

KIP Color 80 Service Manual

Version C.1 | September 2009

Chapter 1

Introduction

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1. 1 Features

(1) New Contact Development Technology with non-magnetic mono-component toner
High definition line and consistent solid image can be produced.

(2) Superior printing productivity
Print speed is 80mm / second (3 A0 prints / minute).

(3) Long parts life and low frequency of service maintenance
Long life of mortal parts and self-cleaning function reduce the frequency of service maintenance.

(4) 4-Bit Multi-Level LED Head
Pre-calibrated LED Head provides the finest image quality.

(5) Automatic adjustment of printing parameters according to the environmental condition
To gain a constant image quality in any environmental conditions, several printing parameters are adjusted automatically.

(6) KIP Image Enhancement Technology
The power of each LED pixels is automatically optimized with KIP Image Enhancement Technology.

(7) Roll replacement without interrupting print process
Roll Deck can be opened for replacing the roll media while the KIP Color 80 is in the process of printing.

(8) Long print
Maximum print length guaranteed is 6 meters (plain paper). Up to 45 meters printing is available. (Longer than 6m is not guaranteed.)

1. 2 Specifications

Subject	Specification
Model	KIP Color 80
Type	Console
Printing method	LED Array Electro Photography
Color	CMYK
Photoconductor	Organic Photoconductive Drum
Print speed	80mm / second (3 A0 / minute)
Exposure method	Multi-Level (4-Bit) LED Print Head
Resolution	600dpi x 600dpi
Print width	Maximum : 914mm (36 inches) Minimum : 297mm (11 inches)
Print length	Maximum : Plain paper ..... Tracing paper ..... Film ..... Glossy paper ..... Minimum : NOTE : If the print is longer than 6m, KIP does not guarantee image quality or the reliability of media feeding system.
Warm up time	Shorter than 6 minutes (At 23 degrees centigrade, 60% RH and 220V)
First print time	Shorter than 45 seconds (A0)
Fusing method	Heat roller fusing
Development	Contact type mono component non-magnetic development system (Initial toner is unnecessary. One toner cartridge contains 500g.)
Charging method	Corona
Media feeding method	Automatic (4 Roll Decks) and manual (50 cut sheets capacity)
Transfer method	Corona
Separation method	Corona
Input power	220 to 240V (+6% to -10%), 20A and 50/60Hz
Interface	KIP Interface 8 LVDS (2 channels) USB 2.0 (5VDC max) RS-232C (12VDC max) RJ-11 (5VDC max)
Maximum power consumption	When 230V, 50/60Hz and Dehumidify Heater is ON Stand by ..... 0.8 Kwh Printing ..... 2.6 Kwh Warm up ..... 2.6 Kwh
Acoustic noise	Less than 70db (Printing) NOTE : Impact noise such as cutting sound is excluded. Less than 55db (Stand by)
Ozone	Less than 0.05ppm (Average of 8 hours)
Dimensions	1544mm (Width) x 939mm (Depth) x 1435mm (Height)
Weight	About 820kg
Media	Specified media Plain paper ..... SHN Tracing paper ..... KMS-75 Film ..... FA-75 Glossy paper (Available types) Plain paper ..... 70 to 90g/m^2 Tracing paper ..... 70 to 90g/m^2 Film ..... Thickness is 100 micrometer or thinner. Glossy paper

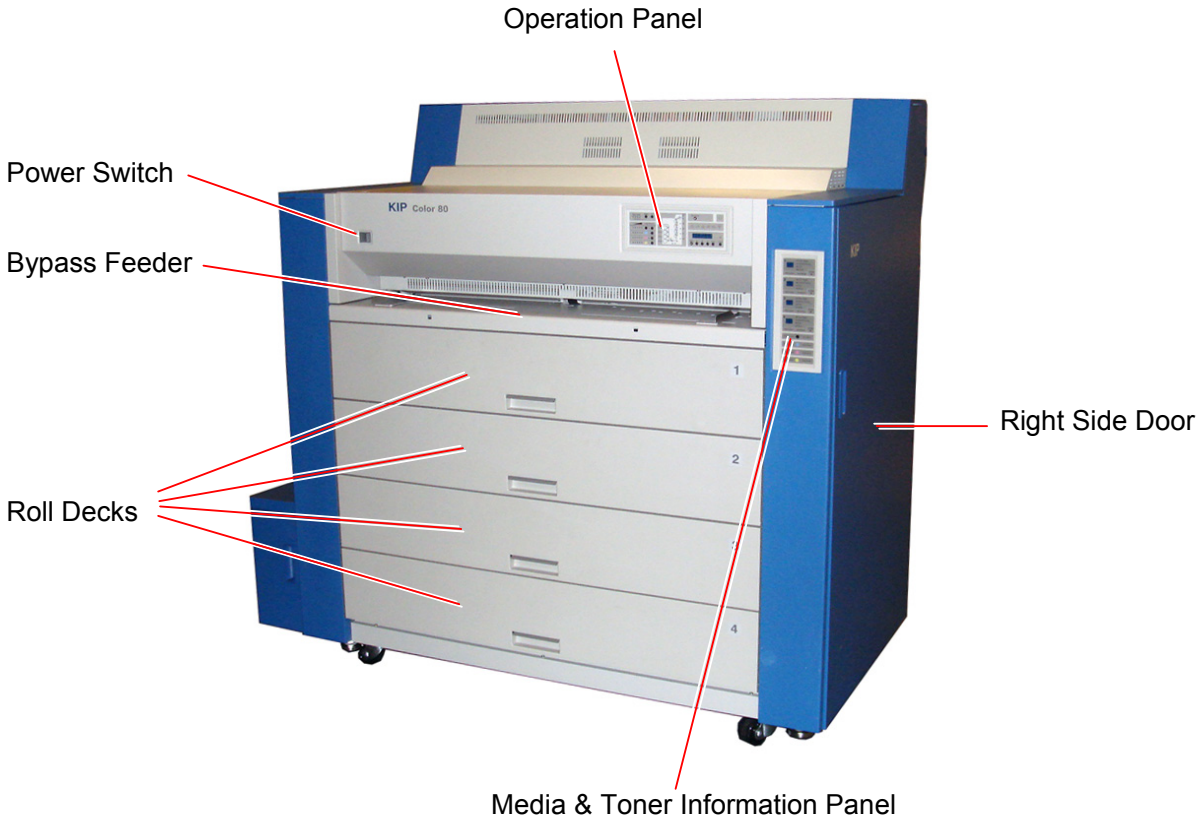
Subject	Specification	
Environmental condition	Temperature	10 to 32.5 degrees centigrade
	Humidity	20 to 80% RH
Storage condition of consumables	Print media	Wrap the media surely to shut out the humidity.
	Toner	Keep the toner cartridge away from the direct sunlight, and store it in the condition of 0 - 35 ^{o}C and 10 - 85% RH.

NOTE

These specifications may be changed without notice.

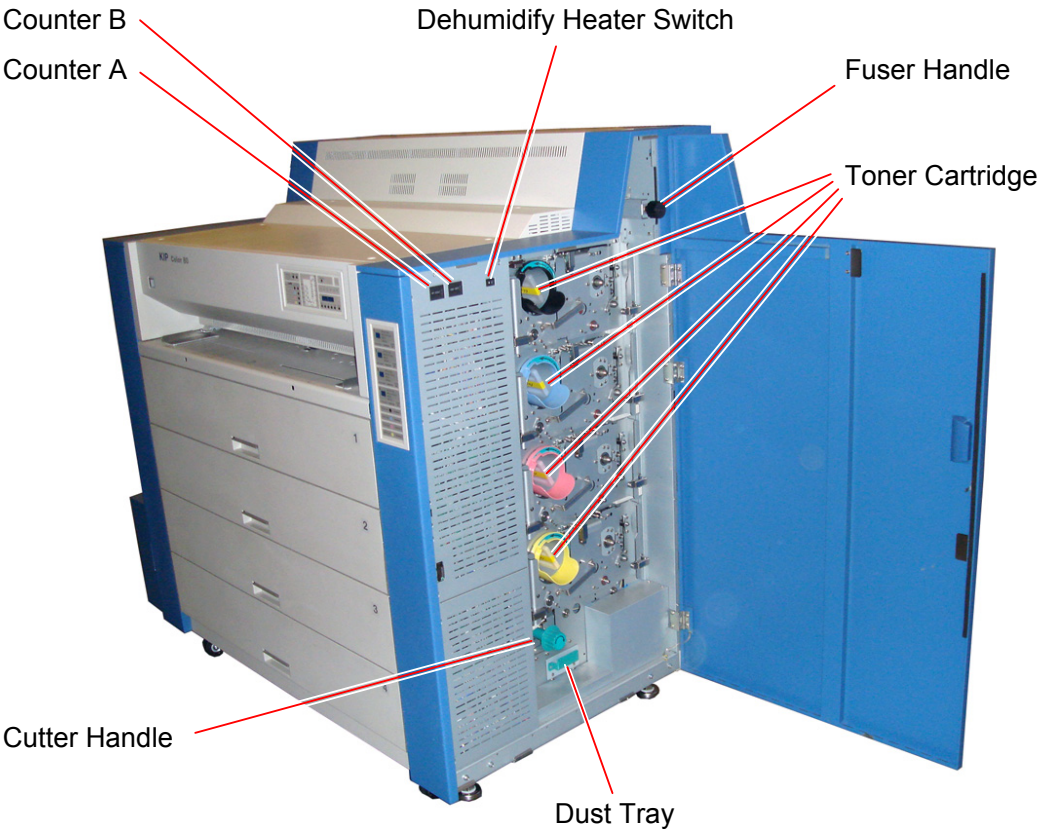
1. 3 Appearance

1. 3. 1 Front view



Name of part	Function
Power Switch	Turns on the KIP Color 80.
Bypass Feeder	Feeds in the cut sheet media. 50 sheets can be set at once if the media is A2 (594mm) or smaller. (24” or narrower)
Operation Panel	Indicates information like printer status, error, mis-feed location and etc.
Roll Decks	4 roll media can be set totally.
Media / Toner Information Panel	Indicates the information about media (size, type & remaining level) and toner (remaining level).
Right Side Door	Can access the mis-fed media by opening Right Side Door.

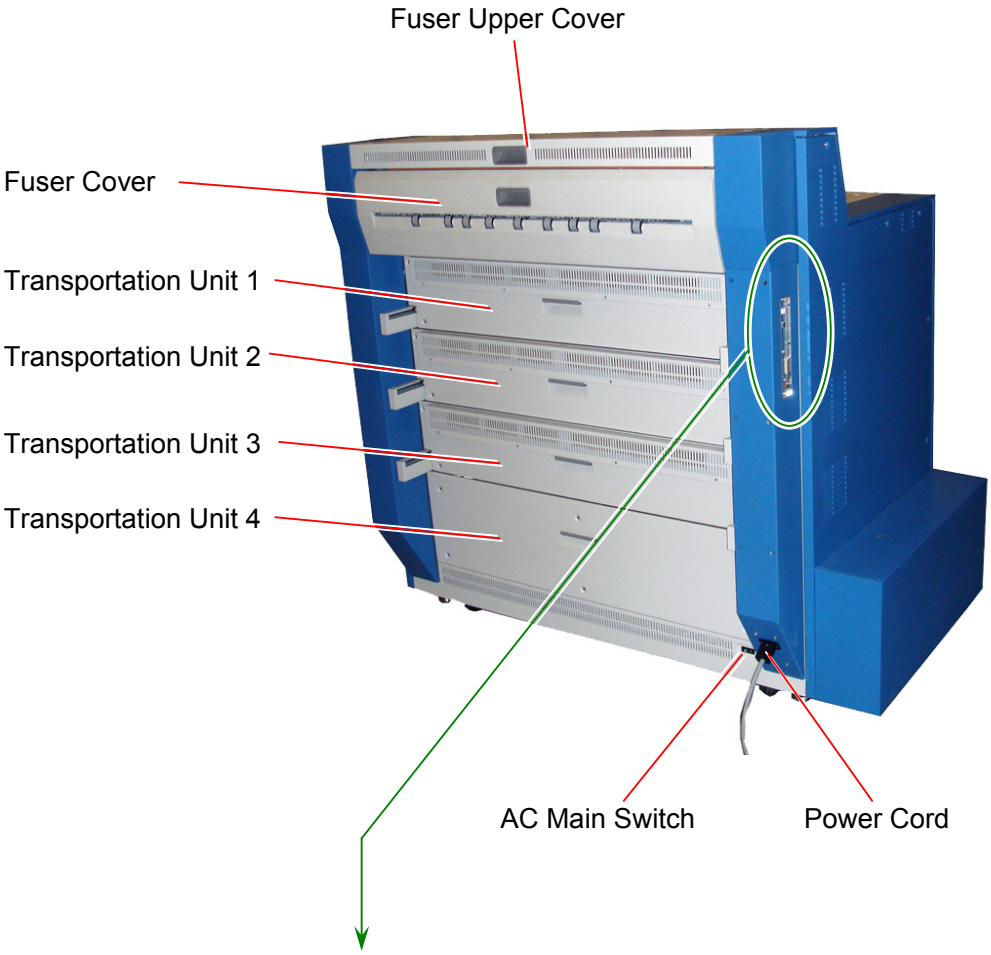
1. 3. 2 Right side view

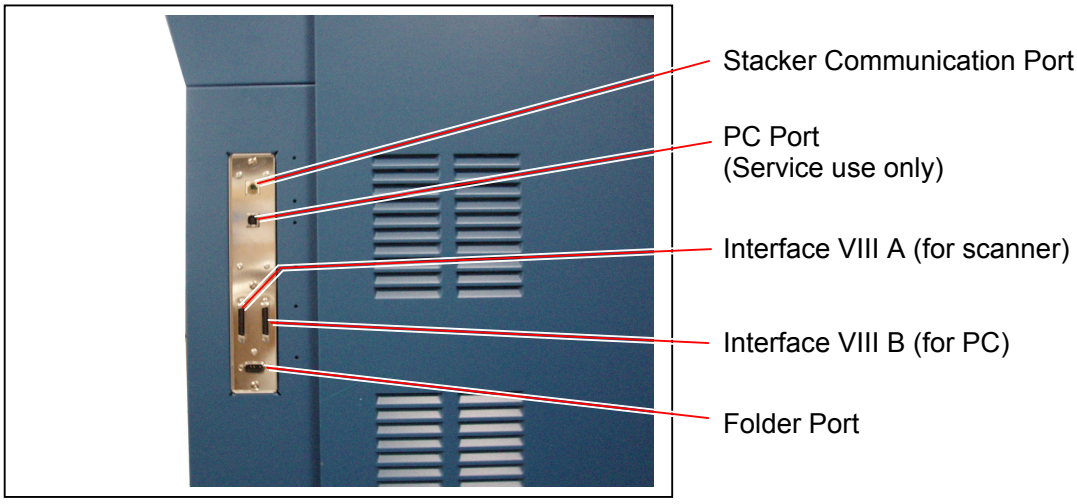




Name of part	Function
Cutter Handle	Can cut the mis-fed media rotating the Cutter Handle manually.
Fuser Handle	Can remove the mos-fed media from the Fuser Region safely.
Dust Tray	Collects the paper dust generated inside of the machine. Dust can be disposed by pulling out the Dust Tray.
Counter A	Counts the linear meter (inch) of total prints.
Counter B	Counts the square meter (inch) of total prints.
Dehumidify Heater Switch	Can turn on the Dehumidify Heater by pressing the “H” side, and turn it off by pressing the “L” side
Fuser Handle	Can eject mis-fed media from the Fuser Unit by rotating the Fuser Handle when the media is mis-fed in the Fuser Unit.
Toner Cartridge	4 Toner Cartridges (cyan, magenta, yellow and black) supplies the toner little by little.
Waste Toner Door	Can access the Waste Toner Box by opening the Waste Toner Door.
Waste Toner Box	Collects the wasted toner.

1. 3. 3 Rear view

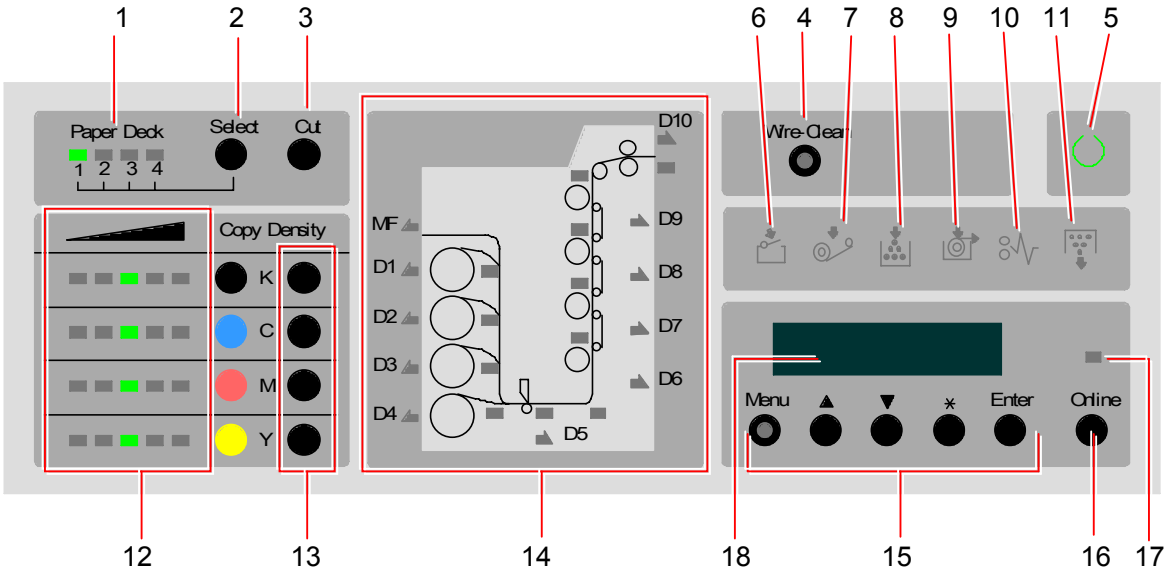




Name of part	Function
Fuser Upper Cover	Can access the media mis-fed around the entrance of the Fuser Unit.
Fuser Cover	Can access the media mis-fed around the Fuser Unit by opening the Fuser Cover.
Transportation Unit 1	Can access the media mis-fed around the Transportation Unit 1.
Transportation Unit 2	Can access the media mis-fed around the Transportation Unit 2.
Transportation Unit 3	Can access the media mis-fed around the Transportation Unit 3.
Transportation Unit 4	Can access the media mis-fed around the Transportation Unit 4.
Power Cord	To be connected to the wall outlet alone. NOTE : Specification for the power cord used in North America Use the following type of power cord (UL-Listed). (1) Rating 250Vdc, 20A (2) Plug type NEMA6-20 (3) Socket type IEC60320 : C19 (4) Cord SJT 3xAWG12 L <4.5m (5) UL-Listed
AC Main Switch	Supplies or shuts off the AC main power.
Stacker Communication Port	Connect the signal cable from the Auto Stacker. Connector type is RJ11 : 5VDC max (NOTE : Do not connect a telephone line.)
PC Port (Service use only)	Service personnel only use this port : max 5Vdc
Interface VIII A (for scanner)	Connect the signal cable from the image scanner. MDR Connector 36 pins : 3.3VDC max
Interface VIII B (for PC)	Connect the signal cable from the PC unit. MDR Connector 36 pins : 3.3VDC max
Folder Port	Connect the signal cable from the Folder. D-Sub Connector 9 pins : max.12Vdc

1. 3. 4 Operation Panel

The Operation Panel on the upper right of front face is available for several settings. It also indicates several status of KIP Color 80.

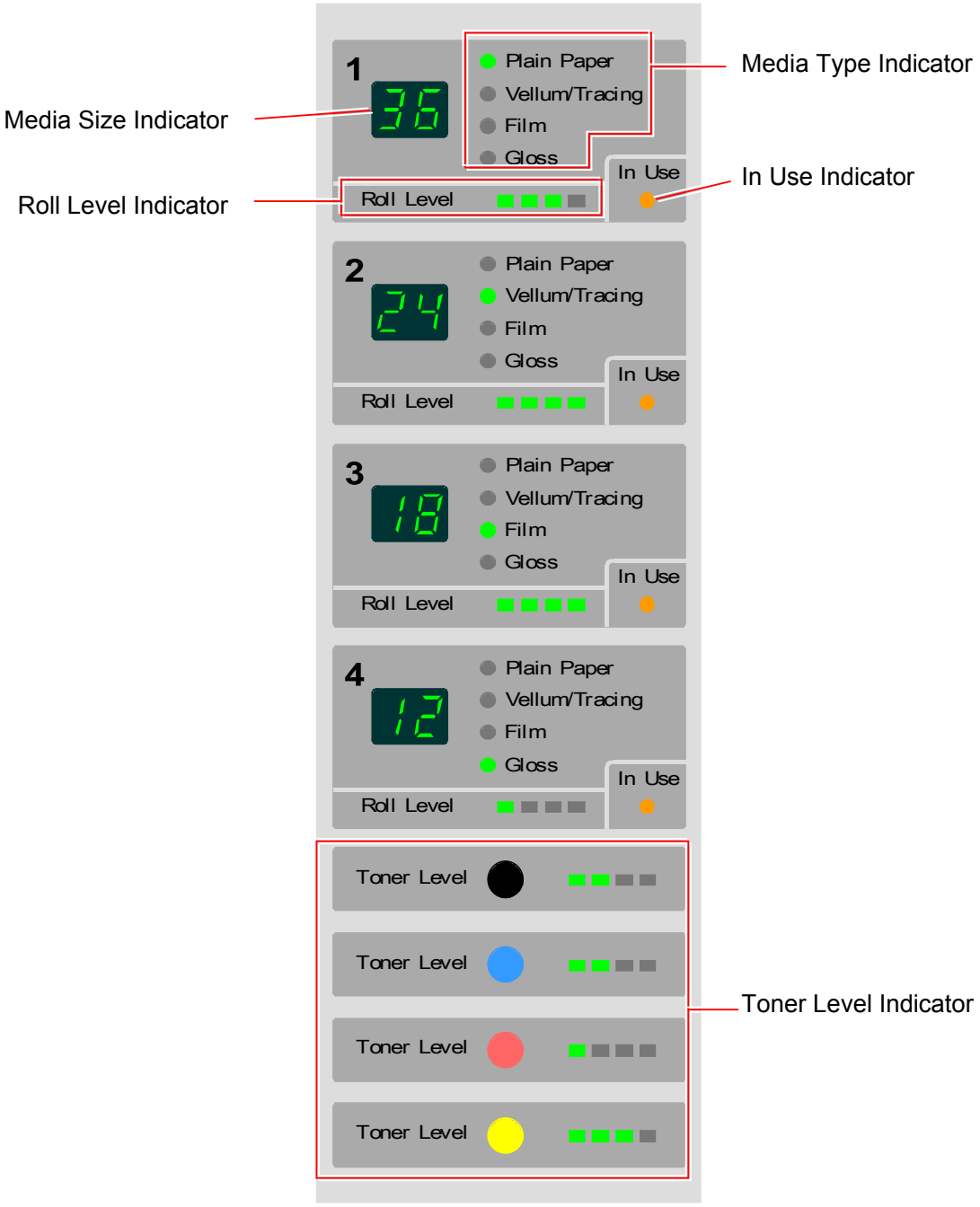


No.	Name of part	Function
1	Roll Deck Selection Indicator	Indicates the present selection of Roll Deck for Initial Cut.
2	Roll Deck Selection Key	Selects one Roll Deck for Initial Cut.
3	Cut Key	Makes an Initial Cut for the roll media on the selected Roll Deck.
4	Wire-Clean Key	Starts wire cleaning operation to prevent an image problem. Lights when ready for wire cleaning, flashing for cleaning, off for disabled for cleaning
5	Ready Indicator	Flashes green when the KIP Color 80 is warming up. Lights green when the KIP Color 80 gets ready.
6	Open Indicator	Lights orange when any door or unit is open or unlocked.
7	Web Cleaner Empty Indicator	Flashes red when the Web Cleaner is near empty. Lights red when the Web Cleaner is emptied completely and no more copy/print become available.
8	Toner Empty Indicator	Lights red when the toner is emptied completely and no more copy/print become available.
9	Roll Empty Indicator	Lights red when the roll media in use is emptied.
10	Mis-feed Indicator	Lights red when a printing media is mis-fed. (A mis-feed code like “J-xxxx” is indicated on the Status Display and some indication LED of Mis-feed Location Indicator lights red to inform the location of mis-feed.)
11	Waste Toner Full Indicator	Lights red when the Waste Toner Box is filled with the toner or when it is not installed correctly.
12	Density Indicator	Indicates the density level presently selected by the Copy Density Key.
13	Copy Density Key	Can change the density level to make the printed image lighter or darker.

No.	Name of part	Function
14	Mis-feed / Open Location Indicator	Indicates the location of mis-fed media by lighting any LED in red. Indicates the location of open door or open unit by lighting any LED in orange.
15	Menu Key ▲ Key ▼ Key ✳ Key Enter Key	These keys are used in the User Modes.
16	Online Key	Lights when the KIP Color 80 is online, and goes off when offline.
17	Online Indicator	Switches between online and offline. Cancels the User Mode. Flashes during Warm / Cold Sleep mode.
18	Status Display	Indicates error code, mis-feed code and other information.

1. 3. 5 Media & Toner Information Panel

The Media & Toner Information Panel indicates the information of roll media on each Roll Deck and that of toner of each color independently.



No.	Name of part	Function
1	Media Size Indicator	Indicates the size of roll media installed on each Roll Deck.
2	Media Type Indicator	Indicates the type of roll media installed on each Roll Deck.
3	Roll Level Indicator	Indicates how much the roll media in the concerning Roll Deck is remaining by 4 levels.
4	In Use Indicator	Notices that the concerning Roll Deck must not be opened as it is in use.
5	Toner Level Indicators	Indicates how much the toner of each color is remaining by 4 levels.

Chapter 2

Installation

The machine had passed our strict inspection after careful adjustment in the factory, and then it was packaged and shipped. Installation is an important procedure to make the machine work at the customer's site in the same manner as it did at the factory after passing our strict inspection before shipment.
A service engineer has to understand the machine's functions very well. Install the machine in a good environmental place in the correct way, and then check that it works perfectly.

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2. 1 Installation Requirements

The following conditions are required for installation of the equipment.

(1) Power source should be as follows (according to your region).
U.S.A. / Europe ..... 220 to 240V (+6% to -10%), 11A, 50/60Hz

(2) The equipment must be on an exclusive circuit (dedicated). The outlet must be near the equipment and easy accessible.

(3) Make sure to connect this equipment to a grounded outlet.

(4) The site temperature range = 15 to 27 degrees centigrade, with the humidity between 20% to 75.0% RH (NON CONDENSING). Keep the equipment away from water sources, boilers, humidifiers or refrigerators.

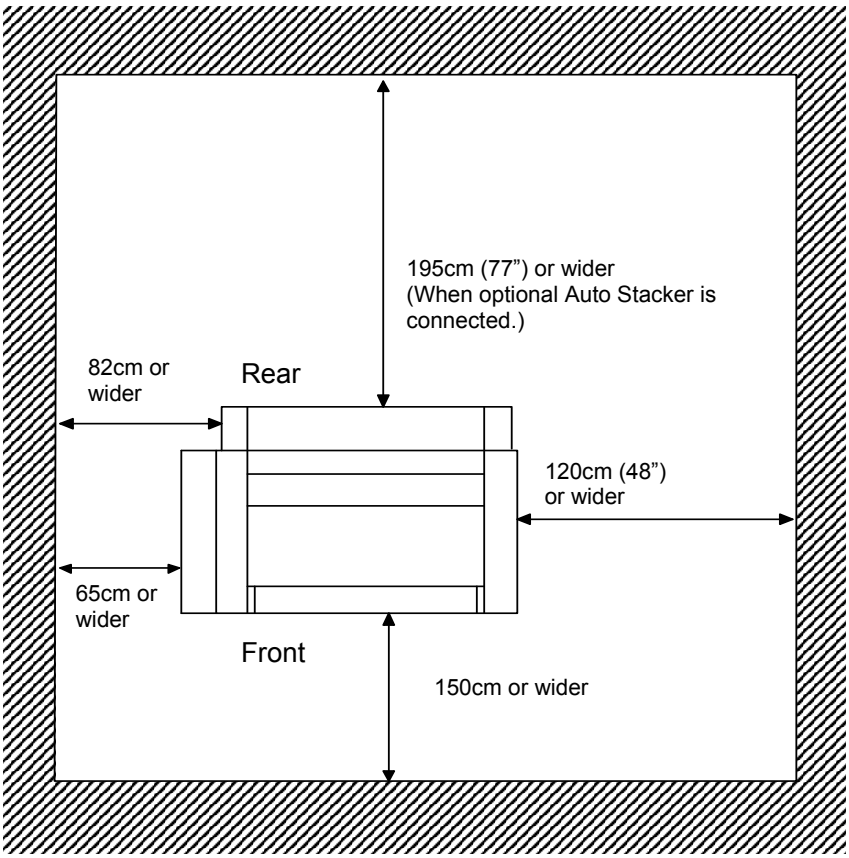
(5) The installation site must not have open flames, dust or ammonia gases.

(6) The equipment should not be exposed to the direct sunlight. Please draw curtains to block any sunlight.

(7) Ozone will be generated while this equipment is in use, although the quantity generated is within safe levels. (see certifications) Ventilate the room, if required.

(8) Levelling Bolts on the bottom of the printer should touch the floor correctly. And the equipment must be levelled. Floor strength must be ample to sustain the weight of the equipment.

(9) Keep ample room around the equipment to ensure comfortable operation. Required space is noted.



2. 2 Unpacking

2. 2. 1 Unpacking

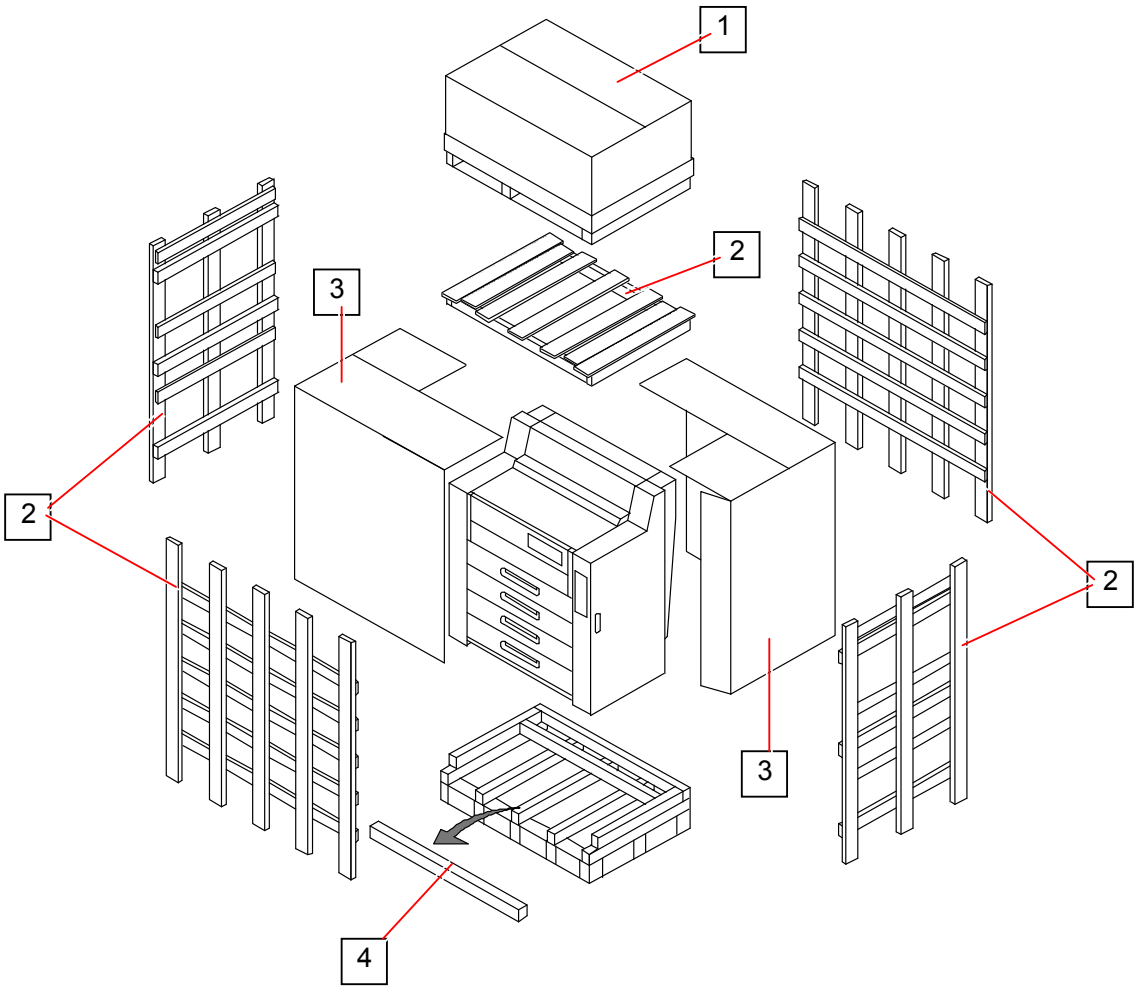
⚠ CAUTION

1. Do not unpack the KIP Color 80 right after moving it from a cold environment to a warm installation site as its inside will get dewed, which will result in several troubles. In such situation please leave the KIP Color 80 at least for 6 hours after moving to the warm installation site. When the KIP Color 80 is enough warmed up then start unpacking.
2. Be careful not to be injured as the net weight of KIP Color 80 is about 1000Kg.

⚠ NOTE

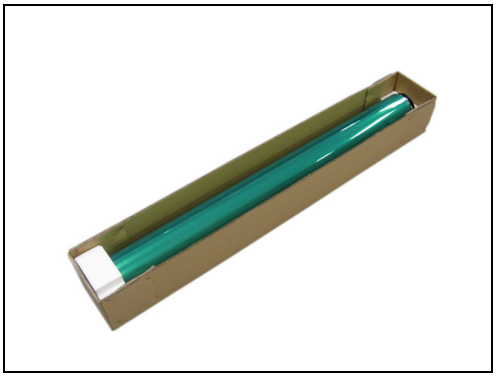
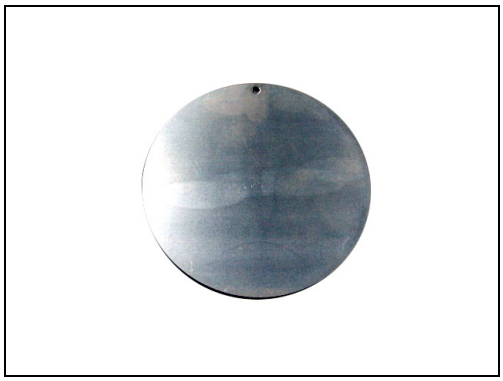
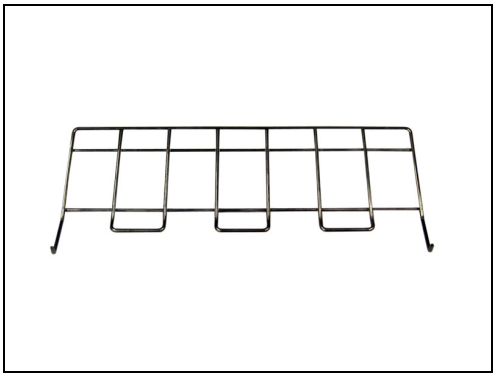
The printer package does not include printing paper. Prepare them separately before installing the printer.

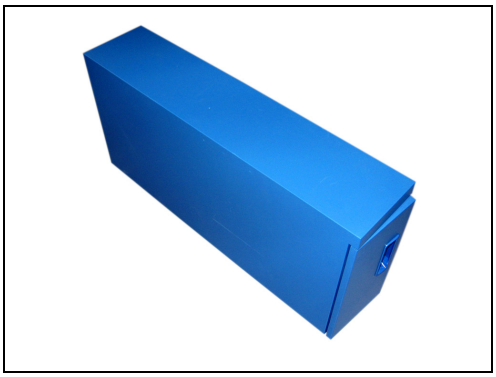
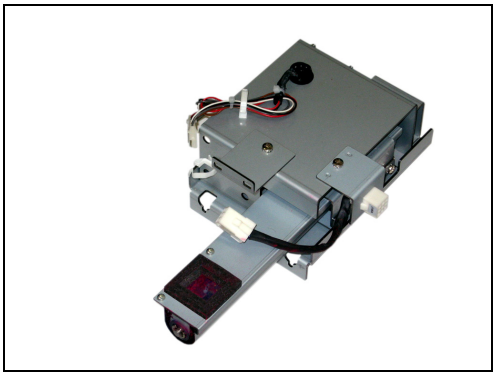
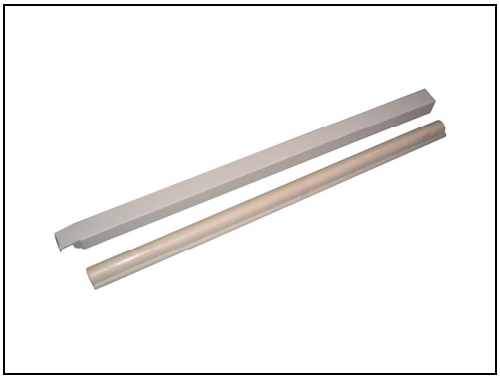
1. Remove the accessory box (1) on the top of the package. **DO NOT DISCARD THIS BOX.**
2. Remove the 5 wood frames (2).
3. Remove the cardboard cases (3).
4. Remove the front bar (4) of the palette removing 5 bolts to have space for inserting the folk lift.
5. Bring down the machine unit onto the floor with a folk lift.
6. Move the machine to the installation site.
7. Remove the wrapping and the shock absorbers from the machine unit.



2. 2. 2 Confirmation of accessories

Confirm the following parts are attached to the product.

Item name	Picture	Number of article
Drum (CMYK)		4
Plate		4
Bypass Feeder Tray		1
Waste Toner Box (This is inside of Waste Toner Bottle Unit.)		1

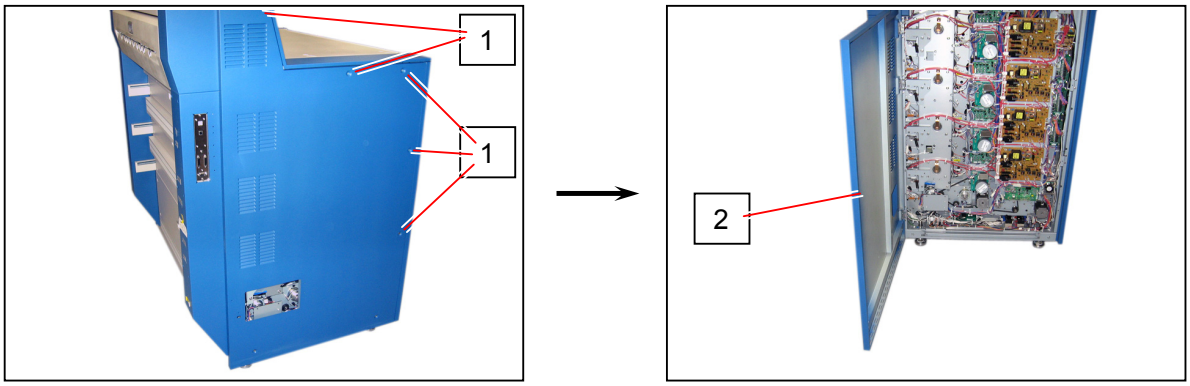
Item name	Picture	Number of article
Waste Toner Bottle Unit		1
Waste Toner Transportation Assy		1
Web Cleaner		1

2. 3 Installing KIP Color 80 Horizontally

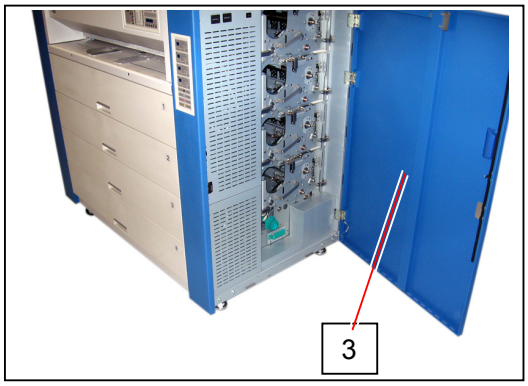
The KC80 printer needs to be levelled strictly using a high accuracy water level for achieving correct Color Registration H. The flooring where the machine will be installed may not be level. Therefore, you will first level the machine by the following steps then raise the machine in small increments so not to twist the frame and cause damage.

1. Prepare a high accuracy water level for the adjustment.
   (Specification of water level : 0.02mm/1m)

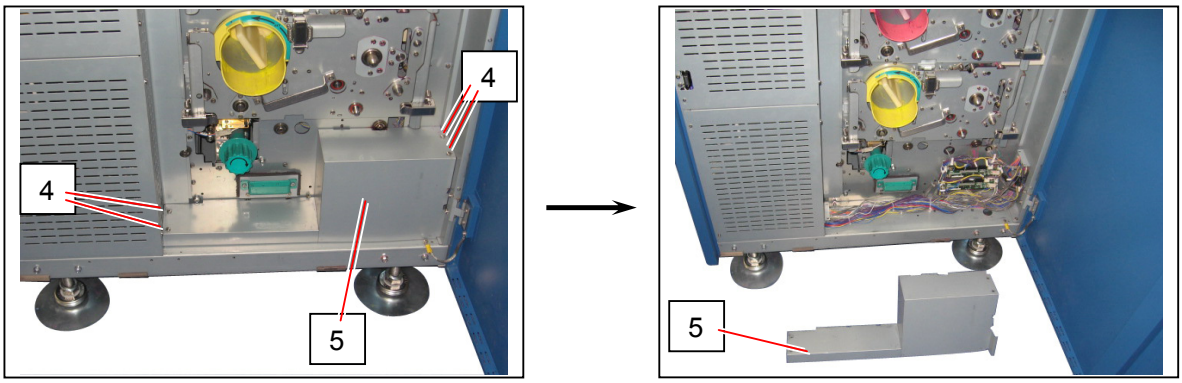
2. Remove 5 screws (1) and open the Cover 119 (2).



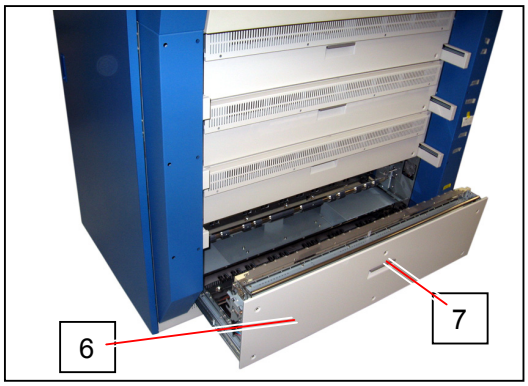
3. Open the Cover 120 (3).



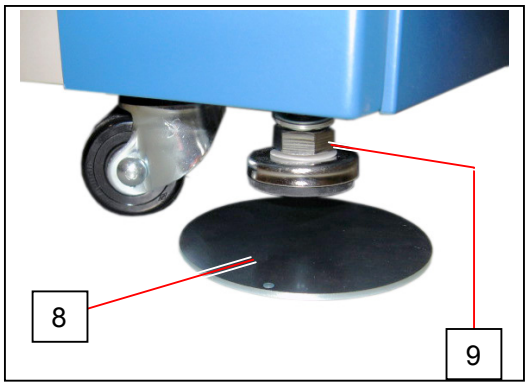
4. Remove 4 screws (4) and remove the Harness Cover (5).



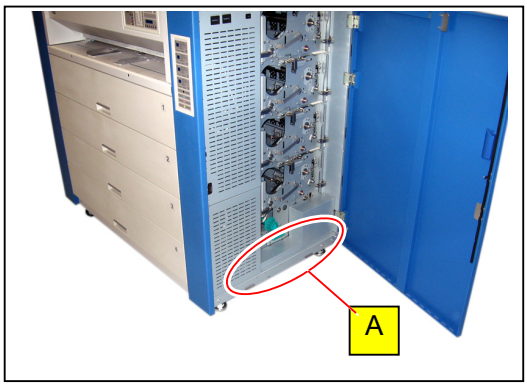
5. Draw out the Registration Unit (6) on the backside pulling the handle (7).



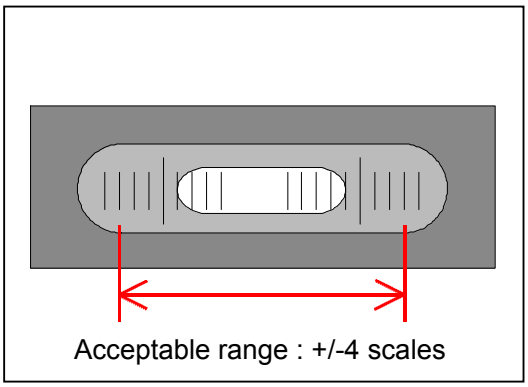
6. Place the Plate (8) under each Adjuster Bolts (9), and turn the Adjuster Bolts by hand until they contact the Plates.

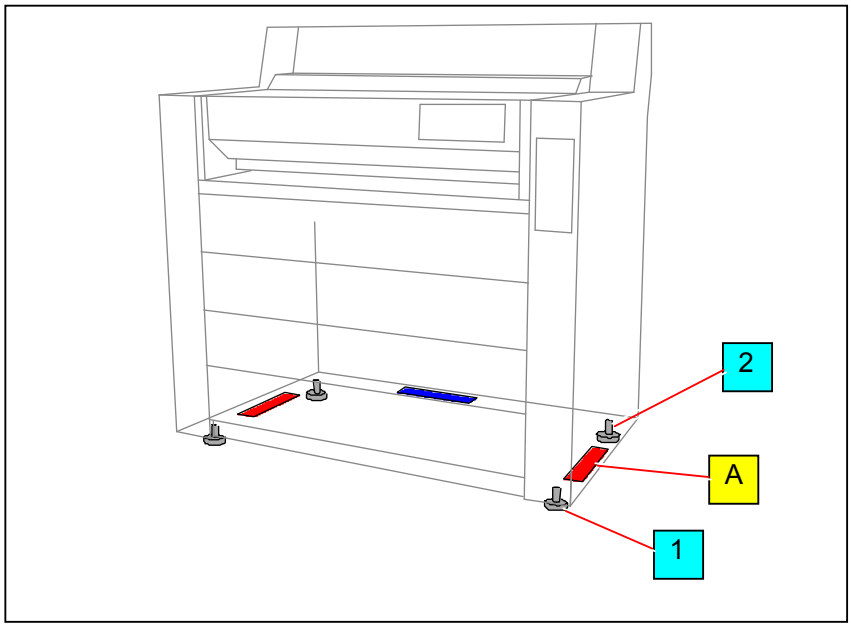


7. Put the water level at **"A"**, and take a level between "right front" and "right rear" of machine turning the **Adjuster Bolts 1 and 2**. The acceptable range is **+/-4 scales (0.08mm/1m)** from the center point of water level.



Indication of water level





NOTE

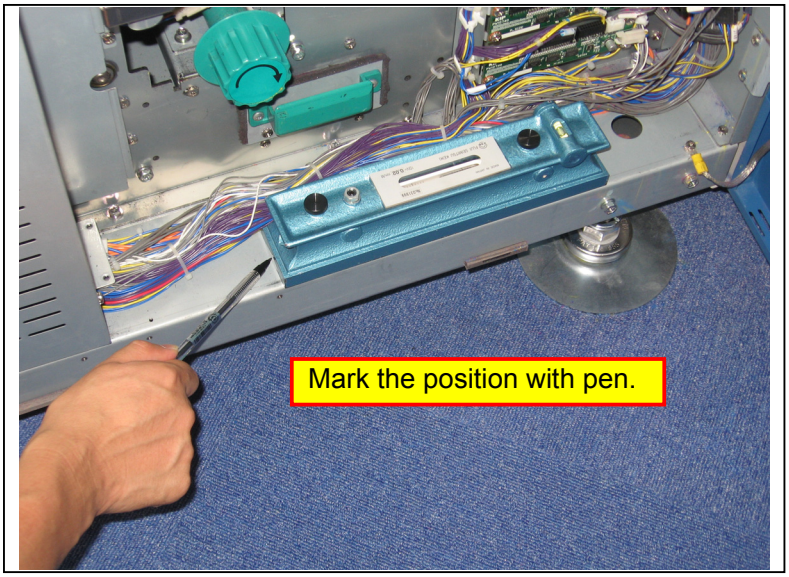
(1) It is unnecessary to raise the machine at this time. Just making it level is enough. (The machine will be raised after the next procedure.)

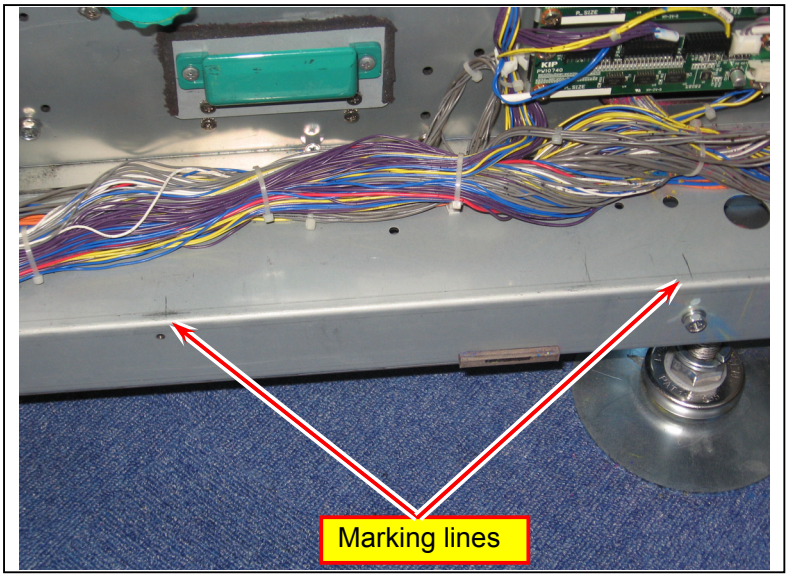
⚠ NOTE

(2) **The most important thing for achieving correct machine level (= correct color registration) with minimum effort is to place the water level always at the same position by the same orientation.** Such high accuracy water level may show different measurement result if only its location on the base plate is changed from one to another even if the machine angle is the same. Just changing its orientation (left-right) will result in the same problem. Please make sure to do the following a), b) and c) at each measurement points to avoid such incorrect measurement.

a) Clean the surface of bottom plate where the water level is to be placed. Clean the bottom of water level as well.

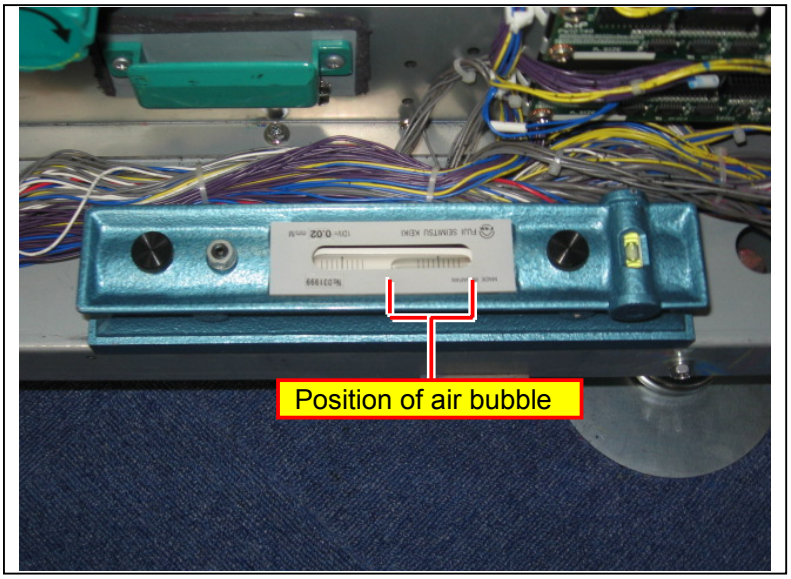
b) Once you decide where to place the water level on the bottom plate, mark this position by drawing lines with pen. And make sure to place the water level within the marked lines whenever you take your measurements again in later occasions.

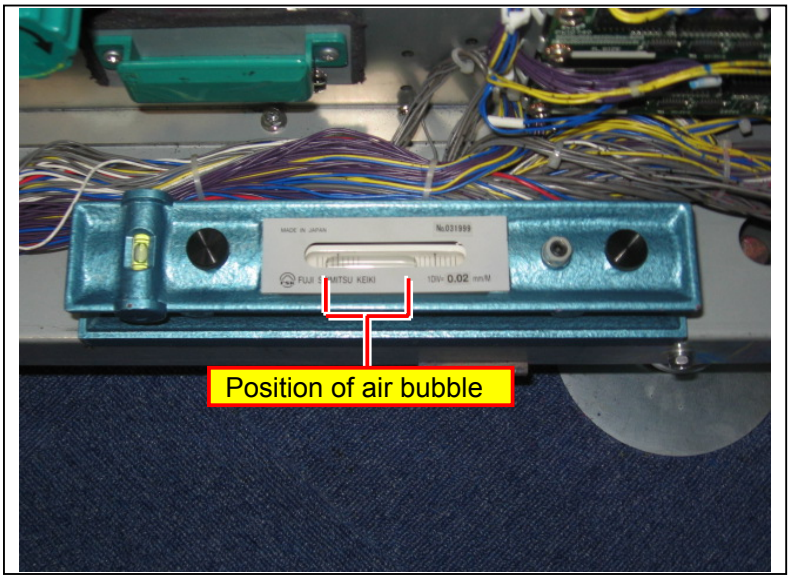




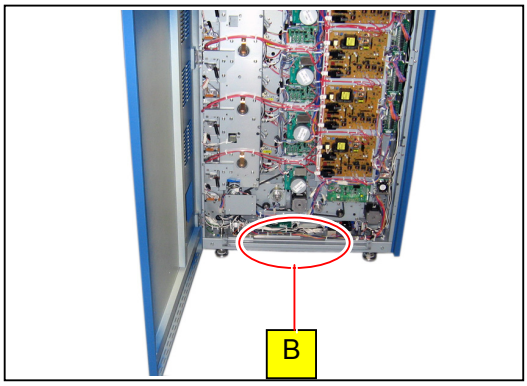
NOTE

c) Once you decide the orientation of water level, please keep it whenever you take measurement again in later occasions. (The following 2 photos show the difference of measurement results when orientation of water level is changed. **Note the difference of air bubble positions although the machine angle is the same in both cases.**)

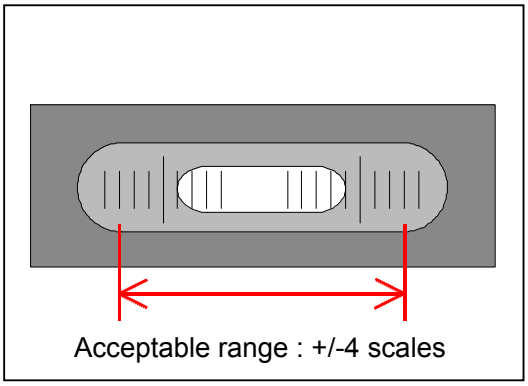


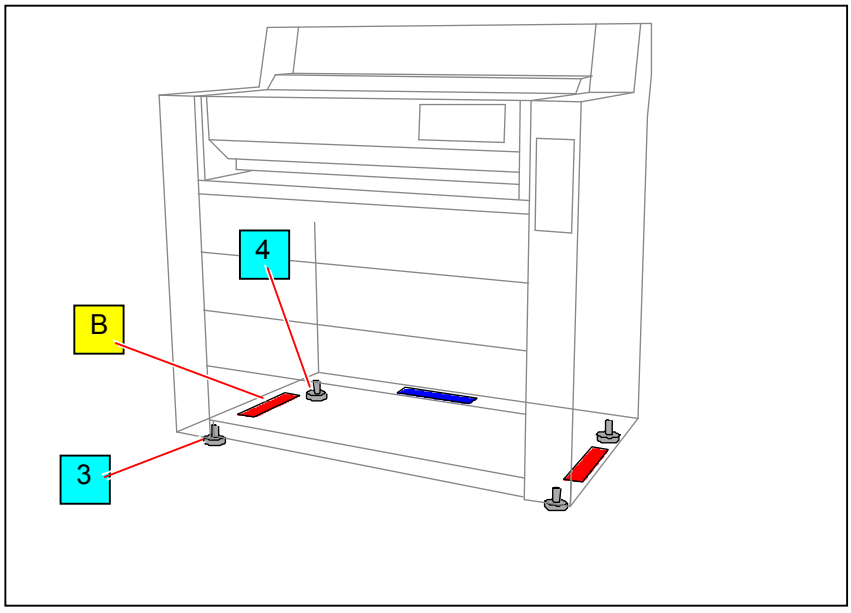


8. Put the water level at **"B"**, and take a level between "left front" and "left rear" of machine turning the **Adjuster Bolts 3 and 4**. The acceptable range is **+/-4 scales (0.08mm/1m)** from the center point of water level.



Indication of water level

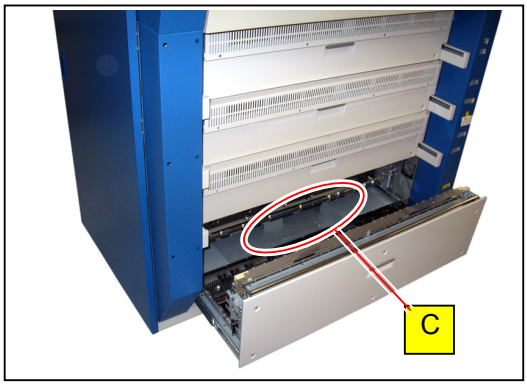


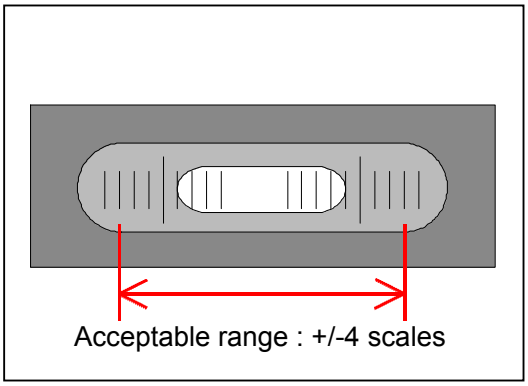


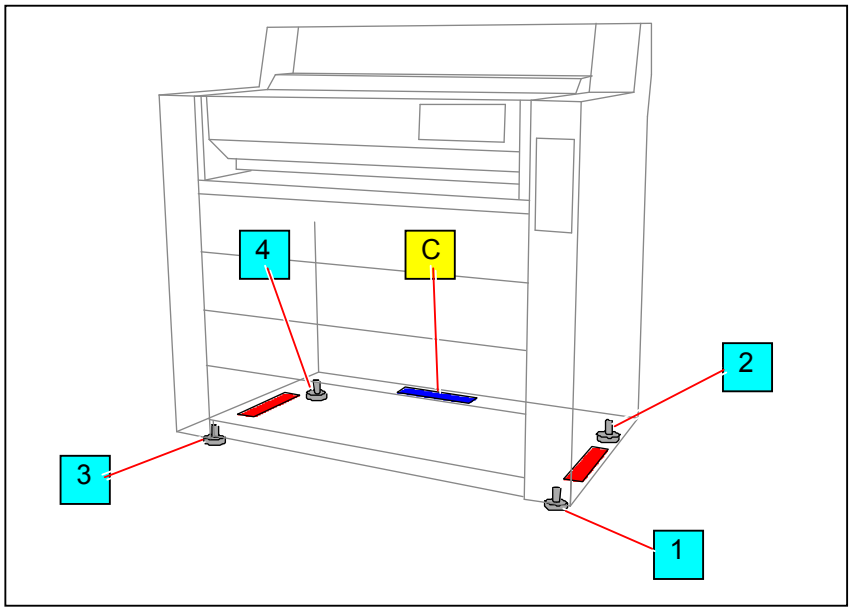
⚠ NOTE

It is unnecessary to raise the machine at this time. Just making it level is enough. (The machine will be raised after the next procedure.)

9. Put the water level at **"C"**, and take a level between left and right turning the **Adjuster Bolts 1 to 4**. The acceptable range is **+/-4 scales (+/-0.08mm)** from the center point of water level.







NOTE

(1) When either side is raised or lowered, turn both of 2 Adjuster Bolts on that side by the same degree. If you will raise the left side for example, turn both the Adjuster Bolts 3 & 4 by the same degree. If you turn only one of them, the machine frame will be twisted.

(2) It is unnecessary to raise the machine at this time. Just making it level is enough.
(The machine will be raised after the next procedure.)

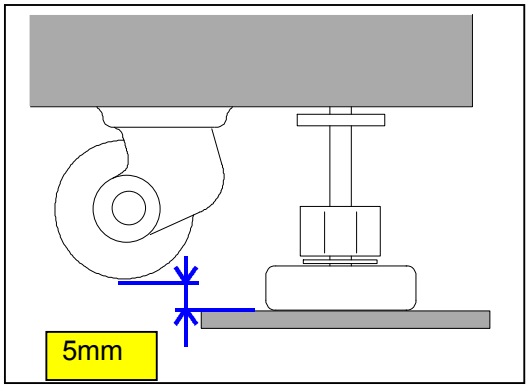
10. Turn the Adjuster Bolt 1 180 degrees to raise the right-front of the machine.

11. Turn the Adjuster Bolt 2 180 degrees to raise the right-rear of the machine.

12. Turn the Adjuster Bolt 3 180 degrees to raise the left-front of the machine.

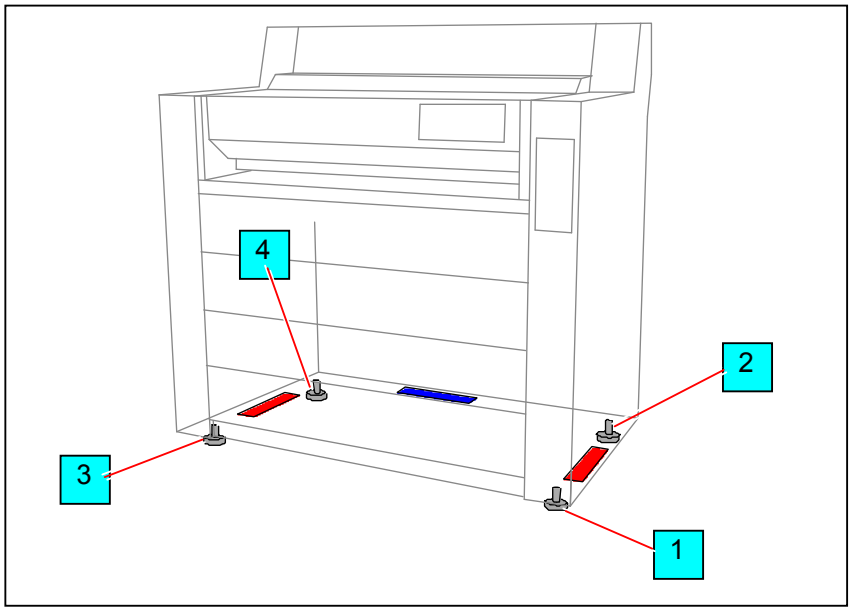
13. Turn the Adjuster Bolt 4 180 degrees to raise the left-rear of the machine.

14. Repeating the procedures 10 to 13 several times, raise the machine little by little. Have 5mm of space between the bottom of Caster and the top face of Plate.



⚠ NOTE

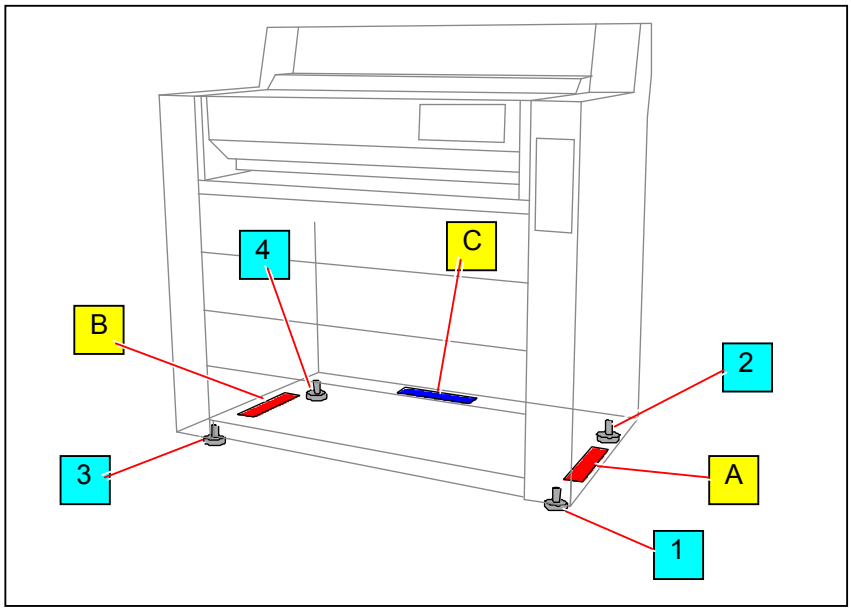
Make sure to raise all of 4 corners evenly little by little to prevent the machine frame from being twisted or distorted. If twisted or distorted, it may cause the disturbance of Color Registration.



15. Put the water level at **"A"** and check the level between "right front" and "right rear" of machine.
    The acceptable range is **+/-1 scale (+/-0.02mm)** from the center point of water level.

16. Put the water level at **"B"** and check the level between "left front" and "left rear" of machine.
    The acceptable range is **+/-1 scale (+/-0.02mm)** from the center point of water level.

17. Put the water level at **"C"** and check the level between left and right of machine.
    The acceptable range is **+/-4 scale (+/-0.08mm)** from the center point of water level.



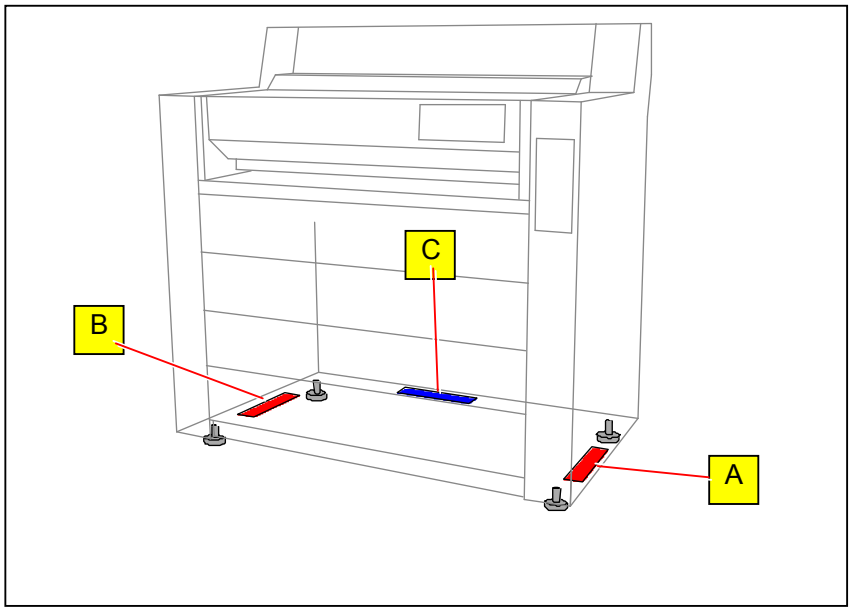
⚠ NOTE

Do not adjust the machine level between front and rear by turning only one Adjuster Bolt as it will cause twisting or distortion of machine frame.
If the Adjuster Bolt 1 is turned 15 degrees clockwise to raise the right front for example, turn the Adjuster Bolt 2 15 degrees counter clockwise to lower the right rear.
Never adjust by turning the Adjuster Bolt 1 30 degrees clockwise or Adjuster Bolt 2 30 degrees counter clockwise.

18. Leave the machine **for 1 hour**. (The machine frame will become accustom to the new angle very slowly.)

19. Place the water level at each checking point A, B and C and check/ verify if the machine is surely placed horizontally. The acceptable range of each point is;

A & B : +/-1 scale
C : +/-4 scales



20. If the acceptable range is not satisfied, go back to the procedure 5 and re-adjust. Wait for 1 hour after readjustment then check again.

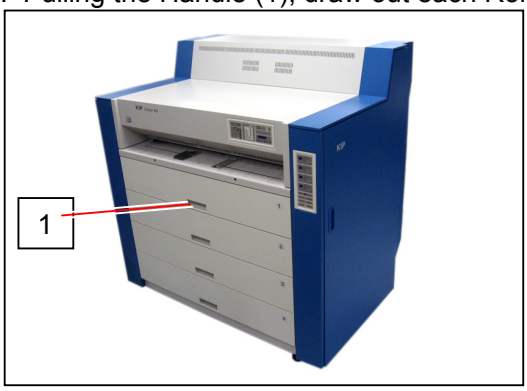
NOTE

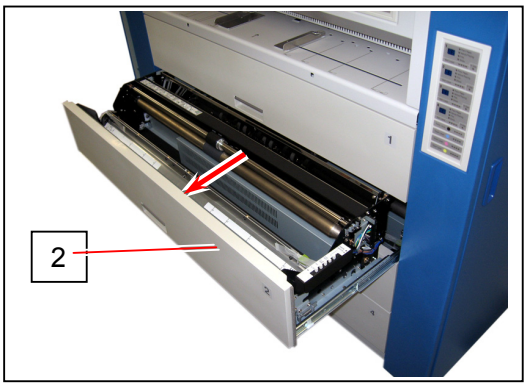
(1) If the printer is installed on a soft floor like on carpet, it will take a very long time until the printer completely gets settled (stabilized). Even if it was surely levelled on the day of installation it may not be levelled on the next day. Therefore it is recommended in such cases to visit the customer's site on the next day of installation and check the machine angle again.

(2) After installing the KC80 horizontally, it is necessary to touch-up the machine angle for proper Color Registration H. This will be performed in a later section [11.4.1 Touch-up of machine angle].

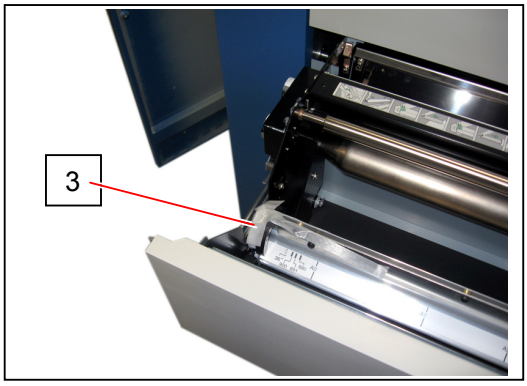
2. 4 Removing Tapes, Shock Absorbers and Screws

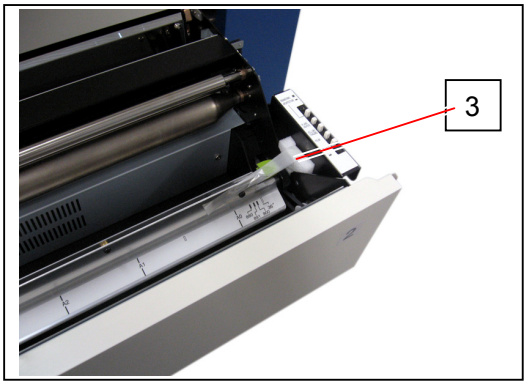
1. Pulling the Handle (1), draw out each Roll Deck (2).



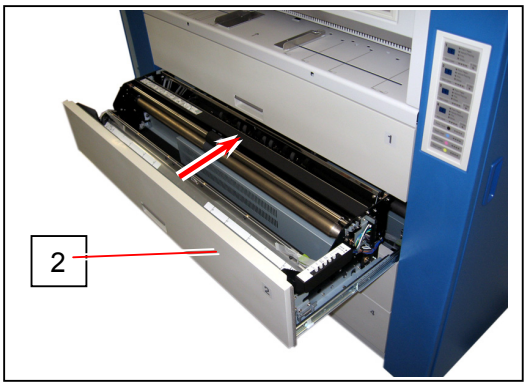


2. Remove the shock absorber and tape (3) at both sides.

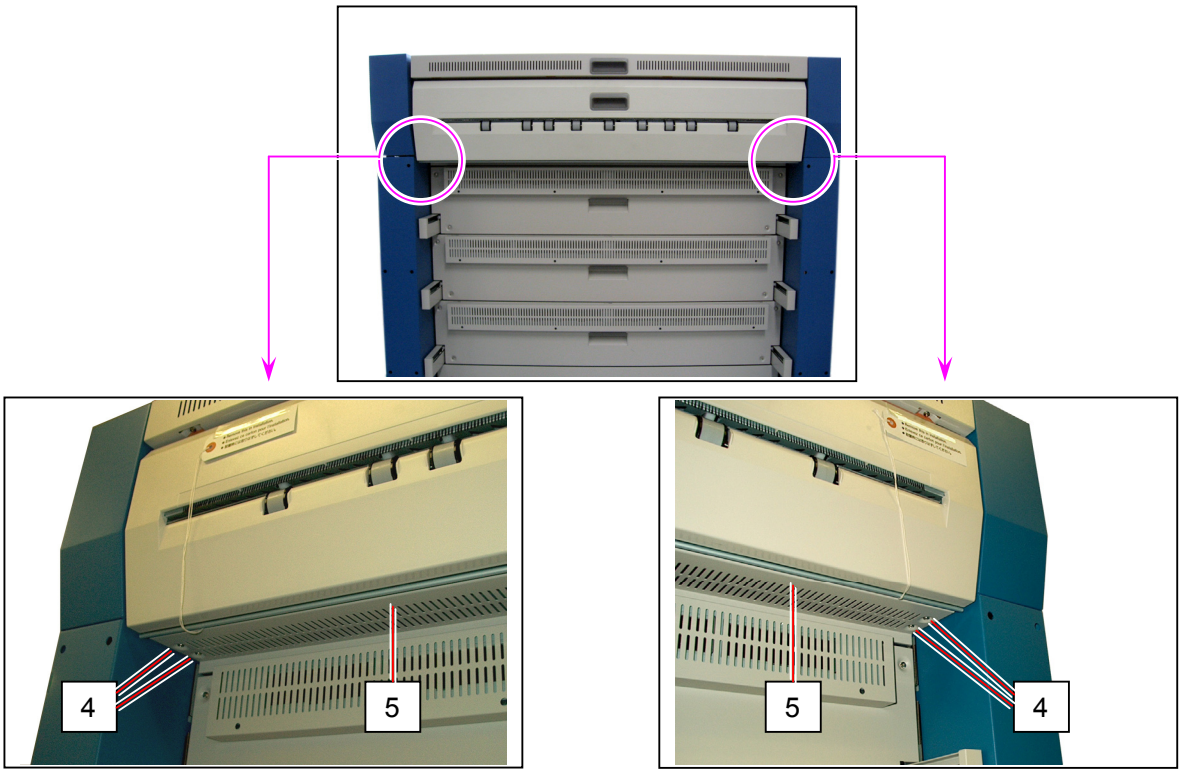




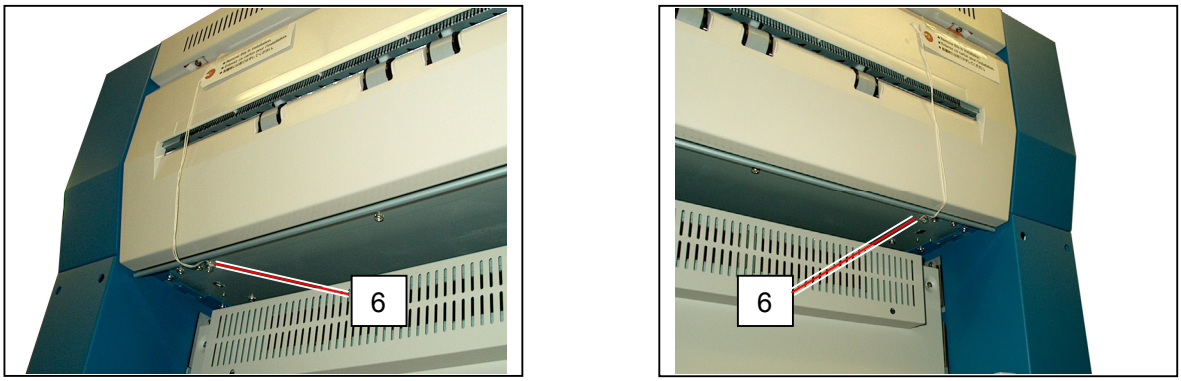
3. Close the Roll Deck (2).



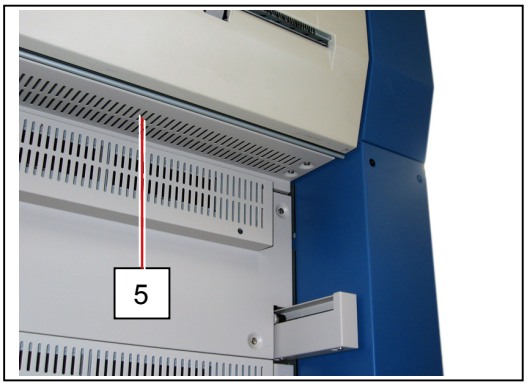
4. Remove 4 screws (4) on the back to remove the Fuser Bottom Cover (5).



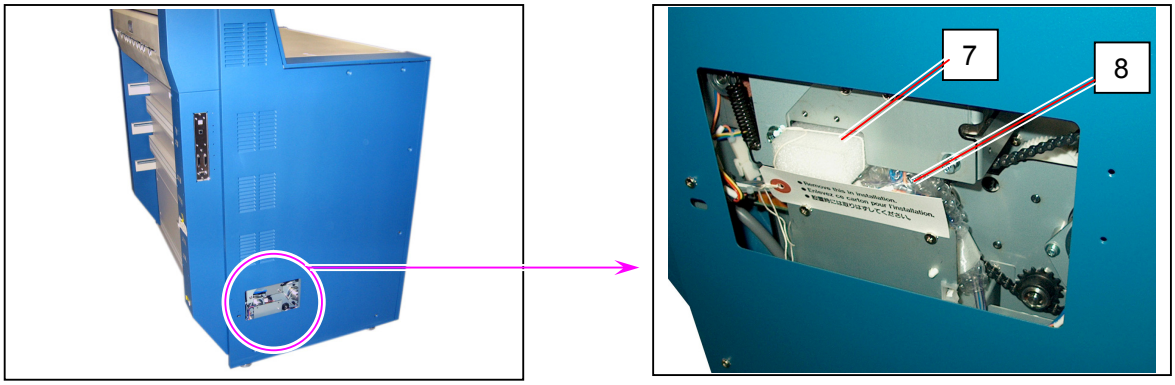
5. Remove 2 tagged screws (6) at both sides. This will pressurize the Fuser Roller correctly. Removed screws (6) are not re-used.



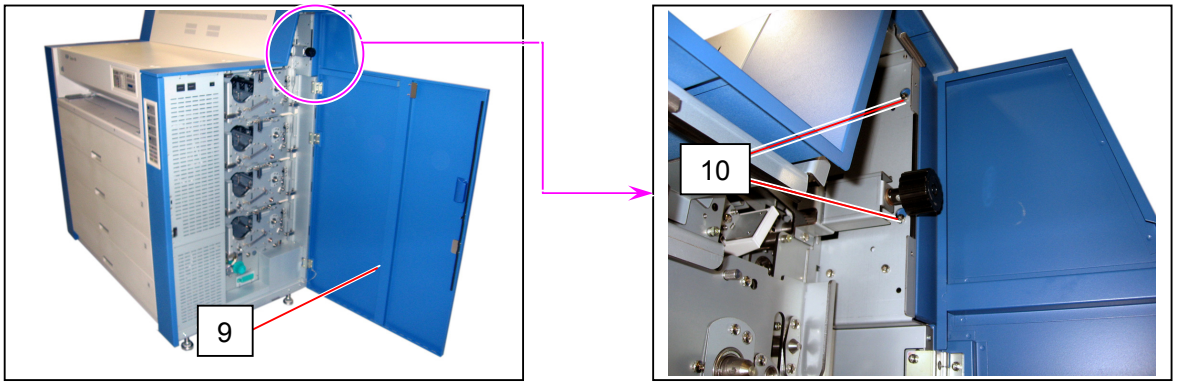
6. Replace the Fuser Bottom Cover (5).



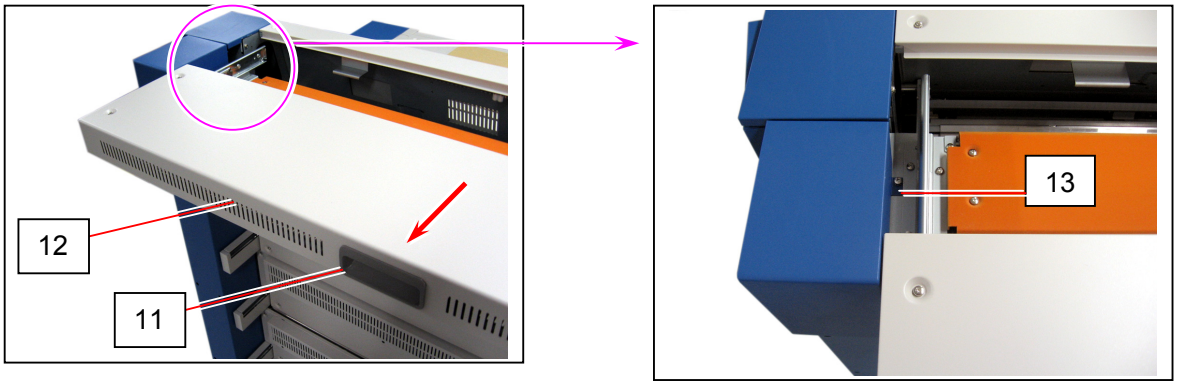
7. Remove the tagged Shock Absorber (7) and plastic bad (8) on the left.



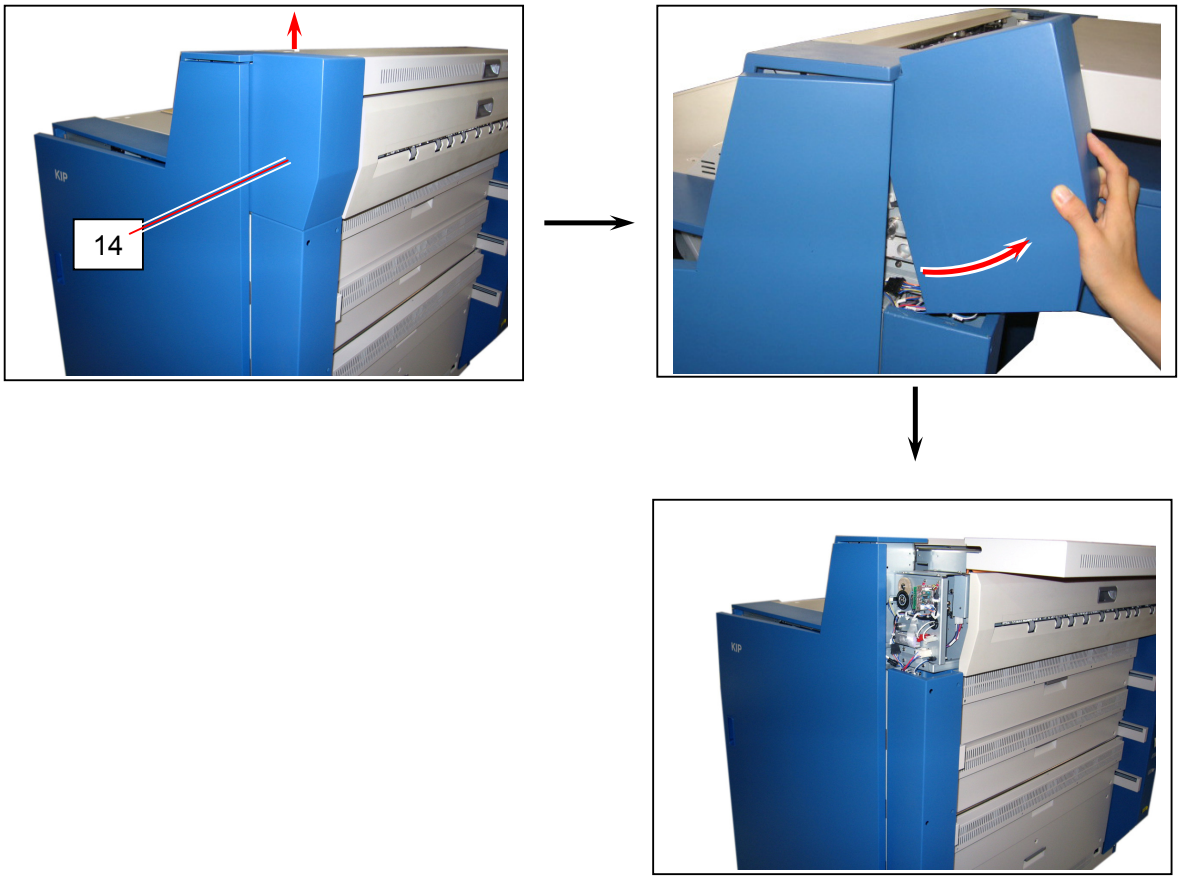
8. Open the Cover 120 (9) and loosen 2 screws (10).



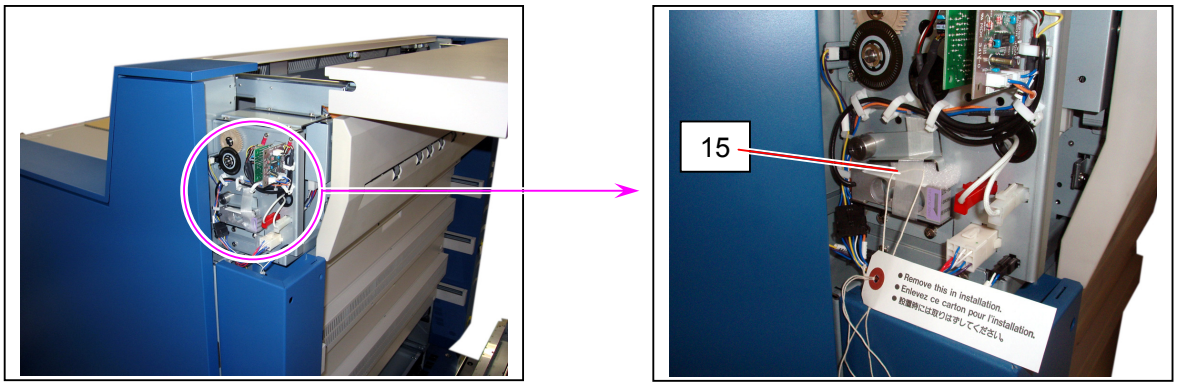
9. Pull the handle (11) to open the Fuser Upper Cover (12) on the rear and remove the screw (13) on the right.



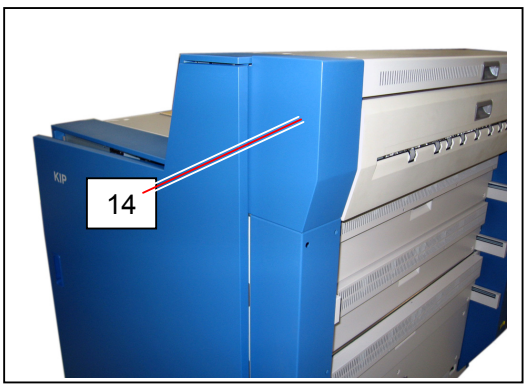
10. Bring up the Right Corner Cover (14) to release its positioning plates from the slits, twist it as arrow, and remove it from the machine.



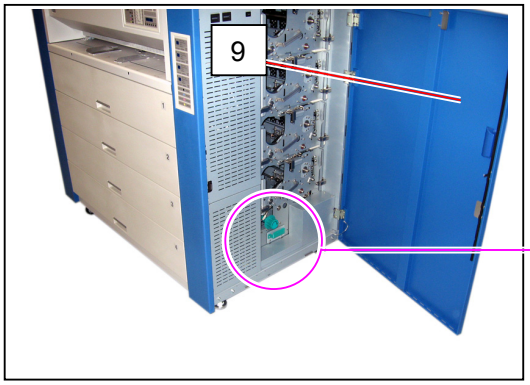
11. Remove the tagged shock absorber and tape (15). This will unfix the actuator of Tension Sensor.

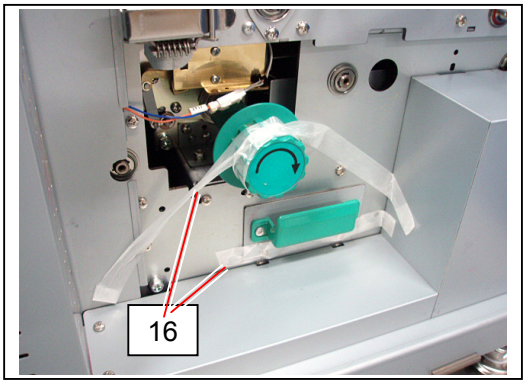


12. Replace the Right Corner Cover (14) and fix it with the screws.



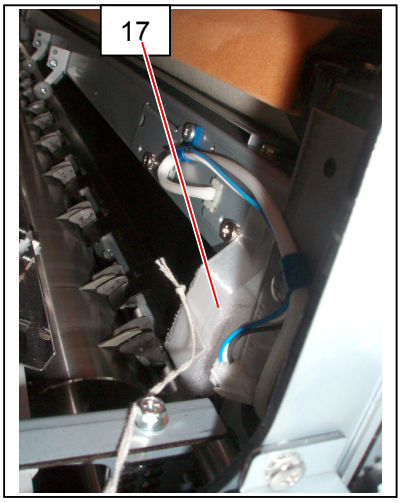
13. Open the Cover 120 (9) again, and remove the tapes (16). This will unfix the Cuter Handle and Dust Tray.



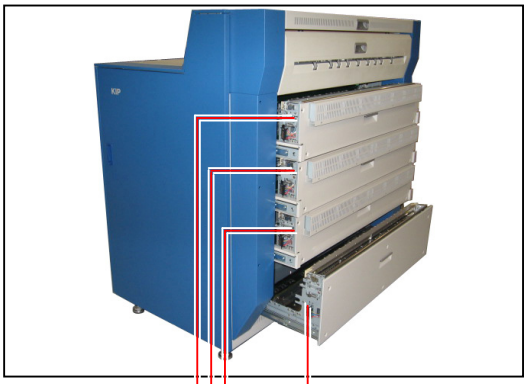


14. Remove the tagged shock absorber (17) from the entrance of fuser.





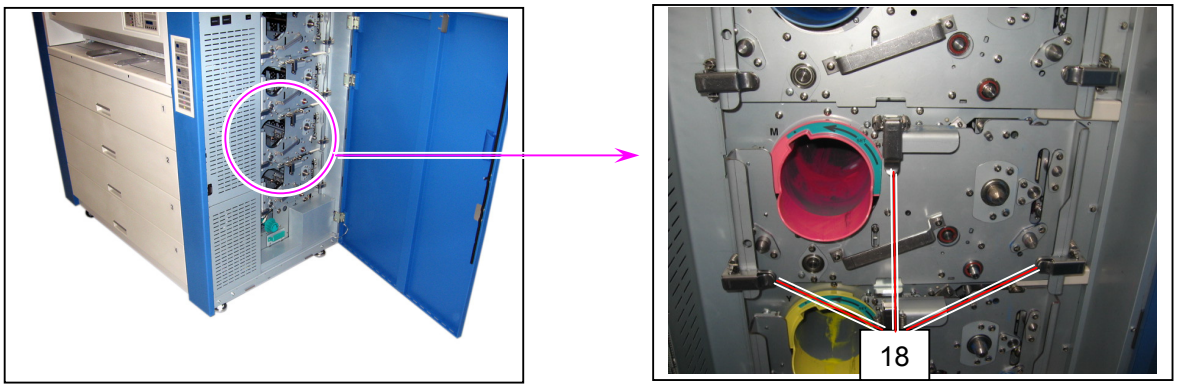
15. From the backside of the machine, open Transportation Unit 1/2/3 or Registration Unit according to the Process Unit you will setup. (example: Open Transportation Unit 2 when you will setup Process Unit 2.)



NOTE

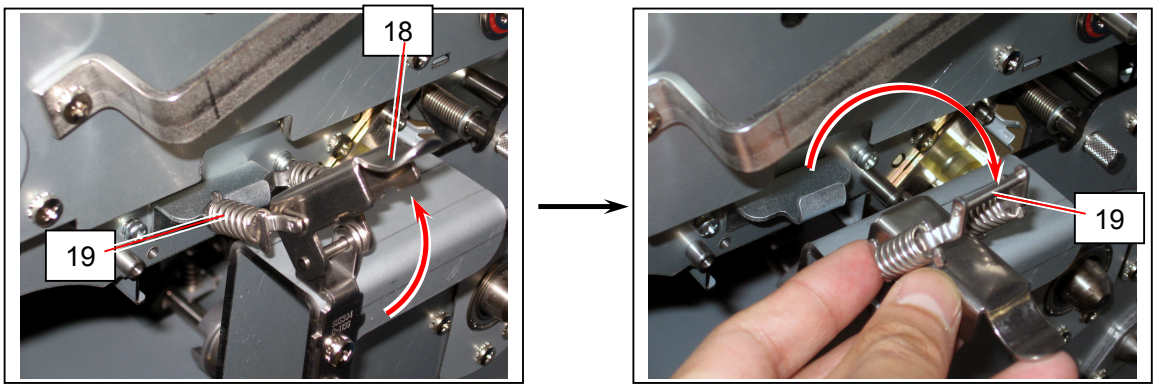
The Drum may bcome damage if the Process Unit is opened / closed without drawing out the corresponding Transportation / Registration Unit

16. Open 3 Stopper Levers (18) to unlock each Process Unit.

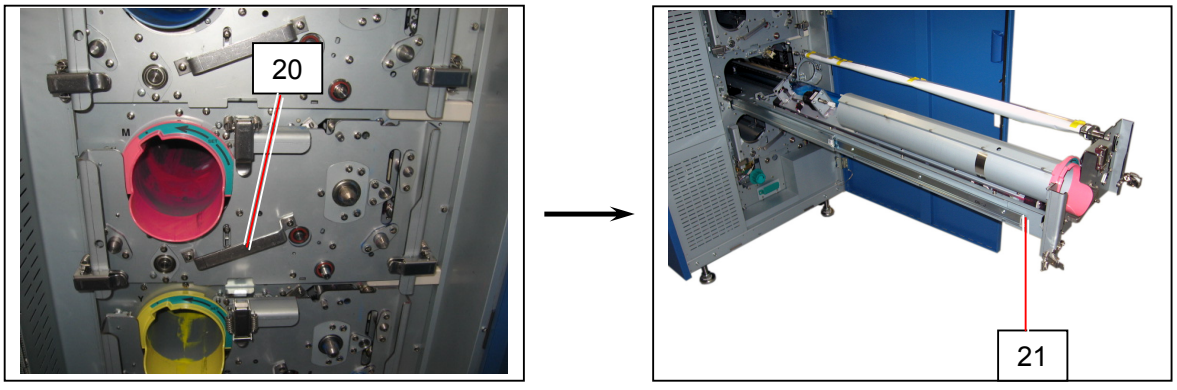


NOTE

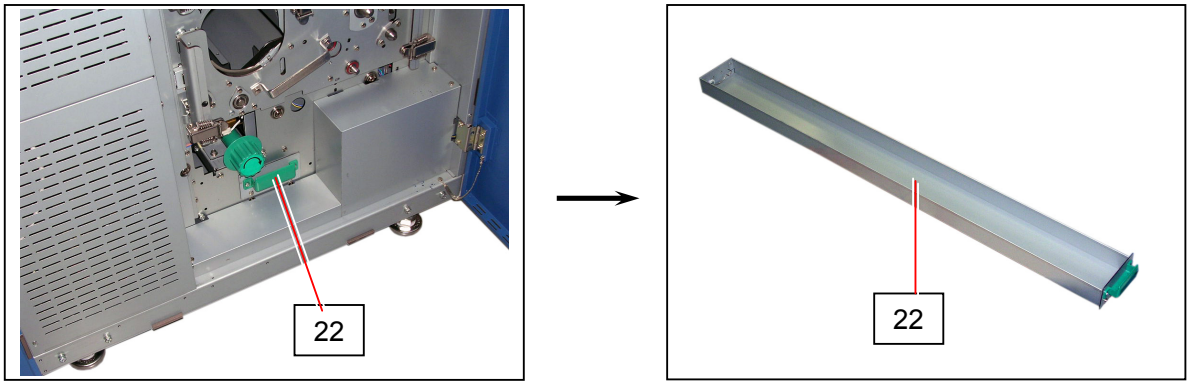
Bring up the Stopper Lever (18), and release the spring part (19) from the hook.



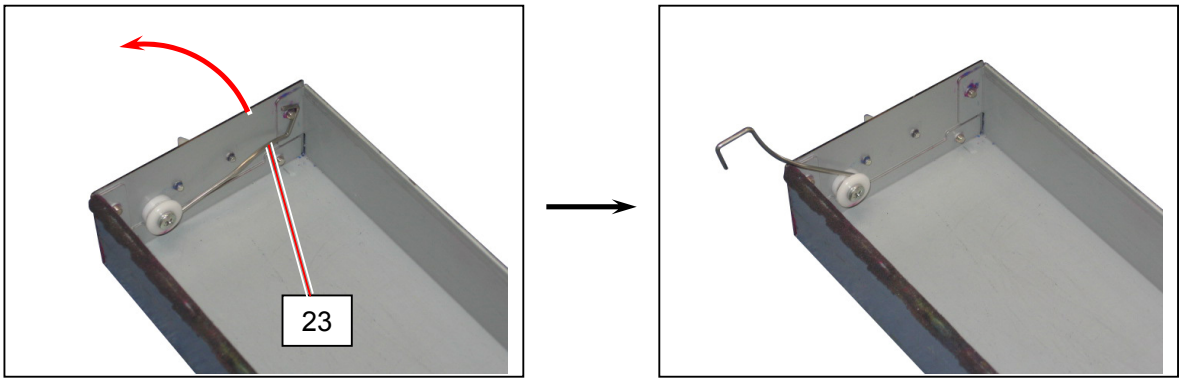
17. Hold the handle (20) firmly and draw out the Process Unit (21).



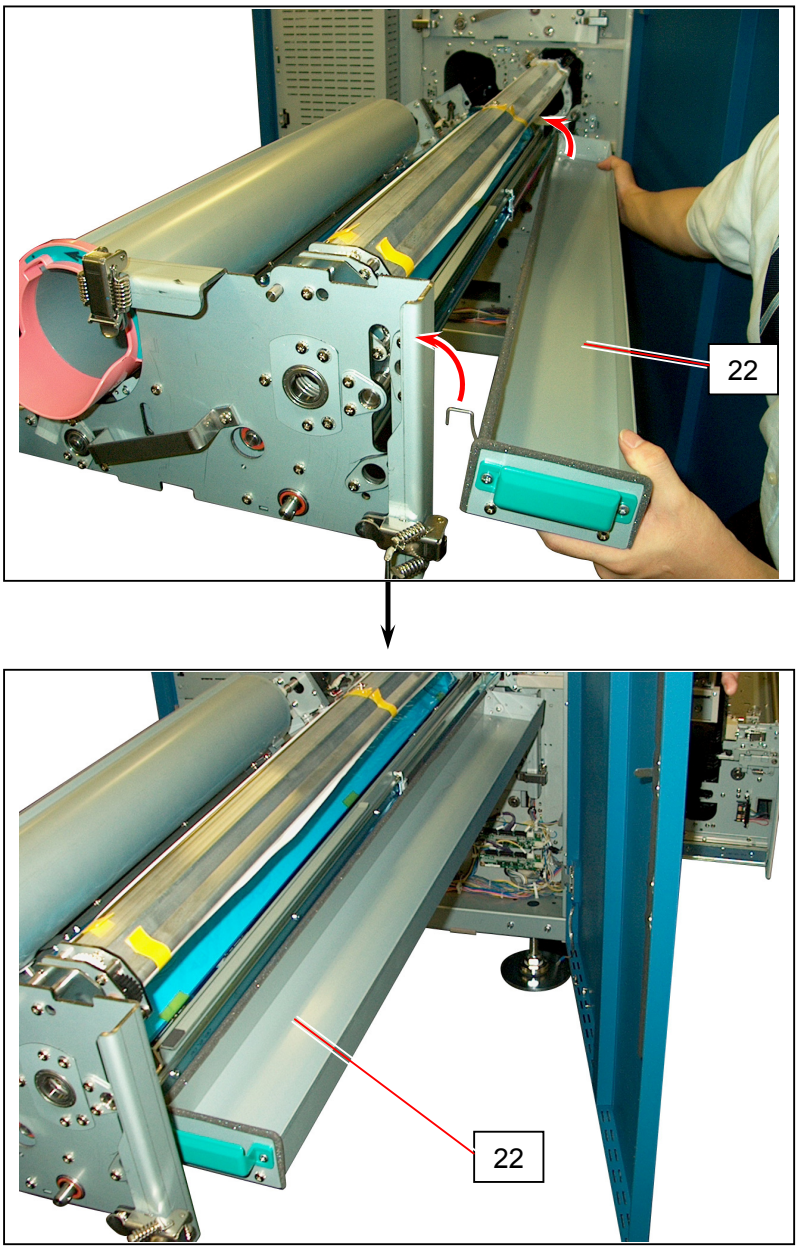
18. Remove the Paper Dust Tray (22) from under the Cutter Unit.



19. Move both hooks (23) out of the Paper Dust Tray.

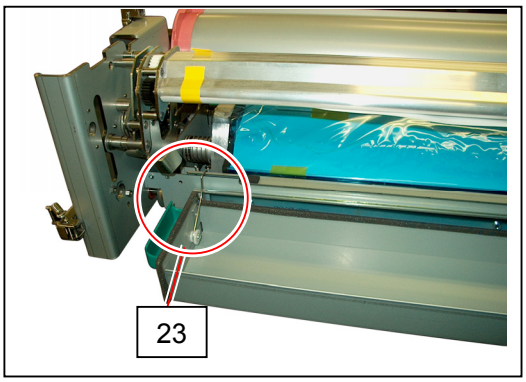


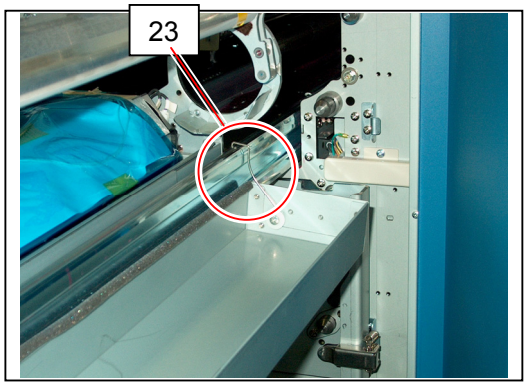
20. Hang the Paper Dust Tray (22) to the slide rail of Process Unit with the hooks (23). (The Paper Dust Tray will function as a toner catch.)



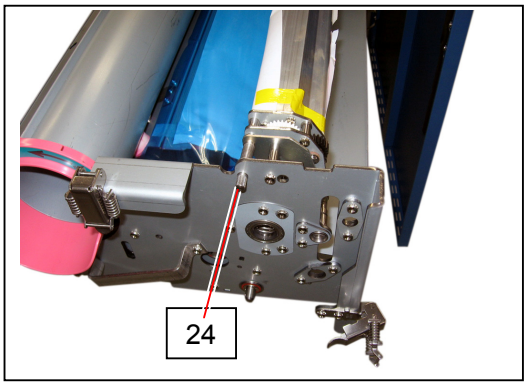
NOTE

Hooks (23) must catch the slide rail of Process Unit surely.

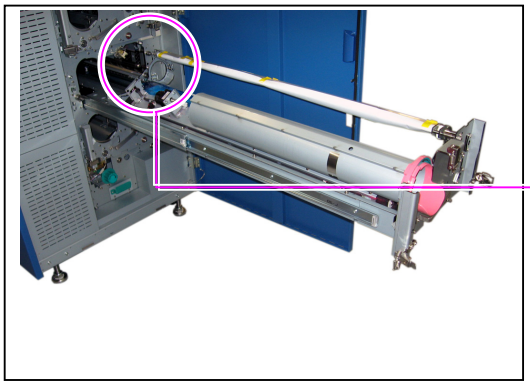


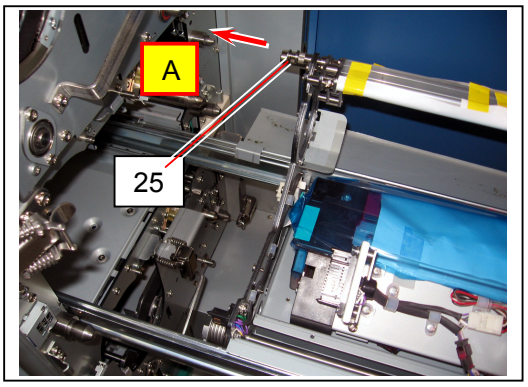


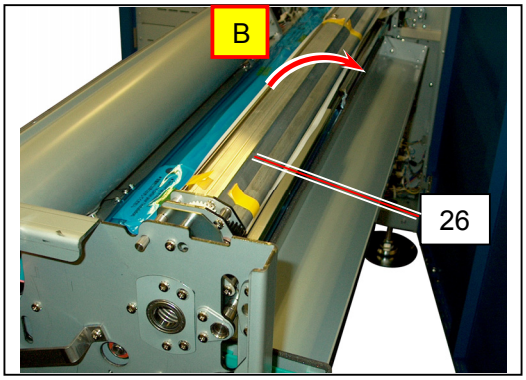
21. Completely loosen the sum screw (24) on the right.

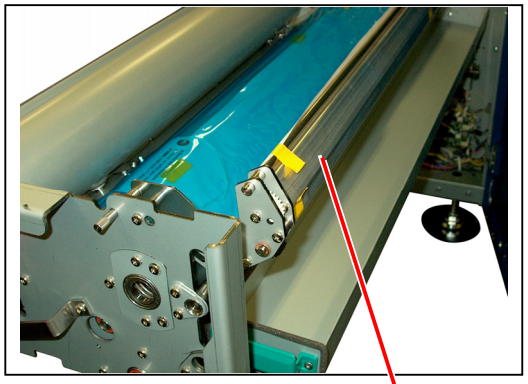


22. Pulling the pin (25) in the direction of arrow (A), rotate the Cleaner Unit (26) 90 degrees as arrow (B).

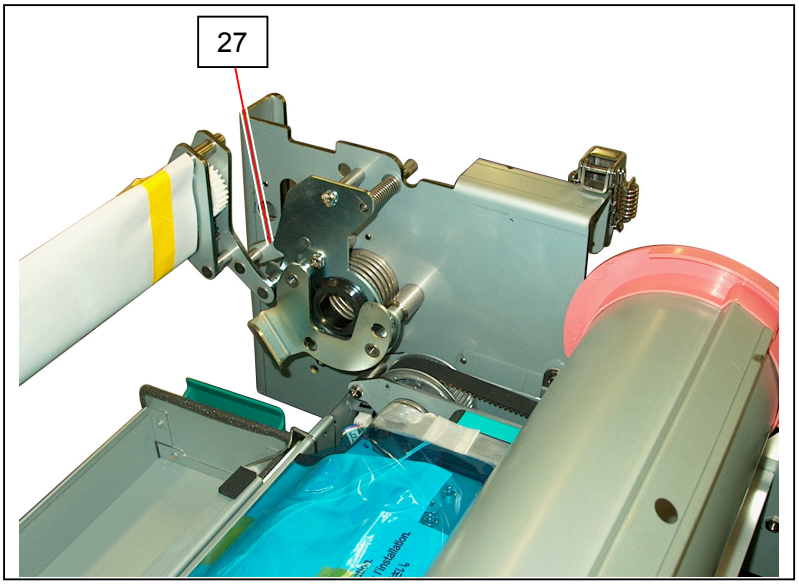


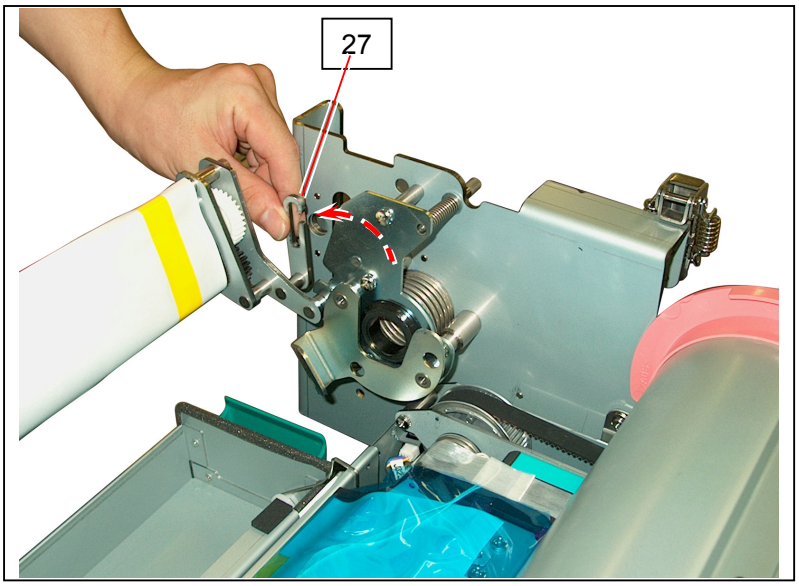


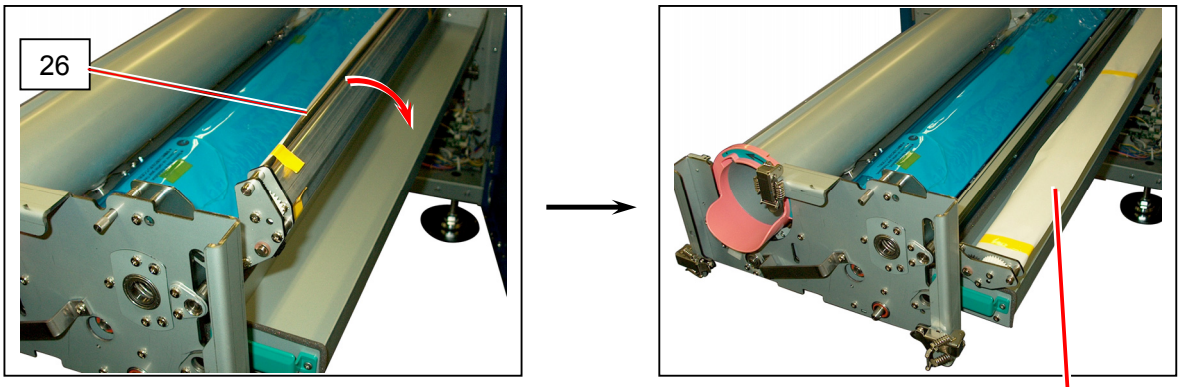




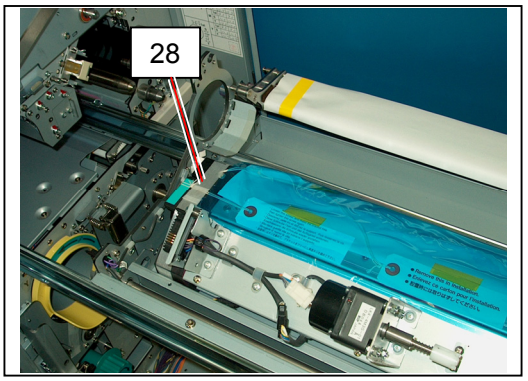
23. Release the hook (27) from the shaft, and rotate the Cleaner Unit (26) 90 degrees more.

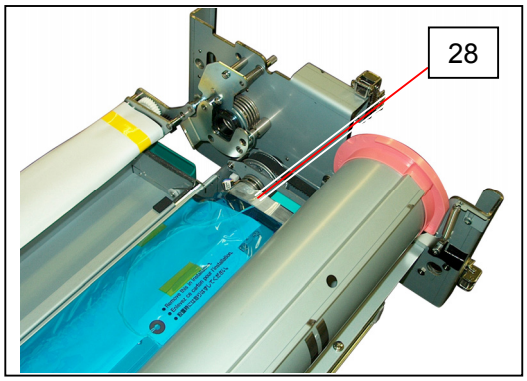




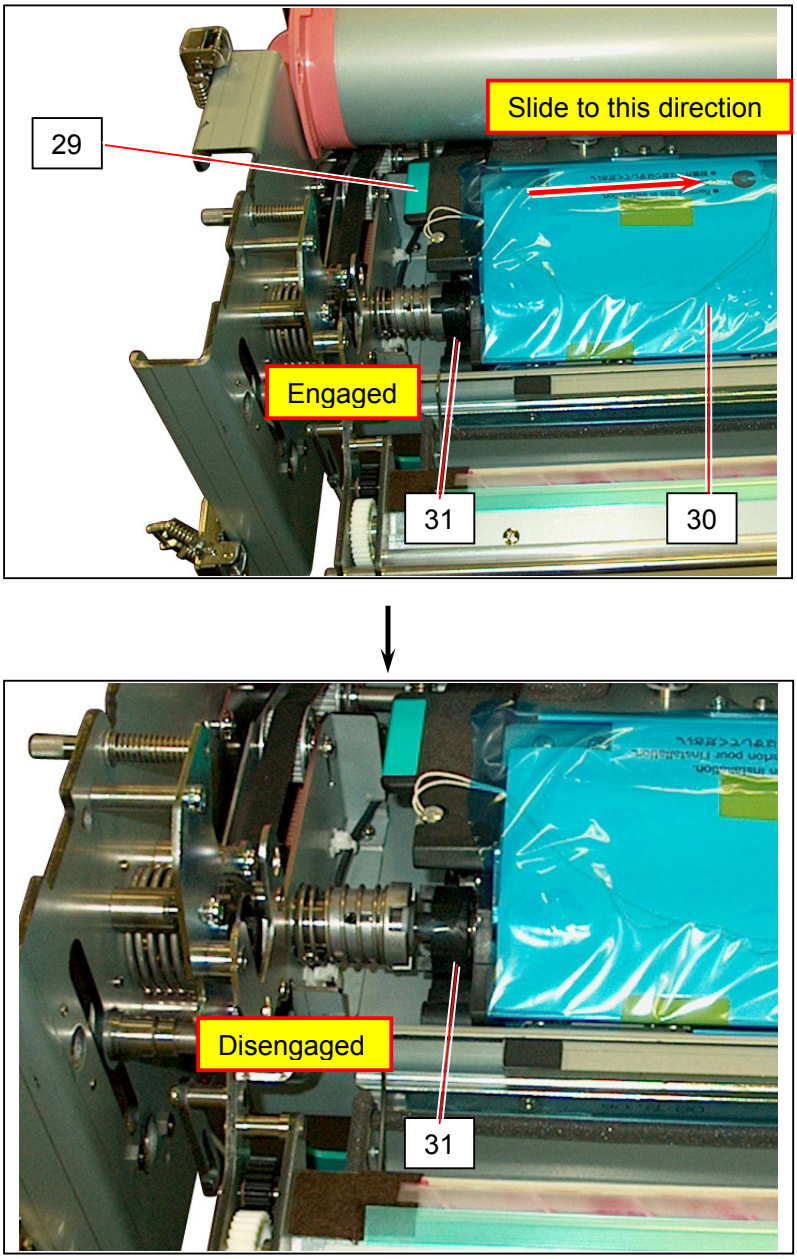


24. Remove the tapes (28) on both sides to unfix the Developer Unit.

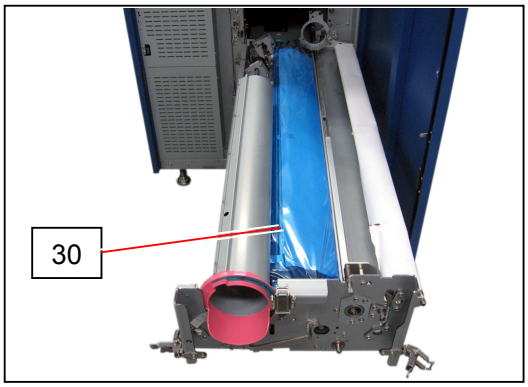


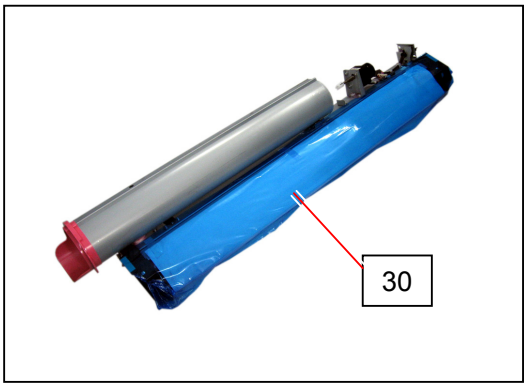


25. Holding the side plates (29) on both sides firmly, shift the entire Developer Unit (30) to the left as arrow until it stops. This will disengage its driving coupling (31) on the right.

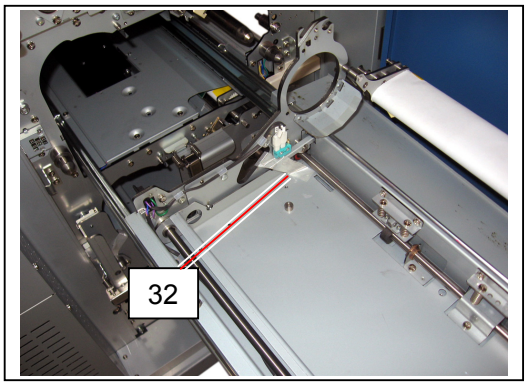


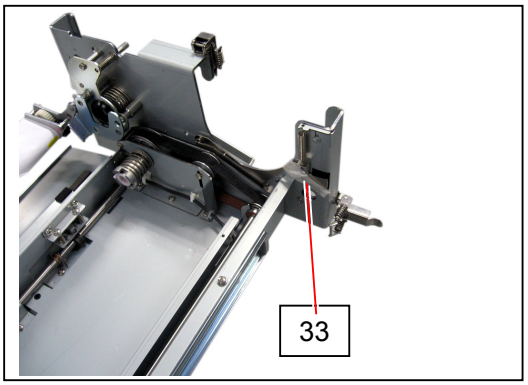
26. With levelling the Developer Unit (30) as far as possible, simply bring it up and remove from the Process Unit.

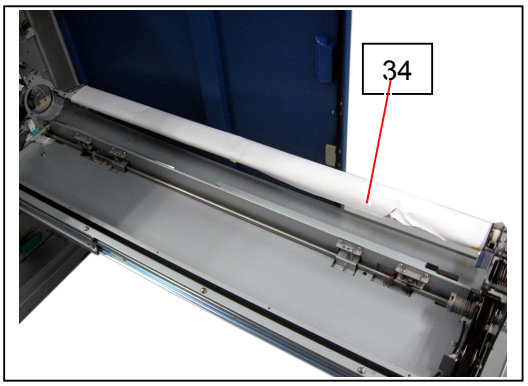




27. Remove the tapes (32) to unfix the actuator of Developer Release Switch.
Remove the tape (33) to unfix the actuator of Toner Level Sensor.
Remove the protection paper (34) from the Cleaner Unit.





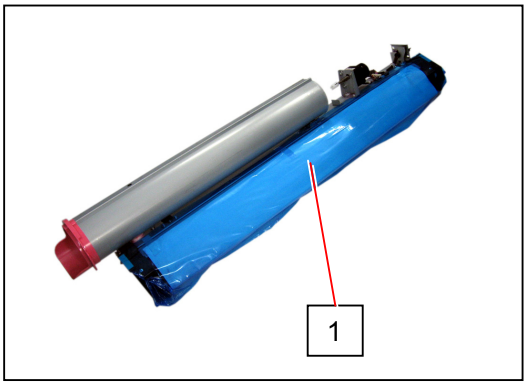


2. 5 Setting up the Process Unit (Developer, Cleaner, Drum)

> **NOTE**
>
> The 3rd Process Unit (Magenta) will be setup in this section as an example.
> Please setup the other 3 Process Units in the same way.

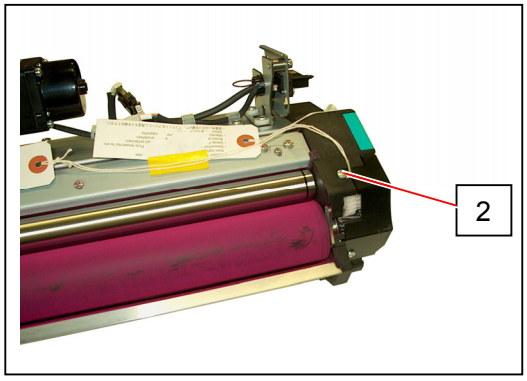
2. 5. 1 Setting up the Developer Unit

1. Remove the protection sheet (1) from the Developer Unit.



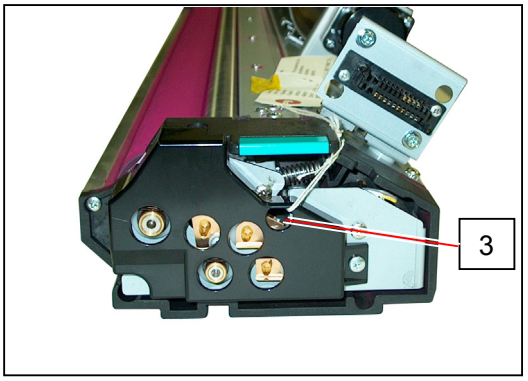
2. Remove the tagged screws (2) at both sides. **These screws will not be reused.** (This operation is indispensable for pressurizing the Blade Roller as well as the next procedure 3.)



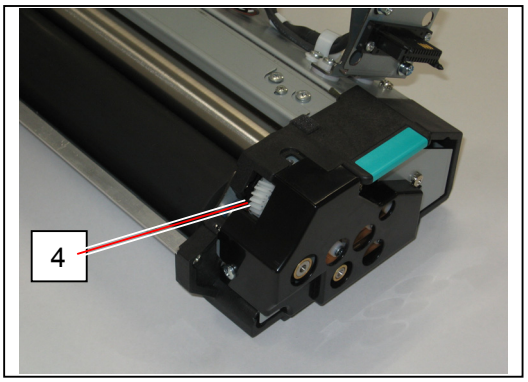


3. Remove the tagged screws (3) on the Electrode Plate side. The tension spring presses the Blade Roller strongly to the Developer Roller by this.

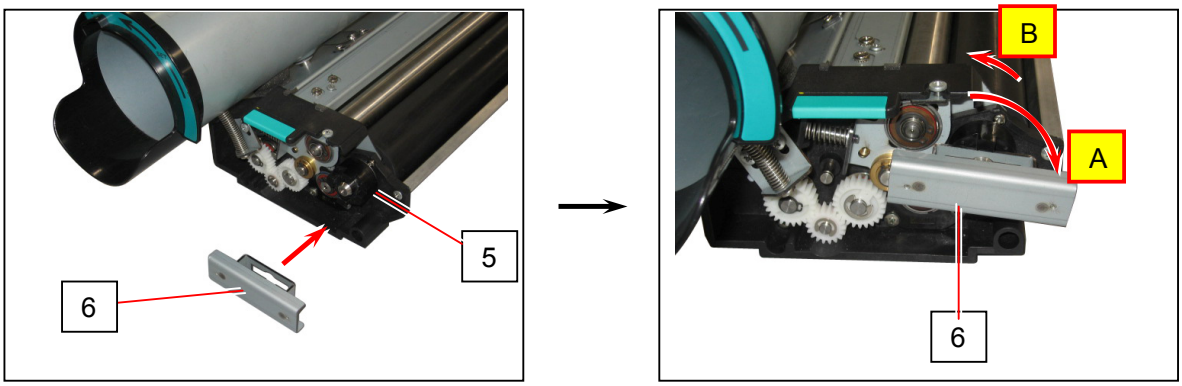
   Remove the caution tag from the screw (3), and just put back the screw (3) **<u>but do not turn it tightly at this time.</u>**



4. Check if the gear (4) has enough mechanical play.
   - If there is enough play, go to the procedure 6 skipping the following 5.
   - If not, do to the following 5.



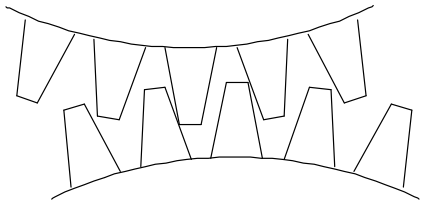
5. Please make the gear (4) have a mechanical play by rotating the coupling (5) on another side a little clockwise as (A) then very slightly couter-clockwise as (B) with the Developer Handle (6).



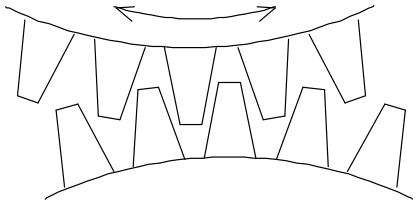
NOTE

If the gear (4) has no mechanical gap, the Regulation Roller on gear side can not be pressed enough firmly to the Developer Unit. This will result in density difference between left and right. (Image on the gear side will become darker.)

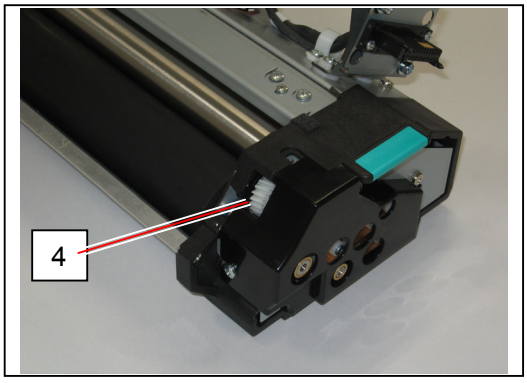
Not correct (no play)

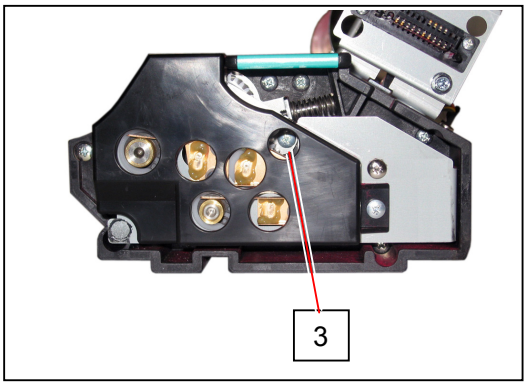


Correct (there is play)

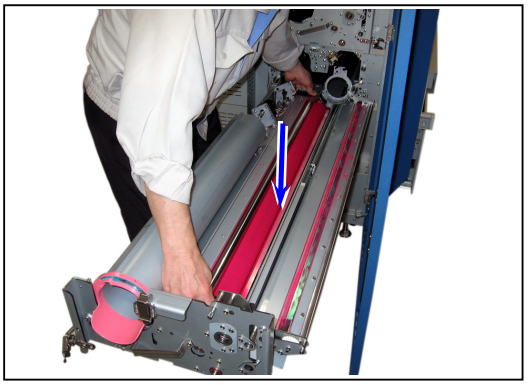


6. After confirming the Gear (4) has a mechanical play, turn the screw (3) tightly.

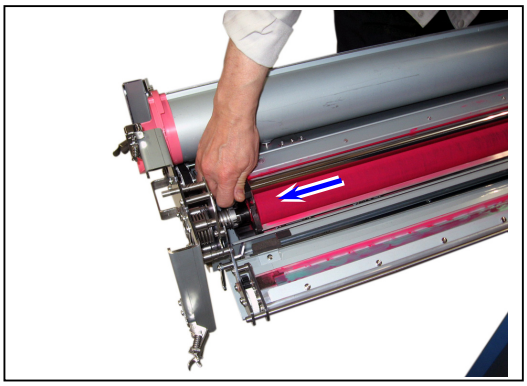


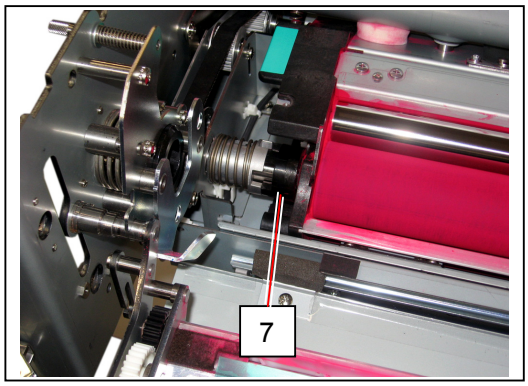


7. Levelling the Developer Unit as far as possible, bring it down vertically onto the Process Unit. (It will be very difficult to put it back if the unit is not levelled.)



8. After putting back the Developer Unit onto the Process Unit, slide it to the arrow direction. Confirm that the coupling (7) is surely engaged.





2. 5. 2 Applying the toner to the Cleaning Blade

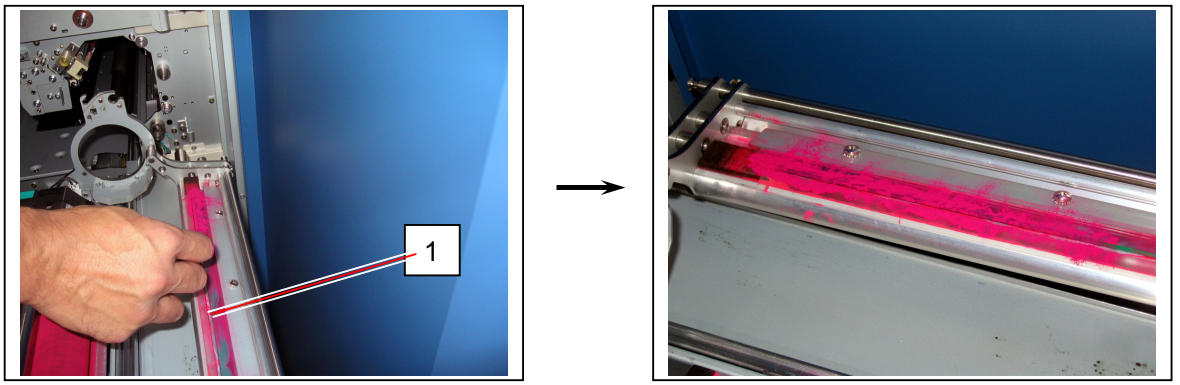
NOTE

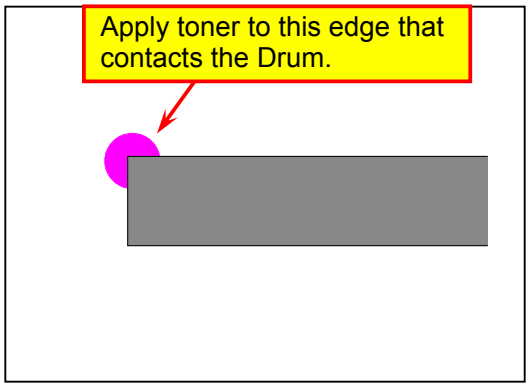
(1) Cleaning Blade has to be applied with the toner before installing the Drum. Otherwise the Drum or the Cleaning Blade may be damaged as the Cleaning Blade will be turned over by the friction.

(2) Please take out some toner from each Toner Cartridge and apply it onto the Cleaning Blade.

(3) Toner color must match with the target color of process unit. (When the process unit is for magenta, apply magenta toner. Other colors can not be used.)

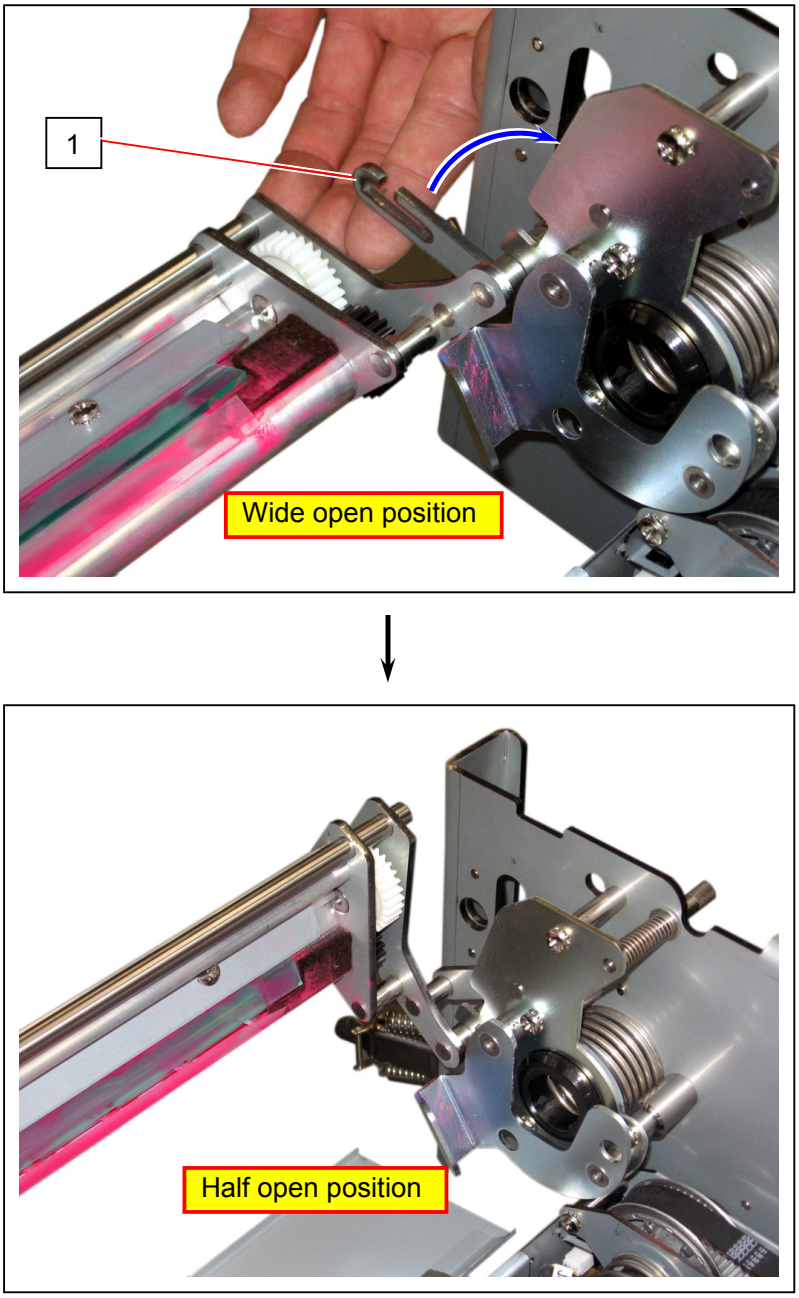
Apply the toner to the contacting edge of Cleaning Blade (1).



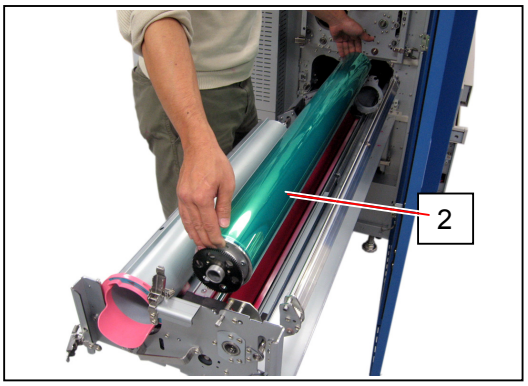


2. 5. 3 Installing the Drum

1. Set the hook (1) to the pin to place the Cleaner Unit from “wide open position” to “half open position”.

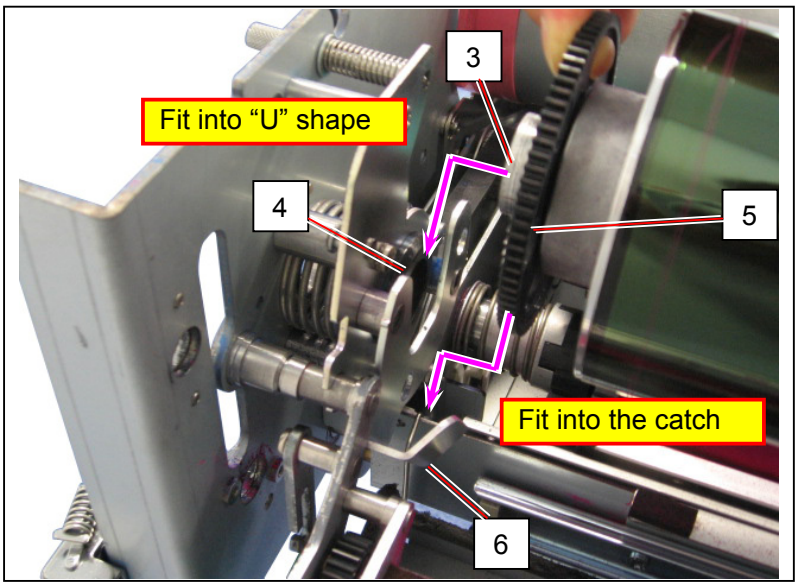


2. Install the Drum (2) directing its gear side to right.

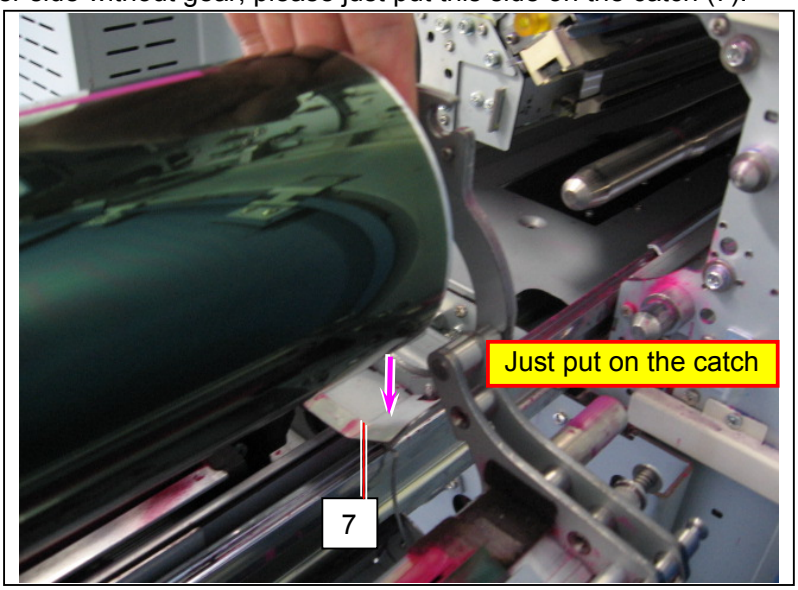


⚠ NOTE

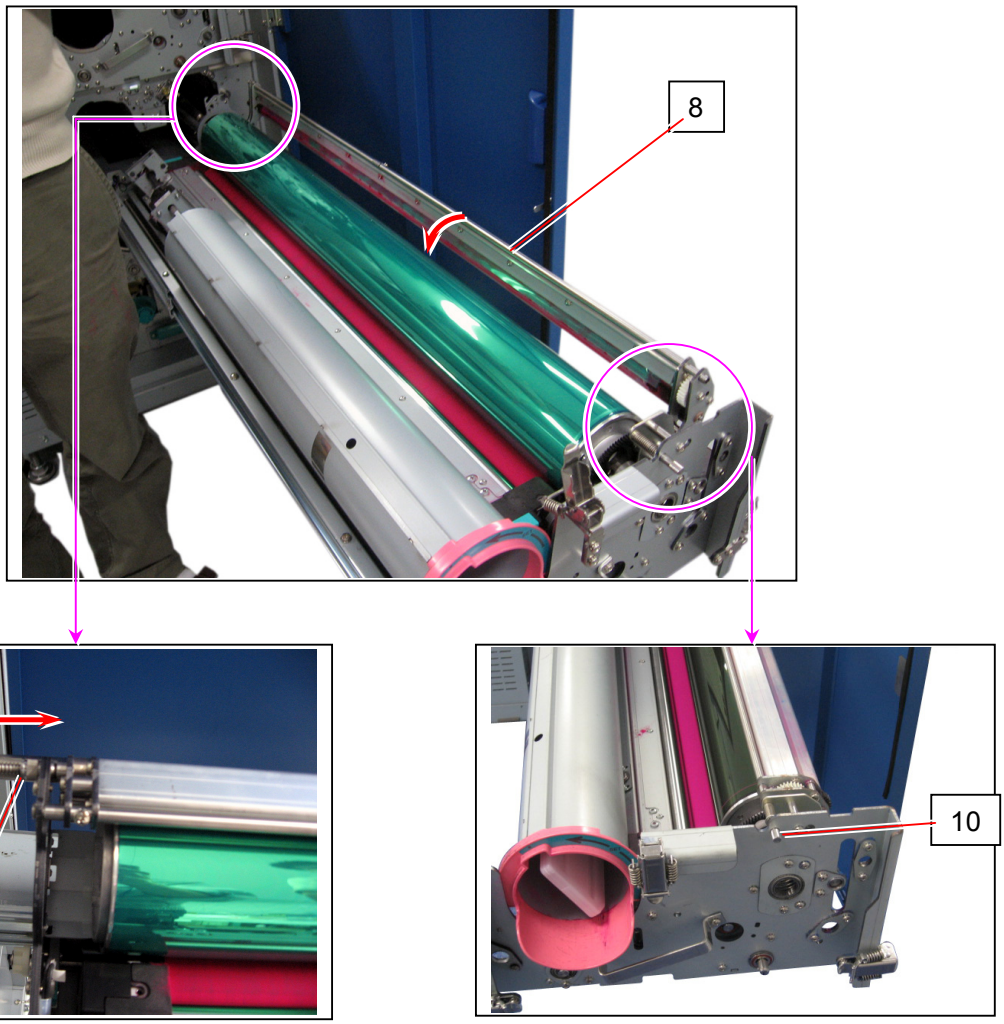
(1) On one side with Drum Gear, fit the drum shaft (3) into the “U” shape (4) of the plate while fitting the Drum Gear (5) into the catch (6). Please just put the other side of Drum on the bracket.



(2) On another side without gear, please just put this side on the catch (7).

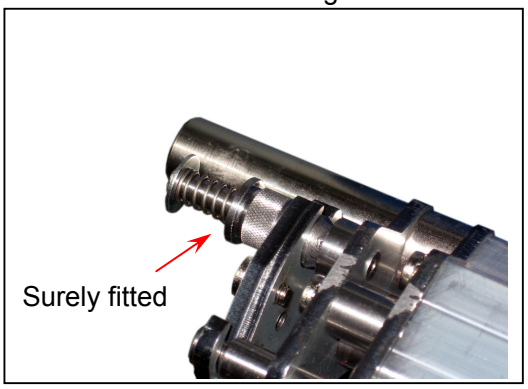


3. Move the Cleaner Unit (8) from “half open position” to “operation position”, and fit it by setting the pin (9) on the left and tightening the sum screw (10).

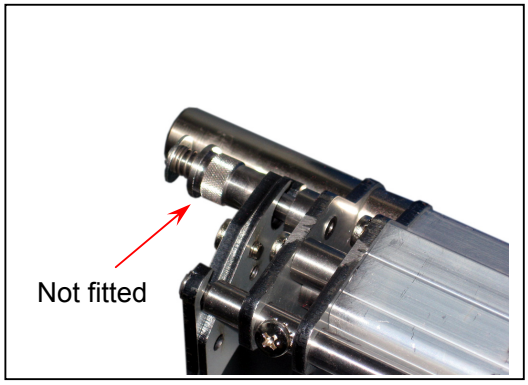


NOTE

Be sure to insert the pin (9) completely. Otherwise the Cleaner Unit can not be locked firmly, which will result in cleaning defect.

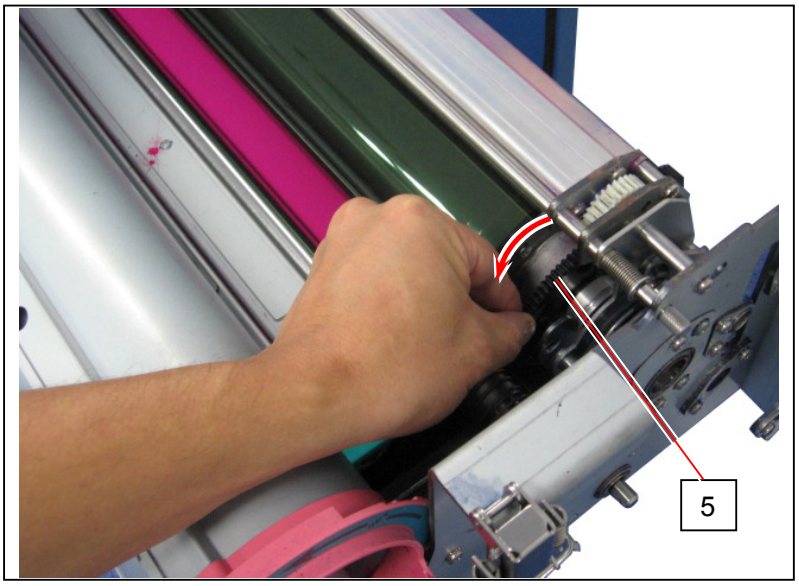


Correct



Not correct

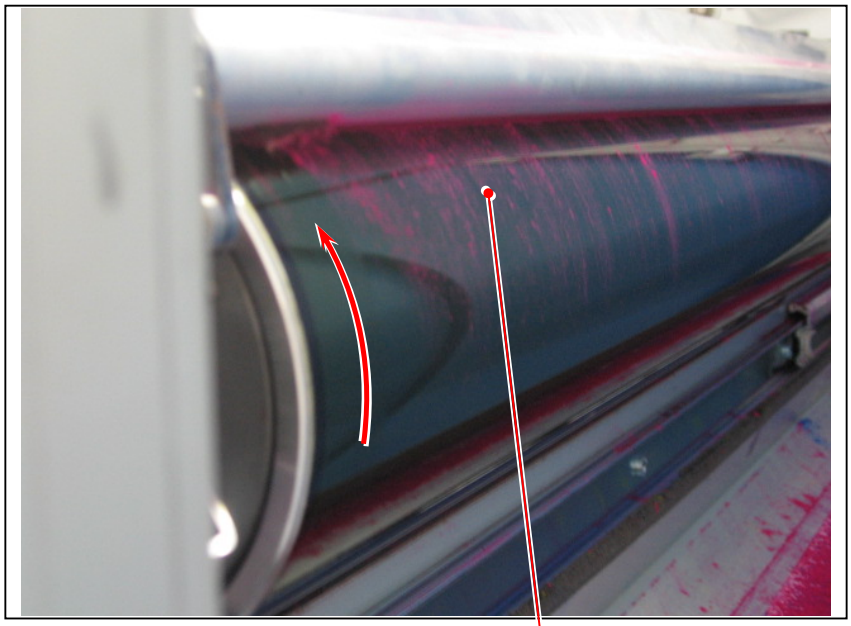
4. Rotate the Drum 1 revolution holding the Drum Gear (5). This will match the Cleaning Blade and Drum with each other.



⚠ NOTE

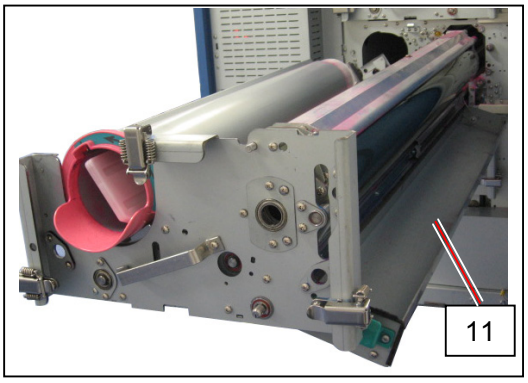
(1) The toner on the edge of Blade is not enough if you feel it hard to rotate the Drum by hand. Apply more toner in this case.

(2) Toner will drop onto the Drum surface if you set the Cleaner Blade to the operation position. This toner will then drop into the inside of machine if you close the Process Unit with this state. The Density Sensors below the Drum may become dirty with the toner at this time, which will result in defective image.
To avoid this situation, rotate the Drum in the direction of arrow with holding the Drum Gear (5) until the Drum surface is completely cleaned.

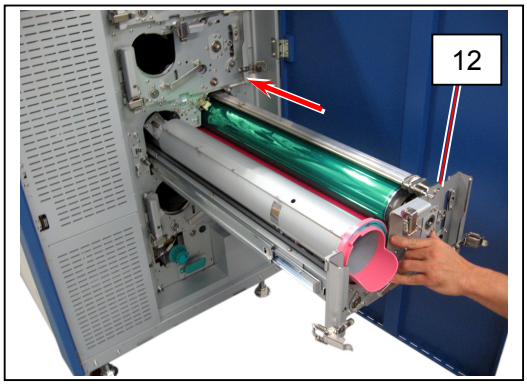


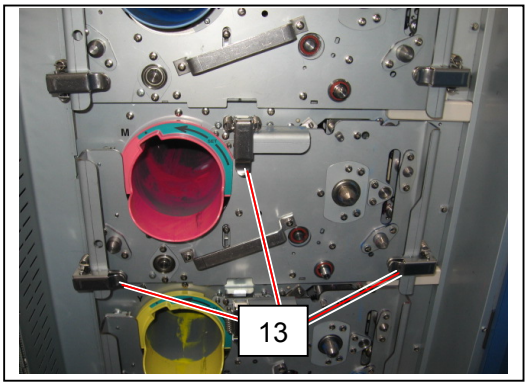
Not good (Toner is on the Drum)

5. Remove the Paper Dust Tray (11) from the Slide Rail **with taking great care not to damage or scratch the Drum surface**.
   Then vacuum its inside and put it back under the Cutter.



6. Push in the Process Unit (12) gently and firmly. Lock the Process unit firmly with 3 Stopper Levers (13).

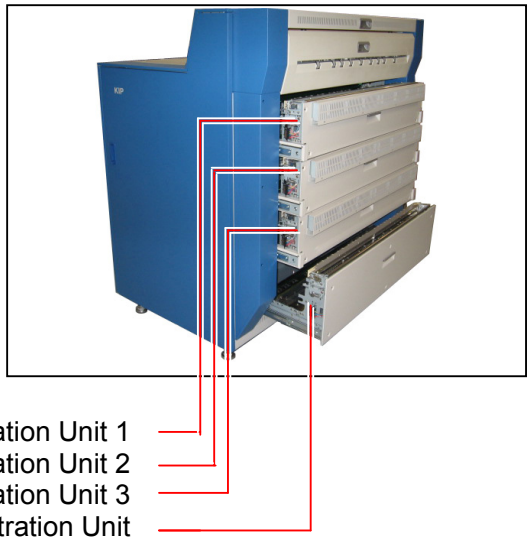




NOTE

Before pushing in the Process Unit, confirm that the concerning Transportation Unit (back of the machine) is open. The Drum may become damage if closed.

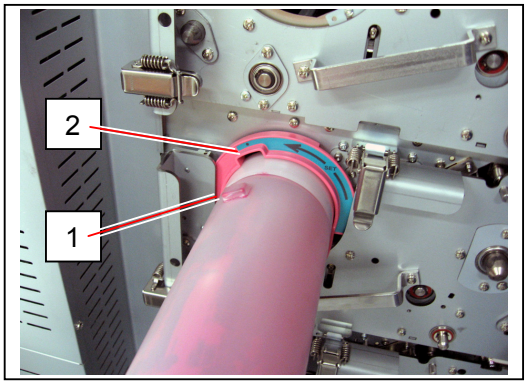
7. Close the Transportation Unit 1/2/3 or Registration Unit when you finish setting up the concerning Process Unit.

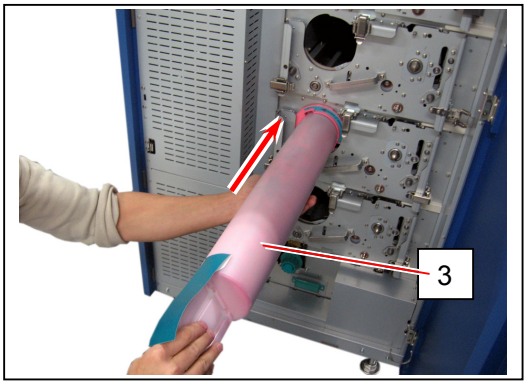


2. 5. 4 Installing the Toner Cartridge

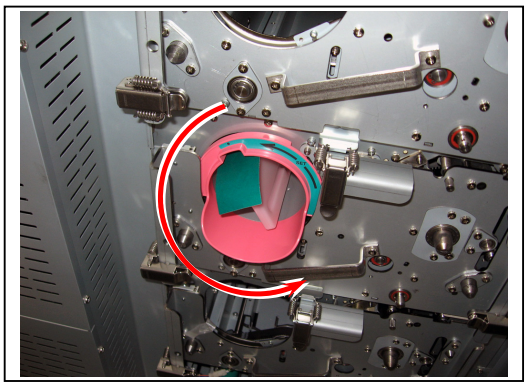
1. Shake the Toner Cartridge several times.

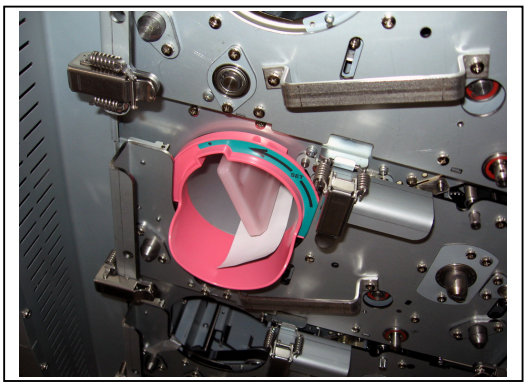
2. Fitting the boss (1) to the notch (2), insert the Toner Cartridge (3) into the machine until it stops.



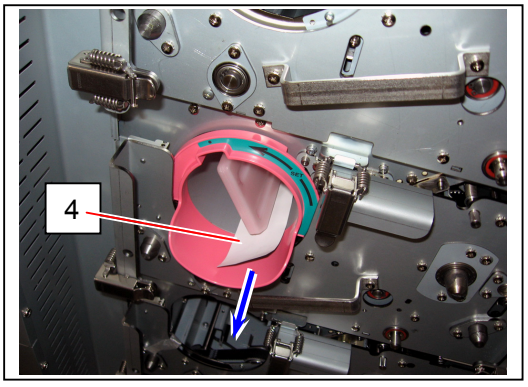


3. Rotate the Toner Cartridge 180 degrees in the direction of arrow until it stops.





4. Remove the seal (4) pulling to the arrow direction. Toner supplying hole of the cartridge is opened.

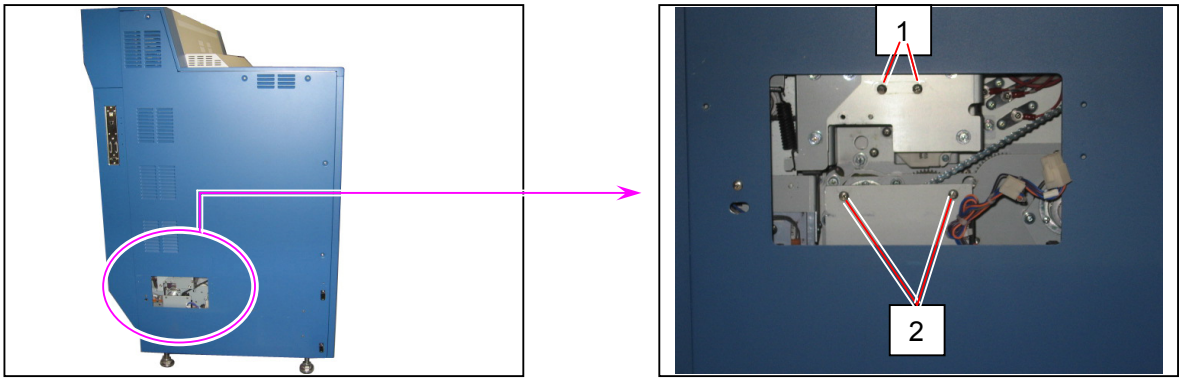


5. Close Cover 120 (5).

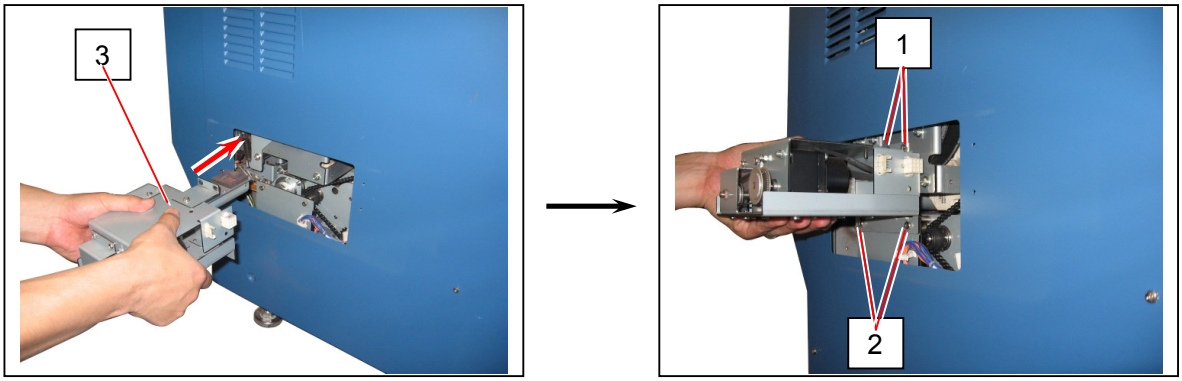


2. 6 Installing Waste Toner Bottle Unit

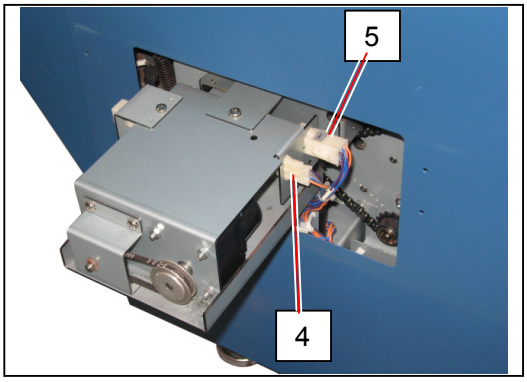
1. Remove 2 screws (1) and loosen 2 screws (2) inside of the left door.



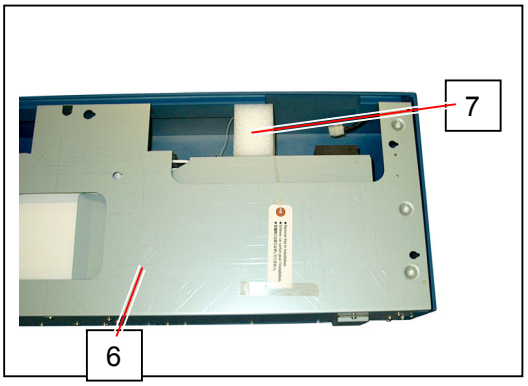
2. Prepare the Waste Toner Transportation Assy (3) of accessory, and install it to the machine with the screws (1) and (2).)



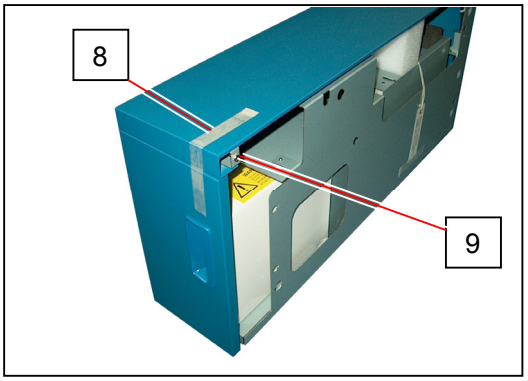
3. Connect the connectors (4) and (5).



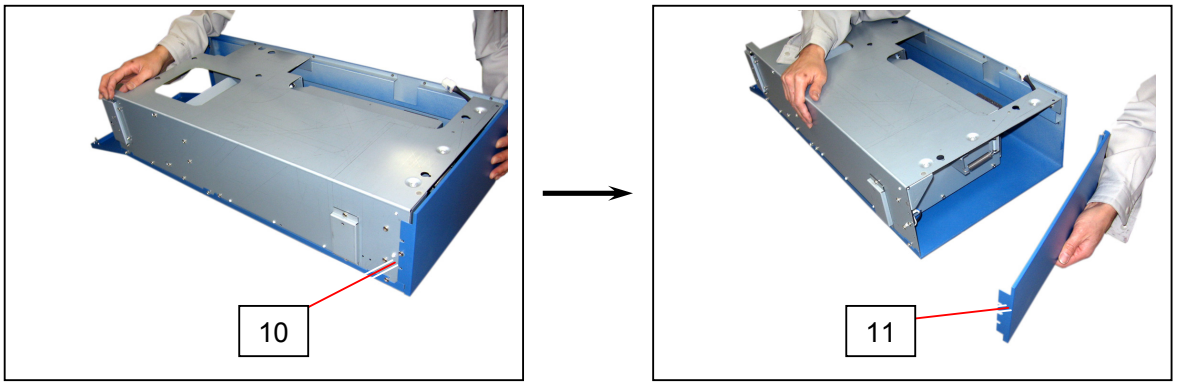
4. Prepare the Waste Toner Box (6) of accessory. Remove the tagged Shock Absorber (7).



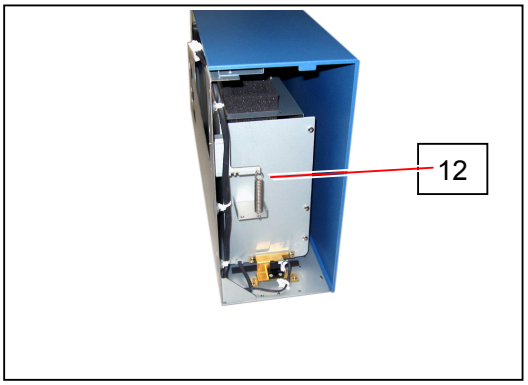
5. Remove the tape (8). Remove the screw (9) which will be reused on later procedure 11.



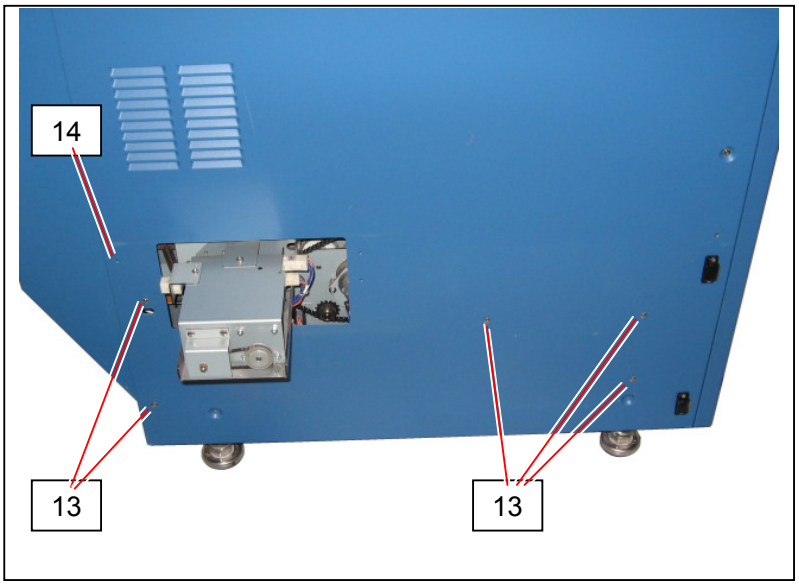
6. Loosen 1 screw (10) on the bottom of the unit then remove the Cover 164 (11).



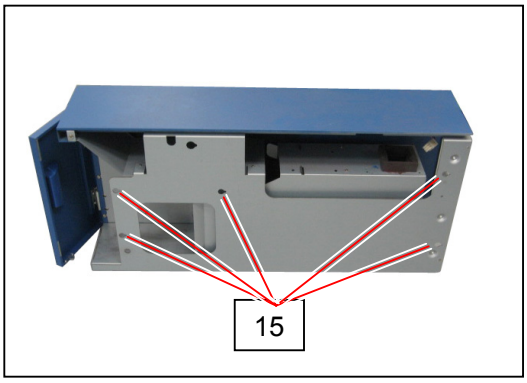
7. Remove the Spring 259 (12).

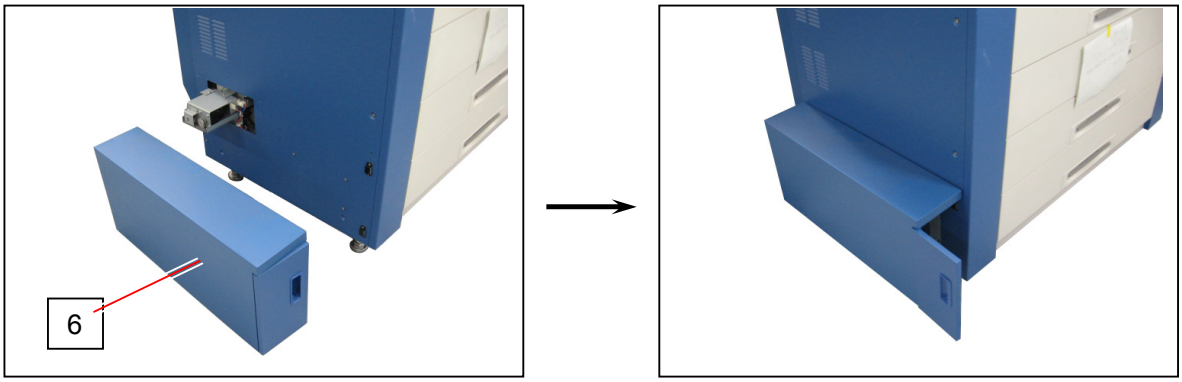


8. Loosen 5 screws (13) and remove 1 screw (14) on the Cover 119. Screw (14) will be used on later procedure 12.



9. By fitting 5 screw holes (15) to 5 loosened screws (13), install the Waste Toner Bottle Unit (6) onto the Cover 119 (17)..

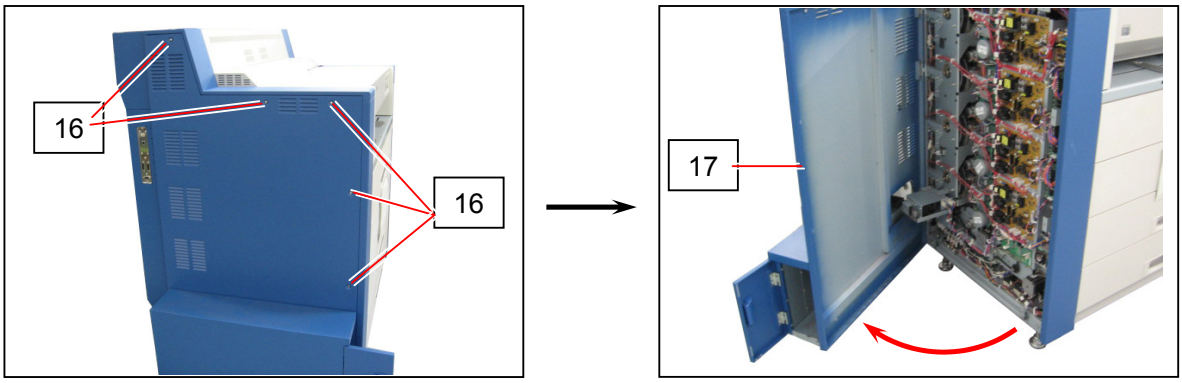




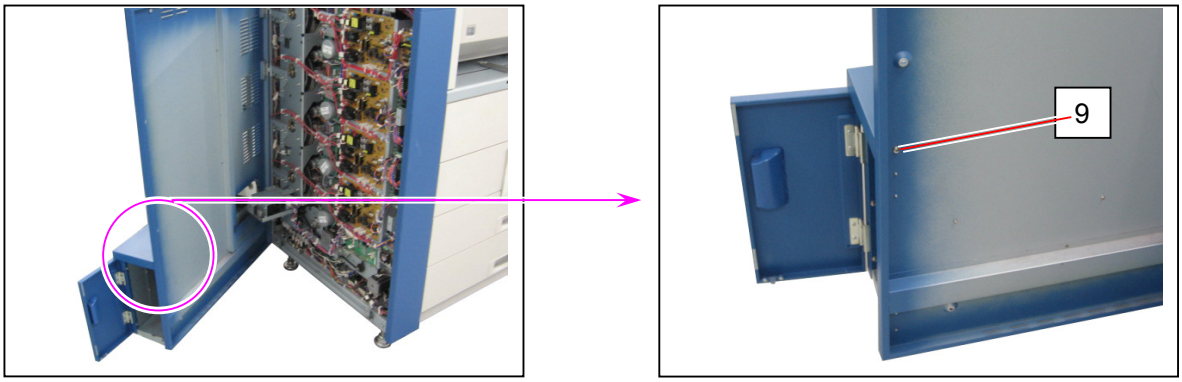
NOTE

Do not turn the screws (13) tightly at this point of time.

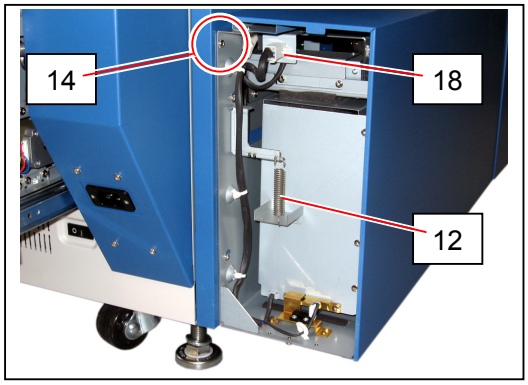
10. Remove 5 screws (16) on the left, and open the Cover 119 (17).



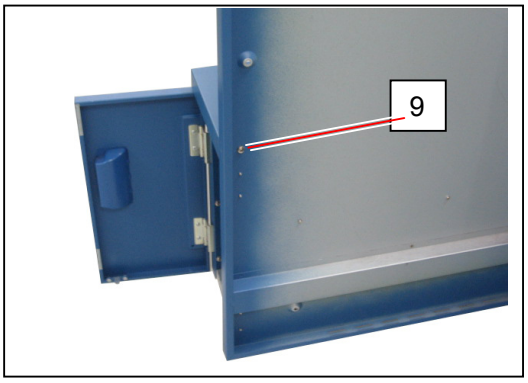
11. Put the screw (9) from the inside of Cover 119 to hold the Waste Toner Bottle Unit, which has been removed at the former procedure 7.

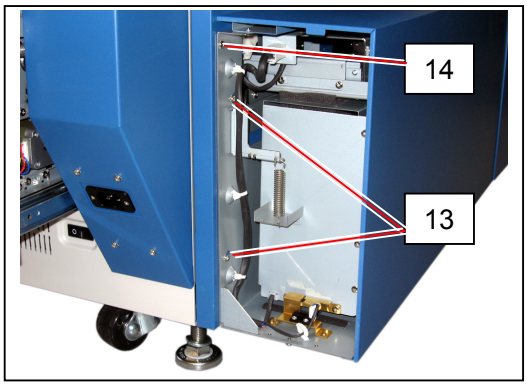


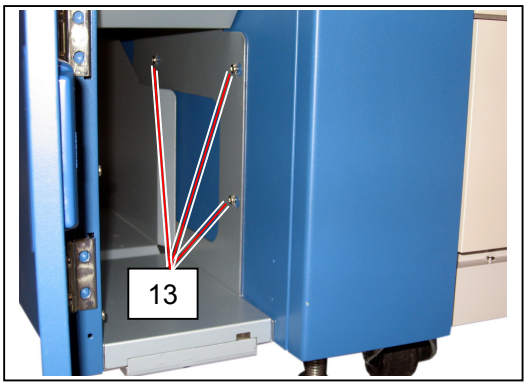
12. Put the screw (14) to hold the Waste Toner Bottle Unit, which has been removed at the former procedure 8.
Connect the connector (18) and return the Spring 259 (12).



13. Tighten all the screws (9), (13 : 5 pieces) & (14) to fix the Waste Toner Bottle Unit firmly.

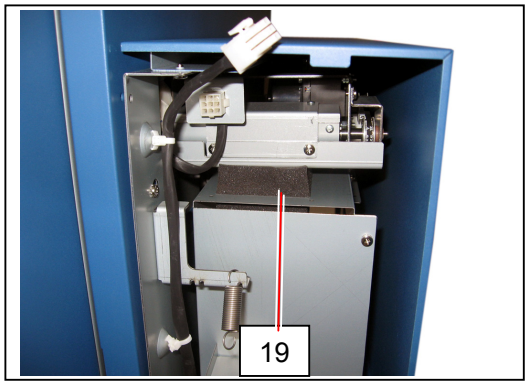




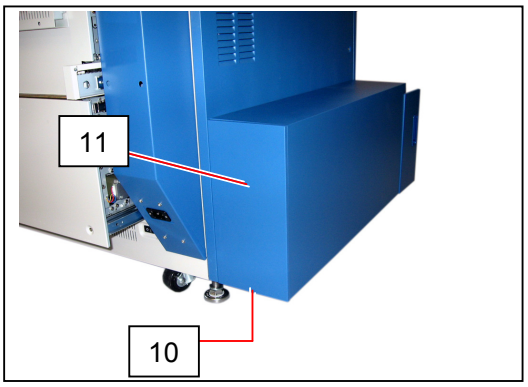


NOTE

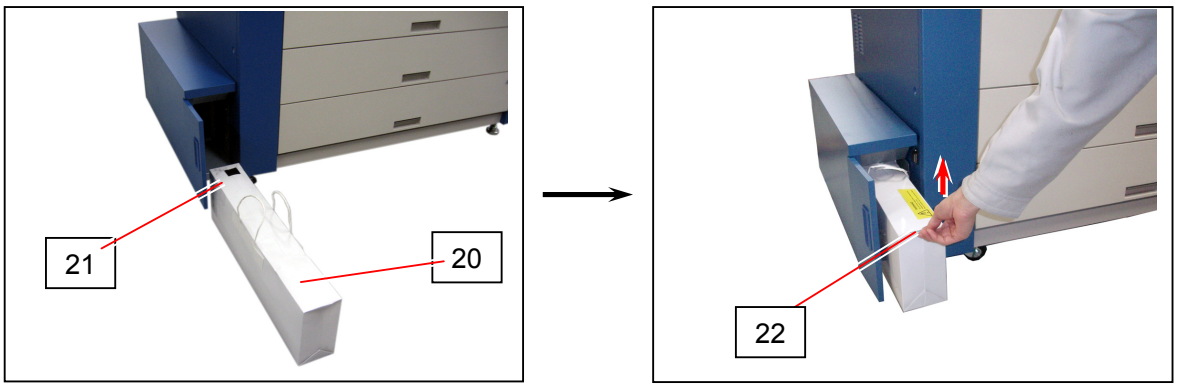
Be sure that Seal 254 is inside of the Seal 279 (19).
The toner will spill out if it is outside.



14. Install Cover 164 (11) with 1 screw (10), which you have removed at the former procedure 5.



15. Set the Waste Toner Box (20) into Waste Toner Bottle Unit with directing its square hole (21) to the rear.

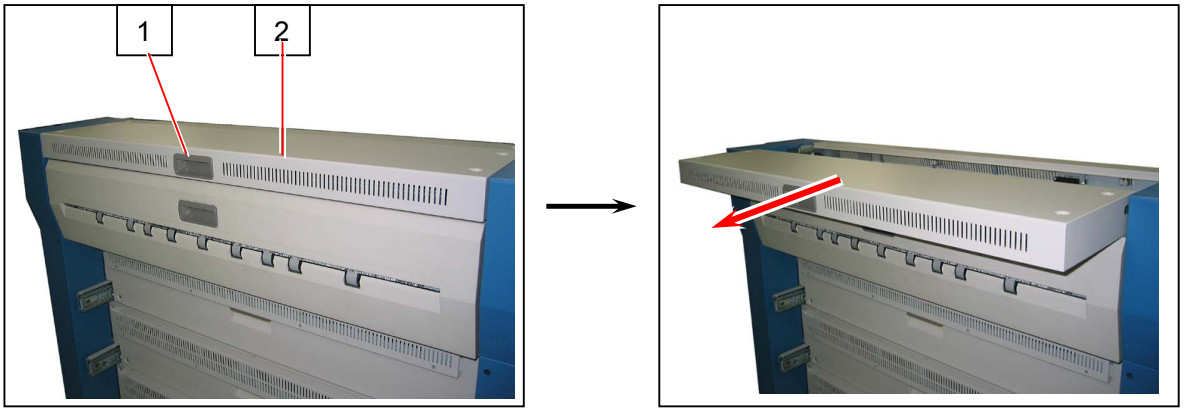


NOTE

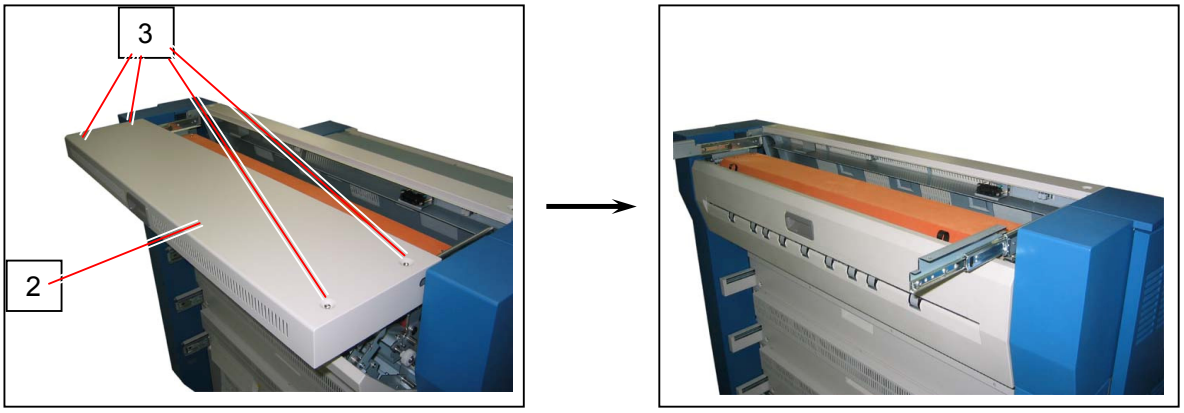
The upper front tab (22) must be up. If it is down, the Waste Toner Door may not be closed completely.

2. 7 Installing the Web Cleaner

1. Hold the handle (1) and open the Cover 4 (1) to the rear side.



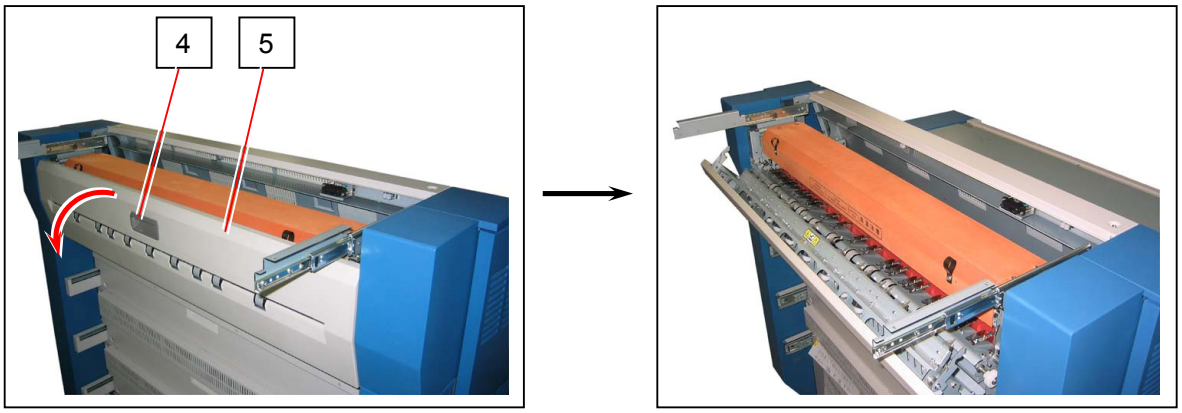
2. Remove 4 screws (3) and remove Cover 4 (2).



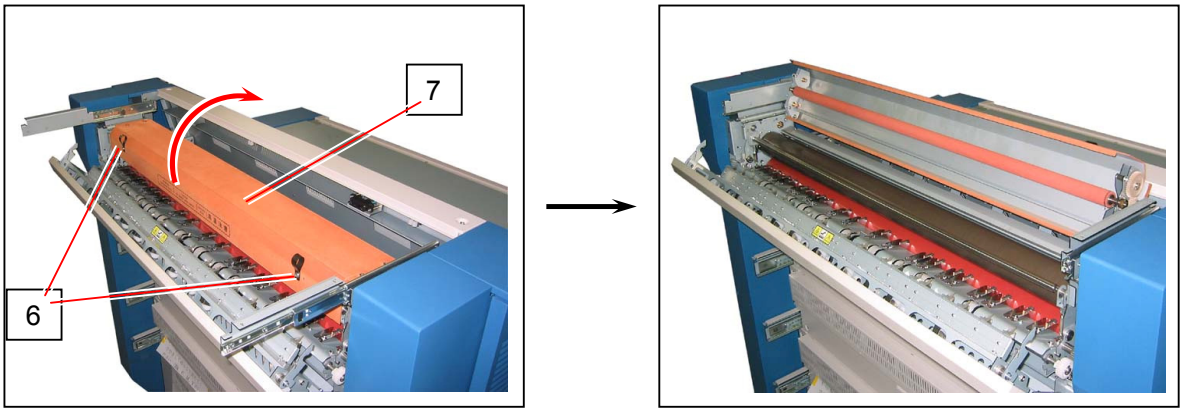
NOTE

As the edge of slide rails is sharp, take care not to be injured.

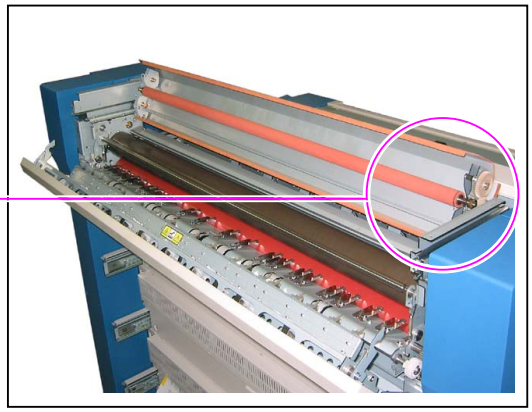
3. Hold the handle (4) and open the Fuser Cover (5).

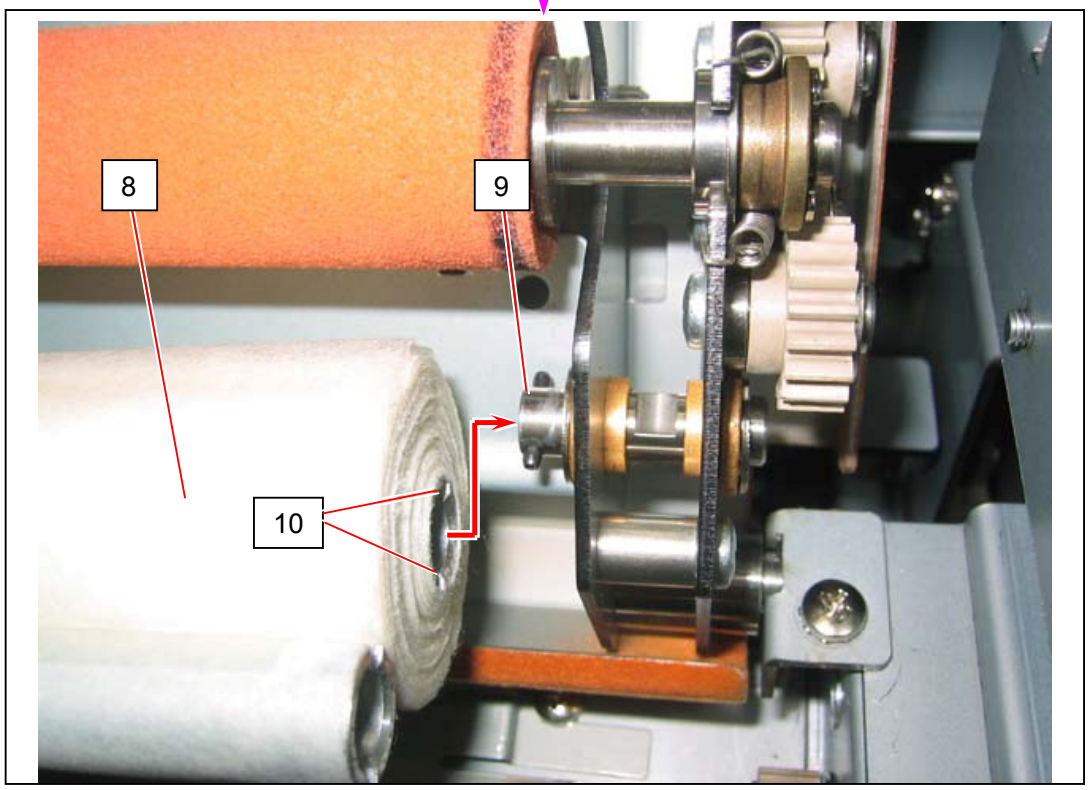


4. Hold both bands (6) and open up the Cover 3 (7).



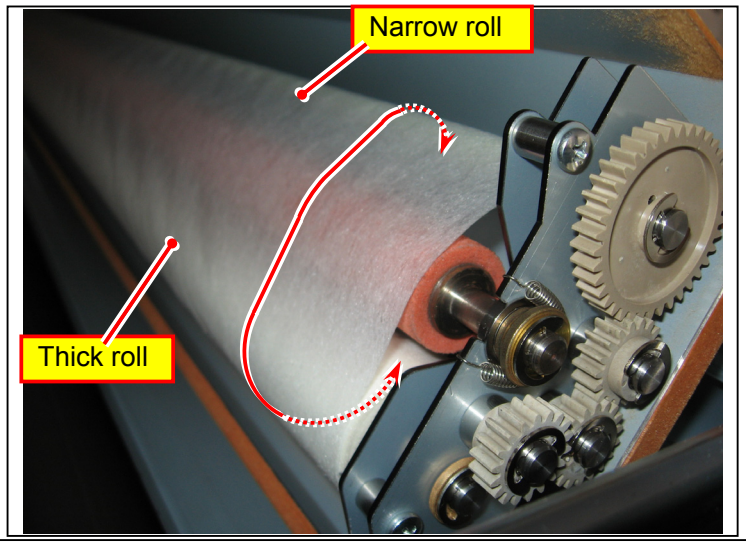
5. On the left side of machine when seen from the front, fit the end of “thicker roll” (8) of Web Cleaner to the Pin (9) on the left of machine. (Fit the Pin (9) to the notches (10) of the Web Shaft.)



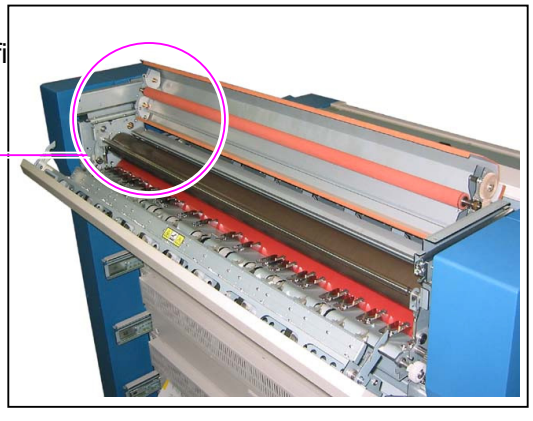


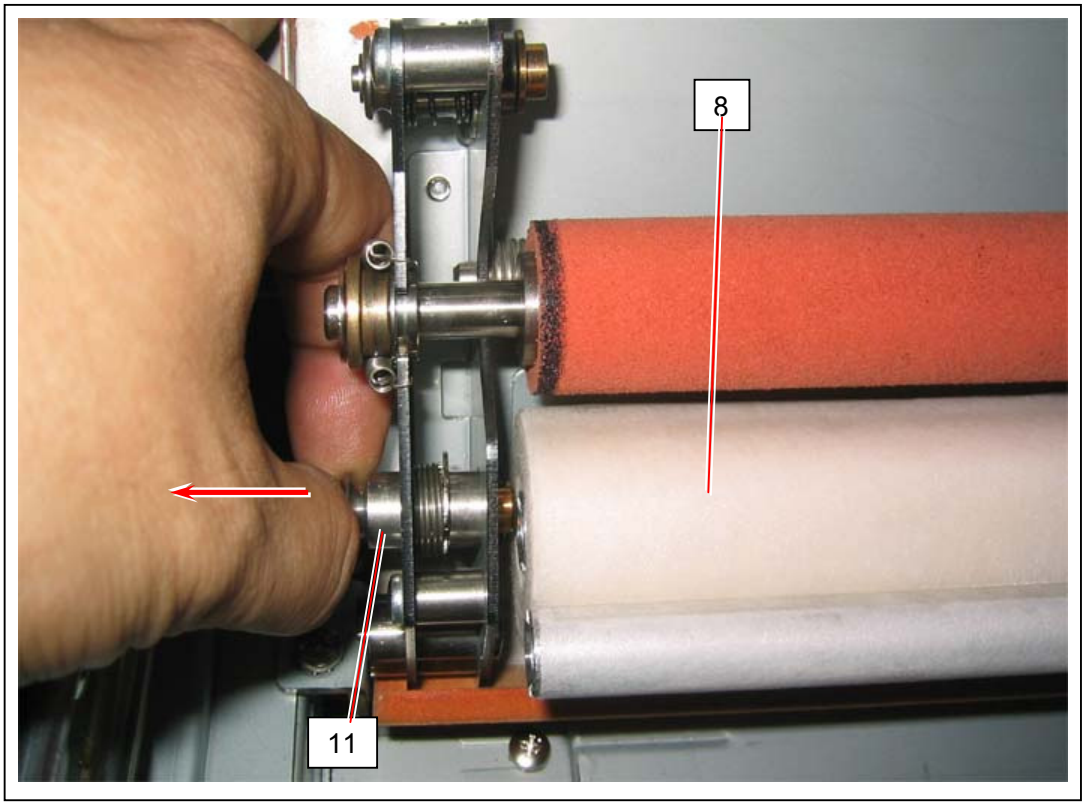
NOTE

Be careful of the winding direction of Web roll. (Web looks as follows in the end when installed correctly.)



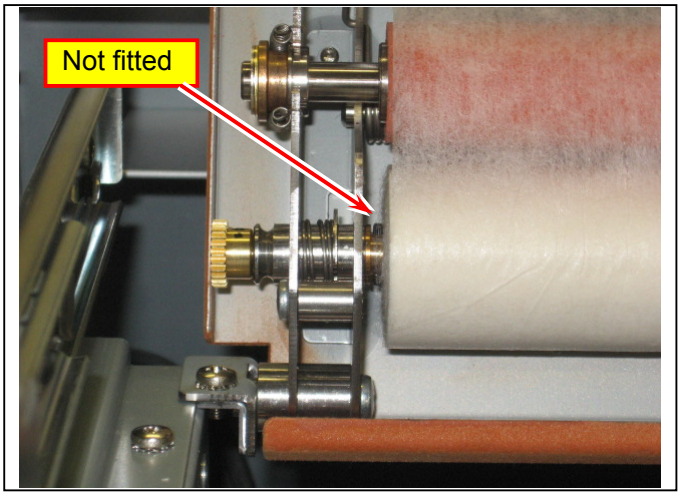
6. On the right side of machine when seen from the front, pull the Pin (11) in the direction of arrow and fi another end of “thicker roll” (8) of Web Cleaner similarly.



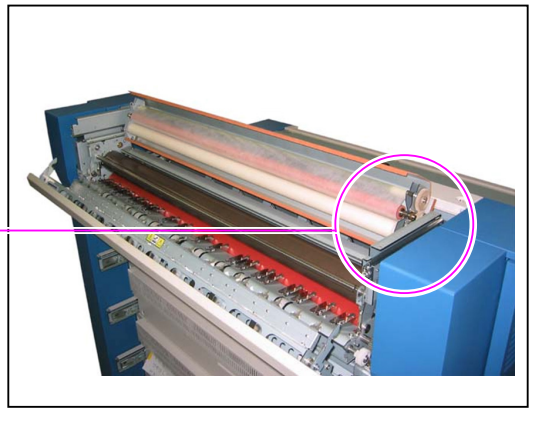


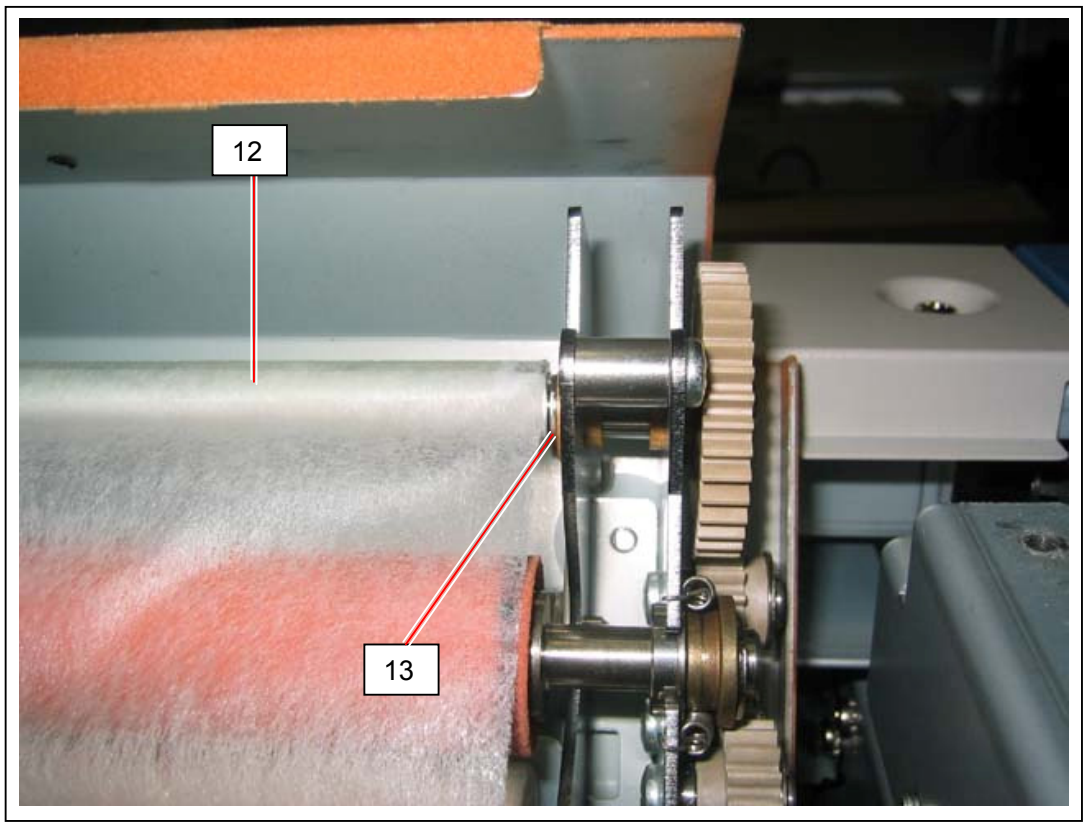
NOTE

Be sure that the Pin (11) is surely fitted into the shaft of Web Roll. Web Feeding Error will occur if not fitted correctly as the following incorrect example.



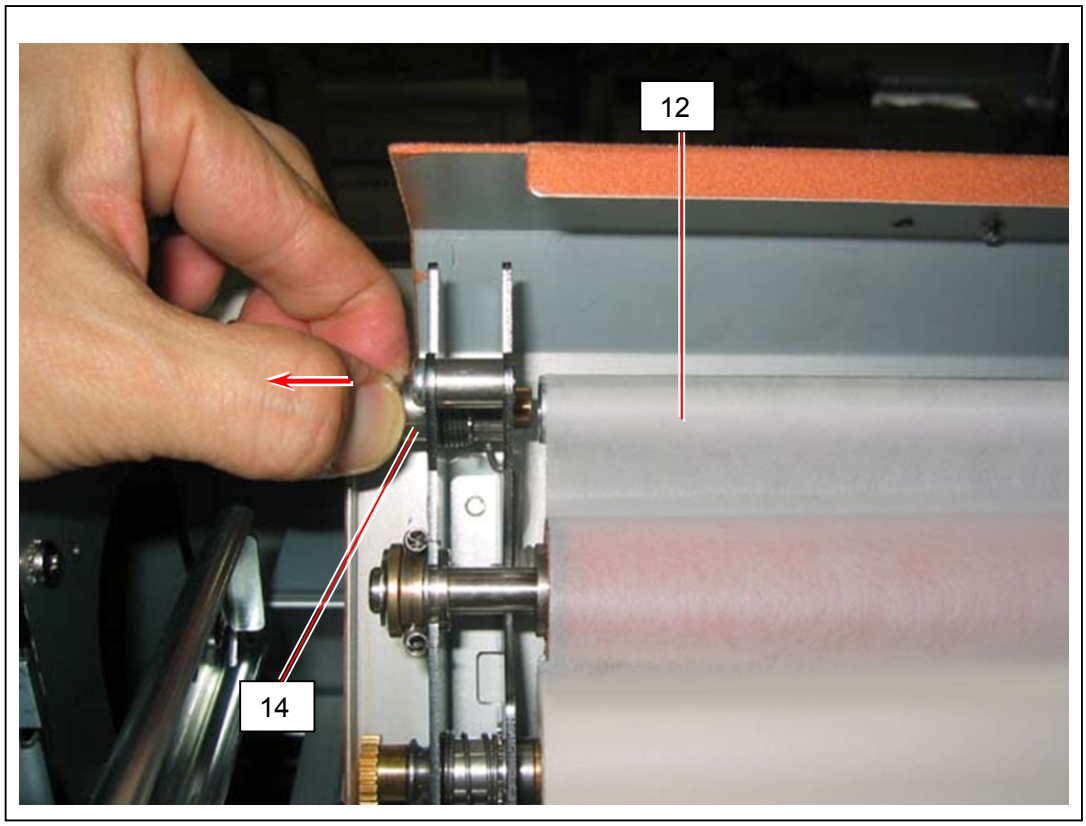
7. Similar with the former procedure 5, fit left end of the “narrower roll” (12) of the Web Cleaner to the Pin (13) on the left of machine.



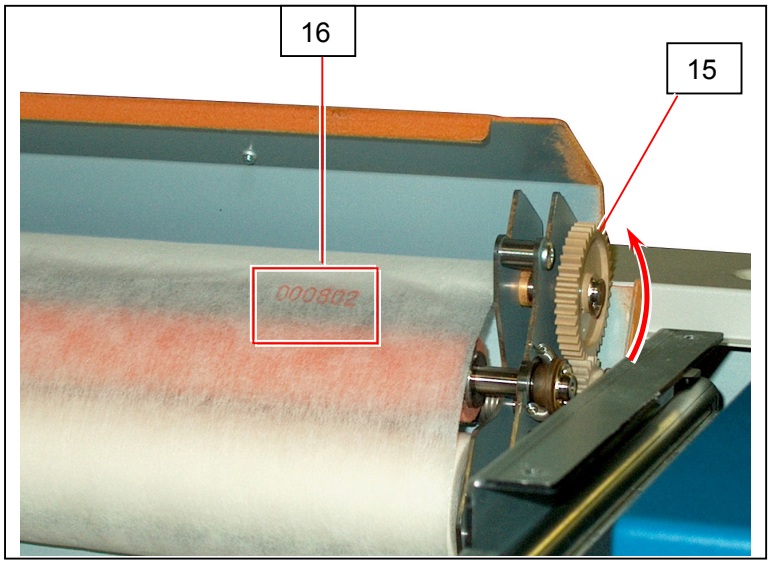


8. Similar with the former procedure 6, pill the Pin (14) on the right in the direction of arrow and fit right end of the “narrower roll” (12) of the Web Cleaner to the Pin (14).

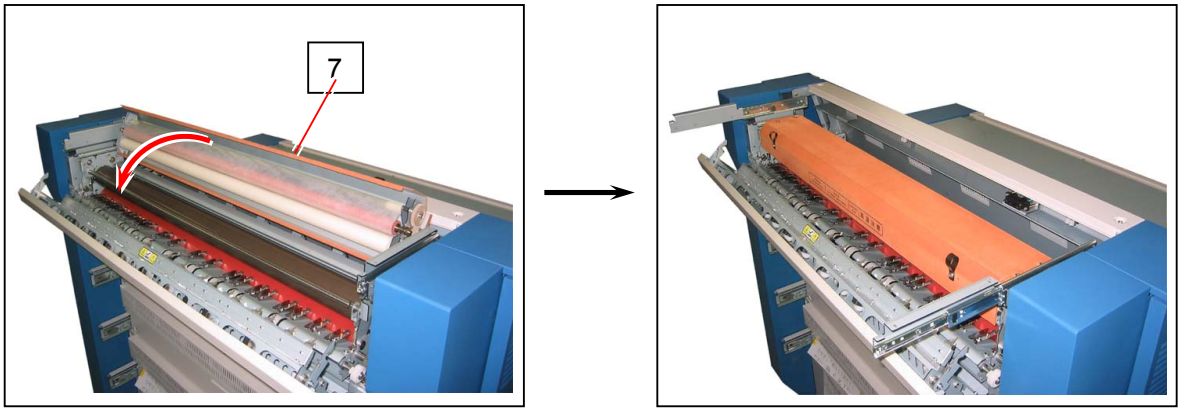




9. Wind the Web Roll rotating the 38T Gear (15) until the number (16) disappears.

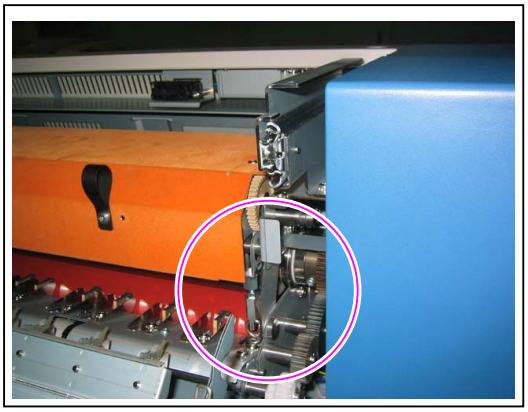


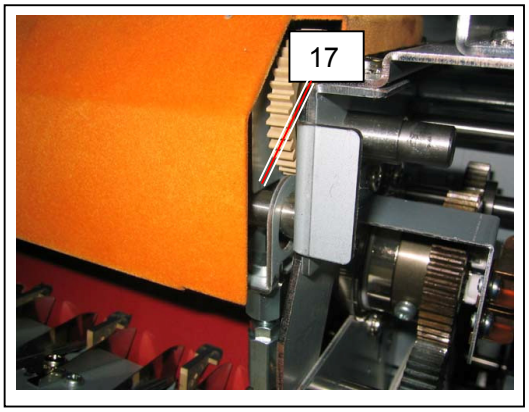
10. Close the Cover 3 (7).



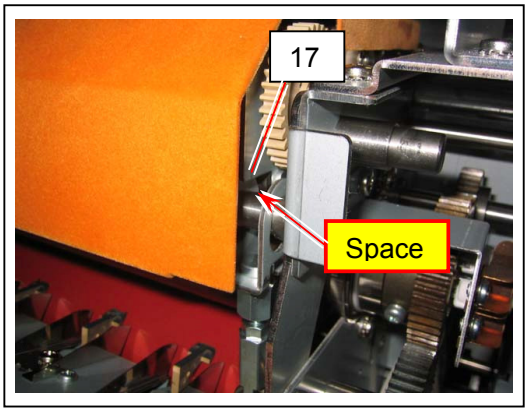
NOTE

Please confirm that the bottom edge (17) of the side plate is closed firmly as the following correct case. If there is any space, it means, the driving gears are not engaged firmly.



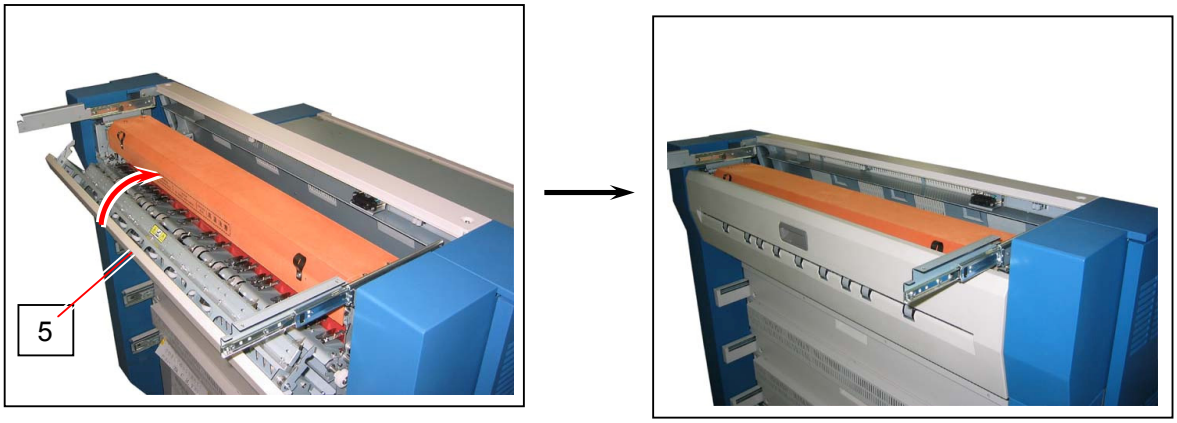


Correct

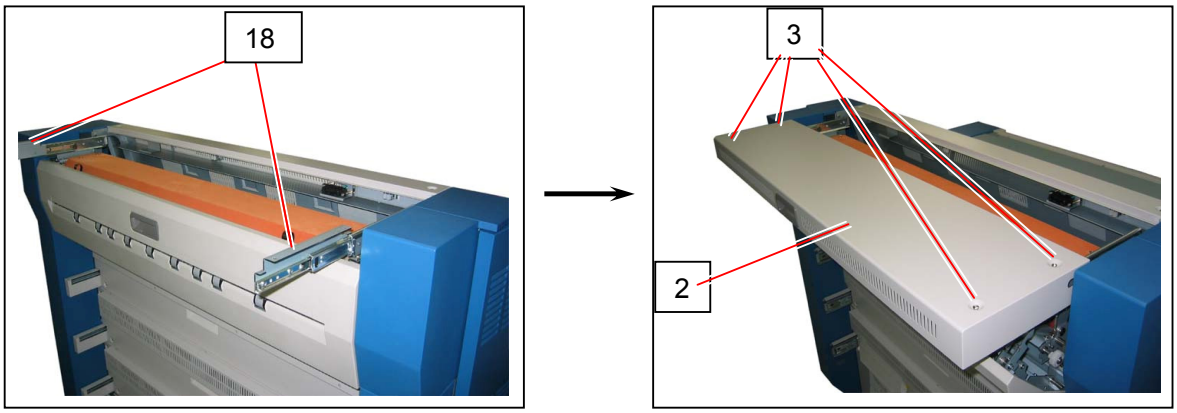


Incorrect

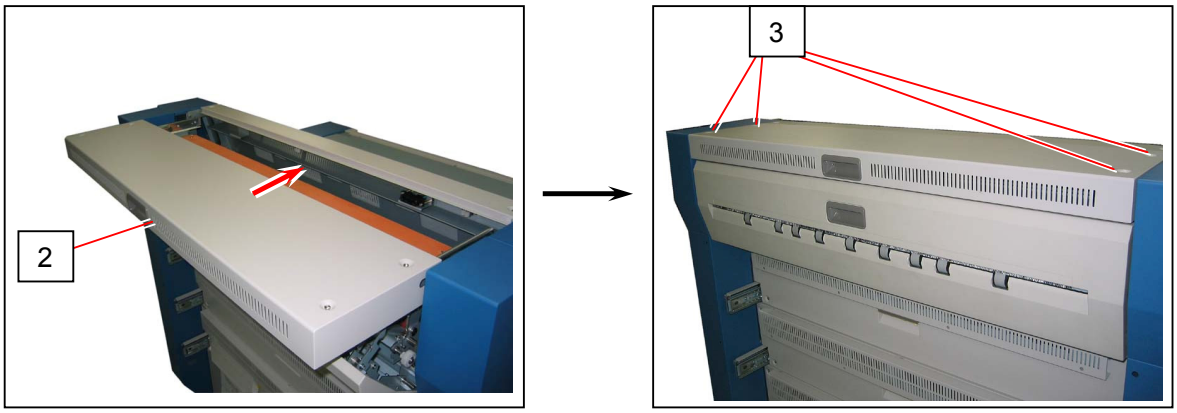
11. Close the Fuser Cover (5)



12. Put the Cover 4 (2) on the slide rails (18), and hold it putting the screws (3). (Do not turn the screws (3) at this point of time.)

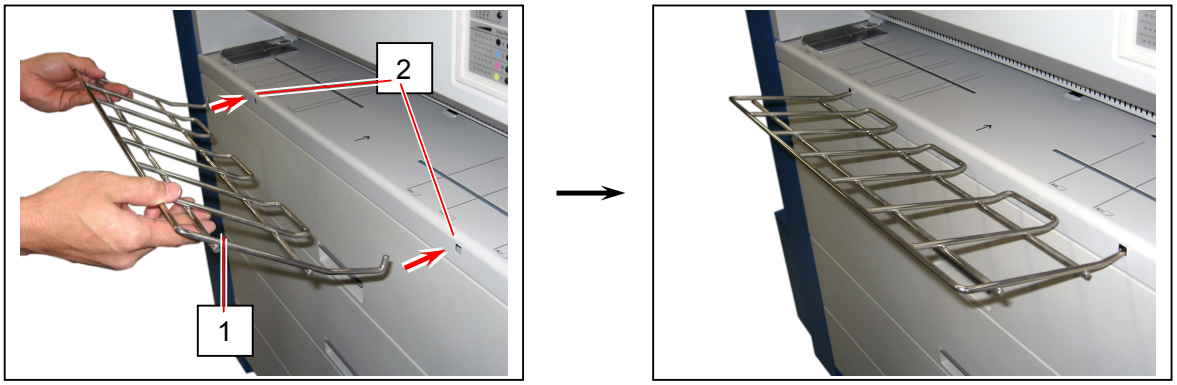


13. Close the Cover 4 (2) firmly then turn the screws (3) tightly.



2. 8 Installing the Bypass Feeder Tray

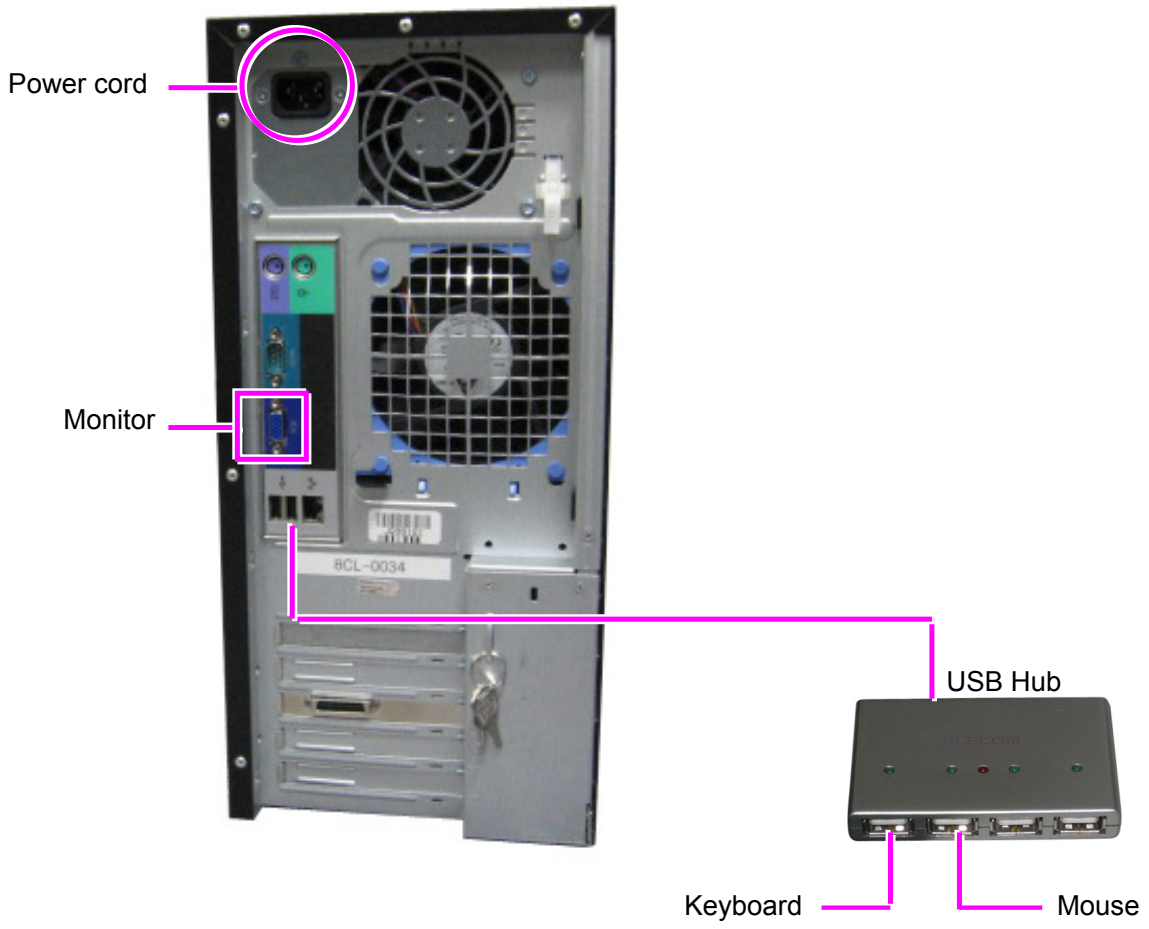
1. Fit the Bypass Feeder Tray (1) to the holes (2).



2. 9 Connection of Mouse, Monitor, Keyboard, Scanner & Cables to KC80 IPS

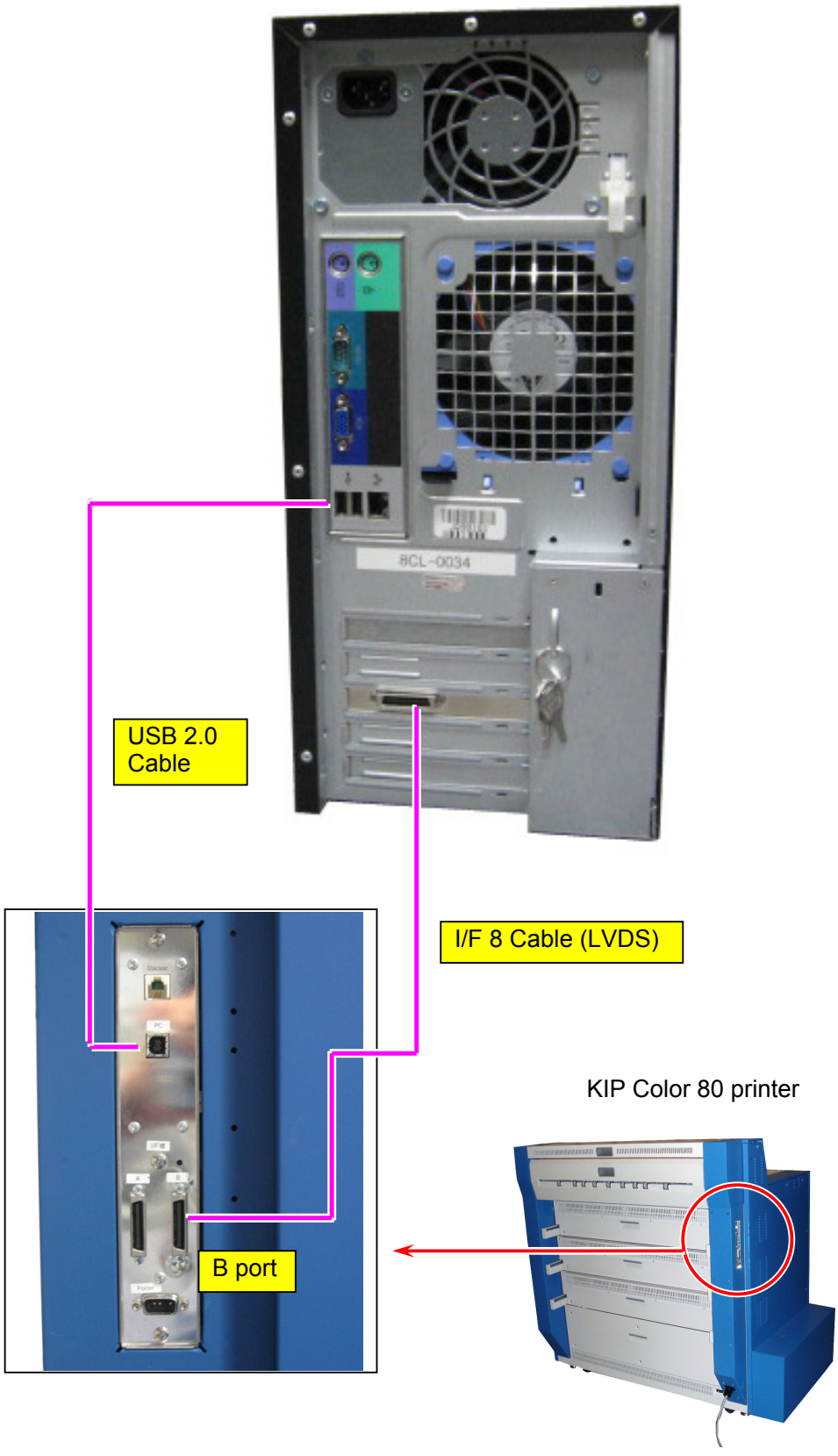
> **⚠ NOTE**
>
> (1) **Do not connect the optional USB Dongles (KIP RIP & KIP Color) and LAN cable** at this stage. They will be connected after you set the IP Address, time zone and date/time on later procedure.
> - Do not connect LAN Cable before setting the IP Address properly to user's network environment.
> - Some trouble may happen if USB Dongles are connected before setting the time zone and date/time correctly, which is caused by the mismatch of times between USB Dongle and OS.
>
> (2) 6 USB ports may be required in maximum according to the configuration, although the IPS unit has only 4 ports. Please connect a USB Hub of your own preparation in such case for increasing the ports. Recommended is a USB Hub corresponded to USB 2.0 with at least 4 ports. (Scanner and printer (KipDiagColor) require USB 2.0.)

1. Connect the mouse, keyboard, monitor and power cable to the designated locations on the back of KC80 IPS. (USB Hub is used in the following example for connecting USB Mouse and Keyboard.)

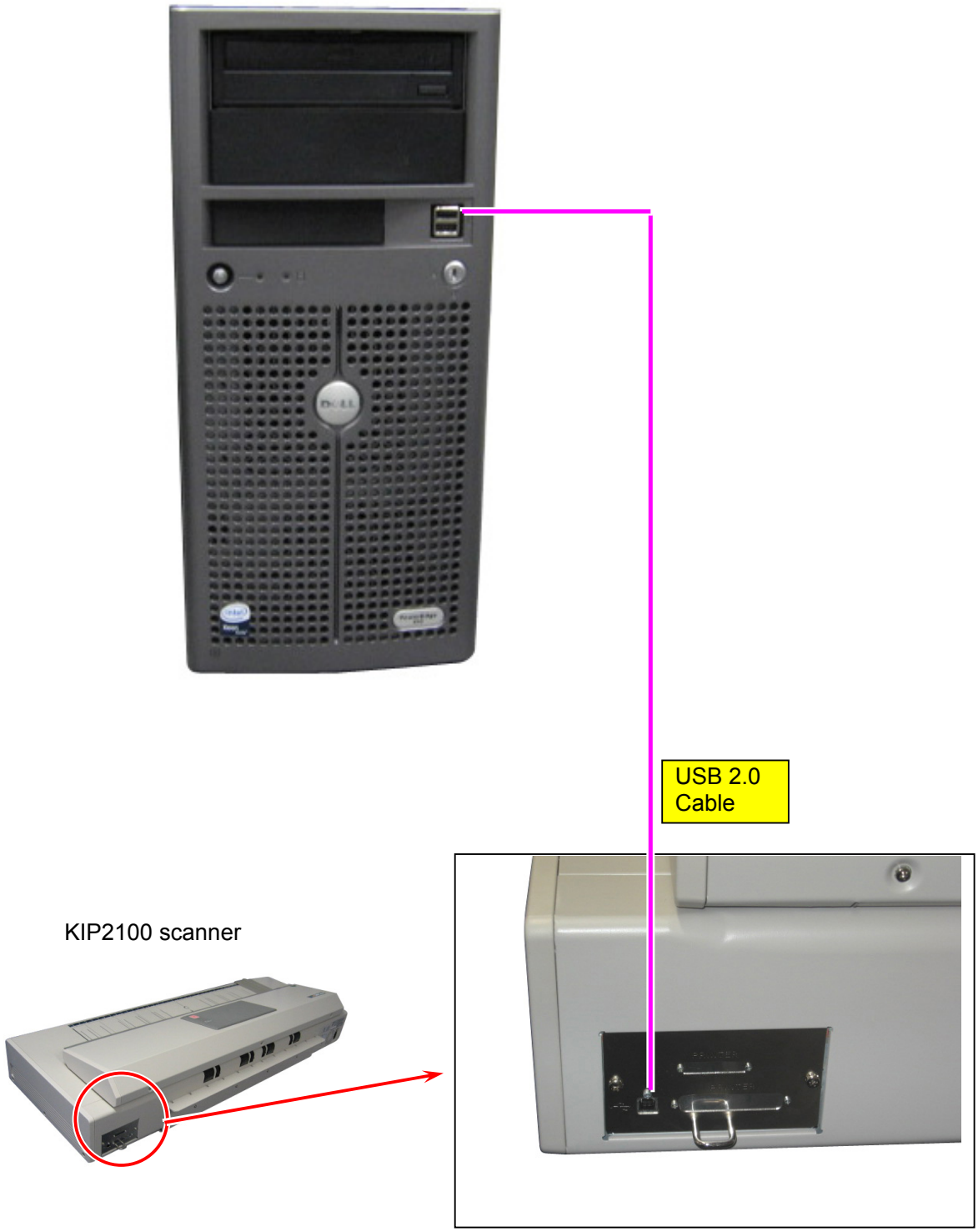


2. Connect the KC80 IPS and printer with the I/F 8 Cable (LVDS) for data transfer. At this time connect the cable to **B port** of printer.

   And connect the KC80 IPS and printer with the USB 2.0 Cable for the communication of KIP Diagnostics. (Connect to the left port.)



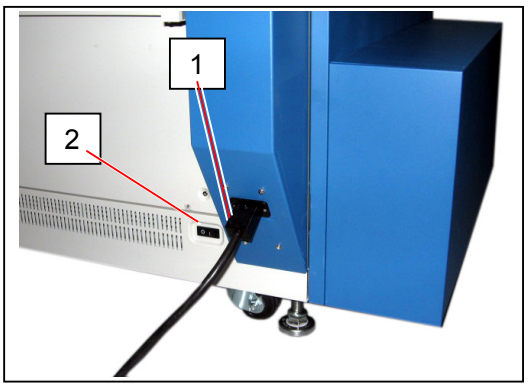
3. Connect the KC80 IPS and KIP2100 scanner with USB 2.0 Cable for making copy and scan. (Connect to the right port.)



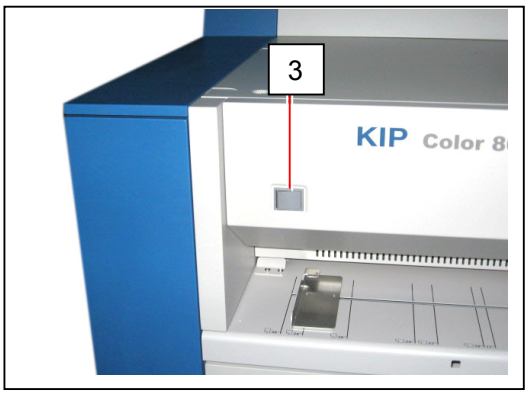
2.10 Turning on the KIP Color 80 Printer & KC80 IPS

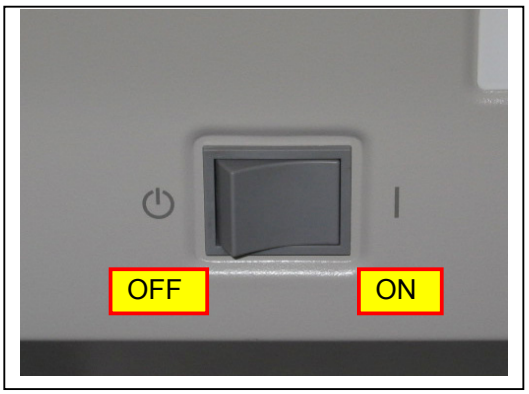
1. Prepare a power cord for KIP Color 80 printer in advance, which must meet the following specifications.
   Rating 250Vdc, 20A
   Plug type ..... NEMA6-20 or NEMA6L-20
   Socket type ..... IEC60320 : C19
   Cord ..... SJT 3xAWG12 L <4.5m
   UL-Listed

2. Connect one end of the Power Cord to the Inlet Socket (1) on the rear of KIP Color 80. Confirm that the “I” side of AC power Switch (2) is pressed.

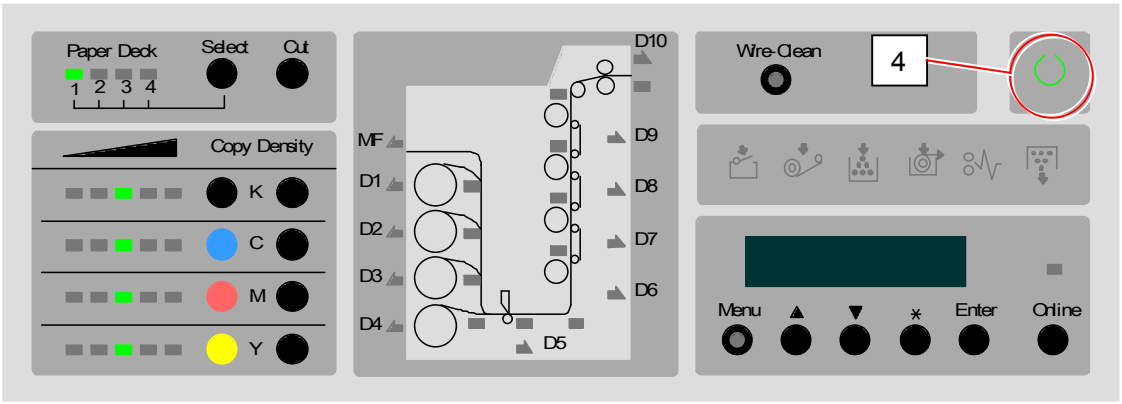


3. Turn on the KIP Color 80 pressing the right of Power Switch (3). Printer starts warming up.

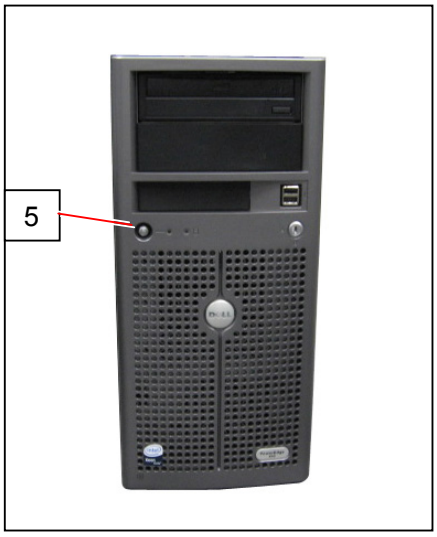




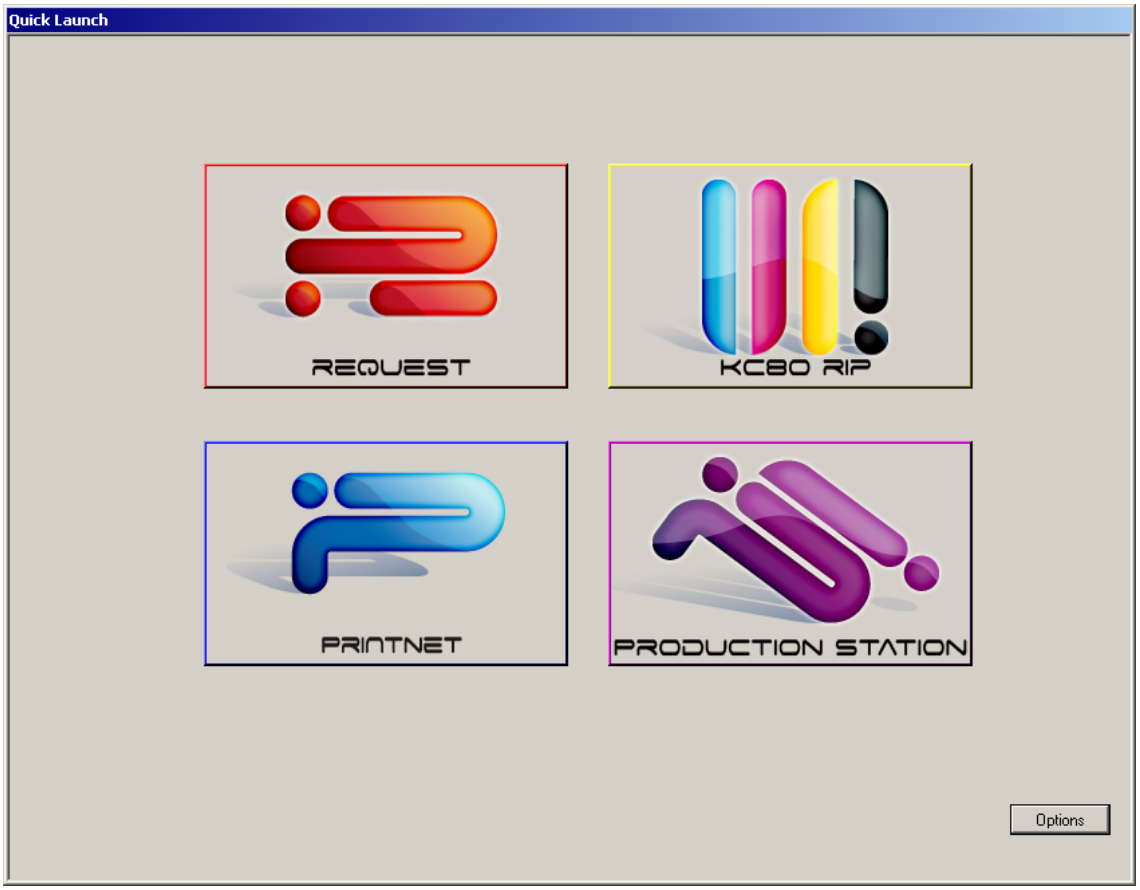
4. The Ready Indicator (4) on the operation panel blinks when the printer is warning up, and it lights green when the printer gets ready. Wait until the printer gets ready.



5. Turn on the KC80 IPS press the Power Switch (5).



6. Wait until the following KC Home is indicated on the monitor of KC80 IPS.



2.11 KIP Color 80 Printer Setup

2.11. 1 Supplying the Toner into Developer Unit

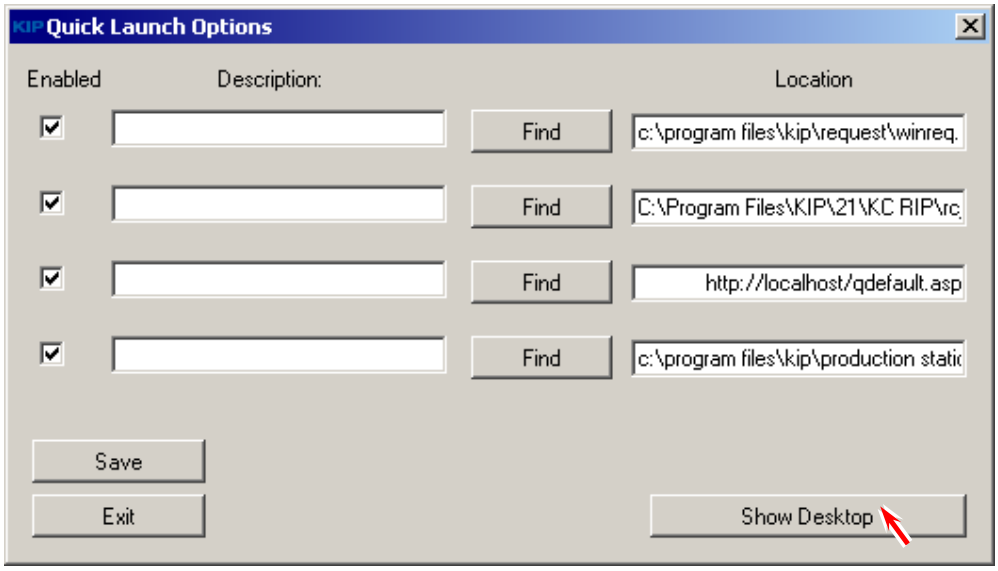
Please supply the toner to KIP Color 80 printer by the Toner Supplying Mode.

> **⚠ NOTE**
>
> Do not set the Auto Density Control to ON (standard or high) before executing the Toner Setup Mode. If you mistakenly do it first, “Auto Density Control Error” (E-2142, E-2242, E-2342 or E-2442) will occur as density control operation is done although printer is not supplied with the toner.

1. Click on **Options** on the Quick Launch.



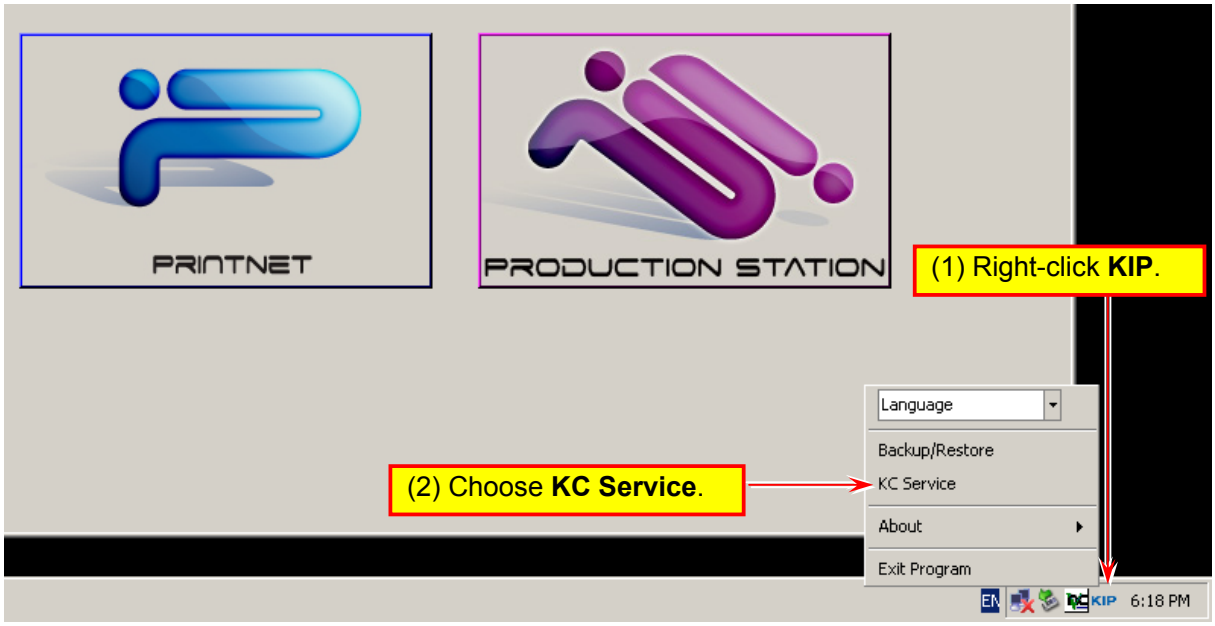
2. Click on **Show Desktop** in the Quick Launch Options.



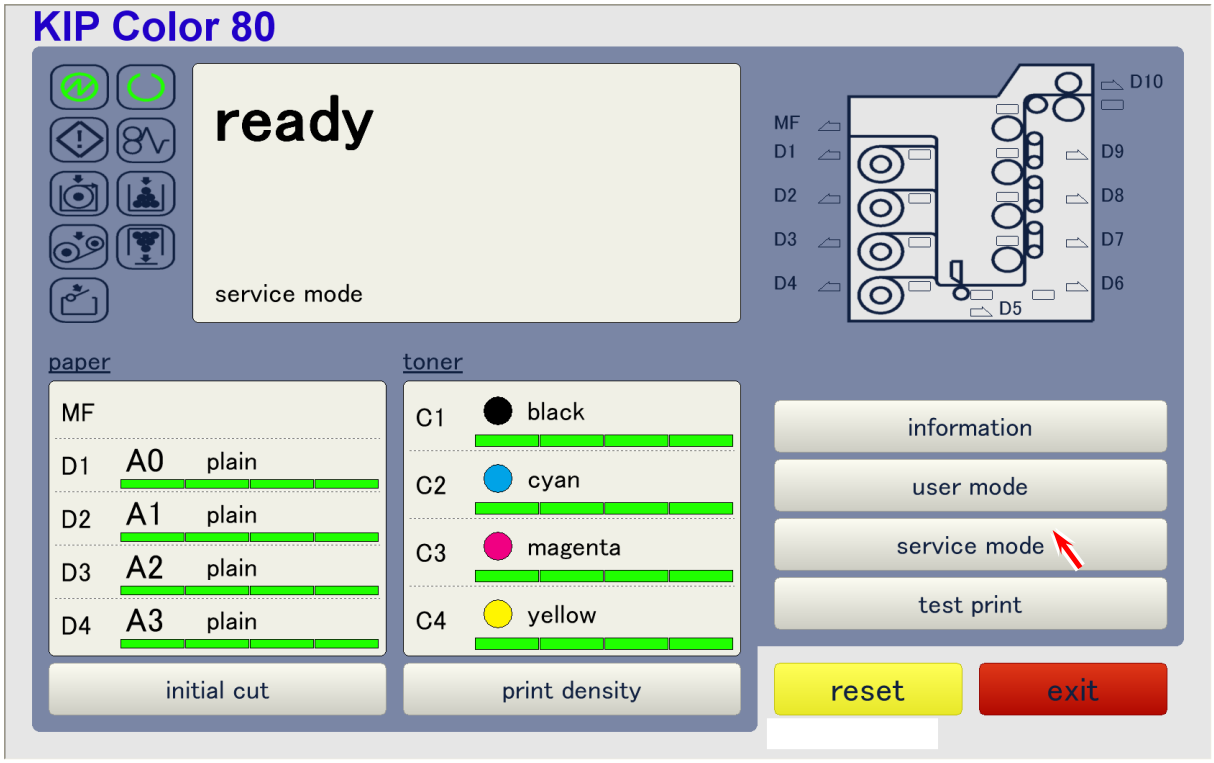
3. Type service password **kip** in the input field then click on **OK**. Windows desktop is indicated.



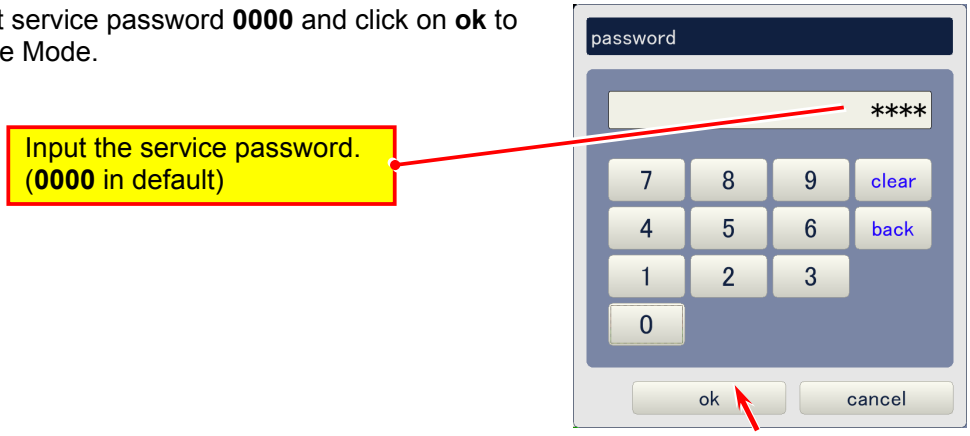
4. You will find **KIP** in the task tray. Right-click **KIP** to indicate its sub menu, and choose **KC Service** to run the KipDiagColor



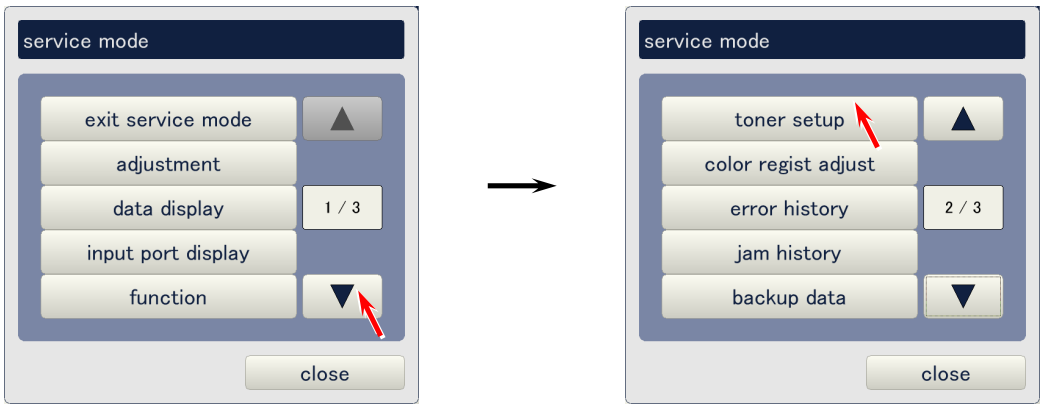
5. Click on **service mode** on the main screen of KipDiagColor.



6. Input the default service password **0000** and click on **ok** to enter the Service Mode.



7. The menu of Service Mode is indicated. Indicate the second page using the triangle icons, and choose **toner setup** in the menu.

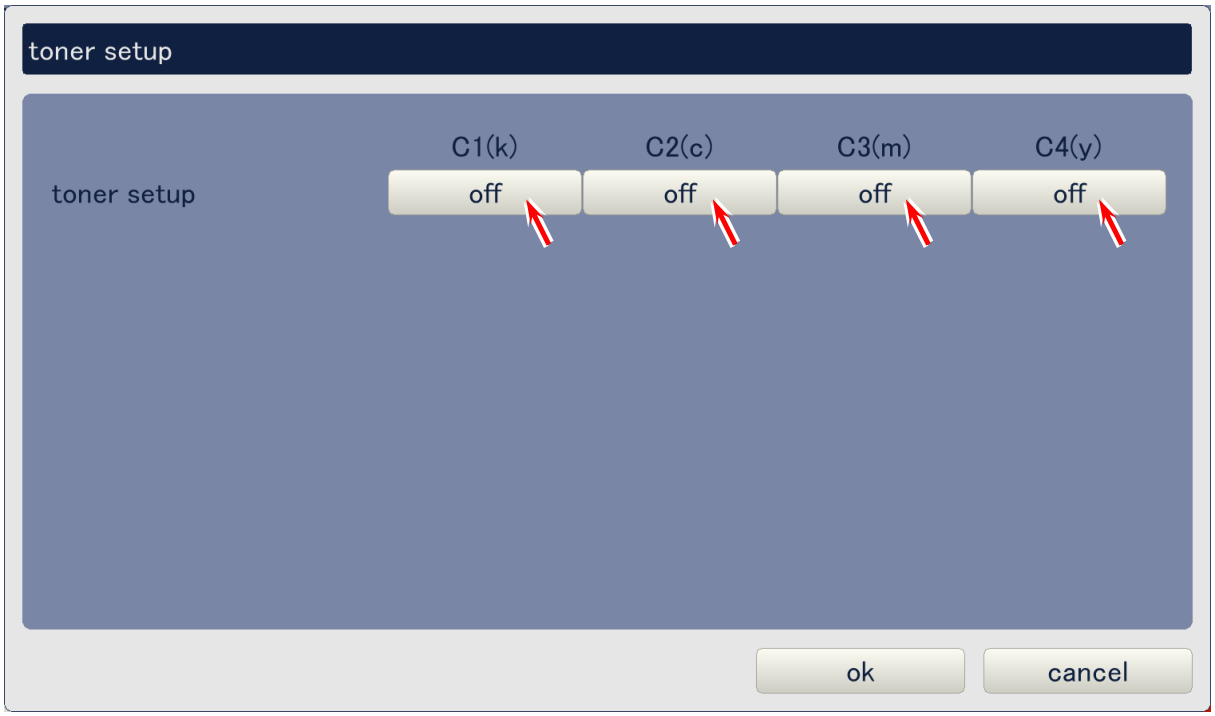


First page Second page

8. In the following page you can decide if Toner Setup mode is performed or not per color. Selecting **on** for some color will perform toner setup mode to that color. Please select **on** for all of 4 colors.

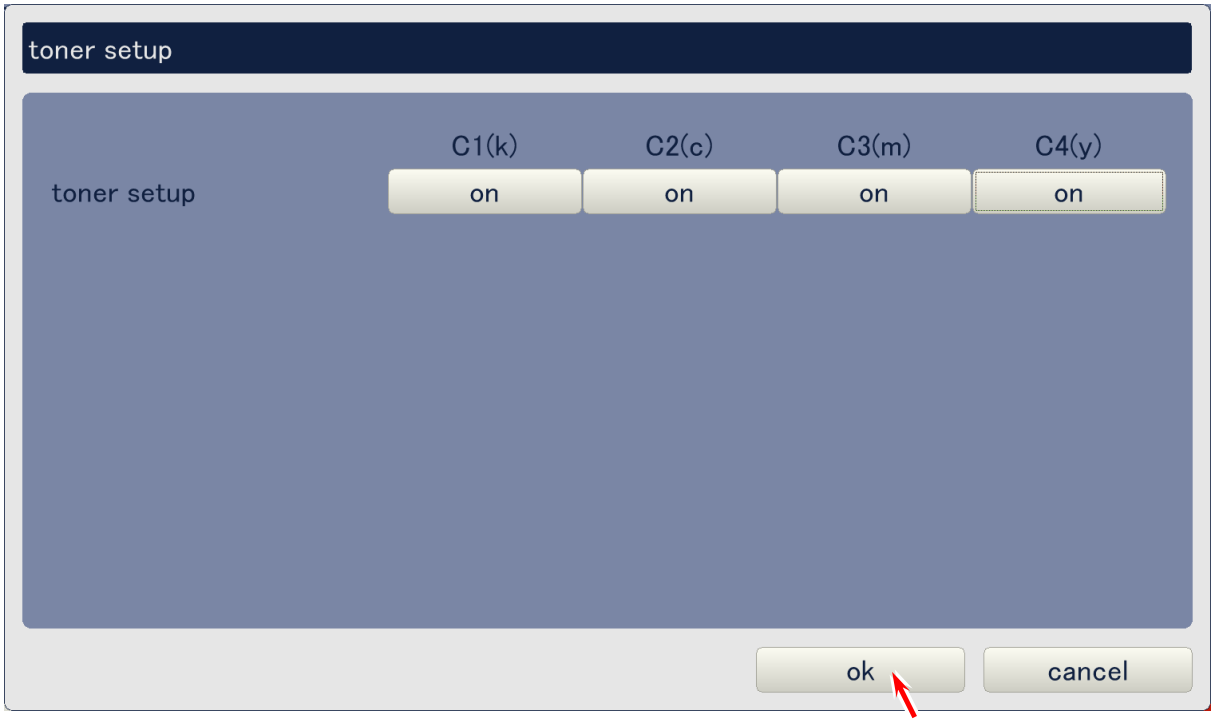
   To change the setting, click on any **CX** button and choose **on** in the pop up dialog. (**CX** means the color.)
   - C1 : Black
   - C2 : Cyan
   - C3 : Magenta
   - C4 : Yellow

Setting	Description
off	Toner is not supplied to the Developer Unit.
on	Toner is supplied to the Developer Unit.

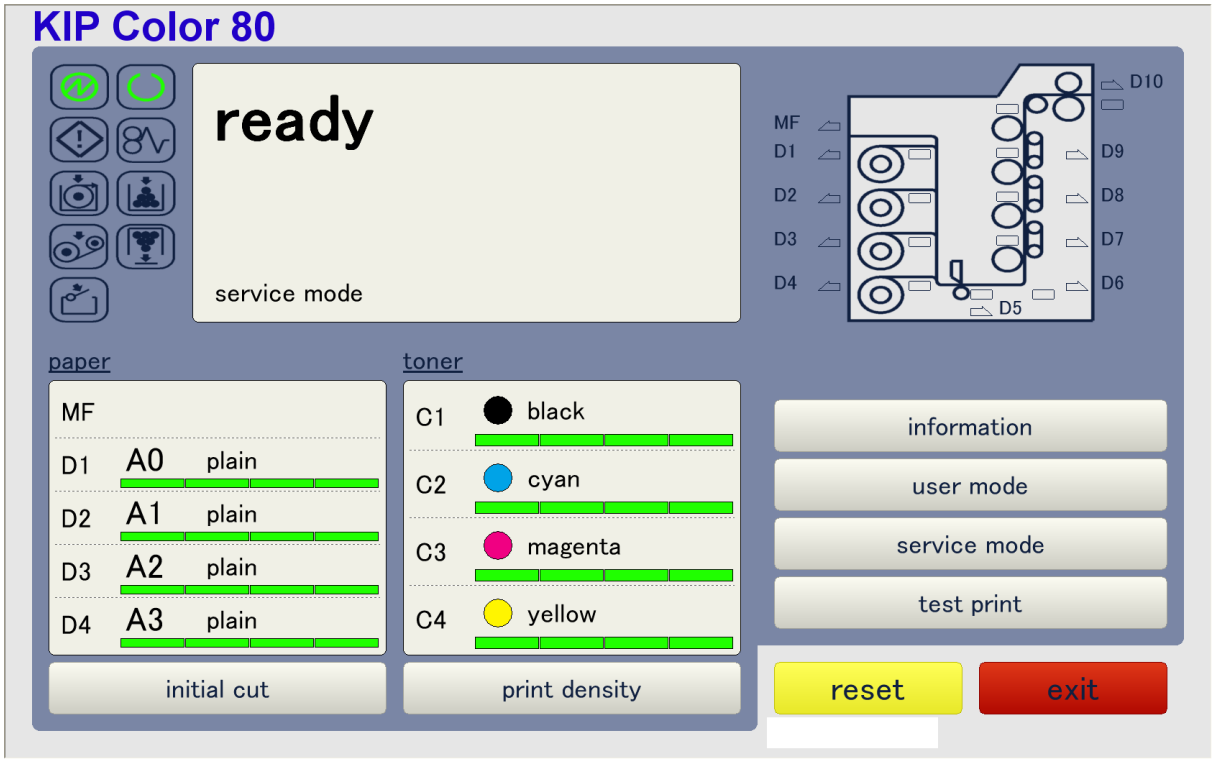




9. After setting all buttons to on, click on **ok** to start toner setup. The printer automatically supplies toner to the developer unit. Wait until the operation finishes. (It takes about 12 to 15 minutes.)



9. KipDiagColor indicates its main screen when Toner Setup Mode finishes. Go to next section [2.11.2 Setting Density Control to “Standard”] without closing the KpDiagColor.



2.11. 2 Setting Auto Density Control to “Standard”

Please set the Auto Density Controls to **standard** for all of 4 colors when Toner Setup Mode is finished.

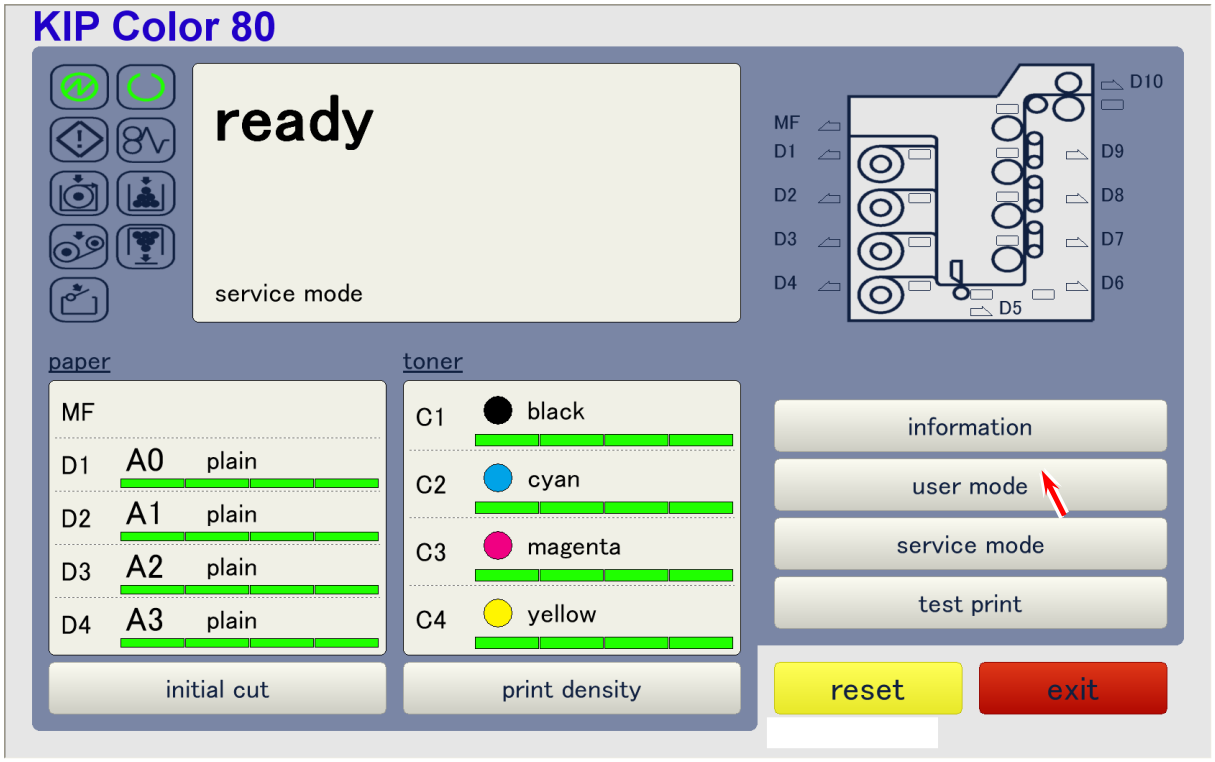
NOTE

(1) Auto Density Controls for all of KCMY were intentionally set to OFF in factory prior to the shipment, because the Toner Setup Mode requires that setting.

(2) It is recommended to check the Optical Density of CMYK at installation using densitometer.
- Print the external test pattern “Density_Calib.zip” **with setting Auto Density Control to “off”**. Please use #24 Premium Bond.
- Lay a black sheet on the table, and put the printout of Density_Calib.zip on it.
- Prepare **X Rite 5xx densitometer** (without filter). Confirm the following settings are correctly set.
  a) Status T
  b) Absolute
- Measure 4 each 90% CMYK with the densitometer. The average of 4 each color must satisfy the following values. Please adjust if not satisfied.
  K : 1.20 +/-0.03
  C : 1.10 +/-0.03
  M : 0.90 +/-0.03
  Y : 0.80 +/-0.03

See section [10.1 Adjustment of Optical Density] of service manual for further detail.

1. Click on **user mode** on the main screen of KipDiagColor.



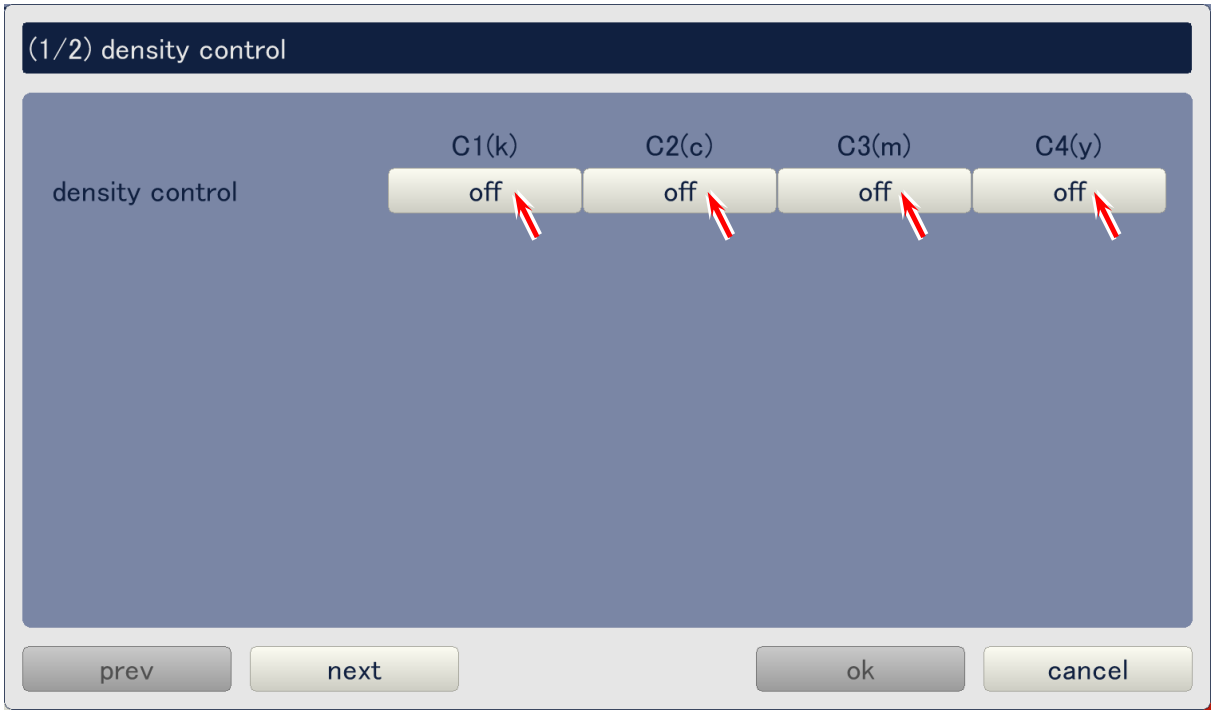
2. Choose **density control** in the User Mode menu.

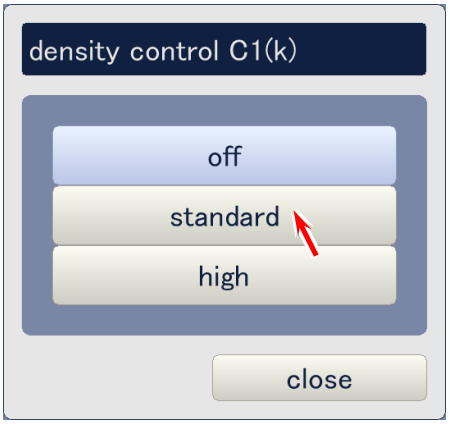


3. In the following page you can specify the Auto Density Control setting per color. Selecting either **standard** or **high** will make Auto Density Control function. Please select **standard** for all of 4 colors.

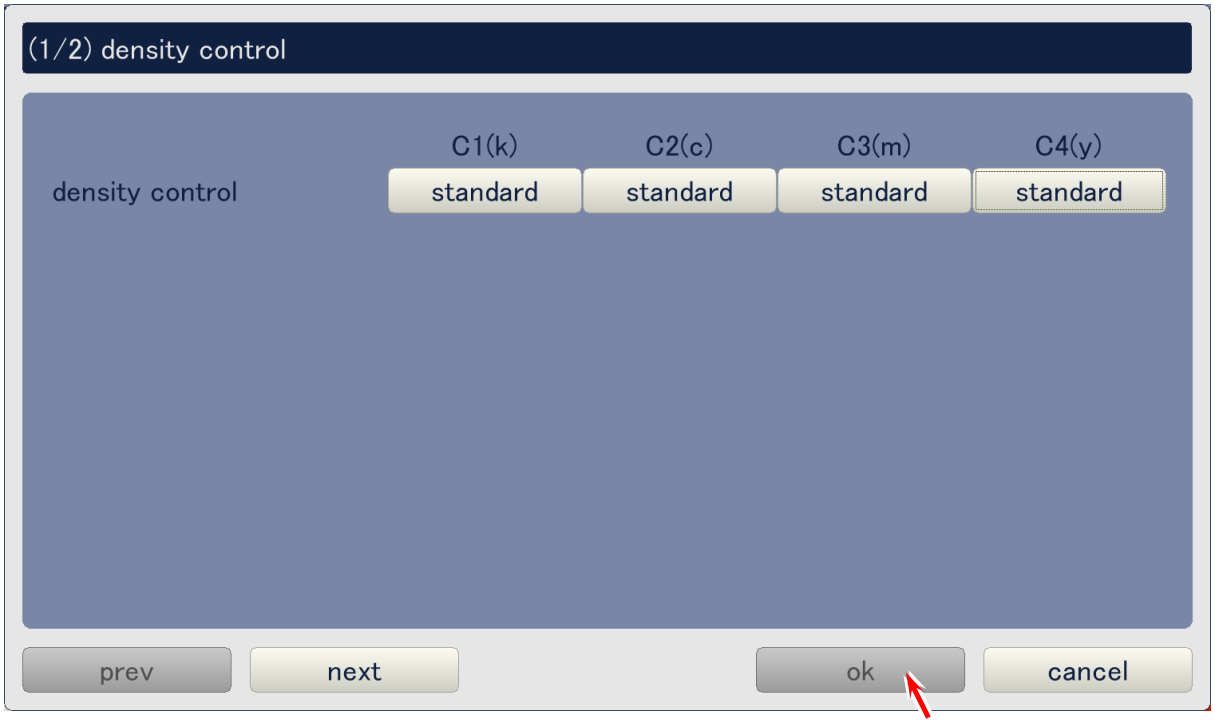
   To change the setting, click on any **CX** button and choose **standard** in the pop up dialog. (**CX** means the color.)
   - C1 : Black
   - C2 : Cyan
   - C3 : Magenta
   - C4 : Yellow

Setting	Description
Off	Auto Density Control does not function.
Standard	Auto Density Control functions with normal error checking level.
High	Auto Density Control functions with strict error checking level.

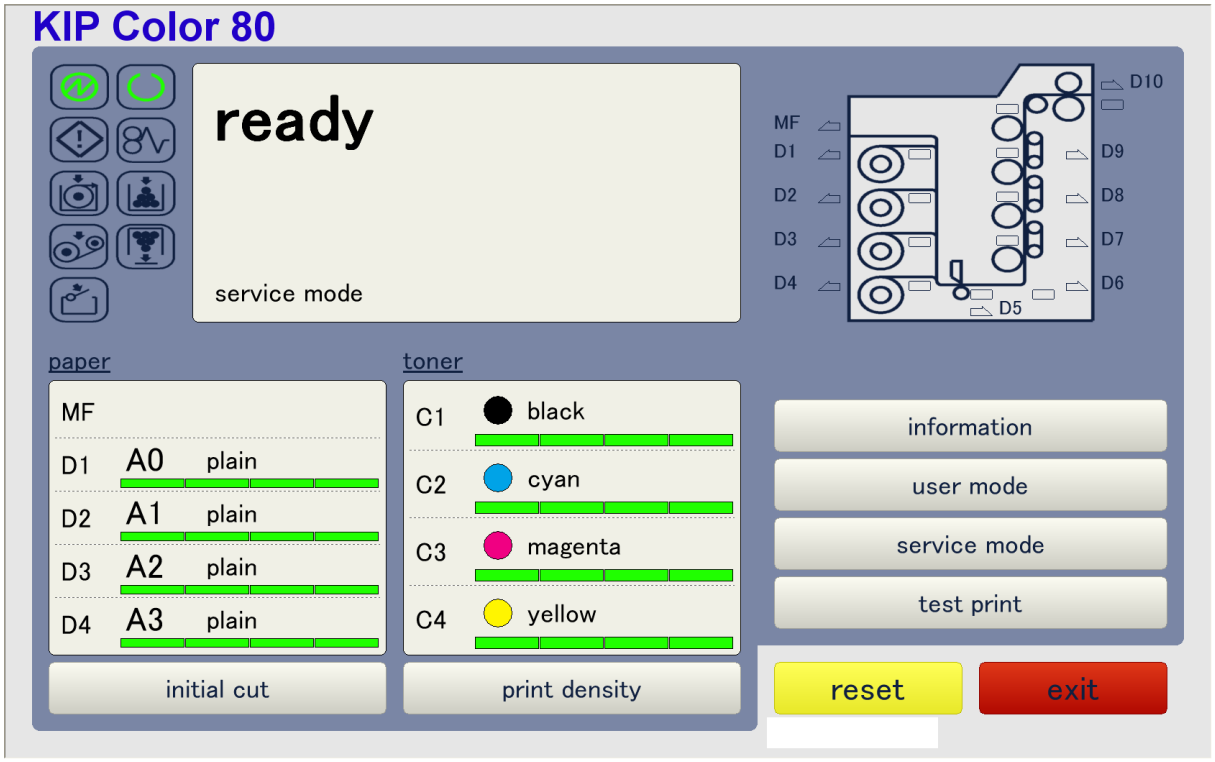




4. After selecting **standard** for all of 4 colors, click on **ok**.



5. KipDiagColor indicates its main screen. Go to next section [2.11.3 Disable Sleep Modes on KIP Color 80 printer] without closing the KpDiagColor.



2.11. 3 Disable Sleep Modes on KIP Color 80 printer
(Necessary when KIP Controller [KC80 IPS] is connected)

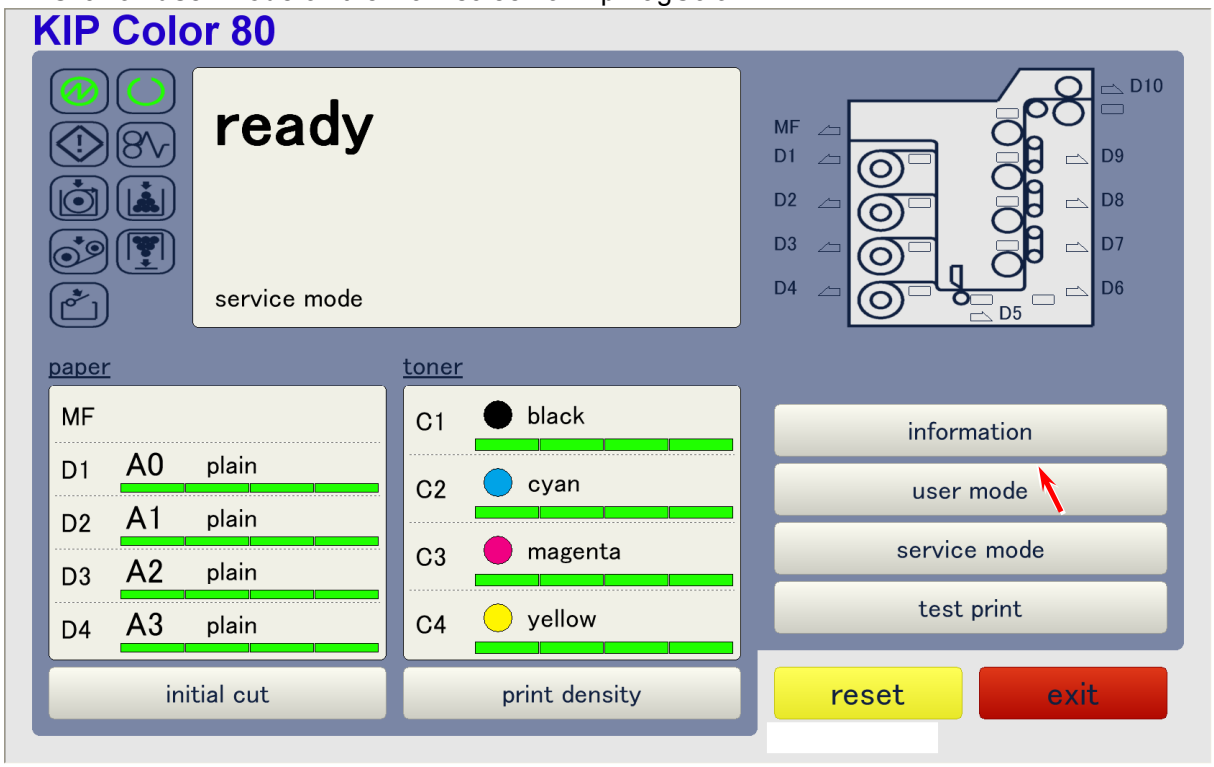
When KIP Color 80 Printer and KC80 IPS are shipped from factory, both Warm Sleep and Cold Sleep are “enabled” on both devices to meet the requirement of Energy Star. During the machine installation please “disable” the sleep modes of KIP Color 80 printer for avoiding “duplication” of sleep control from both devices. (This will allow KC80 IPS to control the sleep modes alone.)

⚠ NOTE

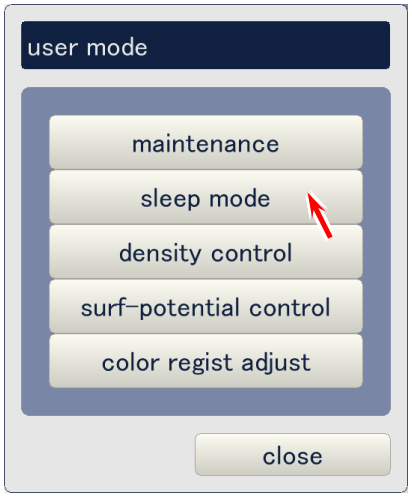
(1) Warm Sleep and Cold Sleep are set as follows on the KIP Color 80 printer by default to meet the requirement of Energy Star.
- Warm Sleep : ON (Timer : 15 minutes)
- Cold Sleep : ON (Timer : 60 minutes)

(2) If you do not disable sleep control of printer, and when the printer goes into sleep mode by the sleep command from the printer, the KC80 IPS does not recognize the printer is in sleep mode. Instead, it mistakenly recognizes that the printer is awake and ready.

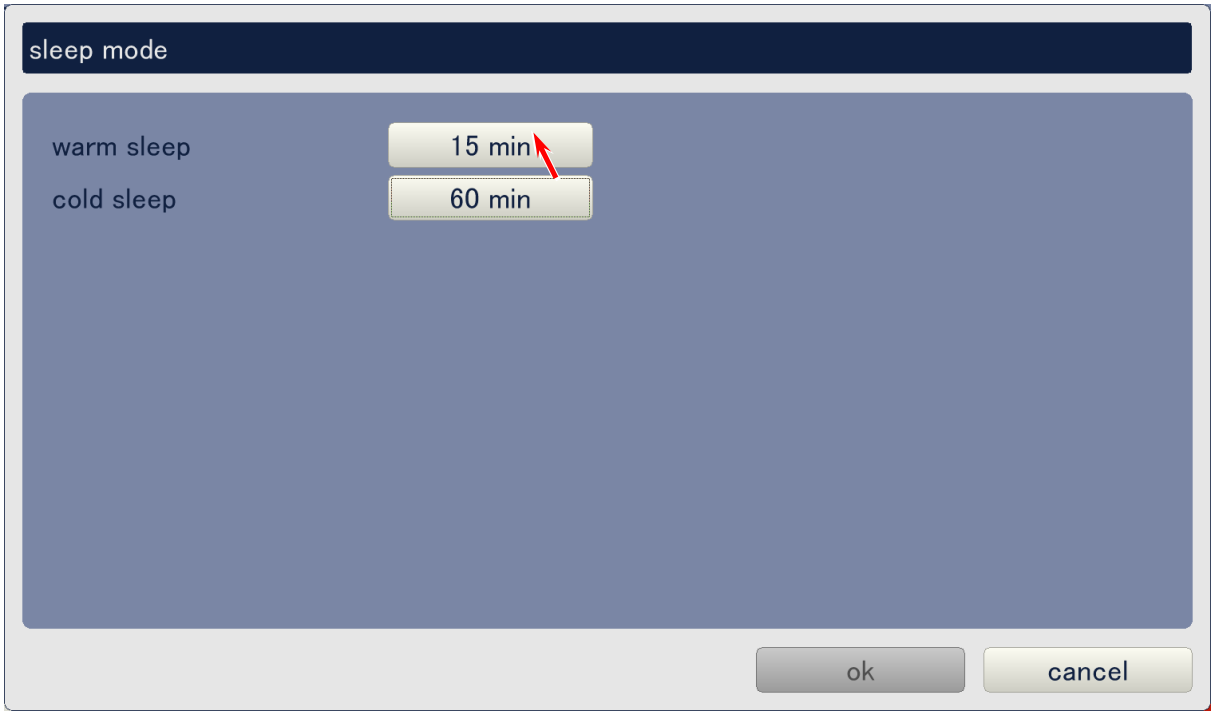
1. Click on **user mode** on the main screen of KipDiagColor.



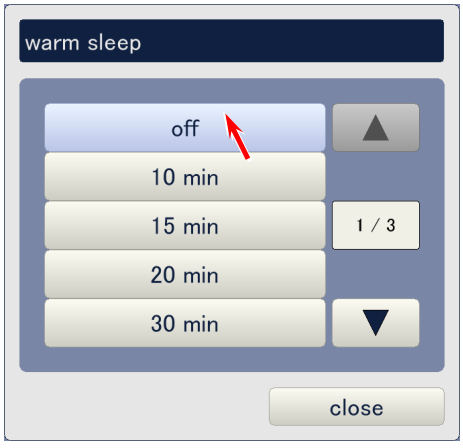
2. Choose **sleep mode** in the User Mode menu.



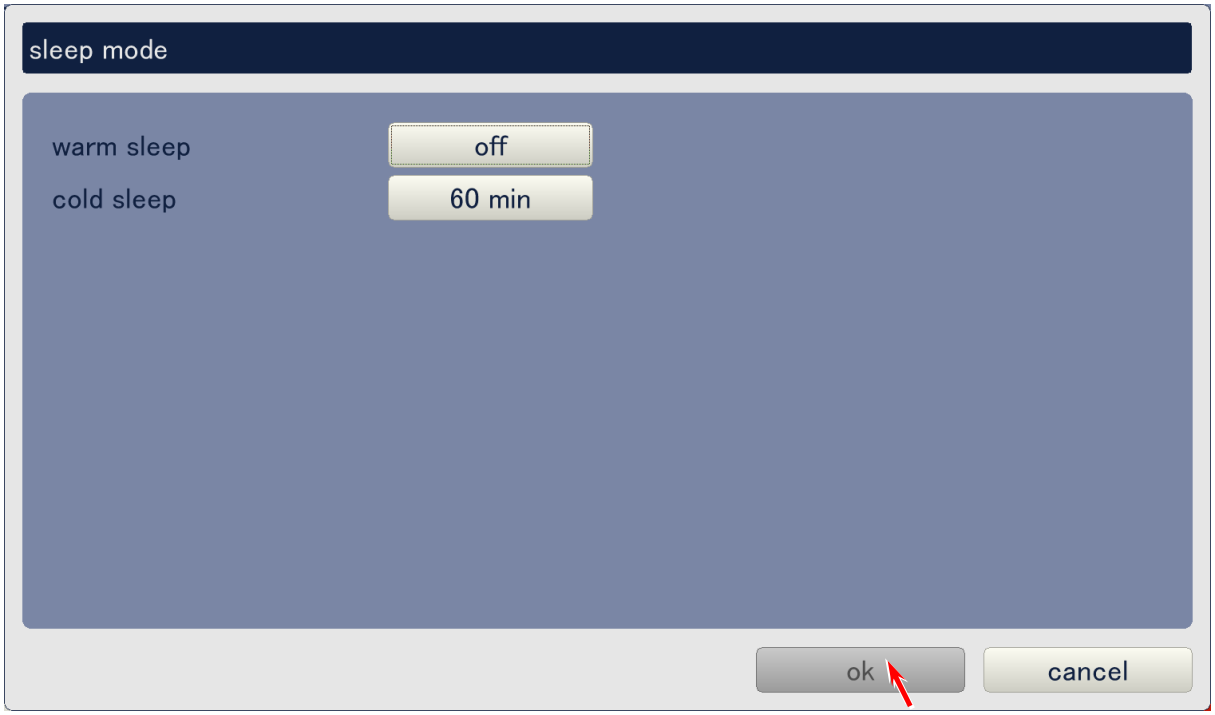
3. Click on the setting button beside **warm sleep**.



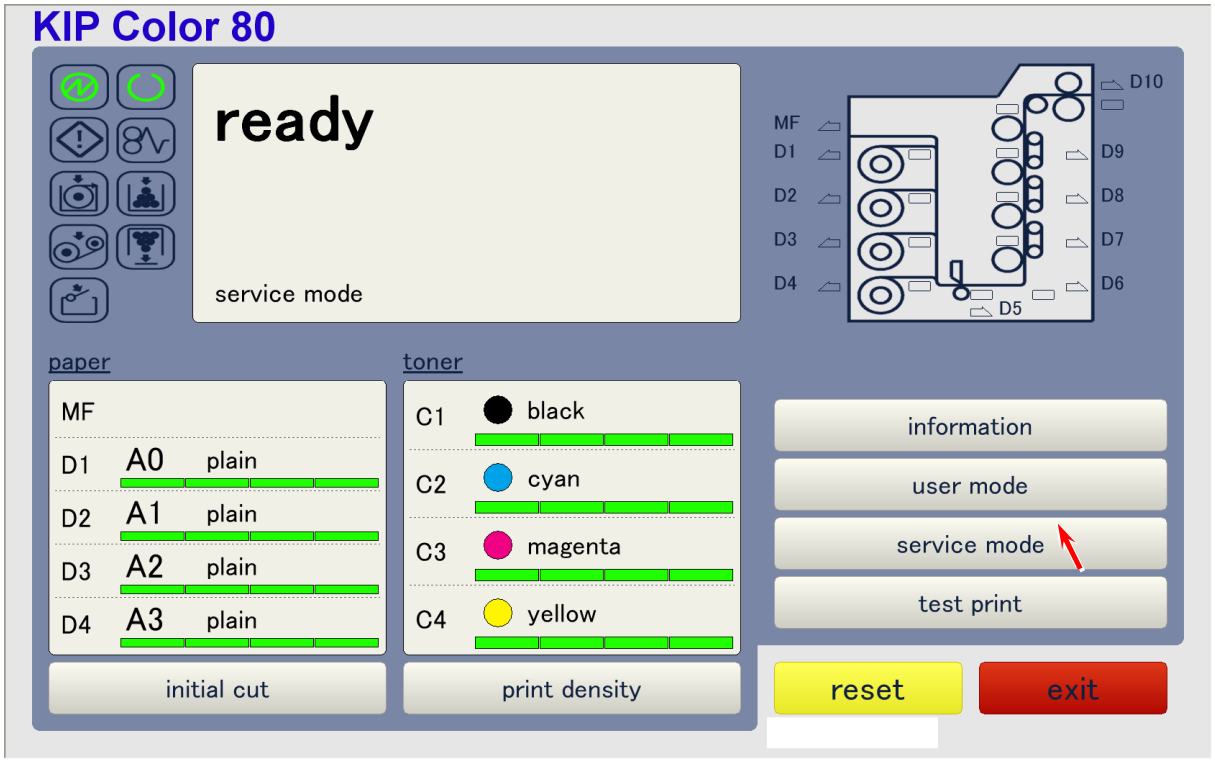
4. Choose **off** to disable Warm Sleep.



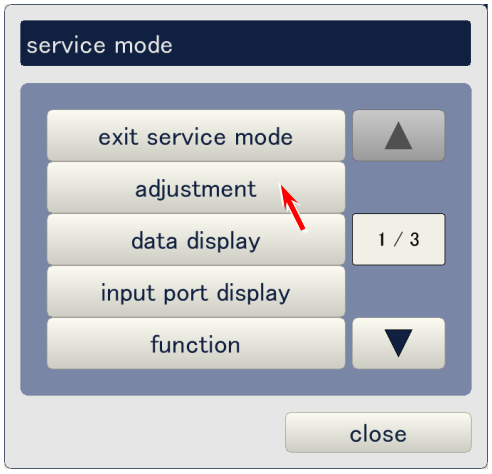
5. Click on **ok**.



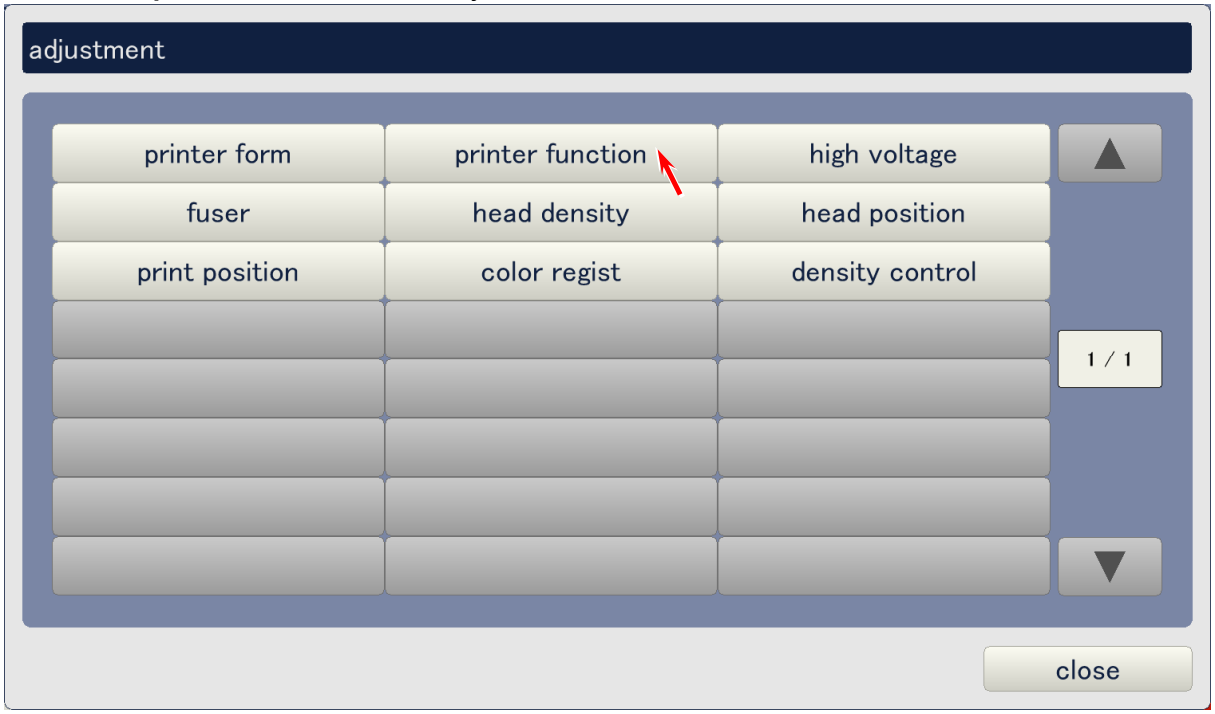
6. Click on **service mode** on the main page of KipDiagColor. (Enter the service password **0000** when required.)



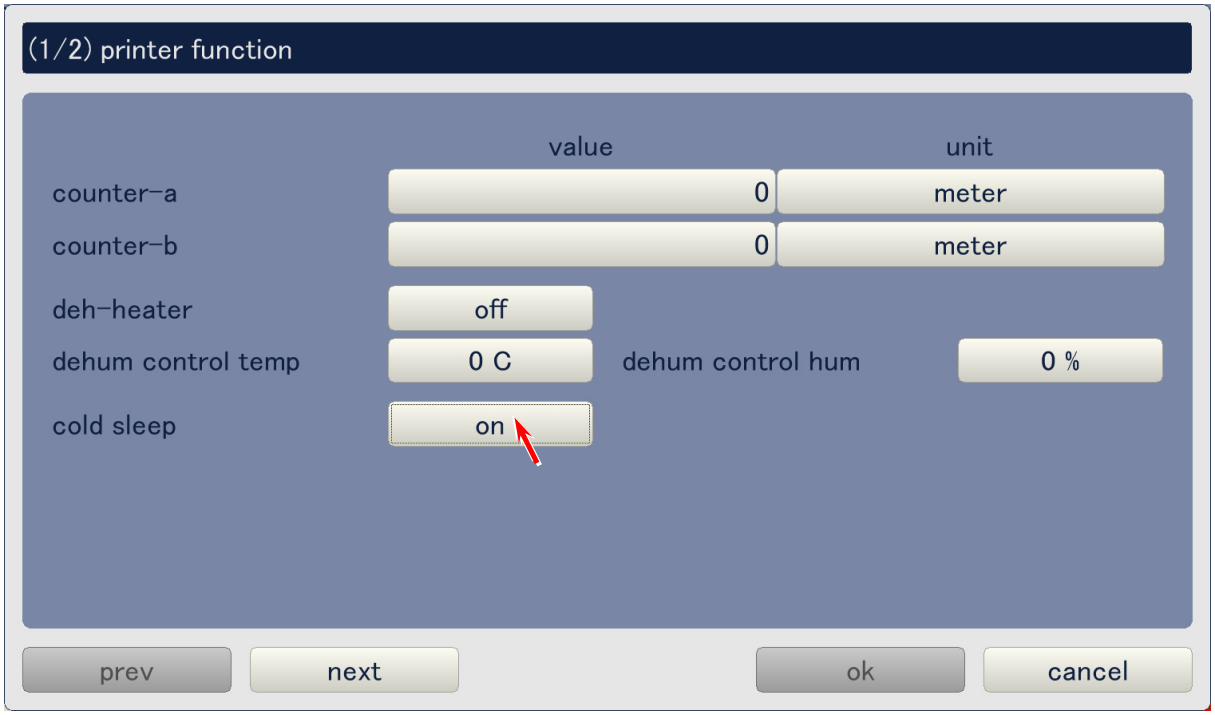
7. Choose **adjustment** in the Service Mode menu.



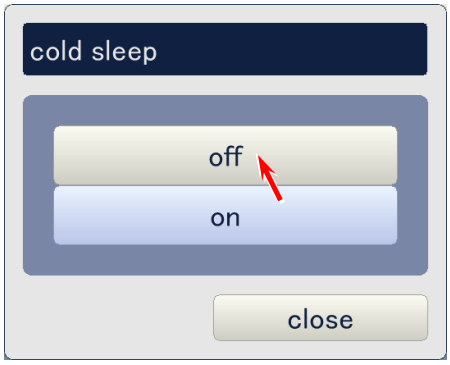
8. Choose **printer function** in the Adjustment Mode menu.



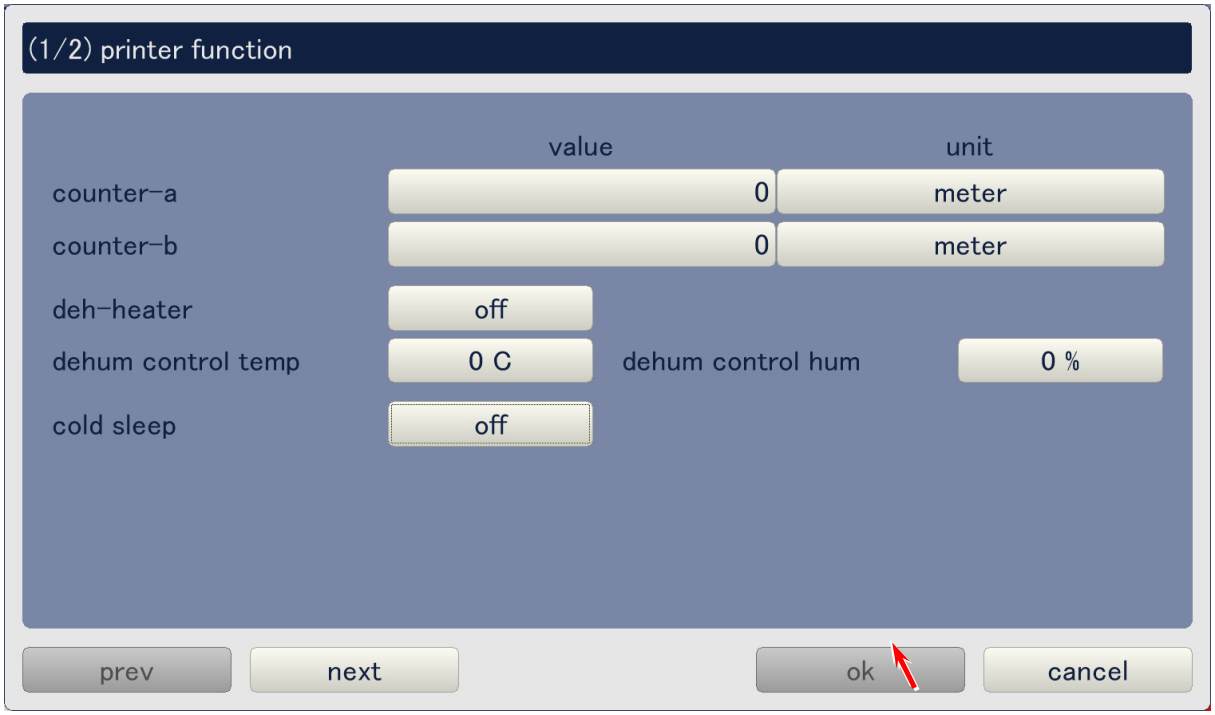
9. Click on the button beside **cold sleep**.



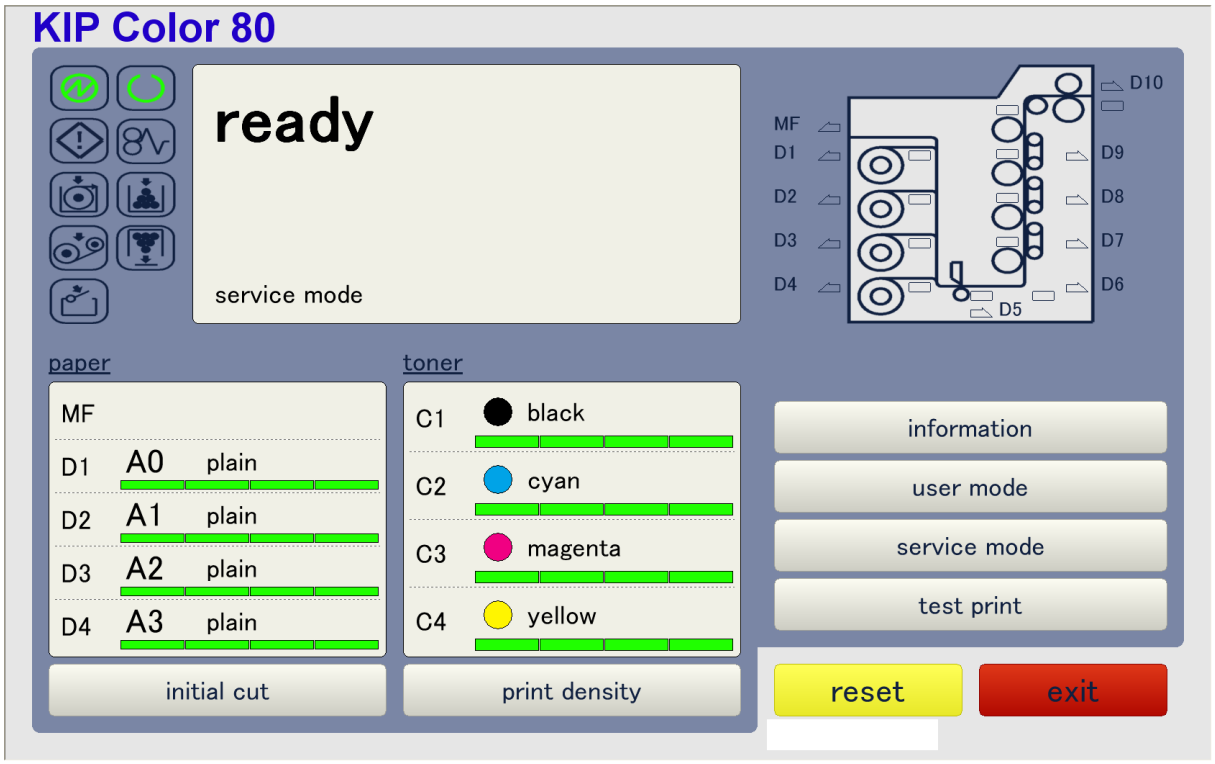
10. Choose **off** to disable Cold Sleep.



11. Click on **ok**.



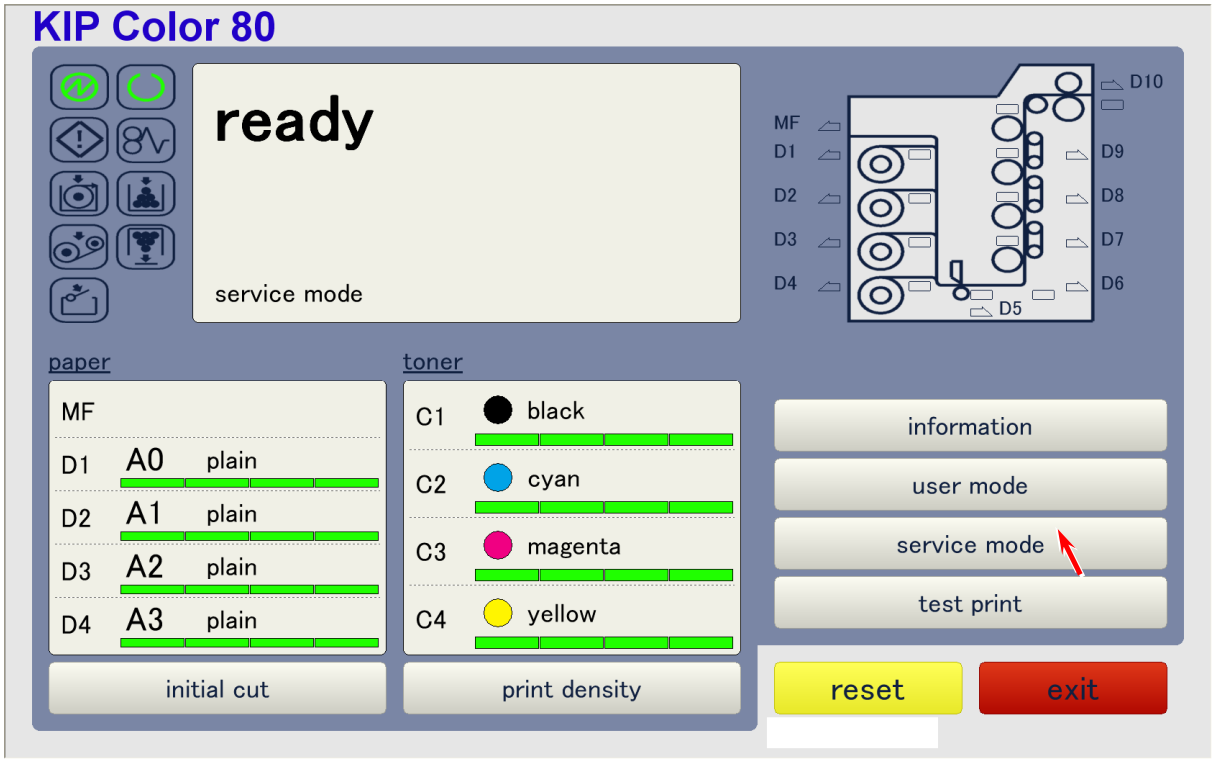
12. KipDiagColor indicates its main screen. Go to next section [2.11.4 Print format (metric/inch - if necessary)] without closing the KpDiagColor.



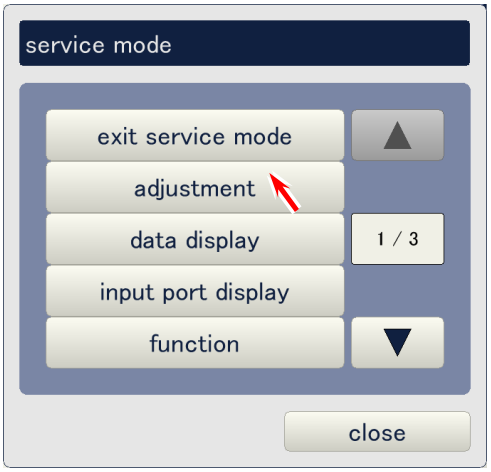
2.11. 4 Print format (metric/inch - if necessary)

Print format of KIP Color 80 printer is set to “inch” by default. Set it to “metric” if necessary.

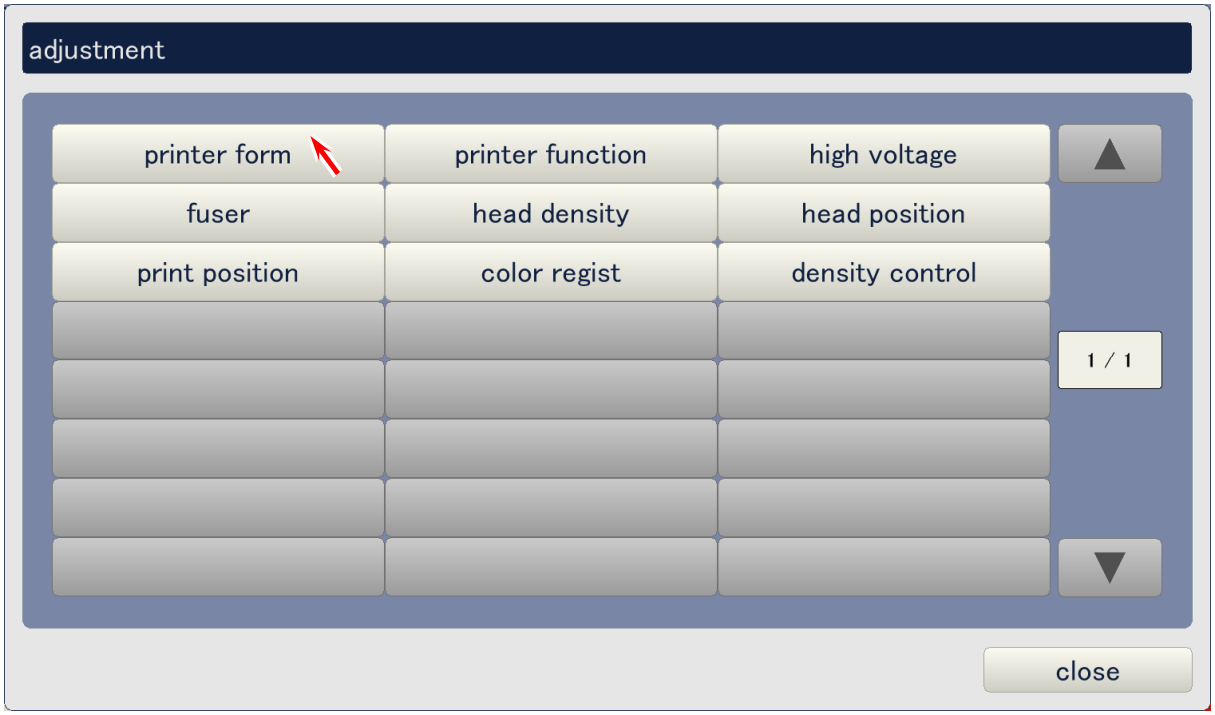
1. Click on **service mode** on the main page of KipDiagColor. (Enter the service password **0000** when required.)



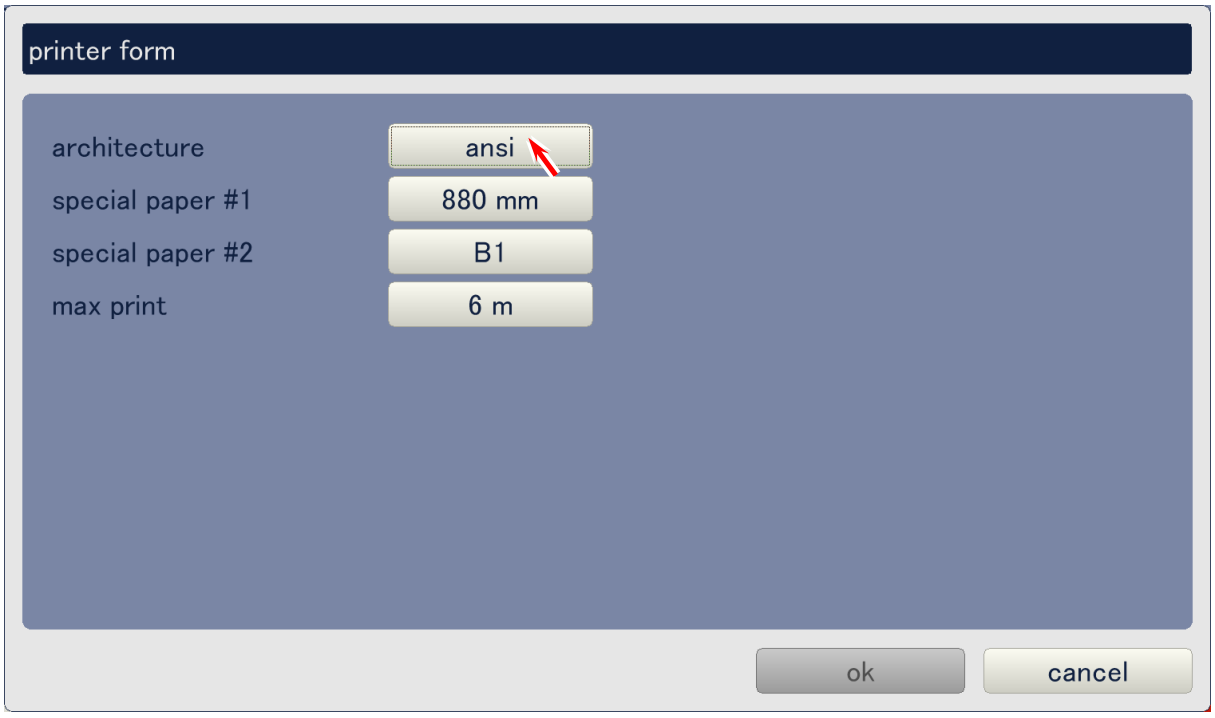
2. Choose **adjustment** in the Service Mode menu.



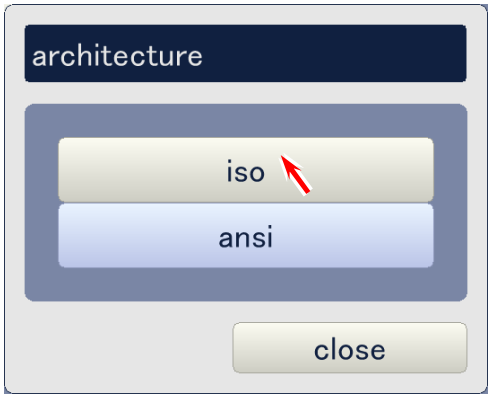
3. Choose **printer form** in the Adjustment Mode manu.



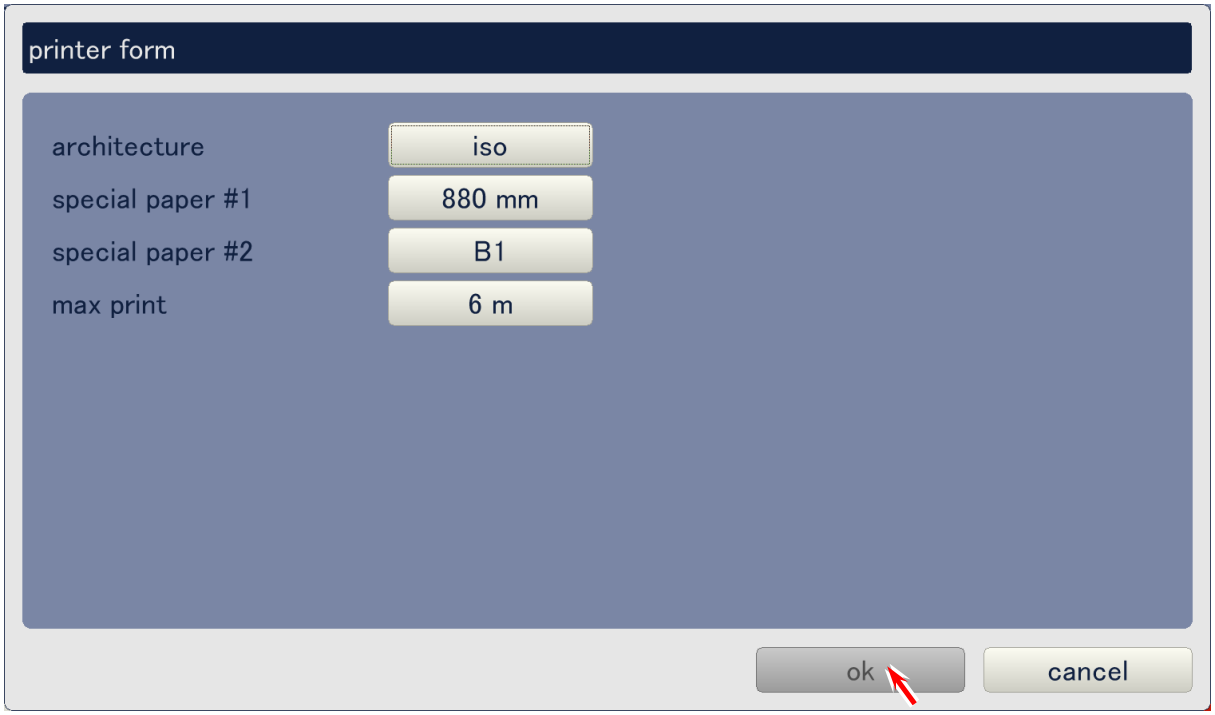
4. Click on the button beside **architecture**.



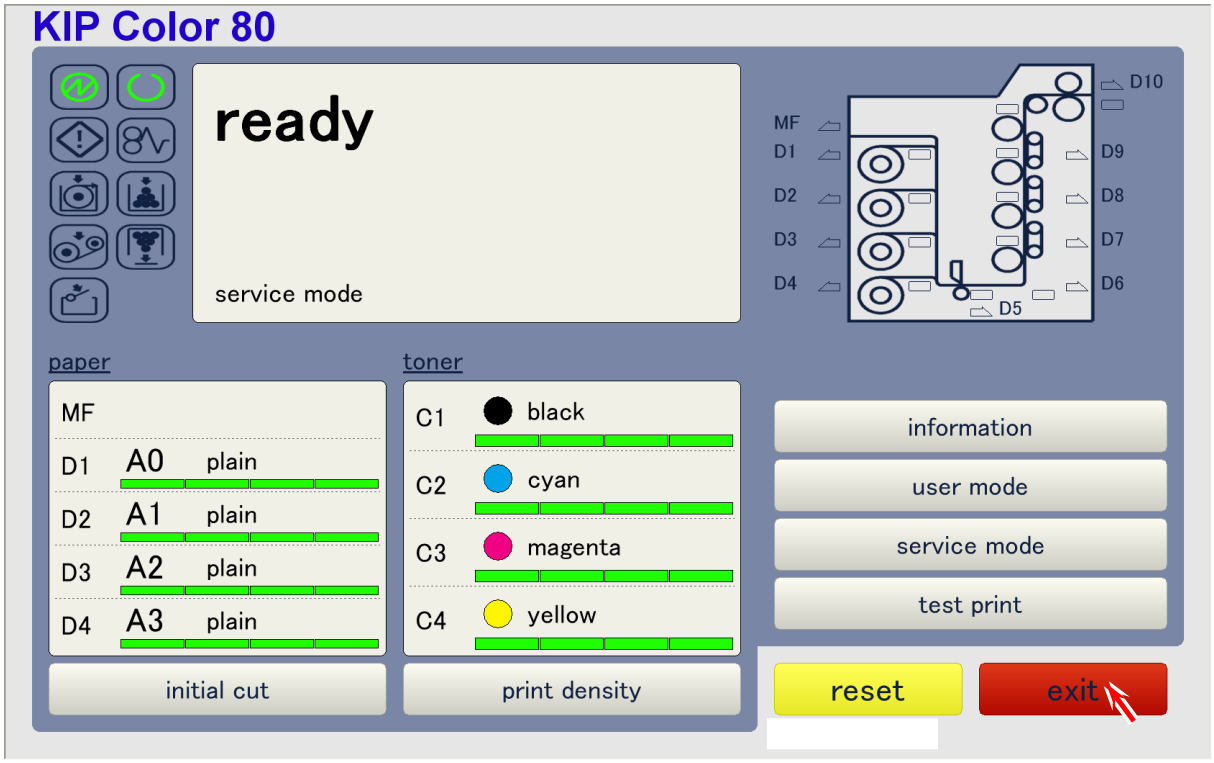
5. Choose **iso** in the pop up window to set the print format to “metric”.



6. Click on **ok**.



7. Click on **exit** to finish the KipDiagColor.



8. **Turn off the KC80 printer, wait few seconds until it completely stops, and turn it on again**. This will change the print format to newly selected setting.

> **NOTE**
>
> Print format does not change if printer is not restarted.

9. Go to next section [2.11.5 Horizontal Color Registration adjustments].

2.11. 5 Horizontal Color Registration adjustments

All of 4 colors must overlap correctly with each other for creating requested color image correctly, which can be achieved by shifting each CMYK color in vertical and horizontal directions. Placement of 4 colors by vertical shifting (front - rear) is called Vertical Color Registration, and the placement by horizontal shifting (left - right) is called Horizontal Color Registration.

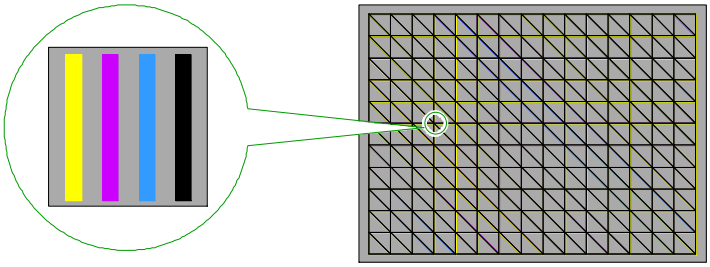
This section instructs the way of Horizontal Color Registration, which can be achieved by the following 2 operations.

(1) Touch-up of machine angle
(2) Automatic Horizontal Color Registration Calibration mode of KIPDiagColor

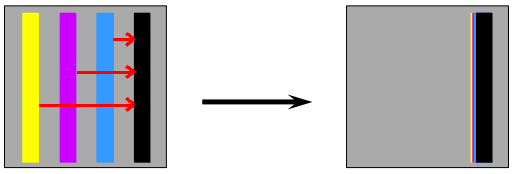
Reference

Horizontal Color Registration

C, M and Y are on the left of K in the following example. These 4 line can overlap correctly with each other if C, M, Y are shifted to the right appropriately. This compensation to shift each C, M and Y horizontally is called Horizontal Color Registration calibration.

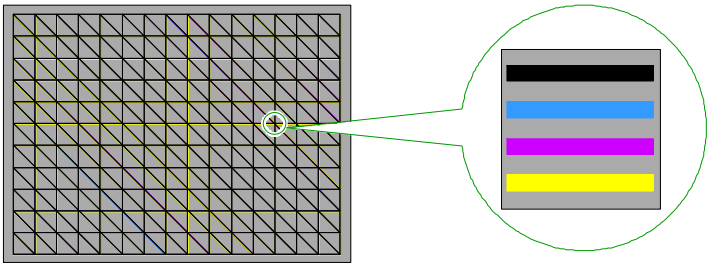


Before calibration After calibration (correct)



Vertical Color Registration

C, M and Y are on the lower positions than K in the following example. These 4 lines can overlap correctly with each other if C, M, Y are shifted to the upper (front) side appropriately. This compensation to shift each C, M and Y vertically is called Color Registration V calibration.



Before calibration After calibration (correct)



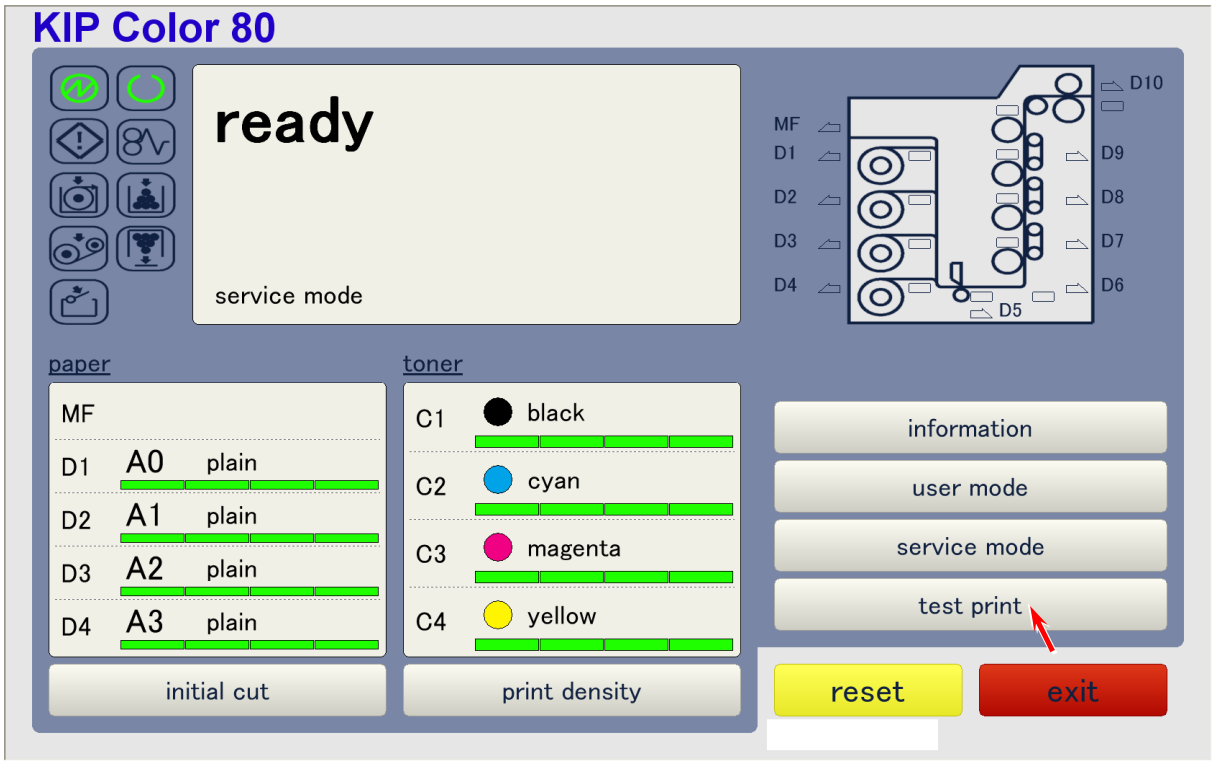
2.11. 5. 1 Touch-up of machine angle

You have already levelled the KIP Color 80 printer correctly using high accuracy water level as instructed in previous section [3 Installing KIP Color 80 Horizontally]. Although this has already achieved almost correct Horizontal Color Registration, more correct registration can be achieved by touching-up the machine angle.

1. Install a 36” wide roll media to any Roll Deck.

> **NOTE**
>
> (1) Use any Roll Deck as the adjustment result of Color Registration H is the same.
> (2) Any type of media can be used as it does not affect the adjustment result of Color Registration H.

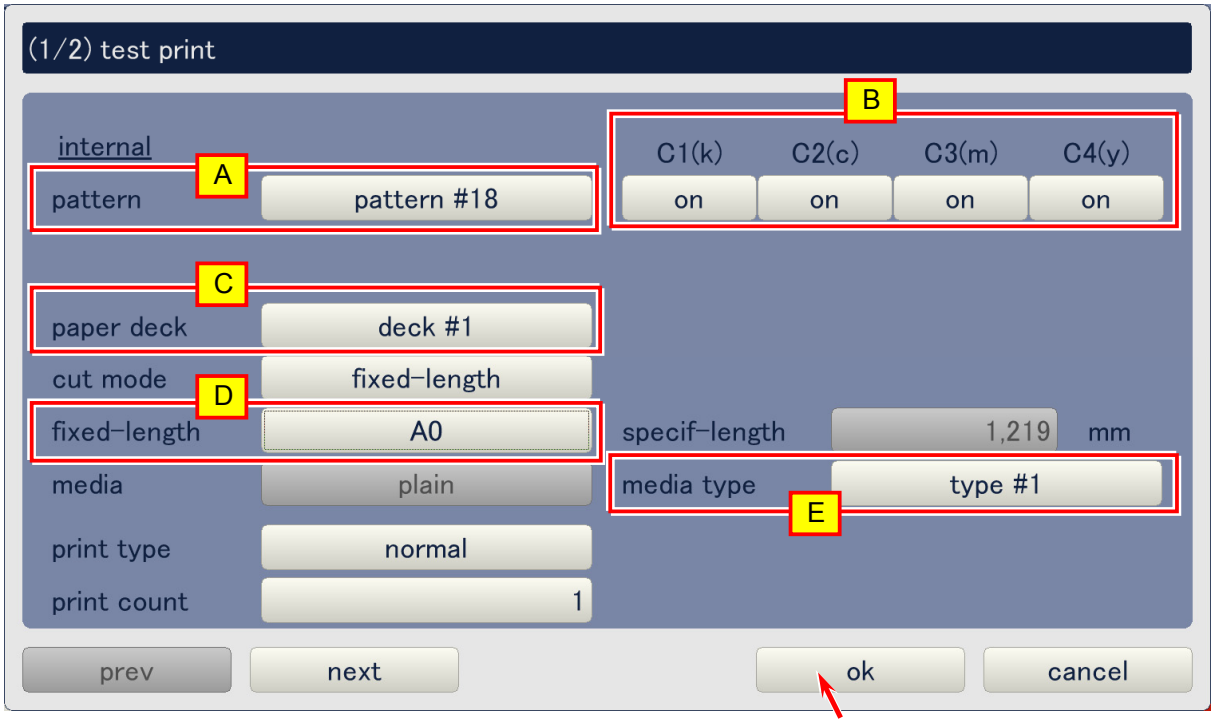
2. After confirming that you have entered the Service Mode, click on **test print**.



3. Change the test print settings as follows on its first page (1/2).

- Set “pattern” to **pattern #18** as A.
- Set all of 4 colors (C1 to C4) to **on** as B.
- Set “paper deck” to **any deck #X** that has the media used for test printing as C.
- Set “fixed-length” to **A0 or 48**” as D. (Cut mode needs to be set to fixed-length.)
- Set “media type” to any type #X according to the used media as E. (Selecting “type #1” will be OK in case of machine setup.)

Click on **ok** after changing as the above. The printer prints out test pattern #18.

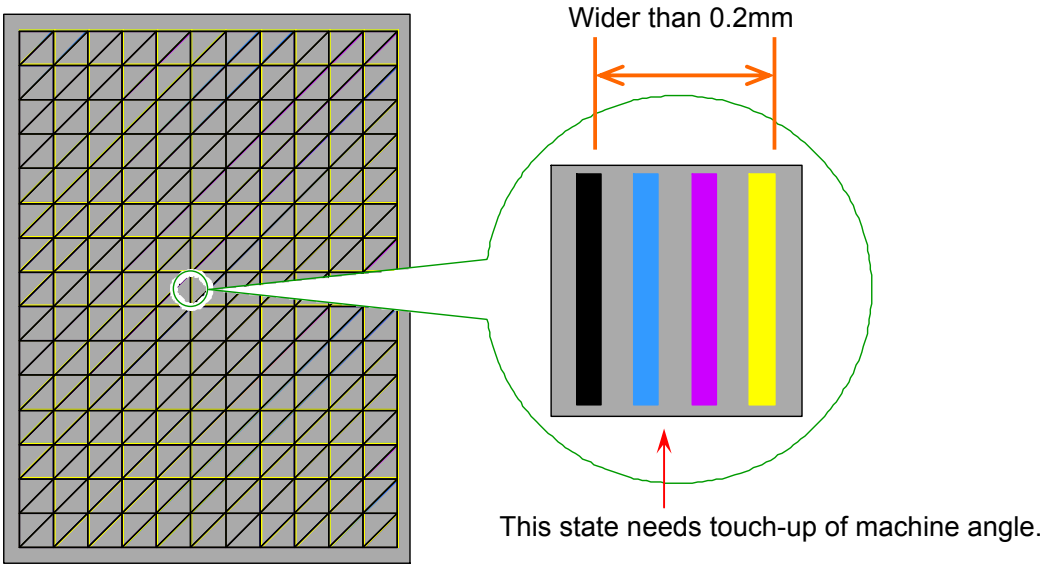


NOTE

If you access the test print page without entering the Service Mode, a “brief” test print page as the right will be indicated instead of the above customisable test print page.
Please enter the Service Mode first then access the test print page again in this case.

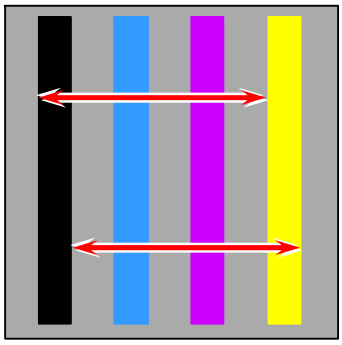


4. Observe the **vertical CMYK lines** of test pattern #18. If the distance between most outside 2 lines is wider than **0.2mm**, you have to touch up the machine angle for better Horizontal Color Registration..

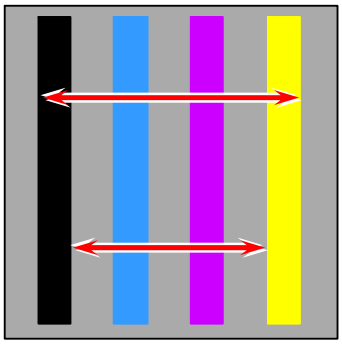


NOTE

Measure between both left edges (or both right edges) of 2 most outside lines for correct measurement.



Correct measurement
(left-left or right-right)

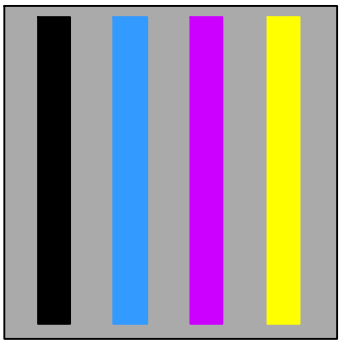


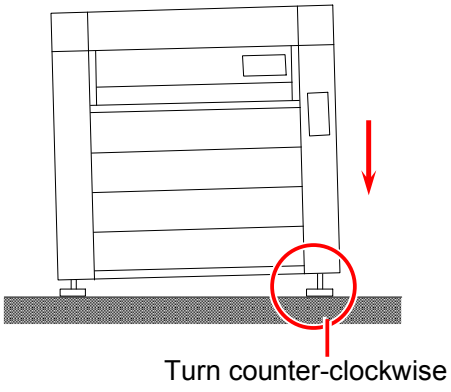
Incorrect measurement
(left-right or right-left)

5. Touching up of machine angle can be achieved by turning only the right-front Adjuster Bolt 1.
(Do not turn other Adjuster Bolts.)

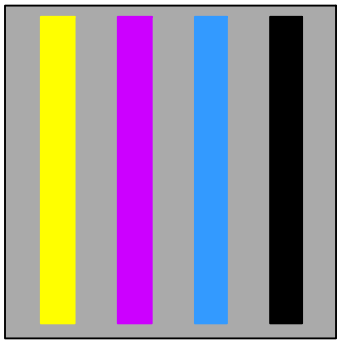


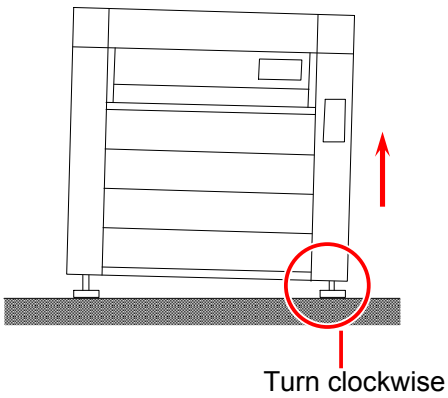
a) If 4 colors are ordered as **K, C, M and Y from left to right**, the right side of the machine is high. Turn the Adjuster Bolt 1 very slightly (30 degrees max) **counter-clockwise** to lower the right side.



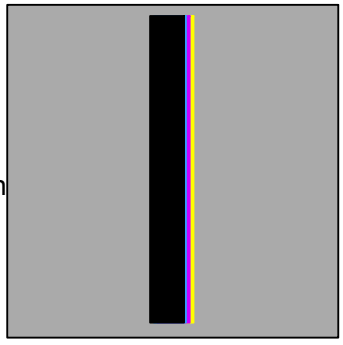


b) If 4 colors are ordered as **Y, M, C and K from left to right**, the right side is low. Turn the Adjuster Bolt 1 very slightly (30 degrees max) **clockwise** to raise the right side.





6. Print out the test pattern #18, and check the image again. If vertical lines of CMYK look overlapped as this example, the machine angle is correct. (Requirement = 4 colors must be within 0.2mm.)



7. Go to next section [2.11.5.2 Automatic Horizontal Color Registration Calibration Mode via KIPDiagColor] without closing the KpDiagColor.

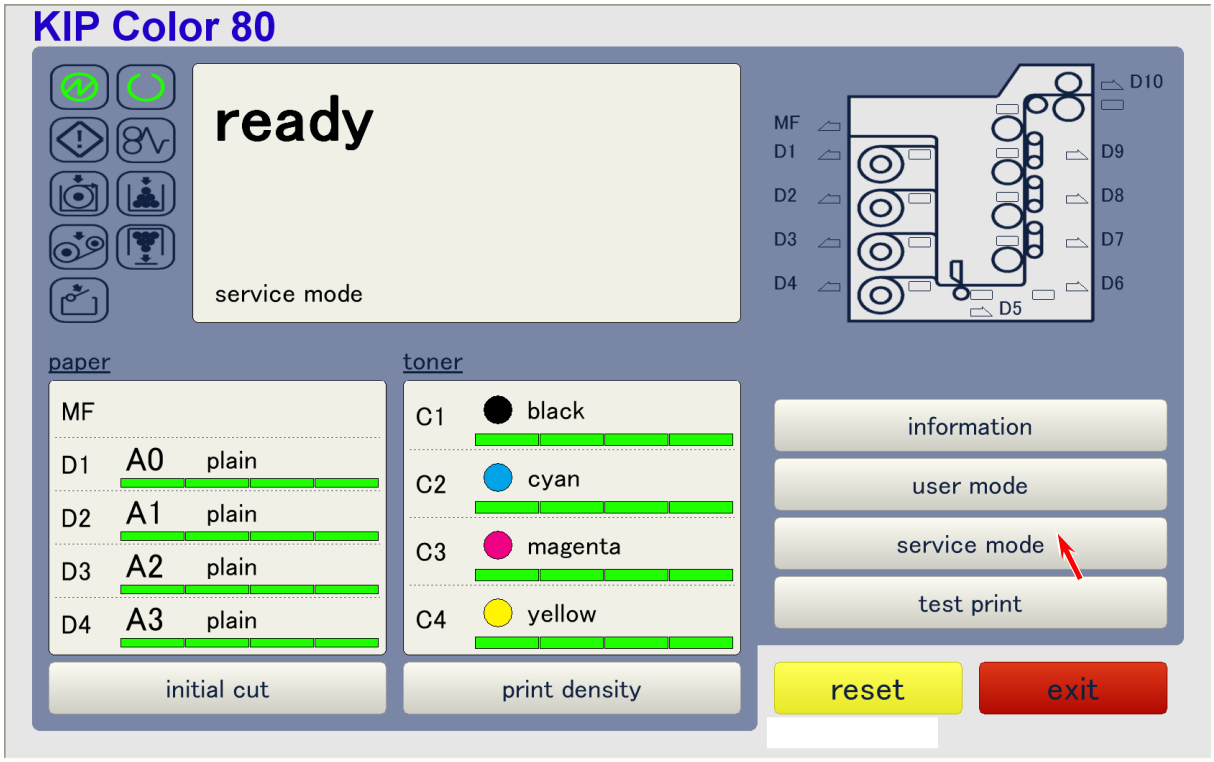
2.11. 5. 2 Automatic Horizontal Color Registration Calibration Mode via KIPDiagColor

After touching-up the machine angle, perform Automatic Color Registration H Calibration Mode via KipDiagColor. This will achieve much more correct Horizontal Color Registration by software compensation.

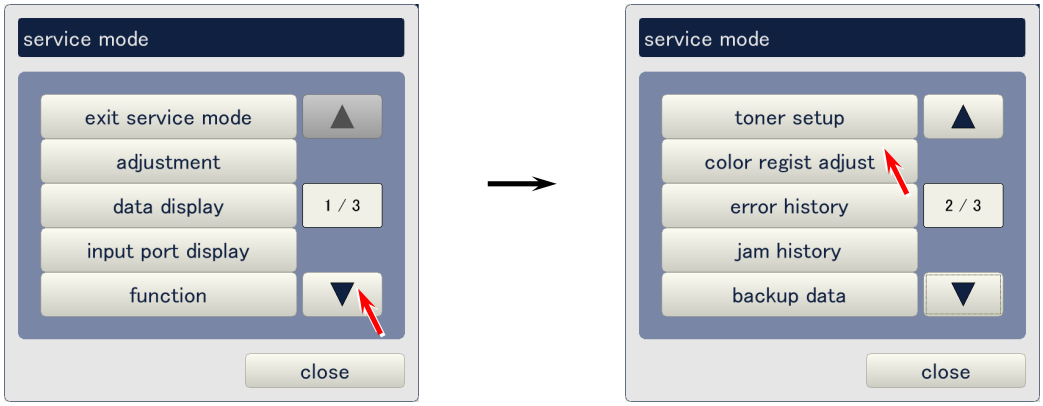
1. Install a 36” wide roll media to any Roll Deck.

> **⚠ NOTE**
>
> (1) Use any Roll Deck as the adjustment result of Color Registration H is the same.
> (2) Any type of media can be used as it does not affect the adjustment result of Color Registration H. However, preferably use the recommended media for this adjustment.

2. Click on service mode on the main screen of KipDiagColor. (Enter the service password **0000** when required.)



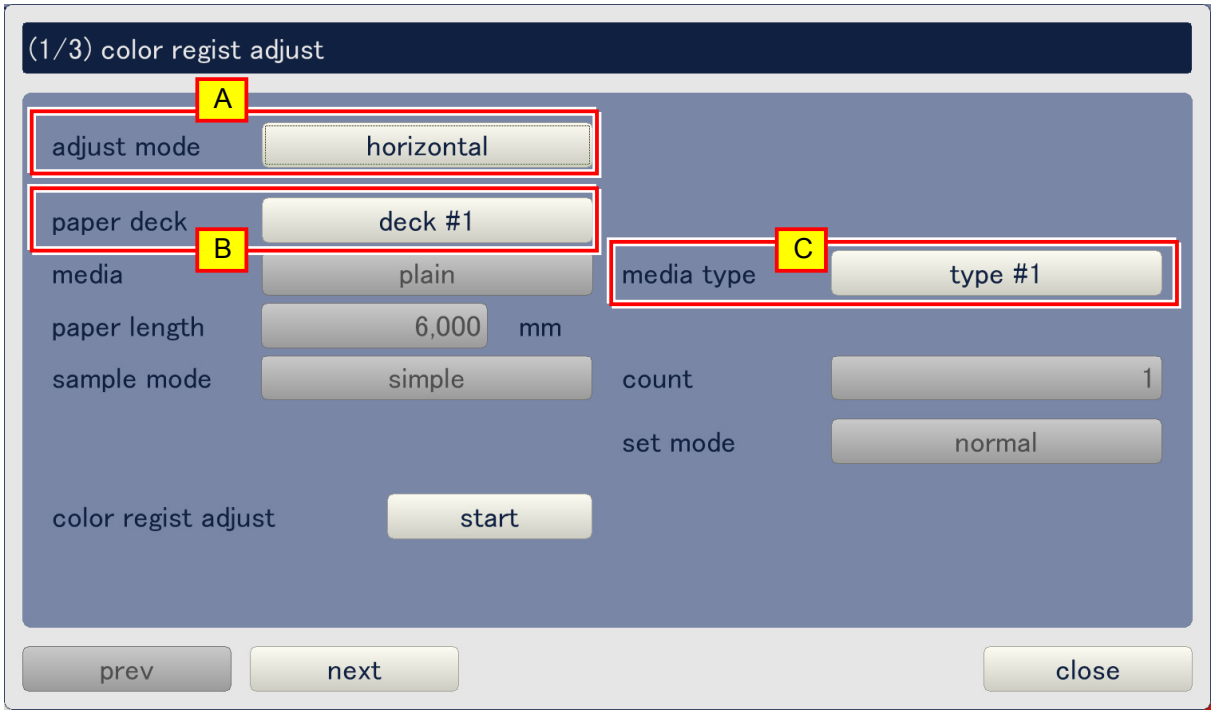
3. Choose **color regist adjust** in the second page (2/3) of Service Mode menu.



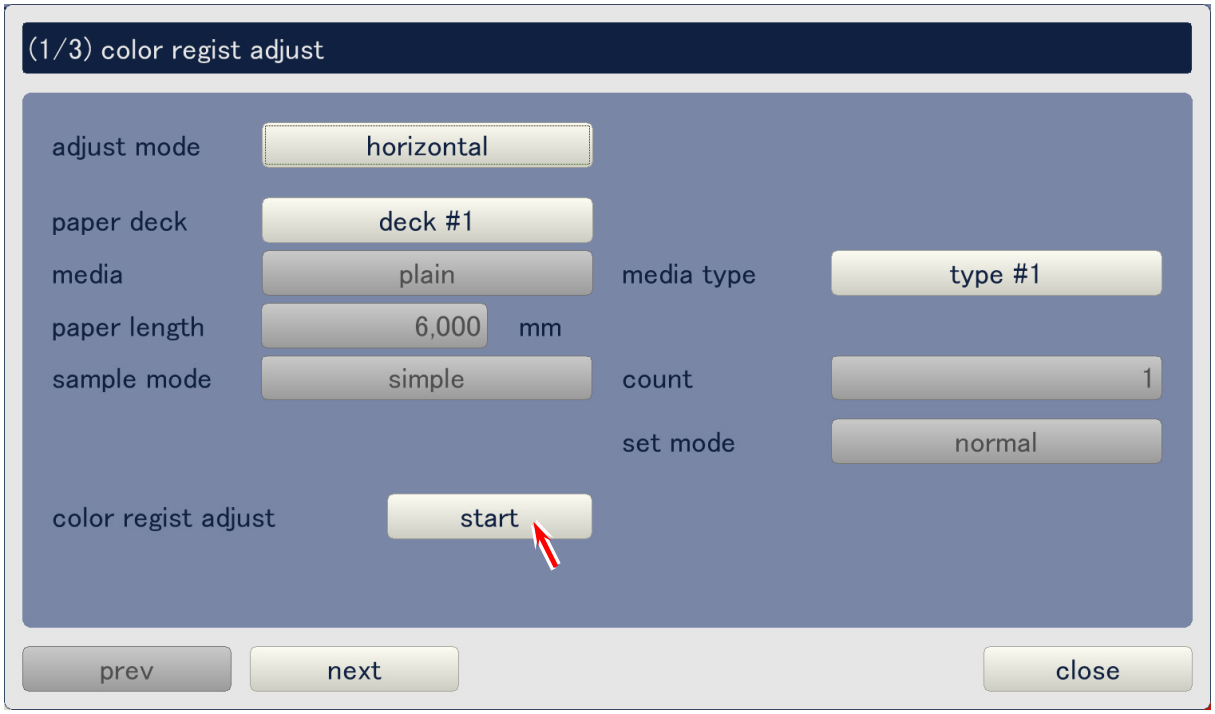
First page　　Second page

4. Change the settings as follows in the first page (1/2) of Color Regist Adjust Page.

- Set “adjust mode” to **horizontal** as A.
- Set “paper deck” to **any deck #X** that has the media used for calibration as B.
- Set “media type” to any type #X according to the used media as C. (Selecting “type #1” will be OK in case of machine setup.)

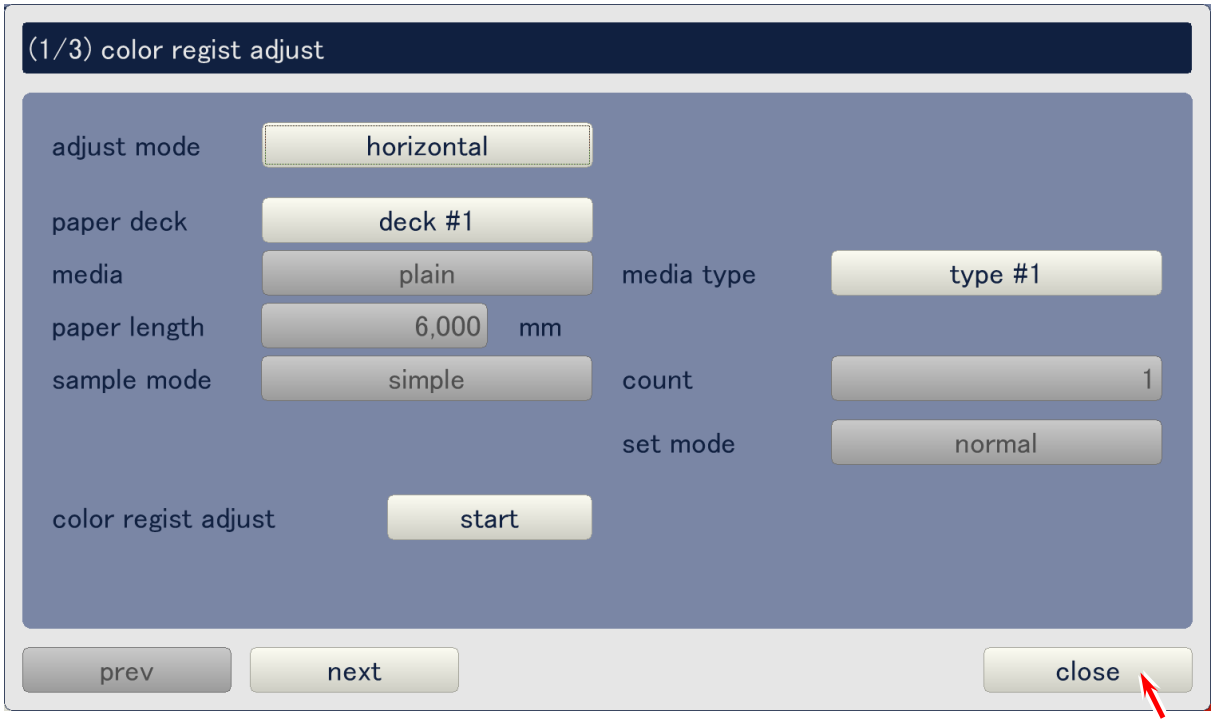


5. Click on **start** to start the Automatic Horizontal Color Registration Calibration Mode. An exclusive pattern calibration will be printed. Please wait until the following message dialog disappears.

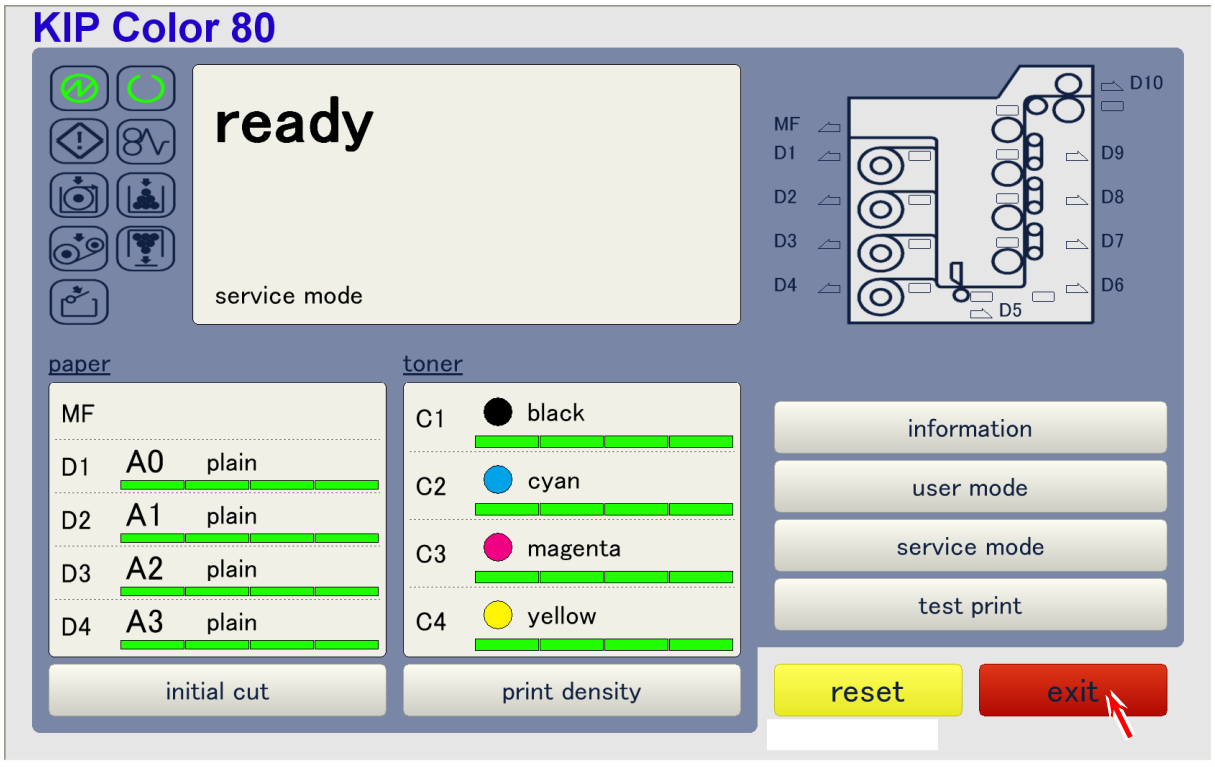




6. Click on **close** when the calibration mode finishes.



7. Close the KipDiagColor by clicking on **exit**, and go to next section [2.12 KC80 IPS Setup].



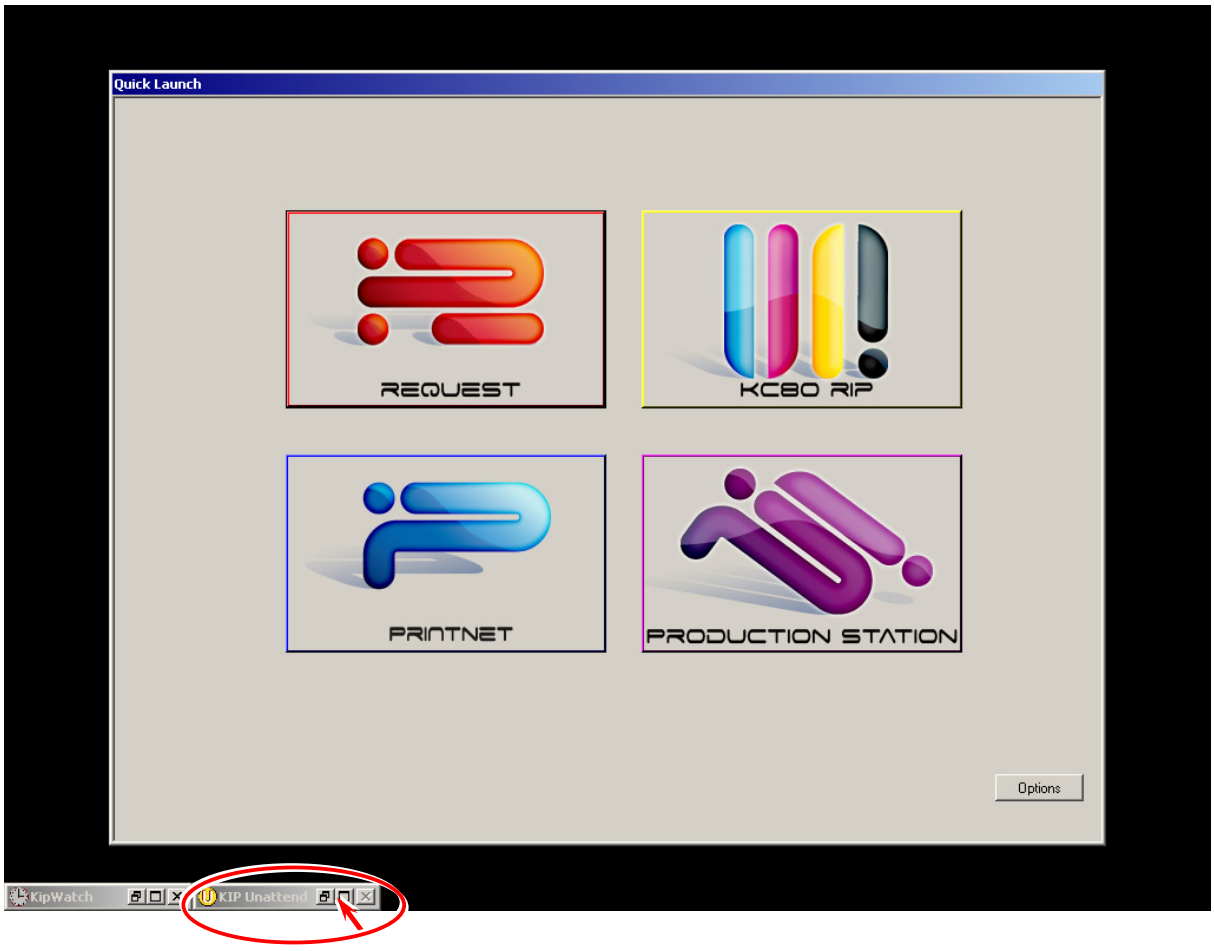
2.12 KC80 IPS Setup

2.12. 1 Regional Setting (language and print format) of KC80 IPS

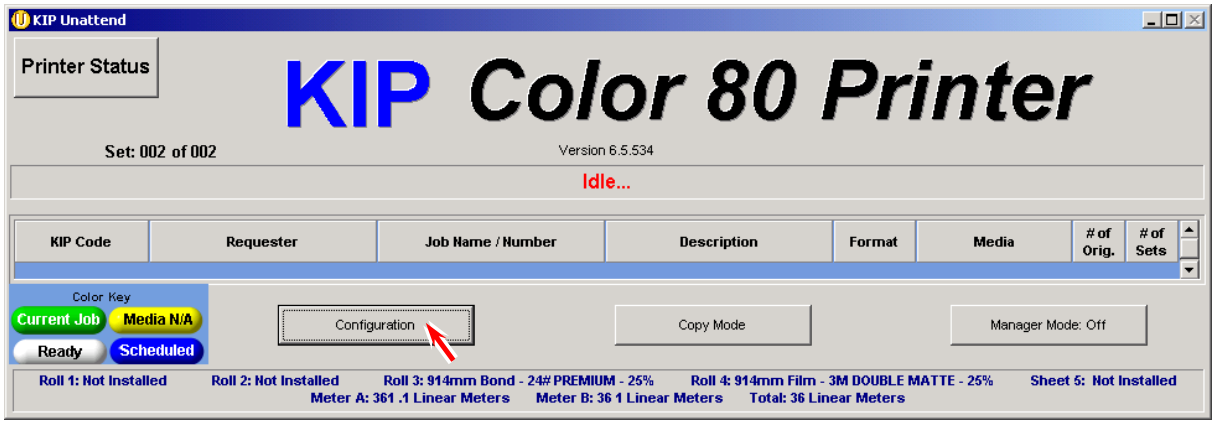
Regional setting on KC80 IPS is set to “English-US” by default. Change it appropriately according to your residence, which will accordingly change the operation language and print format (metric/inch) correctly.

> **NOTE**
>
> The operation explained in this section does not change the print format of KC80 RIP.
> Please change it independently seeing the section [12.7 Setup of KC80 RIP] on later page.

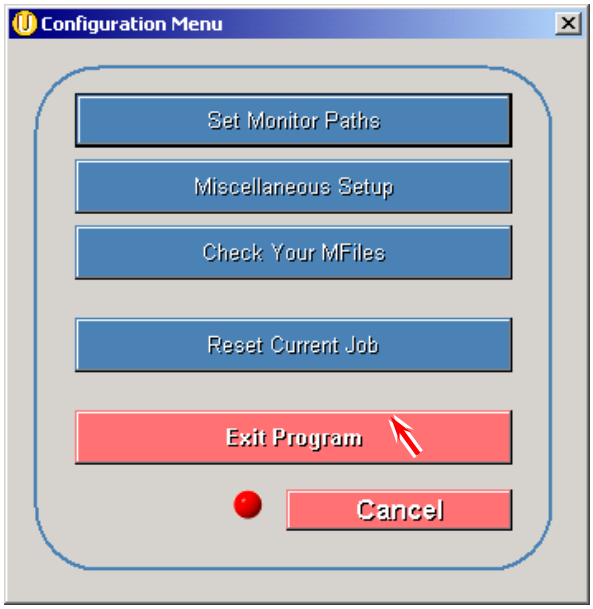
1. You will find KIP Unattend being minimized on the bottom of the screen. Expand it.



2. Click on **Configuration**.



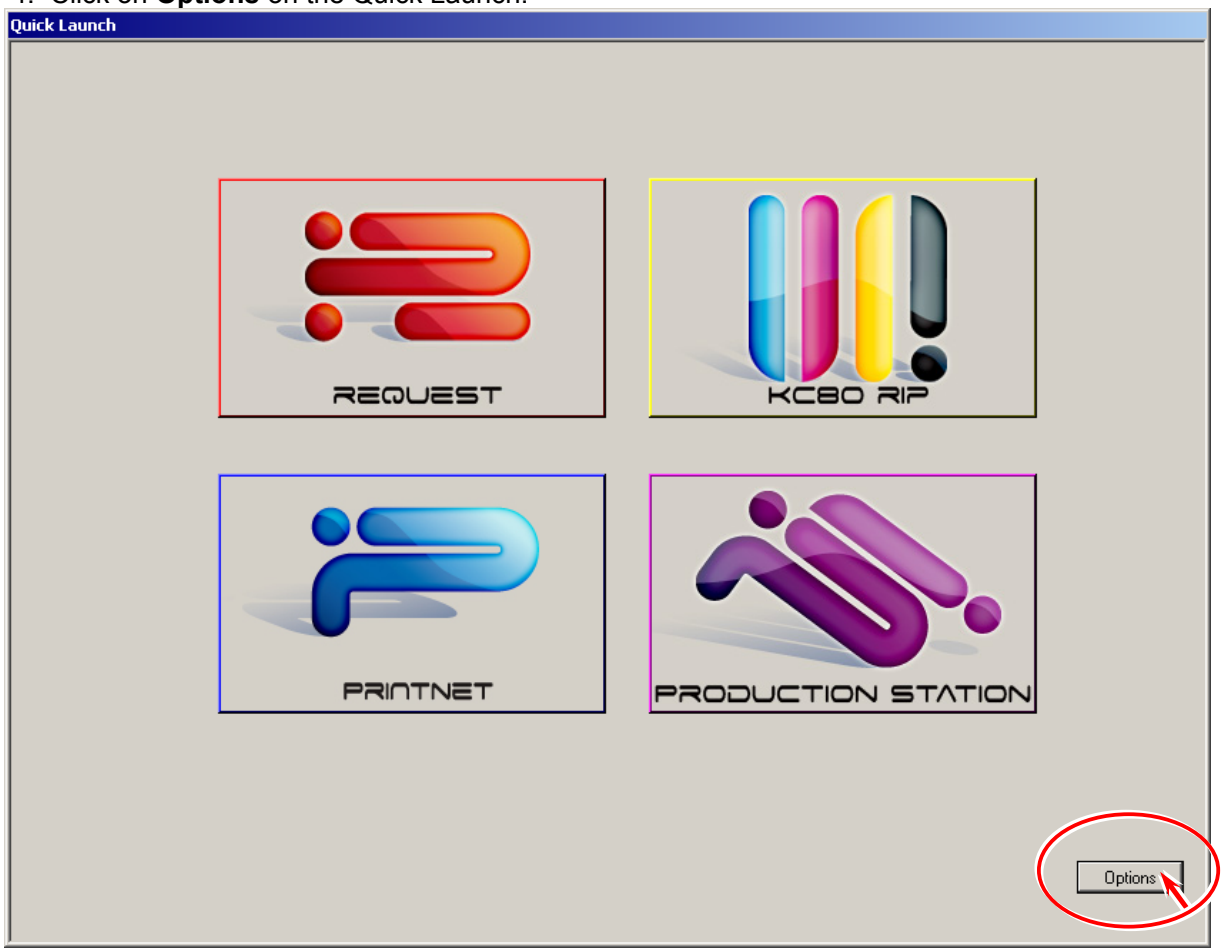
3. Click on **Exit Program** to exit the KIP Unattend,



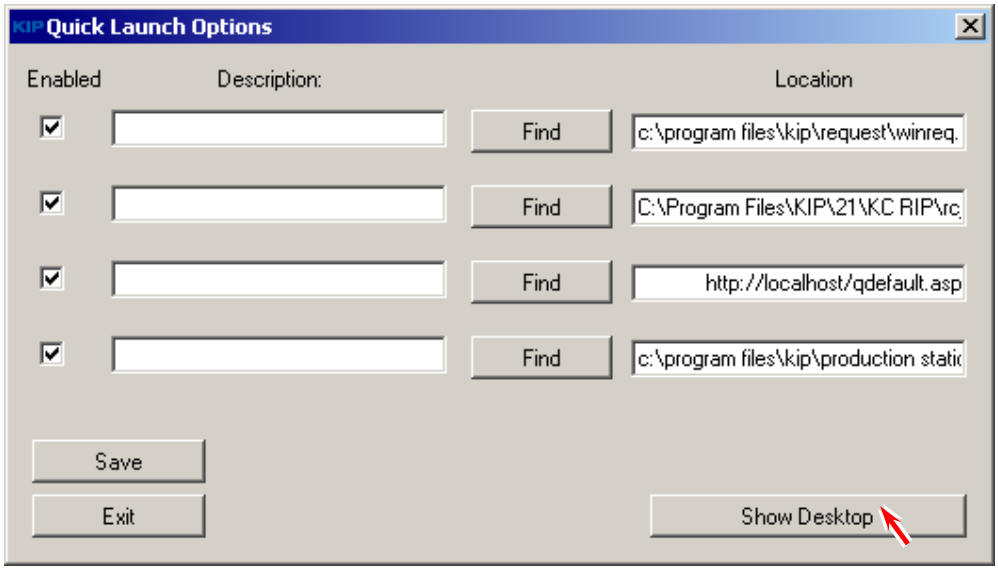
NOTE

KIP Unattend needs to be finished prior to changing the language setting.

4. Click on **Options** on the Quick Launch.



5. Click on **Show Desktop** in the Quick Launch Options.



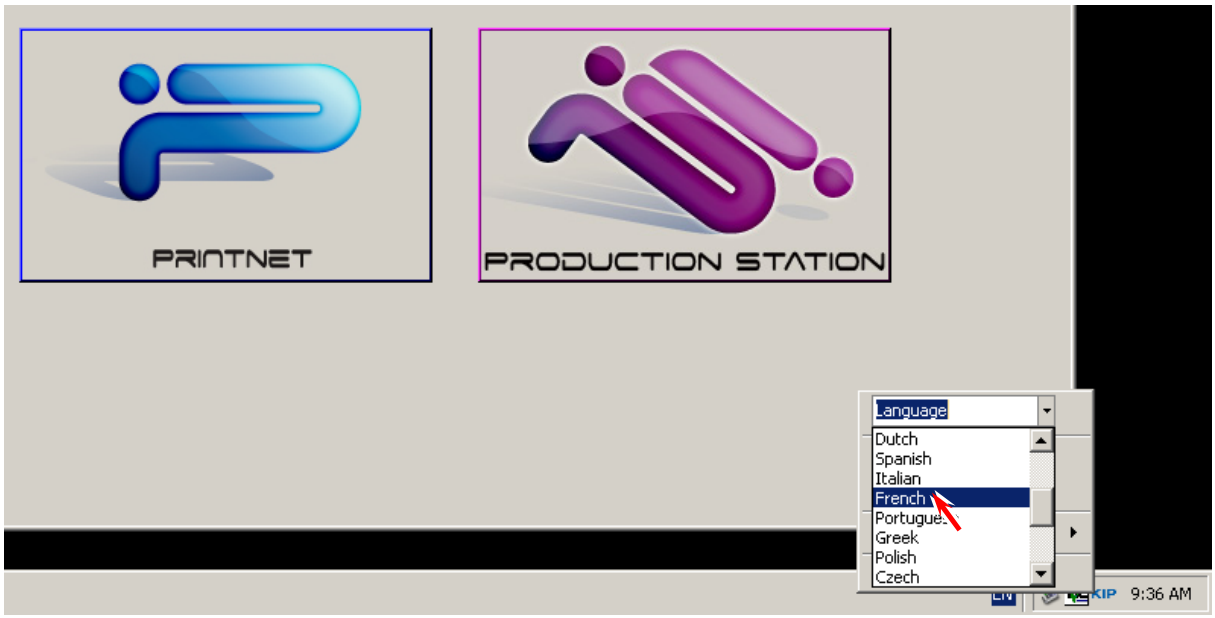
6. Type service password **kip** in the input field then click on **OK**. Windows desktop is indicated.



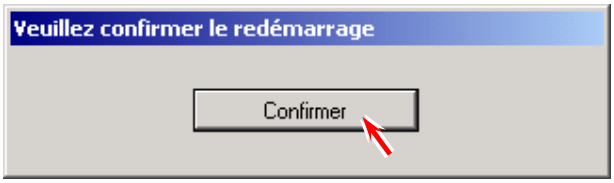
7. You will find **KIP** in the task tray. Right-click **KIP** to indicate its sub menu.



8. Set **Language** to your local language. (Example : French)



9. Click on **Confirm** (Confirmer in French) in the following message dialog. The IPS will automatically reboot, and the language will change to the selected local language.



⚠ NOTE

(1) It may take longer time than usual for rebooting in case you changed the Regional Setting.

(2) Printer format will be set to metric automatically when the regional setting is set to any region other than English-US.

(3) Note that you have to make more operation to change the printer format of KC80 RIP. See [8. Setup of KC80 RIP] on later page.

10. Go to next section [2.12.2 Setting of IP Address, “time zone” and “date & time”].

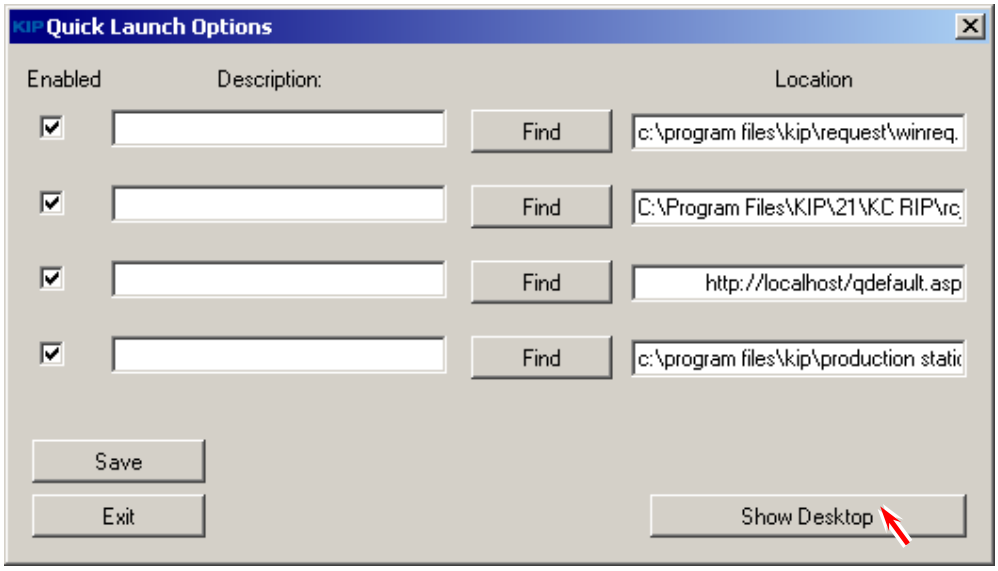
2.12. 2 Setting of IP Address, “time zone” and “date & time”

> **NOTE**
>
> Do not connect optional USB dongles and LAN Cable before completing the settings of IP Address, “time zone” and “date & time”.
>
> - Confliction of IP Address may occur if LAN cable is connected before setting the IP Address.
> - Some trouble may happen if USB dongle is connected before setting “time zone” and “date & time” correctly.

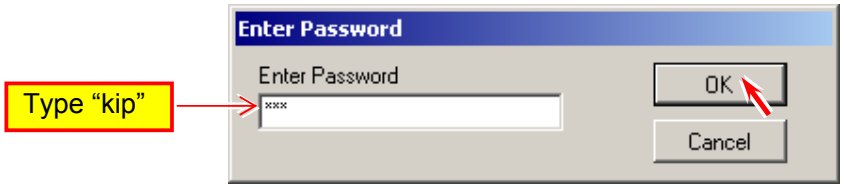
1. Click on **Options** on the Quick Launch.



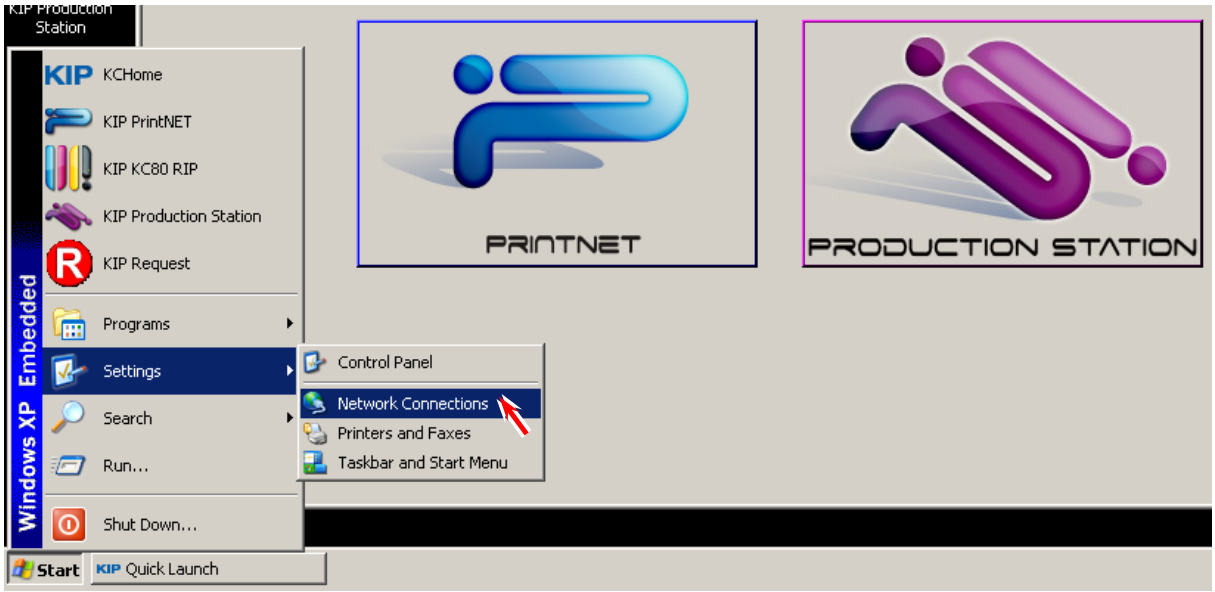
2. Click on **Show Desktop** in the Quick Launch Options.



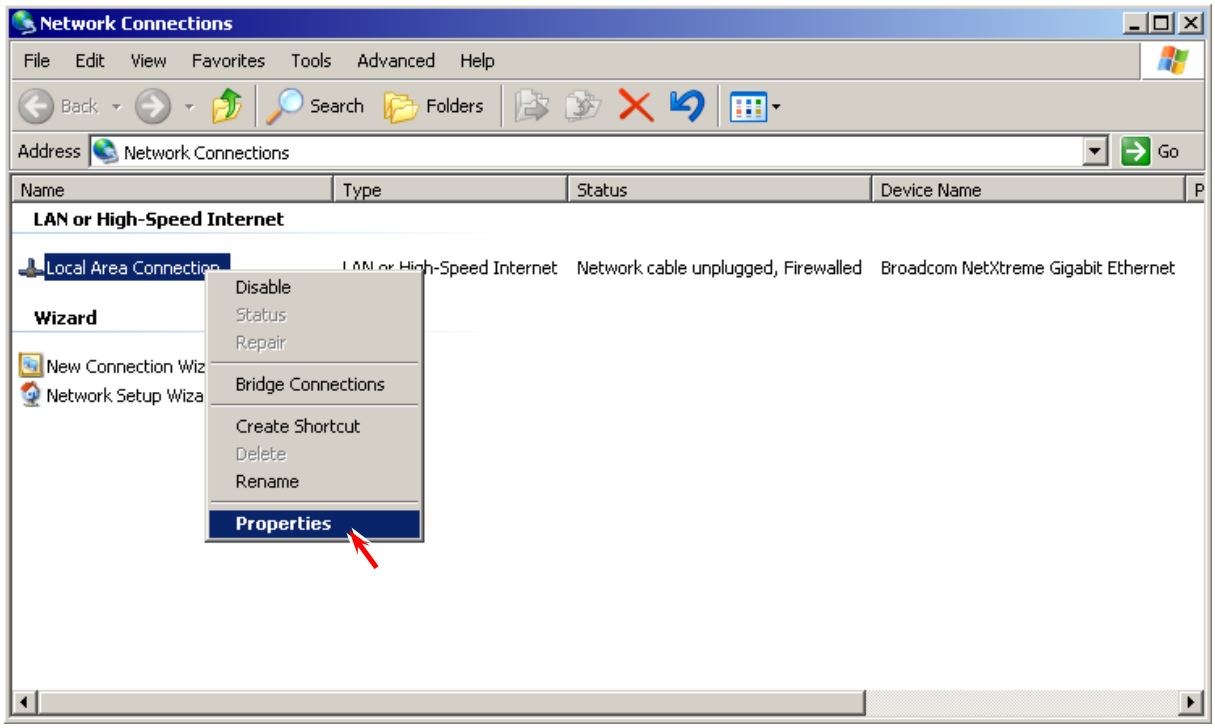
3. Type service password **kip** in the input field then click on **OK**. Windows desktop is indicated.



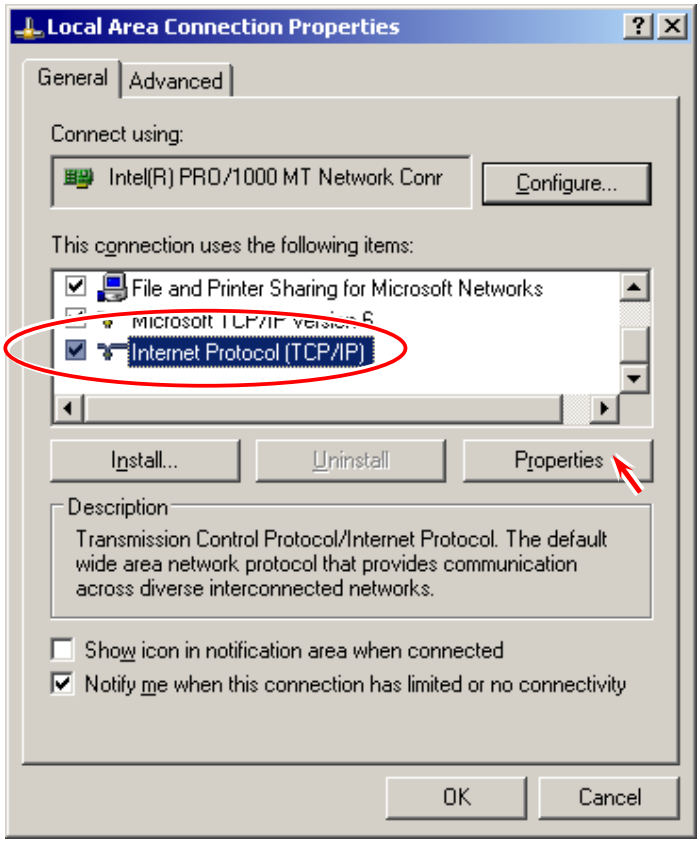
4. Choose **Network Connections**. (Start → Settings →Network Connections)



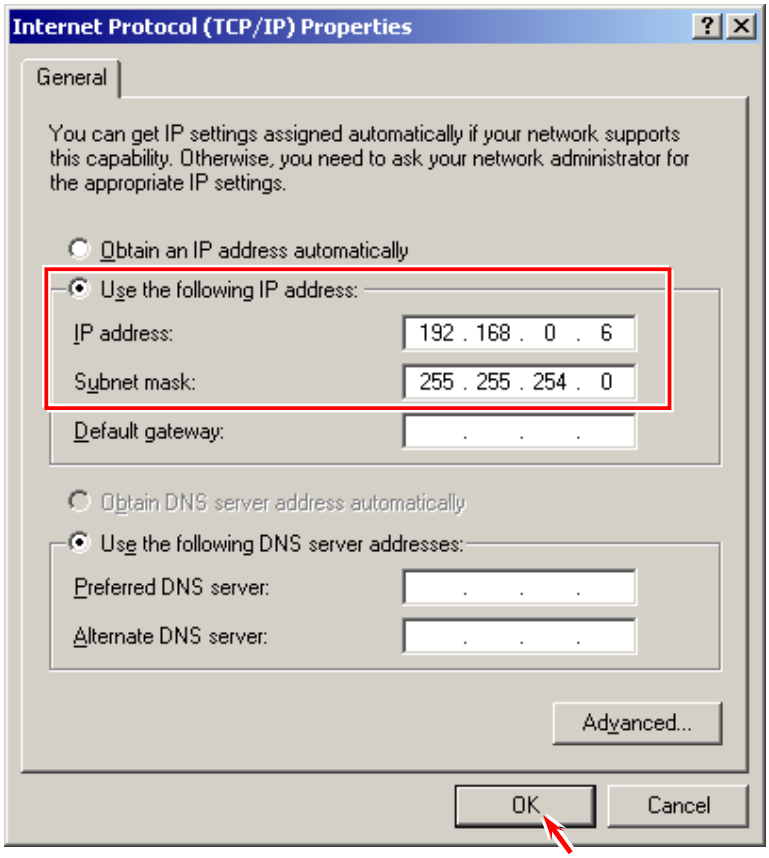
5. Right-click **Local Area Connection** and choose **Properties** in the sub menu.



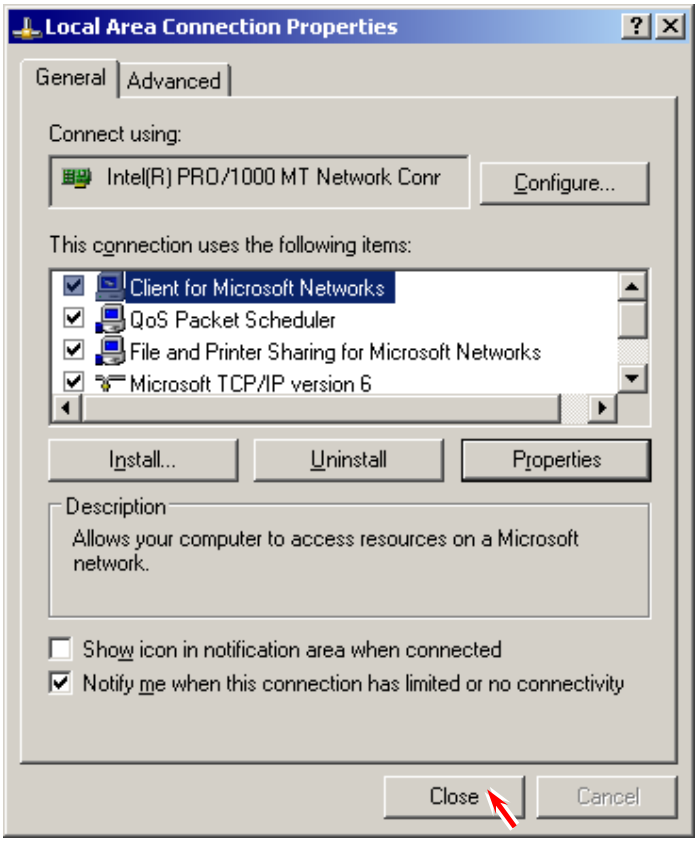
6. Choose **Internet Protocol (TCP/IP)** and click on **Properties**.



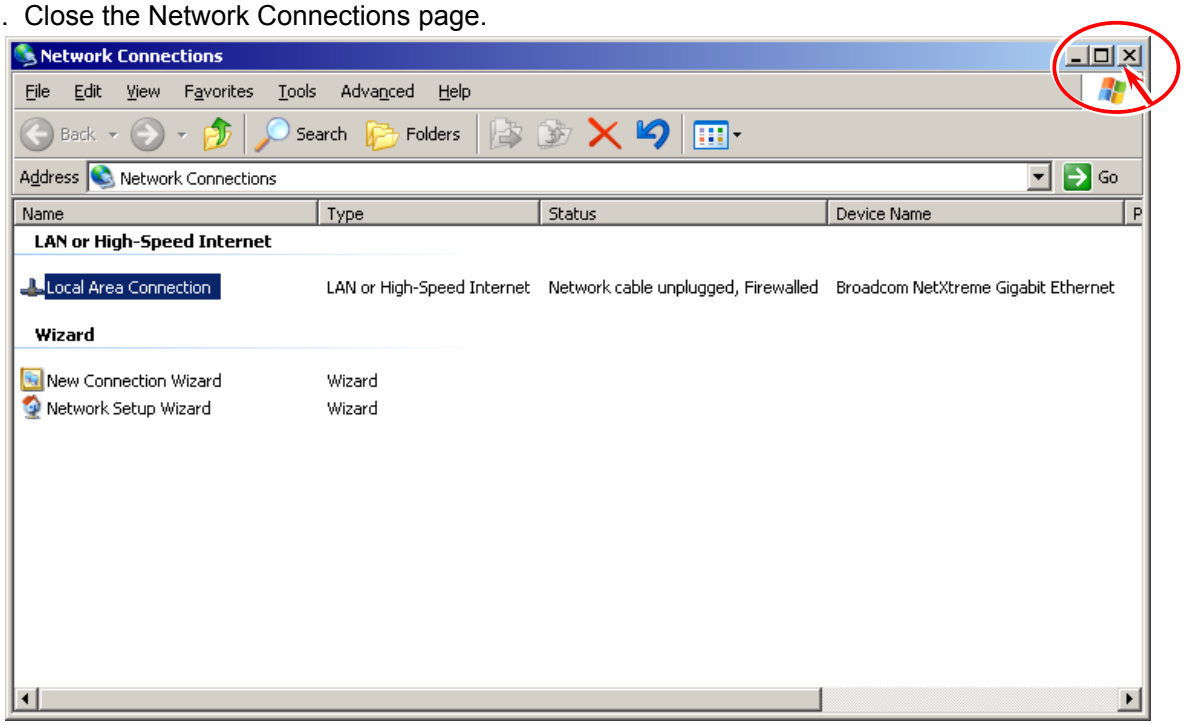
7. Specify correct IP Address and Subnet mask according to the network environment of installation site, and click on **OK**.



8. Click on **Close**.



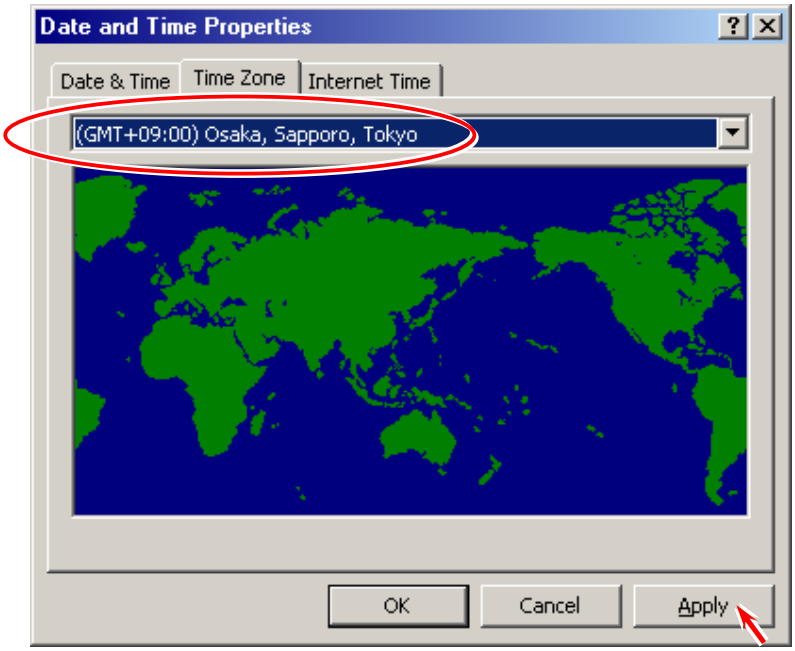
9. Close the Network Connections page.



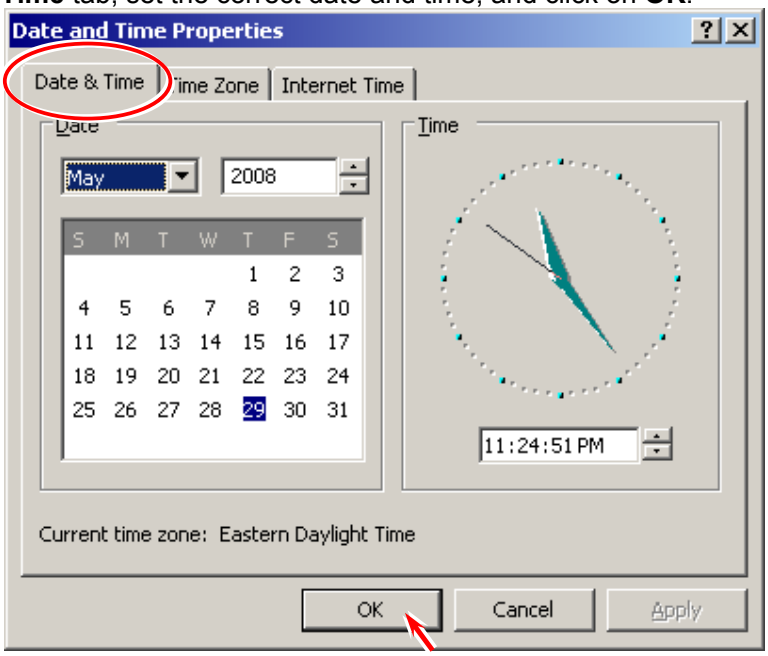
10. Double-click on the “time” in task tray.



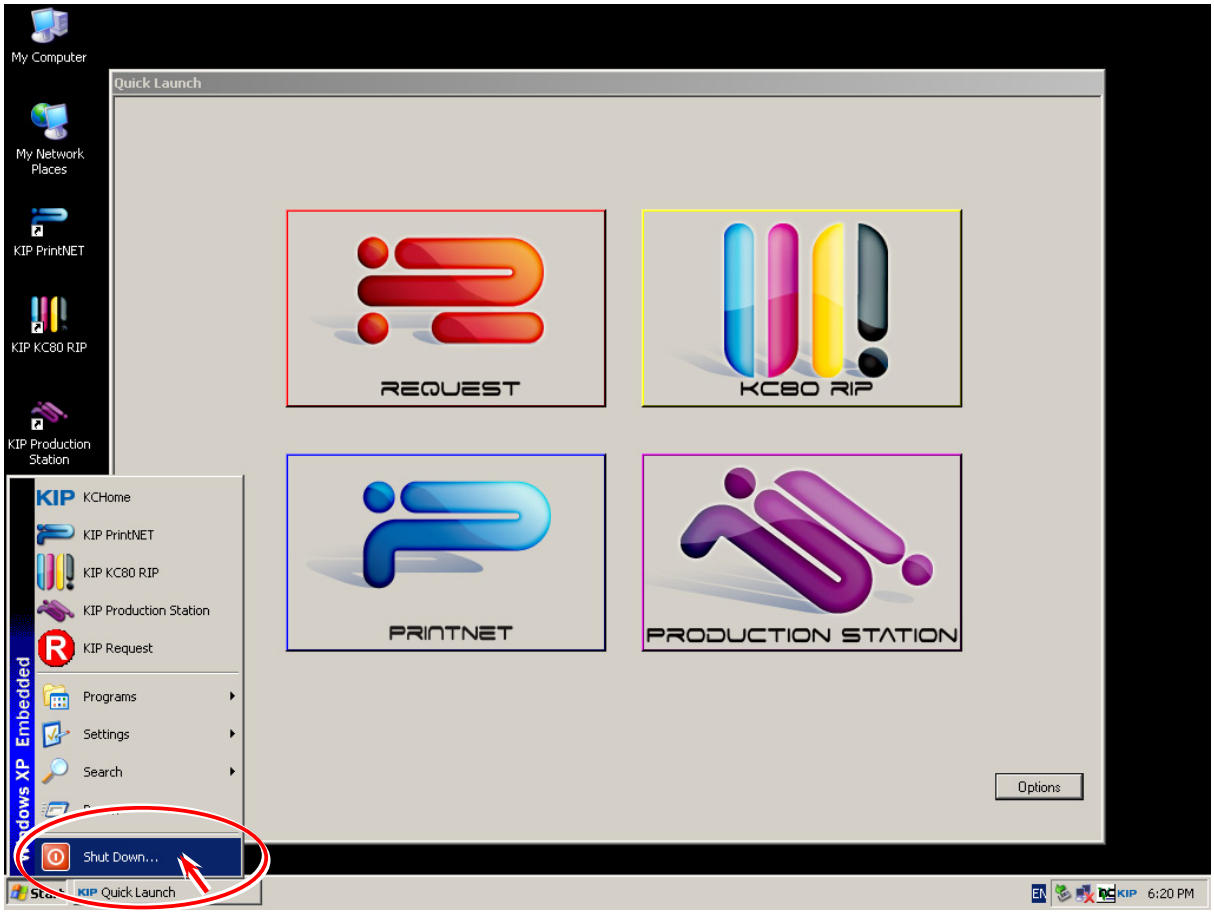
11. Open **Time Zone** tab, set the time zone correctly to your local region, and click on Apply.



12. Open **Date & Time** tab, set the correct date and time, and click on **OK**.



13. Reboot the KC80 IPS by ordinal way of Windows rebooting. (Start → Shut Down)



14. Go to next section [2.12.3 Connection of USB Dongles and LAN Cable].

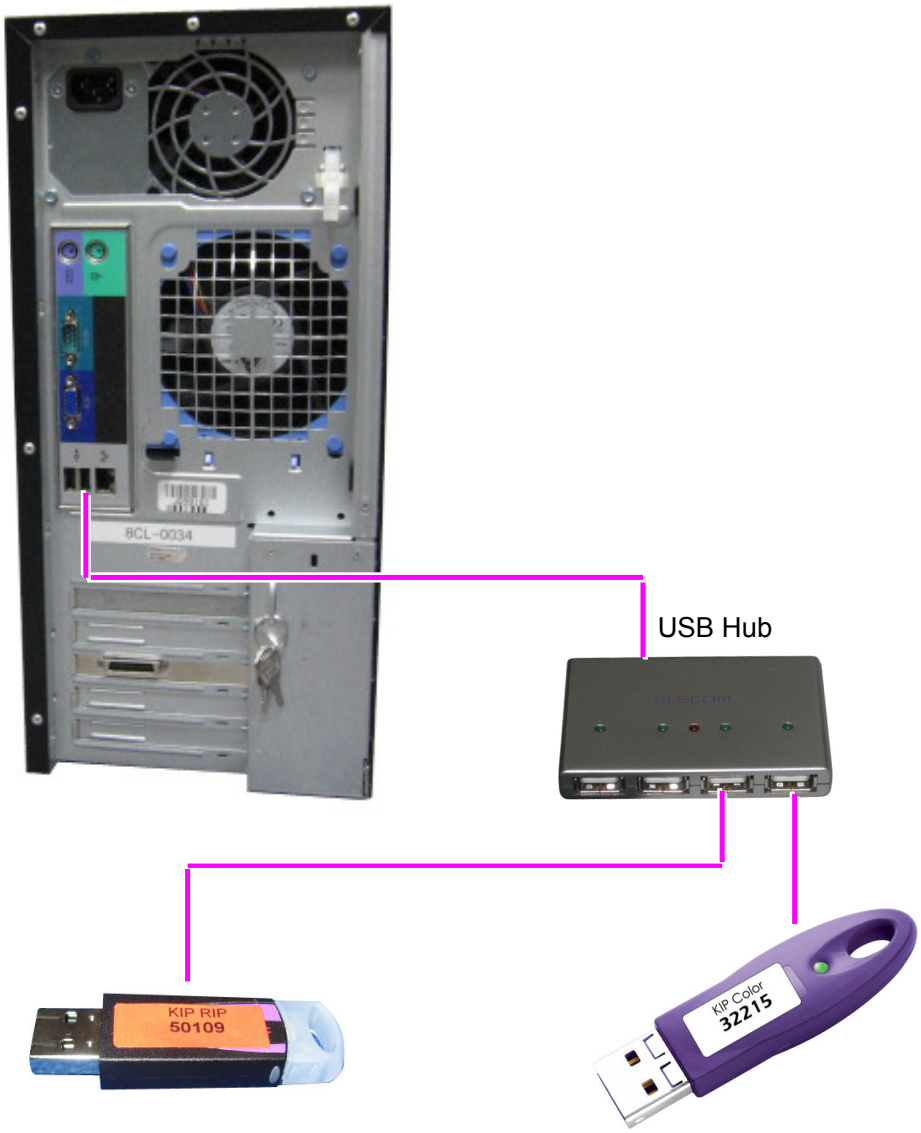
2.12. 3 Connection of USB Dongles and LAN Cable

If you have finished setting the IP Address, “time zone” and “date & time” then connect the optional USB dongles and LAN cable to the KC80 IPS unit.

1. Connect the USB Dongle labelled with **KIP Color** to any USB port of KC80 IPS directly (or to the added USB Hub).
   This USB Dongle enables the following options.
   - Simple color (clolor copy and color scan)
   - KIP Color Max

2. Connect the USB Dongle labelled with **KIP RIP** to any USB port of KC80 IPS directly (or to the added USB Hub). This USB Dongle enables the following options.
   - KC80 RIP

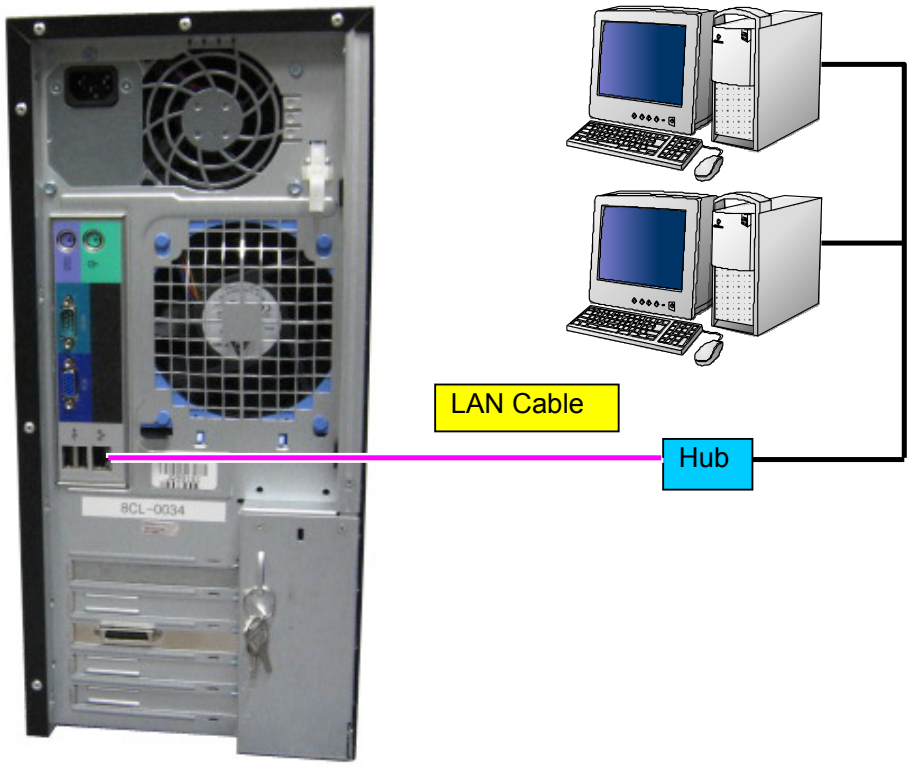
(USB Hub is used in the following example for connecting the USB Dongles.)



USB Dongle of KC80 RIP

USB Dongle of KIP Color

3. Connect the LAN cable to the LAN port for connecting the KC80 IPS to the local area network.



4. Go to next section [2.12.4 Registration of Option Key Codes (print, PS/PDF & Color) on Production Station].

2.12. 4 Registration of Option Key Codes (print, PS/PDF & Color) on Production Station

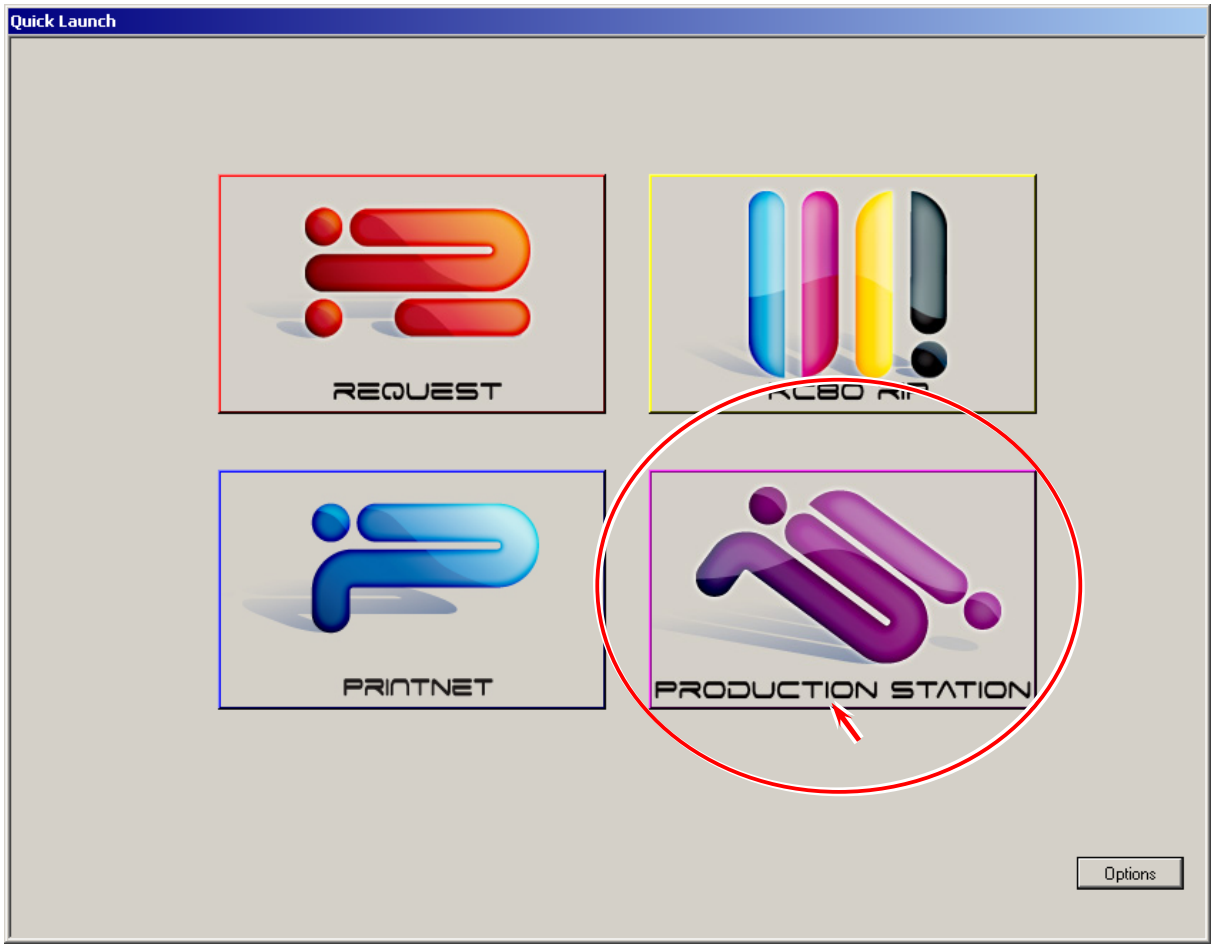
NOTE

(1) Each of the following 3 optional functions becomes available when the concerning key code is entered on the Production Station.

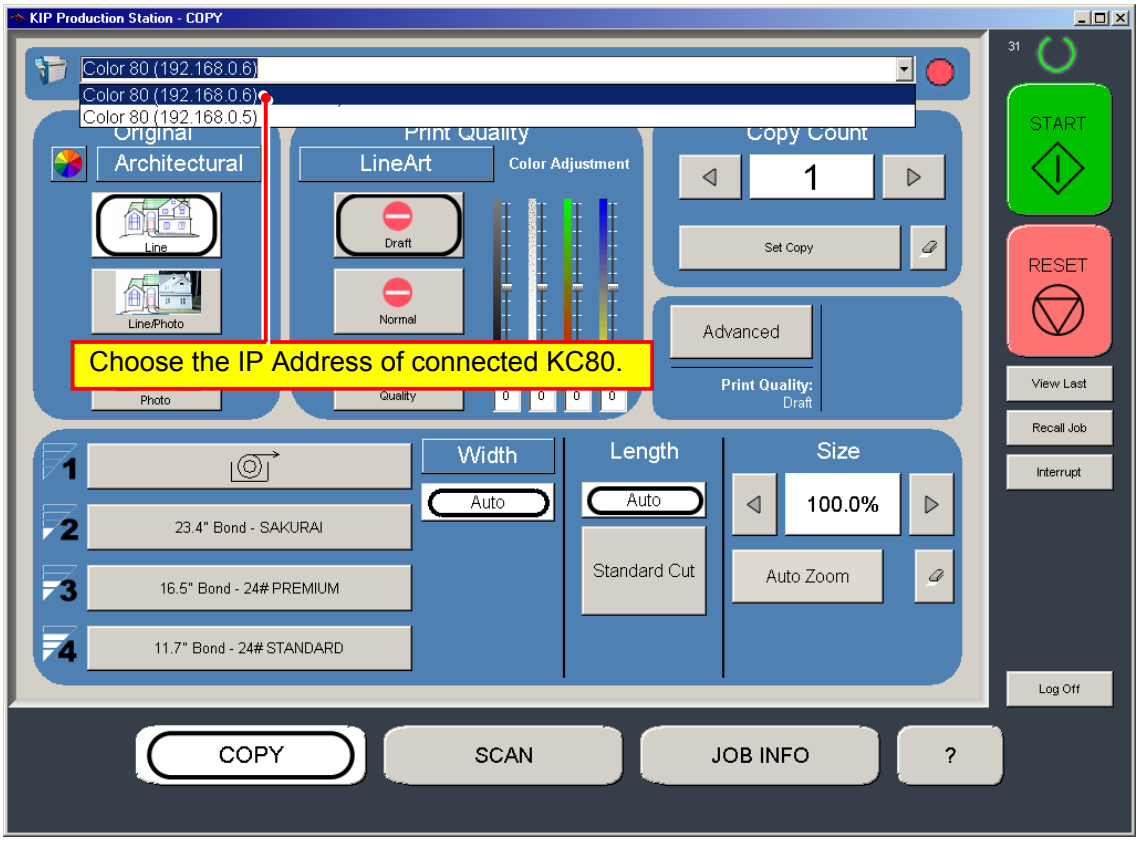
Optional license	Available optional function
KIP Request / KIP PrintNET	Printing from KIP Request, PrintNET and AutoCAD Driver **Key code needs to be entered to make this function available.**
.PDF + .PS Printing	Printing of PDF file and PS file from Windows Driver **Key code needs to be entered to make this function available.**
Color Copy + Color Scan-To-File	Color Copy and Color STF from KIP2100 scanner **Key code needs to be entered to make this function available.**

(2) The license code for KC80 RIP can not be entered from the Production Station. It can be entered on the KC80 RIP, which is explained on later page.

1. Click on **PRODUCTION STATION** button on the KC Home to run the Production Station.



2. Choose the correct IP Address of KC80 IPS in the pull down list for connecting the Production Station to the selected KIP Color 80 printer.

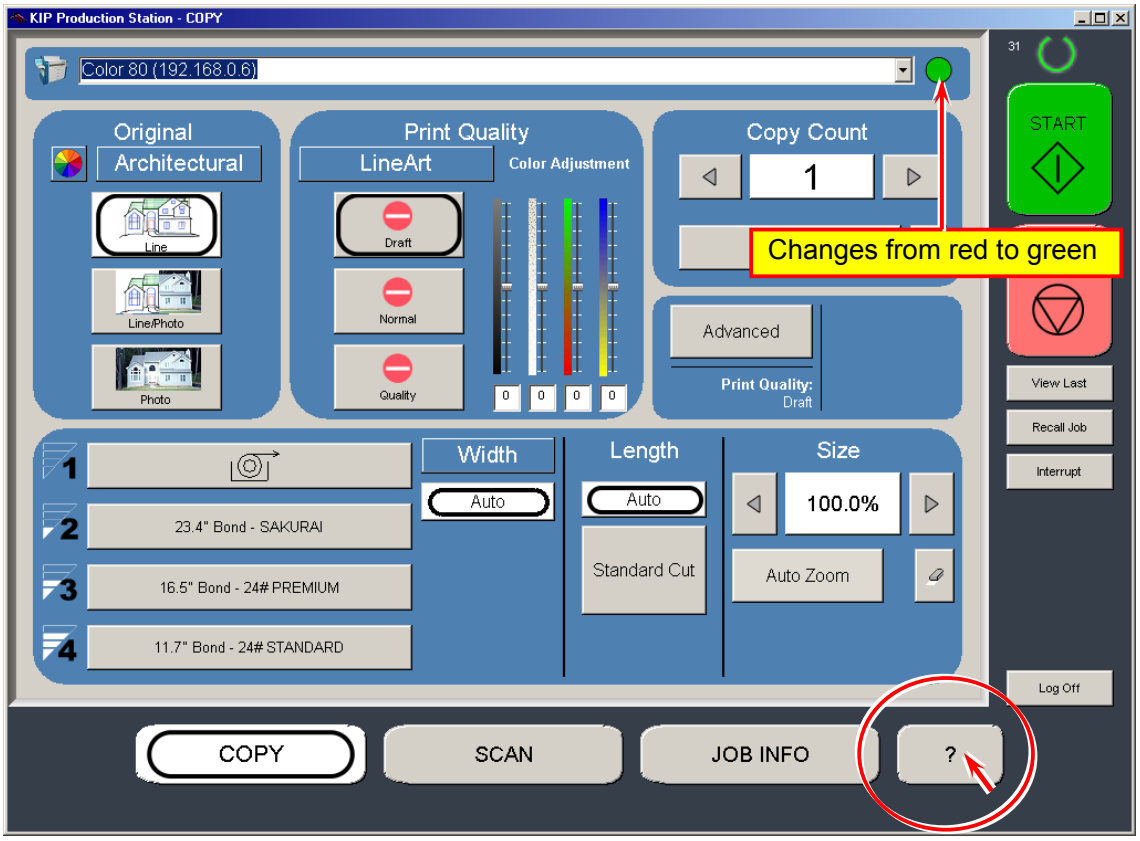


NOTE

(1) If there is any other KIP printers on the same network, their IP Addresses are also indicated in the pull down list. Choose the one you will connect the Production Station.

(2) Check if the LAN cable is connected to the IPS unit if nothing is indicated in the pull-down list.

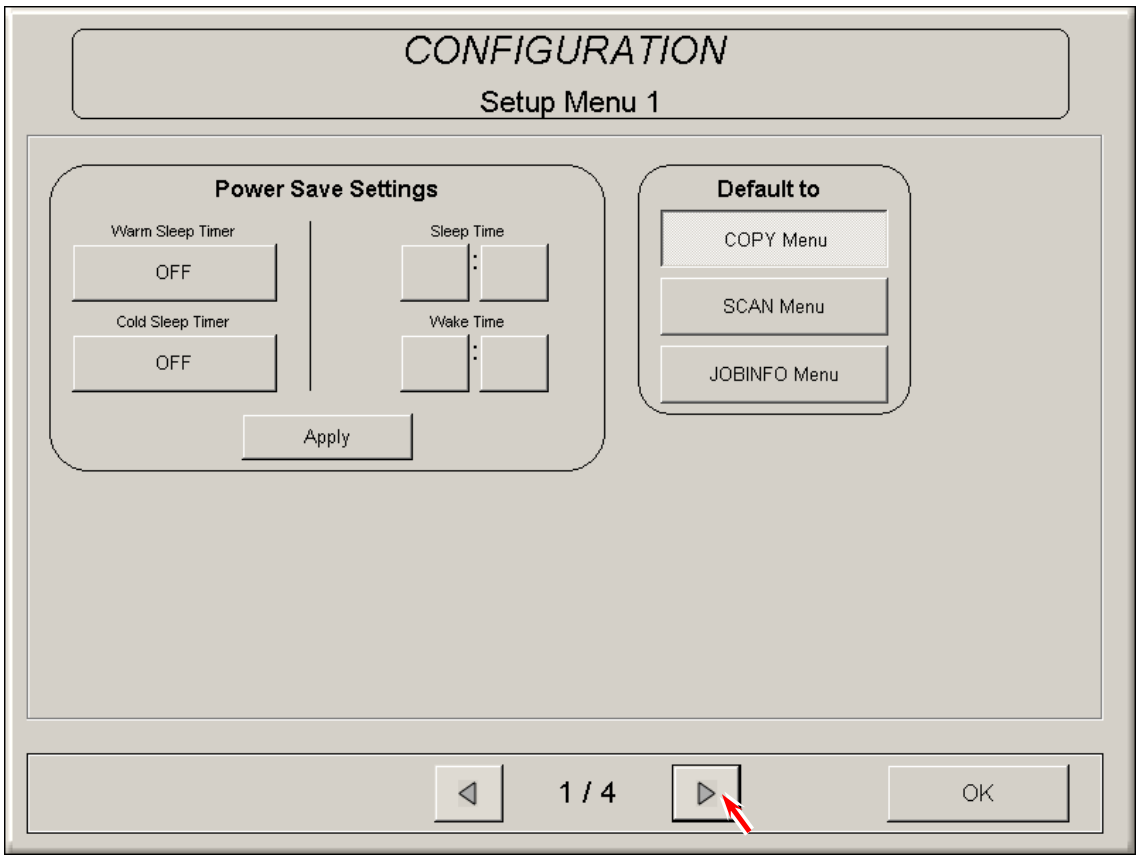
3. A circular icon on upper right of Production Station UI will change from red to green when the Production Station is correctly connected to KC80. After confirming this, click on **?** icon.

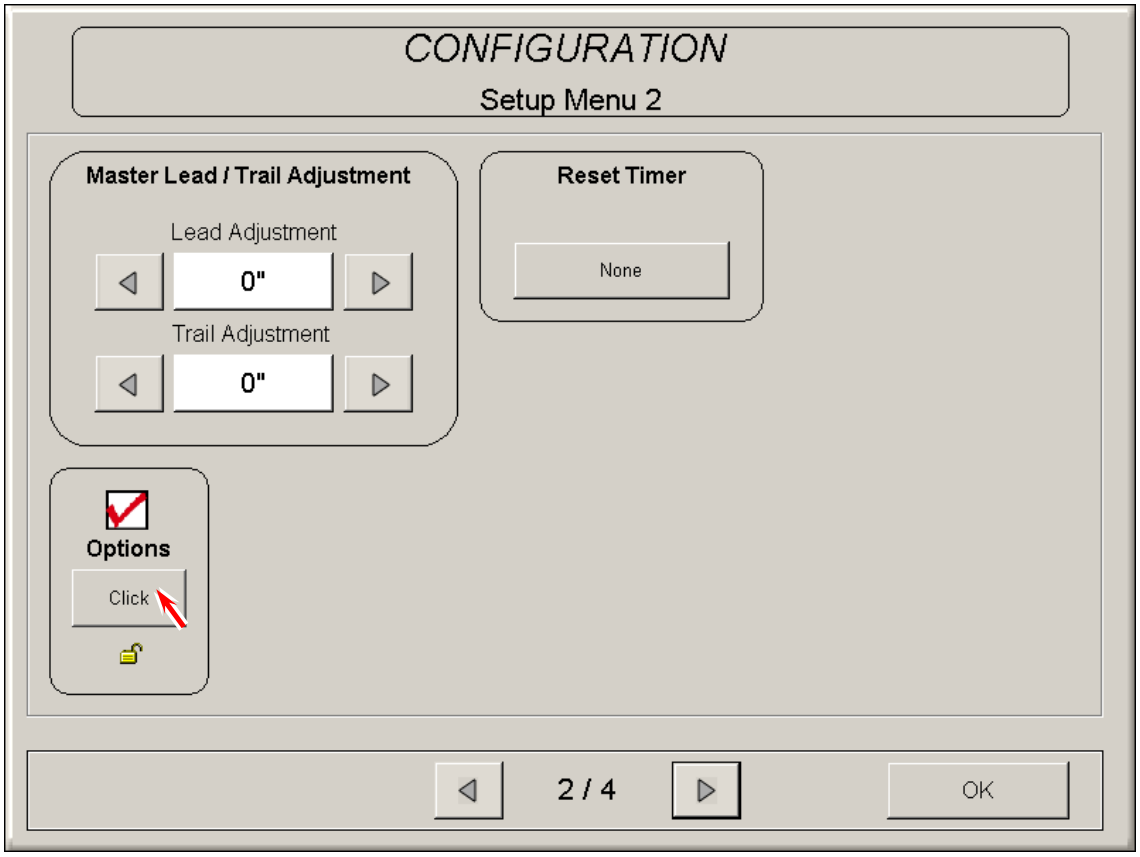


4. Click on **Configuration**.

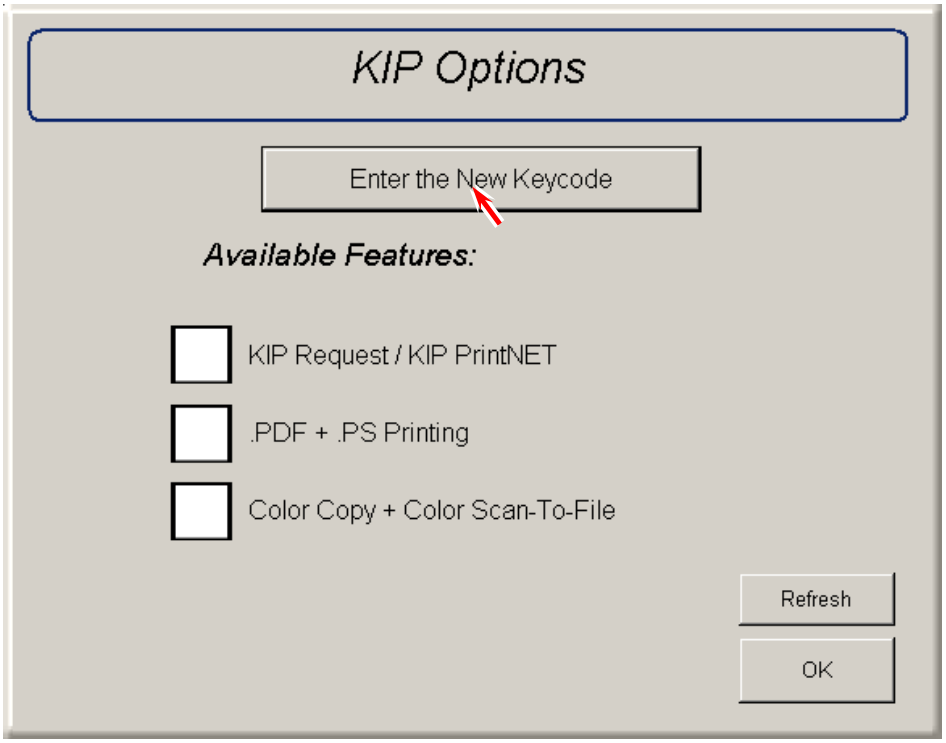


5. Access **Setup Menu 2** (page 2/4) of CONFIGURATION by clicking the triangle icons, and click on the button of **Options**.

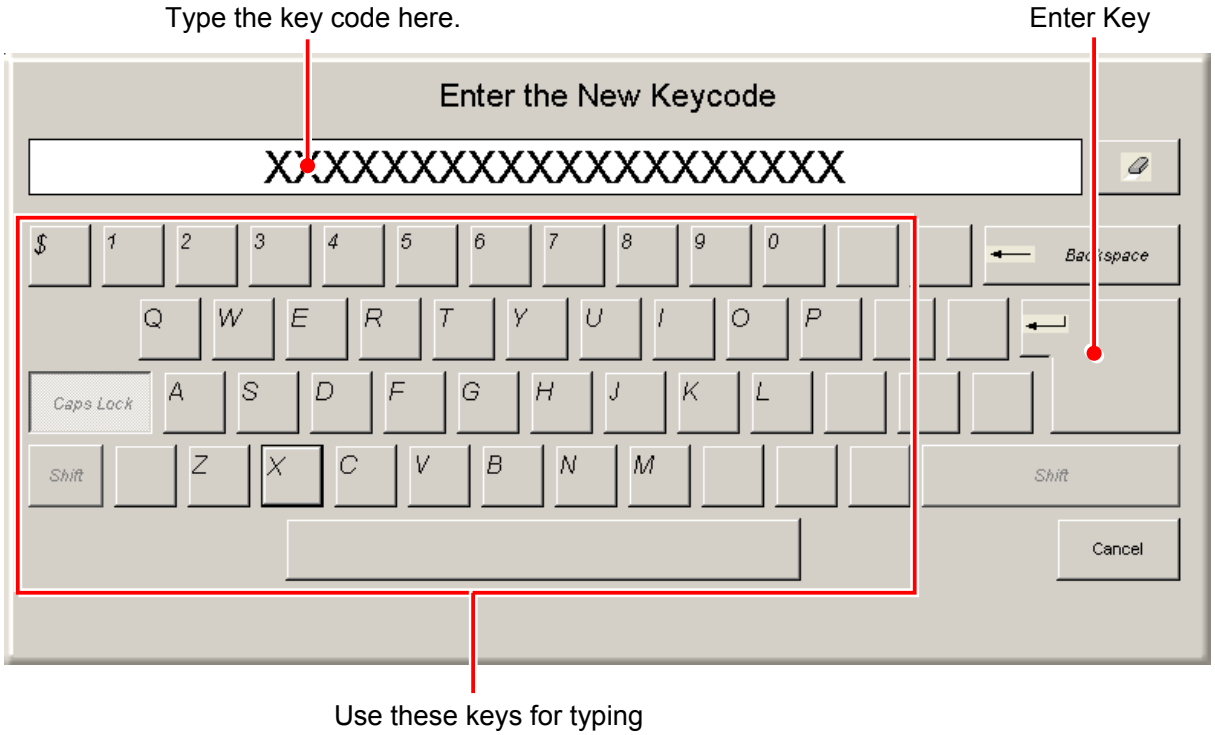




6. Click on **Enter the New Keycode**.



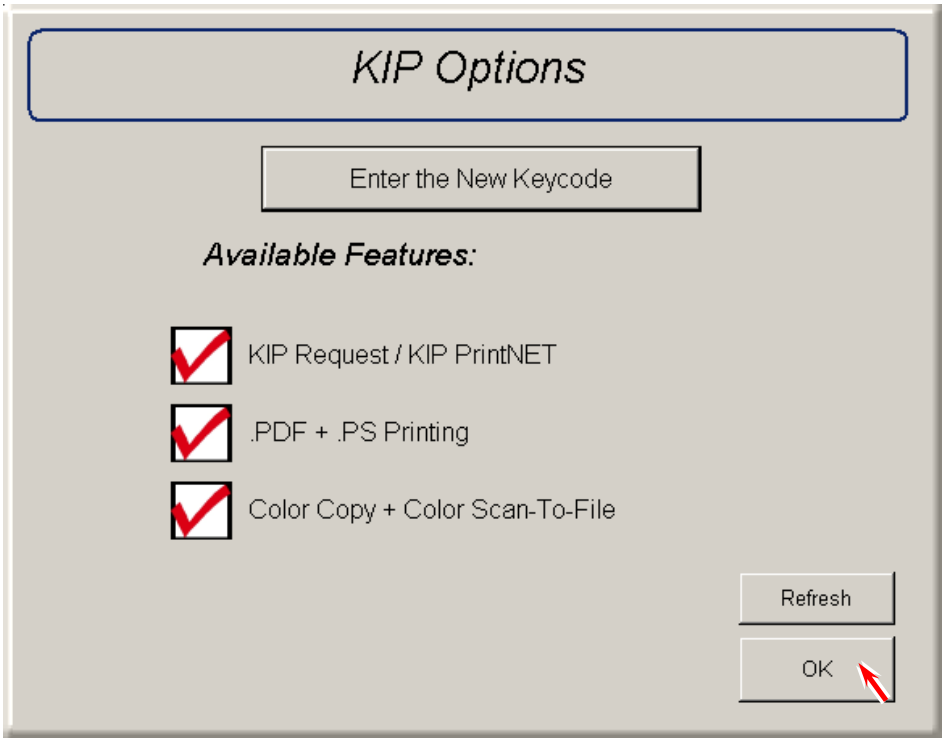
7. As the necessary license code(s) has already been provided to you according to your purchase order, type it (them) in the input field using the keys on the following "software" keyboard screen and click on **Enter**.



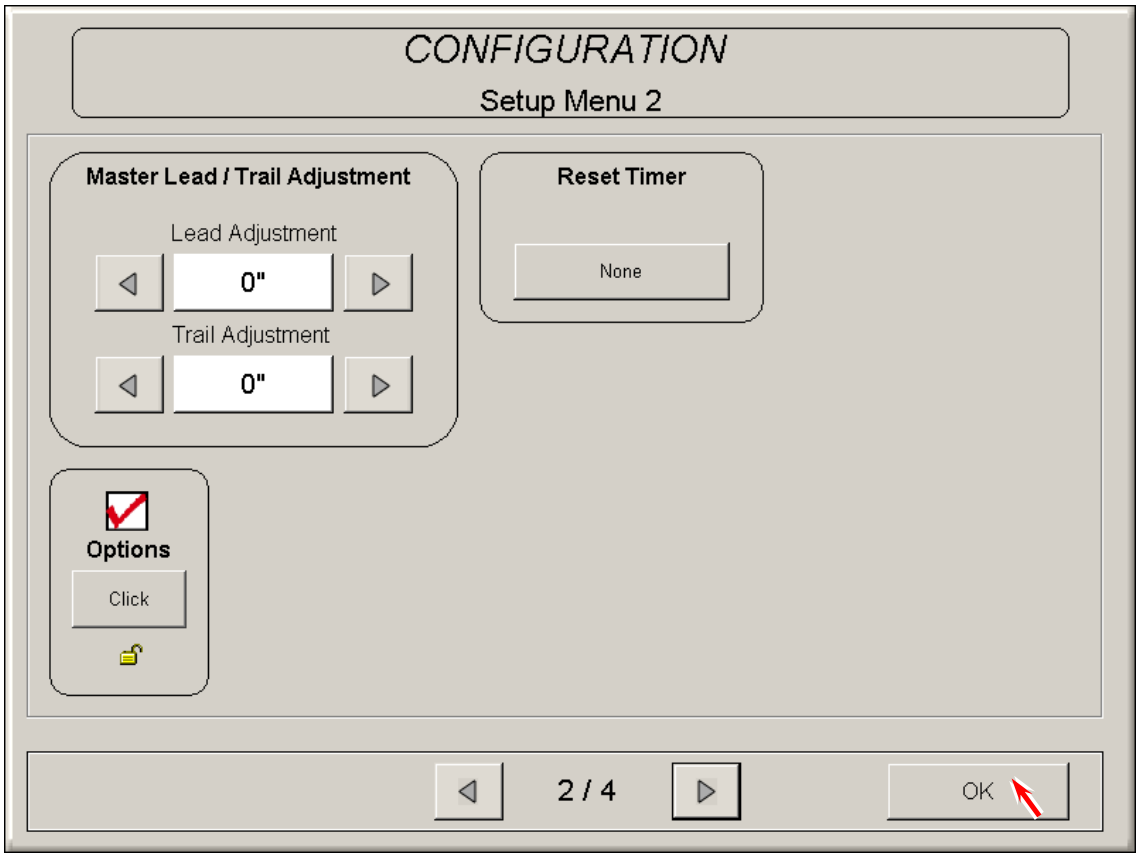
NOTE

"Hardware" keyboard connected to KC80 IPS can not be used for typing the keycode. Please type it with the above "software" keyboard.

8. An optional function is checked when it becomes available by entering key code. Enter other necessary license codes by the same way, and click on **OK**.



9. Click on **OK**.



10. Go to next section [2.12.5 Media Configuration on Production Station] without exiting the Production Station.

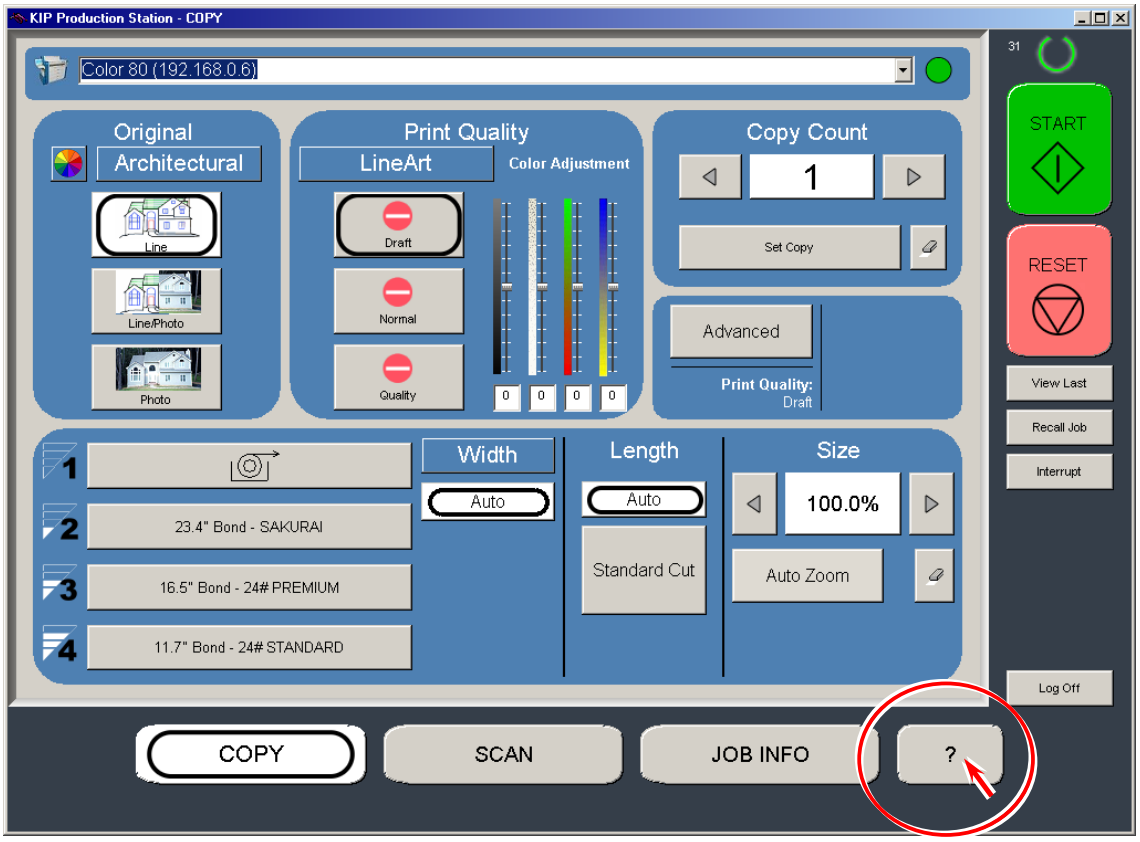
2.12. 5 Media Configuration on Production Station

This section instructs how to give easy-to-understand custom name to each media type (#X), and also how to perform Vertical Calor Registration Calibration.

2.12. 5. 1 Giving an easy-to-understand custom name to each media type #X

Please give an easy-to-understand name to each media type #X according to its manufacturer, product name, weight/thickness and etc.

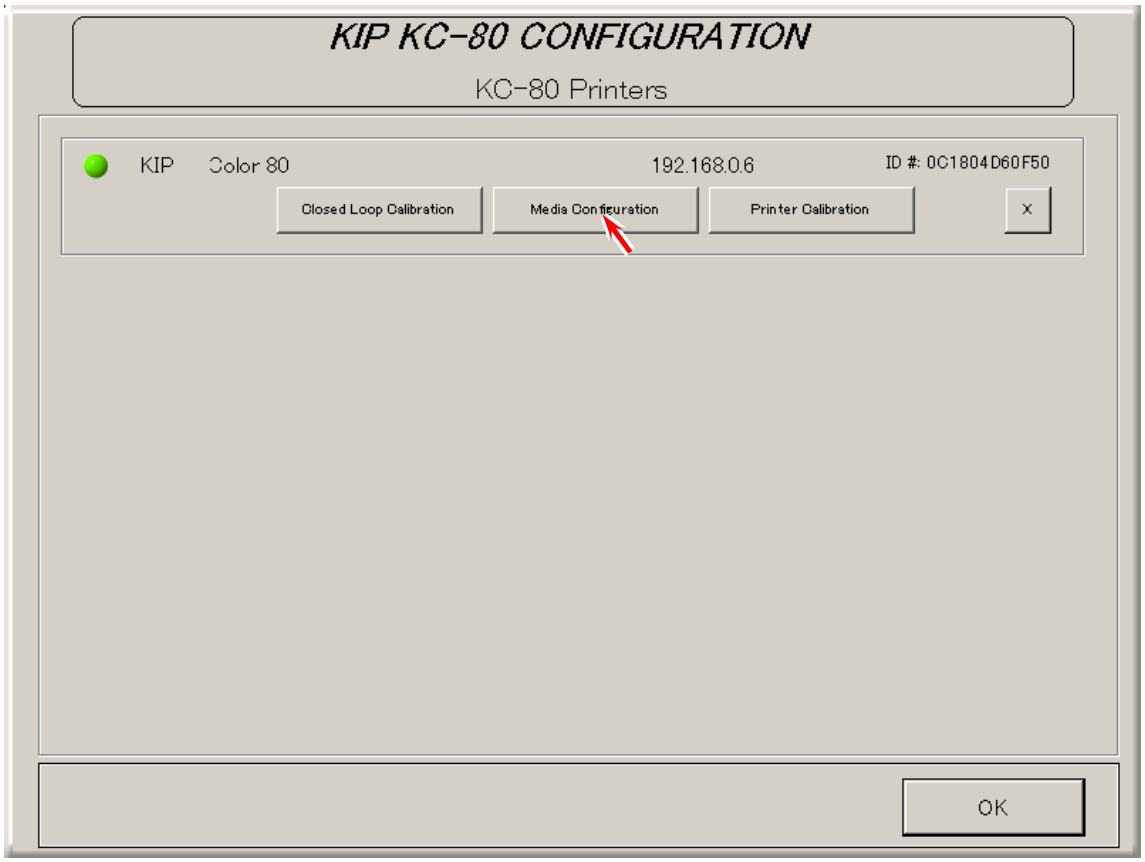
1. Click on **?** icon on the Production Station.



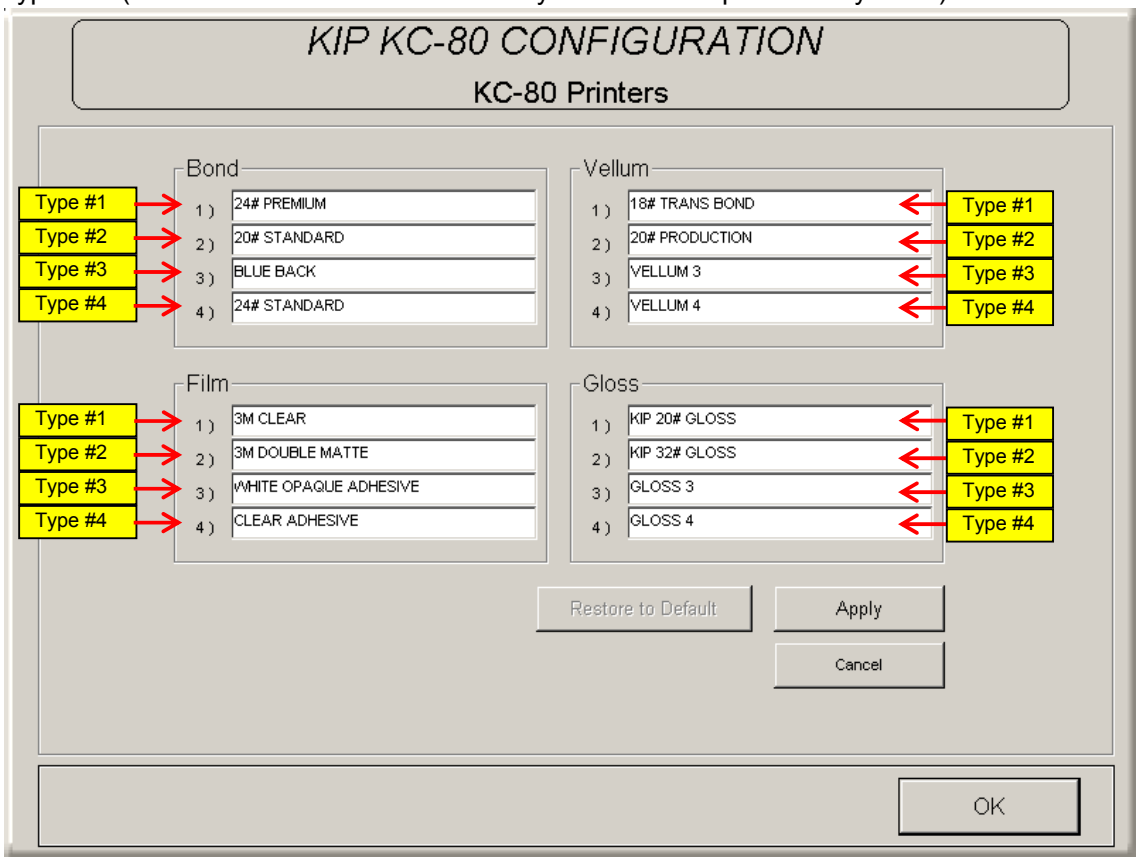
2. Click on **KC80 Config**.

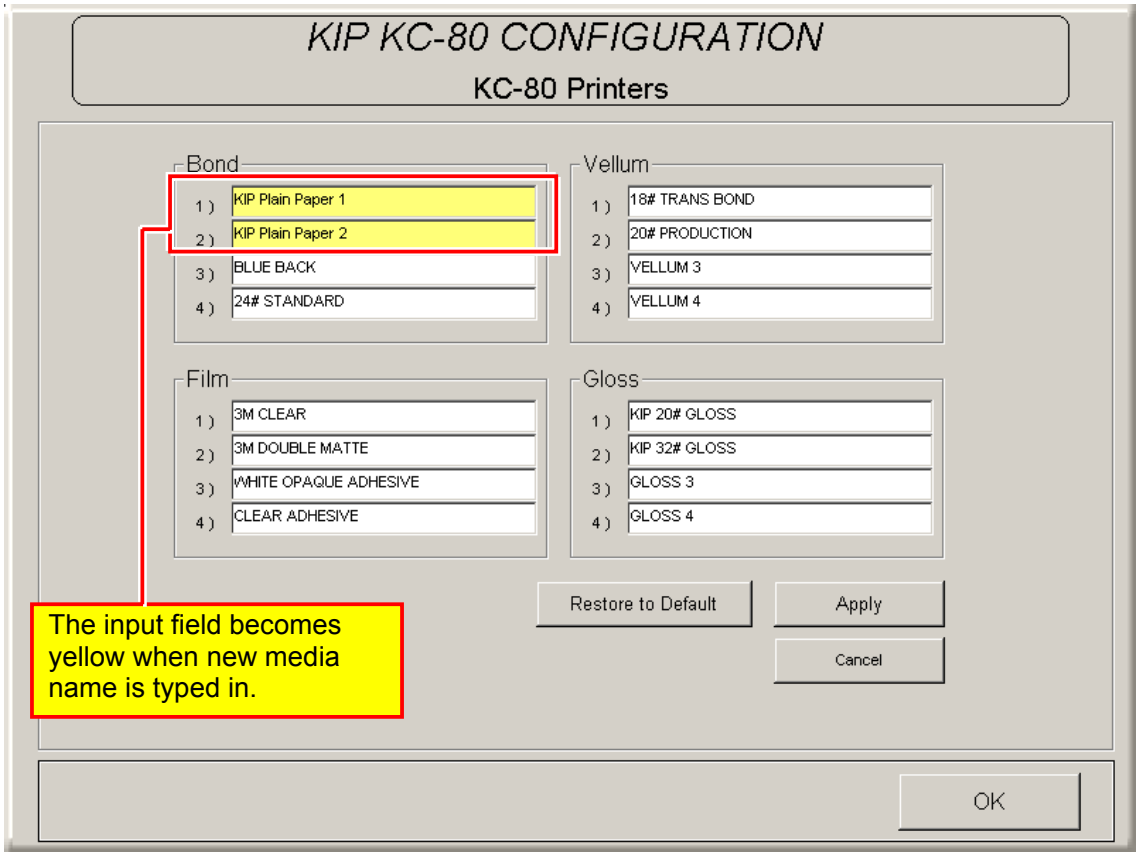


3. Click on **Media Configuration**.

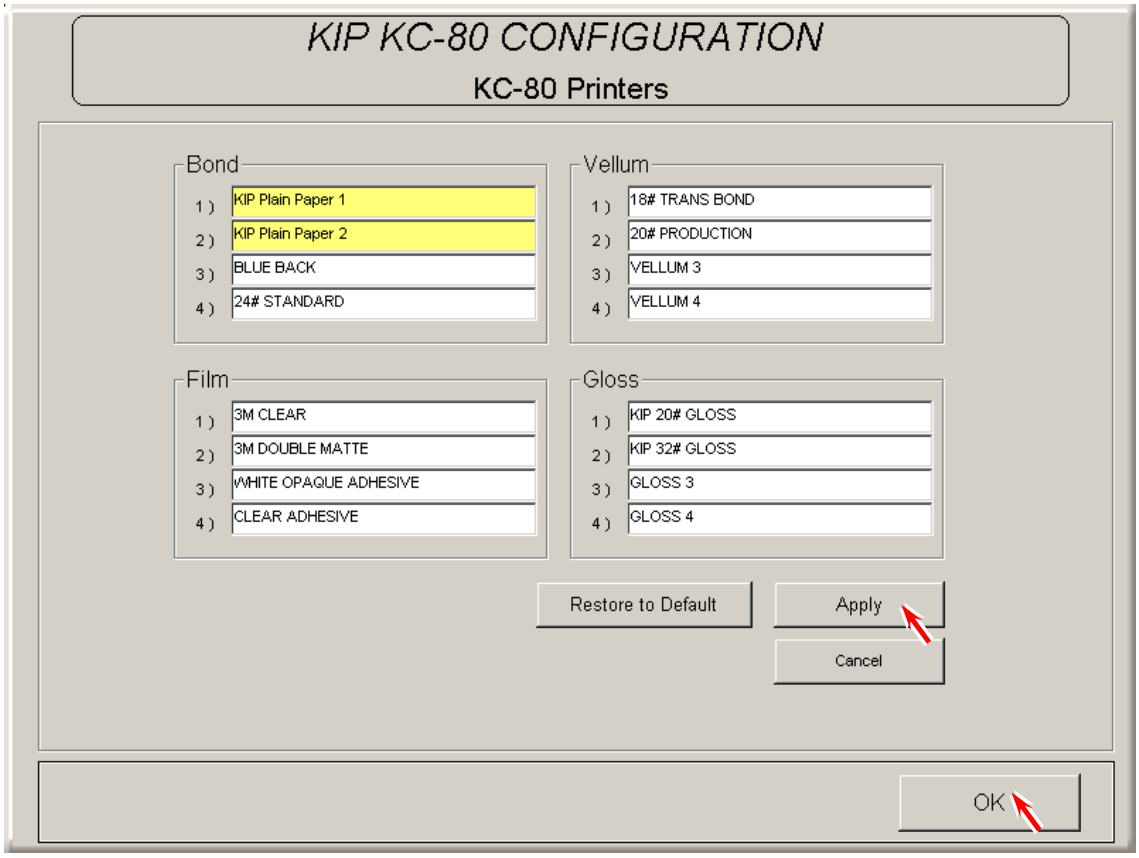


4. Each media can have 4 different media names respectively, which are corresponded to “Type #1-4” on KipDiagColor. Give a clear and understandable media name to each “Type #X” based on its manufacturer, product name, thickness/weight and etc, and type it in the input field with the “hardware” keyboard. The input field becomes yellow when a new media name is typed in. (New media name is not effective yet when the input field is yellow.)





5. Click on **Apply** to register new media names. The input field changes from yellow to white when applied. Click on **OK** after that.



6. Go to next section [2.12.5.2 Media calibration – Automatic Color Registration V Calibration] without exiting the Production Station.

2.12. 5. 2 Media calibration – Automatic Vertical Color Registration Calibration

Reference

In many cases each media has widths lineup such as 36” A0, B1, A1, A2 and A3. Those widths are divided into 4 width groups as follows, and the Color Registration calibration has to be performed per group.

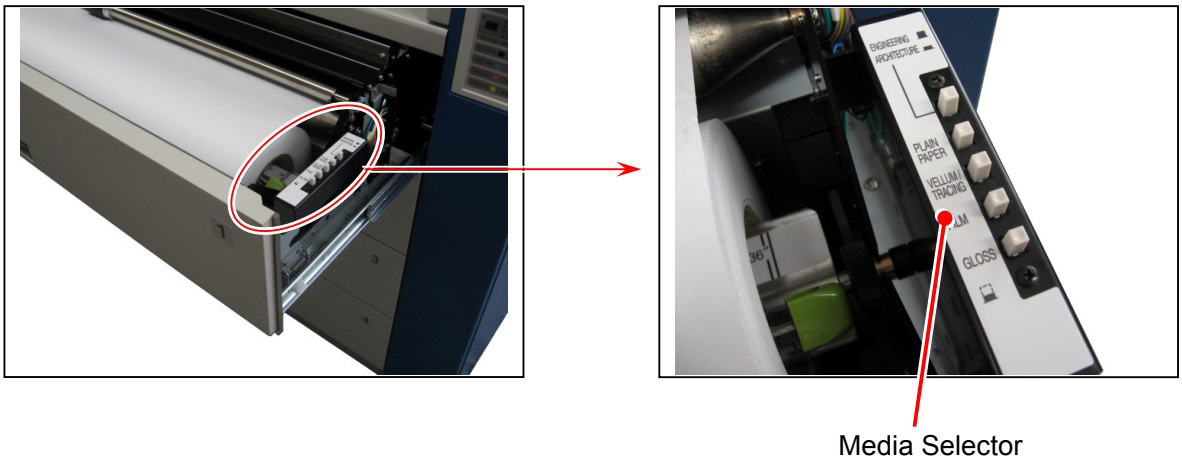
- Width group 1 : A0, B1, 36”, 34” 30”, 900mm, 891mm, 880mm & 707mm
- Width group 2 : A1, B2, 24” & 22”
- Width group 3 : A2, B3, 18”, 17” & 15”
- Width group 4 : A3, 12”, 11”, 9” & 8.5”

Any one width of (roll) media in each group is used for calibration on behalf of the group, and the calibration result for this representative width is commonly applied to all other widths that belong to the same group. That means if Vertical Color Registration Calibration is performed with 4 kinds of media from each group like A0, A1, A2 and A3, all other widths of same media can be calibrated as well.

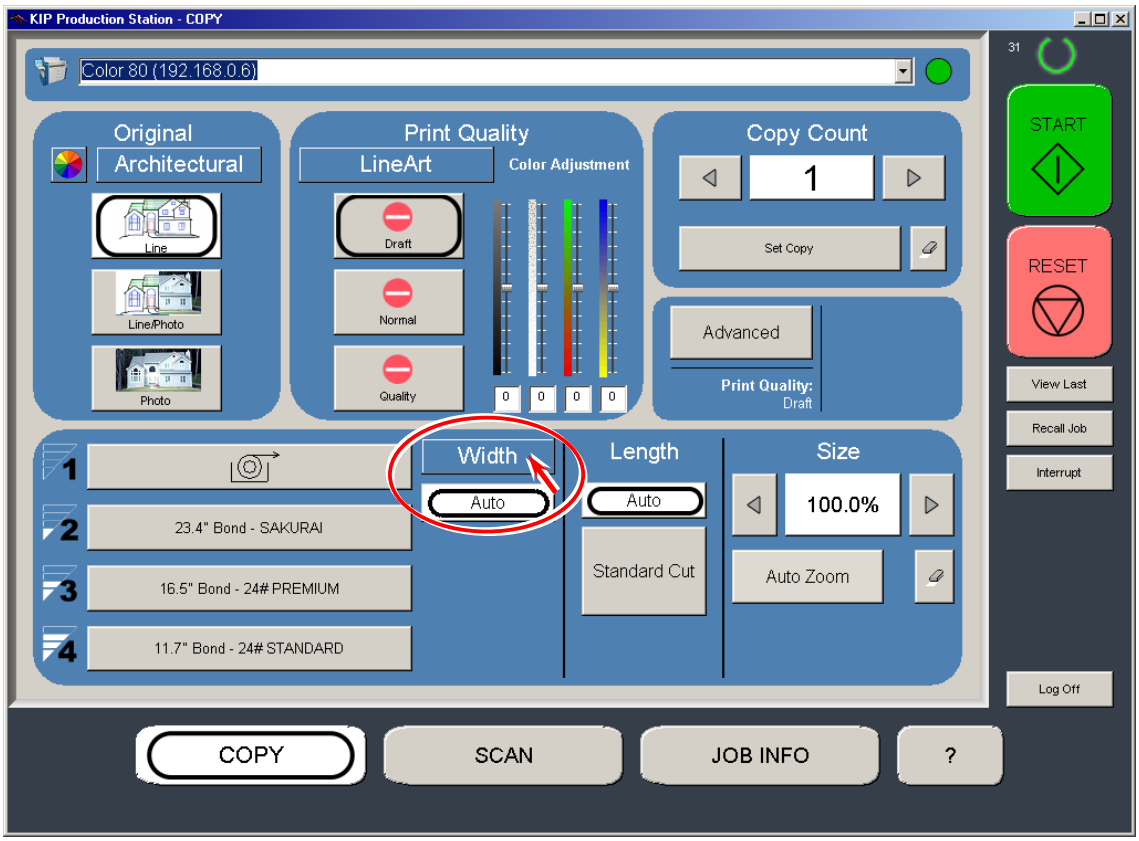
Once a media is calibrated using any one Roll Deck, this media becomes available also on other Roll Decks. If A0 roll is calibrated using Roll Deck 1, for example, A0 (and all other widths that belong to the same group) can be used also on all other Roll Decks 2/3/4.

1. Prepare the roll media to be calibrated.
   Preferably prepare 4 different widths of roll media from each width group for calibrating all widths lineup of this media.

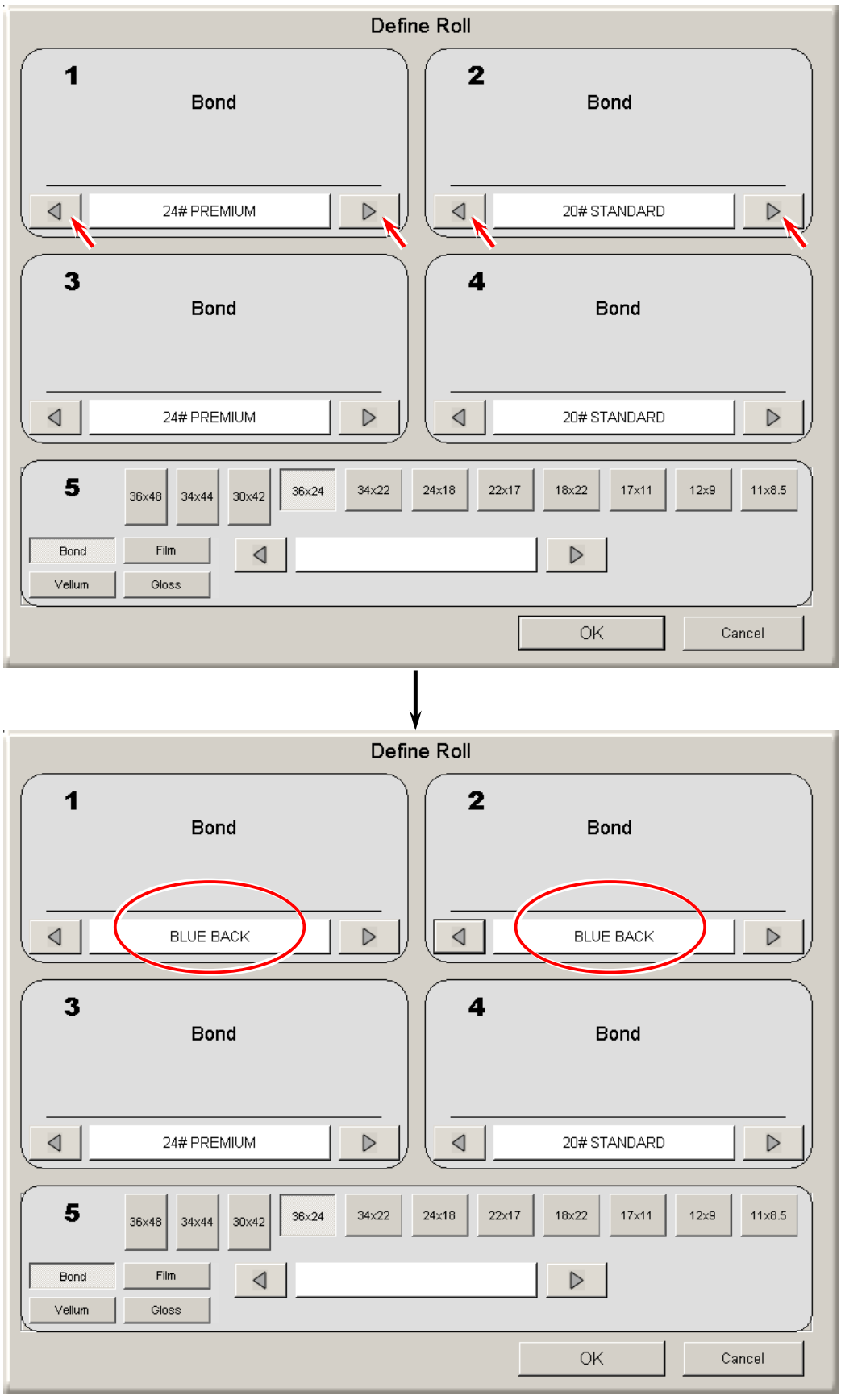
2. Install the roll media onto any Roll Deck, and set the Media Selector correctly.



3. Click on **Width** icon on the Copy Page of Production Station.

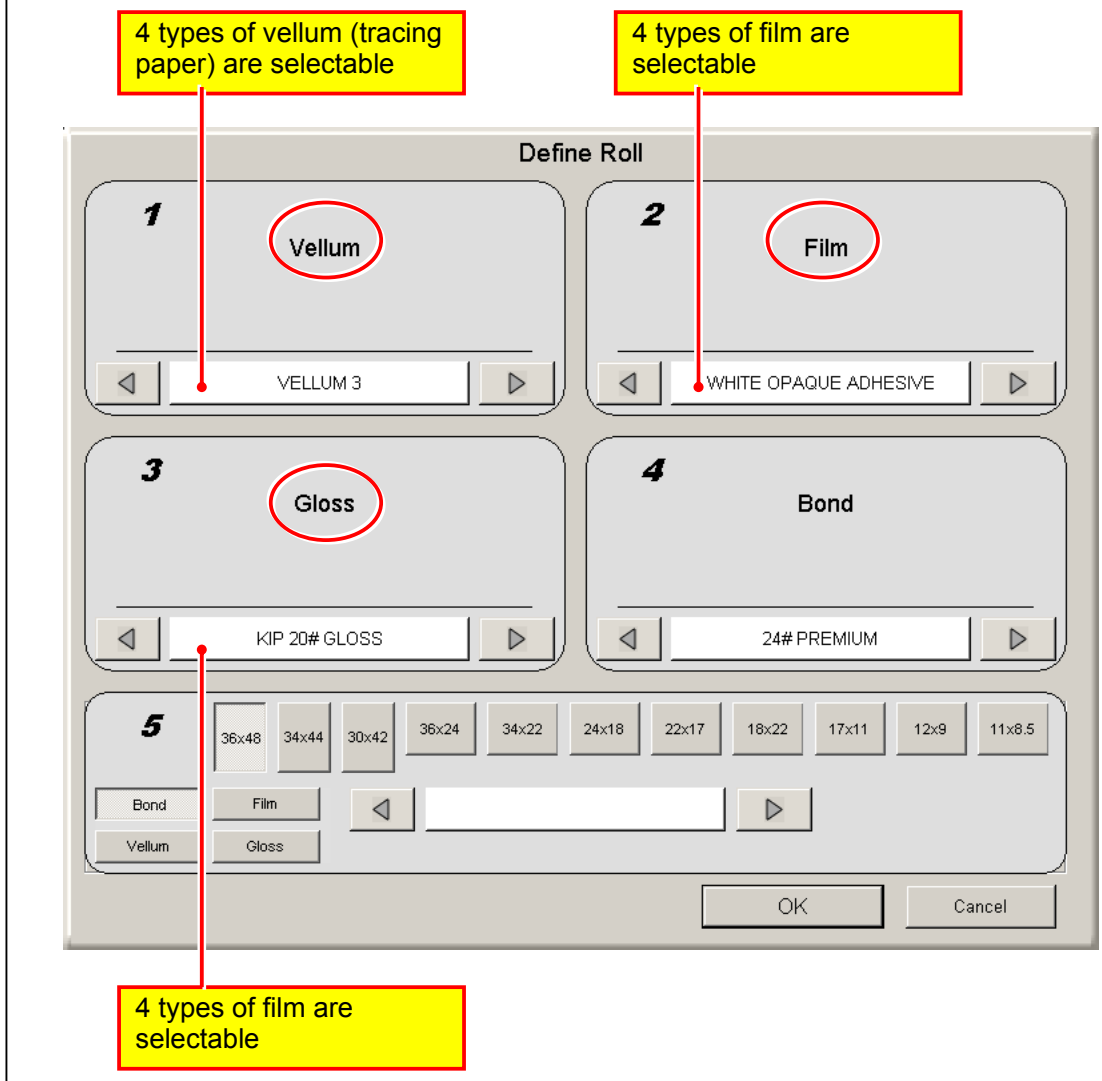


4. The following Define Roll Page indicates the current selection of media type on each roll deck. Pressing triangle icons, indicate the media name which is to be calibrated.

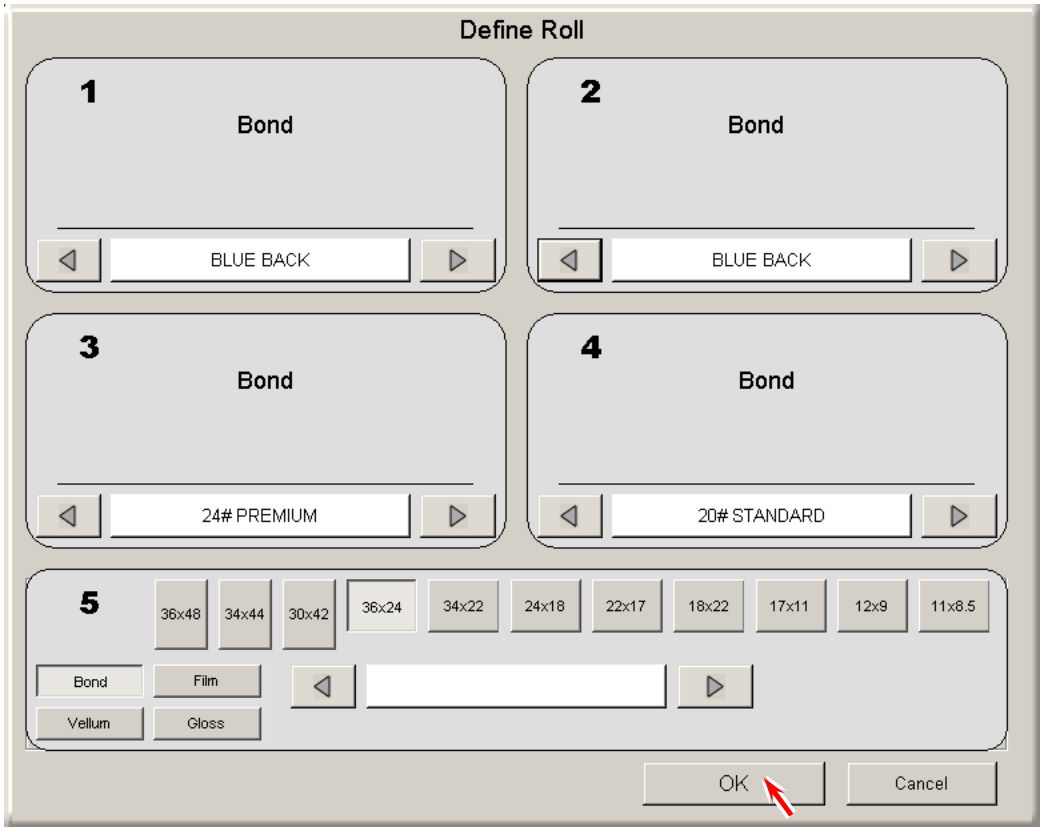


NOTE

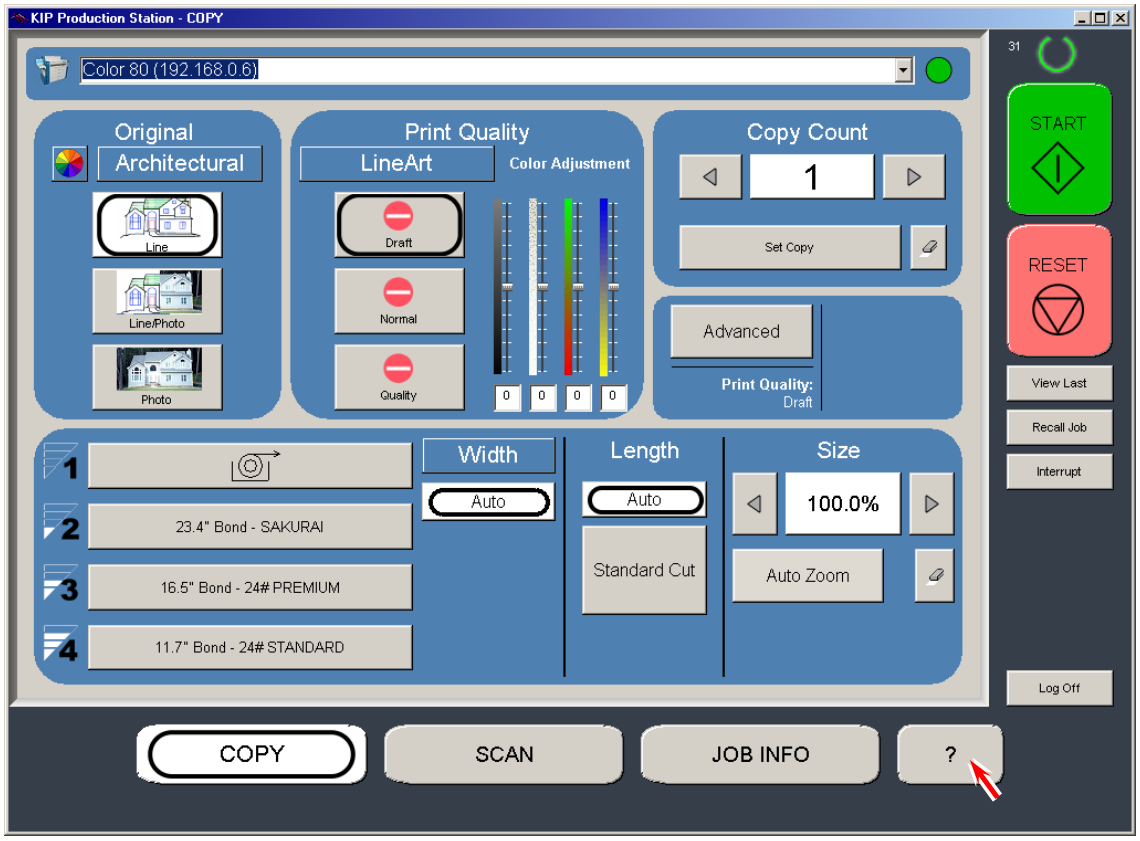
"Media" selection indicated on the "Define Roll" Page just follows the setting of Media Selector in each Roll Deck. If you set it to vellum (trading paper), the indication on the Define Roll Page changes accordingly and 4 types of vellum (tracing paper) become selectable.



5. Click on **OK**.



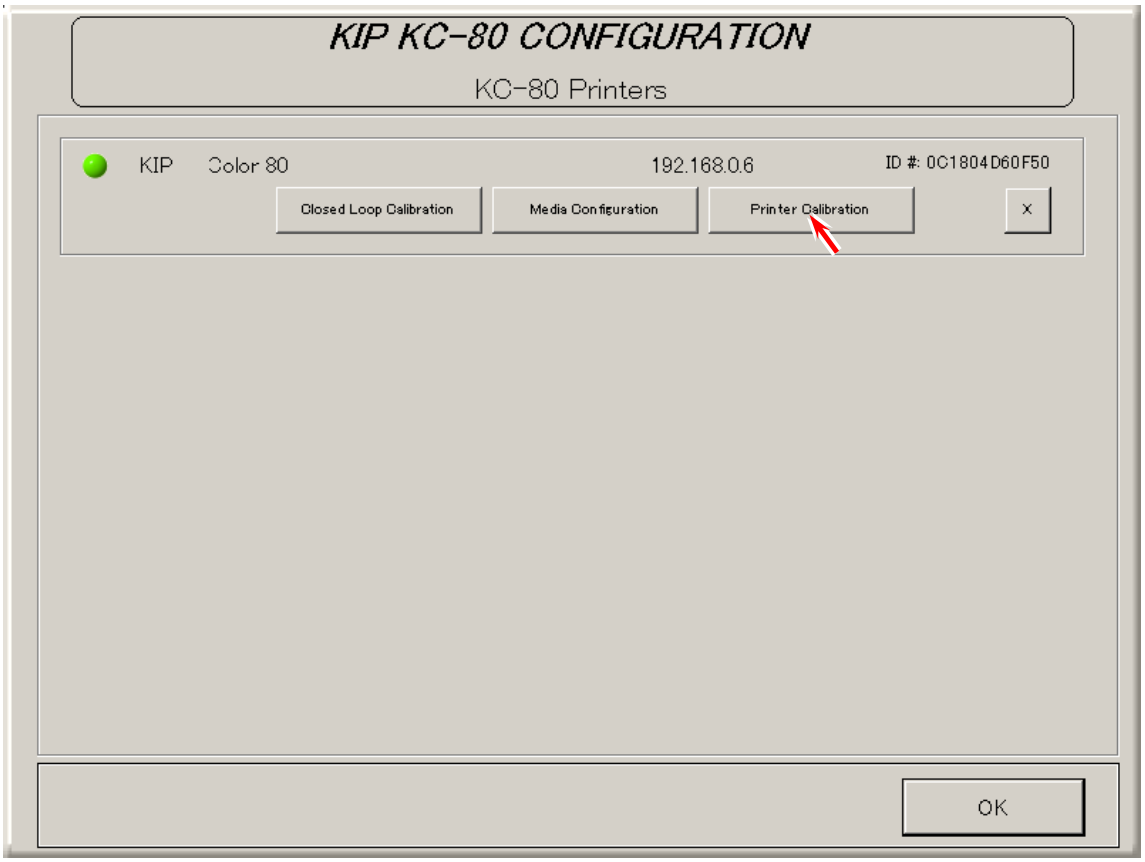
6. Click on the **?** icon.



7. Click on **KC80 Config**.



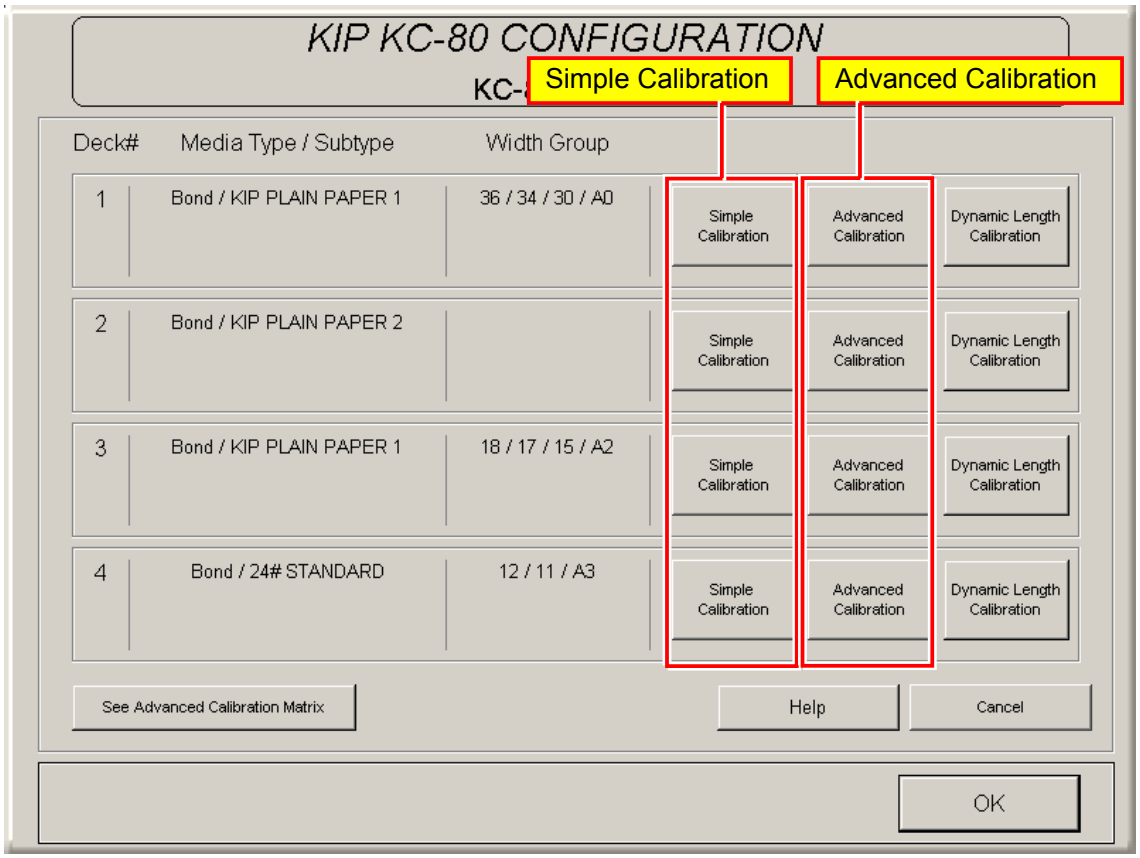
8. Click on **Printer Calibration**.



9. The KC80 IPS has 2 Vertical Color Registration Calibration Modes such as Simple Calibration and Advanced Calibration. Choose either of them according to the necessity.

- Simple Calibration ..... Basic calibration can be achieved. KC80 prints 3 sheets when this is performed. The calibration process will take about 3 minutes.

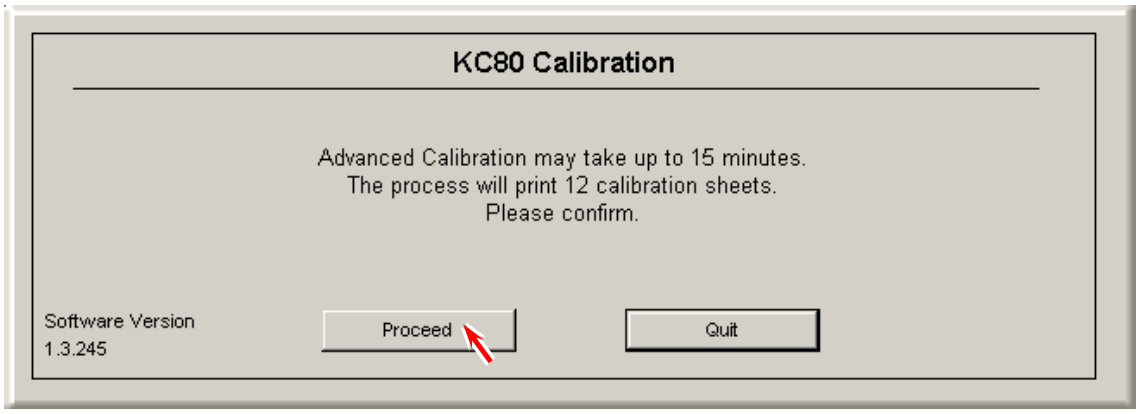
- Advanced Calibration ..... More accurate calibration than “Simple Calibration” can be achieved. KC80 prints 12 sheets when this is performed. The calibration process will take about 15 minutes.



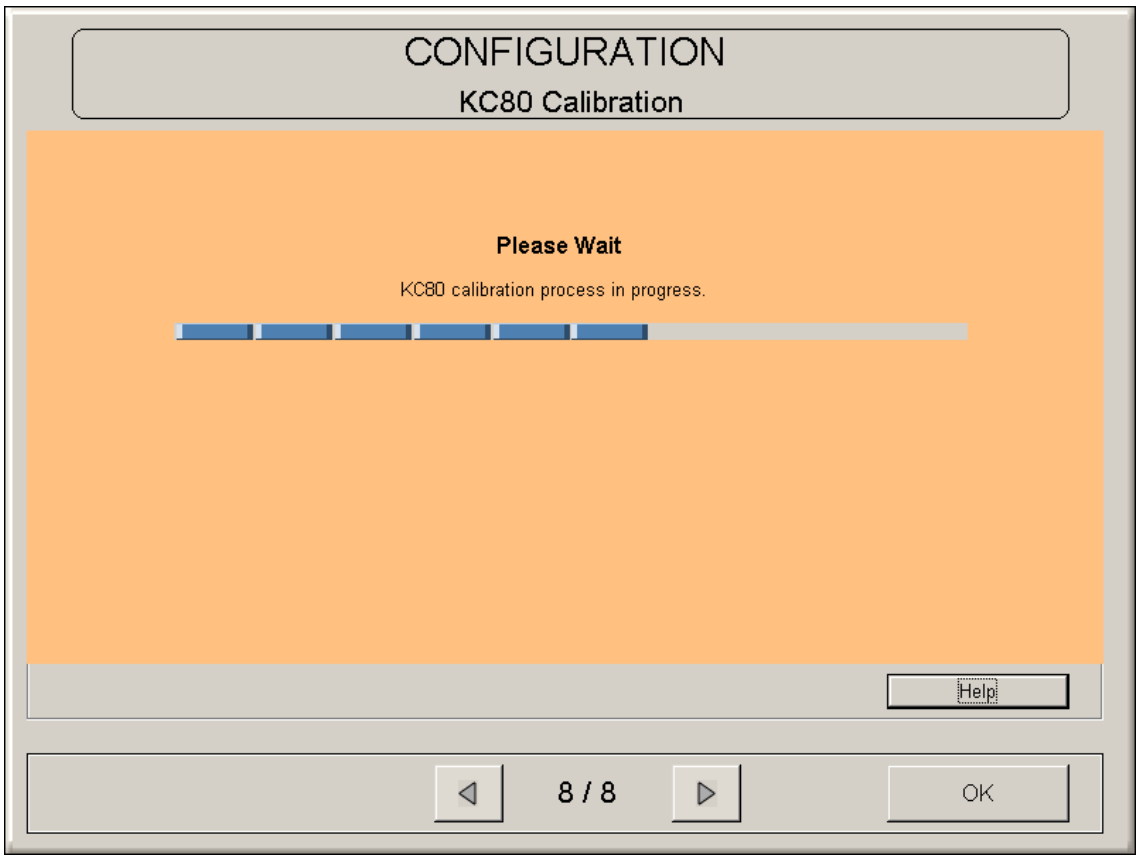
NOTE

See the concerning page of service manual for Dynamic Length Calibration.

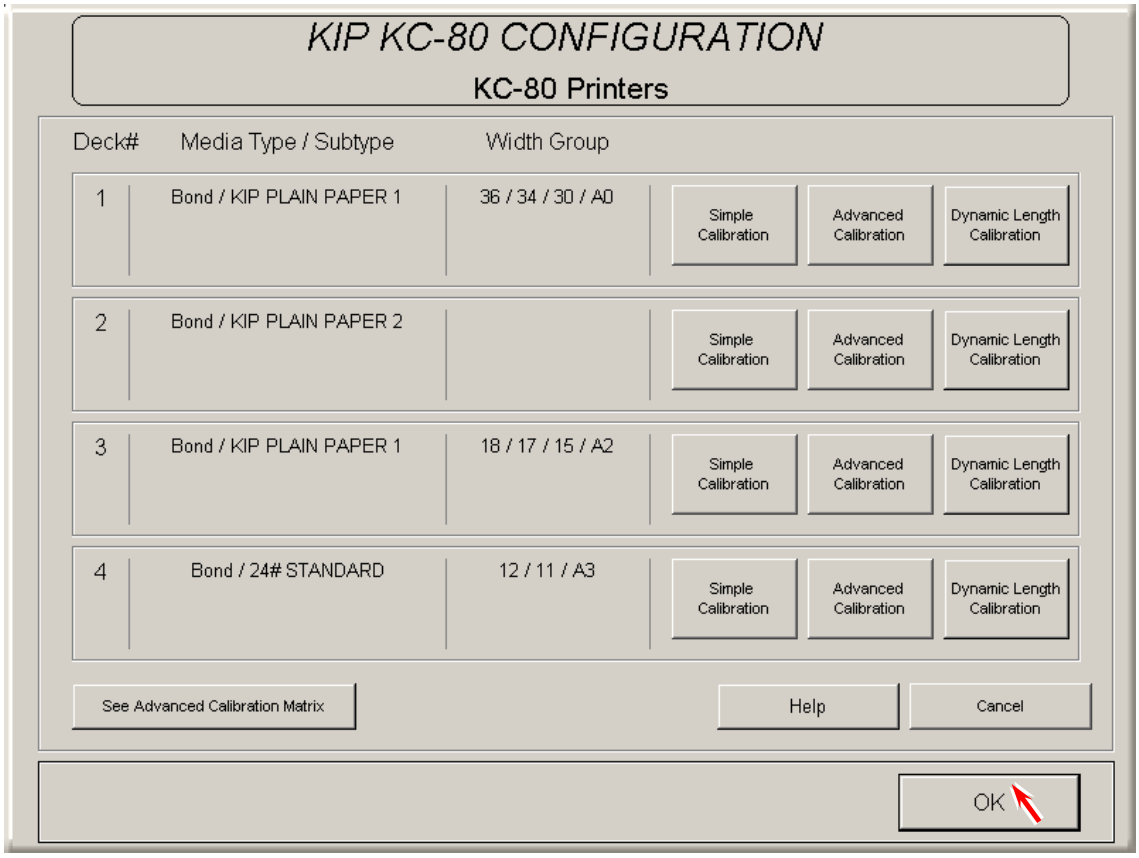
10. Click on **Proceed** if you will start the calibration process.



11. The calibration process starts. Wait until it finishes.



12. Click on **OK** when the calibration process finishes.



13. Calibrate all necessary types and sizes of media in the same way.

> **⚠ NOTE**
>
> (1) Note that a certain paper can not be used unless it is calibrated by the calibration process explained in this section.
>
> (2) Once a media is calibrated using any Roll Deck, all other Roll Deck can accept this media.

14. Go to either of the following sections according to the cases.
    - If you have a requirement for color copy from KIP2100 via Production Station, go to [2.12.6 Color Copy Configuration - Loop calibration from Production Station] without exiting the Production Station.
    - If you do not have such requirement, go to [2.12.7 Setup of KC80 RIP]. Please exit the Production Station in this case.

2.12. 6 Color Copy Configuration - Loop calibration from Production Station

Color copy from KIP2100 to KIP Color 80 becomes available via Production Station when loop calibration is performed in the following direction.

⚠ NOTE

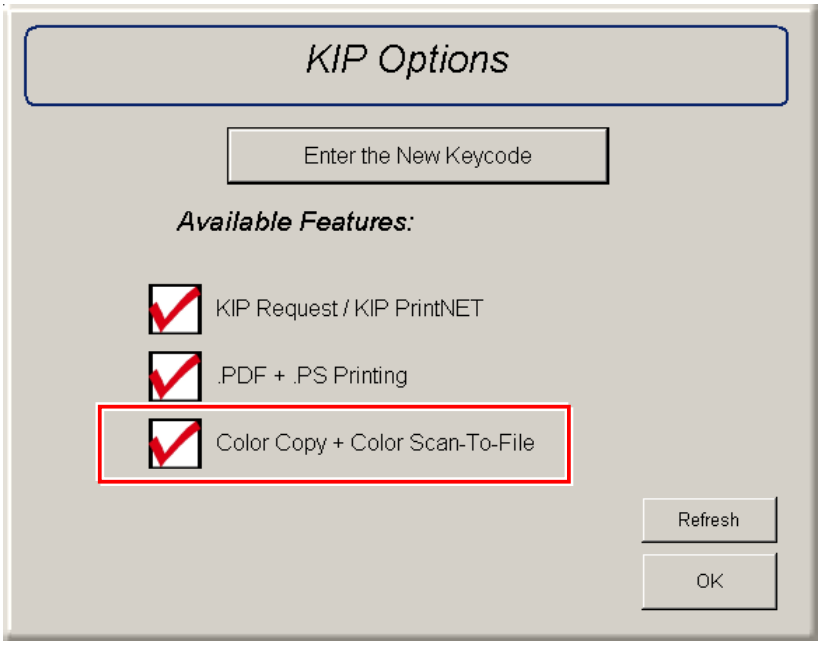
Color option is required for making color copy. Therefore the followings are required.

(1) The USB Dongle labelled with **KIP Color** must be installed to the USB port on the front face of KC80 IPS.

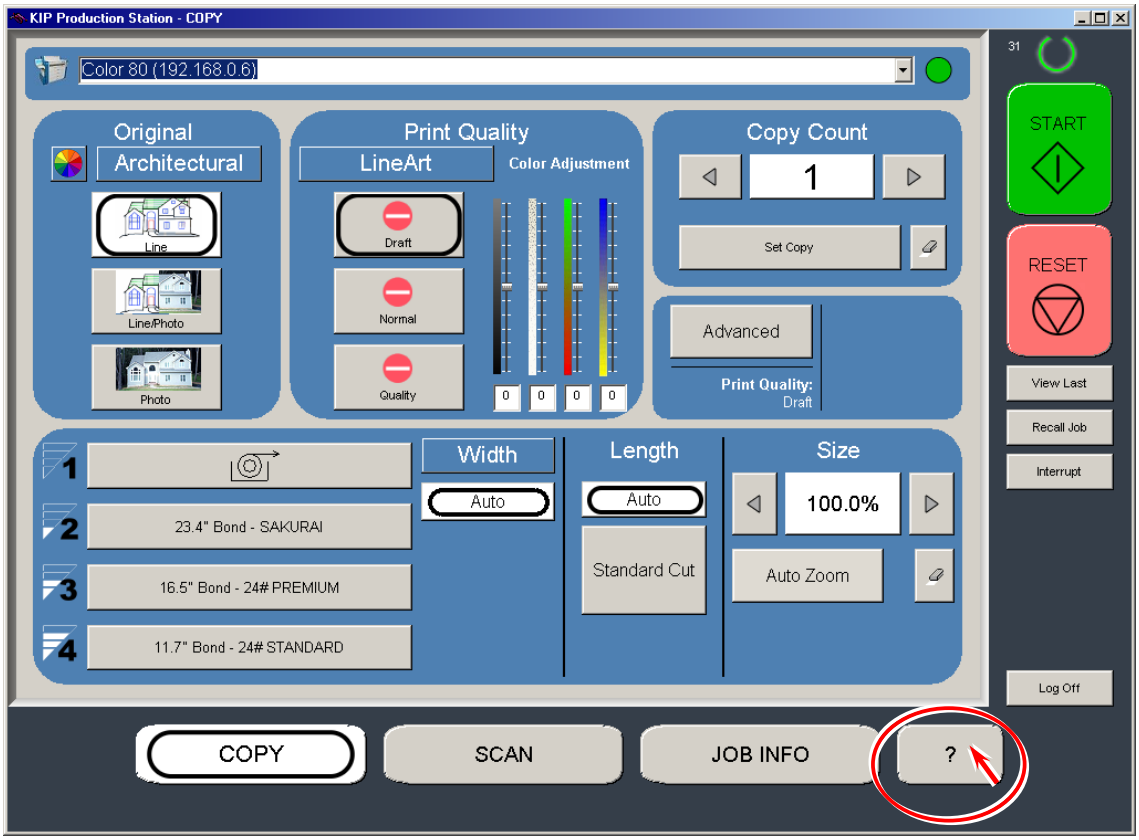




(2) License code **Color Copy + Color** must be entered on the Production Station.



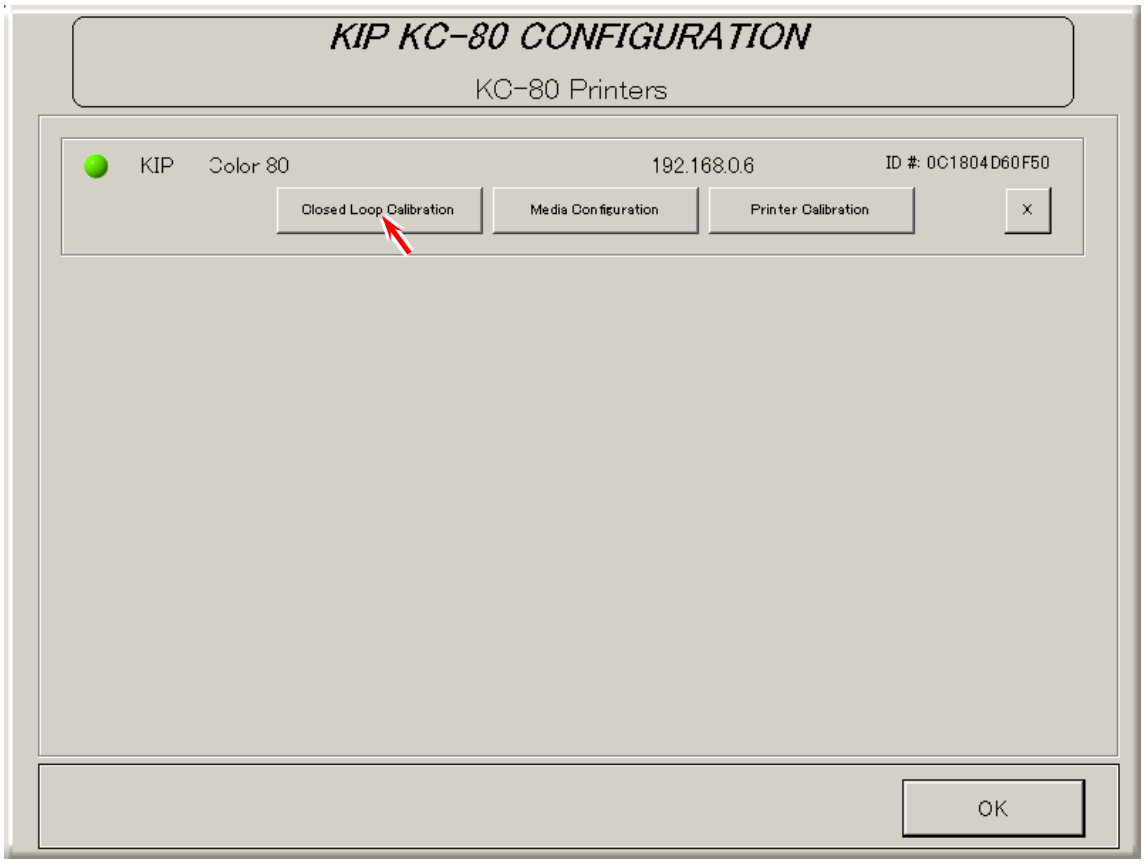
1. Click on the **?** icon on the Production Station.



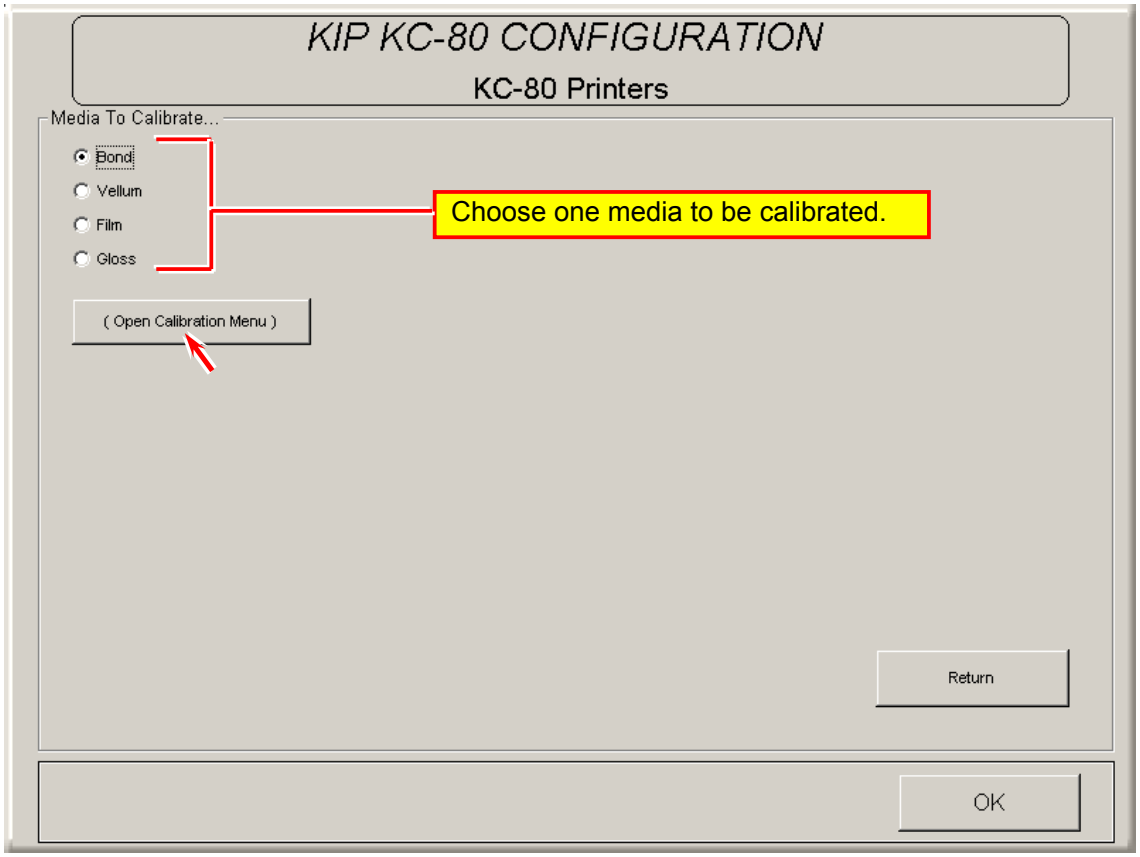
2. Click on **KC80 Config**.



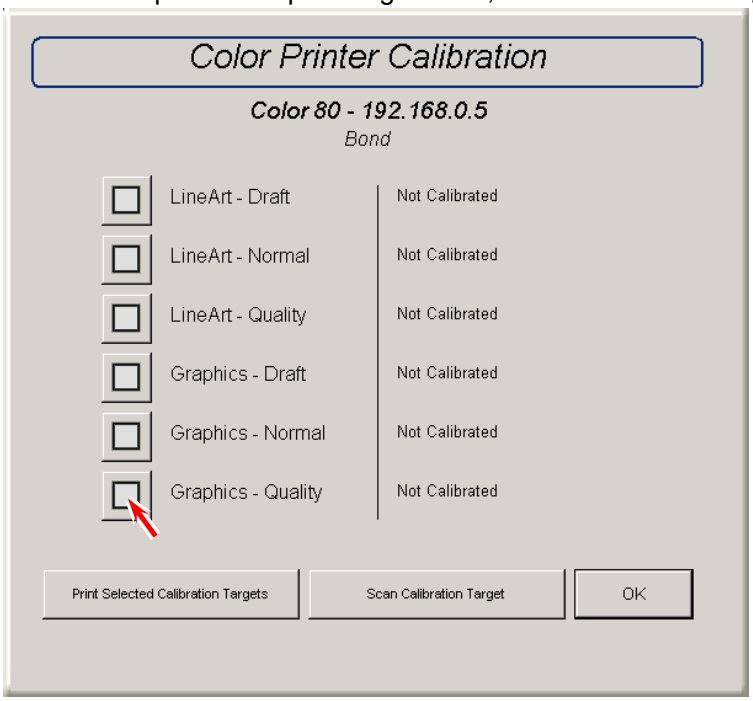
3. Click on **Closed Loop Calibration**.



4. Choose one media to be calibrated then click on **Open Calibration Menu**.



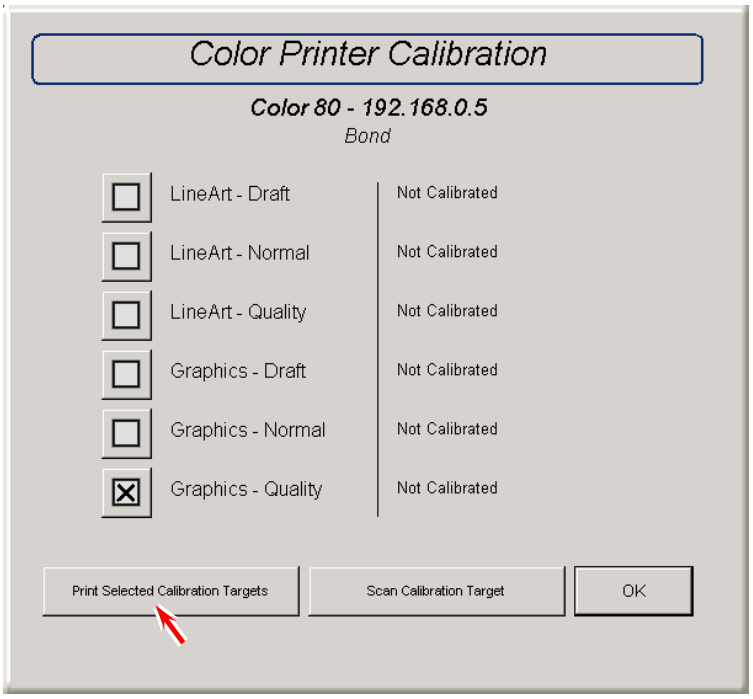
5. As calibration needs to be performed per image mode, choose one of 6 image modes.



NOTE

Calibration for “Graphics - Quality” will also calibrate “Graphics - Normal”, and vice versa. This is the same for “Lineart - Quality” and “Lineart - Normal”.

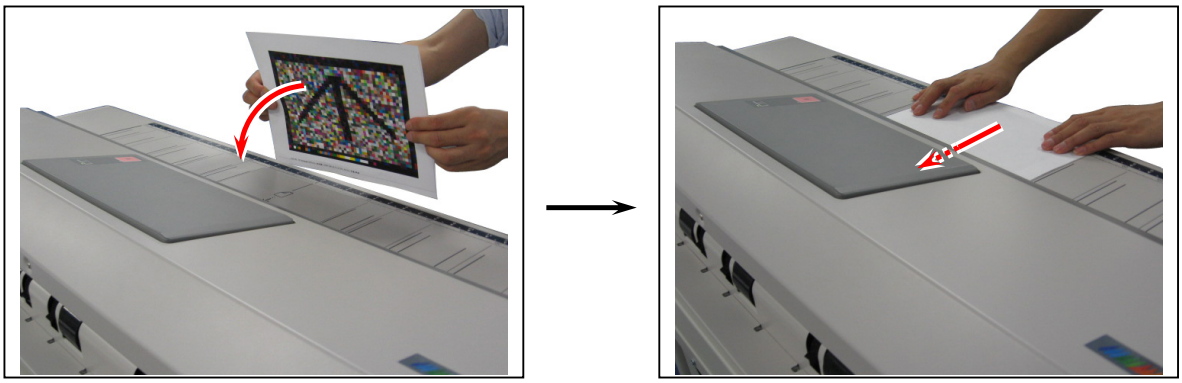
6. Click on **Print Selected Calibration Target**. An exclusive target sheet corresponded to the selected image mode is printed out from the KIP Color 80 printer. (Please trim the target sheet to A4 landscape if printed with a larger paper.)



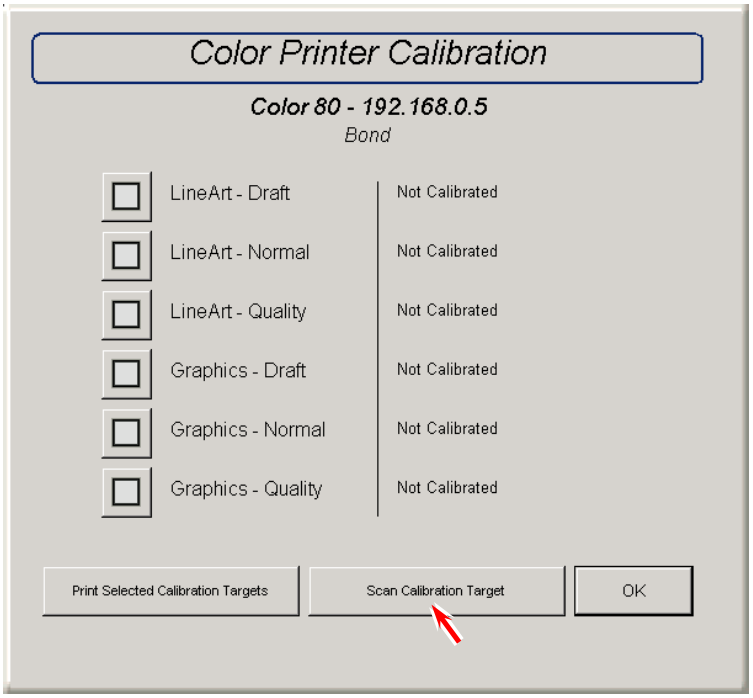
(Target sheet)

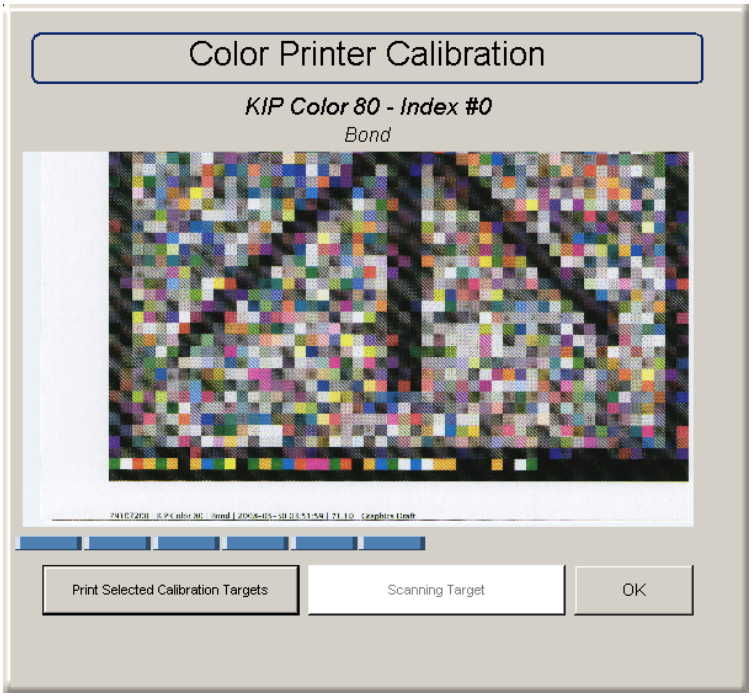


7. Put the target sheet on scanner table with face down and directing its arrow mark to the feeding direction, and feed it into the scanner until the leading edge contacts the feeding roller. It is automatically transported a little then stayed at the waiting position.

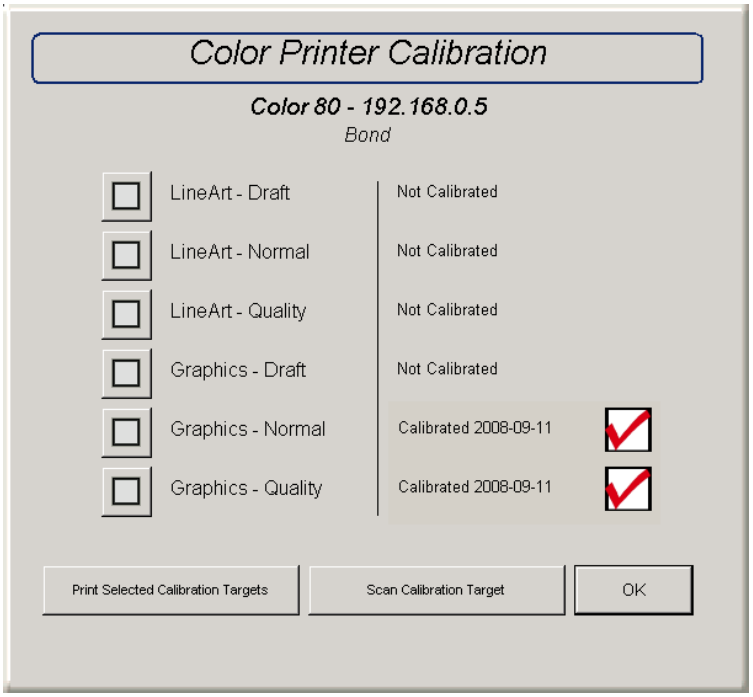


8. Click on **Scan Calibration Target**. KIP2100 scanner starts scanning the target sheet automatically. (It may take some seconds before starting scanning.)



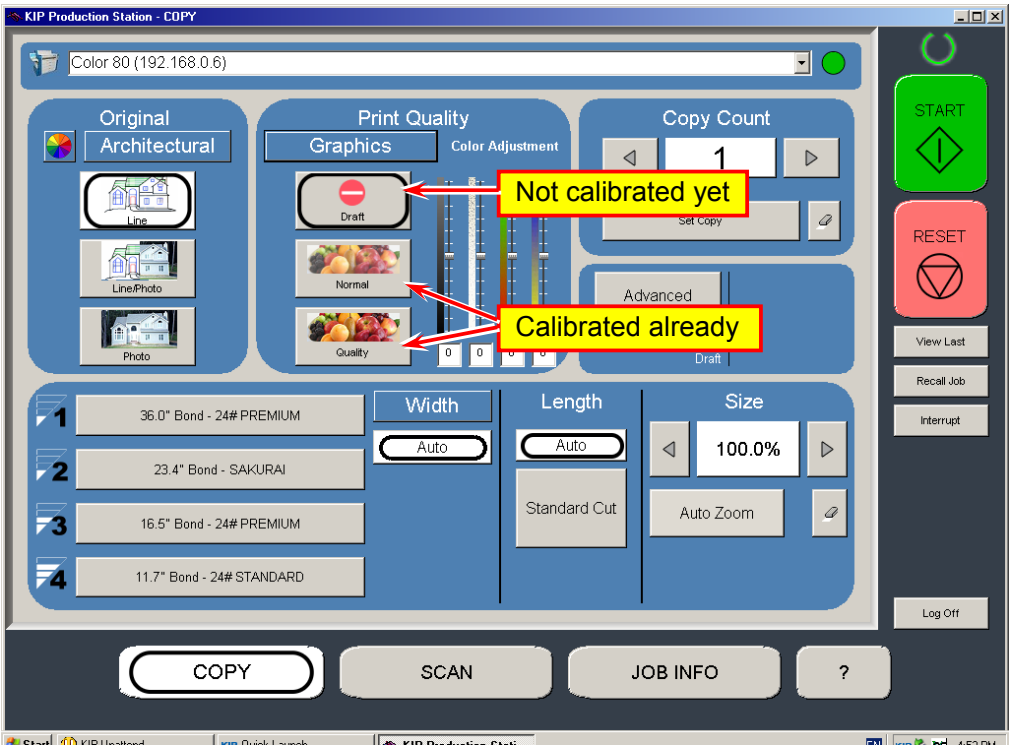


9. When the calibration is finished, the calibrated item(s) is checked as well as provided with current date. Take more loop calibration for other image modes and media types in the same way if necessary.



NOTE

The image mode on the Copy Screen becomes available when calibrated. (The item not calibrated yet is shown with a red mark.)



10. Exit the Production Station, and go to next section [2.12.7 Setup of KC80 RIP].

2.12. 7 Setup of KC80 RIP

Print via KC80 RIP Client on the KC80 IPS becomes available by the following operation.
(Skip this section if you will not use KC80 RIP.)

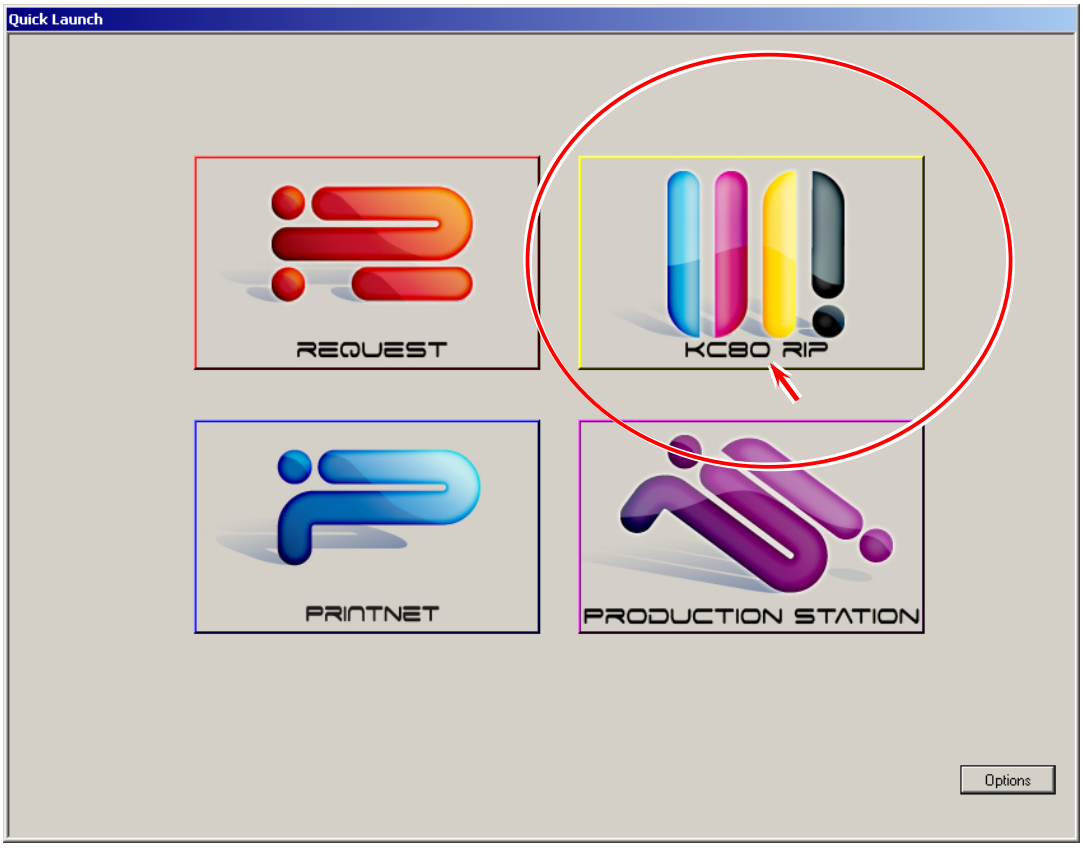
NOTE

The USB Dongle labelled with **KIP RIP** (orange seal) must be installed to the USB port on the front face of KC80 IPS before booting up the KC80 IPS as the KC80 RIP accesses the USB Dongle during booting up.

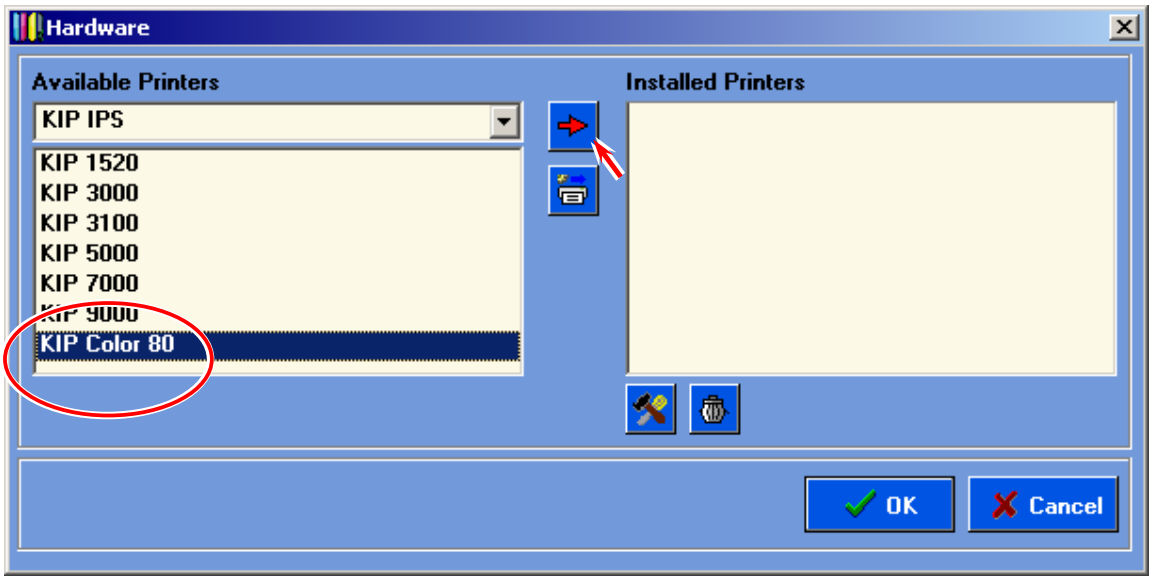




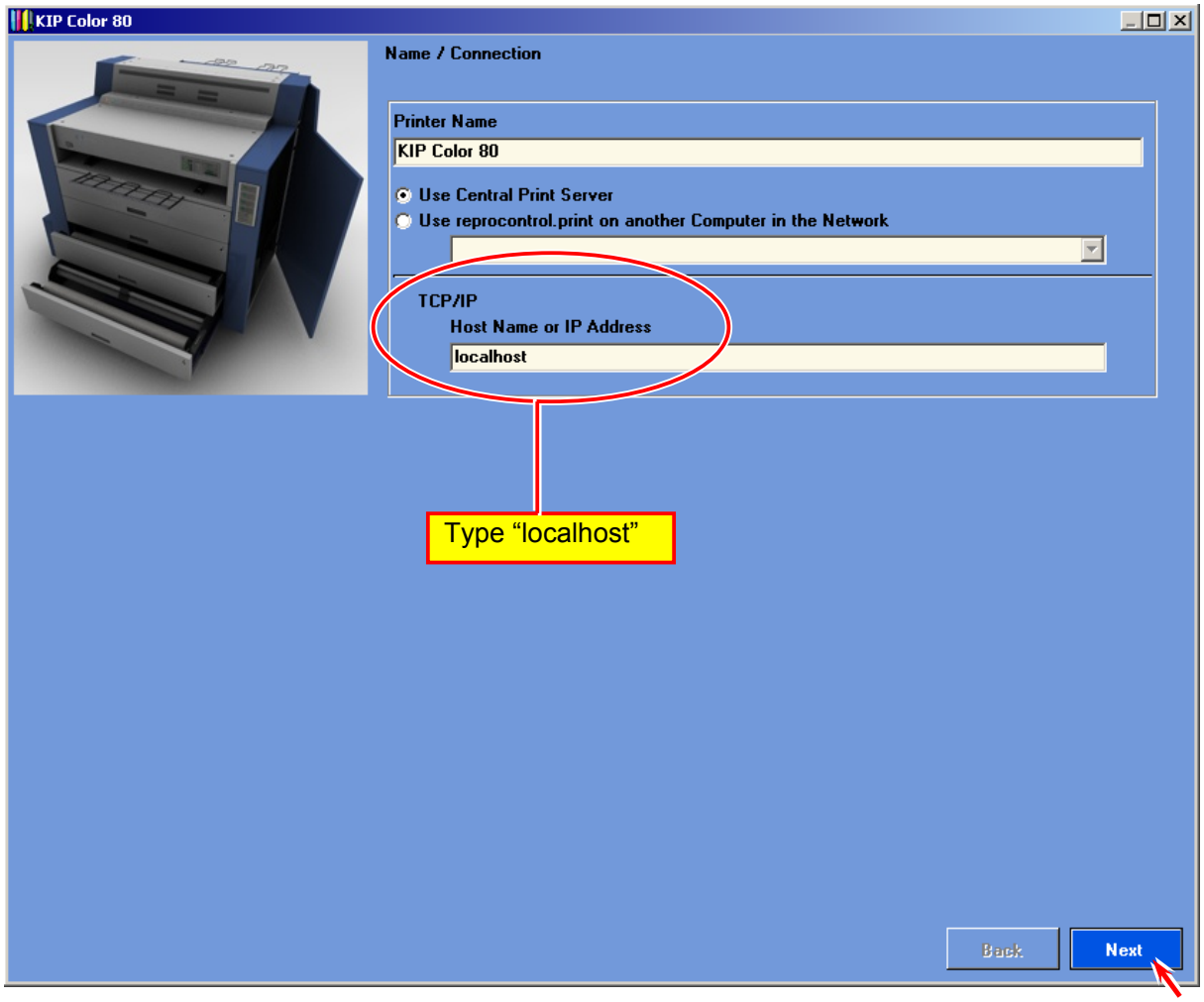
1. Click on **KC80 RIP** button on the KC Home to run the KC80 RIP.



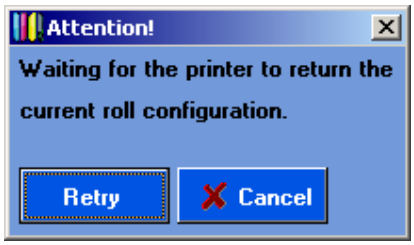
2. The application will ask to install a printer when the KC80 RIP is run for the first time. Select **KIP Color 80** in the list then click on the red arrow icon.



3. When the following page is indicated, type **localhost** in [Host Name or IP Address] field and click on **Next**.

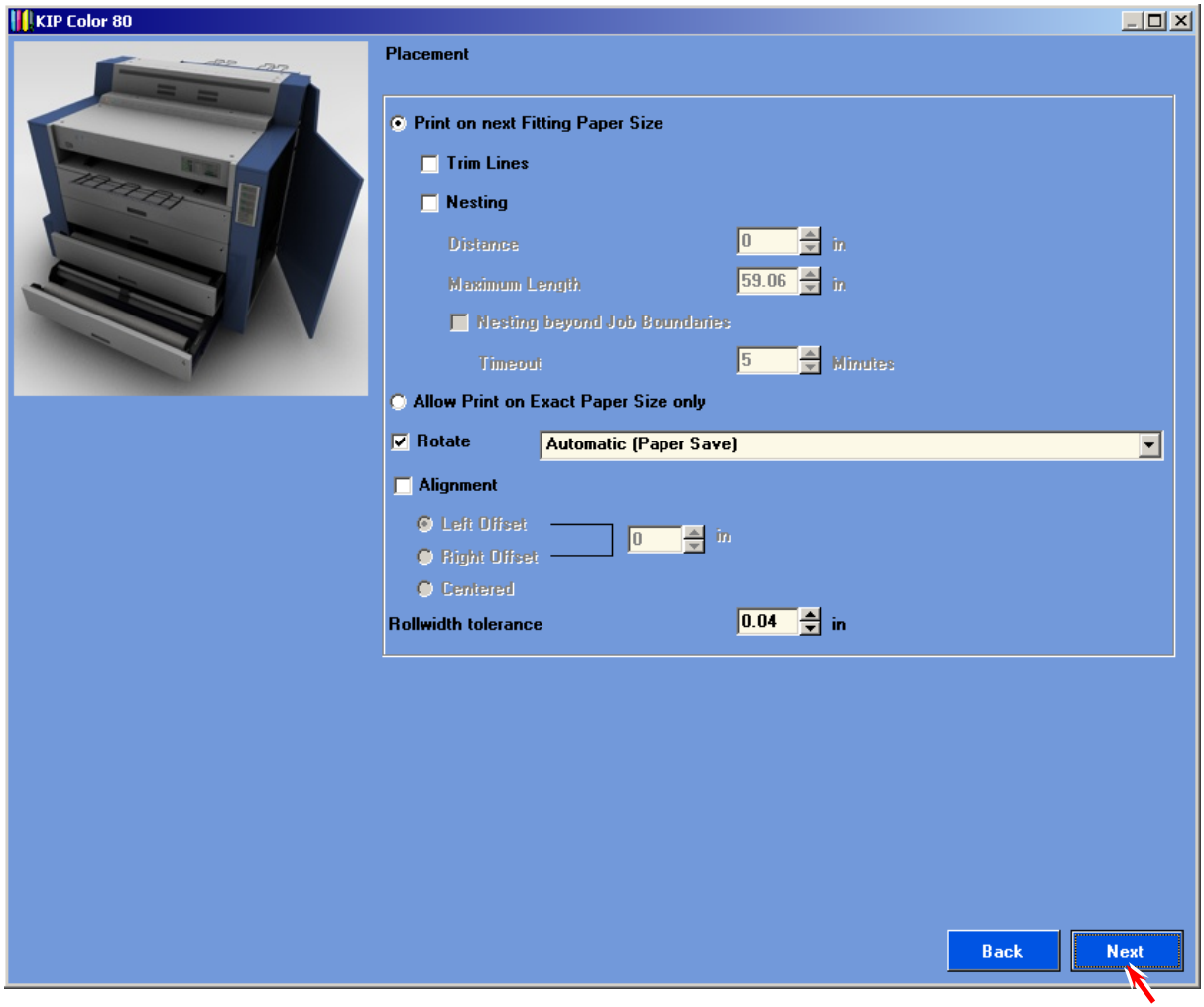


4. KC80 RIP collects the media information from the printer, which will take some time with indicating the following [Attention!]. Please wait a little until this message dialog disappears automatically.

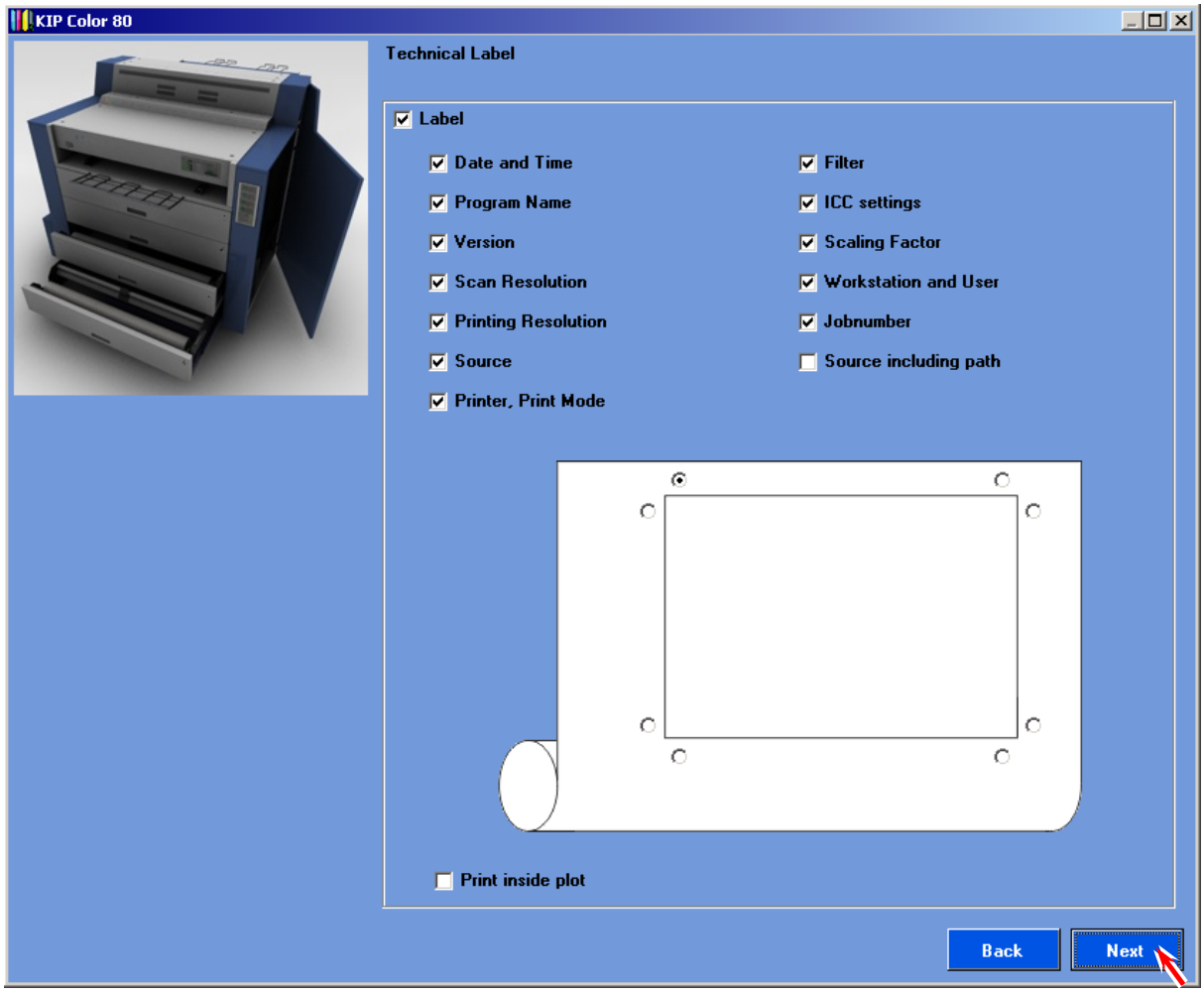


Just wait until the above message disappears.

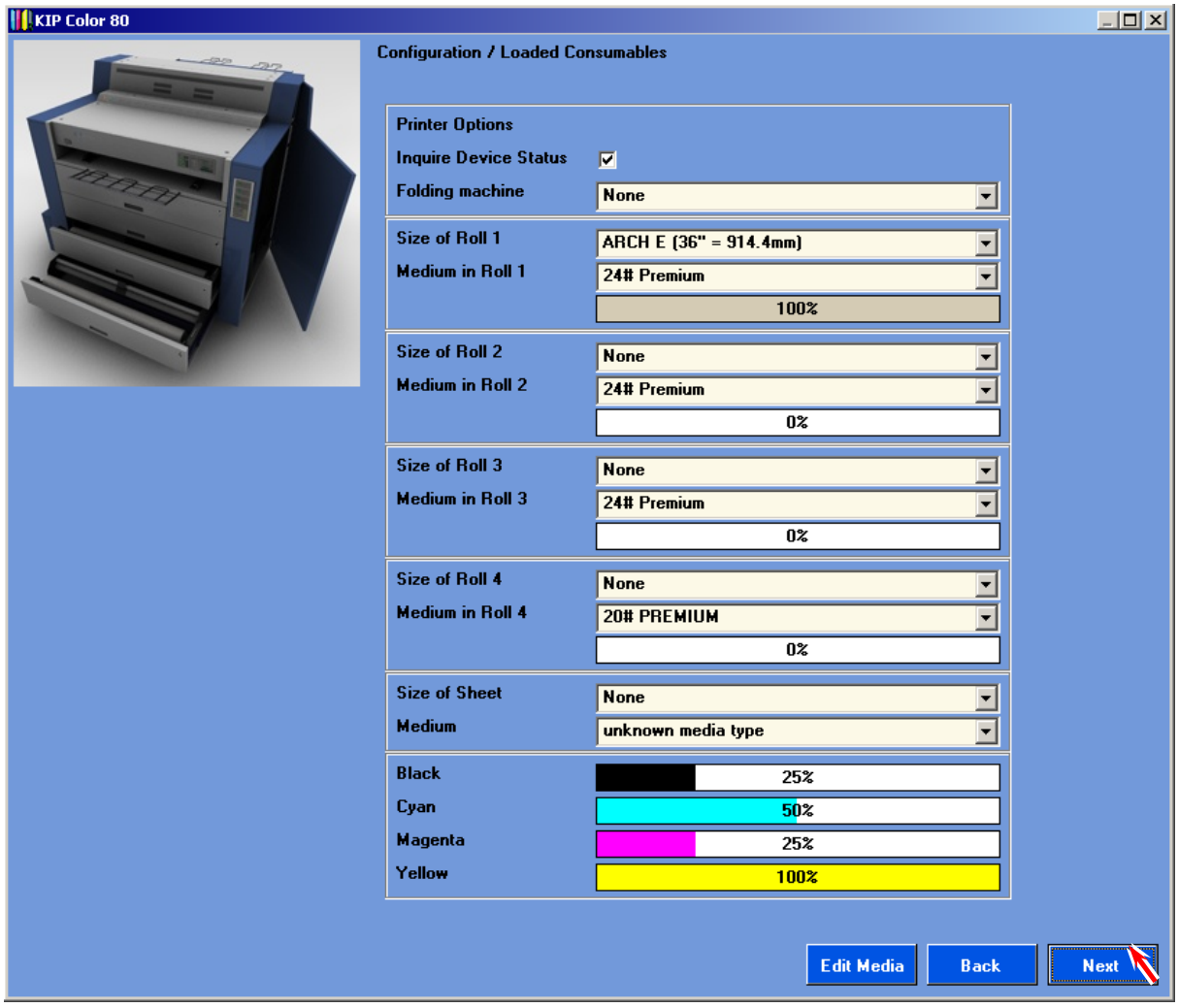
5. The following page is indicated for deciding printer's default settings for "placement". Change the settings if necessary, and click on **Next**.
(These settings can be changed anytime later when you want.)



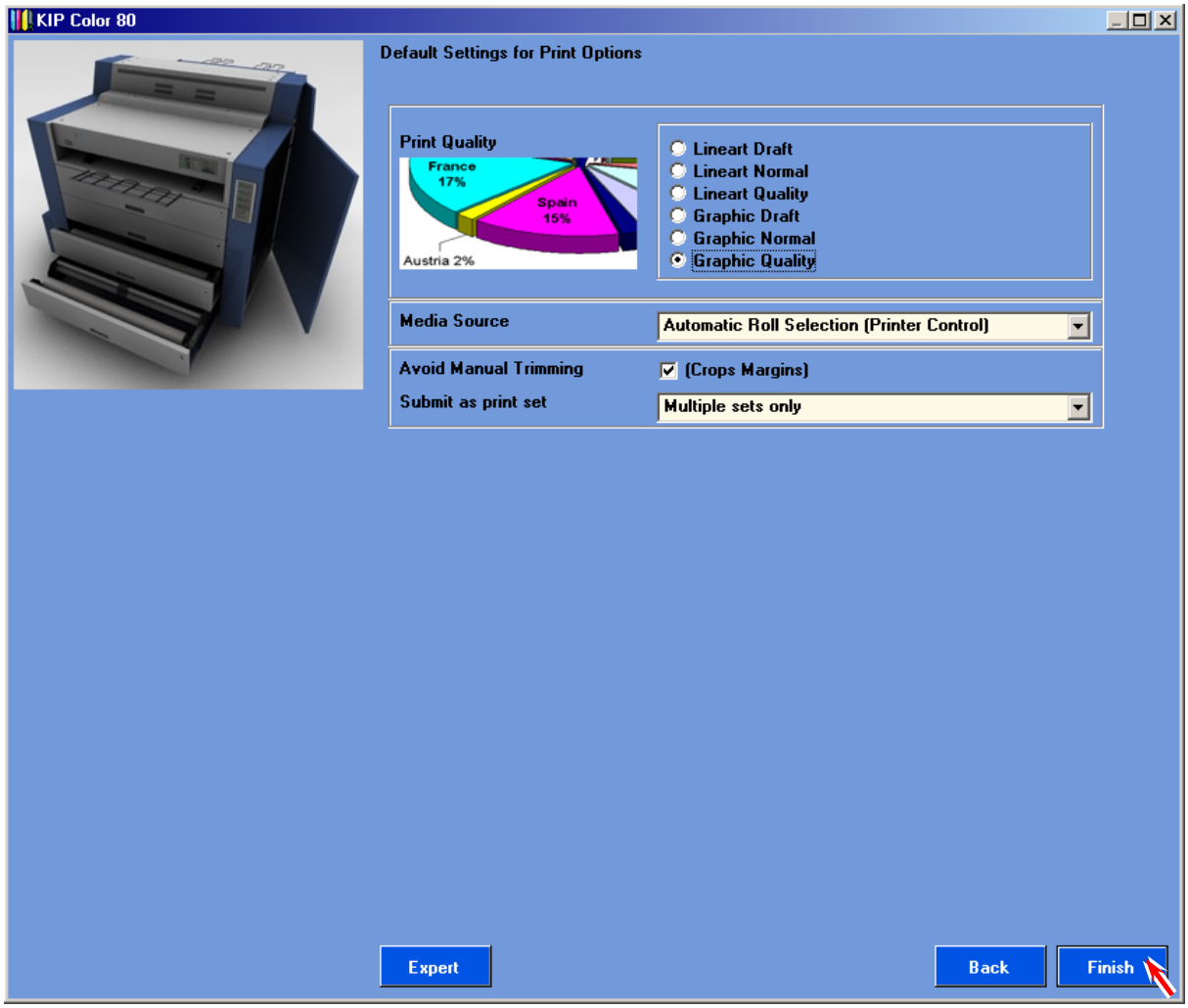
6. The following page is indicated for deciding printer's default settings for "technical label". Change the settings if necessary, and click on **Next**.
(These settings can be changed anytime later when you want.)



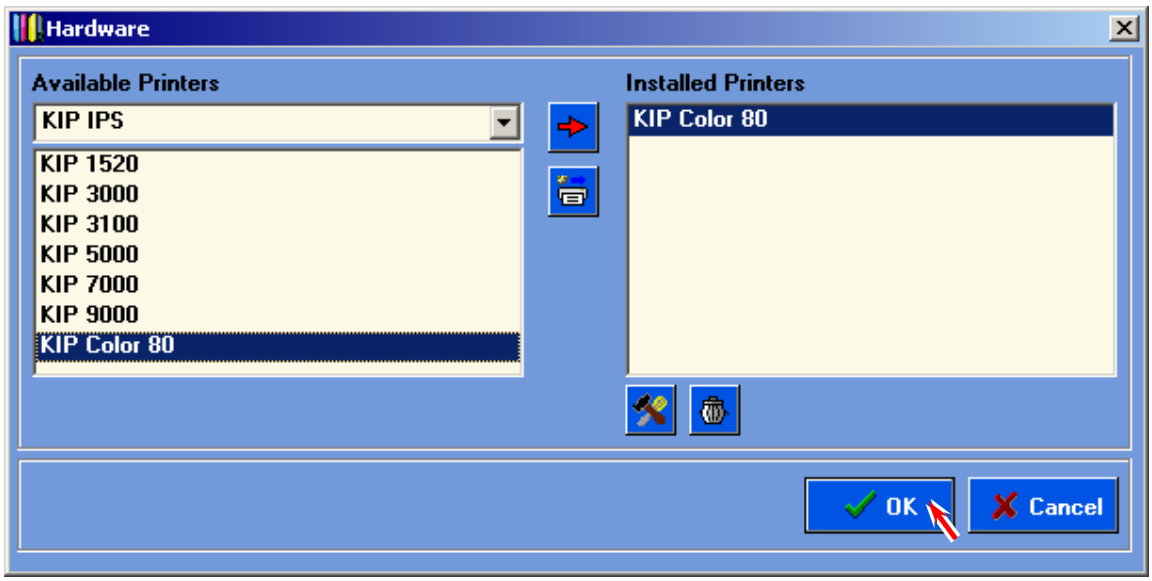
7. The status of option device, media and toner informed from the printer is indicated. Change the media setting by clicking on **Edit Media** if necessary, and click on **Next**. (These settings can be changed anytime later when you want.)



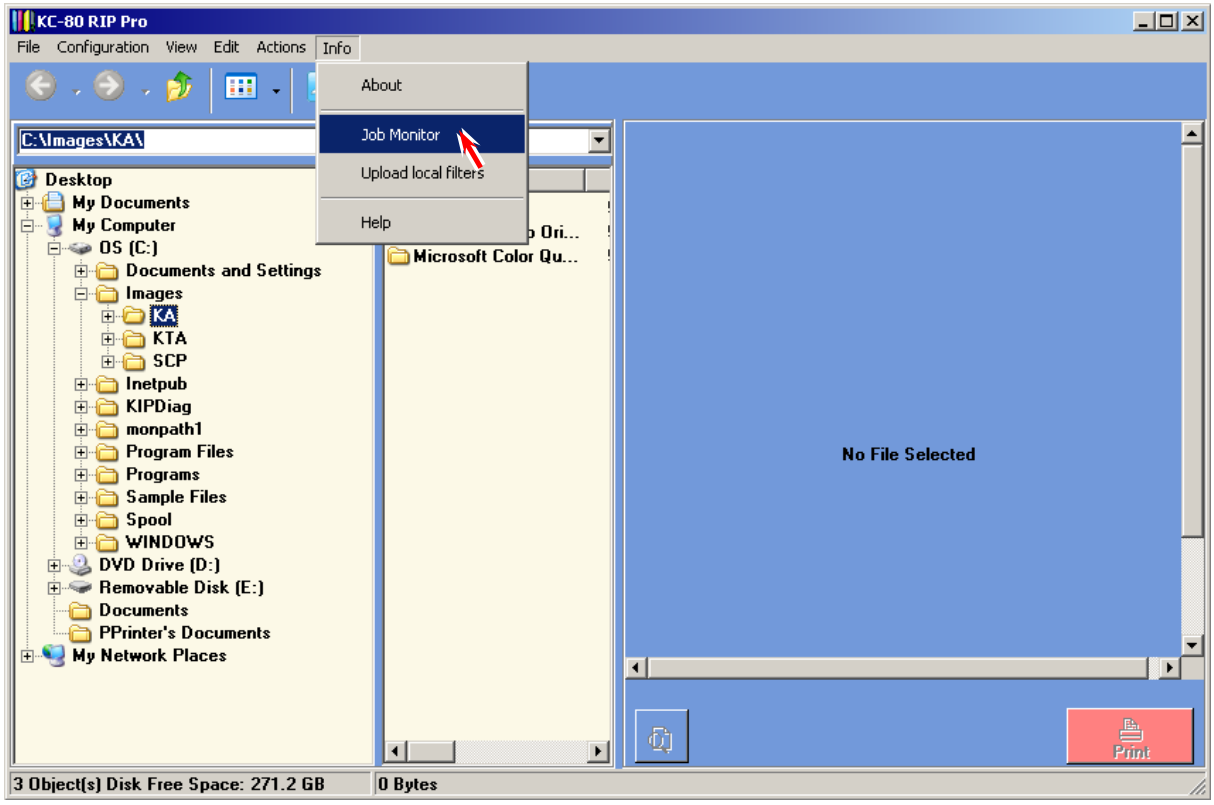
8. The following page is indicated for deciding printer's default settings for "print option". Change the settings if necessary, and click on **Finish**.
(These settings can be changed anytime later when you want.)



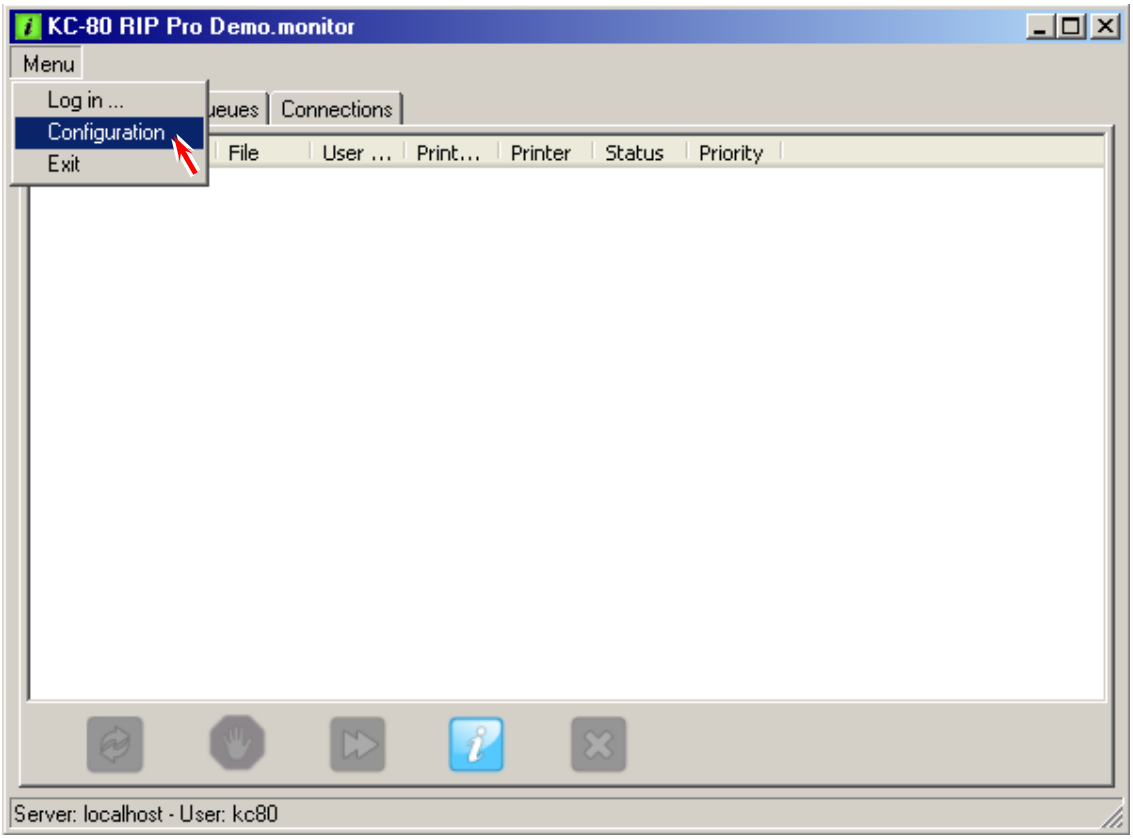
9. Click on **OK** to finish the installation and configuration of printer.



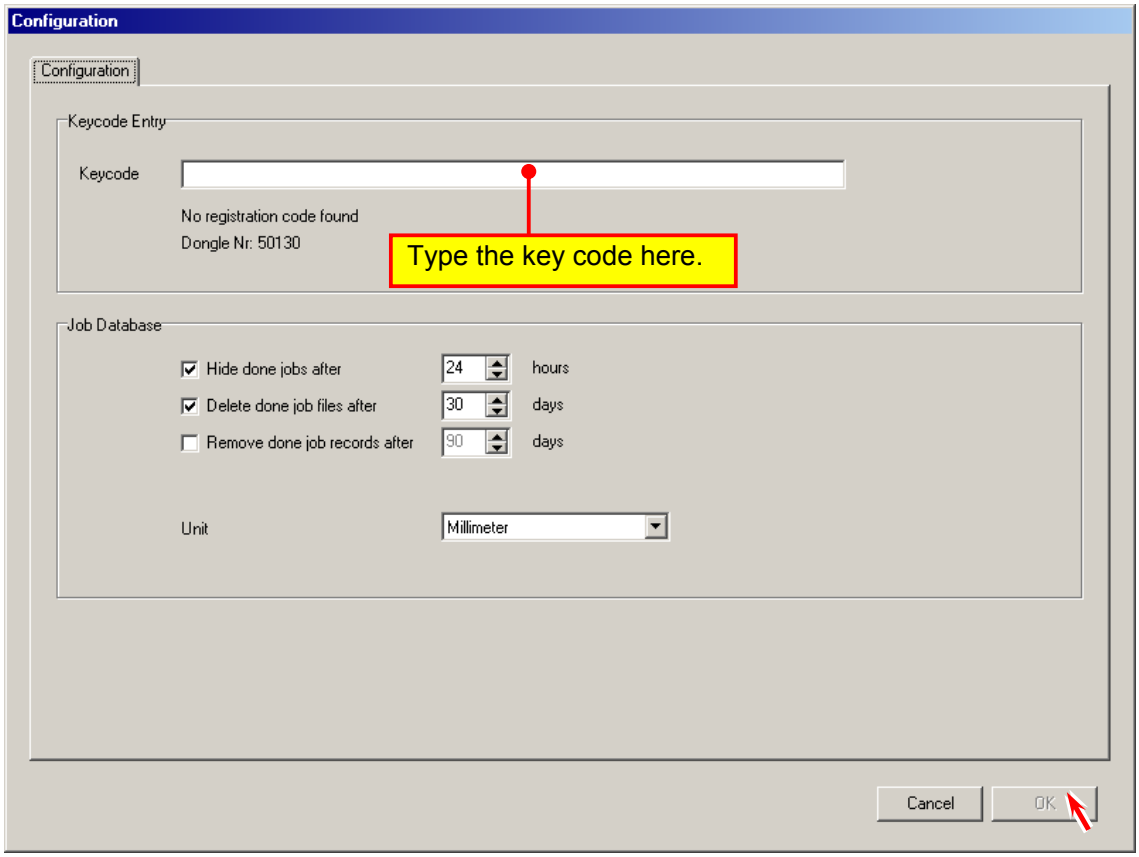
10. Choose as **Info** → **Job Monitor**.



11. Choose as **Menu** → **Configuration**.

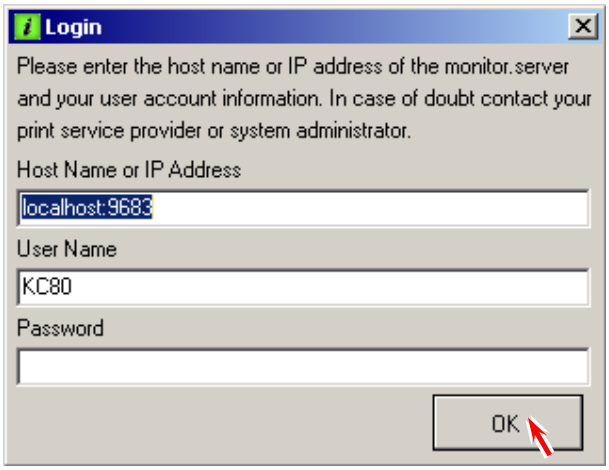


12. Type the key code in **Keycode** field then click on **OK**. This will make the KC80 RIP Client function by normal operation mode.

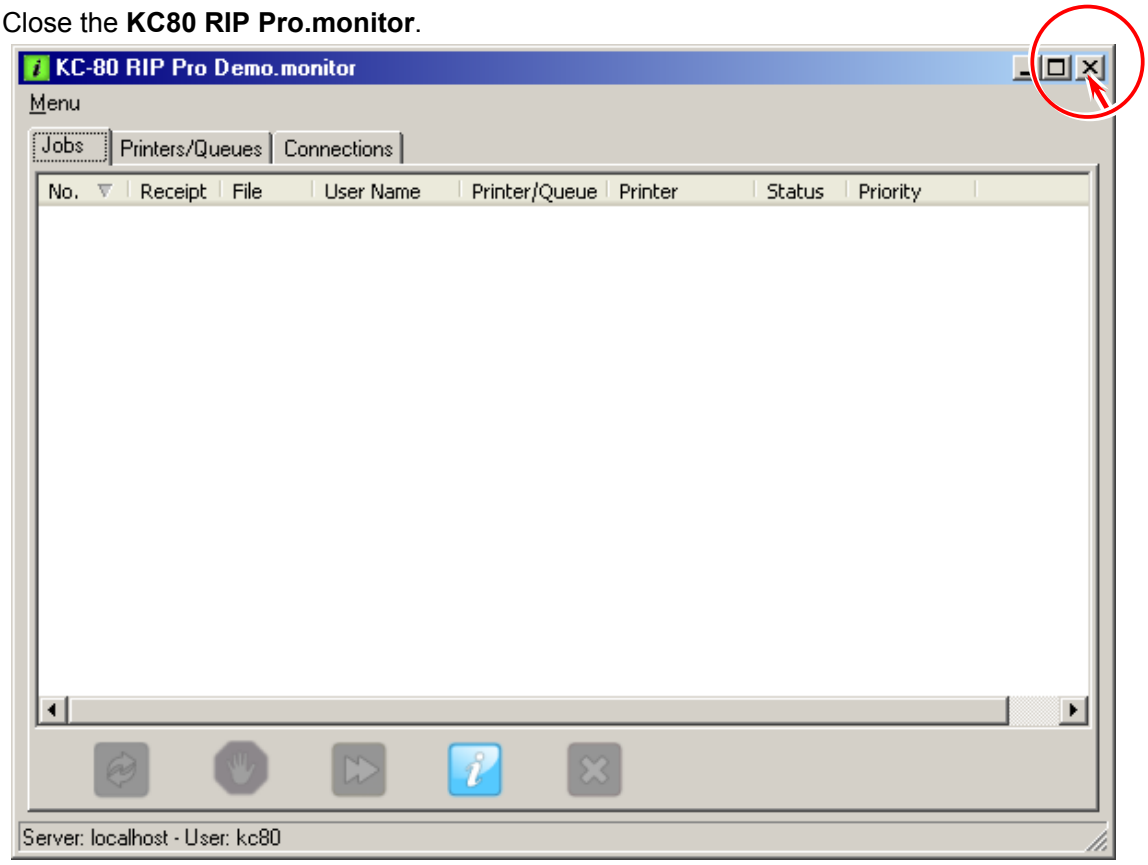


> **NOTE**
>
> The software package includes the necessary key code that uniquely corresponds to the Dongle Number.

13. When the following Login page is indicated, confirm that **localhost:9683** is indicated in [Host Name or IP Address] field and also **KC80** is indicated in [User Name] field. After confirming this, click on **OK**.

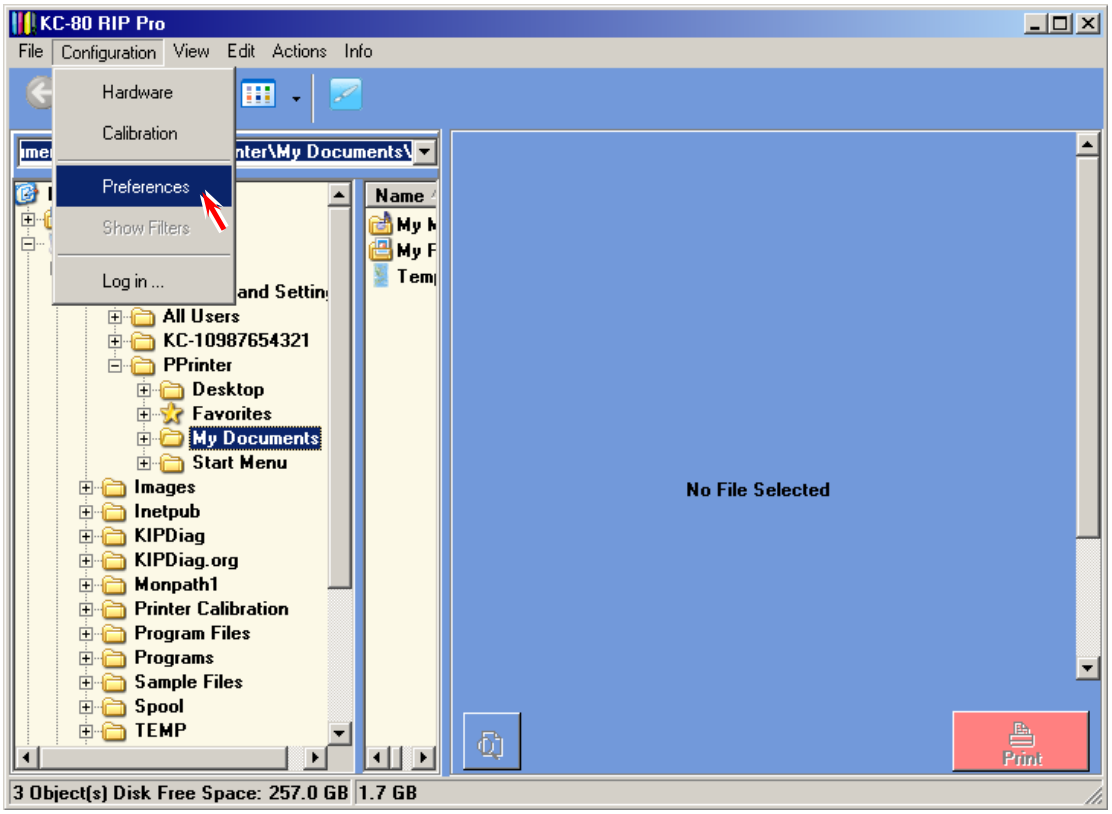


14. Close the **KC80 RIP Pro.monitor**.

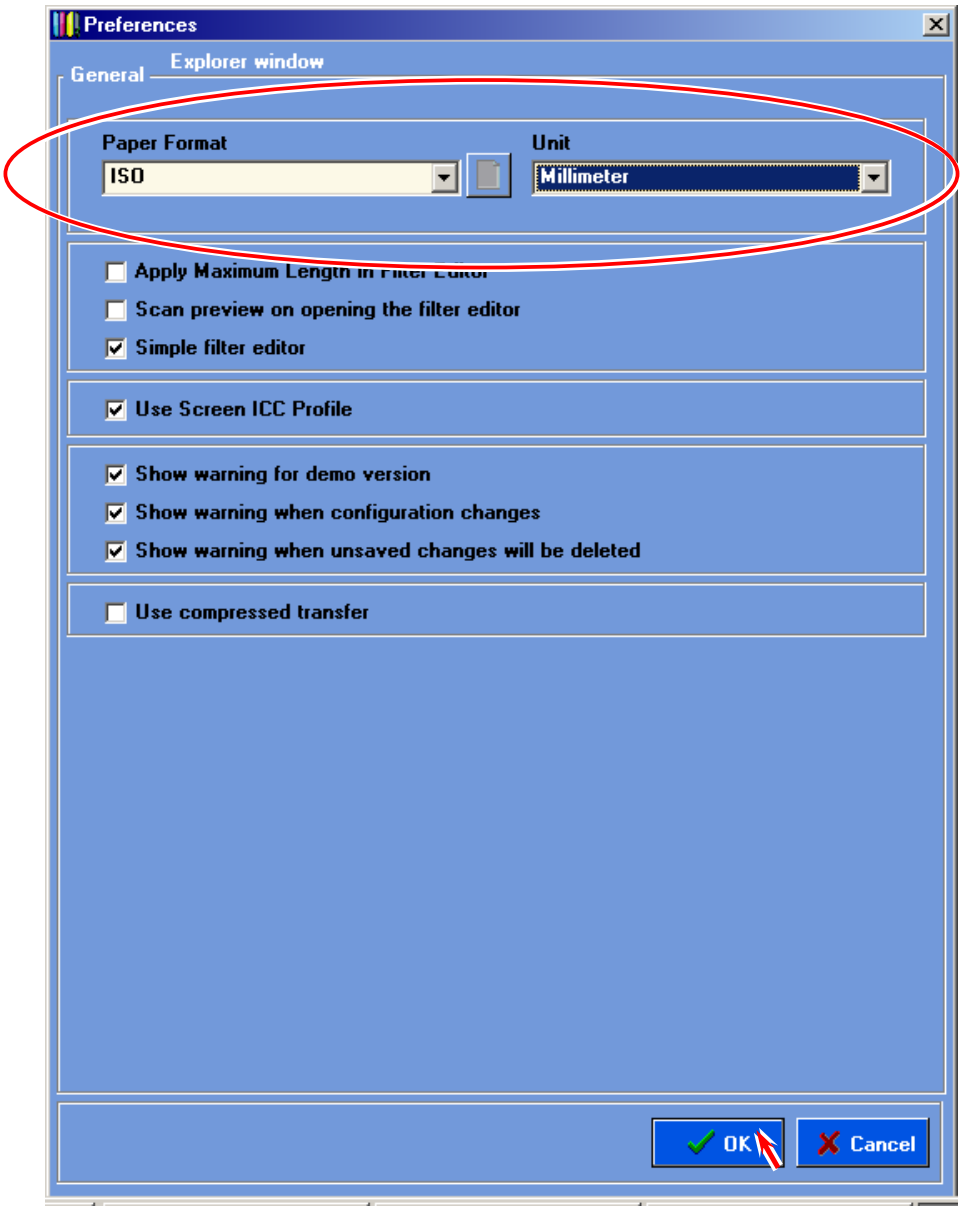


The Following operation is required when your printer format needs to be metric. (KC80 RIP is set to inch mode by default.)

15. From the menu bar, choose as **Configuration** → **Preferences**.



16. Set [Paper Format] to **ISO** and [Unit] to **Millimeter**, and click on **OK**.

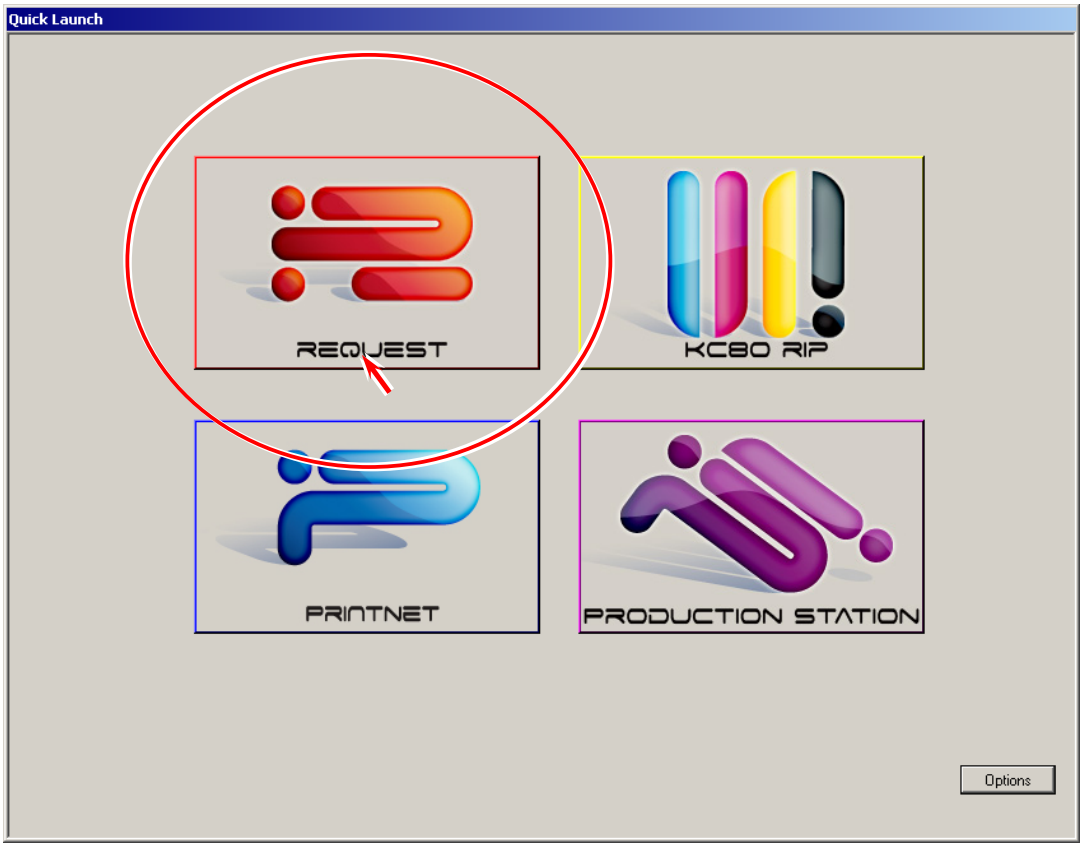


17. Exit the KC80 RIP, and go to next section [2.12.8 Setup of KIP Request].

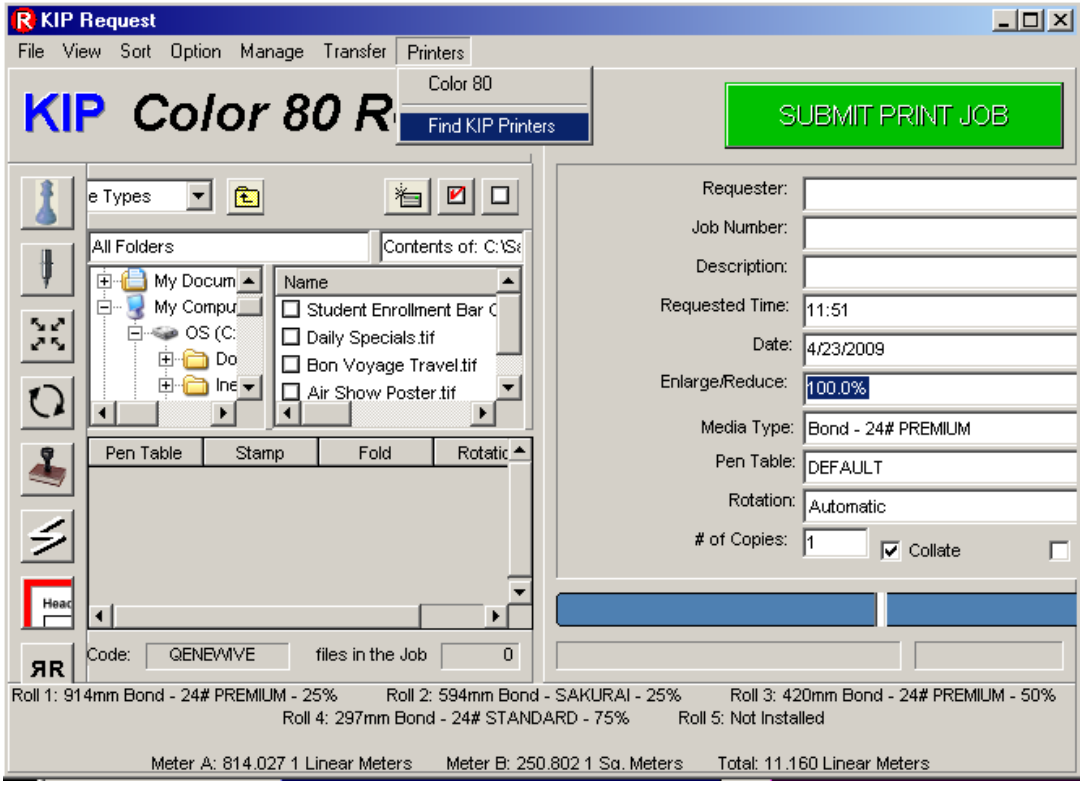
2.12. 8 Setup of KIP Request

Print via KIP Request on the KC80 IPS becomes available by the following operation.
(Skip this section if you will not use KIP Request.)

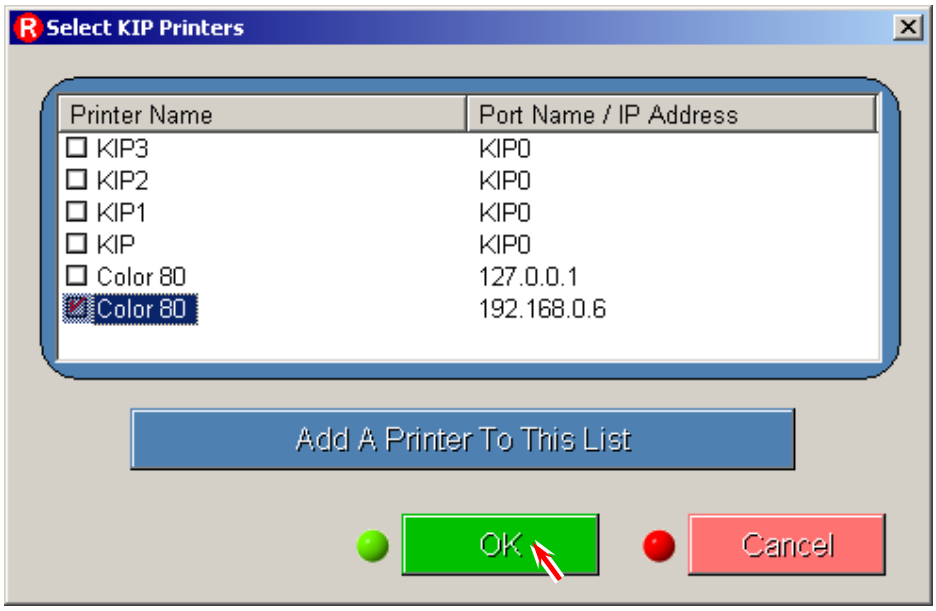
1. Click on **REQUEST** button on the KC Home to run the KIP Request.



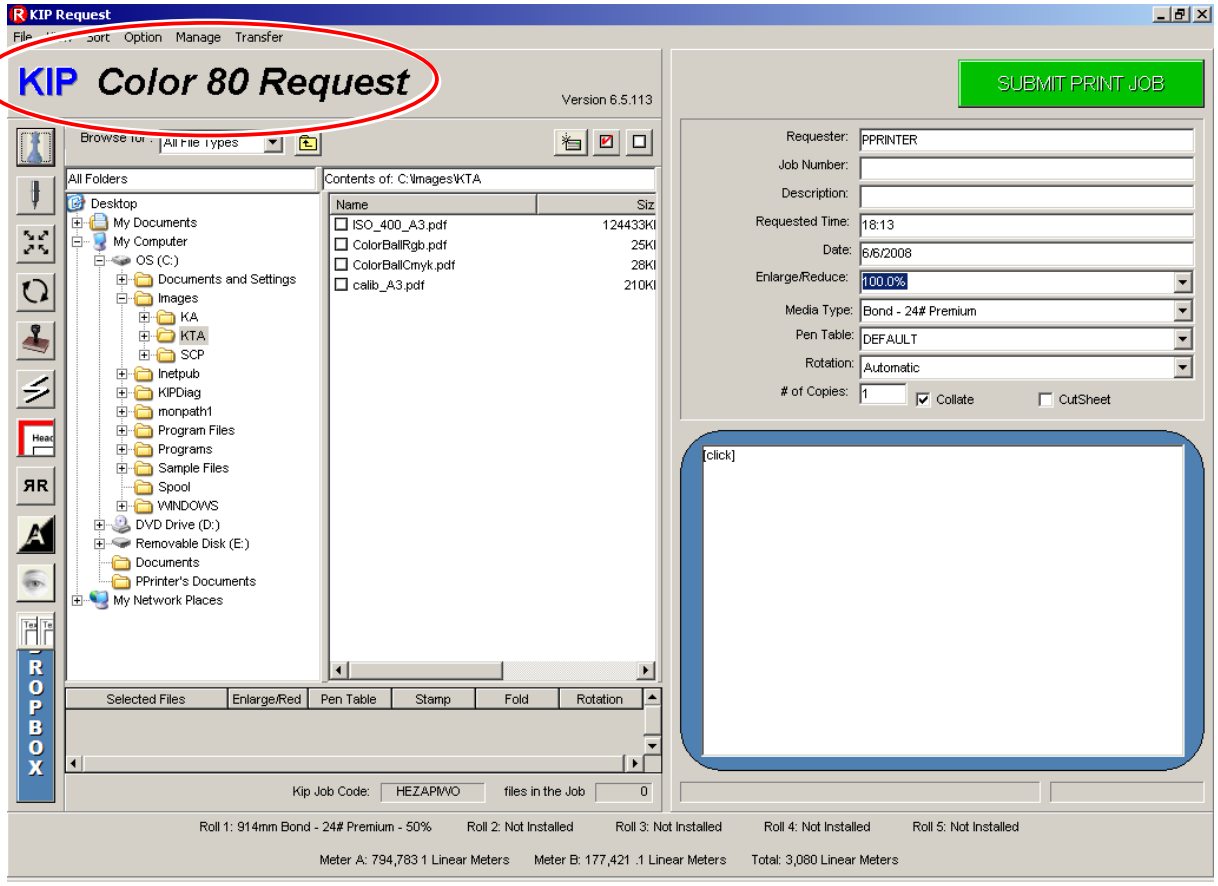
2. Choose as **Printers** → **Find KIP Printers**.



3. KIP Request automatically checks the network and indicates all the KIP printers. As the printer name “Color 80” is indicated with its IP Address, check it and click on **OK**.



4. “Color 80 Request” will be indicated. Now it is possible to print from the KIP Request.

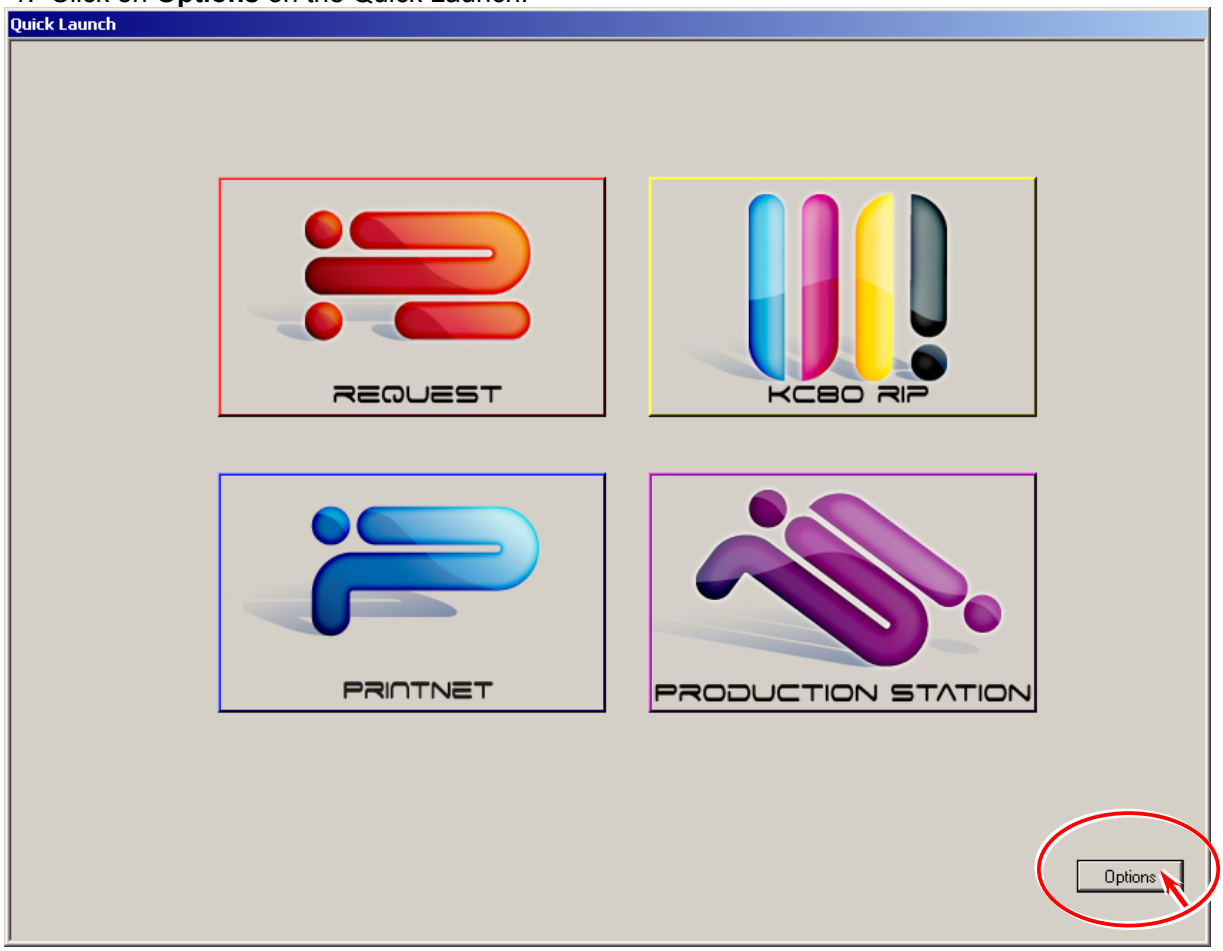


5. Exit the KIP Request, and go to next section [2.13 Backup of Printer Parameters].

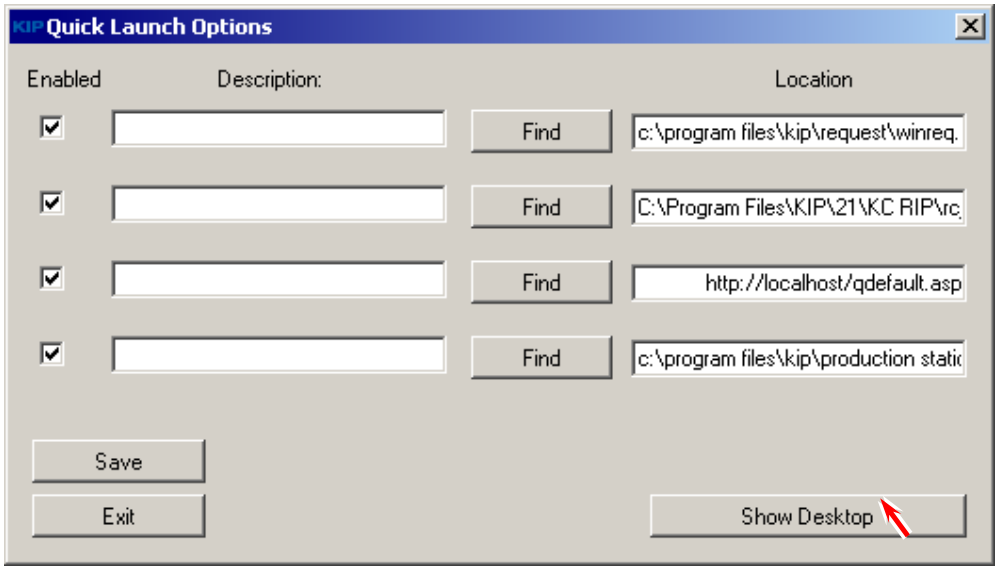
2.13 Backup of Printer Parameters

Please save the current KIP Color 80 printer parameters into a backup ini file if you have successfully finished everything stated in the setup procedures. Please bring back the backup ini file to your office and keep it with its machine serial number just in case of future requirement for restoration.

1. Click on **Options** on the Quick Launch.



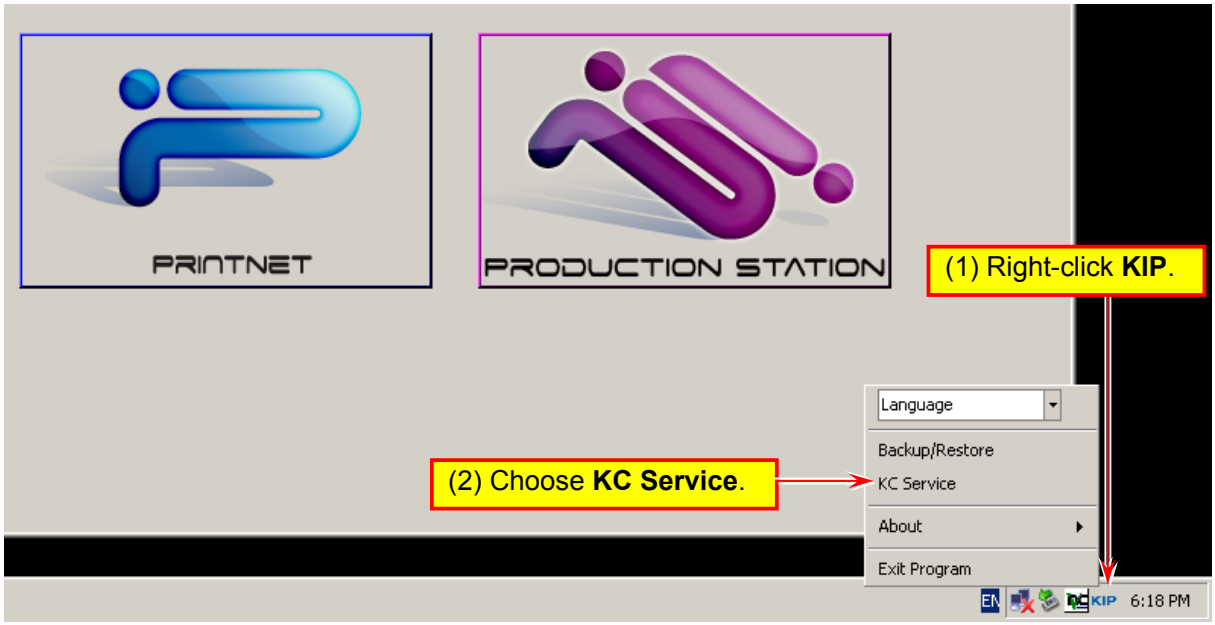
2. Click on **Show Desktop** in the Quick Launch Options.



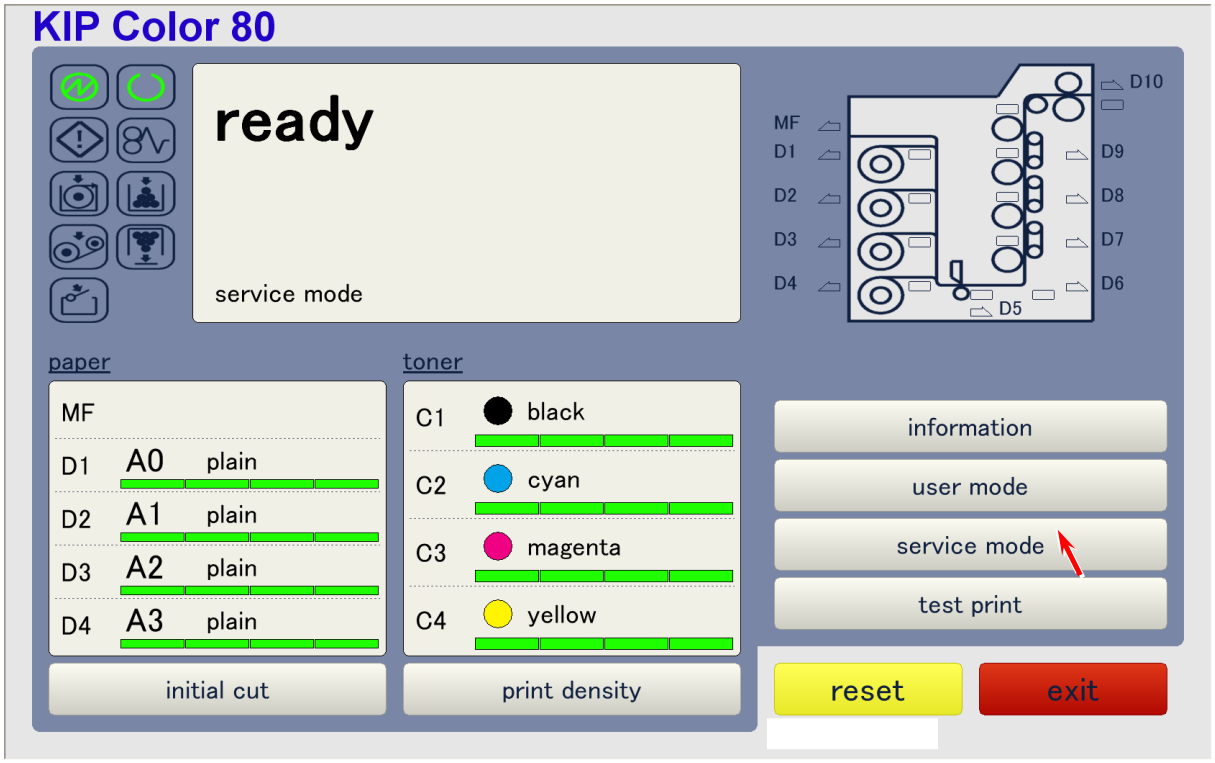
3. Type service password **kip** in the input field then click on **OK**. Windows desktop is indicated.



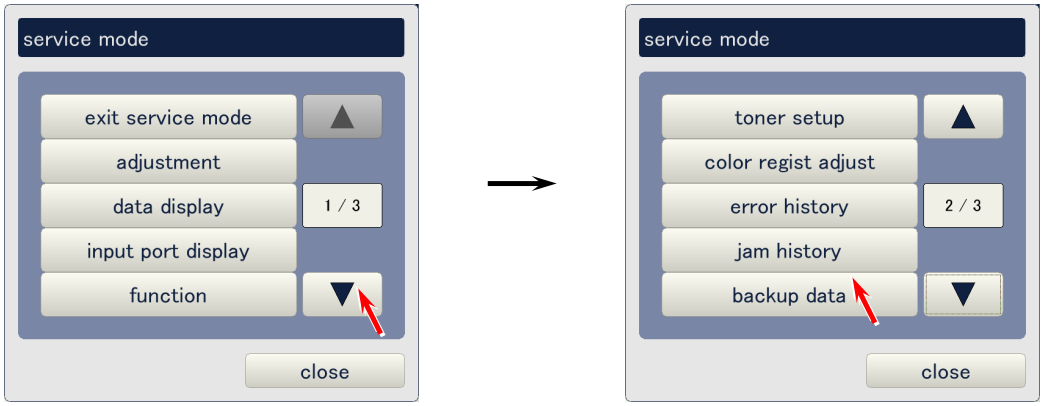
4. You will find **KIP** in the task tray. Right-click **KIP** and choose **KC Service** in the sub menu to run the KipDiagColor.



5. Click on **service mode**. (Enter the service password **0000** when required.)

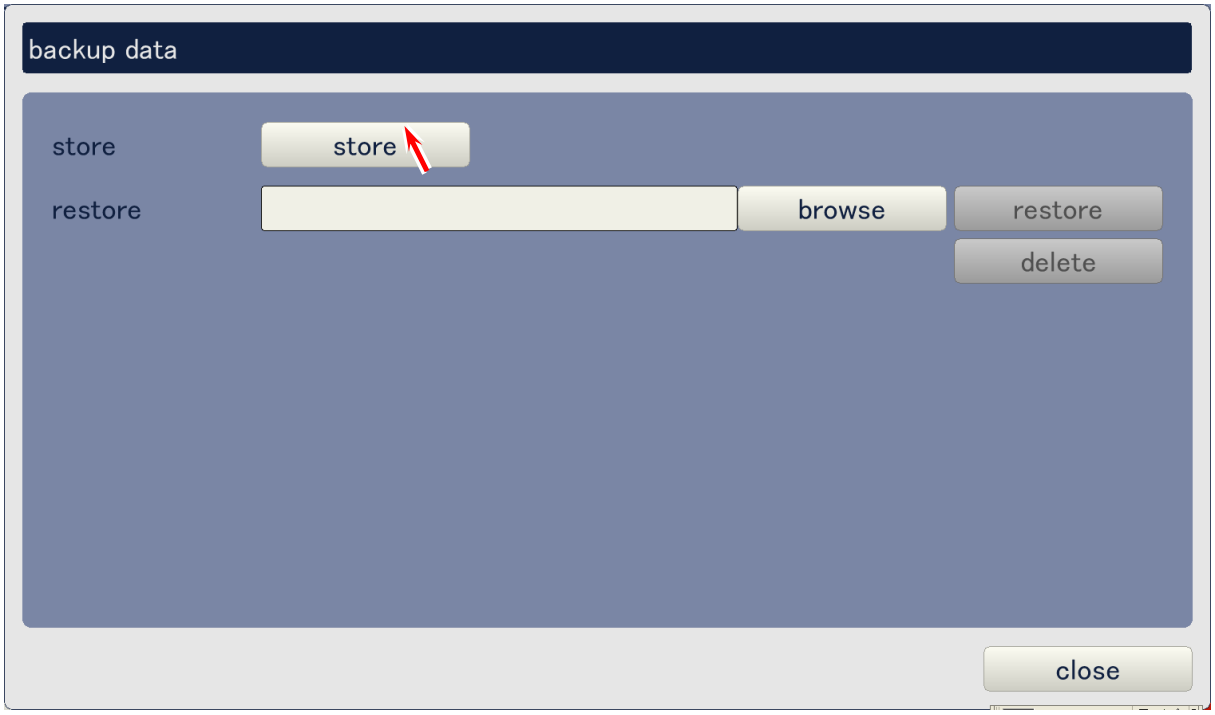


6. Open the second page (2/3) of the Service Mode menu using the triangle icon and choose **backup data**.

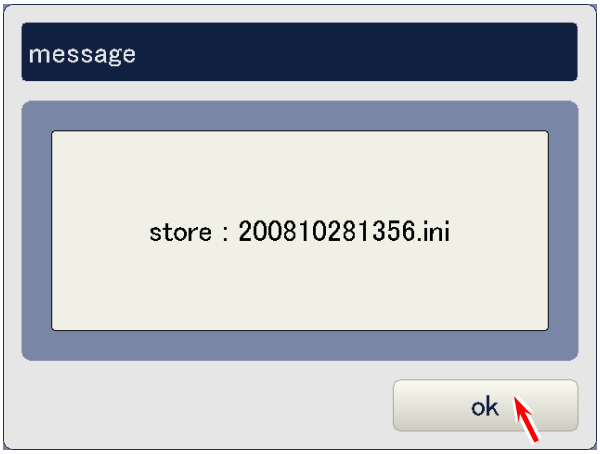


First page Second page

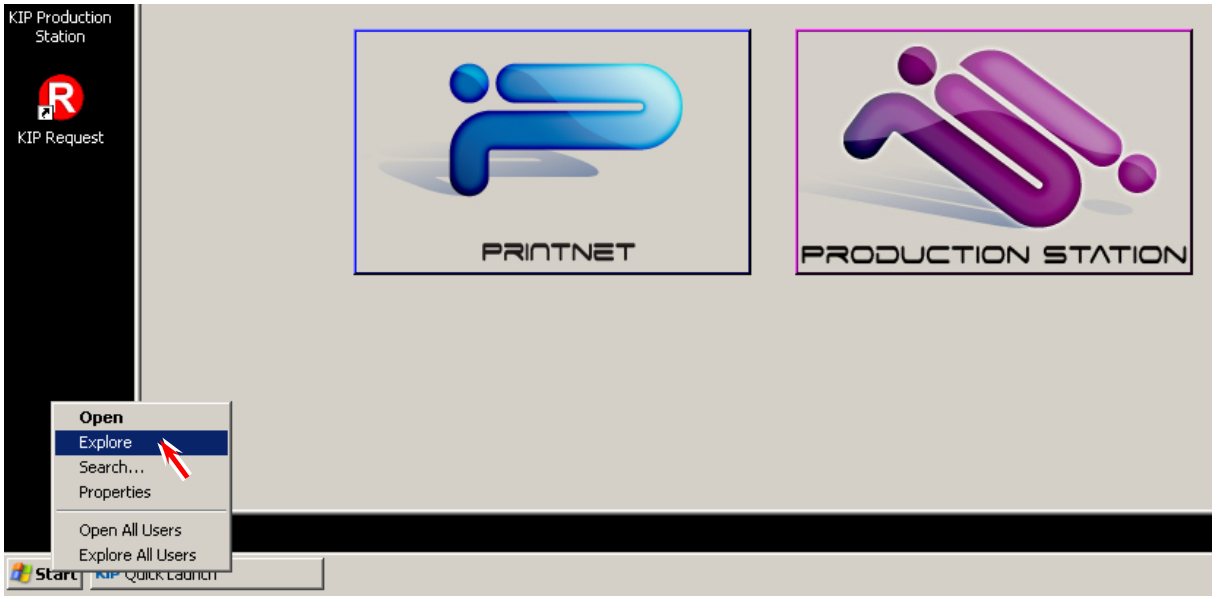
7. Click on **Store**. This will save all current printer parameters in a backup ini file.



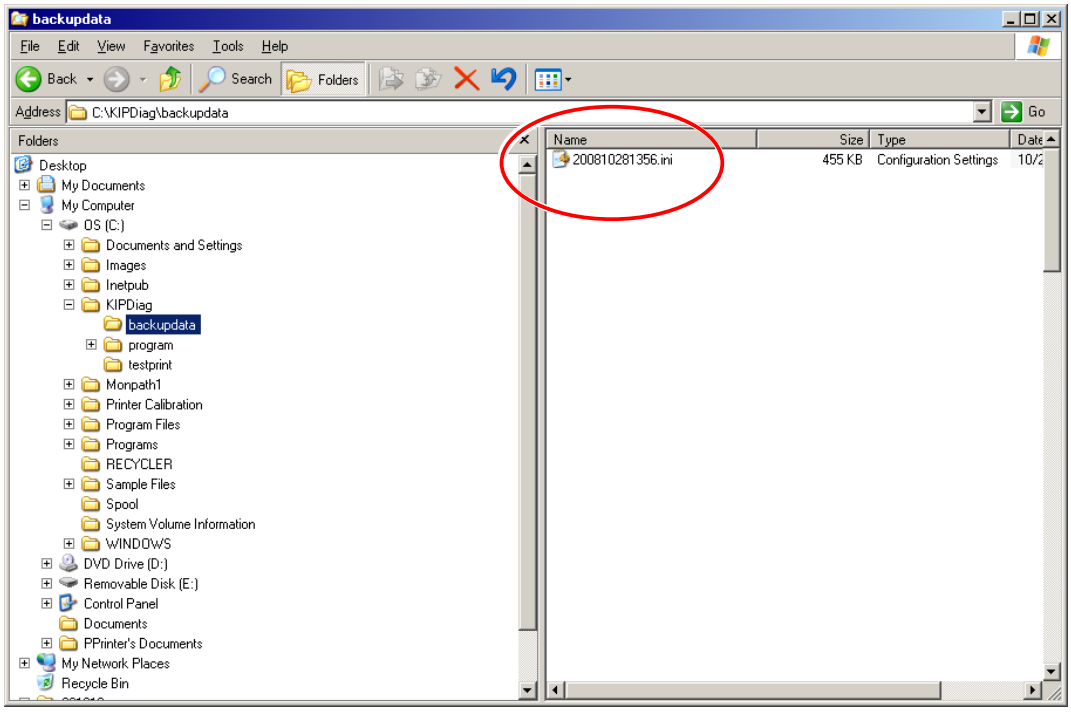
8. The backup ini file will be named with the current date and time. Click on **ok**. Close the backup data page then exit the KipDiagColor.



9. Run the Windows Explorer.



10. Browse to the backup ini file located at **C:\KipDiag\backupdata**, and copy it to such recording media as USB Memory. Please bring it back to your office and keep it just in case of future use.



Chapter 3

Print Process & Controls

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3. 1 General Outline of the Print Process

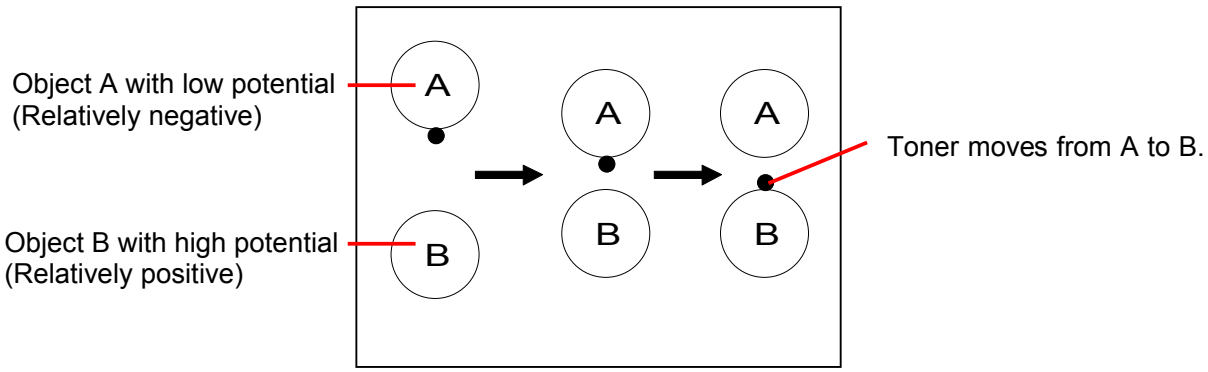
3. 1. 1 Characteristic of toner

The toner for the KIP Color 80 has a characteristic to be charged “negative”, which tends to be attracted to a more “positive” object.

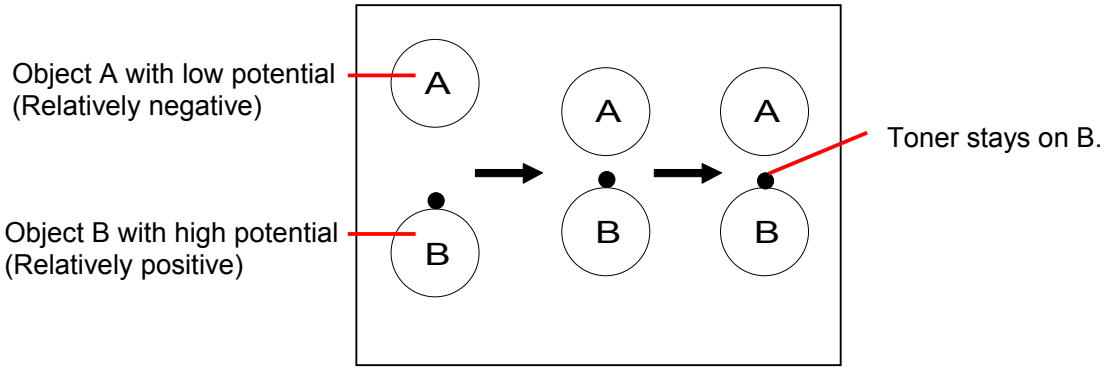
Suppose that there are objects A and B, and the situation is as follows.

1. Electric potential of the object B is higher than that of object A.
2. Toner exists on the object A.

Comparing the potential of both objects, it can be said that the object B is relatively “positive” and the object A is “negative”. (In another word, object B is more “positive” than the object A.)
As the toner is “negative”, it is attracted to the object B that is more “positive”.
If you move the object B close to the object A, therefore, the toner moves onto the object B.



On the contrary, suppose that the toner exists on the object B of which electric potential is higher than the object A.
Even if you move the object A close to the object B, the toner continues to stay on the object B because negative toner and relatively negative object A repel each other.

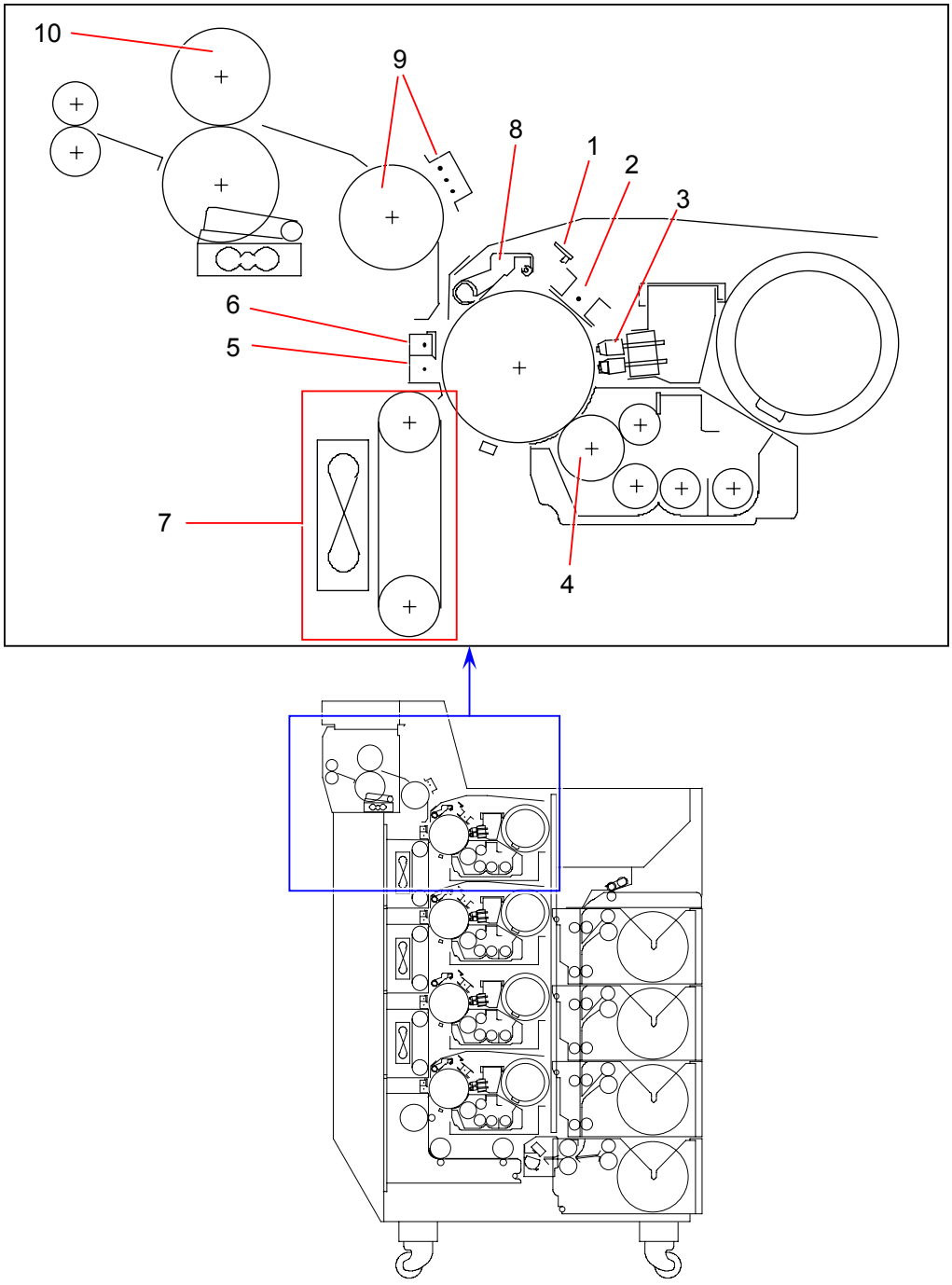


Thus, the toner has a characteristic to move from one place with a lower potential to another place with a higher potential.
If we control the electric potentials, it is possible to move the toner from one place to another as we intend, or it is also possible to remove the toner from an unwanted place.
KC80 controls the electric potentials properly operating each part as Drum, Corona Units and Developer Unit.
The movement of toner is controlled correctly and several processes as Development, Toner Transfer, Drum Cleaning and etc. are performed.

3. 1. 2 Overall flow of print process

Print process consists of the following 10 steps. Steps from 4 to 10 are common process for all of 4 colors.

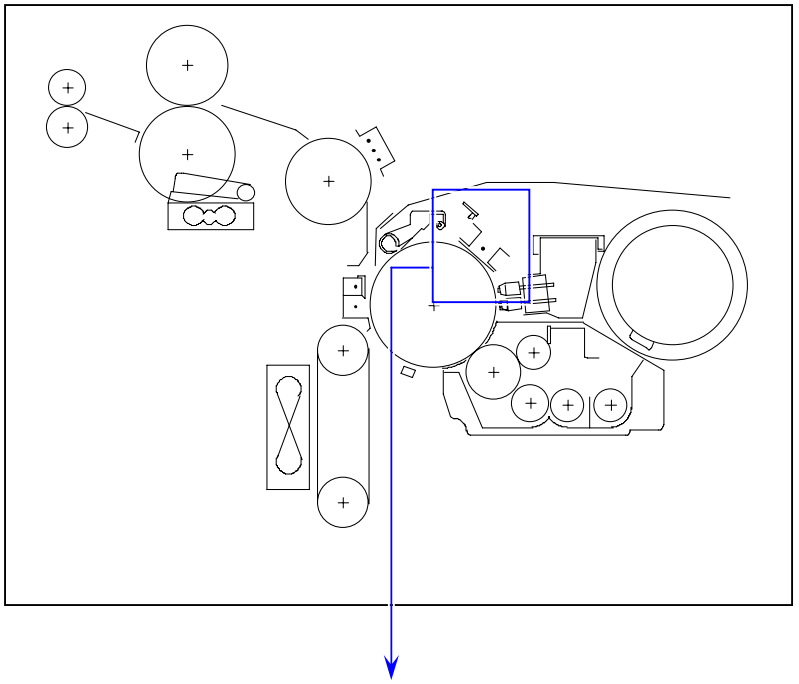
(1) Erasing
(2) Drum charging
(3) Exposure
(4) Development
(5) Transfer of toner image
(6) Separation of media
(7) Media transportation by Transportation Unit
(8) Drum cleaning
(9) Media transportation by the Attraction Corona and Attraction Roller
(10) Fusing

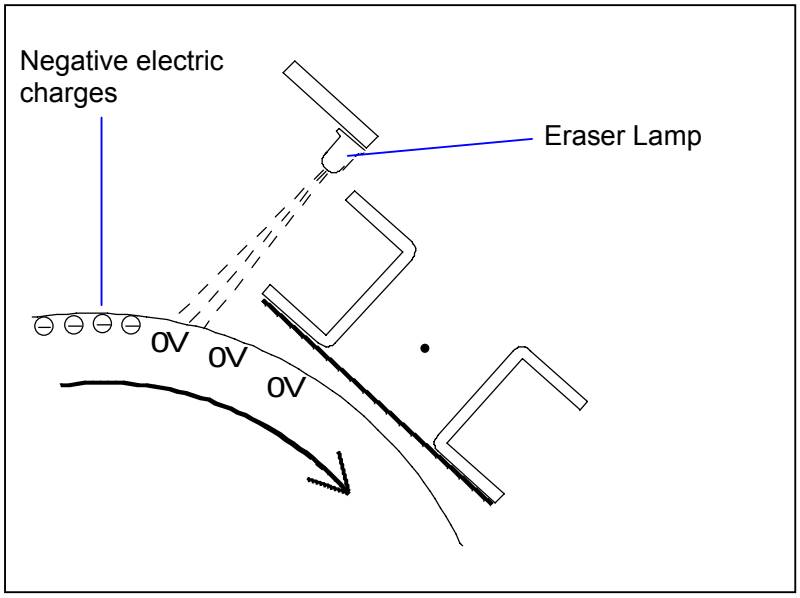


3. 2 Description of Each Step of Print Process

3. 2. 1 Erasing

Some negative electric charges generated in the previous imaging process are remaining on the Drum Surface. Before starting the next imaging process, these negative charges must be removed. As the Drum has a characteristic to lose the negative electric charges when exposed to the light, it is rotated and evenly exposed to the light from the Eraser Lamp. The electric potential on the Drum becomes 0V by this process.





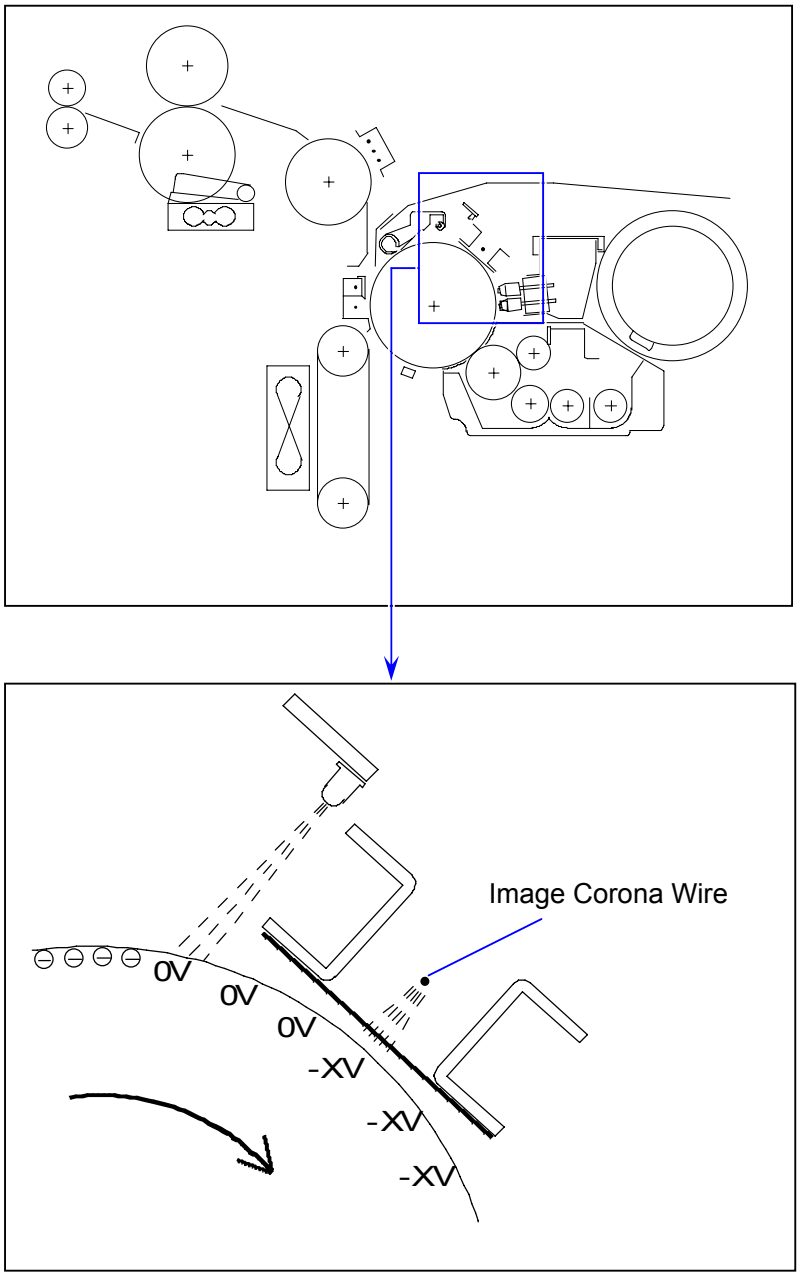
3. 2. 2 Drum charging

The Image Corona takes negative discharging, and the Drum surface is charged negatively with -XV evenly by this process. The Drum area charged with -XV corresponds to the white area of the printed image pattern.

According to the information from Surface Potential Sensor and Temperature Sensor, the Auto SP Control automatically adjusts the surface potential to within “-XV +/-ZV” that has been specified on GUI or service mode in advance. (The possible range of “-XV” is from -350V to -450V)

-XV : Target surface potential (Service mode 4-2008 to 201F)
+/-ZV : Acceptable potential range (Service mode 4-2020 to 2023)

See [3.4.2 Auto SP Control] on page 3-26 for the detail.



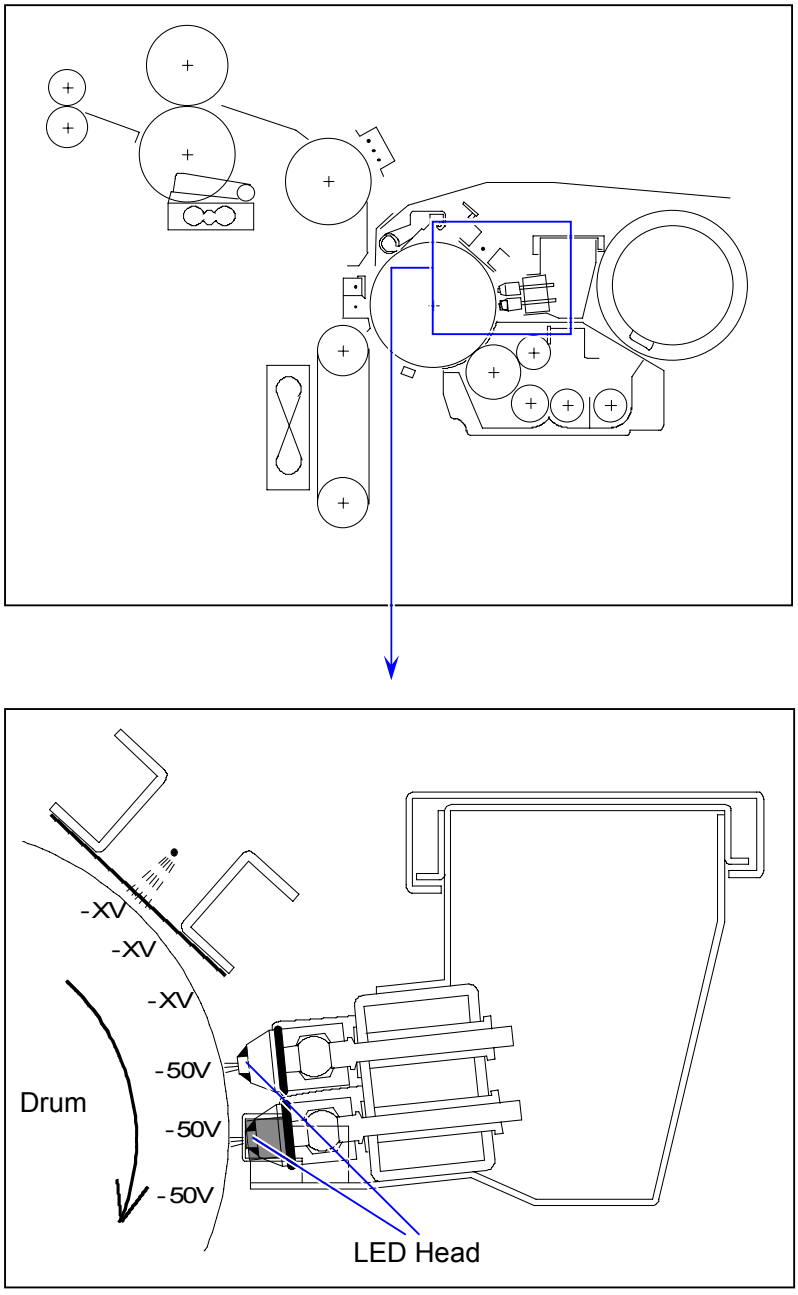
-XV :about -350 to -450V

3. 2. 3 Exposure

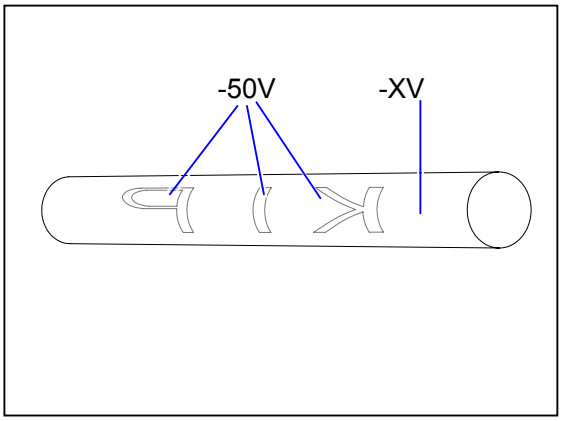
According to the printed image pattern, the LED Head throws light onto a certain area of the Drum that corresponds to the black area of printed image pattern. As the Drum has a characteristic to lose the negative electric charges if it is exposed to the light, the potential of this exposed area is increased to about -50V. The other part of Drum surface not exposed to the LED light keeps -XV of Surface Potential which has been given by the Image Corona.

-XV < -50V

An invisible electric image pattern that consists of -XV area and -50V area is formed on the surface of Drum as a result. (This is called “Electrostatic Latent Image”.)



(Distribution of electric potentials after the Exposure)



Reference

The LED Head of KIP Color 80 can produce 16 density gradations. It takes exposure by any of 16 density gradations for each singular pixel of print data according to the density gradation data which each singular pixels has. Therefore, the actual voltage on the exposure area is not constantly -50V but different point to point.

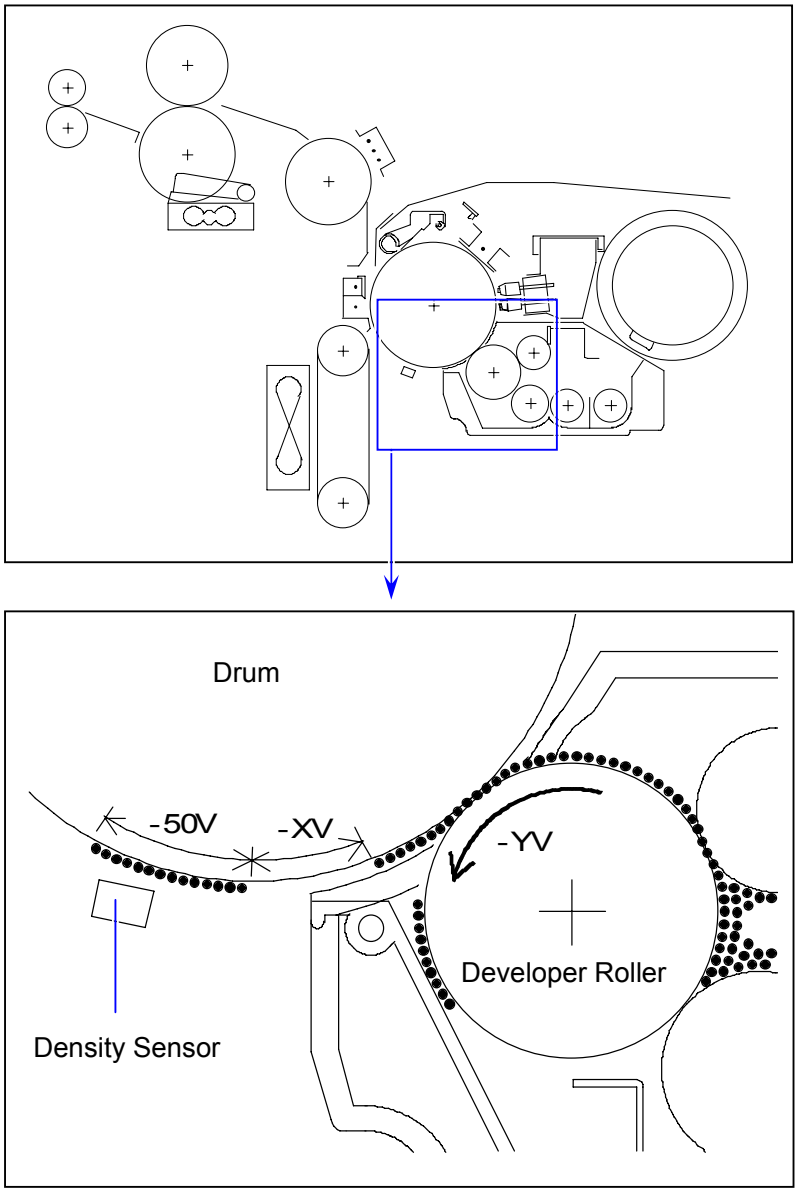
3. 2. 4 Development

The Developer Roller of each color is evenly covered with the toner, and it is contacted to the Drum firmly. (The width of contacting area is about 5mm.) The Developer Roller is supplied with -YV of Developer Bias which is flexibly adjusted by the Auto Density Control. On the other hand, an Electrostatic Latent Image consisting of -XV area and about -50V area exists on the Drum. The relationship among -XV, -YV and the exposed part of the Drum (-50V) are as follows.

-XV < -YV < -50V

Seen from the voltage of Developer Roller Bias (-YV), the -50V area on the Drum that was exposed to the light from the LED is relatively “positive”, so the toner moves from the Developer Roller to the -50V area of Drum. On the other hand, the -XV area is relatively “negative” seen from the Developer Roller, so the toner does not move to the -XV area but stays on the Developer Roller. A visible toner image is formed on the Drum as a result.

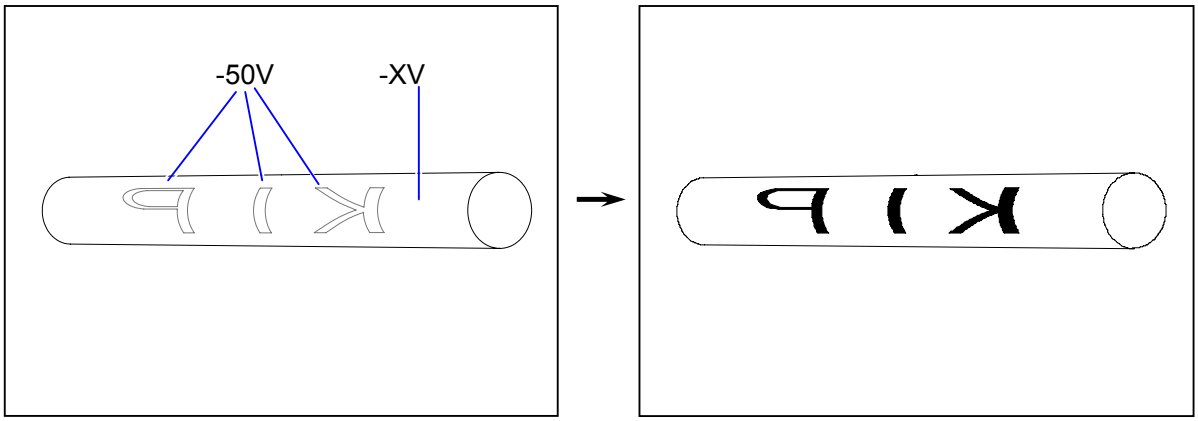
The value of Developer Bias “-YV” is not constant but is compensated flexibly to be most appropriately, ranging from -100V to -230V by the Auto Density Control according to the output from the Density Sensors. (See [3.4.1 Auto Density Control] on page 3-23 for the detail.)



-XV :about -350 to -450V
-YV :about -100 to -230V

Before Development

After Development : Toner moves only to -50V area.

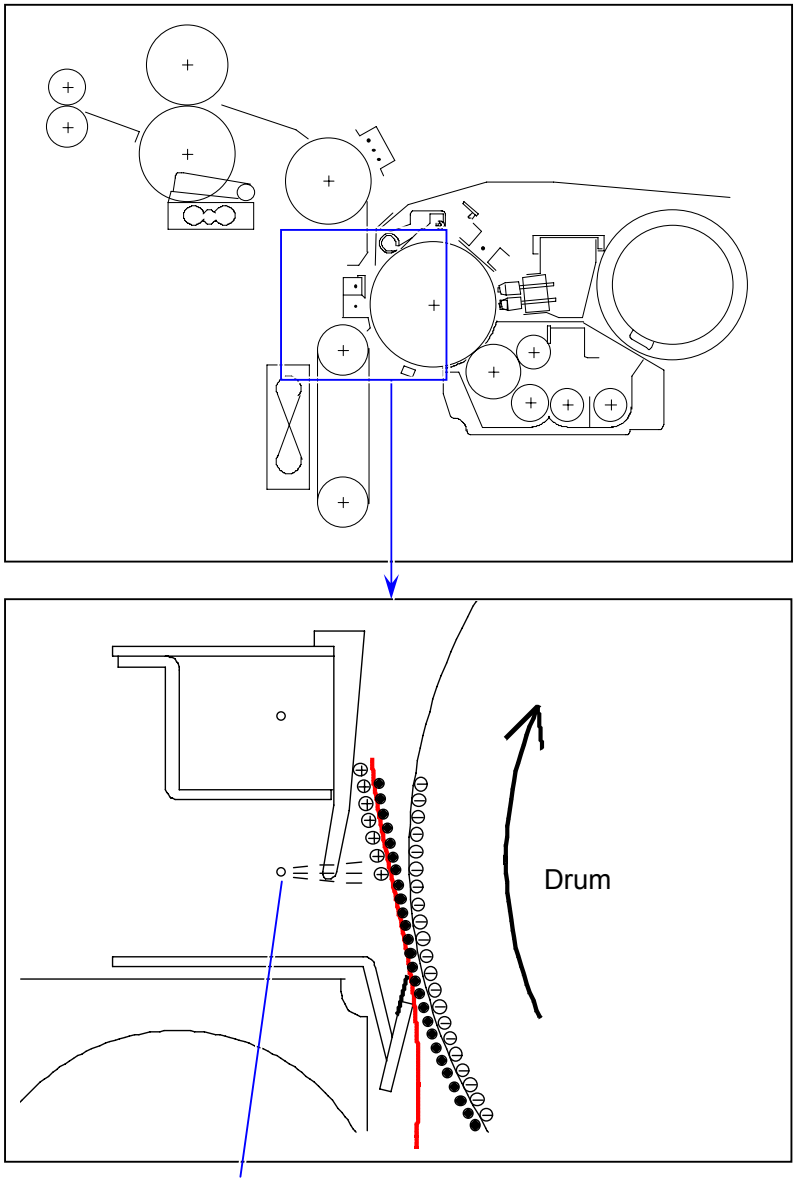


(Invisible Electrostatic Latent Image)

(Visible toner image)

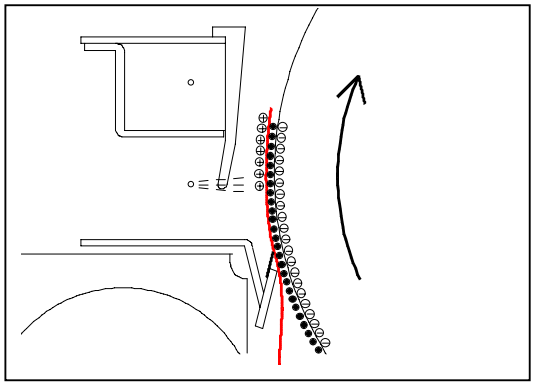
3. 2. 5 Transfer of toner image

The Transfer Corona takes positive discharging to charge the printing media positively. As the toner existing on negative Drum surface is attracted to the positive printing media, the toner image can be transferred onto the media. The Transfer Corona Wire Bias is not always constant but is adjusted flexibly according to the humidity detected by the sensor.



NOTE

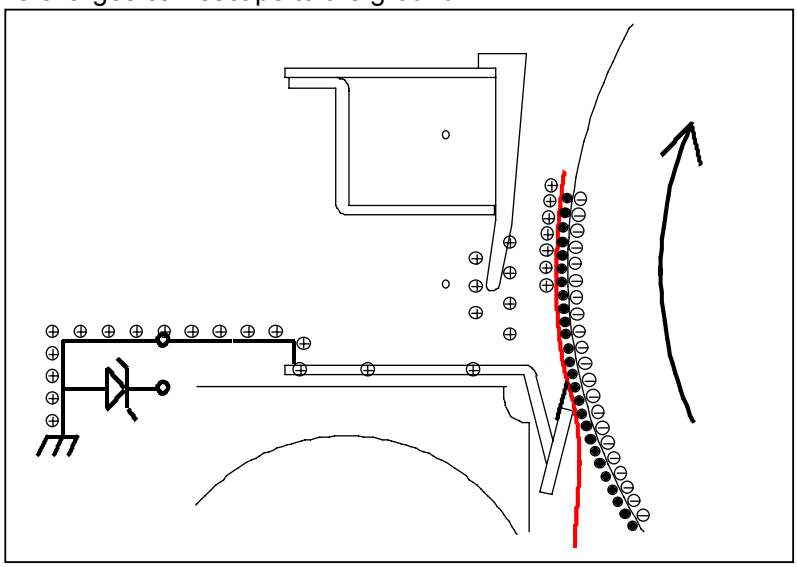
(1) In the actual situation, the media sticks onto the Drum after the transfer, so the Drum transports the media upward. (The media looks separated from the Drum in the above illustration as it would be easier to understand this step.)



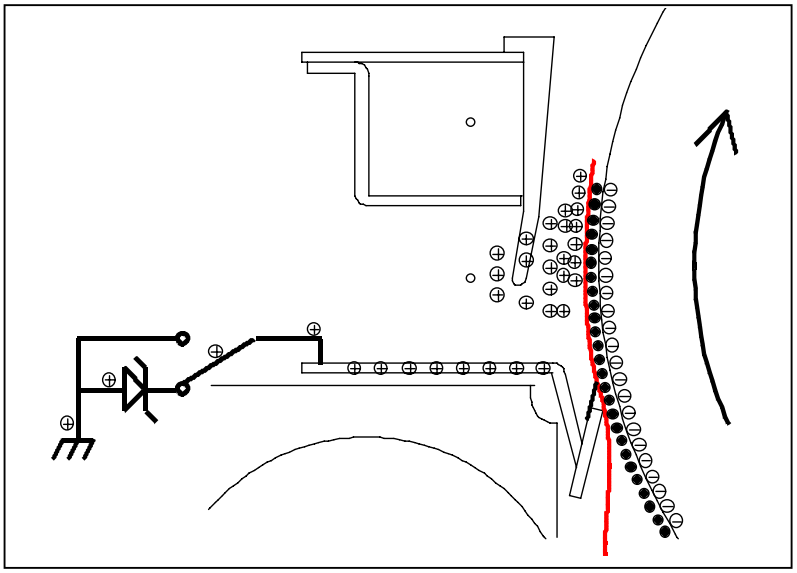
NOTE

(2) The Transfer Corona House is provided with the Transfer Zener, which “connects” or “disconnects” the Transfer Corona House to the ground according to the situation.

- If the Transfer Corona House is charged more positively than required, it attracts the toner on its surface, which results in a dirt on the back of print. To avoid this, the Transfer Corona Hose is connected directly to the ground in normal situation so that the positive charges can escape to the ground.



- Toner transfer onto some special media requires more positive charges. To realize this, the Transfer Corona House is connected to the ground through Transfer Zener in such case. When the house gets charged strong positive, the Transfer Zener allows only some excess positive charges to escape to the ground and blocks the rest of charges to remain them on the house. The Transfer Corona House is highly charged positive by this operation. As the charges from the Corona Wire and Transfer Corona House are both positive, they repel each other. The positive charges from the Corona Wire is “moved away” by this force, which as a result provides more positive charges to the media for helping toner transfer. (This operation of Zener is available for each media type respectively. See [8.7.7.25 Transfer Zener ON/OFF for each Process [No. 10E1 to 10E4]] on page 8-204.)



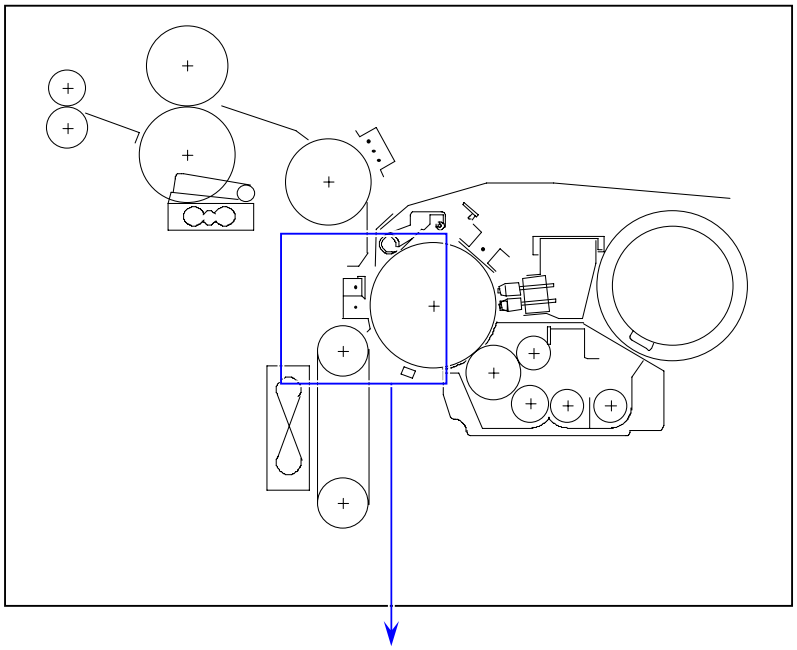
(3) As the “upper” process requires stronger transfer power, more transfer current is provided to the “upper” Transfer Corona and its Corona Wire is set closer to the Drum.

3. 2. 6 Separation of media

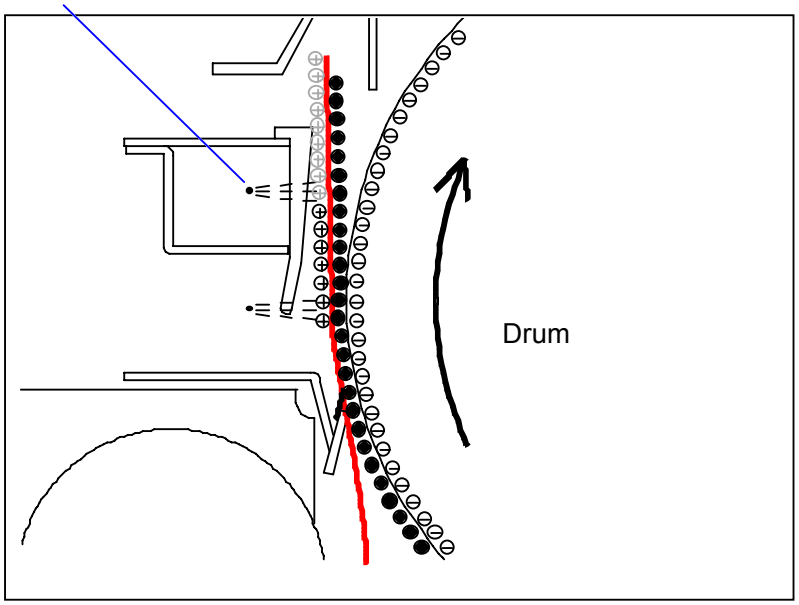
The printing media is stuck to the Drum after the Transfer being attracted by the static force. It is necessary for avoiding the jam to separate the media from the Drum smoothly removing the static force. The Separation Corona takes AC discharge being supplied with the AC voltage and the DC voltage.

AC voltage : 3.7KV
DC voltage : -220V

As the AC voltage is compensated by the negative DC voltage, the negative charges are provided to the printing media more than positive ones. The positive charges on the printing media are offset by these negative charges. The static force between media and Drum is removed, and the media is naturally removed from the Drum.

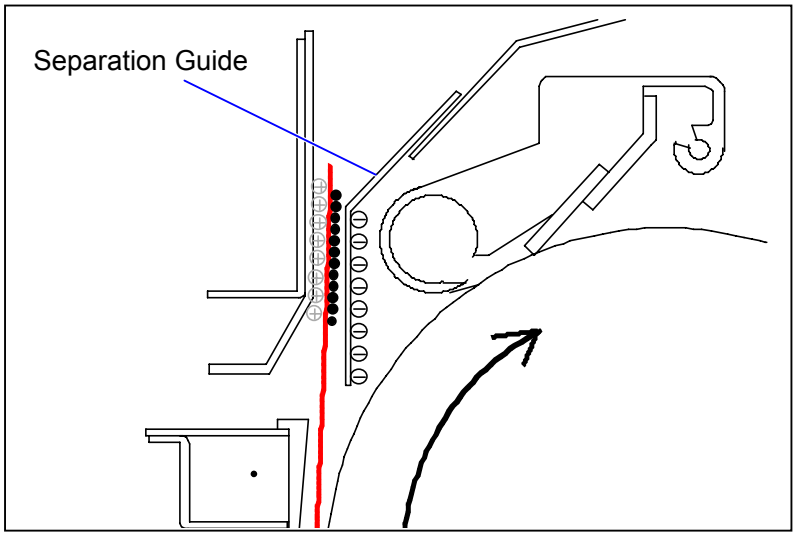


Separation Corona Wire



NOTE

The Separation Guide tends to get dirty with the toner because the unfused toner image passes very close position. To avoid getting dirt, the Separation Guide is provided with a high tention negative Bias. The toner does not stick onto “negative” Separation Guide.



3. 2. 7 Media transportation by Transportation Unit

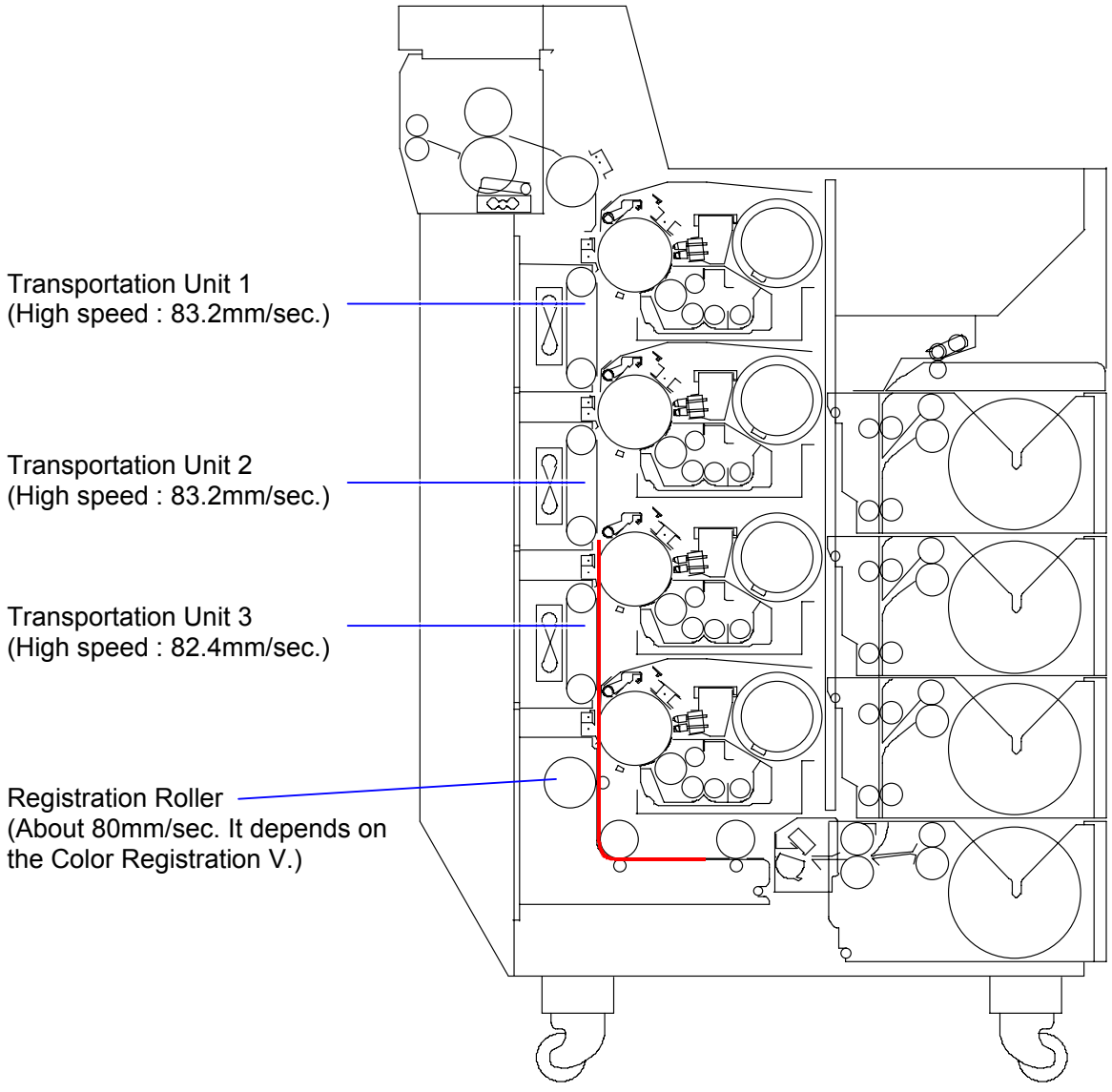
The printing media with toner image is transported upward by the Transportation Units 1, 2 and 3. As the Separation Fans strongly attracts the printing media to the feeder belts, it can be avoided that the unfused image is disturbed by contacting to anywhere in the feeding path.
It is better for more stable toner transfer to strain the printing media at the transfer area. The KIP Color 80 realizes it by changing the feeding speed flexibly according to the situation. 3 kinds of speed control are offered.

Case 1 : Printing media is held by the Registration Roller

When the media (longer than 840mm) is held by the Registration Roller that is operating with 80mm/second, the Transportation Units 1, 2 & 3 operates in a “high speed”.

High speed
- Transportation Unit 1 : 83.2mm/sec.
- Transportation Unit 2 : 83.2mm/sec.
- Transportation Unit 3 : 82.4mm/sec.

As there is a difference of speed between Transport Units and Registration Roller, it can be said that the Transportation Units “pull” the media while the Registration Roller “fixes” the media. As a result the media can be strained.

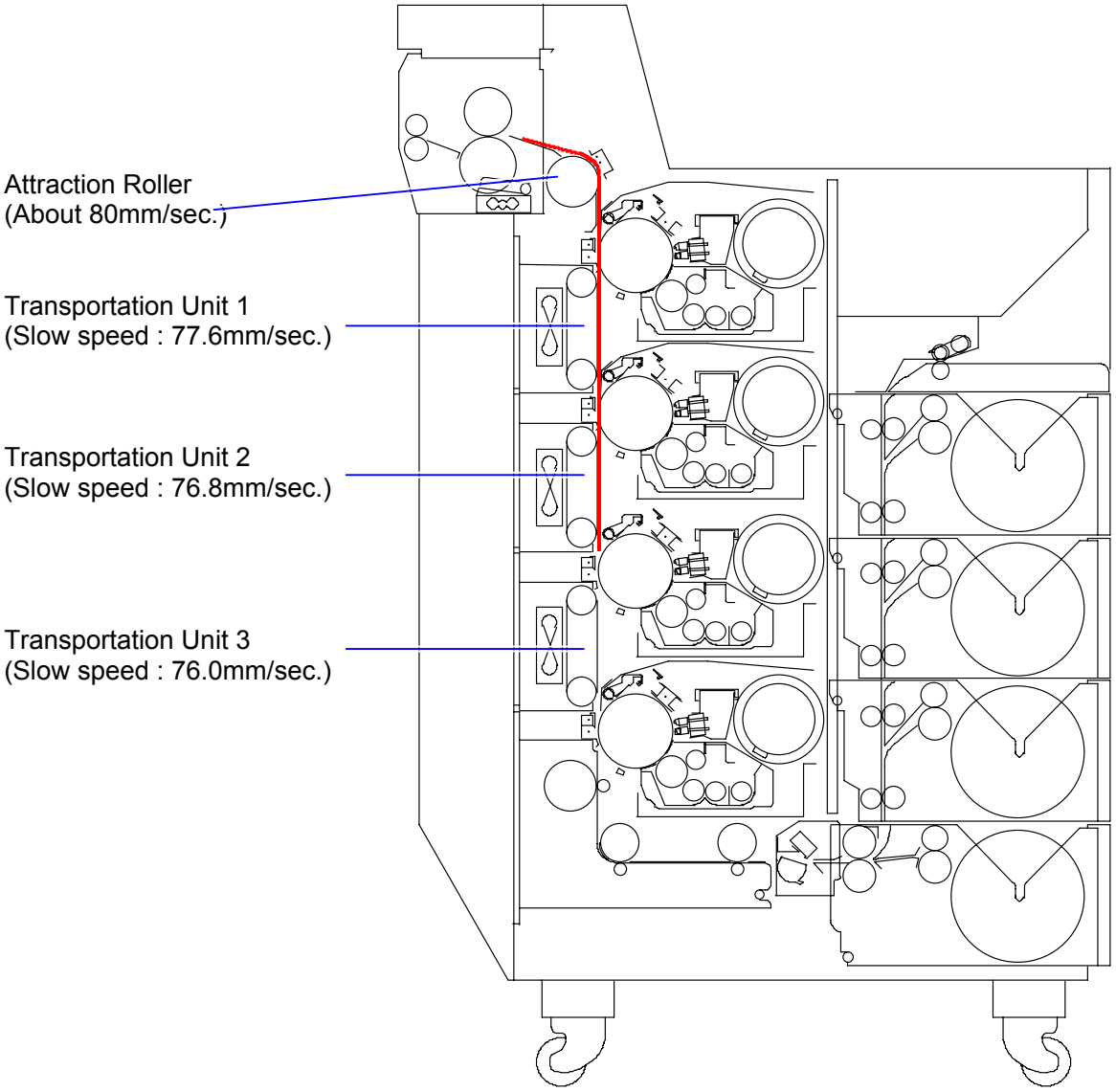


Case 2 : Printing media is sticking to the Attraction Roller

When the media (longer than 840mm) is sticking to the Attraction Roller that is operating with 80mm/second, and when the trailing edge has passed by the Registration Roller, the Transportation Units 1, 2 & 3 operates in a “slow speed”.

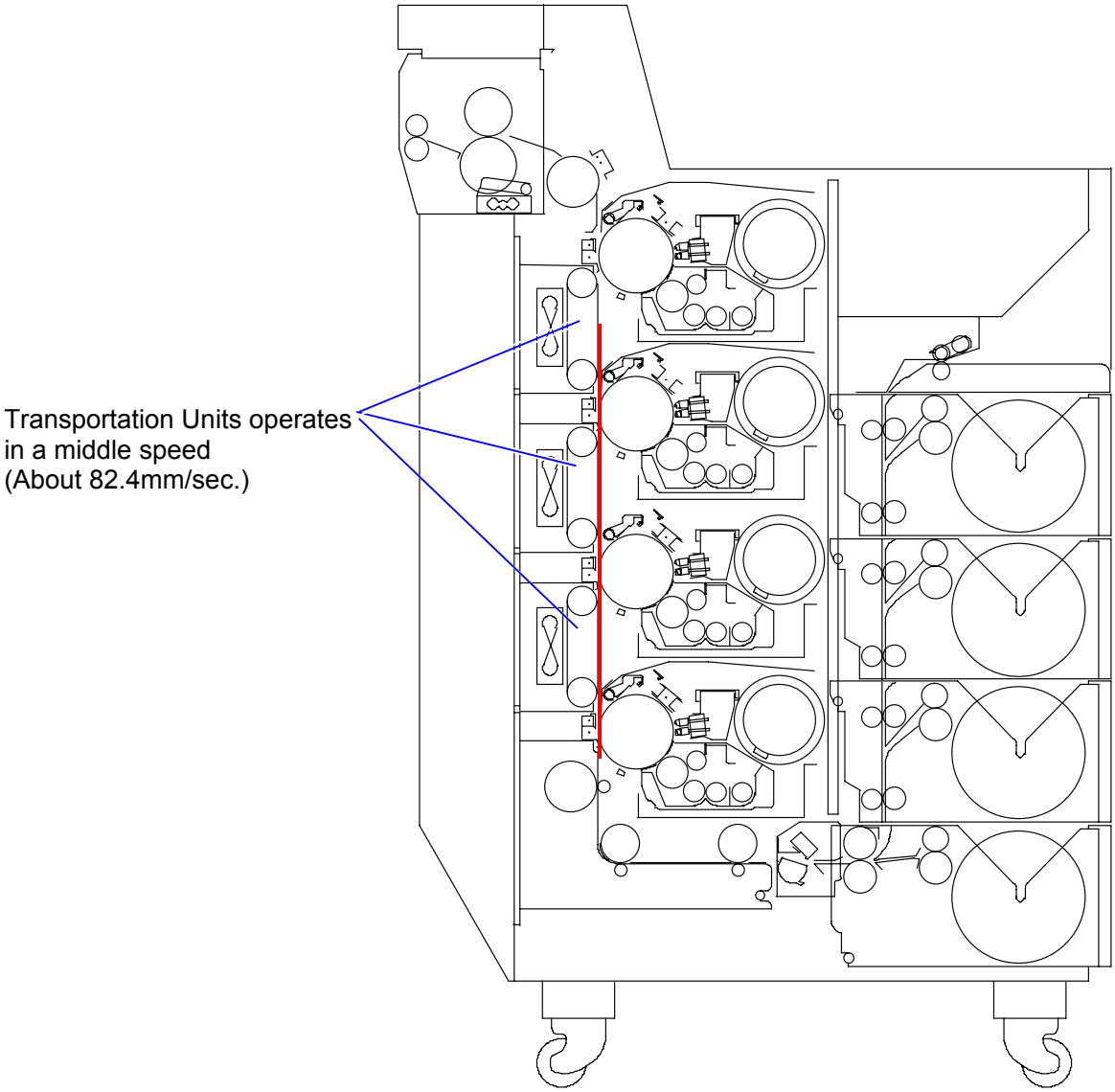
Slow speed
- Transportation Unit 1 : 77.6mm/sec.
- Transportation Unit 2 : 76.8mm/sec.
- Transportation Unit 3 : 76.0mm/sec.

As there is a difference of speed between Transport Units and Attraction Roller, it can be said that the Attraction Roller “pull” the media while the Transportation Units “fix” the media. As a result the media can be strained.



Case 3 : Printing media is between Registration Roller and Attraction Roller

The printing media (longer than 840mm) can not be “fixed” firmly like the former 2 cases if it is not held by the Registration Roller and not sticking to the Attraction Roller. It may be possible to strain the media is different speed is set to neighbouring 2 Transfer Units, but this will disturb the “color registration”. Therefore the Transportation Units operate in a middle speed (82.4mm/second. It depends on the Color Registration V.) in this case.

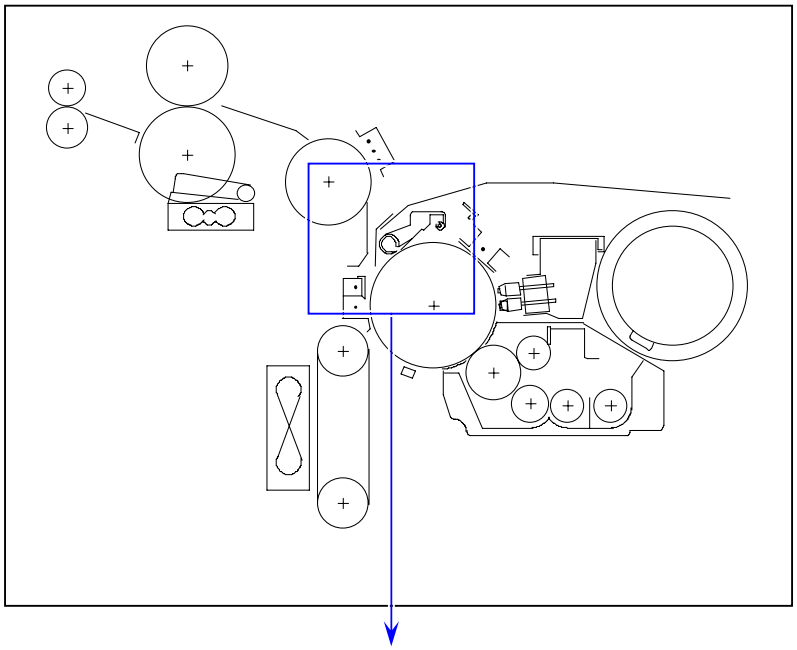


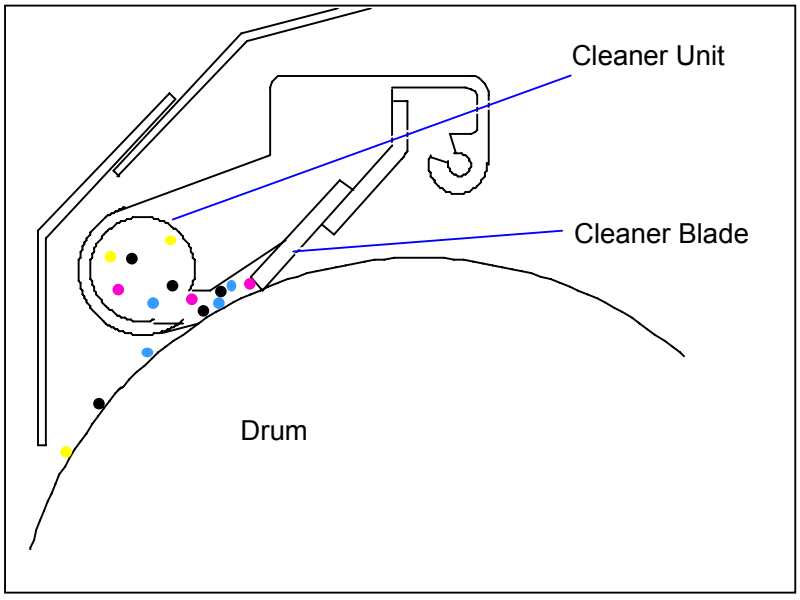
3. 2. 8 Drum cleaning

Small amount of toner can be found on the Drum after the separation as;

- the toner of concerning color did not transfer onto the printing media.
- the toner of another color on the printing media transferred onto the Drum for some reason

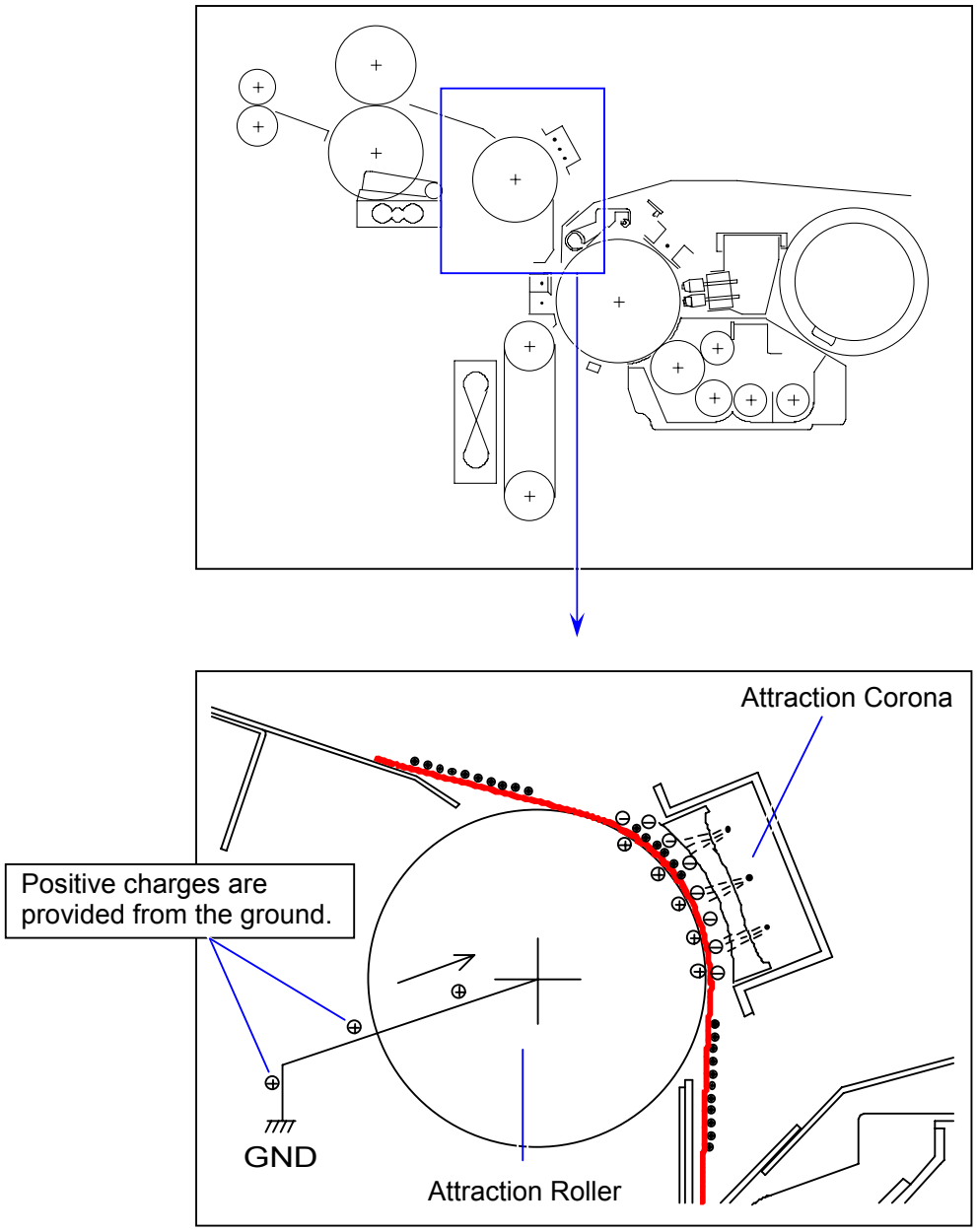
If the toner of mixed color is returned to the Developer Unit by the characteristic of HDP system, it will lead to color problem. So this unused toner is scraped off by the Cleaner Blade, collected into the Cleaner Unit, and conveyed to the Waste Toner Box.





3. 2. 9 Media transportation by the Attraction Corona and Attraction Roller

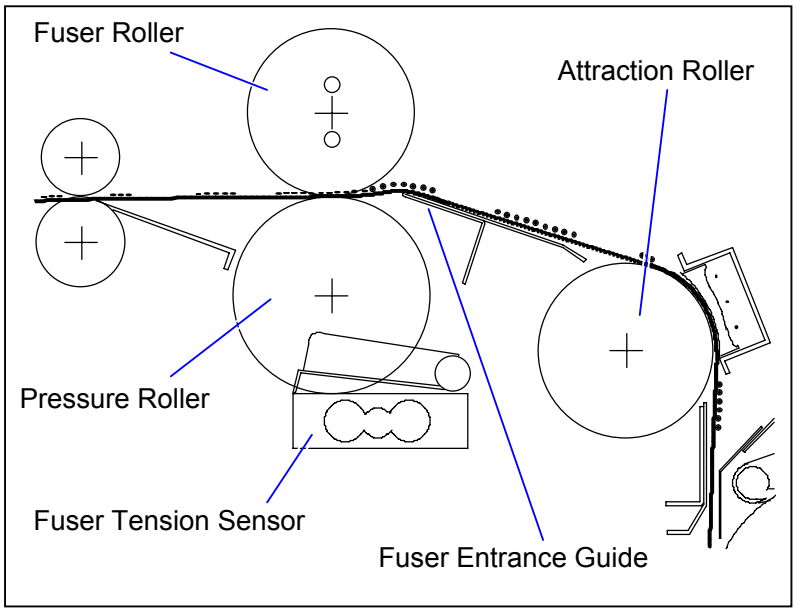
The printing media transported vertically from the bottom must be turned to the horizontal direction without disturbing the unfused toner image. The Attraction Corona takes negative discharging to provide the negative charges to the printing media. When the negative printing media is contacted to the Attraction Roller which is connected to the ground, positive charges are provided from the ground for neutralization by electrostatic induction. The Attraction Roller becomes positive, so the negative printing media is firmly stuck on the roller surface. Thus the feeding direction of media can be changed without disturbing image.



3. 2.10 Fusing

The toner is firmly fused onto the printing media by the heat and the pressure when the media passes through between the Fuser Roller and Pressure Roller.

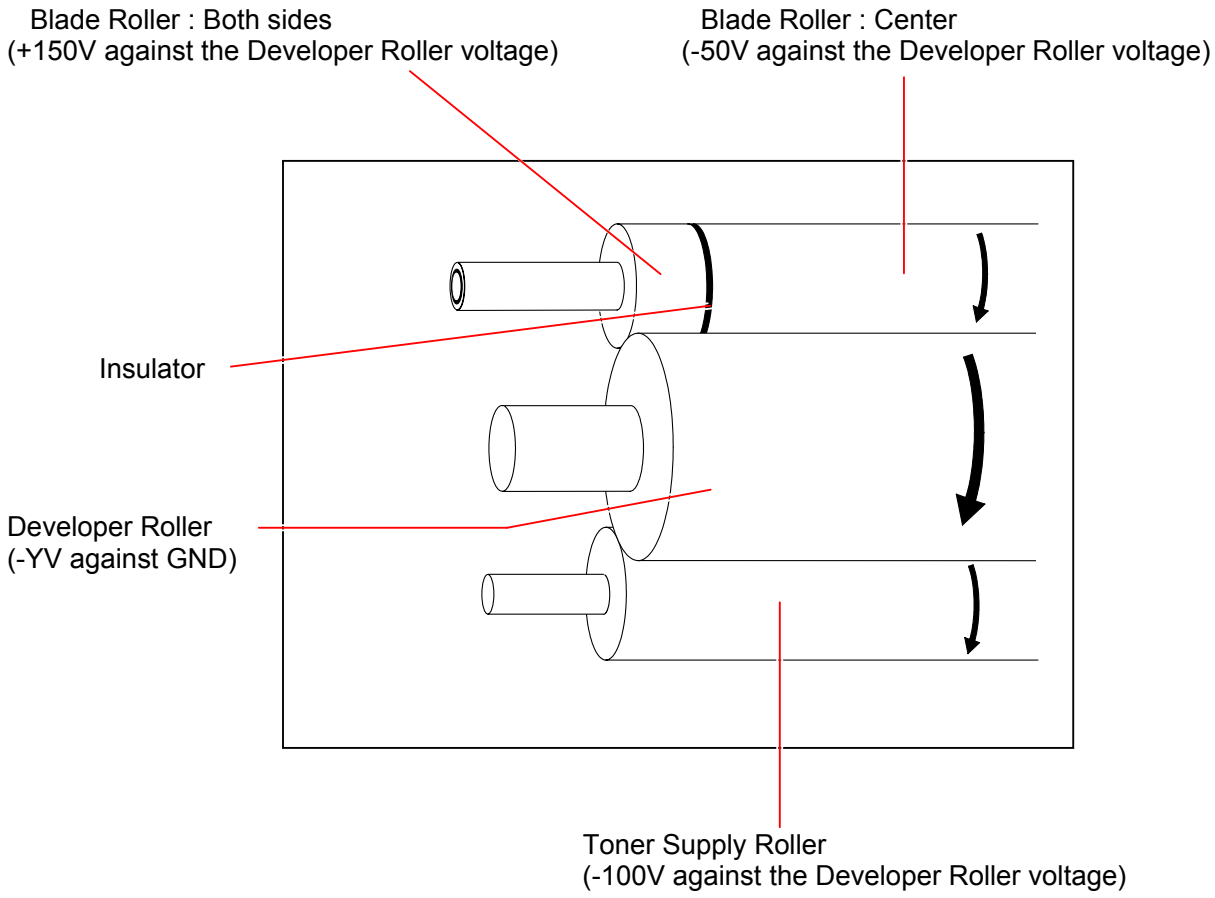
It is important for avoiding a creasing problem that the printing media is constantly tensioned with a proper load throughout the printing. KIP Color 80 realizes it by flexibly changing the Fuser Motor speed according to the feeding condition. As the printing media is firmly stuck onto the Attraction Roller as well as held by the Fuser Roller, it can be firmly strained between them. The power of media strain rotates the Fuser Entrance Guide slightly, and the actuator that moves accompanying to the Fuser Entrance Guide pushes the Fuser Tension Sensor. The KIP Color 80 detects the tension given to the Fuser Tension Sensor, compares it with the “Target Tension” in real time, and compensates the speed of Fuser Motor flexibly so that the actual tension should be same with the “Target Tension” throughout printing.



3. 3 Controlling the movement of toner in the Developer Unit

Developer Unit is provided with 3 rollers “Developer Roller”, “Blade Roller” and “Toner Supply Roller”, which are provided with their own Bias respectively as the following table. The voltage of the Developer Roller (-YV) is measured against the ground, and the voltages for other items are the difference against the voltage “-YV” of Developer Bias.

Name of roller	Supplied voltage
Developer Roller	-Y +/-3V against the ground
Blade Roller (Center)	-50 +/-5V against the Developer Roller Bias
Blade Roller (Both sides)	+150 +/-3V against the Developer Roller Bias
Toner Supply Roller	-100 +/-3V against the Developer Roller Bias



NOTE

The insulator divides the Blade Roller into “centrer” and “both side”. Different voltage is provided to them respectively.

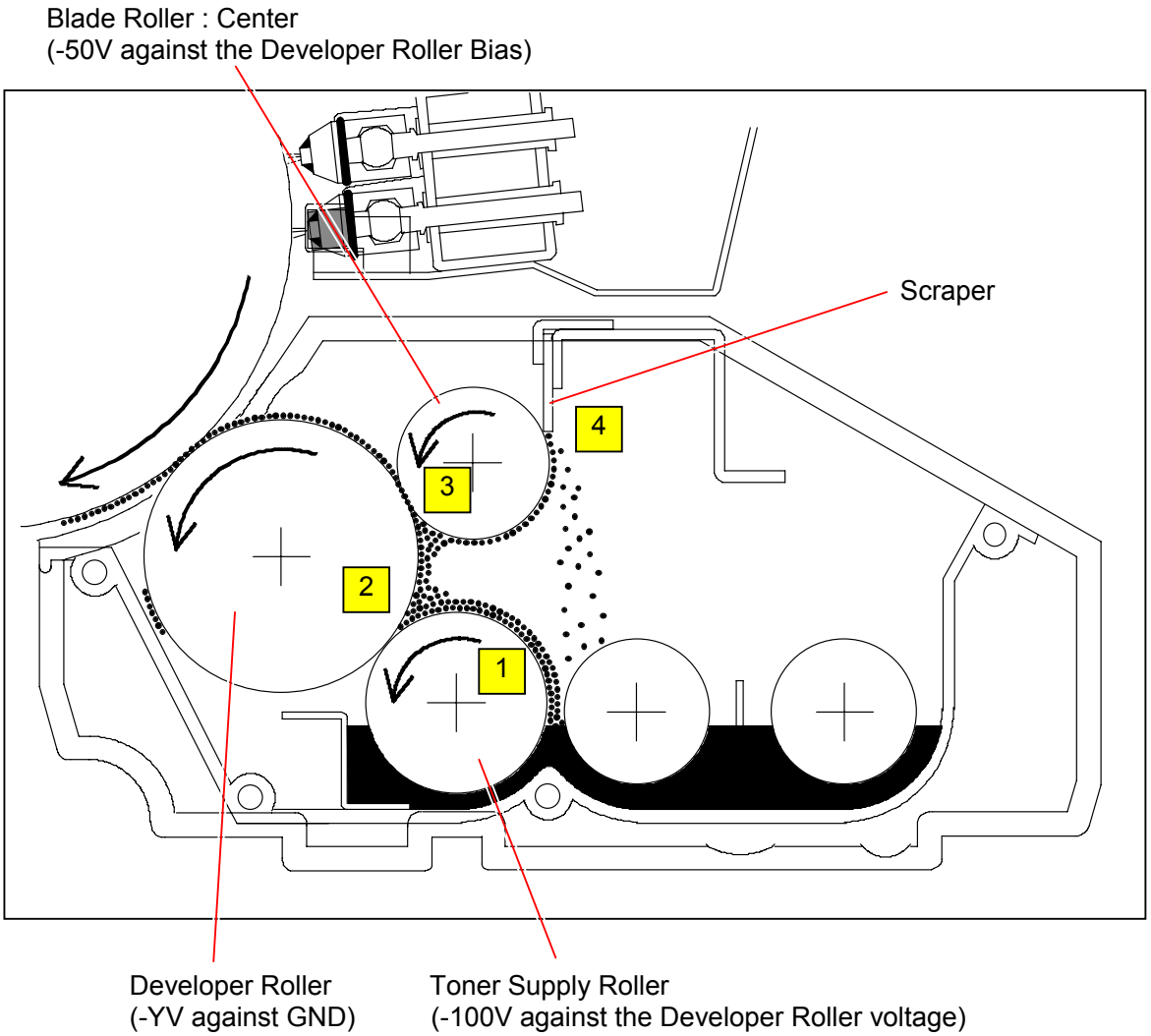
Taking advantage of the difference of potentials among these rollers, the movement of toner is controlled in the Developer Unit as follows.

1. The Toner Supply Roller carries the toner toward the Developer Roller.

2. The voltage of the Toner Supply Roller is 100V lower than that of Developer Roller. When the toner reaches the contact point of these rollers, it moves onto the Developer Roller. Then the Development Roller carries the toner toward the Blade Roller.

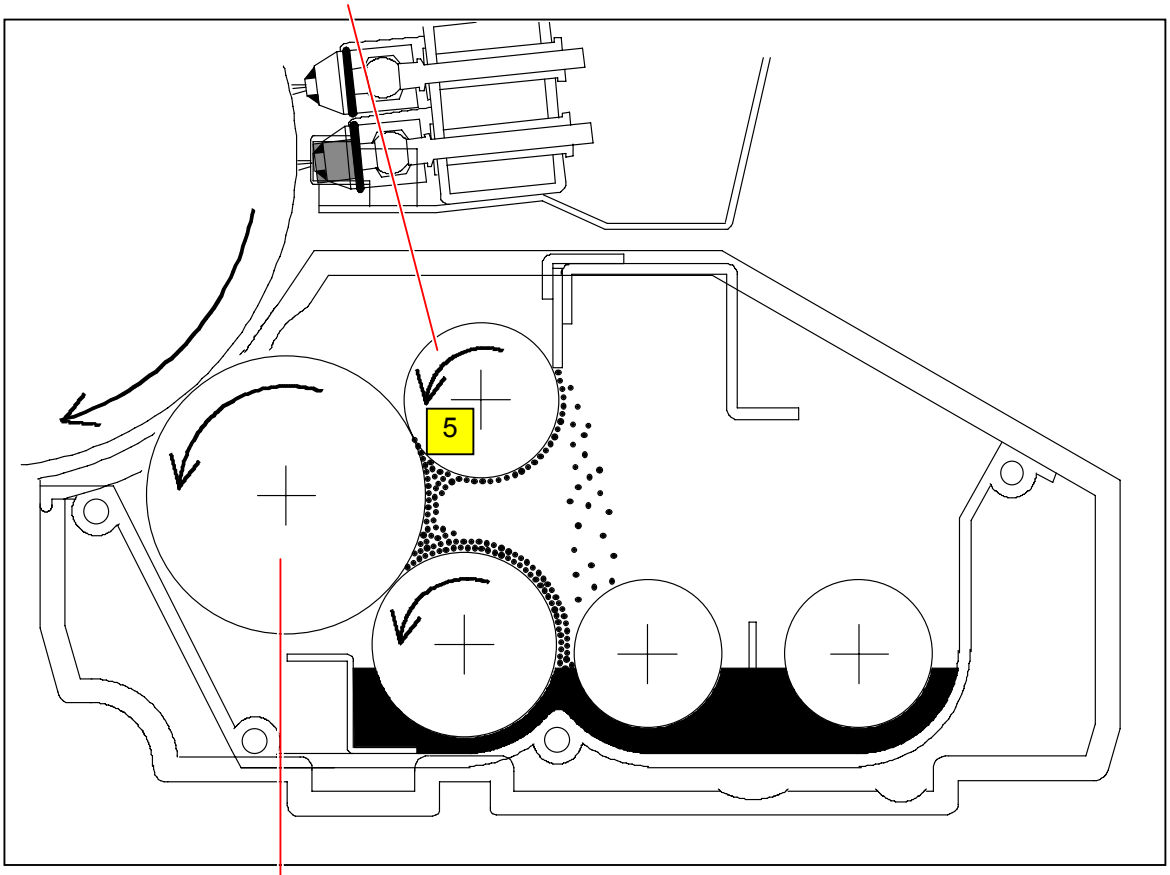
3. The Blade Roller is strongly pressed to the Developer Roller by the spring, and these 2 rollers move to the opposite direction each other at the contact point. The Developer Roller carries much toner, but the Blade Roller limits the amount of toner that can pass through between 2 rollers. As a result very small amount of toner can pass through between rollers and the rest is returned back to the inside. As the voltage of Developer Roller is 40V higher than that of Blade Roller (Center), the toner passed through between rollers is surely attracted to the Developer Roller. Very thin layer of toner is evenly formed on the surface of Developer Roller as a result.

4. Much toner sticks onto the Blade Roller when it is returned back to the inside. This toner is scraped off by the Scraper which is contacted to the Blade Roller.



5. The voltage of both sides of Blade Roller is +150V higher than the voltage of Developer Roller. When the toner reaches the contact point of these rollers, it moves onto the Blade Roller. The side areas of the Developer Roller are not covered with the toner as a result, which can prevent the toner drops into the machine from the side.

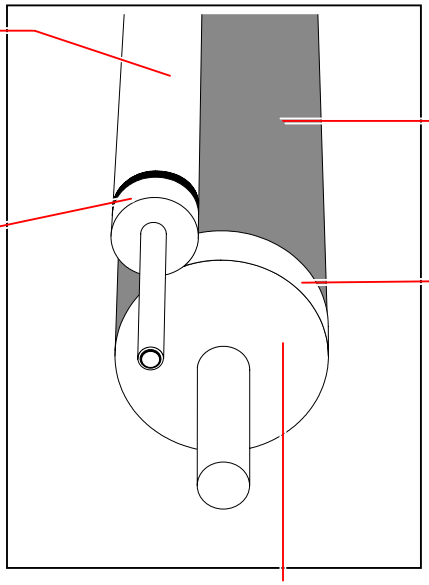
Blade Roller : Both Sides
(+150V against the Developer Roller voltage)



Developer Roller

Blade Roller : Center
(-0V against Developer Roller voltage)

Blade Roller : Both sides
(+150V against Developer Roller voltage)



Toner area

Non-toner area

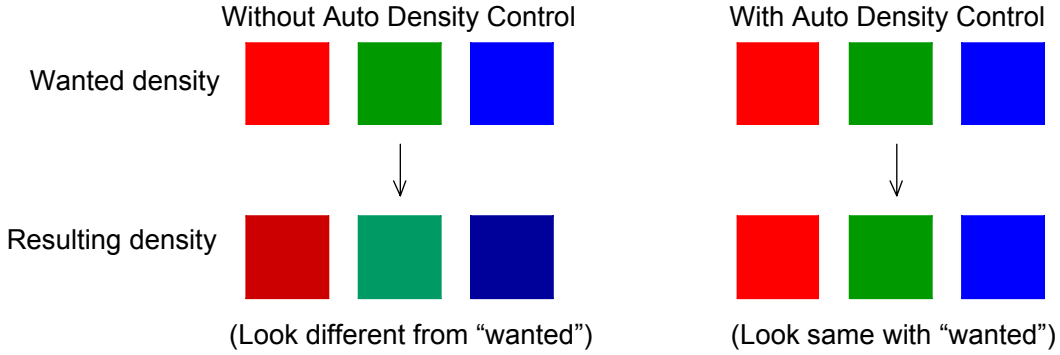
Developer Roller

3. 4 Automatic Controls

3. 4. 1 Auto Density Control

If the Developer Bias is always constant, the image density is changed when the surrounding temperature changes. To get rid of any effect by the temperature, the Auto Density Control compensates the Developer Bias flexibly to the most appropriate level monitoring the change of density with the Density Sensor.

KIP Color 80 memorizes a “Target Density” for each of CMYK which has been specified in the factory by Density Lock. The Auto Density Control is a process to reproduce the “Target Density” in any temperature condition.



3. 4. 1. 1 Density Lock

Density Lock is performed in the following way. (Readjustment of Target Density is available in the market by the same way.)

1. For avoiding that the Auto Density Control unexpectedly changes the Developer Bias when you are adjusting it manually, cancel the Auto Density Control in the following items of the Adjustment Mode.
   4-2004 : Auto Density Control 1 (Process 1) ON/OFF
   4-2005 : Auto Density Control 2 (Process 2) ON/OFF
   4-2006 : Auto Density Control 3 (Process 3) ON/OFF
   4-2007 : Auto Density Control 4 (Process 4) ON/OFF

2. Print out an exclusive external test pattern “calib_36inch_lineart_3.64.14.38.zip”, measure the density of 90% CMYK of each block with the densitometer, and take average of the density of each color (CMYK). If the density does not satisfy the values described in the following [Reference], adjust the following Developer Bias setting appropriately.
   4-1004 : Developer Bias 1 (Applied when Auto Density Control is OFF)
   4-1005 : Developer Bias 2 (Applied when Auto Density Control is OFF)
   4-1006 : Developer Bias 3 (Applied when Auto Density Control is OFF)
   4-1007 : Developer Bias 4 (Applied when Auto Density Control is OFF)

Reference

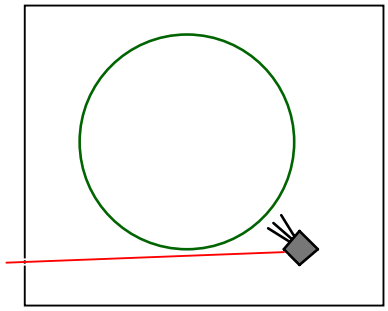
Density of each color is adjusted in the factory as the densitometer should show the following value.

K : 1.20 +/-0.03
C : 1.10 +/-0.03
M : 0.90 +/-0.03
Y : 0.80 +/-0.03

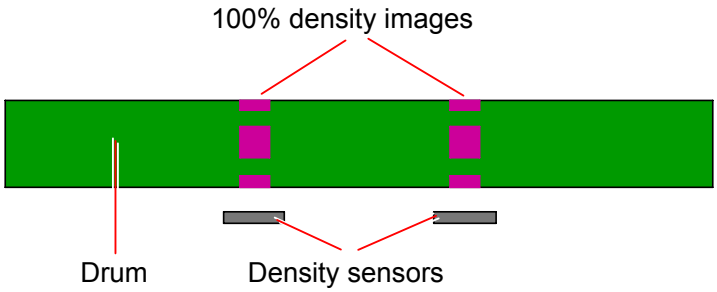
3. Specify the adjusted density as “Target Density” in each of the following modes of the Special Mode.
   8-1C : Density Lock Execution Mode (Process 1)
   8-1d : Density Lock Execution Mode (Process 2)
   8-1E : Density Lock Execution Mode (Process 3)
   8-1F : Density Lock Execution Mode (Process 4)

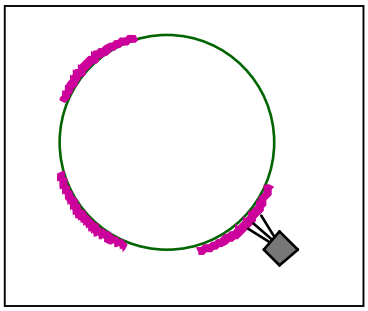
   The following operation is performed automatically in the Density Lock Process of each color.

   (1) LED of both Left and Right Density Sensors throw light onto the bare Drum surface, and the reflection from the Drum is detected. If the reflection is out of the specified range, the light intensity of LED is adjusted automatically so that the reflection should be within specified range. The light intensity from both sensors is initialized by this process.



   (2) After the initialization of Density Sensors, 16 square images with 75% density are created on the Drum depending on the Developer Bias setting you specified on the former procedure, and both Left & Right Density Sensors detect the density of these images.





   (3) The density of 16 images detected by the left sensor are averaged and converted into hexadecimal data (Hex. Left : Target). This is performed for the right sensor as well (Hex. Right : Target).

   (4) Both “Hex. Left: Target” and “Hex. Right: Target” are averaged. This averaged value is memorized as the “Target Density”.

3. 4. 1. 2 Auto Density Control

The Auto Density Control can be activated or inactivated in the following items of the Adjustment Mode.

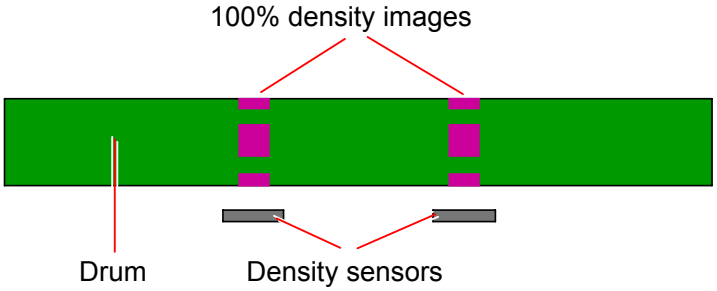
4-2004 : Auto Density Control 1 (Process 1) ON/OFF
4-2005 : Auto Density Control 2 (Process 2) ON/OFF
4-2006 : Auto Density Control 3 (Process 3) ON/OFF
4-2007 : Auto Density Control 4 (Process 4) ON/OFF

When the Auto Density Control is activated, it is executed when;

- the Fuser is colder than 50 degrees centigrade at power on.
- the inside temperature changes more than 3 degrees since the last Auto Density Control.
- 24 hours has passed with the machine turned on since the last Auto Density Control.
- any parameter concerned with the Auto Density Control is changed.
- the Auto Density Control is newly activated or inactivated.
- the Target Density is changed.

Auto Density Control adjusts the density as follows.

(1) 16 square images with 75% density are created on the Drum, and both Left & Right Density Sensors detect the density of these images.



(2) The density of 16 images detected by the left sensor are averaged and converted into hexadecimal data (Hex. Left: Detection). This is performed for the right sensor as well (Hex. Right: Detection).
(3) “Hex. Left: Adjust” and “Hex. Right: Adjust” are averaged. (Hex. Detection)
(4) “Hex. Detection” is compared with the “Target Density”.
(5) If the difference between “Hex. Detection” and the “Target Density” is out of the acceptable range, the Developer Bias is automatically adjusted so that the difference should become acceptable. (Refer to the following [Reference] for the acceptable range.)
(6) The above procedure 1 to 5 is repeated again. The adjustment will be finished if the difference becomes acceptable, but it will be repeated several times if not acceptable.
(7) If the difference is still out of the acceptable range even after 6 times adjustment, Service Call Error E-2142, E-2242, E-2342 or E-2442 is indicated.

Reference

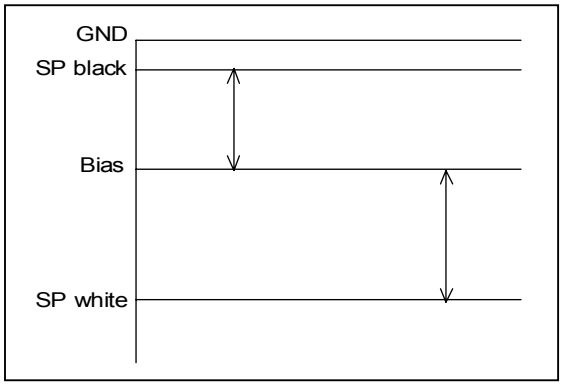
Acceptable ranges for the difference of density are specified by the User Mode.

- When User Mode (08 to 11) is set to “On1”, error check is performed with 5 times of “high quality mode” then 1 time of “normal mode”.
- When User Mode (08 to 11) is set to “On2”, error check is performed with 6 times of “high quality mode”.

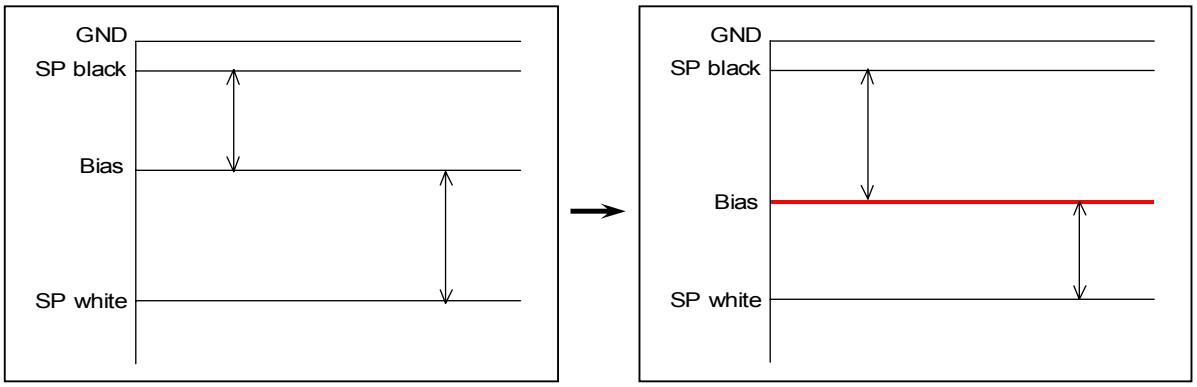
	Acceptable range (Unit : Hex.)			
	K	C	M	Y
Normal mode	+/-20	+/-13	+/-13	+/-13
High quality mode	+/-0.5	+/-0.5	+/-0.5	+/-0.5

3. 4. 2 Auto SP Control

A proper voltage gap must be maintained between Developer Bias (Bias) and Surface Potential for white (SP white) for avoiding a foggy background problem.



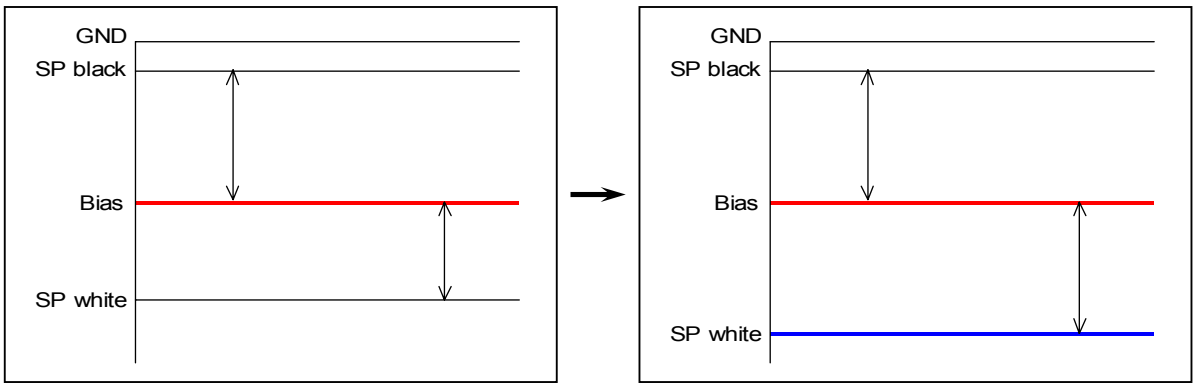
But if the Auto Density Control compensates the Developer Bias, the voltage gap (Bias - SP white) may become so small. Especially the Auto Density Control tends to make a great compensation for the Bias when in a cold environment as bigger voltage gap is required between Surface Potential for Black (SP black) and Developer Bias (Bias) to gain enough density. The foggy background problem is likely to occur in such case.



In normal environment

In a cold environment (As “SP black - Bias” is increased, “Bias - SP white” is decreased.)

The foggy background can be avoided if enough voltage gap (Bias - SP white) is maintained even after the compensation of Bias by the Auto Density Control. Therefore the Automatic Surface Potential compensates the Surface Potential (SP white) to the most appropriate level.



Before the compensation by Automatic Surface Potential Control
(Bias - Sp white is small.)

Before the compensation by Automatic Surface Potential Control
(Bias - Sp white is enough large.)

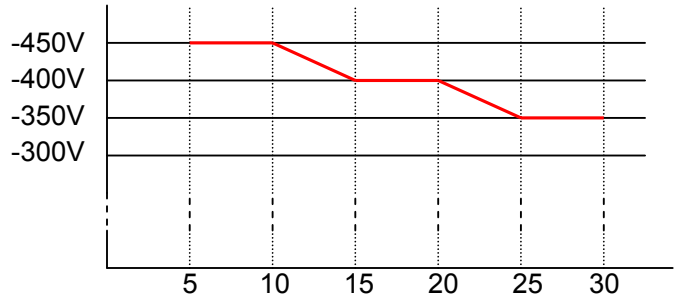
How much the Surface Potential (SP white) has to be compensated relies on the temperature. As bigger compensation of Bias is required in a colder environment, bigger compensate is also required for the Surface Potential (SP white). The most appropriate amount of compensation is specified to each temperature (every 5c^{o} step) thus, and it is memorized as “Target Surface Potential”. The Auto SP Control is a process to reproduce the “Target Surface Potential” in any temperature condition.

“Target Surface Potential” can be specified in the following items of the Adjustment Mode. (Readjustment by the service staff in the field is available.)

4-2008 : Target Surface Potential 1 (at 5 degrees centigrade)
4-2009 : Target Surface Potential 1 (at 10 degrees centigrade)
4-200A : Target Surface Potential 1 (at 15 degrees centigrade)
4-200b : Target Surface Potential 1 (at 20 degrees centigrade)
4-200C : Target Surface Potential 1 (at 25 degrees centigrade)
4-200d : Target Surface Potential 1 (at 30 degrees centigrade)
4-200E : Target Surface Potential 2 (at 5 degrees centigrade)
4-200F : Target Surface Potential 2 (at 10 degrees centigrade)
4-2010 : Target Surface Potential 2 (at 15 degrees centigrade)
4-2011 : Target Surface Potential 2 (at 20 degrees centigrade)
4-2012 : Target Surface Potential 2 (at 25 degrees centigrade)
4-2013 : Target Surface Potential 2 (at 30 degrees centigrade)
4-2014 : Target Surface Potential 3 (at 5 degrees centigrade)
4-2015 : Target Surface Potential 3 (at 10 degrees centigrade)
4-2016 : Target Surface Potential 3 (at 15 degrees centigrade)
4-2017 : Target Surface Potential 3 (at 20 degrees centigrade)
4-2018 : Target Surface Potential 3 (at 25 degrees centigrade)
4-2019 : Target Surface Potential 3 (at 30 degrees centigrade)
4-201A : Target Surface Potential 4 (at 5 degrees centigrade)
4-201b : Target Surface Potential 4 (at 10 degrees centigrade)
4-201C : Target Surface Potential 4 (at 15 degrees centigrade)
4-201d : Target Surface Potential 4 (at 20 degrees centigrade)
4-201E : Target Surface Potential 4 (at 25 degrees centigrade)
4-201F : Target Surface Potential 4 (at 30 degrees centigrade)

Reference

The Target Surface Potential can be specified only to the setting points of 5 degrees step. Between 2 setting points are linearly plotted.



The Auto SP Control can be activated or inactivated in the following items of the Adjustment Mode.

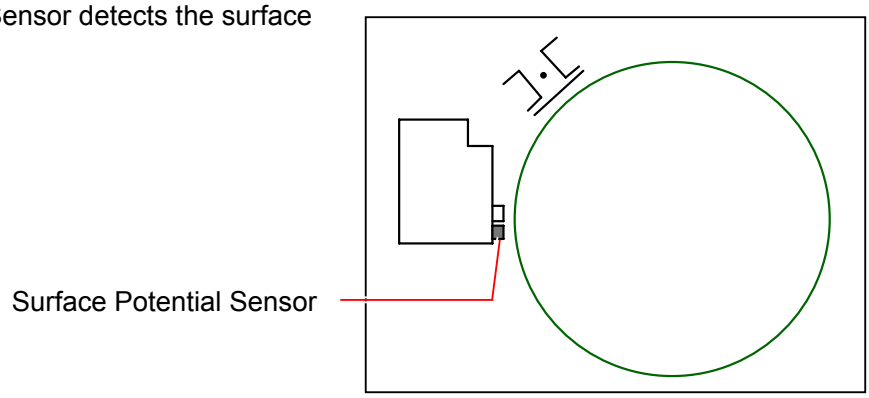
4-2000 : Auto SP Control 1 (Process 1) ON/OFF
4-2001 : Auto SP Control 2 (Process 2) ON/OFF
4-2002 : Auto SP Control 3 (Process 3) ON/OFF
4-2003 : Auto SP Control 4 (Process 4) ON/OFF

When the Auto SP Control is activated, it is executed when;

- the Fuser is colder than 50 degrees centigrade at power on.
- the inside temperature changes more than 3 degrees since the last Auto SP Control.
- 24 hours has passed since the last Auto SP Control.
- any parameter concerned with the Auto SP Control is changed.
- the Auto SP Control is newly activated or inactivated.
- the Target Surface Potential is changed.

Auto SP Control adjusts the density as follows.

(1) The surface Potential Sensor detects the surface potential of the Drum.



(2) The detected potential is compared with the Target Surface Potential.

(3) If the difference between detected potential and Target Surface Potential is out of the acceptable range, the Grid Plate Bias is automatically adjusted so that the difference should become acceptable. (Refer to the following [Reference] for the acceptable range.)

(4) The above procedure 1 to 3 is repeated again. The adjustment will be finished if the difference becomes acceptable, but it will be repeated several times if not acceptable.

(7) If the difference is still out of the acceptable range even after 6 times adjustment, Service Call Error E-2132, E-2232, E-2332 or E-2432 is indicated.

Reference

Acceptable range of the surface potential can be specified in the following items of the Adjustment Mode.

4-2020 : Acceptable potential range for Auto SP Control 1
4-2021 : Acceptable potential range for Auto SP Control 2
4-2022 : Acceptable potential range for Auto SP Control 3
4-2023 : Acceptable potential range for Auto SP Control 4

Chapter 4

Electrical

page

4. 1 General Information 4- 2

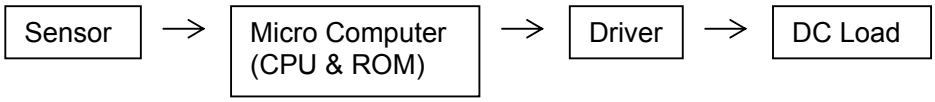
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4. 4 Correspondence between Fuse and Electrical Component 4-104

4. 1 General Information

This machine is mainly controlled by a microcomputer, which is located on DC Controller. This microcomputer reads input signals from sensors, and outputs the operation signals to motors, SSRs, solenoid, clutches and blowers on programmed timing.



LEDs on DC Controller lights when applied a specified DC.

Red LED : 24VDC
Orange LED : 5VDC
Green LED : 3.3VDC

Generally the color of wiring is separated depends on the voltage.

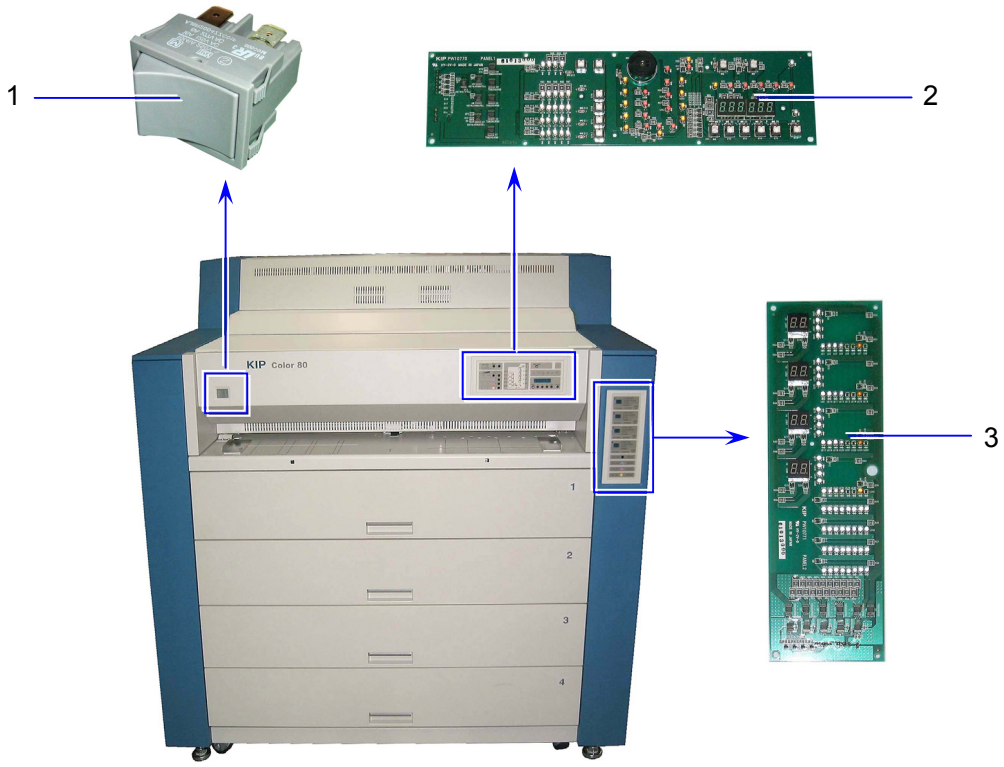
0VDC	Blue
3.3VDC	Pink
5VDC	Yellow
12VDC	Brown
24VDC	Orange
Signal in to DC Controller (sensors)	Purple
Signal out from DC Controller	Gray

⚠ CAUTION

DOUBLE POLE / NEUTRAL FUSING

4. 2 Electrical Components Location

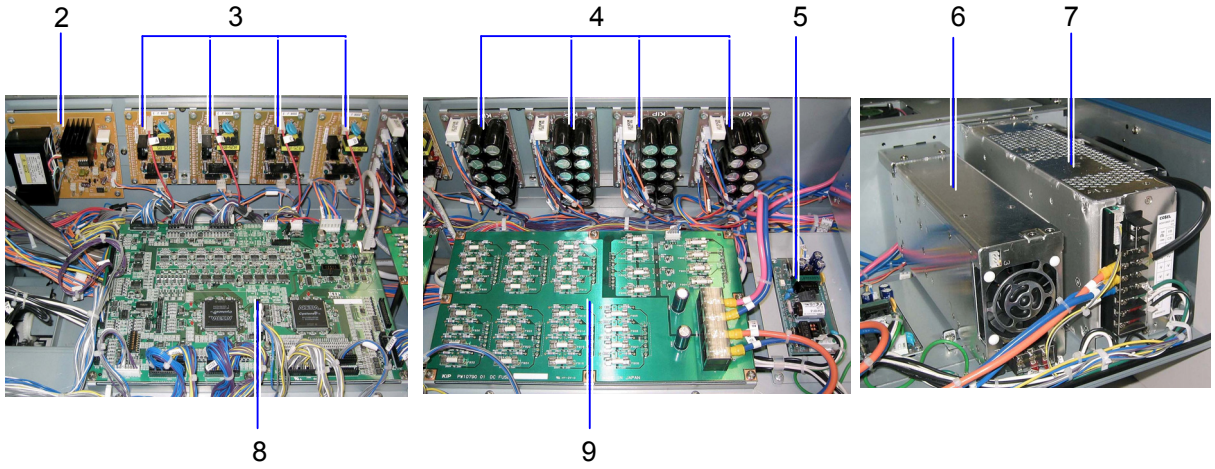
4. 2. 1 Front Side



Item	Symbol	Signal name	Name	Type	Function
1	S1		Power Supply Switch	AJ8R2004ZZC01F	Turning on and off the machine
2	PW10770		Panel 1 PCB Assy	PW10770	Several operations can be done and operational information is indicated.
3	PW10771		Panel 2 PCB Assy	PW10771	Displays media type, media/toner remaining.

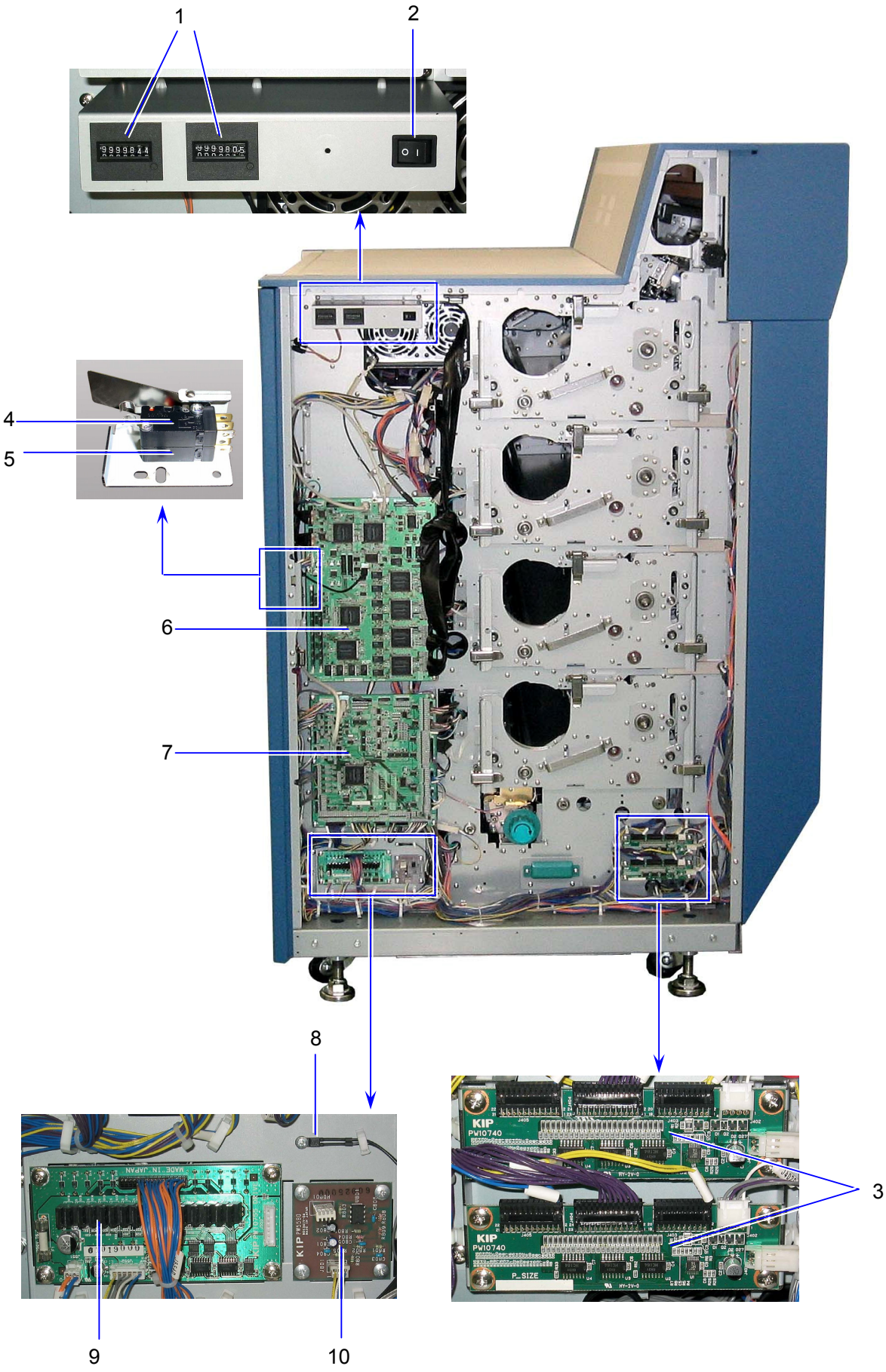
4. 2. 2 Top Side

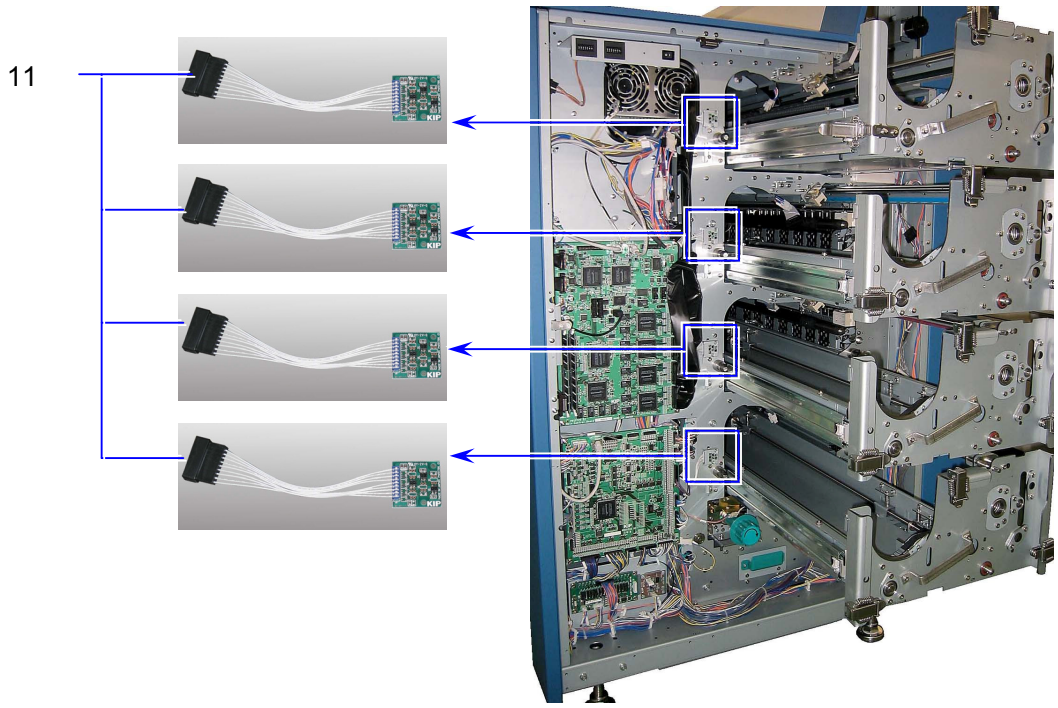




Item	Symbol	Signal name	Name	Type	Function
1	FM2 FM3		Cross Flow Fan (Cooling Fan)	FE-04029-AF215	Cools Developer Unit for avoiding toner fixing to Developer Roller
2	HVP10		H.V. Power Supply Assy	FHKG-078	Outputs a high voltage to Attraction Corona
3	HVP5 HVP6 HVP7 HVP8		H.V. Power Supply Assy (Grid Constant Voltage HV)	KHKG-065	Outputs a high voltage to Grid Plate HVP5 : K HVP6 : C HVP7 : M HVP8 : Y
4	PW10258A PW10258B PW10258C PW10258D		PW10258 PCB Assy	PW10258	Supplies power for releasing the Developer Unit from Drum PW10258A: Developer Unit 1 (K) PW10258B: Developer Unit 2 (C) PW10258C: Developer Unit 3 (M) PW10258D: Developer Unit 4 (Y)
5	DCP3		DC Power Supply	LDA10F-5	Outputs 5VDC to AC Terminal PCB and Dehumidify Heater.
6	DCP1		DC Power Supply	AC3-0RMB-00	Outputs 3.3VDC, 5VDC, 24VDC. - 3.3VDC to CPU PCB, I/O A PCB, I/O B PCB and LED Head. - 5VDC to sensors, CPU PCB, I/O A PCB and I/O B PCB - 24VDC to CPU PCB, I/O A PCB, I/O B PCB and interlock
7	DCP2		DC Power Supply	ADA1000F-24-FR	Outputs 24VDC to fans, motors, clutches, and other driving components.
8	PW10721		I/O A PCB Assy	PW10721	Controls input / output on left side components
9	PW10790		Fuse PCB	PW10790	Protects Circuit

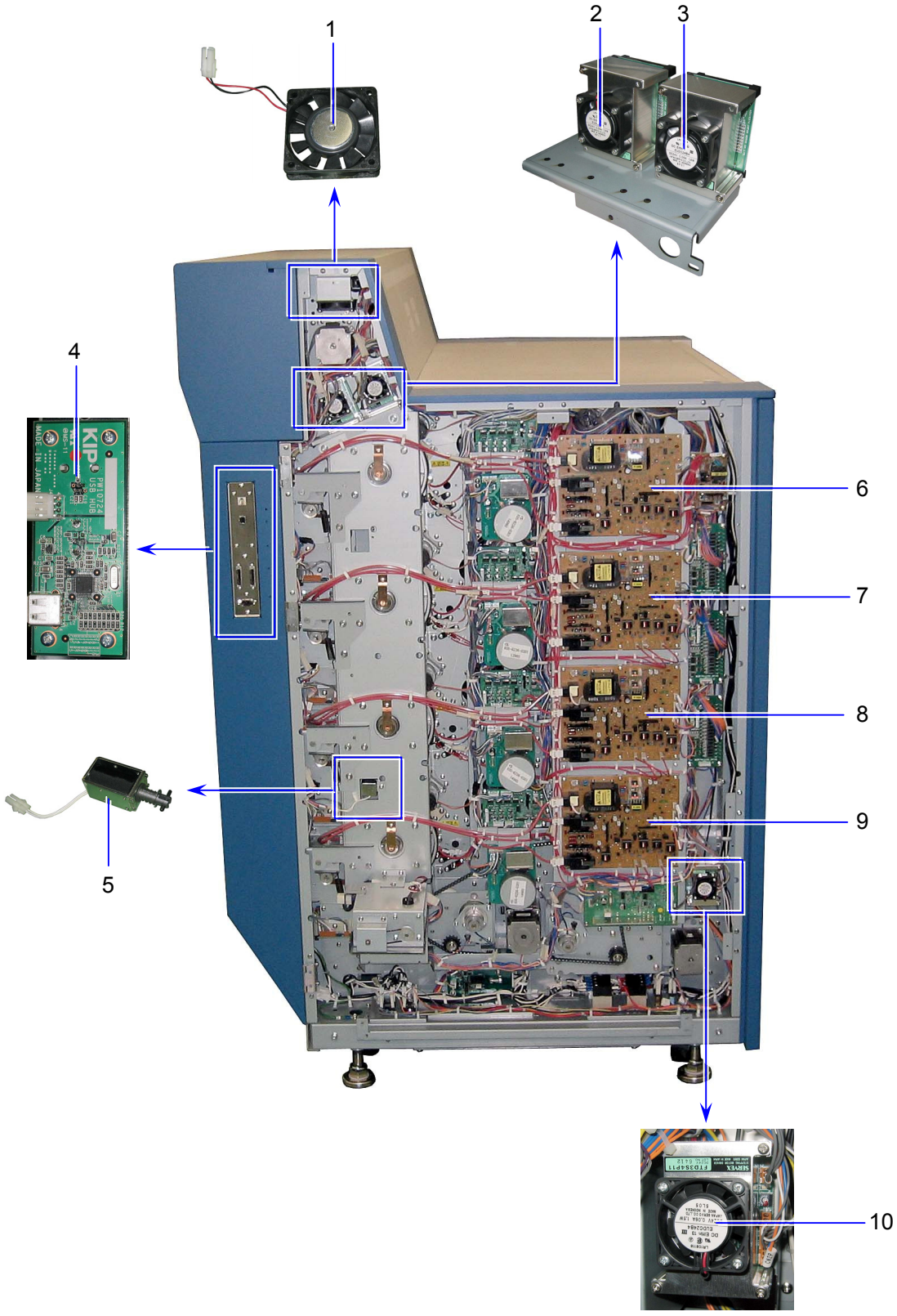
4. 2. 3 Right Side



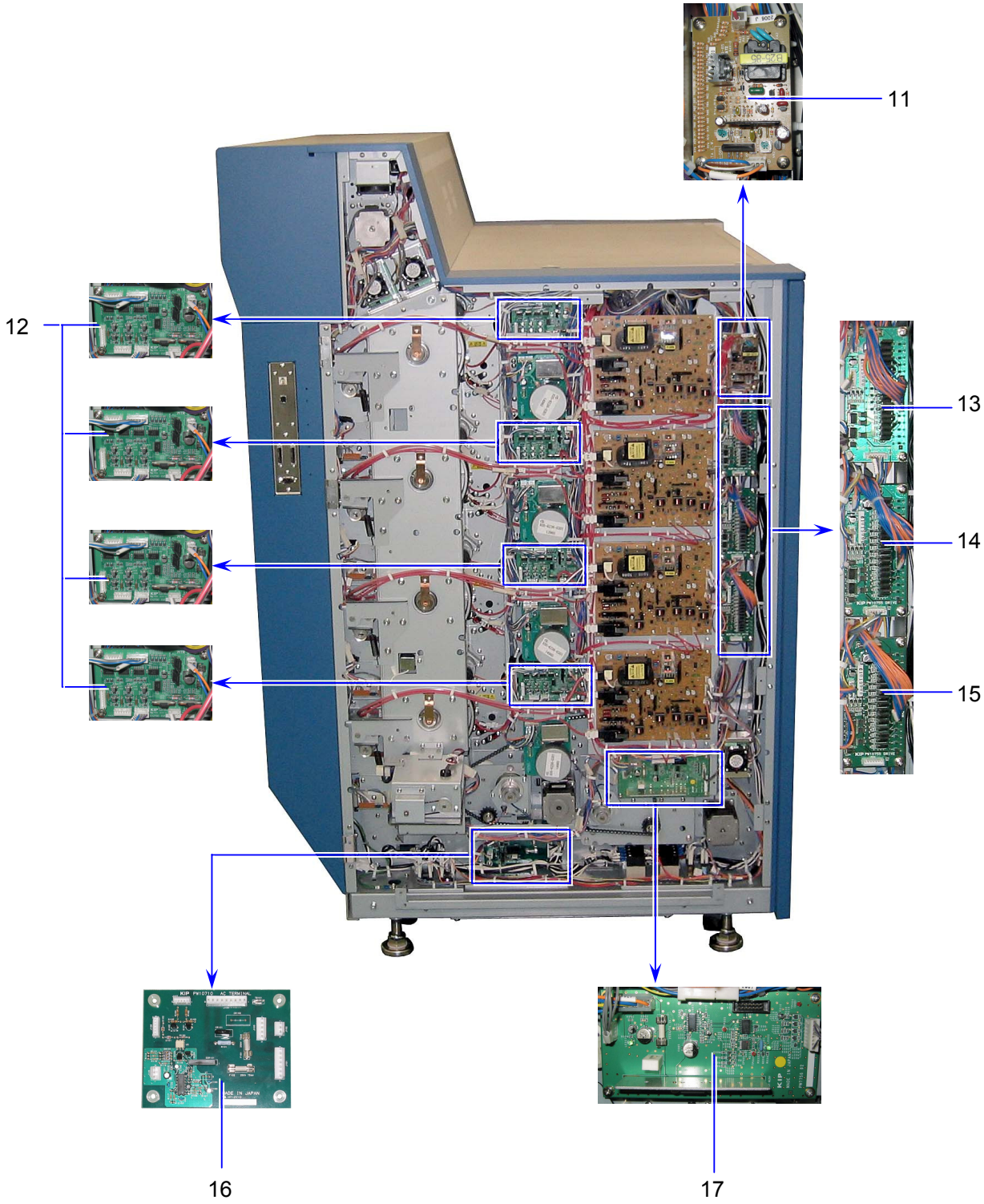


Item	Symbol	Signal name	Name	Type	Function
1	CNT1 CNT2		Counter	SCM-2470SK	Counts the whole amount of print in square foot (linear foot) CNT1: Counter A CNT2: Counter B
2	S3		Switch (Dehumidify Heater)	SDDJE1	Turns on/off Dehumidify Heater
3	PW10740F PW10740G		Sensor PCB Assy	PW10740	Controls toner remaining detection (Terminal PCB)
4	DSW2		Micro Switch (Door Switch)	D2VW-5L3-IHS	Detects Right Side Door open
	DSW2ST		Micro Switch (Door Switch)	D2VW-01L3-IHS	Detects Right Side Door open
6	PW10720		CPU PCB Assy	PW10720	Overall Sequence Control with Interface
7	PW10722		I/O B PCB Assy	PW10722	Controls input / output on center and right side components
8	TH3		Thermistor	EC2F103A2-30185	Detects temperature inside the machine
9	PW10755D		Driver PCB Assy	PW10755	Driver for right side Clutch, Solenoid, Counter
10	PW10780		Humidity Sensor PCB Assy	PW10780	Detect humidity inside the machine
11	PW10796A PW10796B PW10796C PW10796D		Toner Sensor	PW10796	Detects toner remaining (Sensor) PW10796A: Toner Cartridge 1 (K) PW10796B: Toner Cartridge 2 (C) PW10796C: Toner Cartridge 3 (M) PW10796D: Toner Cartridge 4 (Y)

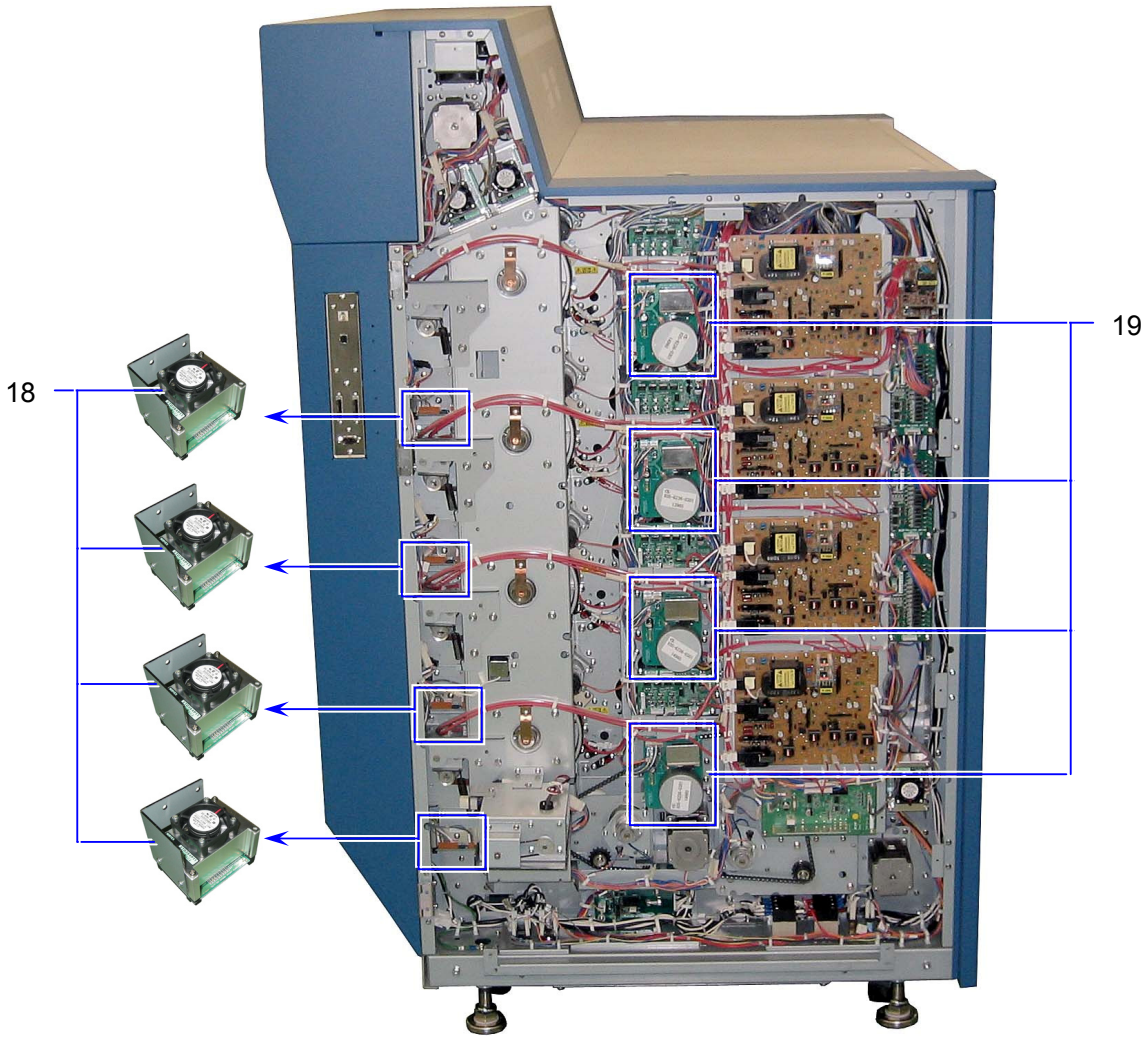
4. 2. 4 Left Side



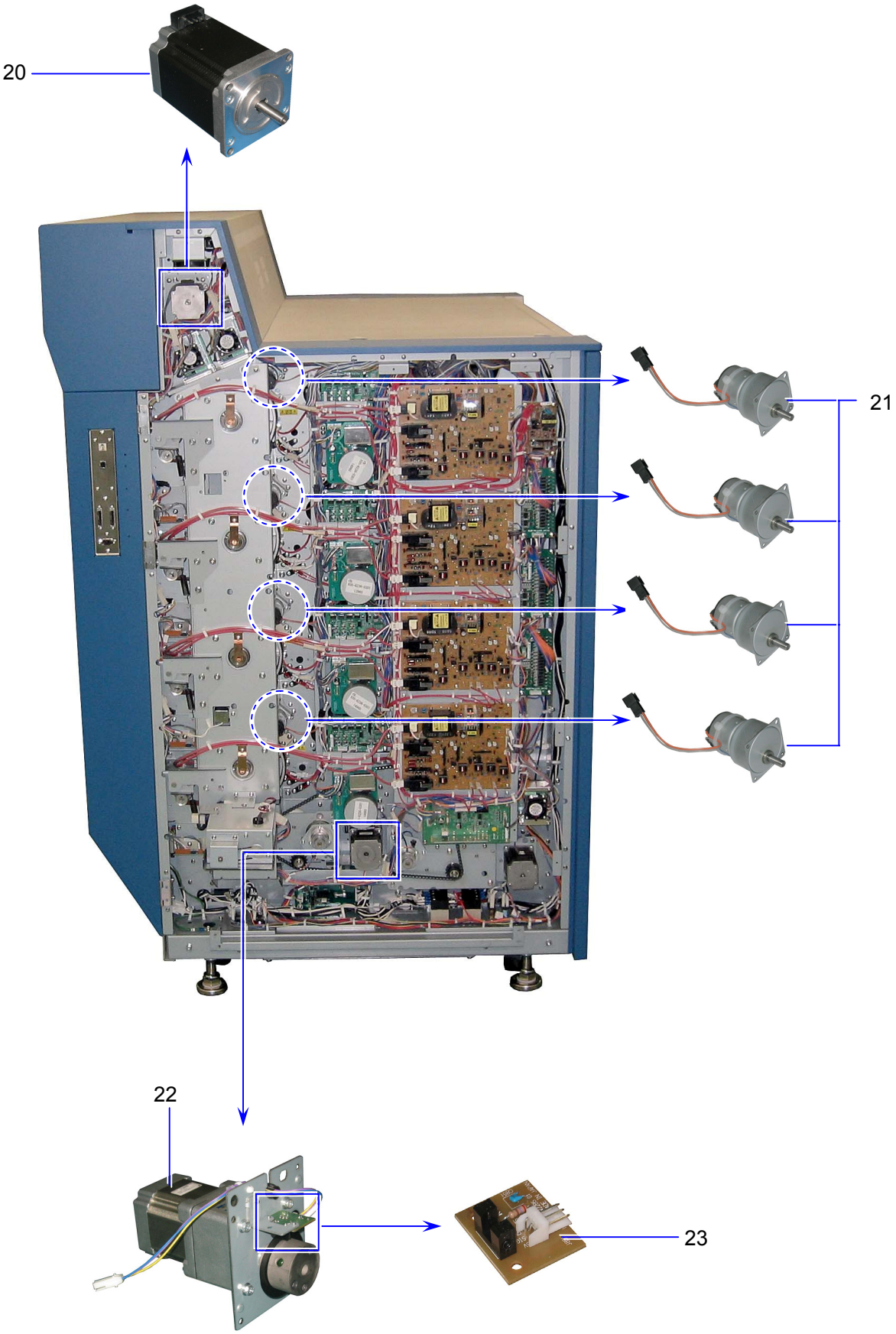
Item	Symbol	Signal name	Name	Type	Function
1	FM1		Fan (Fuser Fan)	FBA06T24H	Cools Fuser Motor
2			Motor Driver 56 (Fuser Motor Driver)	FTD3S4P11-01	Driver for Fuser Motor
3			Motor Driver 42 (Attraction Roller Motor Driver)	FTD3S4P11-01	Driver for Attraction Roller Motor
4	PW10724		USB HUB PCB Assy	PW10724	
5	SL1		Solenoid (Waste Toner Solenoid)	G-943-K9	Knocks on the waste toner duct to prevent it from getting clogged with the toner
6	HVP1		High Voltage Unit 1	EUKMBG845HB	Outputs a high voltage to (1) Developer Unit 1 (K) components • Toner Supply Roller (output1) • Developer Roller (output2) • Blade Roller (middle) (output3) • Blade Roller (end) (output4) (2) Image Corona 1 (3) Transfer Corona 1 (4) Separation Corona 1
7	HVP2		High Voltage Unit 2	EUKMBG845HB	Outputs a high voltage to (1) Developer Unit 2 (C) components • Toner Supply Roller (output1) • Developer Roller (output2) • Blade Roller (middle) (output3) • Blade Roller (end) (output4) (2) Image Corona 2 (3) Transfer Corona 2 (4) Separation Corona 2
8	HVP3		High Voltage Unit 3	EUKMBG845HB	Outputs a high voltage to (1) Developer Unit 3 (M) components • Toner Supply Roller (output1) • Developer Roller (output2) • Blade Roller (middle) (output3) • Blade Roller (end) (output4) (2) Image Corona 3 (3) Transfer Corona 3 (4) Separation Corona 3
9	HVP4		High Voltage Unit 4	EUKMBG845HB	Outputs a high voltage to (1) Developer Unit 4 (Y) components • Toner Supply Roller (output1) • Developer Roller (output2) • Blade Roller (middle) (output3) • Blade Roller (end) (output4) (2) Image Corona 4 (3) Transfer Corona 4 (4) Separation Corona 4
10			Motor Driver 56 (Paper Feed Motor Driver)	FTD3S4P11-01	Driver for Paper Feed Motor


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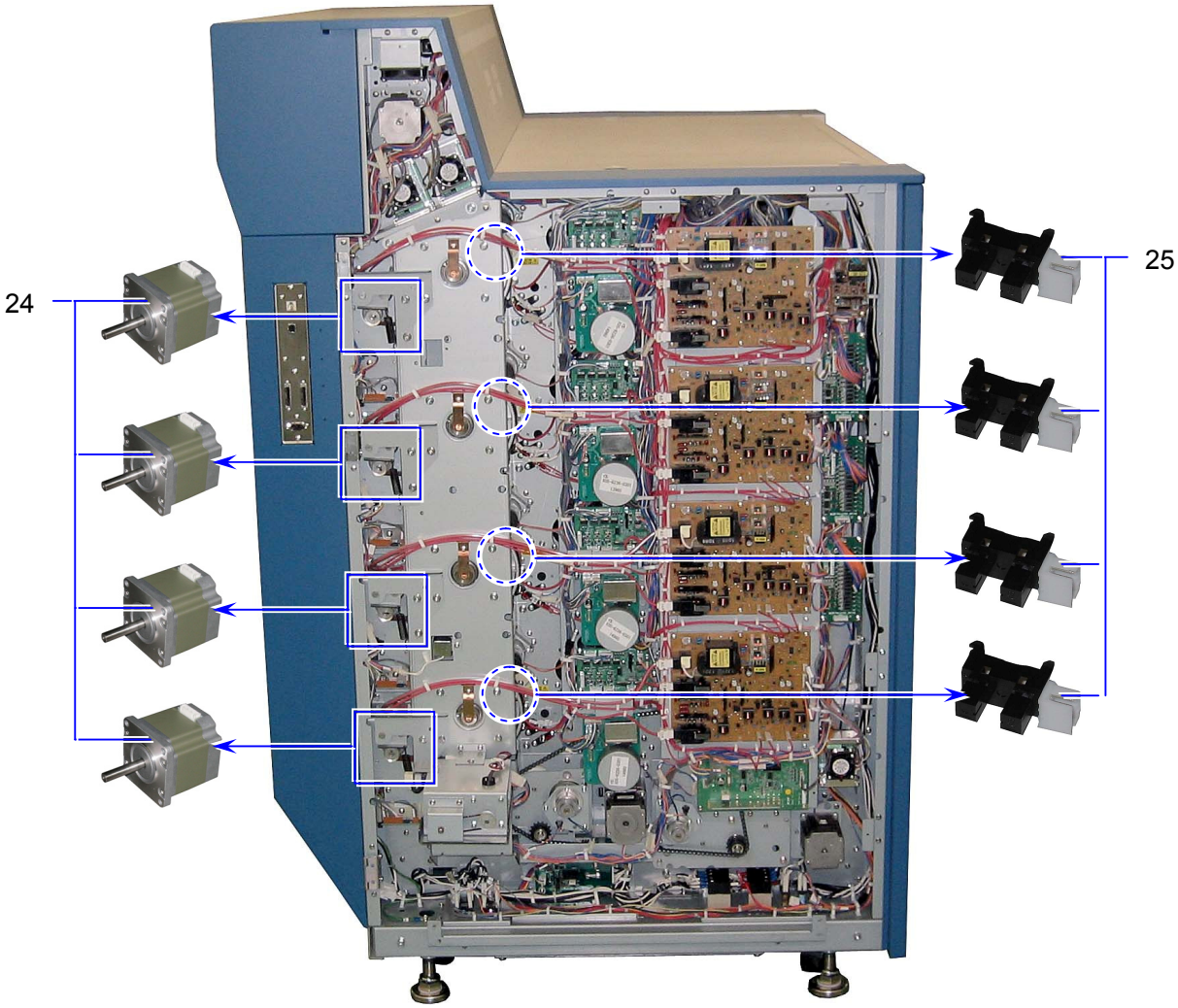
Item	Symbol	Signal name	Name	Type	Function
11	HVP9		H.V. Power Supply Assy	KHKG-065	Outputs a high voltage to Separation Guide
12	PW10256 A PW10256 B PW10256 C PW10256 D		PW10256 PCB Assy	PW10256	Driver for motors PW10256 A: Waste Toner Motor Toner Cartridge Motor 1 Wire Cleaning Motor 1 PW10256 B: Toner Cartridge Motor 2 Wire Cleaning Motor 2 PW10256 C: Toner Cartridge Motor 3 Wire Cleaning Motor 3 PW10256 D: Toner Cartridge Motor 4 Wire Cleaning Motor 4
13	PW10755A		Driver PCB Assy	PW10755	Driver for left side Eraser, Solenoid, Fan Motor
14	PW10755B		Driver PCB Assy	PW10755	Driver for left side Eraser, Solenoid, Fan Clutch
15	PW10755C		Driver PCB Assy	PW10755	Driver for Solenoid, Fan, Clutch, Motor
16	PW10710		AC Terminal PCB Assy	PW10710	AC Terminal
17	PW7756		PW7756PCB Assy	PW7756	Driver for Cutter Motor



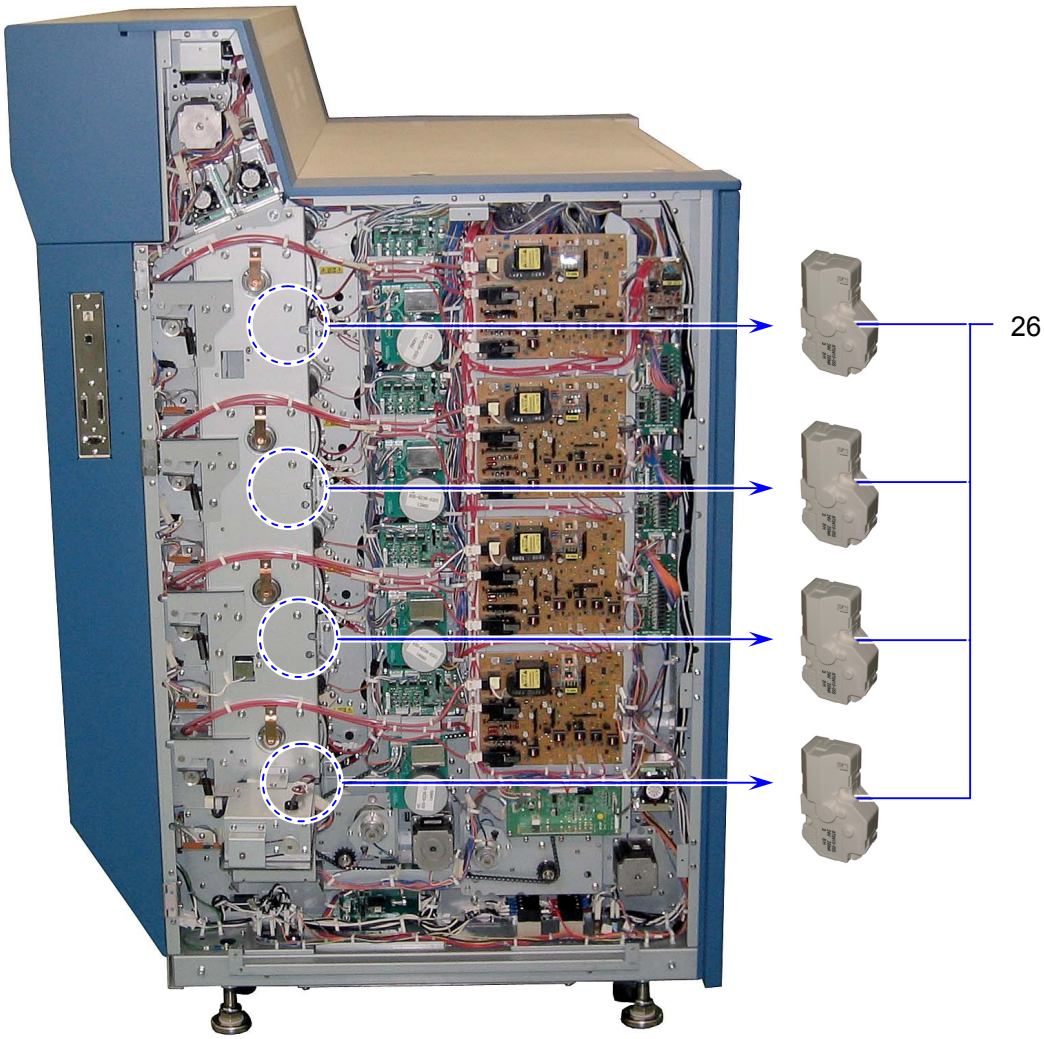
Item	Symbol	Signal name	Name	Type	Function
18			Motor Driver (60) (Drum Motor Driver)	FTD3S4P11-01	Driver for Drum Motor : Drum Motor 1 : Drum Motor 2 : Drum Motor 3 : Drum Motor 4
19	M11 M12 M13 M14		Geared Motor (Developer Motor)	DRG-6236-196	Drives Developer Unit M11: Developer Unit 1(K) M12: Developer Unit 2(C) M13: Developer Unit 3(M) M14: Developer Unit 4(Y)


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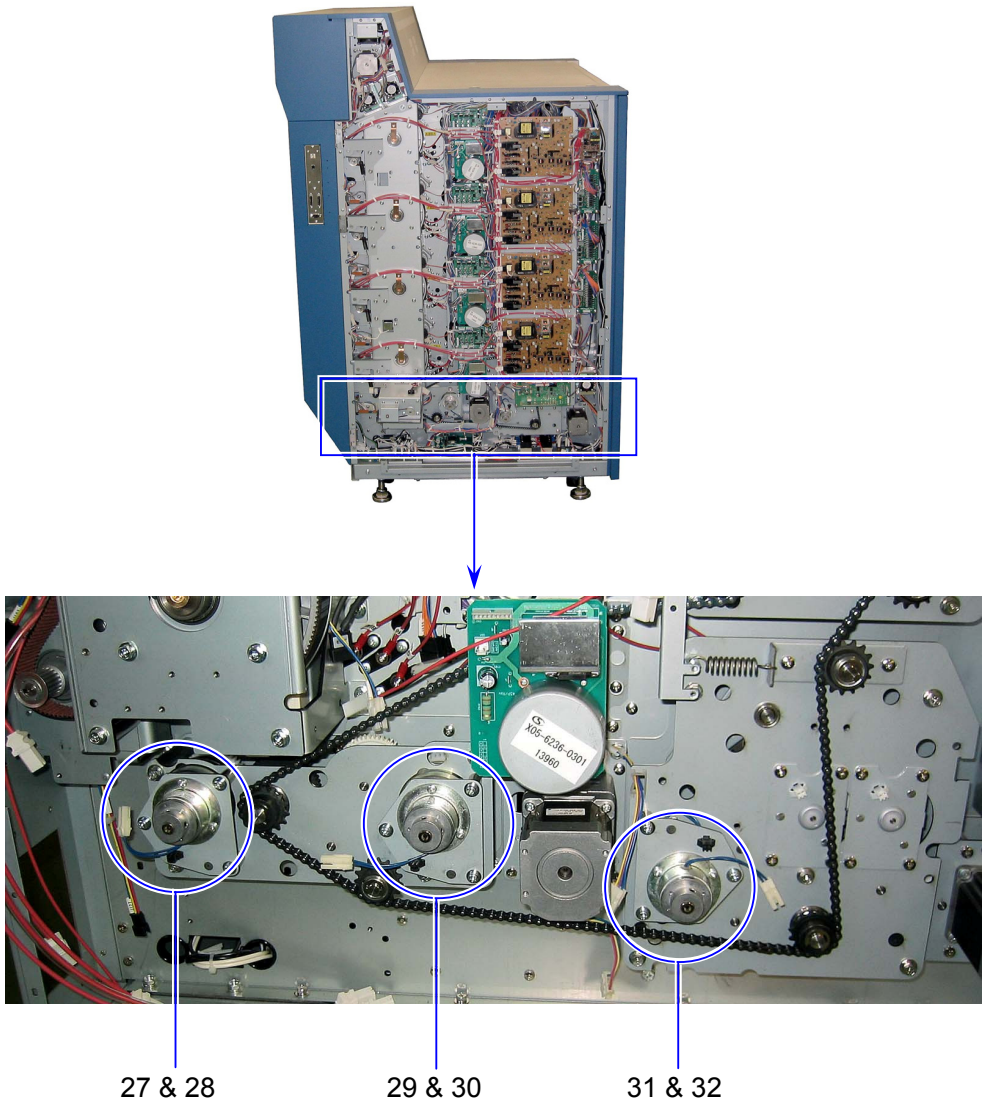
Item	Symbol	Signal name	Name	Type	Function
20	M5		Stepping Motor (Fuser Motor)	KT56QM1-002	Drives Fuser Roller
21	M23 M24 M25 M26		Geared Motor (Wire Cleaning Motor)	TG-05K-AG-15-F354 24V	Drives Wire Cleaning Pad to clean Image Corona Wire M23: Image Corona 1 M24: Image Corona 2 M25: Image Corona 3 M26: Image Corona 4
22	M2		Stepping Motor (Cutter Motor)	KT56LM4G-004	Drives Cutter Unit
23	PW2285(A)		Sensor PCB Assy (Cutter Home Position Sensor)	PW2285(A)	Detects Cutter Blade in its home position



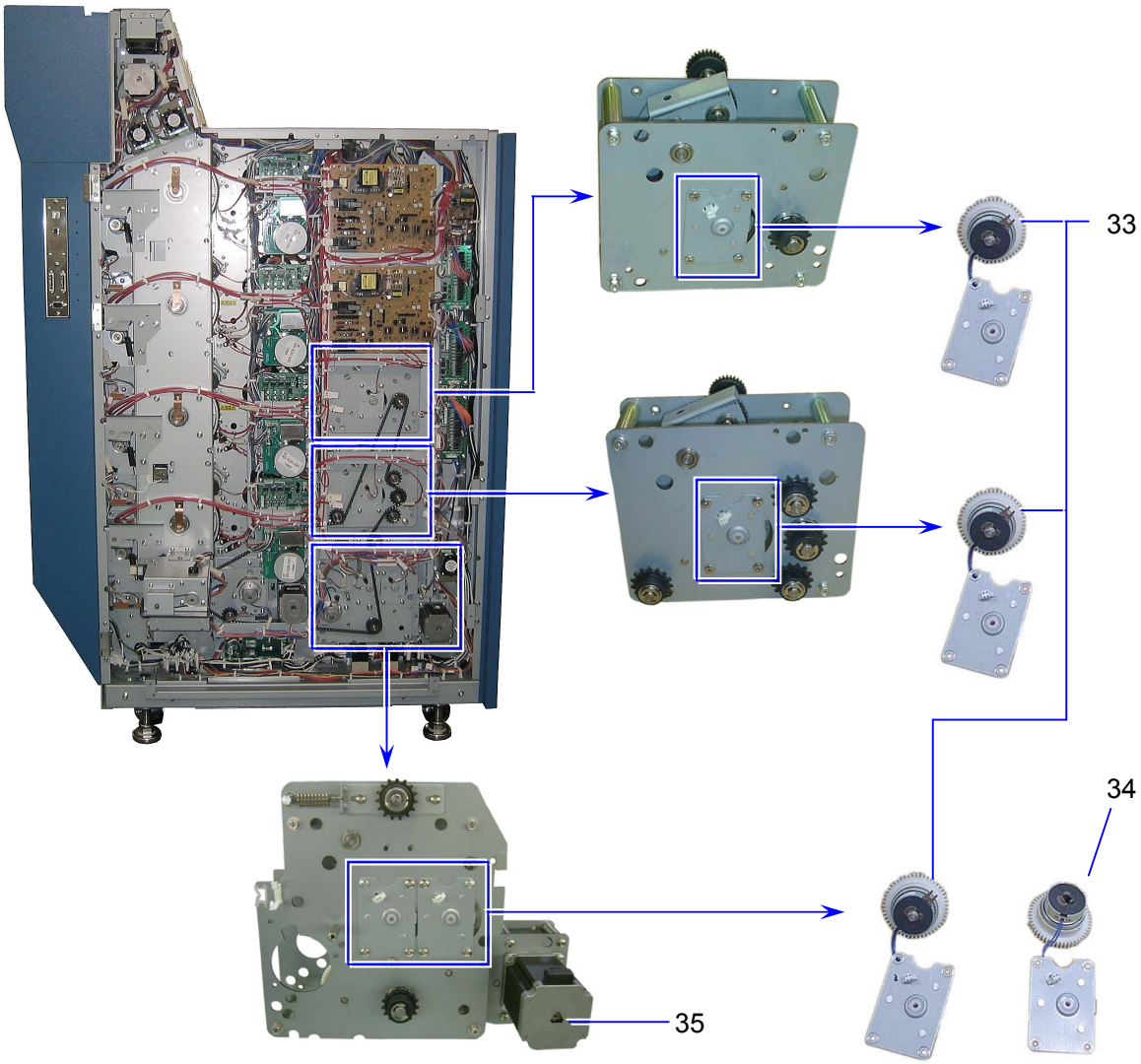
Item	Symbol	Signal name	Name	Type	Function
24	M7 M8 M9 M10		Stepping Motor (Drum Motor)	KT60LM06-017	Drives Drum M7: Drum 1 (K) M8: Drum 2 (C) M9: Drum 3 (M) M10: Drum 4 (Y)
25	PH2 PH3 PH4 PH5		Photo Interrupter (Drum Motor Sensor)	GP1A73AJ000F	Detects Drum Motor operation PH2: Drum Motor 1 PH3: Drum Motor 2 PH4: Drum Motor 3 PH5: Drum Motor 4



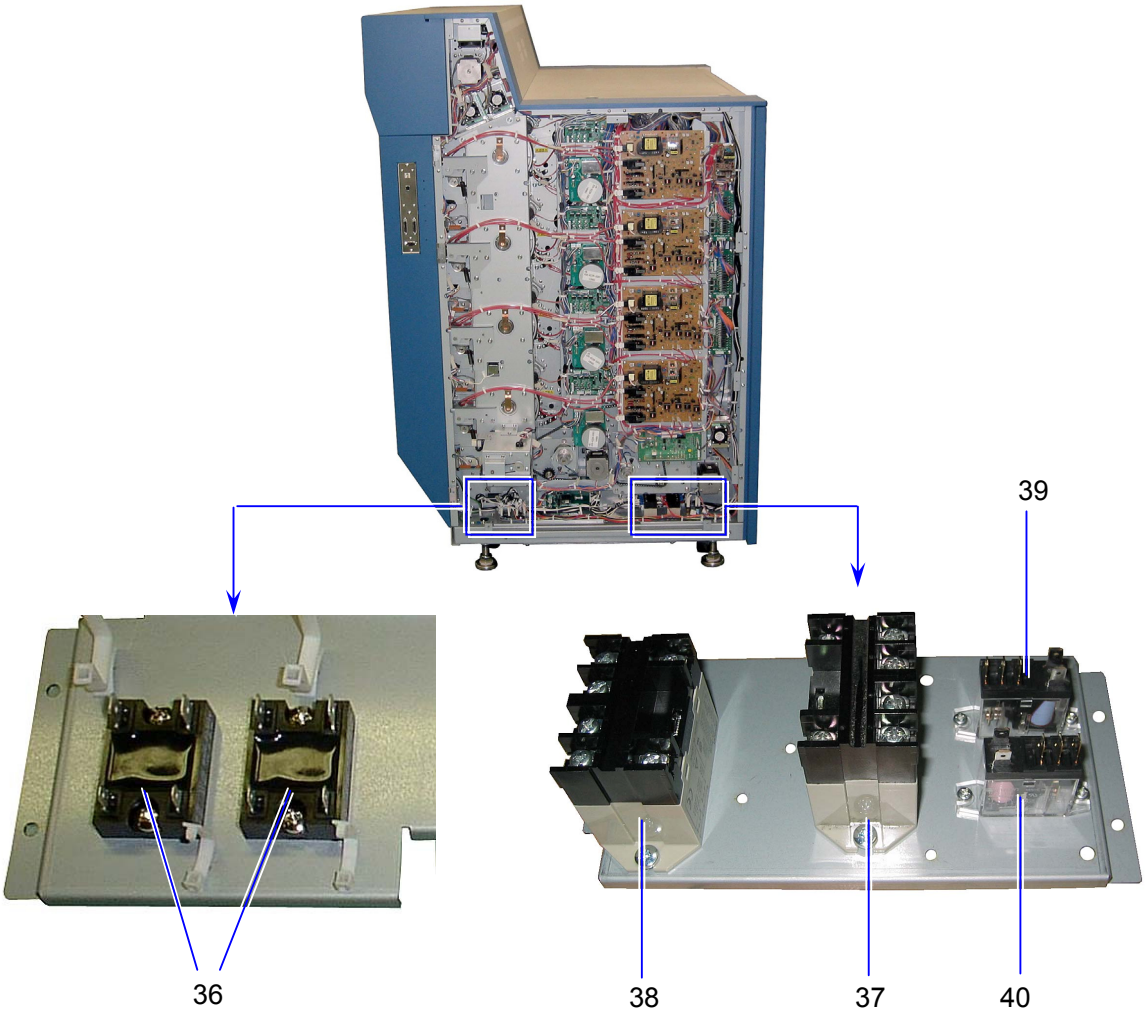
Item	Symbol	Signal name	Name	Type	Function
26	M15 M16 M17 M18		DC Motor (Developer Press Motor)	DU2422-1	Presses Developer Unit against / release from Drum M15: Developer Unit 1 (K) M16: Developer Unit 2 (C) M17: Developer Unit 3 (M) M18: Developer Unit 4 (Y)



Item	Symbol	Signal name	Name	Type	Function
27	MC9		Electromagnetic Brake (Registration Front Roller Brake)	BB-3.2-E01A	
28	MC8		Electromagnetic Clutch (Registration Front Roller Clutch)	AMC 20	
29	MC7		Electromagnetic Brake (Middle Feed Roller Brake)	BB-3.2-E01A	
30	MC6		Electromagnetic Clutch (Middle Feed Roller Clutch)	AMC 20	
31	MC5		Electromagnetic Brake (Feed Roller Brake)	BB-3.2-E01A	
32	MC4		Electromagnetic Clutch (Feed Roller Clutch)	AMC 20	



Item	Symbol	Signal name	Name	Type	Function
33	MC1 MC2 MC3		Electromagnetic Clutch (Pick Up Clutch)	BJ-3.5-166A	
34	MC10		Electromagnetic Clutch (Pick Up Clutch)	BJ-3.5-166A	
35	M1		Stepping Motor (Paper Feed Motor)	KT56QM1-002	Feeds media



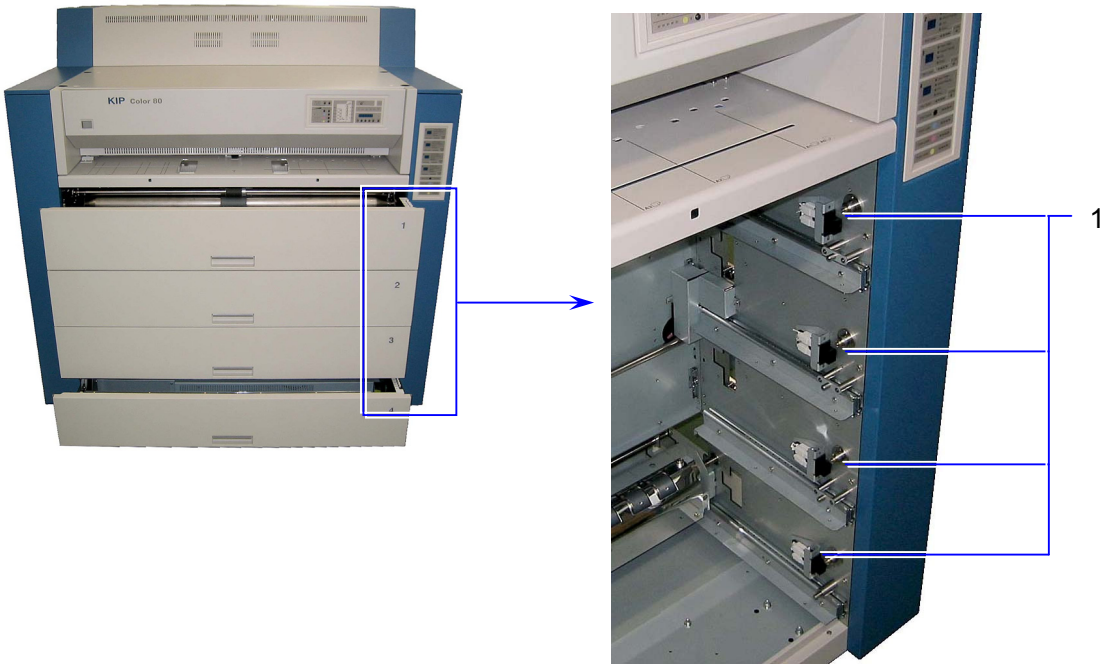
Item	Symbol	Signal name	Name	Type	Function
36	SSR1 SSR2		Solid State Relay	S5N-225HV	Controlling IR Lamp SSR1: H1 SSR2: H2
37	RY1		Relay	G7L-2A-BUB AC200-240	Supplies DC power to DC Power Supply 1. (Remains DC power supply when any door/cover open)
38	RY2		Relay	G7L-2A-BUB DC24	Supplies DC power to IR Lamps and DC Power Supply 2. (Shuts DC power when any door/cover open)
39	RY3		Relay	G2R-1-T DC24V	Shuts DC power to DC power Supply 1 when Switch off
40	RY4		Relay	G2R-1-T AC200V / (220V)	Detects Switch off

4. 2. 5 Back Side



Item	Symbol	Signal name	Name	Type	Function
1	S2		Switch	AJ921001B3F	Supplies/Shuts AC power

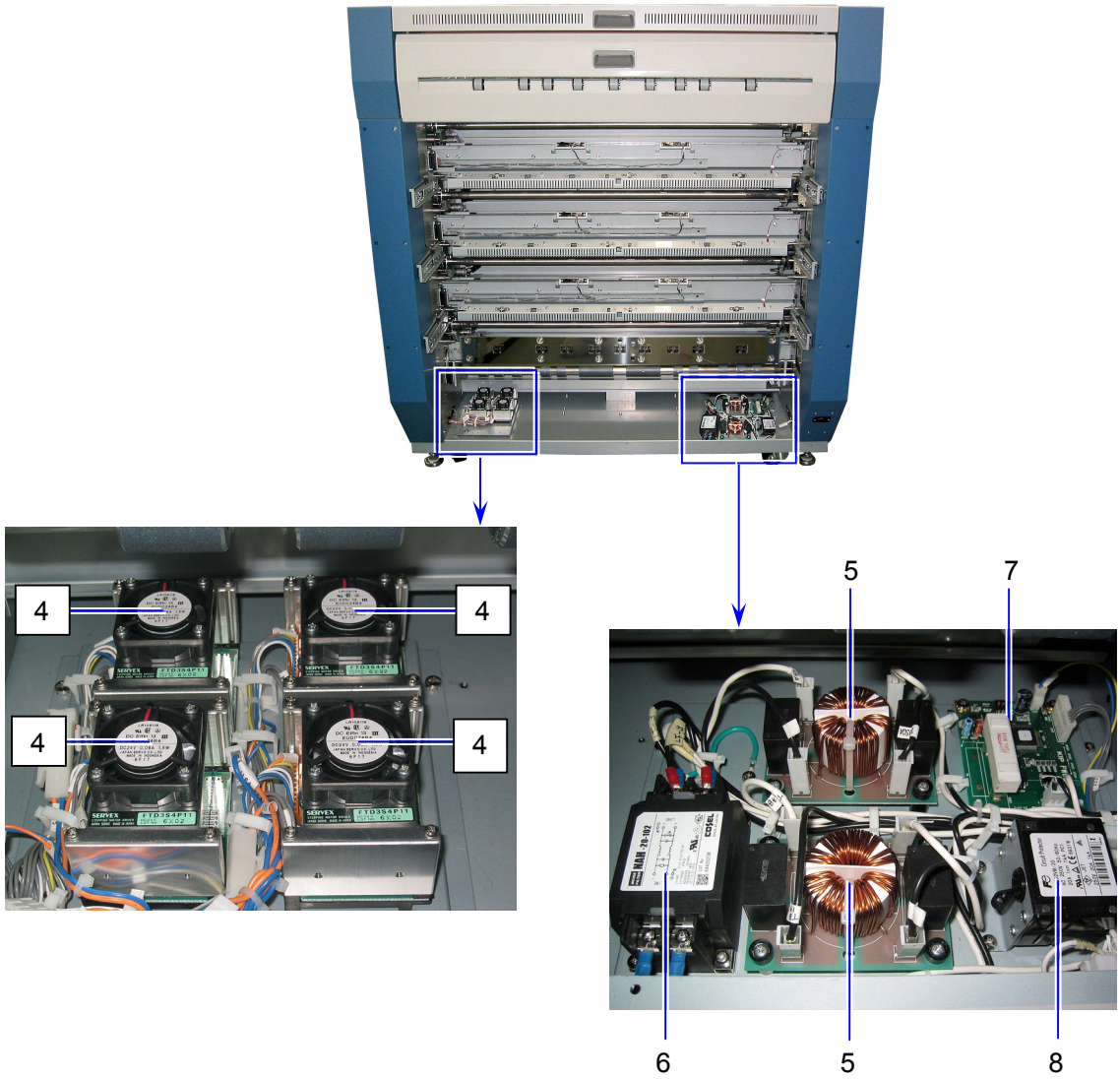
4. 2. 6 Main Frame



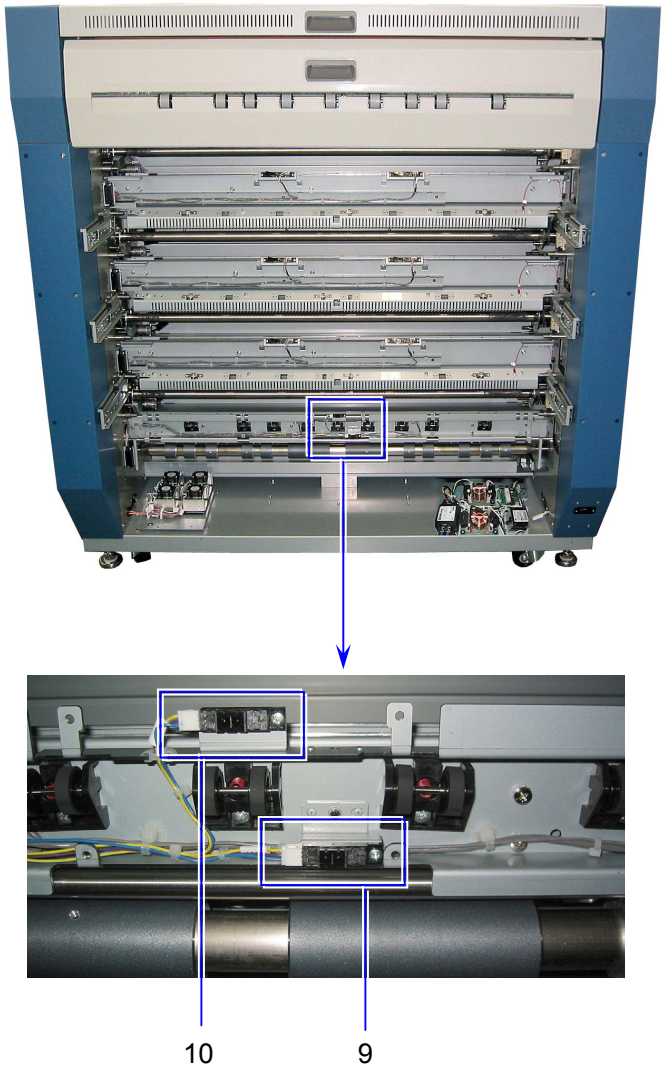
Item	Symbol	Signal name	Name	Type	Function
1	DS1 DS2 DS3 DS4		Switch (Door Switch)	FA2L-BA22	Detects Roll Deck open to shut AC power to Dehumidify Heater.



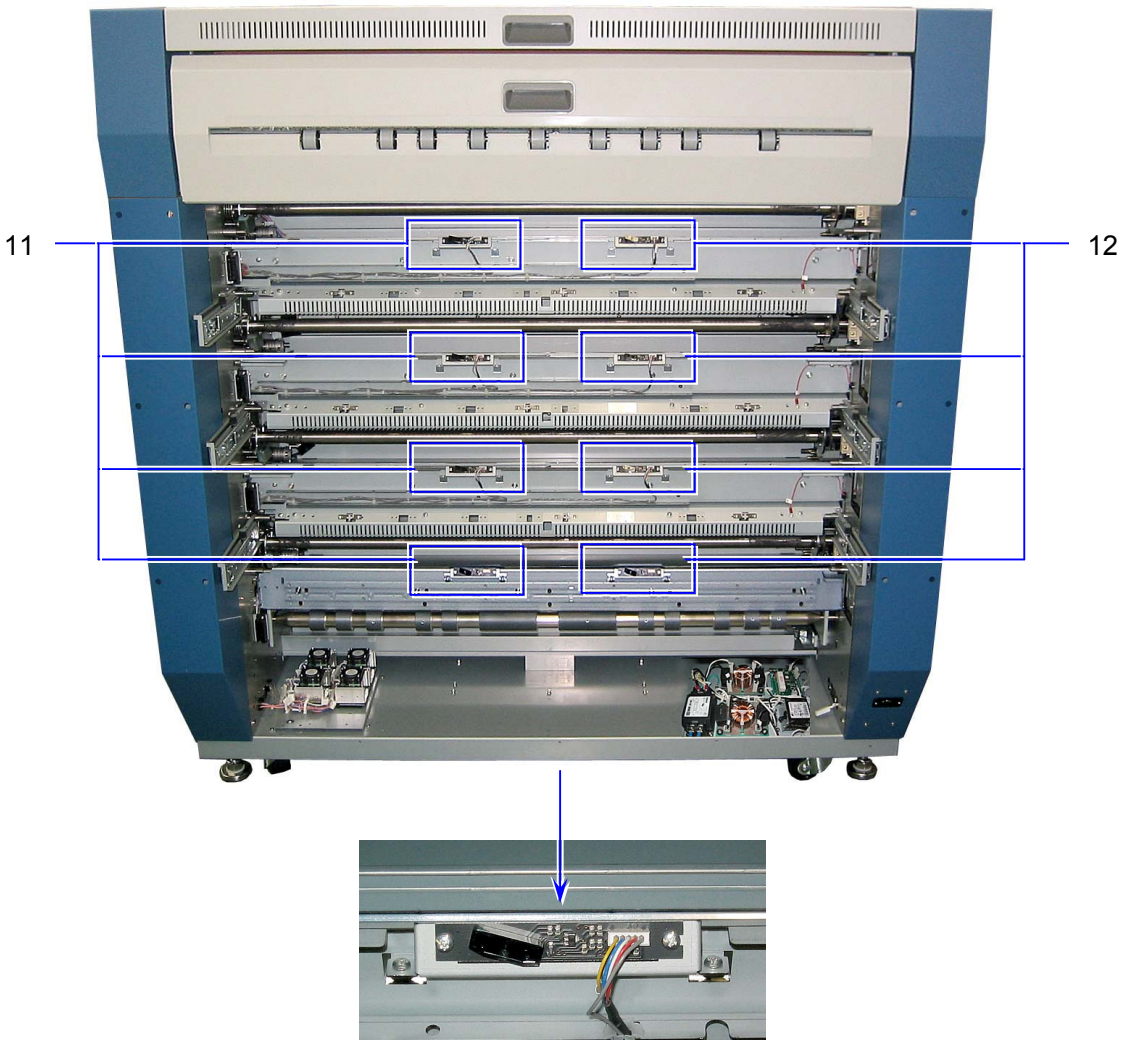
Item	Symbol	Signal name	Name	Type	Function
2	M6		DC Motor (Bypass Feeder Motor)	DME37B6H30B	Feeds cut sheet on Bypass Feeder
3	SL6		Solenoid (Bypass Feeder Roller Solenoid)	G-1053-K12	Shifts Bypass Feeder Roller up and down



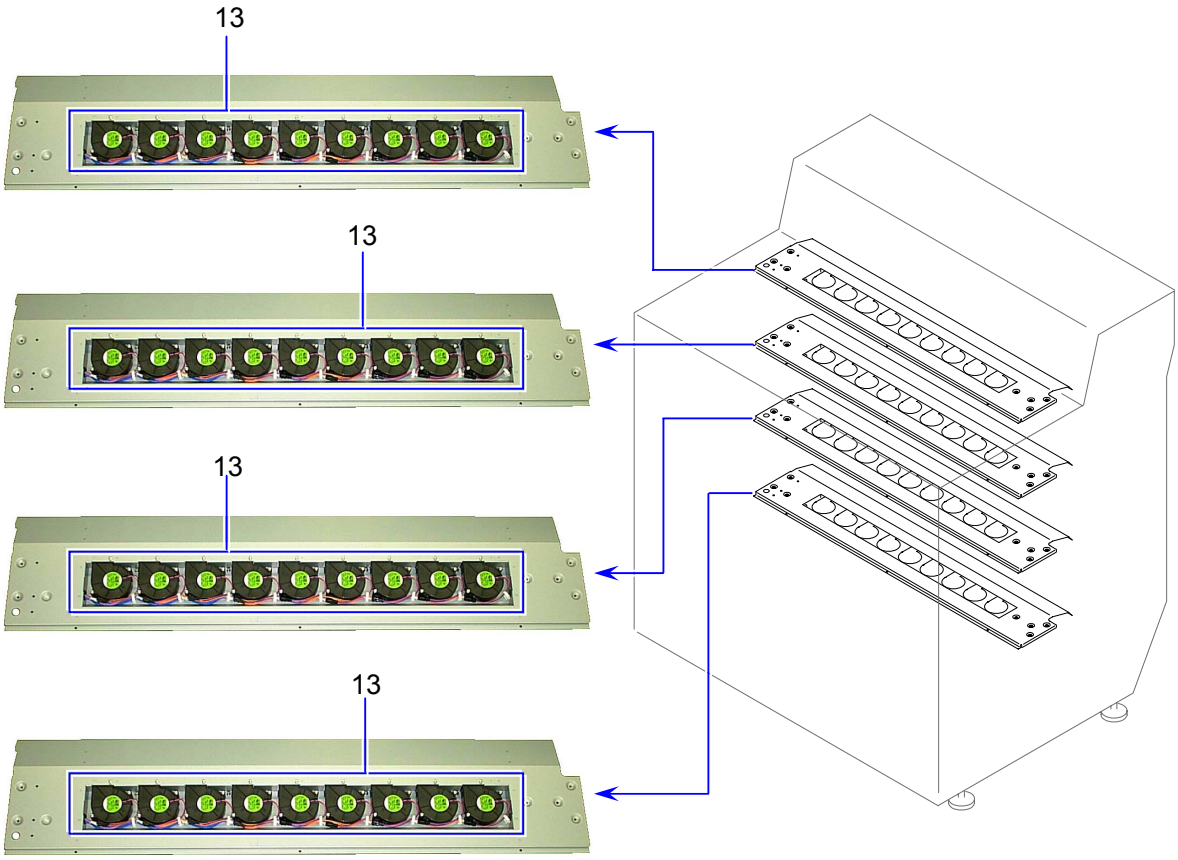
Item	Symbol	Signal name	Name	Type	Function
4			Motor Driver 42	FTD3S4P11-01	Driver for motors (1): Registration Roller Motor (2): Transportation Unit Motor 1 (3): Transportation Unit Motor 2 (4): Transportation Unit Motor 3
5	PW10711A PW10711B		Filter PCB Assy	PW10711	Line filter
6	LF		Line Filter	NAH-20-102	Line filter
7	PW6125		Phase Control PCB Assy	PW6125	Reduces flicker
8	CB1		Circuit Protector	CP32VM/20	Protects AC line from over current



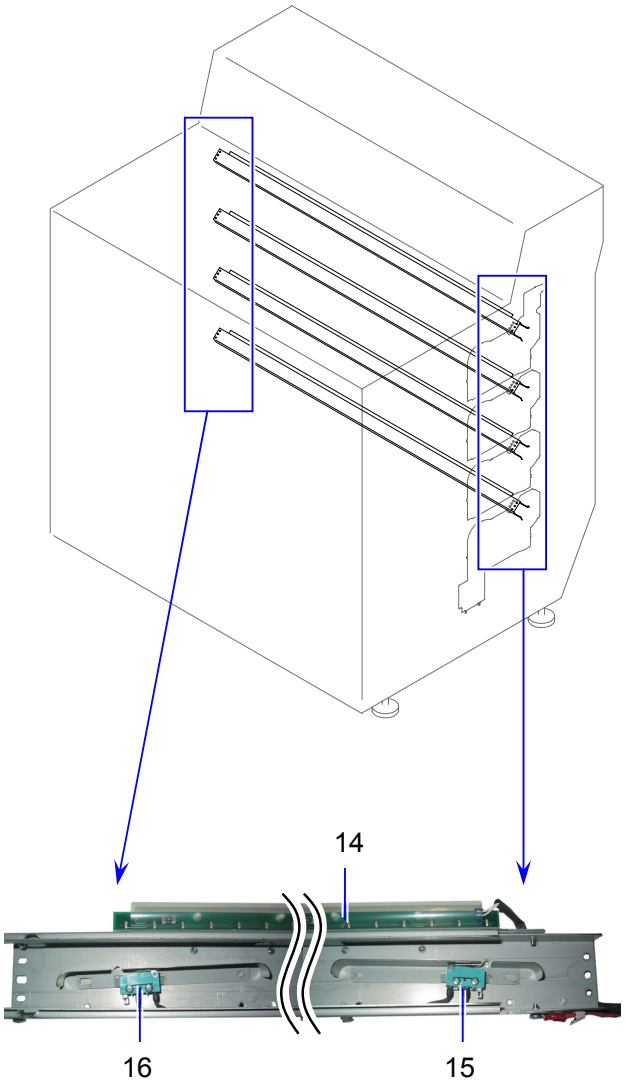
Item	Symbol	Signal name	Name	Type	Function
9	PH19		Photo Interrupter (Registration Front Sensor)	GP2A25J000F	
10	PH20		Photo Interrupter (Registration Rear Sensor)	GP2A25J000F	



Item	Symbol	Signal name	Name	Type	Function
11	PH29 PH31 PH33 PH35		Toner Density Sensor Assy (Density Sensor R)	GP2TC2	Detects toner density on right side of Drum Surface PH29: Drum 1 (K) PH31: Drum 2 (C) PH33: Drum 3 (M) PH35: Drum 4 (Y)
12	PH30 PH32 PH34 PH36		Toner Density Sensor Assy Density Sensor L)	GP2TC2	Detects toner density on left side of Drum surface PH30: Drum 1 (K) PH32: Drum 2 (C) PH34: Drum 3 (M) PH36: Drum 4 (Y)

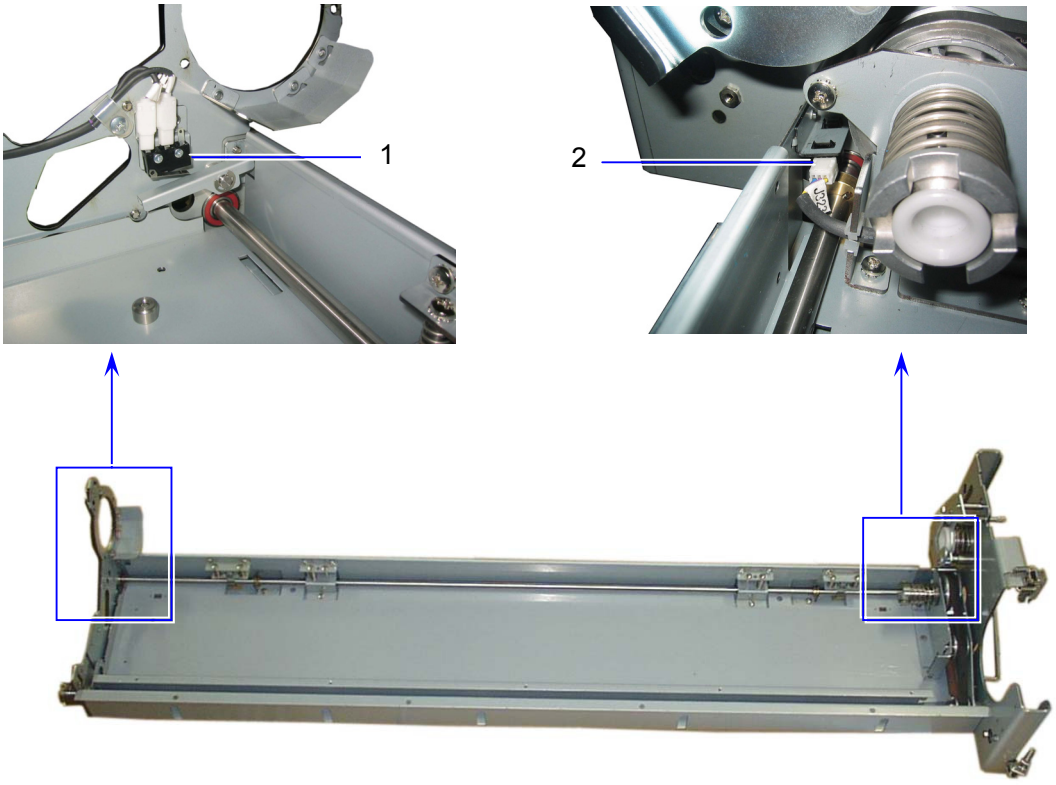


Item	Symbol	Signal name	Name	Type	Function
13	FM19 to FM54		Sirocco Fan Assy (Separation Fan)	SMBD24H4-933	Blows media to help separation from Drum surface



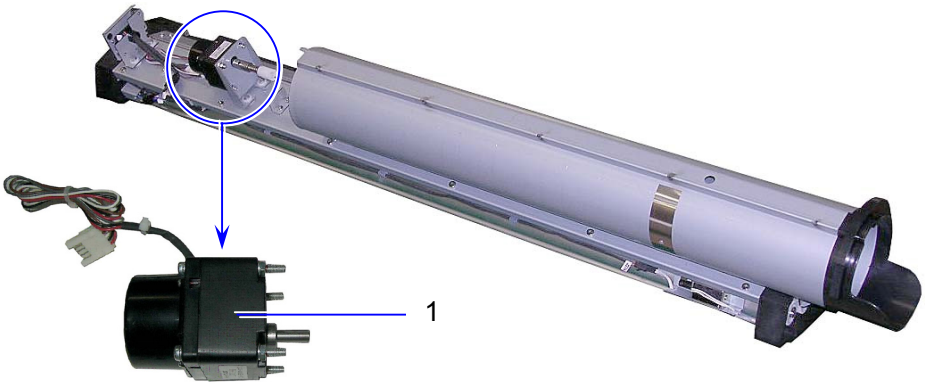
Item	Symbol	Signal name	Name	Type	Function
14	PW10730A PW10730B PW10730C PW10730D		ERS PCB Assy	PW10730	Removes negative charge from Drum at the beginning of Print Process PW10730A: Drum 1 PW10730B: Drum 2 PW10730C: Drum 3 PW10730D: Drum 4
15	MS1R MS2R MS3R MS4R		Micro Switch Assy (Wire Cleaning Pad HP switch R)	ABS1414413	Detects the Cleaning Pad of Image Corona is at home position R. MS1R: Image Corona 1 MS2R: Image Corona 2 MS3R: Image Corona 3 MS4R: Image Corona 4
16	MS1L MS2L MS3L MS4L		Micro Switch Assy (Wire Cleaning Pad HP switch L)	ABS1414413	Detects the Cleaning Pad of the Image Corona is at home position L. MS1L: Image Corona 1 MS2L: Image Corona 2 MS3L: Image Corona 3 MS4L: Image Corona 4

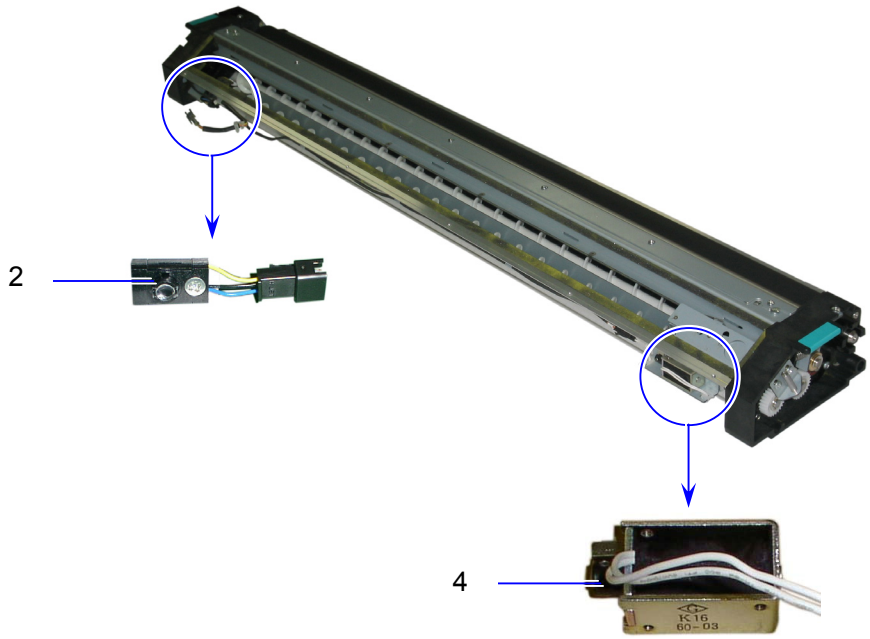
4. 2. 7 Process Unit

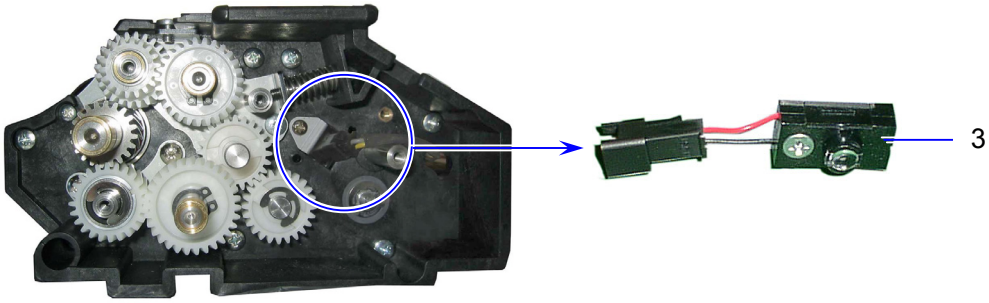


Item	Symbol	Signal name	Name	Type	Function
1	MS1 MS2 MS3 MS4		Micro Switch (Developer Release Switch)	ABS111251	Detects Developer Unit released position MS1: Developer Unit 1 MS2: Developer Unit 2 MS3: Developer Unit 3 MS4: Developer Unit 4
2	PH6 PH7 PH8 PH9		Photo Interrupter (Developer Press Sensor)	GP1A73AJ000F	Detects Developer Unit set position PH6: Developer Unit 1 PH7: Developer Unit 2 PH8: Developer Unit 3 PH9: Developer Unit 4

4. 2. 8 Developer Unit

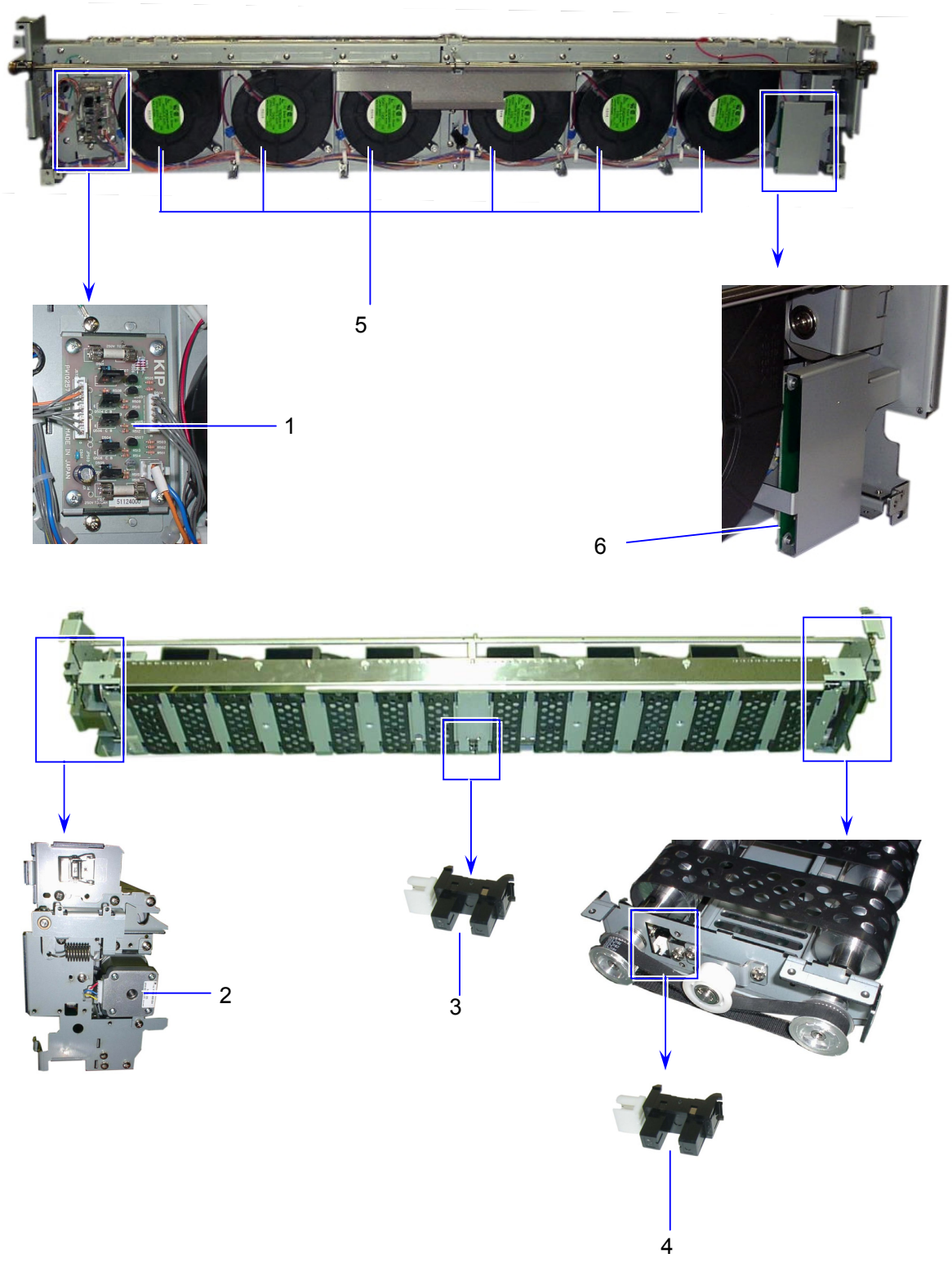






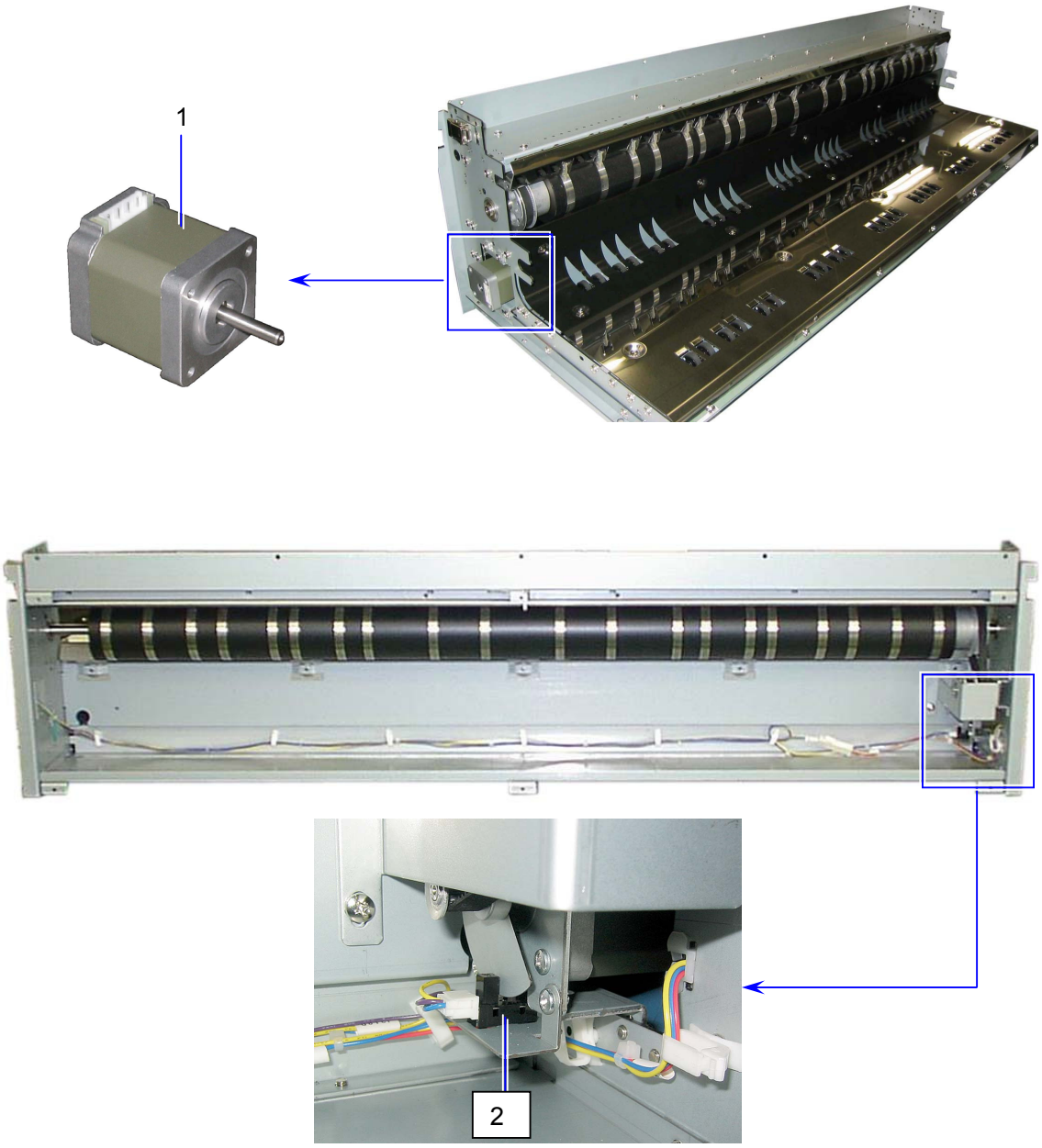
Item	Symbol	Signal name	Name	Type	Function
1	M19 M20 M21 M22		DC Motor (Toner Cartridge Motor)	LK4-4M3G-01	Rotates Toner Cartridge to help toner to move into Developer Unit M19: Toner Cartridge 1 (K) M20: Toner Cartridge 2 (C) M21: Toner Cartridge 3 (M) M21: Toner Cartridge 4 (Y)
2	PH11 PH13 PH15 PH17		Sensor (Toner Sensor reception)	KB874-AA22	Detects if there is enough toner in the Developer Unit PH11: Developer Unit 1 PH13: Developer Unit 2 PH15: Developer Unit 3 PH17: Developer Unit 4
3	PH10 PH12 PH14 PH16		Sensor (Toner Sensor emission)	KB874-AA12	Detects if there is enough toner in the Developer Unit PH10: Developer Unit 1 PH12: Developer Unit 2 PH14: Developer Unit 3 PH16: Developer Unit 4
4	SL2 SL3 SL4 SL5		Solenoid (Toner Shutter Solenoid)	G-835-NA19	Opens and closes the Developer Shutter SL2: Toner Cartridge 1 (K) SL3: Toner Cartridge 2 (C) SL4: Toner Cartridge 3 (M) SL4: Toner Cartridge 4 (Y)

4. 2. 9 Feeder Unit



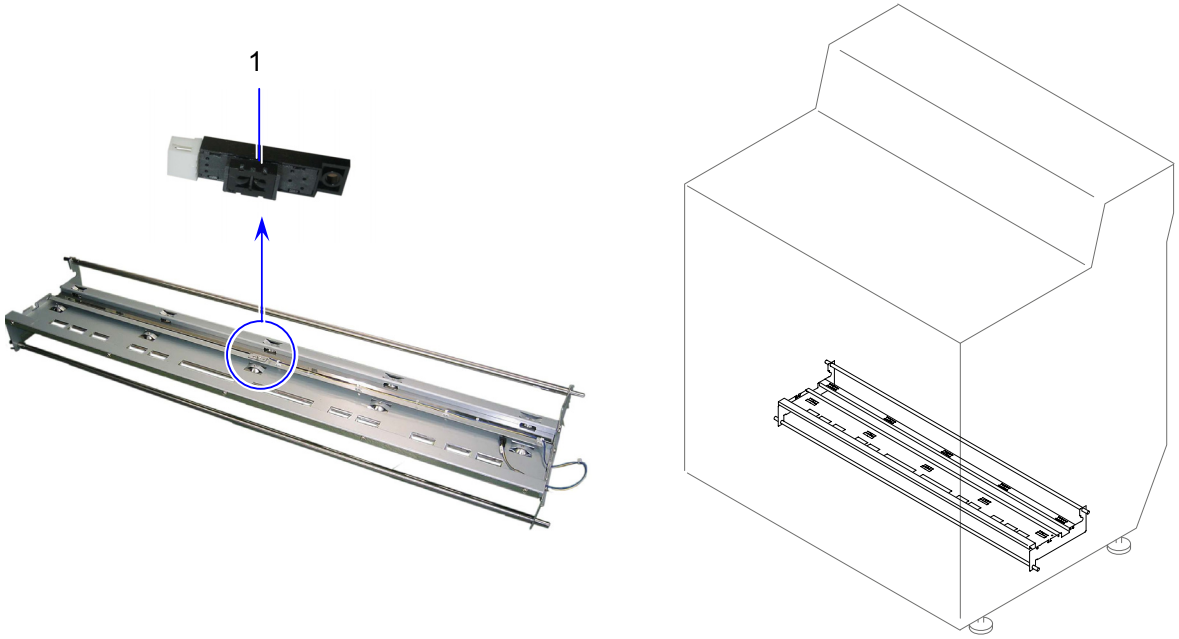
Item	Symbol	Signal name	Name	Type	Function
1	PW10257F PW10257G PW10257H		PW10257 PCB Assy (SOL)	PW10257	Driver for Transport Assist Fan PW10257F: Transportation Unit 1 PW10257G: Transportation Unit 2 PW10257H: Transportation Unit 3
2	M28 M29 M30		Stepping Motor (Transportation Unit Motor)	KT42KM06-004	Drives Transportation Unit M28: Transportation Unit 1 M29: Transportation Unit 2 M30: Transportation Unit 3
3	PH22 PH23 PH24		Photo Interrupter (Separation Sensor)	GP1A73AJ000F	Detects the separation of printing media from the Drum. PH22: Transportation Unit 1 PH23: Transportation Unit 2 PH24: Transportation Unit 3
4	PH25 PH26 PH27		Photo Interrupter (Transportation Unit Motor Sensor)	GP1A73AJ000F	Detects Transportation Unit Motor operation PH25: Transportation Unit 1 PH26: Transportation Unit 2 PH27: Transportation Unit 3
5	FM60 to 77		Sirocco Fan (Transport Assist Fan)	SCBD24H4-993	Inhales air to attract media onto Transportation Unit Belt
6			Transfer Guide PCB (Zener)		Connects the Transfer Guide to the ground through Zener. Or connect it directly to the ground.

4. 2. 10 Registration Unit



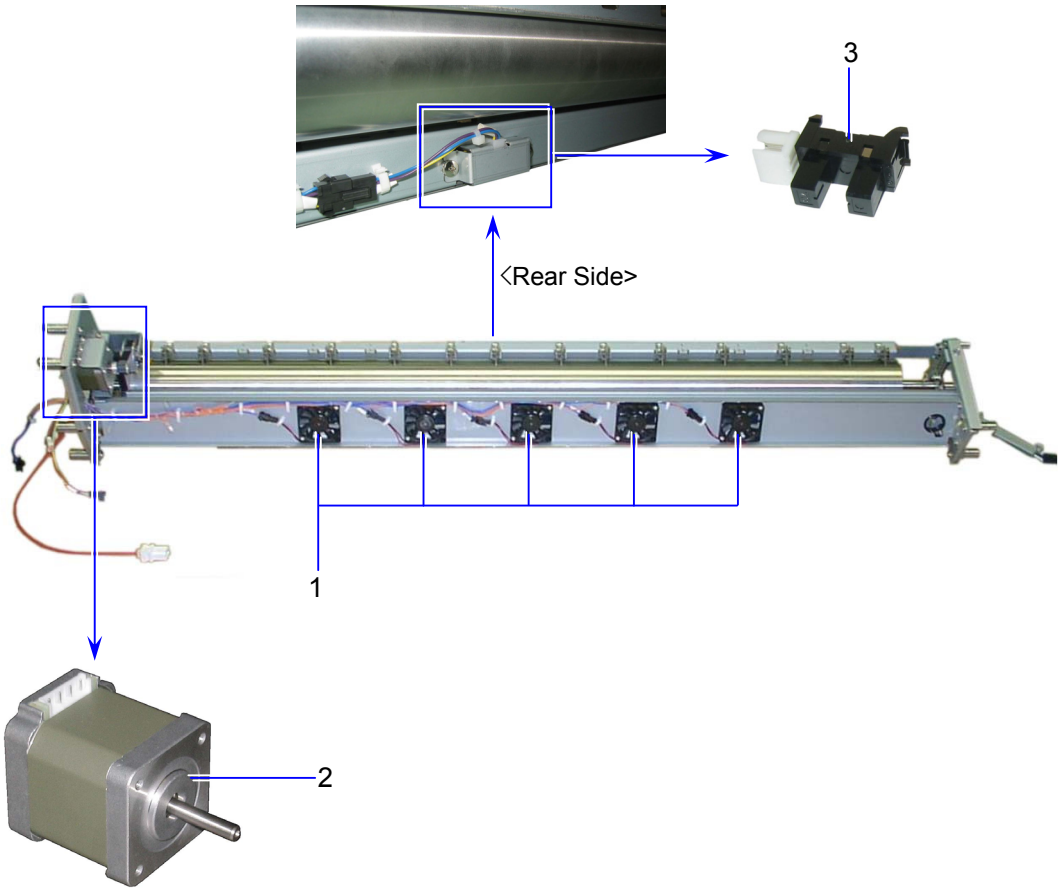
Item	Symbol	Signal name	Name	Type	Function
1	M31		Stepping Motor (Registration Roller Motor)	KT42KM06-004	Drives Registration Roller
2	PH28		Photo Interrupter (Registration Roller Motor Sensor)	GP1A73AJ000F	Detects Registration Roller Motor operation

4. 2. 11 Transportation Unit



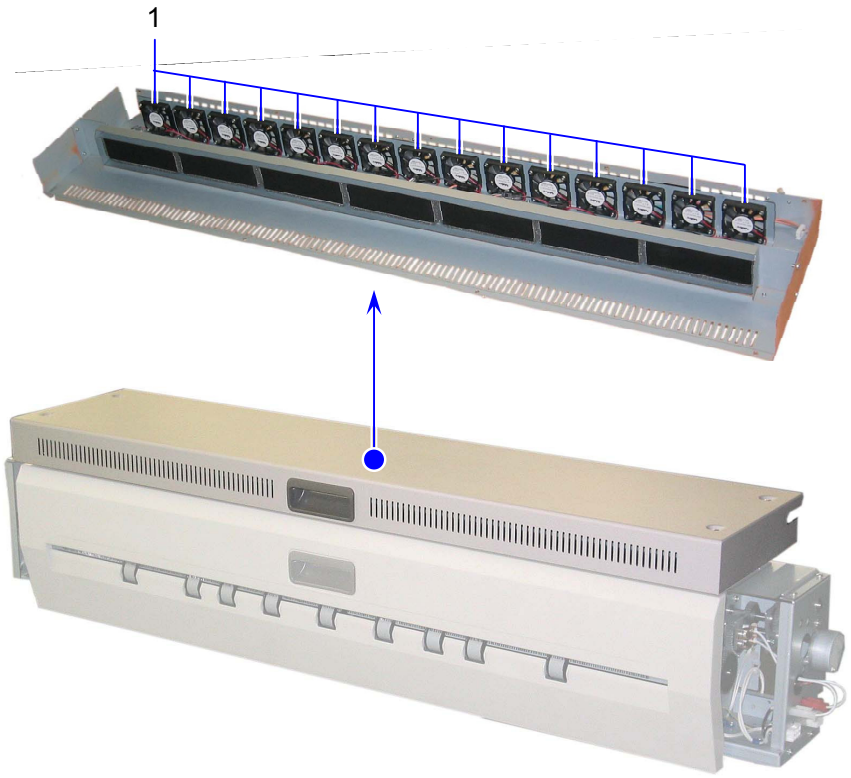
Item	Symbol	Signal name	Name	Type	Function
1	PH18		Photo Interrupter (Bottom corner Area Sensor)	GP2A25J000F	Detects Transportation Unit Jam

4. 2. 12 Paper Diverter Unit

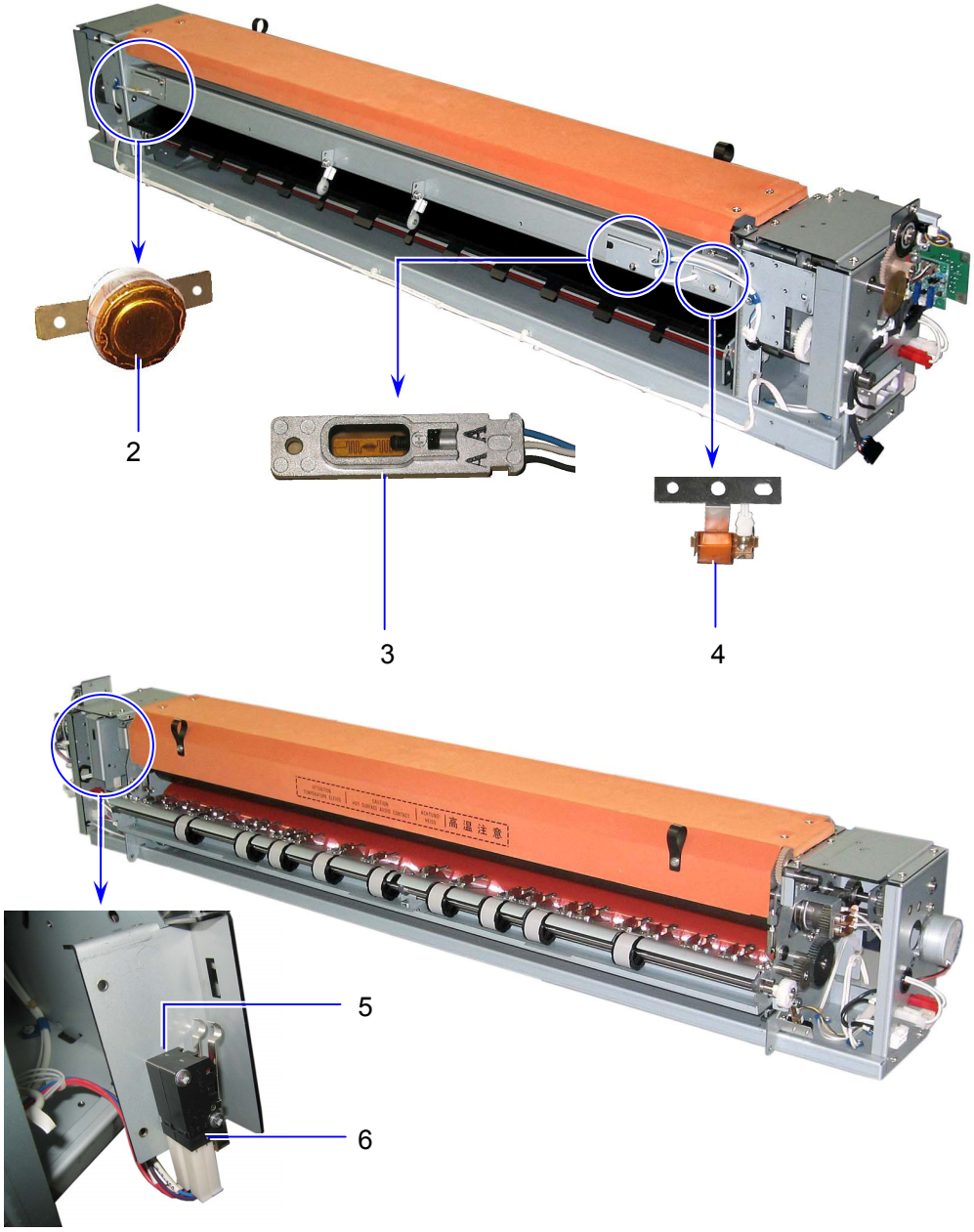


Item	Symbol	Signal name	Name	Type	Function
1	FM55 to FM59		DC Fan (Pressure Blower)	D05X-24TL 04	Helps transporting media into Fuser unit by pressing media with blow
2	M4		Stepping Motor (Attraction Roller Motor)	KT42KM06-004	Drives Attraction Roller
3	PH21		Photo Interrupter (Separation Sensor)	GP1A73A	Detects media separation of Process 1.

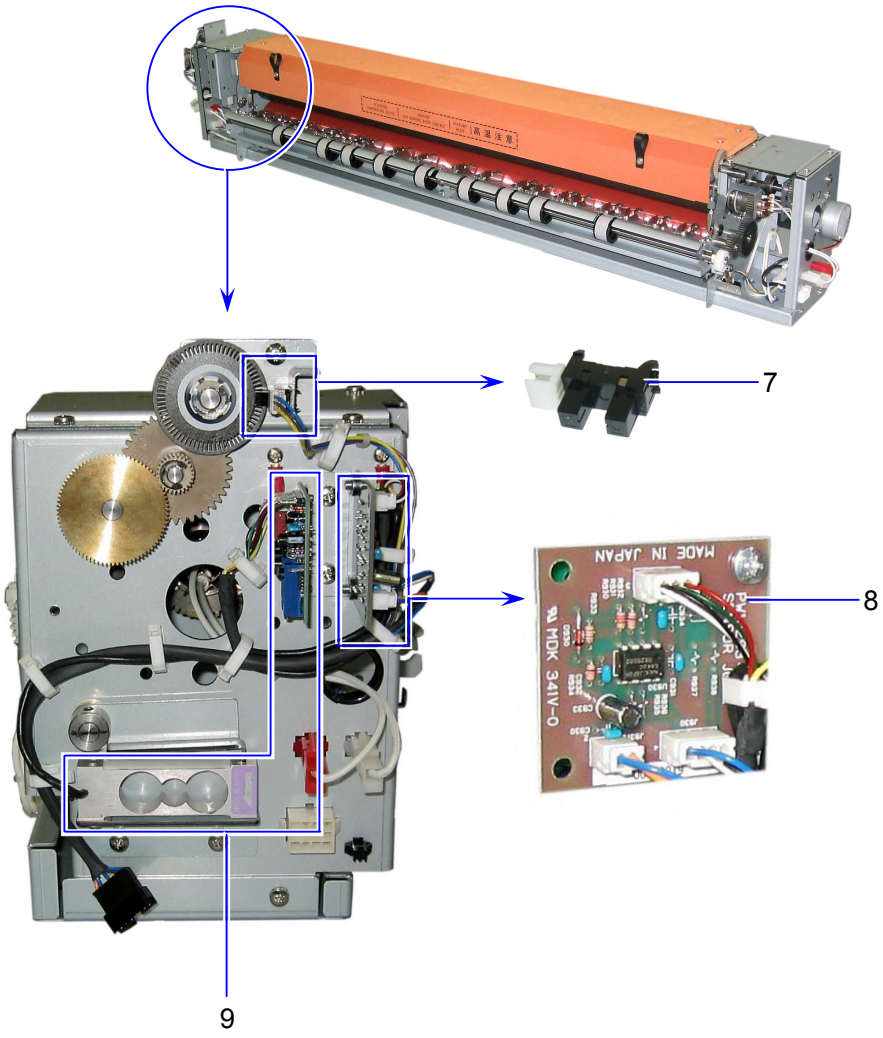
4. 2. 13 Fuser Unit



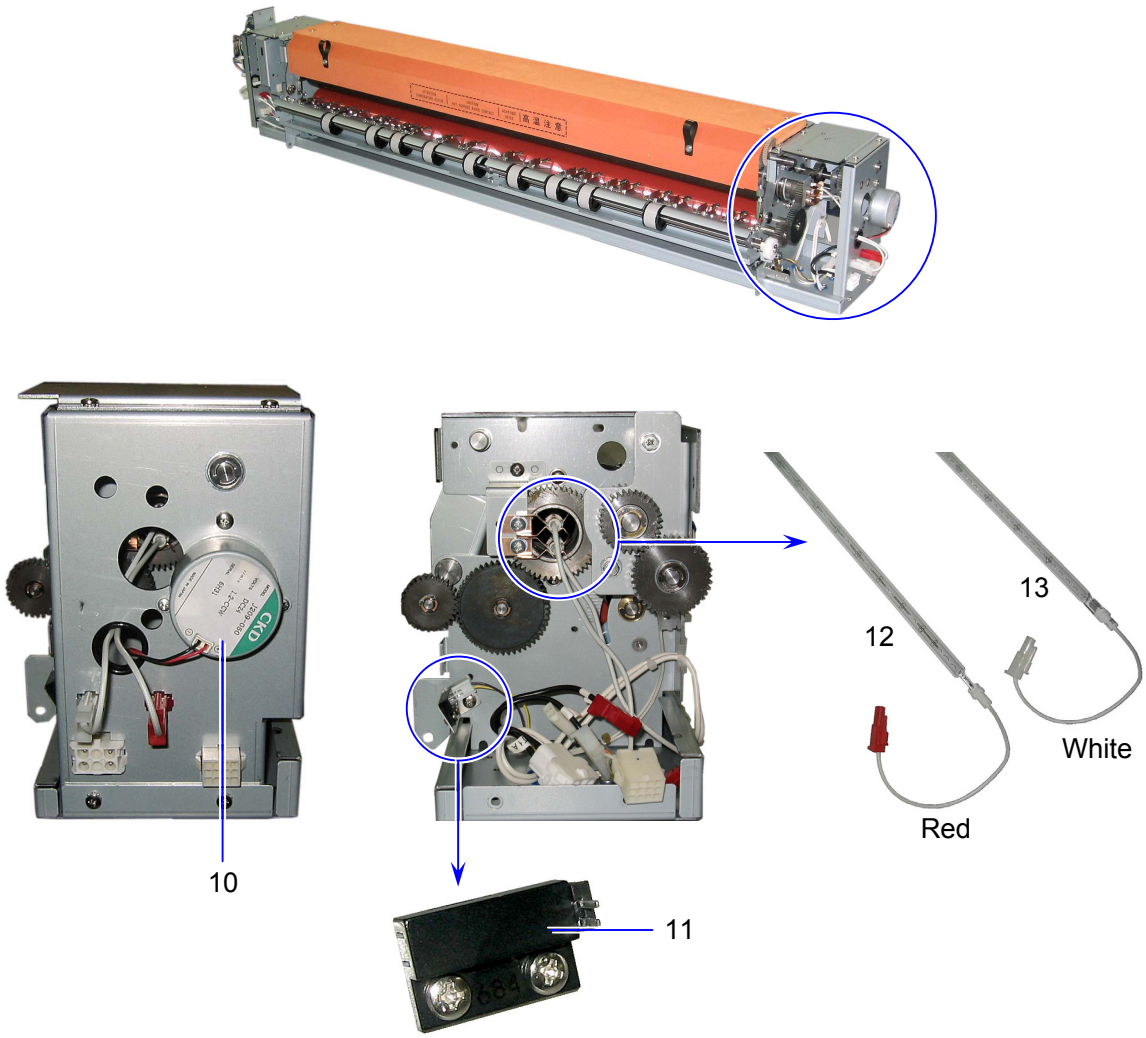
Item	Symbol	Signal name	Name	Type	Function
1	FM4 to FM18		DC Fan (Fuser Fan)	D05X-24TL 04	Cools Fuser Upper Cover



Item	Symbol	Signal name	Name	Type	Function
2	TS1		Thermostat	2450RC-S26-4-181	Prevents overheat
3	TH1		Thermistor	ES2U1.3B6-20031	Detects temperature on Fuser Roller surface. It controls the temperature.
4	TH2			NC-F16	Detects temperature on Fuser Roller surface. When it detects a decided temperature, the machine shuts off the power for fuser (before the Thermostat breaks).
5	DSW1		Micro Switch (Fuser Door Switch)	D2VW-5L3-IHS	Detects Fuser Cover open
6	DSW1ST		Micro Switch (Fuser Door Switch)	D2VW-5L3-IHS	Detects Fuser Cover open

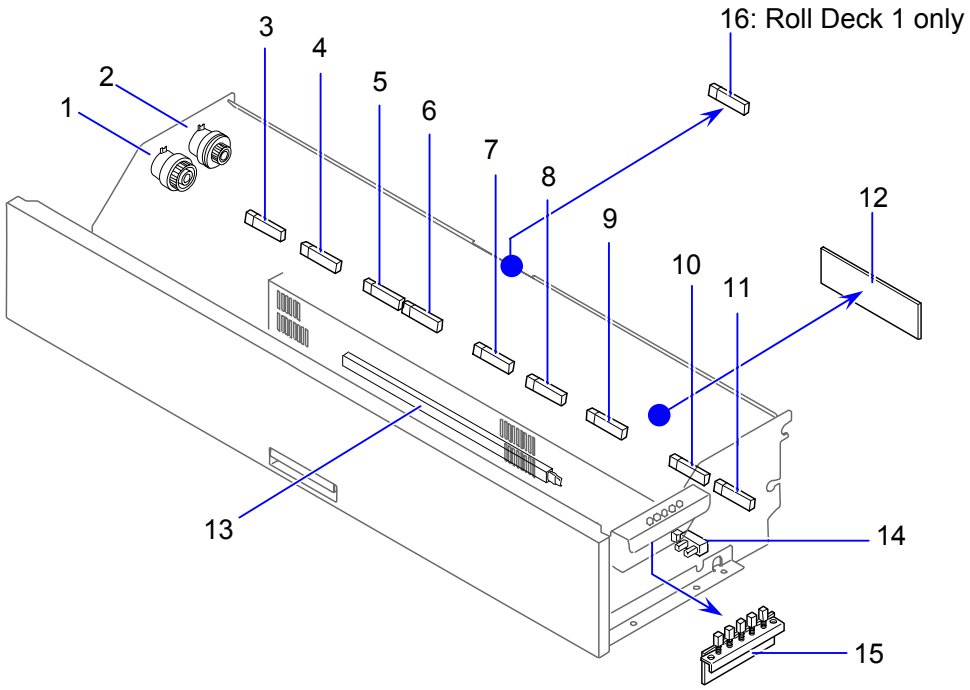


Item	Symbol	Signal name	Name	Type	Function
7	PH37		Photo Interrupter (Web Sensor)	GP1A73A	Detects Web Motor operation
8	PW10293		PW10293 PCB Assy (SENSOR)	PW10293	Sensor PCB for PH37
9			Load-cell (Tension Sensor)	LT2-06G-SW393	Detects media tension and adjusts Fuser Motor speed



Item	Symbol	Signal name	Name	Type	Function
10	M27		Synchronous Motor (Web Motor)	D12-X500	Drives the Web
11	LS2		Lead Switch (Exit Sensor)	RS-801EA	Detects jam in Fuser Unit
12	H2		IR Lamp	QIRZ 200-1300 KIC1	Heats side region of Fuser Roller (red connector, below)
13	H1		IR Lamp	QIRZ 200-1000 KIAG1	Heats center of Fuser Roller (white connector, upper)

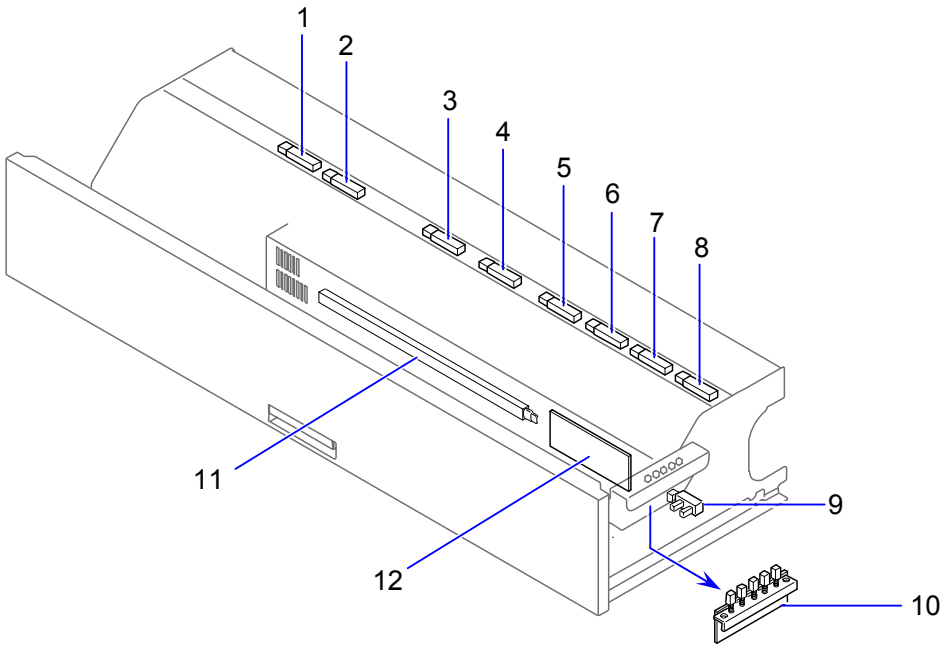
4. 2. 14 Roll Deck 1 / 2 / 3 Assy



Item	Symbol	Signal name	Name	Type	Function
1	MC12 MC14 MC16		Electromagnetic Clutch (Paper Feed Clutch)	BJ-3.5-160A	Feeds media MC12: Roll Deck 1 MC14: Roll Deck 2 MC16: Roll Deck 3
2	MC11		Electromagnetic Clutch 2 (Bypass Feeder Clutch)	BJ-3.5-E06A	Feeds media MC11: Bypass Feeder / Roll Deck 1
	MC13 MC15		Electromagnetic Clutch (Deck 2/3 Feed Clutch)	BJ-3.5-E06A BJ-3.5-E06A	Feeds media MC13 : Roll Deck 2 MC15 : Roll Deck 3
3	PH56 PH66 PH76		Photo Interrupter (Paper Size Sensor 7)	GP2A25J000F	Detects paper size 880 / 891 / 900mm width PH56: Roll Deck 1 PH66: Roll Deck 2 PH76: Roll Deck 3
4	PH54 PH64 PH74		Photo Interrupter (Paper Size Sensor 5)	GP2A25J000F	Detects paper size 707mm / 30” PH56: Roll Deck 1 PH66: Roll Deck 2 PH76: Roll Deck 3
5	PH52 PH62 PH72		Photo Interrupter (Paper Size Sensor 3)	GP2A25J000F	Detects paper size 515mm / 22" PH52: Roll Deck 1 PH62: Roll Deck 2 PH72: Roll Deck 3
6	PH51 PH61 PH71		Photo Interrupter (Paper Size Sensor 2)	GP2A25J000F	Detects paper size 420mm / 17" / 18" PH51: Roll Deck 1 PH61: Roll Deck 2 PH71: Roll Deck 3
7	PH48 PH58 PH68		Photo Interrupter (Paper Set Sensor)	GP2A25J000F	Detects paper set in Roll Deck Detects paper size 297mm / 11" / 12" PH48: Roll Deck 1 PH58: Roll Deck 2 PH78: Roll Deck 3

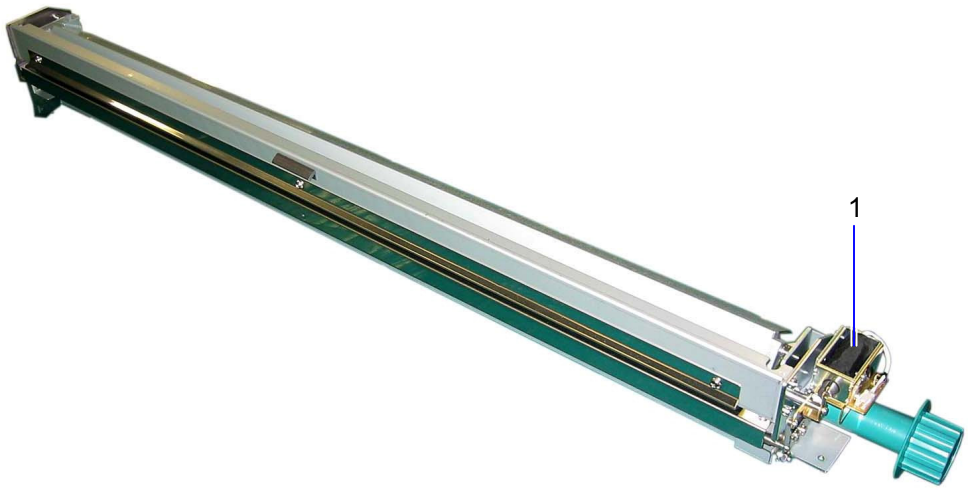
Item	Symbol	Signal name	Name	Type	Function
8	PH50 PH60 PH70		Photo Interrupter (Paper Size Sensor 1)	GP2A25J000F	Detects paper size 364mm / 15" PH50: Roll Deck 1 PH60: Roll Deck 2 PH70: Roll Deck 3
9	PH53 PH63 PH73		Photo Interrupter (Paper Size Sensor 4)	GP2A25J000F	Detects paper size 594mm / 24" PH53: Roll Deck 1 PH63: Roll Deck 2 PH73: Roll Deck 3
10	PH55 PH65 PH75		Photo Interrupter (Paper Size Sensor 6)	GP2A25J000F	Detects paper size 841mm / 34" PH55: Roll Deck 1 PH65: Roll Deck 2 PH75: Roll Deck 3
11	PH57 PH67 PH77		Photo Interrupter (Paper Size Sensor 8)	GP2A25J000F	Detects paper size 36" PH57: Roll Deck 1 PH67: Roll Deck 2 PH77: Roll Deck 3
12	PW10740A PW10740B PW10740C		Sensor PCB Assy	PW10740	Sensor PCB of size sensors of Roll Decks 1/2/3 PW10740A: Roll Deck 1 PW10740B: Roll Deck 2 PW10740C: Roll Deck 3
13	H3 H4 H5		Heater (Dehumidify Heater)	15W, 3.5KΩ	Dehumidifies media H3: Roll Deck 1 H4: Roll Deck 2 H5: Roll Deck 3
14	PH49 PH59 PH69		Photo Interrupter (media remaining sensor)	GP1A73AJ000F	Detects remaining amount of media with a clock pulse generated by Roll Deck Spool PH49: Roll Deck 1 PH59: Roll Deck 2 PH69: Roll Deck 3
15	PW10772A PW10772B PW10772C		Paper Choice PCB Assy (Media Selector)	PW10772	Specifies media type PW10772A: Roll Deck 1 PW10772B: Roll Deck 2 PW10772C: Roll Deck 3
16	PH47 (Roll Deck 1 Only)		Photo Interrupter (Bypass Start Sensor)	GP2A25J000F	A large size cut sheet on Bypass Feeder is carried until PH47 detects the media's leading edge

4. 2. 15 Roll Deck 4 Assy



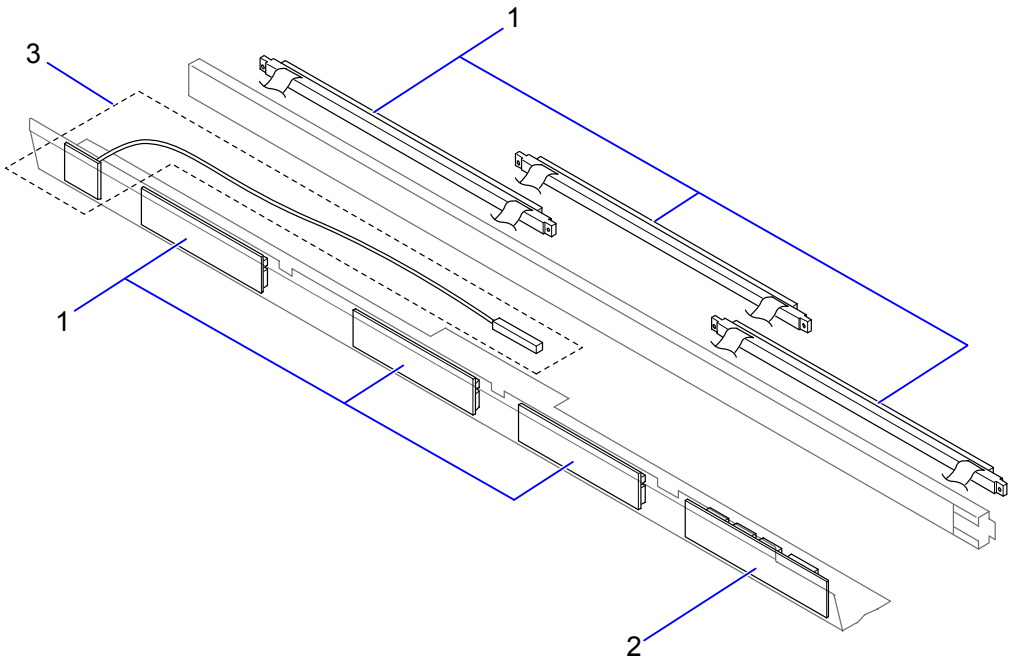
Item	Symbol	Signal name	Name	Type	Function
1	PH82		Photo Interrupter (Paper Size Sensor 3)	GP2A25J000F	Detects paper size 515mm / 22"
2	PH80		Photo Interrupter (Paper Size Sensor 1)	GP2A25J000F	Detects paper size 364mm / 15"
3	PH78		Photo Interrupter (Paper Set Sensor)	GP2A25J000F	Detects paper set in Roll Deck Detects paper size 297mm / 11" / 12"
4	PH81		Photo Interrupter (Paper Size Sensor 2)	GP2A25J000F	Detects paper size 420mm / 17" / 18"
5	PH83		Photo Interrupter (Paper Size Sensor 4)	GP2A25J000F	Detects paper size 594mm / 24"
6	PH84		Photo Interrupter (Paper Size Sensor 5)	GP2A25J000F	Detects paper size 707mm / 30”
7	PH85		Photo Interrupter (Paper Size Sensor 6)	GP2A25J000F	Detects paper size 841mm / 34"
8	PH86		Photo Interrupter (Paper Size Sensor 7)	GP2A25J000F	Detects paper size 36"
9	PH79		Photo Interrupter (media remaining sensor)	GP2A25J000F	Detects remaining amount of media with a clock pulse generated by Roll Deck 4 Spool
10	PW10772D		Paper Choice PCB Assy (Media Selector)	PW10772	Specifies media type for Roll deck 4
11	H6		Heater (Dehumidify Heater)	15W, 3.5KΩ	Dehumidifies Roll Deck 4 media
12	PW10740D		Sensor PCB Assy	PW10740	Sensor PCB of size sensors of Roll Deck 4

4. 2. 16 Cutter Assy



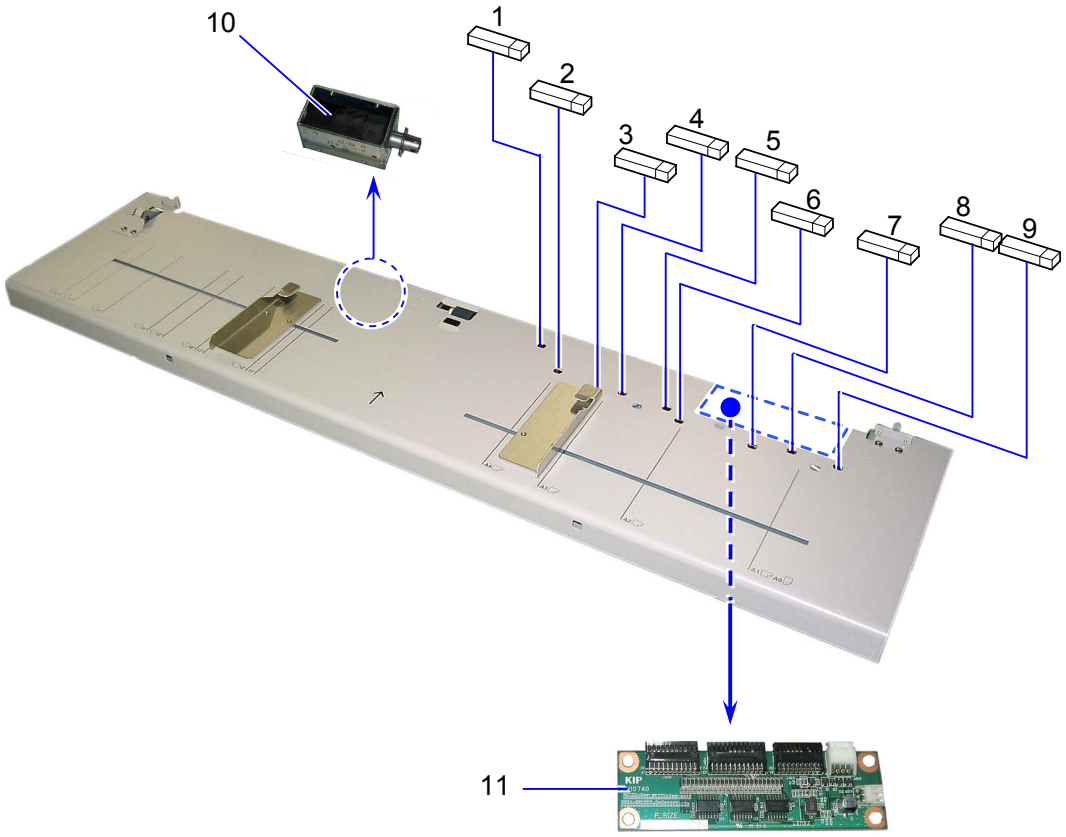
Item	Symbol	Signal name	Name	Type	Function
1	SL8		Solenoid (Cutter Oil Supply Solenoid)	G1253-K7	Moves oil pad to lubricate Cutter Blade

4. 2. 17 LED Head Assy



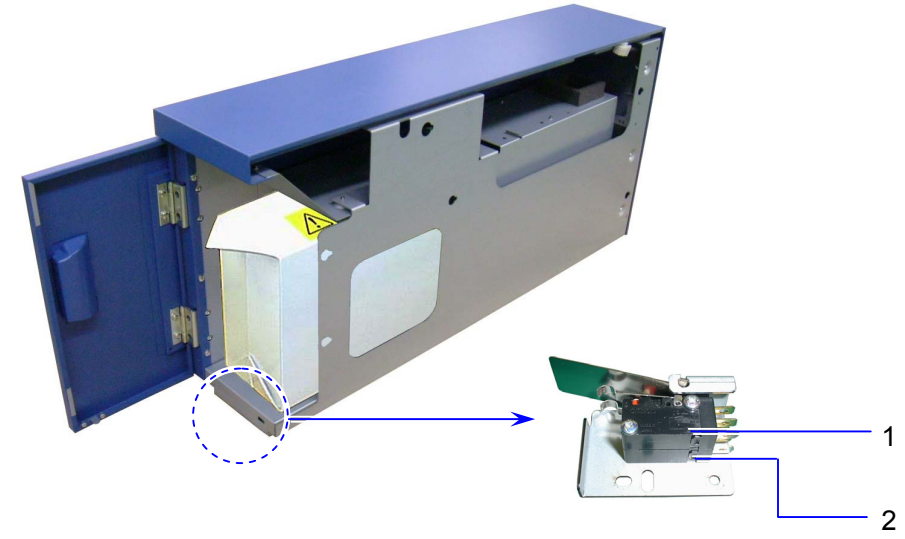
Item	Symbol	Signal name	Name	Type	Function
1			LED Head		Creates electrostatic latent image on the Drum according to the IE level. (1): (K) (2): (C) (3): (M) (4): (Y)
2	PW10727K PW10727C PW10727M PW10727Y		LED Head Terminal PCB Assy	PW10727	Image Control Interface PW10727K: (K) PW10727C: (C) PW10727M: (M) PW10727Y: (Y)
3	SPS1 SPS2 SPS3 SPS4		Surface Potential Sensor	ES2A-6007(600mm)	Detects Drum potential SPS1: Drum 1(K) SPS2: Drum 2(C) SPS3: Drum 3(M) SPS4: Drum 4(Y)

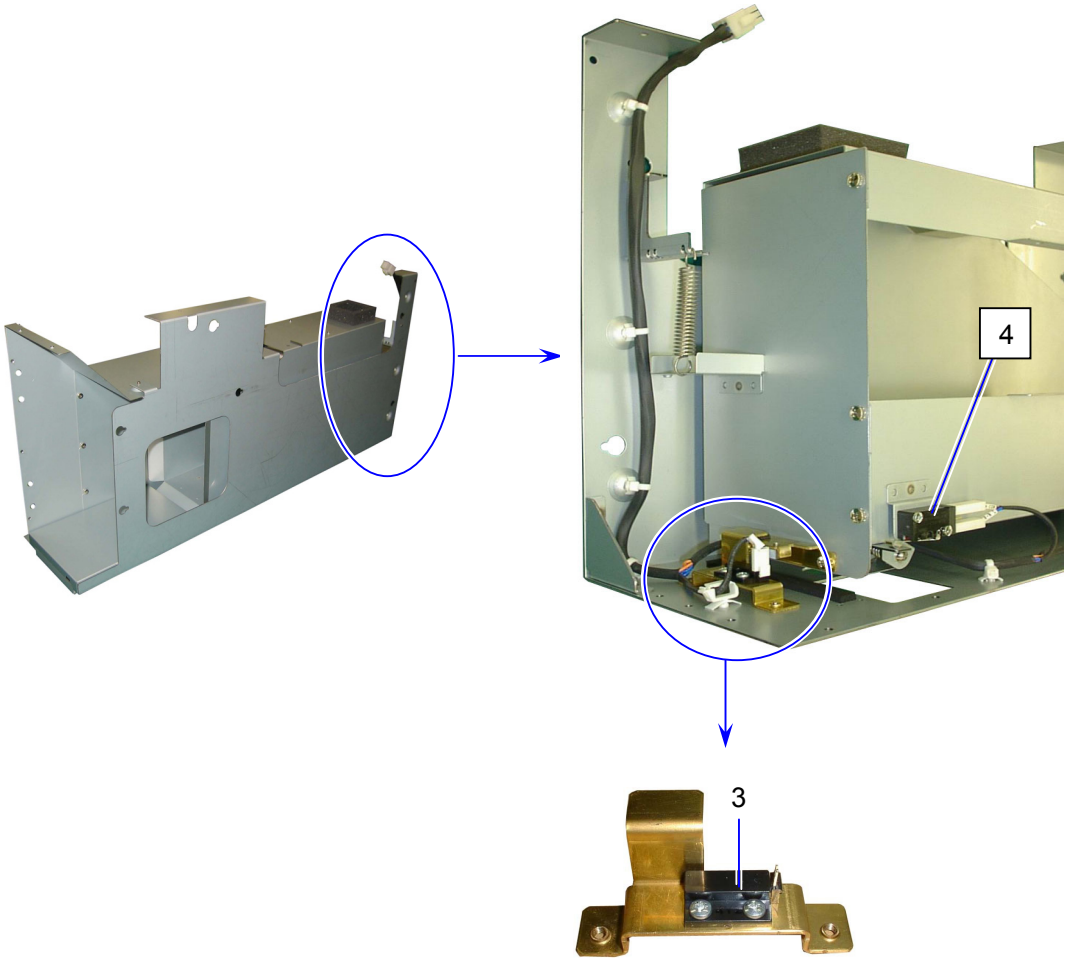
4. 2. 18 Multi Tray Unit

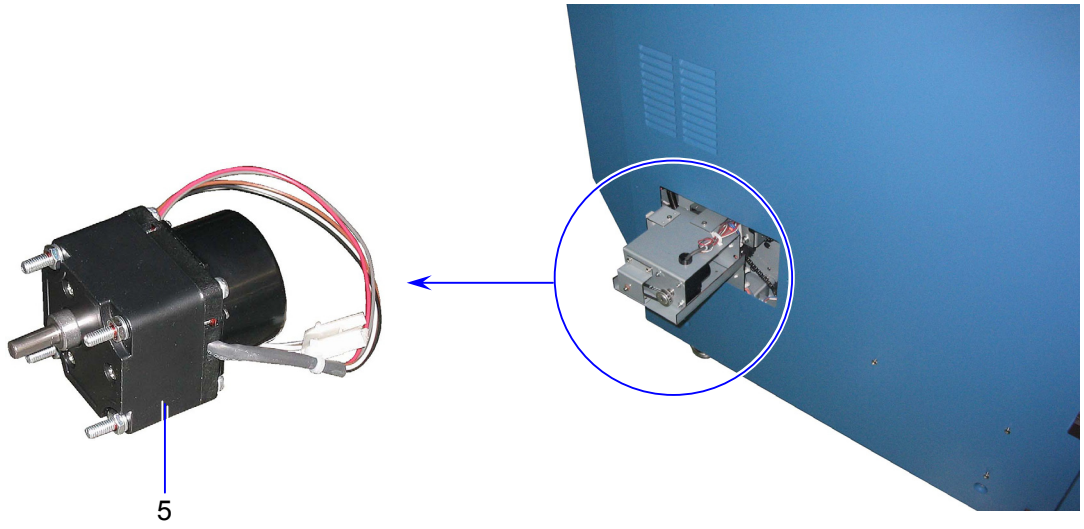


Item	Symbol	Signal name	Name	Type	Function
1	PH38		Photo Interrupter (Bypass Set Sensor)	GP2A25J000F	Detects paper set on Bypass Feeder Detects paper size 11"
2	PH39		Photo Interrupter (Bypass Size Sensor 1)	GP2A25J000F	Detects paper size 297mm / 12"
3	PH40		Photo Interrupter (Bypass Size Sensor 2)	GP2A25J000F	Detects paper size 420mm / 17"
4	PH41		Photo Interrupter (Bypass Size Sensor 3)	GP2A25J000F	Detects paper size 18"
5	PH42		Photo Interrupter (Bypass Size Sensor 4)	GP2A25J000F	Detects paper size 22"
6	PH43		Photo Interrupter (Bypass Size Sensor 5)	GP2A25J000F	Detects paper size 594mm / 24"
7	PH44		Photo Interrupter (Bypass Size Sensor 6)	GP2A25J000F	Detects paper size 30"
8	PH45		Photo Interrupter (Bypass Size Sensor 7)	GP2A25J000F	Detects paper size 841mm / 34"
9	PH46		Photo Interrupter (Bypass Size Sensor 8)	GP2A25J000F	Detects paper size 36"
10	SL7		Solenoid (Bypass Reverse Solenoid)	G-1053-K12	Shifts Roller Paper Reverse 2 up and down
11	PW10740E		Sensor PCB Assy	PW10740	Sensor PCB of size sensors of Bypass feeder

4. 2. 19 Waste Toner Assy

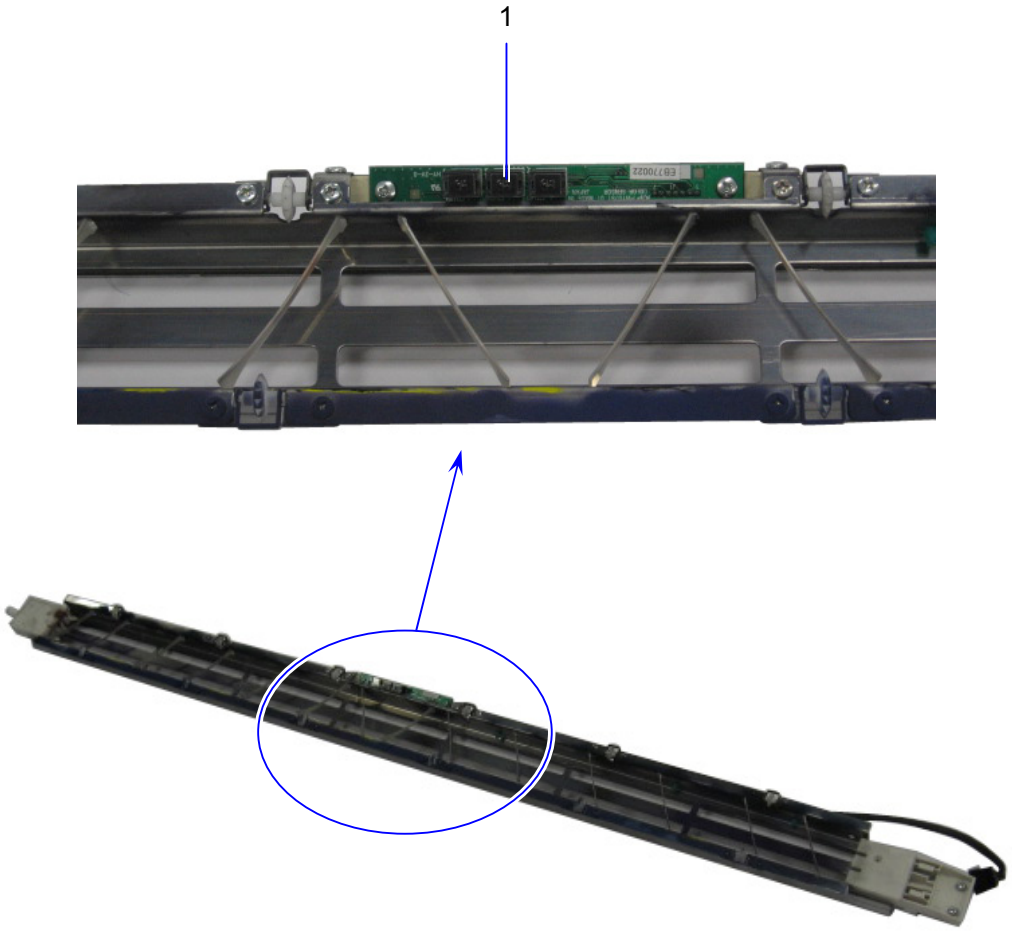






Item	Symbol	Signal name	Name	Type	Function
1	MSW		Micro Switch (Waste Toner Door Switch)	D2VW-5L3-IHS	Shuts DC power to Waste Toner Motor when Waste Toner Door is open
2	TSW		Micro Switch (Waste Toner Door Switch)	D2VW-01L3-IHS	Detects Waste Toner Door open
3	LS1		Lead Switch (Waste Toner Full Sensor)	RS-801EA	Detects waste toner full
4	BSW		Micro Switch (Waste Toner Box Switch)	D2VW-01L3-IHS	Detects Waste Toner Box set
5	M3		DC Motor (Waste Toner Motor)	LK4-4M3G-01	Drives Waste Toner transportation Unit

4. 2.20 Attraction Corona Unit



Item	Symbol	Signal name	Name	Type	Function
1	PW10781	-	Color Sensor PCB Assy	PW10781	Adjusts the Color Registration V & H detecting the gap between K and CMY.

4. 3 Check & Adjustment of HV Power Supply

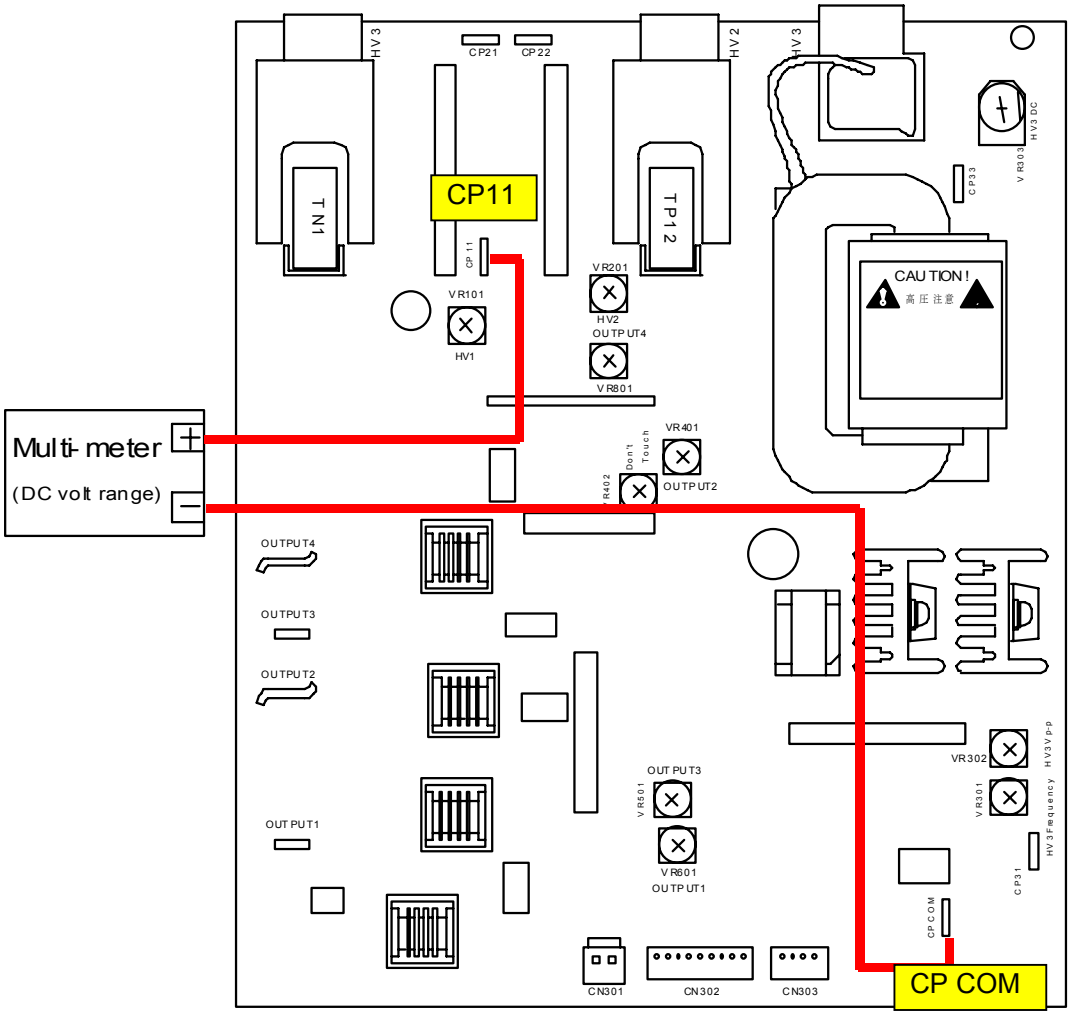
The High Voltage Power Supply PCBs are well adjusted before shipment, so basically it is unnecessary to check or readjust them in the market. If you will like to check the output for some reason such as troubleshooting purpose, please do it as instructed in this section.

Checking Item	Reference page
Image Corona (Output voltage to Image Corona)	4-50
Transfer Corona (Analog voltage & output voltage to Transfer Corona)	4-53
Separation Corona (AC Component)	4-61
Separation Corona (DC Component)	4-64
Developer Bias (Analog voltage & output voltage to Developer Roller)	4-67
Voltage gap between Developer Roller & Toner Supply Roller	4-74
Voltage gap between Developer Roller & Blade Roller (Center)	4-77
Voltage gap between Developer Roller & Blade Roller (Both sides)	4-80
Attraction Corona (Analog voltage & output voltage to Attraction Corona)	4-83
Grid Plate (Analog voltage & output voltage to Grid Plate)	4-89
Separation Guide (Analog voltage & output voltage to Separation Guide)	4-97

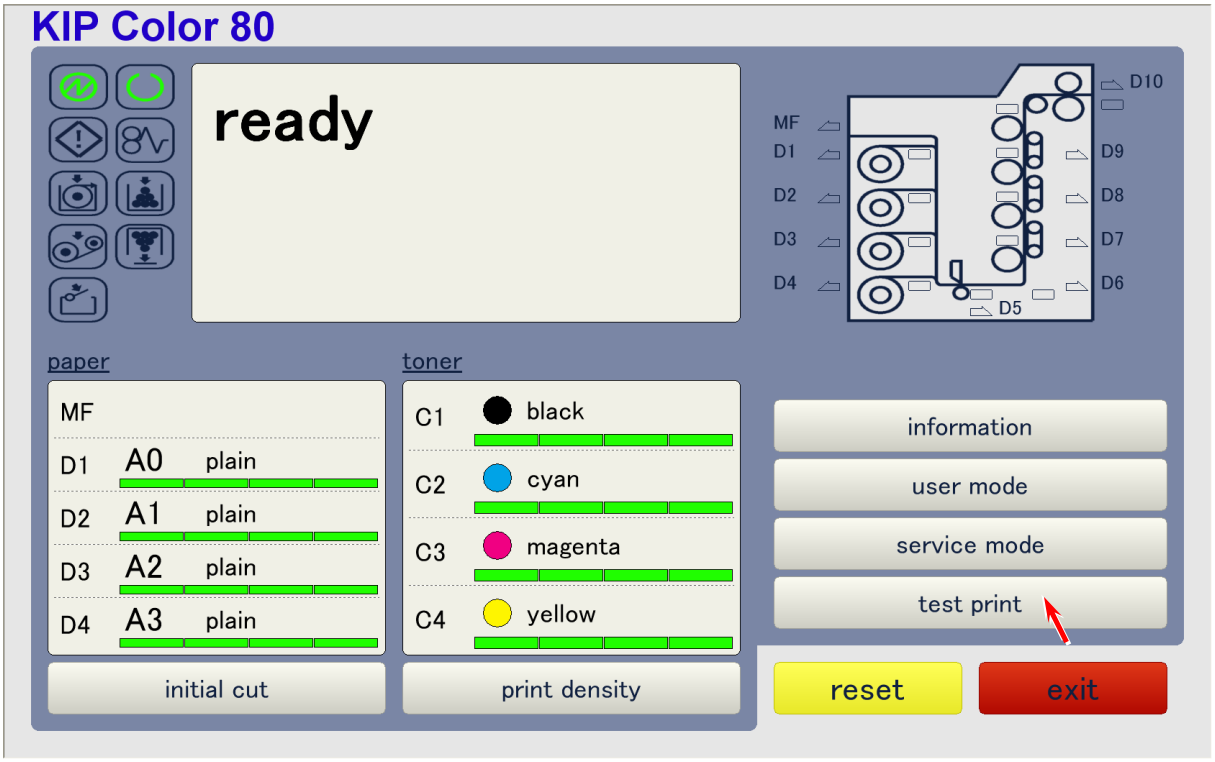
4. 3. 1 Image Corona (Output voltage to Image Corona)

The voltage outputted from the HV Power Supply PCB to the Image Corona must satisfy **1.30 +/-0.05V**. Check and adjust the output in the following way.

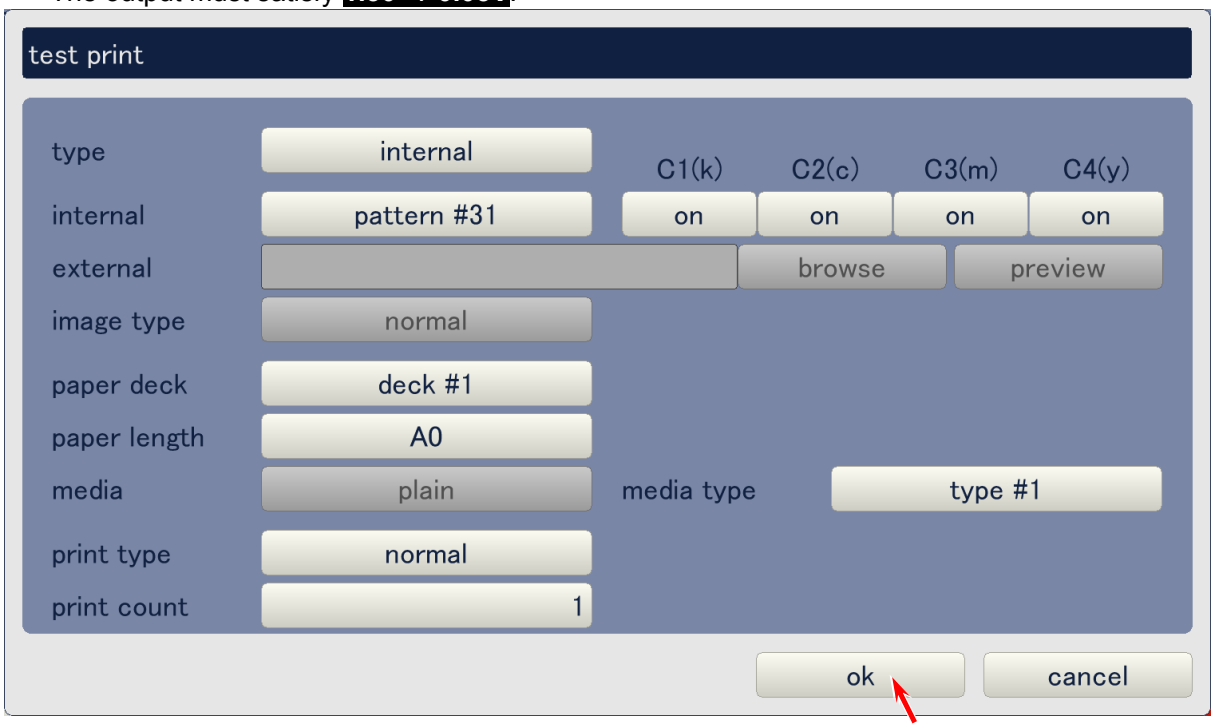
1. Connect the “+” cable of the multi-meter to the “CP11” pin on the HV Power Supply PCB. Connect the “-” one to the “CP COM”.
   Select the DC volt range on the multi-meter.



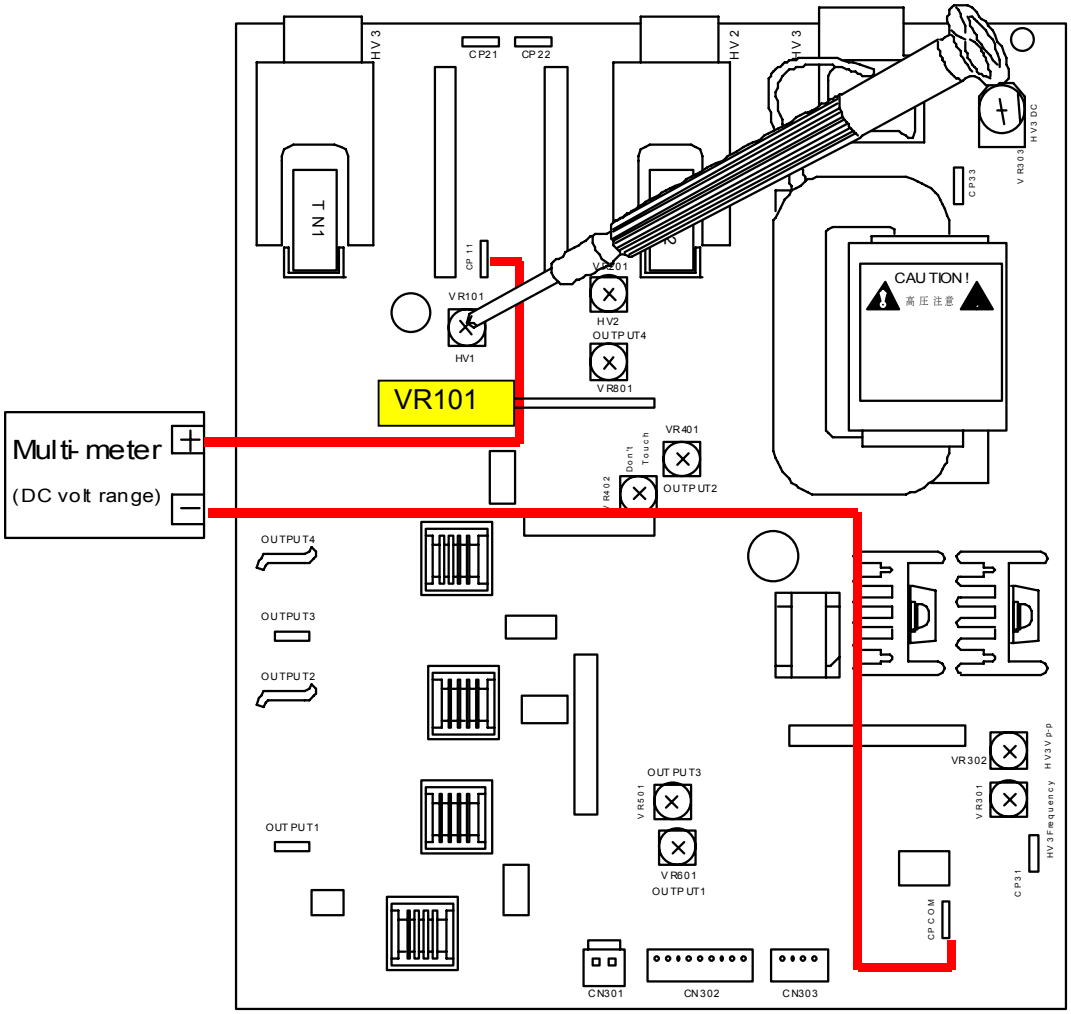
2. Connect the service PC to the KIP Color 80, which is installed with the KIP Diagnostics. Run the KIP Diagnostics, and press [test print] button on the main screen.



3. Change the test print settings if necessary, and press [ok] to take a test printing. (Any pattern is OK) Measure the high voltage supplied to the Image Corona during test printing. The output must satisfy **1.30 +/-0.05V**.



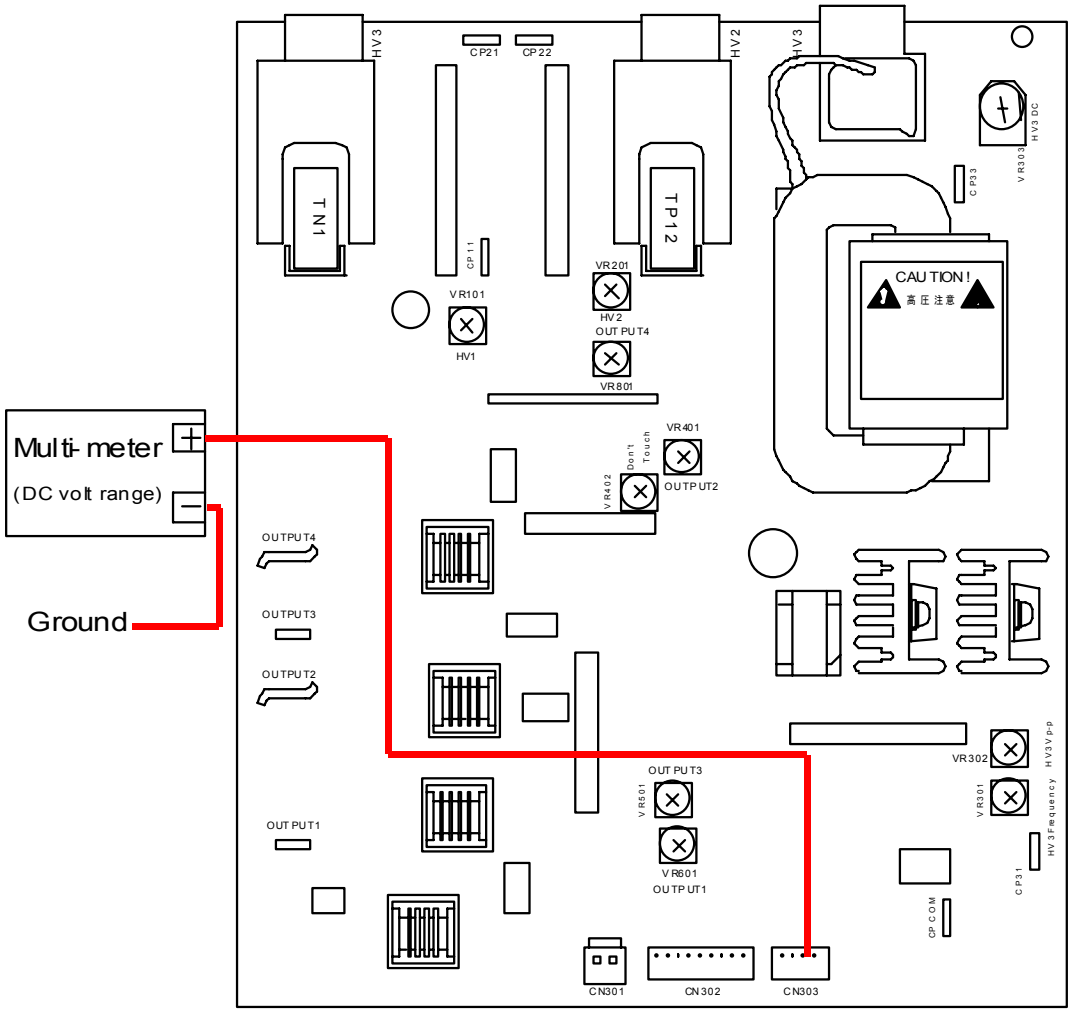
4. If the output does not satisfy **1.30 +/-0.05V**, adjust it rotating the VR101 with a screwdriver.



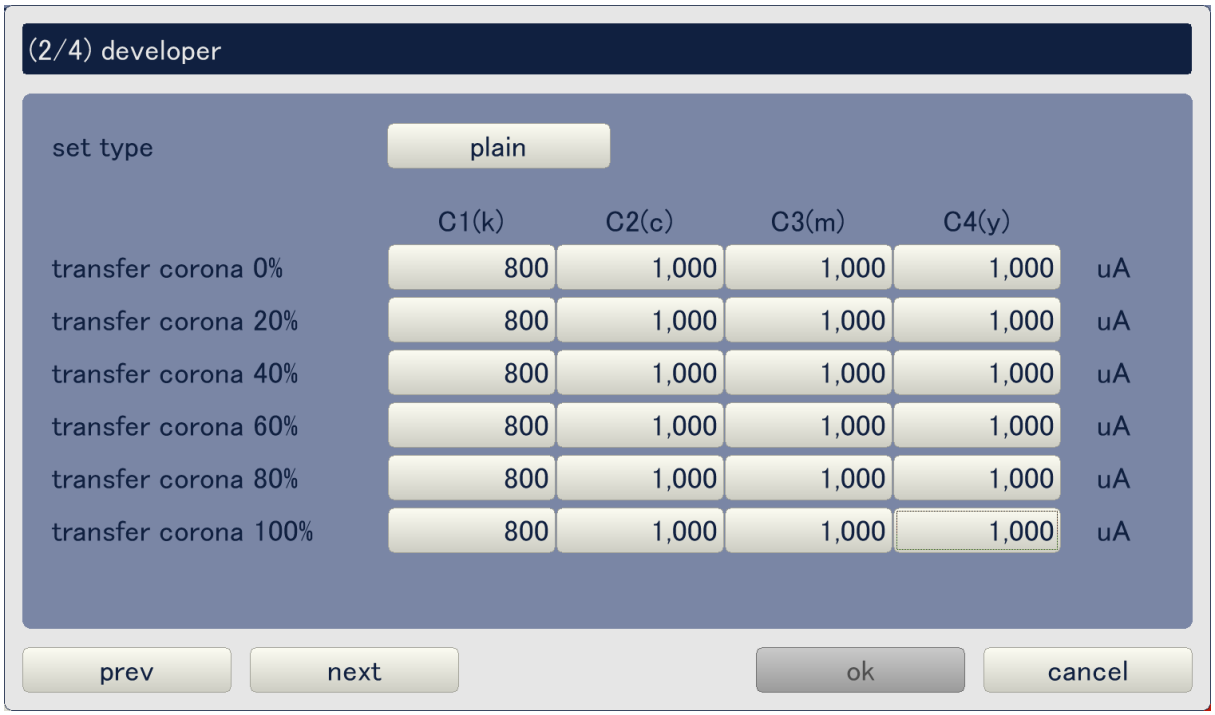
4. 3. 2 Transfer Corona (Analog voltage & output voltage to Transfer Corona)

The analog voltage supplied to the HV Power Supply PCB adjusts the output voltage to the Transfer Corona. Check these voltages in the following way.

1. Connect the "+" cable of the multi-meter to the connector pin (**right** white cable) of the connector CN303 on the HV Power Supply PCB. Connect the "-" one to the ground. Select the DC volt range on the multi-meter. This is for checking the analog voltage to the HV Power Supply.



2. Connect the service PC to the KIP Color 80, which is installed with the KIP Diagnostics. Run the KIP Diagnostics, and access the 2/4 of the Developer Setting Page by;
   - Press the [service mode] button on the main screen of KIP Diagnostics.
   - Input the service password.
   - Press the [adjustment] button in the menu page of the service mode.
   - Press the [developer] button in the menu page of the Adjustment Mode.
   - Press [next] button on the 1/4 page of Developer Setting Screen.



3. The 2/4 of the Developer Setting Page has the setting parameters for Transfer Corona Wire Bias. Set all parameters back to the following default values taking care of the media type.

Plain paper

Relative humidity	Default values (micro ampere)			
	K	C	M	Y
0%	800	1000	1000	1000
20%	800	1000	1000	1000
40%	800	1000	1000	1000
60%	800	1000	1000	1000
80%	800	1000	1000	1000
100%	800	1000	1000	1000

Tracing paper

Relative humidity	Default values (micro ampere)			
	K	C	M	Y
0%	800	1000	1000	1000
20%	800	1000	1000	1000
40%	800	1000	1000	1000
60%	800	1000	1000	1000
80%	800	1000	1000	1000
100%	800	1000	1000	1000

Film

Relative humidity	Default values (micro ampere)			
	K	C	M	Y
0%	1000	1000	900	1000
20%	1000	1000	900	1000
40%	1000	1000	900	1000
60%	1000	1000	900	1000
80%	1000	1000	900	1000
100%	1000	1000	900	1000

Gloss

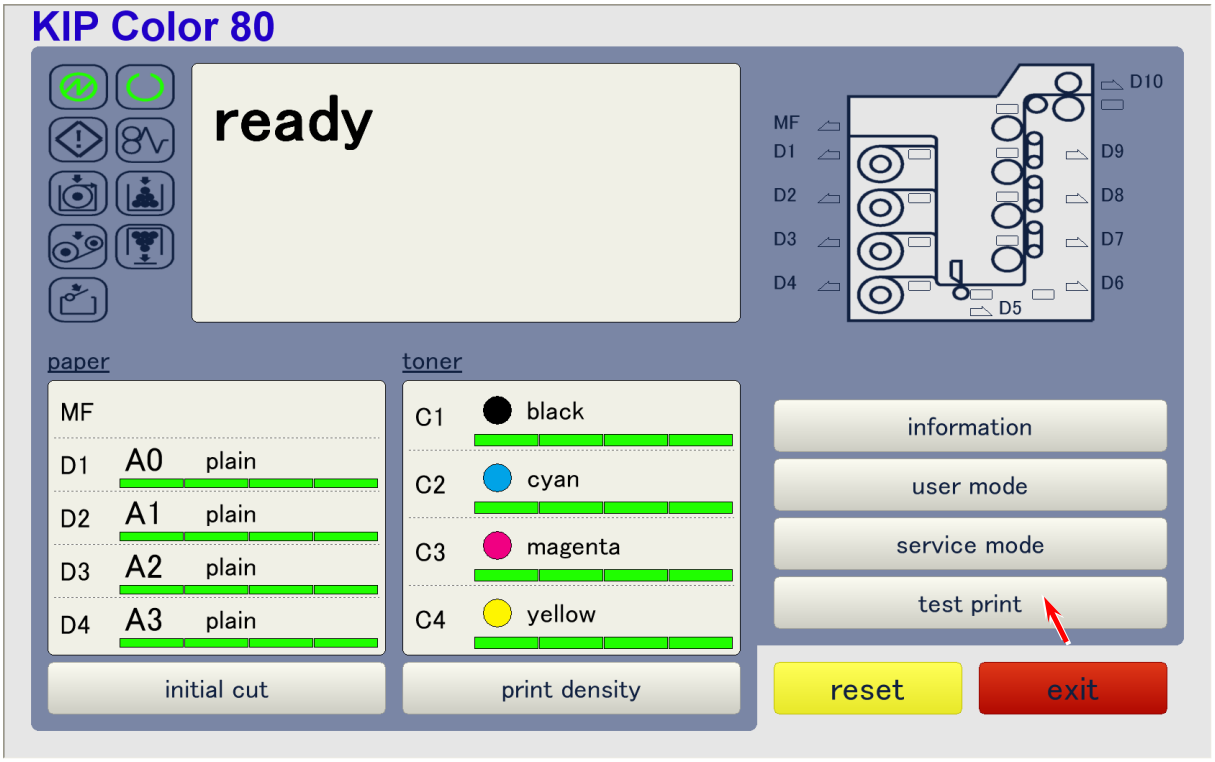
Relative humidity	Default values (micro ampere)			
	K	C	M	Y
0%	800	1000	1000	1000
20%	800	1000	1000	1000
40%	800	1000	1000	1000
60%	800	1000	1000	1000
80%	800	1000	1000	1000
100%	800	1000	1000	1000

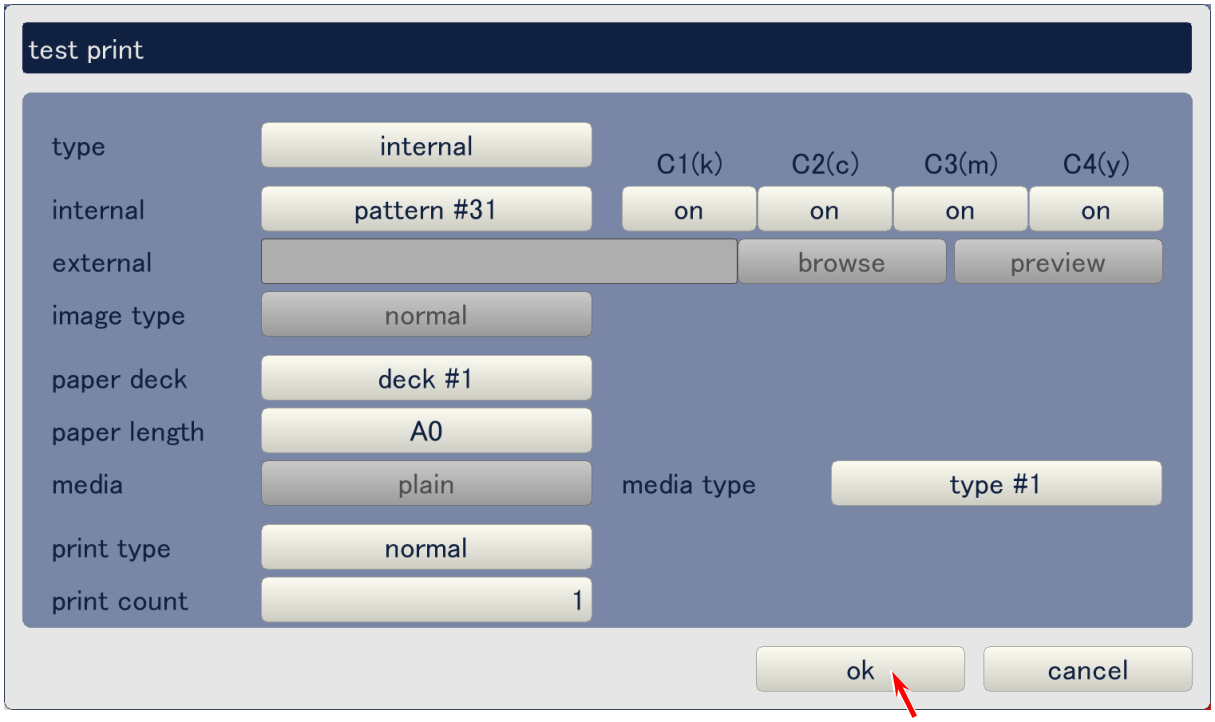
⚠ NOTE

(1) Please have a backup (ini file) of current settings before changing just in case.

(2) If you do not wish to disturb the current setting values, it is possible to check the analog voltage and output to the Transfer Corona from the current setting value by using a formula. See NOTE on page 4-57 and 4-60.

4. Press [test print] button on the main screen to indicate the Test Print Page. Change the test print settings if necessary (especially “media type”), and press [ok] to take a test printing. (Any pattern is OK)





5. Measure the analog voltage during test printing. It must satisfy the following values when the Transfer Corona Bias settings are set to the default values.

Media type	Black	Cyan	Magenta	Yellow
Plain paper	8.0 +/-0.5V	10.0 +/-0.5V	10.0 +/-0.5V	10.0 +/-0.5V
Tracing paper	8.0 +/-0.5V	10.0 +/-0.5V	10.0 +/-0.5V	10.0 +/-0.5V
Film	10.0 +/-0.5V	10.0 +/-0.5V	9.0 +/-0.5V	10.0 +/-0.5V
Glossy paper	8.0 +/-0.5V	10.0 +/-0.5V	10.0 +/-0.5V	10.0 +/-0.5V

⚠ NOTE

(1) The analog input to the HV Power Supply may be in abnormal situation if it does not satisfy the above values. Try to replace the Main PCB and I/O A PCB in this case.

(2) If you are checking with the current setting values (not the default values) of Transfer Corona Bias, calculate the analog voltage from the following formula.

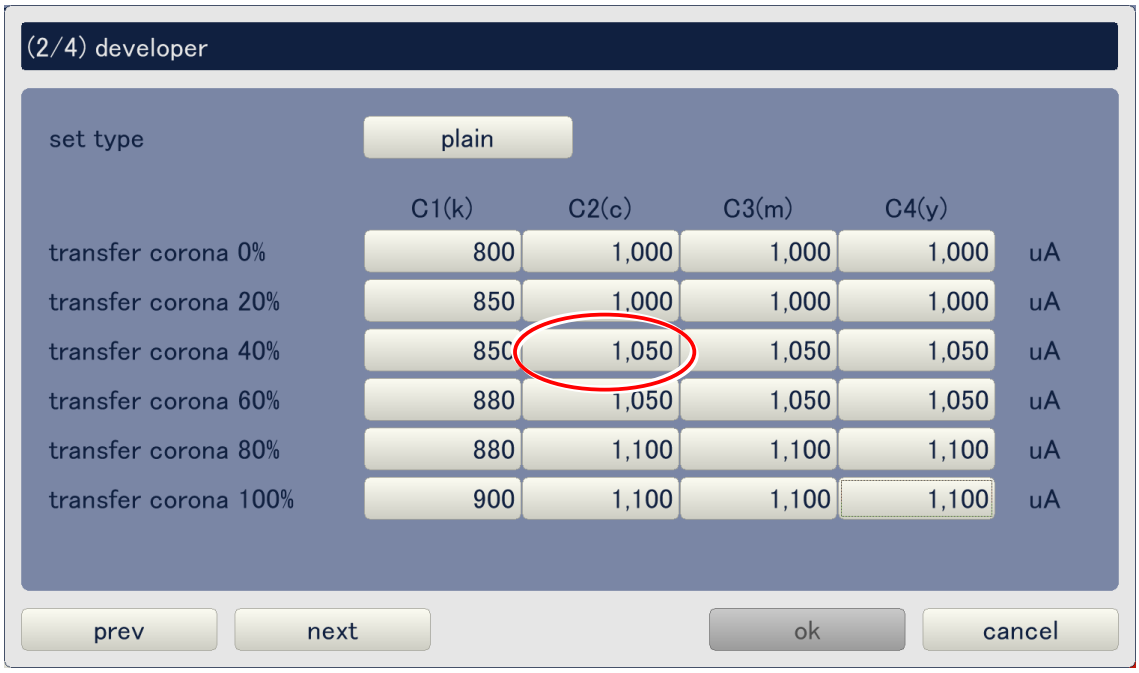
(TR Corona Bias [micro A]) x 0.01 [V] = analog voltage (with +/-0.5V of tolerance)

In this case please consider the media type and current humidity.

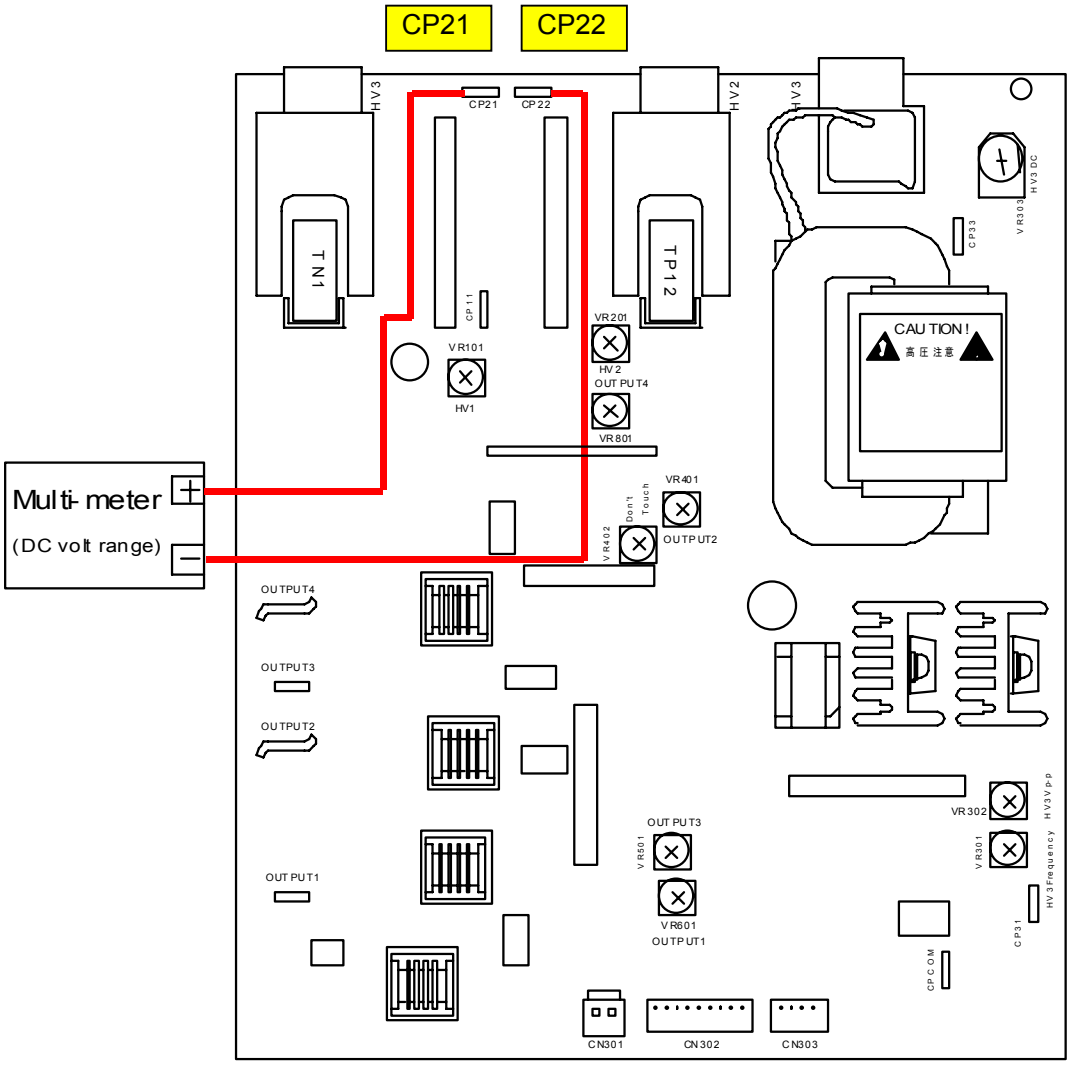
[Example]
- Current humidity is 40%
- Plain paper is used for checking
- You will check the analog voltage for cyan Transfer Corona Wire Bias

1050 x 0.01 = 10.5

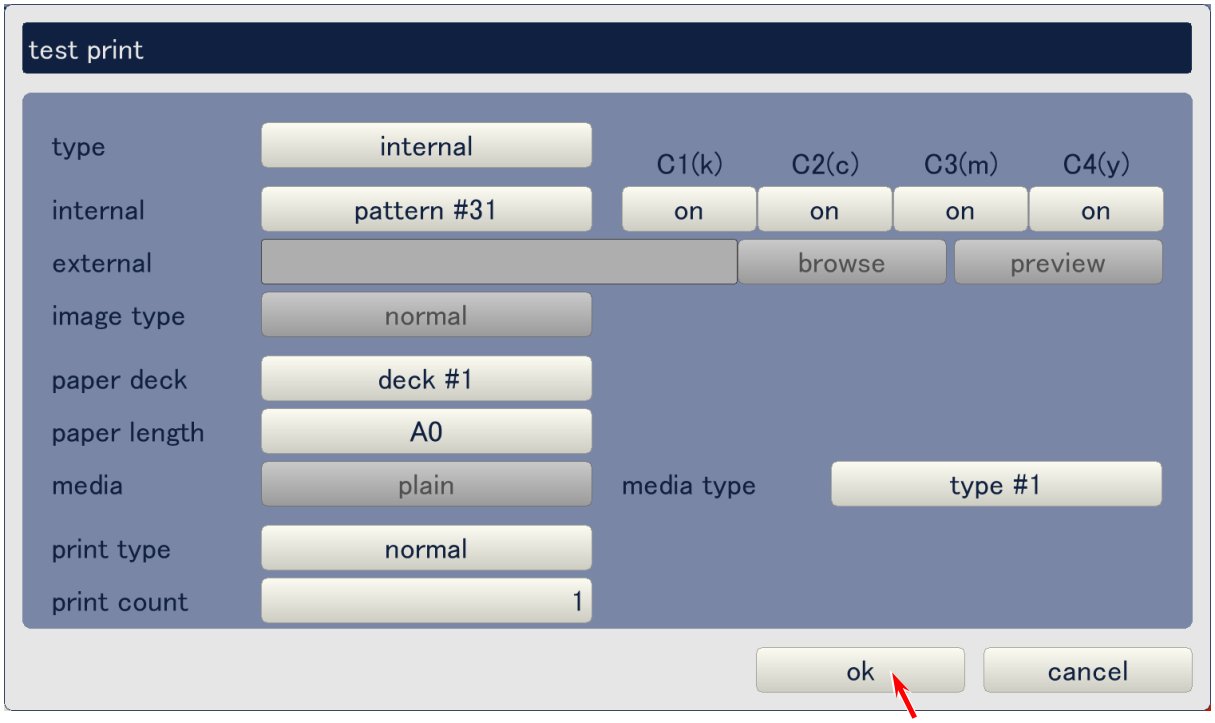
Required analog voltage is 10.5 +/-0.5V in this case.



6. Connect the “+” cable of the multi-meter to the “CP21” pin on the HV Power Supply PCB. Connect the “-” one to the “CP22” pin. Select the DC volt range on the multi-meter. This is for checking the output voltage to the Transfer Corona.



7. Take test print again.



8. Measure the output voltage to the Transfer Corona during test printing. It must satisfy the following values when the Transfer Corona Bias settings are set to the default values.

Media type	Black	Cyan	Magenta	Yellow
Plain paper	0.8 +/-0.1V	1.0 +/-0.1V	1.0 +/-0.1V	1.0 +/-0.1V
Tracing paper	0.8 +/-0.1V	1.0 +/-0.1V	1.0 +/-0.1V	1.0 +/-0.1V
Film	1.0 +/-0.1V	1.0 +/-0.1V	0.9 +/-0.1V	1.0 +/-0.1V
Glossy paper	0.8 +/-0.1V	1.0 +/-0.1V	1.0 +/-0.1V	1.0 +/-0.1V

⚠ NOTE

(1) The output voltage to the Transfer Corona may be in abnormal situation if it does not satisfy the above values. Try to replace the HV Power Supply PCB in this case.

(2) If you are checking with the current setting values (not the default values) of Transfer Corona Bias, calculate the output voltage from the following kinds of 2 formula.

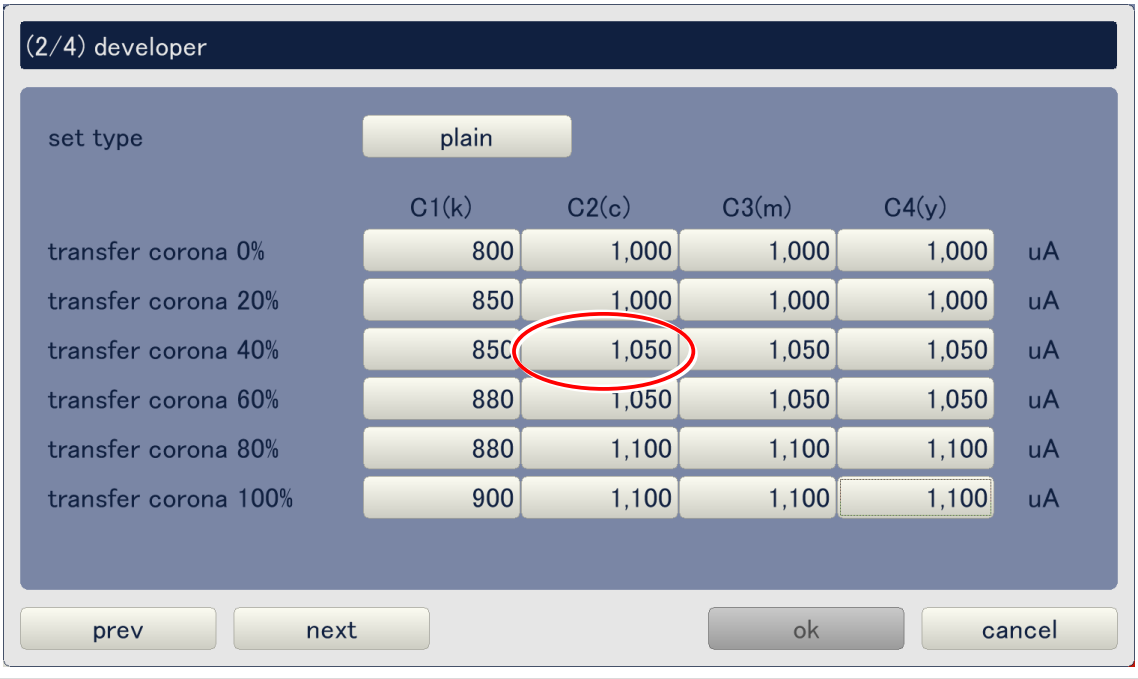
Formula 1 : (TR Corona Bias [micro A]) x 0.01 [V] = analog voltage
Formula 2 : (Analog voltage) x 0.1 [V] = output voltage (with +/-0.1V of tolerance)

In this case please consider the media type and current humidity.

[Example]
- Current humidity is 40%
- Plain paper is used for checking
- You will check the output voltage for “cyan” Transfer Corona

Formula 1 : 1050 x 0.01 = 10.5 (analog voltage)
Formula 2 : 10.5 x 0.1 = 1.05

Required output voltage is 1.05 +/-0.1V in this case.



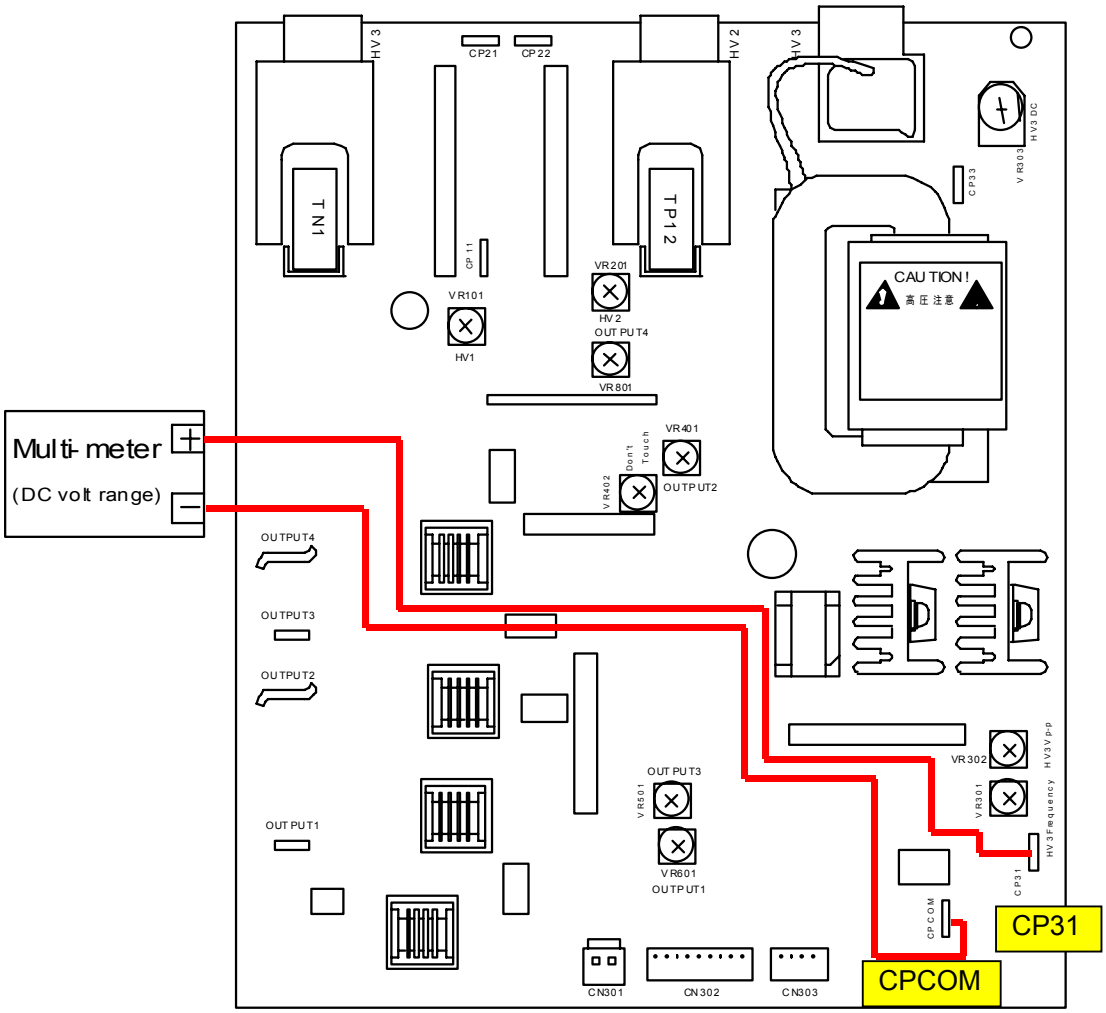
4. 3. 3 Separation Corona (AC Component)

The AC Component outputted from the HV Power Supply PCB to the Separation Corona must satisfy the following values.

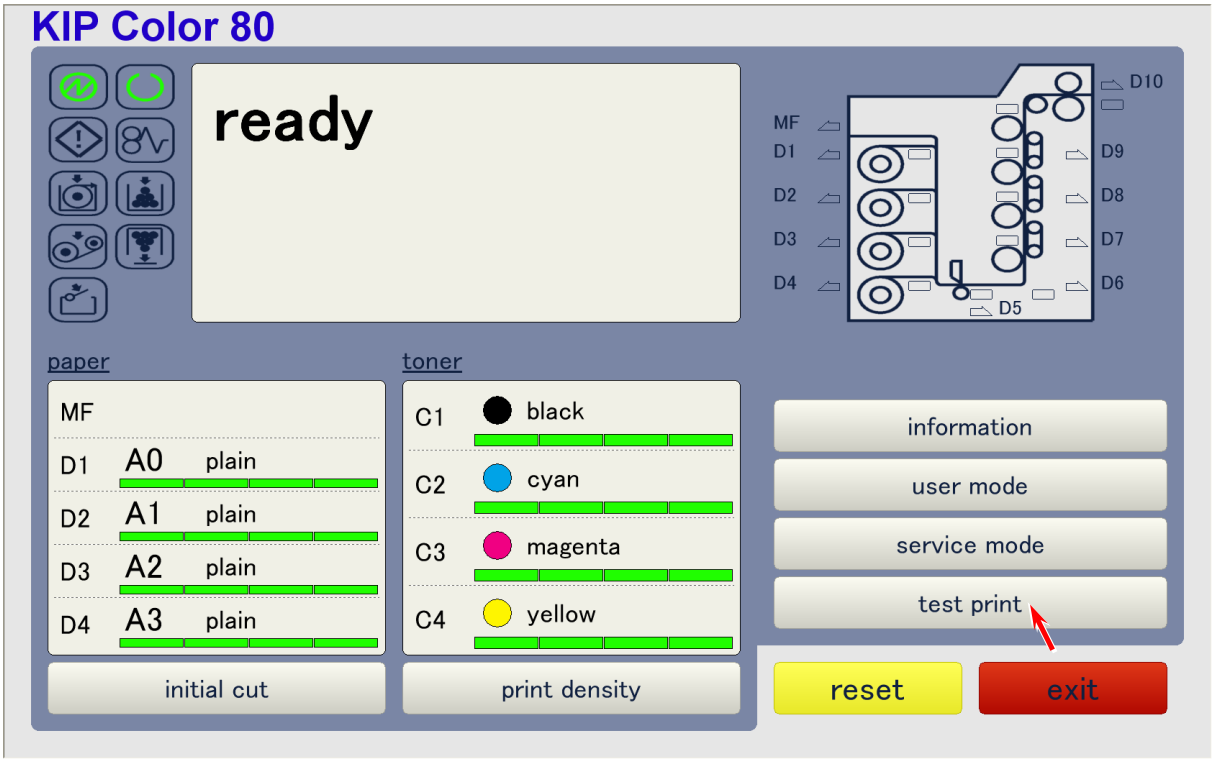
K, C & M : **3.8 +/-0.5V**
Y : **4.0 +/-0.5V**

Check and adjust the output in the following way.

1. Connect the “+” cable of the multi-meter to the “CP31” pin on the HV Power Supply PCB.
   Connect the “-” one to the “CPCOM” pin.
   Select the DC volt range on the multi-meter.

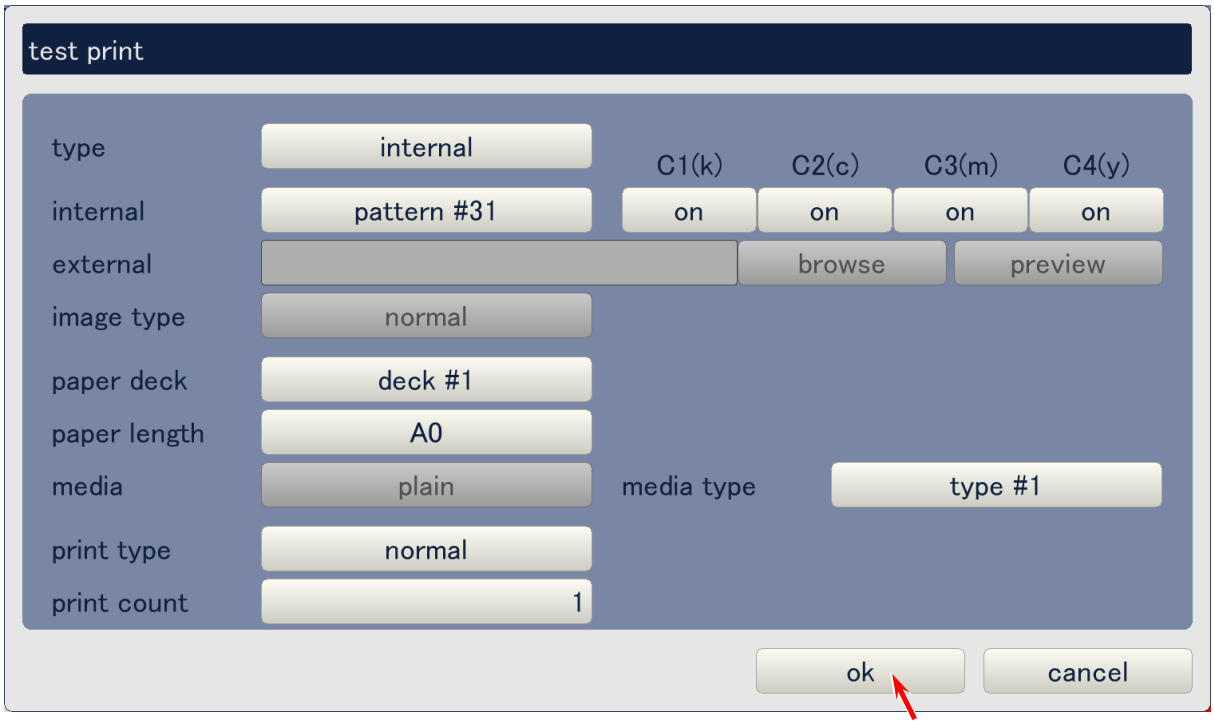


2. Connect the service PC to the KIP Color 80, which is installed with the KIP Diagnostics. Run the KIP Diagnostics, and press [test print] button on the main screen.

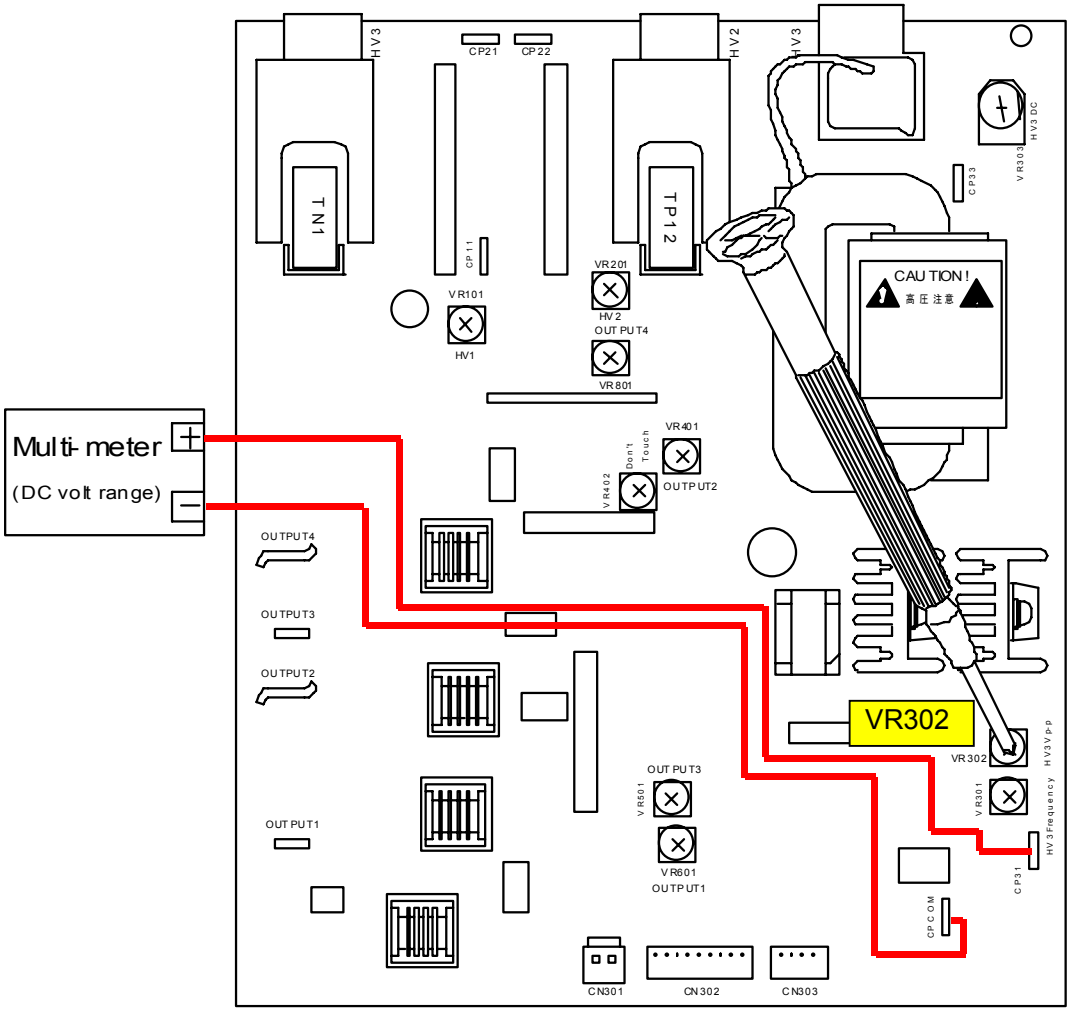


3. Change the setting if necessary, and press [ok] to take a test printing. (Any pattern is OK) Measure the high voltage (AC Component) supplied to the Transfer Corona during test printing. The output must satisfy ;

K, C & M : **3.8 +/-0.5V**
Y : **4.0 +/-0.5V**



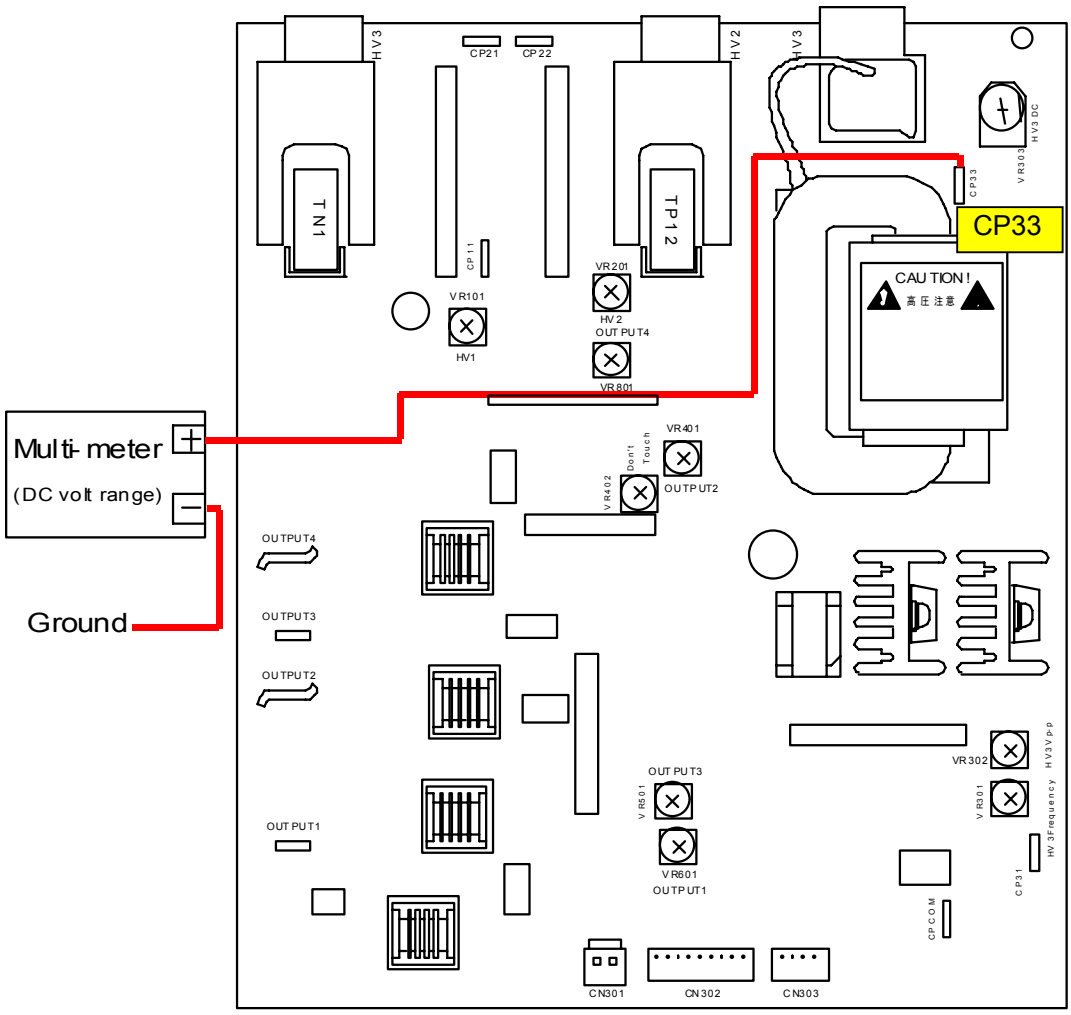
3. If the output does not satisfy the requirement, adjust it rotating the VR302 with a screwdriver.



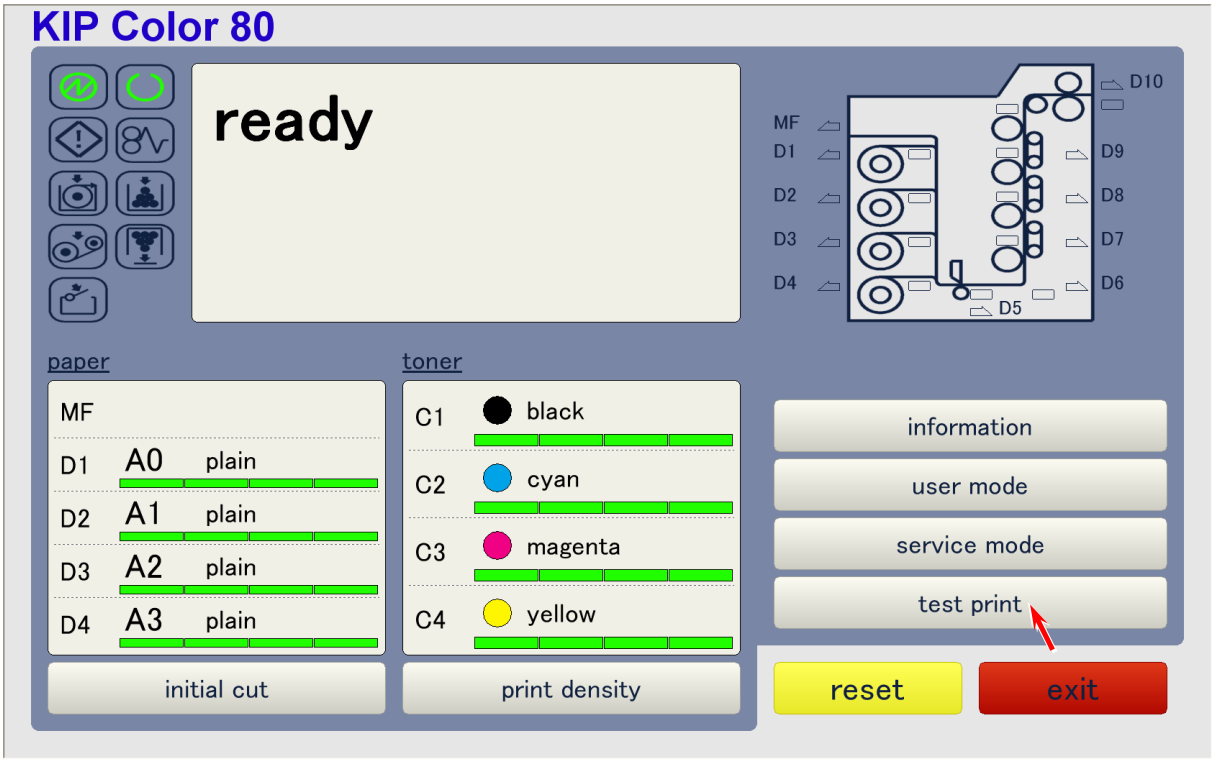
4. 3. 4 Separation Corona (DC Component)

The DC Component outputted from the HV Power Supply PCB to the Separation Corona must satisfy **-220 +/-5V**. Check and adjust the output in the following way.

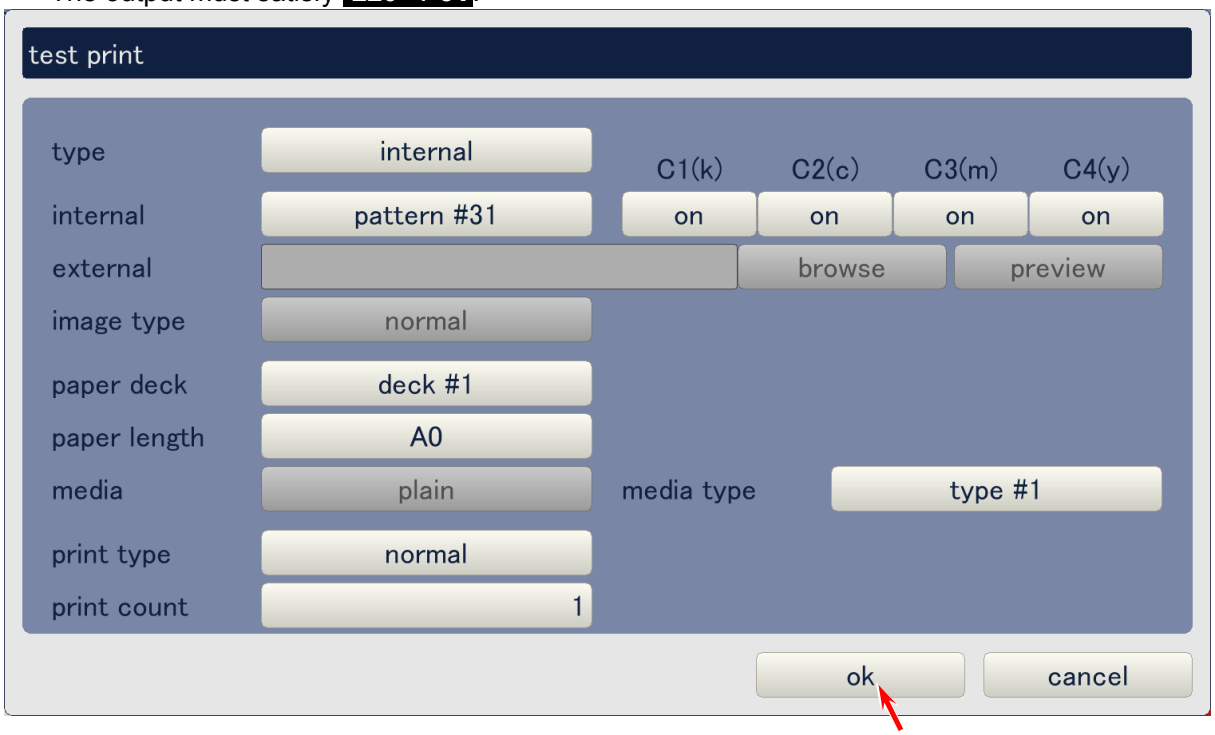
1. Connect the “+” cable of the multi-meter to the “CP33” pin on the HV Power Supply PCB. Connect the “-” one to the ground.
   Select the DC volt range on the multi-meter.



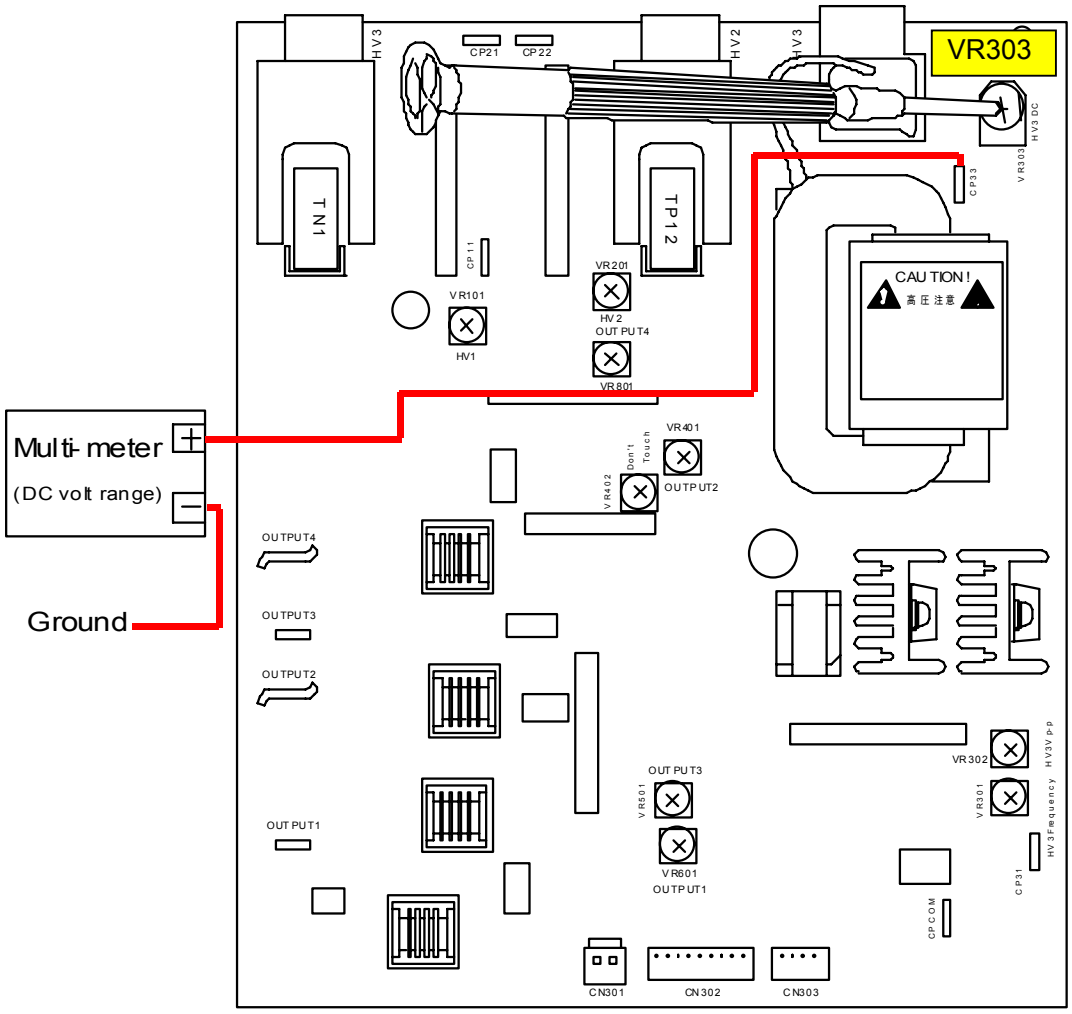
2. Connect the service PC to the KIP Color 80, which is installed with the KIP Diagnostics. Run the KIP Diagnostics, and press [test print] button on the main screen.



3. Change the setting if necessary, and press [ok] to take a test printing. (Any pattern is OK) Measure the high voltage (DC Component) supplied to the Transfer Corona during test printing. The output must satisfy **-220 +/-5V**.



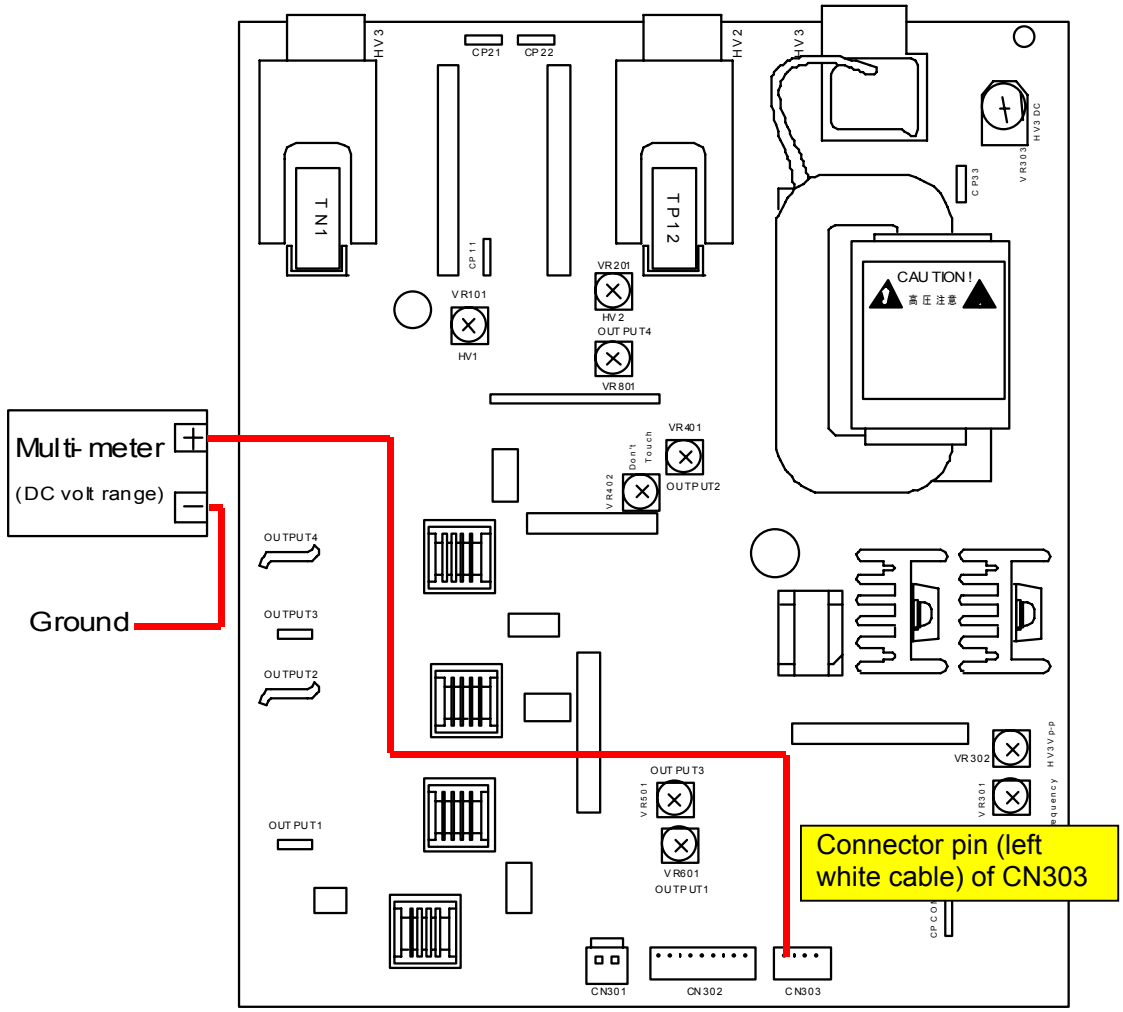
4. If the output does not satisfy **-220 +/-5V**, adjust it rotating the VR303 with a screwdriver.



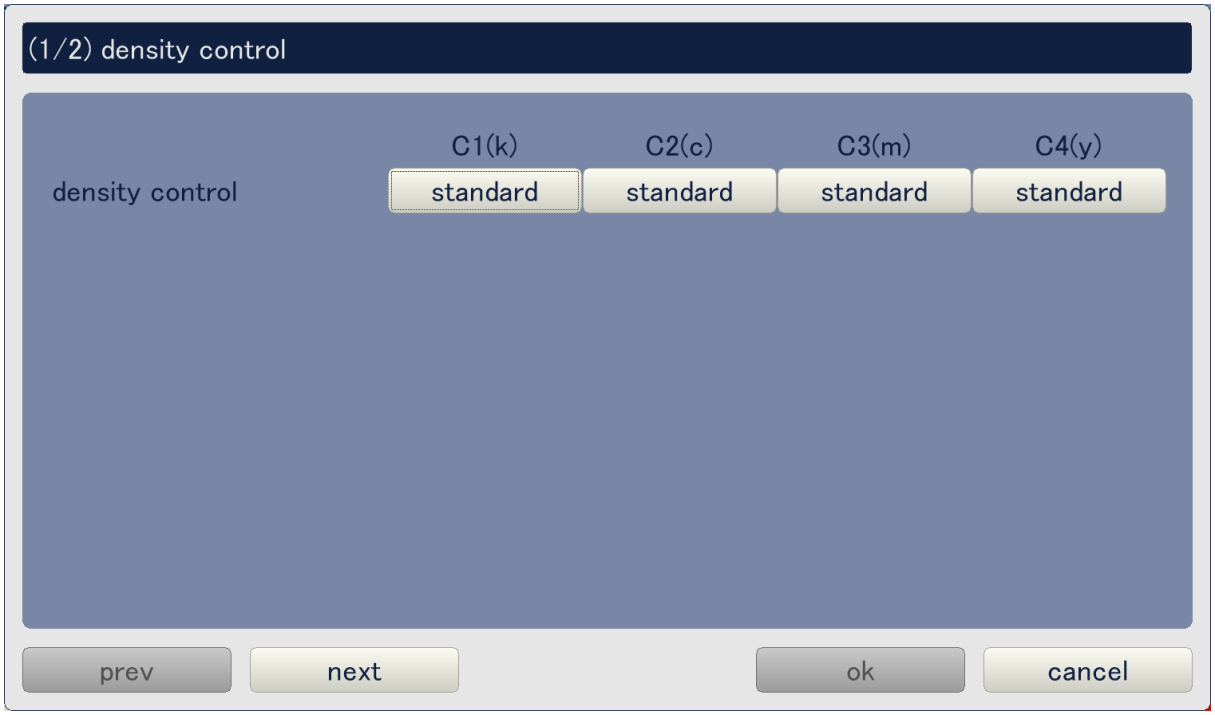
4. 3. 5 Developer Bias (Analog voltage & output voltage to Developer Roller)

The analog voltage supplied to the HV Power Supply PCB adjusts the output voltage to the Developer Roller. Check these voltages in the following way.

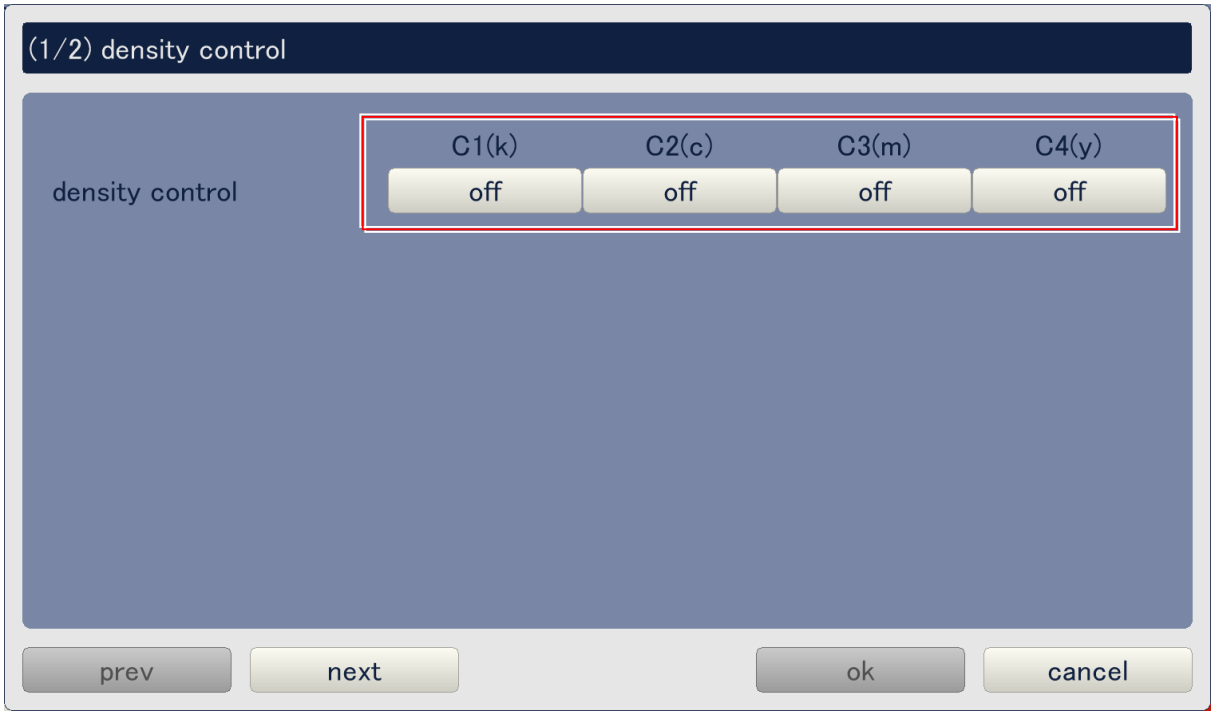
1. Connect the “+” cable of the multi-meter to the connector pin (**left** white cable) of the connector CN303 on the HV Power Supply PCB. Connect the “-” one to the ground. Select the DC volt range on the multi-meter. This is for checking the analog voltage to the HV Power Supply.



2. Connect the service PC to the KIP Color 80, which is installed with the KIP Diagnostics. Run the KIP Diagnostics, and access the following page by;
   - Press the [user mode] button on the main screen of KIP Diagnostics.
   - Press the [density control] button in the first menu page of the user mode.



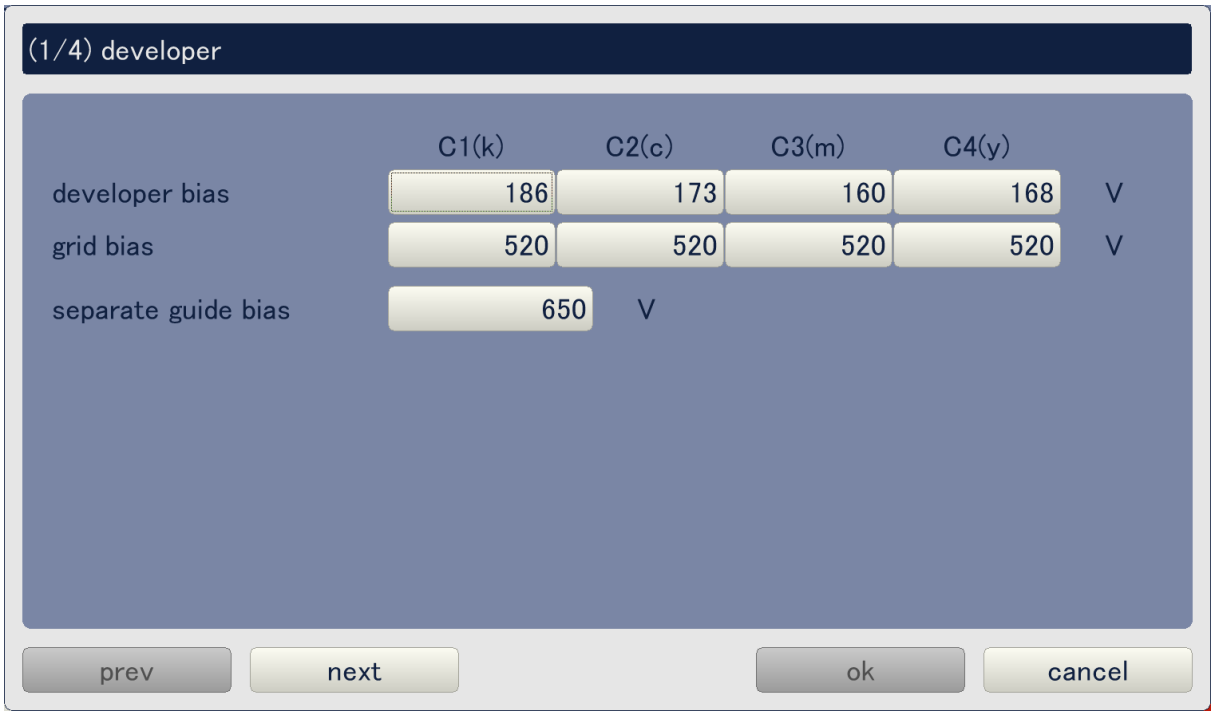
3. Set the Auto Density Control to “off” for all colors.



⚠ NOTE

The Auto Density Control must be cancelled before checking the output from the High Voltage Power Supply. Otherwise the output may be changed by the Auto Density Control.

4. Access the following page by;
   - Press the [service mode] button on the main screen of KIP Diagnostics.
   - Input the service password.
   - Press the [adjustment] button in the menu page of the service mode.
   - Press the [developer] button in the menu page of the Adjustment Mode.



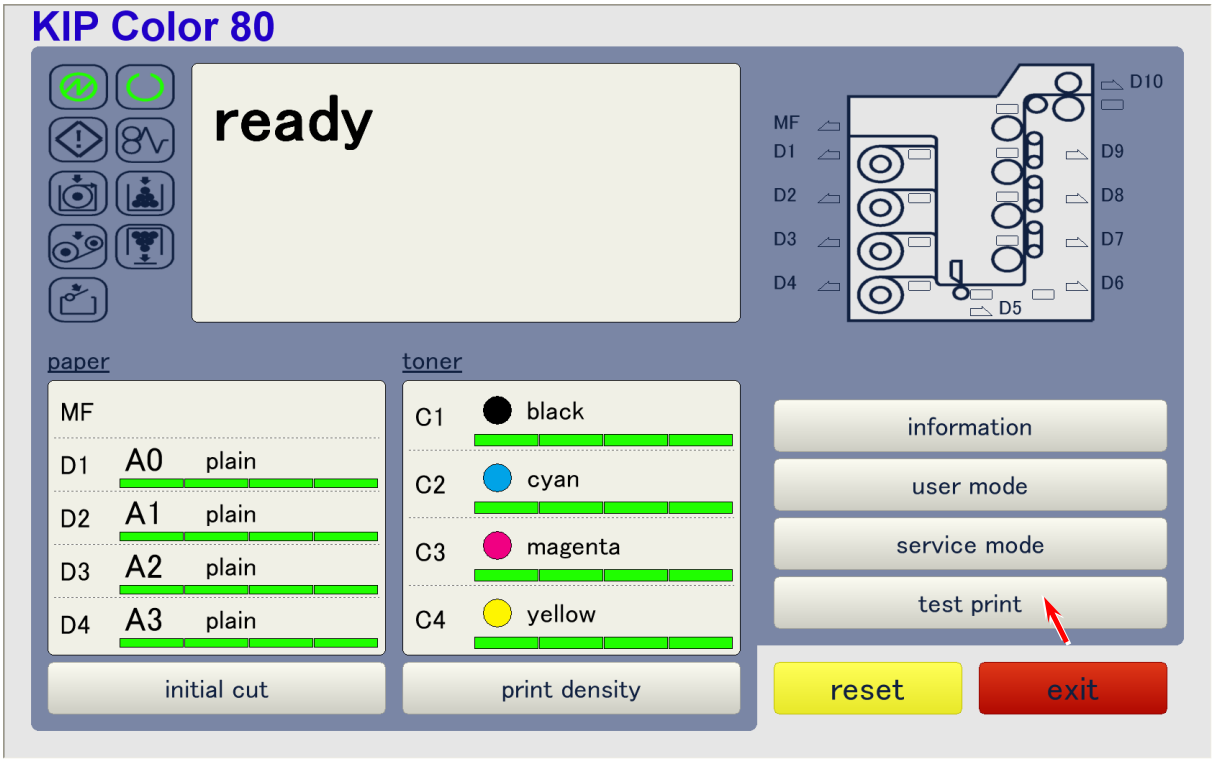
5. Set the developer bias to “150V” for all colors.

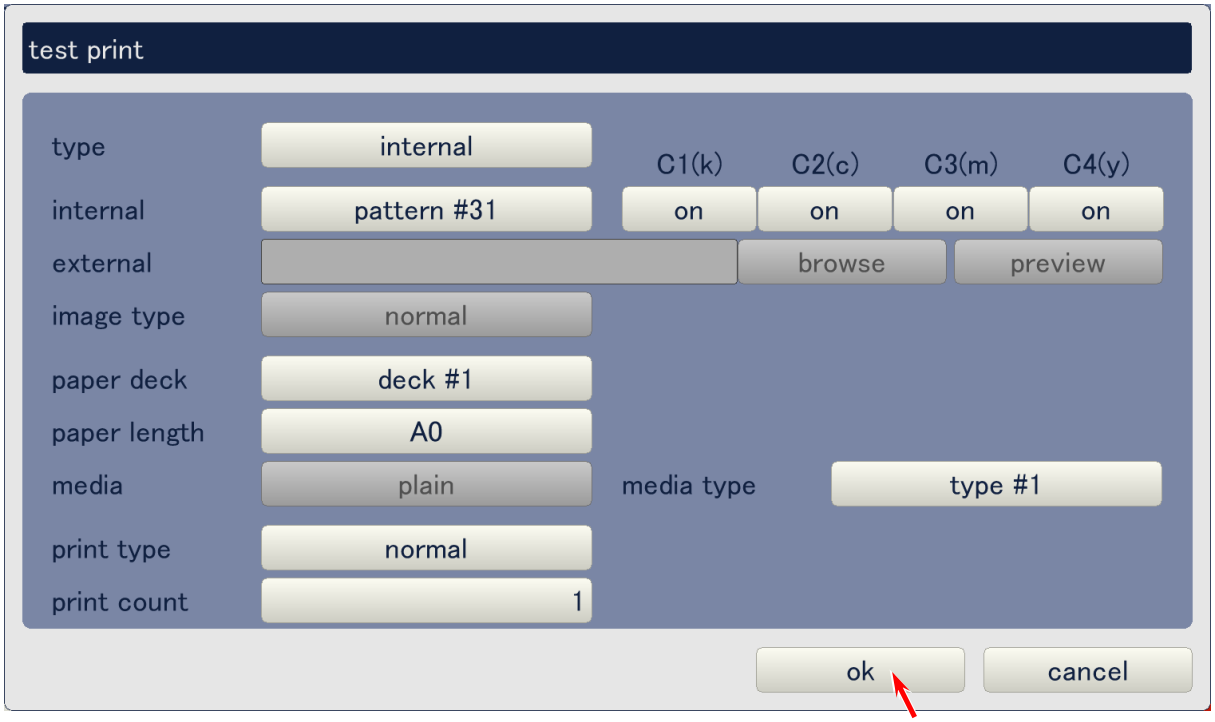


NOTE

It is possible to check the analog voltage and output to the Developer Roller with the current Developer Bias settings by using a formula. See NOTE on page 4-71 and 4-73.

6. Press [test print] button on the main screen to indicate the Test Print Page. Change the test print settings if necessary, and press [ok] to take a test printing. (Any pattern is OK)





7. Measure the analog voltage during test printing. It must be **6.43 +/-0.45V** when the Developer Bias is set to “150”.

⚠ NOTE

(1) The analog input to the HV Power Supply may be in abnormal situation if it is not **6.43 +/-0.45V**. Try to replace the Main PCB and I/O A PCB in this case.

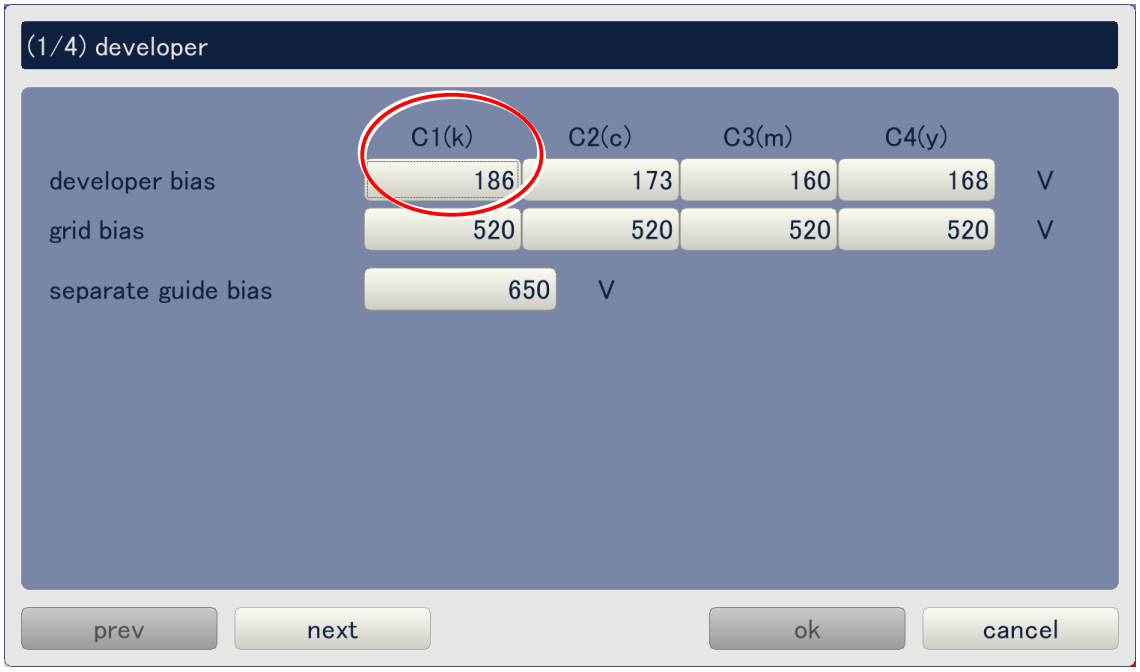
(2) If you are checking with the current setting values (not “150”) of Developer Bias, calculate the analog voltage from the following formula.

(Developer Bias +75) / 35 = analog voltage (with +/-0.45V of tolerance)

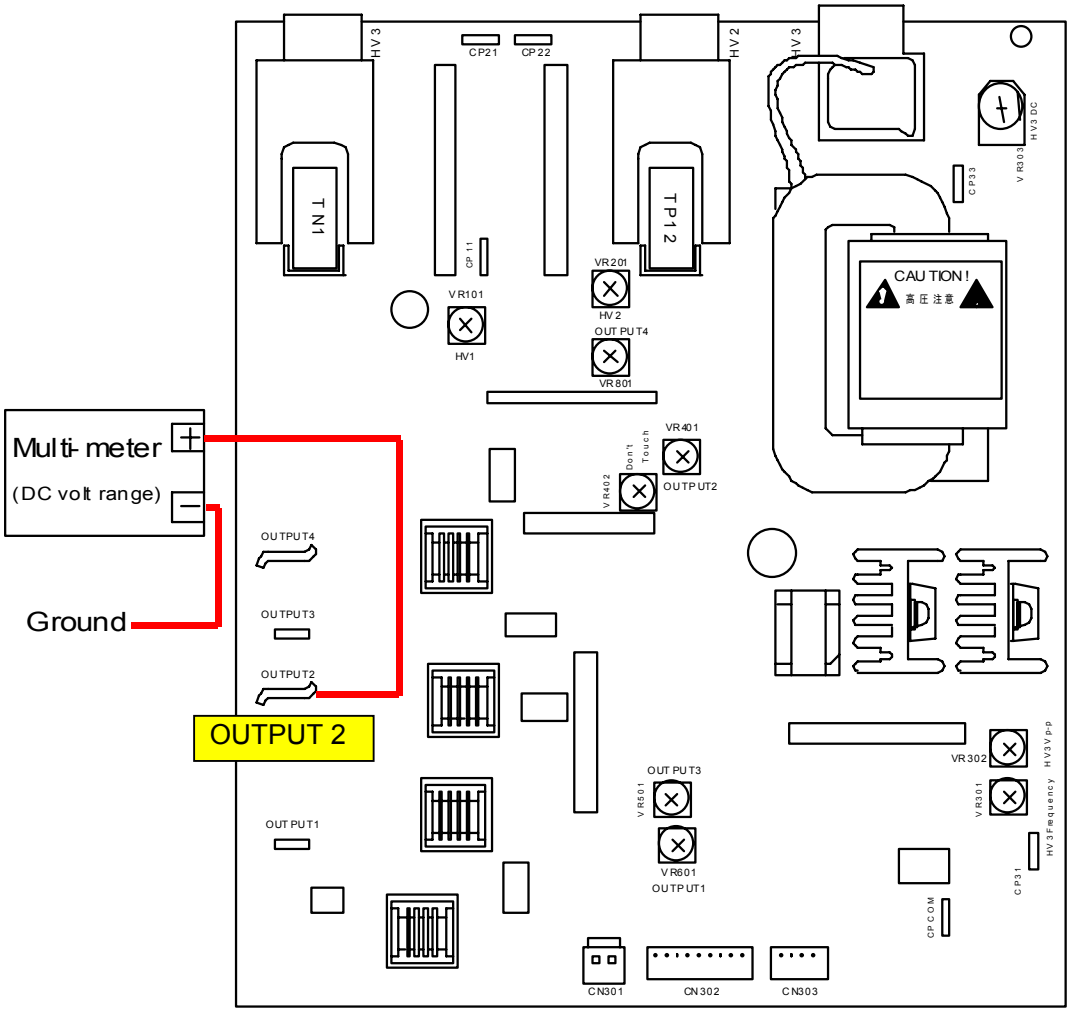
[Example]
- You will check the analog voltage for “black” Developer Bias

(186 + 75) / 35 = 7.45…

Required analog voltage is about 7.45 +/-0.45V in this case.



8. Connect the “+” cable of the multi-meter to the “OUTPUT2” pin on the HV Power Supply PCB. Connect the “-” one to the ground. Select the DC volt range on the multi-meter. This is for checking the output voltage to the Developer Roller.



9. Take a test printing again and measure the output voltage supplied to the Developer Roller. It must be **-150 +/-30V** when the Developer Bias is set to “150”.

NOTE

(1) The output voltage to the Developer Roller may be in abnormal situation if it is not **-150 +/-30V**. Try to replace the HV Power Supply PCB in this case.

(2) If you are checking with the current setting values (not “150”) of Developer Bias, calculate the output voltage from the following kinds of 2 formula.

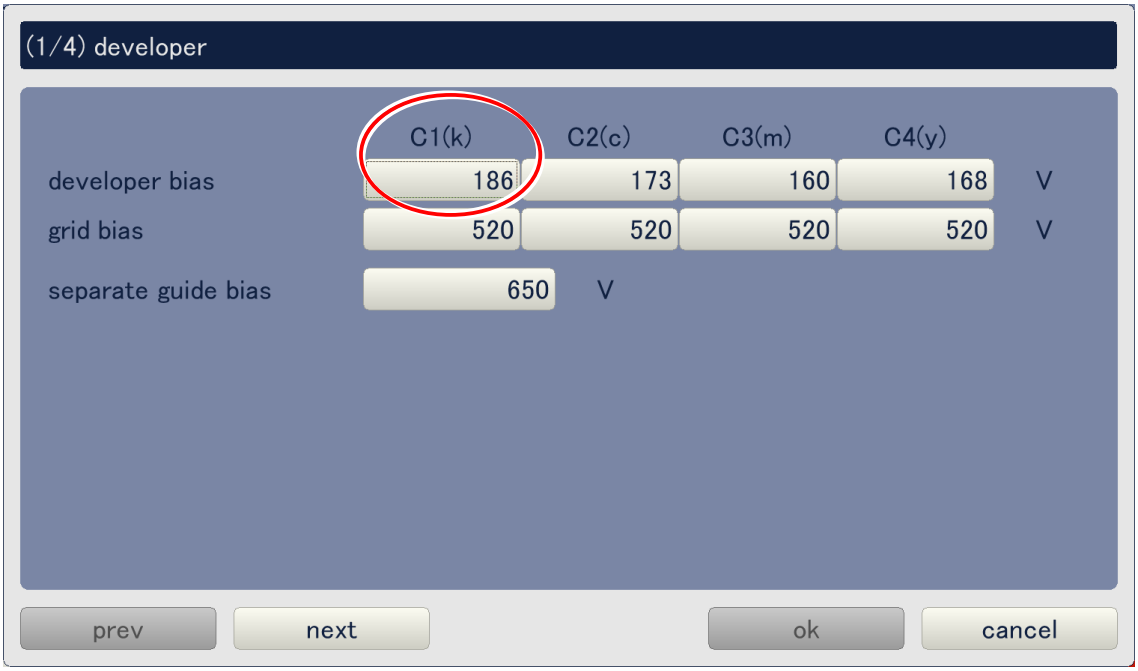
Formula 1 : (Developer Bias +75) / 35 = analog voltage
Formula 2 : 75- analog voltage x 35 = output voltage (with +/-30V of tolerance)

In this case please consider the media type and current humidity.

[Example]
- You will check the output voltage for “black” Developer Roller

Formula 1 : (186 + 75) / 35 = 7.45…
Formula 2 : 75 - 7.45 x 35 = 185.75

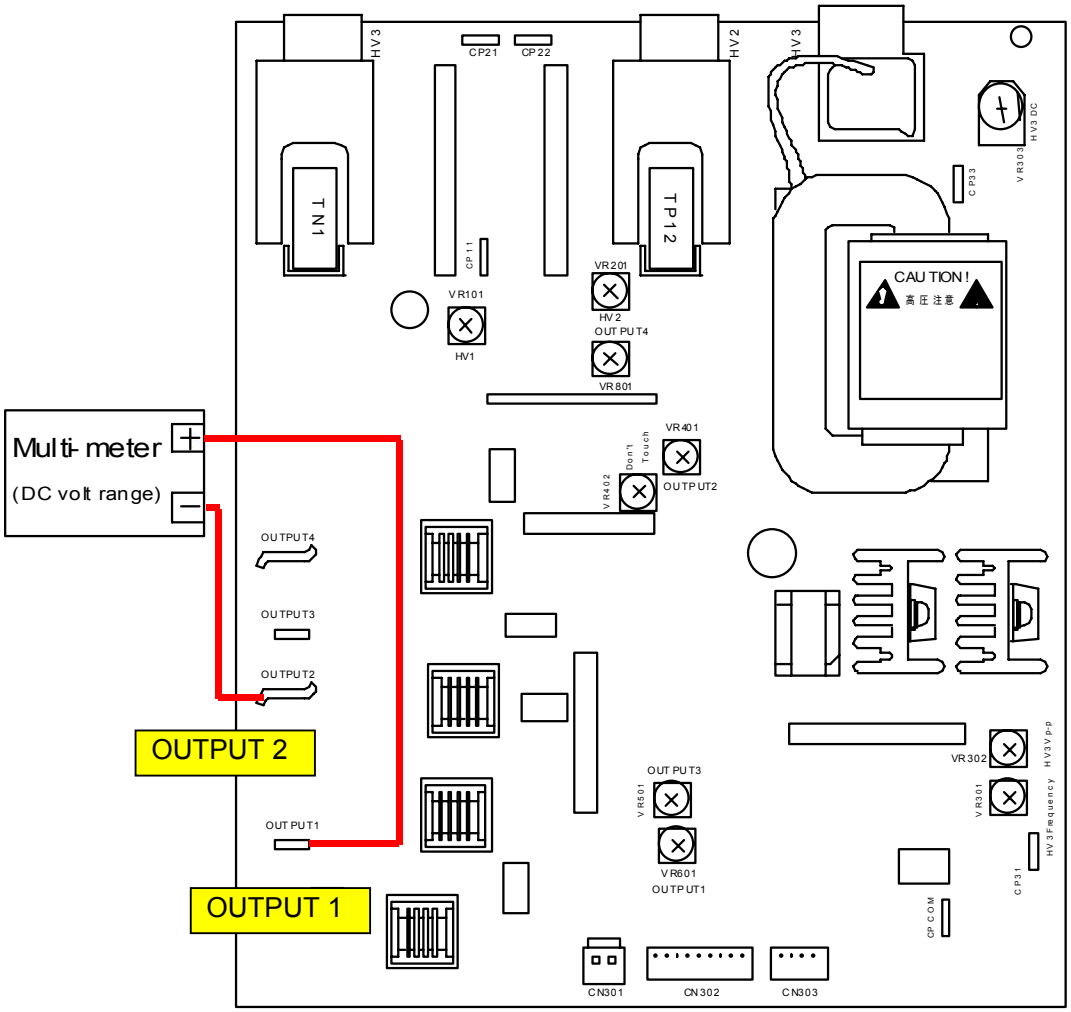
Required output voltage is about 185.75 +/-30V in this case.



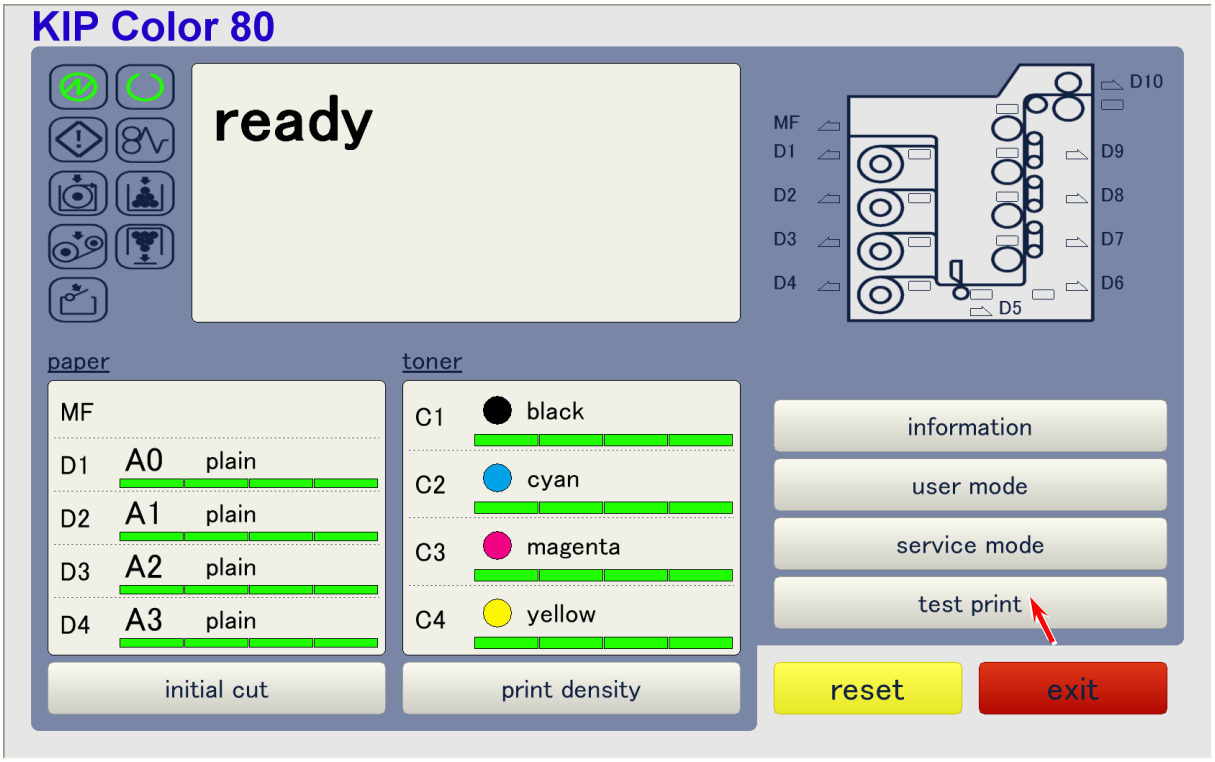
4. 3. 6 Voltage gap between Developer Roller & Toner Supply Roller

The Bias gap between Developer Roller and Toner Supply Roller must satisfy **100 +/-3V**. (Toner Supply Roller is set to -100V +/-3V against the Developer Roller.) Check and adjust it in the following way.

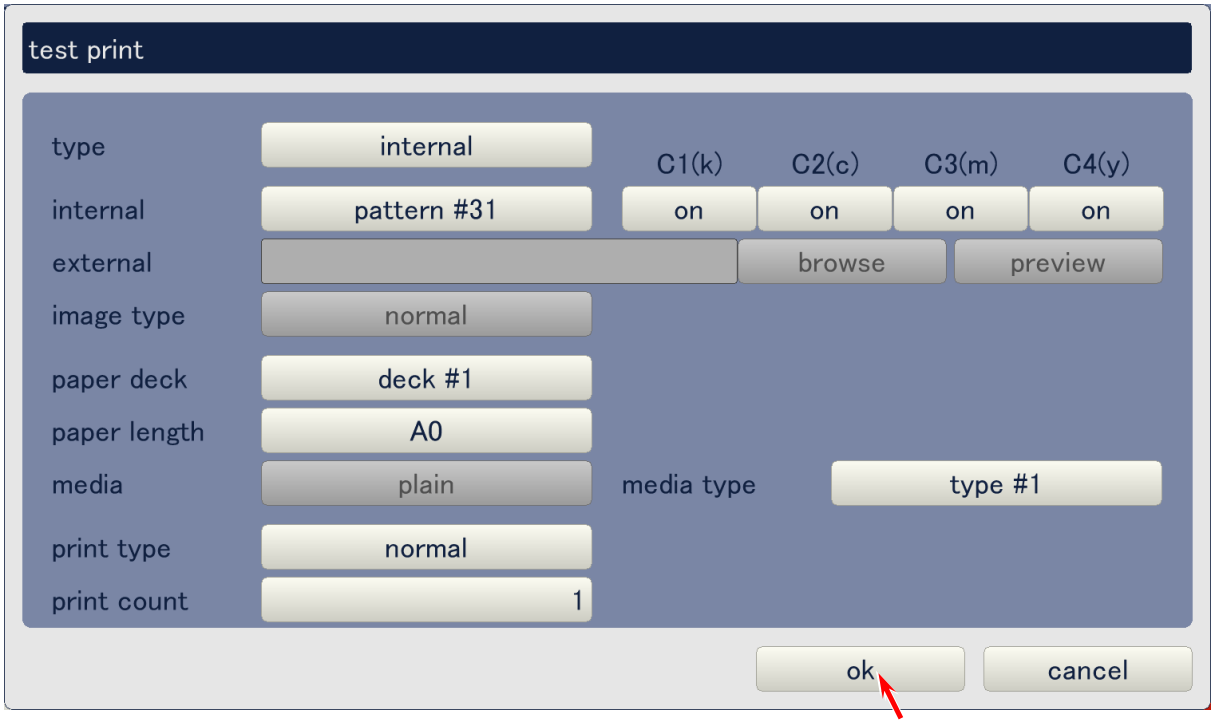
1. Connect the “+” cable of the multi-meter to the “OUTPUT1” pin on the HV Power Supply PCB. Connect the “-” one to the “OUTPUT2” Pin. Select the DC volt range on the multi-meter.



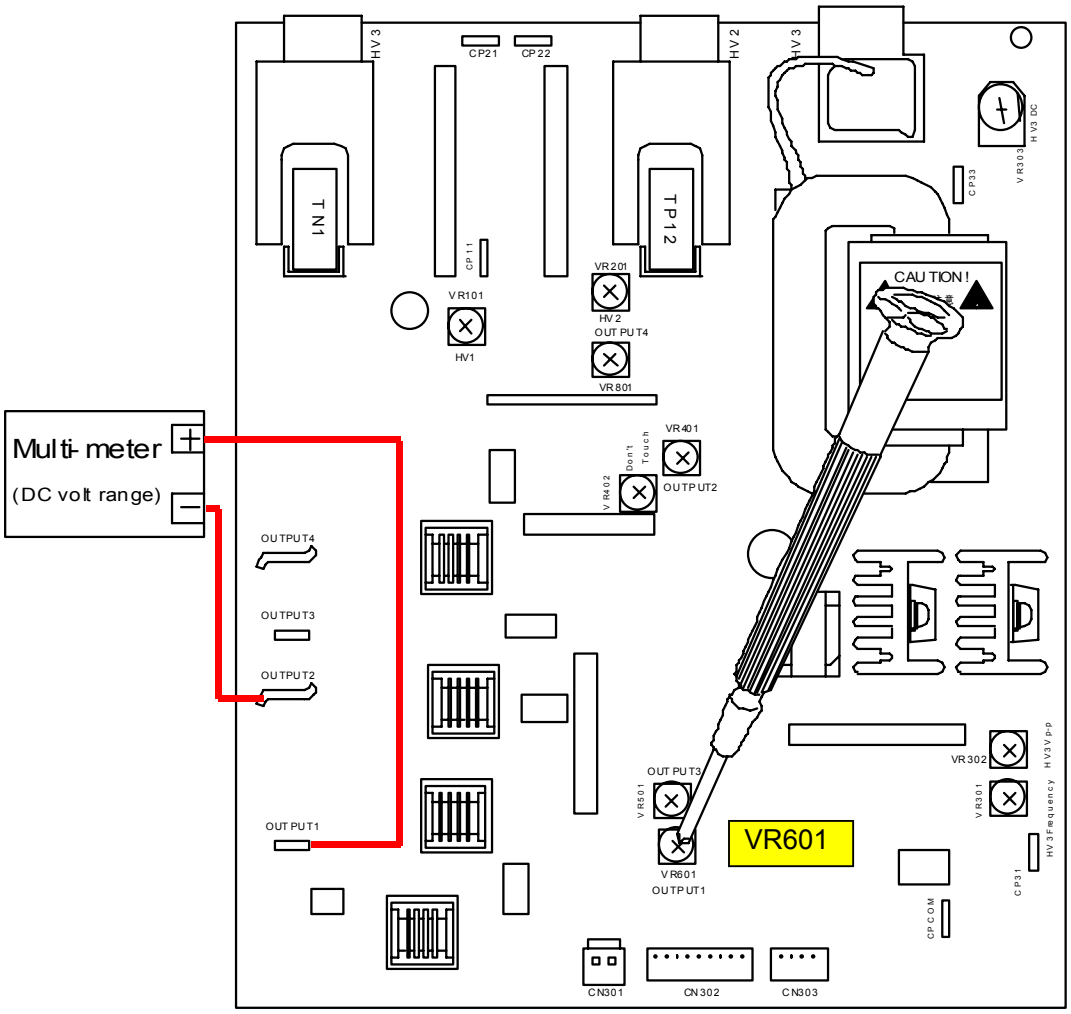
2. Connect the service PC to the KIP Color 80, which is installed with the KIP Diagnostics. Run the KIP Diagnostics, and press [test print] button on the main screen.



3. Change the setting if necessary, and press [ok] to take a test printing. (Any pattern is OK) Measure the Bias gap between Developer Roller and Toner Supply Roller during test printing. The gap between them must satisfy **100 +/-3V**.



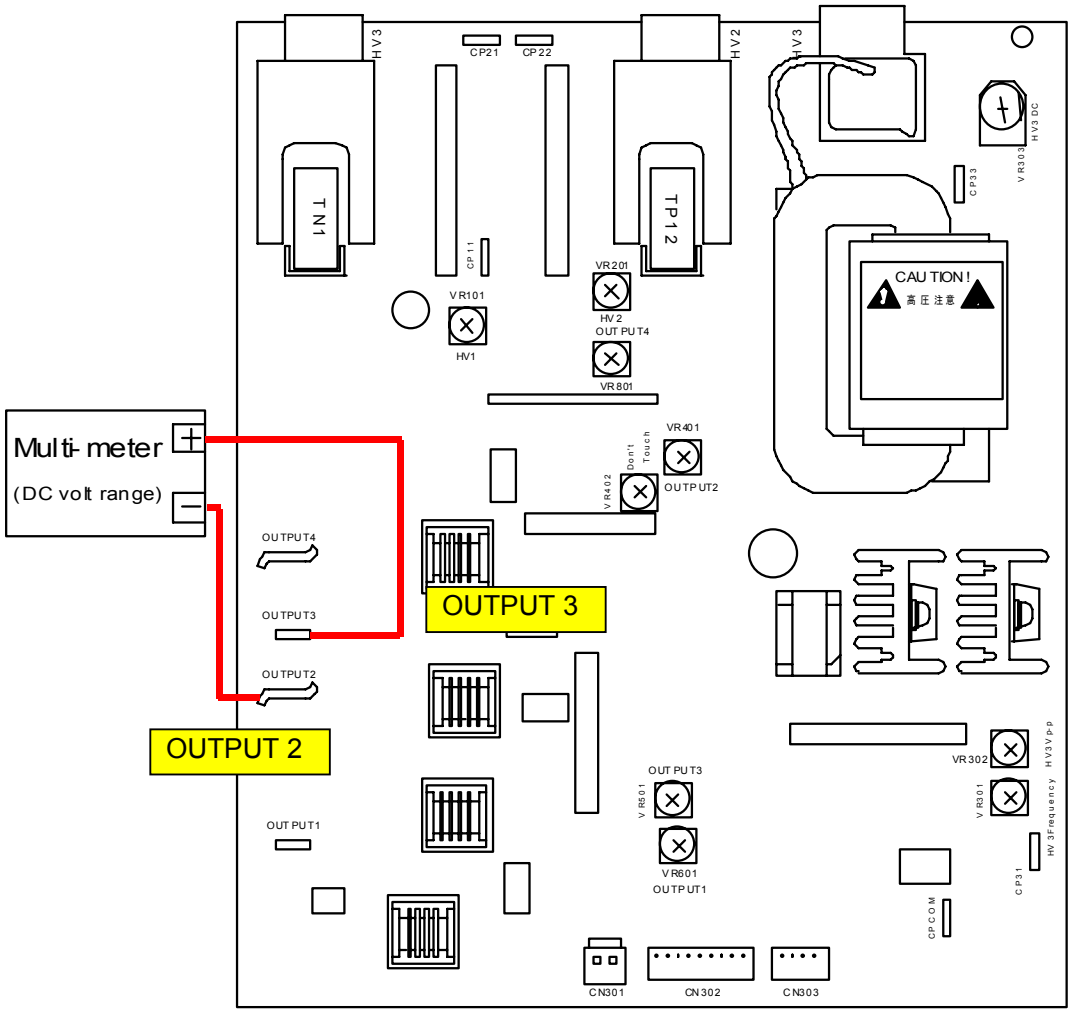
4. If the gap does not satisfy **100 +/-3V**, adjust it rotating the VR601 with a screwdriver.



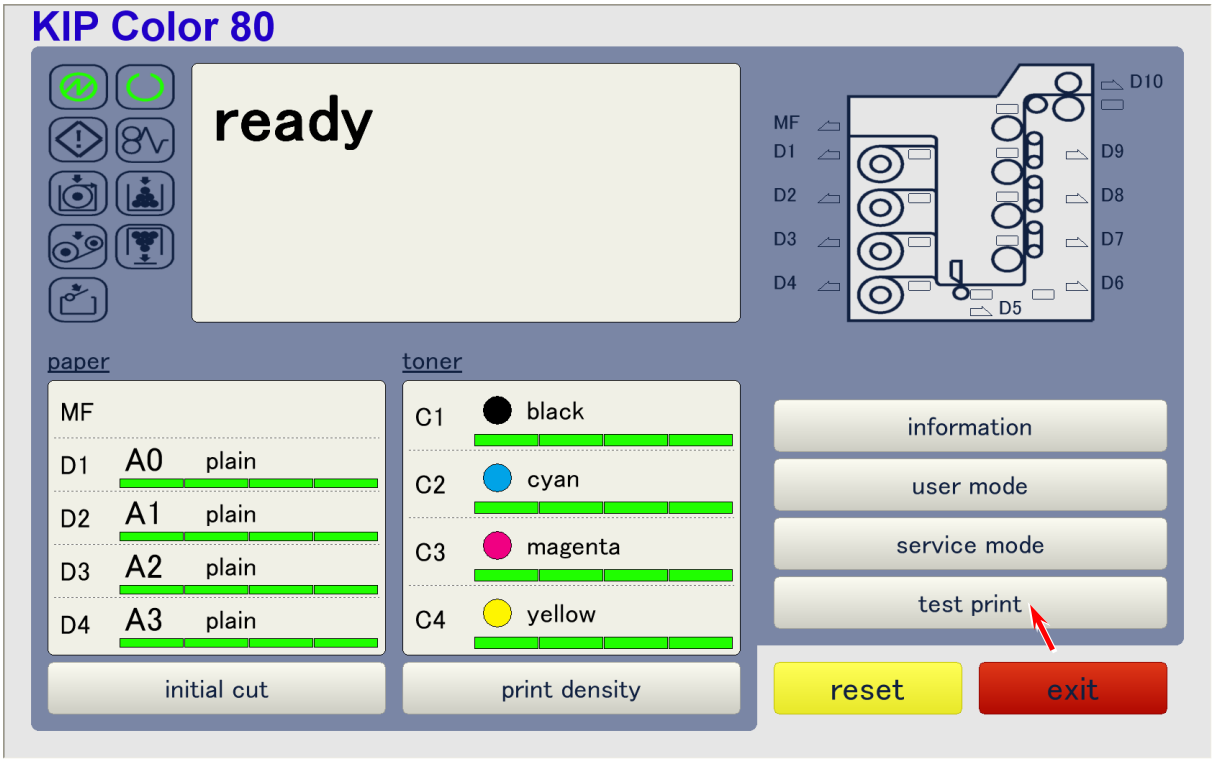
4. 3. 7 Voltage gap between Developer Roller & Blade Roller (Center)

The Bias gap between Developer Roller and Blade Roller (center) must satisfy **50 +/-3V**. (Blade Roller (center) is set to +50V +/-3V against the Developer Roller.) Check and adjust it in the following way.

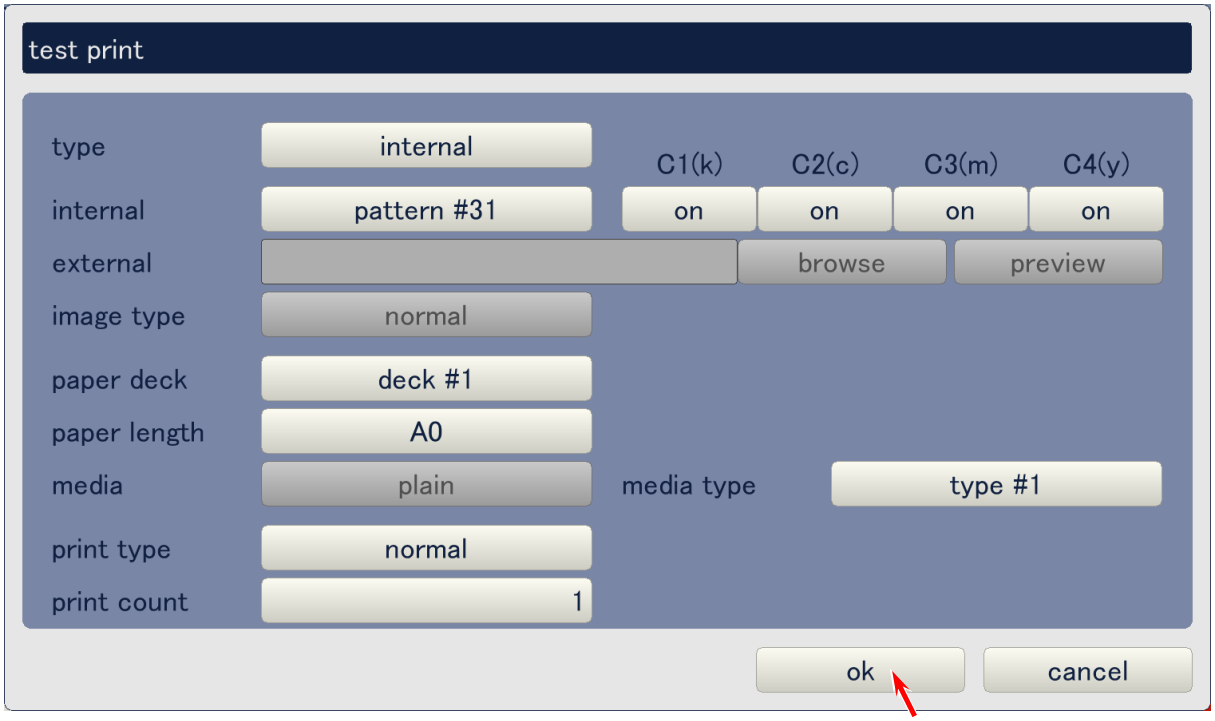
1. Connect the “+” cable of the multi-meter to the “OUTPUT3” pin on the HV Power Supply PCB. Connect the “-” one to the “OUTPUT2” Pin. Select the DC volt range on the multi-meter.



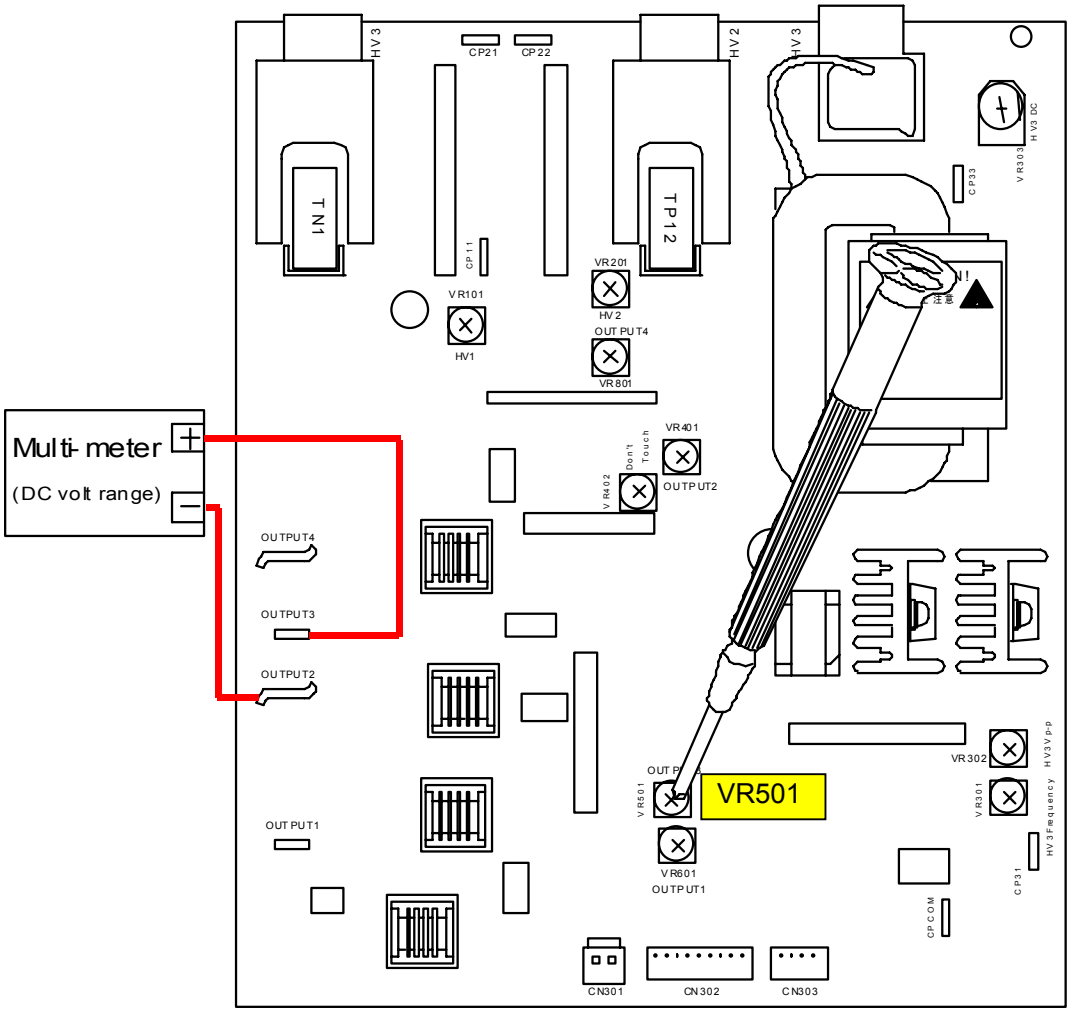
2. Connect the service PC to the KIP Color 80, which is installed with the KIP Diagnostics. Run the KIP Diagnostics, and press [test print] button on the main screen.



3. Change the setting if necessary, and press [ok] to take a test printing. (Any pattern is OK) Measure the Bias gap between Developer Roller and Blade Roller (center) during test printing. The gap between them must satisfy **50 +/-3V**.



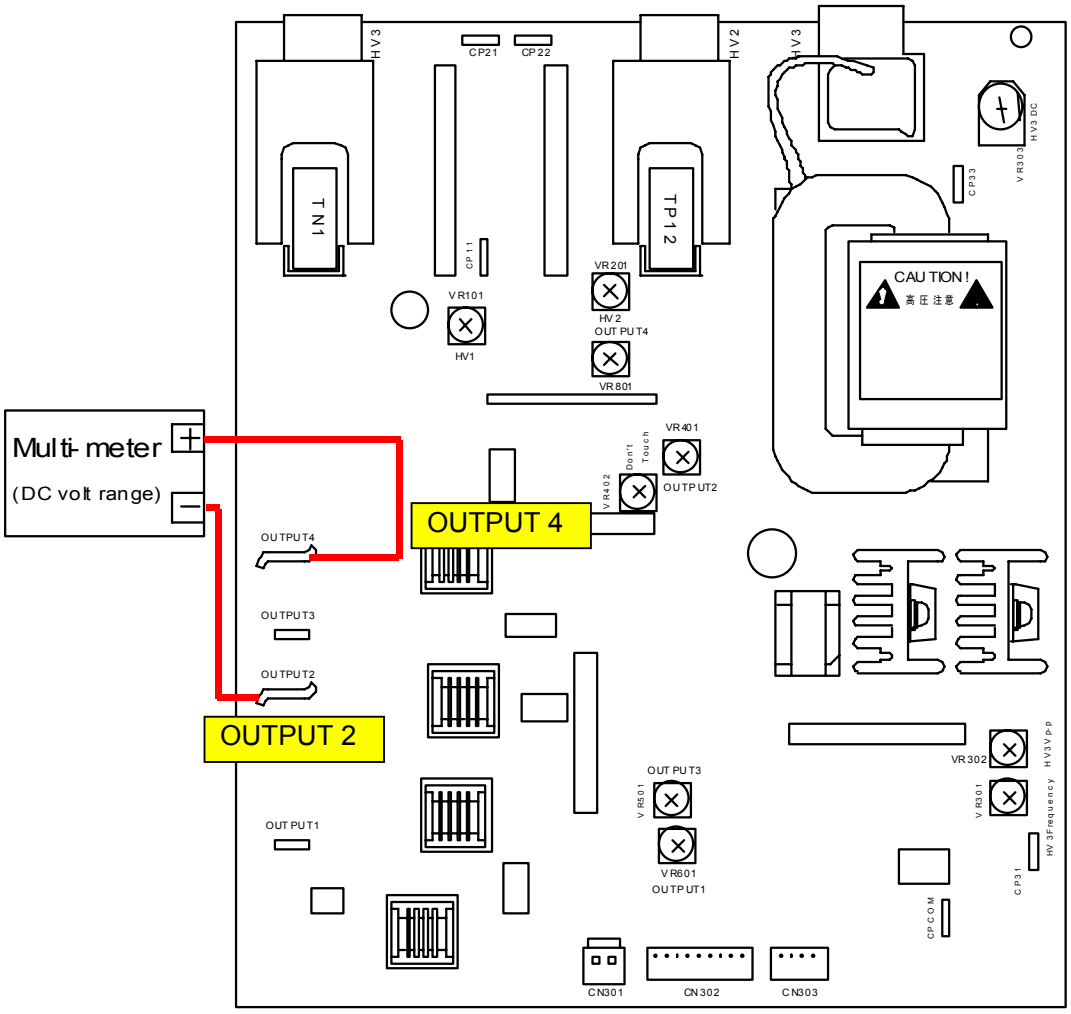
4. If the gap does not satisfy **50 +/-3V**, adjust it rotating the VR501 with a screwdriver.



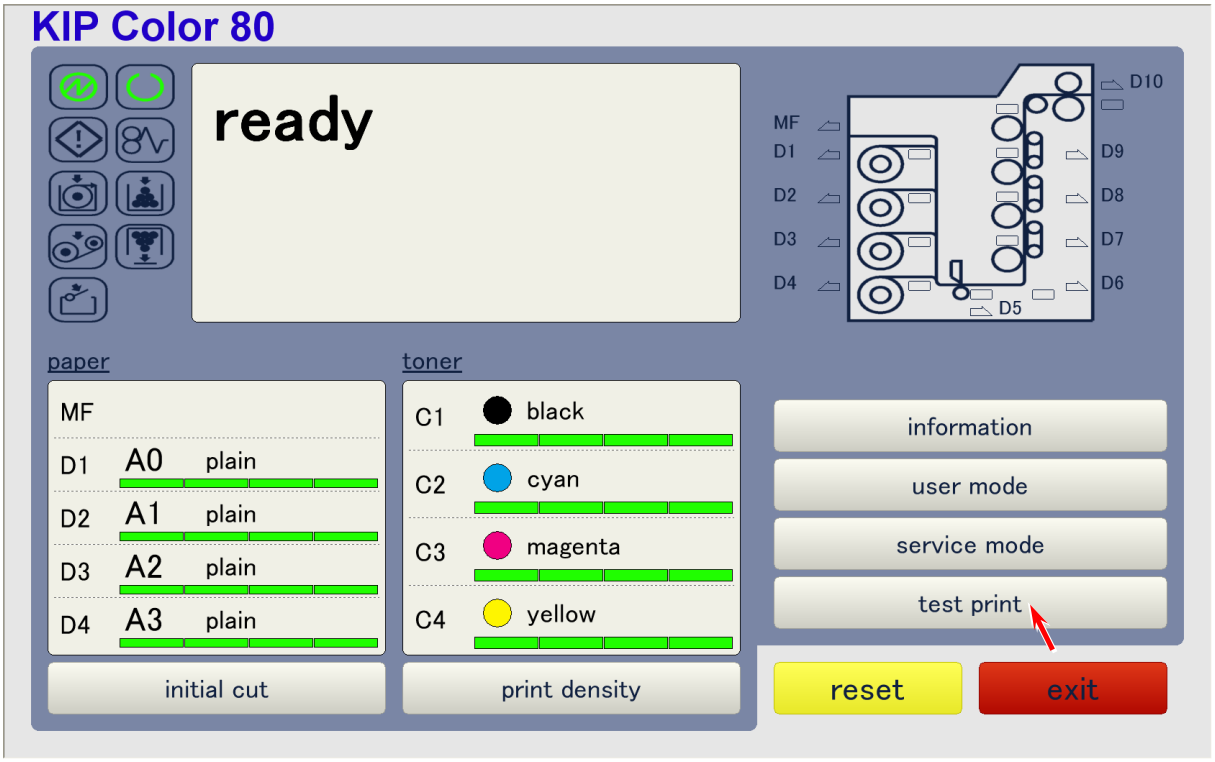
4. 3. 8 Voltage gap between Developer Roller & Blade Roller (Both sides)

The Bias gap between Developer Roller and Blade Roller (both sides) must satisfy **150 +/-3V**. (Blade Roller (both sides) is set to +150V +/-3V against the Developer Roller.) Check and adjust it in the following way.

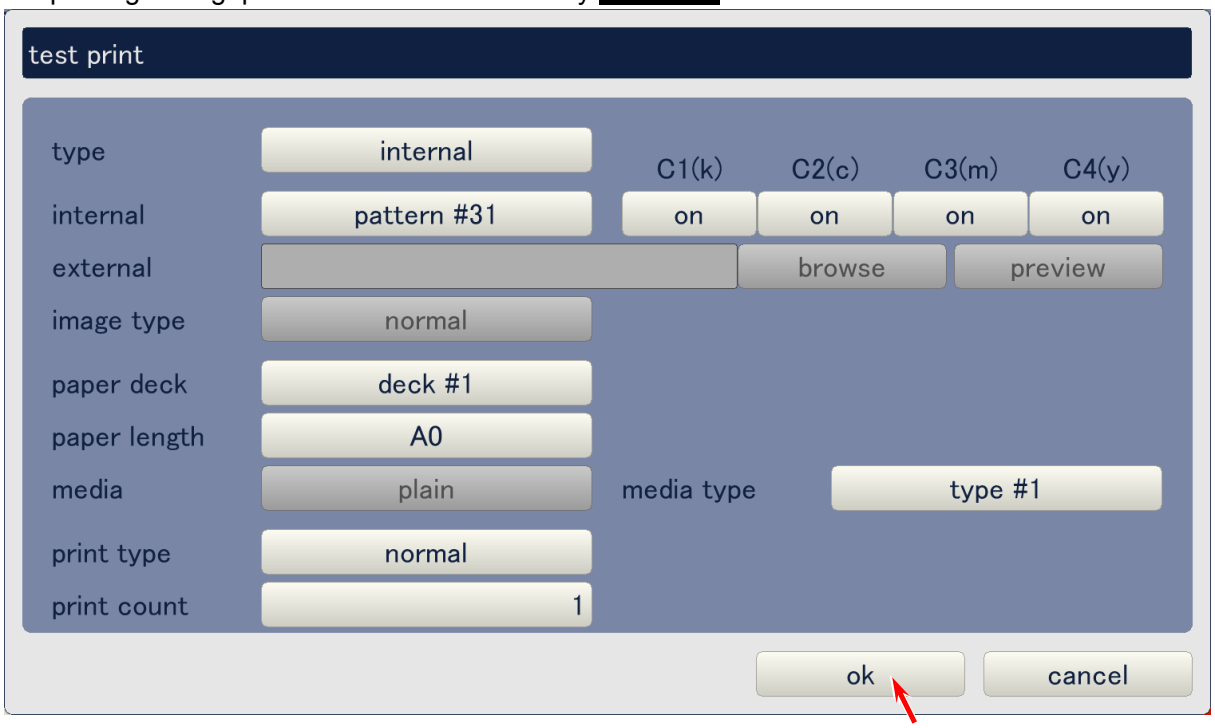
1. Connect the “+” cable of the multi-meter to the “OUTPUT4” pin on the HV Power Supply PCB. Connect the “-” one to the “OUTPUT2” Pin. Select the DC volt range on the multi-meter.



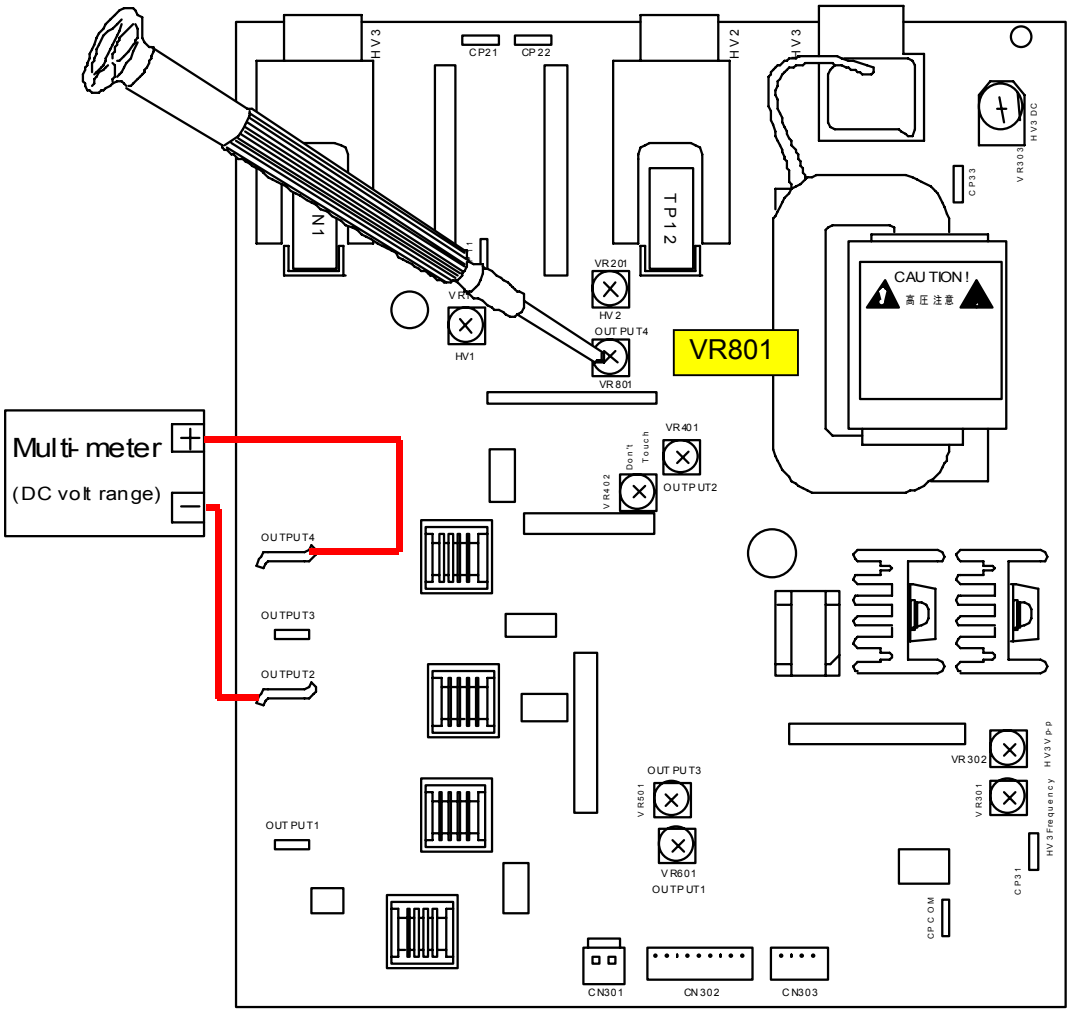
2. Connect the service PC to the KIP Color 80, which is installed with the KIP Diagnostics. Run the KIP Diagnostics, and press [test print] button on the main screen.



3. Change the setting if necessary, and press [ok] to take a test printing. (Any pattern is OK) Measure the Bias gap between Developer Roller and Blade Roller (both sides) during test printing. The gap between them must satisfy **150 +/-3V**.



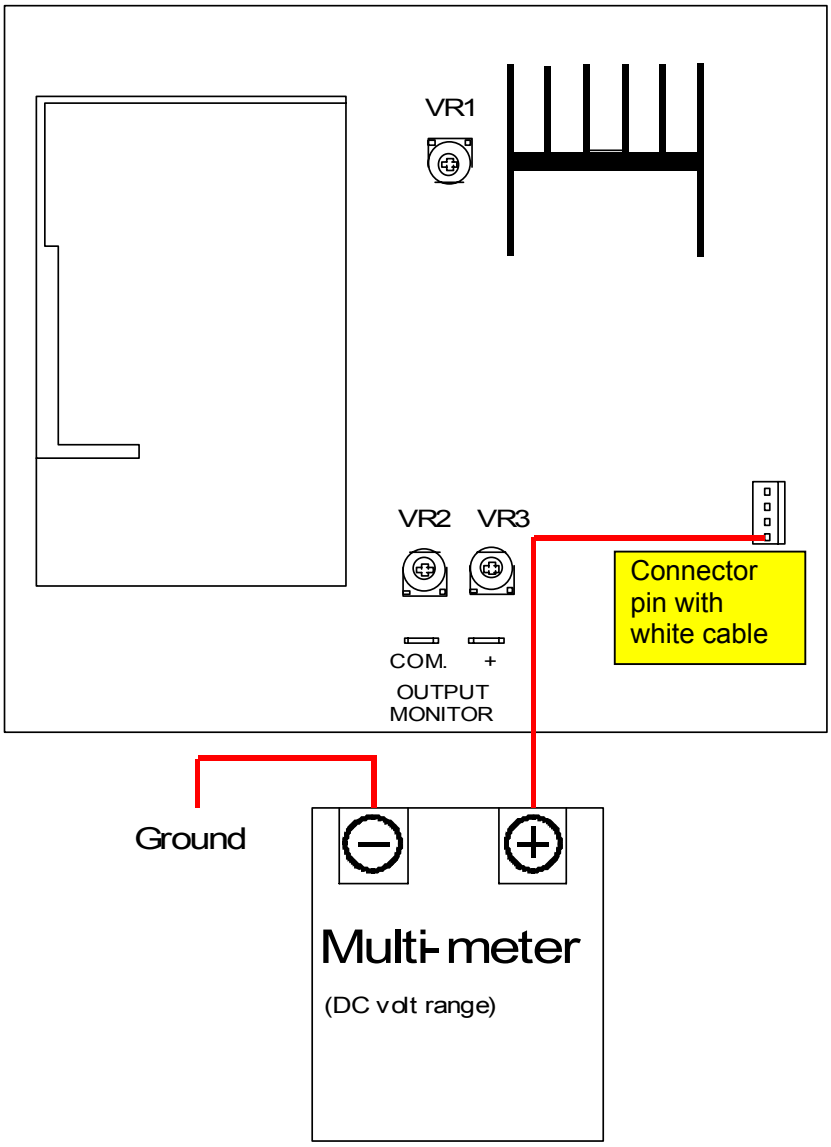
4. If the gap does not satisfy **150 +/-3V**, adjust it rotating the VR801 with a screwdriver.



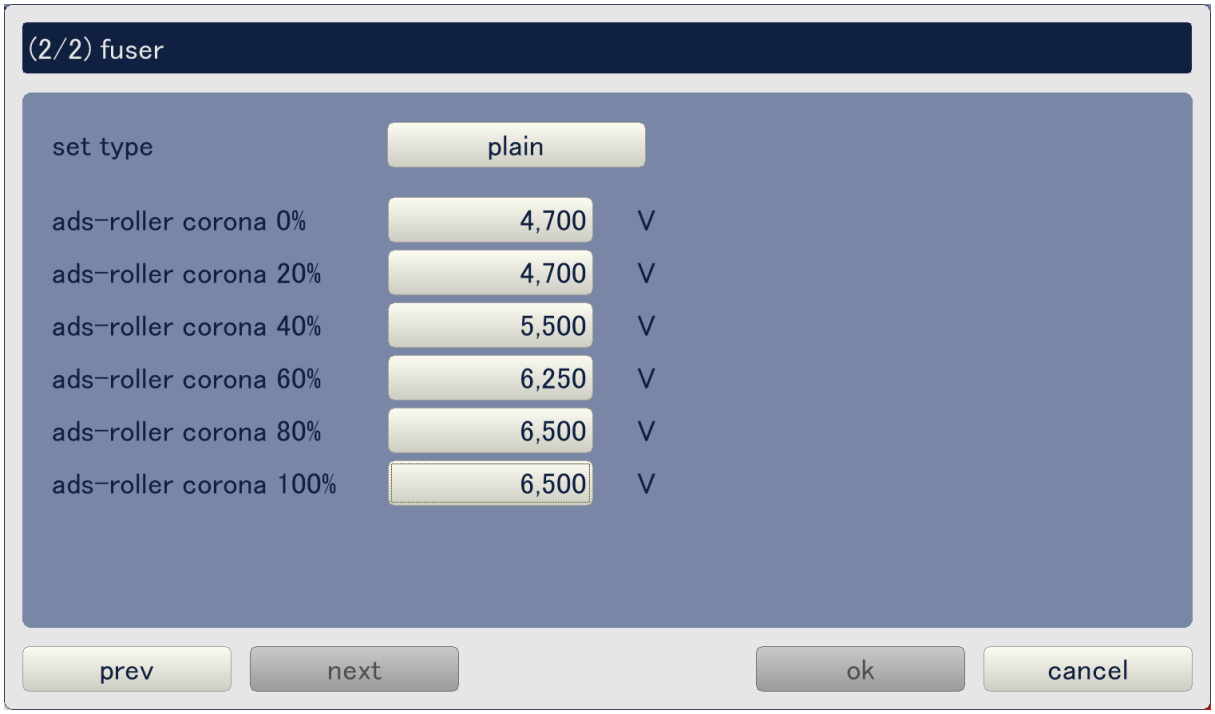
4. 3. 9 Attraction Corona (Analog voltage & output voltage to Attraction Corona)

The analog voltage supplied to the HV Power Supply PCB adjusts the output voltage to the Attraction Corona. Check these voltages in the following way.

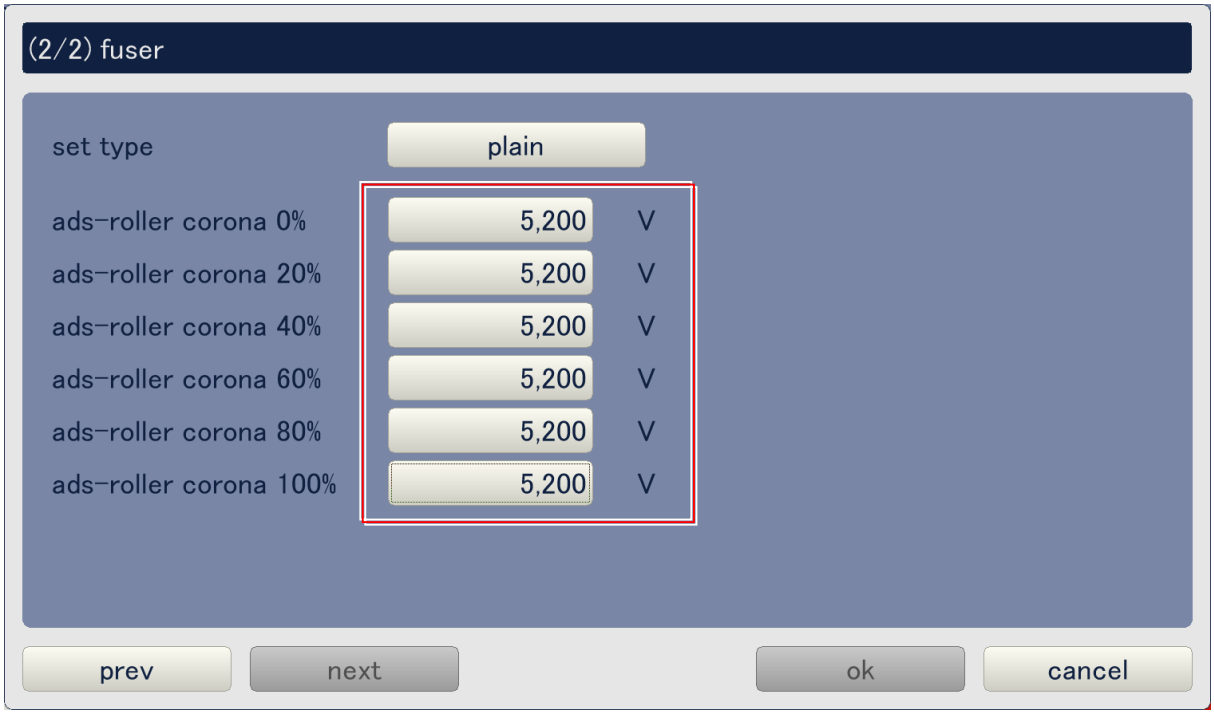
1. Connect the “+” cable of the multi-meter to the connector pin with white cable of the connector on the HV Power Supply PCB. Connect the “-” one to the ground. Select the DC volt range on the multi-meter. This is for checking the analog voltage to the HV Power Supply.



2. Connect the service PC to the KIP Color 80, which is installed with the KIP Diagnostics. Run the KIP Diagnostics, and access the following page by;
   - Press the [service mode] button on the main screen of KIP Diagnostics.
   - Input the service password.
   - Press the [adjustment] button in the menu page of the service mode.
   - Press the [fuser] button in the menu page of the Adjustment Mode.
   - Press the [next] button on the first page (1/4) of “fuser”.



3. Set the Attraction Corona Bias to “5200” for all humidity ranges.



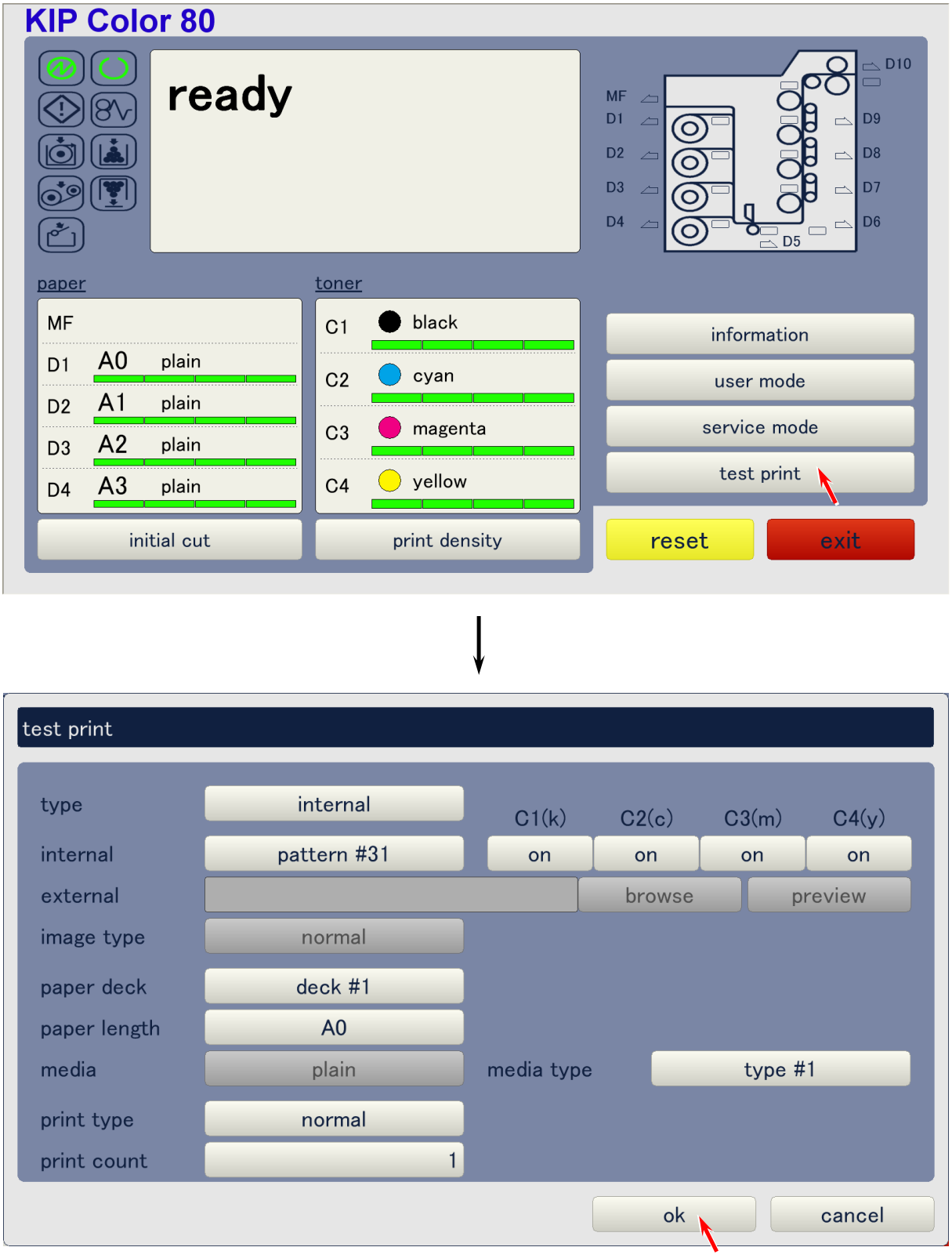
NOTE

(1) Please have a backup (ini file) of current settings before changing just in case.

(2) If you do not wish to disturb the current setting values, it is possible to check the analog voltage with the current Attraction Corona Bias settings by using a formula. See NOTE on page 4-87.

(3) Change the “set type” properly according to the media you will use for checking.

4. Press [test print] button on the main screen to indicate the Test Print Page. Change the test print settings if necessary (especially “media type”), and press [ok] to take a test printing. (Any pattern is OK)



5. Measure the analog voltage during test printing. It must be **12.0 +/-0.5V** when the Attraction Corona Bias is set to “5200”.

⚠ NOTE

(1) The analog input to the HV Power Supply may be in abnormal situation if it is not **12.0 +/-0.5V**. Try to replace the Main PCB and I/O A PCB in this case.

(2) If you are checking with the current setting values (not “5200”) of Attraction Corona Bias, calculate the analog voltage from the following formula.

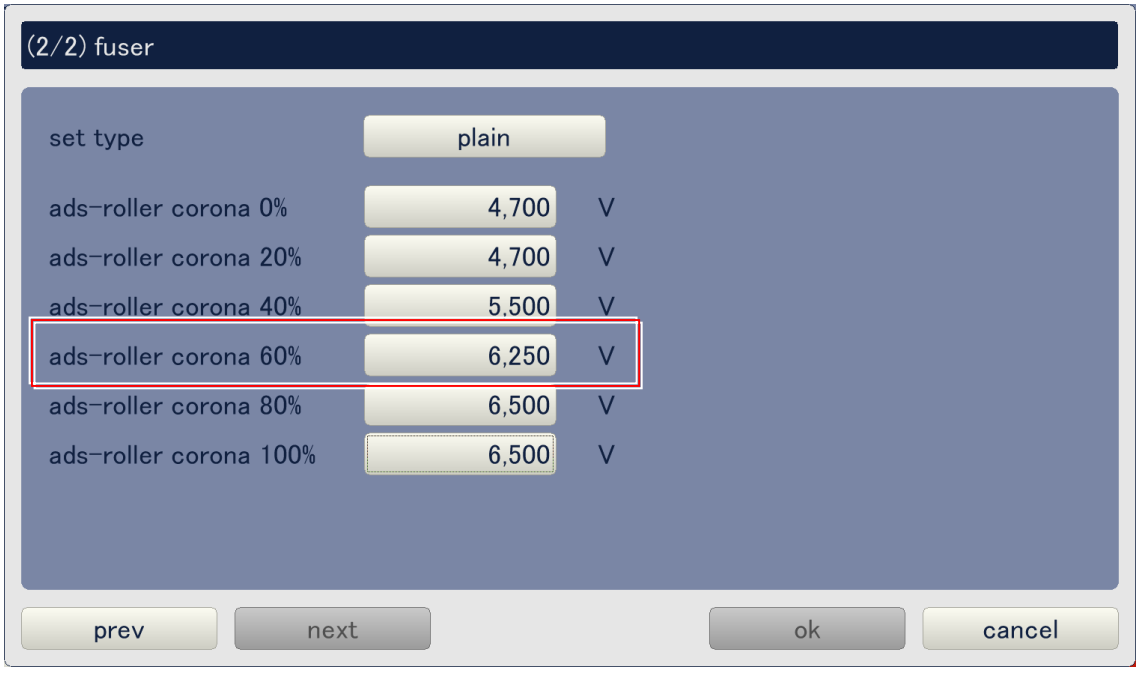
(Attraction Corona Bias + 2000) / 600 = analog voltage (with +/-0.5V of tolerance)

In this case please consider the media type and current humidity.

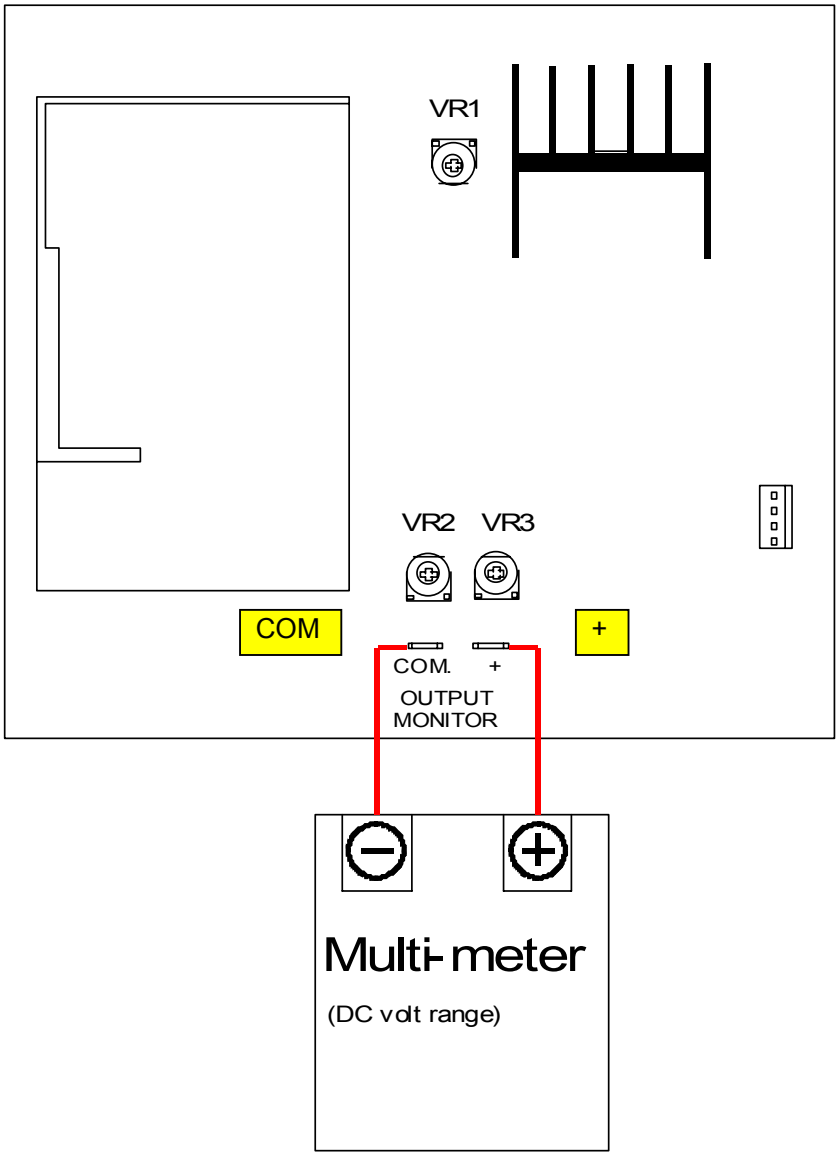
[Example]
- Current humidity is 60%
- Plain paper is used for checking

(6250 + 2000) / 600 = 13.75

Required analog voltage is 13.75 +/-0.5V in this case.



6. Connect the “+” cable of the multi-meter to the “+” pin of “OUTPUT MONITOR” on the HV Power Supply PCB. Connect the “-” one to the “COM” pin. Select the DC volt range on the multi-meter. This is for checking the output voltage to the Attraction Corona.



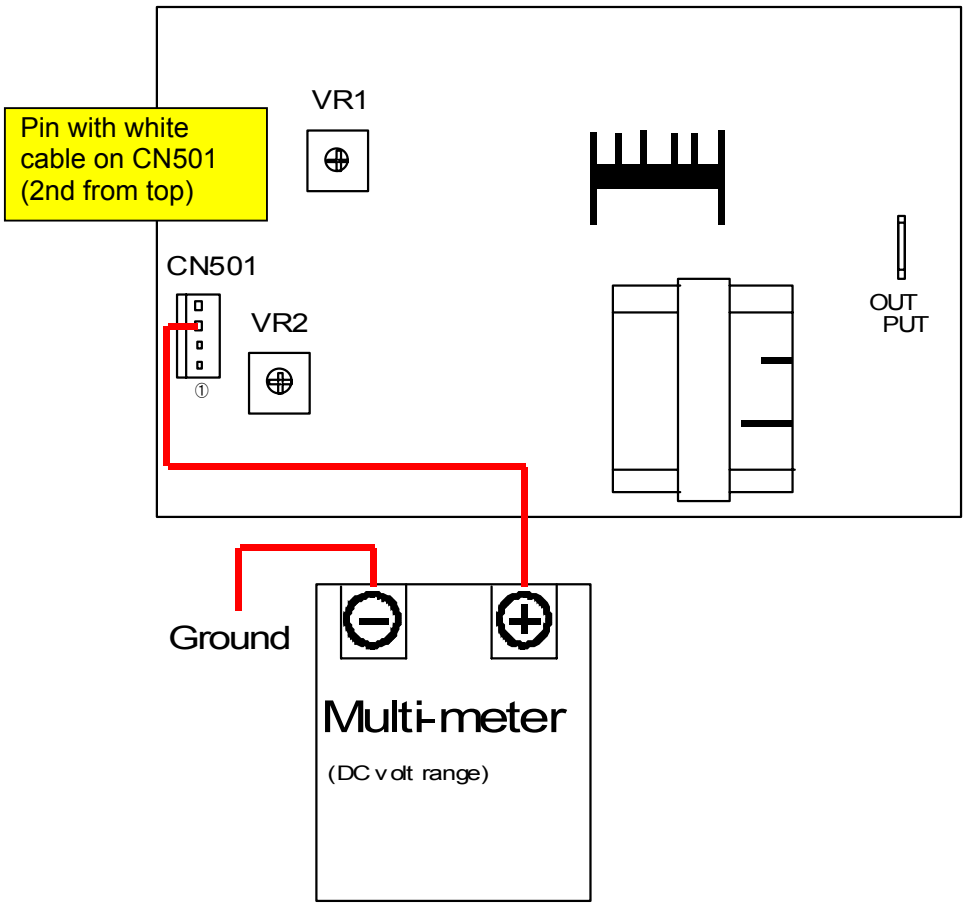
7. Take a test printing again and measure the output voltage supplied to the Attraction Corona. It must be **0.7 to 1.8V**.

> **NOTE**
>
> The output voltage to the Attraction Corona may be in abnormal situation if it is not **0.7 to 1.8V**. Try to replace the HV Power Supply PCB in this case.

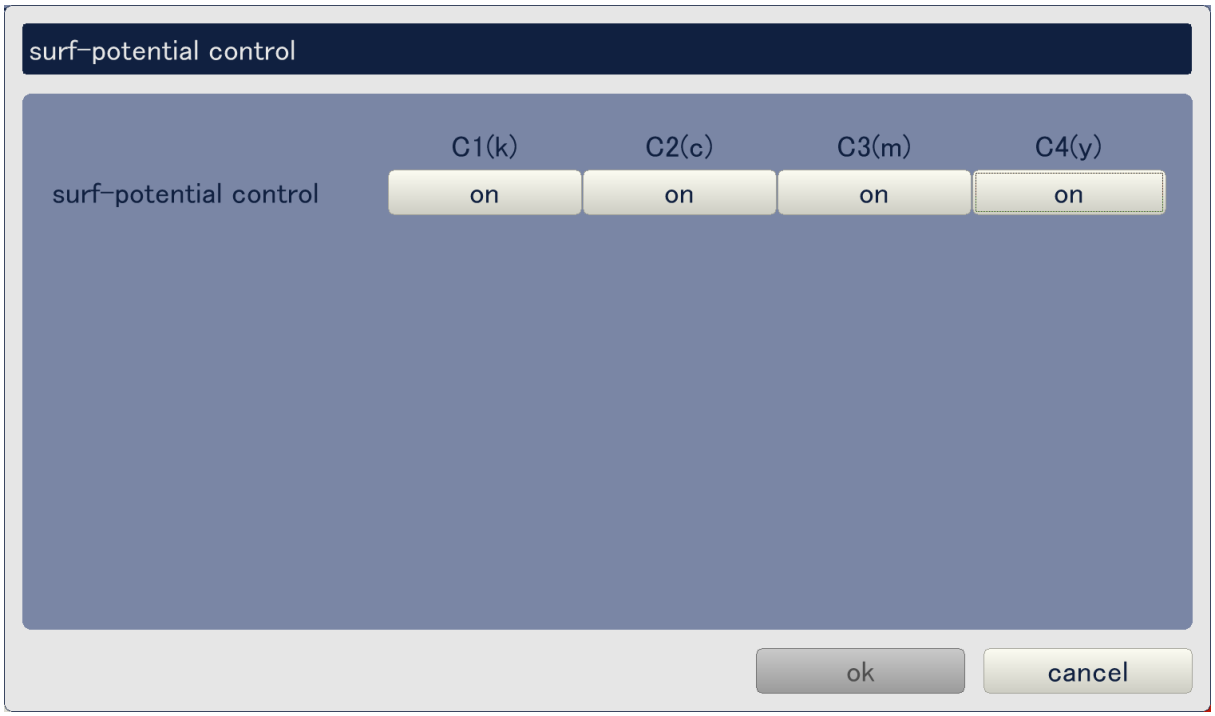
4. 3.10 Grid Plate (Analog voltage & output voltage to Grid Plate)

The analog voltage supplied to the HV Power Supply PCB adjusts the output voltage to the Grid Plate. Check these voltages in the following way.

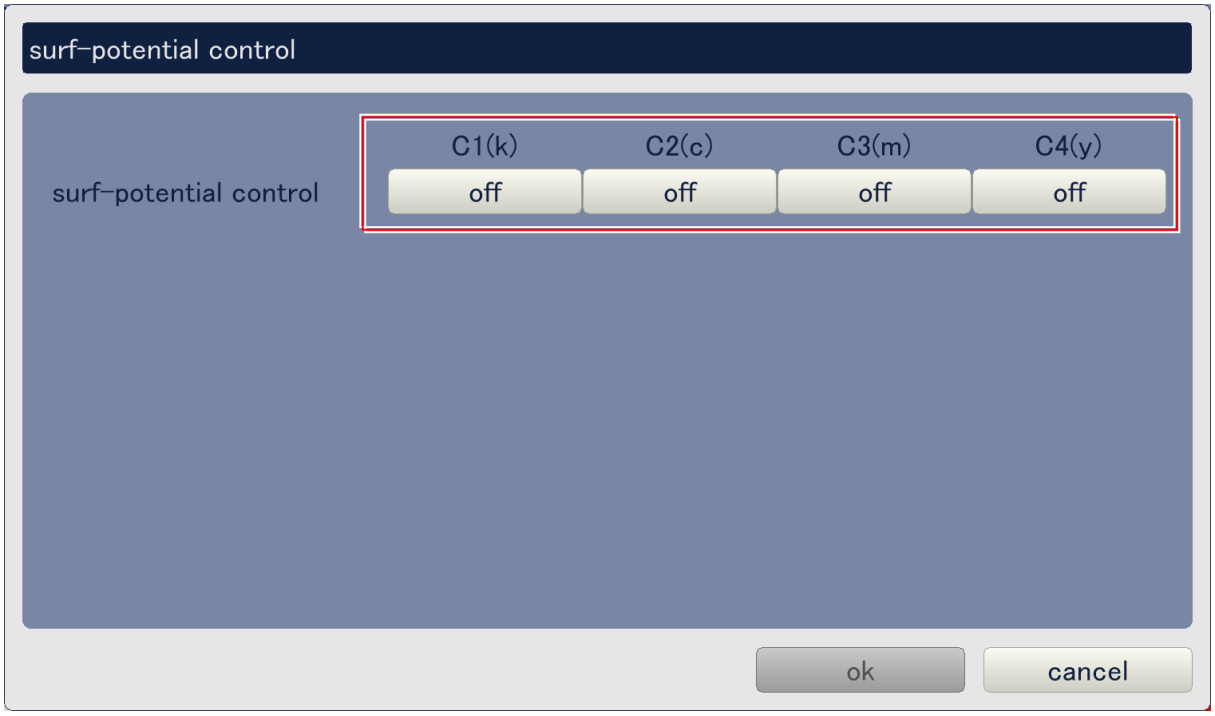
1. Connect the “+” cable of the multi-meter to the connector pin with white cable of the CN501 on the HV Power Supply PCB. Connect the “-” one to the ground. Select the DC volt range on the multi-meter. This is for checking the analog voltage supplied to the HV Power Supply.



2. Connect the service PC to the KIP Color 80, which is installed with the KIP Diagnostics. Run the KIP Diagnostics, and access the following page by;
   - Press the [user mode] button on the main screen of KIP Diagnostics.
   - Press the [surf-potential control] button in the first menu page of the user mode.



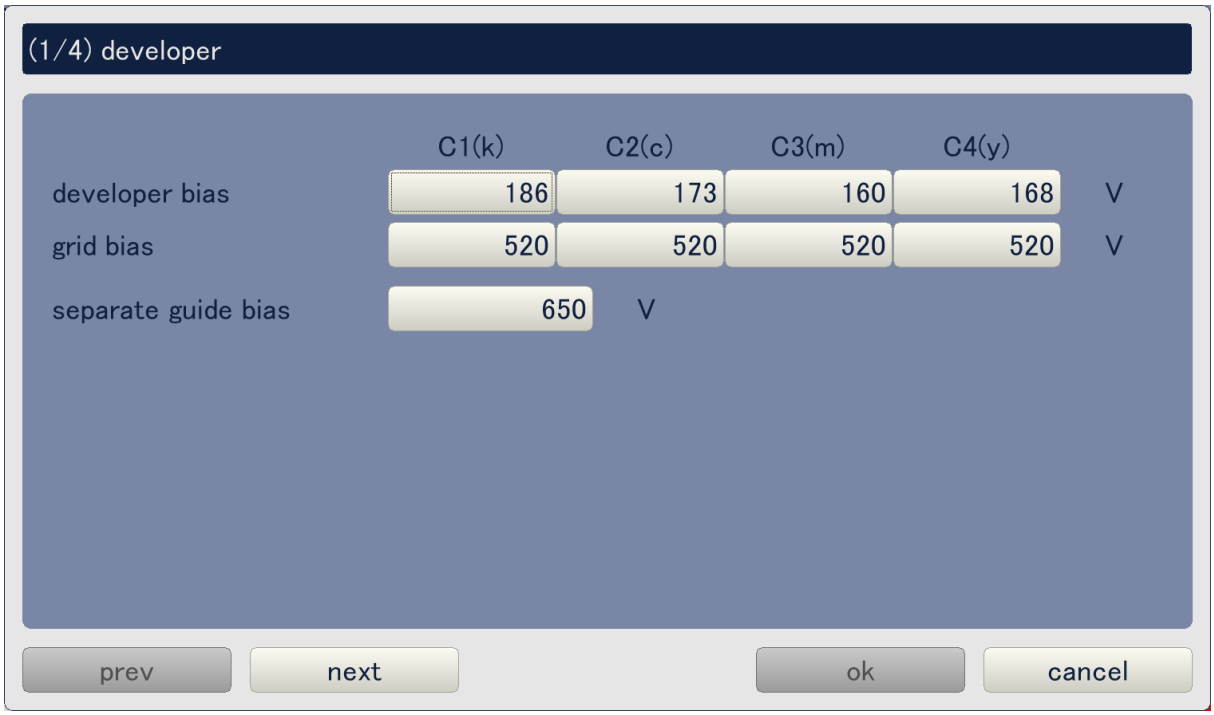
3. Set the Auto SP Control to “off” for all colors.



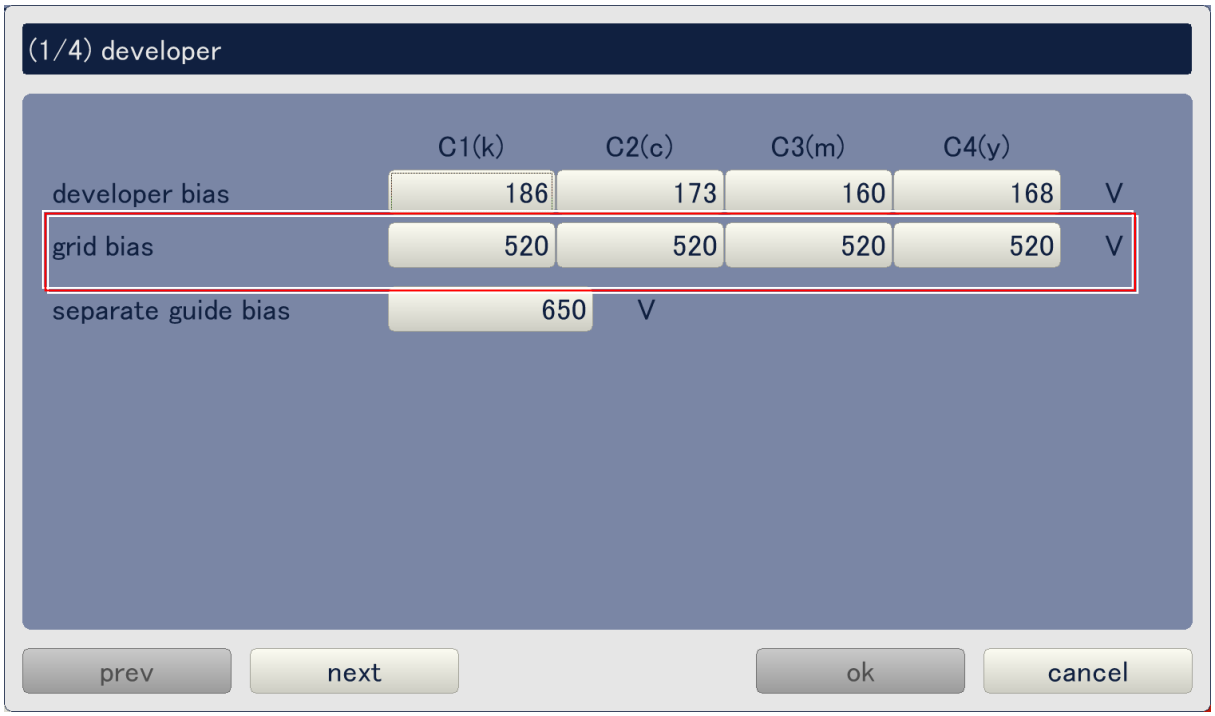
⚠ NOTE

The Auto SP Control must be cancelled before checking the output from the High Voltage Power Supply. Otherwise the output may be changed by the Auto SP Control.

4. Access the following page by;
    - Press the [service mode] button on the main screen of KIP Diagnostics.
    - Input the service password.
    - Press the [adjustment] button in the menu page of the service mode.
    - Press the [developer] button in the menu page of the Adjustment Mode.



5. Set the Grid Bias to “520V” for all colors. (If not set to “520”)

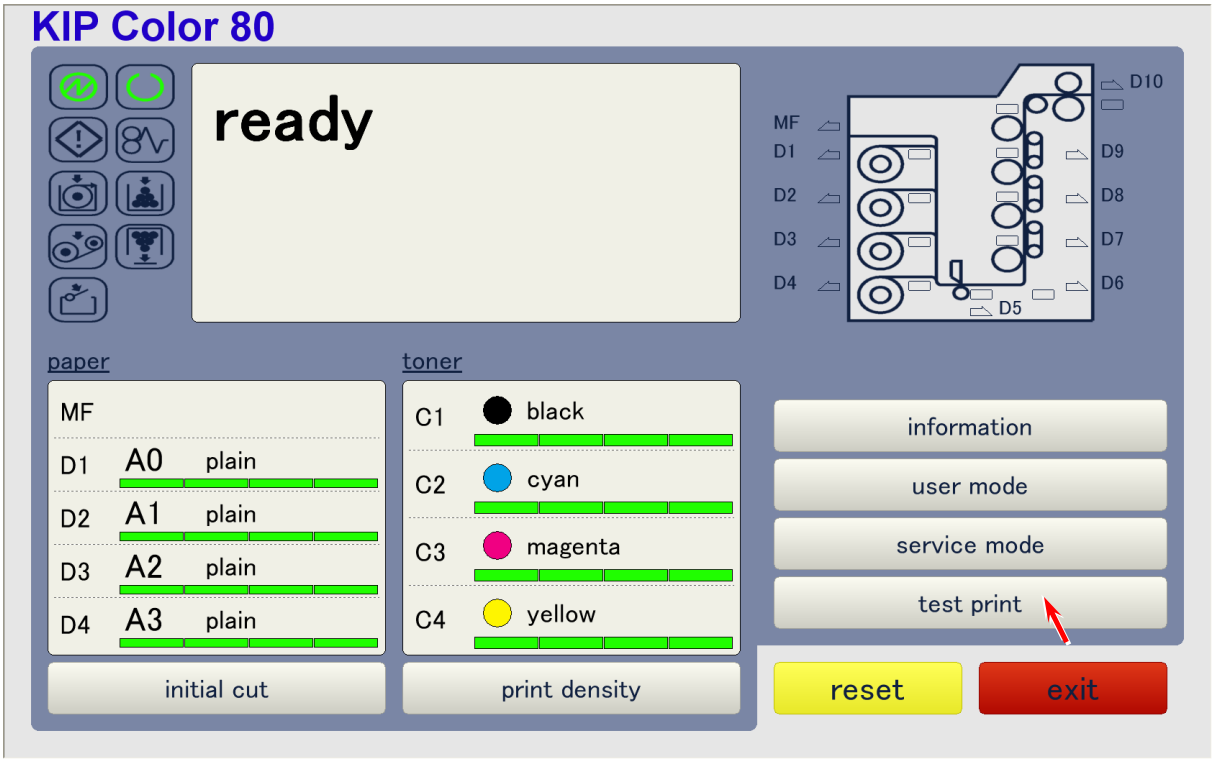


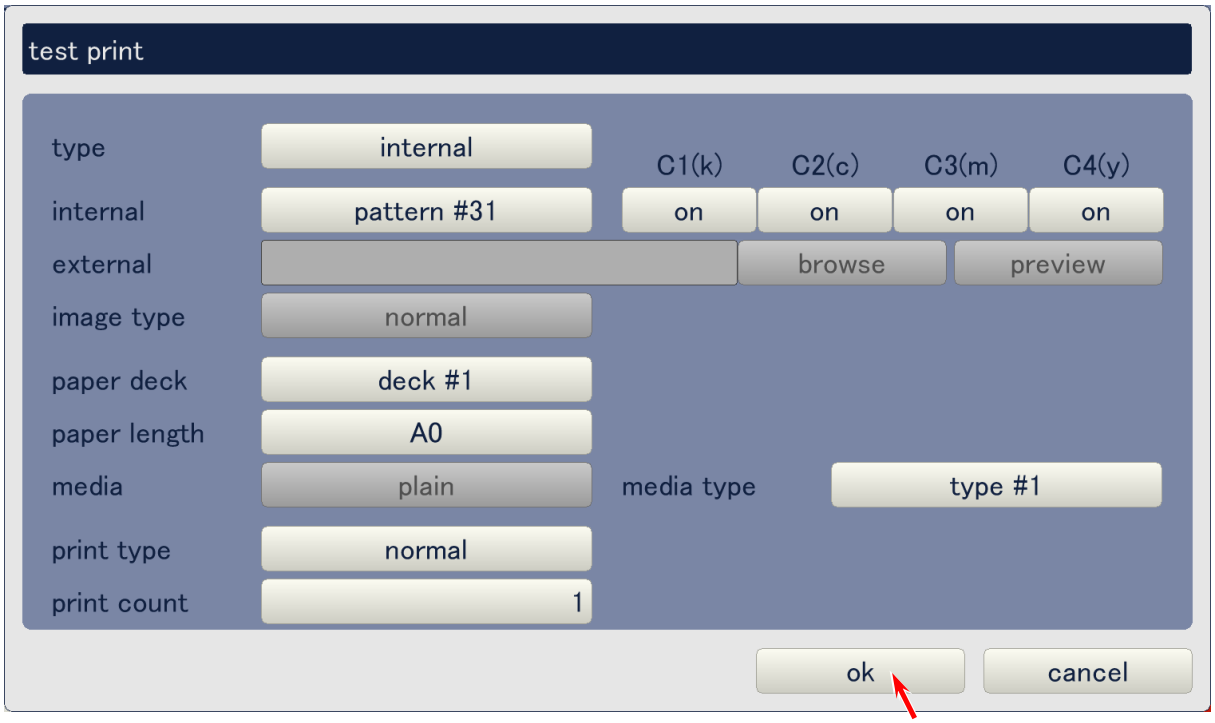
NOTE

(1) Please have a backup (ini file) of current settings before changing just in case.

(2) If you do not wish to disturb the current setting values, it is possible to check the analog voltage and output to the Grid Plate with the current Grid Bias settings by using a formula. See NOTE on page 4-94 and 4-96.

6. Press [test print] button on the main screen to indicate the Test Print Page. Change the test print settings if necessary, and press [ok] to take a test printing. (Any pattern is OK)





7. Measure the analog voltage during test printing. It must be **12.8 +/-0.5V** when the Grid Bias is set to “520”.

⚠ NOTE

(1) The analog input to the HV Power Supply may be in abnormal situation if it is not **12.8 +/-0.5V**. Try to replace the Main PCB and I/O A PCB in this case.

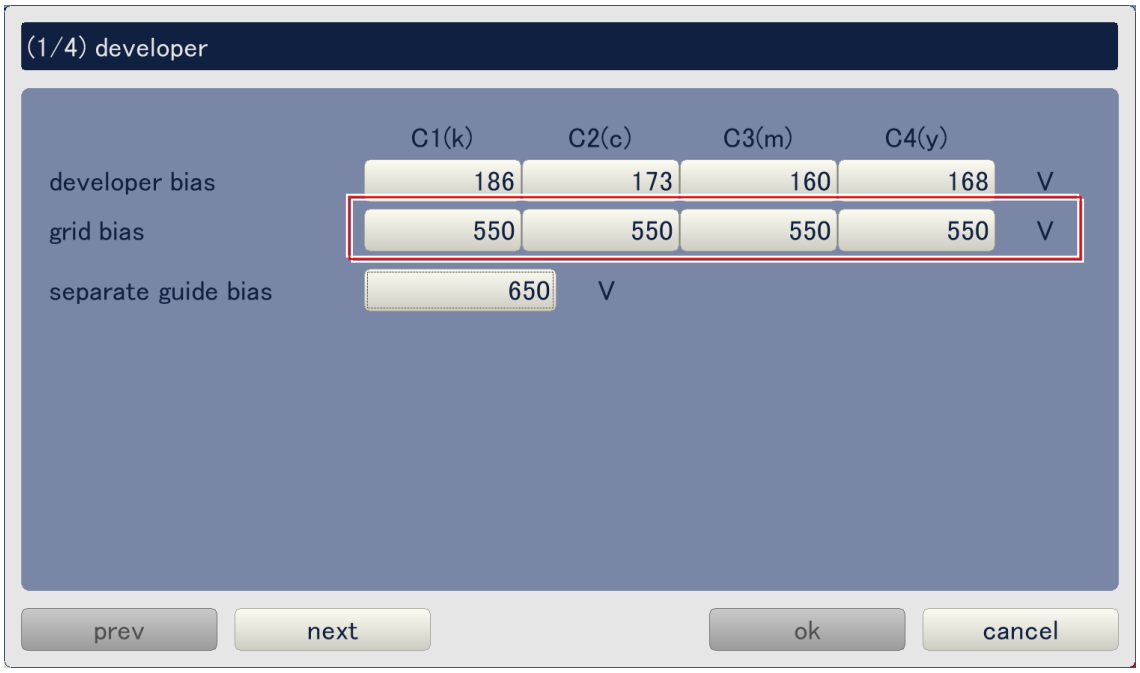
(2) If you are checking with the current setting values (not “520”) of Grid Bias, calculate the analog voltage from the following formula.

(1800 - Grid Bias) / 100 = analog voltage (with +/-0.5V of tolerance)

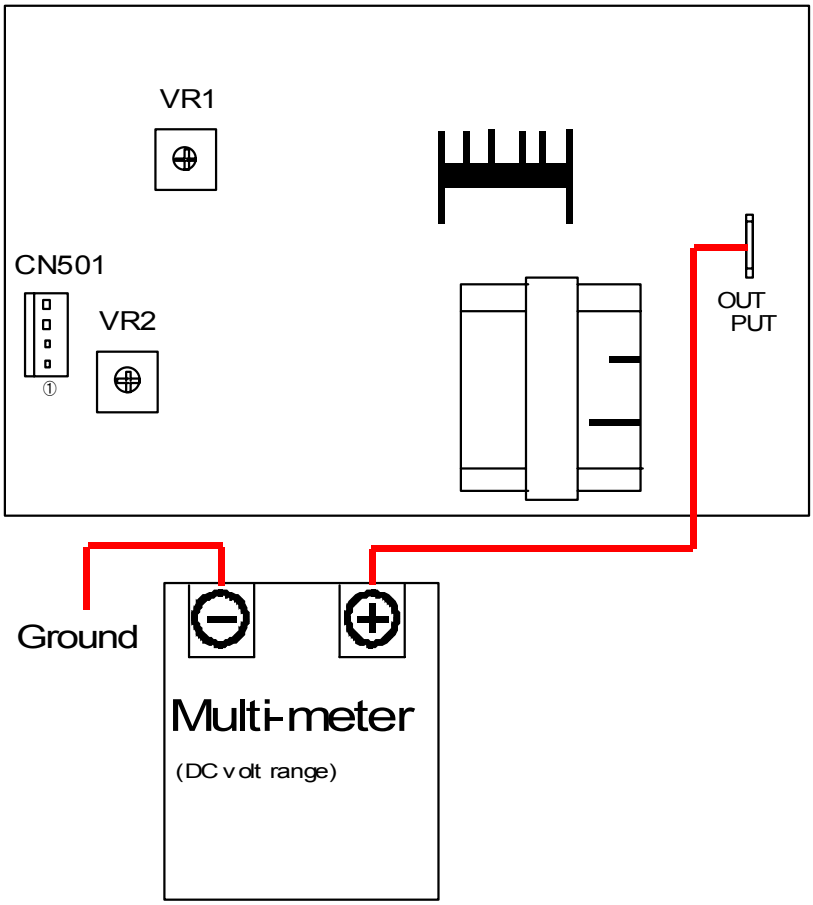
[Example]
- You will check the analog voltage for “black” Grid Bias

(1800 - 550) / 100 = 12.5

Required analog voltage is 12.5 +/-0.5V in this case.



8. Connect the “+” cable of the multi-meter to “OUTPUT” pin on the HV Power Supply PCB. Connect the “-” one to the ground. Select the DC volt range on the multi-meter. This is for checking the output voltage to the Grid Plate.



9. Take a test printing again and measure the output voltage supplied to the Grid Plate. It must be **-520 to +/-80V** when the Grid Bias is set to “520V”.

⚠ NOTE

(1) The output voltage to the Grid Plate may be in abnormal situation if it is not **-520 +/-80V**. Try to replace the HV Power Supply PCB in this case.

(2) If you are checking with the current setting values (not “520”) of Grid Bias, calculate the output voltage from the following kinds of 2 formula.

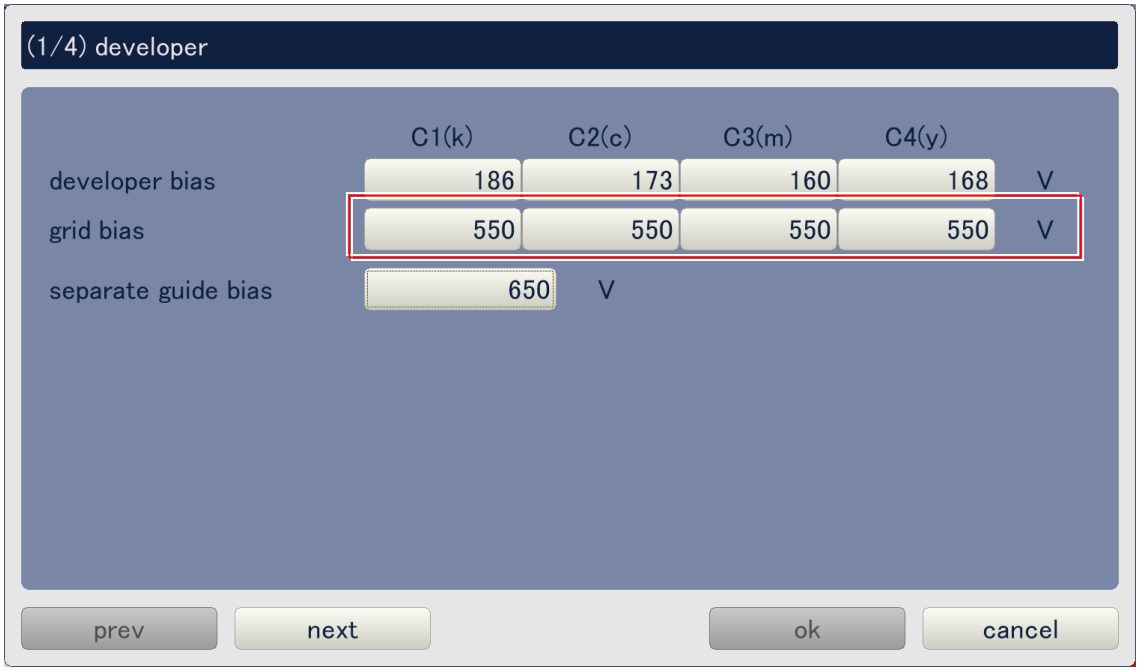
Formula 1 : (1800 - Grid Bias) / 100 = analog voltage
Formula 2 : analog voltage x 100-1800 = output voltage (with +/-80V of tolerance)

In this case please consider the media type and current humidity.

[Example]
- You will check the output voltage for “black” Grid Plate

Formula 1 : (1800 - 550) / 100 = 12.5
Formula 2 : 12.5 x 100 -1800 = -550

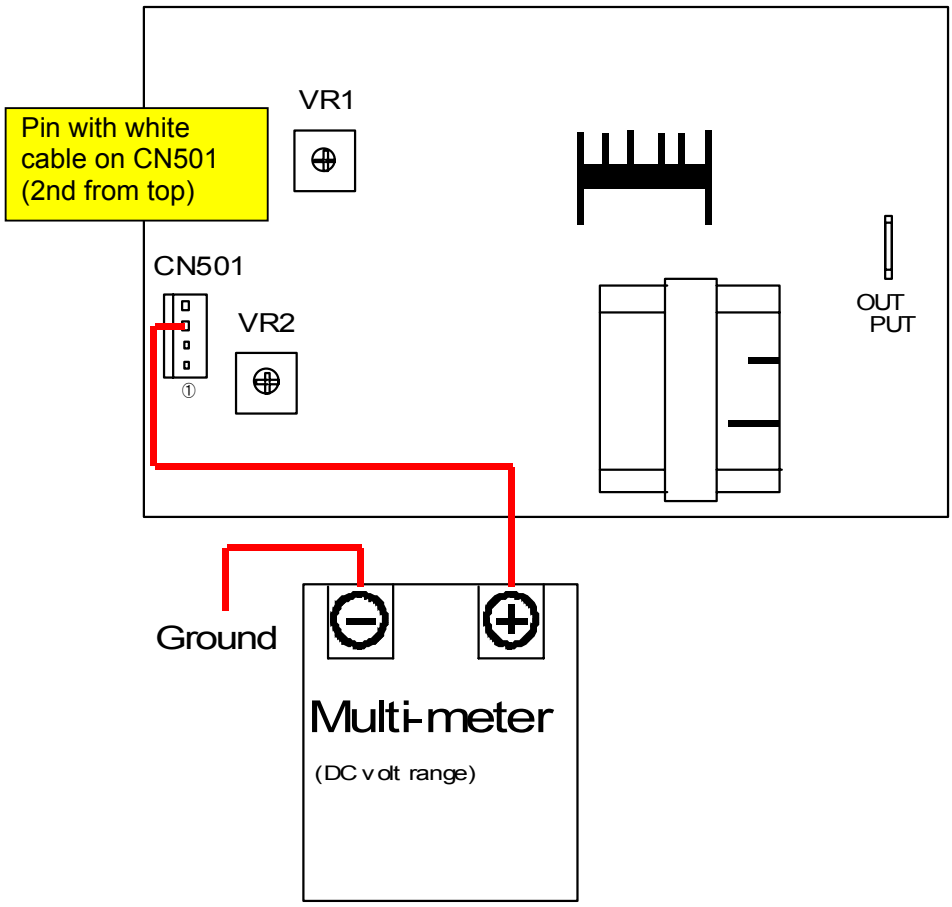
Required output voltage is about -550 +/-80V in this case.



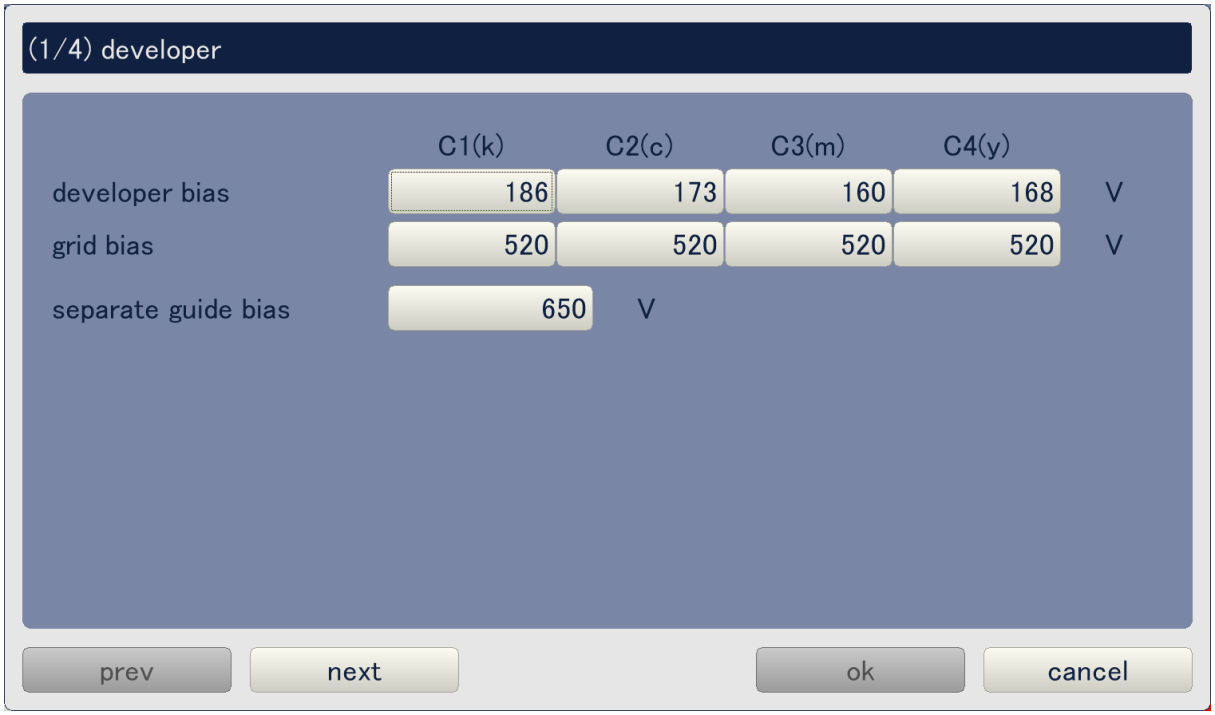
4. 3.11 Separation Guide (Analog voltage & output voltage to Separation Guide)

The analog voltage supplied to the HV Power Supply PCB adjusts the output voltage to the Separation Guide. Check these voltages in the following way.

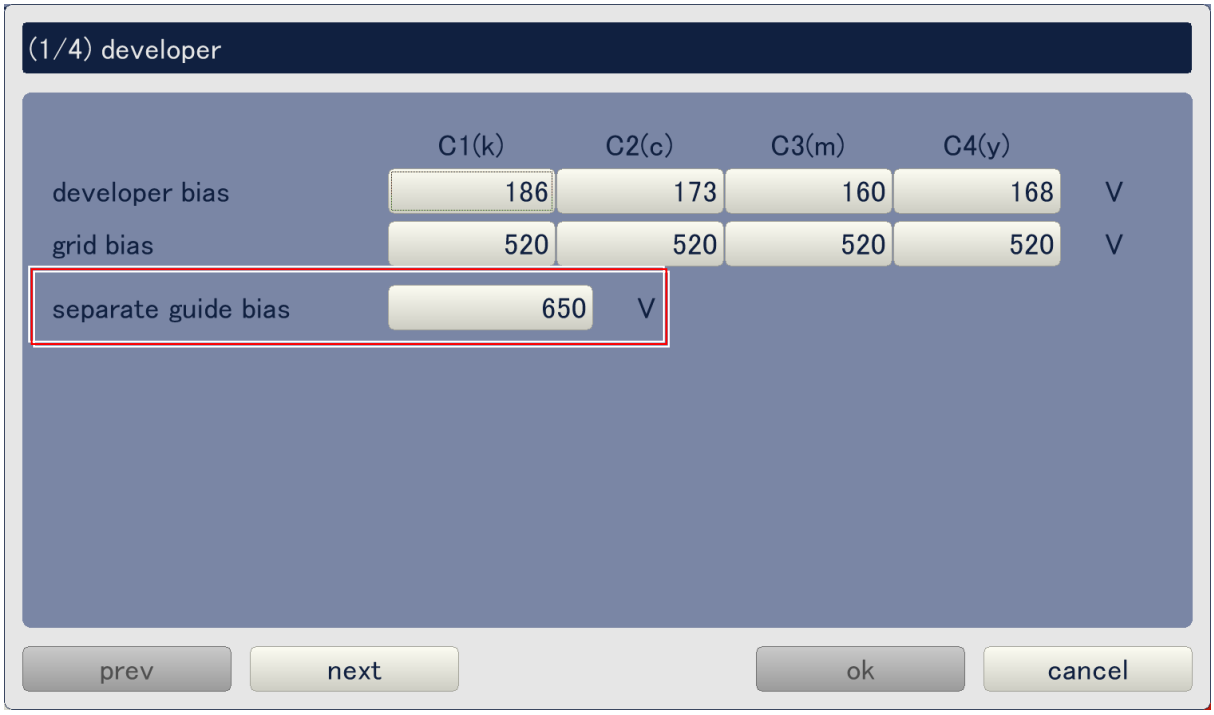
1. Connect the “+” cable of the multi-meter to the connector pin with white cable of the CN501 on the HV Power Supply PCB. Connect the “-” one to the ground. Select the DC volt range on the multi-meter. This is for checking the analog voltage to the HV Power Supply.



2. Connect the service PC to the KIP Color 80, which is installed with the KIP Diagnostics. Run the KIP Diagnostics, and access the following page by;
   - Press the [service mode] button on the main screen of KIP Diagnostics.
   - Input the service password.
   - Press the [adjustment] button in the menu page of the service mode.
   - Press the [developer] button in the menu page of the Adjustment Mode.



3. Set the Separation Guide Bias to “650V” for all colors. (If not set to “650”)

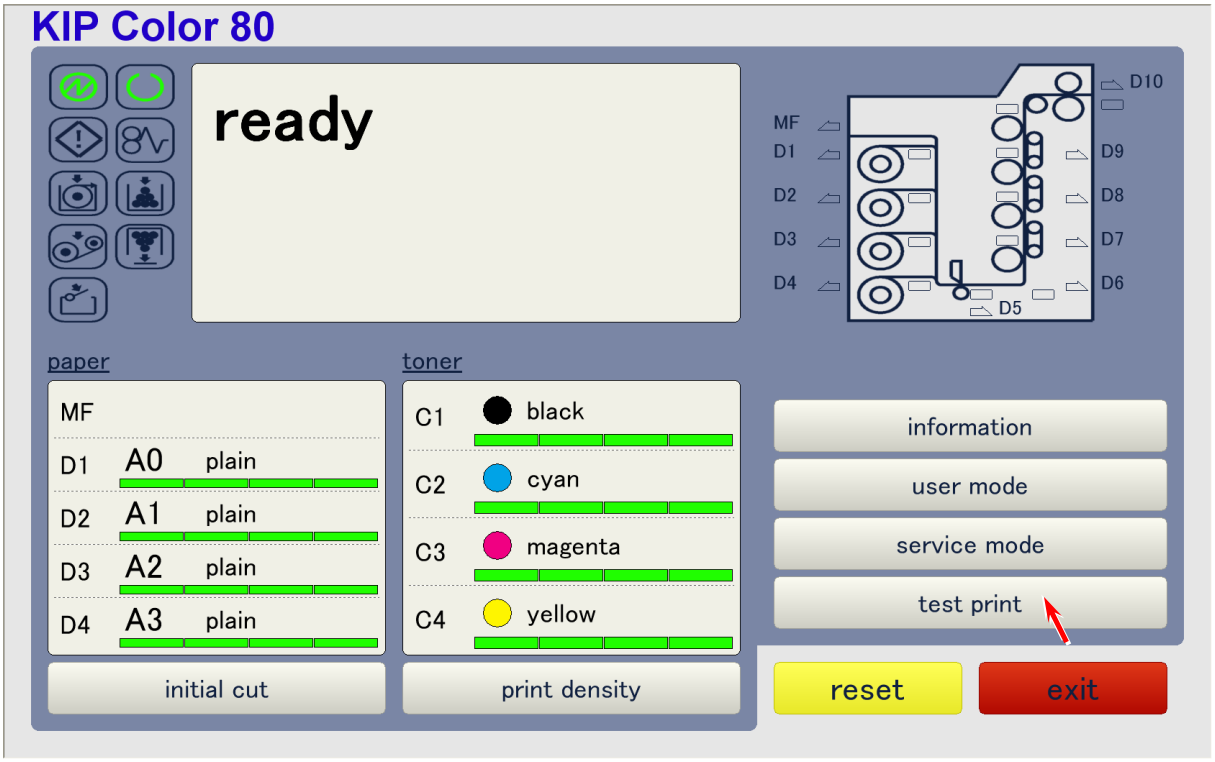


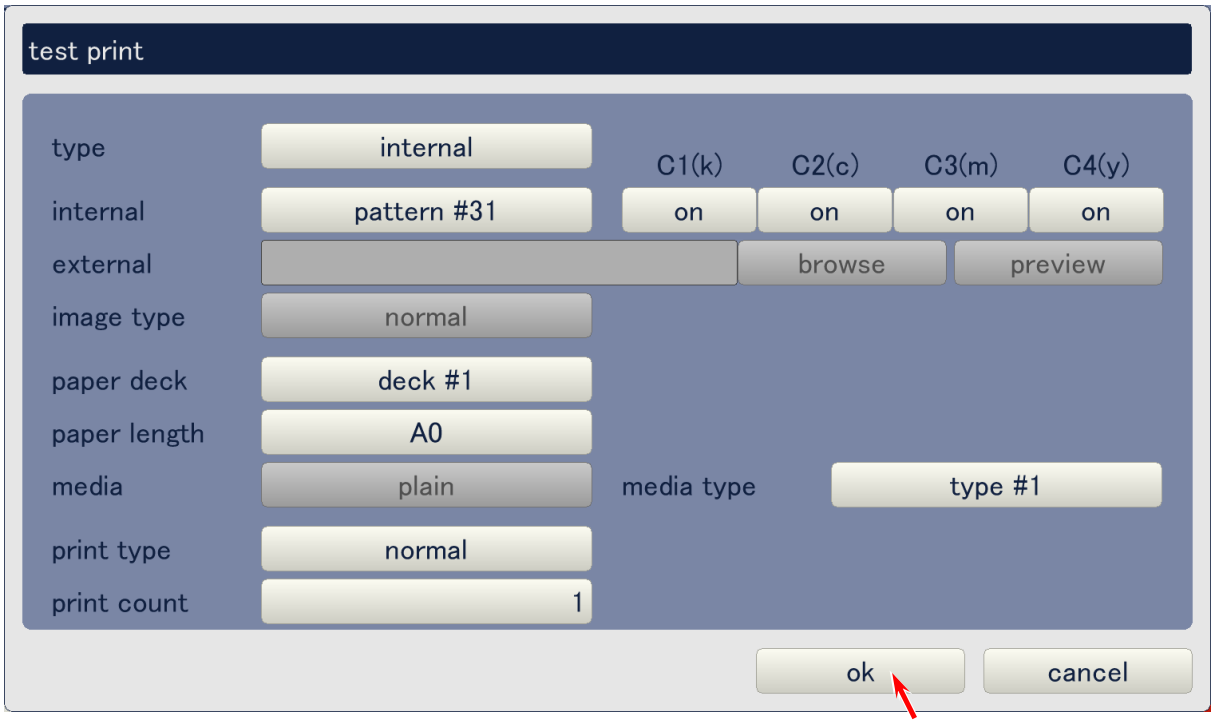
NOTE

(1) Please have a backup (ini file) of current settings before changing just in case.

(2) If you do not wish to disturb the current setting value, it is possible to check the analog voltage and output to the Separation Guide with the current Separation Guide Bias settings by using a formula. See NOTE on page 4-101 and 4-103.

4. Press [test print] button on the main screen to indicate the Test Print Page. Change the test print settings if necessary, and press [ok] to take a test printing. (Any pattern is OK)





5. Measure the analog voltage during test printing. It must be **11.5 +/-0.5V** when the Separation Guide Bias is set to “650”.

⚠ NOTE

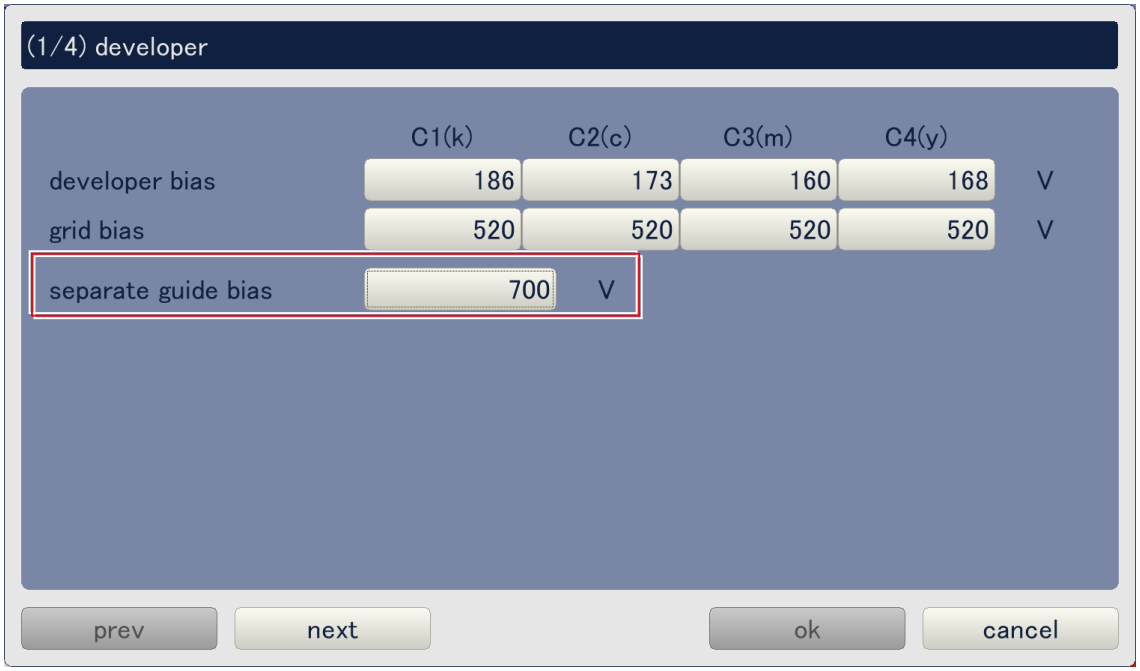
(1) The analog input to the HV Power Supply may be in abnormal situation if it is not **11.5 +/-0.5V**. Try to replace the Main PCB and I/O A PCB in this case.

(2) If you are checking with the current setting values (not “650”) of Separation Guide Bias, calculate the analog voltage from the following formula.

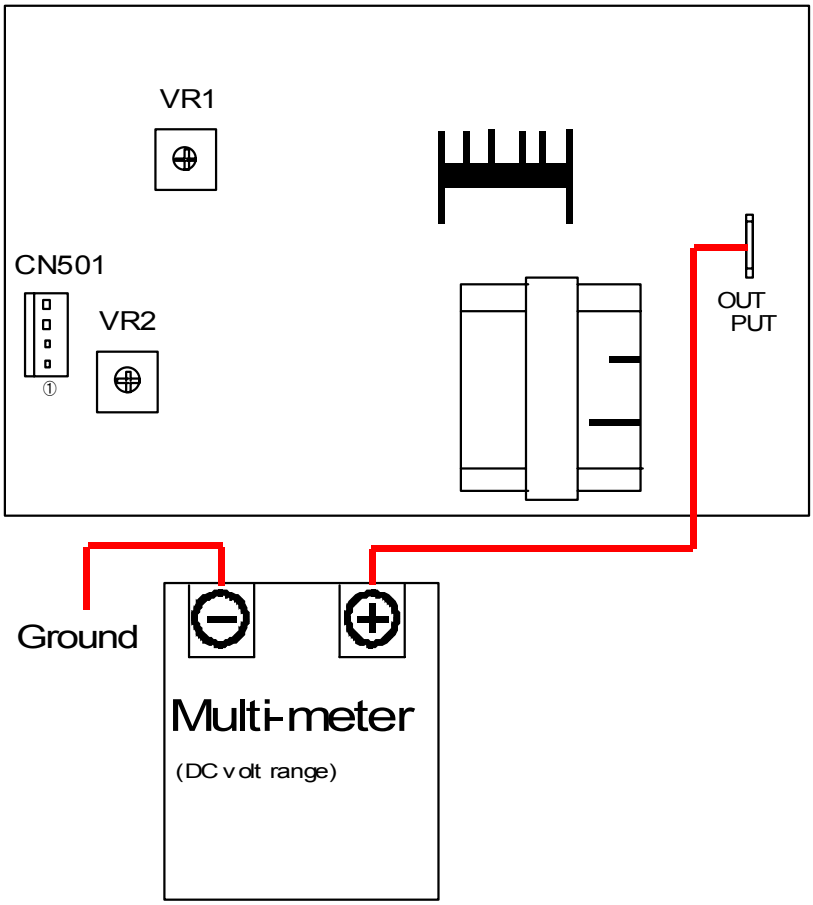
(1800 – Separation Guide Bias) / 100 = analog voltage (with +/-0.5V of tolerance)

[Example]
(1800 - 700) / 100 = 11

Required analog voltage is 11.0 +/-0.5V in this case.



6. Connect the “+” cable of the multi-meter to “OUTPUT” pin on the HV Power Supply PCB. Connect the “-” one to the ground. Select the DC volt range on the multi-meter. This is for checking the output voltage to the Separation Guide.



7. Take a test printing again and measure the output voltage supplied to the Separation Guide. It must be **-650 to +/-80V** when the Separation Guide Bias is set to “650V”.

⚠ NOTE

(1) The output voltage to the Separation Guide may be in abnormal situation if it is not **-650 +/-80V**. Try to replace the HV Power Supply PCB in this case.

(2) If you are checking with the current setting values (not “520”) of Grid Bias, calculate the output voltage from the following kinds of 2 formula.

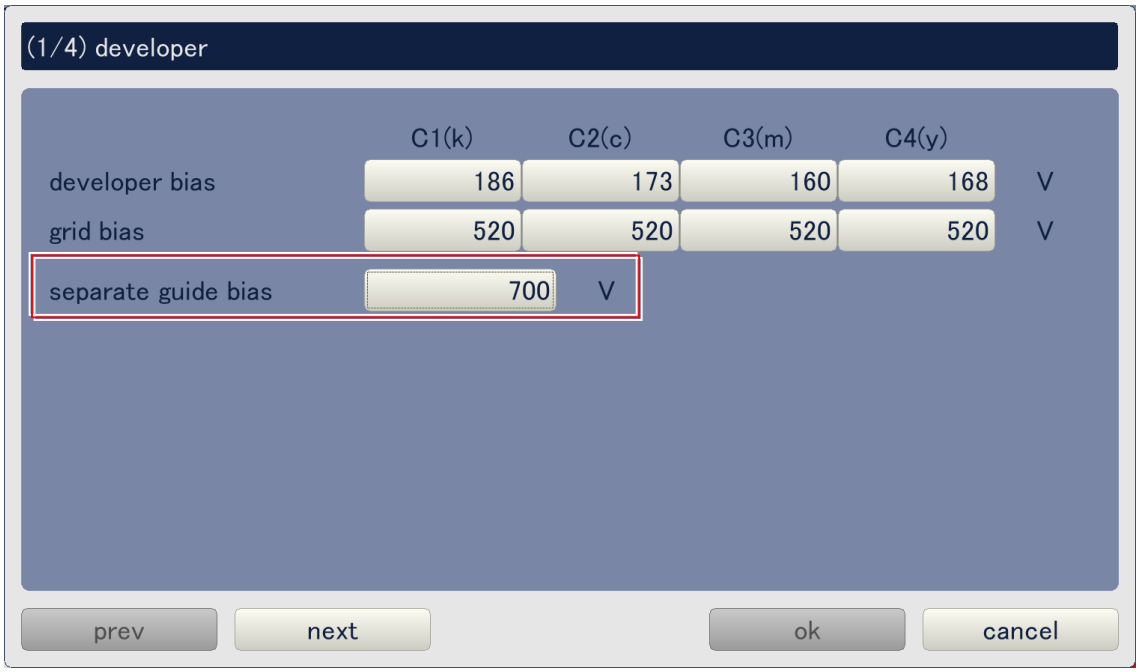
Formula 1 : (1800 - Separation Guide Bias) / 100 = analog voltage
Formula 2 : analog voltage x 100-1800 = output voltage (with +/-80V of tolerance)

In this case please consider the media type and current humidity.

[Example]
- Separation Guide Bias is set to “700”

Formula 1 : (1800 - 700) / 100 = 11
Formula 2 : 11 x 100 -1800 = -700

Required output voltage is about -700 +/-80V in this case.



4. 4 Correspondence between Fuse and Electrical Component

Fuse No.	LED No.	Output Connector	Voltage	Rated Current (A)	Corresponded electrical components
F901	LE901	J901-1	+3.3V	6.3	LED Head 1
F902	LE902	J901-3	+3.3V	6.3	LED Head 2
F903	LE903	J901-5	+3.3V	6.3	LED Head 3
F904	LE904	J901-7	+3.3V	6.3	LED Head 4
F905	LE905	J902-1	+24V	6.3	High Voltage Unit 1
					High Voltage Unit 2
F906	LE906	J902-3	+24V	6.3	High Voltage Unit 3
					High Voltage Unit 4
F907	LE907	J902-5	+24V	6.3	PW10258 A (Developer press/release)
					PW10258 B (Developer press/release)
					PW10258 C (Developer press/release)
					PW10258 D (Developer press/release)
F908	LE908	J902-7	+24V	6.3	Paper Feed Motor
					SSR 1
					SSR 2
F909	LE909	J903-1	+24V	6.3	Driver PCB (PW10755A)
F910	LE910	J903-3	+24V	6.3	Driver PCB (PW10755B)
F911	LE911	J903-5	+24V	6.3	H. V. Power Supply Assy (HVP5)
					H. V. Power Supply Assy (HVP6)
					H. V. Power Supply Assy (HVP7)
					H. V. Power Supply Assy (HVP8)
					H. V. Power Supply Assy (HVP10)
F912	LE912	J903-7	+24V	6.3	PW7756 PCB Assy (Cutter Motor Driver)
F913	LE913	J904-1	+24V	6.3	PW10256 PCB Assy A
					PW10256 PCB Assy B
					PW10256 PCB Assy C
					PW10256 PCB Assy D
F914	LE914	J904-3	+24V	6.3	Driver PCB Assy (PW10755C)
F915	LE915	J904-5	+24V	6.3	Geared Motor 1 (M11 : Developer Motor 1)
					Geared Motor 2 (M12 : Developer Motor 2)
F916	LE916	J904-7	+24V	6.3	Geared Motor 3 (M13 : Developer Motor 3)
					Geared Motor 4 (M14 : Developer Motor 4)
F917	LE917	J905-1	+24V	6.3	Stepping Motor (M5 : Fuser Motor)
F918	LE918	J905-3	+24V	6.3	Stepping Motor (M4 : Attraction Roller Motor)
F919	LE919	J905-5	+24V	6.3	Stepping Motor (M7 : Drum Motor 1)
					Stepping Motor (M8 : Drum Motor 2)
F920	LE920	J905-7	+24V	6.3	Stepping Motor (M9 : Drum Motor 3)
					Stepping Motor (M10 : Drum Motor 4)
F921	LE921	J906-1	+24V	6.3	Stepping Motor (M28 : Transportation Unit Motor 1)
					Stepping Motor (M29 : Transportation Unit Motor 2)
F922	LE922	J906-3	+24V	6.3	Stepping Motor (M30 : Transportation Unit Motor 3)
					Stepping Motor (M31 : Registration Roller Motor)

Fuse No.	LED No.	Output Connector	Voltage	Rated Current (A)	Corresponded electrical components
F923	LE923	J906-5	+24V	6.3	Surface Potential Sensor (SPS1)
					Surface Potential Sensor (SPS2)
					Surface Potential Sensor (SPS3)
					Surface Potential Sensor (SPS4)
F924	LE924	J906-7	+24V	6.3	Driver PCB Assy (PW10755D)
F925	LE925	J907-1	+24V	6.3	H. V. Power Supply Assy (HVP9)
F926	LE926	J907-3	+24V	6.3	DCP3 Cooling Fan
F927	LE927	J907-5	+24V	6.3	
F928	LE928	J907-7	+24V	6.3	Fuser Fan (FM1)
F929	LE929	J908-1	+24V	6.3	Driver PCB (PW10257F)
F930	LE930	J908-3	+24V	6.3	Driver PCB (PW10257G)
F931	LE931	J908-5	+24V	6.3	Driver PCB (PW10257H)
F932	LE932	J908-7	+24V	6.3	PW10293 PCB (Sensor junction)
F933	LE933	J909-1	+3.3V	6.3	I/O A PCB (PW10721)
F934	LE934	J909-3	+3.3V	6.3	I/O B PCB (PW10722)
F935	LE935	J909-5	+3.3V	6.3	Main Control PCB (PW10720)
F936	LE936	J909-7	+3.3V	6.3	

Chapter 5

Mechanical

page

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5. 1 Process Unit

5. 1. 1 Drawing Process Unit

NOTE

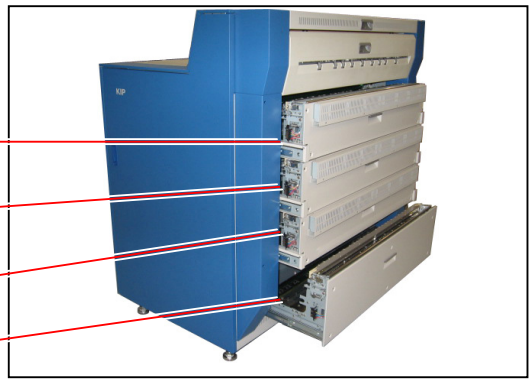
Drum may damage if a Process Unit is opened / closed without drawing out the corresponding Inner Transport Assy or Registration Unit.

Inner Transport Assy 1 for Process Unit 1 (K)

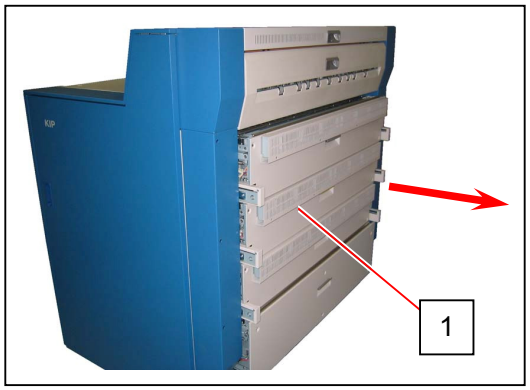
Inner Transport Assy 2 for Process Unit 2 (C)

Inner Transport Assy 3 for Process Unit 3 (M)

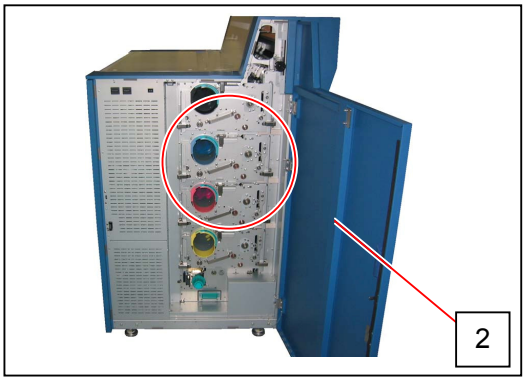
Registration Unit for Process Unit 4 (Y)

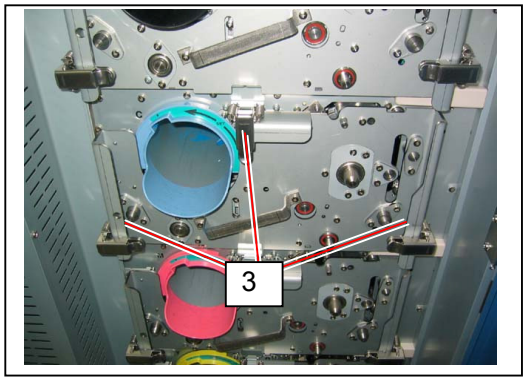


1. Draw Inner Transport Assy (1).
   (Process Unit 2 (C) is shown for example)

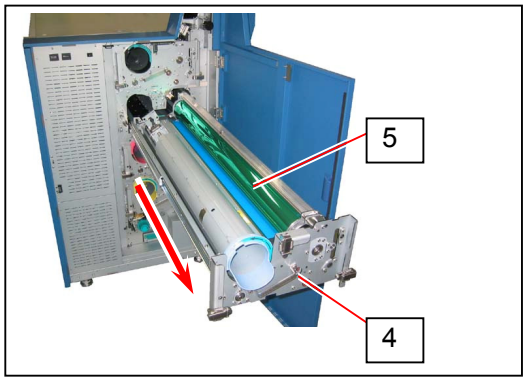


2. Open Cover 120 (2) and release 3 Stopper Levers (3).



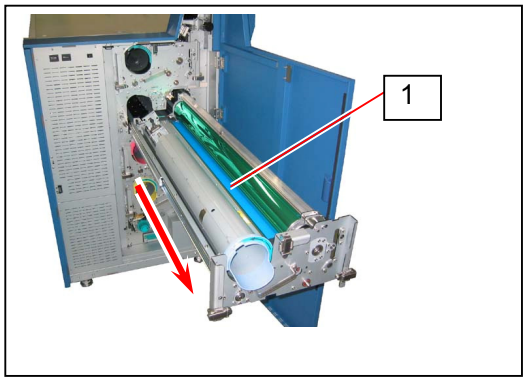


3. Holding the handle (4), gently draw Process Unit (5).

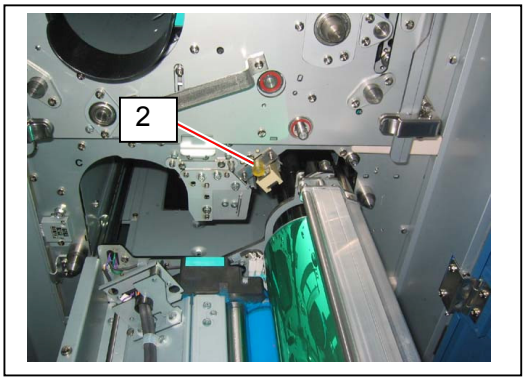


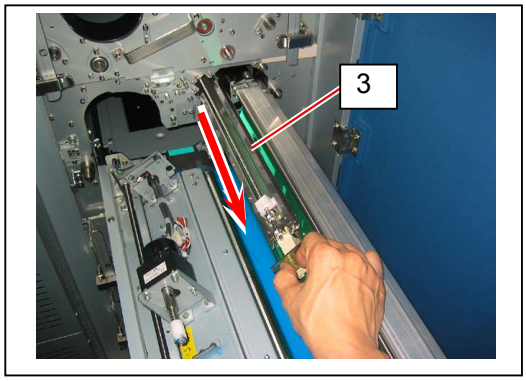
5. 1. 2 Removing 1st Charging Unit

1. Draw Process Unit (1). Refer to [5.1.1 Drawing Process Unit] on page 5-2.



2. Holding Push Rubber (2), gently draw 1st Charging Unit (3).



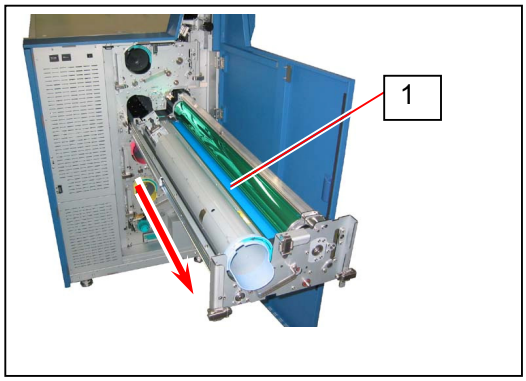


NOTE

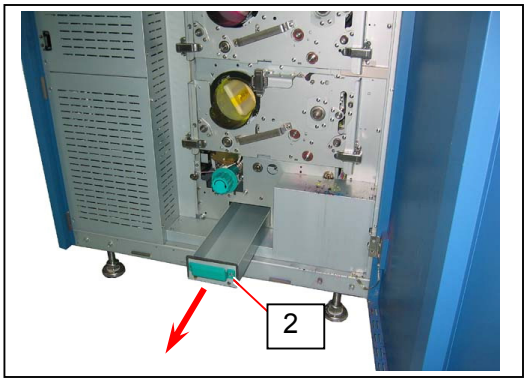
Carefully remove 1st Charging Unit from the machine.
Do not fall or hit 1st Charging Unit to Drum as they are located close each other.

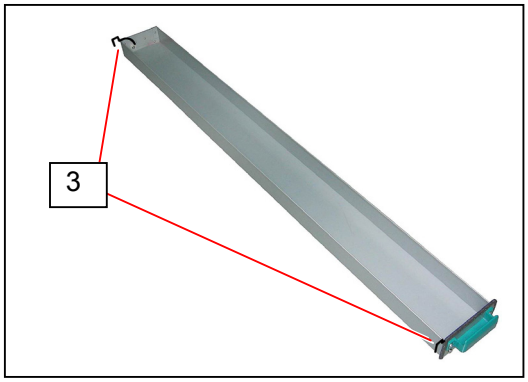
5. 1. 3 Removing Drum and Cleaner Unit

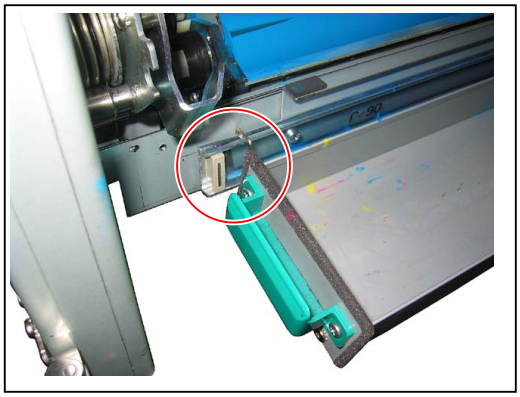
1. Draw Process Unit (1). Refer to [5.1.1 Drawing Process Unit] on page 5-2.

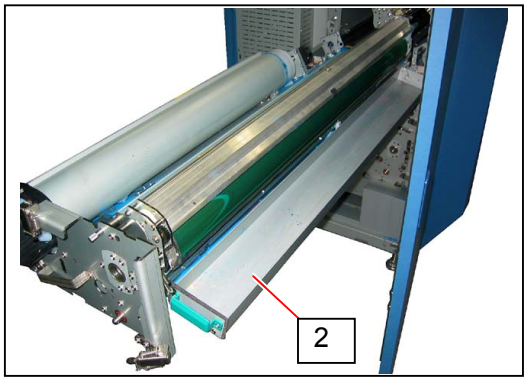


2. Remove Dust Tray (2). Raise the wire hooks (3).
   Hook Dust Dray (2) on the rail.

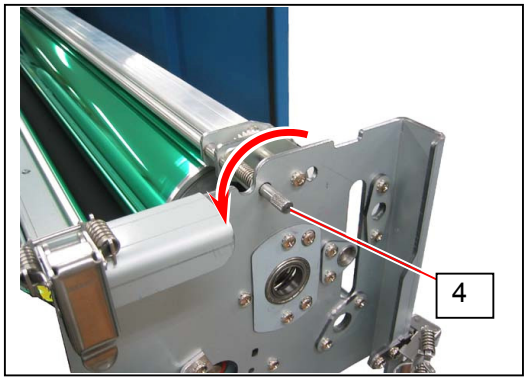




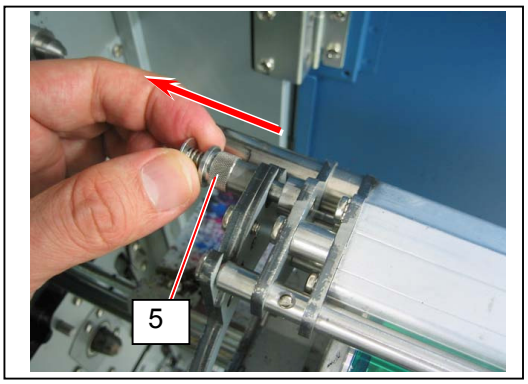


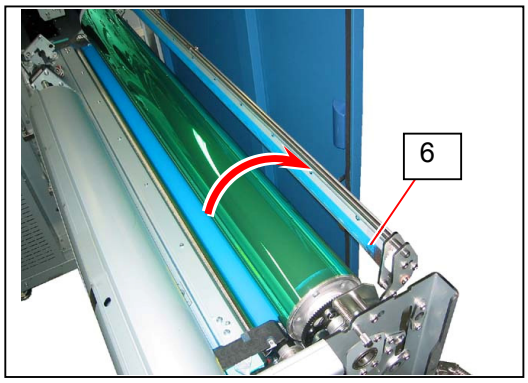


3. Loosen the sum screw (4) on the right to the direction of arrow to unlock Cleaner Unit.



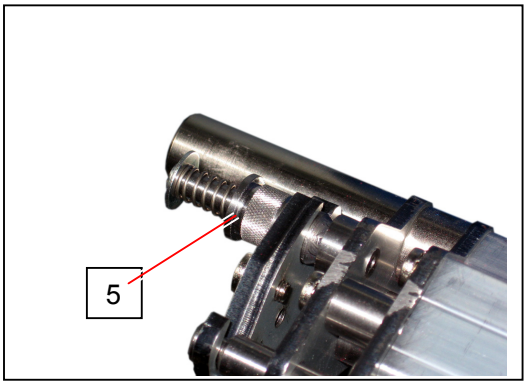
4. Pulling Collar (5) to the direction of arrow, open Cleaner Unit (6).



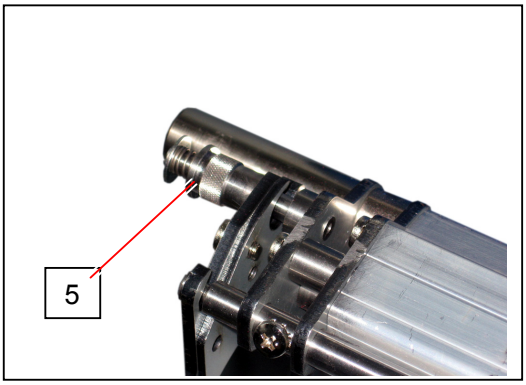


NOTE

When reassembling, insert Collar (5) completely to lock Cleaner Unit

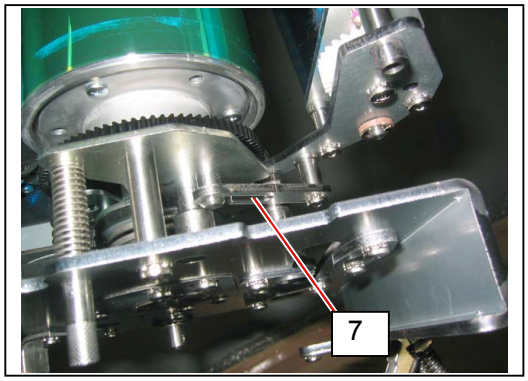


Correct

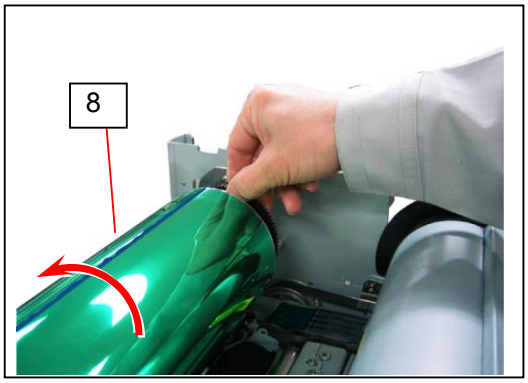


Not correct

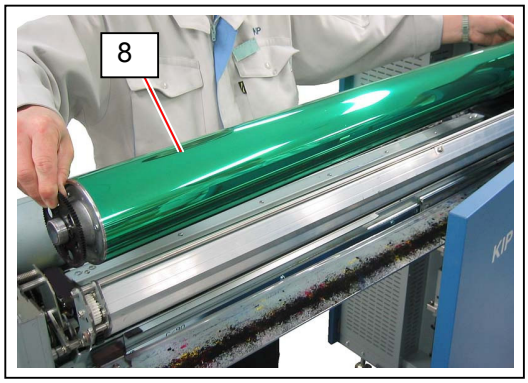
5. Release the hook (7) to completely lift up Cleaner Unit.



6. Rotate Drum (8) to the direction of arrow to scrape off toner from Drum surface.
   Make sure of no excess toner on Drum surface.



7. Holding Drum ends, lift up Drum (8) to remove it.

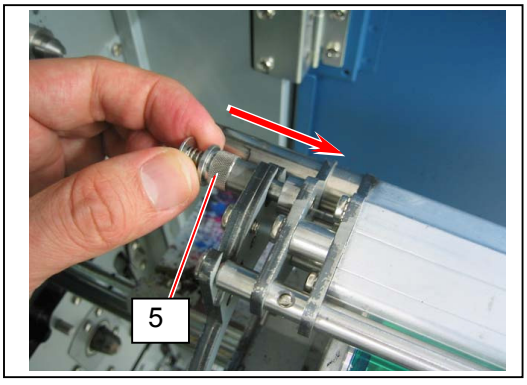


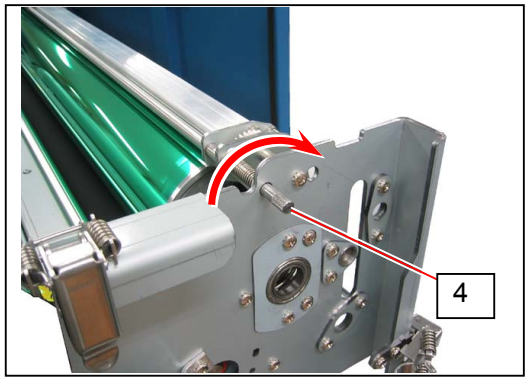
NOTE

(1) Keep Drum in a dark cold space.
Avoid exposing interior lighting in a long period or direct sunlight.

(2) If a removed Drum has toner sticking, the Drum should be performed Drum surface cleaning on reassembling according to the instruction below.

a) Reinstall Drum to Process Unit.
b) Reinstall Cleaner Unit to Process Unit. Lock Cleaner Unit with the sum screw (4) and Collar (5).





(next page)

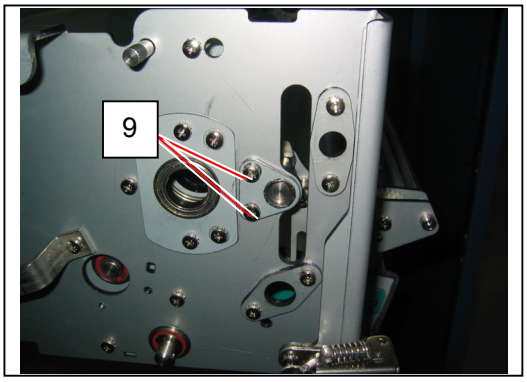
NOTE

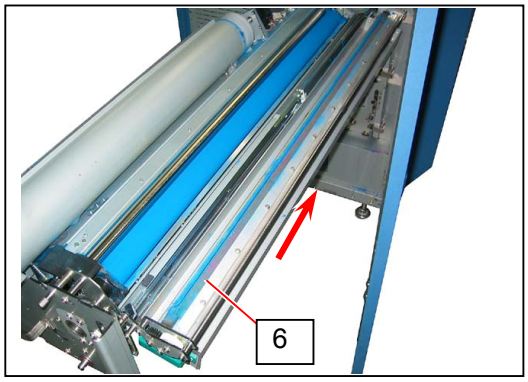
c) Rotate Drum to the direction of arrow to scrape off toner from Drum surface.

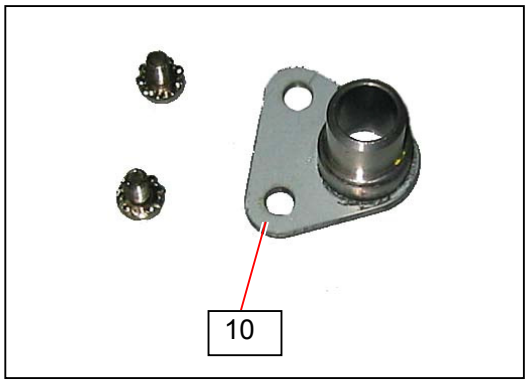
d) Make sure of no excess toner on Drum surface.



8. Remove 2 Tooth Washer Screw (9: M4x6). Slide Cleaner Unit to the direction of arrow (inside). Remove Bracket 154 (10) and Cleaner Unit.

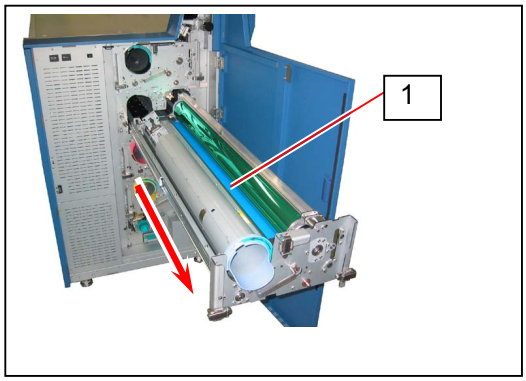




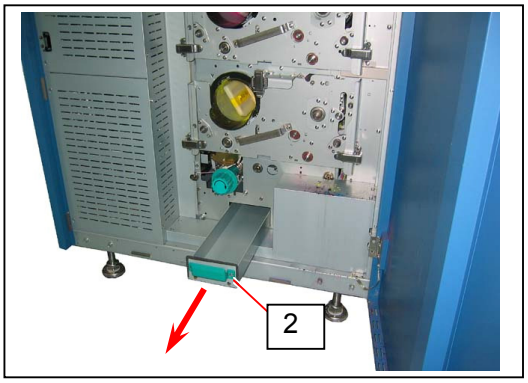


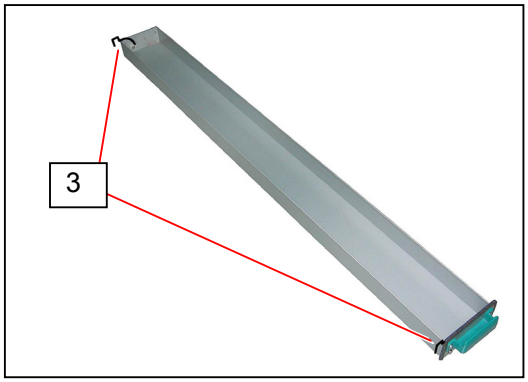
5. 1. 4 Removing Developer Unit

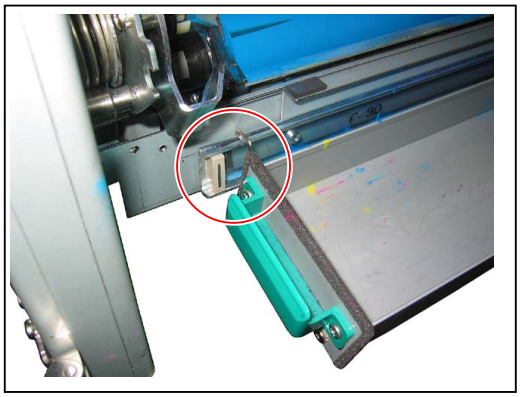
1. Draw Process Unit (1). Refer to [5.1.1 Drawing Process Unit] on page 5-2.

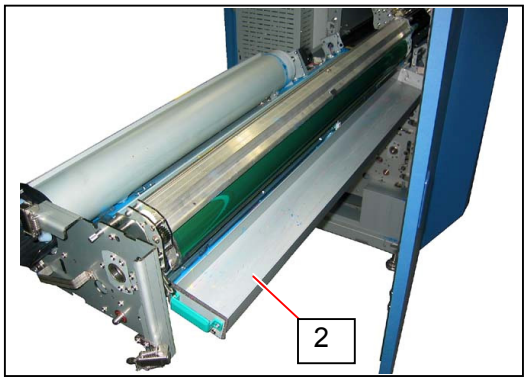


2. Remove Dust Tray (2). Raise the wire hooks (3) and hook Dust Dray (2) on the rail.

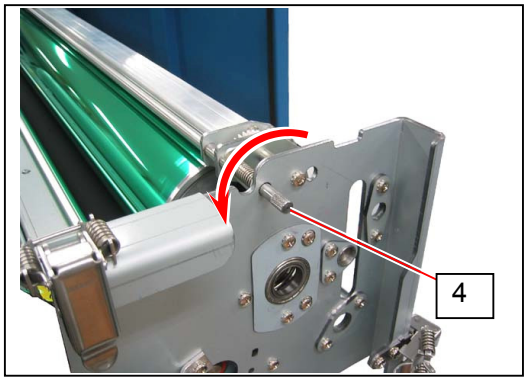




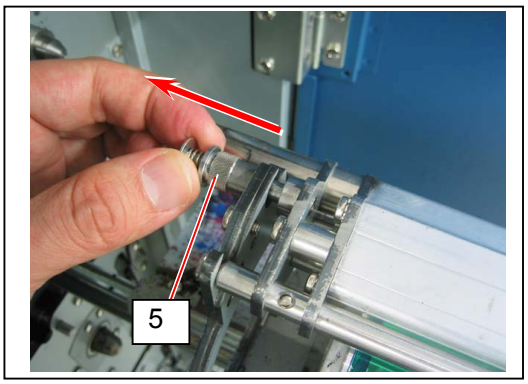


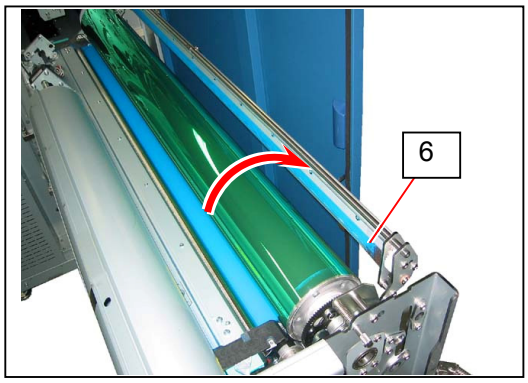


3. Loosen the sum screw (4) on the right to the direction of arrow to unlock Cleaner Unit.



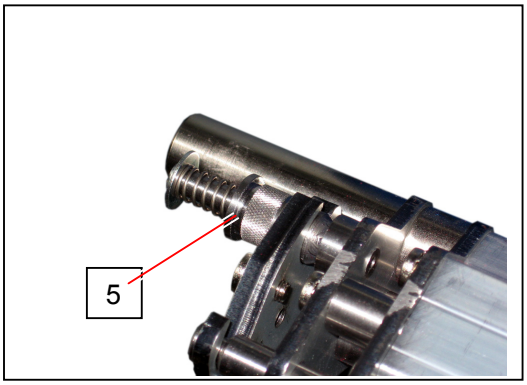
4. Pulling Collar (5) to the direction of arrow, open Cleaner Unit (6).



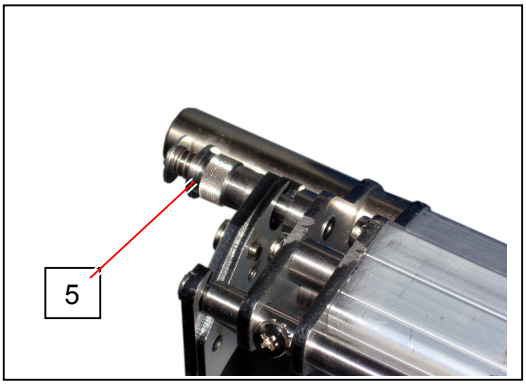


NOTE

When reassembling, insert Collar (5) completely to lock Cleaner Unit.

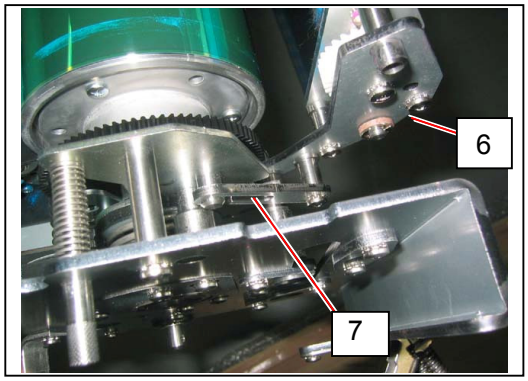


Correct

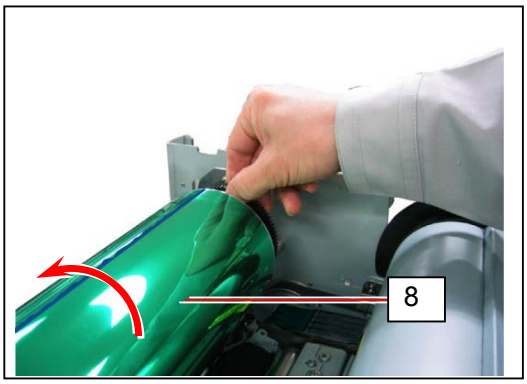


Not correct

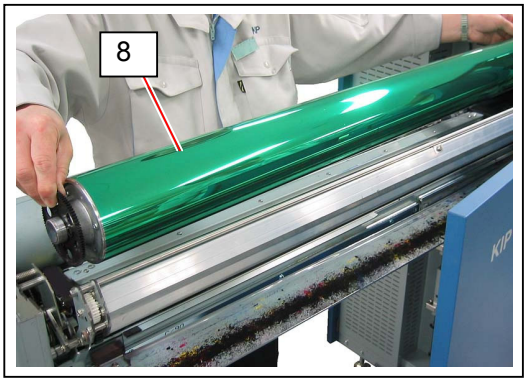
5. Release the hook (7) to completely lift up Cleaner Unit (6).



6. Rotate Drum (8) to the direction of arrow to scrape off toner from Drum surface.
   Make sure of no excess toner on Drum surface.



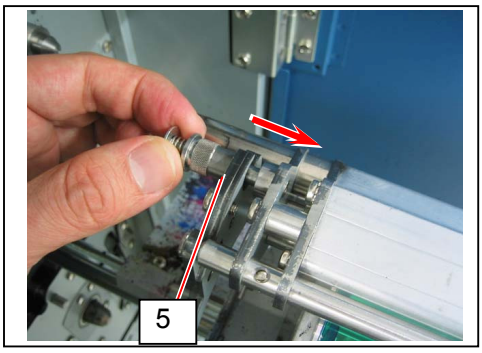
7. Holding Drum ends, lift up Drum (8) to remove it.

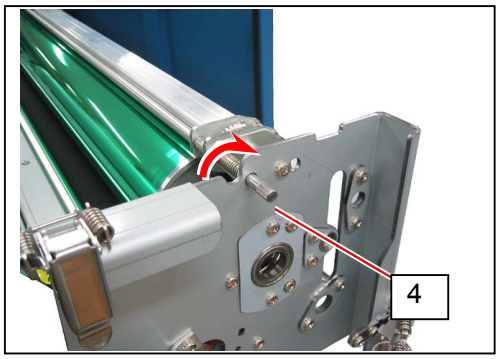


NOTE

(1) Keep Drum in a dark cold space.
(2) If a removed Drum has toner sticking, the Drum should be performed Drum surface cleaning on reassembling according to the instruction below.

a) Reinstall Drum to Process Unit.
b) Reinstall Cleaner Unit to Process Unit. Lock Cleaner Unit with the sum screw (4) and Collar (5)



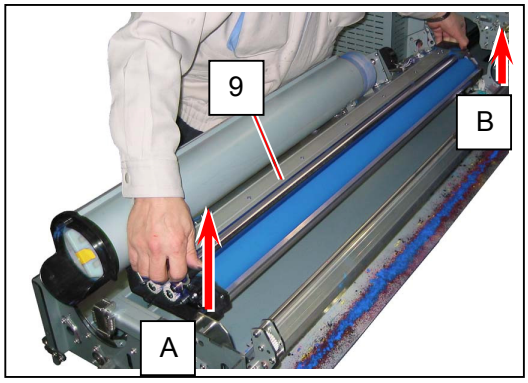


c) Rotate Drum to the direction of arrow to scrape off toner from Drum surface.

d) Make sure of no excess toner on Drum surface.

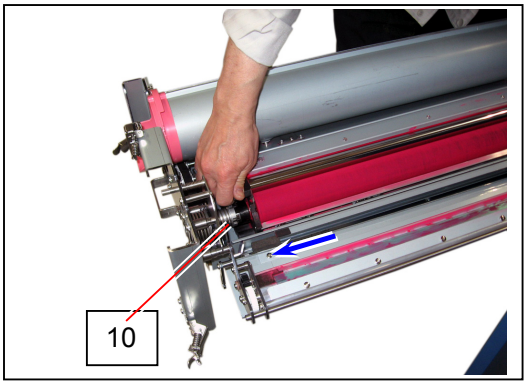


8. Holding the handling portion on both sides, lift Developer Unit machine left side first (A). Release Coupling and lift machine right side (B). Remove Developer Unit (9).

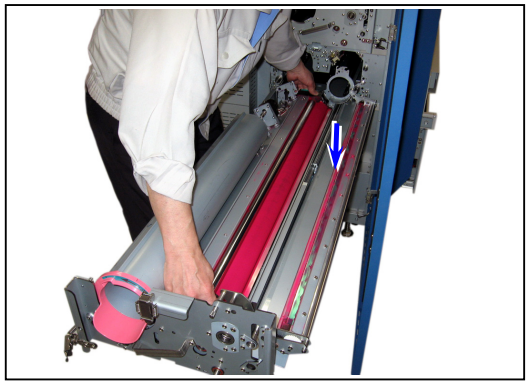


NOTE

(1) Joint the Coupling (10) on the left first while keeping up the right side of the unit at first. When Coupling is jointed firmly, then bring down the right side.

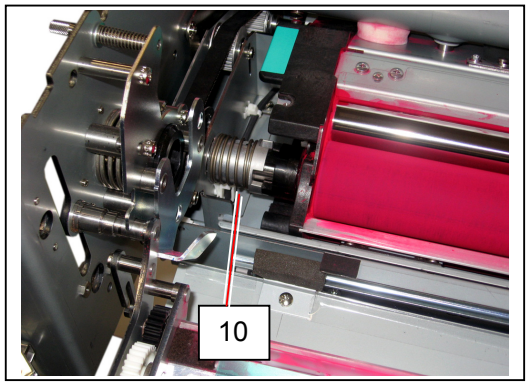


Joint the coupling first.

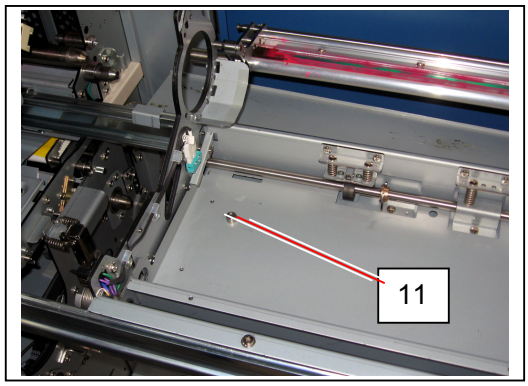


Then bring down the left side.

(2) Be sure that the Coupling (10) is jointed firmly.



(3) Be sure that the positioning boss (11) on the left side of the Process Unit is fitted into the positioning hole on the bottom of the Developer Unit.



5. 2 1st Charging Unit

5. 2. 1 Recommended Periodic Replacement

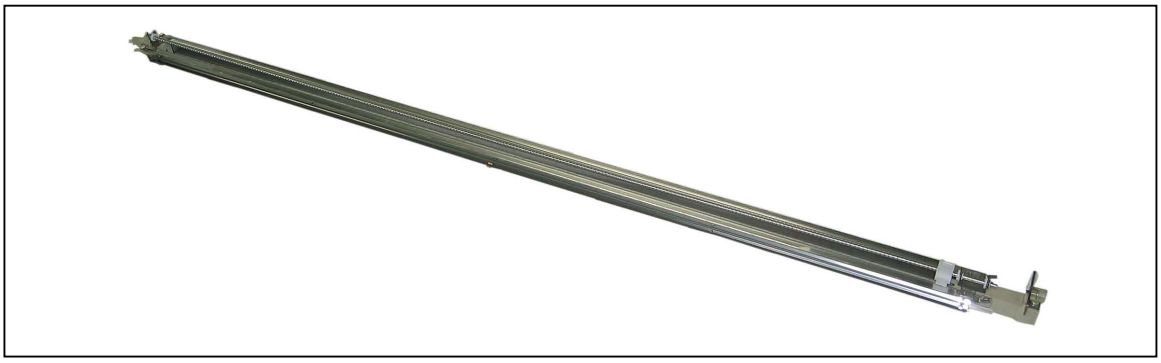
NOTE

The following parts are recommended for periodic replacement.

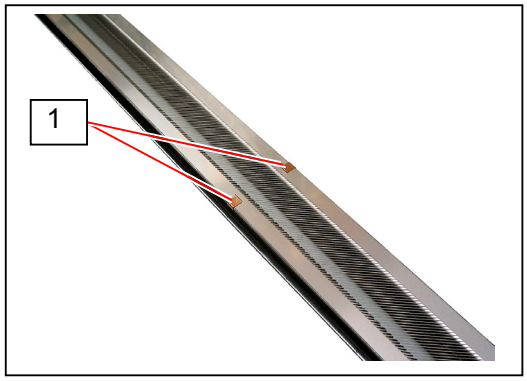
Item	Part Number	Number of article (per unit)
Cleaning Pad Assy	Z075160010	2
Corona Wire	Z075100130	1

This section describes how to replace all of them in one sequent operation.

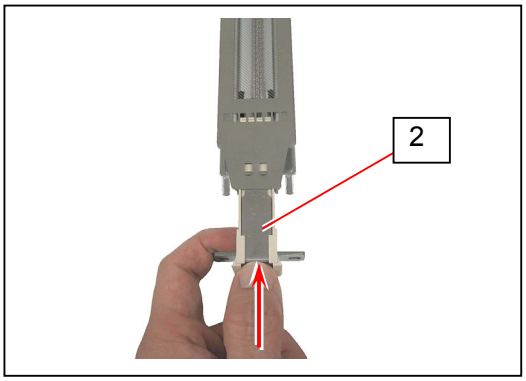
1. Remove 1st Charging Unit. Refer to [5.1.2 Removing 1st Charging Unit] on page 5-3.

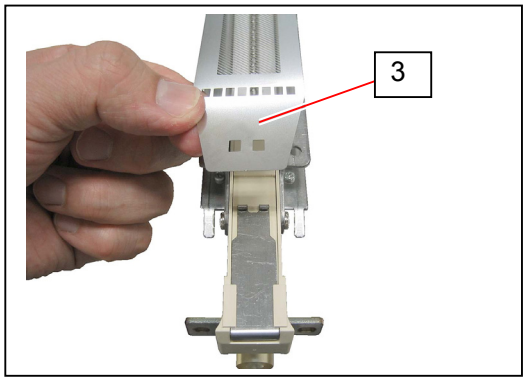


2. Remove 2 Grid Clips (1) fixing Grid Plate.



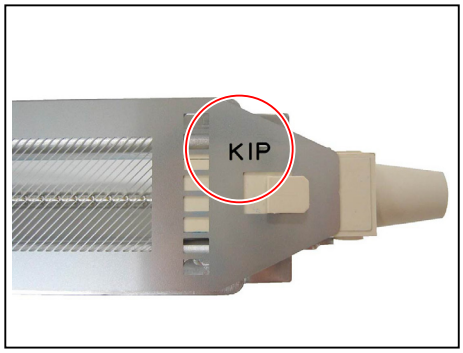
3. Press Grid Bracket (2) to the direction of arrow to remove Grid Plate (3).
   Replace **Grid Plate** (3) with a new one.





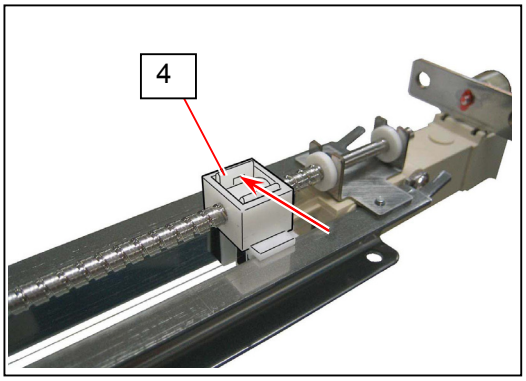
NOTE

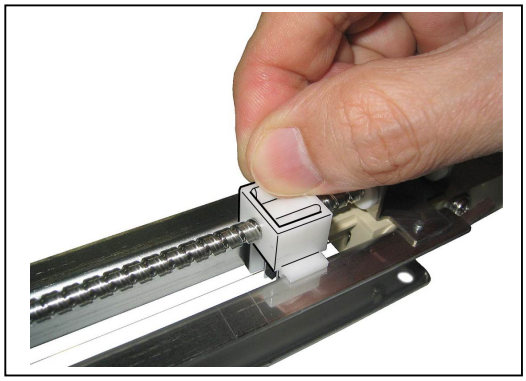
(1) Reinstall Grid Plate in the correct direction.
The blanking letter “KIP” should be in the correct orientation.



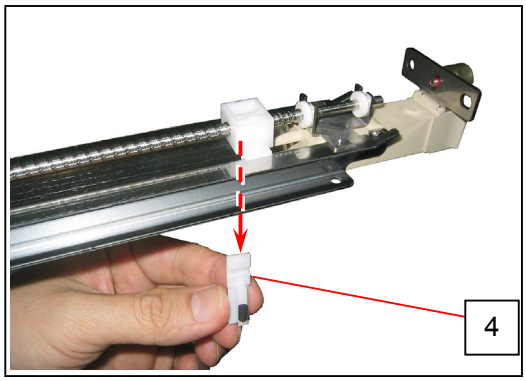
(2) For cleaning Grid Plate, wash it with water and dry it completely.
Do not wipe it with a paper or cloth.

4. Press and pinch the tab part of Cleaning Pad (4) shown below.





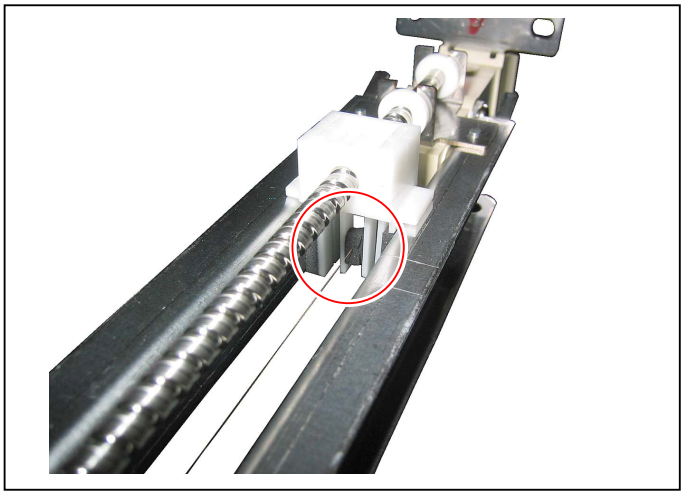
5. Pull 2 pieces of Cleaning Pad Assy (4) downward to remove it from the housing. Replace **Cleaning Pad Assy** with new ones.



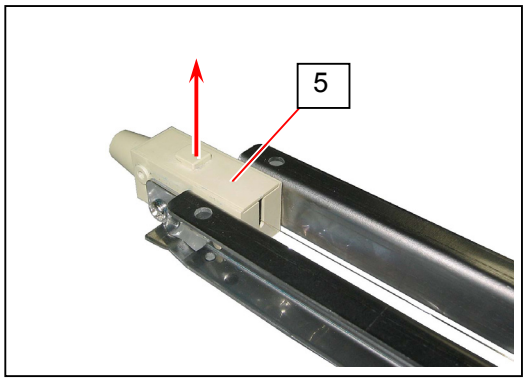
NOTE

Make sure that Corona Wire goes straight between 2 Cleaning Pad Assy. If they do not catch Corona Wire, Corona Wire's height position will be incorrect. This may cause defective imaging.

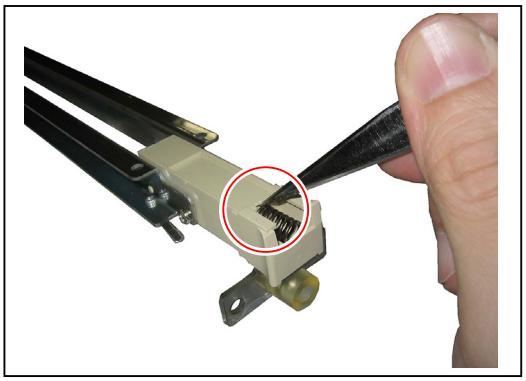
Refer to the next page for height information.

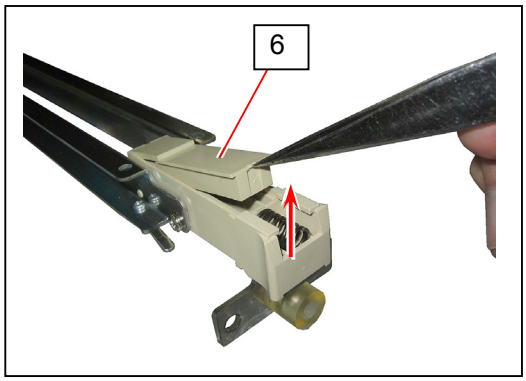


6. Pull HV Head Cover Back (5) upward to remove it.

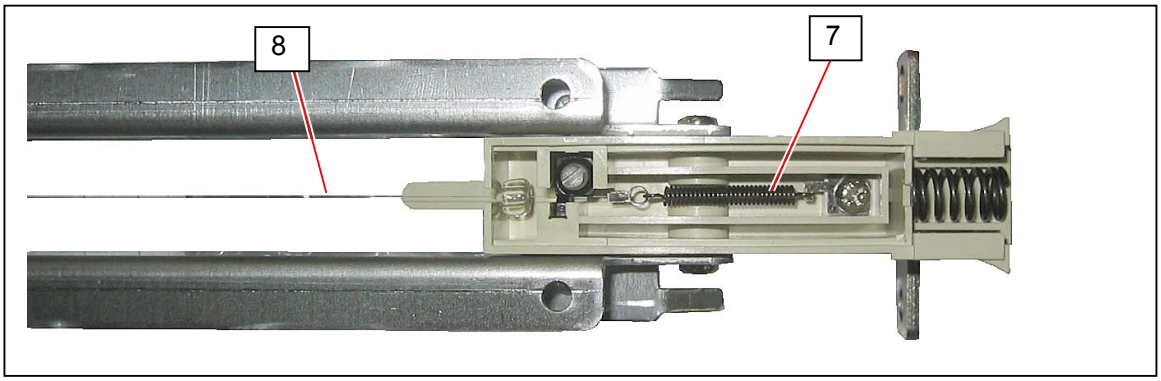


7. Lift HV Head Cover Front (6) with a thin tip tool and remove it.



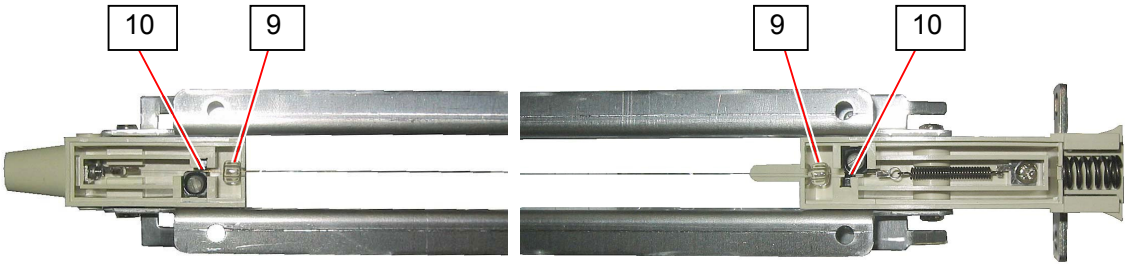


8. Remove Grid Spring (7) located inside HV Head and remove Corona Wire (8).
Replace **Corona Wire** with a new one.

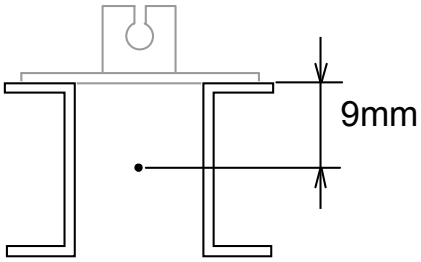


NOTE

(1) Locate Beads (9) for vibration control in the correct position shown below.
Route Corona Wire inside the groove of Height Adjuster (10).



(2) Check Corona Wire height. Keep 9mm height from the top of Corona House.



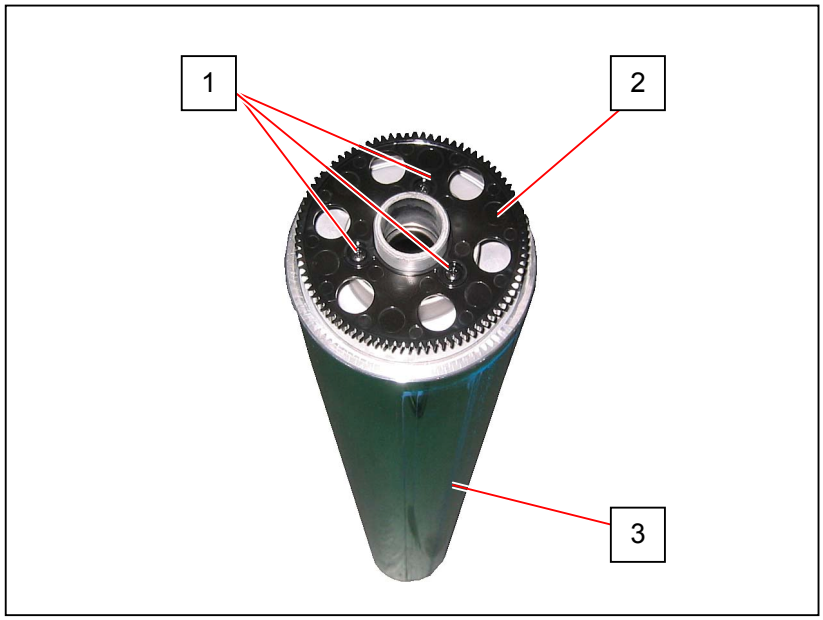
5. 3 Drum

5. 3. 1 Replacing Drum

1. Remove Drum Assembly from Process Unit. Refer to [5.1.3 Removing Drum] on page 5-4.



2. Place Drum Assembly with the gear end facing up.
   Remove 3 screws (1: M3x8) to remove Gear 86T (2) from Drum (3).
   Replace **Drum** (3) with a new one.



NOTE

Reinstall Gear 86T (2) in the original direction.

5. 4 Developer Unit

5. 4. 1 Recommended Periodic Replacement

NOTE

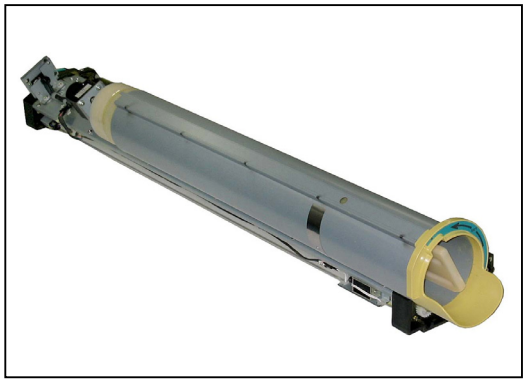
(1) The following parts are recommended for periodic replacement.
This section describes how to replace all of them in one sequent operation.

Item	Part Number	Number of article (per unit)
Blade	Z074600150	1
Bias Terminal 5	Z074601460	1
Bias Terminal 6	Z074601490	1
Bias Terminal 7	Z074601500	1
Roller Developer	Z074610010	1
Side Seal	Z074600200	1
Side Seal 2	Z074600210	1
Side Seal 10	Z074600860	2
Side Seal 11	Z074600870	2
Side Seal 12	Z074600900	2
Side Seal 19	Z074602040	2

(2) Remove all the toner inside Developer Unit before replacing Developer Roller and any of Side Seals.

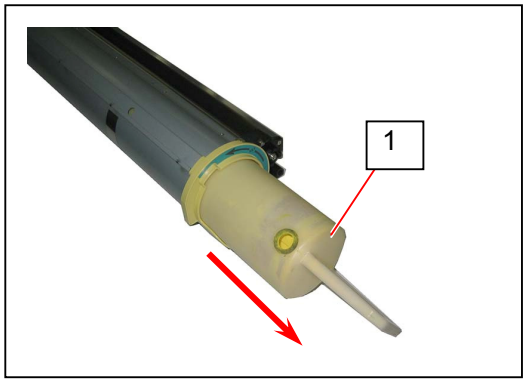
(3) This section includes replacing procedure of Toner Supply Roller for additional information.
(Toner Supply Roller does not require its periodic replacement.)

1. Remove Developer Unit from the machine.
Refer to [5.1.4 Removing Developer Unit] on page 5-8.
(Developer Unit 4 (Y) is shown for example)

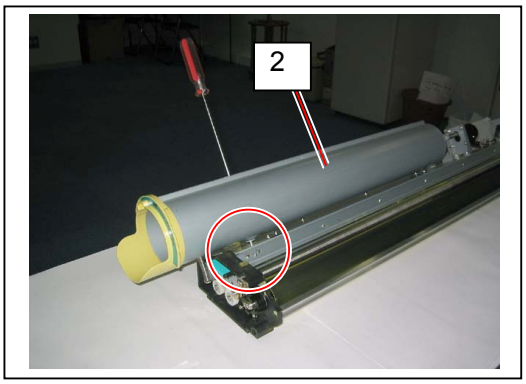


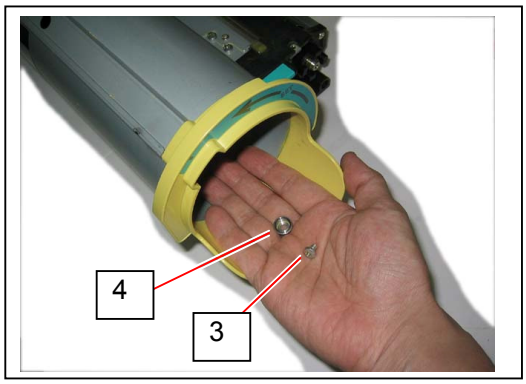
2. Turn Toner Cartridge (1) to the direction of arrow (clockwise) to remove it.



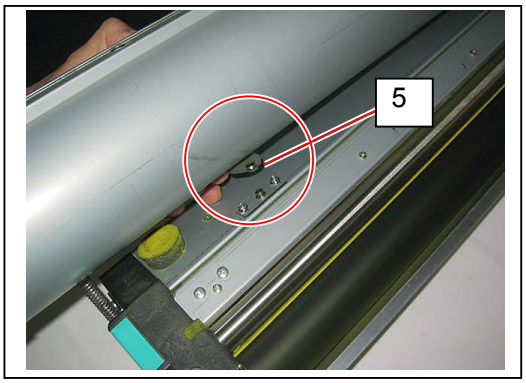


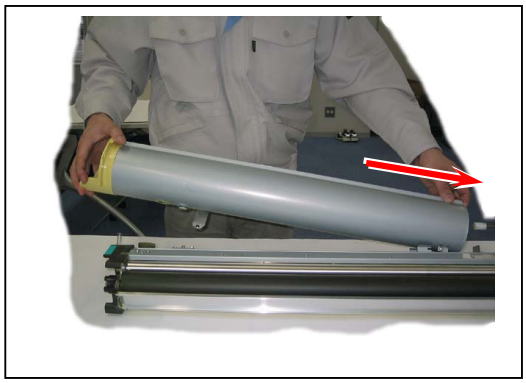
3. Remove 1 screw (3: M4x6) and Stopper (4).



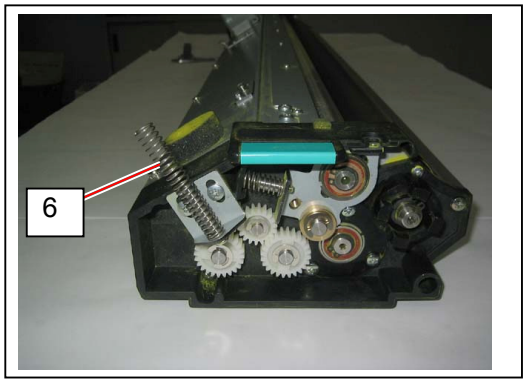


4. Release the hook part (5) and slide Bottle Guide to the direction of arrow to remove it.

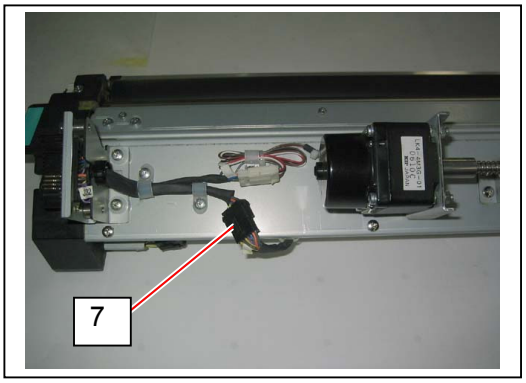




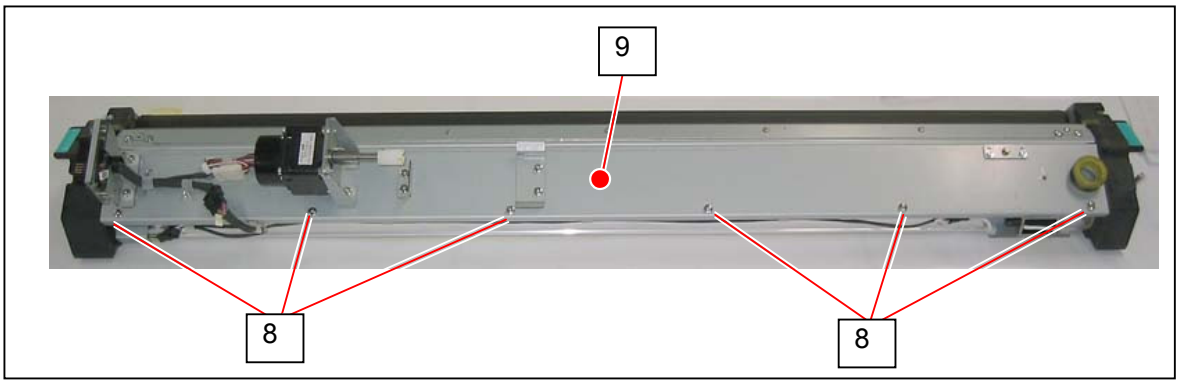
5. Remove Spring (6).



6. Disconnect the connector (7) of Toner Motor.

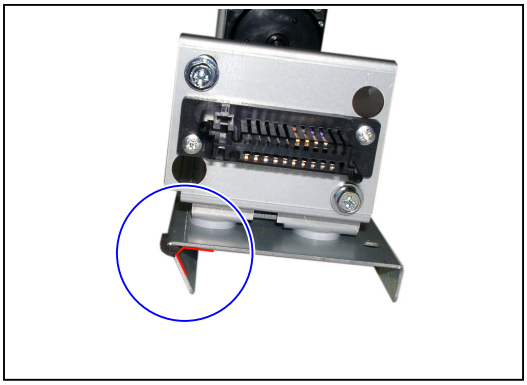


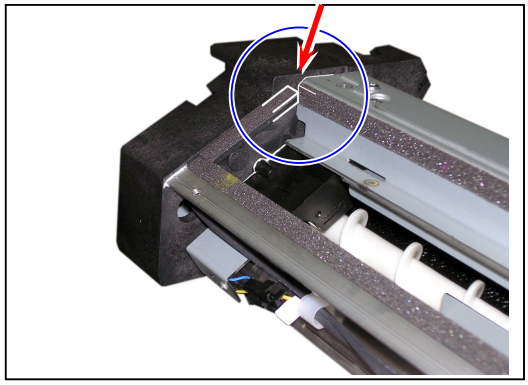
7. Remove 6 Tooth Washer Screws (8: M4x6) to remove Upper Cover Unit (9).



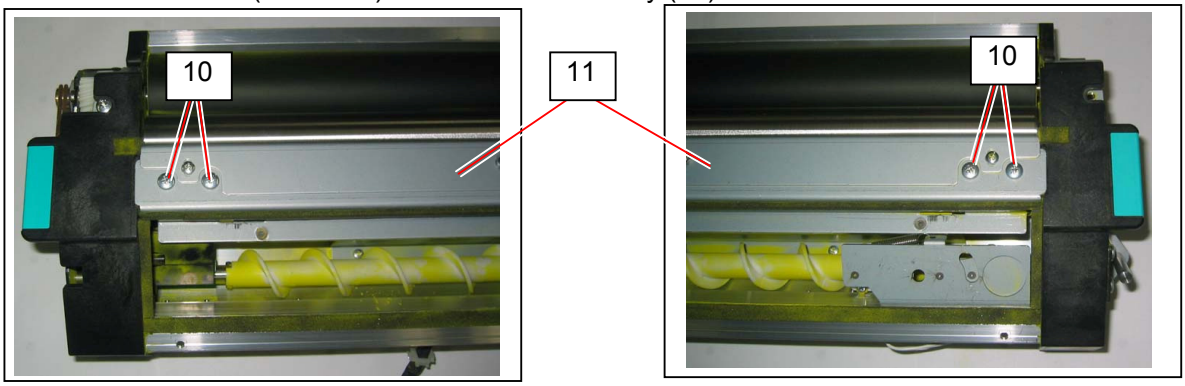
NOTE

Hook the bending of Upper Cover Unit (9) onto the stud of the side plates.

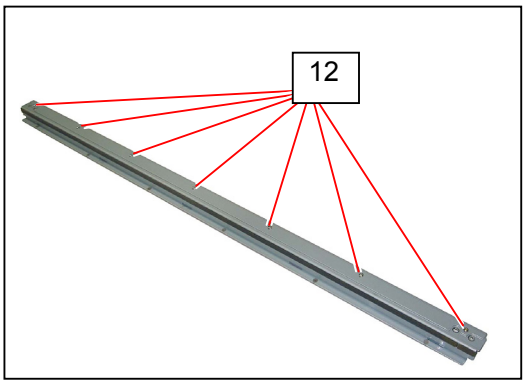


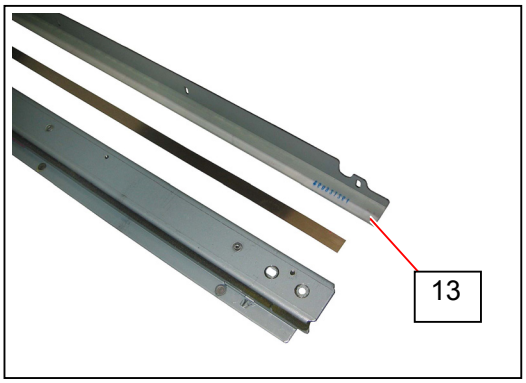


8. Remove 4 screws (10: M4x6) to remove Blade Assy (11).

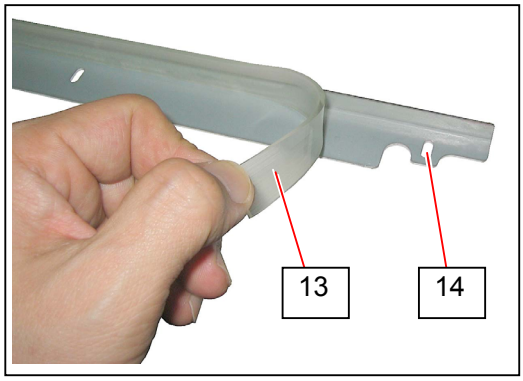


9. Remove 7 screw (12: M3x5) to remove Blade Bracket (13).

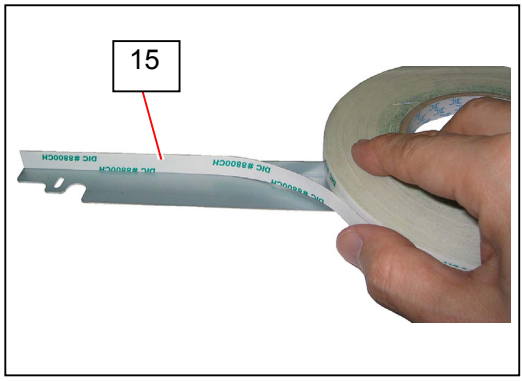




10. Remove Blade (14) from Blade Bracket (13).



11. Replace the double-faced tape (15) on Blade Bracket with a new one.

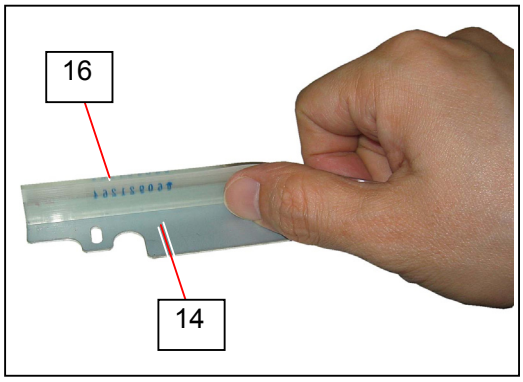


NOTE

Align the tape's edge with the bending line of Blade Bracket shown below.



12. Apply **Blade** (16) to Blade Bracket (14).

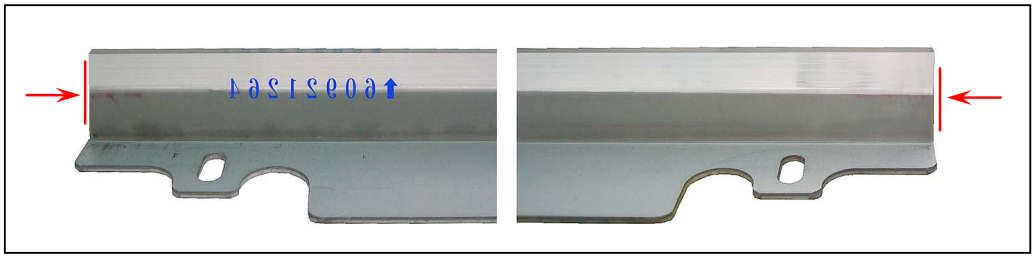


NOTE

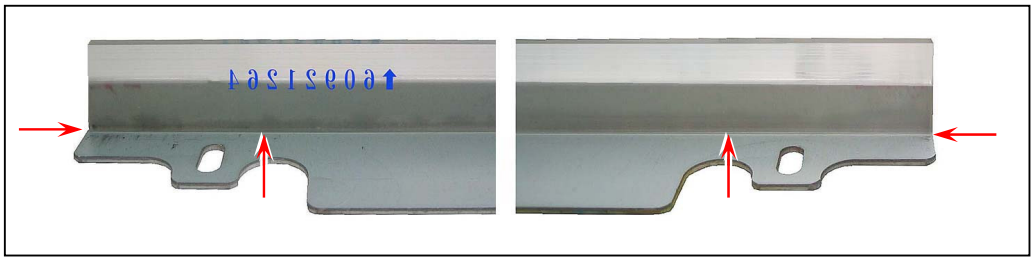
(1) Install Blade (12) in the correct direction shown below.



(2) Align Blade with Blade Bracket on both side ends. (Requires -0.5 to 0mm alignment)
Do not install Blade pulling too strong as Blade may stick out of Blade Bracket.

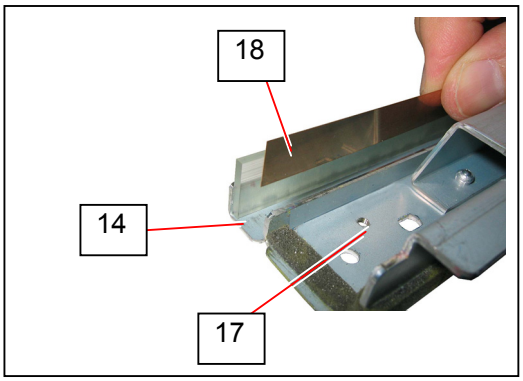


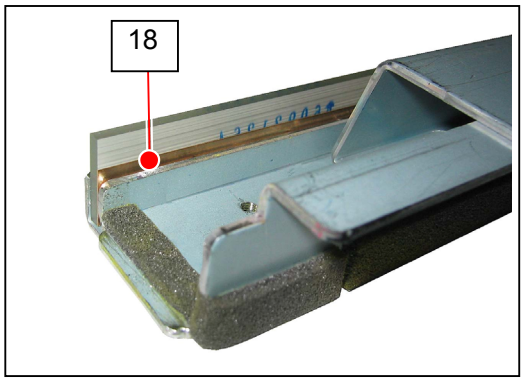
(3) Align Blade's edge with the bending line of Blade Bracket.



(4) Check that the entire Blade's edge is even.

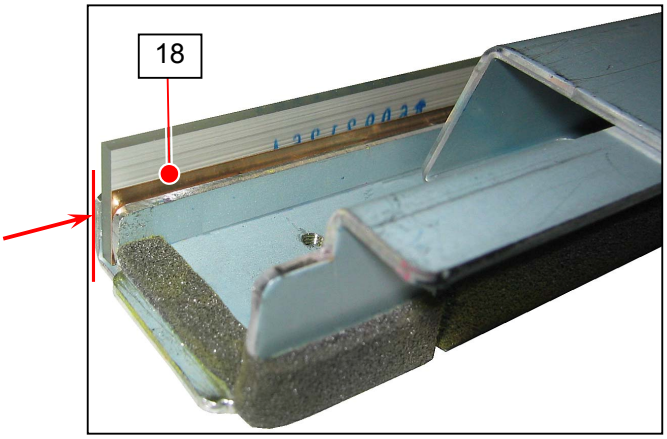
13. Place Stay (17) on Blade Bracket (14). Install Spacer (18) between them.



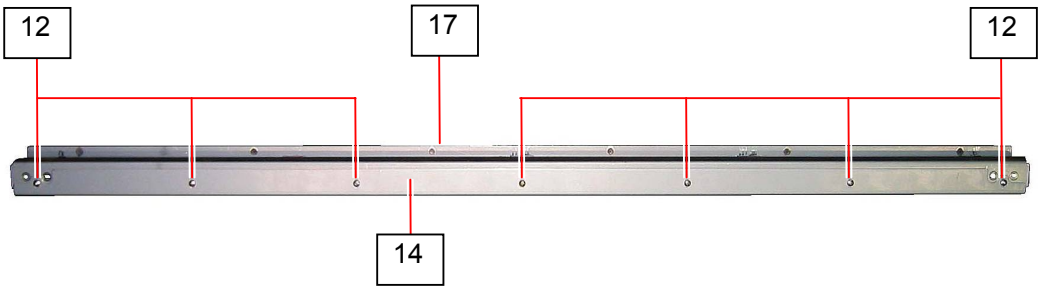


NOTE

Align Spacer (18) with Blade on both side ends.

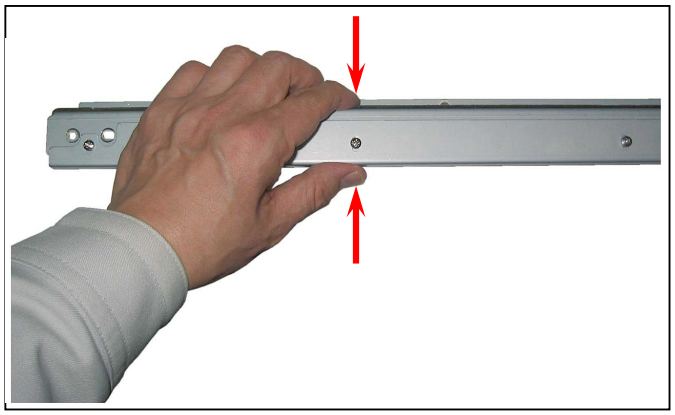


14. Fix Blade Bracket (14) to Stay (17) with 7 screws (12).

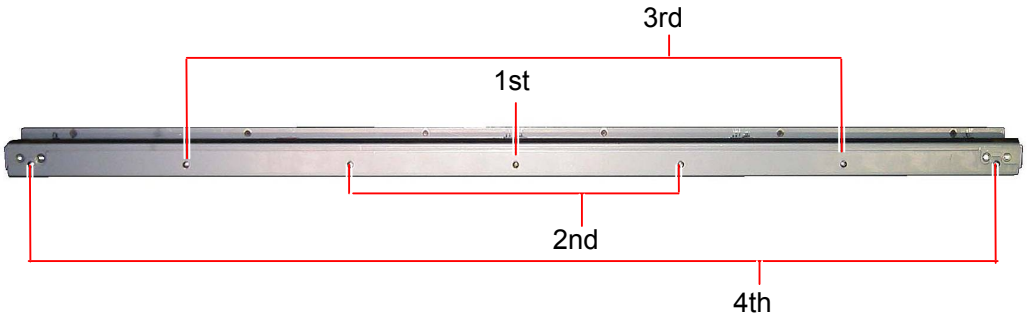


NOTE

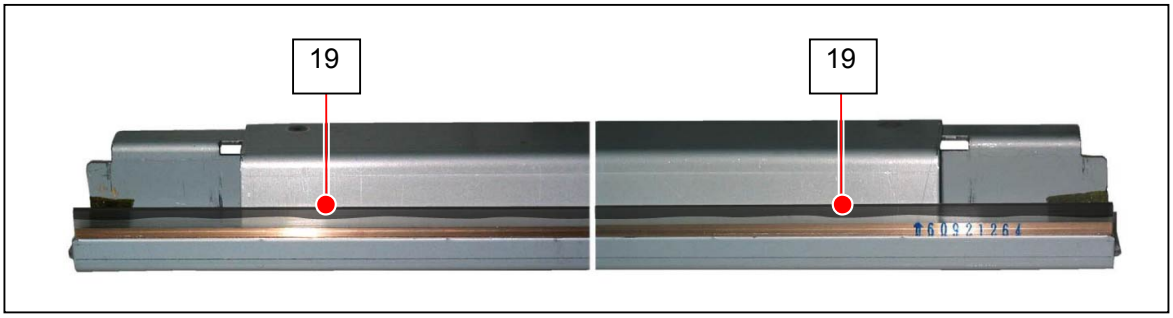
(1) Pinch and press the faces shown below.



(2) Tighten the screws (12) in the following order. (center to ends)



15. Evenly rub the entire Blade edge (19) with toner to avoid friction with Blade Roller surface.

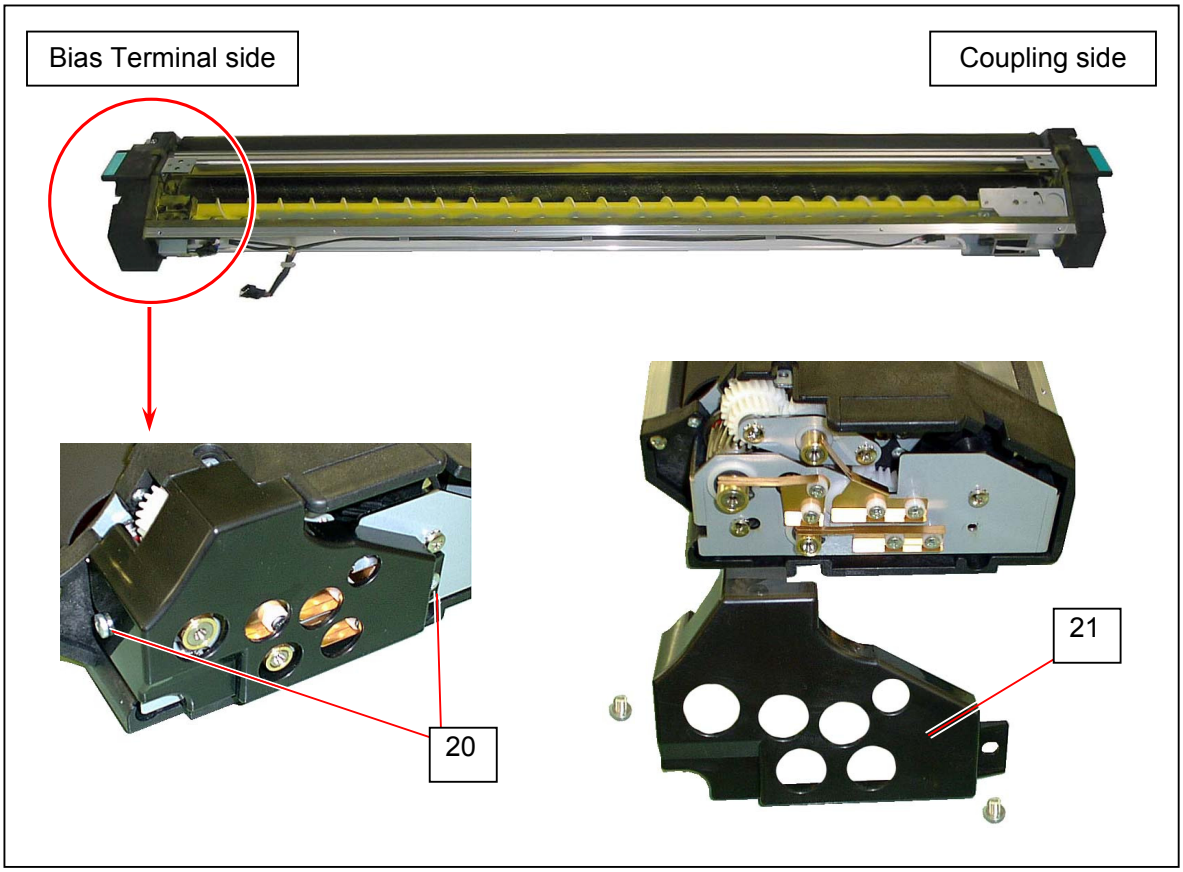


NOTE

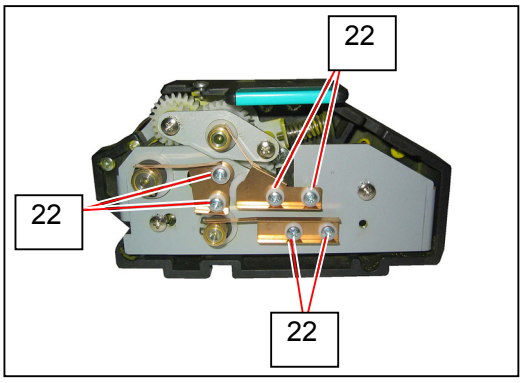
Blade should be applied toner in the color corresponding to the Developer Unit to be installed to.

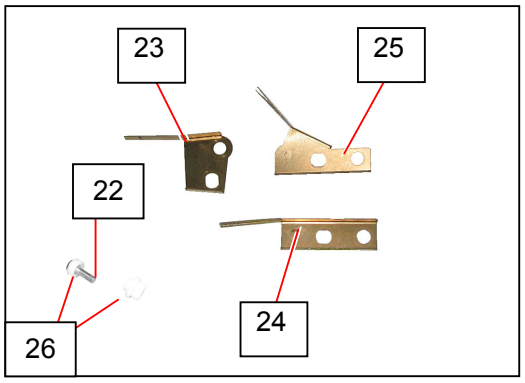
16. Rotate Roller Developer in several revolutions and check Blade Roller surface.
    Flipping up or wavy edge on Blade will cause toner sticking on Blade Roller surface.
    If this occurs, reinstall Blade according to the step 12 to 15.

17. On Bias Terminal side, remove 2 screws (20: M4x6) to remove Terminal Cover (21).

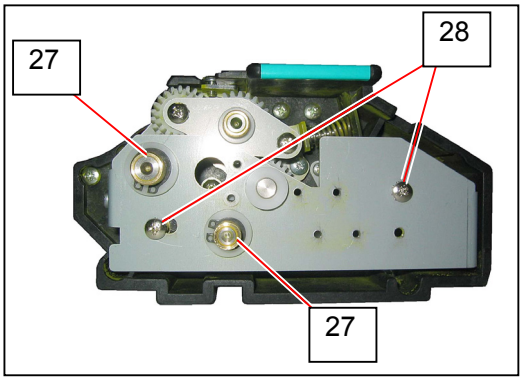


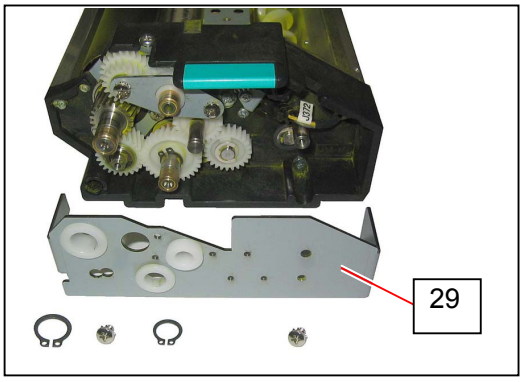
18. Remove 6 screws (22: M3x12) to remove Bias Terminal 5 (23), Bias Terminal 6 (24), Bias Terminal 7 (25) and Collar (26).
Replace **Bias Terminal 5** (23), **Bias Terminal 6** (24) and **Bias Terminal 7** (25) with new ones.



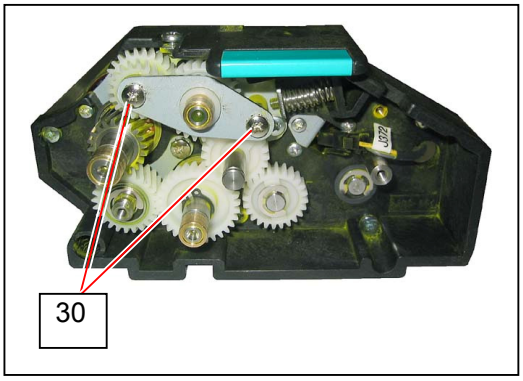


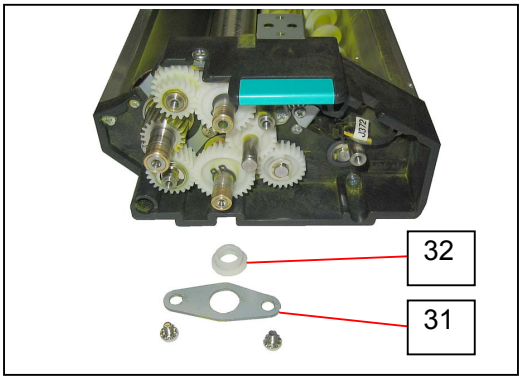
19. Remove 2 C Rings (27: M10, M12). Remove 2 Tooth Washer Screws (28: M4x6) to remove Roller Guide 2 (29).



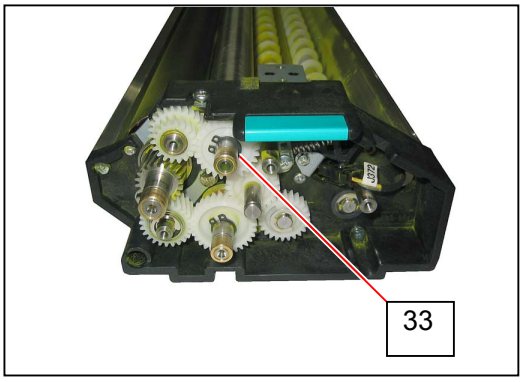


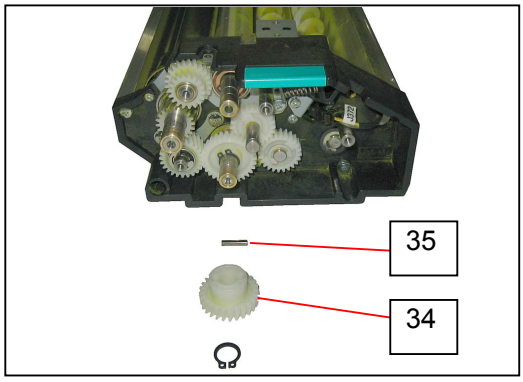
20. Remove 2 Tooth Washer Screws (30: M4x6) to remove Roller Guide (31) and Collar (32).



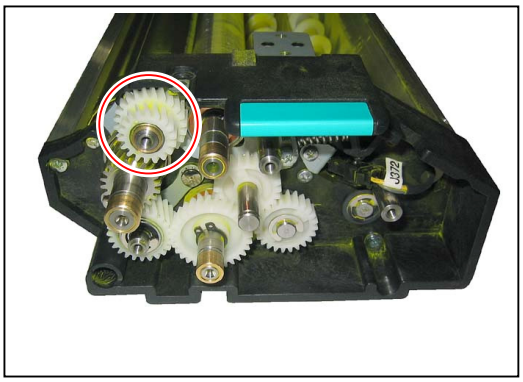


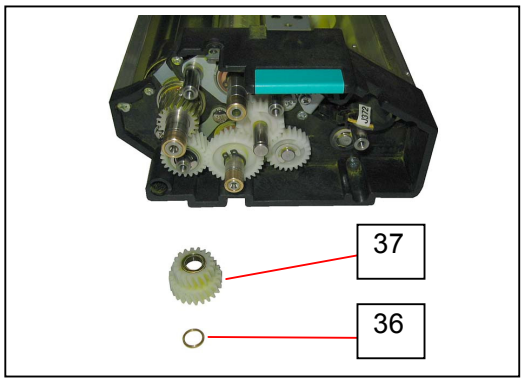
21. Remove C Ring (33: M10) to remove Gear 27T (34) and Parallel Pin (35: M3x14).



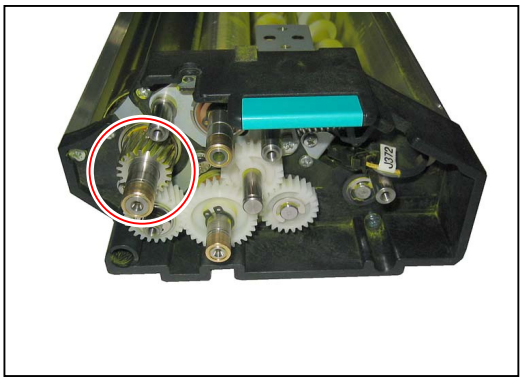


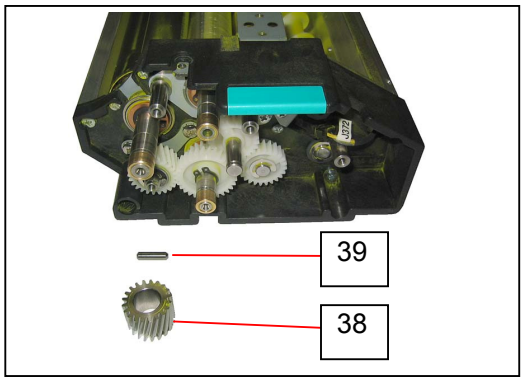
22. Remove Collar (36) to remove Gear 24-18T with Bearing (37).



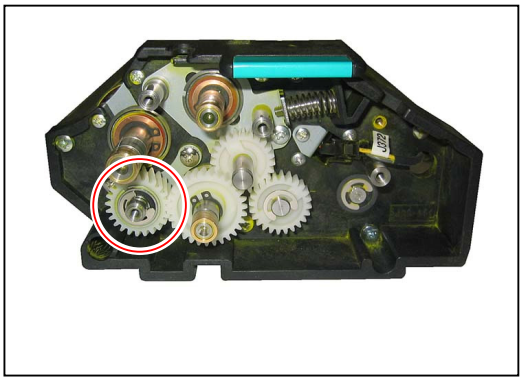


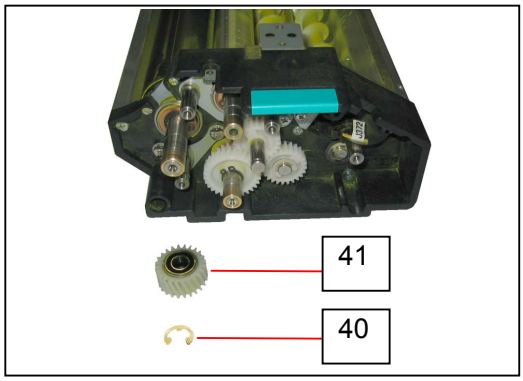
23. Remove Gear 20T (38) and Parallel Pin (39: M4x16).



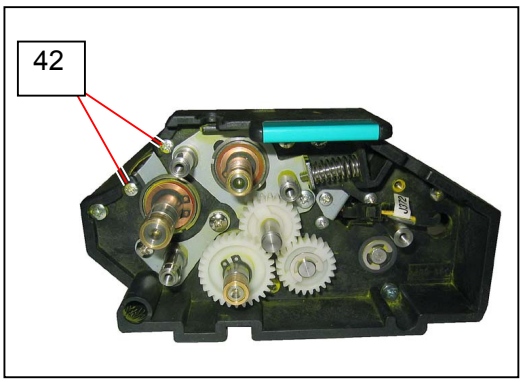


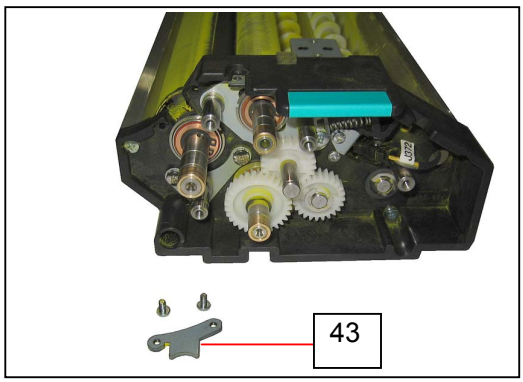
24. Remove Retaining Ring-E (40: E7) to remove Gear 24T 3 with Bearing (41).



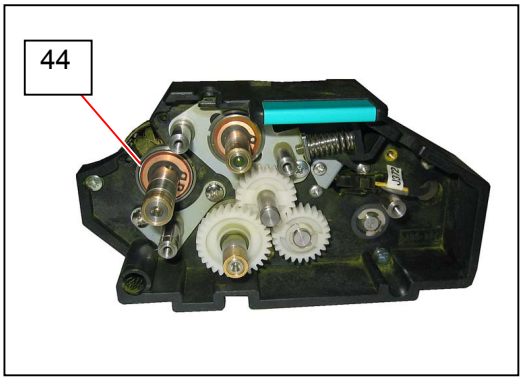


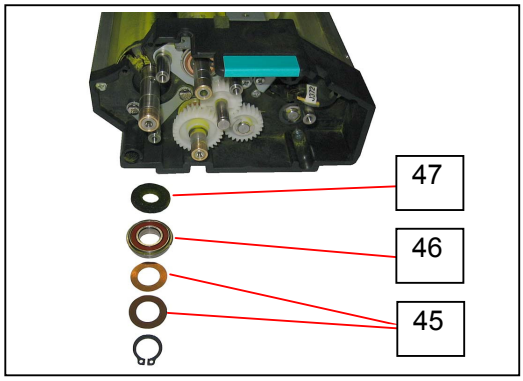
25. Remove 2 screws (42: M3x6) to remove Fixing Plate (43).



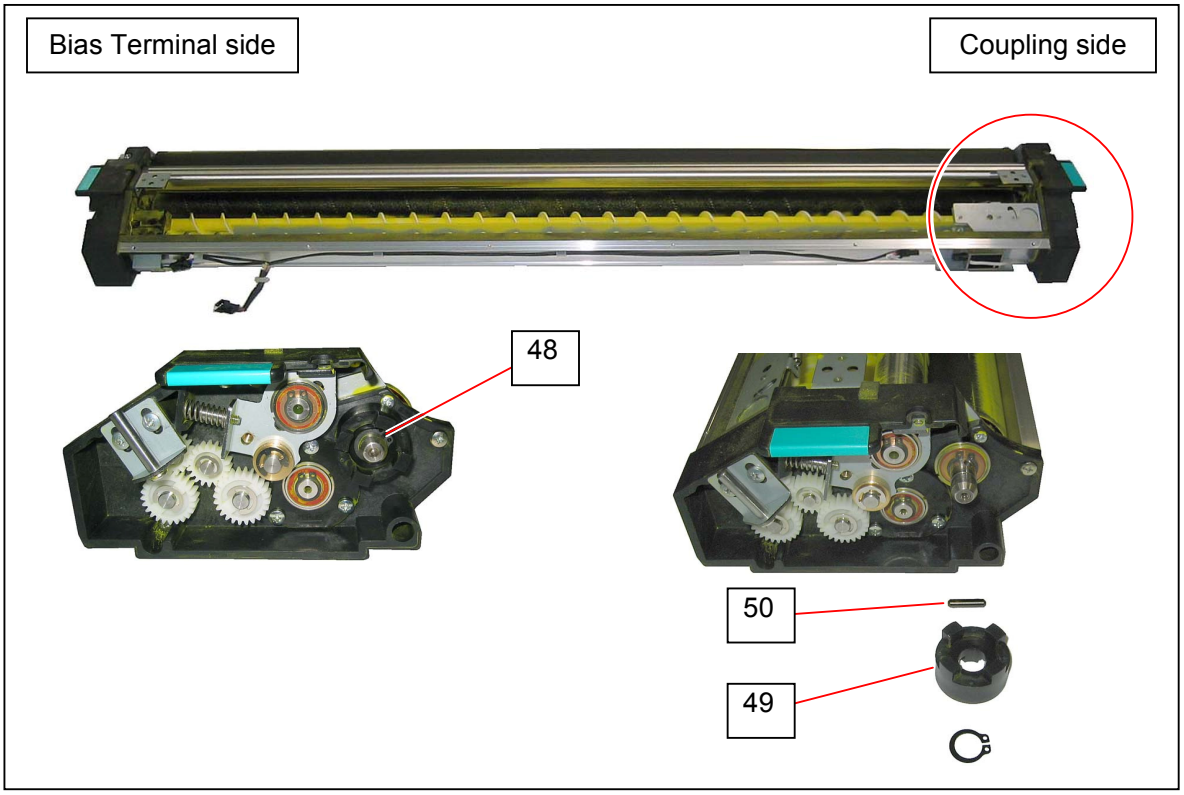


26. Remove C Ring (44: M12) to remove Thrust Washer (45), Bearing (46) and Side Seal 11 (47) from Roller Developer shaft.
Replace **Side Seal 11** (47) with a new one.

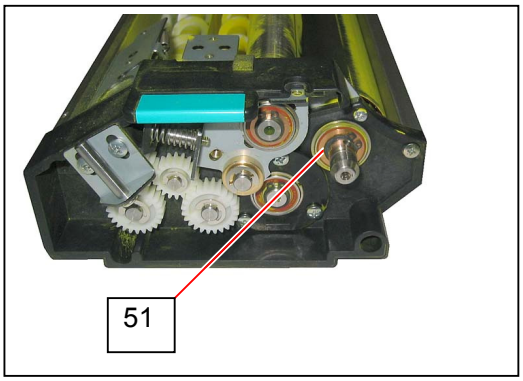


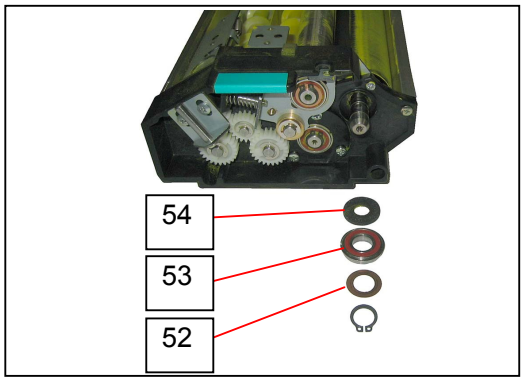


27. On Coupling side, remove C Ring (48: M12) to remove Coupling (49), Parallel Pin (50: M4x18).

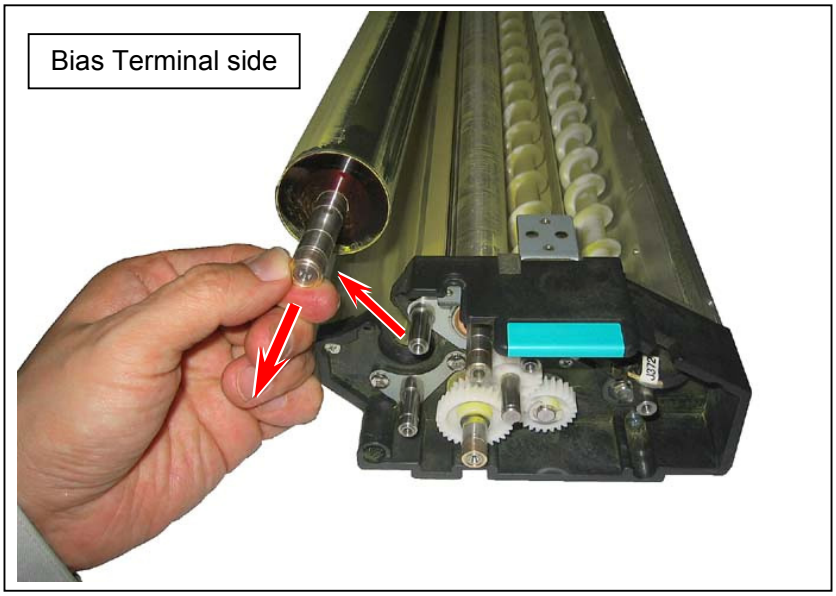


28. Remove C Ring (51: M12) to remove Thrust Washer (52), Bearing (53) and Side Seal 11 (54) from Roller Developer shaft.
Replace **Side Seal 11** (54) with a new one.





29. Lift Roller Developer (55) from the notch on Bias Terminal side and remove it.
Replace **Roller Developer** (55) with a new one.



NOTE

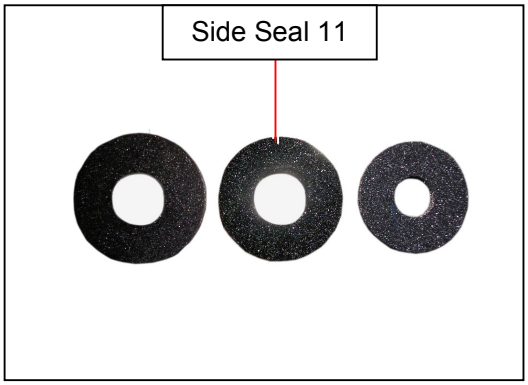
(1) The shorter shaft end of Roller Developer should be installed to Coupling side.



(2) Do not damage the plastic sheets on both roller ends.

(3) Install Side Seal 11 for Roller Developer.
Side Seal 10 / Side Seal 11 / Side Seal 12 are not interchangeable.

Roller	Seal	Outside diameter (mm)	Inside diameter (mm)	Thickness (mm)
Blade Roller	Side Seal 10	27.0	10.0	4
Roller Developer	**Side Seal 11**	**23.8**	**10.0**	**3**
Toner Supply Roller	Side Seal 12	21.8	8.0	3



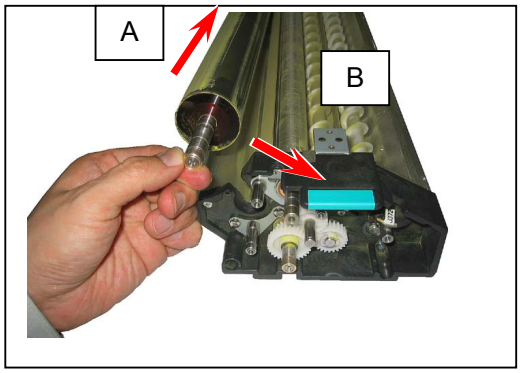
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NOTE

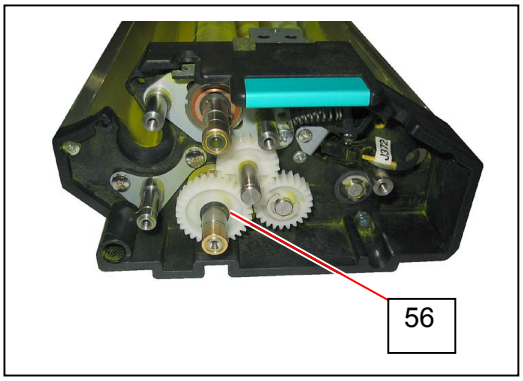
(4) Install Roller Developer carefully so that Side Seals stays in position.
If Side Seals are out of alignment or flipped up, toner may come out of Developer Unit.

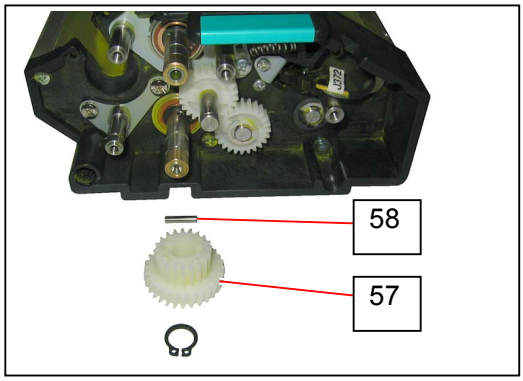
a) Strongly press Roller Developer to Coupling side (A) to hold the side seals.

b) With pressing, slide Roller Developer shaft forward (end of the notch). (B)

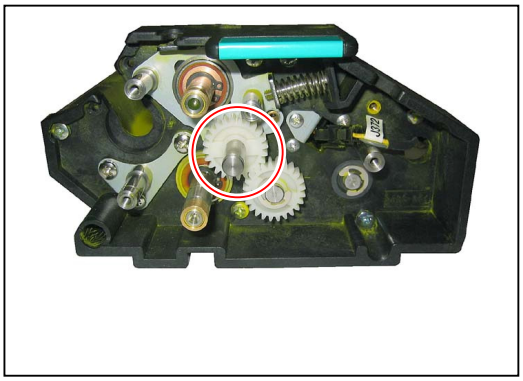


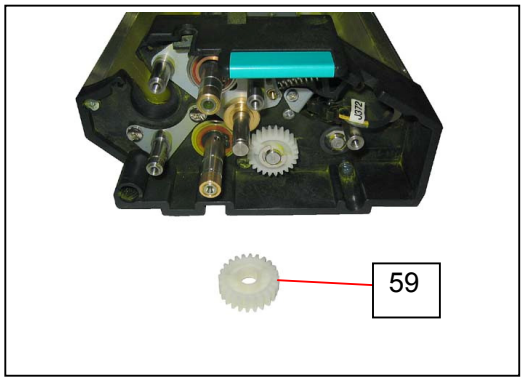
30. On Bias Terminal side, remove C Ring (56: M10) to remove Gear 30-20T (57) and Parallel Pin (58: M3x14)



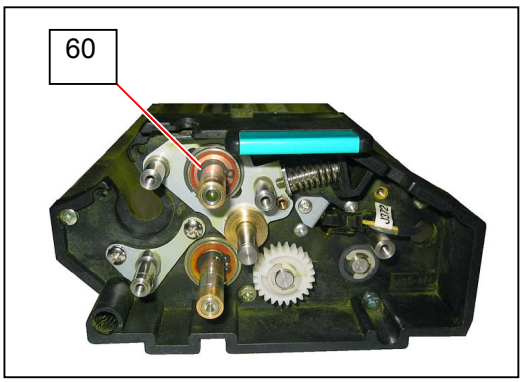


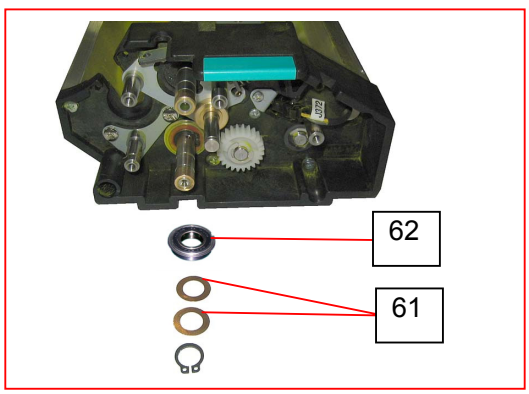
31. Remove Gear 24T (59).



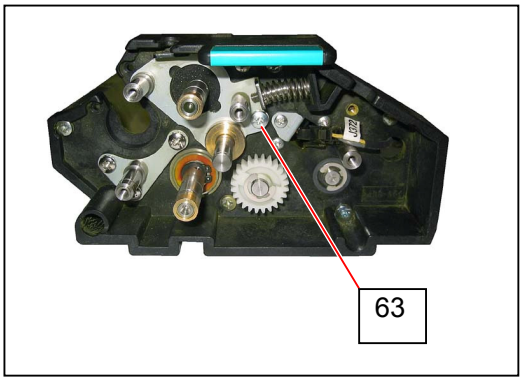


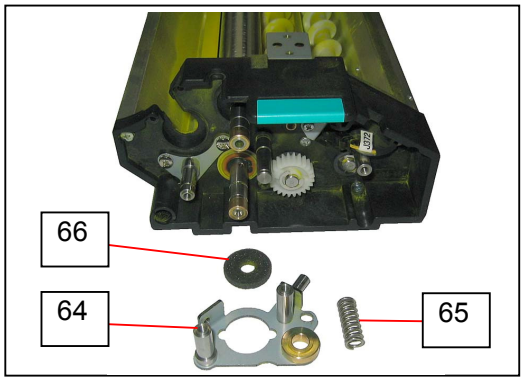
32. Remove C Ring (60: M10) to remove 2 Thrust Washers (61) and Bearing (62).





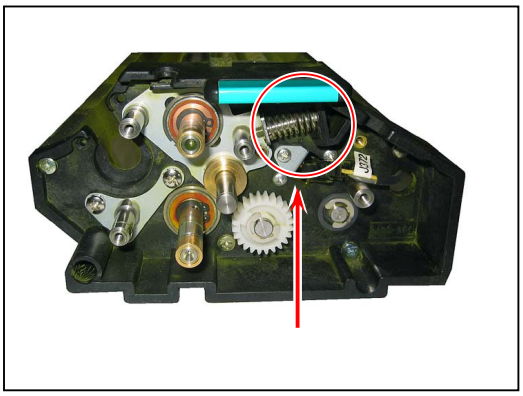
33. Remove 1 screw (63: M4x6) to remove Roller Arm 2 (64), Spring (65) and Side Seal 10 (66). Replace **Side Seal 10** (66) with a new one.

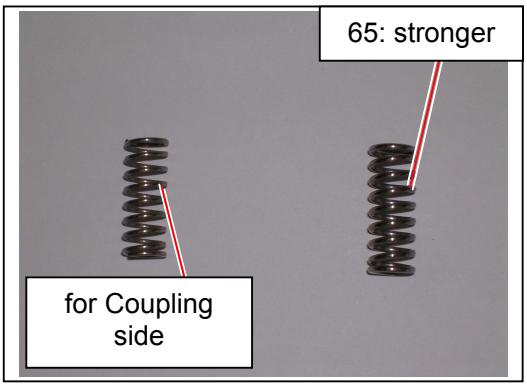




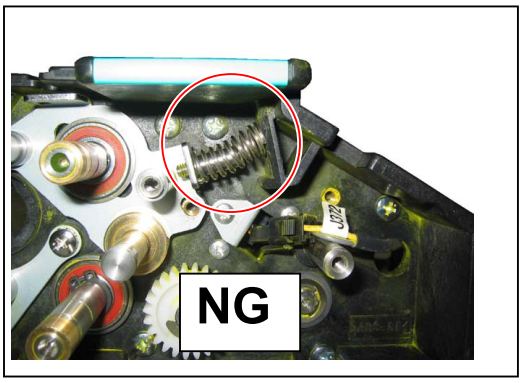
⚠ NOTE

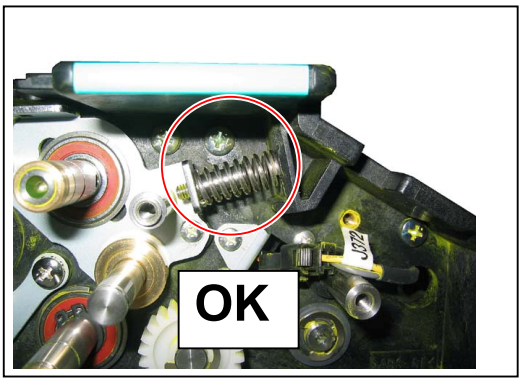
(1) Reinstall Spring (65) on Bias Terminal side.



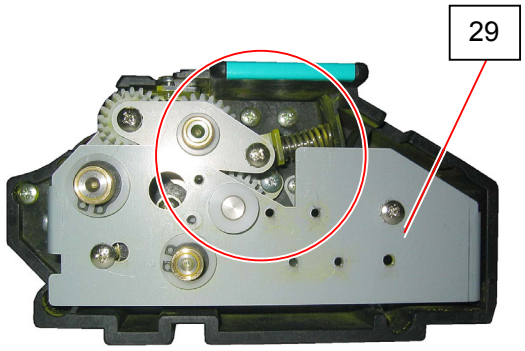


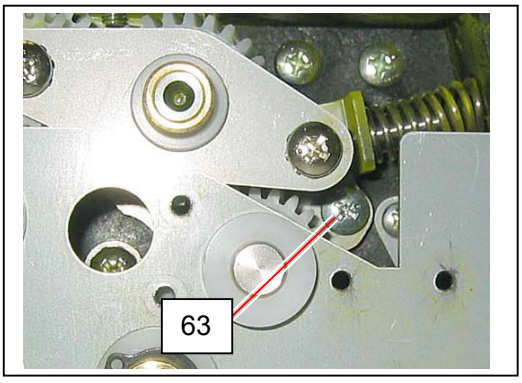
(2) Reinstall Spring (65) in alignment.



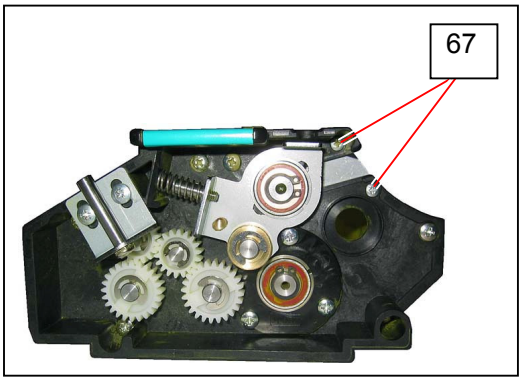


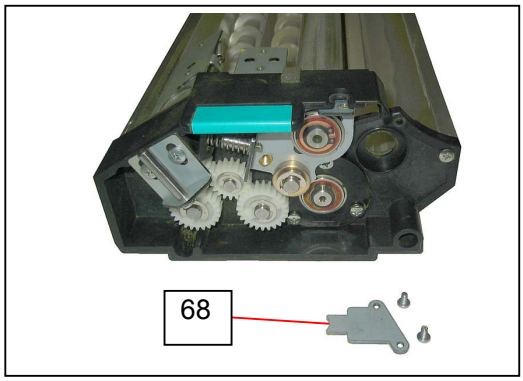
(3) Fix Roller Arm 2 with 1 screw (63) after reinstalling Roller Guide 2 (29).



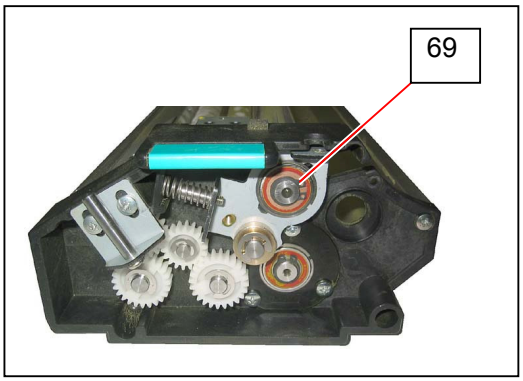


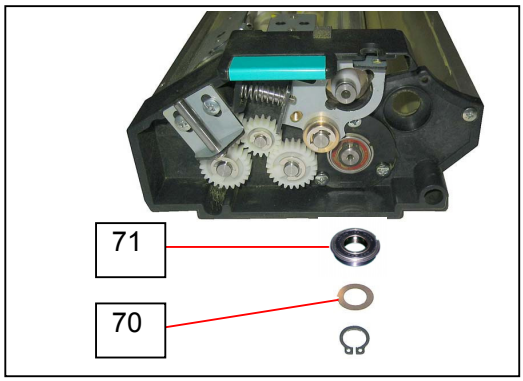
34. On Coupling side, Remove 2 screws (67: 3x6) to remove Fixing Plate 2 (68).



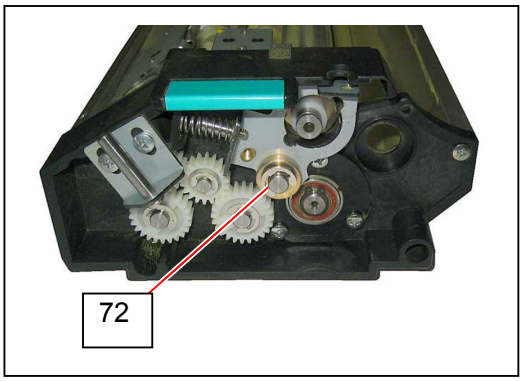


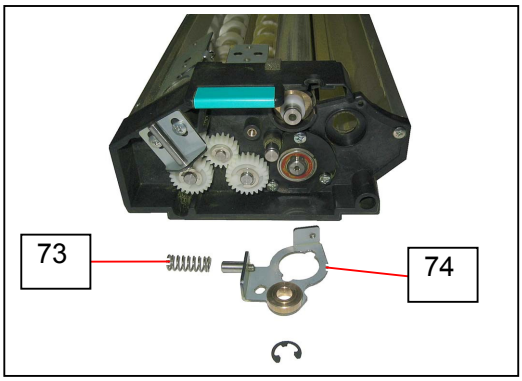
35. Remove C Ring (69: M10) to remove Thrust Washer (70) and Bearing (71).





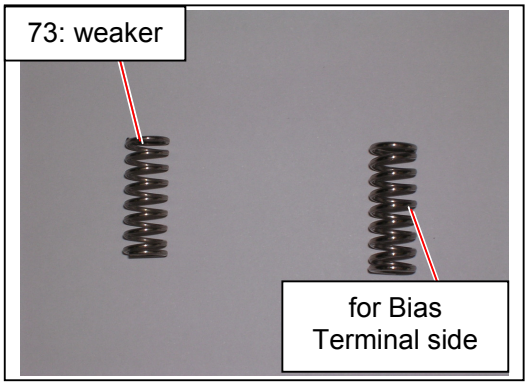
36. Remove Retaining Ring E (72: E7) to remove Spring (73) and Roller Arm (74).





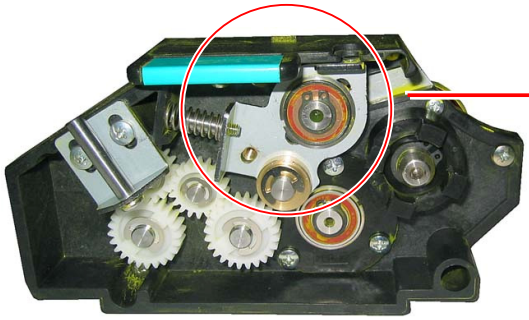
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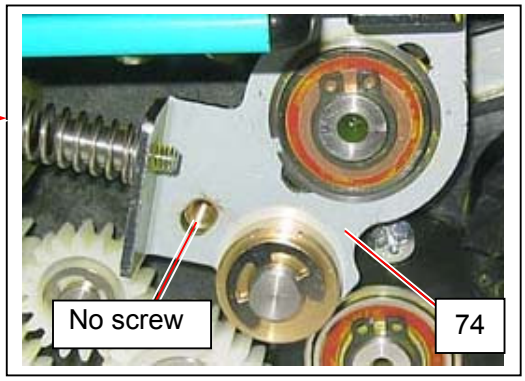
(1) Reinstall Spring (73) on Coupling side.



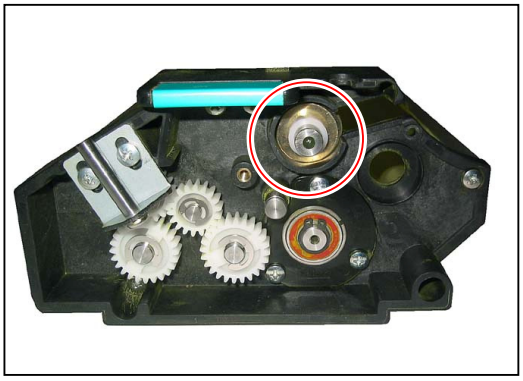
(2) Reinstall Spring (73) in alignment to obtain a proper pressure.

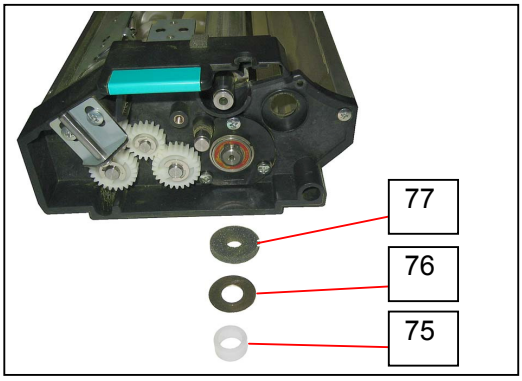
(3) There is no screw to fix Roller Arm (74).



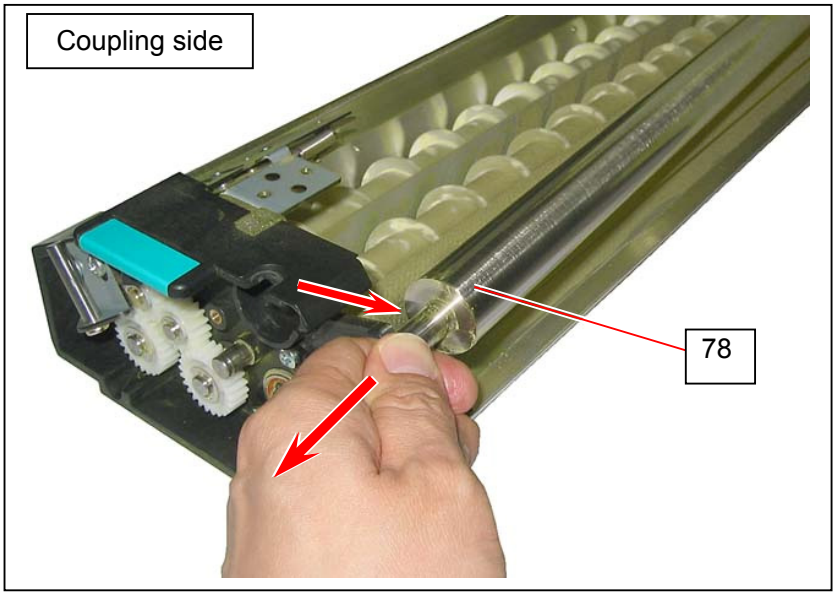


37. Remove Collar (75), Spacer (76) and Side Seal 10 (77) from Blade Roller shaft.
Replace **Side Seal 10** (77) with a new one.





38. Lift Blade Roller (78) from the notch on Coupling side and remove it.

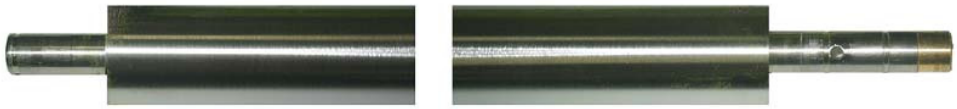


NOTE

(1) The shorter shaft end of Blade Roller should be installed to Coupling side.

Coupling side

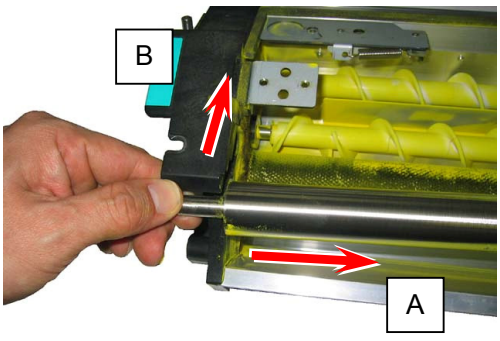
Bias Terminal side



(2) Reinstall Blade Roller carefully so that Side Seals stays in position.
If Side Seals are out of alignment or flipped up, toner may come out of Developer Unit.

a) Strongly press Blade Roller to Coupling side (A) to hold the side seals.

b) With pressing, slide Blade Roller shaft forward (end of the notch). (B)

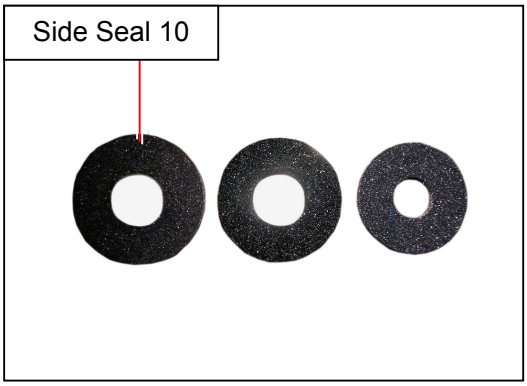


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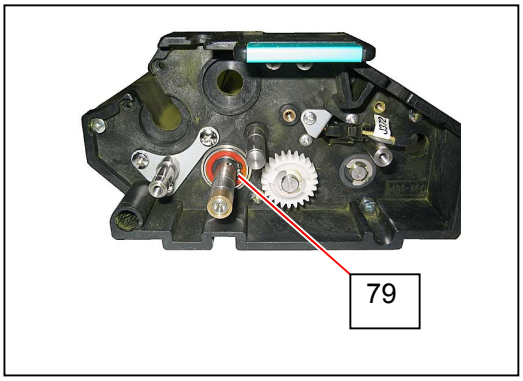
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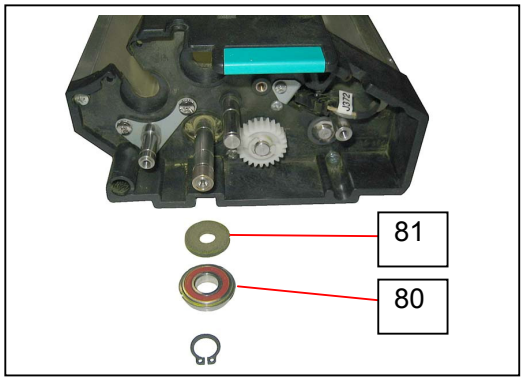
(3) Install Side Seal 10 for Blade Roller.
Side Seal 10 / Side Seal 11 / Side Seal 12 are not interchangeable.

Roller	Seal	Outside diameter (mm)	Inside diameter (mm)	Thickness (mm)
Blade Roller	**Side Seal 10**	**27.0**	**10.0**	**4**
Developer Roller	Side Seal 11	23.8	10.0	3
Toner Supply Roller	Side Seal 12	21.8	8.0	3

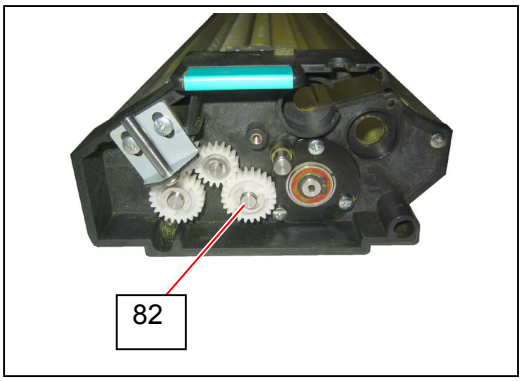


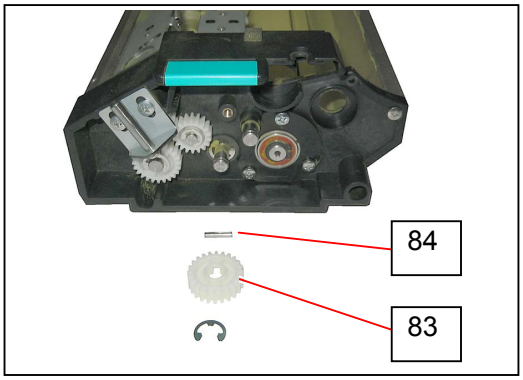
39. On Bias Terminal side, remove C Ring (79: M10) to remove Bearing (80) and Side Seal 12 (81) from Toner Supply Roller shaft.
Replace **Side Seal 12** (81) with a new one.



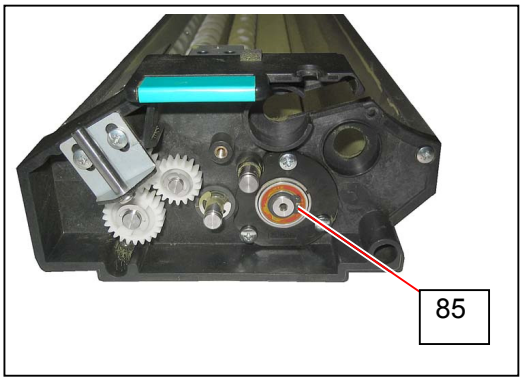


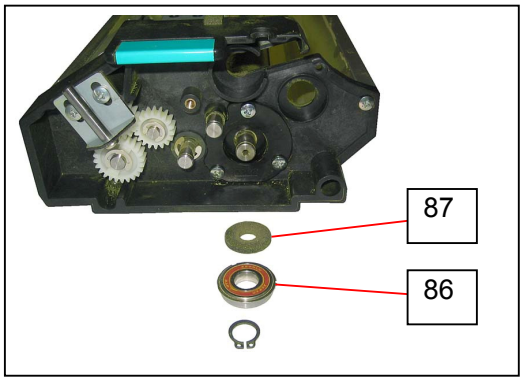
40. On Coupling side, Remove Retaining Ring-E (82: E7) to remove Gear 24T (83) and Parallel Pin (84: M3x14)



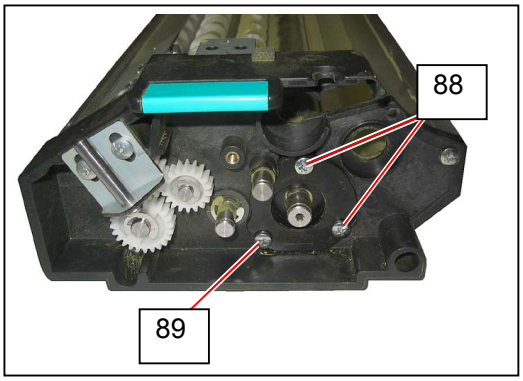


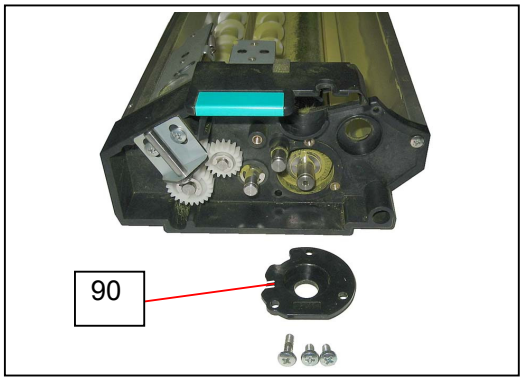
41. Remove C Ring (85: M10) to remove Bearing (86) and Side Seal 12 (87).
Replace **Side Seal 12** (87) with a new one.



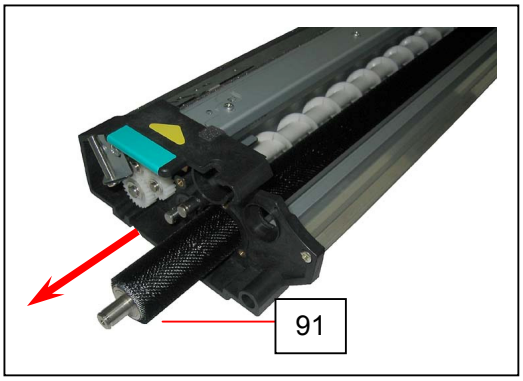


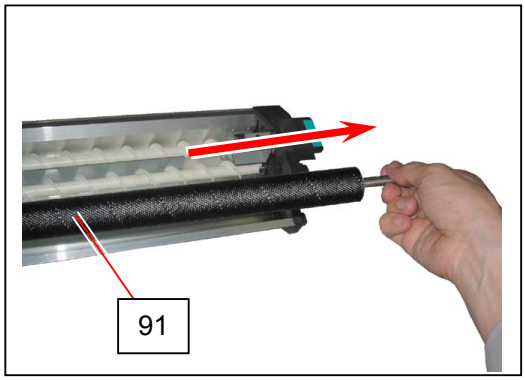
42. Remove 3 screws (88: M4x8) (89: M4x14) to remove Flange (90).





43. Slide Toner Supply Roller (91) to Coupling side.
Then pull Toner Supply Roller (91) to Bias Terminal side to remove it.
Replace Toner Supply Roller with a new one as needed.



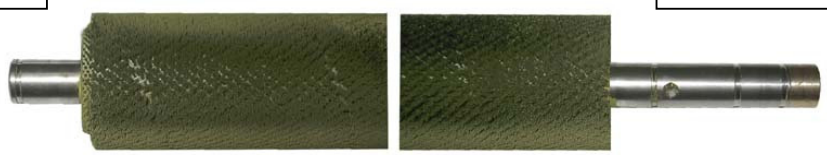


NOTE

(1) The shorter shaft end of Toner Supply Roller should be installed to Coupling side.

Coupling side

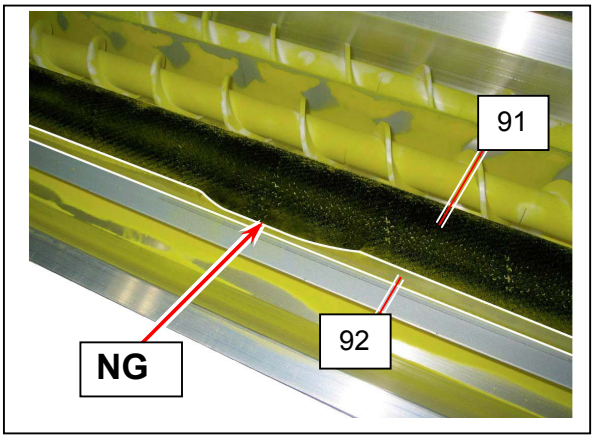
Bias Terminal side



(next page)

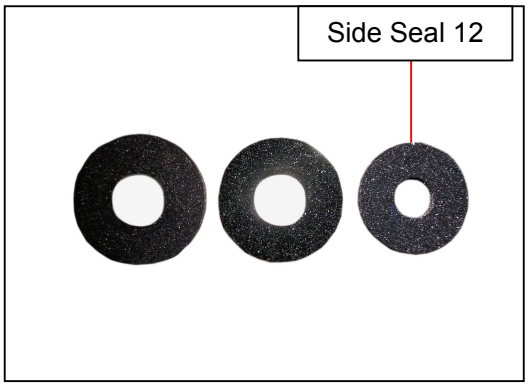
NOTE

(2) Install Toner Supply Roller (91) so as not to catch Seal (92) inside.

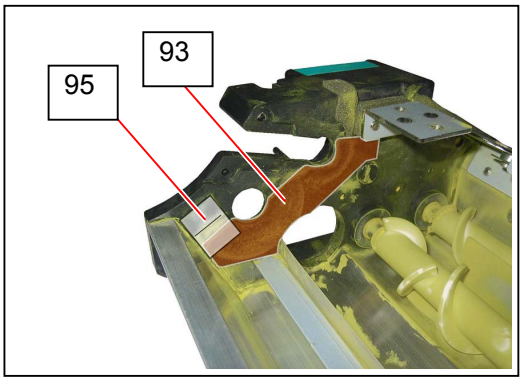


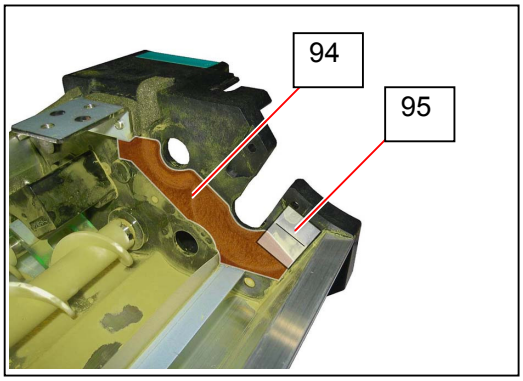
(3) Install Side Seal 12 for Toner Supply Roller.
Side Seal 10 / Side Seal 11 / Side Seal 12 are not interchangeable.

Roller	Seal	Outside diameter (mm)	Inside diameter (mm)	Thickness (mm)
Blade Roller	Side Seal 10	27.0	10.0	4
Developer Roller	Side Seal 11	23.8	10.0	3
Toner Supply Roller	**Side Seal 12**	**21.8**	**8.0**	**3**

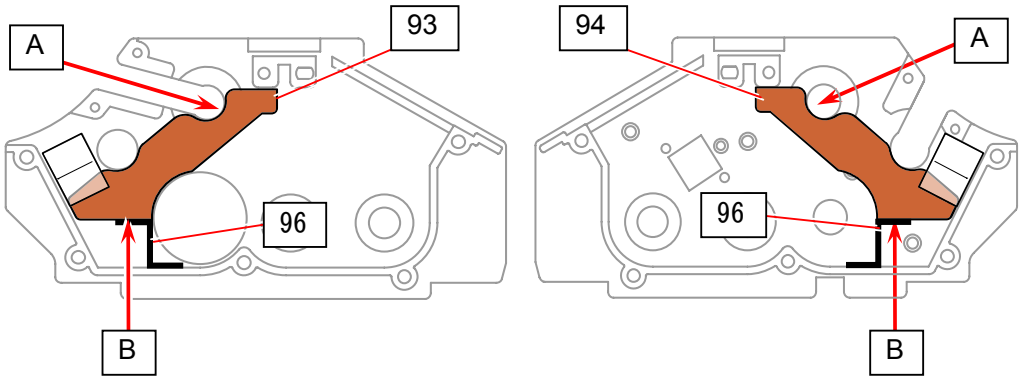


44. Remove Side Seal (93), Side Seal 2 (94) and Side Seal 19 (95).

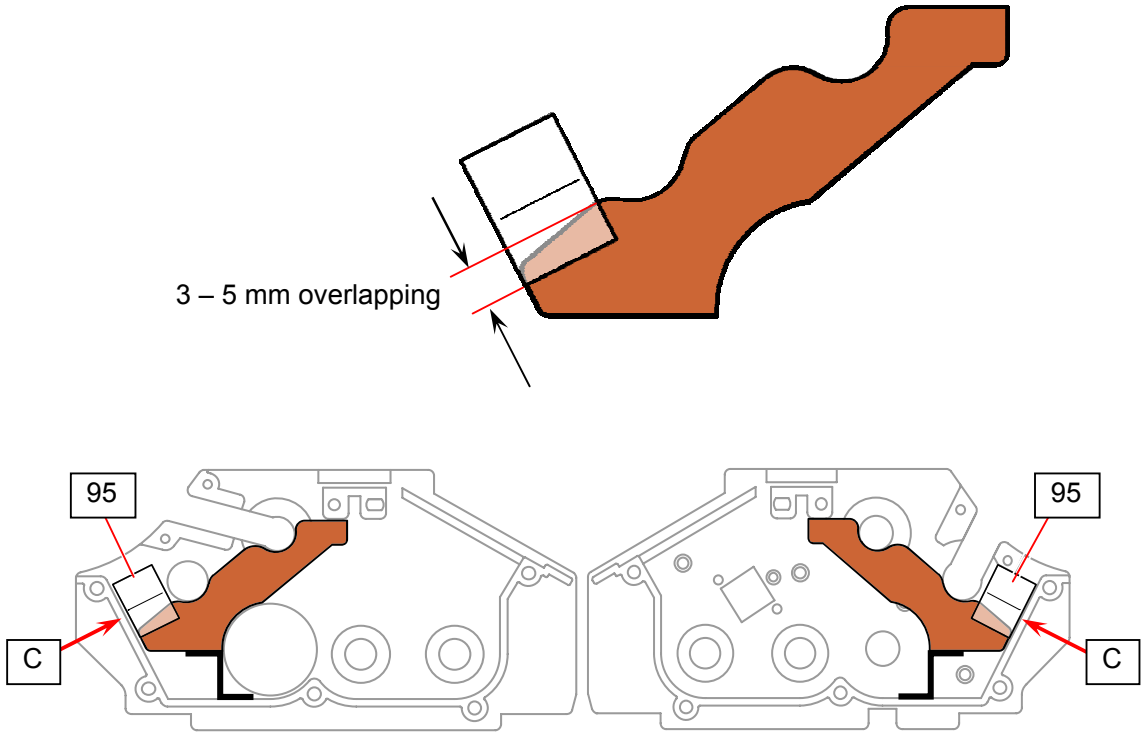




45. Remove sticking toner on the side plates, and apply **Side Seal** (93) and **Side Seal 2** (94).
Align the dent part of Side Seal / Side Seal 2 with the rim of Blade Roller Shaft hole (A).
Align the bottom of Side Seal / Side Seal 2 with the guide (96) (B).



46. Apply **Side Seal 19** (95).
The bottom part of Side Seal 19 will be on top of Side Seal / Side Seal 2.
Align the seal's bottom with the Side Plate boss (C).



47. Replace all the parts in position.

5. 5 Cleaner Unit

5. 5. 1 Replacing Blade and Seals

NOTE

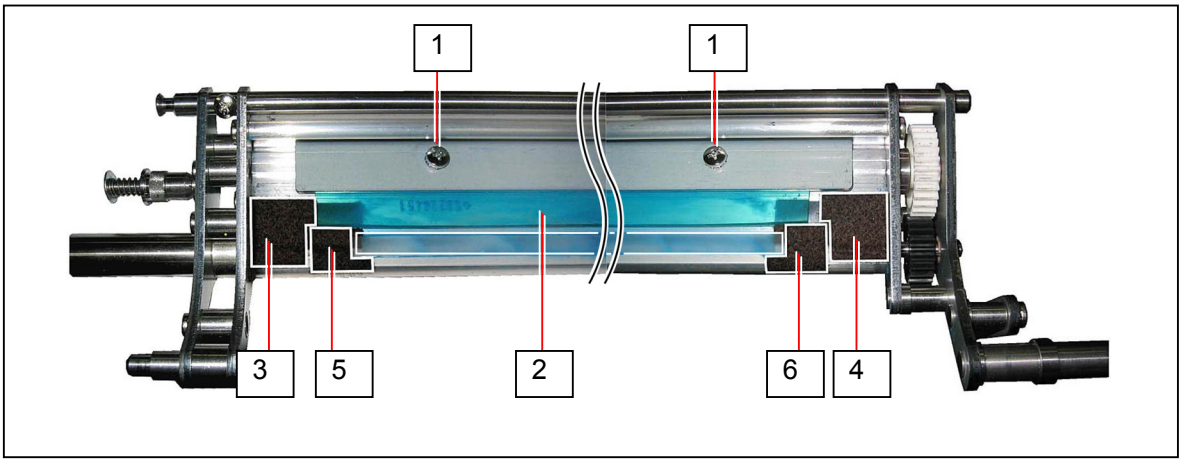
The following parts are recommended for periodic replacement.

Item	Part Number	Number of article (per unit)
Blade	Z074300060	1
Seal 229	Z074320120	1
Seal 231	Z074320010	1
Seal 295	Z074301150	1
Seal 296	Z074301160	1

This section describes how to replace all of them in one sequent operation.

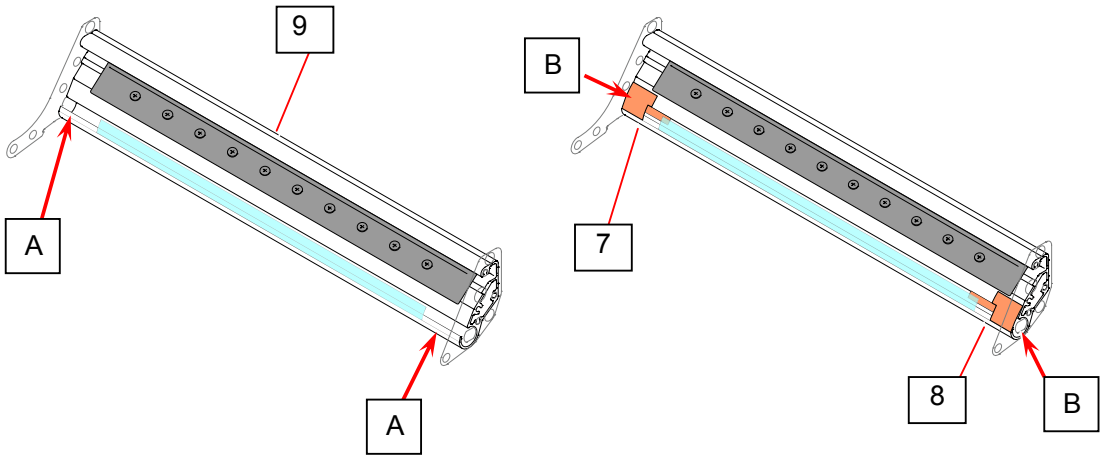
1. Remove Cleaner Unit. Refer to [5.1.3 Removing Drum and Cleaner Unit] on page 5-4.

2. Loosen 10 screws (1) to remove Blade (2).
   Remove Seal 229 (3), Seal 231 (4), Seal 295 (5) and Seal 296 (6).



3. Remove sticking toner, and apply **Seal 229** (7) and **Seal 231** (8) on Frame (9).

> **NOTE**
>
> Align Seal's bottom with the step (A), side with the side plates (B).
> Seal's incorrect position (gap) for the side (B) may cause toner leak.



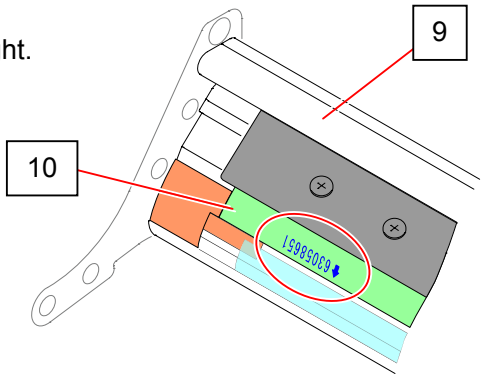
4. Rub **Blade** (10) on both faces with toner to reduce friction on its installation.
   This will prevent Blade from waving.

> **NOTE**
>
> Blade should be applied toner in the color corresponding to the Process Unit to be installed to.

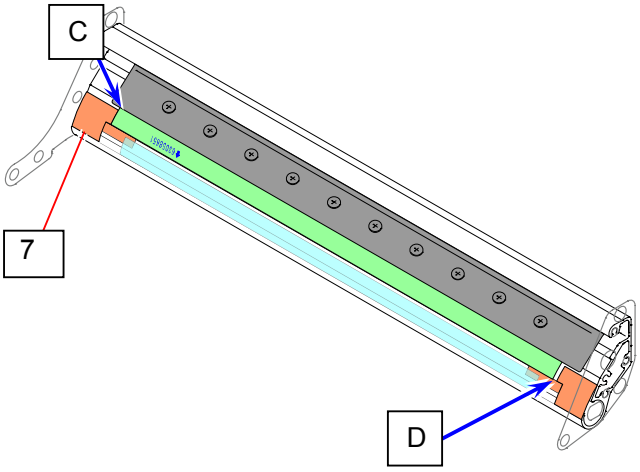
5. Install Blade (10) to Frame (9).

NOTE

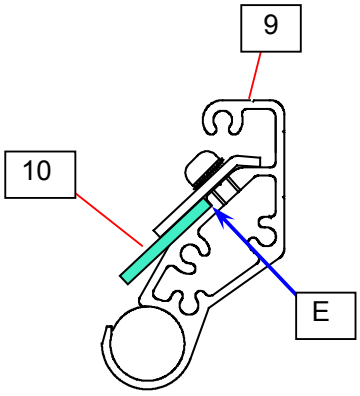
(1) Install Blade (10) in the correct direction shown right.



(2) Align the left side of Blade with Seal 229 (7: C).
A gap on the other side (D) will not be a defect.

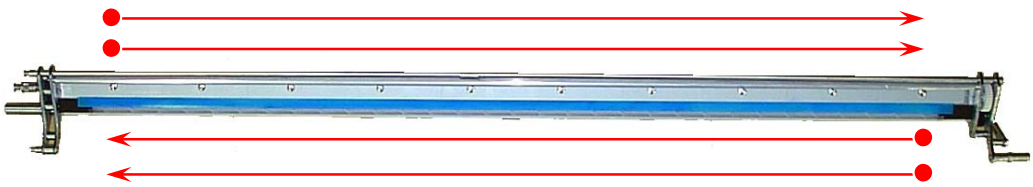


(3) Insert Blade to the direction of arrow until it stops at the step (E).



(4) Tighten the screws (1) from one end to the other in either direction.

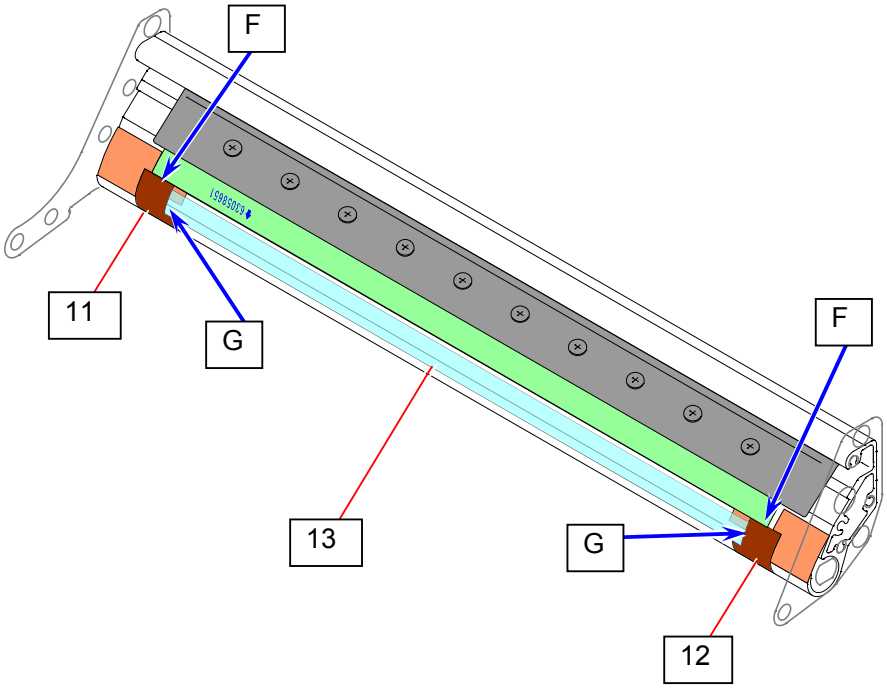
(5) Blade may wave with tightened strongly. Tighten the screws in either twice screwing with just enough turns for catching Blade.



6. Remove sticking toner, and apply **Seal 295** (11) and **Seal 296** (12).

NOTE

Align the top of Seal 295 (11) and Seal 296 (12) with the bottom edge of Blade (F) and the ends of Sheet 61 (13: G)

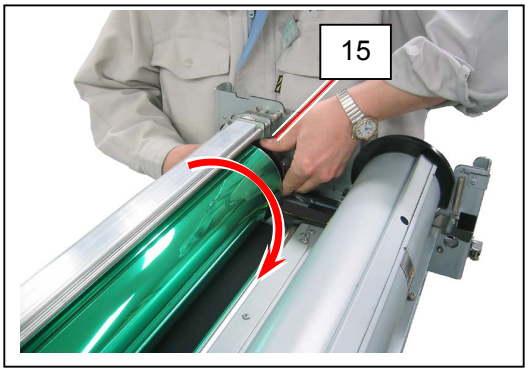


7. Evenly rub the entire Blade edge (14) with toner to avoid friction with Drum surface.

NOTE

Blade should be applied toner in the color corresponding to the Process Unit to be installed to.

8. Holding the gear on Drum (15), turn Drum to the direction of arrow in one revolution. Blade edge and Drum surface will match each other.



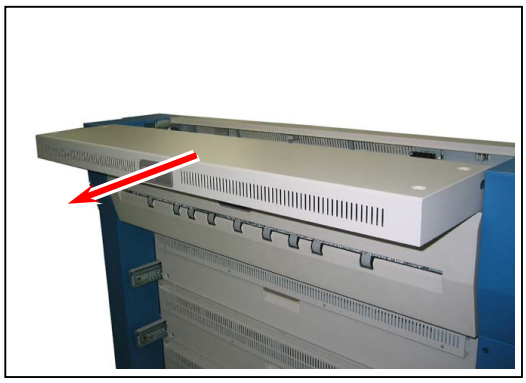
NOTE

Insufficient toner on Blade edge makes Drum rotation harder.
Apply more toner if too hard.

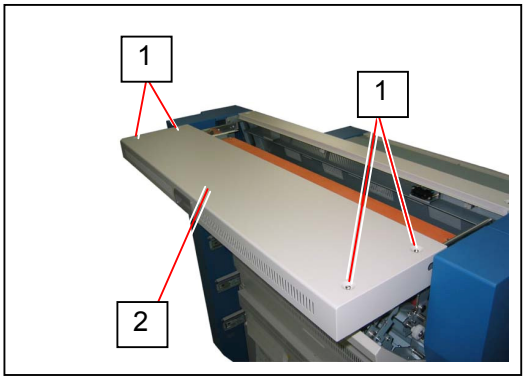
5. 6 Fuser Unit

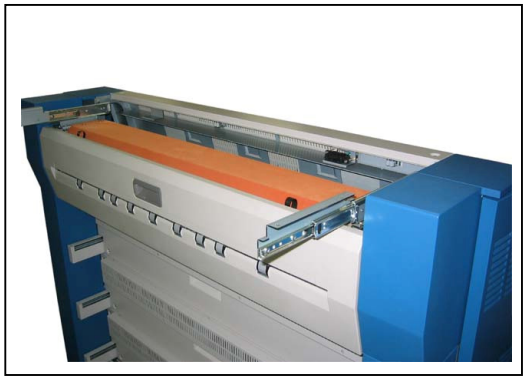
5. 6. 1 Removing Fuser Unit

1. Draw Cover 4 (1).



2. Remove 4 Tooth Washer Screws (2: M4x6) to remove Cover 4 (1).





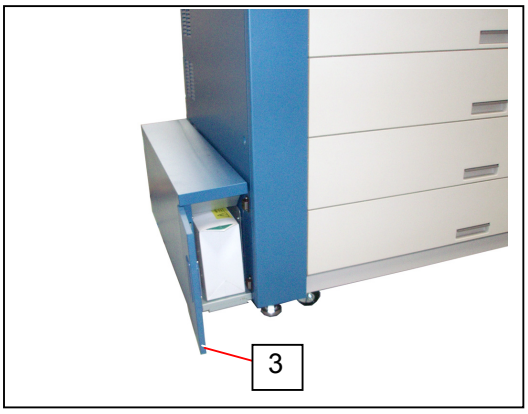
NOTE

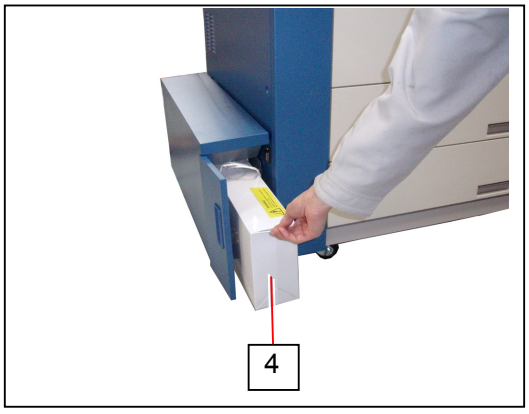
(1) Watch the rail. They can be mounted to the railing.

(2) When reassembling, follow the instruction below.

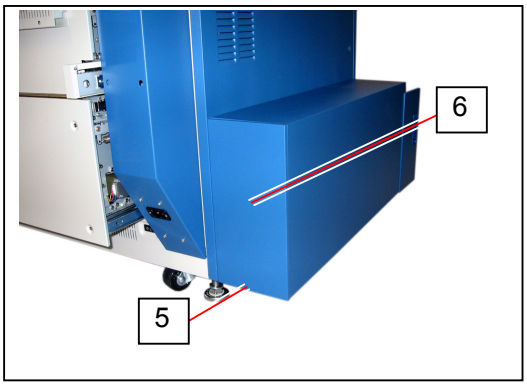
a) Draw the rails fully. Place Cover 4 (1) on the rails.
b) Fix Cover 4 (1) loose with the screws (2).
c) Close Fuser Upper Unit and then tighten the screws (2).

3. Open Cover 129 (3). Gently pull Waste Toner Box (4). Keep it a safe place to avoid scattering toner.

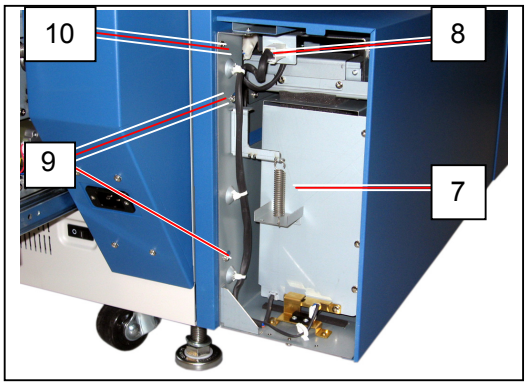


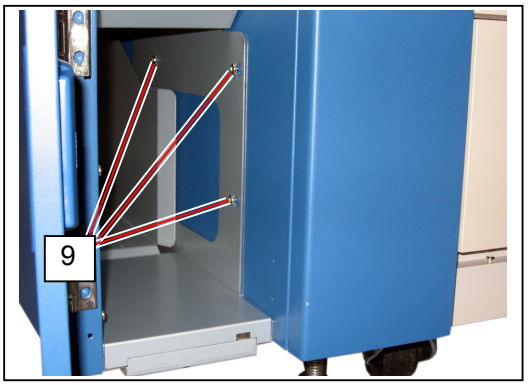


4. Loosen 1 screw (5) on the bottom of Waste Toner Unit to remove Cover 164 (6).



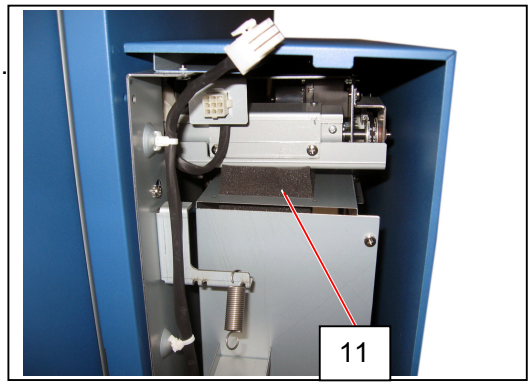
5. Remove Spring 257 (7). Disconnect the connector 13 (8).
   Loosen 5 screws (9) fixing Waste Toner Unit. Remove 1 screw (10).



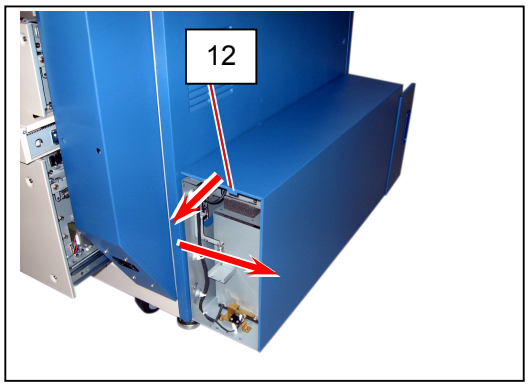


NOTE

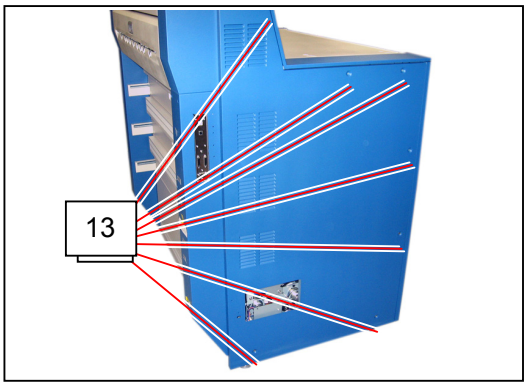
Make sure that Seal 254 is inside of Seal 279 (11).
The toner will spill out if it is outside.

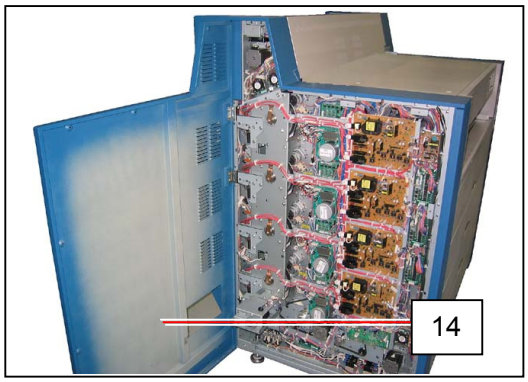


6. Slide Waste Toner Unit (12) to the direction of arrow to remove it.

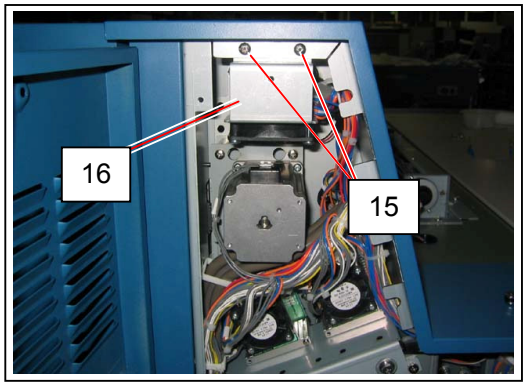


7. Remove 7 Tooth Washer Screws (13) to open Cover 119 (14).

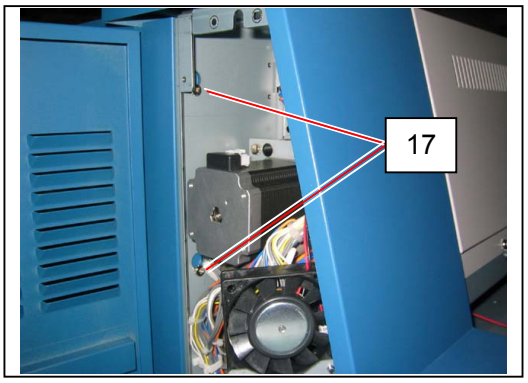


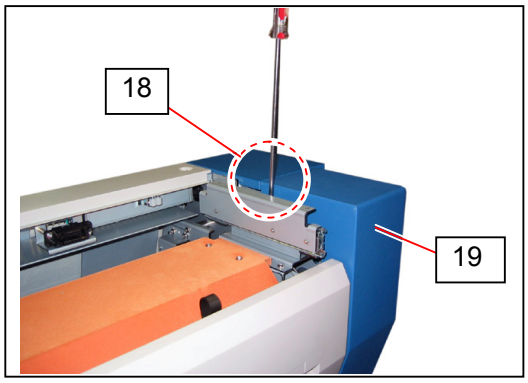


8. Remove 2 Tooth Washer Screws (15: M4x6) to remove Fan Bracket (16)

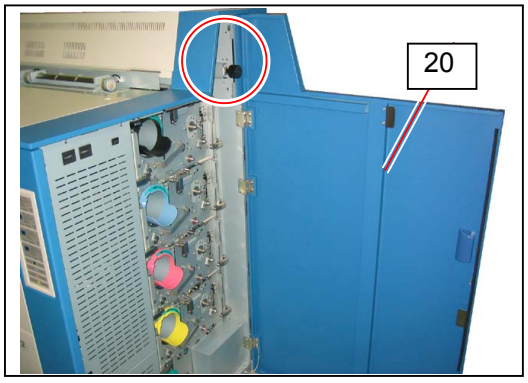


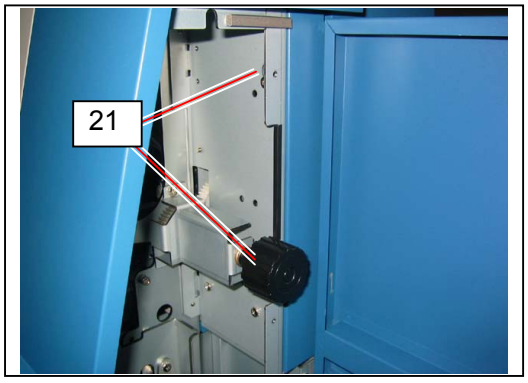
9. Loosen 2 screws (17), remove 1 Tooth Washer Screw (18: M4x6) to remove Cover 121 (19)



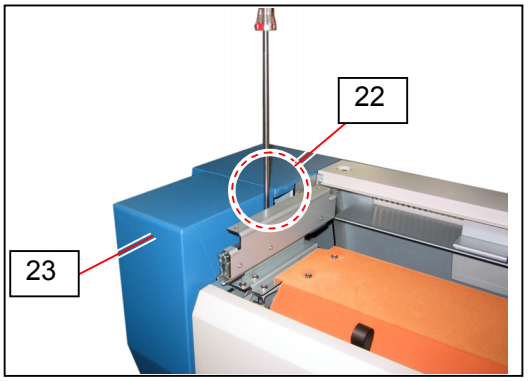


10. Open Cover 120 (20), loosen 2 screws (21).

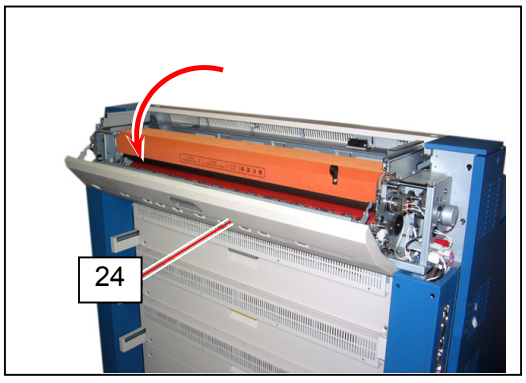




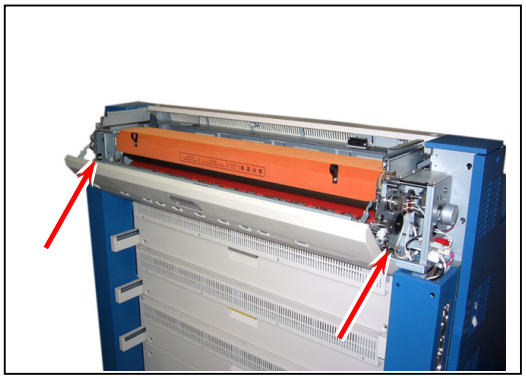
11. Remove 1 Tooth Washer Screw (22: M4x6) to remove Cover 122 (23).

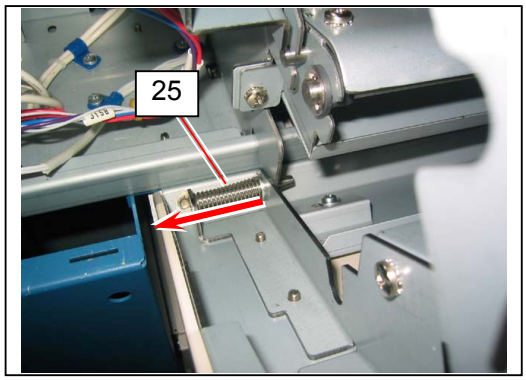


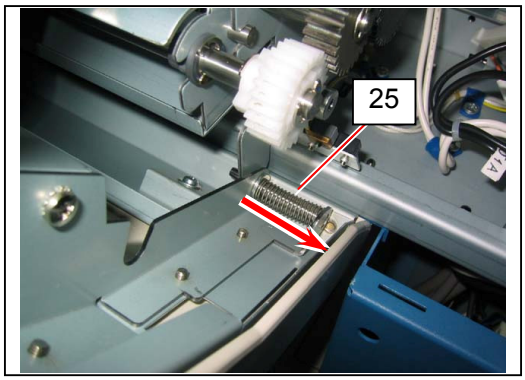
12. Open Fuser Door Assy (24).

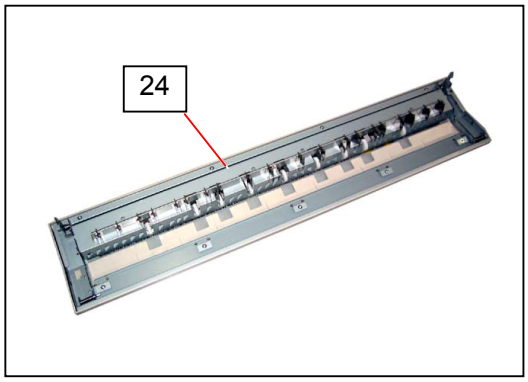


13. Move the pins (25) to the direction of arrow (outward) to remove Fuser Door Assy (24).

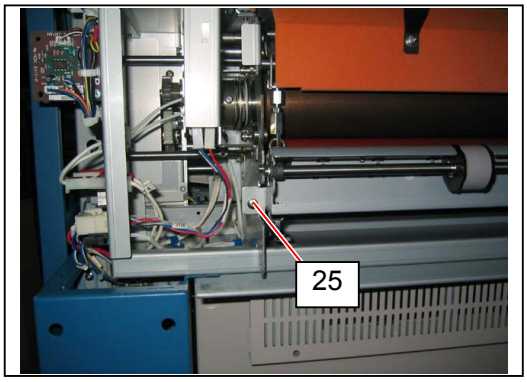


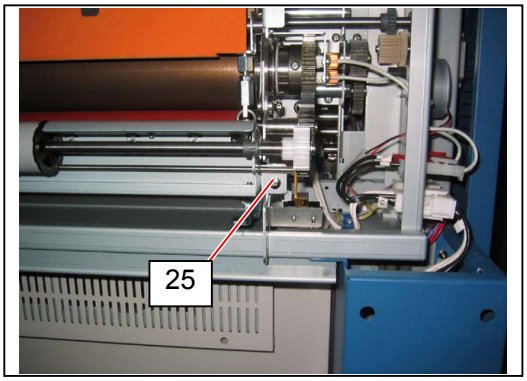


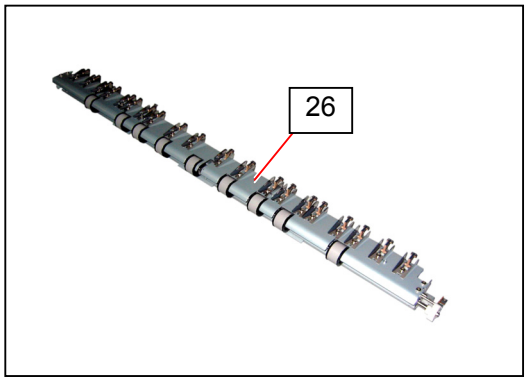




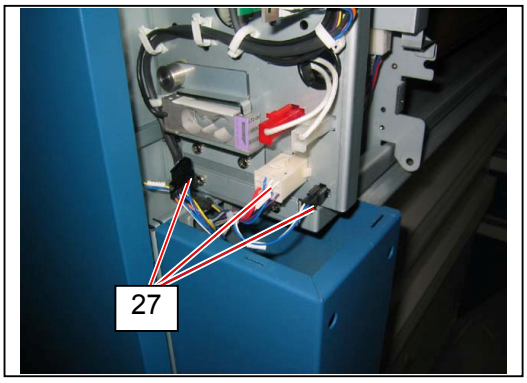
13. Remove 2 Tooth Washer Screws (25: M4x8) to remove Frame Assy (26).

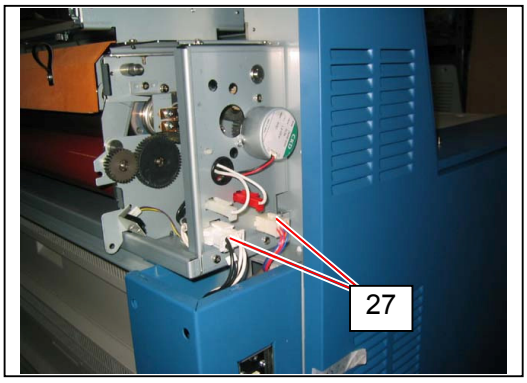






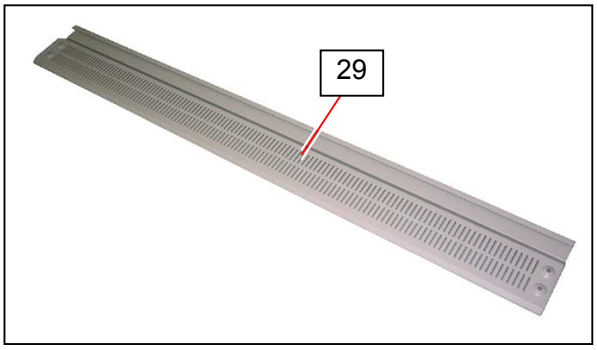
14. Disconnect 5 connectors (27) (3 for right, 2 for left)





15. Remove 4 Tooth Washer Screws (28: M4x6) to remove Cover 2 (29).

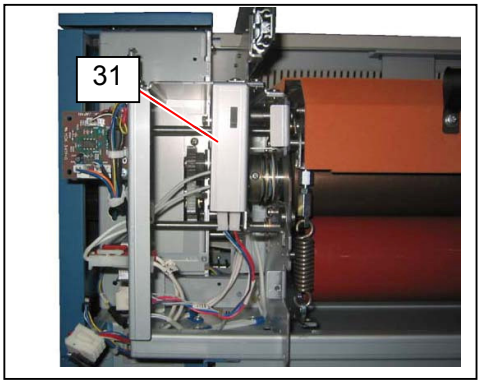


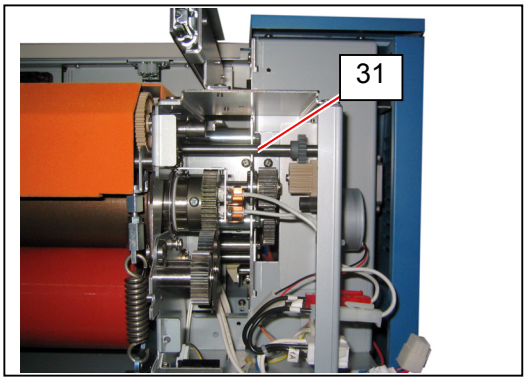


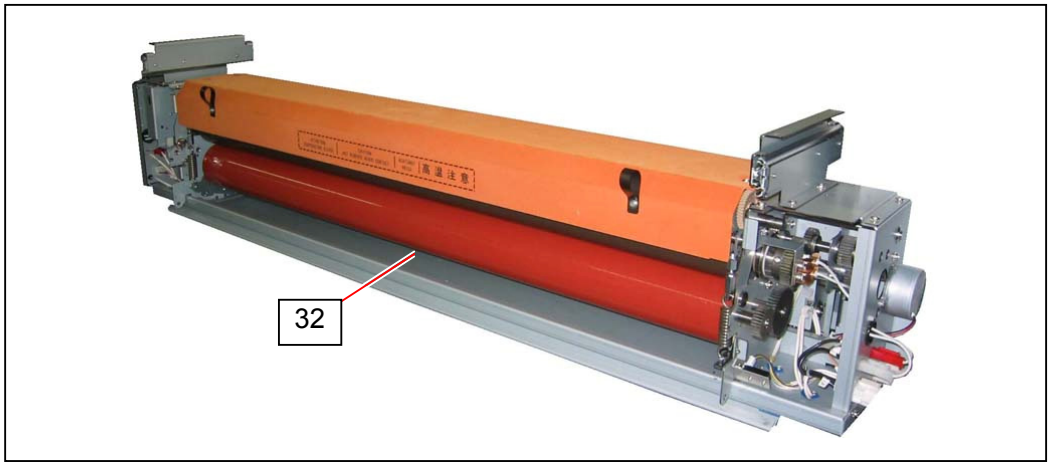
16. Remove 4 Tooth Washer Screws (30: M4x6).



17. Remove 1 Tooth Washer Screw (31: M4x6) from each side to remove Fuser Unit (32).







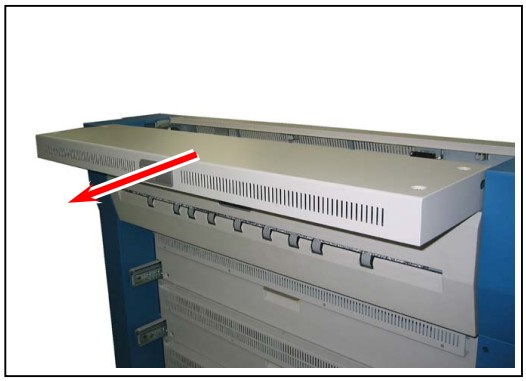
5. 6. 2 Replacing IR Lamp, Fusing Roller and Pressure Roller

NOTE

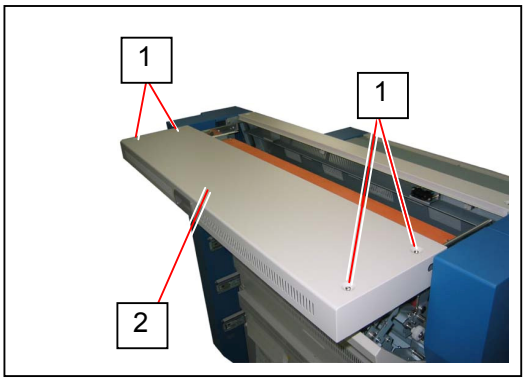
Fusing Roller and Pressure Roller are recommended for periodic replacement.

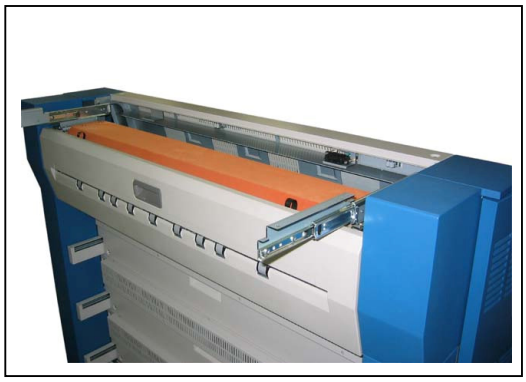
Item	Part Number	Number of article
Fusing Roller	7704400390	1
Pressure Roller	2210440011	1

1. Draw Cover 4 (1).



2. Remove 4 Tooth Washer Screws (2: M4x6) to remove Cover 4 (1).





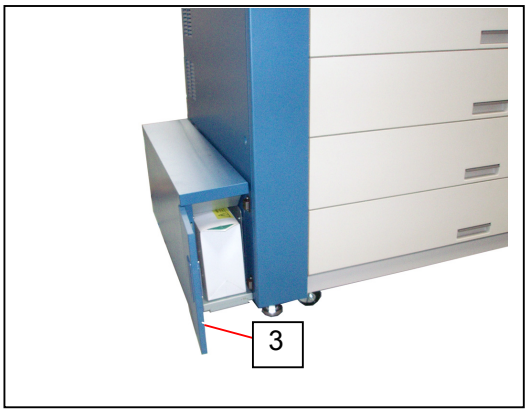
NOTE

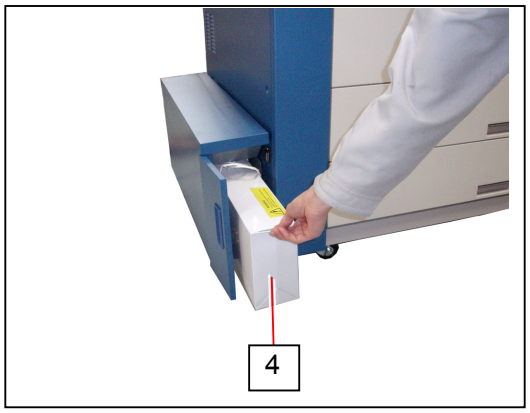
(1) Watch the rail. They can be mounted to the railing.

(2) When reassembling, follow the instruction below.

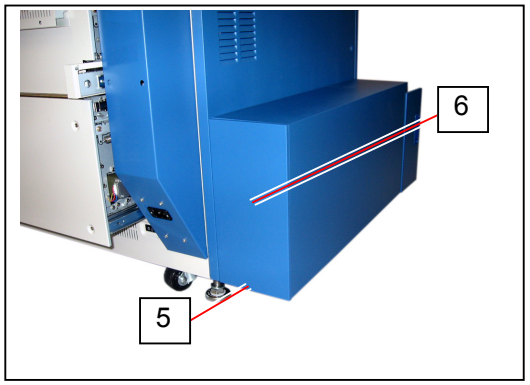
a) Draw the rails fully. Place Cover 4 (1) on the rails.
b) Fix Cover 4 (1) loose with the screws (2).
c) Close Fuser Upper Unit and then tighten the screws (2).

3. Open Cover 129 (3). Gently pull Waste Toner Box (4). Keep it a safe place to avoid scattering toner.

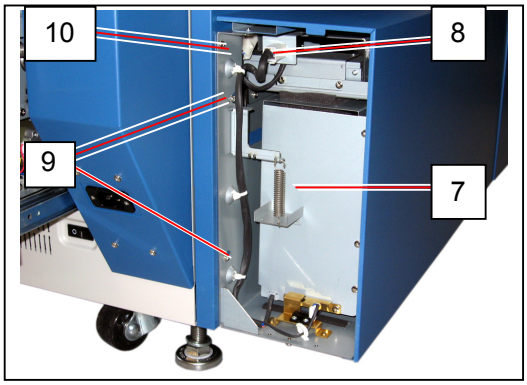


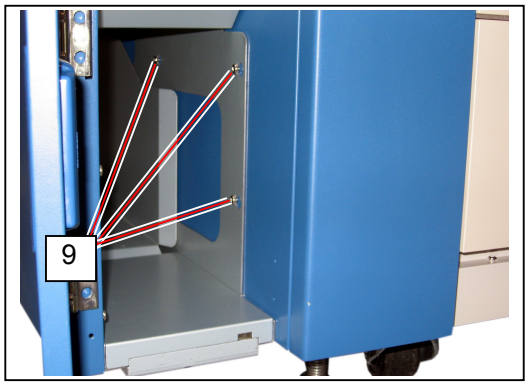


4. Loosen 1 screw (5) on the bottom of Waste Toner Unit to remove Cover 164 (6).



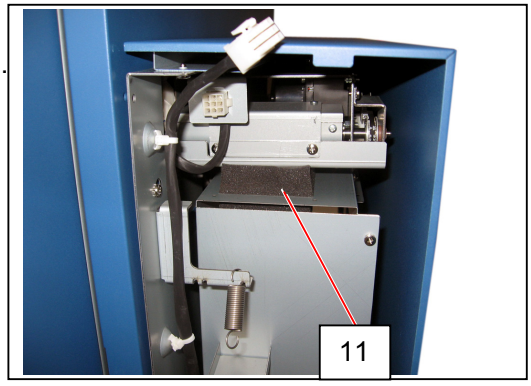
5. Remove Spring 257 (7). Disconnect the connector 13 (8).
Loosen 5 screws (9) fixing Waste Toner Unit. Remove 1 screw (10).



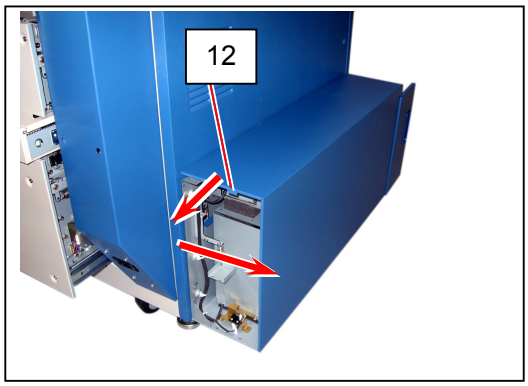


NOTE

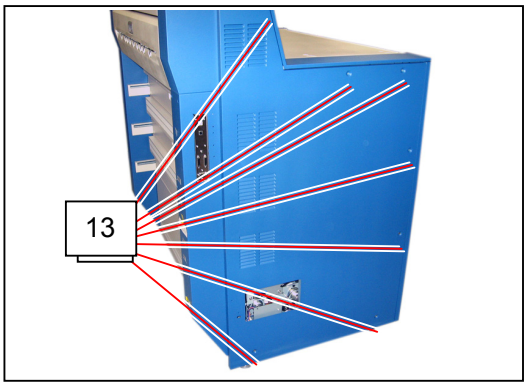
Make sure that Seal 254 is inside of Seal 279 (11).
The toner will spill out if it is outside.

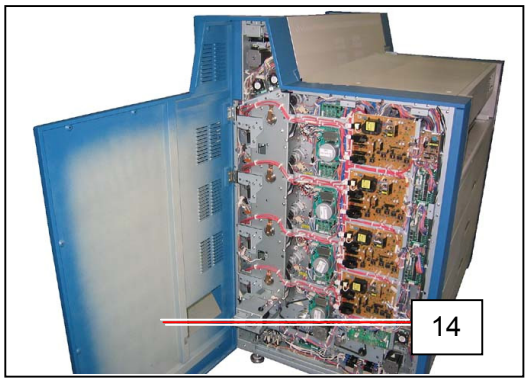


6. Slide Waste Toner Unit (12) to the direction of arrow to remove it.

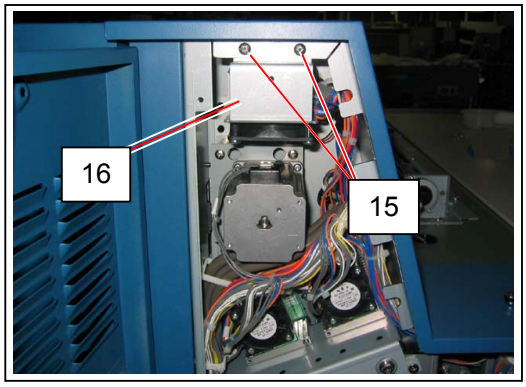


7. Remove 7 Tooth Washer Screws (13) to open Cover 119 (14).

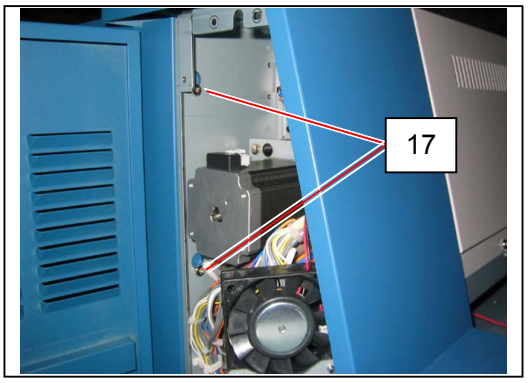


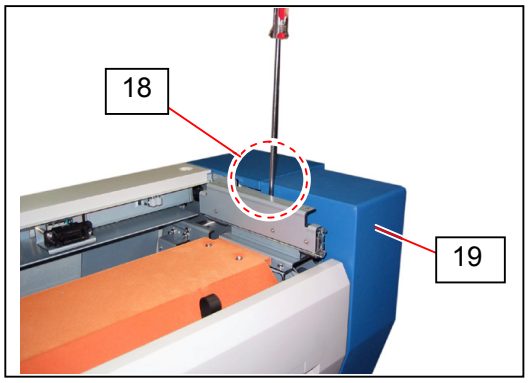


8. Remove 2 Tooth Washer Screws (15: M4x6) to remove Fan Bracket (16)

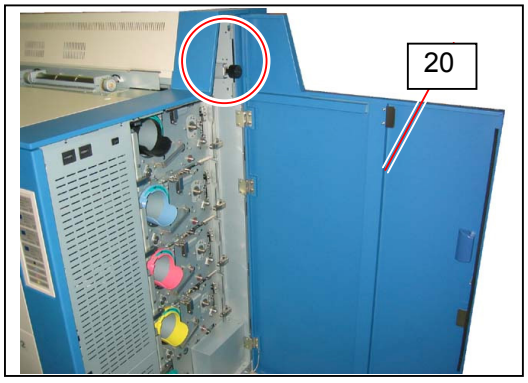


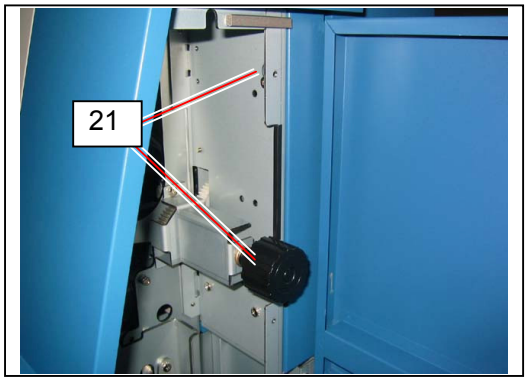
9. Loosen 2 screws (17), remove 1 Tooth Washer Screw (18: M4x6) to remove Cover 121 (19)



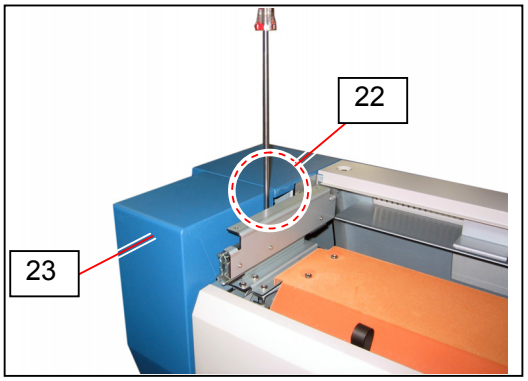


10. Open Cover 120 (20), loosen 2 screws (21).

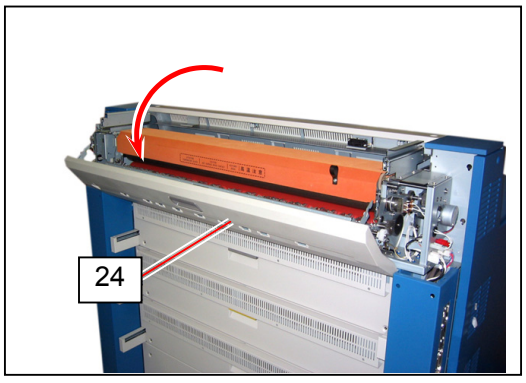




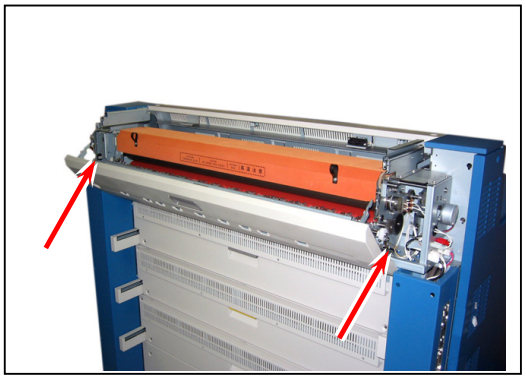
11. Remove 1 Tooth Washer Screw (22: M4x6) to remove Cover 122 (23).

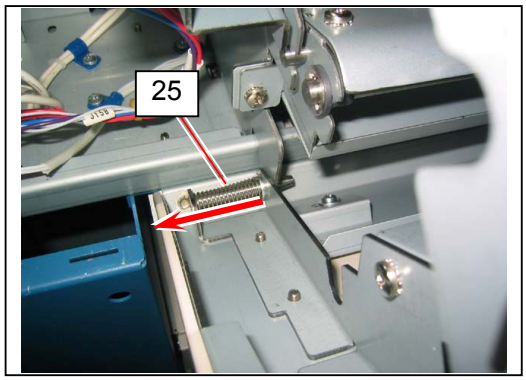


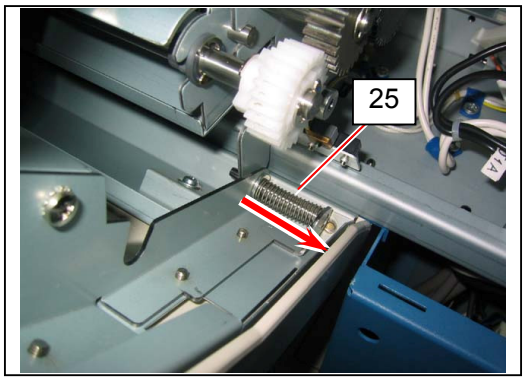
12. Open Fuser Door Assy (24).

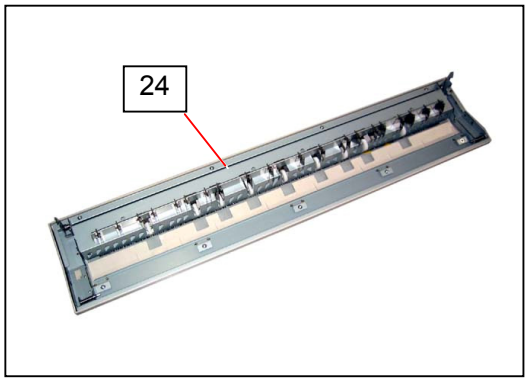


13. Move the pins (25) to the direction of arrow (outward) to remove Fuser Door Assy (24).

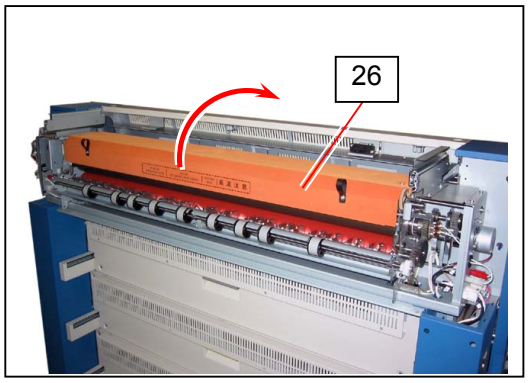




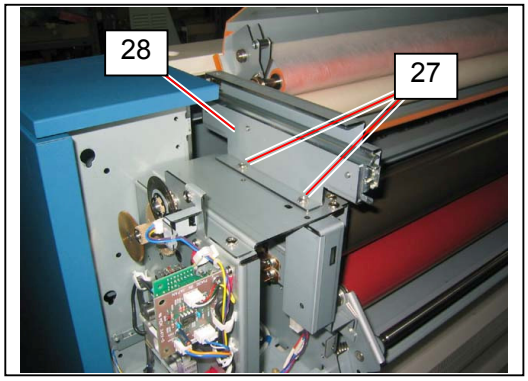




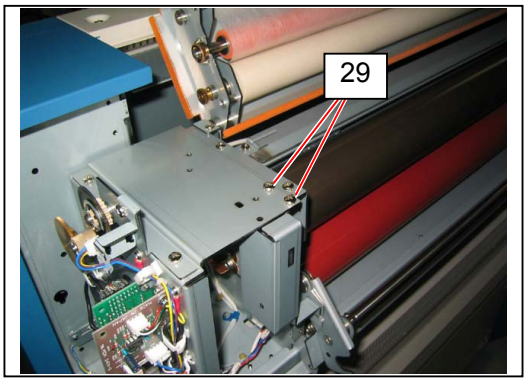
14. Holding the bands at both sides, open Cover 3 (26).

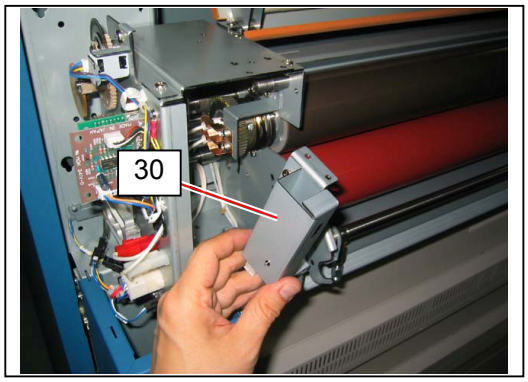


15. Remove 2 Tooth Washer Screws (27: M4x6) to remove Rail Assy (28).

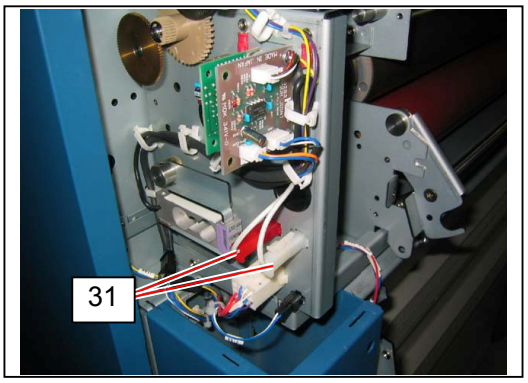


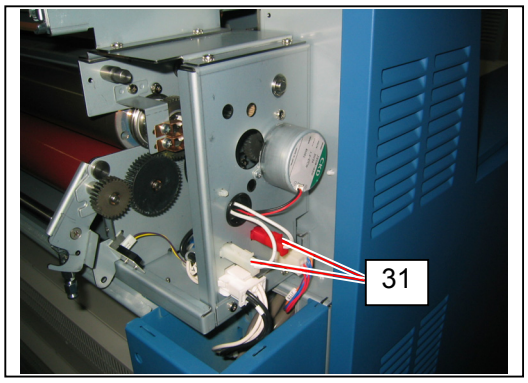
16. Remove 2 Tooth Washer Screws (29: M4x6) to remove Switch Case Assy (30).



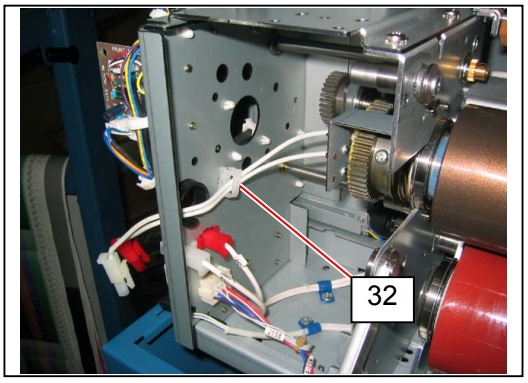


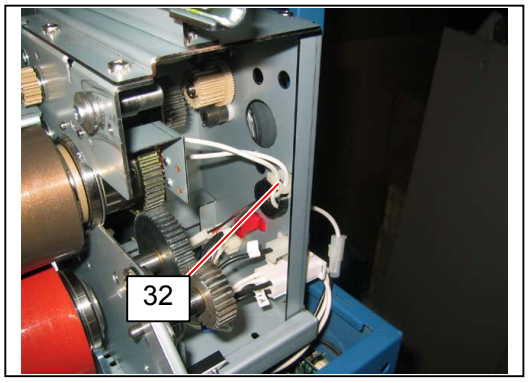
17. Disconnect 4 connectors (31) for IR Lamp.



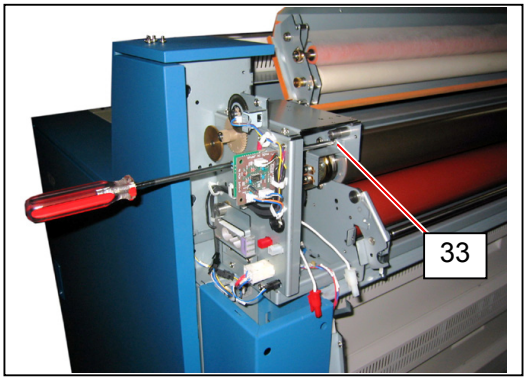


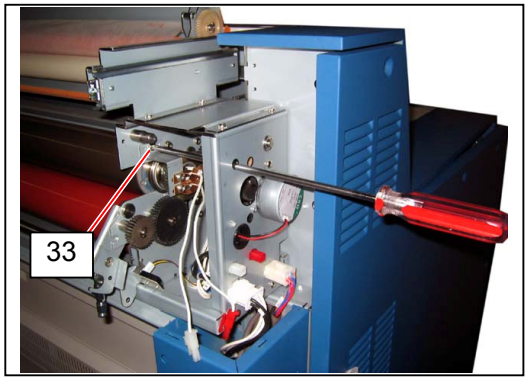
18. Open Cable Clamps (32) to release harnesses.

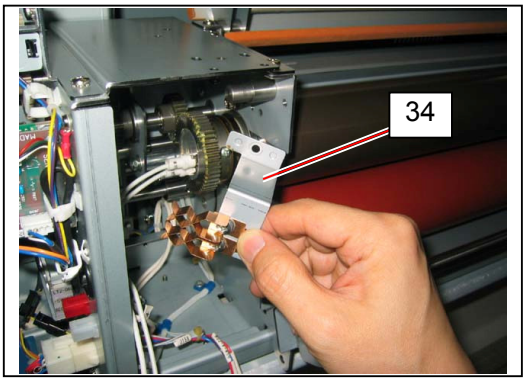


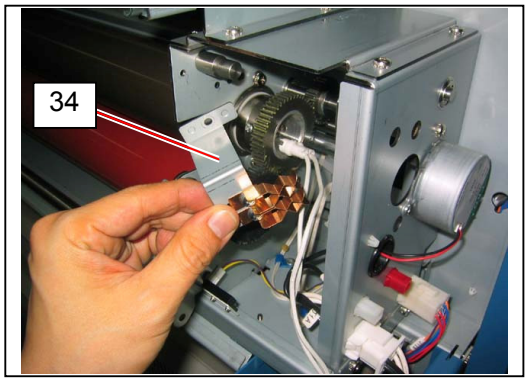


19. Remove 1 screw (33: M4x6) on both sides to remove IR Lamp holder (33).

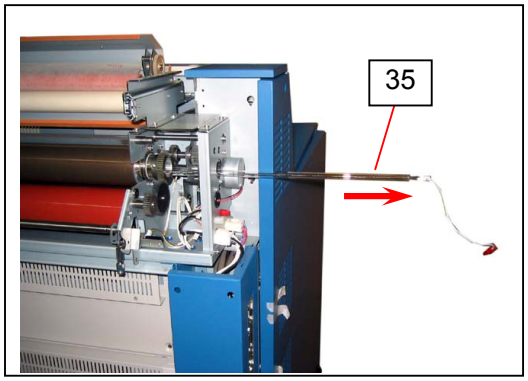








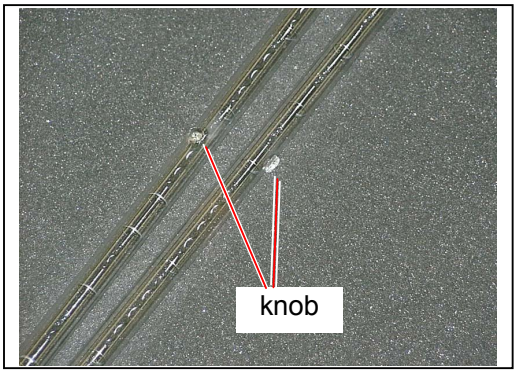
20. Gently pull IR Lamp (35) through the hole on the side plate.
Replace **IR Lamp** (35) with new ones.

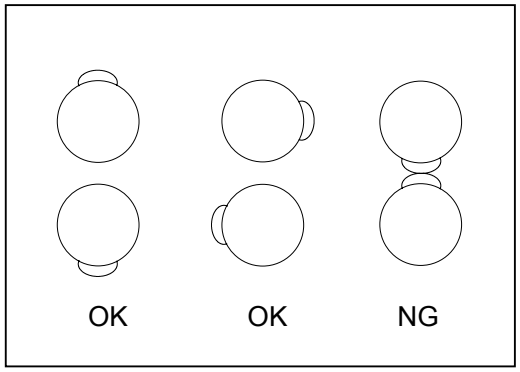


NOTE

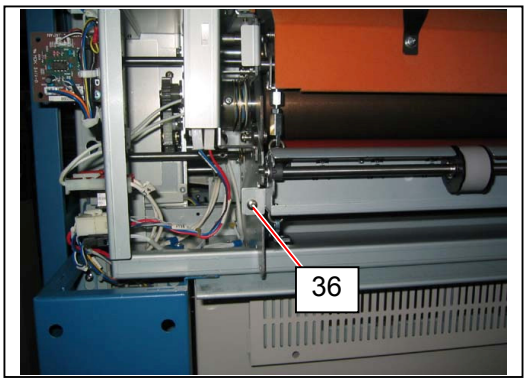
(1) One IR Lamp has white connectors, the other one has red connectors.
Install the white connector one to the upper holder.

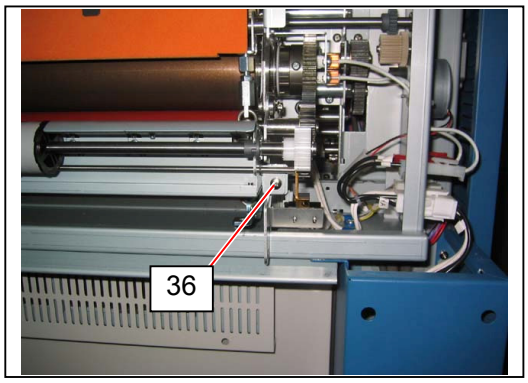
(2) IR Lamp has a glass knob on the middle.
Install 2 IR Lamps so that their knobs face in staggered / opposite direction (outside).
Facing each other (inside) may damage IR Lamps because of the glass touch.

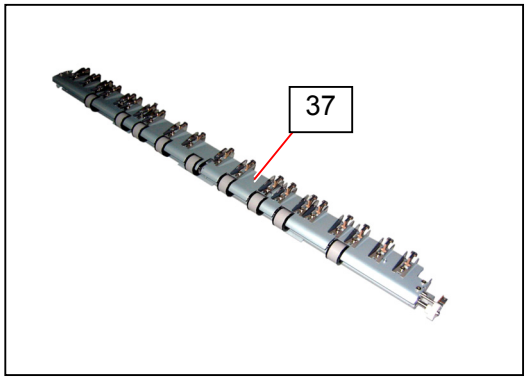




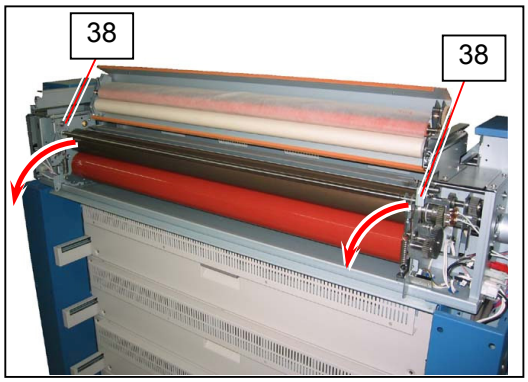
21. Remove 1 Tooth Washer Screw (36 M4x8) on both sides to remove Guide Plate Assy (37).



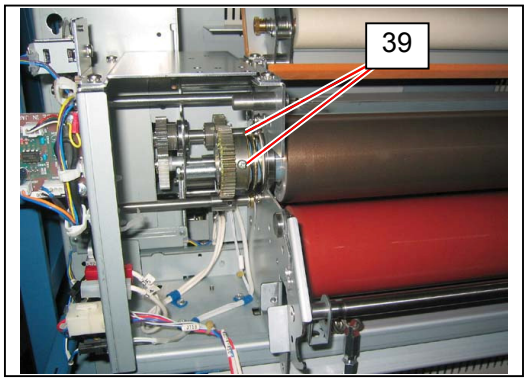


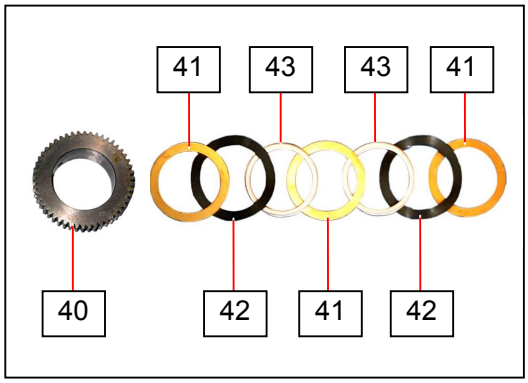


22. Pull Lever (38) on both sides to release pressure on Pressure Roller.

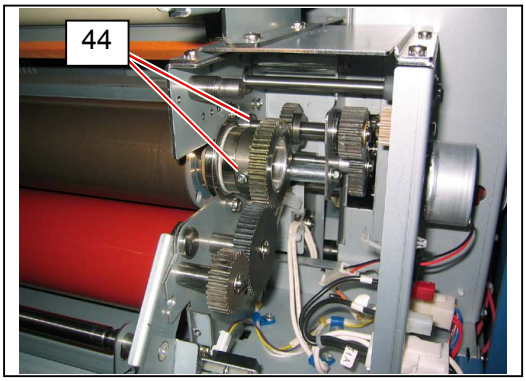


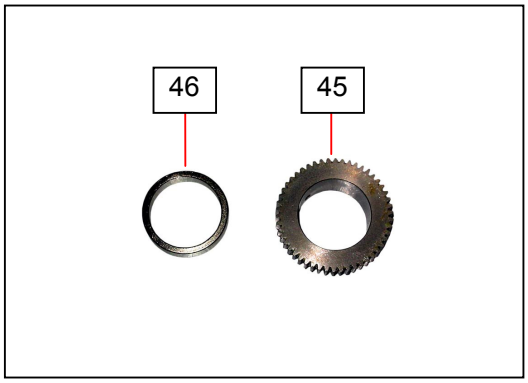
23. Remove 2 screws (39: M4x8) to remove Spur Gear 50T (40), Spacer (41), Wave Washer (42) and Collar (43).



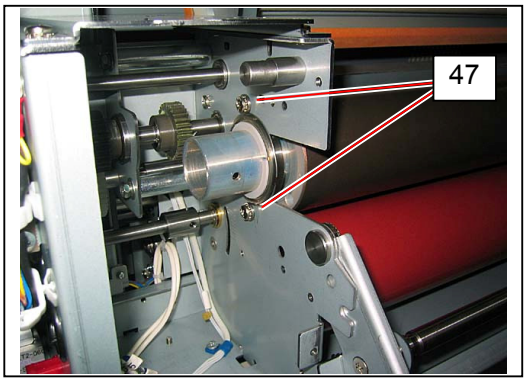


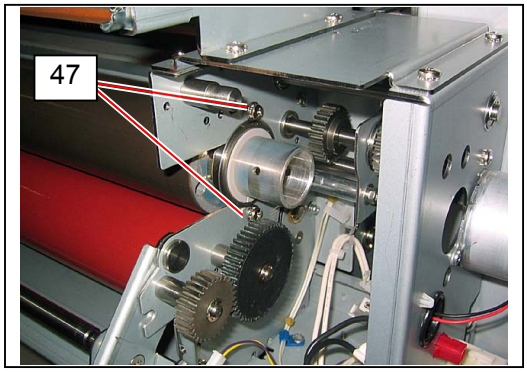
24. Remove 2 screws (44: M4x8) to remove Spur Gear 50T (45) and Collar 1 (46).

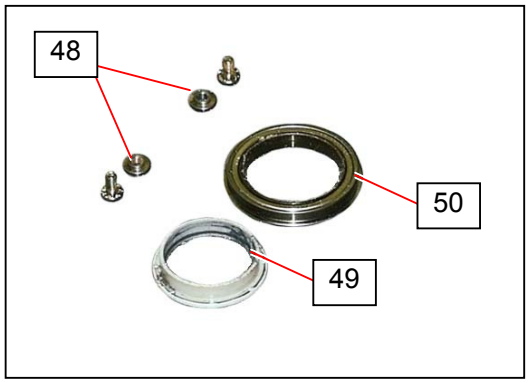




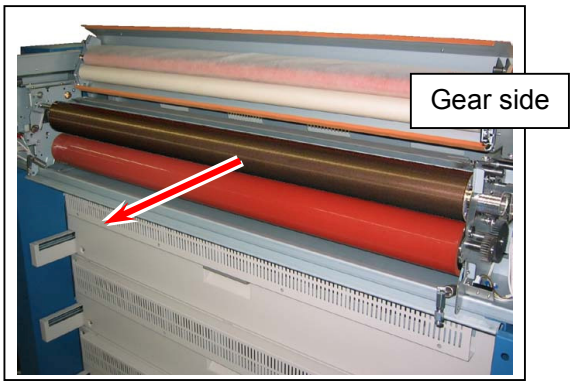
25. Remove 2 Tooth Washer Screws (47: M4x8) on both sides to remove Collar (48), Isolate Bushing (49) and Ball Bearing (50).

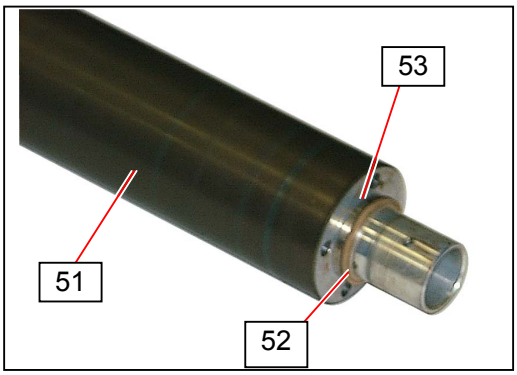






26. Pull Fusing Roller (51) to the direction of arrow (machine back side) to remove it.
Remove Collar E (52: both ends) and Collar 4 (53: Gear side only).
Replace **Fusing Roller** (51) with a new one.

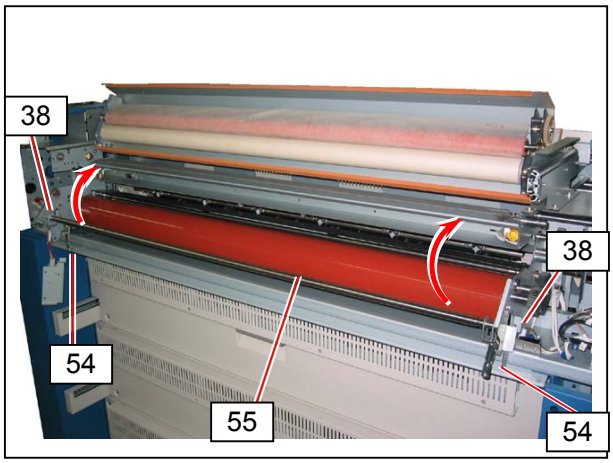


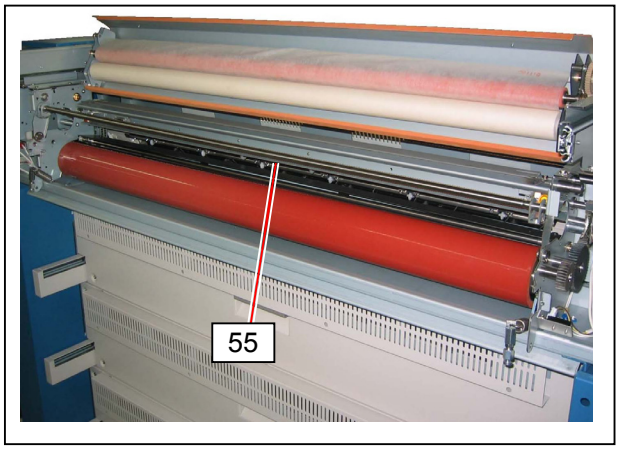


NOTE

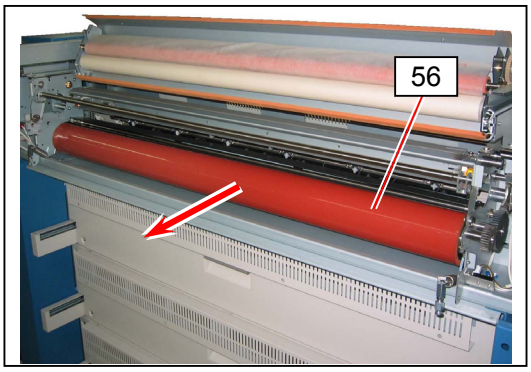
Fusing Roller can be installed in either direction.
The one end with reinstalled Collar E and Collar 4 should be placed to Gear side end (machine left side).

27. Release Spring Hooks (54).
Return Lever (38) on both sides to its original position to lift Stay (55) up.

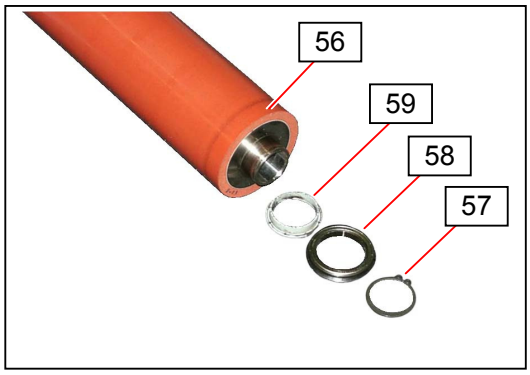




28. Pull Pressure Roller (56) to the direction of arrow (back) to remove it.



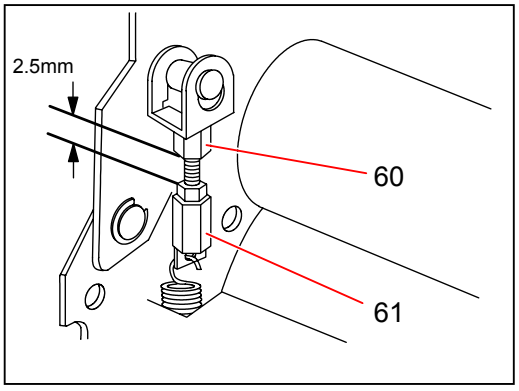
29. Remove C Ring (57: M32), Ball Bearing (58) and Isolate Bushing (59) from both ends of Pressure Roller (56).
Replace **Pressure Roller** (56) with a new one.

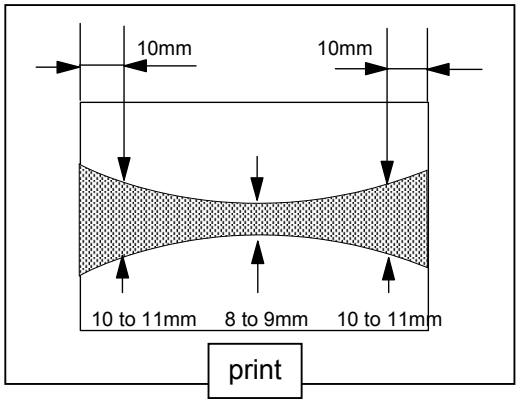


NOTE

(1) Pressure Roller can be installed in either direction.

(2) Fusing Pressure can be adjusted according to the gap between Spring Hook 1 (60) and Spring Hook 2 (61).
The default gap is 2.5mm.
The NIP width at the center is 8 to 9mm, at the side 10mm inside the paper edge (36" / A0) is 10 to 11mm.





5. 6. 3 Replacing Stripper Finger and Separation Finger

NOTE

The following parts are recommended for periodic replacement.

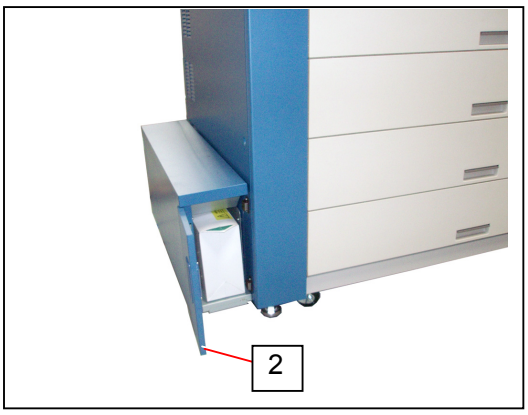
Item	Part Number	Number of article
Stripping Finger	4704400070	20
Separation Finger	7104403290	20

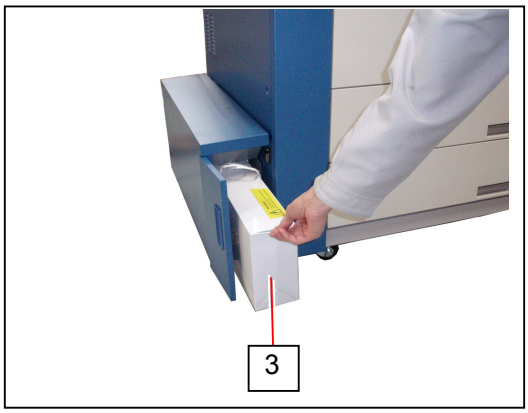
This section describes how to replace all of them in one sequent operation.

1. Draw Cover 4 (1).

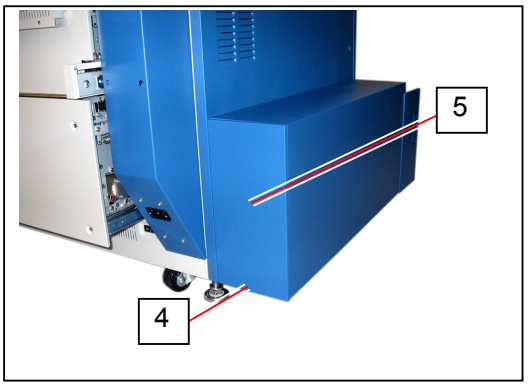


2. Open Cover 129 (2). Gently pull Waste Toner Box (3). Keep it a safe place to avoid scattering toner.

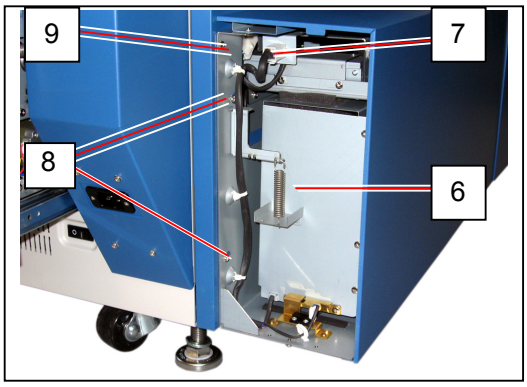


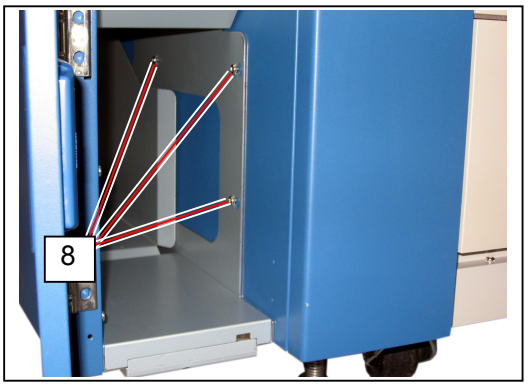


3. Loosen 1 screw (4) on the bottom of Waste Toner Unit to remove Cover 164 (5).



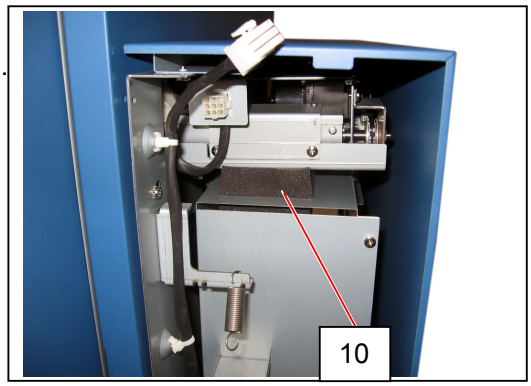
4. Remove Spring 257 (6). Disconnect the connector 13 (7).
   Loosen 5 screws (8) fixing Waste Toner Unit. Remove 1 screw (9).



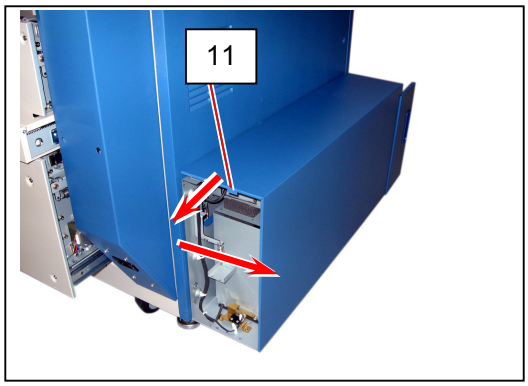


NOTE

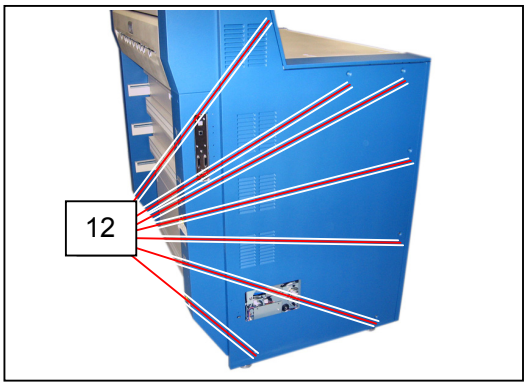
Make sure that Seal 254 is inside of Seal 279 (10).
The toner will spill out if it is outside.

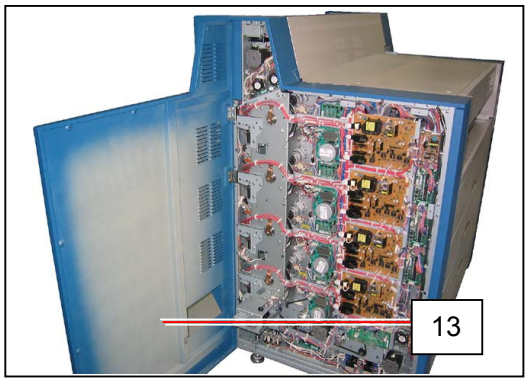


5. Slide Waste Toner Unit (11) to the direction of arrow to remove it.

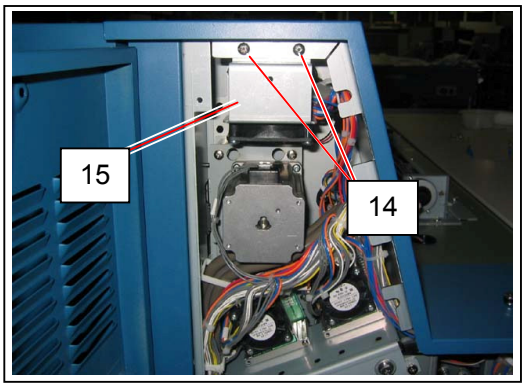


6. Remove 7 Tooth Washer Screws (12) to open Cover 119 (13).

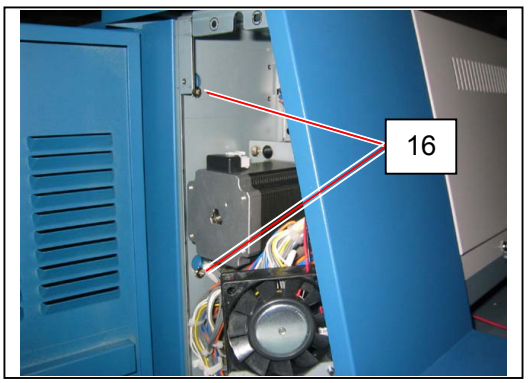


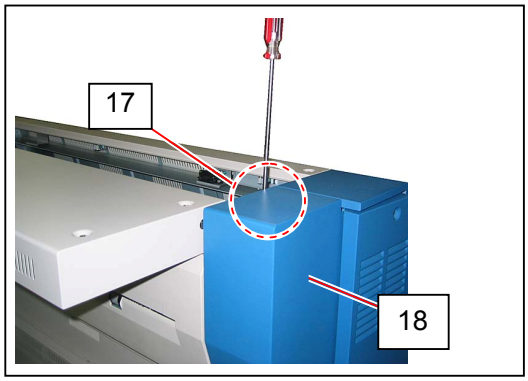


7. Remove 2 Tooth Washer Screws (14: M4x6) to remove Fan Bracket (15)

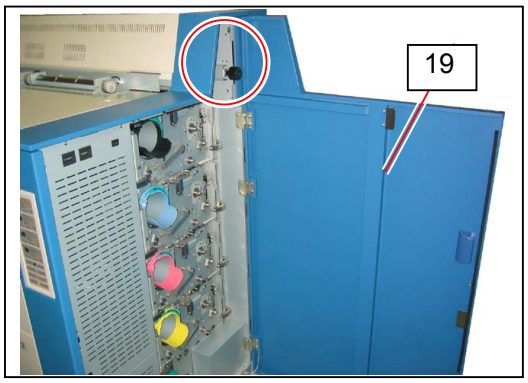


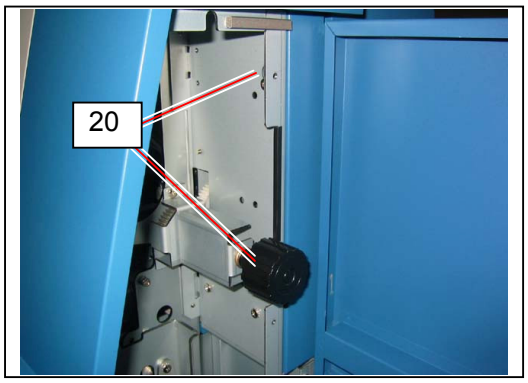
8. Loosen 2 screws (16), remove 1 Tooth Washer Screw (17: M4x6) to remove Cover 121 (18)



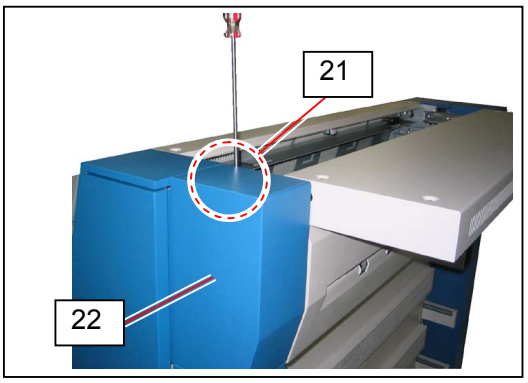


9. Open Cover 120 (19), loosen 2 screws (20).

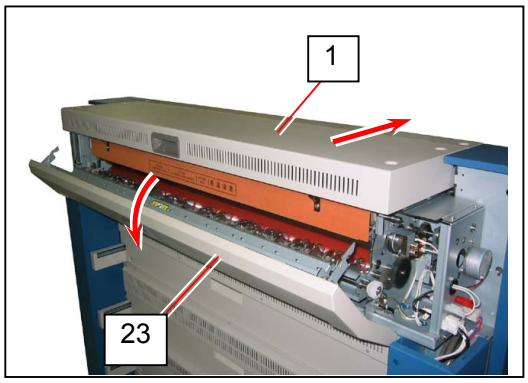




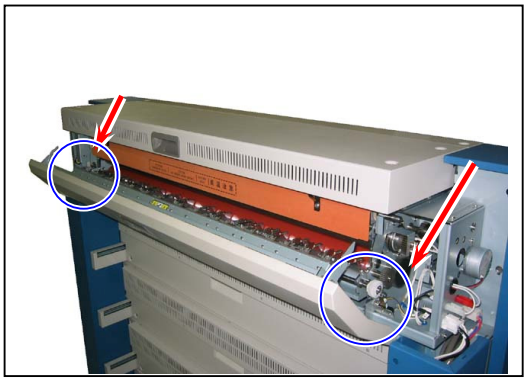
10. Remove 1 Tooth Washer Screw (21: M4x6) to remove Cover 122 (22).

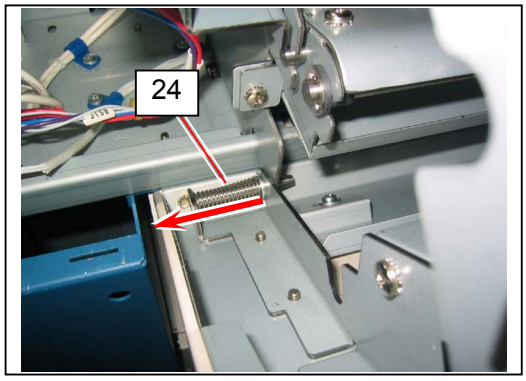


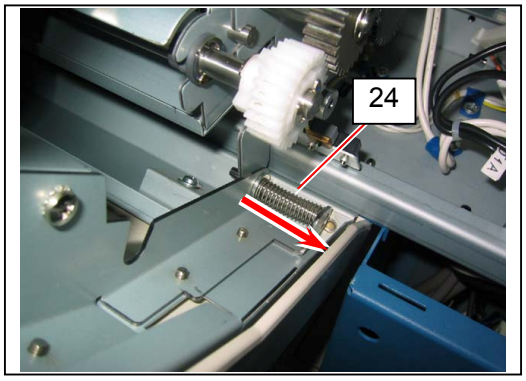
11. Close Cover 4 (1). Open Fuser Door Assy (23).

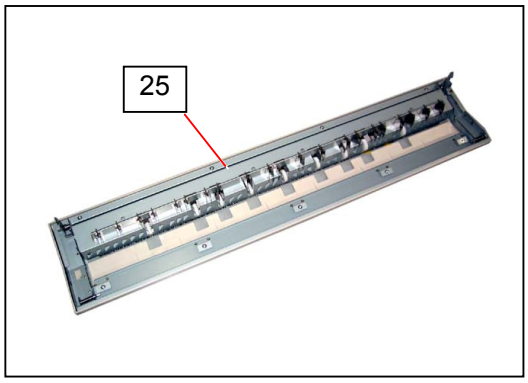


12. Move the pins (24) to the direction of arrow (outward) to remove Fuser Door Assy (25).

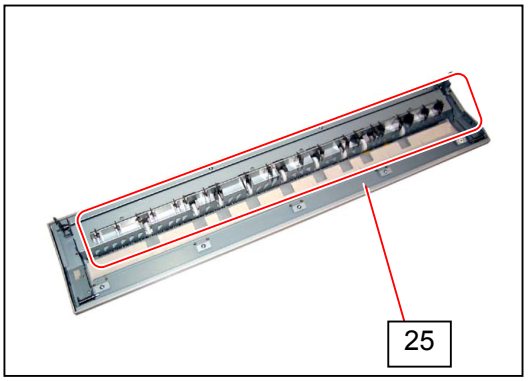


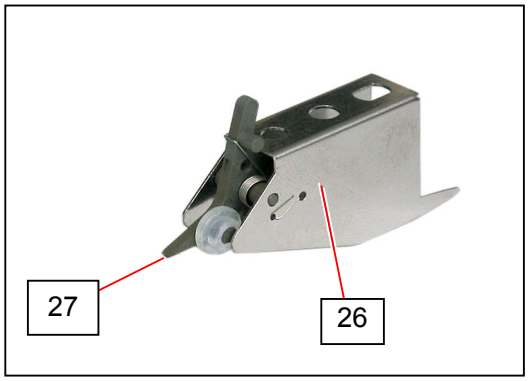






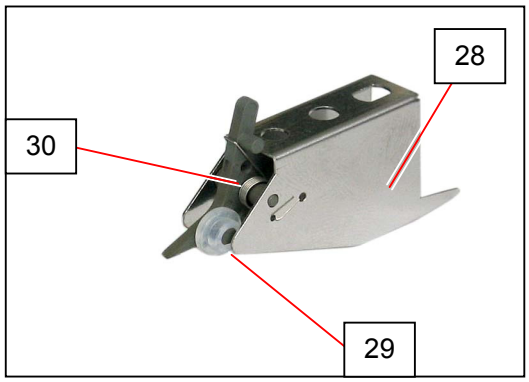
13. Remove Stripper Finger Assy (26) from Fuser Door Assy (25).
Replace **Stripper Finger** (27) with a new one.



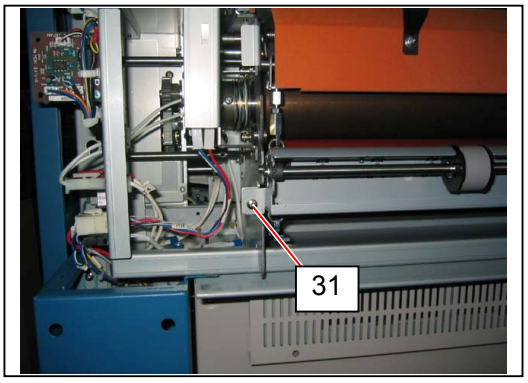


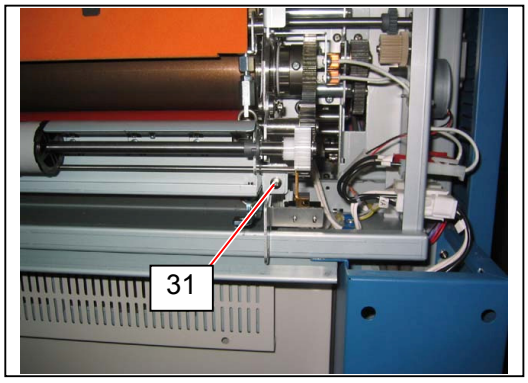
NOTE

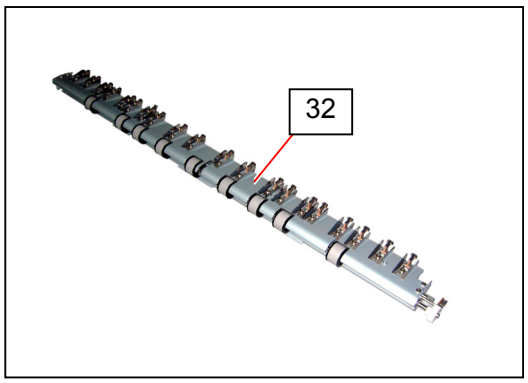
Reinstall the removed Guide (28), Spring 2 (29) and the small collar (30).



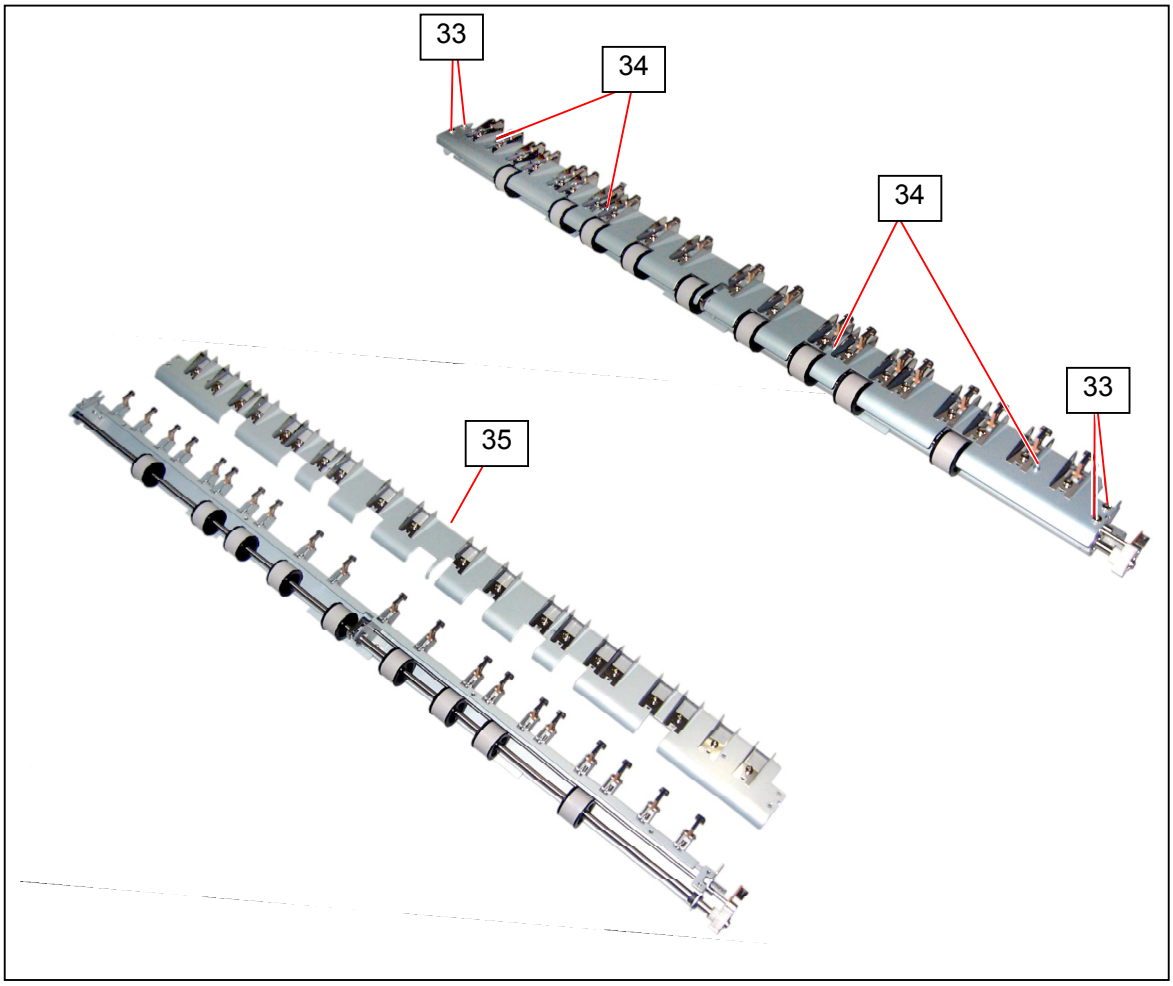
14. Remove 1 Tooth Washer Screw (31 M4x8) on both sides to remove Guide Plate Assy (32).



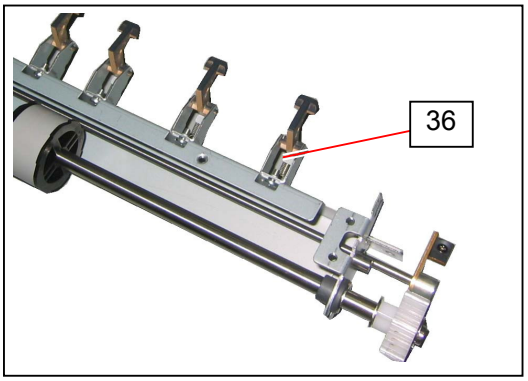


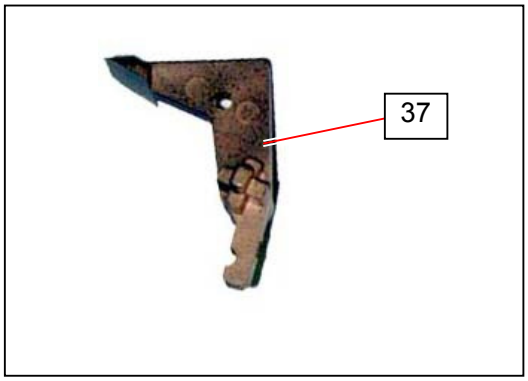


15. Remove 4 Tooth Washer Screws (33: M4x8) and screws (34: M4x6) to remove Guide Plate (35).



16. Remove Extension Spring 1 (36) to remove Separation Finger (37).
Replace **Separation Finger** (37) with a new one.





5. 6. 4 Replacing Web Cleaner

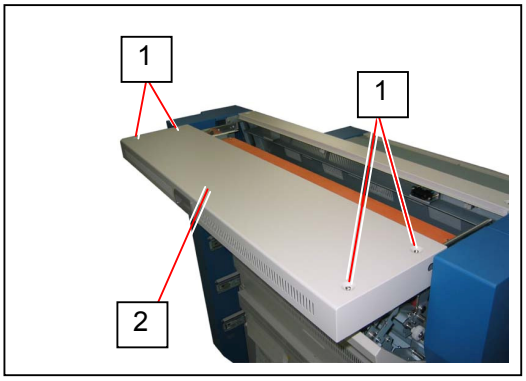
NOTE

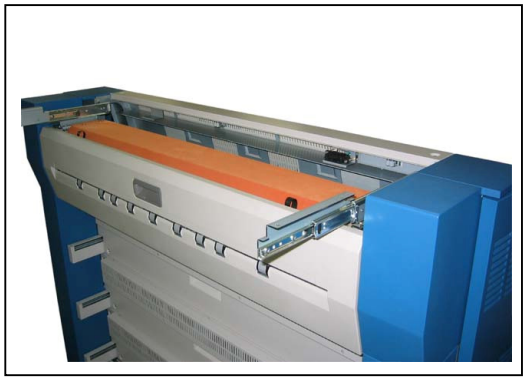
Web Motor operation time should be initialized (set to “0 hour 0 minute 0 second”) after replacing Web Cleaner to notify Web Cleaner Roll end.

1. Draw Cover 4 (1).



2. Remove 4 Tooth Washer Screws (2: M4x6) to remove Cover 4 (1).





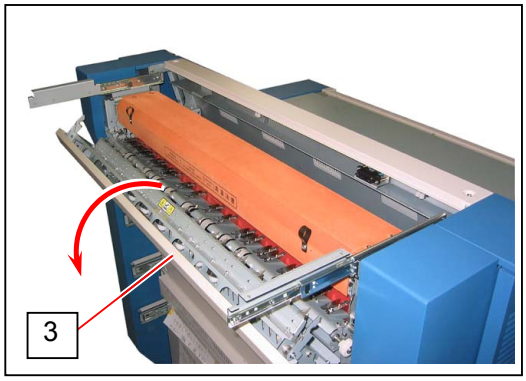
NOTE

(1) Watch the rail. They can be mounted to the railing.

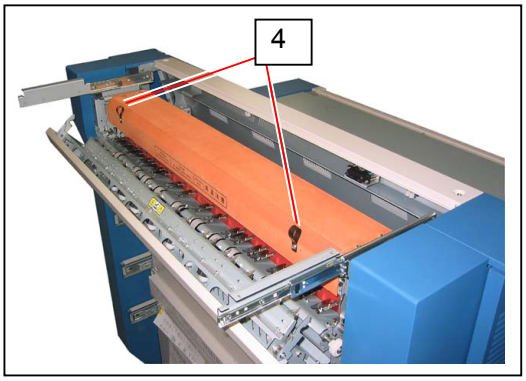
(2) When reassembling, follow the instruction below.

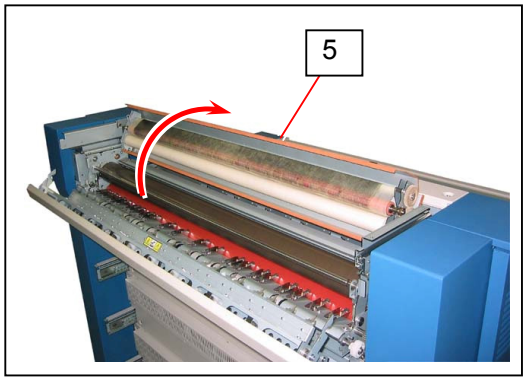
a) Draw the rails fully. Place Cover 4 (1) on the rails.
b) Fix Cover 4 (1) loose with the screws (2).
c) Close Fuser Upper Unit and then tighten the screws (2).

3. Open Fuser Door Assy (3).

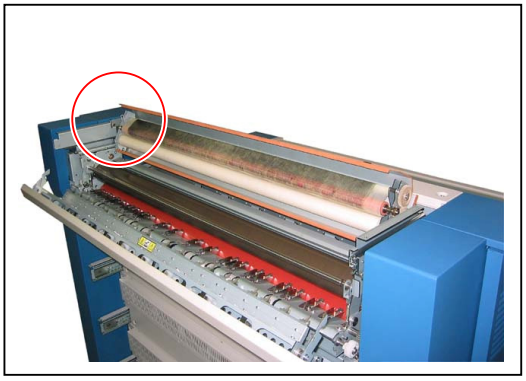


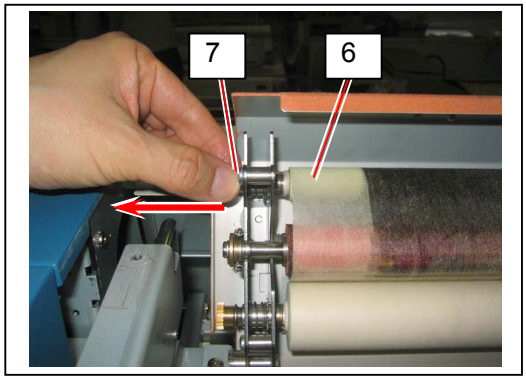
4. Hold Handles (4) and Open Cover 3 (5).





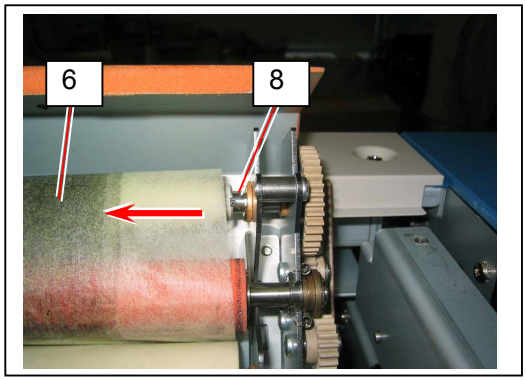
5. Pull the pin (7) fixing Cleaner Shaft (6) to the direction of arrow and release Cleaner Shaft.



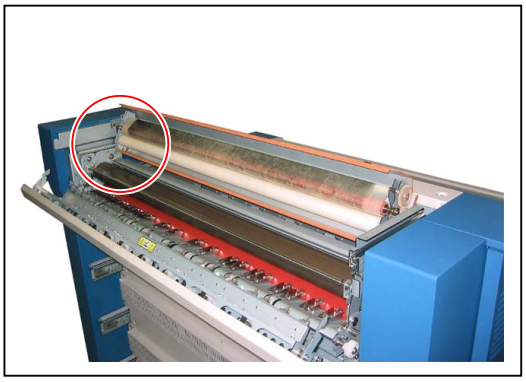


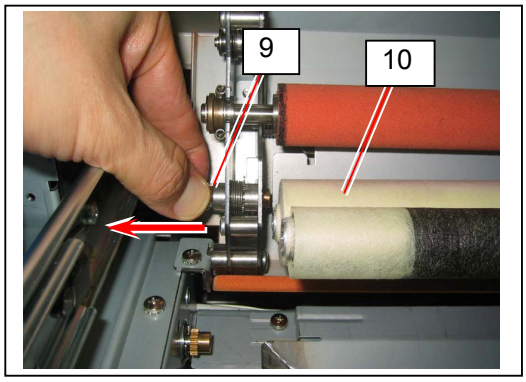
6. Release Cleaner Shaft (6) from the pin (8) on the other side.





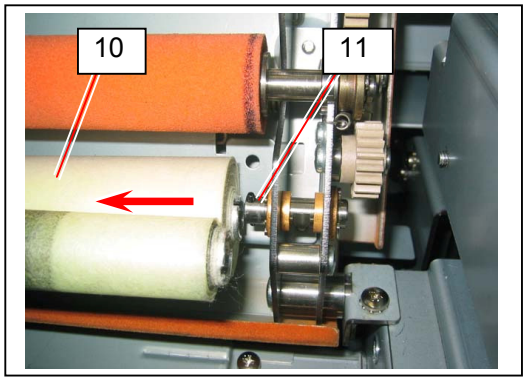
7. Pull the pin (9) fixing the other Cleaner Shaft (10) to the direction of arrow to release Web Cleaner.



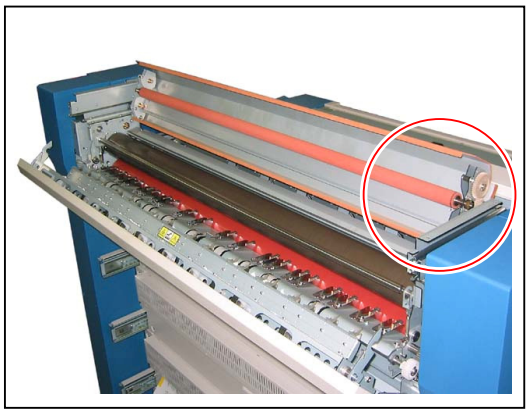


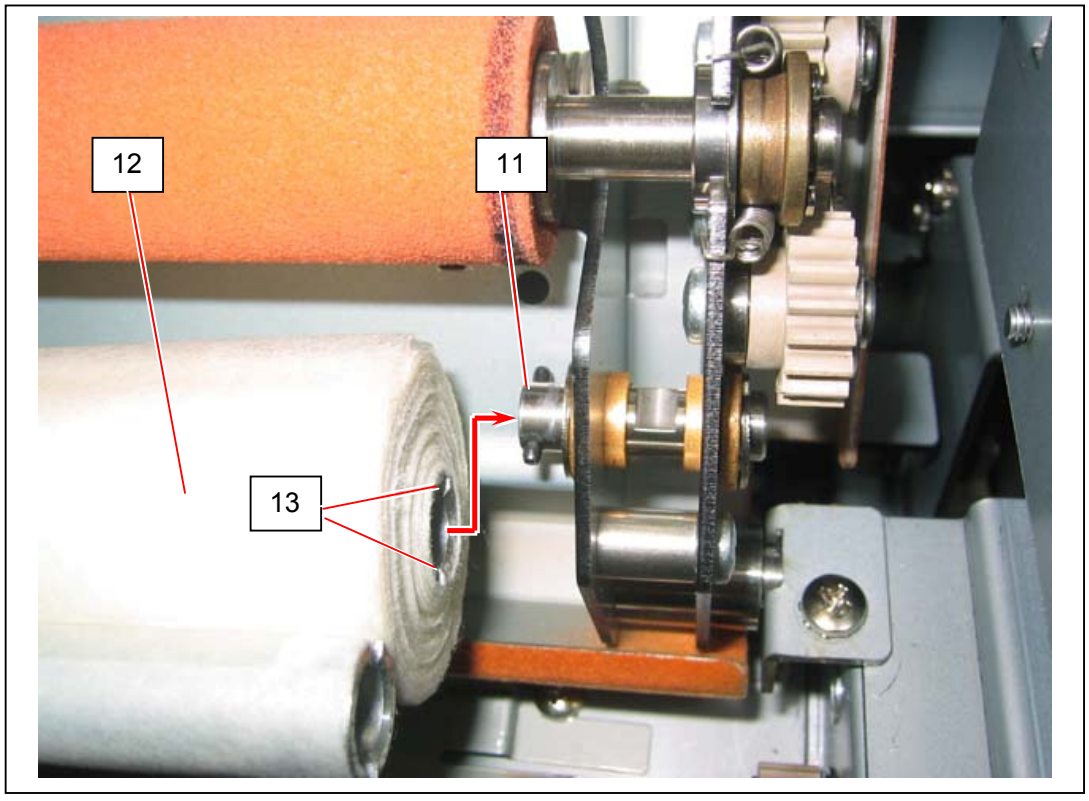
8. Release Cleaner Shaft (10) from the pin (11) on the other side.
   Remove **Web Cleaner**.





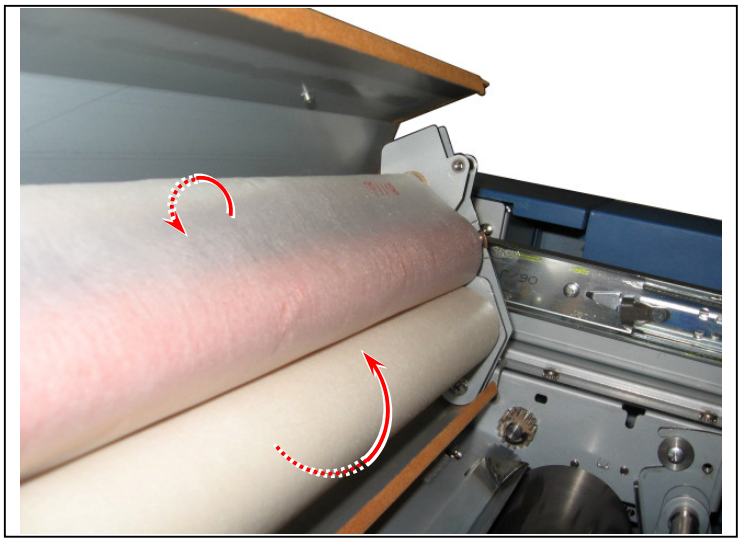
9. Fit one end of the “thicker roll” (12) of a new **Web Cleaner** to the Pin (11) on the left of machine.
   Fit the Pin (11) to the notches (13) of the Web Shaft.



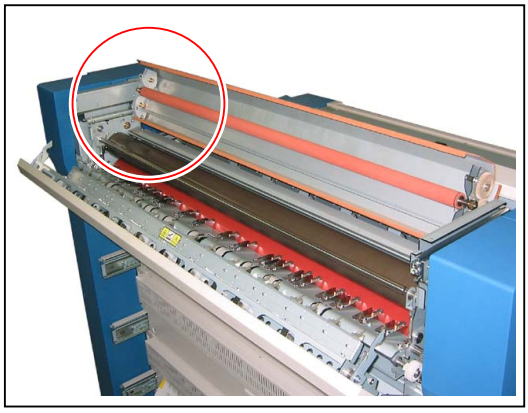


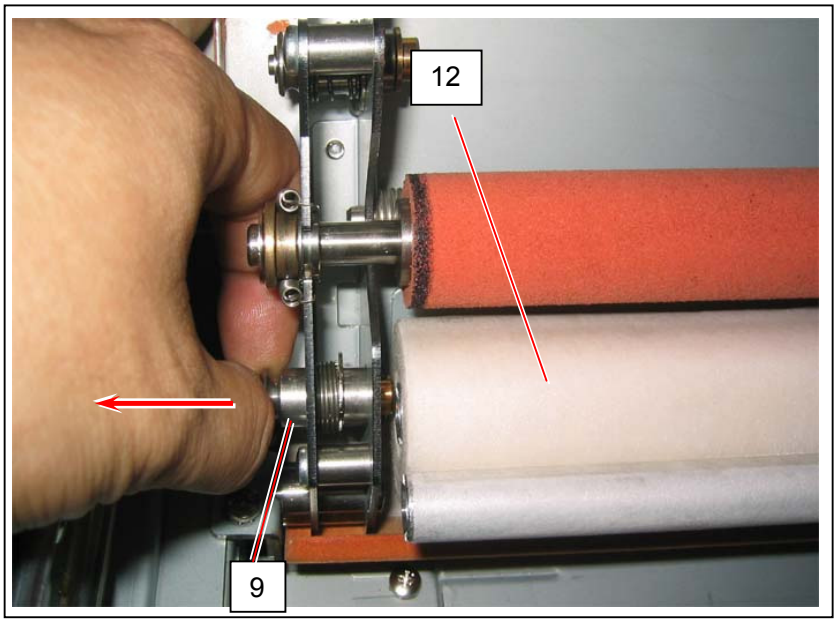
⚠ NOTE

Be careful of the winding direction of Web Cleaner roll.



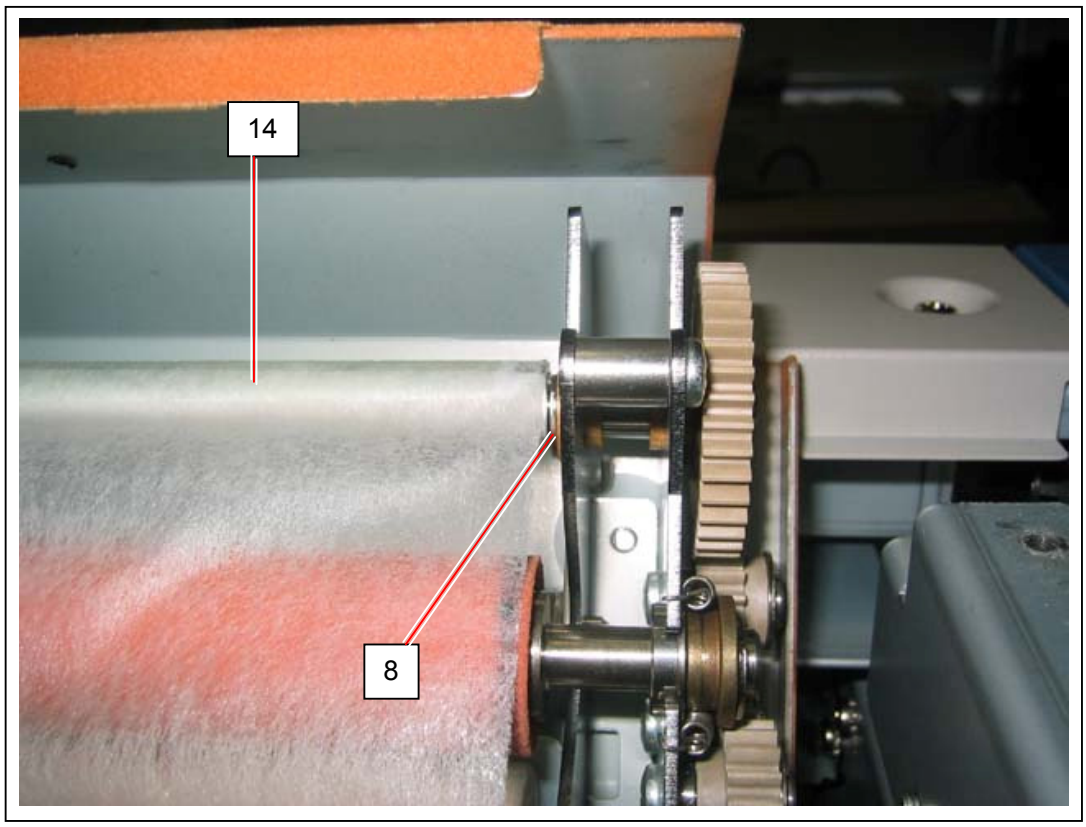
10. Pulling the Pin (9) on the right of the machine in the direction of arrow, fit another end of “thicker roll” (12) of Web Cleaner similarly.



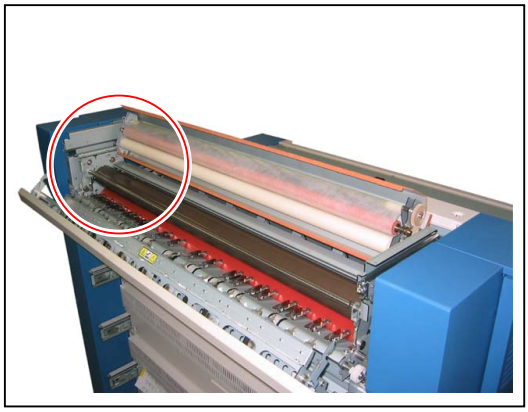


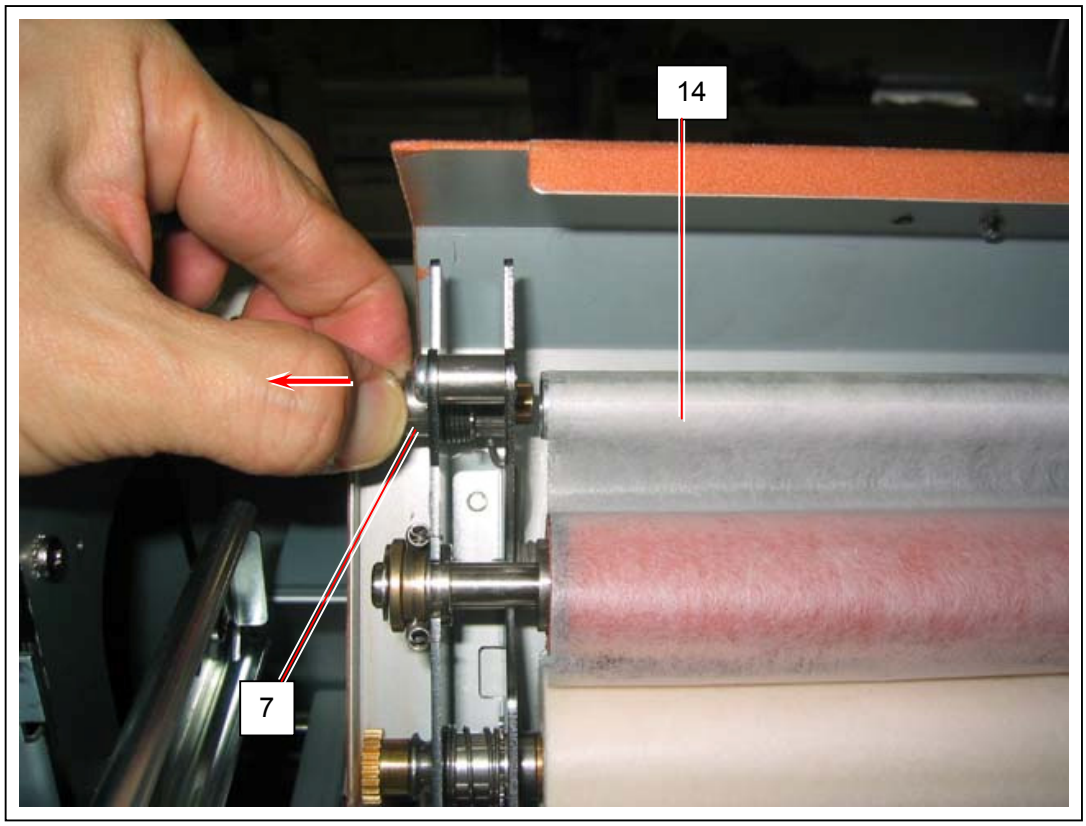
11. Similar with the former procedure 9, fit one end of the “narrower roll” (14) of the Web Cleaner to the Pin (8) on the left of machine.



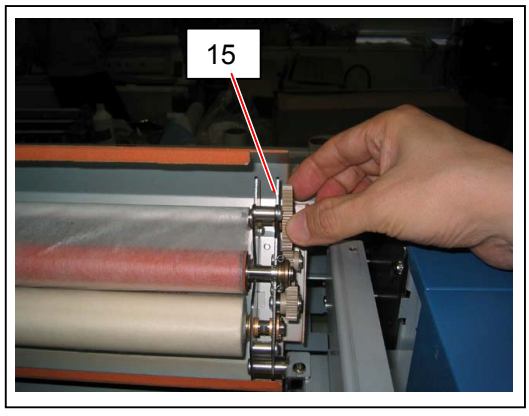


12. Similar with the former procedure 10, pill the Pin (11) on the left of machine in the direction of arrow and fit another end of the “narrower roll” (14) of the Web Cleaner to the Pin (11).

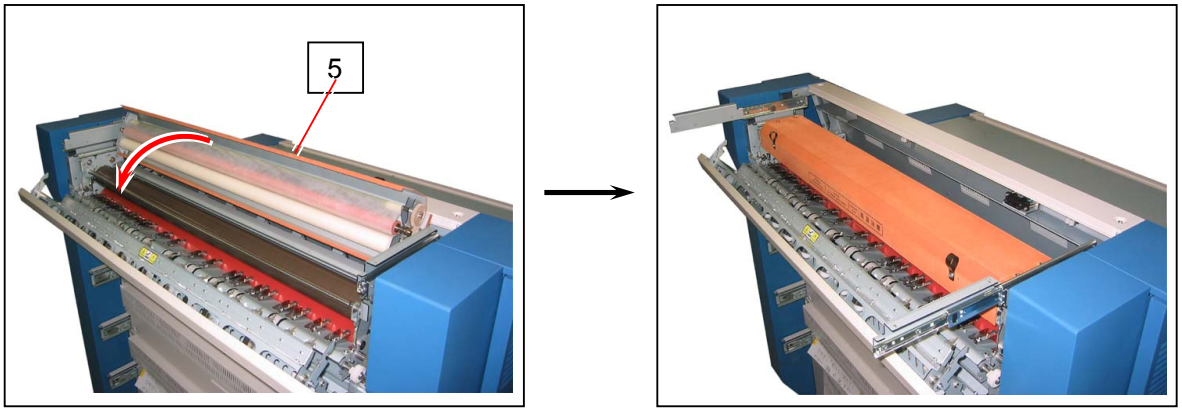




13. Slightly rotate 38T Gear (15) to remove a slack on Web Cleaner.

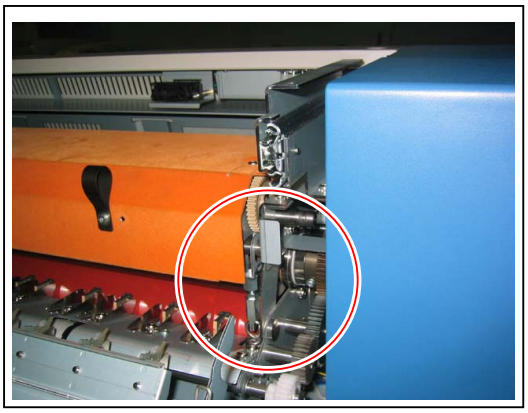


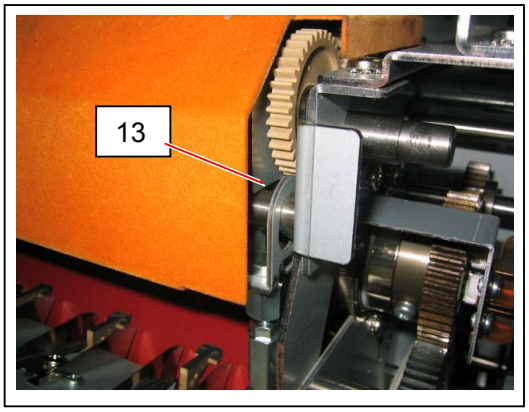
14. Close the Cover 3 (5)



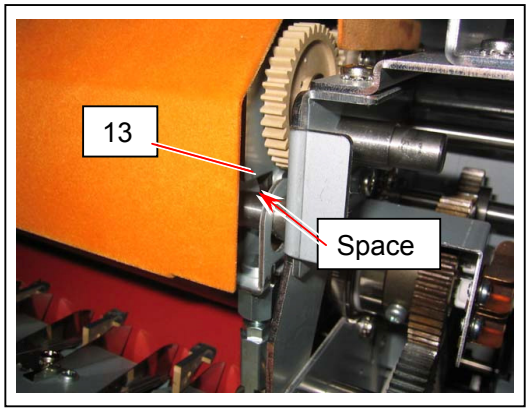
NOTE

Please confirm that the bottom edge (13) of the side plate is closed firmly as the following correct case. If some space can be found under the bottom edge (13) as the incorrect case, the driving gears are not engaged firmly. Open and close the Cover 3 (5) some times until gears are engaged.



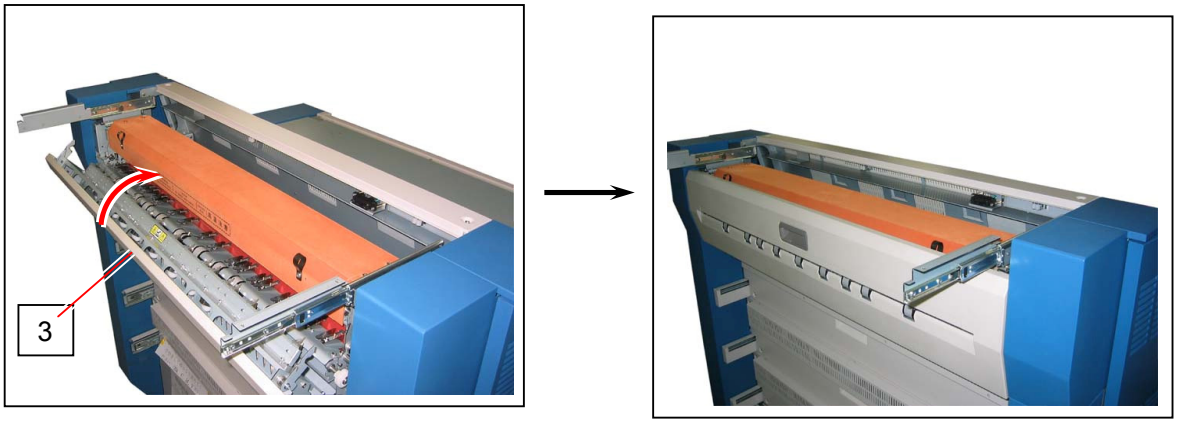


Correct

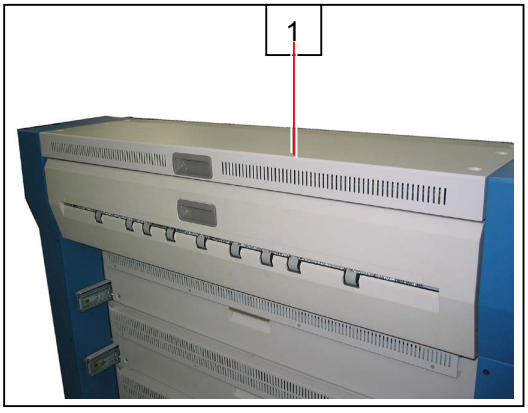


Incorrect

15. Close the Fuser Door Assy (3)



16. Replace Cover 4 (1).



NOTE

(1) Watch the rail. They can be mounted to the railing.

(2) When reassembling, follow the instruction below.

a) Draw the rails fully. Place Cover 4 (1) on the rails.
b) Fix Cover 4 (1) loose with the screws (2).
c) Close Fuser Upper Unit and then tighten the screws (2).

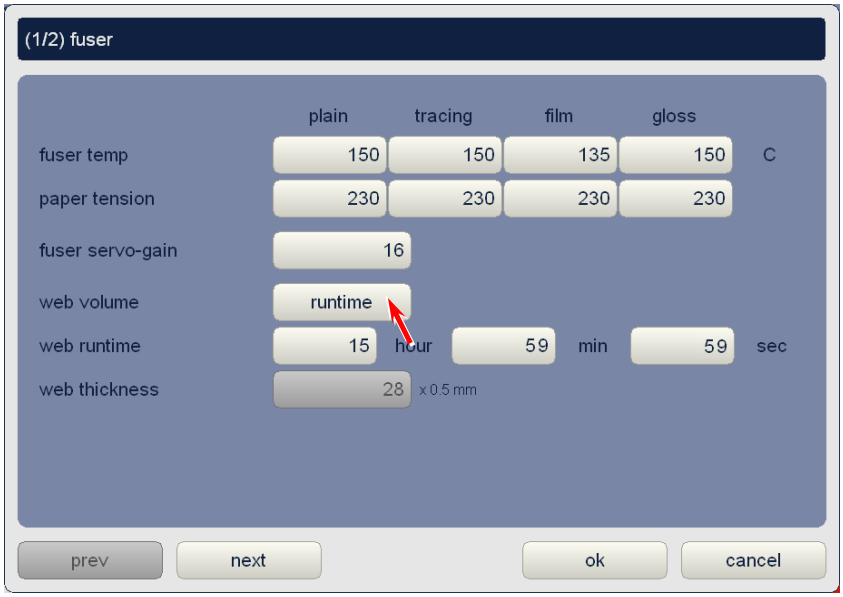
17. Connect your service PC with the KIP Color 80 through USB.

18. Run KIP Diagnostics.
Refer to [9.3 Basic Operations] on page 9-6 for KIP Diagnostics.

19. Access the following page (FUSER) on the KIP Diagnostics by;
    19-1. Press [service mode] button on the main screen of KIP Diagnostics.
    19-2. Input the service password.
    19-3. Press [adjustment] button in the menu page of the service mode.
    19-4. Press [fuser] button in the menu page of the Adjustment Mode.

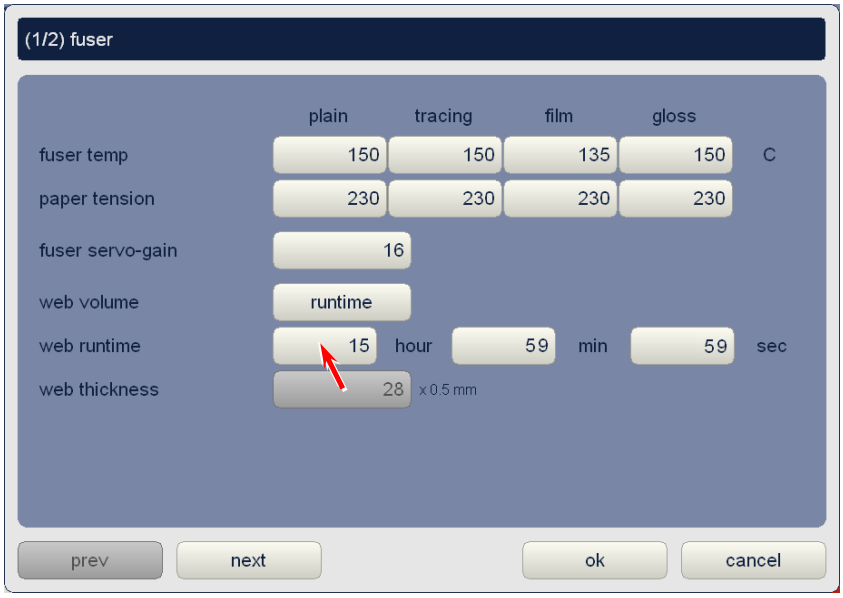


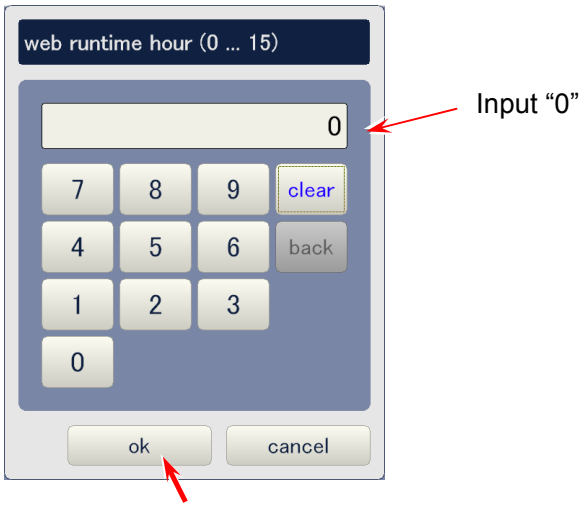
20. “web volume” must be set to “runtime” for changing the operation time of Web Motor. If it is set to “thickness”, press the button, and select “runtime” in the pop up dialog.



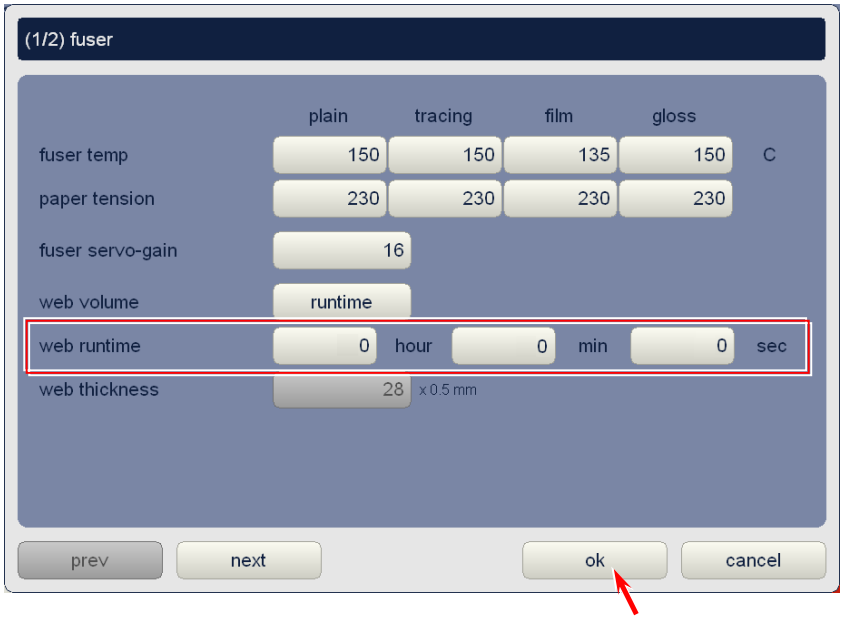


21. Press the button for “hour”, input “0” in the pop up dialog, and press [ok]. The operation time of “hour” is set to “0 hour”.





22. Similarly set “min” and “sec” to “0”.
    Press [ok] after setting to “0 hour 0 minute 0 second”.



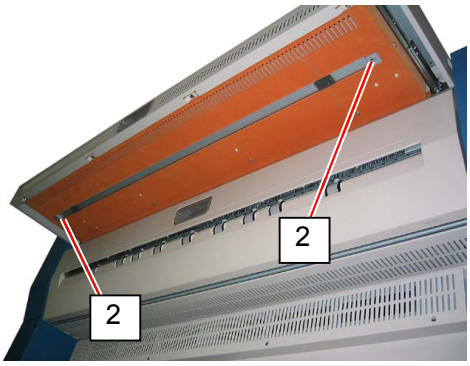
23. Close KIP Diagnostics.

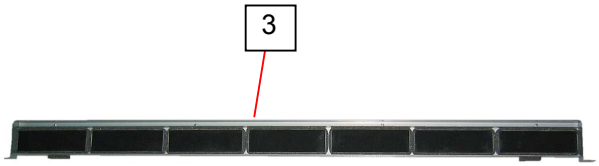
5. 6. 5 Replacing Filter

1. Draw Cover 4 (1).



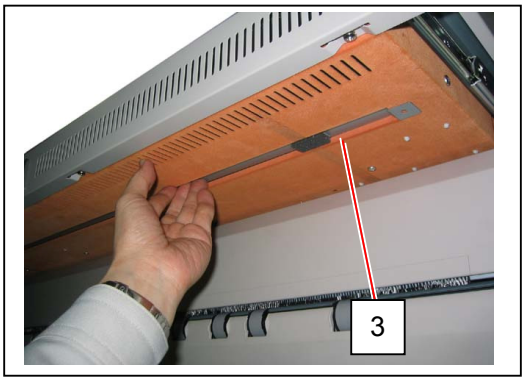
2. Remove 2 screws (2: M4x6) to remove Filter Bracket Assy (3).



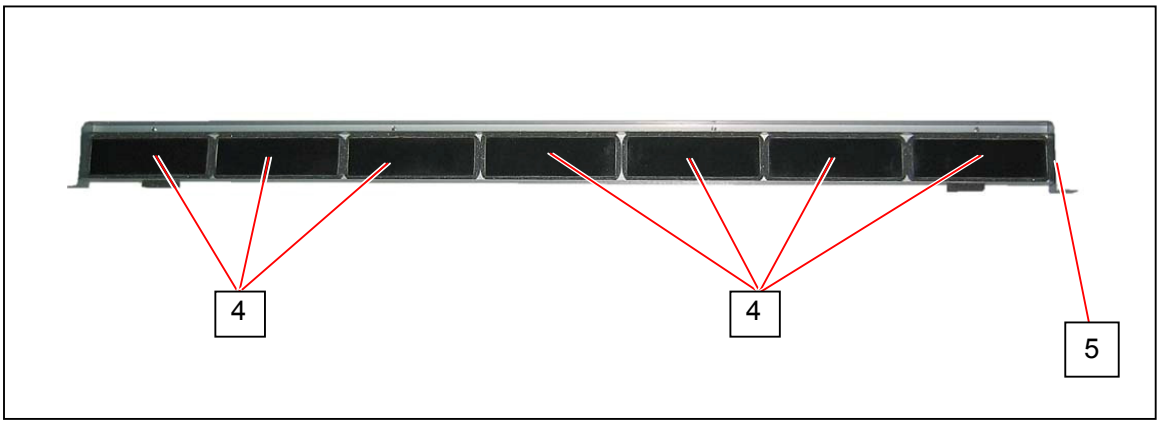


NOTE

Remove the screws with supporting Filter Bracket Assy (3). Otherwise Filter Bracket Assy may fall.

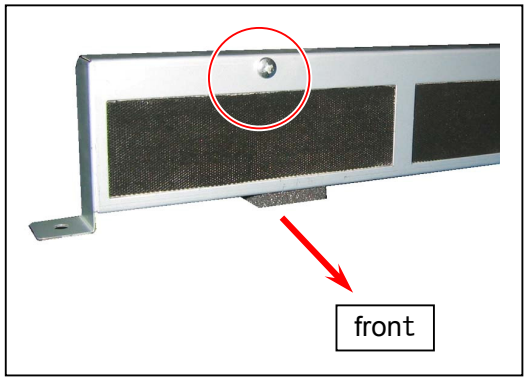


3. Remove Filter (4) from Bracket 2 (5). Replace Filter (4) with new ones.



NOTE

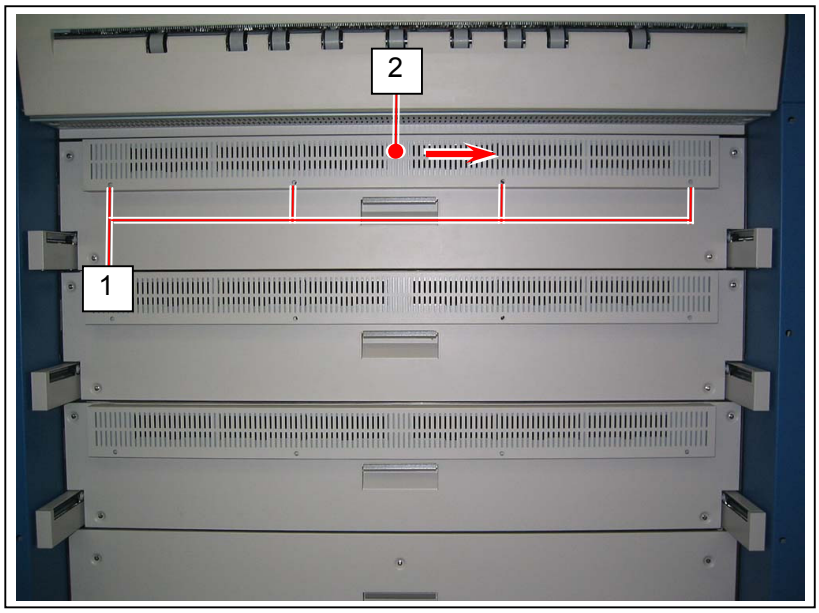
When reinstalling, insert Filter Bracket Assy to Fuser Upper Unit so that screw heads on Bracket 2 faces the machine front side.



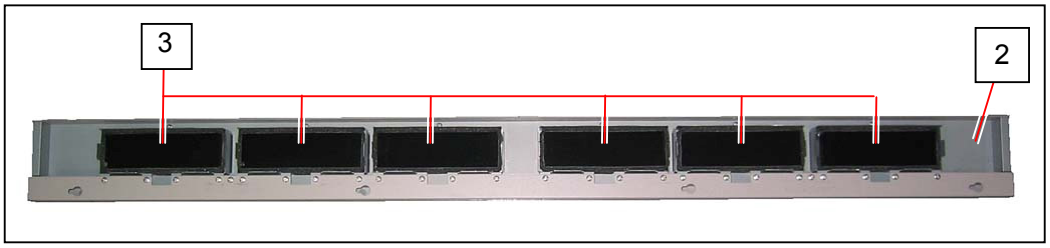
5. 7 Inner Transport Assy

5. 7. 1 Replacing Filter

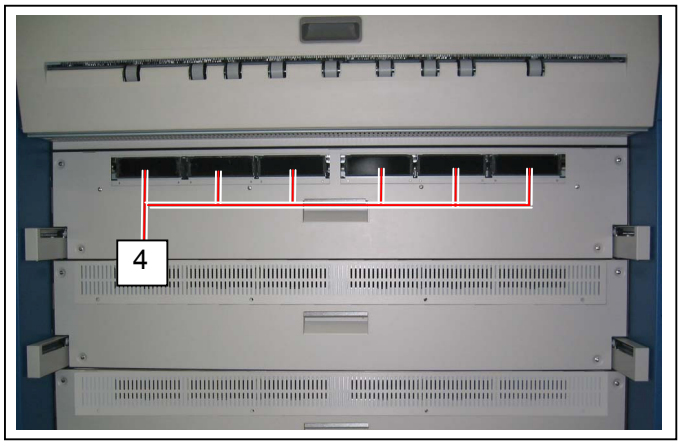
1. Loosen 4 screws (1). Slide Rear Cover (2) to the direction of arrow to remove it.



2. Replace Filter (3) inside Rear Cover (2) with new ones.



3. Replace Filter (4) on the back of the machine with new ones.

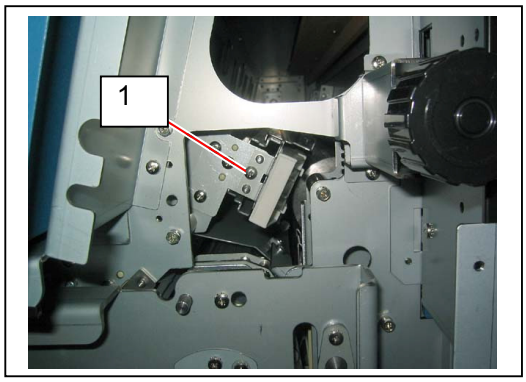


5. 8 Attraction Corona Assy

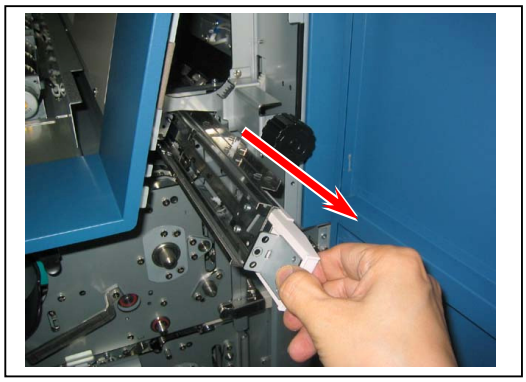
5. 8. 1 Removing Attraction Corona Assy

1. Open Cover 120 (1).
   Remove 1 Tooth Washer Screw (2: M4x6) fixing Attraction Corona Assy.





2. Holding Corona Head (3), gently draw Attraction Corona Assy (4).



5. 8. 2 Replacing Attraction Corona Wire

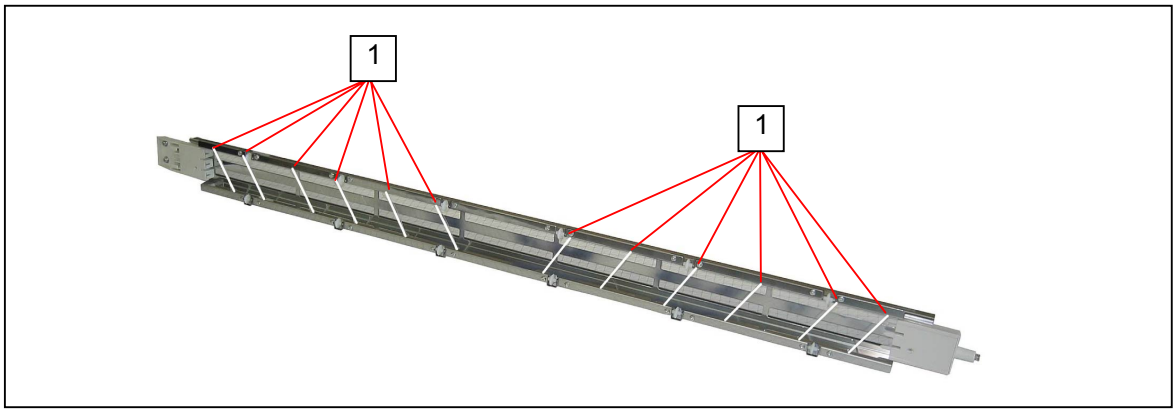
NOTE

Corona Wire is recommended for periodic replacement.

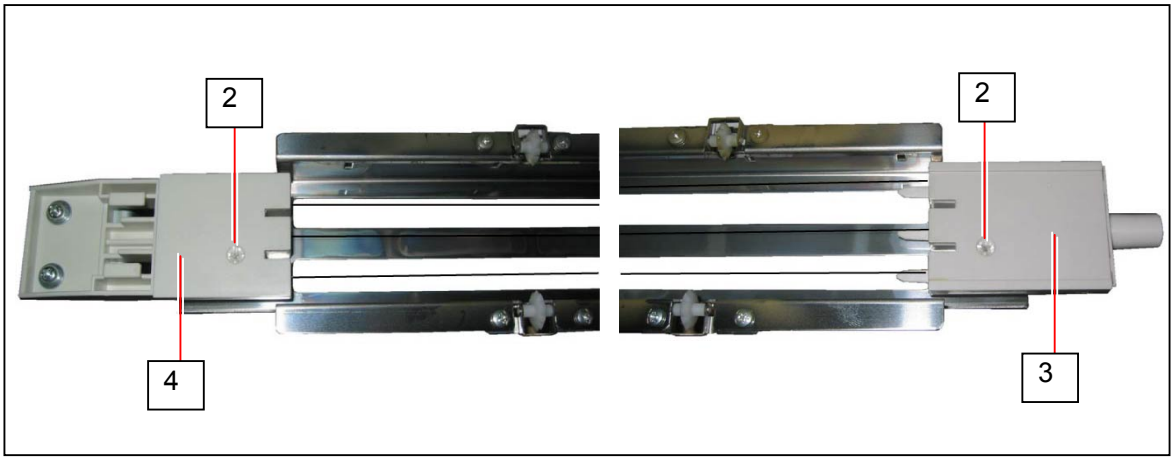
Item	Part Number	Number of article
Corona Wire	Z075300120	3

1. Remove Attraction Corona Assy from the machine.
   Refer to [5.8.1 Removing Attraction Assy] on page 5-81.

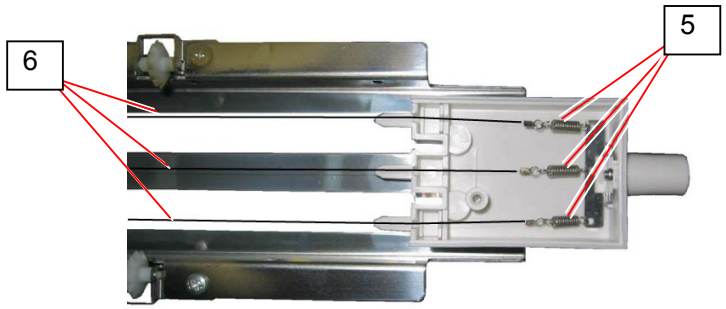
2. Remove Guides (1) from Attraction Corona Assy.



3. Remove 2 Flush Head Screws (2: M3x8) to remove Cover (3) and Cover 2 (4).



4. Remove Spring (5). Replace **Corona Wire** (6) with a new one.



NOTE

Route Corona Wire inside the groove of Corona Head inside (7).



5. 9 Transfer Corona Assy

NOTE

Inner Transport Assy 1 / 2 / 3 contain the same Transfer Corona Assy, Registration Assy contains Transfer Corona Assy 2.



This section shows Transfer Corona Assy 2 for Registration Assy for example as Transfer Corona Assy and Transfer Corona Assy 2 are similar in structure.

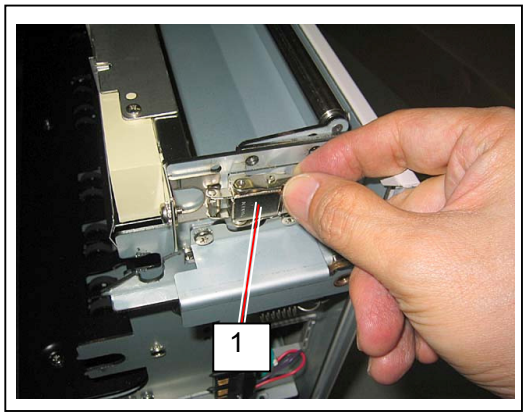
5. 9. 1 Removing Transfer Corona Assy

1. Draw Registration Assy. (Inner Transport Assy 1 / 2 / 3 for Transfer Corona Assy 1 / 2 / 3)



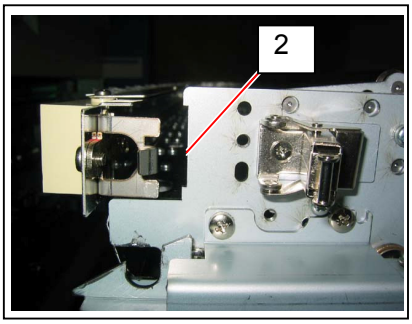
2. Holding Transfer Corona Assy 2, release Catch (1) on both sides.
   Remove Transfer Corona Assy 2.

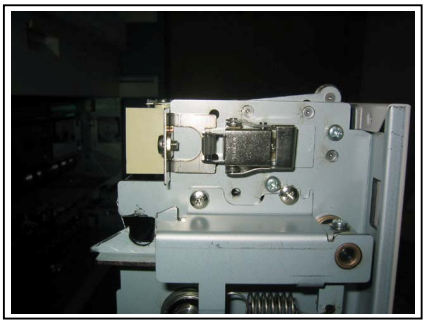




NOTE

Reinstall Transfer Corona Assy 2 (Transfer Corona Assy) so that it fits into the notch (2). Otherwise this may cause defective images because of incorrect height distance for the corona wires.





5. 9. 2 Replacing Transfer / Separation Corona Wire

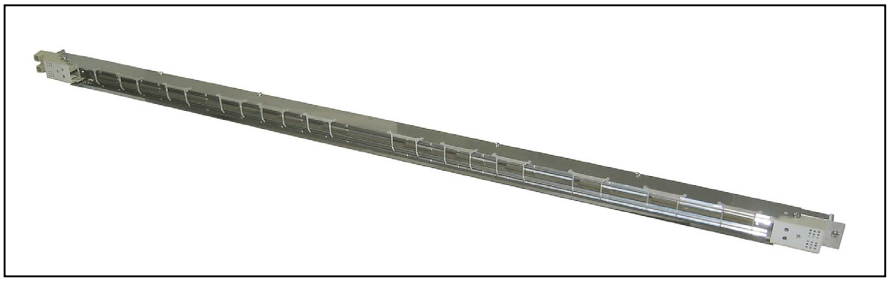
NOTE

(1) Corona Wire is recommended for periodic replacement.

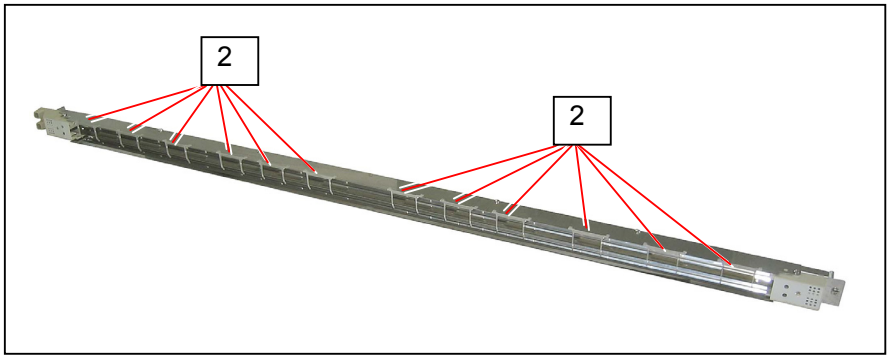
Item	Part Number	Number of use (per Assy)
Corona Wire	Z075200180	2

(2) Corona Wire is in common use for Transfer and Separation Corona.

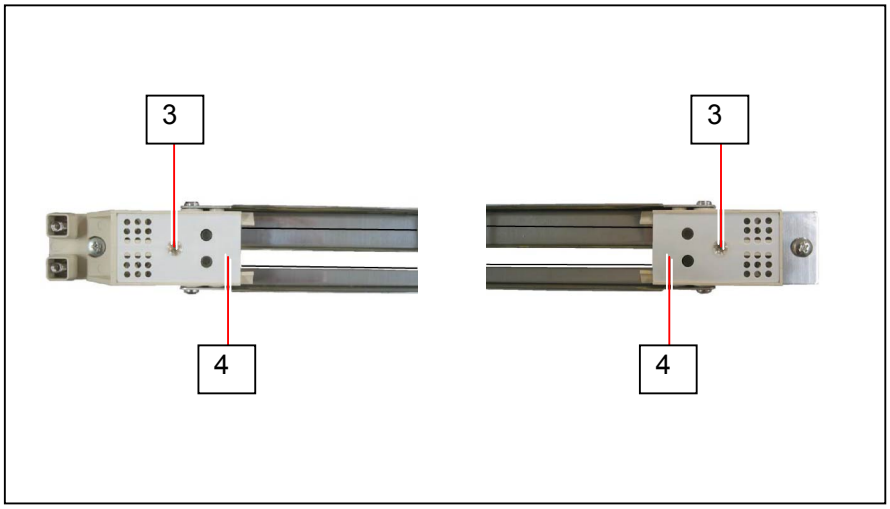
1. Remove Transfer Corona Assy. Refer to [5.9.1 Removing Transfer Corona Assy] on page 5-84.



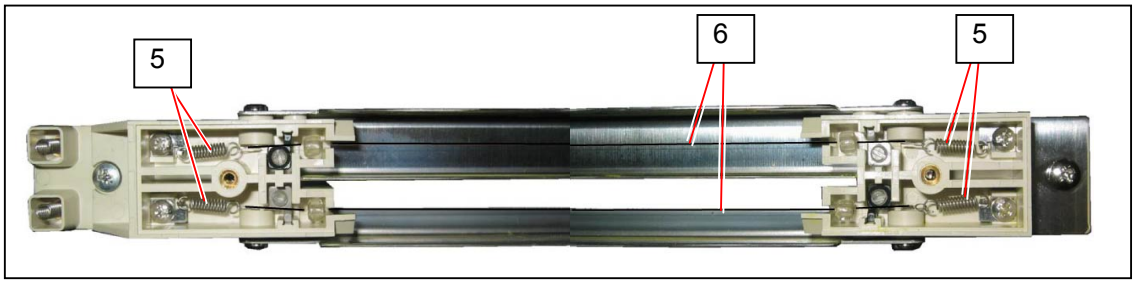
2. Remove Guides (2).



3. Remove 2 Flush Head Screws (3) to remove Head Cover (4).

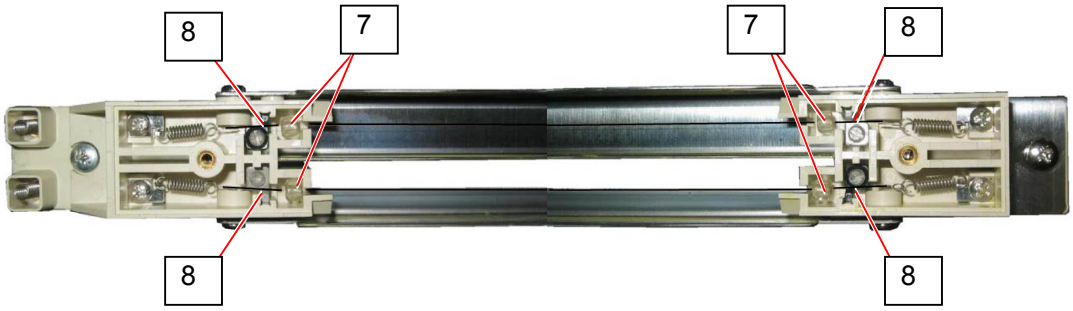


4. Remove Spring (5).
   Replace **Corona Wire** (6) with new ones.



NOTE

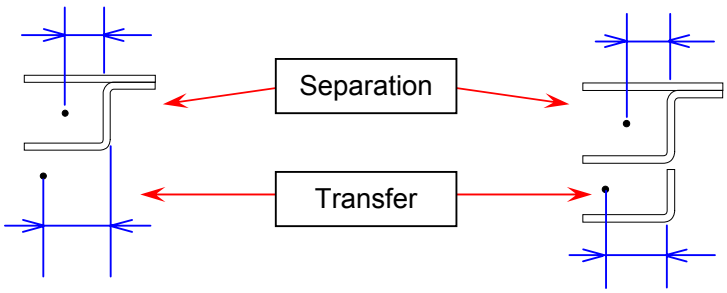
(1) Locate Beads (7) for vibration control in the correct position show below.
And route Corona Wire inside the groove of Height Adjuster (8).



(2) Check the Corona Wire height. Keep a specified height from the top of Corona House.
The specified height for the corresponding wire is listed below.

Corona Wire Height (mm)		Separation (upper)	Transfer (lower)
Transfer Corona Assy	Inner Transport Assy 1 for Developer Unit 1 (K)	11.5	13
	Inner Transport Assy 2 for Developer Unit 2 (C)	11.5	12
	Inner Transport Assy 3 for Developer Unit 3 (M)	11.5	11
Transfer Corona Assy 2	Registration Assy for Developer Unit 4 (Y)	11.5	11.5

Transfer Corona Assy Transfer Corona Assy 2

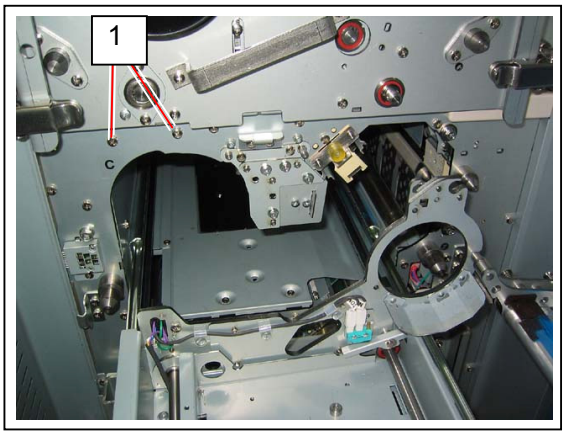


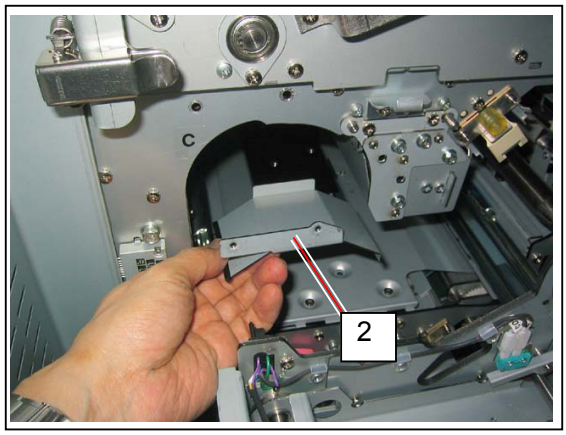
5. 10 LED Head Assy

5. 10. 1 Replacing LED Head Assy

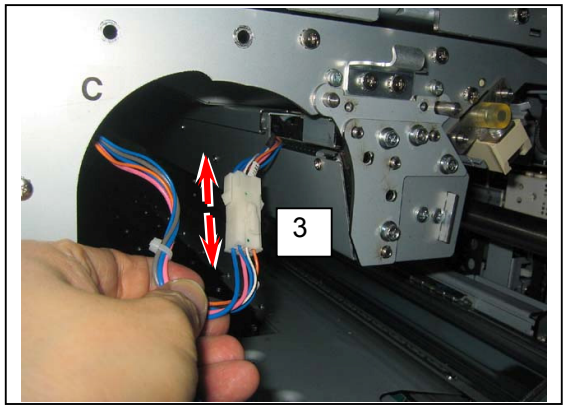
1. Remove Developer Unit. Refer to [5.1.4 Removing Developer Unit] on page 5-8.

2. Remove 2 Tooth Washer Screws (1: M4x6) to remove Wire Cover 1 (2).

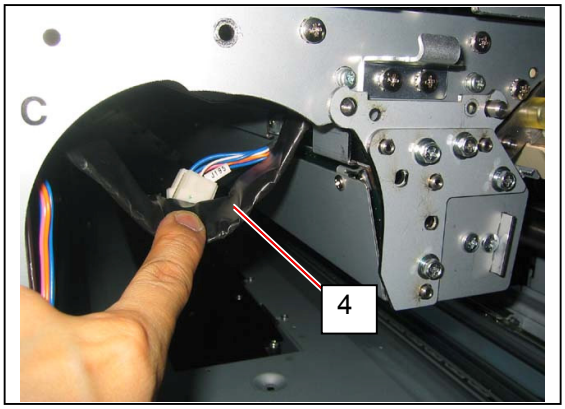




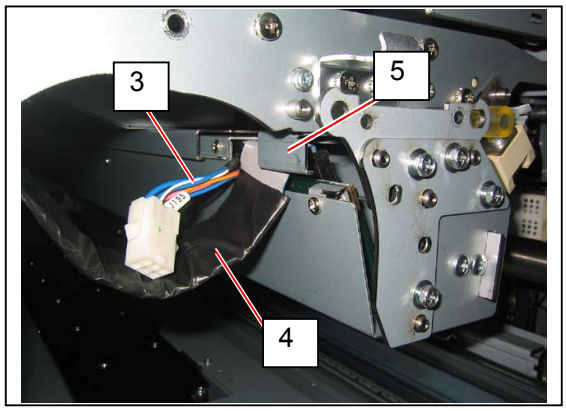
3. Draw the harness (3) and disconnect the connector.



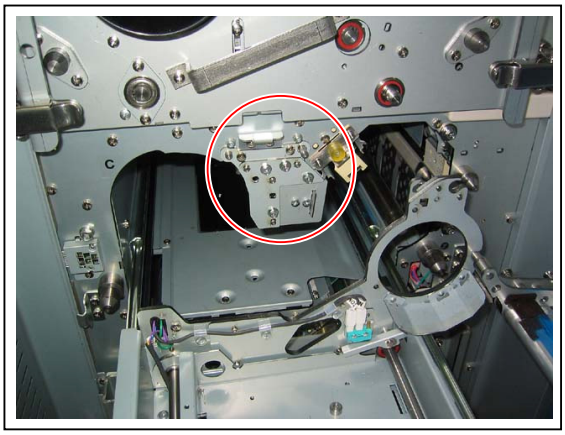
4. Pull black Flat Cable (4) downward.

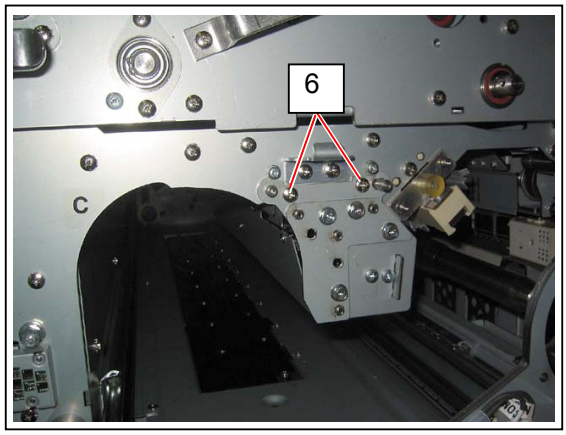


5. Route the harness (3) and Flat Cable under the rail (5).

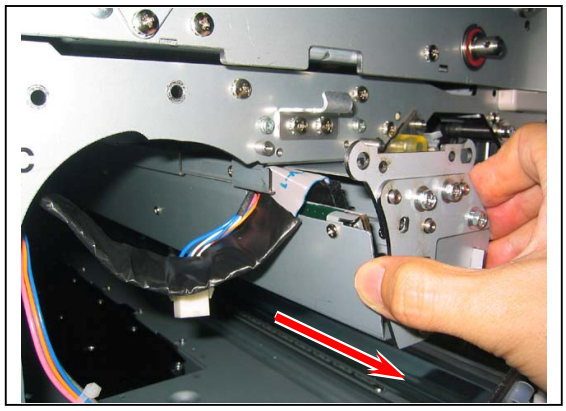


6. Remove 2 Tooth Washer Screws (6: M4x6) fixing LED Head Assy.





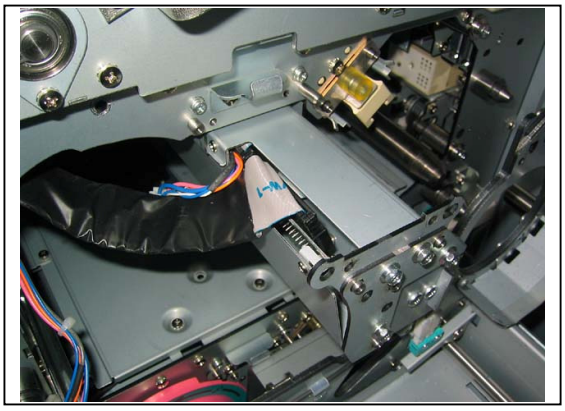
7. Gently draw LED Head Assy.

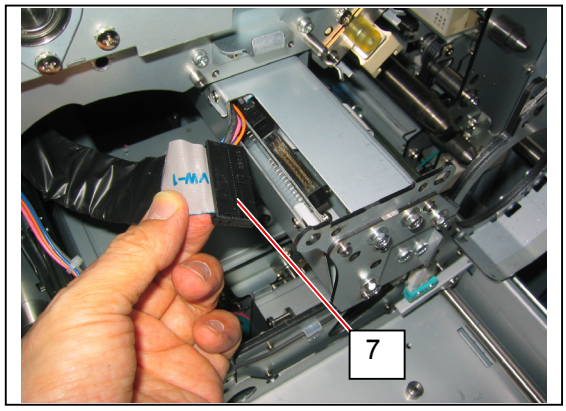


NOTE

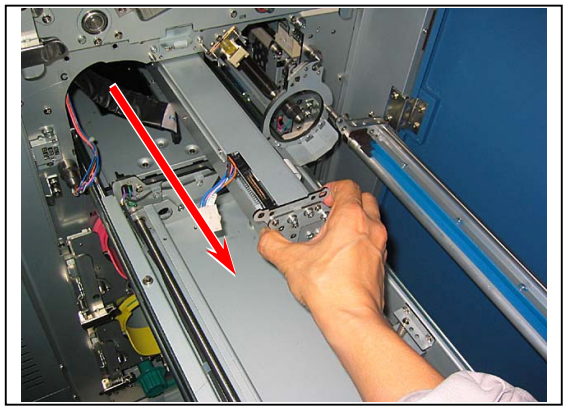
Be careful not to catch the harness or Flat Cable.

8. Stop drawing when LED Head reaches the below position, disconnect the connector (7) of Flat Cable.





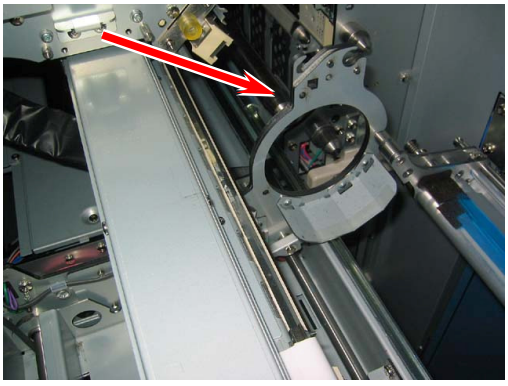
9. Gently draw LED Head Assy completely and remove it.



NOTE

When removing

(1) Be careful not to hit LED Head Assy against the Process Unit frame shown below.



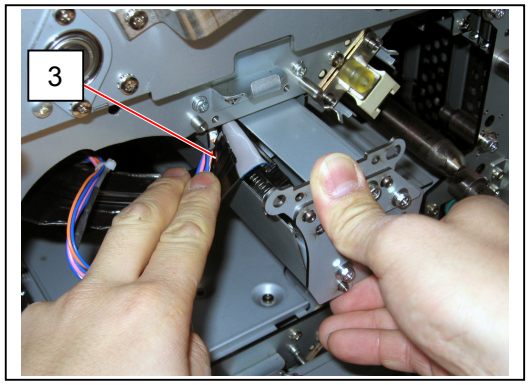
(2) Do not fall or hit LED Head Assy when completely pulled it out.

(next page)

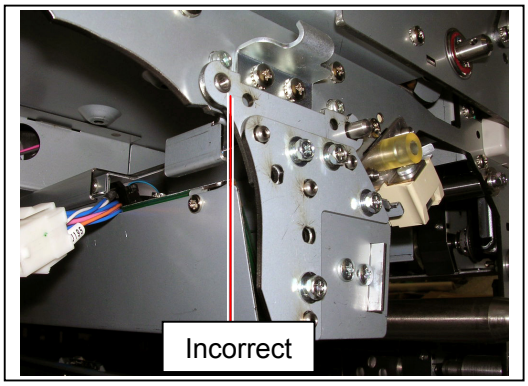
NOTE

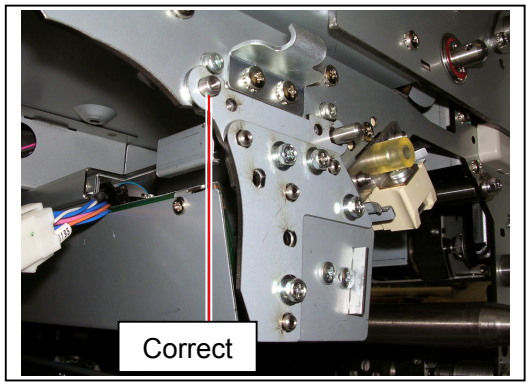
When reassembling

(1) Keep the harness (3) away for avoiding damage.

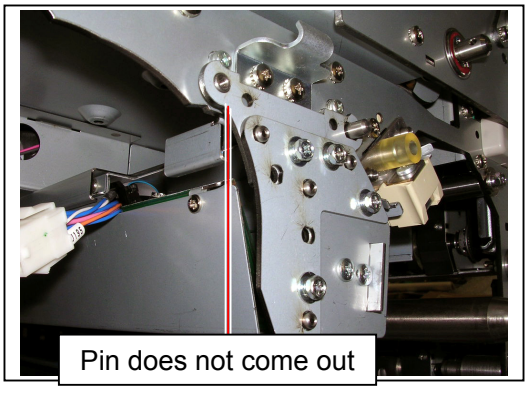


(2) Make sure that the positioning pin (5) sticks out of the positioning hole on LED Head Assy. If not, LED Head Assy is inserted incorrectly.
Follow the instruction below to install LED Head Assy in position.





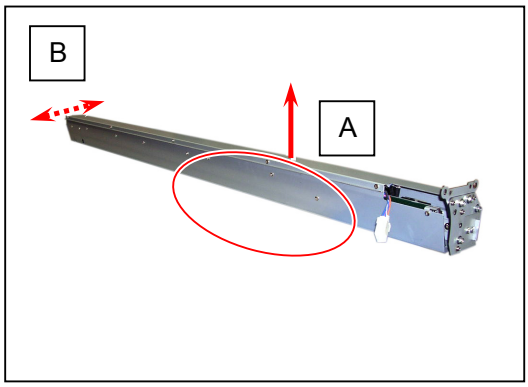
a) Insert LED Head Assy as deep as possible.

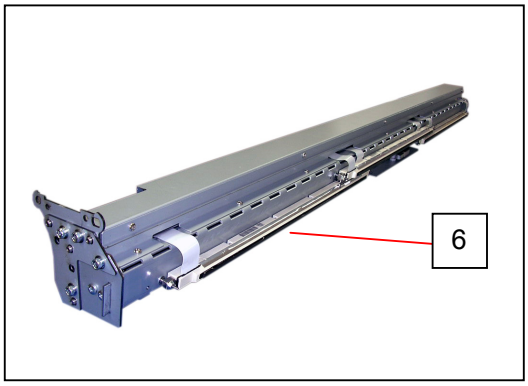


(next page)

NOTE (continued)

b) Supporting the middle bottom part of LED Head Assy (A), and with moving the left (far) end of LED Head Assy slightly left and right (B), insert LED Head Assy completely. Do not hold LED Head (6) on the back.





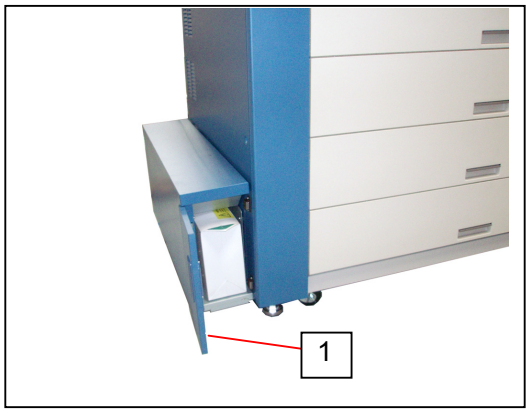
(3) Replacing LED Head Assy would require some adjustments if the focus adjustment failed. Make a test print to check it
Refer to [10.3 Adjustment of LED Head] on page 10-9 for further information.

5. 11 Waste Toner Unit

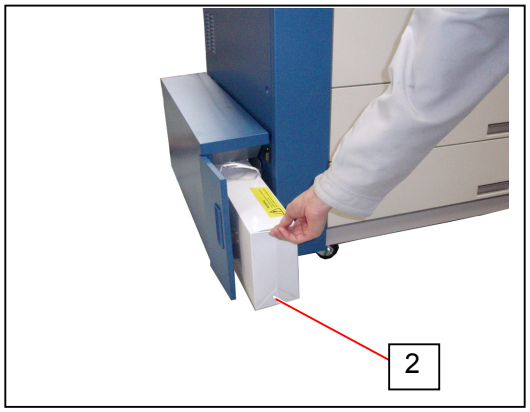
5. 11. 1 Replacing Waste Toner Box

1. Open Cover 129 (1).





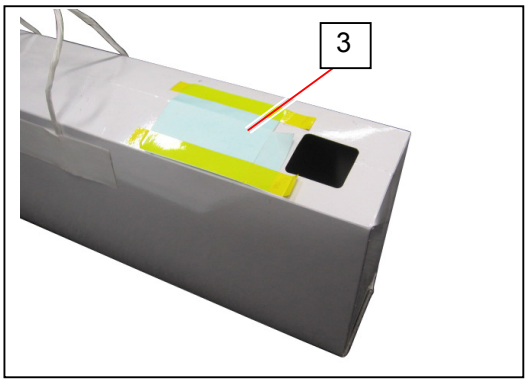
2. Gently pull Waste Toner Box (2).

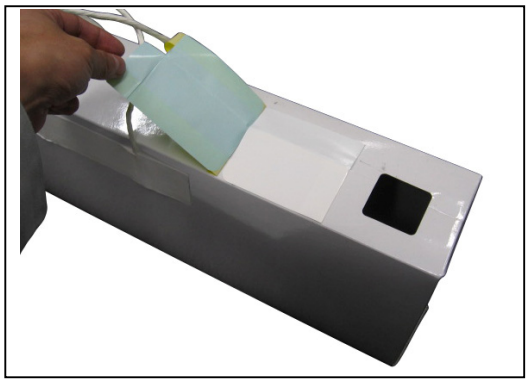


NOTE

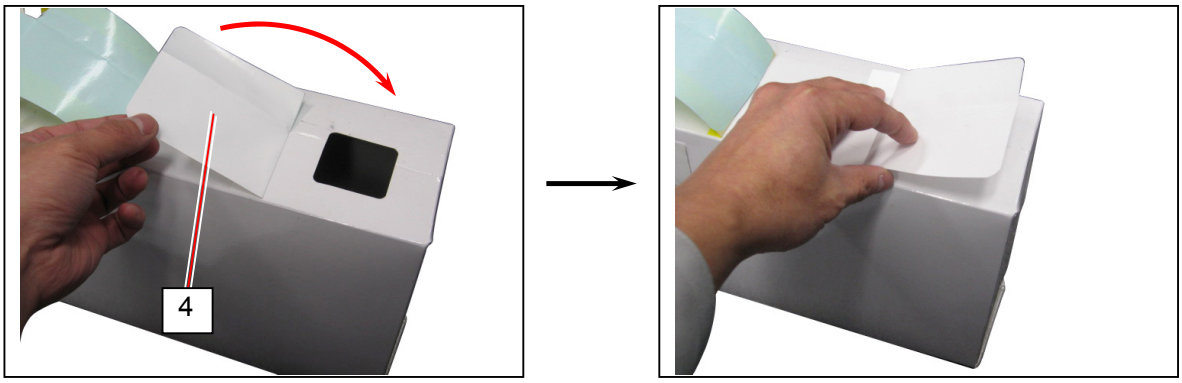
Handle Waste Toner Box with care. Otherwise toner will come out through the hole on top.

3. Strip off the release paper (3) beside the hole.





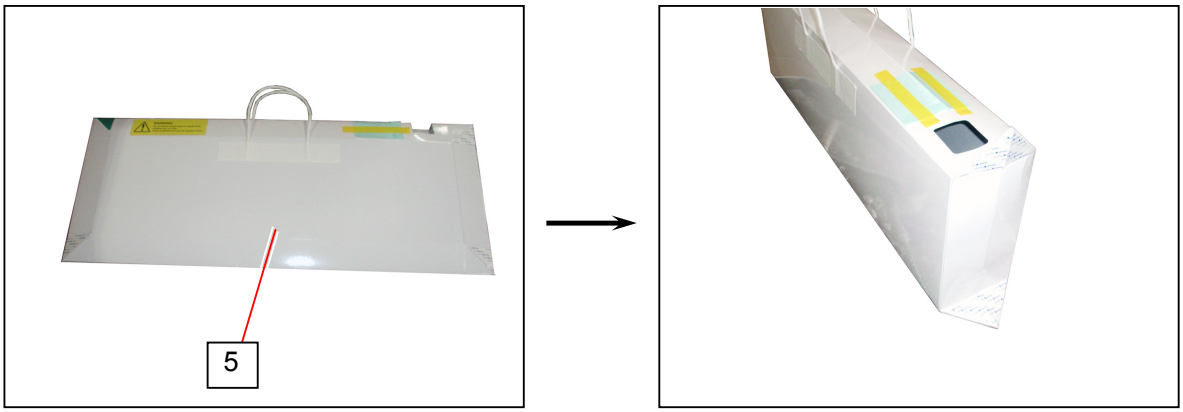
4. Seal the hole with the adhesive seal (4).
   Dispose Waste Toner Box in accordance with applicable regulations.



WARNING

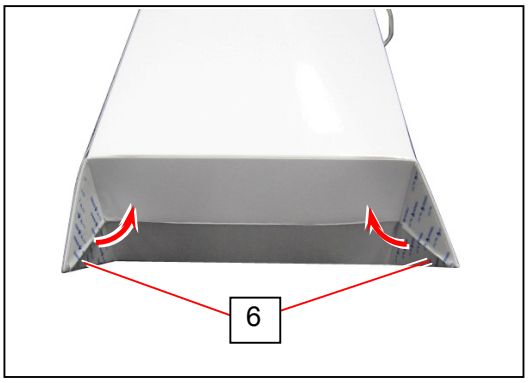
Do not attempt to throw Waste Toner Box or its contents into fire.

5. Assemble a folded Waste Toner Box (5).

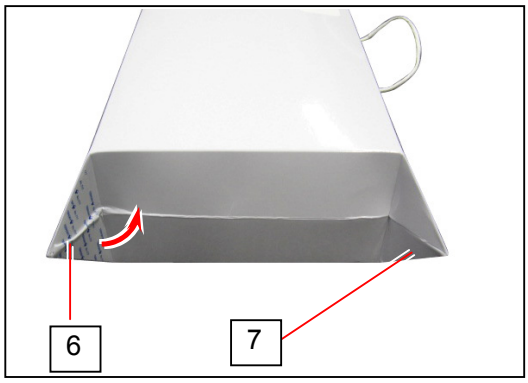


6. Strip off the release papers on 3 tabs (6), and apply the 3 tabs (6) to the side face of Waste Toner Box. The last tab (7) does not have a tape.

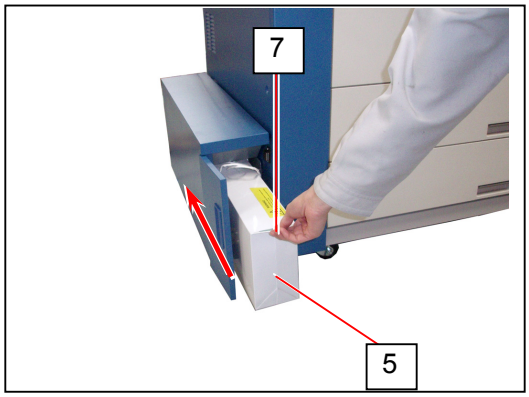
Rear side



Front side

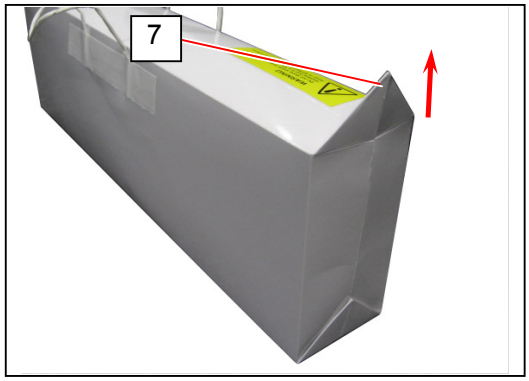


7. Holding the free tab (7), install Waste Toner Box (5) to Waste Toner Unit.

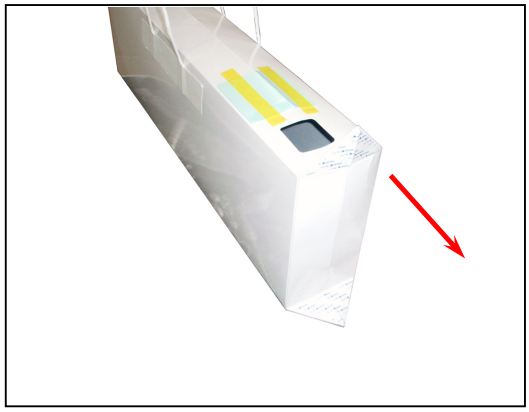


NOTE

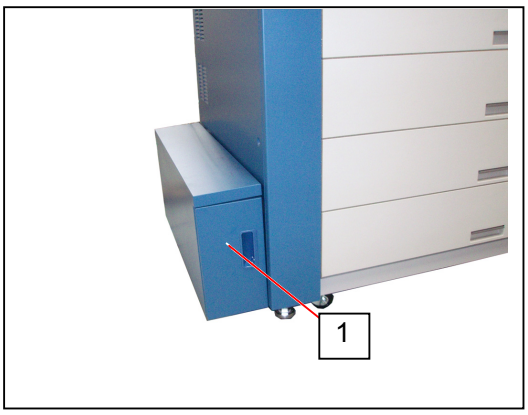
(1) Direct the free tab (7) upward not to block Cover 129 (1).



(2) Make sure that the hole is located on the rear side. Otherwise it may cause the machine's malfunction.



8. Close Cover 129 (1).

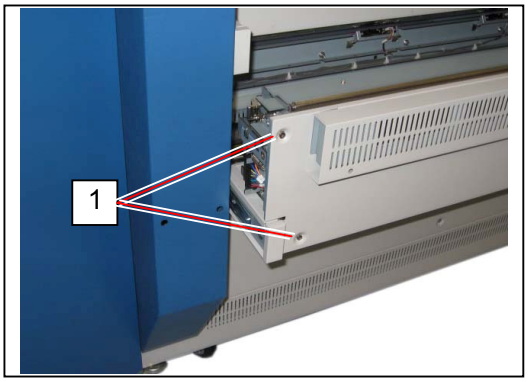


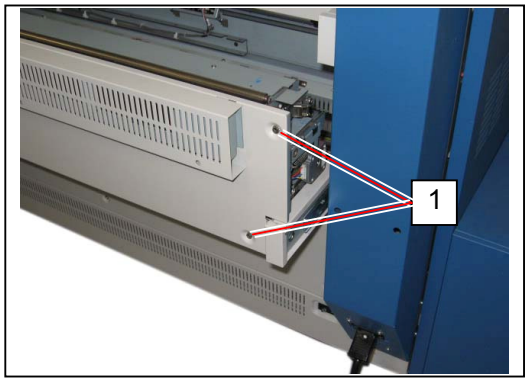
5. 12 When KC80 Is to Pass through Narrow Entrance (Door/Lift)

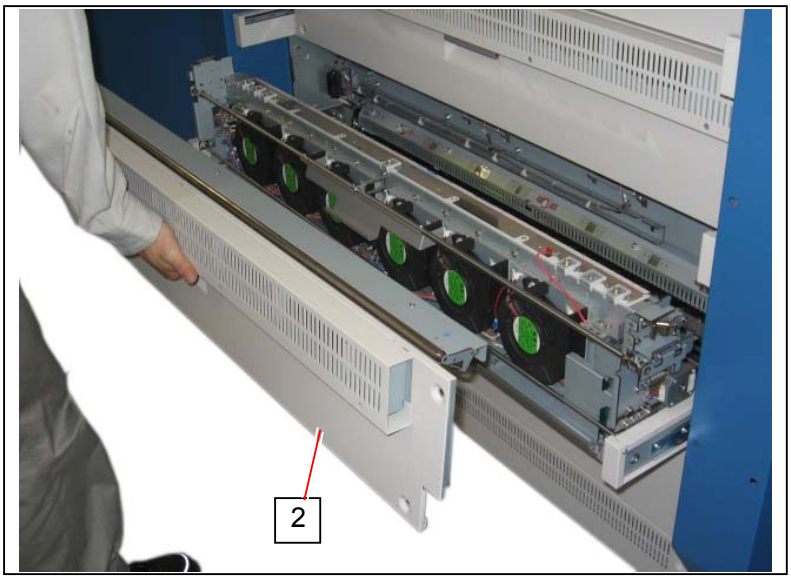
If the KC80 needs to pass through a narrow entrance (door or lift) before it is moved to the installation site, do as follows.

1. Remove the Drums and Cleaner Units from all process units.
   See [5.1.3 Removing Drum and Cleaner Unit] on page 5-4 for the removal procedure.

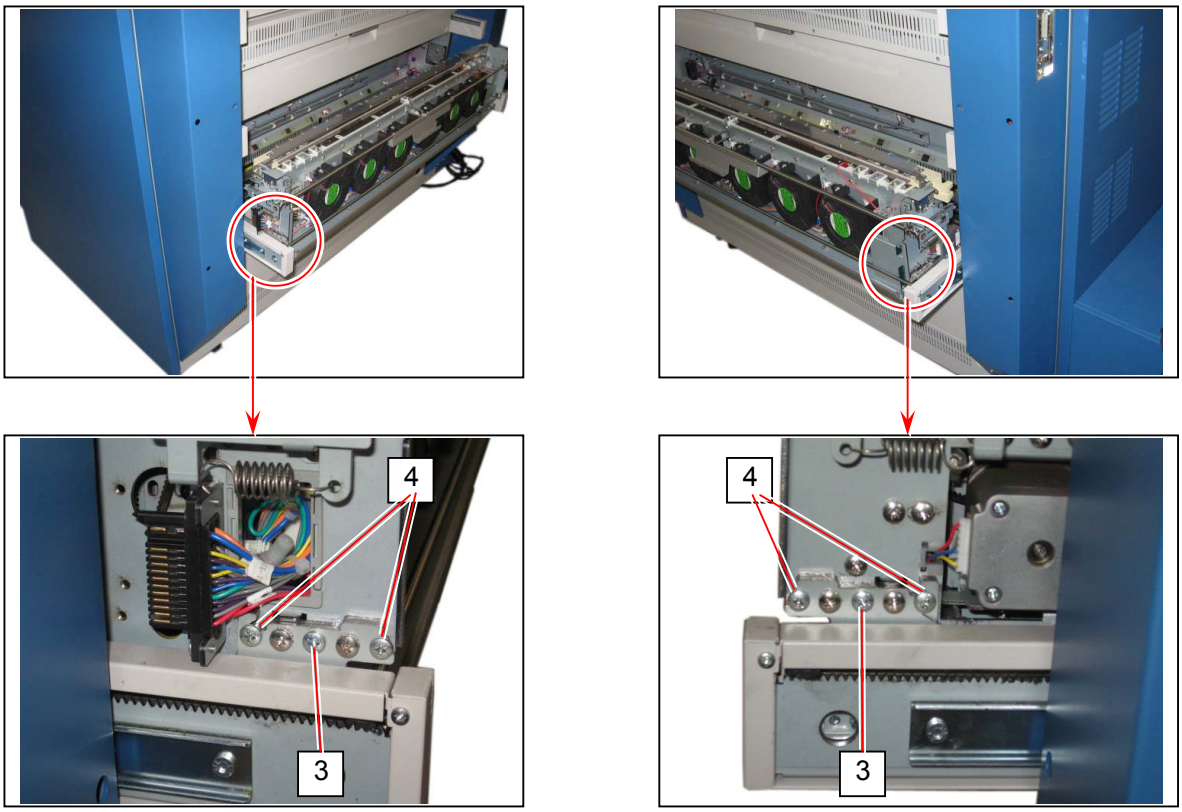
2. Draw out the any Transportation Unit 1-3, remove 4 screws (1), and remove the outer cover (9).



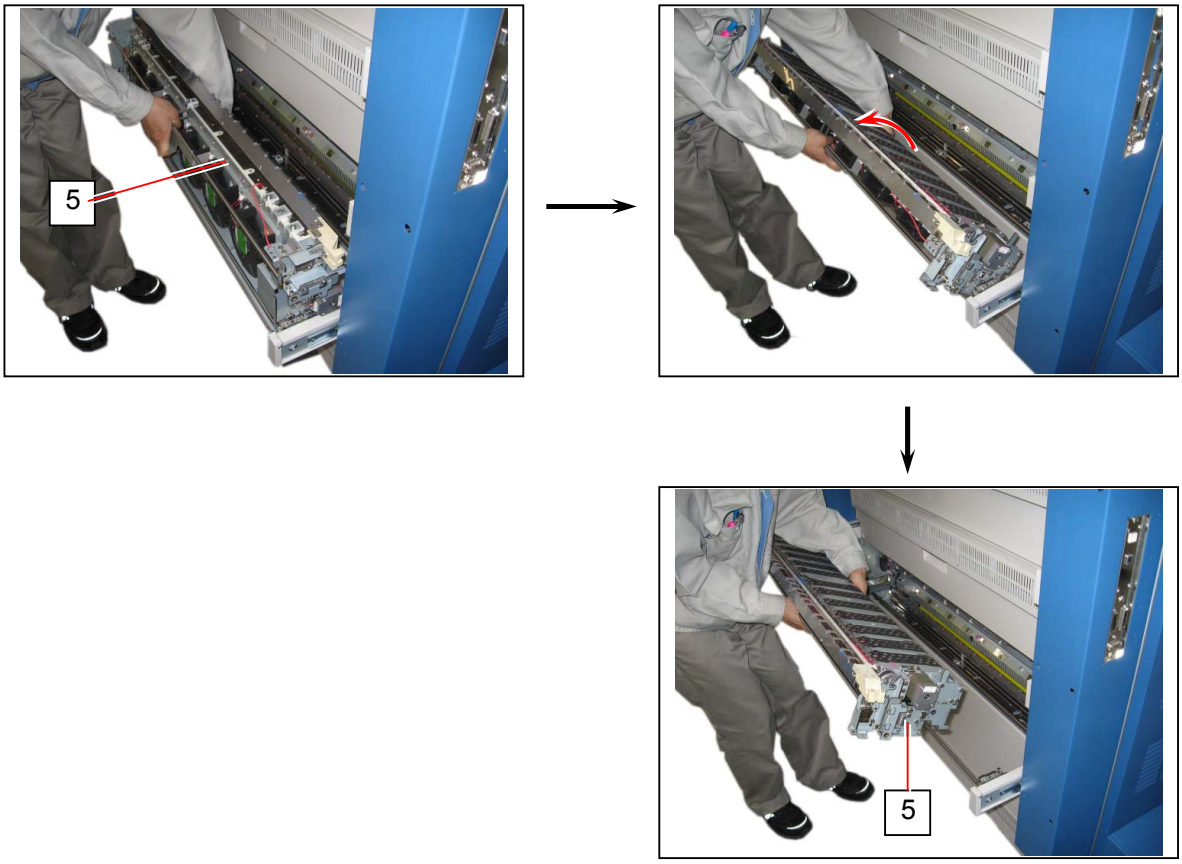




3. Remove 1 screw (3) and loosen 2 screws (4) on each side of the Transportation Unit.



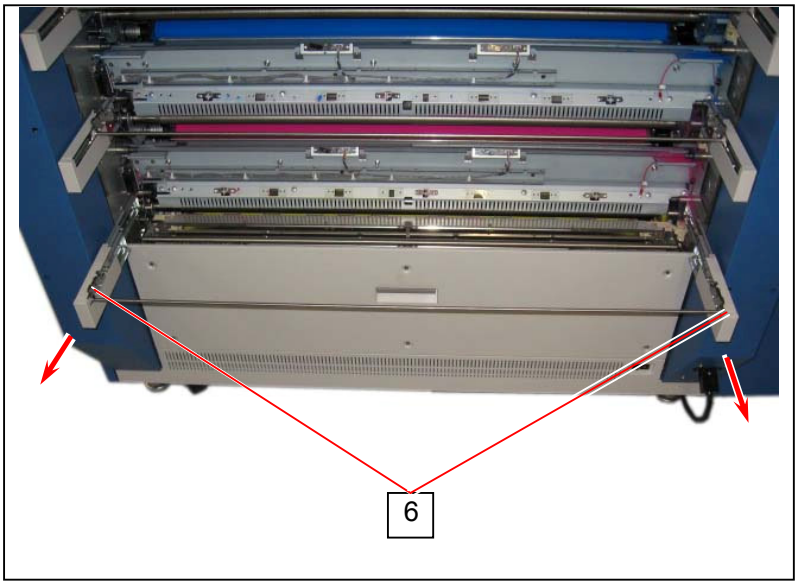
4. Remove the Transportation Unit (5) twisting as the following photo.



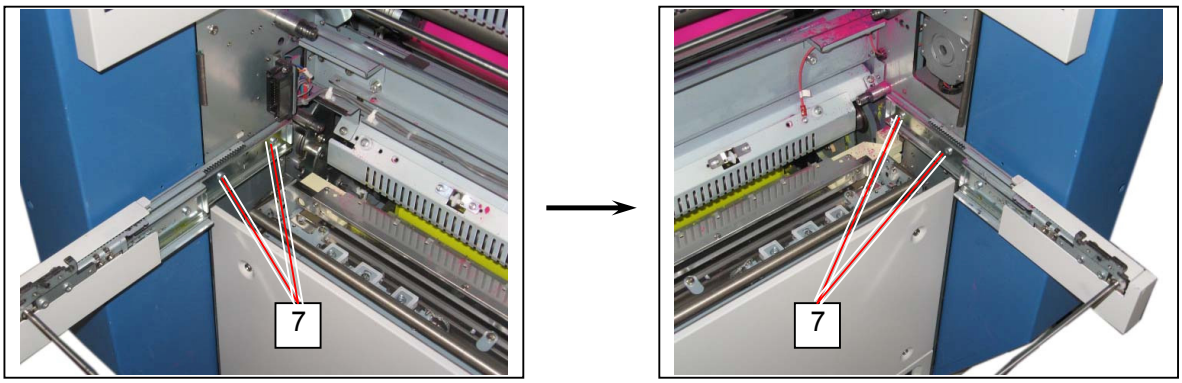
5. Remove all Transportation Units 1-3 repeating the procedures 2 to 4.

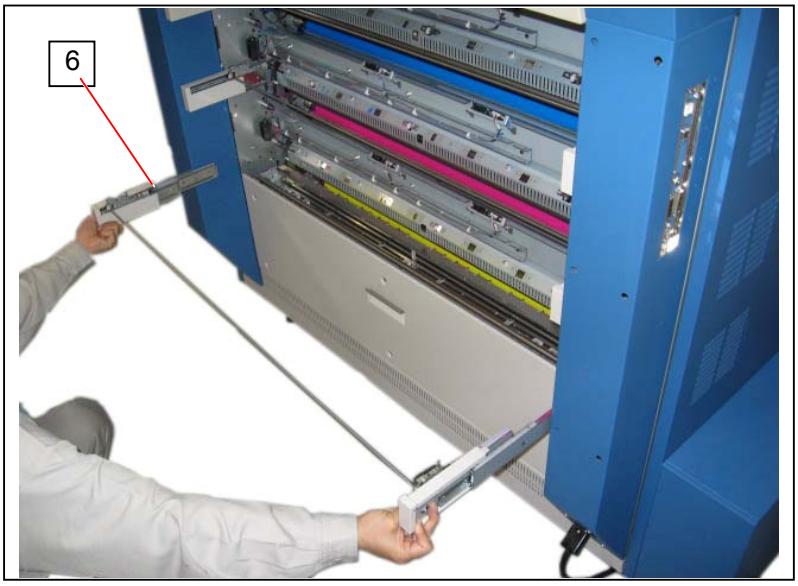


6. Fully draw out the Slide Rail Unit (6) of each unit.



7. Holding on both sides of Slide Rail Unit **by 2 people**, remove 4 screws (7) and gently remove the Slide Rail Unit (6). Remove all of 3 Slide Rail Units by the same way.

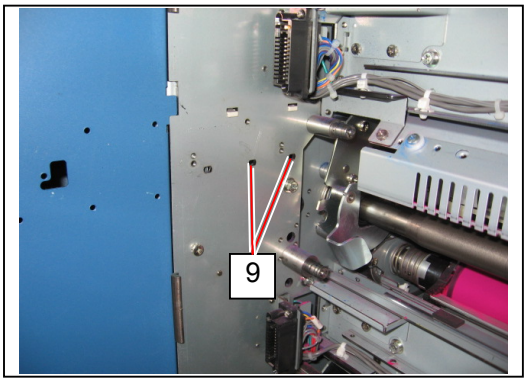


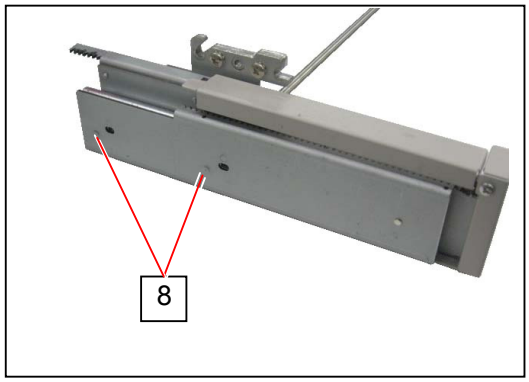


NOTE

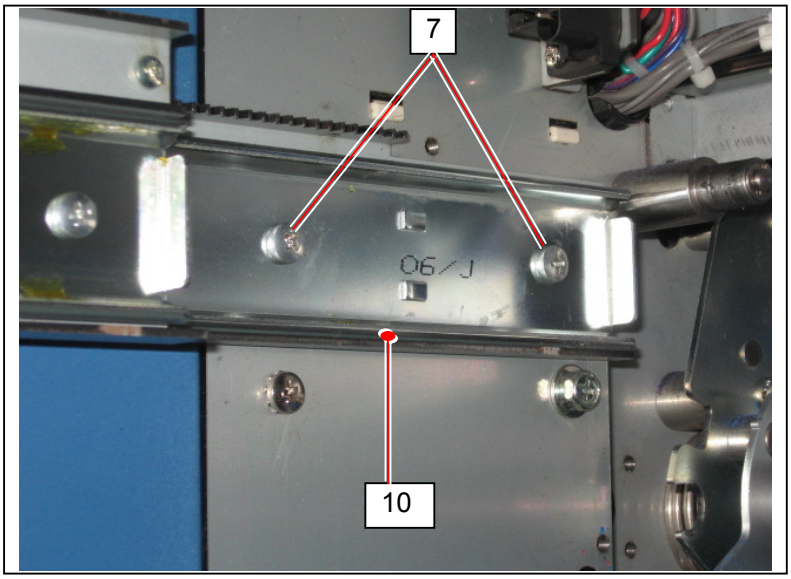
When the Slide Rail Unit (6) is to be returned;

(1) Fit the positioning bosses (8) to the positioning holes (9) on machine side.

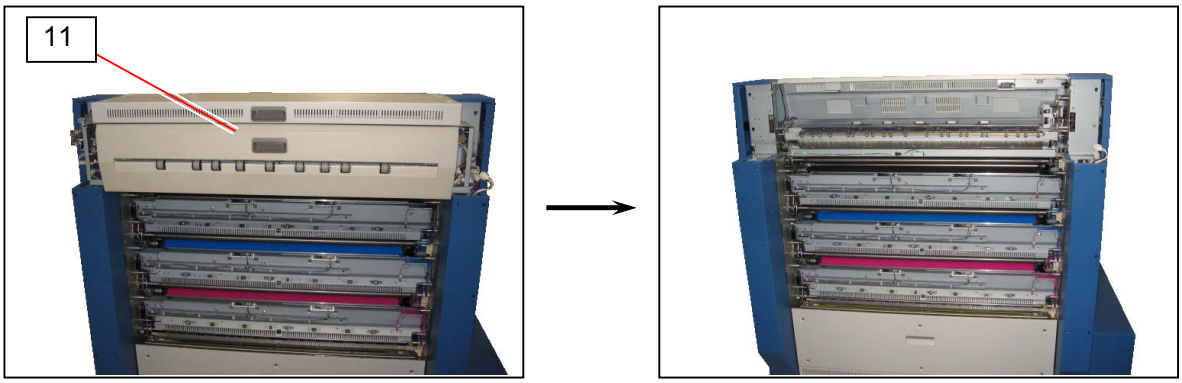




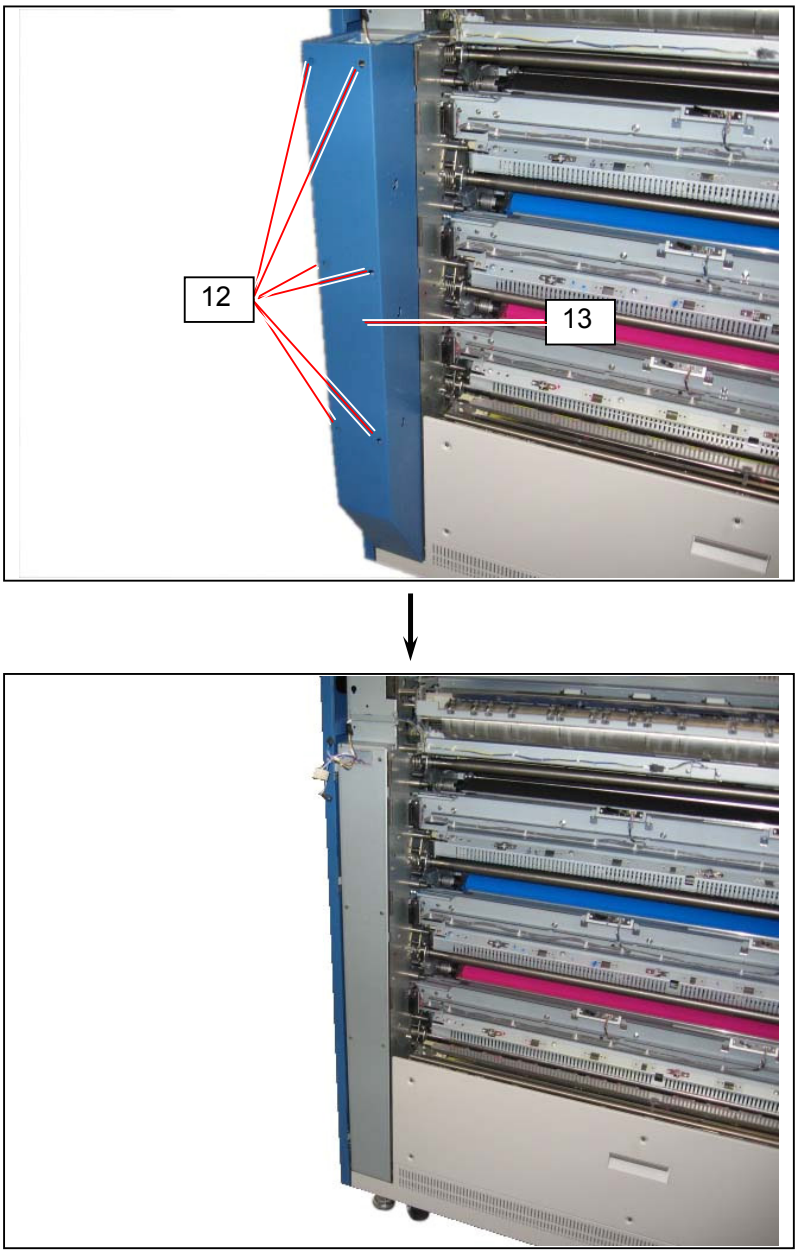
(2) Tighten the screws (7) with pressing the slide rail downward to have no space on its bottom area (10). If there is any space, the Transportation Unit can not be opened/closed smoothly.



8. Remove the whole Fuser Unit (11) from the machine **by 2 people**.
   See [5.6.1 Removing Fuser Unit] on page 5-42.

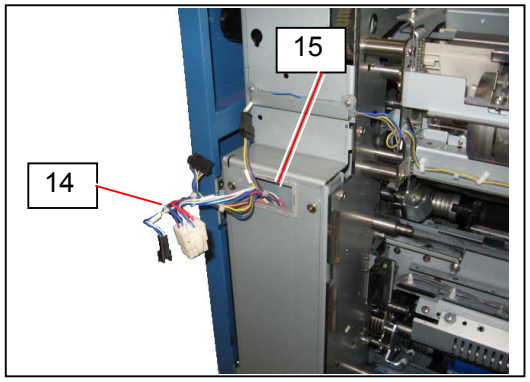


9. Remove 6 screws (12), and remove the Fuser Holder R (13) on the right.

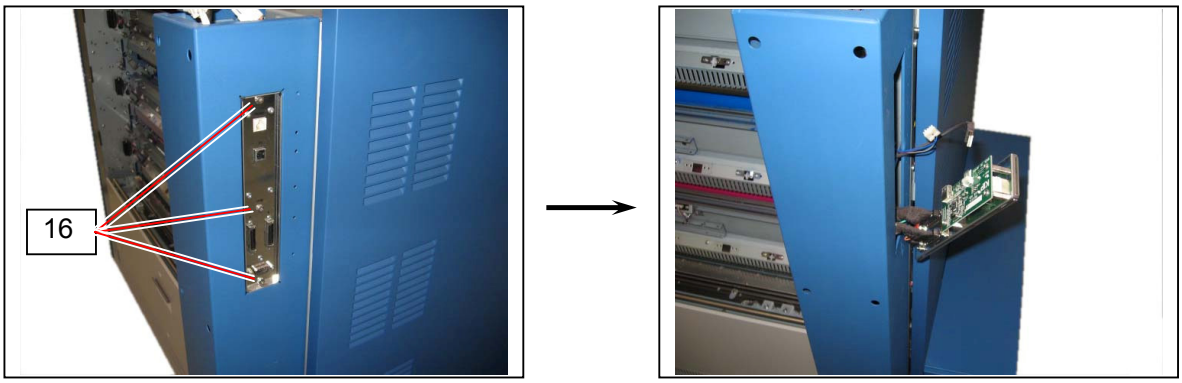


NOTE

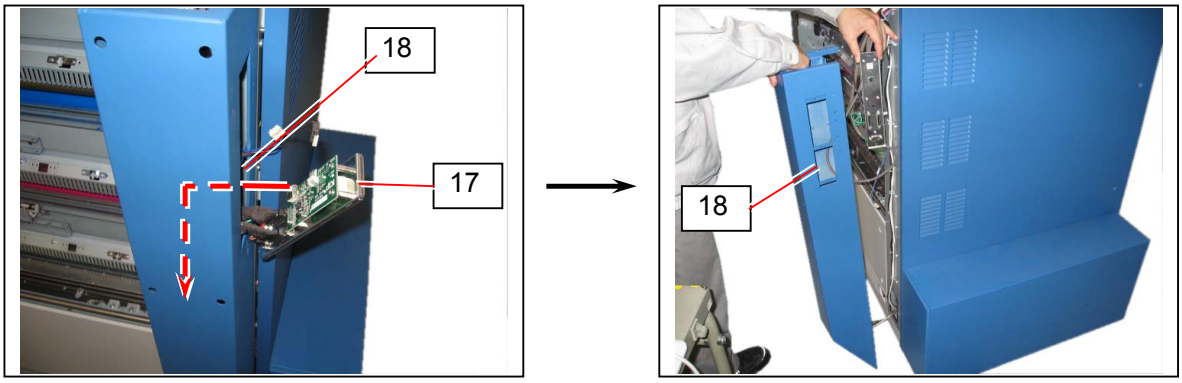
Put the harness (14) into the square hole (15) to prevent it from being damaged.



10. Remove 3 screws (16).

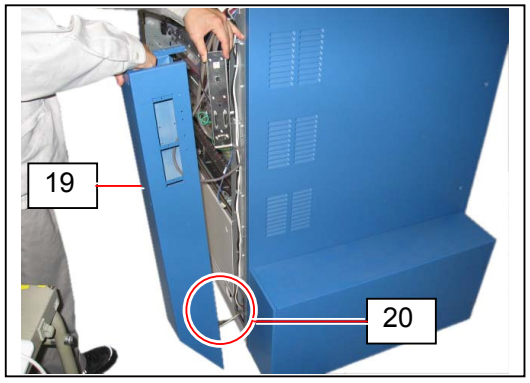


11. Put the Terminal Bracket (17) into the square hole (18).

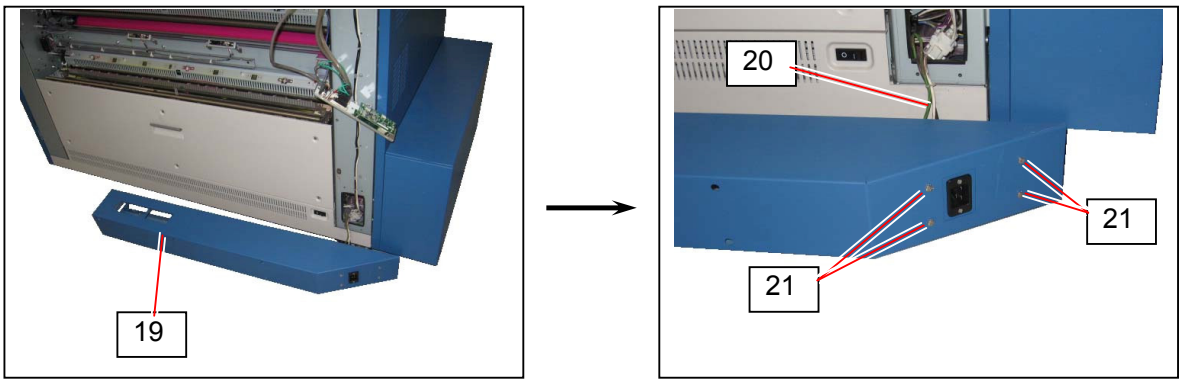


NOTE

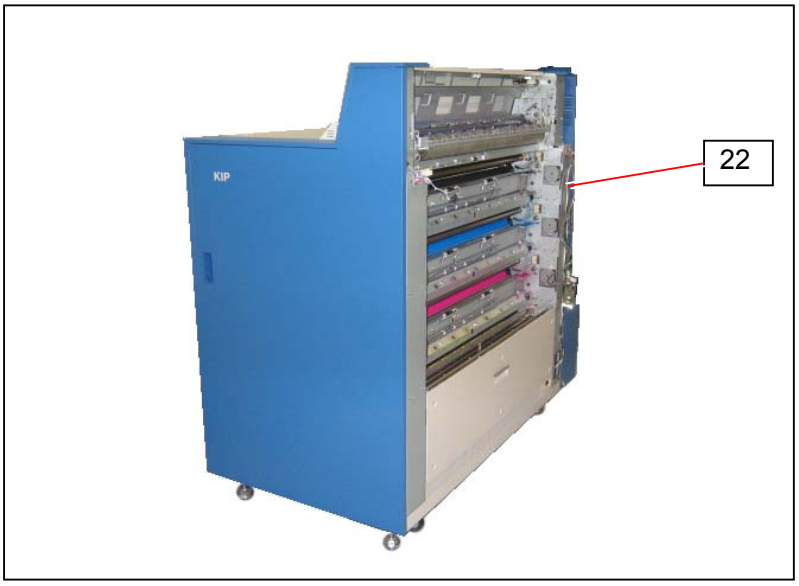
Do not handle the Fuser Holder L (19) roughly as the harness (20) is still fixed on its bottom part.



12. Lay the Fuser Holder L (19) on the floor, and remove 4 screws (21) to release the harness (20). (Fuser Holder L (19) can be removed.)



13. Taking care not to damage the cables (22), pass the KC80 through narrow entrance.

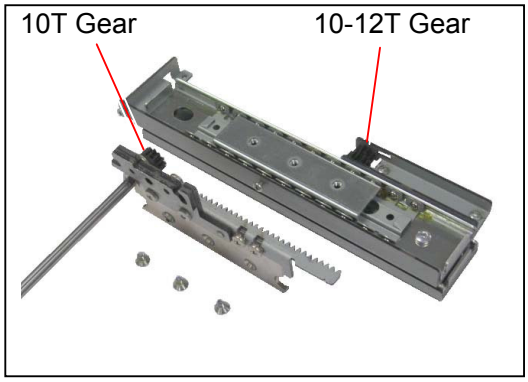


14. Reassemble the KC80 in the reversed order.

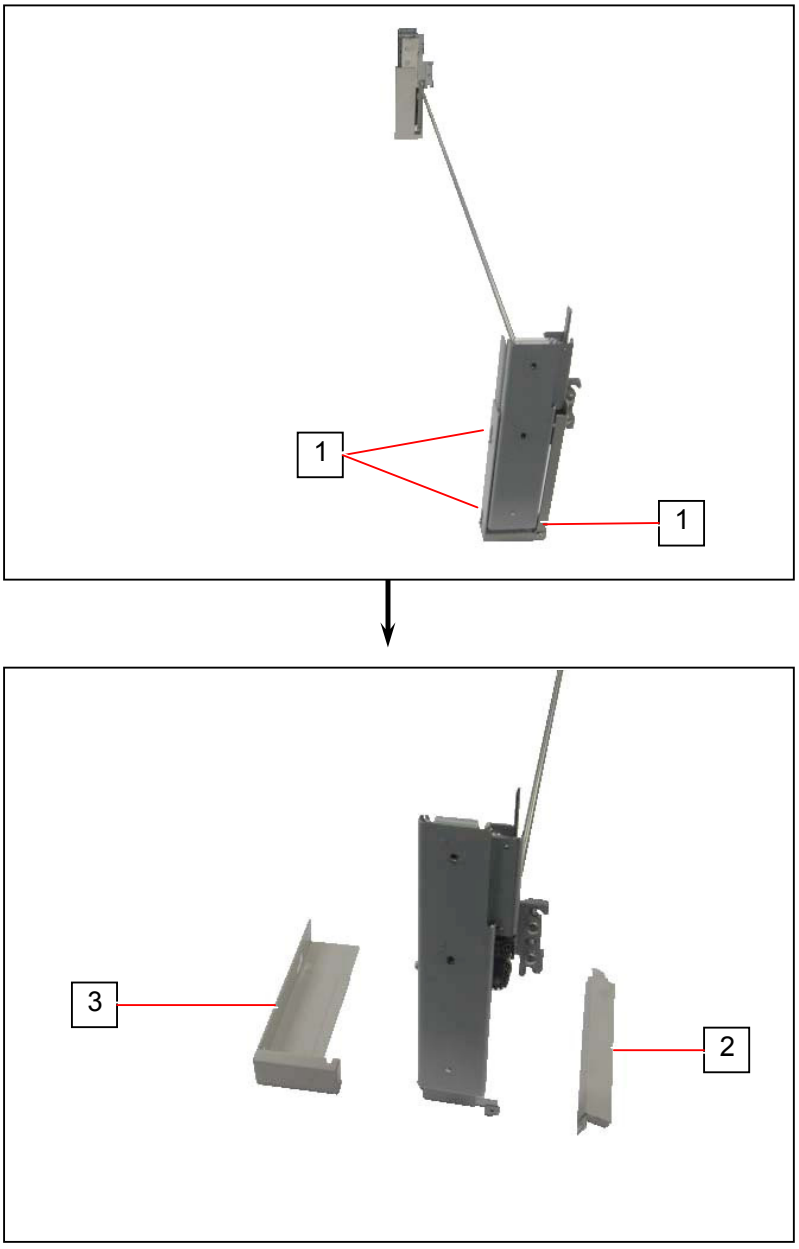
5.13 Replacing 10-12T Gear & 10T Gear in Slide Rail Unit of Transportation Unit

The gear in the Slide Rail Unit of Transportation Units (1-3) may be worn out or broken after very long term use of KC80. As the Transportation Unit does not mode smoothly if this gear is not installed correctly, install them in the following way.

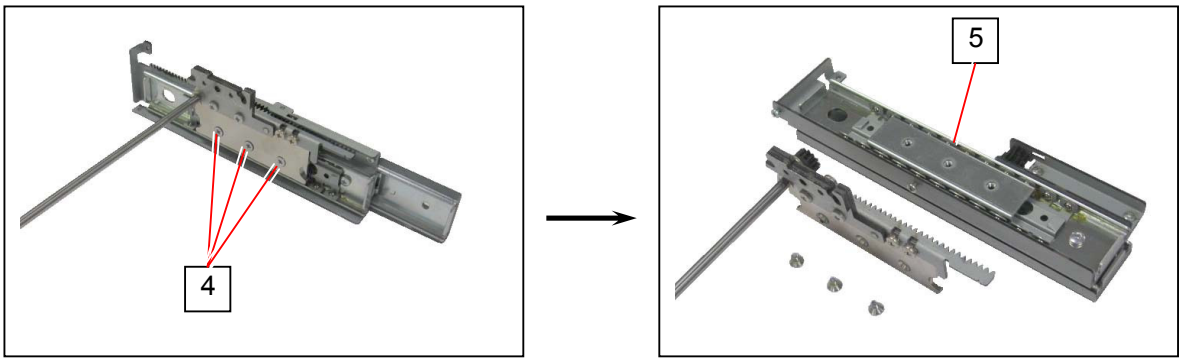
Please perform the following procedures on both sides of Slide Rail Units commonly.



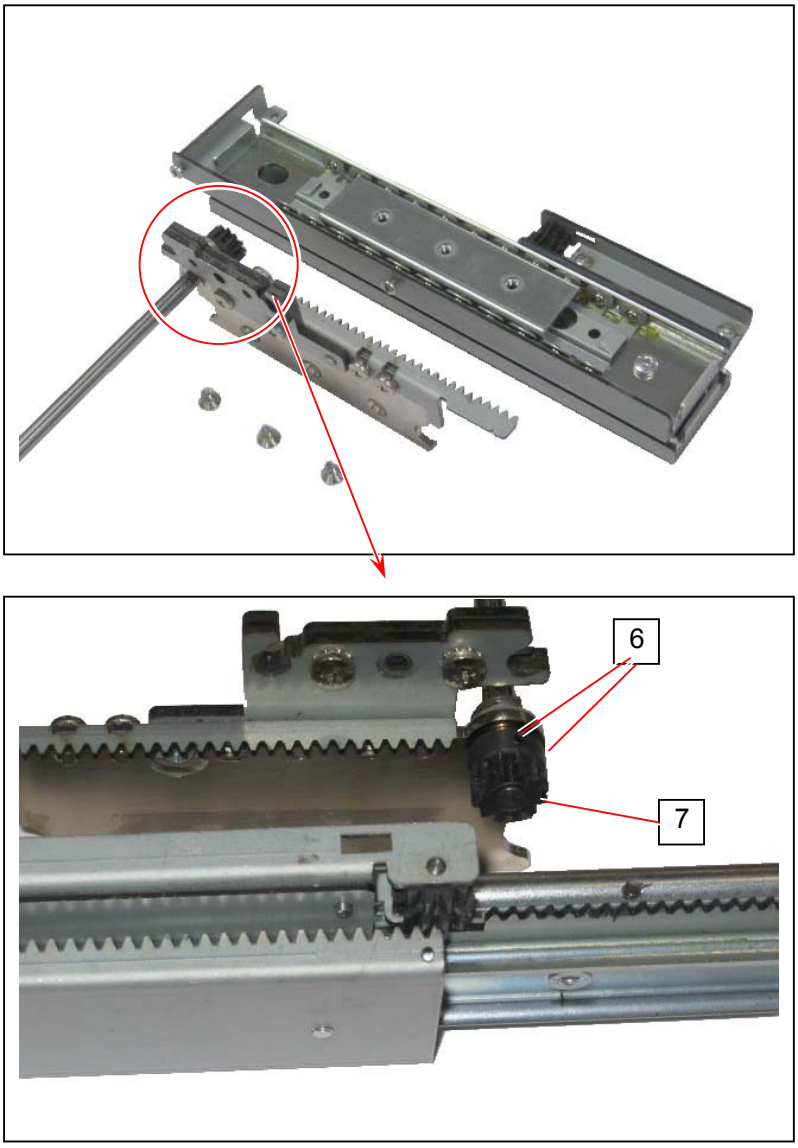
1. Loosen 3 screws (1), and remove the slide rail cover 1 (2) and slide rail cover 2 (3).



2. Remove 3 screws (4) to remove the Rail Unit (5).



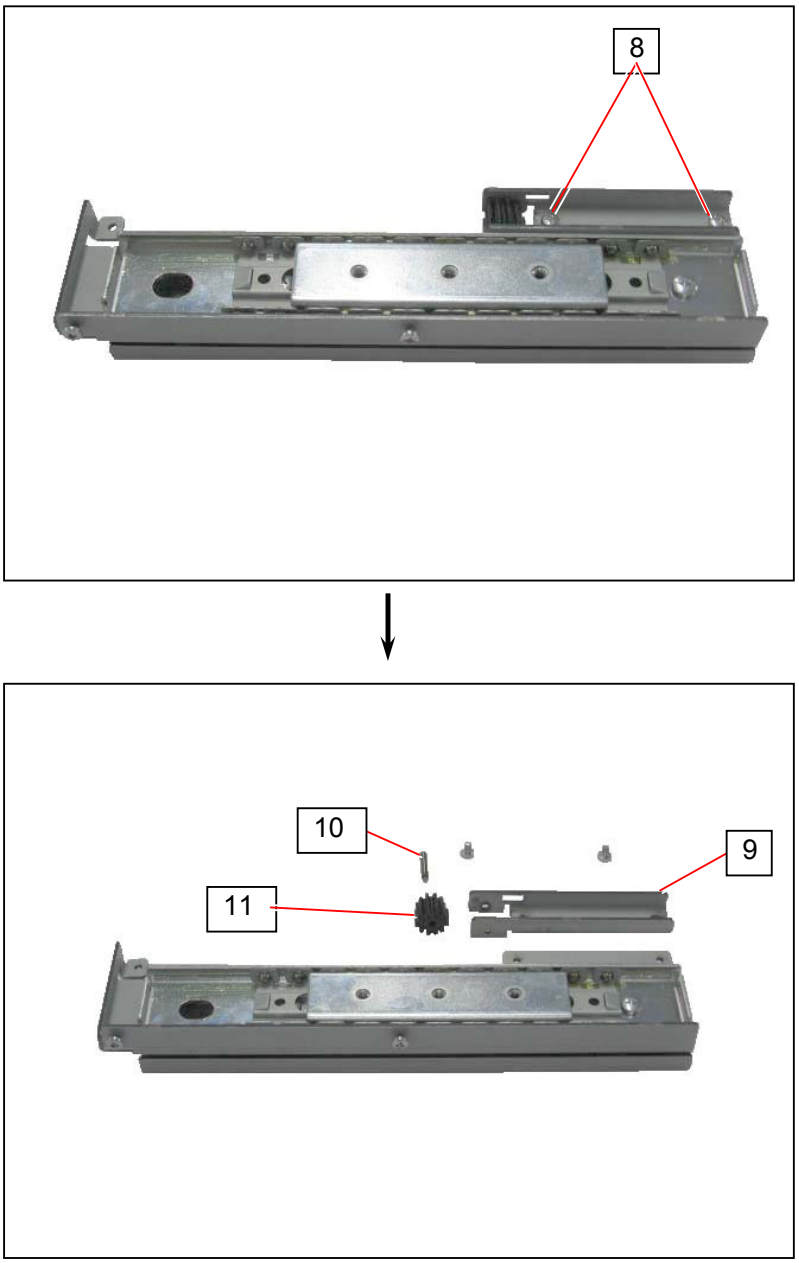
3. Loosen 2 Set Screws (6) to remove the 10T Gear (7). Replace the 10T Gear with the new one.



NOTE

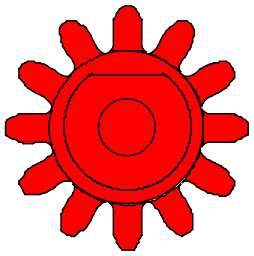
Longer one of 2 Set Screws (6) is to be fitted into the screw hole on the shaft.

4. Remove 2 screws (8), and remove Bracket (9), Pin (10) and 10-12T Gear (11).

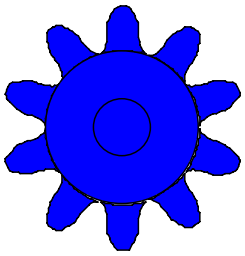


5. Prepare the new 10-12T Gear (11). It has 12 tooth on one side and 10 tooth on another side. And there is a “D” mark on 12 tooth side.

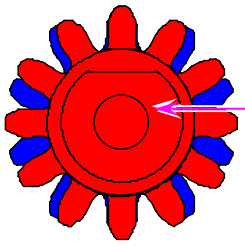
12T Gear side with D mark



10 Gear side

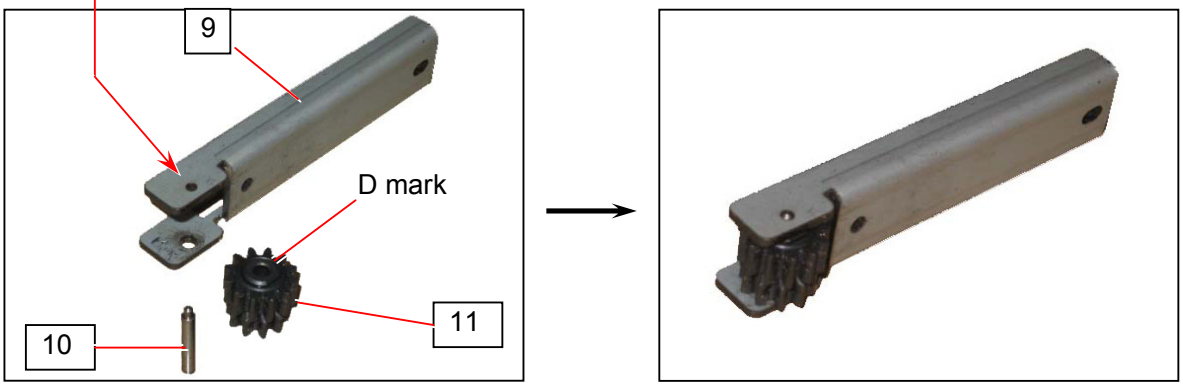


With direct the D mark side (12 tooth side) up, put the 10-12T Gear 12 between both plates of the Bracket (10), and hold it by inserting the Pin (11).

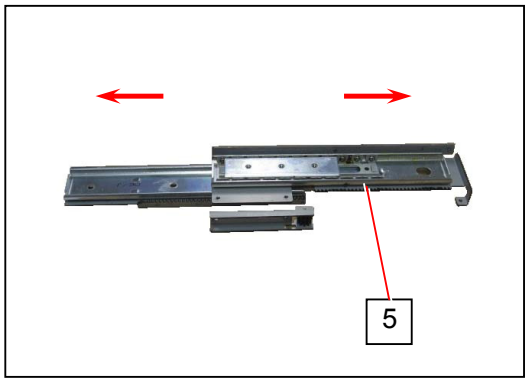


Direct “D: side of 10-12T Gear up.

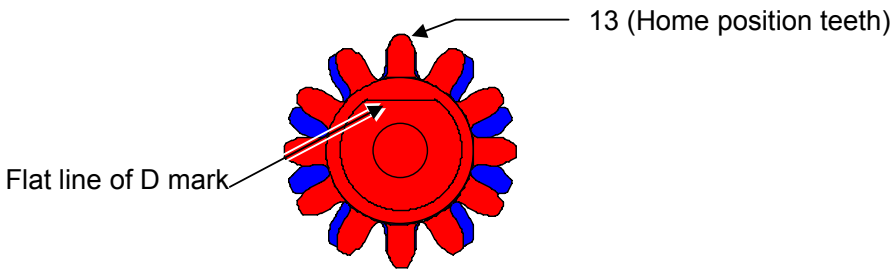
Small hole side is upside

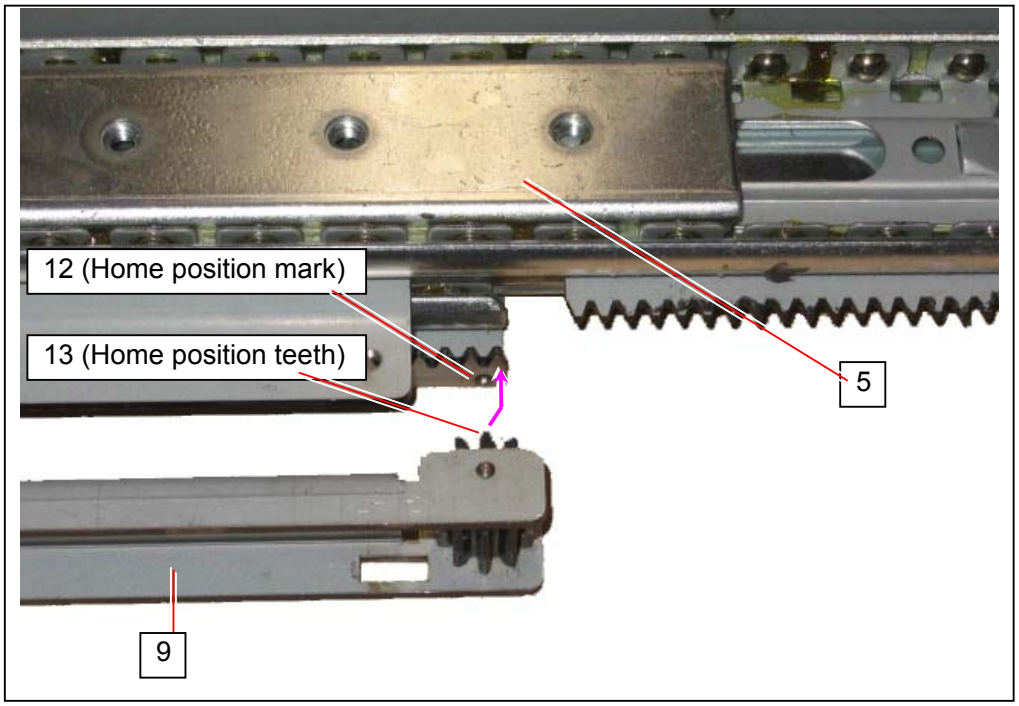


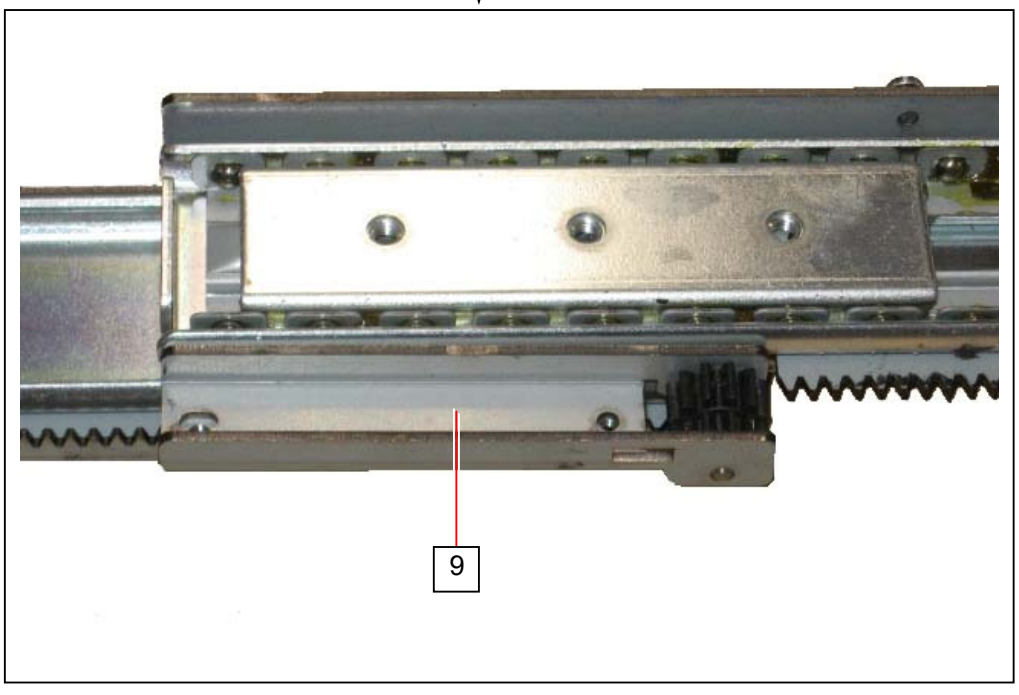
6. Fully extend the Rail Unit (5).



7. There is a “home position mark” (12) for 10-12T Gear on the Rail Unit (5). The 10-12T Gear also has the “home position teeth” (13) that is shown by the flat line of D mark.
With fitting the home position teeth (13) to the groove beside home position mark (12), put the Bracket (9) onto its installation position on the Rail Unit (5).



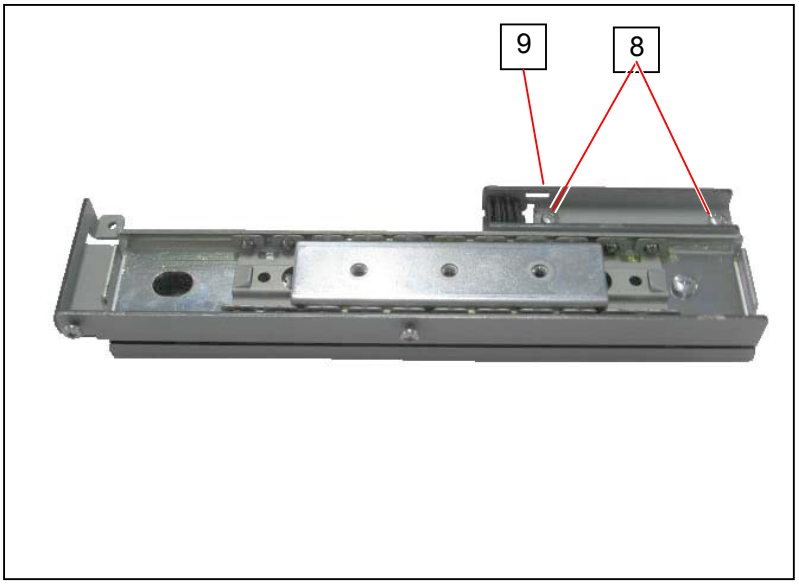




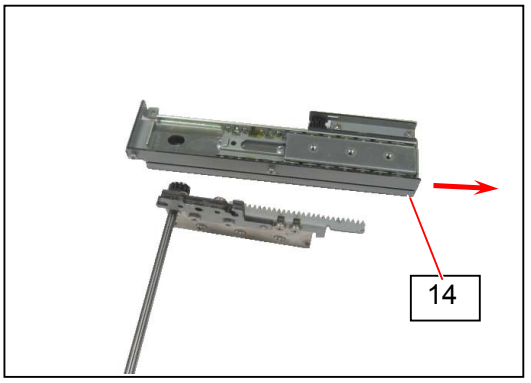
NOTE

Make sure to fit the positioning teeth (13) into the correct grooves shown by positioning marks (12) **on both left and right Rail Unit**. If its position is different between left and right, the Transportation Unit can not be opened/closed smoothly.

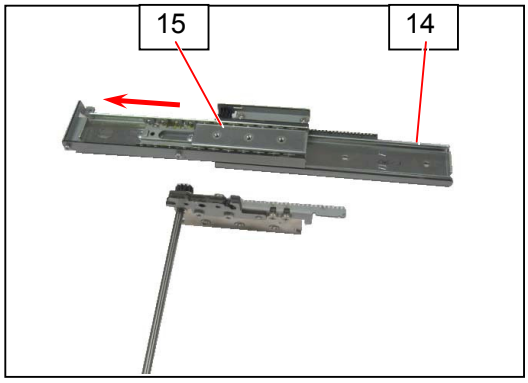
8. Fix the Bracket (9) with 2 screws (8).

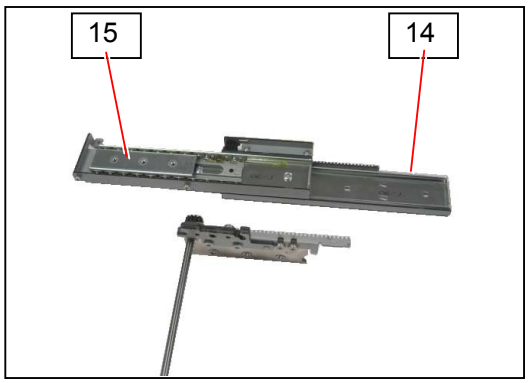


9. Fully slide out the outside rail (14) or each Rail Unit, and also fully slide out the inside rail (15).



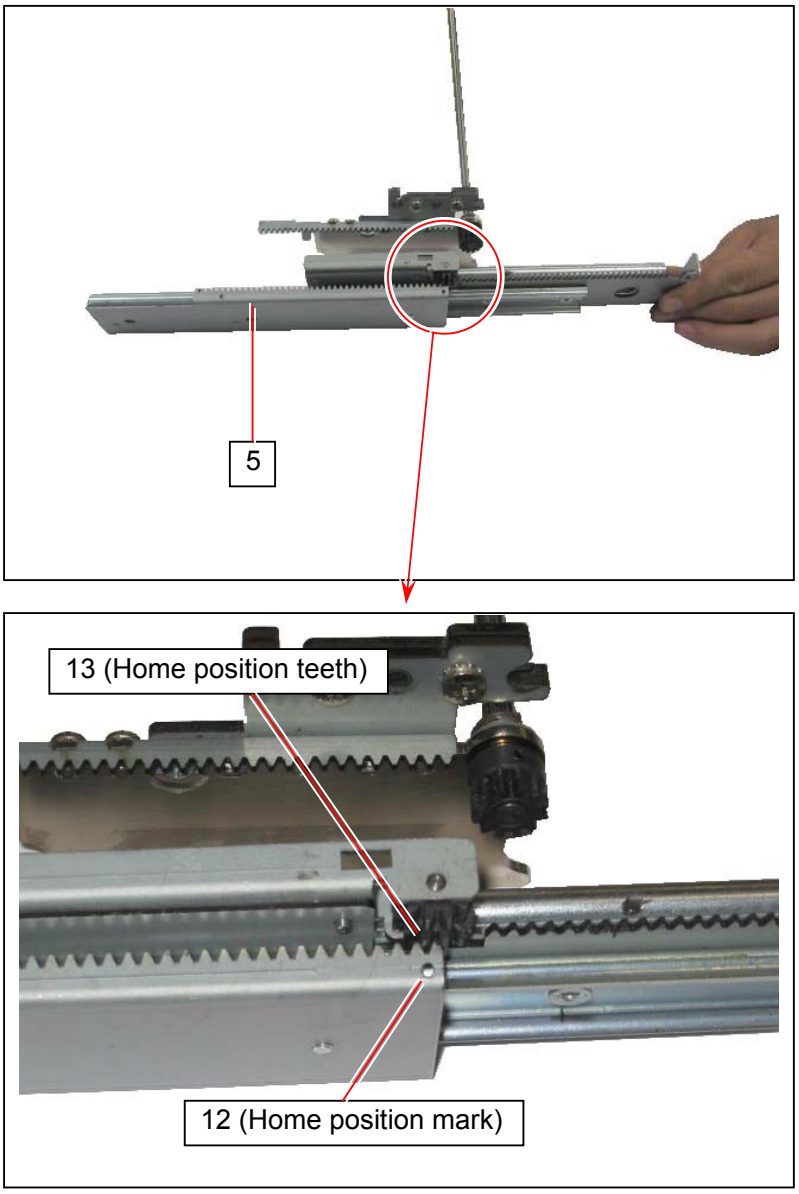
(Completely shortened)



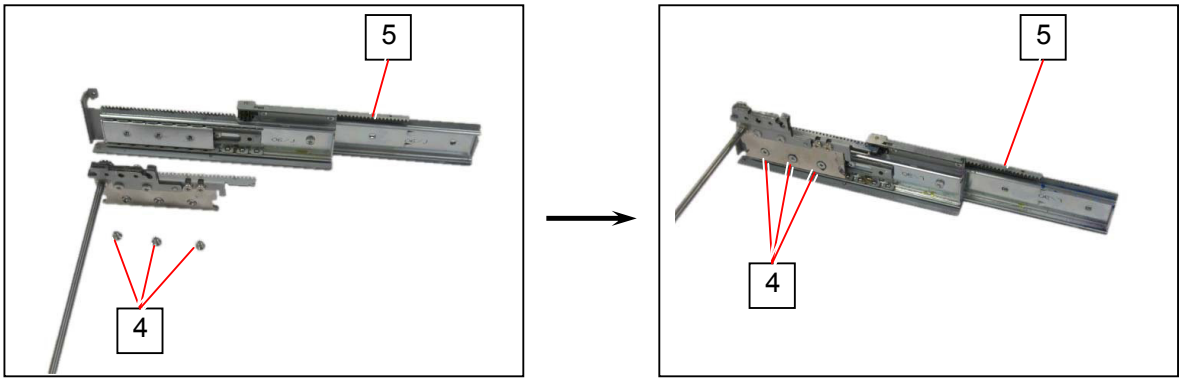


(Completely extended)

10. Keeping the Rail Unit (5) extending fully, confirm that the home position teeth (13) of 10-12T Gear is in the groove shown by the home position mark (12).



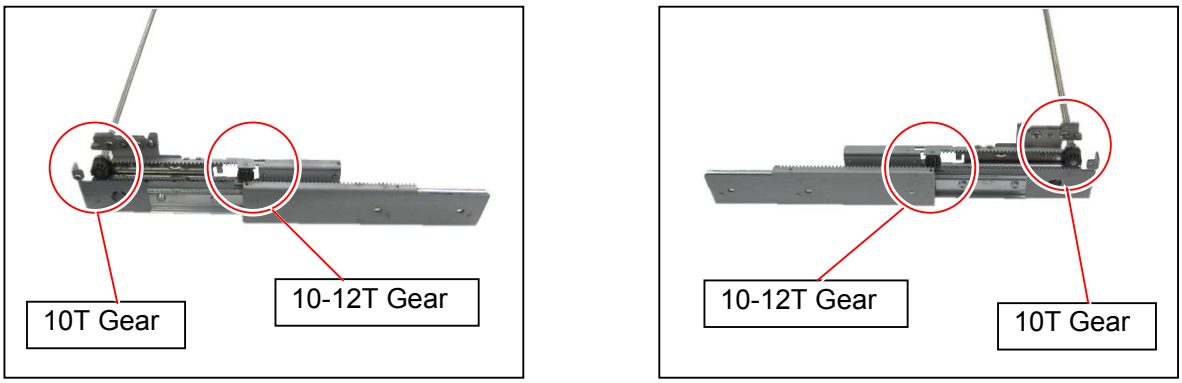
Keeping the above state, install the Rail Unit (5) to the Slide Rail Unit with 3 screws (4).



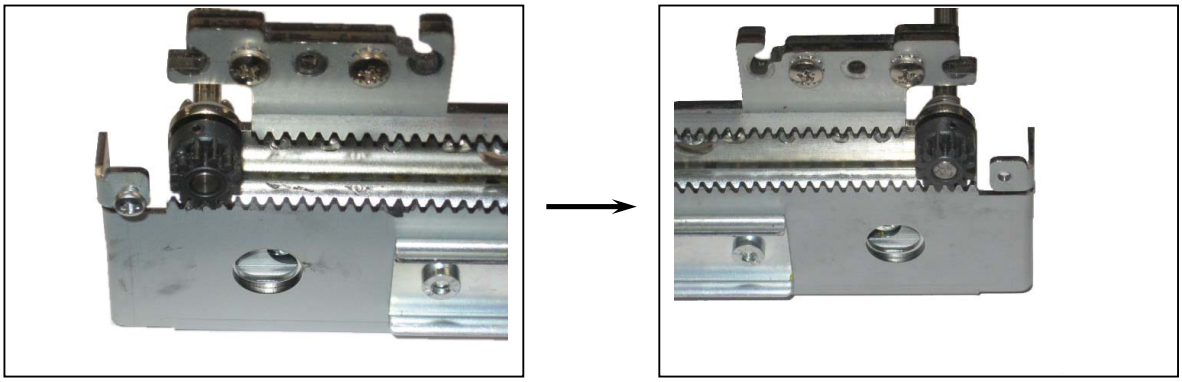
NOTE

Lock the screws (4) with paint when reassemble.

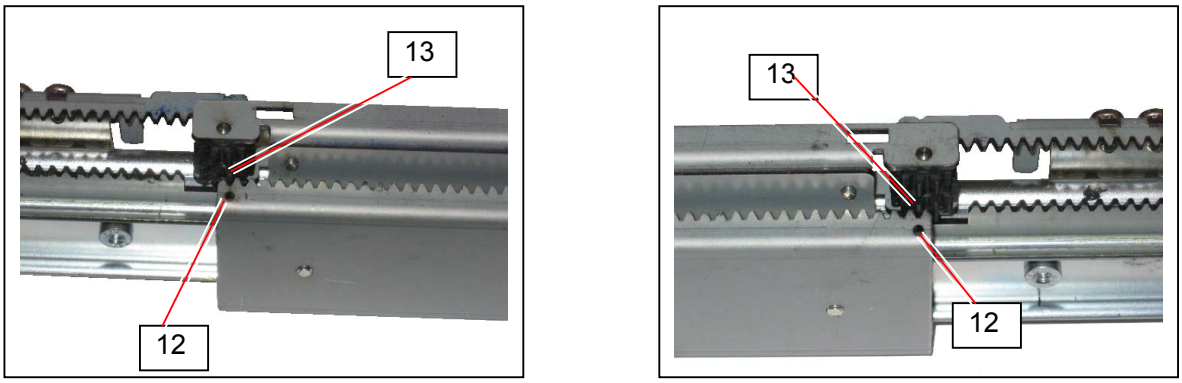
11. After installing the Rail Units (5) on both sides, check if the gears are successfully installed. Fully extend both rail unit.



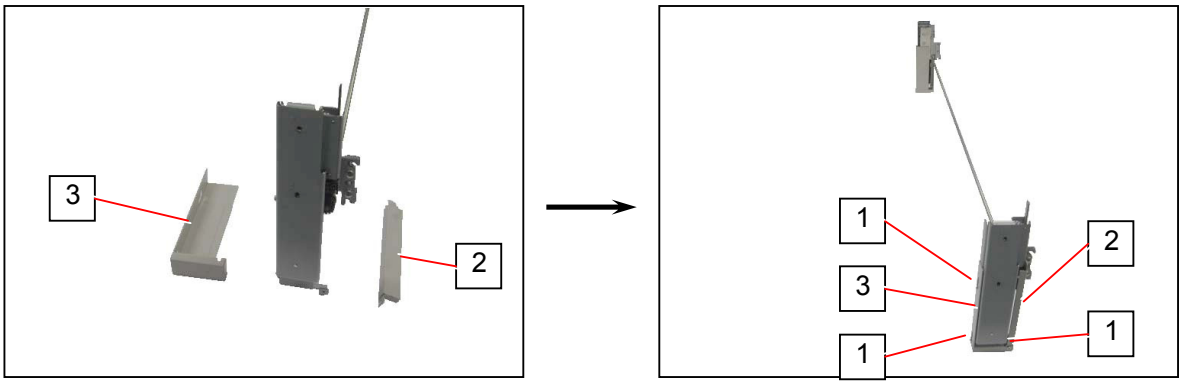
a) Confirm that the tooth of 10T Gear are fitted into the same grooves on both left and right Rail Units.



b) Confirm that the home position teeth (13) of each 10-12T Gear is in the groove shown by the home position mark (12).

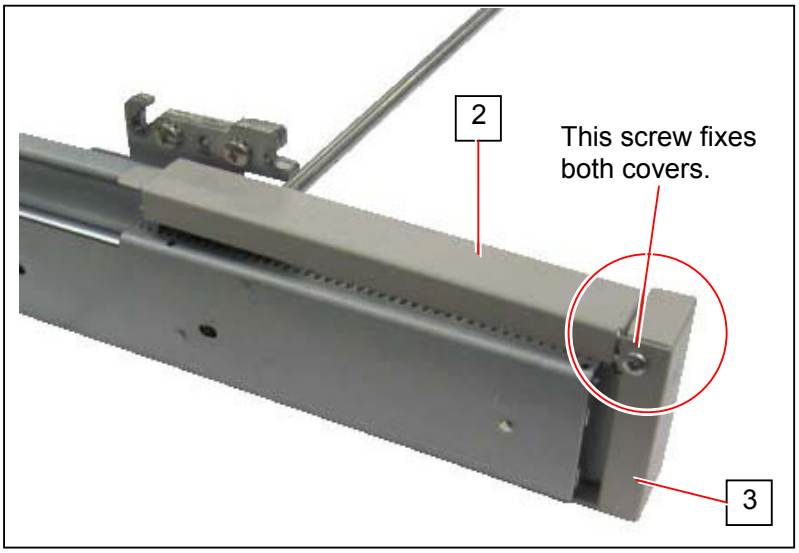


12. Finally return the slide rail cover 1 (2) and slide rail cover 2 (3), and fix them with 3 screws (1).

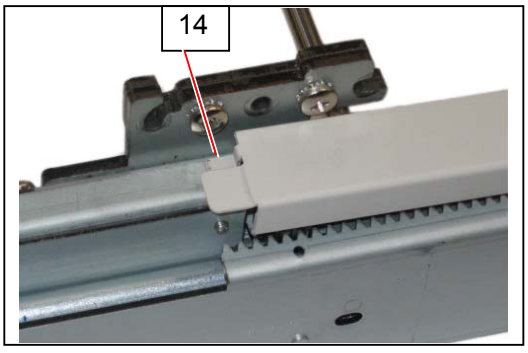


NOTE

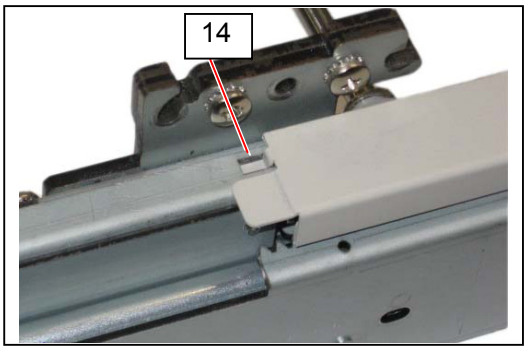
(1) When reassemble, return the Slide Rail Cover 1 (2) first then Slide Rail Cover 2 (3). Therefore the Slide Rail Cover 2 (3) is outside and Slide Rail Cover 1 (2) is inside at around the common screw (1).



(2) The tip (14) of Slide Rail Cover 1 (2) must be in its correct position as the following correct case.



Incorrect



Correct

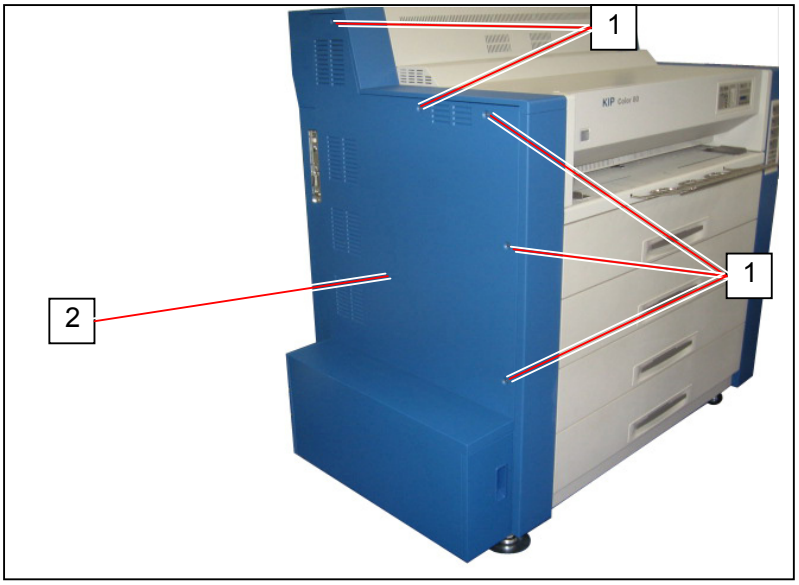
5. 14 Replacing Plate Conductive

NOTE

The following parts are recommended for periodic replacement.

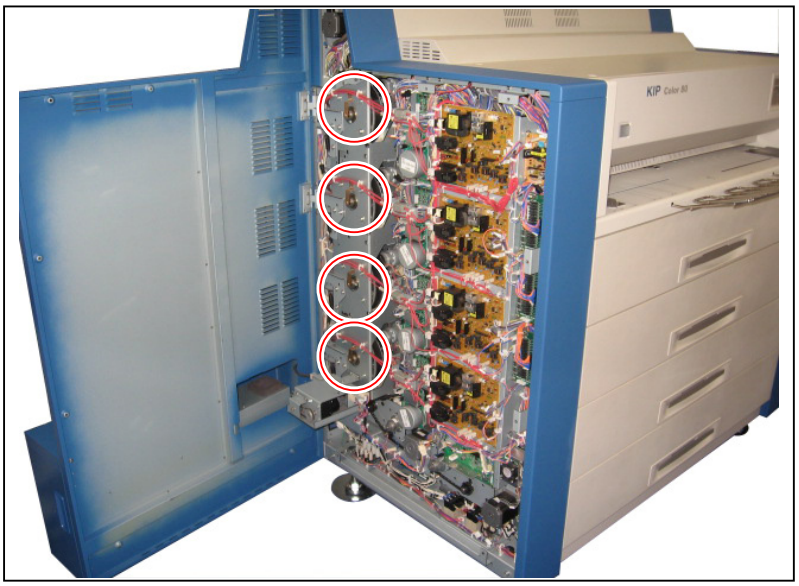
Item	Part Number	Number of article (per unit)
Plate Conduction	Z071600210	1

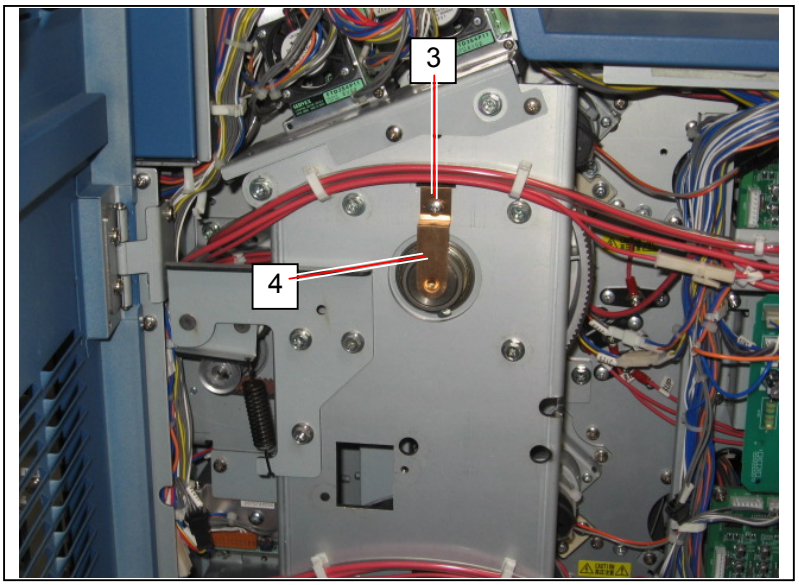
1. Remove 5 screws (1) and open the Left Side Door (2).



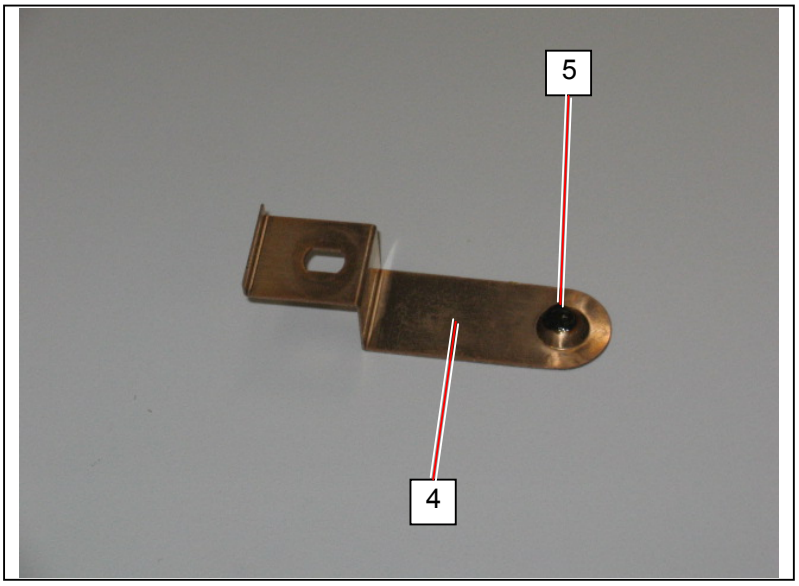


2. Remove the screw (3) to remove each “Plate Conductive” (4).

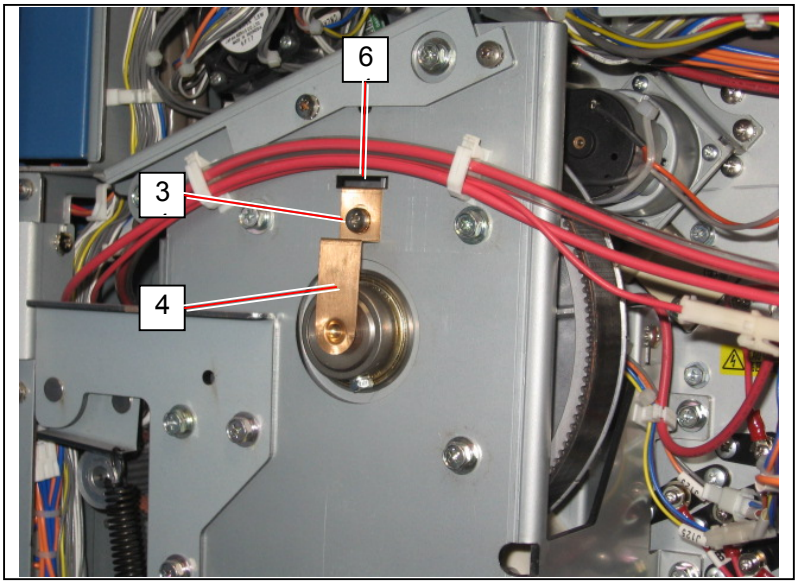




3. Apply the conductive grease (5) onto the contact point of new “Plate Conductive” (4) for better conduction.



4. Secure the “Plate Conductive” (4) with the screw (3).



NOTE

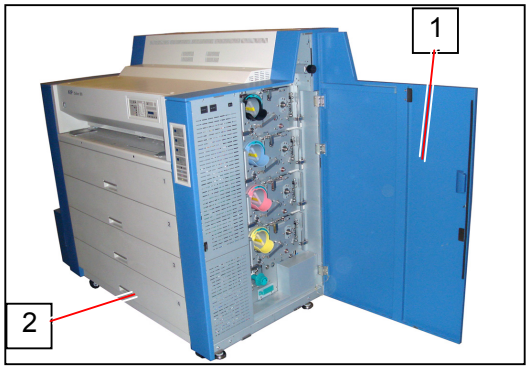
Make sure to fit the end of “Plate Conductive” (4) into the slit (6).

5.15 Oil Supplying to Stay 1 of Cutter Unit

NOTE

Supply the sawing machine oil to the Stay 1 (cutter blade cleaner) of Cutter Unit every 6 month.

1. Open the Right Side Door (1), and draw out the 4th Roll Deck (2).

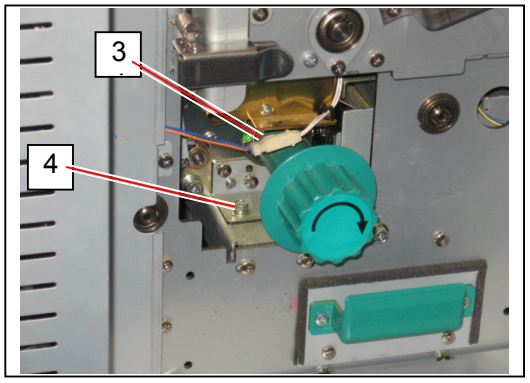


NOTE

It will be difficult to pull out the Cutter Unit from the machine on later procedure if the 4th Roll Deck is closed.

2. Disconnect the connector (3), and remove the screw (4).

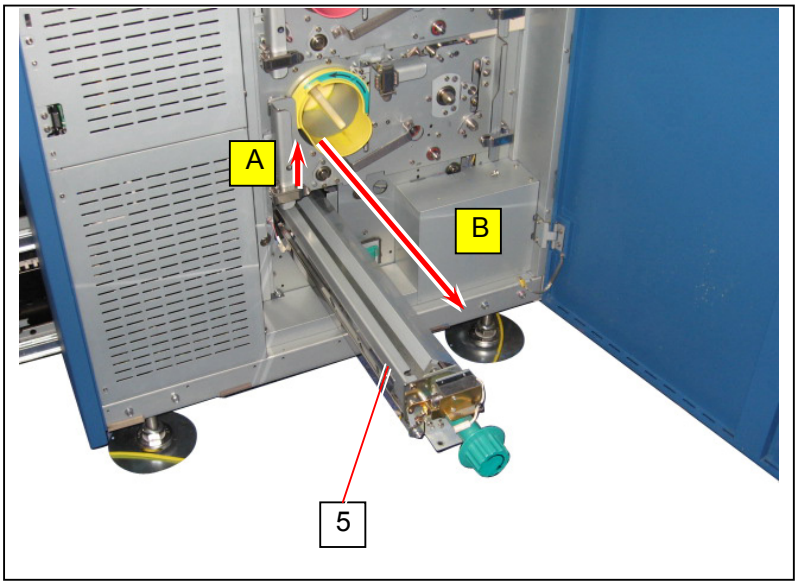


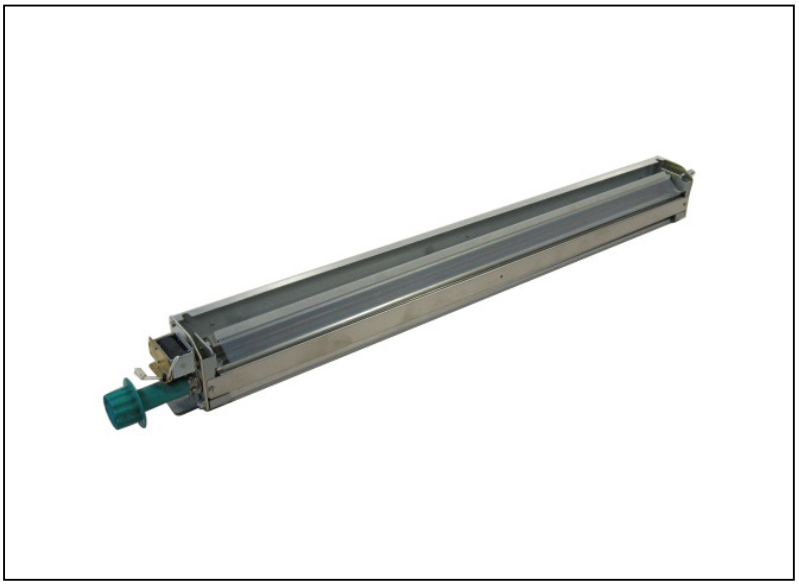


NOTE

Be careful not to drop the screw (4) inside of the machine. If dropped unfortunately, it will be better to remove the 4th Roll Deck for accessing the dropped screw.

3. Holding the green Cutter Handle, move up the Cutter Unit (5) a little as arrow (A) then pull out the whole unit as arrow (B).

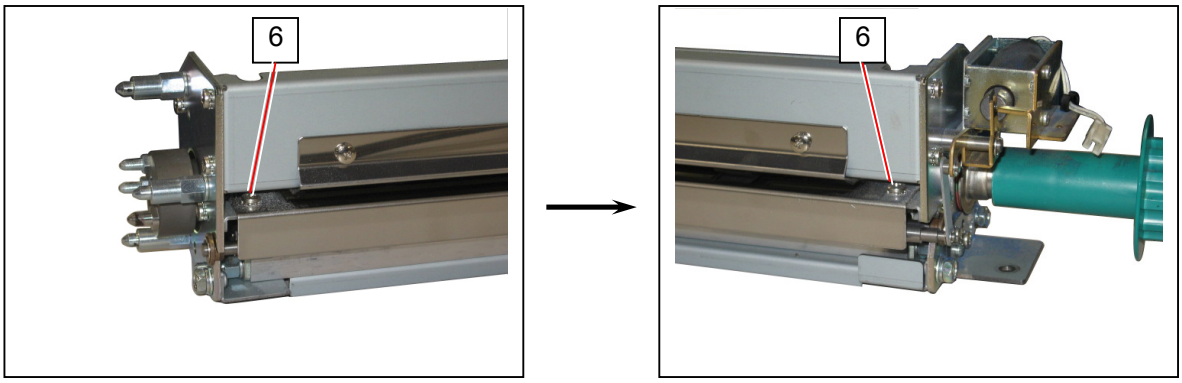




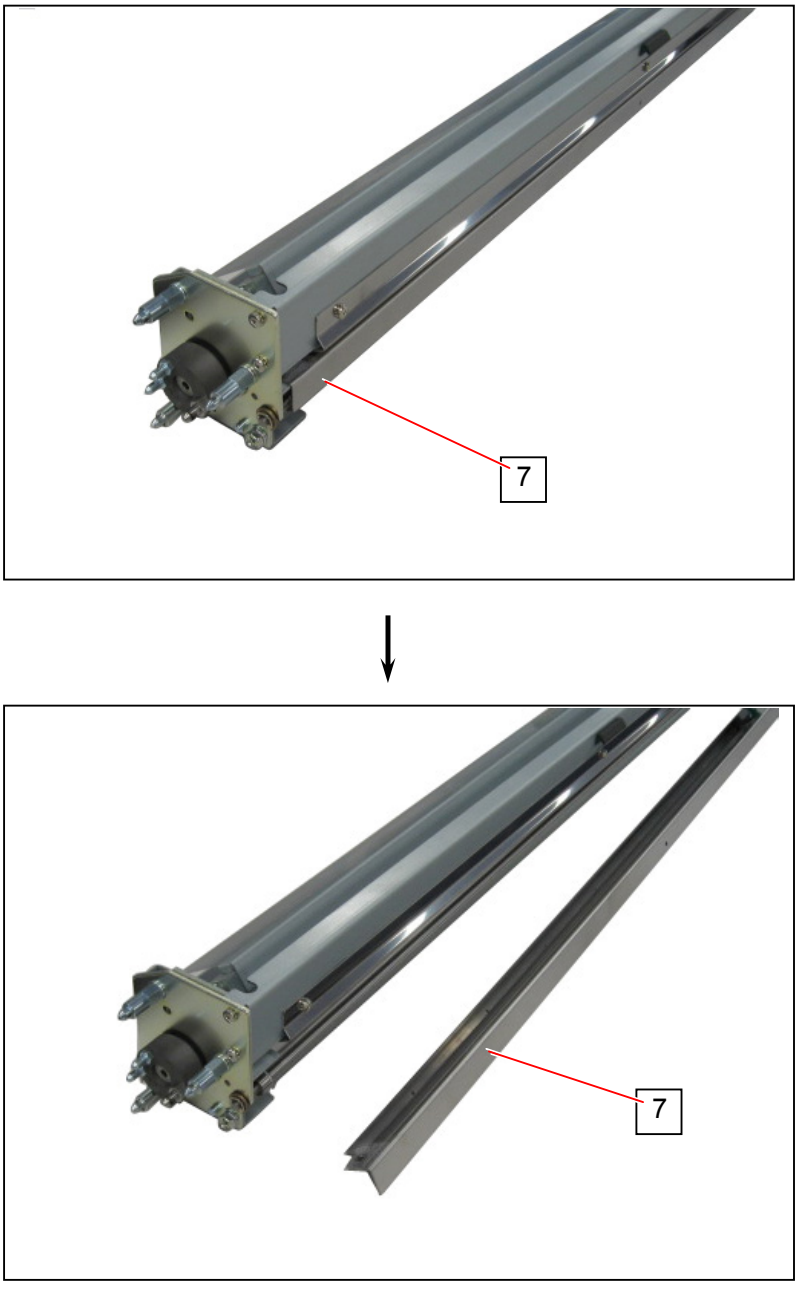
NOTE

If the Cutter Unit is not moved up as (A) at first, it will be impossible to pull it out as (B) as the unit is tightly locked.

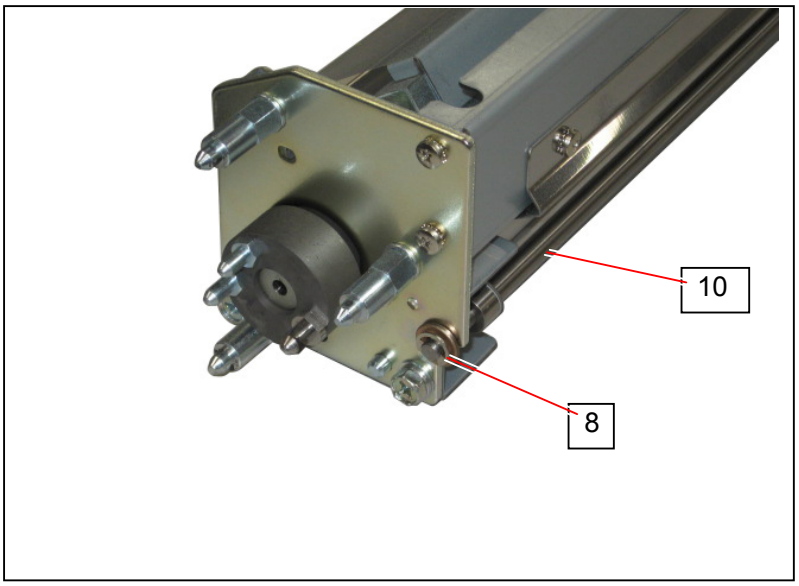
4. Remove 2 screws (6) on both sides.

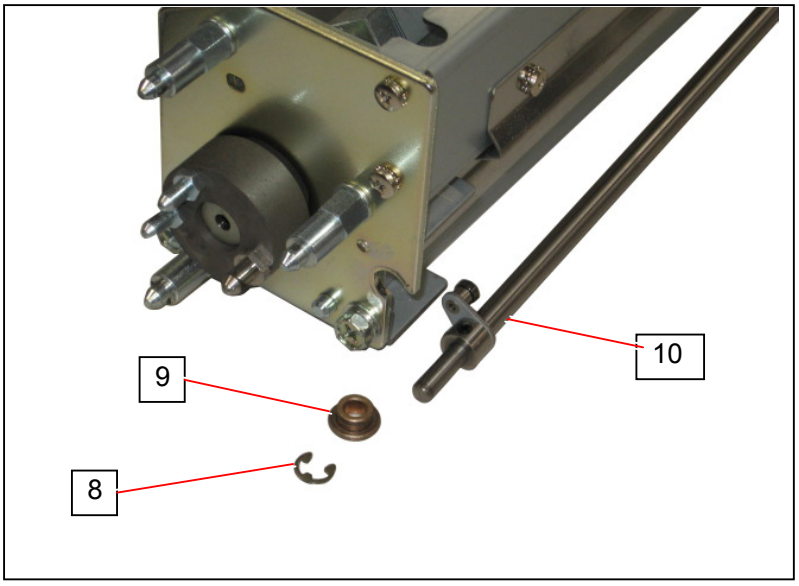


5. Remove the Lower Paper Guide Plate (7).

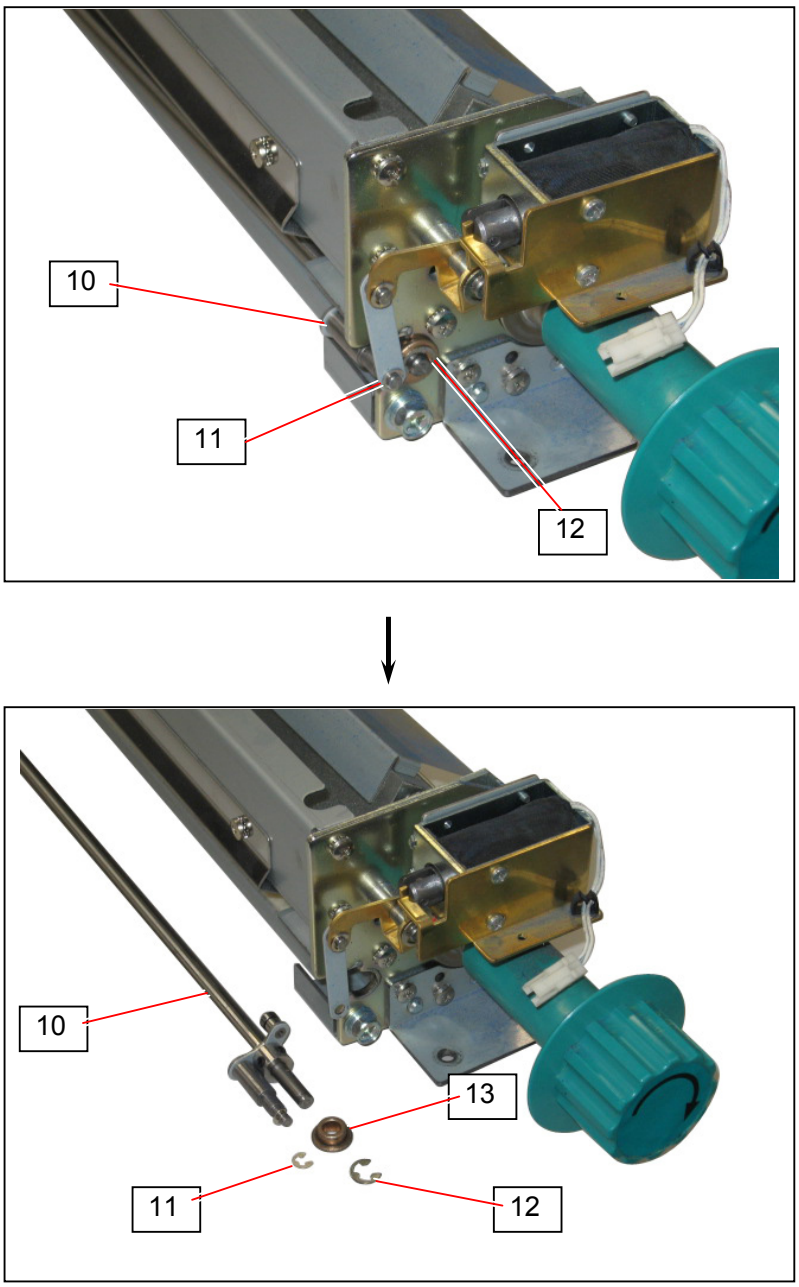


6. Remove the E Ring (E5) (8) and Oil-less Metal (9). This will remove one end of the Supporting Shaft 1 (10) from the side plate.

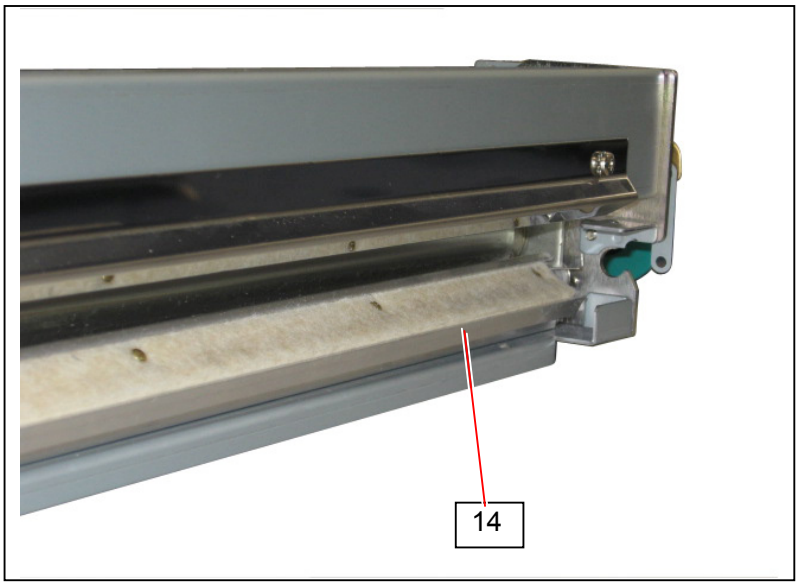




7. Remove the E Ring (E3) (11), E Ring (E5) (12) and Oil-less Metal (13). This will remove another end of the Supporting Shaft 1 (10) from the side plate.



8. Supply the sawing machine oil to the filter on the Stay 1 (14).



Chapter 6

Maintenance

page

6. 1 Recommended Periodic Replacement Parts 6- 2

6. 2 Periodical Maintenance 6- 3

6. 3 Recommended Service Tools & Devices 6- 4

KIP Color 80 PM Schedule

r1

Printer Serial Number _____

- Please keep this form with the KIP Color 80 ; Please perform PMs as scheduled

- As the PM comes due and items replaced or cleaned, note with an "X" in the complete box.

Part / Description	Part Number	Qty		Linear Feet X 1000																	
			Code	20	Complete	40	Complete	60	Complete	80	Complete	100	Complete	120	Complete	140	Complete	160	Complete	180	Complete
Process Unit Corona Wires & ADS wires (15)	Z078070010	1	#	C		C		C		C		C		C		C		R		C	
Density Sensors		8	#	C		C		C		C		C		C		C		C		C	
Optical Density																		A			
Grid Screen		4				C				C				C				C			
Drum with Blade	Z078060050	4																R			
Drum Ground	Z071600210	4																L			
Drum Side Seals	Z078060010	4	@	C		C		C		C		C		C		C		C		C	
Developer (Rebuild Kit)	Z078060040	4	@															R			
LED Heads		4	#	C		C		C		C		C		C		C		C		C	
Paper Compartment			@	C		C		C		C		C		C		C		C		C	
Media Decks drive gears										L								L			
Vacuum (clean) Interior			@	C		C		C		C		C		C		C		C		C	
Filter Kit A-36	Z078060100	1	@							C								C			
Filter Kit B-7	Z078060110	1	@							C								C			
Fuser Web	Z074400540	1				I				I				I				R			
Fuser Roller, Pressure Roller, Fuser Fingers	z078060120	1		C		C		C		C		C		C		C		C		C	
Fuser Gears										L								L			
Knife (Oil Pad)			@							L								L			
Waste Toner	SUPKC80-105			I		I		I		I		I		I		I		I		I	
Exterior Covers			#	C		C		C		C		C		C		C		C		C	

# = Clean with cloth/glass cleaner and wipe dry	C = Clean	R = Replace	L = Lubricate
@ = Clean with vacuum, carefully	I = Inspect	A = Adjust	

Part numbers subject to change without notice

Part replacement intervals may change with customer requirements and installation location.

KIP Color 80 PM Schedule

r1

Printer Serial Number _____

- Please keep this form with the KIP Color 80 ; Please perform PMs as scheduled

- As the PM comes due and items replaced or cleaned, note with an "X" in the complete box.

Part / Description	Part Number	Qty		Linear Feet X 1000																	
			Code	200	Complete	220	Complete	240	Complete	260	Complete	280	Complete	300	Complete	320	Complete	340	Complete	360	Complete
Process Unit Corona Wires & ADS wires (15)	Z078070010	1	#	C		C		C		C		C		C		R		C		C	
Density Sensors		8	#	C		C		C		C		C		C		C		C		C	
Optical Density																A					
Grid Screen		4				C				C				C		C		C			
Drum with Blade	Z078060050	4														R					
Drum Ground	Z071600210	4														R					
Drum Side Seals	Z078060010	4	@	C		C		C		C		C		C		R		C		C	
Developer (Rebuild Kit)	Z078060040	4	@													R					
LED Heads		4	#	C		C		C		C		C		C		C		C		C	
Paper Compartment			@	C		C		C		C		C		C		C		C		C	
Media Decks drive gears										L						L					
Vacuum (clean) Interior			@	C		C		C		C		C		C		C		C		C	
Filter Kit A-36	Z078060100	1	@							C						R					
Filter Kit B-7	Z078060110	1	@							C						C					
Fuser Web	Z074400540	1				I				I				I		R		I			
Fuser Roller, Pressure Roller, Fuser Fingers	z078060120	1		C		C		C		C		C		C		R		C		C	
Fuser Gears										L						L					
Knife (Oil Pad)			@							L						L					
Waste Toner	SUPKC80-105			I		I		I		I		I		I		I		I		I	
Exterior Covers			#	C		C		C		C		C		C		C		C		C	

# = Clean with cloth/glass cleaner and wipe dry	C = Clean	R = Replace	L = Lubricate
@ = Clean with vacuum, carefully	I = Inspect	A = Adjust	

Part numbers subject to change without notice

Part replacement intervals may change with customer requirements and installation location.

KIP Color 80 PM Schedule

r1

Printer Serial Number _____

- Please keep this form with the KIP Color 80 ; Please perform PMs as scheduled

- As the PM comes due and items replaced or cleaned, note with an "X" in the complete box.

Part / Description	Part Number	Qty		Linear Feet X 1000																	
			Code	380	Complete	400	Complete	420	Complete	440	Complete	460	Complete	480	Complete	500	Complete	520	Complete	540	Complete
Process Unit Corona Wires & ADS wires (15)	Z078070010	1	#	C		C		C		C		C		R		C		C		C	
Density Sensors		8	#	C		C		C		C		C		C		C		C		C	
Optical Density														A							
Grid Screen		4				C				C				C				C			
Drum with Blade	Z078060050	4												R							
Drum Ground	Z071600210	4												L							
Drum Side Seals	Z078060010	4	@	C		C		C		C		C		C		C		C		C	
Developer (Rebuild Kit)	Z078060040	4	@											R							
LED Heads		4	#	C		C		C		C		C		C		C		C		C	
Paper Compartment			@	C		C		C		C		C		C		C		C		C	
Media Decks drive gears										L				L				L			
Vacuum (clean) Interior			@	C		C		C		C		C		C		C		C		C	
Filter Kit A-36	Z078060100	1	@							C				C				C			
Filter Kit B-7	Z078060110	1	@							C				R				C			
Fuser Web	Z074400540	1				I				I				R				I			
Fuser Roller, Pressure Roller, Fuser Fingers	z078060120	1		C		C		C		C		C		C		C		C		C	
Fuser Gears										L				L				L			
Knife (Oil Pad)			@							L				L				L			
Waste Toner	SUPKC80-105			I		I		I		I		I		I		I		I		I	
Exterior Covers			#	C		C		C		C		C		C		C		C		C	

# = Clean with cloth/glass cleaner and wipe dry	C = Clean	R = Replace	L = Lubricate
@ = Clean with vacuum, carefully	I = Inspect	A = Adjust	

Part numbers subject to change without notice

Part replacement intervals may change with customer requirements and installation location.

KIP Color 80 PM Schedule

r1

Printer Serial Number _____

- Please keep this form with the KIP Color 80 ; Please perform PMs as scheduled

- As the PM comes due and items replaced or cleaned, note with an "X" in the complete box.

Part / Description	Part Number	Qty		Linear Feet X 1000																	
			Code	560	Complete	580	Complete	600	Complete	620	Complete	640	Complete	660	Complete	680	Complete	700	Complete	720	Complete
Process Unit Corona Wires & ADS wires (15)	Z078070010	1	#	C		C		C		C		R		C		C		C		C	
Density Sensors		8	#	C		C		C		C		C		C		C		C		C	
Optical Density												A									
Grid Screen		4				C				C		C		C				C			
Drum with Blade	Z078060050	4										R									
Drum Ground	Z071600210	4										R									
Drum Side Seals	Z078060010	4	@	C		C		C		C		R		C		C		C		C	
Developer (Rebuild Kit)	Z078060040	4	@									R									
LED Heads		4	#	C		C		C		C		C		C		C		C		C	
Paper Compartment			@	C		C		C		C		C		C		C		C		C	
Media Decks drive gears										L		L									
Vacuum (clean) Interior			@	C		C		C		C		C		C		C		C		C	
Filter Kit A-36	Z078060100	1	@							C		R									
Filter Kit B-7	Z078060110	1	@							C		C									
Fuser Web	Z074400540	1				I				I		R		I				I			
Fuser Roller, Pressure Roller, Fuser Fingers	z078060120	1		C		C		C		C		R		C		C		C		C	
Fuser Gears										L		L									
Knife (Oil Pad)			@							L		L									
Waste Toner	SUPKC80-105			I		I		I		I		I		I		I		I		I	
Exterior Covers			#	C		C		C		C		C		C		C		C		C	

# = Clean with cloth/glass cleaner and wipe dry	C = Clean	R = Replace	L = Lubricate
@ = Clean with vacuum, carefully	I = Inspect	A = Adjust	

Part numbers subject to change without notice

Part replacement intervals may change with customer requirements and installation location.

KIP Color 80 Printer
Preventative Maintenance
Procedure every 20,000 Linear Feet

Step #1 - Prepare Machine

- ❑ Ask User on Printer Performance / Image Quality
- ❑ Run Test Prints
- ❑ Locate the "KIP KC80 PM Schedule" Form (check as each item completed on the form)

Step #2 - Corona Units x4 - ADS wires

- ❑ Clean 1st Charge wires and cases (Glass cleaner)
- ❑ Clean Grid Screen (use Simple Green, then rinse with water) Let dry on paper towel /cloth.
- ❑ Clean transfer / separation wires and case. (Glass cleaner)
- ❑ Clean ADS wires and case
- ❑ Carefully vacuum cleaner blade side seals

Step #3 - Development Unit x4

- ❑ Vacuum toner dust from ends of developer unit.
- ❑ Vacuum around toner hopper inlet.
- ❑ Clean and lube gears as needed. (G501 grease / Lithium grease)

Step #4 - Cutter Assembly

- ❑ Clean paper dust from knife and from tray.
- ❑ Apply cutter oil to cutter pad as required.

Step #5 - Clean Interior of Printer

- ❑ Clean Transport belts with water and clean cloth and then wipe dry (do not use any solvents!)
- ❑ Transfer guide plates etc.

Step #6 - Paper Decks

- ❑ Vacuum paper dust.
- ❑ Inspected paper spools.

Step #7 - Fuser Section

- ❑ Clean upper Nails.
- ❑ Shift upper Nails (left /right / center etc.)
- ❑ Clean lower Nails.
- ❑ Clean and lube gears. (High temp. grease)

Step #8 - L.E.D Print Head x4

- ❑ Clean Selfoc lens. (Glass cleaner)
- ❑ Carefully clean the Density sensors (do this last item last)

Step #9 - Density / Tests

- ❑ Print TP #31 and #18 - Verify image quality and registration
- ❑ Perform Density Calibration (if needed)

Step #10 Clean Panels and Covers

6. 3 Recommended Service Tools & Devices

The following tools and devices are (or may be) required for KC80 field service.

Name	Part number	Remarks
Handle 	Z078501260	This is used to have a mechanical play on a certain driving gear on the Developer Unit. See page 2-30 for this operation.
LED Cleaner 	Z078560020	This is used for cleaning the LED Head by drawing out/in the Process Unit.
Shaft 4 	Z078501160	This is used when it is accidentally and unluckily required to re-adjust the angle of Attraction Roller. See page 10-52 for this operation.
Adjust Drum 	Z078560010	This is used when it is accidentally and unluckily required to re-adjust the gap between Drum and TR Guide. See page 10-68 for this operation.

NOTE:
Please see KIP Technical Bulletin TB-K107-001c for more details on special tools.

Name	Part number	Remarks
Setup Toner (with case and brush) 	-	This is used for applying the toner to; - Cleaner Blade of Cleaner Unit at installation (See page 2-32.) - Both side faces of new Cleaner Blade (See page 5-39) - Scraper of Developer Unit (See page 5-24.) NOTE (1) Please use the toner from the Toner Cartridge. (2) Prepare the case and cosmetic brush to each color respectively to avoid the mixture of different color toner.
Water Level (0.02mm/1m) 	-	This is used to level the printer to have correct Color Registration H. The specification is “0.02mm/1m”. See page 2-6 for this operation.
Loupe 	-	This may be required to adjust the alignment (vertical delay, horizontal overlap & skew) of LED Head after its replacement.
Densitometer 	-	This is used to readjust the Target Density for some reason. See page 10-2 for this operation.

NOTE:
Please see KIP Technical Bulletin TB-K107-001c for more details on special tools.

Chapter 7

Troubleshooting

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7. 1 Countermeasures for Errors

7. 1. 1 Operator call errors

7. 1. 1. 1 Open errors

(1) Roll Deck 1 - 4 open (U-0101, U-0102, U-0103 & U-0104)

U-0101 : Roll Deck 1
U-0102 : Roll Deck 2
U-0103 : Roll Deck 3
U-0104 : Roll Deck 4

Items	Order	Checking matters	Result	Treatment
Open / unlock	1	Is the concerning Roll Deck opened or unlocked?	Yes	Close it firmly.
Harness	2	Is the harness correctly connected to the concerning Roll Deck and the I/O B PCB? Concerning drawer connectors are; J138 : Roll Deck 1 J139 : Roll Deck 2 J140 : Roll Deck 3 J141 : Roll Deck 4	No	Connect it.
I/O B PCB (PW10722)	3	Can the problem be fixed by replacing the I/O B PCB?	Yes	OK
Main Control PCB (PW10720)	4	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

(2) Interlock open (U-0110)

Items	Order	Checking matters	Result	Treatment
Open / unlock	1	Is any of the following parts opened or unlocked? Fuser Upper Cover Fuser Cover Transportation Unit 1 Transportation Unit 2 Transportation Unit 3 Registration Unit (Transportation Unit 4) Right Side Door Bypass Feeder	Yes	Close it firmly.
Harness	2	Is the harness correctly connected to the drawer connectors of the above 8 parts and also the I/O B PCB?	No	Connect it.
Fuser Door Switch (DSW1) or Right Side Door Switch (DSW2ST)	3	Does the J107A-4 show 24V when the J107A-2 is showing 24V? (These pins are on the AC Terminal PCB.)	No	Try to replace either Fuser Door Switch or Right Side Door Switch.
AC Terminal PCB (PW10721)	4	Does the J106A-4 show 0V when the J107A-4 is showing 24V? (These pins are on the AC Terminal PCB.)	No	Try to replace the AC Terminal PCB.
I/O A PCB (PW10721)	5	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	6	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

(3) Bypass Feeder open (U-0111)

Items	Order	Checking matters	Result	Treatment
Open / unlock	1	Is the Bypass Feeder opened or unlocked?	Yes	Close it firmly.
Harness	2	Is the harness correctly connected to the Bypass Feeder (drawer connector J137) and the I/O B PCB?	No	Connect it.
I/O B PCB (PW10722)	3	Can the problem be fixed by replacing the I/O B PCB?	Yes	OK
Main Control PCB (PW10720)	4	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

(4) Right Side Door open (U-0112)

Items	Order	Checking matters	Result	Treatment
Open / unlock	1	Is the Right Side Door opened or unlocked?	Yes	Close it firmly.
Harness	2	Is the harness correctly connected to the Right Side Door Switch (MS6) and the I/O B PCB?	No	Connect it.
I/O B PCB (PW10722)	3	Can the problem be fixed by replacing the I/O B PCB?	Yes	OK
Main Control PCB (PW10720)	4	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

(5) Registration Unit (Transportation Unit 4) open (U-0120)

Items	Order	Checking matters	Result	Treatment
Open / unlock	1	Is the Registration Unit opened or unlocked?	Yes	Close it firmly.
Harness	2	Is the harness correctly connected to the Registration Unit (drawer connector J151-D) and the I/O B PCB?	No	Connect it.
I/O B PCB (PW10722)	3	Can the problem be fixed by replacing the I/O B PCB?	Yes	OK
Main Control PCB (PW10720)	4	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

(6) Transportation Unit 1 - 3 open (U-0121, U-0122 & U-0123)

U-0121 : Transportation Unit 1
U-0122 : Transportation Unit 2
U-0123 : Transportation Unit 3

Items	Order	Checking matters	Result	Treatment
Open / unlock	1	Is the concerning Transportation Unit opened or unlocked?	Yes	Close it firmly.
Harness	2	Is the harness correctly connected to the drawer connector of the concerning Transportation Unit and the I/O B PCB? Concerning drawer connectors are; J151-A : Transportation Unit 1 J151-B : Transportation Unit 2 J151-C : Transportation Unit 3	No	Connect it.
I/O B PCB (PW10722)	3	Can the problem be fixed by replacing the I/O B PCB?	Yes	OK
Main Control PCB (PW10720)	4	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

(7) Fuser Cover open (U-0130)

Items	Order	Checking matters	Result	Treatment
Open / unlock	1	Is the Fuser Cover opened or unlocked?	Yes	Close it firmly.
Harness	2	Is the harness correctly connected to the Fuser Cover Switch (DSW1ST) and the I/O B PCB?	No	Connect it.
Fuser Door Switch (DSW1ST)	3	Check the status of open/close signal of the Fuser Cover (signal code : 10A) in the Input Signal Monitoring Mode. Does the signal status change if the Fuser Door is opened or closed?	No	1. Reinstall the Fuser Door Switch correctly. 2. Replace the Fuser Door Switch.
I/O B PCB (PW10722)	4	Can the problem be fixed by replacing the I/O B PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

(8) Fuser Upper Cover open (U-0131)

Items	Order	Checking matters	Result	Treatment
Open / unlock	1	Is the Fuser Upper Cover opened or unlocked?	Yes	Close it firmly.
Harness	2	Is the harness correctly connected to the drawer connector (J352) of the Fuser Upper Cover Switch and the I/O A PCB?	No	Connect it.
I/O A PCB (PW10721)	3	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	4	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

(9) Waste Toner Door open (U-0140)

Items	Order	Checking matters	Result	Treatment
Open / unlock	1	Is the Waste Toner Door opened or unlocked?	Yes	Close it firmly.
Harness	2	Is the harness correctly connected to the Waste Toner Door Switch (TSW) and the I/O B PCB?	No	Connect it.
Waste Toner Door Switch (TSW)	3	Check the status of open/close signal of the Waste Toner Door (signal code : 10C) in the Input Signal Monitoring Mode. Does the signal status change if the Waste Toner Door is opened or closed?	No	1. Reinstall the Waste Toner Door Switch correctly. 2. Replace the Waste Toner Door Switch.
I/O A PCB (PW10721)	4	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

(10) Process Unit 1- 4 open (U-0141, U-0142, U-0143 & U-0144)

U-0141 : Process Unit 1
U-0142 : Process Unit 2
U-0143 : Process Unit 3
U-0144 : Process Unit 4

Items	Order	Checking matters	Result	Treatment
Open / unlock	1	Is the concerning Process Unit opened or unlocked?	Yes	Close it firmly.
Harness	2	Is the harness correctly connected to the drawer connector of the concerning Process Unit and the I/O B PCB? Concerning drawer connectors are; J322-A : Process Unit 1 J322-B : Process Unit 2 J322-C : Process Unit 3 J322-D : Process Unit 4	No	Connect it.
I/O A PCB (PW10721)	3	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	4	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

(11) Waste Toner Box is not set (U-0150)

Items	Order	Checking matters	Result	Treatment
Open / unlock	1	Is the Waste Toner Box installed?	Yes	Close it firmly.
Harness	2	Is the harness correctly connected to the Waste Toner Box Switch (BSW) and the I/O B PCB?	No	Connect it.
Waste Toner Box Switch (BSW)	3	Check the status of open/close signal of the Waste Toner Box (signal code : 206) in the Input Signal Monitoring Mode. Does the signal status change if the Waste Toner Box is removed or installed?	No	1. Reinstall the Waste Toner Box Switch correctly. 2. Replace the Waste Toner Box Switch.
I/O A PCB (PW10721)	4	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 1. 2 Jam errors

(1) Jam around the Roll Deck 1 Region (& J-0401 : TE delay)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Paper Set Sensor 1 (PH48) Sensor PCB (PW10740_A) I/O B PCB (PW10722) Paper Feed Motor (M1) Paper Feed Motor Driver PCB (FTD3S4P11-01) Paper Feed Clutch 1 (MC1) Driver PCB (PW10755_B) Pick Up Clutch 1 (MC12) Driver PCB (PW10755_D) Fuse PCB (PW10790) I/O A PCB (PW10721)	No	Connect it firmly.
Paper Set Sensor 1 (PH48) Sensor PCB (PW10740_A) I/O B PCB (PW10722)	2	Check the status of the output signal from the Paper Set Sensor 1 in the Function Checking Mode. Code : 601 (Switches and Sensors in Roll Deck 1) Does the signal status change when the media is set or removed?	No	1. Replace the Paper Set Sensor 1. 2. Replace the Sensor PCB. 3. Replace the I/O B PCB.
Paper Feed Motor (M1) Paper Feed Motor Driver PCB (FTD3S4P11-01) Fuse PCB (PW10790) I/O A PCB (PW10721)	3	Try to operate the Paper Feed Motor individually in the Function Checking Mode. Code : 108 (Paper Feed Motor [Normal rotation]) Does the Paper Feed Motor function normally?	No	1. Replace the Paper Feed Motor or the Paper Feed Motor Driver PCB. 2. If the LE908 on the Fuse PCB is lighting, check all the component relating with the J902-7 and find the cause of the problem. Then replace the Fuse F908 on the Fuse PCB. 3. Replace the I/O A PCB.
Paper Feed Clutch 1 (MC1) Driver PCB (PW10755_B) Fuse PCB (PW10790) I/O A PCB (PW10721)	4	Try to operate the Paper Feed Clutch 1 individually in the Function Checking Mode. Code : 200 (Paper Feed Clutch 1) Does the Paper Feed Clutch 1 function normally?	No	1. Replace the Paper Feed Clutch 1 or the Driver PCB. 2. If the LE910 on the Fuse PCB is lighting, check all the component relating with the J903-3 and find the cause of the problem. Then replace the Fuse F910 on the Fuse PCB. 3. Replace the I/O A PCB.
Pick Up Clutch 1 (MC12) Driver PCB (PW10755_D) Fuse PCB (PW10790) I/O B PCB (PW10722)	5	Try to operate the Pick Up Clutch 1 individually in the Function Checking Mode. Code : 203 (Pick Up Clutch 1) Does the Pick Up Clutch 1 function normally?	No	1. Replace the Pick Up Clutch 1 or the Driver PCB. 2. If the LE924 on the Fuse PCB is lighting, check all the component relating with the J906-7 and find the cause of the problem. Then replace the Fuse F924 on the Fuse PCB. 3. Replace the I/O A PCB.
Main Control PCB (PW10720)	6	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

(2) Jam around the Roll Deck 2 Region (J-0402 : TE delay)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Paper Set Sensor 2 (PH58) Sensor PCB (PW10740_B) I/O B PCB (PW10722) Paper Feed Motor (M1) Paper Feed Motor Driver PCB (FTD3S4P11-01) Paper Feed Clutch 2 (MC2) Driver PCB (PW10755_B) Pick Up Clutch 2 (MC14) Driver PCB (PW10755_D) Fuse PCB (PW10790) I/O A PCB (PW10721)	No	Connect it firmly.
Paper Set Sensor 2 (PH58) Sensor PCB (PW10740_B) I/O B PCB (PW10722)	2	Check the status of the output signal from the Paper Set Sensor 2 in the Function Checking Mode. Code : 602 (Switches and Sensors in Roll Deck 2) Does the signal status change when the media is set or removed?	No	1. Replace the Paper Set Sensor 2. 2. Replace the Sensor PCB. 3. Replace the I/O B PCB.
Paper Feed Motor (M1) Paper Feed Motor Driver PCB (FTD3S4P11-01) Fuse PCB (PW10790) I/O A PCB (PW10721)	3	Try to operate the Paper Feed Motor individually in the Function Checking Mode. Code : 108 (Paper Feed Motor [Normal rotation]) Does the Paper Feed Motor function normally?	No	1. Replace the Paper Feed Motor or the Paper Feed Motor Driver PCB. 2. If the LE908 on the Fuse PCB is lighting, check all the component relating with the J902-7 and find the cause of the problem. Then replace the Fuse F908 on the Fuse PCB. 3. Replace the I/O A PCB.
Paper Feed Clutch 2 (MC2) Driver PCB (PW10755_B) Fuse PCB (PW10790) I/O A PCB (PW10721)	4	Try to operate the Paper Feed Clutch 2 individually in the Function Checking Mode. Code : 201 (Paper Feed Clutch 2) Does the Paper Feed Clutch 2 function normally?	No	1. Replace the Paper Feed Clutch 2 or the Driver PCB. 2. If the LE910 on the Fuse PCB is lighting, check all the component relating with the J903-3 and find the cause of the problem. Then replace the Fuse F910 on the Fuse PCB. 3. Replace the I/O A PCB.
Pick Up Clutch 2 (MC14) Driver PCB (PW10755_D) Fuse PCB (PW10790) I/O B PCB (PW10722)	5	Try to operate the Pick Up Clutch 2 individually in the Function Checking Mode. Code : 204 (Pick Up Clutch 2) Does the Pick Up Clutch 2 function normally?	No	1. Replace the Pick Up Clutch 2 or the Driver PCB. 2. If the LE924 on the Fuse PCB is lighting, check all the component relating with the J906-7 and find the cause of the problem. Then replace the Fuse F924 on the Fuse PCB. 3. Replace the I/O A PCB.
Main Control PCB (PW10720)	6	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

(3) Jam around the Roll Deck 3 Region (J-0403 : TE delay)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Paper Set Sensor 3 (PH68) Sensor PCB (PW10740_C) I/O B PCB (PW10722) Paper Feed Motor (M1) Paper Feed Motor Driver PCB (FTD3S4P11-01) Paper Feed Clutch 3 (MC3) Driver PCB (PW10755_B) Pick Up Clutch 3 (MC16) Driver PCB (PW10755_D) Fuse PCB (PW10790) I/O A PCB (PW10721)	No	Connect it firmly.
Paper Set Sensor 3 (PH68) Sensor PCB (PW10740_C) I/O B PCB (PW10722)	2	Check the status of the output signal from the Paper Set Sensor 3 in the Function Checking Mode. Code : 603 (Switches and Sensors in Roll Deck 3) Does the signal status change when the media is set or removed?	No	1. Replace the Paper Set Sensor 3. 2. Replace the Sensor PCB. 3. Replace the I/O B PCB.
Paper Feed Motor (M1) Paper Feed Motor Driver PCB (FTD3S4P11-01) Fuse PCB (PW10790) I/O A PCB (PW10721)	3	Try to operate the Paper Feed Motor individually in the Function Checking Mode. Code : 108 (Paper Feed Motor [Normal rotation]) Does the Paper Feed Motor function normally?	No	1. Replace the Paper Feed Motor or the Paper Feed Motor Driver PCB. 2. If the LE908 on the Fuse PCB is lighting, check all the component relating with the J902-7 and find the cause of the problem. Then replace the Fuse F908 on the Fuse PCB. 3. Replace the I/O A PCB.
Paper Feed Clutch 3 (MC3) Driver PCB (PW10755_B) Fuse PCB (PW10790) I/O A PCB (PW10721)	4	Try to operate the Paper Feed Clutch 2 individually in the Function Checking Mode. Code : 202 (Paper Feed Clutch 3) Does the Paper Feed Clutch 3 function normally?	No	1. Replace the Paper Feed Clutch 3 or the Driver PCB. 2. If the LE910 on the Fuse PCB is lighting, check all the component relating with the J903-3 and find the cause of the problem. Then replace the Fuse F910 on the Fuse PCB. 3. Replace the I/O A PCB.
Pick Up Clutch 3 (MC16) Driver PCB (PW10755_D) Fuse PCB (PW10790) I/O B PCB (PW10722)	5	Try to operate the Pick Up Clutch 2 individually in the Function Checking Mode. Code : 205 (Pick Up Clutch 3) Does the Pick Up Clutch 3 function normally?	No	1. Replace the Pick Up Clutch 3 or the Driver PCB. 2. If the LE924 on the Fuse PCB is lighting, check all the component relating with the J906-7 and find the cause of the problem. Then replace the Fuse F924 on the Fuse PCB. 3. Replace the I/O A PCB.
Main Control PCB (PW10720)	6	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

(4) Jam around the Roll Deck 4 Region (J-0404 : TE delay)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Paper Set Sensor 4 (PH78) Sensor PCB (PW10740_D) I/O B PCB (PW10722) Paper Feed Motor (M1) Paper Feed Motor Driver PCB (FTD3S4P11-01) Pick Up Clutch 4 (MC10) Driver PCB (PW10755_C) Fuse PCB (PW10790) I/O A PCB (PW10721)	No	Connect it firmly.
Paper Set Sensor 4 (PH78) Sensor PCB (PW10740_D) I/O B PCB (PW10722)	2	Check the status of the output signal from the Paper Set Sensor 4 in the Function Checking Mode. Code : 604 (Switches and Sensors in Roll Deck 4) Does the signal status change when the media is set or removed?	No	1. Replace the Paper Set Sensor 4. 2. Replace the Sensor PCB. 3. Replace the I/O B PCB.
Paper Feed Motor (M1) Paper Feed Motor Driver PCB (FTD3S4P11-01) Fuse PCB (PW10790) I/O A PCB (PW10721)	3	Try to operate the Paper Feed Motor individually in the Function Checking Mode. Code : 108 (Paper Feed Motor [Normal rotation]) Does the Paper Feed Motor function normally?	No	1. Replace the Paper Feed Motor or the Paper Feed Motor Driver PCB. 2. If the LE908 on the Fuse PCB is lighting, check all the component relating with the J902-7 and find the cause of the problem. Then replace the Fuse F908 on the Fuse PCB. 3. Replace the I/O A PCB.
Pick Up Clutch 3 (MC16) Driver PCB (PW10755_D) Fuse PCB (PW10790) I/O B PCB (PW10722)	4	Try to operate the Pick Up Clutch 2 individually in the Function Checking Mode. Code : 206 (Pick Up Clutch 4) Does the Pick Up Clutch 4 function normally?	No	1. Replace the Pick Up Clutch 4 or the Driver PCB. 2. If the LE914 on the Fuse PCB is lighting, check all the component relating with the J904-3 and find the cause of the problem. Then replace the Fuse F914 on the Fuse PCB. 3. Replace the I/O A PCB.
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

(5) Jam around the Bypass Feeder Region (J-0105 : At power on)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Bypass Set Sensor (PH38) Sensor PCB (PW10740_E) I/O B PCB (PW10722)	No	Connect it firmly.
Bypass Set Sensor (PH38) Sensor PCB (PW10740_E) I/O B PCB (PW10722)	2	Check the status of the output signal from the Bypass Set Sensor in the Function Checking Mode. Code : 605 (Sensors in Bypass Feeder) Does the signal status change when the media is set or removed?	No	1. Replace the Bypass Set Sensor. 2. Replace the Sensor PCB. 3. Replace the I/O B PCB.
Main Control PCB (PW10720)	3	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

(6) Jam around the Bypass Feeder Region (J-0205 : LE delay)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Bypass Set Sensor (PH38) Sensor PCB (PW10740_E) I/O B PCB (PW10722) Bypass Feeder Motor (M6) Driver PCB (PW10755_A) Bypass Feeder Clutch (MC11) Bypass Pick Up Solenoid (SL6) Driver PCB (PW10755_D) Fuse PCB (PW10790) I/O A PCB (PW10721)	No	Connect it firmly.
Bypass Set Sensor (PH38) Sensor PCB (PW10740_E) I/O B PCB (PW10722)	2	Check the status of the output signal from the Bypass Set Sensor in the Function Checking Mode. Code : 605 (Sensors in Bypass Feeder) Does the signal status change when the media is set or removed?	No	1. Replace the Bypass Set Sensor. 2. Replace the Sensor PCB. 3. Replace the I/O B PCB.
Bypass Feeder Motor (M6) Driver PCB (PW10755_A) Fuse PCB (PW10790) I/O A PCB (PW10721)	3	Try to operate the Bypass Feeder Motor individually in the Function Checking Mode. Code : 126 (Bypass Feeder Motor) Does the Paper Feed Motor function normally?	No	1. Replace the Bypass Feeder Motor or the Driver PCB. 2. If the LE909 on the Fuse PCB is lighting, check all the component relating with the J903-1 and find the cause of the problem. Then replace the Fuse F909 on the Fuse PCB. 3. Replace the I/O A PCB.
Bypass Feeder Clutch (MC11) Driver PCB (PW10755_D) Fuse PCB (PW10790) I/O B PCB (PW10722)	4	Try to operate the Bypass Feeder Clutch individually in the Function Checking Mode. Code : 207 (Bypass Feeder Clutch) Does the Bypass Feeder Clutch function normally?	No	1. Replace the Bypass Feeder Clutch or the Driver PCB. 2. If the LE924 on the Fuse PCB is lighting, check all the component relating with the J906-7 and find the cause of the problem. Then replace the Fuse F924 on the Fuse PCB. 3. Replace the I/O A PCB.
Bypass Pick Up Solenoid (SL6) Driver PCB (PW10755_D) Fuse PCB (PW10790) I/O B PCB (PW10722)	5	Try to operate the Bypass Pick Up Solenoid individually in the Function Checking Mode. Code : 210 (Bypass Pick Up Solenoid) Does the Bypass Pick Up Solenoid function normally?	No	1. Replace the Bypass Pick Up Solenoid or the Driver PCB. 2. If the LE924 on the Fuse PCB is lighting, check all the component relating with the J906-7 and find the cause of the problem. Then replace the Fuse F924 on the Fuse PCB. 3. Replace the I/O A PCB.
Main Control PCB (PW10720)	6	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

(7) Jam around the Cutter Region (J-0111 : At power on & J-0411 : TE delay)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Print Timing Sensor (PH18) I/O B PCB (PW10722)	No	Connect it firmly.
Print Timing Sensor (PH18) I/O B PCB (PW10722)	2	Check the status of the output signal from the Print Timing Sensor in the Input Signal Monitoring Mode. Code : 000 (Print Timing Sensor) Does the signal status change when the media is set or removed?	No	1. Replace the Print Timing Sensor. 2. Replace the I/O B PCB.
Main Control PCB (PW10720)	3	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

(8) Jam around the Cutter Region (J-0211 : LE delay)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Print Timing Sensor (PH18) I/O B PCB (PW10722) Feed Roller Clutch (MC4) Middle Feed Roller Clutch (MC6) Driver PCB (PW10755_B) Fuse PCB (PW10790) I/O A PCB (PW10721)	No	Connect it firmly.
Print Timing Sensor (PH18) I/O B PCB (PW10722)	2	Check the status of the output signal from the Print Timing Sensor in the Input Signal Monitoring Mode. Code : 000 (Print Timing Sensor) Does the signal status change when the media is set or removed?	No	1. Replace the Print Timing Sensor. 2. Replace the I/O B PCB.
Feed Roller Clutch (MC4) Driver PCB (PW10755_B) Fuse PCB (PW10790) I/O A PCB (PW10721)	3	Try to operate the Feed Roller Clutch individually in the Function Checking Mode. Code : 20A (Feed Roller Clutch) Does the Feed Roller Clutch function normally?	No	1. Replace the Feed Roller Clutch or the Driver PCB. 2. If the LE910 on the Fuse PCB is lighting, check all the component relating with the J903-3 and find the cause of the problem. Then replace the Fuse F910 on the Fuse PCB. 3. Replace the I/O A PCB.
Middle Feed Roller Clutch (MC6) Driver PCB (PW10755_B) Fuse PCB (PW10790) I/O A PCB (PW10721)	4	Try to operate the Middle Feed Roller Clutch individually in the Function Checking Mode. Code : 20b (Middle Feed Roller Clutch) Does the Middle Feed Roller Clutch function normally?	No	1. Replace the Middle Feed Roller Clutch or the Driver PCB. 2. If the LE910 on the Fuse PCB is lighting, check all the component relating with the J903-3 and find the cause of the problem. Then replace the Fuse F910 on the Fuse PCB. 3. Replace the I/O A PCB.
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

(9) Jam around the Lower Registration (Bottom Corner) Region (J-0112 At power on: & J-0412 : TE delay)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Registration Rear Sensor (PH20) I/O B PCB (PW10722)	No	Connect it firmly.
Registration Rear Sensor (PH20) I/O B PCB (PW10722)	2	Check the status of the output signal from the Print Timing Sensor in the Input Signal Monitoring Mode. Code : 002 (Registration Rear Sensor) Does the signal status change when the media is set or removed?	No	1. Replace the Registration Rear Sensor. 2. Replace the I/O B PCB.
Main Control PCB (PW10720)	3	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

(10) Jam around the Lower Registration (Bottom Corner) Region (J-0212 : LE delay)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Registration Rear Sensor (PH20) I/O B PCB (PW10722) Registration Front Roller Clutch (MC8) Driver PCB (PW10755_C) Fuse PCB (PW10790) I/O A PCB (PW10721)	No	Connect it firmly.
Registration Rear Sensor (PH20) I/O B PCB (PW10722)	2	Check the status of the output signal from the Print Timing Sensor in the Input Signal Monitoring Mode. Code : 002 (Registration Rear Sensor) Does the signal status change when the media is set or removed?	No	1. Replace the Registration Rear Sensor. 2. Replace the I/O B PCB.
Registration Front Roller Clutch (MC8) Driver PCB (PW10755_B) Fuse PCB (PW10790) I/O A PCB (PW10721)	3	Try to operate the Registration Front Roller Clutch individually in the Function Checking Mode. Code : 20C (Registration Front Roller Clutch) Does the Registration Front Roller Clutch function normally?	No	1. Replace the Registration Front Roller Clutch or the Driver PCB. 2. If the LE914 on the Fuse PCB is lighting, check all the component relating with the J904-3 and find the cause of the problem. Then replace the Fuse F914 on the Fuse PCB. 3. Replace the I/O A PCB.
Main Control PCB (PW10720)	4	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

(11) Jam around the Transportation Unit 1 Region (J-0121 : At power on & J-0421 : TE delay)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Separation Sensor 1 (PH21) I/O B PCB (PW10722)	No	Connect it firmly.
Separation Sensor 1 (PH21) I/O B PCB (PW10722)	2	Check the status of the output signal from the Separation Sensor 1 in the Input Signal Monitoring Mode. Code : 004 (Separation Sensor 1) Does the signal status change when the media is set or removed?	No	1. Replace the Separation Sensor 1. 2. Replace the I/O B PCB.
Main Control PCB (PW10720)	3	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

(12) Jam around the Transportation Unit 1 Region (J-0221 : LE delay)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Separation Sensor 1 (PH21) I/O B PCB (PW10722) Separation Fan 1A to 1E (FM19 to 27) Driver PCB (PW10755_A) Driver PCB (PW10755_C) Transfer Assist Fan 1A to 1F (FM60 to 65) Driver PCB (PW10755_F) Fuse PCB (PW10790) I/O A PCB (PW10721)	No	Connect it firmly.
Separation Sensor 1 (PH21) I/O B PCB (PW10722)	2	Check the status of the output signal from the Separation Sensor 1 in the Input Signal Monitoring Mode. Code : 004 (Separation Sensor 1) Does the signal status change when the media is set or removed?	No	1. Replace the Separation Sensor 1. 2. Replace the I/O B PCB.
Separation Fans 1A to 1E (FM19 to 27)	3	Can the problem be fixed by replacing the Separation Fan? (Try to replace the fans one by one.)	Yes	OK
Driver PCB (PW10755_A) Driver PCB (PW10755_C)	4	Can the problem be fixed by replacing either of the following boards? Driver PCB (PW10755_A) Driver PCB (PW10755_C)	Yes	OK
Fuse PCB	5	Is either LE909 or LE914 on the Fuse PCB lighting?	Yes	1. If the LE909 on the Fuse PCB is lighting, check all the component relating with the J903-1 and find the cause of the problem. Then replace the Fuse F909 on the Fuse PCB. 1. If the LE914 on the Fuse PCB is lighting, check all the component relating with the J904-3 and find the cause of the problem. Then replace the Fuse F914 on the Fuse PCB.
Transfer Assist Fan 1A to 1F (FM60 to 65) Driver PCB (PW10755_F) Fuse PCB (PW10790) I/O B PCB (PW10722)	6	Try to operate the Transfer Assist Fans 1A to 1F individually in the Function Checking Mode. Code: 302 (Transfer Assist Fan 1A & 1B) 303 (Transfer Assist Fan 1C) 304 (Transfer Assist Fan 1D) 305 (Transfer Assist Fan 1E) 306 (Transfer Assist Fan 1F) Does the Registration Front Roller Clutch function normally?	No	1. Replace the defective Transfer Assist Fan or the Driver PCB. 2. If the LE929 on the Fuse PCB is lighting, check all the component relating with the J908-1 and find the cause of the problem. Then replace the Fuse F929 on the Fuse PCB. 3. Replace the I/O B PCB.
I/O A PCB (PW10721)	7	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	8	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

(13) Jam around the Transportation Unit 2 Region (J-0122 : At power on & J-0422 : TE delay)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Separation Sensor 2 (PH22) I/O B PCB (PW10722)	No	Connect it firmly.
Separation Sensor 2 (PH22) I/O B PCB (PW10722)	2	Check the status of the output signal from the Separation Sensor 2 in the Input Signal Monitoring Mode. Code : 005 (Separation Sensor 2) Does the signal status change when the media is set or removed?	No	1. Replace the Separation Sensor 2. 2. Replace the I/O B PCB.
Main Control PCB (PW10720)	3	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

(14) Jam around the Transportation Unit 2 Region (J-0222 : LE delay)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Separation Sensor 2 (PH22) I/O B PCB (PW10722) Separation Fan 2A to 2E (FM28 to 36) Driver PCB (PW10755_A) Driver PCB (PW10755_C) Transfer Assist Fan 2A to 2F (FM66 to 71) Driver PCB (PW10755_G) Fuse PCB (PW10790) I/O A PCB (PW10721)	No	Connect it firmly.
Separation Sensor 2 (PH22) I/O B PCB (PW10722)	2	Check the status of the output signal from the Separation Sensor 2 in the Input Signal Monitoring Mode. Code : 005 (Separation Sensor 2) Does the signal status change when the media is set or removed?	No	1. Replace the Separation Sensor 2. 2. Replace the I/O B PCB.
Separation Fans 2A to 2E (FM28 to 36)	3	Can the problem be fixed by replacing the Separation Fan? (Try to replace the fans one by one.)	Yes	OK
Driver PCB (PW10755_A) Driver PCB (PW10755_C)	4	Can the problem be fixed by replacing either of the following boards? Driver PCB (PW10755_A) Driver PCB (PW10755_C)	Yes	OK
Fuse PCB	5	Is either LE909 or LE914 on the Fuse PCB lighting?	Yes	1. If the LE909 on the Fuse PCB is lighting, check all the component relating with the J903-1 and find the cause of the problem. Then replace the Fuse F909 on the Fuse PCB. 1. If the LE914 on the Fuse PCB is lighting, check all the component relating with the J904-3 and find the cause of the problem. Then replace the Fuse F914 on the Fuse PCB.
Transfer Assist Fan 2A to 2F (FM66 to 71) Driver PCB (PW10755_G) Fuse PCB (PW10790) I/O B PCB (PW10722)	6	Try to operate the Transfer Assist Fans 2A to 2F individually in the Function Checking Mode. Code: 307 (Transfer Assist Fan 2A & 2B) 308 (Transfer Assist Fan 2C) 309 (Transfer Assist Fan 2D) 30A (Transfer Assist Fan 2E) 30b (Transfer Assist Fan 2F) Does the Registration Front Roller Clutch function normally?	No	1. Replace the defective Transfer Assist Fan or the Driver PCB. 2. If the LE930 on the Fuse PCB is lighting, check all the component relating with the J908-3 and find the cause of the problem. Then replace the Fuse F930 on the Fuse PCB. 3. Replace the I/O B PCB.
I/O A PCB (PW10721)	7	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	8	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

(15) Jam around the Transportation Unit 3 Region (J-0123 : At power on & J-0423 : TE delay)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Separation Sensor 3 (PH23) I/O B PCB (PW10722)	No	Connect it firmly.
Separation Sensor 3 (PH23) I/O B PCB (PW10722)	2	Check the status of the output signal from the Separation Sensor 3 in the Input Signal Monitoring Mode. Code : 006 (Separation Sensor 3) Does the signal status change when the media is set or removed?	No	1. Replace the Separation Sensor 3. 2. Replace the I/O B PCB.
Main Control PCB (PW10720)	3	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

(16) Jam around the Transportation Unit 3 Region (J-0223 : LE delay)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Separation Sensor 3 (PH23) I/O B PCB (PW10722) Separation Fan 3A to 3E (FM37 to 45) Driver PCB (PW10755_B) Driver PCB (PW10755_C) Transfer Assist Fan 3A to 3F (FM72 to 77) Driver PCB (PW10755_H) Fuse PCB (PW10790) I/O A PCB (PW10721)	No	Connect it firmly.
Separation Sensor 3 (PH23) I/O B PCB (PW10722)	2	Check the status of the output signal from the Separation Sensor 3 in the Input Signal Monitoring Mode. Code : 006 (Separation Sensor 3) Does the signal status change when the media is set or removed?	No	1. Replace the Separation Sensor 3. 2. Replace the I/O B PCB.
Separation Fans 3A to 3E (FM37 to 45)	3	Can the problem be fixed by replacing the Separation Fan? (Try to replace the fans one by one.)	Yes	OK
Driver PCB (PW10755_B) Driver PCB (PW10755_C)	4	Can the problem be fixed by replacing either of the following boards? Driver PCB (PW10755_B) Driver PCB (PW10755_C)	Yes	OK
Fuse PCB	5	Is either LE910 or LE914 on the Fuse PCB lighting?	Yes	1. If the LE910 on the Fuse PCB is lighting, check all the component relating with the J903-3 and find the cause of the problem. Then replace the Fuse F910 on the Fuse PCB. 1. If the LE914 on the Fuse PCB is lighting, check all the component relating with the J904-3 and find the cause of the problem. Then replace the Fuse F914 on the Fuse PCB.
Transfer Assist Fan 3A to 3F (FM72 to 77) Driver PCB (PW10755_H) Fuse PCB (PW10790) I/O B PCB (PW10722)	6	Try to operate the Transfer Assist Fans 3A to 2F individually in the Function Checking Mode. Code: 30C (Transfer Assist Fan 2A & 2B) 30d (Transfer Assist Fan 2C) 30E (Transfer Assist Fan 2D) 30F (Transfer Assist Fan 2E) 310 (Transfer Assist Fan 2F) Does the Registration Front Roller Clutch function normally?	No	1. Replace the defective Transfer Assist Fan or the Driver PCB. 2. If the LE931 on the Fuse PCB is lighting, check all the component relating with the J908-5 and find the cause of the problem. Then replace the Fuse F931 on the Fuse PCB. 3. Replace the I/O B PCB.
I/O A PCB (PW10721)	7	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	8	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

(17) Jam around the Upper Registration (Transportation Unit 4) Region (J-0124 : At power on & J-0424 : TE delay)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Separation Sensor 4 (PH24) I/O B PCB (PW10722)	No	Connect it firmly.
Separation Sensor 4 (PH24) I/O B PCB (PW10722)	2	Check the status of the output signal from the Separation Sensor 4 in the Input Signal Monitoring Mode. Code : 007 (Separation Sensor 4) Does the signal status change when the media is set or removed?	No	1. Replace the Separation Sensor 4. 2. Replace the I/O B PCB.
Main Control PCB (PW10720)	3	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

(18) Jam around the Upper Registration (Transportation Unit 4) Region (J-0224 : LE delay)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Separation Sensor 4 (PH24) I/O B PCB (PW10722) Separation Fan 4A to 4E (FM46 to 54) Driver PCB (PW10755_B) Driver PCB (PW10755_C) Fuse PCB (PW10790) I/O A PCB (PW10721)	No	Connect it firmly.
Separation Sensor 4 (PH24) I/O B PCB (PW10722)	2	Check the status of the output signal from the Separation Sensor 4 in the Input Signal Monitoring Mode. Code : 007 (Separation Sensor 4) Does the signal status change when the media is set or removed?	No	1. Replace the Separation Sensor 4. 2. Replace the I/O B PCB.
Separation Fans 4A to 4E (FM46 to 54)	3	Can the problem be fixed by replacing the Separation Fan? (Try to replace the fans one by one.)	Yes	OK
Driver PCB (PW10755_B) Driver PCB (PW10755_C)	4	Can the problem be fixed by replacing either of the following boards? Driver PCB (PW10755_B) Driver PCB (PW10755_C)	Yes	OK
Fuse PCB	5	Is either LE910 or LE914 on the Fuse PCB lighting?	Yes	1. If the LE910 on the Fuse PCB is lighting, check all the component relating with the J903-3 and find the cause of the problem. Then replace the Fuse F910 on the Fuse PCB. 1. If the LE914 on the Fuse PCB is lighting, check all the component relating with the J904-3 and find the cause of the problem. Then replace the Fuse F914 on the Fuse PCB.
I/O A PCB (PW10721)	6	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	7	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

(19) Jam in the Fuser Region (J-0131 : At power on)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Exit Sensor (LS2) I/O A PCB (PW10721)	No	Connect it firmly.
Exit Sensor (LS2)	2	Does the actuator of the Exit Sensor move smoothly?	No	Reinstall the Exit Sensor so that the actuator moves smoothly.
Exit Sensor (LS2) I/O A PCB (PW10721)	3	Check the status of the output signal from the Exit Sensor in the Input Signal Monitoring Mode. Code : 003 (Exit Sensor) Does the signal status change when the media is set or removed?	No	1. Replace the Exit Sensor. 2. Replace the I/O A PCB.
Main Control PCB (PW10720)	4	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

(20) Jam in the Fuser Region (J-0231 : LE delay)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Exit Sensor (LS2) Attraction Roller Motor (M4) Attraction Roller Motor Driver PCB (FTD3S4P11-01) Fuser Motor (M5) Fuser Motor Driver PCB (FTD3S4P11-01) Transfer Assist Fan 3A to 3F (FM72 to 77) HV Power Supply PCB (HVP10) Fuse PCB (PW10790) I/O A PCB (PW10721)	No	Connect it firmly.
Exit Sensor (LS2) I/O A PCB (PW10721)	2	Check the status of the output signal from the Exit Sensor in the Input Signal Monitoring Mode. Code : 003 (Exit Sensor) Does the signal status change when the media is set or removed?	No	1. Replace the Exit Sensor. 2. Replace the I/O A PCB.
Attraction Roller Motor (M4) Attraction Roller Motor Driver PCB (FTD3S4P11-01) Fuse PCB (PW10790) I/O A PCB (PW10721)	3	Try to operate the Attraction Roller Motor individually in the Function Checking Mode. Code: 10A (Attraction Roller Motor) Does the Attraction Roller Motor function normally?	No	1. Replace the Attraction Roller Motor. 2. If the LE918 on the Fuse PCB is lighting, check all the component relating with the J905-3 and find the cause of the problem. Then replace the Fuse F918 on the Fuse PCB. 3. Replace the I/O A PCB.
Fuser Motor (M5) Fuser Motor Driver PCB (FTD3S4P11-01) Fuse PCB (PW10790) I/O A PCB (PW10721)	4	Try to operate the Fuser Motor individually in the Function Checking Mode. Code: 10b (Fuser Motor) Does the Attraction Roller Motor function normally?	No	1. Replace the Fuser Motor. 2. If the LE917 on the Fuse PCB is lighting, check all the component relating with the J905-1 and find the cause of the problem. Then replace the Fuse F917 on the Fuse PCB. 3. Replace the I/O A PCB.
HV Power Supply PCB (HVP10) Silicone Serge Absorber	5	Try to apply the Attraction Corona Bias in the Function Checking Mode. Code : 41C (Attraction Corona Bias) While outputting the Bias, check the voltage between the Attraction Corona House and the ground with the multi-meter. Is it about -700V?	No	1. Replace the Silicone Surge Absorber on the guiding rail of the Attraction Corona Unit. 2. Replace the HV Power Supply PCB. 3. If the LE911 on the Fuse PCB is lighting, check all the component relating with the J903-5 and find the cause of the problem. Then replace the Fuse F911 on the Fuse PCB. 3. Replace the I/O A PCB.
Main Control PCB (PW10720)	6	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

(21) Jam in the Fuser Region (J-0431 : TE delay)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Exit Sensor (LS2) I/O A PCB (PW10721)	No	Connect it firmly.
Exit Sensor (LS2)	2	Does the actuator of the Exit Sensor move smoothly?	No	Reinstall the Exit Sensor so that the actuator moves smoothly.
Exit Sensor (LS2) I/O A PCB (PW10721)	3	Check the status of the output signal from the Exit Sensor in the Input Signal Monitoring Mode. Code : 003 (Exit Sensor) Does the signal status change when the media is set or removed?	No	1. Replace the Exit Sensor. 2. Replace the I/O A PCB.
Main Control PCB (PW10720)	4	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

(22) Jam in the Auto Stacker (J-0181 : At power on & J-0481 : TE delay)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to the Auto Stacker?	No	Connect it firmly.
Sensor (PH1) of Auto Stacker DC Controller PCB (PW5420) of Auto Stacker I/O A PCB (PW10721)	2	Check the status of the output signal from the Auto Stacker in the Input Signal Monitoring Mode. Code : 30E (Stacker input) Does the signal status change when the media is set or removed?	No	1. Replace the sensor of the Auto Stacker. 2. Replace the DC Controller PCB of the Auto Stacker. 3. Replace the I/O A PCB.
Main Control PCB (PW10720)	3	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

(23) Jam in the Auto Stacker (J-0281 : LE delay)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to the Auto Stacker?	No	Connect it firmly.
Sensor (PH1) of Auto Stacker DC Controller PCB (PW5420) of Auto Stacker I/O A PCB (PW10721)	2	Check the status of the output signal from the Auto Stacker in the Input Signal Monitoring Mode. Code : 30E (Stacker input) Does the signal status change when the media is set or removed?	No	1. Replace the sensor of the Auto Stacker. 2. Replace the DC Controller PCB of the Auto Stacker. 3. Replace the I/O A PCB.
Motor (M1) of Auto Stacker Motor Driver PCB (PW3125 of Auto Stacker)	3	Is the motor of the Auto Stacker functioning during printing?	No	1. Replace the motor of the Auto Stacker. 2. Replace the Motor Driver PCB of the Auto Stacker.
Main Control PCB (PW10720)	4	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 1. 3 Other operator call errors

(1) Toner empty

Items	Order	Checking matters	Result	Treatment
Toner Cartridge	1	Is the toner supplying hole of each Toner Cartridge moved down?	No	Move it down.
Harness	2	Is the harness correctly connected to each of the following components? Toner Shutter Solenoid 1 (SL2) Toner Shutter Solenoid 2 (SL3) Toner Shutter Solenoid 3 (SL4) Toner Shutter Solenoid 4 (SL5) Driver PCB (PW10755_C) Fuse PCB (PW10790) I/O A PCB (PW10721)	No	Connect it firmly.
Toner Shutter Solenoid 1 to 4 (SL2 to SL5)	3	Try to operate each Toner Shutter Solenoid individually in the Function Checking Mode. Code: 214 (Toner Shutter Solenoid 1) 215 (Toner Shutter Solenoid 2) 216 (Toner Shutter Solenoid 3) 217 (Toner Shutter Solenoid 4) Does each Toner Shutter Solenoid function normally?	No	1. Replace the defective Toner Shutter Solenoid. 2. Replace the Driver PCB. 3. If the LE914 on the Fuse PCB is lighting, check all the component relating with the J904-3 and find the cause of the problem. Then replace the Fuse F914 on the Fuse PCB. 4. Replace the I/O A PCB.
Toner Sensors (PH10 to PH17)	4	Try to replace the following Toner Sensors. Toner Sensor 1 (PH10 & PH11) Toner Sensor 2 (PH12 & PH13) Toner Sensor 3 (PH14 & PH15) Toner Sensor 4 (PH16 & PH17) Can the problem be fixed by replacing the Toner Sensor?	Yes	OK
I/O A PCB (PW10721)	5	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	6	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

(2) Roll empty

Items	Order	Checking matters	Result	Treatment
Rubber Belt in the Roll Deck	1	Is the rubber belt stretched correctly?	No	Stretch it correctly.
Harness	2	Is the harness correctly connected to each of the following components? Paper Set Sensor 1, 2, 3 & 4 (PH48, 58, 68 & 78) Sensor PCB (PW10740_A, B, C & D) I/O B PCB (PW10722) Paper Feed Motor (M1) Paper Feed Motor Driver PCB (FTD3S4P11-01) Paper Feed Clutch 1, 2 & 3 (MC1, 2 & 3) Driver PCB (PW10755_B) Pick Up Clutch 1, 2 & 3 & 4 (MC12, MC14, MC16 & MC10) Driver PCB (PW10755_D) Fuse PCB (PW10790) I/O A PCB (PW10721)	No	Connect it firmly.
Paper Set Sensors 1, 2, 3 & 4 (PH48, 58, 68 & 78) Sensor PCB (PW10740_B) I/O B PCB (PW10722)	3	Check the status of the output signal from each Paper Set Sensor in the Function Checking Modes. Code : 601(Switches and Sensors in Roll Deck 1) 602 (Switches and Sensors in Roll Deck 2) 603 (Switches and Sensors in Roll Deck 3) 604 (Switches and Sensors in Roll Deck 4) Does the signal status change when the media is set or removed?	No	1. Replace the defective Paper Set Sensor. 2. Replace the Sensor PCB. 3. Replace the I/O B PCB.
Paper Feed Motor (M1) Paper Feed Motor Driver PCB (FTD3S4P11-01) Fuse PCB (PW10790) I/O A PCB (PW10721)	4	Try to operate the Paper Feed Motor individually in the Function Checking Mode. Code : 108 (Paper Feed Motor [Normal rotation]) Does the Paper Feed Motor function normally?	No	1. Replace the Paper Feed Motor or the Paper Feed Motor Driver PCB. 2. If the LE908 on the Fuse PCB is lighting, check all the component relating with the J902-7 and find the cause of the problem. Then replace the Fuse F908 on the Fuse PCB. 3. Replace the I/O A PCB.
Paper Feed Clutches 1, 2 & 3 (MC1, 2 & 3) Driver PCB (PW10755_B) Fuse PCB (PW10790) I/O A PCB (PW10721)	5	Try to operate each Paper Feed Clutch individually in the Function Checking Mode. Code : 200 (Paper Feed Clutch 1) 201 (Paper Feed Clutch 2) 202 (Paper Feed Clutch 3) Does each Paper Feed Clutch function normally?	No	1. Replace the defective Paper Feed Clutch or the Driver PCB. 2. If the LE910 on the Fuse PCB is lighting, check all the component relating with the J903-3 and find the cause of the problem. Then replace the Fuse F910 on the Fuse PCB. 3. Replace the I/O A PCB.

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Items	Order	Checking matters	Result	Treatment
Pick Up Clutches 1, 2, 3 & 4 (MC14, 16, 18 & 10) Driver PCB (PW10755_D) Fuse PCB (PW10790) I/O B PCB (PW10722)	6	Try to operate each Pick Up Clutch individually in the Function Checking Mode. Code : 203 (Pick Up Clutch 1) 204 (Pick Up Clutch 2) 205 (Pick Up Clutch 3) 206 (Pick Up Clutch 4) Does each Pick Up Clutch function normally?	No	1. Replace the defective Up Clutch or the Driver PCB. 2. If the LE924 on the Fuse PCB is lighting, check all the components relating with the J906-7 and find the cause of the problem. Then replace the Fuse F924 on the Fuse PCB. 3. Replace the I/O A PCB.
Main Control PCB (PW10720)	7	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

(3) Waste toner full

Items	Order	Checking matters	Result	Treatment
Waste Toner Box	1	Is the Waste Toner Box filled with the toner?	Yes	Replace it/
Waste Toner Sensor (LS1)	2	Check the status of open/close signal of the Waste Toner Box in the Input Signal Monitoring Mode. Code : 206 (Waste Toner Box does not exist) Does the signal status show “1” when the Waste Toner Box is removed from the machine?	No	1. Remove the rear cover of the Waste Toner Collection Unit, and check if the spring for hanging up the box is installed correctly. 2. Replace the Waste Toner Sensor. 3. Replace the I/O A PCB.
Main Control PCB (PW10720)	3	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2 Service call errors

7. 1. 2. 1 Fuser temperature rising error (E-0001)

First of all, try to make the Fuser Lamps (Code : 500 & 501) light in the Function Checking Mode. Cancel the Service Mode after the confirmation. Go to the following case 1 if both the Fuser Lamps function correctly, and go to the following case 2 if they do not.

> **⚠ NOTE**
>
> Do not make the Fuser Lamps light so long time as the temperature will rise with uncontrolled in the Function Checking Mode.

Case 1 : Fuser Lamps function correctly. (It turns on.)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each Thermistor?	No	Connect it firmly.
Thermistor (TH1)	2	Check if each Thermistor is detecting the fuser temperature correctly in the Control Data Indication Mode. Code : 000 (Temperature of Fuser Roller) Does the detected temperature change if the Fuser Lamp lights?	No	1. Remove the Thermistor, clean the contacting surface, and reinstall to the machine correctly. 2. Replace the Thermistor if cleaning can not fix the error.
I/O B PCB (PW10722)	3	Can the problem be fixed by replacing the I/O B PCB?	Yes	OK
Main Control PCB (PW10720)	4	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

Case 2 : Fuser Lamps do not function correctly. (It does not turn on.)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Fuser Lamps (H1 & H2) SSR1 and SSR 2 Fuse PCB (PW10790) Thermistors (TH1 & TH2)	No	Connect it firmly.
Fuser Lamps (H1 & H2)	2	Disconnect the Power Cord, and measure the resistance of each Fuser Lamp. Is there any resistance?	No	Replace the Fuser Lamp.
Interlock	3	Measure the voltage between the terminals “0” and “1” on the Relay 2 (RY2). Does it show 24V?	No	Check if any interlock is open.
I/O A PCB	4	Measure the voltage at the terminal “1” on the Relay 2 (RY2). Does it show 0V?	No	Replace the I/O A PCB.
Relay 2 (RY2)	5	Measure the voltage between the terminals “4” and “8” on the Relay 2 (RY2) when the voltage between the terminals “0” and “1” is showing 24V. Does it show 24V?	No	Replace the Relay 2.
Fuse PCB (PW10790)	6	Is the LE908 on the Fuse PCB lighting?	Yes	Check all the components relating with the J902-7 and find the cause of the problem. Then replace the Fuse F908 on the Fuse PCB.

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Items	Order	Checking matters	Result	Treatment
Phase Control PCB C (PW6125C) Or SSR1	7	Measure the voltages at the SSR1-4 while making the Fuser Lamp (H1) work in the Function Checking Mode. Is the voltage 0V at the SSR1-4?	No	Replace the Phase Control PCB C.
			Yes	Replace the SSR1.
Phase Control PCB C (PW6125C) Or SSR2	8	Measure the voltages at the SSR2-4 while making the Fuser Lamp (H1) work in the Function Checking Mode. Is the voltage 0V at the SSR2-4?	No	Replace the Phase Control PCB C.
			Yes	Replace the SSR2.
I/O A PCB (PW10721)	9	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	10	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2. 2 Fuser abnormal high temperature error (E-0002)

First of all, try to make the Fuser Lamps (Code : 500 & 501) light in the Function Checking Mode. Cancel the Service Mode after the confirmation. Go to the following case 1 if both the Fuser Lamps function correctly, and go to the following case 2 if they do not function.

> **⚠ NOTE**
>
> Do not make the Fuser Lamps light so long time as the temperature will rise with uncontrolled in the Function Checking Mode.

Case 1 : Fuser Lamps function correctly. (It turn on and off correctly.)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each Thermistor?	No	Connect it firmly.
Thermistor (TH1)	2	Check if each Thermistor is detecting the fuser temperature correctly in the Control Data Indication Mode. Code : 000 (Temperature of Fuser Roller) Does the detected temperature change if the Fuser Lamp lights?	No	Replace the Thermistor.
I/O B PCB (PW10722)	3	Can the problem be fixed by replacing the I/O B PCB?	Yes	OK
Main Control PCB (PW10720)	4	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

Case 2 : Fuser Lamps do not function correctly. (It turns on but does not turn off.)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Fuser Lamps (H1 & H2) SSR1 and SSR 2 Fuse PCB (PW10790) Thermistors (TH1 & TH2)	No	Connect it firmly.
SSR1	2	Execute “All Control OFF” in the Function Checking Mode to stop the operation of all components, and measure the voltage at SSR1-4. Does the fuser temperature rise gradually when the voltage at SSR1-4 is showing 24V?	Yes	Replace the SSR1.
SSR2	3	Execute “All Control OFF” in the Function Checking Mode to stop the operation of all components, and measure the voltage at SSR2-4. Does the fuser temperature rise gradually when the voltage at SSR2-4 is showing 24V?	Yes	Replace the SSR2.

(Continues to the next page)

Items	Order	Checking matters	Result	Treatment
Phase Control PCB C (PW6125C)	4	Execute “All Control OFF” in the Function Checking Mode to stop the operation of all components, and measure the voltage at SSR1-4 and SSR2-4. Is the voltage at each of these points 24V?	No	Replace the Phase Control PCB C.
I/O A PCB (PW10721)	5	Measure the voltage at the terminal “1” on the Relay (RY2). Does it show 0V?	No	Replace the I/O A PCB.
Main Control PCB (PW10720)	6	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2. 3 Web feeding error (E-0011)

First of all, try to operate the Web Motor (Code : 128) individually in the Function Checking Mode. Cancel the Service Mode after the confirmation. Go to the following case 1 if the Web Motor does not operate correctly, and go to the following case 2 if it operates.

Case 1 : Web Motor does not operate correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Web Motor (M27) Driver PCB (PW10755_C) Fuse PCB (PW10790) Thermistors (TH1 & TH2)	No	Connect it firmly.
Web Cleaner	2	Is the Web Cleaner correctly installed?	No	Install it correctly.
Web Motor (M27)	3	Can the problem be fixed by replacing the Web Motor?	Yes	OK
Driver PCB (PW10755_C)	4	Measure the voltage between J551C-1 and J551-C2 on the Driver OPB. Does it show 24V?	Yes	Replace the Driver PCB.
Fuse PCB (PW10790)	5	Is the LE914 on the Fuse PCB lighting?	Yes	Check all the components relating with the J904-3 and find the cause of the problem. Then replace the Fuse F914 on the Fuse PCB.
I/O A PCB (PW10721)	6	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	7	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

Case 2 : Web Motor operates correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Web Motor Sensor (PH37) I/O B PCB (PW10722)	No	Connect it firmly.
Web Cleaner	2	Is the Web Cleaner correctly installed?	No	Install it correctly.
Web Motor Sensor (PH37)	3	Check the status of signal from the Web Motor Sensor in the Control Data Indication Mode. Code : 300 (Pulse of Web Motor Sensor) Is a clock pulse outputted from the sensor when the encoder is rotated by hand?	No	Replace the Web Motor Sensor.
I/O B PCB (PW10722)	4	Can the problem be fixed by replacing the I/O B PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2. 4 Fuser thermostat error (E-0020)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? DC Power Supply (DCP1) Thermostat (TS1) AC Terminal PCB (PW10710) I/O A PCB (PW10721)	No	Connect it firmly.
Thermostat (TS1)	2	Can electric current pass through the Thermostat?	No	Replace the Thermostat.
DC Power Supply (DCP1)	3	Does the J107A-1 on the AC Terminal PCB show 24V?	No	Replace the DC Power Supply PCB.
AC Terminal PCB (PW10710)	4	Does the J106A-3 on the AC Terminal PCB show 0V when the J107A-1 is showing 24V?	No	Replace the AC Terminal PCB.
I/O A PCB (PW10721)	5	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	6	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2. 5 Web end error (E-0051)

Items	Order	Checking matters	Result	Treatment
Web Cleaner	1	Is the remainder of the Web Cleaner enough?	Yes	Measure the actual thickness of Web Cleaner roll and input this value into the Main PCB in the Service Mode 4-000F. See [8.7.7.13 Thickness of Web Cleaner Roll [No.0011]] on page 8-200 for the detail
			No	Replace the Web Cleaner roll with the new one, and reset the operation time of Web Motor in the Service Mode 000E. See [8.7.7.12 Web Motor operation time [No.0010]] on page 8-199.
Main Control PCB (PW10720)	2	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2. 6 Registration roller motor error (E-1012)

First of all, try to operate the Registration Roller Motor (Code : 10F) individually in the Function Checking Mode. Cancel the Service Mode after the confirmation. Go to the following case 1 if the Registration Roller Motor does not operate correctly, and go to the following case 2 if it operates.

Case 1 : Registration Roller Motor does not operate correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Registration Roller Motor (M31) Registration Roller Motor Driver PCB Fuse PCB (PW10790) I/O B PCB (PW10722)	No	Connect it firmly.
Registration Roller Motor (M31) Registration Roller Motor Driver PCB	2	Can the problem be fixed by replacing the Registration Roller Motor or Registration Roller Motor Driver PCB?	Yes	OK
Fuse PCB (PW10790)	3	Is the LE922 on the Fuse PCB lighting?	Yes	Check all the components relating with the J906-3 and find the cause of the problem. Then replace the Fuse F922 on the Fuse PCB.
I/O B PCB (PW10722)	4	Can the problem be fixed by replacing the I/O B PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

Case 2 : Registration Roller Motor operates correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Registration Roller Motor Pulse Sensor (PH25) I/O B PCB (PW10722)	No	Connect it firmly.
Registration Roller Motor Pulse Sensor (PH25)	2	Can the problem be fixed by replacing the Registration Roller Motor Pulse Sensor?	Yes	OK
I/O B PCB (PW10722)	3	Can the problem be fixed by replacing the I/O B PCB?	Yes	OK
Main Control PCB (PW10720)	4	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2. 7 Transportation unit 1 motor error (E-1114)

First of all, try to operate the Transportation Unit 1 Motor (Code : 10C) individually in the Function Checking Mode. Cancel the Service Mode after the confirmation. Go to the following case 1 if the Transportation Unit 1 Motor does not operate correctly, and go to the following case 2 if it operates.

Case 1 : Transportation Unit 1 Motor does not operate correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Transportation Unit 1 Motor (M28) Transportation Unit 1 Motor Driver PCB Fuse PCB (PW10790) I/O B PCB (PW10722)	No	Connect it firmly.
Transportation Unit 1 Motor (M28) Transportation Unit 1 Motor Driver PCB	2	Can the problem be fixed by replacing the Transportation Unit 1 Motor or Transportation Unit 1 Motor Driver PCB?	Yes	OK
Fuse PCB (PW10790)	3	Is the LE921 on the Fuse PCB lighting?	Yes	Check all the components relating with the J906-1 and find the cause of the problem. Then replace the Fuse F921 on the Fuse PCB.
I/O B PCB (PW10722)	4	Can the problem be fixed by replacing the I/O B PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

Case 2 : Transportation Unit 1 Motor operates correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Transportation Unit 1 Motor Pulse Sensor (PH26) I/O B PCB (PW10722)	No	Connect it firmly.
Transportation Unit 1 Motor Pulse Sensor (PH26)	2	Can the problem be fixed by replacing the Transportation Unit 1 Motor Pulse Sensor?	Yes	OK
I/O B PCB (PW10722)	3	Can the problem be fixed by replacing the I/O B PCB?	Yes	OK
Main Control PCB (PW10720)	4	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2. 8 Transportation unit 2 motor error (E-1214)

First of all, try to operate the Transportation Unit 2 Motor (Code : 10d) individually in the Function Checking Mode. Cancel the Service Mode after the confirmation. Go to the following case 1 if the Transportation Unit 2 Motor does not operate correctly, and go to the following case 2 if it operates.

Case 1 : Transportation Unit 2 Motor does not operate correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Transportation Unit 2 Motor (M29) Transportation Unit 2 Motor Driver PCB Fuse PCB (PW10790) I/O B PCB (PW10722)	No	Connect it firmly.
Transportation Unit 2 Motor (M29) Transportation Unit 2 Motor Driver PCB	2	Can the problem be fixed by replacing the Transportation Unit 2 Motor or Transportation Unit 2 Motor Driver PCB?	Yes	OK
Fuse PCB (PW10790)	3	Is the LE921 on the Fuse PCB lighting?	Yes	Check all the components relating with the J906-1 and find the cause of the problem. Then replace the Fuse F921 on the Fuse PCB.
I/O B PCB (PW10722)	4	Can the problem be fixed by replacing the I/O B PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

Case 2 : Transportation Unit 2 Motor operates correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Transportation Unit 2 Motor Pulse Sensor (PH27) I/O B PCB (PW10722)	No	Connect it firmly.
Transportation Unit 2 Motor Pulse Sensor (PH27)	2	Can the problem be fixed by replacing the Transportation Unit 2 Motor Pulse Sensor?	Yes	OK
I/O B PCB (PW10722)	3	Can the problem be fixed by replacing the I/O B PCB?	Yes	OK
Main Control PCB (PW10720)	4	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2. 9 Transportation unit 3 motor error (E-1314)

First of all, try to operate the Transportation Unit 3 Motor (Code : 10E) individually in the Function Checking Mode. Cancel the Service Mode after the confirmation. Go to the following case 1 if the Transportation Unit 3 Motor does not operate correctly, and go to the following case 2 if it operates.

Case 1 : Transportation Unit 3 Motor does not operate correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Transportation Unit 3 Motor (M30) Transportation Unit 3 Motor Driver PCB Fuse PCB (PW10790) I/O B PCB (PW10722)	No	Connect it firmly.
Transportation Unit 3 Motor (M30) Transportation Unit 3 Motor Driver PCB	2	Can the problem be fixed by replacing the Transportation Unit 3 Motor or Transportation Unit 3 Motor Driver PCB?	Yes	OK
Fuse PCB (PW10790)	3	Is the LE922 on the Fuse PCB lighting?	Yes	Check all the components relating with the J906-3 and find the cause of the problem. Then replace the Fuse F922 on the Fuse PCB.
I/O B PCB (PW10722)	4	Can the problem be fixed by replacing the I/O B PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

Case 2 : Transportation Unit 3 Motor operates correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Transportation Unit 3 Motor Pulse Sensor (PH28) I/O B PCB (PW10722)	No	Connect it firmly.
Transportation Unit 3 Motor Pulse Sensor (PH28)	2	Can the problem be fixed by replacing the Transportation Unit 3 Motor Pulse Sensor?	Yes	OK
I/O B PCB (PW10722)	3	Can the problem be fixed by replacing the I/O B PCB?	Yes	OK
Main Control PCB (PW10720)	4	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.10 Cutter error (E-1021)

First of all, try to operate the Cutter Motor (Code : 127) individually in the Function Checking Mode. Cancel the Service Mode after the confirmation. Go to the following case 1 if the Cutter Motor does not operate correctly, and go to the following case 2 if it operates.

Case 1 : Cutter Motor does not operate correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Cutter Motor (M2) Cutter Motor Controller PCB (PW7756) Cutter Home Position Sensor (PH1) Fuse PCB (PW10790) Cutter Solenoid (SL8) Driver PCB (PW10755_D) I/O A PCB (PW10721)	No	Connect it firmly.
Cutter Motor (M30) Cutter Motor Controller PCB (PW7756)	2	Can the problem be fixed by replacing the Cutter Motor or Cutter Motor Controller PCB?	Yes	OK
Fuse PCB (PW10790)	3	Is the LE912 on the Fuse PCB lighting?	Yes	Check all the components relating with the J903-7 and find the cause of the problem. Then replace the Fuse F912 on the Fuse PCB.
Cutter Solenoid (SL8) Driver PCB (PW10755_D) I/O B PCB (PW10722)	4	Try to operate the Cutter Solenoid individually in the Function Checking Mode. Code : 212 (Cutter Solenoid) Does the Cutter Solenoid function normally?	No	1. Replace the Cutter Solenoid. 2. Replace the Driver PCB. 3. If the LE924 on the Fuse PCB is lighting, check all the components relating with the J906-7 and find the cause of the problem. Then replace the Fuse F924 on the Fuse PCB. 4. Replace the I/O B PCB.
Oil Supplying Pad of the Cutter Unit	5	Is the pad impregnated with the oil sufficiently?	No	Supply the sawing machine oil to the pad.
I/O A PCB (PW10721)	6	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	7	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

Case 2 : Cutter Motor operates correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Cutter Motor (M2) Cutter Motor Controller PCB (PW7756) Cutter Home Position Sensor (PH1) Fuse PCB (PW10790) I/O A PCB (PW10721)	No	Connect it firmly.
Cutter Motor Controller PCB (PW7756)	2	Can the problem be fixed by replacing the Cutter Motor Controller PCB?	Yes	OK

(Continues to the next page)

Items	Order	Checking matters	Result	Treatment
Cutter Home Position Sensor (PH1)	3	Check the status of signal from the Cutter Home Position Sensor in the Input Signal Monitoring Mode. Code : 305 (Cutter Home Position Sensor) Does the status change between L and H when the Cutter is rotated manually with the Cutter Handle?	No	Replace the Cutter Home Position Sensor.
I/O A PCB (PW10721)	4	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.11 Waste toner motor error (E-2010)

First of all, try to operate the Waste Toner Motor (Code : 120) individually in the Function Checking Mode. Cancel the Service Mode after the confirmation. Go to the following case 1 if the Waste Toner Motor does not operate correctly, and go to the following case 2 if it operates.

Case 1 : Waste Toner Motor does not operate correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Waste Toner Motor (M3) Waste Toner Motor Switch (MSW) Motor Driver PCB 1 (PW10256_A) Fuse PCB (PW10790) I/O A PCB (PW10721)	No	Connect it firmly.
Waste Toner Collection Unit	2	Is the Sender Screw is stuffed with the wasted toner?	Yes	Remove the toner.
Waste Toner Motor (M3) Motor Driver PCB 1 (PW10256_A)	3	Can the problem be fixed by replacing the Waste Toner Motor or Motor Driver PCB 1?	Yes	OK
Waste Toner Motor Switch (MSW)	4	Can the problem be fixed by replacing the Waste Toner Motor Switch?	Yes	OK
Fuse PCB (PW10790)	5	Is the LE913 on the Fuse PCB lighting?	Yes	Check all the components relating with the J904-1 and find the cause of the problem. Then replace the Fuse F913 on the Fuse PCB.
I/O A PCB (PW10721)	6	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	7	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

Case 2 : Waste Toner Motor operates correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Waste Toner Motor (M3) Waste Toner Motor Switch (MSW) Motor Driver PCB 1 (PW10256_A) I/O A PCB (PW10721)	No	Connect it firmly.
Waste Toner Collection Unit	2	Is the Sender Screw is stuffed with the wasted toner?	Yes	Remove the toner.
Waste Toner Motor (M3) Motor Driver PCB 1 (PW10256_A)	3	Can the problem be fixed by replacing the Waste Toner Motor or Motor Driver PCB 1?	Yes	OK
I/O A PCB (PW10721)	4	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.12 Drum motor 1 error (E-2111)

First of all, try to operate the Drum Motor 1 (Code : 100) individually in the Function Checking Mode. Cancel the Service Mode after the confirmation. Go to the following case 1 if the Drum Motor 1 does not operate correctly, and go to the following case 2 if it operates.

Case 1 : Drum Motor 1 does not operate correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Drum Motor 1 (M7) Drum Motor 1 Driver PCB (FTD3S4P11-01) Fuse PCB (PW10790) I/O A PCB (PW10721)	No	Connect it firmly.
Drum Motor 1 (M7) Drum Motor 1 Driver PCB (FTD3S4P11-01)	2	Can the problem be fixed by replacing the Drum Motor 1 or Drum Motor 1 Driver PCB?	Yes	OK
Fuse PCB (PW10790)	3	Is the LE919 on the Fuse PCB lighting?	Yes	Check all the components relating with the J905-5 and find the cause of the problem. Then replace the Fuse F919 on the Fuse PCB.
I/O A PCB (PW10721)	4	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

Case 2 : Drum Motor 1 operates correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Drum Motor 1 Pulse Sensor (PH2) I/O A PCB (PW10721)	No	Connect it firmly.
Drum Motor 1 Pulse Sensor (PH2)	2	Can the problem be fixed by replacing the Drum Motor 1 Pulse Sensor?	Yes	OK
I/O A PCB (PW10721)	3	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	4	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.13 Developer motor 1 error (E-2112)

First of all, try to operate the Developer Motor 1 (Code : 110) individually in the Function Checking Mode. Cancel the Service Mode after the confirmation. Go to the following case 1 if the Developer Motor 1 does not operate correctly, and go to the following case 2 if it operates.

Case 1 : Developer Motor 1 does not operate correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Developer Motor 1 (M11) Fuse PCB (PW10790) I/O A PCB (PW10721)	No	Connect it firmly.
Developer Motor 1 (M11)	2	Can the problem be fixed by replacing the Developer Motor 1?	Yes	OK
Fuse PCB (PW10790)	3	Is the LE915 on the Fuse PCB lighting?	Yes	Check all the components relating with the J904-5 and find the cause of the problem. Then replace the Fuse F915 on the Fuse PCB.
I/O A PCB (PW10721)	4	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

Case 2 : Developer Motor 1 operates correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Developer Motor 1 (M11) I/O A PCB (PW10721)	No	Connect it firmly.
Developer Motor 1 (M11)	2	Can the problem be fixed by replacing the Developer Motor 1?	Yes	OK
I/O A PCB (PW10721)	3	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	4	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.14 Developer press motor 1 error (E-2113)

First of all, try to operate the Developer Press Motor 1 (Code : 121) individually in the Function Checking Mode. Cancel the Service Mode after the confirmation. Go to the following case 1 if the Developer Press Motor 1 does not operate correctly, and go to the following case 2 if it operates.

Case 1 : Developer Press Motor 1 does not operate correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Developer Press Motor 1 (M15) Motor Driver PCB 1 (PW10258_A) Developer Release Switch 1 (MS1) Fuse PCB (PW10790) I/O A PCB (PW10721)	No	Connect it firmly.
Developer Press Motor 1 (M15) Motor Driver PCB 1 (PW10258_A)	2	Can the problem be fixed by replacing the Developer Press Motor 1 or the Motor Driver PCB 1?	Yes	OK
Fuse PCB (PW10790)	3	Is the LE907 on the Fuse PCB lighting?	Yes	Check all the components relating with the J902-5 and find the cause of the problem. Then replace the Fuse F907 on the Fuse PCB.
I/O A PCB (PW10721)	4	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

Case 2 : Developer Press Motor 1 operates correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Developer Press Sensor 1 (PH6) I/O A PCB (PW10721)	No	Connect it firmly.
Developer Press Sensor 1 (PH6)	2	Can the problem be fixed by replacing the Developer Motor 1?	Yes	OK
I/O A PCB (PW10721)	3	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	4	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.15 Image corona 1 cleaning error (E-2114 : Delay)

First of all, try to operate the Wire Cleaning Motor 1 individually (Code : 114 & 115) in the Function Checking Mode. Cancel the Service Mode after the confirmation. Go to the following case 1 if the Wire Cleaning Motor 1 does not operate correctly, and go to the following case 2 if it operates.

> **⚠ NOTE**
>
> As the KIP Color 80 does not detect “motor error” and “home position” in the Function Checking Mode, the Wire Cleaning Motor 1 can not be stopped automatically. Please do as follows to avoid giving an over current to the motor. (Otherwise the motor will be broken.)
>
> 1. Before starting to check, move the Wire Cleaner to the center of the corona unit by hand.
> 2. Check the operation of the Wire Cleaning Motor in the Function Checking Mode, and stop the operation of motor **before** it arrives to the home position.

Case 1 : Wire Cleaning Motor 1 does not operate correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Wire Cleaning Motor 1 (M23) Motor Driver PCB 1 (PW10256_A) Fuse PCB (PW10790) I/O A PCB (PW10721)	No	Connect it firmly.
Screw Shaft of the Wire Cleaner	2	Is any abnormality found on the Screw Shaft of the Wire Cleaner, such as dirt or distortion?	Yes	Clean or replace the Screw Shaft.
Wire Cleaning Motor 1 (M23) Motor Driver PCB 1 (PW10256_A)	3	Can the problem be fixed by replacing the Wire Cleaning Motor 1 or the Motor Driver PCB 1?	Yes	OK
Fuse PCB (PW10790)	4	Is the LE913 on the Fuse PCB lighting?	Yes	Check all the components relating with the J904-1 and find the cause of the problem. Then replace the Fuse F913 on the Fuse PCB.
I/O A PCB (PW10721)	5	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	6	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

Case 2 : Wire Cleaning Motor 1 operates correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Wire Cleaner Position Switch 1L (MS1L) Wire Cleaner Position Switch 1R (MS1R) I/O A PCB (PW10722)	No	Connect it firmly.
Screw Shaft of the Wire Cleaner	2	Is any abnormality found on the Screw Shaft of the Wire Cleaner, such as dirt or distortion?	Yes	Clean or replace the Screw Shaft.

(Continues to the next page.)

Items	Order	Checking matters	Result	Treatment
Wire Cleaner Position Switch 1L (MS1L)	3	Remove the Image Corona Unit 1, set the Wire Cleaner to the LEFT home position by hand, and reinstall the unit to the machine. Check the status of signal from the Wire Cleaner Position Switch 1L in the Input Signal Monitoring Mode. Code : 306 (Wire Cleaner Position Switch 1L) Is the status H when the Image Corona Unit is installed, and is it L when the unit is removed?	No	Replace the Wire Cleaner Position Switch 1L.
Wire Cleaner Position Switch 1R (MS1R)	4	Remove the Image Corona Unit 1, set the Wire Cleaner to the RIGHT home position by hand, and reinstall the unit to the machine. Check the status of signal from the Wire Cleaner Position Switch 1R in the Input Signal Monitoring Mode. Code : 307 (Wire Cleaner Position Switch 1R) Is the status H when the Image Corona Unit is installed, and is it L when the unit is removed?	No	Replace the Wire Cleaner Position Switch 1R.
I/O A PCB (PW10721)	5	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	6	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.16 Image corona 1 cleaning error (E-2115 : Early)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Wire Cleaner Position Switch 1L (MS1L) Wire Cleaner Position Switch 1R (MS1R) I/O A PCB (PW10722)	No	Connect it firmly.
Screw Shaft of the Wire Cleaner	2	Is any abnormality found on the Screw Shaft of the Wire Cleaner, such as dirt or distortion?	Yes	Clean or replace the Screw Shaft.
Wire Cleaner Position Switch 1L (MS1L)	3	Remove the Image Corona Unit 1, set the Wire Cleaner to the LEFT home position by hand, and reinstall the unit to the machine. Check the status of signal from the Wire Cleaner Position Switch 1L in the Input Signal Monitoring Mode. Code : 306 (Wire Cleaner Position Switch 1L) Is the status H when the Image Corona Unit is installed, and is it L when the unit is removed?	No	Replace the Wire Cleaner Position Switch 1L.
Wire Cleaner Position Switch 1R (MS1R)	4	Remove the Image Corona Unit 1, set the Wire Cleaner to the RIGHT home position by hand, and reinstall the unit to the machine. Check the status of signal from the Wire Cleaner Position Switch 1R in the Input Signal Monitoring Mode. Code : 307 (Wire Cleaner Position Switch 1R) Is the status H when the Image Corona Unit is installed, and is it L when the unit is removed?	No	Replace the Wire Cleaner Position Switch 1R.
I/O A PCB (PW10721)	5	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	6	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.17 Image corona 1 cleaning error (E-2116 : Over current)

First of all, try to operate the Wire Cleaning Motor 1 individually (Code : 114 & 115) in the Function Checking Mode. Cancel the Service Mode after the confirmation. Go to the following case 1 if the Wire Cleaning Motor 1 does not operate correctly, and go to the following case 2 if it operates.

> **⚠ NOTE**
>
> As the KIP Color 80 does not detect “motor error” and “home position” in the Function Checking Mode, the Wire Cleaning Motor 1 can not be stopped automatically. Please do as follows to avoid giving an over current to the motor. (Otherwise the motor will be broken.)
>
> 1. Before starting to check, move the Wire Cleaner to the center of the corona unit by hand.
> 2. Check the operation of the Wire Cleaning Motor in the Function Checking Mode, and stop the operation of motor **before** it arrives to the home position.

Case 1 : Wire Cleaning Motor 1 does not operate correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Wire Cleaning Motor 1 (M23) Motor Driver PCB 1 (PW10256_A) Fuse PCB (PW10790) I/O A PCB (PW10721)	No	Connect it firmly.
Screw Shaft of the Wire Cleaner	2	Is any abnormality found on the Screw Shaft of the Wire Cleaner, such as dirt or distortion?	Yes	Clean or replace the Screw Shaft.
Wire Cleaning Motor 1 (M23) Motor Driver PCB 1 (PW10256_A)	3	Can the problem be fixed by replacing the Wire Cleaning Motor 1 or the Motor Driver PCB 1?	Yes	OK
Fuse PCB (PW10790)	4	Is the LE913 on the Fuse PCB lighting?	Yes	Check all the components relating with the J904-1 and find the cause of the problem. Then replace the Fuse F913 on the Fuse PCB.
I/O A PCB (PW10721)	5	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	6	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

Case 2 : Wire Cleaning Motor 1 operates correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Wire Cleaner Position Switch 1L (MS1L) Wire Cleaner Position Switch 1R (MS1R) I/O A PCB (PW10722)	No	Connect it firmly.
Screw Shaft of the Wire Cleaner	2	Is any abnormality found on the Screw Shaft of the Wire Cleaner, such as dirt or distortion?	Yes	Clean or replace the Screw Shaft.

(Continues to the next page.)

Items	Order	Checking matters	Result	Treatment
Wire Cleaner Position Switch 1L (MS1L)	3	Remove the Image Corona Unit 1, set the Wire Cleaner to the LEFT home position by hand, and reinstall the unit to the machine. Check the status of signal from the Wire Cleaner Position Switch 1L in the Input Signal Monitoring Mode. Code : 306 (Wire Cleaner Position Switch 1L) Is the status H when the Image Corona Unit is installed, and is it L when the unit is removed?	No	Replace the Wire Cleaner Position Switch 1L.
Wire Cleaner Position Switch 1R (MS1R)	4	Remove the Image Corona Unit 1, set the Wire Cleaner to the RIGHT home position by hand, and reinstall the unit to the machine. Check the status of signal from the Wire Cleaner Position Switch 1R in the Input Signal Monitoring Mode. Code : 307 (Wire Cleaner Position Switch 1R) Is the status H when the Image Corona Unit is installed, and is it L when the unit is removed?	No	Replace the Wire Cleaner Position Switch 1R.
Wire Cleaning Motor 1 (M23) Motor Driver PCB 1 (PW10256_A)	5	Can the problem be fixed by replacing the Wire Cleaning Motor 1 or the Motor Driver PCB 1?	Yes	OK
I/O A PCB (PW10721)	6	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	7	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.18 Toner cartridge motor 1 error (E-2117)

First of all, try to operate the Toner Cartridge Motor 1 individually (Code : 11C) in the Function Checking Mode. Cancel the Service Mode after the confirmation. Go to the following case 1 if the Toner Cartridge Motor 1 does operate correctly, and go to the following case 2 if it operates.

> **⚠ NOTE**
>
> Check the operation of Toner Cartridge Motor 1 while carrying out the following matters simultaneously.
>
> 1. Open the Right Side Door. (However set the door switch to ON.)
> 2. Remove the Toner Cartridge from the Process 1. (Confirm the rotation of motor by the action of the motor shaft.)

Case 1 : Toner Cartridge Motor 1 does not operate correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Toner Cartridge Motor 1 (M19) Motor Driver PCB 1 (PW10256_A) Fuse PCB (PW10790) I/O A PCB (PW10721)	No	Connect it firmly.
Toner Cartridge Motor 1 (M19) Motor Driver PCB 1 (PW10256_A)	2	Can the problem be fixed by replacing the Toner Cartridge Motor 1 or the Motor Driver PCB 1?	Yes	OK
Fuse PCB (PW10790)	3	Is the LE913 on the Fuse PCB lighting?	Yes	Check all the components relating with the J904-1 and find the cause of the problem. Then replace the Fuse F913 on the Fuse PCB.
I/O A PCB (PW10721)	4	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

Case 2 : Toner Cartridge Motor 1 operates correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Toner Cartridge Motor 1 (M19) Motor Driver PCB 1 (PW10256_A) I/O A PCB (PW10721)	No	Connect it firmly.
Toner Cartridge	2	Is the toner in the cartridge loosened?	No	Close the open hole of the cartridge, and shake the cartridge to loosen the toner.
Toner Cartridge Motor 1 (M19) Motor Driver PCB 1 (PW10256_A)	3	Can the problem be fixed by replacing the Toner Cartridge Motor 1 or the Motor Driver PCB 1?	Yes	OK
I/O A PCB (PW10721)	4	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.19 Image corona 1 output error (E-2121)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? HV Power Supply PCB 1 (HVP1) I/O A PCB (PW10721)	No	Connect it firmly.
HV1 harness Image Corona Wire	2	Measure the resistance between the HV1 harness on the HVP1 and the ground. Is there any resistance?	No	Check if there is any abnormality on the HV1 harness or the Image Corona Wire.
HV Power Supply PCB 1 (HVP1)	3	Can the problem be fixed by replacing the HV Power Supply PCB 1?	Yes	OK
I/O A PCB (PW10721)	4	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.20 Transfer corona 1 output error (E-2122)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? HV Power Supply PCB 1 (HVP1) I/O A PCB (PW10721)	No	Connect it firmly.
HV2 harness Transfer Corona Wire	2	Measure the resistance between the HV2 harness on the HVP1 and the ground. Is there any resistance?	No	Check if there is any abnormality on the HV2 harness or the Transfer Corona Wire.
HV Power Supply PCB 1 (HVP1)	3	Can the problem be fixed by replacing the HV Power Supply PCB 1?	Yes	OK
I/O A PCB (PW10721)	4	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.21 Separation corona 1 output error (E-2123)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? HV Power Supply PCB 1 (HVP1) I/O A PCB (PW10721)	No	Connect it firmly.
HV3 harness Separation Corona Wire	2	Measure the resistance between the HV3 harness on the HVP1 and the ground. Is there any resistance?	No	Check if there is any abnormality on the HV3 harness or the Separation Corona Wire.
HV Power Supply PCB 1 (HVP1)	3	Can the problem be fixed by replacing the HV Power Supply PCB 1?	Yes	OK
I/O A PCB (PW10721)	4	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.22 Developer bias 1 output error (E-2124)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? HV Power Supply PCB 1 (HVP1) I/O A PCB (PW10721)	No	Connect it firmly.
OUT2 harness Developer Unit 1	2	Measure the resistance between the OUT2 harness on the HVP1 and the ground. Is there any resistance?	No	Check if there is any abnormality on the OUT2 harness or the Developer Unit 1.
HV Power Supply PCB 1 (HVP1)	3	Can the problem be fixed by replacing the HV Power Supply PCB 1?	Yes	OK
I/O A PCB (PW10721)	4	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.23 Auto SP Control 1 error (E-2132)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Surface potential Sensor 1 (SPS1) Fuse PCB (PW10790) I/O B PCB (PW10722)	No	Connect it firmly.
Image Corona Drum	2	Cancel the Auto SP Control 1 in the Adjustment Mode. (Set the value to “0”.) Code : 2000 (Automatic Surface Potential Control 1 ON/OFF) Then restart the KIP Color 80, and take a test print. Is the print image correct?	No	1. Install the Image Corona correctly. 2. Replace the Drum.
Surface potential Sensor 1 (SPS1)	3	Can the problem be fixed by replacing the Surface Potential Sensor 1?	Yes	OK
Fuse PCB (PW10790)	4	Is the LE923 on the Fuse PCB lighting?	Yes	Check all the components relating with the J906-5 and find the cause of the problem. Then replace the Fuse F923 on the Fuse PCB.
I/O B PCB (PW10722)	5	Can the problem be fixed by replacing the I/O B PCB?	Yes	OK
Main Control PCB (PW10720)	6	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.24 Density sensor 1 error (E-2141) & Auto Density Control 1 error (E-2142)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Toner Density Sensor 1L (PH29) Toner Density Sensor 1R (PH30) I/O B PCB (PW10722)	No	Connect it firmly.
Toner Density Sensor 1L (PH29) Toner Density Sensor 1R (PH30) LED Head	2	Is the toner sticking on the surface of Toner Density Sensors (1L & 1R) or LED Head?	Yes	Clean off the toner.
Toner Density Sensor 1L (PH29) Toner Density Sensor 1R (PH30)	3	Can the problem be fixed by replacing the Toner Density Sensor 1L or Toner Density Sensor 1R?	Yes	OK
I/O B PCB (PW10722)	4	Can the problem be fixed by replacing the I/O B PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.25 Developer unit 1 missing error (E-2150)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Developer Unit 1 I/O A PCB (PW10721)	No	Connect it firmly.
I/O A PCB (PW10721)	2	Can the problem be fixed by replacing the I/O B PCB?	Yes	OK
Main Control PCB (PW10720)	3	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.26 Head 1 error (LED head unit 1) (E-2161)
Head 2 error (LED head unit 1) (E-2162)
Head 3 error (LED head unit 1) (E-2163)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Head 1 of LED Head Unit 1 Head 2 of LED Head Unit 1 Head 3 of LED Head Unit 1 LED Head Translation PCB (PW10727_K) Fuse PCB (PW10790) Main Control PCB (PW10720)	No	Connect it firmly.
Head 1 of LED Head Unit 1 Head 2 of LED Head Unit 1 Head 3 of LED Head Unit 1 LED Head Translation PCB (PW10727_K) Signal Cable	2	Can the problem be fixed by replacing each of the following parts? Head 1 of LED Head Unit 1 Head 2 of LED Head Unit 1 Head 3 of LED Head Unit 1 LED Head Translation PCB (PW10727_K) Signal Cable	Yes	OK
Fuse PCB (PW10790)	3	Is the LE933 on the Fuse PCB lighting?	Yes	Check all the components relating with the J901-1 and find the cause of the problem. Then replace the Fuse F933 on the Fuse PCB.
Main Control PCB (PW10720)	4	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.27 Drum motor 2 error (E-2211)

First of all, try to operate the Drum Motor 2 (Code : 101) individually in the Function Checking Mode. Cancel the Service Mode after the confirmation. Go to the following case 1 if the Drum Motor 2 does not operate correctly, and go to the following case 2 if it operates.

Case 1 : Drum Motor 2 does not operate correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Drum Motor 2 (M8) Drum Motor 2 Driver PCB (FTD3S4P11-01) Fuse PCB (PW10790) I/O A PCB (PW10721)	No	Connect it firmly.
Drum Motor 2 (M8) Drum Motor 2 Driver PCB (FTD3S4P11-01)	2	Can the problem be fixed by replacing the Drum Motor 2 or Drum Motor 2 Driver PCB?	Yes	OK
Fuse PCB (PW10790)	3	Is the LE919 on the Fuse PCB lighting?	Yes	Check all the components relating with the J905-5 and find the cause of the problem. Then replace the Fuse F919 on the Fuse PCB.
I/O A PCB (PW10721)	4	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

Case 2 : Drum Motor 2 operates correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Drum Motor 2 Pulse Sensor (PH3) I/O A PCB (PW10721)	No	Connect it firmly.
Drum Motor 2 Pulse Sensor (PH3)	2	Can the problem be fixed by replacing the Drum Motor 2 Pulse Sensor?	Yes	OK
I/O A PCB (PW10721)	3	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	4	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.28 Developer motor 2 error (E-2212)

First of all, try to operate the Developer Motor 2 (Code : 111) individually in the Function Checking Mode. Cancel the Service Mode after the confirmation. Go to the following case 1 if the Developer Motor 2 does not operate correctly, and go to the following case 2 if it operates.

Case 1 : Developer Motor 2 does not operate correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Developer Motor 2 (M12) Fuse PCB (PW10790) I/O A PCB (PW10721)	No	Connect it firmly.
Developer Motor 2 (M12)	2	Can the problem be fixed by replacing the Developer Motor 2?	Yes	OK
Fuse PCB (PW10790)	3	Is the LE915 on the Fuse PCB lighting?	Yes	Check all the components relating with the J904-5 and find the cause of the problem. Then replace the Fuse F915 on the Fuse PCB.
I/O A PCB (PW10721)	4	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

Case 2 : Developer Motor 2 operates correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Developer Motor 2 (M12) I/O A PCB (PW10721)	No	Connect it firmly.
Developer Motor 2 (M12)	2	Can the problem be fixed by replacing the Developer Motor 2?	Yes	OK
I/O A PCB (PW10721)	3	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	4	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.29 Developer press motor 2 error (E-2213)

First of all, try to operate the Developer Press Motor 2 (Code : 122) individually in the Function Checking Mode. Cancel the Service Mode after the confirmation. Go to the following case 1 if the Developer Press Motor 2 does not operate correctly, and go to the following case 2 if it operates.

Case 1 : Developer Press Motor 2 does not operate correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Developer Press Motor 2 (M16) Motor Driver PCB 2 (PW10258_B) Developer Release Switch 2 (MS2) Fuse PCB (PW10790) I/O A PCB (PW10721)	No	Connect it firmly.
Developer Press Motor 2 (M16) Motor Driver PCB 2 (PW10258_B)	2	Can the problem be fixed by replacing the Developer Press Motor 2 or the Motor Driver PCB 2?	Yes	OK
Fuse PCB (PW10790)	3	Is the LE907 on the Fuse PCB lighting?	Yes	Check all the components relating with the J902-5 and find the cause of the problem. Then replace the Fuse F907 on the Fuse PCB.
I/O A PCB (PW10721)	4	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

Case 2 : Developer Press Motor 2 operates correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Developer Press Sensor 2 (PH7) I/O A PCB (PW10721)	No	Connect it firmly.
Developer Press Sensor 2 (PH7)	2	Can the problem be fixed by replacing the Developer Motor 2?	Yes	OK
I/O A PCB (PW10721)	3	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	4	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.30 Image corona 2 cleaning error (E-2214 : Delay)

First of all, try to operate the Wire Cleaning Motor 2 individually (Code : 116 & 117) in the Function Checking Mode. Cancel the Service Mode after the confirmation. Go to the following case 1 if the Wire Cleaning Motor 2 does not operate correctly, and go to the following case 2 if it operates.

> **⚠ NOTE**
>
> As the KIP Color 80 does not detect “motor error” and “home position” in the Function Checking Mode, the Wire Cleaning Motor 2 can not be stopped automatically. Please do as follows to avoid giving an over current to the motor. (Otherwise the motor will be broken.)
>
> 1. Before starting to check, move the Wire Cleaner to the center of the corona unit by hand.
> 2. Check the operation of the Wire Cleaning Motor in the Function Checking Mode, and stop the operation of motor **before** it arrives to the home position.

Case 1 : Wire Cleaning Motor 2 does not operate correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Wire Cleaning Motor 2 (M24) Motor Driver PCB 2 (PW10256_B) Fuse PCB (PW10790) I/O A PCB (PW10721)	No	Connect it firmly.
Screw Shaft of the Wire Cleaner	2	Is any abnormality found on the Screw Shaft of the Wire Cleaner, such as dirt or distortion?	Yes	Clean or replace the Screw Shaft.
Wire Cleaning Motor 2 (M24) Motor Driver PCB 2 (PW10256_B)	3	Can the problem be fixed by replacing the Wire Cleaning Motor 2 or the Motor Driver PCB 2?	Yes	OK
Fuse PCB (PW10790)	4	Is the LE913 on the Fuse PCB lighting?	Yes	Check all the components relating with the J904-1 and find the cause of the problem. Then replace the Fuse F913 on the Fuse PCB.
I/O A PCB (PW10721)	5	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	6	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

Case 2 : Wire Cleaning Motor 2 operates correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Wire Cleaner Position Switch 2L (MS2L) Wire Cleaner Position Switch 2R (MS2R) I/O A PCB (PW10722)	No	Connect it firmly.
Screw Shaft of the Wire Cleaner	2	Is any abnormality found on the Screw Shaft of the Wire Cleaner, such as dirt or distortion?	Yes	Clean or replace the Screw Shaft.

(Continues to the next page.)

Items	Order	Checking matters	Result	Treatment
Wire Cleaner Position Switch 2L (MS2L)	3	Remove the Image Corona Unit 2, set the Wire Cleaner to the LEFT home position by hand, and reinstall the unit to the machine. Check the status of signal from the Wire Cleaner Position Switch 2L in the Input Signal Monitoring Mode. Code : 308 (Wire Cleaner Position Switch 2L) Is the status H when the Image Corona Unit is installed, and is it L when the unit is removed?	No	Replace the Wire Cleaner Position Switch 2L.
Wire Cleaner Position Switch 2R (MS2R)	4	Remove the Image Corona Unit 2, set the Wire Cleaner to the RIGHT home position by hand, and reinstall the unit to the machine. Check the status of signal from the Wire Cleaner Position Switch 2R in the Input Signal Monitoring Mode. Code : 309 (Wire Cleaner Position Switch 2R) Is the status H when the Image Corona Unit is installed, and is it L when the unit is removed?	No	Replace the Wire Cleaner Position Switch 2R.
I/O A PCB (PW10721)	5	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	6	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.31 Image corona 2 cleaning error (E-2215 : Early)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Wire Cleaner Position Switch 2L (MS2L) Wire Cleaner Position Switch 2R (MS2R) I/O A PCB (PW10722)	No	Connect it firmly.
Screw Shaft of the Wire Cleaner	2	Is any abnormality found on the Screw Shaft of the Wire Cleaner, such as dirt or distortion?	Yes	Clean or replace the Screw Shaft.
Wire Cleaner Position Switch 2L (MS2L)	3	Remove the Image Corona Unit 2, set the Wire Cleaner to the LEFT home position by hand, and reinstall the unit to the machine. Check the status of signal from the Wire Cleaner Position Switch 2L in the Input Signal Monitoring Mode. Code : 308 (Wire Cleaner Position Switch 2L) Is the status H when the Image Corona Unit is installed, and is it L when the unit is removed?	No	Replace the Wire Cleaner Position Switch 2L.
Wire Cleaner Position Switch 2R (MS2R)	4	Remove the Image Corona Unit 2, set the Wire Cleaner to the RIGHT home position by hand, and reinstall the unit to the machine. Check the status of signal from the Wire Cleaner Position Switch 2R in the Input Signal Monitoring Mode. Code : 309 (Wire Cleaner Position Switch 2R) Is the status H when the Image Corona Unit is installed, and is it L when the unit is removed?	No	Replace the Wire Cleaner Position Switch 2R.
I/O A PCB (PW10721)	5	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	6	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.32 Image corona 2 cleaning error (E-2216 : Over current)

First of all, try to operate the Wire Cleaning Motor 2 individually (Code : 116 & 117) in the Function Checking Mode. Cancel the Service Mode after the confirmation. Go to the following case 1 if the Wire Cleaning Motor 2 does not operate correctly, and go to the following case 2 if it operates.

> **⚠ NOTE**
>
> As the KIP Color 80 does not detect “motor error” and “home position” in the Function Checking Mode, the Wire Cleaning Motor 2 can not be stopped automatically. Please do as follows to avoid giving an over current to the motor. (Otherwise the motor will be broken.)
>
> 1. Before starting to check, move the Wire Cleaner to the center of the corona unit by hand.
> 2. Check the operation of the Wire Cleaning Motor in the Function Checking Mode, and stop the operation of motor **before** it arrives to the home position.

Case 1 : Wire Cleaning Motor 2 does not operate correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Wire Cleaning Motor 2 (M24) Motor Driver PCB 2 (PW10256_B) Fuse PCB (PW10790) I/O A PCB (PW10721)	No	Connect it firmly.
Screw Shaft of the Wire Cleaner	2	Is any abnormality found on the Screw Shaft of the Wire Cleaner, such as dirt or distortion?	Yes	Clean or replace the Screw Shaft.
Wire Cleaning Motor 2 (M24) Motor Driver PCB 2 (PW10256_B)	3	Can the problem be fixed by replacing the Wire Cleaning Motor 2 or the Motor Driver PCB 2?	Yes	OK
Fuse PCB (PW10790)	4	Is the LE913 on the Fuse PCB lighting?	Yes	Check all the components relating with the J904-1 and find the cause of the problem. Then replace the Fuse F913 on the Fuse PCB.
I/O A PCB (PW10721)	5	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	6	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

Case 2 : Wire Cleaning Motor 2 operates correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Wire Cleaner Position Switch 2L (MS2L) Wire Cleaner Position Switch 2R (MS2R) I/O A PCB (PW10722)	No	Connect it firmly.
Screw Shaft of the Wire Cleaner	2	Is any abnormality found on the Screw Shaft of the Wire Cleaner, such as dirt or distortion?	Yes	Clean or replace the Screw Shaft.

(Continues to the next page.)

Items	Order	Checking matters	Result	Treatment
Wire Cleaner Position Switch 2L (MS2L)	3	Remove the Image Corona Unit 2, set the Wire Cleaner to the LEFT home position by hand, and reinstall the unit to the machine. Check the status of signal from the Wire Cleaner Position Switch 2L in the Input Signal Monitoring Mode. Code : 308 (Wire Cleaner Position Switch 2L) Is the status H when the Image Corona Unit is installed, and is it L when the unit is removed?	No	Replace the Wire Cleaner Position Switch 2L.
Wire Cleaner Position Switch 2R (MS2R)	4	Remove the Image Corona Unit 2, set the Wire Cleaner to the RIGHT home position by hand, and reinstall the unit to the machine. Check the status of signal from the Wire Cleaner Position Switch 2R in the Input Signal Monitoring Mode. Code : 309 (Wire Cleaner Position Switch 2R) Is the status H when the Image Corona Unit is installed, and is it L when the unit is removed?	No	Replace the Wire Cleaner Position Switch 2R.
Wire Cleaning Motor 2 (M24) Motor Driver PCB 2 (PW10256_B)	5	Can the problem be fixed by replacing the Wire Cleaning Motor 2 or the Motor Driver PCB 2?	Yes	OK
I/O A PCB (PW10721)	6	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	7	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.33 Toner cartridge motor 2 error (E-2217)

First of all, try to operate the Toner Cartridge Motor 2 individually (Code : 11d) in the Function Checking Mode. Cancel the Service Mode after the confirmation. Go to the following case 1 if the Toner Cartridge Motor 2 does operate correctly, and go to the following case 2 if it operates.

> **⚠ NOTE**
>
> Check the operation of Toner Cartridge Motor 2 while carrying out the following matters simultaneously.
>
> 1. Open the Right Side Door. (However set the door switch to ON.)
> 2. Remove the Toner Cartridge from the Process 2. (Confirm the rotation of motor by the action of the motor shaft.)

Case 1 : Toner Cartridge Motor 2 does not operate correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Toner Cartridge Motor 2 (M20) Motor Driver PCB 2 (PW10256_B) Fuse PCB (PW10790) I/O A PCB (PW10721)	No	Connect it firmly.
Toner Cartridge Motor 2 (M20) Motor Driver PCB 2 (PW10256_B)	2	Can the problem be fixed by replacing the Toner Cartridge Motor 2 or the Motor Driver PCB 2?	Yes	OK
Fuse PCB (PW10790)	3	Is the LE913 on the Fuse PCB lighting?	Yes	Check all the components relating with the J904-1 and find the cause of the problem. Then replace the Fuse F913 on the Fuse PCB.
I/O A PCB (PW10721)	4	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

Case 2 : Toner Cartridge Motor 2 operates correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Toner Cartridge Motor 2 (M20) Motor Driver PCB 2 (PW10256_B) I/O A PCB (PW10721)	No	Connect it firmly.
Toner Cartridge	2	Is the toner in the cartridge loosened?	No	Close the open hole of the cartridge, and shake the cartridge to loosen the toner.
Toner Cartridge Motor 2 (M20) Motor Driver PCB 2 (PW10256_B)	3	Can the problem be fixed by replacing the Toner Cartridge Motor 2 or the Motor Driver PCB 2?	Yes	OK
I/O A PCB (PW10721)	4	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.34 Image corona 2 output error (E-2221)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? HV Power Supply PCB 2 (HVP2) I/O A PCB (PW10721)	No	Connect it firmly.
HV1 harness Image Corona Wire	2	Measure the resistance between the HV1 harness on the HVP2 and the ground. Is there any resistance?	No	Check if there is any abnormality on the HV1 harness or the Image Corona Wire.
HV Power Supply PCB 2 (HVP2)	3	Can the problem be fixed by replacing the HV Power Supply PCB 2?	Yes	OK
I/O A PCB (PW10721)	4	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.35 Transfer corona 2 output error (E-2222)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? HV Power Supply PCB 2 (HVP2) I/O A PCB (PW10721)	No	Connect it firmly.
HV2 harness Transfer Corona Wire	2	Measure the resistance between the HV2 harness on the HVP2 and the ground. Is there any resistance?	No	Check if there is any abnormality on the HV2 harness or the Transfer Corona Wire.
HV Power Supply PCB 2 (HVP2)	3	Can the problem be fixed by replacing the HV Power Supply PCB 2?	Yes	OK
I/O A PCB (PW10721)	4	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.36 Separation corona 2 output error (E-2223)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? HV Power Supply PCB 2 (HVP2) I/O A PCB (PW10721)	No	Connect it firmly.
HV3 harness Separation Corona Wire	2	Measure the resistance between the HV3 harness on the HVP2 and the ground. Is there any resistance?	No	Check if there is any abnormality on the HV3 harness or the Separation Corona Wire.
HV Power Supply PCB 2 (HVP2)	3	Can the problem be fixed by replacing the HV Power Supply PCB 2?	Yes	OK
I/O A PCB (PW10721)	4	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.37 Developer bias 2 output error (E-2224)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? HV Power Supply PCB 2 (HVP2) I/O A PCB (PW10721)	No	Connect it firmly.
OUT2 harness Developer Unit 2	2	Measure the resistance between the OUT2 harness on the HVP2 and the ground. Is there any resistance?	No	Check if there is any abnormality on the OUT2 harness or the Developer Unit 2.
HV Power Supply PCB 2 (HVP2)	3	Can the problem be fixed by replacing the HV Power Supply PCB 2?	Yes	OK
I/O A PCB (PW10721)	4	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.38 Auto SP Control 2 error (E-2232)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Surface potential Sensor 2 (SPS2) Fuse PCB (PW10790) I/O B PCB (PW10722)	No	Connect it firmly.
Image Corona Drum	2	Cancel the Auto SP Control 2 in the Adjustment Mode. (Set the value to “0”.) Code : 2001 (Automatic Surface Potential Control 2 ON/OFF) Then restart the KIP Color 80, and take a test print. Is the print image correct?	No	1. Install the Image Corona correctly. 2. Replace the Drum.
Surface potential Sensor 2 (SPS2)	3	Can the problem be fixed by replacing the Surface Potential Sensor 2?	Yes	OK
Fuse PCB (PW10790)	4	Is the LE923 on the Fuse PCB lighting?	Yes	Check all the components relating with the J906-5 and find the cause of the problem. Then replace the Fuse F923 on the Fuse PCB.
I/O B PCB (PW10722)	5	Can the problem be fixed by replacing the I/O B PCB?	Yes	OK
Main Control PCB (PW10720)	6	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.39 Density sensor 2 error (E-2241) & Auto Density Control 2 error (E-2242)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Toner Density Sensor 2L (PH31) Toner Density Sensor 2R (PH32) I/O B PCB (PW10722)	No	Connect it firmly.
Toner Density Sensor 2L (PH31) Toner Density Sensor 2R (PH32) LED Head	2	Is the toner sticking on the surface of Toner Density Sensors (2L & 2R) or LED Head?	Yes	Clean off the toner.
Toner Density Sensor 2L (PH31) Toner Density Sensor 2R (PH32)	3	Can the problem be fixed by replacing the Toner Density Sensor 2L or Toner Density Sensor 2R?	Yes	OK
I/O B PCB (PW10722)	4	Can the problem be fixed by replacing the I/O B PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.40 Developer unit 2 missing error (E-2250)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Developer Unit 2 I/O A PCB (PW10721)	No	Connect it firmly.
I/O A PCB (PW10721)	2	Can the problem be fixed by replacing the I/O B PCB?	Yes	OK
Main Control PCB (PW10720)	3	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.41 Head 1 error (LED head unit 2) (E-2261)
Head 2 error (LED head unit 2) (E-2262)
Head 3 error (LED head unit 2) (E-2263)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Head 1 of LED Head Unit 2 Head 2 of LED Head Unit 2 Head 3 of LED Head Unit 2 LED Head Translation PCB (PW10727_C) Fuse PCB (PW10790) Main Control PCB (PW10720)	No	Connect it firmly.
Head 1 of LED Head Unit 2 Head 2 of LED Head Unit 2 Head 3 of LED Head Unit 2 LED Head Translation PCB (PW10727_C) Signal Cable	2	Can the problem be fixed by replacing each of the following parts? Head 1 of LED Head Unit 2 Head 2 of LED Head Unit 2 Head 3 of LED Head Unit 2 LED Head Translation PCB (PW10727_C) Signal Cable	Yes	OK
Fuse PCB (PW10790)	3	Is the LE934 on the Fuse PCB lighting?	Yes	Check all the components relating with the J901-3 and find the cause of the problem. Then replace the Fuse F934 on the Fuse PCB.
Main Control PCB (PW10720)	4	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.42 Drum motor 3 error (E-2311)

First of all, try to operate the Drum Motor 3 (Code : 102) individually in the Function Checking Mode. Cancel the Service Mode after the confirmation. Go to the following case 1 if the Drum Motor 3 does not operate correctly, and go to the following case 2 if it operates.

Case 1 : Drum Motor 3 does not operate correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Drum Motor 3 (M9) Drum Motor 3 Driver PCB (FTD3S4P11-01) Fuse PCB (PW10790) I/O A PCB (PW10721)	No	Connect it firmly.
Drum Motor 3 (M9) Drum Motor 3 Driver PCB (FTD3S4P11-01)	2	Can the problem be fixed by replacing the Drum Motor 3 or Drum Motor 3 Driver PCB?	Yes	OK
Fuse PCB (PW10790)	3	Is the LE920 on the Fuse PCB lighting?	Yes	Check all the components relating with the J905-7 and find the cause of the problem. Then replace the Fuse F920 on the Fuse PCB.
I/O A PCB (PW10721)	4	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

Case 2 : Drum Motor 3 operates correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Drum Motor 3 Pulse Sensor (PH4) I/O A PCB (PW10721)	No	Connect it firmly.
Drum Motor 3 Pulse Sensor (PH4)	2	Can the problem be fixed by replacing the Drum Motor 3 Pulse Sensor?	Yes	OK
I/O A PCB (PW10721)	3	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	4	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.43 Developer motor 3 error (E-2312)

First of all, try to operate the Developer Motor 3 (Code : 112) individually in the Function Checking Mode. Cancel the Service Mode after the confirmation. Go to the following case 1 if the Developer Motor 3 does not operate correctly, and go to the following case 2 if it operates.

Case 1 : Developer Motor 3 does not operate correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Developer Motor 3 (M13) Fuse PCB (PW10790) I/O A PCB (PW10721)	No	Connect it firmly.
Developer Motor 3 (M13)	2	Can the problem be fixed by replacing the Developer Motor 3?	Yes	OK
Fuse PCB (PW10790)	3	Is the LE916 on the Fuse PCB lighting?	Yes	Check all the components relating with the J904-7 and find the cause of the problem. Then replace the Fuse F916 on the Fuse PCB.
I/O A PCB (PW10721)	4	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

Case 2 : Developer Motor 3 operates correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Developer Motor 3 (M13) I/O A PCB (PW10721)	No	Connect it firmly.
Developer Motor 3 (M13)	2	Can the problem be fixed by replacing the Developer Motor 3?	Yes	OK
I/O A PCB (PW10721)	3	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	4	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.44 Developer press motor 3 error (E-2313)

First of all, try to operate the Developer Press Motor 3 (Code : 123) individually in the Function Checking Mode. Cancel the Service Mode after the confirmation. Go to the following case 1 if the Developer Press Motor 3 does not operate correctly, and go to the following case 2 if it operates.

Case 1 : Developer Press Motor 3 does not operate correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Developer Press Motor 3 (M17) Motor Driver PCB 3 (PW10258_C) Developer Release Switch 3 (MS3) Fuse PCB (PW10790) I/O A PCB (PW10721)	No	Connect it firmly.
Developer Press Motor 3 (M17) Motor Driver PCB 3 (PW10258_C)	2	Can the problem be fixed by replacing the Developer Press Motor 3 or the Motor Driver PCB 3?	Yes	OK
Fuse PCB (PW10790)	3	Is the LE907 on the Fuse PCB lighting?	Yes	Check all the components relating with the J902-5 and find the cause of the problem. Then replace the Fuse F907 on the Fuse PCB.
I/O A PCB (PW10721)	4	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

Case 2 : Developer Press Motor 3 operates correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Developer Press Sensor 3 (PH8) I/O A PCB (PW10721)	No	Connect it firmly.
Developer Press Sensor 3 (PH8)	2	Can the problem be fixed by replacing the Developer Motor 3?	Yes	OK
I/O A PCB (PW10721)	3	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	4	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.45 Image corona 3 cleaning error (E-2314 : Delay)

First of all, try to operate the Wire Cleaning Motor 3 individually (Code : 118 & 119) in the Function Checking Mode. Cancel the Service Mode after the confirmation. Go to the following case 1 if the Wire Cleaning Motor 3 does not operate correctly, and go to the following case 2 if it operates.

> **⚠ NOTE**
>
> As the KIP Color 80 does not detect “motor error” and “home position” in the Function Checking Mode, the Wire Cleaning Motor 3 can not be stopped automatically. Please do as follows to avoid giving an over current to the motor. (Otherwise the motor will be broken.)
>
> 1. Before starting to check, move the Wire Cleaner to the center of the corona unit by hand.
> 2. Check the operation of the Wire Cleaning Motor in the Function Checking Mode, and stop the operation of motor **before** it arrives to the home position.

Case 1 : Wire Cleaning Motor 3 does not operate correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Wire Cleaning Motor 2 (M25) Motor Driver PCB 3 (PW10256_C) Fuse PCB (PW10790) I/O A PCB (PW10721)	No	Connect it firmly.
Screw Shaft of the Wire Cleaner	2	Is any abnormality found on the Screw Shaft of the Wire Cleaner, such as dirt or distortion?	Yes	Clean or replace the Screw Shaft.
Wire Cleaning Motor 3 (M25) Motor Driver PCB 3 (PW10256_C)	3	Can the problem be fixed by replacing the Wire Cleaning Motor 3 or the Motor Driver PCB 3?	Yes	OK
Fuse PCB (PW10790)	4	Is the LE913 on the Fuse PCB lighting?	Yes	Check all the components relating with the J904-1 and find the cause of the problem. Then replace the Fuse F913 on the Fuse PCB.
I/O A PCB (PW10721)	5	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	6	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

Case 2 : Wire Cleaning Motor 3 operates correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Wire Cleaner Position Switch 3L (MS3L) Wire Cleaner Position Switch 3R (MS3R) I/O A PCB (PW10722)	No	Connect it firmly.
Screw Shaft of the Wire Cleaner	2	Is any abnormality found on the Screw Shaft of the Wire Cleaner, such as dirt or distortion?	Yes	Clean or replace the Screw Shaft.

(Continues to the next page.)

Items	Order	Checking matters	Result	Treatment
Wire Cleaner Position Switch 3L (MS3L)	3	Remove the Image Corona Unit 3, set the Wire Cleaner to the LEFT home position by hand, and reinstall the unit to the machine. Check the status of signal from the Wire Cleaner Position Switch 3L in the Input Signal Monitoring Mode. Code : 30A (Wire Cleaner Position Switch 3L) Is the status H when the Image Corona Unit is installed, and is it L when the unit is removed?	No	Replace the Wire Cleaner Position Switch 3L.
Wire Cleaner Position Switch 3R (MS3R)	4	Remove the Image Corona Unit 3, set the Wire Cleaner to the RIGHT home position by hand, and reinstall the unit to the machine. Check the status of signal from the Wire Cleaner Position Switch 3R in the Input Signal Monitoring Mode. Code : 30b (Wire Cleaner Position Switch 3R) Is the status H when the Image Corona Unit is installed, and is it L when the unit is removed?	No	Replace the Wire Cleaner Position Switch 3R.
I/O A PCB (PW10721)	5	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	6	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.46 Image corona 3 cleaning error (E-2315 : Early)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Wire Cleaner Position Switch 3L (MS3L) Wire Cleaner Position Switch 3R (MS3R) I/O A PCB (PW10722)	No	Connect it firmly.
Screw Shaft of the Wire Cleaner	2	Is any abnormality found on the Screw Shaft of the Wire Cleaner, such as dirt or distortion?	Yes	Clean or replace the Screw Shaft.
Wire Cleaner Position Switch 3L (MS3L)	3	Remove the Image Corona Unit 3, set the Wire Cleaner to the LEFT home position by hand, and reinstall the unit to the machine. Check the status of signal from the Wire Cleaner Position Switch 3L in the Input Signal Monitoring Mode. Code : 30A (Wire Cleaner Position Switch 3L) Is the status H when the Image Corona Unit is installed, and is it L when the unit is removed?	No	Replace the Wire Cleaner Position Switch 3L.
Wire Cleaner Position Switch 3R (MS3R)	4	Remove the Image Corona Unit 3, set the Wire Cleaner to the RIGHT home position by hand, and reinstall the unit to the machine. Check the status of signal from the Wire Cleaner Position Switch 3R in the Input Signal Monitoring Mode. Code : 30b (Wire Cleaner Position Switch 3R) Is the status H when the Image Corona Unit is installed, and is it L when the unit is removed?	No	Replace the Wire Cleaner Position Switch 3R.
I/O A PCB (PW10721)	5	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	6	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.47 Image corona 3 cleaning error (E-2316 : Over current)

First of all, try to operate the Wire Cleaning Motor 3 individually (Code : 118 & 119) in the Function Checking Mode. Cancel the Service Mode after the confirmation. Go to the following case 1 if the Wire Cleaning Motor 3 does not operate correctly, and go to the following case 2 if it operates.

> **⚠ NOTE**
>
> As the KIP Color 80 does not detect “motor error” and “home position” in the Function Checking Mode, the Wire Cleaning Motor 3 can not be stopped automatically. Please do as follows to avoid giving an over current to the motor. (Otherwise the motor will be broken.)
>
> 1. Before starting to check, move the Wire Cleaner to the center of the corona unit by hand.
> 2. Check the operation of the Wire Cleaning Motor in the Function Checking Mode, and stop the operation of motor **before** it arrives to the home position.

Case 1 : Wire Cleaning Motor 3 does not operate correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Wire Cleaning Motor 3 (M25) Motor Driver PCB 3 (PW10256_C) Fuse PCB (PW10790) I/O A PCB (PW10721)	No	Connect it firmly.
Screw Shaft of the Wire Cleaner	2	Is any abnormality found on the Screw Shaft of the Wire Cleaner, such as dirt or distortion?	Yes	Clean or replace the Screw Shaft.
Wire Cleaning Motor 3 (M25) Motor Driver PCB 3 (PW10256_C)	3	Can the problem be fixed by replacing the Wire Cleaning Motor 3 or the Motor Driver PCB 3?	Yes	OK
Fuse PCB (PW10790)	4	Is the LE913 on the Fuse PCB lighting?	Yes	Check all the components relating with the J904-1 and find the cause of the problem. Then replace the Fuse F913 on the Fuse PCB.
I/O A PCB (PW10721)	5	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	6	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

Case 2 : Wire Cleaning Motor 3 operates correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Wire Cleaner Position Switch 3L (MS3L) Wire Cleaner Position Switch 3R (MS3R) I/O A PCB (PW10722)	No	Connect it firmly.
Screw Shaft of the Wire Cleaner	2	Is any abnormality found on the Screw Shaft of the Wire Cleaner, such as dirt or distortion?	Yes	Clean or replace the Screw Shaft.

(Continues to the next page.)

Items	Order	Checking matters	Result	Treatment
Wire Cleaner Position Switch 3L (MS3L)	3	Remove the Image Corona Unit 3, set the Wire Cleaner to the LEFT home position by hand, and reinstall the unit to the machine. Check the status of signal from the Wire Cleaner Position Switch 3L in the Input Signal Monitoring Mode. Code : 30A (Wire Cleaner Position Switch 3L) Is the status H when the Image Corona Unit is installed, and is it L when the unit is removed?	No	Replace the Wire Cleaner Position Switch 3L.
Wire Cleaner Position Switch 3R (MS3R)	4	Remove the Image Corona Unit 3, set the Wire Cleaner to the RIGHT home position by hand, and reinstall the unit to the machine. Check the status of signal from the Wire Cleaner Position Switch 3R in the Input Signal Monitoring Mode. Code : 30b (Wire Cleaner Position Switch 3R) Is the status H when the Image Corona Unit is installed, and is it L when the unit is removed?	No	Replace the Wire Cleaner Position Switch 3R.
Wire Cleaning Motor 3 (M25) Motor Driver PCB 3 (PW10256_C)	5	Can the problem be fixed by replacing the Wire Cleaning Motor 3 or the Motor Driver PCB 3?	Yes	OK
I/O A PCB (PW10721)	6	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	7	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.48 Toner cartridge motor 3 error (E-2317)

First of all, try to operate the Toner Cartridge Motor 3 individually (Code : 11E) in the Function Checking Mode. Cancel the Service Mode after the confirmation. Go to the following case 1 if the Toner Cartridge Motor 3 does operate correctly, and go to the following case 2 if it operates.

> **⚠ NOTE**
>
> Check the operation of Toner Cartridge Motor 3 while carrying out the following matters simultaneously.
>
> 1. Open the Right Side Door. (However set the door switch to ON.)
> 2. Remove the Toner Cartridge from the Process 3. (Confirm the rotation of motor by the action of the motor shaft.)

Case 1 : Toner Cartridge Motor 3 does not operate correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Toner Cartridge Motor 3 (M21) Motor Driver PCB 3 (PW10256_C) Fuse PCB (PW10790) I/O A PCB (PW10721)	No	Connect it firmly.
Toner Cartridge Motor 3 (M21) Motor Driver PCB 3 (PW10256_C)	2	Can the problem be fixed by replacing the Toner Cartridge Motor 3 or the Motor Driver PCB 3?	Yes	OK
Fuse PCB (PW10790)	3	Is the LE913 on the Fuse PCB lighting?	Yes	Check all the components relating with the J904-1 and find the cause of the problem. Then replace the Fuse F913 on the Fuse PCB.
I/O A PCB (PW10721)	4	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

Case 2 : Toner Cartridge Motor 3 operates correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Toner Cartridge Motor 3 (M21) Motor Driver PCB 3 (PW10256_C) I/O A PCB (PW10721)	No	Connect it firmly.
Toner Cartridge	2	Is the toner in the cartridge loosened?	No	Close the open hole of the cartridge, and shake the cartridge to loosen the toner.
Toner Cartridge Motor 3 (M21) Motor Driver PCB 3 (PW10256_C)	3	Can the problem be fixed by replacing the Toner Cartridge Motor 3 or the Motor Driver PCB 3?	Yes	OK
I/O A PCB (PW10721)	4	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.49 Image corona 3 output error (E-2321)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? HV Power Supply PCB 3 (HVP3) I/O A PCB (PW10721)	No	Connect it firmly.
HV1 harness Image Corona Wire	2	Measure the resistance between the HV1 harness on the HVP3 and the ground. Is there any resistance?	No	Check if there is any abnormality on the HV1 harness or the Image Corona Wire.
HV Power Supply PCB 3 (HVP3)	3	Can the problem be fixed by replacing the HV Power Supply PCB 3?	Yes	OK
I/O A PCB (PW10721)	4	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.50 Transfer corona 3 output error (E-2322)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? HV Power Supply PCB 3 (HVP3) I/O A PCB (PW10721)	No	Connect it firmly.
HV2 harness Transfer Corona Wire	2	Measure the resistance between the HV2 harness on the HVP3 and the ground. Is there any resistance?	No	Check if there is any abnormality on the HV2 harness or the Transfer Corona Wire.
HV Power Supply PCB 3 (HVP3)	3	Can the problem be fixed by replacing the HV Power Supply PCB 3?	Yes	OK
I/O A PCB (PW10721)	4	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.51 Separation corona 3 output error (E-2323)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? HV Power Supply PCB 3 (HVP3) I/O A PCB (PW10721)	No	Connect it firmly.
HV3 harness Separation Corona Wire	2	Measure the resistance between the HV3 harness on the HVP3 and the ground. Is there any resistance?	No	Check if there is any abnormality on the HV3 harness or the Separation Corona Wire.
HV Power Supply PCB 3 (HVP3)	3	Can the problem be fixed by replacing the HV Power Supply PCB 3?	Yes	OK
I/O A PCB (PW10721)	4	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.52 Developer bias 3 output error (E-2324)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? HV Power Supply PCB 3 (HVP3) I/O A PCB (PW10721)	No	Connect it firmly.
OUT2 harness Developer Unit 3	2	Measure the resistance between the OUT2 harness on the HVP3 and the ground. Is there any resistance?	No	Check if there is any abnormality on the OUT2 harness or the Developer Unit 3.
HV Power Supply PCB 3 (HVP3)	3	Can the problem be fixed by replacing the HV Power Supply PCB 3?	Yes	OK
I/O A PCB (PW10721)	4	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.53 Auto SP Control 3 error (E-2332)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Surface potential Sensor 3 (SPS3) Fuse PCB (PW10790) I/O B PCB (PW10722)	No	Connect it firmly.
Image Corona Drum	2	Cancel the Auto SP Control 3 in the Adjustment Mode. (Set the value to “0”.) Code : 2002 (Automatic Surface Potential Control 3 ON/OFF) Then restart the KIP Color 80, and take a test print. Is the print image correct?	No	1. Install the Image Corona correctly. 2. Replace the Drum.
Surface potential Sensor 3 (SPS3)	3	Can the problem be fixed by replacing the Surface Potential Sensor 3?	Yes	OK
Fuse PCB (PW10790)	4	Is the LE923 on the Fuse PCB lighting?	Yes	Check all the components relating with the J906-5 and find the cause of the problem. Then replace the Fuse F923 on the Fuse PCB.
I/O B PCB (PW10722)	5	Can the problem be fixed by replacing the I/O B PCB?	Yes	OK
Main Control PCB (PW10720)	6	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.54 Density sensor 3 error (E-2341) & Auto Density Control 3 error (E-2342)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Toner Density Sensor 3L (PH33) Toner Density Sensor 3R (PH34) I/O B PCB (PW10722)	No	Connect it firmly.
Toner Density Sensor 3L (PH33) Toner Density Sensor 3R (PH34) LED Head	2	Is the toner sticking on the surface of Toner Density Sensors (3L & 3R) or LED Head?	Yes	Clean off the toner.
Toner Density Sensor 3L (PH33) Toner Density Sensor 3R (PH34)	3	Can the problem be fixed by replacing the Toner Density Sensor 3L or Toner Density Sensor 3R?	Yes	OK
I/O B PCB (PW10722)	4	Can the problem be fixed by replacing the I/O B PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.55 Developer unit 3 missing error (E-2350)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Developer Unit 3 I/O A PCB (PW10721)	No	Connect it firmly.
I/O A PCB (PW10721)	2	Can the problem be fixed by replacing the I/O B PCB?	Yes	OK
Main Control PCB (PW10720)	3	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.56 Head 1 error (LED head unit 3) (E-2361)
Head 2 error (LED head unit 3) (E-2362)
Head 3 error (LED head unit 3) (E-2363)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Head 1 of LED Head Unit 3 Head 2 of LED Head Unit 3 Head 3 of LED Head Unit 3 LED Head Translation PCB (PW10727_M) Fuse PCB (PW10790) Main Control PCB (PW10720)	No	Connect it firmly.
Head 1 of LED Head Unit 3 Head 2 of LED Head Unit 3 Head 3 of LED Head Unit 3 LED Head Translation PCB (PW10727_M) Signal Cable	2	Can the problem be fixed by replacing each of the following parts? Head 1 of LED Head Unit 3 Head 2 of LED Head Unit 3 Head 3 of LED Head Unit 3 LED Head Translation PCB (PW10727_M) Signal Cable	Yes	OK
Fuse PCB (PW10790)	3	Is the LE935 on the Fuse PCB lighting?	Yes	Check all the components relating with the J901-5 and find the cause of the problem. Then replace the Fuse F935 on the Fuse PCB.
Main Control PCB (PW10720)	4	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.57 Drum motor 4 error (E-2411)

First of all, try to operate the Drum Motor 4 (Code : 103) individually in the Function Checking Mode. Cancel the Service Mode after the confirmation. Go to the following case 1 if the Drum Motor 4 does not operate correctly, and go to the following case 2 if it operates.

Case 1 : Drum Motor 4 does not operate correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Drum Motor 4 (M10) Drum Motor 3 Driver PCB (FTD3S4P11-01) Fuse PCB (PW10790) I/O A PCB (PW10721)	No	Connect it firmly.
Drum Motor 4 (M10) Drum Motor 4 Driver PCB (FTD3S4P11-01)	2	Can the problem be fixed by replacing the Drum Motor 4 or Drum Motor 4 Driver PCB?	Yes	OK
Fuse PCB (PW10790)	3	Is the LE920 on the Fuse PCB lighting?	Yes	Check all the components relating with the J905-7 and find the cause of the problem. Then replace the Fuse F920 on the Fuse PCB.
I/O A PCB (PW10721)	4	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

Case 2 : Drum Motor 4 operates correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Drum Motor 4 Pulse Sensor (PH5) I/O A PCB (PW10721)	No	Connect it firmly.
Drum Motor 4 Pulse Sensor (PH5)	2	Can the problem be fixed by replacing the Drum Motor 4 Pulse Sensor?	Yes	OK
I/O A PCB (PW10721)	3	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	4	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.58 Developer motor 4 error (E-2412)

First of all, try to operate the Developer Motor 4 (Code : 113) individually in the Function Checking Mode. Cancel the Service Mode after the confirmation. Go to the following case 1 if the Developer Motor 4 does not operate correctly, and go to the following case 2 if it operates.

Case 1 : Developer Motor 4 does not operate correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Developer Motor 4 (M14) Fuse PCB (PW10790) I/O A PCB (PW10721)	No	Connect it firmly.
Developer Motor 4 (M14)	2	Can the problem be fixed by replacing the Developer Motor 4?	Yes	OK
Fuse PCB (PW10790)	3	Is the LE916 on the Fuse PCB lighting?	Yes	Check all the components relating with the J904-7 and find the cause of the problem. Then replace the Fuse F916 on the Fuse PCB.
I/O A PCB (PW10721)	4	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

Case 2 : Developer Motor 4 operates correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Developer Motor 4 (M14) I/O A PCB (PW10721)	No	Connect it firmly.
Developer Motor 4 (M14)	2	Can the problem be fixed by replacing the Developer Motor 4?	Yes	OK
I/O A PCB (PW10721)	3	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	4	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.59 Developer press motor 4 error (E-2413)

First of all, try to operate the Developer Press Motor 4 (Code : 124) individually in the Function Checking Mode. Cancel the Service Mode after the confirmation. Go to the following case 1 if the Developer Press Motor 4 does not operate correctly, and go to the following case 2 if it operates.

Case 1 : Developer Press Motor 4 does not operate correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Developer Press Motor 4 (M18) Motor Driver PCB 4 (PW10258_D) Developer Release Switch 4 (MS4) Fuse PCB (PW10790) I/O A PCB (PW10721)	No	Connect it firmly.
Developer Press Motor 4 (M18) Motor Driver PCB 4 (PW10258_D)	2	Can the problem be fixed by replacing the Developer Press Motor 4 or the Motor Driver PCB 4?	Yes	OK
Fuse PCB (PW10790)	3	Is the LE907 on the Fuse PCB lighting?	Yes	Check all the components relating with the J902-5 and find the cause of the problem. Then replace the Fuse F907 on the Fuse PCB.
I/O A PCB (PW10721)	4	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

Case 2 : Developer Press Motor 4 operates correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Developer Press Sensor 4 (PH9) I/O A PCB (PW10721)	No	Connect it firmly.
Developer Press Sensor 4 (PH9)	2	Can the problem be fixed by replacing the Developer Motor 4?	Yes	OK
I/O A PCB (PW10721)	3	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	4	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.60 Image corona 4 cleaning error (E-2414 : Delay)

First of all, try to operate the Wire Cleaning Motor 4 individually (Code : 120 & 121) in the Function Checking Mode. Cancel the Service Mode after the confirmation. Go to the following case 1 if the Wire Cleaning Motor 4 does not operate correctly, and go to the following case 2 if it operates.

> **⚠ NOTE**
>
> As the KIP Color 80 does not detect “motor error” and “home position” in the Function Checking Mode, the Wire Cleaning Motor 4 can not be stopped automatically. Please do as follows to avoid giving an over current to the motor. (Otherwise the motor will be broken.)
>
> 1. Before starting to check, move the Wire Cleaner to the center of the corona unit by hand.
> 2. Check the operation of the Wire Cleaning Motor in the Function Checking Mode, and stop the operation of motor **before** it arrives to the home position.

Case 1 : Wire Cleaning Motor 4 does not operate correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Wire Cleaning Motor 4 (M26) Motor Driver PCB 4 (PW10256_D) Fuse PCB (PW10790) I/O A PCB (PW10721)	No	Connect it firmly.
Screw Shaft of the Wire Cleaner	2	Is any abnormality found on the Screw Shaft of the Wire Cleaner, such as dirt or distortion?	Yes	Clean or replace the Screw Shaft.
Wire Cleaning Motor 4 (M26) Motor Driver PCB 4 (PW10256_D)	3	Can the problem be fixed by replacing the Wire Cleaning Motor 4 or the Motor Driver PCB 4?	Yes	OK
Fuse PCB (PW10790)	4	Is the LE913 on the Fuse PCB lighting?	Yes	Check all the components relating with the J904-1 and find the cause of the problem. Then replace the Fuse F913 on the Fuse PCB.
I/O A PCB (PW10721)	5	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	6	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

Case 2 : Wire Cleaning Motor 4 operates correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Wire Cleaner Position Switch 4L (MS4L) Wire Cleaner Position Switch 4R (MS4R) I/O A PCB (PW10722)	No	Connect it firmly.
Screw Shaft of the Wire Cleaner	2	Is any abnormality found on the Screw Shaft of the Wire Cleaner, such as dirt or distortion?	Yes	Clean or replace the Screw Shaft.

(Continues to the next page.)

Items	Order	Checking matters	Result	Treatment
Wire Cleaner Position Switch 4L (MS4L)	3	Remove the Image Corona Unit 4, set the Wire Cleaner to the LEFT home position by hand, and reinstall the unit to the machine. Check the status of signal from the Wire Cleaner Position Switch 4L in the Input Signal Monitoring Mode. Code : 30C (Wire Cleaner Position Switch 4L) Is the status H when the Image Corona Unit is installed, and is it L when the unit is removed?	No	Replace the Wire Cleaner Position Switch 4L.
Wire Cleaner Position Switch 4R (MS4R)	4	Remove the Image Corona Unit 4, set the Wire Cleaner to the RIGHT home position by hand, and reinstall the unit to the machine. Check the status of signal from the Wire Cleaner Position Switch 4R in the Input Signal Monitoring Mode. Code : 30d (Wire Cleaner Position Switch 4R) Is the status H when the Image Corona Unit is installed, and is it L when the unit is removed?	No	Replace the Wire Cleaner Position Switch 4R.
I/O A PCB (PW10721)	5	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	6	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.61 Image corona 4 cleaning error (E-2415 : Early)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Wire Cleaner Position Switch 4L (MS4L) Wire Cleaner Position Switch 4R (MS4R) I/O A PCB (PW10722)	No	Connect it firmly.
Screw Shaft of the Wire Cleaner	2	Is any abnormality found on the Screw Shaft of the Wire Cleaner, such as dirt or distortion?	Yes	Clean or replace the Screw Shaft.
Wire Cleaner Position Switch 4L (MS4L)	3	Remove the Image Corona Unit 4, set the Wire Cleaner to the LEFT home position by hand, and reinstall the unit to the machine. Check the status of signal from the Wire Cleaner Position Switch 4L in the Input Signal Monitoring Mode. Code : 30C (Wire Cleaner Position Switch 4L) Is the status H when the Image Corona Unit is installed, and is it L when the unit is removed?	No	Replace the Wire Cleaner Position Switch 4L.
Wire Cleaner Position Switch 4R (MS4R)	4	Remove the Image Corona Unit 4, set the Wire Cleaner to the RIGHT home position by hand, and reinstall the unit to the machine. Check the status of signal from the Wire Cleaner Position Switch 4R in the Input Signal Monitoring Mode. Code : 30d (Wire Cleaner Position Switch 4R) Is the status H when the Image Corona Unit is installed, and is it L when the unit is removed?	No	Replace the Wire Cleaner Position Switch 4R.
I/O A PCB (PW10721)	5	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	6	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.62 Image corona 4 cleaning error (E-2416 : Over current)

First of all, try to operate the Wire Cleaning Motor 4 individually (Code : 120 & 121) in the Function Checking Mode. Cancel the Service Mode after the confirmation. Go to the following case 1 if the Wire Cleaning Motor 4 does not operate correctly, and go to the following case 2 if it operates.

> **⚠ NOTE**
>
> As the KIP Color 80 does not detect “motor error” and “home position” in the Function Checking Mode, the Wire Cleaning Motor 4 can not be stopped automatically. Please do as follows to avoid giving an over current to the motor. (Otherwise the motor will be broken.)
>
> 1. Before starting to check, move the Wire Cleaner to the center of the corona unit by hand.
> 2. Check the operation of the Wire Cleaning Motor in the Function Checking Mode, and stop the operation of motor **before** it arrives to the home position.

Case 1 : Wire Cleaning Motor 4 does not operate correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Wire Cleaning Motor 4 (M26) Motor Driver PCB 4 (PW10256_D) Fuse PCB (PW10790) I/O A PCB (PW10721)	No	Connect it firmly.
Screw Shaft of the Wire Cleaner	2	Is any abnormality found on the Screw Shaft of the Wire Cleaner, such as dirt or distortion?	Yes	Clean or replace the Screw Shaft.
Wire Cleaning Motor 4 (M26) Motor Driver PCB 4 (PW10256_D)	3	Can the problem be fixed by replacing the Wire Cleaning Motor 4 or the Motor Driver PCB 4?	Yes	OK
Fuse PCB (PW10790)	4	Is the LE913 on the Fuse PCB lighting?	Yes	Check all the components relating with the J904-1 and find the cause of the problem. Then replace the Fuse F913 on the Fuse PCB.
I/O A PCB (PW10721)	5	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	6	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

Case 2 : Wire Cleaning Motor 4 operates correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Wire Cleaner Position Switch 4L (MS4L) Wire Cleaner Position Switch 4R (MS4R) I/O A PCB (PW10722)	No	Connect it firmly.
Screw Shaft of the Wire Cleaner	2	Is any abnormality found on the Screw Shaft of the Wire Cleaner, such as dirt or distortion?	Yes	Clean or replace the Screw Shaft.

(Continues to the next page.)

Items	Order	Checking matters	Result	Treatment
Wire Cleaner Position Switch 4L (MS4L)	3	Remove the Image Corona Unit 4, set the Wire Cleaner to the LEFT home position by hand, and reinstall the unit to the machine. Check the status of signal from the Wire Cleaner Position Switch 4L in the Input Signal Monitoring Mode. Code : 30C (Wire Cleaner Position Switch 4L) Is the status H when the Image Corona Unit is installed, and is it L when the unit is removed?	No	Replace the Wire Cleaner Position Switch 4L.
Wire Cleaner Position Switch 4R (MS4R)	4	Remove the Image Corona Unit 4, set the Wire Cleaner to the RIGHT home position by hand, and reinstall the unit to the machine. Check the status of signal from the Wire Cleaner Position Switch 4R in the Input Signal Monitoring Mode. Code : 30d (Wire Cleaner Position Switch 4R) Is the status H when the Image Corona Unit is installed, and is it L when the unit is removed?	No	Replace the Wire Cleaner Position Switch 4R.
Wire Cleaning Motor 4 (M26) Motor Driver PCB 4 (PW10256_D)	5	Can the problem be fixed by replacing the Wire Cleaning Motor 4 or the Motor Driver PCB 4?	Yes	OK
I/O A PCB (PW10721)	6	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	7	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.63 Toner cartridge motor 4 error (E-2417)

First of all, try to operate the Toner Cartridge Motor 4 individually (Code : 11F) in the Function Checking Mode. Cancel the Service Mode after the confirmation. Go to the following case 1 if the Toner Cartridge Motor 4 does operate correctly, and go to the following case 2 if it operates.

> **⚠ NOTE**
>
> Check the operation of Toner Cartridge Motor 4 while carrying out the following matters simultaneously.
>
> 1. Open the Right Side Door. (However set the door switch to ON.)
> 2. Remove the Toner Cartridge from the Process 3. (Confirm the rotation of motor by the action of the motor shaft.)

Case 1 : Toner Cartridge Motor 4 does not operate correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Toner Cartridge Motor 4 (M22) Motor Driver PCB 4 (PW10256_D) Fuse PCB (PW10790) I/O A PCB (PW10721)	No	Connect it firmly.
Toner Cartridge Motor 4 (M22) Motor Driver PCB 4 (PW10256_D)	2	Can the problem be fixed by replacing the Toner Cartridge Motor 4 or the Motor Driver PCB 4?	Yes	OK
Fuse PCB (PW10790)	3	Is the LE913 on the Fuse PCB lighting?	Yes	Check all the components relating with the J904-1 and find the cause of the problem. Then replace the Fuse F913 on the Fuse PCB.
I/O A PCB (PW10721)	4	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

Case 2 : Toner Cartridge Motor 4 operates correctly.

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Toner Cartridge Motor 4 (M22) Motor Driver PCB 4 (PW10256_D) I/O A PCB (PW10721)	No	Connect it firmly.
Toner Cartridge	2	Is the toner in the cartridge loosened?	No	Close the open hole of the cartridge, and shake the cartridge to loosen the toner.
Toner Cartridge Motor 4 (M22) Motor Driver PCB 4 (PW10256_D)	3	Can the problem be fixed by replacing the Toner Cartridge Motor 4 or the Motor Driver PCB 4?	Yes	OK
I/O A PCB (PW10721)	4	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.64 Image corona 4 output error (E-2421)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? HV Power Supply PCB 4 (HVP4) I/O A PCB (PW10721)	No	Connect it firmly.
HV1 harness Image Corona Wire	2	Measure the resistance between the HV1 harness on the HVP4 and the ground. Is there any resistance?	No	Check if there is any abnormality on the HV1 harness or the Image Corona Wire.
HV Power Supply PCB 4 (HVP4)	3	Can the problem be fixed by replacing the HV Power Supply PCB 4?	Yes	OK
I/O A PCB (PW10721)	4	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.65 Transfer corona 4 output error (E-2422)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? HV Power Supply PCB 4 (HVP4) I/O A PCB (PW10721)	No	Connect it firmly.
HV2 harness Transfer Corona Wire	2	Measure the resistance between the HV2 harness on the HVP4 and the ground. Is there any resistance?	No	Check if there is any abnormality on the HV2 harness or the Transfer Corona Wire.
HV Power Supply PCB 4 (HVP4)	3	Can the problem be fixed by replacing the HV Power Supply PCB 4?	Yes	OK
I/O A PCB (PW10721)	4	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.66 Separation corona 4 output error (E-2423)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? HV Power Supply PCB 4 (HVP4) I/O A PCB (PW10721)	No	Connect it firmly.
HV3 harness Separation Corona Wire	2	Measure the resistance between the HV3 harness on the HVP4 and the ground. Is there any resistance?	No	Check if there is any abnormality on the HV3 harness or the Separation Corona Wire.
HV Power Supply PCB 4 (HVP4)	3	Can the problem be fixed by replacing the HV Power Supply PCB 4?	Yes	OK
I/O A PCB (PW10721)	4	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.67 Developer bias 4 output error (E-2424)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? HV Power Supply PCB 4 (HVP4) I/O A PCB (PW10721)	No	Connect it firmly.
OUT2 harness Developer Unit 3	2	Measure the resistance between the OUT2 harness on the HVP4 and the ground. Is there any resistance?	No	Check if there is any abnormality on the OUT2 harness or the Developer Unit 4.
HV Power Supply PCB 4 (HVP4)	3	Can the problem be fixed by replacing the HV Power Supply PCB 4?	Yes	OK
I/O A PCB (PW10721)	4	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.68 Auto SP Control 4 error (E-2432)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Surface potential Sensor 4 (SPS4) Fuse PCB (PW10790) I/O B PCB (PW10722)	No	Connect it firmly.
Image Corona Drum	2	Cancel the Auto SP Control 4 in the Adjustment Mode. (Set the value to “0”.) Code : 2003 (Automatic Surface Potential Control 4 ON/OFF) Then restart the KIP Color 80, and take a test print. Is the print image correct?	No	1. Install the Image Corona correctly. 2. Replace the Drum.
Surface potential Sensor 4 (SPS4)	3	Can the problem be fixed by replacing the Surface Potential Sensor 4?	Yes	OK
Fuse PCB (PW10790)	4	Is the LE923 on the Fuse PCB lighting?	Yes	Check all the components relating with the J906-5 and find the cause of the problem. Then replace the Fuse F923 on the Fuse PCB.
I/O B PCB (PW10722)	5	Can the problem be fixed by replacing the I/O B PCB?	Yes	OK
Main Control PCB (PW10720)	6	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.69 Density sensor 4 error (E-2441) & Auto Density Control 4 error (E-2442)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Toner Density Sensor 4L (PH35) Toner Density Sensor 4R (PH36) I/O B PCB (PW10722)	No	Connect it firmly.
Toner Density Sensor 4L (PH35) Toner Density Sensor 4R (PH36) LED Head	2	Is the toner sticking on the surface of Toner Density Sensors (4L & 4R) or LED Head?	Yes	Clean off the toner.
Toner Density Sensor 4L (PH35) Toner Density Sensor 4R (PH36)	3	Can the problem be fixed by replacing the Toner Density Sensor 4L or Toner Density Sensor 4R?	Yes	OK
I/O B PCB (PW10722)	4	Can the problem be fixed by replacing the I/O B PCB?	Yes	OK
Main Control PCB (PW10720)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.70 Developer unit 4 missing error (E-2450)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Developer Unit 4 I/O A PCB (PW10721)	No	Connect it firmly.
I/O A PCB (PW10721)	2	Can the problem be fixed by replacing the I/O B PCB?	Yes	OK
Main Control PCB (PW10720)	3	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.71 Head 1 error (LED head unit 4) (E-2461)
Head 2 error (LED head unit 4) (E-2462)
Head 3 error (LED head unit 4) (E-2463)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Head 1 of LED Head Unit 4 Head 2 of LED Head Unit 4 Head 3 of LED Head Unit 4 LED Head Translation PCB (PW10727_Y) Fuse PCB (PW10790) Main Control PCB (PW10720)	No	Connect it firmly.
Head 1 of LED Head Unit 4 Head 2 of LED Head Unit 4 Head 3 of LED Head Unit 4 LED Head Translation PCB (PW10727_Y) Signal Cable	2	Can the problem be fixed by replacing each of the following parts? Head 1 of LED Head Unit 4 Head 2 of LED Head Unit 4 Head 3 of LED Head Unit 4 LED Head Translation PCB (PW10727_Y) Signal Cable	Yes	OK
Fuse PCB (PW10790)	3	Is the LE936 on the Fuse PCB lighting?	Yes	Check all the components relating with the J901-7 and find the cause of the problem. Then replace the Fuse F936 on the Fuse PCB.
Main Control PCB (PW10720)	4	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.72 Process 1 Color Sensor error (E-3001)
Process 2 Color Sensor error (E-3002)
Process 3 Color Sensor error (E-3003)
Process 4 Color Sensor error (E-3004)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? Color Sensor PCB (PW10781) I/O A PCB (PW10721)	No	Connect it firmly.
Color Sensor PCB (PW10781)	2	Can the problem be fixed by replacing the Color Sensor PCB?	Yes	OK
I/O A PCB (PW10721)	3	Can the problem be fixed by replacing the I/O B PCB?	Yes	OK

7. 1. 2.73 Process 1 Color Sensor reading error (E-3011)
Process 2 Color Sensor reading error (E-3012)
Process 3 Color Sensor reading error (E-3013)
Process 4 Color Sensor reading error (E-3014)

Items	Order	Checking matters	Result	Treatment
Installation of Color Sensor PCB	1	Referring to [10.7 Adjustment of Color Sensor's Position after Replacement] on page 10-49, check the output voltage from the Color Sensor PCB. Is a proper voltage output from the sensor?	No	Adjust the installation position of Color Sensor PCB correctly.
Color Sensor PCB (PW10781)	2	Can the problem be fixed by replacing the Color Sensor PCB?	Yes	OK
I/O A PCB (PW10721)	3	Can the problem be fixed by replacing the I/O B PCB?	Yes	OK

7. 1. 2.74 Flash memory writing error (E-A001)

Items	Order	Checking matters	Result	Treatment
Main Control PCB (PW10720)	1	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.75 IO board A communication error (E-A010)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? I/O A PCB (PW10721) Main Control PCB (PW10720)	No	Connect it firmly.
I/O A PCB (PW10721)	3	Can the problem be fixed by replacing the I/O A PCB?	Yes	OK
Main Control PCB (PW10720)	4	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 2.76 IO board B communication error (E-A011)

Items	Order	Checking matters	Result	Treatment
Harness	1	Is the harness correctly connected to each of the following components? I/O B PCB (PW10722) Main Control PCB (PW10720)	No	Connect it firmly.
I/O B PCB (PW10722)	3	Can the problem be fixed by replacing the I/O B PCB?	Yes	OK
Main Control PCB (PW10720)	4	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 1. 3 Conditions for the errors

The conditions for each errors are listed in below.

Error Code	Error Name	Error conditions	Remarks
E-0001	Fuser temperature rising error	(1) Fuser is not heated up to 50C^{o} within 6 minutes after turning on. (2) Fuser is not heated up to 100C^{o} within 6 minutes since it has heated up to 50C^{o}. (3) Fuser is not heated up to the ready temperature within 6 minutes since it has heated up to 100C^{o}. (4) Fuser is cooled down to 100C^{o} since once it has been ready. (5) 0C^{o} is detected for 1 minute continuously when the Fuser Lamps are ON.	
E-0002	Fuser abnormal high temperature error	(1) When over 200C^{o} is detected. (2) When “fuser abnormally hot signal” shows “H” for longer than 100msec.	
E-0011	Web feeding error	(1) An operation to strain the Web is performed after turning on or after closing Fuser Cover or Fuser Upper Cover, and the input signal does not change to another status within 120 seconds since the Web Motor has started to rotate. (2) An operation to strain the Web is performed when printing is to be started, and the input signal does not change to another status within 10 seconds since the Web Motor has started to rotate. (3) The input signal from the Web Motor does not change to another status during 20m printing.	
E-0020	Fuser thermostat error	“Thermostat status signal” shows “L” continuously for longer than 100msec.	
E-0051	Web end error	When the total operation time of Web Motor is over 14 hours 45 minutes 34 seconds.	
E-1012	Registration roller motor error	“Abnormal output signal” shows “H” for longer than 100msec.	
E-1114	Transportation unit 1 motor error	“Abnormal output signal” shows “H” for longer than 100msec.	
E-1214	Transportation unit 2 motor error	“Abnormal output signal” shows “H” for longer than 100msec.	
E-1314	Transportation unit 3 motor error	“Abnormal output signal” shows “H” for longer than 100msec.	
E-1021	Cutter error	(1) Cutter is still at the home position although 1 second has passed after ON. (2) Cutter does not return to the home position within 3 seconds since it has left from there.	
E-2010	Waste toner motor error	“Lock detection signal” is lower than 0.5V continuously for longer than 1 second when the motor is operating.	
E-2111	Drum motor 1 error	“Abnormal output signal” shows “H” for longer than 100msec.	
E-2113	Developer press motor 1 error	(1) Developer Unit is not placed to the setting position although 9 seconds has passed. (2) Developer Unit is not separated although 9 seconds has passed.	
E-2114	Image corona 1 cleaning error (Delay)	Wire Cleaner does not arrive at another end within 70 seconds since the start of cleaning.	Delay
E-2115	Image corona 1 cleaning error (Early)	Wire Cleaner arrives at another end within 10 seconds since the start of cleaning.	Early arrival

Error Code	Error Name	Error conditions	Remarks
E-2116	Image corona 1 cleaning error (Over current)	“Lock detection signal“ is “H” continuously for longer than 1 second when the motor is operating.	
E-2117	Toner cartridge motor 1 error	“Lock detection signal” is lower than 0.5V continuously for longer than 1 second when the motor is operating.	
E-2121	Image corona 1 output error	“Abnormal output signal” shows “H” for longer than 100msec.	
E-2122	Transfer corona 1 output error	“Abnormal output signal” shows “H” for longer than 100msec.	
E-2123	Separation corona 1 output error	“Abnormal output signal” shows “H” for longer than 100msec.	
E-2124	Developer bias 1 output error	“Abnormal output signal” shows “H” for longer than 100msec.	
E-2132	Auto SP Control 1 error	Surface potential is not adjusted satisfactory by the Auto SP Control.	
E-2141	Density sensor 1 error	Adjustment for LED is failed during Density Lock.	
E-2142	Auto Density Control 1 error	Density is not adjusted satisfactory by the Auto Density Control.	
E-2150	Developer unit 1 missing error	“Developer status signal” shows “L” when every door is closed.	
E-2161	Head 1 error (LED head unit 1)	Initialization of LED Head is failed 6 times at turning on or when recovered from the Cold Sleep.	
E-2162	Head 2 error (LED head unit 1)	Initialization of LED Head is failed 6 times at turning on or when recovered from the Cold Sleep.	
E-2163	Head 3 error (LED head unit 1)	Initialization of LED Head is failed 6 times at turning on or when recovered from the Cold Sleep.	
E-2211	Drum motor 2 error	“Abnormal output signal” shows “H” for longer than 100msec.	
E-2213	Developer press motor 2 error	(1) Developer Unit is not placed to the setting position although 9 seconds has passed. (2) Developer Unit is not separated although 9 seconds has passed.	
E-2214	Image corona 2 cleaning error (Delay)	Wire Cleaner does not arrive at another end within 70 seconds since the start of cleaning.	
E-2215	Image corona 2 cleaning error (Early)	Wire Cleaner arrives at another end within 10 seconds since the start of cleaning.	
E-2216	Image corona 2 cleaning error (Over current)	“Lock detection signal“ is “H” continuously for longer than 1 second when the motor is operating.	
E-2217	Toner cartridge motor 2 error	“Lock detection signal” is lower than 0.5V continuously for longer than 1 second when the motor is operating.	
E-2221	Image corona 2 output error	“Abnormal output signal” shows “H” for longer than 100msec.	
E-2222	Transfer corona 2 output error	“Abnormal output signal” shows “H” for longer than 100msec.	
E-2223	Separation corona 2 output error	“Abnormal output signal” shows “H” for longer than 100msec.	
E-2224	Developer bias 2 output error	“Abnormal output signal” shows “H” for longer than 100msec.	
E-2232	Auto SP Control 2 error	Surface potential is not adjusted satisfactory by the Auto SP Control.	
E-2241	Density sensor 2 error	Adjustment for LED is failed during Density Lock.	
E-2242	Auto Density Control 2 error	Density is not adjusted satisfactory by the Auto Density Control.	
E-2250	Developer unit 2 missing error	“Developer status signal” shows “L” when every door is closed.	
E-2261	Head 1 error (LED head unit 2)	Initialization of LED Head is failed 6 times at turning on or when recovered from the Cold Sleep.	

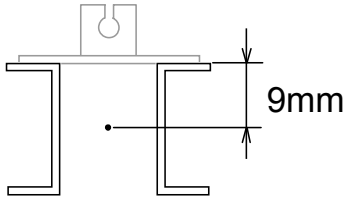
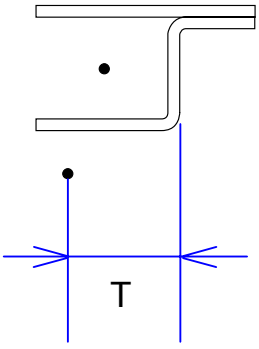
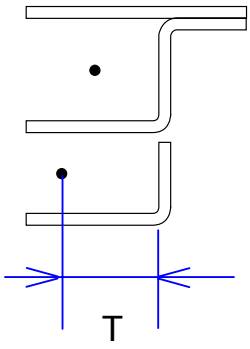
Error Code	Error Name	Error conditions	Remarks
E-2262	Head 2 error (LED head unit 2)	Initialization of LED Head is failed 6 times at turning on or when recovered from the Cold Sleep.	
E-2263	Head 3 error (LED head unit 2)	Initialization of LED Head is failed 6 times at turning on or when recovered from the Cold Sleep.	
E-2311	Drum motor 3 error	“Abnormal output signal” shows “H” for longer than 100msec.	
E-2313	Developer press motor 3 error	(1) Developer Unit is not placed to the setting position although 9 seconds has passed. (2) Developer Unit is not separated although 9 seconds has passed.	
E-2314	Image corona 3 cleaning error (Delay)	Wire Cleaner does not arrive at another end within 70 seconds since the start of cleaning.	
E-2315	Image corona 3 cleaning error (Early)	Wire Cleaner arrives at another end within 10 seconds since the start of cleaning.	
E-2316	Image corona 3 cleaning error (Over current)	“Lock detection signal“ is “H” continuously for longer than 1 second when the motor is operating.	
E-2317	Toner cartridge motor 3 error	“Lock detection signal” is lower than 0.5V continuously for longer than 1 second when the motor is operating.	
E-2321	Image corona 3 output error	“Abnormal output signal” shows “H” for longer than 100msec.	
E-2322	Transfer corona 3 output error	“Abnormal output signal” shows “H” for longer than 100msec.	
E-2323	Separation corona 3 output error	“Abnormal output signal” shows “H” for longer than 100msec.	
E-2324	Developer bias 3 output error	“Abnormal output signal” shows “H” for longer than 100msec.	
E-2332	Auto SP Control 3 error	Surface potential is not adjusted satisfactory by the Auto SP Control.	
E-2341	Density sensor 3 error	Adjustment for LED is failed during Density Lock.	
E-2342	Auto Density Control 3 error	Density is not adjusted satisfactory by the Auto Density Control.	
E-2350	Developer unit 3 missing error	“Developer status signal” shows “L” when every door is closed.	
E-2361	Head 1 error (LED head unit 3)	Initialization of LED Head is failed 6 times at turning on or when recovered from the Cold Sleep.	
E-2362	Head 2 error (LED head unit 3)	Initialization of LED Head is failed 6 times at turning on or when recovered from the Cold Sleep.	
E-2363	Head 3 error (LED head unit 3)	Initialization of LED Head is failed 6 times at turning on or when recovered from the Cold Sleep.	
E-2411	Drum motor 4 error	“Abnormal output signal” shows “H” for longer than 100msec.	
E-2413	Developer press motor 4 error	(1) Developer Unit is not placed to the setting position although 9 seconds has passed. (2) Developer Unit is not separated although 9 seconds has passed.	
E-2414	Image corona 4 cleaning error (Delay)	Wire Cleaner does not arrive at another end within 70 seconds since the start of cleaning.	
E-2415	Image corona 4 cleaning error (Early)	Wire Cleaner arrives at another end within 10 seconds since the start of cleaning.	
E-2416	Image corona 4 cleaning error (Over current)	“Lock detection signal“ is “H” continuously for longer than 1 second when the motor is operating.	
E-2417	Toner cartridge motor 4 error	“Lock detection signal” is lower than 0.5V continuously for longer than 1 second when the motor is operating.	

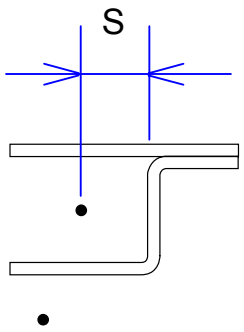
Error Code	Error Name	Error conditions	Remarks
E-2421	Image corona 4 output error	“Abnormal output signal” shows “H” for longer than 100msec.	
E-2422	Transfer corona 4 output error	“Abnormal output signal” shows “H” for longer than 100msec.	
E-2423	Separation corona 4 output error	“Abnormal output signal” shows “H” for longer than 100msec.	
E-2424	Developer bias 4 output error	“Abnormal output signal” shows “H” for longer than 100msec.	
E-2432	Auto SP Control 4 error	Surface potential is not adjusted satisfactory by the Auto SP Control.	
E-2441	Density sensor 4 error	Adjustment for LED is failed during Density Lock.	
E-2442	Auto Density Control 4 error	Density is not adjusted satisfactory by the Auto Density Control.	
E-2450	Developer unit 4 missing error	“Developer status signal” shows “L” when every door is closed.	
E-2461	Head 1 error (LED head unit 4)	Initialization of LED Head is failed 6 times at turning on or when recovered from the Cold Sleep.	
E-2462	Head 2 error (LED head unit 4)	Initialization of LED Head is failed 6 times at turning on or when recovered from the Cold Sleep.	
E-2463	Head 3 error (LED head unit 4)	Initialization of LED Head is failed 6 times at turning on or when recovered from the Cold Sleep.	
E-A001	Flash memory writing error		Backup Rewriting
E-A010	IO board A communication error	Communication error with I/O PCB occurs.	
E-A011	IO board B communication error	Communication error with I/O PCB occurs.	

7. 2 Troubleshooting - Image Quality

7. 2. 1 Basic Image Adjustment

The followings are the standard settings of image creation components.
When a defective image is printed out, please check if these settings are correct.

Component	Checking point	Designated voltage	Way of adjustment	Height of Corona Wire
Image Corona	CP11 (+) CPCOM (-)	1.3 +/-0.05VDC	VR101	Height of Image Corona Wire is **9mm** for all of CMYK. 
Transfer Corona	CP21 (+) CP22 (-)	(For film) 1.2mA : K 1.2mA : C 1.1mA : M 1.0mA : Y (For other types) 1.0mA commonly	Service mode	Heights of Transfer Corona Wire (T) are; **13mm : K** **12mm : C** **11mm : M** **11.5mm : Y**  For KCM : Measure the distance between Corona Wire and **OUTSIDE** of the house.  For Y : Measure the distance between Corona Wire and **INSIDE** of the house.

Component	Checking point	Designated voltage	Way of adjustment	Height of Corona Wire
Separation Corona (AC)	CP31 (+) CPCOM (-)	4.6 +/-0.05V	VR302	Height of Separation Corona Wire (S) is **11.5mm** for all of CMYK. 
Separation Corona (DC)	CP33 (+) Ground (-)	-220 +/-5VDC	VR303	
Negative Developer Roller Bias	OUTPUT2 (+) Ground (-)	Automatically adjusted between -230 to -300	(Auto)	
Positive Developer Roller Bias	OUTPUT2 (+) Ground (-)	-	-	
Toner Supply Roller Bias	OUTPUT1 (+) OUTPUT2 (-)	-100 +/-3VDC	VR601	
Blade Roller Bias (Center)	OUTPUT3 (+) OUTPUT2 (-)	-50 +/-3VDC	VR501	
Blade Roller Bias (Both sides)	OUTPUT3 (+) OUTPUT2 (-)	+150 +/-3VDC	VR801	
Grid Bias	OUTPUT (+) Ground (-)	-520 V(Automatically adjusted between -450 to -650)	(Auto)	
Separation Guide	OUTPUT (+) Ground (-)	-800V +/-20V	Service mode	
Attraction Corona	Connector pin (+) Ground (-)	1.5 to 2.3mA	Service mode	

7. 2. 2 Cause (suspicious part) for a frequent image

If a defective image appears on the print frequently with keeping a constant interval, please check the length of interval to quickly find the suspicious part.

Interval	Suspicious part
141.2mm	Developer Roller
190mm	Fuser Roller
212mm	Toner Supply Roller
255mm	Blade Roller
314mm	Drum

7. 2. 3 Countermeasures - Image Quality

7. 2. 3. 1 Halftone is light (or dark)

Cause	Checking order	Checking	Result	Treatment
LED Head	1	Is the Lens Array of LED Head dirty?	Yes	Clean it.
Paper	2	Can you fix the problem if you use a newly unpacked paper?	Yes	1. If the paper was humidified, instruct the customer of the way store the paper. 2. If the paper was not the specified one, explain the customer that some image problem may occur in that case.
Image Corona	3	Is the Image Corona dirty?	Yes	Clean each Corona Wire, Grid Plate and Corona Housing. Replace the Corona Wire or Grid Plate if it is too dirty.
	4	Is the height of Corona Wire abnormal as it is placed out of the desired position. (For example it is not in the setting groove.)	Yes	Correct it.
	5	Is the input current to the Image Corona correctly set to -1.3 +/- 0.05mA?	No	Readjust it. See [4.3.1 Image Corona (Output voltage to Image Corona)] on page 4-50.
Setting of Image Enhance	6	Is a proper Image Enhance Level selected? (If the image is not enhanced enough, the halftone tends to look light.)	No	Set it to a proper level.
Target Surface Potential	7	Is the setting of Target Surface Potential proper? (If it is too high, the image becomes light.)	No	Adjust it properly.
Auto Density Control	8	Is the Auto Density Control set to ON?	No	Set it to ON.
Density Sensor	9	Is the Density Sensor dirty?	Yes	Clean it.
Eraser Lamp	10	Does the Eraser Lamp light properly?	No	1. Check the wire connected to the Eraser Lamp. 2. Check or replace the Eraser Lamp.
Transfer Corona	11	Is the Transfer / Separation Corona dirty?	Yes	Clean each Corona Wire and housing, or replace the Corona Wire if it is too dirty.
	12	Is the input voltage to the Transfer Corona correct?	No	Readjust it. See 4.3.2 Transfer Corona (Analog voltage & output voltage to Transfer Corona) [] on page 4-53.
Contact points of Developer Bias	13	Is each Electrode Plate on the right of the Developer Unit surely contacted to the Electrode Plate on the machine side?	No	Try to install the Developer Unit so that they are contacted each other. And supply the conductive grease to the Electrode Plates.
Set position of Developer Unit	14	Is the excentric cam (Developer Press Cam) stayed at the correct position with pressing the Developer Unit to the Drum?	No	Check its driving mechanism and motor.
Developer Unit	15	Is Roller Developer evenly covered with the toner?	No	Overhaul the Developer and find the cause.
HVP	16	Is proper voltage supplied to each roller of the Developer Unit? (Chek it referring to the concerning pages of [4.3 Check & Adjustment of Analog Output from HV Power Supply])	No	Adjust the voltage properly.

Cause	Checking order	Checking	Result	Treatment
Developer Bias	17	Cancel the Auto Density Control, adjust the Developer Bias properly, and take printing. Is the image enough dense when printed while cancelling the Auto Density Control?	Yes	Readjust the Target Density.
Main PCB	18	Can the problem be fixed by replacing the Main PCB?	Yes	OK
Drum	19	Can the problem be fixed by replacing the Drum?	Yes	OK

7. 2. 3. 2 Halftone and solid images are too light

Cause	Checking order	Checking	Result	Treatment
	1	Turn off the machine in the middle of printing, and then check the toner image on the Drum. Is the toner image looks normal?	Yes	Go on to the step 3.
			No	Go on to the step 8.
Paper	2	Can the problem be fixed by using a newly unpacked paper?	Yes	1. Instruct the user of the correct way of storing the media. 2. If the media is not a recommended one, explain the user that some image problem may occur in that case.
Transfer Corona	3	Is the Transfer/Separation Corona installed to the machine correctly?	No	Install it correctly.
	4	Is the high voltage of Transfer Corona leaking?	Yes	Clean the Transfer Corona.
	5	Is the resistance of Lead Wire about 10 kilo ohm, which connects the HV Power Supply and the Transfer Corona?	No	Replace the Lead Wire.
	6	Is the input voltage to the Transfer Corona correct?	No	Readjust it. See [4.3.2 Transfer Corona (Analog voltage & output voltage to Transfer Corona)] on page 4-53.
	7	Was it impossible to adjust the input voltage to the Transfer Corona in the above procedure 6?	Yes	Replace the Main PCB.
Developer Unit	8	Is each Electrode Plate on the right of the Developer Unit surely contacted to the Electrode Plate on the machine side?	No	Try to install the Developer Unit so that they are contacted each other. And supply the conductive grease to the Electrode Plates.
	9	Is Roller Developer evenly covered with the toner?	No	Overhaul the Developer and find the cause.
	10	Can electricity pass through from the electrode plates to each roller of the Developer?	No	Correct it so that it should be surely contacted to the roller.
	11	Is the excentric cam (Developer Press Cam) stayed at the correct position?	No	Check its driving mechanism and motor.
	12	Is enough toner is stored in the Developer Unit?	No	Check the Toner Sensor and the harness.
	13	Is proper voltage supplied to each roller of the Developer Unit? (Chek it referring to the concerning pages of [4.3 Check & Adjustment of HV Power Supply])	No	Adjust the voltage properly.
	14	Was it impossible to adjust the voltage to each roller of Developer Unit in the above procedure 13?	Yes	Replace the Main PCB.
Drum	15	Can the problem be fixed by replacing the Drum?	Yes	OK

Cause	Checking order	Checking	Result	Treatment
Auto Density Control	16	Is the Auto Density Control set to ON?	No	Set to ON (standard).
	17	Is the Density Sensor dirty?	Yes	Clean it.
	18	Cancel the Auto Density Control, adjust the Developer Bias properly, and take printing. Is the image enough dense when printed while cancelling the Auto Density Control?	Yes	Readjust the Target Density.
	19	Is the value specified to the following service Modes same? Code : 8045 804F to 8052	No	Specify the same proper value to them.

7. 2. 3. 3 Density is uneven

Cause	Checking order	Checking	Result	Treatment
Image Corona	1	Is the Image Corona dirty?	Yes	Clean the Image Corona, or replace the Corona Wire.
	2	Is the height of Corona Wire different between left and right? (It may not be set into its correct setting position.)	Yes	Adjust the height properly.
Installation of Developer Unit	3	Is Roller Developer evenly covered with the toner?	No	Clean Blade Roller.
	4	Is the toner accumulating evenly in the Developer Unit?	No	Level the machine correctly.
	5	Try to re-tension Blade Roller correctly. Is the problem fixed?	Yes	OK
Dirt of LED Head	6	Is the Lens Array dirty	Yes	Clean it.
Eraser Lamp	7	Are all LED of the Eraser Lamp light properly during the print?	No	Replace the Eraser Lamp.
Main PCB	8	Can the problem be fixed by replacing the Main PCB?	Yes	OK
LED Head	9	Can the problem be fixed by replacing the LED Head?	Yes	OK

7. 2. 3. 4 Totally appeared foggy image

Cause	Checking order	Checking	Result	Treatment
Auto SP Control	1	Is the Auto SP Control set to ON?	No	Set tit to ON.
Surface Potential Sensor	2	Confirm the Target Surface Potential is set to the correct value, then print out a complete white pattern while checking the input from the Surface Potential Sensor in the following Service mode. Code : 001 (Input from Surface Potential Sensor 1) 002 (Input from Surface Potential Sensor 2) 003 (Input from Surface Potential Sensor 3) 004 (Input from Surface Potential Sensor 4) Is the input value from the Surface Potential Sensor same with the Target Surface Potential?	No	Check the Surface Potential Sensor
	3	Cancel the Auto Density Control, and set the Developer Bias to “62” on the GUI. Is the image improved?	Yes	Go to the following 4.
			No	Go to the following 5.
Target Density	4	Set the Auto Density Control to ON, and clean the Density Sensor. Is the image improved?	No	Adjust the following service mode correctly. 8045 to 804E 804F to 8052 Then take Density Lock operation ro set the Target Density correctly.
Developer Unit	5	Try to re-tension Blade Roller correctly. Is the problem fixed?	Yes	OK
	6	Is proper voltage supplied to each roller of the Developer Unit? (Check it referring to the concerning pages of [4.3 Check & Adjustment of Analog Output from HV Power Supply])	No	Adjust the voltage properly.
	7	Is the high voltage lead connected correctly?	No	Connect it.
	8	Can electricity pass through from the electrode plates to each roller of the Developer?	No	Correct it so that it should be surely contacted to the roller.
	9	Is the quantity of toner in the Developer Unit normal?	No	Check the Toner Sensor and its harness.

7. 2. 3. 5 Vertical thick line that looks not clear

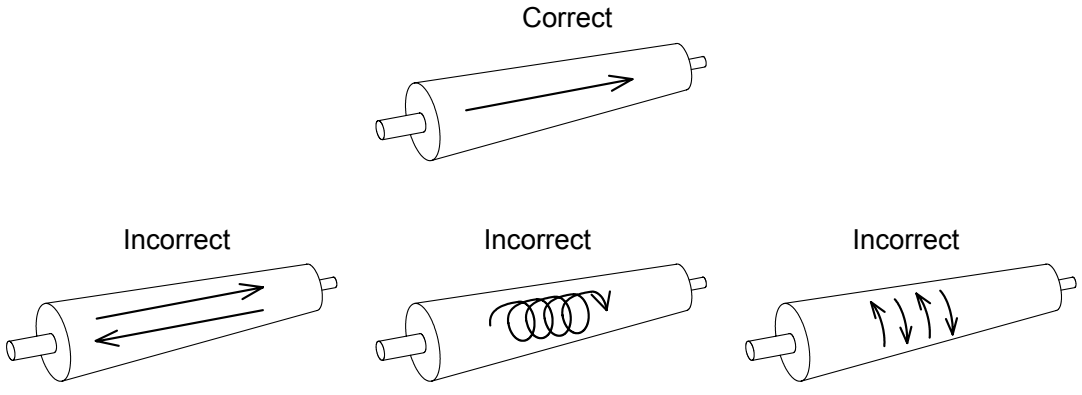
Cause	Checking order	Checking	Result	Treatment
Image Corona	1	Is the Image Corona dirty?	Yes	Clean each Corona Wire, Grid Plate and Corona Housing. Replace the Corona Wire or Grid Plate if it is too dirty.
	2	Is the Wire Cleaner placed at the end of the unit?	No	Check if there is any abnormality on the driving mechanism of Wire Cleaner, such as the breakage of Wire Cleaning Motor or distortion of sender shaft.
	3	Is the wire cleaning operation completed within 90 seconds?	No	Check if there is any abnormality on the driving mechanism of Wire Cleaner, such as the breakage of Wire Cleaning Motor or distortion of sender shaft.
Developer Unit	4	Is Roller Developer evenly covered with the toner?	No	Overhaul the Developer Unit and check is there is any reason for this problem.

7. 2. 3. 6 Vertical thin line that looks clear

Cause	Checking order	Checking	Result	Treatment
Image Corona	1	Is there anything like filament on the Grid Plate? And is it contacted to the Drum?	Yes	Remove it.
		Is the Image Corona dirty?	Yes	Clean each Corona Wire, Grid Plate and Corona Housing. Replace the Corona Wire or Grid Plate if it is too dirty.
Foreign substance	2	Is there any foreign substance on the units around the Drum? And is it contacted to the Drum? (Check the Corona Units, LED Head or some other parts which is very close to the Drum.)	Yes	Remove it.
Drum	3	Is there any line or damage on the Drum, which is located corresponding with the position of vertical line on the print?	Yes	(1) In case of the line on the Drum, wipe it off with a soft dry cloth. (Be careful of the direction for wiping. See the following picture.) (2) Replace the Drum in case of the damage. (Be sure to find the cause of the damage before the replacement. Check some parts that are very close to the Drum, such as Corona Units, Transfer Guide or some other.)

⚠ NOTE

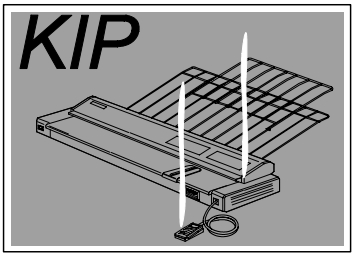
Wipe the surface always from one end to another (left to right, or right to left). Other way will damage the Drum.



7. 2. 3. 7 Vertical white line

Cause	Checking order	Checking	Result	Treatment
Image Corona	1	Is there anything like filament on the Grid Plate? And is it contacted to the Drum?	Yes	Remove it.
Dirt of the LED Head	2	Is the Lens Array of LED Head dirty?	Yes	Clean it with a soft dry cloth or lens cleaning cloth (paper).
Transfer/Separation Corona	3	Is the Corona Wire of Transfer / Separation Corona dirty?	Yes	Clean the Corona Wire and Corona Housing. Replace the Corona Wire if it is too dirty.
Entrance of Fuser Unit	5	Is there any foreign substance or dirt around the entrance area of the Fuser Unit? And is it touching on unfused image side of the media?	Yes	Clean it off
Drum	6	Is there any damage on the Drum, which is located corresponding with the position of white line on the print?	Yes	Find the cause for the damage, remove the cause, and replace the Drum. (Please check some parts that are very close to the Drum, such as Corona Units, Transfer Guide or some other.)
LED Head	7	Can the problem be fixed by replacing the LED Head?	Yes	OK

7. 2. 3. 8 Void of image

Cause	Checking order	Checking	Result	Treatment
Printing media	1	Can the problem be fixed by using a newly unpacked media?	Yes	Instruct the user of the correct way of storing the media.
Developer Unit	2	Does the void of image appear on the print constantly Keeping about 141.2mm of interval?	Yes	Check Roller Developer. 1. If it is dirty, wipe it off with a dry cloth. 2. Replace it if damaged.
		Does the void of image randomly run vertically as the following picture? 	Yes	Check if there is enough toner in the Developer Unit. If the toner quantity is abnormally small, check if the Toner Sensor is broken.
Drum	3	Does the void of image appear on the print constantly Keeping about 314mm of interval?	Yes	Check the Drum. (1) In case of the line on the Drum, wipe it off with a soft dry cloth. (Be careful of the direction for wiping. See NOTE on page 7-108.) (2) Replace the Drum in case of the damage. (Be sure to find the cause of the damage before the replacement. Check some parts that are very close to the Drum, such as Stripper Fingers, Corona Units, Transfer Guide or some other.)

7. 2. 3. 9 Dirt on the back of the print

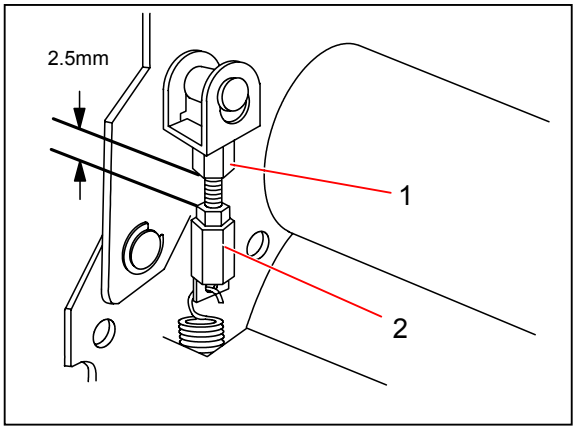
Cause	Checking order	Checking	Result	Treatment
Transfer Guide	1	Is the Transfer Guide dirty?	Yes	Clean it.
Media feeding area	2	Is there any suspicious dirt on the Roll Deck or Bypass Feeder?	Yes	Clean it, and also find the cause of this dirt.
Fuser Unit	3	Is the Fuser Entrance Guide dirty?	Yes	Clean it.
	4	Is there a melt toner around the fuser exit, such as Fuser Roller, Pressure Roller, fingers and other parts?	Yes	Clean it off.

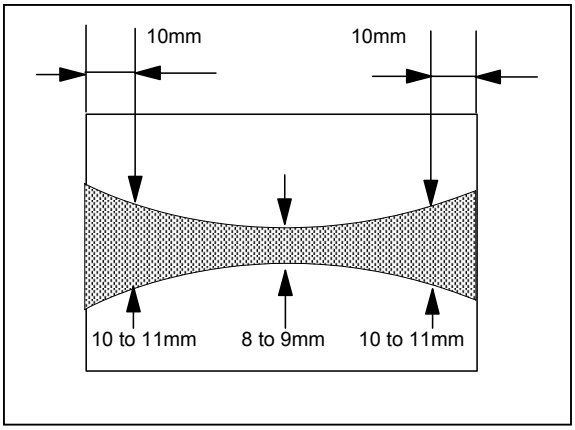
7. 2. 3.10 Poor fusing

Cause	Checking order	Checking	Result	Treatment
Paper	1	Is the selection of media type on the Media Selector and the actual media type correctly matched with each other?	No	Instruct the user to set the Media Selector correctly.
	2	Can the problem be fixed by using a newly unpacked paper?	Yes	1. Instruct the user of the correct way of storing the media. 2. If the media is not a recommended one, explain the user that some image problem may occur in that case.
Fusing temperature setting	3	Check the temperature detected by the Thermistor in the Control Data Indication Mode. Code : 000 (Temperature of Fuser Roller) Is the detected temperature correct?	Yes	See [(1) Fuser temperature rising error (E-0001)] on page 7-30 and follow the instruction.
	4	Check if the setting of fuser temperature is correct in the Adjustment Mode. Code : 00A (Fuser temperature for plain paper) 00b (Fuser temperature for tracing paper) 00C (Fuser temperature for film) 00d (Fuser temperature for glossy paper) Is the setting temperature correct?	No	Set the fuser temperature correctly.
	5	Is the pressure provided by the Pressure Roller correct?	No	Adjust it correctly. See the following NOTE.

⚠ NOTE

Fusing pressure can be adjusted rotating the distance between Spring Hook 1 (1) and Spring Hook 2 (2). Please adjust it to 2.5mm in usual case. The “Nip” is 8 to 9mm wide on the center and 10 to 11mm on both sides (Measure at 10mm from side edges of A0 or 36” paper).





7. 2. 3.11 Complete white (No image)

Cause	Checking order	Checking	Result	Treatment
Transfer Corona	1	Stop printing intentionally in the midst by opening any door, and check the Drum surface. Can any toner image be seen on the Drum?	Yes	Go to the following 2.
			No	Go to the following 3.
Transfer Corona and HVP	2	Check the voltage between the pin of orange wire of CN301 on the HVP and the ground. Is 24V supplied when the printer is ready?	No	Check the Fuse PCB.
		Check the voltage between the 2nd pin of CN302 on the HVP and the ground. Is the voltage “L” during printing?	No	Check the input harness from the Main PCB to the HVP.
		Is the Corona Wire dirty?	Yes	Clean it. Replace if too dirty.
		Is the tension of Corona Wire proper?	No	Give a proper tension.
		Is the high voltage lead line connected?	No	Connect it.
		Is the high voltage lead broken?	Yes	Replace it.
LED Head	3	Try to replace the connections of flat cables of suspected LED Head and correct one. Does the “correct” LED Head come to have the problem while the “suspected” one no longer has the problem?	Yes	Replace the “suspected” LED Head.
Developer Unit	4	Check the voltage between the 4th pin of CN302 on the HVP and the ground. Is the voltage “L” during printing?	No	Check the input harness from the Main PCB to the HVP.
	5	Is proper voltage supplied to each roller of the Developer Unit? (Chek it referring to the concerning pages of [4.3 Check & Adjustment of Analog Output from HV Power Supply])	No	Adjust the voltage properly.
	6	Is the high voltage lead line connected?	No	Connect it.
	7	Is the high voltage lead broken?	Yes	Replace it.

7. 2. 3.12 Complete solid image like “all black”

Cause	Checking order	Checking	Result	Treatment
Auto SP Control	1	Is the Auto SP Control cancelled?	No	Check the concerning LED Head.
	2	Is the print provided with side margin?	No	If no side margin is provided, go to the following 3.
			Yes	Go to the following 4.
LED Head or Main PCB	3	Try to replace the LED Head of defective color with the one of another color without problem. Does the problem come to occur on the replaced color?	Yes	Replace the LED Head.
			No	Replace the Main PCB.
Image Corona and HVP	4	Check the voltage between the pin of orange wire of CN301 on the HVP and the ground. Is 24V supplied when the printer is ready?	No	Check the Fuse PCB.
	5	Check the voltage between the 1st pin of CN302 on the HVP and the ground. Is the voltage “L” during printing?	No	Check the input harness from the Main PCB to the HVP.
	6	Check the voltage between CPCPM and CP11 on the HVP. Is 1.3 +/-0.05V supplied?	No	(1) If the voltage is 0V, replace the HVP. (2) If the voltage is the out of range, adjust it referring to [4.3.1 Check points of Image Corona] on page 4-50.
	7	Is the Corona Wire dirty?	Yes	Clean it. Replace if too dirty.
	8	Is the tension of Corona Wire proper?	No	Give a proper tension.
	9	Is the high voltage lead line connected?	No	Connect it.
	10	Is the high voltage lead broken?	Yes	Replace it.
	11	Measure the resistance between the Corona Rail and the ground. Is it 0 ohm? (Normally it is around 250 to 300kohm.)	Yes	Leak is occurred on the Corona Rail. (1) Check if there is any foreign substance on the Corona Rail. (2) Check is any harness is broken.

Chapter 8

Service Mode

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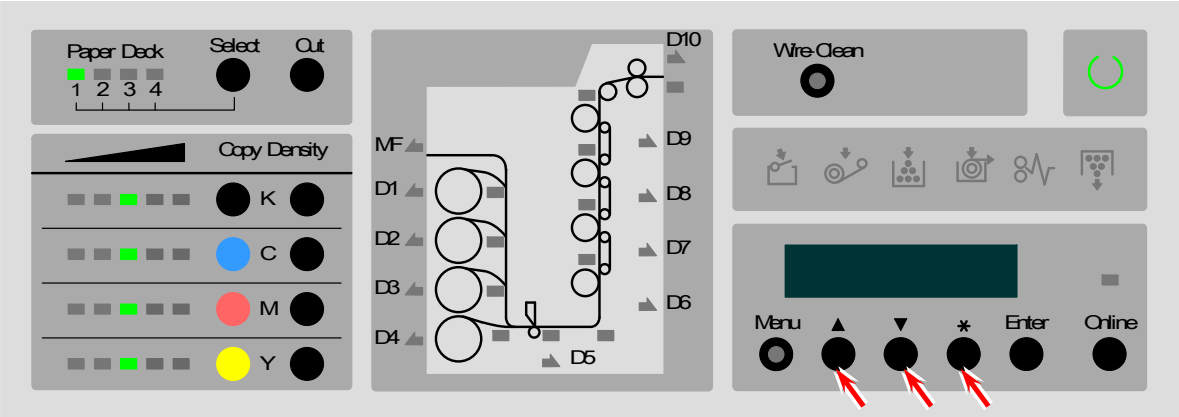
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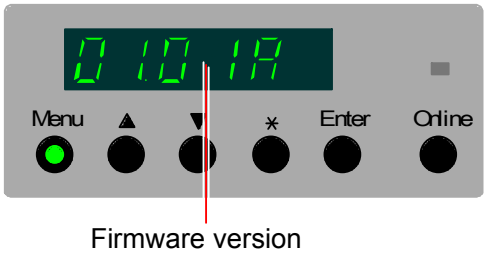
8. 1 General Outline of Service Mode

8. 1. 1 Entering Service Mode

1. Press and hold the [*] Key on the Operation Panel, and press as [▲], [▲], [▼] and [▲] to enter the Service Mode.



The firmware version is indicated right after entering the Service Mode. The Menu Key lights green when in the Service Mode.



8. 1. 2 Selecting each Sub Mode

Service Mode consists of 10 sub modes.

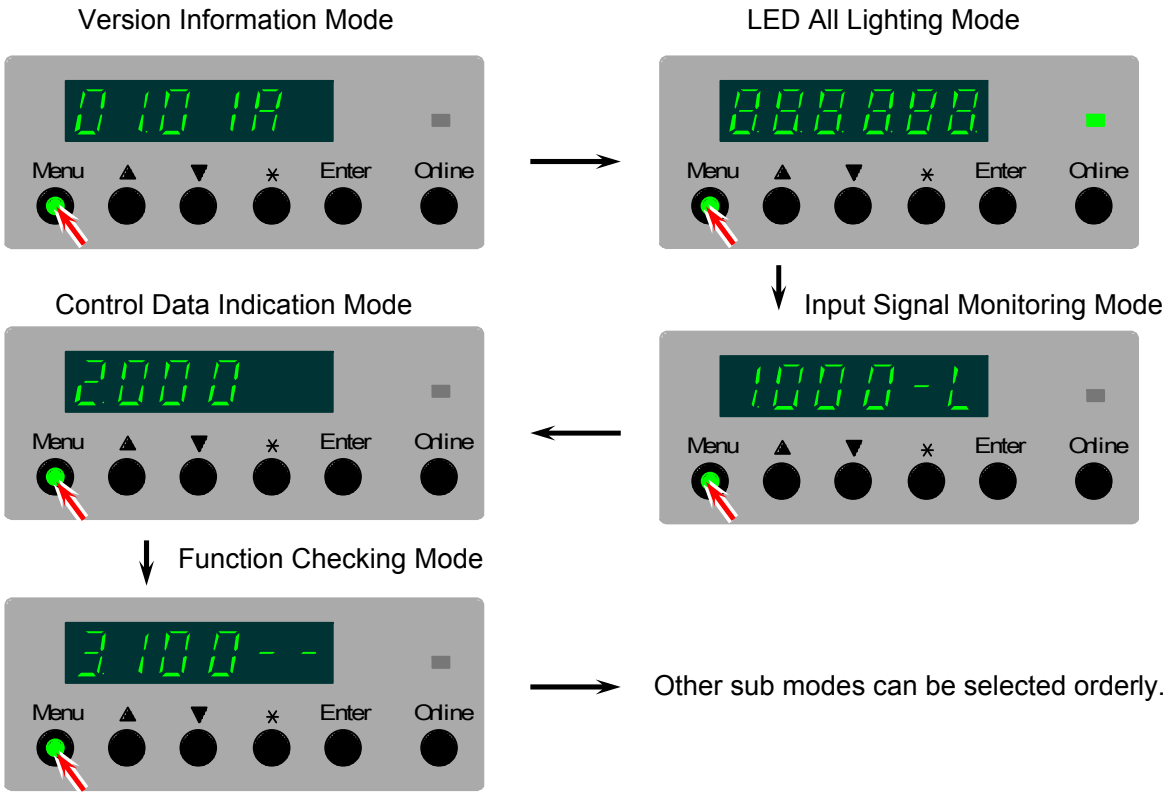
Sub Mode No.	Mode name	Description
-	Version Information Mode	Indicates the version of firmware and FPGA
-	LED All Lighting Mode	Turns on all LED indicators
1.	Input Signal Monitoring Mode	Available to confirm the status of input signals
2.	Control Data Indication Mode	Available to confirm the control data
3.	Function Checking Mode	Confirms the function of electric components
4.	Adjustment Mode	Adjusts several machine parameters
5.	Test Print Mode	Makes a test print
6.	Running Mode	Used only for development purpose on the manufacturer
7.	(Reserved)	Not used
8.	Special Mode	
9.	Color Registration Calibration Mode	Calibrates the Color Registration V and H data

Each Sub Mode is provided with individual Sub Mode Number, which is indicated on the far left digit on the Status Display. (It is not provided to the Version Information Mode and the LED All Lighting Mode.)



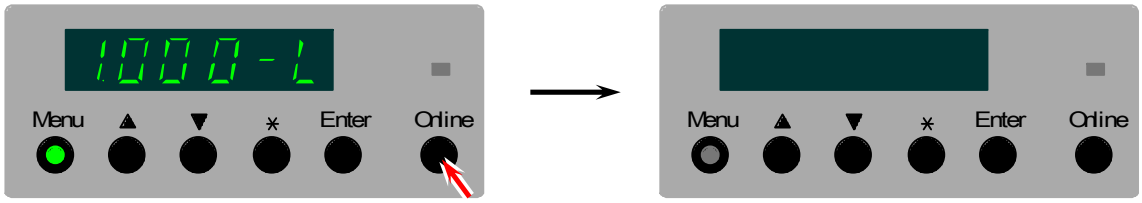
Sub Mode No. (Example : Input Signal Monitoring Mode)

After entering the Service Mode, select the required Sub Mode by indicating its Sub Mode Number on the Status Display pressing the Menu Key.



8. 1. 3 Cancelling the Service Mode

Press the Online Key to cancel the Service Mode. Green lamp of the Menu Key does off when the Service Mode is cancelled.



NOTE

(1) Service Mode can not be cancelled when you are changing any setting of the Adjustment Mode. Decide the setting value for that setting item at first, and cancel the Service Mode.

(2) Service Mode can not be cancelled when any electric component is being operated in either Function Checking Mode or Special Mode. Stop the operation of it at first, and cancel the Service Mode.

(3) Some setting items require restarting the KIP Color 80 after cancelling the Service Mode, while some other items do not require to do so. **To avoid the confusion or mistake, restart the KIP Color 80 every time after cancelling the Service Mode.**

8. 2 Version Information Mode

8. 2. 1 Function

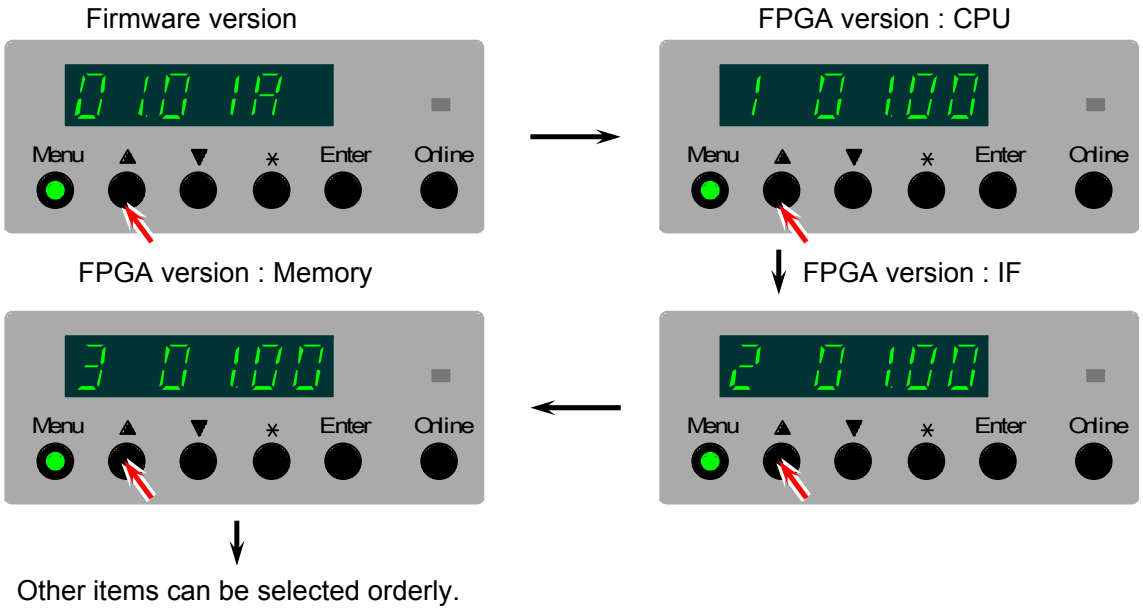
Firmware version and FPGA version are indicated, which can be used for analysing the cause of problem. Please report these versions when any abnormal problem occurs in the field.

The following versions are indicated.

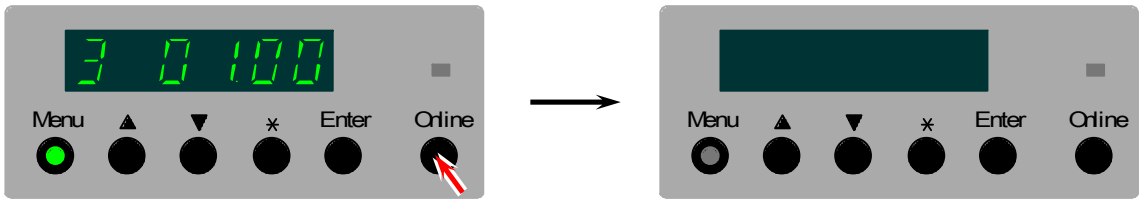
Item No.	Contents
(None)	Firmware
1	FPGA : CPU (on the DC Controller PCB)
2	FPGA : IF (on the DC Controller PCB)
3	FPGA : Memory (on the DC Controller PCB)
4	FPGA : MTF (on the DC Controller PCB)
5	FPGA : FTP (on the DC Controller PCB)
6	Interface A
7	Interface B
8	Filter (on the scanner board : not used presently)
9	Halftone (on the scanner board : not used presently)

8. 2. 2 Operation

1. The Version Information Mode is already selected right after entering the Service Mode. Select the required item pressing the [▲] and [▼] keys.



2. Press the Online Key to cancel the Service Mode.



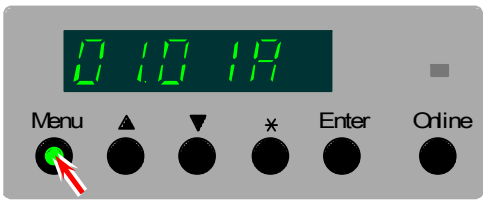
8. 3 LED All Lighting Mode

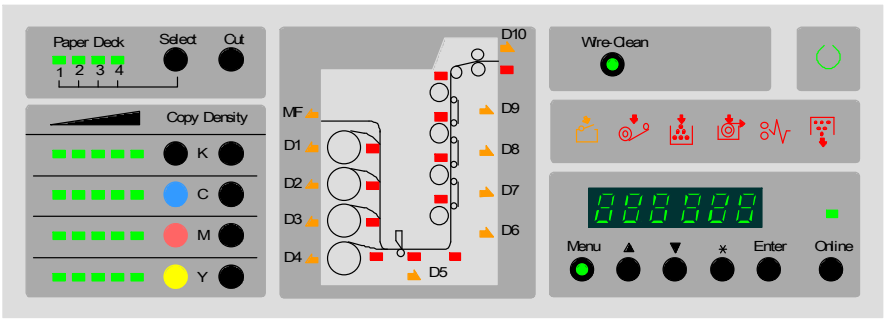
8. 3. 1 Function

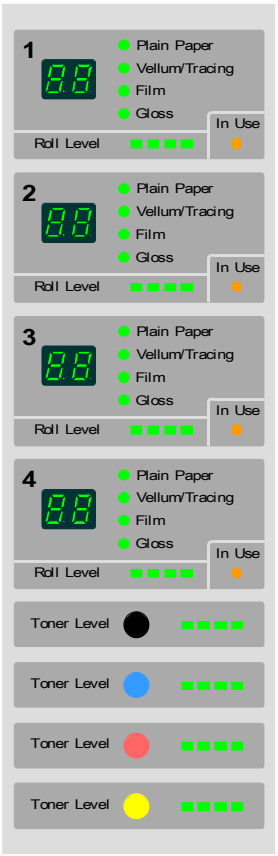
All LED indicators on both Operation panel and Media& Toner Information Panel light. It is possible if any LED is broken or not.

8. 3. 2 Operation

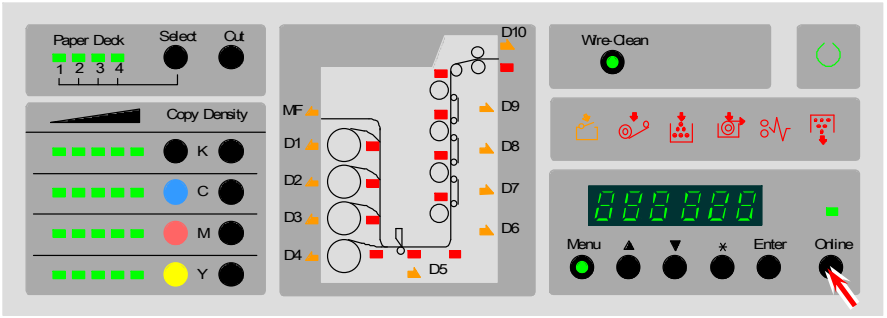
1. After entering the Service Mode, press the Menu Key once to select the LED All Lighting Mode. All LED indicators light.







2. Press the Online Key to cancel the Service Mode.



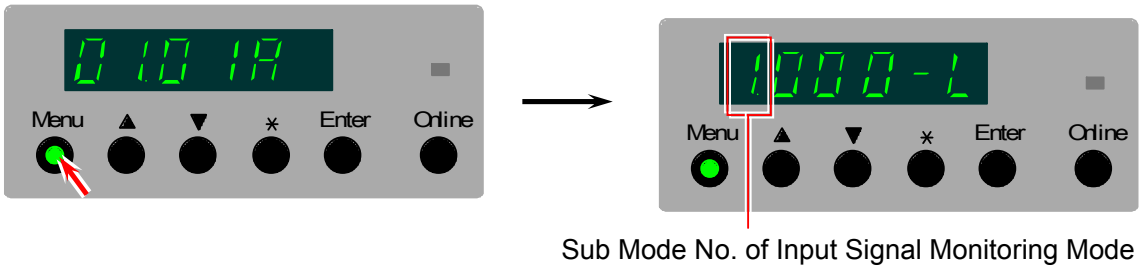
8. 4 Input Signal Monitoring Mode

8. 4. 1 Function

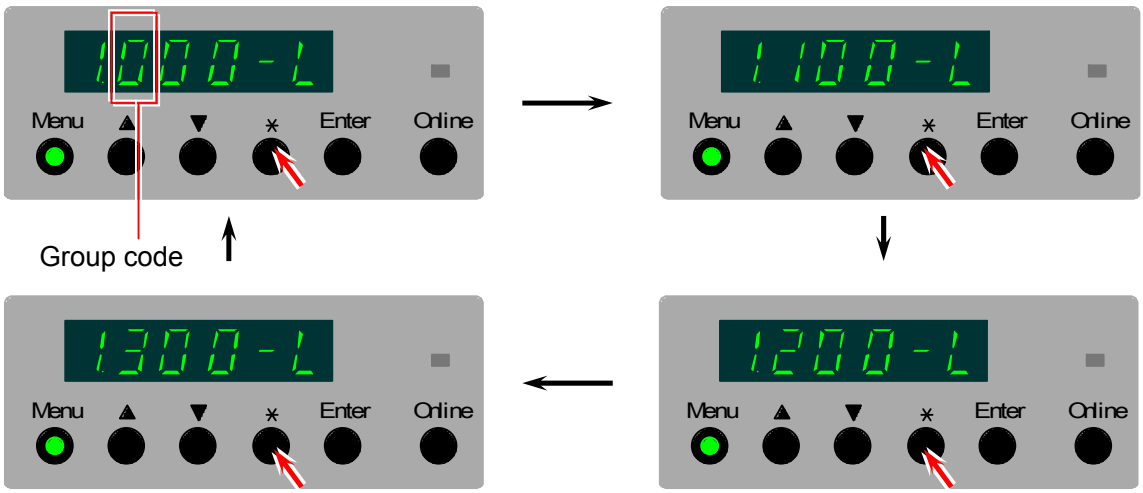
Whether or not a correct signal is input from each electric component can be confirmed. Monitoring of signal can be performed while operating the machine normally. Please refer to the list on the next page for the signals available to observe.

8. 4. 2 Operation

1. After entering the Service Mode, press the Menu Key twice to select the Input Signal Monitoring Mode. The Sub Mode number “1.” flashes on the far left digit.



2. Select the “group code” of the signal code pressing the [*] Key, which is indicated on the 2nd digit from the left.

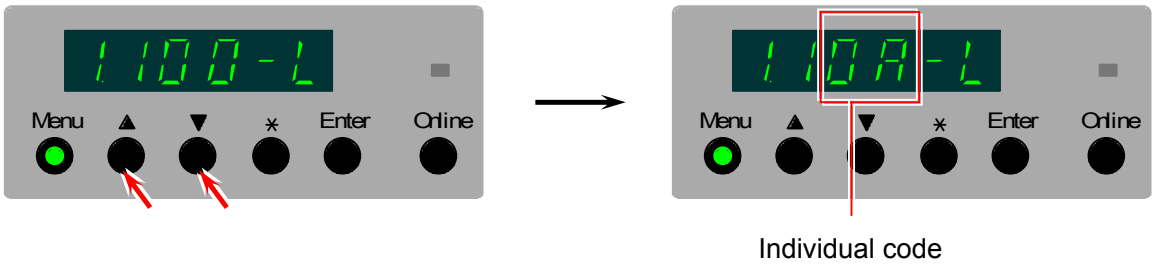


Reference

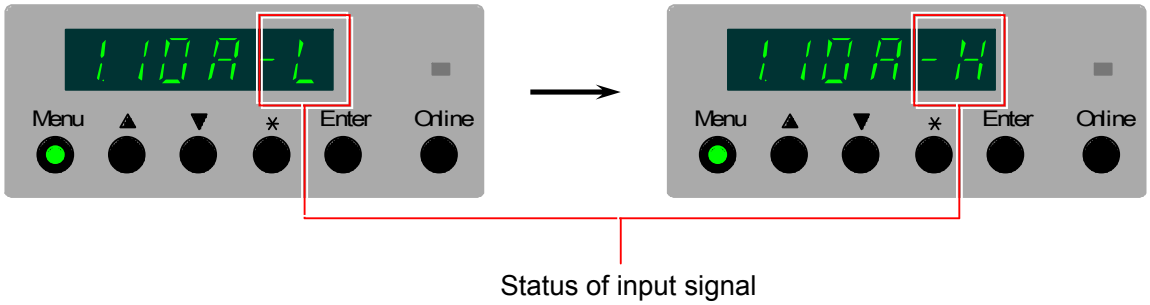
The signal code consists of 3 digits number or alphabet. The left one of them is the “group code” and the rest of 2 are “individual code”. For selecting the signal code “206” (Set of Waste Toner Box), for example, select the group code “2” first then the individual code “06”. Thus a fast selection of target item can be realized. The meaning of each group code is as follows. (Please refer to [8.4.3 Signal code list] on page 8-11 as well.)

Group code 0 : Sensor signal group
1 : Open signal group
2 : Error signal group
3 : Control signal group

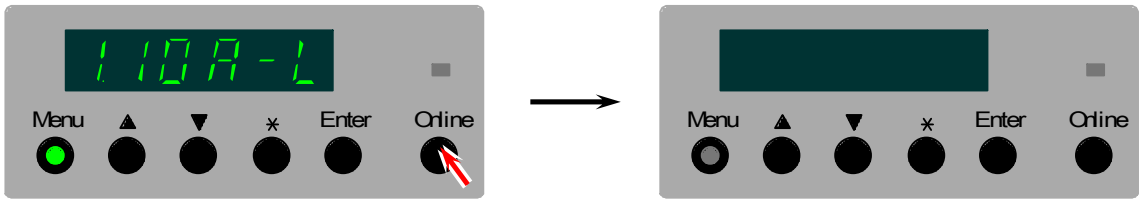
3. Select the “individual code” of the signal code with pressing [▲] and [▼] Key.



4. The alphabet on the right digit stands for the status of input signal. “L” means low and “H” means high. Confirm that it changes surely when the status of target item is changed. (Signal code “10A” in this example is for open/close of Fuser Cover. So open and close the Fuser Cover, and confirm the status changes.)



5. Press the Online Key to cancel the Service Mode



Refer to the next page for the description of each input signal.

8. 4. 3 Signal code list

Group code	Individual code	Target	Status
0 (Sensor signal group)	00	Print Timing Sensor	L : Detecting media
	01	Registration Front Sensor	L : Detecting media
	02	Registration Rear Sensor	L : Detecting media
	03	Exit Sensor	L : Detecting media
	04	Separation Sensor 1	L : Detecting media
	05	Separation Sensor 2	L : Detecting media
	06	Separation Sensor 3	L : Detecting media
	07	Separation Sensor 4	L : Detecting media
1 (Open signal group)	00	Bypass Feeder	L : Open
	01	Roll Deck 1	L : Open
	02	Roll Deck 2	L : Open
	03	Roll Deck 3	L : Open
	04	Roll Deck 4	L : Open
	05	Transportation Unit 1	L : Open
	06	Transportation Unit 2	L : Open
	07	Transportation Unit 3	L : Open
	08	Registration Unit (Transportation Unit 4)	L : Open
	09	Right Side Door	L : Open
	0A	Fuser Cover	L : Open
	0b	Fuser Upper Cover	L : Open
	0C	Waste Toner Door	L : Open
	0d	Process Unit 1	L : Open
	0E	Process Unit 2	L : Open
	0F	Process Unit 3	L : Open
	10	Process Unit 4	L : Open
	11	Interlock	L : Open
2 (Error signal group)	00	Fuser over temperature	H : Error
	01	Thermostat error	H : Error
	02	Developer Unit 1 does not exist	L : Not exist
	03	Developer Unit 2 does not exist	L : Not exist
	04	Developer Unit 3 does not exist	L : Not exist
	05	Developer Unit 4 does not exist	L : Not exist
	06	Waste Toner Box does not exist	L : Not exist
	07	Waste Toner full	H : Full
	08	HV Power Supply 1 Image Corona output error	H : Error
	09	HV Power Supply 1 Transfer Corona output error	H : Error
	0A	HV Power Supply 1 Separation Corona output error	H : Error
	0b	HV Power Supply 1 OUT2 negative bias output error	H : Error
	0C	HV Power Supply 2 Image Corona output error	H : Error
	0d	HV Power Supply 2 Transfer Corona output error	H : Error
	0E	HV Power Supply 2 Separation Corona output error	H : Error
	0F	HV Power Supply 2 OUT2 negative bias output error	H : Error
	10	HV Power Supply 3 Image Corona output error	H : Error
	11	HV Power Supply 3 Transfer Corona output error	H : Error
	12	HV Power Supply 3 Separation Corona output error	H : Error
	13	HV Power Supply 3 OUT2 negative bias output error	H : Error
	14	HV Power Supply 4 Image Corona output error	H : Error
	15	HV Power Supply 4 Transfer Corona output error	H : Error
	16	HV Power Supply 4 Separation Corona output error	H : Error
	17	HV Power Supply 4 OUT2 negative bias output error	H : Error

(Continues to the next page)

Group code	Individual code	Target	Status
3 (Control signal group)	00	Pulse of Web Motor Sensor	-
	01	Developer Press Sensor 1	H : Not pressed
	02	Developer Press Sensor 2	H : Not pressed
	03	Developer Press Sensor 3	H : Not pressed
	04	Developer Press Sensor 4	H : Not pressed
	05	Cutter Home Position Sensor	H : Home position
	06	Wire Cleaner Position Switch 1L	H : Left home position
	07	Wire Cleaner Position Switch 1R	H : Right home position
	08	Wire Cleaner Position Switch 2L	H : Left home position
	09	Wire Cleaner Position Switch 2R	H : Right home position
	0A	Wire Cleaner Position Switch 3L	H : Left home position
	0b	Wire Cleaner Position Switch 3R	H : Right home position
	0C	Wire Cleaner Position Switch 4L	H : Left home position
	0d	Wire Cleaner Position Switch 4R	H : Right home position
	0E	Stacker input	-
	0F	Toner Sensor 1 (Effective during printing)	L : Empty
	10	Toner Sensor 2 (Effective during printing)	L : Empty
	11	Toner Sensor 3 (Effective during printing)	L : Empty
	12	Toner Sensor 4 (Effective during printing)	L : Empty
	13	Power Switch OFF	H : Switch is OFF
	14	AC Main Switch OFF	H : Switch is OFF

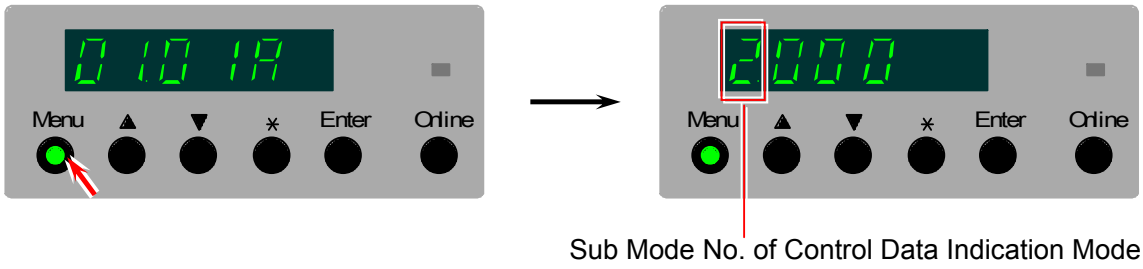
8. 5 Control Data Indication Mode

8. 5. 1 Function

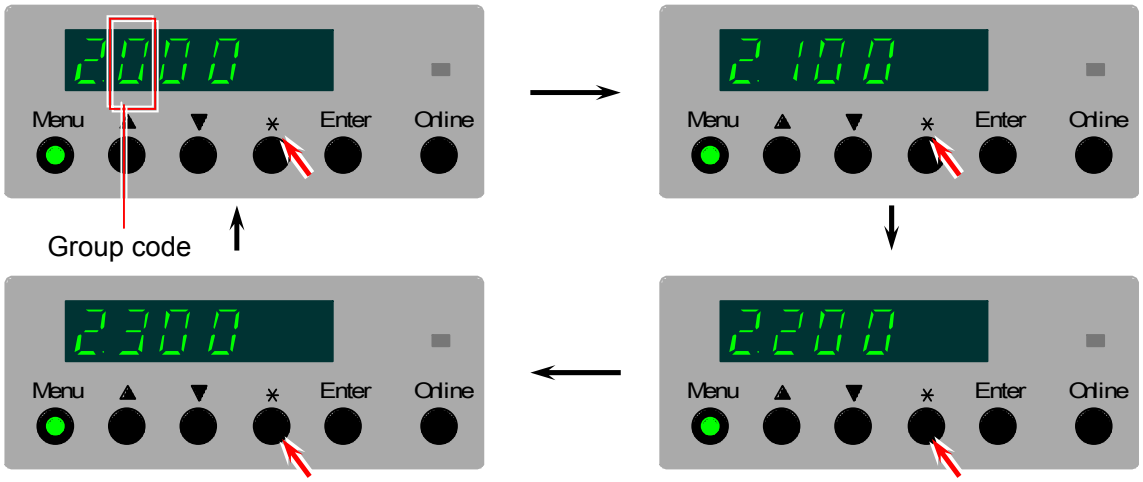
Several control data as analog data, sensor information, control information, and other items can be observed.

8. 5. 2 Operation

1. After entering the Service Mode, press the Menu Key 3 times to select the Control Data Indication Mode. The Sub Mode number “2.” flashes on the far left digit.



2. Select the “group code” of the control data code pressing the [*] Key.

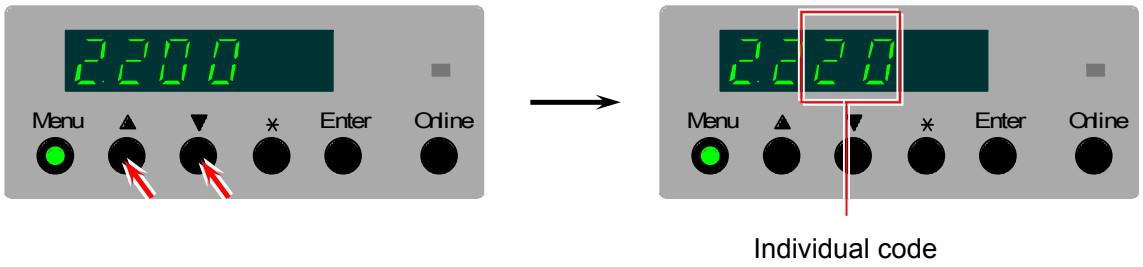


Reference

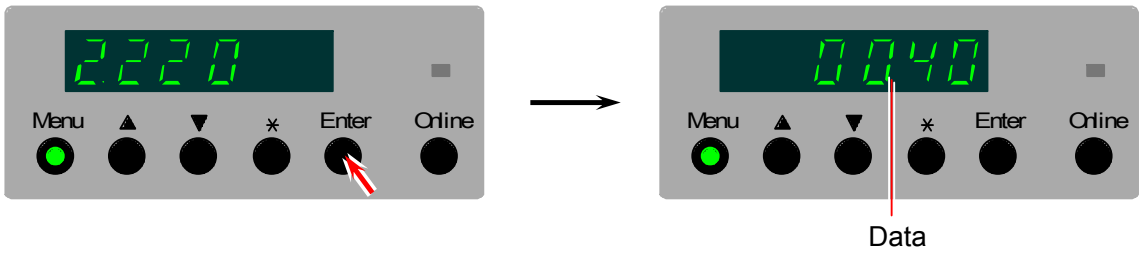
The control data code consists of 3 digits number or alphabet. The left one of them is the “group code” and the rest of 2 are “individual code”. For selecting the control data code “220” (Target density decided by Density Lock Process [Process 1]), for example, select the group code “2” first then the individual code “20”.
Thus a fast selection of target item can be realized. The meaning of each group code is as follows. (Please refer to [8.5.3 Control data code list] on page 8-15 as well.)

Group code 0 : General data group
1 : LED Head status data group
2 : Density control data group
3 : Surface potential control data group

3. Select the “individual code” of the control data code with pressing [▲] and [▼] Key.

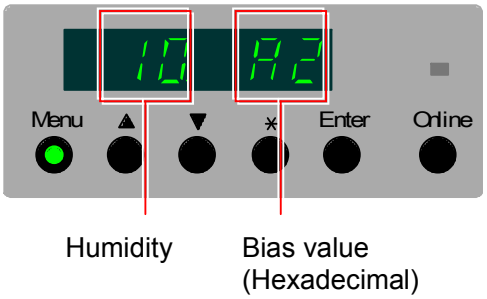


4. Press the Enter Key. The data of the selected control data code is indicated.

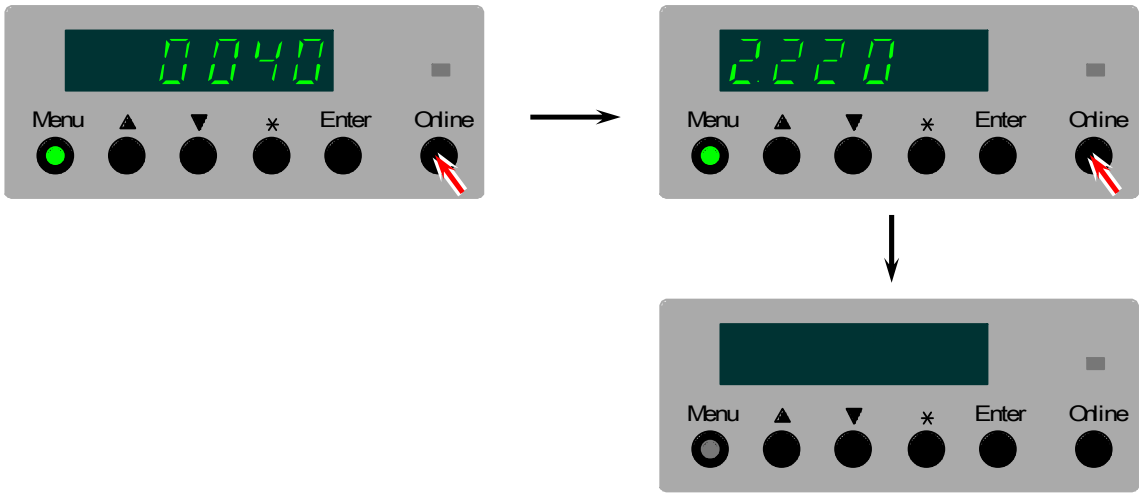


NOTE

When control data code “008” to “00C” are selected, “humidity” is indicated on the left half, and “Bias value” is indicated on the right by hexadecimal.



5. Press the Online Key to go back to “code selection”.
   - If necessary, select another control data code and observe the data.
   - Press the Online Key once again to cancel the Service Mode.



8. 5. 3 Control data list

Group code	Individual code	Target	Unit
0 (General data group)	00	Temperature of Fuser Roller	Centigrade
	01	Input from Surface Potential Sensor 1	Hexadecimal
	02	Input from Surface Potential Sensor 2	Hexadecimal
	03	Input from Surface Potential Sensor 3	Hexadecimal
	04	Input from Surface Potential Sensor 4	Hexadecimal
	05	Temperature of the interior of machine	Centigrade
	06	Connection of Stacker	0 : Not connected 1 : Connected
	07	Humidity of the interior of machine	%
	08	Output current to Transfer Corona Wire 1	Microampere
	09	Output current to Transfer Corona Wire 2	Microampere
	0A	Output current to Transfer Corona Wire 3	Microampere
	0b	Output current to Transfer Corona Wire 4	Microampere
	0C	Output voltage to Attraction Corona	- V
1 (Led Head status data group)	00	Status of Head 1 of LED Unit 1	Hexadecimal
	01	Status of Head 2 of LED Unit 1	Hexadecimal
	02	Status of Head 3 of LED Unit 1	Hexadecimal
	03	Status of Head 1 of LED Unit 2	Hexadecimal
	04	Status of Head 2 of LED Unit 2	Hexadecimal
	05	Status of Head 3 of LED Unit 2	Hexadecimal
	06	Status of Head 1 of LED Unit 3	Hexadecimal
	07	Status of Head 2 of LED Unit 3	Hexadecimal
	08	Status of Head 3 of LED Unit 3	Hexadecimal
	09	Status of Head 1 of LED Unit 4	Hexadecimal
	0A	Status of Head 2 of LED Unit 4	Hexadecimal
	0b	Status of Head 3 of LED Unit 4	Hexadecimal
2 (Density control data group)	00	Output from Left Density Sensor (Process 1)	Hexadecimal
	01	Output from Right Density Sensor (Process 1)	Hexadecimal
	02	Output from Left Density Sensor (Process 2)	Hexadecimal
	03	Output from Right Density Sensor (Process 2)	Hexadecimal
	04	Output from Left Density Sensor (Process 3)	Hexadecimal
	05	Output from Right Density Sensor (Process 3)	Hexadecimal
	06	Output from Left Density Sensor (Process 4)	Hexadecimal
	07	Output from Right Density Sensor (Process 4)	Hexadecimal
	08	Final output from Left Density Sensor when initializing the LED intensity in Density Lock Process (Process 1)	Hexadecimal
	09	Final output from Right Density Sensor when initializing the LED intensity in Density Lock Process (Process 1)	Hexadecimal
	0A	Final output from Left Density Sensor when initializing the LED intensity in Density Lock Process (Process 2)	Hexadecimal
	0b	Final output from Right Density Sensor when initializing the LED intensity in Density Lock Process (Process 2)	Hexadecimal
	0C	Final output from Left Density Sensor when initializing the LED intensity in Density Lock Process (Process 3)	Hexadecimal
	0d	Final output from Right Density Sensor when initializing the LED intensity in Density Lock Process (Process 3)	Hexadecimal
	0E	Final output from Left Density Sensor when initializing the LED intensity in Density Lock Process (Process 4)	Hexadecimal
	0F	Final output from Right Density Sensor when initializing the LED intensity in Density Lock Process (Process 4)	Hexadecimal
	10	Output current to the LED on the Left Density Sensor (Process 1)	Hexadecimal
	11	Output current to the LED on the Right Density Sensor (Process 1)	Hexadecimal
	12	Output current to the LED on the Left Density Sensor (Process 2)	Hexadecimal

Group code	Individual code	Target	Unit
2 (Density control data group)	13	Output current to the LED on the Right Density Sensor (Process 2)	Hexadecimal
	14	Output current to the LED on the Left Density Sensor (Process 3)	Hexadecimal
	15	Output current to the LED on the Right Density Sensor (Process 3)	Hexadecimal
	16	Output current to the LED on the Left Density Sensor (Process 4)	Hexadecimal
	17	Output current to the LED on the Right Density Sensor (Process 4)	Hexadecimal
	18	Output from Left Density Sensor when reading the density target in Density Lock Process (Process 1)	Hexadecimal
	19	Output from Right Density Sensor when reading the density target in Density Lock Process (Process 1)	Hexadecimal
	1A	Output from Left Density Sensor when reading the density target in Density Lock Process (Process 2)	Hexadecimal
	1b	Output from Right Density Sensor when reading the density target in Density Lock Process (Process 2)	Hexadecimal
	1C	Output from Left Density Sensor when reading the density target in Density Lock Process (Process 3)	Hexadecimal
	1d	Output from Right Density Sensor when reading the density target in Density Lock Process (Process 3)	Hexadecimal
	1E	Output from Left Density Sensor when reading the density target in Density Lock Process (Process 4)	Hexadecimal
	1F	Output from Right Density Sensor when reading the density target in Density Lock Process (Process 4)	Hexadecimal
	20	Target density decided by Density Lock Process (Process 1)	Hexadecimal
	21	Target density decided by Density Lock Process (Process 2)	Hexadecimal
	22	Target density decided by Density Lock Process (Process 3)	Hexadecimal
	23	Target density decided by Density Lock Process (Process 4)	Hexadecimal
	24	Developer Bias value when Auto Density Control is ON (Process 1)	- V
	25	Developer Bias value when Auto Density Control is ON (Process 2)	- V
	26	Developer Bias value when Auto Density Control is ON (Process 3)	- V
	27	Developer Bias value when Auto Density Control is ON (Process 4)	- V
	28	Final output from Left Density Sensor at the time of Auto Density Control Process (Process 1)	Hexadecimal
	29	Final output from Right Density Sensor at the time of Auto Density Control Process (Process 1)	Hexadecimal
	2A	Final output from Left Density Sensor at the time of Auto Density Control Process (Process 2)	Hexadecimal
	2b	Final output from Right Density Sensor at the time of Auto Density Control Process (Process 2)	Hexadecimal
	2C	Final output from Left Density Sensor at the time of Auto Density Control Process (Process 3)	Hexadecimal
	2d	Final output from Right Density Sensor at the time of Auto Density Control Process (Process 3)	Hexadecimal
	2E	Final output from Left Density Sensor at the time of Auto Density Control Process (Process 4)	Hexadecimal
	2F	Final output from Right Density Sensor at the time of Auto Density Control Process (Process 4)	Hexadecimal
	30	Success / failure of Auto Density Control Process (Process 1)	Hexadecimal
	31	History of the Developer Bias value in Auto Density Control Process (1st : Process 1)	- V
	32	History of the Developer Bias value in Auto Density Control Process (2nd : Process 1)	- V
	33	History of the Developer Bias value in Auto Density Control Process (3rd : Process 1)	- V
	34	History of the Developer Bias value in Auto Density Control Process (4th : Process 1)	- V

Group code	Individual code	Target	Unit
2 (Density control data group)	35	History of the Developer Bias value in Auto Density Control Process (5th : Process 1)	Hexadecimal
	36	History of the Developer Bias value in Auto Density Control Process (6th : Process 1)	Hexadecimal
	37	History of the output from Left Density Sensor in Auto Density Control Process (1st : Process 1)	Hexadecimal
	38	History of the output from Left Density Sensor in Auto Density Control Process (2nd : Process 1)	Hexadecimal
	39	History of the output from Left Density Sensor in Auto Density Control Process (3rd : Process 1)	Hexadecimal
	3A	History of the output from Left Density Sensor in Auto Density Control Process (4th : Process 1)	Hexadecimal
	3b	History of the output from Left Density Sensor in Auto Density Control Process (5th : Process 1)	Hexadecimal
	3C	History of the output from Left Density Sensor in Auto Density Control Process (6th : Process 1)	Hexadecimal
	3d	History of the output from Right Density Sensor in Auto Density Control Process (1st : Process 1)	Hexadecimal
	3E	History of the output from Right Density Sensor in Auto Density Control Process (2nd : Process 1)	Hexadecimal
	3F	History of the output from Right Density Sensor in Auto Density Control Process (3rd : Process 1)	Hexadecimal
	40	History of the output from Right Density Sensor in Auto Density Control Process (4th : Process 1)	Hexadecimal
	41	History of the output from Right Density Sensor in Auto Density Control Process (5th : Process 1)	Hexadecimal
	42	History of the output from Right Density Sensor in Auto Density Control Process (6th : Process 1)	Hexadecimal
	43	Success / failure of Auto Density Control Process (Process 2)	Hexadecimal
	44	History of the Developer Bias value in Auto Density Control Process (1st : Process 2)	- V
	45	History of the Developer Bias value in Auto Density Control Process (2nd : Process 2)	- V
	46	History of the Developer Bias value in Auto Density Control Process (3rd : Process 2)	- V
	47	History of the Developer Bias value in Auto Density Control Process (4th : Process 2)	- V
	48	History of the Developer Bias value in Auto Density Control Process (5th : Process 2)	- V
	49	History of the Developer Bias value in Auto Density Control Process (6th : Process 2)	- V
	4A	History of the output from Left Density Sensor in Auto Density Control Process (1st : Process 2)	Hexadecimal
	4b	History of the output from Left Density Sensor in Auto Density Control Process (2nd : Process 2)	Hexadecimal
	4C	History of the output from Left Density Sensor in Auto Density Control Process (3rd : Process 2)	Hexadecimal
	4d	History of the output from Left Density Sensor in Auto Density Control Process (4th : Process 2)	Hexadecimal
	4E	History of the output from Left Density Sensor in Auto Density Control Process (5th : Process 2)	Hexadecimal
	4F	History of the output from Left Density Sensor in Auto Density Control Process (6th : Process 2)	Hexadecimal
	50	History of the output from Right Density Sensor in Auto Density Control Process (1st : Process 2)	Hexadecimal
	51	History of the output from Right Density Sensor in Auto Density Control Process (2nd : Process 2)	Hexadecimal
	52	History of the output from Right Density Sensor in Auto Density Control Process (3rd : Process 2)	Hexadecimal
	53	History of the output from Right Density Sensor in Auto Density Control Process (4th : Process 2)	Hexadecimal
	54	History of the output from Right Density Sensor in Auto Density Control Process (5th : Process 2)	Hexadecimal

Group code	Individual code	Target	Unit
2 (Density control data group)	55	History of the output from Right Density Sensor in Auto Density Control Process (6th : Process 2)	Hexadecimal
	56	Success / failure of Auto Density Control Process (Process 3)	Hexadecimal
	57	History of the Developer Bias value in Auto Density Control Process (1st : Process 3)	- V
	58	History of the Developer Bias value in Auto Density Control Process (2nd : Process 3)	- V
	59	History of the Developer Bias value in Auto Density Control Process (3rd : Process 3)	- V
	5A	History of the Developer Bias value in Auto Density Control Process (4th : Process 3)	- V
	5b	History of the Developer Bias value in Auto Density Control Process (5th : Process 3)	- V
	5C	History of the Developer Bias value in Auto Density Control Process (6th : Process 3)	- V
	5d	History of the output from Left Density Sensor in Auto Density Control Process (1st : Process 3)	Hexadecimal
	5E	History of the output from Left Density Sensor in Auto Density Control Process (2nd : Process 3)	Hexadecimal
	5F	History of the output from Left Density Sensor in Auto Density Control Process (3rd : Process 3)	Hexadecimal
	60	History of the output from Left Density Sensor in Auto Density Control Process (4th : Process 3)	Hexadecimal
	61	History of the output from Left Density Sensor in Auto Density Control Process (5th : Process 3)	Hexadecimal
	62	History of the output from Left Density Sensor in Auto Density Control Process (6th : Process 3)	Hexadecimal
	63	History of the output from Right Density Sensor in Auto Density Control Process (1st : Process 3)	Hexadecimal
	64	History of the output from Right Density Sensor in Auto Density Control Process (2nd : Process 3)	Hexadecimal
	65	History of the output from Right Density Sensor in Auto Density Control Process (3rd : Process 3)	Hexadecimal
	66	History of the output from Right Density Sensor in Auto Density Control Process (4th : Process 3)	Hexadecimal
	67	History of the output from Right Density Sensor in Auto Density Control Process (5th : Process 3)	Hexadecimal
	68	History of the output from Right Density Sensor in Auto Density Control Process (6th : Process 3)	Hexadecimal
	69	Success / failure of Auto Density Control Process (Process 4)	Hexadecimal
	6A	History of the Developer Bias value in Auto Density Control Process (1st : Process 4)	- V
	6b	History of the Developer Bias value in Auto Density Control Process (2nd : Process 4)	- V
	6C	History of the Developer Bias value in Auto Density Control Process (3rd : Process 4)	- V
	6d	History of the Developer Bias value in Auto Density Control Process (4th : Process 4)	- V
	6E	History of the Developer Bias value in Auto Density Control Process (5th : Process 4)	- V
	6F	History of the Developer Bias value in Auto Density Control Process (6th : Process 4)	- V
	70	History of the output from Left Density Sensor in Auto Density Control Process (1st : Process 4)	Hexadecimal
	71	History of the output from Left Density Sensor in Auto Density Control Process (2nd : Process 4)	Hexadecimal
	72	History of the output from Left Density Sensor in Auto Density Control Process (3rd : Process 4)	Hexadecimal
	73	History of the output from Left Density Sensor in Auto Density Control Process (4th : Process 4)	Hexadecimal
	74	History of the output from Left Density Sensor in Auto Density Control Process (5th : Process 4)	Hexadecimal

Group code	Individual code	Target	Unit
2 (Density control data group)	75	History of the output from Left Density Sensor in Auto Density Control Process (6th : Process 4)	Hexadecimal
	76	History of the output from Right Density Sensor in Auto Density Control Process (1st : Process 4)	Hexadecimal
	77	History of the output from Right Density Sensor in Auto Density Control Process (2nd : Process 4)	Hexadecimal
	78	History of the output from Right Density Sensor in Auto Density Control Process (3rd : Process 4)	Hexadecimal
	79	History of the output from Right Density Sensor in Auto Density Control Process (4th : Process 4)	Hexadecimal
	7A	History of the output from Right Density Sensor in Auto Density Control Process (5th : Process 4)	Hexadecimal
	7b	History of the output from Right Density Sensor in Auto Density Control Process (6th : Process 4)	Hexadecimal
3 (Surface potential data group)	00	Grid Bias value when Auto SP Control Procedure is completed (Process 1)	- V
	01	Grid Bias value when Auto SP Control Procedure is completed (Process 2)	- V
	02	Grid Bias value when Auto SP Control Procedure is completed (Process 3)	- V
	03	Grid Bias value when Auto SP Control Procedure is completed (Process 4)	- V

8. 6 Function Checking Mode

8. 6. 1 Function

It is possible to operate each electric component individually to check if it works properly.
Also it is possible to check the operation of sensors and switches by checking the output signal.

8. 6. 2 Operation

Function Checking Mode is available to operate an electric component individually, and also to check the sensor/switch operation.

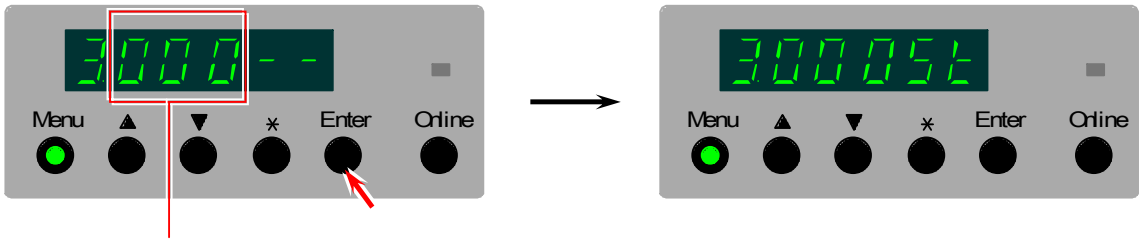
- See [8.6.2.1 Operating the electric component individually] in below when operating the electric component individually.
- When checking the sensor operation, see [8.6.2.2 Checking the operation of sensors/switches] on page 8-23 for the operation, and see [8.6.4 Description of the data indicated in sensor/switch operation check] on page 8-28 for the meaning of indicated data.

8. 6. 2. 1 Operating the electric component individually

NOTE

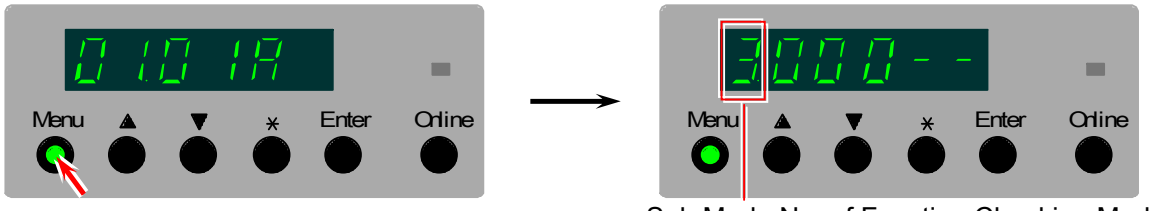
Some electric components like blowers will be operating always. If you will check the operation of such components, execute “All control off” first. All the components including such “always operating” components will be stopped.

- Select the check item code “000” and press the Enter Key to execute “All control off”.
- “ST” will be indicated when “All control off” is executed.
- Turn off/on the KC80 to cancel the “All control off” state correctly.



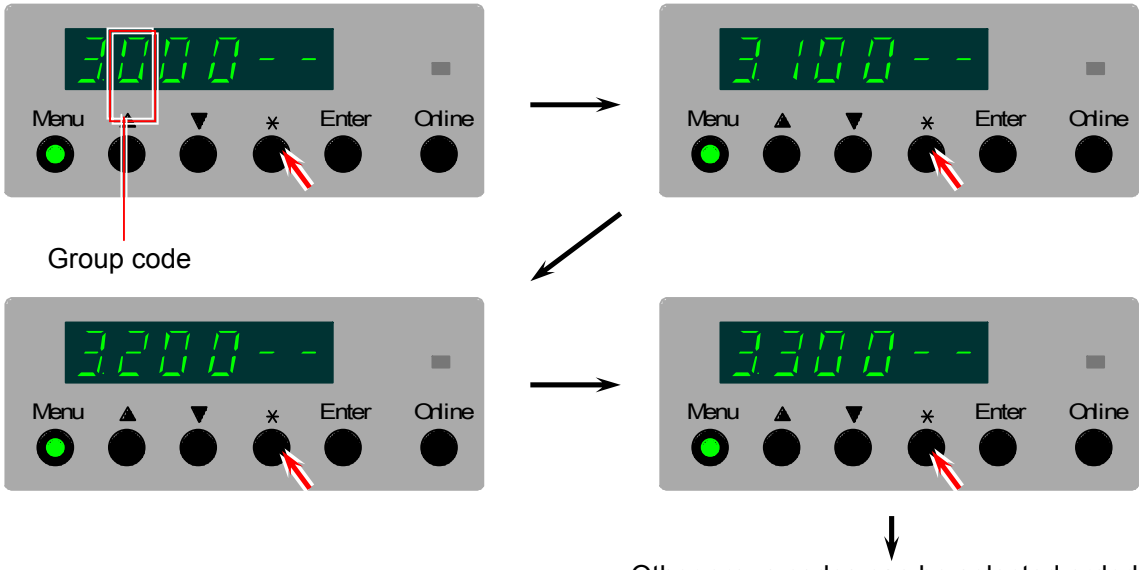
Check item code of “All control off”

1. After entering the Service Mode, press the Menu Key 4 times to select the Function Checking Mode. The Sub Mode number “3.” flashes on the far left digit.



Sub Mode No. of Function Checking Mode

2. Select the “group code” of the check item code pressing the [*] Key.

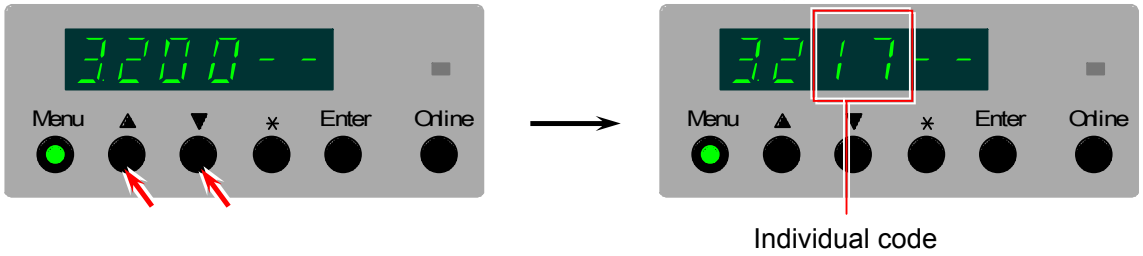


Reference

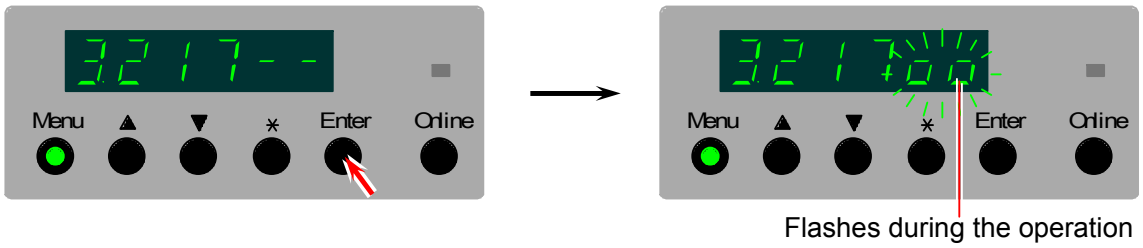
The check item code consists of 3 digits number or alphabet. The left one of them is the “group code” and the rest of 2 are “individual code”. For selecting the check item code “417” (Negative Developer Bias of Process 4), for example, select the group code “4” first then the individual code “17”.
Thus a fast selection of target item can be realized. The meaning of each group code is as follows. (Please refer to [8.6.3 Check item code list] on page 8-25 as well.)

Group code 0 : General group
1 : Motor group
2 : Clutch / Brake / Solenoid group
3 : Fan / Blower group
4 : HVP / Process group
5 : IR Lamp group
6 : Other Items group

3. Select the “individual code” of the check item code with pressing [▲] and [▼] Key.



4. Press the Enter Key. The selected component operates individually. “oo” flashes on the Status Display when the component is operating.

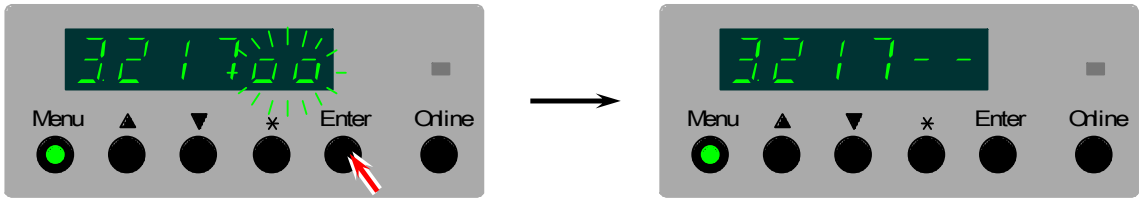


⚠ CAUTION

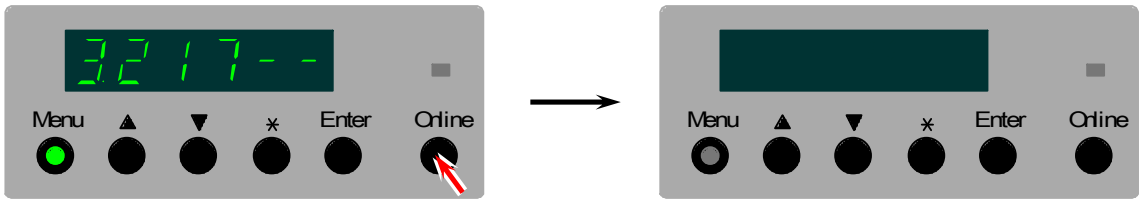
(1) Do not operate any items that belong to “HVP / Process group” individually as it will damage the Drum.

(2) If you will operate the IR lamp in “All control off” state, do not leave the lamp ON for a long time. It will cause the breakage of Thermostat.

5. Press the Enter Key once again to stop the operation. Flash of “oo” changes to the light of “- -”.



6. Press the Online Key to cancel the Service Mode.

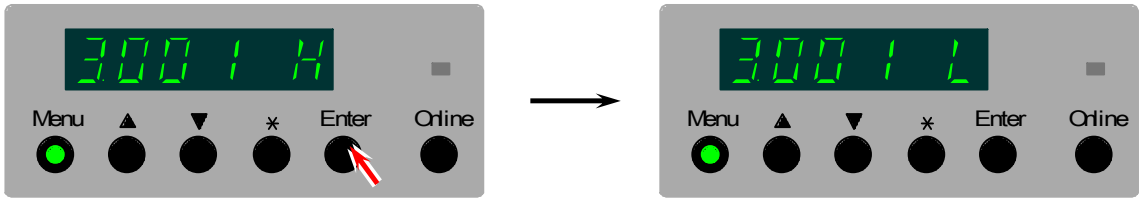


⚠ NOTE

(1) Only one electric component can be operated at once.

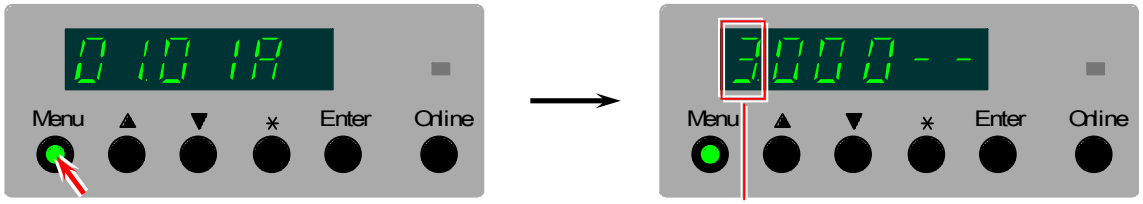
(2) If the “All control off” (check item code : 000) was executed, do either of the followings. Otherwise the Cutter Motor will not operate.

- Cancel the Service Mode.
- Execute “Cancellation of cutter reset”. (Select the check item code “001” and press the Enter Key to change the status from H to L.)

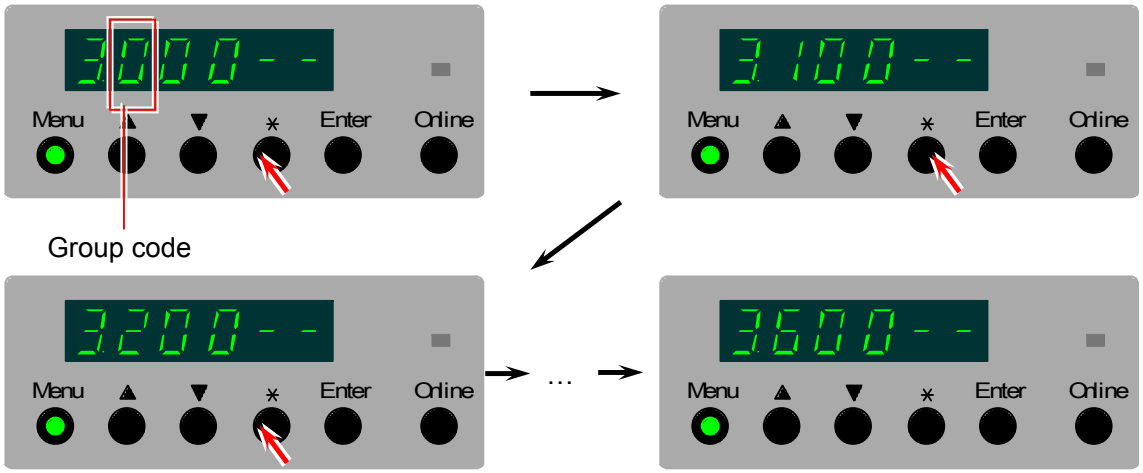


8. 6. 2. 2 Checking the operation of sensors/switches

1. After entering the Service Mode, press the Menu Key 4 times to select the Function Checking Mode. The Sub Mode number “3.” flashes on the far left digit.



2. Select the “group code” of the check item code pressing the [*] Key. Please select “6” for checking the operation of sensors and switches.

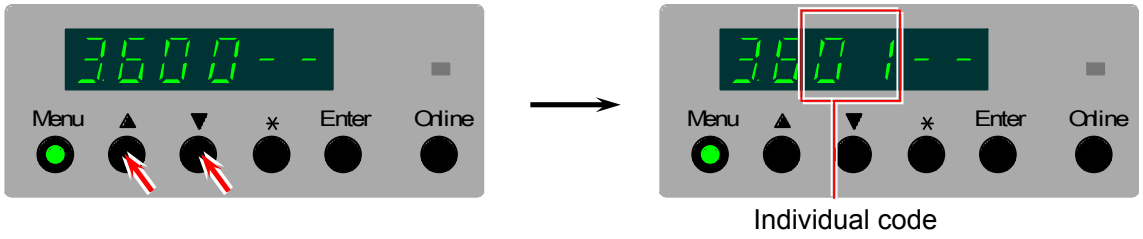


Reference

The check item code consists of 3 digits number or alphabet. The left one of them is the “group code” and the rest of 2 are “individual code”. For selecting the check item code “417” (Negative Developer Bias of Process 4), for example, select the group code “4” first then the individual code “17”.
Thus a fast selection of target item can be realized with the combination of these codes.
The meaning of each group code is as follows. (Please refer to [8.6.3 Check item code list] on page 8-25 as well.)

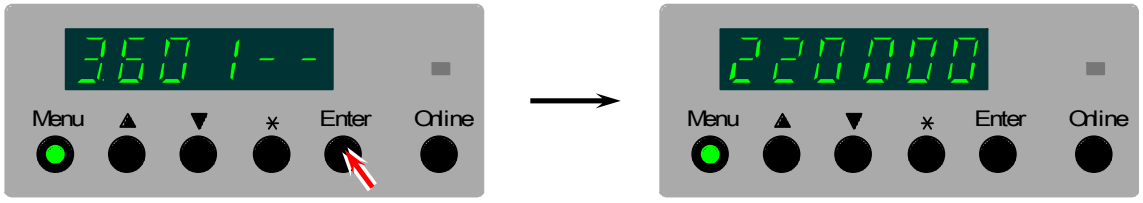
Group code 0 : Special group
1 : Motor group
2 : Clutch / Brake / Solenoid group
3 : Fan / Blower group
4 : HVP / Process group
5 : Fuser Lamp group
6 : Other Items group

3. Select the “individual code” of the check item code with pressing [▲] and [▼] Key.

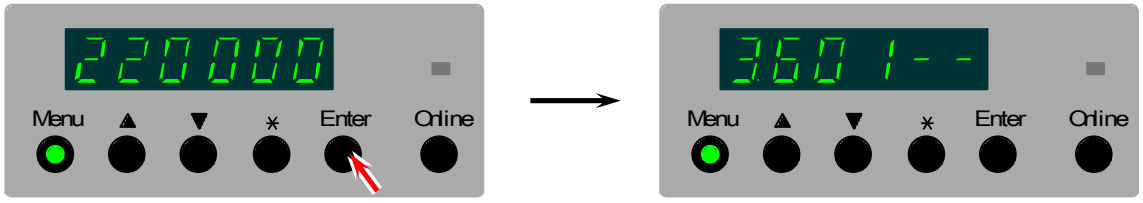


4. Press the Enter Key. The output from each sensor and switch is shown by the data.
    - Check the operation of each sensor blocking the sensor light with paper.
    - Check the operation of switches by pressing them mechanically.

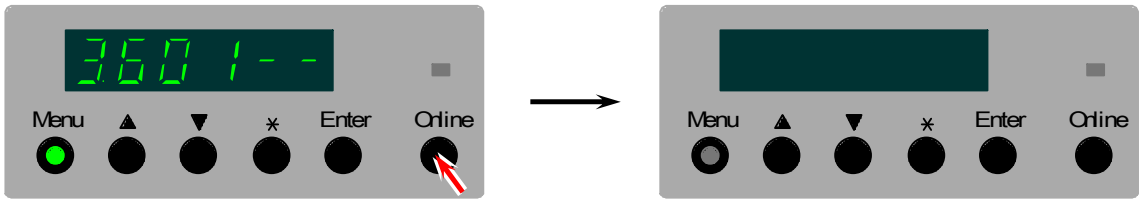
   Please see [8.6.4 Description of data indicated in sensor/switch operation check] on page 8-28 for the meaning of data.



5. When checking is finished, press the Enter Key once again to stop indicating the hexadecimal data.



6. Press the Online Key to cancel the Service Mode.



8. 6. 3 Check item code list

Group code	Individual code	Target
0 (Special group)	00	All control off
	01	Cancellation of Cutter Motor reset
1 (Motor group)	00	Drum Motor 1 (Normal rotation)
	01	Drum Motor 2 (Normal rotation)
	02	Drum Motor 3 (Normal rotation)
	03	Drum Motor 4 (Normal rotation)
	04	Drum Motor 1 (Opposite rotation in slow speed)
	05	Drum Motor 2 (Opposite rotation in slow speed)
	06	Drum Motor 3 (Opposite rotation in slow speed)
	07	Drum Motor 4 (Opposite rotation in slow speed)
	08	Paper Feed Motor (Normal rotation)
	09	Paper Feed Motor (Opposite rotation)
	0A	Attraction Roller Motor
	0b	Fuser Motor
	0C	Transportation Unit 1 Motor
	0d	Transportation Unit 2 Motor
	0E	Transportation Unit 3 Motor
	0F	Registration Roller Motor
	10	Developer Motor 1
	11	Developer Motor 2
	12	Developer Motor 3
	13	Developer Motor 4
	14	Wire Cleaning Motor 1 (Normal rotation)
	15	Wire Cleaning Motor 1 (Opposite rotation)
	16	Wire Cleaning Motor 2 (Normal rotation)
	17	Wire Cleaning Motor 2 (Opposite rotation)
	18	Wire Cleaning Motor 3 (Normal rotation)
	19	Wire Cleaning Motor 3 (Opposite rotation)
	1A	Wire Cleaning Motor 4 (Normal rotation)
	1b	Wire Cleaning Motor 4 (Opposite rotation)
	1C	Toner Cartridge Motor 1
	1d	Toner Cartridge Motor 2
	1E	Toner Cartridge Motor 3
	1F	Toner Cartridge Motor 4
	20	Waste Toner Motor
	21	Developer Press Motor 1
	22	Developer Press Motor 2
	23	Developer Press Motor 3
	24	Developer Press Motor 4
	25	(Reserved)
	26	Bypass Feeder Motor
	27	Cutter Motor
	28	Web Motor
2 (Clutch / Brake / Solenoid group)	00	Paper Feed Clutch 1
	01	Paper Feed Clutch 2
	02	Paper Feed Clutch 3
	03	Pick Up Clutch 1
	04	Pick Up Clutch 2
	05	Pick Up Clutch 3
	06	Pick Up Clutch 4
	07	Bypass Feeder Clutch
	08	Deck 2 Feed Clutch
	09	Deck 3 Feed Clutch
	0A	Feed Roller Clutch
	0b	Middle Feed Roller Clutch
	0C	Registration Front Roller Clutch
	0d	Feed Roller Brake
	0E	Middle Feed Roller Brake
	0F	Registration Front Roller Brake

Group code	Individual code	Target signal
2 (Clutch / Brake / Solenoid group)	10	Bypass Pick Up Solenoid
	11	Bypass Reverse Solenoid
	12	Cutter Solenoid
	13	Waste Toner Solenoid
	14	Toner Shutter Solenoid 1
	15	Toner Shutter Solenoid 2
	16	Toner Shutter Solenoid 3
	17	Toner Shutter Solenoid 4
3 (Fan / Blower group)	00	Fuser Fan 1
	01	Fuser Fan 2
	02	Transport Assist Fan 1A&1B
	03	Transport Assist Fan 1C
	04	Transport Assist Fan 1D
	05	Transport Assist Fan 1E
	06	Transport Assist Fan 1F
	07	Transport Assist Fan 2A&2B
	08	Transport Assist Fan 2C
	09	Transport Assist Fan 2D
	0A	Transport Assist Fan 2E
	0b	Transport Assist Fan 2F
	0C	Transport Assist Fan 3A&1B
	0d	Transport Assist Fan 3C
	0E	Transport Assist Fan 3D
	0F	Transport Assist Fan 3E
	10	Transport Assist Fan 3F
	11	Separation Fan 1A
	12	Separation Fan 1B
	13	Separation Fan 1C
	14	Separation Fan 1D
	15	Separation Fan 1E
	16	Separation Fan 2A
	17	Separation Fan 2B
	18	Separation Fan 2C
	19	Separation Fan 2D
	1A	Separation Fan 2E
	1b	Separation Fan 3A
	1C	Separation Fan 3B
	1d	Separation Fan 3C
	1E	Separation Fan 3D
	1F	Separation Fan 3E
	20	Separation Fan 4A
	21	Separation Fan 4B
	22	Separation Fan 4C
	23	Separation Fan 4D
	24	Separation Fan 4E
	25	Pressure Blower 1
	26	Pressure Blower 2
	27	Cooling Fan 1
4 (HVP / Process group)	00	Eraser Lamp 1
	01	Eraser Lamp 2
	02	Eraser Lamp 3
	03	Eraser Lamp 4
	04	Image Corona Wire Bias (Process 1)
	05	Transfer Corona Wire Bias (Process 1)
	06	Separation Corona Wire Bias (Process 1)
	07	Positive Developer Bias (Process 1)
	08	Negative Developer Bias (Process 1)
	09	Image Corona Wire Bias (Process 2)
	0A	Transfer Corona Wire Bias (Process 2)
	0b	Separation Corona Wire Bias (Process 2)
	0C	Positive Developer Bias (Process 2)

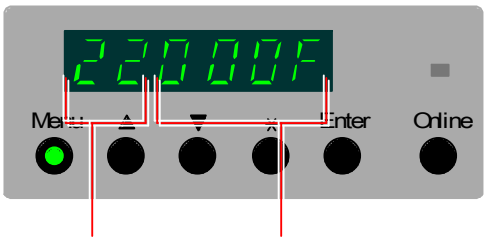
Group code	Individual code	Target signal
4 (HVP / Process group)	0d	Negative Developer Bias (Process 2)
	0E	Image Corona Wire Bias (Process 3)
	0F	Transfer Corona Wire Bias (Process 3)
	10	Separation Corona Wire Bias (Process 3)
	11	Positive Developer Bias (Process 3)
	12	Negative Developer Bias (Process 3)
	13	Image Corona Wire Bias (Process 4)
	14	Transfer Corona Wire Bias (Process 4)
	15	Separation Corona Wire Bias (Process 4)
	16	Positive Developer Bias (Process 4)
	17	Negative Developer Bias (Process 4)
	18	Grid Plate Bias (Process 1)
	19	Grid Plate Bias (Process 2)
	1A	Grid Plate Bias (Process 3)
	1b	Grid Plate Bias (Process 4)
	1C	Attraction Corona Bias
	1d	Separation Guide Plate Bias
	1E	Transfer Corona House Bias Selection (Process 1)
	1F	Transfer Corona House Bias Selection (Process 2)
	20	Transfer Corona House Bias Selection (Process 3)
	21	Transfer Corona House Bias Selection (Process 4)
5 (Fuser Lamp group)	00	Fuser Lamp 1
	01	Fuser Lamp 2
6 (Other Items group)	00	Buzzer
	01	Switches and Sensors in Roll Deck 1
	02	Switches and Sensors in Roll Deck 2
	03	Switches and Sensors in Roll Deck 3
	04	Switches and Sensors in Roll Deck 4
	05	Sensors in Bypass Feeder
	06	Toner Level Sensor (Process 1)
	07	Toner Level Sensor (Process 2)
	08	Toner Level Sensor (Process 3)
	09	Toner Level Sensor (Process 4)
	0A	Toner Sensors
	0b	Output to Stacker
	0C	Counter A (Left)
	0d	Counter B (Right)

8. 6. 4 Description of the data indicated in sensor/switch operation check

8. 6. 4. 1 Check of sensors & switches of Roll Decks 1 to 4 (Check item codes 601 to 604)

The outputs from the sensors and the switches of Roll Decks are shown by the hexadecimal data. 6 digits hex data on the Status Display can be divided into upper 2 digits hex and lower 4 digits hex.

Example : Output data from sensors & switches of Roll Deck 1



Upper 2 digits hex Lower 4 digits hex

Please convert these hex data into “binary” data. In case of the above case;

Hex		Binary
22 (Upper 2)	→	00100010
000F (Lower 4)	→	0000000000001111

Reference

The following is the conversion table between hex and binary.

Hex	Binary	Hex	Binary
0	0000	8	1000
1	0001	9	1001
2	0010	A	1010
3	0011	b	1011
4	0100	C	1100
5	0101	d	1101
6	0110	E	1110
7	0111	F	1111

Each digit of the binary data is concerned with the individual sensors and switches, and the status of output from them is shown by “0” or “1”. See the next page for the detail.

[Upper 2 digits hex]

Each digit of the binary data converted from the upper 2 digits hex is concerned with the sensors and switches as follows. (Suppose that the upper 2 digits hex is “22”.)

Binary data : 0 0 1 0 0 0 1 0
↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑
Item : 8 7 6 5 4 3 2 1

Item	Concerning sensor and switch		Output status
1	Media format switch		0: Engineer, 1: Architecture
2	Media type switch (Plain paper)		0: ON, 1: OFF
3	Media type switch (Vellum/tracing)		0: ON, 1: OFF
4	Media type switch (Film)		0: ON, 1: OFF
5	Media type switch (Gloss)		0: ON, 1: OFF
6	Roll End Sensor	PH49 : Roll 1 PH59 : Roll 2 PH69 : Roll 3 PH79 : Roll 4	Pulse signal
7	Bypass Start Sensor	PH47 : Roll 1	0: Not detecting paper, 1: Detecting paper
8	(Not Used)		Always 0

The above example denotes that the media format is set to “Engineering”, the media type is “plain paper”, and the pulse from the Roll End Sensor is OFF. Try to press another switch, and try to close the sensor light with the paper. If a wrong status is indicated, the concerning component is broken.

[Lower 4 digits hex]

Each digit of the binary data converted from the lower 4 digits hex is concerned with the sensors as follows. (Suppose that the lower 4 digits hex is “000F”.)

```
Binary data : 0  0  0  0  0  0  0  0  0  0  0  0  1  1  1  1
              ↑  ↑  ↑  ↑  ↑  ↑  ↑  ↑  ↑  ↑  ↑  ↑  ↑  ↑  ↑  ↑
Item :        16 15 14 13 12 11 10 9  8  7  6  5  4  3  2  1
```

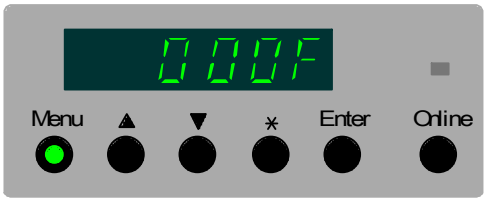
Item	Concerning sensor and switch			Output status
1	Paper Set Sensor	PH48 : Roll 1 PH58 : Roll 2 PH68 : Roll 3 PH78 : Roll 4	A3, 11” & 12”	0: Not detecting paper, 1: Detecting paper
2	Paper Size Sensor 1	PH50 : Roll 1 PH60 : Roll 2 PH70 : Roll 3 PH80 : Roll 4	15” (& B3)	0: Not detecting paper, 1: Detecting paper
3	Paper Size Sensor 2	PH51 : Roll 1 PH61 : Roll 2 PH71 : Roll 3 PH81 : Roll 4	A2, 17” & 18”	0: Not detecting paper, 1: Detecting paper
4	Paper Size Sensor 3	PH52 : Roll 1 PH62 : Roll 2 PH72 : Roll 3 PH82 : Roll 4	22” (& B2)	0: Not detecting paper, 1: Detecting paper
5	Paper Size Sensor 4	PH53 : Roll 1 PH63 : Roll 2 PH73 : Roll 3 PH83 : Roll 4	A1 & 24”	0: Not detecting paper, 1: Detecting paper
6	Paper Size Sensor 5	PH54 : Roll 1 PH64 : Roll 2 PH74 : Roll 3 PH84 : Roll 4	B1 & 30” (707mm)	0: Not detecting paper, 1: Detecting paper
7	Paper Size Sensor 6	PH55 : Roll 1 PH65 : Roll 2 PH75 : Roll 3 PH85 : Roll 4	A0 & 34”	0: Not detecting paper, 1: Detecting paper
8	Paper Size Sensor 7	PH56 : Roll 1 PH66 : Roll 2 PH76 : Roll 3 PH86 : Roll 4	900mm, 891mm & 880mm 36”	0: Not detecting paper, 1: Detecting paper
9	Paper Size Sensor 8	PH57 : Roll 1 PH67 : Roll 2 PH77 : Roll 3	36”	0: Not detecting paper, 1: Detecting paper
10	(Not Used)			Always 0
11	(Not Used)			Always 0
12	(Not Used)			Always 0
13	(Not Used)			Always 0
14	(Not Used)			Always 0
15	(Not Used)			Always 0
16	(Not Used)			Always 0

The above example denotes that the Paper Set Sensor and Paper Size Sensors 1 to 3 are detecting the media. (A2, 17” or 18” is set to the deck.) Try to close the sensor light of other sensors with the paper as well. If a wrong status is indicated, the concerning sensor is broken.

8. 6. 4. 2 Check of sensors of Bypass Feeder (Check item code : 605)

The outputs from the sensors of Bypass Feeder are shown by the 4 digits hexadecimal data.

Example : Output data from sensors of Bypass Feeder



Please convert these hex data into “binary” data. In case of the above case;

Hex Binary
000F ⟶ 0000000000001111

Reference

The following is the conversion table between hex and binary.

Hex	Binary	Hex	Binary
0	0000	8	1000
1	0001	9	1001
2	0010	A	1010
3	0011	b	1011
4	0100	C	1100
5	0101	d	1101
6	0110	E	1110
7	0111	F	1111

Each digit of the binary data is concerned with the individual sensors as follows, and the status of output from them is shown by “0” or “1”. (Suppose that the hex is “000F”.)

Binary data :	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Item :	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Item	Concerning sensor and switch		Output status
1	Bypass Set Sensor	A3 & 11”	0: Not detecting paper, 1: Detecting paper
2	Bypass Size Sensor 1	12”	0: Not detecting paper, 1: Detecting paper
3	Bypass Size Sensor 2	A2 & 17”	0: Not detecting paper, 1: Detecting paper
4	Bypass Size Sensor 3	18”	0: Not detecting paper, 1: Detecting paper
5	Bypass Size Sensor 4	A1 & 22	0: Not detecting paper, 1: Detecting paper
6	Bypass Size Sensor 5	24”	0: Not detecting paper, 1: Detecting paper
7	Bypass Size Sensor 6	30”	0: Not detecting paper, 1: Detecting paper
8	Bypass Size Sensor 7	A0 & 34”	0: Not detecting paper, 1: Detecting paper
9	Bypass Size Sensor 8	36”	0: Not detecting paper, 1: Detecting paper
10	(Not Used)		Always 0
11	(Not Used)		Always 0
12	(Not Used)		Always 0
13	(Not Used)		Always 0
14	(Not Used)		Always 0
15	(Not Used)		Always 0
16	(Not Used)		Always 0

The above example denotes that the Bypass Set Sensor and Bypass Size Sensors 1 to 3 are detecting the media. (A2 or 17” is set to the Bypass Feeder.) Try to close the sensor light of other sensors with the paper as well. If a wrong status is indicated, the concerning sensor is broken.

8. 6. 4. 3 Check of the Toner Level Sensors of Process 1 to 4 (Check item codes : 606 to 609)

The outputs from the Toner Level Sensors are shown by the 2 digits hexadecimal data.

Example : Output data from the Toner Level Sensors



Please convert these hex data into “binary” data. In case of the above case;

Hex Binary
2A ⟶ 00101010

Reference

The following is the conversion table between hex and binary.

Hex	Binary	Hex	Binary
0	0000	8	1000
1	0001	9	1001
2	0010	A	1010
3	0011	b	1011
4	0100	C	1100
5	0101	d	1101
6	0110	E	1110
7	0111	F	1111

Each digit of the binary data is concerned with the individual sensors as follows, and the status of output from them is shown by “0” or “1”. (Suppose that the hex is “000F”.)

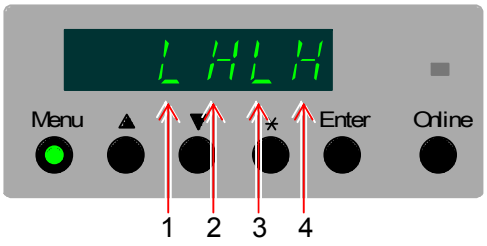
Binary data :	0	0	1	0	1	0	1	0
	↑	↑	↑	↑	↑	↑	↑	↑
Item :	8	7	6	5	4	3	2	1

Item	Concerning sensor and switch	Output status
1	(Not used)	Always 0
2	Upper Toner Level Sensor	0: Toner is not detected, 1: Toner is detected
3	(Not used)	Always 0
4	Middle Toner Level Sensor	0: Toner is not detected, 1: Toner is detected
5	(Not used)	Always 0
6	Lower Toner Level Sensor	0: Toner is not detected, 1: Toner is detected
7	(Not used)	Always 0
8	(Not used)	Always 0

The above example denotes that all of the 3 Toner Level Sensor is detecting the toner. (Cartridge is full.) Try to close the sensor light moving the actuator. If a wrong status is indicated, the concerning sensor is broken.

8. 6. 4. 4 Check of the Toner Sensors (Check item code : 60A)

The outputs from the Toner Sensors 1 to 4 are shown by the 4 digits data.



Item	Concerning sensor and switch	Output status
1	Toner Sensor 1	L: Toner is not detected, 1: Toner is detected
2	Toner Sensor 2	L: Toner is not detected, 1: Toner is detected
3	Toner Sensor 3	L: Toner is not detected, 1: Toner is detected
4	Toner Sensor 4	L: Toner is not detected, 1: Toner is detected

The above example denotes that the Toner Sensors 2 and 4 are detecting the toner, but the Toner Sensors 1 and 3 are detecting “toner empty”. If a wrong status is indicated, the concerning sensor is broken.

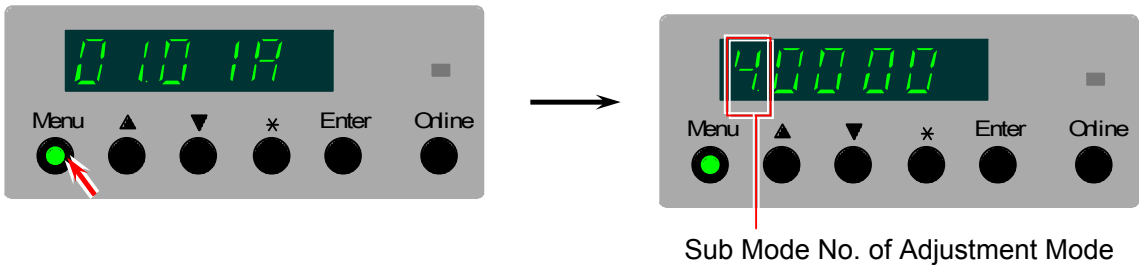
8. 7 Adjustment Mode

8. 7. 1 Function

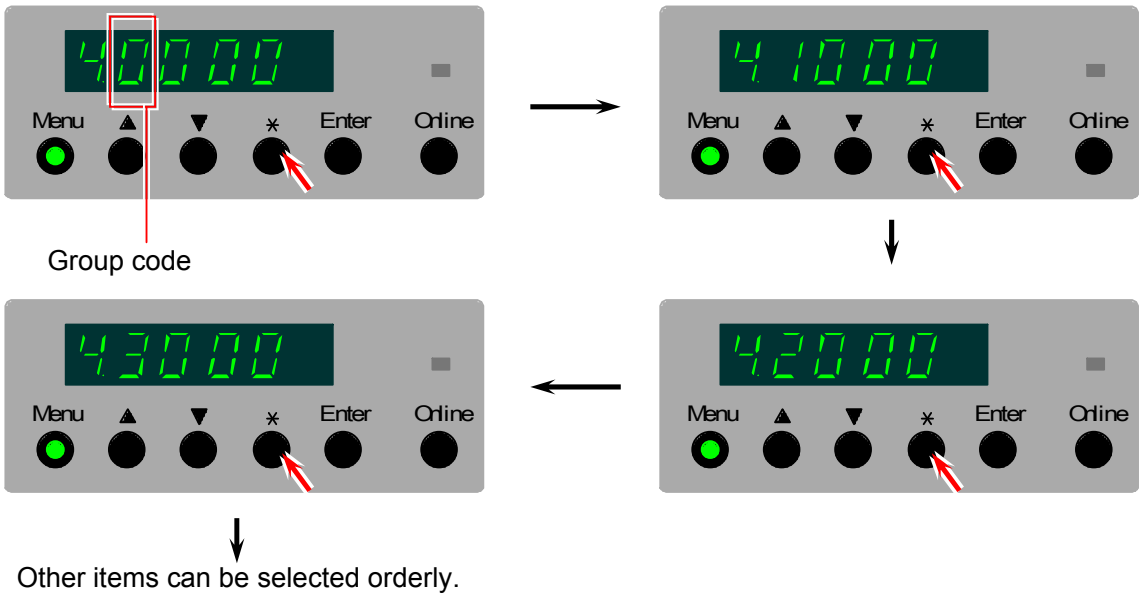
Several printer parameters can be changed.

8. 7. 2 Operation

1. After entering the Service Mode, press the Menu Key 5 times to select the Adjustment Mode. The Sub Mode number “4.” flashes on the far left digit.



2. Select the “group code” of the setting item code pressing the [*] Key.

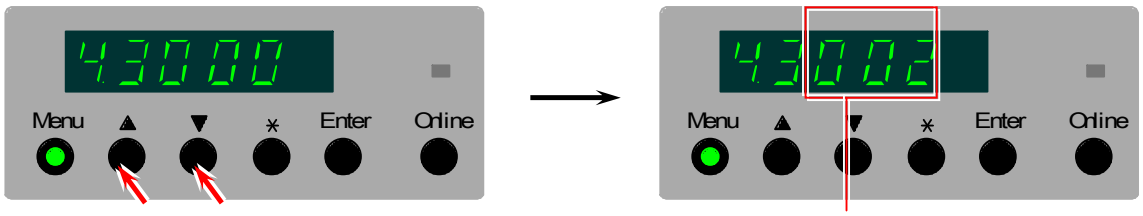


Reference

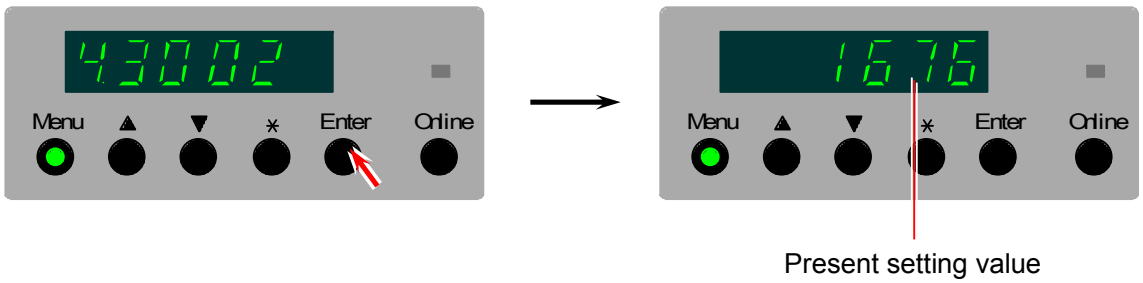
The setting item code of the Adjustment Mode consists of 4 digits number or alphabet. The far left one of them is the “group code” and the rest of 3 are “individual code”. For selecting the setting item code “3002” (Fuser Motor Speed), for example, select the group code “3” first then the individual code “002”.
Thus a fast selection of target item can be realized. The meaning of each group code is as follows. (Please refer to [8.7.3 Setting item code list] on page 8-37 as well.)

Group code 0 : General group
1 : High voltage group
2 : Surface potential & density control group
3 : General motor speed group
4 : Registration roller motor / Attraction roller motor speed group
5 : Transportation unit 1 motor speed group
6 : Transportation unit 2 motor speed group
7 : Transportation unit 3 motor speed group
8 : LED head group
9 : Image placement & margin group
A : Color Registratioon V (Process 1) group
B : Color Registratioon V (Process 2) group
C : Color Registratioon V (Process 3) group
D : Color Registratioon V (Process 4) group
E : Horizontal color registration group
F : Drum motor 1-4 speed group

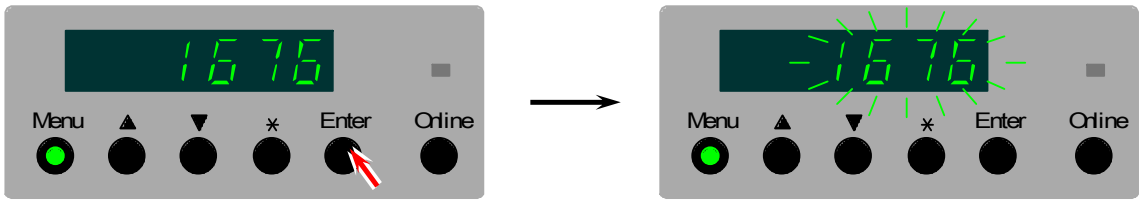
3. Select the “individual code” of the setting item code with pressing [▲] and [▼] Key.



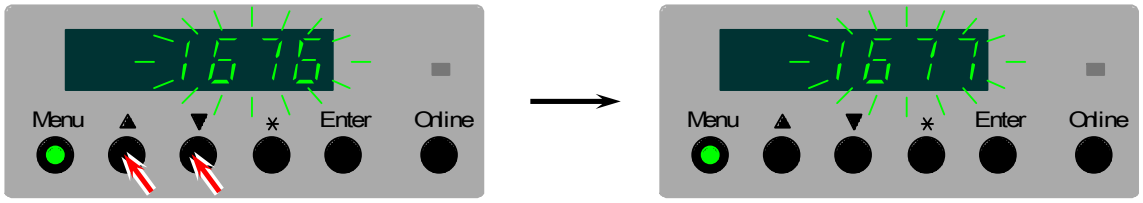
4. Press the Enter Key. The present setting value of the selected setting item is indicated.



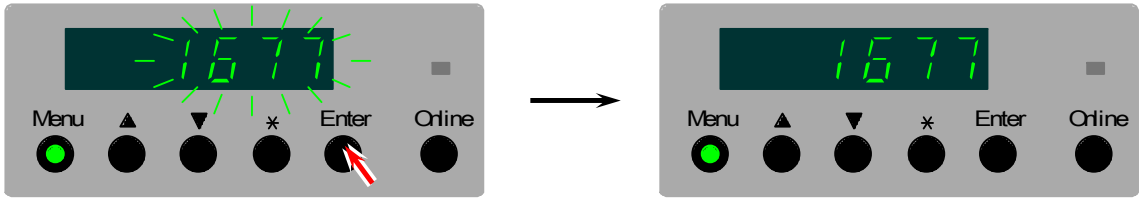
5. Press the Enter Key once again. The setting value flashes and becomes changeable.



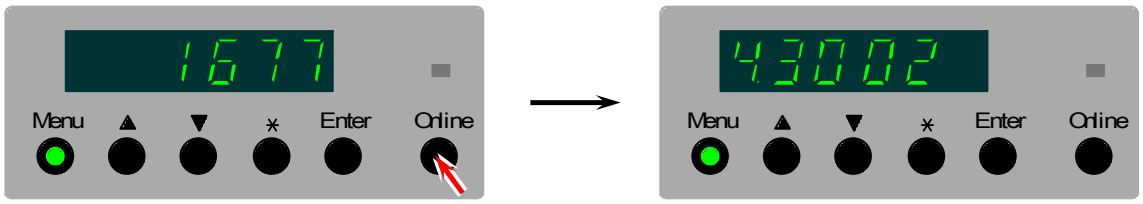
6. Change the setting value pressing [▲] and [▼] Keys.



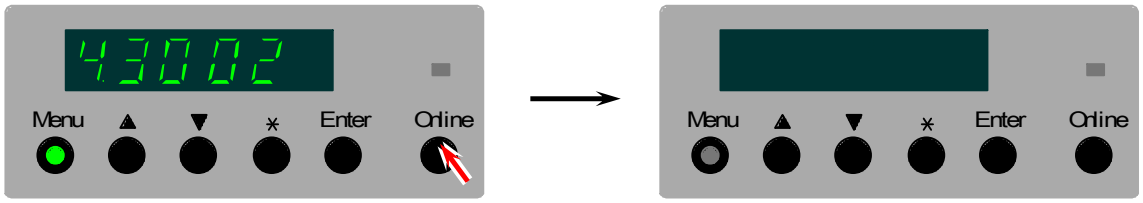
7. Press the Enter Key to decide the setting value. The setting value stops flashing when decided.



8. Press the Online Key to go back to “code selection”.



9. Press the Online Key to cancel the Service Mode



8. 7. 3 Setting item code list

Group code	Individual code	Target	Default value	Setting range	Unit
0 (General)	000	Metric or inch		A0 / 36	
	001	Interface communication		0 to 2	
	002	Special media size 1		900/ 891/ 880	mm
	003	Special media size 2		707/b1	
	004	Maximum print length		6 / 45	m
	005	Unit of Counter A		0 to 3: metric 0 to 1: inch	
	006	Software Counter A value setting (Lower 4 digits)		-	
	007	Software Counter A value setting (Upper 3 digits)		-	
	008	Unit of Counter B		0 to 3: metric 0 to 1: inch	
	009	Software Counter B value setting (Lower 4 digits)		-	
	00A	Software Counter B value setting (Upper 3 digits)		-	
	00b	Dehumidify Heater operation		0 / 1	
	00C	Dehumidify Heater ON/OFF control (Humidity threshold)		No/40/50/60/ 70	%
	00d	Dehumidify Heater ON/OFF control (Temperature threshold)		No/15/20/25/ 30	C°
	00E	Web Motor operation time		00.00.00 to 15.59.59	
	00F	Thickness of Web Cleaner Roll		0.0 to 14.0	mm
	010	Web operation mode		0 to 2	
	011	Cold Sleep ON/OFF		ON / OFF	
	012	Automatic Wire Cleaning ON/OFF		ON / OFF	
	013	Interval of Automatic Wire Cleaning		100 to 10000	1m
	014	Number of times of Wire Cleaning		1 to 5	
	015	Fuser temperature (Plain paper / Type #1)		100 to 185	C°
	016	Fuser temperature (Plain paper / Type #2)		100 to 185	C°
	017	Fuser temperature (Plain paper / Type #3)		100 to 185	C°
	018	Fuser temperature (Plain paper / Type #4)		100 to 185	C°
	019	Fuser temperature (Tracing paper / Type #1)		100 to 185	C°
	01A	Fuser temperature (Tracing paper / Type #2)		100 to 185	C°
	01b	Fuser temperature (Tracing paper / Type #3)		100 to 185	C°
	01C	Fuser temperature (Tracing paper / Type #4)		100 to 185	C°
	01d	Fuser temperature (Film / Type #1)			
	01E	Fuser temperature (Film / Type #2)		100 to 185	C°
	01F	Fuser temperature (Film / Type #3)		100 to 185	C°
	020	Fuser temperature (Film / Type #4)		100 to 185	C°
	021	Fuser temperature (Tracing paper / Type #1)			
	022	Fuser temperature (Tracing paper / Type #2)			
	023	Fuser temperature (Tracing paper / Type #3)			
	024	Fuser temperature (Tracing paper / Type #4)			
	025	“Gain” of Fuser Motor			
	026	Targer fuser tension (Plain paper / Type #1)		0000 to 00FF	Hex
	027	Targer fuser tension (Plain paper / Type #2)		0000 to 3FFF	Hex
	028	Targer fuser tension (Plain paper / Type #3)		0000 to 3FFF	Hex
	029	Targer fuser tension (Plain paper / Type #4)		0000 to 3FFF	Hex
	02A	Targer fuser tension (Tracing paper / Type #1)		0000 to 00FF	Hex
	02b	Targer fuser tension (Tracing paper / Type #2)		0000 to 3FFF	Hex
	02C	Targer fuser tension (Tracing paper / Type #3)		0000 to 3FFF	Hex
	02d	Targer fuser tension (Tracing paper / Type #4)		0000 to 3FFF	Hex
	02E	Targer fuser tension (Film / Type #1)		0000 to 00FF	Hex
	02F	Targer fuser tension (Film / Type #2)		0000 to 3FFF	Hex
	030	Targer fuser tension (Film / Type #3)		0000 to 3FFF	Hex
	031	Targer fuser tension (Film / Type #4)		0000 to 3FFF	Hex
	032	Targer fuser tension (Gloss / Type #1)		0000 to 00FF	Hex
	033	Targer fuser tension (Gloss / Type #2)		0000 to 3FFF	Hex
	034	Targer fuser tension (Gloss / Type #3)		0000 to 3FFF	Hex
	035	Targer fuser tension (Gloss / Type #4)		0000 to 3FFF	Hex

Group code	Individual code	Target	Default value	Setting range	Unit
1 (High voltage)	000	Grid Plate Bias 1 (Applied when Auto SP Control is OFF)		302 to 800	V
	001	Grid Plate Bias 2 (Applied when Auto SP Control is OFF)		302 to 800	V
	002	Grid Plate Bias 3 (Applied when Auto SP Control is OFF)		302 to 800	V
	003	Grid Plate Bias 4 (Applied when Auto SP Control is OFF)		302 to 800	V
	004	Developer Bias 1 (Applied when Auto Density Control is OFF)		100 to 499	-V
	005	Developer Bias 2 (Applied when Auto Density Control is OFF)		100 to 499	-V
	006	Developer Bias 3 (Applied when Auto Density Control is OFF)		100 to 499	-V
	007	Developer Bias 4 (Applied when Auto Density Control is OFF)		100 to 499	-V
	008	Separation Guide Plate Bias		302 to 800	-V
	009	Transfer Corona Wire Bias 1 (Plain paper / Type #1 / 0%RH)		400 to 1496	Micro amp.
	00A	Transfer Corona Wire Bias 1 (Plain paper / Type #1 / 20%RH)		400 to 1496	Micro amp.
	00b	Transfer Corona Wire Bias 1 (Plain paper / Type #1 / 40%RH)		400 to 1496	Micro amp.
	00C	Transfer Corona Wire Bias 1 (Plain paper / Type #1 / / 60%RH)		400 to 1496	Micro amp.
	00d	Transfer Corona Wire Bias 1 (Plain paper / Type #1 / / 80%RH)		400 to 1496	Micro amp.
	00E	Transfer Corona Wire Bias 1 (Plain paper / Type #1 / / 100%RH)		400 to 1496	Micro amp.
	00F	Transfer Corona Wire Bias 1 (Plain paper / Type #2 / 0%RH)		400 to 1496	Micro amp.
	010	Transfer Corona Wire Bias 1 (Plain paper / Type #2 / 20%RH)		400 to 1496	Micro amp.
	011	Transfer Corona Wire Bias 1 (Plain paper / Type #2 / 40%RH)		400 to 1496	Micro amp.
	012	Transfer Corona Wire Bias 1 (Plain paper / Type #2 / / 60%RH)		400 to 1496	Micro amp.
	013	Transfer Corona Wire Bias 1 (Plain paper / Type #2 / / 80%RH)		400 to 1496	Micro amp.
	014	Transfer Corona Wire Bias 1 (Plain paper / Type #2 / / 100%RH)		400 to 1496	Micro amp.
	015	Transfer Corona Wire Bias 1 (Plain paper / Type #3 / 0%RH)		400 to 1496	Micro amp.
	016	Transfer Corona Wire Bias 1 (Plain paper / Type #3 / 20%RH)		400 to 1496	Micro amp.
	017	Transfer Corona Wire Bias 1 (Plain paper / Type #3 / 40%RH)		400 to 1496	Micro amp.
	018	Transfer Corona Wire Bias 1 (Plain paper / Type #3 / / 60%RH)		400 to 1496	Micro amp.
	019	Transfer Corona Wire Bias 1 (Plain paper / Type #3 / / 80%RH)		400 to 1496	Micro amp.
	01A	Transfer Corona Wire Bias 1 (Plain paper / Type #3 / / 100%RH)		400 to 1496	Micro amp.
	01b	Transfer Corona Wire Bias 1 (Plain paper / Type #4 / 0%RH)		400 to 1496	Micro amp.
	01C	Transfer Corona Wire Bias 1 (Plain paper / Type #4 / 20%RH)		400 to 1496	Micro amp.
	01d	Transfer Corona Wire Bias 1 (Plain paper / Type #4 / 40%RH)		400 to 1496	Micro amp.
	01E	Transfer Corona Wire Bias 1 (Plain paper / Type #4 / / 60%RH)		400 to 1496	Micro amp.
	01F	Transfer Corona Wire Bias 1 (Plain paper / Type #4 / / 80%RH)		400 to 1496	Micro amp.
	020	Transfer Corona Wire Bias 1 (Plain paper / Type #4 / / 100%RH)		400 to 1496	Micro amp.
	021	Transfer Corona Wire Bias 1 (Tracing paper / Type #1 / 0%RH)		400 to 1496	Micro amp.
	022	Transfer Corona Wire Bias 1 (Tracing paper / Type #1 / 20%RH)		400 to 1496	Micro amp.

Group code	Individual code	Target	Default value	Setting range	Unit
1 (High voltage)	023	Transfer Corona Wire Bias 1 (Tracing paper / Type #1 / 40%RH)		400 to 1496	Micro amp.
	024	Transfer Corona Wire Bias 1 (Tracing paper / Type #1 / / 60%RH)		400 to 1496	Micro amp.
	025	Transfer Corona Wire Bias 1 (Tracing paper / Type #1 / / 80%RH)		400 to 1496	Micro amp.
	026	Transfer Corona Wire Bias 1 (Tracing paper / Type #1 / / 100%RH)		400 to 1496	Micro amp.
	027	Transfer Corona Wire Bias 1 (Tracing paper / Type #2 / 0%RH)		400 to 1496	Micro amp.
	028	Transfer Corona Wire Bias 1 (Tracing paper / Type #2 / 20%RH)		400 to 1496	Micro amp.
	029	Transfer Corona Wire Bias 1 (Tracing paper / Type #2 / 40%RH)		400 to 1496	Micro amp.
	02A	Transfer Corona Wire Bias 1 (Tracing paper / Type #2 / / 60%RH)		400 to 1496	Micro amp.
	02b	Transfer Corona Wire Bias 1 (Tracing paper / Type #2 / / 80%RH)		400 to 1496	Micro amp.
	02C	Transfer Corona Wire Bias 1 (Tracing paper / Type #2 / / 100%RH)		400 to 1496	Micro amp.
	02d	Transfer Corona Wire Bias 1 (Tracing paper / Type #3 / 0%RH)		400 to 1496	Micro amp.
	02E	Transfer Corona Wire Bias 1 (Tracing paper / Type #3 / 20%RH)		400 to 1496	Micro amp.
	02F	Transfer Corona Wire Bias 1 (Tracing paper / Type #3 / 40%RH)		400 to 1496	Micro amp.
	030	Transfer Corona Wire Bias 1 (Tracing paper / Type #3 / / 60%RH)		400 to 1496	Micro amp.
	031	Transfer Corona Wire Bias 1 (Tracing paper / Type #3 / / 80%RH)		400 to 1496	Micro amp.
	032	Transfer Corona Wire Bias 1 (Tracing paper / Type #3 / / 100%RH)		400 to 1496	Micro amp.
	033	Transfer Corona Wire Bias 1 (Tracing paper / Type #4 / 0%RH)		400 to 1496	Micro amp.
	034	Transfer Corona Wire Bias 1 (Tracing paper / Type #4 / 20%RH)		400 to 1496	Micro amp.
	035	Transfer Corona Wire Bias 1 (Tracing paper / Type #4 / 40%RH)		400 to 1496	Micro amp.
	036	Transfer Corona Wire Bias 1 (Tracing paper / Type #4 / / 60%RH)		400 to 1496	Micro amp.
	037	Transfer Corona Wire Bias 1 (Tracing paper / Type #4 / / 80%RH)		400 to 1496	Micro amp.
	038	Transfer Corona Wire Bias 1 (Tracing paper / Type #4 / / 100%RH)		400 to 1496	Micro amp.
	039	Transfer Corona Wire Bias 1 (Film / Type #1 / 0%RH)		400 to 1496	Micro amp.
	03A	Transfer Corona Wire Bias 1 (Film / Type #1 / 20%RH)		400 to 1496	Micro amp.
	03b	Transfer Corona Wire Bias 1 (Film / Type #1 / 40%RH)		400 to 1496	Micro amp.
	03C	Transfer Corona Wire Bias 1 (Film / Type #1 / / 60%RH)		400 to 1496	Micro amp.
	03d	Transfer Corona Wire Bias 1 (Film / Type #1 / / 80%RH)		400 to 1496	Micro amp.
	03E	Transfer Corona Wire Bias 1 (Film / Type #1 / / 100%RH)		400 to 1496	Micro amp.
	03F	Transfer Corona Wire Bias 1 (Film / Type #2 / 0%RH)		400 to 1496	Micro amp.
	040	Transfer Corona Wire Bias 1 (Film / Type #2 / 20%RH)		400 to 1496	Micro amp.
	041	Transfer Corona Wire Bias 1 (Film / Type #2 / 40%RH)		400 to 1496	Micro amp.
	042	Transfer Corona Wire Bias 1 (Film / Type #2 / / 60%RH)		400 to 1496	Micro amp.
	043	Transfer Corona Wire Bias 1 (Film / Type #2 / / 80%RH)		400 to 1496	Micro amp.
	044	Transfer Corona Wire Bias 1 (Film / Type #2 / / 100%RH)		400 to 1496	Micro amp.
	045	Transfer Corona Wire Bias 1 (Film / Type #3 / 0%RH)		400 to 1496	Micro amp.
	046	Transfer Corona Wire Bias 1 (Film / Type #3 / 20%RH)			

Group code	Individual code	Target	Default value	Setting range	Unit
1 (High voltage)	047	Transfer Corona Wire Bias 1 (Film / Type #3 / 40%RH)		400 to 1496	Micro amp.
	048	Transfer Corona Wire Bias 1 (Film / Type #3 / / 60%RH)		400 to 1496	Micro amp.
	049	Transfer Corona Wire Bias 1 (Film / Type #3 / / 80%RH)		400 to 1496	Micro amp.
	04A	Transfer Corona Wire Bias 1 (Film / Type #3 / / 100%RH)		400 to 1496	Micro amp.
	04b	Transfer Corona Wire Bias 1 (Film / Type #4 / 0%RH)		400 to 1496	Micro amp.
	04C	Transfer Corona Wire Bias 1 (Film / Type #4 / 20%RH)		400 to 1496	Micro amp.
	04d	Transfer Corona Wire Bias 1 (Film / Type #4 / 40%RH)		400 to 1496	Micro amp.
	04E	Transfer Corona Wire Bias 1 (Film / Type #4 / / 60%RH)		400 to 1496	Micro amp.
	04F	Transfer Corona Wire Bias 1 (Film / Type #4 / / 80%RH)		400 to 1496	Micro amp.
	050	Transfer Corona Wire Bias 1 (Film / Type #4 / / 100%RH)		400 to 1496	Micro amp.
	051	Transfer Corona Wire Bias 1 (Gloss / Type #1 / 0%RH)		400 to 1496	Micro amp.
	052	Transfer Corona Wire Bias 1 (Gloss / Type #1 / 20%RH)		400 to 1496	Micro amp.
	053	Transfer Corona Wire Bias 1 (Gloss / Type #1 / 40%RH)		400 to 1496	Micro amp.
	054	Transfer Corona Wire Bias 1 (Gloss / Type #1 / / 60%RH)		400 to 1496	Micro amp.
	055	Transfer Corona Wire Bias 1 (Gloss / Type #1 / / 80%RH)		400 to 1496	Micro amp.
	056	Transfer Corona Wire Bias 1 (Gloss / Type #1 / / 100%RH)		400 to 1496	Micro amp.
	057	Transfer Corona Wire Bias 1 (Gloss / Type #2 / 0%RH)		400 to 1496	Micro amp.
	058	Transfer Corona Wire Bias 1 (Gloss / Type #2 / 20%RH)		400 to 1496	Micro amp.
	059	Transfer Corona Wire Bias 1 (Gloss / Type #2 / 40%RH)		400 to 1496	Micro amp.
	05A	Transfer Corona Wire Bias 1 (Gloss / Type #2 / / 60%RH)		400 to 1496	Micro amp.
	05b	Transfer Corona Wire Bias 1 (Gloss / Type #2 / / 80%RH)		400 to 1496	Micro amp.
	05C	Transfer Corona Wire Bias 1 (Gloss / Type #2 / / 100%RH)		400 to 1496	Micro amp.
	05d	Transfer Corona Wire Bias 1 (Gloss / Type #3 / 0%RH)		400 to 1496	Micro amp.
	05E	Transfer Corona Wire Bias 1 (Gloss / Type #3 / 20%RH)		400 to 1496	Micro amp.
	05F	Transfer Corona Wire Bias 1 (Gloss / Type #3 / 40%RH)		400 to 1496	Micro amp.
	060	Transfer Corona Wire Bias 1 (Gloss / Type #3 / / 60%RH)		400 to 1496	Micro amp.
	061	Transfer Corona Wire Bias 1 (Gloss / Type #3 / / 80%RH)		400 to 1496	Micro amp.
	062	Transfer Corona Wire Bias 1 (Gloss / Type #3 / / 100%RH)		400 to 1496	Micro amp.
	063	Transfer Corona Wire Bias 1 (Gloss / Type #4 / 0%RH)		400 to 1496	Micro amp.
	064	Transfer Corona Wire Bias 1 (Gloss / Type #4 / 20%RH)		400 to 1496	Micro amp.
	065	Transfer Corona Wire Bias 1 (Gloss / Type #4 / 40%RH)		400 to 1496	Micro amp.
	066	Transfer Corona Wire Bias 1 (Gloss / Type #4 / / 60%RH)		400 to 1496	Micro amp.
	067	Transfer Corona Wire Bias 1 (Gloss / Type #4 / / 80%RH)		400 to 1496	Micro amp.
	068	Transfer Corona Wire Bias 1 (Gloss / Type #4 / / 100%RH)		400 to 1496	Micro amp.
	069	Transfer Corona Wire Bias 2 (Plain paper / Type #1 / 0%RH)		400 to 1496	Micro amp.
	06A	Transfer Corona Wire Bias 2 (Plain paper / Type #1 / 20%RH)		400 to 1496	Micro amp.

Group code	Individual code	Target	Default value	Setting range	Unit
1 (High voltage)	06b	Transfer Corona Wire Bias 2 (Plain paper / Type #1 / 40%RH)		400 to 1496	Micro amp.
	06C	Transfer Corona Wire Bias 2 (Plain paper / Type #1 / / 60%RH)		400 to 1496	Micro amp.
	06d	Transfer Corona Wire Bias 2 (Plain paper / Type #1 / / 80%RH)		400 to 1496	Micro amp.
	06E	Transfer Corona Wire Bias 2 (Plain paper / Type #1 / / 100%RH)		400 to 1496	Micro amp.
	06F	Transfer Corona Wire Bias 2 (Plain paper / Type #2 / 0%RH)		400 to 1496	Micro amp.
	070	Transfer Corona Wire Bias 2 (Plain paper / Type #2 / 20%RH)		400 to 1496	Micro amp.
	071	Transfer Corona Wire Bias 2 (Plain paper / Type #2 / 40%RH)		400 to 1496	Micro amp.
	072	Transfer Corona Wire Bias 2 (Plain paper / Type #2 / / 60%RH)		400 to 1496	Micro amp.
	073	Transfer Corona Wire Bias 2 (Plain paper / Type #2 / / 80%RH)		400 to 1496	Micro amp.
	074	Transfer Corona Wire Bias 2 (Plain paper / Type #2 / / 100%RH)		400 to 1496	Micro amp.
	075	Transfer Corona Wire Bias 2 (Plain paper / Type #3 / 0%RH)		400 to 1496	Micro amp.
	076	Transfer Corona Wire Bias 2 (Plain paper / Type #3 / 20%RH)		400 to 1496	Micro amp.
	077	Transfer Corona Wire Bias 2 (Plain paper / Type #3 / 40%RH)		400 to 1496	Micro amp.
	078	Transfer Corona Wire Bias 2 (Plain paper / Type #3 / / 60%RH)		400 to 1496	Micro amp.
	079	Transfer Corona Wire Bias 2 (Plain paper / Type #3 / / 80%RH)		400 to 1496	Micro amp.
	07A	Transfer Corona Wire Bias 2 (Plain paper / Type #3 / / 100%RH)		400 to 1496	Micro amp.
	07b	Transfer Corona Wire Bias 2 (Plain paper / Type #4 / 0%RH)		400 to 1496	Micro amp.
	07C	Transfer Corona Wire Bias 2 (Plain paper / Type #4 / 20%RH)		400 to 1496	Micro amp.
	07d	Transfer Corona Wire Bias 2 (Plain paper / Type #4 / 40%RH)		400 to 1496	Micro amp.
	07E	Transfer Corona Wire Bias 2 (Plain paper / Type #4 / / 60%RH)		400 to 1496	Micro amp.
	07F	Transfer Corona Wire Bias 2 (Plain paper / Type #4 / / 80%RH)		400 to 1496	Micro amp.
	080	Transfer Corona Wire Bias 2 (Plain paper / Type #4 / / 100%RH)		400 to 1496	Micro amp.
	081	Transfer Corona Wire Bias 2 (Tracing paper / Type #1 / 0%RH)		400 to 1496	Micro amp.
	082	Transfer Corona Wire Bias 2 (Tracing paper / Type #1 / 20%RH)		400 to 1496	Micro amp.
	083	Transfer Corona Wire Bias 2 (Tracing paper / Type #1 / 40%RH)		400 to 1496	Micro amp.
	084	Transfer Corona Wire Bias 2 (Tracing paper / Type #1 / / 60%RH)		400 to 1496	Micro amp.
	085	Transfer Corona Wire Bias 2 (Tracing paper / Type #1 / / 80%RH)		400 to 1496	Micro amp.
	086	Transfer Corona Wire Bias 2 (Tracing paper / Type #1 / / 100%RH)		400 to 1496	Micro amp.
	087	Transfer Corona Wire Bias 2 (Tracing paper / Type #2 / 0%RH)		400 to 1496	Micro amp.
	088	Transfer Corona Wire Bias 2 (Tracing paper / Type #2 / 20%RH)		400 to 1496	Micro amp.
	089	Transfer Corona Wire Bias 2 (Tracing paper / Type #2 / 40%RH)		400 to 1496	Micro amp.
	08A	Transfer Corona Wire Bias 2 (Tracing paper / Type #2 / / 60%RH)		400 to 1496	Micro amp.
	08b	Transfer Corona Wire Bias 2 (Tracing paper / Type #2 / / 80%RH)		400 to 1496	Micro amp.
	08C	Transfer Corona Wire Bias 2 (Tracing paper / Type #2 / / 100%RH)		400 to 1496	Micro amp.
	08d	Transfer Corona Wire Bias 2 (Tracing paper / Type #3 / 0%RH)		400 to 1496	Micro amp.
	08E	Transfer Corona Wire Bias 2 (Tracing paper / Type #3 / 20%RH)		400 to 1496	Micro amp.

Group code	Individual code	Target	Default value	Setting range	Unit
1 (High voltage)	08F	Transfer Corona Wire Bias 2 (Tracing paper / Type #3 / 40%RH)		400 to 1496	Micro amp.
	090	Transfer Corona Wire Bias 2 (Tracing paper / Type #3 / / 60%RH)		400 to 1496	Micro amp.
	091	Transfer Corona Wire Bias 2 (Tracing paper / Type #3 / / 80%RH)		400 to 1496	Micro amp.
	092	Transfer Corona Wire Bias 2 (Tracing paper / Type #3 / / 100%RH)		400 to 1496	Micro amp.
	093	Transfer Corona Wire Bias 2 (Tracing paper / Type #4 / 0%RH)		400 to 1496	Micro amp.
	094	Transfer Corona Wire Bias 2 (Tracing paper / Type #4 / 20%RH)		400 to 1496	Micro amp.
	095	Transfer Corona Wire Bias 2 (Tracing paper / Type #4 / 40%RH)		400 to 1496	Micro amp.
	096	Transfer Corona Wire Bias 2 (Tracing paper / Type #4 / / 60%RH)		400 to 1496	Micro amp.
	097	Transfer Corona Wire Bias 2 (Tracing paper / Type #4 / / 80%RH)		400 to 1496	Micro amp.
	098	Transfer Corona Wire Bias 2 (Tracing paper / Type #4 / / 100%RH)		400 to 1496	Micro amp.
	099	Transfer Corona Wire Bias 2 (Film / Type #1 / 0%RH)		400 to 1496	Micro amp.
	09A	Transfer Corona Wire Bias 2 (Film / Type #1 / 20%RH)		400 to 1496	Micro amp.
	09b	Transfer Corona Wire Bias 2 (Film / Type #1 / 40%RH)		400 to 1496	Micro amp.
	09C	Transfer Corona Wire Bias 2 (Film / Type #1 / / 60%RH)		400 to 1496	Micro amp.
	09d	Transfer Corona Wire Bias 2 (Film / Type #1 / / 80%RH)		400 to 1496	Micro amp.
	09E	Transfer Corona Wire Bias 2 (Film / Type #1 / / 100%RH)		400 to 1496	Micro amp.
	09F	Transfer Corona Wire Bias 2 (Film / Type #2 / 0%RH)		400 to 1496	Micro amp.
	0A0	Transfer Corona Wire Bias 2 (Film / Type #2 / 20%RH)		400 to 1496	Micro amp.
	0A1	Transfer Corona Wire Bias 2 (Film / Type #2 / 40%RH)		400 to 1496	Micro amp.
	0A2	Transfer Corona Wire Bias 2 (Film / Type #2 / / 60%RH)		400 to 1496	Micro amp.
	0A3	Transfer Corona Wire Bias 2 (Film / Type #2 / / 80%RH)		400 to 1496	Micro amp.
	0A4	Transfer Corona Wire Bias 2 (Film / Type #2 / / 100%RH)		400 to 1496	Micro amp.
	0A5	Transfer Corona Wire Bias 2 (Film / Type #3 / 0%RH)		400 to 1496	Micro amp.
	0A6	Transfer Corona Wire Bias 2 (Film / Type #3 / 20%RH)		400 to 1496	Micro amp.
	0A7	Transfer Corona Wire Bias 2 (Film / Type #3 / 40%RH)		400 to 1496	Micro amp.
	0A8	Transfer Corona Wire Bias 2 (Film / Type #3 / / 60%RH)		400 to 1496	Micro amp.
	0A9	Transfer Corona Wire Bias 2 (Film / Type #3 / / 80%RH)		400 to 1496	Micro amp.
	0AA	Transfer Corona Wire Bias 2 (Film / Type #3 / / 100%RH)		400 to 1496	Micro amp.
	0Ab	Transfer Corona Wire Bias 2 (Film / Type #4 / 0%RH)		400 to 1496	Micro amp.
	0AC	Transfer Corona Wire Bias 2 (Film / Type #4 / 20%RH)		400 to 1496	Micro amp.
	0Ad	Transfer Corona Wire Bias 2 (Film / Type #4 / 40%RH)		400 to 1496	Micro amp.
	0AE	Transfer Corona Wire Bias 2 (Film / Type #4 / / 60%RH)		400 to 1496	Micro amp.
	0AF	Transfer Corona Wire Bias 2 (Film / Type #4 / / 80%RH)		400 to 1496	Micro amp.
	0b0	Transfer Corona Wire Bias 2 (Film / Type #4 / / 100%RH)		400 to 1496	Micro amp.
	0b1	Transfer Corona Wire Bias 2 (Gloss / Type #1 / 0%RH)		400 to 1496	Micro amp.
	0b2	Transfer Corona Wire Bias 2 (Gloss / Type #1 / 20%RH)		400 to 1496	Micro amp.

Group code	Individual code	Target	Default value	Setting range	Unit
1 (High voltage)	0b3	Transfer Corona Wire Bias 2 (Gloss / Type #1 / 40%RH)		400 to 1496	Micro amp.
	0b4	Transfer Corona Wire Bias 2 (Gloss / Type #1 / / 60%RH)		400 to 1496	Micro amp.
	0b5	Transfer Corona Wire Bias 2 (Gloss / Type #1 / / 80%RH)		400 to 1496	Micro amp.
	0b6	Transfer Corona Wire Bias 2 (Gloss / Type #1 / / 100%RH)		400 to 1496	Micro amp.
	0b7	Transfer Corona Wire Bias 2 (Gloss / Type #2 / 0%RH)		400 to 1496	Micro amp.
	0b8	Transfer Corona Wire Bias 2 (Gloss / Type #2 / 20%RH)		400 to 1496	Micro amp.
	0b9	Transfer Corona Wire Bias 2 (Gloss / Type #2 / 40%RH)		400 to 1496	Micro amp.
	0bA	Transfer Corona Wire Bias 2 (Gloss / Type #2 / / 60%RH)		400 to 1496	Micro amp.
	0bb	Transfer Corona Wire Bias 2 (Gloss / Type #2 / / 80%RH)		400 to 1496	Micro amp.
	0bC	Transfer Corona Wire Bias 2 (Gloss / Type #2 / / 100%RH)		400 to 1496	Micro amp.
	0bd	Transfer Corona Wire Bias 2 (Gloss / Type #3 / 0%RH)		400 to 1496	Micro amp.
	0bE	Transfer Corona Wire Bias 2 (Gloss / Type #3 / 20%RH)		400 to 1496	Micro amp.
	0bF	Transfer Corona Wire Bias 2 (Gloss / Type #3 / 40%RH)		400 to 1496	Micro amp.
	0C0	Transfer Corona Wire Bias 2 (Gloss / Type #3 / / 60%RH)		400 to 1496	Micro amp.
	0C1	Transfer Corona Wire Bias 2 (Gloss / Type #3 / / 80%RH)		400 to 1496	Micro amp.
	0C2	Transfer Corona Wire Bias 2 (Gloss / Type #3 / / 100%RH)		400 to 1496	Micro amp.
	0C3	Transfer Corona Wire Bias 2 (Gloss / Type #4 / 0%RH)		400 to 1496	Micro amp.
	0C4	Transfer Corona Wire Bias 2 (Gloss / Type #4 / 20%RH)		400 to 1496	Micro amp.
	0C5	Transfer Corona Wire Bias 2 (Gloss / Type #4 / 40%RH)		400 to 1496	Micro amp.
	0C6	Transfer Corona Wire Bias 2 (Gloss / Type #4 / / 60%RH)		400 to 1496	Micro amp.
	0C7	Transfer Corona Wire Bias 2 (Gloss / Type #4 / / 80%RH)		400 to 1496	Micro amp.
	0C8	Transfer Corona Wire Bias 2 (Gloss / Type #4 / / 100%RH)		400 to 1496	Micro amp.
	0C9	Transfer Corona Wire Bias 3 (Plain paper / Type #1 / 0%RH)		400 to 1496	Micro amp.
	0CA	Transfer Corona Wire Bias 3 (Plain paper / Type #1 / 20%RH)		400 to 1496	Micro amp.
	0Cb	Transfer Corona Wire Bias 3 (Plain paper / Type #1 / 40%RH)		400 to 1496	Micro amp.
	0CC	Transfer Corona Wire Bias 3 (Plain paper / Type #1 / / 60%RH)		400 to 1496	Micro amp.
	0Cd	Transfer Corona Wire Bias 3 (Plain paper / Type #1 / / 80%RH)		400 to 1496	Micro amp.
	0CE	Transfer Corona Wire Bias 3 (Plain paper / Type #1 / / 100%RH)		400 to 1496	Micro amp.
	0CF	Transfer Corona Wire Bias 3 (Plain paper / Type #2 / 0%RH)		400 to 1496	Micro amp.
	0d0	Transfer Corona Wire Bias 3 (Plain paper / Type #2 / 20%RH)		400 to 1496	Micro amp.
	0d1	Transfer Corona Wire Bias 3 (Plain paper / Type #2 / 40%RH)		400 to 1496	Micro amp.
	0d2	Transfer Corona Wire Bias 3 (Plain paper / Type #2 / / 60%RH)		400 to 1496	Micro amp.
	0d3	Transfer Corona Wire Bias 3 (Plain paper / Type #2 / / 80%RH)		400 to 1496	Micro amp.
	0d4	Transfer Corona Wire Bias 3 (Plain paper / Type #2 / / 100%RH)		400 to 1496	Micro amp.
	0d5	Transfer Corona Wire Bias 3 (Plain paper / Type #3 / 0%RH)		400 to 1496	Micro amp.
	0d6	Transfer Corona Wire Bias 3 (Plain paper / Type #3 / 20%RH)		400 to 1496	Micro amp.

Group code	Individual code	Target	Default value	Setting range	Unit
1 (High voltage)	0d7	Transfer Corona Wire Bias 3 (Plain paper / Type #3 / 40%RH)		400 to 1496	Micro amp.
	0d8	Transfer Corona Wire Bias 3 (Plain paper / Type #3 / / 60%RH)		400 to 1496	Micro amp.
	0d9	Transfer Corona Wire Bias 3 (Plain paper / Type #3 / / 80%RH)		400 to 1496	Micro amp.
	0dA	Transfer Corona Wire Bias 3 (Plain paper / Type #3 / / 100%RH)		400 to 1496	Micro amp.
	0db	Transfer Corona Wire Bias 3 (Plain paper / Type #4 / 0%RH)		400 to 1496	Micro amp.
	0dC	Transfer Corona Wire Bias 3 (Plain paper / Type #4 / 20%RH)		400 to 1496	Micro amp.
	0dd	Transfer Corona Wire Bias 3 (Plain paper / Type #4 / 40%RH)		400 to 1496	Micro amp.
	0dE	Transfer Corona Wire Bias 3 (Plain paper / Type #4 / / 60%RH)		400 to 1496	Micro amp.
	0dF	Transfer Corona Wire Bias 3 (Plain paper / Type #4 / / 80%RH)		400 to 1496	Micro amp.
	0E0	Transfer Corona Wire Bias 3 (Plain paper / Type #4 / / 100%RH)		400 to 1496	Micro amp.
	0E1	Transfer Corona Wire Bias 3 (Tracing paper / Type #1 / 0%RH)		400 to 1496	Micro amp.
	0E2	Transfer Corona Wire Bias 3 (Tracing paper / Type #1 / 20%RH)		400 to 1496	Micro amp.
	0E3	Transfer Corona Wire Bias 3 (Tracing paper / Type #1 / 40%RH)		400 to 1496	Micro amp.
	0E4	Transfer Corona Wire Bias 3 (Tracing paper / Type #1 / / 60%RH)		400 to 1496	Micro amp.
	0E5	Transfer Corona Wire Bias 3 (Tracing paper / Type #1 / / 80%RH)		400 to 1496	Micro amp.
	0E6	Transfer Corona Wire Bias 3 (Tracing paper / Type #1 / / 100%RH)		400 to 1496	Micro amp.
	0E7	Transfer Corona Wire Bias 3 (Tracing paper / Type #2 / 0%RH)		400 to 1496	Micro amp.
	0E8	Transfer Corona Wire Bias 3 (Tracing paper / Type #2 / 20%RH)		400 to 1496	Micro amp.
	0E9	Transfer Corona Wire Bias 3 (Tracing paper / Type #2 / 40%RH)		400 to 1496	Micro amp.
	0EA	Transfer Corona Wire Bias 3 (Tracing paper / Type #2 / / 60%RH)		400 to 1496	Micro amp.
	0Eb	Transfer Corona Wire Bias 3 (Tracing paper / Type #2 / / 80%RH)		400 to 1496	Micro amp.
	0EC	Transfer Corona Wire Bias 3 (Tracing paper / Type #2 / / 100%RH)		400 to 1496	Micro amp.
	0Ed	Transfer Corona Wire Bias 3 (Tracing paper / Type #3 / 0%RH)		400 to 1496	Micro amp.
	0EE	Transfer Corona Wire Bias 3 (Tracing paper / Type #3 / 20%RH)		400 to 1496	Micro amp.
	0EF	Transfer Corona Wire Bias 3 (Tracing paper / Type #3 / 40%RH)		400 to 1496	Micro amp.
	0F0	Transfer Corona Wire Bias 3 (Tracing paper / Type #3 / / 60%RH)		400 to 1496	Micro amp.
	0F1	Transfer Corona Wire Bias 3 (Tracing paper / Type #3 / / 80%RH)		400 to 1496	Micro amp.
	0F2	Transfer Corona Wire Bias 3 (Tracing paper / Type #3 / / 100%RH)		400 to 1496	Micro amp.
	0F3	Transfer Corona Wire Bias 3 (Tracing paper / Type #4 / 0%RH)		400 to 1496	Micro amp.
	0F4	Transfer Corona Wire Bias 3 (Tracing paper / Type #4 / 20%RH)		400 to 1496	Micro amp.
	0F5	Transfer Corona Wire Bias 3 (Tracing paper / Type #4 / 40%RH)		400 to 1496	Micro amp.
	0F6	Transfer Corona Wire Bias 3 (Tracing paper / Type #4 / / 60%RH)		400 to 1496	Micro amp.
	0F7	Transfer Corona Wire Bias 3 (Tracing paper / Type #4 / / 80%RH)		400 to 1496	Micro amp.
	0F8	Transfer Corona Wire Bias 3 (Tracing paper / Type #4 / / 100%RH)		400 to 1496	Micro amp.
	0F9	Transfer Corona Wire Bias 3 (Film / Type #1 / 0%RH)		400 to 1496	Micro amp.
	0FA	Transfer Corona Wire Bias 3 (Film / Type #1 / 20%RH)		400 to 1496	Micro amp.

Group code	Individual code	Target	Default value	Setting range	Unit
1 (High voltage)	0Fb	Transfer Corona Wire Bias 3 (Film / Type #1 / 40%RH)		400 to 1496	Micro amp.
	0FC	Transfer Corona Wire Bias 3 (Film / Type #1 / / 60%RH)		400 to 1496	Micro amp.
	0Fd	Transfer Corona Wire Bias 3 (Film / Type #1 / / 80%RH)		400 to 1496	Micro amp.
	0FE	Transfer Corona Wire Bias 3 (Film / Type #1 / / 100%RH)		400 to 1496	Micro amp.
	0FF	Transfer Corona Wire Bias 3 (Film / Type #2 / 0%RH)		400 to 1496	Micro amp.
	100	Transfer Corona Wire Bias 3 (Film / Type #2 / 20%RH)		400 to 1496	Micro amp.
	101	Transfer Corona Wire Bias 3 (Film / Type #2 / 40%RH)		400 to 1496	Micro amp.
	102	Transfer Corona Wire Bias 3 (Film / Type #2 / / 60%RH)		400 to 1496	Micro amp.
	103	Transfer Corona Wire Bias 3 (Film / Type #2 / / 80%RH)		400 to 1496	Micro amp.
	104	Transfer Corona Wire Bias 3 (Film / Type #2 / / 100%RH)		400 to 1496	Micro amp.
	105	Transfer Corona Wire Bias 3 (Film / Type #3 / 0%RH)		400 to 1496	Micro amp.
	106	Transfer Corona Wire Bias 3 (Film / Type #3 / 20%RH)		400 to 1496	Micro amp.
	107	Transfer Corona Wire Bias 3 (Film / Type #3 / 40%RH)		400 to 1496	Micro amp.
	108	Transfer Corona Wire Bias 3 (Film / Type #3 / / 60%RH)		400 to 1496	Micro amp.
	109	Transfer Corona Wire Bias 3 (Film / Type #3 / / 80%RH)		400 to 1496	Micro amp.
	10A	Transfer Corona Wire Bias 3 (Film / Type #3 / / 100%RH)		400 to 1496	Micro amp.
	10b	Transfer Corona Wire Bias 3 (Film / Type #4 / 0%RH)		400 to 1496	Micro amp.
	10C	Transfer Corona Wire Bias 3 (Film / Type #4 / 20%RH)		400 to 1496	Micro amp.
	10D	Transfer Corona Wire Bias 3 (Film / Type #4 / 40%RH)		400 to 1496	Micro amp.
	10E	Transfer Corona Wire Bias 3 (Film / Type #4 / / 60%RH)		400 to 1496	Micro amp.
	10F	Transfer Corona Wire Bias 3 (Film / Type #4 / / 80%RH)		400 to 1496	Micro amp.
	110	Transfer Corona Wire Bias 3 (Film / Type #4 / / 100%RH)		400 to 1496	Micro amp.
	111	Transfer Corona Wire Bias 3 (Gloss / Type #1 / 0%RH)		400 to 1496	Micro amp.
	112	Transfer Corona Wire Bias 3 (Gloss / Type #1 / 20%RH)		400 to 1496	Micro amp.
	113	Transfer Corona Wire Bias 3 (Gloss / Type #1 / 40%RH)		400 to 1496	Micro amp.
	114	Transfer Corona Wire Bias 3 (Gloss / Type #1 / / 60%RH)		400 to 1496	Micro amp.
	115	Transfer Corona Wire Bias 3 (Gloss / Type #1 / / 80%RH)		400 to 1496	Micro amp.
	116	Transfer Corona Wire Bias 3 (Gloss / Type #1 / / 100%RH)		400 to 1496	Micro amp.
	117	Transfer Corona Wire Bias 3 (Gloss / Type #2 / 0%RH)		400 to 1496	Micro amp.
	118	Transfer Corona Wire Bias 3 (Gloss / Type #2 / 20%RH)		400 to 1496	Micro amp.
	119	Transfer Corona Wire Bias 3 (Gloss / Type #2 / 40%RH)		400 to 1496	Micro amp.
	11A	Transfer Corona Wire Bias 3 (Gloss / Type #2 / / 60%RH)		400 to 1496	Micro amp.
	11b	Transfer Corona Wire Bias 3 (Gloss / Type #2 / / 80%RH)		400 to 1496	Micro amp.
	11C	Transfer Corona Wire Bias 3 (Gloss / Type #2 / / 100%RH)		400 to 1496	Micro amp.
	11d	Transfer Corona Wire Bias 3 (Gloss / Type #3 / 0%RH)		400 to 1496	Micro amp.
	11E	Transfer Corona Wire Bias 3 (Gloss / Type #3 / 20%RH)		400 to 1496	Micro amp.

Group code	Individual code	Target	Default value	Setting range	Unit
1 (High voltage)	11F	Transfer Corona Wire Bias 3 (Gloss / Type #3 / 40%RH)		400 to 1496	Micro amp.
	120	Transfer Corona Wire Bias 3 (Gloss / Type #3 / / 60%RH)		400 to 1496	Micro amp.
	121	Transfer Corona Wire Bias 3 (Gloss / Type #3 / / 80%RH)		400 to 1496	Micro amp.
	122	Transfer Corona Wire Bias 3 (Gloss / Type #3 / / 100%RH)		400 to 1496	Micro amp.
	123	Transfer Corona Wire Bias 3 (Gloss / Type #4 / 0%RH)		400 to 1496	Micro amp.
	124	Transfer Corona Wire Bias 3 (Gloss / Type #4 / 20%RH)		400 to 1496	Micro amp.
	125	Transfer Corona Wire Bias 3 (Gloss / Type #4 / 40%RH)		400 to 1496	Micro amp.
	126	Transfer Corona Wire Bias 3 (Gloss / Type #4 / / 60%RH)		400 to 1496	Micro amp.
	127	Transfer Corona Wire Bias 3 (Gloss / Type #4 / / 80%RH)		400 to 1496	Micro amp.
	128	Transfer Corona Wire Bias 3 (Gloss / Type #4 / / 100%RH)		400 to 1496	Micro amp.
	129	Transfer Corona Wire Bias 4 (Plain paper / Type #1 / 0%RH)		400 to 1496	Micro amp.
	12A	Transfer Corona Wire Bias 4 (Plain paper / Type #1 / 20%RH)		400 to 1496	Micro amp.
	12b	Transfer Corona Wire Bias 4 (Plain paper / Type #1 / 40%RH)		400 to 1496	Micro amp.
	12C	Transfer Corona Wire Bias 4 (Plain paper / Type #1 / / 60%RH)		400 to 1496	Micro amp.
	12d	Transfer Corona Wire Bias 4 (Plain paper / Type #1 / / 80%RH)		400 to 1496	Micro amp.
	12E	Transfer Corona Wire Bias 4 (Plain paper / Type #1 / / 100%RH)		400 to 1496	Micro amp.
	12F	Transfer Corona Wire Bias 4 (Plain paper / Type #2 / 0%RH)		400 to 1496	Micro amp.
	130	Transfer Corona Wire Bias 4 (Plain paper / Type #2 / 20%RH)		400 to 1496	Micro amp.
	131	Transfer Corona Wire Bias 4 (Plain paper / Type #2 / 40%RH)		400 to 1496	Micro amp.
	132	Transfer Corona Wire Bias 4 (Plain paper / Type #2 / / 60%RH)		400 to 1496	Micro amp.
	133	Transfer Corona Wire Bias 4 (Plain paper / Type #2 / / 80%RH)		400 to 1496	Micro amp.
	134	Transfer Corona Wire Bias 4 (Plain paper / Type #2 / / 100%RH)		400 to 1496	Micro amp.
	135	Transfer Corona Wire Bias 4 (Plain paper / Type #3 / 0%RH)		400 to 1496	Micro amp.
	136	Transfer Corona Wire Bias 4 (Plain paper / Type #3 / 20%RH)		400 to 1496	Micro amp.
	137	Transfer Corona Wire Bias 4 (Plain paper / Type #3 / 40%RH)		400 to 1496	Micro amp.
	138	Transfer Corona Wire Bias 4 (Plain paper / Type #3 / / 60%RH)		400 to 1496	Micro amp.
	139	Transfer Corona Wire Bias 4 (Plain paper / Type #3 / / 80%RH)		400 to 1496	Micro amp.
	13A	Transfer Corona Wire Bias 4 (Plain paper / Type #3 / / 100%RH)		400 to 1496	Micro amp.
	13b	Transfer Corona Wire Bias 4 (Plain paper / Type #4 / 0%RH)		400 to 1496	Micro amp.
	13C	Transfer Corona Wire Bias 4 (Plain paper / Type #4 / 20%RH)		400 to 1496	Micro amp.
	13d	Transfer Corona Wire Bias 4 (Plain paper / Type #4 / 40%RH)		400 to 1496	Micro amp.
	13E	Transfer Corona Wire Bias 4 (Plain paper / Type #4 / / 60%RH)		400 to 1496	Micro amp.
	13F	Transfer Corona Wire Bias 4 (Plain paper / Type #4 / / 80%RH)		400 to 1496	Micro amp.
	140	Transfer Corona Wire Bias 4 (Plain paper / Type #4 / / 100%RH)		400 to 1496	Micro amp.
	141	Transfer Corona Wire Bias 4 (Tracing paper / Type #1 / 0%RH)		400 to 1496	Micro amp.
	142	Transfer Corona Wire Bias 4 (Tracing paper / Type #1 / 20%RH)		400 to 1496	Micro amp.

Group code	Individual code	Target	Default value	Setting range	Unit
1 (High voltage)	143	Transfer Corona Wire Bias 4 (Tracing paper / Type #1 / 40%RH)		400 to 1496	Micro amp.
	144	Transfer Corona Wire Bias 4 (Tracing paper / Type #1 / / 60%RH)		400 to 1496	Micro amp.
	145	Transfer Corona Wire Bias 4 (Tracing paper / Type #1 / / 80%RH)		400 to 1496	Micro amp.
	146	Transfer Corona Wire Bias 4 (Tracing paper / Type #1 / / 100%RH)		400 to 1496	Micro amp.
	147	Transfer Corona Wire Bias 4 (Tracing paper / Type #2 / 0%RH)		400 to 1496	Micro amp.
	148	Transfer Corona Wire Bias 4 (Tracing paper / Type #2 / 20%RH)		400 to 1496	Micro amp.
	149	Transfer Corona Wire Bias 4 (Tracing paper / Type #2 / 40%RH)		400 to 1496	Micro amp.
	14A	Transfer Corona Wire Bias 4 (Tracing paper / Type #2 / / 60%RH)		400 to 1496	Micro amp.
	14b	Transfer Corona Wire Bias 4 (Tracing paper / Type #2 / / 80%RH)		400 to 1496	Micro amp.
	14C	Transfer Corona Wire Bias 4 (Tracing paper / Type #2 / / 100%RH)		400 to 1496	Micro amp.
	14d	Transfer Corona Wire Bias 4 (Tracing paper / Type #3 / 0%RH)		400 to 1496	Micro amp.
	14E	Transfer Corona Wire Bias 4 (Tracing paper / Type #3 / 20%RH)		400 to 1496	Micro amp.
	14F	Transfer Corona Wire Bias 4 (Tracing paper / Type #3 / 40%RH)		400 to 1496	Micro amp.
	150	Transfer Corona Wire Bias 4 (Tracing paper / Type #3 / / 60%RH)		400 to 1496	Micro amp.
	151	Transfer Corona Wire Bias 4 (Tracing paper / Type #3 / / 80%RH)		400 to 1496	Micro amp.
	152	Transfer Corona Wire Bias 4 (Tracing paper / Type #3 / / 100%RH)		400 to 1496	Micro amp.
	153	Transfer Corona Wire Bias 4 (Tracing paper / Type #4 / 0%RH)		400 to 1496	Micro amp.
	154	Transfer Corona Wire Bias 4 (Tracing paper / Type #4 / 20%RH)		400 to 1496	Micro amp.
	155	Transfer Corona Wire Bias 4 (Tracing paper / Type #4 / 40%RH)		400 to 1496	Micro amp.
	156	Transfer Corona Wire Bias 4 (Tracing paper / Type #4 / / 60%RH)		400 to 1496	Micro amp.
	157	Transfer Corona Wire Bias 4 (Tracing paper / Type #4 / / 80%RH)		400 to 1496	Micro amp.
	158	Transfer Corona Wire Bias 4 (Tracing paper / Type #4 / / 100%RH)		400 to 1496	Micro amp.
	159	Transfer Corona Wire Bias 4 (Film / Type #1 / 0%RH)		400 to 1496	Micro amp.
	15A	Transfer Corona Wire Bias 4 (Film / Type #1 / 20%RH)		400 to 1496	Micro amp.
	15b	Transfer Corona Wire Bias 4 (Film / Type #1 / 40%RH)		400 to 1496	Micro amp.
	15C	Transfer Corona Wire Bias 4 (Film / Type #1 / / 60%RH)		400 to 1496	Micro amp.
	15d	Transfer Corona Wire Bias 4 (Film / Type #1 / / 80%RH)		400 to 1496	Micro amp.
	15E	Transfer Corona Wire Bias 4 (Film / Type #1 / / 100%RH)		400 to 1496	Micro amp.
	15F	Transfer Corona Wire Bias 4 (Film / Type #2 / 0%RH)		400 to 1496	Micro amp.
	160	Transfer Corona Wire Bias 4 (Film / Type #2 / 20%RH)		400 to 1496	Micro amp.
	161	Transfer Corona Wire Bias 4 (Film / Type #2 / 40%RH)		400 to 1496	Micro amp.
	162	Transfer Corona Wire Bias 4 (Film / Type #2 / / 60%RH)		400 to 1496	Micro amp.
	163	Transfer Corona Wire Bias 4 (Film / Type #2 / / 80%RH)		400 to 1496	Micro amp.
	164	Transfer Corona Wire Bias 4 (Film / Type #2 / / 100%RH)		400 to 1496	Micro amp.
	165	Transfer Corona Wire Bias 4 (Film / Type #3 / 0%RH)		400 to 1496	Micro amp.
	166	Transfer Corona Wire Bias 4 (Film / Type #3 / 20%RH)		400 to 1496	Micro amp.

Group code	Individual code	Target	Default value	Setting range	Unit
1 (High voltage)	167	Transfer Corona Wire Bias 4 (Film / Type #3 / 40%RH)		400 to 1496	Micro amp.
	168	Transfer Corona Wire Bias 4 (Film / Type #3 / / 60%RH)		400 to 1496	Micro amp.
	169	Transfer Corona Wire Bias 4 (Film / Type #3 / / 80%RH)		400 to 1496	Micro amp.
	16A	Transfer Corona Wire Bias 4 (Film / Type #3 / / 100%RH)		400 to 1496	Micro amp.
	16b	Transfer Corona Wire Bias 4 (Film / Type #4 / 0%RH)		400 to 1496	Micro amp.
	16C	Transfer Corona Wire Bias 4 (Film / Type #4 / 20%RH)		400 to 1496	Micro amp.
	16d	Transfer Corona Wire Bias 4 (Film / Type #4 / 40%RH)		400 to 1496	Micro amp.
	16E	Transfer Corona Wire Bias 4 (Film / Type #4 / / 60%RH)		400 to 1496	Micro amp.
	16F	Transfer Corona Wire Bias 4 (Film / Type #4 / / 80%RH)		400 to 1496	Micro amp.
	170	Transfer Corona Wire Bias 4 (Film / Type #4 / / 100%RH)		400 to 1496	Micro amp.
	171	Transfer Corona Wire Bias 4 (Gloss / Type #1 / 0%RH)		400 to 1496	Micro amp.
	172	Transfer Corona Wire Bias 4 (Gloss / Type #1 / 20%RH)		400 to 1496	Micro amp.
	173	Transfer Corona Wire Bias 4 (Gloss / Type #1 / 40%RH)		400 to 1496	Micro amp.
	174	Transfer Corona Wire Bias 4 (Gloss / Type #1 / / 60%RH)		400 to 1496	Micro amp.
	175	Transfer Corona Wire Bias 4 (Gloss / Type #1 / / 80%RH)		400 to 1496	Micro amp.
	176	Transfer Corona Wire Bias 4 (Gloss / Type #1 / / 100%RH)		400 to 1496	Micro amp.
	177	Transfer Corona Wire Bias 4 (Gloss / Type #2 / 0%RH)		400 to 1496	Micro amp.
	178	Transfer Corona Wire Bias 4 (Gloss / Type #2 / 20%RH)		400 to 1496	Micro amp.
	179	Transfer Corona Wire Bias 4 (Gloss / Type #2 / 40%RH)		400 to 1496	Micro amp.
	17A	Transfer Corona Wire Bias 4 (Gloss / Type #2 / / 60%RH)		400 to 1496	Micro amp.
	17b	Transfer Corona Wire Bias 4 (Gloss / Type #2 / / 80%RH)		400 to 1496	Micro amp.
	17C	Transfer Corona Wire Bias 4 (Gloss / Type #2 / / 100%RH)		400 to 1496	Micro amp.
	17d	Transfer Corona Wire Bias 4 (Gloss / Type #3 / 0%RH)		400 to 1496	Micro amp.
	17E	Transfer Corona Wire Bias 4 (Gloss / Type #3 / 20%RH)		400 to 1496	Micro amp.
	17F	Transfer Corona Wire Bias 4 (Gloss / Type #3 / 40%RH)		400 to 1496	Micro amp.
	180	Transfer Corona Wire Bias 4 (Gloss / Type #3 / / 60%RH)		400 to 1496	Micro amp.
	181	Transfer Corona Wire Bias 4 (Gloss / Type #3 / / 80%RH)		400 to 1496	Micro amp.
	182	Transfer Corona Wire Bias 4 (Gloss / Type #3 / / 100%RH)		400 to 1496	Micro amp.
	183	Transfer Corona Wire Bias 4 (Gloss / Type #4 / 0%RH)		400 to 1496	Micro amp.
	184	Transfer Corona Wire Bias 4 (Gloss / Type #4 / 20%RH)		400 to 1496	Micro amp.
	185	Transfer Corona Wire Bias 4 (Gloss / Type #4 / 40%RH)		400 to 1496	Micro amp.
	186	Transfer Corona Wire Bias 4 (Gloss / Type #4 / / 60%RH)		400 to 1496	Micro amp.
	187	Transfer Corona Wire Bias 4 (Gloss / Type #4 / / 80%RH)		400 to 1496	Micro amp.
	188	Transfer Corona Wire Bias 4 (Gloss / Type #4 / / 100%RH)		400 to 1496	Micro amp.
	189	Attraction Corona Wire Bias (Plain paper / Type #1 / 0%RH)		5000 to 7490	-V
	18A	Attraction Corona Wire Bias (Plain paper / Type #1 / 20%RH)		5000 to 7490	-V

Group code	Individual code	Target	Default value	Setting range	Unit
1 (High voltage)	18b	Attraction Corona Wire Bias (Plain paper / Type #1 / 40%RH)		5000 to 7490	-V
	18C	Attraction Corona Wire Bias (Plain paper / Type #1 / 60%RH)		5000 to 7490	-V
	18d	Attraction Corona Wire Bias (Plain paper / Type #1 / 80%RH)		5000 to 7490	-V
	18E	Attraction Corona Wire Bias (Plain paper / Type #1 / 100%RH)		5000 to 7490	-V
	18F	Attraction Corona Wire Bias (Plain paper / Type #2 / 0%RH)		5000 to 7490	-V
	190	Attraction Corona Wire Bias (Plain paper / Type #2 / 20%RH)		5000 to 7490	-V
	191	Attraction Corona Wire Bias (Plain paper / Type #2 / 40%RH)		5000 to 7490	-V
	192	Attraction Corona Wire Bias (Plain paper / Type #2 / 60%RH)		5000 to 7490	-V
	193	Attraction Corona Wire Bias (Plain paper / Type #2 / 80%RH)		5000 to 7490	-V
	194	Attraction Corona Wire Bias (Plain paper / Type #2 / 100%RH)		5000 to 7490	-V
	195	Attraction Corona Wire Bias (Plain paper / Type #3 / 0%RH)		5000 to 7490	-V
	196	Attraction Corona Wire Bias (Plain paper / Type #3 / 20%RH)		5000 to 7490	-V
	197	Attraction Corona Wire Bias (Plain paper / Type #3 / 40%RH)		5000 to 7490	-V
	198	Attraction Corona Wire Bias (Plain paper / Type #3 / 60%RH)		5000 to 7490	-V
	199	Attraction Corona Wire Bias (Plain paper / Type #3 / 80%RH)		5000 to 7490	-V
	19A	Attraction Corona Wire Bias (Plain paper / Type #3 / 100%RH)		5000 to 7490	-V
	19b	Attraction Corona Wire Bias (Plain paper / Type #4 / 0%RH)		5000 to 7490	-V
	19C	Attraction Corona Wire Bias (Plain paper / Type #4 / 20%RH)		5000 to 7490	-V
	19d	Attraction Corona Wire Bias (Plain paper / Type #4 / 40%RH)		5000 to 7490	-V
	19E	Attraction Corona Wire Bias (Plain paper / Type #4 / 60%RH)		5000 to 7490	-V
	19F	Attraction Corona Wire Bias (Plain paper / Type #4 / 80%RH)		5000 to 7490	-V
	1A0	Attraction Corona Wire Bias (Plain paper / Type #4 / 100%RH)		5000 to 7490	-V
	1A1	Attraction Corona Wire Bias (Tracing paper / Type #1 / 0%RH)		5000 to 7490	-V
	1A2	Attraction Corona Wire Bias (Tracing paper / Type #1 / 20%RH)		5000 to 7490	-V
	1A3	Attraction Corona Wire Bias (Tracing paper / Type #1 / 40%RH)		5000 to 7490	-V
	1A4	Attraction Corona Wire Bias (Tracing paper / Type #1 / 60%RH)		5000 to 7490	-V
	1A5	Attraction Corona Wire Bias (Tracing paper / Type #1 / 80%RH)		5000 to 7490	-V
	1A6	Attraction Corona Wire Bias (Tracing paper / Type #1 / 100%RH)		5000 to 7490	-V
	1A7	Attraction Corona Wire Bias (Tracing paper / Type #2 / 0%RH)		5000 to 7490	-V
	1A8	Attraction Corona Wire Bias (Tracing paper / Type #2 / 20%RH)		5000 to 7490	-V
	1A9	Attraction Corona Wire Bias (Tracing paper / Type #2 / 40%RH)		5000 to 7490	-V
	1AA	Attraction Corona Wire Bias (Tracing paper / Type #2 / 60%RH)		5000 to 7490	-V
	1Ab	Attraction Corona Wire Bias (Tracing paper / Type #2 / 80%RH)		5000 to 7490	-V
	1AC	Attraction Corona Wire Bias (Tracing paper / Type #2 / 100%RH)		5000 to 7490	-V
	1Ad	Attraction Corona Wire Bias (Tracing paper / Type #3 / 0%RH)		5000 to 7490	-V
	1AE	Attraction Corona Wire Bias (Tracing paper / Type #3 / 20%RH)		5000 to 7490	-V

Group code	Individual code	Target	Default value	Setting range	Unit
1 (High voltage)	1AF	Attraction Corona Wire Bias (Tracing paper / Type #3 / 40%RH)		5000 to 7490	-V
	1b0	Attraction Corona Wire Bias (Tracing paper / Type #3 / 60%RH)		5000 to 7490	-V
	1b1	Attraction Corona Wire Bias (Tracing paper / Type #3 / 80%RH)		5000 to 7490	-V
	1b2	Attraction Corona Wire Bias (Tracing paper / Type #3 / 100%RH)		5000 to 7490	-V
	1b3	Attraction Corona Wire Bias (Tracing paper / Type #4 / 0%RH)		5000 to 7490	-V
	1b4	Attraction Corona Wire Bias (Tracing paper / Type #4 / 20%RH)		5000 to 7490	-V
	1b5	Attraction Corona Wire Bias (Tracing paper / Type #4 / 40%RH)		5000 to 7490	-V
	1b6	Attraction Corona Wire Bias (Tracing paper / Type #4 / 60%RH)		5000 to 7490	-V
	1b7	Attraction Corona Wire Bias (Tracing paper / Type #4 / 80%RH)		5000 to 7490	-V
	1b8	Attraction Corona Wire Bias (Tracing paper / Type #4 / 100%RH)		5000 to 7490	-V
	1b9	Attraction Corona Wire Bias (Film / Type #1 / 0%RH)		5000 to 7490	-V
	1bA	Attraction Corona Wire Bias (Film / Type #1 / 20%RH)		5000 to 7490	-V
	1bb	Attraction Corona Wire Bias (Film / Type #1 / 40%RH)		5000 to 7490	-V
	1bC	Attraction Corona Wire Bias (Film / Type #1 / 60%RH)		5000 to 7490	-V
	1bd	Attraction Corona Wire Bias (Film / Type #1 / 80%RH)		5000 to 7490	-V
	1bE	Attraction Corona Wire Bias (Film / Type #1 / 100%RH)		5000 to 7490	-V
	1bF	Attraction Corona Wire Bias (Film / Type #2 / 0%RH)		5000 to 7490	-V
	1C0	Attraction Corona Wire Bias (Film / Type #2 / 20%RH)		5000 to 7490	-V
	1C1	Attraction Corona Wire Bias (Film / Type #2 / 40%RH)		5000 to 7490	-V
	1C2	Attraction Corona Wire Bias (Film / Type #2 / 60%RH)		5000 to 7490	-V
	1C3	Attraction Corona Wire Bias (Film / Type #2 / 80%RH)		5000 to 7490	-V
	1C4	Attraction Corona Wire Bias (Film / Type #2 / 100%RH)		5000 to 7490	-V
	1C5	Attraction Corona Wire Bias (Film / Type #3 / 0%RH)		5000 to 7490	-V
	1C6	Attraction Corona Wire Bias (Film / Type #3 / 20%RH)		5000 to 7490	-V
	1C7	Attraction Corona Wire Bias (Film / Type #3 / 40%RH)		5000 to 7490	-V
	1C8	Attraction Corona Wire Bias (Film / Type #3 / 60%RH)		5000 to 7490	-V
	1C9	Attraction Corona Wire Bias (Film / Type #3 / 80%RH)		5000 to 7490	-V
	1CA	Attraction Corona Wire Bias (Film / Type #3 / 100%RH)		5000 to 7490	-V
	1Cb	Attraction Corona Wire Bias (Film / Type #4 / 0%RH)		5000 to 7490	-V
	1CC	Attraction Corona Wire Bias (Film / Type #4 / 20%RH)		5000 to 7490	-V
	1Cd	Attraction Corona Wire Bias (Film / Type #4 / 40%RH)		5000 to 7490	-V
	1CE	Attraction Corona Wire Bias (Film / Type #4 / 60%RH)		5000 to 7490	-V
	1CF	Attraction Corona Wire Bias (Film / Type #4 / 80%RH)		5000 to 7490	-V
	1d0	Attraction Corona Wire Bias (Film / Type #4 / 100%RH)		5000 to 7490	-V
	1d1	Attraction Corona Wire Bias (Gloss / Type #1 / 0%RH)		5000 to 7490	-V
	1d2	Attraction Corona Wire Bias (Gloss / Type #1 / 20%RH)		5000 to 7490	-V

Group code	Individual code	Target	Default value	Setting range	Unit
1 (High voltage)	1d3	Attraction Corona Wire Bias (Gloss / Type #1 / 40%RH)		5000 to 7490	-V
	1d4	Attraction Corona Wire Bias (Gloss / Type #1 / 60%RH)		5000 to 7490	-V
	1d5	Attraction Corona Wire Bias (Gloss / Type #1 / 80%RH)		5000 to 7490	-V
	1d6	Attraction Corona Wire Bias (Gloss / Type #1 / 100%RH)		5000 to 7490	-V
	1d7	Attraction Corona Wire Bias (Gloss / Type #2 / 0%RH)		5000 to 7490	-V
	1d8	Attraction Corona Wire Bias (Gloss / Type #2 / 20%RH)		5000 to 7490	-V
	1d9	Attraction Corona Wire Bias (Gloss / Type #2 / 40%RH)		5000 to 7490	-V
	1dA	Attraction Corona Wire Bias (Gloss / Type #2 / 60%RH)		5000 to 7490	-V
	1db	Attraction Corona Wire Bias (Gloss / Type #2 / 80%RH)		5000 to 7490	-V
	1dC	Attraction Corona Wire Bias (Gloss / Type #2 / 100%RH)		5000 to 7490	-V
	1dd	Attraction Corona Wire Bias (Gloss / Type #3 / 0%RH)		5000 to 7490	-V
	1d	Attraction Corona Wire Bias (Gloss / Type #3 / 20%RH)		5000 to 7490	-V
	1dF	Attraction Corona Wire Bias (Gloss / Type #3 / 40%RH)		5000 to 7490	-V
	1E0	Attraction Corona Wire Bias (Gloss / Type #3 / 60%RH)		5000 to 7490	-V
	1E1	Attraction Corona Wire Bias (Gloss / Type #3 / 80%RH)		5000 to 7490	-V
	1E2	Attraction Corona Wire Bias (Gloss / Type #3 / 100%RH)		5000 to 7490	-V
	1E3	Attraction Corona Wire Bias (Gloss / Type #4 / 0%RH)		5000 to 7490	-V
	1E4	Attraction Corona Wire Bias (Gloss / Type #4 / 20%RH)		5000 to 7490	-V
	1E5	Attraction Corona Wire Bias (Gloss / Type #4 / 40%RH)		5000 to 7490	-V
	1E6	Attraction Corona Wire Bias (Gloss / Type #4 / 60%RH)		5000 to 7490	-V
	1E7	Attraction Corona Wire Bias (Gloss / Type #4 / 80%RH)		5000 to 7490	-V
	1E8	Attraction Corona Wire Bias (Gloss / Type #4 / 100%RH)		5000 to 7490	-V
	1E9	Transfer Zener ON/OFF (Plain paper / Type #1)		0000 to 1111	
	1EA	Transfer Zener ON/OFF (Plain paper / Type #2)		0000 to 1111	
	1Eb	Transfer Zener ON/OFF (Plain paper / Type #3)		0000 to 1111	
	1EC	Transfer Zener ON/OFF (Plain paper / Type #4)		0000 to 1111	
	1Ed	Transfer Zener ON/OFF (Tracing paper / Type #1)		0000 to 1111	
	1EE	Transfer Zener ON/OFF (Tracing paper / Type #2)		0000 to 1111	
	1EF	Transfer Zener ON/OFF (Tracing paper / Type #3)		0000 to 1111	
	1F0	Transfer Zener ON/OFF (Tracing paper / Type #4)		0000 to 1111	
	1F1	Transfer Zener ON/OFF (Film / Type #1)		0000 to 1111	
	1F2	Transfer Zener ON/OFF (Film / Type #2)		0000 to 1111	
	1F3	Transfer Zener ON/OFF (Film / Type #3)		0000 to 1111	
	1F4	Transfer Zener ON/OFF (Film / Type #4)		0000 to 1111	
	1F5	Transfer Zener ON/OFF (Gloss / Type #1)		0000 to 1111	
	1F6	Transfer Zener ON/OFF (Gloss / Type #2)		0000 to 1111	
	1F7	Transfer Zener ON/OFF (Gloss / Type #3)		0000 to 1111	
	1F8	Transfer Zener ON/OFF (Gloss / Type #4)		0000 to 1111	

Group code	Individual code	Target	Default value	Setting range	Unit
2 (Surface potential & density control)	000	Auto SP Control 1 (Process 1) ON/OFF	ON	ON / OFF	
	001	Auto SP Control 2 (Process 2) ON/OFF	ON	ON / OFF	
	002	Auto SP Control 3 (Process 3) ON/OFF	ON	ON / OFF	
	003	Auto SP Control 4 (Process 4) ON/OFF	ON	ON / OFF	
	004	Auto Density Control 1 (Process 1) ON/OFF	OFF	OFF / ON1 /ON2	
	005	Auto Density Control 2 (Process 2) ON/OFF	OFF	OFF / ON1 /ON2	
	006	Auto Density Control 3 (Process 3) ON/OFF	OFF	OFF / ON1 /ON2	
	007	Auto Density Control 4 (Process 4) ON/OFF	OFF	OFF / ON1 /ON2	
	008	Target Surface Potential 1 (at 5 degrees centigrade)	450	350 to 650	V
	009	Target Surface Potential 1 (at 10 degrees centigrade)	450	350 to 650	V
	00A	Target Surface Potential 1 (at 15 degrees centigrade)	450	350 to 650	V
	00b	Target Surface Potential 1 (at 20 degrees centigrade)	450	350 to 650	V
	00C	Target Surface Potential 1 (at 25 degrees centigrade)	350	350 to 650	V
	00D	Target Surface Potential 1 (at 30 degrees centigrade)	350	350 to 650	V
	00E	Target Surface Potential 2 (at 5 degrees centigrade)	450	350 to 650	V
	00F	Target Surface Potential 2 (at 10 degrees centigrade)	450	350 to 650	V
	010	Target Surface Potential 2 (at 15 degrees centigrade)	450	350 to 650	V
	011	Target Surface Potential 2 (at 20 degrees centigrade)	450	350 to 650	V
	012	Target Surface Potential 2 (at 25 degrees centigrade)	350	350 to 650	V
	013	Target Surface Potential 2 (at 30 degrees centigrade)	350	350 to 650	V
	014	Target Surface Potential 3 (at 5 degrees centigrade)	450	350 to 650	V
	015	Target Surface Potential 3 (at 10 degrees centigrade)	450	350 to 650	V
	016	Target Surface Potential 3 (at 15 degrees centigrade)	450	350 to 650	V
	017	Target Surface Potential 3 (at 20 degrees centigrade)	450	350 to 650	V
	018	Target Surface Potential 3 (at 25 degrees centigrade)	350	350 to 650	V
	019	Target Surface Potential 3 (at 30 degrees centigrade)	350	350 to 650	V
	01A	Target Surface Potential 4 (at 5 degrees centigrade)	450	350 to 650	V
	01b	Target Surface Potential 4 (at 10 degrees centigrade)	450	350 to 650	V
	01C	Target Surface Potential 4 (at 15 degrees centigrade)	450	350 to 650	V
	01d	Target Surface Potential 4 (at 20 degrees centigrade)	450	350 to 650	V
	01E	Target Surface Potential 4 (at 25 degrees centigrade)	350	350 to 650	V
	01F	Target Surface Potential 4 (at 30 degrees centigrade)	350	350 to 650	V
	020	Acceptable potential range for Auto SP Control 1	6	4 to 10	V
	021	Acceptable potential range for Auto SP Control 2	6	4 to 10	V
	022	Acceptable potential range for Auto SP Control 3	6	4 to 10	V
	023	Acceptable potential range for Auto SP Control 4	6	4 to 10	V

Group code	Individual code	Target	Default value	Setting range	Unit
2 (Surface potential & density control)	024	Compensation of Target Density 1	0000	0000 to 00FF	Hex
	025	Compensation of Target Density 2	0000	0000 to 00FF	Hex
	026	Compensation of Target Density 3	0000	0000 to 00FF	Hex
	027	Compensation of Target Density 4	0000	0000 to 00FF	Hex
	028	Limitation of Developer Bias in Auto Density Control 1	50	0 to 250	V
	029	Limitation of Developer Bias in Auto Density Control 2	50	0 to 250	V
	02A	Limitation of Developer Bias in Auto Density Control 3	50	0 to 250	V
	02b	Limitation of Developer Bias in Auto Density Control 4	50	0 to 250	V

Group code	Individual code	Target	Default value	Setting range	Unit
3 (General motor speed)	000	Paper Feed Motor speed		-10.000 to +10.000	%
	001	Fuser Motor speed		-10.000 to +10.000	%
	002	Developer Motor 1 speed (Process 1)		-10.000 to +10.000	%
	003	Developer Motor 2 speed (Process 2)		-10.000 to +10.000	%
	004	Developer Motor 3 speed (Process 3)		-10.000 to +10.000	%
	005	Developer Motor 4 speed (Process 4)		-10.000 to +10.000	%
	006	Paper Feed Motor speed for longer print than 2m		-10.000 to +10.000	%
	007	Drum Motor speed (Process 1)		-10.000 to +10.000	%
	008	Drum Motor speed (Process 2)		-10.000 to +10.000	%
	009	Drum Motor speed (Process 3)		-10.000 to +10.000	%
	00A	Drum Motor speed (Process 4)		-10.000 to +10.000	%

Group code	Individual code	Target	Default value	Setting range	Unit
4 (Registration Roller Motor / Attraction Roller Motor speed)	000	Registration Roller Motor speed (For plain paper, type #1, width 1 & length 1)		-10.000 to +10.000	%
	001	Registration Roller Motor speed (For plain paper, type #1, width 1 & length 2)		-10.000 to +10.000	%
	002	Registration Roller Motor speed (For plain paper, type #1, width 1 & length 3)		-10.000 to +10.000	%
	003	Registration Roller Motor speed (For plain paper, type #1, width 2 & length 1)		-10.000 to +10.000	%
	004	Registration Roller Motor speed (For plain paper, type #1, width 2 & length 2)		-10.000 to +10.000	%
	005	Registration Roller Motor speed (For plain paper, type #1, width 2 & length 3)		-10.000 to +10.000	%
	006	Registration Roller Motor speed (For plain paper, type #1, width 3 & length 1)		-10.000 to +10.000	%
	007	Registration Roller Motor speed (For plain paper, type #1, width 3 & length 2)		-10.000 to +10.000	%
	008	Registration Roller Motor speed (For plain paper, type #1, width 3 & length 3)		-10.000 to +10.000	%
	009	Registration Roller Motor speed (For plain paper, type #1, width 4 & length 1)		-10.000 to +10.000	%
	00A	Registration Roller Motor speed (For plain paper, type #1, width 4 & length 2)		-10.000 to +10.000	%
	00b	Registration Roller Motor speed (For plain paper, type #1, width 4 & length 3)		-10.000 to +10.000	%
	00C	Registration Roller Motor speed (For plain paper, type #2, width 1 & length 1)		-10.000 to +10.000	%
	00D	Registration Roller Motor speed (For plain paper, type #2, width 1 & length 2)		-10.000 to +10.000	%
	00E	Registration Roller Motor speed (For plain paper, type #2, width 1 & length 3)		-10.000 to +10.000	%
	00F	Registration Roller Motor speed (For plain paper, type #2, width 2 & length 1)		-10.000 to +10.000	%
	010	Registration Roller Motor speed (For plain paper, type #2, width 2 & length 2)		-10.000 to +10.000	%
	011	Registration Roller Motor speed (For plain paper, type #2, width 2 & length 3)		-10.000 to +10.000	%
	012	Registration Roller Motor speed (For plain paper, type #2, width 3 & length 1)		-10.000 to +10.000	%
	013	Registration Roller Motor speed (For plain paper, type #2, width 3 & length 2)		-10.000 to +10.000	%
	014	Registration Roller Motor speed (For plain paper, type #2, width 3 & length 3)		-10.000 to +10.000	%
	015	Registration Roller Motor speed (For plain paper, type #2, width 4 & length 1)		-10.000 to +10.000	%
	016	Registration Roller Motor speed (For plain paper, type #2, width 4 & length 2)		-10.000 to +10.000	%
	017	Registration Roller Motor speed (For plain paper, type #2, width 4 & length 3)		-10.00 to +10.00	%
	018	Registration Roller Motor speed (For plain paper, type #3, width 1 & length 1)		-10.00 to +10.00	%
	019	Registration Roller Motor speed (For plain paper, type #3, width 1 & length 2)		-10.00 to +10.00	%
	01A	Registration Roller Motor speed (For plain paper, type #3, width 1 & length 3)		-10.00 to +10.00	%
	01b	Registration Roller Motor speed (For plain paper, type #3, width 2 & length 1)		-10.000 to +10.000	%
	01C	Registration Roller Motor speed (For plain paper, type #3, width 2 & length 2)		-10.000 to +10.000	%
	01d	Registration Roller Motor speed (For plain paper, type #3, width 2 & length 3)		-10.000 to +10.000	%
	01E	Registration Roller Motor speed (For plain paper, type #3, width 3 & length 1)		-10.000 to +10.000	%
	01F	Registration Roller Motor speed (For plain paper, type #3, width 3 & length 2)		-10.000 to +10.000	%
	020	Registration Roller Motor speed (For plain paper, type #3, width 3 & length 3)		-10.000 to +10.000	%
	021	Registration Roller Motor speed (For plain paper, type #3, width 4 & length 1)		-10.000 to +10.000	%
	022	Registration Roller Motor speed (For plain paper, type #3, width 4 & length 2)		-10.000 to +10.000	%
	023	Registration Roller Motor speed (For plain paper, type #3, width 4 & length 3)		-10.000 to +10.000	%

Group code	Individual code	Target	Default value	Setting range	Unit
4 (Registration Roller Motor / Attraction Roller Motor speed)	024	Registration Roller Motor speed (For plain paper, type #4, width 1 & length 1)		-10.000 to +10.000	%
	025	Registration Roller Motor speed (For plain paper, type #4, width 1 & length 2)		-10.000 to +10.000	%
	026	Registration Roller Motor speed (For plain paper, type #4, width 1 & length 3)		-10.000 to +10.000	%
	027	Registration Roller Motor speed (For plain paper, type #4, width 2 & length 1)		-10.000 to +10.000	%
	028	Registration Roller Motor speed (For plain paper, type #4, width 2 & length 2)		-10.000 to +10.000	%
	029	Registration Roller Motor speed (For plain paper, type #4, width 2 & length 3)		-10.000 to +10.000	%
	02A	Registration Roller Motor speed (For plain paper, type #4, width 3 & length 1)		-10.000 to +10.000	%
	02b	Registration Roller Motor speed (For plain paper, type #4, width 3 & length 2)		-10.000 to +10.000	%
	02C	Registration Roller Motor speed (For plain paper, type #4, width 3 & length 3)		-10.000 to +10.000	%
	02d	Registration Roller Motor speed (For plain paper, type #4, width 4 & length 1)		-10.000 to +10.000	%
	02E	Registration Roller Motor speed (For plain paper, type #4, width 4 & length 2)		-10.000 to +10.000	%
	02F	Registration Roller Motor speed (For plain paper, type #4, width 4 & length 3)		-10.000 to +10.000	%
	030	Registration Roller Motor speed (For tracing paper, type #1, width 1 & length 1)		-10.000 to +10.000	%
	031	Registration Roller Motor speed (For tracing paper, type #1, width 1 & length 2)		-10.000 to +10.000	%
	032	Registration Roller Motor speed (For tracing paper, type #1, width 1 & length 3)		-10.00 to +10.00	%
	033	Registration Roller Motor speed (For tracing paper, type #1, width 2 & length 1)		-10.00 to +10.00	%
	034	Registration Roller Motor speed (For tracing paper, type #1, width 2 & length 2)		-10.00 to +10.00	%
	035	Registration Roller Motor speed (For tracing paper, type #1, width 2 & length 3)		-10.00 to +10.00	%
	036	Registration Roller Motor speed (For tracing paper, type #1, width 3 & length 1)		-10.000 to +10.000	%
	037	Registration Roller Motor speed (For tracing paper, type #1, width 3 & length 2)		-10.000 to +10.000	%
	038	Registration Roller Motor speed (For tracing paper, type #1, width 3 & length 3)		-10.000 to +10.000	%
	039	Registration Roller Motor speed (For tracing paper, type #1, width 4 & length 1)		-10.000 to +10.000	%
	03A	Registration Roller Motor speed (For tracing paper, type #1, width 4 & length 2)		-10.000 to +10.000	%
	03b	Registration Roller Motor speed (For tracing paper, type #1, width 4 & length 3)		-10.000 to +10.000	%
	03C	Registration Roller Motor speed (For tracing paper, type #2, width 1 & length 1)		-10.000 to +10.000	%
	03d	Registration Roller Motor speed (For tracing paper, type #2, width 1 & length 2)		-10.000 to +10.000	%
	03E	Registration Roller Motor speed (For tracing paper, type #2, width 1 & length 3)		-10.000 to +10.000	%
	03F	Registration Roller Motor speed (For tracing paper, type #2, width 2 & length 1)		-10.000 to +10.000	%
	040	Registration Roller Motor speed (For tracing paper, type #2, width 2 & length 2)		-10.000 to +10.000	%
	041	Registration Roller Motor speed (For tracing paper, type #2, width 2 & length 3)		-10.000 to +10.000	%
	042	Registration Roller Motor speed (For tracing paper, type #2, width 3 & length 1)		-10.000 to +10.000	%
	043	Registration Roller Motor speed (For tracing paper, type #2, width 3 & length 2)		-10.000 to +10.000	%
	044	Registration Roller Motor speed (For tracing paper, type #2, width 3 & length 3)		-10.000 to +10.000	%
	045	Registration Roller Motor speed (For tracing paper, type #2, width 4 & length 1)		-10.000 to +10.000	%
	046	Registration Roller Motor speed (For tracing paper, type #2, width 4 & length 2)		-10.000 to +10.000	%
	047	Registration Roller Motor speed (For tracing paper, type #2, width 4 & length 3)		-10.000 to +10.000	%

Group code	Individual code	Target	Default value	Setting range	Unit
4 (Registration Roller Motor / Attraction Roller Motor speed)	048	Registration Roller Motor speed (For tracing paper, type #3, width 1 & length 1)		-10.000 to +10.000	%
	049	Registration Roller Motor speed (For tracing paper, type #3, width 1 & length 2)		-10.000 to +10.000	%
	04A	Registration Roller Motor speed (For tracing paper, type #3, width 1 & length 3)		-10.000 to +10.000	%
	04b	Registration Roller Motor speed (For tracing paper, type #3, width 2 & length 1)		-10.000 to +10.000	%
	04C	Registration Roller Motor speed (For tracing paper, type #3, width 2 & length 2)		-10.000 to +10.000	%
	04d	Registration Roller Motor speed (For tracing paper, type #3, width 2 & length 3)		-10.000 to +10.000	%
	04E	Registration Roller Motor speed (For tracing paper, type #3, width 3 & length 1)		-10.00 to +10.00	%
	04F	Registration Roller Motor speed (For tracing paper, type #3, width 3 & length 2)		-10.00 to +10.00	%
	050	Registration Roller Motor speed (For tracing paper, type #3, width 3 & length 3)		-10.00 to +10.00	%
	051	Registration Roller Motor speed (For tracing paper, type #3, width 4 & length 1)		-10.000 to +10.000	%
	052	Registration Roller Motor speed (For tracing paper, type #3, width 4 & length 2)		-10.000 to +10.000	%
	053	Registration Roller Motor speed (For tracing paper, type #3, width 4 & length 3)		-10.000 to +10.000	%
	054	Registration Roller Motor speed (For tracing paper, type #4, width 1 & length 1)		-10.000 to +10.000	%
	055	Registration Roller Motor speed (For tracing paper, type #4, width 1 & length 2)		-10.000 to +10.000	%
	056	Registration Roller Motor speed (For tracing paper, type #4, width 1 & length 3)		-10.000 to +10.000	%
	057	Registration Roller Motor speed (For tracing paper, type #4, width 2 & length 1)		-10.000 to +10.000	%
	058	Registration Roller Motor speed (For tracing paper, type #4, width 2 & length 2)		-10.000 to +10.000	%
	059	Registration Roller Motor speed (For tracing paper, type #4, width 2 & length 3)		-10.000 to +10.000	%
	05A	Registration Roller Motor speed (For tracing paper, type #4, width 3 & length 1)		-10.000 to +10.000	%
	05b	Registration Roller Motor speed (For tracing paper, type #4, width 3 & length 2)		-10.000 to +10.000	%
	05C	Registration Roller Motor speed (For tracing paper, type #4, width 3 & length 3)		-10.000 to +10.000	%
	05d	Registration Roller Motor speed (For tracing paper, type #4, width 4 & length 1)		-10.000 to +10.000	%
	05E	Registration Roller Motor speed (For tracing paper, type #4, width 4 & length 2)		-10.000 to +10.000	%
	05F	Registration Roller Motor speed (For tracing paper, type #4, width 4 & length 3)		-10.000 to +10.000	%
	060	Registration Roller Motor speed (For film, type #1, width 1 & length 1)		-10.000 to +10.000	%
	061	Registration Roller Motor speed (For film, type #1, width 1 & length 2)		-10.000 to +10.000	%
	062	Registration Roller Motor speed (For film, type #1, width 1 & length 3)		-10.000 to +10.000	%
	063	Registration Roller Motor speed (For film, type #1, width 2 & length 1)		-10.000 to +10.000	%
	064	Registration Roller Motor speed (For film, type #1, width 2 & length 2)		-10.000 to +10.000	%
	065	Registration Roller Motor speed (For film, type #1, width 2 & length 3)		-10.000 to +10.000	%
	066	Registration Roller Motor speed (For film, type #1, width 3 & length 1)		-10.000 to +10.000	%
	067	Registration Roller Motor speed (For film, type #1, width 3 & length 2)		-10.000 to +10.000	%
	068	Registration Roller Motor speed (For film, type #1, width 3 & length 3)		-10.00 to +10.00	%
	069	Registration Roller Motor speed (For film, type #1, width 4 & length 1)		-10.00 to +10.00	%
	06A	Registration Roller Motor speed (For film, type #1, width 4 & length 2)		-10.00 to +10.00	%
	06b	Registration Roller Motor speed (For film, type #1, width 4 & length 3)		-10.00 to +10.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
4 (Registration Roller Motor / Attraction Roller Motor speed)	06C	Registration Roller Motor speed (For film, type #2, width 1 & length 1)		-10.000 to +10.000	%
	06d	Registration Roller Motor speed (For film, type #2, width 1 & length 2)		-10.000 to +10.000	%
	06E	Registration Roller Motor speed (For film, type #2, width 1 & length 3)		-10.000 to +10.000	%
	06F	Registration Roller Motor speed (For film, type #2, width 2 & length 1)		-10.000 to +10.000	%
	070	Registration Roller Motor speed (For film, type #2, width 2 & length 2)		-10.000 to +10.000	%
	071	Registration Roller Motor speed (For film, type #2, width 2 & length 3)		-10.000 to +10.000	%
	072	Registration Roller Motor speed (For film, type #2, width 3 & length 1)		-10.000 to +10.000	%
	073	Registration Roller Motor speed (For film, type #2, width 3 & length 2)		-10.000 to +10.000	%
	074	Registration Roller Motor speed (For film, type #2, width 3 & length 3)		-10.000 to +10.000	%
	075	Registration Roller Motor speed (For film, type #2, width 4 & length 1)		-10.000 to +10.000	%
	076	Registration Roller Motor speed (For film, type #2, width 4 & length 2)		-10.000 to +10.000	%
	077	Registration Roller Motor speed (For film, type #2, width 4 & length 3)		-10.000 to +10.000	%
	078	Registration Roller Motor speed (For film, type #3, width 1 & length 1)		-10.000 to +10.000	%
	079	Registration Roller Motor speed (For film, type #3, width 1 & length 2)		-10.000 to +10.000	%
	07A	Registration Roller Motor speed (For film, type #3, width 1 & length 3)		-10.000 to +10.000	%
	07b	Registration Roller Motor speed (For film, type #3, width 2 & length 1)		-10.000 to +10.000	%
	07C	Registration Roller Motor speed (For film, type #3, width 2 & length 2)		-10.000 to +10.000	%
	07d	Registration Roller Motor speed (For film, type #3, width 2 & length 3)		-10.000 to +10.000	%
	07E	Registration Roller Motor speed (For film, type #3, width 3 & length 1)		-10.000 to +10.000	%
	07F	Registration Roller Motor speed (For film, type #3, width 3 & length 2)		-10.000 to +10.000	%
	080	Registration Roller Motor speed (For film, type #3, width 3 & length 3)		-10.000 to +10.000	%
	081	Registration Roller Motor speed (For film, type #3, width 4 & length 1)		-10.000 to +10.000	%
	082	Registration Roller Motor speed (For film, type #3, width 4 & length 2)		-10.000 to +10.000	%
	083	Registration Roller Motor speed (For film, type #3, width 4 & length 3)		-10.00 to +10.00	%
	084	Registration Roller Motor speed (For film, type #4, width 1 & length 1)		-10.00 to +10.00	%
	085	Registration Roller Motor speed (For film, type #4, width 1 & length 2)		-10.00 to +10.00	%
	086	Registration Roller Motor speed (For film, type #4, width 1 & length 3)		-10.00 to +10.00	%
	087	Registration Roller Motor speed (For film, type #4, width 2 & length 1)		-10.000 to +10.000	%
	088	Registration Roller Motor speed (For film, type #4, width 2 & length 2)		-10.000 to +10.000	%
	089	Registration Roller Motor speed (For film, type #4, width 2 & length 3)		-10.000 to +10.000	%
	08A	Registration Roller Motor speed (For film, type #4, width 3 & length 1)		-10.000 to +10.000	%
	08b	Registration Roller Motor speed (For film, type #4, width 3 & length 2)		-10.000 to +10.000	%
	08C	Registration Roller Motor speed (For film, type #4, width 3 & length 3)		-10.000 to +10.000	%
	08d	Registration Roller Motor speed (For film, type #4, width 4 & length 1)		-10.000 to +10.000	%
	08E	Registration Roller Motor speed (For film, type #4, width 4 & length 2)		-10.000 to +10.000	%
	08F	Registration Roller Motor speed (For film, type #4, width 4 & length 3)		-10.000 to +10.000	%

Group code	Individual code	Target	Default value	Setting range	Unit
4 (Registration Roller Motor / Attraction Roller Motor speed)	090	Registration Roller Motor speed (For Gloss, type #1, width 1 & length 1)		-10.000 to +10.000	%
	091	Registration Roller Motor speed (For Gloss, type #1, width 1 & length 2)		-10.000 to +10.000	%
	092	Registration Roller Motor speed (For Gloss, type #1, width 1 & length 3)		-10.000 to +10.000	%
	093	Registration Roller Motor speed (For Gloss, type #1, width 2 & length 1)		-10.000 to +10.000	%
	094	Registration Roller Motor speed (For Gloss, type #1, width 2 & length 2)		-10.000 to +10.000	%
	095	Registration Roller Motor speed (For Gloss, type #1, width 2 & length 3)		-10.000 to +10.000	%
	096	Registration Roller Motor speed (For Gloss, type #1, width 3 & length 1)		-10.000 to +10.000	%
	097	Registration Roller Motor speed (For Gloss, type #1, width 3 & length 2)		-10.000 to +10.000	%
	098	Registration Roller Motor speed (For Gloss, type #1, width 3 & length 3)		-10.000 to +10.000	%
	099	Registration Roller Motor speed (For Gloss, type #1, width 4 & length 1)		-10.000 to +10.000	%
	09A	Registration Roller Motor speed (For Gloss, type #1, width 4 & length 2)		-10.000 to +10.000	%
	09b	Registration Roller Motor speed (For Gloss, type #1, width 4 & length 3)		-10.000 to +10.000	%
	09C	Registration Roller Motor speed (For Gloss, type #2, width 1 & length 1)		-10.000 to +10.000	%
	09d	Registration Roller Motor speed (For Gloss, type #2, width 1 & length 2)		-10.000 to +10.000	%
	09E	Registration Roller Motor speed (For Gloss, type #2, width 1 & length 3)		-10.00 to +10.00	%
	09F	Registration Roller Motor speed (For Gloss, type #2, width 2 & length 1)		-10.00 to +10.00	%
	0A0	Registration Roller Motor speed (For Gloss, type #2, width 2 & length 2)		-10.00 to +10.00	%
	0A1	Registration Roller Motor speed (For Gloss, type #2, width 2 & length 3)		-10.00 to +10.00	%
	0A2	Registration Roller Motor speed (For Gloss, type #2, width 3 & length 1)		-10.000 to +10.000	%
	0A3	Registration Roller Motor speed (For Gloss, type #2, width 3 & length 2)		-10.000 to +10.000	%
	0A4	Registration Roller Motor speed (For Gloss, type #2, width 3 & length 3)		-10.000 to +10.000	%
	0A5	Registration Roller Motor speed (For Gloss, type #2, width 4 & length 1)		-10.000 to +10.000	%
	0A6	Registration Roller Motor speed (For Gloss, type #2, width 4 & length 2)		-10.000 to +10.000	%
	0A7	Registration Roller Motor speed (For Gloss, type #2, width 4 & length 3)		-10.000 to +10.000	%
	0A8	Registration Roller Motor speed (For Gloss, type #3, width 1 & length 1)		-10.000 to +10.000	%
	0A9	Registration Roller Motor speed (For Gloss, type #3, width 1 & length 2)		-10.000 to +10.000	%
	0AA	Registration Roller Motor speed (For Gloss, type #3, width 1 & length 3)		-10.000 to +10.000	%
	0Ab	Registration Roller Motor speed (For gloss, type #3, width 2 & length 1)		-10.000 to +10.000	%
	0AC	Registration Roller Motor speed (For gloss, type #3, width 2 & length 2)		-10.000 to +10.000	%
	0Ad	Registration Roller Motor speed (For gloss, type #3, width 2 & length 3)		-10.000 to +10.000	%
	0AE	Registration Roller Motor speed (For gloss, type #3, width 3 & length 1)		-10.000 to +10.000	%
	0AF	Registration Roller Motor speed (For gloss, type #3, width 3 & length 2)		-10.000 to +10.000	%
	0b0	Registration Roller Motor speed (For gloss, type #3, width 3 & length 3)		-10.000 to +10.000	%
	0b1	Registration Roller Motor speed (For gloss, type #3, width 4 & length 1)		-10.000 to +10.000	%
	0b2	Registration Roller Motor speed (For gloss, type #3, width 4 & length 2)		-10.000 to +10.000	%
	0b3	Registration Roller Motor speed (For gloss, type #3, width 4 & length 3)		-10.000 to +10.000	%

Group code	Individual code	Target	Default value	Setting range	Unit
4 (Registration Roller Motor / Attraction Roller Motor speed)	0b4	Registration Roller Motor speed (For gloss, type #4, width 1 & length 1)		-10.000 to +10.000	%
	0b5	Registration Roller Motor speed (For gloss, type #4, width 1 & length 2)		-10.000 to +10.000	%
	0b6	Registration Roller Motor speed (For gloss, type #4, width 1 & length 3)		-10.000 to +10.000	%
	0b7	Registration Roller Motor speed (For gloss, type #4, width 2 & length 1)		-10.000 to +10.000	%
	0b8	Registration Roller Motor speed (For gloss, type #4, width 2 & length 2)		-10.000 to +10.000	%
	0b9	Registration Roller Motor speed (For gloss, type #4, width 2 & length 3)		-10.00 to +10.00	%
	0bA	Registration Roller Motor speed (For gloss, type #4, width 3 & length 1)		-10.00 to +10.00	%
	0bb	Registration Roller Motor speed (For gloss, type #4, width 3 & length 2)		-10.00 to +10.00	%
	0bC	Registration Roller Motor speed (For gloss, type #4, width 3 & length 3)		-10.00 to +10.00	%
	0bd	Registration Roller Motor speed (For gloss, type #4, width 4 & length 1)		-10.000 to +10.000	%
	0bE	Registration Roller Motor speed (For gloss, type #4, width 4 & length 2)		-10.000 to +10.000	%
	0bF	Registration Roller Motor speed (For gloss, type #4, width 4 & length 3)		-10.000 to +10.000	%
	0C0	Attraction Roller Motor speed (For plain paper, type #1, width 1 & length 1)		-10.000 to +10.000	%
	0C1	Attraction Roller Motor speed (For plain paper, type #1, width 1 & length 2)		-10.000 to +10.000	%
	0C2	Attraction Roller Motor speed (For plain paper, type #1, width 1 & length 3)		-10.000 to +10.000	%
	0C3	Attraction Roller Motor speed (For plain paper, type #1, width 2 & length 1)		-10.000 to +10.000	%
	0C4	Attraction Roller Motor speed (For plain paper, type #1, width 2 & length 2)		-10.000 to +10.000	%
	0C5	Attraction Roller Motor speed (For plain paper, type #1, width 2 & length 3)		-10.000 to +10.000	%
	0C6	Attraction Roller Motor speed (For plain paper, type #1, width 3 & length 1)		-10.000 to +10.000	%
	0C7	Attraction Roller Motor speed (For plain paper, type #1, width 3 & length 2)		-10.000 to +10.000	%
	0C8	Attraction Roller Motor speed (For plain paper, type #1, width 3 & length 3)		-10.000 to +10.000	%
	0C9	Attraction Roller Motor speed (For plain paper, type #1, width 4 & length 1)		-10.000 to +10.000	%
	0CA	Attraction Roller Motor speed (For plain paper, type #1, width 4 & length 2)		-10.000 to +10.000	%
	0Cb	Attraction Roller Motor speed (For plain paper, type #1, width 4 & length 3)		-10.000 to +10.000	%
	0CC	Attraction Roller Motor speed (For plain paper, type #2, width 1 & length 1)		-10.000 to +10.000	%
	0Cd	Attraction Roller Motor speed (For plain paper, type #2, width 1 & length 2)		-10.000 to +10.000	%
	0CE	Attraction Roller Motor speed (For plain paper, type #2, width 1 & length 3)		-10.000 to +10.000	%
	0CF	Attraction Roller Motor speed (For plain paper, type #2, width 2 & length 1)		-10.000 to +10.000	%
	0d0	Attraction Roller Motor speed (For plain paper, type #2, width 2 & length 2)		-10.000 to +10.000	%
	0d1	Attraction Roller Motor speed (For plain paper, type #2, width 2 & length 3)		-10.000 to +10.000	%
	0d2	Attraction Roller Motor speed (For plain paper, type #2, width 3 & length 1)		-10.000 to +10.000	%
	0d3	Attraction Roller Motor speed (For plain paper, type #2, width 3 & length 2)		-10.000 to +10.000	%
	0d4	Attraction Roller Motor speed (For plain paper, type #2, width 3 & length 3)		-10.000 to +10.000	%
	0d5	Attraction Roller Motor speed (For plain paper, type #2, width 4 & length 1)		-10.000 to +10.000	%
	0d6	Attraction Roller Motor speed (For plain paper, type #2, width 4 & length 2)		-10.000 to +10.000	%
	0d7	Attraction Roller Motor speed (For plain paper, type #2, width 4 & length 3)		-10.000 to +10.000	%

Group code	Individual code	Target	Default value	Setting range	Unit
4 (Registration Roller Motor / Attraction Roller Motor speed)	0d8	Attraction Roller Motor speed (For plain paper, type #3, width 1 & length 1)		-10.000 to +10.000	%
	0d9	Attraction Roller Motor speed (For plain paper, type #3, width 1 & length 2)		-10.000 to +10.000	%
	0dA	Attraction Roller Motor speed (For plain paper, type #3, width 1 & length 3)		-10.000 to +10.000	%
	0db	Attraction Roller Motor speed (For plain paper, type #3, width 2 & length 1)		-10.000 to +10.000	%
	0dC	Attraction Roller Motor speed (For plain paper, type #3, width 2 & length 2)		-10.000 to +10.000	%
	0dd	Attraction Roller Motor speed (For plain paper, type #3, width 2 & length 3)		-10.000 to +10.000	%
	0dE	Attraction Roller Motor speed (For plain paper, type #3, width 3 & length 1)		-10.000 to +10.000	%
	0dF	Attraction Roller Motor speed (For plain paper, type #3, width 3 & length 2)		-10.000 to +10.000	%
	0E0	Attraction Roller Motor speed (For plain paper, type #3, width 3 & length 3)		-10.000 to +10.000	%
	0E1	Attraction Roller Motor speed (For plain paper, type #3, width 4 & length 1)		-10.000 to +10.000	%
	0E2	Attraction Roller Motor speed (For plain paper, type #3, width 4 & length 2)		-10.000 to +10.000	%
	0E3	Attraction Roller Motor speed (For plain paper, type #3, width 4 & length 3)		-10.000 to +10.000	%
	0E4	Attraction Roller Motor speed (For plain paper, type #4, width 1 & length 1)		-10.000 to +10.000	%
	0E5	Attraction Roller Motor speed (For plain paper, type #4, width 1 & length 2)		-10.000 to +10.000	%
	0E6	Attraction Roller Motor speed (For plain paper, type #4, width 1 & length 3)		-10.000 to +10.000	%
	0E7	Attraction Roller Motor speed (For plain paper, type #4, width 2 & length 1)		-10.000 to +10.000	%
	0E8	Attraction Roller Motor speed (For plain paper, type #4, width 2 & length 2)		-10.000 to +10.000	%
	0E9	Attraction Roller Motor speed (For plain paper, type #4, width 2 & length 3)		-10.000 to +10.000	%
	0EA	Attraction Roller Motor speed (For plain paper, type #4, width 3 & length 1)		-10.000 to +10.000	%
	0Eb	Attraction Roller Motor speed (For plain paper, type #4, width 3 & length 2)		-10.000 to +10.000	%
	0EC	Attraction Roller Motor speed (For plain paper, type #4, width 3 & length 3)		-10.000 to +10.000	%
	0Ed	Attraction Roller Motor speed (For plain paper, type #4, width 4 & length 1)		-10.000 to +10.000	%
	0EE	Attraction Roller Motor speed (For plain paper, type #4, width 4 & length 2)		-10.000 to +10.000	%
	0EF	Attraction Roller Motor speed (For plain paper, type #4, width 4 & length 3)		-10.000 to +10.000	%
	0F0	Attraction Roller Motor speed (For tracing paper, type #1, width 1 & length 1)		-10.000 to +10.000	%
	0F1	Attraction Roller Motor speed (For tracing paper, type #1, width 1 & length 2)		-10.000 to +10.000	%
	0F2	Attraction Roller Motor speed (For tracing paper, type #1, width 1 & length 3)		-10.000 to +10.000	%
	0F3	Attraction Roller Motor speed (For tracing paper, type #1, width 2 & length 1)		-10.000 to +10.000	%
	0F4	Attraction Roller Motor speed (For tracing paper, type #1, width 2 & length 2)		-10.000 to +10.000	%
	0F5	Attraction Roller Motor speed (For tracing paper, type #1, width 2 & length 3)		-10.000 to +10.000	%
	0F6	Attraction Roller Motor speed (For tracing paper, type #1, width 3 & length 1)		-10.000 to +10.000	%
	0F7	Attraction Roller Motor speed (For tracing paper, type #1, width 3 & length 2)		-10.000 to +10.000	%
	0F8	Attraction Roller Motor speed (For tracing paper, type #1, width 3 & length 3)		-10.000 to +10.000	%
	0F9	Attraction Roller Motor speed (For tracing paper, type #1, width 4 & length 1)		-10.000 to +10.000	%
	0FA	Attraction Roller Motor speed (For tracing paper, type #1, width 4 & length 2)		-10.000 to +10.000	%
	0Fb	Attraction Roller Motor speed (For tracing paper, type #1, width 4 & length 3)		-10.000 to +10.000	%

Group code	Individual code	Target	Default value	Setting range	Unit
4 (Registration Roller Motor / Attraction Roller Motor speed)	0FC	Attraction Roller Motor speed (For tracing paper, type #2, width 1 & length 1)		-10.000 to +10.000	%
	0Fd	Attraction Roller Motor speed (For tracing paper, type #2, width 1 & length 2)		-10.000 to +10.000	%
	0FE	Attraction Roller Motor speed (For tracing paper, type #2, width 1 & length 3)		-10.000 to +10.000	%
	0FF	Attraction Roller Motor speed (For tracing paper, type #2, width 2 & length 1)		-10.000 to +10.000	%
	100	Attraction Roller Motor speed (For tracing paper, type #2, width 2 & length 2)		-10.000 to +10.000	%
	101	Attraction Roller Motor speed (For tracing paper, type #2, width 2 & length 3)		-10.000 to +10.000	%
	102	Attraction Roller Motor speed (For tracing paper, type #2, width 3 & length 1)		-10.000 to +10.000	%
	103	Attraction Roller Motor speed (For tracing paper, type #2, width 3 & length 2)		-10.000 to +10.000	%
	104	Attraction Roller Motor speed (For tracing paper, type #2, width 3 & length 3)		-10.000 to +10.000	%
	105	Attraction Roller Motor speed (For tracing paper, type #2, width 4 & length 1)		-10.000 to +10.000	%
	106	Attraction Roller Motor speed (For tracing paper, type #2, width 4 & length 2)		-10.000 to +10.000	%
	107	Attraction Roller Motor speed (For tracing paper, type #2, width 4 & length 3)		-10.000 to +10.000	%
	108	Attraction Roller Motor speed (For tracing paper, type #3, width 1 & length 1)		-10.000 to +10.000	%
	109	Attraction Roller Motor speed (For tracing paper, type #3, width 1 & length 2)		-10.000 to +10.000	%
	10A	Attraction Roller Motor speed (For tracing paper, type #3, width 1 & length 3)		-10.000 to +10.000	%
	10b	Attraction Roller Motor speed (For tracing paper, type #3, width 2 & length 1)		-10.000 to +10.000	%
	10C	Attraction Roller Motor speed (For tracing paper, type #3, width 2 & length 2)		-10.000 to +10.000	%
	10D	Attraction Roller Motor speed (For tracing paper, type #3, width 2 & length 3)		-10.000 to +10.000	%
	10E	Attraction Roller Motor speed (For tracing paper, type #3, width 3 & length 1)		-10.000 to +10.000	%
	10F	Attraction Roller Motor speed (For tracing paper, type #3, width 3 & length 2)		-10.000 to +10.000	%
	110	Attraction Roller Motor speed (For tracing paper, type #3, width 3 & length 3)		-10.000 to +10.000	%
	111	Attraction Roller Motor speed (For tracing paper, type #3, width 4 & length 1)		-10.000 to +10.000	%
	112	Attraction Roller Motor speed (For tracing paper, type #3, width 4 & length 2)		-10.000 to +10.000	%
	113	Attraction Roller Motor speed (For tracing paper, type #3, width 4 & length 3)		-10.000 to +10.000	%
	114	Attraction Roller Motor speed (For tracing paper, type #4, width 1 & length 1)		-10.000 to +10.000	%
	115	Attraction Roller Motor speed (For tracing paper, type #4, width 1 & length 2)		-10.000 to +10.000	%
	116	Attraction Roller Motor speed (For tracing paper, type #4, width 1 & length 3)		-10.000 to +10.000	%
	117	Attraction Roller Motor speed (For tracing paper, type #4, width 2 & length 1)		-10.000 to +10.000	%
	118	Attraction Roller Motor speed (For tracing paper, type #4, width 2 & length 2)		-10.000 to +10.000	%
	119	Attraction Roller Motor speed (For tracing paper, type #4, width 2 & length 3)		-10.000 to +10.000	%
	11A	Attraction Roller Motor speed (For tracing paper, type #4, width 3 & length 1)		-10.000 to +10.000	%
	11b	Attraction Roller Motor speed (For tracing paper, type #4, width 3 & length 2)		-10.000 to +10.000	%
	11C	Attraction Roller Motor speed (For tracing paper, type #4, width 3 & length 3)		-10.000 to +10.000	%
	11d	Attraction Roller Motor speed (For tracing paper, type #4, width 4 & length 1)		-10.000 to +10.000	%
	11E	Attraction Roller Motor speed (For tracing paper, type #4, width 4 & length 2)		-10.000 to +10.000	%
	11F	Attraction Roller Motor speed (For tracing paper, type #4, width 4 & length 3)		-10.000 to +10.000	%

Group code	Individual code	Target	Default value	Setting range	Unit
4 (Registration Roller Motor / Attraction Roller Motor speed)	120	Attraction Roller Motor speed (For film, type #1, width 1 & length 1)		-10.000 to +10.000	%
	121	Attraction Roller Motor speed (For film, type #1, width 1 & length 2)		-10.000 to +10.000	%
	122	Attraction Roller Motor speed (For film, type #1, width 1 & length 3)		-10.000 to +10.000	%
	123	Attraction Roller Motor speed (For film, type #1, width 2 & length 1)		-10.000 to +10.000	%
	124	Attraction Roller Motor speed (For film, type #1, width 2 & length 2)		-10.000 to +10.000	%
	125	Attraction Roller Motor speed (For film, type #1, width 2 & length 3)		-10.000 to +10.000	%
	126	Attraction Roller Motor speed (For film, type #1, width 3 & length 1)		-10.000 to +10.000	%
	127	Attraction Roller Motor speed (For film, type #1, width 3 & length 2)		-10.000 to +10.000	%
	128	Attraction Roller Motor speed (For film, type #1, width 3 & length 3)		-10.000 to +10.000	%
	129	Attraction Roller Motor speed (For film, type #1, width 4 & length 1)		-10.000 to +10.000	%
	12A	Attraction Roller Motor speed (For film, type #1, width 4 & length 2)		-10.000 to +10.000	%
	12b	Attraction Roller Motor speed (For film, type #1, width 4 & length 3)		-10.000 to +10.000	%
	12C	Attraction Roller Motor speed (For film, type #2, width 1 & length 1)		-10.000 to +10.000	%
	12d	Attraction Roller Motor speed (For film, type #2, width 1 & length 2)		-10.000 to +10.000	%
	12E	Attraction Roller Motor speed (For film, type #2, width 1 & length 3)		-10.000 to +10.000	%
	12F	Attraction Roller Motor speed (For film, type #2, width 2 & length 1)		-10.000 to +10.000	%
	130	Attraction Roller Motor speed (For film, type #2, width 2 & length 2)		-10.000 to +10.000	%
	131	Attraction Roller Motor speed (For film, type #2, width 2 & length 3)		-10.000 to +10.000	%
	132	Attraction Roller Motor speed (For film, type #2, width 3 & length 1)		-10.000 to +10.000	%
	133	Attraction Roller Motor speed (For film, type #2, width 3 & length 2)		-10.000 to +10.000	%
	134	Attraction Roller Motor speed (For film, type #2, width 3 & length 3)		-10.000 to +10.000	%
	135	Attraction Roller Motor speed (For film, type #2, width 4 & length 1)		-10.000 to +10.000	%
	136	Attraction Roller Motor speed (For film, type #2, width 4 & length 2)		-10.000 to +10.000	%
	137	Attraction Roller Motor speed (For film, type #2, width 4 & length 3)		-10.000 to +10.000	%
	138	Attraction Roller Motor speed (For film, type #3, width 1 & length 1)		-10.000 to +10.000	%
	139	Attraction Roller Motor speed (For film, type #3, width 1 & length 2)		-10.000 to +10.000	%
	13A	Attraction Roller Motor speed (For film, type #3, width 1 & length 3)		-10.000 to +10.000	%
	13b	Attraction Roller Motor speed (For film, type #3, width 2 & length 1)		-10.000 to +10.000	%
	13C	Attraction Roller Motor speed (For film, type #3, width 2 & length 2)		-10.000 to +10.000	%
	13d	Attraction Roller Motor speed (For film, type #3, width 2 & length 3)		-10.000 to +10.000	%
	13E	Attraction Roller Motor speed (For film, type #3, width 3 & length 1)		-10.000 to +10.000	%
	13F	Attraction Roller Motor speed (For film, type #3, width 3 & length 2)		-10.000 to +10.000	%
	140	Attraction Roller Motor speed (For film, type #3, width 3 & length 3)		-10.000 to +10.000	%
	141	Attraction Roller Motor speed (For film, type #3, width 4 & length 1)		-10.000 to +10.000	%
	142	Attraction Roller Motor speed (For film, type #3, width 4 & length 2)		-10.000 to +10.000	%
	143	Attraction Roller Motor speed (For film, type #3, width 4 & length 3)		-10.000 to +10.000	%

Group code	Individual code	Target	Default value	Setting range	Unit
4 (Registration Roller Motor / Attraction Roller Motor speed)	144	Attraction Roller Motor speed (For film, type #4, width 1 & length 1)		-10.000 to +10.000	%
	145	Attraction Roller Motor speed (For film, type #4, width 1 & length 2)		-10.000 to +10.000	%
	146	Attraction Roller Motor speed (For film, type #4, width 1 & length 3)		-10.000 to +10.000	%
	147	Attraction Roller Motor speed (For film, type #4, width 2 & length 1)		-10.000 to +10.000	%
	148	Attraction Roller Motor speed (For film, type #4, width 2 & length 2)		-10.000 to +10.000	%
	149	Attraction Roller Motor speed (For film, type #4, width 2 & length 3)		-10.000 to +10.000	%
	14A	Attraction Roller Motor speed (For film, type #4, width 3 & length 1)		-10.000 to +10.000	%
	14b	Attraction Roller Motor speed (For film, type #4, width 3 & length 2)		-10.000 to +10.000	%
	14C	Attraction Roller Motor speed (For film, type #4, width 3 & length 3)		-10.000 to +10.000	%
	14d	Attraction Roller Motor speed (For film, type #4, width 4 & length 1)		-10.000 to +10.000	%
	14E	Attraction Roller Motor speed (For film, type #4, width 4 & length 2)		-10.000 to +10.000	%
	14F	Attraction Roller Motor speed (For film, type #4, width 4 & length 3)		-10.000 to +10.000	%
	150	Attraction Roller Motor speed (For gloss, type #1, width 1 & length 1)		-10.000 to +10.000	%
	151	Attraction Roller Motor speed (For gloss, type #1, width 1 & length 2)		-10.000 to +10.000	%
	152	Attraction Roller Motor speed (For gloss, type #1, width 1 & length 3)		-10.000 to +10.000	%
	153	Attraction Roller Motor speed (For gloss, type #1, width 2 & length 1)		-10.000 to +10.000	%
	154	Attraction Roller Motor speed (For gloss, type #1, width 2 & length 2)		-10.000 to +10.000	%
	155	Attraction Roller Motor speed (For gloss, type #1, width 2 & length 3)		-10.000 to +10.000	%
	156	Attraction Roller Motor speed (For gloss, type #1, width 3 & length 1)		-10.000 to +10.000	%
	157	Attraction Roller Motor speed (For gloss, type #1, width 3 & length 2)		-10.000 to +10.000	%
	158	Attraction Roller Motor speed (For gloss, type #1, width 3 & length 3)		-10.000 to +10.000	%
	159	Attraction Roller Motor speed (For gloss, type #1, width 4 & length 1)		-10.000 to +10.000	%
	15A	Attraction Roller Motor speed (For gloss, type #1, width 4 & length 2)		-10.000 to +10.000	%
	15b	Attraction Roller Motor speed (For gloss, type #1, width 4 & length 3)		-10.000 to +10.000	%
	15C	Attraction Roller Motor speed (For gloss, type #2, width 1 & length 1)		-10.000 to +10.000	%
	15d	Attraction Roller Motor speed (For gloss, type #2, width 1 & length 2)		-10.000 to +10.000	%
	15E	Attraction Roller Motor speed (For gloss, type #2, width 1 & length 3)		-10.000 to +10.000	%
	15F	Attraction Roller Motor speed (For gloss, type #2, width 2 & length 1)		-10.000 to +10.000	%
	160	Attraction Roller Motor speed (For gloss, type #2, width 2 & length 2)		-10.000 to +10.000	%
	161	Attraction Roller Motor speed (For gloss, type #2, width 2 & length 3)		-10.000 to +10.000	%
	162	Attraction Roller Motor speed (For gloss, type #2, width 3 & length 1)		-10.000 to +10.000	%
	163	Attraction Roller Motor speed (For gloss, type #2, width 3 & length 2)		-10.000 to +10.000	%
	164	Attraction Roller Motor speed (For gloss, type #2, width 3 & length 3)		-10.000 to +10.000	%
	165	Attraction Roller Motor speed (For gloss, type #2, width 4 & length 1)		-10.000 to +10.000	%
	166	Attraction Roller Motor speed (For gloss, type #2, width 4 & length 2)		-10.000 to +10.000	%
	167	Attraction Roller Motor speed (For gloss, type #2, width 4 & length 3)		-10.000 to +10.000	%

Group code	Individual code	Target	Default value	Setting range	Unit
4 (Registration Roller Motor / Attraction Roller Motor speed)	168	Attraction Roller Motor speed (For gloss, type #3, width 1 & length 1)		-10.000 to +10.000	%
	169	Attraction Roller Motor speed (For gloss, type #3, width 1 & length 2)		-10.000 to +10.000	%
	16A	Attraction Roller Motor speed (For gloss, type #3, width 1 & length 3)		-10.000 to +10.000	%
	16b	Attraction Roller Motor speed (For gloss, type #3, width 2 & length 1)		-10.000 to +10.000	%
	16C	Attraction Roller Motor speed (For gloss, type #3, width 2 & length 2)		-10.000 to +10.000	%
	16d	Attraction Roller Motor speed (For gloss, type #3, width 2 & length 3)		-10.000 to +10.000	%
	16E	Attraction Roller Motor speed (For gloss, type #3, width 3 & length 1)		-10.000 to +10.000	%
	16F	Attraction Roller Motor speed (For gloss, type #3, width 3 & length 2)		-10.000 to +10.000	%
	170	Attraction Roller Motor speed (For gloss, type #3, width 3 & length 3)		-10.000 to +10.000	%
	171	Attraction Roller Motor speed (For gloss, type #3, width 4 & length 1)		-10.000 to +10.000	%
	172	Attraction Roller Motor speed (For gloss, type #3, width 4 & length 2)		-10.000 to +10.000	%
	173	Attraction Roller Motor speed (For gloss, type #3, width 4 & length 3)		-10.000 to +10.000	%
	174	Attraction Roller Motor speed (For gloss, type #4, width 1 & length 1)		-10.000 to +10.000	%
	175	Attraction Roller Motor speed (For gloss, type #4, width 1 & length 2)		-10.000 to +10.000	%
	176	Attraction Roller Motor speed (For gloss, type #4, width 1 & length 3)		-10.000 to +10.000	%
	177	Attraction Roller Motor speed (For gloss, type #4, width 2 & length 1)		-10.000 to +10.000	%
	178	Attraction Roller Motor speed (For gloss, type #4, width 2 & length 2)		-10.000 to +10.000	%
	179	Attraction Roller Motor speed (For gloss, type #4, width 2 & length 3)		-10.000 to +10.000	%
	17A	Attraction Roller Motor speed (For gloss, type #4, width 3 & length 1)		-10.000 to +10.000	%
	17b	Attraction Roller Motor speed (For gloss, type #4, width 3 & length 2)		-10.000 to +10.000	%
	17C	Attraction Roller Motor speed (For gloss, type #4, width 3 & length 3)		-10.000 to +10.000	%
	17d	Attraction Roller Motor speed (For gloss, type #4, width 4 & length 1)		-10.000 to +10.000	%
	17E	Attraction Roller Motor speed (For gloss, type #4, width 4 & length 2)		-10.000 to +10.000	%
	17F	Attraction Roller Motor speed (For gloss, type #4, width 4 & length 3)		-10.000 to +10.000	%

Group code	Individual code	Target	Default value	Setting range	Unit
5 (Transportation Unit 1 Motor speed)	000	Transportation Unit 1 Motor high speed (For plain paper, type #1, width 1 & length 1)		-50.00 to +50.00	%
	001	Transportation Unit 1 Motor normal speed (For plain paper, type #1, width 1 & length 1)		-50.00 to +50.00	%
	002	Transportation Unit 1 Motor low speed (For plain paper, type #1, width 1 & length 1)		-50.00 to +50.00	%
	003	Transportation Unit 1 Motor high speed (For plain paper, type #1, width 1 & length 2)		-50.00 to +50.00	%
	004	Transportation Unit 1 Motor normal speed (For plain paper, type #1, width 1 & length 2)		-50.00 to +50.00	%
	005	Transportation Unit 1 Motor low speed (For plain paper, type #1, width 1 & length 2)		-50.00 to +50.00	%
	006	Transportation Unit 1 Motor high speed (For plain paper, type #1, width 1 & length 3)		-50.00 to +50.00	%
	007	Transportation Unit 1 Motor normal speed (For plain paper, type #1, width 1 & length 3)		-50.00 to +50.00	%
	008	Transportation Unit 1 Motor low speed (For plain paper, type #1, width 1 & length 3)		-50.00 to +50.00	%
	009	Transportation Unit 1 Motor high speed (For plain paper, type #1, width 2 & length 1)		-50.00 to +50.00	%
	00A	Transportation Unit 1 Motor normal speed (For plain paper, type #1, width 2 & length 1)		-50.00 to +50.00	%
	00b	Transportation Unit 1 Motor low speed (For plain paper, type #1, width 2 & length 1)		-50.00 to +50.00	%
	00C	Transportation Unit 1 Motor high speed (For plain paper, type #1, width 2 & length 2)		-50.00 to +50.00	%
	00D	Transportation Unit 1 Motor normal speed (For plain paper, type #1, width 2 & length 2)		-50.00 to +50.00	%
	00E	Transportation Unit 1 Motor low speed (For plain paper, type #1, width 2 & length 2)		-50.00 to +50.00	%
	00F	Transportation Unit 1 Motor high speed (For plain paper, type #1, width 2 & length 3)		-50.00 to +50.00	%
	010	Transportation Unit 1 Motor normal speed (For plain paper, type #1, width 2 & length 3)		-50.00 to +50.00	%
	011	Transportation Unit 1 Motor low speed (For plain paper, type #1, width 2 & length 3)		-50.00 to +50.00	%
	012	Transportation Unit 1 Motor high speed (For plain paper, type #1, width 3 & length 1)		-10.000 to +10.000	%
	013	Transportation Unit 1 Motor normal speed (For plain paper, type #1, width 3 & length 1)		-10.000 to +10.000	%
	014	Transportation Unit 1 Motor low speed (For plain paper, type #1, width 3 & length 1)		-50.00 to +50.00	%
	015	Transportation Unit 1 Motor high speed (For plain paper, type #1, width 3 & length 2)		-50.00 to +50.00	%
	016	Transportation Unit 1 Motor normal speed (For plain paper, type #1, width 3 & length 2)		-50.00 to +50.00	%
	017	Transportation Unit 1 Motor low speed (For plain paper, type #1, width 3 & length 2)		-50.00 to +50.00	%
	018	Transportation Unit 1 Motor high speed (For plain paper, type #1, width 3 & length 3)		-50.00 to +50.00	%
	019	Transportation Unit 1 Motor normal speed (For plain paper, type #1, width 3 & length 3)		-50.00 to +50.00	%
	01A	Transportation Unit 1 Motor low speed (For plain paper, type #1, width 3 & length 3)		-50.00 to +50.00	%
	01b	Transportation Unit 1 Motor high speed (For plain paper, type #1, width 4 & length 1)		-50.00 to +50.00	%
	01C	Transportation Unit 1 Motor normal speed (For plain paper, type #1, width 4 & length 1)		-50.00 to +50.00	%
	01d	Transportation Unit 1 Motor low speed (For plain paper, type #1, width 4 & length 1)		-50.00 to +50.00	%
	01E	Transportation Unit 1 Motor high speed (For plain paper, type #1, width 4 & length 2)		-50.00 to +50.00	%
	01F	Transportation Unit 1 Motor normal speed (For plain paper, type #1, width 4 & length 2)		-50.00 to +50.00	%
	020	Transportation Unit 1 Motor low speed (For plain paper, type #1, width 4 & length 2)		-50.00 to +50.00	%
	021	Transportation Unit 1 Motor high speed (For plain paper, type #1, width 4 & length 3)		-50.00 to +50.00	%
	022	Transportation Unit 1 Motor normal speed (For plain paper, type #1, width 4 & length 3)		-50.00 to +50.00	%
	023	Transportation Unit 1 Motor low speed (For plain paper, type #1, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
5 (Transportation Unit 1 Motor speed)	024	Transportation Unit 1 Motor high speed (For plain paper, type #2, width 1 & length 1)		-50.00 to +50.00	%
	025	Transportation Unit 1 Motor normal speed (For plain paper, type #2, width 1 & length 1)		-50.00 to +50.00	%
	026	Transportation Unit 1 Motor low speed (For plain paper, type #2, width 1 & length 1)		-50.00 to +50.00	%
	027	Transportation Unit 1 Motor high speed (For plain paper, type #2, width 1 & length 2)		-50.00 to +50.00	%
	028	Transportation Unit 1 Motor normal speed (For plain paper, type #2, width 1 & length 2)		-50.00 to +50.00	%
	029	Transportation Unit 1 Motor low speed (For plain paper, type #2, width 1 & length 2)		-50.00 to +50.00	%
	02A	Transportation Unit 1 Motor high speed (For plain paper, type #2, width 1 & length 3)		-50.00 to +50.00	%
	02b	Transportation Unit 1 Motor normal speed (For plain paper, type #2, width 1 & length 3)		-50.00 to +50.00	%
	02C	Transportation Unit 1 Motor low speed (For plain paper, type #2, width 1 & length 3)		-50.00 to +50.00	%
	02d	Transportation Unit 1 Motor high speed (For plain paper, type #2, width 2 & length 1)		-50.00 to +50.00	%
	02E	Transportation Unit 1 Motor normal speed (For plain paper, type #2, width 2 & length 1)		-50.00 to +50.00	%
	02F	Transportation Unit 1 Motor low speed (For plain paper, type #2, width 2 & length 1)		-50.00 to +50.00	%
	030	Transportation Unit 1 Motor high speed (For plain paper, type #2, width 2 & length 2)		-50.00 to +50.00	%
	031	Transportation Unit 1 Motor normal speed (For plain paper, type #2, width 2 & length 2)		-50.00 to +50.00	%
	032	Transportation Unit 1 Motor low speed (For plain paper, type #2, width 2 & length 2)		-50.00 to +50.00	%
	033	Transportation Unit 1 Motor high speed (For plain paper, type #2, width 2 & length 3)		-50.00 to +50.00	%
	034	Transportation Unit 1 Motor normal speed (For plain paper, type #2, width 2 & length 3)		-50.00 to +50.00	%
	035	Transportation Unit 1 Motor low speed (For plain paper, type #2, width 2 & length 3)		-50.00 to +50.00	%
	036	Transportation Unit 1 Motor high speed (For plain paper, type #2, width 3 & length 1)		-50.00 to +50.00	%
	037	Transportation Unit 1 Motor normal speed (For plain paper, type #2, width 3 & length 1)		-50.00 to +50.00	%
	038	Transportation Unit 1 Motor low speed (For plain paper, type #2, width 3 & length 1)		-50.00 to +50.00	%
	039	Transportation Unit 1 Motor high speed (For plain paper, type #2, width 3 & length 2)		-50.00 to +50.00	%
	03A	Transportation Unit 1 Motor normal speed (For plain paper, type #2, width 3 & length 2)		-50.00 to +50.00	%
	03b	Transportation Unit 1 Motor low speed (For plain paper, type #2, width 3 & length 2)		-50.00 to +50.00	%
	03C	Transportation Unit 1 Motor high speed (For plain paper, type #2, width 3 & length 3)		-50.00 to +50.00	%
	03d	Transportation Unit 1 Motor normal speed (For plain paper, type #2, width 3 & length 3)		-50.00 to +50.00	%
	03E	Transportation Unit 1 Motor low speed (For plain paper, type #2, width 3 & length 3)		-50.00 to +50.00	%
	03F	Transportation Unit 1 Motor high speed (For plain paper, type #2, width 4 & length 1)		-50.00 to +50.00	%
	040	Transportation Unit 1 Motor normal speed (For plain paper, type #2, width 4 & length 1)		-50.00 to +50.00	%
	041	Transportation Unit 1 Motor low speed (For plain paper, type #2, width 4 & length 1)		-50.00 to +50.00	%
	042	Transportation Unit 1 Motor high speed (For plain paper, type #2, width 4 & length 2)		-50.00 to +50.00	%
	043	Transportation Unit 1 Motor normal speed (For plain paper, type #2, width 4 & length 2)		-50.00 to +50.00	%
	044	Transportation Unit 1 Motor low speed (For plain paper, type #2, width 4 & length 2)		-50.00 to +50.00	%
	045	Transportation Unit 1 Motor high speed (For plain paper, type #2, width 4 & length 3)		-50.00 to +50.00	%
	046	Transportation Unit 1 Motor normal speed (For plain paper, type #2, width 4 & length 3)		-50.00 to +50.00	%
	047	Transportation Unit 1 Motor low speed (For plain paper, type #2, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
5 (Transportation Unit 1 Motor speed)	048	Transportation Unit 1 Motor high speed (For plain paper, type #3, width 1 & length 1)		-50.00 to +50.00	%
	049	Transportation Unit 1 Motor normal speed (For plain paper, type #3, width 1 & length 1)		-50.00 to +50.00	%
	04A	Transportation Unit 1 Motor low speed (For plain paper, type #3, width 1 & length 1)		-50.00 to +50.00	%
	04b	Transportation Unit 1 Motor high speed (For plain paper, type #3, width 1 & length 2)		-50.00 to +50.00	%
	04C	Transportation Unit 1 Motor normal speed (For plain paper, type #3, width 1 & length 2)		-50.00 to +50.00	%
	04d	Transportation Unit 1 Motor low speed (For plain paper, type #3, width 1 & length 2)		-50.00 to +50.00	%
	04E	Transportation Unit 1 Motor high speed (For plain paper, type #3, width 1 & length 3)		-50.00 to +50.00	%
	04F	Transportation Unit 1 Motor normal speed (For plain paper, type #3, width 1 & length 3)		-50.00 to +50.00	%
	050	Transportation Unit 1 Motor low speed (For plain paper, type #3, width 1 & length 3)		-50.00 to +50.00	%
	051	Transportation Unit 1 Motor high speed (For plain paper, type #3, width 2 & length 1)		-50.00 to +50.00	%
	052	Transportation Unit 1 Motor normal speed (For plain paper, type #3, width 2 & length 1)		-50.00 to +50.00	%
	053	Transportation Unit 1 Motor low speed (For plain paper, type #3, width 2 & length 1)		-50.00 to +50.00	%
	054	Transportation Unit 1 Motor high speed (For plain paper, type #3, width 2 & length 2)		-50.00 to +50.00	%
	055	Transportation Unit 1 Motor normal speed (For plain paper, type #3, width 2 & length 2)		-50.00 to +50.00	%
	056	Transportation Unit 1 Motor low speed (For plain paper, type #3, width 2 & length 2)		-50.00 to +50.00	%
	057	Transportation Unit 1 Motor high speed (For plain paper, type #3, width 2 & length 3)		-50.00 to +50.00	%
	058	Transportation Unit 1 Motor normal speed (For plain paper, type #3, width 2 & length 3)		-50.00 to +50.00	%
	059	Transportation Unit 1 Motor low speed (For plain paper, type #3, width 2 & length 3)		-50.00 to +50.00	%
	05A	Transportation Unit 1 Motor high speed (For plain paper, type #3, width 3 & length 1)		-50.00 to +50.00	%
	05b	Transportation Unit 1 Motor normal speed (For plain paper, type #3, width 3 & length 1)		-50.00 to +50.00	%
	05C	Transportation Unit 1 Motor low speed (For plain paper, type #3, width 3 & length 1)		-50.00 to +50.00	%
	05d	Transportation Unit 1 Motor high speed (For plain paper, type #3, width 3 & length 2)		-50.00 to +50.00	%
	05E	Transportation Unit 1 Motor normal speed (For plain paper, type #3, width 3 & length 2)		-50.00 to +50.00	%
	05F	Transportation Unit 1 Motor low speed (For plain paper, type #3, width 3 & length 2)		-50.00 to +50.00	%
	060	Transportation Unit 1 Motor high speed (For plain paper, type #3, width 3 & length 3)		-50.00 to +50.00	%
	061	Transportation Unit 1 Motor normal speed (For plain paper, type #3, width 3 & length 3)		-50.00 to +50.00	%
	062	Transportation Unit 1 Motor low speed (For plain paper, type #3, width 3 & length 3)		-50.00 to +50.00	%
	063	Transportation Unit 1 Motor high speed (For plain paper, type #3, width 4 & length 1)		-50.00 to +50.00	%
	064	Transportation Unit 1 Motor normal speed (For plain paper, type #3, width 4 & length 1)		-50.00 to +50.00	%
	065	Transportation Unit 1 Motor low speed (For plain paper, type #3, width 4 & length 1)		-50.00 to +50.00	%
	066	Transportation Unit 1 Motor high speed (For plain paper, type #3, width 4 & length 2)		-50.00 to +50.00	%
	067	Transportation Unit 1 Motor normal speed (For plain paper, type #3, width 4 & length 2)		-50.00 to +50.00	%
	068	Transportation Unit 1 Motor low speed (For plain paper, type #3, width 4 & length 2)		-50.00 to +50.00	%
	069	Transportation Unit 1 Motor high speed (For plain paper, type #3, width 4 & length 3)		-50.00 to +50.00	%
	06A	Transportation Unit 1 Motor normal speed (For plain paper, type #3, width 4 & length 3)		-50.00 to +50.00	%
	06b	Transportation Unit 1 Motor low speed (For plain paper, type #3, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
5 (Transportation Unit 1 Motor speed)	06C	Transportation Unit 1 Motor high speed (For plain paper, type #4, width 1 & length 1)		-50.00 to +50.00	%
	06d	Transportation Unit 1 Motor normal speed (For plain paper, type #4, width 1 & length 1)		-50.00 to +50.00	%
	06E	Transportation Unit 1 Motor low speed (For plain paper, type #4, width 1 & length 1)		-50.00 to +50.00	%
	06F	Transportation Unit 1 Motor high speed (For plain paper, type #4, width 1 & length 2)		-50.00 to +50.00	%
	070	Transportation Unit 1 Motor normal speed (For plain paper, type #4, width 1 & length 2)		-50.00 to +50.00	%
	071	Transportation Unit 1 Motor low speed (For plain paper, type #4, width 1 & length 2)		-50.00 to +50.00	%
	072	Transportation Unit 1 Motor high speed (For plain paper, type #4, width 1 & length 3)		-50.00 to +50.00	%
	073	Transportation Unit 1 Motor normal speed (For plain paper, type #4, width 1 & length 3)		-50.00 to +50.00	%
	074	Transportation Unit 1 Motor low speed (For plain paper, type #4, width 1 & length 3)		-50.00 to +50.00	%
	075	Transportation Unit 1 Motor high speed (For plain paper, type #4, width 2 & length 1)		-50.00 to +50.00	%
	076	Transportation Unit 1 Motor normal speed (For plain paper, type #4, width 2 & length 1)		-50.00 to +50.00	%
	077	Transportation Unit 1 Motor low speed (For plain paper, type #4, width 2 & length 1)		-50.00 to +50.00	%
	078	Transportation Unit 1 Motor high speed (For plain paper, type #4, width 2 & length 2)		-50.00 to +50.00	%
	079	Transportation Unit 1 Motor normal speed (For plain paper, type #4, width 2 & length 2)		-50.00 to +50.00	%
	07A	Transportation Unit 1 Motor low speed (For plain paper, type #4, width 2 & length 2)		-50.00 to +50.00	%
	07b	Transportation Unit 1 Motor high speed (For plain paper, type #4, width 2 & length 3)		-50.00 to +50.00	%
	07C	Transportation Unit 1 Motor normal speed (For plain paper, type #4, width 2 & length 3)		-50.00 to +50.00	%
	07d	Transportation Unit 1 Motor low speed (For plain paper, type #4, width 2 & length 3)		-50.00 to +50.00	%
	07E	Transportation Unit 1 Motor high speed (For plain paper, type #4, width 3 & length 1)		-50.00 to +50.00	%
	07F	Transportation Unit 1 Motor normal speed (For plain paper, type #4, width 3 & length 1)		-50.00 to +50.00	%
	080	Transportation Unit 1 Motor low speed (For plain paper, type #4, width 3 & length 1)		-50.00 to +50.00	%
	081	Transportation Unit 1 Motor high speed (For plain paper, type #4, width 3 & length 2)		-50.00 to +50.00	%
	082	Transportation Unit 1 Motor normal speed (For plain paper, type #4, width 3 & length 2)		-50.00 to +50.00	%
	083	Transportation Unit 1 Motor low speed (For plain paper, type #4, width 3 & length 2)		-50.00 to +50.00	%
	084	Transportation Unit 1 Motor high speed (For plain paper, type #4, width 3 & length 3)		-50.00 to +50.00	%
	085	Transportation Unit 1 Motor normal speed (For plain paper, type #4, width 3 & length 3)		-50.00 to +50.00	%
	086	Transportation Unit 1 Motor low speed (For plain paper, type #4, width 3 & length 3)		-50.00 to +50.00	%
	087	Transportation Unit 1 Motor high speed (For plain paper, type #4, width 4 & length 1)		-50.00 to +50.00	%
	088	Transportation Unit 1 Motor normal speed (For plain paper, type #4, width 4 & length 1)		-50.00 to +50.00	%
	089	Transportation Unit 1 Motor low speed (For plain paper, type #4, width 4 & length 1)		-50.00 to +50.00	%
	08A	Transportation Unit 1 Motor high speed (For plain paper, type #4, width 4 & length 2)		-50.00 to +50.00	%
	08b	Transportation Unit 1 Motor normal speed (For plain paper, type #4, width 4 & length 2)		-50.00 to +50.00	%
	08C	Transportation Unit 1 Motor low speed (For plain paper, type #4, width 4 & length 2)		-50.00 to +50.00	%
	08d	Transportation Unit 1 Motor high speed (For plain paper, type #4, width 4 & length 3)		-50.00 to +50.00	%
	08E	Transportation Unit 1 Motor normal speed (For plain paper, type #4, width 4 & length 3)		-50.00 to +50.00	%
	08F	Transportation Unit 1 Motor low speed (For plain paper, type #4, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
5 (Transportation Unit 1 Motor speed)	090	Transportation Unit 1 Motor high speed (For tracing paper, type #1, width 1 & length 1)		-50.00 to +50.00	%
	091	Transportation Unit 1 Motor normal speed (For tracing paper, type #1, width 1 & length 1)		-50.00 to +50.00	%
	092	Transportation Unit 1 Motor low speed (For tracing paper, type #1, width 1 & length 1)		-50.00 to +50.00	%
	093	Transportation Unit 1 Motor high speed (For tracing paper, type #1, width 1 & length 2)		-50.00 to +50.00	%
	094	Transportation Unit 1 Motor normal speed (For tracing paper, type #1, width 1 & length 2)		-50.00 to +50.00	%
	095	Transportation Unit 1 Motor low speed (For tracing paper, type #1, width 1 & length 2)		-50.00 to +50.00	%
	096	Transportation Unit 1 Motor high speed (For tracing paper, type #1, width 1 & length 3)		-50.00 to +50.00	%
	097	Transportation Unit 1 Motor normal speed (For tracing paper, type #1, width 1 & length 3)		-50.00 to +50.00	%
	098	Transportation Unit 1 Motor low speed (For tracing paper, type #1, width 1 & length 3)		-50.00 to +50.00	%
	099	Transportation Unit 1 Motor high speed (For tracing paper, type #1, width 2 & length 1)		-50.00 to +50.00	%
	09A	Transportation Unit 1 Motor normal speed (For tracing paper, type #1, width 2 & length 1)		-50.00 to +50.00	%
	09b	Transportation Unit 1 Motor low speed (For tracing paper, type #1, width 2 & length 1)		-50.00 to +50.00	%
	09C	Transportation Unit 1 Motor high speed (For tracing paper, type #1, width 2 & length 2)		-50.00 to +50.00	%
	09d	Transportation Unit 1 Motor normal speed (For tracing paper, type #1, width 2 & length 2)		-50.00 to +50.00	%
	09E	Transportation Unit 1 Motor low speed (For tracing paper, type #1, width 2 & length 2)		-50.00 to +50.00	%
	09F	Transportation Unit 1 Motor high speed (For tracing paper, type #1, width 2 & length 3)		-50.00 to +50.00	%
	0A0	Transportation Unit 1 Motor normal speed (For tracing paper, type #1, width 2 & length 3)		-50.00 to +50.00	%
	0A1	Transportation Unit 1 Motor low speed (For tracing paper, type #1, width 2 & length 3)		-50.00 to +50.00	%
	0A2	Transportation Unit 1 Motor high speed (For tracing paper, type #1, width 3 & length 1)		-50.00 to +50.00	%
	0A3	Transportation Unit 1 Motor normal speed (For tracing paper, type #1, width 3 & length 1)		-50.00 to +50.00	%
	0A4	Transportation Unit 1 Motor low speed (For tracing paper, type #1, width 3 & length 1)		-50.00 to +50.00	%
	0A5	Transportation Unit 1 Motor high speed (For tracing paper, type #1, width 3 & length 2)		-50.00 to +50.00	%
	0A6	Transportation Unit 1 Motor normal speed (For tracing paper, type #1, width 3 & length 2)		-50.00 to +50.00	%
	0A7	Transportation Unit 1 Motor low speed (For tracing paper, type #1, width 3 & length 2)		-50.00 to +50.00	%
	0A8	Transportation Unit 1 Motor high speed (For tracing paper, type #1, width 3 & length 3)		-50.00 to +50.00	%
	0A9	Transportation Unit 1 Motor normal speed (For tracing paper, type #1, width 3 & length 3)		-50.00 to +50.00	%
	0AA	Transportation Unit 1 Motor low speed (For tracing paper, type #1, width 3 & length 3)		-50.00 to +50.00	%
	0Ab	Transportation Unit 1 Motor high speed (For tracing paper, type #1, width 4 & length 1)		-50.00 to +50.00	%
	0AC	Transportation Unit 1 Motor normal speed (For tracing paper, type #1, width 4 & length 1)		-50.00 to +50.00	%
	0Ad	Transportation Unit 1 Motor low speed (For tracing paper, type #1, width 4 & length 1)		-50.00 to +50.00	%
	0AE	Transportation Unit 1 Motor high speed (For tracing paper, type #1, width 4 & length 2)		-50.00 to +50.00	%
	0AF	Transportation Unit 1 Motor normal speed (For tracing paper, type #1, width 4 & length 2)		-50.00 to +50.00	%
	0b0	Transportation Unit 1 Motor low speed (For tracing paper, type #1, width 4 & length 2)		-50.00 to +50.00	%
	0b1	Transportation Unit 1 Motor high speed (For tracing paper, type #1, width 4 & length 3)		-50.00 to +50.00	%
	0b2	Transportation Unit 1 Motor normal speed (For tracing paper, type #1, width 4 & length 3)		-50.00 to +50.00	%
	0b3	Transportation Unit 1 Motor low speed (For tracing paper, type #1, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
5 (Transportation Unit 1 Motor speed)	0b4	Transportation Unit 1 Motor high speed (For tracing paper, type #2, width 1 & length 1)		-50.00 to +50.00	%
	0b5	Transportation Unit 1 Motor normal speed (For tracing paper, type #2, width 1 & length 1)		-50.00 to +50.00	%
	0b6	Transportation Unit 1 Motor low speed (For tracing paper, type #2, width 1 & length 1)		-50.00 to +50.00	%
	0b7	Transportation Unit 1 Motor high speed (For tracing paper, type #2, width 1 & length 2)		-50.00 to +50.00	%
	0b8	Transportation Unit 1 Motor normal speed (For tracing paper, type #2, width 1 & length 2)		-50.00 to +50.00	%
	0b9	Transportation Unit 1 Motor low speed (For tracing paper, type #2, width 1 & length 2)		-50.00 to +50.00	%
	0bA	Transportation Unit 1 Motor high speed (For tracing paper, type #2, width 1 & length 3)		-50.00 to +50.00	%
	0bb	Transportation Unit 1 Motor normal speed (For tracing paper, type #2, width 1 & length 3)		-50.00 to +50.00	%
	0bC	Transportation Unit 1 Motor low speed (For tracing paper, type #2, width 1 & length 3)		-50.00 to +50.00	%
	0bd	Transportation Unit 1 Motor high speed (For tracing paper, type #2, width 2 & length 1)		-50.00 to +50.00	%
	0bE	Transportation Unit 1 Motor normal speed (For tracing paper, type #2, width 2 & length 1)		-50.00 to +50.00	%
	0bF	Transportation Unit 1 Motor low speed (For tracing paper, type #2, width 2 & length 1)		-50.00 to +50.00	%
	0C0	Transportation Unit 1 Motor high speed (For tracing paper, type #2, width 2 & length 2)		-50.00 to +50.00	%
	0C1	Transportation Unit 1 Motor normal speed (For tracing paper, type #2, width 2 & length 2)		-50.00 to +50.00	%
	0C2	Transportation Unit 1 Motor low speed (For tracing paper, type #2, width 2 & length 2)		-50.00 to +50.00	%
	0C3	Transportation Unit 1 Motor high speed (For tracing paper, type #2, width 2 & length 3)		-50.00 to +50.00	%
	0C4	Transportation Unit 1 Motor normal speed (For tracing paper, type #2, width 2 & length 3)		-50.00 to +50.00	%
	0C5	Transportation Unit 1 Motor low speed (For tracing paper, type #2, width 2 & length 3)		-50.00 to +50.00	%
	0C6	Transportation Unit 1 Motor high speed (For tracing paper, type #2, width 3 & length 1)		-50.00 to +50.00	%
	0C7	Transportation Unit 1 Motor normal speed (For tracing paper, type #2, width 3 & length 1)		-50.00 to +50.00	%
	0C8	Transportation Unit 1 Motor low speed (For tracing paper, type #2, width 3 & length 1)		-50.00 to +50.00	%
	0C9	Transportation Unit 1 Motor high speed (For tracing paper, type #2, width 3 & length 2)		-50.00 to +50.00	%
	0CA	Transportation Unit 1 Motor normal speed (For tracing paper, type #2, width 3 & length 2)		-50.00 to +50.00	%
	0Cb	Transportation Unit 1 Motor low speed (For tracing paper, type #2, width 3 & length 2)		-50.00 to +50.00	%
	0CC	Transportation Unit 1 Motor high speed (For tracing paper, type #2, width 3 & length 3)		-50.00 to +50.00	%
	0Cd	Transportation Unit 1 Motor normal speed (For tracing paper, type #2, width 3 & length 3)		-50.00 to +50.00	%
	0CE	Transportation Unit 1 Motor low speed (For tracing paper, type #2, width 3 & length 3)		-50.00 to +50.00	%
	0CF	Transportation Unit 1 Motor high speed (For tracing paper, type #2, width 4 & length 1)		-50.00 to +50.00	%
	0d0	Transportation Unit 1 Motor normal speed (For tracing paper, type #2, width 4 & length 1)		-50.00 to +50.00	%
	0d1	Transportation Unit 1 Motor low speed (For tracing paper, type #2, width 4 & length 1)		-50.00 to +50.00	%
	0d2	Transportation Unit 1 Motor high speed (For tracing paper, type #2, width 4 & length 2)		-50.00 to +50.00	%
	0d3	Transportation Unit 1 Motor normal speed (For tracing paper, type #2, width 4 & length 2)		-50.00 to +50.00	%
	0d4	Transportation Unit 1 Motor low speed (For tracing paper, type #2, width 4 & length 2)		-50.00 to +50.00	%
	0d5	Transportation Unit 1 Motor high speed (For tracing paper, type #2, width 4 & length 3)		-50.00 to +50.00	%
	0d6	Transportation Unit 1 Motor normal speed (For tracing paper, type #2, width 4 & length 3)		-50.00 to +50.00	%
	0d7	Transportation Unit 1 Motor low speed (For tracing paper, type #2, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
5 (Transportation Unit 1 Motor speed)	0d8	Transportation Unit 1 Motor high speed (For tracing paper, type #3, width 1 & length 1)		-50.00 to +50.00	%
	0d9	Transportation Unit 1 Motor normal speed (For tracing paper, type #3, width 1 & length 1)		-50.00 to +50.00	%
	0dA	Transportation Unit 1 Motor low speed (For tracing paper, type #3, width 1 & length 1)		-50.00 to +50.00	%
	0db	Transportation Unit 1 Motor high speed (For tracing paper, type #3, width 1 & length 2)		-50.00 to +50.00	%
	0dC	Transportation Unit 1 Motor normal speed (For tracing paper, type #3, width 1 & length 2)		-50.00 to +50.00	%
	0dd	Transportation Unit 1 Motor low speed (For tracing paper, type #3, width 1 & length 2)		-50.00 to +50.00	%
	0dE	Transportation Unit 1 Motor high speed (For tracing paper, type #3, width 1 & length 3)		-50.00 to +50.00	%
	0dF	Transportation Unit 1 Motor normal speed (For tracing paper, type #3, width 1 & length 3)		-50.00 to +50.00	%
	0E0	Transportation Unit 1 Motor low speed (For tracing paper, type #3, width 1 & length 3)		-50.00 to +50.00	%
	0E1	Transportation Unit 1 Motor high speed (For tracing paper, type #3, width 2 & length 1)		-50.00 to +50.00	%
	0E2	Transportation Unit 1 Motor normal speed (For tracing paper, type #3, width 2 & length 1)		-50.00 to +50.00	%
	0E3	Transportation Unit 1 Motor low speed (For tracing paper, type #3, width 2 & length 1)		-50.00 to +50.00	%
	0E4	Transportation Unit 1 Motor high speed (For tracing paper, type #3, width 2 & length 2)		-50.00 to +50.00	%
	0E5	Transportation Unit 1 Motor normal speed (For tracing paper, type #3, width 2 & length 2)		-50.00 to +50.00	%
	0E6	Transportation Unit 1 Motor low speed (For tracing paper, type #3, width 2 & length 2)		-50.00 to +50.00	%
	0E7	Transportation Unit 1 Motor high speed (For tracing paper, type #3, width 2 & length 3)		-50.00 to +50.00	%
	0E8	Transportation Unit 1 Motor normal speed (For tracing paper, type #3, width 2 & length 3)		-50.00 to +50.00	%
	0E9	Transportation Unit 1 Motor low speed (For tracing paper, type #3, width 2 & length 3)		-50.00 to +50.00	%
	0EA	Transportation Unit 1 Motor high speed (For tracing paper, type #3, width 3 & length 1)		-50.00 to +50.00	%
	0Eb	Transportation Unit 1 Motor normal speed (For tracing paper, type #3, width 3 & length 1)		-50.00 to +50.00	%
	0EC	Transportation Unit 1 Motor low speed (For tracing paper, type #3, width 3 & length 1)		-50.00 to +50.00	%
	0Ed	Transportation Unit 1 Motor high speed (For tracing paper, type #3, width 3 & length 2)		-50.00 to +50.00	%
	0EE	Transportation Unit 1 Motor normal speed (For tracing paper, type #3, width 3 & length 2)		-50.00 to +50.00	%
	0EF	Transportation Unit 1 Motor low speed (For tracing paper, type #3, width 3 & length 2)		-50.00 to +50.00	%
	0F0	Transportation Unit 1 Motor high speed (For tracing paper, type #3, width 3 & length 3)		-50.00 to +50.00	%
	0F1	Transportation Unit 1 Motor normal speed (For tracing paper, type #3, width 3 & length 3)		-50.00 to +50.00	%
	0F2	Transportation Unit 1 Motor low speed (For tracing paper, type #3, width 3 & length 3)		-50.00 to +50.00	%
	0F3	Transportation Unit 1 Motor high speed (For tracing paper, type #3, width 4 & length 1)		-50.00 to +50.00	%
	0F4	Transportation Unit 1 Motor normal speed (For tracing paper, type #3, width 4 & length 1)		-50.00 to +50.00	%
	0F5	Transportation Unit 1 Motor low speed (For tracing paper, type #3, width 4 & length 1)		-50.00 to +50.00	%
	0F6	Transportation Unit 1 Motor high speed (For tracing paper, type #3, width 4 & length 2)		-50.00 to +50.00	%
	0F7	Transportation Unit 1 Motor normal speed (For tracing paper, type #3, width 4 & length 2)		-50.00 to +50.00	%
	0F8	Transportation Unit 1 Motor low speed (For tracing paper, type #3, width 4 & length 2)		-50.00 to +50.00	%
	0F9	Transportation Unit 1 Motor high speed (For tracing paper, type #3, width 4 & length 3)		-50.00 to +50.00	%
	0FA	Transportation Unit 1 Motor normal speed (For tracing paper, type #3, width 4 & length 3)		-50.00 to +50.00	%
	0Fb	Transportation Unit 1 Motor low speed (For tracing paper, type #3, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
5 (Transportation Unit 1 Motor speed)	0FC	Transportation Unit 1 Motor high speed (For tracing paper, type #4, width 1 & length 1)		-50.00 to +50.00	%
	0Fd	Transportation Unit 1 Motor normal speed (For tracing paper, type #4, width 1 & length 1)		-50.00 to +50.00	%
	0FE	Transportation Unit 1 Motor low speed (For tracing paper, type #4, width 1 & length 1)		-50.00 to +50.00	%
	0FF	Transportation Unit 1 Motor high speed (For tracing paper, type #4, width 1 & length 2)		-50.00 to +50.00	%
	100	Transportation Unit 1 Motor normal speed (For tracing paper, type #4, width 1 & length 2)		-50.00 to +50.00	%
	101	Transportation Unit 1 Motor low speed (For tracing paper, type #4, width 1 & length 2)		-50.00 to +50.00	%
	102	Transportation Unit 1 Motor high speed (For tracing paper, type #4, width 1 & length 3)		-50.00 to +50.00	%
	103	Transportation Unit 1 Motor normal speed (For tracing paper, type #4, width 1 & length 3)		-50.00 to +50.00	%
	104	Transportation Unit 1 Motor low speed (For tracing paper, type #4, width 1 & length 3)		-50.00 to +50.00	%
	105	Transportation Unit 1 Motor high speed (For tracing paper, type #4, width 2 & length 1)		-50.00 to +50.00	%
	106	Transportation Unit 1 Motor normal speed (For tracing paper, type #4, width 2 & length 1)		-50.00 to +50.00	%
	107	Transportation Unit 1 Motor low speed (For tracing paper, type #4, width 2 & length 1)		-50.00 to +50.00	%
	108	Transportation Unit 1 Motor high speed (For tracing paper, type #4, width 2 & length 2)		-50.00 to +50.00	%
	109	Transportation Unit 1 Motor normal speed (For tracing paper, type #4, width 2 & length 2)		-50.00 to +50.00	%
	10A	Transportation Unit 1 Motor low speed (For tracing paper, type #4, width 2 & length 2)		-50.00 to +50.00	%
	10b	Transportation Unit 1 Motor high speed (For tracing paper, type #4, width 2 & length 3)		-50.00 to +50.00	%
	10C	Transportation Unit 1 Motor normal speed (For tracing paper, type #4, width 2 & length 3)		-50.00 to +50.00	%
	10d	Transportation Unit 1 Motor low speed (For tracing paper, type #4, width 2 & length 3)		-50.00 to +50.00	%
	10E	Transportation Unit 1 Motor high speed (For tracing paper, type #4, width 3 & length 1)		-50.00 to +50.00	%
	10F	Transportation Unit 1 Motor normal speed (For tracing paper, type #4, width 3 & length 1)		-50.00 to +50.00	%
	110	Transportation Unit 1 Motor low speed (For tracing paper, type #4, width 3 & length 1)		-50.00 to +50.00	%
	111	Transportation Unit 1 Motor high speed (For tracing paper, type #4, width 3 & length 2)		-50.00 to +50.00	%
	112	Transportation Unit 1 Motor normal speed (For tracing paper, type #4, width 3 & length 2)		-50.00 to +50.00	%
	113	Transportation Unit 1 Motor low speed (For tracing paper, type #4, width 3 & length 2)		-50.00 to +50.00	%
	114	Transportation Unit 1 Motor high speed (For tracing paper, type #4, width 3 & length 3)		-50.00 to +50.00	%
	115	Transportation Unit 1 Motor normal speed (For tracing paper, type #4, width 3 & length 3)		-50.00 to +50.00	%
	116	Transportation Unit 1 Motor low speed (For tracing paper, type #4, width 3 & length 3)		-50.00 to +50.00	%
	117	Transportation Unit 1 Motor high speed (For tracing paper, type #4, width 4 & length 1)		-50.00 to +50.00	%
	118	Transportation Unit 1 Motor normal speed (For tracing paper, type #4, width 4 & length 1)		-50.00 to +50.00	%
	119	Transportation Unit 1 Motor low speed (For tracing paper, type #4, width 4 & length 1)		-50.00 to +50.00	%
	11A	Transportation Unit 1 Motor high speed (For tracing paper, type #4, width 4 & length 2)		-50.00 to +50.00	%
	11b	Transportation Unit 1 Motor normal speed (For tracing paper, type #4, width 4 & length 2)		-50.00 to +50.00	%
	11C	Transportation Unit 1 Motor low speed (For tracing paper, type #4, width 4 & length 2)		-50.00 to +50.00	%
	11d	Transportation Unit 1 Motor high speed (For tracing paper, type #4, width 4 & length 3)		-50.00 to +50.00	%
	11E	Transportation Unit 1 Motor normal speed (For tracing paper, type #4, width 4 & length 3)		-50.00 to +50.00	%
	11F	Transportation Unit 1 Motor low speed (For tracing paper, type #4, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
5 (Transportation Unit 1 Motor speed)	120	Transportation Unit 1 Motor high speed (For film, type #1, width 1 & length 1)		-50.00 to +50.00	%
	121	Transportation Unit 1 Motor normal speed (For film, type #1, width 1 & length 1)		-50.00 to +50.00	%
	122	Transportation Unit 1 Motor low speed (For film, type #1, width 1 & length 1)		-50.00 to +50.00	%
	123	Transportation Unit 1 Motor high speed (For film, type #1, width 1 & length 2)		-50.00 to +50.00	%
	124	Transportation Unit 1 Motor normal speed (For film, type #1, width 1 & length 2)		-50.00 to +50.00	%
	125	Transportation Unit 1 Motor low speed (For film, type #1, width 1 & length 2)		-50.00 to +50.00	%
	126	Transportation Unit 1 Motor high speed (For film, type #1, width 1 & length 3)		-50.00 to +50.00	%
	127	Transportation Unit 1 Motor normal speed (For film, type #1, width 1 & length 3)		-50.00 to +50.00	%
	128	Transportation Unit 1 Motor low speed (For film, type #1, width 1 & length 3)		-50.00 to +50.00	%
	129	Transportation Unit 1 Motor high speed (For film, type #1, width 2 & length 1)		-50.00 to +50.00	%
	12A	Transportation Unit 1 Motor normal speed (For film, type #1, width 2 & length 1)		-50.00 to +50.00	%
	12b	Transportation Unit 1 Motor low speed (For film, type #1, width 2 & length 1)		-50.00 to +50.00	%
	12C	Transportation Unit 1 Motor high speed (For film, type #1, width 2 & length 2)		-50.00 to +50.00	%
	12d	Transportation Unit 1 Motor normal speed (For film, type #1, width 2 & length 2)		-50.00 to +50.00	%
	12E	Transportation Unit 1 Motor low speed (For film, type #1, width 2 & length 2)		-50.00 to +50.00	%
	12F	Transportation Unit 1 Motor high speed (For film, type #1, width 2 & length 3)		-50.00 to +50.00	%
	130	Transportation Unit 1 Motor normal speed (For film, type #1, width 2 & length 3)		-50.00 to +50.00	%
	131	Transportation Unit 1 Motor low speed (For film, type #1, width 2 & length 3)		-50.00 to +50.00	%
	132	Transportation Unit 1 Motor high speed (For film, type #1, width 3 & length 1)		-50.00 to +50.00	%
	133	Transportation Unit 1 Motor normal speed (For film, type #1, width 3 & length 1)		-50.00 to +50.00	%
	134	Transportation Unit 1 Motor low speed (For film, type #1, width 3 & length 1)		-50.00 to +50.00	%
	135	Transportation Unit 1 Motor high speed (For film, type #1, width 3 & length 2)		-50.00 to +50.00	%
	136	Transportation Unit 1 Motor normal speed (For film, type #1, width 3 & length 2)		-50.00 to +50.00	%
	137	Transportation Unit 1 Motor low speed (For film, type #1, width 3 & length 2)		-50.00 to +50.00	%
	138	Transportation Unit 1 Motor high speed (For film, type #1, width 3 & length 3)		-50.00 to +50.00	%
	139	Transportation Unit 1 Motor normal speed (For film, type #1, width 3 & length 3)		-50.00 to +50.00	%
	13A	Transportation Unit 1 Motor low speed (For film, type #1, width 3 & length 3)		-50.00 to +50.00	%
	13b	Transportation Unit 1 Motor high speed (For film, type #1, width 4 & length 1)		-50.00 to +50.00	%
	13C	Transportation Unit 1 Motor normal speed (For film, type #1, width 4 & length 1)		-50.00 to +50.00	%
	13d	Transportation Unit 1 Motor low speed (For film, type #1, width 4 & length 1)		-50.00 to +50.00	%
	13E	Transportation Unit 1 Motor high speed (For film, type #1, width 4 & length 2)		-50.00 to +50.00	%
	13F	Transportation Unit 1 Motor normal speed (For film, type #1, width 4 & length 2)		-50.00 to +50.00	%
	140	Transportation Unit 1 Motor low speed (For film, type #1, width 4 & length 2)		-50.00 to +50.00	%
	141	Transportation Unit 1 Motor high speed (For film, type #1, width 4 & length 3)		-50.00 to +50.00	%
	142	Transportation Unit 1 Motor normal speed (For film, type #1, width 4 & length 3)		-50.00 to +50.00	%
	143	Transportation Unit 1 Motor low speed (For film, type #1, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
5 (Transportation Unit 1 Motor speed)	144	Transportation Unit 1 Motor high speed (For film, type #2, width 1 & length 1)		-50.00 to +50.00	%
	145	Transportation Unit 1 Motor normal speed (For film, type #2, width 1 & length 1)		-50.00 to +50.00	%
	146	Transportation Unit 1 Motor low speed (For film, type #2, width 1 & length 1)		-50.00 to +50.00	%
	147	Transportation Unit 1 Motor high speed (For film, type #2, width 1 & length 2)		-50.00 to +50.00	%
	148	Transportation Unit 1 Motor normal speed (For film, type #2, width 1 & length 2)		-50.00 to +50.00	%
	149	Transportation Unit 1 Motor low speed (For film, type #2, width 1 & length 2)		-50.00 to +50.00	%
	14A	Transportation Unit 1 Motor high speed (For film, type #2, width 1 & length 3)		-50.00 to +50.00	%
	14b	Transportation Unit 1 Motor normal speed (For film, type #2, width 1 & length 3)		-50.00 to +50.00	%
	14C	Transportation Unit 1 Motor low speed (For film, type #2, width 1 & length 3)		-50.00 to +50.00	%
	14d	Transportation Unit 1 Motor high speed (For film, type #2, width 2 & length 1)		-50.00 to +50.00	%
	14E	Transportation Unit 1 Motor normal speed (For film, type #2, width 2 & length 1)		-50.00 to +50.00	%
	14F	Transportation Unit 1 Motor low speed (For film, type #2, width 2 & length 1)		-50.00 to +50.00	%
	150	Transportation Unit 1 Motor high speed (For film, type #2, width 2 & length 2)		-50.00 to +50.00	%
	151	Transportation Unit 1 Motor normal speed (For film, type #2, width 2 & length 2)		-50.00 to +50.00	%
	152	Transportation Unit 1 Motor low speed (For film, type #2, width 2 & length 2)		-50.00 to +50.00	%
	153	Transportation Unit 1 Motor high speed (For film, type #2, width 2 & length 3)		-50.00 to +50.00	%
	154	Transportation Unit 1 Motor normal speed (For film, type #2, width 2 & length 3)		-50.00 to +50.00	%
	155	Transportation Unit 1 Motor low speed (For film, type #2, width 2 & length 3)		-50.00 to +50.00	%
	156	Transportation Unit 1 Motor high speed (For film, type #2, width 3 & length 1)		-50.00 to +50.00	%
	157	Transportation Unit 1 Motor normal speed (For film, type #2, width 3 & length 1)		-50.00 to +50.00	%
	158	Transportation Unit 1 Motor low speed (For film, type #2, width 3 & length 1)		-50.00 to +50.00	%
	159	Transportation Unit 1 Motor high speed (For film, type #2, width 3 & length 2)		-50.00 to +50.00	%
	15A	Transportation Unit 1 Motor normal speed (For film, type #2, width 3 & length 2)		-50.00 to +50.00	%
	15b	Transportation Unit 1 Motor low speed (For film, type #2, width 3 & length 2)		-50.00 to +50.00	%
	15C	Transportation Unit 1 Motor high speed (For film, type #2, width 3 & length 3)		-50.00 to +50.00	%
	15d	Transportation Unit 1 Motor normal speed (For film, type #2, width 3 & length 3)		-50.00 to +50.00	%
	15E	Transportation Unit 1 Motor low speed (For film, type #2, width 3 & length 3)		-50.00 to +50.00	%
	15F	Transportation Unit 1 Motor high speed (For film, type #2, width 4 & length 1)		-50.00 to +50.00	%
	160	Transportation Unit 1 Motor normal speed (For film, type #2, width 4 & length 1)		-50.00 to +50.00	%
	161	Transportation Unit 1 Motor low speed (For film, type #2, width 4 & length 1)		-50.00 to +50.00	%
	162	Transportation Unit 1 Motor high speed (For film, type #2, width 4 & length 2)		-50.00 to +50.00	%
	163	Transportation Unit 1 Motor normal speed (For film, type #2, width 4 & length 2)		-50.00 to +50.00	%
	164	Transportation Unit 1 Motor low speed (For film, type #2, width 4 & length 2)		-50.00 to +50.00	%
	165	Transportation Unit 1 Motor high speed (For film, type #2, width 4 & length 3)		-50.00 to +50.00	%
	166	Transportation Unit 1 Motor normal speed (For film, type #2, width 4 & length 3)		-50.00 to +50.00	%
	167	Transportation Unit 1 Motor low speed (For film, type #2, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
5 (Transportation Unit 1 Motor speed)	168	Transportation Unit 1 Motor high speed (For film, type #3, width 1 & length 1)		-50.00 to +50.00	%
	169	Transportation Unit 1 Motor normal speed (For film, type #3, width 1 & length 1)		-50.00 to +50.00	%
	16A	Transportation Unit 1 Motor low speed (For film, type #3, width 1 & length 1)		-50.00 to +50.00	%
	16b	Transportation Unit 1 Motor high speed (For film, type #3, width 1 & length 2)		-50.00 to +50.00	%
	16C	Transportation Unit 1 Motor normal speed (For film, type #3, width 1 & length 2)		-50.00 to +50.00	%
	16d	Transportation Unit 1 Motor low speed (For film, type #3, width 1 & length 2)		-50.00 to +50.00	%
	16E	Transportation Unit 1 Motor high speed (For film, type #3, width 1 & length 3)		-50.00 to +50.00	%
	16F	Transportation Unit 1 Motor normal speed (For film, type #3, width 1 & length 3)		-50.00 to +50.00	%
	170	Transportation Unit 1 Motor low speed (For film, type #3, width 1 & length 3)		-50.00 to +50.00	%
	171	Transportation Unit 1 Motor high speed (For film, type #3, width 2 & length 1)		-50.00 to +50.00	%
	172	Transportation Unit 1 Motor normal speed (For film, type #3, width 2 & length 1)		-50.00 to +50.00	%
	173	Transportation Unit 1 Motor low speed (For film, type #3, width 2 & length 1)		-50.00 to +50.00	%
	174	Transportation Unit 1 Motor high speed (For film, type #3, width 2 & length 2)		-50.00 to +50.00	%
	175	Transportation Unit 1 Motor normal speed (For film, type #3, width 2 & length 2)		-50.00 to +50.00	%
	176	Transportation Unit 1 Motor low speed (For film, type #3, width 2 & length 2)		-50.00 to +50.00	%
	177	Transportation Unit 1 Motor high speed (For film, type #3, width 2 & length 3)		-50.00 to +50.00	%
	178	Transportation Unit 1 Motor normal speed (For film, type #3, width 2 & length 3)		-50.00 to +50.00	%
	179	Transportation Unit 1 Motor low speed (For film, type #3, width 2 & length 3)		-50.00 to +50.00	%
	17A	Transportation Unit 1 Motor high speed (For film, type #3, width 3 & length 1)		-50.00 to +50.00	%
	17b	Transportation Unit 1 Motor normal speed (For film, type #3, width 3 & length 1)		-50.00 to +50.00	%
	17C	Transportation Unit 1 Motor low speed (For film, type #3, width 3 & length 1)		-50.00 to +50.00	%
	17d	Transportation Unit 1 Motor high speed (For film, type #3, width 3 & length 2)		-50.00 to +50.00	%
	17E	Transportation Unit 1 Motor normal speed (For film, type #3, width 3 & length 2)		-50.00 to +50.00	%
	17F	Transportation Unit 1 Motor low speed (For film, type #3, width 3 & length 2)		-50.00 to +50.00	%
	180	Transportation Unit 1 Motor high speed (For film, type #3, width 3 & length 3)		-50.00 to +50.00	%
	181	Transportation Unit 1 Motor normal speed (For film, type #3, width 3 & length 3)		-50.00 to +50.00	%
	182	Transportation Unit 1 Motor low speed (For film, type #3, width 3 & length 3)		-50.00 to +50.00	%
	183	Transportation Unit 1 Motor high speed (For film, type #3, width 4 & length 1)		-50.00 to +50.00	%
	184	Transportation Unit 1 Motor normal speed (For film, type #3, width 4 & length 1)		-50.00 to +50.00	%
	185	Transportation Unit 1 Motor low speed (For film, type #3, width 4 & length 1)		-50.00 to +50.00	%
	186	Transportation Unit 1 Motor high speed (For film, type #3, width 4 & length 2)		-50.00 to +50.00	%
	187	Transportation Unit 1 Motor normal speed (For film, type #3, width 4 & length 2)		-50.00 to +50.00	%
	188	Transportation Unit 1 Motor low speed (For film, type #3, width 4 & length 2)		-50.00 to +50.00	%
	189	Transportation Unit 1 Motor high speed (For film, type #3, width 4 & length 3)		-50.00 to +50.00	%
	18A	Transportation Unit 1 Motor normal speed (For film, type #3, width 4 & length 3)		-50.00 to +50.00	%
	18b	Transportation Unit 1 Motor low speed (For film, type #3, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
5 (Transportation Unit 1 Motor speed)	18C	Transportation Unit 1 Motor high speed (For film, type #4, width 1 & length 1)		-50.00 to +50.00	%
	18d	Transportation Unit 1 Motor normal speed (For film, type #4, width 1 & length 1)		-50.00 to +50.00	%
	18E	Transportation Unit 1 Motor low speed (For film, type #4, width 1 & length 1)		-50.00 to +50.00	%
	18F	Transportation Unit 1 Motor high speed (For film, type #4, width 1 & length 2)		-50.00 to +50.00	%
	190	Transportation Unit 1 Motor normal speed (For film, type #4, width 1 & length 2)		-50.00 to +50.00	%
	191	Transportation Unit 1 Motor low speed (For film, type #4, width 1 & length 2)		-50.00 to +50.00	%
	192	Transportation Unit 1 Motor high speed (For film, type #4, width 1 & length 3)		-50.00 to +50.00	%
	193	Transportation Unit 1 Motor normal speed (For film, type #4, width 1 & length 3)		-50.00 to +50.00	%
	194	Transportation Unit 1 Motor low speed (For film, type #4, width 1 & length 3)		-50.00 to +50.00	%
	195	Transportation Unit 1 Motor high speed (For film, type #4, width 2 & length 1)		-50.00 to +50.00	%
	196	Transportation Unit 1 Motor normal speed (For film, type #4, width 2 & length 1)		-50.00 to +50.00	%
	197	Transportation Unit 1 Motor low speed (For film, type #4, width 2 & length 1)		-50.00 to +50.00	%
	198	Transportation Unit 1 Motor high speed (For film, type #4, width 2 & length 2)		-50.00 to +50.00	%
	199	Transportation Unit 1 Motor normal speed (For film, type #4, width 2 & length 2)		-50.00 to +50.00	%
	19A	Transportation Unit 1 Motor low speed (For film, type #4, width 2 & length 2)		-50.00 to +50.00	%
	19b	Transportation Unit 1 Motor high speed (For film, type #4, width 2 & length 3)		-50.00 to +50.00	%
	19C	Transportation Unit 1 Motor normal speed (For film, type #4, width 2 & length 3)		-50.00 to +50.00	%
	19d	Transportation Unit 1 Motor low speed (For film, type #4, width 2 & length 3)		-50.00 to +50.00	%
	19E	Transportation Unit 1 Motor high speed (For film, type #4, width 3 & length 1)		-50.00 to +50.00	%
	19F	Transportation Unit 1 Motor normal speed (For film, type #4, width 3 & length 1)		-50.00 to +50.00	%
	1A0	Transportation Unit 1 Motor low speed (For film, type #4, width 3 & length 1)		-50.00 to +50.00	%
	1A1	Transportation Unit 1 Motor high speed (For film, type #4, width 3 & length 2)		-50.00 to +50.00	%
	1A2	Transportation Unit 1 Motor normal speed (For film, type #4, width 3 & length 2)		-50.00 to +50.00	%
	1A3	Transportation Unit 1 Motor low speed (For film, type #4, width 3 & length 2)		-50.00 to +50.00	%
	1A4	Transportation Unit 1 Motor high speed (For film, type #4, width 3 & length 3)		-50.00 to +50.00	%
	1A5	Transportation Unit 1 Motor normal speed (For film, type #4, width 3 & length 3)		-50.00 to +50.00	%
	1A6	Transportation Unit 1 Motor low speed (For film, type #4, width 3 & length 3)		-50.00 to +50.00	%
	1A7	Transportation Unit 1 Motor high speed (For film, type #4, width 4 & length 1)		-50.00 to +50.00	%
	1A8	Transportation Unit 1 Motor normal speed (For film, type #4, width 4 & length 1)		-50.00 to +50.00	%
	1A9	Transportation Unit 1 Motor low speed (For film, type #4, width 4 & length 1)		-50.00 to +50.00	%
	1AA	Transportation Unit 1 Motor high speed (For film, type #4, width 4 & length 2)		-50.00 to +50.00	%
	1Ab	Transportation Unit 1 Motor normal speed (For film, type #4, width 4 & length 2)		-50.00 to +50.00	%
	1AC	Transportation Unit 1 Motor low speed (For film, type #4, width 4 & length 2)		-50.00 to +50.00	%
	1Ad	Transportation Unit 1 Motor high speed (For film, type #4, width 4 & length 3)		-50.00 to +50.00	%
	1AE	Transportation Unit 1 Motor normal speed (For film, type #4, width 4 & length 3)		-50.00 to +50.00	%
	1AF	Transportation Unit 1 Motor low speed (For film, type #4, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
5 (Transportation Unit 1 Motor speed)	1b0	Transportation Unit 1 Motor high speed (For gloss, type #1, width 1 & length 1)		-50.00 to +50.00	%
	1b1	Transportation Unit 1 Motor normal speed (For gloss, type #1, width 1 & length 1)		-50.00 to +50.00	%
	1b2	Transportation Unit 1 Motor low speed (For gloss, type #1, width 1 & length 1)		-50.00 to +50.00	%
	1b3	Transportation Unit 1 Motor high speed (For gloss, type #1, width 1 & length 2)		-50.00 to +50.00	%
	1b4	Transportation Unit 1 Motor normal speed (For gloss, type #1, width 1 & length 2)		-50.00 to +50.00	%
	1b5	Transportation Unit 1 Motor low speed (For gloss, type #1, width 1 & length 2)		-50.00 to +50.00	%
	1b6	Transportation Unit 1 Motor high speed (For gloss, type #1, width 1 & length 3)		-50.00 to +50.00	%
	1b7	Transportation Unit 1 Motor normal speed (For gloss, type #1, width 1 & length 3)		-50.00 to +50.00	%
	1b8	Transportation Unit 1 Motor low speed (For gloss, type #1, width 1 & length 3)		-50.00 to +50.00	%
	1b9	Transportation Unit 1 Motor high speed (For gloss, type #1, width 2 & length 1)		-50.00 to +50.00	%
	1bA	Transportation Unit 1 Motor normal speed (For gloss, type #1, width 2 & length 1)		-50.00 to +50.00	%
	1bb	Transportation Unit 1 Motor low speed (For gloss, type #1, width 2 & length 1)		-50.00 to +50.00	%
	1bC	Transportation Unit 1 Motor high speed (For gloss, type #1, width 2 & length 2)		-50.00 to +50.00	%
	1bd	Transportation Unit 1 Motor normal speed (For gloss, type #1, width 2 & length 2)		-50.00 to +50.00	%
	1bE	Transportation Unit 1 Motor low speed (For gloss, type #1, width 2 & length 2)		-50.00 to +50.00	%
	1bF	Transportation Unit 1 Motor high speed (For gloss, type #1, width 2 & length 3)		-50.00 to +50.00	%
	1C0	Transportation Unit 1 Motor normal speed (For gloss, type #1, width 2 & length 3)		-50.00 to +50.00	%
	1C1	Transportation Unit 1 Motor low speed (For gloss, type #1, width 2 & length 3)		-50.00 to +50.00	%
	1C2	Transportation Unit 1 Motor high speed (For gloss, type #1, width 3 & length 1)		-10.000 to +10.000	%
	1C3	Transportation Unit 1 Motor normal speed (For gloss, type #1, width 3 & length 1)		-10.000 to +10.000	%
	1C4	Transportation Unit 1 Motor low speed (For gloss, type #1, width 3 & length 1)		-50.00 to +50.00	%
	1C5	Transportation Unit 1 Motor high speed (For gloss, type #1, width 3 & length 2)		-50.00 to +50.00	%
	1C6	Transportation Unit 1 Motor normal speed (For gloss, type #1, width 3 & length 2)		-50.00 to +50.00	%
	1C7	Transportation Unit 1 Motor low speed (For gloss, type #1, width 3 & length 2)		-50.00 to +50.00	%
	1C8	Transportation Unit 1 Motor high speed (For gloss, type #1, width 3 & length 3)		-50.00 to +50.00	%
	1C9	Transportation Unit 1 Motor normal speed (For gloss, type #1, width 3 & length 3)		-50.00 to +50.00	%
	1CA	Transportation Unit 1 Motor low speed (For gloss, type #1, width 3 & length 3)		-50.00 to +50.00	%
	1Cb	Transportation Unit 1 Motor high speed (For gloss, type #1, width 4 & length 1)		-50.00 to +50.00	%
	1CC	Transportation Unit 1 Motor normal speed (For gloss, type #1, width 4 & length 1)		-50.00 to +50.00	%
	1Cd	Transportation Unit 1 Motor low speed (For gloss, type #1, width 4 & length 1)		-50.00 to +50.00	%
	1CE	Transportation Unit 1 Motor high speed (For gloss, type #1, width 4 & length 2)		-50.00 to +50.00	%
	1CF	Transportation Unit 1 Motor normal speed (For gloss, type #1, width 4 & length 2)		-50.00 to +50.00	%
	1d0	Transportation Unit 1 Motor low speed (For gloss, type #1, width 4 & length 2)		-50.00 to +50.00	%
	1d1	Transportation Unit 1 Motor high speed (For gloss, type #1, width 4 & length 3)		-50.00 to +50.00	%
	1d2	Transportation Unit 1 Motor normal speed (For gloss, type #1, width 4 & length 3)		-50.00 to +50.00	%
	1d3	Transportation Unit 1 Motor low speed (For gloss, type #1, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
5 (Transportation Unit 1 Motor speed)	1d4	Transportation Unit 1 Motor high speed (For gloss, type #2, width 1 & length 1)		-50.00 to +50.00	%
	1d5	Transportation Unit 1 Motor normal speed (For gloss, type #2, width 1 & length 1)		-50.00 to +50.00	%
	1d6	Transportation Unit 1 Motor low speed (For gloss, type #2, width 1 & length 1)		-50.00 to +50.00	%
	1d7	Transportation Unit 1 Motor high speed (For gloss, type #2, width 1 & length 2)		-50.00 to +50.00	%
	1d8	Transportation Unit 1 Motor normal speed (For gloss, type #2, width 1 & length 2)		-50.00 to +50.00	%
	1d9	Transportation Unit 1 Motor low speed (For gloss, type #2, width 1 & length 2)		-50.00 to +50.00	%
	1dA	Transportation Unit 1 Motor high speed (For gloss, type #2, width 1 & length 3)		-50.00 to +50.00	%
	1db	Transportation Unit 1 Motor normal speed (For gloss, type #2, width 1 & length 3)		-50.00 to +50.00	%
	1dC	Transportation Unit 1 Motor low speed (For gloss, type #2, width 1 & length 3)		-50.00 to +50.00	%
	1dd	Transportation Unit 1 Motor high speed (For gloss, type #2, width 2 & length 1)		-50.00 to +50.00	%
	1dE	Transportation Unit 1 Motor normal speed (For gloss, type #2, width 2 & length 1)		-50.00 to +50.00	%
	1dF	Transportation Unit 1 Motor low speed (For gloss, type #2, width 2 & length 1)		-50.00 to +50.00	%
	1E0	Transportation Unit 1 Motor high speed (For gloss, type #2, width 2 & length 2)		-50.00 to +50.00	%
	1E1	Transportation Unit 1 Motor normal speed (For gloss, type #2, width 2 & length 2)		-50.00 to +50.00	%
	1E2	Transportation Unit 1 Motor low speed (For gloss, type #2, width 2 & length 2)		-50.00 to +50.00	%
	1E3	Transportation Unit 1 Motor high speed (For gloss, type #2, width 2 & length 3)		-50.00 to +50.00	%
	1E4	Transportation Unit 1 Motor normal speed (For gloss, type #2, width 2 & length 3)		-50.00 to +50.00	%
	1E5	Transportation Unit 1 Motor low speed (For gloss, type #2, width 2 & length 3)		-50.00 to +50.00	%
	1E6	Transportation Unit 1 Motor high speed (For gloss, type #2, width 3 & length 1)		-50.00 to +50.00	%
	1E7	Transportation Unit 1 Motor normal speed (For gloss, type #2, width 3 & length 1)		-50.00 to +50.00	%
	1E8	Transportation Unit 1 Motor low speed (For gloss, type #2, width 3 & length 1)		-50.00 to +50.00	%
	1E9	Transportation Unit 1 Motor high speed (For gloss, type #2, width 3 & length 2)		-50.00 to +50.00	%
	1EA	Transportation Unit 1 Motor normal speed (For gloss, type #2, width 3 & length 2)		-50.00 to +50.00	%
	1Eb	Transportation Unit 1 Motor low speed (For gloss, type #2, width 3 & length 2)		-50.00 to +50.00	%
	1EC	Transportation Unit 1 Motor high speed (For gloss, type #2, width 3 & length 3)		-50.00 to +50.00	%
	1Ed	Transportation Unit 1 Motor normal speed (For gloss, type #2, width 3 & length 3)		-50.00 to +50.00	%
	1EE	Transportation Unit 1 Motor low speed (For gloss, type #2, width 3 & length 3)		-50.00 to +50.00	%
	1EF	Transportation Unit 1 Motor high speed (For gloss, type #2, width 4 & length 1)		-50.00 to +50.00	%
	1F0	Transportation Unit 1 Motor normal speed (For gloss, type #2, width 4 & length 1)		-50.00 to +50.00	%
	1F1	Transportation Unit 1 Motor low speed (For gloss, type #2, width 4 & length 1)		-50.00 to +50.00	%
	1F2	Transportation Unit 1 Motor high speed (For gloss, type #2, width 4 & length 2)		-50.00 to +50.00	%
	1F3	Transportation Unit 1 Motor normal speed (For gloss, type #2, width 4 & length 2)		-50.00 to +50.00	%
	1F4	Transportation Unit 1 Motor low speed (For gloss, type #2, width 4 & length 2)		-50.00 to +50.00	%
	1F5	Transportation Unit 1 Motor high speed (For gloss, type #2, width 4 & length 3)		-50.00 to +50.00	%
	1F6	Transportation Unit 1 Motor normal speed (For gloss, type #2, width 4 & length 3)		-50.00 to +50.00	%
	1F7	Transportation Unit 1 Motor low speed (For gloss, type #2, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
5 (Transportation Unit 1 Motor speed)	1F8	Transportation Unit 1 Motor high speed (For gloss, type #3, width 1 & length 1)		-50.00 to +50.00	%
	1F9	Transportation Unit 1 Motor normal speed (For gloss, type #3, width 1 & length 1)		-50.00 to +50.00	%
	1FA	Transportation Unit 1 Motor low speed (For gloss, type #3, width 1 & length 1)		-50.00 to +50.00	%
	1Fb	Transportation Unit 1 Motor high speed (For gloss, type #3, width 1 & length 2)		-50.00 to +50.00	%
	1FC	Transportation Unit 1 Motor normal speed (For gloss, type #3, width 1 & length 2)		-50.00 to +50.00	%
	1Fd	Transportation Unit 1 Motor low speed (For gloss, type #3, width 1 & length 2)		-50.00 to +50.00	%
	1FE	Transportation Unit 1 Motor high speed (For gloss, type #3, width 1 & length 3)		-50.00 to +50.00	%
	1FF	Transportation Unit 1 Motor normal speed (For gloss, type #3, width 1 & length 3)		-50.00 to +50.00	%
	200	Transportation Unit 1 Motor low speed (For gloss, type #3, width 1 & length 3)		-50.00 to +50.00	%
	201	Transportation Unit 1 Motor high speed (For gloss, type #3, width 2 & length 1)		-50.00 to +50.00	%
	202	Transportation Unit 1 Motor normal speed (For gloss, type #3, width 2 & length 1)		-50.00 to +50.00	%
	203	Transportation Unit 1 Motor low speed (For gloss, type #3, width 2 & length 1)		-50.00 to +50.00	%
	204	Transportation Unit 1 Motor high speed (For gloss, type #3, width 2 & length 2)		-50.00 to +50.00	%
	205	Transportation Unit 1 Motor normal speed (For gloss, type #3, width 2 & length 2)		-50.00 to +50.00	%
	206	Transportation Unit 1 Motor low speed (For gloss, type #3, width 2 & length 2)		-50.00 to +50.00	%
	207	Transportation Unit 1 Motor high speed (For gloss, type #3, width 2 & length 3)		-50.00 to +50.00	%
	208	Transportation Unit 1 Motor normal speed (For gloss, type #3, width 2 & length 3)		-50.00 to +50.00	%
	209	Transportation Unit 1 Motor low speed (For gloss, type #3, width 2 & length 3)		-50.00 to +50.00	%
	20A	Transportation Unit 1 Motor high speed (For gloss, type #3, width 3 & length 1)		-50.00 to +50.00	%
	20b	Transportation Unit 1 Motor normal speed (For gloss, type #3, width 3 & length 1)		-50.00 to +50.00	%
	20C	Transportation Unit 1 Motor low speed (For gloss, type #3, width 3 & length 1)		-50.00 to +50.00	%
	20d	Transportation Unit 1 Motor high speed (For gloss, type #3, width 3 & length 2)		-50.00 to +50.00	%
	20E	Transportation Unit 1 Motor normal speed (For gloss, type #3, width 3 & length 2)		-50.00 to +50.00	%
	20F	Transportation Unit 1 Motor low speed (For gloss, type #3, width 3 & length 2)		-50.00 to +50.00	%
	210	Transportation Unit 1 Motor high speed (For gloss, type #3, width 3 & length 3)		-50.00 to +50.00	%
	211	Transportation Unit 1 Motor normal speed (For gloss, type #3, width 3 & length 3)		-50.00 to +50.00	%
	212	Transportation Unit 1 Motor low speed (For gloss, type #3, width 3 & length 3)		-50.00 to +50.00	%
	213	Transportation Unit 1 Motor high speed (For gloss, type #3, width 4 & length 1)		-50.00 to +50.00	%
	214	Transportation Unit 1 Motor normal speed (For gloss, type #3, width 4 & length 1)		-50.00 to +50.00	%
	215	Transportation Unit 1 Motor low speed (For gloss, type #3, width 4 & length 1)		-50.00 to +50.00	%
	216	Transportation Unit 1 Motor high speed (For gloss, type #3, width 4 & length 2)		-50.00 to +50.00	%
	217	Transportation Unit 1 Motor normal speed (For gloss, type #3, width 4 & length 2)		-50.00 to +50.00	%
	218	Transportation Unit 1 Motor low speed (For gloss, type #3, width 4 & length 2)		-50.00 to +50.00	%
	219	Transportation Unit 1 Motor high speed (For gloss, type #3, width 4 & length 3)		-50.00 to +50.00	%
	21A	Transportation Unit 1 Motor normal speed (For gloss, type #3, width 4 & length 3)		-50.00 to +50.00	%
	21b	Transportation Unit 1 Motor low speed (For gloss, type #3, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
5 (Transportation Unit 1 Motor speed)	21C	Transportation Unit 1 Motor high speed (For gloss, type #4, width 1 & length 1)		-50.00 to +50.00	%
	21d	Transportation Unit 1 Motor normal speed (For gloss, type #4, width 1 & length 1)		-50.00 to +50.00	%
	21E	Transportation Unit 1 Motor low speed (For gloss, type #4, width 1 & length 1)		-50.00 to +50.00	%
	21F	Transportation Unit 1 Motor high speed (For gloss, type #4, width 1 & length 2)		-50.00 to +50.00	%
	220	Transportation Unit 1 Motor normal speed (For gloss, type #4, width 1 & length 2)		-50.00 to +50.00	%
	221	Transportation Unit 1 Motor low speed (For gloss, type #4, width 1 & length 2)		-50.00 to +50.00	%
	222	Transportation Unit 1 Motor high speed (For gloss, type #4, width 1 & length 3)		-50.00 to +50.00	%
	223	Transportation Unit 1 Motor normal speed (For gloss, type #4, width 1 & length 3)		-50.00 to +50.00	%
	224	Transportation Unit 1 Motor low speed (For gloss, type #4, width 1 & length 3)		-50.00 to +50.00	%
	225	Transportation Unit 1 Motor high speed (For gloss, type #4, width 2 & length 1)		-50.00 to +50.00	%
	226	Transportation Unit 1 Motor normal speed (For gloss, type #4, width 2 & length 1)		-50.00 to +50.00	%
	227	Transportation Unit 1 Motor low speed (For gloss, type #4, width 2 & length 1)		-50.00 to +50.00	%
	228	Transportation Unit 1 Motor high speed (For gloss, type #4, width 2 & length 2)		-50.00 to +50.00	%
	229	Transportation Unit 1 Motor normal speed (For gloss, type #4, width 2 & length 2)		-50.00 to +50.00	%
	22A	Transportation Unit 1 Motor low speed (For gloss, type #4, width 2 & length 2)		-50.00 to +50.00	%
	22b	Transportation Unit 1 Motor high speed (For gloss, type #4, width 2 & length 3)		-50.00 to +50.00	%
	22C	Transportation Unit 1 Motor normal speed (For gloss, type #4, width 2 & length 3)		-50.00 to +50.00	%
	22d	Transportation Unit 1 Motor low speed (For gloss, type #4, width 2 & length 3)		-50.00 to +50.00	%
	22E	Transportation Unit 1 Motor high speed (For gloss, type #4, width 3 & length 1)		-50.00 to +50.00	%
	22F	Transportation Unit 1 Motor normal speed (For gloss, type #4, width 3 & length 1)		-50.00 to +50.00	%
	230	Transportation Unit 1 Motor low speed (For gloss, type #4, width 3 & length 1)		-50.00 to +50.00	%
	231	Transportation Unit 1 Motor high speed (For gloss, type #4, width 3 & length 2)		-50.00 to +50.00	%
	232	Transportation Unit 1 Motor normal speed (For gloss, type #4, width 3 & length 2)		-50.00 to +50.00	%
	233	Transportation Unit 1 Motor low speed (For gloss, type #4, width 3 & length 2)		-50.00 to +50.00	%
	234	Transportation Unit 1 Motor high speed (For gloss, type #4, width 3 & length 3)		-50.00 to +50.00	%
	235	Transportation Unit 1 Motor normal speed (For gloss, type #4, width 3 & length 3)		-50.00 to +50.00	%
	236	Transportation Unit 1 Motor low speed (For gloss, type #4, width 3 & length 3)		-50.00 to +50.00	%
	237	Transportation Unit 1 Motor high speed (For gloss, type #4, width 4 & length 1)		-50.00 to +50.00	%
	238	Transportation Unit 1 Motor normal speed (For gloss, type #4, width 4 & length 1)		-50.00 to +50.00	%
	239	Transportation Unit 1 Motor low speed (For gloss, type #4, width 4 & length 1)		-50.00 to +50.00	%
	23A	Transportation Unit 1 Motor high speed (For gloss, type #4, width 4 & length 2)		-50.00 to +50.00	%
	23b	Transportation Unit 1 Motor normal speed (For gloss, type #4, width 4 & length 2)		-50.00 to +50.00	%
	23C	Transportation Unit 1 Motor low speed (For gloss, type #4, width 4 & length 2)		-50.00 to +50.00	%
	23d	Transportation Unit 1 Motor high speed (For gloss, type #4, width 4 & length 3)		-50.00 to +50.00	%
	23E	Transportation Unit 1 Motor normal speed (For gloss, type #4, width 4 & length 3)		-50.00 to +50.00	%
	23F	Transportation Unit 1 Motor low speed (For gloss, type #4, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
6 (Transportation Unit 2 Motor speed)	000	Transportation Unit 2 Motor high speed (For plain paper, type #1, width 1 & length 1)		-50.00 to +50.00	%
	001	Transportation Unit 2 Motor normal speed (For plain paper, type #1, width 1 & length 1)		-50.00 to +50.00	%
	002	Transportation Unit 2 Motor low speed (For plain paper, type #1, width 1 & length 1)		-50.00 to +50.00	%
	003	Transportation Unit 2 Motor high speed (For plain paper, type #1, width 1 & length 2)		-50.00 to +50.00	%
	004	Transportation Unit 2 Motor normal speed (For plain paper, type #1, width 1 & length 2)		-50.00 to +50.00	%
	005	Transportation Unit 2 Motor low speed (For plain paper, type #1, width 1 & length 2)		-50.00 to +50.00	%
	006	Transportation Unit 2 Motor high speed (For plain paper, type #1, width 1 & length 3)		-50.00 to +50.00	%
	007	Transportation Unit 2 Motor normal speed (For plain paper, type #1, width 1 & length 3)		-50.00 to +50.00	%
	008	Transportation Unit 2 Motor low speed (For plain paper, type #1, width 1 & length 3)		-50.00 to +50.00	%
	009	Transportation Unit 2 Motor high speed (For plain paper, type #1, width 2 & length 1)		-50.00 to +50.00	%
	00A	Transportation Unit 2 Motor normal speed (For plain paper, type #1, width 2 & length 1)		-50.00 to +50.00	%
	00b	Transportation Unit 2 Motor low speed (For plain paper, type #1, width 2 & length 1)		-50.00 to +50.00	%
	00C	Transportation Unit 2 Motor high speed (For plain paper, type #1, width 2 & length 2)		-50.00 to +50.00	%
	00D	Transportation Unit 2 Motor normal speed (For plain paper, type #1, width 2 & length 2)		-50.00 to +50.00	%
	00E	Transportation Unit 2 Motor low speed (For plain paper, type #1, width 2 & length 2)		-50.00 to +50.00	%
	00F	Transportation Unit 2 Motor high speed (For plain paper, type #1, width 2 & length 3)		-50.00 to +50.00	%
	010	Transportation Unit 2 Motor normal speed (For plain paper, type #1, width 2 & length 3)		-50.00 to +50.00	%
	011	Transportation Unit 2 Motor low speed (For plain paper, type #1, width 2 & length 3)		-50.00 to +50.00	%
	012	Transportation Unit 2 Motor high speed (For plain paper, type #1, width 3 & length 1)		-10.000 to +10.000	%
	013	Transportation Unit 2 Motor normal speed (For plain paper, type #1, width 3 & length 1)		-10.000 to +10.000	%
	014	Transportation Unit 2 Motor low speed (For plain paper, type #1, width 3 & length 1)		-50.00 to +50.00	%
	015	Transportation Unit 2 Motor high speed (For plain paper, type #1, width 3 & length 2)		-50.00 to +50.00	%
	016	Transportation Unit 2 Motor normal speed (For plain paper, type #1, width 3 & length 2)		-50.00 to +50.00	%
	017	Transportation Unit 2 Motor low speed (For plain paper, type #1, width 3 & length 2)		-50.00 to +50.00	%
	018	Transportation Unit 2 Motor high speed (For plain paper, type #1, width 3 & length 3)		-50.00 to +50.00	%
	019	Transportation Unit 2 Motor normal speed (For plain paper, type #1, width 3 & length 3)		-50.00 to +50.00	%
	01A	Transportation Unit 2 Motor low speed (For plain paper, type #1, width 3 & length 3)		-50.00 to +50.00	%
	01b	Transportation Unit 2 Motor high speed (For plain paper, type #1, width 4 & length 1)		-50.00 to +50.00	%
	01C	Transportation Unit 2 Motor normal speed (For plain paper, type #1, width 4 & length 1)		-50.00 to +50.00	%
	01d	Transportation Unit 2 Motor low speed (For plain paper, type #1, width 4 & length 1)		-50.00 to +50.00	%
	01E	Transportation Unit 2 Motor high speed (For plain paper, type #1, width 4 & length 2)		-50.00 to +50.00	%
	01F	Transportation Unit 2 Motor normal speed (For plain paper, type #1, width 4 & length 2)		-50.00 to +50.00	%
	020	Transportation Unit 2 Motor low speed (For plain paper, type #1, width 4 & length 2)		-50.00 to +50.00	%
	021	Transportation Unit 2 Motor high speed (For plain paper, type #1, width 4 & length 3)		-50.00 to +50.00	%
	022	Transportation Unit 2 Motor normal speed (For plain paper, type #1, width 4 & length 3)		-50.00 to +50.00	%
	023	Transportation Unit 2 Motor low speed (For plain paper, type #1, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
6 (Transportation Unit 2 Motor speed)	024	Transportation Unit 2 Motor high speed (For plain paper, type #2, width 1 & length 1)		-50.00 to +50.00	%
	025	Transportation Unit 2 Motor normal speed (For plain paper, type #2, width 1 & length 1)		-50.00 to +50.00	%
	026	Transportation Unit 2 Motor low speed (For plain paper, type #2, width 1 & length 1)		-50.00 to +50.00	%
	027	Transportation Unit 2 Motor high speed (For plain paper, type #2, width 1 & length 2)		-50.00 to +50.00	%
	028	Transportation Unit 2 Motor normal speed (For plain paper, type #2, width 1 & length 2)		-50.00 to +50.00	%
	029	Transportation Unit 2 Motor low speed (For plain paper, type #2, width 1 & length 2)		-50.00 to +50.00	%
	02A	Transportation Unit 2 Motor high speed (For plain paper, type #2, width 1 & length 3)		-50.00 to +50.00	%
	02b	Transportation Unit 2 Motor normal speed (For plain paper, type #2, width 1 & length 3)		-50.00 to +50.00	%
	02C	Transportation Unit 2 Motor low speed (For plain paper, type #2, width 1 & length 3)		-50.00 to +50.00	%
	02d	Transportation Unit 2 Motor high speed (For plain paper, type #2, width 2 & length 1)		-50.00 to +50.00	%
	02E	Transportation Unit 2 Motor normal speed (For plain paper, type #2, width 2 & length 1)		-50.00 to +50.00	%
	02F	Transportation Unit 2 Motor low speed (For plain paper, type #2, width 2 & length 1)		-50.00 to +50.00	%
	030	Transportation Unit 2 Motor high speed (For plain paper, type #2, width 2 & length 2)		-50.00 to +50.00	%
	031	Transportation Unit 2 Motor normal speed (For plain paper, type #2, width 2 & length 2)		-50.00 to +50.00	%
	032	Transportation Unit 2 Motor low speed (For plain paper, type #2, width 2 & length 2)		-50.00 to +50.00	%
	033	Transportation Unit 2 Motor high speed (For plain paper, type #2, width 2 & length 3)		-50.00 to +50.00	%
	034	Transportation Unit 2 Motor normal speed (For plain paper, type #2, width 2 & length 3)		-50.00 to +50.00	%
	035	Transportation Unit 2 Motor low speed (For plain paper, type #2, width 2 & length 3)		-50.00 to +50.00	%
	036	Transportation Unit 2 Motor high speed (For plain paper, type #2, width 3 & length 1)		-50.00 to +50.00	%
	037	Transportation Unit 2 Motor normal speed (For plain paper, type #2, width 3 & length 1)		-50.00 to +50.00	%
	038	Transportation Unit 2 Motor low speed (For plain paper, type #2, width 3 & length 1)		-50.00 to +50.00	%
	039	Transportation Unit 2 Motor high speed (For plain paper, type #2, width 3 & length 2)		-50.00 to +50.00	%
	03A	Transportation Unit 2 Motor normal speed (For plain paper, type #2, width 3 & length 2)		-50.00 to +50.00	%
	03b	Transportation Unit 2 Motor low speed (For plain paper, type #2, width 3 & length 2)		-50.00 to +50.00	%
	03C	Transportation Unit 2 Motor high speed (For plain paper, type #2, width 3 & length 3)		-50.00 to +50.00	%
	03d	Transportation Unit 2 Motor normal speed (For plain paper, type #2, width 3 & length 3)		-50.00 to +50.00	%
	03E	Transportation Unit 2 Motor low speed (For plain paper, type #2, width 3 & length 3)		-50.00 to +50.00	%
	03F	Transportation Unit 2 Motor high speed (For plain paper, type #2, width 4 & length 1)		-50.00 to +50.00	%
	040	Transportation Unit 2 Motor normal speed (For plain paper, type #2, width 4 & length 1)		-50.00 to +50.00	%
	041	Transportation Unit 2 Motor low speed (For plain paper, type #2, width 4 & length 1)		-50.00 to +50.00	%
	042	Transportation Unit 2 Motor high speed (For plain paper, type #2, width 4 & length 2)		-50.00 to +50.00	%
	043	Transportation Unit 2 Motor normal speed (For plain paper, type #2, width 4 & length 2)		-50.00 to +50.00	%
	044	Transportation Unit 2 Motor low speed (For plain paper, type #2, width 4 & length 2)		-50.00 to +50.00	%
	045	Transportation Unit 2 Motor high speed (For plain paper, type #2, width 4 & length 3)		-50.00 to +50.00	%
	046	Transportation Unit 2 Motor normal speed (For plain paper, type #2, width 4 & length 3)		-50.00 to +50.00	%
	047	Transportation Unit 2 Motor low speed (For plain paper, type #2, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
6 (Transportation Unit 2 Motor speed)	048	Transportation Unit 2 Motor high speed (For plain paper, type #3, width 1 & length 1)		-50.00 to +50.00	%
	049	Transportation Unit 2 Motor normal speed (For plain paper, type #3, width 1 & length 1)		-50.00 to +50.00	%
	04A	Transportation Unit 2 Motor low speed (For plain paper, type #3, width 1 & length 1)		-50.00 to +50.00	%
	04b	Transportation Unit 2 Motor high speed (For plain paper, type #3, width 1 & length 2)		-50.00 to +50.00	%
	04C	Transportation Unit 2 Motor normal speed (For plain paper, type #3, width 1 & length 2)		-50.00 to +50.00	%
	04d	Transportation Unit 2 Motor low speed (For plain paper, type #3, width 1 & length 2)		-50.00 to +50.00	%
	04E	Transportation Unit 2 Motor high speed (For plain paper, type #3, width 1 & length 3)		-50.00 to +50.00	%
	04F	Transportation Unit 2 Motor normal speed (For plain paper, type #3, width 1 & length 3)		-50.00 to +50.00	%
	050	Transportation Unit 2 Motor low speed (For plain paper, type #3, width 1 & length 3)		-50.00 to +50.00	%
	051	Transportation Unit 2 Motor high speed (For plain paper, type #3, width 2 & length 1)		-50.00 to +50.00	%
	052	Transportation Unit 2 Motor normal speed (For plain paper, type #3, width 2 & length 1)		-50.00 to +50.00	%
	053	Transportation Unit 2 Motor low speed (For plain paper, type #3, width 2 & length 1)		-50.00 to +50.00	%
	054	Transportation Unit 2 Motor high speed (For plain paper, type #3, width 2 & length 2)		-50.00 to +50.00	%
	055	Transportation Unit 2 Motor normal speed (For plain paper, type #3, width 2 & length 2)		-50.00 to +50.00	%
	056	Transportation Unit 2 Motor low speed (For plain paper, type #3, width 2 & length 2)		-50.00 to +50.00	%
	057	Transportation Unit 2 Motor high speed (For plain paper, type #3, width 2 & length 3)		-50.00 to +50.00	%
	058	Transportation Unit 2 Motor normal speed (For plain paper, type #3, width 2 & length 3)		-50.00 to +50.00	%
	059	Transportation Unit 2 Motor low speed (For plain paper, type #3, width 2 & length 3)		-50.00 to +50.00	%
	05A	Transportation Unit 2 Motor high speed (For plain paper, type #3, width 3 & length 1)		-50.00 to +50.00	%
	05b	Transportation Unit 2 Motor normal speed (For plain paper, type #3, width 3 & length 1)		-50.00 to +50.00	%
	05C	Transportation Unit 2 Motor low speed (For plain paper, type #3, width 3 & length 1)		-50.00 to +50.00	%
	05d	Transportation Unit 2 Motor high speed (For plain paper, type #3, width 3 & length 2)		-50.00 to +50.00	%
	05E	Transportation Unit 2 Motor normal speed (For plain paper, type #3, width 3 & length 2)		-50.00 to +50.00	%
	05F	Transportation Unit 2 Motor low speed (For plain paper, type #3, width 3 & length 2)		-50.00 to +50.00	%
	060	Transportation Unit 2 Motor high speed (For plain paper, type #3, width 3 & length 3)		-50.00 to +50.00	%
	061	Transportation Unit 2 Motor normal speed (For plain paper, type #3, width 3 & length 3)		-50.00 to +50.00	%
	062	Transportation Unit 2 Motor low speed (For plain paper, type #3, width 3 & length 3)		-50.00 to +50.00	%
	063	Transportation Unit 2 Motor high speed (For plain paper, type #3, width 4 & length 1)		-50.00 to +50.00	%
	064	Transportation Unit 2 Motor normal speed (For plain paper, type #3, width 4 & length 1)		-50.00 to +50.00	%
	065	Transportation Unit 2 Motor low speed (For plain paper, type #3, width 4 & length 1)		-50.00 to +50.00	%
	066	Transportation Unit 2 Motor high speed (For plain paper, type #3, width 4 & length 2)		-50.00 to +50.00	%
	067	Transportation Unit 2 Motor normal speed (For plain paper, type #3, width 4 & length 2)		-50.00 to +50.00	%
	068	Transportation Unit 2 Motor low speed (For plain paper, type #3, width 4 & length 2)		-50.00 to +50.00	%
	069	Transportation Unit 2 Motor high speed (For plain paper, type #3, width 4 & length 3)		-50.00 to +50.00	%
	06A	Transportation Unit 2 Motor normal speed (For plain paper, type #3, width 4 & length 3)		-50.00 to +50.00	%
	06b	Transportation Unit 2 Motor low speed (For plain paper, type #3, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
6 (Transportation Unit 2 Motor speed)	06C	Transportation Unit 2 Motor high speed (For plain paper, type #4, width 1 & length 1)		-50.00 to +50.00	%
	06d	Transportation Unit 2 Motor normal speed (For plain paper, type #4, width 1 & length 1)		-50.00 to +50.00	%
	06E	Transportation Unit 2 Motor low speed (For plain paper, type #4, width 1 & length 1)		-50.00 to +50.00	%
	06F	Transportation Unit 2 Motor high speed (For plain paper, type #4, width 1 & length 2)		-50.00 to +50.00	%
	070	Transportation Unit 2 Motor normal speed (For plain paper, type #4, width 1 & length 2)		-50.00 to +50.00	%
	071	Transportation Unit 2 Motor low speed (For plain paper, type #4, width 1 & length 2)		-50.00 to +50.00	%
	072	Transportation Unit 2 Motor high speed (For plain paper, type #4, width 1 & length 3)		-50.00 to +50.00	%
	073	Transportation Unit 2 Motor normal speed (For plain paper, type #4, width 1 & length 3)		-50.00 to +50.00	%
	074	Transportation Unit 2 Motor low speed (For plain paper, type #4, width 1 & length 3)		-50.00 to +50.00	%
	075	Transportation Unit 2 Motor high speed (For plain paper, type #4, width 2 & length 1)		-50.00 to +50.00	%
	076	Transportation Unit 2 Motor normal speed (For plain paper, type #4, width 2 & length 1)		-50.00 to +50.00	%
	077	Transportation Unit 2 Motor low speed (For plain paper, type #4, width 2 & length 1)		-50.00 to +50.00	%
	078	Transportation Unit 2 Motor high speed (For plain paper, type #4, width 2 & length 2)		-50.00 to +50.00	%
	079	Transportation Unit 2 Motor normal speed (For plain paper, type #4, width 2 & length 2)		-50.00 to +50.00	%
	07A	Transportation Unit 2 Motor low speed (For plain paper, type #4, width 2 & length 2)		-50.00 to +50.00	%
	07b	Transportation Unit 2 Motor high speed (For plain paper, type #4, width 2 & length 3)		-50.00 to +50.00	%
	07C	Transportation Unit 2 Motor normal speed (For plain paper, type #4, width 2 & length 3)		-50.00 to +50.00	%
	07d	Transportation Unit 2 Motor low speed (For plain paper, type #4, width 2 & length 3)		-50.00 to +50.00	%
	07E	Transportation Unit 2 Motor high speed (For plain paper, type #4, width 3 & length 1)		-50.00 to +50.00	%
	07F	Transportation Unit 2 Motor normal speed (For plain paper, type #4, width 3 & length 1)		-50.00 to +50.00	%
	080	Transportation Unit 2 Motor low speed (For plain paper, type #4, width 3 & length 1)		-50.00 to +50.00	%
	081	Transportation Unit 2 Motor high speed (For plain paper, type #4, width 3 & length 2)		-50.00 to +50.00	%
	082	Transportation Unit 2 Motor normal speed (For plain paper, type #4, width 3 & length 2)		-50.00 to +50.00	%
	083	Transportation Unit 2 Motor low speed (For plain paper, type #4, width 3 & length 2)		-50.00 to +50.00	%
	084	Transportation Unit 2 Motor high speed (For plain paper, type #4, width 3 & length 3)		-50.00 to +50.00	%
	085	Transportation Unit 2 Motor normal speed (For plain paper, type #4, width 3 & length 3)		-50.00 to +50.00	%
	086	Transportation Unit 2 Motor low speed (For plain paper, type #4, width 3 & length 3)		-50.00 to +50.00	%
	087	Transportation Unit 2 Motor high speed (For plain paper, type #4, width 4 & length 1)		-50.00 to +50.00	%
	088	Transportation Unit 2 Motor normal speed (For plain paper, type #4, width 4 & length 1)		-50.00 to +50.00	%
	089	Transportation Unit 2 Motor low speed (For plain paper, type #4, width 4 & length 1)		-50.00 to +50.00	%
	08A	Transportation Unit 2 Motor high speed (For plain paper, type #4, width 4 & length 2)		-50.00 to +50.00	%
	08b	Transportation Unit 2 Motor normal speed (For plain paper, type #4, width 4 & length 2)		-50.00 to +50.00	%
	08C	Transportation Unit 2 Motor low speed (For plain paper, type #4, width 4 & length 2)		-50.00 to +50.00	%
	08d	Transportation Unit 2 Motor high speed (For plain paper, type #4, width 4 & length 3)		-50.00 to +50.00	%
	08E	Transportation Unit 2 Motor normal speed (For plain paper, type #4, width 4 & length 3)		-50.00 to +50.00	%
	08F	Transportation Unit 2 Motor low speed (For plain paper, type #4, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
6 (Transportation Unit 2 Motor speed)	090	Transportation Unit 2 Motor high speed (For tracing paper, type #1, width 1 & length 1)		-50.00 to +50.00	%
	091	Transportation Unit 2 Motor normal speed (For tracing paper, type #1, width 1 & length 1)		-50.00 to +50.00	%
	092	Transportation Unit 2 Motor low speed (For tracing paper, type #1, width 1 & length 1)		-50.00 to +50.00	%
	093	Transportation Unit 2 Motor high speed (For tracing paper, type #1, width 1 & length 2)		-50.00 to +50.00	%
	094	Transportation Unit 2 Motor normal speed (For tracing paper, type #1, width 1 & length 2)		-50.00 to +50.00	%
	095	Transportation Unit 2 Motor low speed (For tracing paper, type #1, width 1 & length 2)		-50.00 to +50.00	%
	096	Transportation Unit 2 Motor high speed (For tracing paper, type #1, width 1 & length 3)		-50.00 to +50.00	%
	097	Transportation Unit 2 Motor normal speed (For tracing paper, type #1, width 1 & length 3)		-50.00 to +50.00	%
	098	Transportation Unit 2 Motor low speed (For tracing paper, type #1, width 1 & length 3)		-50.00 to +50.00	%
	099	Transportation Unit 2 Motor high speed (For tracing paper, type #1, width 2 & length 1)		-50.00 to +50.00	%
	09A	Transportation Unit 2 Motor normal speed (For tracing paper, type #1, width 2 & length 1)		-50.00 to +50.00	%
	09b	Transportation Unit 2 Motor low speed (For tracing paper, type #1, width 2 & length 1)		-50.00 to +50.00	%
	09C	Transportation Unit 2 Motor high speed (For tracing paper, type #1, width 2 & length 2)		-50.00 to +50.00	%
	09d	Transportation Unit 2 Motor normal speed (For tracing paper, type #1, width 2 & length 2)		-50.00 to +50.00	%
	09E	Transportation Unit 2 Motor low speed (For tracing paper, type #1, width 2 & length 2)		-50.00 to +50.00	%
	09F	Transportation Unit 2 Motor high speed (For tracing paper, type #1, width 2 & length 3)		-50.00 to +50.00	%
	0A0	Transportation Unit 2 Motor normal speed (For tracing paper, type #1, width 2 & length 3)		-50.00 to +50.00	%
	0A1	Transportation Unit 2 Motor low speed (For tracing paper, type #1, width 2 & length 3)		-50.00 to +50.00	%
	0A2	Transportation Unit 2 Motor high speed (For tracing paper, type #1, width 3 & length 1)		-50.00 to +50.00	%
	0A3	Transportation Unit 2 Motor normal speed (For tracing paper, type #1, width 3 & length 1)		-50.00 to +50.00	%
	0A4	Transportation Unit 2 Motor low speed (For tracing paper, type #1, width 3 & length 1)		-50.00 to +50.00	%
	0A5	Transportation Unit 2 Motor high speed (For tracing paper, type #1, width 3 & length 2)		-50.00 to +50.00	%
	0A6	Transportation Unit 2 Motor normal speed (For tracing paper, type #1, width 3 & length 2)		-50.00 to +50.00	%
	0A7	Transportation Unit 2 Motor low speed (For tracing paper, type #1, width 3 & length 2)		-50.00 to +50.00	%
	0A8	Transportation Unit 2 Motor high speed (For tracing paper, type #1, width 3 & length 3)		-50.00 to +50.00	%
	0A9	Transportation Unit 2 Motor normal speed (For tracing paper, type #1, width 3 & length 3)		-50.00 to +50.00	%
	0AA	Transportation Unit 2 Motor low speed (For tracing paper, type #1, width 3 & length 3)		-50.00 to +50.00	%
	0Ab	Transportation Unit 2 Motor high speed (For tracing paper, type #1, width 4 & length 1)		-50.00 to +50.00	%
	0AC	Transportation Unit 2 Motor normal speed (For tracing paper, type #1, width 4 & length 1)		-50.00 to +50.00	%
	0Ad	Transportation Unit 2 Motor low speed (For tracing paper, type #1, width 4 & length 1)		-50.00 to +50.00	%
	0AE	Transportation Unit 2 Motor high speed (For tracing paper, type #1, width 4 & length 2)		-50.00 to +50.00	%
	0AF	Transportation Unit 2 Motor normal speed (For tracing paper, type #1, width 4 & length 2)		-50.00 to +50.00	%
	0b0	Transportation Unit 2 Motor low speed (For tracing paper, type #1, width 4 & length 2)		-50.00 to +50.00	%
	0b1	Transportation Unit 2 Motor high speed (For tracing paper, type #1, width 4 & length 3)		-50.00 to +50.00	%
	0b2	Transportation Unit 2 Motor normal speed (For tracing paper, type #1, width 4 & length 3)		-50.00 to +50.00	%
	0b3	Transportation Unit 2 Motor low speed (For tracing paper, type #1, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
6 (Transportation Unit 2 Motor speed)	0b4	Transportation Unit 2 Motor high speed (For tracing paper, type #2, width 1 & length 1)		-50.00 to +50.00	%
	0b5	Transportation Unit 2 Motor normal speed (For tracing paper, type #2, width 1 & length 1)		-50.00 to +50.00	%
	0b6	Transportation Unit 2 Motor low speed (For tracing paper, type #2, width 1 & length 1)		-50.00 to +50.00	%
	0b7	Transportation Unit 2 Motor high speed (For tracing paper, type #2, width 1 & length 2)		-50.00 to +50.00	%
	0b8	Transportation Unit 2 Motor normal speed (For tracing paper, type #2, width 1 & length 2)		-50.00 to +50.00	%
	0b9	Transportation Unit 2 Motor low speed (For tracing paper, type #2, width 1 & length 2)		-50.00 to +50.00	%
	0bA	Transportation Unit 2 Motor high speed (For tracing paper, type #2, width 1 & length 3)		-50.00 to +50.00	%
	0bb	Transportation Unit 2 Motor normal speed (For tracing paper, type #2, width 1 & length 3)		-50.00 to +50.00	%
	0bC	Transportation Unit 2 Motor low speed (For tracing paper, type #2, width 1 & length 3)		-50.00 to +50.00	%
	0bd	Transportation Unit 2 Motor high speed (For tracing paper, type #2, width 2 & length 1)		-50.00 to +50.00	%
	0bE	Transportation Unit 2 Motor normal speed (For tracing paper, type #2, width 2 & length 1)		-50.00 to +50.00	%
	0bF	Transportation Unit 2 Motor low speed (For tracing paper, type #2, width 2 & length 1)		-50.00 to +50.00	%
	0C0	Transportation Unit 2 Motor high speed (For tracing paper, type #2, width 2 & length 2)		-50.00 to +50.00	%
	0C1	Transportation Unit 2 Motor normal speed (For tracing paper, type #2, width 2 & length 2)		-50.00 to +50.00	%
	0C2	Transportation Unit 2 Motor low speed (For tracing paper, type #2, width 2 & length 2)		-50.00 to +50.00	%
	0C3	Transportation Unit 2 Motor high speed (For tracing paper, type #2, width 2 & length 3)		-50.00 to +50.00	%
	0C4	Transportation Unit 2 Motor normal speed (For tracing paper, type #2, width 2 & length 3)		-50.00 to +50.00	%
	0C5	Transportation Unit 2 Motor low speed (For tracing paper, type #2, width 2 & length 3)		-50.00 to +50.00	%
	0C6	Transportation Unit 2 Motor high speed (For tracing paper, type #2, width 3 & length 1)		-50.00 to +50.00	%
	0C7	Transportation Unit 2 Motor normal speed (For tracing paper, type #2, width 3 & length 1)		-50.00 to +50.00	%
	0C8	Transportation Unit 2 Motor low speed (For tracing paper, type #2, width 3 & length 1)		-50.00 to +50.00	%
	0C9	Transportation Unit 2 Motor high speed (For tracing paper, type #2, width 3 & length 2)		-50.00 to +50.00	%
	0CA	Transportation Unit 2 Motor normal speed (For tracing paper, type #2, width 3 & length 2)		-50.00 to +50.00	%
	0Cb	Transportation Unit 2 Motor low speed (For tracing paper, type #2, width 3 & length 2)		-50.00 to +50.00	%
	0CC	Transportation Unit 2 Motor high speed (For tracing paper, type #2, width 3 & length 3)		-50.00 to +50.00	%
	0Cd	Transportation Unit 2 Motor normal speed (For tracing paper, type #2, width 3 & length 3)		-50.00 to +50.00	%
	0CE	Transportation Unit 2 Motor low speed (For tracing paper, type #2, width 3 & length 3)		-50.00 to +50.00	%
	0CF	Transportation Unit 2 Motor high speed (For tracing paper, type #2, width 4 & length 1)		-50.00 to +50.00	%
	0d0	Transportation Unit 2 Motor normal speed (For tracing paper, type #2, width 4 & length 1)		-50.00 to +50.00	%
	0d1	Transportation Unit 2 Motor low speed (For tracing paper, type #2, width 4 & length 1)		-50.00 to +50.00	%
	0d2	Transportation Unit 2 Motor high speed (For tracing paper, type #2, width 4 & length 2)		-50.00 to +50.00	%
	0d3	Transportation Unit 2 Motor normal speed (For tracing paper, type #2, width 4 & length 2)		-50.00 to +50.00	%
	0d4	Transportation Unit 2 Motor low speed (For tracing paper, type #2, width 4 & length 2)		-50.00 to +50.00	%
	0d5	Transportation Unit 2 Motor high speed (For tracing paper, type #2, width 4 & length 3)		-50.00 to +50.00	%
	0d6	Transportation Unit 2 Motor normal speed (For tracing paper, type #2, width 4 & length 3)		-50.00 to +50.00	%
	0d7	Transportation Unit 2 Motor low speed (For tracing paper, type #2, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
6 (Transportation Unit 2 Motor speed)	0d8	Transportation Unit 2 Motor high speed (For tracing paper, type #3, width 1 & length 1)		-50.00 to +50.00	%
	0d9	Transportation Unit 2 Motor normal speed (For tracing paper, type #3, width 1 & length 1)		-50.00 to +50.00	%
	0dA	Transportation Unit 2 Motor low speed (For tracing paper, type #3, width 1 & length 1)		-50.00 to +50.00	%
	0db	Transportation Unit 2 Motor high speed (For tracing paper, type #3, width 1 & length 2)		-50.00 to +50.00	%
	0dC	Transportation Unit 2 Motor normal speed (For tracing paper, type #3, width 1 & length 2)		-50.00 to +50.00	%
	0dd	Transportation Unit 2 Motor low speed (For tracing paper, type #3, width 1 & length 2)		-50.00 to +50.00	%
	0dE	Transportation Unit 2 Motor high speed (For tracing paper, type #3, width 1 & length 3)		-50.00 to +50.00	%
	0dF	Transportation Unit 2 Motor normal speed (For tracing paper, type #3, width 1 & length 3)		-50.00 to +50.00	%
	0E0	Transportation Unit 2 Motor low speed (For tracing paper, type #3, width 1 & length 3)		-50.00 to +50.00	%
	0E1	Transportation Unit 2 Motor high speed (For tracing paper, type #3, width 2 & length 1)		-50.00 to +50.00	%
	0E2	Transportation Unit 2 Motor normal speed (For tracing paper, type #3, width 2 & length 1)		-50.00 to +50.00	%
	0E3	Transportation Unit 2 Motor low speed (For tracing paper, type #3, width 2 & length 1)		-50.00 to +50.00	%
	0E4	Transportation Unit 2 Motor high speed (For tracing paper, type #3, width 2 & length 2)		-50.00 to +50.00	%
	0E5	Transportation Unit 2 Motor normal speed (For tracing paper, type #3, width 2 & length 2)		-50.00 to +50.00	%
	0E6	Transportation Unit 2 Motor low speed (For tracing paper, type #3, width 2 & length 2)		-50.00 to +50.00	%
	0E7	Transportation Unit 2 Motor high speed (For tracing paper, type #3, width 2 & length 3)		-50.00 to +50.00	%
	0E8	Transportation Unit 2 Motor normal speed (For tracing paper, type #3, width 2 & length 3)		-50.00 to +50.00	%
	0E9	Transportation Unit 2 Motor low speed (For tracing paper, type #3, width 2 & length 3)		-50.00 to +50.00	%
	0EA	Transportation Unit 2 Motor high speed (For tracing paper, type #3, width 3 & length 1)		-50.00 to +50.00	%
	0Eb	Transportation Unit 2 Motor normal speed (For tracing paper, type #3, width 3 & length 1)		-50.00 to +50.00	%
	0EC	Transportation Unit 2 Motor low speed (For tracing paper, type #3, width 3 & length 1)		-50.00 to +50.00	%
	0Ed	Transportation Unit 2 Motor high speed (For tracing paper, type #3, width 3 & length 2)		-50.00 to +50.00	%
	0EE	Transportation Unit 2 Motor normal speed (For tracing paper, type #3, width 3 & length 2)		-50.00 to +50.00	%
	0EF	Transportation Unit 2 Motor low speed (For tracing paper, type #3, width 3 & length 2)		-50.00 to +50.00	%
	0F0	Transportation Unit 2 Motor high speed (For tracing paper, type #3, width 3 & length 3)		-50.00 to +50.00	%
	0F1	Transportation Unit 2 Motor normal speed (For tracing paper, type #3, width 3 & length 3)		-50.00 to +50.00	%
	0F2	Transportation Unit 2 Motor low speed (For tracing paper, type #3, width 3 & length 3)		-50.00 to +50.00	%
	0F3	Transportation Unit 2 Motor high speed (For tracing paper, type #3, width 4 & length 1)		-50.00 to +50.00	%
	0F4	Transportation Unit 2 Motor normal speed (For tracing paper, type #3, width 4 & length 1)		-50.00 to +50.00	%
	0F5	Transportation Unit 2 Motor low speed (For tracing paper, type #3, width 4 & length 1)		-50.00 to +50.00	%
	0F6	Transportation Unit 2 Motor high speed (For tracing paper, type #3, width 4 & length 2)		-50.00 to +50.00	%
	0F7	Transportation Unit 2 Motor normal speed (For tracing paper, type #3, width 4 & length 2)		-50.00 to +50.00	%
	0F8	Transportation Unit 2 Motor low speed (For tracing paper, type #3, width 4 & length 2)		-50.00 to +50.00	%
	0F9	Transportation Unit 2 Motor high speed (For tracing paper, type #3, width 4 & length 3)		-50.00 to +50.00	%
	0FA	Transportation Unit 2 Motor normal speed (For tracing paper, type #3, width 4 & length 3)		-50.00 to +50.00	%
	0Fb	Transportation Unit 2 Motor low speed (For tracing paper, type #3, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
6 (Transportation Unit 2 Motor speed)	0FC	Transportation Unit 2 Motor high speed (For tracing paper, type #4, width 1 & length 1)		-50.00 to +50.00	%
	0Fd	Transportation Unit 2 Motor normal speed (For tracing paper, type #4, width 1 & length 1)		-50.00 to +50.00	%
	0FE	Transportation Unit 2 Motor low speed (For tracing paper, type #4, width 1 & length 1)		-50.00 to +50.00	%
	0FF	Transportation Unit 2 Motor high speed (For tracing paper, type #4, width 1 & length 2)		-50.00 to +50.00	%
	100	Transportation Unit 2 Motor normal speed (For tracing paper, type #4, width 1 & length 2)		-50.00 to +50.00	%
	101	Transportation Unit 2 Motor low speed (For tracing paper, type #4, width 1 & length 2)		-50.00 to +50.00	%
	102	Transportation Unit 2 Motor high speed (For tracing paper, type #4, width 1 & length 3)		-50.00 to +50.00	%
	103	Transportation Unit 2 Motor normal speed (For tracing paper, type #4, width 1 & length 3)		-50.00 to +50.00	%
	104	Transportation Unit 2 Motor low speed (For tracing paper, type #4, width 1 & length 3)		-50.00 to +50.00	%
	105	Transportation Unit 2 Motor high speed (For tracing paper, type #4, width 2 & length 1)		-50.00 to +50.00	%
	106	Transportation Unit 2 Motor normal speed (For tracing paper, type #4, width 2 & length 1)		-50.00 to +50.00	%
	107	Transportation Unit 2 Motor low speed (For tracing paper, type #4, width 2 & length 1)		-50.00 to +50.00	%
	108	Transportation Unit 2 Motor high speed (For tracing paper, type #4, width 2 & length 2)		-50.00 to +50.00	%
	109	Transportation Unit 2 Motor normal speed (For tracing paper, type #4, width 2 & length 2)		-50.00 to +50.00	%
	10A	Transportation Unit 2 Motor low speed (For tracing paper, type #4, width 2 & length 2)		-50.00 to +50.00	%
	10b	Transportation Unit 2 Motor high speed (For tracing paper, type #4, width 2 & length 3)		-50.00 to +50.00	%
	10C	Transportation Unit 2 Motor normal speed (For tracing paper, type #4, width 2 & length 3)		-50.00 to +50.00	%
	10d	Transportation Unit 2 Motor low speed (For tracing paper, type #4, width 2 & length 3)		-50.00 to +50.00	%
	10E	Transportation Unit 2 Motor high speed (For tracing paper, type #4, width 3 & length 1)		-50.00 to +50.00	%
	10F	Transportation Unit 2 Motor normal speed (For tracing paper, type #4, width 3 & length 1)		-50.00 to +50.00	%
	110	Transportation Unit 2 Motor low speed (For tracing paper, type #4, width 3 & length 1)		-50.00 to +50.00	%
	111	Transportation Unit 2 Motor high speed (For tracing paper, type #4, width 3 & length 2)		-50.00 to +50.00	%
	112	Transportation Unit 2 Motor normal speed (For tracing paper, type #4, width 3 & length 2)		-50.00 to +50.00	%
	113	Transportation Unit 2 Motor low speed (For tracing paper, type #4, width 3 & length 2)		-50.00 to +50.00	%
	114	Transportation Unit 2 Motor high speed (For tracing paper, type #4, width 3 & length 3)		-50.00 to +50.00	%
	115	Transportation Unit 2 Motor normal speed (For tracing paper, type #4, width 3 & length 3)		-50.00 to +50.00	%
	116	Transportation Unit 2 Motor low speed (For tracing paper, type #4, width 3 & length 3)		-50.00 to +50.00	%
	117	Transportation Unit 2 Motor high speed (For tracing paper, type #4, width 4 & length 1)		-50.00 to +50.00	%
	118	Transportation Unit 2 Motor normal speed (For tracing paper, type #4, width 4 & length 1)		-50.00 to +50.00	%
	119	Transportation Unit 2 Motor low speed (For tracing paper, type #4, width 4 & length 1)		-50.00 to +50.00	%
	11A	Transportation Unit 2 Motor high speed (For tracing paper, type #4, width 4 & length 2)		-50.00 to +50.00	%
	11b	Transportation Unit 2 Motor normal speed (For tracing paper, type #4, width 4 & length 2)		-50.00 to +50.00	%
	11C	Transportation Unit 2 Motor low speed (For tracing paper, type #4, width 4 & length 2)		-50.00 to +50.00	%
	11d	Transportation Unit 2 Motor high speed (For tracing paper, type #4, width 4 & length 3)		-50.00 to +50.00	%
	11E	Transportation Unit 2 Motor normal speed (For tracing paper, type #4, width 4 & length 3)		-50.00 to +50.00	%
	11F	Transportation Unit 2 Motor low speed (For tracing paper, type #4, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
6 (Transportation Unit 2 Motor speed)	120	Transportation Unit 2 Motor high speed (For film, type #1, width 1 & length 1)		-50.00 to +50.00	%
	121	Transportation Unit 2 Motor normal speed (For film, type #1, width 1 & length 1)		-50.00 to +50.00	%
	122	Transportation Unit 2 Motor low speed (For film, type #1, width 1 & length 1)		-50.00 to +50.00	%
	123	Transportation Unit 2 Motor high speed (For film, type #1, width 1 & length 2)		-50.00 to +50.00	%
	124	Transportation Unit 2 Motor normal speed (For film, type #1, width 1 & length 2)		-50.00 to +50.00	%
	125	Transportation Unit 2 Motor low speed (For film, type #1, width 1 & length 2)		-50.00 to +50.00	%
	126	Transportation Unit 2 Motor high speed (For film, type #1, width 1 & length 3)		-50.00 to +50.00	%
	127	Transportation Unit 2 Motor normal speed (For film, type #1, width 1 & length 3)		-50.00 to +50.00	%
	128	Transportation Unit 2 Motor low speed (For film, type #1, width 1 & length 3)		-50.00 to +50.00	%
	129	Transportation Unit 2 Motor high speed (For film, type #1, width 2 & length 1)		-50.00 to +50.00	%
	12A	Transportation Unit 2 Motor normal speed (For film, type #1, width 2 & length 1)		-50.00 to +50.00	%
	12b	Transportation Unit 2 Motor low speed (For film, type #1, width 2 & length 1)		-50.00 to +50.00	%
	12C	Transportation Unit 2 Motor high speed (For film, type #1, width 2 & length 2)		-50.00 to +50.00	%
	12d	Transportation Unit 2 Motor normal speed (For film, type #1, width 2 & length 2)		-50.00 to +50.00	%
	12E	Transportation Unit 2 Motor low speed (For film, type #1, width 2 & length 2)		-50.00 to +50.00	%
	12F	Transportation Unit 2 Motor high speed (For film, type #1, width 2 & length 3)		-50.00 to +50.00	%
	130	Transportation Unit 2 Motor normal speed (For film, type #1, width 2 & length 3)		-50.00 to +50.00	%
	131	Transportation Unit 2 Motor low speed (For film, type #1, width 2 & length 3)		-50.00 to +50.00	%
	132	Transportation Unit 2 Motor high speed (For film, type #1, width 3 & length 1)		-50.00 to +50.00	%
	133	Transportation Unit 2 Motor normal speed (For film, type #1, width 3 & length 1)		-50.00 to +50.00	%
	134	Transportation Unit 2 Motor low speed (For film, type #1, width 3 & length 1)		-50.00 to +50.00	%
	135	Transportation Unit 2 Motor high speed (For film, type #1, width 3 & length 2)		-50.00 to +50.00	%
	136	Transportation Unit 2 Motor normal speed (For film, type #1, width 3 & length 2)		-50.00 to +50.00	%
	137	Transportation Unit 2 Motor low speed (For film, type #1, width 3 & length 2)		-50.00 to +50.00	%
	138	Transportation Unit 2 Motor high speed (For film, type #1, width 3 & length 3)		-50.00 to +50.00	%
	139	Transportation Unit 2 Motor normal speed (For film, type #1, width 3 & length 3)		-50.00 to +50.00	%
	13A	Transportation Unit 2 Motor low speed (For film, type #1, width 3 & length 3)		-50.00 to +50.00	%
	13b	Transportation Unit 2 Motor high speed (For film, type #1, width 4 & length 1)		-50.00 to +50.00	%
	13C	Transportation Unit 2 Motor normal speed (For film, type #1, width 4 & length 1)		-50.00 to +50.00	%
	13d	Transportation Unit 2 Motor low speed (For film, type #1, width 4 & length 1)		-50.00 to +50.00	%
	13E	Transportation Unit 2 Motor high speed (For film, type #1, width 4 & length 2)		-50.00 to +50.00	%
	13F	Transportation Unit 2 Motor normal speed (For film, type #1, width 4 & length 2)		-50.00 to +50.00	%
	140	Transportation Unit 2 Motor low speed (For film, type #1, width 4 & length 2)		-50.00 to +50.00	%
	141	Transportation Unit 2 Motor high speed (For film, type #1, width 4 & length 3)		-50.00 to +50.00	%
	142	Transportation Unit 2 Motor normal speed (For film, type #1, width 4 & length 3)		-50.00 to +50.00	%
	143	Transportation Unit 2 Motor low speed (For film, type #1, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
6 (Transportation Unit 2 Motor speed)	144	Transportation Unit 2 Motor high speed (For film, type #2, width 1 & length 1)		-50.00 to +50.00	%
	145	Transportation Unit 2 Motor normal speed (For film, type #2, width 1 & length 1)		-50.00 to +50.00	%
	146	Transportation Unit 2 Motor low speed (For film, type #2, width 1 & length 1)		-50.00 to +50.00	%
	147	Transportation Unit 2 Motor high speed (For film, type #2, width 1 & length 2)		-50.00 to +50.00	%
	148	Transportation Unit 2 Motor normal speed (For film, type #2, width 1 & length 2)		-50.00 to +50.00	%
	149	Transportation Unit 2 Motor low speed (For film, type #2, width 1 & length 2)		-50.00 to +50.00	%
	14A	Transportation Unit 2 Motor high speed (For film, type #2, width 1 & length 3)		-50.00 to +50.00	%
	14b	Transportation Unit 2 Motor normal speed (For film, type #2, width 1 & length 3)		-50.00 to +50.00	%
	14C	Transportation Unit 2 Motor low speed (For film, type #2, width 1 & length 3)		-50.00 to +50.00	%
	14d	Transportation Unit 2 Motor high speed (For film, type #2, width 2 & length 1)		-50.00 to +50.00	%
	14E	Transportation Unit 2 Motor normal speed (For film, type #2, width 2 & length 1)		-50.00 to +50.00	%
	14F	Transportation Unit 2 Motor low speed (For film, type #2, width 2 & length 1)		-50.00 to +50.00	%
	150	Transportation Unit 2 Motor high speed (For film, type #2, width 2 & length 2)		-50.00 to +50.00	%
	151	Transportation Unit 2 Motor normal speed (For film, type #2, width 2 & length 2)		-50.00 to +50.00	%
	152	Transportation Unit 2 Motor low speed (For film, type #2, width 2 & length 2)		-50.00 to +50.00	%
	153	Transportation Unit 2 Motor high speed (For film, type #2, width 2 & length 3)		-50.00 to +50.00	%
	154	Transportation Unit 2 Motor normal speed (For film, type #2, width 2 & length 3)		-50.00 to +50.00	%
	155	Transportation Unit 2 Motor low speed (For film, type #2, width 2 & length 3)		-50.00 to +50.00	%
	156	Transportation Unit 2 Motor high speed (For film, type #2, width 3 & length 1)		-50.00 to +50.00	%
	157	Transportation Unit 2 Motor normal speed (For film, type #2, width 3 & length 1)		-50.00 to +50.00	%
	158	Transportation Unit 2 Motor low speed (For film, type #2, width 3 & length 1)		-50.00 to +50.00	%
	159	Transportation Unit 2 Motor high speed (For film, type #2, width 3 & length 2)		-50.00 to +50.00	%
	15A	Transportation Unit 2 Motor normal speed (For film, type #2, width 3 & length 2)		-50.00 to +50.00	%
	15b	Transportation Unit 2 Motor low speed (For film, type #2, width 3 & length 2)		-50.00 to +50.00	%
	15C	Transportation Unit 2 Motor high speed (For film, type #2, width 3 & length 3)		-50.00 to +50.00	%
	15d	Transportation Unit 2 Motor normal speed (For film, type #2, width 3 & length 3)		-50.00 to +50.00	%
	15E	Transportation Unit 2 Motor low speed (For film, type #2, width 3 & length 3)		-50.00 to +50.00	%
	15F	Transportation Unit 2 Motor high speed (For film, type #2, width 4 & length 1)		-50.00 to +50.00	%
	160	Transportation Unit 2 Motor normal speed (For film, type #2, width 4 & length 1)		-50.00 to +50.00	%
	161	Transportation Unit 2 Motor low speed (For film, type #2, width 4 & length 1)		-50.00 to +50.00	%
	162	Transportation Unit 2 Motor high speed (For film, type #2, width 4 & length 2)		-50.00 to +50.00	%
	163	Transportation Unit 2 Motor normal speed (For film, type #2, width 4 & length 2)		-50.00 to +50.00	%
	164	Transportation Unit 2 Motor low speed (For film, type #2, width 4 & length 2)		-50.00 to +50.00	%
	165	Transportation Unit 2 Motor high speed (For film, type #2, width 4 & length 3)		-50.00 to +50.00	%
	166	Transportation Unit 2 Motor normal speed (For film, type #2, width 4 & length 3)		-50.00 to +50.00	%
	167	Transportation Unit 2 Motor low speed (For film, type #2, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
6 (Transportation Unit 2 Motor speed)	168	Transportation Unit 2 Motor high speed (For film, type #3, width 1 & length 1)		-50.00 to +50.00	%
	169	Transportation Unit 2 Motor normal speed (For film, type #3, width 1 & length 1)		-50.00 to +50.00	%
	16A	Transportation Unit 2 Motor low speed (For film, type #3, width 1 & length 1)		-50.00 to +50.00	%
	16b	Transportation Unit 2 Motor high speed (For film, type #3, width 1 & length 2)		-50.00 to +50.00	%
	16C	Transportation Unit 2 Motor normal speed (For film, type #3, width 1 & length 2)		-50.00 to +50.00	%
	16d	Transportation Unit 2 Motor low speed (For film, type #3, width 1 & length 2)		-50.00 to +50.00	%
	16E	Transportation Unit 2 Motor high speed (For film, type #3, width 1 & length 3)		-50.00 to +50.00	%
	16F	Transportation Unit 2 Motor normal speed (For film, type #3, width 1 & length 3)		-50.00 to +50.00	%
	170	Transportation Unit 2 Motor low speed (For film, type #3, width 1 & length 3)		-50.00 to +50.00	%
	171	Transportation Unit 2 Motor high speed (For film, type #3, width 2 & length 1)		-50.00 to +50.00	%
	172	Transportation Unit 2 Motor normal speed (For film, type #3, width 2 & length 1)		-50.00 to +50.00	%
	173	Transportation Unit 2 Motor low speed (For film, type #3, width 2 & length 1)		-50.00 to +50.00	%
	174	Transportation Unit 2 Motor high speed (For film, type #3, width 2 & length 2)		-50.00 to +50.00	%
	175	Transportation Unit 2 Motor normal speed (For film, type #3, width 2 & length 2)		-50.00 to +50.00	%
	176	Transportation Unit 2 Motor low speed (For film, type #3, width 2 & length 2)		-50.00 to +50.00	%
	177	Transportation Unit 2 Motor high speed (For film, type #3, width 2 & length 3)		-50.00 to +50.00	%
	178	Transportation Unit 2 Motor normal speed (For film, type #3, width 2 & length 3)		-50.00 to +50.00	%
	179	Transportation Unit 2 Motor low speed (For film, type #3, width 2 & length 3)		-50.00 to +50.00	%
	17A	Transportation Unit 2 Motor high speed (For film, type #3, width 3 & length 1)		-50.00 to +50.00	%
	17b	Transportation Unit 2 Motor normal speed (For film, type #3, width 3 & length 1)		-50.00 to +50.00	%
	17C	Transportation Unit 2 Motor low speed (For film, type #3, width 3 & length 1)		-50.00 to +50.00	%
	17d	Transportation Unit 2 Motor high speed (For film, type #3, width 3 & length 2)		-50.00 to +50.00	%
	17E	Transportation Unit 2 Motor normal speed (For film, type #3, width 3 & length 2)		-50.00 to +50.00	%
	17F	Transportation Unit 2 Motor low speed (For film, type #3, width 3 & length 2)		-50.00 to +50.00	%
	180	Transportation Unit 2 Motor high speed (For film, type #3, width 3 & length 3)		-50.00 to +50.00	%
	181	Transportation Unit 2 Motor normal speed (For film, type #3, width 3 & length 3)		-50.00 to +50.00	%
	182	Transportation Unit 2 Motor low speed (For film, type #3, width 3 & length 3)		-50.00 to +50.00	%
	183	Transportation Unit 2 Motor high speed (For film, type #3, width 4 & length 1)		-50.00 to +50.00	%
	184	Transportation Unit 2 Motor normal speed (For film, type #3, width 4 & length 1)		-50.00 to +50.00	%
	185	Transportation Unit 2 Motor low speed (For film, type #3, width 4 & length 1)		-50.00 to +50.00	%
	186	Transportation Unit 2 Motor high speed (For film, type #3, width 4 & length 2)		-50.00 to +50.00	%
	187	Transportation Unit 2 Motor normal speed (For film, type #3, width 4 & length 2)		-50.00 to +50.00	%
	188	Transportation Unit 2 Motor low speed (For film, type #3, width 4 & length 2)		-50.00 to +50.00	%
	189	Transportation Unit 2 Motor high speed (For film, type #3, width 4 & length 3)		-50.00 to +50.00	%
	18A	Transportation Unit 2 Motor normal speed (For film, type #3, width 4 & length 3)		-50.00 to +50.00	%
	18b	Transportation Unit 2 Motor low speed (For film, type #3, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
6 (Transportation Unit 2 Motor speed)	18C	Transportation Unit 2 Motor high speed (For film, type #4, width 1 & length 1)		-50.00 to +50.00	%
	18d	Transportation Unit 2 Motor normal speed (For film, type #4, width 1 & length 1)		-50.00 to +50.00	%
	18E	Transportation Unit 2 Motor low speed (For film, type #4, width 1 & length 1)		-50.00 to +50.00	%
	18F	Transportation Unit 2 Motor high speed (For film, type #4, width 1 & length 2)		-50.00 to +50.00	%
	190	Transportation Unit 2 Motor normal speed (For film, type #4, width 1 & length 2)		-50.00 to +50.00	%
	191	Transportation Unit 2 Motor low speed (For film, type #4, width 1 & length 2)		-50.00 to +50.00	%
	192	Transportation Unit 2 Motor high speed (For film, type #4, width 1 & length 3)		-50.00 to +50.00	%
	193	Transportation Unit 2 Motor normal speed (For film, type #4, width 1 & length 3)		-50.00 to +50.00	%
	194	Transportation Unit 2 Motor low speed (For film, type #4, width 1 & length 3)		-50.00 to +50.00	%
	195	Transportation Unit 2 Motor high speed (For film, type #4, width 2 & length 1)		-50.00 to +50.00	%
	196	Transportation Unit 2 Motor normal speed (For film, type #4, width 2 & length 1)		-50.00 to +50.00	%
	197	Transportation Unit 2 Motor low speed (For film, type #4, width 2 & length 1)		-50.00 to +50.00	%
	198	Transportation Unit 2 Motor high speed (For film, type #4, width 2 & length 2)		-50.00 to +50.00	%
	199	Transportation Unit 2 Motor normal speed (For film, type #4, width 2 & length 2)		-50.00 to +50.00	%
	19A	Transportation Unit 2 Motor low speed (For film, type #4, width 2 & length 2)		-50.00 to +50.00	%
	19b	Transportation Unit 2 Motor high speed (For film, type #4, width 2 & length 3)		-50.00 to +50.00	%
	19C	Transportation Unit 2 Motor normal speed (For film, type #4, width 2 & length 3)		-50.00 to +50.00	%
	19d	Transportation Unit 2 Motor low speed (For film, type #4, width 2 & length 3)		-50.00 to +50.00	%
	19E	Transportation Unit 2 Motor high speed (For film, type #4, width 3 & length 1)		-50.00 to +50.00	%
	19F	Transportation Unit 2 Motor normal speed (For film, type #4, width 3 & length 1)		-50.00 to +50.00	%
	1A0	Transportation Unit 2 Motor low speed (For film, type #4, width 3 & length 1)		-50.00 to +50.00	%
	1A1	Transportation Unit 2 Motor high speed (For film, type #4, width 3 & length 2)		-50.00 to +50.00	%
	1A2	Transportation Unit 2 Motor normal speed (For film, type #4, width 3 & length 2)		-50.00 to +50.00	%
	1A3	Transportation Unit 2 Motor low speed (For film, type #4, width 3 & length 2)		-50.00 to +50.00	%
	1A4	Transportation Unit 2 Motor high speed (For film, type #4, width 3 & length 3)		-50.00 to +50.00	%
	1A5	Transportation Unit 2 Motor normal speed (For film, type #4, width 3 & length 3)		-50.00 to +50.00	%
	1A6	Transportation Unit 2 Motor low speed (For film, type #4, width 3 & length 3)		-50.00 to +50.00	%
	1A7	Transportation Unit 2 Motor high speed (For film, type #4, width 4 & length 1)		-50.00 to +50.00	%
	1A8	Transportation Unit 2 Motor normal speed (For film, type #4, width 4 & length 1)		-50.00 to +50.00	%
	1A9	Transportation Unit 2 Motor low speed (For film, type #4, width 4 & length 1)		-50.00 to +50.00	%
	1AA	Transportation Unit 2 Motor high speed (For film, type #4, width 4 & length 2)		-50.00 to +50.00	%
	1Ab	Transportation Unit 2 Motor normal speed (For film, type #4, width 4 & length 2)		-50.00 to +50.00	%
	1AC	Transportation Unit 2 Motor low speed (For film, type #4, width 4 & length 2)		-50.00 to +50.00	%
	1Ad	Transportation Unit 2 Motor high speed (For film, type #4, width 4 & length 3)		-50.00 to +50.00	%
	1AE	Transportation Unit 2 Motor normal speed (For film, type #4, width 4 & length 3)		-50.00 to +50.00	%
	1AF	Transportation Unit 2 Motor low speed (For film, type #4, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
6 (Transportation Unit 2 Motor speed)	1b0	Transportation Unit 2 Motor high speed (For gloss, type #1, width 1 & length 1)		-50.00 to +50.00	%
	1b1	Transportation Unit 2 Motor normal speed (For gloss, type #1, width 1 & length 1)		-50.00 to +50.00	%
	1b2	Transportation Unit 2 Motor low speed (For gloss, type #1, width 1 & length 1)		-50.00 to +50.00	%
	1b3	Transportation Unit 2 Motor high speed (For gloss, type #1, width 1 & length 2)		-50.00 to +50.00	%
	1b4	Transportation Unit 2 Motor normal speed (For gloss, type #1, width 1 & length 2)		-50.00 to +50.00	%
	1b5	Transportation Unit 2 Motor low speed (For gloss, type #1, width 1 & length 2)		-50.00 to +50.00	%
	1b6	Transportation Unit 2 Motor high speed (For gloss, type #1, width 1 & length 3)		-50.00 to +50.00	%
	1b7	Transportation Unit 2 Motor normal speed (For gloss, type #1, width 1 & length 3)		-50.00 to +50.00	%
	1b8	Transportation Unit 2 Motor low speed (For gloss, type #1, width 1 & length 3)		-50.00 to +50.00	%
	1b9	Transportation Unit 2 Motor high speed (For gloss, type #1, width 2 & length 1)		-50.00 to +50.00	%
	1bA	Transportation Unit 2 Motor normal speed (For gloss, type #1, width 2 & length 1)		-50.00 to +50.00	%
	1bb	Transportation Unit 2 Motor low speed (For gloss, type #1, width 2 & length 1)		-50.00 to +50.00	%
	1bC	Transportation Unit 2 Motor high speed (For gloss, type #1, width 2 & length 2)		-50.00 to +50.00	%
	1bd	Transportation Unit 2 Motor normal speed (For gloss, type #1, width 2 & length 2)		-50.00 to +50.00	%
	1bE	Transportation Unit 2 Motor low speed (For gloss, type #1, width 2 & length 2)		-50.00 to +50.00	%
	1bF	Transportation Unit 2 Motor high speed (For gloss, type #1, width 2 & length 3)		-50.00 to +50.00	%
	1C0	Transportation Unit 2 Motor normal speed (For gloss, type #1, width 2 & length 3)		-50.00 to +50.00	%
	1C1	Transportation Unit 2 Motor low speed (For gloss, type #1, width 2 & length 3)		-50.00 to +50.00	%
	1C2	Transportation Unit 2 Motor high speed (For gloss, type #1, width 3 & length 1)		-10.000 to +10.000	%
	1C3	Transportation Unit 2 Motor normal speed (For gloss, type #1, width 3 & length 1)		-10.000 to +10.000	%
	1C4	Transportation Unit 2 Motor low speed (For gloss, type #1, width 3 & length 1)		-50.00 to +50.00	%
	1C5	Transportation Unit 2 Motor high speed (For gloss, type #1, width 3 & length 2)		-50.00 to +50.00	%
	1C6	Transportation Unit 2 Motor normal speed (For gloss, type #1, width 3 & length 2)		-50.00 to +50.00	%
	1C7	Transportation Unit 2 Motor low speed (For gloss, type #1, width 3 & length 2)		-50.00 to +50.00	%
	1C8	Transportation Unit 2 Motor high speed (For gloss, type #1, width 3 & length 3)		-50.00 to +50.00	%
	1C9	Transportation Unit 2 Motor normal speed (For gloss, type #1, width 3 & length 3)		-50.00 to +50.00	%
	1CA	Transportation Unit 2 Motor low speed (For gloss, type #1, width 3 & length 3)		-50.00 to +50.00	%
	1Cb	Transportation Unit 2 Motor high speed (For gloss, type #1, width 4 & length 1)		-50.00 to +50.00	%
	1CC	Transportation Unit 2 Motor normal speed (For gloss, type #1, width 4 & length 1)		-50.00 to +50.00	%
	1Cd	Transportation Unit 2 Motor low speed (For gloss, type #1, width 4 & length 1)		-50.00 to +50.00	%
	1CE	Transportation Unit 2 Motor high speed (For gloss, type #1, width 4 & length 2)		-50.00 to +50.00	%
	1CF	Transportation Unit 2 Motor normal speed (For gloss, type #1, width 4 & length 2)		-50.00 to +50.00	%
	1d0	Transportation Unit 2 Motor low speed (For gloss, type #1, width 4 & length 2)		-50.00 to +50.00	%
	1d1	Transportation Unit 2 Motor high speed (For gloss, type #1, width 4 & length 3)		-50.00 to +50.00	%
	1d2	Transportation Unit 2 Motor normal speed (For gloss, type #1, width 4 & length 3)		-50.00 to +50.00	%
	1d3	Transportation Unit 2 Motor low speed (For gloss, type #1, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
6 (Transportation Unit 2 Motor speed)	1d4	Transportation Unit 2 Motor high speed (For gloss, type #2, width 1 & length 1)		-50.00 to +50.00	%
	1d5	Transportation Unit 2 Motor normal speed (For gloss, type #2, width 1 & length 1)		-50.00 to +50.00	%
	1d6	Transportation Unit 2 Motor low speed (For gloss, type #2, width 1 & length 1)		-50.00 to +50.00	%
	1d7	Transportation Unit 2 Motor high speed (For gloss, type #2, width 1 & length 2)		-50.00 to +50.00	%
	1d8	Transportation Unit 2 Motor normal speed (For gloss, type #2, width 1 & length 2)		-50.00 to +50.00	%
	1d9	Transportation Unit 2 Motor low speed (For gloss, type #2, width 1 & length 2)		-50.00 to +50.00	%
	1dA	Transportation Unit 2 Motor high speed (For gloss, type #2, width 1 & length 3)		-50.00 to +50.00	%
	1db	Transportation Unit 2 Motor normal speed (For gloss, type #2, width 1 & length 3)		-50.00 to +50.00	%
	1dC	Transportation Unit 2 Motor low speed (For gloss, type #2, width 1 & length 3)		-50.00 to +50.00	%
	1dd	Transportation Unit 2 Motor high speed (For gloss, type #2, width 2 & length 1)		-50.00 to +50.00	%
	1dE	Transportation Unit 2 Motor normal speed (For gloss, type #2, width 2 & length 1)		-50.00 to +50.00	%
	1dF	Transportation Unit 2 Motor low speed (For gloss, type #2, width 2 & length 1)		-50.00 to +50.00	%
	1E0	Transportation Unit 2 Motor high speed (For gloss, type #2, width 2 & length 2)		-50.00 to +50.00	%
	1E1	Transportation Unit 2 Motor normal speed (For gloss, type #2, width 2 & length 2)		-50.00 to +50.00	%
	1E2	Transportation Unit 2 Motor low speed (For gloss, type #2, width 2 & length 2)		-50.00 to +50.00	%
	1E3	Transportation Unit 2 Motor high speed (For gloss, type #2, width 2 & length 3)		-50.00 to +50.00	%
	1E4	Transportation Unit 2 Motor normal speed (For gloss, type #2, width 2 & length 3)		-50.00 to +50.00	%
	1E5	Transportation Unit 2 Motor low speed (For gloss, type #2, width 2 & length 3)		-50.00 to +50.00	%
	1E6	Transportation Unit 2 Motor high speed (For gloss, type #2, width 3 & length 1)		-50.00 to +50.00	%
	1E7	Transportation Unit 2 Motor normal speed (For gloss, type #2, width 3 & length 1)		-50.00 to +50.00	%
	1E8	Transportation Unit 2 Motor low speed (For gloss, type #2, width 3 & length 1)		-50.00 to +50.00	%
	1E9	Transportation Unit 2 Motor high speed (For gloss, type #2, width 3 & length 2)		-50.00 to +50.00	%
	1EA	Transportation Unit 2 Motor normal speed (For gloss, type #2, width 3 & length 2)		-50.00 to +50.00	%
	1Eb	Transportation Unit 2 Motor low speed (For gloss, type #2, width 3 & length 2)		-50.00 to +50.00	%
	1EC	Transportation Unit 2 Motor high speed (For gloss, type #2, width 3 & length 3)		-50.00 to +50.00	%
	1Ed	Transportation Unit 2 Motor normal speed (For gloss, type #2, width 3 & length 3)		-50.00 to +50.00	%
	1EE	Transportation Unit 2 Motor low speed (For gloss, type #2, width 3 & length 3)		-50.00 to +50.00	%
	1EF	Transportation Unit 2 Motor high speed (For gloss, type #2, width 4 & length 1)		-50.00 to +50.00	%
	1F0	Transportation Unit 2 Motor normal speed (For gloss, type #2, width 4 & length 1)		-50.00 to +50.00	%
	1F1	Transportation Unit 2 Motor low speed (For gloss, type #2, width 4 & length 1)		-50.00 to +50.00	%
	1F2	Transportation Unit 2 Motor high speed (For gloss, type #2, width 4 & length 2)		-50.00 to +50.00	%
	1F3	Transportation Unit 2 Motor normal speed (For gloss, type #2, width 4 & length 2)		-50.00 to +50.00	%
	1F4	Transportation Unit 2 Motor low speed (For gloss, type #2, width 4 & length 2)		-50.00 to +50.00	%
	1F5	Transportation Unit 2 Motor high speed (For gloss, type #2, width 4 & length 3)		-50.00 to +50.00	%
	1F6	Transportation Unit 2 Motor normal speed (For gloss, type #2, width 4 & length 3)		-50.00 to +50.00	%
	1F7	Transportation Unit 2 Motor low speed (For gloss, type #2, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
6 (Transportation Unit 2 Motor speed)	1F8	Transportation Unit 2 Motor high speed (For gloss, type #3, width 1 & length 1)		-50.00 to +50.00	%
	1F9	Transportation Unit 2 Motor normal speed (For gloss, type #3, width 1 & length 1)		-50.00 to +50.00	%
	1FA	Transportation Unit 2 Motor low speed (For gloss, type #3, width 1 & length 1)		-50.00 to +50.00	%
	1Fb	Transportation Unit 2 Motor high speed (For gloss, type #3, width 1 & length 2)		-50.00 to +50.00	%
	1FC	Transportation Unit 2 Motor normal speed (For gloss, type #3, width 1 & length 2)		-50.00 to +50.00	%
	1Fd	Transportation Unit 2 Motor low speed (For gloss, type #3, width 1 & length 2)		-50.00 to +50.00	%
	1FE	Transportation Unit 2 Motor high speed (For gloss, type #3, width 1 & length 3)		-50.00 to +50.00	%
	1FF	Transportation Unit 2 Motor normal speed (For gloss, type #3, width 1 & length 3)		-50.00 to +50.00	%
	200	Transportation Unit 2 Motor low speed (For gloss, type #3, width 1 & length 3)		-50.00 to +50.00	%
	201	Transportation Unit 2 Motor high speed (For gloss, type #3, width 2 & length 1)		-50.00 to +50.00	%
	202	Transportation Unit 2 Motor normal speed (For gloss, type #3, width 2 & length 1)		-50.00 to +50.00	%
	203	Transportation Unit 2 Motor low speed (For gloss, type #3, width 2 & length 1)		-50.00 to +50.00	%
	204	Transportation Unit 2 Motor high speed (For gloss, type #3, width 2 & length 2)		-50.00 to +50.00	%
	205	Transportation Unit 2 Motor normal speed (For gloss, type #3, width 2 & length 2)		-50.00 to +50.00	%
	206	Transportation Unit 2 Motor low speed (For gloss, type #3, width 2 & length 2)		-50.00 to +50.00	%
	207	Transportation Unit 2 Motor high speed (For gloss, type #3, width 2 & length 3)		-50.00 to +50.00	%
	208	Transportation Unit 2 Motor normal speed (For gloss, type #3, width 2 & length 3)		-50.00 to +50.00	%
	209	Transportation Unit 2 Motor low speed (For gloss, type #3, width 2 & length 3)		-50.00 to +50.00	%
	20A	Transportation Unit 2 Motor high speed (For gloss, type #3, width 3 & length 1)		-50.00 to +50.00	%
	20b	Transportation Unit 2 Motor normal speed (For gloss, type #3, width 3 & length 1)		-50.00 to +50.00	%
	20C	Transportation Unit 2 Motor low speed (For gloss, type #3, width 3 & length 1)		-50.00 to +50.00	%
	20d	Transportation Unit 2 Motor high speed (For gloss, type #3, width 3 & length 2)		-50.00 to +50.00	%
	20E	Transportation Unit 2 Motor normal speed (For gloss, type #3, width 3 & length 2)		-50.00 to +50.00	%
	20F	Transportation Unit 2 Motor low speed (For gloss, type #3, width 3 & length 2)		-50.00 to +50.00	%
	210	Transportation Unit 2 Motor high speed (For gloss, type #3, width 3 & length 3)		-50.00 to +50.00	%
	211	Transportation Unit 2 Motor normal speed (For gloss, type #3, width 3 & length 3)		-50.00 to +50.00	%
	212	Transportation Unit 2 Motor low speed (For gloss, type #3, width 3 & length 3)		-50.00 to +50.00	%
	213	Transportation Unit 2 Motor high speed (For gloss, type #3, width 4 & length 1)		-50.00 to +50.00	%
	214	Transportation Unit 2 Motor normal speed (For gloss, type #3, width 4 & length 1)		-50.00 to +50.00	%
	215	Transportation Unit 2 Motor low speed (For gloss, type #3, width 4 & length 1)		-50.00 to +50.00	%
	216	Transportation Unit 2 Motor high speed (For gloss, type #3, width 4 & length 2)		-50.00 to +50.00	%
	217	Transportation Unit 2 Motor normal speed (For gloss, type #3, width 4 & length 2)		-50.00 to +50.00	%
	218	Transportation Unit 2 Motor low speed (For gloss, type #3, width 4 & length 2)		-50.00 to +50.00	%
	219	Transportation Unit 2 Motor high speed (For gloss, type #3, width 4 & length 3)		-50.00 to +50.00	%
	21A	Transportation Unit 2 Motor normal speed (For gloss, type #3, width 4 & length 3)		-50.00 to +50.00	%
	21b	Transportation Unit 2 Motor low speed (For gloss, type #3, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
6 (Transportation Unit 2 Motor speed)	21C	Transportation Unit 2 Motor high speed (For gloss, type #4, width 1 & length 1)		-50.00 to +50.00	%
	21d	Transportation Unit 2 Motor normal speed (For gloss, type #4, width 1 & length 1)		-50.00 to +50.00	%
	21E	Transportation Unit 2 Motor low speed (For gloss, type #4, width 1 & length 1)		-50.00 to +50.00	%
	21F	Transportation Unit 2 Motor high speed (For gloss, type #4, width 1 & length 2)		-50.00 to +50.00	%
	220	Transportation Unit 2 Motor normal speed (For gloss, type #4, width 1 & length 2)		-50.00 to +50.00	%
	221	Transportation Unit 2 Motor low speed (For gloss, type #4, width 1 & length 2)		-50.00 to +50.00	%
	222	Transportation Unit 2 Motor high speed (For gloss, type #4, width 1 & length 3)		-50.00 to +50.00	%
	223	Transportation Unit 2 Motor normal speed (For gloss, type #4, width 1 & length 3)		-50.00 to +50.00	%
	224	Transportation Unit 2 Motor low speed (For gloss, type #4, width 1 & length 3)		-50.00 to +50.00	%
	225	Transportation Unit 2 Motor high speed (For gloss, type #4, width 2 & length 1)		-50.00 to +50.00	%
	226	Transportation Unit 2 Motor normal speed (For gloss, type #4, width 2 & length 1)		-50.00 to +50.00	%
	227	Transportation Unit 2 Motor low speed (For gloss, type #4, width 2 & length 1)		-50.00 to +50.00	%
	228	Transportation Unit 2 Motor high speed (For gloss, type #4, width 2 & length 2)		-50.00 to +50.00	%
	229	Transportation Unit 2 Motor normal speed (For gloss, type #4, width 2 & length 2)		-50.00 to +50.00	%
	22A	Transportation Unit 2 Motor low speed (For gloss, type #4, width 2 & length 2)		-50.00 to +50.00	%
	22b	Transportation Unit 2 Motor high speed (For gloss, type #4, width 2 & length 3)		-50.00 to +50.00	%
	22C	Transportation Unit 2 Motor normal speed (For gloss, type #4, width 2 & length 3)		-50.00 to +50.00	%
	22d	Transportation Unit 2 Motor low speed (For gloss, type #4, width 2 & length 3)		-50.00 to +50.00	%
	22E	Transportation Unit 2 Motor high speed (For gloss, type #4, width 3 & length 1)		-50.00 to +50.00	%
	22F	Transportation Unit 2 Motor normal speed (For gloss, type #4, width 3 & length 1)		-50.00 to +50.00	%
	230	Transportation Unit 2 Motor low speed (For gloss, type #4, width 3 & length 1)		-50.00 to +50.00	%
	231	Transportation Unit 2 Motor high speed (For gloss, type #4, width 3 & length 2)		-50.00 to +50.00	%
	232	Transportation Unit 2 Motor normal speed (For gloss, type #4, width 3 & length 2)		-50.00 to +50.00	%
	233	Transportation Unit 2 Motor low speed (For gloss, type #4, width 3 & length 2)		-50.00 to +50.00	%
	234	Transportation Unit 2 Motor high speed (For gloss, type #4, width 3 & length 3)		-50.00 to +50.00	%
	235	Transportation Unit 2 Motor normal speed (For gloss, type #4, width 3 & length 3)		-50.00 to +50.00	%
	236	Transportation Unit 2 Motor low speed (For gloss, type #4, width 3 & length 3)		-50.00 to +50.00	%
	237	Transportation Unit 2 Motor high speed (For gloss, type #4, width 4 & length 1)		-50.00 to +50.00	%
	238	Transportation Unit 2 Motor normal speed (For gloss, type #4, width 4 & length 1)		-50.00 to +50.00	%
	239	Transportation Unit 2 Motor low speed (For gloss, type #4, width 4 & length 1)		-50.00 to +50.00	%
	23A	Transportation Unit 2 Motor high speed (For gloss, type #4, width 4 & length 2)		-50.00 to +50.00	%
	23b	Transportation Unit 2 Motor normal speed (For gloss, type #4, width 4 & length 2)		-50.00 to +50.00	%
	23C	Transportation Unit 2 Motor low speed (For gloss, type #4, width 4 & length 2)		-50.00 to +50.00	%
	23d	Transportation Unit 2 Motor high speed (For gloss, type #4, width 4 & length 3)		-50.00 to +50.00	%
	23E	Transportation Unit 2 Motor normal speed (For gloss, type #4, width 4 & length 3)		-50.00 to +50.00	%
	23F	Transportation Unit 2 Motor low speed (For gloss, type #4, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
7 (Transportation Unit 3 Motor speed)	000	Transportation Unit 3 Motor high speed (For plain paper, type #1, width 1 & length 1)		-50.00 to +50.00	%
	001	Transportation Unit 3 Motor normal speed (For plain paper, type #1, width 1 & length 1)		-50.00 to +50.00	%
	002	Transportation Unit 3 Motor low speed (For plain paper, type #1, width 1 & length 1)		-50.00 to +50.00	%
	003	Transportation Unit 3 Motor high speed (For plain paper, type #1, width 1 & length 2)		-50.00 to +50.00	%
	004	Transportation Unit 3 Motor normal speed (For plain paper, type #1, width 1 & length 2)		-50.00 to +50.00	%
	005	Transportation Unit 3 Motor low speed (For plain paper, type #1, width 1 & length 2)		-50.00 to +50.00	%
	006	Transportation Unit 3 Motor high speed (For plain paper, type #1, width 1 & length 3)		-50.00 to +50.00	%
	007	Transportation Unit 3 Motor normal speed (For plain paper, type #1, width 1 & length 3)		-50.00 to +50.00	%
	008	Transportation Unit 3 Motor low speed (For plain paper, type #1, width 1 & length 3)		-50.00 to +50.00	%
	009	Transportation Unit 3 Motor high speed (For plain paper, type #1, width 2 & length 1)		-50.00 to +50.00	%
	00A	Transportation Unit 3 Motor normal speed (For plain paper, type #1, width 2 & length 1)		-50.00 to +50.00	%
	00b	Transportation Unit 3 Motor low speed (For plain paper, type #1, width 2 & length 1)		-50.00 to +50.00	%
	00C	Transportation Unit 3 Motor high speed (For plain paper, type #1, width 2 & length 2)		-50.00 to +50.00	%
	00D	Transportation Unit 3 Motor normal speed (For plain paper, type #1, width 2 & length 2)		-50.00 to +50.00	%
	00E	Transportation Unit 3 Motor low speed (For plain paper, type #1, width 2 & length 2)		-50.00 to +50.00	%
	00F	Transportation Unit 3 Motor high speed (For plain paper, type #1, width 2 & length 3)		-50.00 to +50.00	%
	010	Transportation Unit 3 Motor normal speed (For plain paper, type #1, width 2 & length 3)		-50.00 to +50.00	%
	011	Transportation Unit 3 Motor low speed (For plain paper, type #1, width 2 & length 3)		-50.00 to +50.00	%
	012	Transportation Unit 3 Motor high speed (For plain paper, type #1, width 3 & length 1)		-10.000 to +10.000	%
	013	Transportation Unit 3 Motor normal speed (For plain paper, type #1, width 3 & length 1)		-10.000 to +10.000	%
	014	Transportation Unit 3 Motor low speed (For plain paper, type #1, width 3 & length 1)		-50.00 to +50.00	%
	015	Transportation Unit 3 Motor high speed (For plain paper, type #1, width 3 & length 2)		-50.00 to +50.00	%
	016	Transportation Unit 3 Motor normal speed (For plain paper, type #1, width 3 & length 2)		-50.00 to +50.00	%
	017	Transportation Unit 3 Motor low speed (For plain paper, type #1, width 3 & length 2)		-50.00 to +50.00	%
	018	Transportation Unit 3 Motor high speed (For plain paper, type #1, width 3 & length 3)		-50.00 to +50.00	%
	019	Transportation Unit 3 Motor normal speed (For plain paper, type #1, width 3 & length 3)		-50.00 to +50.00	%
	01A	Transportation Unit 3 Motor low speed (For plain paper, type #1, width 3 & length 3)		-50.00 to +50.00	%
	01b	Transportation Unit 3 Motor high speed (For plain paper, type #1, width 4 & length 1)		-50.00 to +50.00	%
	01C	Transportation Unit 3 Motor normal speed (For plain paper, type #1, width 4 & length 1)		-50.00 to +50.00	%
	01d	Transportation Unit 3 Motor low speed (For plain paper, type #1, width 4 & length 1)		-50.00 to +50.00	%
	01E	Transportation Unit 3 Motor high speed (For plain paper, type #1, width 4 & length 2)		-50.00 to +50.00	%
	01F	Transportation Unit 3 Motor normal speed (For plain paper, type #1, width 4 & length 2)		-50.00 to +50.00	%
	020	Transportation Unit 3 Motor low speed (For plain paper, type #1, width 4 & length 2)		-50.00 to +50.00	%
	021	Transportation Unit 3 Motor high speed (For plain paper, type #1, width 4 & length 3)		-50.00 to +50.00	%
	022	Transportation Unit 3 Motor normal speed (For plain paper, type #1, width 4 & length 3)		-50.00 to +50.00	%
	023	Transportation Unit 3 Motor low speed (For plain paper, type #1, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
7 (Transportation Unit 3 Motor speed)	024	Transportation Unit 3 Motor high speed (For plain paper, type #2, width 1 & length 1)		-50.00 to +50.00	%
	025	Transportation Unit 3 Motor normal speed (For plain paper, type #2, width 1 & length 1)		-50.00 to +50.00	%
	026	Transportation Unit 3 Motor low speed (For plain paper, type #2, width 1 & length 1)		-50.00 to +50.00	%
	027	Transportation Unit 3 Motor high speed (For plain paper, type #2, width 1 & length 2)		-50.00 to +50.00	%
	028	Transportation Unit 3 Motor normal speed (For plain paper, type #2, width 1 & length 2)		-50.00 to +50.00	%
	029	Transportation Unit 3 Motor low speed (For plain paper, type #2, width 1 & length 2)		-50.00 to +50.00	%
	02A	Transportation Unit 3 Motor high speed (For plain paper, type #2, width 1 & length 3)		-50.00 to +50.00	%
	02b	Transportation Unit 3 Motor normal speed (For plain paper, type #2, width 1 & length 3)		-50.00 to +50.00	%
	02C	Transportation Unit 3 Motor low speed (For plain paper, type #2, width 1 & length 3)		-50.00 to +50.00	%
	02d	Transportation Unit 3 Motor high speed (For plain paper, type #2, width 2 & length 1)		-50.00 to +50.00	%
	02E	Transportation Unit 3 Motor normal speed (For plain paper, type #2, width 2 & length 1)		-50.00 to +50.00	%
	02F	Transportation Unit 3 Motor low speed (For plain paper, type #2, width 2 & length 1)		-50.00 to +50.00	%
	030	Transportation Unit 3 Motor high speed (For plain paper, type #2, width 2 & length 2)		-50.00 to +50.00	%
	031	Transportation Unit 3 Motor normal speed (For plain paper, type #2, width 2 & length 2)		-50.00 to +50.00	%
	032	Transportation Unit 3 Motor low speed (For plain paper, type #2, width 2 & length 2)		-50.00 to +50.00	%
	033	Transportation Unit 3 Motor high speed (For plain paper, type #2, width 2 & length 3)		-50.00 to +50.00	%
	034	Transportation Unit 3 Motor normal speed (For plain paper, type #2, width 2 & length 3)		-50.00 to +50.00	%
	035	Transportation Unit 3 Motor low speed (For plain paper, type #2, width 2 & length 3)		-50.00 to +50.00	%
	036	Transportation Unit 3 Motor high speed (For plain paper, type #2, width 3 & length 1)		-50.00 to +50.00	%
	037	Transportation Unit 3 Motor normal speed (For plain paper, type #2, width 3 & length 1)		-50.00 to +50.00	%
	038	Transportation Unit 3 Motor low speed (For plain paper, type #2, width 3 & length 1)		-50.00 to +50.00	%
	039	Transportation Unit 3 Motor high speed (For plain paper, type #2, width 3 & length 2)		-50.00 to +50.00	%
	03A	Transportation Unit 3 Motor normal speed (For plain paper, type #2, width 3 & length 2)		-50.00 to +50.00	%
	03b	Transportation Unit 3 Motor low speed (For plain paper, type #2, width 3 & length 2)		-50.00 to +50.00	%
	03C	Transportation Unit 3 Motor high speed (For plain paper, type #2, width 3 & length 3)		-50.00 to +50.00	%
	03d	Transportation Unit 3 Motor normal speed (For plain paper, type #2, width 3 & length 3)		-50.00 to +50.00	%
	03E	Transportation Unit 3 Motor low speed (For plain paper, type #2, width 3 & length 3)		-50.00 to +50.00	%
	03F	Transportation Unit 3 Motor high speed (For plain paper, type #2, width 4 & length 1)		-50.00 to +50.00	%
	040	Transportation Unit 3 Motor normal speed (For plain paper, type #2, width 4 & length 1)		-50.00 to +50.00	%
	041	Transportation Unit 3 Motor low speed (For plain paper, type #2, width 4 & length 1)		-50.00 to +50.00	%
	042	Transportation Unit 3 Motor high speed (For plain paper, type #2, width 4 & length 2)		-50.00 to +50.00	%
	043	Transportation Unit 3 Motor normal speed (For plain paper, type #2, width 4 & length 2)		-50.00 to +50.00	%
	044	Transportation Unit 3 Motor low speed (For plain paper, type #2, width 4 & length 2)		-50.00 to +50.00	%
	045	Transportation Unit 3 Motor high speed (For plain paper, type #2, width 4 & length 3)		-50.00 to +50.00	%
	046	Transportation Unit 3 Motor normal speed (For plain paper, type #2, width 4 & length 3)		-50.00 to +50.00	%
	047	Transportation Unit 3 Motor low speed (For plain paper, type #2, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
7 (Transportation Unit 3 Motor speed)	048	Transportation Unit 3 Motor high speed (For plain paper, type #3, width 1 & length 1)		-50.00 to +50.00	%
	049	Transportation Unit 3 Motor normal speed (For plain paper, type #3, width 1 & length 1)		-50.00 to +50.00	%
	04A	Transportation Unit 3 Motor low speed (For plain paper, type #3, width 1 & length 1)		-50.00 to +50.00	%
	04b	Transportation Unit 3 Motor high speed (For plain paper, type #3, width 1 & length 2)		-50.00 to +50.00	%
	04C	Transportation Unit 3 Motor normal speed (For plain paper, type #3, width 1 & length 2)		-50.00 to +50.00	%
	04d	Transportation Unit 3 Motor low speed (For plain paper, type #3, width 1 & length 2)		-50.00 to +50.00	%
	04E	Transportation Unit 3 Motor high speed (For plain paper, type #3, width 1 & length 3)		-50.00 to +50.00	%
	04F	Transportation Unit 3 Motor normal speed (For plain paper, type #3, width 1 & length 3)		-50.00 to +50.00	%
	050	Transportation Unit 3 Motor low speed (For plain paper, type #3, width 1 & length 3)		-50.00 to +50.00	%
	051	Transportation Unit 3 Motor high speed (For plain paper, type #3, width 2 & length 1)		-50.00 to +50.00	%
	052	Transportation Unit 3 Motor normal speed (For plain paper, type #3, width 2 & length 1)		-50.00 to +50.00	%
	053	Transportation Unit 3 Motor low speed (For plain paper, type #3, width 2 & length 1)		-50.00 to +50.00	%
	054	Transportation Unit 3 Motor high speed (For plain paper, type #3, width 2 & length 2)		-50.00 to +50.00	%
	055	Transportation Unit 3 Motor normal speed (For plain paper, type #3, width 2 & length 2)		-50.00 to +50.00	%
	056	Transportation Unit 3 Motor low speed (For plain paper, type #3, width 2 & length 2)		-50.00 to +50.00	%
	057	Transportation Unit 3 Motor high speed (For plain paper, type #3, width 2 & length 3)		-50.00 to +50.00	%
	058	Transportation Unit 3 Motor normal speed (For plain paper, type #3, width 2 & length 3)		-50.00 to +50.00	%
	059	Transportation Unit 3 Motor low speed (For plain paper, type #3, width 2 & length 3)		-50.00 to +50.00	%
	05A	Transportation Unit 3 Motor high speed (For plain paper, type #3, width 3 & length 1)		-50.00 to +50.00	%
	05b	Transportation Unit 3 Motor normal speed (For plain paper, type #3, width 3 & length 1)		-50.00 to +50.00	%
	05C	Transportation Unit 3 Motor low speed (For plain paper, type #3, width 3 & length 1)		-50.00 to +50.00	%
	05d	Transportation Unit 3 Motor high speed (For plain paper, type #3, width 3 & length 2)		-50.00 to +50.00	%
	05E	Transportation Unit 3 Motor normal speed (For plain paper, type #3, width 3 & length 2)		-50.00 to +50.00	%
	05F	Transportation Unit 3 Motor low speed (For plain paper, type #3, width 3 & length 2)		-50.00 to +50.00	%
	060	Transportation Unit 3 Motor high speed (For plain paper, type #3, width 3 & length 3)		-50.00 to +50.00	%
	061	Transportation Unit 3 Motor normal speed (For plain paper, type #3, width 3 & length 3)		-50.00 to +50.00	%
	062	Transportation Unit 3 Motor low speed (For plain paper, type #3, width 3 & length 3)		-50.00 to +50.00	%
	063	Transportation Unit 3 Motor high speed (For plain paper, type #3, width 4 & length 1)		-50.00 to +50.00	%
	064	Transportation Unit 3 Motor normal speed (For plain paper, type #3, width 4 & length 1)		-50.00 to +50.00	%
	065	Transportation Unit 3 Motor low speed (For plain paper, type #3, width 4 & length 1)		-50.00 to +50.00	%
	066	Transportation Unit 3 Motor high speed (For plain paper, type #3, width 4 & length 2)		-50.00 to +50.00	%
	067	Transportation Unit 3 Motor normal speed (For plain paper, type #3, width 4 & length 2)		-50.00 to +50.00	%
	068	Transportation Unit 3 Motor low speed (For plain paper, type #3, width 4 & length 2)		-50.00 to +50.00	%
	069	Transportation Unit 3 Motor high speed (For plain paper, type #3, width 4 & length 3)		-50.00 to +50.00	%
	06A	Transportation Unit 3 Motor normal speed (For plain paper, type #3, width 4 & length 3)		-50.00 to +50.00	%
	06b	Transportation Unit 3 Motor low speed (For plain paper, type #3, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
7 (Transportation Unit 3 Motor speed)	06C	Transportation Unit 3 Motor high speed (For plain paper, type #4, width 1 & length 1)		-50.00 to +50.00	%
	06d	Transportation Unit 3 Motor normal speed (For plain paper, type #4, width 1 & length 1)		-50.00 to +50.00	%
	06E	Transportation Unit 3 Motor low speed (For plain paper, type #4, width 1 & length 1)		-50.00 to +50.00	%
	06F	Transportation Unit 3 Motor high speed (For plain paper, type #4, width 1 & length 2)		-50.00 to +50.00	%
	070	Transportation Unit 3 Motor normal speed (For plain paper, type #4, width 1 & length 2)		-50.00 to +50.00	%
	071	Transportation Unit 3 Motor low speed (For plain paper, type #4, width 1 & length 2)		-50.00 to +50.00	%
	072	Transportation Unit 3 Motor high speed (For plain paper, type #4, width 1 & length 3)		-50.00 to +50.00	%
	073	Transportation Unit 3 Motor normal speed (For plain paper, type #4, width 1 & length 3)		-50.00 to +50.00	%
	074	Transportation Unit 3 Motor low speed (For plain paper, type #4, width 1 & length 3)		-50.00 to +50.00	%
	075	Transportation Unit 3 Motor high speed (For plain paper, type #4, width 2 & length 1)		-50.00 to +50.00	%
	076	Transportation Unit 3 Motor normal speed (For plain paper, type #4, width 2 & length 1)		-50.00 to +50.00	%
	077	Transportation Unit 3 Motor low speed (For plain paper, type #4, width 2 & length 1)		-50.00 to +50.00	%
	078	Transportation Unit 3 Motor high speed (For plain paper, type #4, width 2 & length 2)		-50.00 to +50.00	%
	079	Transportation Unit 3 Motor normal speed (For plain paper, type #4, width 2 & length 2)		-50.00 to +50.00	%
	07A	Transportation Unit 3 Motor low speed (For plain paper, type #4, width 2 & length 2)		-50.00 to +50.00	%
	07b	Transportation Unit 3 Motor high speed (For plain paper, type #4, width 2 & length 3)		-50.00 to +50.00	%
	07C	Transportation Unit 3 Motor normal speed (For plain paper, type #4, width 2 & length 3)		-50.00 to +50.00	%
	07d	Transportation Unit 3 Motor low speed (For plain paper, type #4, width 2 & length 3)		-50.00 to +50.00	%
	07E	Transportation Unit 3 Motor high speed (For plain paper, type #4, width 3 & length 1)		-50.00 to +50.00	%
	07F	Transportation Unit 3 Motor normal speed (For plain paper, type #4, width 3 & length 1)		-50.00 to +50.00	%
	080	Transportation Unit 3 Motor low speed (For plain paper, type #4, width 3 & length 1)		-50.00 to +50.00	%
	081	Transportation Unit 3 Motor high speed (For plain paper, type #4, width 3 & length 2)		-50.00 to +50.00	%
	082	Transportation Unit 3 Motor normal speed (For plain paper, type #4, width 3 & length 2)		-50.00 to +50.00	%
	083	Transportation Unit 3 Motor low speed (For plain paper, type #4, width 3 & length 2)		-50.00 to +50.00	%
	084	Transportation Unit 3 Motor high speed (For plain paper, type #4, width 3 & length 3)		-50.00 to +50.00	%
	085	Transportation Unit 3 Motor normal speed (For plain paper, type #4, width 3 & length 3)		-50.00 to +50.00	%
	086	Transportation Unit 3 Motor low speed (For plain paper, type #4, width 3 & length 3)		-50.00 to +50.00	%
	087	Transportation Unit 3 Motor high speed (For plain paper, type #4, width 4 & length 1)		-50.00 to +50.00	%
	088	Transportation Unit 3 Motor normal speed (For plain paper, type #4, width 4 & length 1)		-50.00 to +50.00	%
	089	Transportation Unit 3 Motor low speed (For plain paper, type #4, width 4 & length 1)		-50.00 to +50.00	%
	08A	Transportation Unit 3 Motor high speed (For plain paper, type #4, width 4 & length 2)		-50.00 to +50.00	%
	08b	Transportation Unit 3 Motor normal speed (For plain paper, type #4, width 4 & length 2)		-50.00 to +50.00	%
	08C	Transportation Unit 3 Motor low speed (For plain paper, type #4, width 4 & length 2)		-50.00 to +50.00	%
	08d	Transportation Unit 3 Motor high speed (For plain paper, type #4, width 4 & length 3)		-50.00 to +50.00	%
	08E	Transportation Unit 3 Motor normal speed (For plain paper, type #4, width 4 & length 3)		-50.00 to +50.00	%
	08F	Transportation Unit 3 Motor low speed (For plain paper, type #4, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
7 (Transportation Unit 3 Motor speed)	090	Transportation Unit 3 Motor high speed (For tracing paper, type #1, width 1 & length 1)		-50.00 to +50.00	%
	091	Transportation Unit 3 Motor normal speed (For tracing paper, type #1, width 1 & length 1)		-50.00 to +50.00	%
	092	Transportation Unit 3 Motor low speed (For tracing paper, type #1, width 1 & length 1)		-50.00 to +50.00	%
	093	Transportation Unit 3 Motor high speed (For tracing paper, type #1, width 1 & length 2)		-50.00 to +50.00	%
	094	Transportation Unit 3 Motor normal speed (For tracing paper, type #1, width 1 & length 2)		-50.00 to +50.00	%
	095	Transportation Unit 3 Motor low speed (For tracing paper, type #1, width 1 & length 2)		-50.00 to +50.00	%
	096	Transportation Unit 3 Motor high speed (For tracing paper, type #1, width 1 & length 3)		-50.00 to +50.00	%
	097	Transportation Unit 3 Motor normal speed (For tracing paper, type #1, width 1 & length 3)		-50.00 to +50.00	%
	098	Transportation Unit 3 Motor low speed (For tracing paper, type #1, width 1 & length 3)		-50.00 to +50.00	%
	099	Transportation Unit 3 Motor high speed (For tracing paper, type #1, width 2 & length 1)		-50.00 to +50.00	%
	09A	Transportation Unit 3 Motor normal speed (For tracing paper, type #1, width 2 & length 1)		-50.00 to +50.00	%
	09b	Transportation Unit 3 Motor low speed (For tracing paper, type #1, width 2 & length 1)		-50.00 to +50.00	%
	09C	Transportation Unit 3 Motor high speed (For tracing paper, type #1, width 2 & length 2)		-50.00 to +50.00	%
	09d	Transportation Unit 3 Motor normal speed (For tracing paper, type #1, width 2 & length 2)		-50.00 to +50.00	%
	09E	Transportation Unit 3 Motor low speed (For tracing paper, type #1, width 2 & length 2)		-50.00 to +50.00	%
	09F	Transportation Unit 3 Motor high speed (For tracing paper, type #1, width 2 & length 3)		-50.00 to +50.00	%
	0A0	Transportation Unit 3 Motor normal speed (For tracing paper, type #1, width 2 & length 3)		-50.00 to +50.00	%
	0A1	Transportation Unit 3 Motor low speed (For tracing paper, type #1, width 2 & length 3)		-50.00 to +50.00	%
	0A2	Transportation Unit 3 Motor high speed (For tracing paper, type #1, width 3 & length 1)		-50.00 to +50.00	%
	0A3	Transportation Unit 3 Motor normal speed (For tracing paper, type #1, width 3 & length 1)		-50.00 to +50.00	%
	0A4	Transportation Unit 3 Motor low speed (For tracing paper, type #1, width 3 & length 1)		-50.00 to +50.00	%
	0A5	Transportation Unit 3 Motor high speed (For tracing paper, type #1, width 3 & length 2)		-50.00 to +50.00	%
	0A6	Transportation Unit 3 Motor normal speed (For tracing paper, type #1, width 3 & length 2)		-50.00 to +50.00	%
	0A7	Transportation Unit 3 Motor low speed (For tracing paper, type #1, width 3 & length 2)		-50.00 to +50.00	%
	0A8	Transportation Unit 3 Motor high speed (For tracing paper, type #1, width 3 & length 3)		-50.00 to +50.00	%
	0A9	Transportation Unit 3 Motor normal speed (For tracing paper, type #1, width 3 & length 3)		-50.00 to +50.00	%
	0AA	Transportation Unit 3 Motor low speed (For tracing paper, type #1, width 3 & length 3)		-50.00 to +50.00	%
	0Ab	Transportation Unit 3 Motor high speed (For tracing paper, type #1, width 4 & length 1)		-50.00 to +50.00	%
	0AC	Transportation Unit 3 Motor normal speed (For tracing paper, type #1, width 4 & length 1)		-50.00 to +50.00	%
	0Ad	Transportation Unit 3 Motor low speed (For tracing paper, type #1, width 4 & length 1)		-50.00 to +50.00	%
	0AE	Transportation Unit 3 Motor high speed (For tracing paper, type #1, width 4 & length 2)		-50.00 to +50.00	%
	0AF	Transportation Unit 3 Motor normal speed (For tracing paper, type #1, width 4 & length 2)		-50.00 to +50.00	%
	0b0	Transportation Unit 3 Motor low speed (For tracing paper, type #1, width 4 & length 2)		-50.00 to +50.00	%
	0b1	Transportation Unit 3 Motor high speed (For tracing paper, type #1, width 4 & length 3)		-50.00 to +50.00	%
	0b2	Transportation Unit 3 Motor normal speed (For tracing paper, type #1, width 4 & length 3)		-50.00 to +50.00	%
	0b3	Transportation Unit 3 Motor low speed (For tracing paper, type #1, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
7 (Transportation Unit 3 Motor speed)	0b4	Transportation Unit 3 Motor high speed (For tracing paper, type #2, width 1 & length 1)		-50.00 to +50.00	%
	0b5	Transportation Unit 3 Motor normal speed (For tracing paper, type #2, width 1 & length 1)		-50.00 to +50.00	%
	0b6	Transportation Unit 3 Motor low speed (For tracing paper, type #2, width 1 & length 1)		-50.00 to +50.00	%
	0b7	Transportation Unit 3 Motor high speed (For tracing paper, type #2, width 1 & length 2)		-50.00 to +50.00	%
	0b8	Transportation Unit 3 Motor normal speed (For tracing paper, type #2, width 1 & length 2)		-50.00 to +50.00	%
	0b9	Transportation Unit 3 Motor low speed (For tracing paper, type #2, width 1 & length 2)		-50.00 to +50.00	%
	0bA	Transportation Unit 3 Motor high speed (For tracing paper, type #2, width 1 & length 3)		-50.00 to +50.00	%
	0bb	Transportation Unit 3 Motor normal speed (For tracing paper, type #2, width 1 & length 3)		-50.00 to +50.00	%
	0bC	Transportation Unit 3 Motor low speed (For tracing paper, type #2, width 1 & length 3)		-50.00 to +50.00	%
	0bd	Transportation Unit 3 Motor high speed (For tracing paper, type #2, width 2 & length 1)		-50.00 to +50.00	%
	0bE	Transportation Unit 3 Motor normal speed (For tracing paper, type #2, width 2 & length 1)		-50.00 to +50.00	%
	0bF	Transportation Unit 3 Motor low speed (For tracing paper, type #2, width 2 & length 1)		-50.00 to +50.00	%
	0C0	Transportation Unit 3 Motor high speed (For tracing paper, type #2, width 2 & length 2)		-50.00 to +50.00	%
	0C1	Transportation Unit 3 Motor normal speed (For tracing paper, type #2, width 2 & length 2)		-50.00 to +50.00	%
	0C2	Transportation Unit 3 Motor low speed (For tracing paper, type #2, width 2 & length 2)		-50.00 to +50.00	%
	0C3	Transportation Unit 3 Motor high speed (For tracing paper, type #2, width 2 & length 3)		-50.00 to +50.00	%
	0C4	Transportation Unit 3 Motor normal speed (For tracing paper, type #2, width 2 & length 3)		-50.00 to +50.00	%
	0C5	Transportation Unit 3 Motor low speed (For tracing paper, type #2, width 2 & length 3)		-50.00 to +50.00	%
	0C6	Transportation Unit 3 Motor high speed (For tracing paper, type #2, width 3 & length 1)		-50.00 to +50.00	%
	0C7	Transportation Unit 3 Motor normal speed (For tracing paper, type #2, width 3 & length 1)		-50.00 to +50.00	%
	0C8	Transportation Unit 3 Motor low speed (For tracing paper, type #2, width 3 & length 1)		-50.00 to +50.00	%
	0C9	Transportation Unit 3 Motor high speed (For tracing paper, type #2, width 3 & length 2)		-50.00 to +50.00	%
	0CA	Transportation Unit 3 Motor normal speed (For tracing paper, type #2, width 3 & length 2)		-50.00 to +50.00	%
	0Cb	Transportation Unit 3 Motor low speed (For tracing paper, type #2, width 3 & length 2)		-50.00 to +50.00	%
	0CC	Transportation Unit 3 Motor high speed (For tracing paper, type #2, width 3 & length 3)		-50.00 to +50.00	%
	0Cd	Transportation Unit 3 Motor normal speed (For tracing paper, type #2, width 3 & length 3)		-50.00 to +50.00	%
	0CE	Transportation Unit 3 Motor low speed (For tracing paper, type #2, width 3 & length 3)		-50.00 to +50.00	%
	0CF	Transportation Unit 3 Motor high speed (For tracing paper, type #2, width 4 & length 1)		-50.00 to +50.00	%
	0d0	Transportation Unit 3 Motor normal speed (For tracing paper, type #2, width 4 & length 1)		-50.00 to +50.00	%
	0d1	Transportation Unit 3 Motor low speed (For tracing paper, type #2, width 4 & length 1)		-50.00 to +50.00	%
	0d2	Transportation Unit 3 Motor high speed (For tracing paper, type #2, width 4 & length 2)		-50.00 to +50.00	%
	0d3	Transportation Unit 3 Motor normal speed (For tracing paper, type #2, width 4 & length 2)		-50.00 to +50.00	%
	0d4	Transportation Unit 3 Motor low speed (For tracing paper, type #2, width 4 & length 2)		-50.00 to +50.00	%
	0d5	Transportation Unit 3 Motor high speed (For tracing paper, type #2, width 4 & length 3)		-50.00 to +50.00	%
	0d6	Transportation Unit 3 Motor normal speed (For tracing paper, type #2, width 4 & length 3)		-50.00 to +50.00	%
	0d7	Transportation Unit 3 Motor low speed (For tracing paper, type #2, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
7 (Transportation Unit 3 Motor speed)	0d8	Transportation Unit 3 Motor high speed (For tracing paper, type #3, width 1 & length 1)		-50.00 to +50.00	%
	0d9	Transportation Unit 3 Motor normal speed (For tracing paper, type #3, width 1 & length 1)		-50.00 to +50.00	%
	0dA	Transportation Unit 3 Motor low speed (For tracing paper, type #3, width 1 & length 1)		-50.00 to +50.00	%
	0db	Transportation Unit 3 Motor high speed (For tracing paper, type #3, width 1 & length 2)		-50.00 to +50.00	%
	0dC	Transportation Unit 3 Motor normal speed (For tracing paper, type #3, width 1 & length 2)		-50.00 to +50.00	%
	0dd	Transportation Unit 3 Motor low speed (For tracing paper, type #3, width 1 & length 2)		-50.00 to +50.00	%
	0dE	Transportation Unit 3 Motor high speed (For tracing paper, type #3, width 1 & length 3)		-50.00 to +50.00	%
	0dF	Transportation Unit 3 Motor normal speed (For tracing paper, type #3, width 1 & length 3)		-50.00 to +50.00	%
	0E0	Transportation Unit 3 Motor low speed (For tracing paper, type #3, width 1 & length 3)		-50.00 to +50.00	%
	0E1	Transportation Unit 3 Motor high speed (For tracing paper, type #3, width 2 & length 1)		-50.00 to +50.00	%
	0E2	Transportation Unit 3 Motor normal speed (For tracing paper, type #3, width 2 & length 1)		-50.00 to +50.00	%
	0E3	Transportation Unit 3 Motor low speed (For tracing paper, type #3, width 2 & length 1)		-50.00 to +50.00	%
	0E4	Transportation Unit 3 Motor high speed (For tracing paper, type #3, width 2 & length 2)		-50.00 to +50.00	%
	0E5	Transportation Unit 3 Motor normal speed (For tracing paper, type #3, width 2 & length 2)		-50.00 to +50.00	%
	0E6	Transportation Unit 3 Motor low speed (For tracing paper, type #3, width 2 & length 2)		-50.00 to +50.00	%
	0E7	Transportation Unit 3 Motor high speed (For tracing paper, type #3, width 2 & length 3)		-50.00 to +50.00	%
	0E8	Transportation Unit 3 Motor normal speed (For tracing paper, type #3, width 2 & length 3)		-50.00 to +50.00	%
	0E9	Transportation Unit 3 Motor low speed (For tracing paper, type #3, width 2 & length 3)		-50.00 to +50.00	%
	0EA	Transportation Unit 3 Motor high speed (For tracing paper, type #3, width 3 & length 1)		-50.00 to +50.00	%
	0Eb	Transportation Unit 3 Motor normal speed (For tracing paper, type #3, width 3 & length 1)		-50.00 to +50.00	%
	0EC	Transportation Unit 3 Motor low speed (For tracing paper, type #3, width 3 & length 1)		-50.00 to +50.00	%
	0Ed	Transportation Unit 3 Motor high speed (For tracing paper, type #3, width 3 & length 2)		-50.00 to +50.00	%
	0EE	Transportation Unit 3 Motor normal speed (For tracing paper, type #3, width 3 & length 2)		-50.00 to +50.00	%
	0EF	Transportation Unit 3 Motor low speed (For tracing paper, type #3, width 3 & length 2)		-50.00 to +50.00	%
	0F0	Transportation Unit 3 Motor high speed (For tracing paper, type #3, width 3 & length 3)		-50.00 to +50.00	%
	0F1	Transportation Unit 3 Motor normal speed (For tracing paper, type #3, width 3 & length 3)		-50.00 to +50.00	%
	0F2	Transportation Unit 3 Motor low speed (For tracing paper, type #3, width 3 & length 3)		-50.00 to +50.00	%
	0F3	Transportation Unit 3 Motor high speed (For tracing paper, type #3, width 4 & length 1)		-50.00 to +50.00	%
	0F4	Transportation Unit 3 Motor normal speed (For tracing paper, type #3, width 4 & length 1)		-50.00 to +50.00	%
	0F5	Transportation Unit 3 Motor low speed (For tracing paper, type #3, width 4 & length 1)		-50.00 to +50.00	%
	0F6	Transportation Unit 3 Motor high speed (For tracing paper, type #3, width 4 & length 2)		-50.00 to +50.00	%
	0F7	Transportation Unit 3 Motor normal speed (For tracing paper, type #3, width 4 & length 2)		-50.00 to +50.00	%
	0F8	Transportation Unit 3 Motor low speed (For tracing paper, type #3, width 4 & length 2)		-50.00 to +50.00	%
	0F9	Transportation Unit 3 Motor high speed (For tracing paper, type #3, width 4 & length 3)		-50.00 to +50.00	%
	0FA	Transportation Unit 3 Motor normal speed (For tracing paper, type #3, width 4 & length 3)		-50.00 to +50.00	%
	0Fb	Transportation Unit 3 Motor low speed (For tracing paper, type #3, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
7 (Transportation Unit 3 Motor speed)	0FC	Transportation Unit 3 Motor high speed (For tracing paper, type #4, width 1 & length 1)		-50.00 to +50.00	%
	0Fd	Transportation Unit 3 Motor normal speed (For tracing paper, type #4, width 1 & length 1)		-50.00 to +50.00	%
	0FE	Transportation Unit 3 Motor low speed (For tracing paper, type #4, width 1 & length 1)		-50.00 to +50.00	%
	0FF	Transportation Unit 3 Motor high speed (For tracing paper, type #4, width 1 & length 2)		-50.00 to +50.00	%
	100	Transportation Unit 3 Motor normal speed (For tracing paper, type #4, width 1 & length 2)		-50.00 to +50.00	%
	101	Transportation Unit 3 Motor low speed (For tracing paper, type #4, width 1 & length 2)		-50.00 to +50.00	%
	102	Transportation Unit 3 Motor high speed (For tracing paper, type #4, width 1 & length 3)		-50.00 to +50.00	%
	103	Transportation Unit 3 Motor normal speed (For tracing paper, type #4, width 1 & length 3)		-50.00 to +50.00	%
	104	Transportation Unit 3 Motor low speed (For tracing paper, type #4, width 1 & length 3)		-50.00 to +50.00	%
	105	Transportation Unit 3 Motor high speed (For tracing paper, type #4, width 2 & length 1)		-50.00 to +50.00	%
	106	Transportation Unit 3 Motor normal speed (For tracing paper, type #4, width 2 & length 1)		-50.00 to +50.00	%
	107	Transportation Unit 3 Motor low speed (For tracing paper, type #4, width 2 & length 1)		-50.00 to +50.00	%
	108	Transportation Unit 3 Motor high speed (For tracing paper, type #4, width 2 & length 2)		-50.00 to +50.00	%
	109	Transportation Unit 3 Motor normal speed (For tracing paper, type #4, width 2 & length 2)		-50.00 to +50.00	%
	10A	Transportation Unit 3 Motor low speed (For tracing paper, type #4, width 2 & length 2)		-50.00 to +50.00	%
	10b	Transportation Unit 3 Motor high speed (For tracing paper, type #4, width 2 & length 3)		-50.00 to +50.00	%
	10C	Transportation Unit 3 Motor normal speed (For tracing paper, type #4, width 2 & length 3)		-50.00 to +50.00	%
	10d	Transportation Unit 3 Motor low speed (For tracing paper, type #4, width 2 & length 3)		-50.00 to +50.00	%
	10E	Transportation Unit 3 Motor high speed (For tracing paper, type #4, width 3 & length 1)		-50.00 to +50.00	%
	10F	Transportation Unit 3 Motor normal speed (For tracing paper, type #4, width 3 & length 1)		-50.00 to +50.00	%
	110	Transportation Unit 3 Motor low speed (For tracing paper, type #4, width 3 & length 1)		-50.00 to +50.00	%
	111	Transportation Unit 3 Motor high speed (For tracing paper, type #4, width 3 & length 2)		-50.00 to +50.00	%
	112	Transportation Unit 3 Motor normal speed (For tracing paper, type #4, width 3 & length 2)		-50.00 to +50.00	%
	113	Transportation Unit 3 Motor low speed (For tracing paper, type #4, width 3 & length 2)		-50.00 to +50.00	%
	114	Transportation Unit 3 Motor high speed (For tracing paper, type #4, width 3 & length 3)		-50.00 to +50.00	%
	115	Transportation Unit 3 Motor normal speed (For tracing paper, type #4, width 3 & length 3)		-50.00 to +50.00	%
	116	Transportation Unit 3 Motor low speed (For tracing paper, type #4, width 3 & length 3)		-50.00 to +50.00	%
	117	Transportation Unit 3 Motor high speed (For tracing paper, type #4, width 4 & length 1)		-50.00 to +50.00	%
	118	Transportation Unit 3 Motor normal speed (For tracing paper, type #4, width 4 & length 1)		-50.00 to +50.00	%
	119	Transportation Unit 3 Motor low speed (For tracing paper, type #4, width 4 & length 1)		-50.00 to +50.00	%
	11A	Transportation Unit 3 Motor high speed (For tracing paper, type #4, width 4 & length 2)		-50.00 to +50.00	%
	11b	Transportation Unit 3 Motor normal speed (For tracing paper, type #4, width 4 & length 2)		-50.00 to +50.00	%
	11C	Transportation Unit 3 Motor low speed (For tracing paper, type #4, width 4 & length 2)		-50.00 to +50.00	%
	11d	Transportation Unit 3 Motor high speed (For tracing paper, type #4, width 4 & length 3)		-50.00 to +50.00	%
	11E	Transportation Unit 3 Motor normal speed (For tracing paper, type #4, width 4 & length 3)		-50.00 to +50.00	%
	11F	Transportation Unit 3 Motor low speed (For tracing paper, type #4, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
7 (Transportation Unit 3 Motor speed)	120	Transportation Unit 3 Motor high speed (For film, type #1, width 1 & length 1)		-50.00 to +50.00	%
	121	Transportation Unit 3 Motor normal speed (For film, type #1, width 1 & length 1)		-50.00 to +50.00	%
	122	Transportation Unit 3 Motor low speed (For film, type #1, width 1 & length 1)		-50.00 to +50.00	%
	123	Transportation Unit 3 Motor high speed (For film, type #1, width 1 & length 2)		-50.00 to +50.00	%
	124	Transportation Unit 3 Motor normal speed (For film, type #1, width 1 & length 2)		-50.00 to +50.00	%
	125	Transportation Unit 3 Motor low speed (For film, type #1, width 1 & length 2)		-50.00 to +50.00	%
	126	Transportation Unit 3 Motor high speed (For film, type #1, width 1 & length 3)		-50.00 to +50.00	%
	127	Transportation Unit 3 Motor normal speed (For film, type #1, width 1 & length 3)		-50.00 to +50.00	%
	128	Transportation Unit 3 Motor low speed (For film, type #1, width 1 & length 3)		-50.00 to +50.00	%
	129	Transportation Unit 3 Motor high speed (For film, type #1, width 2 & length 1)		-50.00 to +50.00	%
	12A	Transportation Unit 3 Motor normal speed (For film, type #1, width 2 & length 1)		-50.00 to +50.00	%
	12b	Transportation Unit 3 Motor low speed (For film, type #1, width 2 & length 1)		-50.00 to +50.00	%
	12C	Transportation Unit 3 Motor high speed (For film, type #1, width 2 & length 2)		-50.00 to +50.00	%
	12d	Transportation Unit 3 Motor normal speed (For film, type #1, width 2 & length 2)		-50.00 to +50.00	%
	12E	Transportation Unit 3 Motor low speed (For film, type #1, width 2 & length 2)		-50.00 to +50.00	%
	12F	Transportation Unit 3 Motor high speed (For film, type #1, width 2 & length 3)		-50.00 to +50.00	%
	130	Transportation Unit 3 Motor normal speed (For film, type #1, width 2 & length 3)		-50.00 to +50.00	%
	131	Transportation Unit 3 Motor low speed (For film, type #1, width 2 & length 3)		-50.00 to +50.00	%
	132	Transportation Unit 3 Motor high speed (For film, type #1, width 3 & length 1)		-50.00 to +50.00	%
	133	Transportation Unit 3 Motor normal speed (For film, type #1, width 3 & length 1)		-50.00 to +50.00	%
	134	Transportation Unit 3 Motor low speed (For film, type #1, width 3 & length 1)		-50.00 to +50.00	%
	135	Transportation Unit 3 Motor high speed (For film, type #1, width 3 & length 2)		-50.00 to +50.00	%
	136	Transportation Unit 3 Motor normal speed (For film, type #1, width 3 & length 2)		-50.00 to +50.00	%
	137	Transportation Unit 3 Motor low speed (For film, type #1, width 3 & length 2)		-50.00 to +50.00	%
	138	Transportation Unit 3 Motor high speed (For film, type #1, width 3 & length 3)		-50.00 to +50.00	%
	139	Transportation Unit 3 Motor normal speed (For film, type #1, width 3 & length 3)		-50.00 to +50.00	%
	13A	Transportation Unit 3 Motor low speed (For film, type #1, width 3 & length 3)		-50.00 to +50.00	%
	13b	Transportation Unit 3 Motor high speed (For film, type #1, width 4 & length 1)		-50.00 to +50.00	%
	13C	Transportation Unit 3 Motor normal speed (For film, type #1, width 4 & length 1)		-50.00 to +50.00	%
	13d	Transportation Unit 3 Motor low speed (For film, type #1, width 4 & length 1)		-50.00 to +50.00	%
	13E	Transportation Unit 3 Motor high speed (For film, type #1, width 4 & length 2)		-50.00 to +50.00	%
	13F	Transportation Unit 3 Motor normal speed (For film, type #1, width 4 & length 2)		-50.00 to +50.00	%
	140	Transportation Unit 3 Motor low speed (For film, type #1, width 4 & length 2)		-50.00 to +50.00	%
	141	Transportation Unit 3 Motor high speed (For film, type #1, width 4 & length 3)		-50.00 to +50.00	%
	142	Transportation Unit 3 Motor normal speed (For film, type #1, width 4 & length 3)		-50.00 to +50.00	%
	143	Transportation Unit 3 Motor low speed (For film, type #1, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
7 (Transportation Unit 3 Motor speed)	144	Transportation Unit 3 Motor high speed (For film, type #2, width 1 & length 1)		-50.00 to +50.00	%
	145	Transportation Unit 3 Motor normal speed (For film, type #2, width 1 & length 1)		-50.00 to +50.00	%
	146	Transportation Unit 3 Motor low speed (For film, type #2, width 1 & length 1)		-50.00 to +50.00	%
	147	Transportation Unit 3 Motor high speed (For film, type #2, width 1 & length 2)		-50.00 to +50.00	%
	148	Transportation Unit 3 Motor normal speed (For film, type #2, width 1 & length 2)		-50.00 to +50.00	%
	149	Transportation Unit 3 Motor low speed (For film, type #2, width 1 & length 2)		-50.00 to +50.00	%
	14A	Transportation Unit 3 Motor high speed (For film, type #2, width 1 & length 3)		-50.00 to +50.00	%
	14b	Transportation Unit 3 Motor normal speed (For film, type #2, width 1 & length 3)		-50.00 to +50.00	%
	14C	Transportation Unit 3 Motor low speed (For film, type #2, width 1 & length 3)		-50.00 to +50.00	%
	14d	Transportation Unit 3 Motor high speed (For film, type #2, width 2 & length 1)		-50.00 to +50.00	%
	14E	Transportation Unit 3 Motor normal speed (For film, type #2, width 2 & length 1)		-50.00 to +50.00	%
	14F	Transportation Unit 3 Motor low speed (For film, type #2, width 2 & length 1)		-50.00 to +50.00	%
	150	Transportation Unit 3 Motor high speed (For film, type #2, width 2 & length 2)		-50.00 to +50.00	%
	151	Transportation Unit 3 Motor normal speed (For film, type #2, width 2 & length 2)		-50.00 to +50.00	%
	152	Transportation Unit 3 Motor low speed (For film, type #2, width 2 & length 2)		-50.00 to +50.00	%
	153	Transportation Unit 3 Motor high speed (For film, type #2, width 2 & length 3)		-50.00 to +50.00	%
	154	Transportation Unit 3 Motor normal speed (For film, type #2, width 2 & length 3)		-50.00 to +50.00	%
	155	Transportation Unit 3 Motor low speed (For film, type #2, width 2 & length 3)		-50.00 to +50.00	%
	156	Transportation Unit 3 Motor high speed (For film, type #2, width 3 & length 1)		-50.00 to +50.00	%
	157	Transportation Unit 3 Motor normal speed (For film, type #2, width 3 & length 1)		-50.00 to +50.00	%
	158	Transportation Unit 3 Motor low speed (For film, type #2, width 3 & length 1)		-50.00 to +50.00	%
	159	Transportation Unit 3 Motor high speed (For film, type #2, width 3 & length 2)		-50.00 to +50.00	%
	15A	Transportation Unit 3 Motor normal speed (For film, type #2, width 3 & length 2)		-50.00 to +50.00	%
	15b	Transportation Unit 3 Motor low speed (For film, type #2, width 3 & length 2)		-50.00 to +50.00	%
	15C	Transportation Unit 3 Motor high speed (For film, type #2, width 3 & length 3)		-50.00 to +50.00	%
	15d	Transportation Unit 3 Motor normal speed (For film, type #2, width 3 & length 3)		-50.00 to +50.00	%
	15E	Transportation Unit 3 Motor low speed (For film, type #2, width 3 & length 3)		-50.00 to +50.00	%
	15F	Transportation Unit 3 Motor high speed (For film, type #2, width 4 & length 1)		-50.00 to +50.00	%
	160	Transportation Unit 3 Motor normal speed (For film, type #2, width 4 & length 1)		-50.00 to +50.00	%
	161	Transportation Unit 3 Motor low speed (For film, type #2, width 4 & length 1)		-50.00 to +50.00	%
	162	Transportation Unit 3 Motor high speed (For film, type #2, width 4 & length 2)		-50.00 to +50.00	%
	163	Transportation Unit 3 Motor normal speed (For film, type #2, width 4 & length 2)		-50.00 to +50.00	%
	164	Transportation Unit 3 Motor low speed (For film, type #2, width 4 & length 2)		-50.00 to +50.00	%
	165	Transportation Unit 3 Motor high speed (For film, type #2, width 4 & length 3)		-50.00 to +50.00	%
	166	Transportation Unit 3 Motor normal speed (For film, type #2, width 4 & length 3)		-50.00 to +50.00	%
	167	Transportation Unit 3 Motor low speed (For film, type #2, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
7 (Transportation Unit 3 Motor speed)	168	Transportation Unit 3 Motor high speed (For film, type #3, width 1 & length 1)		-50.00 to +50.00	%
	169	Transportation Unit 3 Motor normal speed (For film, type #3, width 1 & length 1)		-50.00 to +50.00	%
	16A	Transportation Unit 3 Motor low speed (For film, type #3, width 1 & length 1)		-50.00 to +50.00	%
	16b	Transportation Unit 3 Motor high speed (For film, type #3, width 1 & length 2)		-50.00 to +50.00	%
	16C	Transportation Unit 3 Motor normal speed (For film, type #3, width 1 & length 2)		-50.00 to +50.00	%
	16d	Transportation Unit 3 Motor low speed (For film, type #3, width 1 & length 2)		-50.00 to +50.00	%
	16E	Transportation Unit 3 Motor high speed (For film, type #3, width 1 & length 3)		-50.00 to +50.00	%
	16F	Transportation Unit 3 Motor normal speed (For film, type #3, width 1 & length 3)		-50.00 to +50.00	%
	170	Transportation Unit 3 Motor low speed (For film, type #3, width 1 & length 3)		-50.00 to +50.00	%
	171	Transportation Unit 3 Motor high speed (For film, type #3, width 2 & length 1)		-50.00 to +50.00	%
	172	Transportation Unit 3 Motor normal speed (For film, type #3, width 2 & length 1)		-50.00 to +50.00	%
	173	Transportation Unit 3 Motor low speed (For film, type #3, width 2 & length 1)		-50.00 to +50.00	%
	174	Transportation Unit 3 Motor high speed (For film, type #3, width 2 & length 2)		-50.00 to +50.00	%
	175	Transportation Unit 3 Motor normal speed (For film, type #3, width 2 & length 2)		-50.00 to +50.00	%
	176	Transportation Unit 3 Motor low speed (For film, type #3, width 2 & length 2)		-50.00 to +50.00	%
	177	Transportation Unit 3 Motor high speed (For film, type #3, width 2 & length 3)		-50.00 to +50.00	%
	178	Transportation Unit 3 Motor normal speed (For film, type #3, width 2 & length 3)		-50.00 to +50.00	%
	179	Transportation Unit 3 Motor low speed (For film, type #3, width 2 & length 3)		-50.00 to +50.00	%
	17A	Transportation Unit 3 Motor high speed (For film, type #3, width 3 & length 1)		-50.00 to +50.00	%
	17b	Transportation Unit 3 Motor normal speed (For film, type #3, width 3 & length 1)		-50.00 to +50.00	%
	17C	Transportation Unit 3 Motor low speed (For film, type #3, width 3 & length 1)		-50.00 to +50.00	%
	17d	Transportation Unit 3 Motor high speed (For film, type #3, width 3 & length 2)		-50.00 to +50.00	%
	17E	Transportation Unit 3 Motor normal speed (For film, type #3, width 3 & length 2)		-50.00 to +50.00	%
	17F	Transportation Unit 3 Motor low speed (For film, type #3, width 3 & length 2)		-50.00 to +50.00	%
	180	Transportation Unit 3 Motor high speed (For film, type #3, width 3 & length 3)		-50.00 to +50.00	%
	181	Transportation Unit 3 Motor normal speed (For film, type #3, width 3 & length 3)		-50.00 to +50.00	%
	182	Transportation Unit 3 Motor low speed (For film, type #3, width 3 & length 3)		-50.00 to +50.00	%
	183	Transportation Unit 3 Motor high speed (For film, type #3, width 4 & length 1)		-50.00 to +50.00	%
	184	Transportation Unit 3 Motor normal speed (For film, type #3, width 4 & length 1)		-50.00 to +50.00	%
	185	Transportation Unit 3 Motor low speed (For film, type #3, width 4 & length 1)		-50.00 to +50.00	%
	186	Transportation Unit 3 Motor high speed (For film, type #3, width 4 & length 2)		-50.00 to +50.00	%
	187	Transportation Unit 3 Motor normal speed (For film, type #3, width 4 & length 2)		-50.00 to +50.00	%
	188	Transportation Unit 3 Motor low speed (For film, type #3, width 4 & length 2)		-50.00 to +50.00	%
	189	Transportation Unit 3 Motor high speed (For film, type #3, width 4 & length 3)		-50.00 to +50.00	%
	18A	Transportation Unit 3 Motor normal speed (For film, type #3, width 4 & length 3)		-50.00 to +50.00	%
	18b	Transportation Unit 3 Motor low speed (For film, type #3, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
7 (Transportation Unit 3 Motor speed)	18C	Transportation Unit 3 Motor high speed (For film, type #4, width 1 & length 1)		-50.00 to +50.00	%
	18d	Transportation Unit 3 Motor normal speed (For film, type #4, width 1 & length 1)		-50.00 to +50.00	%
	18E	Transportation Unit 3 Motor low speed (For film, type #4, width 1 & length 1)		-50.00 to +50.00	%
	18F	Transportation Unit 3 Motor high speed (For film, type #4, width 1 & length 2)		-50.00 to +50.00	%
	190	Transportation Unit 3 Motor normal speed (For film, type #4, width 1 & length 2)		-50.00 to +50.00	%
	191	Transportation Unit 3 Motor low speed (For film, type #4, width 1 & length 2)		-50.00 to +50.00	%
	192	Transportation Unit 3 Motor high speed (For film, type #4, width 1 & length 3)		-50.00 to +50.00	%
	193	Transportation Unit 3 Motor normal speed (For film, type #4, width 1 & length 3)		-50.00 to +50.00	%
	194	Transportation Unit 3 Motor low speed (For film, type #4, width 1 & length 3)		-50.00 to +50.00	%
	195	Transportation Unit 3 Motor high speed (For film, type #4, width 2 & length 1)		-50.00 to +50.00	%
	196	Transportation Unit 3 Motor normal speed (For film, type #4, width 2 & length 1)		-50.00 to +50.00	%
	197	Transportation Unit 3 Motor low speed (For film, type #4, width 2 & length 1)		-50.00 to +50.00	%
	198	Transportation Unit 3 Motor high speed (For film, type #4, width 2 & length 2)		-50.00 to +50.00	%
	199	Transportation Unit 3 Motor normal speed (For film, type #4, width 2 & length 2)		-50.00 to +50.00	%
	19A	Transportation Unit 3 Motor low speed (For film, type #4, width 2 & length 2)		-50.00 to +50.00	%
	19b	Transportation Unit 3 Motor high speed (For film, type #4, width 2 & length 3)		-50.00 to +50.00	%
	19C	Transportation Unit 3 Motor normal speed (For film, type #4, width 2 & length 3)		-50.00 to +50.00	%
	19d	Transportation Unit 3 Motor low speed (For film, type #4, width 2 & length 3)		-50.00 to +50.00	%
	19E	Transportation Unit 3 Motor high speed (For film, type #4, width 3 & length 1)		-50.00 to +50.00	%
	19F	Transportation Unit 3 Motor normal speed (For film, type #4, width 3 & length 1)		-50.00 to +50.00	%
	1A0	Transportation Unit 3 Motor low speed (For film, type #4, width 3 & length 1)		-50.00 to +50.00	%
	1A1	Transportation Unit 3 Motor high speed (For film, type #4, width 3 & length 2)		-50.00 to +50.00	%
	1A2	Transportation Unit 3 Motor normal speed (For film, type #4, width 3 & length 2)		-50.00 to +50.00	%
	1A3	Transportation Unit 3 Motor low speed (For film, type #4, width 3 & length 2)		-50.00 to +50.00	%
	1A4	Transportation Unit 3 Motor high speed (For film, type #4, width 3 & length 3)		-50.00 to +50.00	%
	1A5	Transportation Unit 3 Motor normal speed (For film, type #4, width 3 & length 3)		-50.00 to +50.00	%
	1A6	Transportation Unit 3 Motor low speed (For film, type #4, width 3 & length 3)		-50.00 to +50.00	%
	1A7	Transportation Unit 3 Motor high speed (For film, type #4, width 4 & length 1)		-50.00 to +50.00	%
	1A8	Transportation Unit 3 Motor normal speed (For film, type #4, width 4 & length 1)		-50.00 to +50.00	%
	1A9	Transportation Unit 3 Motor low speed (For film, type #4, width 4 & length 1)		-50.00 to +50.00	%
	1AA	Transportation Unit 3 Motor high speed (For film, type #4, width 4 & length 2)		-50.00 to +50.00	%
	1Ab	Transportation Unit 3 Motor normal speed (For film, type #4, width 4 & length 2)		-50.00 to +50.00	%
	1AC	Transportation Unit 3 Motor low speed (For film, type #4, width 4 & length 2)		-50.00 to +50.00	%
	1Ad	Transportation Unit 3 Motor high speed (For film, type #4, width 4 & length 3)		-50.00 to +50.00	%
	1AE	Transportation Unit 3 Motor normal speed (For film, type #4, width 4 & length 3)		-50.00 to +50.00	%
	1AF	Transportation Unit 3 Motor low speed (For film, type #4, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
7 (Transportation Unit 3 Motor speed)	1b0	Transportation Unit 3 Motor high speed (For gloss, type #1, width 1 & length 1)		-50.00 to +50.00	%
	1b1	Transportation Unit 3 Motor normal speed (For gloss, type #1, width 1 & length 1)		-50.00 to +50.00	%
	1b2	Transportation Unit 3 Motor low speed (For gloss, type #1, width 1 & length 1)		-50.00 to +50.00	%
	1b3	Transportation Unit 3 Motor high speed (For gloss, type #1, width 1 & length 2)		-50.00 to +50.00	%
	1b4	Transportation Unit 3 Motor normal speed (For gloss, type #1, width 1 & length 2)		-50.00 to +50.00	%
	1b5	Transportation Unit 3 Motor low speed (For gloss, type #1, width 1 & length 2)		-50.00 to +50.00	%
	1b6	Transportation Unit 3 Motor high speed (For gloss, type #1, width 1 & length 3)		-50.00 to +50.00	%
	1b7	Transportation Unit 3 Motor normal speed (For gloss, type #1, width 1 & length 3)		-50.00 to +50.00	%
	1b8	Transportation Unit 3 Motor low speed (For gloss, type #1, width 1 & length 3)		-50.00 to +50.00	%
	1b9	Transportation Unit 3 Motor high speed (For gloss, type #1, width 2 & length 1)		-50.00 to +50.00	%
	1bA	Transportation Unit 3 Motor normal speed (For gloss, type #1, width 2 & length 1)		-50.00 to +50.00	%
	1bb	Transportation Unit 3 Motor low speed (For gloss, type #1, width 2 & length 1)		-50.00 to +50.00	%
	1bC	Transportation Unit 3 Motor high speed (For gloss, type #1, width 2 & length 2)		-50.00 to +50.00	%
	1bd	Transportation Unit 3 Motor normal speed (For gloss, type #1, width 2 & length 2)		-50.00 to +50.00	%
	1bE	Transportation Unit 3 Motor low speed (For gloss, type #1, width 2 & length 2)		-50.00 to +50.00	%
	1bF	Transportation Unit 3 Motor high speed (For gloss, type #1, width 2 & length 3)		-50.00 to +50.00	%
	1C0	Transportation Unit 3 Motor normal speed (For gloss, type #1, width 2 & length 3)		-50.00 to +50.00	%
	1C1	Transportation Unit 3 Motor low speed (For gloss, type #1, width 2 & length 3)		-50.00 to +50.00	%
	1C2	Transportation Unit 3 Motor high speed (For gloss, type #1, width 3 & length 1)		-10.000 to +10.000	%
	1C3	Transportation Unit 3 Motor normal speed (For gloss, type #1, width 3 & length 1)		-10.000 to +10.000	%
	1C4	Transportation Unit 3 Motor low speed (For gloss, type #1, width 3 & length 1)		-50.00 to +50.00	%
	1C5	Transportation Unit 3 Motor high speed (For gloss, type #1, width 3 & length 2)		-50.00 to +50.00	%
	1C6	Transportation Unit 3 Motor normal speed (For gloss, type #1, width 3 & length 2)		-50.00 to +50.00	%
	1C7	Transportation Unit 3 Motor low speed (For gloss, type #1, width 3 & length 2)		-50.00 to +50.00	%
	1C8	Transportation Unit 3 Motor high speed (For gloss, type #1, width 3 & length 3)		-50.00 to +50.00	%
	1C9	Transportation Unit 3 Motor normal speed (For gloss, type #1, width 3 & length 3)		-50.00 to +50.00	%
	1CA	Transportation Unit 3 Motor low speed (For gloss, type #1, width 3 & length 3)		-50.00 to +50.00	%
	1Cb	Transportation Unit 3 Motor high speed (For gloss, type #1, width 4 & length 1)		-50.00 to +50.00	%
	1CC	Transportation Unit 3 Motor normal speed (For gloss, type #1, width 4 & length 1)		-50.00 to +50.00	%
	1Cd	Transportation Unit 3 Motor low speed (For gloss, type #1, width 4 & length 1)		-50.00 to +50.00	%
	1CE	Transportation Unit 3 Motor high speed (For gloss, type #1, width 4 & length 2)		-50.00 to +50.00	%
	1CF	Transportation Unit 3 Motor normal speed (For gloss, type #1, width 4 & length 2)		-50.00 to +50.00	%
	1d0	Transportation Unit 3 Motor low speed (For gloss, type #1, width 4 & length 2)		-50.00 to +50.00	%
	1d1	Transportation Unit 3 Motor high speed (For gloss, type #1, width 4 & length 3)		-50.00 to +50.00	%
	1d2	Transportation Unit 3 Motor normal speed (For gloss, type #1, width 4 & length 3)		-50.00 to +50.00	%
	1d3	Transportation Unit 3 Motor low speed (For gloss, type #1, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
7 (Transportation Unit 3 Motor speed)	1d4	Transportation Unit 3 Motor high speed (For gloss, type #2, width 1 & length 1)		-50.00 to +50.00	%
	1d5	Transportation Unit 3 Motor normal speed (For gloss, type #2, width 1 & length 1)		-50.00 to +50.00	%
	1d6	Transportation Unit 3 Motor low speed (For gloss, type #2, width 1 & length 1)		-50.00 to +50.00	%
	1d7	Transportation Unit 3 Motor high speed (For gloss, type #2, width 1 & length 2)		-50.00 to +50.00	%
	1d8	Transportation Unit 3 Motor normal speed (For gloss, type #2, width 1 & length 2)		-50.00 to +50.00	%
	1d9	Transportation Unit 3 Motor low speed (For gloss, type #2, width 1 & length 2)		-50.00 to +50.00	%
	1dA	Transportation Unit 3 Motor high speed (For gloss, type #2, width 1 & length 3)		-50.00 to +50.00	%
	1db	Transportation Unit 3 Motor normal speed (For gloss, type #2, width 1 & length 3)		-50.00 to +50.00	%
	1dC	Transportation Unit 3 Motor low speed (For gloss, type #2, width 1 & length 3)		-50.00 to +50.00	%
	1dd	Transportation Unit 3 Motor high speed (For gloss, type #2, width 2 & length 1)		-50.00 to +50.00	%
	1dE	Transportation Unit 3 Motor normal speed (For gloss, type #2, width 2 & length 1)		-50.00 to +50.00	%
	1dF	Transportation Unit 3 Motor low speed (For gloss, type #2, width 2 & length 1)		-50.00 to +50.00	%
	1E0	Transportation Unit 3 Motor high speed (For gloss, type #2, width 2 & length 2)		-50.00 to +50.00	%
	1E1	Transportation Unit 3 Motor normal speed (For gloss, type #2, width 2 & length 2)		-50.00 to +50.00	%
	1E2	Transportation Unit 3 Motor low speed (For gloss, type #2, width 2 & length 2)		-50.00 to +50.00	%
	1E3	Transportation Unit 3 Motor high speed (For gloss, type #2, width 2 & length 3)		-50.00 to +50.00	%
	1E4	Transportation Unit 3 Motor normal speed (For gloss, type #2, width 2 & length 3)		-50.00 to +50.00	%
	1E5	Transportation Unit 3 Motor low speed (For gloss, type #2, width 2 & length 3)		-50.00 to +50.00	%
	1E6	Transportation Unit 3 Motor high speed (For gloss, type #2, width 3 & length 1)		-50.00 to +50.00	%
	1E7	Transportation Unit 3 Motor normal speed (For gloss, type #2, width 3 & length 1)		-50.00 to +50.00	%
	1E8	Transportation Unit 3 Motor low speed (For gloss, type #2, width 3 & length 1)		-50.00 to +50.00	%
	1E9	Transportation Unit 3 Motor high speed (For gloss, type #2, width 3 & length 2)		-50.00 to +50.00	%
	1EA	Transportation Unit 3 Motor normal speed (For gloss, type #2, width 3 & length 2)		-50.00 to +50.00	%
	1Eb	Transportation Unit 3 Motor low speed (For gloss, type #2, width 3 & length 2)		-50.00 to +50.00	%
	1EC	Transportation Unit 3 Motor high speed (For gloss, type #2, width 3 & length 3)		-50.00 to +50.00	%
	1Ed	Transportation Unit 3 Motor normal speed (For gloss, type #2, width 3 & length 3)		-50.00 to +50.00	%
	1EE	Transportation Unit 3 Motor low speed (For gloss, type #2, width 3 & length 3)		-50.00 to +50.00	%
	1EF	Transportation Unit 3 Motor high speed (For gloss, type #2, width 4 & length 1)		-50.00 to +50.00	%
	1F0	Transportation Unit 3 Motor normal speed (For gloss, type #2, width 4 & length 1)		-50.00 to +50.00	%
	1F1	Transportation Unit 3 Motor low speed (For gloss, type #2, width 4 & length 1)		-50.00 to +50.00	%
	1F2	Transportation Unit 3 Motor high speed (For gloss, type #2, width 4 & length 2)		-50.00 to +50.00	%
	1F3	Transportation Unit 3 Motor normal speed (For gloss, type #2, width 4 & length 2)		-50.00 to +50.00	%
	1F4	Transportation Unit 3 Motor low speed (For gloss, type #2, width 4 & length 2)		-50.00 to +50.00	%
	1F5	Transportation Unit 3 Motor high speed (For gloss, type #2, width 4 & length 3)		-50.00 to +50.00	%
	1F6	Transportation Unit 3 Motor normal speed (For gloss, type #2, width 4 & length 3)		-50.00 to +50.00	%
	1F7	Transportation Unit 3 Motor low speed (For gloss, type #2, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
7 (Transportation Unit 3 Motor speed)	1F8	Transportation Unit 3 Motor high speed (For gloss, type #3, width 1 & length 1)		-50.00 to +50.00	%
	1F9	Transportation Unit 3 Motor normal speed (For gloss, type #3, width 1 & length 1)		-50.00 to +50.00	%
	1FA	Transportation Unit 3 Motor low speed (For gloss, type #3, width 1 & length 1)		-50.00 to +50.00	%
	1Fb	Transportation Unit 3 Motor high speed (For gloss, type #3, width 1 & length 2)		-50.00 to +50.00	%
	1FC	Transportation Unit 3 Motor normal speed (For gloss, type #3, width 1 & length 2)		-50.00 to +50.00	%
	1Fd	Transportation Unit 3 Motor low speed (For gloss, type #3, width 1 & length 2)		-50.00 to +50.00	%
	1FE	Transportation Unit 3 Motor high speed (For gloss, type #3, width 1 & length 3)		-50.00 to +50.00	%
	1FF	Transportation Unit 3 Motor normal speed (For gloss, type #3, width 1 & length 3)		-50.00 to +50.00	%
	200	Transportation Unit 3 Motor low speed (For gloss, type #3, width 1 & length 3)		-50.00 to +50.00	%
	201	Transportation Unit 3 Motor high speed (For gloss, type #3, width 2 & length 1)		-50.00 to +50.00	%
	202	Transportation Unit 3 Motor normal speed (For gloss, type #3, width 2 & length 1)		-50.00 to +50.00	%
	203	Transportation Unit 3 Motor low speed (For gloss, type #3, width 2 & length 1)		-50.00 to +50.00	%
	204	Transportation Unit 3 Motor high speed (For gloss, type #3, width 2 & length 2)		-50.00 to +50.00	%
	205	Transportation Unit 3 Motor normal speed (For gloss, type #3, width 2 & length 2)		-50.00 to +50.00	%
	206	Transportation Unit 3 Motor low speed (For gloss, type #3, width 2 & length 2)		-50.00 to +50.00	%
	207	Transportation Unit 3 Motor high speed (For gloss, type #3, width 2 & length 3)		-50.00 to +50.00	%
	208	Transportation Unit 3 Motor normal speed (For gloss, type #3, width 2 & length 3)		-50.00 to +50.00	%
	209	Transportation Unit 3 Motor low speed (For gloss, type #3, width 2 & length 3)		-50.00 to +50.00	%
	20A	Transportation Unit 3 Motor high speed (For gloss, type #3, width 3 & length 1)		-50.00 to +50.00	%
	20b	Transportation Unit 3 Motor normal speed (For gloss, type #3, width 3 & length 1)		-50.00 to +50.00	%
	20C	Transportation Unit 3 Motor low speed (For gloss, type #3, width 3 & length 1)		-50.00 to +50.00	%
	20d	Transportation Unit 3 Motor high speed (For gloss, type #3, width 3 & length 2)		-50.00 to +50.00	%
	20E	Transportation Unit 3 Motor normal speed (For gloss, type #3, width 3 & length 2)		-50.00 to +50.00	%
	20F	Transportation Unit 3 Motor low speed (For gloss, type #3, width 3 & length 2)		-50.00 to +50.00	%
	210	Transportation Unit 3 Motor high speed (For gloss, type #3, width 3 & length 3)		-50.00 to +50.00	%
	211	Transportation Unit 3 Motor normal speed (For gloss, type #3, width 3 & length 3)		-50.00 to +50.00	%
	212	Transportation Unit 3 Motor low speed (For gloss, type #3, width 3 & length 3)		-50.00 to +50.00	%
	213	Transportation Unit 3 Motor high speed (For gloss, type #3, width 4 & length 1)		-50.00 to +50.00	%
	214	Transportation Unit 3 Motor normal speed (For gloss, type #3, width 4 & length 1)		-50.00 to +50.00	%
	215	Transportation Unit 3 Motor low speed (For gloss, type #3, width 4 & length 1)		-50.00 to +50.00	%
	216	Transportation Unit 3 Motor high speed (For gloss, type #3, width 4 & length 2)		-50.00 to +50.00	%
	217	Transportation Unit 3 Motor normal speed (For gloss, type #3, width 4 & length 2)		-50.00 to +50.00	%
	218	Transportation Unit 3 Motor low speed (For gloss, type #3, width 4 & length 2)		-50.00 to +50.00	%
	219	Transportation Unit 3 Motor high speed (For gloss, type #3, width 4 & length 3)		-50.00 to +50.00	%
	21A	Transportation Unit 3 Motor normal speed (For gloss, type #3, width 4 & length 3)		-50.00 to +50.00	%
	21b	Transportation Unit 3 Motor low speed (For gloss, type #3, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
7 (Transportation Unit 3 Motor speed)	21C	Transportation Unit 3 Motor high speed (For gloss, type #4, width 1 & length 1)		-50.00 to +50.00	%
	21d	Transportation Unit 3 Motor normal speed (For gloss, type #4, width 1 & length 1)		-50.00 to +50.00	%
	21E	Transportation Unit 3 Motor low speed (For gloss, type #4, width 1 & length 1)		-50.00 to +50.00	%
	21F	Transportation Unit 3 Motor high speed (For gloss, type #4, width 1 & length 2)		-50.00 to +50.00	%
	220	Transportation Unit 3 Motor normal speed (For gloss, type #4, width 1 & length 2)		-50.00 to +50.00	%
	221	Transportation Unit 3 Motor low speed (For gloss, type #4, width 1 & length 2)		-50.00 to +50.00	%
	222	Transportation Unit 3 Motor high speed (For gloss, type #4, width 1 & length 3)		-50.00 to +50.00	%
	223	Transportation Unit 3 Motor normal speed (For gloss, type #4, width 1 & length 3)		-50.00 to +50.00	%
	224	Transportation Unit 3 Motor low speed (For gloss, type #4, width 1 & length 3)		-50.00 to +50.00	%
	225	Transportation Unit 3 Motor high speed (For gloss, type #4, width 2 & length 1)		-50.00 to +50.00	%
	226	Transportation Unit 3 Motor normal speed (For gloss, type #4, width 2 & length 1)		-50.00 to +50.00	%
	227	Transportation Unit 3 Motor low speed (For gloss, type #4, width 2 & length 1)		-50.00 to +50.00	%
	228	Transportation Unit 3 Motor high speed (For gloss, type #4, width 2 & length 2)		-50.00 to +50.00	%
	229	Transportation Unit 3 Motor normal speed (For gloss, type #4, width 2 & length 2)		-50.00 to +50.00	%
	22A	Transportation Unit 3 Motor low speed (For gloss, type #4, width 2 & length 2)		-50.00 to +50.00	%
	22b	Transportation Unit 3 Motor high speed (For gloss, type #4, width 2 & length 3)		-50.00 to +50.00	%
	22C	Transportation Unit 3 Motor normal speed (For gloss, type #4, width 2 & length 3)		-50.00 to +50.00	%
	22d	Transportation Unit 3 Motor low speed (For gloss, type #4, width 2 & length 3)		-50.00 to +50.00	%
	22E	Transportation Unit 3 Motor high speed (For gloss, type #4, width 3 & length 1)		-50.00 to +50.00	%
	22F	Transportation Unit 3 Motor normal speed (For gloss, type #4, width 3 & length 1)		-50.00 to +50.00	%
	230	Transportation Unit 3 Motor low speed (For gloss, type #4, width 3 & length 1)		-50.00 to +50.00	%
	231	Transportation Unit 3 Motor high speed (For gloss, type #4, width 3 & length 2)		-50.00 to +50.00	%
	232	Transportation Unit 3 Motor normal speed (For gloss, type #4, width 3 & length 2)		-50.00 to +50.00	%
	233	Transportation Unit 3 Motor low speed (For gloss, type #4, width 3 & length 2)		-50.00 to +50.00	%
	234	Transportation Unit 3 Motor high speed (For gloss, type #4, width 3 & length 3)		-50.00 to +50.00	%
	235	Transportation Unit 3 Motor normal speed (For gloss, type #4, width 3 & length 3)		-50.00 to +50.00	%
	236	Transportation Unit 3 Motor low speed (For gloss, type #4, width 3 & length 3)		-50.00 to +50.00	%
	237	Transportation Unit 3 Motor high speed (For gloss, type #4, width 4 & length 1)		-50.00 to +50.00	%
	238	Transportation Unit 3 Motor normal speed (For gloss, type #4, width 4 & length 1)		-50.00 to +50.00	%
	239	Transportation Unit 3 Motor low speed (For gloss, type #4, width 4 & length 1)		-50.00 to +50.00	%
	23A	Transportation Unit 3 Motor high speed (For gloss, type #4, width 4 & length 2)		-50.00 to +50.00	%
	23b	Transportation Unit 3 Motor normal speed (For gloss, type #4, width 4 & length 2)		-50.00 to +50.00	%
	23C	Transportation Unit 3 Motor low speed (For gloss, type #4, width 4 & length 2)		-50.00 to +50.00	%
	23d	Transportation Unit 3 Motor high speed (For gloss, type #4, width 4 & length 3)		-50.00 to +50.00	%
	23E	Transportation Unit 3 Motor normal speed (For gloss, type #4, width 4 & length 3)		-50.00 to +50.00	%
	23F	Transportation Unit 3 Motor low speed (For gloss, type #4, width 4 & length 3)		-50.00 to +50.00	%

Group code	Individual code	Target	Default value	Setting range	Unit
8 (LED Head)	000	LED density adjustment (Head 1 of LED Unit 1 [K])		0 to 139	
	001	LED density adjustment (Head 2 of LED Unit 1 [K])		0 to 139	
	002	LED density adjustment (Head 3 of LED Unit 1 [K])		0 to 139	
	003	LED density adjustment (Head 1 of LED Unit 2 [C])		0 to 139	
	004	LED density adjustment (Head 2 of LED Unit 2 [C])		0 to 139	
	005	LED density adjustment (Head 3 of LED Unit 2 [C])		0 to 139	
	006	LED density adjustment (Head 1 of LED Unit 3 [M])		0 to 139	
	007	LED density adjustment (Head 2 of LED Unit 3 [M])		0 to 139	
	008	LED density adjustment (Head 3 of LED Unit 3 [M])		0 to 139	
	009	LED density adjustment (Head 1 of LED Unit 4 [Y])		0 to 139	
	00A	LED density adjustment (Head 2 of LED Unit 4 [Y])		0 to 139	
	00b	LED density adjustment (Head 3 of LED Unit 4 [Y])		0 to 139	
	00C	Correction of skew (Head 1 of LED Unit 1 [K])		-60 to 60	dot
	00D	Correction of skew (Head 2 of LED Unit 1 [K)		-60 to 60	dot
	00E	Correction of skew (Head 3 of LED Unit 1 [K)		-60 to 60	dot
	00F	Correction of skew (Head 1 of LED Unit 2 [C])		-60 to 60	dot
	010	Correction of skew (Head 2 of LED Unit 2 [C])		-60 to 60	dot
	011	Correction of skew (Head 3 of LED Unit 2 [C])		-60 to 60	dot
	012	Correction of skew (Head 1 of LED Unit 3 [M])		-60 to 60	dot
	013	Correction of skew (Head 2 of LED Unit 3 [M])		-60 to 60	dot
	014	Correction of skew (Head 3 of LED Unit 3 [M])		-60 to 60	dot
	015	Correction of skew (Head 1 of LED Unit 4 [Y])		-60 to 60	dot
	016	Correction of skew (Head 2 of LED Unit 4 [Y])		-60 to 60	dot
	017	Correction of skew (Head 3 of LED Unit 4 [Y])		-60 to 60	dot
	018	Vertical stitching main adjustment (Head 1 of LED Unit 1 [K])		-100 to 100	dot
	019	Vertical stitching fine adjustment (Head 1 of LED Unit 1 [K])		0 to 7	dot
	01A	Vertical stitching fine adjustment (Head 2 of LED Unit 1 [K])		0 to 7	dot
	01b	Vertical stitching main adjustment (Head 3 of LED Unit 1 [K])		-100 to 100	dot
	01C	Vertical stitching fine adjustment (Head 3 of LED Unit 1 [K])		0 to 7	dot
	01d	Vertical stitching main adjustment (Head 1 of LED Unit 2 [C])		-100 to 100	dot
	01E	Vertical stitching fine adjustment (Head 1 of LED Unit 2 [C])		0 to 7	dot
	01F	Vertical stitching fine adjustment (Head 2 of LED Unit 2 [C])		0 to 7	dot
	020	Vertical stitching main adjustment (Head 3 of LED Unit 2 [C])		-100 to 100	dot
	021	Vertical stitching fine adjustment (Head 3 of LED Unit 2 [C])		0 to 7	dot
	022	Vertical stitching main adjustment (Head 1 of LED Unit 3 [M])		-100 to 100	dot
	023	Vertical stitching fine adjustment (Head 1 of LED Unit 3 [M])		0 to 7	dot
	024	Vertical stitching fine adjustment (Head 2 of LED Unit 3 [M])		0 to 7	dot
	025	Vertical stitching main adjustment (Head 3 of LED Unit 3 [M])		-100 to 100	dot
	026	Vertical stitching fine adjustment (Head 3 of LED Unit 3 [M])		0 to 7	dot
	027	Vertical stitching main adjustment (Head 1 of LED Unit 4 [Y])		-100 to 100	dot
	028	Vertical stitching fine adjustment (Head 1 of LED Unit 4 [Y])		0 to 7	dot

Group code	Individual code	Target	Default value	Setting range	Unit
8 (LED Head)	029	Vertical stitching fine adjustment (Head 2 of LED Unit 4 [Y])		0 to 7	dot
	02A	Vertical stitching main adjustment (Head 3 of LED Unit 4 [Y])		-100 to 100	dot
	02b	Vertical stitching fine adjustment (Head 3 of LED Unit 4 [Y])		0 to 7	dot
	02C	Horizontal arrangement (Head 2 of LED Unit 1 [K])		-60 to 60	dot
	02d	Horizontal arrangement (Head 3 of LED Unit 1 [K])		-60 to 60	dot
	02E	Horizontal arrangement (Head 2 of LED Unit 2 [C])		-60 to 60	dot
	02F	Horizontal arrangement (Head 3 of LED Unit 2 [C])		-60 to 60	dot
	030	Horizontal arrangement (Head 2 of LED Unit 3 [M])		-60 to 60	dot
	031	Horizontal arrangement (Head 3 of LED Unit 3 [M])		-60 to 60	dot
	032	Horizontal arrangement (Head 2 of LED Unit 4 [Y])		-60 to 60	dot
	033	Horizontal arrangement (Head 3 of LED Unit 4 [Y])		-60 to 60	dot
	034	Image Enhancement ON/OFF		0 / 1	
	035	IE Level for IE Category A1 (Applied in test print)		1 to 15	
	036	IE Level for IE Category A2 (Applied in test print)		1 to 15	
	037	IE Level for IE Category A3 (Applied in test print)		1 to 15	
	038	IE Level for IE Category A4 (Applied in test print)		1 to 15	
	039	IE Level for IE Category A5 (Applied in test print)		1 to 15	
	03A	IE Level for IE Category B1 (Applied in test print)		1 to 15	
	03b	IE Level for IE Category B2 (Applied in test print)		1 to 15	
	03C	IE Level for IE Category B3 (Applied in test print)		1 to 15	
	03d	IE Level for IE Category B4 (Applied in test print)		1 to 15	
	03E	IE Level for IE Category B5 (Applied in test print)		1 to 15	
	03F	Assignment of LED density level to 1 bit data (LED Unit 1 [K])		0 to 15	
	040	Assignment of LED density level to 1 bit data (LED Unit 2 [C])		0 to 15	
	041	Assignment of LED density level to 1 bit data (LED Unit 3 [M])		0 to 15	
	042	Assignment of LED density level to 1 bit data (LED Unit 4 [Y])		0 to 15	
	043	IE Level for IE Category A1 (Applied when IE is set to Mode 1)		1 to 15	
	044	IE Level for IE Category A2 (Applied when IE is set to Mode 1)		1 to 15	
	045	IE Level for IE Category A3 (Applied when IE is set to Mode 1)		1 to 15	
	046	IE Level for IE Category A4 (Applied when IE is set to Mode 1)		1 to 15	
	047	IE Level for IE Category A5 (Applied when IE is set to Mode 1)		1 to 15	
	048	IE Level for IE Category B1 (Applied when IE is set to Mode 1)		1 to 15	
	049	IE Level for IE Category B2 (Applied when IE is set to Mode 1)		1 to 15	
	04A	IE Level for IE Category B3 (Applied when IE is set to Mode 1)		1 to 15	
	04b	IE Level for IE Category B4 (Applied when IE is set to Mode 1)		1 to 15	
	04C	IE Level for IE Category B5 (Applied when IE is set to Mode 1)		1 to 15	
	04D	IE Level for IE Category A1 (Applied when IE is set to Mode 2)		1 to 15	
	04E	IE Level for IE Category A2 (Applied when IE is set to Mode 2)		1 to 15	
	04F	IE Level for IE Category A3 (Applied when IE is set to Mode 2)		1 to 15	
	050	IE Level for IE Category A4 (Applied when IE is set to Mode 2)		1 to 15	
	051	IE Level for IE Category A5 (Applied when IE is set to Mode 2)		1 to 15	

Group code	Individual code	Target	Default value	Setting range	Unit
8 (LED Head)	052	IE Level for IE Category B1 (Applied when IE is set to Mode 2)		1 to 15	
	053	IE Level for IE Category B2 (Applied when IE is set to Mode 2)		1 to 15	
	054	IE Level for IE Category B3 (Applied when IE is set to Mode 2)		1 to 15	
	055	IE Level for IE Category B4 (Applied when IE is set to Mode 2)		1 to 15	
	056	IE Level for IE Category B5 (Applied when IE is set to Mode 2)		1 to 15	
	057	IE Level for IE Category A1 (Applied when IE is set to Mode 3)		1 to 15	
	058	IE Level for IE Category A2 (Applied when IE is set to Mode 3)		1 to 15	
	059	IE Level for IE Category A3 (Applied when IE is set to Mode 3)		1 to 15	
	05A	IE Level for IE Category A4 (Applied when IE is set to Mode 3)		1 to 15	
	05b	IE Level for IE Category A5 (Applied when IE is set to Mode 3)		1 to 15	
	05C	IE Level for IE Category B1 (Applied when IE is set to Mode 3)		1 to 15	
	05d	IE Level for IE Category B2 (Applied when IE is set to Mode 3)		1 to 15	
	05E	IE Level for IE Category B3 (Applied when IE is set to Mode 3)		1 to 15	
	05F	IE Level for IE Category B4 (Applied when IE is set to Mode 3)		1 to 15	
	060	IE Level for IE Category B5 (Applied when IE is set to Mode 3)		1 to 15	
	061	IE Level for IE Category A1 (Applied when IE is set to Mode 4)		1 to 15	
	062	IE Level for IE Category A2 (Applied when IE is set to Mode 4)		1 to 15	
	063	IE Level for IE Category A3 (Applied when IE is set to Mode 4)		1 to 15	
	064	IE Level for IE Category A4 (Applied when IE is set to Mode 4)		1 to 15	
	065	IE Level for IE Category A5 (Applied when IE is set to Mode 4)		1 to 15	
	066	IE Level for IE Category B1 (Applied when IE is set to Mode 4)		1 to 15	
	067	IE Level for IE Category B2 (Applied when IE is set to Mode 4)		1 to 15	
	068	IE Level for IE Category B3 (Applied when IE is set to Mode 4)		1 to 15	
	069	IE Level for IE Category B4 (Applied when IE is set to Mode 4)		1 to 15	
	06A	IE Level for IE Category B5 (Applied when IE is set to Mode 4)		1 to 15	
	06b	IE Level for IE Category A1 (Applied when IE is set to Mode 5)		1 to 15	
	06C	IE Level for IE Category A2 (Applied when IE is set to Mode 5)		1 to 15	
	06d	IE Level for IE Category A3 (Applied when IE is set to Mode 5)		1 to 15	
	06E	IE Level for IE Category A4 (Applied when IE is set to Mode 5)		1 to 15	
	06F	IE Level for IE Category A5 (Applied when IE is set to Mode 5)		1 to 15	
	070	IE Level for IE Category B1 (Applied when IE is set to Mode 5)		1 to 15	
	071	IE Level for IE Category B2 (Applied when IE is set to Mode 5)		1 to 15	
	072	IE Level for IE Category B3 (Applied when IE is set to Mode 5)		1 to 15	
	073	IE Level for IE Category B4 (Applied when IE is set to Mode 5)		1 to 15	
	074	IE Level for IE Category B5 (Applied when IE is set to Mode 5)		1 to 15	

Group code	Individual code	Target	Default value	Setting range	Unit
8 (LED Head)	075	IE Level for IE Category A1 (Applied when IE is set to Mode 6)		1 to 15	
	076	IE Level for IE Category A2 (Applied when IE is set to Mode 6)		1 to 15	
	077	IE Level for IE Category A3 (Applied when IE is set to Mode 6)		1 to 15	
	078	IE Level for IE Category A4 (Applied when IE is set to Mode 6)		1 to 15	
	079	IE Level for IE Category A5 (Applied when IE is set to Mode 6)		1 to 15	
	07A	IE Level for IE Category B1 (Applied when IE is set to Mode 6)		1 to 15	
	07b	IE Level for IE Category B2 (Applied when IE is set to Mode 6)		1 to 15	
	07C	IE Level for IE Category B3 (Applied when IE is set to Mode 6)		1 to 15	
	07d	IE Level for IE Category B4 (Applied when IE is set to Mode 6)		1 to 15	
	07E	IE Level for IE Category B5 (Applied when IE is set to Mode 6)		1 to 15	
	07F	IE Level for IE Category A1 (Applied when IE is set to Mode 7)		1 to 15	
	080	IE Level for IE Category A2 (Applied when IE is set to Mode 7)		1 to 15	
	081	IE Level for IE Category A3 (Applied when IE is set to Mode 7)		1 to 15	
	082	IE Level for IE Category A4 (Applied when IE is set to Mode 7)		1 to 15	
	083	IE Level for IE Category A5 (Applied when IE is set to Mode 7)		1 to 15	
	084	IE Level for IE Category B1 (Applied when IE is set to Mode 7)		1 to 15	
	085	IE Level for IE Category B2 (Applied when IE is set to Mode 7)		1 to 15	
	086	IE Level for IE Category B3 (Applied when IE is set to Mode 7)		1 to 15	
	087	IE Level for IE Category B4 (Applied when IE is set to Mode 7)		1 to 15	
	088	IE Level for IE Category B5 (Applied when IE is set to Mode 7)		1 to 15	
	089	IE Level for IE Category A1 (Applied when IE is set to Mode 8)		1 to 15	
	08A	IE Level for IE Category A2 (Applied when IE is set to Mode 8)		1 to 15	
	08b	IE Level for IE Category A3 (Applied when IE is set to Mode 8)		1 to 15	
	08C	IE Level for IE Category A4 (Applied when IE is set to Mode 8)		1 to 15	
	08d	IE Level for IE Category A5 (Applied when IE is set to Mode 8)		1 to 15	
	08E	IE Level for IE Category B1 (Applied when IE is set to Mode 8)		1 to 15	
	08F	IE Level for IE Category B2 (Applied when IE is set to Mode 8)		1 to 15	
	090	IE Level for IE Category B3 (Applied when IE is set to Mode 8)		1 to 15	
	091	IE Level for IE Category B4 (Applied when IE is set to Mode 8)		1 to 15	
	092	IE Level for IE Category B5 (Applied when IE is set to Mode 8)		1 to 15	
	093	**(Accessible, but never change this!)**			
	094	**(Accessible, but never change this!)**			
	095	**(Accessible, but never change this!)**			
	096	**(Accessible, but never change this!)**			

Group code	Individual code	Target	Default value	Setting range	Unit
9 (Image placement & margin)	000	Image placement		0.0 to 400.0	0.1 mm
	001	Cut length		0.0 to 200.0	0.1 mm
	002	Leading margin		0.0 to 80.0	0.1 mm
	003	Trailing margin		0.0 to 200.0	0.1 mm
	004	Left margin		0.0 to 60.0	0.1 mm
	005	Right margin		0.0 to 60.0	0.1 mm
	006	Line Pitch Calibration - Activation / inactivation of calibration for Cyan		OFF/ON1	
	007	Line Pitch Calibration - Activation / inactivation of calibration for Magenta		OFF/ON1	
	008	Line Pitch Calibration - Activation / inactivation of calibration for Yellow		OFF/ON1	
	009	Line Pitch Calibration - Tolerance against Target Calibration Length (up to 1.5m)		0 to 50mm	1mm
	00A	Line Pitch Calibration - Tolerance against Target Calibration Length (1.5 to 8m)		0 to 50mm	1mm
	00b	Line Pitch Calibration - Tolerance against Target Calibration Length (8 to 16m)		0 to 50mm	1mm
	00C	Line Pitch Calibration - Tolerance against Target Calibration Length (16 to 24m)		0 to 50mm	1mm
	00d	Line Pitch Calibration - Tolerance against Target Calibration Length (24 to 32m)		0 to 50mm	1mm
	00E	Line Pitch Calibration - Tolerance against Target Calibration Length (32 to 40m)		0 to 50mm	1mm
	00F	Line Pitch Calibration - Tolerance against Target Calibration Length (40 to 45m)		0 to 50mm	1mm

Group code	Individual code	Target	Default value	Setting range	Unit
A (Vertical color registration for black	000	Vertical color registration for black (Process 1) (For plain paper, type #1, width 1 & length 1)		-256 to +256	
	001	Vertical color registration for black (Process 1) (For plain paper, type #1, width 1 & length 2)		-256 to +256	
	002	Vertical color registration for black (Process 1) (For plain paper, type #1, width 1 & length 3)		-256 to +256	
	003	Vertical color registration for black (Process 1) (For plain paper, type #1, width 2 & length 1)		-256 to +256	
	004	Vertical color registration for black (Process 1) (For plain paper, type #1, width 2 & length 2)		-256 to +256	
	005	Vertical color registration for black (Process 1) (For plain paper, type #1, width 2 & length 3)		-256 to +256	
	006	Vertical color registration for black (Process 1) (For plain paper, type #1, width 3 & length 1)		-256 to +256	
	007	Vertical color registration for black (Process 1) (For plain paper, type #1, width 3 & length 2)		-256 to +256	
	008	Vertical color registration for black (Process 1) (For plain paper, type #1, width 3 & length 3)		-256 to +256	
	009	Vertical color registration for black (Process 1) (For plain paper, type #1, width 4 & length 1)		-256 to +256	
	00A	Vertical color registration for black (Process 1) (For plain paper, type #1, width 4 & length 2)		-256 to +256	
	00b	Vertical color registration for black (Process 1) (For plain paper, type #1, width 4 & length 3)		-256 to +256	
	00C	Vertical color registration for black (Process 1) (For plain paper, type #2, width 1 & length 1)		-256 to +256	
	00D	Vertical color registration for black (Process 1) (For plain paper, type #2, width 1 & length 2)		-256 to +256	
	00E	Vertical color registration for black (Process 1) (For plain paper, type #2, width 1 & length 3)		-256 to +256	
	00F	Vertical color registration for black (Process 1) (For plain paper, type #2, width 2 & length 1)		-256 to +256	
	010	Vertical color registration for black (Process 1) (For plain paper, type #2, width 2 & length 2)		-256 to +256	
	011	Vertical color registration for black (Process 1) (For plain paper, type #2, width 2 & length 3)		-256 to +256	
	012	Vertical color registration for black (Process 1) (For plain paper, type #2, width 3 & length 1)		-256 to +256	
	013	Vertical color registration for black (Process 1) (For plain paper, type #2, width 3 & length 2)		-256 to +256	
	014	Vertical color registration for black (Process 1) (For plain paper, type #2, width 3 & length 3)		-256 to +256	
	015	Vertical color registration for black (Process 1) (For plain paper, type #2, width 4 & length 1)		-256 to +256	
	016	Vertical color registration for black (Process 1) (For plain paper, type #2, width 4 & length 2)		-256 to +256	
	017	Vertical color registration for black (Process 1) (For plain paper, type #2, width 4 & length 3)		-256 to +256	
	018	Vertical color registration for black (Process 1) (For plain paper, type #3, width 1 & length 1)		-256 to +256	
	019	Vertical color registration for black (Process 1) (For plain paper, type #3, width 1 & length 2)		-256 to +256	
	01A	Vertical color registration for black (Process 1) (For plain paper, type #3, width 1 & length 3)		-256 to +256	
	01b	Vertical color registration for black (Process 1) (For plain paper, type #3, width 2 & length 1)		-256 to +256	
	01C	Vertical color registration for black (Process 1) (For plain paper, type #3, width 2 & length 2)		-256 to +256	
	01d	Vertical color registration for black (Process 1) (For plain paper, type #3, width 2 & length 3)		-256 to +256	
	01E	Vertical color registration for black (Process 1) (For plain paper, type #3, width 3 & length 1)		-256 to +256	
	01F	Vertical color registration for black (Process 1) (For plain paper, type #3, width 3 & length 2)		-256 to +256	
	020	Vertical color registration for black (Process 1) (For plain paper, type #3, width 3 & length 3)		-256 to +256	
	021	Vertical color registration for black (Process 1) (For plain paper, type #3, width 4 & length 1)		-256 to +256	
	022	Vertical color registration for black (Process 1) (For plain paper, type #3, width 4 & length 2)		-256 to +256	
	023	Vertical color registration for black (Process 1) (For plain paper, type #3, width 4 & length 3)		-256 to +256	

Group code	Individual code	Target	Default value	Setting range	Unit
A (Vertical color registration for black	024	Vertical color registration for black (Process 1) (For plain paper, type #4, width 1 & length 1)		-256 to +256	
	025	Vertical color registration for black (Process 1) (For plain paper, type #4, width 1 & length 2)		-256 to +256	
	026	Vertical color registration for black (Process 1) (For plain paper, type #4, width 1 & length 3)		-256 to +256	
	027	Vertical color registration for black (Process 1) (For plain paper, type #4, width 2 & length 1)		-256 to +256	
	028	Vertical color registration for black (Process 1) (For plain paper, type #4, width 2 & length 2)		-256 to +256	
	029	Vertical color registration for black (Process 1) (For plain paper, type #4, width 2 & length 3)		-256 to +256	
	02A	Vertical color registration for black (Process 1) (For plain paper, type #4, width 3 & length 1)		-256 to +256	
	02b	Vertical color registration for black (Process 1) (For plain paper, type #4, width 3 & length 2)		-256 to +256	
	02C	Vertical color registration for black (Process 1) (For plain paper, type #4, width 3 & length 3)		-256 to +256	
	02d	Vertical color registration for black (Process 1) (For plain paper, type #4, width 4 & length 1)		-256 to +256	
	02E	Vertical color registration for black (Process 1) (For plain paper, type #4, width 4 & length 2)		-256 to +256	
	02F	Vertical color registration for black (Process 1) (For plain paper, type #4, width 4 & length 3)		-256 to +256	
	030	Vertical color registration for black (Process 1) (For tracing paper, type #1, width 1 & length 1)		-256 to +256	
	031	Vertical color registration for black (Process 1) (For tracing paper, type #1, width 1 & length 2)		-256 to +256	
	032	Vertical color registration for black (Process 1) (For tracing paper, type #1, width 1 & length 3)		-256 to +256	
	033	Vertical color registration for black (Process 1) (For tracing paper, type #1, width 2 & length 1)		-256 to +256	
	034	Vertical color registration for black (Process 1) (For tracing paper, type #1, width 2 & length 2)		-256 to +256	
	035	Vertical color registration for black (Process 1) (For tracing paper, type #1, width 2 & length 3)		-256 to +256	
	036	Vertical color registration for black (Process 1) (For tracing paper, type #1, width 3 & length 1)		-256 to +256	
	037	Vertical color registration for black (Process 1) (For tracing paper, type #1, width 3 & length 2)		-256 to +256	
	038	Vertical color registration for black (Process 1) (For tracing paper, type #1, width 3 & length 3)		-256 to +256	
	039	Vertical color registration for black (Process 1) (For tracing paper, type #1, width 4 & length 1)		-256 to +256	
	03A	Vertical color registration for black (Process 1) (For tracing paper, type #1, width 4 & length 2)		-256 to +256	
	03b	Vertical color registration for black (Process 1) (For tracing paper, type #1, width 4 & length 3)		-256 to +256	
	03C	Vertical color registration for black (Process 1) (For tracing paper, type #2, width 1 & length 1)		-256 to +256	
	03d	Vertical color registration for black (Process 1) (For tracing paper, type #2, width 1 & length 2)		-256 to +256	
	03E	Vertical color registration for black (Process 1) (For tracing paper, type #2, width 1 & length 3)		-256 to +256	
	03F	Vertical color registration for black (Process 1) (For tracing paper, type #2, width 2 & length 1)		-256 to +256	
	040	Vertical color registration for black (Process 1) (For tracing paper, type #2, width 2 & length 2)		-256 to +256	
	041	Vertical color registration for black (Process 1) (For tracing paper, type #2, width 2 & length 3)		-256 to +256	
	042	Vertical color registration for black (Process 1) (For tracing paper, type #2, width 3 & length 1)		-256 to +256	
	043	Vertical color registration for black (Process 1) (For tracing paper, type #2, width 3 & length 2)		-256 to +256	
	044	Vertical color registration for black (Process 1) (For tracing paper, type #2, width 3 & length 3)		-256 to +256	
	045	Vertical color registration for black (Process 1) (For tracing paper, type #2, width 4 & length 1)		-256 to +256	
	046	Vertical color registration for black (Process 1) (For tracing paper, type #2, width 4 & length 2)		-256 to +256	
	047	Vertical color registration for black (Process 1) (For tracing paper, type #2, width 4 & length 3)		-256 to +256	

Group code	Individual code	Target	Default value	Setting range	Unit
A (Vertical color registration for black	048	Vertical color registration for black (Process 1) (For tracing paper, type #3, width 1 & length 1)		-256 to +256	
	049	Vertical color registration for black (Process 1) (For tracing paper, type #3, width 1 & length 2)		-256 to +256	
	04A	Vertical color registration for black (Process 1) (For tracing paper, type #3, width 1 & length 3)		-256 to +256	
	04b	Vertical color registration for black (Process 1) (For tracing paper, type #3, width 2 & length 1)		-256 to +256	
	04C	Vertical color registration for black (Process 1) (For tracing paper, type #3, width 2 & length 2)		-256 to +256	
	04d	Vertical color registration for black (Process 1) (For tracing paper, type #3, width 2 & length 3)		-256 to +256	
	04E	Vertical color registration for black (Process 1) (For tracing paper, type #3, width 3 & length 1)		-256 to +256	
	04F	Vertical color registration for black (Process 1) (For tracing paper, type #3, width 3 & length 2)		-256 to +256	
	050	Vertical color registration for black (Process 1) (For tracing paper, type #3, width 3 & length 3)		-256 to +256	
	051	Vertical color registration for black (Process 1) (For tracing paper, type #3, width 4 & length 1)		-256 to +256	
	052	Vertical color registration for black (Process 1) (For tracing paper, type #3, width 4 & length 2)		-256 to +256	
	053	Vertical color registration for black (Process 1) (For tracing paper, type #3, width 4 & length 3)		-256 to +256	
	054	Vertical color registration for black (Process 1) (For tracing paper, type #4, width 1 & length 1)		-256 to +256	
	055	Vertical color registration for black (Process 1) (For tracing paper, type #4, width 1 & length 2)		-256 to +256	
	056	Vertical color registration for black (Process 1) (For tracing paper, type #4, width 1 & length 3)		-256 to +256	
	057	Vertical color registration for black (Process 1) (For tracing paper, type #4, width 2 & length 1)		-256 to +256	
	058	Vertical color registration for black (Process 1) (For tracing paper, type #4, width 2 & length 2)		-256 to +256	
	059	Vertical color registration for black (Process 1) (For tracing paper, type #4, width 2 & length 3)		-256 to +256	
	05A	Vertical color registration for black (Process 1) (For tracing paper, type #4, width 3 & length 1)		-256 to +256	
	05b	Vertical color registration for black (Process 1) (For tracing paper, type #4, width 3 & length 2)		-256 to +256	
	05C	Vertical color registration for black (Process 1) (For tracing paper, type #4, width 3 & length 3)		-256 to +256	
	05d	Vertical color registration for black (Process 1) (For tracing paper, type #4, width 4 & length 1)		-256 to +256	
	05E	Vertical color registration for black (Process 1) (For tracing paper, type #4, width 4 & length 2)		-256 to +256	
	05F	Vertical color registration for black (Process 1) (For tracing paper, type #4, width 4 & length 3)		-256 to +256	
	060	Vertical color registration for black (Process 1) (For film, type #1, width 1 & length 1)		-256 to +256	
	061	Vertical color registration for black (Process 1) (For film, type #1, width 1 & length 2)		-256 to +256	
	062	Vertical color registration for black (Process 1) (For film, type #1, width 1 & length 3)		-256 to +256	
	063	Vertical color registration for black (Process 1) (For film, type #1, width 2 & length 1)		-256 to +256	
	064	Vertical color registration for black (Process 1) (For film, type #1, width 2 & length 2)		-256 to +256	
	065	Vertical color registration for black (Process 1) (For film, type #1, width 2 & length 3)		-256 to +256	
	066	Vertical color registration for black (Process 1) (For film, type #1, width 3 & length 1)		-256 to +256	
	067	Vertical color registration for black (Process 1) (For film, type #1, width 3 & length 2)		-256 to +256	
	068	Vertical color registration for black (Process 1) (For film, type #1, width 3 & length 3)		-256 to +256	
	069	Vertical color registration for black (Process 1) (For film, type #1, width 4 & length 1)		-256 to +256	
	06A	Vertical color registration for black (Process 1) (For film, type #1, width 4 & length 2)		-256 to +256	
	06b	Vertical color registration for black (Process 1) (For film, type #1, width 4 & length 3)		-256 to +256	

Group code	Individual code	Target	Default value	Setting range	Unit
A (Vertical color registration for black	06C	Vertical color registration for black (Process 1) (For film, type #2, width 1 & length 1)		-256 to +256	
	06d	Vertical color registration for black (Process 1) (For film, type #2, width 1 & length 2)		-256 to +256	
	06E	Vertical color registration for black (Process 1) (For film, type #2, width 1 & length 3)		-256 to +256	
	06F	Vertical color registration for black (Process 1) (For film, type #2, width 2 & length 1)		-256 to +256	
	070	Vertical color registration for black (Process 1) (For film, type #2, width 2 & length 2)		-256 to +256	
	071	Vertical color registration for black (Process 1) (For film, type #2, width 2 & length 3)		-256 to +256	
	072	Vertical color registration for black (Process 1) (For film, type #2, width 3 & length 1)		-256 to +256	
	073	Vertical color registration for black (Process 1) (For film, type #2, width 3 & length 2)		-256 to +256	
	074	Vertical color registration for black (Process 1) (For film, type #2, width 3 & length 3)		-256 to +256	
	075	Vertical color registration for black (Process 1) (For film, type #2, width 4 & length 1)		-256 to +256	
	076	Vertical color registration for black (Process 1) (For film, type #2, width 4 & length 2)		-256 to +256	
	077	Vertical color registration for black (Process 1) (For film, type #2, width 4 & length 3)		-256 to +256	
	078	Vertical color registration for black (Process 1) (For film, type #3, width 1 & length 1)		-256 to +256	
	079	Vertical color registration for black (Process 1) (For film, type #3, width 1 & length 2)		-256 to +256	
	07A	Vertical color registration for black (Process 1) (For film, type #3, width 1 & length 3)		-256 to +256	
	07b	Vertical color registration for black (Process 1) (For film, type #3, width 2 & length 1)		-256 to +256	
	07C	Vertical color registration for black (Process 1) (For film, type #3, width 2 & length 2)		-256 to +256	
	07d	Vertical color registration for black (Process 1) (For film, type #3, width 2 & length 3)		-256 to +256	
	07E	Vertical color registration for black (Process 1) (For film, type #3, width 3 & length 1)		-256 to +256	
	07F	Vertical color registration for black (Process 1) (For film, type #3, width 3 & length 2)		-256 to +256	
	080	Vertical color registration for black (Process 1) (For film, type #3, width 3 & length 3)		-256 to +256	
	081	Vertical color registration for black (Process 1) (For film, type #3, width 4 & length 1)		-256 to +256	
	082	Vertical color registration for black (Process 1) (For film, type #3, width 4 & length 2)		-256 to +256	
	083	Vertical color registration for black (Process 1) (For film, type #3, width 4 & length 3)		-256 to +256	
	084	Vertical color registration for black (Process 1) (For film, type #4, width 1 & length 1)		-256 to +256	
	085	Vertical color registration for black (Process 1) (For film, type #4, width 1 & length 2)		-256 to +256	
	086	Vertical color registration for black (Process 1) (For film, type #4, width 1 & length 3)		-256 to +256	
	087	Vertical color registration for black (Process 1) (For film, type #4, width 2 & length 1)		-256 to +256	
	088	Vertical color registration for black (Process 1) (For film, type #4, width 2 & length 2)		-256 to +256	
	089	Vertical color registration for black (Process 1) (For film, type #4, width 2 & length 3)		-256 to +256	
	08A	Vertical color registration for black (Process 1) (For film, type #4, width 3 & length 1)		-256 to +256	
	08b	Vertical color registration for black (Process 1) (For film, type #4, width 3 & length 2)		-256 to +256	
	08C	Vertical color registration for black (Process 1) (For film, type #4, width 3 & length 3)		-256 to +256	
	08d	Vertical color registration for black (Process 1) (For film, type #4, width 4 & length 1)		-256 to +256	
	08E	Vertical color registration for black (Process 1) (For film, type #4, width 4 & length 2)		-256 to +256	
	08F	Vertical color registration for black (Process 1) (For film, type #4, width 4 & length 3)		-256 to +256	

Group code	Individual code	Target	Default value	Setting range	Unit
A (Vertical color registration for black	090	Vertical color registration for black (Process 1) (For gloss, type #1, width 1 & length 1)		-256 to +256	
	091	Vertical color registration for black (Process 1) (For gloss, type #1, width 1 & length 2)		-256 to +256	
	092	Vertical color registration for black (Process 1) (For gloss, type #1, width 1 & length 3)		-256 to +256	
	093	Vertical color registration for black (Process 1) (For gloss, type #1, width 2 & length 1)		-256 to +256	
	094	Vertical color registration for black (Process 1) (For gloss, type #1, width 2 & length 2)		-256 to +256	
	095	Vertical color registration for black (Process 1) (For gloss, type #1, width 2 & length 3)		-256 to +256	
	096	Vertical color registration for black (Process 1) (For gloss, type #1, width 3 & length 1)		-256 to +256	
	097	Vertical color registration for black (Process 1) (For gloss, type #1, width 3 & length 2)		-256 to +256	
	098	Vertical color registration for black (Process 1) (For gloss, type #1, width 3 & length 3)		-256 to +256	
	099	Vertical color registration for black (Process 1) (For gloss, type #1, width 4 & length 1)		-256 to +256	
	09A	Vertical color registration for black (Process 1) (For gloss, type #1, width 4 & length 2)		-256 to +256	
	09b	Vertical color registration for black (Process 1) (For gloss, type #1, width 4 & length 3)		-256 to +256	
	09C	Vertical color registration for black (Process 1) (For gloss, type #2, width 1 & length 1)		-256 to +256	
	09d	Vertical color registration for black (Process 1) (For gloss, type #2, width 1 & length 2)		-256 to +256	
	09E	Vertical color registration for black (Process 1) (For gloss, type #2, width 1 & length 3)		-256 to +256	
	09F	Vertical color registration for black (Process 1) (For gloss, type #2, width 2 & length 1)		-256 to +256	
	0A0	Vertical color registration for black (Process 1) (For gloss, type #2, width 2 & length 2)		-256 to +256	
	0A1	Vertical color registration for black (Process 1) (For gloss, type #2, width 2 & length 3)		-256 to +256	
	0A2	Vertical color registration for black (Process 1) (For gloss, type #2, width 3 & length 1)		-256 to +256	
	0A3	Vertical color registration for black (Process 1) (For gloss, type #2, width 3 & length 2)		-256 to +256	
	0A4	Vertical color registration for black (Process 1) (For gloss, type #2, width 3 & length 3)		-256 to +256	
	0A5	Vertical color registration for black (Process 1) (For gloss, type #2, width 4 & length 1)		-256 to +256	
	0A6	Vertical color registration for black (Process 1) (For gloss, type #2, width 4 & length 2)		-256 to +256	
	0A7	Vertical color registration for black (Process 1) (For gloss, type #2, width 4 & length 3)		-256 to +256	
	0A8	Vertical color registration for black (Process 1) (For gloss, type #3, width 1 & length 1)		-256 to +256	
	0A9	Vertical color registration for black (Process 1) (For gloss, type #3, width 1 & length 2)		-256 to +256	
	0AA	Vertical color registration for black (Process 1) (For gloss, type #3, width 1 & length 3)		-256 to +256	
	0Ab	Vertical color registration for black (Process 1) (For gloss, type #3, width 2 & length 1)		-256 to +256	
	0AC	Vertical color registration for black (Process 1) (For gloss, type #3, width 2 & length 2)		-256 to +256	
	0Ad	Vertical color registration for black (Process 1) (For gloss, type #3, width 2 & length 3)		-256 to +256	
	0AE	Vertical color registration for black (Process 1) (For gloss, type #3, width 3 & length 1)		-256 to +256	
	0AF	Vertical color registration for black (Process 1) (For gloss, type #3, width 3 & length 2)		-256 to +256	
	0b0	Vertical color registration for black (Process 1) (For gloss, type #3, width 3 & length 3)		-256 to +256	
	0b1	Vertical color registration for black (Process 1) (For gloss, type #3, width 4 & length 1)		-256 to +256	
	0b2	Vertical color registration for black (Process 1) (For gloss, type #3, width 4 & length 2)		-256 to +256	
	0b3	Vertical color registration for black (Process 1) (For gloss, type #3, width 4 & length 3)		-256 to +256	

Group code	Individual code	Target	Default value	Setting range	Unit
A (Vertical color registration for black	0b4	Vertical color registration for black (Process 1) (For gloss, type #4, width 1 & length 1)		-256 to +256	
	0b5	Vertical color registration for black (Process 1) (For gloss, type #4, width 1 & length 2)		-256 to +256	
	0b6	Vertical color registration for black (Process 1) (For gloss, type #4, width 1 & length 3)		-256 to +256	
	0b7	Vertical color registration for black (Process 1) (For gloss, type #4, width 2 & length 1)		-256 to +256	
	0b8	Vertical color registration for black (Process 1) (For gloss, type #4, width 2 & length 2)		-256 to +256	
	0b9	Vertical color registration for black (Process 1) (For gloss, type #4, width 2 & length 3)		-256 to +256	
	0bA	Vertical color registration for black (Process 1) (For gloss, type #4, width 3 & length 1)		-256 to +256	
	0bb	Vertical color registration for black (Process 1) (For gloss, type #4, width 3 & length 2)		-256 to +256	
	0bC	Vertical color registration for black (Process 1) (For gloss, type #4, width 3 & length 3)		-256 to +256	
	0bd	Vertical color registration for black (Process 1) (For gloss, type #4, width 4 & length 1)		-256 to +256	
	0bE	Vertical color registration for black (Process 1) (For gloss, type #4, width 4 & length 2)		-256 to +256	
	0bF	Vertical color registration for black (Process 1) (For gloss, type #4, width 4 & length 3)		-256 to +256	

Group code	Individual code	Target	Default value	Setting range	Unit
B (Vertical color registration for cyan	000	Vertical color registration for cyan (Process 2) (For plain paper, type #1, width 1 & length 1)		-256 to +256	
	001	Vertical color registration for cyan (Process 2) (For plain paper, type #1, width 1 & length 2)		-256 to +256	
	002	Vertical color registration for cyan (Process 2) (For plain paper, type #1, width 1 & length 3)		-256 to +256	
	003	Vertical color registration for cyan (Process 2) (For plain paper, type #1, width 2 & length 1)		-256 to +256	
	004	Vertical color registration for cyan (Process 2) (For plain paper, type #1, width 2 & length 2)		-256 to +256	
	005	Vertical color registration for cyan (Process 2) (For plain paper, type #1, width 2 & length 3)		-256 to +256	
	006	Vertical color registration for cyan (Process 2) (For plain paper, type #1, width 3 & length 1)		-256 to +256	
	007	Vertical color registration for cyan (Process 2) (For plain paper, type #1, width 3 & length 2)		-256 to +256	
	008	Vertical color registration for cyan (Process 2) (For plain paper, type #1, width 3 & length 3)		-256 to +256	
	009	Vertical color registration for cyan (Process 2) (For plain paper, type #1, width 4 & length 1)		-256 to +256	
	00A	Vertical color registration for cyan (Process 2) (For plain paper, type #1, width 4 & length 2)		-256 to +256	
	00b	Vertical color registration for cyan (Process 2) (For plain paper, type #1, width 4 & length 3)		-256 to +256	
	00C	Vertical color registration for cyan (Process 2) (For plain paper, type #2, width 1 & length 1)		-256 to +256	
	00D	Vertical color registration for cyan (Process 2) (For plain paper, type #2, width 1 & length 2)		-256 to +256	
	00E	Vertical color registration for cyan (Process 2) (For plain paper, type #2, width 1 & length 3)		-256 to +256	
	00F	Vertical color registration for cyan (Process 2) (For plain paper, type #2, width 2 & length 1)		-256 to +256	
	010	Vertical color registration for cyan (Process 2) (For plain paper, type #2, width 2 & length 2)		-256 to +256	
	011	Vertical color registration for cyan (Process 2) (For plain paper, type #2, width 2 & length 3)		-256 to +256	
	012	Vertical color registration for cyan (Process 2) (For plain paper, type #2, width 3 & length 1)		-256 to +256	
	013	Vertical color registration for cyan (Process 2) (For plain paper, type #2, width 3 & length 2)		-256 to +256	
	014	Vertical color registration for cyan (Process 2) (For plain paper, type #2, width 3 & length 3)		-256 to +256	
	015	Vertical color registration for cyan (Process 2) (For plain paper, type #2, width 4 & length 1)		-256 to +256	
	016	Vertical color registration for cyan (Process 2) (For plain paper, type #2, width 4 & length 2)		-256 to +256	
	017	Vertical color registration for cyan (Process 2) (For plain paper, type #2, width 4 & length 3)		-256 to +256	
	018	Vertical color registration for cyan (Process 2) (For plain paper, type #3, width 1 & length 1)		-256 to +256	
	019	Vertical color registration for cyan (Process 2) (For plain paper, type #3, width 1 & length 2)		-256 to +256	
	01A	Vertical color registration for cyan (Process 2) (For plain paper, type #3, width 1 & length 3)		-256 to +256	
	01b	Vertical color registration for cyan (Process 2) (For plain paper, type #3, width 2 & length 1)		-256 to +256	
	01C	Vertical color registration for cyan (Process 2) (For plain paper, type #3, width 2 & length 2)		-256 to +256	
	01d	Vertical color registration for cyan (Process 2) (For plain paper, type #3, width 2 & length 3)		-256 to +256	
	01E	Vertical color registration for cyan (Process 2) (For plain paper, type #3, width 3 & length 1)		-256 to +256	
	01F	Vertical color registration for cyan (Process 2) (For plain paper, type #3, width 3 & length 2)		-256 to +256	
	020	Vertical color registration for cyan (Process 2) (For plain paper, type #3, width 3 & length 3)		-256 to +256	
	021	Vertical color registration for cyan (Process 2) (For plain paper, type #3, width 4 & length 1)		-256 to +256	
	022	Vertical color registration for cyan (Process 2) (For plain paper, type #3, width 4 & length 2)		-256 to +256	
	023	Vertical color registration for cyan (Process 2) (For plain paper, type #3, width 4 & length 3)		-256 to +256	

Group code	Individual code	Target	Default value	Setting range	Unit
B (Vertical color registration for cyan	024	Vertical color registration for cyan (Process 2) (For plain paper, type #4, width 1 & length 1)		-256 to +256	
	025	Vertical color registration for cyan (Process 2) (For plain paper, type #4, width 1 & length 2)		-256 to +256	
	026	Vertical color registration for cyan (Process 2) (For plain paper, type #4, width 1 & length 3)		-256 to +256	
	027	Vertical color registration for cyan (Process 2) (For plain paper, type #4, width 2 & length 1)		-256 to +256	
	028	Vertical color registration for cyan (Process 2) (For plain paper, type #4, width 2 & length 2)		-256 to +256	
	029	Vertical color registration for cyan (Process 2) (For plain paper, type #4, width 2 & length 3)		-256 to +256	
	02A	Vertical color registration for cyan (Process 2) (For plain paper, type #4, width 3 & length 1)		-256 to +256	
	02b	Vertical color registration for cyan (Process 2) (For plain paper, type #4, width 3 & length 2)		-256 to +256	
	02C	Vertical color registration for cyan (Process 2) (For plain paper, type #4, width 3 & length 3)		-256 to +256	
	02d	Vertical color registration for cyan (Process 2) (For plain paper, type #4, width 4 & length 1)		-256 to +256	
	02E	Vertical color registration for cyan (Process 2) (For plain paper, type #4, width 4 & length 2)		-256 to +256	
	02F	Vertical color registration for cyan (Process 2) (For plain paper, type #4, width 4 & length 3)		-256 to +256	
	030	Vertical color registration for cyan (Process 2) (For tracing paper, type #1, width 1 & length 1)		-256 to +256	
	031	Vertical color registration for cyan (Process 2) (For tracing paper, type #1, width 1 & length 2)		-256 to +256	
	032	Vertical color registration for cyan (Process 2) (For tracing paper, type #1, width 1 & length 3)		-256 to +256	
	033	Vertical color registration for cyan (Process 2) (For tracing paper, type #1, width 2 & length 1)		-256 to +256	
	034	Vertical color registration for cyan (Process 2) (For tracing paper, type #1, width 2 & length 2)		-256 to +256	
	035	Vertical color registration for cyan (Process 2) (For tracing paper, type #1, width 2 & length 3)		-256 to +256	
	036	Vertical color registration for cyan (Process 2) (For tracing paper, type #1, width 3 & length 1)		-256 to +256	
	037	Vertical color registration for cyan (Process 2) (For tracing paper, type #1, width 3 & length 2)		-256 to +256	
	038	Vertical color registration for cyan (Process 2) (For tracing paper, type #1, width 3 & length 3)		-256 to +256	
	039	Vertical color registration for cyan (Process 2) (For tracing paper, type #1, width 4 & length 1)		-256 to +256	
	03A	Vertical color registration for cyan (Process 2) (For tracing paper, type #1, width 4 & length 2)		-256 to +256	
	03b	Vertical color registration for cyan (Process 2) (For tracing paper, type #1, width 4 & length 3)		-256 to +256	
	03C	Vertical color registration for cyan (Process 2) (For tracing paper, type #2, width 1 & length 1)		-256 to +256	
	03d	Vertical color registration for cyan (Process 2) (For tracing paper, type #2, width 1 & length 2)		-256 to +256	
	03E	Vertical color registration for cyan (Process 2) (For tracing paper, type #2, width 1 & length 3)		-256 to +256	
	03F	Vertical color registration for cyan (Process 2) (For tracing paper, type #2, width 2 & length 1)		-256 to +256	
	040	Vertical color registration for cyan (Process 2) (For tracing paper, type #2, width 2 & length 2)		-256 to +256	
	041	Vertical color registration for cyan (Process 2) (For tracing paper, type #2, width 2 & length 3)		-256 to +256	
	042	Vertical color registration for cyan (Process 2) (For tracing paper, type #2, width 3 & length 1)		-256 to +256	
	043	Vertical color registration for cyan (Process 2) (For tracing paper, type #2, width 3 & length 2)		-256 to +256	
	044	Vertical color registration for cyan (Process 2) (For tracing paper, type #2, width 3 & length 3)		-256 to +256	
	045	Vertical color registration for cyan (Process 2) (For tracing paper, type #2, width 4 & length 1)		-256 to +256	
	046	Vertical color registration for cyan (Process 2) (For tracing paper, type #2, width 4 & length 2)		-256 to +256	
	047	Vertical color registration for cyan (Process 2) (For tracing paper, type #2, width 4 & length 3)		-256 to +256	

Group code	Individual code	Target	Default value	Setting range	Unit
B (Vertical color registration for cyan	048	Vertical color registration for cyan (Process 2) (For tracing paper, type #3, width 1 & length 1)		-256 to +256	
	049	Vertical color registration for cyan (Process 2) (For tracing paper, type #3, width 1 & length 2)		-256 to +256	
	04A	Vertical color registration for cyan (Process 2) (For tracing paper, type #3, width 1 & length 3)		-256 to +256	
	04b	Vertical color registration for cyan (Process 2) (For tracing paper, type #3, width 2 & length 1)		-256 to +256	
	04C	Vertical color registration for cyan (Process 2) (For tracing paper, type #3, width 2 & length 2)		-256 to +256	
	04d	Vertical color registration for cyan (Process 2) (For tracing paper, type #3, width 2 & length 3)		-256 to +256	
	04E	Vertical color registration for cyan (Process 2) (For tracing paper, type #3, width 3 & length 1)		-256 to +256	
	04F	Vertical color registration for cyan (Process 2) (For tracing paper, type #3, width 3 & length 2)		-256 to +256	
	050	Vertical color registration for cyan (Process 2) (For tracing paper, type #3, width 3 & length 3)		-256 to +256	
	051	Vertical color registration for cyan (Process 2) (For tracing paper, type #3, width 4 & length 1)		-256 to +256	
	052	Vertical color registration for cyan (Process 2) (For tracing paper, type #3, width 4 & length 2)		-256 to +256	
	053	Vertical color registration for cyan (Process 2) (For tracing paper, type #3, width 4 & length 3)		-256 to +256	
	054	Vertical color registration for cyan (Process 2) (For tracing paper, type #4, width 1 & length 1)		-256 to +256	
	055	Vertical color registration for cyan (Process 2) (For tracing paper, type #4, width 1 & length 2)		-256 to +256	
	056	Vertical color registration for cyan (Process 2) (For tracing paper, type #4, width 1 & length 3)		-256 to +256	
	057	Vertical color registration for cyan (Process 2) (For tracing paper, type #4, width 2 & length 1)		-256 to +256	
	058	Vertical color registration for cyan (Process 2) (For tracing paper, type #4, width 2 & length 2)		-256 to +256	
	059	Vertical color registration for cyan (Process 2) (For tracing paper, type #4, width 2 & length 3)		-256 to +256	
	05A	Vertical color registration for cyan (Process 2) (For tracing paper, type #4, width 3 & length 1)		-256 to +256	
	05b	Vertical color registration for cyan (Process 2) (For tracing paper, type #4, width 3 & length 2)		-256 to +256	
	05C	Vertical color registration for cyan (Process 2) (For tracing paper, type #4, width 3 & length 3)		-256 to +256	
	05d	Vertical color registration for cyan (Process 2) (For tracing paper, type #4, width 4 & length 1)		-256 to +256	
	05E	Vertical color registration for cyan (Process 2) (For tracing paper, type #4, width 4 & length 2)		-256 to +256	
	05F	Vertical color registration for cyan (Process 2) (For tracing paper, type #4, width 4 & length 3)		-256 to +256	
	060	Vertical color registration for cyan (Process 2) (For film, type #1, width 1 & length 1)		-256 to +256	
	061	Vertical color registration for cyan (Process 2) (For film, type #1, width 1 & length 2)		-256 to +256	
	062	Vertical color registration for cyan (Process 2) (For film, type #1, width 1 & length 3)		-256 to +256	
	063	Vertical color registration for cyan (Process 2) (For film, type #1, width 2 & length 1)		-256 to +256	
	064	Vertical color registration for cyan (Process 2) (For film, type #1, width 2 & length 2)		-256 to +256	
	065	Vertical color registration for cyan (Process 2) (For film, type #1, width 2 & length 3)		-256 to +256	
	066	Vertical color registration for cyan (Process 2) (For film, type #1, width 3 & length 1)		-256 to +256	
	067	Vertical color registration for cyan (Process 2) (For film, type #1, width 3 & length 2)		-256 to +256	
	068	Vertical color registration for cyan (Process 2) (For film, type #1, width 3 & length 3)		-256 to +256	
	069	Vertical color registration for cyan (Process 2) (For film, type #1, width 4 & length 1)		-256 to +256	
	06A	Vertical color registration for cyan (Process 2) (For film, type #1, width 4 & length 2)		-256 to +256	
	06b	Vertical color registration for cyan (Process 2) (For film, type #1, width 4 & length 3)		-256 to +256	

Group code	Individual code	Target	Default value	Setting range	Unit
B (Vertical color registration for cyan	06C	Vertical color registration for cyan (Process 2) (For film, type #2, width 1 & length 1)		-256 to +256	
	06d	Vertical color registration for cyan (Process 2) (For film, type #2, width 1 & length 2)		-256 to +256	
	06E	Vertical color registration for cyan (Process 2) (For film, type #2, width 1 & length 3)		-256 to +256	
	06F	Vertical color registration for cyan (Process 2) (For film, type #2, width 2 & length 1)		-256 to +256	
	070	Vertical color registration for cyan (Process 2) (For film, type #2, width 2 & length 2)		-256 to +256	
	071	Vertical color registration for cyan (Process 2) (For film, type #2, width 2 & length 3)		-256 to +256	
	072	Vertical color registration for cyan (Process 2) (For film, type #2, width 3 & length 1)		-256 to +256	
	073	Vertical color registration for cyan (Process 2) (For film, type #2, width 3 & length 2)		-256 to +256	
	074	Vertical color registration for cyan (Process 2) (For film, type #2, width 3 & length 3)		-256 to +256	
	075	Vertical color registration for cyan (Process 2) (For film, type #2, width 4 & length 1)		-256 to +256	
	076	Vertical color registration for cyan (Process 2) (For film, type #2, width 4 & length 2)		-256 to +256	
	077	Vertical color registration for cyan (Process 2) (For film, type #2, width 4 & length 3)		-256 to +256	
	078	Vertical color registration for cyan (Process 2) (For film, type #3, width 1 & length 1)		-256 to +256	
	079	Vertical color registration for cyan (Process 2) (For film, type #3, width 1 & length 2)		-256 to +256	
	07A	Vertical color registration for cyan (Process 2) (For film, type #3, width 1 & length 3)		-256 to +256	
	07b	Vertical color registration for cyan (Process 2) (For film, type #3, width 2 & length 1)		-256 to +256	
	07C	Vertical color registration for cyan (Process 2) (For film, type #3, width 2 & length 2)		-256 to +256	
	07d	Vertical color registration for cyan (Process 2) (For film, type #3, width 2 & length 3)		-256 to +256	
	07E	Vertical color registration for cyan (Process 2) (For film, type #3, width 3 & length 1)		-256 to +256	
	07F	Vertical color registration for cyan (Process 2) (For film, type #3, width 3 & length 2)		-256 to +256	
	080	Vertical color registration for cyan (Process 2) (For film, type #3, width 3 & length 3)		-256 to +256	
	081	Vertical color registration for cyan (Process 2) (For film, type #3, width 4 & length 1)		-256 to +256	
	082	Vertical color registration for cyan (Process 2) (For film, type #3, width 4 & length 2)		-256 to +256	
	083	Vertical color registration for cyan (Process 2) (For film, type #3, width 4 & length 3)		-256 to +256	
	084	Vertical color registration for cyan (Process 2) (For film, type #4, width 1 & length 1)		-256 to +256	
	085	Vertical color registration for cyan (Process 2) (For film, type #4, width 1 & length 2)		-256 to +256	
	086	Vertical color registration for cyan (Process 2) (For film, type #4, width 1 & length 3)		-256 to +256	
	087	Vertical color registration for cyan (Process 2) (For film, type #4, width 2 & length 1)		-256 to +256	
	088	Vertical color registration for cyan (Process 2) (For film, type #4, width 2 & length 2)		-256 to +256	
	089	Vertical color registration for cyan (Process 2) (For film, type #4, width 2 & length 3)		-256 to +256	
	08A	Vertical color registration for cyan (Process 2) (For film, type #4, width 3 & length 1)		-256 to +256	
	08b	Vertical color registration for cyan (Process 2) (For film, type #4, width 3 & length 2)		-256 to +256	
	08C	Vertical color registration for cyan (Process 2) (For film, type #4, width 3 & length 3)		-256 to +256	
	08d	Vertical color registration for cyan (Process 2) (For film, type #4, width 4 & length 1)		-256 to +256	
	08E	Vertical color registration for cyan (Process 2) (For film, type #4, width 4 & length 2)		-256 to +256	
	08F	Vertical color registration for cyan (Process 2) (For film, type #4, width 4 & length 3)		-256 to +256	

Group code	Individual code	Target	Default value	Setting range	Unit
B (Vertical color registration for cyan	090	Vertical color registration for cyan (Process 2) (For gloss, type #1, width 1 & length 1)		-256 to +256	
	091	Vertical color registration for cyan (Process 2) (For gloss, type #1, width 1 & length 2)		-256 to +256	
	092	Vertical color registration for cyan (Process 2) (For gloss, type #1, width 1 & length 3)		-256 to +256	
	093	Vertical color registration for cyan (Process 2) (For gloss, type #1, width 2 & length 1)		-256 to +256	
	094	Vertical color registration for cyan (Process 2) (For gloss, type #1, width 2 & length 2)		-256 to +256	
	095	Vertical color registration for cyan (Process 2) (For gloss, type #1, width 2 & length 3)		-256 to +256	
	096	Vertical color registration for cyan (Process 2) (For gloss, type #1, width 3 & length 1)		-256 to +256	
	097	Vertical color registration for cyan (Process 2) (For gloss, type #1, width 3 & length 2)		-256 to +256	
	098	Vertical color registration for cyan (Process 2) (For gloss, type #1, width 3 & length 3)		-256 to +256	
	099	Vertical color registration for cyan (Process 2) (For gloss, type #1, width 4 & length 1)		-256 to +256	
	09A	Vertical color registration for cyan (Process 2) (For gloss, type #1, width 4 & length 2)		-256 to +256	
	09b	Vertical color registration for cyan (Process 2) (For gloss, type #1, width 4 & length 3)		-256 to +256	
	09C	Vertical color registration for cyan (Process 2) (For gloss, type #2, width 1 & length 1)		-256 to +256	
	09d	Vertical color registration for cyan (Process 2) (For gloss, type #2, width 1 & length 2)		-256 to +256	
	09E	Vertical color registration for cyan (Process 2) (For gloss, type #2, width 1 & length 3)		-256 to +256	
	09F	Vertical color registration for cyan (Process 2) (For gloss, type #2, width 2 & length 1)		-256 to +256	
	0A0	Vertical color registration for cyan (Process 2) (For gloss, type #2, width 2 & length 2)		-256 to +256	
	0A1	Vertical color registration for cyan (Process 2) (For gloss, type #2, width 2 & length 3)		-256 to +256	
	0A2	Vertical color registration for cyan (Process 2) (For gloss, type #2, width 3 & length 1)		-256 to +256	
	0A3	Vertical color registration for cyan (Process 2) (For gloss, type #2, width 3 & length 2)		-256 to +256	
	0A4	Vertical color registration for cyan (Process 2) (For gloss, type #2, width 3 & length 3)		-256 to +256	
	0A5	Vertical color registration for cyan (Process 2) (For gloss, type #2, width 4 & length 1)		-256 to +256	
	0A6	Vertical color registration for cyan (Process 2) (For gloss, type #2, width 4 & length 2)		-256 to +256	
	0A7	Vertical color registration for cyan (Process 2) (For gloss, type #2, width 4 & length 3)		-256 to +256	
	0A8	Vertical color registration for cyan (Process 2) (For gloss, type #3, width 1 & length 1)		-256 to +256	
	0A9	Vertical color registration for cyan (Process 2) (For gloss, type #3, width 1 & length 2)		-256 to +256	
	0AA	Vertical color registration for cyan (Process 2) (For gloss, type #3, width 1 & length 3)		-256 to +256	
	0Ab	Vertical color registration for cyan (Process 2) (For gloss, type #3, width 2 & length 1)		-256 to +256	
	0AC	Vertical color registration for cyan (Process 2) (For gloss, type #3, width 2 & length 2)		-256 to +256	
	0Ad	Vertical color registration for cyan (Process 2) (For gloss, type #3, width 2 & length 3)		-256 to +256	
	0AE	Vertical color registration for cyan (Process 2) (For gloss, type #3, width 3 & length 1)		-256 to +256	
	0AF	Vertical color registration for cyan (Process 2) (For gloss, type #3, width 3 & length 2)		-256 to +256	
	0b0	Vertical color registration for cyan (Process 2) (For gloss, type #3, width 3 & length 3)		-256 to +256	
	0b1	Vertical color registration for cyan (Process 2) (For gloss, type #3, width 4 & length 1)		-256 to +256	
	0b2	Vertical color registration for cyan (Process 2) (For gloss, type #3, width 4 & length 2)		-256 to +256	
	0b3	Vertical color registration for cyan (Process 2) (For gloss, type #3, width 4 & length 3)		-256 to +256	

Group code	Individual code	Target	Default value	Setting range	Unit
B (Vertical color registration for cyan	0b4	Vertical color registration for cyan (Process 2) (For gloss, type #4, width 1 & length 1)		-256 to +256	
	0b5	Vertical color registration for cyan (Process 2) (For gloss, type #4, width 1 & length 2)		-256 to +256	
	0b6	Vertical color registration for cyan (Process 2) (For gloss, type #4, width 1 & length 3)		-256 to +256	
	0b7	Vertical color registration for cyan (Process 2) (For gloss, type #4, width 2 & length 1)		-256 to +256	
	0b8	Vertical color registration for cyan (Process 2) (For gloss, type #4, width 2 & length 2)		-256 to +256	
	0b9	Vertical color registration for cyan (Process 2) (For gloss, type #4, width 2 & length 3)		-256 to +256	
	0bA	Vertical color registration for cyan (Process 2) (For gloss, type #4, width 3 & length 1)		-256 to +256	
	0bb	Vertical color registration for cyan (Process 2) (For gloss, type #4, width 3 & length 2)		-256 to +256	
	0bC	Vertical color registration for cyan (Process 2) (For gloss, type #4, width 3 & length 3)		-256 to +256	
	0bd	Vertical color registration for cyan (Process 2) (For gloss, type #4, width 4 & length 1)		-256 to +256	
	0bE	Vertical color registration for cyan (Process 2) (For gloss, type #4, width 4 & length 2)		-256 to +256	
	0bF	Vertical color registration for cyan (Process 2) (For gloss, type #4, width 4 & length 3)		-256 to +256	

Group code	Individual code	Target	Default value	Setting range	Unit
C (Vertical color registration for magenta	000	Vertical color registration for magenta (Process 3) (For plain paper, type #1, width 1 & length 1)		-256 to +256	
	001	Vertical color registration for magenta (Process 3) (For plain paper, type #1, width 1 & length 2)		-256 to +256	
	002	Vertical color registration for magenta (Process 3) (For plain paper, type #1, width 1 & length 3)		-256 to +256	
	003	Vertical color registration for magenta (Process 3) (For plain paper, type #1, width 2 & length 1)		-256 to +256	
	004	Vertical color registration for magenta (Process 3) (For plain paper, type #1, width 2 & length 2)		-256 to +256	
	005	Vertical color registration for magenta (Process 3) (For plain paper, type #1, width 2 & length 3)		-256 to +256	
	006	Vertical color registration for magenta (Process 3) (For plain paper, type #1, width 3 & length 1)		-256 to +256	
	007	Vertical color registration for magenta (Process 3) (For plain paper, type #1, width 3 & length 2)		-256 to +256	
	008	Vertical color registration for magenta (Process 3) (For plain paper, type #1, width 3 & length 3)		-256 to +256	
	009	Vertical color registration for magenta (Process 3) (For plain paper, type #1, width 4 & length 1)		-256 to +256	
	00A	Vertical color registration for magenta (Process 3) (For plain paper, type #1, width 4 & length 2)		-256 to +256	
	00b	Vertical color registration for magenta (Process 3) (For plain paper, type #1, width 4 & length 3)		-256 to +256	
	00C	Vertical color registration for magenta (Process 3) (For plain paper, type #2, width 1 & length 1)		-256 to +256	
	00D	Vertical color registration for magenta (Process 3) (For plain paper, type #2, width 1 & length 2)		-256 to +256	
	00E	Vertical color registration for magenta (Process 3) (For plain paper, type #2, width 1 & length 3)		-256 to +256	
	00F	Vertical color registration for magenta (Process 3) (For plain paper, type #2, width 2 & length 1)		-256 to +256	
	010	Vertical color registration for magenta (Process 3) (For plain paper, type #2, width 2 & length 2)		-256 to +256	
	011	Vertical color registration for magenta (Process 3) (For plain paper, type #2, width 2 & length 3)		-256 to +256	
	012	Vertical color registration for magenta (Process 3) (For plain paper, type #2, width 3 & length 1)		-256 to +256	
	013	Vertical color registration for magenta (Process 3) (For plain paper, type #2, width 3 & length 2)		-256 to +256	
	014	Vertical color registration for magenta (Process 3) (For plain paper, type #2, width 3 & length 3)		-256 to +256	
	015	Vertical color registration for magenta (Process 3) (For plain paper, type #2, width 4 & length 1)		-256 to +256	
	016	Vertical color registration for magenta (Process 3) (For plain paper, type #2, width 4 & length 2)		-256 to +256	
	017	Vertical color registration for magenta (Process 3) (For plain paper, type #2, width 4 & length 3)		-256 to +256	
	018	Vertical color registration for magenta (Process 3) (For plain paper, type #3, width 1 & length 1)		-256 to +256	
	019	Vertical color registration for magenta (Process 3) (For plain paper, type #3, width 1 & length 2)		-256 to +256	
	01A	Vertical color registration for magenta (Process 3) (For plain paper, type #3, width 1 & length 3)		-256 to +256	
	01b	Vertical color registration for magenta (Process 3) (For plain paper, type #3, width 2 & length 1)		-256 to +256	
	01C	Vertical color registration for magenta (Process 3) (For plain paper, type #3, width 2 & length 2)		-256 to +256	
	01d	Vertical color registration for magenta (Process 3) (For plain paper, type #3, width 2 & length 3)		-256 to +256	
	01E	Vertical color registration for magenta (Process 3) (For plain paper, type #3, width 3 & length 1)		-256 to +256	
	01F	Vertical color registration for magenta (Process 3) (For plain paper, type #3, width 3 & length 2)		-256 to +256	
	020	Vertical color registration for magenta (Process 3) (For plain paper, type #3, width 3 & length 3)		-256 to +256	
	021	Vertical color registration for magenta (Process 3) (For plain paper, type #3, width 4 & length 1)		-256 to +256	
	022	Vertical color registration for magenta (Process 3) (For plain paper, type #3, width 4 & length 2)		-256 to +256	
	023	Vertical color registration for magenta (Process 3) (For plain paper, type #3, width 4 & length 3)		-256 to +256	

Group code	Individual code	Target	Default value	Setting range	Unit
C (Vertical color registration for magenta	024	Vertical color registration for magenta (Process 3) (For plain paper, type #4, width 1 & length 1)		-256 to +256	
	025	Vertical color registration for magenta (Process 3) (For plain paper, type #4, width 1 & length 2)		-256 to +256	
	026	Vertical color registration for magenta (Process 3) (For plain paper, type #4, width 1 & length 3)		-256 to +256	
	027	Vertical color registration for magenta (Process 3) (For plain paper, type #4, width 2 & length 1)		-256 to +256	
	028	Vertical color registration for magenta (Process 3) (For plain paper, type #4, width 2 & length 2)		-256 to +256	
	029	Vertical color registration for magenta (Process 3) (For plain paper, type #4, width 2 & length 3)		-256 to +256	
	02A	Vertical color registration for magenta (Process 3) (For plain paper, type #4, width 3 & length 1)		-256 to +256	
	02b	Vertical color registration for magenta (Process 3) (For plain paper, type #4, width 3 & length 2)		-256 to +256	
	02C	Vertical color registration for magenta (Process 3) (For plain paper, type #4, width 3 & length 3)		-256 to +256	
	02d	Vertical color registration for magenta (Process 3) (For plain paper, type #4, width 4 & length 1)		-256 to +256	
	02E	Vertical color registration for magenta (Process 3) (For plain paper, type #4, width 4 & length 2)		-256 to +256	
	02F	Vertical color registration for magenta (Process 3) (For plain paper, type #4, width 4 & length 3)		-256 to +256	
	030	Vertical color registration for magenta (Process 3) (For tracing paper, type #1, width 1 & length 1)		-256 to +256	
	031	Vertical color registration for magenta (Process 3) (For tracing paper, type #1, width 1 & length 2)		-256 to +256	
	032	Vertical color registration for magenta (Process 3) (For tracing paper, type #1, width 1 & length 3)		-256 to +256	
	033	Vertical color registration for magenta (Process 3) (For tracing paper, type #1, width 2 & length 1)		-256 to +256	
	034	Vertical color registration for magenta (Process 3) (For tracing paper, type #1, width 2 & length 2)		-256 to +256	
	035	Vertical color registration for magenta (Process 3) (For tracing paper, type #1, width 2 & length 3)		-256 to +256	
	036	Vertical color registration for magenta (Process 3) (For tracing paper, type #1, width 3 & length 1)		-256 to +256	
	037	Vertical color registration for magenta (Process 3) (For tracing paper, type #1, width 3 & length 2)		-256 to +256	
	038	Vertical color registration for magenta (Process 3) (For tracing paper, type #1, width 3 & length 3)		-256 to +256	
	039	Vertical color registration for magenta (Process 3) (For tracing paper, type #1, width 4 & length 1)		-256 to +256	
	03A	Vertical color registration for magenta (Process 3) (For tracing paper, type #1, width 4 & length 2)		-256 to +256	
	03b	Vertical color registration for magenta (Process 3) (For tracing paper, type #1, width 4 & length 3)		-256 to +256	
	03C	Vertical color registration for magenta (Process 3) (For tracing paper, type #2, width 1 & length 1)		-256 to +256	
	03d	Vertical color registration for magenta (Process 3) (For tracing paper, type #2, width 1 & length 2)		-256 to +256	
	03E	Vertical color registration for magenta (Process 3) (For tracing paper, type #2, width 1 & length 3)		-256 to +256	
	03F	Vertical color registration for magenta (Process 3) (For tracing paper, type #2, width 2 & length 1)		-256 to +256	
	040	Vertical color registration for magenta (Process 3) (For tracing paper, type #2, width 2 & length 2)		-256 to +256	
	041	Vertical color registration for magenta (Process 3) (For tracing paper, type #2, width 2 & length 3)		-256 to +256	
	042	Vertical color registration for magenta (Process 3) (For tracing paper, type #2, width 3 & length 1)		-256 to +256	
	043	Vertical color registration for magenta (Process 3) (For tracing paper, type #2, width 3 & length 2)		-256 to +256	
	044	Vertical color registration for magenta (Process 3) (For tracing paper, type #2, width 3 & length 3)		-256 to +256	
	045	Vertical color registration for magenta (Process 3) (For tracing paper, type #2, width 4 & length 1)		-256 to +256	
	046	Vertical color registration for magenta (Process 3) (For tracing paper, type #2, width 4 & length 2)		-256 to +256	
	047	Vertical color registration for magenta (Process 3) (For tracing paper, type #2, width 4 & length 3)		-256 to +256	

Group code	Individual code	Target	Default value	Setting range	Unit
C (Vertical color registration for magenta	048	Vertical color registration for magenta (Process 3) (For tracing paper, type #3, width 1 & length 1)		-256 to +256	
	049	Vertical color registration for magenta (Process 3) (For tracing paper, type #3, width 1 & length 2)		-256 to +256	
	04A	Vertical color registration for magenta (Process 3) (For tracing paper, type #3, width 1 & length 3)		-256 to +256	
	04b	Vertical color registration for magenta (Process 3) (For tracing paper, type #3, width 2 & length 1)		-256 to +256	
	04C	Vertical color registration for magenta (Process 3) (For tracing paper, type #3, width 2 & length 2)		-256 to +256	
	04d	Vertical color registration for magenta (Process 3) (For tracing paper, type #3, width 2 & length 3)		-256 to +256	
	04E	Vertical color registration for magenta (Process 3) (For tracing paper, type #3, width 3 & length 1)		-256 to +256	
	04F	Vertical color registration for magenta (Process 3) (For tracing paper, type #3, width 3 & length 2)		-256 to +256	
	050	Vertical color registration for magenta (Process 3) (For tracing paper, type #3, width 3 & length 3)		-256 to +256	
	051	Vertical color registration for magenta (Process 3) (For tracing paper, type #3, width 4 & length 1)		-256 to +256	
	052	Vertical color registration for magenta (Process 3) (For tracing paper, type #3, width 4 & length 2)		-256 to +256	
	053	Vertical color registration for magenta (Process 3) (For tracing paper, type #3, width 4 & length 3)		-256 to +256	
	054	Vertical color registration for magenta (Process 3) (For tracing paper, type #4, width 1 & length 1)		-256 to +256	
	055	Vertical color registration for magenta (Process 3) (For tracing paper, type #4, width 1 & length 2)		-256 to +256	
	056	Vertical color registration for magenta (Process 3) (For tracing paper, type #4, width 1 & length 3)		-256 to +256	
	057	Vertical color registration for magenta (Process 3) (For tracing paper, type #4, width 2 & length 1)		-256 to +256	
	058	Vertical color registration for magenta (Process 3) (For tracing paper, type #4, width 2 & length 2)		-256 to +256	
	059	Vertical color registration for magenta (Process 3) (For tracing paper, type #4, width 2 & length 3)		-256 to +256	
	05A	Vertical color registration for magenta (Process 3) (For tracing paper, type #4, width 3 & length 1)		-256 to +256	
	05b	Vertical color registration for magenta (Process 3) (For tracing paper, type #4, width 3 & length 2)		-256 to +256	
	05C	Vertical color registration for magenta (Process 3) (For tracing paper, type #4, width 3 & length 3)		-256 to +256	
	05d	Vertical color registration for magenta (Process 3) (For tracing paper, type #4, width 4 & length 1)		-256 to +256	
	05E	Vertical color registration for magenta (Process 3) (For tracing paper, type #4, width 4 & length 2)		-256 to +256	
	05F	Vertical color registration for magenta (Process 3) (For tracing paper, type #4, width 4 & length 3)		-256 to +256	
	060	Vertical color registration for magenta (Process 3) (For film, type #1, width 1 & length 1)		-256 to +256	
	061	Vertical color registration for magenta (Process 3) (For film, type #1, width 1 & length 2)		-256 to +256	
	062	Vertical color registration for magenta (Process 3) (For film, type #1, width 1 & length 3)		-256 to +256	
	063	Vertical color registration for magenta (Process 3) (For film, type #1, width 2 & length 1)		-256 to +256	
	064	Vertical color registration for magenta (Process 3) (For film, type #1, width 2 & length 2)		-256 to +256	
	065	Vertical color registration for magenta (Process 3) (For film, type #1, width 2 & length 3)		-256 to +256	
	066	Vertical color registration for magenta (Process 3) (For film, type #1, width 3 & length 1)		-256 to +256	
	067	Vertical color registration for magenta (Process 3) (For film, type #1, width 3 & length 2)		-256 to +256	
	068	Vertical color registration for magenta (Process 3) (For film, type #1, width 3 & length 3)		-256 to +256	
	069	Vertical color registration for magenta (Process 3) (For film, type #1, width 4 & length 1)		-256 to +256	
	06A	Vertical color registration for magenta (Process 3) (For film, type #1, width 4 & length 2)		-256 to +256	
	06b	Vertical color registration for magenta (Process 3) (For film, type #1, width 4 & length 3)		-256 to +256	

Group code	Individual code	Target	Default value	Setting range	Unit
C (Vertical color registration for magenta	06C	Vertical color registration for magenta (Process 3) (For film, type #2, width 1 & length 1)		-256 to +256	
	06d	Vertical color registration for magenta (Process 3) (For film, type #2, width 1 & length 2)		-256 to +256	
	06E	Vertical color registration for magenta (Process 3) (For film, type #2, width 1 & length 3)		-256 to +256	
	06F	Vertical color registration for magenta (Process 3) (For film, type #2, width 2 & length 1)		-256 to +256	
	070	Vertical color registration for magenta (Process 3) (For film, type #2, width 2 & length 2)		-256 to +256	
	071	Vertical color registration for magenta (Process 3) (For film, type #2, width 2 & length 3)		-256 to +256	
	072	Vertical color registration for magenta (Process 3) (For film, type #2, width 3 & length 1)		-256 to +256	
	073	Vertical color registration for magenta (Process 3) (For film, type #2, width 3 & length 2)		-256 to +256	
	074	Vertical color registration for magenta (Process 3) (For film, type #2, width 3 & length 3)		-256 to +256	
	075	Vertical color registration for magenta (Process 3) (For film, type #2, width 4 & length 1)		-256 to +256	
	076	Vertical color registration for magenta (Process 3) (For film, type #2, width 4 & length 2)		-256 to +256	
	077	Vertical color registration for magenta (Process 3) (For film, type #2, width 4 & length 3)		-256 to +256	
	078	Vertical color registration for magenta (Process 3) (For film, type #3, width 1 & length 1)		-256 to +256	
	079	Vertical color registration for magenta (Process 3) (For film, type #3, width 1 & length 2)		-256 to +256	
	07A	Vertical color registration for magenta (Process 3) (For film, type #3, width 1 & length 3)		-256 to +256	
	07b	Vertical color registration for magenta (Process 3) (For film, type #3, width 2 & length 1)		-256 to +256	
	07C	Vertical color registration for magenta (Process 3) (For film, type #3, width 2 & length 2)		-256 to +256	
	07d	Vertical color registration for magenta (Process 3) (For film, type #3, width 2 & length 3)		-256 to +256	
	07E	Vertical color registration for magenta (Process 3) (For film, type #3, width 3 & length 1)		-256 to +256	
	07F	Vertical color registration for magenta (Process 3) (For film, type #3, width 3 & length 2)		-256 to +256	
	080	Vertical color registration for magenta (Process 3) (For film, type #3, width 3 & length 3)		-256 to +256	
	081	Vertical color registration for magenta (Process 3) (For film, type #3, width 4 & length 1)		-256 to +256	
	082	Vertical color registration for magenta (Process 3) (For film, type #3, width 4 & length 2)		-256 to +256	
	083	Vertical color registration for magenta (Process 3) (For film, type #3, width 4 & length 3)		-256 to +256	
	084	Vertical color registration for magenta (Process 3) (For film, type #4, width 1 & length 1)		-256 to +256	
	085	Vertical color registration for magenta (Process 3) (For film, type #4, width 1 & length 2)		-256 to +256	
	086	Vertical color registration for magenta (Process 3) (For film, type #4, width 1 & length 3)		-256 to +256	
	087	Vertical color registration for magenta (Process 3) (For film, type #4, width 2 & length 1)		-256 to +256	
	088	Vertical color registration for magenta (Process 3) (For film, type #4, width 2 & length 2)		-256 to +256	
	089	Vertical color registration for magenta (Process 3) (For film, type #4, width 2 & length 3)		-256 to +256	
	08A	Vertical color registration for magenta (Process 3) (For film, type #4, width 3 & length 1)		-256 to +256	
	08b	Vertical color registration for magenta (Process 3) (For film, type #4, width 3 & length 2)		-256 to +256	
	08C	Vertical color registration for magenta (Process 3) (For film, type #4, width 3 & length 3)		-256 to +256	
	08d	Vertical color registration for magenta (Process 3) (For film, type #4, width 4 & length 1)		-256 to +256	
	08E	Vertical color registration for magenta (Process 3) (For film, type #4, width 4 & length 2)		-256 to +256	
	08F	Vertical color registration for magenta (Process 3) (For film, type #4, width 4 & length 3)		-256 to +256	

Group code	Individual code	Target	Default value	Setting range	Unit
C (Vertical color registration for magenta	090	Vertical color registration for magenta (Process 3) (For gloss, type #1, width 1 & length 1)		-256 to +256	
	091	Vertical color registration for magenta (Process 3) (For gloss, type #1, width 1 & length 2)		-256 to +256	
	092	Vertical color registration for magenta (Process 3) (For gloss, type #1, width 1 & length 3)		-256 to +256	
	093	Vertical color registration for magenta (Process 3) (For gloss, type #1, width 2 & length 1)		-256 to +256	
	094	Vertical color registration for magenta (Process 3) (For gloss, type #1, width 2 & length 2)		-256 to +256	
	095	Vertical color registration for magenta (Process 3) (For gloss, type #1, width 2 & length 3)		-256 to +256	
	096	Vertical color registration for magenta (Process 3) (For gloss, type #1, width 3 & length 1)		-256 to +256	
	097	Vertical color registration for magenta (Process 3) (For gloss, type #1, width 3 & length 2)		-256 to +256	
	098	Vertical color registration for magenta (Process 3) (For gloss, type #1, width 3 & length 3)		-256 to +256	
	099	Vertical color registration for magenta (Process 3) (For gloss, type #1, width 4 & length 1)		-256 to +256	
	09A	Vertical color registration for magenta (Process 3) (For gloss, type #1, width 4 & length 2)		-256 to +256	
	09b	Vertical color registration for magenta (Process 3) (For gloss, type #1, width 4 & length 3)		-256 to +256	
	09C	Vertical color registration for magenta (Process 3) (For gloss, type #2, width 1 & length 1)		-256 to +256	
	09d	Vertical color registration for magenta (Process 3) (For gloss, type #2, width 1 & length 2)		-256 to +256	
	09E	Vertical color registration for magenta (Process 3) (For gloss, type #2, width 1 & length 3)		-256 to +256	
	09F	Vertical color registration for magenta (Process 3) (For gloss, type #2, width 2 & length 1)		-256 to +256	
	0A0	Vertical color registration for magenta (Process 3) (For gloss, type #2, width 2 & length 2)		-256 to +256	
	0A1	Vertical color registration for magenta (Process 3) (For gloss, type #2, width 2 & length 3)		-256 to +256	
	0A2	Vertical color registration for magenta (Process 3) (For gloss, type #2, width 3 & length 1)		-256 to +256	
	0A3	Vertical color registration for magenta (Process 3) (For gloss, type #2, width 3 & length 2)		-256 to +256	
	0A4	Vertical color registration for magenta (Process 3) (For gloss, type #2, width 3 & length 3)		-256 to +256	
	0A5	Vertical color registration for magenta (Process 3) (For gloss, type #2, width 4 & length 1)		-256 to +256	
	0A6	Vertical color registration for magenta (Process 3) (For gloss, type #2, width 4 & length 2)		-256 to +256	
	0A7	Vertical color registration for magenta (Process 3) (For gloss, type #2, width 4 & length 3)		-256 to +256	
	0A8	Vertical color registration for magenta (Process 3) (For gloss, type #3, width 1 & length 1)		-256 to +256	
	0A9	Vertical color registration for magenta (Process 3) (For gloss, type #3, width 1 & length 2)		-256 to +256	
	0AA	Vertical color registration for magenta (Process 3) (For gloss, type #3, width 1 & length 3)		-256 to +256	
	0Ab	Vertical color registration for magenta (Process 3) (For gloss, type #3, width 2 & length 1)		-256 to +256	
	0AC	Vertical color registration for magenta (Process 3) (For gloss, type #3, width 2 & length 2)		-256 to +256	
	0Ad	Vertical color registration for magenta (Process 3) (For gloss, type #3, width 2 & length 3)		-256 to +256	
	0AE	Vertical color registration for magenta (Process 3) (For gloss, type #3, width 3 & length 1)		-256 to +256	
	0AF	Vertical color registration for magenta (Process 3) (For gloss, type #3, width 3 & length 2)		-256 to +256	
	0b0	Vertical color registration for magenta (Process 3) (For gloss, type #3, width 3 & length 3)		-256 to +256	
	0b1	Vertical color registration for magenta (Process 3) (For gloss, type #3, width 4 & length 1)		-256 to +256	
	0b2	Vertical color registration for magenta (Process 3) (For gloss, type #3, width 4 & length 2)		-256 to +256	
	0b3	Vertical color registration for magenta (Process 3) (For gloss, type #3, width 4 & length 3)		-256 to +256	

Group code	Individual code	Target	Default value	Setting range	Unit
C (Vertical color registration for magenta	0b4	Vertical color registration for magenta (Process 3) (For gloss, type #4, width 1 & length 1)		-256 to +256	
	0b5	Vertical color registration for magenta (Process 3) (For gloss, type #4, width 1 & length 2)		-256 to +256	
	0b6	Vertical color registration for magenta (Process 3) (For gloss, type #4, width 1 & length 3)		-256 to +256	
	0b7	Vertical color registration for magenta (Process 3) (For gloss, type #4, width 2 & length 1)		-256 to +256	
	0b8	Vertical color registration for magenta (Process 3) (For gloss, type #4, width 2 & length 2)		-256 to +256	
	0b9	Vertical color registration for magenta (Process 3) (For gloss, type #4, width 2 & length 3)		-256 to +256	
	0bA	Vertical color registration for magenta (Process 3) (For gloss, type #4, width 3 & length 1)		-256 to +256	
	0bb	Vertical color registration for magenta (Process 3) (For gloss, type #4, width 3 & length 2)		-256 to +256	
	0bC	Vertical color registration for magenta (Process 3) (For gloss, type #4, width 3 & length 3)		-256 to +256	
	0bd	Vertical color registration for magenta (Process 3) (For gloss, type #4, width 4 & length 1)		-256 to +256	
	0bE	Vertical color registration for magenta (Process 3) (For gloss, type #4, width 4 & length 2)		-256 to +256	
	0bF	Vertical color registration for magenta (Process 3) (For gloss, type #4, width 4 & length 3)		-256 to +256	

Group code	Individual code	Target	Default value	Setting range	Unit
D (Vertical color registration for yellow	000	Vertical color registration for yellow (Process 4) (For plain paper, type #1, width 1 & length 1)		-256 to +256	
	001	Vertical color registration for yellow (Process 4) (For plain paper, type #1, width 1 & length 2)		-256 to +256	
	002	Vertical color registration for yellow (Process 4) (For plain paper, type #1, width 1 & length 3)		-256 to +256	
	003	Vertical color registration for yellow (Process 4) (For plain paper, type #1, width 2 & length 1)		-256 to +256	
	004	Vertical color registration for yellow (Process 4) (For plain paper, type #1, width 2 & length 2)		-256 to +256	
	005	Vertical color registration for yellow (Process 4) (For plain paper, type #1, width 2 & length 3)		-256 to +256	
	006	Vertical color registration for yellow (Process 4) (For plain paper, type #1, width 3 & length 1)		-256 to +256	
	007	Vertical color registration for yellow (Process 4) (For plain paper, type #1, width 3 & length 2)		-256 to +256	
	008	Vertical color registration for yellow (Process 4) (For plain paper, type #1, width 3 & length 3)		-256 to +256	
	009	Vertical color registration for yellow (Process 4) (For plain paper, type #1, width 4 & length 1)		-256 to +256	
	00A	Vertical color registration for yellow (Process 4) (For plain paper, type #1, width 4 & length 2)		-256 to +256	
	00b	Vertical color registration for yellow (Process 4) (For plain paper, type #1, width 4 & length 3)		-256 to +256	
	00C	Vertical color registration for yellow (Process 4) (For plain paper, type #2, width 1 & length 1)		-256 to +256	
	00D	Vertical color registration for yellow (Process 4) (For plain paper, type #2, width 1 & length 2)		-256 to +256	
	00E	Vertical color registration for yellow (Process 4) (For plain paper, type #2, width 1 & length 3)		-256 to +256	
	00F	Vertical color registration for yellow (Process 4) (For plain paper, type #2, width 2 & length 1)		-256 to +256	
	010	Vertical color registration for yellow (Process 4) (For plain paper, type #2, width 2 & length 2)		-256 to +256	
	011	Vertical color registration for yellow (Process 4) (For plain paper, type #2, width 2 & length 3)		-256 to +256	
	012	Vertical color registration for yellow (Process 4) (For plain paper, type #2, width 3 & length 1)		-256 to +256	
	013	Vertical color registration for yellow (Process 4) (For plain paper, type #2, width 3 & length 2)		-256 to +256	
	014	Vertical color registration for yellow (Process 4) (For plain paper, type #2, width 3 & length 3)		-256 to +256	
	015	Vertical color registration for yellow (Process 4) (For plain paper, type #2, width 4 & length 1)		-256 to +256	
	016	Vertical color registration for yellow (Process 4) (For plain paper, type #2, width 4 & length 2)		-256 to +256	
	017	Vertical color registration for yellow (Process 4) (For plain paper, type #2, width 4 & length 3)		-256 to +256	
	018	Vertical color registration for yellow (Process 4) (For plain paper, type #3, width 1 & length 1)		-256 to +256	
	019	Vertical color registration for yellow (Process 4) (For plain paper, type #3, width 1 & length 2)		-256 to +256	
	01A	Vertical color registration for yellow (Process 4) (For plain paper, type #3, width 1 & length 3)		-256 to +256	
	01b	Vertical color registration for yellow (Process 4) (For plain paper, type #3, width 2 & length 1)		-256 to +256	
	01C	Vertical color registration for yellow (Process 4) (For plain paper, type #3, width 2 & length 2)		-256 to +256	
	01d	Vertical color registration for yellow (Process 4) (For plain paper, type #3, width 2 & length 3)		-256 to +256	
	01E	Vertical color registration for yellow (Process 4) (For plain paper, type #3, width 3 & length 1)		-256 to +256	
	01F	Vertical color registration for yellow (Process 4) (For plain paper, type #3, width 3 & length 2)		-256 to +256	
	020	Vertical color registration for yellow (Process 4) (For plain paper, type #3, width 3 & length 3)		-256 to +256	
	021	Vertical color registration for yellow (Process 4) (For plain paper, type #3, width 4 & length 1)		-256 to +256	
	022	Vertical color registration for yellow (Process 4) (For plain paper, type #3, width 4 & length 2)		-256 to +256	
	023	Vertical color registration for yellow (Process 4) (For plain paper, type #3, width 4 & length 3)		-256 to +256	

Group code	Individual code	Target	Default value	Setting range	Unit
D (Vertical color registration for yellow	024	Vertical color registration for yellow (Process 4) (For plain paper, type #4, width 1 & length 1)		-256 to +256	
	025	Vertical color registration for yellow (Process 4) (For plain paper, type #4, width 1 & length 2)		-256 to +256	
	026	Vertical color registration for yellow (Process 4) (For plain paper, type #4, width 1 & length 3)		-256 to +256	
	027	Vertical color registration for yellow (Process 4) (For plain paper, type #4, width 2 & length 1)		-256 to +256	
	028	Vertical color registration for yellow (Process 4) (For plain paper, type #4, width 2 & length 2)		-256 to +256	
	029	Vertical color registration for yellow (Process 4) (For plain paper, type #4, width 2 & length 3)		-256 to +256	
	02A	Vertical color registration for yellow (Process 4) (For plain paper, type #4, width 3 & length 1)		-256 to +256	
	02b	Vertical color registration for yellow (Process 4) (For plain paper, type #4, width 3 & length 2)		-256 to +256	
	02C	Vertical color registration for yellow (Process 4) (For plain paper, type #4, width 3 & length 3)		-256 to +256	
	02d	Vertical color registration for yellow (Process 4) (For plain paper, type #4, width 4 & length 1)		-256 to +256	
	02E	Vertical color registration for yellow (Process 4) (For plain paper, type #4, width 4 & length 2)		-256 to +256	
	02F	Vertical color registration for yellow (Process 4) (For plain paper, type #4, width 4 & length 3)		-256 to +256	
	030	Vertical color registration for yellow (Process 4) (For tracing paper, type #1, width 1 & length 1)		-256 to +256	
	031	Vertical color registration for yellow (Process 4) (For tracing paper, type #1, width 1 & length 2)		-256 to +256	
	032	Vertical color registration for yellow (Process 4) (For tracing paper, type #1, width 1 & length 3)		-256 to +256	
	033	Vertical color registration for yellow (Process 4) (For tracing paper, type #1, width 2 & length 1)		-256 to +256	
	034	Vertical color registration for yellow (Process 4) (For tracing paper, type #1, width 2 & length 2)		-256 to +256	
	035	Vertical color registration for yellow (Process 4) (For tracing paper, type #1, width 2 & length 3)		-256 to +256	
	036	Vertical color registration for yellow (Process 4) (For tracing paper, type #1, width 3 & length 1)		-256 to +256	
	037	Vertical color registration for yellow (Process 4) (For tracing paper, type #1, width 3 & length 2)		-256 to +256	
	038	Vertical color registration for yellow (Process 4) (For tracing paper, type #1, width 3 & length 3)		-256 to +256	
	039	Vertical color registration for yellow (Process 4) (For tracing paper, type #1, width 4 & length 1)		-256 to +256	
	03A	Vertical color registration for yellow (Process 4) (For tracing paper, type #1, width 4 & length 2)		-256 to +256	
	03b	Vertical color registration for yellow (Process 4) (For tracing paper, type #1, width 4 & length 3)		-256 to +256	
	03C	Vertical color registration for yellow (Process 4) (For tracing paper, type #2, width 1 & length 1)		-256 to +256	
	03d	Vertical color registration for yellow (Process 4) (For tracing paper, type #2, width 1 & length 2)		-256 to +256	
	03E	Vertical color registration for yellow (Process 4) (For tracing paper, type #2, width 1 & length 3)		-256 to +256	
	03F	Vertical color registration for yellow (Process 4) (For tracing paper, type #2, width 2 & length 1)		-256 to +256	
	040	Vertical color registration for yellow (Process 4) (For tracing paper, type #2, width 2 & length 2)		-256 to +256	
	041	Vertical color registration for yellow (Process 4) (For tracing paper, type #2, width 2 & length 3)		-256 to +256	
	042	Vertical color registration for yellow (Process 4) (For tracing paper, type #2, width 3 & length 1)		-256 to +256	
	043	Vertical color registration for yellow (Process 4) (For tracing paper, type #2, width 3 & length 2)		-256 to +256	
	044	Vertical color registration for yellow (Process 4) (For tracing paper, type #2, width 3 & length 3)		-256 to +256	
	045	Vertical color registration for yellow (Process 4) (For tracing paper, type #2, width 4 & length 1)		-256 to +256	
	046	Vertical color registration for yellow (Process 4) (For tracing paper, type #2, width 4 & length 2)		-256 to +256	
	047	Vertical color registration for yellow (Process 4) (For tracing paper, type #2, width 4 & length 3)		-256 to +256	

Group code	Individual code	Target	Default value	Setting range	Unit
D (Vertical color registration for yellow	048	Vertical color registration for yellow (Process 4) (For tracing paper, type #3, width 1 & length 1)		-256 to +256	
	049	Vertical color registration for yellow (Process 4) (For tracing paper, type #3, width 1 & length 2)		-256 to +256	
	04A	Vertical color registration for yellow (Process 4) (For tracing paper, type #3, width 1 & length 3)		-256 to +256	
	04b	Vertical color registration for yellow (Process 4) (For tracing paper, type #3, width 2 & length 1)		-256 to +256	
	04C	Vertical color registration for yellow (Process 4) (For tracing paper, type #3, width 2 & length 2)		-256 to +256	
	04d	Vertical color registration for yellow (Process 4) (For tracing paper, type #3, width 2 & length 3)		-256 to +256	
	04E	Vertical color registration for yellow (Process 4) (For tracing paper, type #3, width 3 & length 1)		-256 to +256	
	04F	Vertical color registration for yellow (Process 4) (For tracing paper, type #3, width 3 & length 2)		-256 to +256	
	050	Vertical color registration for yellow (Process 4) (For tracing paper, type #3, width 3 & length 3)		-256 to +256	
	051	Vertical color registration for yellow (Process 4) (For tracing paper, type #3, width 4 & length 1)		-256 to +256	
	052	Vertical color registration for yellow (Process 4) (For tracing paper, type #3, width 4 & length 2)		-256 to +256	
	053	Vertical color registration for yellow (Process 4) (For tracing paper, type #3, width 4 & length 3)		-256 to +256	
	054	Vertical color registration for yellow (Process 4) (For tracing paper, type #4, width 1 & length 1)		-256 to +256	
	055	Vertical color registration for yellow (Process 4) (For tracing paper, type #4, width 1 & length 2)		-256 to +256	
	056	Vertical color registration for yellow (Process 4) (For tracing paper, type #4, width 1 & length 3)		-256 to +256	
	057	Vertical color registration for yellow (Process 4) (For tracing paper, type #4, width 2 & length 1)		-256 to +256	
	058	Vertical color registration for yellow (Process 4) (For tracing paper, type #4, width 2 & length 2)		-256 to +256	
	059	Vertical color registration for yellow (Process 4) (For tracing paper, type #4, width 2 & length 3)		-256 to +256	
	05A	Vertical color registration for yellow (Process 4) (For tracing paper, type #4, width 3 & length 1)		-256 to +256	
	05b	Vertical color registration for yellow (Process 4) (For tracing paper, type #4, width 3 & length 2)		-256 to +256	
	05C	Vertical color registration for yellow (Process 4) (For tracing paper, type #4, width 3 & length 3)		-256 to +256	
	05d	Vertical color registration for yellow (Process 4) (For tracing paper, type #4, width 4 & length 1)		-256 to +256	
	05E	Vertical color registration for yellow (Process 4) (For tracing paper, type #4, width 4 & length 2)		-256 to +256	
	05F	Vertical color registration for yellow (Process 4) (For tracing paper, type #4, width 4 & length 3)		-256 to +256	
	060	Vertical color registration for yellow (Process 4) (For film, type #1, width 1 & length 1)		-256 to +256	
	061	Vertical color registration for yellow (Process 4) (For film, type #1, width 1 & length 2)		-256 to +256	
	062	Vertical color registration for yellow (Process 4) (For film, type #1, width 1 & length 3)		-256 to +256	
	063	Vertical color registration for yellow (Process 4) (For film, type #1, width 2 & length 1)		-256 to +256	
	064	Vertical color registration for yellow (Process 4) (For film, type #1, width 2 & length 2)		-256 to +256	
	065	Vertical color registration for yellow (Process 4) (For film, type #1, width 2 & length 3)		-256 to +256	
	066	Vertical color registration for yellow (Process 4) (For film, type #1, width 3 & length 1)		-256 to +256	
	067	Vertical color registration for yellow (Process 4) (For film, type #1, width 3 & length 2)		-256 to +256	
	068	Vertical color registration for yellow (Process 4) (For film, type #1, width 3 & length 3)		-256 to +256	
	069	Vertical color registration for yellow (Process 4) (For film, type #1, width 4 & length 1)		-256 to +256	
	06A	Vertical color registration for yellow (Process 4) (For film, type #1, width 4 & length 2)		-256 to +256	
	06b	Vertical color registration for yellow (Process 4) (For film, type #1, width 4 & length 3)		-256 to +256	

Group code	Individual code	Target	Default value	Setting range	Unit
D (Vertical color registration for yellow	06C	Vertical color registration for yellow (Process 4) (For film, type #2, width 1 & length 1)		-256 to +256	
	06d	Vertical color registration for yellow (Process 4) (For film, type #2, width 1 & length 2)		-256 to +256	
	06E	Vertical color registration for yellow (Process 4) (For film, type #2, width 1 & length 3)		-256 to +256	
	06F	Vertical color registration for yellow (Process 4) (For film, type #2, width 2 & length 1)		-256 to +256	
	070	Vertical color registration for yellow (Process 4) (For film, type #2, width 2 & length 2)		-256 to +256	
	071	Vertical color registration for yellow (Process 4) (For film, type #2, width 2 & length 3)		-256 to +256	
	072	Vertical color registration for yellow (Process 4) (For film, type #2, width 3 & length 1)		-256 to +256	
	073	Vertical color registration for yellow (Process 4) (For film, type #2, width 3 & length 2)		-256 to +256	
	074	Vertical color registration for yellow (Process 4) (For film, type #2, width 3 & length 3)		-256 to +256	
	075	Vertical color registration for yellow (Process 4) (For film, type #2, width 4 & length 1)		-256 to +256	
	076	Vertical color registration for yellow (Process 4) (For film, type #2, width 4 & length 2)		-256 to +256	
	077	Vertical color registration for yellow (Process 4) (For film, type #2, width 4 & length 3)		-256 to +256	
	078	Vertical color registration for yellow (Process 4) (For film, type #3, width 1 & length 1)		-256 to +256	
	079	Vertical color registration for yellow (Process 4) (For film, type #3, width 1 & length 2)		-256 to +256	
	07A	Vertical color registration for yellow (Process 4) (For film, type #3, width 1 & length 3)		-256 to +256	
	07b	Vertical color registration for yellow (Process 4) (For film, type #3, width 2 & length 1)		-256 to +256	
	07C	Vertical color registration for yellow (Process 4) (For film, type #3, width 2 & length 2)		-256 to +256	
	07d	Vertical color registration for yellow (Process 4) (For film, type #3, width 2 & length 3)		-256 to +256	
	07E	Vertical color registration for yellow (Process 4) (For film, type #3, width 3 & length 1)		-256 to +256	
	07F	Vertical color registration for yellow (Process 4) (For film, type #3, width 3 & length 2)		-256 to +256	
	080	Vertical color registration for yellow (Process 4) (For film, type #3, width 3 & length 3)		-256 to +256	
	081	Vertical color registration for yellow (Process 4) (For film, type #3, width 4 & length 1)		-256 to +256	
	082	Vertical color registration for yellow (Process 4) (For film, type #3, width 4 & length 2)		-256 to +256	
	083	Vertical color registration for yellow (Process 4) (For film, type #3, width 4 & length 3)		-256 to +256	
	084	Vertical color registration for yellow (Process 4) (For film, type #4, width 1 & length 1)		-256 to +256	
	085	Vertical color registration for yellow (Process 4) (For film, type #4, width 1 & length 2)		-256 to +256	
	086	Vertical color registration for yellow (Process 4) (For film, type #4, width 1 & length 3)		-256 to +256	
	087	Vertical color registration for yellow (Process 4) (For film, type #4, width 2 & length 1)		-256 to +256	
	088	Vertical color registration for yellow (Process 4) (For film, type #4, width 2 & length 2)		-256 to +256	
	089	Vertical color registration for yellow (Process 4) (For film, type #4, width 2 & length 3)		-256 to +256	
	08A	Vertical color registration for yellow (Process 4) (For film, type #4, width 3 & length 1)		-256 to +256	
	08b	Vertical color registration for yellow (Process 4) (For film, type #4, width 3 & length 2)		-256 to +256	
	08C	Vertical color registration for yellow (Process 4) (For film, type #4, width 3 & length 3)		-256 to +256	
	08d	Vertical color registration for yellow (Process 4) (For film, type #4, width 4 & length 1)		-256 to +256	
	08E	Vertical color registration for yellow (Process 4) (For film, type #4, width 4 & length 2)		-256 to +256	
	08F	Vertical color registration for yellow (Process 4) (For film, type #4, width 4 & length 3)		-256 to +256	

Group code	Individual code	Target	Default value	Setting range	Unit
D (Vertical color registration for yellow	090	Vertical color registration for yellow (Process 4) (For gloss, type #1, width 1 & length 1)		-256 to +256	
	091	Vertical color registration for yellow (Process 4) (For gloss, type #1, width 1 & length 2)		-256 to +256	
	092	Vertical color registration for yellow (Process 4) (For gloss, type #1, width 1 & length 3)		-256 to +256	
	093	Vertical color registration for yellow (Process 4) (For gloss, type #1, width 2 & length 1)		-256 to +256	
	094	Vertical color registration for yellow (Process 4) (For gloss, type #1, width 2 & length 2)		-256 to +256	
	095	Vertical color registration for yellow (Process 4) (For gloss, type #1, width 2 & length 3)		-256 to +256	
	096	Vertical color registration for yellow (Process 4) (For gloss, type #1, width 3 & length 1)		-256 to +256	
	097	Vertical color registration for yellow (Process 4) (For gloss, type #1, width 3 & length 2)		-256 to +256	
	098	Vertical color registration for yellow (Process 4) (For gloss, type #1, width 3 & length 3)		-256 to +256	
	099	Vertical color registration for yellow (Process 4) (For gloss, type #1, width 4 & length 1)		-256 to +256	
	09A	Vertical color registration for yellow (Process 4) (For gloss, type #1, width 4 & length 2)		-256 to +256	
	09b	Vertical color registration for yellow (Process 4) (For gloss, type #1, width 4 & length 3)		-256 to +256	
	09C	Vertical color registration for yellow (Process 4) (For gloss, type #2, width 1 & length 1)		-256 to +256	
	09d	Vertical color registration for yellow (Process 4) (For gloss, type #2, width 1 & length 2)		-256 to +256	
	09E	Vertical color registration for yellow (Process 4) (For gloss, type #2, width 1 & length 3)		-256 to +256	
	09F	Vertical color registration for yellow (Process 4) (For gloss, type #2, width 2 & length 1)		-256 to +256	
	0A0	Vertical color registration for yellow (Process 4) (For gloss, type #2, width 2 & length 2)		-256 to +256	
	0A1	Vertical color registration for yellow (Process 4) (For gloss, type #2, width 2 & length 3)		-256 to +256	
	0A2	Vertical color registration for yellow (Process 4) (For gloss, type #2, width 3 & length 1)		-256 to +256	
	0A3	Vertical color registration for yellow (Process 4) (For gloss, type #2, width 3 & length 2)		-256 to +256	
	0A4	Vertical color registration for yellow (Process 4) (For gloss, type #2, width 3 & length 3)		-256 to +256	
	0A5	Vertical color registration for yellow (Process 4) (For gloss, type #2, width 4 & length 1)		-256 to +256	
	0A6	Vertical color registration for yellow (Process 4) (For gloss, type #2, width 4 & length 2)		-256 to +256	
	0A7	Vertical color registration for yellow (Process 4) (For gloss, type #2, width 4 & length 3)		-256 to +256	
	0A8	Vertical color registration for yellow (Process 4) (For gloss, type #3, width 1 & length 1)		-256 to +256	
	0A9	Vertical color registration for yellow (Process 4) (For gloss, type #3, width 1 & length 2)		-256 to +256	
	0AA	Vertical color registration for yellow (Process 4) (For gloss, type #3, width 1 & length 3)		-256 to +256	
	0Ab	Vertical color registration for yellow (Process 4) (For gloss, type #3, width 2 & length 1)		-256 to +256	
	0AC	Vertical color registration for yellow (Process 4) (For gloss, type #3, width 2 & length 2)		-256 to +256	
	0Ad	Vertical color registration for yellow (Process 4) (For gloss, type #3, width 2 & length 3)		-256 to +256	
	0AE	Vertical color registration for yellow (Process 4) (For gloss, type #3, width 3 & length 1)		-256 to +256	
	0AF	Vertical color registration for yellow (Process 4) (For gloss, type #3, width 3 & length 2)		-256 to +256	
	0b0	Vertical color registration for yellow (Process 4) (For gloss, type #3, width 3 & length 3)		-256 to +256	
	0b1	Vertical color registration for yellow (Process 4) (For gloss, type #3, width 4 & length 1)		-256 to +256	
	0b2	Vertical color registration for yellow (Process 4) (For gloss, type #3, width 4 & length 2)		-256 to +256	
	0b3	Vertical color registration for yellow (Process 4) (For gloss, type #3, width 4 & length 3)		-256 to +256	

Group code	Individual code	Target	Default value	Setting range	Unit
D (Vertical color registration for yellow	0b4	Vertical color registration for yellow (Process 4) (For gloss, type #4, width 1 & length 1)		-256 to +256	
	0b5	Vertical color registration for yellow (Process 4) (For gloss, type #4, width 1 & length 2)		-256 to +256	
	0b6	Vertical color registration for yellow (Process 4) (For gloss, type #4, width 1 & length 3)		-256 to +256	
	0b7	Vertical color registration for yellow (Process 4) (For gloss, type #4, width 2 & length 1)		-256 to +256	
	0b8	Vertical color registration for yellow (Process 4) (For gloss, type #4, width 2 & length 2)		-256 to +256	
	0b9	Vertical color registration for yellow (Process 4) (For gloss, type #4, width 2 & length 3)		-256 to +256	
	0bA	Vertical color registration for yellow (Process 4) (For gloss, type #4, width 3 & length 1)		-256 to +256	
	0bb	Vertical color registration for yellow (Process 4) (For gloss, type #4, width 3 & length 2)		-256 to +256	
	0bC	Vertical color registration for yellow (Process 4) (For gloss, type #4, width 3 & length 3)		-256 to +256	
	0bd	Vertical color registration for yellow (Process 4) (For gloss, type #4, width 4 & length 1)		-256 to +256	
	0bE	Vertical color registration for yellow (Process 4) (For gloss, type #4, width 4 & length 2)		-256 to +256	
	0bF	Vertical color registration for yellow (Process 4) (For gloss, type #4, width 4 & length 3)		-256 to +256	

Group code	Individual code	Target	Default value	Setting range	Unit
E (Horizontal color registration)	000	Horizontal color registration for black (Process 1)	0	-128 to 128	
	001	Horizontal color registration for cyan (Process 2)	0	-128 to 128	
	002	Horizontal color registration for magenta (Process 3)	0	-128 to 128	
	003	Horizontal color registration for yellow (Process 4)	0	-128 to 128	

8. 7. 4 Description of each setting item

8. 7. 4. 1 Metric or inch [No.0000]

Metric format or inch format can be selected.

Setting value	Description
A0	Metric
36	Inch

8. 7. 4. 2 Interface communication [No.0001]

The communication of Interface PCB with the outer devices can be specified.

Setting value	Description
0	Both A channel and B channel communicate with scanner and controller.
1	Only A channel communicates with the image scanner.
2	Only B channel communicates with the controller.

8. 7. 4. 3 Special media size 1 [No.0002]

It is possible to specify one special media size that is available to set to the Roll Decks 1, 2 and 3. Machine's recognition for the special size obeys this selection.

Setting value	Description
900	Machine recognizes a special size media as 900mm wide.
891	Machine recognizes a special size media as 891mm wide.
880	Machine recognizes a special size media as 880mm wide.

⚠ NOTE

880mm, 891mm and 900mm wide roll media can not be set to the Roll Deck 4.

8. 7. 4. 4 Special media size 2 [No.0003]

It is possible to specify one special media size that is available to set to the Roll Deck 4. Machine's recognition for the special size obeys this selection.

Setting value	Description
707	Machine recognizes a special size media as 707mm wide.
b1	Machine recognizes a special size media as B1.

⚠ NOTE

707mm and B1 roll media can not be set to the Roll Decks 1, 2 and 3.

8. 7. 4. 5 Maximum print length [No.0004]

Restriction for the maximum print length can be specified.

Setting value	Description
6	Print is available up to 6 meters long.
45	Print is available up to 45 meters long.

8. 7. 4. 6 Unit of Counter A [No.0005]

Counting unit of Counter A can be specified.

Metric mode

Setting value	Description
0	1 count corresponds to “1 linear meter”.
1	1 count corresponds to “0.1 linear meters”.
2	1 count corresponds to “1 square meter”.
3	1 count corresponds to “0.1 square meters”.

Inch mode

Setting value	Description
0	1 count corresponds to “1 linear foot”.
1	1 count corresponds to “1 square feet”.

8. 7. 4. 7 Software Counter A value setting (0006 & 0007)

The counted value of Software Counters A can be changed.
The value can be changed pressing [▲] and [▼] buttons.

Setting item code	Setting item
0006	Can change the lower 4 of 7 digits of the counted value of Software Counter A
0007	Can change the upper 3 of 7 digits of the counted value of Software Counter A

⚠ NOTE

If the current counted value “1234567” is to be changed to “9876543” for example, change the upper 3 digits “123” to “987” in No.0006, and change the lower 4 digits “4567” to “6543” in No.0007.

8. 7. 4. 8 Unit of Counter B [No.0008]

Counting unit of Counter B can be specified.

Metric mode

Setting value	Description
0	1 count corresponds to “1 linear meter”.
1	1 count corresponds to “0.1 linear meters”.
2	1 count corresponds to “1 square meter”.
3	1 count corresponds to “0.1 square meters”.

Inch mode

Setting value	Description
0	1 count corresponds to “1 linear foot”.
1	1 count corresponds to “1 square feet”.

8. 7. 4. 9 Software Counter B value setting (0009 & 000A)

The counted value of Software Counters B can be changed.
The value can be changed pressing [▲] and [▼] buttons.

Setting item code	Setting item
0009	Can change the lower 4 of 7 digits of the counted value of Software Counter B
000A	Can change the upper 3 of 7 digits of the counted value of Software Counter B

⚠ NOTE

If the current counted value “1234567” is to be changed to “9876543” for example, change the upper 3 digits “123” to “987” in No.0009, and change the lower 4 digits “4567” to “6543” in No.000A.

8. 7. 4.10 Dehumidify Heater operation [No.000b]

Operation of Dehumidify Heater can be specified.

Setting value	Description
0	Dehumidify Heater works when the KIP Color 80 is powered off.
1	Dehumidify Heater always works.

⚠ NOTE

(1) Do not disconnect the Power Cord or do not turn off the AC Main Switch. Otherwise the Dehumidify Heater does not work.

(2) If the Dehumidify Heater operation is set to “1”, it is possible to control heater on/off in terms of “humidity” and “temperature”. See the following sections for more detail.

- 8.7.4.11 Dehumidify Heater ON/OFF control (Humidity threshold) [No.000C].
- 8.7.4.12 Dehumidify Heater ON/OFF control (Temperature threshold) [No.000d].

8. 7. 4.11 Dehumidify Heater ON/OFF control (Humidity threshold) [No.000C]

It is possible to specify a humidity threshold that decides whether the Dehumidify Heater works or not. The Dehumidify Heater automatically works if the humidity detected by the Humidity Sensor is over the humidity threshold specified in this mode.

Setting value	Description
no	Dehumidify Heater does not work.
40	Dehumidify Heater works when the humidity is over 40%RH.
50	Dehumidify Heater works when the humidity is over 50%RH.
60	Dehumidify Heater works when the humidity is over 60%RH.
70	Dehumidify Heater works when the humidity is over 70%RH.

⚠ NOTE

(1) ON/OFF control of Dehumidify Heater by the humidity threshold can be achieved only in case the KC80 is turned on as this way of control needs to get the humidity information from the sensor. (Therefore the item No.000b (Dehumidify Heater operation) must be set to “1”.)

(2) If “temperature threshold” is specified in below No.000d as well, the Dehumidify Heater works when both humidity and temperature are over the specified thresholds.

8. 7. 4.12 Dehumidify Heater ON/OFF control (Temperature threshold) [No.000d]

It is possible to specify a temperature threshold that decides whether the Dehumidify Heater works or not. The Dehumidify Heater automatically works if the temperature detected by the Temperature Sensor is over the temperature threshold specified in this mode.

Setting value	Description
no	Dehumidify Heater does not work.
15	Dehumidify Heater works when the temperature is over 15 degrees centigrade.
20	Dehumidify Heater works when the temperature is over 20 degrees centigrade.
25	Dehumidify Heater works when the temperature is over 25 degrees centigrade.
30	Dehumidify Heater works when the temperature is over 30 degrees centigrade.

⚠ NOTE

(1) ON/OFF control of Dehumidify Heater by the temperature threshold can be achieved only in case the KC80 is turned on as this way of control needs to get the temperature information from the sensor. (Therefore the item No.000b (Dehumidify Heater operation) must be set to “1”.)

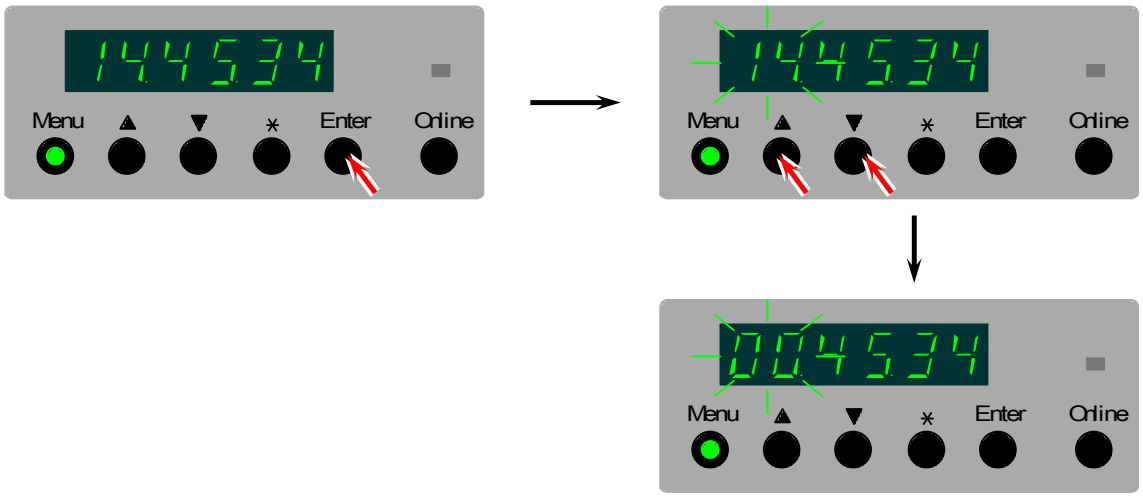
(2) If “humidity threshold” is specified in above No.000C as well, the Dehumidify Heater works when both humidity and temperature are over the specified thresholds.

8. 7. 4.13 Web Motor operation time [No.000E]

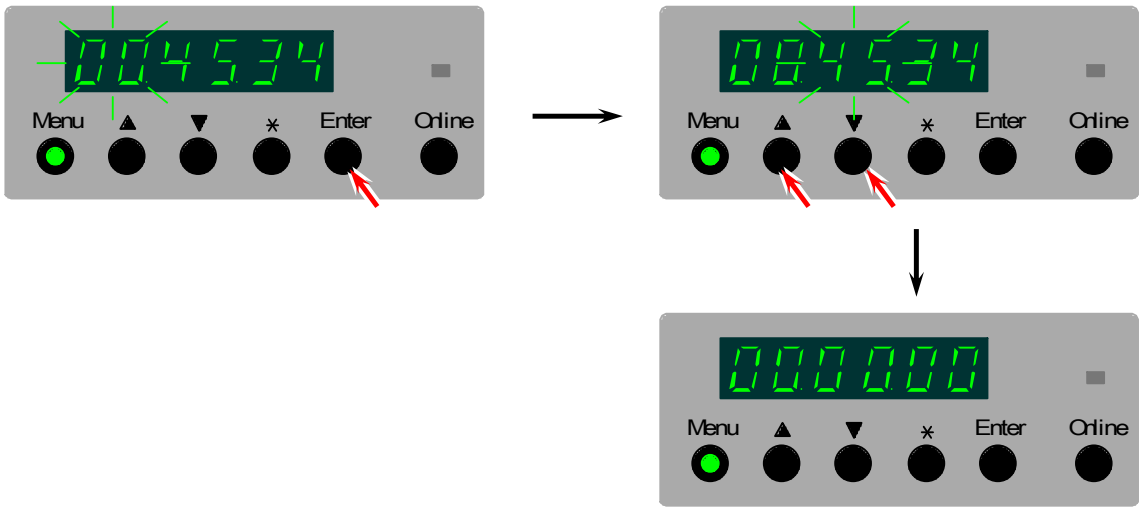
The total operation time of Web Motor can be re-input. Set it to “00.00.00” after replacing the Web Cleaner Roll.

[Operation]

1. Press the Enter Key. The setting value for “hour” flashes and becomes changeable. Change the value to “00” pressing the [▲] and [▼] keys.



2. Press the Enter Key. The setting value for “minute” becomes changeable. Set both “minute” and “second” to “00” in the same way.



NOTE

As no sensor is provided for counting the remaining level of Web Cleaner, the total operation time of Web Motor is only the way to detect “Web End Error”. It is detected when the total operation time reaches “14 hours 45 minutes 34 seconds”.

Set the value to “00.00.00” after replacing the Web Cleaner. Otherwise the “Web End Error” is indicated again.

8. 7. 4.14 Thickness of Web Cleaner Roll [No.000F]

The thickness of Web Cleaner Roll can be inputted. The setting unit is 0.5mm, and the setting range is 0.0mm to 14.0mm.

> **⚠ NOTE**
>
> If the DC Controller PCB is replaced for some reason, you will lose the counted value of "total operation time" of Web Motor. If this occurs when the Web Cleaner Roll is not new, correct counting for "Web End" error can not be accomplished. In this case counting can be recovered by inputting the remaining thickness of the roll, although it is not so precise.

8. 7. 4.15 Web operation mode [No.0010]

One of 3 web operation mode can be selected according to the necessity.

Setting value	Description
0	Consumes the least amount of web. (1) Web is transported 0.15mm forward against every 500mm printing.
1	Intermediate of settings 0 and 2. (1) Web is transported 0.3mm forward against every 500mm printing. (2) In addition to the above (1), web is fed 1.5mm forward when the printer is going to stop after printing.
2	Achieves the best cleaning for fuser roller. (1) Web is transported 0.3mm forward against every 500mm printing. (2) In addition to the above (1), web is fed 3mm forward when the printer is going to stop after printing.

8. 7. 4.16 Cold Sleep ON/OFF [No.0011]

It is possible to specify whether or not the Cold Sleep Mode works.

Setting value	Description
OFF	Cold Sleep Mode does not work.
ON	Cold Sleep Mode works.

8. 7. 4.17 Automatic Wire Cleaning ON/OFF [No.0012]

Automatic Wire Cleaning function can be activated or inactivated. When a decided length of print has been done, which the following No.0013 specifies, the KC80 performs wire cleaning automatically.

Setting value	Description
ON	Automatic Wire Cleaning function works.
OFF	Automatic Wire Cleaning function does not work.

8. 7. 4.18 Interval of Automatic Wire Cleaning [No.0013]

It is possible to specify how often the Automatic Wire Cleaning has to be performed. When the total length of prints reaches the value specified in this No.0013, KC80 performs wire cleaning automatically. The setting range is 100 to 10000 meters.

> **⚠ NOTE**
>
> Counting for the interval starts whenever the KC80 is turned on.

8. 7. 4.19 Number of times of Wire Cleaning [No.0014]

It is possible to specify how many times the Wire Cleaner has to move at each occasion of wire cleaning. (The Wire Cleaner moves from one side to another, then goes back to its original position when cleaning is performed “1 time”.) The setting range is 1 to 5 meters.

> **⚠ NOTE**
>
> This setting is applied not only for the Automatic Wire Cleaning but also for the Manual Wire Cleaning.

8. 7. 4.20 Fuser temperature [No.0015 to 0024]

Temperature of Fuser Roller can be specified on a per media sub type (Type #X) basis. The setting unit is 1 degree centigrade”, and the setting range is from 100 to 185.

Setting item code	Setting item
41015	Plain paper / Type #1
41016	Plain paper / Type #2
41017	Plain paper / Type #3
41018	Plain paper / Type #4
41019	Tracing paper / Type #1
4101A	Tracing paper / Type #2
4101b	Tracing paper / Type #3
4101C	Tracing paper / Type #4
4101d	Film / Type #1
4101E	Film / Type #2
4101F	Film / Type #3
41020	Film / Type #4
41021	Gloss / Type #1
41022	Gloss / Type #2
41023	Gloss / Type #3
41024	Gloss / Type #4

8. 7. 4.21 “Gain” of Fuser Motor [No.0025]

If the tension of printing media becomes more loosened or more strained than the Target Tension during printing, the speed of Fuser Motor automatically becomes faster or slower to achieve the required Target Tension. This No.0025 specifies how much the speed of Fuser Motor should change at each occasion of speed change. The setting unit is hexadecimal.

> **⚠ NOTE**
>
> Normally it is not necessary to change this setting in the field.

8. 7. 4.22 Target fuser tension [No.0026 to 0035]

It is possible to specify the required output voltage from the Fuser Tension Sensor on a per media sub type (Type #X) basis, which decides the “target fuser tension”. The speed of Fuser Motor is changed flexibly to realize this tension throughout printing. The setting unit is hexadecimal. Increment of the value can give more tension to the printing media as the Target Tension is increased.

Setting item code	Setting item
41026	Plain paper / Type #1
41027	Plain paper / Type #2
41028	Plain paper / Type #3
41029	Plain paper / Type #4
4102A	Tracing paper / Type #1
4102b	Tracing paper / Type #2
4102C	Tracing paper / Type #3
4102d	Tracing paper / Type #4
4102E	Film / Type #1
4102F	Film / Type #2
41030	Film / Type #3
41031	Film / Type #4
41032	Gloss / Type #1
41033	Gloss / Type #2
41034	Gloss / Type #3
41035	Gloss / Type #4

8. 7. 4.23 Grid Plate Bias (Applied when Auto SP Control is OFF) [No.1000 to 1003]

Bias to the Grid Plate of Image Corona can be adjusted. This setting will become effective when the Auto SP Control is cancelled. The setting range is from -302V to -800V in 1V increment. Increment of the setting value makes the Grid Plate Bias less negative, that is to say the surface potential of Drum gets less negative.

> **⚠ NOTE**
>
> It is unnecessary to adjust the Grid Bias because in usual case it is automatically adjusted by the Auto SP Control function.

8. 7. 4.24 Developer Bias (Applied when Auto Density Control is OFF) [No.1004 to 1007]

Bias to the Developer Roller can be adjusted. This setting will become effective when the Auto Density Control is cancelled. The setting range is from -100 to -449V in 1V increment. Increment of the setting value makes the Developer Bias more negative, that is to say the print image will become darker as more toner can be supplied to the Drum.

> **⚠ NOTE**
>
> It is unnecessary to adjust the Developer Bias because in usual case it is automatically adjusted by the Auto Density Control function. The only possible situation you have to adjust it is to set the Target Density again for some reason.

8. 7. 4.25 Separation Guide Plate Bias [No.1008]

Bias to the Separation Guide plates 1 to 4 can be adjusted. The setting range is from -302 to -800V in 1V increment. Increment of the setting value makes the Separation Guide Plate Bias more negative.

8. 7. 4.26 Transfer Corona Wire Bias [No.1009 to 1188]

Bias to the Transfer Corona Wire can be adjusted. The setting range is from 400 to 1496 micro amperes in 1 micro ampere increment. Increment of the setting value makes the Transfer Corona Wire Bias more positive, so the toner image on the Drum will be more attracted onto the printing media.

> **⚠ NOTE**
>
> Target conditions for the setting of Transfer Corona Bias are classified in terms of “process (1 to 4)”, “media”, media sub type (type #X) and “relative humidity”.

8. 7. 4.27 Attraction Corona Wire Bias [No. 1189 to 11E8]

Bias to the Attraction Corona Wire can be adjusted. The setting range is from -5000V to -7490V in 1V increment. Increment of the setting value makes the Attraction Corona Wire Bias more negative, so the printing media will be more attracted to the Attraction Roller.

> **⚠ NOTE**
>
> Target conditions for the setting of Attraction Corona Bias are classified in terms of “media”, media sub type (type #X) and “relative humidity”.

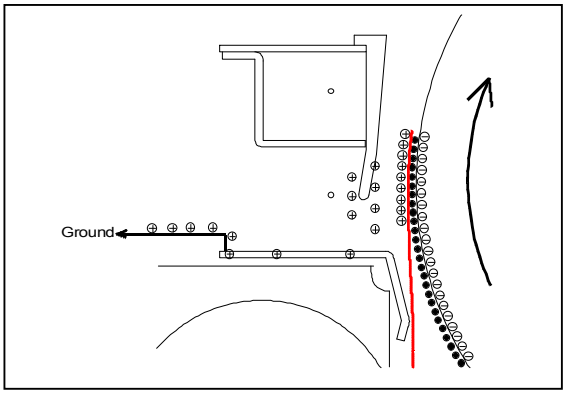
8. 7. 4.28 Transfer Zener ON/OFF [No. 11E9 to 11F8]

It is possible to specify whether or not the Transfer Corona House is connected to the ground directly. This setting can be set on a per process basis and also on a per media sub type (type #X) basis.

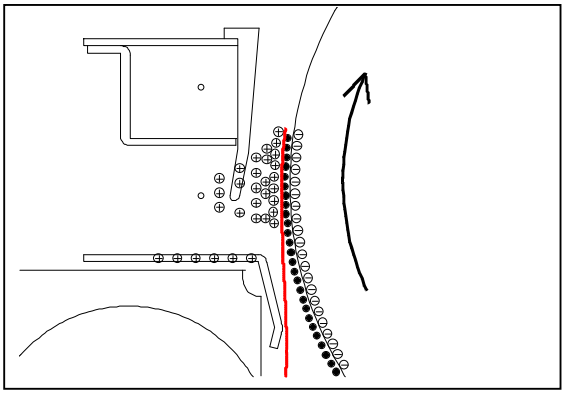
Setting item code	Setting item
410E9	Plain paper / Type #1
410EA	Plain paper / Type #2
410Eb	Plain paper / Type #3
410EC	Plain paper / Type #4
410Ed	Tracing paper / Type #1
410EE	Tracing paper / Type #2
410EF	Tracing paper / Type #3
410F0	Tracing paper / Type #4
410F1	Film / Type #1
410F2	Film / Type #2
410F3	Film / Type #3
410F4	Film / Type #4
410F5	Gloss / Type #1
410F6	Gloss / Type #2
410F7	Gloss / Type #3
410F8	Gloss / Type #4

- If this is set to OFF, the Transfer Corona House is connected to the ground directly. The positive charges on the Transfer Corona House simply escape to the ground.
- If this is set to ON, the Transfer Corona House is connected to the ground through Transfer Zener. Some positive charges kept by the Transfer Zener remain on the Transfer Corona House, and the excess charges escape to the ground.

When OFF



When ON



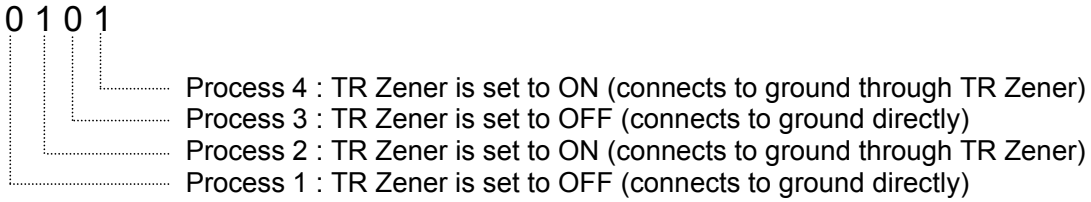
[Setting example]
Do as follows if Transfer Zener setting is to be set as follows for example.

- Media type : Tracing paper / Type #2
- ON/OFF for each process : OFF for process 1 (connects to ground directly)
  OFF for process 2 (connects to ground directly)
  ON for process 3 (connects to ground through TR Zener)
  ON for process 4 (connects to ground through TR Zener)

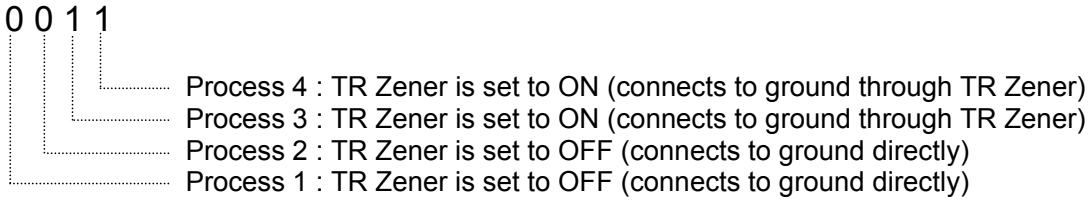
1. Select the item No.410EE as you will set the Transfer Zener operation for the Type #2 of tracing paper.

2. Some 4 digits number that consists of “0” and “1” is indicated, which specifies ON/OFF setting of Transfer Zener for each process.
   - “0” means “connect to ground”, and “1” means “disconnect from ground”.
   - 4 digits are corresponded to process 1-4 respectively.

   If “0101” is indicated for example, present ON/OFF setting to each process is;



3. Change the setting value to “0011” pressing [▲] and [▼] buttons to have the requested setting.



8. 7. 4.29 Auto SP Control ON/OFF [No.2000 to 2003]

Auto SP Control can be activated or inactivated for each Process 1 to 4 distinctly.

Setting item code	Setting item
42000	Process 1 (Black)
42001	Process 2 (Cyan)
42002	Process 3 (Magenta)
42003	Process 4 (Yellow)

Setting value	Description
OFF	Auto SP Control is inactivated.
ON	Auto SP Control is activated.

8. 7. 4.30 Auto Density Control ON/OFF [No.2004 to 2007]

Auto Density Control can be activated or inactivated for each Process 1 to 4 distinctly.

Setting item code	Setting item
42004	Process 1 (Black)
42005	Process 2 (Cyan)
42006	Process 3 (Magenta)
42007	Process 4 (Yellow)

Setting value	Description
OFF	Auto Density Control is inactivated.
ON1	Auto Density Control is activated with normal error check level.
ON2	Auto Density Control is activated with strict error check level.

8. 7. 4.31 Target Surface Potential [No.2008 to 201F]

Target Surface Potential can be specified, which is used when the Auto SP Control works. The setting range is from 350 to 650 in 1V increment. Increment of the setting value makes the print image lighter.

> **⚠ NOTE**
>
> Target conditions for the setting of Target Surface Potential are classified in terms of "process (1 to 4)" and "temperature".

8. 7. 4.32 Acceptable potential range for Auto SP Control [No.2020 to 2023]

The Auto SP Control will show the Service Call Errors if it can not adjust the surface potential to within the acceptable range. This acceptable range can be specified in items No.2020 to 2023. The setting value stands for "+/- X volts against the Target Surface Potential", and the setting range is from 4 to 10 volts in 1V increment. Increment of setting value tends to avoid the Service Call Error.

8. 7. 4.33 Compensation of Target Density [No.2024 to 2027]

The Target Density of each Process (1 to 4) specified in the Special Mode can be changed. The setting unit is hexadecimal, and the setting range is 0000 to 00FF. Increment of the setting value makes the Target Density darker.

8. 7. 4.34 Limitation of Developer Bias in Auto Density Control [No.2028 to 202b]

When the Auto Density Control tries to adjust the density several times, the Developer Bias may be so much increased that it may get closer to the Surface Potential. This kind of less difference of voltage between Developer Bias and Surface potential will result in very light image as enough amount of toner will not move onto the Drum at the time of development. To avoid this situation, it is possible to specify a limitation value for the adjustment. The Developer Bias can not be increased beyond this value even if the Auto Density Control wants to do so. The setting stands for "-X volts against the Surface Potential", and the setting range is from 0 to 250V in 1V increment.

8. 7. 4.35 Paper Feed Motor speed [No.3000]

Paper Feed Motor speed can be adjusted. The setting range is from -10.000% to +10.000%. Increment of the setting value makes the motor speed faster.

8. 7. 4.36 Fuser Motor speed [No.3001]

Fuser Motor speed can be adjusted. The setting range is from -10.000% to +10.000%. Increment of the setting value makes the motor speed faster.

8. 7. 4.37 Developer Motor speed [No.3002 to 3005]

Developer Motor speed of each Process (1 to 4) can be adjusted. The setting range is from -10.000% to +10.000%. Increment of the setting value makes the motor speed faster.

8. 7. 4.38 Paper Feed Motor speed for longer print than 2m [No.3006]

Paper Feed Motor speed can be adjusted finely. The setting range is from -10.00% to +10.00%. Increment of the setting value makes the motor speed faster.

⚠ NOTE

Long print means longer then 2m. If the image length is longer than 2m, the motor speed specified in 4-3006 is applied from the beginning (from leading edge) of printing of this image.

8. 7. 4.39 Drum Motor 1-4 speed [No.3007 to F00A]

Drum Motor (1-4) speed can be adjusted. The setting range is from -10.000% to +10.000%. Increment of the setting value makes the motor speed faster.

8. 7. 4.40 Registration Roller Motor speed [No.4000 to 40FF]

Registration Roller Motor speed can be adjusted. The setting range is from -10.000% to +10.000%. Increment of the setting value makes the motor speed faster.

⚠ NOTE

(1) Target conditions for the setting of Registration Roller speed are classified in terms of “media (PPC, Tracing, film. gloss)”, “media type (types #1-4)” “media width” and “media length”.

(2) Width 1 to 4 mean as follows.
Width 1 : A0, B1, 36”, 34” & 30”
Width 2 : A1, B2, 24” & 22”
Width 3 : A2, B3, 18”, 17” & 15”
Width 4 : A3, 12” & 11”

(3) Length 1 to 4 mean as follows.
Length 1 : Longer then 840mm
Length 2 : Between 400mm to 839mm
Length 3 : Shorter than 399mm

8. 7. 4.41 Attraction Roller Motor speed [No.4100 to 41FF]

Attraction Roller Motor speed can be adjusted. The setting range is from -10.000% to +10.000%. Increment of the setting value makes the motor speed faster.

⚠ NOTE

(1) Target conditions for the setting of Attraction Roller speed are classified in terms of "media (PPC, Tracing, film. gloss)", "media type (types #1-4)" "media width" and "media length".

(2) Width 1 to 4 mean as follows.
Width 1 : A0, B1, 36", 34" & 30"
Width 2 : A1, B2, 24" & 22"
Width 3 : A2, B3, 18", 17" & 15"
Width 4 : A3, 12" & 11"

(3) Length 1 to 4 mean as follows.
Length 1 : Longer then 840mm
Length 2 : Between 400mm to 839mm
Length 3 : Shorter than 399mm

8. 7. 4.42 Transportation Unit 1 Motor speed [No.5000 to 52FF]

Distinct adjustment for Transportation Unit 1 Motor speed "High", "Normal" and "Slow" is available. The setting range is from -50.00% to +50.00%. Increment of the setting value makes the motor speed faster.

⚠ NOTE

(1) Target conditions for the setting of Transportation Unit 1 Motor are classified in terms of "media (PPC, Tracing, film. gloss)", "media type (types #1-4)" "media width" and "media length".

(2) Width 1 to 4 mean as follows.
Width 1 : A0, B1, 36", 34" & 30"
Width 2 : A1, B2, 24" & 22"
Width 3 : A2, B3, 18", 17" & 15"
Width 4 : A3, 12" & 11"

(3) Length 1 to 4 mean as follows.
Length 1 : Longer then 840mm
Length 2 : Between 400mm to 839mm
Length 3 : Shorter than 399mm

8. 7. 4.43 Transportation Unit 2 Motor speed [No.6000 to 62FF]

Distinct adjustment for Transportation Unit 2 Motor speed “High”, “Normal” and “Slow” is available. The setting range is from -50.00% to +50.00%. Increment of the setting value makes the motor speed faster.

⚠ NOTE

(1) Target conditions for the setting of Transportation Unit 2 Motor are classified in terms of “media (PPC, Tracing, film. gloss)”, “media type (types #1-4)” “media width” and “media length”.

(2) Width 1 to 4 mean as follows.
Width 1 : A0, B1, 36”, 34” & 30”
Width 2 : A1, B2, 24” & 22”
Width 3 : A2, B3, 18”, 17” & 15”
Width 4 : A3, 12” & 11”

(3) Length 1 to 4 mean as follows.
Length 1 : Longer then 840mm
Length 2 : Between 400mm to 839mm
Length 3 : Shorter than 399mm

8. 7. 4.44 Transportation Unit 3 Motor speed [No.7000 to 72FF]

Distinct adjustment for Transportation Unit 3 Motor speed “High”, “Normal” and “Slow” is available. The setting range is from -50.00% to +50.00%. Increment of the setting value makes the motor speed faster.

⚠ NOTE

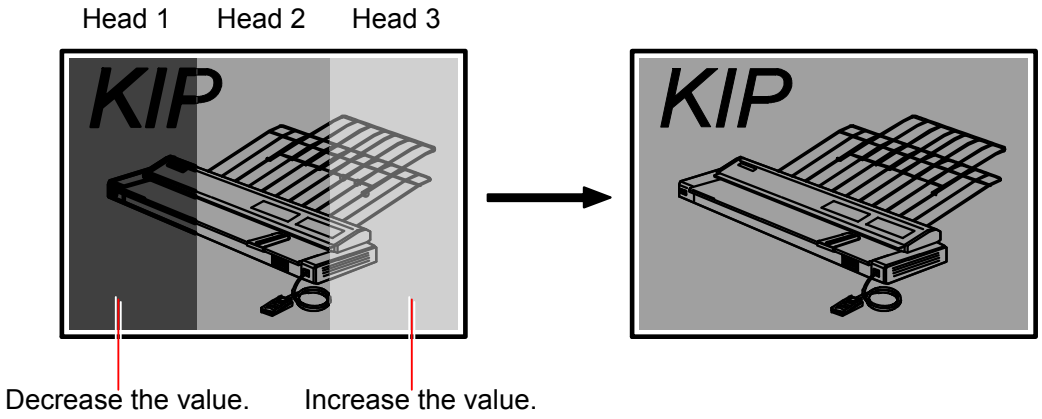
(1) Target conditions for the setting of Transportation Unit 3 Motor are classified in terms of “media (PPC, Tracing, film. gloss)”, “media type (types #1-4)” “media width” and “media length”.

(2) Width 1 to 4 mean as follows.
Width 1 : A0, B1, 36”, 34” & 30”
Width 2 : A1, B2, 24” & 22”
Width 3 : A2, B3, 18”, 17” & 15”
Width 4 : A3, 12” & 11”

(3) Length 1 to 4 mean as follows.
Length 1 : Longer then 840mm
Length 2 : Between 400mm to 839mm
Length 3 : Shorter than 399mm

8. 7. 4.45 LED density adjustment [No.8000 to 800b]

A control voltage of LED Head that decides the light intensity can be increased or decreased. Increment of the setting value makes all 16 levels of light-on time (except for level “0”) on the concerning Head (1-3) of LED Unit longer, so the whole image density of corresponding image block gets darker as a result.

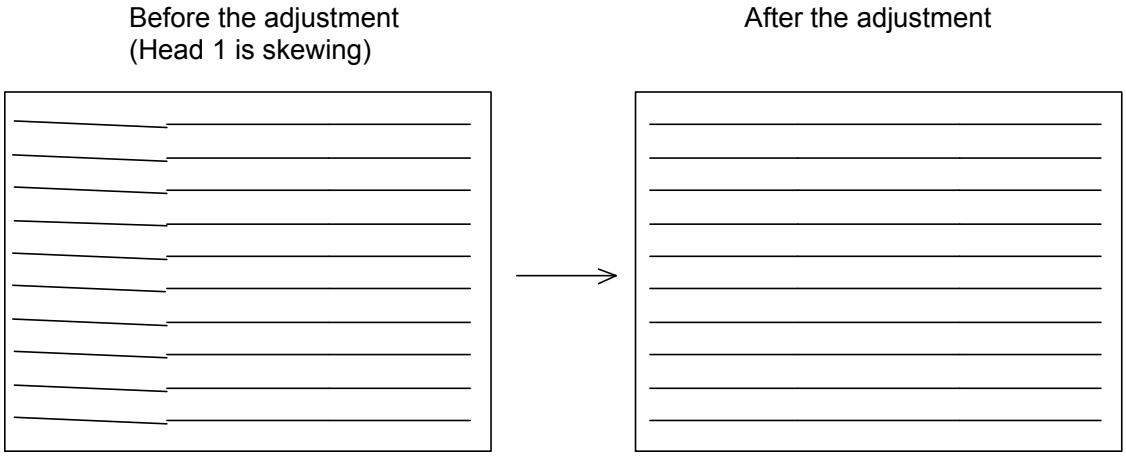


NOTE

It is not recommended to adjust the image density by changing the control voltage in No.8000 to 800b.

8. 7. 4.46 Correction of skew [No.800C to 8017]

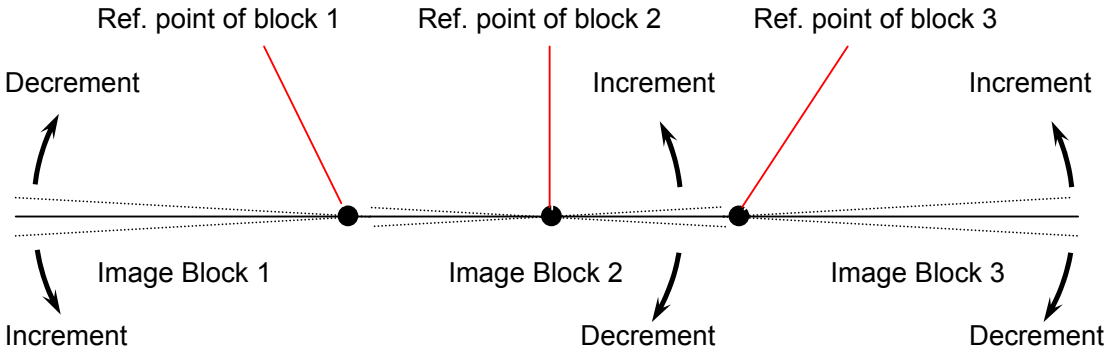
A skew of each image block can be corrected with image mapping arrangement. The setting unit is “1 pixel” and the setting range is from -60 to 60. Increment of the value rotates the image block counter-clockwise.



NOTE

Reference points for the adjustment are different among Image Blocks.

- Image Block 1 : Right end (border between blosk 1 & 2)
- Image Block 2 : Center
- Image Block 3 : Left end (border between blosk 2 & 3)



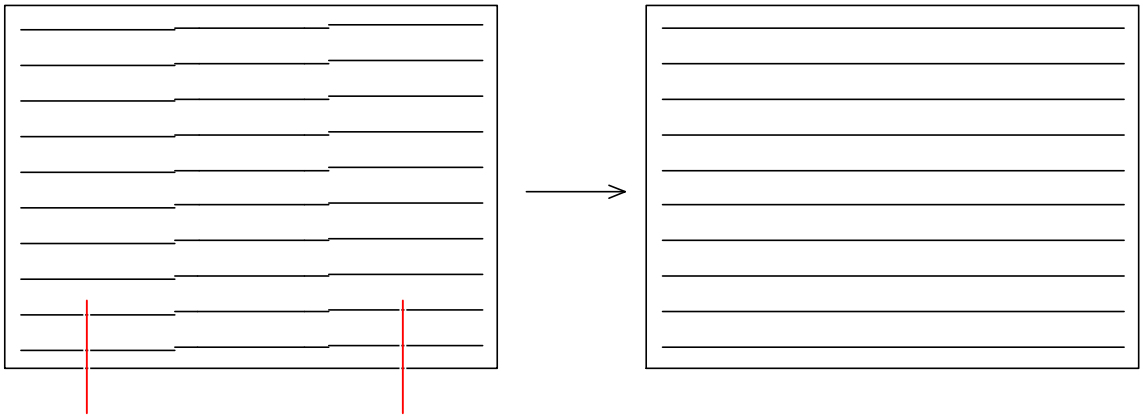
8. 7. 4.47 Vertical stitching (main & fine adjustments) [No.8018 to 802b]

Vertical gap among 3 image blocks can be corrected with image mapping arrangement.

- Main adjustment shifts the total image block up and down by 1 pixel increment. Increment of the shifts the image block to the leading edge side.
- Fine adjustment shifts the total image block up and down by 1/8 pixel increment. Increment of the shifts the image block to the leading edge side.

Before the adjustment
(3 image blocks are not aligned)

After the adjustment



Increase the value to move up this block.

Decrease the value to move down this block.

Setting item code	Setting item
8018	Vertical stitching main adjustment (Head 1 of LED Unit 1 [K])
8019	Vertical stitching fine adjustment (Head 1 of LED Unit 1 [K])
801A	Vertical stitching fine adjustment (Head 2 of LED Unit 1 [K])
801b	Vertical stitching main adjustment (Head 3 of LED Unit 1 [K])
801C	Vertical stitching fine adjustment (Head 3 of LED Unit 1 [K])
801d	Vertical stitching main adjustment (Head 1 of LED Unit 2 [C])
801E	Vertical stitching fine adjustment (Head 1 of LED Unit 2 [C])
801F	Vertical stitching fine adjustment (Head 2 of LED Unit 2 [C])
8020	Vertical stitching main adjustment (Head 3 of LED Unit 2 [C])
8021	Vertical stitching fine adjustment (Head 3 of LED Unit 2 [C])
8022	Vertical stitching main adjustment (Head 1 of LED Unit 3 [M])
8023	Vertical stitching fine adjustment (Head 1 of LED Unit 3 [M])
8024	Vertical stitching fine adjustment (Head 2 of LED Unit 3 [M])
8025	Vertical stitching main adjustment (Head 3 of LED Unit 3 [M])
8026	Vertical stitching fine adjustment (Head 3 of LED Unit 3 [M])
8027	Vertical stitching main adjustment (Head 1 of LED Unit 4 [Y])
8028	Vertical stitching fine adjustment (Head 1 of LED Unit 4 [Y])
8029	Vertical stitching fine adjustment (Head 2 of LED Unit 4 [Y])
802A	Vertical stitching main adjustment (Head 3 of LED Unit 4 [Y])
802b	Vertical stitching fine adjustment (Head 3 of LED Unit 4 [Y])

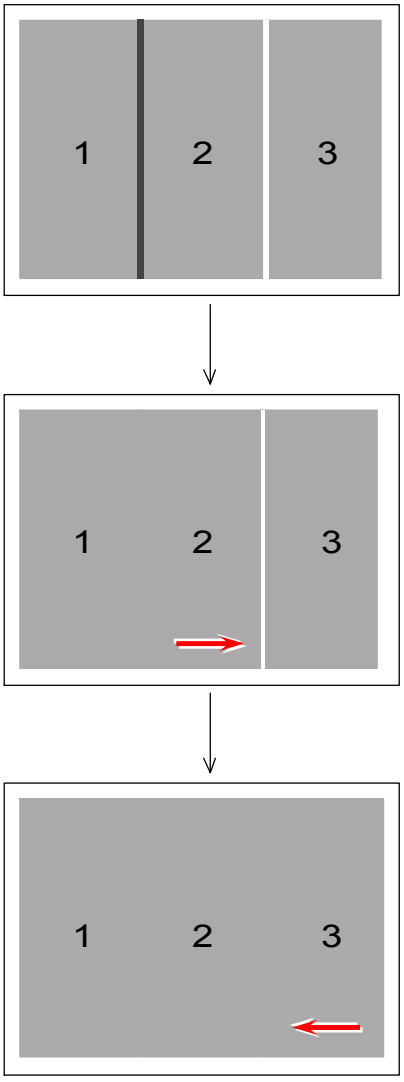
NOTE

Only fine adjustment is available for Head 2 (central block) as it is the standard for other heads (blocks).

8. 7. 4.48 Horizontal arrangement [No.802C to 8033]

The horizontal arrangement of 3 image blocks can be adjusted. The setting unit is “1 pixel” and the setting range is from -60 to 60. Increment of the value moves the concerning image block to the right.
This setting will resolve a dark line on the border of 2 image blocks caused by the duplication of pixels, or a white line on the border caused by the separation of 2 image blocks.

> **NOTE**
>
> The left image block (Head 1) can not be moved horizontally as it is the standard. Therefore adjust the arrangement of central block (Head 2) first then the right block (Head 3).



Before adjustment
(Blocks 1 & 2 are overlapping each other, and 2 and 3 are separated.)

Central block (Head 2) is well arranged by correctly increasing the value.

Right block (Head 3) is well arranged by correctly decreasing the value.

8. 7. 4.49 Image Enhancement ON/OFF [No.8034]

Whether or not the Image Enhancement should be activated can be decided. Selectable setting values are 0 or 1.

Setting value	Description
0	Image Enhancement is not activated.
1	Image Enhancement is activated.

⚠ NOTE

If Image Enhancement is activated, the IE Levels specified in the following item No. become effective.

- 8038 to 803E : IE Level for IE Categories A1 to B5 (Applied in test print)
- 8043 to 80aC : IE Level for IE Categories A1 to B5 (Applied when IE is set to Mode 1)
- 804d to 8056 : IE Level for IE Categories A1 to B5 (Applied when IE is set to Mode 2)
- 8057 to 8060 : IE Level for IE Categories A1 to B5 (Applied when IE is set to Mode 3)
- 8061 to 806A : IE Level for IE Categories A1 to B5 (Applied when IE is set to Mode 4)
- 806b to 8074 : IE Level for IE Categories A1 to B5 (Applied when IE is set to Mode 5)
- 8075 to 807E : IE Level for IE Categories A1 to B5 (Applied when IE is set to Mode 6)
- 807F to 8088 : IE Level for IE Categories A1 to B5 (Applied when IE is set to Mode 7)
- 8089 to 8092 : IE Level for IE Categories A1 to B5 (Applied when IE is set to Mode 8)

8. 7. 4.50 IE Level for IE Categories A1 to B5 (Applied in test print or when IE is OFF) [No.8035 to 803E]

Any 1 of 16 IE Level (Image Enhancement Level), which corresponds to 16 density levels of LED, can be assigned to each IE Category A1 to B5. Assigning a larger IE Level makes more enhancement to all the pixels that belong to the concerning IE Category, as a result those pixels become darker. **These settings are applied in test printing.**

Setting value	Description
0	IE Level 0 : Image is least enhanced (Becomes lightest)
1	IE Level 1 : Image is more enhanced (becomes darker) than IE Level 0
2	IE Level 2 : Image is more enhanced (becomes darker) than IE Level 1
3	IE Level 3 : Image is more enhanced (becomes darker) than IE Level 2
4	IE Level 4 : Image is more enhanced (becomes darker) than IE Level 3
5	IE Level 5 : Image is more enhanced (becomes darker) than IE Level 4
6	IE Level 6 : Image is more enhanced (becomes darker) than IE Level 5
7	IE Level 7 : Image is more enhanced (becomes darker) than IE Level 6
8	IE Level 8 : Image is more enhanced (becomes darker) than IE Level 7
9	IE Level 9 : Image is more enhanced (becomes darker) than IE Level 8
10	IE Level 10 : Image is more enhanced (becomes darker) than IE Level 9
11	IE Level 11 : Image is more enhanced (becomes darker) than IE Level 10
12	IE Level 12 : Image is more enhanced (becomes darker) than IE Level 11
13	IE Level 13 : Image is more enhanced (becomes darker) than IE Level 12
14	IE Level 14 : Image is more enhanced (becomes darker) than IE Level 13
15	IE Level 15 : Image is most enhanced (Becomes darkest)

Reference

When the Image Enhancement is activated on the item No. 8034, the KIP Color 80 categorizes every single pixel of print data into any of 10 IE Categories depending on its "visual appeal power".

2 factors concern for the categorization, such as "isolate level" and "existence of nearby dot".

- "Isolate level" stands for the isolation from other images, and shown by the "numeral" of IE Category as A**1** or A**2**. A larger value stands for more isolation from other images (as single pixel). "More isolation" reduces the "visual appeal power" of the target pixel. Therefore more image enhancement is required for more isolated pixel to print it much darker.
- "Existence of nearby dot" is shown by the alphabet of IE Category as **A**1 or **B**1. Nearby dot exists when "B", and does not exist when "A". As the existence of nearby dot provides more "visual appeal power" to the concerning pixel, less image enhancement is required.

The followings are the descriptions of 10 IE Categories, which are ordered from top to bottom in terms of their visual appeal power. (Upper item has more visual appeal power.)

B5 : Isolate level 5 with nearby dot
A5 : Isolate level 5 without nearby dot
B4 : Isolate level 4 with nearby dot
A4 : Isolate level 4 without nearby dot
B3 : Isolate level 3 with nearby dot
A3 : Isolate level 3 without nearby dot
B2 : Isolate level 2 with nearby dot
A2 : Isolate level 2 without nearby dot
B1 : Isolate level 1 with nearby dot
A1 : Isolate level 1 without nearby dot

↑ Have more visual appeal power (Needs less image enhancement)

↓ Have less visual appeal power (Needs more image enhancement)

8. 7. 4.51 Assignment of LED density level to 1 bit data [No.803F to 8042]

It is possible to assign any one level of 16 LED density levels as the default density level of 1 bit data. The setting value stands for the density level. “0” is the lightest and “15” is the darkest. Assigning a larger level makes the print images (pixels) darker.

Setting item code	Setting item
804F	Assigns a LED density level of black to “dark” grade of 1 bit data
8050	Assigns a LED density level of cyan to “dark” grade of 1 bit data
8051	Assigns a LED density level of magenta to “dark” grade of 1 bit data
8052	Assigns a LED density level of yellow to “dark” grade of 1 bit data

Setting value	Description
0	LED density level 0 : Image becomes lightest.
1	LED density level 1 : Image becomes darker than LED density level 0.
2	LED density level 2 : Image becomes darker than LED density level 1.
3	LED density level 3 : Image becomes darker than LED density level 2.
4	LED density level 4 : Image becomes darker than LED density level 3.
5	LED density level 5 : Image becomes darker than LED density level 4.
6	LED density level 6 : Image becomes darker than LED density level 5.
7	LED density level 7 : Image becomes darker than LED density level 6.
8	LED density level 8 : Image becomes darker than LED density level 7.
9	LED density level 9 : Image becomes darker than LED density level 8.
10	LED density level 10 : Image becomes darker than LED density level 9.
11	LED density level 11 : Image becomes darker than LED density level 10.
12	LED density level 12 : Image becomes darker than LED density level 11.
13	LED density level 13 : Image becomes darker than LED density level 12.
14	LED density level 14 : Image becomes darker than LED density level 13.
15	LED density level 15 : Image becomes darkest.

⚠ NOTE

The density levels specified in 803F to 8042 become effective if Image Enhancement is set to OFF in the item No.8034.

Reference

1 bit data has 2 density grades “light” and “dark”. Items No.803F to 8042 can change the density of the “dark” grade by assigning different LED density level.

8. 7. 4.52 IE Level for IE Categories A1 to B5 (Applied when IE is set to Mode 1) [No.8043 to 804C]

Any 1 of 16 IE Level (Image Enhancement Level), which corresponds to 16 density levels of LED, can be assigned to each IE Category A1 to B5. Assigning a larger IE Level makes more enhancement to all the pixels that belong to the concerning IE Category, as a result those pixels become darker. **These settings are applied when IE is set to Mode 1 on the print controller.** (See page 8-215 for the description of these settings.)

8. 7. 4.53 IE Level for IE Categories A1 to B5 (Applied when IE is set to Mode 2) [No.804d to 8056]

Any 1 of 16 IE Level (Image Enhancement Level), which corresponds to 16 density levels of LED, can be assigned to each IE Category A1 to B5. Assigning a larger IE Level makes more enhancement to all the pixels that belong to the concerning IE Category, as a result those pixels become darker. **These settings are applied when IE is set to Mode 2 on the print controller.** (See page 8-215 for the description of these settings.)

8. 7. 4.54 IE Level for IE Categories A1 to B5 (Applied when IE is set to Mode 3) [No.8057 to 8060]

Any 1 of 16 IE Level (Image Enhancement Level), which corresponds to 16 density levels of LED, can be assigned to each IE Category A1 to B5. Assigning a larger IE Level makes more enhancement to all the pixels that belong to the concerning IE Category, as a result those pixels become darker. **These settings are applied when IE is set to Mode 3 on the print controller.** (See page 8-215 for the description of these settings.)

8. 7. 4.55 IE Level for IE Categories A1 to B5 (Applied when IE is set to Mode 4) [No.8061 to 806A]

Any 1 of 16 IE Level (Image Enhancement Level), which corresponds to 16 density levels of LED, can be assigned to each IE Category A1 to B5. Assigning a larger IE Level makes more enhancement to all the pixels that belong to the concerning IE Category, as a result those pixels become darker. **These settings are applied when IE is set to Mode 4 on the print controller.** (See page 8-215 for the description of these settings.)

8. 7. 4.56 IE Level for IE Categories A1 to B5 (Applied when IE is set to Mode 5) [No.806b to 8074]

Any 1 of 16 IE Level (Image Enhancement Level), which corresponds to 16 density levels of LED, can be assigned to each IE Category A1 to B5. Assigning a larger IE Level makes more enhancement to all the pixels that belong to the concerning IE Category, as a result those pixels become darker. **These settings are applied when IE is set to Mode 5 on the print controller.** (See page 8-215 for the description of these settings.)

8. 7. 4.57 IE Level for IE Categories A1 to B5 (Applied when IE is set to Mode 6) [No.8075 to 807E]

Any 1 of 16 IE Level (Image Enhancement Level), which corresponds to 16 density levels of LED, can be assigned to each IE Category A1 to B5. Assigning a larger IE Level makes more enhancement to all the pixels that belong to the concerning IE Category, as a result those pixels become darker. **These settings are applied when IE is set to Mode 6 on the print controller.** (See page 8-215 for the description of these settings.)

8. 7. 4.58 IE Level for IE Categories A1 to B5 (Applied when IE is set to Mode 7) [No.807F to 8088]

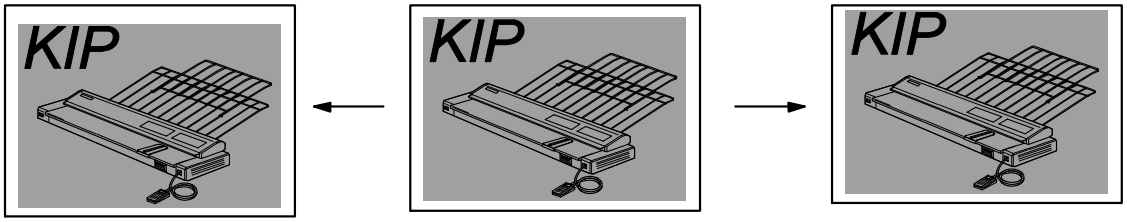
Any 1 of 16 IE Level (Image Enhancement Level), which corresponds to 16 density levels of LED, can be assigned to each IE Category A1 to B5. Assigning a larger IE Level makes more enhancement to all the pixels that belong to the concerning IE Category, as a result those pixels become darker. **These settings are applied when IE is set to Mode 7 on the print controller.** (See page 8-215 for the description of these settings.)

8. 7. 4.59 IE Level for IE Categories A1 to B5 (Applied when IE is set to Mode 8) [No.8089 to 8092]

Any 1 of 16 IE Level (Image Enhancement Level), which corresponds to 16 density levels of LED, can be assigned to each IE Category A1 to B5. Assigning a larger IE Level makes more enhancement to all the pixels that belong to the concerning IE Category, as a result those pixels become darker. **These settings are applied when IE is set to Mode 8 on the print controller.** (See page 8-215 for the description of these settings.)

8. 7. 4.60 Image placement [No.9000]

Image placement against the printing media can be adjusted. The setting unit is 0.1mm, and the setting range is from 0 to 400. Increment of the setting value moves the image to the trailing edge side.

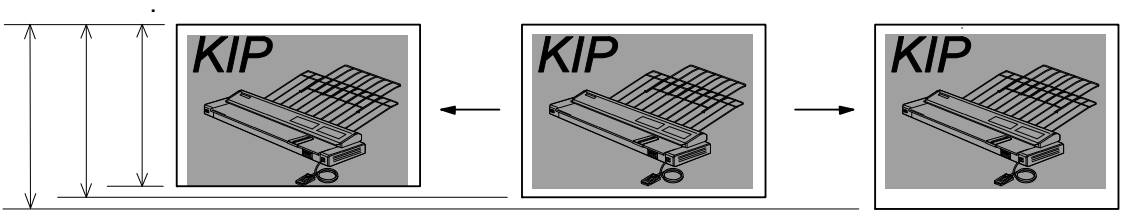


Setting value is increased. Setting value is decreased.

8. 7. 4.61 Cut length [No.9001]

Cut length can be adjusted. The setting unit is 0.1mm, and the setting range is from 0 to 200. Increment of the setting value makes the cut length shorter.

Setting value is increased. Setting value is decreased

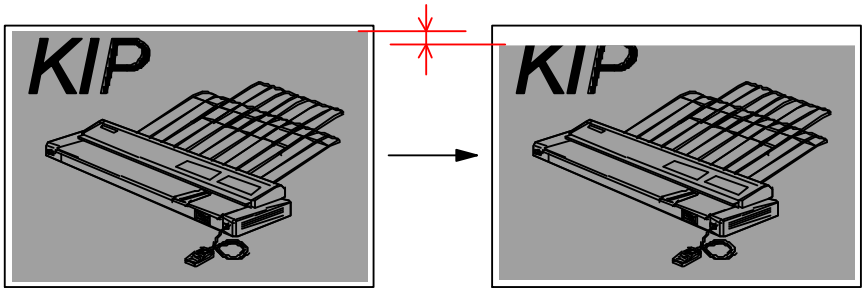


Cut length

8. 7. 4.62 Leading margin [No.9002]

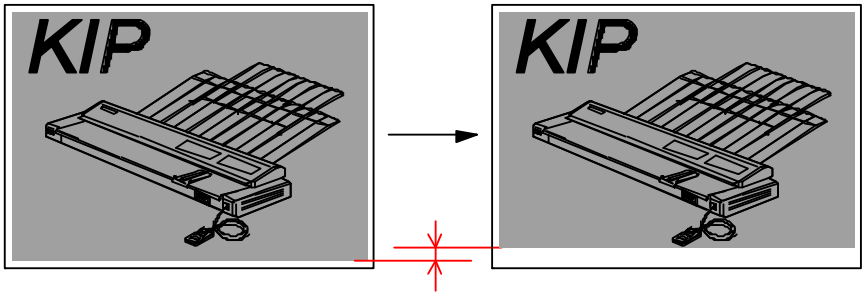
Leading margin can be adjusted by specifying how long leading image should be removed. The setting unit is 0.1mm, and the setting range is from 0 to 80. Increment of the setting value provides more leading margin.

Leading margin (removed leading image)



8. 7. 4.63 Trailing margin [No.9003]

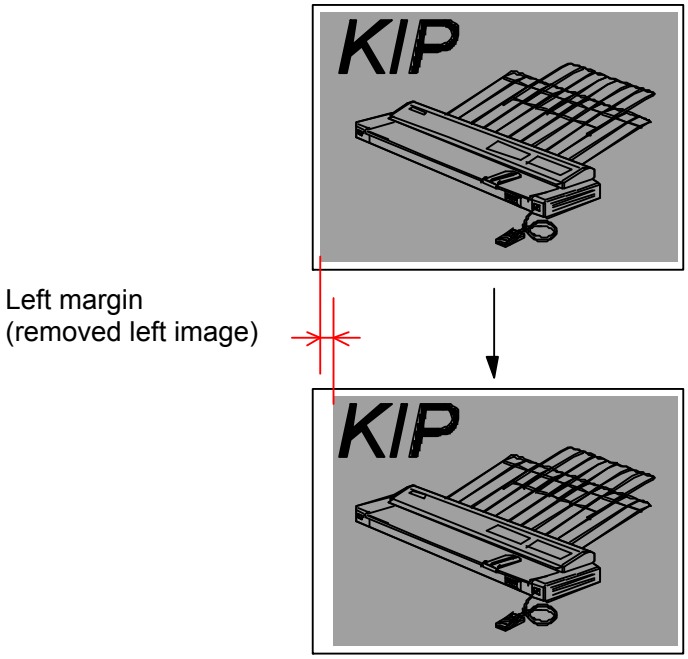
Trailing margin can be adjusted by specifying how long trailing image should be removed. The setting unit is 0.1mm, and the setting range is from 0 to 200. Increment of the setting value provides more trailing margin.



Trailing margin (removed trailing image)

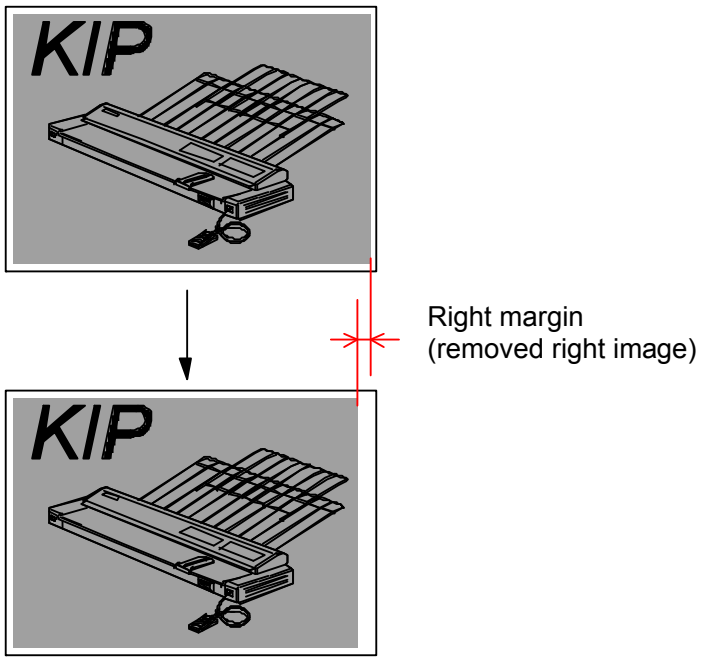
8. 7. 4.64 Left margin [No.9004]

Left margin can be adjusted by specifying how wide left image should be removed. The setting unit is 0.1mm, and the setting range is from 0 to 60. Increment of the setting value provides more left margin.



8. 7. 4.65 Right margin [No.9005]

Right margin can be adjusted by specifying how wide right image should be removed. The setting unit is 0.1mm, and the setting range is from 0 to 60. Increment of the setting value provides more right margin.



8. 7. 4.66 Line Pitch Calibration - Activation / inactivation of calibration [No.9006 to 9008]

Line Pitch calibration can be activated or inactivated per color. More accurate vertical color registration will be achieved for the target length is this is activated. See [10.3.4 Pitch Control Calibration] for further detail of Line Pitch Calibration.

Setting item code	Setting item
9006	Line Pitch Calibration - Activation / inactivation of calibration for Cyan
9007	Line Pitch Calibration - Activation / inactivation of calibration for Magenta
9008	Line Pitch Calibration - Activation / inactivation of calibration for Yellow

Setting value	Description
OFF	Line Pitch Calibration is inactivated.
ON1	Line Pitch Calibration is activated. More accurate vertical color registration will be achieved.

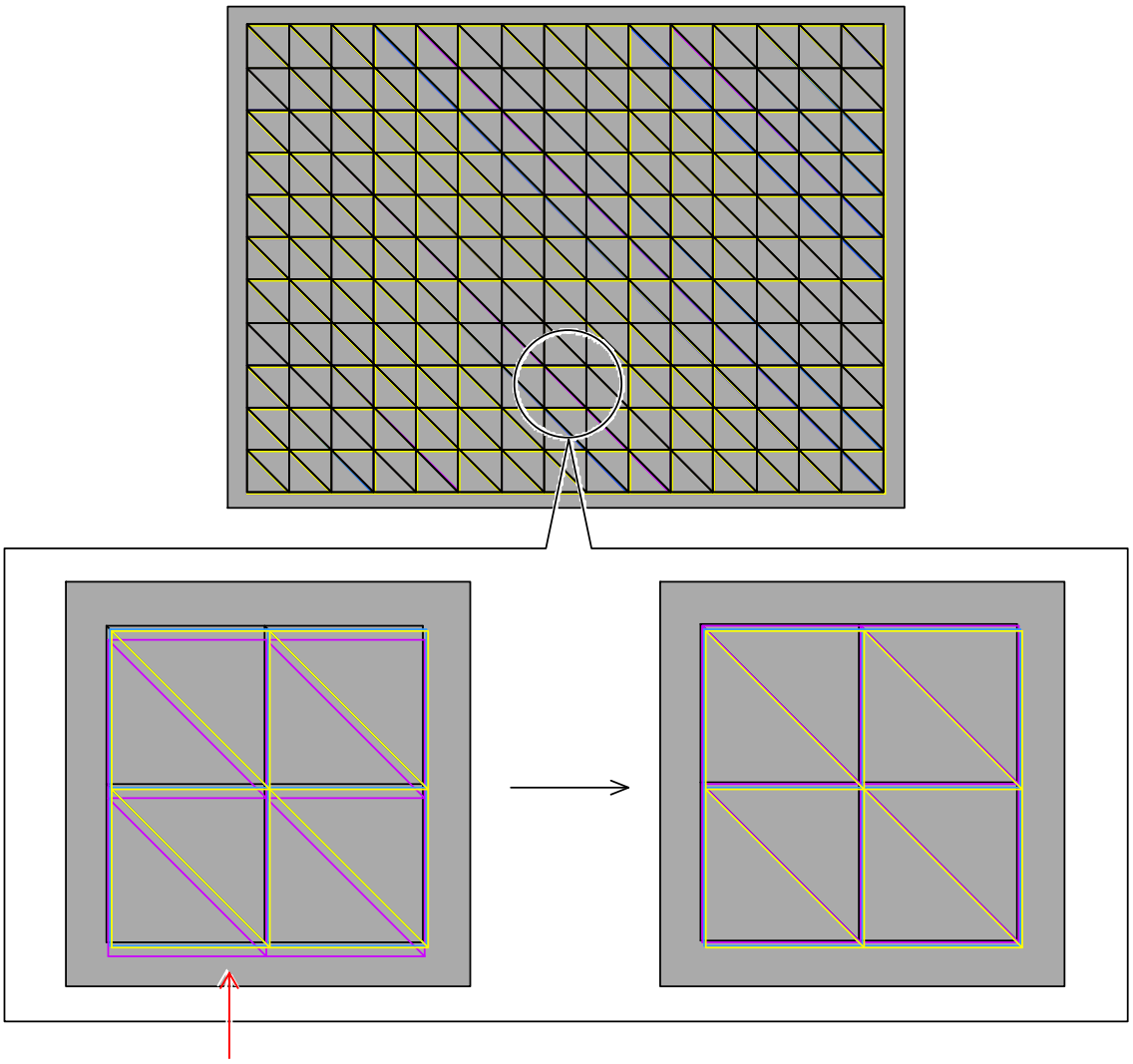
8. 7. 4.67 Line Pitch Calibration - Tolerance against Target Calibration Length [No.9009 to 900F]

Tolerance against the Target Calibration Length of line pitch calibration can be specified per length range. The setting value stands for “+/- X millimeters against Target Length”. Setting range is from 0 to 50mm by 1mm increment.
Let’s suppose that the tolerance is set to “30” in mode 900A that covers 1.5m to 8m of length range. If you create a calibration data for a Target Length “6000mm” by sampling mode, this calibration data can be applied to any length within 6000 +/-30mm (from 5970 to 6030mm).

Setting item code	Setting item
9009	Line Pitch Calibration - Tolerance against Target Calibration Length (210 to 1500mm)
900A	Line Pitch Calibration - Tolerance against Target Calibration Length (1501 to 8000mm)
900b	Line Pitch Calibration - Tolerance against Target Calibration Length (8001 to 16000mm)
900C	Line Pitch Calibration - Tolerance against Target Calibration Length (16001 to 24000mm)
900d	Line Pitch Calibration - Tolerance against Target Calibration Length (24001 to 32000mm)
900E	Line Pitch Calibration - Tolerance against Target Calibration Length (32001 to 40000mm)
900F	Line Pitch Calibration - Tolerance against Target Calibration Length (40001 to 45000mm)

8. 7. 4.68 Vertical color registration [No.A000 to d14F]

Vertical color registration for a certain color image can be calibrated. Setting value “1” corresponds to
“1 pixel”, and the setting range is from -256 to 256. Increment of the setting value moves the image of specific color to trailing edge side.



Magenta is not placed correctly.
Decrease the value to move it to the leading edge side.

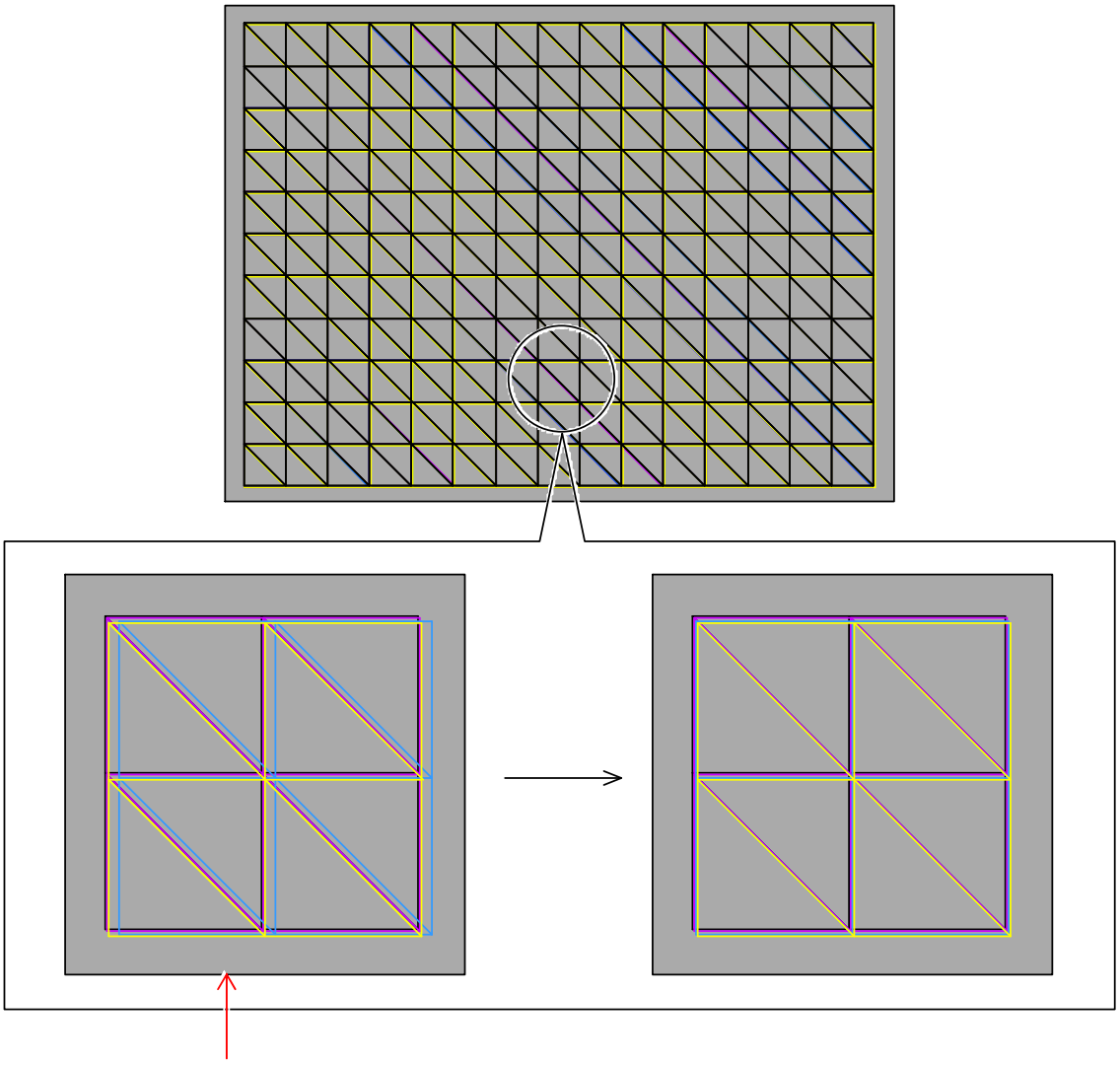
NOTE

(1) Target conditions for the setting of vertical color registration are classified in terms of “process (1 to 4)”, “media (PPC, tracing, film, gloss)”, “media type (type #X)”, “media width” and “media length”.

(2) Length 1 to 4 mean as follows.
Length 1 : Longer then 840mm
Length 2 : Between 400mm to 839mm
Length 3 : Shorter than 399mm
Length 4 : Synchronous cut

8. 7. 4.69 Horizontal color registration [No.E000 to E003]

Horizontal color registration for a certain color image can be calibrated. Setting value “1” corresponds to
“1 pixel”, and the setting range is from -128 to 128. Increment of the setting value moves the image of specific color to the right.



Cyan is not placed correctly.
Decrease the value to move it to the left.

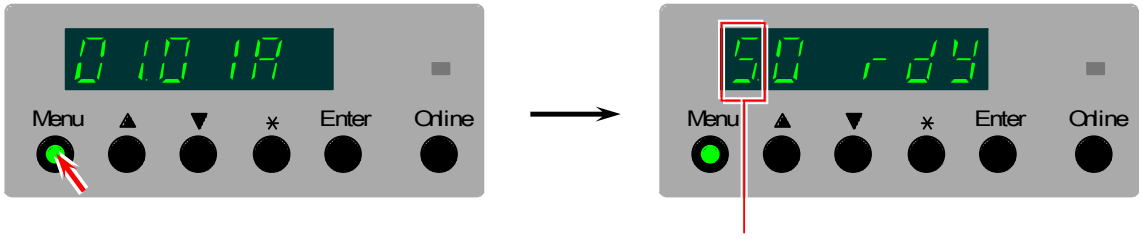
8. 8 Test Print Mode

8. 8. 1 Function

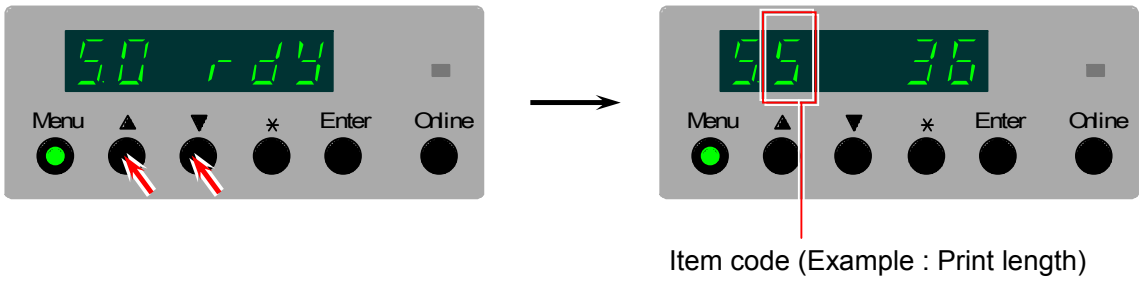
Internal test patters can be printed out.

8. 8. 2 Operation

1. After entering the Service Mode, press the Menu Key 6 times to select the Test Print Mode. The Sub Mode number “5.” flashes on the far left digit.

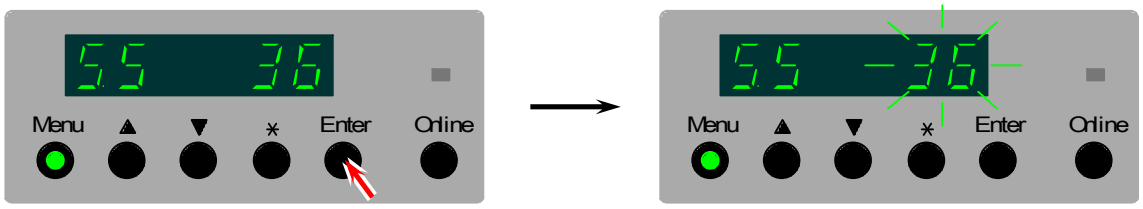


2. Select the item code of your required setting item pressing the [▲] and [▼] Keys.

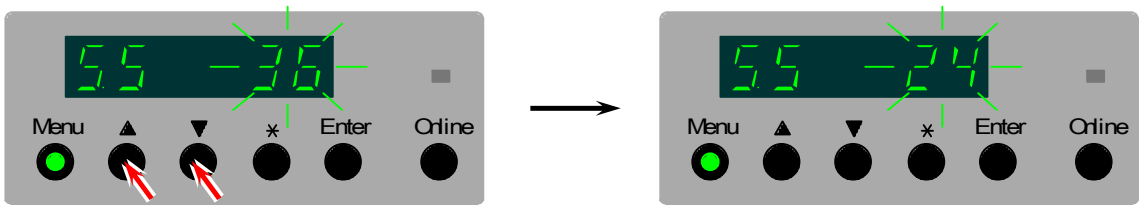


Item code	Setting contents	Reference page
0	Test Print Start Mode	8-227
1	Print Number Setting Mode	8-228
2	Test Pattern Selection Mode	8-228
3	Color Selection Mode	8-229
4	Media Source Selection Mode	8-230
5	Print Length Setting Mode	8-230
6	Media Type Selection Mode (for cut sheet media)	8-231
7	Reserved	
8	Media Type (Type #X) Selection Mode	8-231

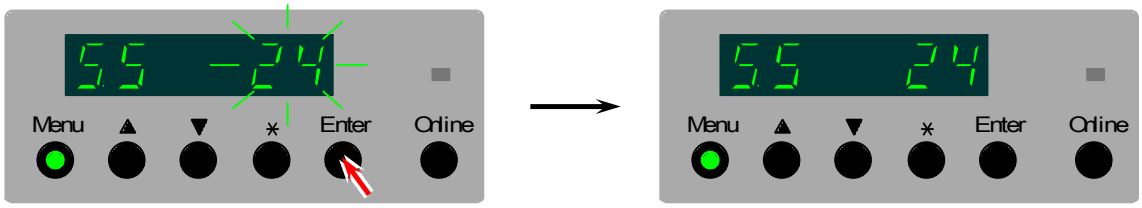
3. Press the Enter Key. The setting value on the right of the Status Display flashes and becomes changeable.



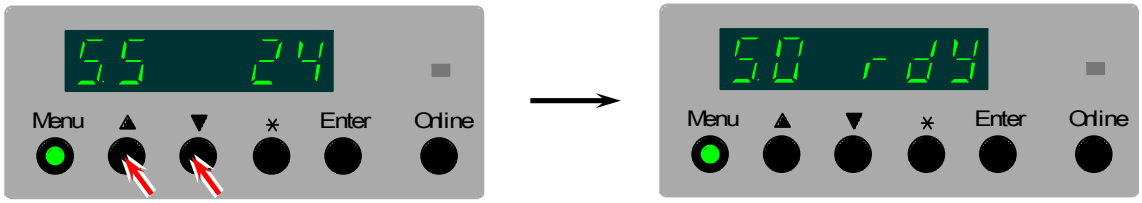
4. Change the setting value as required pressing the [▲] and [▼] Keys.



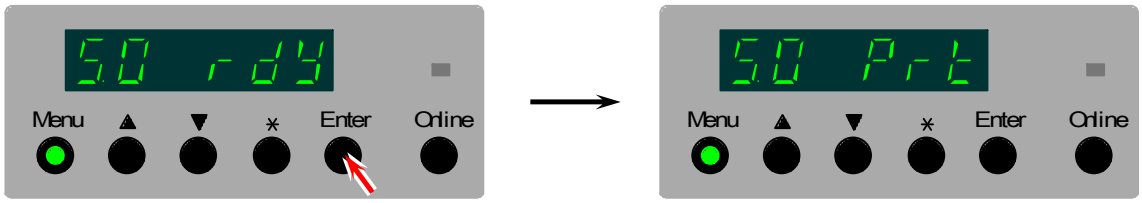
5. Press the Enter Key to decide the selected setting. The setting value stops flashing when decided.



6. Select the item code “0“ (Print Start Mode) pressing the [▲] and [▼] Keys.



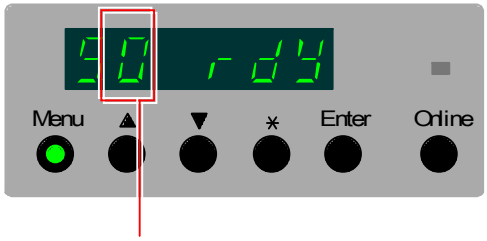
7. After confirming “rdy” is indicated, press the Enter Key to start test printing. “Prt” is indicated during printing out.



8. 8. 3 Description for each setting item

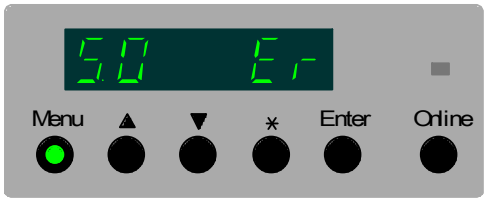
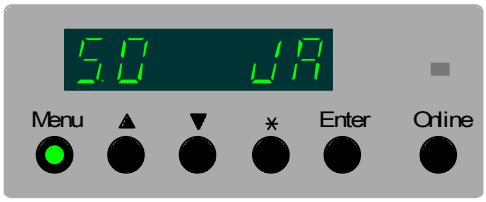
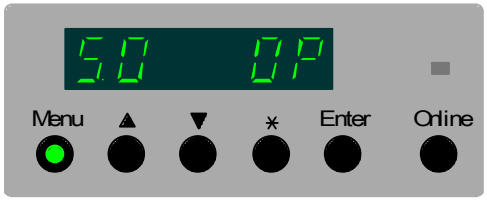
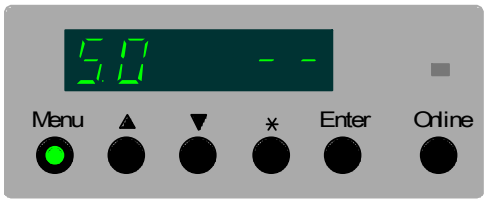
8. 8. 3. 1 Test Print Start Mode

Item code “0” is the Test Print Start Mode. Press Enter Key when the Status Display is indicating “rdy”, and the KIP Color 80 will start printing.



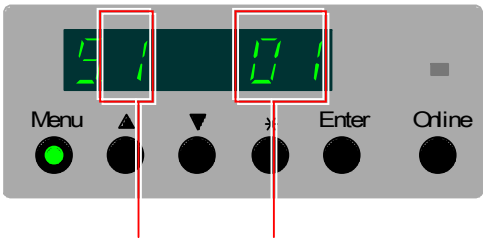
Item code of Test Print Start Mode

The Status Display may indicate other code as follows according to the situation.

Error 	Jam 
Door open 	No paper on the deck 
Wait 	Printing 

8. 8. 3. 2 Print Number Setting Mode

Item code “1” is the Print Number Setting Mode. Input the necessary number of prints with the [▲] and [▼] Keys. The maximum number is 99.

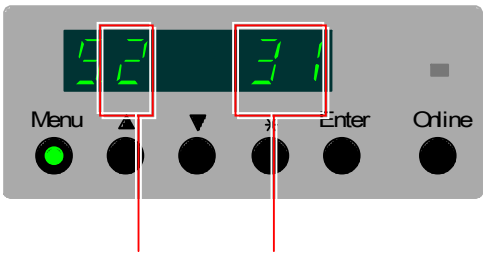


Item code of Print Number Setting Mode Print number

> **⚠ NOTE**
>
> Do not set the print number to “SP” as it is provided for the developing purpose. It is a king of running mode which will produce 30,000 prints.

8. 8. 3. 3 Test Pattern Selection Mode

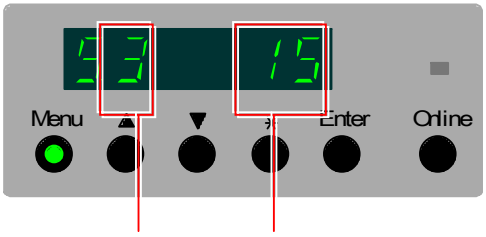
Item code “2” is the Test Pattern Selection Mode. Select a Test Pattern pressing the [▲] and [▼] Keys. There are 32 selectable patterns. See [8.8.4 Test pattern] for the detail.



Item code of Test Pattern Selection Mode Test Pattern

8. 8. 3. 4 Color Selection Mode

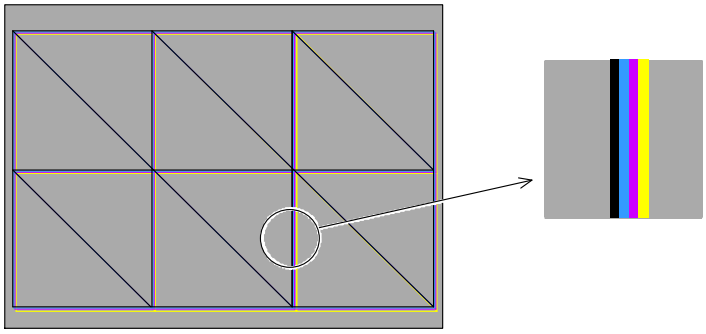
Item code “3” is the Color Selection Mode. The test pattern is printed with the color combination selected in this mode. There are 16 selectable patterns of color combination. Select the code of required color combination pressing the [▲] and [▼] Keys.



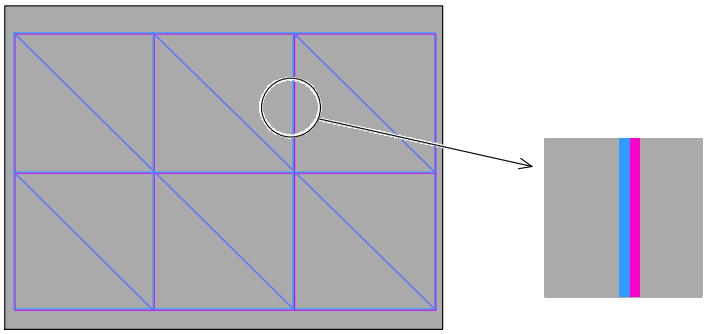
Item code of Color Selection Mode Code of color combination

Code	Color combination	Code	Color combination
0	No color	8	K
1	C	9	CK
2	M	10	MK
3	CM	11	CMK
4	Y	12	YK
5	CY	13	CYK
6	MY	14	MYK
7	CMY	15	CMYK

Example : Code 15 (CMYK)



Example : Code 3 (CM)

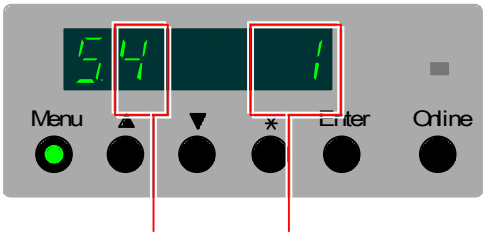


⚠ NOTE

The color combination selected in this mode does not affect the Test Pattern No.31. The image is printed being divided into 4 colors respectively in case of the Test Pattern No.31.

8. 8. 3. 5 Media Source Selection Mode

Item code “4” is the Media Source Selection Mode. The selectable items are Roll Decks 1 to 4 and the Bypass Feeder. Select the code of required media source pressing the [▲] and [▼] Keys.

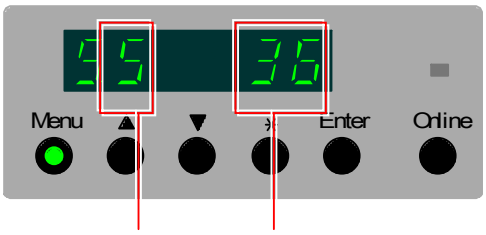


Item code of Media Source Selection Mode Code of media source

Code	Media source
0	Bypass Feeder
1	Roll Deck 1
2	Roll Deck 2
3	Roll Deck 3
4	Roll Deck 4

8. 8. 3. 6 Print Length Setting Mode

Item code “5” is the Media Source Selection Mode. The indicated sizes depend on the selection of format (metric/inch). Select the required print length pressing the [▲] and [▼] Keys.



Item code of Print Length Setting Mode Print length

Selectable lengths are;

Metric mode

A0, A1, A2, A3, A4, A5, b1, b2, b3, b4, b5 & SC

Inch mode

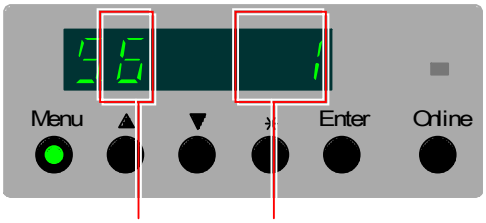
48”, 44”, 36”, 34”, 30”, 24”, 22”, 18”, 17”, 15”, 11”, 8.5 & SC

NOTE

Print length becomes either 6m or 48m depending on the maximum print length setting (Service Mode 4-0004) if “SC” is selected.

8. 8. 3. 7 Media Type Selection Mode (for cut sheet)

Item code “6” is the Media Type Selection Mode applied in test printing with the cut sheet media. Select the code of required media type pressing the [▲] and [▼] Keys.

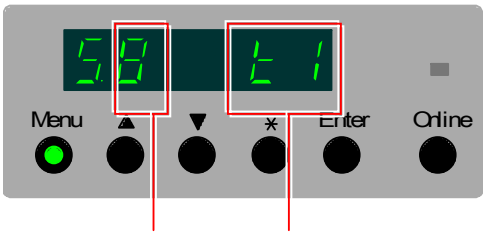


Item code of Media Type Selection Mode Code of media type

Code	Media source
0	Plain paper
1	Vellum / tracing paper
2	Film
3	Gloss

8. 8. 3. 8 Media Type (Type #X) Selection Mode

Item code “8” is the Media Type (Type #X) Selection Mode. Select the code of required media type pressing the [▲] and [▼] Keys.

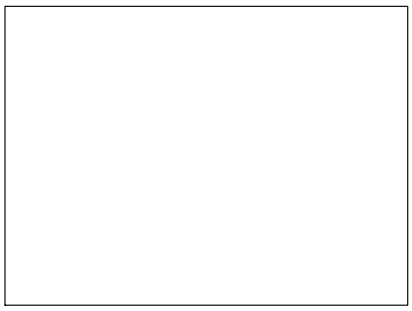
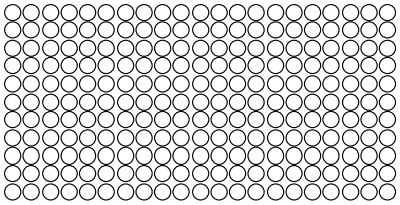
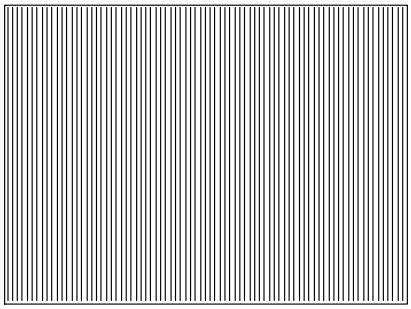
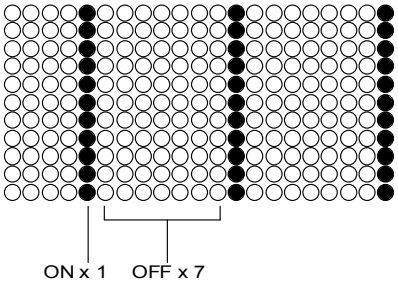
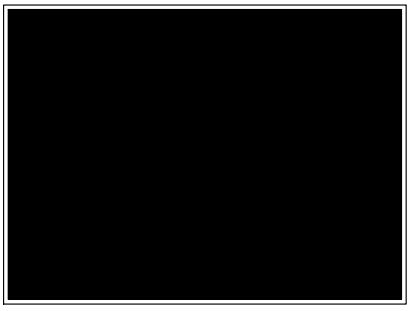
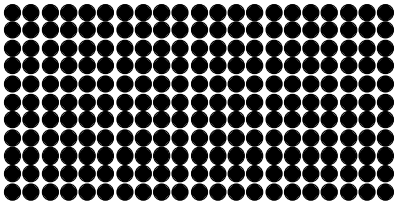


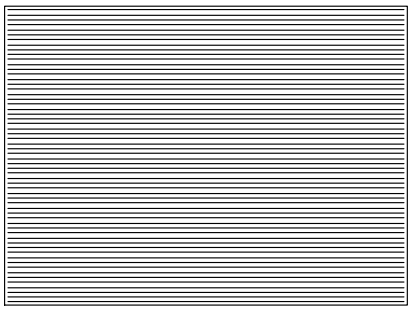
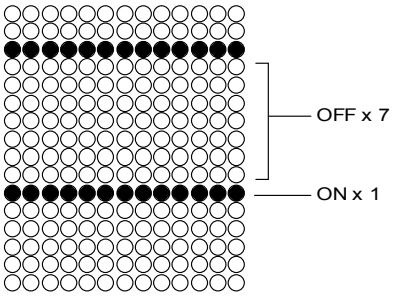
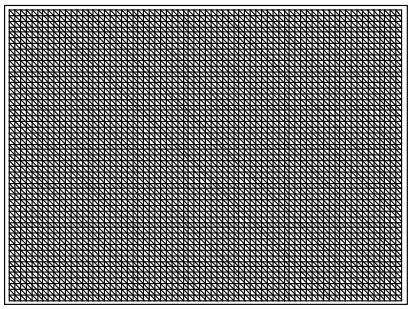
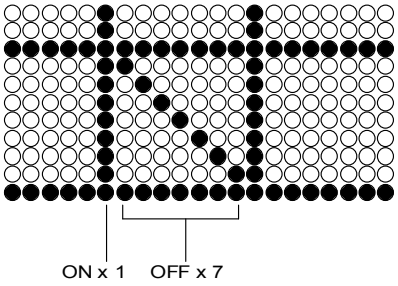
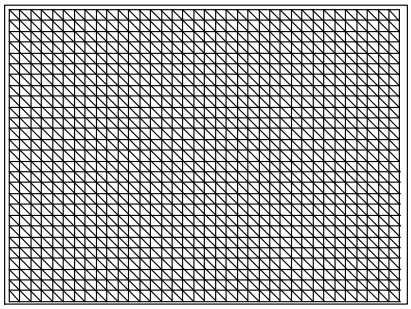
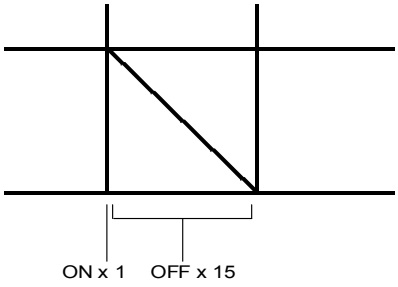
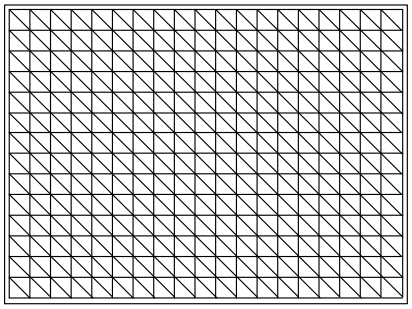
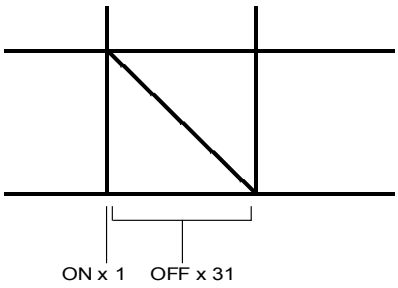
Item code of Media Type Selection Mode Code of media type

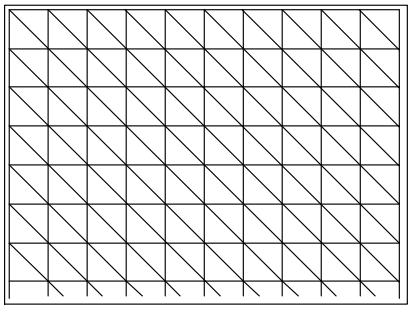
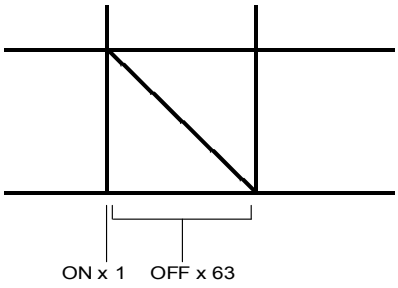
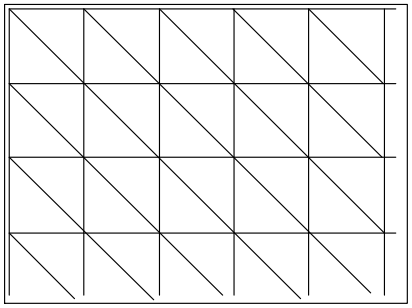
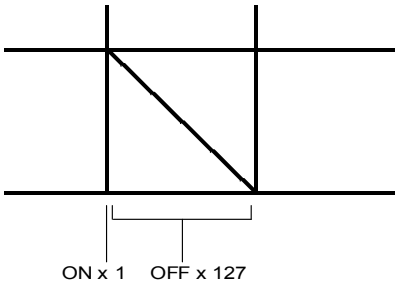
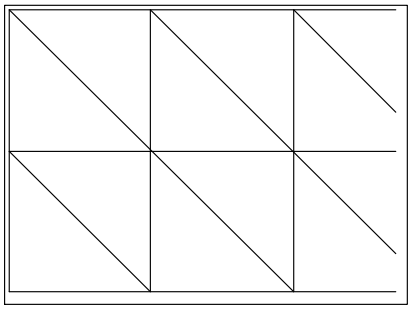
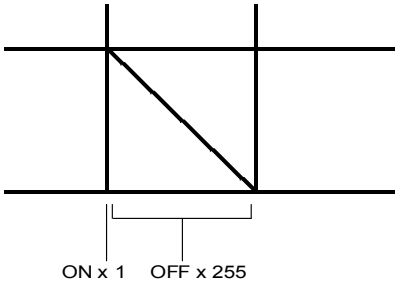
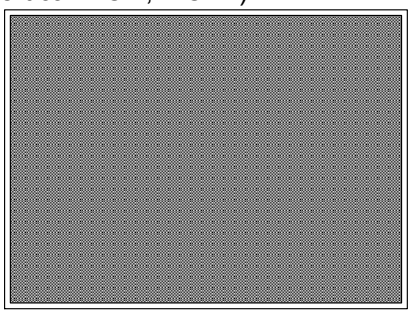
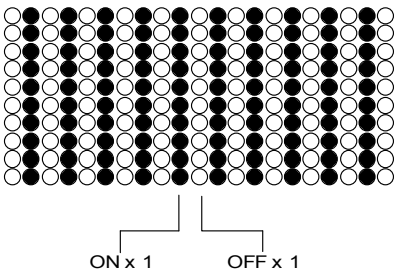
Code	Media type
t1	Type #1
t2	Type #2
t3	Type #3
t4	Type #4

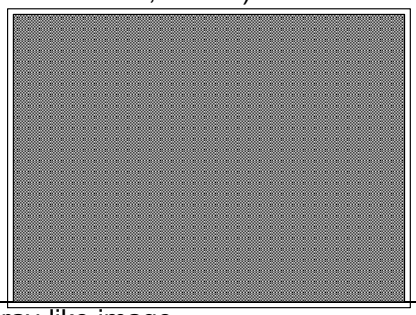
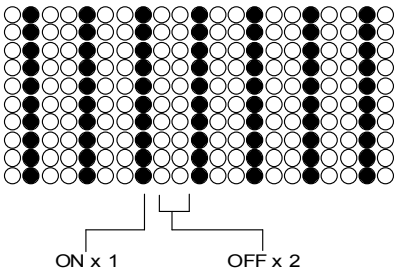
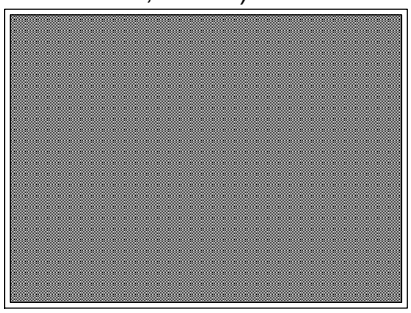
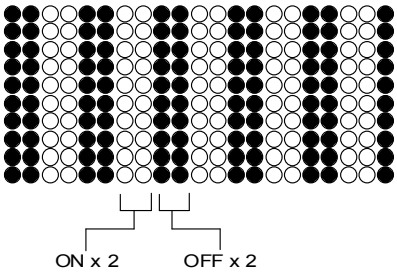
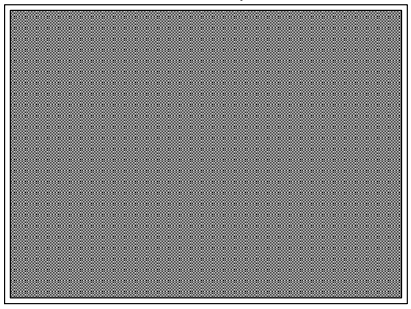
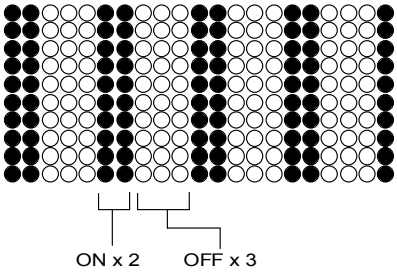
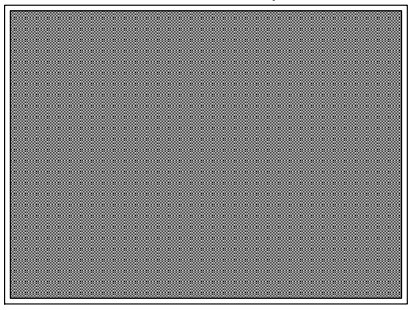
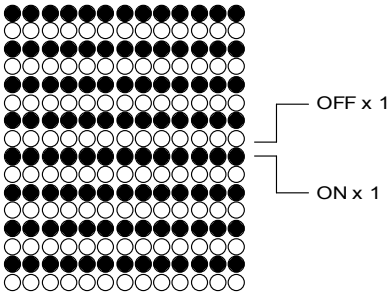
8. 8. 4 Test patterns

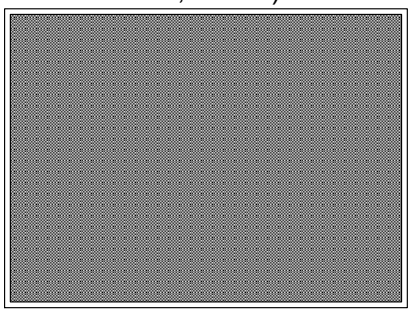
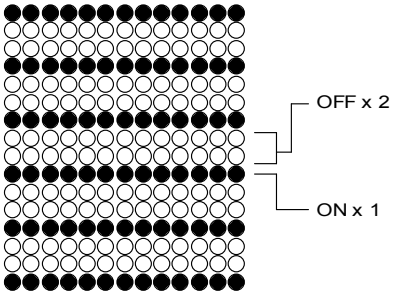
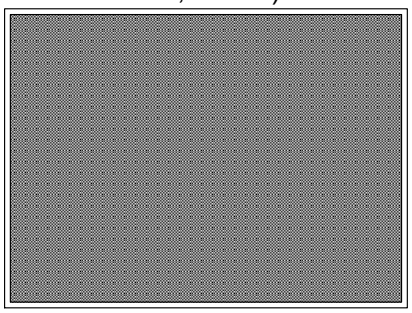
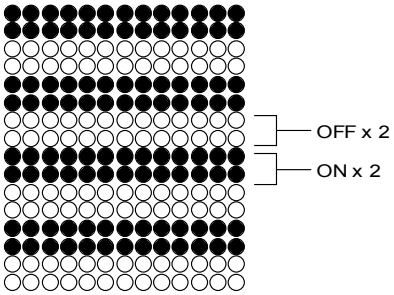
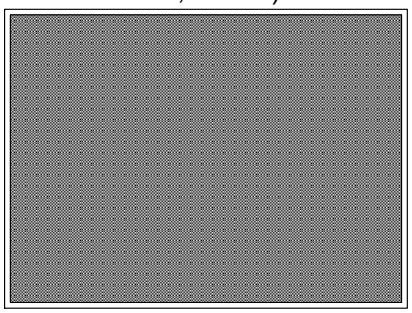
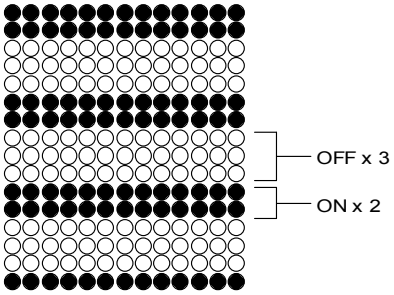
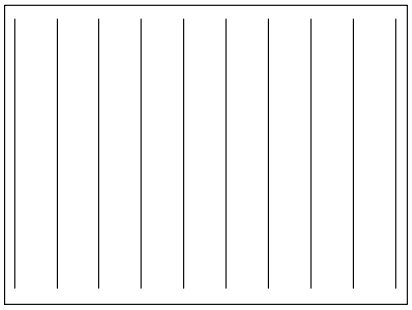
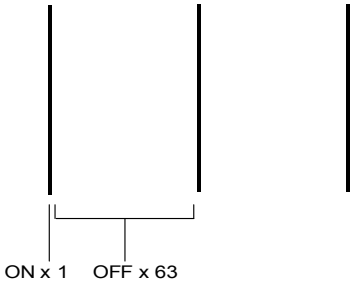
Descriptions of the selected test patterns are listed in below.

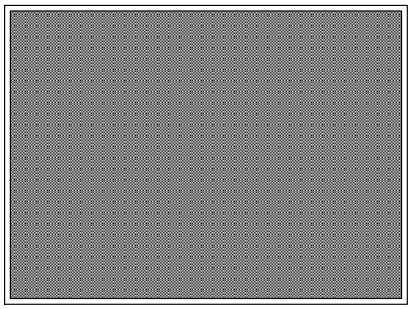
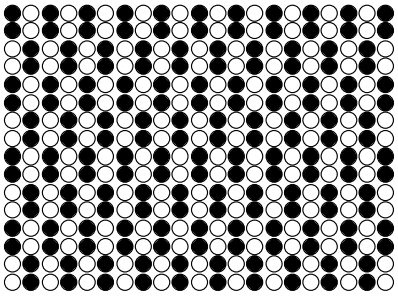
Test Pattern No.	Image sample	Description
1	Mixed images	Test patters from 2 to 28 are printed on one sheet of media.
2	White 	 All pixels are OFF
3 to 10	Thin vertical lines (1 ON, 7 OFF) 	
11	Solid 	 All pixels are ON

Test Pattern No.	Image sample	Description
12	Thin horizontal lines (1 ON, 7 OFF) 	
13	Line images (1 ON, 7 OFF) 	
14	Line images (1 ON, 15 OFF) 	
15	Line images (1 ON, 31 OFF) 	

Test Pattern No.	Image sample	Description
16	Line images (1 ON, 63 OFF) 	
17	Line images (1 ON, 127 OFF) 	
18	Line images (1 ON, 255 OFF) 	
19	Gray-like image (vertical 1 ON, 1 OFF) 	

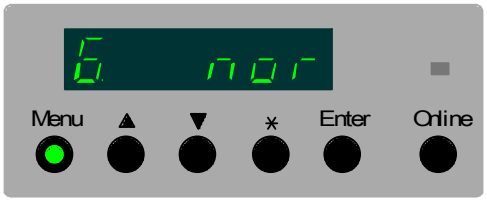
Test Pattern No.	Image sample	Description
20	Gray-like image (vertical 1 ON, 2 OFF) 	
21	Gray-like image (vertical 2 ON, 2 OFF) 	
22	Gray-like image (vertical 2 ON, 3 OFF) 	
23	Gray-like image (horizontal 1 ON, 1 OFF) 	

Test Pattern No.	Image sample	Description
24	Gray-like image (horizontal 1 ON, 2 OFF) 	
25	Gray-like image (horizontal 2 ON, 2 OFF) 	
26	Gray-like image (horizontal 2 ON, 3 OFF) 	
27	Thin vertical limes (1 ON, 63 OFF) 	

Test Pattern No.	Image sample	Description
28	Gray-like image 	
29		
30		
31	Mixed images	Test patters from 2 to 28 are printed on one sheet of media being divided into each color.

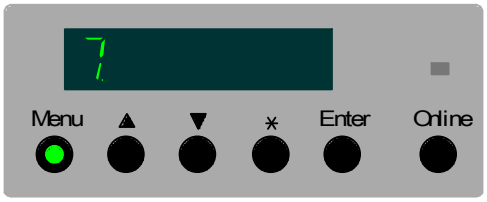
8. 9 Running Mode (Do not use)

The Sub Mode No.6 is the Running Mode provided only for the development purpose of manufacturer. **Do not make any operation in this Mode.**



8.10 Sub Mode No.7 (Reserved)

The Sub Mode No.7 is reserved in preparation for future use. **Do not make any operation in this Mode.**



8.11 Special Mode

8.11. 1 Function

Most of items in the Special Mode are provided for the developing purpose of the manufacturer. Only few items can be operated in the service field. See the following list for the details of the items.

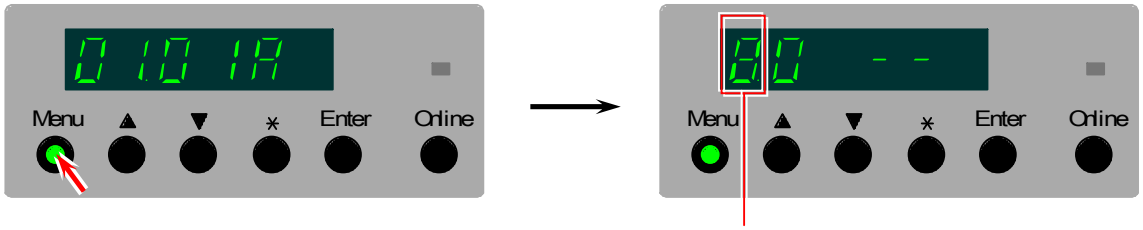
Setting item code	Contents	Necessity of operation in the service field	Reference page
00	Image Corona adjustment (Process 1)	Unnecessary	
01	Transfer Corona adjustment (Process 1)	Unnecessary	
02	Separation Corona adjustment (Process 1)	Unnecessary	
03	Separation Corona adjustment (Process 1)	Unnecessary	
04	Transfer Corona adjustment (Process 2)	Unnecessary	
05	Separation Corona adjustment (Process 2)	Unnecessary	
06	Image Corona adjustment (Process 3)	Unnecessary	
07	Transfer Corona adjustment (Process 3)	Unnecessary	
08	Separation Corona adjustment (Process 3)	Unnecessary	
09	Image Corona adjustment (Process 4)	Unnecessary	
0A	Transfer Corona adjustment (Process 4)	Unnecessary	
0b	Separation Corona adjustment (Process 4)	Unnecessary	
0C	Developer Bias adjustment (Process 1)	Unnecessary	
0d	Developer Bias adjustment (Process 2)	Unnecessary	
0E	Developer Bias adjustment (Process 3)	Unnecessary	
0F	Developer Bias adjustment (Process 4)	Unnecessary	
10	LED Head ON (Process 1)	Unnecessary	
11	LED Head ON (Process 2)	Unnecessary	
12	LED Head ON (Process 3)	Unnecessary	
13	LED Head ON (Process 4)	Unnecessary	
14	Surface Potential Measurement Mode (Process 1)	Unnecessary	
15	Surface Potential Measurement Mode (Process 2)	Unnecessary	
16	Surface Potential Measurement Mode (Process 3)	Unnecessary	
17	Surface Potential Measurement Mode (Process 4)	Unnecessary	
18	Manual execution of SP Control (Process 1)	As required	8-241
19	Manual execution of SP Control (Process 2)	As required	8-241
1A	Manual execution of SP Control (Process 3)	As required	8-241
1b	Manual execution of SP Control (Process 4)	As required	8-241
1C	Density Lock Execution Mode (Process 1)	Unnecessary	
1d	Density Lock Execution Mode (Process 2)	Unnecessary	
1E	Density Lock Execution Mode (Process 3)	Unnecessary	
1F	Density Lock Execution Mode (Process 4)	Unnecessary	
20	Manual execution of Density Control (Process 1)	As required	8-242
21	Manual execution of Density Control (Process 2)	As required	8-242
22	Manual execution of Density Control (Process 3)	As required	8-242
23	Manual execution of Density Control (Process 4)	As required	8-242
24	Toner Supplying Mode (Process 1)	Necessary	8-243
25	Toner Supplying Mode (Process 2)	Necessary	8-243
26	Toner Supplying Mode (Process 3)	Necessary	8-243
27	Toner Supplying Mode (Process 4)	Necessary	8-243
28	Toner Supplying Mode (All processes)	Necessary	8-243

8.11. 2 Operation

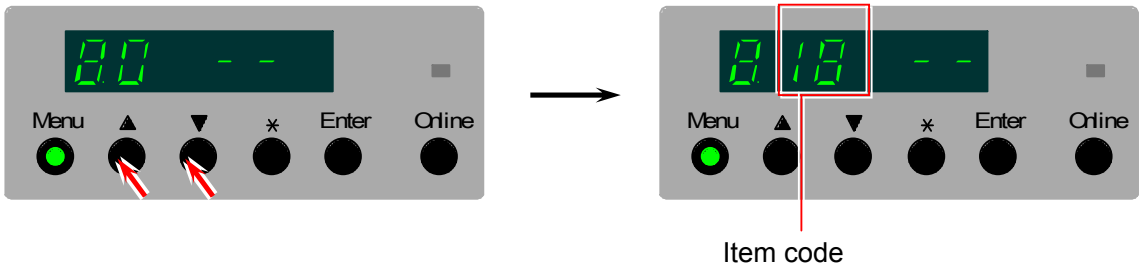
8.11. 2. 1 Manual execution of SP Control (Codes : 18 to 1b)

It is possible to execute the SP Control anytime you require.

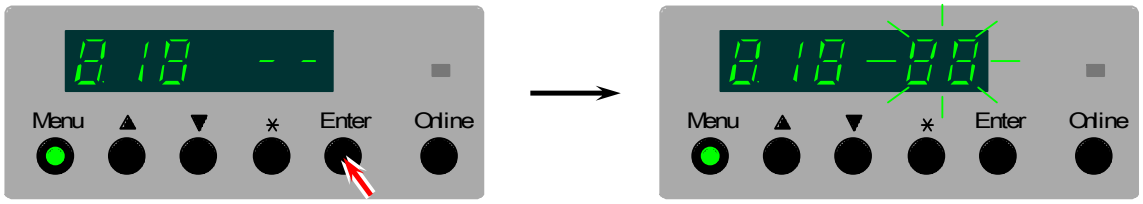
1. After entering the Service Mode, press the Menu Key 9 times to select the Special Mode. The Sub Mode number “8.” flashes on the far left digit.



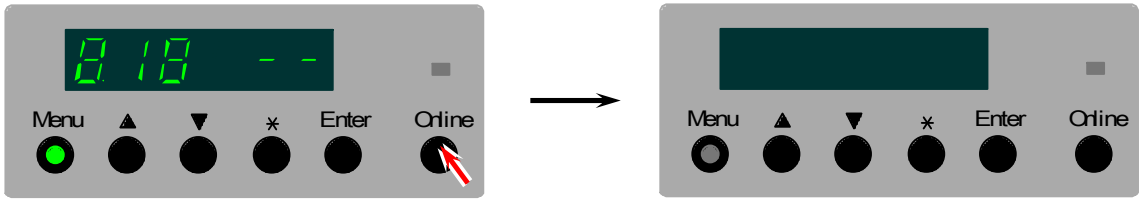
2. Indicate any code number from “18” to “1b” pressing the [▲] and [▼] Keys.



3. Press the Enter Key to execute the SP Control. “88” flashes on the Status Display during the control of surface potential, and it will return to “- -” when controlling is completed.



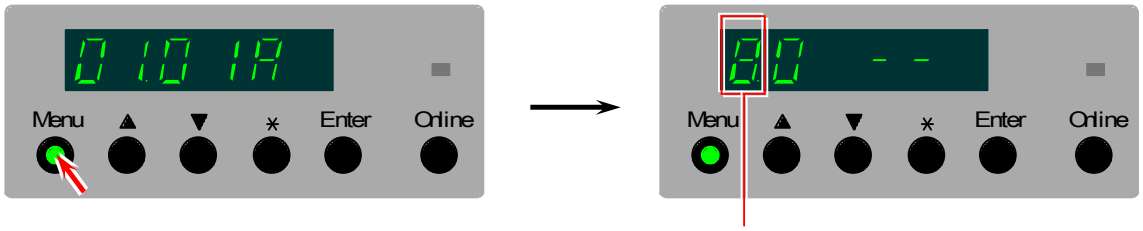
5. Press the Online Key to cancel the Service Mode



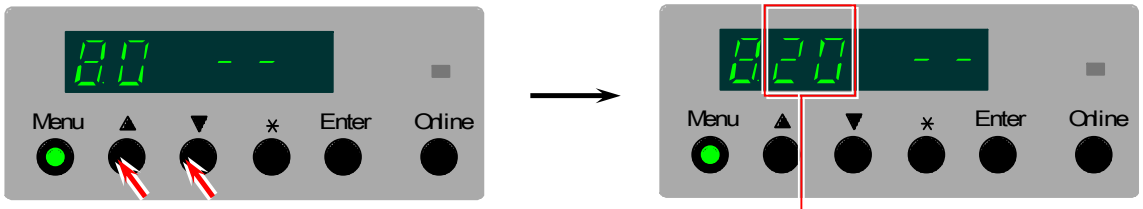
8.11. 2. 2 Manual execution of Density Control (Codes : 20 to 23)

It is possible to execute the Density Control anytime you require.

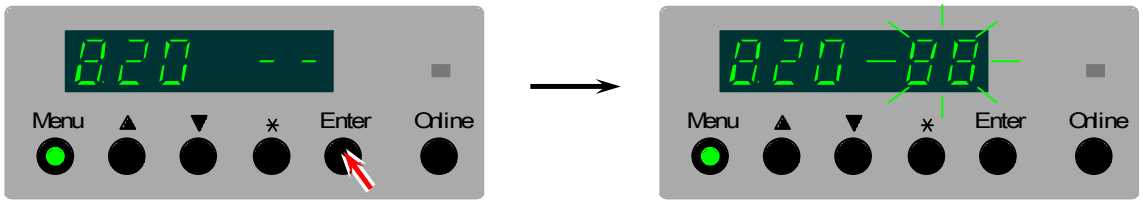
1. After entering the Service Mode, press the Menu Key 9 times to select the Special Mode. The Sub Mode number “8.” flashes on the far left digit.



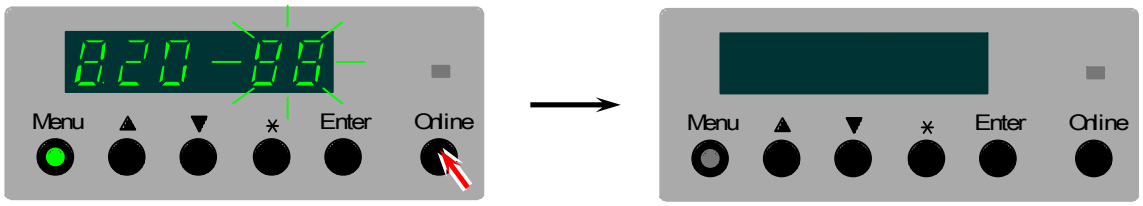
2. Indicate any code number from “20” to “23” pressing the [▲] and [▼] Keys.



3. Press the Enter Key to execute the Density Control. “88” flashes on the Status Display during the control of surface potential, and it will return to “- -” when controlling is completed.



5. Press the Online Key to cancel the Service Mode

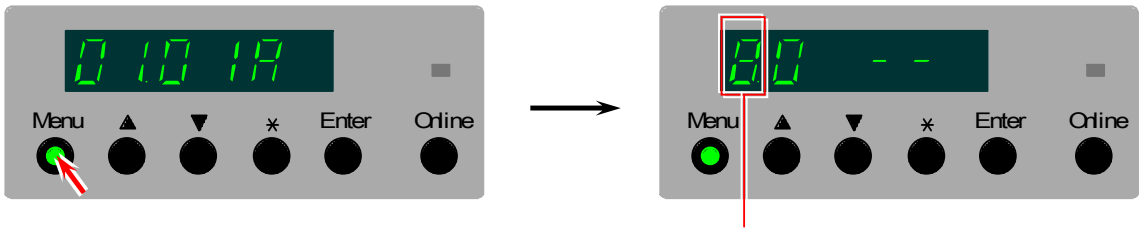


8.11. 2. 3 Toner Supplying Mode (Codes : 24 to 28)

It is possible to supply the toner to the Developer Unit after installing the empty Developer Unit to the machine, in such case as the installation or developer maintenance. Choose any of the setting item code according to your necessity.

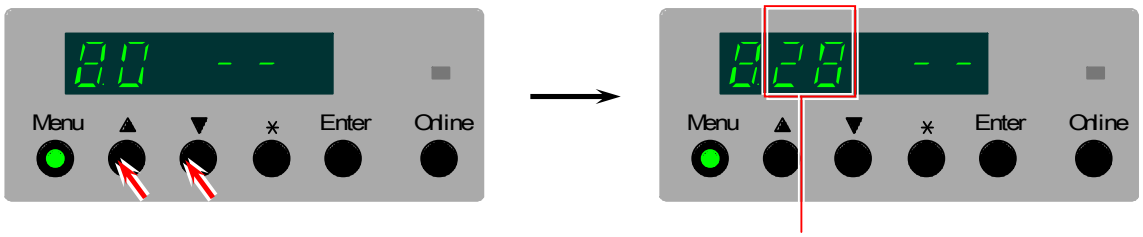
Setting item code	
24	Toner Supplying Mode (Process 1)
25	Toner Supplying Mode (Process 2)
26	Toner Supplying Mode (Process 3)
27	Toner Supplying Mode (Process 4)
28	Toner Supplying Mode (All processes)

1. After entering the Service Mode, press the Menu Key 9 times to select the Special Mode. The Sub Mode number “8.” flashes on the far left digit.



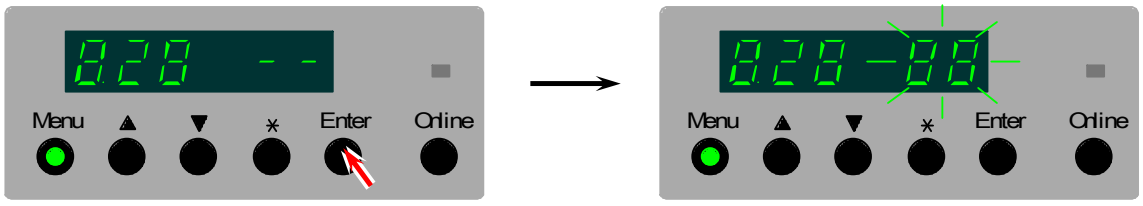
Sub Mode No. of Special Mode

2. Indicate any code number from “24” to “28” pressing the [▲] and [▼] Keys.



Item code

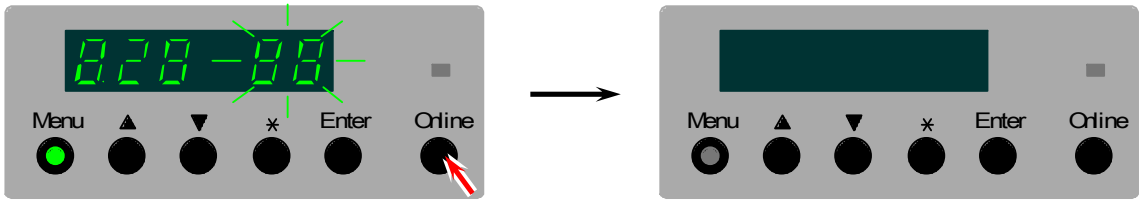
3. Press the Enter Key to start supplying the toner. “88” flashes on the Status Display during toner supplying, and it will return to “- -” when completed.



⚠ NOTE

It takes about 12 to 15 minutes until the completion of toner supplying.

4. Press the Online Key to cancel the Service Mode



8.12 Color Registration Calibration Mode

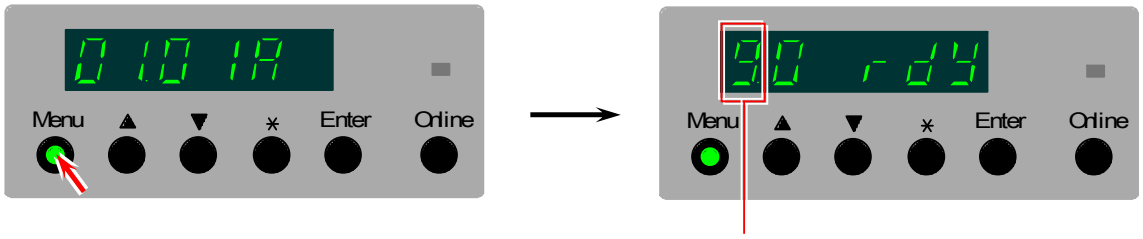
8.12. 1 Function

Calibrations of Color Registration V and H are available.

> **NOTE**
>
> It is recommended to calibrate the Color Registration V and H data on the KIP Diagnostics as it provides easier operation for getting the same calibration result, which is described in detail on the chapter 10.

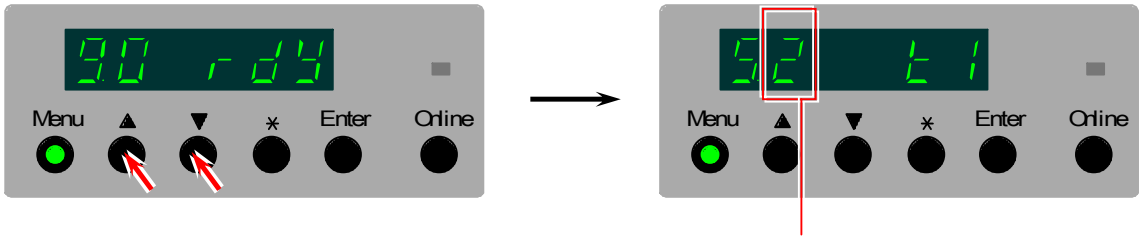
8.12. 2 Operation

1. After entering the Service Mode, press the Menu Key 9 times to select the Color Registration Calibration Mode. The Sub Mode number "9." flashes on the far left digit.



Sub Mode No. of Color Registration Calibration Mode

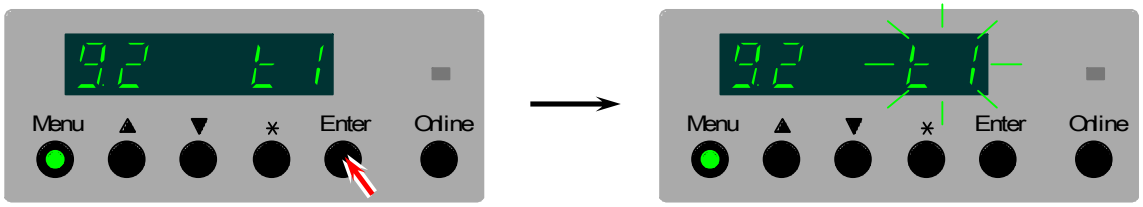
2. Select the item code of your required setting item pressing the [▲] and [▼] Keys.



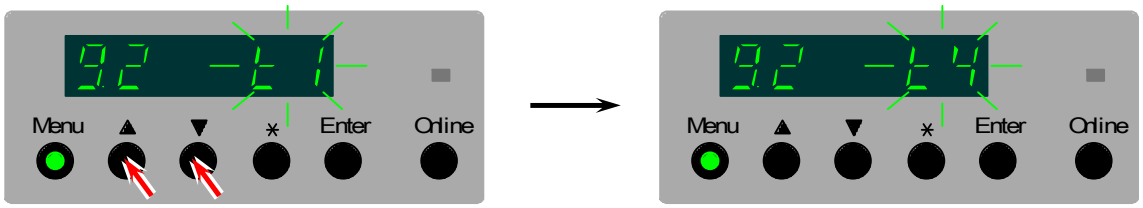
Item code (Example : Print length)

Item code	Setting contents	Reference page
0	Calibration Start Mode	8-247
1	Deck Selection Mode	8-248
2	Media Type (Type #X) Selection Mode	8-248
3	Calibration Item Selection Mode	8-249
4	Simple Calibration / Normal Calibration Selection Mode	8-249
5	Data Number to save Line Pitch Calibration Data	8-
6	Target Length of Line Pitch - Meter	8-
7	Target Length of Line Pitch - Millimeter	8-
8	Number of sampling prints for Line Pitch Calibration	8-

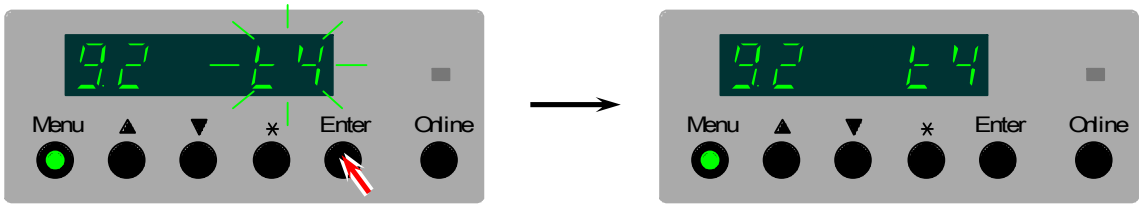
3. Press the Enter Key. The setting value on the right of the Status Display flashes and becomes changeable.



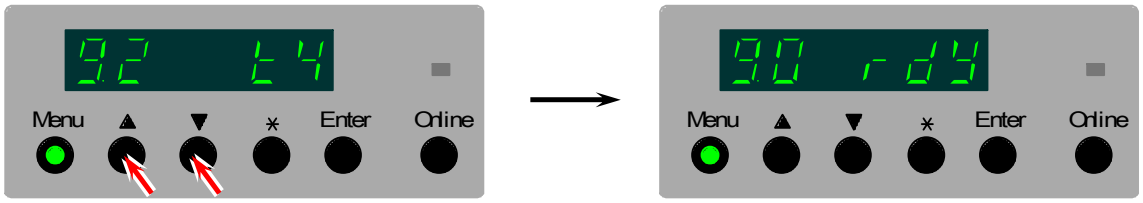
4. Change the setting value as required pressing the [▲] and [▼] Keys.



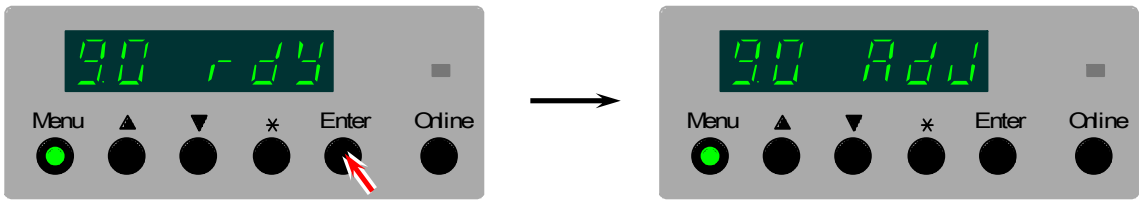
5. Press the Enter Key to decide the selected setting. The setting value stops flashing when decided.



6. Select the item code “0“ (Calibration Start Mode) pressing the [▲] and [▼] Keys.



7. After confirming “rdy” is indicated, press the Enter Key to start test printing. The KC 80 starts calibration process of Color Registration V or H according to the setting. “Adj” is indicated during printing out.



⚠ NOTE

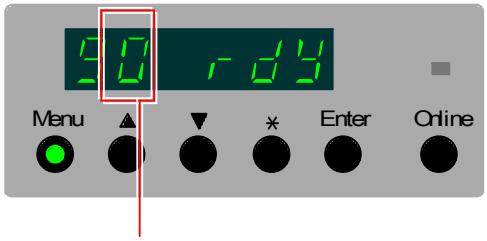
An exclusive calibration will be printed on some sheets during the calibration.

8.12. 3 Description for each setting item

The setting items of Color Registration Calibration Mode are described briefly in this section as these items are explained more precisely in chapter 9.

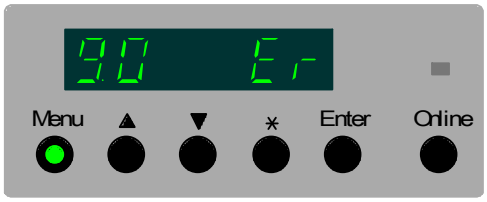
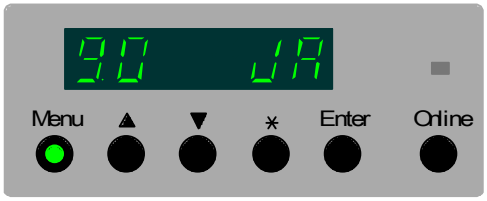
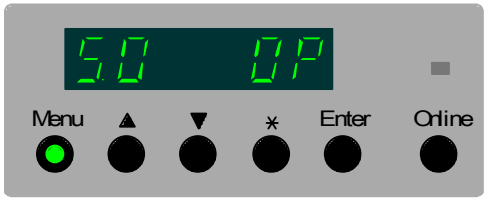
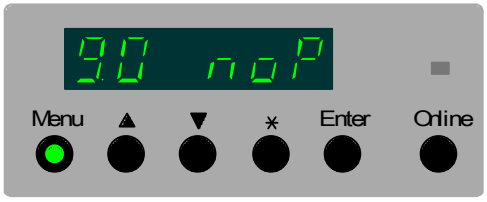
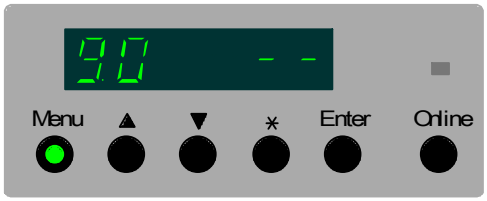
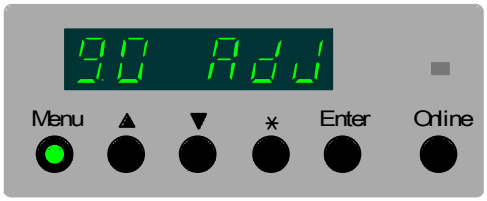
8.12. 3. 1 Calibration Start Mode

Item code “0” is the Calibration Start Mode. Press Enter Key when the Status Display is indicating “rdy”, and the KIP Color 80 will start calibration according to the setting.



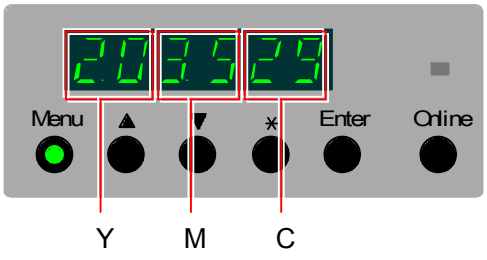
Item code of Test Print Start Mode

The Status Display may indicate other code as follows according to the situation.

Error 	Jam 
Door open 	No paper on the deck 
Wait 	During calibration 

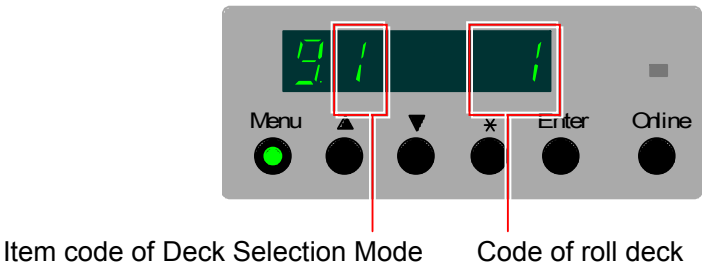
NOTE

If “Sensor” calibration is performed, the Status Display will indicate the output voltages from the color sensors (CMY) in the middle of calibration as the right.



8.12. 3. 2 Deck Selection Mode

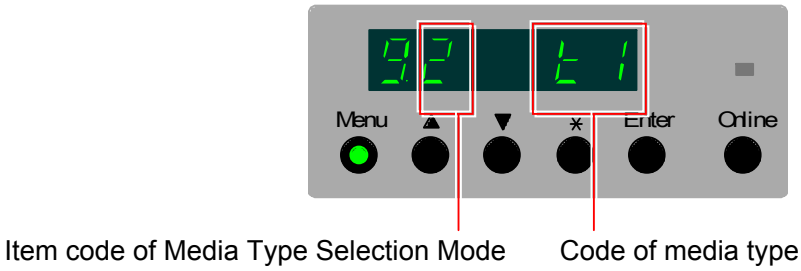
Item code “1” is the Deck Selection Mode. The media in the selected deck is used for the calibration. Select the code of required media source pressing the [▲] and [▼] Keys.



Code	Roll deck
1	Roll Deck 1
2	Roll Deck 2
3	Roll Deck 3
4	Roll Deck 4

8.12. 3. 3 Media Type (Type #X) Selection Mode

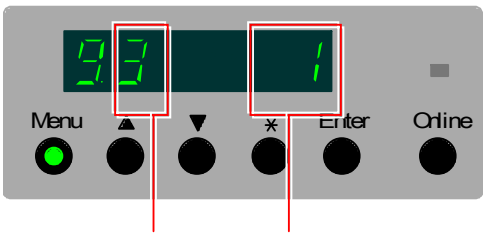
Item code “2” is the Media Type (Type #X) Selection Mode. Select the code of required media type pressing the [▲] and [▼] Keys.



Code	Media type
t1	Type #1
t2	Type #2
t3	Type #3
t4	Type #4

8.12. 3. 4 Calibration Item Selection Mode

Item code “3” is the Calibration Item Selection Mode. Select the code of required calibration item pressing the [▲] and [▼] Keys.

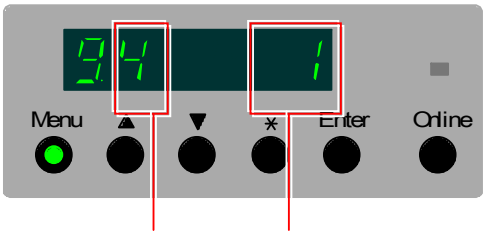


Item code of Calibration Item Selection Mode Code of calibration item

Code	Calibration item
1	Sensor
2	Color Registration V
3	Color Registration H
4	Motor
5	Line Pitch

8.12. 3. 5 Simple Calibration / Normal Calibration Selection Mode

Item code “4” is the Simple Calibration / Normal Calibration Selection Mode applied when the Color Registration V is to be calibrated. Select the code of required calibration item pressing the [▲] and [▼] Keys.

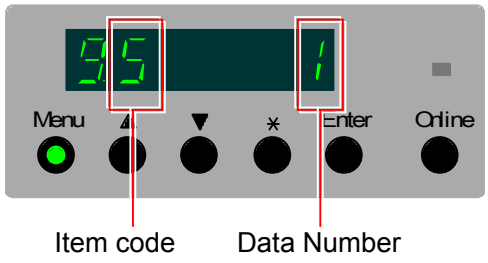


Item code of Calibration Item Selection Mode Code of calibration item

Code	Calibration item
1	Normal calibration
2	Simple calibration

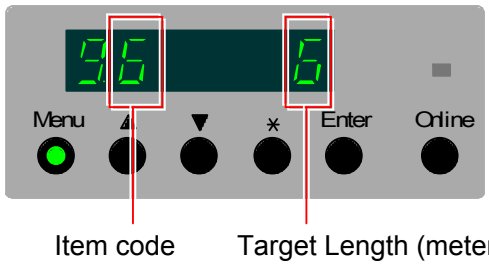
8.12. 3. 6 Data Number to save Line Pitch Calibration Data

There are 10 different Data Box (Data Number) for saving the Line Pitch Calibration Data. As each box can save 1 Line Pitch Calibration Data, the system can have 10 Line Pitch Calibration Data in maximum. This mode specifies which Data Box (Data Number) the Line Pitch Calibration Data should be saved in. Choose any value from 1 to 10 pressing the [▲] and [▼] Keys.



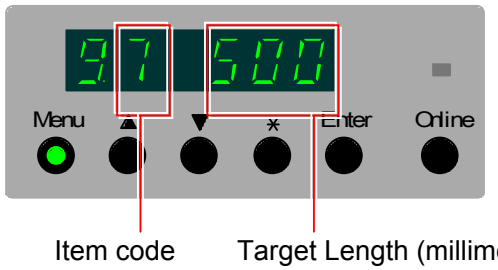
8.12. 3. 7 Target Length of Line Pitch - Meter

Line Pitch is a feature to achieve the best possible Color Registration V for some targeted length of print. If you wish to have the best achievement for 6500mm long print for example, you have to perform sampling to get the best calibration data for 6500. This mode specifies meter of target length. (In case of 6500mm, this mode can specify “6”.) Adjustable range is 0 to 45 in 1m increment.



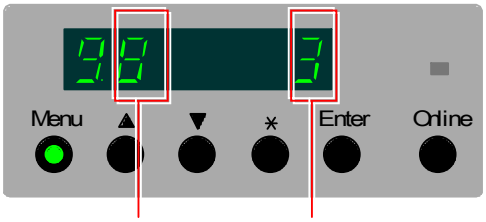
8.12. 3. 8 Target Length of Line Pitch - Millimeter

This mode also specifies millimeter of Target Length similar with the above mode. Adjustable range is 0 to 999 in 1mm increment.



8.12. 3. 9 Number of sampling prints for Line Pitch Calibration

It is necessary for collecting the Line Pitch Calibration Data to perform sampling mode. This mode specifies how many sampling prints have to be done in the sampling mode. More times of sampling will achieve more accurate calibration result. Adjustable range is from 1 to 5.



Item code Number of sampling prints

Chapter 9

Operations of KIPDiagColor

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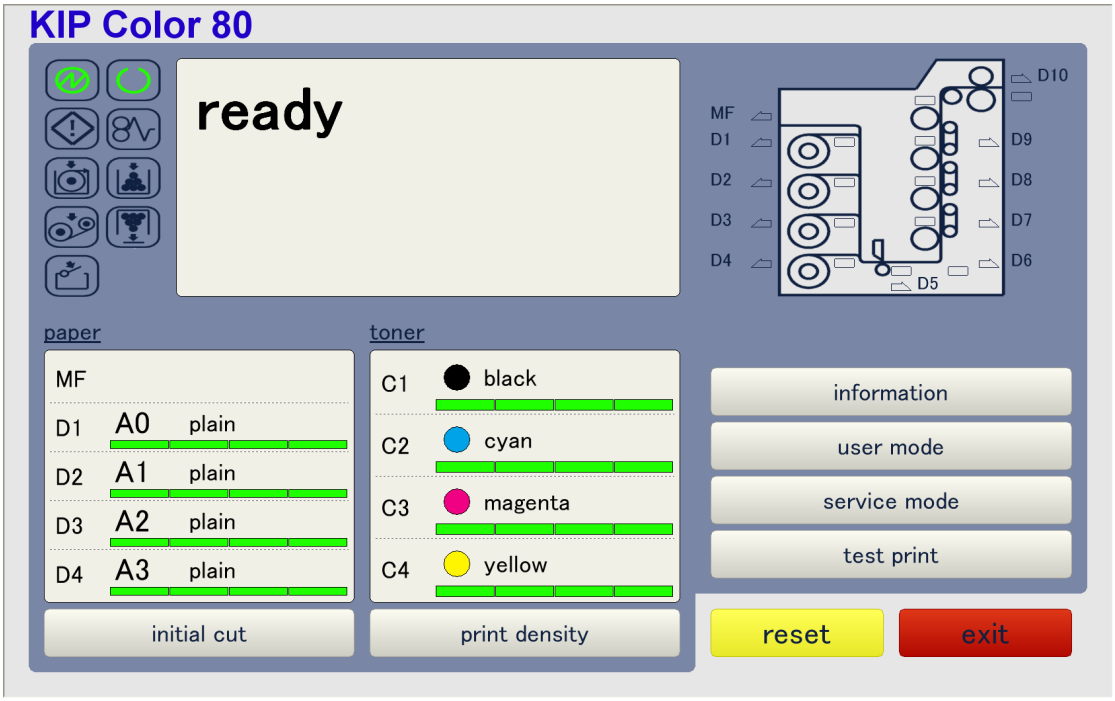
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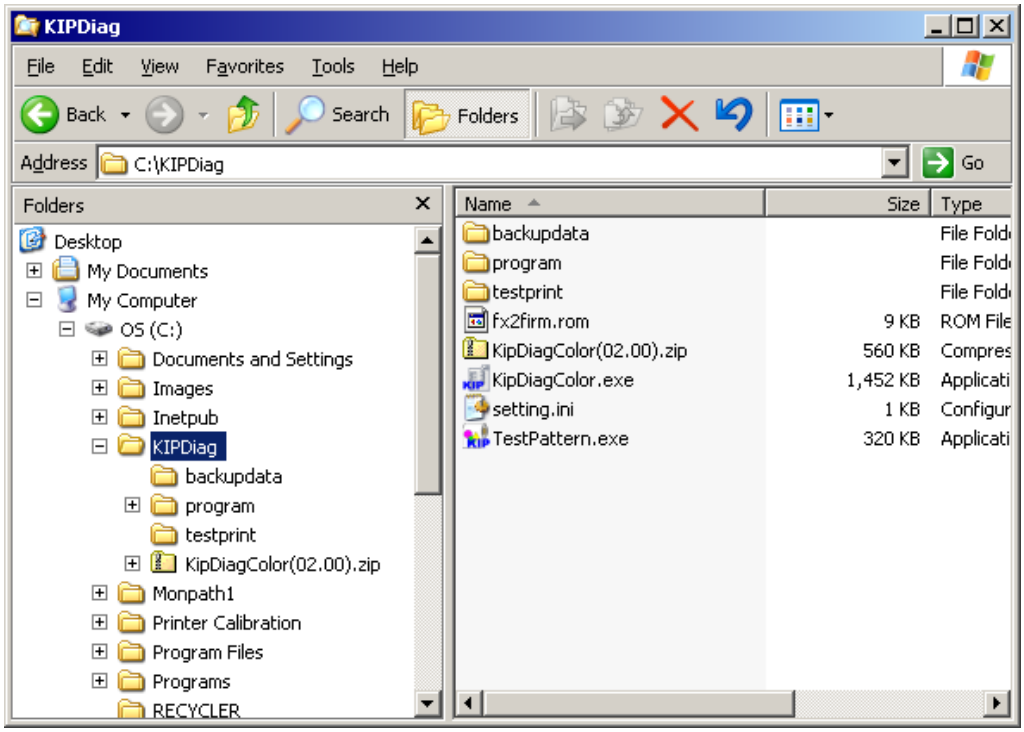
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9. 1 Introduction of KIPDiagColor

KIPDiagColor is a Windows application that is exclusively used for taking field maintenance for the KIP Color 80 printer.



KIPDiagColor is included in the ghost image of KC80 IPS. It is to be copied to the designated location (folder) of KC80 IPS by simply taking re-ghosting. The location where it resides on KC80 IPS is **C:\KipDiag**.



9. 2 Installation to the service laptop

9. 2. 1 Operation environment

The following requirements have to be satisfied for using the KIPDiagColor.

- Windows XP or Windows 2000
- USB 2.0 Interface

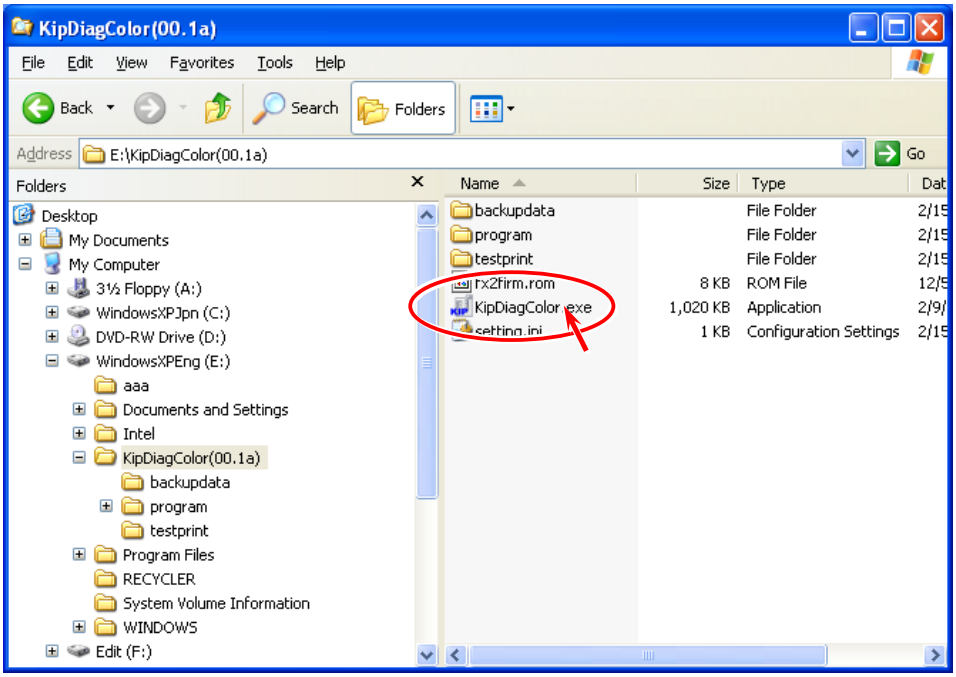
Screen resolution is optimized for 1280 x 1024 pixels.
Touch screen operation is assumed.

9. 2. 2 Installation of USB Driver

Connect the USB cable to the PC when the KIP Color 80 is turned on. The installation wizard runs automatically. Install the USB Driver “KipColor.inf” and “KipColor.sys” to the PC following the guidance of the wizard.

9. 2. 3 Installation of KIPDiagColor

Confirm both the application file “KipDiagColor.exe” and the USB firmware file “fx2firm.rom” are on the same folder.
Run the KIPDiagColor double-clicking “KipDiagColor.exe”.
The firmware file “fx2firm.rom” is transferred to KC80 automatically, and the application starts USB communication between KC80.



NOTE

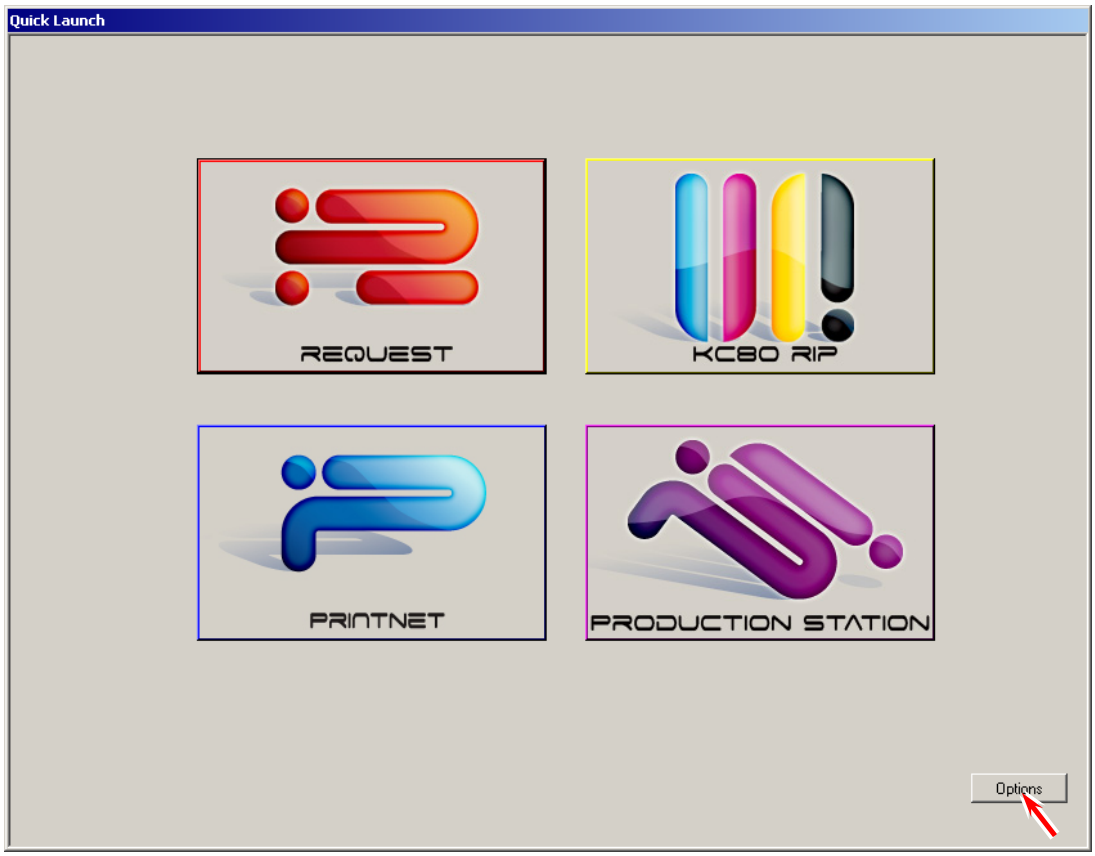
Install “gdiplus” if the KIPDiagColor is operated on the Windows 2000, which can be supplied from Microsoft.

9. 3 Basic Operations

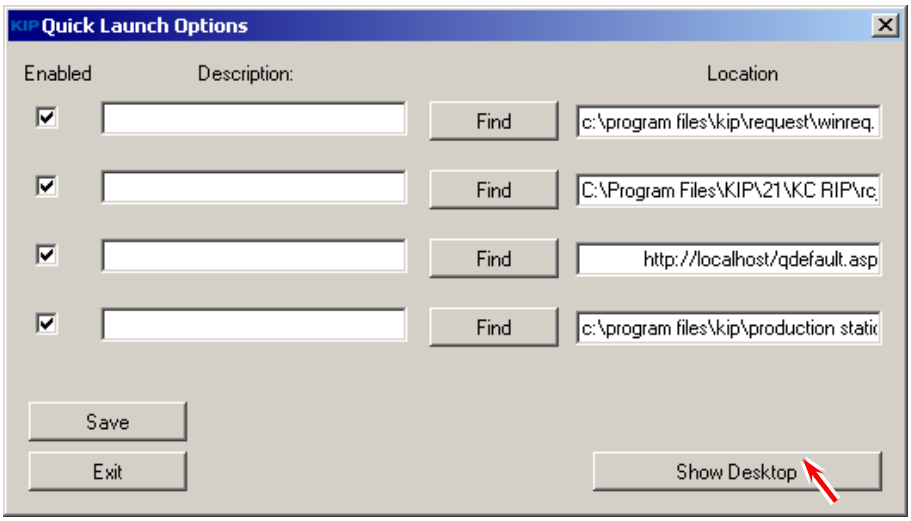
9. 3. 1 Running the KIPDiagColor on the KC80 IPS

1. After confirming that both the KIP Color 80 printer and the KC80IPS are connected with each other with USB cable, turn on both devices.

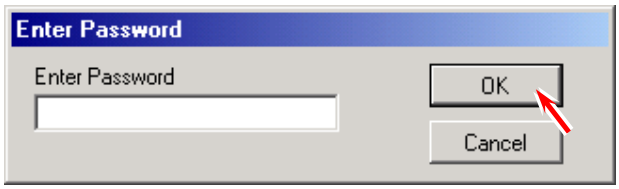
2. Click on **Options** on the bottom right of Quick Launch.



3. Click on **Show Desktop**.



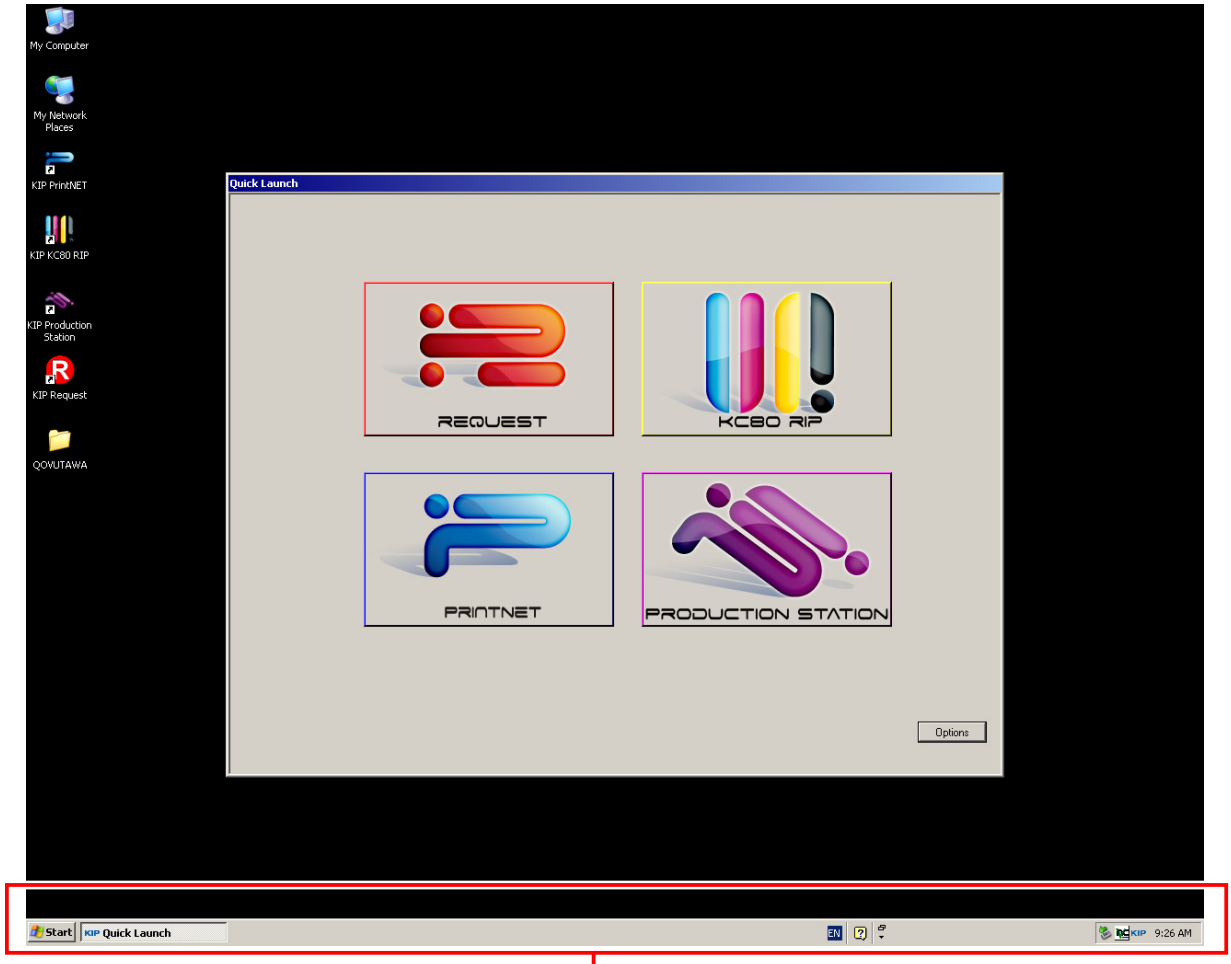
4. Enter the entry password when required by the following dialog, and click on OK. This will indicate the Windows task bar.



NOTE

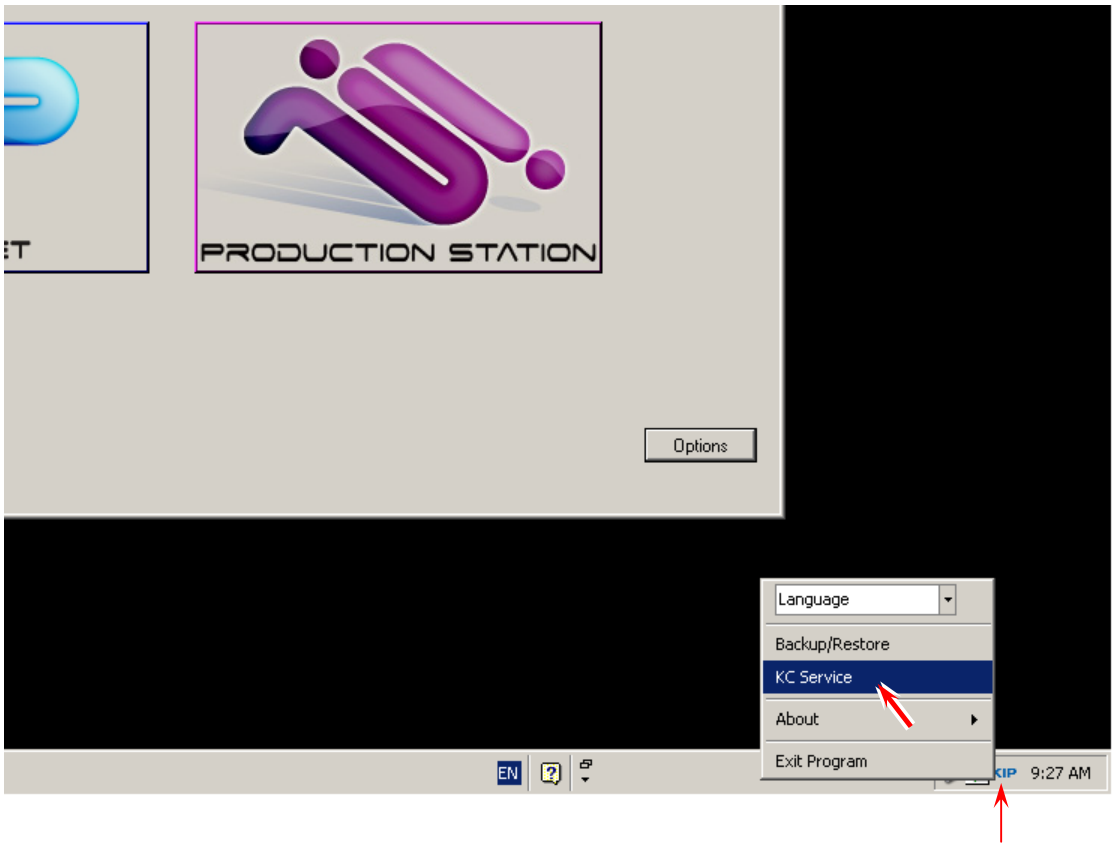
(1) Default entry password is **kip**.

(2) The operator can change the password as he likes. See [9.x How to change entry password for KIPDiagColor.]

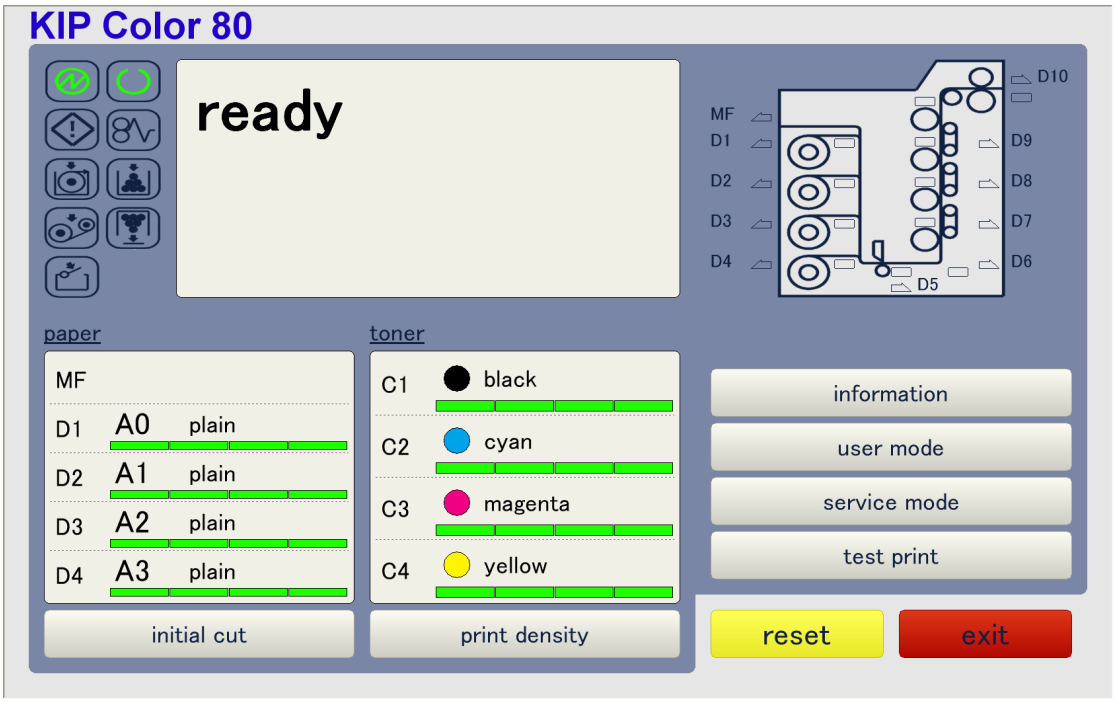


Windows task bar

5. Right-click on **KIP** on the task bar and select **KC Service**.

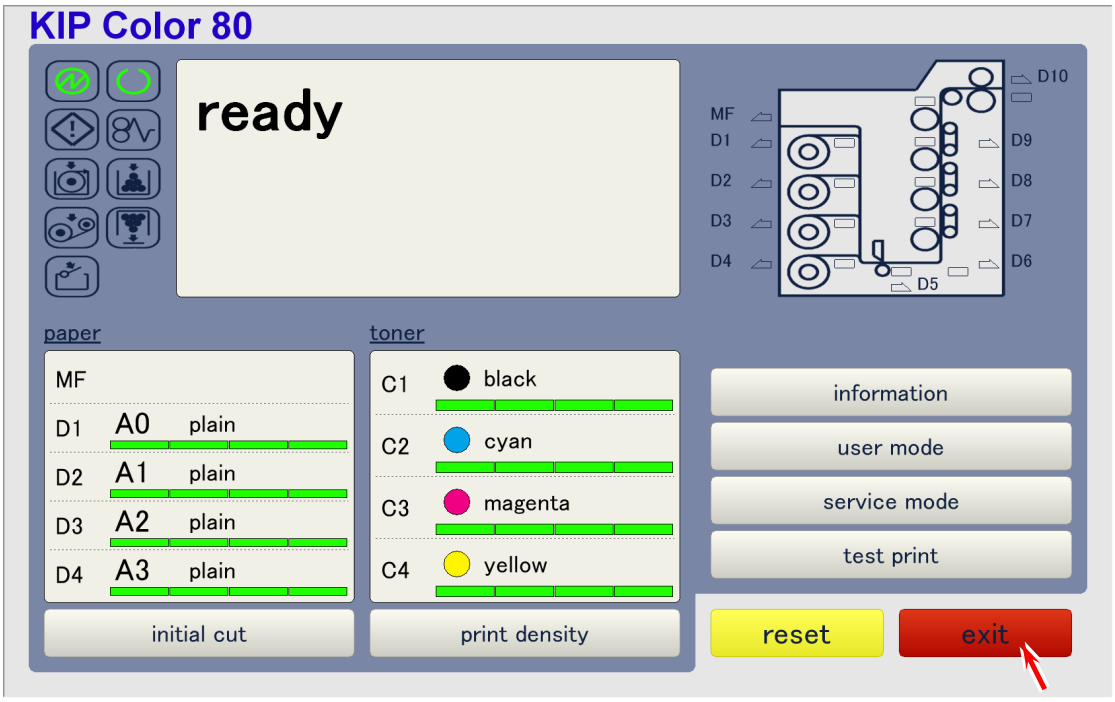


6. KIPDiagColor runs.

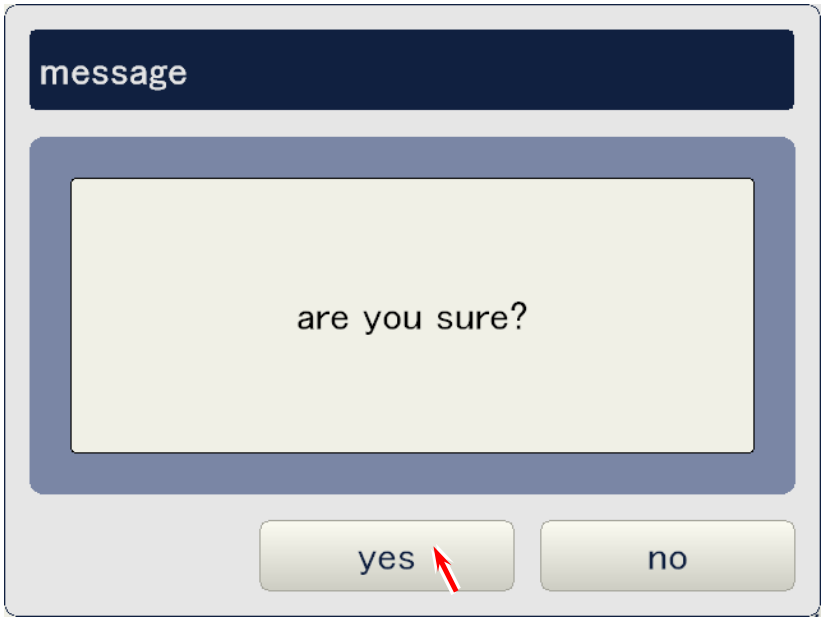


9. 3. 2 Closing the KIPDiagColor

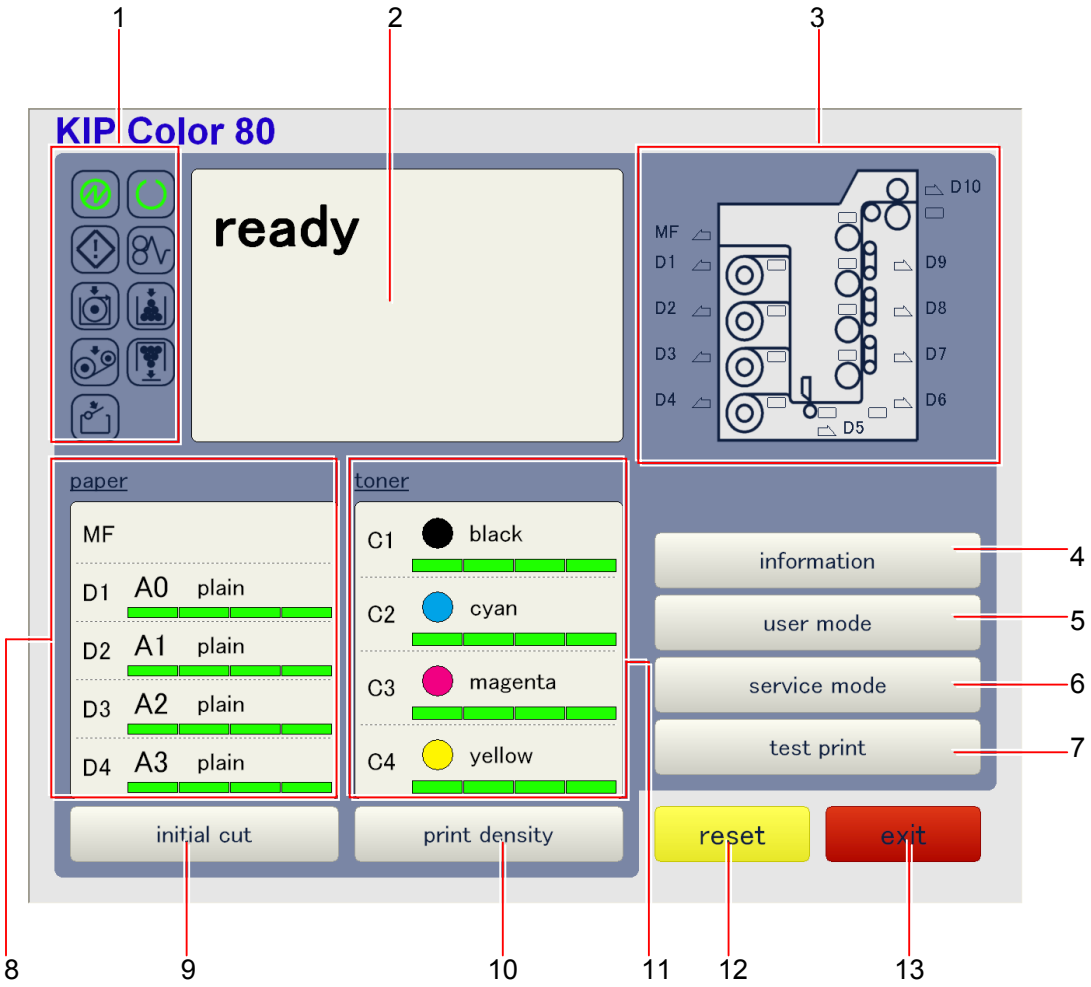
1. Click on **exit**.



2. Click on yes to in the following dialog to close the KIPDiagColor.



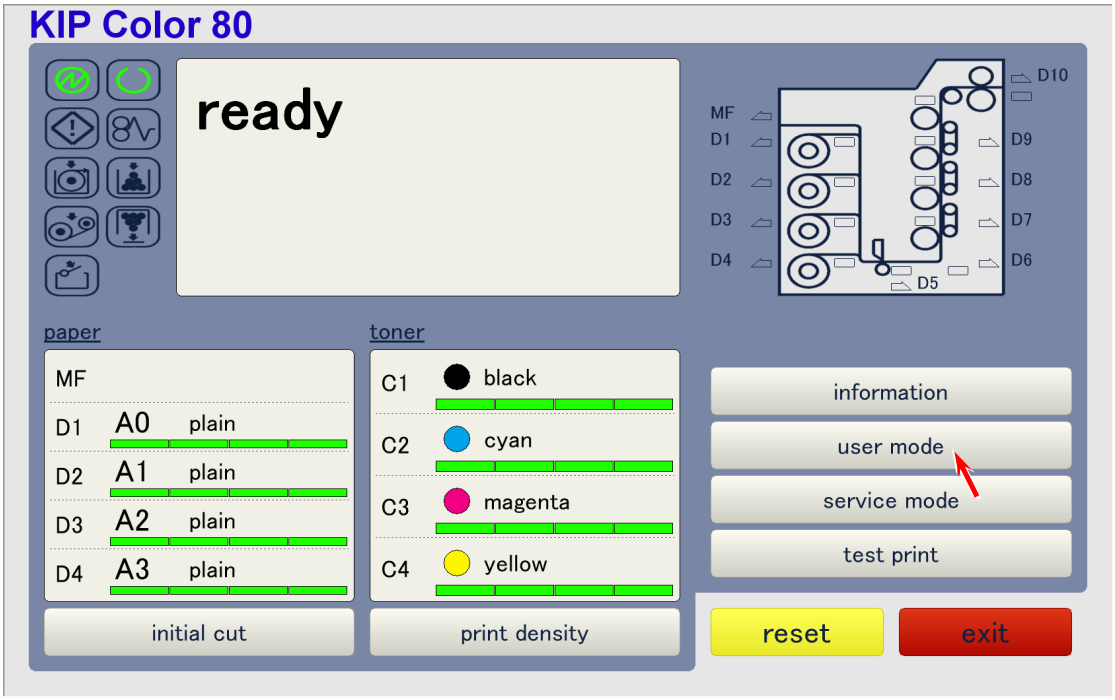
9. 3. 3 Overview of the Main Screen



No.	Name	Brief explanation	Reference page
1	Status Icons	Informs the printer status.	9-242
2	Message Window	Indicates printer status, error/warning message, and printer mode.	9-244
3	Jam & Open Location Indicator	Informs the location of jam and open errors.	9-245
4	Information Button	Informs the version of software and hardware. Informs the printer configurations.	9-248
5	User Mode Button	User Mode operations are available.	9-10
6	Service Mode Button	Service Mode operations are available.	9-37
7	Test Print Button	Test print operations are available.	9-220
8	Paper Information	Indicates the information about printing media.	9-246
9	Initial Cut Button	Makes an initial cut for the selected roll media.	9-239
10	Print Density Button	Changes the density of each color.	9-240
11	Toner Information	Indicates the information about the toner of each color.	9-247
12	Reset Button	Communication between KIPDiagColor and KIP Color 80 is initialized.	9-241
13	Exit Button	Finishes the KIPDiagColor application.	9-8

9. 4 User Mode Button

It is possible to access the User Modes by clicking on the User Mode Button on the main screen.



The following User Mode Dialog pops up when you click on the User Mode Button, which offers 5 selectable items. Please see the reference page for the description of each item.



Item	Reference page
Maintenance	9-11
Sleep mode	9-12
Density control	9-17
Surf-potential control	9-19
Color regist adjust	9-21

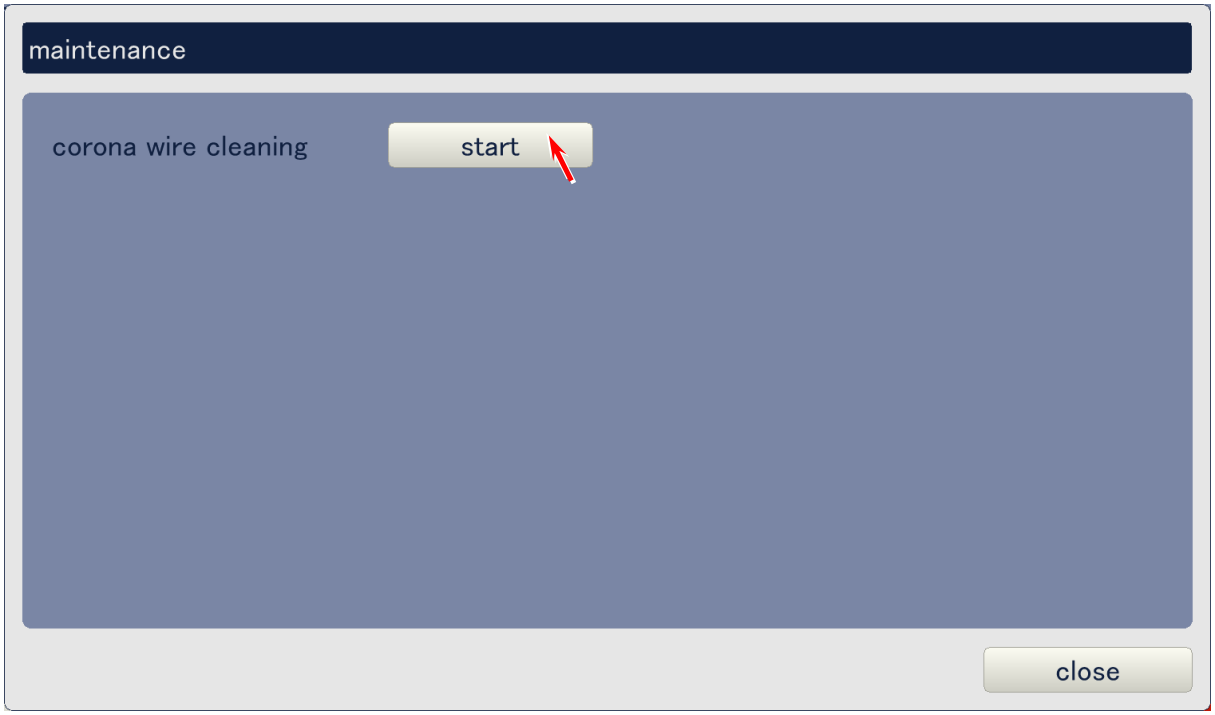
9. 4. 1 Maintenance

Cleaning of the Image Corona Wire can be accomplished.

1. Click on **maintenance**.



2. Click on **start** to start cleaning the Image Corona Wire. Click on **close** when cleaning is finished.

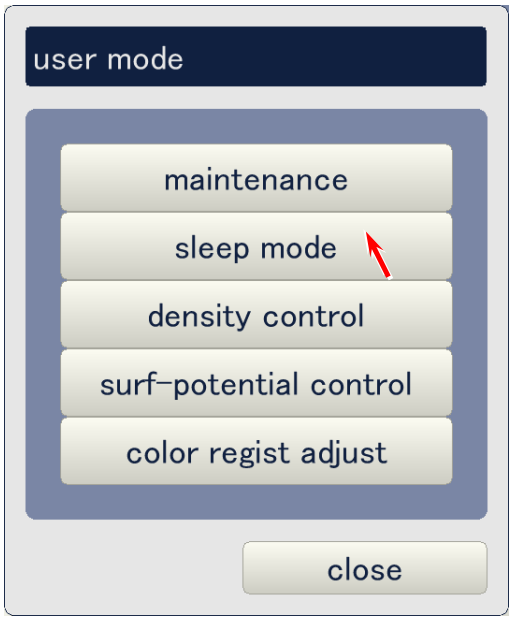


9. 4. 2 Sleep Mode

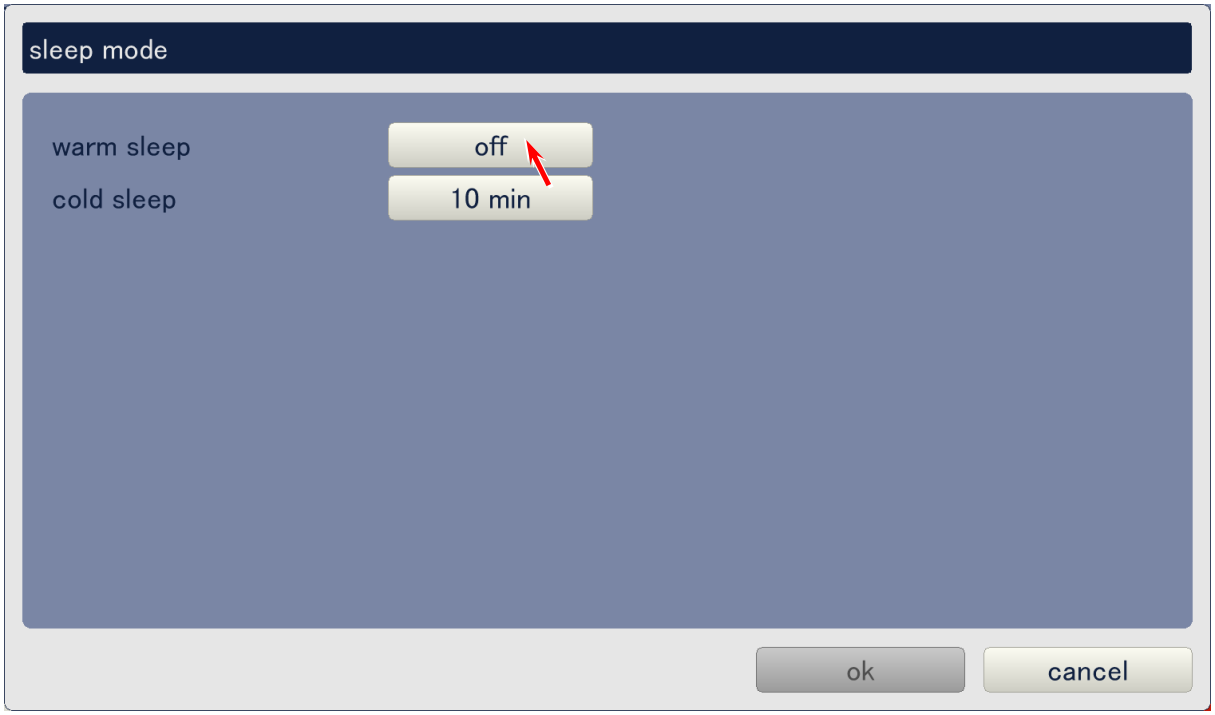
Warm Sleep settings (ON/OFF, & timer) and Cold Sleep setting (timer) are available.

9. 4. 2. 1 Warm Sleep

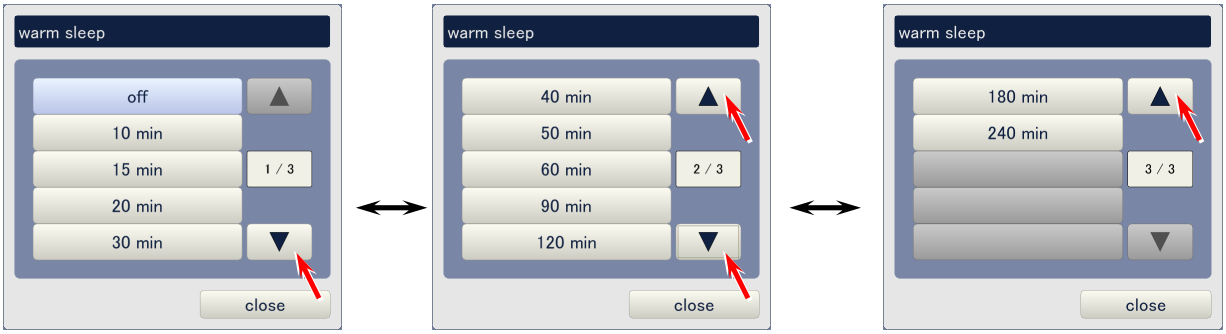
1. Click on **sleep mode**.



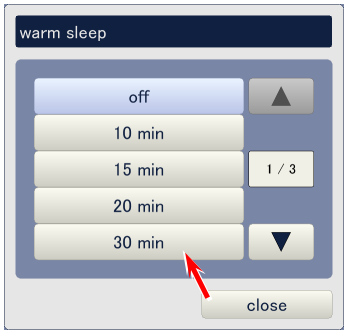
2. Click on the button beside **warm sleep**.



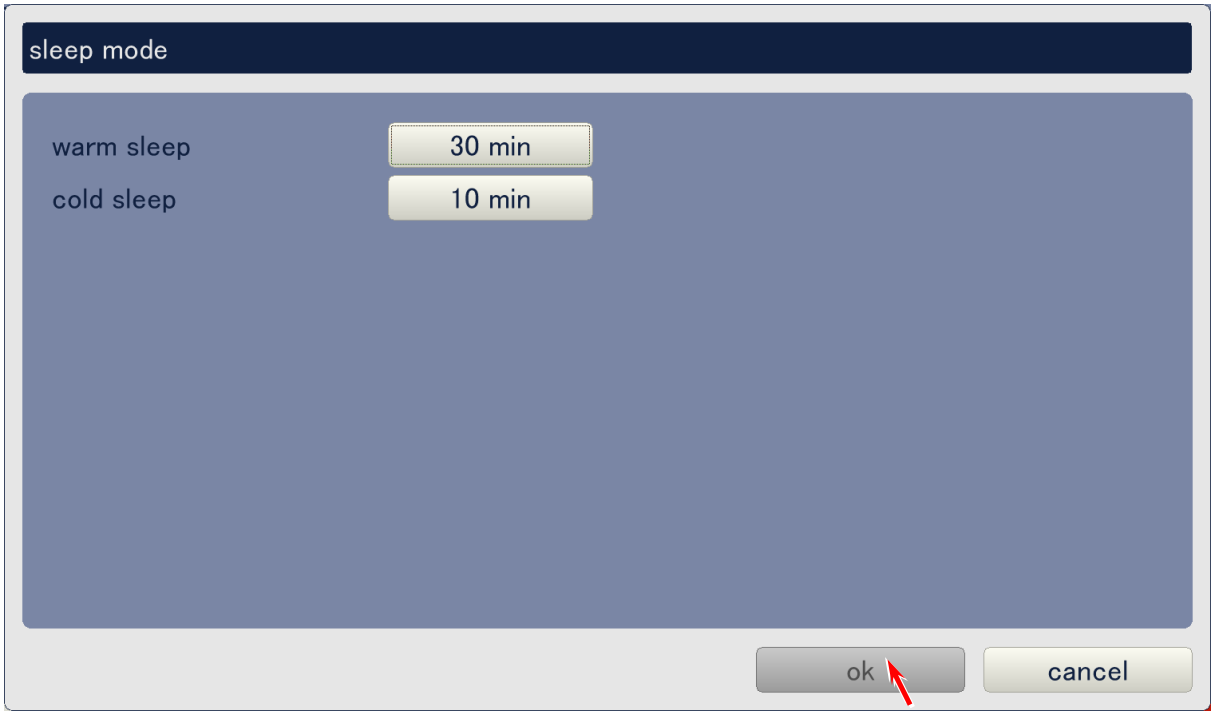
3. A dialog to select the setting value is indicated. Clicking on [▲] and [▼] buttons will change the page. (There are 3 pages.)



4. Choose any warm sleep timer in the dialog.



5. Click on **ok** to decide the new setting.

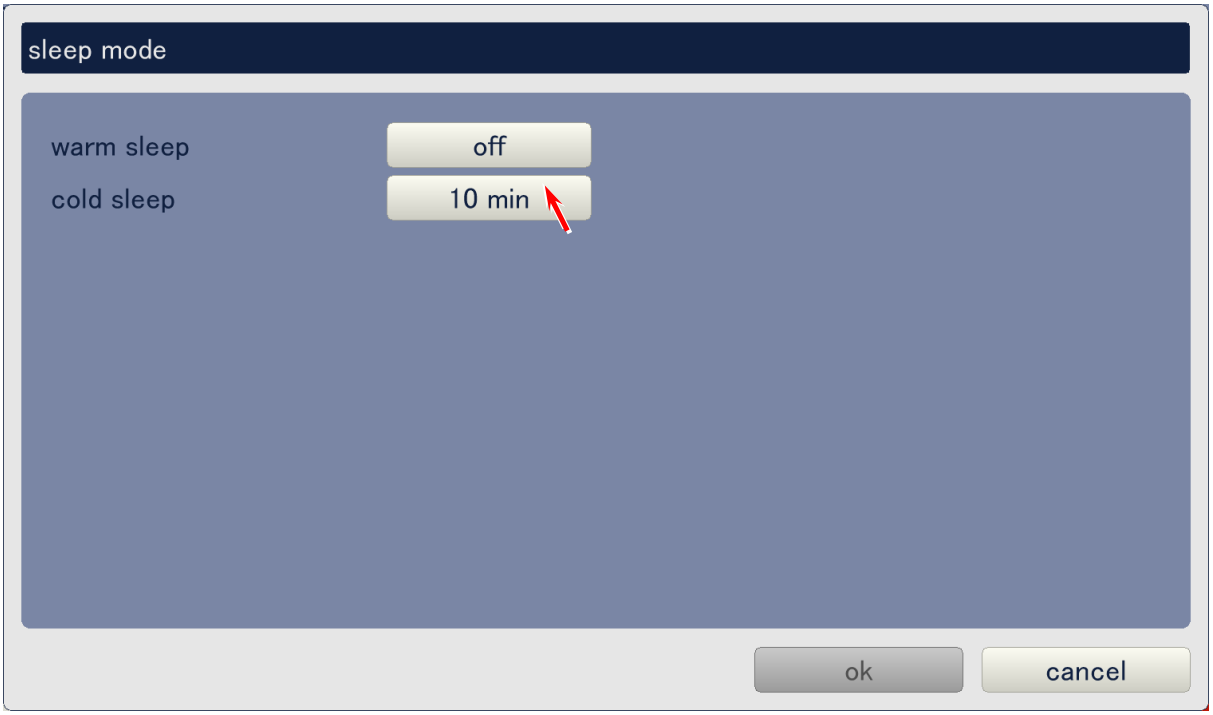


9. 4. 2. 2 Cold Sleep

1. Click on **sleep mode**.



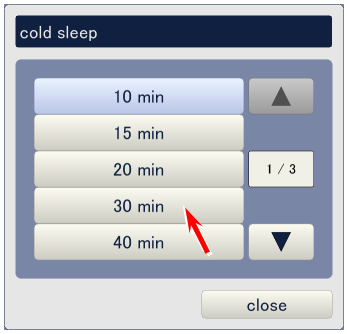
2. Click on the button beside **cold sleep**.



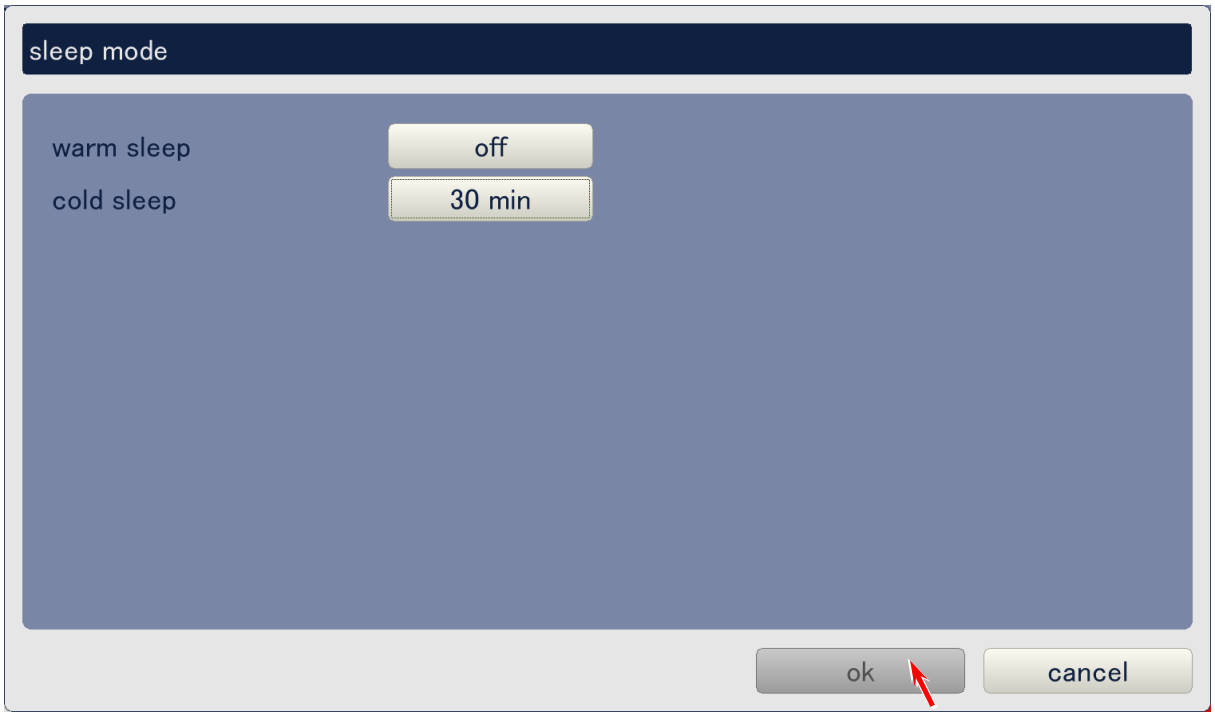
3. A dialog to select the setting value is indicated. Clicking on [▲] and [▼] buttons will change the page. (There are 3 pages.)



4. Choose any cold sleep timer in the dialog.



5. Click on **ok** to decide the new setting.



⚠ NOTE

User can not cancel the Cold Sleep. It is required to enter the service mode with inputting the service password for its cancellation. See [(7) Cold sleep] on page 9-55.

9. 4. 3 Density Control

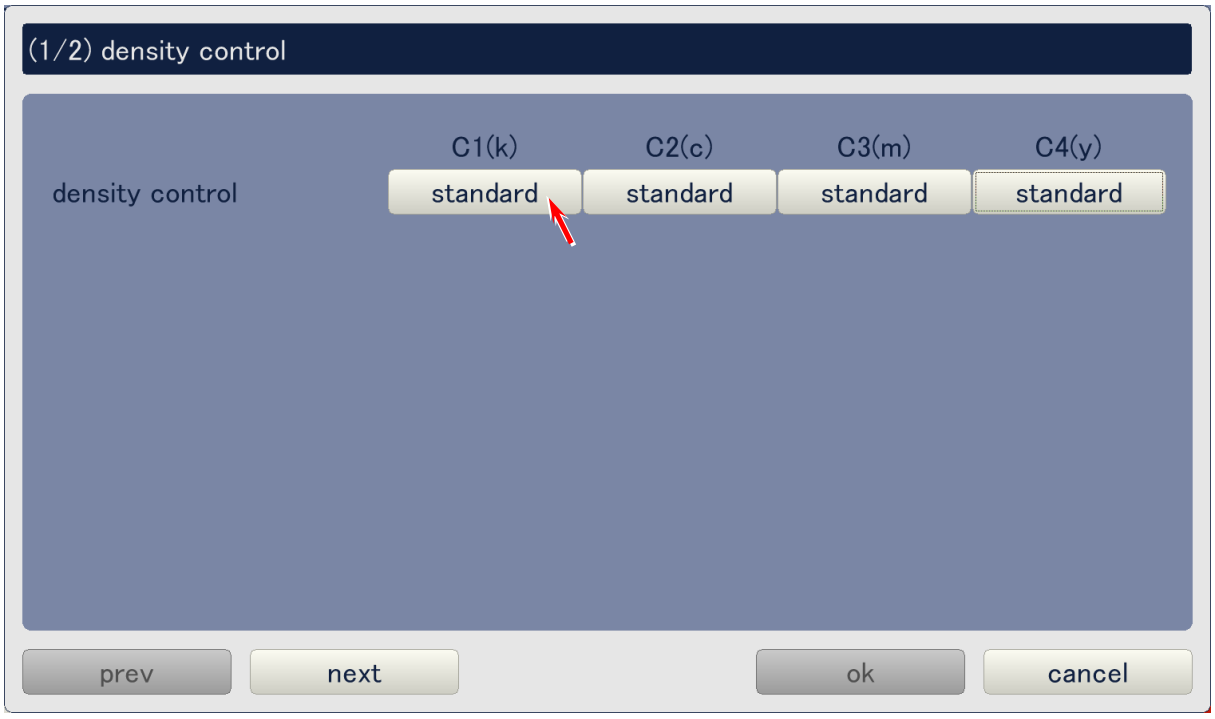
User can activate or inactivate Auto Density Control per color.

1. Click on **density control**.

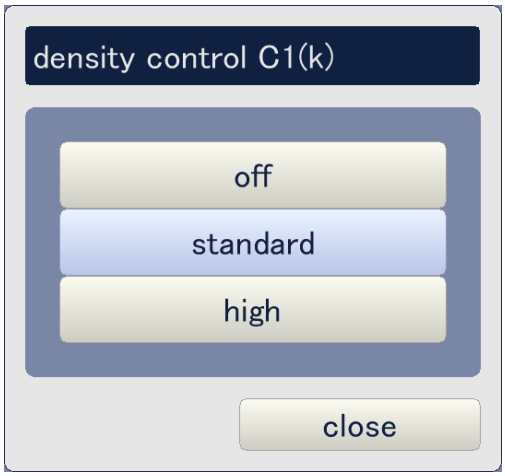


2. Click on any buttons C1 to C4. Each button has its own target color.

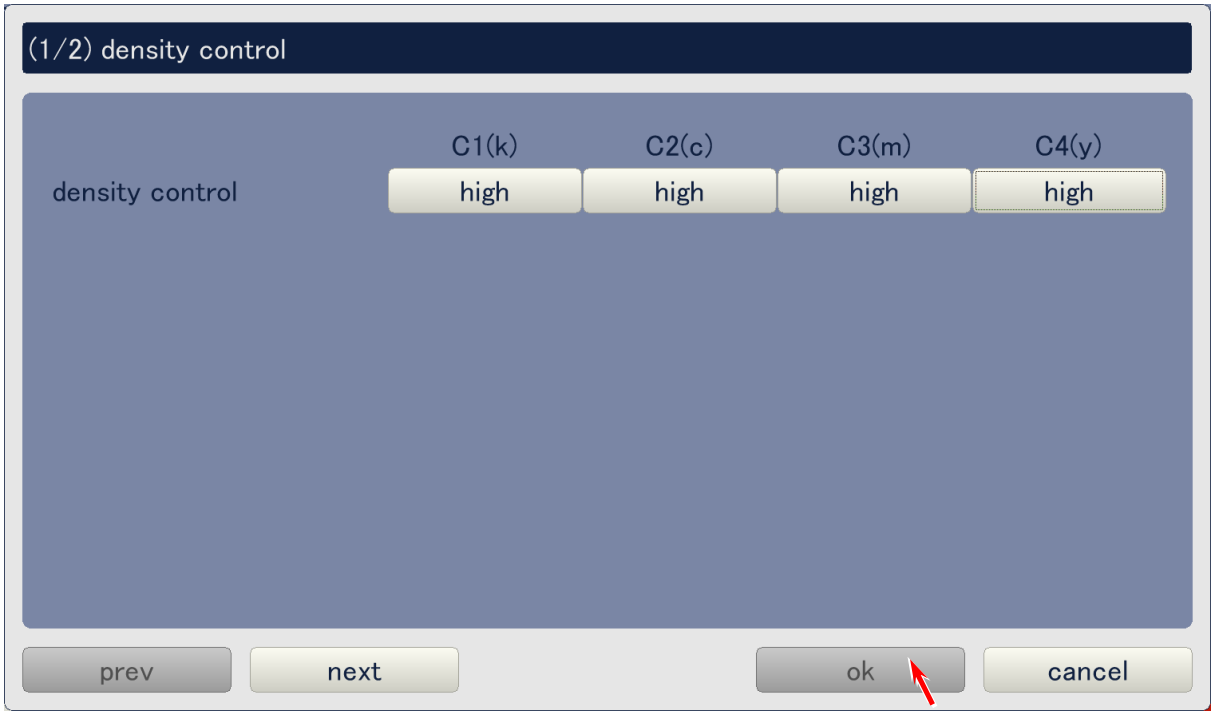
C1 : Black C3 : Magenta
C2 : Cyan C4 : Yellow



3. Choose any setting according to the necessity.
   off : Cancels the Auto Density Control.
   standard : Auto Density Control functions with normal error check level.
   high : Auto Density Control functions with higher error check level.



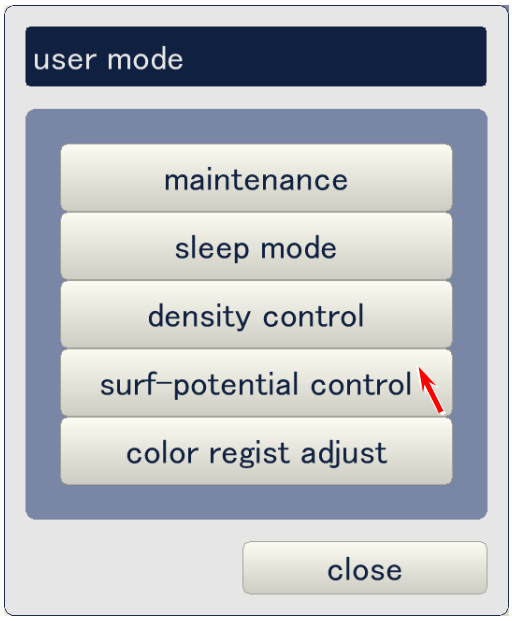
4. Click on **ok** to finish the setting.



9. 4. 4 Surf-potential Control

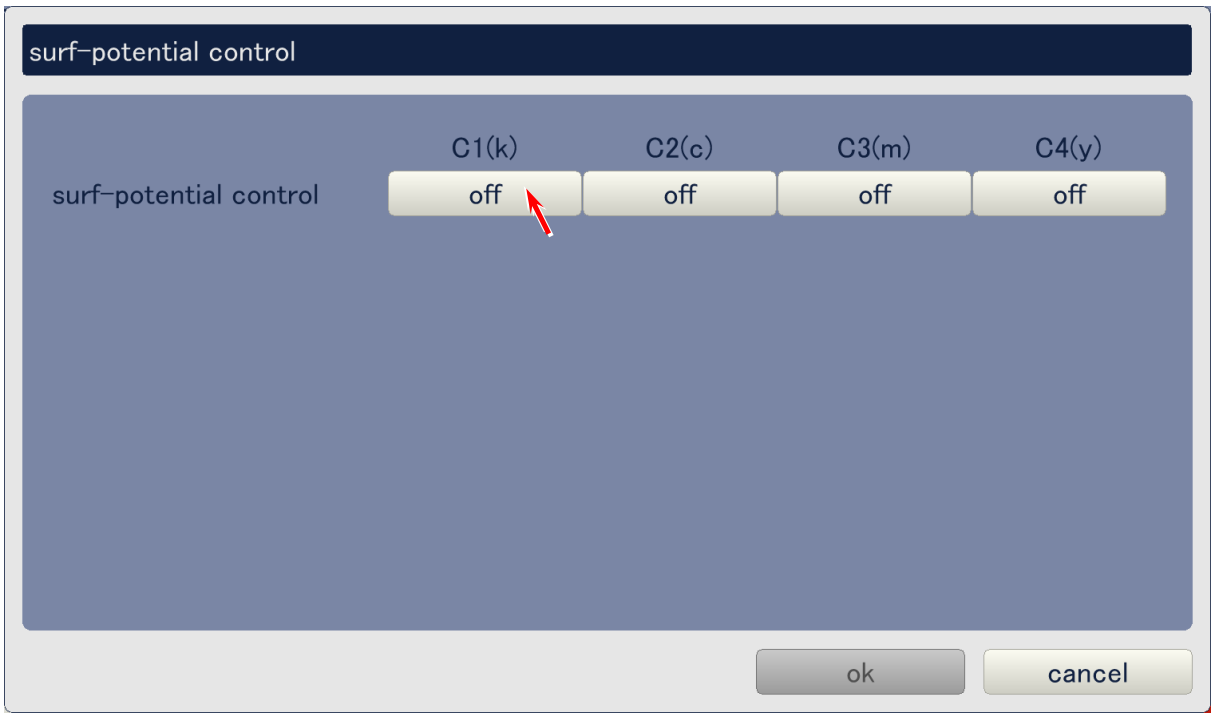
User can activate or inactivate Auto SP Control feature per color.

1. Click on **surf-potential control**.

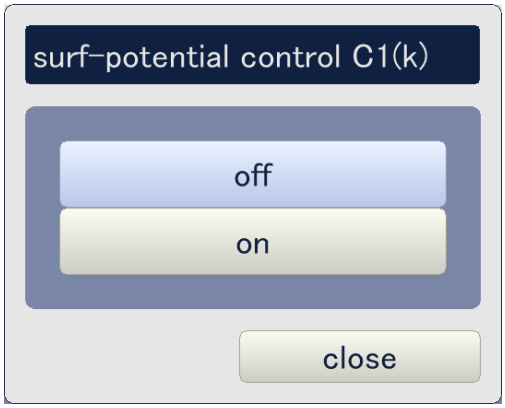


2. Click on any buttons C1 to C4. Each button has its own target color.

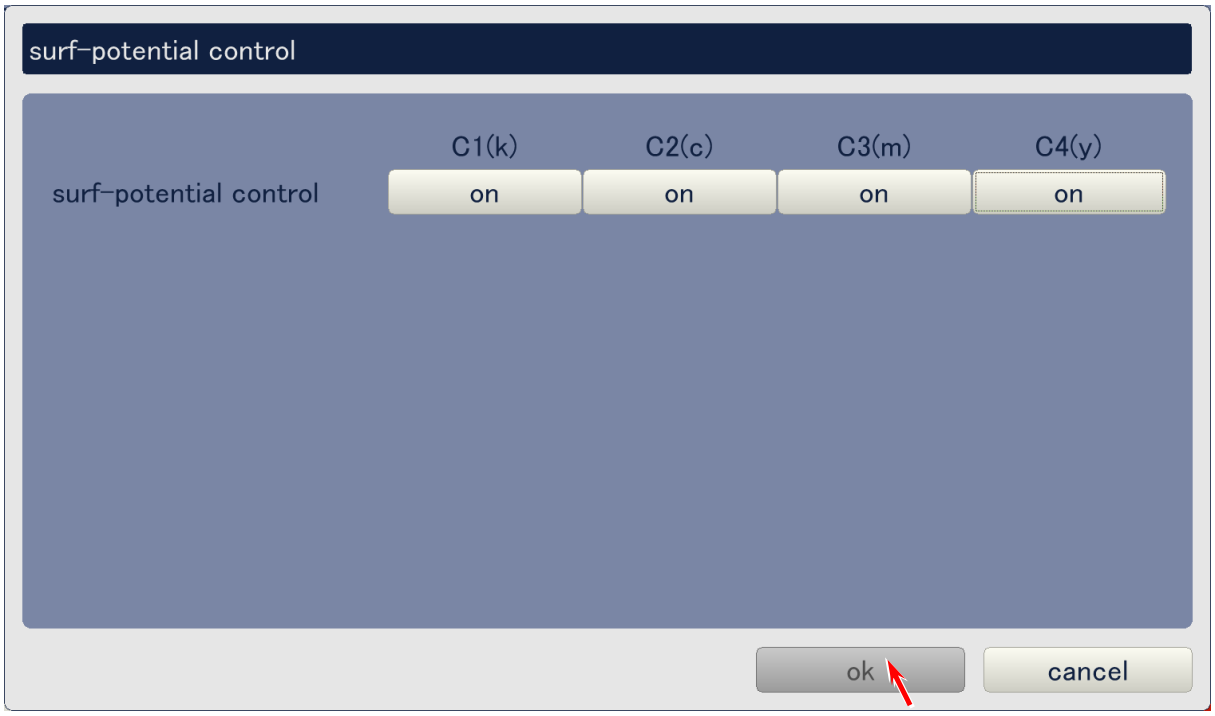
C1 : Black C3 : Magenta
C2 : Cyan C4 : Yellow



3. Choose any setting according to the necessity.
   off : Cancels Auto SP Control.
   on : Auto SP Control functions.



4. Click on **ok** to finish the setting.



9. 4. 5 Color regist adjust

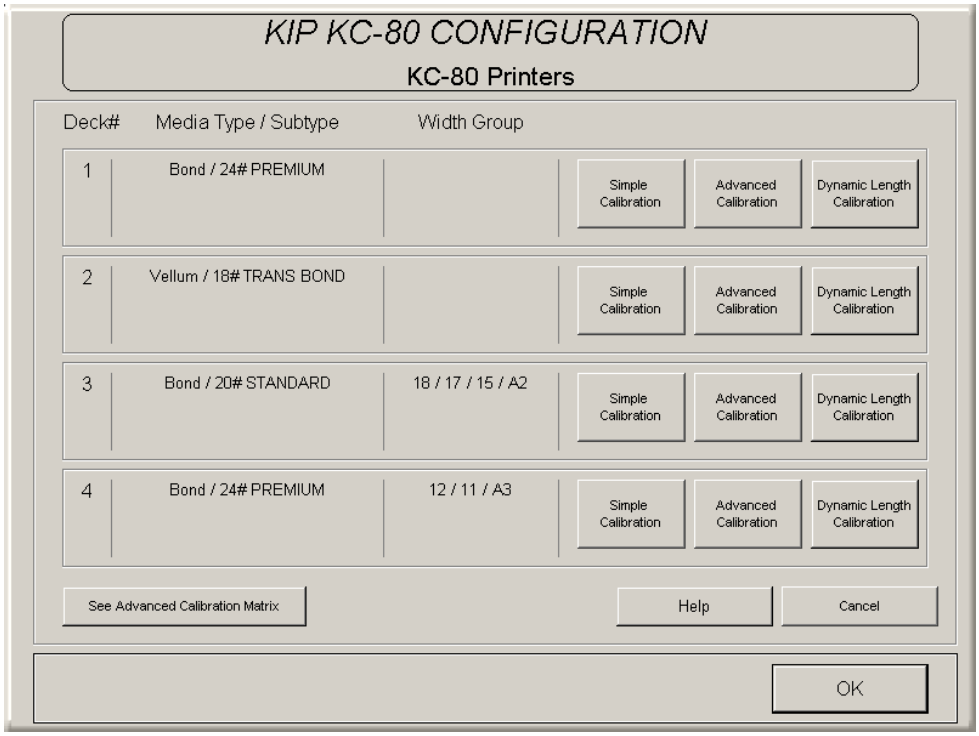
Working together with Color Sensor, color regist adjust mode takes automatic calibration to achieve the best possible vertical color registration per media sub type (type #X). It also can compensate horizontal color registration.

⚠ NOTE

(1) This mode automatically sets the appropriate setting data of vertical & horizontal color registrations working together with the Color Sensor.

(2) User can take vertical color registration calibration operations via KIP Production Station.

(Name on Production Station)	(Name on KIPDiagColor)
Simple Calibration	vertical
Advanced Calibration	vertical advance
Dynamic Length Calibration	line pitch

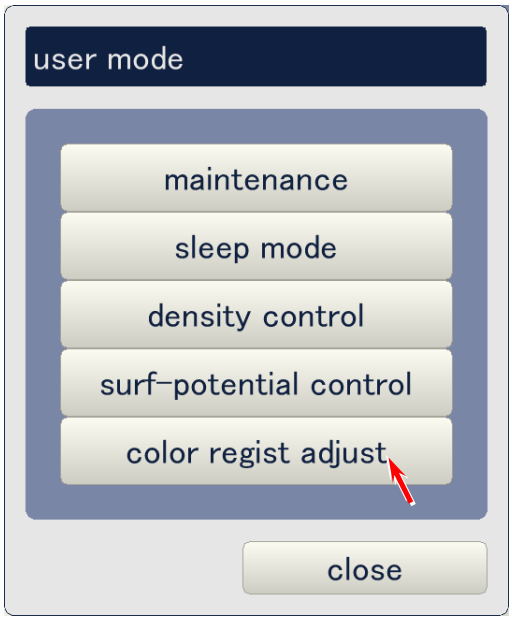


The color regist adjust mode provides 3 calibration modes for vertical color registration and 1 mode for horizontal color registration. The above calibration modes in the user mode are the same as the ones in the service mode.

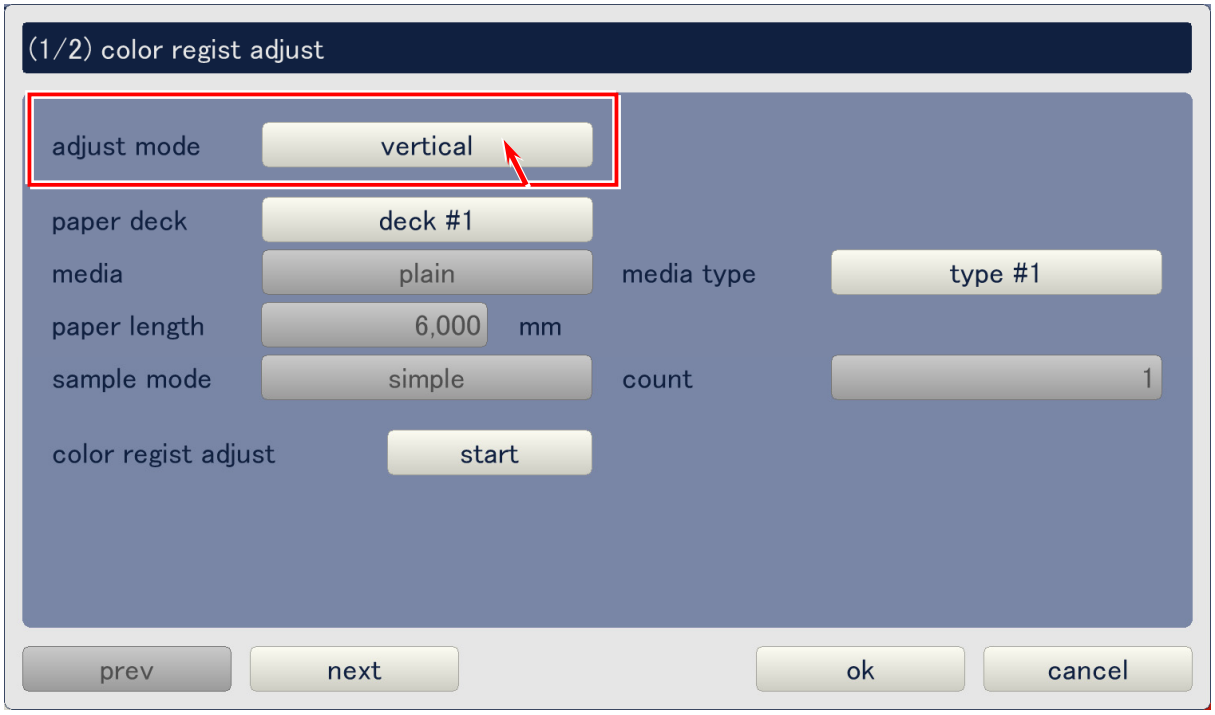
- vertical ..... Regular quality of vertical color registration is achieved.
- horizontal ..... Calibrates horizontal color registration.
- vertical advanced ..... Higher quality of vertical color registration is achieved.
- line pitch ..... Highest quality of vertical color registration is achieved with targeting any print length directly.

9. 4. 5. 1 Operation of vertical, horizontal & vertical advance

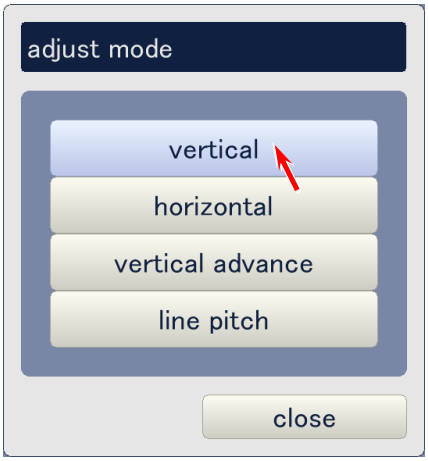
1. Clock on **color regist adjust**.



2. Click on the button beside **adjust mode**.

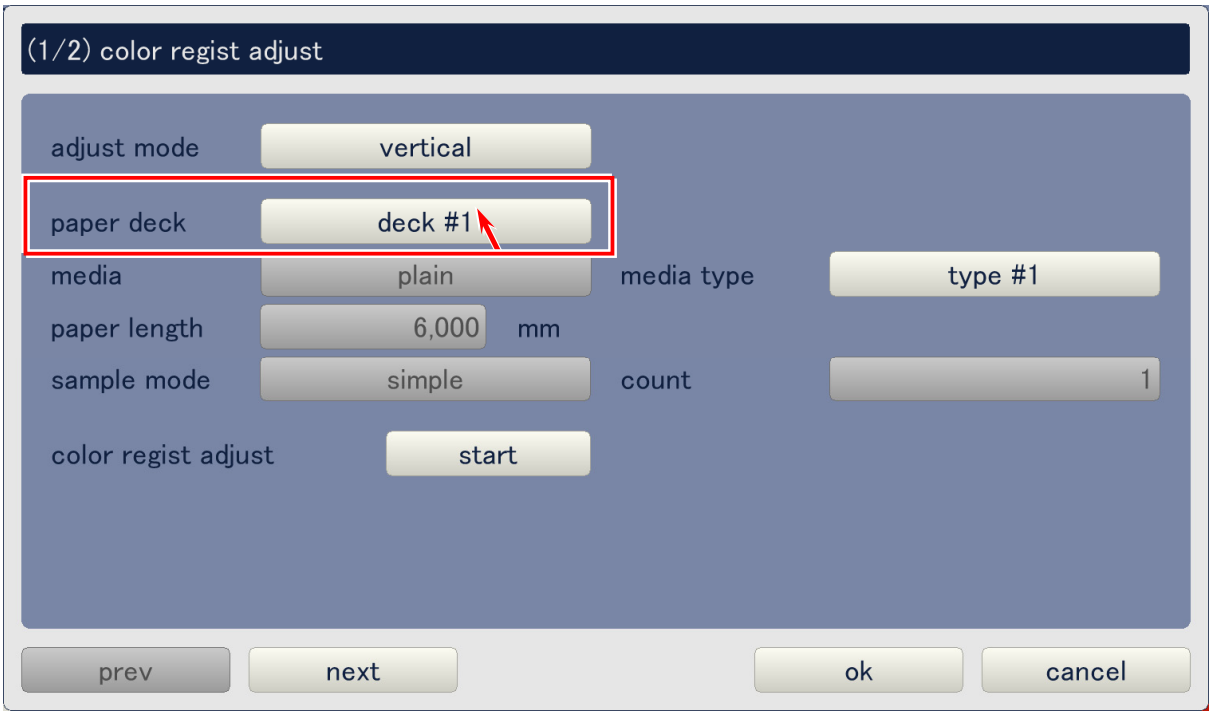


3. Choose any calibration mode according to your requested achievement.
    - Choose **vertical** to achieve regular quality of vertical color registration. This calibration mode will take about 3 minutes totally with printing 3 sampling pages.
    - Choose **horizontal** to compensate the horizontal color registration
    - Choose **vertical advance** to achieve higher quality of vertical color registration. This calibration mode will take about 15 minutes totally with printing 12 sampling pages.



> **NOTE**
>
> The operation method of **line pitch** is explained separately on later page.

4. Click on the button beside **paper deck**.

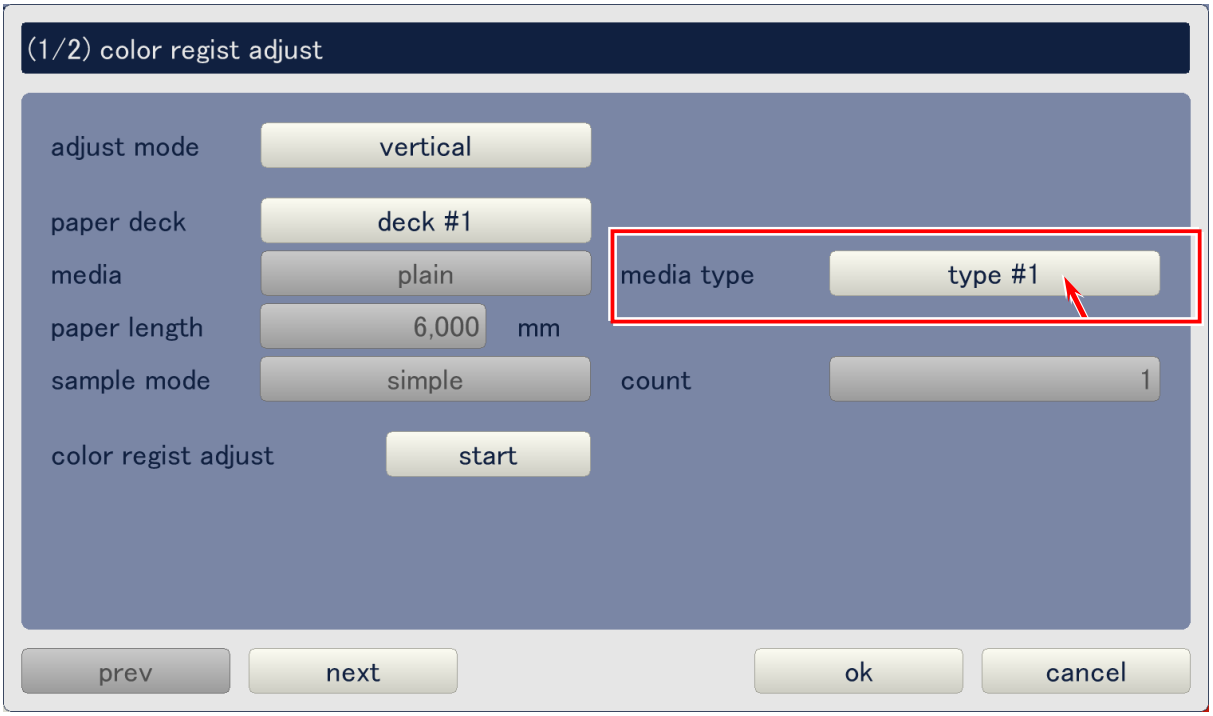


5. Select the needed media source in the following dialog. The selected roll deck needs to have a media to be calibrated.



> **NOTE**
>
> If you change **paper deck** setting from one to another, **media** (plain, trading, film or gloss) also changes according to the Media Selector setting of selected Roll Deck. Note that change of **media** via KIPDiagColor is not available. (This button is always inactive.)

6. Click on the button beside **media type**.



7. Select the media type (type #X) to be calibrated.



Reference

Each media (plain, tracing, film & gloss) has 4 media type (type #1-4) respectively. This enables to use 4 different each media as;

Bond
- Type #1 : 24lbs Premium Bond
- Type #2 : 20lbs bond of manufacturer A
- Type #3 : 22lbs bond of manufacturer B
- Type #4 : 24lbs bond of manufacturer C

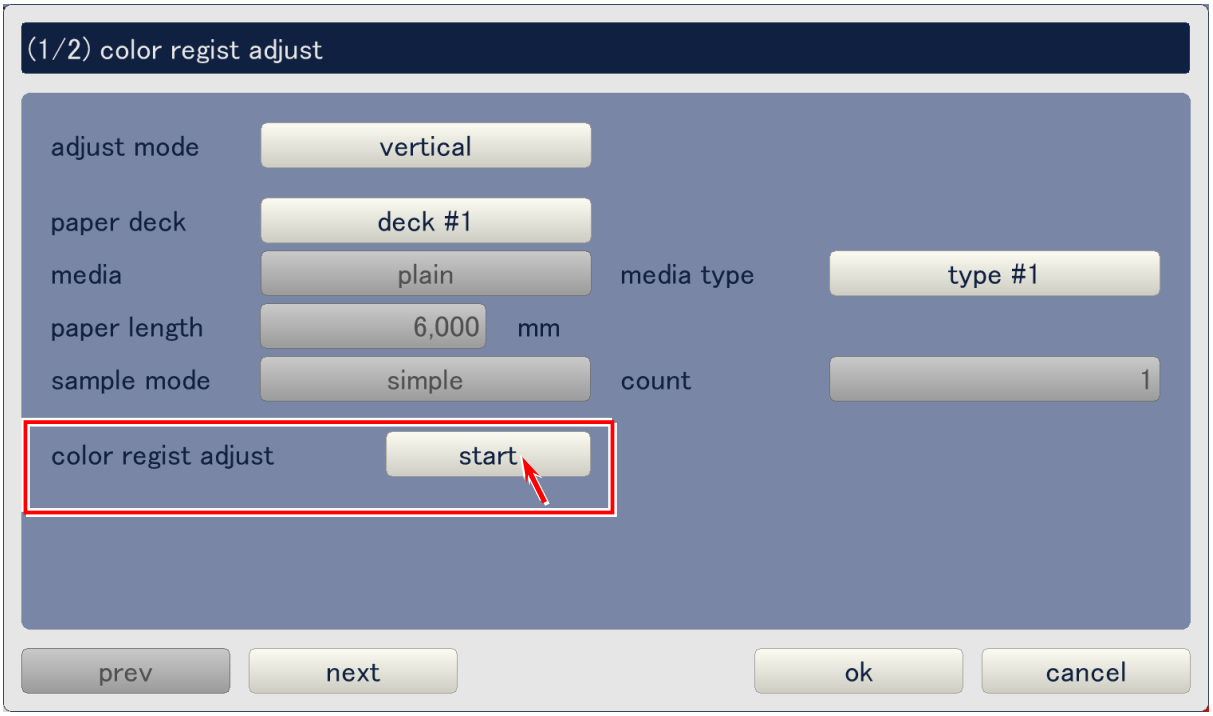
Each individual media type needs to be calibrated prior to the usage.

8. Click on [Start] beside **color regist adjust**. KC 80 will take sampling print according to the selected calibration mode. Please wait until the printer stops completely.

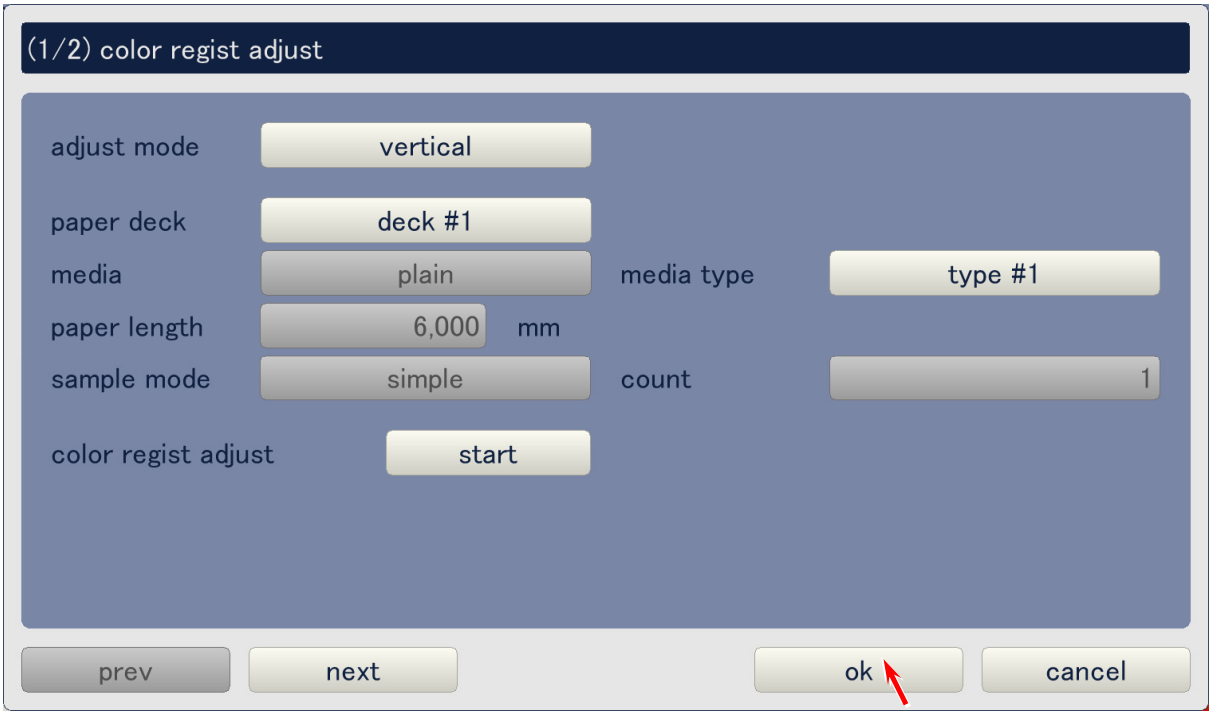
    - In **vertical** calibration mode, printer takes 3 pages of sampling print in 3 different print lengths (each 48”, 24” & 15” long). KIPDiagColor reads the image on each 3 prints to know the amount of vertical misalignment of 3 colors C, M & Y against standard K via Color Sensor, and automatically calculates the best calibration data per color by software compensation to achieve correct alignment of 4 colors.

    - In **horizontal** calibration mode, printer takes 1 page of sampling print. KIPDiagColor reads the image on this print to know the amount of horizontal misalignment of 3 colors C, M & Y against standard K via Color Sensor, and automatically calculates the best calibration data per color by software compensation to achieve correct alignment of 4 colors.

    - In **vertical advance** calibration mode, printer takes 13 pages of sampling print in 3 different print lengths (5 pages of 48”, 4 of 24” & 4 of 15”). KIPDiagColor reads the image on each 12 prints to know the amount of vertical misalignment of 3 colors C, M & Y against standard K via Color Sensor, and automatically calculates the best calibration data per color by software compensation as well as motor speed compensation to achieve correct alignment of 4 colors.



9. When the printer stops completely, click on **ok** to close the color registration calibration page.

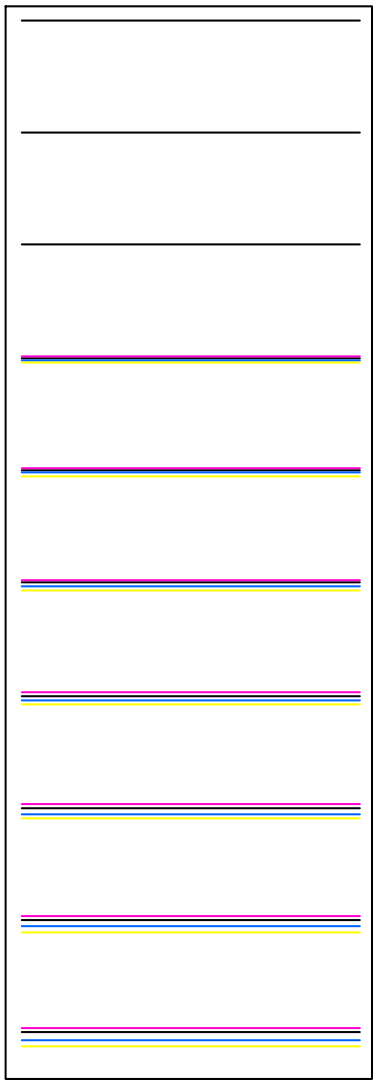


9. 4. 5. 2 Operation of line pitch

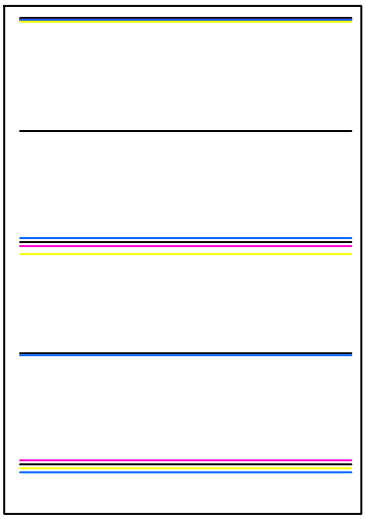
Line pitch is a vertical color registration calibration mode that can achieve the best possible color registration result when printing is done under some particular target condition. This will be suitable for achieving correct vertical color registration in the following cases.

Case 1 : On the long print, 4 colors are correctly aligned with each other between leading edge and some vertical point. But mis-alignment starts to appear after some vertical point, and it becomes gradually bigger and bigger as going more and more to the trailing edge.

Case 2 : The degree of mis-alignment randomly differs point to point.



Mis-alignment starts after some point and it becomes bigger and bigger



Degree of mis-alignment randomly differs point to point

The operator has to set the following target settings as required before taking line pitch calibration mode. The line pitch calibration data will be applied only when the printing job satisfies all specified target conditions.

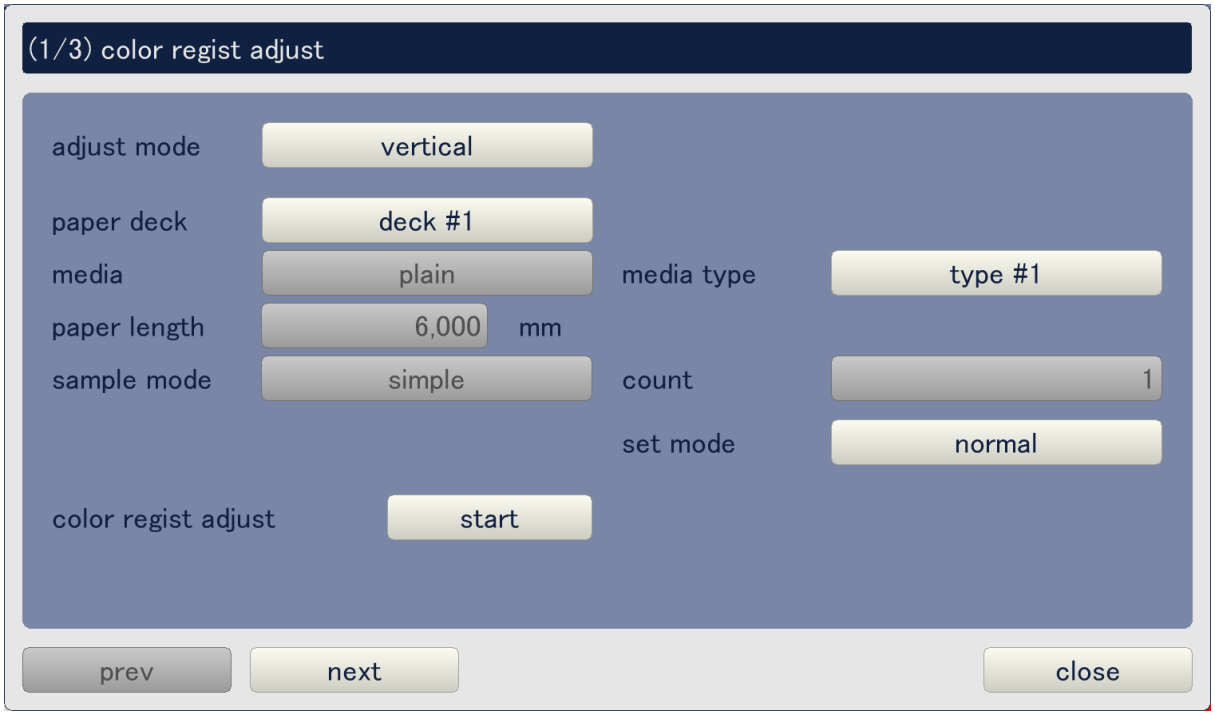
- Media
- Media type (type #X)
- Media width
- Media length

(1) Getting line pitch calibration data by line pitch calibration mode

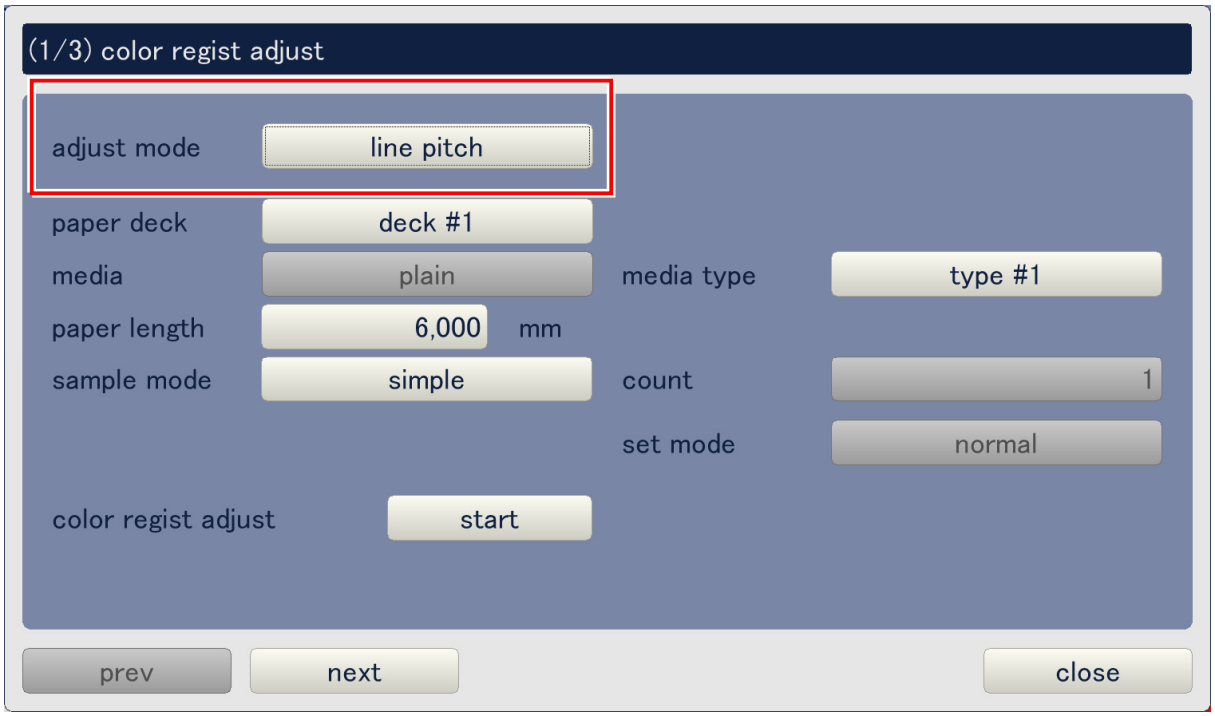
> **NOTE**
>
> **Vertical advance** calibration has to be done prior to taking line pitch calibration. Please check if vertical advance has already been done, and take it if has not been done yet.

1. Install a roll media to any Roll Deck and set the Media Selector correctly. Please note that the **media** and **media width** are the targets which the line pitch calibration data is applied to.

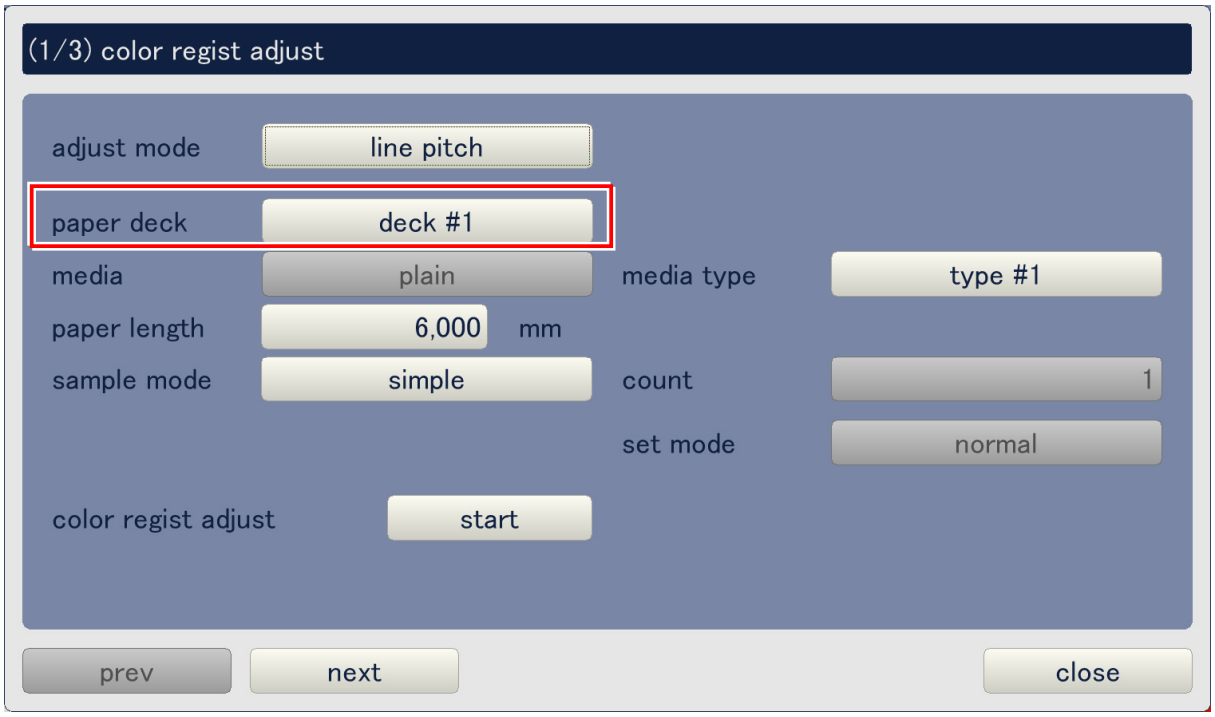
2. Access the following page by;
   - Enter service mode. (if not entered yet)
   - Choose color regist adjust on the 2/3 page of service mode menu page.



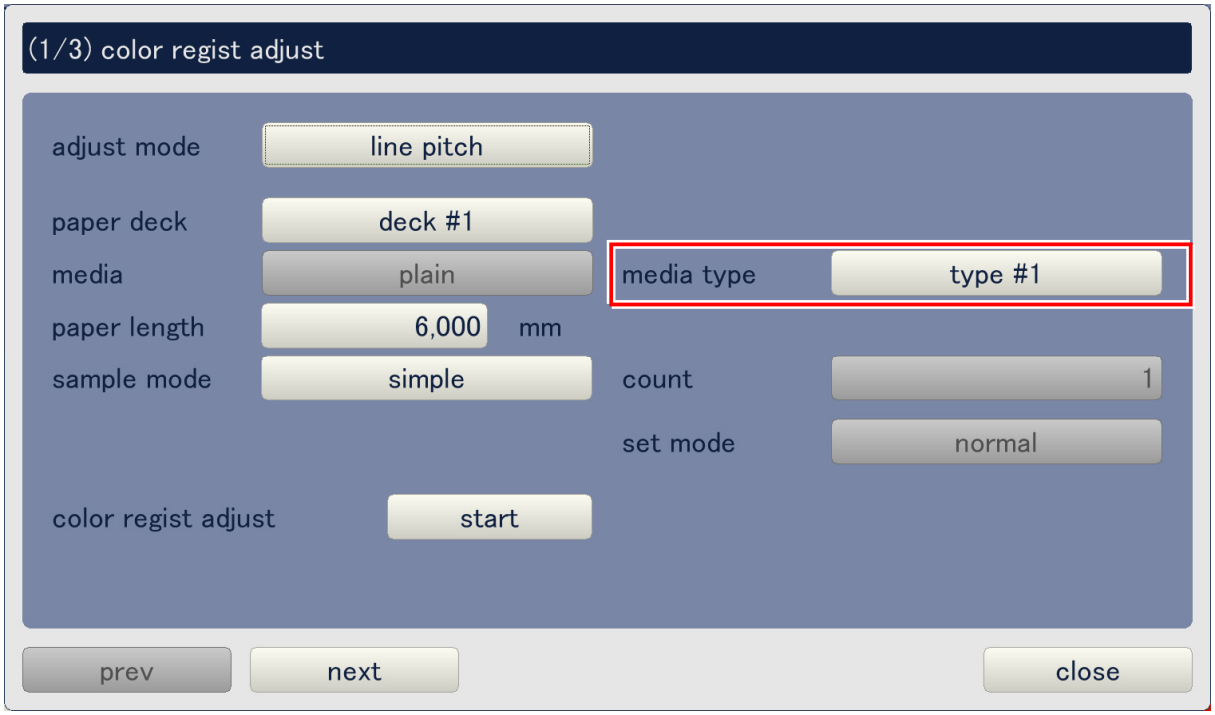
3. Set adjust mode to **line pitch**.



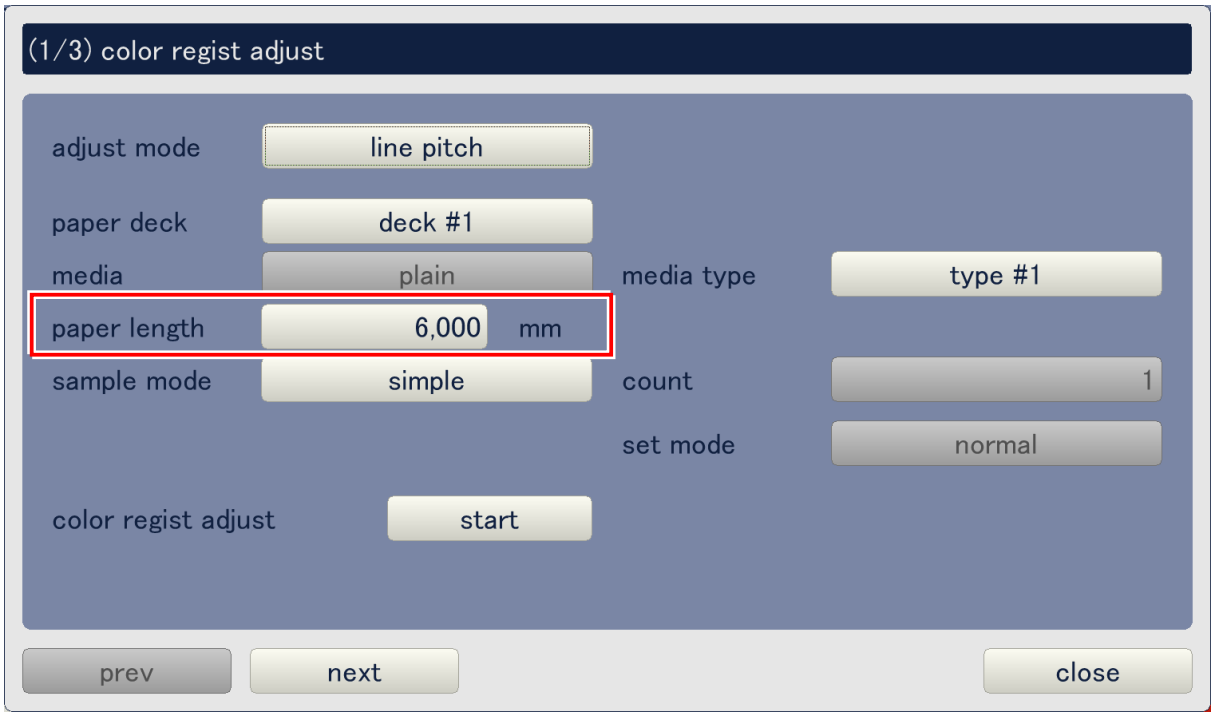
4. Choose the roll deck that has the media to be calibrated. (Be sure to set the Media Selector correctly.)



5. Choose correct **media type** (type #X). Please note that this will be the target media type of line pitch calibration data.



6. Specify any **paper length** (print length). Available input range is from 210mm to 45000mm (45m). Please note that this will be the target length of line pitch calibration data.



NOTE

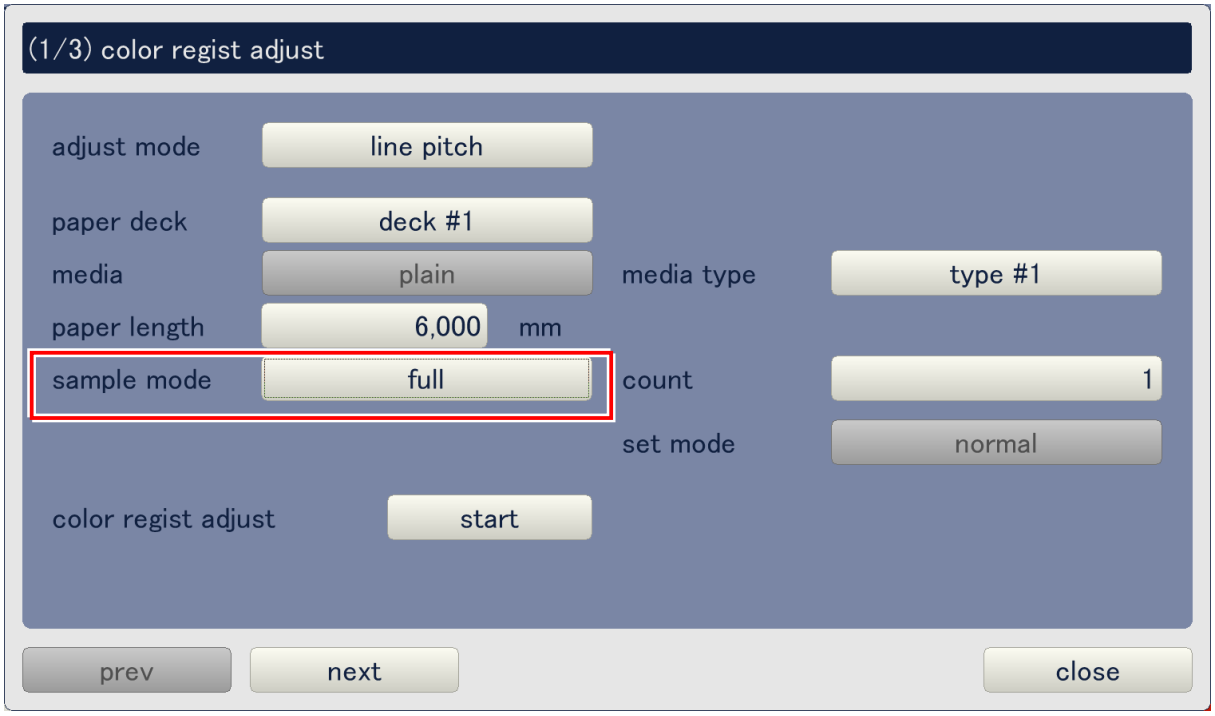
The calibration data that is obtained from the line pitch calibration mode achieves the highest quality of vertical color registration when the print is just as long as the target length specified here.

And even though the print length is not just as long as the target length, the same line pitch calibration data also achieves high quality vertical color registration so far as the print length is within its applicable length range. The following 2 factors decide whether one length is within applicable length range or not.

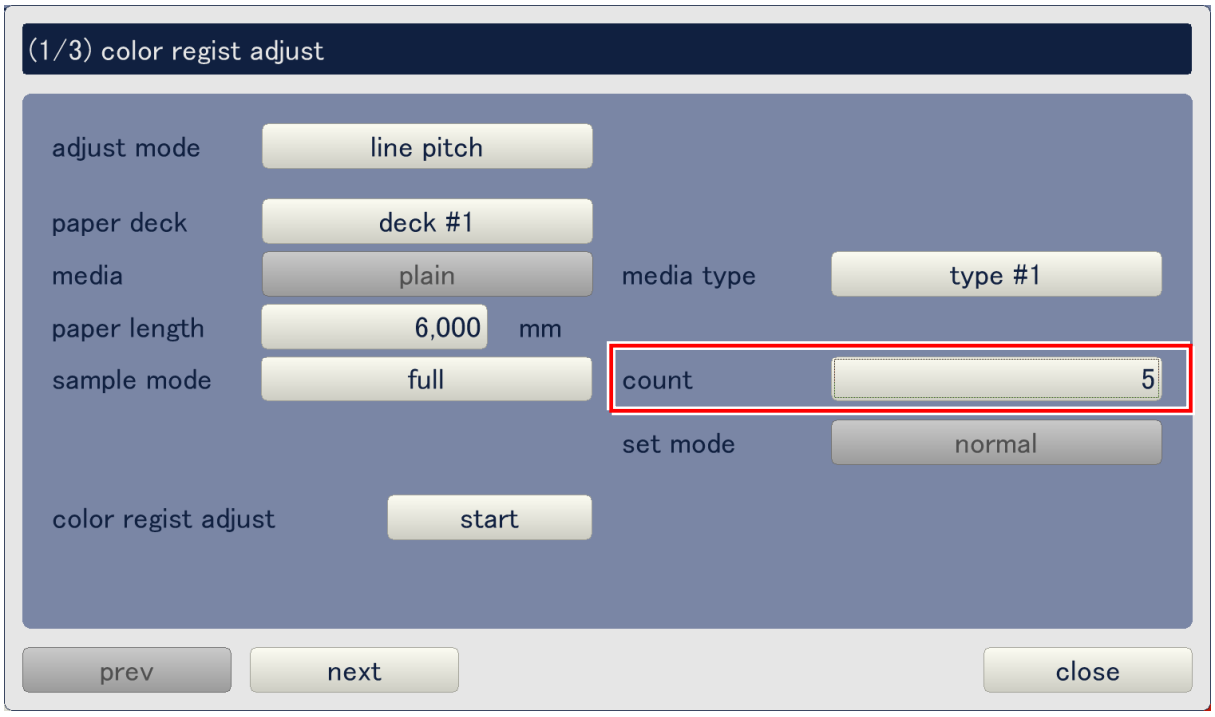
(1) Length group
(2) Tolerance

See [Reference : Applicable length range of Line Pitch calibration data] on later page for further detail.

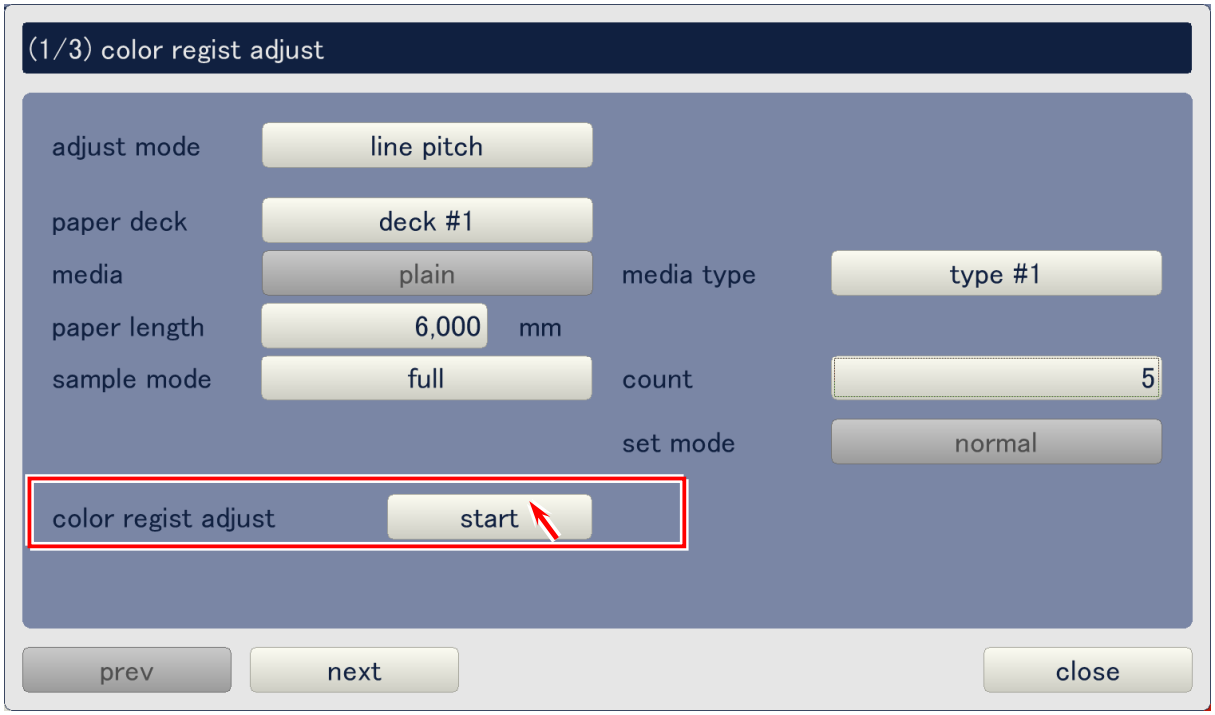
7. Choose either **simple** or **full**.
   - **Simple** reads only 250mm from the LE and 150mm from TE for getting Line Pitch calibration data. Only 1 time of sampling is taken. This achieves regular line pitch calibration result.
   - **Full** reads all area between LE and TE for getting Line Pitch calibration data. The operator can specify the number of times to take sampling (5 times max). This achieves better line pitch calibration result than Simple.



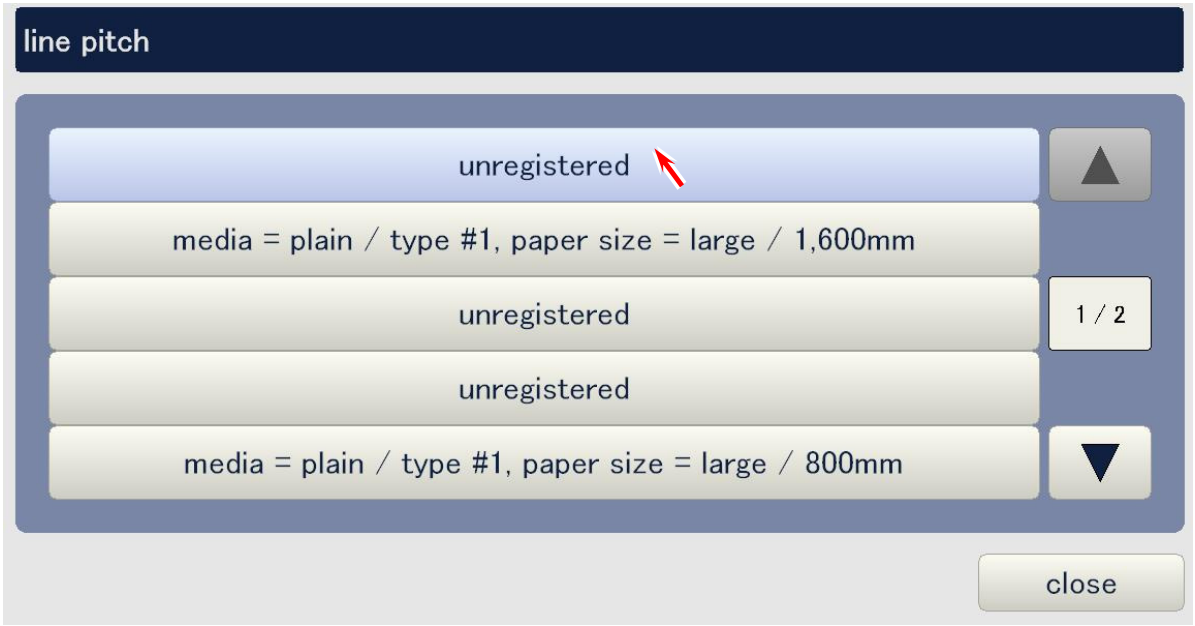
8. If **full** is selected, specify how many times data sampling is to be taken. More times of sampling will get more reliable sampling data.



9. When every setting is set correctly, click on **start**.



10. The operator can choose the data box which the line pitch calibration data is saved in. Of the 10 available data box, choose any **unregistered** one as it is currently empty with the calibration data. Upon selection f the data box, the KC80 printer starts line pitch calibration operation automatically, and saves the line pitch calibration data in the chosen data box with showing its target conditions such as media, media sub type, media width and print length.



⚠ NOTE

If all of 10 data box are already filled with Line Pitch Calibration Data;
- Delete anyone.
- Or overwrite anyone with new data.

Reference

Applicable length range of Line Pitch calibration data

The Line Pitch calibration data is applied its target length to achieve the highest quality of vertical color registration as already explained. But not limited to its target length, it is also applied to any other print length that is within applicable length range and achieves higher quality of vertical color registration. Applicable length range is decided by 2 factors such as **length group** and **tolerance**.

Length group

Available print length of KC80 printer is from 210mm to 45000mm (if not considering print quality). Line Pitch Calibration divides this length range into 7 length groups as follows.

1st group : 210 to 1500mm
2nd group : 1501 to 8000mm
3rd group : 8001 to 16000mm
4th group : 16001 to 24000mm
5th group : 24001 to 32000mm
6th group : 32001 to 40000mm
7th group : 40001 to 45000mm

If there is any Line Pitch calibration data directly targeting certain print length Xmm, this Line Pitch calibration data can be applied also to **all other shorter lengths than Xmm within the same length group**. (But this rule is not applied to the 1st group only. See the following NOTE.)

Examples)

- When there is Line Pitch calibration data that directly targets 6000mm, this data can be applied also to any lengths from 1501mm to 5999mm.
- When there is Line Pitch calibration data that directly targets 20000mm, this data can be applied also to any lengths from 16001mm to 19999mm.

⚠ NOTE

(1) Only in case of the 1st group, the Line Pitch calibration data is applied only to its target print length if tolerance is not specified especially. (Example : Line Pitch calibration data for 1000mm is applied only to 1000mm if tolerance is not specified.)

(2) Let's suppose that we have 2 Line Pitch calibration data targeting 3000mm and 6000mm respectively. When we take 3000mm long print with applying both calibration data, of course the data for 3000mm can achieve better vertical color registration.

See next page for the explanation of tolerance.

Reference

Tolerance

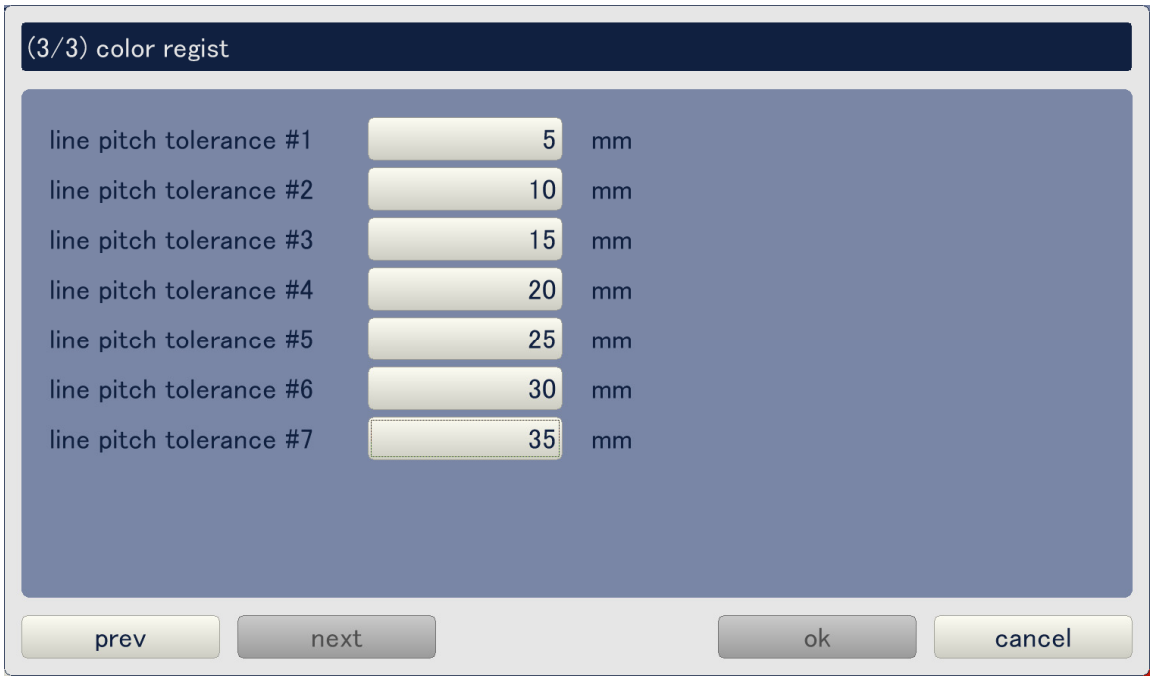
Tolerance provides additional applicable length range to the Line Pitch calibration data. If tolerance is set to 50mm, for example, the applicable length range becomes “target length +/-50mm”.

(Example)
When target length is 1000mm and tolerance is set to 30mm, applicable range is 1000 +/-30mm.

Tolerance can be specified per length group in the following page of KIPDiagColor. The maximum tolerance is 50mm. To access this page;

- Enter **service mode** with inputting service password.
- Choose **option** in the menu page (3/3) of service mode.
- Set **service mode advance** to **on**. (When this is set to off, you can not access tolerance setting.) Click on **ok** after that.
- Enter **service mode** again.
- Choose **adjustment** in the menu page of service mode.
- Choose **color regist adjust** in the menu page of adjustment mode.
- Open the 3/3 page.

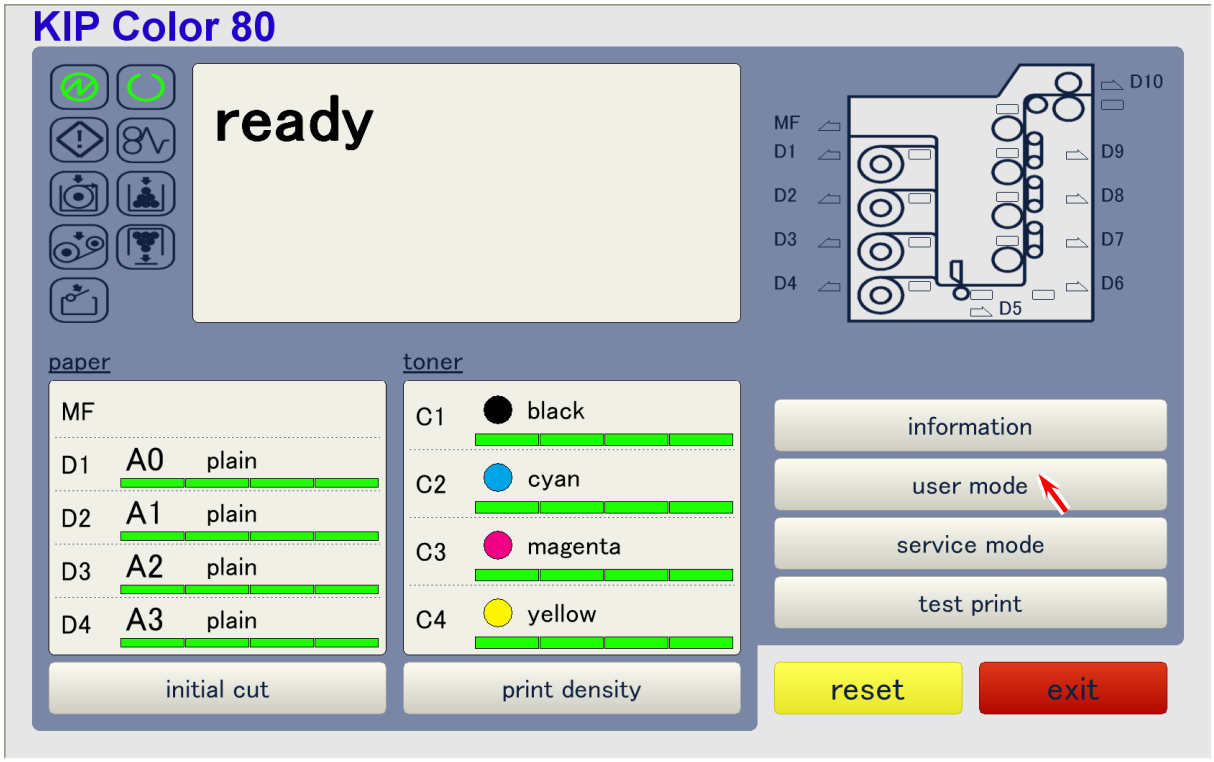
NOTE : #1 means 1st length group



(2) Activation of line pitch calibration

When you get the line pitch calibration data, the next step you have to do is to activate the line pitch calibration.

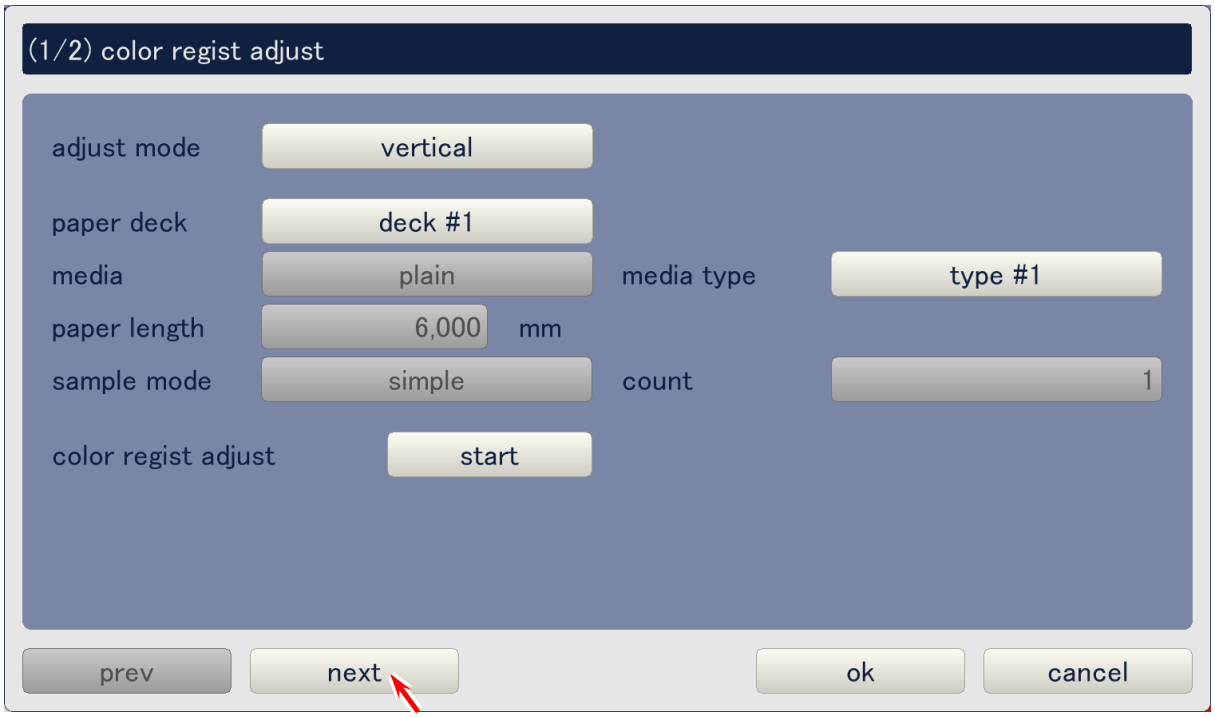
1. Click on **user mode**.



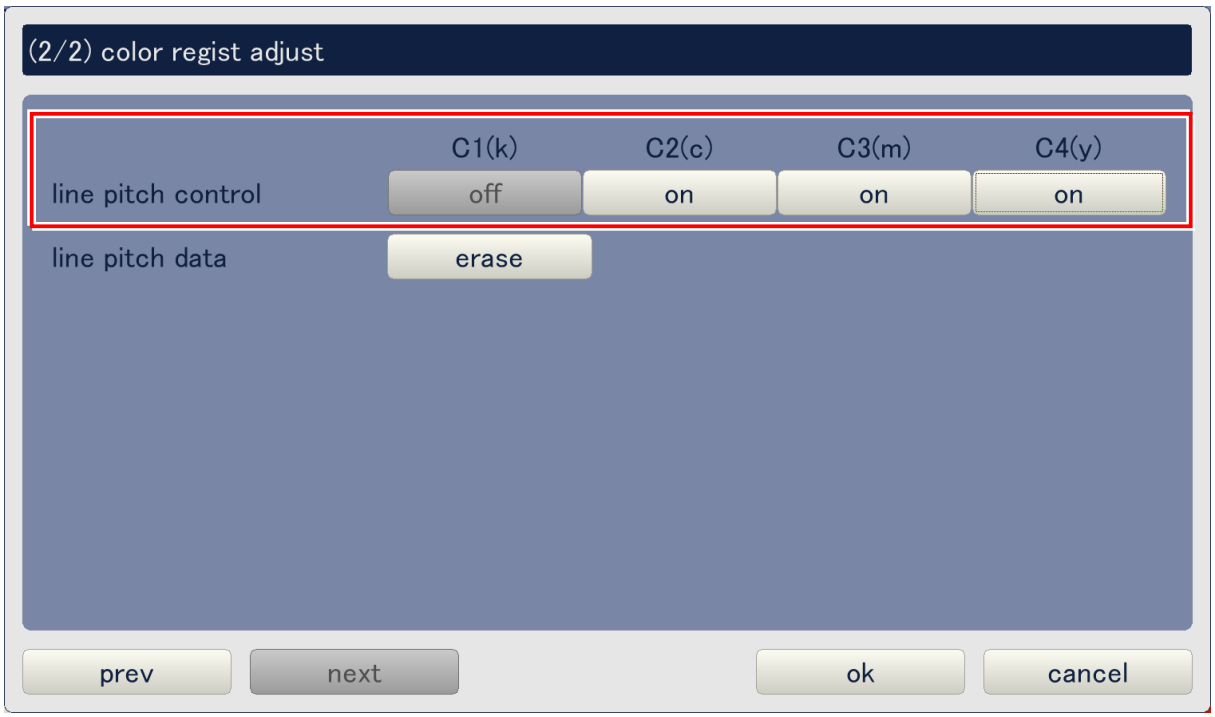
2. Choose **color regist adjust** in the menu page of user mode.



3. Click on **next** to open page 2/2.



4. **Line pitch calibration** can be activated or inactivated per color (CMY). Set them to on if you wish the best vertical color registration.

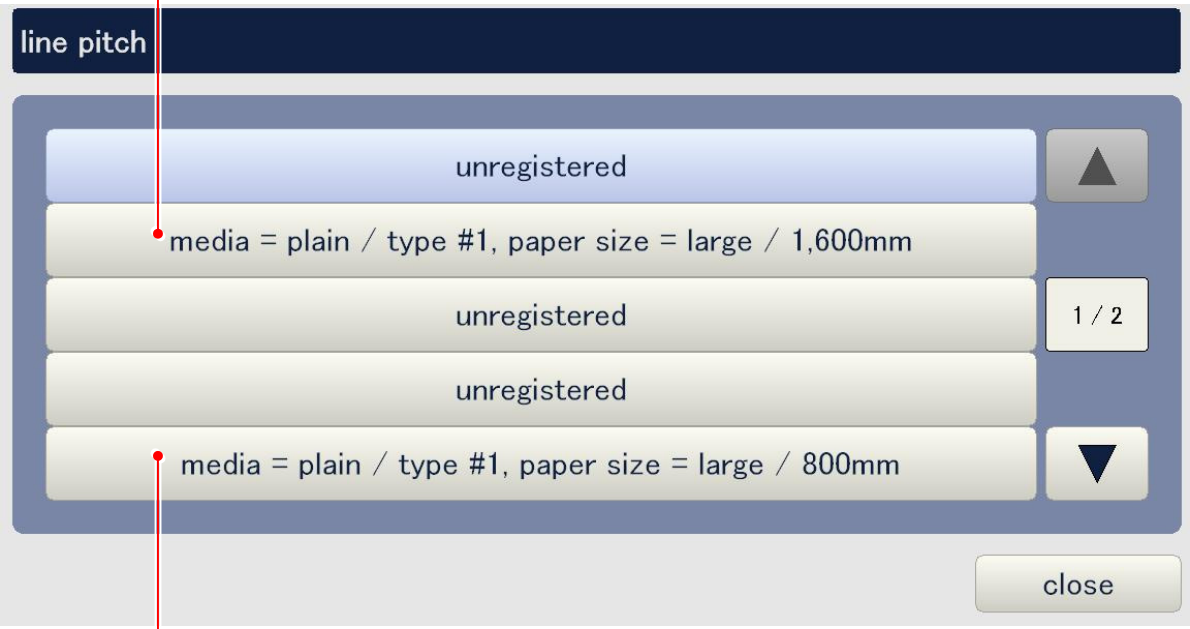


NOTE

Line pitch calibration for black is always inactive as black is the standard.

5. When your print job meets the target conditions of any line pitch calibration data, that data is applied on printing to achieve the highest quality of vertical color registration..

Example 1 : This line pitch calibration data will be applied when;
- plain paper is used.
- type #1 plain paper is used.
- media width belongs to “large” group
- print length is 1600mm long (and within applicable length range)



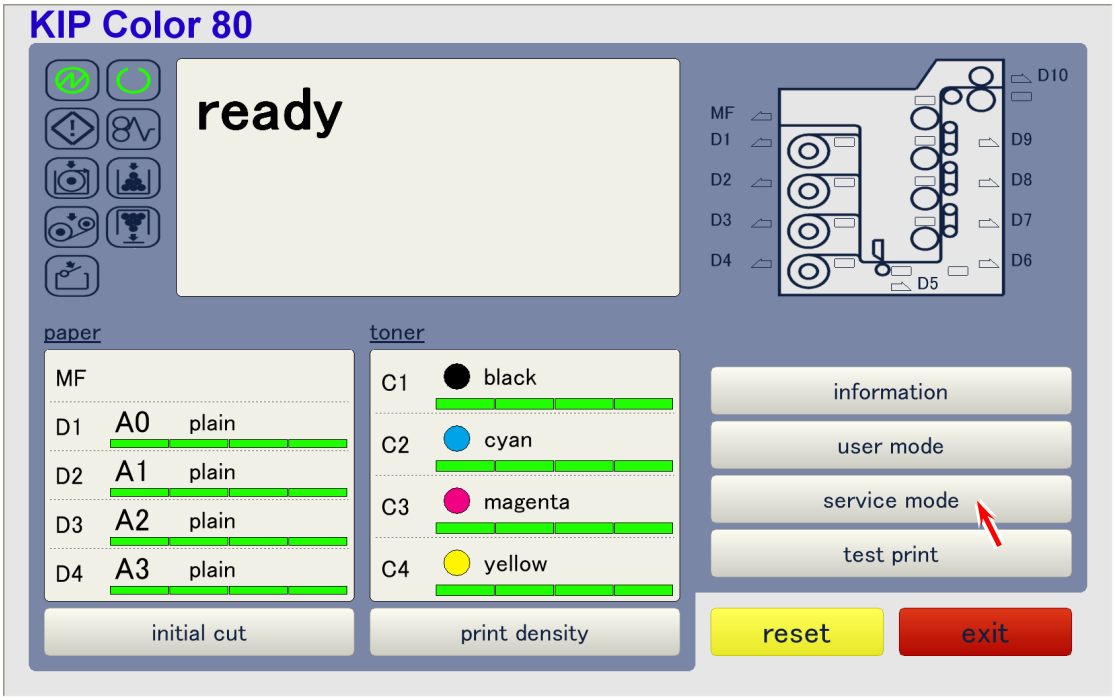
Example 2 : This line pitch calibration data will be applied when;
- plain paper is used.
- type #1 plain paper is used.
- media width belongs to “large” group
- print length is 800mm long (and within applicable length range)

9. 5 Service Mode Button

Service Mode operations are available.

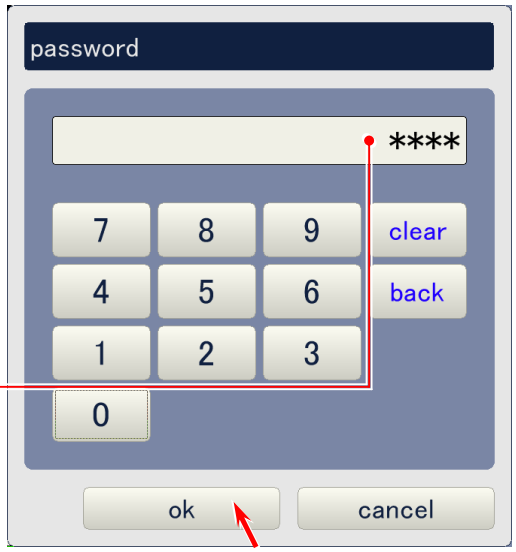
9. 5. 1 Entering the Service Mode

1. Click on **service mode** on the Main Screen



2. The following dialog requires you to input service password. Input the default password **0000** (or custom password you specified) and click on **ok** to enter the Service Mode.

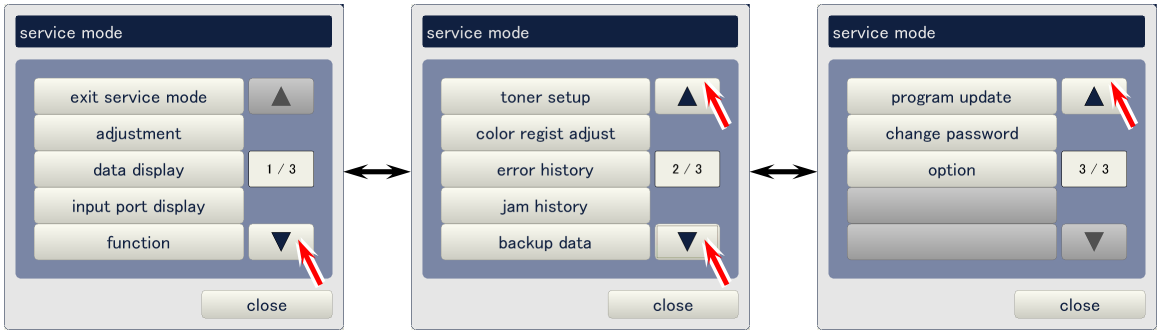
> **NOTE**
>
> Service password can be customized. See [9.5.11 Change Password].



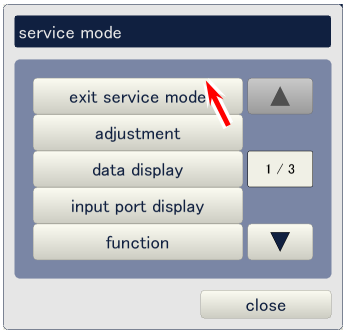
Service password
(0000 in default)

3. The service mode menu consists of 3 pages.

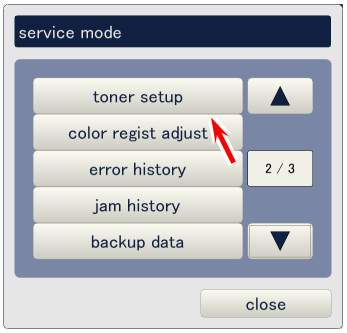
- Indicate next/previous page with clicking on [▲] and [▼] icons.



- Click on **exit service mode** to cancel the Service Mode.



- Click on the button of requested item to choose.
(Example : **Color regist adjust** is selected.)

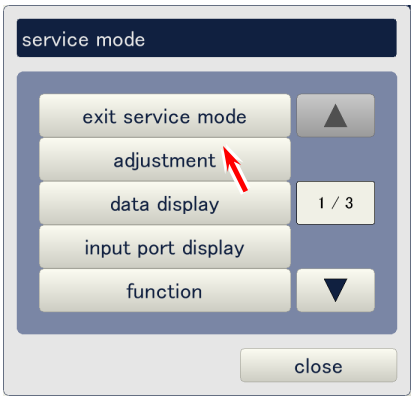


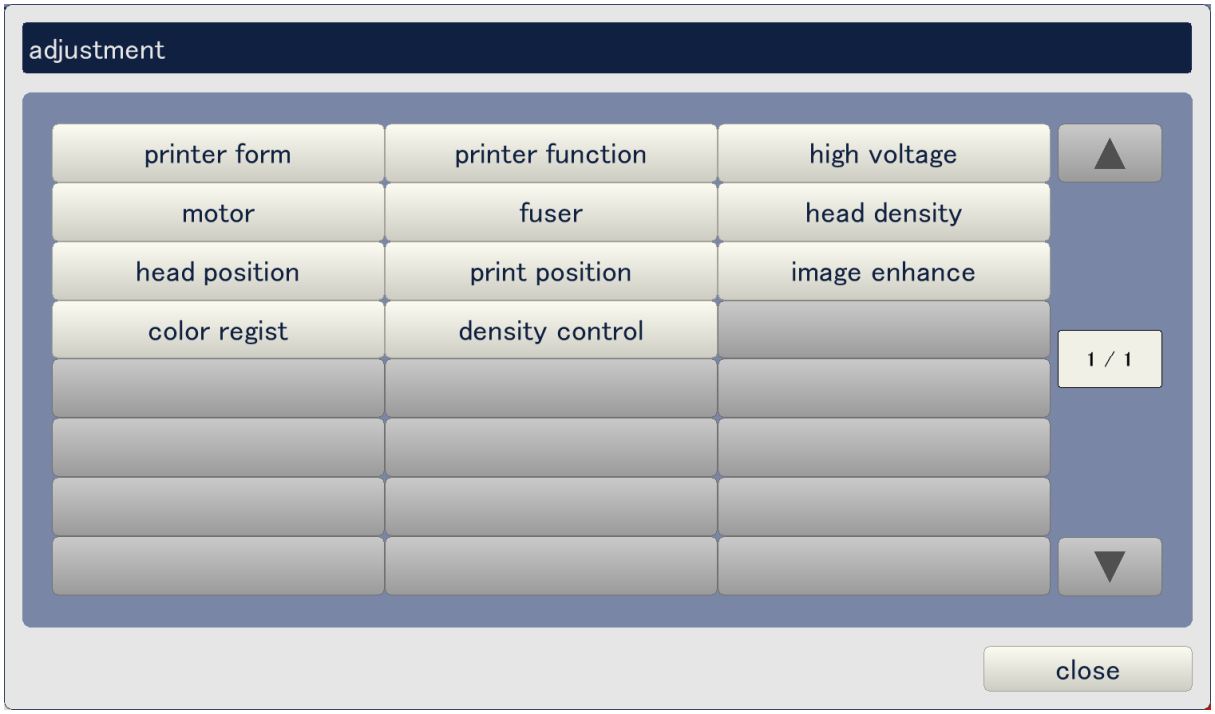
Refer to the concerning page for the description of each item.

Item	Reference page
Adjustment	9-39
Data display	9-144
Input port display	9-150
Function	9-156
Toner setup	9-160
Color regist adjust	9-163
Error history	9-
Jam history	9-
Backup data	9-204
Program update	9-211
Change password	9-215
Option	9-217

9. 5. 2 Adjustment

Fundamental printer settings, activation/inactivation of several functions, customization of parameters, and several other operations are available in the Adjustment Mode. Click on **adjustment** in the service menu page (1/3) to indicate the menu page of Adjustment Mode.





The accessibility for the adjustment mode items varies accordingly if you are in normal service mode or advanced service mode. See next page for further detail.

9. 5. 2. 1 Selection of normal service mode and advanced service mode

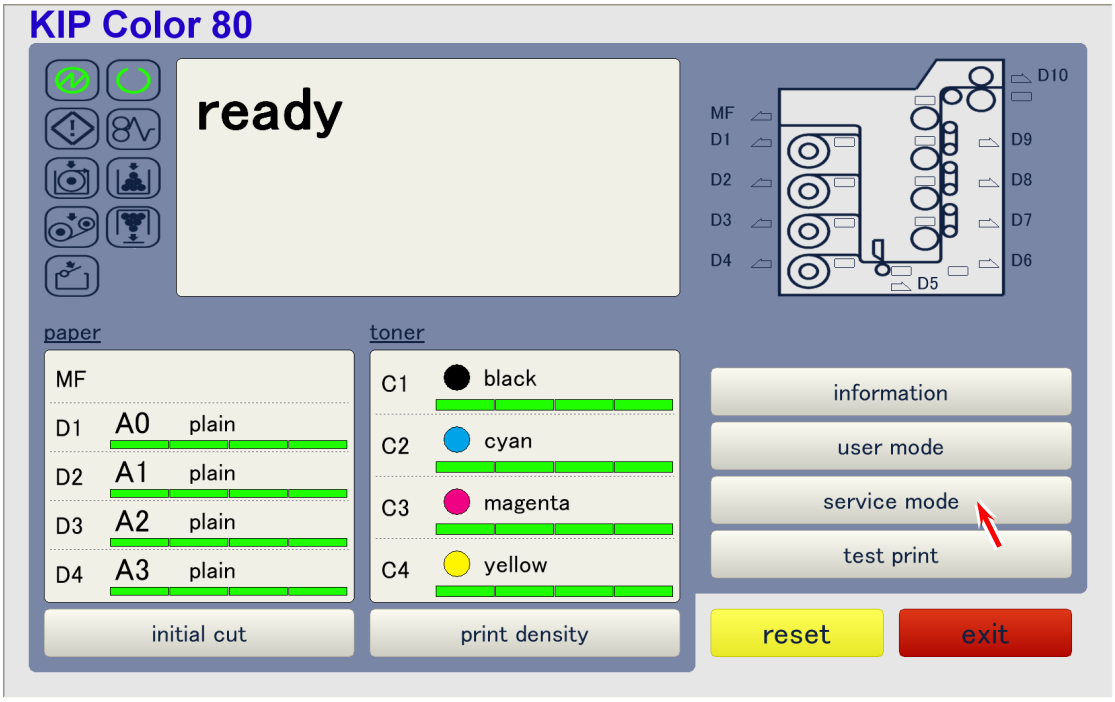
Items of Adjustment Mode are divided into 2 groups in terms of their frequency in use or importance.

First group consists of major setting items such as "HV Bias settings" and "Fuser/Web settings". They are major settings and will be used very frequently in the field. Therefore, these items are accessible in both **normal service mode** and **advanced service mode**.

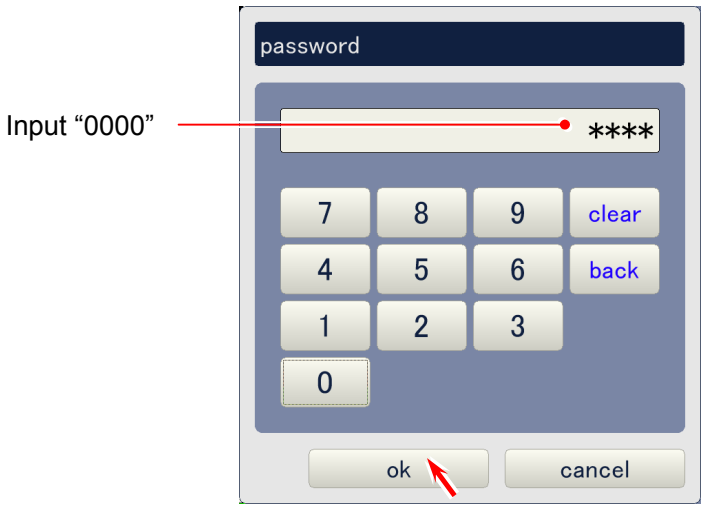
Second group consists of minor setting items such as "Motor" and "Image Enhancement". Technicians will not have to access such items unless any special necessity arises. Therefore, these items are accessible only in the **advanced service mode**.

(1) Switching between normal/advanced service mode

1. Click on **service mode** on the Main Screen



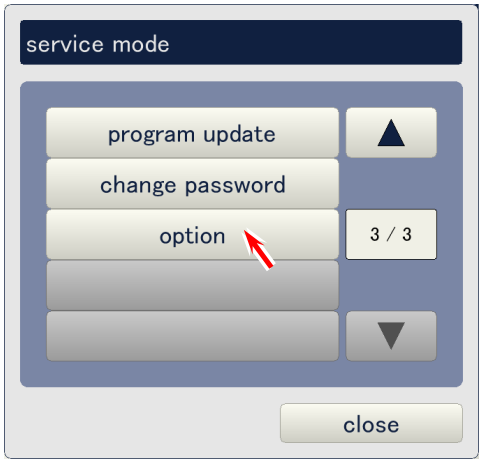
2. Input **0000** (or any custom password you specified) when password entry is required, and click on **ok**. You will enter the **normal service mode**.



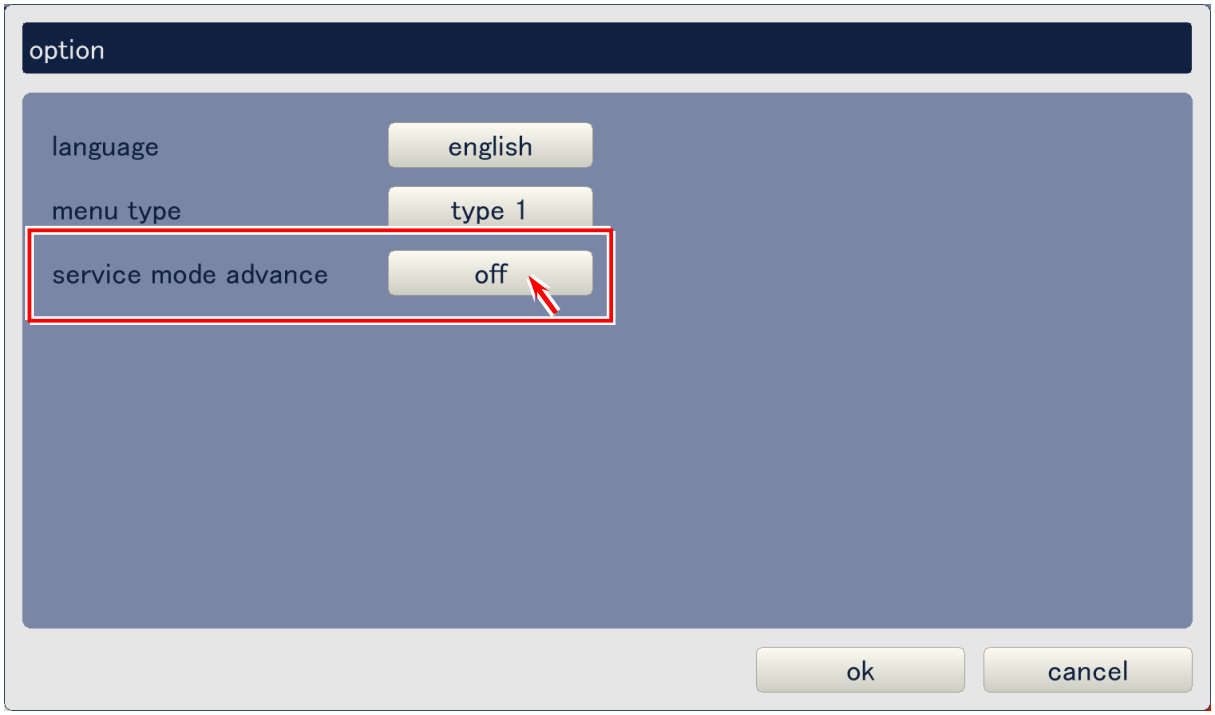
NOTE

You will enter the normal service mode whenever you enter the service mode for the first time after running the KIPDiagColor.

3. Access the 3/3 page of the service mode menu and choose **option**.



4. **Service mode advance** is set to off (normal service mode) under the default. For setting it to the advanced service mode, click on its setting button.



5. Choose **on** in the following dialog to set to the advance service mode.



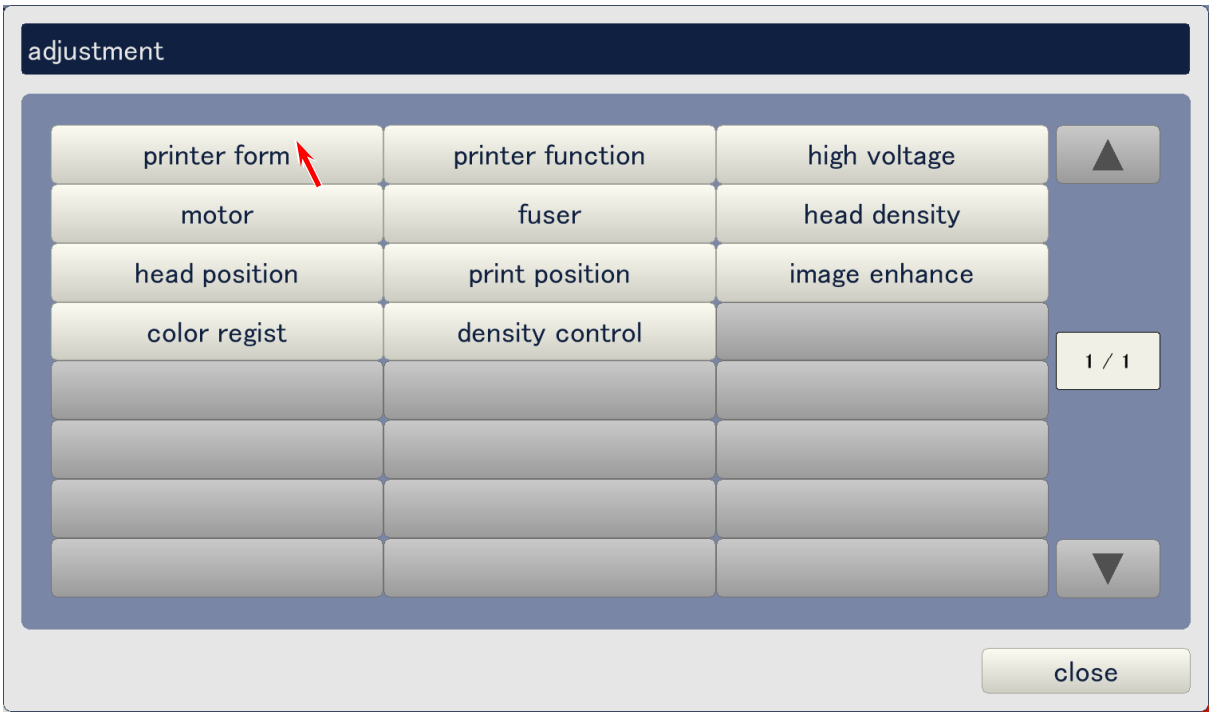
(2) Accessibility list

See the following list for the accessibility of each setting item.

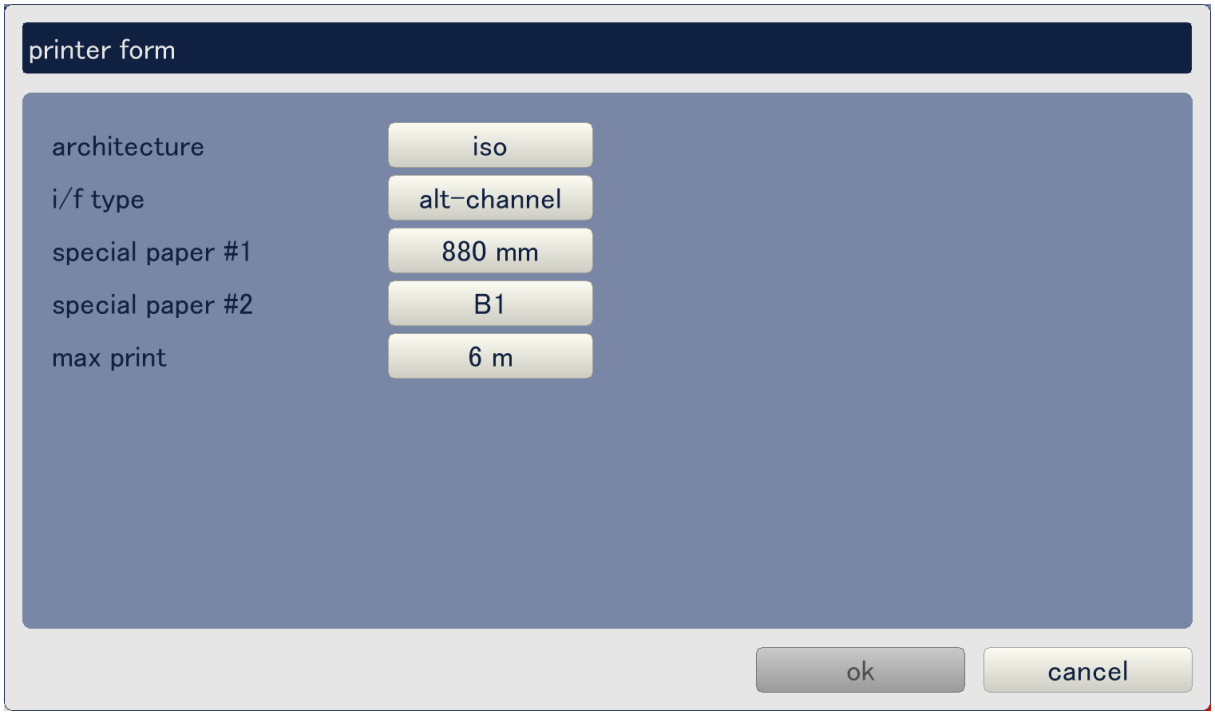
Main items	Sub items	Accessibility	
		Normal service mode	Advance service mode
printer form	architecture	Accessible	Accessible
	i/f type	Not accessible	Accessible
	special paper #1	Accessible	Accessible
	special paper #2	Accessible	Accessible
	max print	Accessible	Accessible
printer function	total counter	Not accessible	Accessible
	counter-a	Accessible	Accessible
	counter-b	Accessible	Accessible
	deh-heater	Accessible	Accessible
	dehum control temp	Accessible	Accessible
	dehum control hum	Accessible	Accessible
	cold sleep	Accessible	Accessible
high voltage	developer bias	Accessible	Accessible
	grid bias	Not accessible	Accessible
	separate guide bias	Not accessible	Accessible
	transfer corona	Accessible	Accessible
	guide tr-bias control	Accessible	Accessible
	surf-potential	Not accessible	Accessible
	surf potential margin	Not accessible	Accessible
	ads-roller corona	Accessible	Accessible
motor	paper feed motor	Not accessible	Accessible
	paper feed motor long		Accessible
	fuser motor		Accessible
	developer motor		Accessible
	drum motor		Accessible
	belt motor		Accessible
	regist roller motor		Accessible
	ads-roller motor		Accessible
fuser	fuser temp	Accessible	Accessible
	paper tension	Not accessible	Accessible
	fuser servo-gain	Not accessible	Accessible
	web volume	Accessible	Accessible
	web runtime	Accessible	Accessible
	web thickness	Accessible	Accessible
	web feed	Accessible	Accessible
head density	head strobe	Accessible	Accessible
	multi level binary	Not accessible	Accessible
head position	head skew	Accessible	Accessible
	head delay	Accessible	Accessible
	head fine delay	Accessible	Accessible
	head overlap	Accessible	Accessible
print position	lead regist	Accessible	Accessible
	cut length	Accessible	Accessible
	top blank	Accessible	Accessible
	bottom blank	Accessible	Accessible
	left blank	Accessible	Accessible
	right blank	Accessible	Accessible
image enhance	image enhance	Not accessible	Accessible
	enhance type a		Accessible
	enhance type b		Accessible
	h-image enhance		Accessible
	h-enhance type a		Accessible
	h-enhance type b		Accessible
color regist	color regist H	Accessible	Accessible
	color regist V	Accessible	Accessible
	line pitch tolerance	Not accessible	Accessible
density control	target density	Not accessible	Accessible
	developer bias limit	Not accessible	Accessible
	density lock	Accessible	Accessible

9. 5. 2. 2 Printer Form

Click on **printer form** to access the Printer Form Page. See the later pages for the description of each setting item.



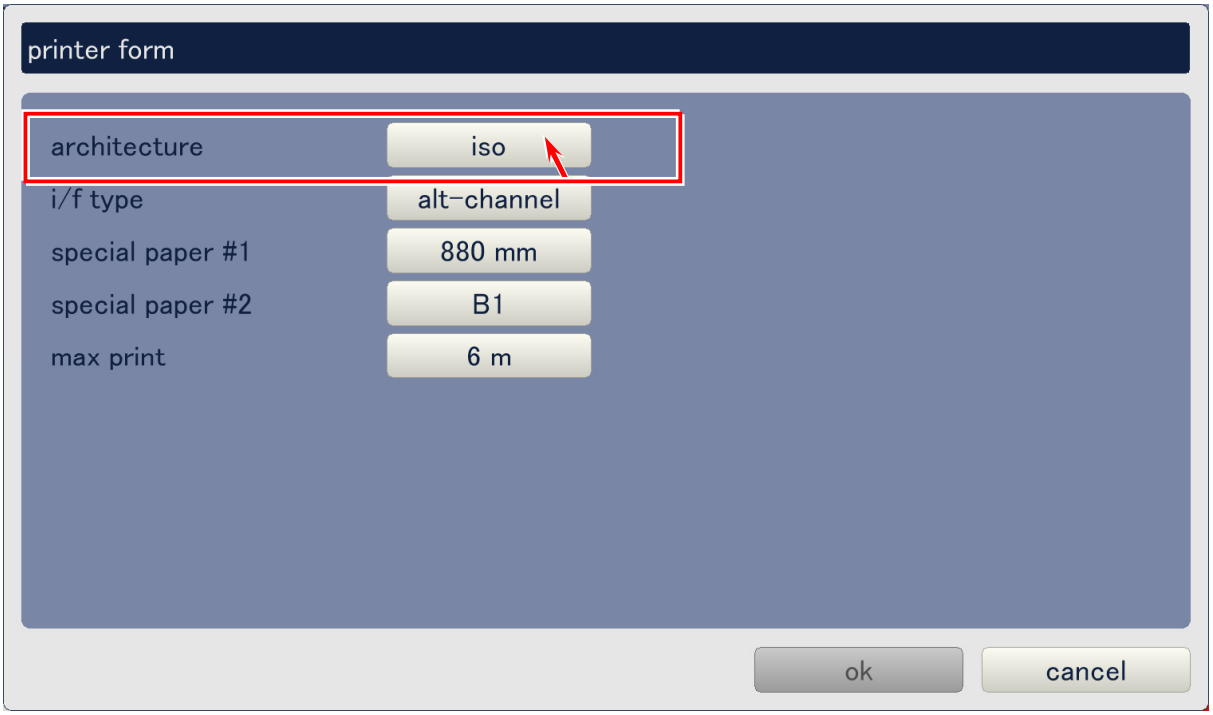
Printer Form Page (Advanced service mode)



(1) Architecture

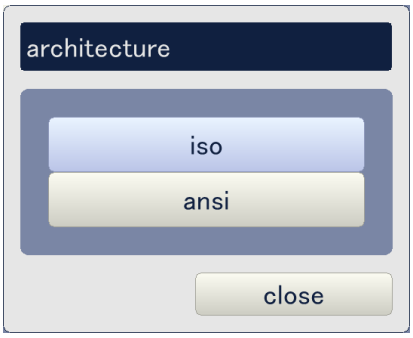
Print format can be set to either **iso** (metric) or **ansi** (inch). To change the setting, click on the button beside **architecture**, and select either setting in the pop up dialog.

Setting	Description
iso	Metric
ansi	Inch



Reference

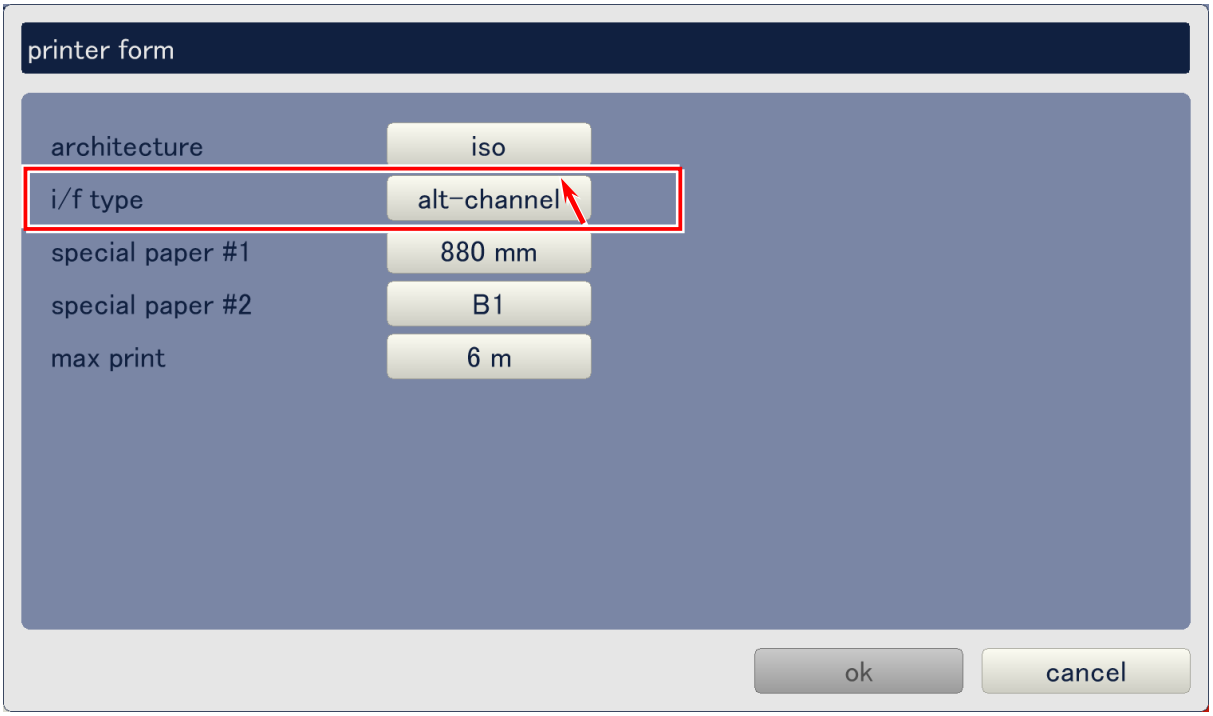
This is common with the Service Mode 4-0000.



(2) I/F type (advanced service mode)

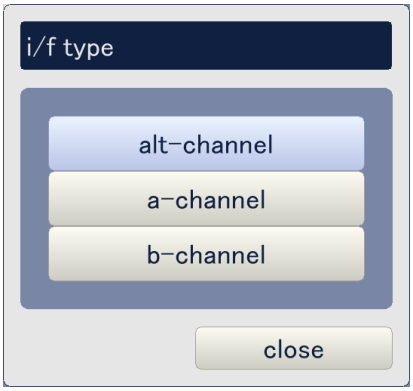
The communication of Interface PCB with the outer devices can be specified. To change the setting, click on the button beside **i/f type** and select any setting in the pop up dialog.

Setting	Description
alt-channel	A & B channels make alternate communication with scanner and controller.
a-channel	A channel communicates with the image scanner.
b-channel	B channel communicates with the controller.



Reference

This is common with the Service Mode 4-0001.



NOTE

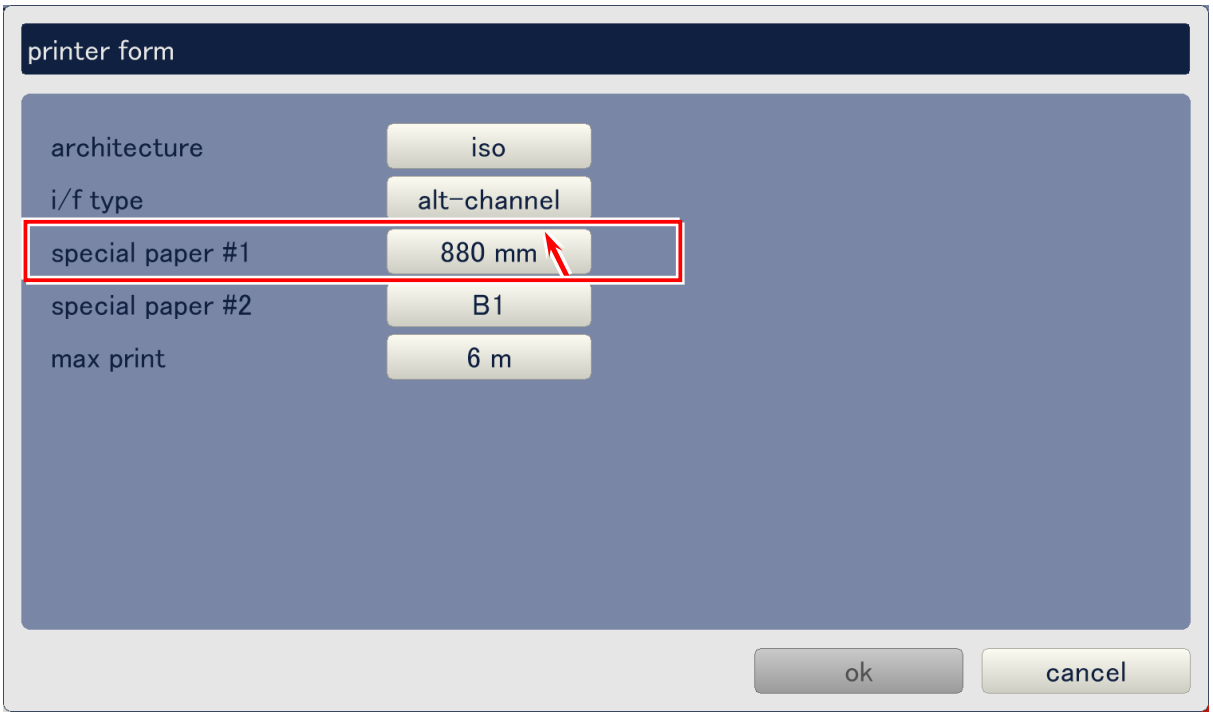
(1) I/F type is accessible only when in the advanced service mode.
(2) Please set this always to **b-channel**, and never set it to alt-channel or a-channel.

(3) Special paper #1

KC80 printer is available for such special width media as 880mm, 891mm and 900mm. These widths of roll media can be installed onto Roll Decks 1, 2 and 3 which are provided with the size sensor specialized for detecting these 3 widths. As the printer can detect only one of 3 widths at one time, you can specify which one should be the current width the machine has to recognize.

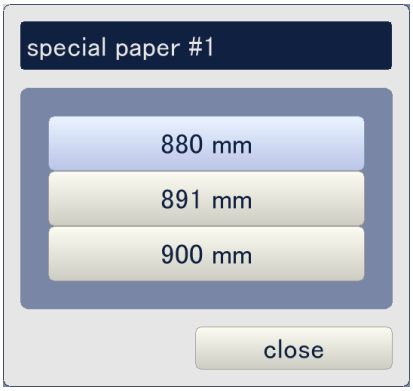
To change the setting, click on the button beside **special paper #1** and select any setting in the pop up dialog.

Setting	Description
880mm	Machine recognizes the special width media as 880mm wide.
891mm	Machine recognizes the special width media as 891mm wide.
900mm	Machine recognizes the special width media as 900mm wide.



Reference

This is common with the Service Mode 4-0002.

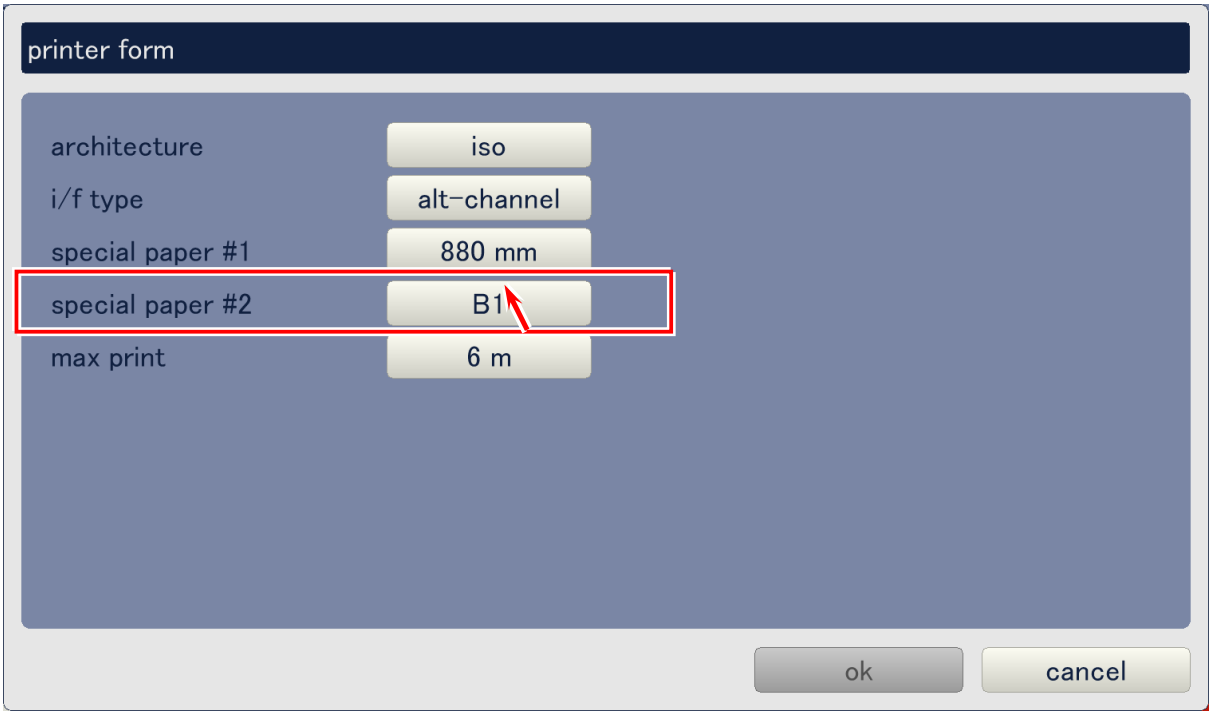


(4) Special paper #2

KC80 printer is available for such special width media as B1 and 707mm. These widths of roll media can be installed onto Roll Decks 1, 2 and 3 which are provided with the size sensor specialized for detecting these 2 widths. As the printer can detect either of these 2 3 widths at one time, you can specify which one should be the current width the machine has to recognize.

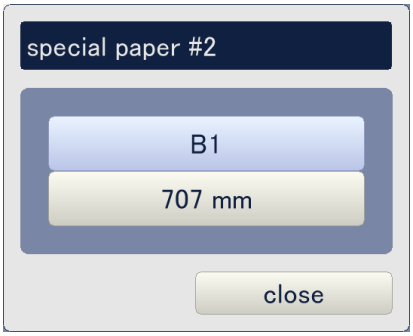
To change the setting, click on the button beside **special paper #2** and select any setting in the pop up dialog.

Setting	Description
B1	Machine recognizes a special size media as B1 (728mm).
707	Machine recognizes a special size media as 707mm wide.



Reference

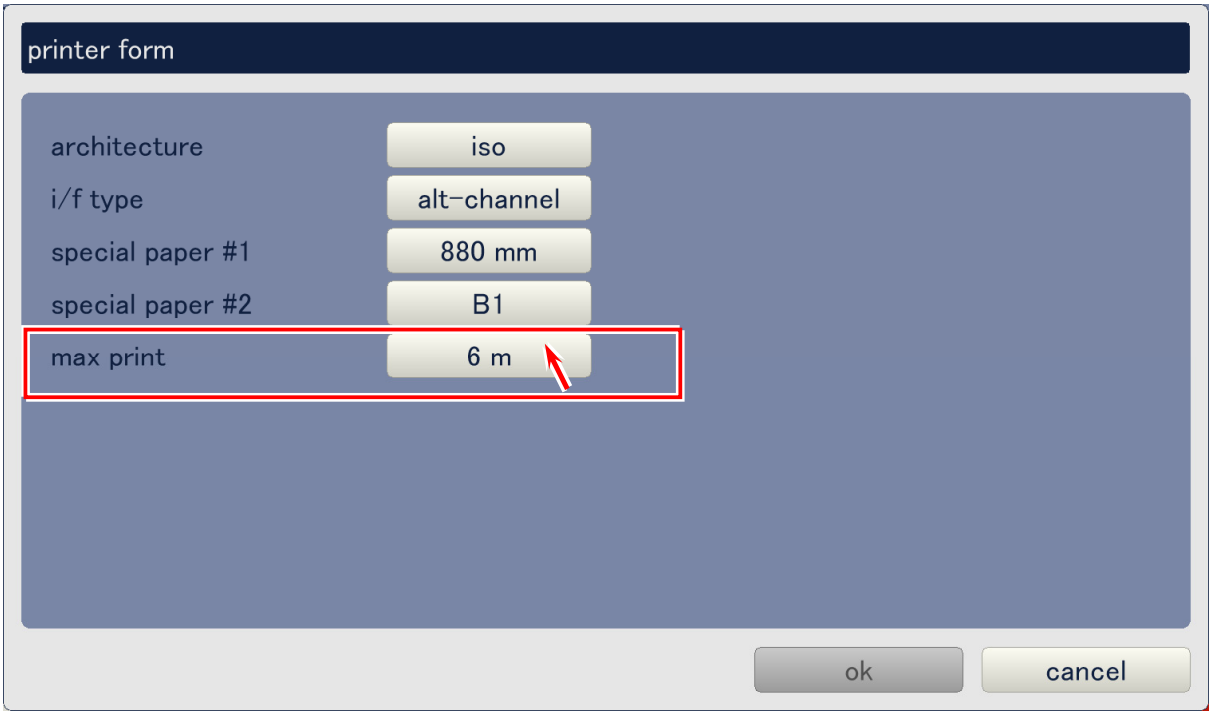
This is common with the Service Mode 4-0003.



(5) Max print

Restriction for the maximum print length can be specified. To change the setting, click on the button beside **max print** and select either setting in the pop up dialog.

Setting	Description
6m	Print is available up to 6 meters long.
45m	Print is available up to 45 meters long.



Reference

This is common with the Service Mode 4-0004.

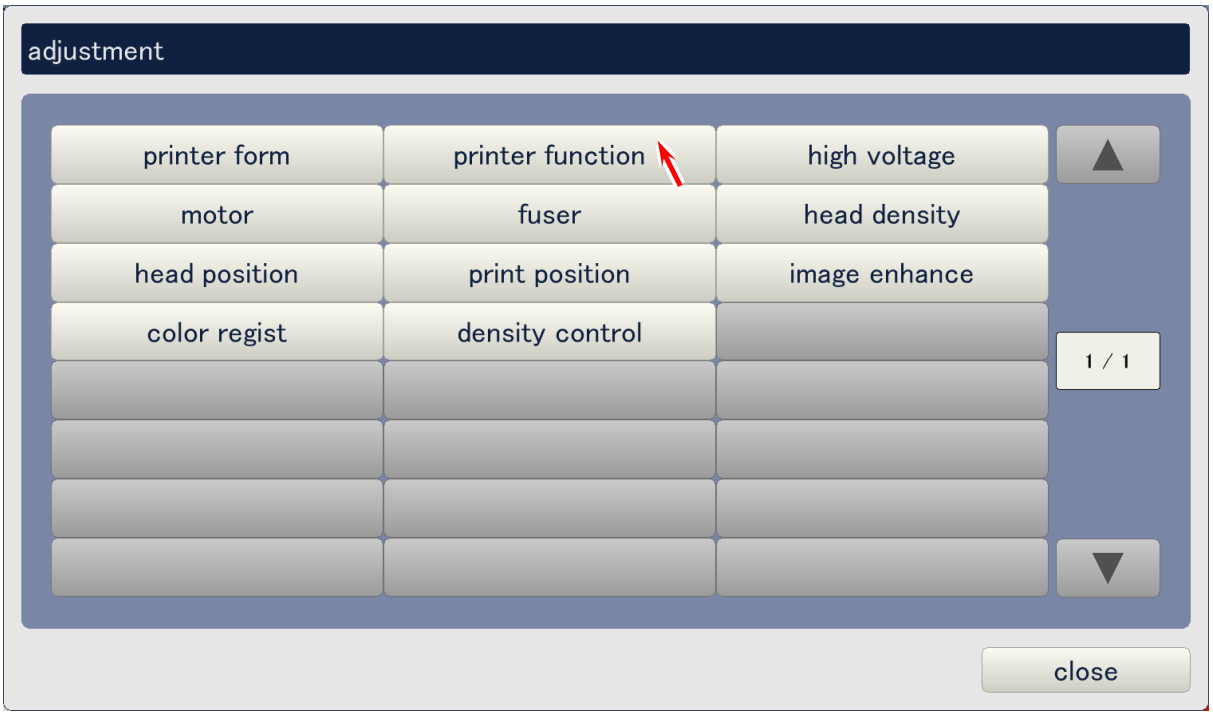


NOTE

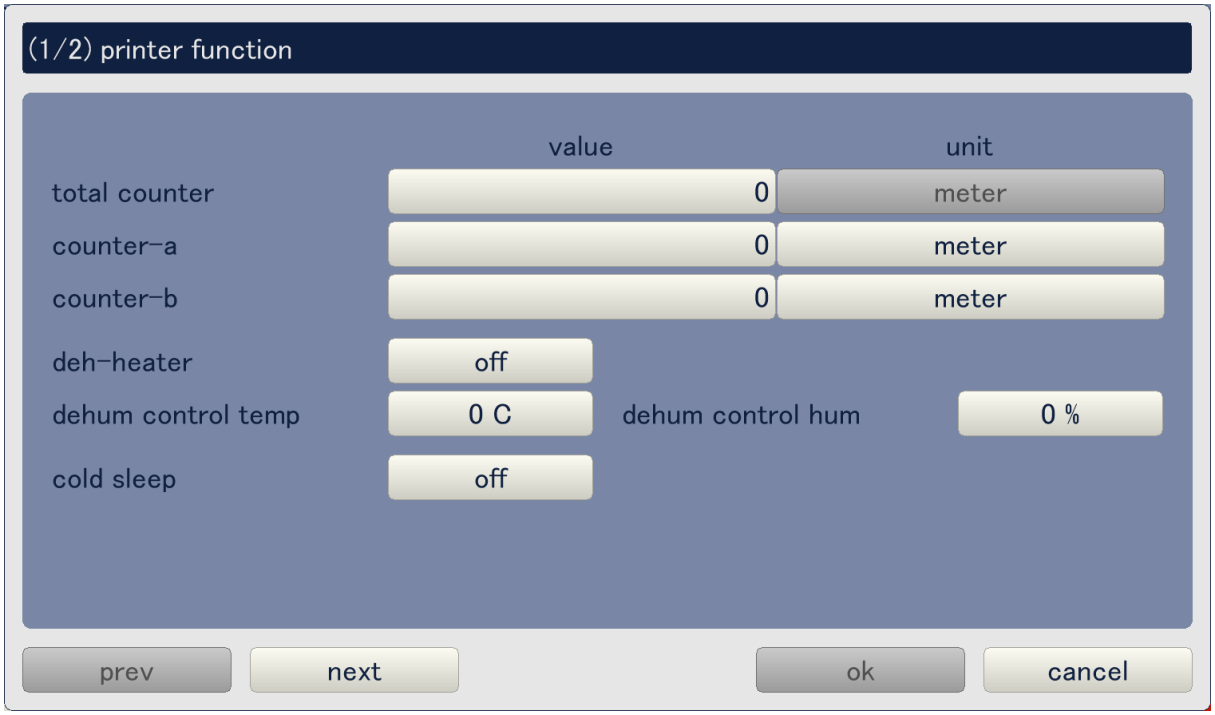
See the specification for the maximum length to be guaranteed.

9. 5. 2. 3 Printer Function

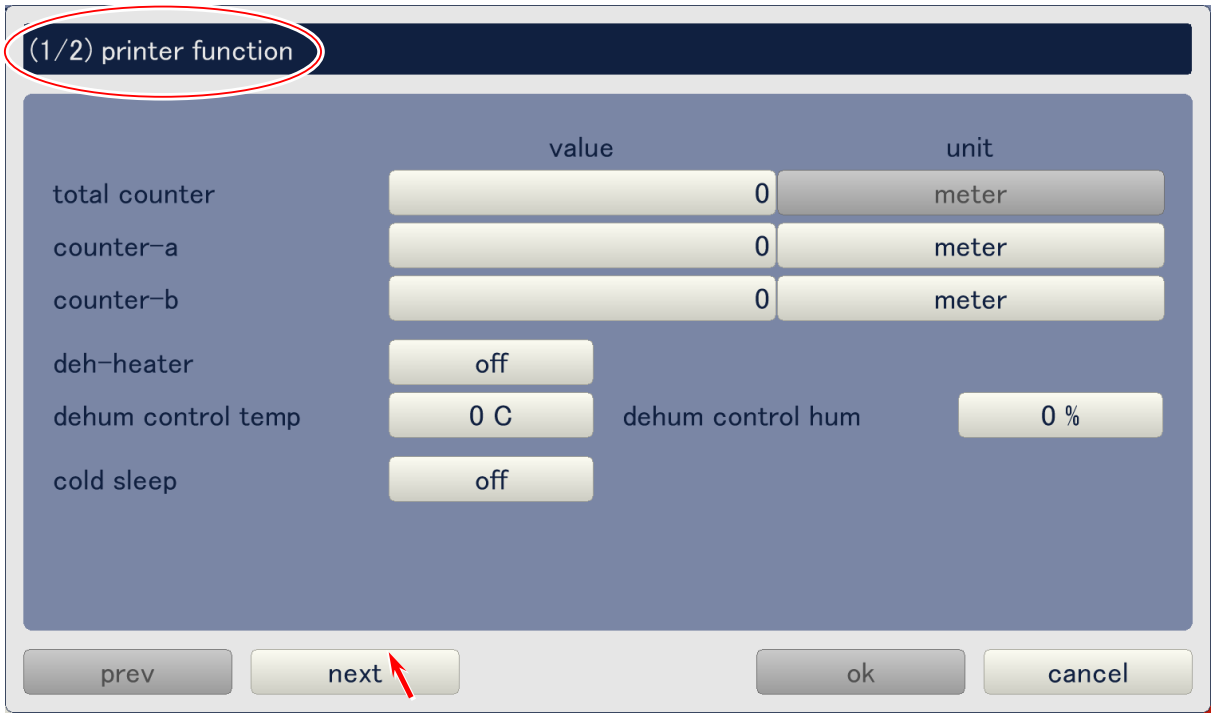
Click on **printer function** to access Printer Function Page. See the later pages for the description of each setting item.

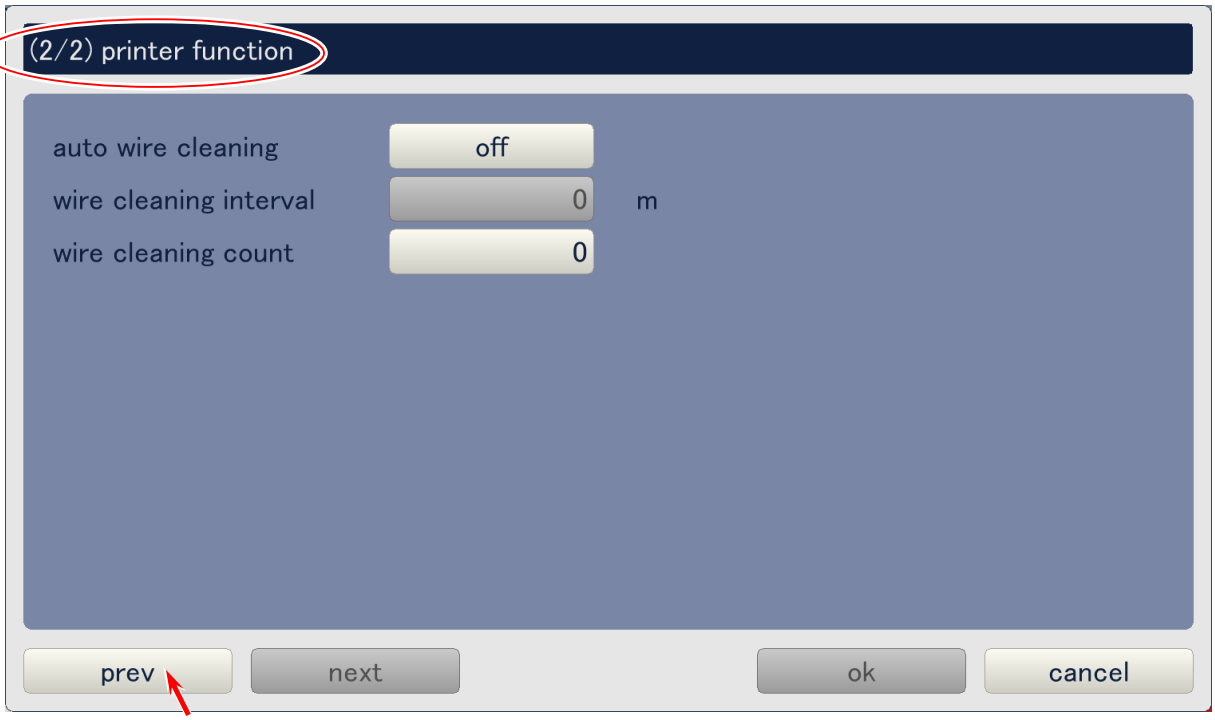


Printer Function Page
(Advanced service mode)



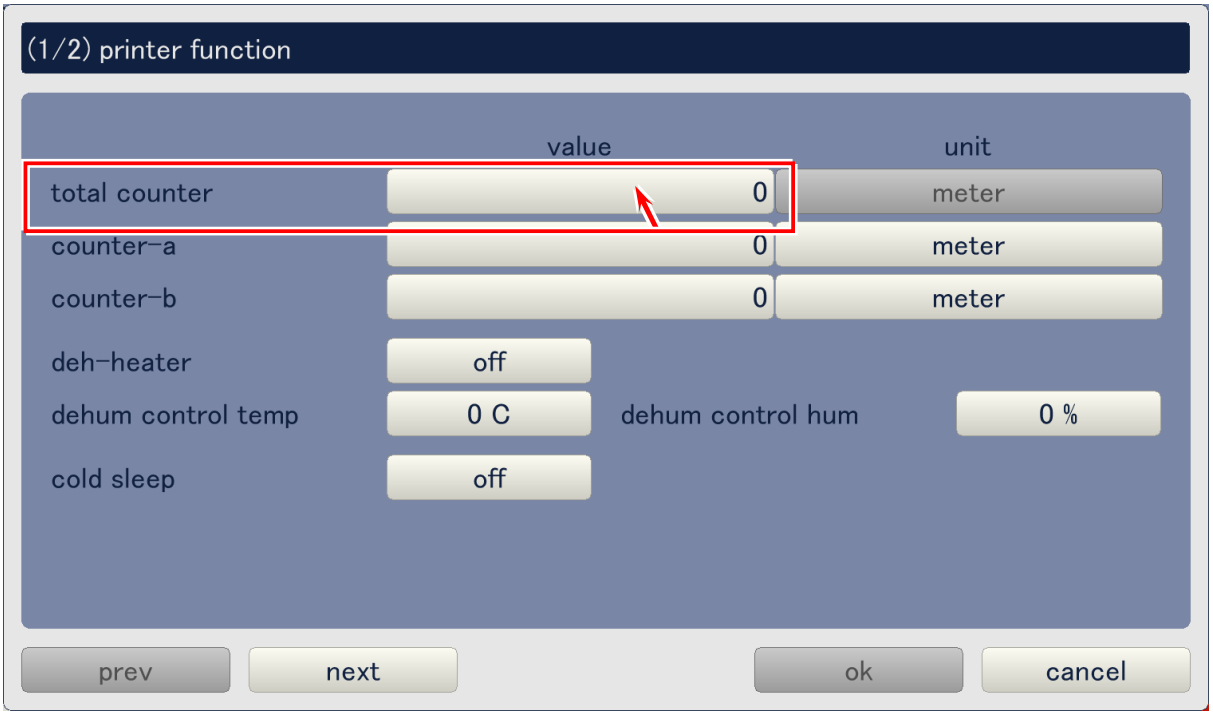
Printer Function Page consists of 2 pages. Use **prev** and **next** buttons to indicate the other page. Current page is shown as (1/2) on the top of the screen.



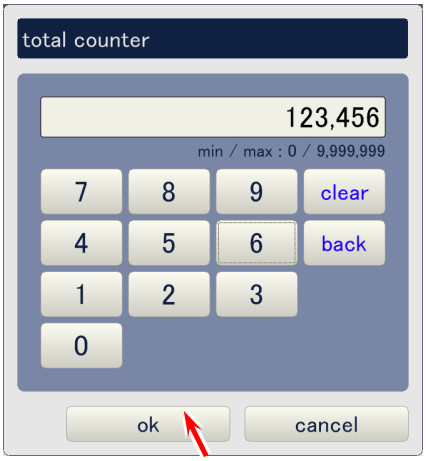


(1) Total counter (advanced service mode)

Count value of the Total Counter can be changed. Click on **value** button beside **total counter**, input the necessary value in the pop up dialog, and click on **ok**.



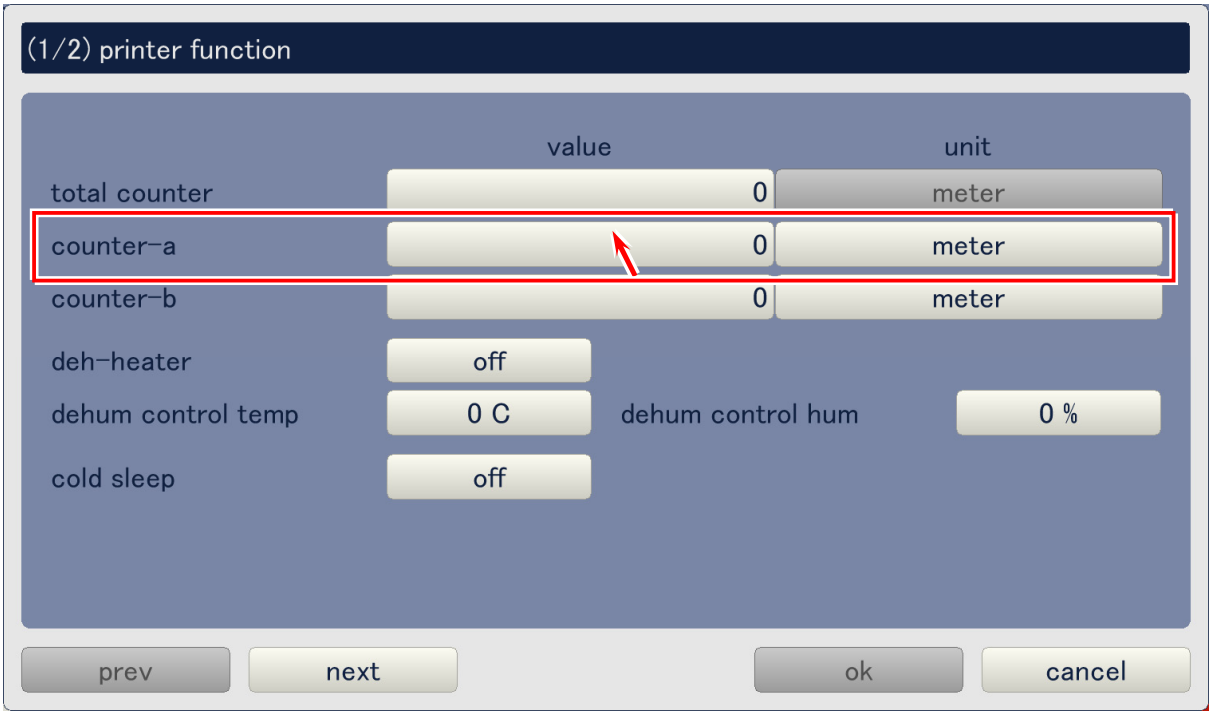
> **NOTE**
>
> (1) **Total counter** is accessible only when in the advanced service mode.
> (2) The counting unit of Total Counter is always set to linear meter, and can not be set to other counting units.



(2) Counter-a

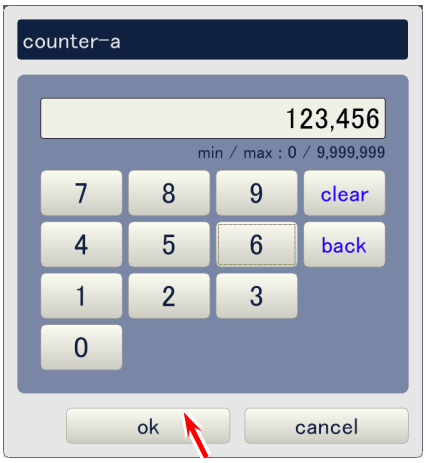
Count value and counting unit of Counter A can be changed.

- To change the count value, click on **value** button of **counter-a**, input the necessary value in the pop up dialog, and click on **ok**.



Reference

This is common with the Service Modes 4-0006 & 0007.



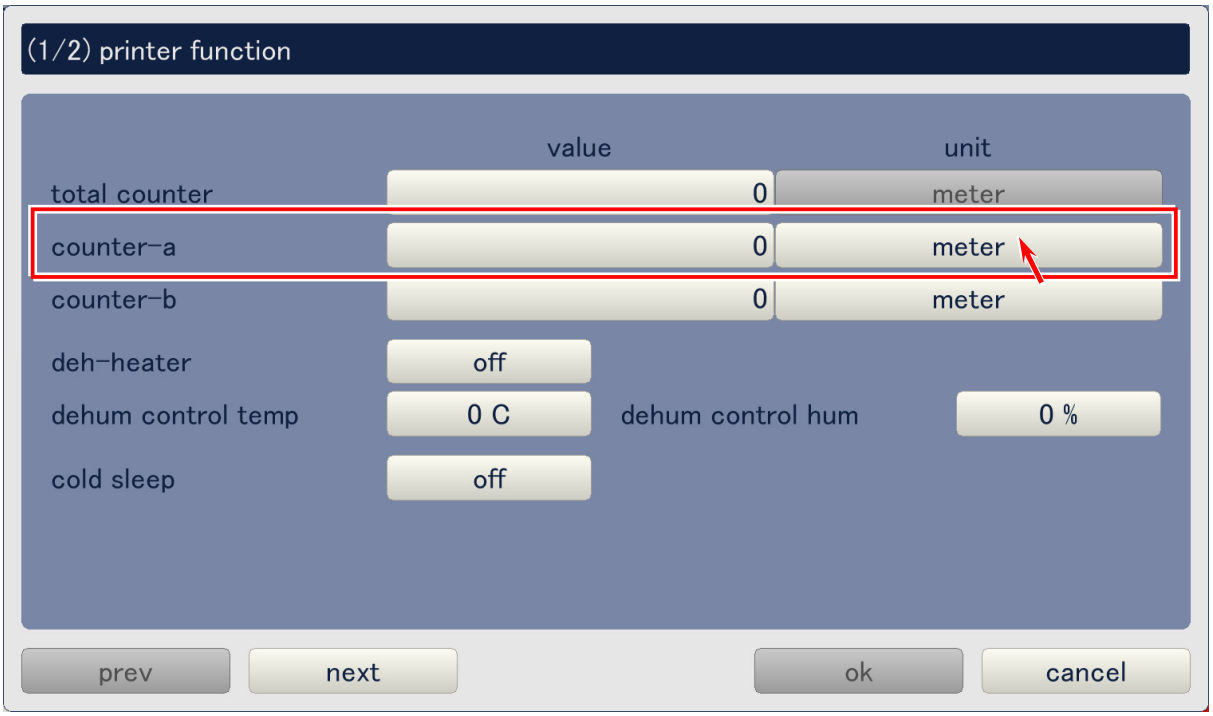
- To change the counting unit, click on the **unit** button beside **counter-a**, and select any setting in the pop up dialog.

Metric mode

Setting	Description
meter	1 count corresponds to “1 linear meter”.
x 0.1 meter	1 count corresponds to “0.1 linear meters”.
sq. meter	1 count corresponds to “1 square meter”.
x 0.1 sq. meter	1 count corresponds to “0.1 square meters”.

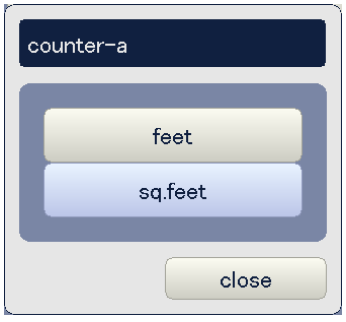
Inch mode

Setting	Description
feet	1 count corresponds to “1 linear foot”.
sq. feet	1 count corresponds to “1 square feet”.

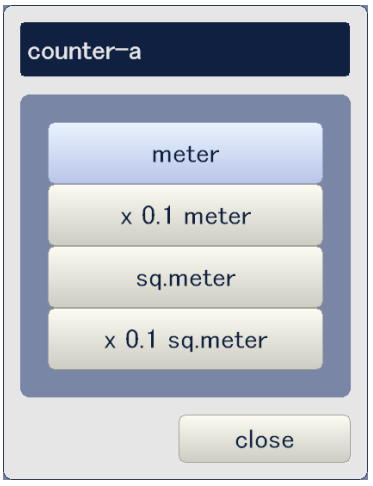


Reference

This is common with the Service Mode 4-0005.



Setting screen in inch mode

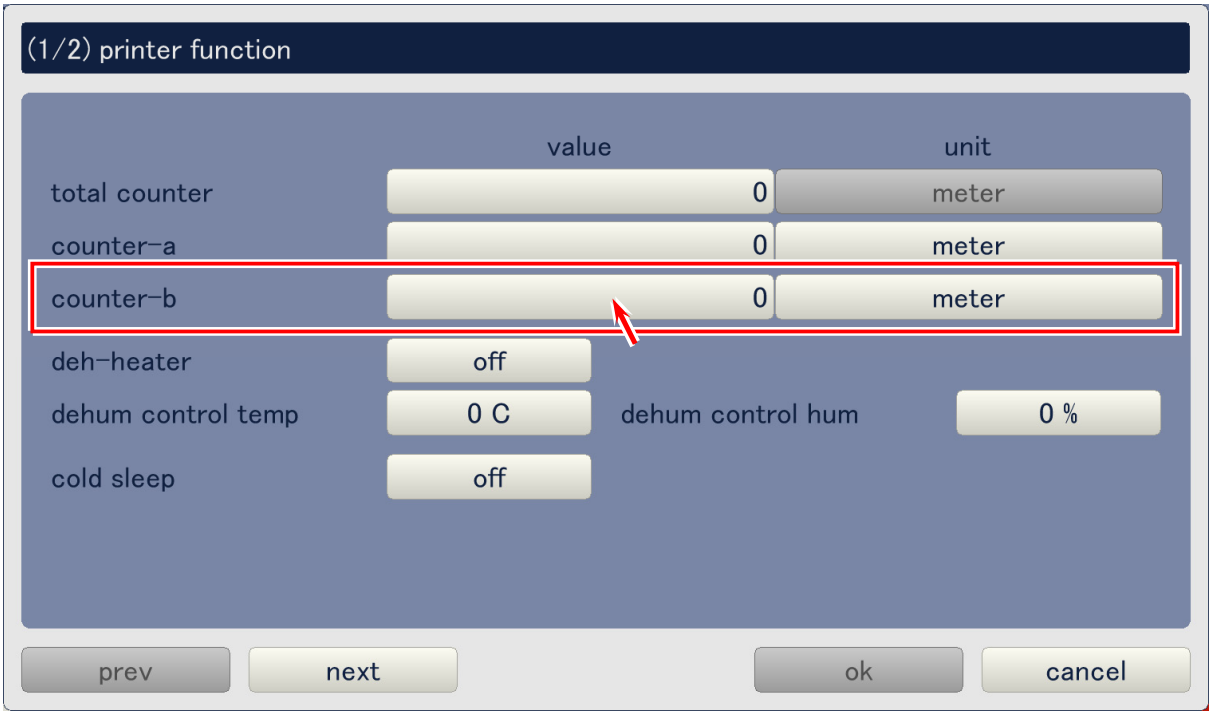


Setting screen in metric mode

(3) Counter-b

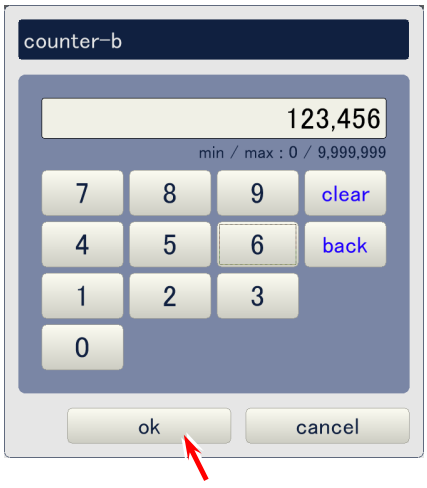
Count value and counting unit of Counter B can be changed.

- To change the count value, click on **value** button beside **counter-b**, input the necessary value in the pop up dialog, and click on **ok**.



Reference

This is common with the Service Modes 4-0009 & 000A.



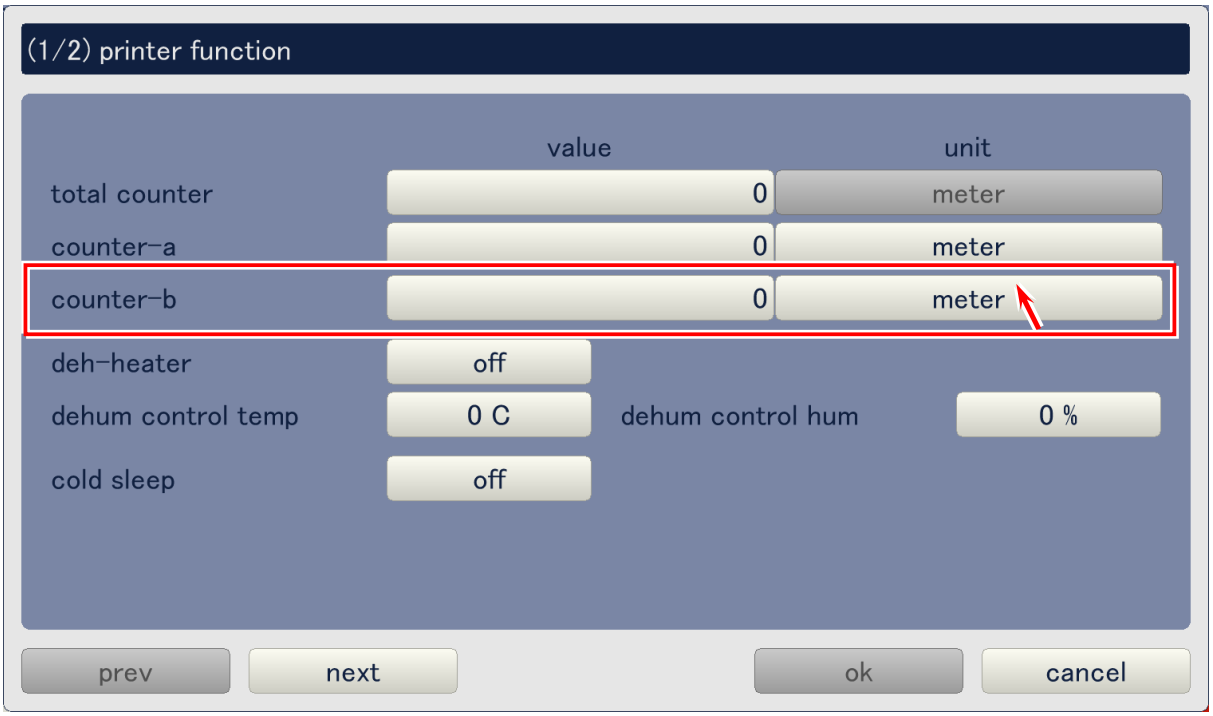
- To change the counting unit, click on **unit** button beside **counter-b**, and select any setting in the pop up dialog.

Metric mode

Setting	Description
meter	1 count corresponds to “1 linear meter”.
x 0.1 meter	1 count corresponds to “0.1 linear meters”.
sq. meter	1 count corresponds to “1 square meter”.
x 0.1 sq. meter	1 count corresponds to “0.1 square meters”.

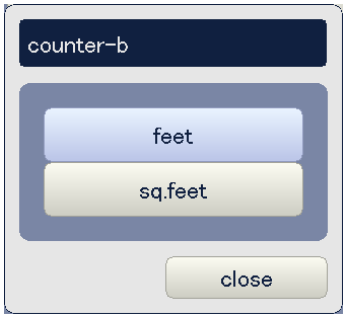
Inch mode

Setting	Description
feet	1 count corresponds to “1 linear foot”.
sq. feet	1 count corresponds to “1 square feet”.

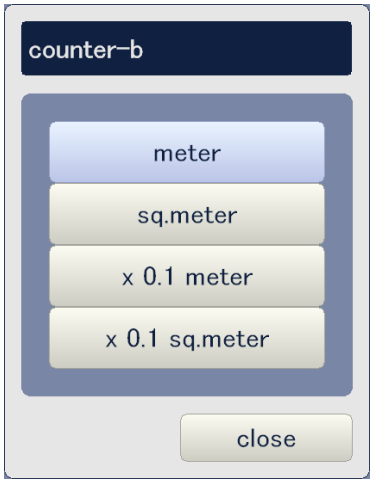


Reference

This is common with the Service Mode 4-0008.



Setting screen in inch mode

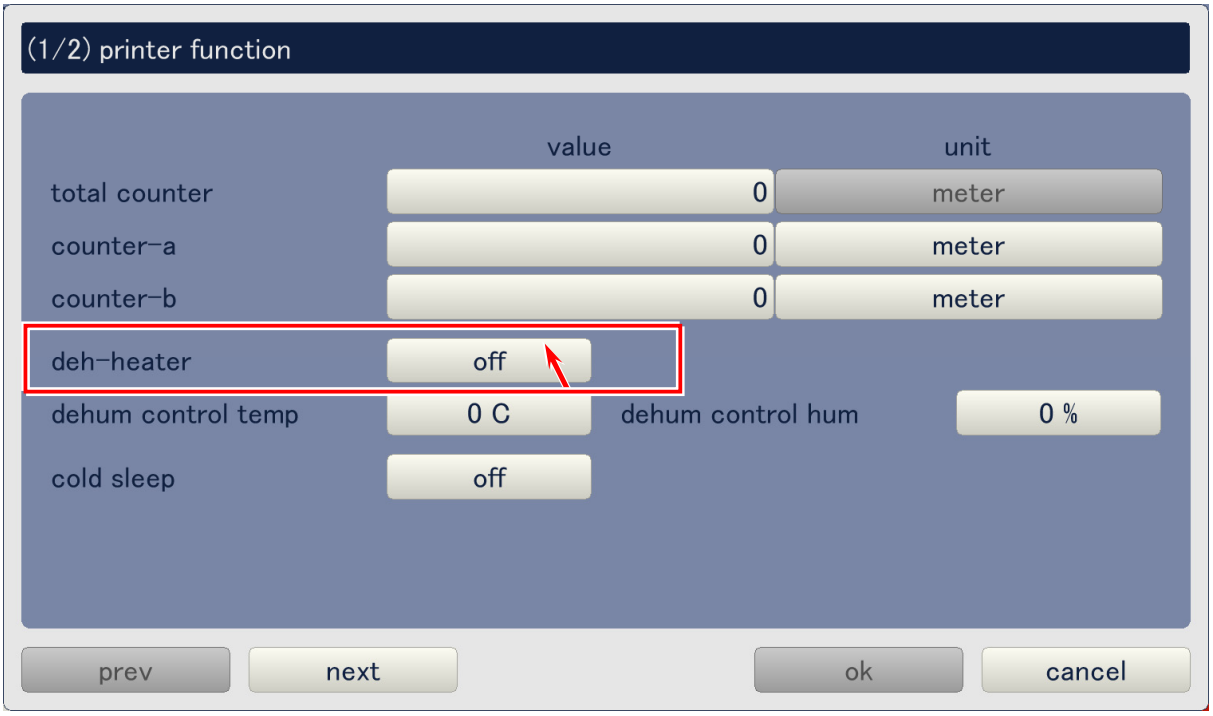


Setting screen in metric mode

(4) Deh-heater

Whether the Dehumidify Heater functions or not can be specified. To change the setting, click on the button beside **deh-heater**, and select either setting in the pop up dialog.

Setting	Description
off	Dehumidify Heater does not function.
on	Dehumidify Heater functions.



Reference

This is common with the Service Mode 4-000b.

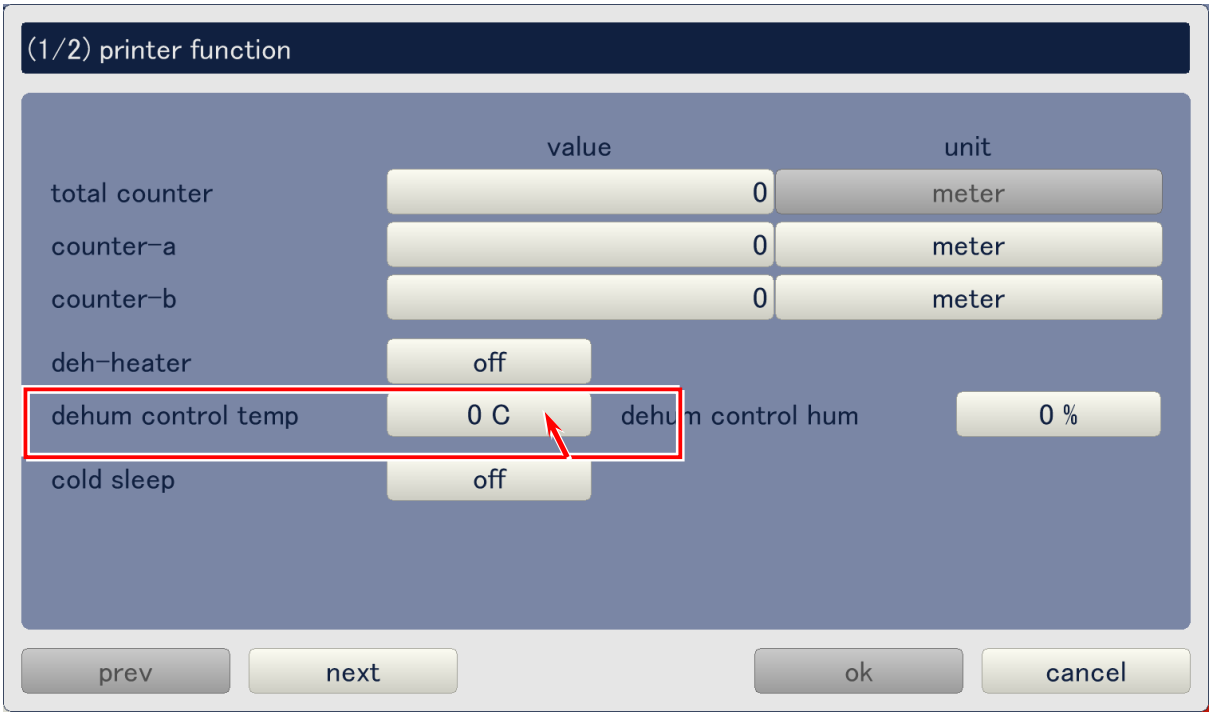


(5) Dehum control temp

A temperature threshold can be specified, which decides whether the Dehumidify Heater works or not. Dehumidify Heater works when the temperature detected by the Temperature Sensor is over the temperature threshold specified in this mode.

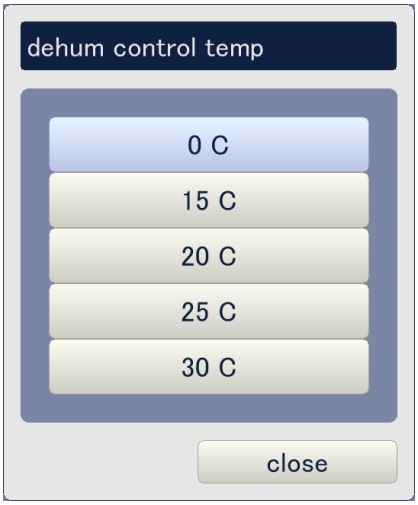
To change the setting, click on the button beside **dehum control temp** and select any of the following settings in the pop up dialog.

Setting	Description
0 C	Dehumidify Heater turns on when the temperature is over 0 degrees centigrade.
15 C	Dehumidify Heater turns on when the temperature is over 15 degrees centigrade.
20 C	Dehumidify Heater turns on when the temperature is over 20 degrees centigrade.
25 C	Dehumidify Heater turns on when the temperature is over 25 degrees centigrade.
30 C	Dehumidify Heater turns on when the temperature is over 30 degrees centigrade.



Reference

This is common with the Service Mode 4-000d.

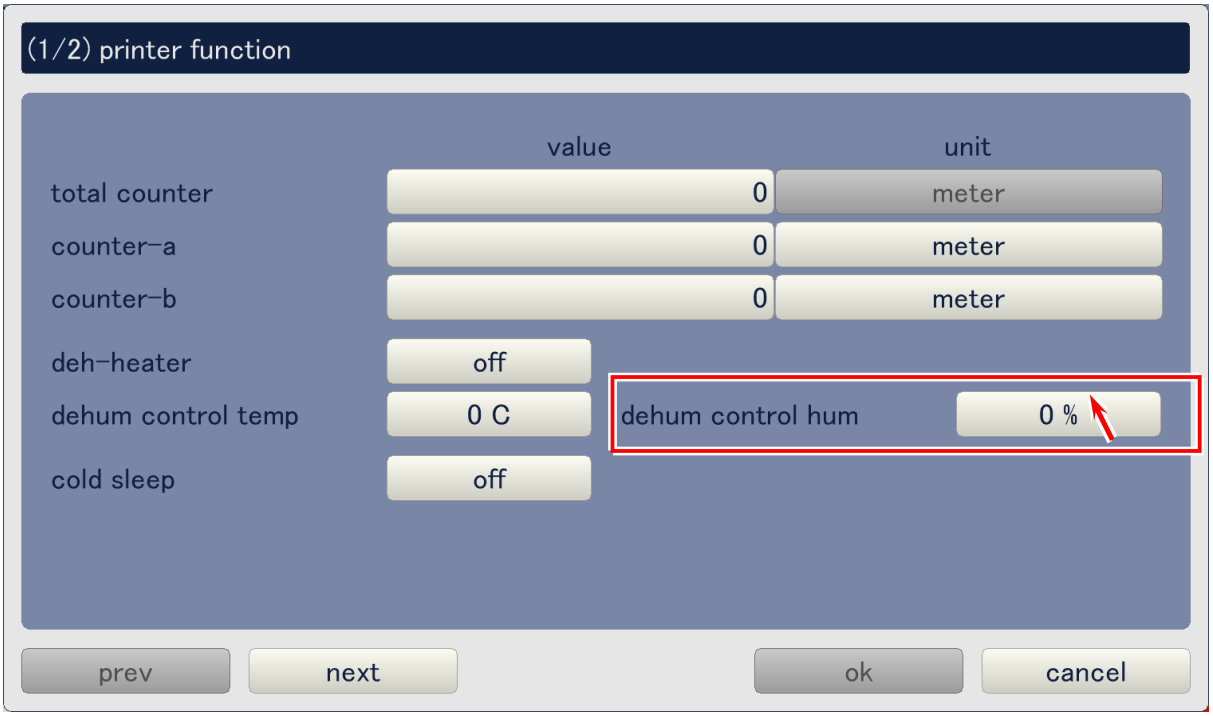


(6) Dehum control hum

A humidity threshold can be specified, which decides whether the Dehumidify Heater works or not. Dehumidify Heater works when the humidity detected by the Humidity Sensor is over the humidity threshold specified in this mode.

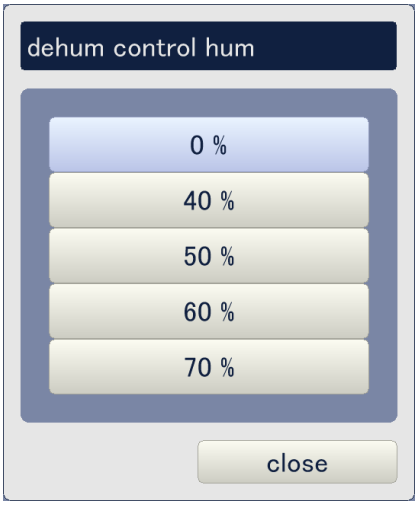
To change the setting, click on the button beside **dehum control hum** and select any of the following settings in the pop up dialog.

Setting	Description
0%	Dehumidify Heater turns on when the humidity is over 0%RH.
40%	Dehumidify Heater turns on when the humidity is over 40%RH.
50%	Dehumidify Heater turns on when the humidity is over 50%RH.
60%	Dehumidify Heater turns on when the humidity is over 60%RH.
70%	Dehumidify Heater turns on when the humidity is over 70%RH.



Reference

This is common with the Service Mode 4-000C.

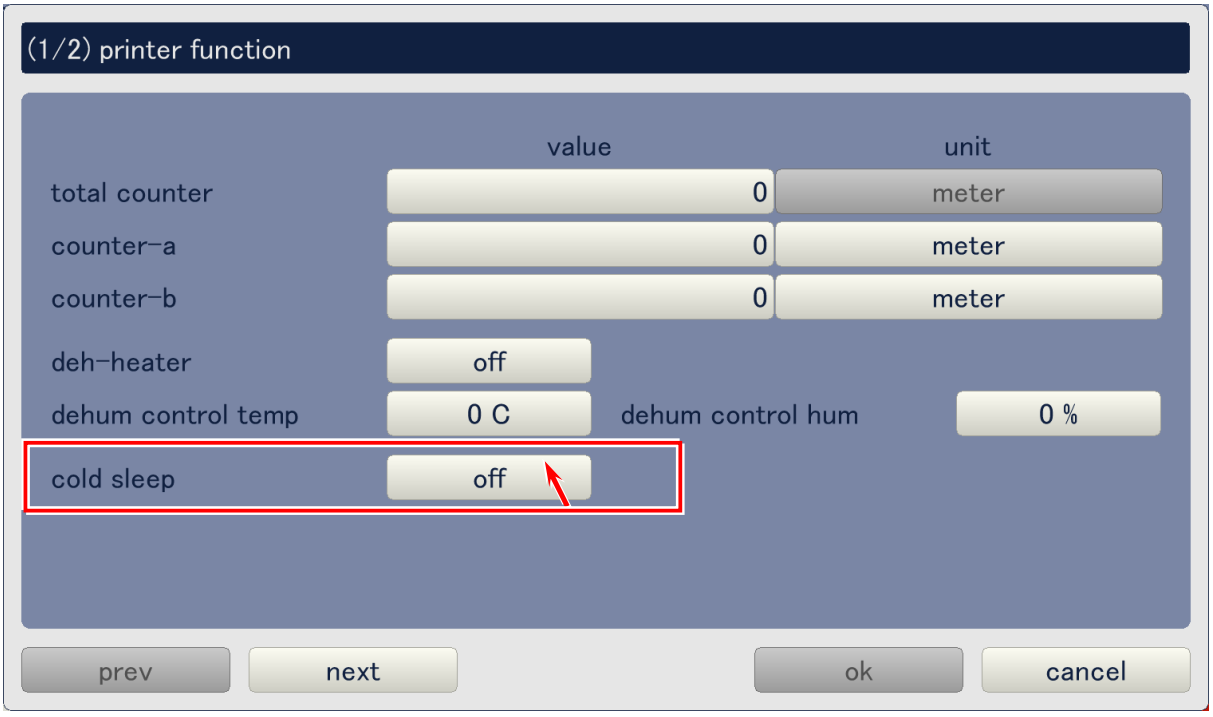


(7) Cold sleep

Whether the Cold Sleep Mode should function or not can be specified. To change the setting, click on the button beside **cold sleep** and select either setting in the pop up dialog.

Setting	Description
off	Cold Sleep does not function.
on	Cold Sleep functions.

To change the setting, click on the button beside **cold sleep** and select either on or off in the pop up dialog.



Reference

This is common with the Service Mode 4-0011.

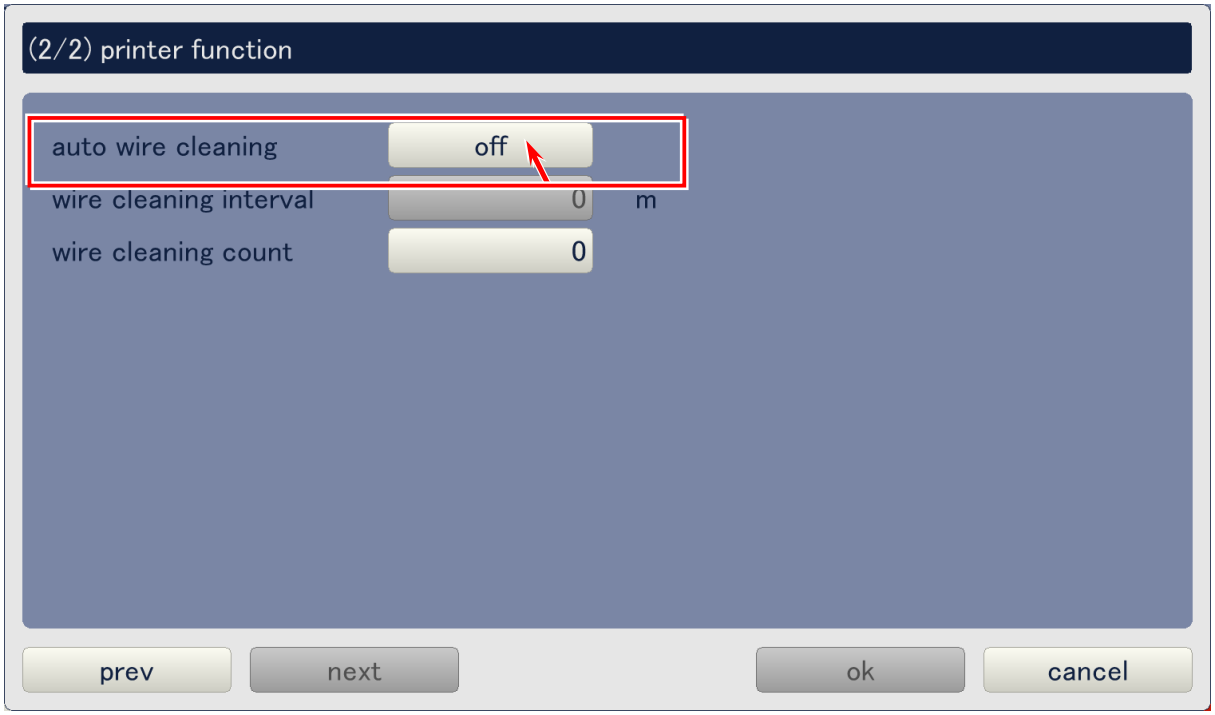


(8) Auto wire cleaning

It is possible to activate or inactivate the Auto Wire Cleaning.

Setting	Description
off	Auto Wire Cleaning does not function.
on	Auto Wire Cleaning functions.

To change the setting, click on the button beside **auto wire cleaning** and select either on or off in the pop up dialog.



Reference

This is common with the Service Mode 4-0012.



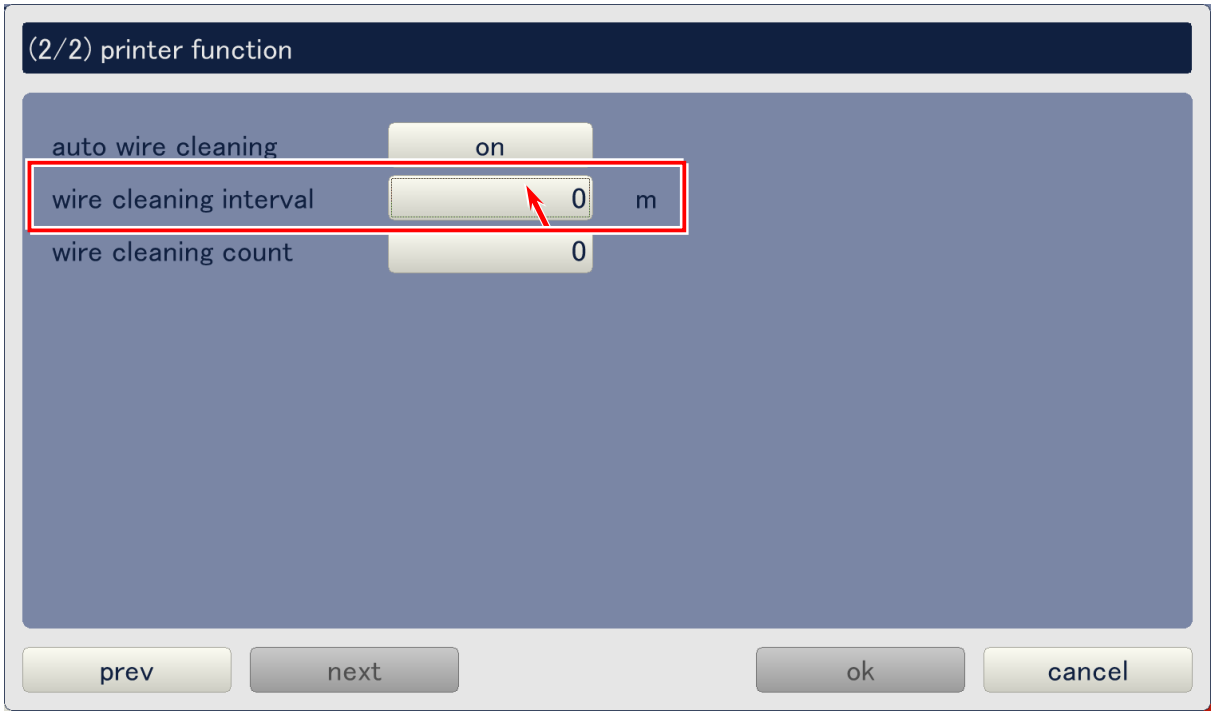
NOTE

When the auto wire cleaning is set to on, it is possible to specify the interval of wire cleaning as well as the number of cleaning times.

(9) Wire cleaning interval

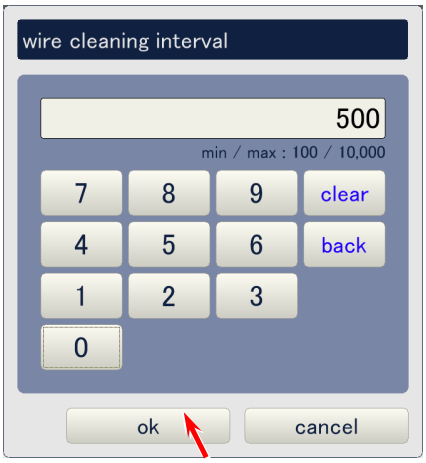
It is possible to specify the interval of auto wire cleaning in terms of print length. Auto wire cleaning functions whenever the specified print length is done.

To change the setting, click on the button beside **wire cleaning interval**, input the required value in the pop up dialog, and click on **ok**. Setting range is 100 to 10000 linear meters.



Reference

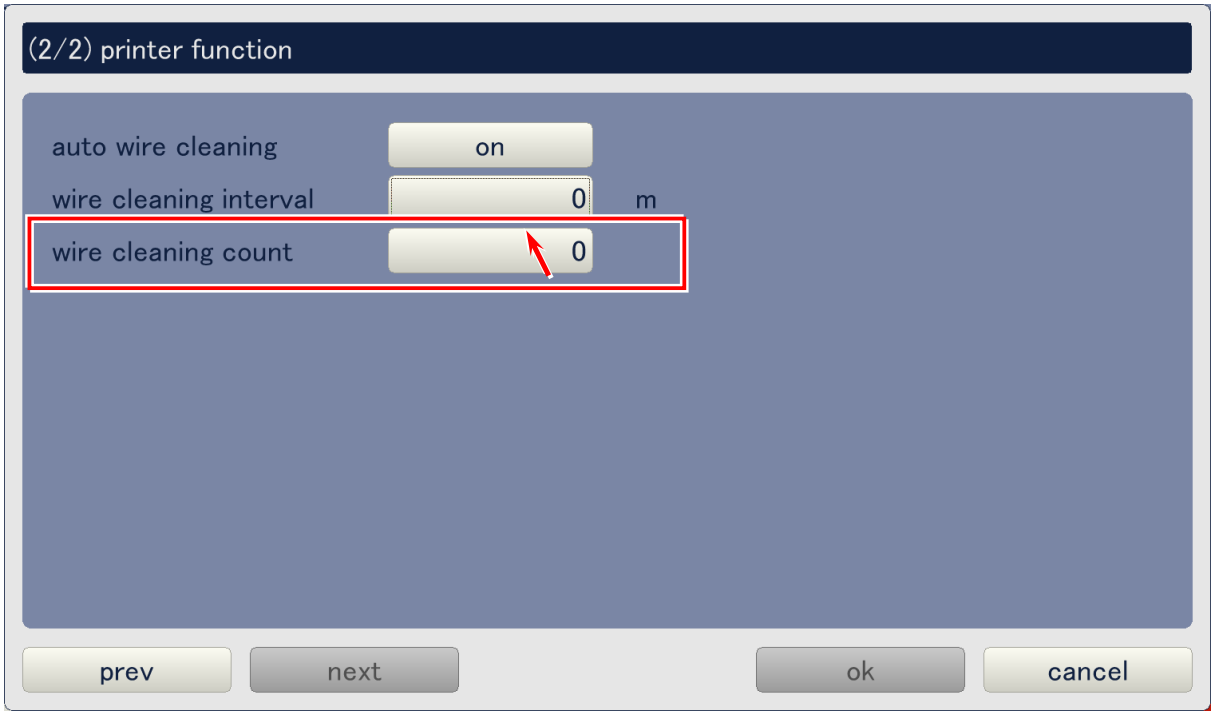
This is common with the Service Mode 4-0013.



(10) Wire cleaning count

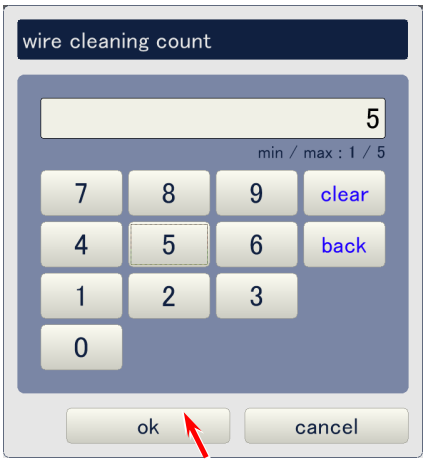
It is possible to specify how many times the wire cleaner should “go and return” at each occasion of wire cleaning.

To change the setting, click on the button beside **wire cleaning count**, input the required value in the pop up dialog, and click on **ok**. Setting range is 1 to 5 times.



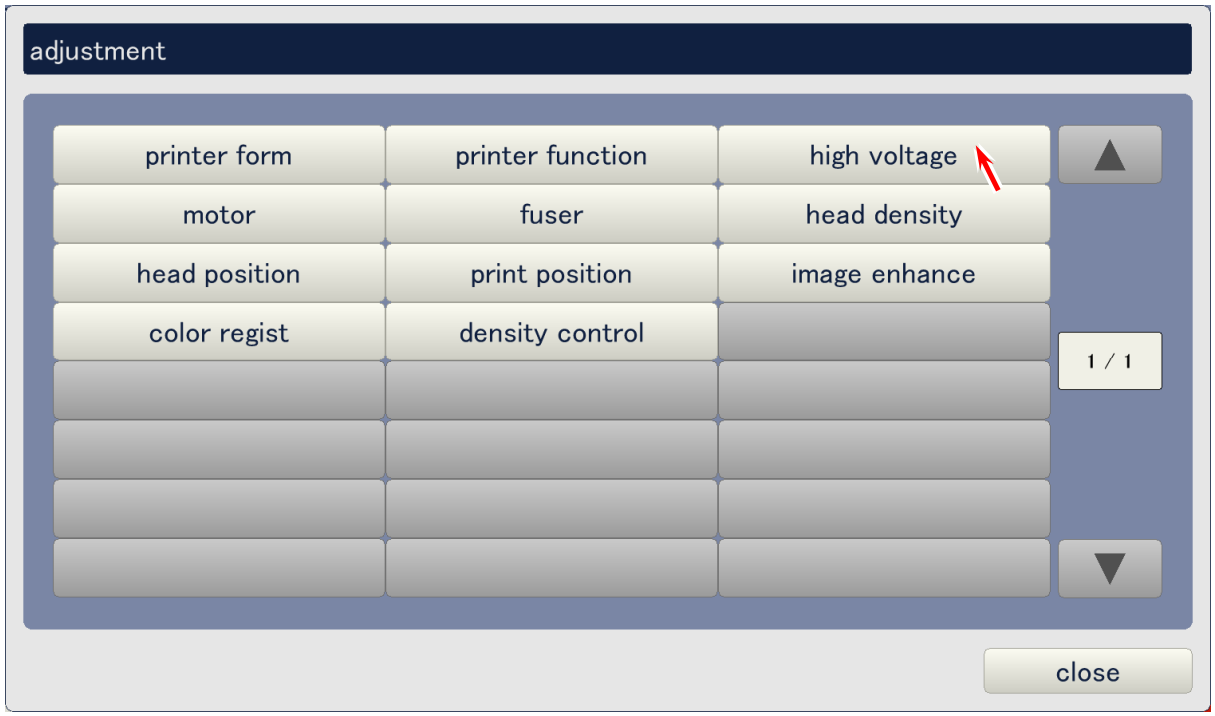
Reference

This is common with the Service Mode 4-0014.

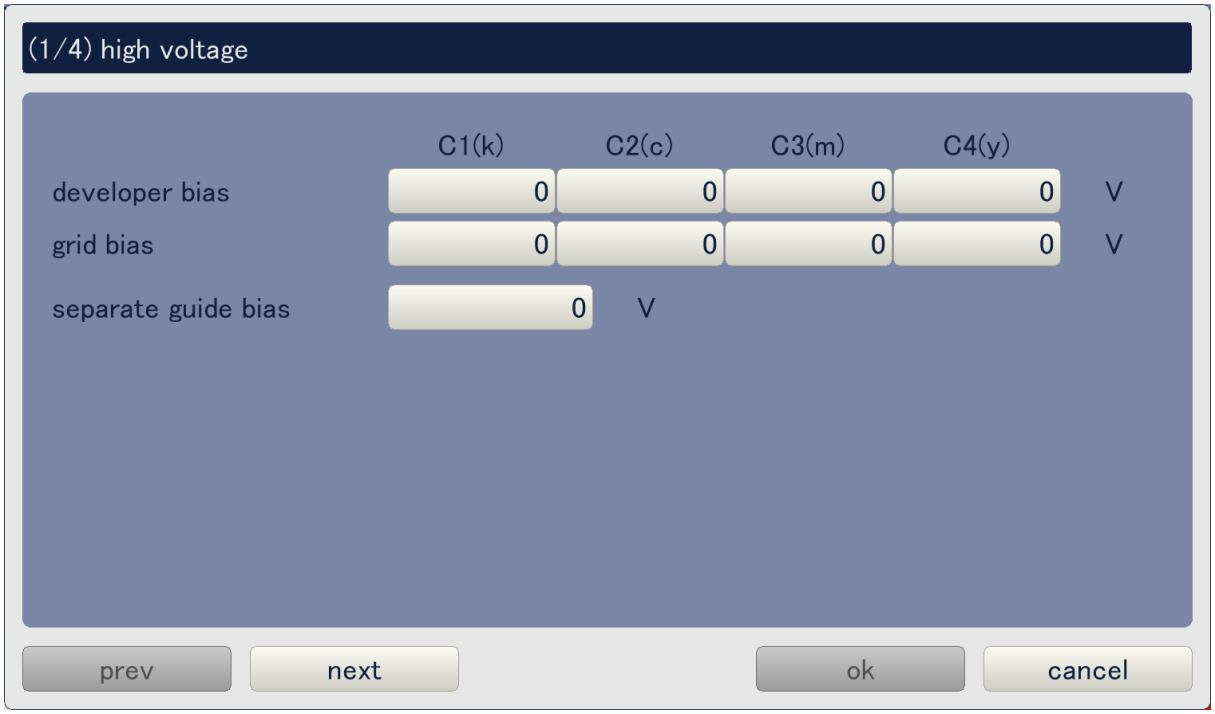


9. 5. 2. 4 High voltage

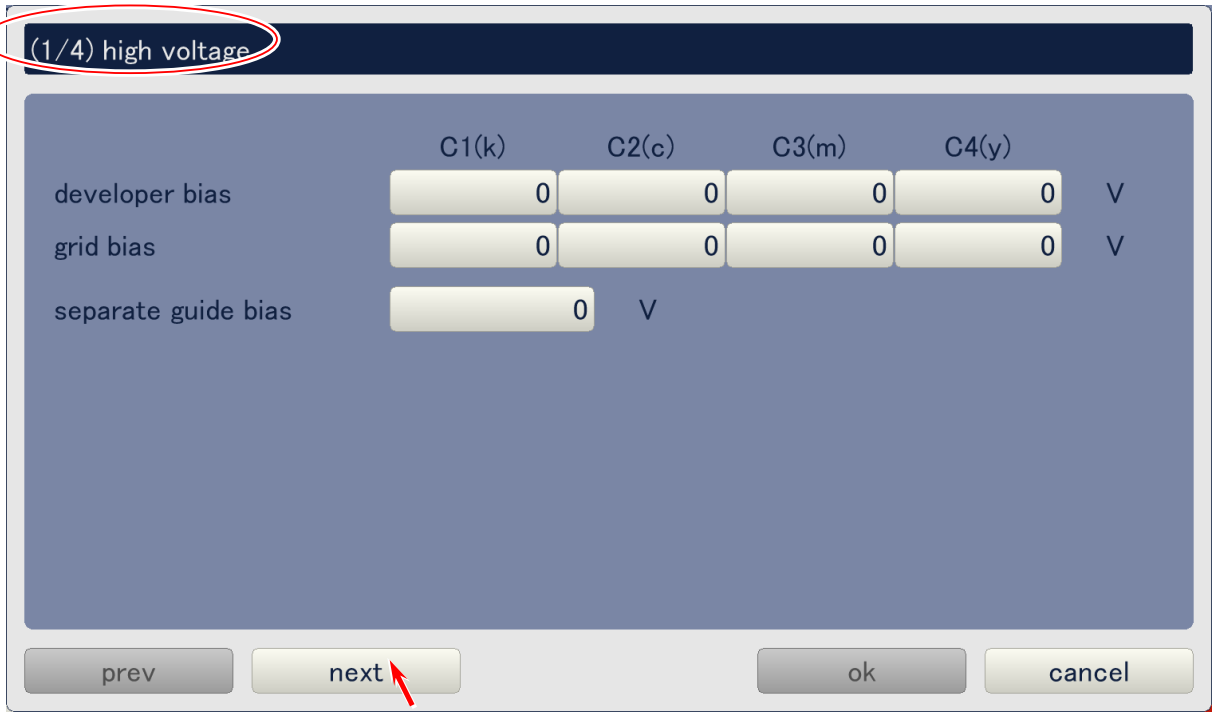
Click on **high voltage** to access the High Voltage Page. See the later pages for the description of each setting item.

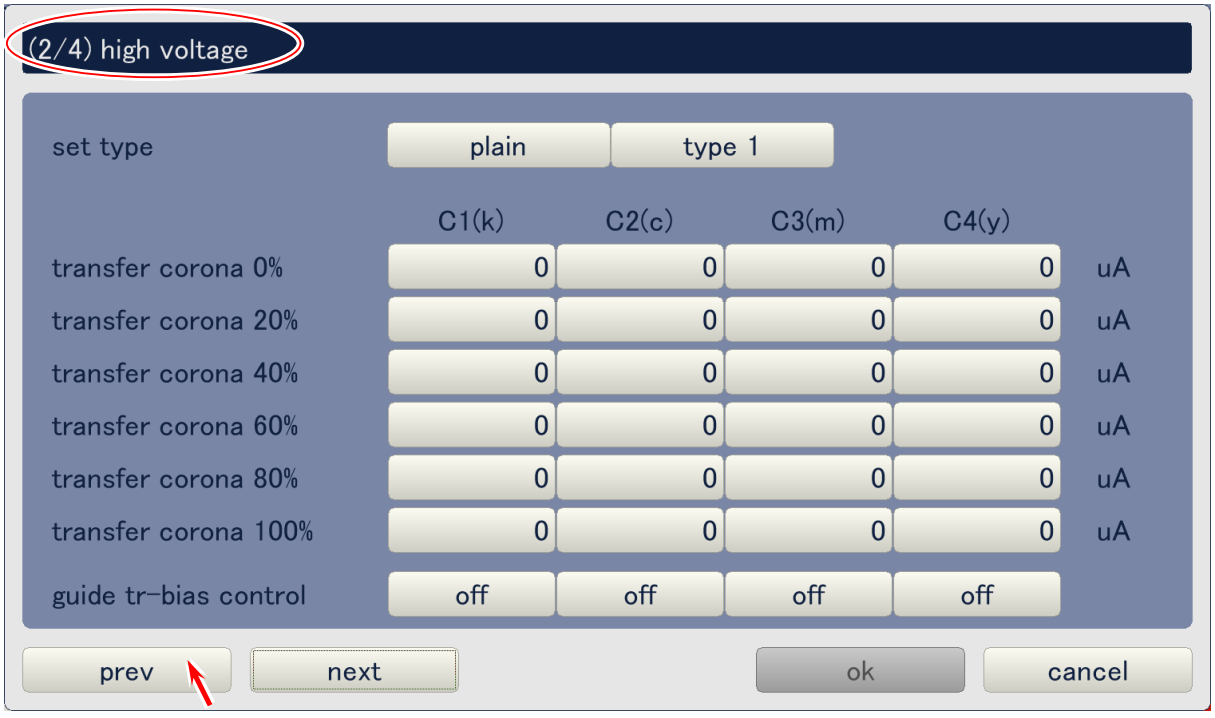


High Voltage Page (Advanced service mode)



High Voltage consists of 4 pages. Use **prev** and **next** buttons to indicate other pages. Current page is shown as (1/4) on the top of the screen.





(1) Developer bias

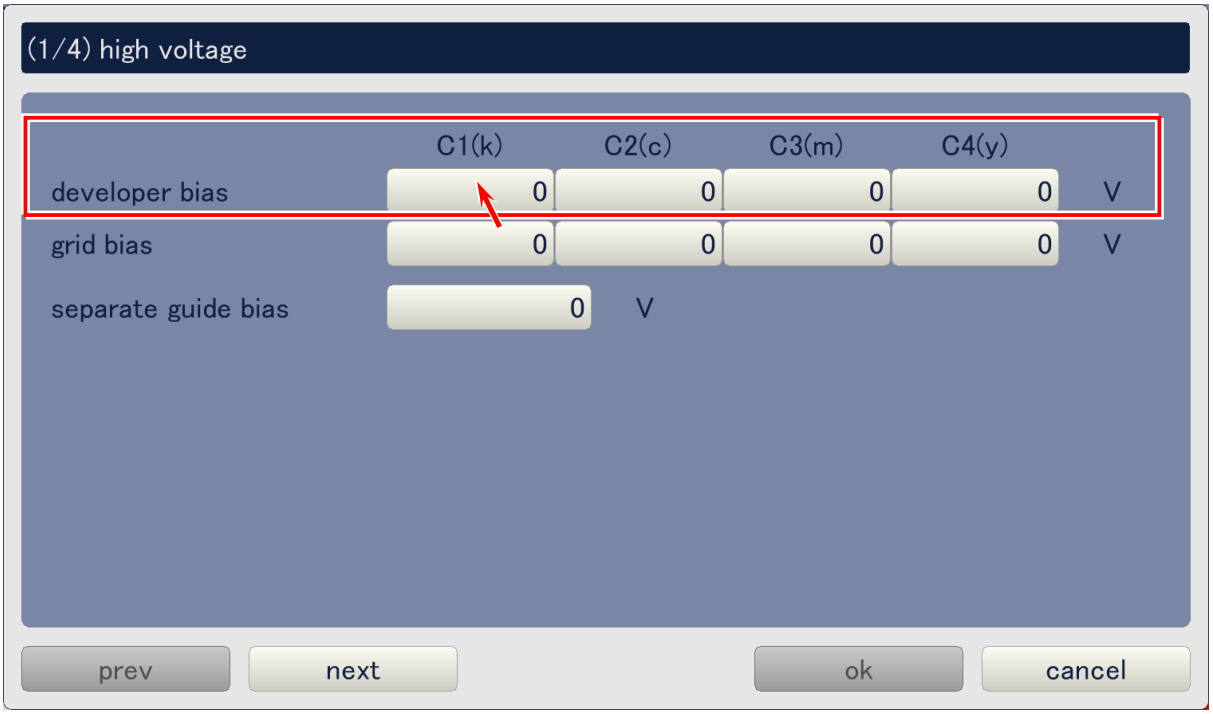
Bias to the Developer Roller can be adjusted per color. **This setting will become effective when the Auto Density Control is set to off**.

> **NOTE**
>
> Use this mode only when you have to readjust the optical density. See [10.1 Adjustment of Optical Density] for further detail of this operation.

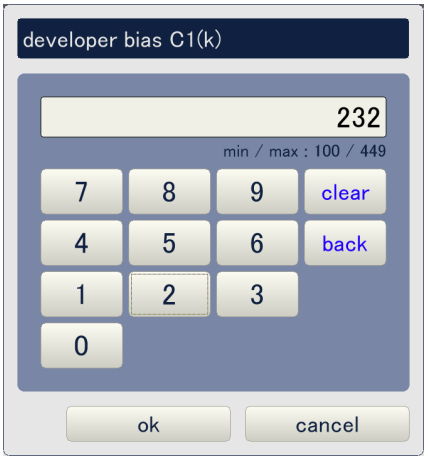
CX (C1-C4) means the target color. For example, you need to select C1 when you will adjust the Developer Bias for black Developer Unit.

C1 : Black C3 : Magenta
C2 : Cyan C4 : Yellow

To change the setting, click on any **C1-C4** button beside **developer bias**, input the necessary value in the pop up dialog, and click on **ok**. Setting range is 100 to 449V. Increment of the value makes the image darker.



> **Reference**
>
> These are common with the Service Mode 4-1004 to 1007.



(2) Grid bias (advanced service mode)

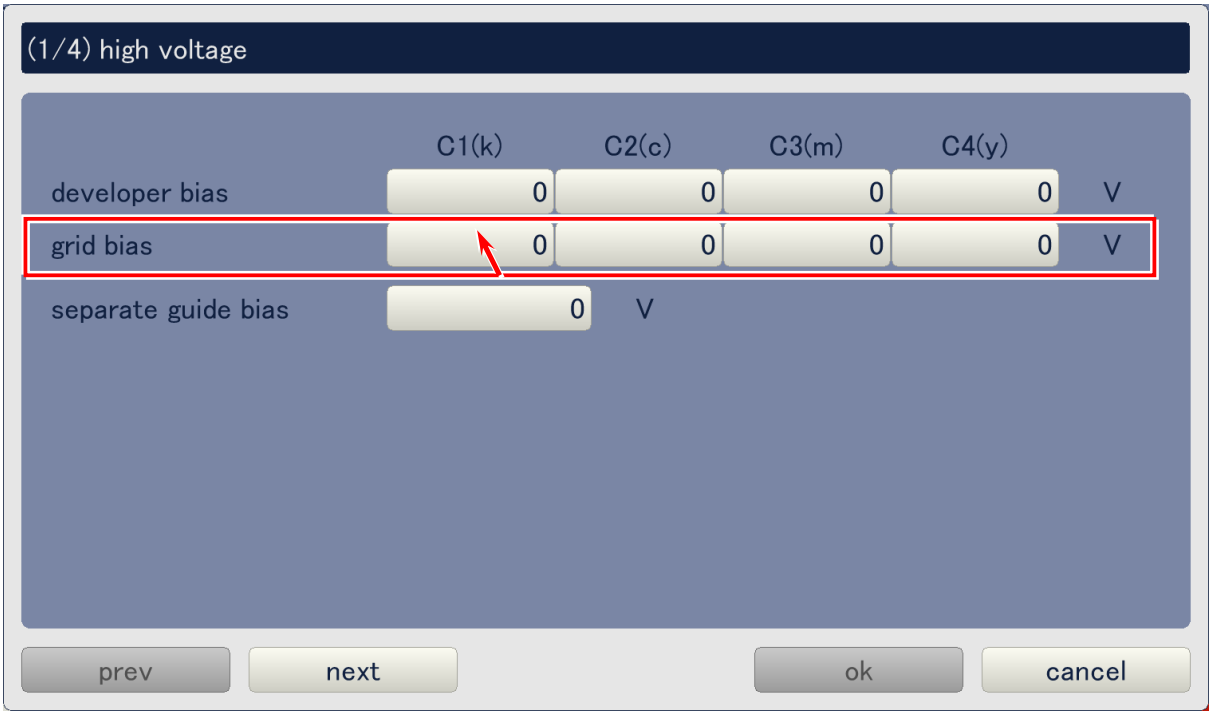
Bias to the Grid Plate of Image Corona can be adjusted per color. **This setting will become effective when the Auto SP Control is set to off**.

> **NOTE**
>
> Normally it is unnecessary to adjust the Grid Bias because in usual case it is automatically adjusted by the Auto SP Control function.

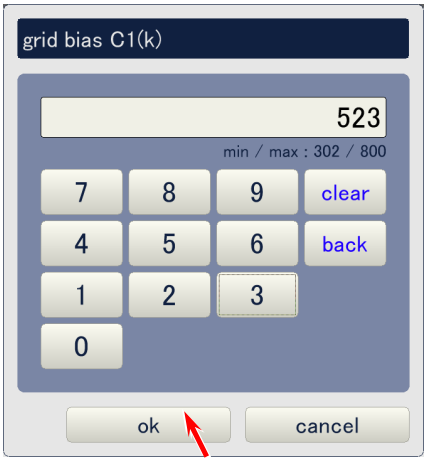
CX (C1-C4) means the target color. For example, you need to select C1 when you will adjust the Grid Bias for black Image Corona.

C1 : Black C3 : Magenta
C2 : Cyan C4 : Yellow

To change the setting, click on any **C1-C4** button beside **grid bias**, input the necessary value in the pop up dialog, and click on **ok**. Setting range is 302 to 800V. Increment of the setting value makes the surface potential of Drum more negative.



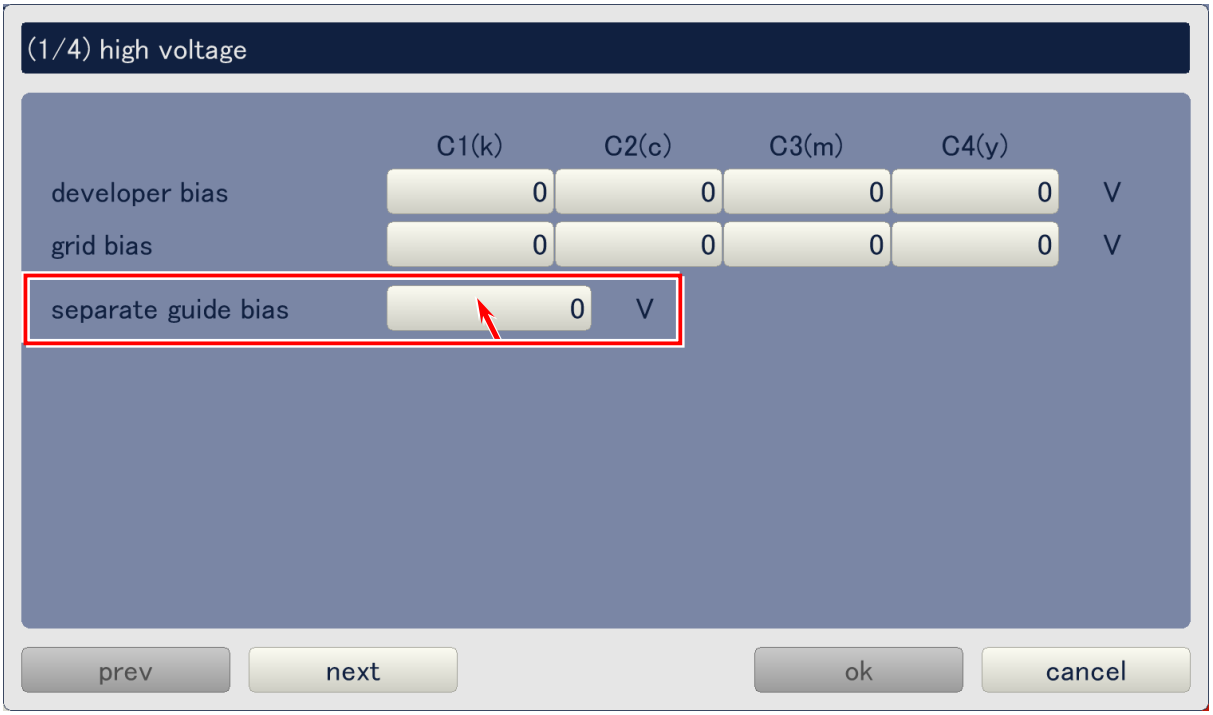
> **Reference**
>
> These are common with the Service Mode 4-1000 to 1003.



(3) Separate guide bias (advanced service mode)

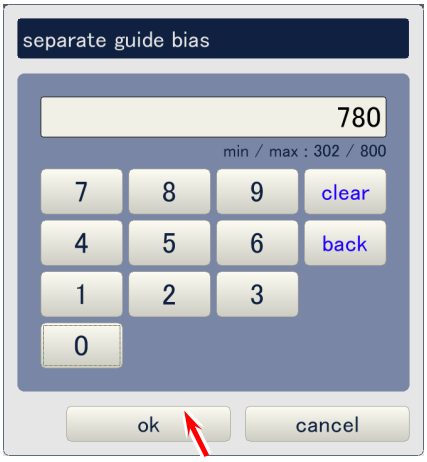
Bias to the Separation Guide Plates 1 to 4 can be adjusted.

To change the setting, click on the button beside **separation guide bias**, input the necessary value in the pop up dialog, and click on **ok**. Setting range is 302 to 800V. Increment of the setting value makes the Separation Guide Plate Bias more negative.



Reference

This is common with the Service Mode 4-1008.

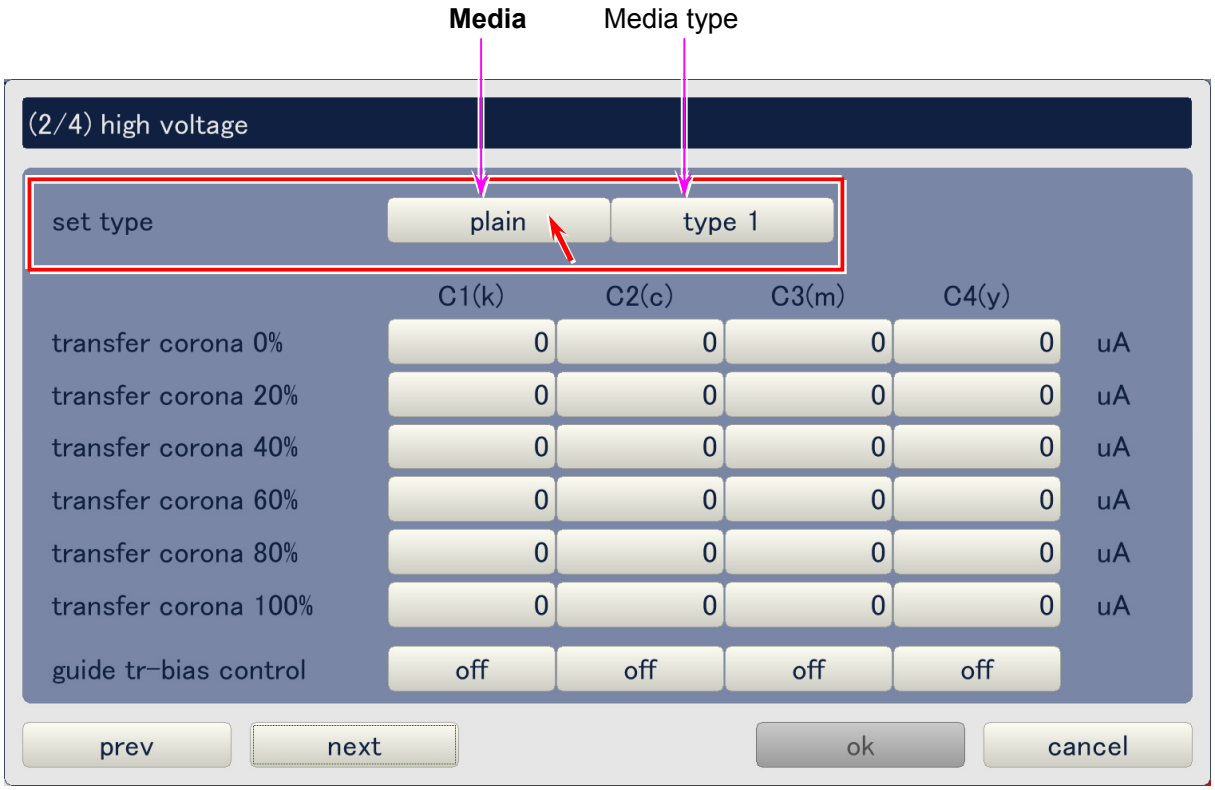


(4) Transfer corona (0% to 100%)

Bias to the Transfer Corona Wire can be set being related with such target conditions as color, media, media type (type #X) and relative humidity. Increment of the setting value makes the Transfer Corona Wire Bias more positive, which eventually makes the concerning color darker.

- The left button of **set type** decides the target media which the Transfer Corona Wire Bias is to be applied to. For example, you need to set this to plain paper when you will adjust the Transfer Corona Wire Bias applied when printing with any plain paper.

  To change the setting, click on the button and select any media in the pop up dialog.

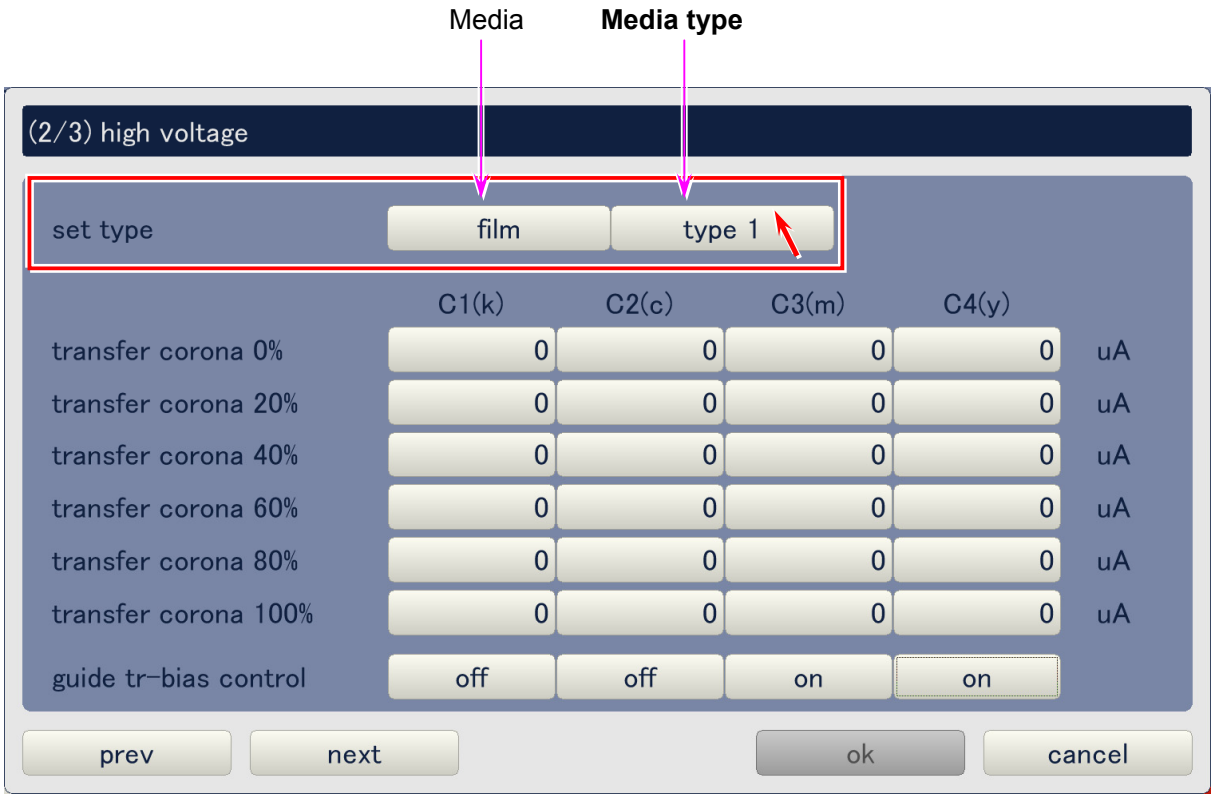


> **NOTE**
>
> All the Transfer Corona Wire Bias values currently indicated on the screen will be applied (copied) to all other media when **all media** is selected here.



- The right button of **set type** decides the target media type (type #X) which the Transfer Corona Wire Bias is to be applied to. For example, you need to set this to type #1 when you will adjust the Transfer Corona Wire Bias applied when printing with any type #1 media.

  To change the setting, click on the button and select any media type in the pop up dialog.



NOTE

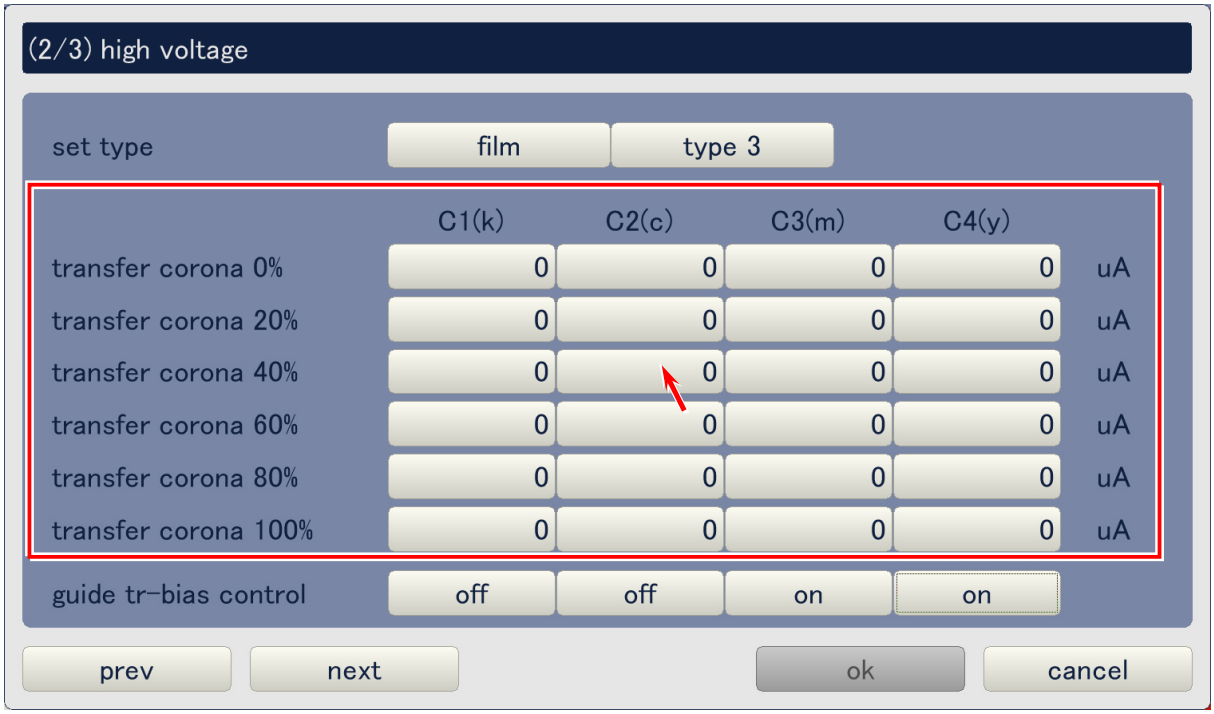
All the Transfer Corona Wire Bias values currently indicated on the screen will be applied (copied) to all other media types when **all type** is selected here.



- **Transfer corona X%** (0%-100%) means the target humidity point which the bias setting is applied to. For example, you need to choose transfer corona 20% when you will adjust the Transfer Corona Wire Bias applied at 20% RH.

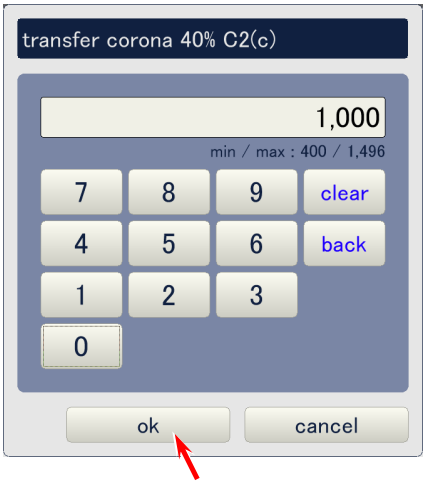
  CX (C1-C4) means the target color. For example, you need to choose C1 when you will adjust the Transfer Corona Wire Bias applied to black Transfer Corona.
  C1 : Black
  C2 : Cyan
  C3 : Magenta
  C4 : Yellow

  Click on any setting button considering humidity point and color, input the value in the pop up dialog, and click on **ok**. Setting range is 400 to 1496.



Reference

These are common with the Service Mode 4-1009 to 1188.

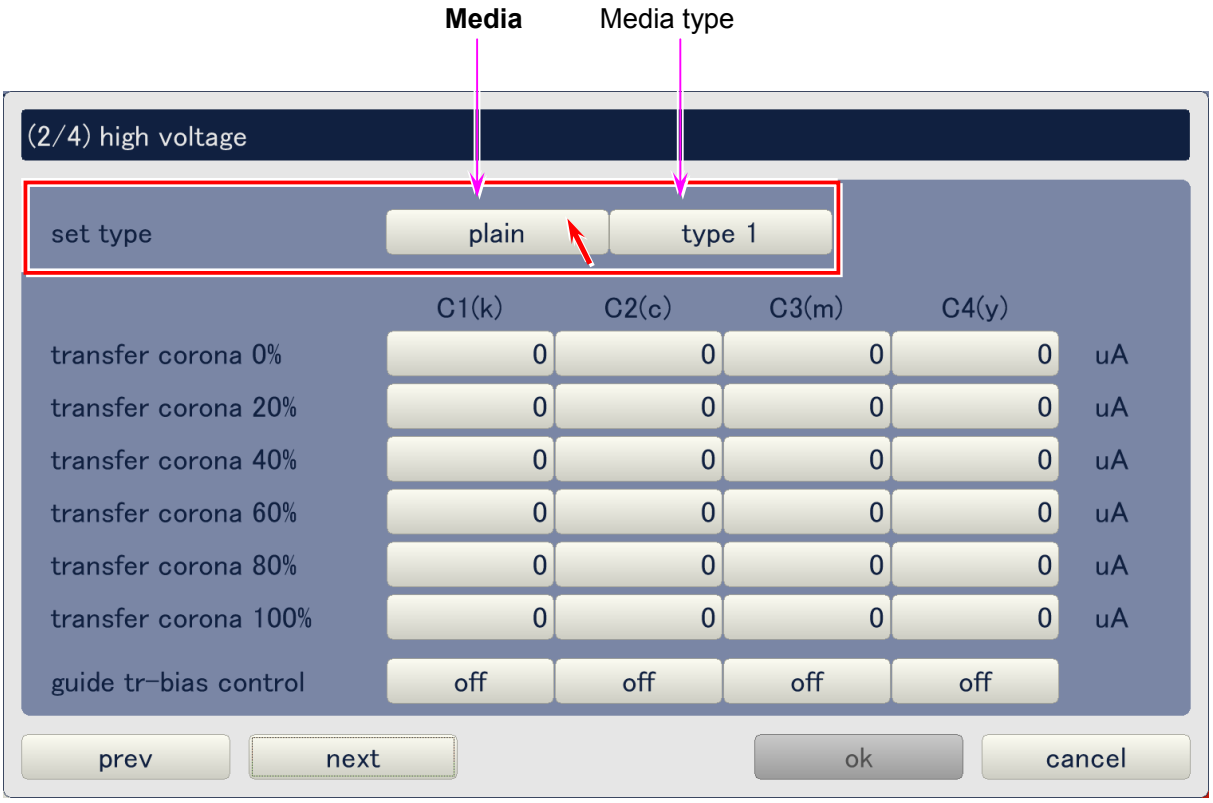


(5) Guide tr-bias control

It is possible to specify how to connect the Transfer Guide to the ground. Selectable settings are direct connection and indirect connection via Transfer Zener.

- The left button of **set type** decides the target media which the Guide TR-Bias Control setting is to be applied to. For example, you need to set this to plain paper when you will specify ON/OFF setting of Guide TR-Bias Control to any plain paper.

  To change the setting, click on the button and select any media in the pop up dialog.



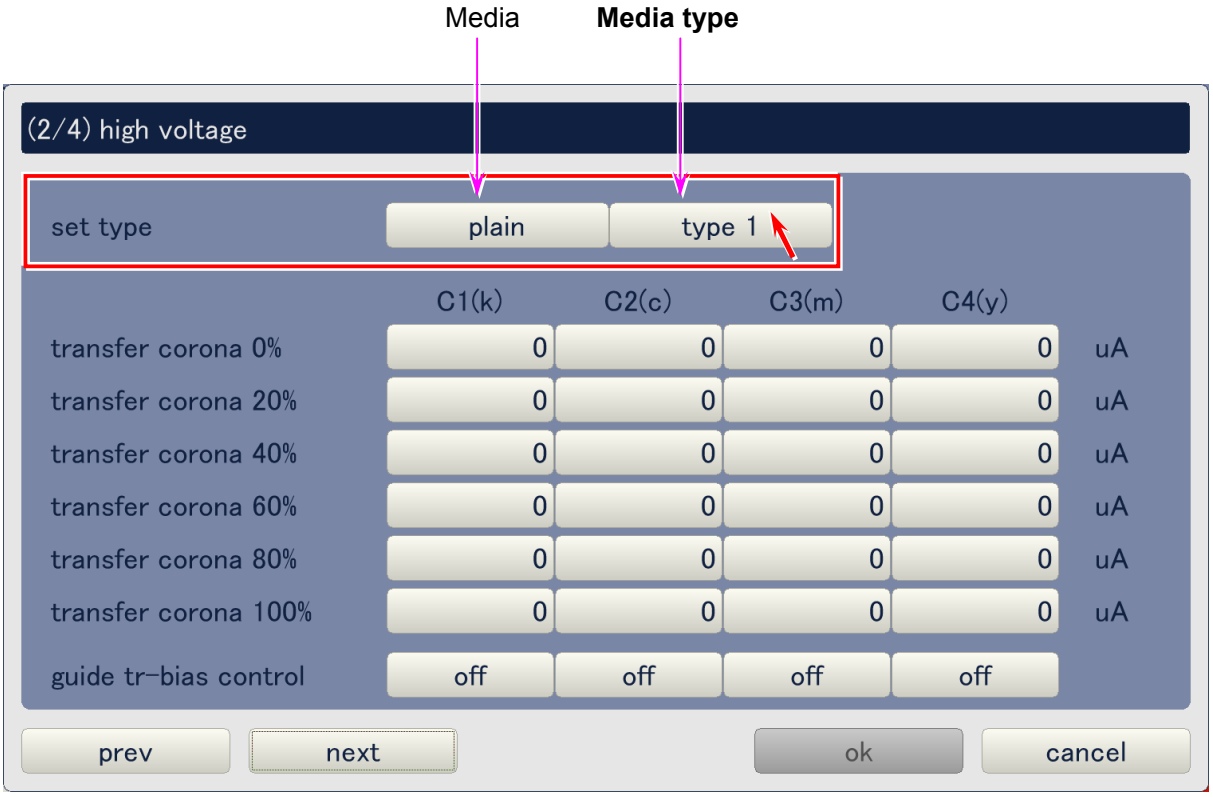
NOTE

ON/OFF settings of all 4 colors currently selected will be applied (copied) to all other media when **all media** is selected here.



- The right button of **set type** decides the target media type which the Guide TR-Bias Control setting is to be applied to. For example, you need to set this to type #1 when you will specify ON/OFF setting of Guide TR-Bias Control to any type #1 media.

  To change the setting, click on the button and select any media type in the pop up dialog.



NOTE

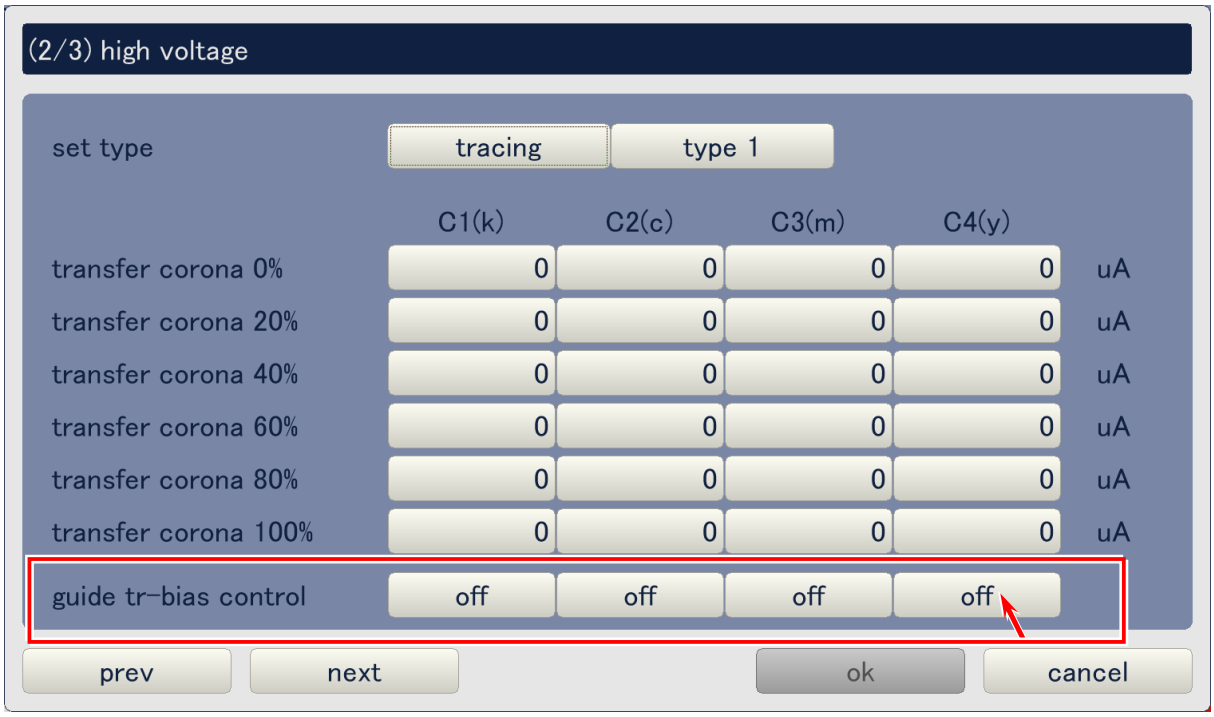
ON/OFF settings of all 4 colors currently selected will be applied (copied) to all other media types when **all type** is selected here.



- **CX** (C1-C4) means the target color. For example, you need to choose C1 when you will specify ON/OFF setting of Guide TR-Bias Control to any to black (process 1).
  C1 : Black
  C2 : Cyan
  C3 : Magenta
  C4 : Yellow

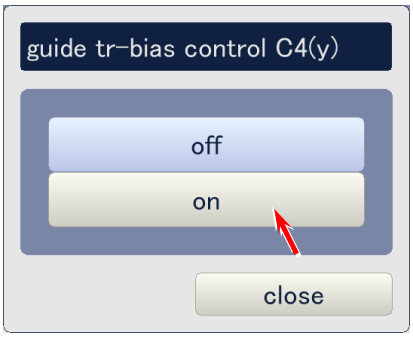
  Click on the button of requested color and select either off or on.

Setting	Description
off	Transfer Guide is connected to the ground directly
on	Transfer Guide is connected to the ground via Transfer Zener.



Reference

These are common with the Service Mode 4-11E9 to 11F8.



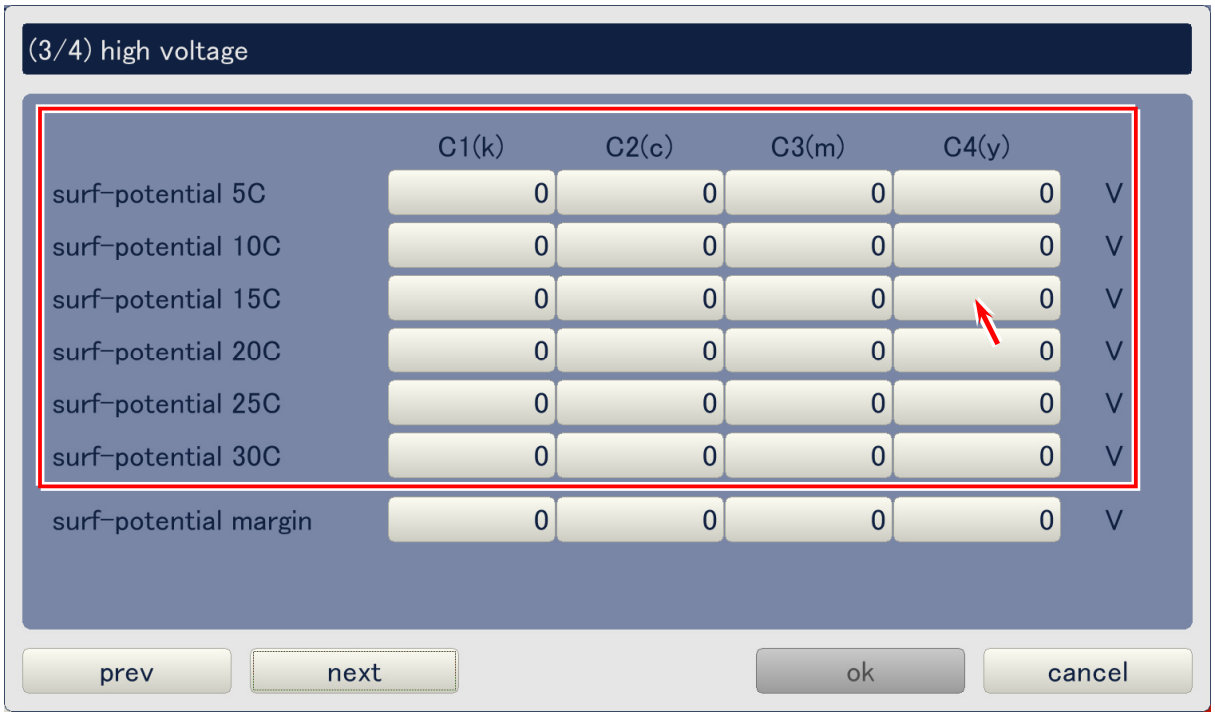
(6) Surf-potential (5C to 30C) (advanced service mode)

Target Surface Potential can be specified, which is used when the Auto SP Control works. Increment of the setting value makes the print image of concerning color lighter.

- **Surf-potential XC** (5C to 30C) means the target temperature point which the bias setting is applied to. For example, you need to choose surf-potential 15 when you will adjust the Target Surface Potential applied when the temperature is at 15 degrees centigrade.
  - 5C : 5 degrees centigrade
  - 10C : 10 degrees centigrade
  - 15C : 15 degrees centigrade
  - 20C : 20 degrees centigrade
  - 25C : 25 degrees centigrade
  - 30C : Higher than 30 degrees centigrade

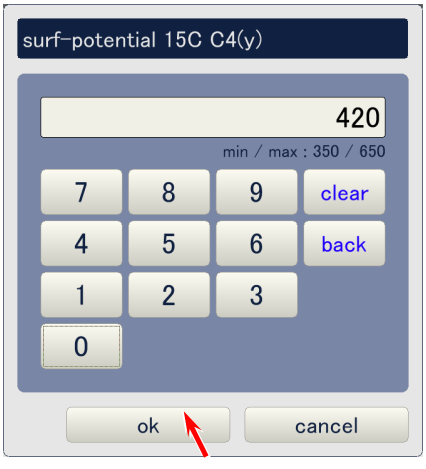
  CX (C1 to C4) means the target color. For example, you need to choose C2 when you will adjust the Target Surface Potential applied to Cyan Drum.
  - C1 : Black
  - C2 : Cyan
  - C3 : Magenta
  - C4 : Yellow

Click on any setting button considering temperature point and color, input the value in the pop up dialog, and click on **ok**. Setting range is 350 to 650.



Reference

These are common with the Service Mode 4-2008 to 201F.



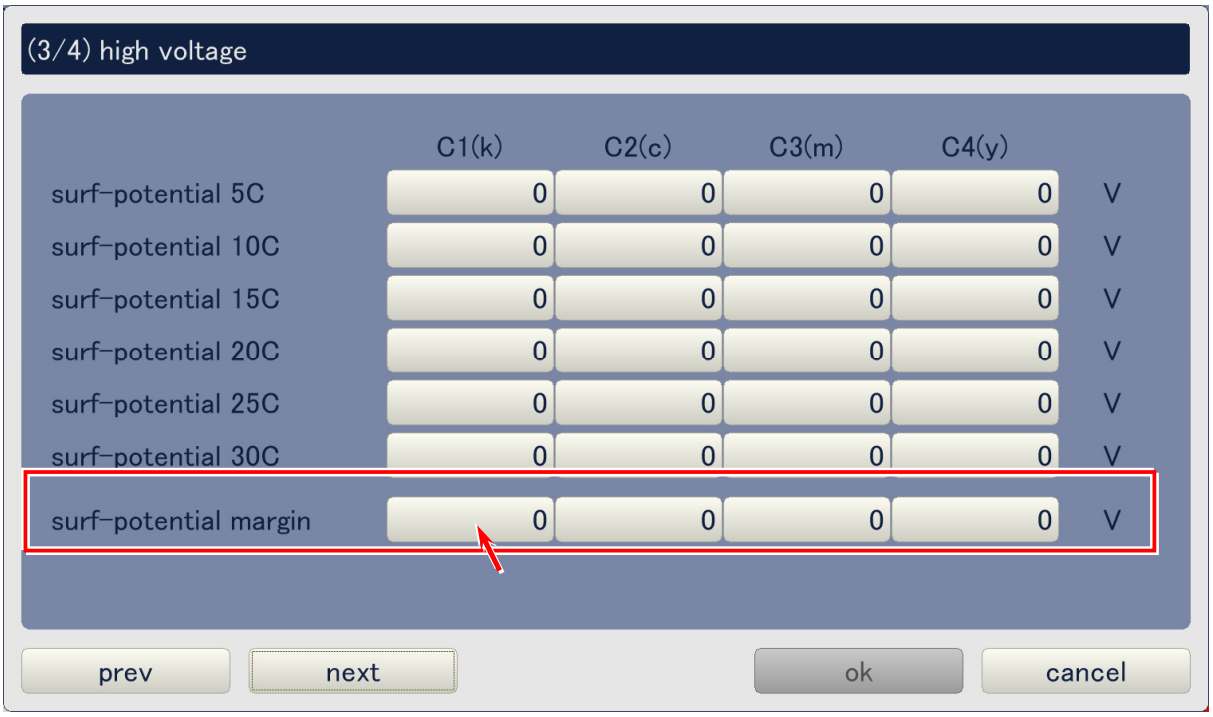
(7) Surf-potential margin (advanced service mode)

Acceptable range of surface potential can be specified, which is applied when the Auto SP Control is executed. Increment of the setting value tends to avoid the Service Call Error.

CX (C1 to C4) means the target color. For example, you need to choose C2 when you will specify an acceptable potential range for Cyan.

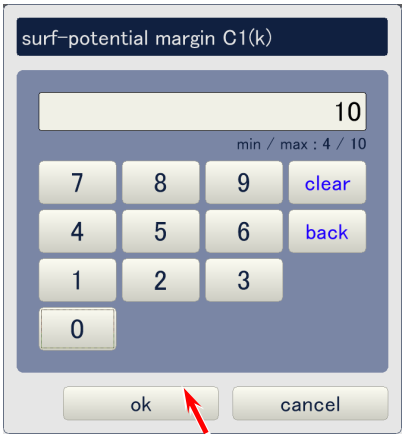
C1 : Black
C2 : Cyan
C3 : Magenta
C4 : Yellow

Click on the button of requested color, input the requested value in the pop up dialog, and click on **ok**. Setting range is 4 to 10.



Reference

These are common with the Service Mode 4-2020 to 2023.

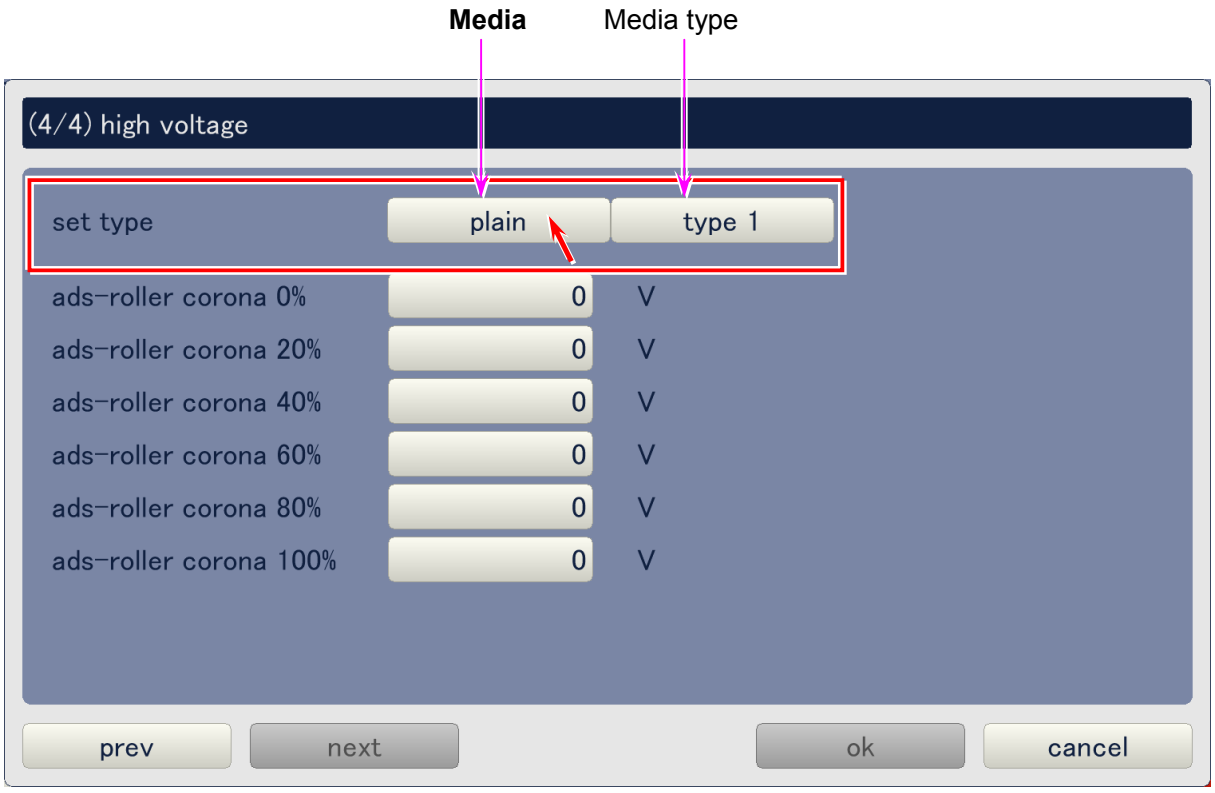


(8) Ads-roller corona (0% to 100%)

Bias to the Attraction Corona Wire can be set being related with such target conditions as color, media, media type (type #X) and relative humidity. Increment of the setting value makes the Attraction Corona Wire Bias more negative, so the printing media will be more attracted to the Attraction Roller.

- The left button of **set type** decides the target media which the Attraction Corona Wire Bias is to be applied to. For example, you need to set this to plain paper when you will adjust the Attraction Corona Bias applied when printing with any plain paper.

  To change the setting, click on the button and select any media in the pop up dialog.

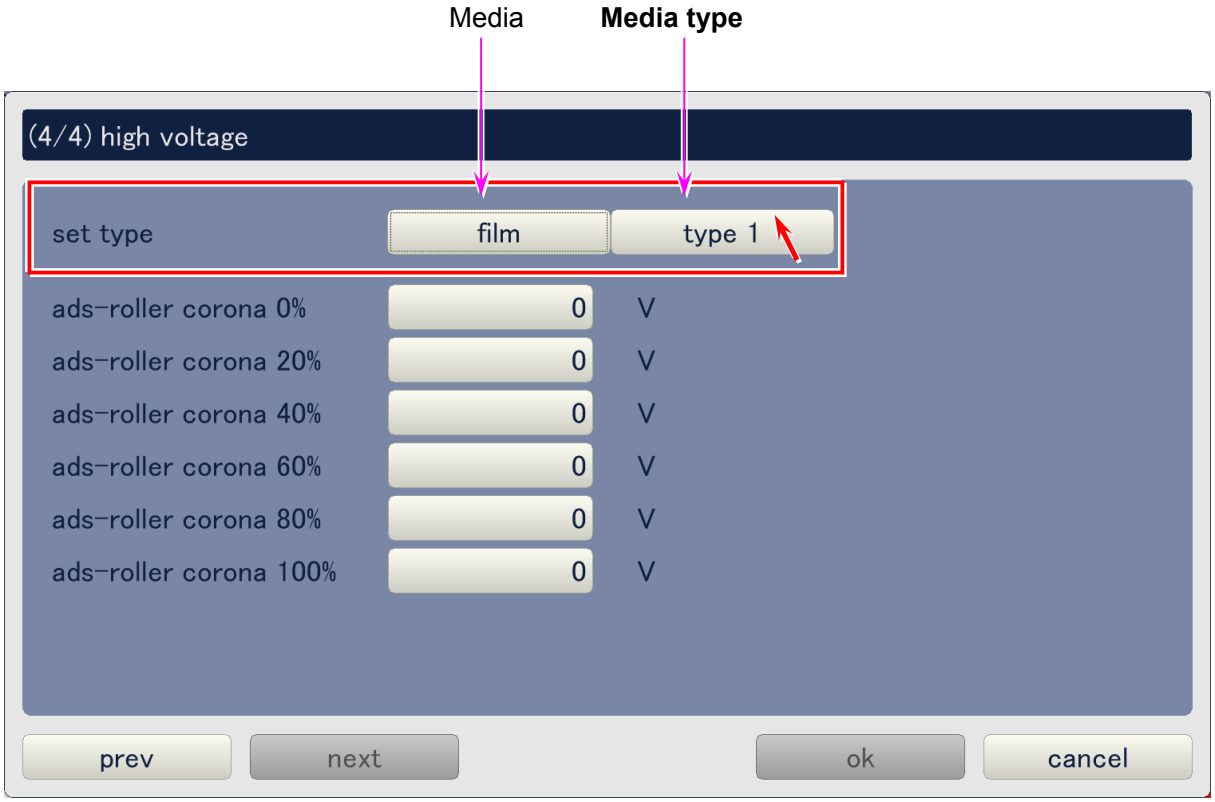


> **NOTE**
>
> All the Attraction Corona Wire Bias values currently indicated on the screen will be applied (copied) to all other media when **all media** is selected here.



- The right button of **set type** decides the target media type (type #X) which the Attraction Corona Wire Bias is to be applied to. For example, you need to set this to type #1 when you will adjust the Attraction Corona Bias applied when printing with any type #1 media.

  To change the setting, click on the button and select any media type in the pop up dialog.



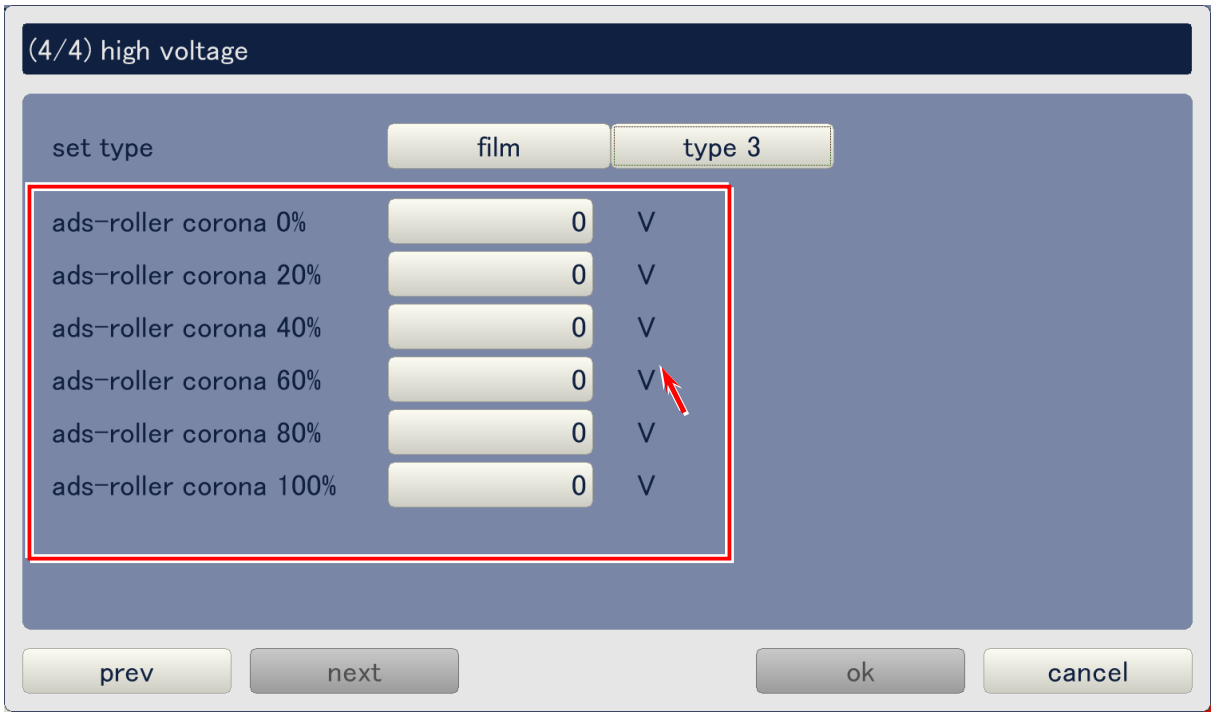
NOTE

All the Attraction Corona Wire Bias values currently indicated on the screen will be applied (copied) to all other media types when **all type** is selected here.



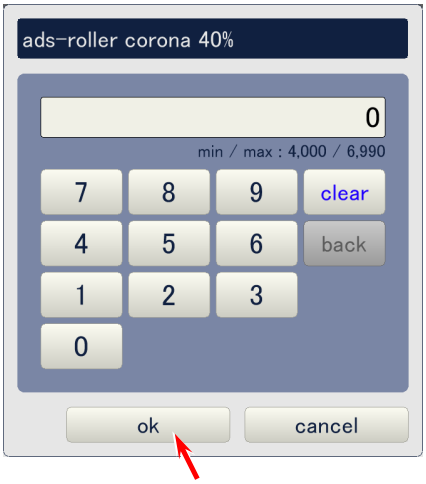
- **Ads-roller corona X%** (0%-100%) means the target humidity point which the bias setting is applied to. For example, you need to choose ads-roller corona 20% when you will adjust the Attraction Corona Bias applied at 20% RH.

  Click on any setting button considering humidity point, input the value in the pop up dialog, and click on **ok**. Setting range is 4000 to 6990.



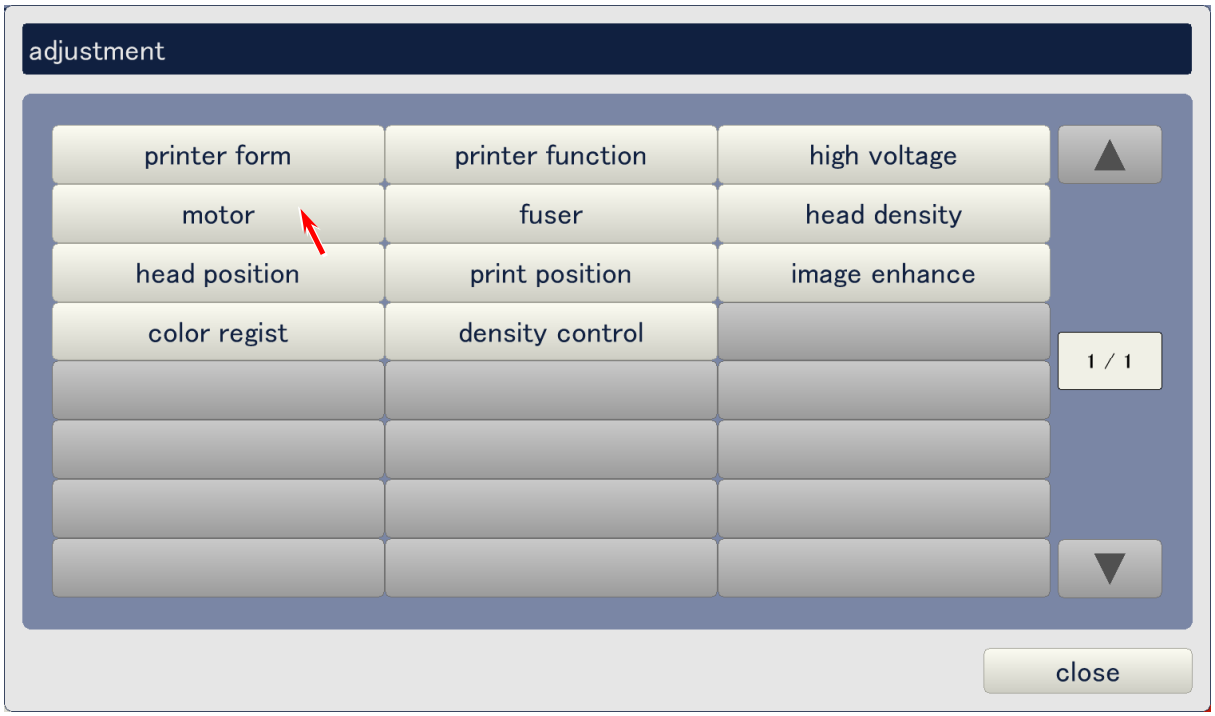
Reference

These are common with the Service Mode 4-1189 to 11E8.

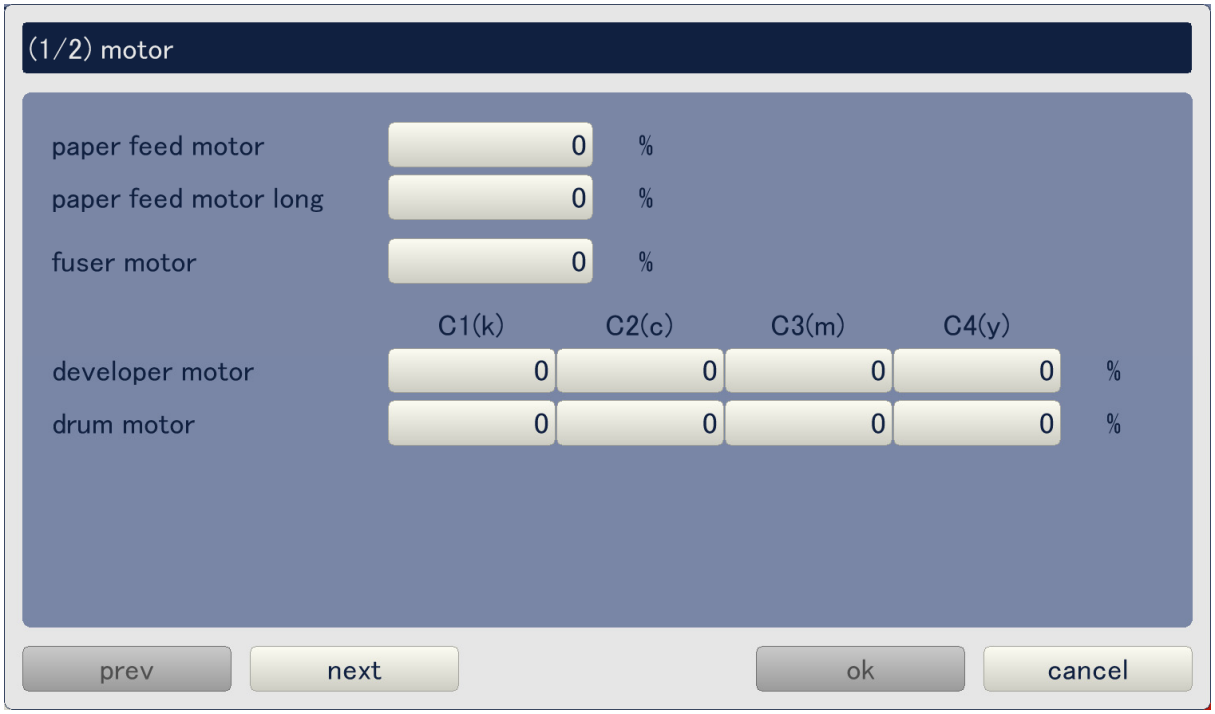


9. 5. 2. 5 Motor (advanced service mode only)

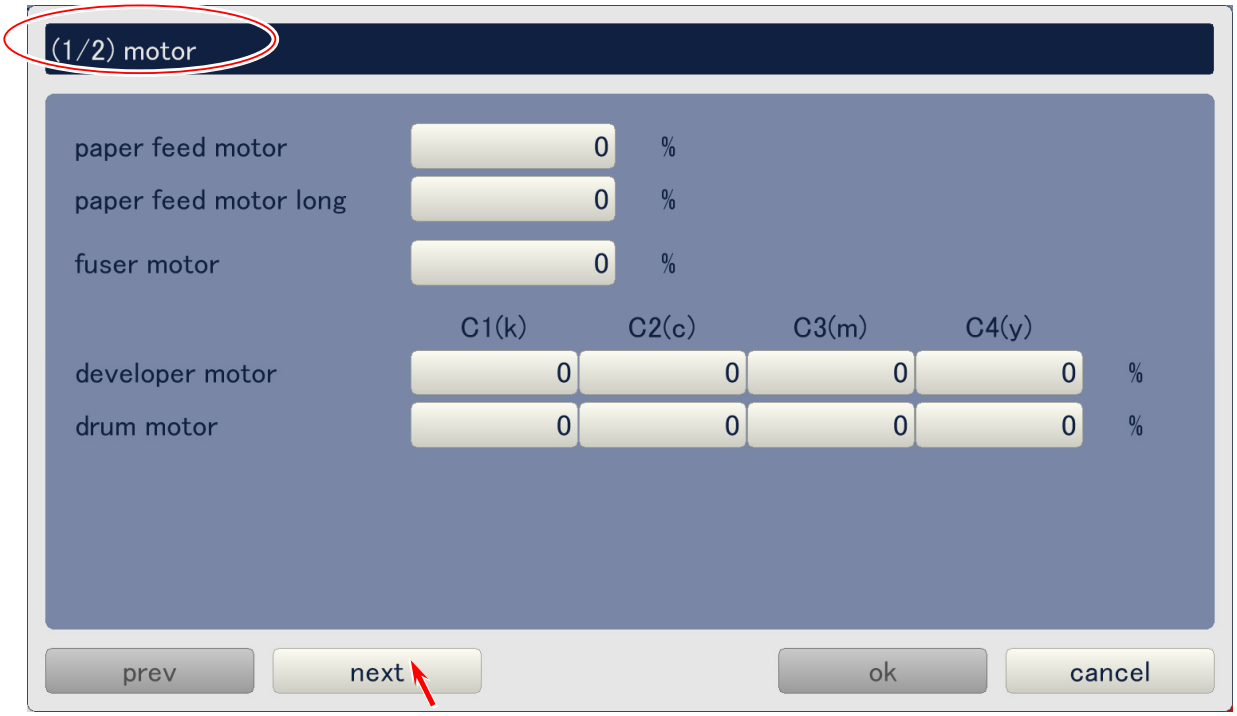
Click on **motor** to access the Motor Page. See the later pages for the description of each setting item.

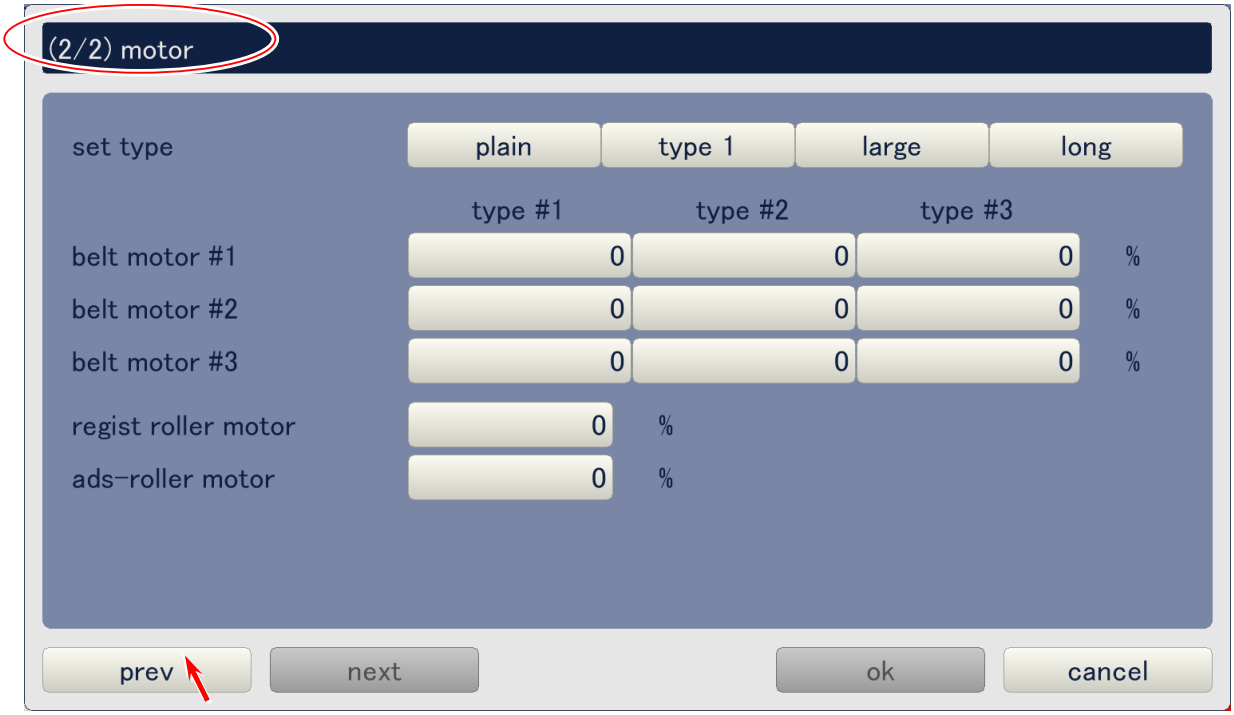


Motor Page (advanced service mode)



Motor Page consists of 2 pages. Use **prev** and **next** buttons to indicate the other page. Current page is shown as (1/2) on the top of the screen.

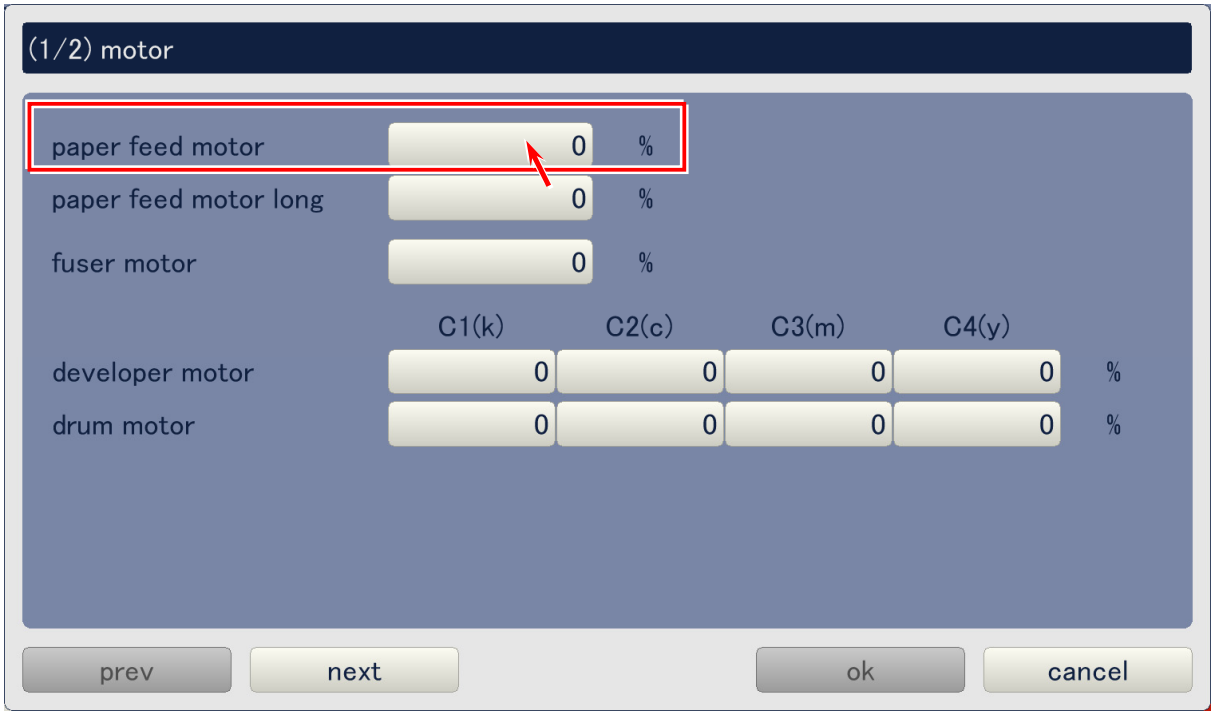




(1) Paper feed motor (advanced service mode)

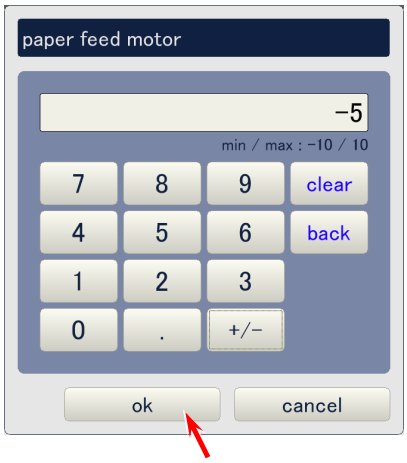
Paper Feed Motor speed can be adjusted. This is a common setting for all of 4 colors and is applied to normal print. Increment of the setting value makes the motor speed faster.

Click on the button beside **paper feed motor**, input the value in the pop up dialog, and click on **ok**. Setting range is -10 to +10.



Reference

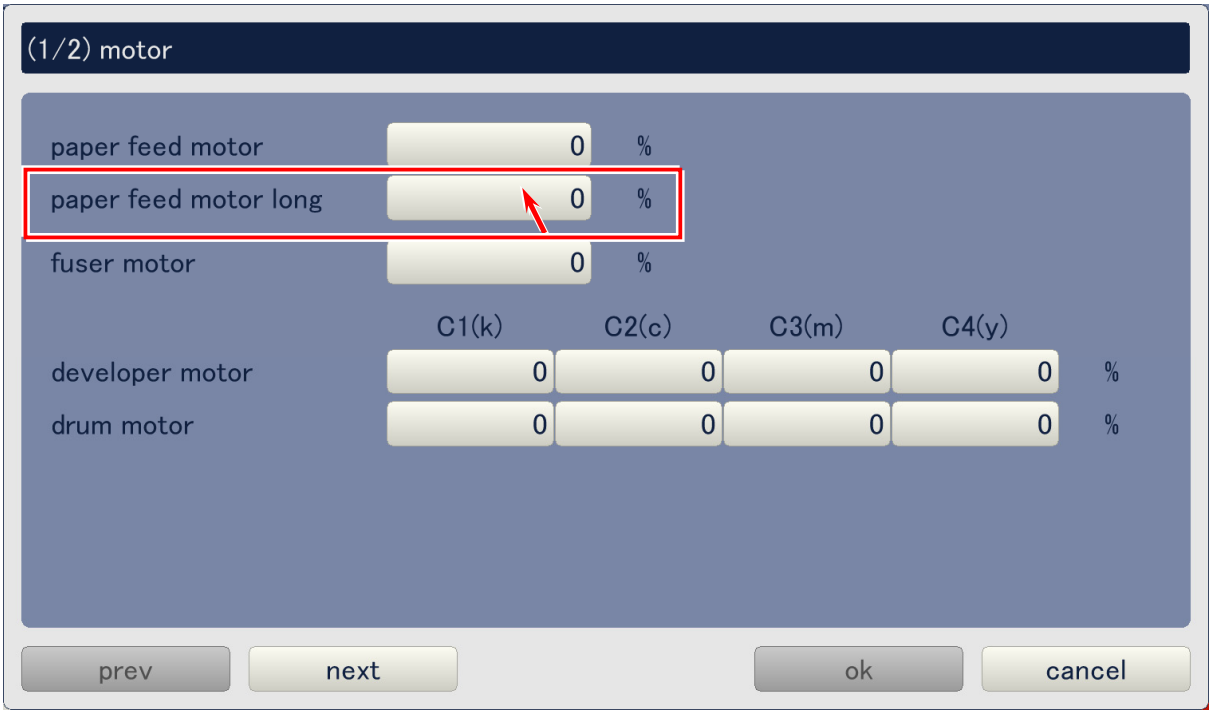
This is common with the Service Mode 4-3000.



(2) Paper feed motor long (advanced service mode)

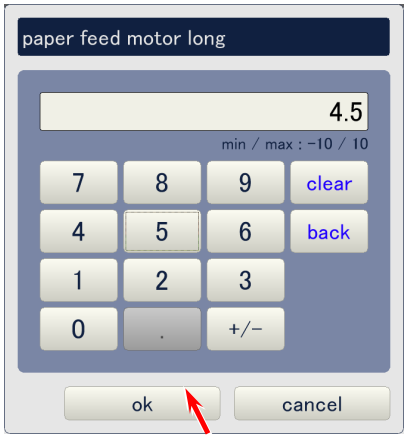
Paper Feed Motor speed can be adjusted. This is a common setting for all of 4 colors and is applied to long print (longer than 2 meters). Increment of the setting value makes the motor speed faster.

Click on the button beside **paper feed motor long**, input the value in the pop up dialog, and click on **ok**. Setting range is -10 to +10.



Reference

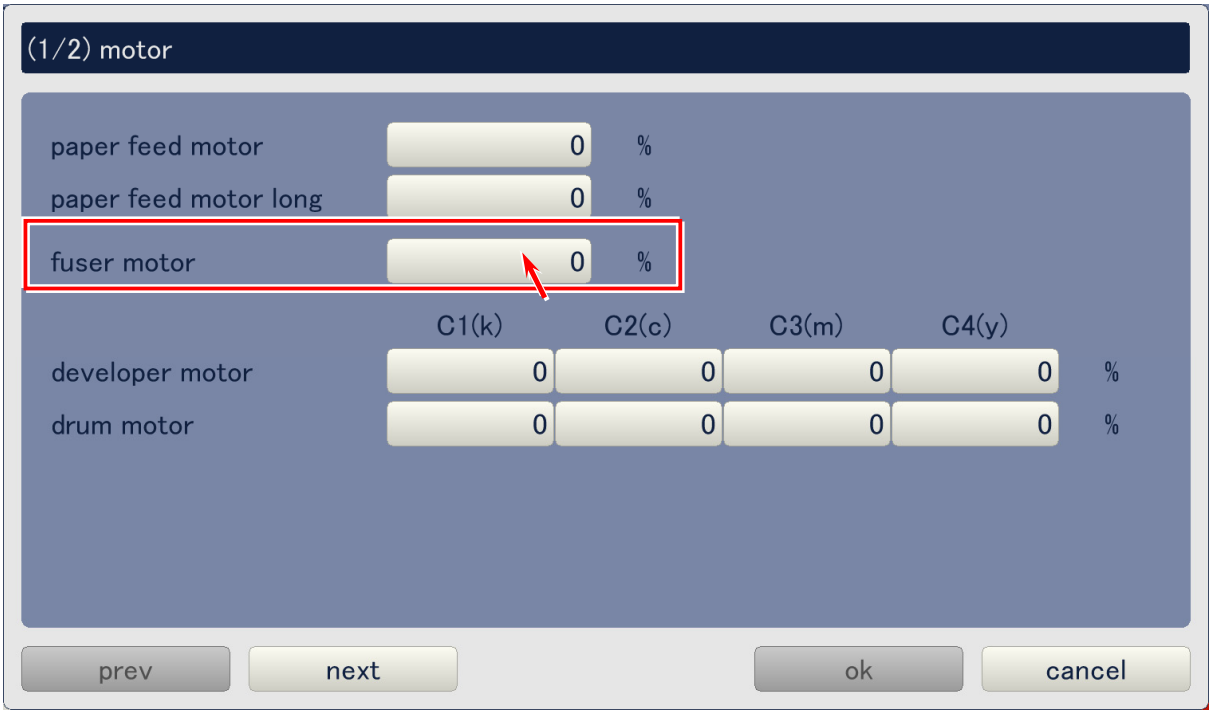
This is common with the Service Mode 4-3006.



(3) Fuser motor (advanced service mode)

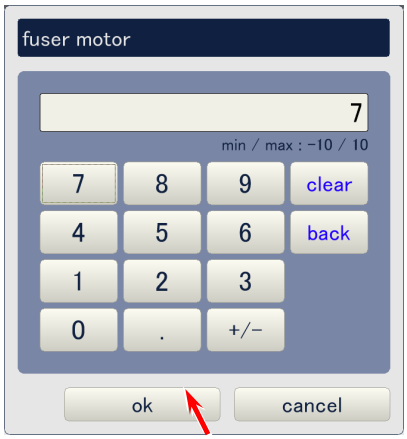
Fuser Motor speed can be adjusted. This is a common setting for all of 4 colors. Increment of the setting value makes the motor speed faster.

Click on the button beside **fuser motor**, input the value in the pop up dialog, and click on **ok**. Setting range is -10 to +10.



Reference

This is common with the Service Mode 4-3001.



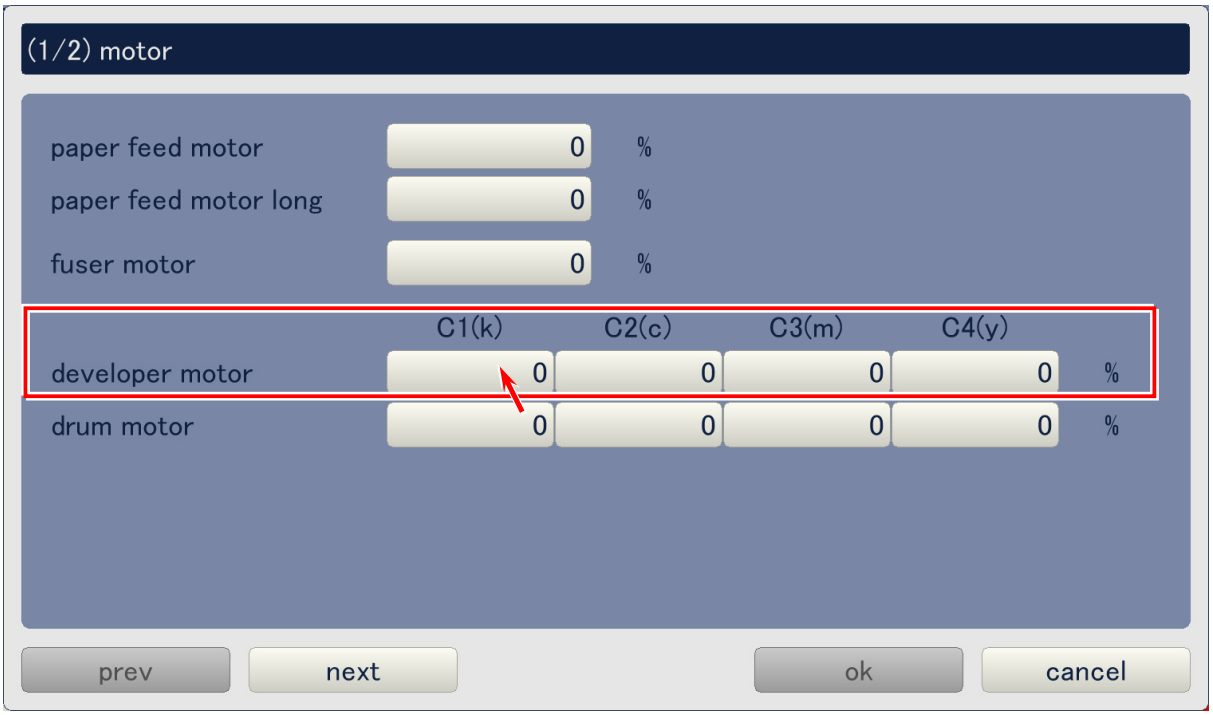
(4) Developer motor (advanced service mode)

Developer Motor speed can be adjusted per color. Increment of the setting value makes the motor speed faster.

CX (C1-C4) means the target color. For example, you need to choose C1 when you will adjust the speed of Developer Motor 1 (for black).

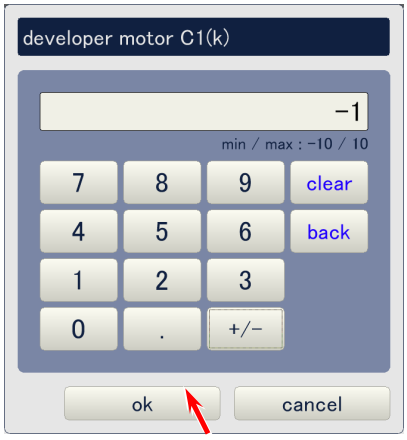
C1 : Black
C2 : Cyan
C3 : Magenta
C4 : Yellow

Click on any of 4 buttons (C1-C4) beside **developer motor**, input the value in the pop up dialog, and click on **ok**. Setting range is -10 to +10.



Reference

This is common with the Service Mode 4-3002 to 3005.



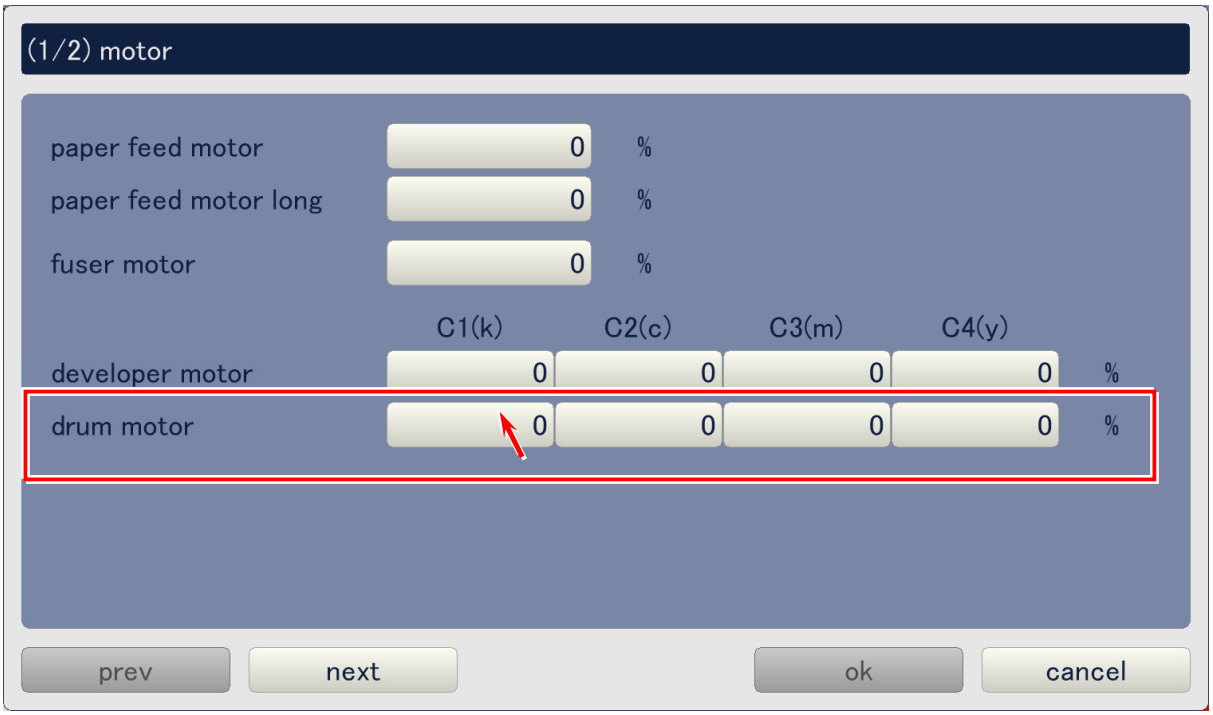
(5) Drum motor (advanced service mode)

Drum Motor speed can be adjusted per color. Increment of the setting value makes the motor speed faster.

CX (C1-C4) means the target color. For example, you need to choose C1 when you will adjust the speed of Drum Motor 1 (for black).

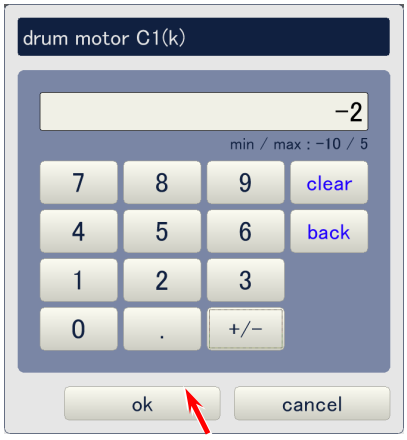
C1 : Black
C2 : Cyan
C3 : Magenta
C4 : Yellow

Click on any of 4 buttons (C1-C4) beside **drum motor**, input the value in the pop up dialog, and click on **ok**. Setting range is -10 to +10.



Reference

This is common with the Service Mode 4-3007 to 300A.

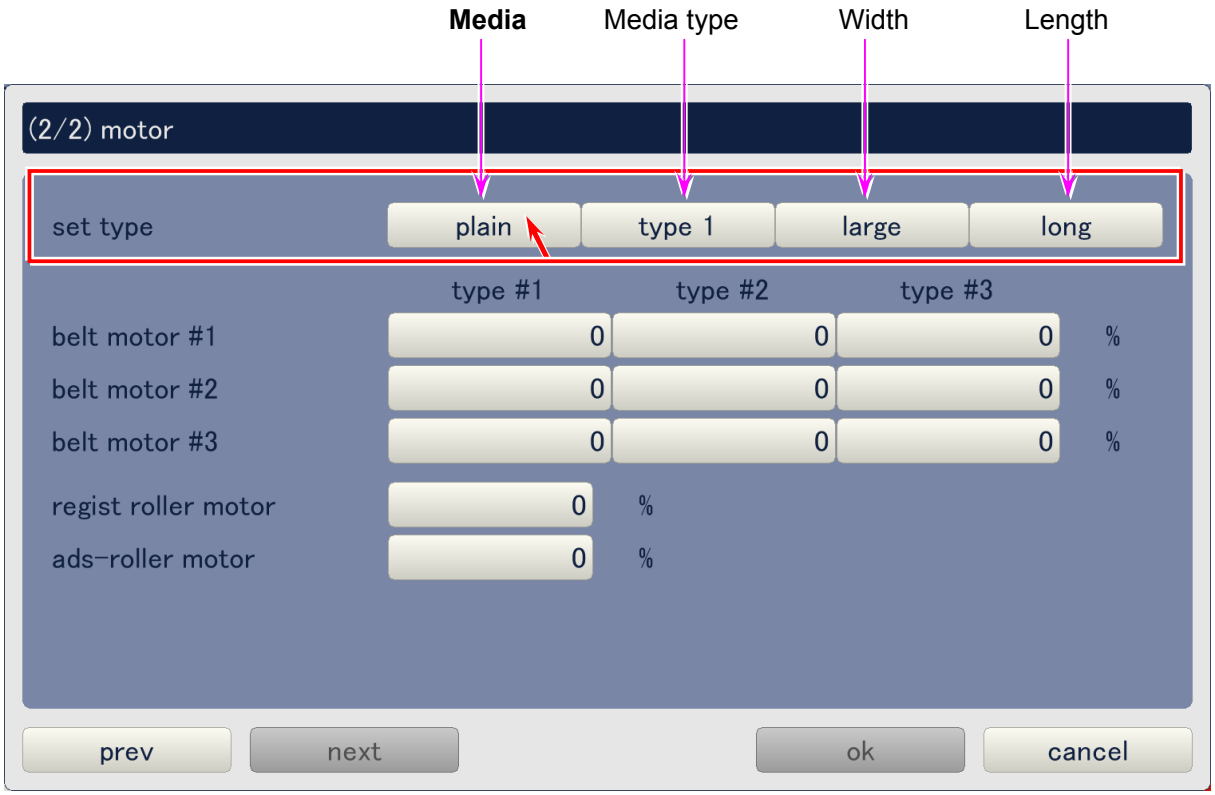


(6) Belt motor (#1, #2 & #3) (advanced service mode)

Each Transportation Unit Motor (1, 2 & 3) has 3 different speed ranges such as high, normal and low. The motor speed of each speed range can be adjusted being related with such target conditions as media, media type (type #X), media width and media length. Increment of the setting value makes the motor speed faster.

- The left button of **set type** decides the target media which the Transportation Unit Motor Speed is to be applied to. For example, you need to set this to plain paper when you will adjust the motor speed that is applied when printing with any plain paper.

  To change the setting, click on the button and select any media in the pop up dialog.



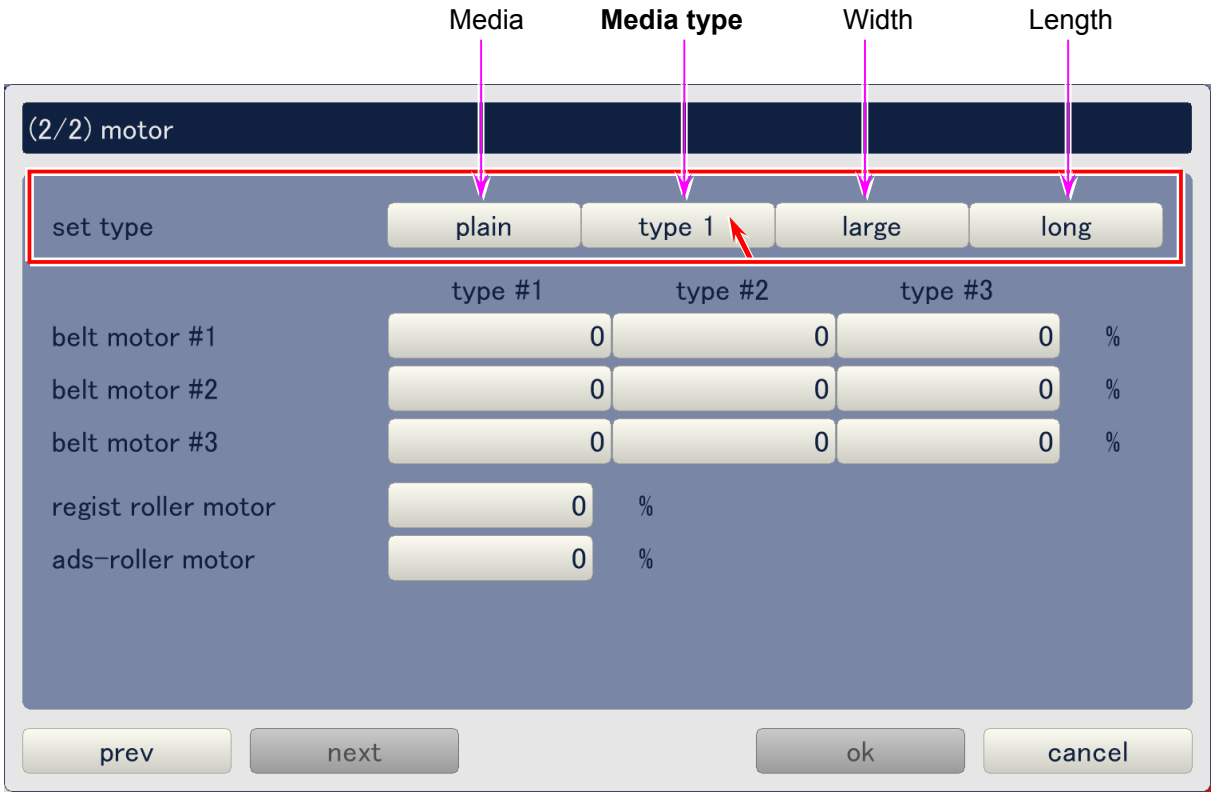
NOTE

All the Transportation Unit Motor speeds currently indicated on the screen will be applied (copied) to all other media when **all media** is selected here.



- The 2nd button from the left of **set type** decides the target media type (type #X) which the Transportation Unit Motor Speed is applied to. For example, you need to set this to type #2 when you will adjust the motor speed that is applied when printing with any type #2 media.

  To change the setting, click on the button and select any media type in the pop up dialog.



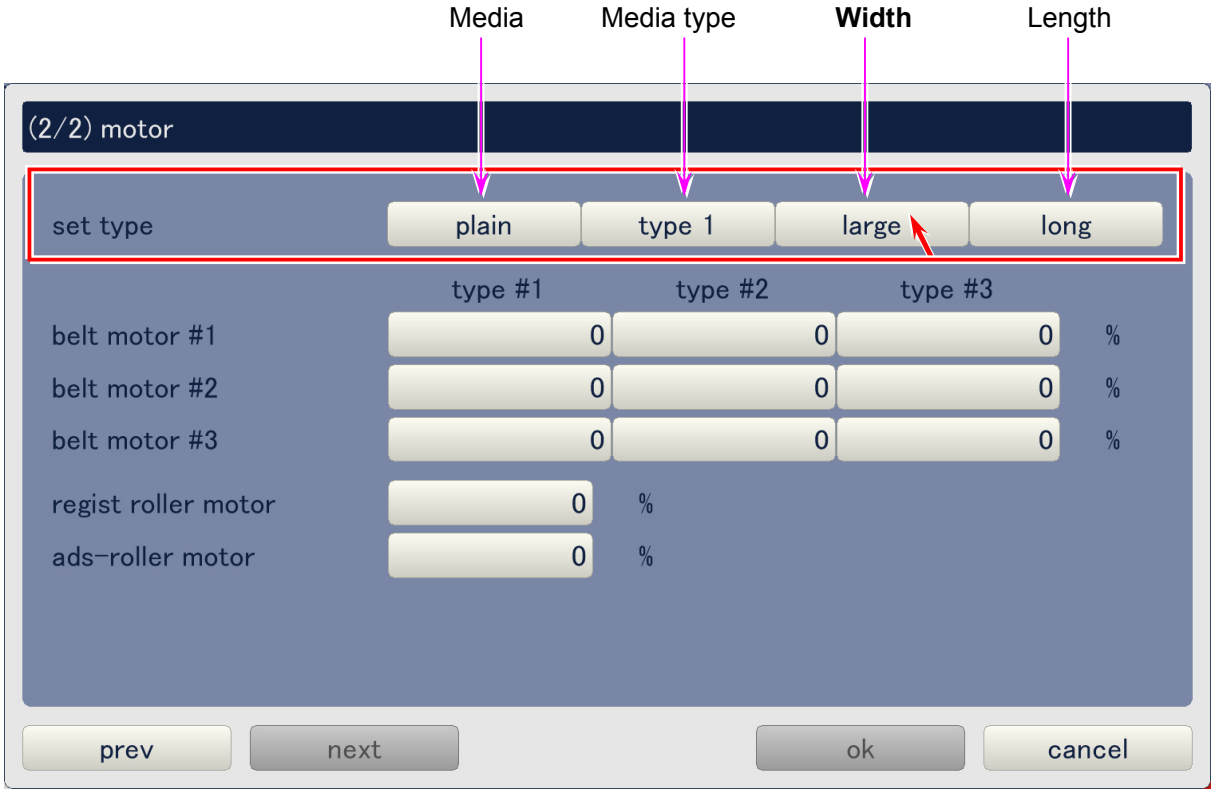
NOTE

All the Transportation Unit Motor speeds currently indicated on the screen will be applied (copied) to all other media types when **all type** is selected here.



- The 3rd button from the left of **set type** decides the target media width (group) which the Transportation Unit Motor Speed is applied to. For example, you need to set this to middle when you will adjust the motor speed that is applied when the print width belongs to the middle group.

  To change the setting, click on the button and select any media width group in the pop up dialog.

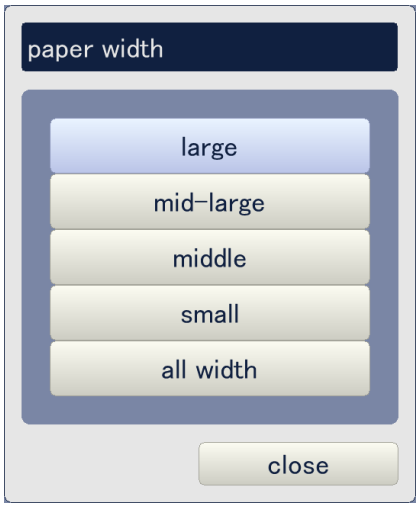


NOTE

(1) All available media widths belong to any width group as follows. Please choose the correct group.

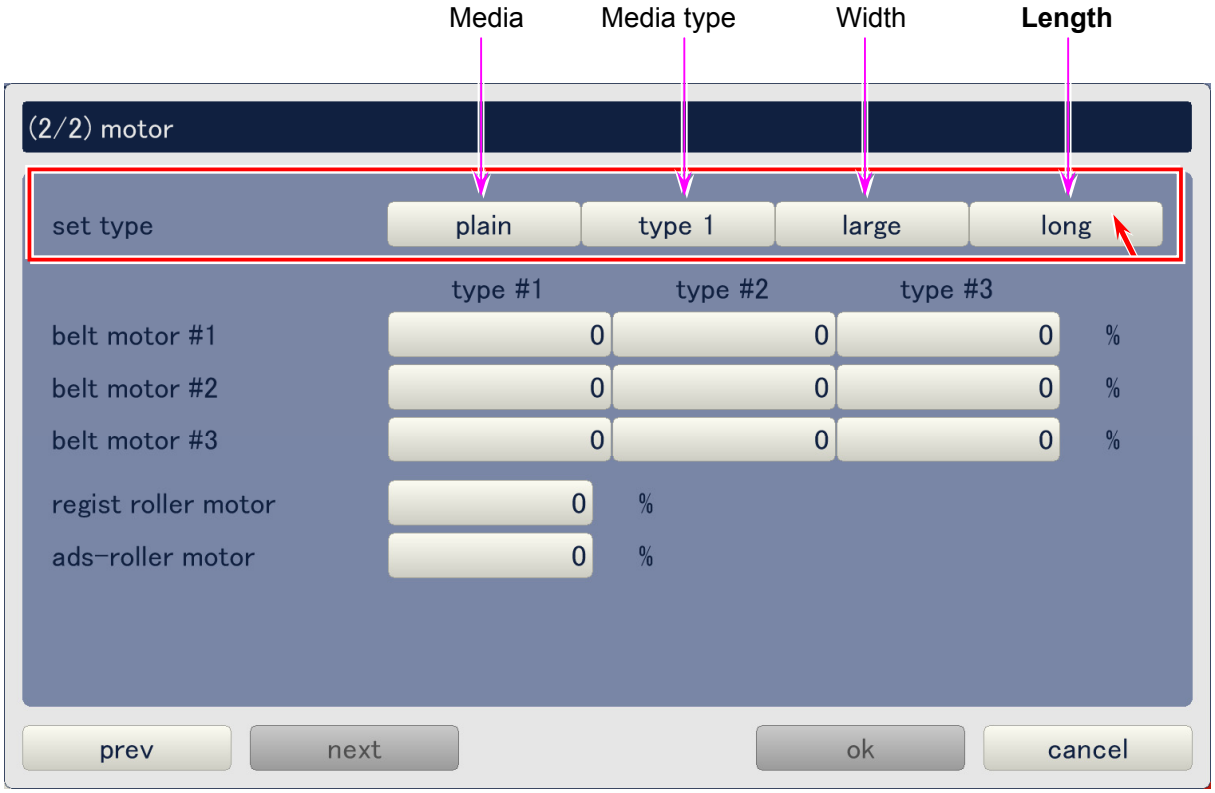
Large	: A0, B1, 36”, 34”, 30”, 900mm, 891mm, 880mm & 707mm
Mid-large	: A1, B2, 24” & 22”
Middle	: A2, B3, 18”, 17” & 15”
Small	: A3, 12”, 11”, 9” & 8.5”

(2) All the Transportation Unit Motor speeds currently indicated on the screen will be applied (copied) to all other media width groups when **all width** is selected



- The 4th button from the left of **set type** decides the target media length (group) which the Transportation Unit Motor Speed is applied to. For example, you need to set this to middle when you will adjust the motor speed that is applied when print length belongs to the middle group.

  To change the setting, click on the button and select any media length group in the pop up dialog.

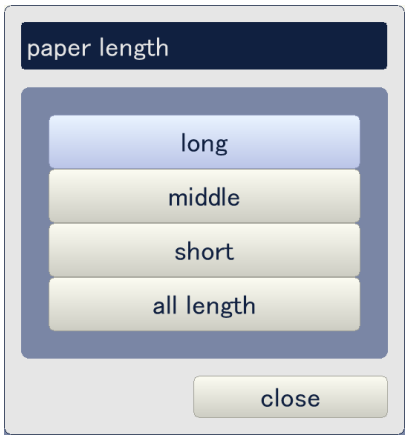


NOTE

(1) All available media length belong to any length group as follows. Please choose the correct group.

Large	: Longer than 840mm
Middle	: Between 400 to 839mm
Short	: Shorter than 399mm

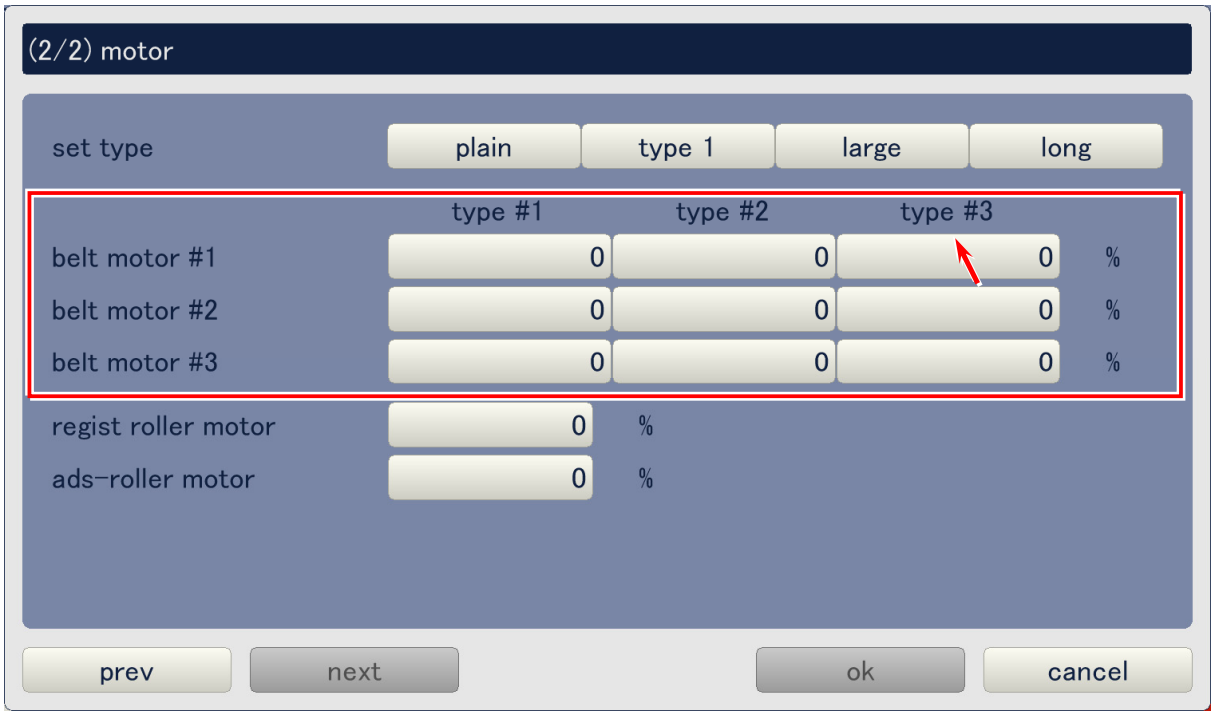
(2) All the Transportation Unit Motor speeds currently indicated on the screen will be applied (copied) to all other media length groups when **all length** is selected here.



- **Type #X** means the motor speed ranges high, normal and low. For example, you need to choose type #1 when you will adjust the motor speed of high range.
  - Type #1 : High
  - Type #2 : Normal
  - Type #3 : Slow

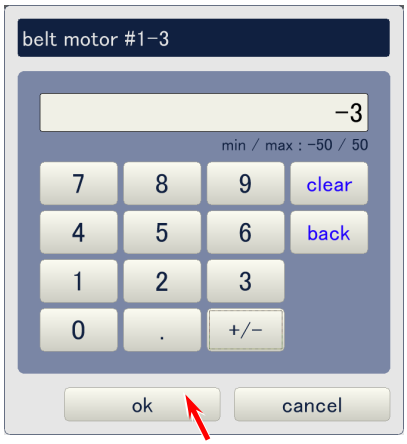
  Belt motor #X means the Transportation Unit Motor 1/2/3. For example, you need to choose belt motor #1 when you will adjust the motor speed of Transportation Unit Motor 1.
  - Belt motor #1 : Transportation Unit Motor 1
  - Belt motor #2 : Transportation Unit Motor 2
  - Belt motor #3 : Transportation Unit Motor 3

  Click on any setting button considering speed range and motor (1/2/3), input the value in the pop up dialog, and click on **ok**. Setting range is -50 to +50 Increment of the setting value makes the motor speed faster.



Reference

These are common with the Service Mode 4-5000 to 7238.

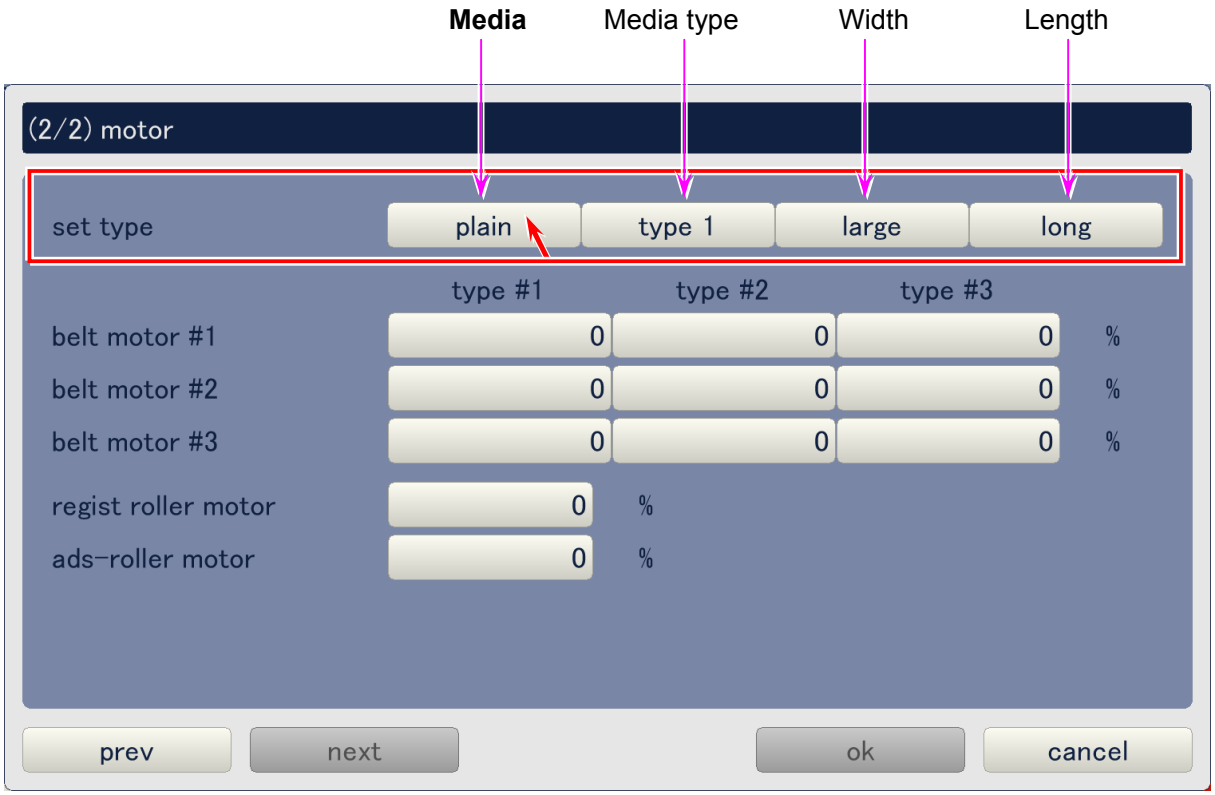


(7) Regist roller motor (advanced service mode)

Registration Roller Motor speed can be adjusted being related with such target conditions as media, media type (type #X), media width and media length. Increment of the setting value makes the motor speed faster.

- The left button of **set type** decides the target media which the Registration Roller Motor Speed is to be applied to. For example, you need to set this to plain paper when you will adjust the motor speed that is applied when printing with any plain paper.

  To change the setting, click on the button and select any media in the pop up dialog.



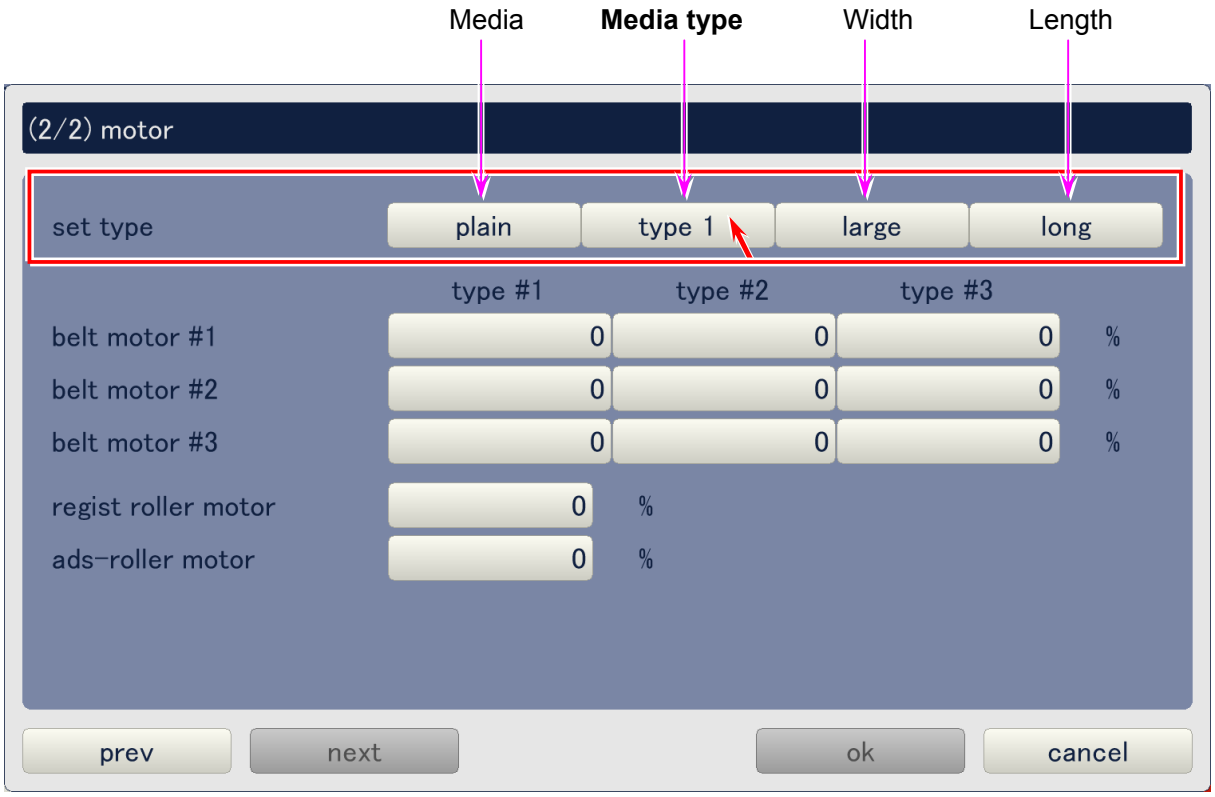
NOTE

Registration Roller Motor speed currently indicated on the screen will be applied (copied) to all other media when **all media** is selected here.



- The 2nd button from the left of **set type** decides the target media type (type #X) which the Registration Roller Motor Speed is applied to. For example, you need to set this to type #2 when you will adjust the motor speed that is applied when printing with any type #2 media.

  To change the setting, click on the button and select any media type in the pop up dialog.



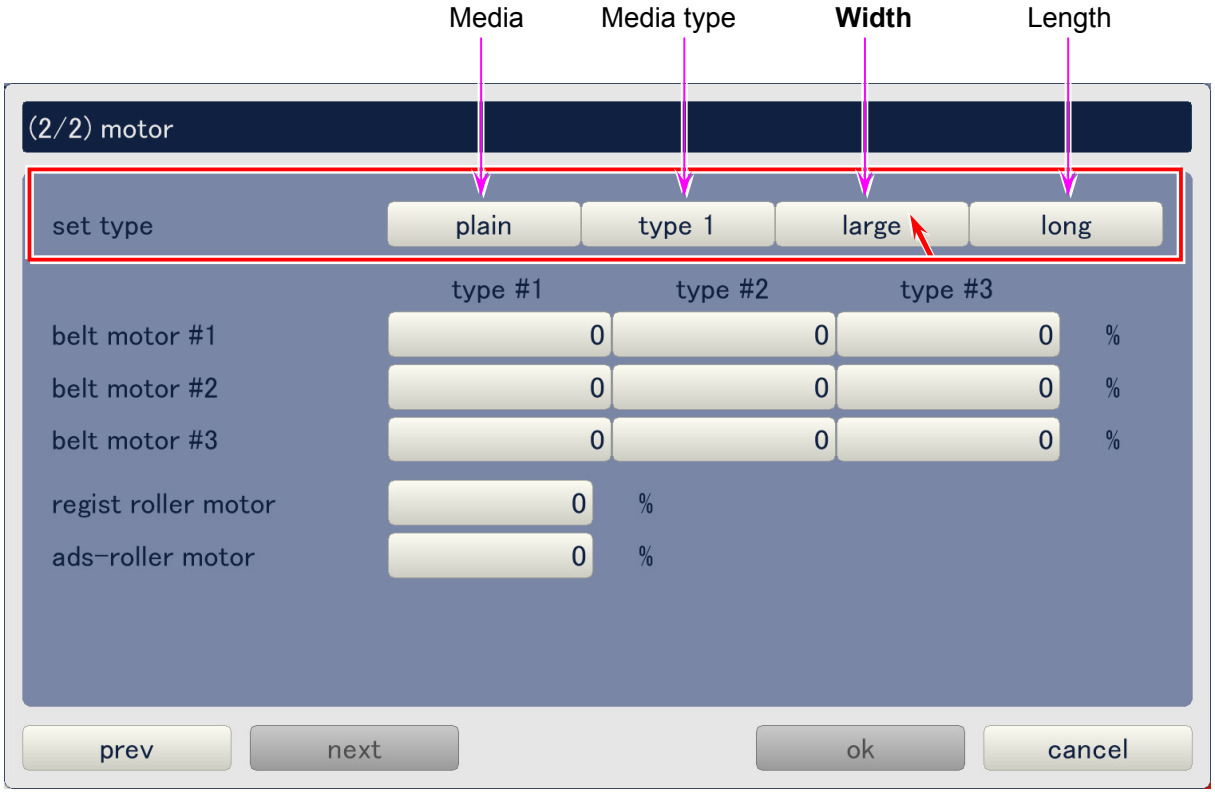
NOTE

Registration Roller Motor speed currently indicated on the screen will be applied (copied) to all other media types when **all type** is selected here.



- The 3rd button from the left of **set type** decides the target media width (group) which the Registration Roller Motor Speed is applied to. For example, you need to set this to middle when you will adjust the motor speed that is applied when the print width belongs to the middle group.

  To change the setting, click on the button and select any media width group in the pop up dialog.

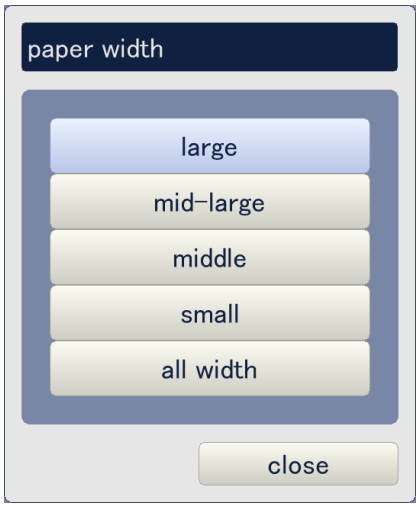


NOTE

(1) All available media widths belong to any width group as follows. Please choose the correct group.

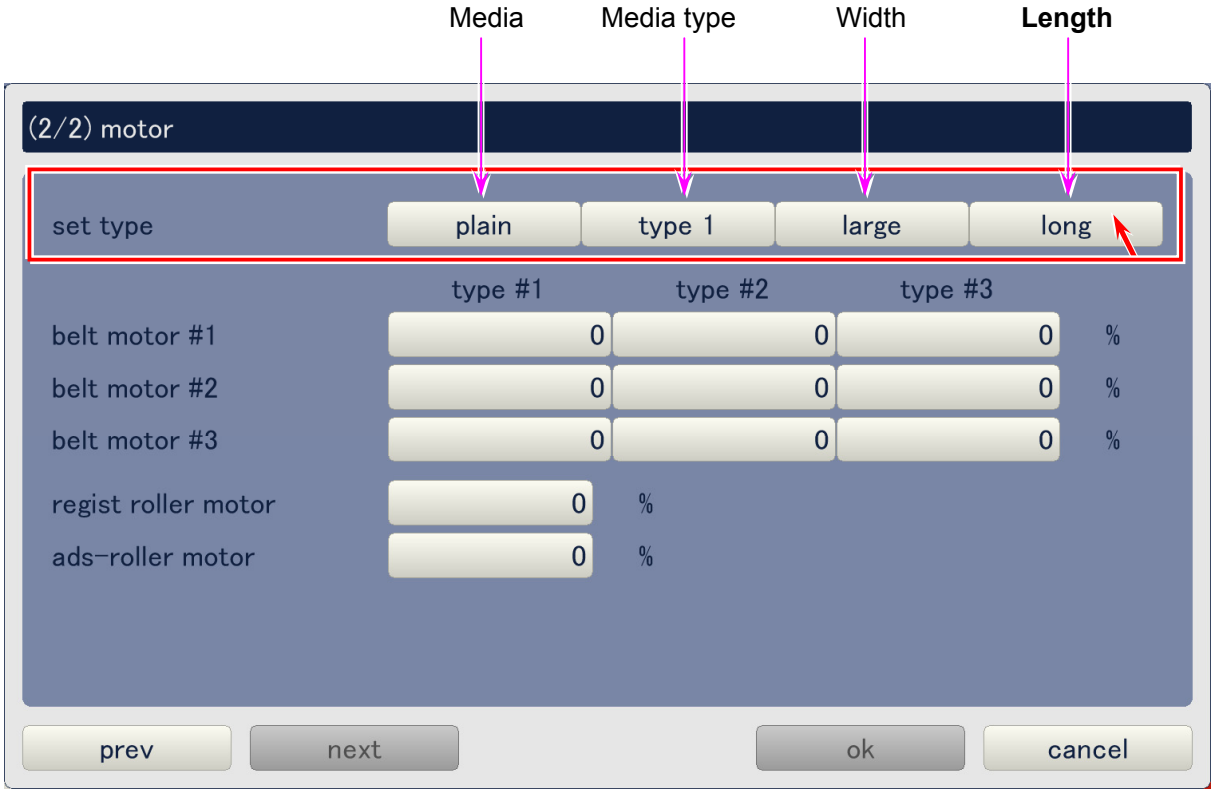
Large	: A0, B1, 36”, 34”, 30”, 900mm, 891mm, 880mm & 707mm
Mid-large	: A1, B2, 24” & 22”
Middle	: A2, B3, 18”, 17” & 15”
Small	: A3, 12”, 11”, 9” & 8.5”

(2) Registration Roller Motor speed currently indicated on the screen will be applied (copied) to all other media width groups when **all width** is selected here.



- The 4th button from the left of **set type** decides the target media length (group) which the Registration Roller Motor Speed is applied to. For example, you need to set this to middle when you will adjust the motor speed that is applied when print length belongs to the middle group.

  To change the setting, click on the button and select any media length group in the pop up dialog.

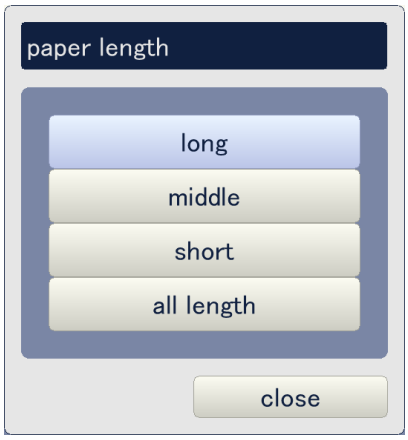


NOTE

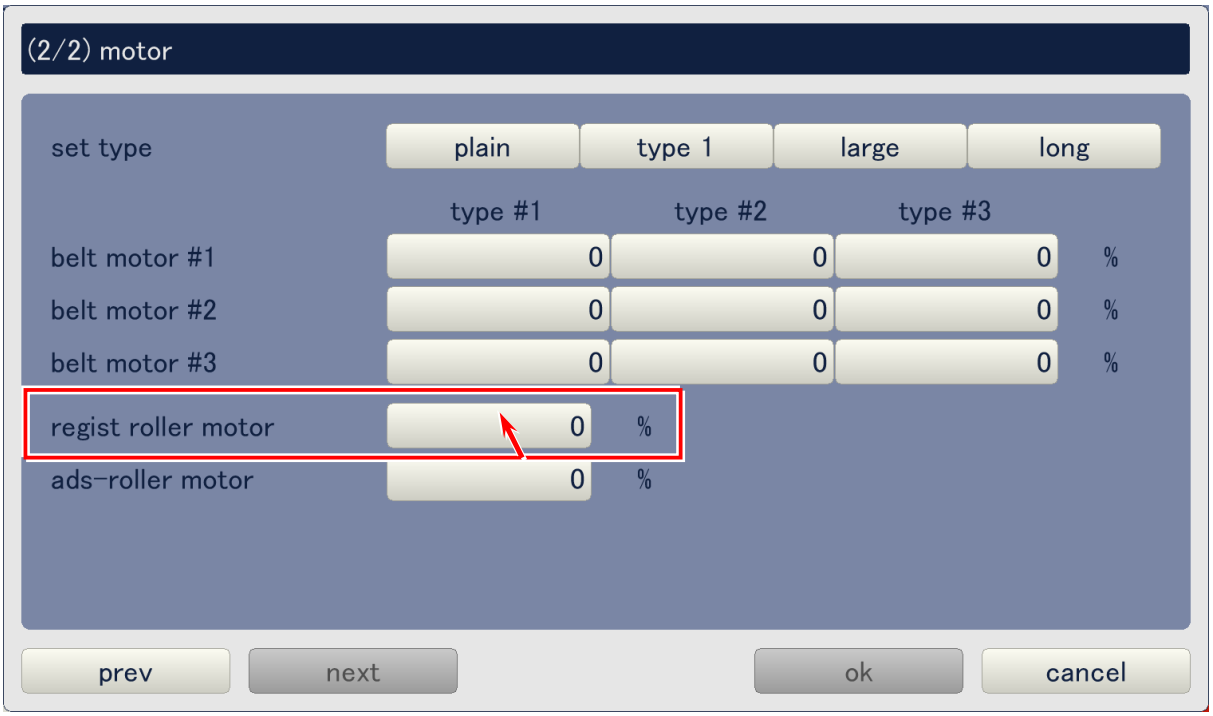
(1) All available media length belong to any length group as follows. Please choose the correct group.

Large	: Longer than 840mm
Middle	: Between 400 to 839mm
Short	: Shorter than 399mm

(2) Registration Roller Motor speed currently indicated on the screen will be applied (copied) to all other media length groups when **all length** is selected here.

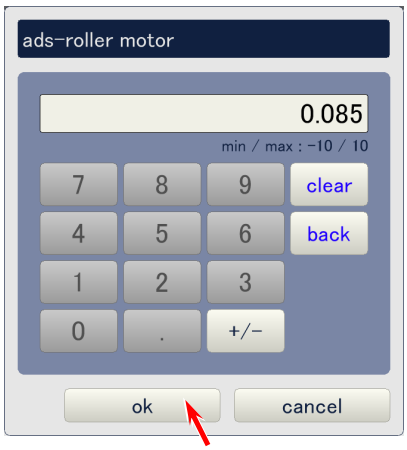


- Click on the button beside **regist roller motor**, input the value in the pop up dialog, and click on **ok**. Setting range is -10 to +10. Increment of the setting value makes the motor speed faster.



Reference

This is common with the Service Mode 4-4000 to 40bF.

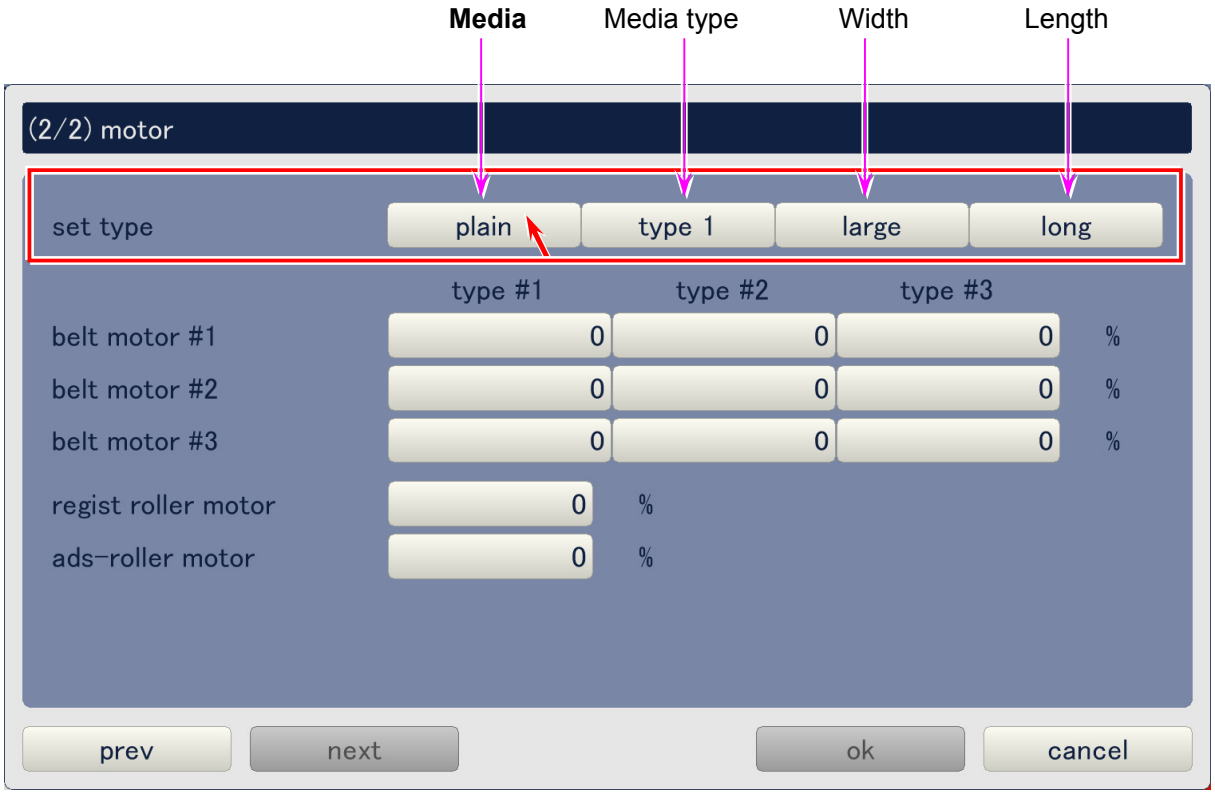


(8) Ads-roller motor (advanced service mode)

Attraction Roller Motor speed can be adjusted being related with such target conditions as media, media type (type #X), media width and media length. Increment of the setting value makes the motor speed faster.

- The left button of **set type** decides the target media which the Attraction Roller Motor Speed is to be applied to. For example, you need to set this to plain paper when you will adjust the motor speed that is applied when printing with any plain paper.

  To change the setting, click on the button and select any media in the pop up dialog.



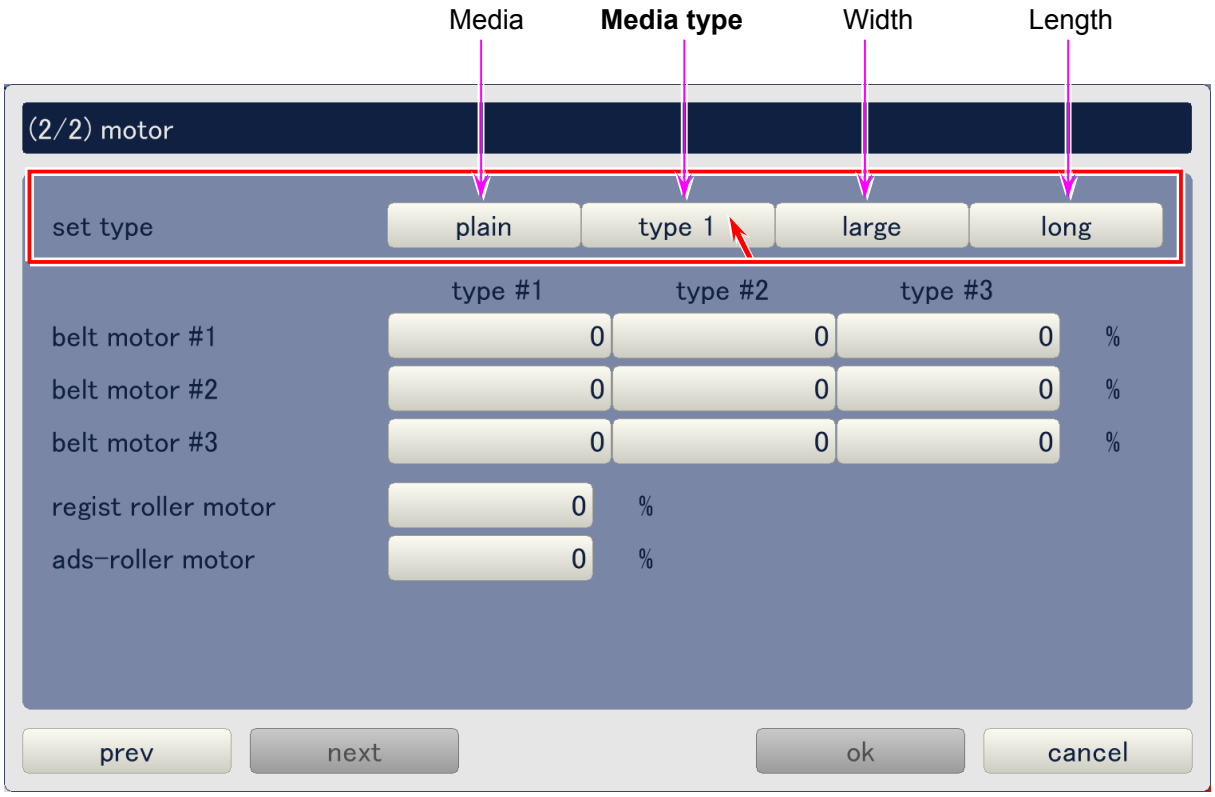
NOTE

Attraction Roller Motor speed currently indicated on the screen will be applied (copied) to all other media when **all media** is selected here.



- The 2nd button from the left of **set type** decides the target media type (type #X) which the Attraction Roller Motor Speed is applied to. For example, you need to set this to type #2 when you will adjust the motor speed that is applied when printing with any type #2 media.

  To change the setting, click on the button and select any media type in the pop up dialog.



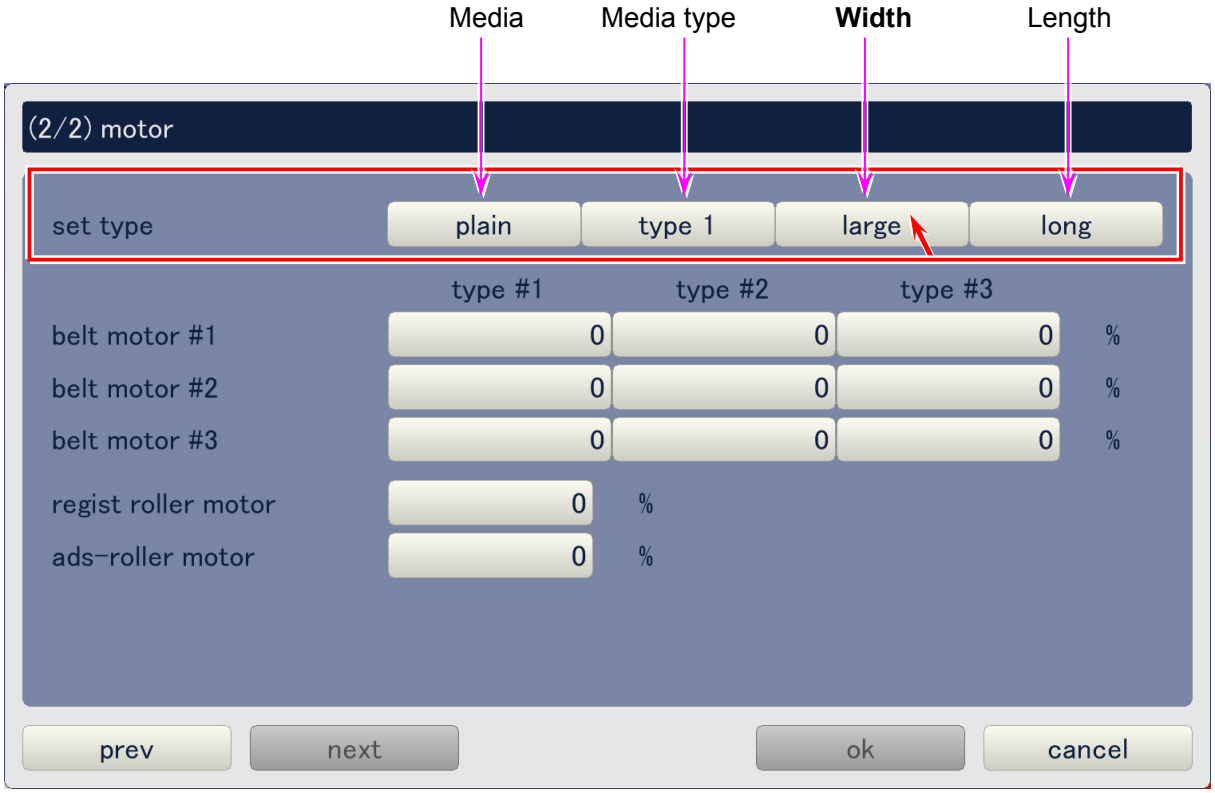
NOTE

Attraction Roller Motor speed currently indicated on the screen will be applied (copied) to all other media types when **all type** is selected here.



- The 3rd button from the left of **set type** decides the target media width (group) which the Attraction Roller Motor Speed is applied to. For example, you need to set this to middle when you will adjust the motor speed that is applied when the print width belongs to the middle group.

  To change the setting, click on the button and select any media width group in the pop up dialog.

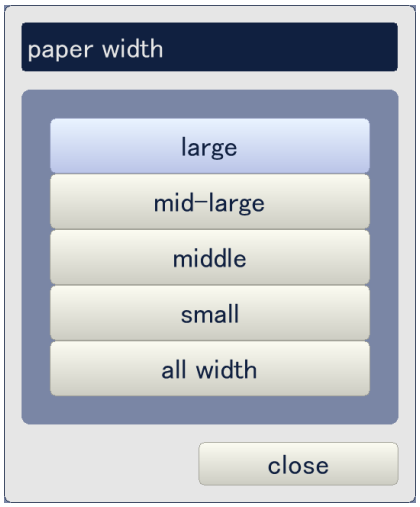


NOTE

(1) All available media widths belong to any width group as follows. Please choose the correct group.

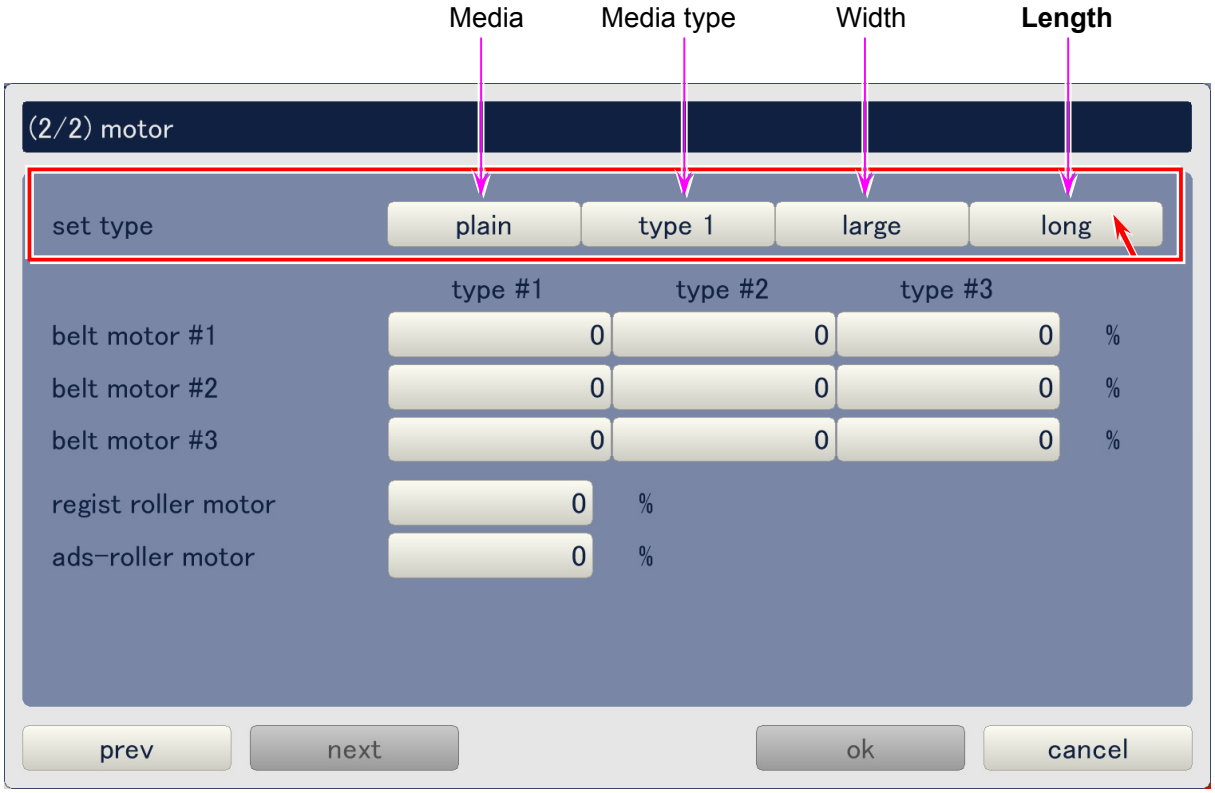
Large	: A0, B1, 36”, 34”, 30”, 900mm, 891mm, 880mm & 707mm
Mid-large	: A1, B2, 24” & 22”
Middle	: A2, B3, 18”, 17” & 15”
Small	: A3, 12”, 11”, 9” & 8.5”

(2) Attraction Roller Motor speed currently indicated on the screen will be applied (copied) to all other media width groups when **all width** is selected here.



- The 4th button from the left of **set type** decides the target media length (group) which the Attraction Roller Motor Speed is applied to. For example, you need to set this to middle when you will adjust the motor speed that is applied when print length belongs to the middle group.

  To change the setting, click on the button and select any media length group in the pop up dialog.

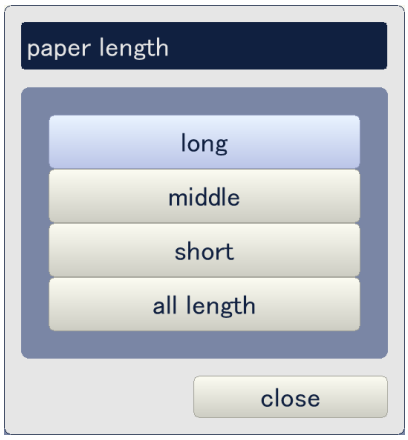


NOTE

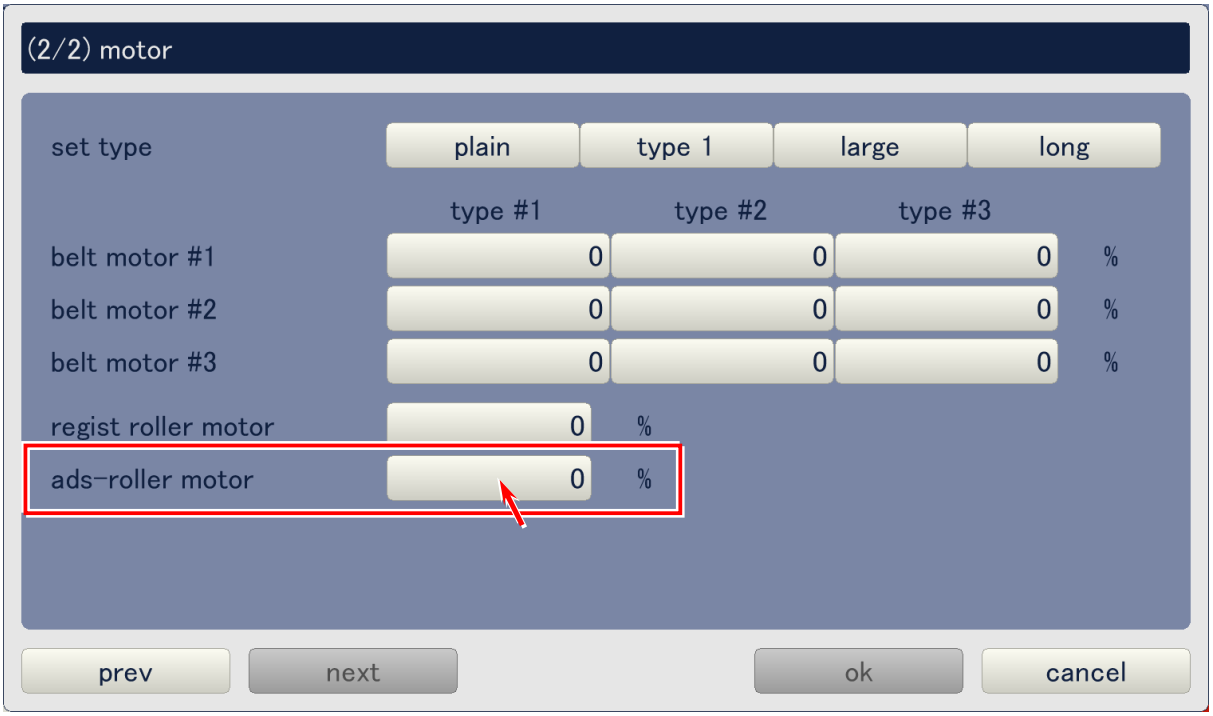
(1) All available media length belong to any length group as follows. Please choose the correct group.

Large : Longer than 840mm
Middle : Between 400 to 839mm
Short : Shorter than 399mm

(2) Attraction Roller Motor speed currently indicated on the screen will be applied (copied) to all other media length groups when **all length** is selected here.

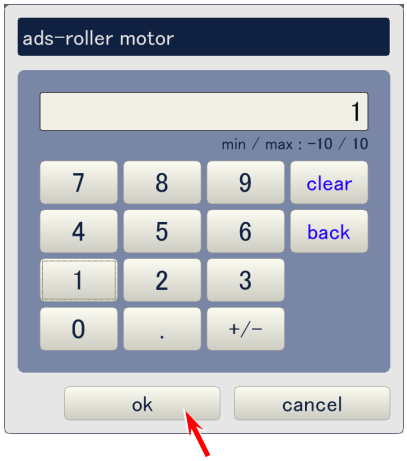


- Click on the button beside **ads-roller motor**, input the value in the pop up dialog, and click on **ok**. Setting range is -10 to +10. Increment of the setting value makes the motor speed faster.



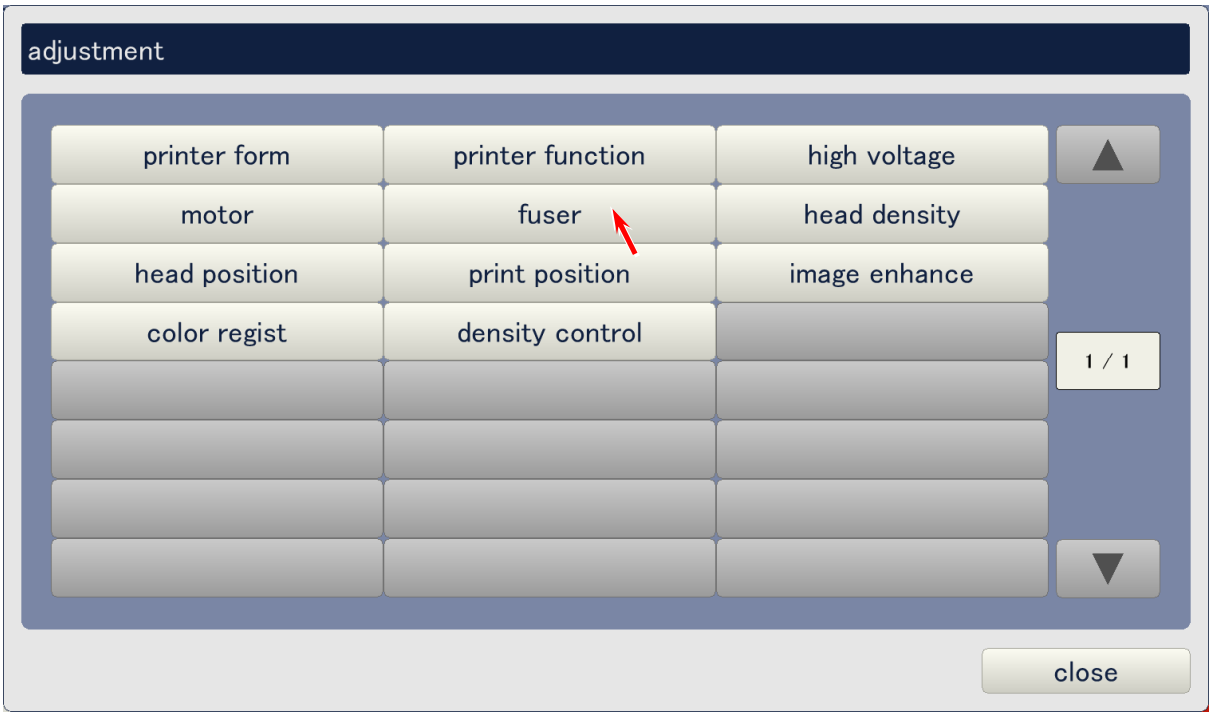
Reference

This is common with the Service Mode 4-40C0 to 417F.

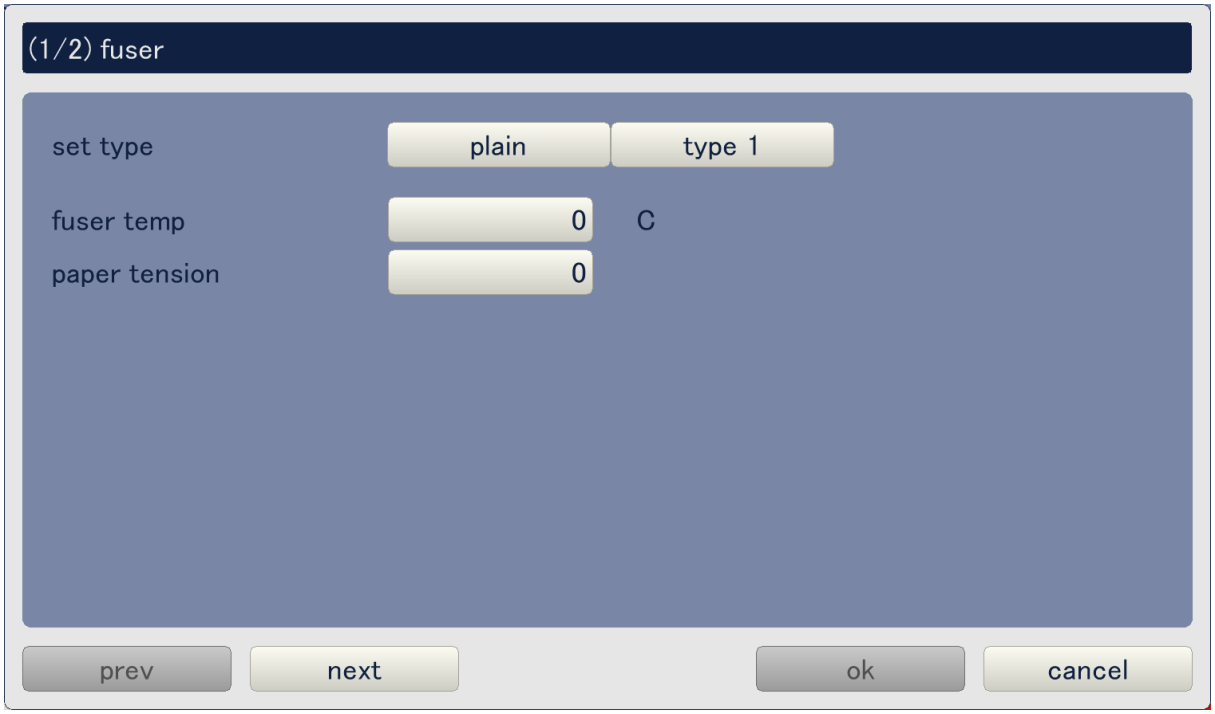


9. 5. 2. 6 Fuser

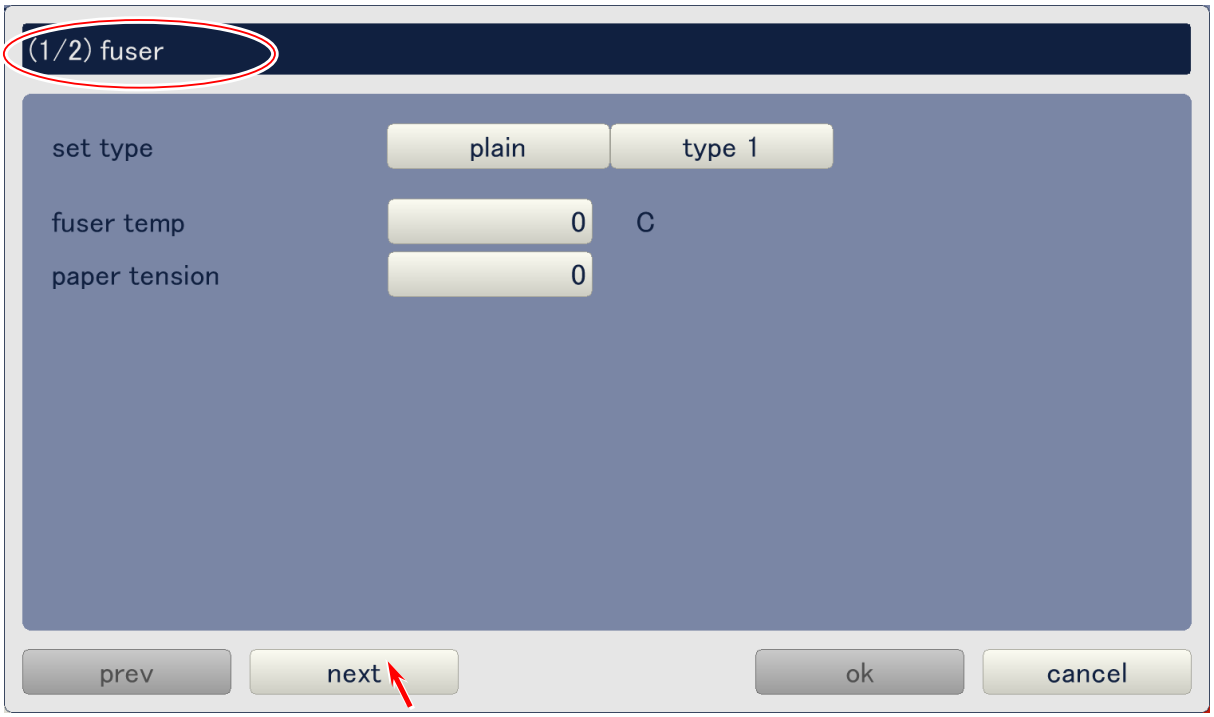
Click on fuser to access the Fuser Page. See the later pages for the description of each setting item.

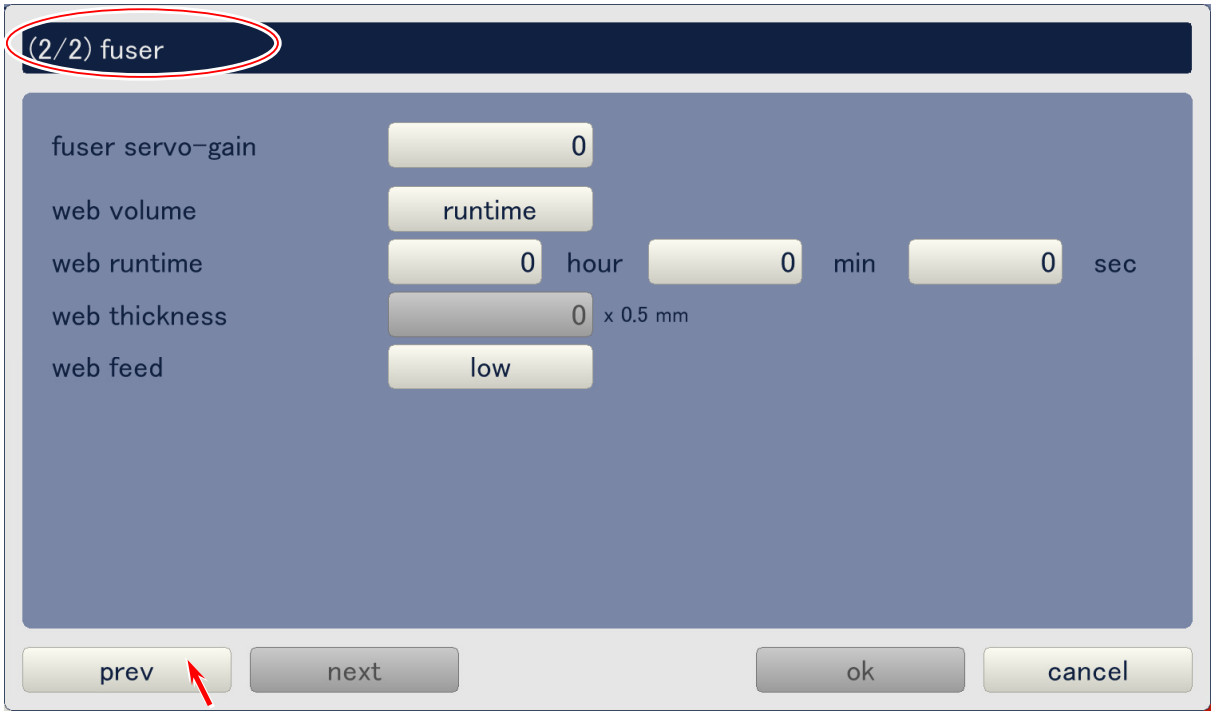


Fuser Page (advanced service mode)



Fuser Page consists of 2 pages. Use **prev** and **next** buttons to indicate the other page. Current page is shown as (1/2) on the top of the screen.



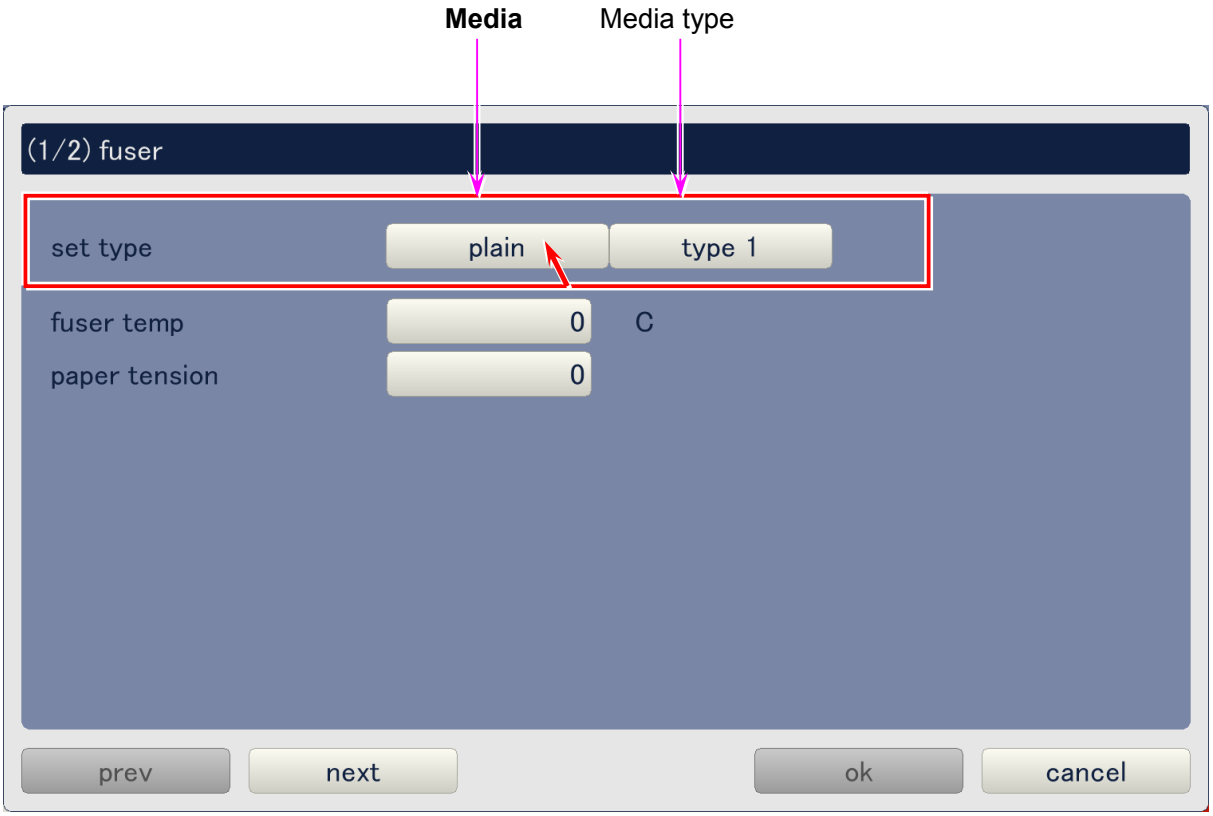


(1) Fuser temp

Temperature of Fuser Roller can be specified per media and per media type.

- The left button of **set type** decides the target media which the Fuser Temperature is to be applied to. For example, you need to set this to plain paper when you will adjust the Fuser Temperature applied when printing with any plain paper.

  To change the setting, click on the button and select any media in the pop up dialog.



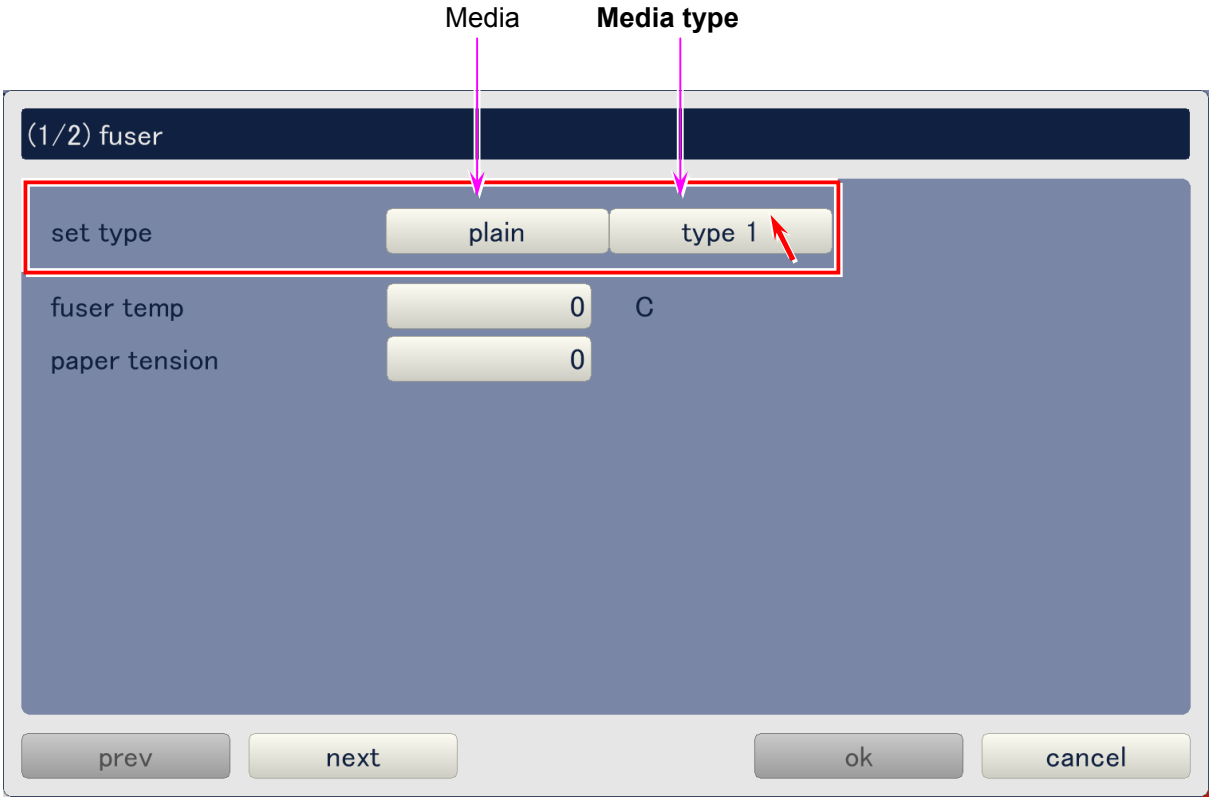
NOTE

Fuser Temperature currently indicated on the screen will be applied (copied) to all other media when **all media** is selected here.



- The right button of **set type** decides the target media type (type #X) which the Fuser Temperature is to be applied to. For example, you need to set this to type #1 when you will adjust the Fuser Temperature applied when printing with any type #1 media.

  To change the setting, click on the button and select any media type in the pop up dialog.

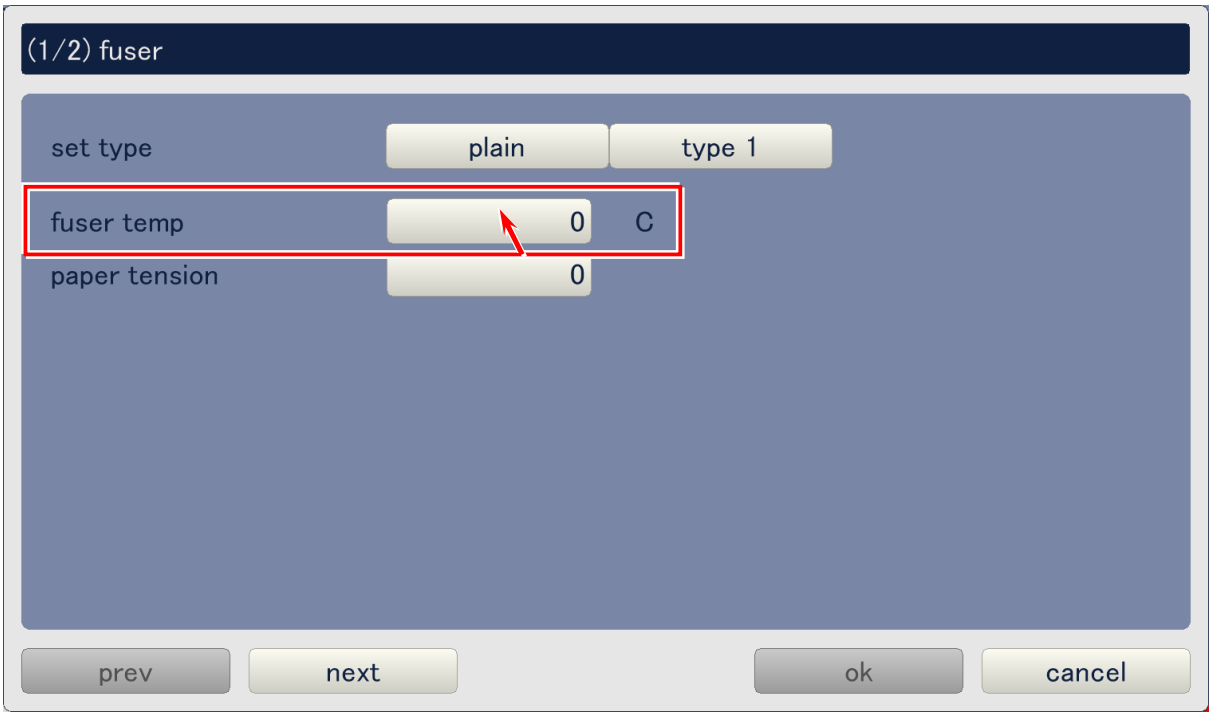


NOTE

Fuser Temperature currently indicated on the screen will be applied (copied) to all other media types when **all type** is selected here.

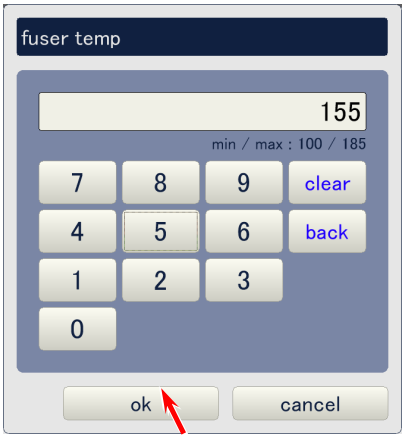


- Click on the button beside **fuser temp**, input the value in the pop up dialog, and click on **ok**. Setting range is 100 to 185. Increment of the setting value makes the temperature of Fuser Roller higher.



Reference

These are common with the Service Mode 4-0015 to 0024.

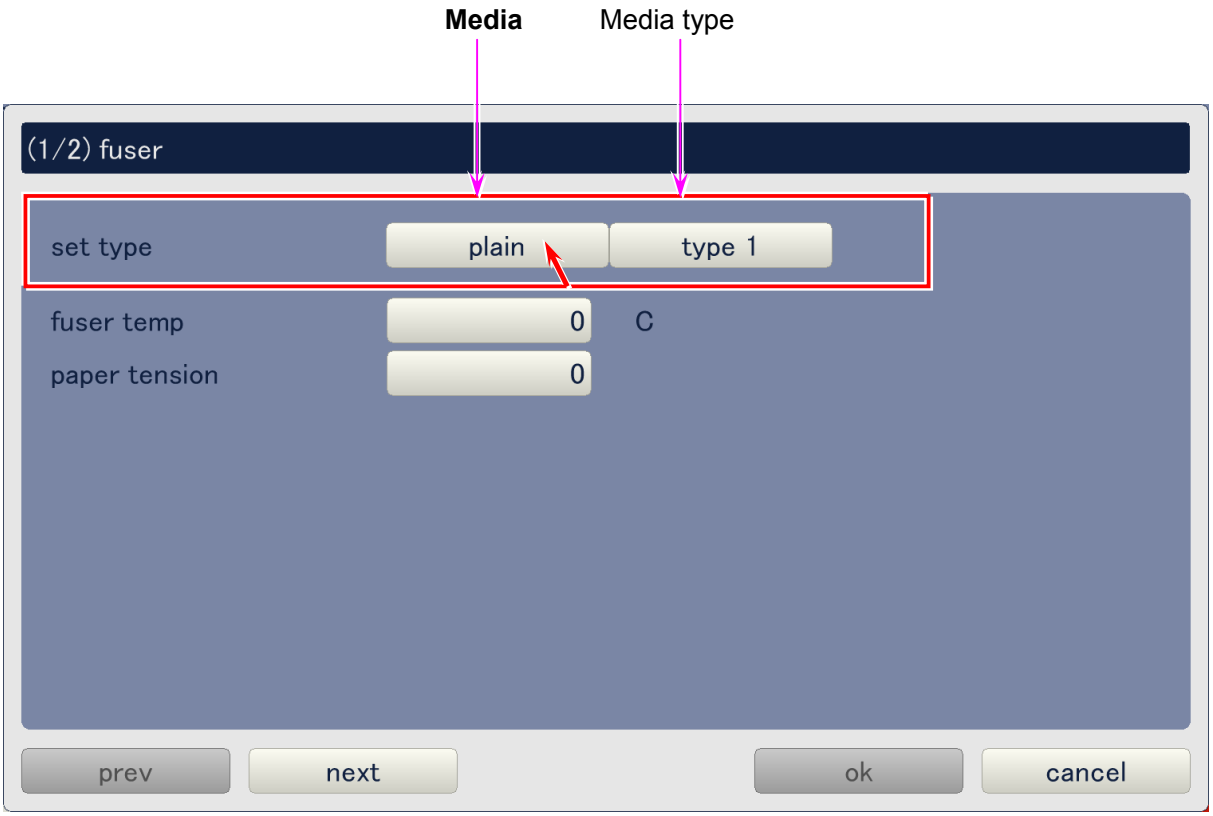


(2) Paper tension (advanced service mode)

Target Tension can be specified per media and per media type. The rotation of Fuser Motor is flexibly increased or decreased to always achieve the specified tension between fuser roller and attraction roller, which is necessary for achieving correct vertical color registration. Increment of the value can give more tension to the printing media.

- The left button of **set type** decides the target media which the Target Tension is to be applied to. For example, you need to set this to plain paper when you will adjust the Target Tension that is applied when printing with any plain paper.

  To change the setting, click on the button and select any media in the pop up dialog.



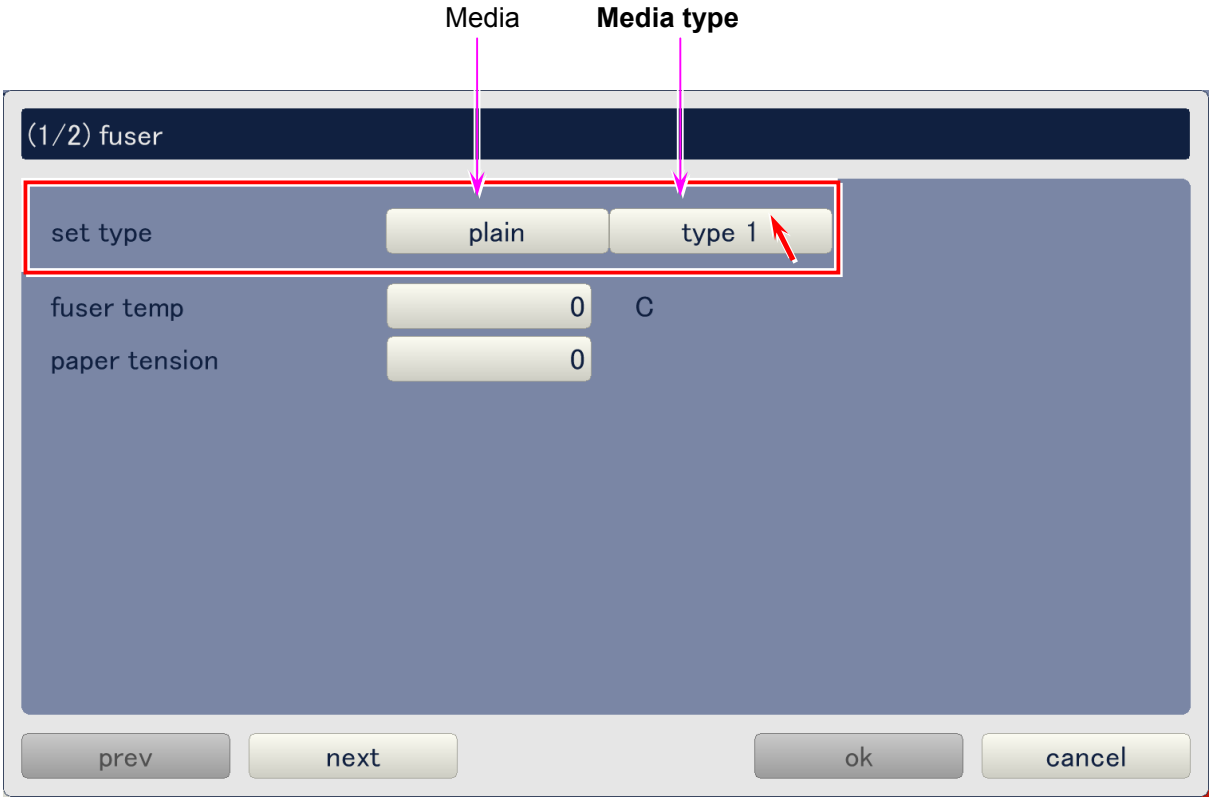
NOTE

Target Tension currently indicated on the screen will be applied (copied) to all other media when **all media** is selected here.



- The right button of **set type** decides the target media type (type #X) which the Target Tension is to be applied to. For example, you need to set this to type #1 when you will adjust the Target Tension that is applied when printing with any type #1 media.

  To change the setting, click on the button and select any media type in the pop up dialog.

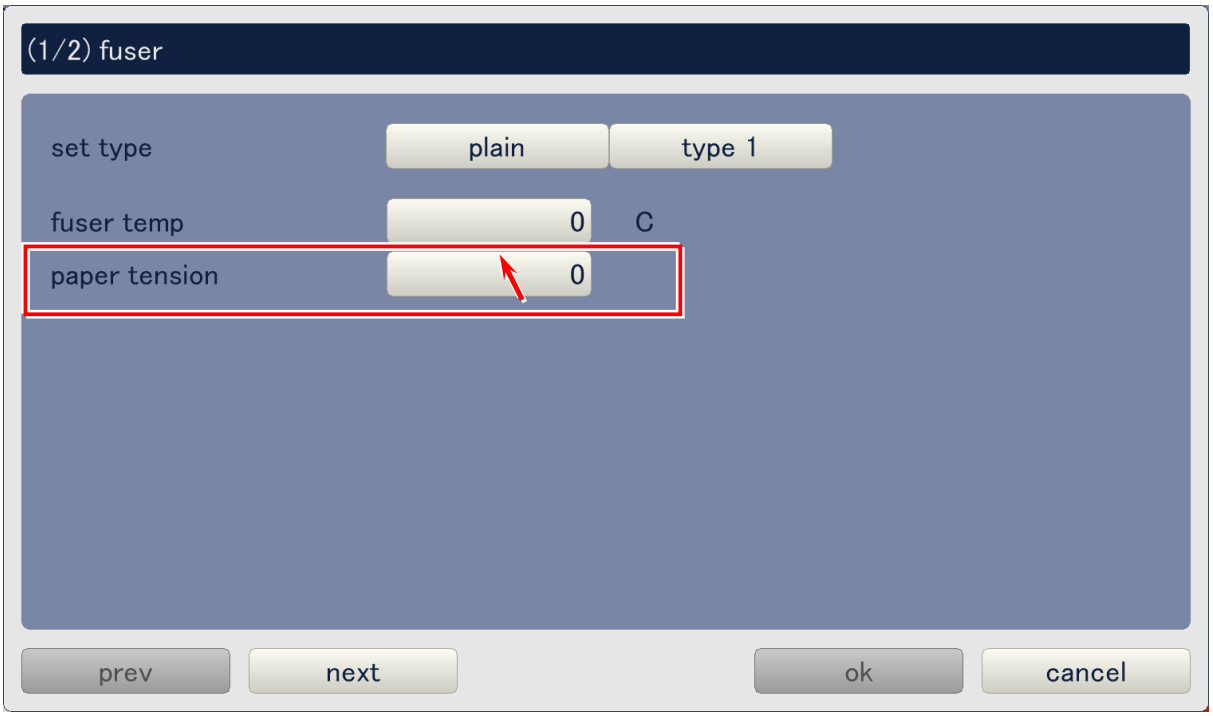


NOTE

Target Tension currently indicated on the screen will be applied (copied) to all other media types when **all type** is selected here.

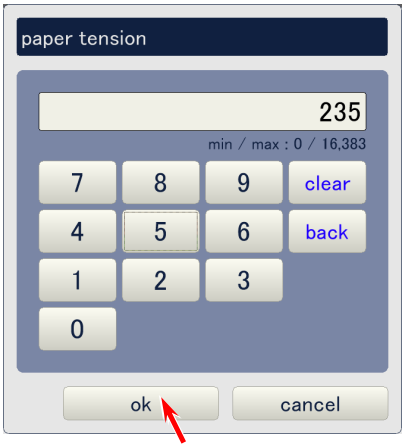


- Click on the button beside **paper tension**, input the value in the pop up dialog, and click on **ok**. Setting range is 100 to 185. Increment of the setting value gives more tension to the media on transportation between fuser roller and attraction roller.



Reference

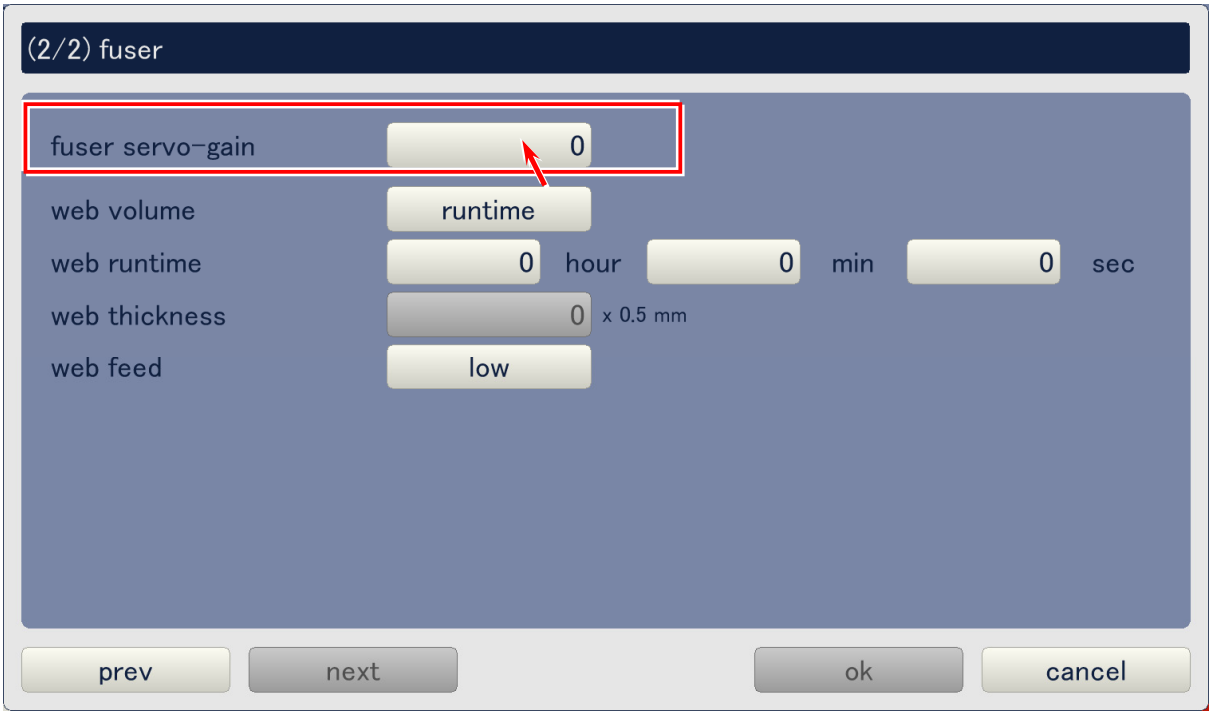
These are common with the Service Mode 4-0026 to 0035.



(3) Fuser servo-gain (advanced service mode)

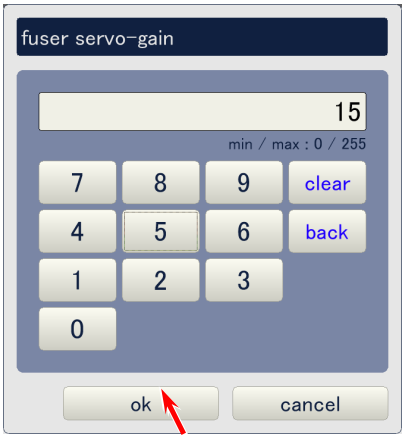
It is possible to specify how much the speed of Fuser Motor should vary at each occasion to change the motor speed by automatic fuser motor speed adjustment function.

Click on the button beside **fuser servo-gain**, input the necessary value in the pop up dialog, and click on **ok**. Setting range is 0 to 255. Increment of the value increases the variation of motor speed.



Reference

This is common with the Service Mode 4-0025.

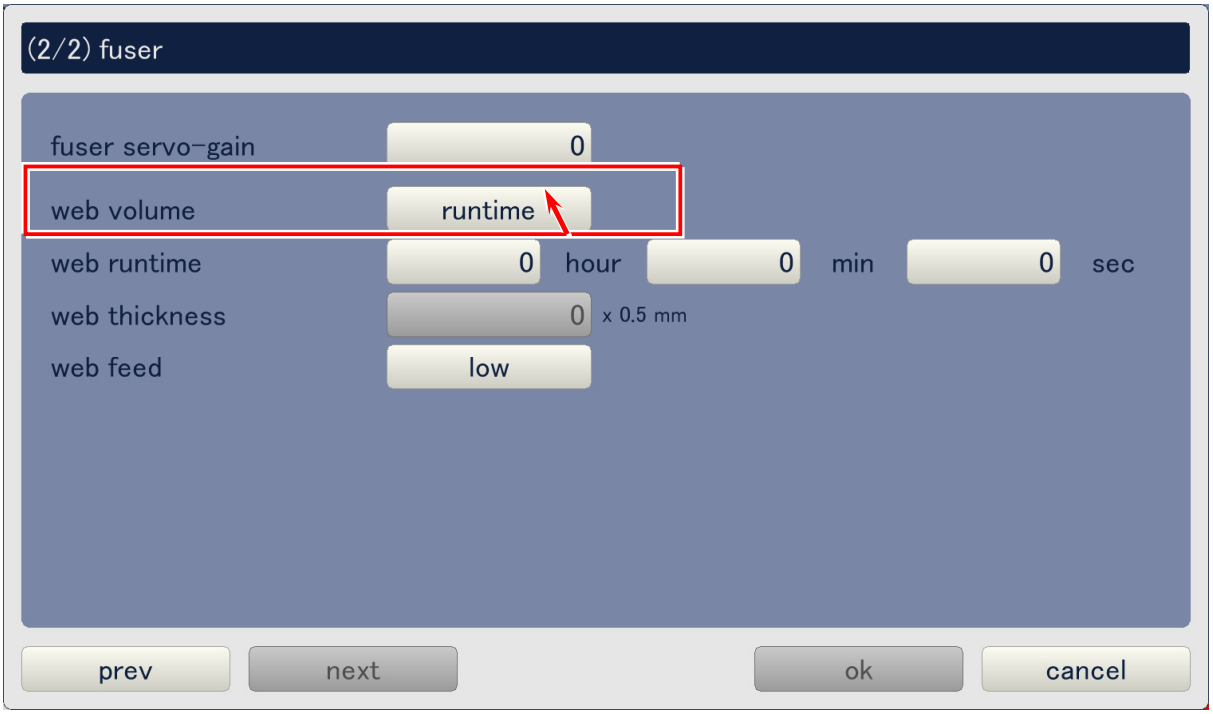


(4) Web volume

The operator can manually input the remaining volume of Web Cleaner in terms of “total run time” or “thickness of remaining roll”. **Web volume** allows the operator to choose either **runtime** or **thickness** as the input mode.

To change the setting, click on the button beside **web volume** and select either setting according to the necessity.

Setting	Description
runtime	Remaining volume of Web Cleaner can be input in terms of total run time.
thickness	Remaining volume of Web Cleaner is input in terms of the thickness of remaining web roll.



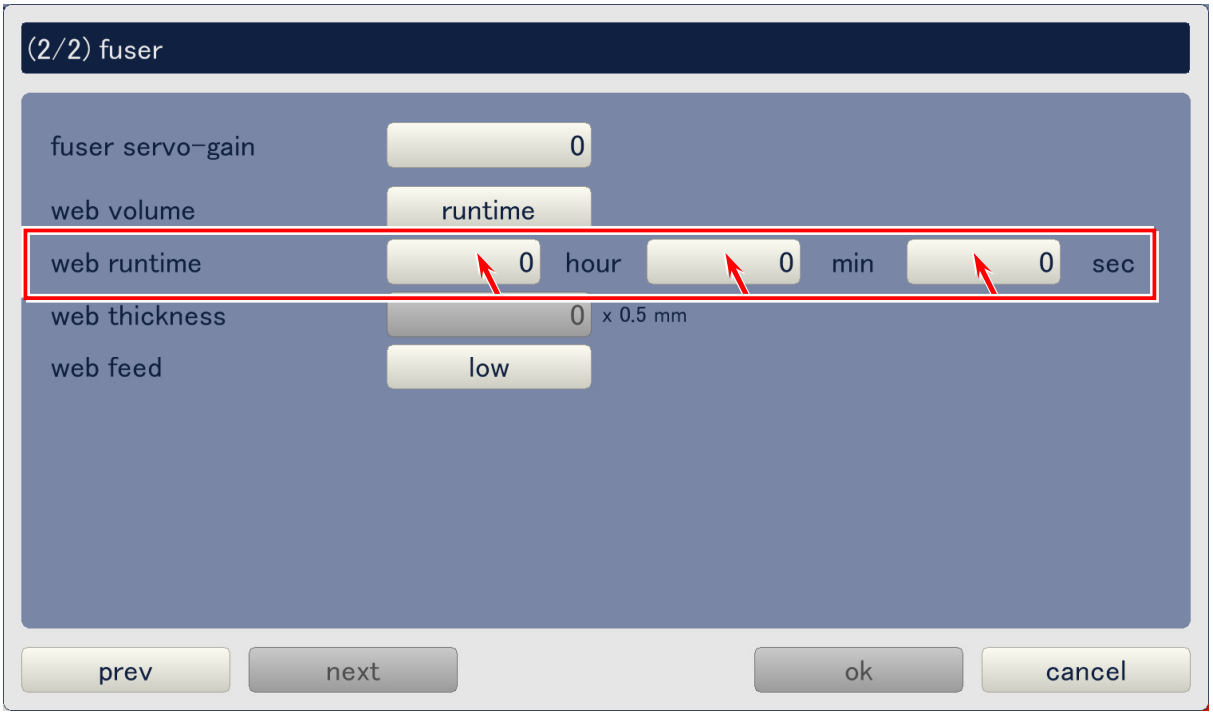


(5) Web runtime

The total run time of Web Motor can be manually inputted, which is utilized for web end error detection. This setting is active when “web volume” is set to “runtime”.

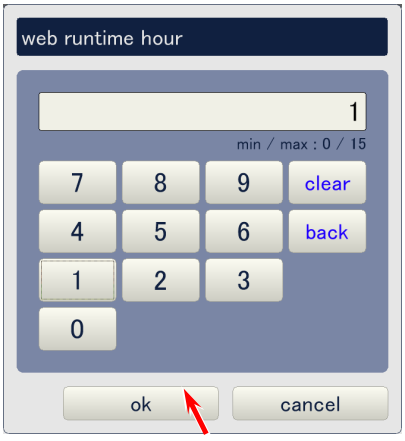
To change the setting, click on the button of each **hour**, **min** and **sec** beside **web runtime**, input the value in each pop up dialog, and click on **ok**.

Setting ranges are;
Hour : 0 to 15
Minute : 0 to 59
Second : 0 to 59



Reference

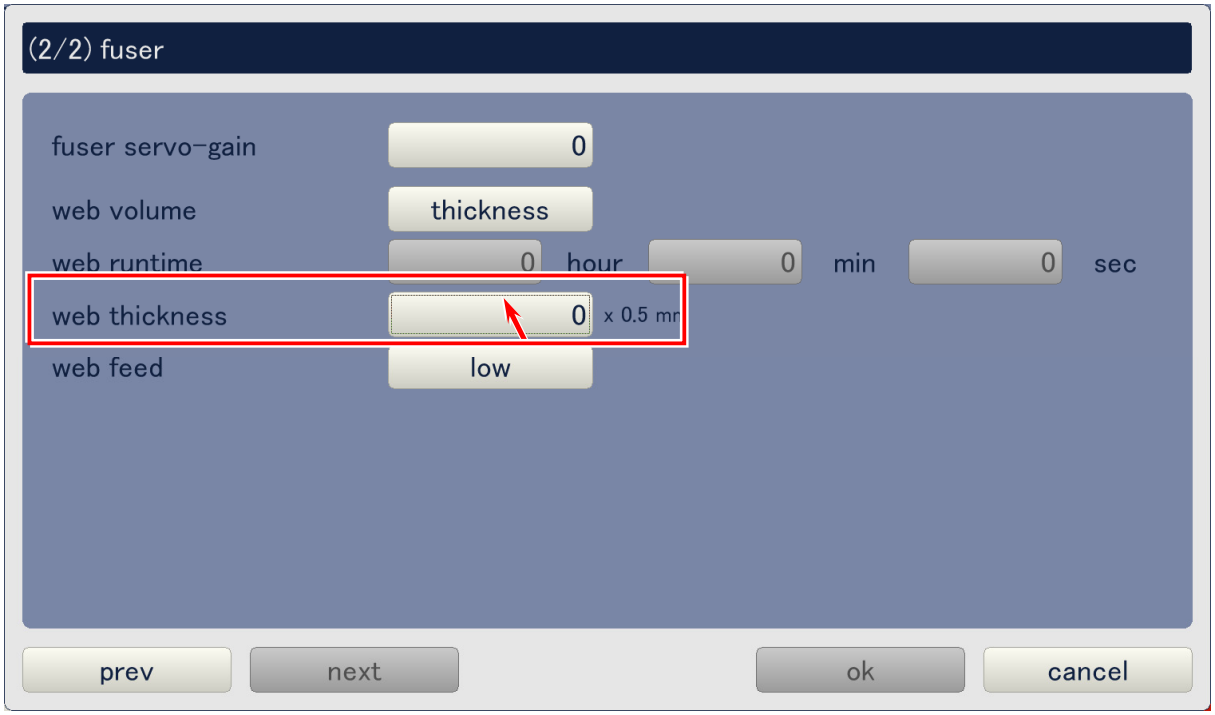
This is common with the Service Mode 4-000E.



(6) Web thickness

The thickness of remaining Web Roll can be input, which is utilized for web end error detection. This setting is active when “web volume” is set to “thickness”.

Click on the button beside **web thickness**, input the value in the pop up dialog, and click on **ok**. Setting range is 0 to 28.



Reference

This is common with the Service Mode 4-000F.

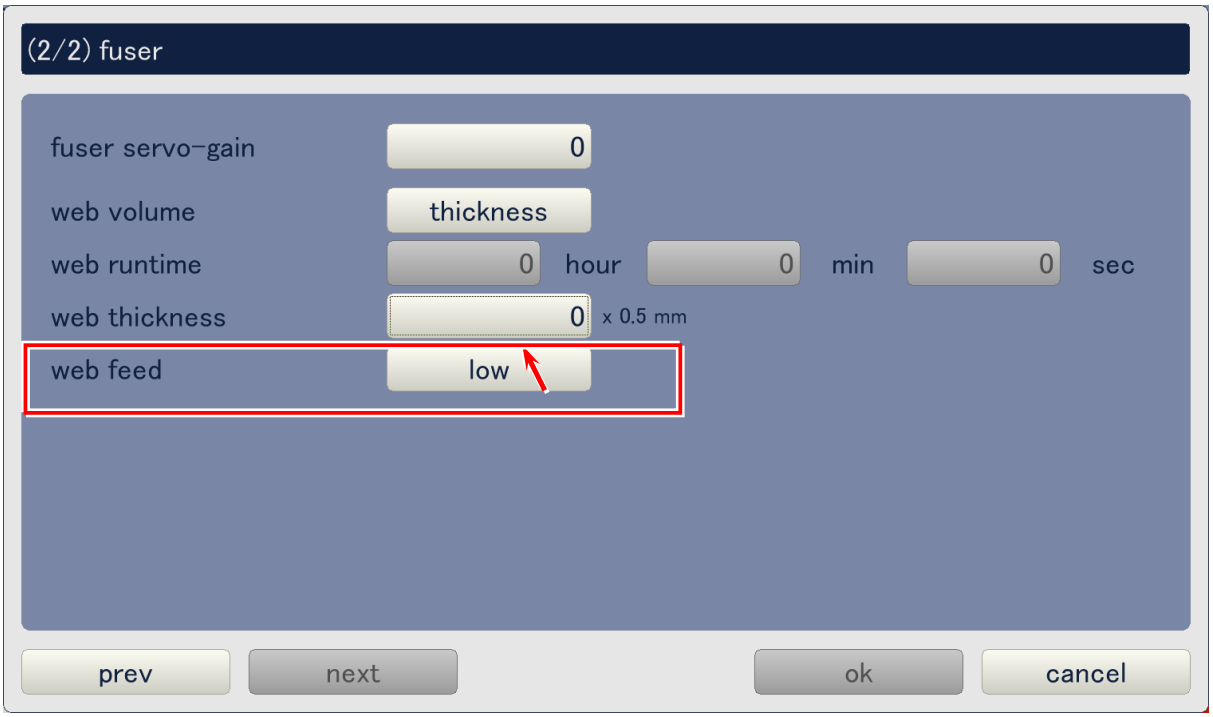


(7) Web feed

One of 3 web feeding operation modes can be selected according to the usage condition.

Click on the button beside **web feed** and choose any of 3 operation mode with referring to the following list.

Setting value	Description
low	Consumes the least amount of web. (1) Web is transported 0.15mm forward against every 500mm printing.
middle	Intermediate of settings 0 and 2. (1) Web is transported 0.3mm forward against every 500mm printing. (2) In addition to the above (1), web is fed 1.5mm forward when the printer is going to stop after printing.
high	Achieves the best cleaning for fuser roller. (1) Web is transported 0.3mm forward against every 500mm printing. (2) In addition to the above (1), web is fed 3mm forward when the printer is going to stop after printing.



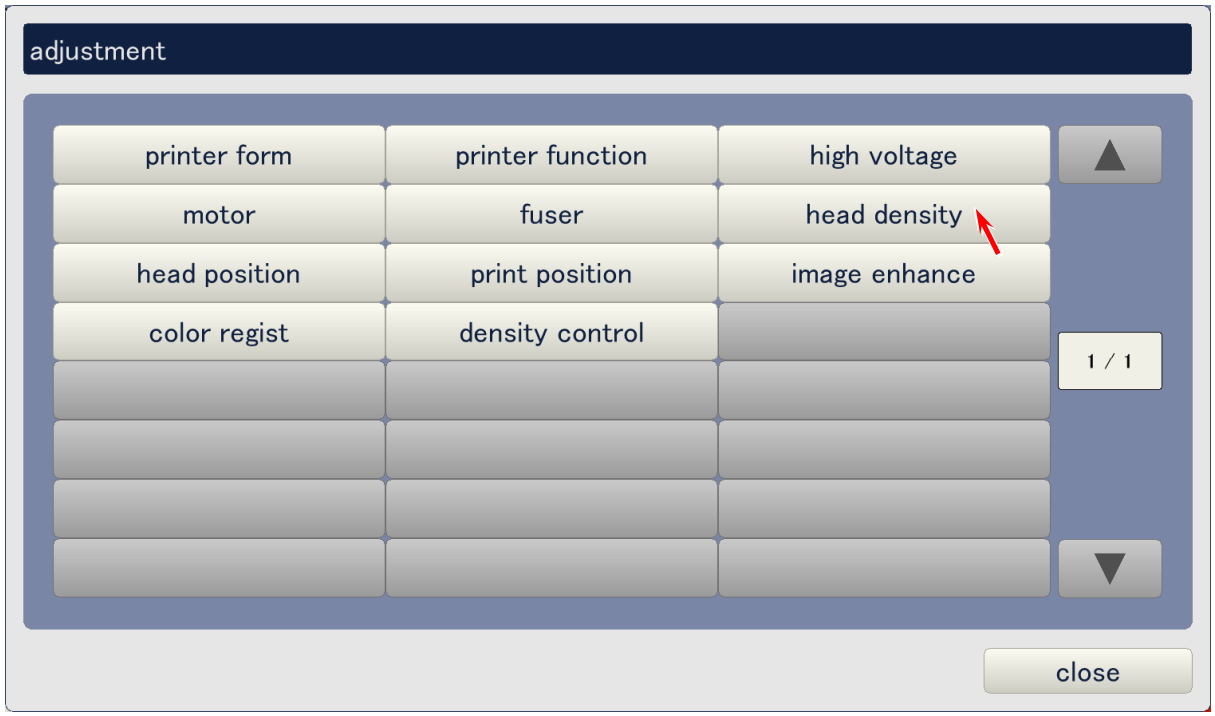
Reference

This is common with the Service Mode 4-0010.

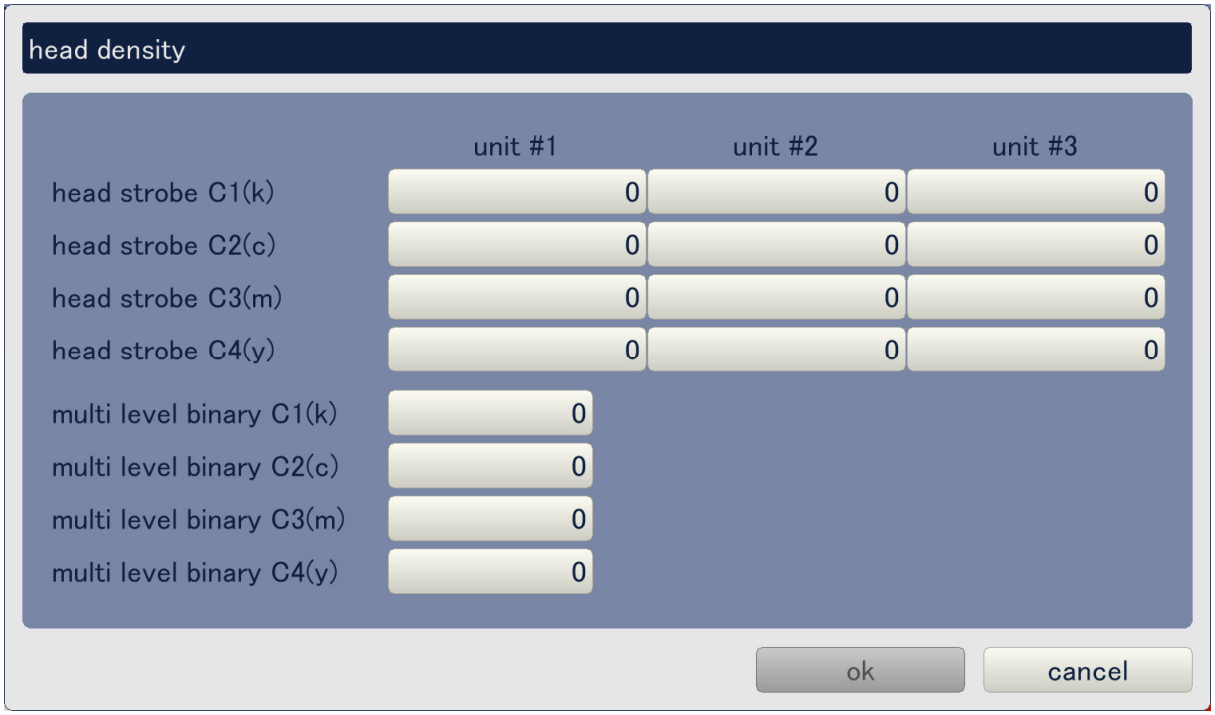


9. 5. 2. 7 Head Density

Click on **head density** to access Head Density Page. See the later pages for the description of each setting item.



Head Density Page (advanced service mode)



(1) Head strobe (C1 to C2, & unit #1 to #3)

A control voltage that decides the light intensity of LED Head can be increased or decreased. Increment of the setting value lengthens the light-on time of all 16 levels (except for level "0") of the concerning image block (1-3) of LED Head, as a result the whole image density of corresponding image block gets darker.

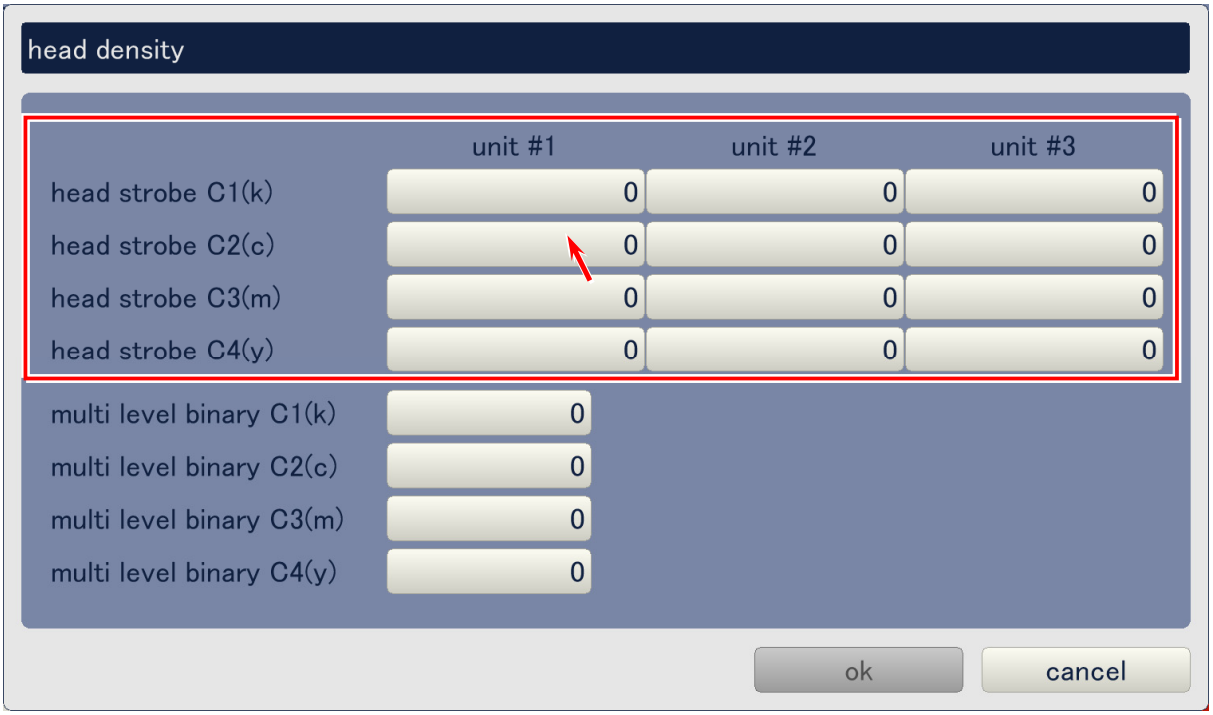
Unit #X means the target image blocks 1/2/3 of each LED Head Unit. For example, you need to choose "unit #1" when you will adjust the light-on time of the image block 1 of any color.

#1 : Image block 1 (left)
#2 : Image block 2 (center)
#3 : Image block 3 (right)

Head Strobe CX means the target color. For example, you need to choose "head strobe C1(k)" when you will adjust the light-on time of the any image block of black LED Head.

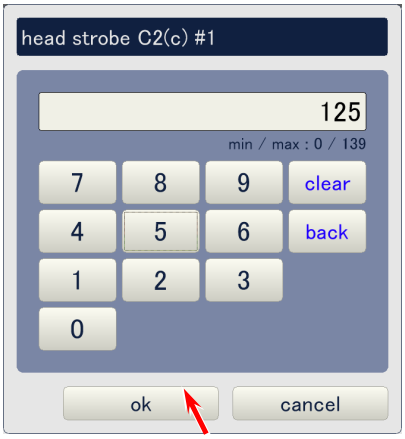
C1 : Black
C2 : Cyan
C3 : Magenta
C4 : Yellow

Click on any setting button considering image block and color, input the value in the pop up dialog, and click on **ok**. Setting range is 0 to 139.



Reference

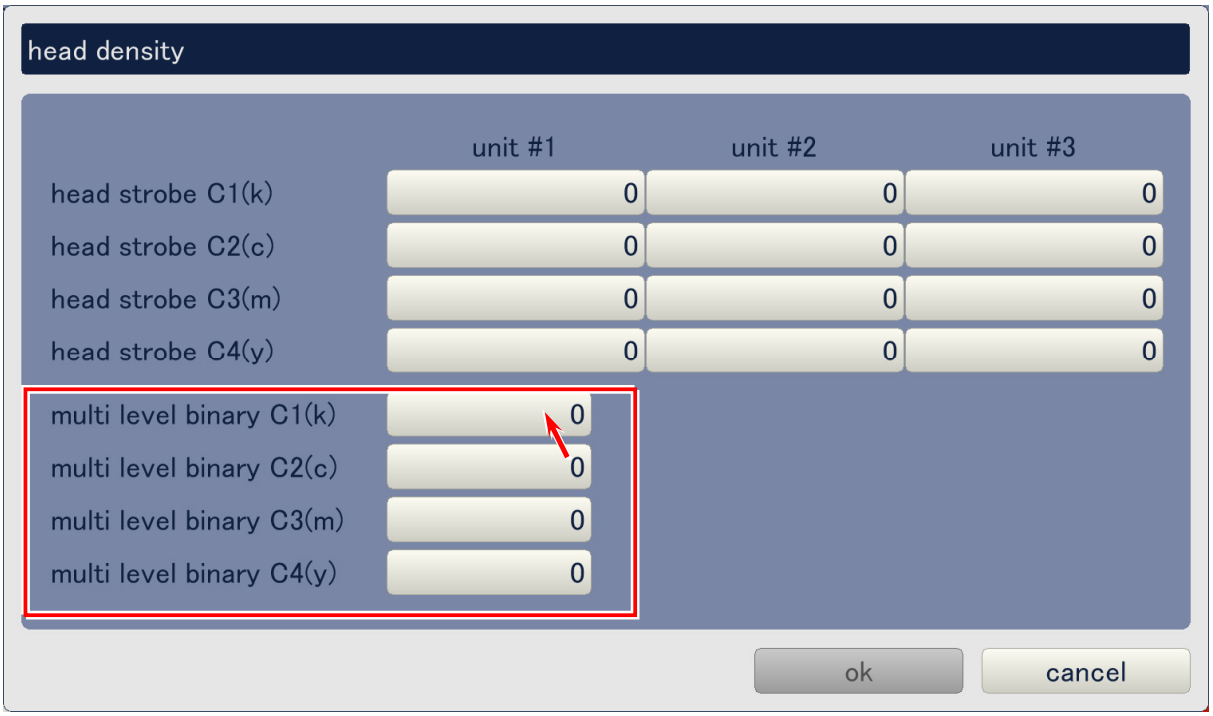
These are common with the Service Mode 4-8000 to 800b.



(2) Multi level binary (advanced service mode)

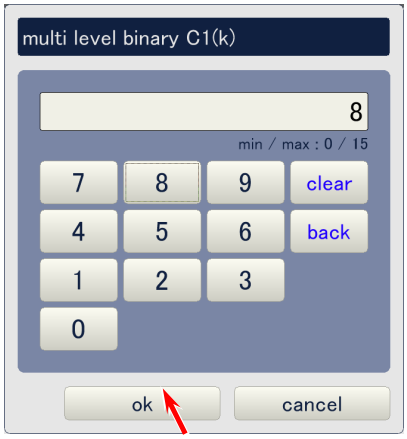
It is possible to assign any one level of 16 LED density levels as the default density level. This setting is available on a per color basis. The setting value stands for the density level. “0” is the lightest and “15” is the darkest. **The LED density level assigned here will be applied when the Image Enhancement is set to OFF.** Assigning a larger level makes the print images (pixels) darker, which belong to the concerning density range.

Click on any of setting buttons (**multi level binary C1-C4**), input the value in the pop up dialog, and click on **ok**. Setting range is 0 to 15.



Reference

These are common with the Service Mode 4-803F to 8042.

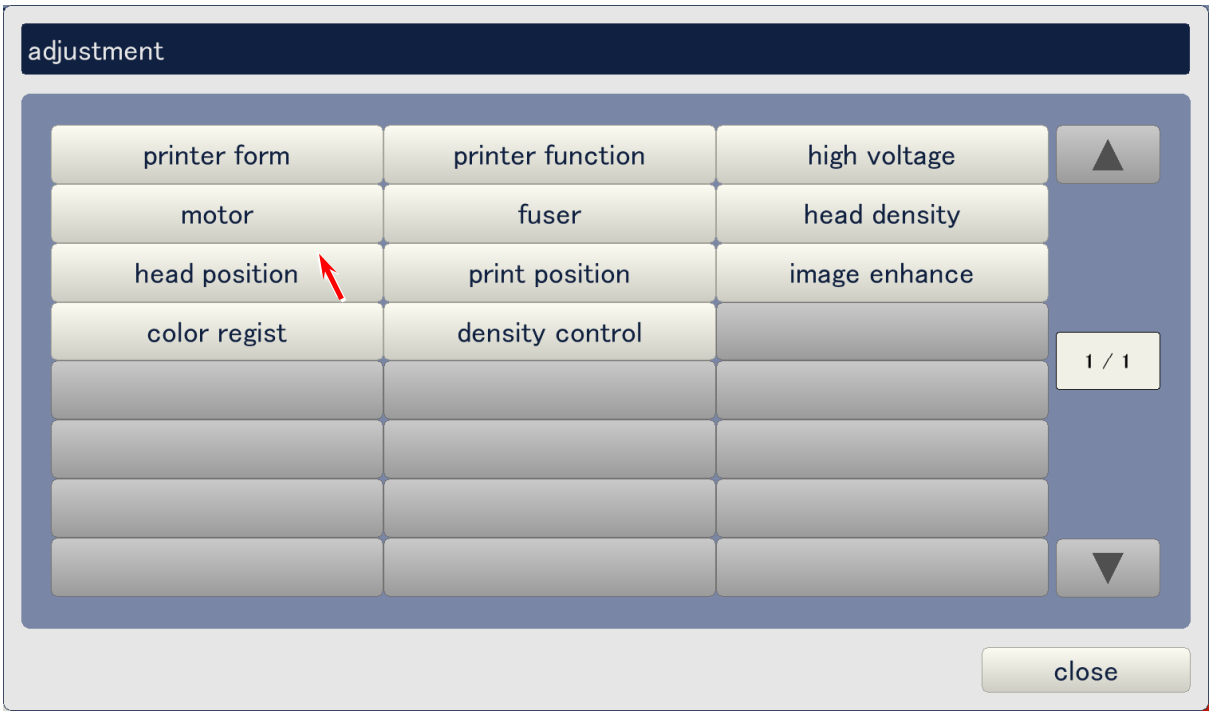


NOTE

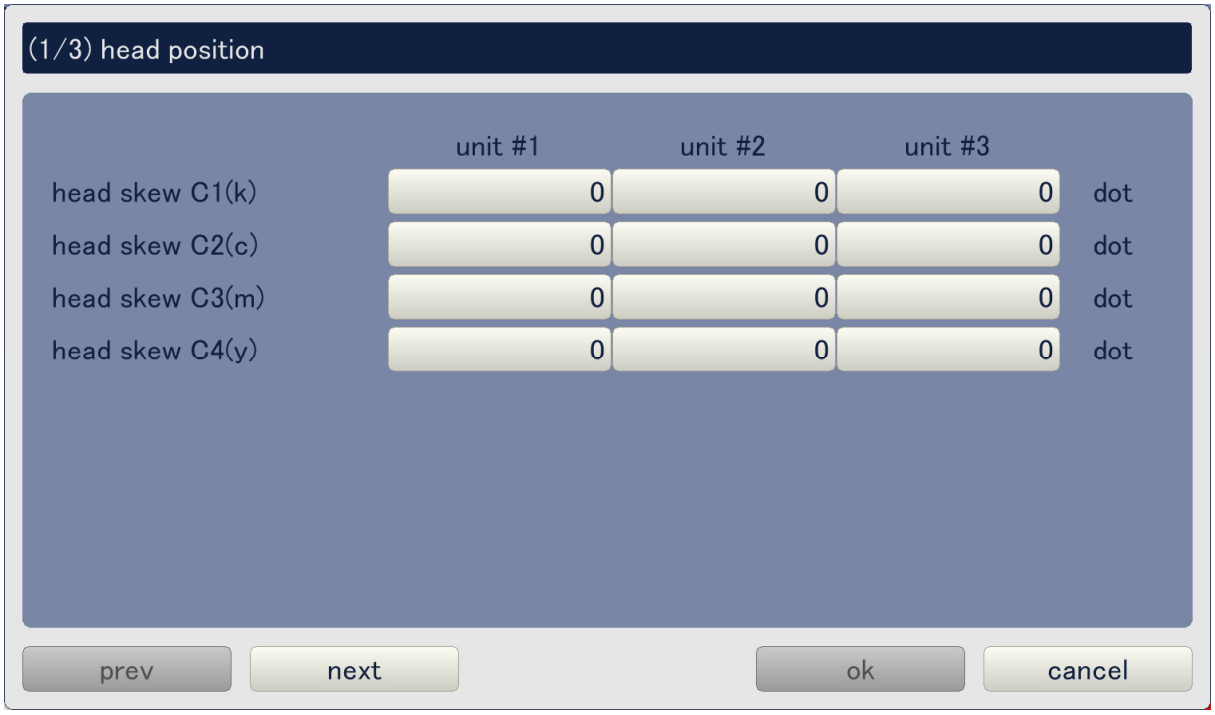
See [8.7.4.51 Assignment of LED density level to 1 bit data (No.803F to 8042)] for the technical detail of this setting.

9. 5. 2. 8 Head Position

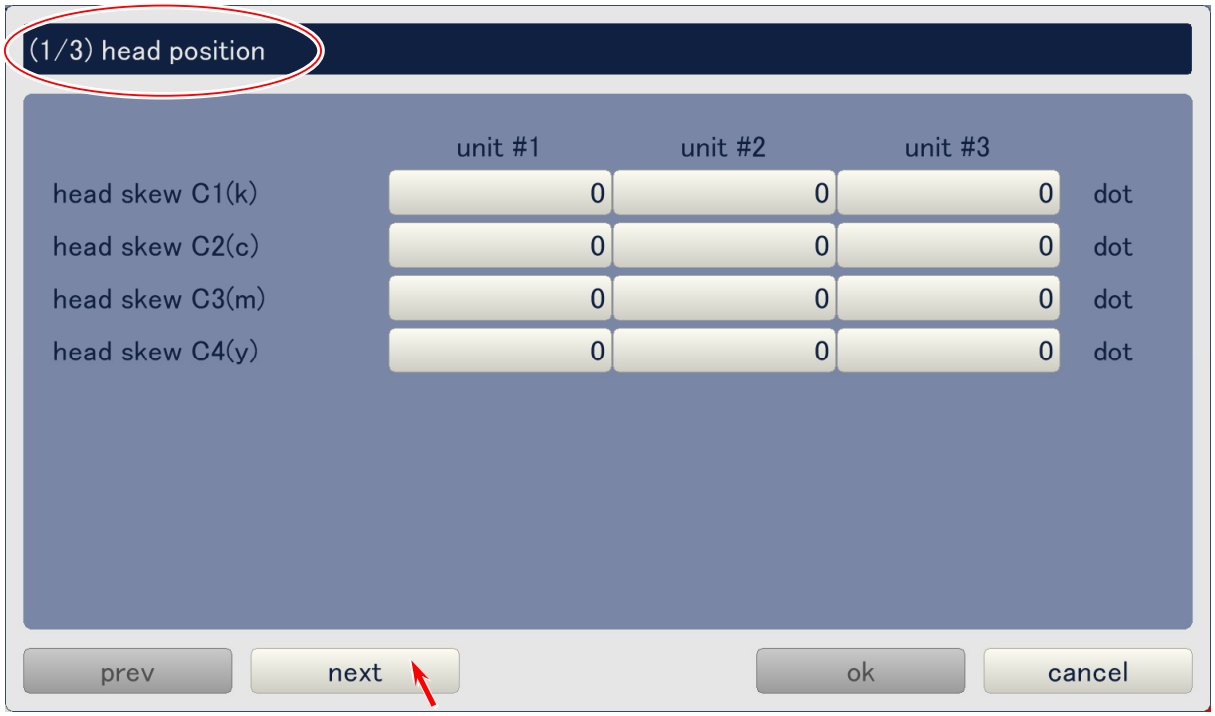
Click on head position to access the Head Position Page. See the later pages for the description of each setting item.

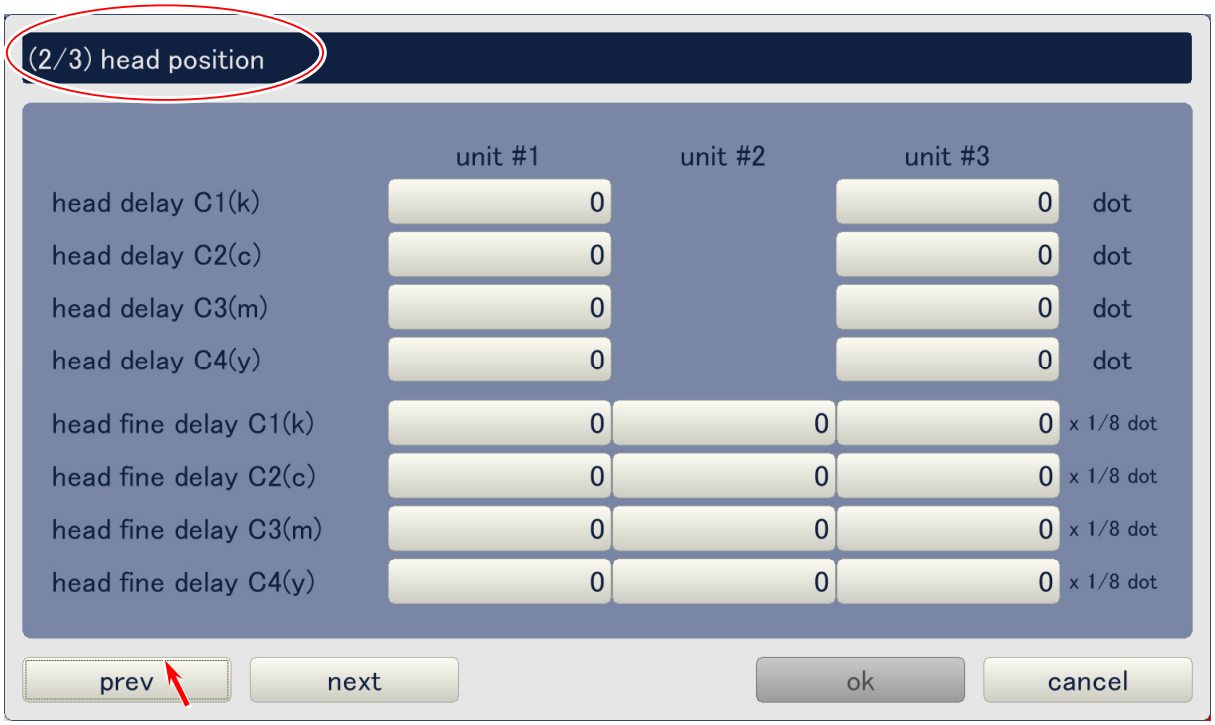


Head Position Page



Head Position Page consists of 3 pages. Use **prev** and **next** buttons to indicate other pages. Current page is shown as (1/3) on the top of the screen.





(1) Head skew (C1 to C4, unit #1 to #3)

Skew of image block can be corrected with image mapping arrangement.

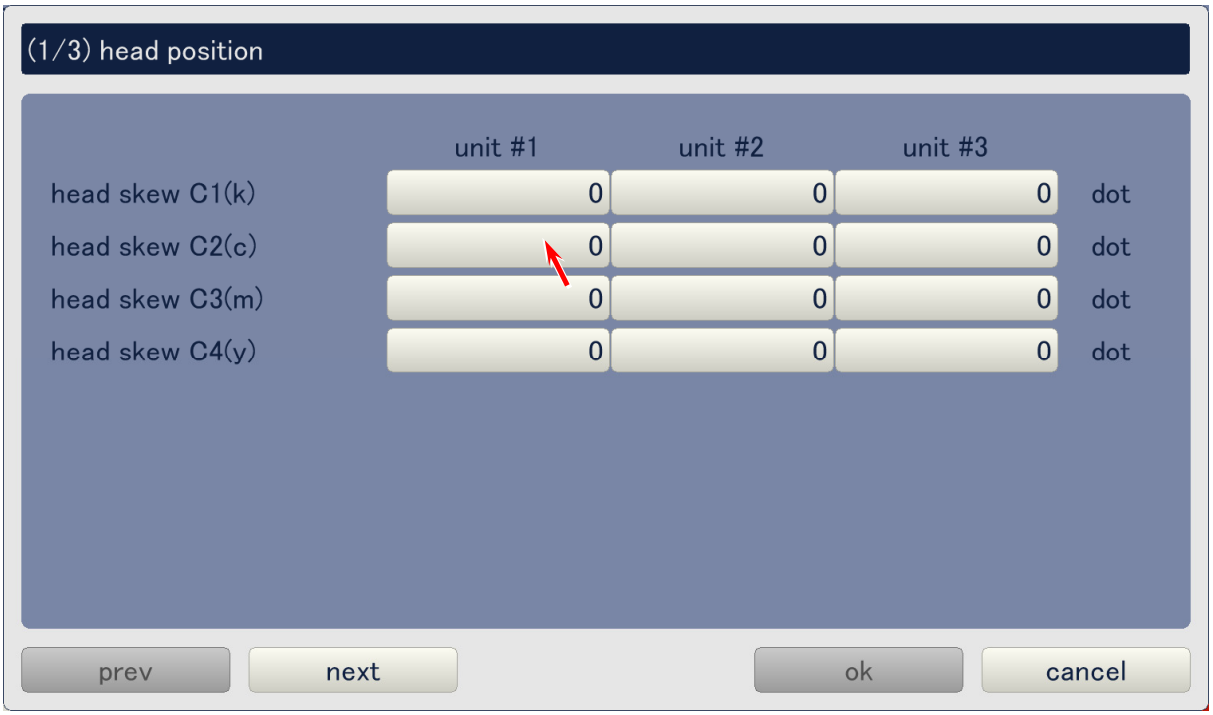
unit #X means the image blocks 1/2/3 of each LED Head Unit. For example, you need to choose "unit #1" when you will de-skew the image block 1 of any color.

#1 : Image block 1 (left)
#2 : Image block 2 (Center)
#3 : Image block 3 (right)

CX means the color.

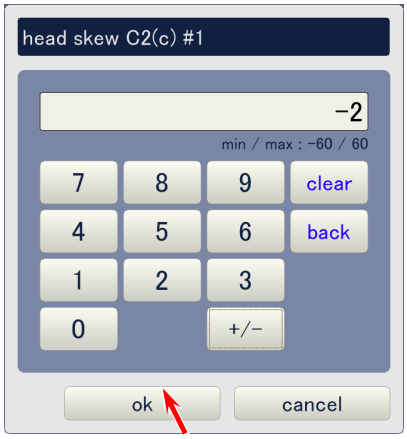
C1 : Black
C2 : Cyan
C3 : Magenta
C4 : Yellow

Click on any button considering the image block and color, input the value in the pop up dialog, and press **ok**. Setting range is -60 to 60. Increment of the value rotates the image block counter-clockwise.



Reference

These are common with the Service Mode 4-800C to 8017.



(2) Head delay (C1 to C4, main & fine adjustments)

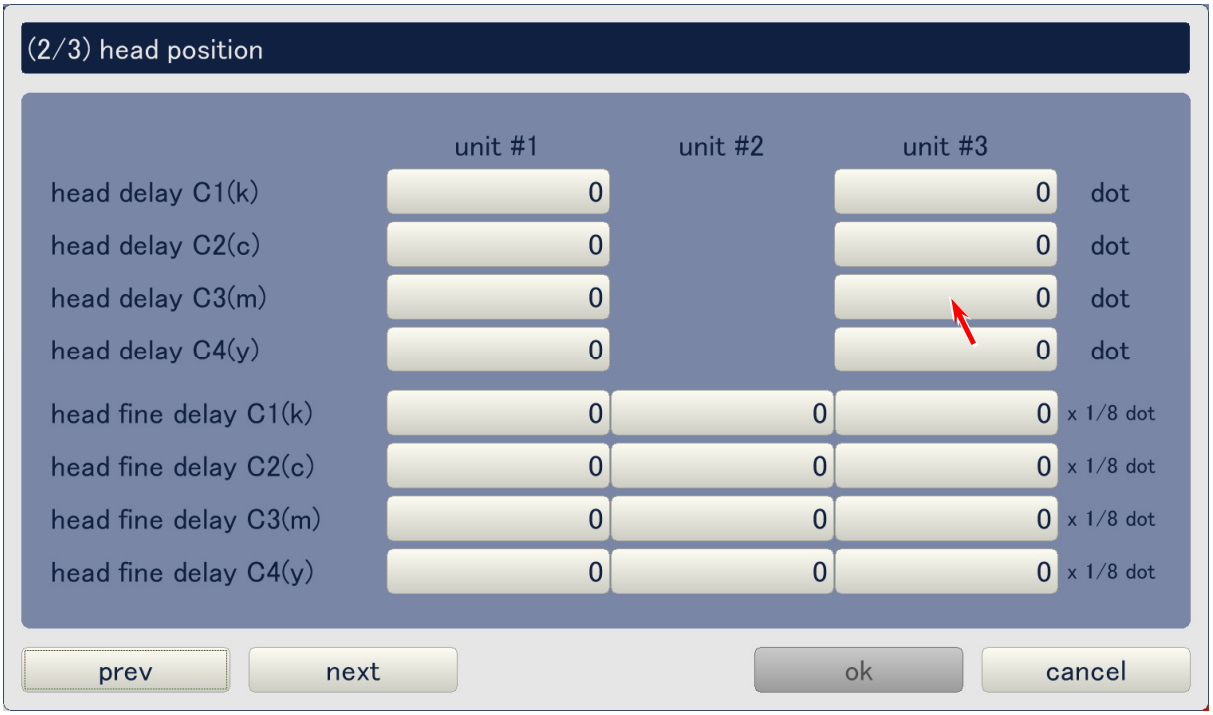
Vertical stitching among 3 image blocks can be adjusted correctly with image mapping arrangement.

unit #X means the image blocks 1/2/3 of each LED Head Unit.
- #1 : Image block 1 (left)
- #2 : Image block 2 (Center)
- #3 : Image block 3 (right)

head delay CX means vertical main stitching by 1 pixel increment.
- head delay C1 : Vertical main stitching for Black
- head delay C2 : Vertical main stitching for Cyan
- head delay C3 : Vertical main stitching for Magenta
- head delay C4 : Vertical main stitching for Yellow

head fine delay CX means vertical fine stitching by 1/8 dot increment.
- head fine delay C1 : Vertical fine stitching for Black
- head fine delay C2 : Vertical fine stitching for Cyan
- head fine delay C3 : Vertical fine stitching for Magenta
- head fine delay C4 : Vertical fine stitching for Yellow

Click on any button considering color, image block and main/fine stitching, input the value in the pop up dialog, and click on **ok**. Increment of the value moves the concerning image block to the leading edge side. Available setting ranges are;
- Main stitching : -100 to 100
- Fine stitching : 0 to 3



Reference

These are common with the Service Mode 4-8018 to 802b.



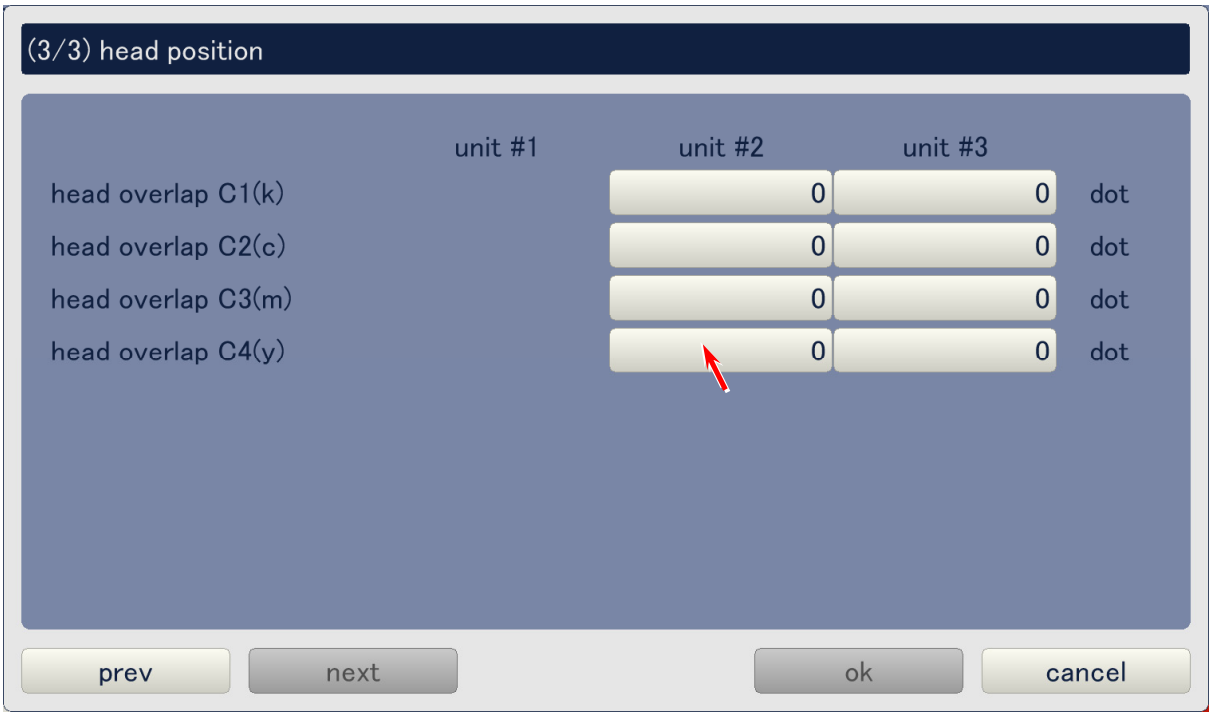
(3) Head overlap (C1 to C4, unit #2 & #3)

Horizontal arrangement among 3 image blocks can be adjusted correctly by image mapping arrangement.

unit #X means the image blocks 1/2/3 of each LED Head Unit.
- #2 : Image block 2 (center)
- #3 : Image block 3 (right)

head overlap CX means horizontal arrangement.
- head overlap C1 : Horizontal arrangement for Black
- head overlap C2 : Horizontal arrangement for Cyan
- head overlap C3 : Horizontal arrangement for Magenta
- head overlap C4 : Horizontal arrangement for Yellow

Click on any button considering color and image block, input the value in the pop up dialog, and click on **ok**. Setting ranges is -60 to 60. Increment of the value moves the concerning image block to the right.



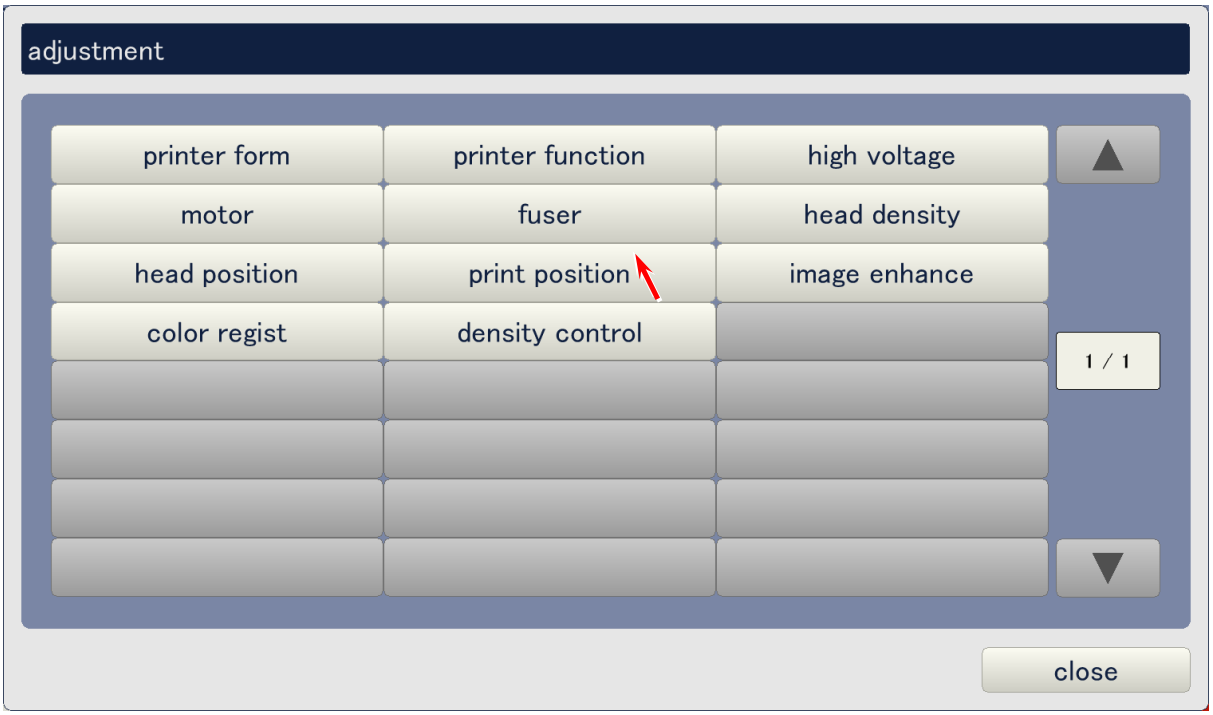
Reference

These are common with the Service Mode 4-802C to 8033.

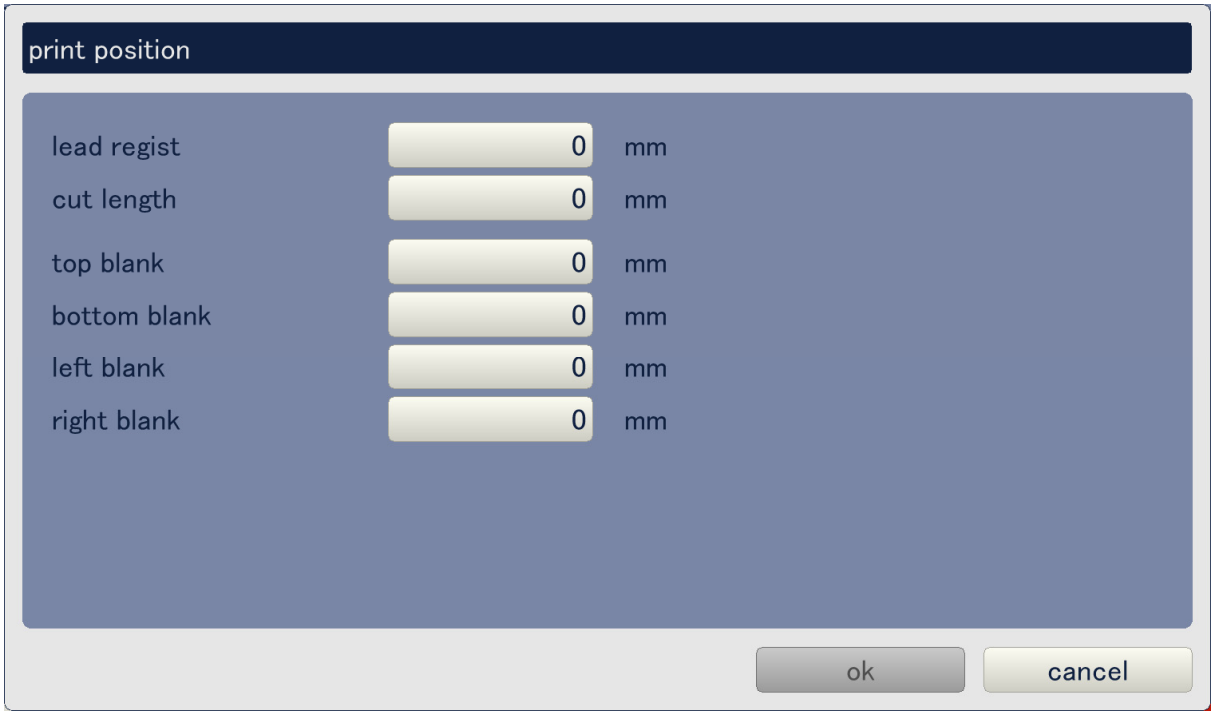


9. 5. 2. 9 Print Position

Print Position Page is opened when [print position] button is pressed. See the later pages for the description of each setting item.



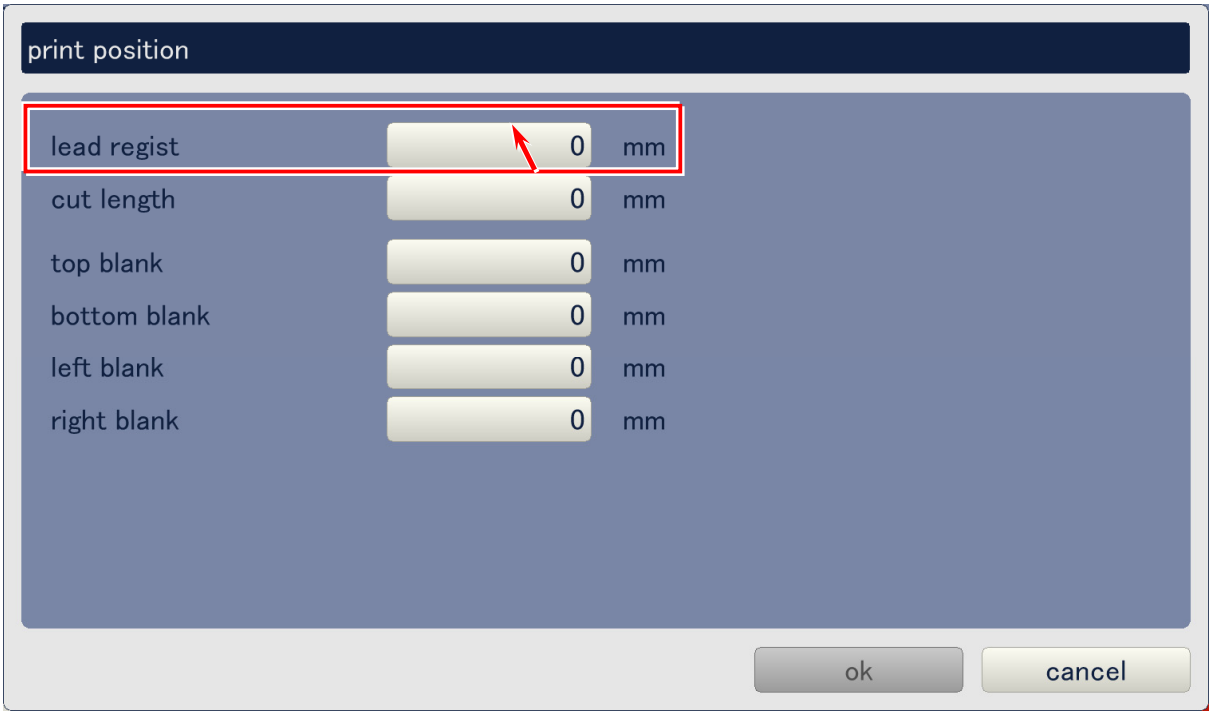
Print Position Page



(1) Lead regist

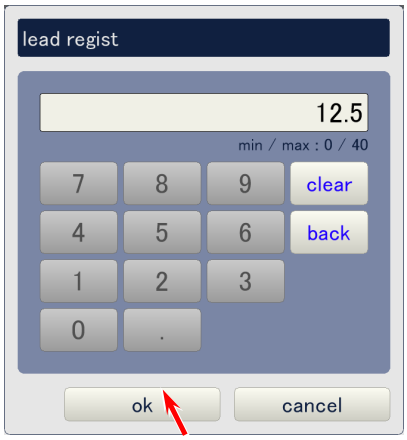
Image placement against the printing media can be adjusted.

To change the setting, click on the button beside **lead regist**, input the required value in the pop up dialog, and click on **ok**. Setting ranges is 0 to 40.0. Increment of the setting value moves the image to the trailing edge side.



Reference

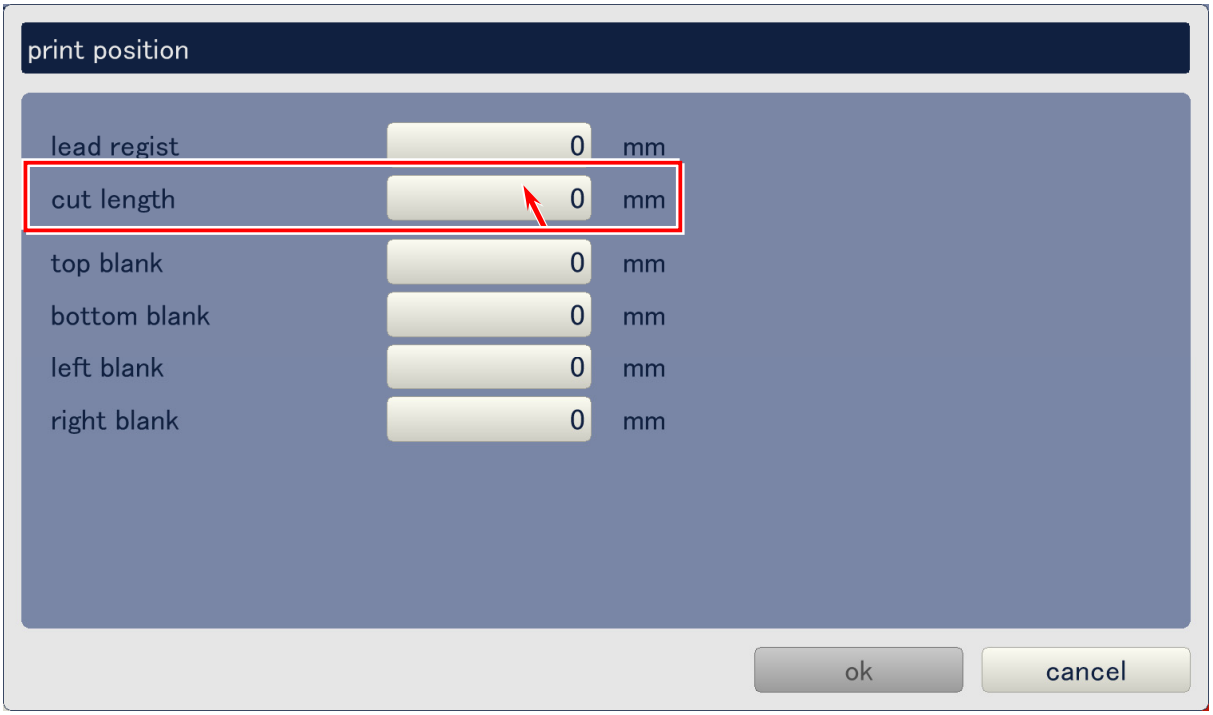
This is common with the Service Mode 4-9000.



(2) Cut length

Cut length can be adjusted.

To change the setting, click on the button beside **cut length**, input the required value in the pop up dialog, and click on **ok**. Setting ranges is 0 to 20.0. Increment of the setting value makes the cut length shorter.



Reference

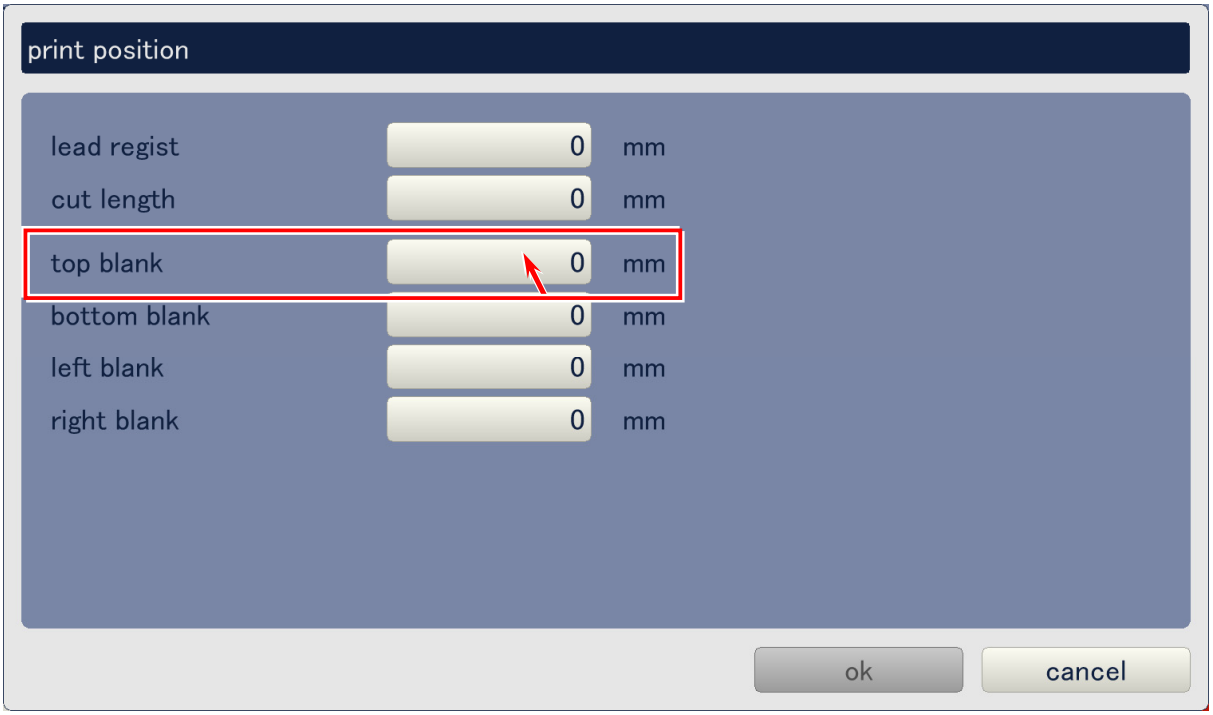
This is common with the Service Mode 4-9001.



(3) Top blank

Leading margin can be adjusted by specifying how long leading image should be removed.

To change the setting, click on the button beside **top blank**, input the required value in the pop up dialog, and click on **ok**. Setting ranges is 0 to 8.0. Increment of the setting value provides more leading margin, that is, removes more leading image.



Reference

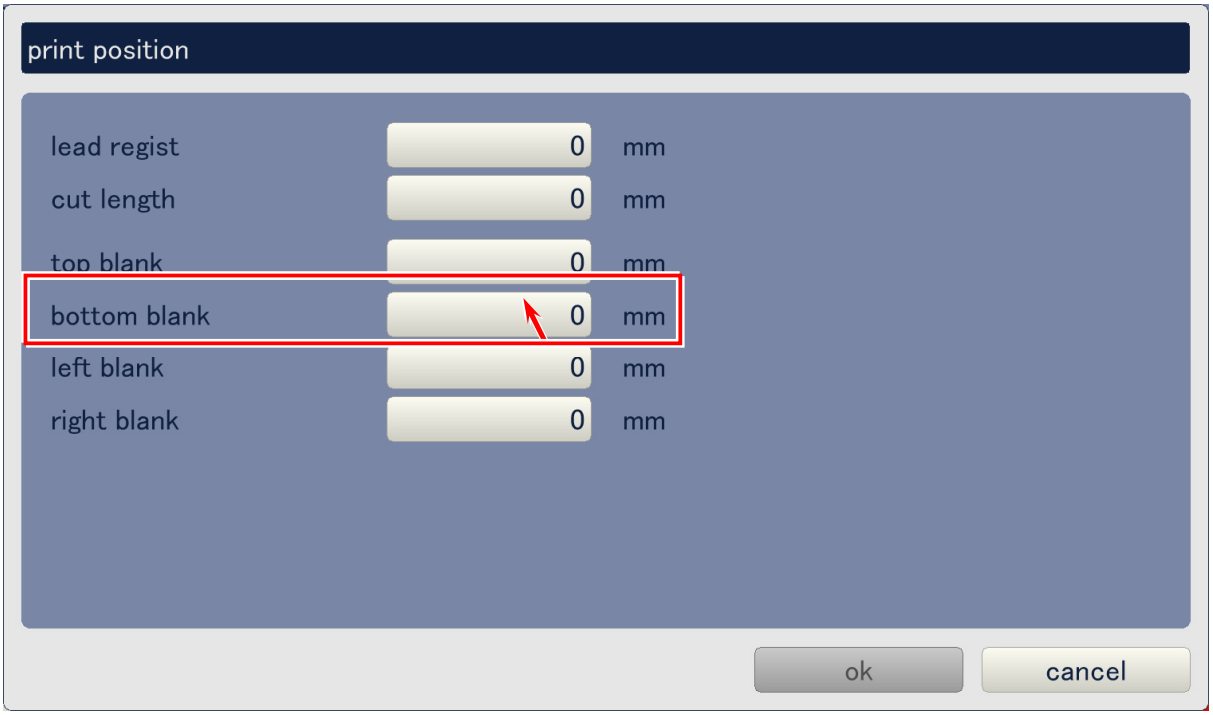
This is common with the Service Mode 4-9002.



(4) Bottom blank

Trailing margin can be adjusted by specifying how long trailing image should be removed.

To change the setting, click on the button beside **bottom blank**, input the required value in the pop up dialog, and click on **ok**. Setting ranges is 0 to 20.0. Increment of the setting value provides more trailing margin, that is, removes more trailing image.



Reference

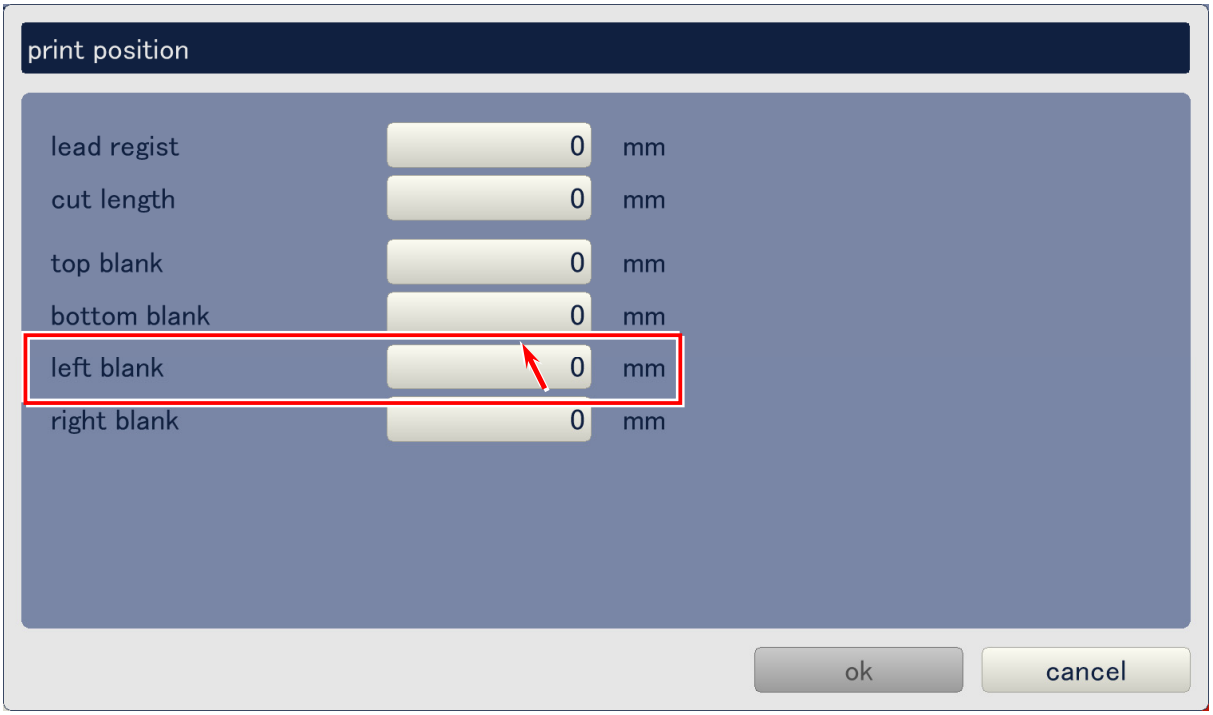
This is common with the Service Mode 4-9003.



(5) Left blank

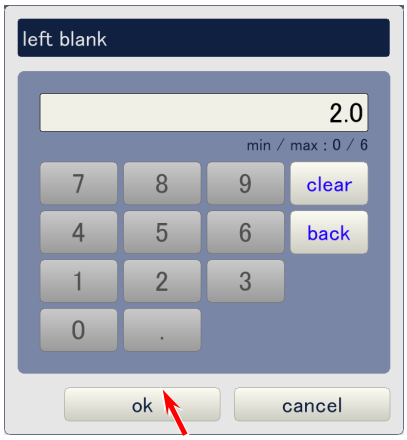
Left margin can be adjusted by specifying how wide left image should be removed.

To change the setting, click on the button beside **left blank**, input the required value in the pop up dialog, and click on **ok**. Setting ranges is 0 to 6.0. Increment of the setting value provides more left margin, that is, removes more left image.



Reference

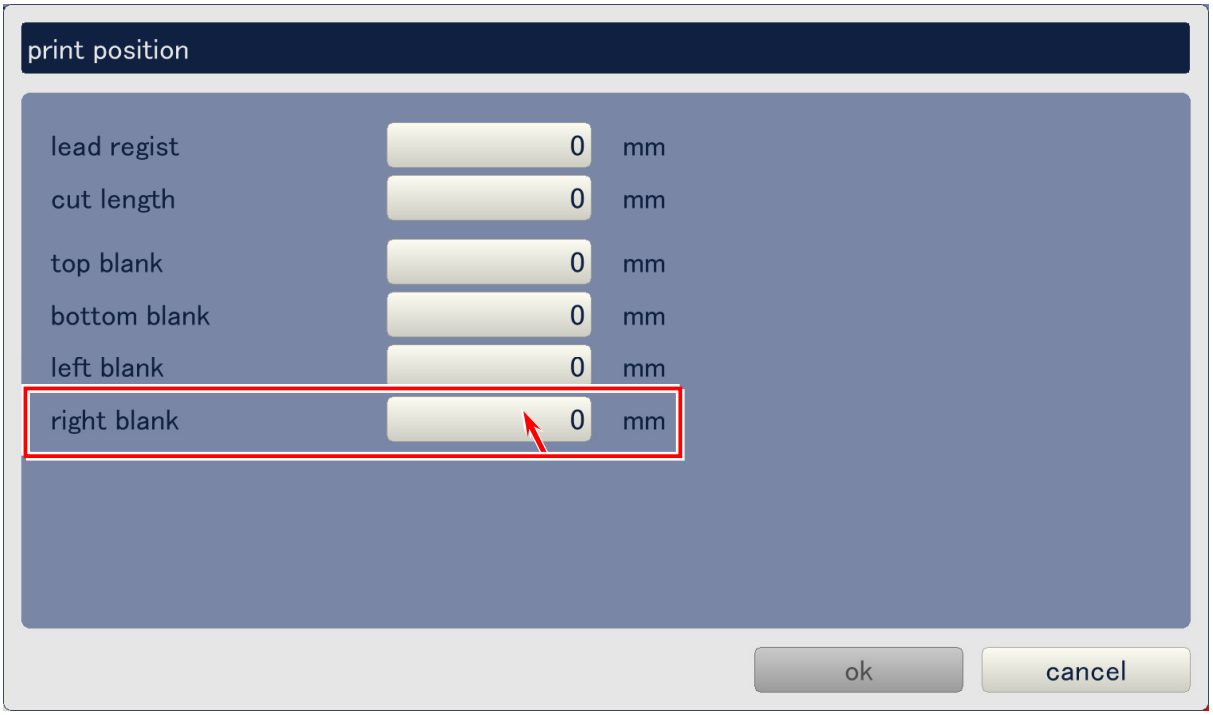
This is common with the Service Mode 4-9004.



(6) Right blank

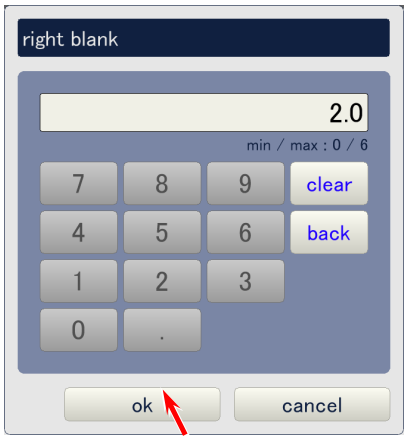
Right margin can be adjusted by specifying how wide right image should be removed.

To change the setting, click on the button beside **right blank**, input the required value in the pop up dialog, and click on **ok**. Setting ranges is 0 to 6.0. Increment of the setting value provides more right margin, that is, removes more right image.



Reference

This is common with the Service Mode 4-9005.



9. 5. 2. 10 Image Enhance (advanced service mode only)

Click on **image enhance** to access the Image Enhance Page. See the later pages for the description of each setting item.

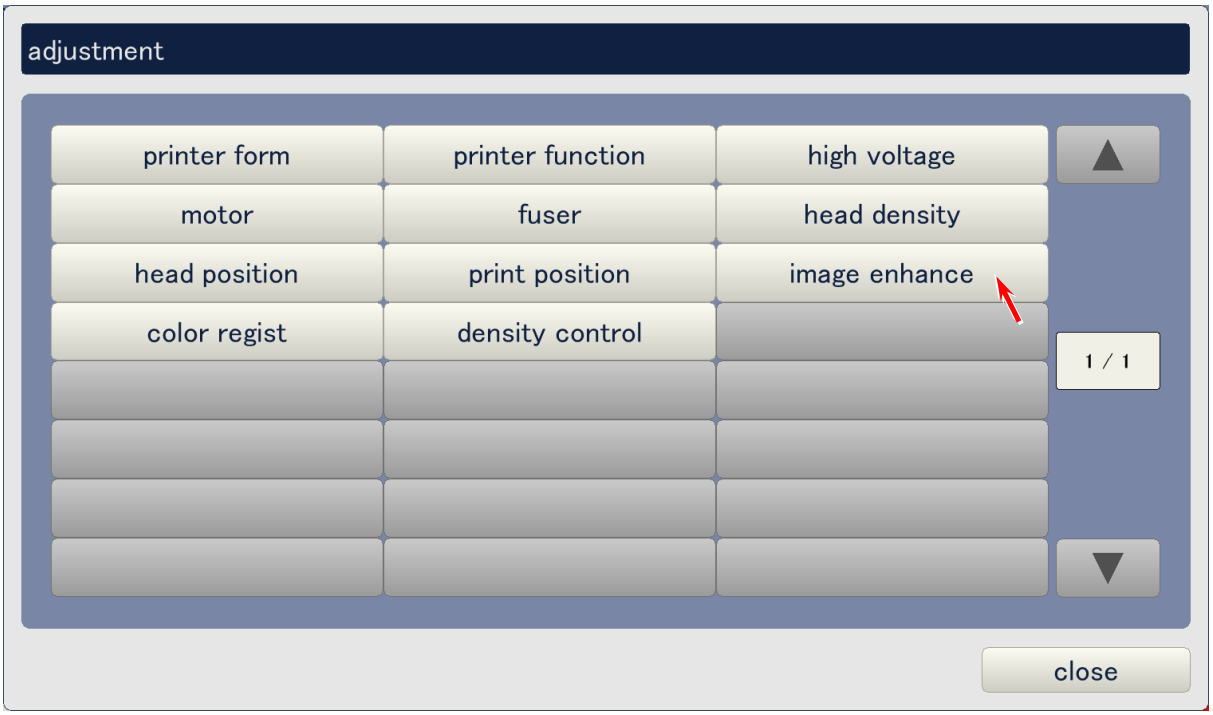


Image Enhance Page (advanced service mode)

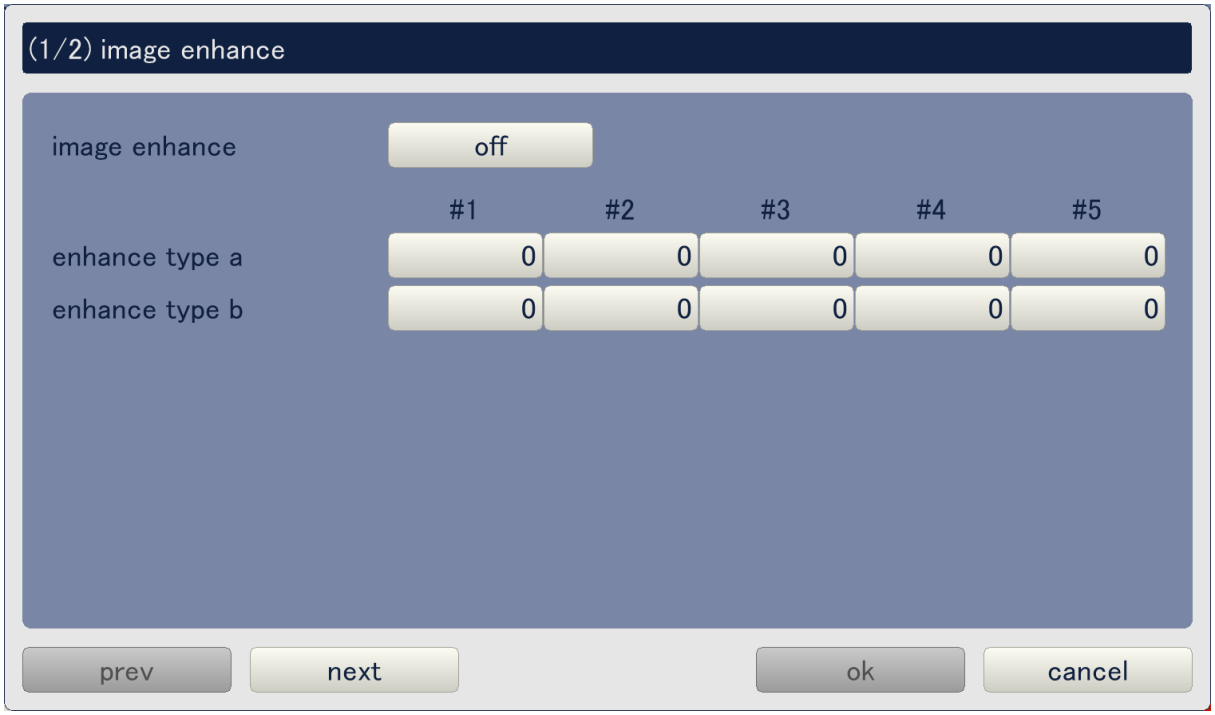
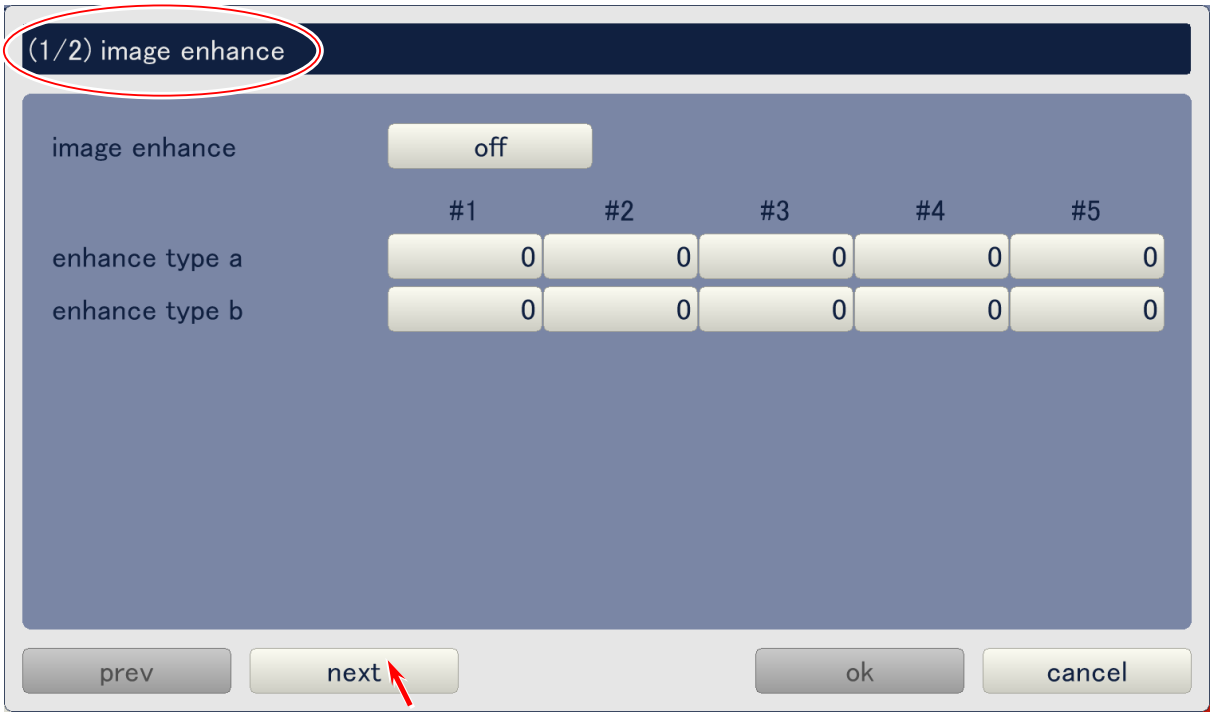
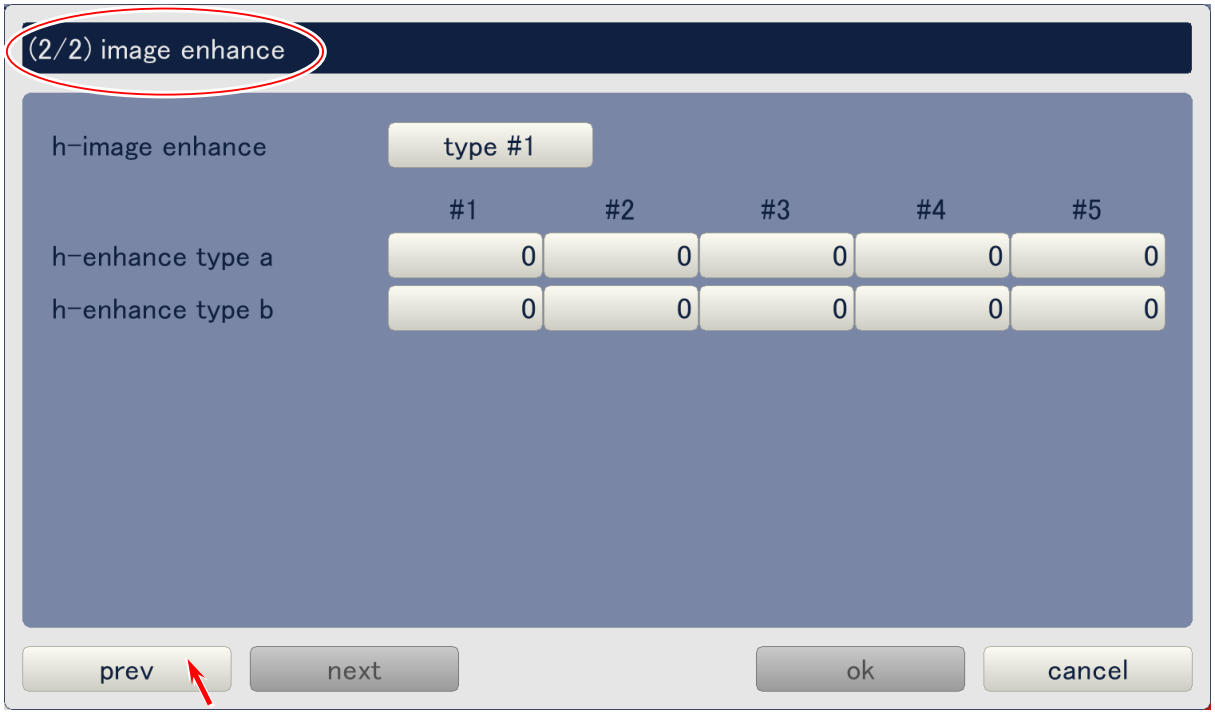


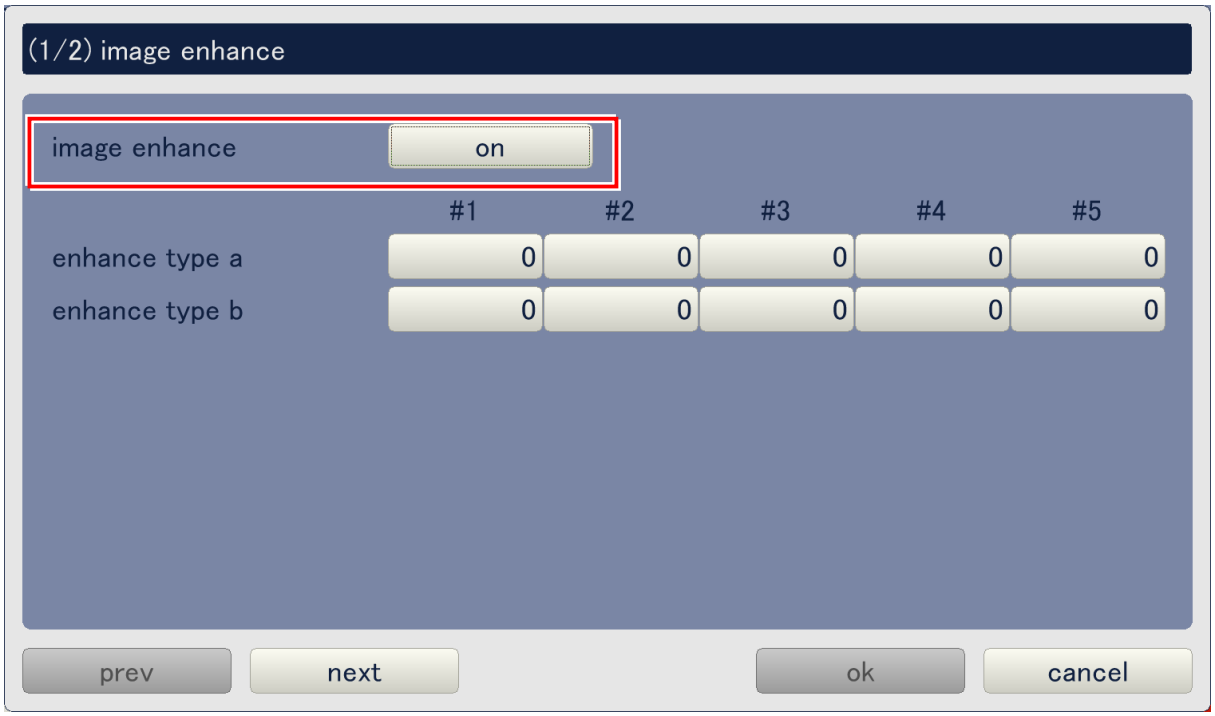
Image Enhance Page consists of 2 pages. Use **prev** and **next** buttons to indicate the other page. Current page is shown as (1/2) on the top of the screen.





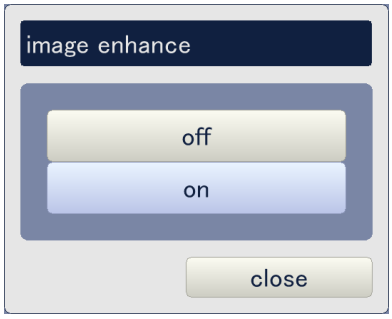
(1) Image enhance (advanced service mode)

It is possible to activate or inactivate the Image Enhancement. **Please keep the factory default setting, and never try to change them unless required especially by the manufacturer!**



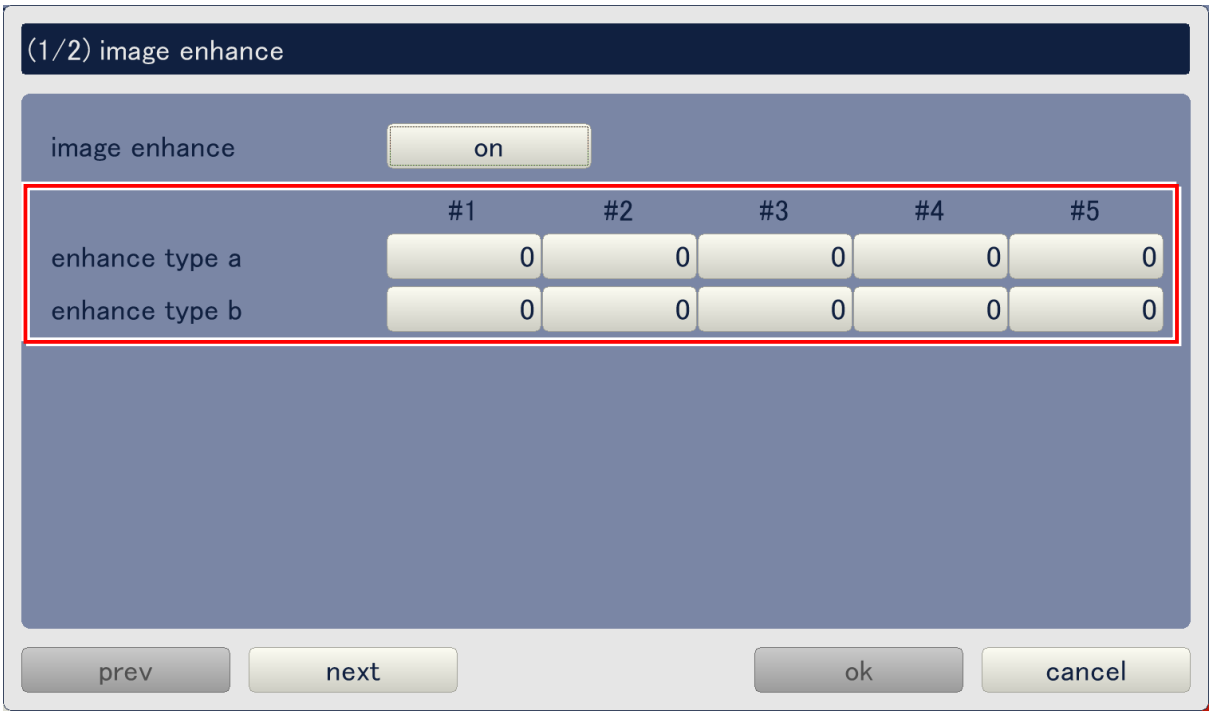
Reference

This is common with the Service Mode 4-8034.



(2) Enhance type (a & b, #1 to #5) (advanced service mode)

Effect of image enhancement for test print can be changed. **Please keep the factory default settings, and never try to change them unless required especially by the manufacturer!**

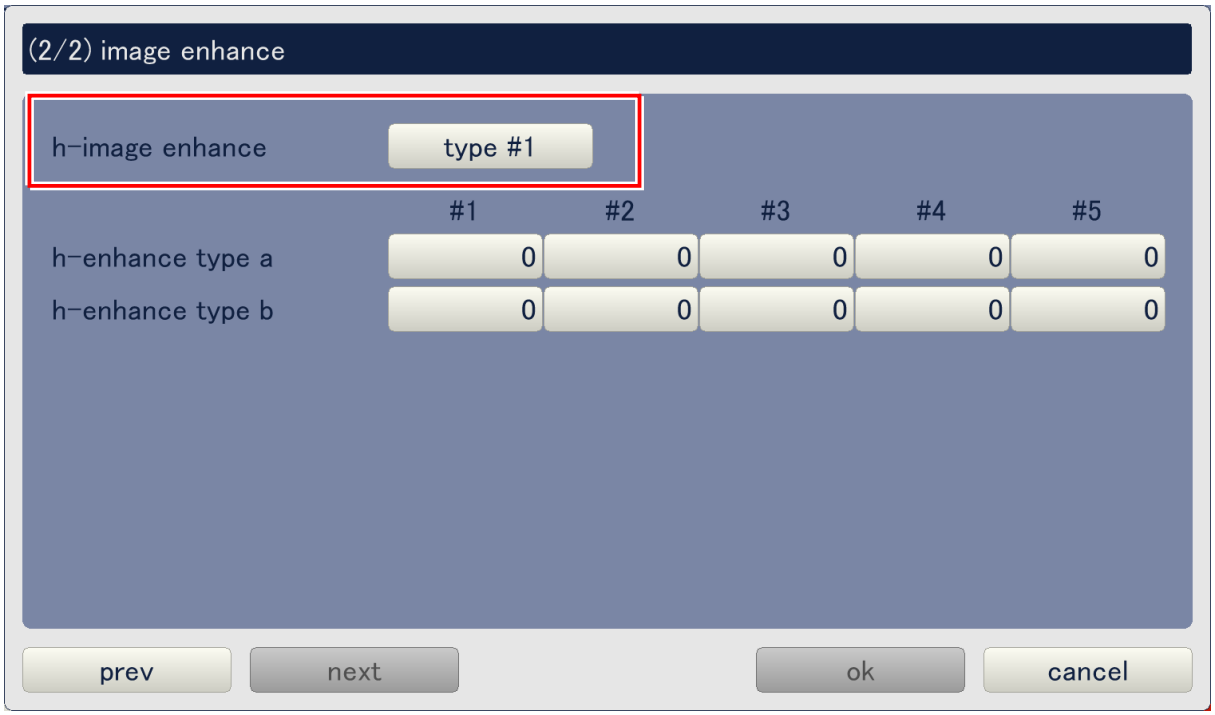


Reference

These are common with the Service Mode 4-8035 to 803E.

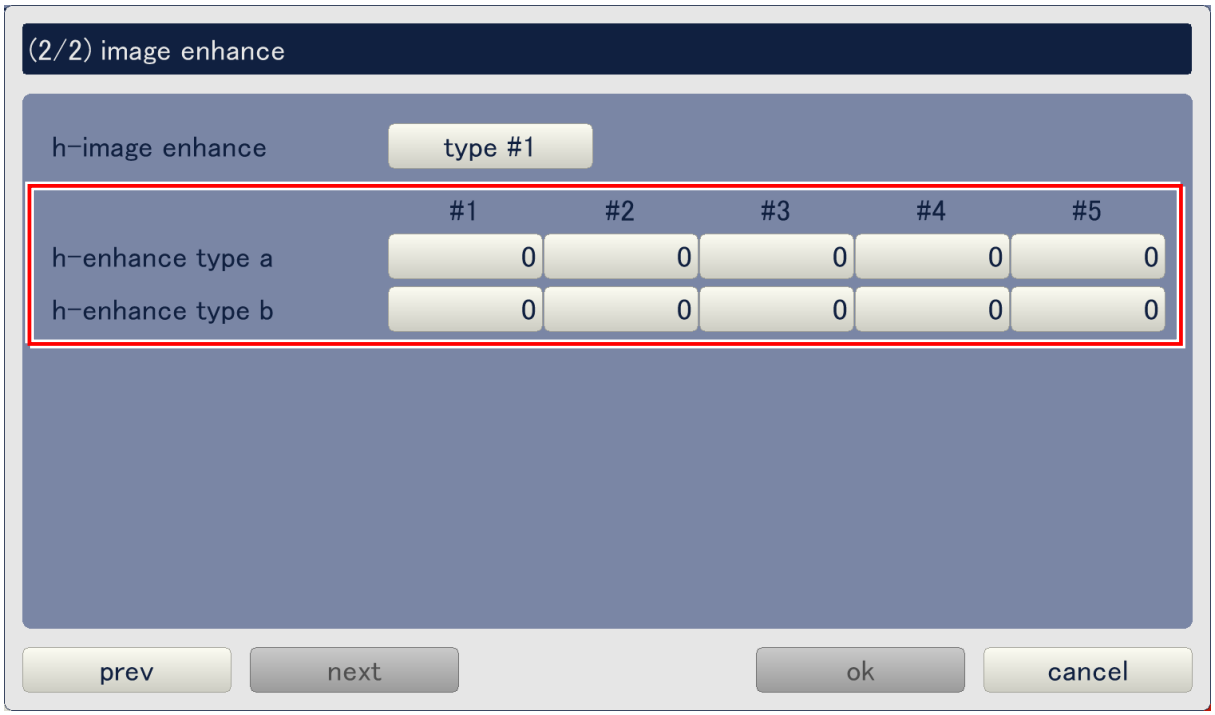
(3) h-image enhance (advanced service mode)

Effect of image enhancement can be changed. **Please do not touch this setting unless required especially by the manufacturer!**



(4) h-enhance type (a & b, #1 to #5) (advanced service mode)

Effect of image enhancement can be changed. **Please keep the factory default settings, and never try to change them unless required especially by the manufacturer!**

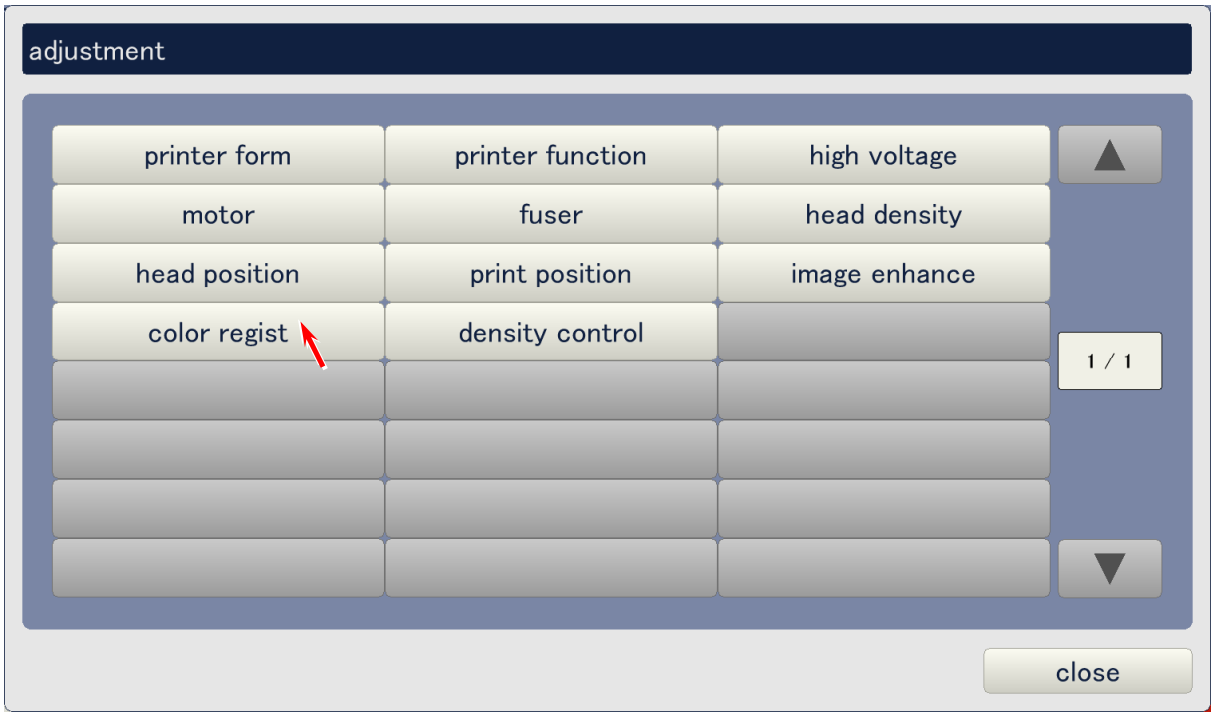


Reference

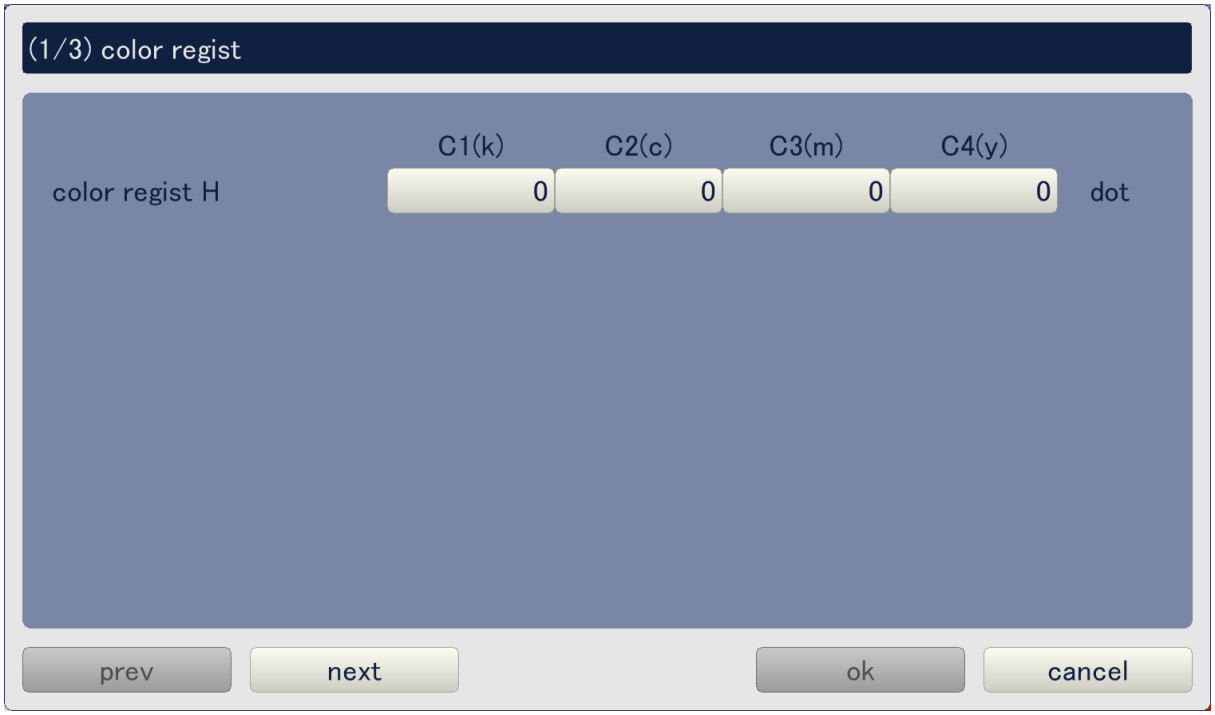
These are common with the Service Mode 4-8044 to 8092.

9. 5. 2.11 Color Regist

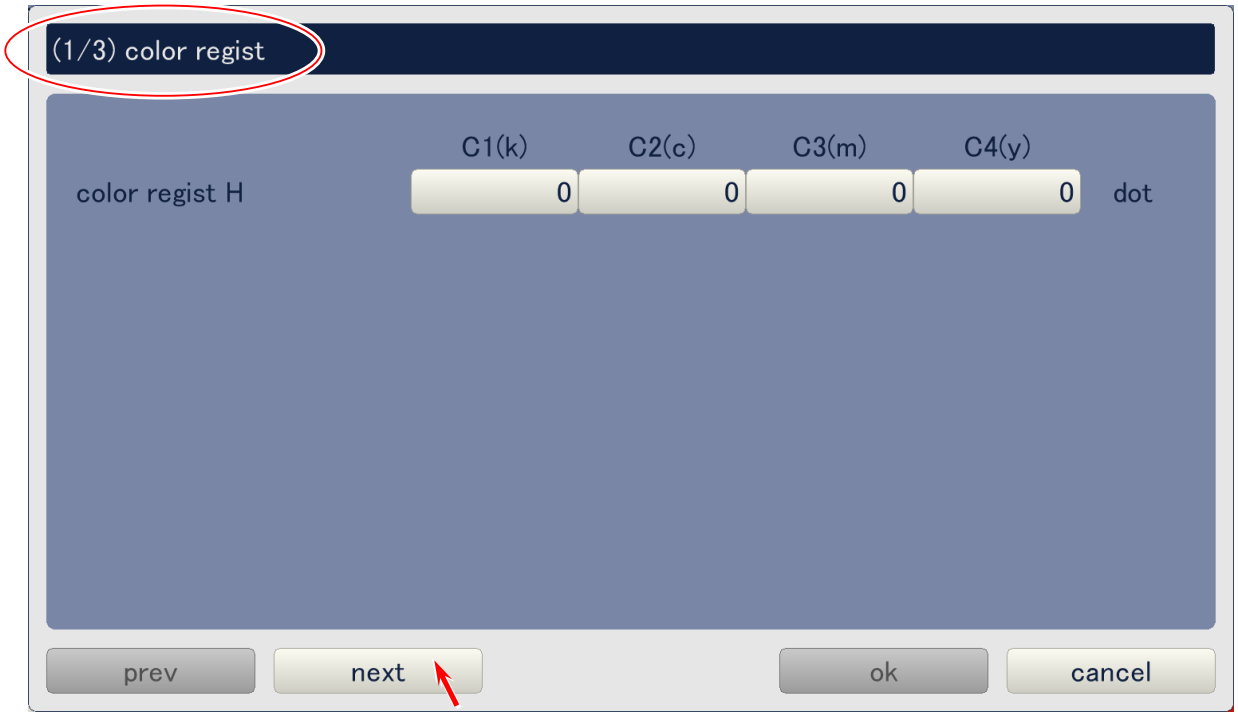
Click on **color regist** to access the Color Regist Page. See the later pages for the description of each setting item.

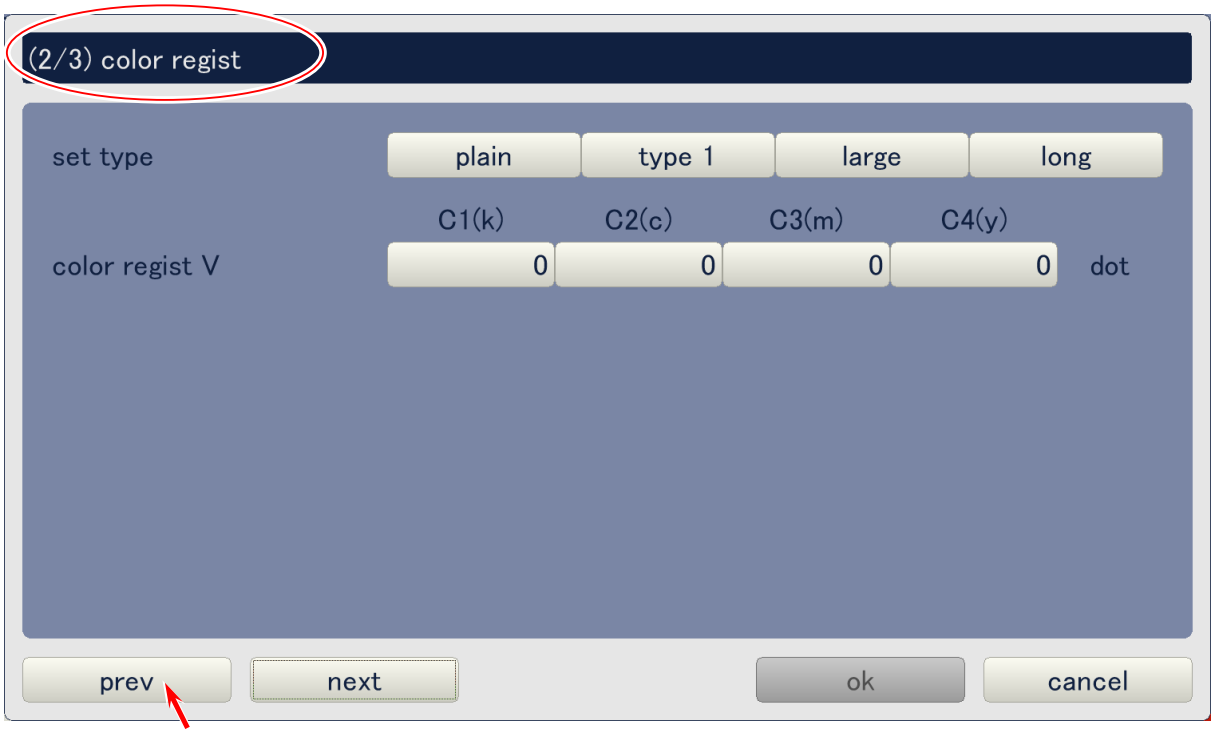


Color Regist Page



Color Regist Page consists of 3 pages. Use **prev** and **next** buttons to indicate other pages.
Current page is shown as (1/2) on the top of the screen.



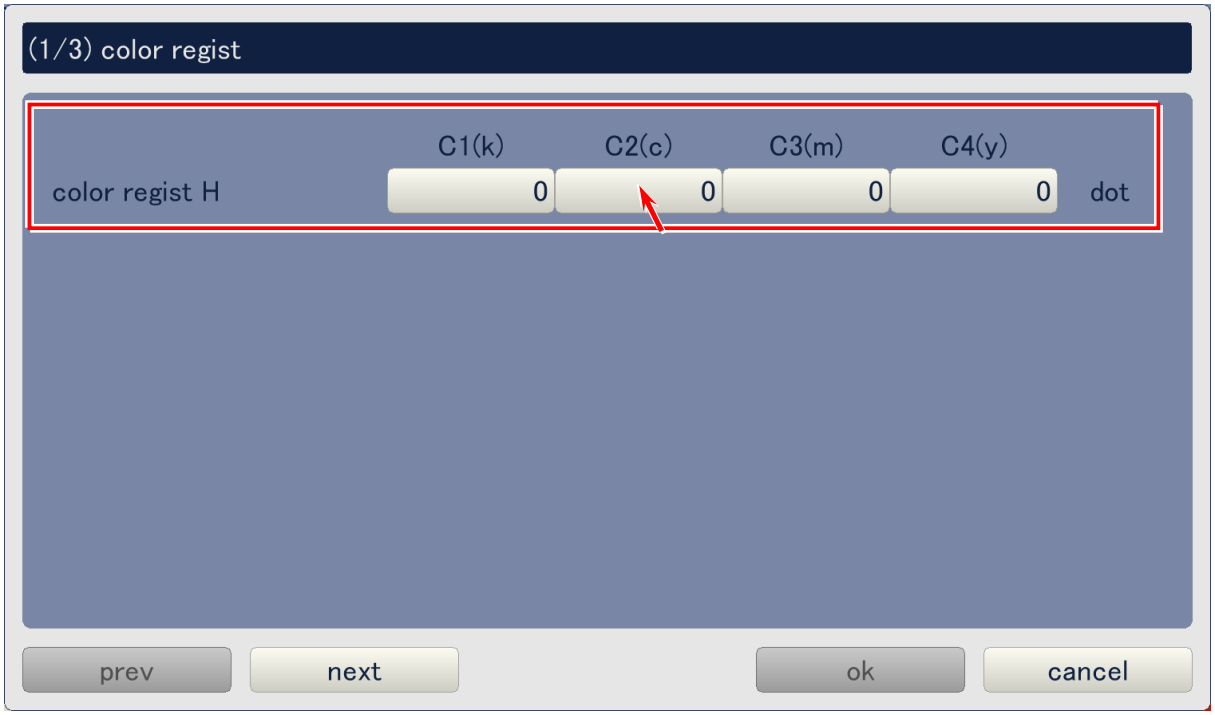


(1) Color regist H

Horizontal color registration can be adjusted manually.

CX means the color.
C1 : Black
C2 : Cyan
C3 : Magenta
C4 : Yellow

Click on any button, input the requested value in the pop up dialog, and click on **ok**. Setting range is -128 to 128. Increment of the setting value moves the concerning color image to the right.



Reference

These are common with the Service Mode 4-E000 to E003.

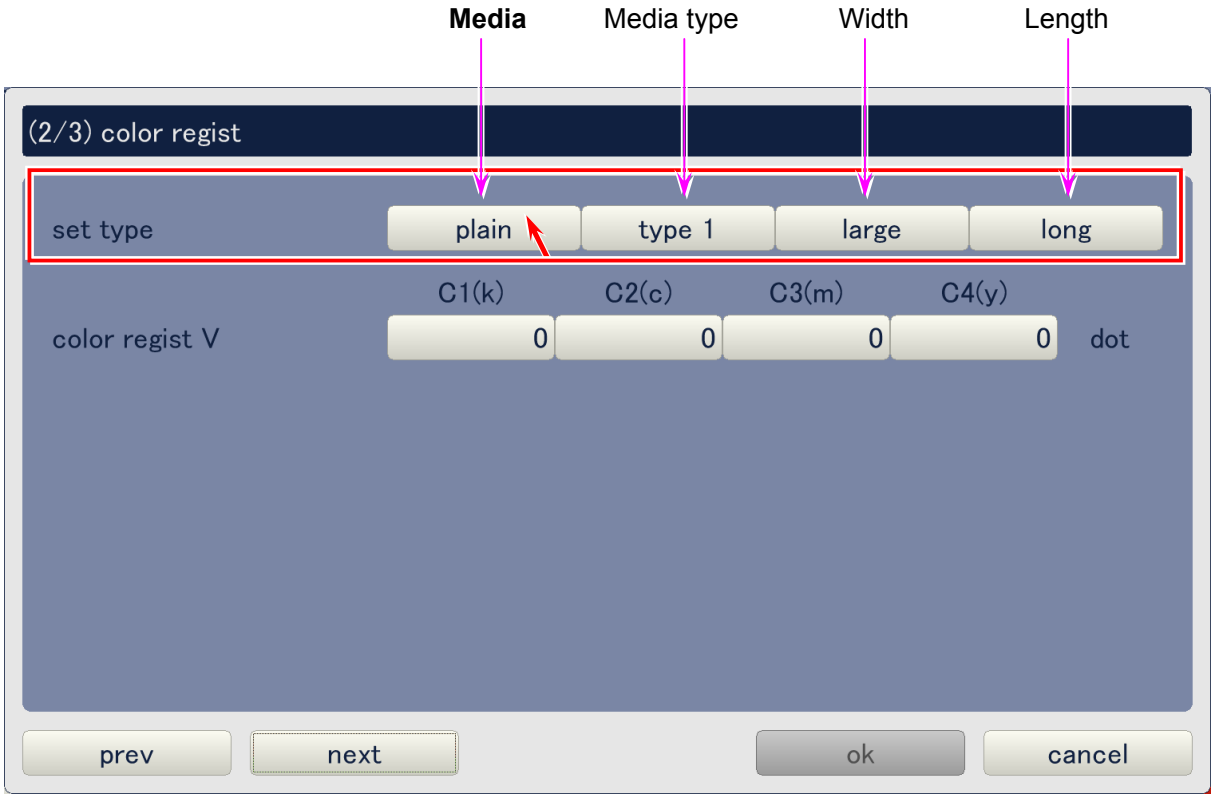


(2) Color regist V

Vertical color registration can be adjusted manually being related with such target conditions as media, media type (type #X), media width and media length. Increment of the setting value moves the targeted color image to the trailing edge.

- The left button of **set type** decides the target media which the vertical color registration setting is to be applied to. For example, you need to set this to plain paper when you will adjust the vertical color registration that is applied when printing with any plain paper.

  To change the setting, click on the button and select any media in the pop up dialog.



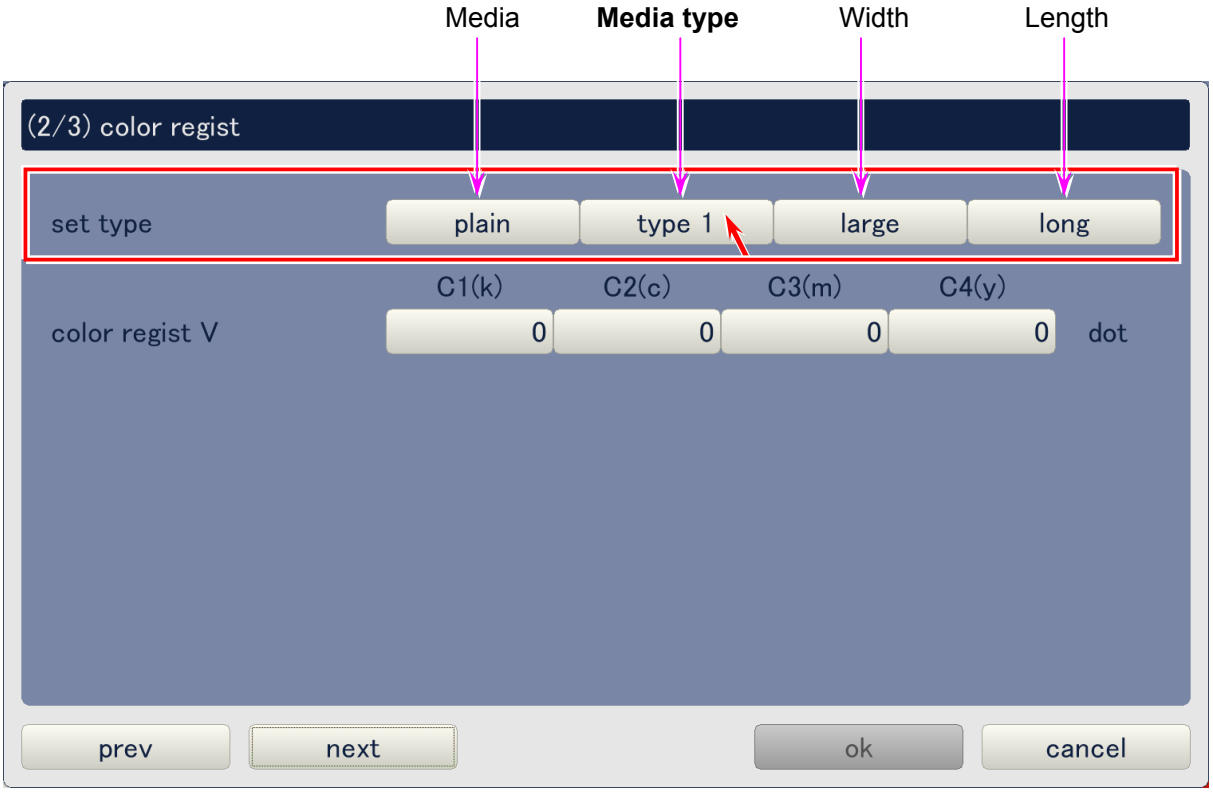
NOTE

Vertical color registration settings of all 4 colors currently indicated on the screen will be applied (copied) to all other media when **all media** is selected here.



- The 2nd button from the left of **set type** decides the target media type (type #X) which the vertical color registration setting is applied to. For example, you need to set this to type #2 when you will adjust the vertical color registration that is applied when printing with any type #2 media.

  To change the setting, click on the button and select any media type in the pop up dialog.



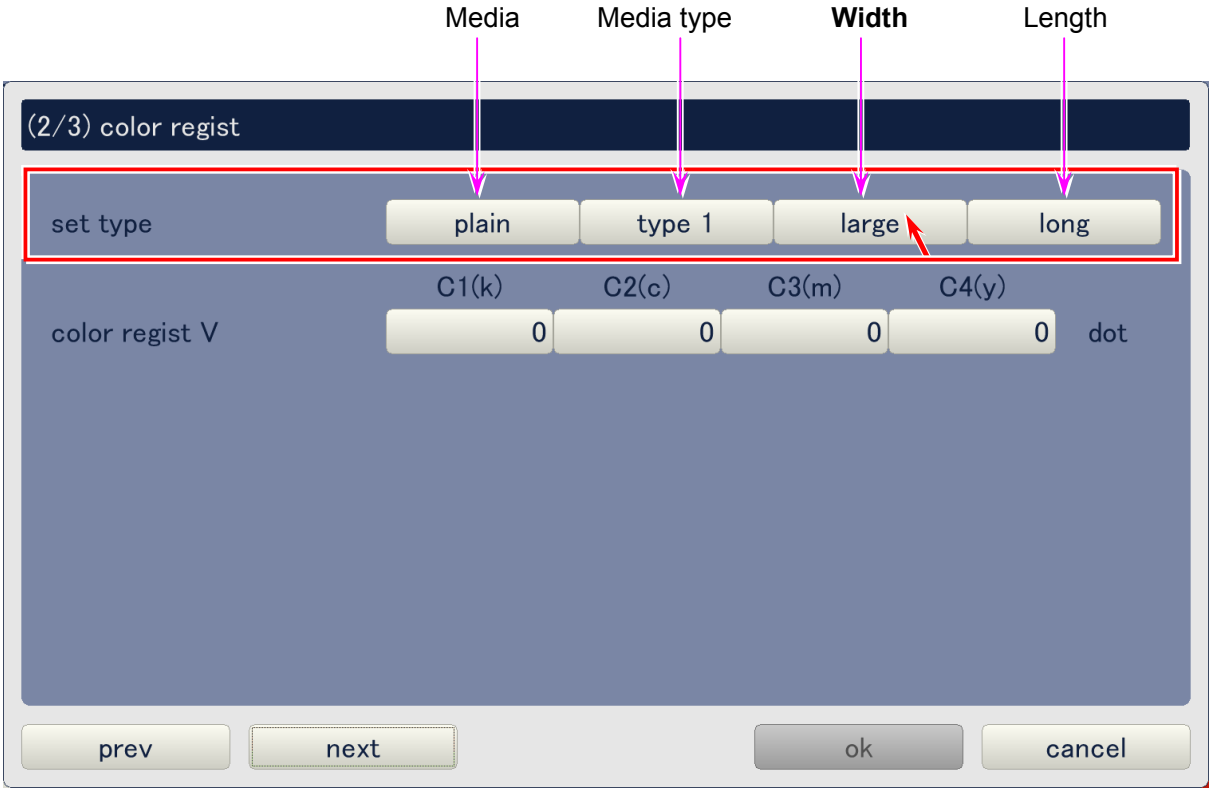
NOTE

Vertical color registration settings of all 4 colors currently indicated on the screen will be applied (copied) to all other media types when **all type** is selected here.



- The 3rd button from the left of **set type** decides the target media width (group) which the vertical color registration setting is applied to. For example, you need to set this to middle when you will adjust the vertical color registration that is applied when the print width belongs to the middle group.

  To change the setting, click on the button and select any media width group in the pop up dialog.

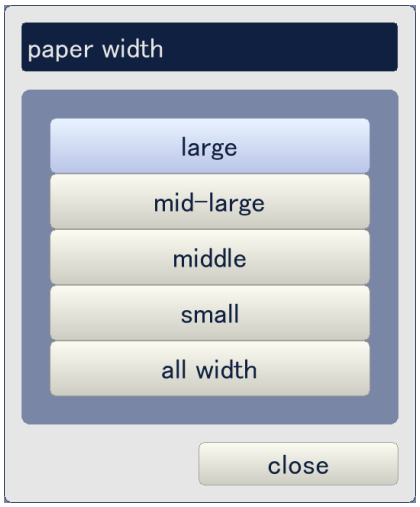


NOTE

(1) All available media widths belong to any width group as follows. Please choose the correct group.

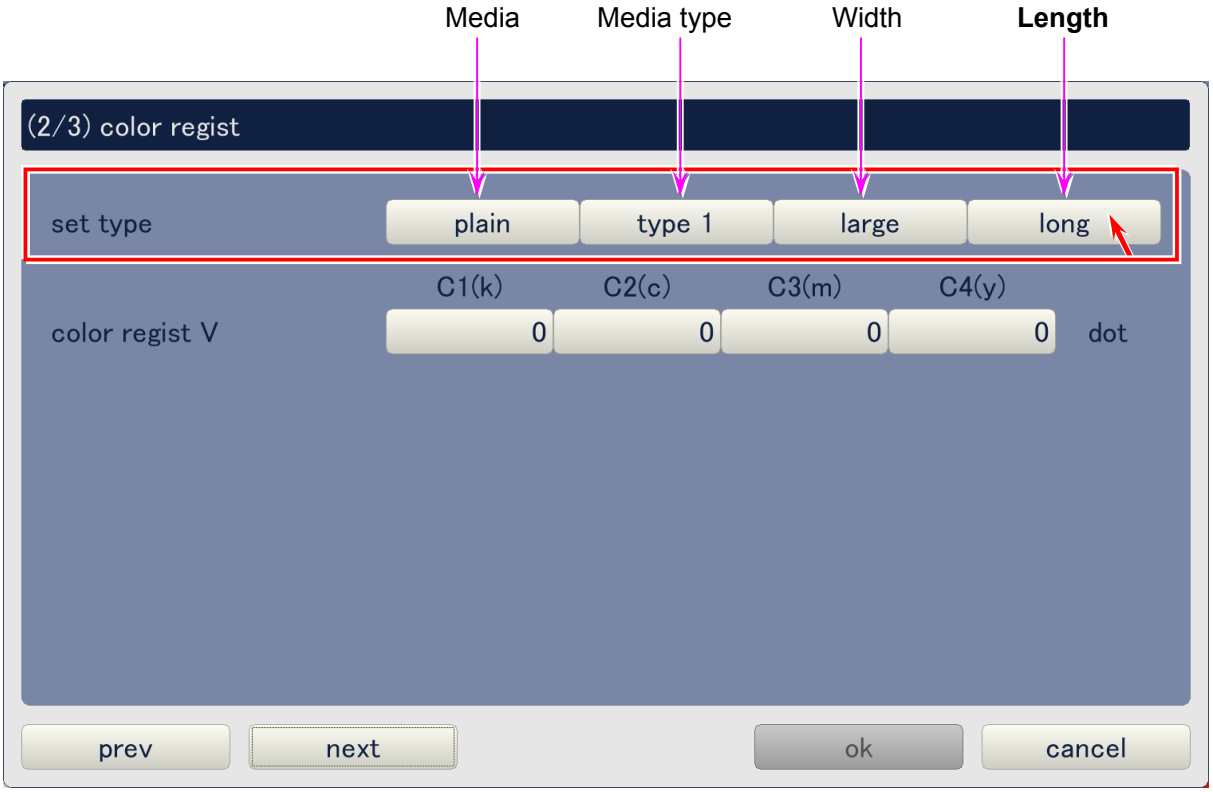
Large	: A0, B1, 36”, 34”, 30”, 900mm, 891mm, 880mm & 707mm
Mid-large	: A1, B2, 24” & 22”
Middle	: A2, B3, 18”, 17” & 15”
Small	: A3, 12”, 11”, 9” & 8.5”

(2) Vertical color registration of all 4 colors currently indicated on the screen will be applied (copied) to all other media width groups when **all width** is selected here.



- The 4th button from the left of **set type** decides the target media length (group) which the vertical color registration setting is applied to. For example, you need to set this to middle when you will adjust the vertical color registration is applied when print length belongs to the middle group.

  To change the setting, click on the button and select any media length group in the pop up dialog.

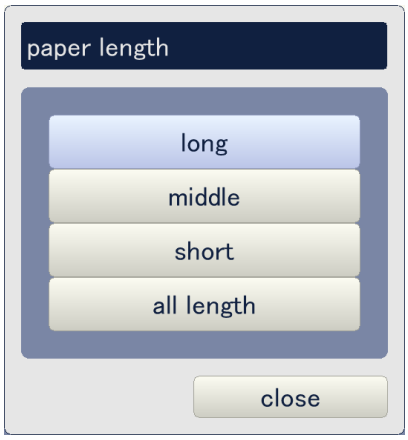


NOTE

(1) All available media length belong to any length group as follows. Please choose the correct group.

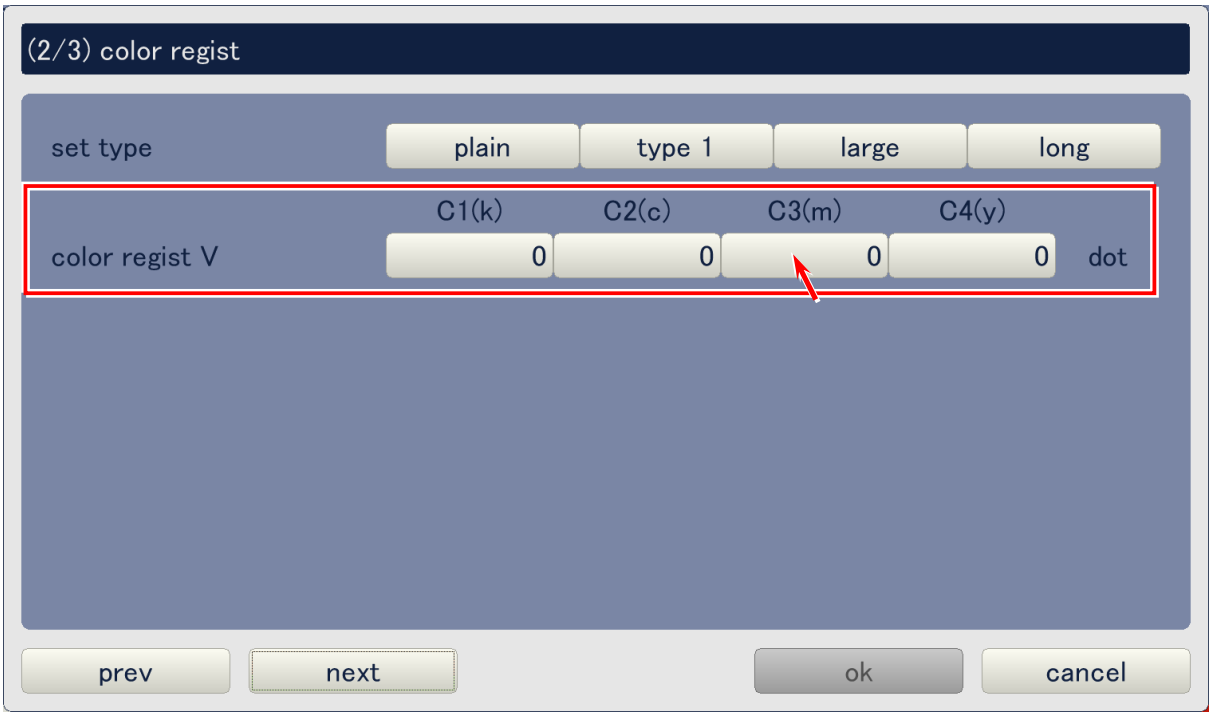
Large : Longer than 840mm
Middle : Between 400 to 839mm
Short : Shorter than 399mm

(2) Vertical color registration of all 4 colors currently indicated on the screen will be applied (copied) to all other media length groups when **all length** is selected here.



- **CX** (C1 to C4) means the color.
  C1 : Black
  C2 : Cyan
  C3 : Magenta
  C4 : Yellow
  Setting range : -256 to +256

  Click on any button beside **color regist V** considering the color, input the requested value in the pop up dialog, and click on **ok**. Increment of the setting value moves the targeted color image to the trailing edge.



Reference

These are common with the Service Mode 4-A000 to d0bF.



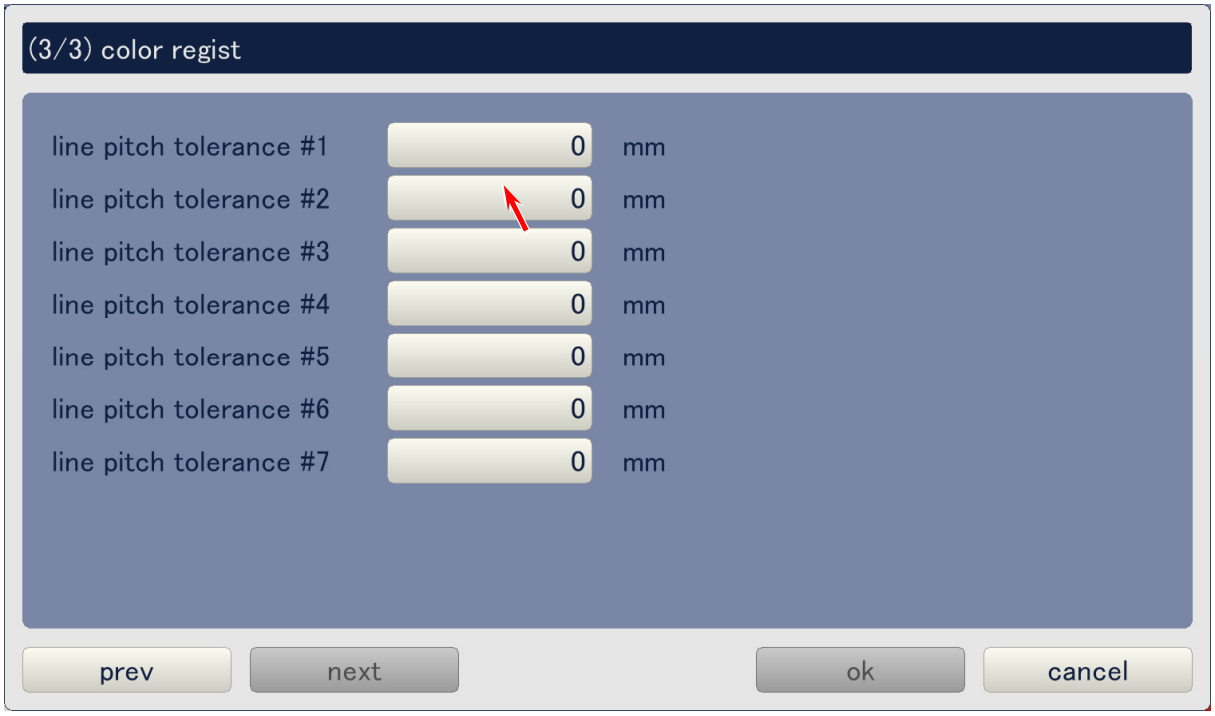
(3) Line pitch tolerance (advanced service mode)

Tolerance against the targeted line pitch calibration length can be specified per length range. The setting value stands for “+/- X millimeters against the target length” that can range from 0 to 50mm by 1mm increment.

Line pitch tolerance #X means the length group. For example, you have to choose #2 when you will change the tolerance that is applied to any target length which belongs to the length group 2 (1501-8000mm).

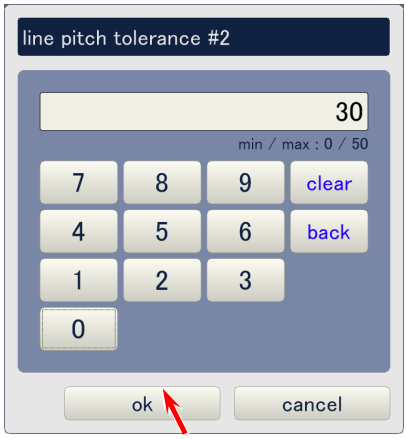
#1 : Length group 1 (210 to 1500mm)
#2 : Length group 2 (1501 to 8000mm)
#3 : Length group 3 (8001 to 16000mm)
#4 : Length group 4 (16001 to 24000mm)
#5 : Length group 5 (24001 to 32000mm)
#6 : Length group 6 (32001 to 40000mm)
#7 : Length group 7 (40001 to 45000mm)

To change the setting, click on any button considering the length group, input the required value in the pop up dialog, and click on **ok**. Setting ranges is 0 to 50mm. Increment of the setting value increases the applicable range of line pitch calibration data.



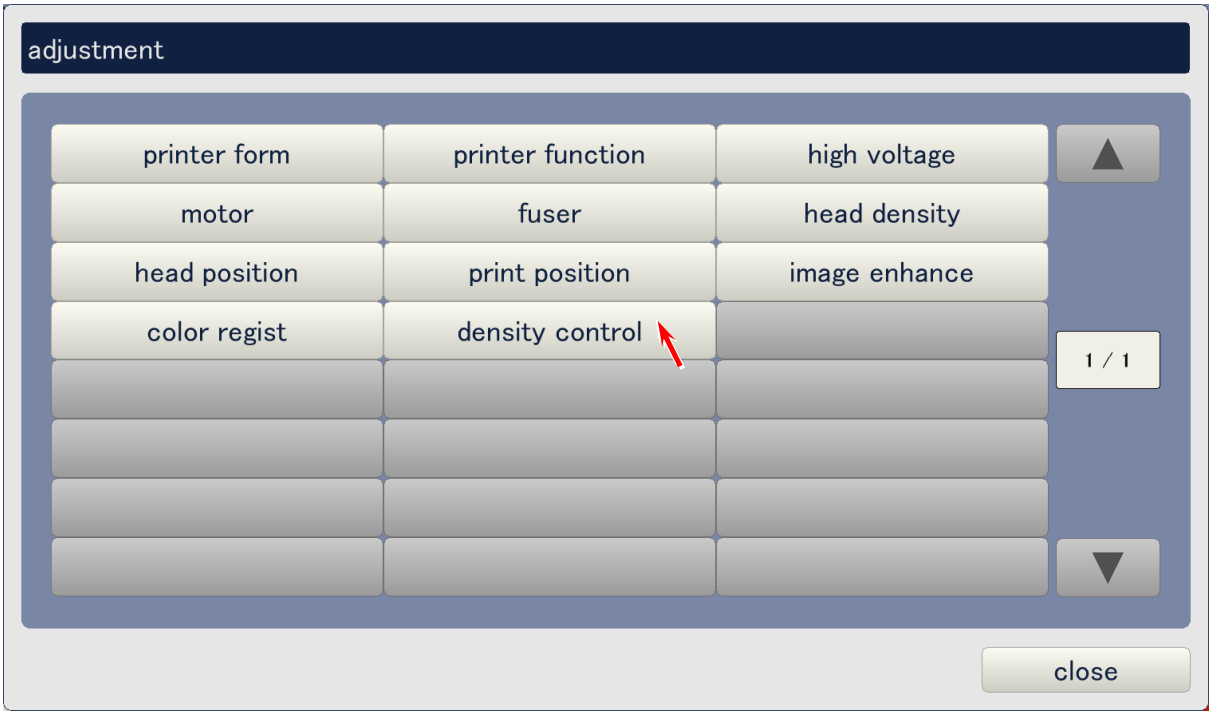
Reference

These are common with the Service Mode 4-9009 to 900F.

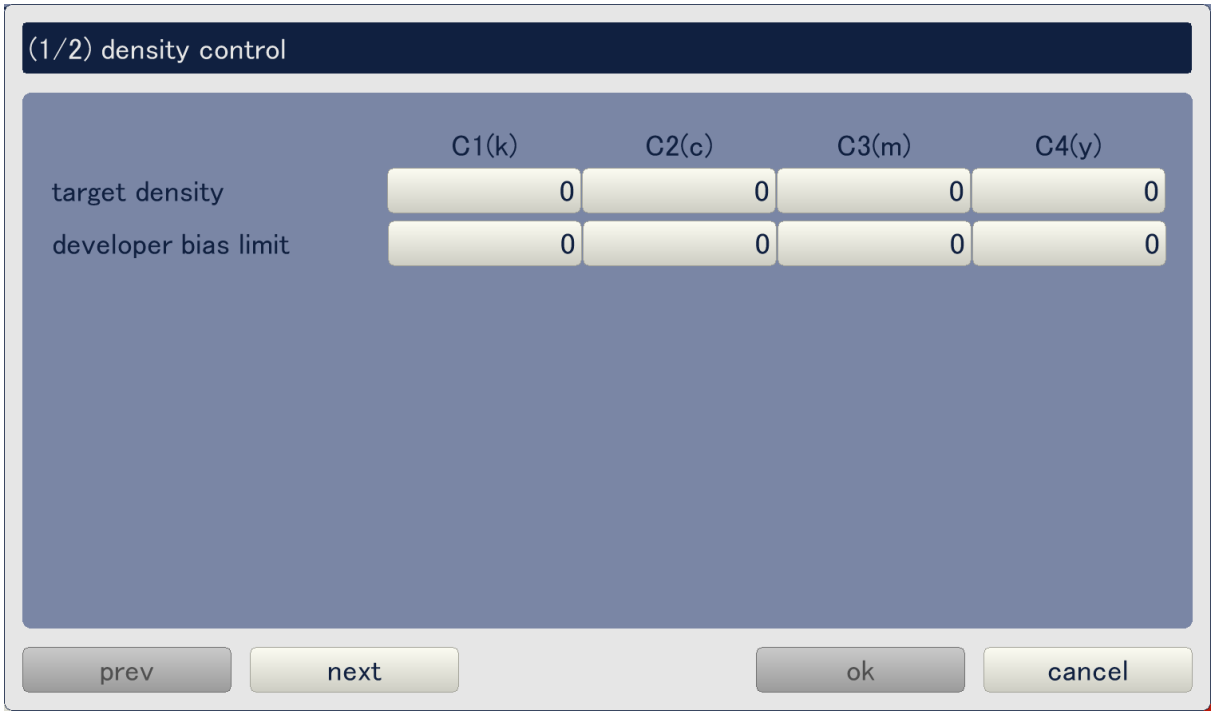


9. 5. 2.12 Density Control

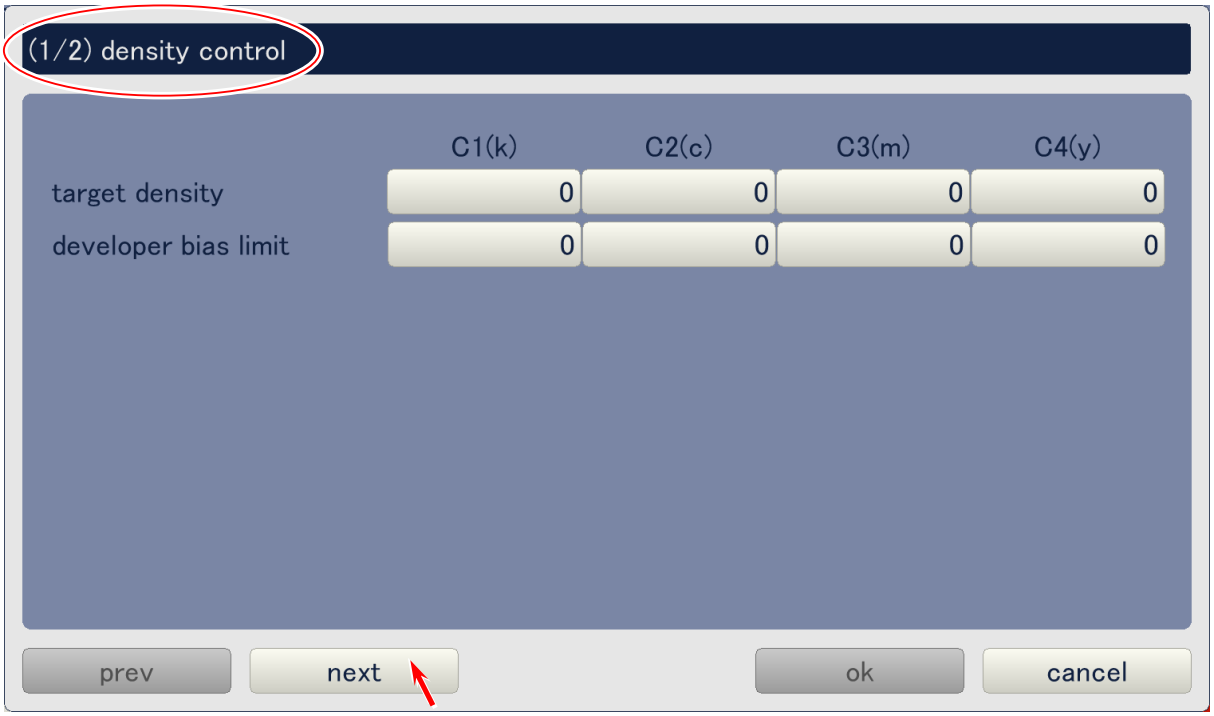
Click on **density control** to access the Density Control Page. See the later pages for the description of each setting item.

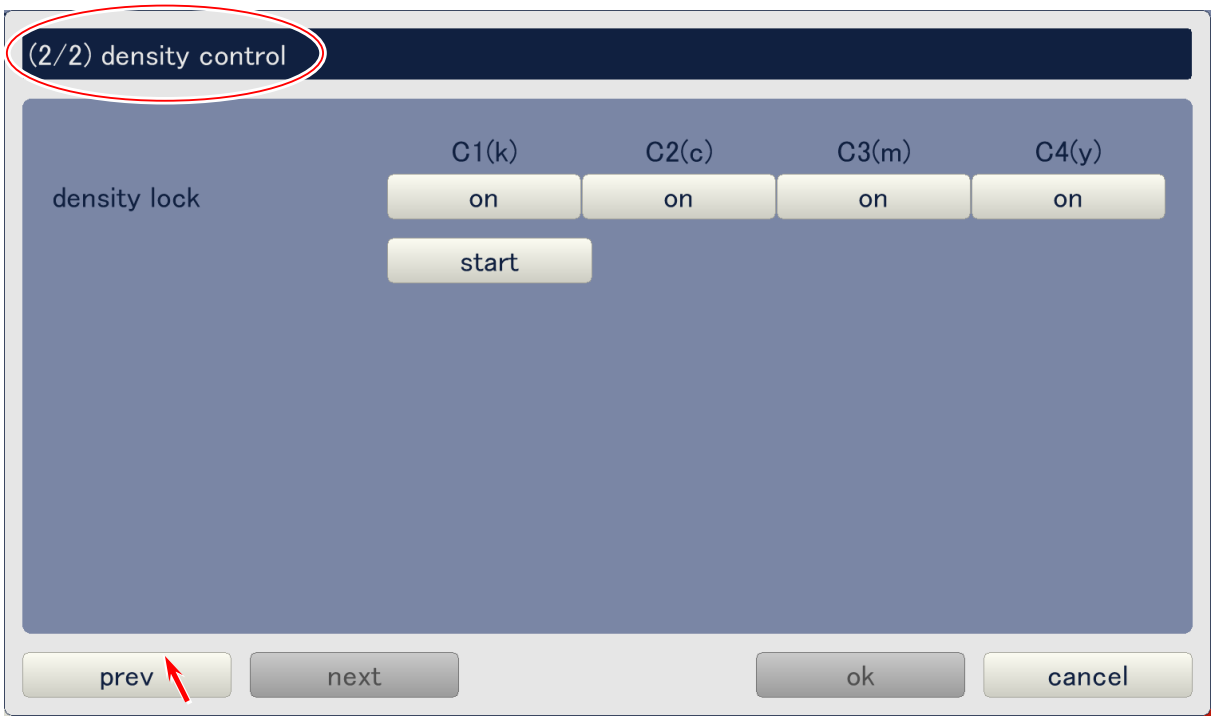


Density Control Page (advanced service mode)



Density Control Page consists of 2 pages. Use **prev** and **next** buttons to indicate other pages. Current page is shown as (1/2) on the top of the screen.



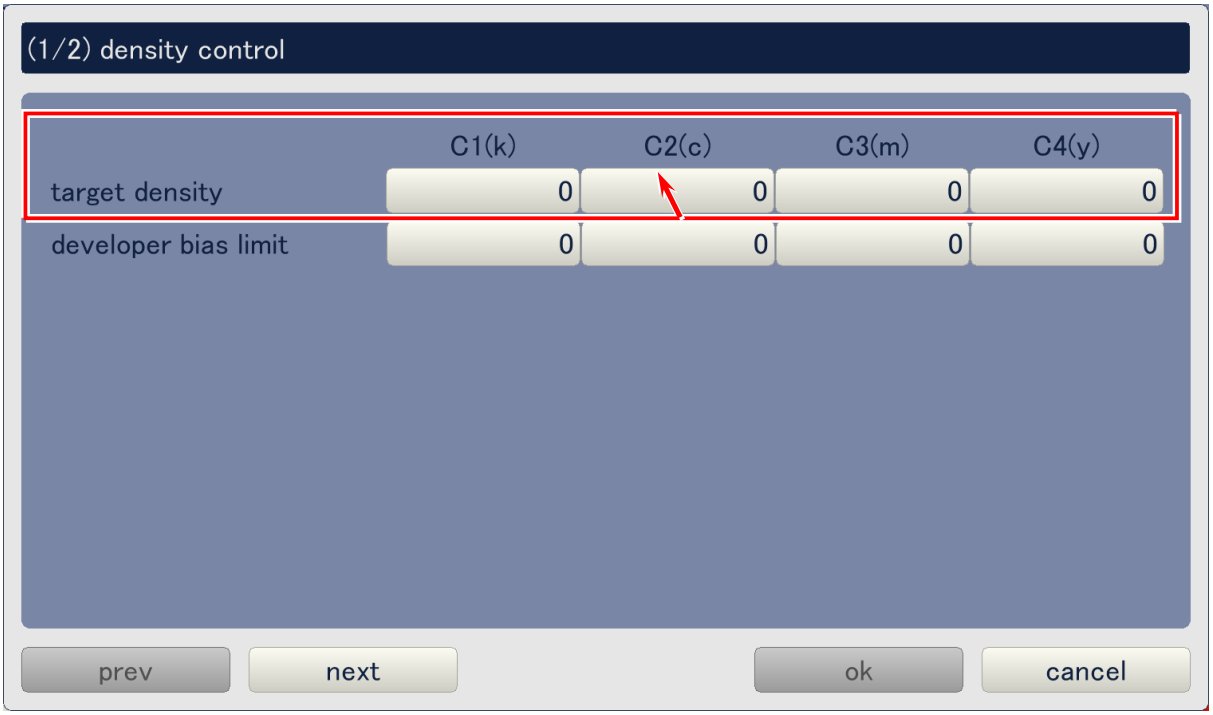


(1) Terget density (advanced service mode)

Target Density can be specified per color, which is used when the Auto Density Control takes density control operation. Increment of the setting value makes the concerning color image lighter.

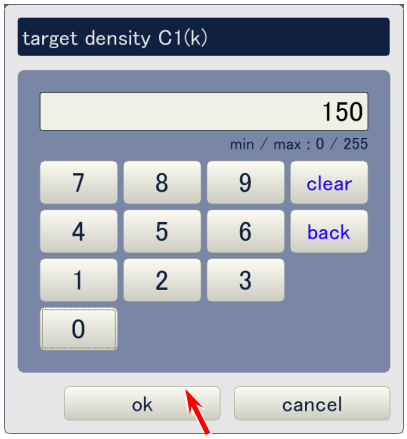
CX (C1-C4) means the color.
- C1 : Black
- C2 : Cyan
- C3 : Magenta
- C4 : Yellow

Click on any button beside **target density** considering the color, input the requested value in the pop up dialog, and click on **ok**. Setting range is 0 to 255.



Reference

These are common with the Service Mode 4-2024 to 2027.

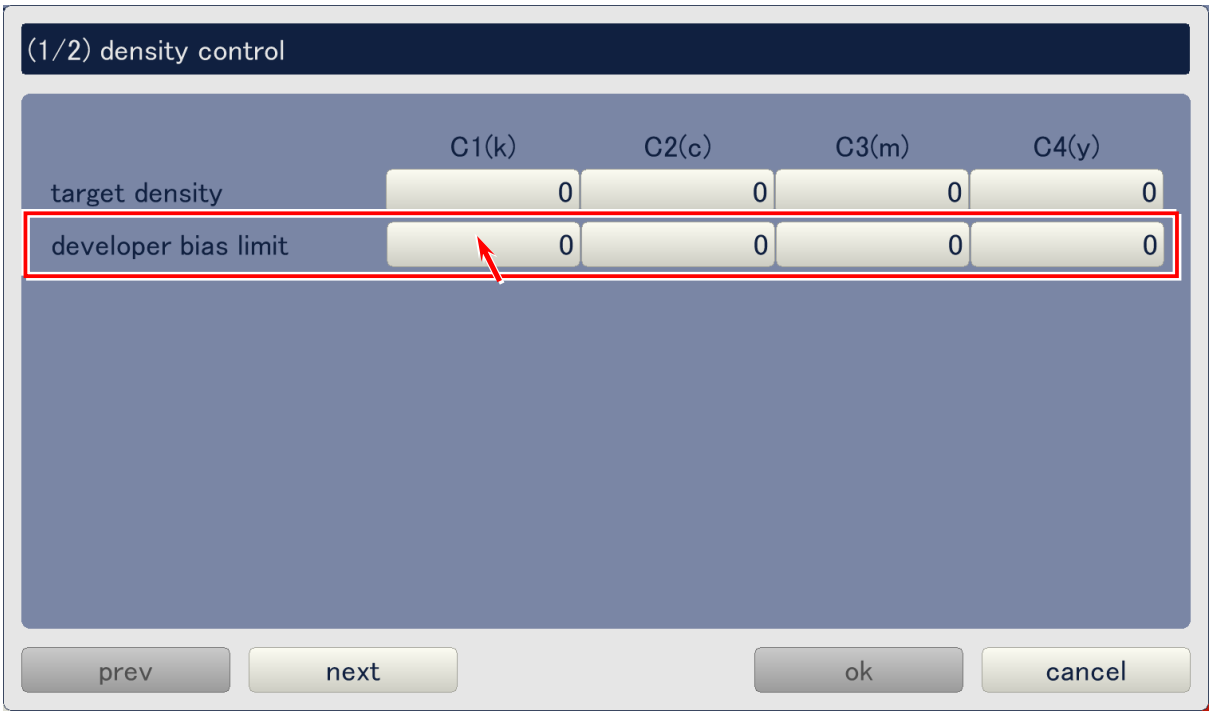


(2) Developer bias limit (advanced service mode)

The minimum voltage difference between Developer Bias and Surface potential can be specified per color.

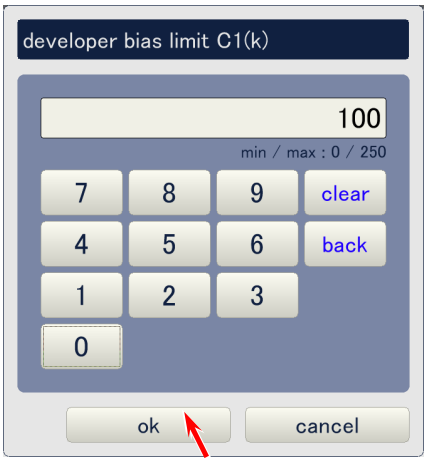
CX (C1-C4) means the color.
C1 : Black
C2 : Cyan
C3 : Magenta
C4 : Yellow

Click on any button considering the color, input the requested value in the pop up dialog, and click on **ok**. Setting range is 0 to 255.



Reference

These are common with the Service Mode 4-2028 to 202b.

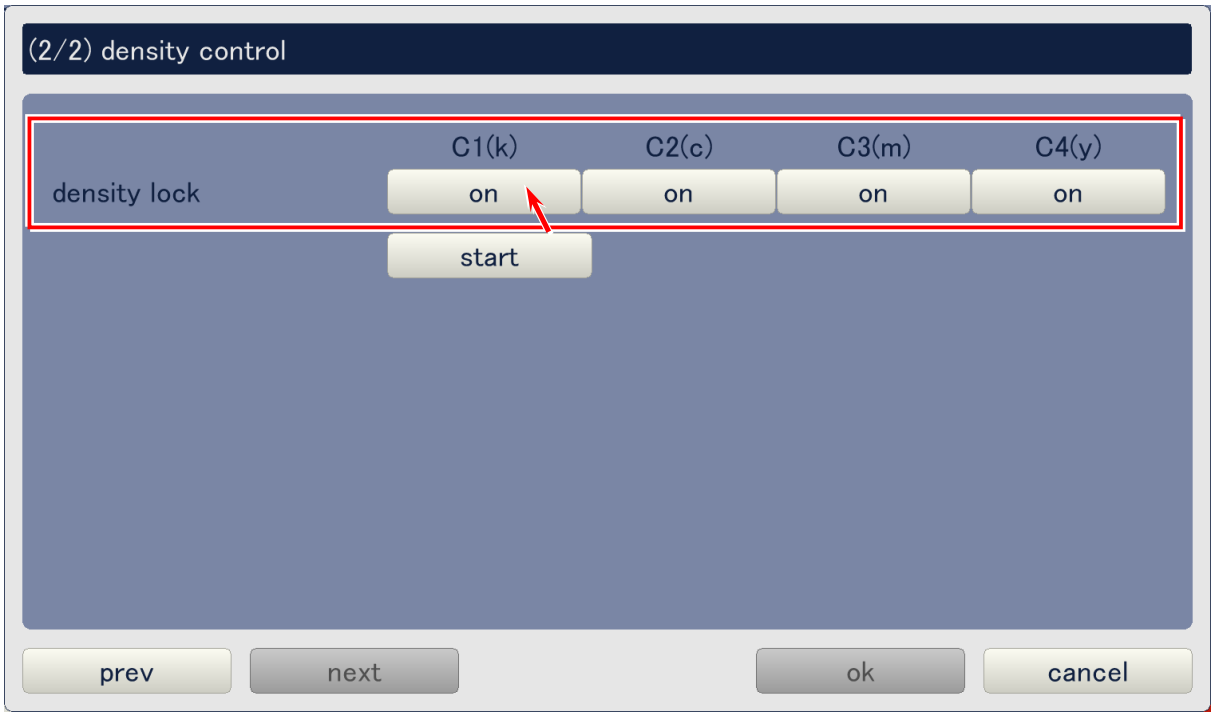


(3) Density lock

Density lock can be performed per color to make the machine memorize Target Density.

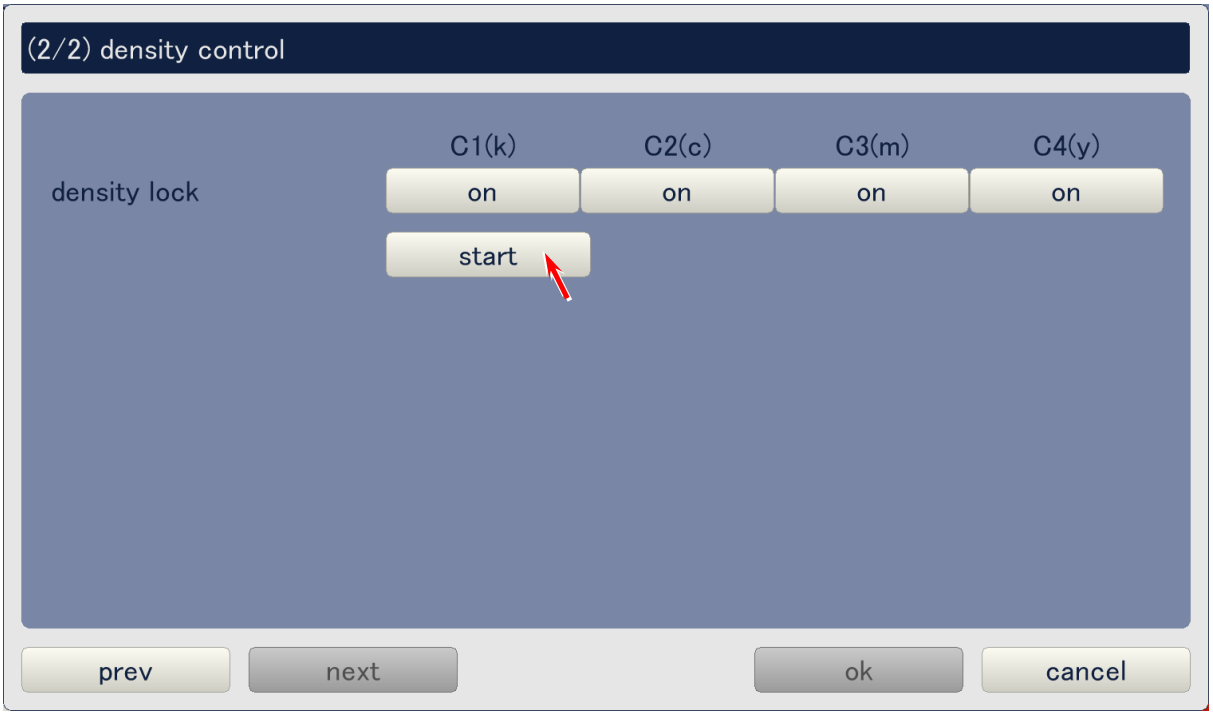
- CX means the target color. Click on any button considering the color, and choose **on** in the pop up dialog if you will take density lock operation for this color.
  C1 : Black
  C2 : Cyan
  C3 : Magenta
  C4 : Yellow

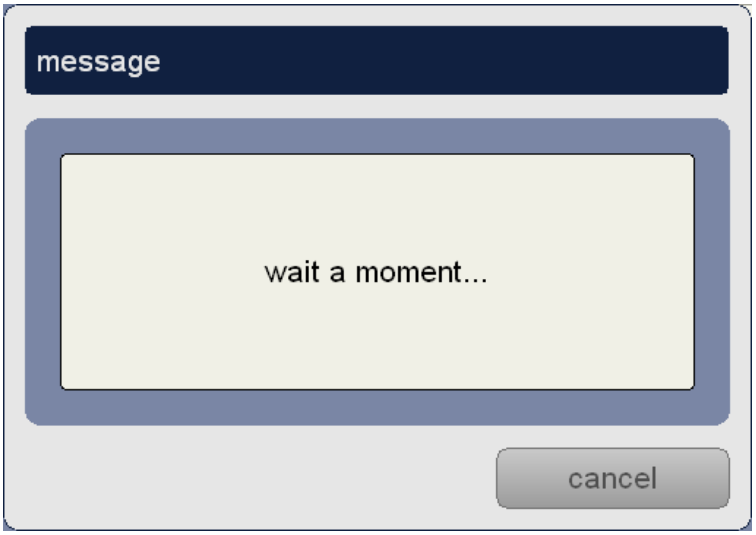
Setting	Description
off	Density Lock Operation is not performed for the selected color.
on	Density Lock Operation is performed for the selected color.





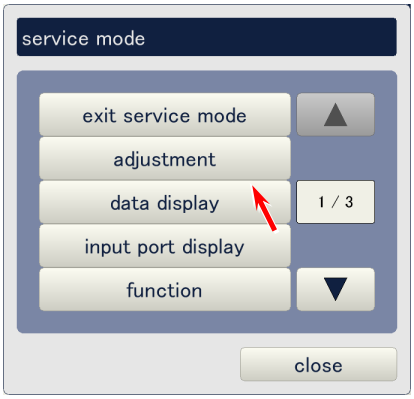
- Click on **start to** take Density Lock operation for the selected color(s). Wait until the automatic operation finishes.



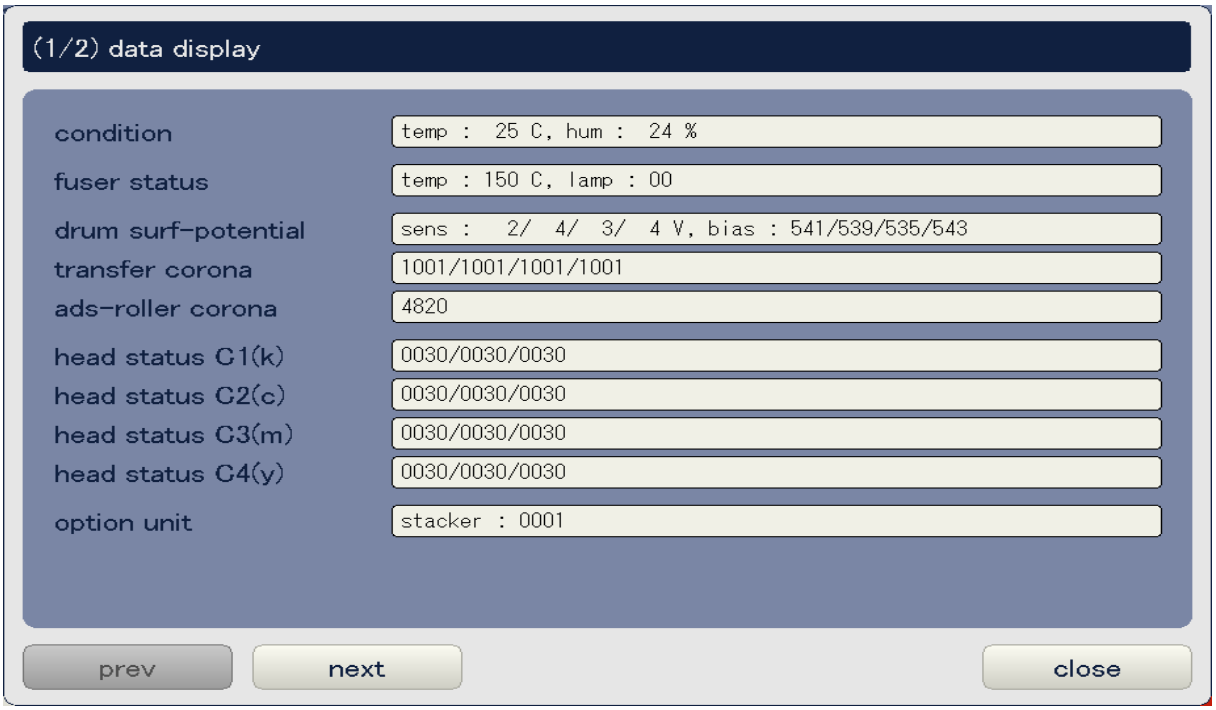


9. 5. 3 Data Display

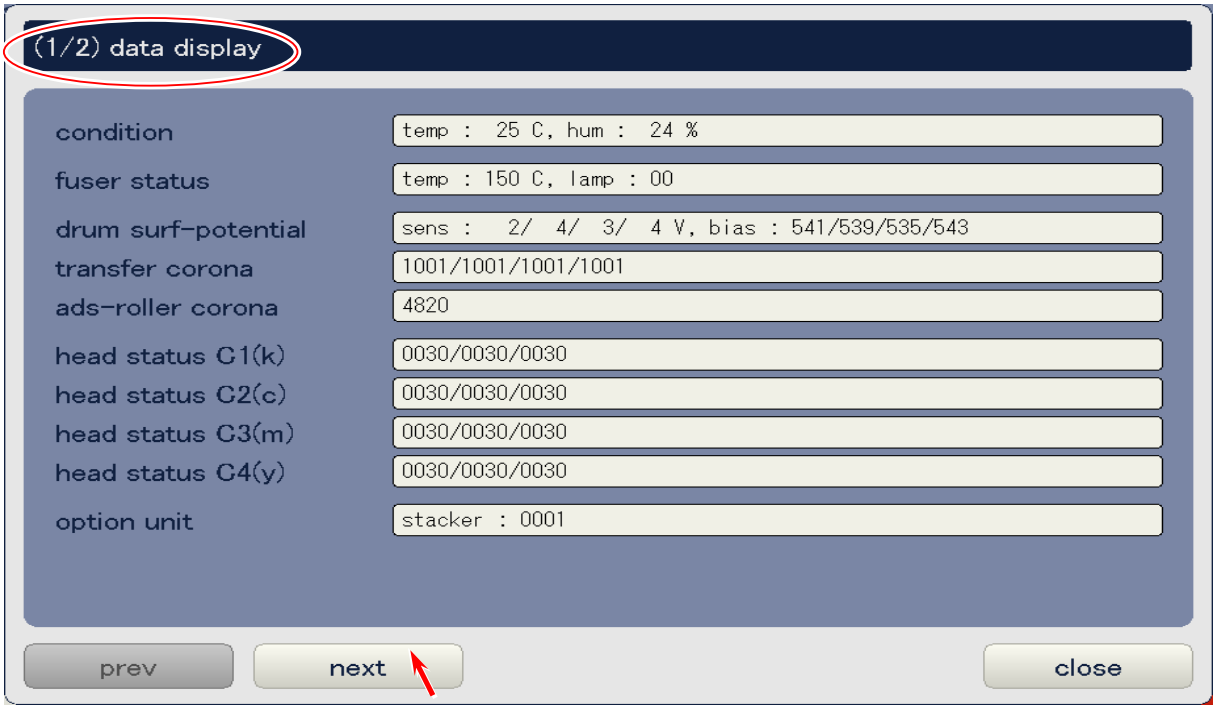
The operator can observe analog data, sensor information, control information, and other items. Choose **data display** in the service mode menu to access the Data Display page. See the later pages for the description of each indicated item.

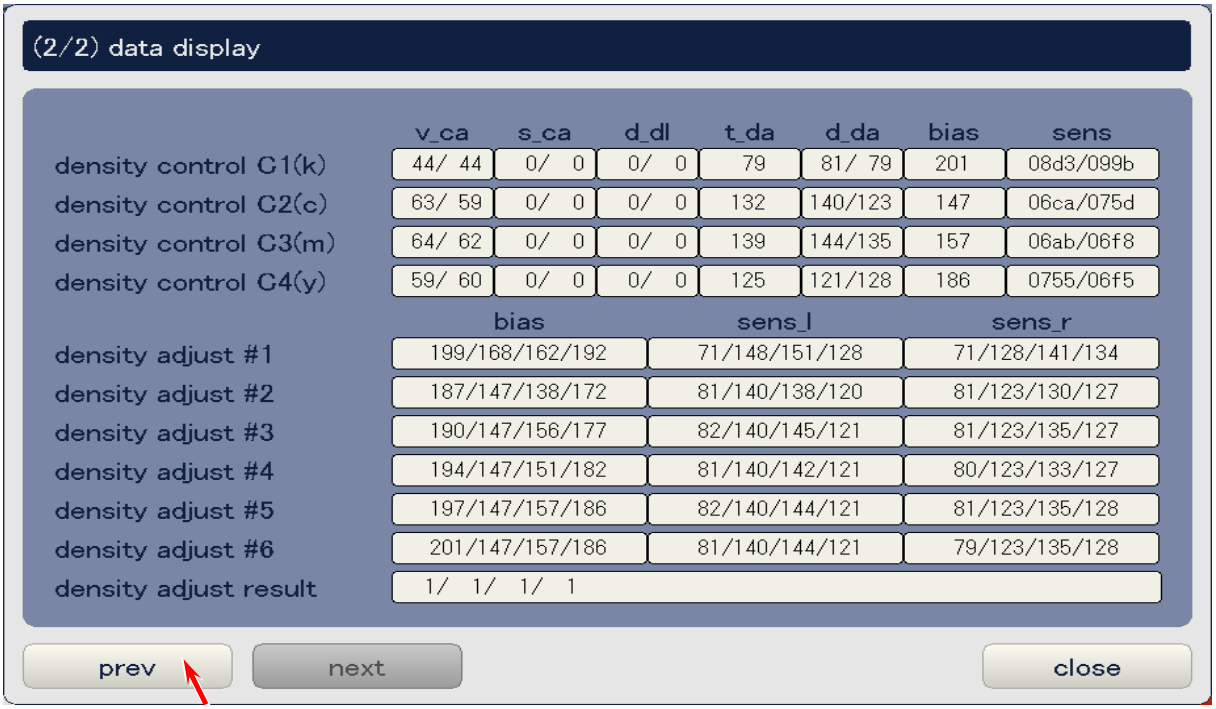


Data Display Page

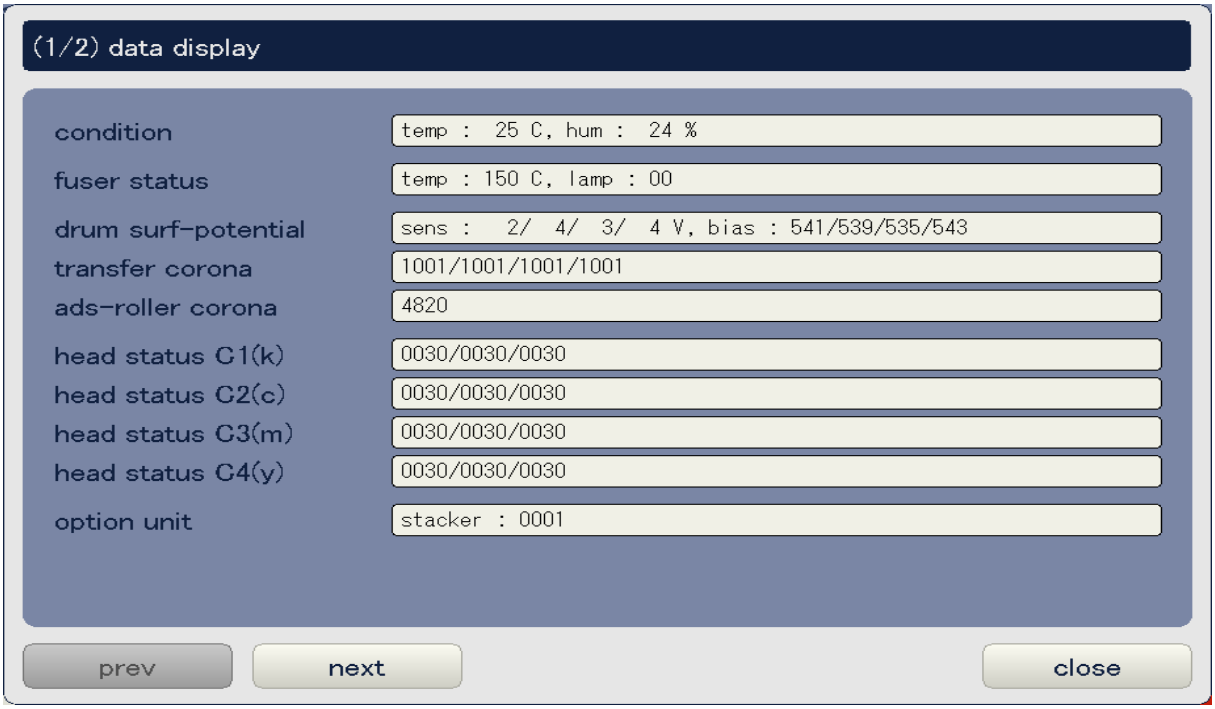


Data Display Page consists of 2 pages. Use **prev** and **next** buttons to indicate the other page. Current page is shown as (1/2) on the top of the screen.



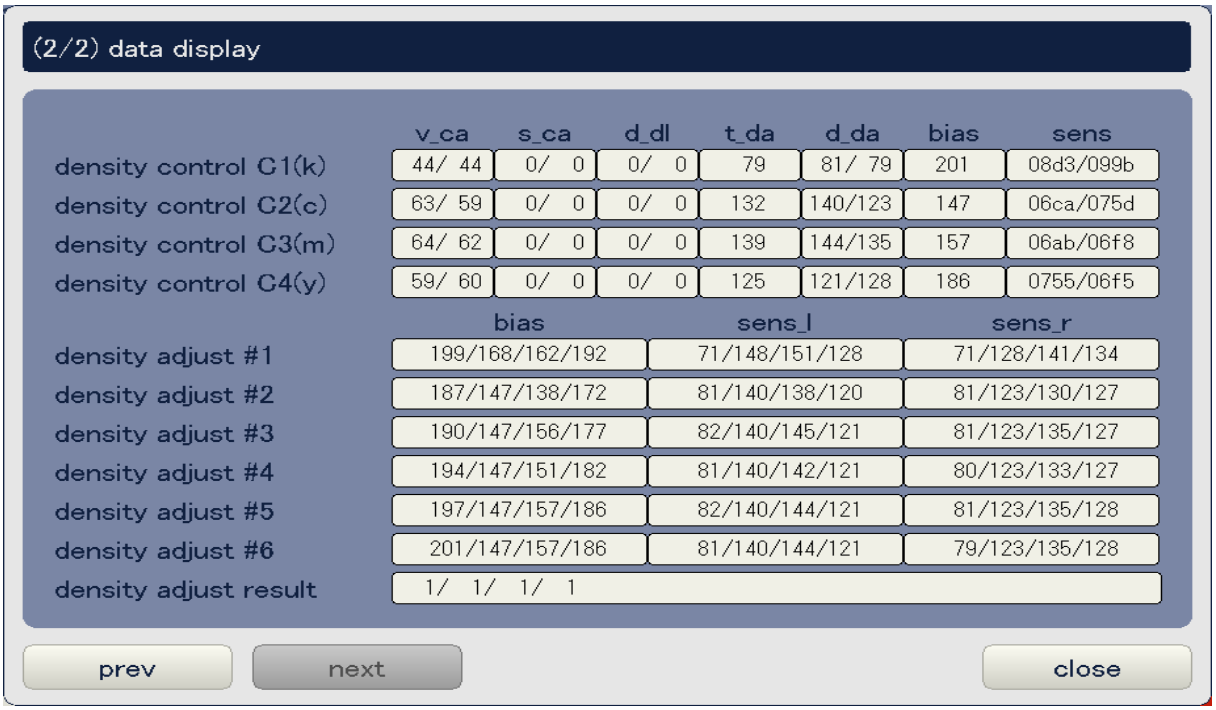


9. 5. 3. 1 Description of the indicated data



Indication item	Description of indication	Unit / Status
condition	Temperature of the interior of machine	Centigrade
	Humidity of the interior of machine	%
fuser status	Temperature of Fuser Roller	Centigrade
	ON/OFF status of Fuser Lamps	00 : Both lamps are off 01 : Lamp 1 is on 02 : Lamp 2 is on 03 : Both lamps are on
drum surf-potential	Surface Potential of Process 1 (Black)	V
	Surface Potential of Process 2 (Cyan)	V
	Surface Potential of Process 3 (Magenta)	V
	Surface Potential of Process 4 (Yellow)	V
	Grid Bias value in the latest Auto SP Control for Process 1 (Black)	V
	Grid Bias value in the latest Auto SP Control for Process 2 (Cyan)	V
	Grid Bias value in the latest Auto SP Control for Process 3 (Magenta)	V
	Grid Bias value in the latest Auto SP Control for Process 4 (Yellow)	V
transfer corona	Transfer Corona Wire Bias 1 (Black)	Micro Ampere
	Transfer Corona Wire Bias 2 (Cyan)	Micro Ampere
	Transfer Corona Wire Bias 3 (Magenta)	Micro Ampere
	Transfer Corona Wire Bias 4 (Yellow)	Micro Ampere
ads-roller corona	Attraction Corona Bias value	V
guide tr-bias	Transfer Corona House Bias 1 (Black)	V
	Transfer Corona House Bias 2 (Cyan)	V
	Transfer Corona House Bias 3 (Magenta)	V
	Transfer Corona House Bias 4 (Yellow)	V
head status C1(k)	Status of Head 1 (left) of LED Unit 1 (Black)	Hexadecimal
	Status of Head 2 (center) of LED Unit 1 (Black)	Hexadecimal
	Status of Head 3 (right) of LED Unit 1 (Black)	Hexadecimal
head status C2(c)	Status of Head 1 (left) of LED Unit 2 (Cyan)	Hexadecimal
	Status of Head 2 (center) of LED Unit 2 (Cyan)	Hexadecimal
	Status of Head 3 (right) of LED Unit 2 (Cyan)	Hexadecimal

Indication item	Description of indication	Unit / Status
head status C3(m)	Status of Head 1 (left) of LED Unit 1 (Magenta)	Hexadecimal
	Status of Head 2 (center) of LED Unit 1 (Magenta)	Hexadecimal
	Status of Head 3 (right) of LED Unit 1 (Magenta)	Hexadecimal
head status C4(y)	Status of Head 1 (left) of LED Unit 1 (Yellow)	Hexadecimal
	Status of Head 2 (center) of LED Unit 1 (Yellow)	Hexadecimal
	Status of Head 3 (right) of LED Unit 1 (Yellow)	Hexadecimal
option unit	Connection of Stacker	0000 : Not connected 0001 : Connected



Indication item		Description of indication	Unit / Status
density control C1(k)	v-ca	Output to the LED on the Left/Right Density Sensor (Process 1 : Black)	
	s-ca	Density data detected by Left/Right Density Sensor during the initialization of LED intensity in Density Lock Process (Process 1 : Black)	
	d-dl	Density data detected by Left/Right Density Sensors when reading the density target in Density Lock Process (Process 1 : Black)	
	t-da	Target Density (Process 1 : Black)	
	d-da	Density data detected by Left/Right Density Sensors during the latest Auto Density Control (Process 1 : Black)	
	bias	Developer Bias applied during the latest Auto Density Control (Process 1 : Black)	V
	sens	Real time output from Left/Right Density Sensor (Process 1 : Black)	

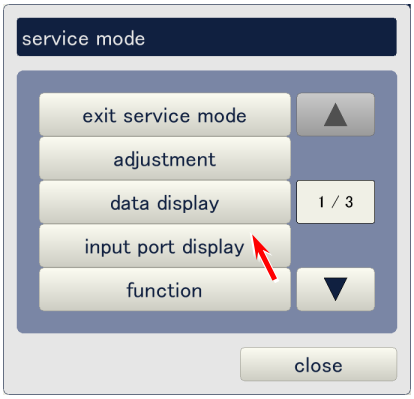
Indication item		Description of indication	Unit / Status
density control C2(c)	v-ca	Output to the LED on the Left/Right Density Sensor (Process 2 : Ctan)	
	s-ca	Density data detected by Left/Right Density Sensor during the initialization of LED intensity in Density Lock Process (Process 2 : Cyan)	
	d-dl	Density data detected by Left/Right Density Sensors when reading the density target in Density Lock Process (Process 2 : Cyan)	
	t-da	Target Density (Process 2 : Cyan)	
	d-da	Density data detected by Left/Right Density Sensors during the latest Auto Density Control (Process 2 : Cyan)	
	bias	Developer Bias applied during the latest Auto Density Control (Process 2 : Cyan)	V
	sens	Real time output from Left/Right Density Sensor (Process 2 : Cyan)	
density control C3(m)	v-ca	Output to the LED on the Left/Right Density Sensor (Process 3 : Magenta)	
	s-ca	Density data detected by Left/Right Density Sensor during the initialization of LED intensity in Density Lock Process (Process 3 : Magenta)	
	d-dl	Density data detected by Left/Right Density Sensors when reading the density target in Density Lock Process (Process 3 : Magenta)	
	t-da	Target Density (Process 3 : Magenta)	
	d-da	Density data detected by Left/Right Density Sensors during the latest Auto Density Control (Process 3 : Magenta)	
	bias	Developer Bias applied during the latest Auto Density Control (Process 3 : Magenta)	V
	sens	Real time output from Left/Right Density Sensor (Process 3 : Magenta)	
density control C4(y)	v-ca	Output to the LED on the Left/Right Density Sensor (Process 4 : Yellow)	
	s-ca	Density data detected by Left/Right Density Sensor during the initialization of LED intensity in Density Lock Process (Process 4 : Yellow)	
	d-dl	Density data detected by Left/Right Density Sensors when reading the density target in Density Lock Process (Process 4 : Yellow)	
	t-da	Target Density (Process 4 : Yellow)	
	d-da	Density data detected by Left/Right Density Sensors during the latest Auto Density Control (Process 4 : Yellow)	
	bias	Developer Bias applied during the latest Auto Density Control (Process 4 : Yellow)	V
	sens	Real time output from Left/Right Density Sensor (Process 4 : Yellow)	
density adjust #1	bias	History of the Developer Bias value in Auto Density Control Process (6th latest : K/C/M/Y)	V
	sens_l	History of the output from Left Density Sensor in Auto Density Control Process (6th latest : K/C/M/Y)	
	sens_r	History of the output from Right Density Sensor in Auto Density Control Process (6th latest : K/C/M/Y)	
density adjust #2	bias	History of the Developer Bias value in Auto Density Control Process (5th latest : K/C/M/Y)	V
	sens_l	History of the output from Left Density Sensor in Auto Density Control Process (5th latest : K/C/M/Y)	
	sens_r	History of the output from Right Density Sensor in Auto Density Control Process (5th latest : K/C/M/Y)	
density adjust #3	bias	History of the Developer Bias value in Auto Density Control Process (4th latest : K/C/M/Y)	V
	sens_l	History of the output from Left Density Sensor in Auto Density Control Process (4th latest : K/C/M/Y)	
	sens_r	History of the output from Right Density Sensor in Auto Density Control Process (4th latest : K/C/M/Y)	

Indication item		Description of indication	Unit / Status
density adjust #4	bias	History of the Developer Bias value in Auto Density Control Process (3rd latest : K/C/M/Y)	V
	sens_l	History of the output from Left Density Sensor in Auto Density Control Process (3rd latest : K/C/M/Y)	
	sens_r	History of the output from Right Density Sensor in Auto Density Control Process (3rd latest : K/C/M/Y)	
density adjust #5	bias	History of the Developer Bias value in Auto Density Control Process (2nd latest : K/C/M/Y)	V
	sens_l	History of the output from Left Density Sensor in Auto Density Control Process (2nd latest: K/C/M/Y)	
	sens_r	History of the output from Right Density Sensor in Auto Density Control Process (2nd latest: K/C/M/Y)	
density adjust #6	bias	History of the Developer Bias value in Auto Density Control Process (Latest : K/C/M/Y)	V
	sens_l	History of the output from Left Density Sensor in Auto Density Control Process (Latest : K/C/M/Y)	
	sens_r	History of the output from Right Density Sensor in Auto Density Control Process (Latest : K/C/M/Y)	
density adjust result		Success / failure of Auto Density Control Process (K/C/M/Y)	0 : Not performed yet 1 : Success 2 : Failure

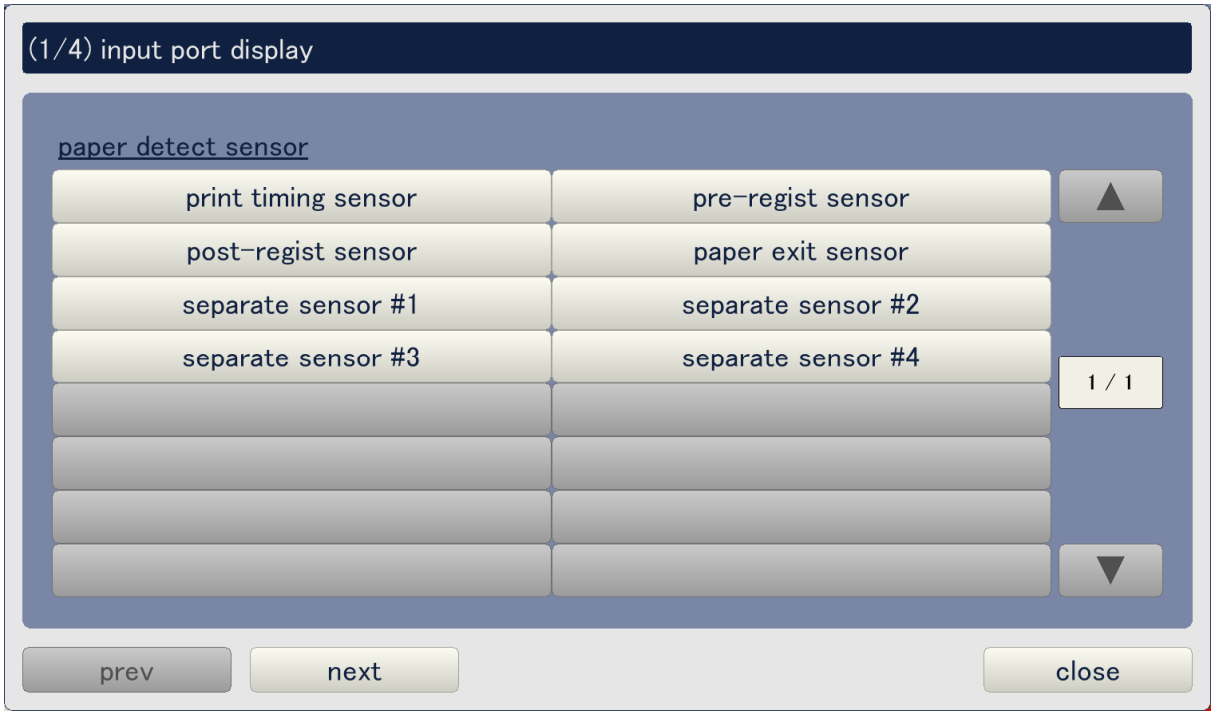
9. 5. 4 Input Port Display

Whether or not a correct signal is sent from each singular electric component can be monitored. Monitoring of signal can be performed with operating the printer normally.

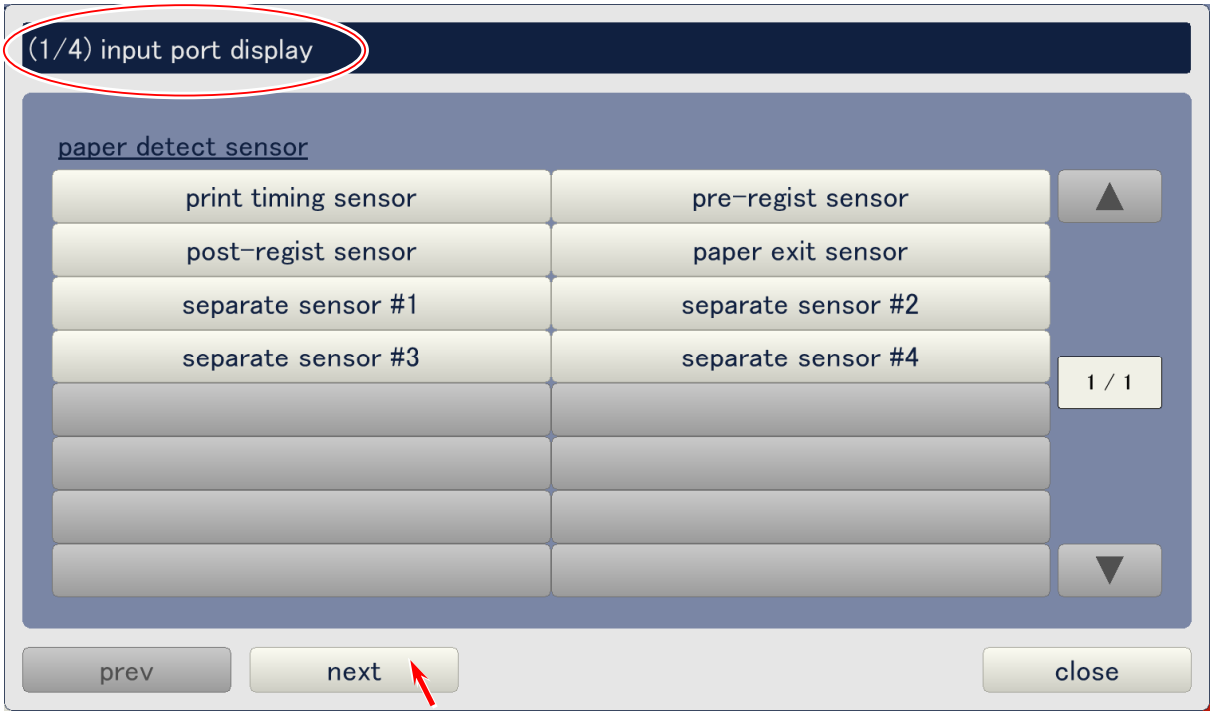
Choose **input port** display in the service mode menu to access the Input Port Display page.

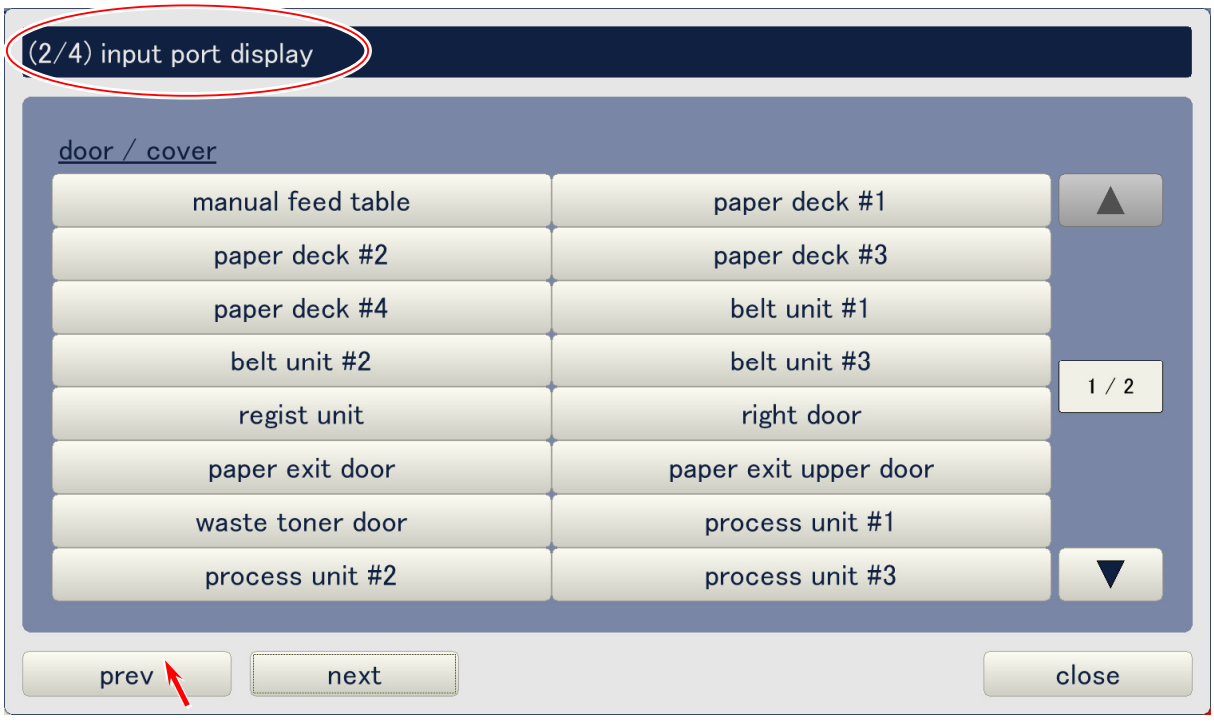


Input Port Display Page



- Data Display Page consists of 4 main pages. Use **prev** and **next** buttons to indicate other main pages. Current main page is shown as (1/4) on the top of the screen.

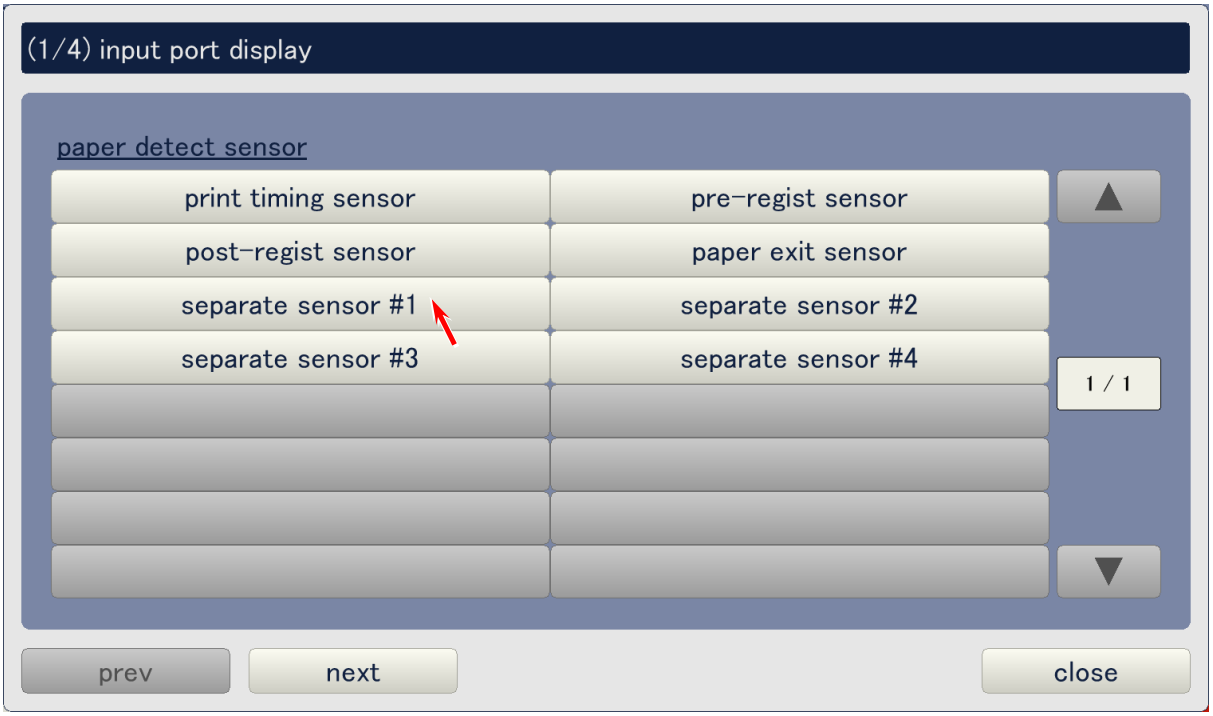


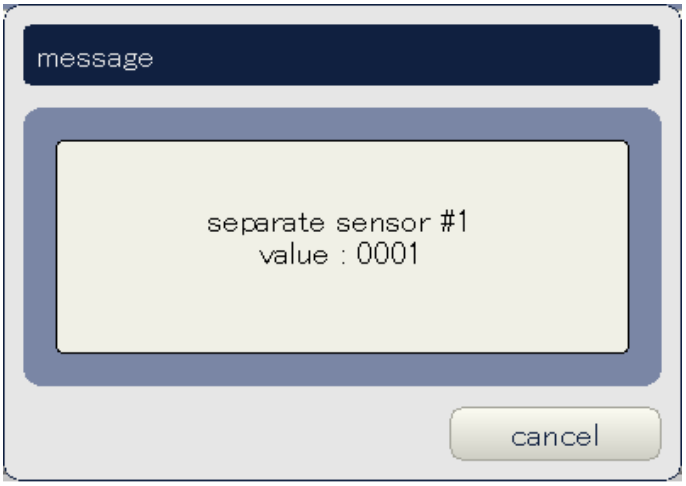


- Some main pages have sub pages as well. Use the triangle buttons to indicate other sub pages. Current sub page is shown as (1/2)



- To check the signal status, choose the button of any electric component. The status of selected component is shown as the following dialog. Click on **cancel** to close the dialog.





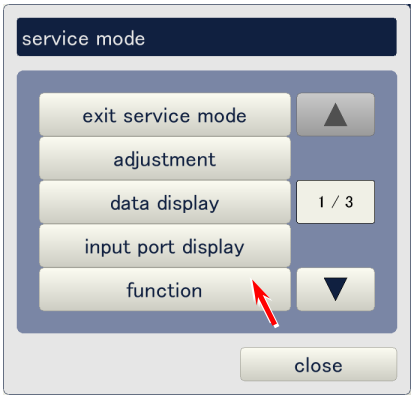
Group	Checked object	Status
Paper detect sensor	print timing sensor	0000 : Detecting media 0001 : Not detecting media
	pre-regist sensor	0000 : Detecting media 0001 : Not detecting media
	post-regist sensor	0000 : Detecting media 0001 : Not detecting media
	paper exit sensor	0000 : Detecting media 0001 : Not detecting media
	separate sensor #1	0000 : Detecting media 0001 : Not detecting media
	separate sensor #2	0000 : Detecting media 0001 : Not detecting media
	separate sensor #3	0000 : Detecting media 0001 : Not detecting media
	separate sensor #4	0000 : Detecting media 0001 : Not detecting media
Door/cover	manual feed table	0000 : Open 0001: Close
	paper deck #1	0000 : Open 0001: Close
	paper deck #2	0000 : Open 0001: Close
	paper deck #3	0000 : Open 0001: Close
	paper deck #4	0000 : Open 0001: Close
	belt unit #1	0000 : Open 0001: Close
	belt unit #2	0000 : Open 0001: Close
	belt unit #3	0000 : Open 0001: Close
	regist unit	0000 : Open 0001: Close
	right door	0000 : Open 0001: Close
	paper exit door	0000 : Open 0001: Close
	paper exit upper door	0000 : Open 0001: Close
	waste toner door	0000 : Open 0001: Close
	process unit #1	0000 : Open 0001: Close
	process unit #2	0000 : Open 0001: Close
	process unit #3	0000 : Open 0001: Close
	process unit #4	0000 : Open 0001: Close
	Interlock	0000 : Open 0001: Close
Error detect	fuser high temperature	0000 : No error 0001: Error
	thermostat error	0000 : No error 0001: Error
	developer #1 detect	0000 : Not detected 0001 : Detected
	developer #2 detect	0000 : Not detected 0001 : Detected
	developer #3 detect	0000 : Not detected 0001 : Detected
	developer #4 detect	0000 : Not detected 0001 : Detected
	waste toner box detect	0000 : Not detected 0001 : Detected
	waste toner full	0000 : Not full 0001 : Full
	hv unit #1 - HV1st	0000 : No error 0001 : Error
	hv unit #1 - HVtr	0000 : No error 0001 : Error
	hv unit #1 - HVsep	0000 : No error 0001 : Error
	hv unit #1 - OUT2nega	0000 : No error 0001 : Error
	hv unit #2 - HV1st	0000 : No error 0001 : Error
	hv unit #2 - HVtr	0000 : No error 0001 : Error
	hv unit #2 - HVsep	0000 : No error 0001 : Error
	hv unit #2 - OUT2nega	0000 : No error 0001 : Error
	hv unit #3 - HV1st	0000 : No error 0001 : Error
	hv unit #3 - HVtr	0000 : No error 0001 : Error
	hv unit #3 - HVsep	0000 : No error 0001 : Error
	hv unit #3 - OUT2nega	0000 : No error 0001 : Error
	hv unit #4 - HV1st	0000 : No error 0001 : Error
	hv unit #4 - HVtr	0000 : No error 0001 : Error
	hv unit #4 - HVsep	0000 : No error 0001 : Error
	hv unit #4 - OUT2nega	0000 : No error 0001 : Error

Group	Checked object	Status
Control	web pulse	-
	developer #1 set sensor	0000 : Pressed to the Drum 0001 : Separated from the Drum
	developer #2 set sensor	0000 : Pressed to the Drum 0001 : Separated from the Drum
	developer #3 set sensor	0000 : Pressed to the Drum 0001 : Separated from the Drum
	developer #4 set sensor	0000 : Pressed to the Drum 0001 : Separated from the Drum
	cutter home position	0000 : Not at home position 0001 : At home position
	wire cleaning 1L	0000 : Not at left home position 0001 : At left home position
	wire cleaning 1R	0000 : Not at right home position 0001 : At right home position
	wire cleaning 2L	0000 : Not at left home position 0001 : At left home position
	wire cleaning 2R	0000 : Not at right home position 0001 : At right home position
	wire cleaning 3L	0000 : Not at left home position 0001 : At left home position
	wire cleaning 3R	0000 : Not at right home position 0001 : At right home position
	wire cleaning 4L	0000 : Not at left home position 0001 : At left home position
	wire cleaning 4R	0000 : Not at right home position 0001 : At right home position
	stacker input	-
	toner sensor #1	0000 : Not detecting toner (toner empty) 0001 : Detecting toner
	toner sensor #2	0000 : Not detecting toner (toner empty) 0001 : Detecting toner
	toner sensor #3	0000 : Not detecting toner (toner empty) 0001 : Detecting toner
	toner sensor #4	0000 : Not detecting toner (toner empty) 0001 : Detecting toner

9. 5. 5 Function

It is possible to operate each singular electric component alone for checking if it works properly. Also it is possible to check the operation of sensors and switches by checking the output signal.

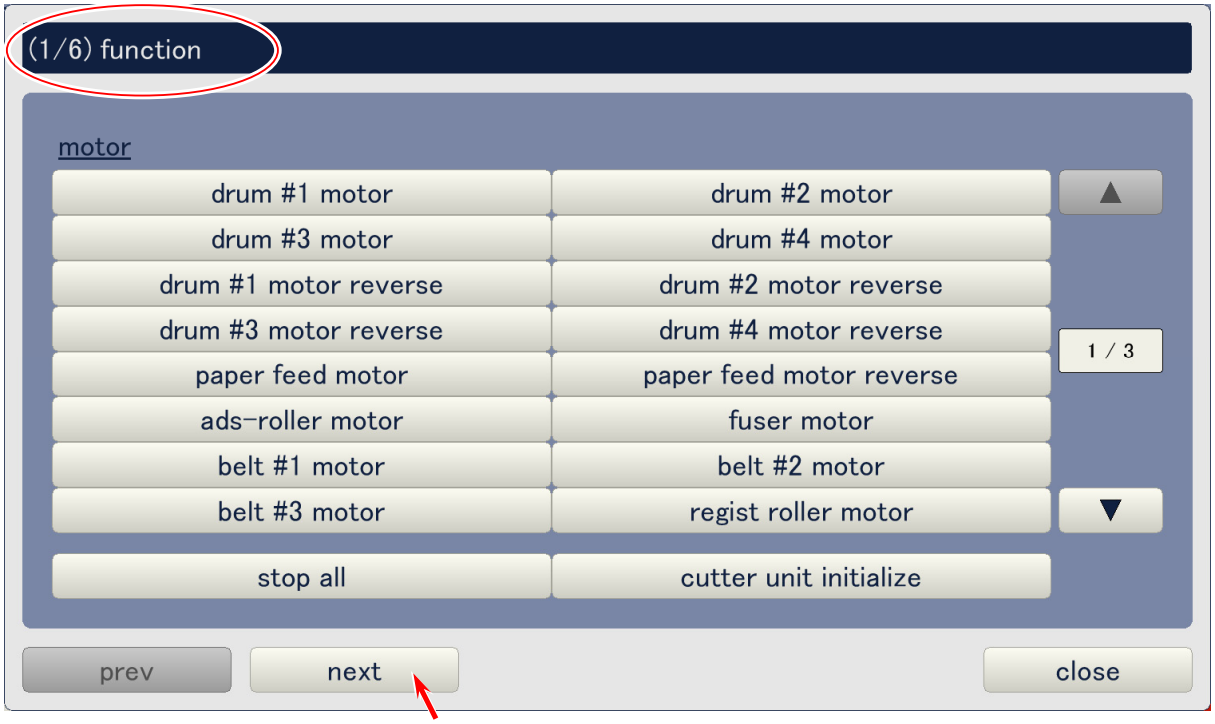
Choose **function** in the service mode menu to access the Function page.

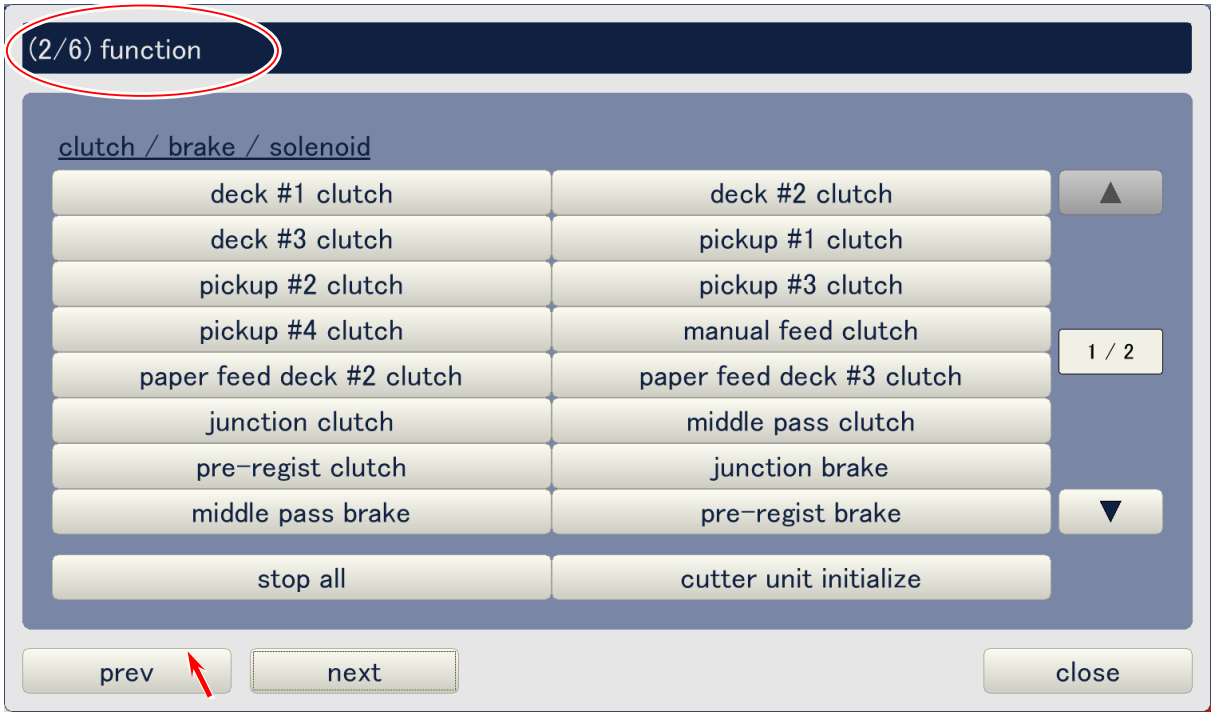


Function Page



- Function Page consists of 6 main pages. Use **prev** and **next** buttons to indicate other main pages. Current main page is shown as (1/6) on the top of the screen.

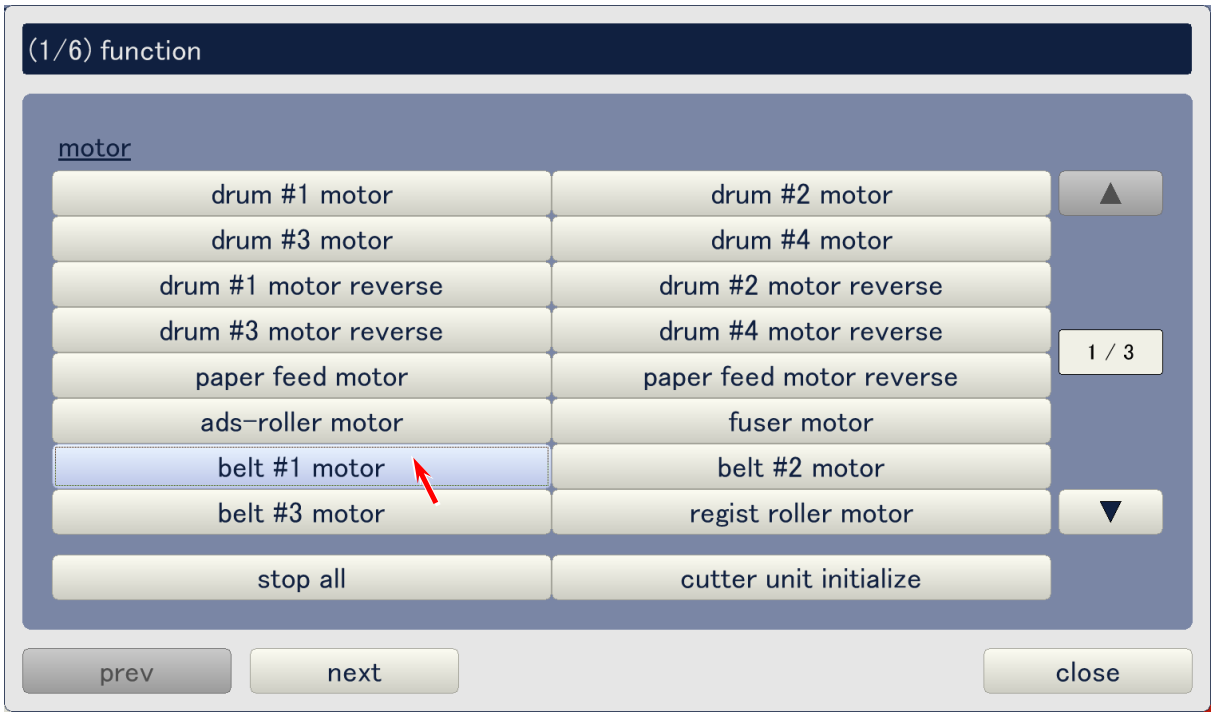


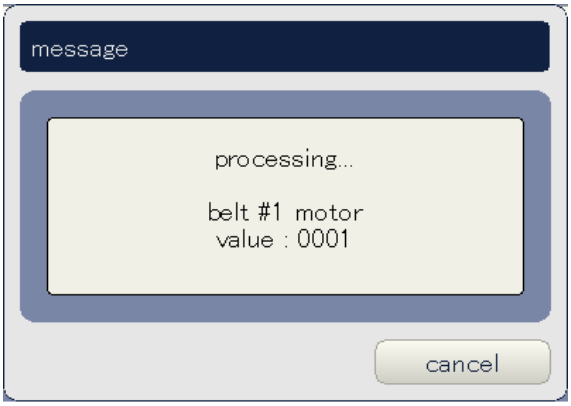


- Some main pages have sub pages as well. Use the triangle buttons on the right to indicate other sub pages. Current sub page is shown as (1/2)



- Click on any button of the electric component to be checked. The selected component operates and the following dialog pops up. Click on **cancel** to stop the operation.

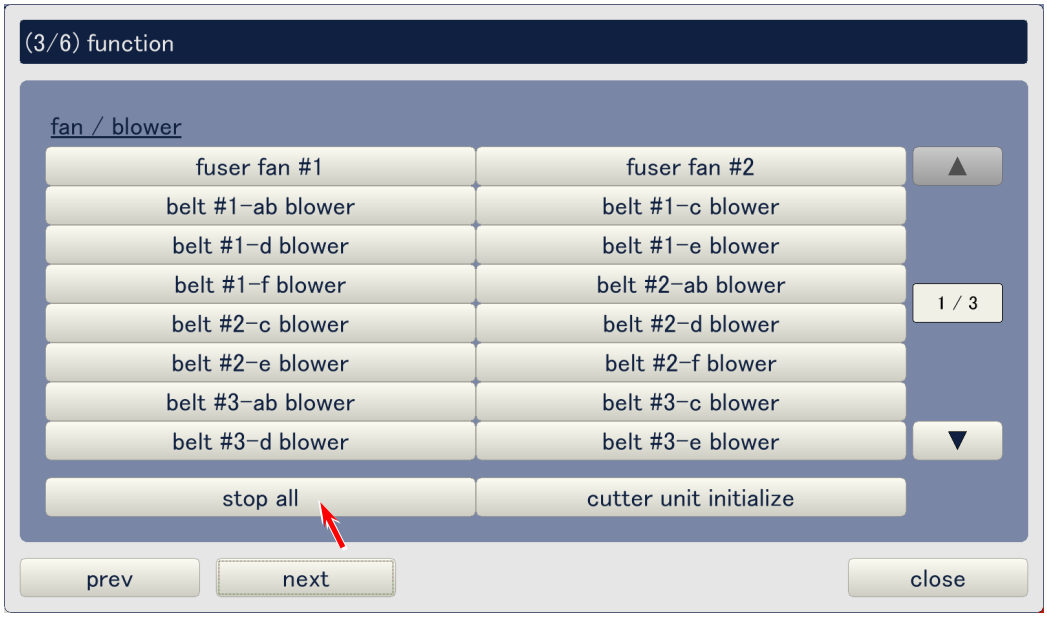




⚠ NOTE

(1) Some electric components like blowers will be operating always. If you will check the operation of such components, execute **stop all** first. All the components including such always operating components will stop, which will make it easier for the operation check.

- E-FFF0 will be indicated on the Operation Panel when “stop all” is executed.
- Turn off/on the KC80 to cancel the “stop all” state.



(2) **Cutter unit initialize** is a function used on the factory side. It has to be executed before operating the Cutter Motor individually when in “stop all” state. As such case will be very rare in the service field, do not touch this button.

(3) Do not operate any high voltage item! Otherwise the Drum will be damaged.

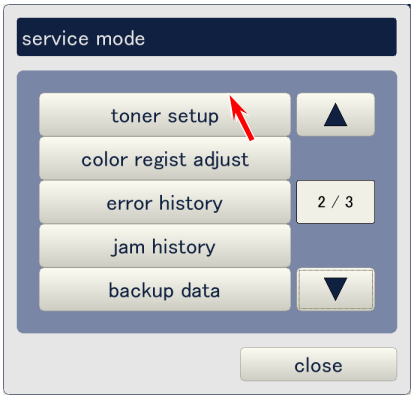
(4) Take great care not to turn on the IR lamp for long time in **stop all** state. If it is turned on for a long time, Thermostat will break.

(5) Only one electric component can be operated at once.

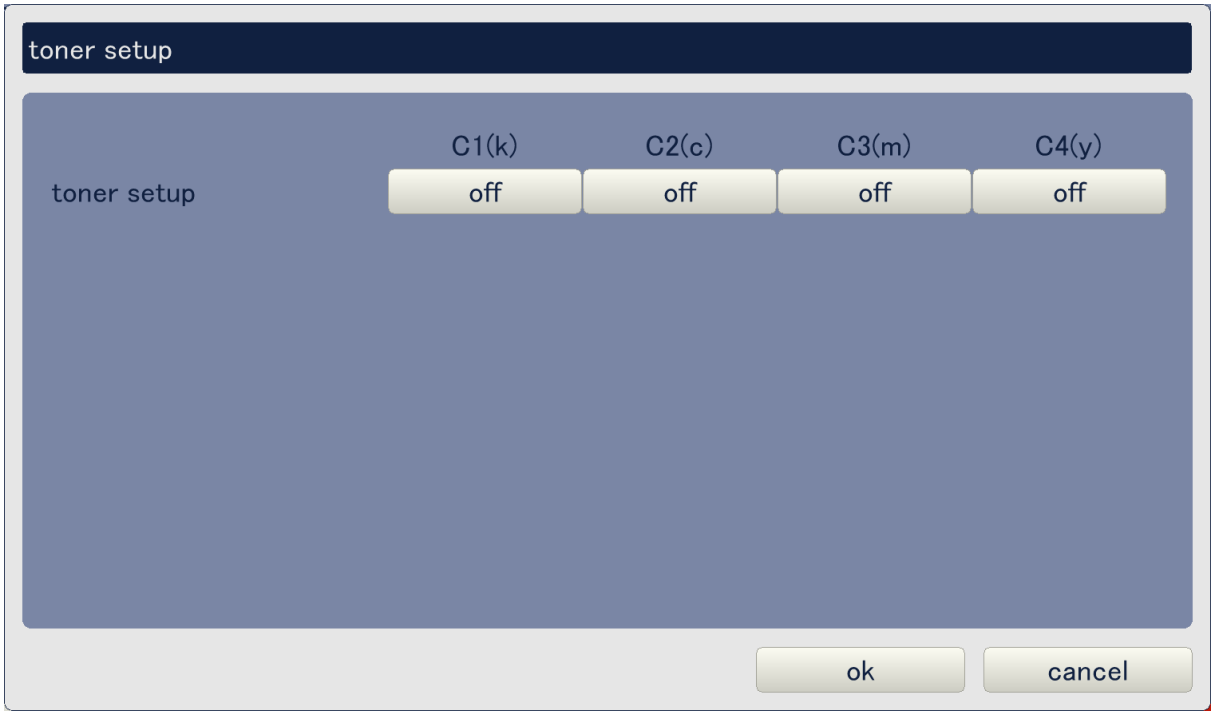
9. 5. 6 Toner Setup

Toner Setup automatically supplies necessary amount of toner to the developer unit. This is required in the following 2 situations.
(1) During machine installation
(2) After developer maintenance

- Click on **toner setup** in the service mode menu to access the Toner Setup page.

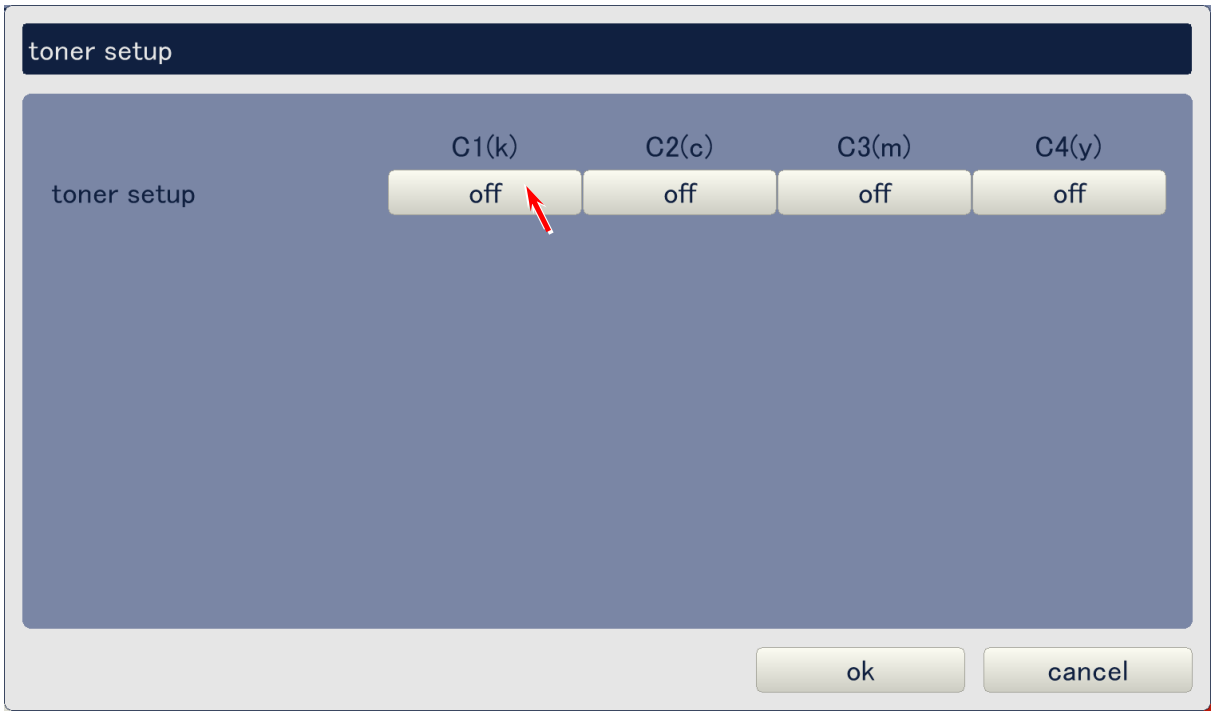


Toner Setup Page



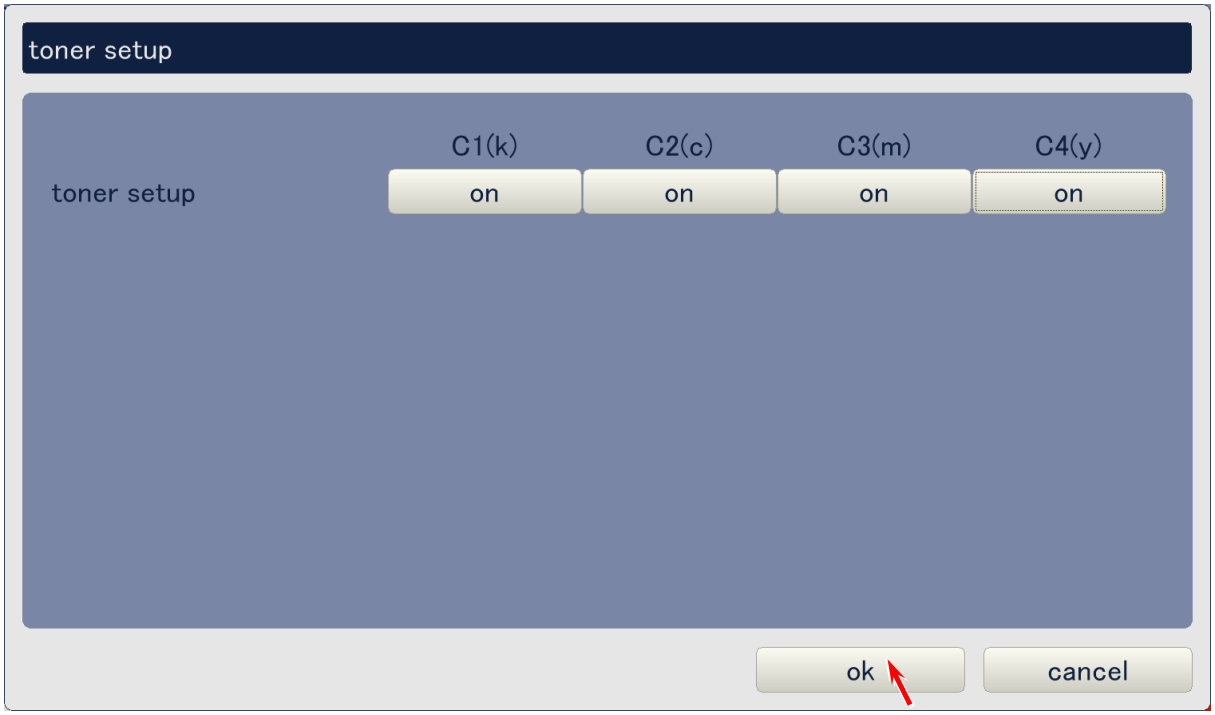
- CX means the target color. Click on any button considering the color, and choose **on** in the pop up dialog if you will take toner setup for this color.
  C1 : Black
  C2 : Cyan
  C3 : Magenta
  C4 : Yellow

Setting	Description
off	Toner is not supplied to the Developer Unit.
on	Toner is supplied to the Developer Unit.





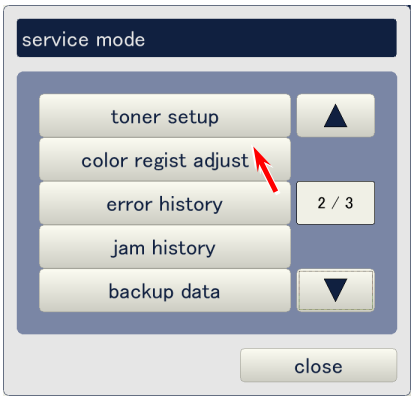
- Click on **ok** to start toner setup. The printer automatically supplies the toner to the developer unit. Wait until the operation finishes.



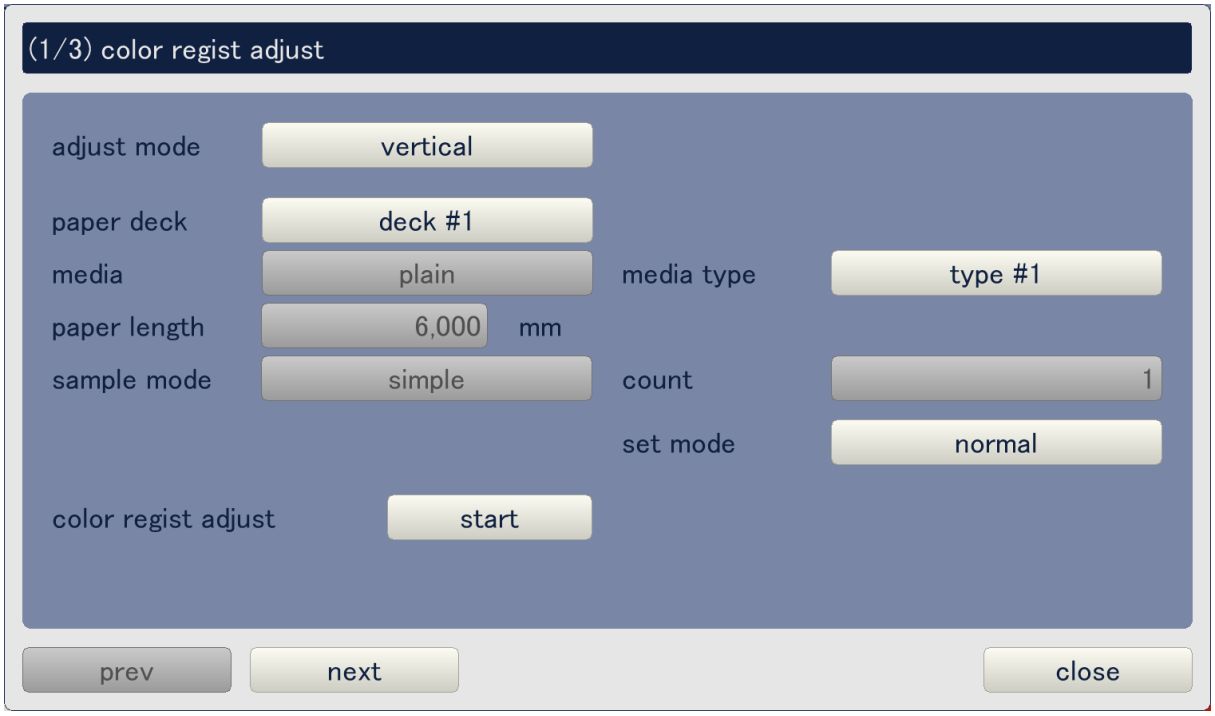
9. 5. 7 Color Regist Adjust

The following operations are available in the Color Regist Adjust Page.

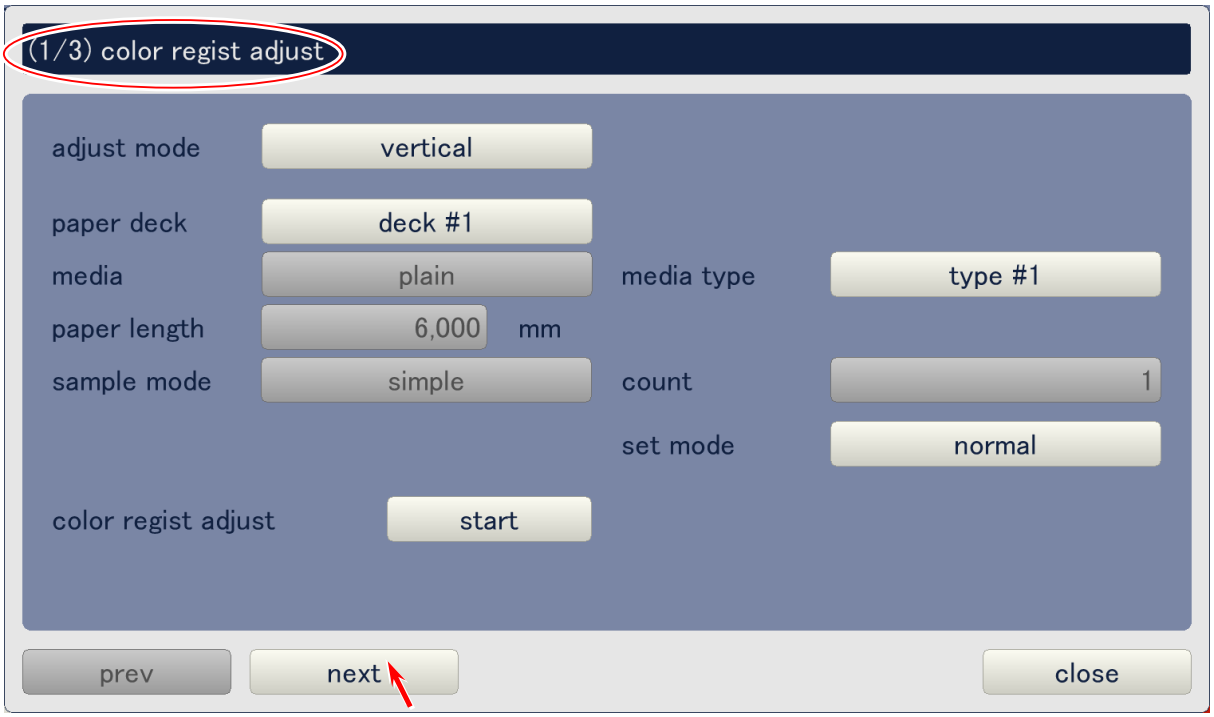
- Adjustment mode for correct placement of Color Sensor
- Horizontal color registration
- Vertical color registration
- Motor speed adjustment
- Saving the reading data of Color Sensor

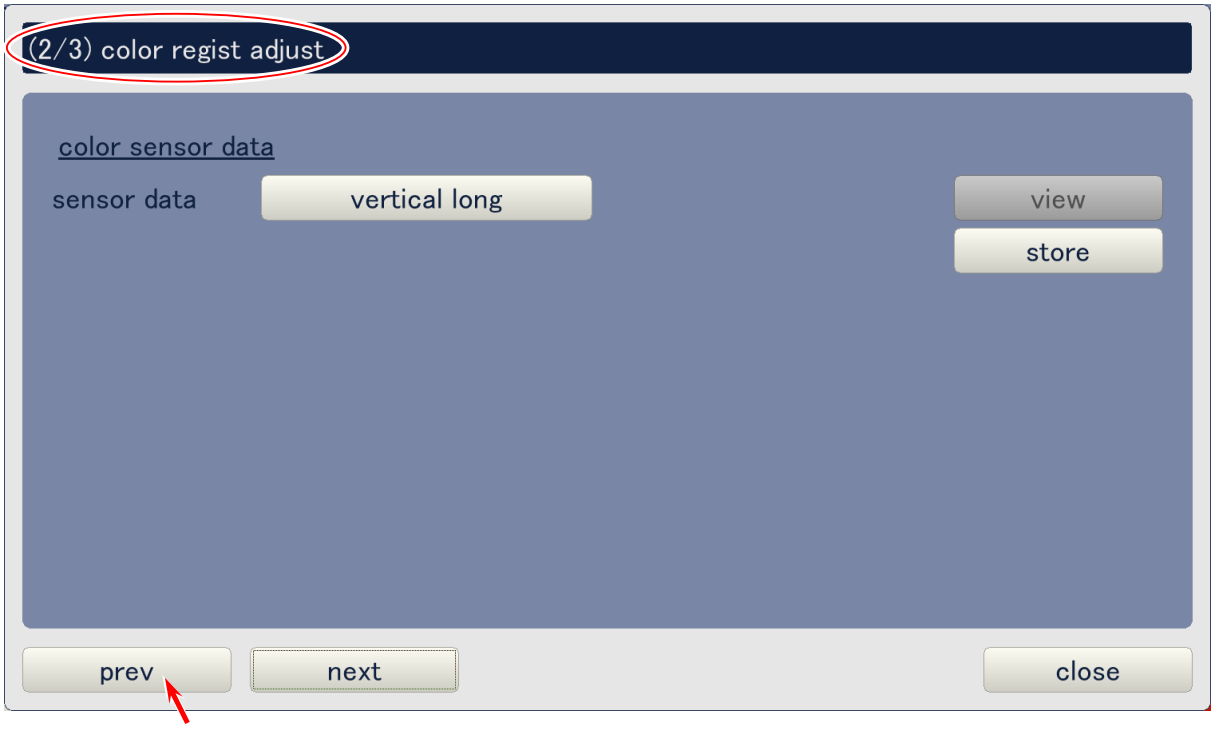


Color Regist Adjust Page



Color Regist Adjust Page consists of 3 pages. Use **prev** and **next** buttons to indicate other pages. Current page is shown as (1/3) on the top of the screen.



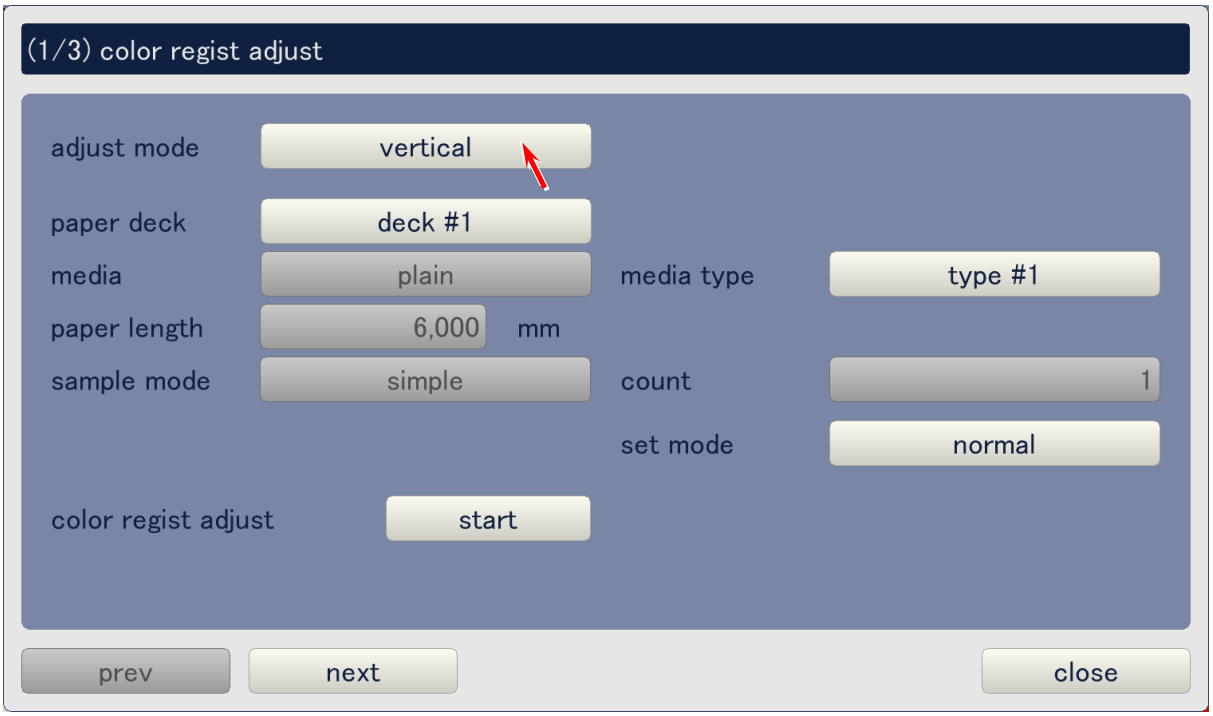


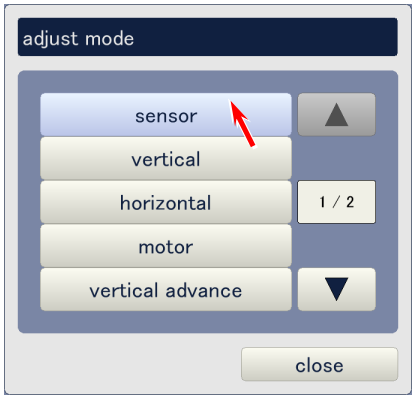
9. 5. 7. 1 Sensor (Color Sensor Adjustment Mode)

Sensor is used exclusively for adjusting the mechanical installation position of Color Sensor. When this is executed, a blank image (white paper) is ejected with operating the fan near Color Sensor. The following is the consequent operation procedure.

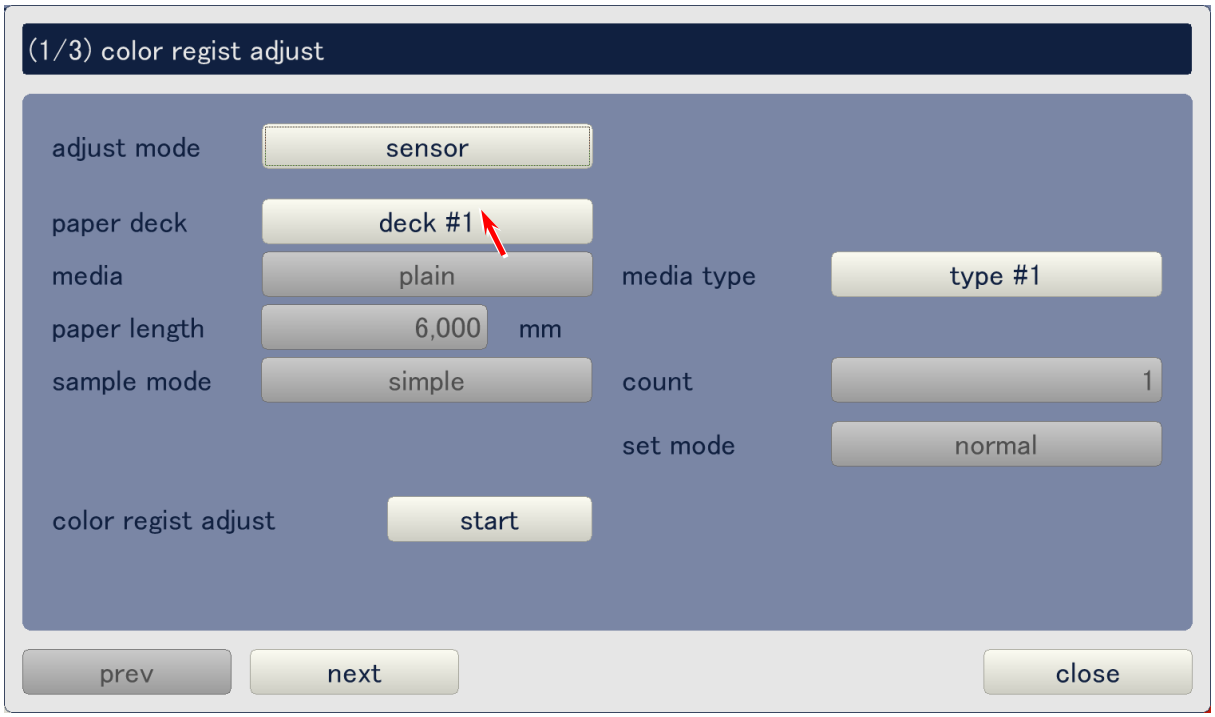
> **NOTE**
>
> See [10.7 Adjustment of Color Sensor's Position after Replacement] on page 10-60 for the adjustment way of installation position of Color Sensor.

- Click on the button beside **adjust mode**, and choose **sensor**.





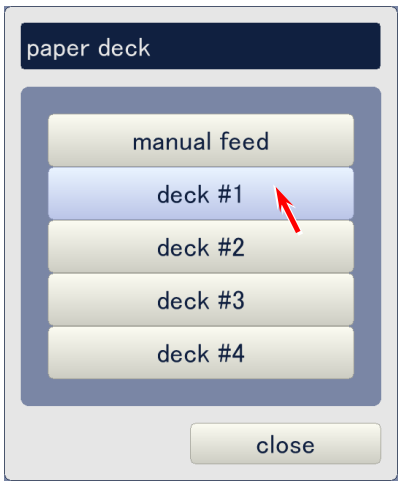
- Click on the button beside **paper deck** and choose the roll deck in which the roll media used for the adjustment is installed.



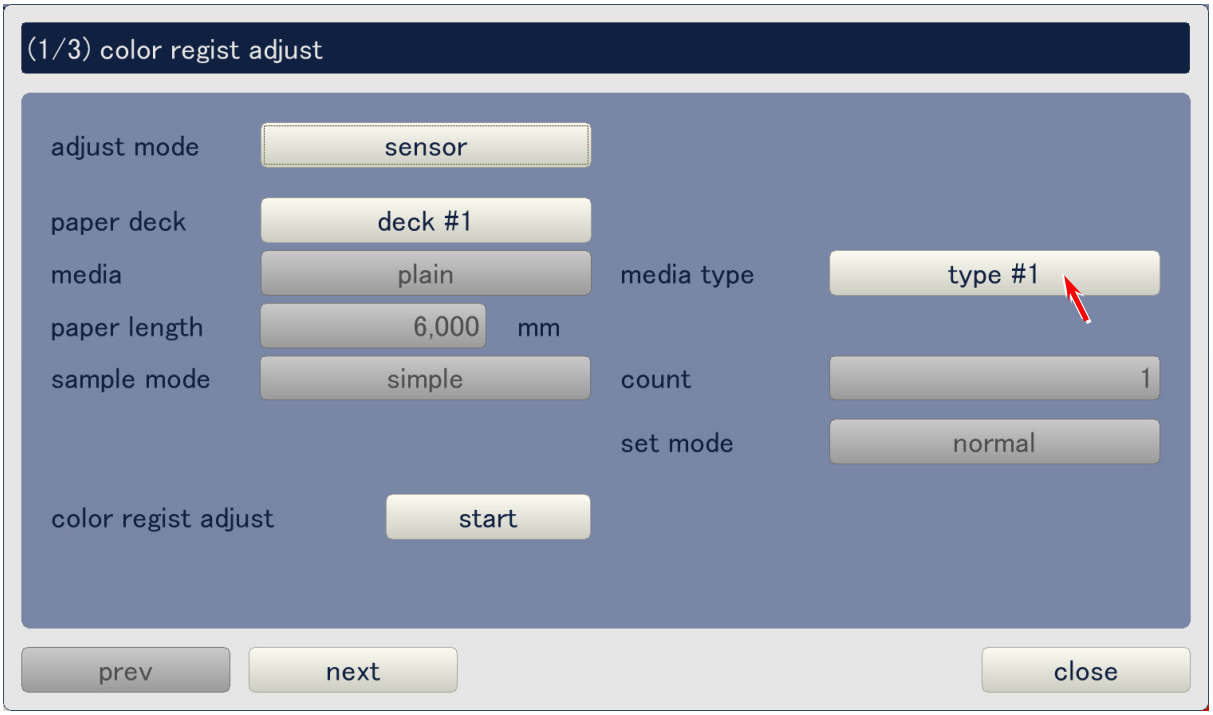
NOTE

(1) If you change **paper deck** setting from one to another, **media** (plain, trading, film or gloss) also changes according to the Media Selector setting of selected Roll Deck. Note that change of **media** via KIPDiagColor is not available. (This button is always inactive.)

(2) Use **24lbs premium bond** for the adjustment.

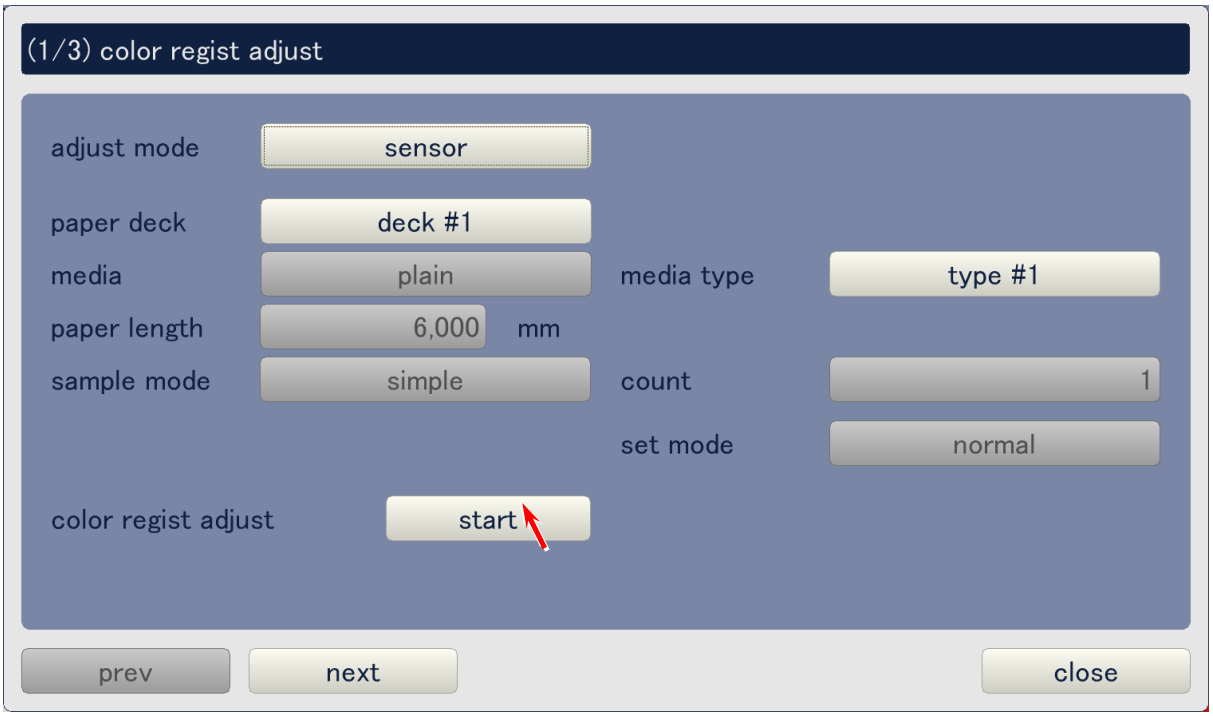


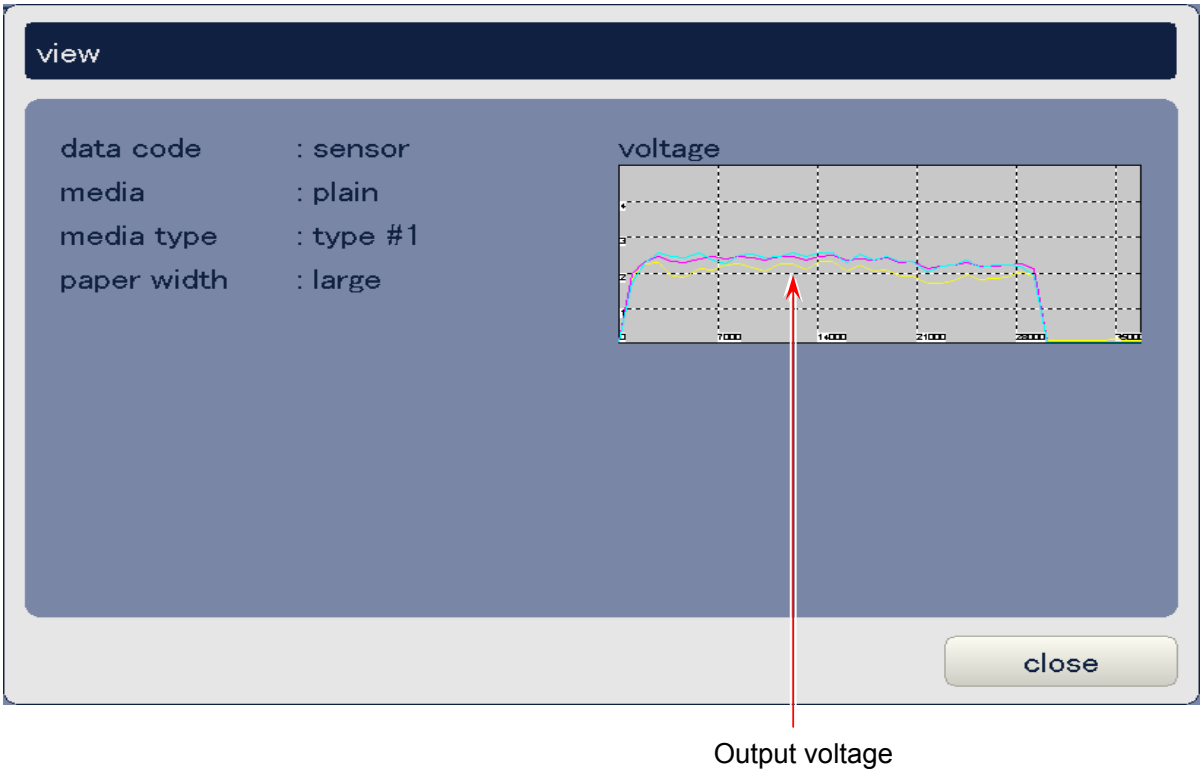
- Click on the button beside **media type** and choose the correct media type.





- Click on the [start] button beside **color regist adjust**. KC80 ejects a sheet of paper without image in 48” long with reading this white paper with the Color Sensor. Then a graphic chart that shows the output voltage from the sensors is indicated.



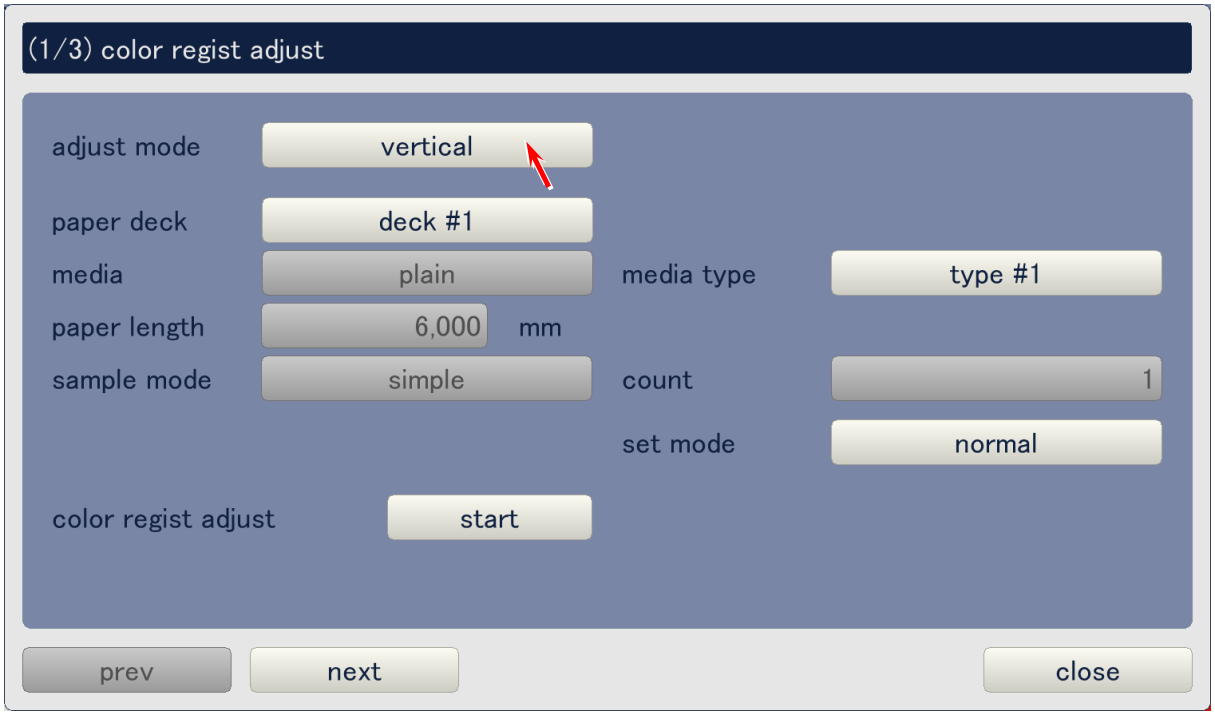


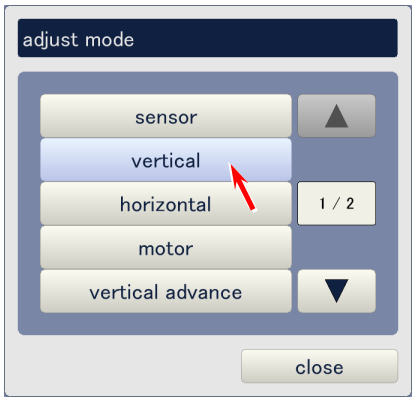
9. 5. 7. 2 Vertical

Vertical is an automatic calibration mode that achieves regular quality of vertical color registration by either **normal** mode or **simple** mode.

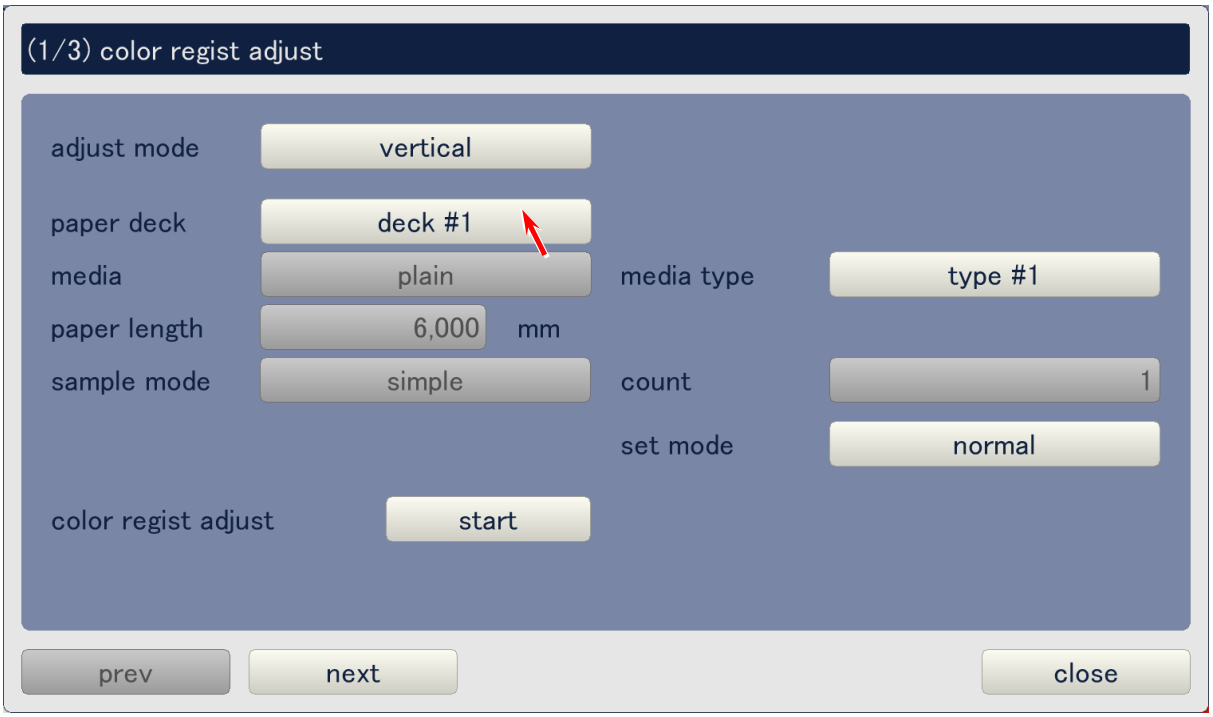
> **NOTE**
>
> Prior to starting the calibration, the operator can specify any media, media type and media width (group) as the applicable conditions of vertical color registration calibration data.
>
> - **Normal** mode gets the calibration data only for the specified applicable conditions.
>
> - **Simple** mode gets the calibration data for the specified applicable conditions. And this calibration data (for operator's specified conditions) is also applied to all other different conditions.

- Click on the button beside **adjust mode** and select **vertical**.





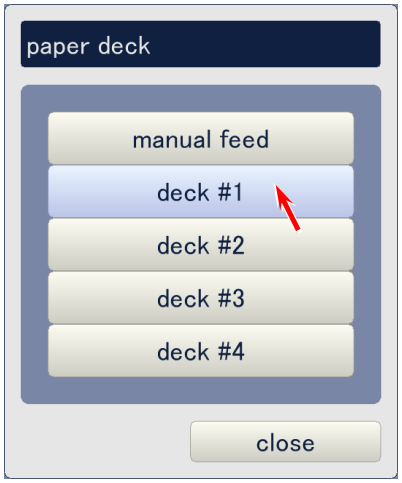
- Click on the button beside **paper deck** and select the roll deck which has the roll media to be calibrated.



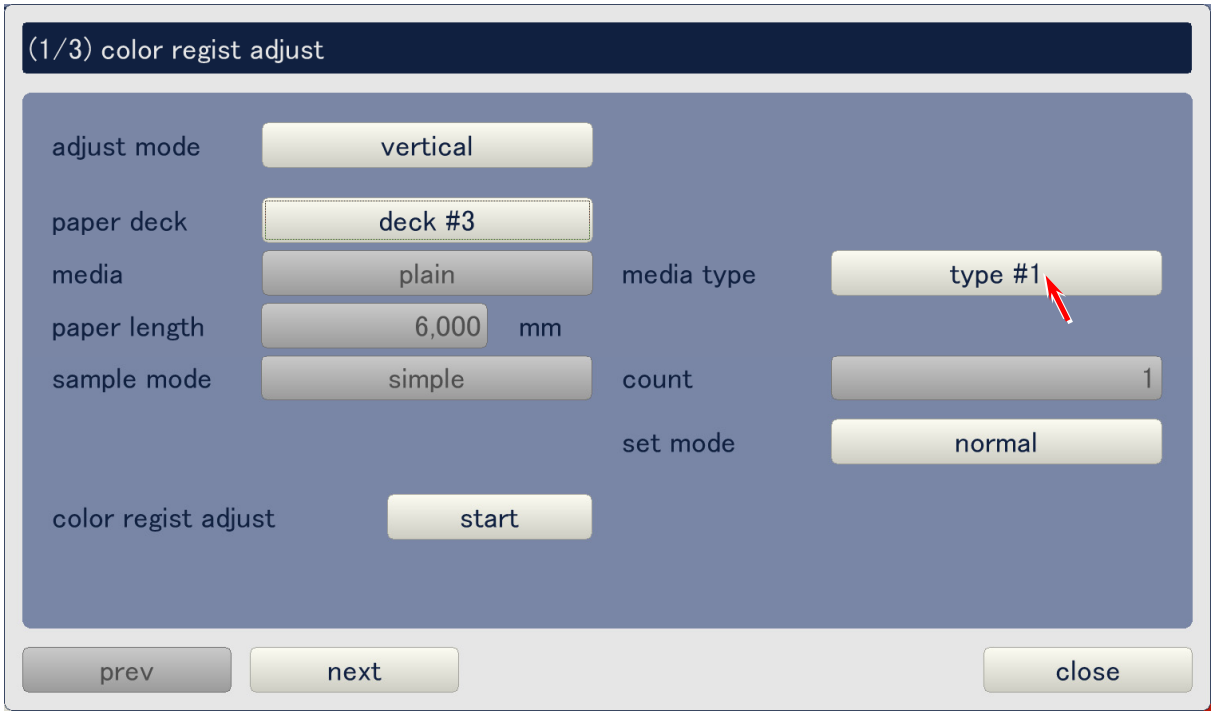
NOTE

(1) If you change **paper deck** setting from one to another, **media** (plain, trading, film or gloss) also changes according to the Media Selector setting of selected Roll Deck. Note that change of **media** via KipDiagColor is not available. (This button is always inactive.)

(2) Please select correct media as each media requires its own vertical color registration calibration data.



- Click on the button beside **media type** and select the media type to be calibrated.





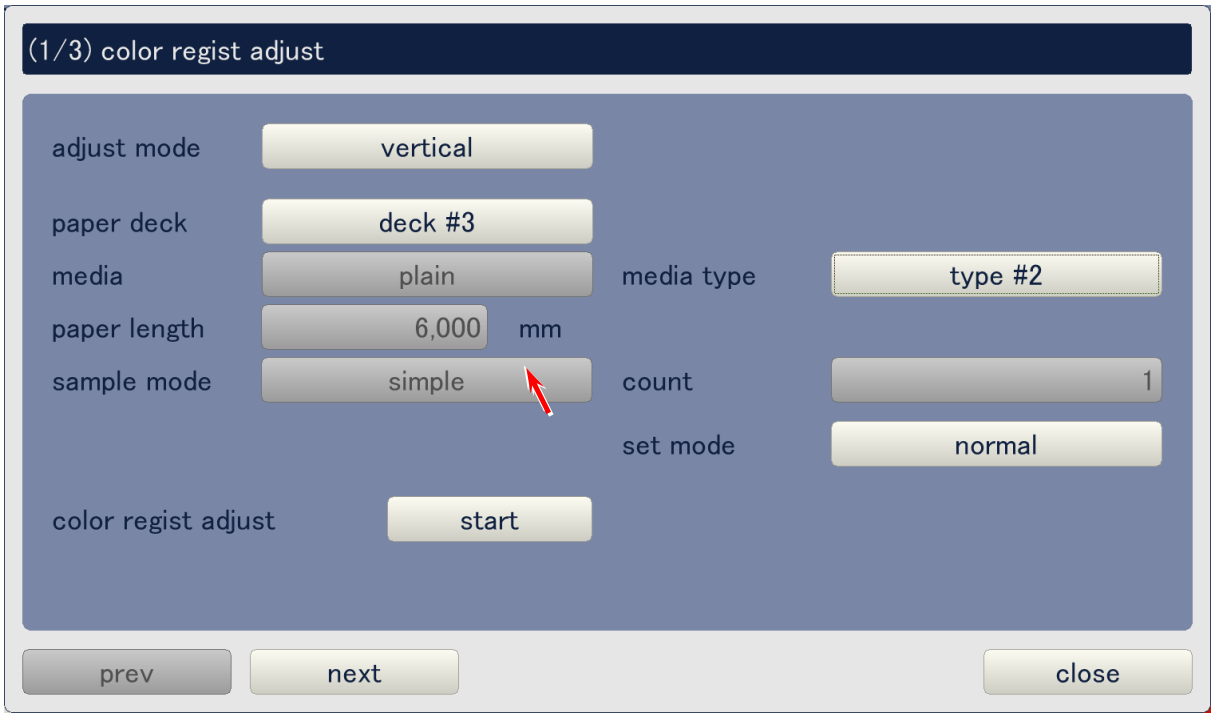
Reference

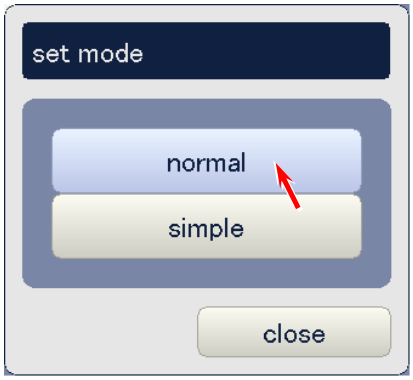
Each media (plain, tracing, film & gloss) has 4 media type (type #1-4) respectively. This enables to use 4 different each media as;

Bond
- Type #1 : 24lbs Premium Bond
- Type #2 : 20lbs bond of manufacturer A
- Type #3 : 22lbs bond of manufacturer B
- Type #4 : 24lbs bond of manufacturer C

Please select correct media type as each media type requires its own vertical color registration calibration data.

- Click on the button beside **set mode** and select either **normal** or **simple** according to the necessity.



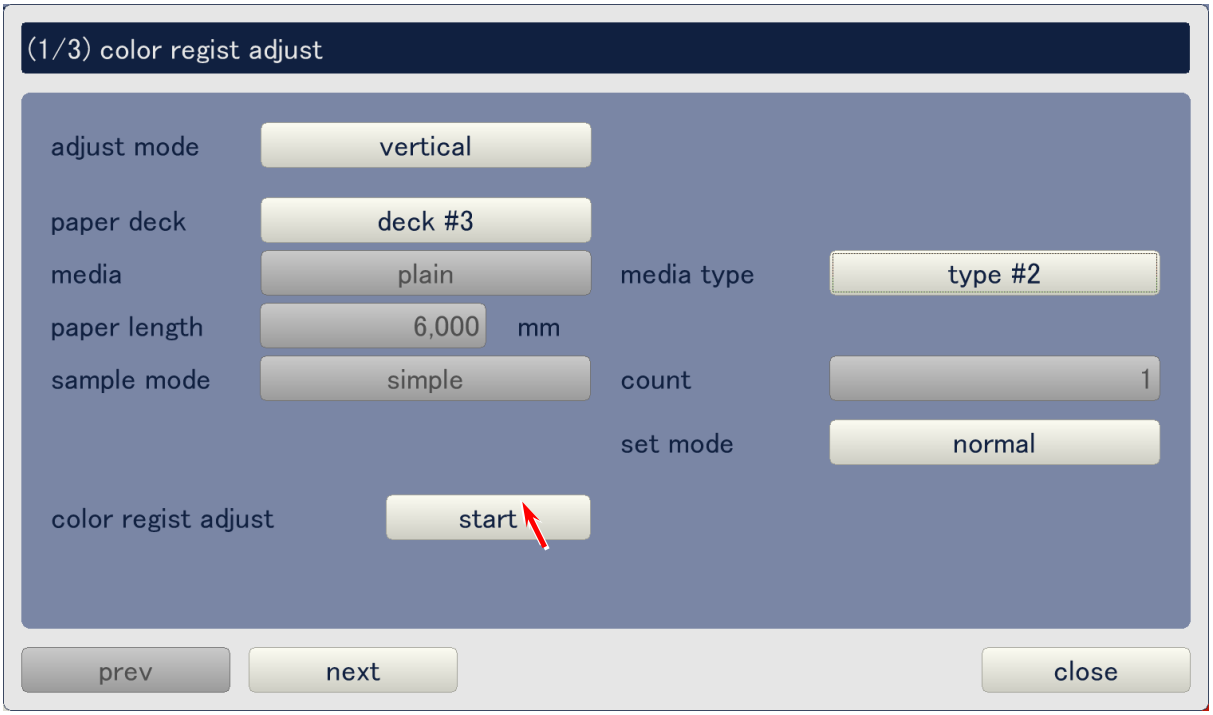


⚠ NOTE

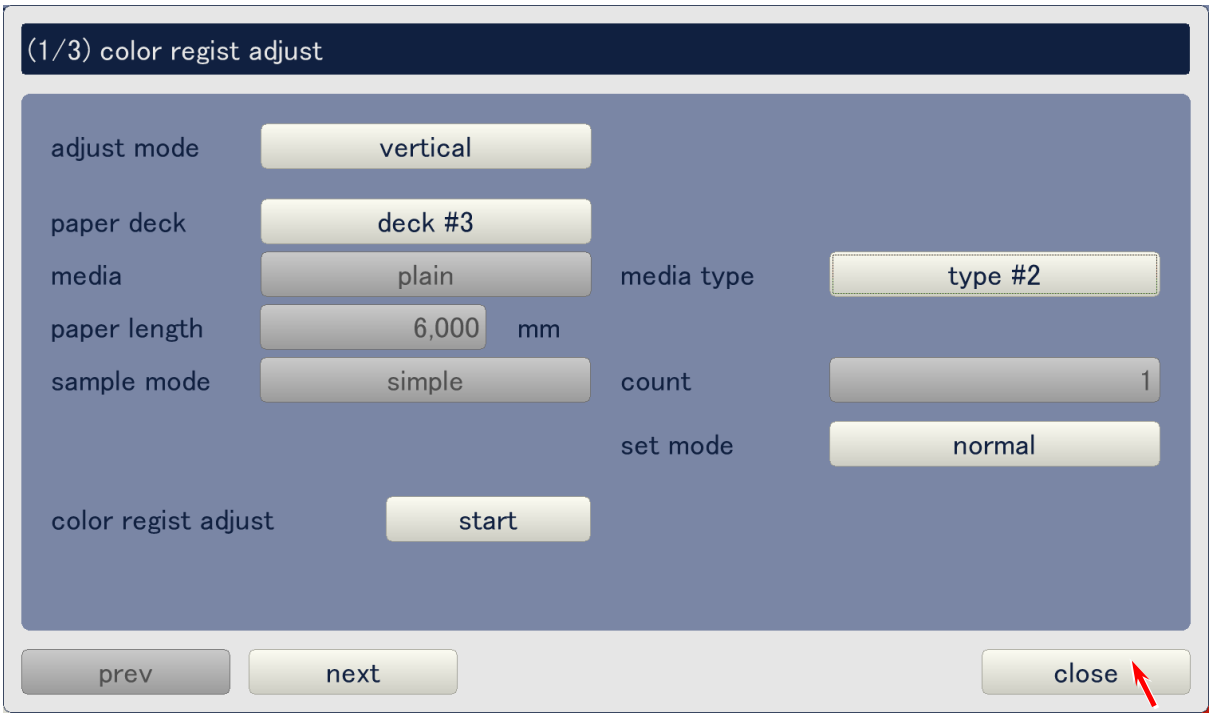
Normal will get the calibration data only for the specified media, media type and media width (group).

Simple will get the calibration data for the specified media, media type and media width (group), and applies this calibration data also to all other different conditions.

- Click on the [start] button beside **color regist adjust**. Printer takes 3 pages of sampling print in 3 different print lengths (each 48", 24" & 15" long). KIPDiagColor reads the image on each 3 prints to know the amount of vertical misalignment of 3 colors C, M & Y against standard K via Color Sensor, and automatically calculates the best calibration data per color by software compensation to achieve correct alignment of 4 colors.



- When the printer stops completely, click on **close** to close the color registration calibration page.



Reference

There are plenty of calibration categories as listed on next 2 pages, but **simple** calibration will calibrate almost all of these items to an acceptable level by just one operation. The calibration is processed as follows.

- Any 3 calibration categories are used for calibration. For example;
  - Plain paper, Type#1, Large, Long
  - Plain paper, Type#1, Large, Middle
  - Plain paper, Type#1, Large, Short
- When calibration starts, KC80 prints the calibration data on 3 different lengths of sheets. (long, middle & short)
- The Color Sensor detects the distance between black and each color on these prints.
- The necessary calibration values are automatically calculated. (The followings are just example of calibration values.)
  - Plain paper, Type#1, Large, Long C: -2 M: -1 Y: -1 (pixel)
  - Plain paper, Type#1, Large, Middle C: -1 M: 0 Y: -1
  - Plain paper, Type#1, Large, Short C: +1 M: 0 Y: -1
- The above calibration values are also applied commonly **to all categories of different media, media types (type #X) and media widths**.
  In this example, the calibration values "C:-2, M:-1, Y:-1" for [Plain paper, Type#1, Large, Long] is also applied to [(all media), (all sub-types), (all roll width categories), Long]. (The setting data of cyan is decreased by "-2", magenta by "-1", and yellow by "-1" on all categories that belong to [(all media), (all sub-types), (all roll width categories), Long].

NOTE

(1) **Simple** calibration will calibrate the vertical color registration for all types of media to an acceptable level by just one operation as explained in the above. Normally this calibration will produce an acceptable image quality even if several different types of media is used. If unacceptable image caused by inappropriate vertical color registration is printed when some specific type of media is used, however, such media needs more calibration independently.
Normal calibration for vertical color registration as well as motor speed calibration are available to make the most appropriate calibration independently to specific type of media. See [10.3 Calibration Required When a New Media Type Is Use] on page 10-11.

(2) Items that belong to the length category "others", which are highlighted in the list on next 2 pages, can not be calibrated by the "simple" calibration. ("Others" means signal cut, which is to be used on copying.)

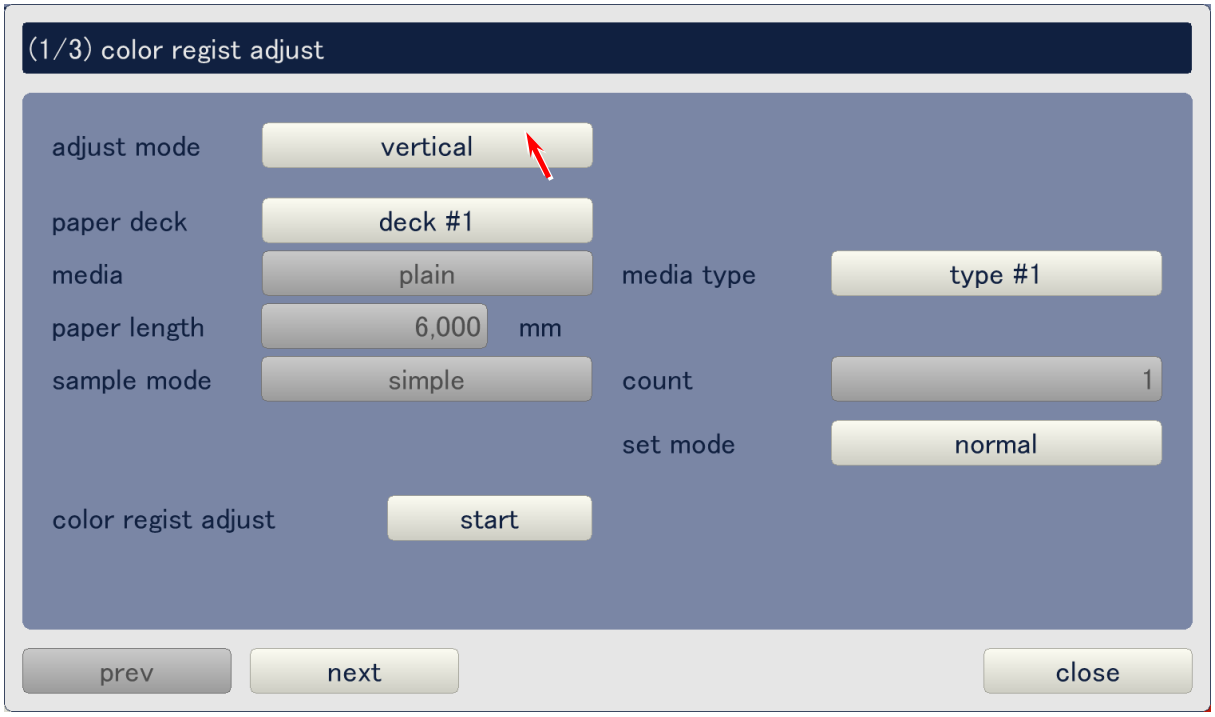
Media type	Sub-type	Roll width category	Length category	Media type	Sub-type	Roll width category	Length category
Plain paper (Bond)	Type #1	Large	Long	Tracing paper (Vellum)	Type #1	Large	Long
			Middle				Middle
			Short				Short
		Middle large	Long			Middle large	Long
			Middle				Middle
			Short				Short
		Middle	Long			Middle	Long
			Middle				Middle
			Short				Short
		Short	Long			Short	Long
			Middle				Middle
			Short				Short
	Type #2	Large	Long		Type #2	Large	Long
			Middle				Middle
			Short				Short
		Middle large	Long			Middle large	Long
			Middle				Middle
			Short				Short
		Middle	Long			Middle	Long
			Middle				Middle
			Short				Short
		Short	Long			Short	Long
			Middle				Middle
			Short				Short
	Type #3	Large	Long		Type #3	Large	Long
			Middle				Middle
			Short				Short
		Middle large	Long			Middle large	Long
			Middle				Middle
			Short				Short
		Middle	Long			Middle	Long
			Middle				Middle
			Short				Short
		Short	Long			Short	Long
			Middle				Middle
			Short				Short
	Type #4	Large	Long		Type #4	Large	Long
			Middle				Middle
			Short				Short
		Middle large	Long			Middle large	Long
			Middle				Middle
			Short				Short
		Middle	Long			Middle	Long
			Middle				Middle
			Short				Short
		Short	Long			Short	Long
			Middle				Middle
			Short				Short

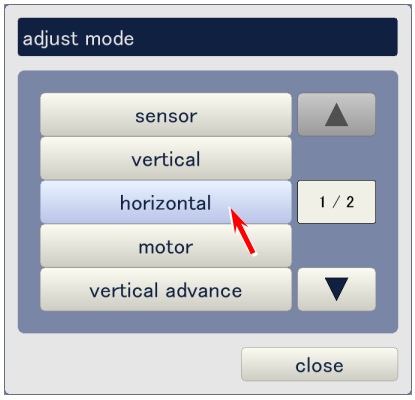
Media type	Sub-type	Roll width category	Length category	Media type	Sub-type	Roll width category	Length category
Film	Type #1	Large	Long	Gloss	Type #1	Large	Long
			Middle				Middle
			Short				Short
		Middle large	Long			Middle large	Long
			Middle				Middle
			Short				Short
		Middle	Long			Middle	Long
			Middle				Middle
			Short				Short
		Short	Long			Short	Long
			Middle				Middle
			Short				Short
	Type #2	Large	Long		Type #2	Large	Long
			Middle				Middle
			Short				Short
		Middle large	Long			Middle large	Long
			Middle				Middle
			Short				Short
		Middle	Long			Middle	Long
			Middle				Middle
			Short				Short
		Short	Long			Short	Long
			Middle				Middle
			Short				Short
	Type #3	Large	Long		Type #3	Large	Long
			Middle				Middle
			Short				Short
		Middle large	Long			Middle large	Long
			Middle				Middle
			Short				Short
		Middle	Long			Middle	Long
			Middle				Middle
			Short				Short
		Short	Long			Short	Long
			Middle				Middle
			Short				Short
	Type #4	Large	Long		Type #4	Large	Long
			Middle				Middle
			Short				Short
		Middle large	Long			Middle large	Long
			Middle				Middle
			Short				Short
		Middle	Long			Middle	Long
			Middle				Middle
			Short				Short
		Short	Long			Short	Long
			Middle				Middle
			Short				Short

9. 5. 7. 3 Horizontal

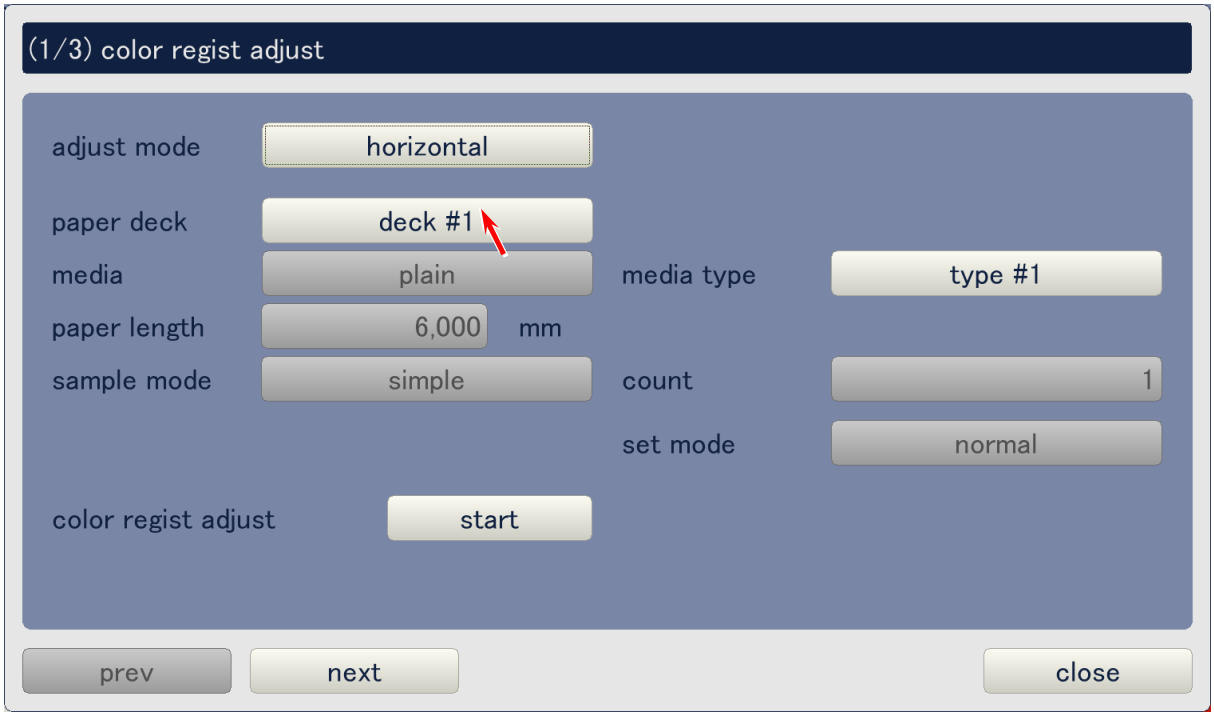
Horizontal is an automatic calibration mode that achieves correct horizontal color registration. A calibration data obtained from this mode will be applied commonly to all media, media type, media and width.

- Click on the button beside **adjust mode** and select **horizontal**.





- Click on the button beside **paper deck** and select the roll deck which has the roll media to be calibrated.

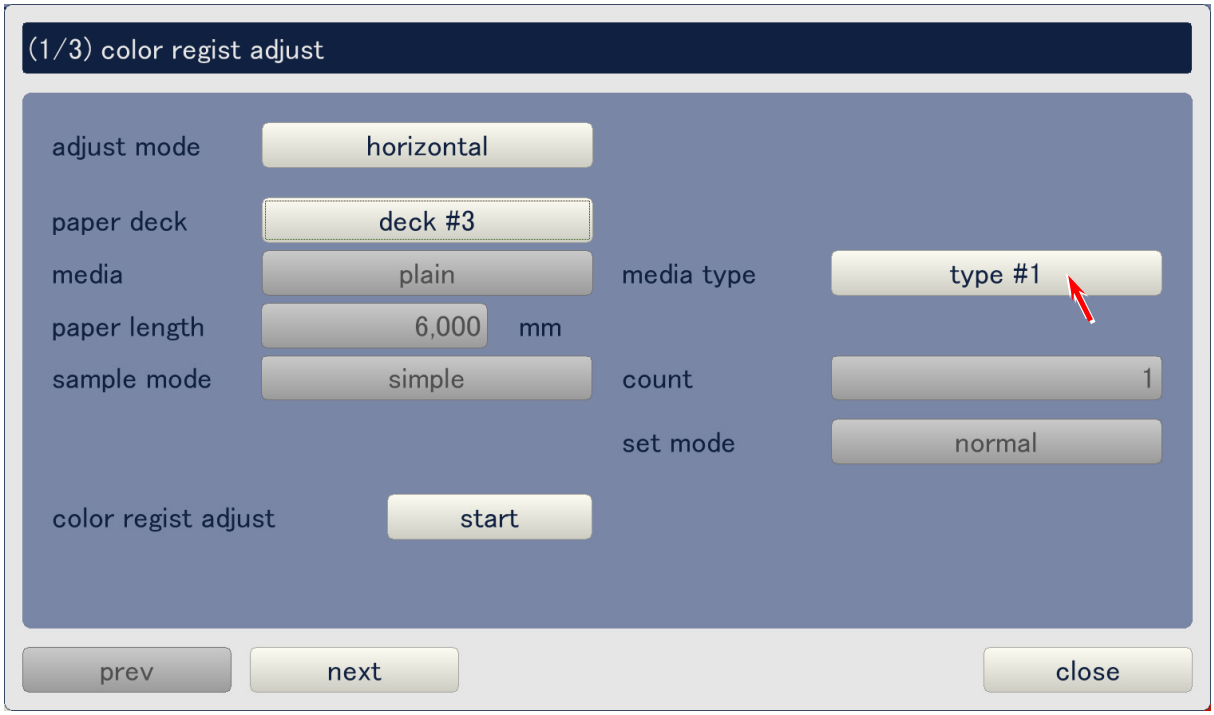


NOTE

If you change **paper deck** setting from one to another, **media** (plain, trading, film or gloss) also changes according to the Media Selector setting of selected Roll Deck. Note that change of **media** via KIPDiagColor is not available. (This button is always inactive.)

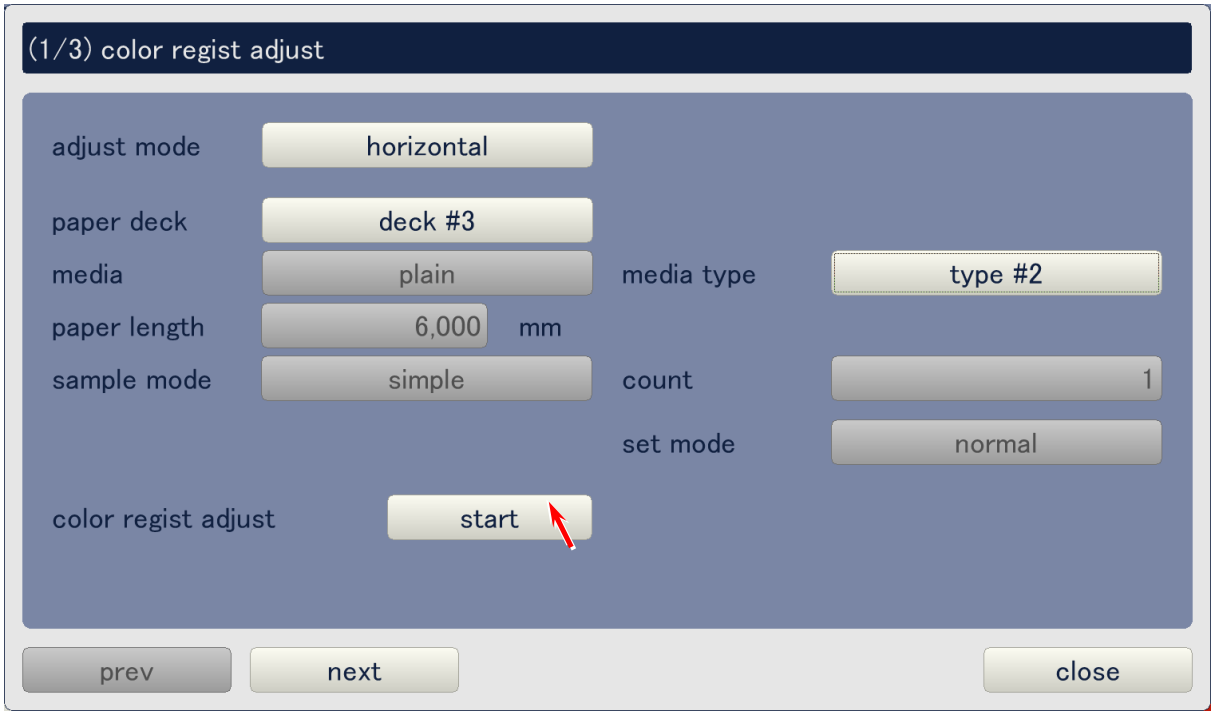


- Click on the button beside **media type** and select the correct media type.

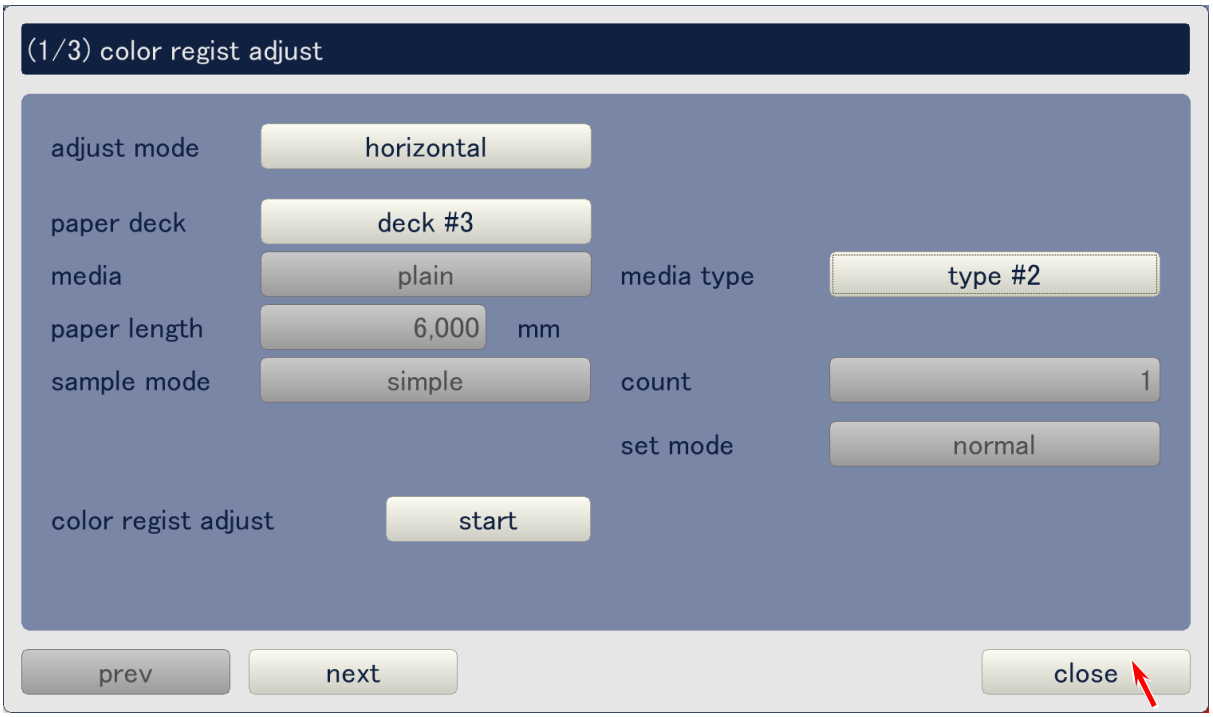




- Click on the [start] button beside **color regist adjust**. Printer takes 1 page of sampling print. KIPDiagColor reads the image on this print to know the amount of horizontal misalignment of 3 colors C, M & Y against standard K via Color Sensor, and automatically calculates the best calibration data per color by software compensation to achieve correct alignment of 4 colors.



- When the printer stops completely, click on **close** to close the color registration calibration page.

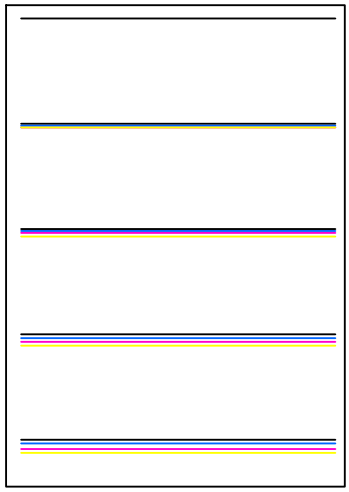


9. 5. 7. 4 Motor

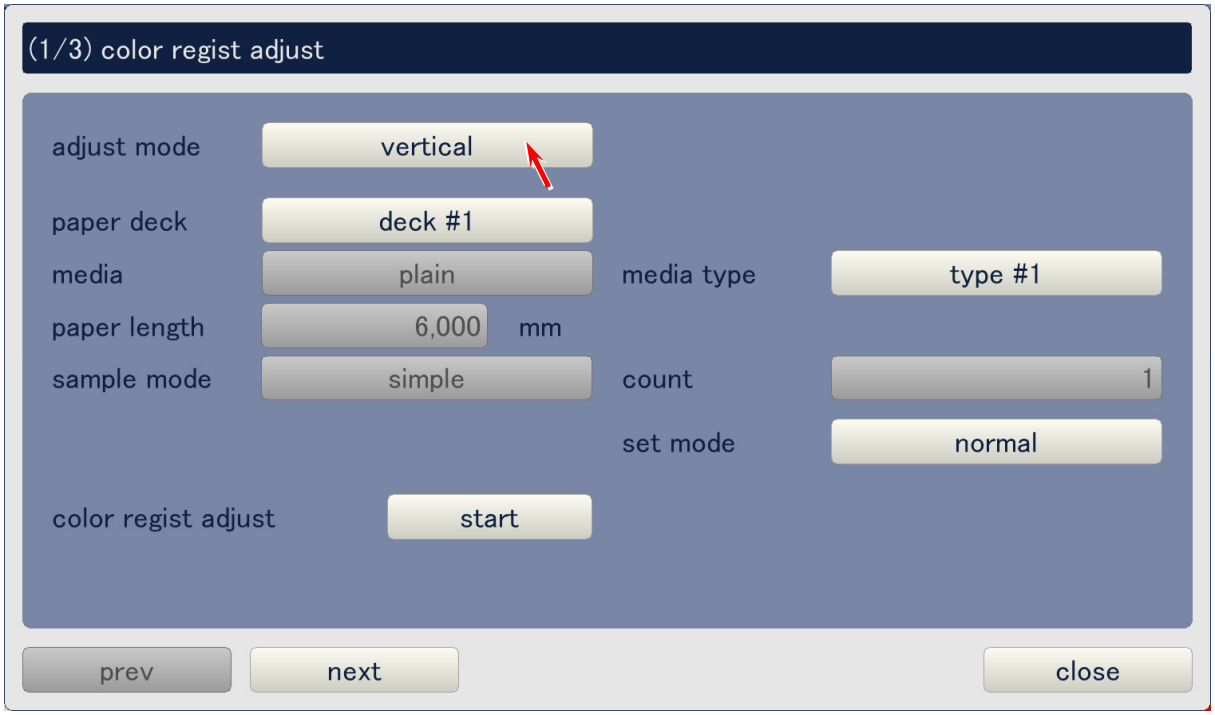
Motor is an automatic calibration mode that corrects mismatch of motor speed among Transportation Unit Motors (1/2/3) and Registration Motor.

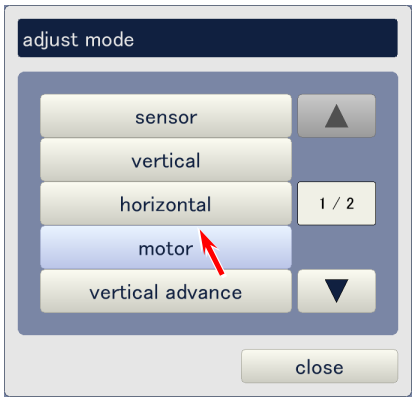
NOTE

When the motor speeds do not match correctly among Transportation Unit Motors (1/2/3) and Registration Motor, the disturbance of vertical color registration gets wider and wider as going more and more to the trailing edge side.

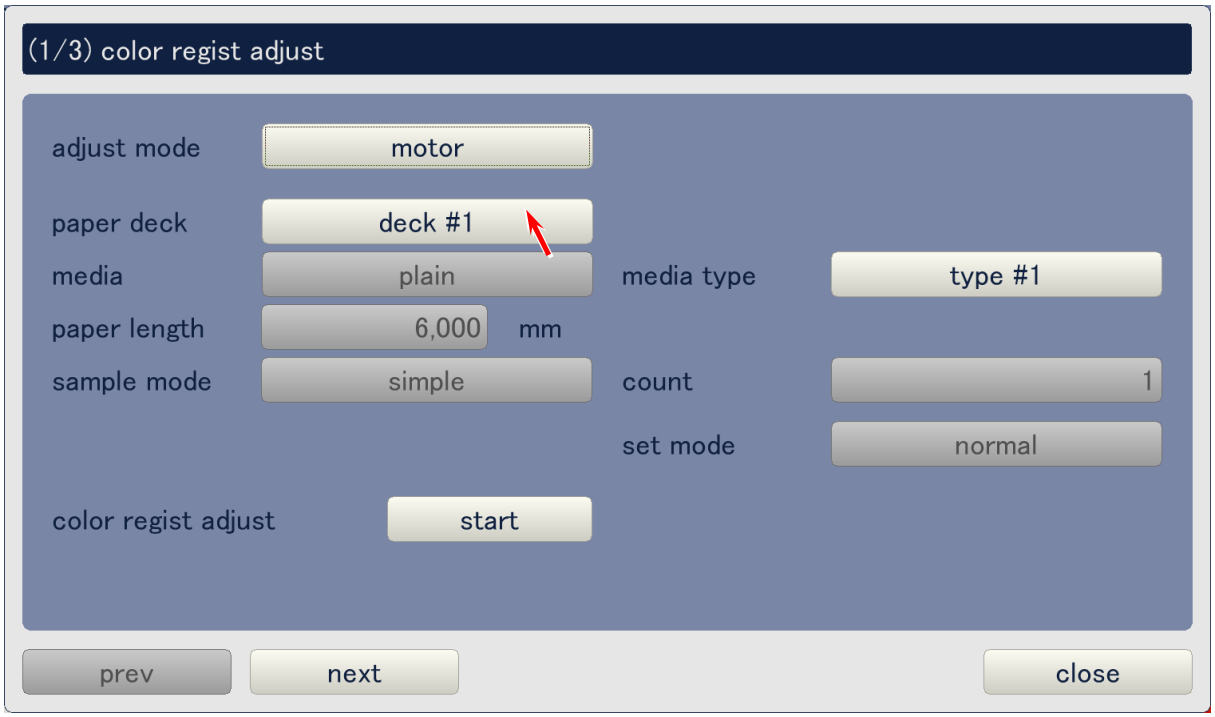


- Click on the button beside **adjust mode** and select **motor**.





- Click on the button beside **paper deck** and select the roll deck which has the roll media to be calibrated.



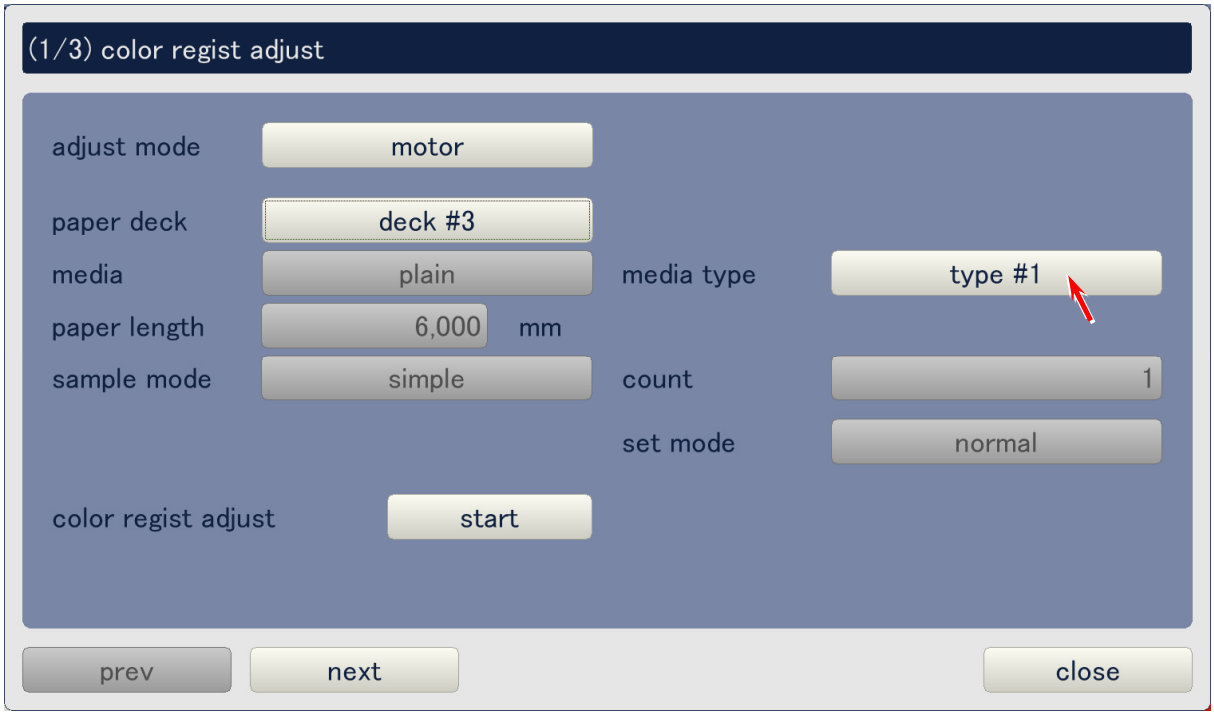
NOTE

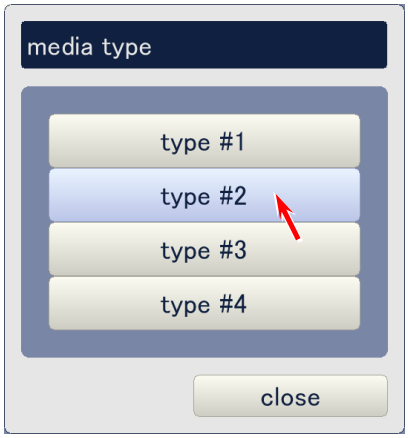
(1) If you change **paper deck** setting from one to another, **media** (plain, trading, film or gloss) also changes according to the Media Selector setting of selected Roll Deck. Note that change of **media** via KIPDiagColor is not available. (This button is always inactive.)

(2) Please select correct media as each media requires its own motor speed.



- Click on the button beside **media type** and select the correct media type to be calibrated.





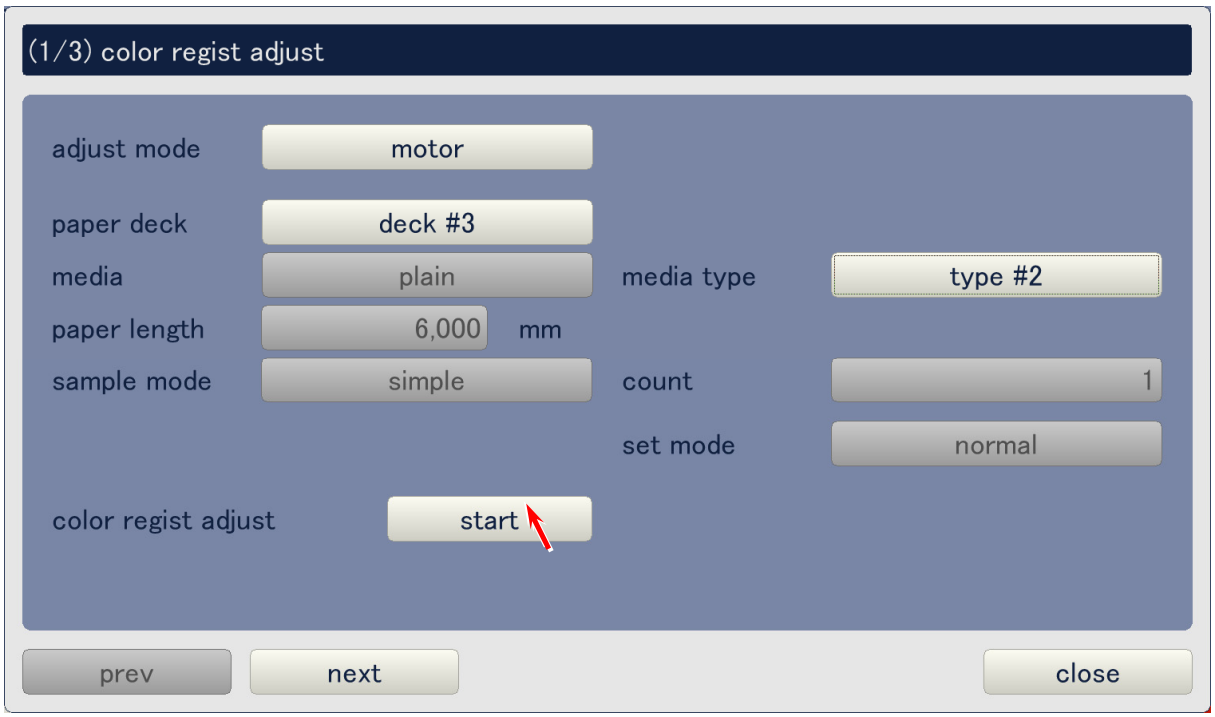
Reference

Each media (plain, tracing, film & gloss) has 4 media type (type #1-4) respectively. This enables to use 4 different each media as;

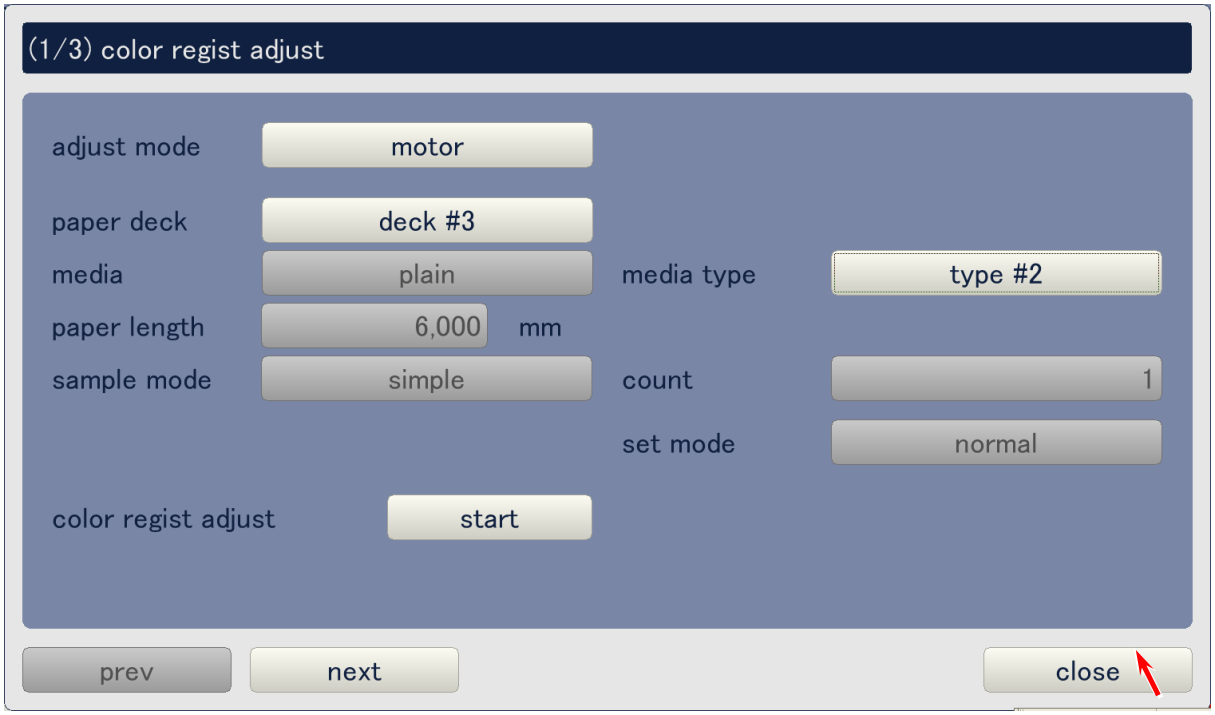
Bond
- Type #1 : 24lbs Premium Bond
- Type #2 : 20lbs bond of manufacturer A
- Type #3 : 22lbs bond of manufacturer B
- Type #4 : 24lbs bond of manufacturer C

Please select correct media type as each media type requires its own motor speed.

- Click on the [start] button beside **color regist adjust**. Printer takes 12 pages of sampling print in 3 different print lengths (4 pages of 48”, 4 of 24” & 4 of 15”). KIPDiagColor reads the image on each 12 prints to know the amount of vertical misalignment of 3 colors C, M & Y against standard K via Color Sensor, and automatically calculates the best motor speed per color.



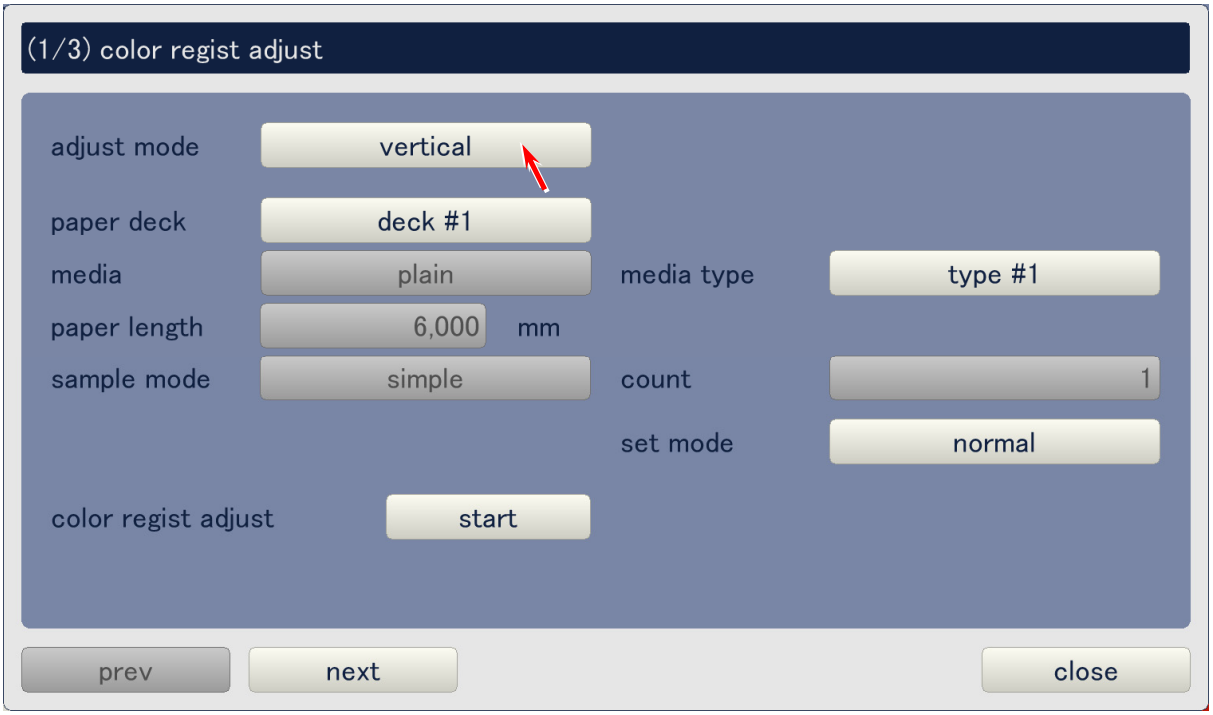
- When the printer stops completely, click on **close** to close the color registration calibration page.

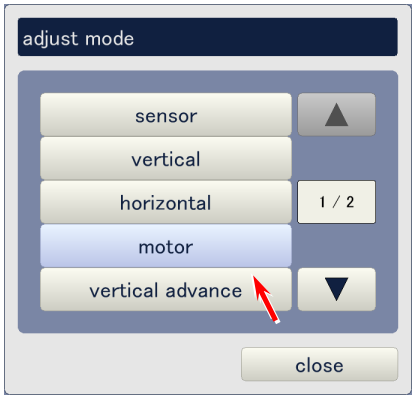


9. 5. 7. 5 Vertical advance

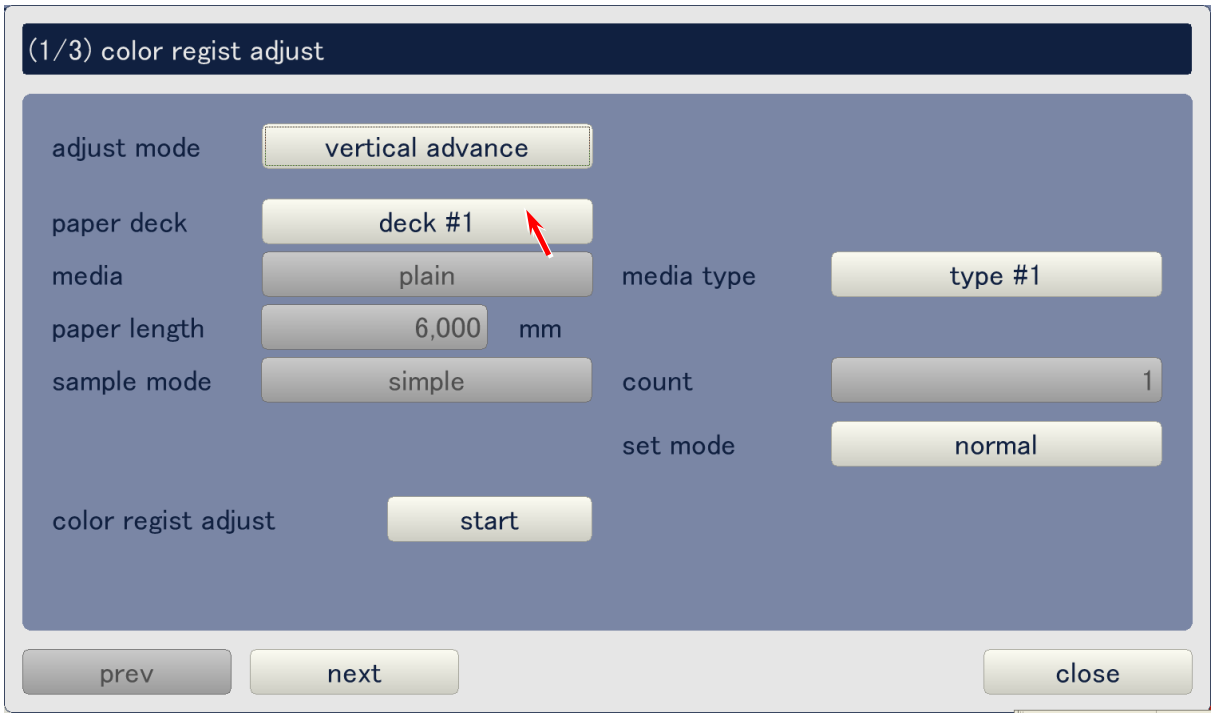
Vertical advance is an automatic calibration mode that achieves higher quality of vertical color registration with taking **vertical** and **motor** simultaneously in one operation.

- Click on the button beside **adjust mode** and select **vertical advance**.





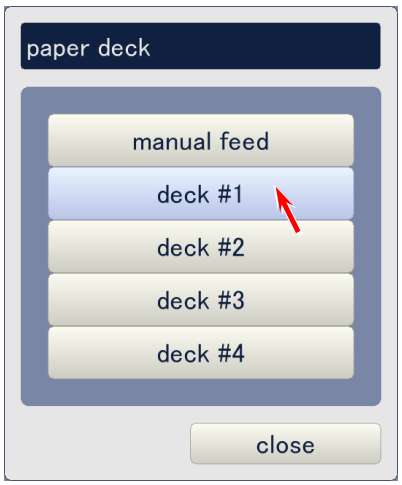
- Click on the button beside **paper deck** and select the roll deck which has the roll media to be calibrated.



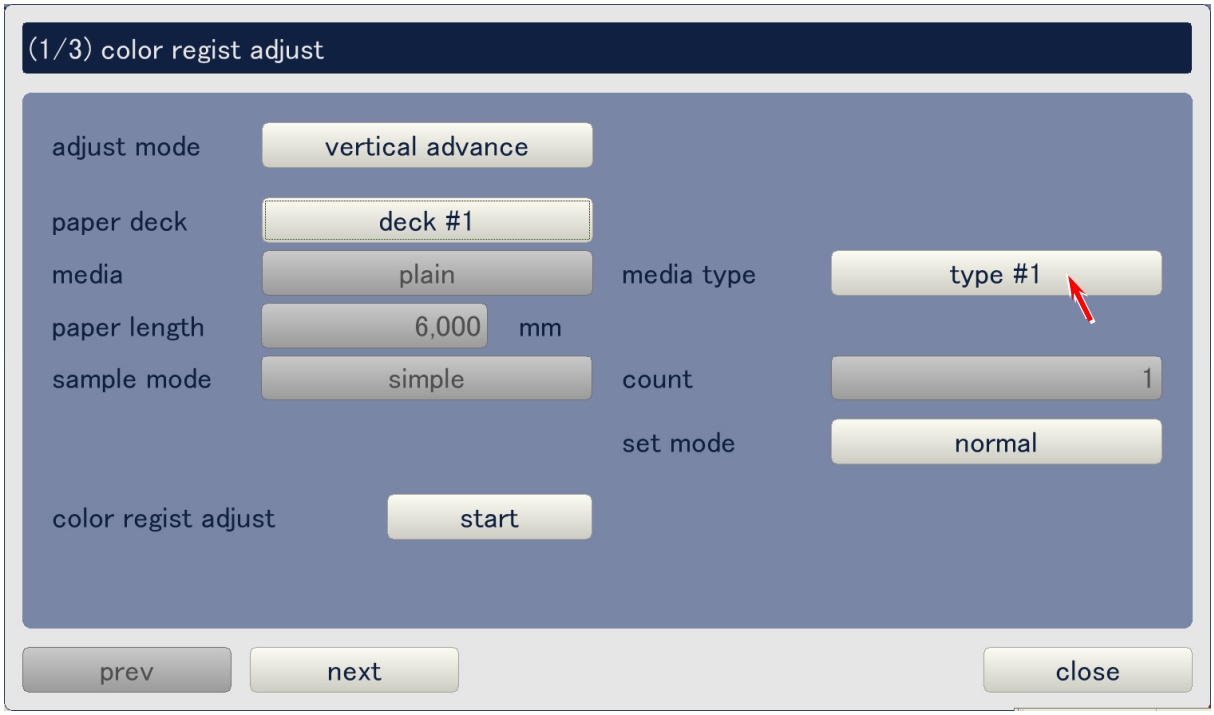
NOTE

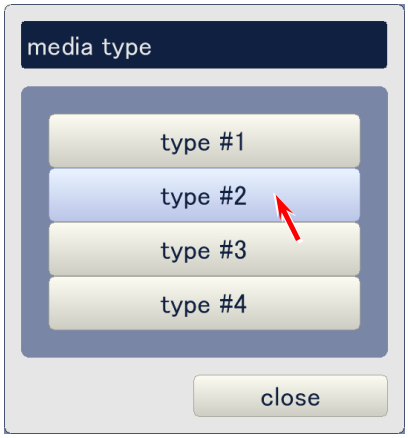
(1) If you change **paper deck** setting from one to another, **media** (plain, trading, film or gloss) also changes according to the Media Selector setting of selected Roll Deck. Note that change of **media** via KIPDiagColor is not available. (This button is always inactive.)

(2) Please select correct media as each media requires its own vertical color registration calibration data.



- Click on the button beside **media type** and select the correct media type to be calibrated.





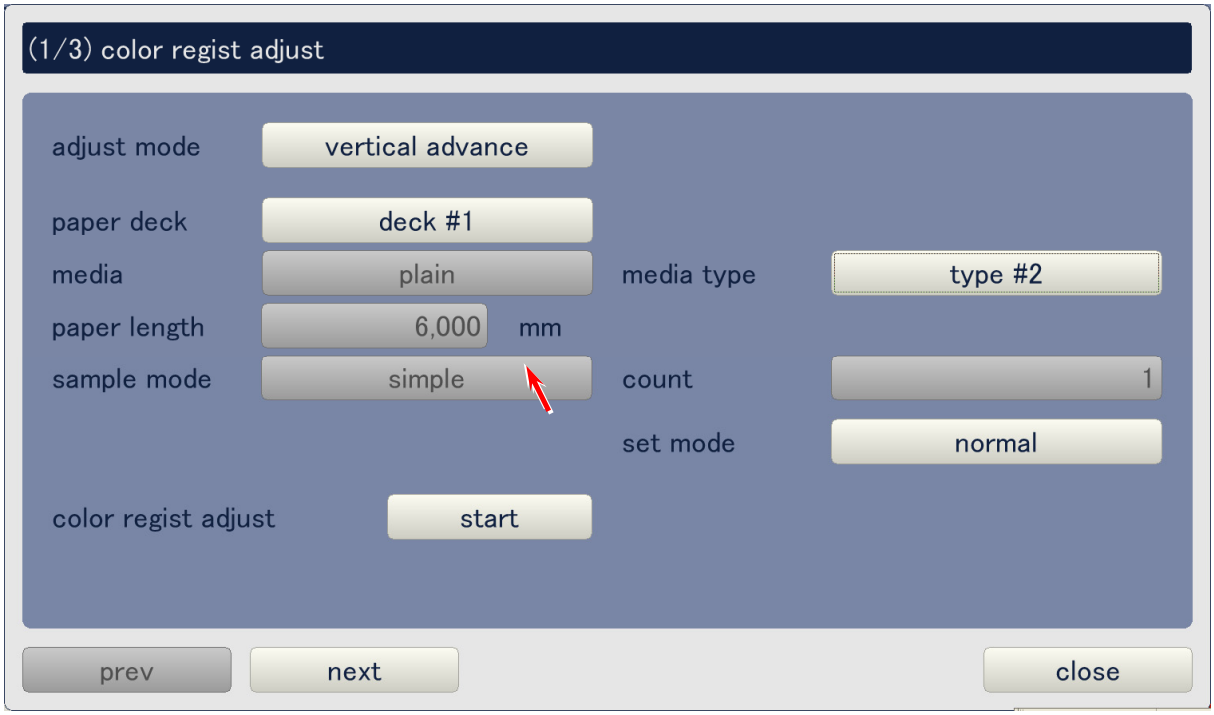
Reference

Each media (plain, tracing, film & gloss) has 4 media type (type #1-4) respectively. This enables to use 4 different each media as;

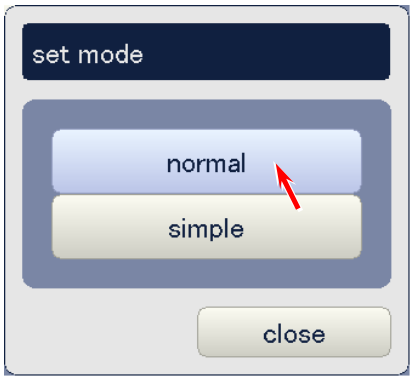
Bond
- Type #1 : 24lbs Premium Bond
- Type #2 : 20lbs bond of manufacturer A
- Type #3 : 22lbs bond of manufacturer B
- Type #4 : 24lbs bond of manufacturer C

Please select correct media type as each media type requires its own vertical color registration calibration data.

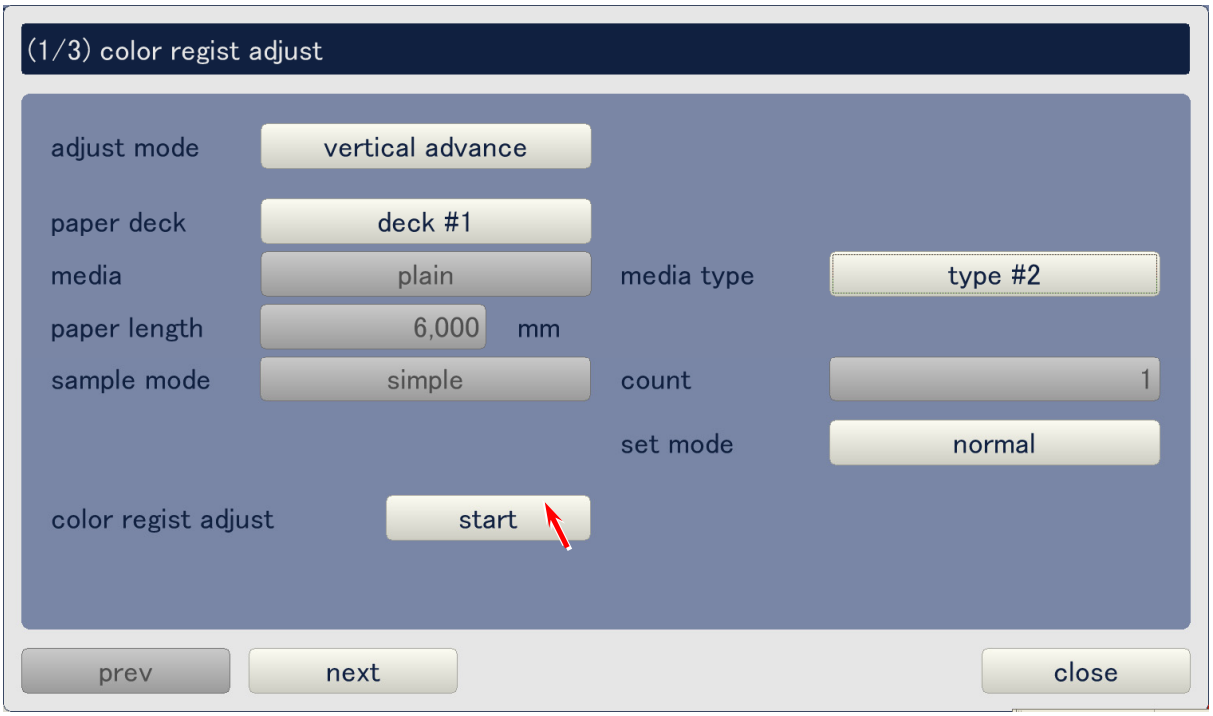
- Click on the button beside **sample mode** and select **normal**.



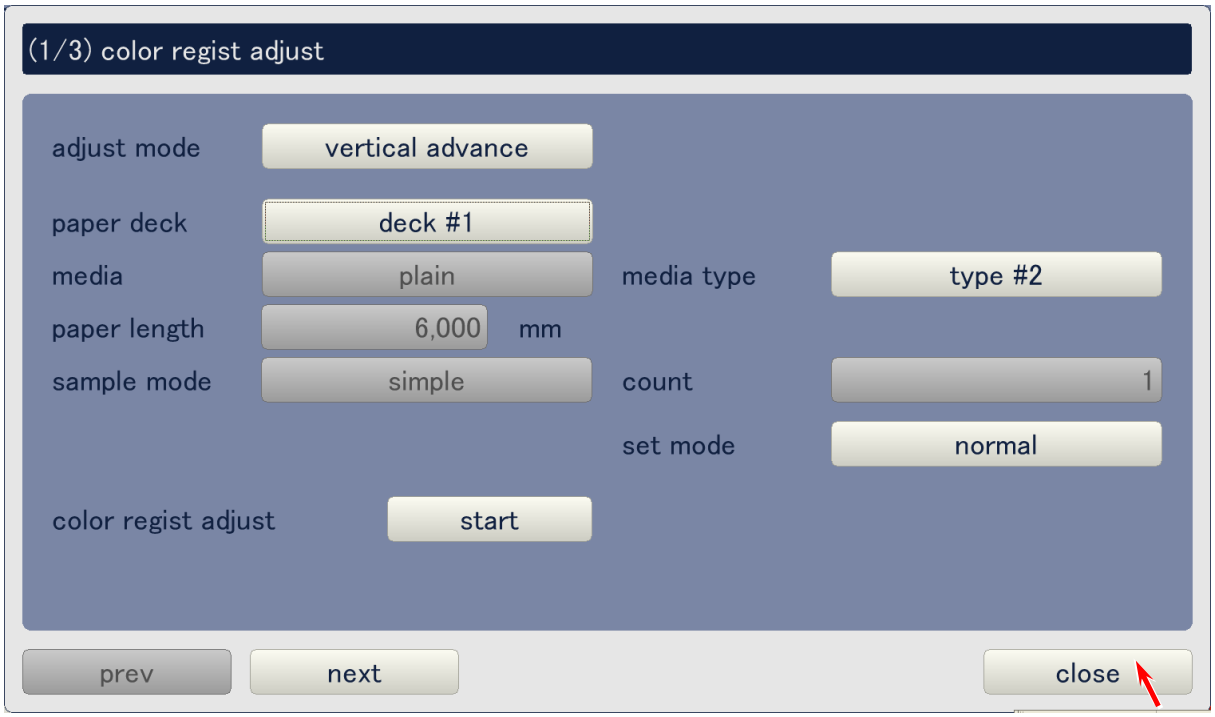
> **NOTE**
>
> Do not select **simple** as it does not achieve expected result. (The result is same as “vertical”.)



- Click on [Start] beside **color regist adjust**. Printer takes 13 pages of sampling print in 3 different print lengths (5 pages of 48", 4 of 24" & 4 of 15"). KIPDiagColor reads the image on each 12 prints to know the amount of vertical misalignment of 3 colors C, M & Y against standard K via Color Sensor, and automatically calculates the best calibration data per color by software compensation as well as motor speed compensation to achieve correct alignment of 4 colors.



- When the printer stops completely, click on **close** to close the color registration calibration page.

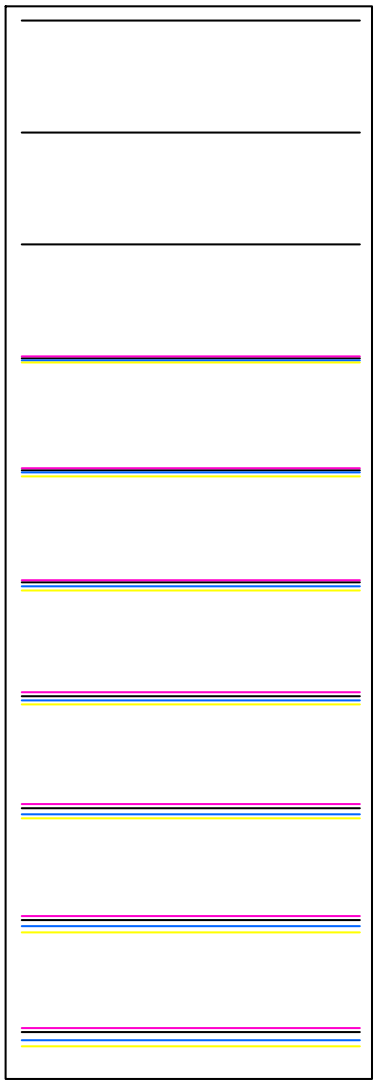


9. 5. 7. 6 Line pitch

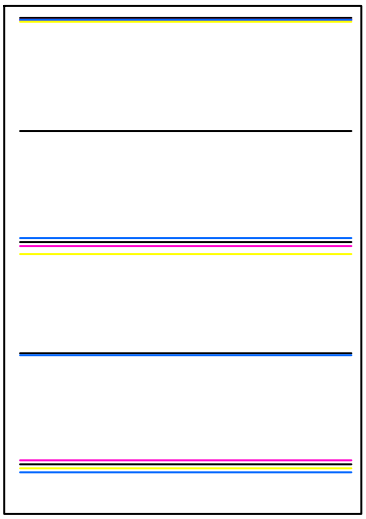
Line pitch is a vertical color registration calibration mode that can achieve the best possible color registration result when printing is done under some particular target condition. This will be suitable for achieving correct vertical color registration in the following cases.

Case 1 : On the long print, 4 colors are correctly aligned with each other between leading edge and some vertical point. But mis-alignment starts to appear after some vertical point, and it becomes gradually bigger and bigger as going more and more to the trailing edge.

Case 2 : The degree of mis-alignment randomly differs point to point.



Mis-alignment starts after some point and it becomes bigger and bigger



Degree of mis-alignment randomly differs point to point

The operator has to set the following target settings as required before taking line pitch calibration mode. The line pitch calibration data will be applied only when the printing job satisfies all specified target conditions.

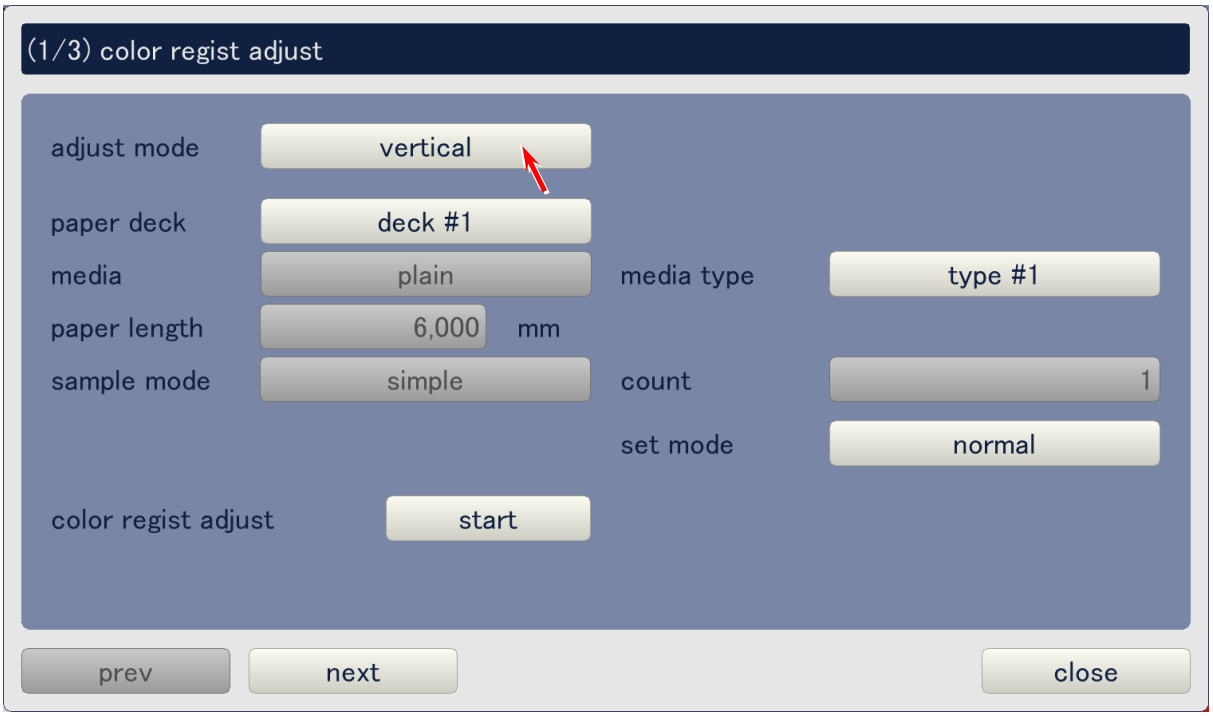
- Media
- Media type (type #X)
- Media width
- Media length

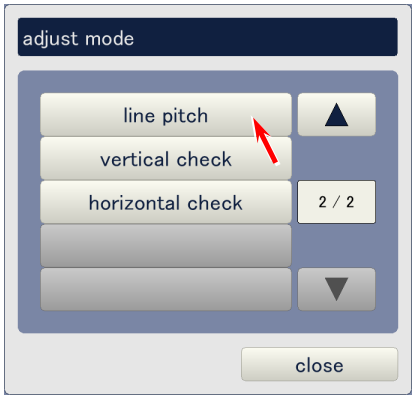
NOTE

(1) **Vertical advance** calibration has to be done prior to taking line pitch calibration. Please check if vertical advance has already been done, and take it if has not been done yet.

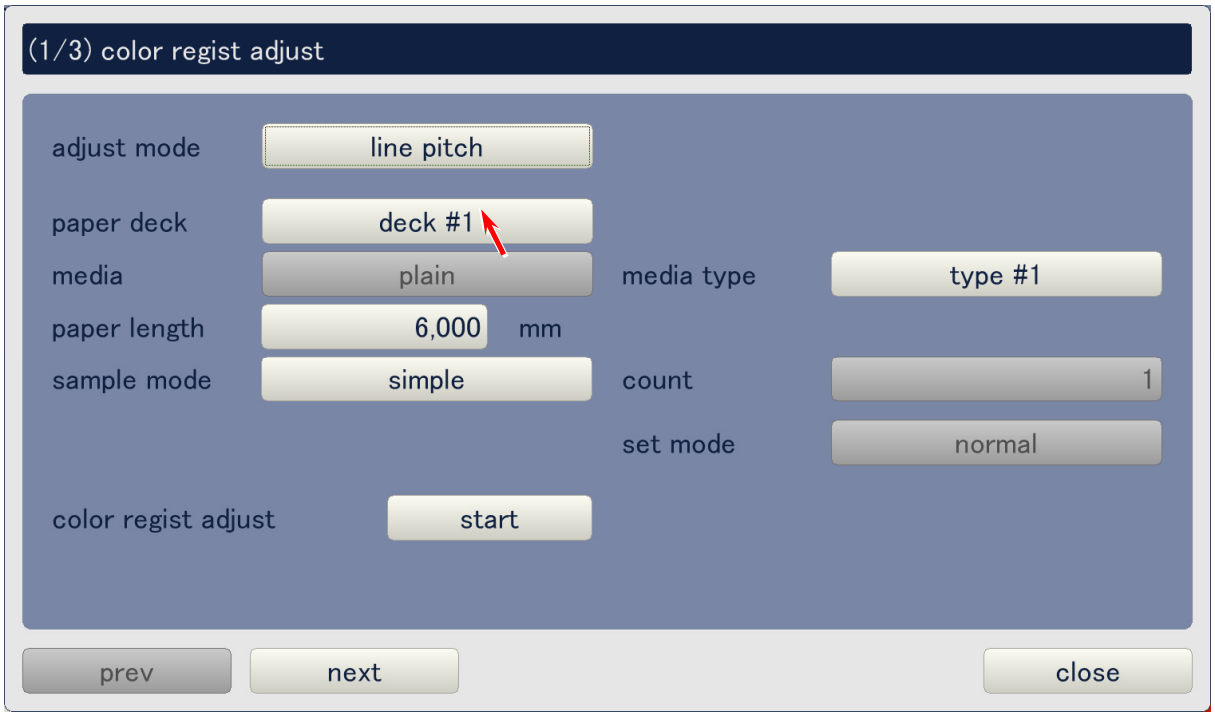
(2) Install a roll media to any Roll Deck and set the Media Selector correctly. Please note that the **media** and **media width** are the targets which the line pitch calibration data is applied to.

- Click on the button beside **adjust mode** and select **line pitch**.





- Click on the button beside **paper deck** and select the roll deck which has the roll media to be calibrated.



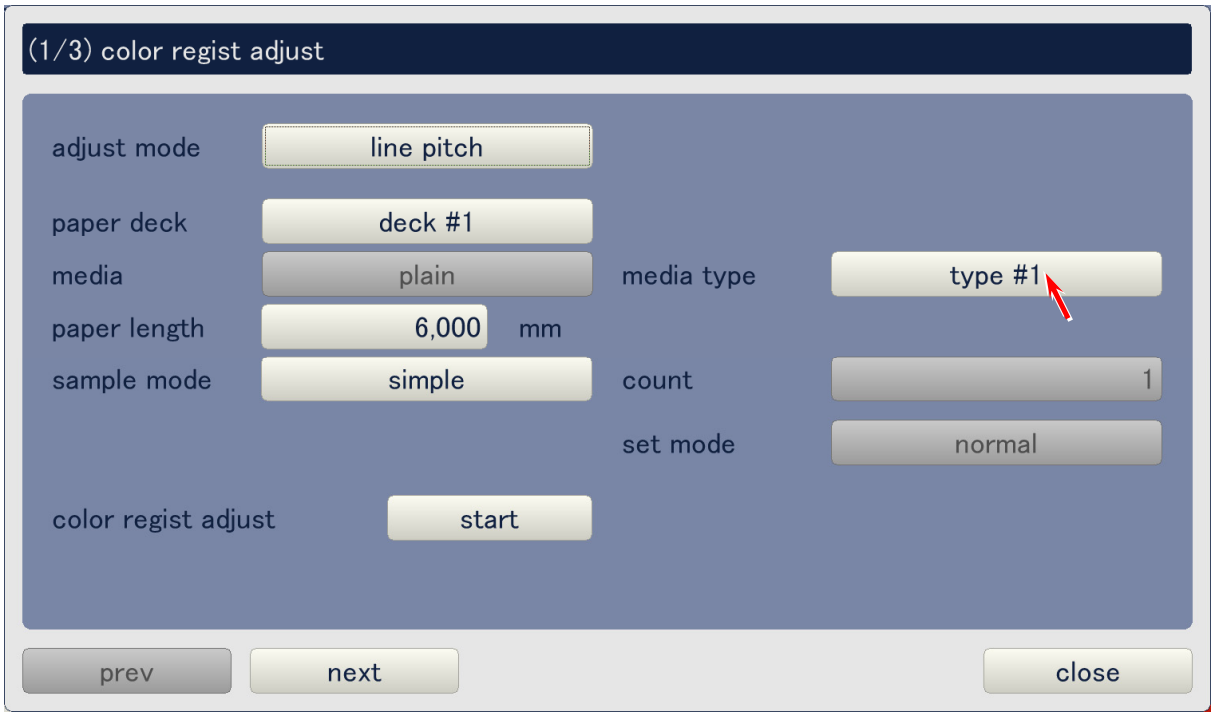
NOTE

(1) If you change **paper deck** setting from one to another, **media** (plain, trading, film or gloss) also changes according to the Media Selector setting of selected Roll Deck. Note that change of **media** via KIPDiagColor is not available. (This button is always inactive.)

(2) Please select correct media as each media requires its own vertical color registration calibration data.



- Click on the button beside **media type** and select the correct media type to be calibrated. Please note that this will be the target media type of line pitch calibration data.





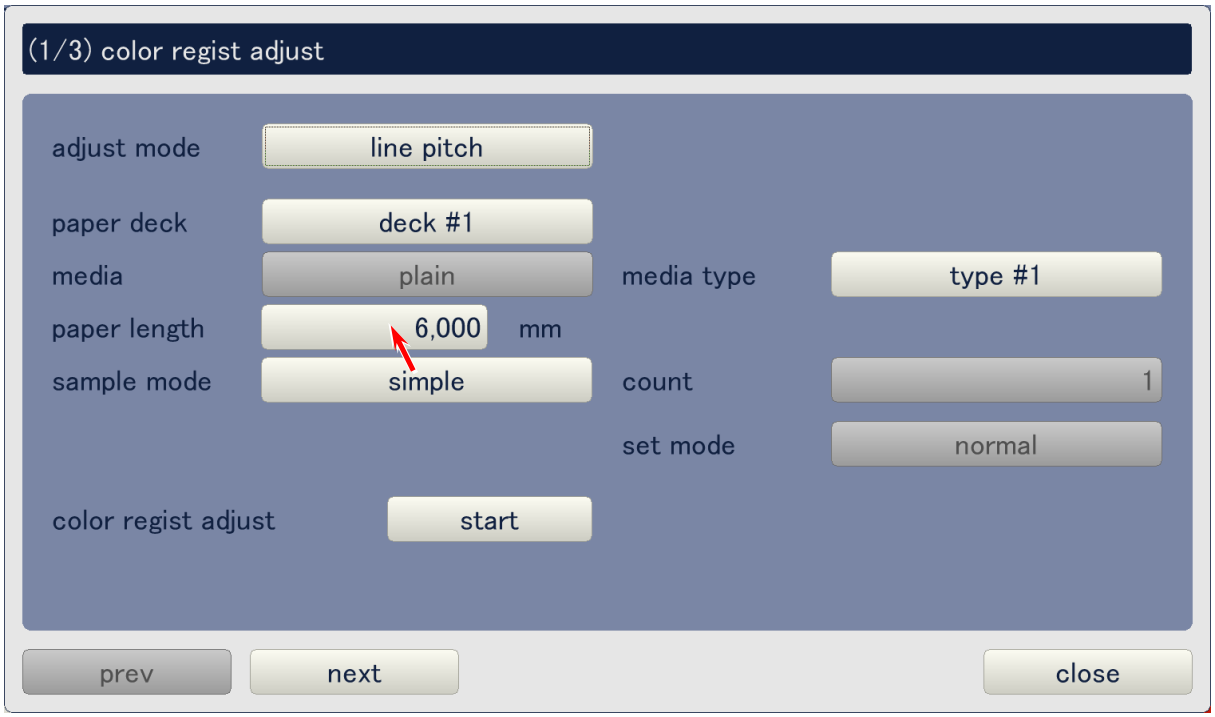
Reference

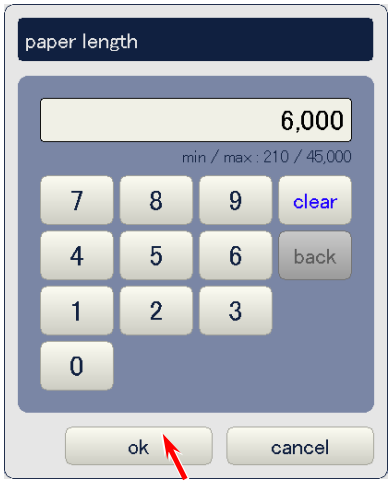
Each media (plain, tracing, film & gloss) has 4 media type (type #1-4) respectively. This enables to use 4 different each media as;

Bond
- Type #1 : 24lbs Premium Bond
- Type #2 : 20lbs bond of manufacturer A
- Type #3 : 22lbs bond of manufacturer B
- Type #4 : 24lbs bond of manufacturer C

Please select correct media type as each media type requires its own vertical color registration calibration data.

- Click on the button beside **paper length**, specify any print length, and click on **ok**. Available input range is from 210mm to 45000mm (45m). Please note that this will be the target length of line pitch calibration data.





NOTE

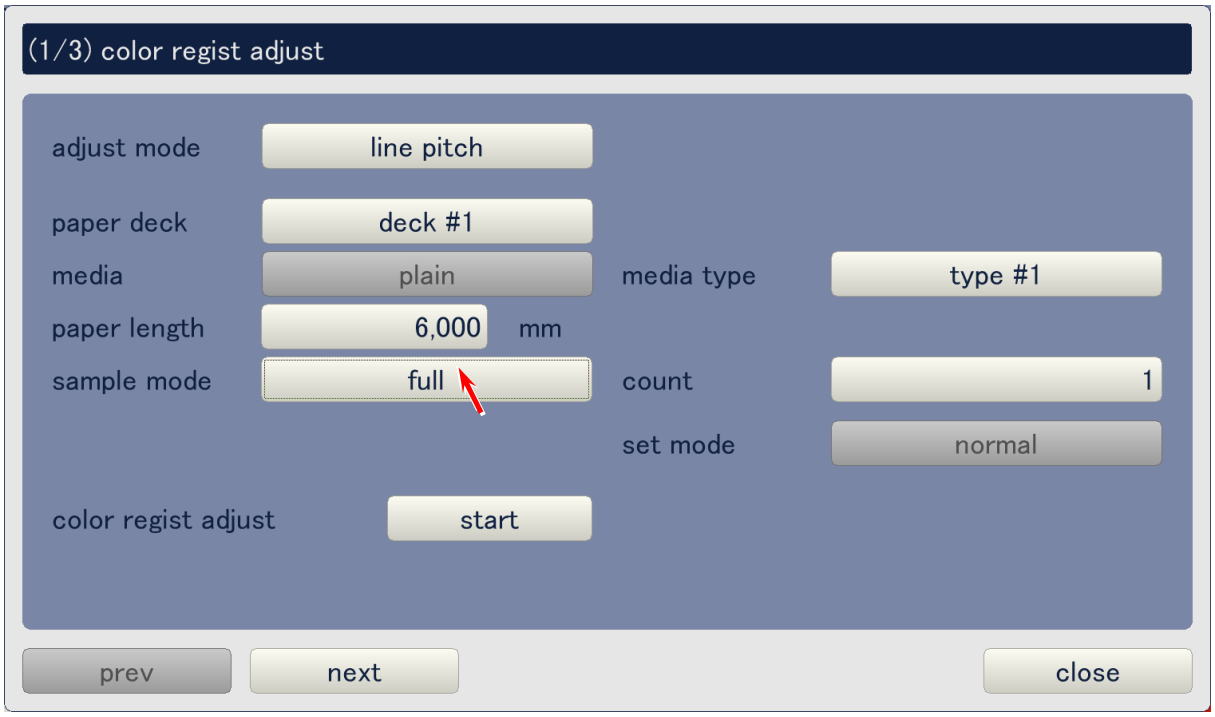
The calibration data that is obtained from the line pitch calibration mode achieves the highest quality of vertical color registration when the print is just as long as the target length specified here.

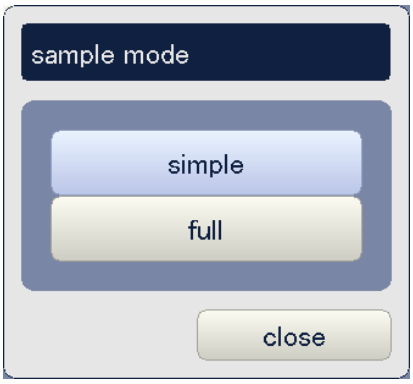
And even though the print length is not just as long as the target length, the same line pitch calibration data also achieves high quality vertical color registration so far as the print length is within its applicable length range. The following 2 factors decide whether one length is within applicable length range or not.

(1) Length group
(2) Tolerance

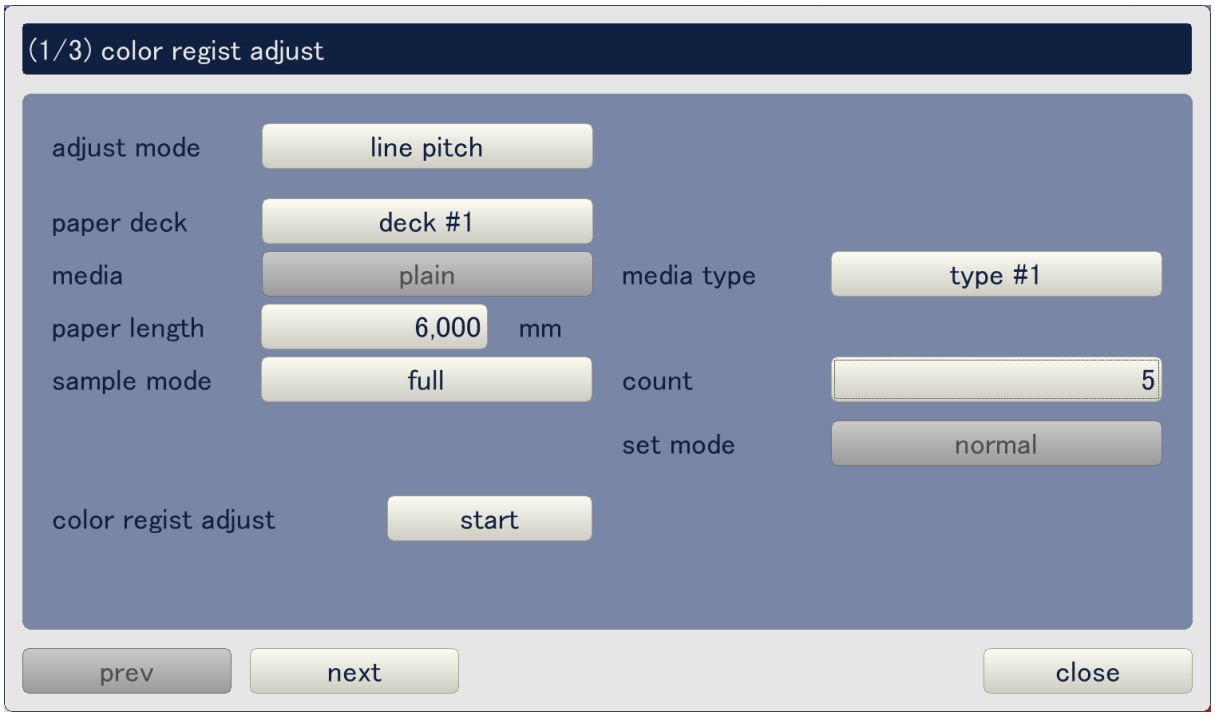
See [Reference : Applicable length range of Line Pitch calibration data] on later page for further detail.

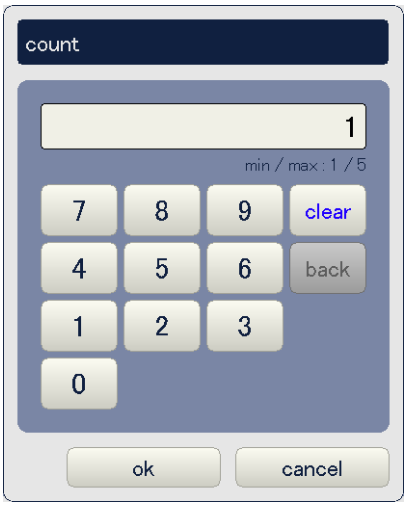
- Click on the button beside **sample mode** and select either **simple** or **full**.
  - **Simple** reads only 250mm from the LE and 150mm from TE for getting Line Pitch calibration data. Only 1 time of sampling is taken. This achieves regular line pitch calibration result.
  - **Full** reads all area between LE and TE for getting Line Pitch calibration data. The operator can specify the number of times to take sampling (5 times max). This achieves better line pitch calibration result than Simple.



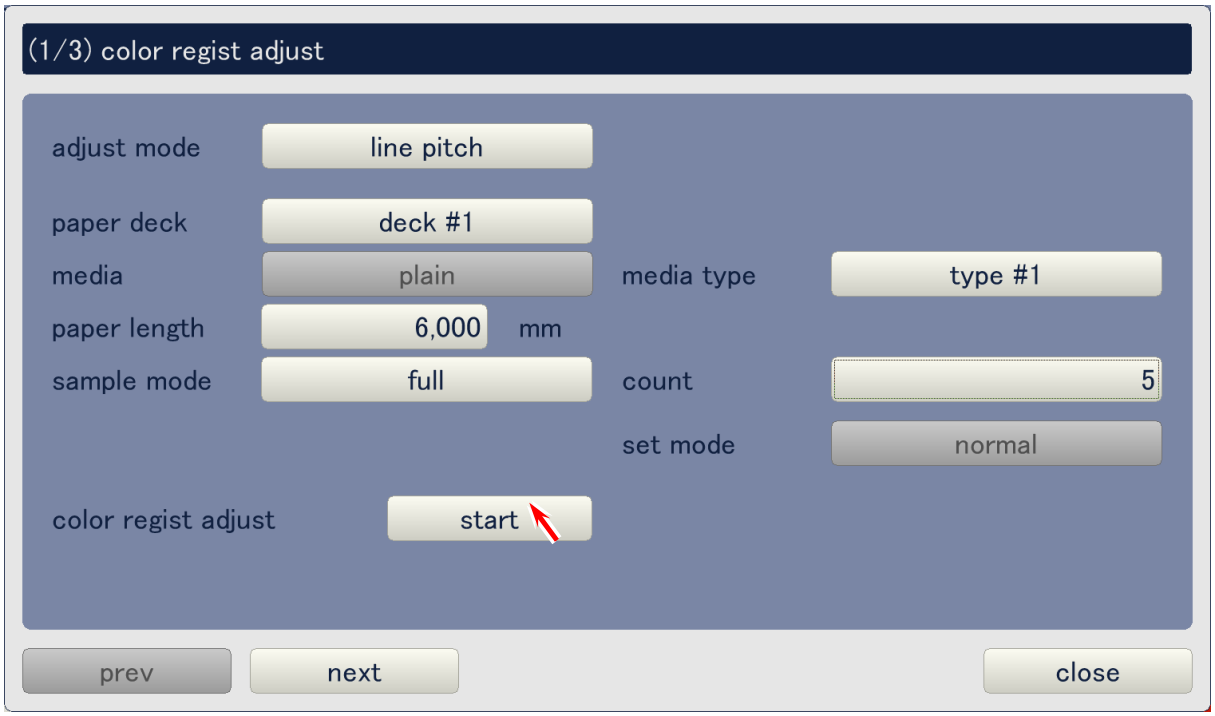


- If **full** is selected, click on the button beside **count**, specify how many times data sampling is to be taken, and click on **ok**. More times of sampling will get more reliable sampling data.

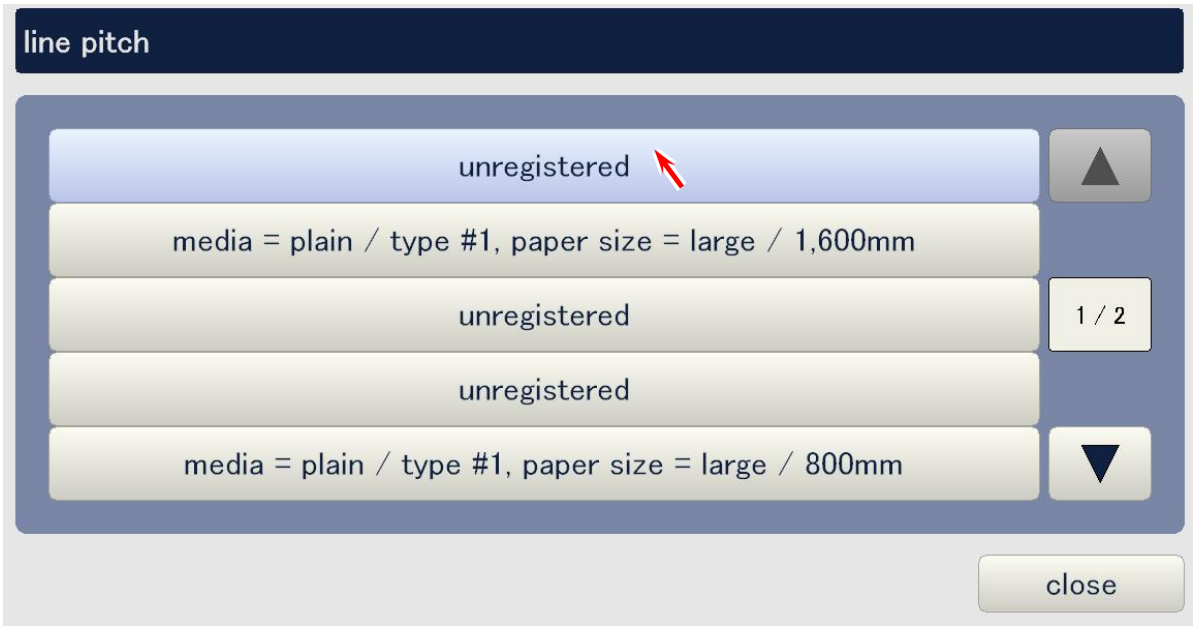




- When every setting is set correctly, click on [start] beside **color regist adjust**.



- The operator can choose the data box which the line pitch calibration data is saved in. Of the 10 available data box, choose any **unregistered** one as it is currently empty with the calibration data. Upon selection f the data box, the KC80 printer starts line pitch calibration operation automatically, and saves the line pitch calibration data in the chosen data box with showing its target conditions such as media, media sub type, media width and print length.



⚠ NOTE

If all of 10 data box are already filled with Line Pitch Calibration Data;
- Delete anyone.
- Or overwrite anyone with new data.

Reference

Applicable length range of Line Pitch calibration data

The Line Pitch calibration data is applied its target length to achieve the highest quality of vertical color registration as already explained. But not limited to its target length, it is also applied to any other print length that is within applicable length range and achieves higher quality of vertical color registration. Applicable length range is decided by 2 factors such as **length group** and **tolerance**.

Length group

Available print length of KC80 printer is from 210mm to 45000mm (if not considering print quality). Line Pitch Calibration divides this length range into 7 length groups as follows.

1st group : 210 to 1500mm
2nd group : 1501 to 8000mm
3rd group : 8001 to 16000mm
4th group : 16001 to 24000mm
5th group : 24001 to 32000mm
6th group : 32001 to 40000mm
7th group : 40001 to 45000mm

If there is any Line Pitch calibration data directly targeting certain print length Xmm, this Line Pitch calibration data can be applied also to **all other shorter lengths than Xmm within the same length group**. (But this rule is not applied to the 1st group only. See the following NOTE.)

Examples)

- When there is Line Pitch calibration data that directly targets 6000mm, this data can be applied also to any lengths from 1501mm to 5999mm.
- When there is Line Pitch calibration data that directly targets 20000mm, this data can be applied also to any lengths from 16001mm to 19999mm.

⚠ NOTE

(1) Only in case of the 1st group, the Line Pitch calibration data is applied only to its target print length if tolerance is not specified especially. (Example : Line Pitch calibration data for 1000mm is applied only to 1000mm if tolerance is not specified.)

(2) Let's suppose that we have 2 Line Pitch calibration data targeting 3000mm and 6000mm respectively. When we take 3000mm long print with applying both calibration data, of course the data for 3000mm can achieve better vertical color registration.

See next page for the explanation of tolerance.

Reference

Tolerance

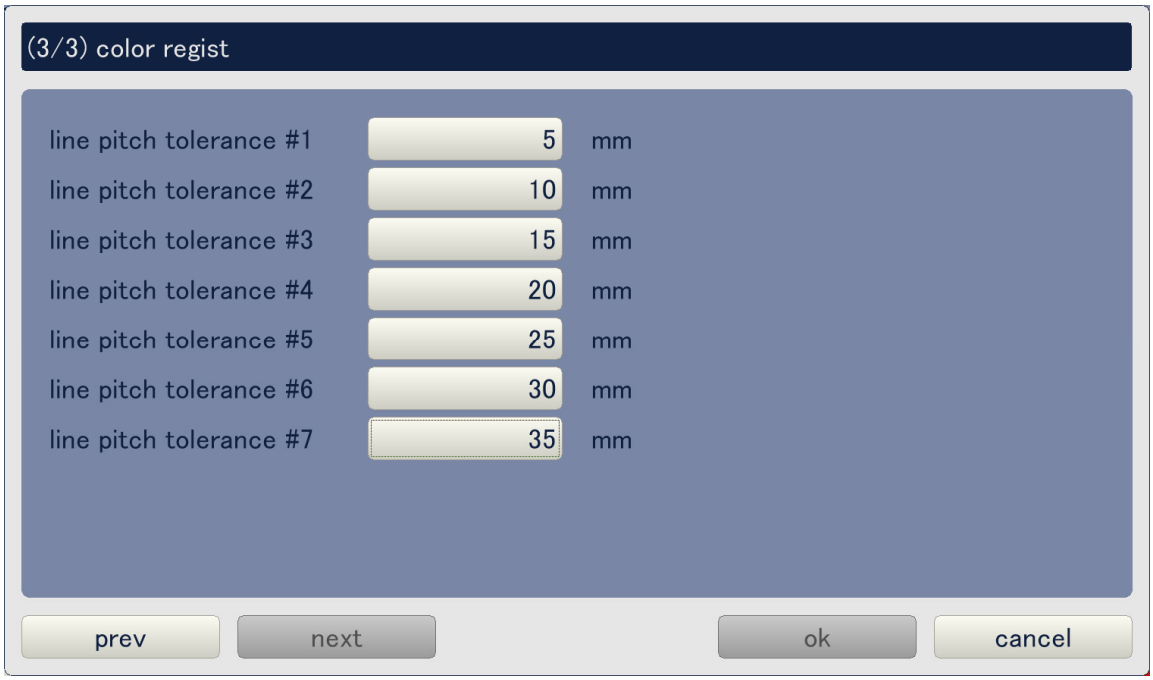
Tolerance provides additional applicable length range to the Line Pitch calibration data. If tolerance is set to 50mm, for example, the applicable length range becomes “target length +/-50mm”.

(Example)
When target length is 1000mm and tolerance is set to 30mm, applicable range is 1000 +/-30mm.

Tolerance can be specified per length group in the following page of KIPDiagColor. The maximum tolerance is 50mm. To access this page;

- Enter **service mode** with inputting service password.
- Choose **option** in the menu page (3/3) of service mode.
- Set **service mode advance** to **on**. (When this is set to off, you can not access tolerance setting.) Click on **ok** after that.
- Enter **service mode** again.
- Choose **adjustment** in the menu page of service mode.
- Choose **color regist adjust** in the menu page of adjustment mode.
- Open the 3/3 page.

NOTE : #1 means 1st length group

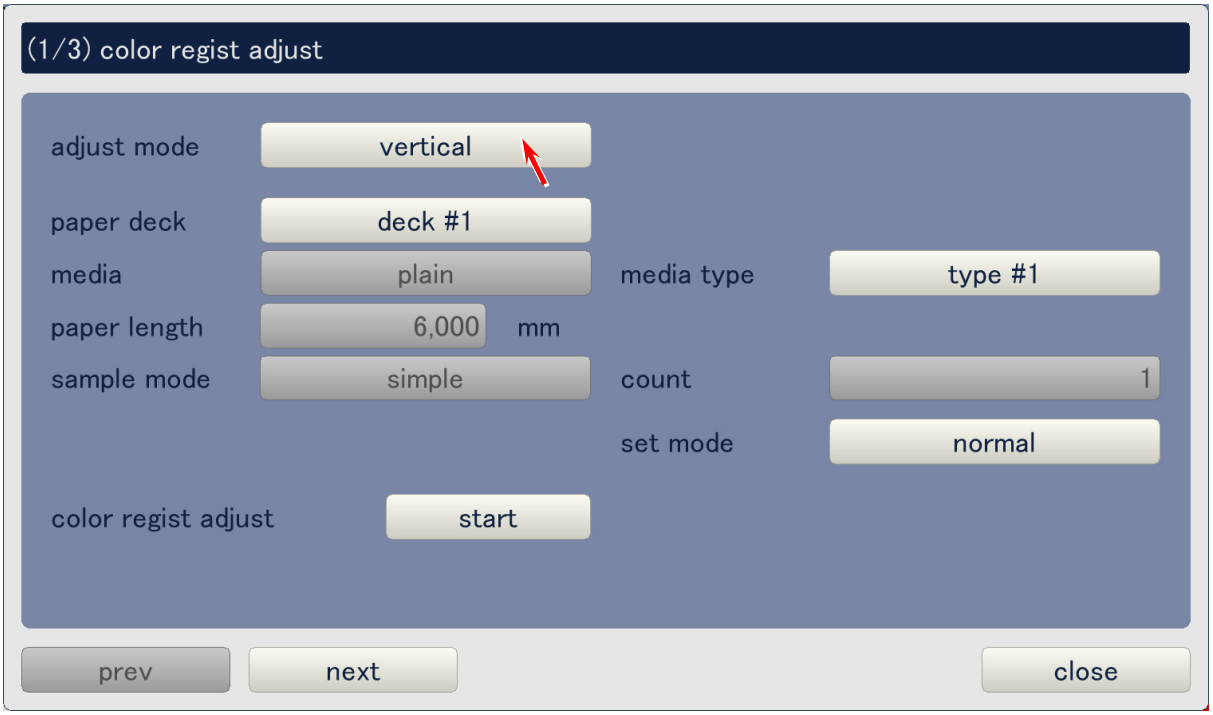


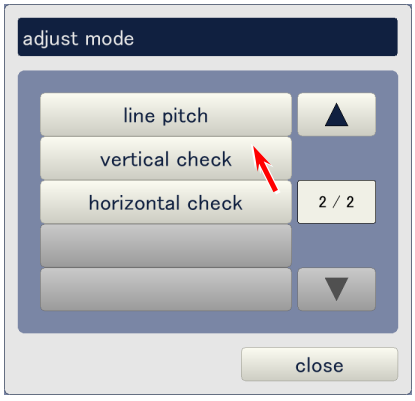
9. 5. 7. 7 Vertical check

This mode is available to print an exclusive pattern by selected length (210mm to 6000mm), which can be used for the confirmation of vertical color registration.

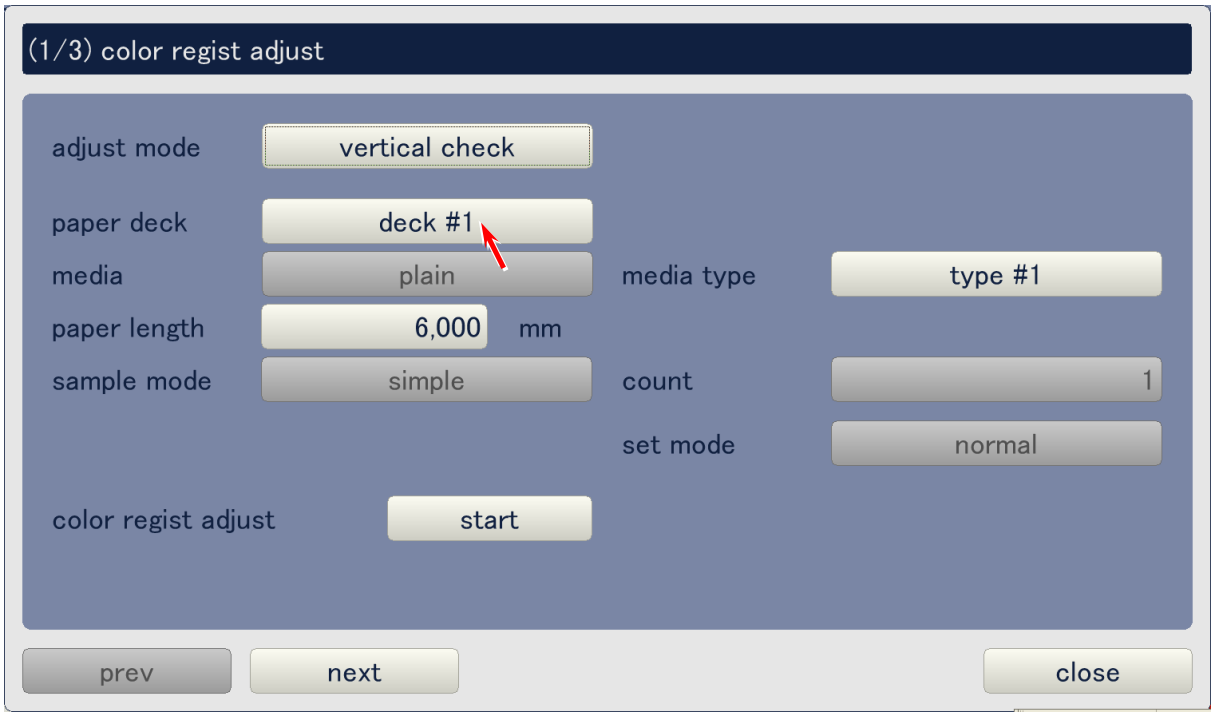
> **NOTE**
>
> The Color Sensor will read this exclusive pattern during its printing out. It is possible to save this reading data into a file. See [9.5.7.8 Color sensor data] on page 9-200.

- Click on the button beside **adjust mode** and select **vertical check**.





- Click on the button beside **paper deck** and select the roll deck which has the roll media used for checking.

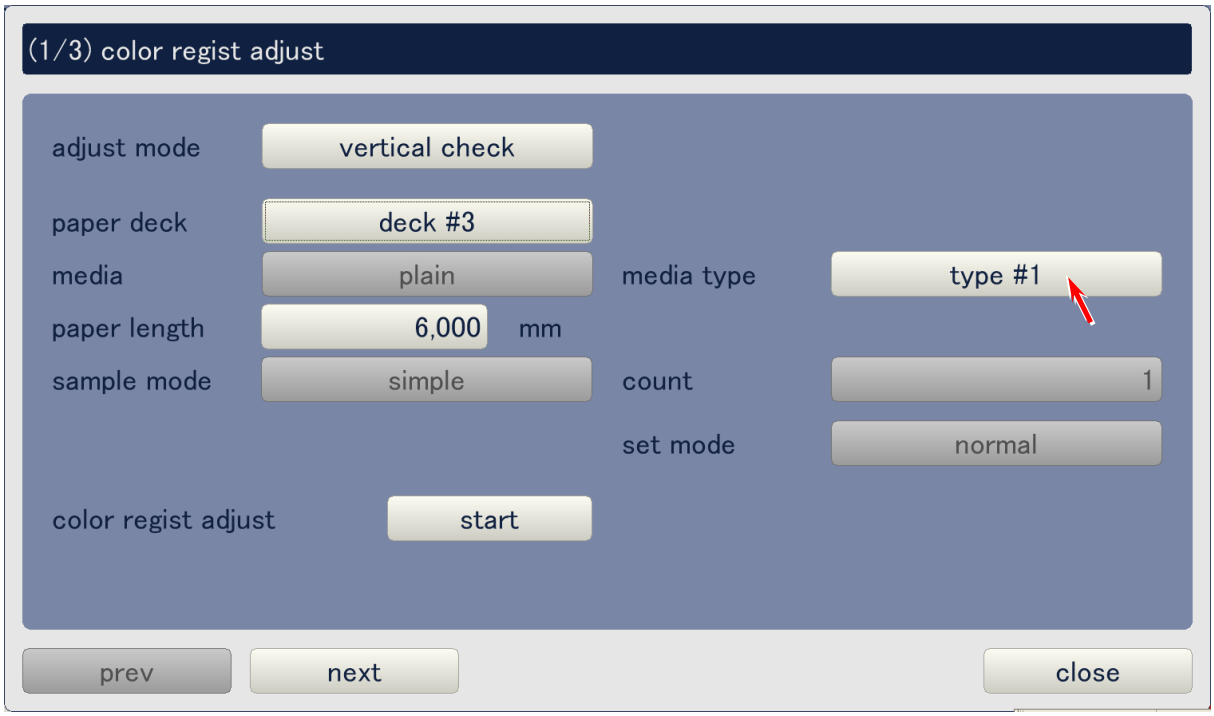


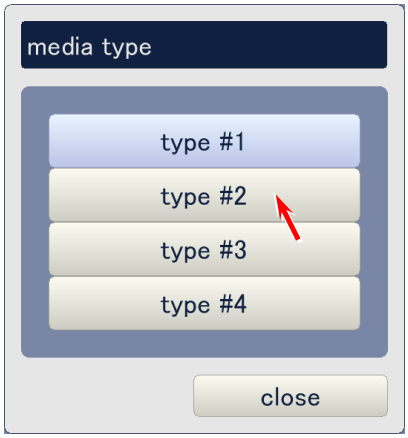
NOTE

If you change **paper deck** setting from one to another, **media** (plain, trading, film or gloss) also changes according to the Media Selector setting of selected Roll Deck. Note that change of **media** via KipDiagColor is not available. (This button is always inactive.)

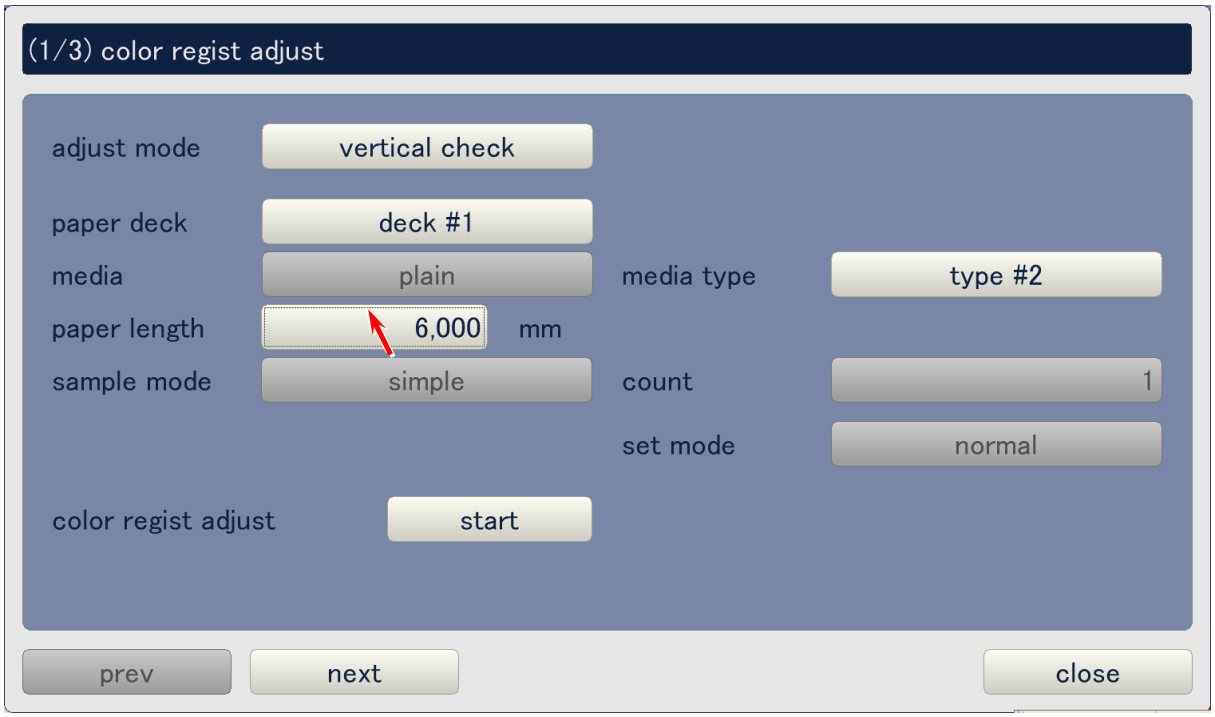


- Click on the button beside **media type** and select the correct media type to be used for checking.



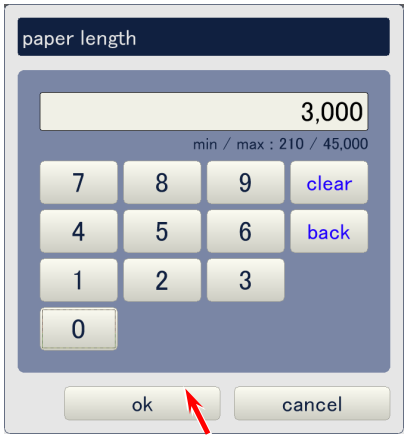


- Click on the button beside **paper length**, specify any print length to be performed, and click on **ok**.

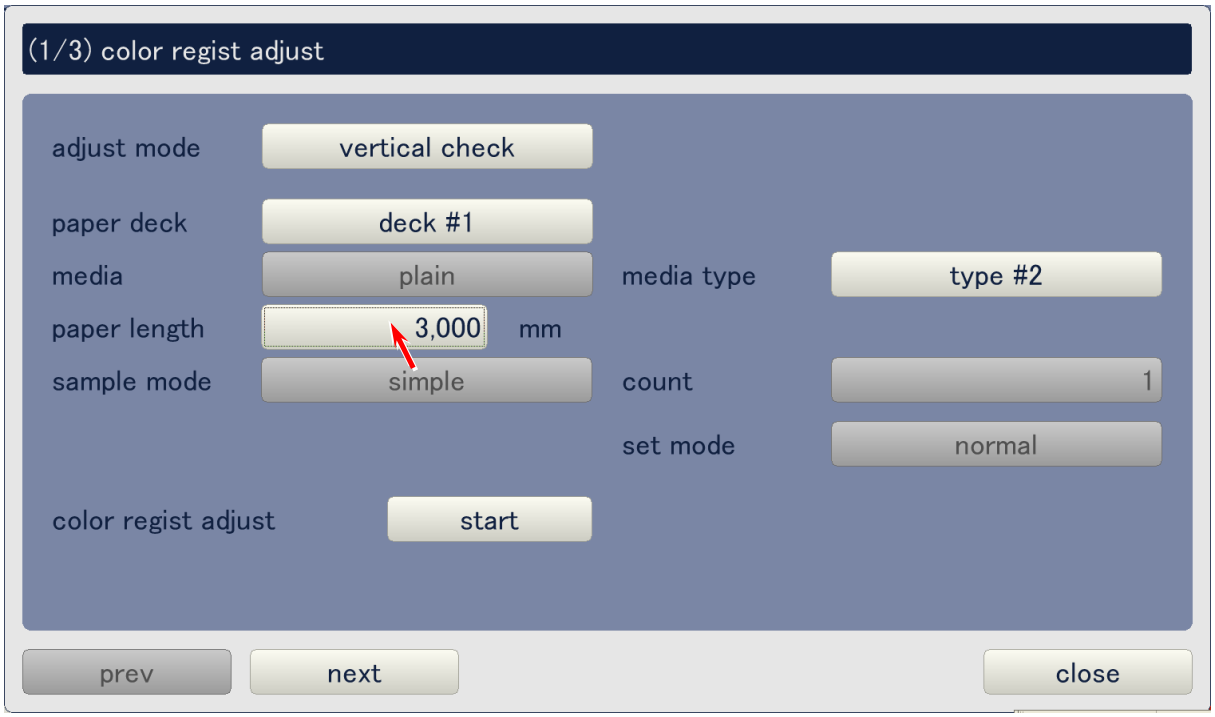


NOTE

Available print length is 210mm to 45000mm.



- Click on [start] beside **color regist adjust**. KC 80 will print an exclusive patter for the confirmation of vertical color registration by the selected print length.

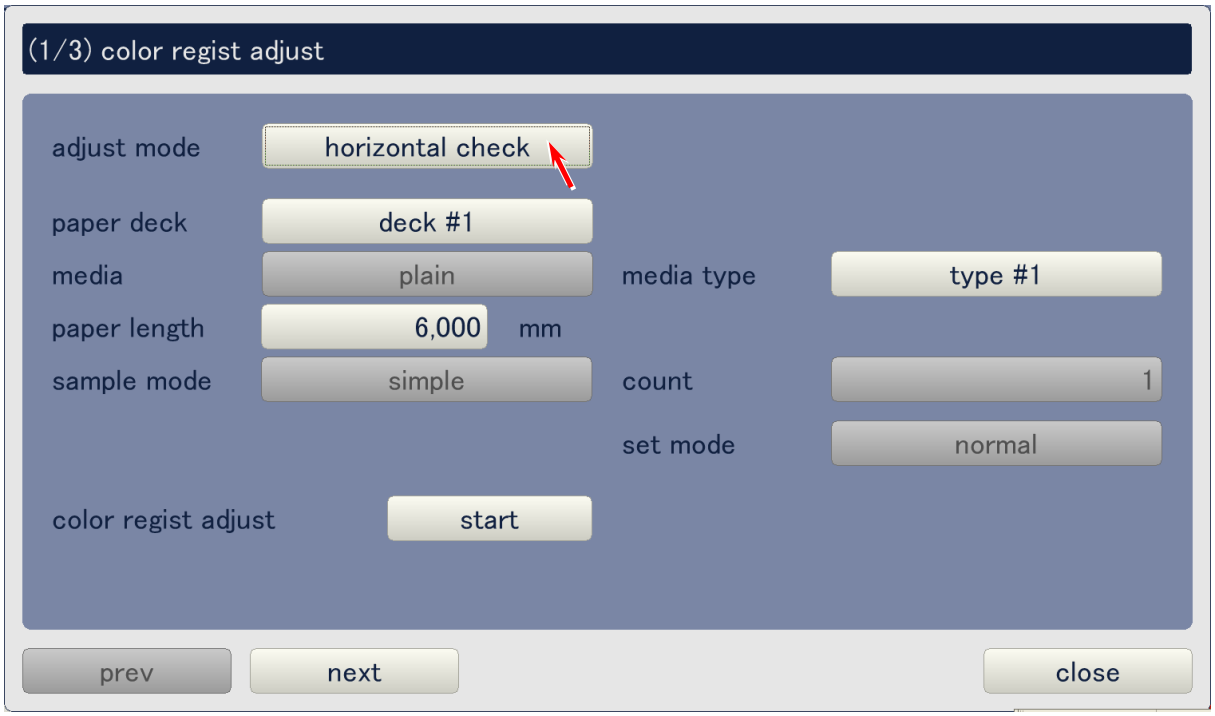


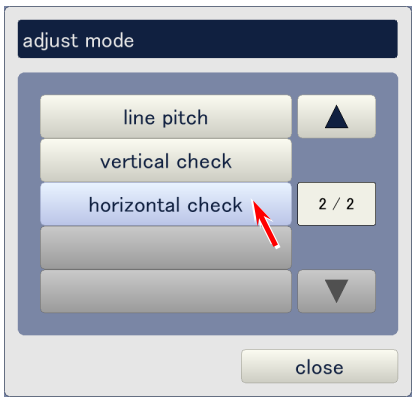
9. 5. 7. 8 Horizontal check

This mode is available to print an exclusive pattern by selected length (210mm to 6000mm), which can be used for the confirmation of horizontal color registration.

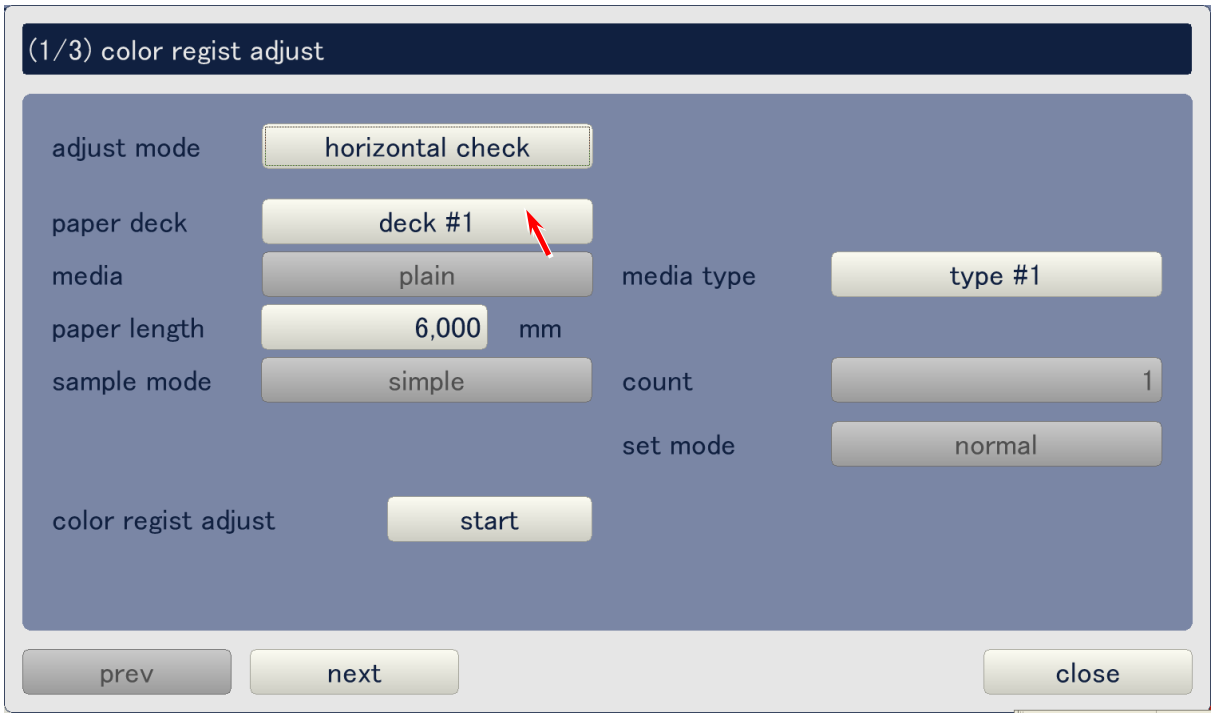
> **NOTE**
>
> The Color Sensor will read this exclusive pattern during its printing out. It is possible to save this reading data into a file. See [9.5.7.8 Color sensor data] on page 9-200.

- Click on the button beside **adjust mode** and select **vertical check**.





- Click on the button beside **paper deck** and select the roll deck which has the roll media used for checking.

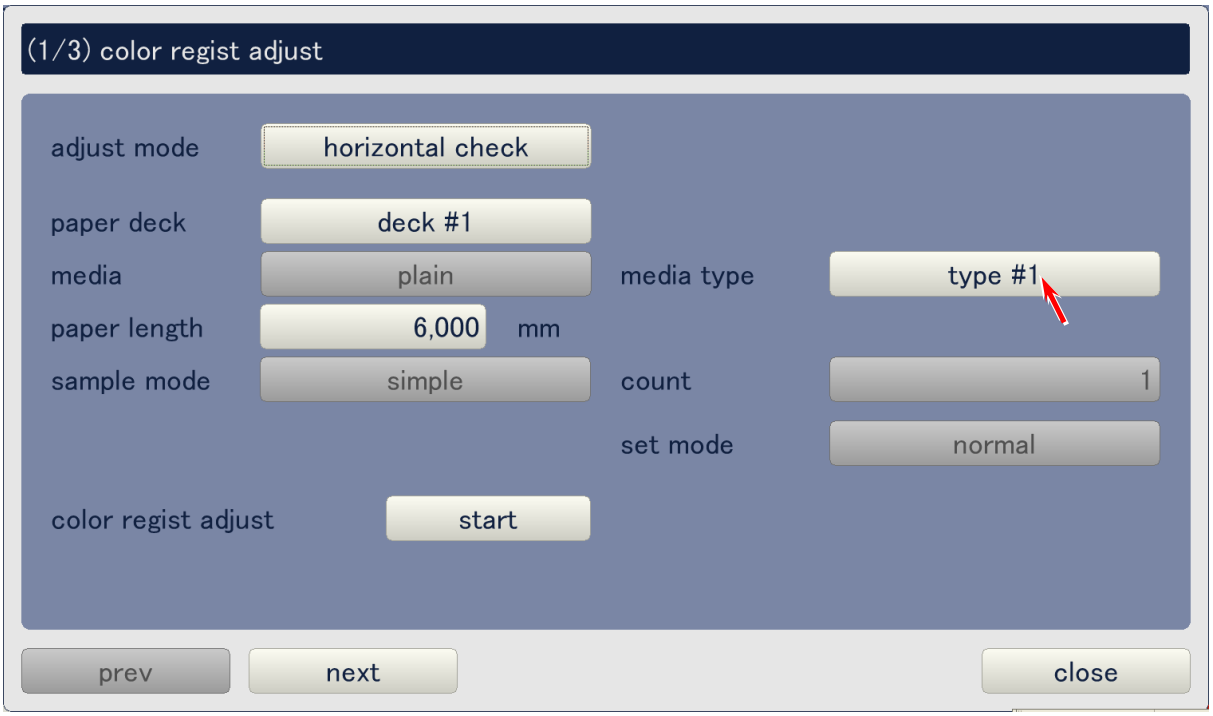


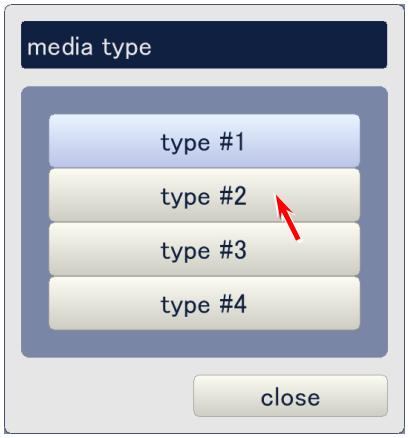
NOTE

If you change **paper deck** setting from one to another, **media** (plain, trading, film or gloss) also changes according to the Media Selector setting of selected Roll Deck. Note that change of **media** via KIPDiagColor is not available. (This button is always inactive.)

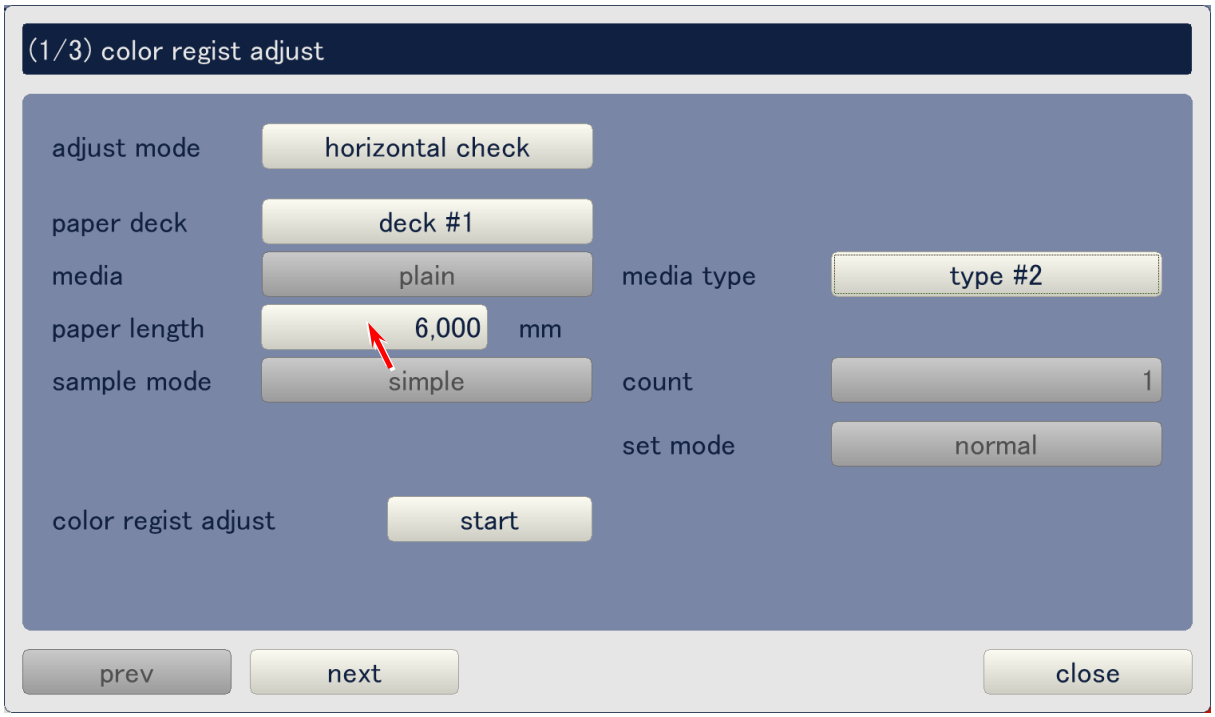


- Click on the button beside **media type** and select the correct media type to be used for checking.



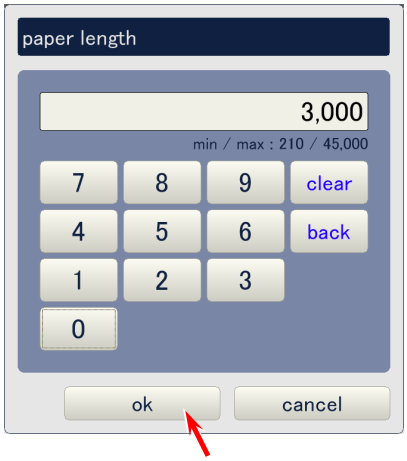


- Click on the button beside **paper length**, specify any print length to be performed, and click on **ok**.

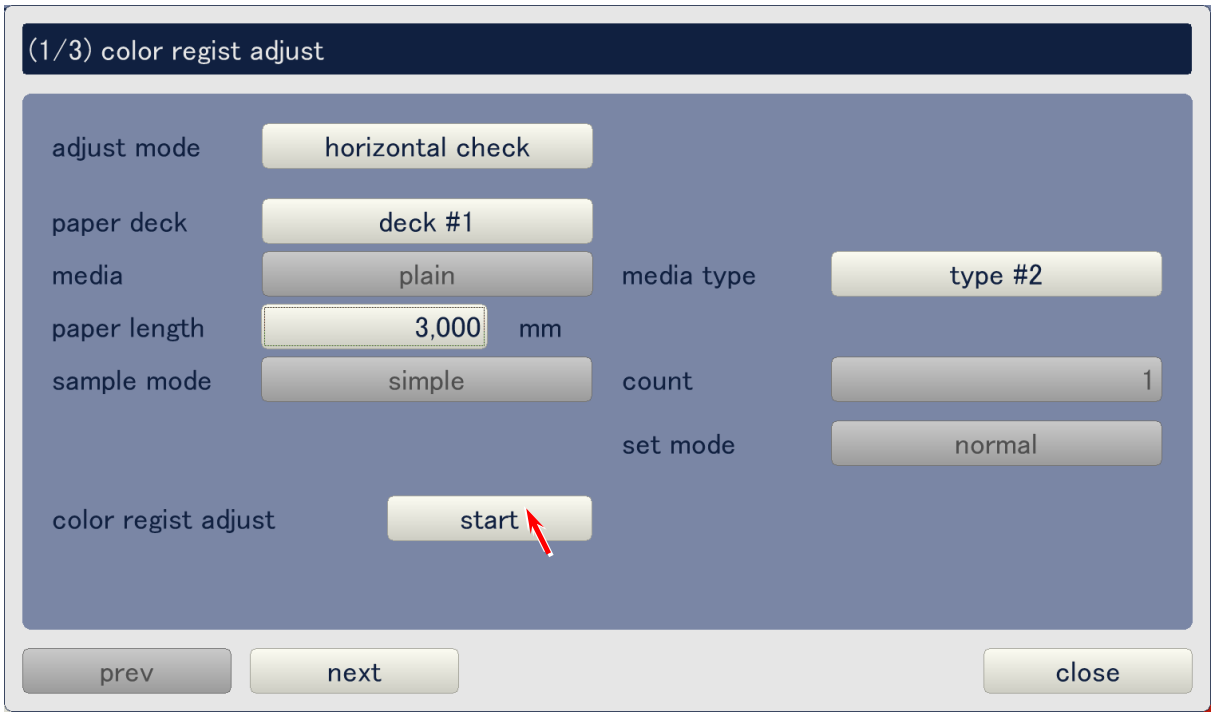


NOTE

Available print length is 210mm to 45000mm.



- Click on [start] beside **color regist adjust**. KC 80 will print an exclusive patter for the confirmation of horizontal color registration by the selected print length.



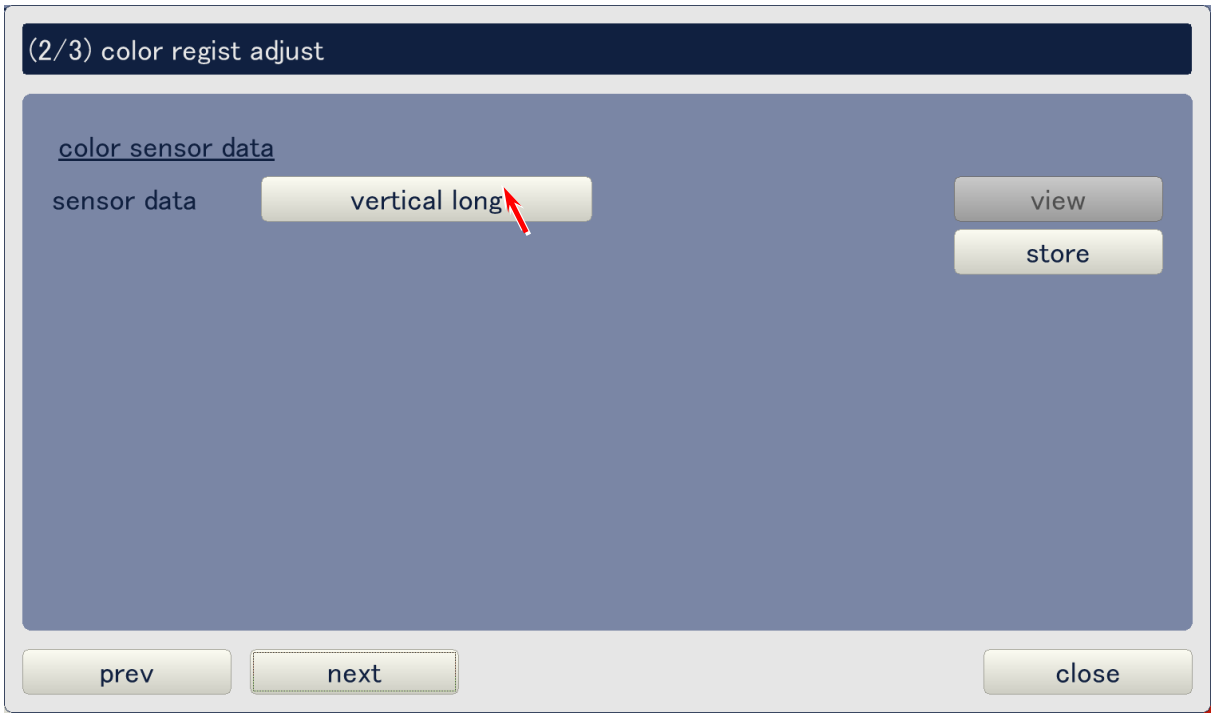
9. 5. 7. 9 Color sensor data

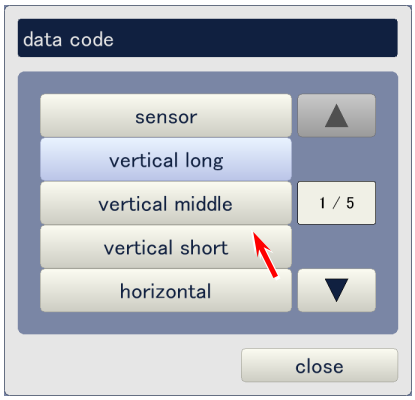
This is a feature to save the reading data of Color Sensor into a text file. Saving of reading data becomes available after performing the following operations in the Color Regist Adjust Page.

Sensor	vertical advance
vertical	vertical check
horizontal	horizontal check
motor	

> **NOTE**
>
> It may be possible to advise you correctly if the text file saved by this feature is sent to us when any trouble regarding Color Registration occurs using some specific media. Therefore use the actual targeted media for the above operations, then save the reading data.

- Press the button beside **sensor data**. The pop up dialog indicates the items of reading data available to save. Select any of them.

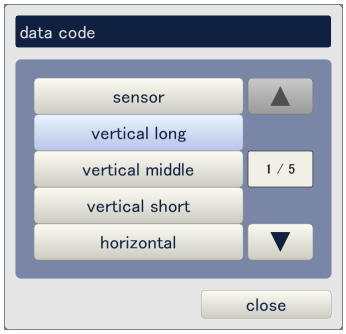


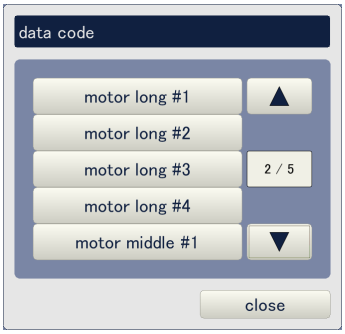


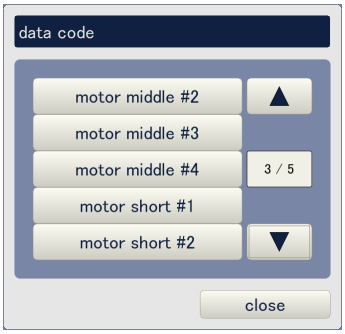
Reference

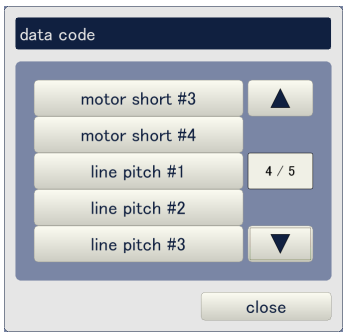
22 kinds of Color Sensor's reading data become available for saving respectively after the following operations on the Color Regist Adjust Page.

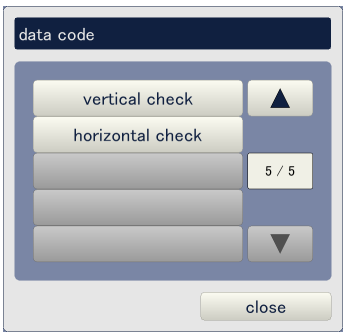
sensor	Becomes available after performing "sensor".
vertical long vertical middle vertical short	Becomes available after performing "vertical" (simple and normal) and "vertical advance".
horizontal	Becomes available after performing "horizontal".
motor long #1 motor long #2 motor long #3 motor long #4 motor middle #1 motor middle #2 motor middle #3 motor middle #4 motor short #1 motor short #2 motor short #3 motor short #4	Becomes available after performing "vertical advance" and "motor".
line pitch #1 line pitch #2 line pitch #3	Becomes available after performing "line pitch".
vertical check	Becomes available after performing "vertical check".
horizontal check	Becomes available after performing "horizontal check".



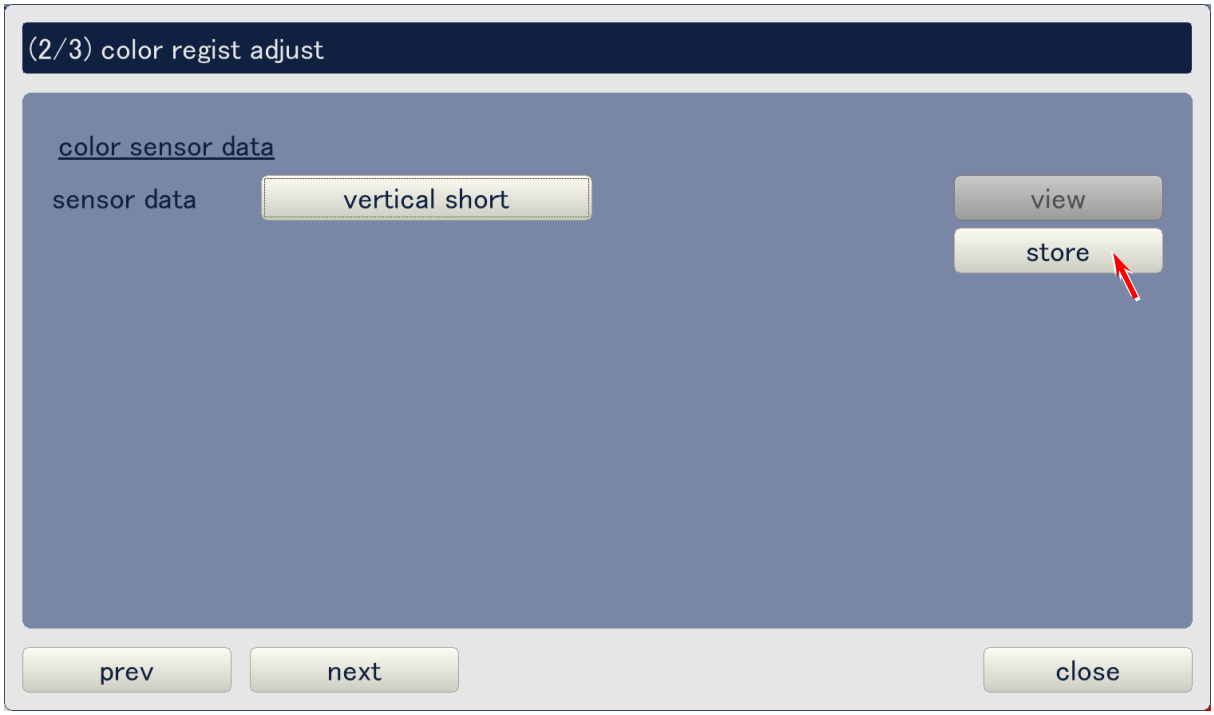








- Click on **store** to save the reading data of your selected item.



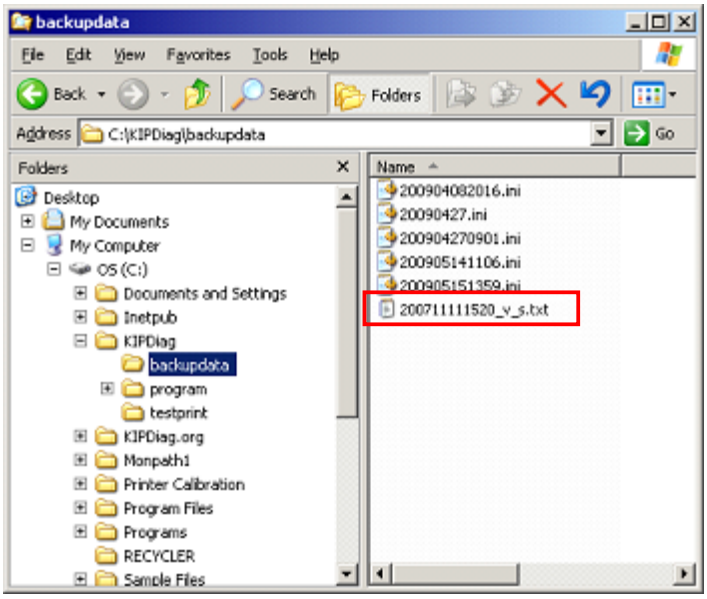


NOTE

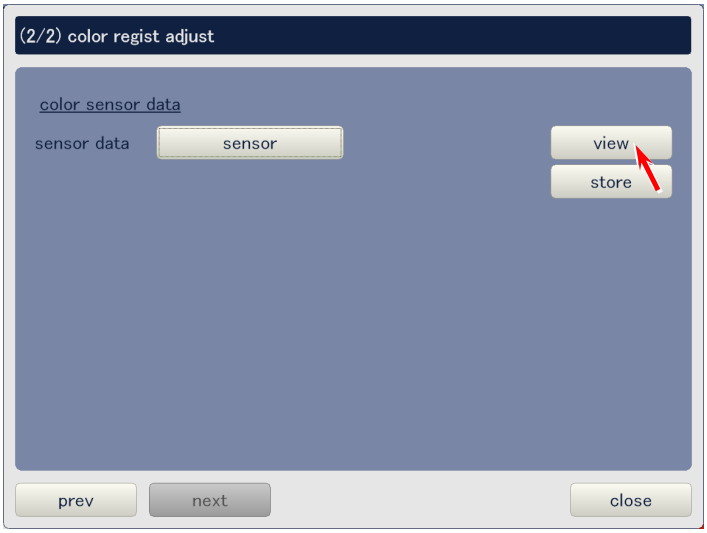
(1) “failure” will be indicated if you try to save the reading data although it is not available for saving. (For example you have not done the requested operation yet on the Color Regist Adjust Page.)

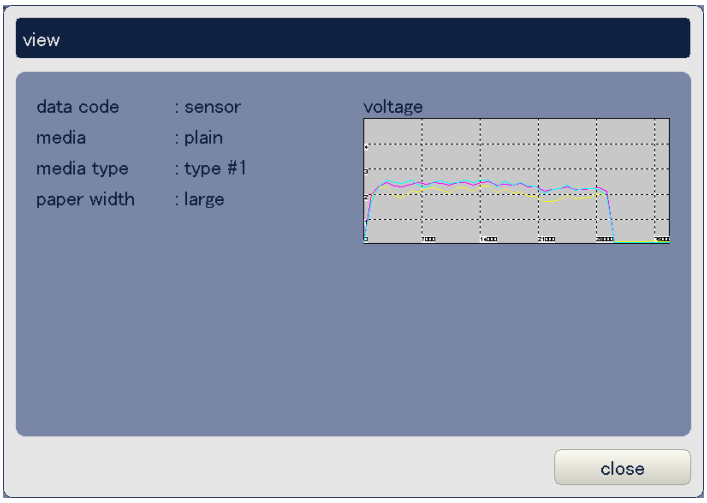
NOTE

(2) The text file is saved in **backupdata** folder that is same location with KIPDiagColor on the hard drive.



(3) **View** button becomes active if **sensor data** is set to **sensor**. Clicking on **view** will indicate the graphic chart which shows the output voltage from the Color Sensor.

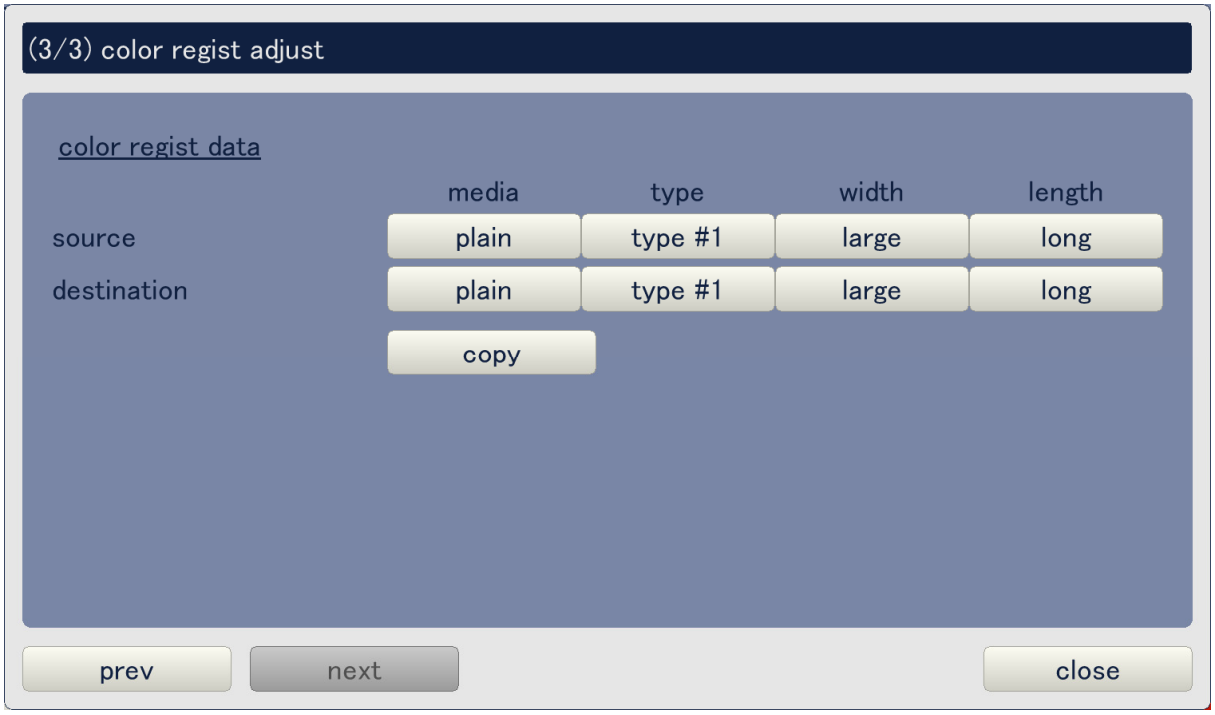


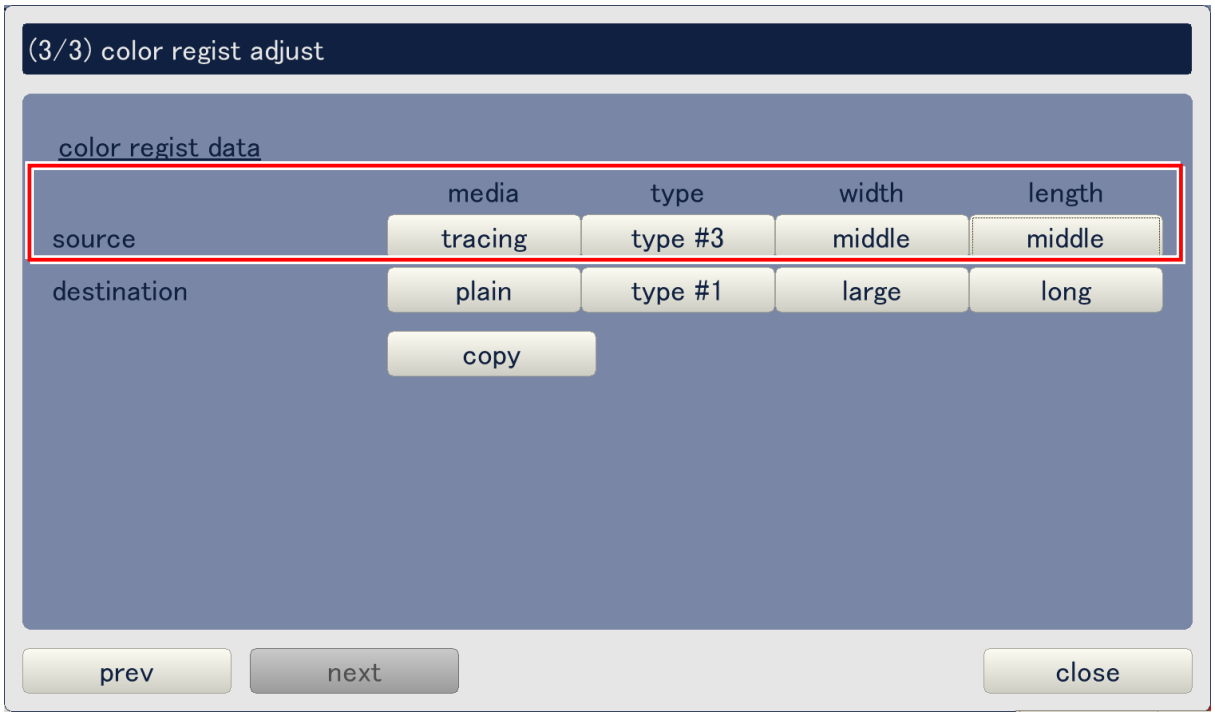


9. 5. 7.10 Color regist data

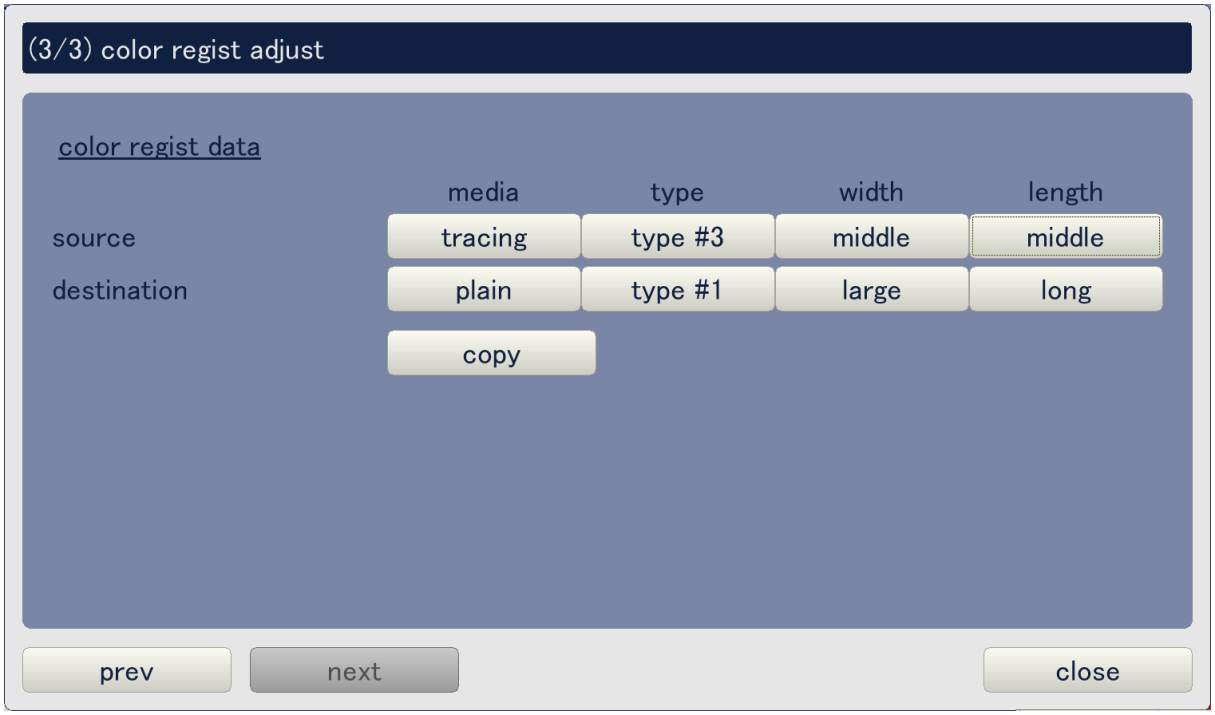
A vertical color registration data for one particular target condition can be applied (copied) to another target condition.

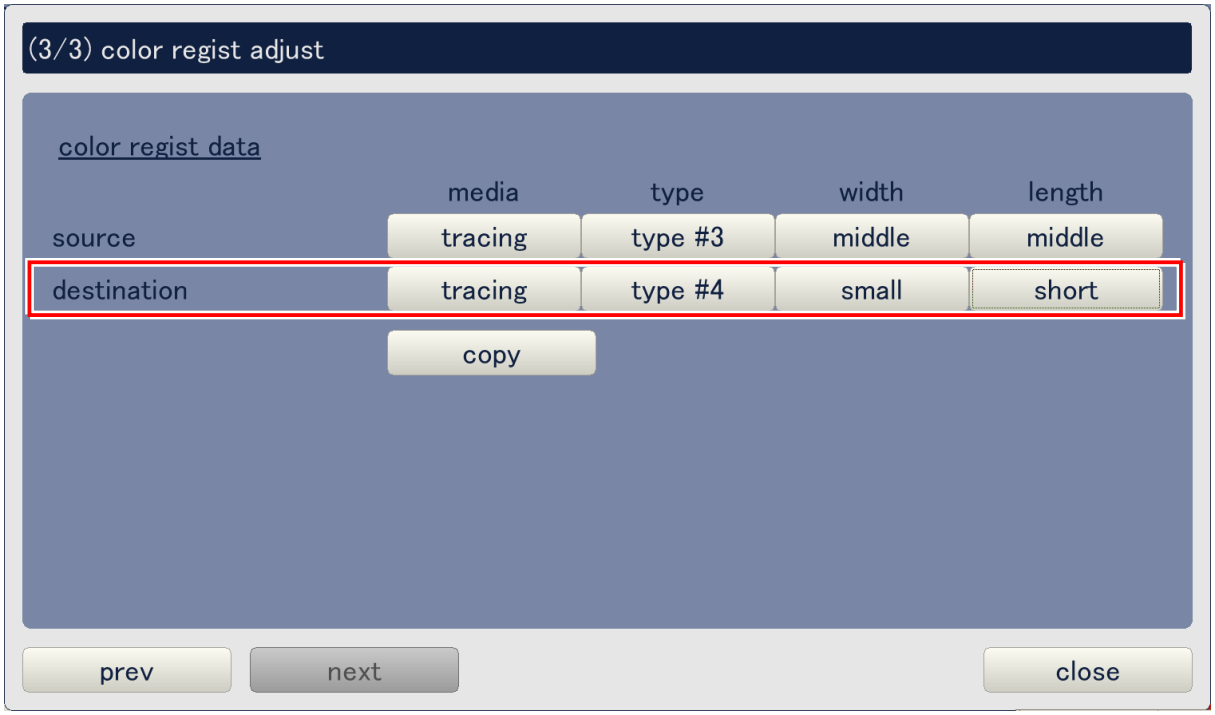
- **Source** section specifies the original target condition of the vertical color registration data that will be copied to another target condition. Change each media, type, width and length appropriately



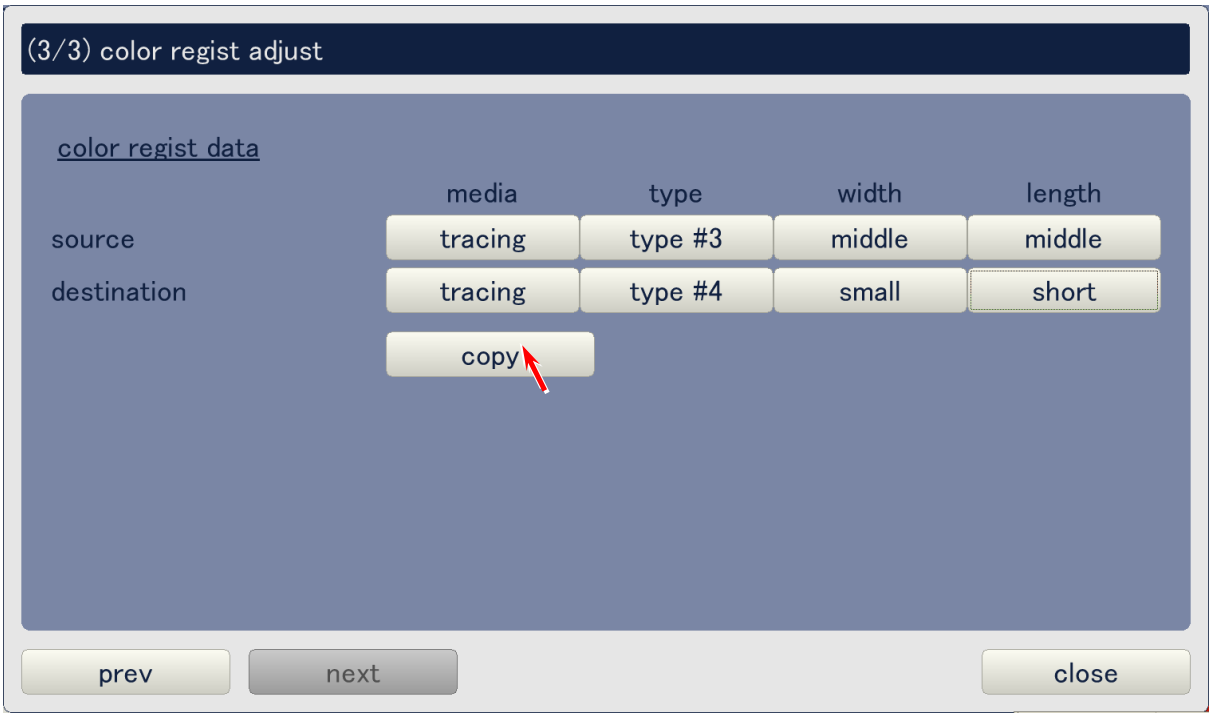


- **Destination** section specifies the target condition which the vertical color registration data of the original target condition is to be applied. Change each media, type, width and length appropriately

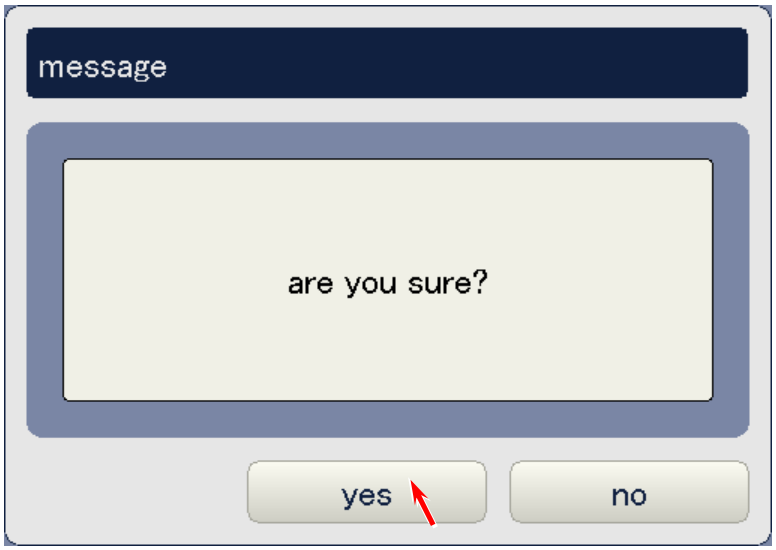




- Click on **ok**.

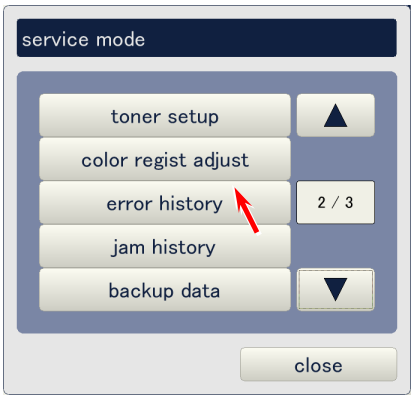


- Choose **yes** for the following message.

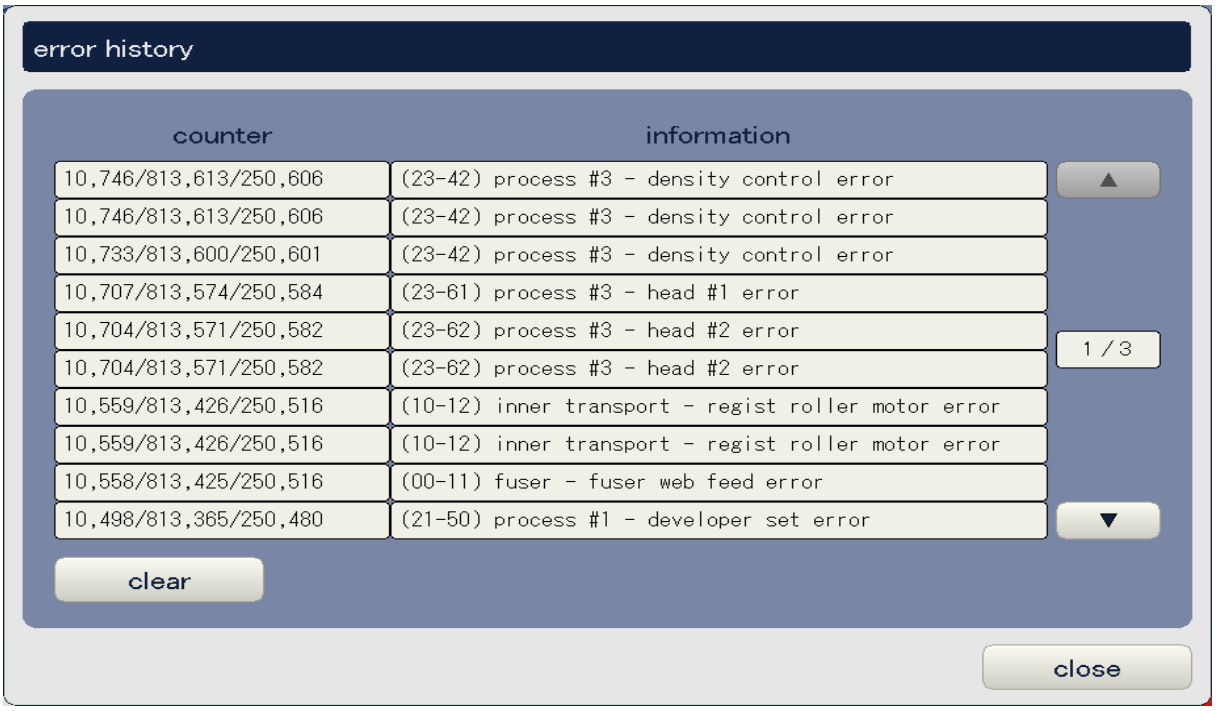


9. 5. 8 Error history

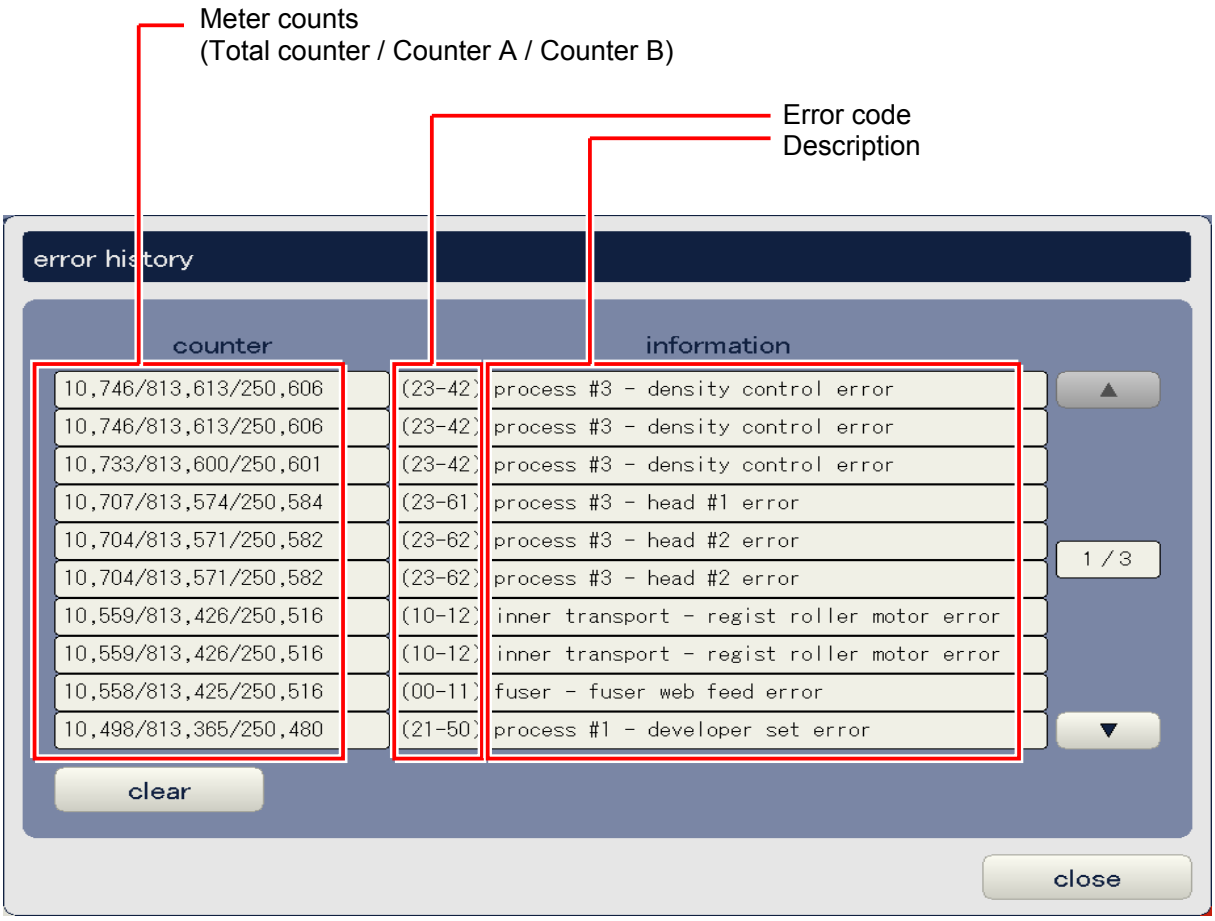
The latest 100 errors are memorized, and their details are indicated on the Error History Page.
Choose **error history** in the service mode menu to access the Error History Page.



Error History Page

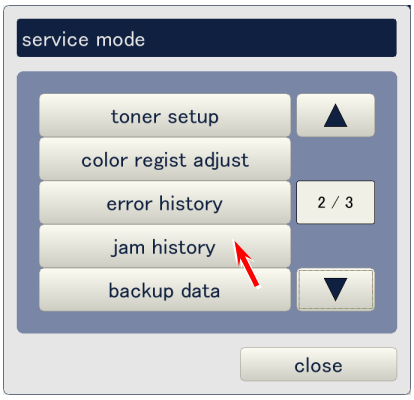


- When an error happens, the meter count of each Total Counter, Counter A and Counter B is indicated in **counter** field.
- The error code and its description are indicated in the **information** field.
- Clicking on **clear** will clear all the recorded error information.

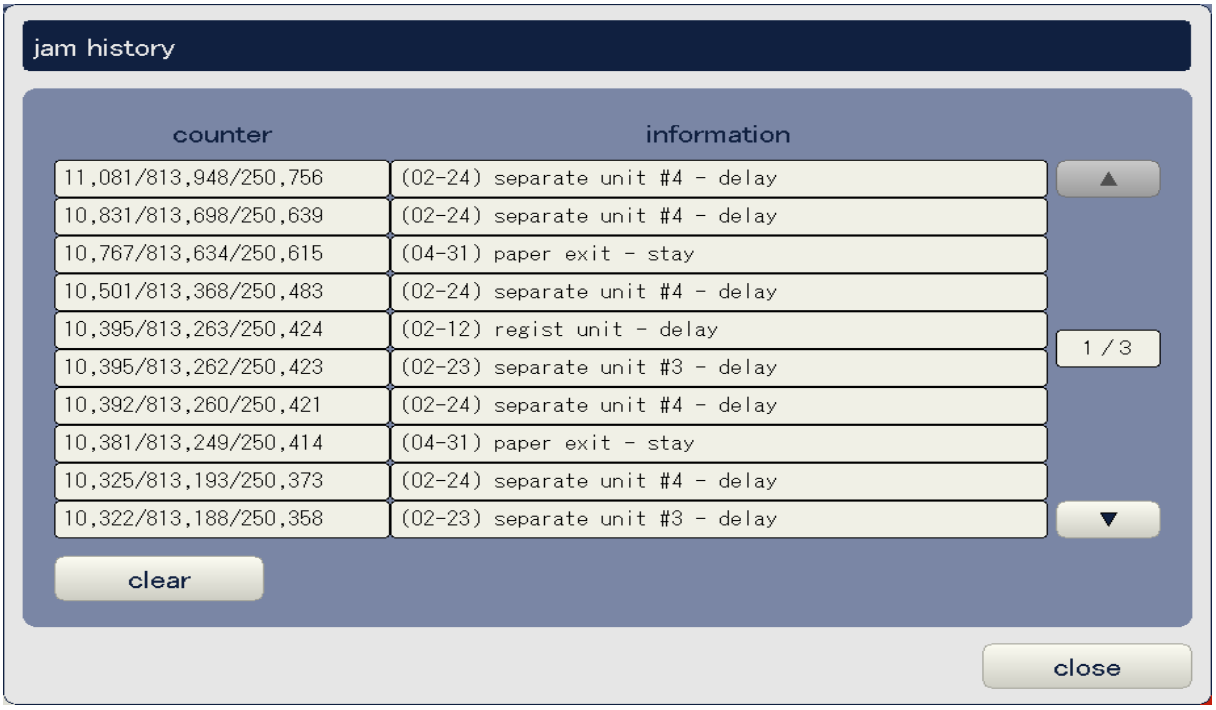


9. 5. 9 Jam history

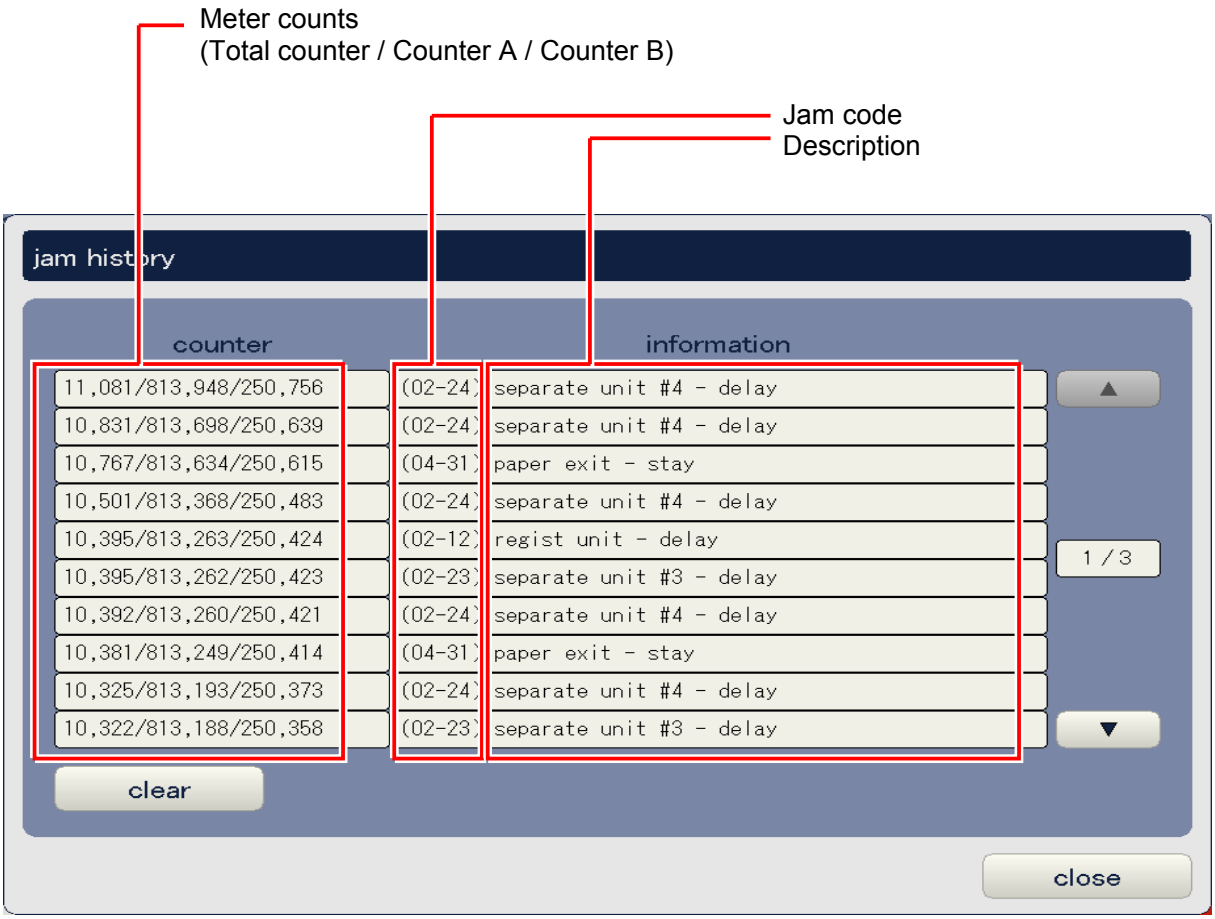
The latest 100 paper jams are memorized, and their details are indicated on the Jam History Page. Choose **jam history** in the service mode menu to access the Jam History Page.



Jam History Page



- When a paper jam happens, the meter count of each Total Counter, Counter A and Counter B is indicated in **counter** field.
- The jam code and its description are indicated in the **information** field.
- Clicking on **clear** will clear all the recorded jam information.

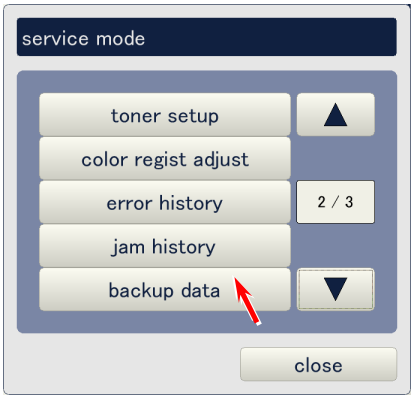


9. 5.10 Backup Data

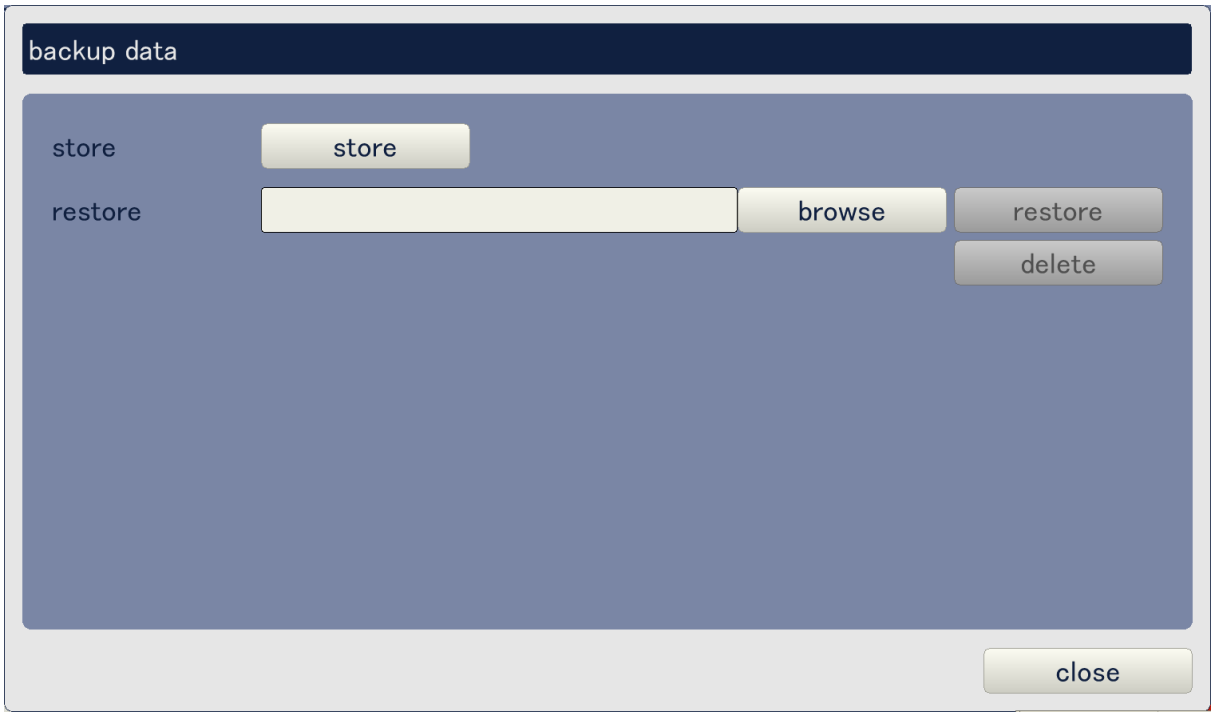
The following operations are available in the Backup Data Page.

- Creation of backup file
- Upload of backup file

Choose **backup data** in the service mode menu to access the Backup Data page.



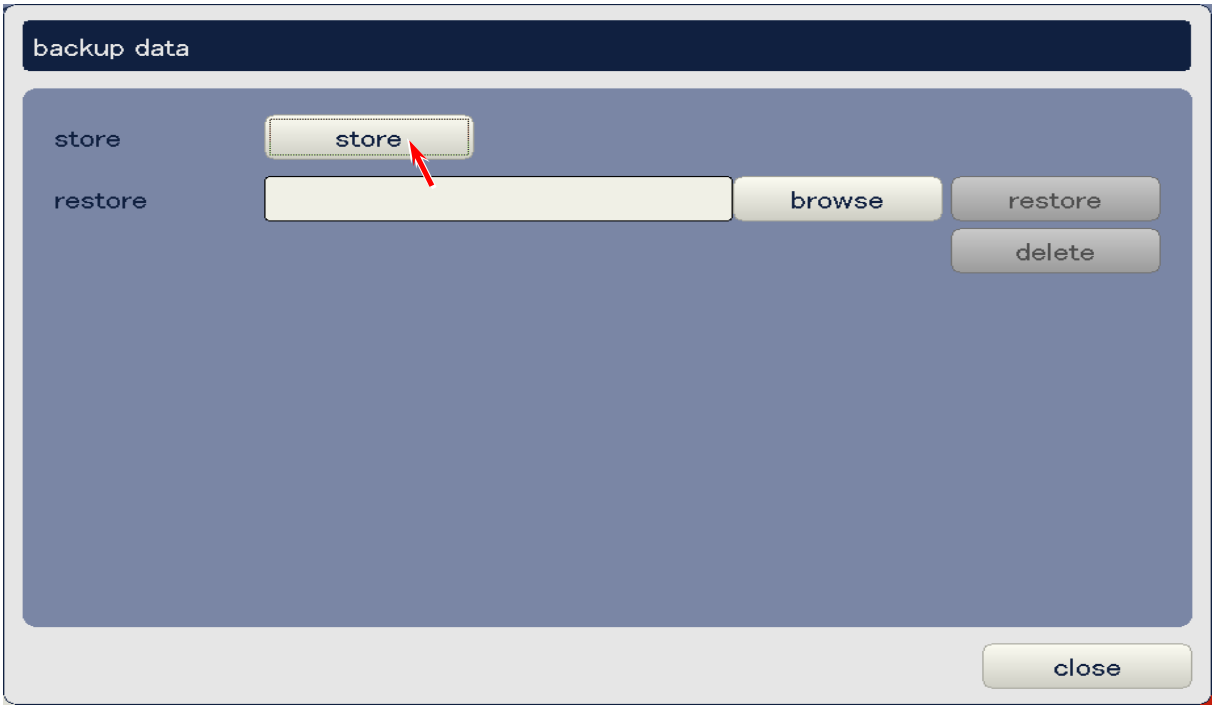
Backup Data Page

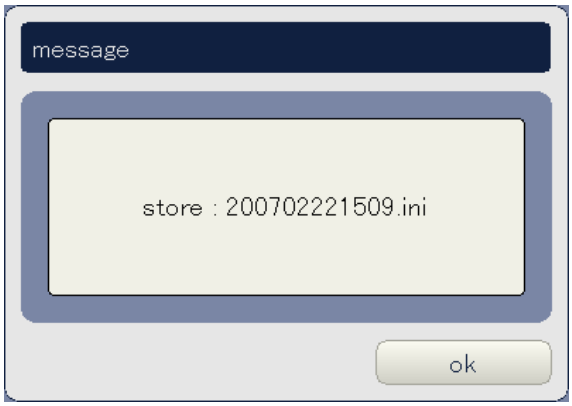


9. 5.10. 1 Store

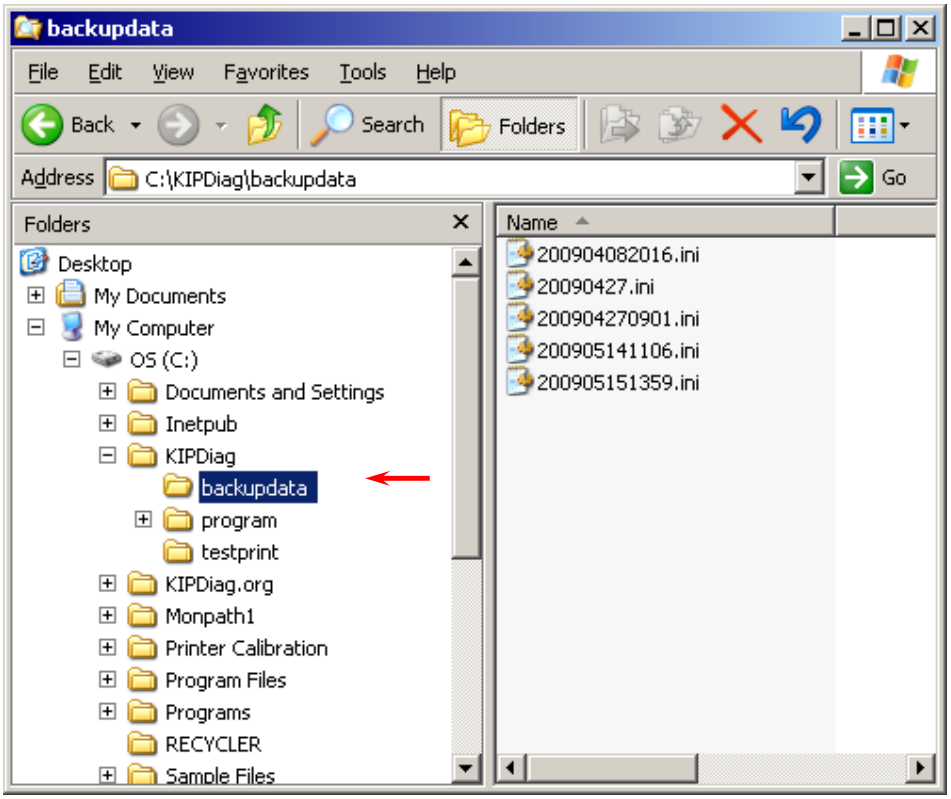
Store will save all the current printer parameters in an ini file for later recovery purpose.

- Click on **store** on the Backup Data Page to save the current printer parameter in the ini file. Its file name will be current date and time.





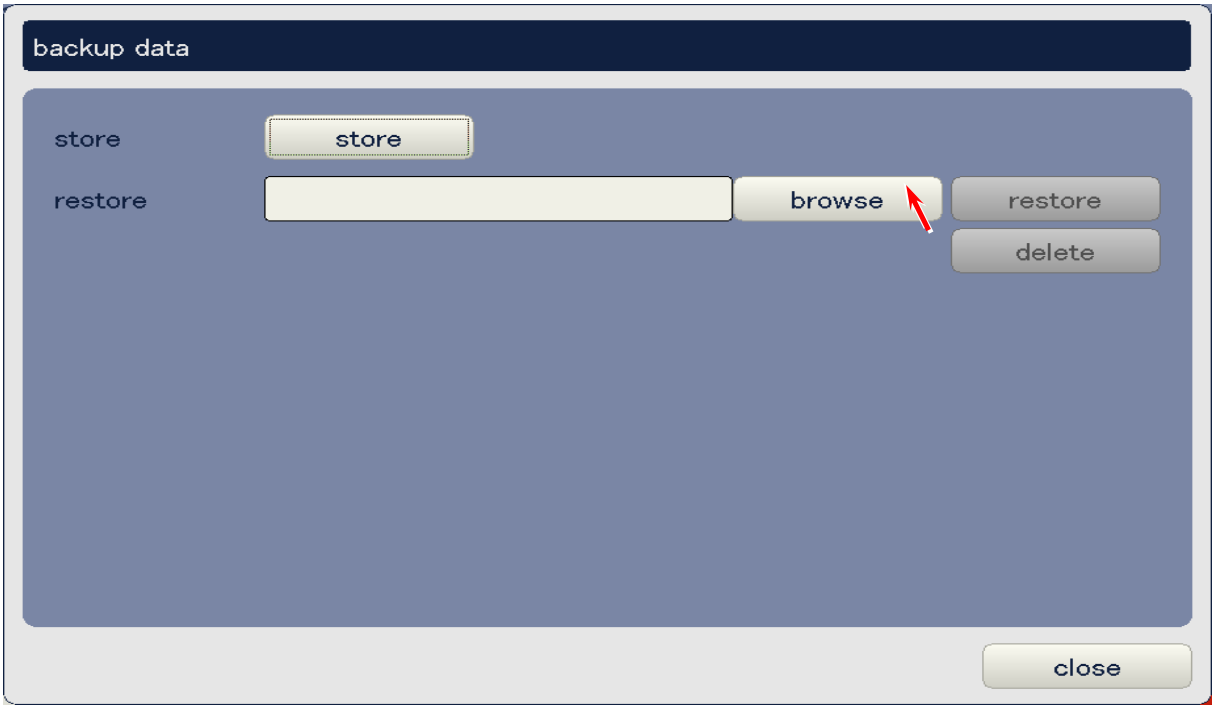
- Run the Windows Explorer on the KC80 IPS and access the ini file at **C:\KIPDiag\backupdata**.

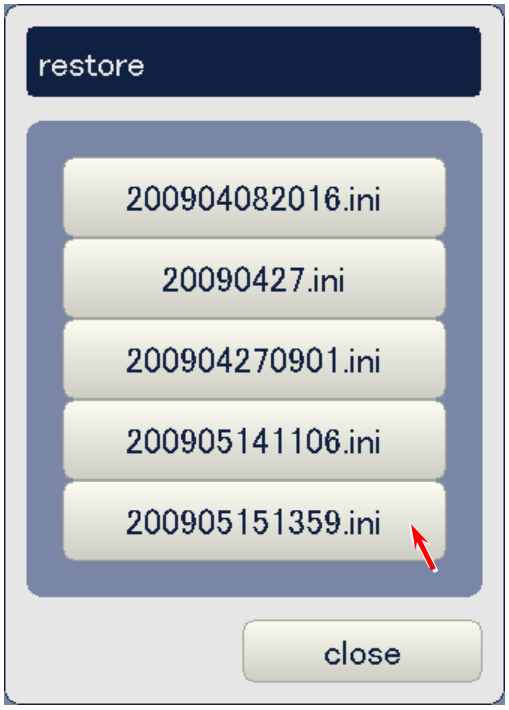


9. 5.10. 2 Restore

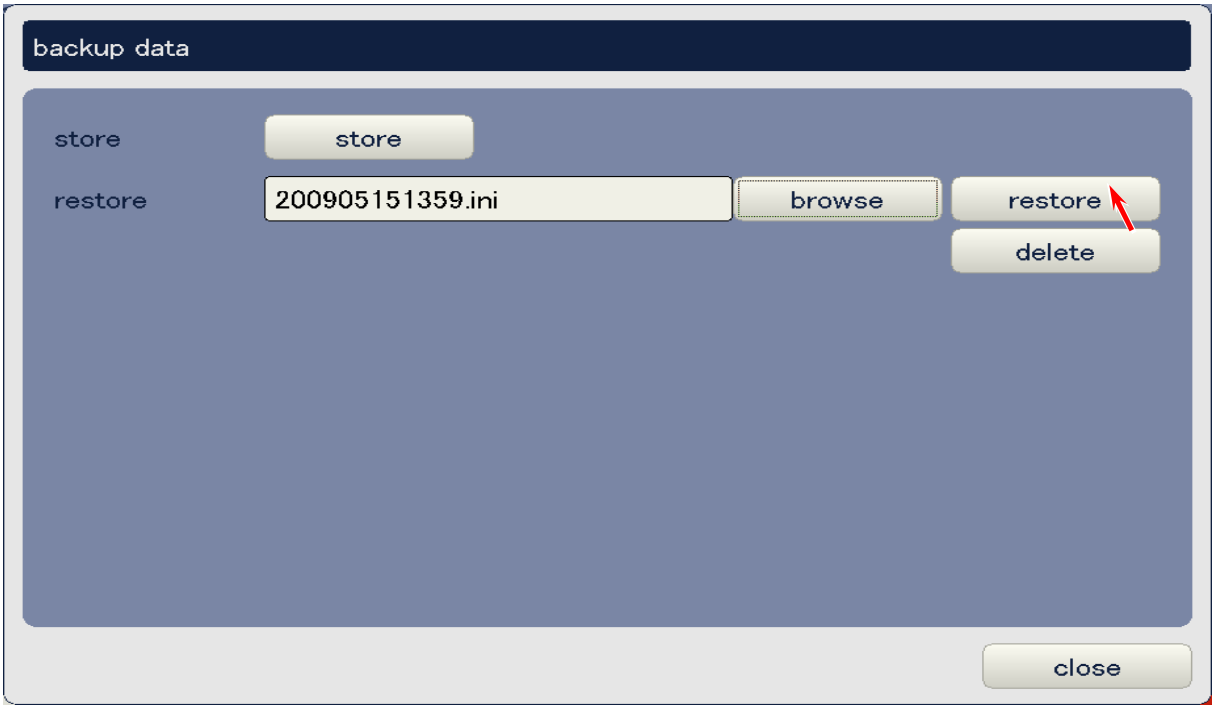
The backup ini file can be uploaded to the KIP Color 80 for recovering the same parameters before backup.

- Click on **browse**. This will indicate all the ini file at **C:\KIPDiag\backupdata**. Choose one file that is used for restoration. (If there are multiple ini files, the latest one is used for restoration in many cases.)



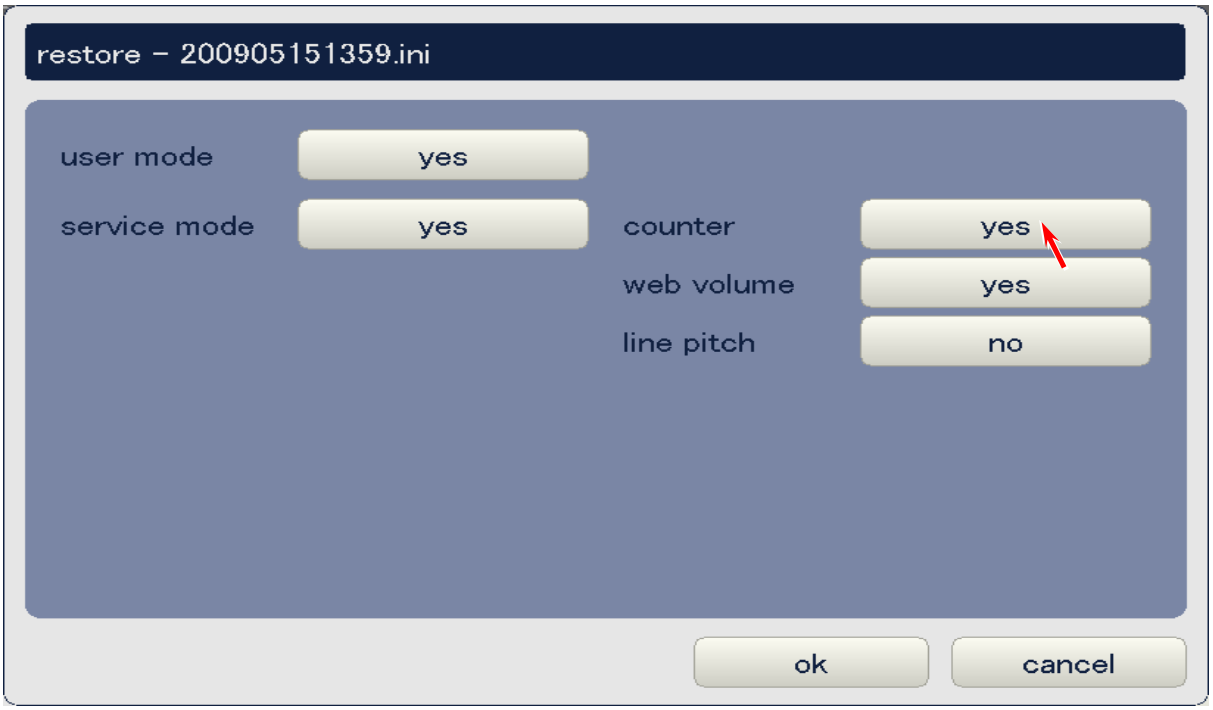


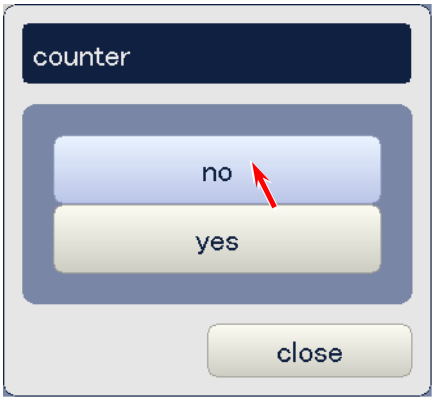
- After confirming the selected file is indicated in the restore field, click on **restore**.



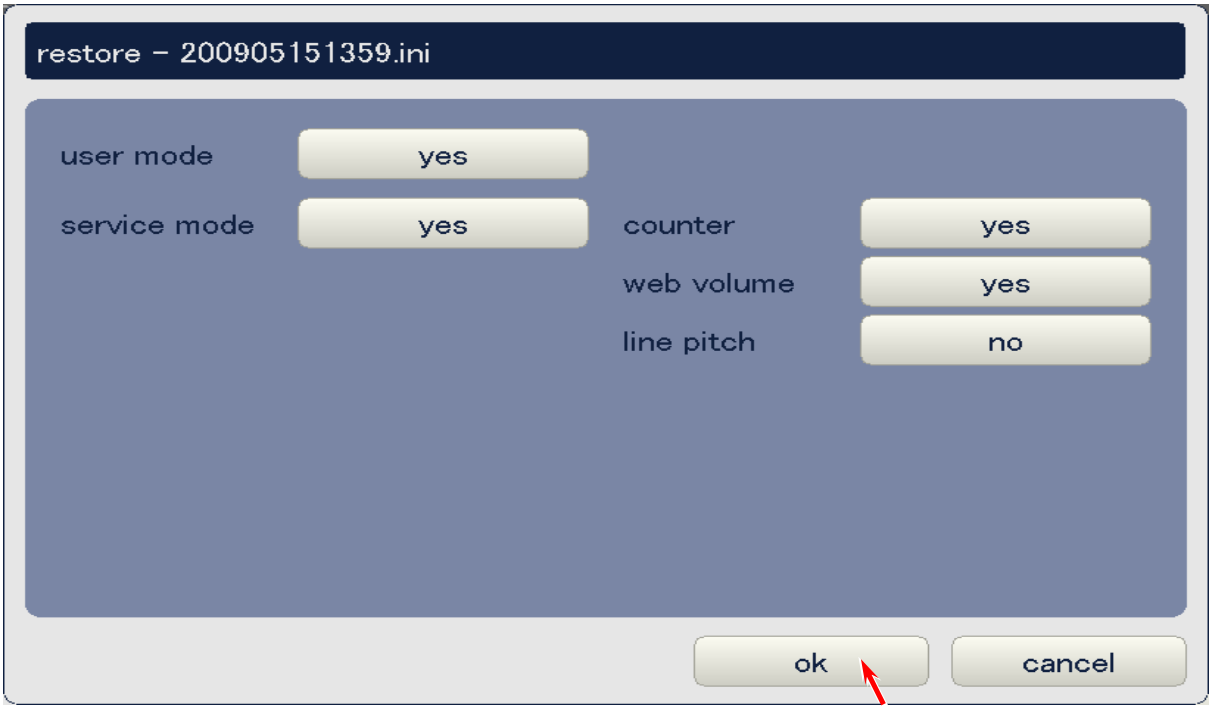
- The next page allows you to choose whether each of 5 restorable items is to be restored or not. Selecting **yes** will restore that item, and selecting **no** does not restore it. To change the setting, click on the concerning button and choose either yes or no.

user mode	All user mode parameters
service mode	All service mode parameters
counter	Counted values and counting units of Counter A & B
web volume	Web operation time.
line pitch	Line pitch calibration data

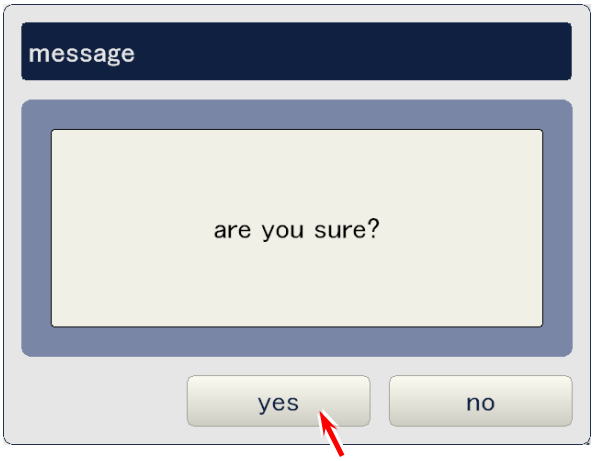




- Click on **ok**.



- Choose **yes** for the following message.

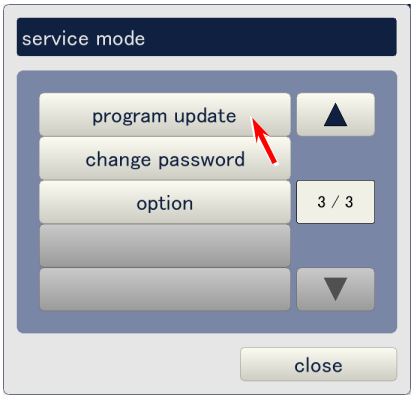


- All the previous printer parameters are successfully restored when the following message is indicated. (It may take time.)

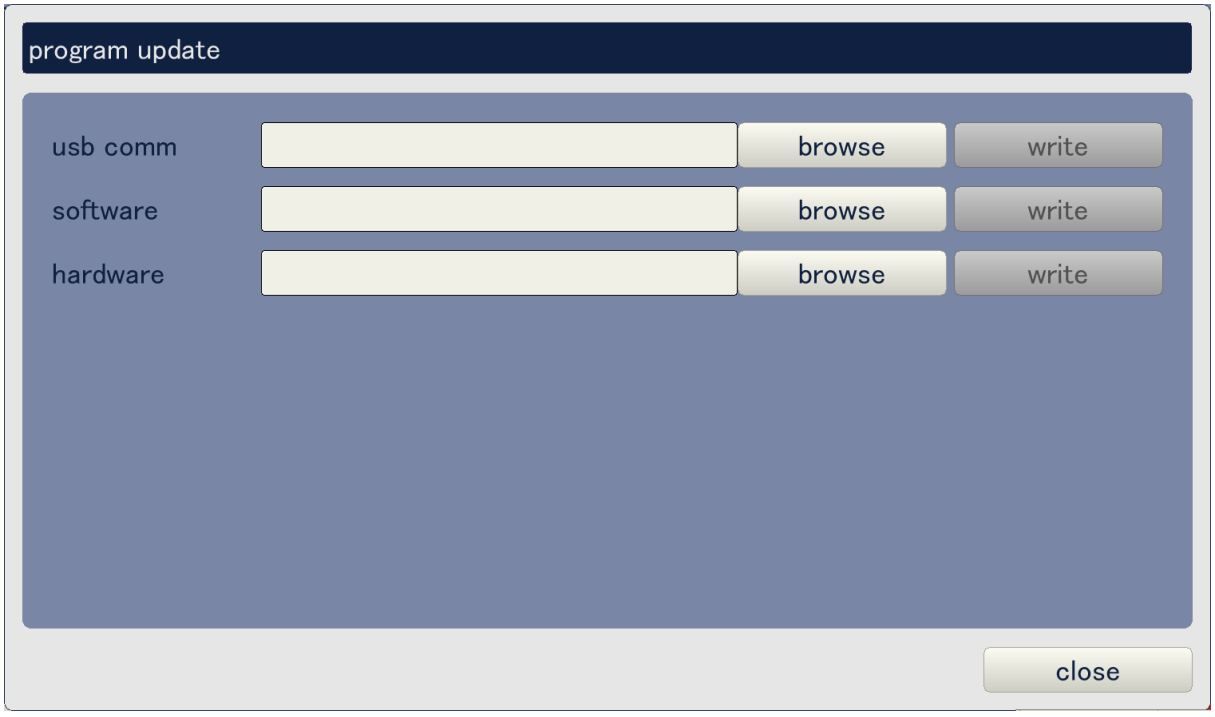


9. 5.11 Program Update

Control programs of KIP Color 80 printer can be uploaded to the printer. Choose **program update** in the service mode menu to access the Program Update page.



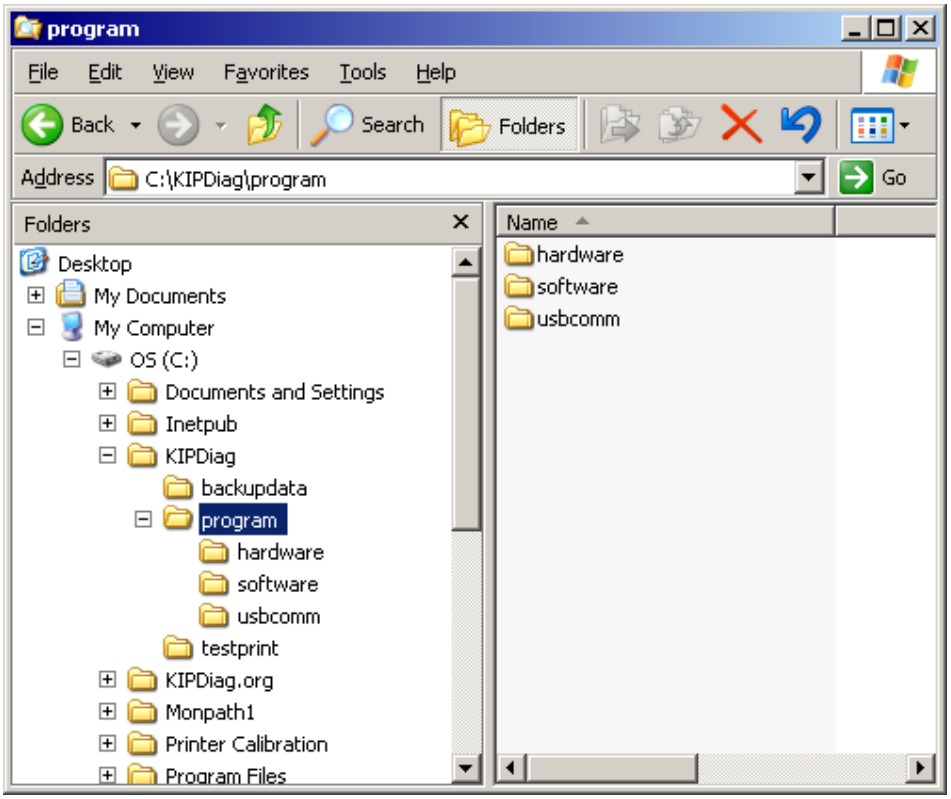
Program Update Page



KIP Color 80 printer is controlled by 3 types of programs.
(1) USB communication software
(2) Software data file (printer firmware)
(3) Hardware data file (FPGA)

To upload these 3 types to the printer, they must be saved in correct folder respectively, which are **hardware**, **software** and **usbcomm** folders at **C:\KIPDiag\program** on the KC80 IPS.

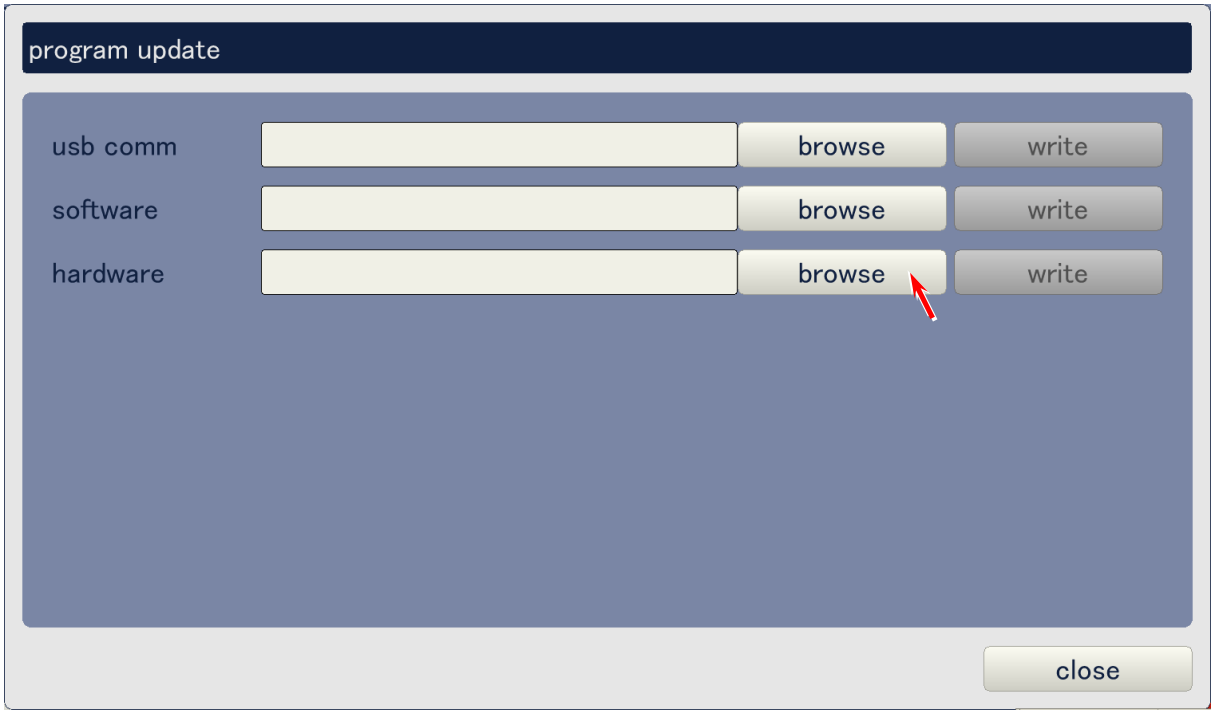
hardware folder : Save the FPGA program here.
software folder : Save the Firmware program here.
usb comm. Folder : Save the USB communication program here.

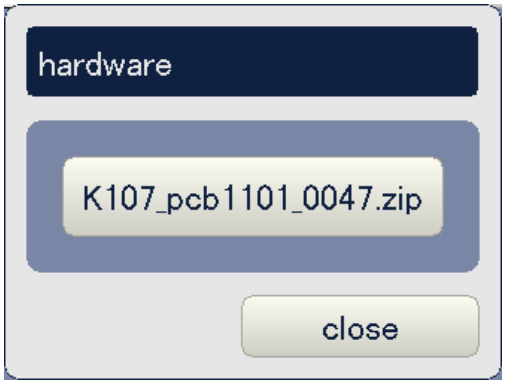


NOTE

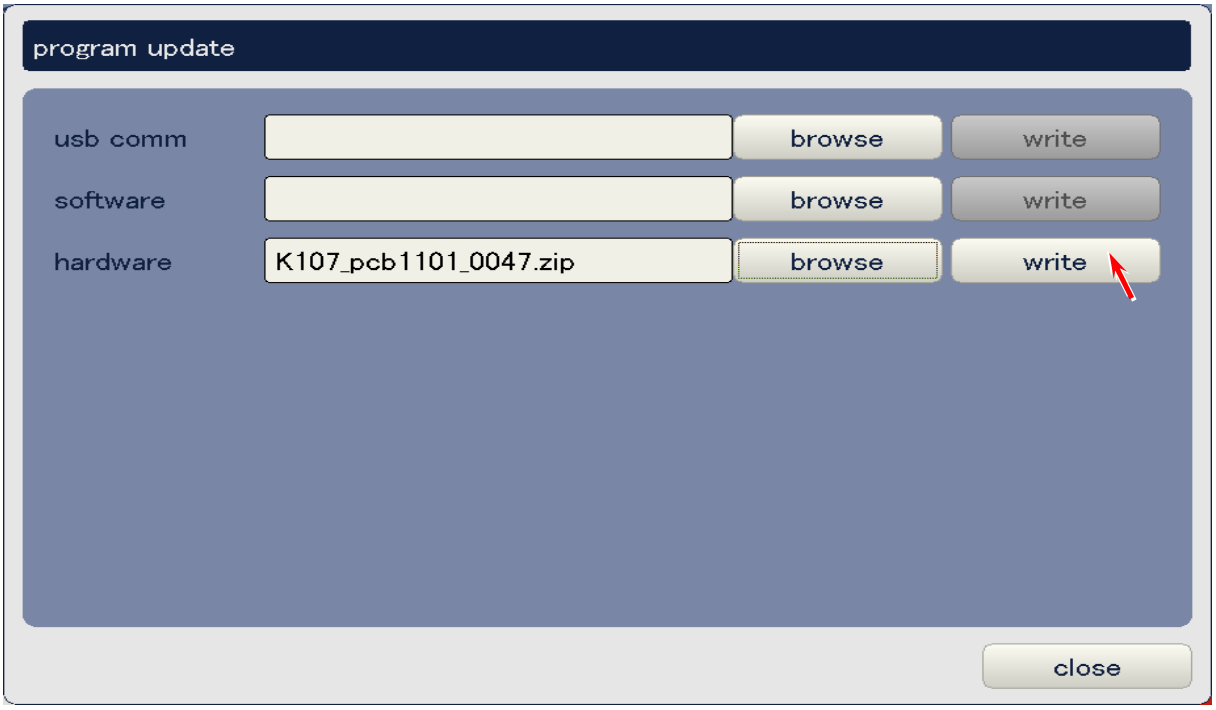
If the program file is saved in a wrong folder, the machine does not recognize this file correctly.

- After the control programs are saved in the correct folder, click on each **browse**. All the control programs (.rom or .zip) in the concerning folder are listed in the pop up dialog. Choose the one to be uploaded to the printer.





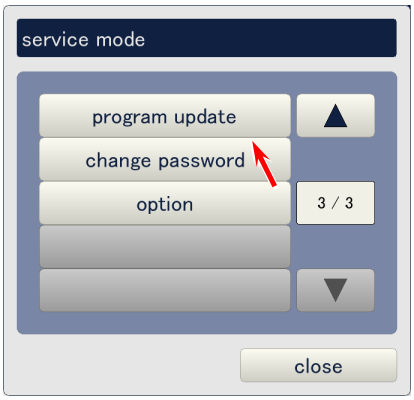
- The selected file is indicated in the concerning window. Click on write to upload it to the KIP Color 80 printer.



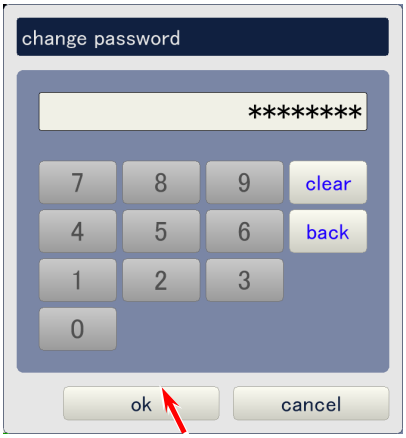
9. 5.12 Change Password

Service password can be changed when necessary.

- Click on **change password** in the service mode menu (3/3 page),

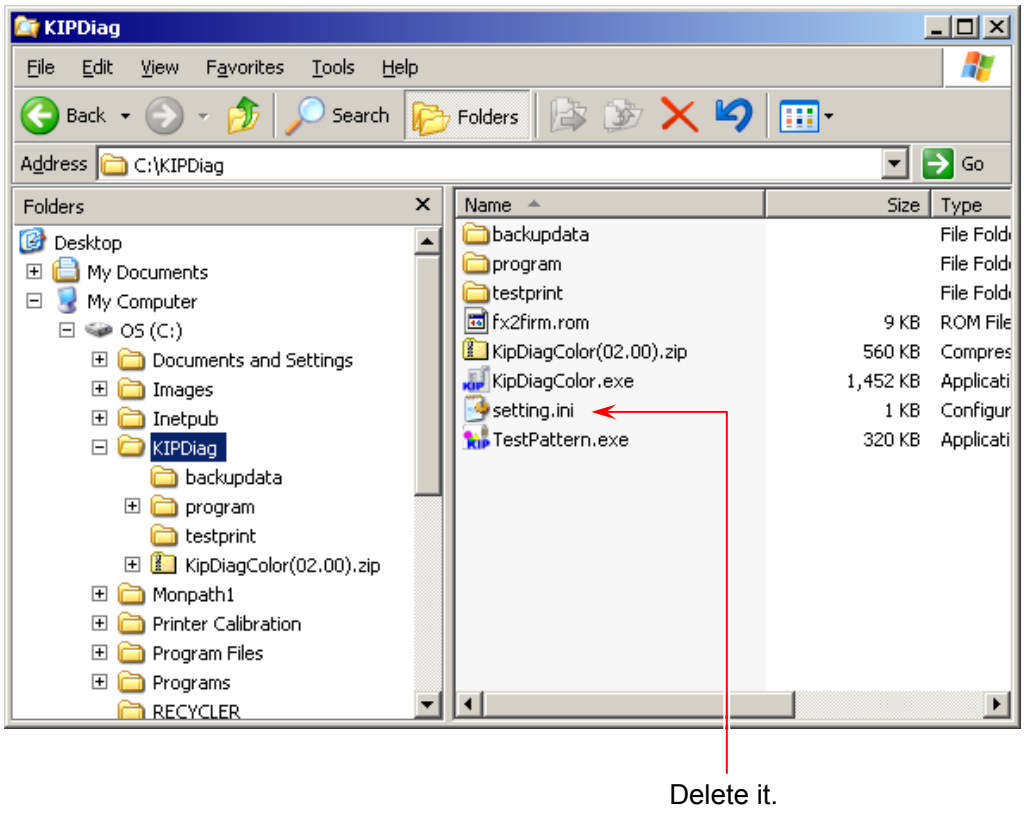


- Type your preferable password in the input field and lick on **ok**. (8 digits max.)



NOTE

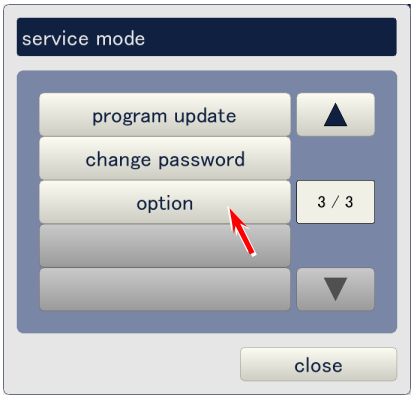
If you forget your own password, delete **setting.ini** at **C:\KIPDiag** and reboot the KC80 IPS. Setting.ini is recreated with recovering default password **0000**.



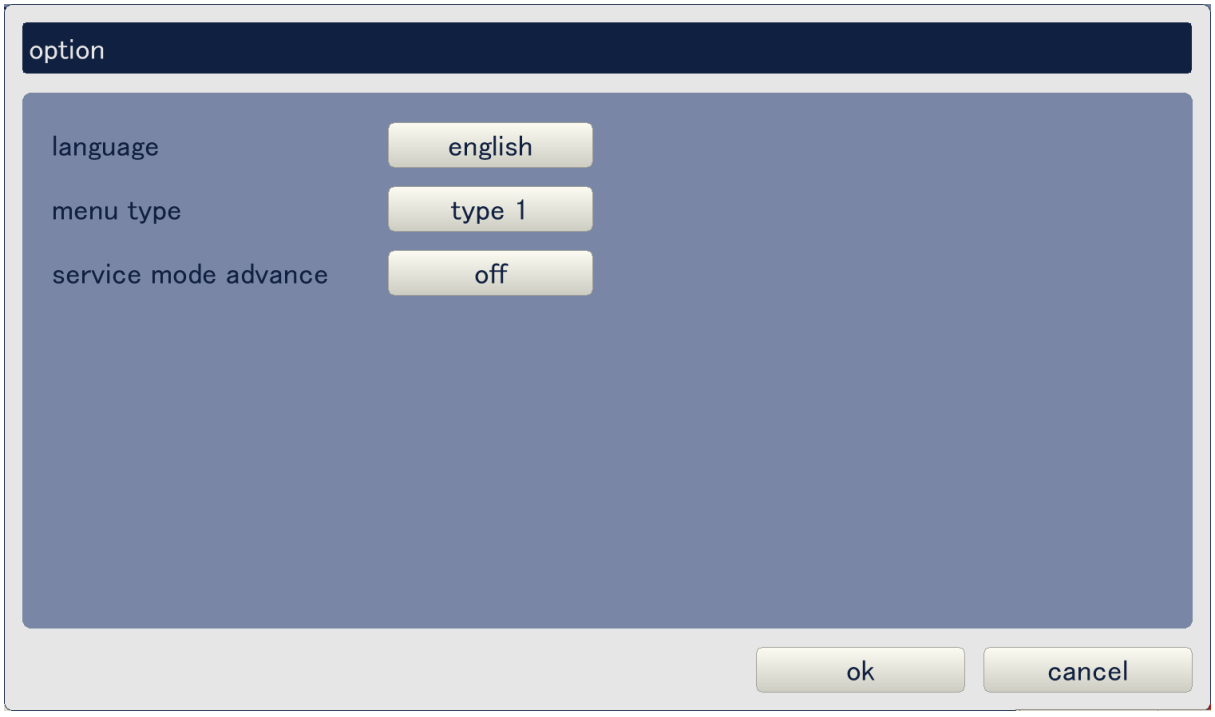
9. 5.13 Option

The following optional functions can be specified.

Language	Can choose the indication language of KIPDiagColor (English or Japanese)
Menu type	Decides which screen has to be indicated after closing the setting screen.
Service mode advance	Can switch between normal/advanced service mode



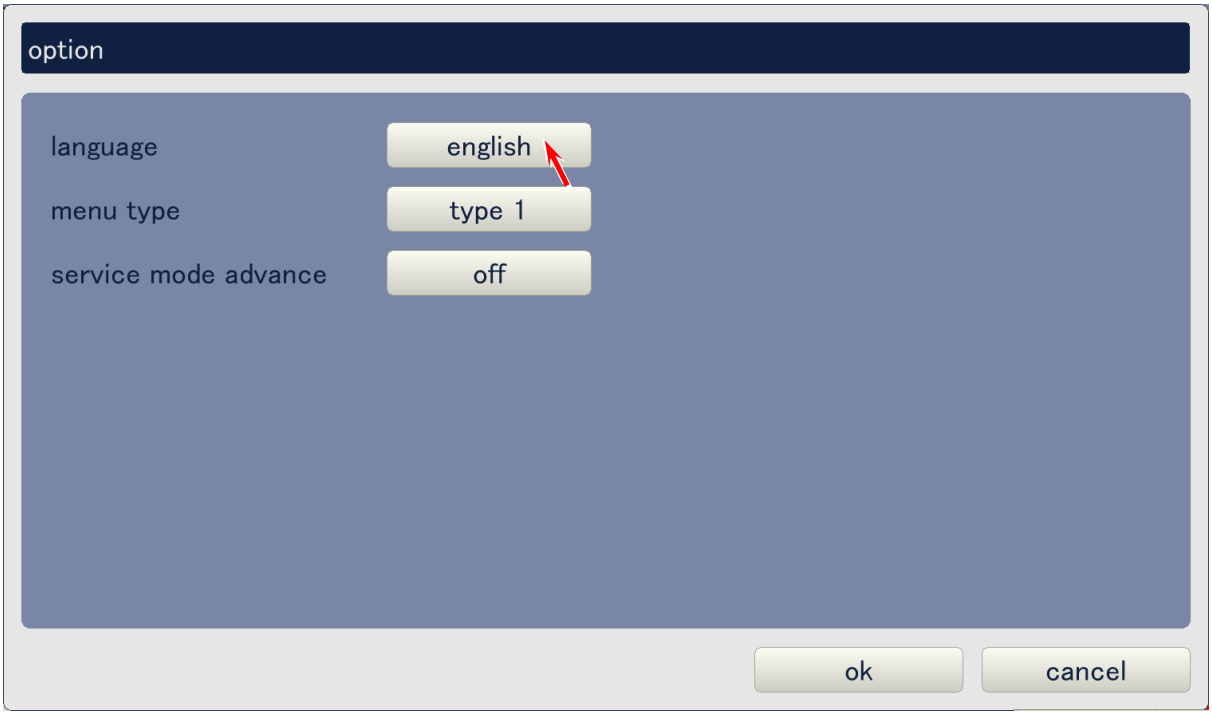
Option Page



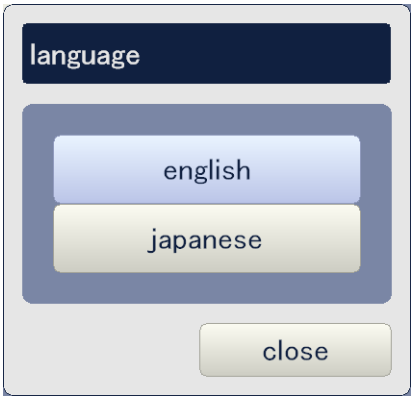
9. 5.13. 1 Language

Indication language of KipDiagColor cam be set to English or Japanese.

- Click on the button beside **language**.



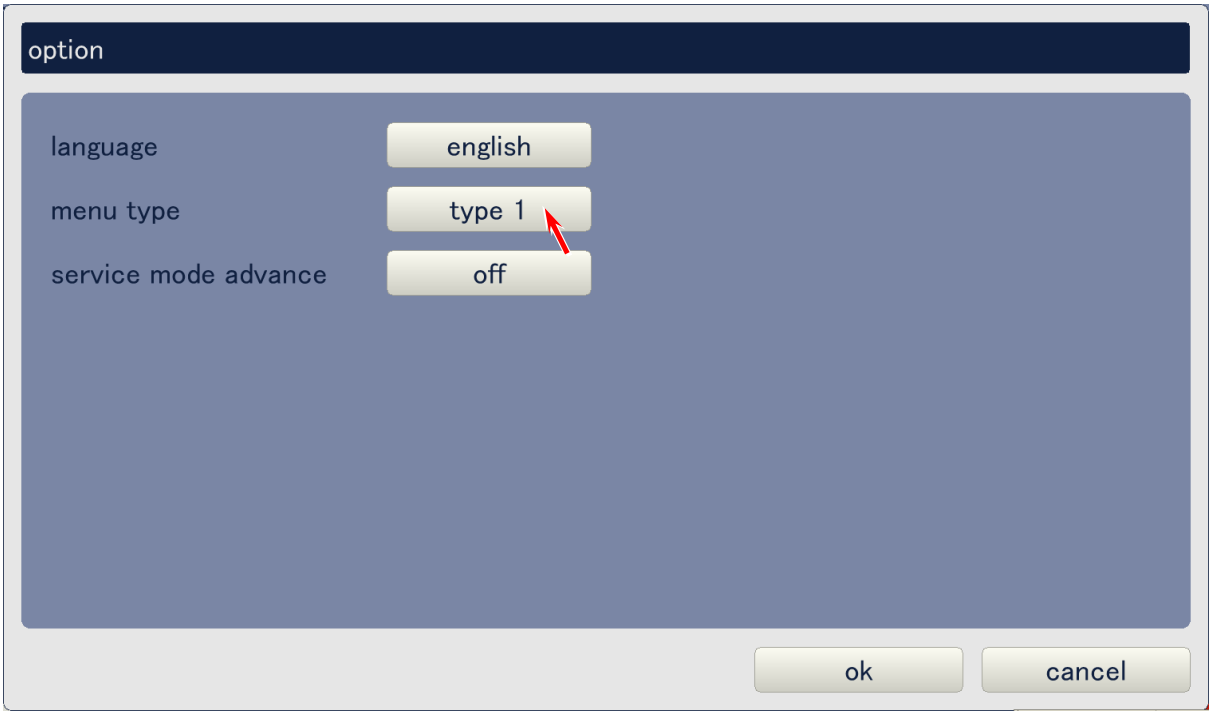
- Choose either **English** of **Japanese**.



9. 5.13. 2 Menu type

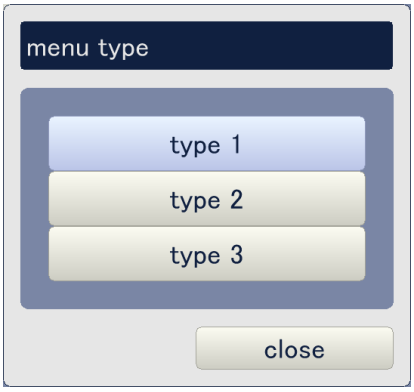
Menu type specifies “how many steps you will go back” from a certain setting screen.

- Click on the button beside **menu type**.



- Choose any setting according to the necessity.

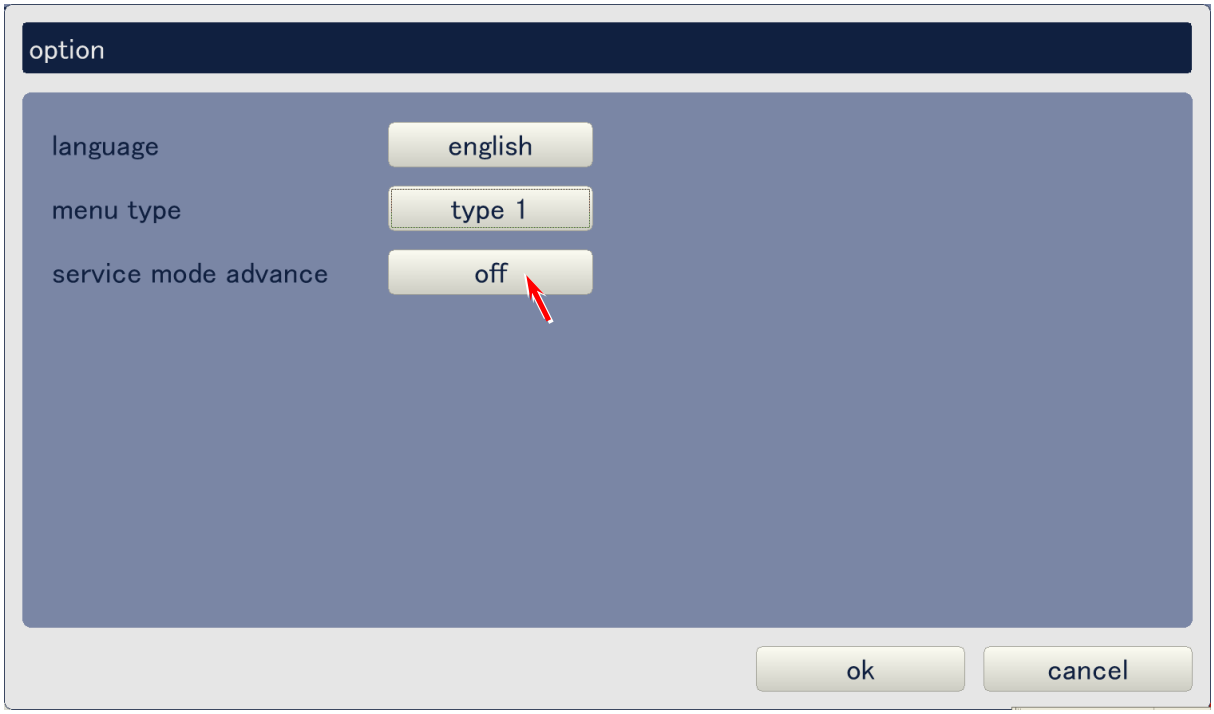
Setting	Description
type 1	Main scree is indicated when setting screen is cancelled.
type 2	1 step previous screen is indicated when setting screen is cancelled.
type 3	2 steps previous screen is indicated when setting screen is cancelled.



9. 5.13. 3 Service mode advance

It is possible to switch between normal service mode and advanced service mode. Selecting normal service mode will allow the service technician to access only major setting items of adjustment mode, and selecting advanced service mode allows for accessing all items.

- Click on the button beside **service mode advance**.



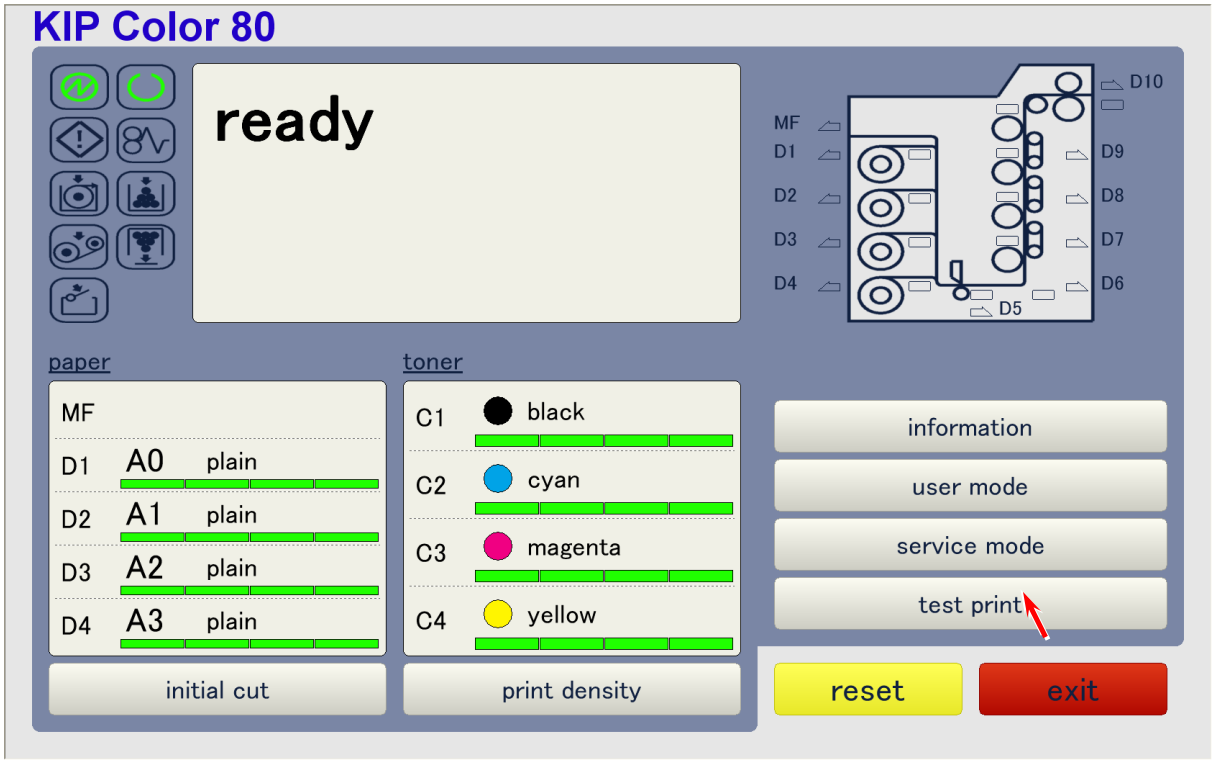
- Choose either **off** or **on**.

Setting	Description
Off	Set to the normal service mode.
On	Set to the advanced service mode.

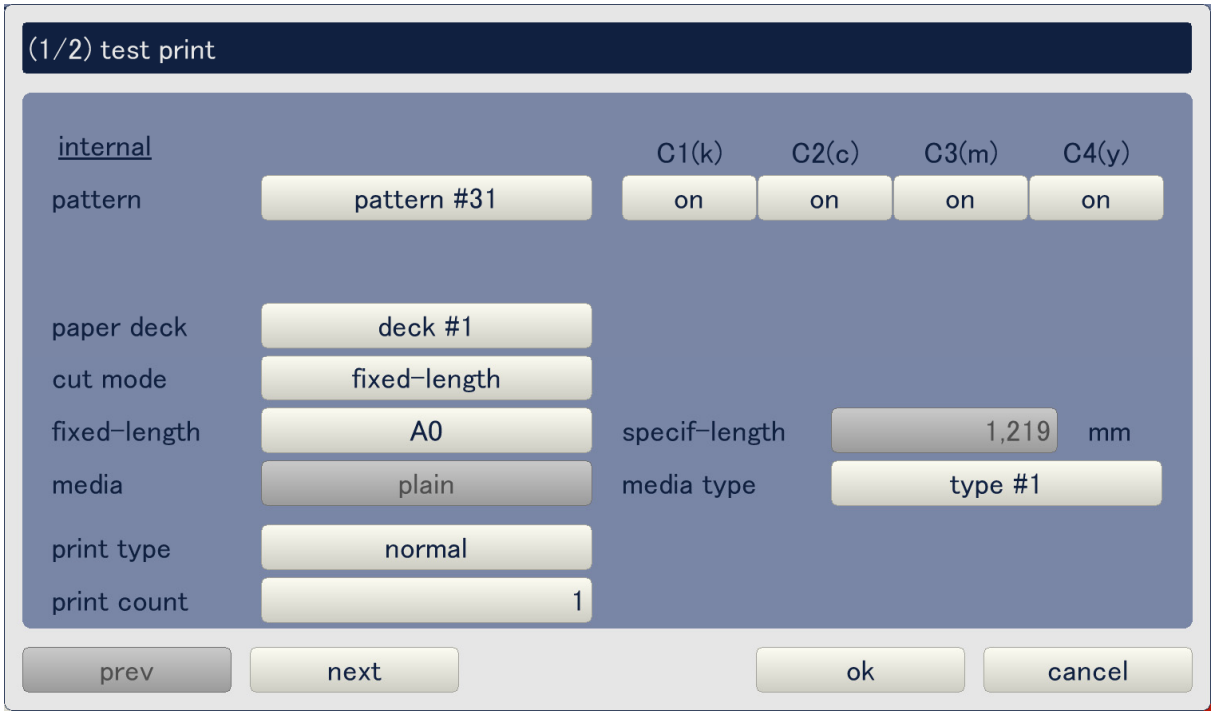


9. 6 Test Print Button

Clicking on test print on the main screen will open the Test Print Page, which allows the service technician to print the internal/external test patterns for adjustments or troubleshooting purposes.

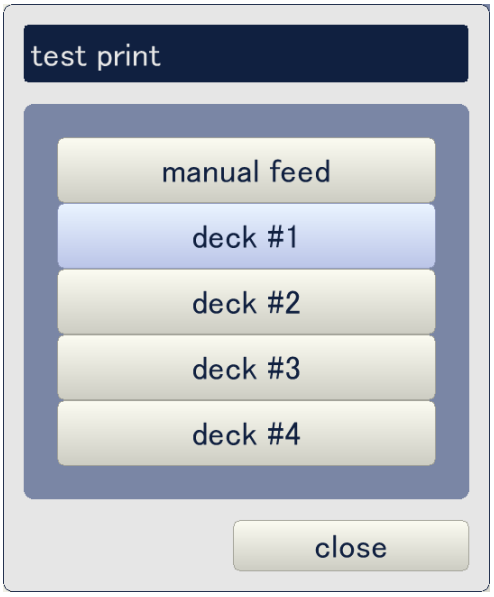


Test Print Page

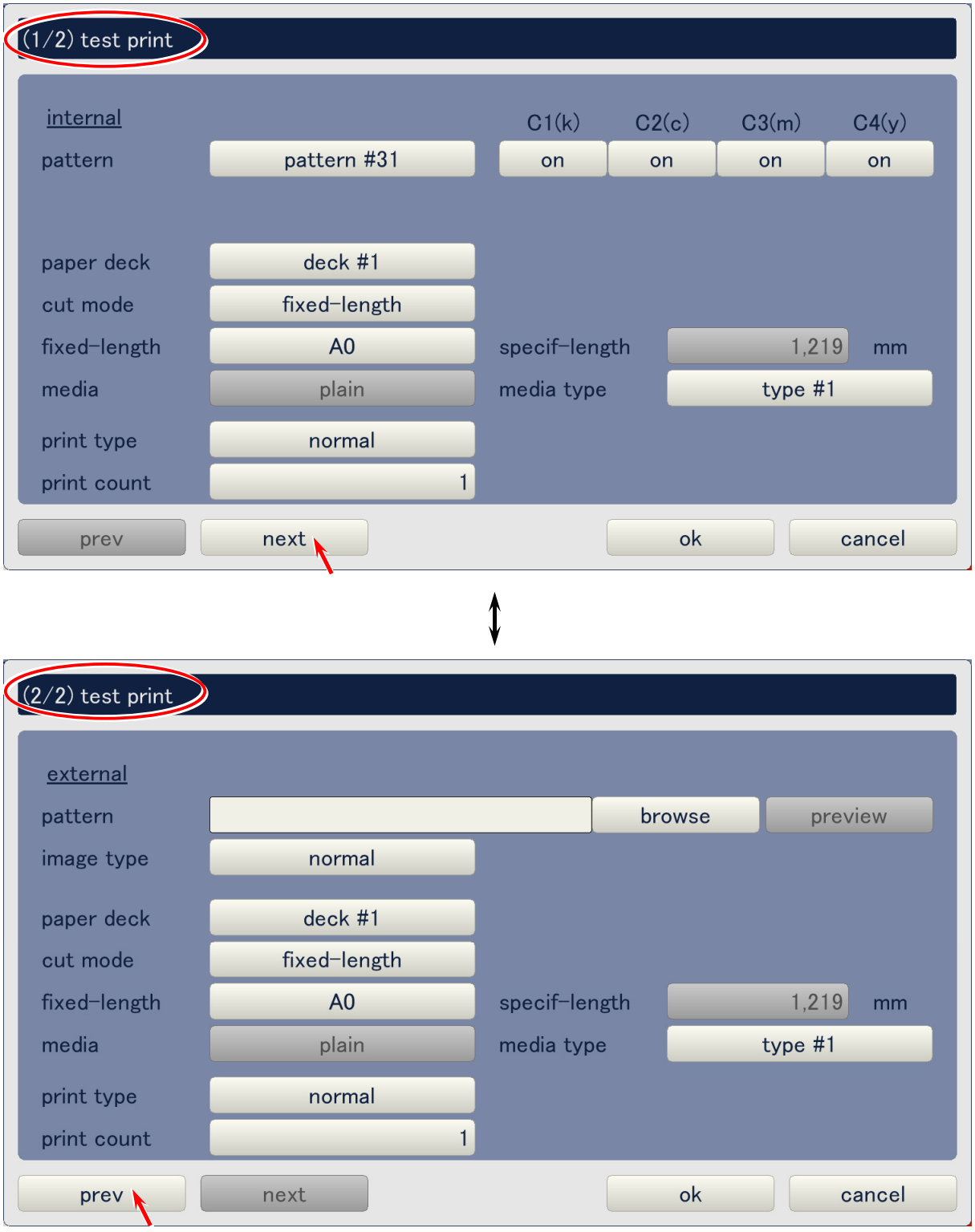


NOTE

Choosing the test print mode without entering the Service Mode will allow you to access only the following media source setting page.



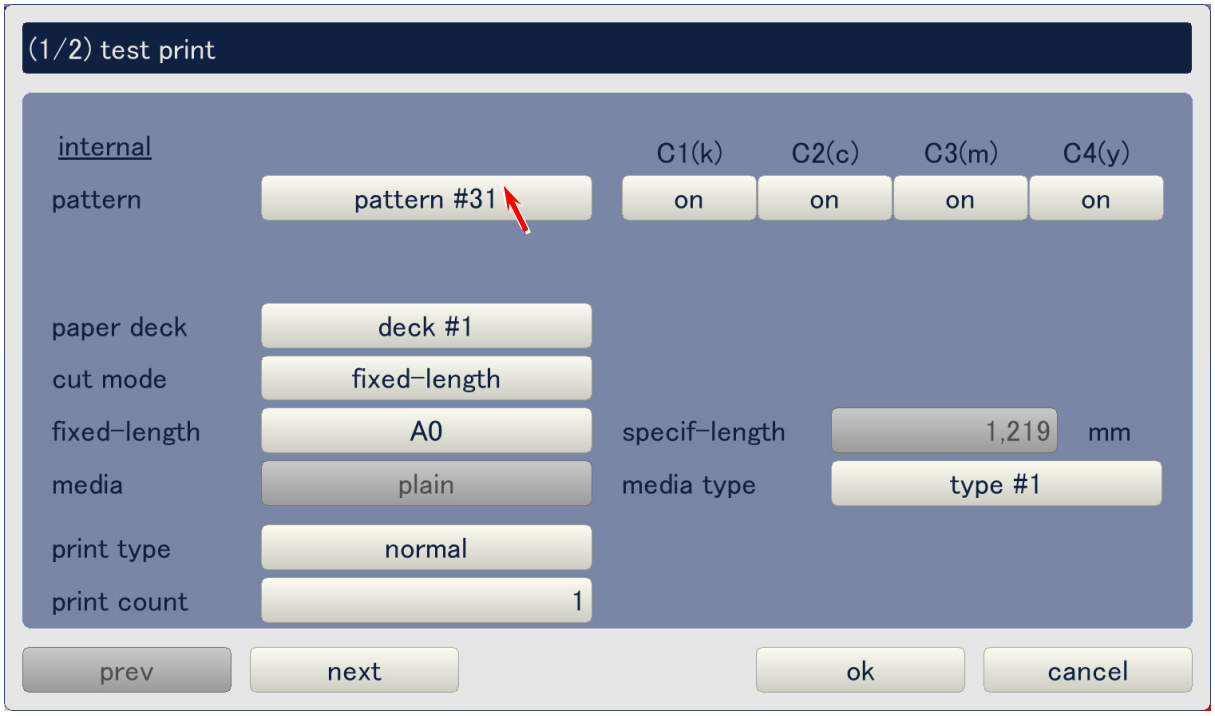
Test Print Page consists of 2 pages. Use **prev** and **next** buttons to indicate the other page. Current page is shown as (1/2) on the top of the screen.



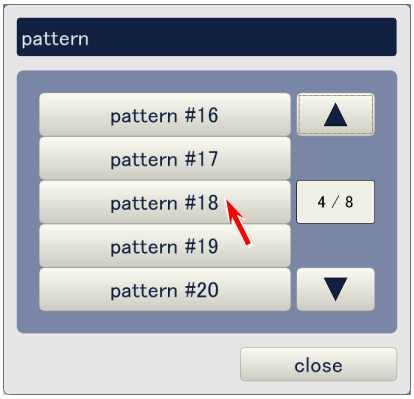
9. 6. 1 Printing out of internal test pattern

Do as follows for printing out any internal test pattern. 39 patterns are available.

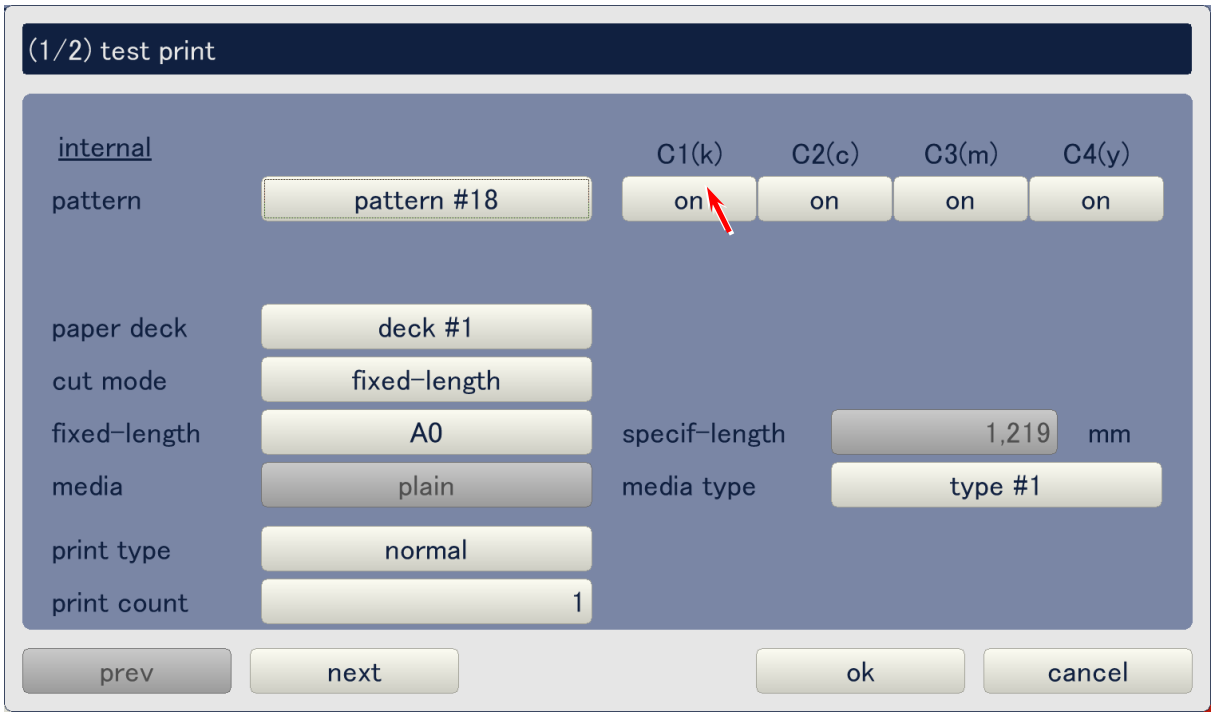
- On the first page (1/2 : internal) of the Test Print Page, click on the button beside **pattern**.



- Choose any internal test pattern that is to be printed.

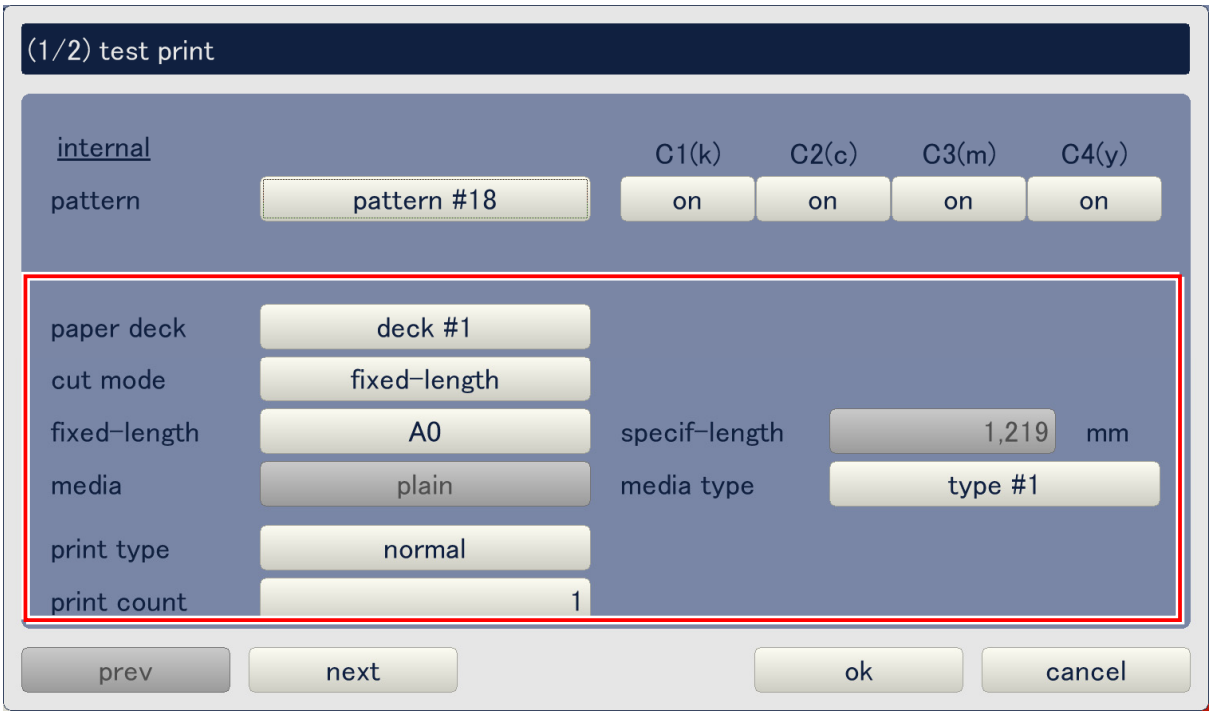


- Setting buttons C1 to C4 allows you to select the colors used for printing. Click on each button and choose **on** if this color is to be used for printing. (Choose **off** if not to use.)

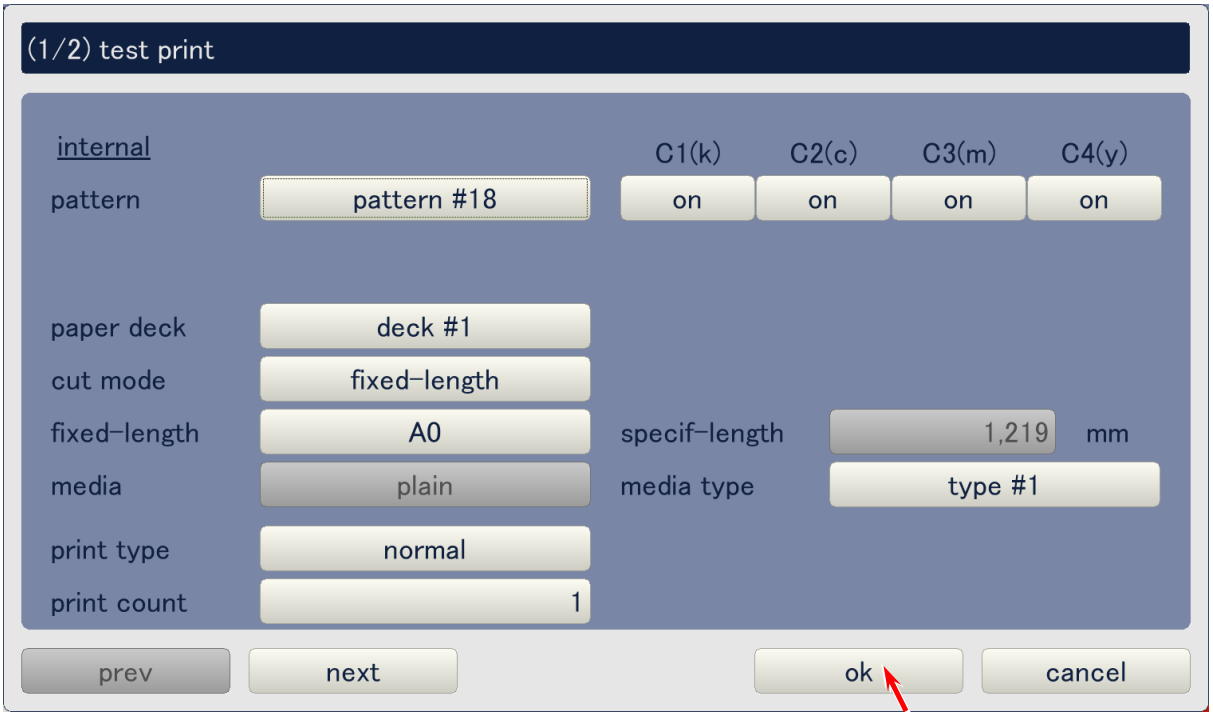




- Change the test print settings if necessary. See [9.6.3 Description of test print settings] for the descriptions of these settings.



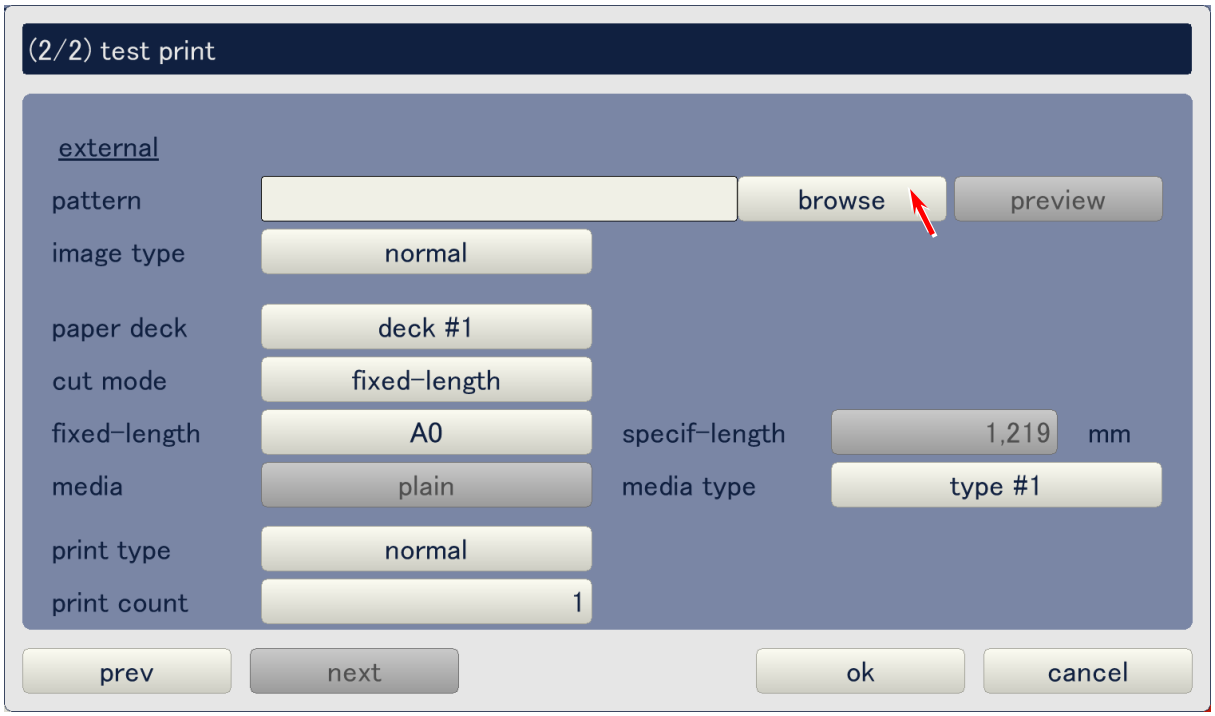
- Click on **ok** to start test printing.



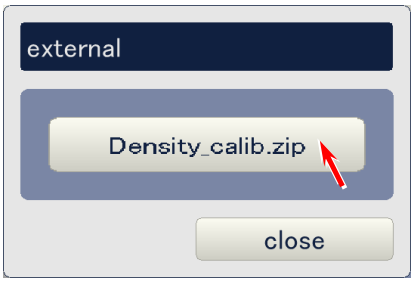
9. 6. 2 Printing out of external test pattern (Density_Calib.zip)

An external test pattern called **Density_calib.zip** is saved at **C:\KIPDiag\testprint**. This is used for adjusting the Optical Density. See [10.1 Adjustment of Optical Density] for further details of the adjustment. This section explains only the way to print Density_calib.zip.

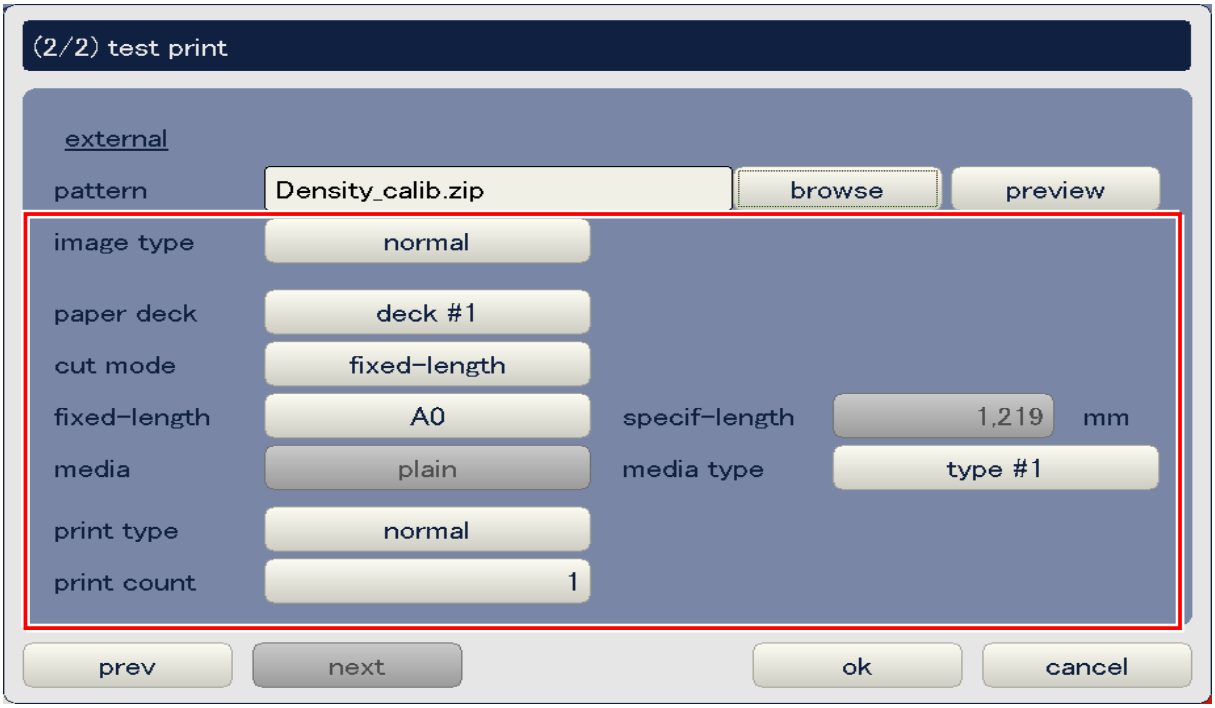
- On the second page (2/2 : external) of the Test Print Page, click on **browse**.



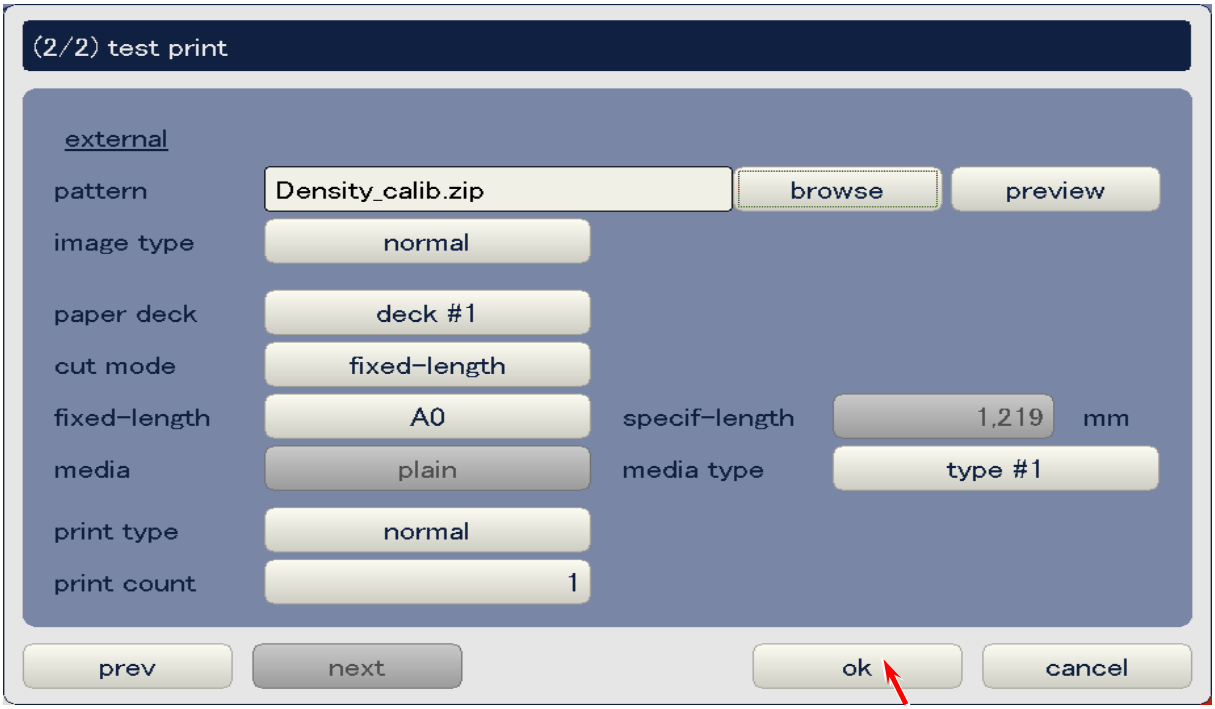
- Choose **Density_calib.zip**.



- Change the test print settings if necessary. See [9.6.3 Description of test print settings] for the descriptions of these settings.



- Click on **ok** to start test printing.

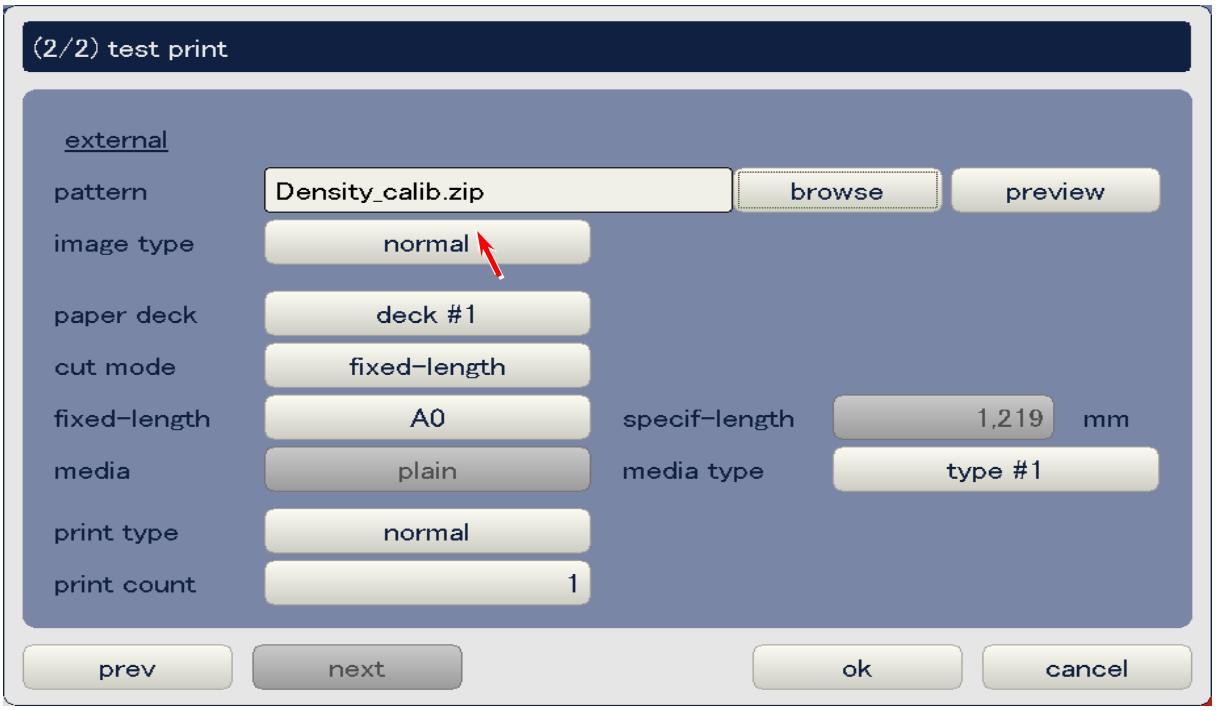


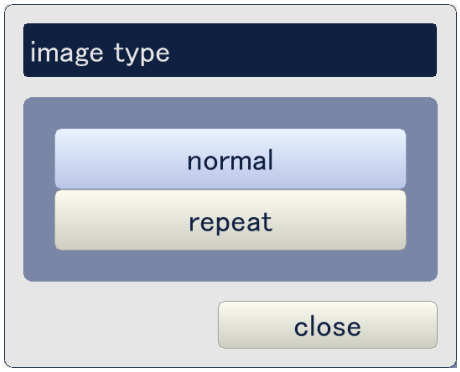
9. 6. 3 Description of test print settings

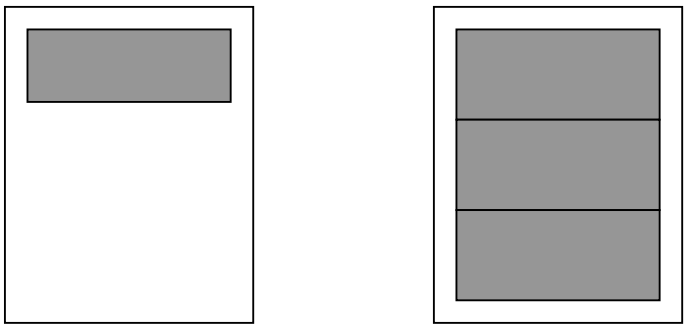
9. 6. 3. 1 Image type – active only when printing external pattern

Image type allows for selecting either normal or repeat. When selecting repeat, the external test pattern image is repeatedly printed on the same sheet of media. This setting is active only when the external pattern Density_calib.zip is printed.

Setting	Description
Normal	Image is printed normally.
Repeat	Image is repeatedly printed on the same sheet of media.



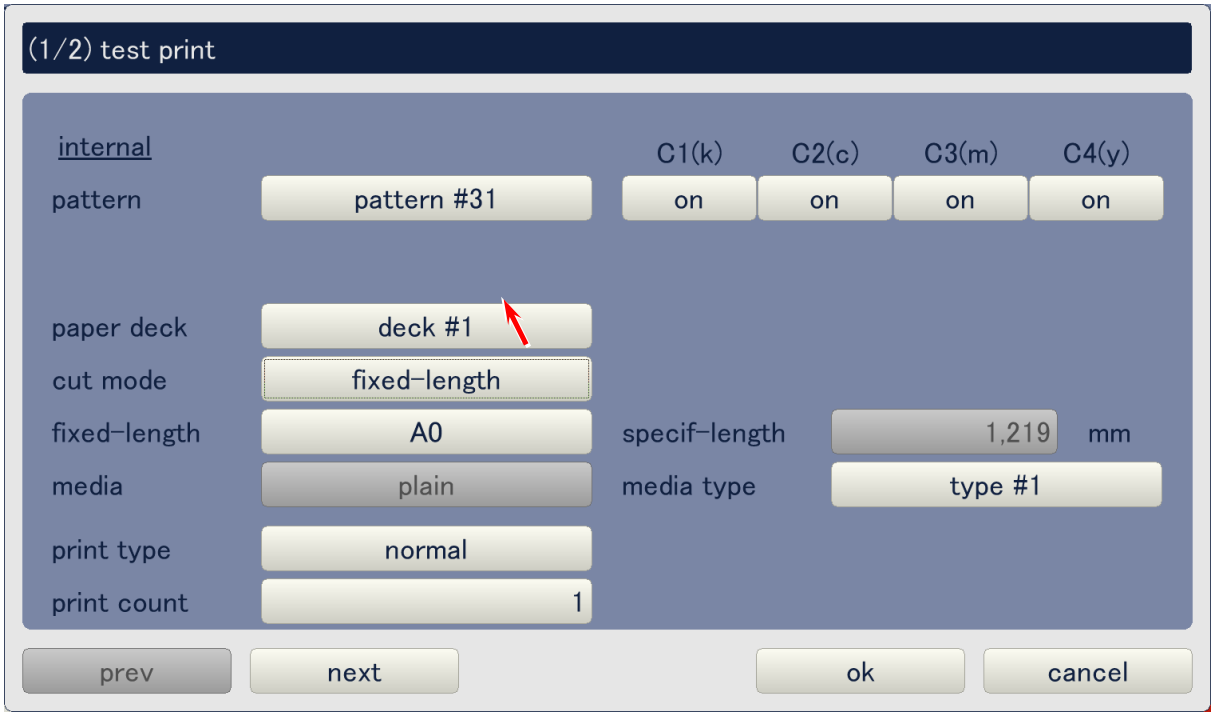




Normal Repeat

9. 6. 3. 2 Paper deck

Paper deck allows for selecting a media source from 4 roll decks and bypass feeder.

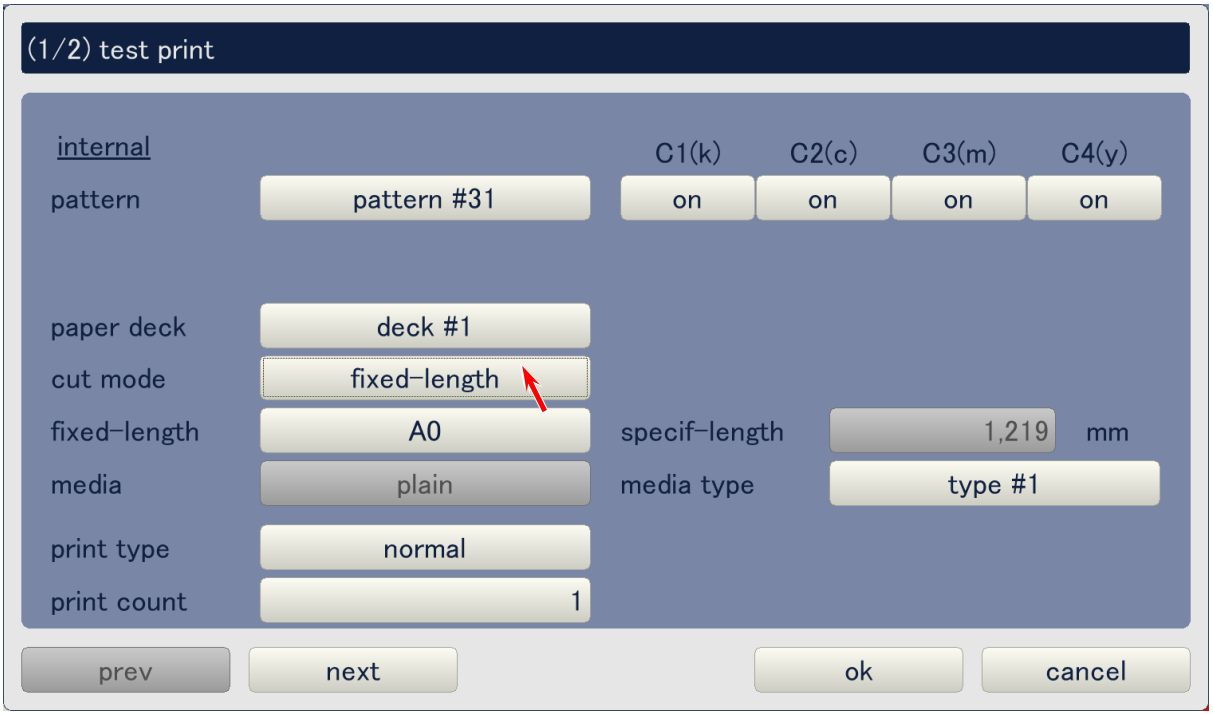


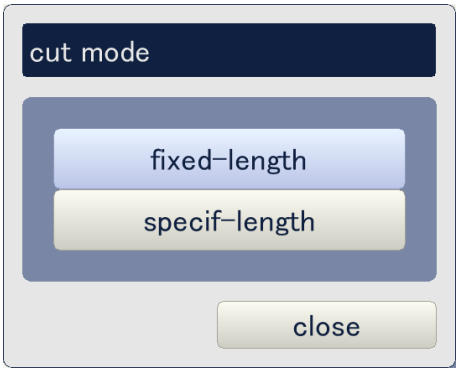


9. 6. 3. 3 Cut mode

Cut mode can activate either **fixed-length** or **specific-length** within the same setting page.

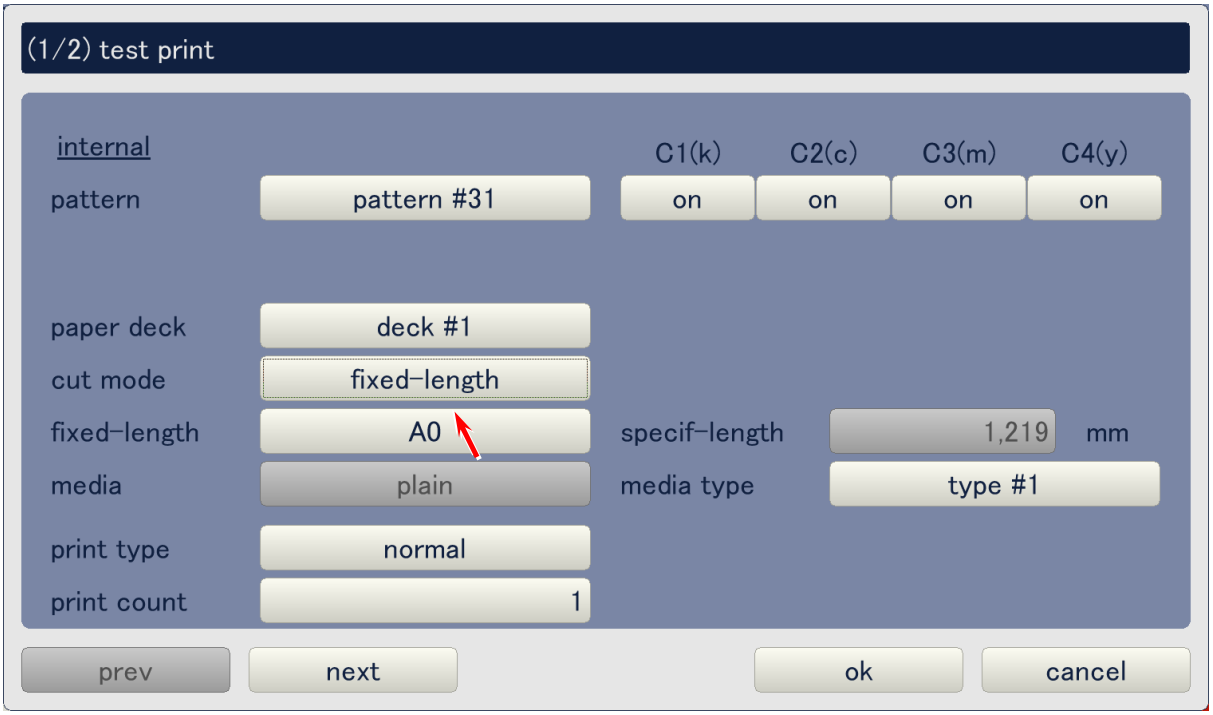
- Activating **fixed-length** allows for selecting any standard cut length as the print length.
- Activating **specif-length** allows the operator to input his requested printed length directly by 1mm increment.

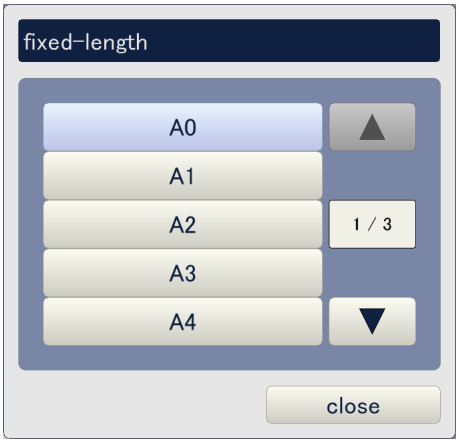




9. 6. 3. 4 Fixed-length

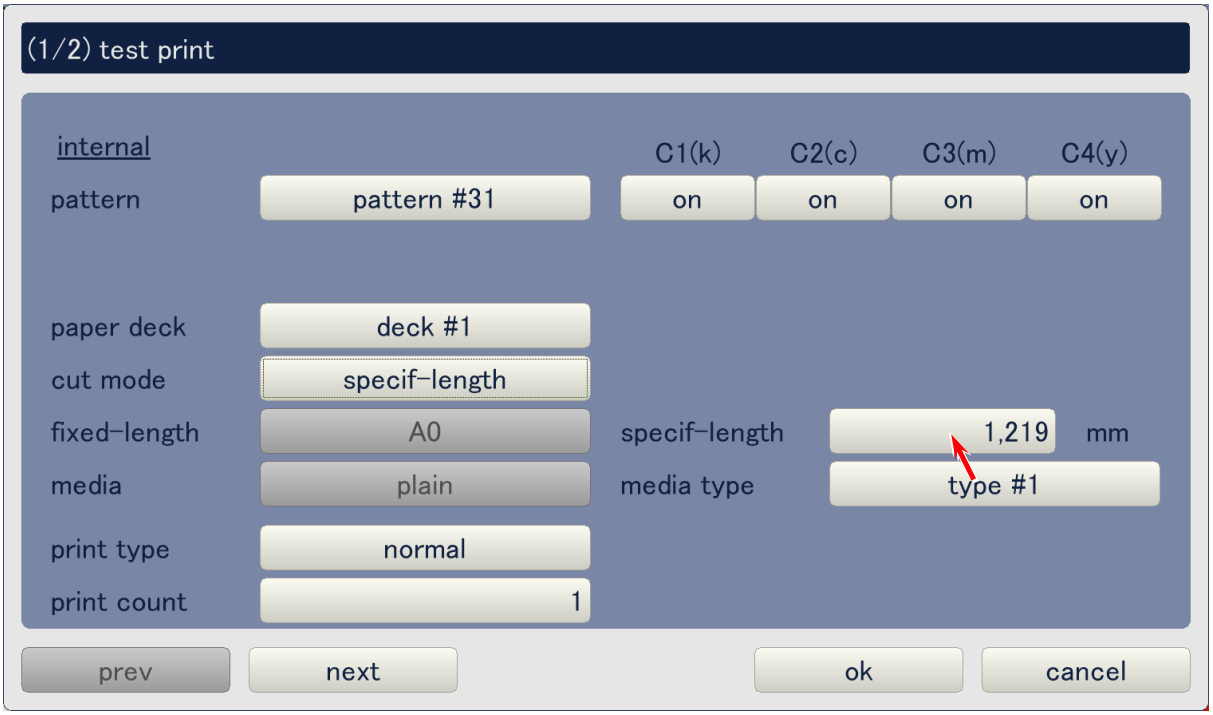
Fixed-length is active when cut mode is set to fixed-length, and allows the operator to input his requested printed length directly by 1mm increment.





9. 6. 3. 5 Specif-length

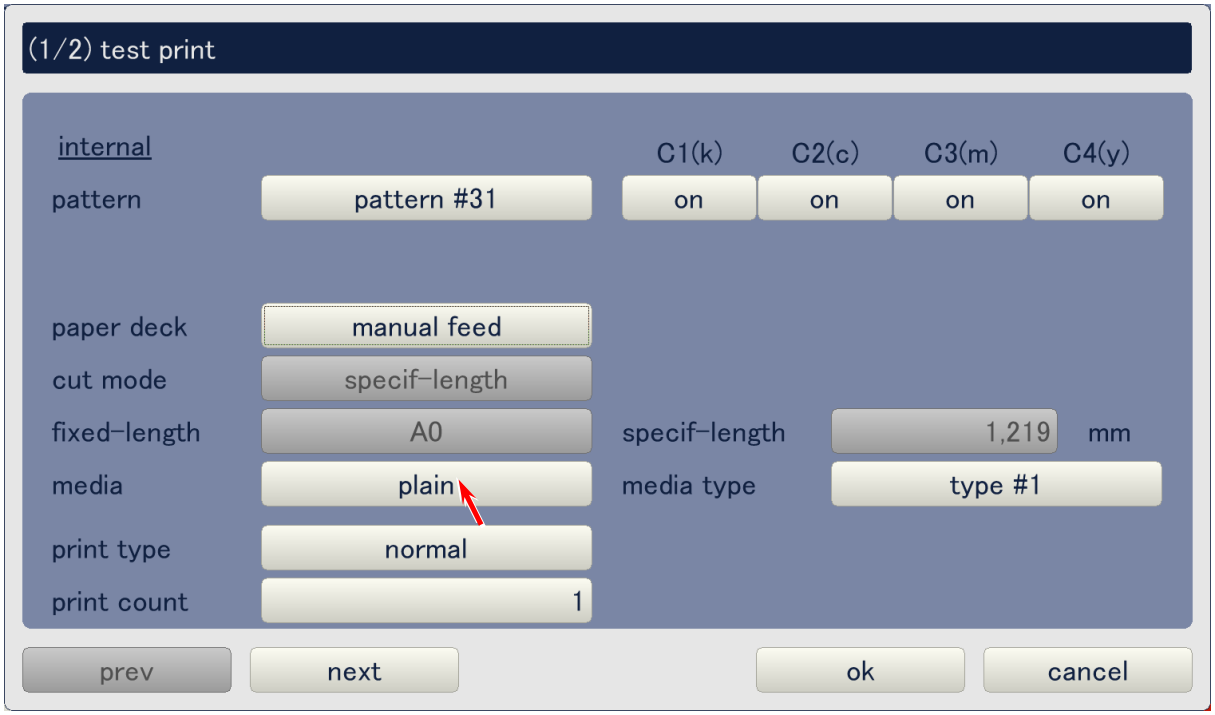
Specif-length is active when cut mode is set to specif-length, and allows for selecting any standard cut length as the print length.





9. 6. 3. 6 Media

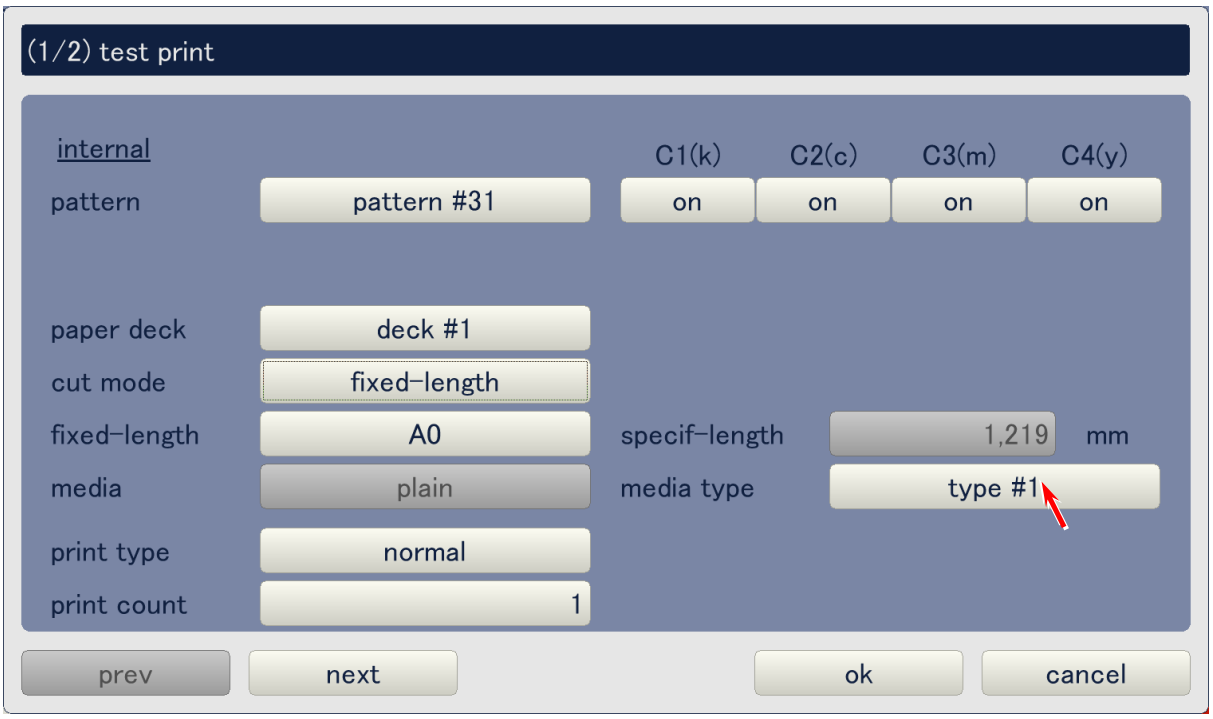
Media becomes active only when **paper deck** is set to **manual feed**, and allows for selecting the media used for test printing.

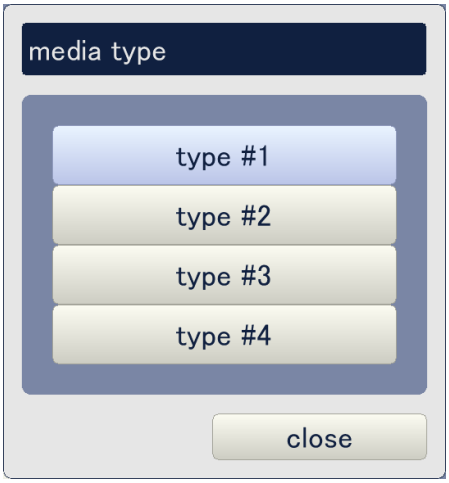




9. 6. 3. 7 Media type

Media type allows for selecting one out of 4 media types (type #X) use for test printing.

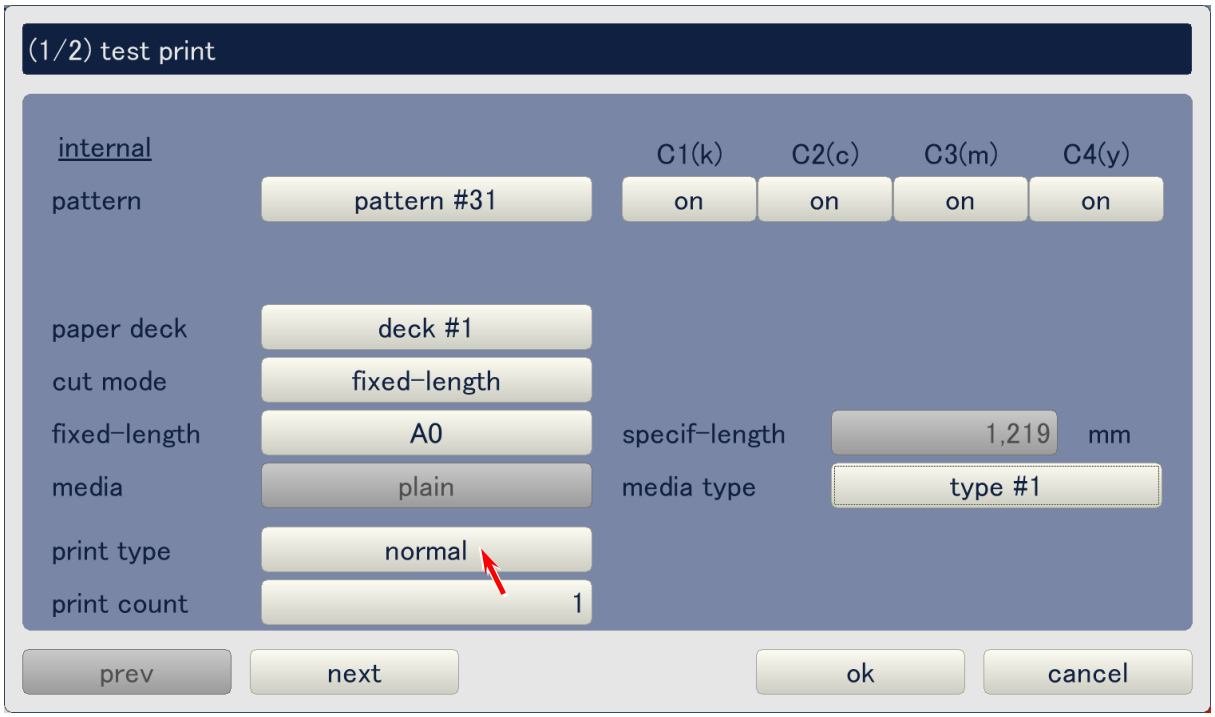


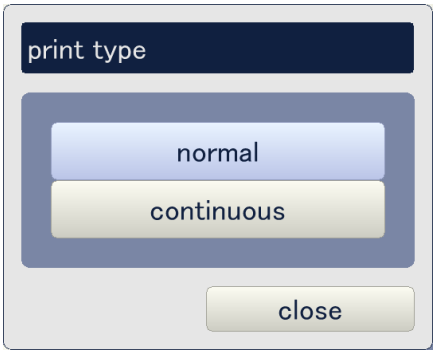


9. 6. 3. 8 Print type

Print type allows for selecting either **normal** or **continuous**.

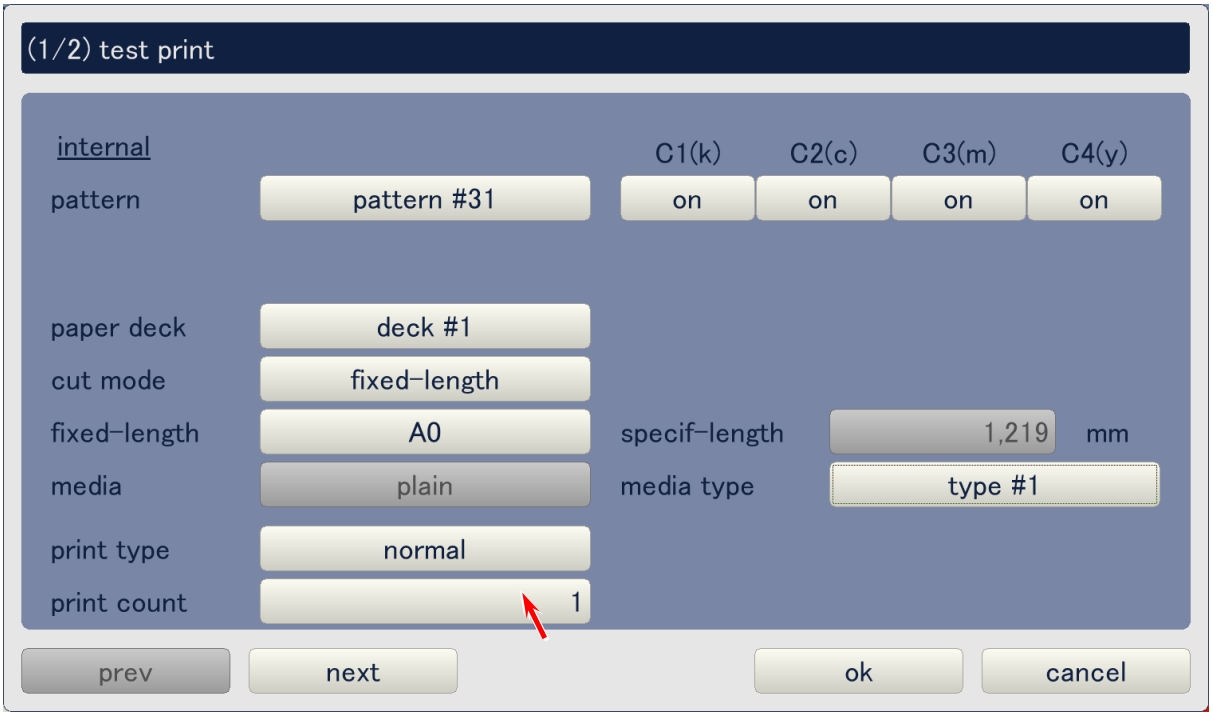
- Selecting **normal** will take normal test printing.
- When selecting **continuous**, printer will continue test printing endlessly. This is used only for development purpose. (Do not use this in the field.)

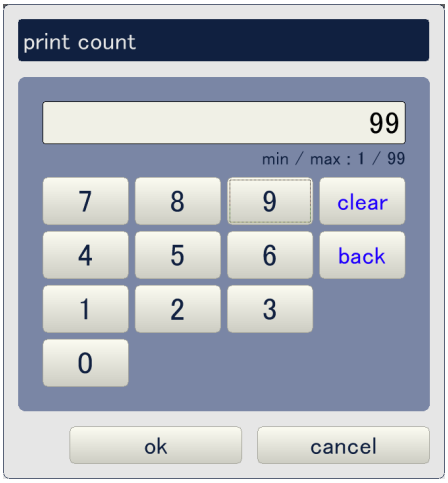




9. 6. 3. 9 Print count

Print count allows for inputting the number of prints ranging from 1 to 99.

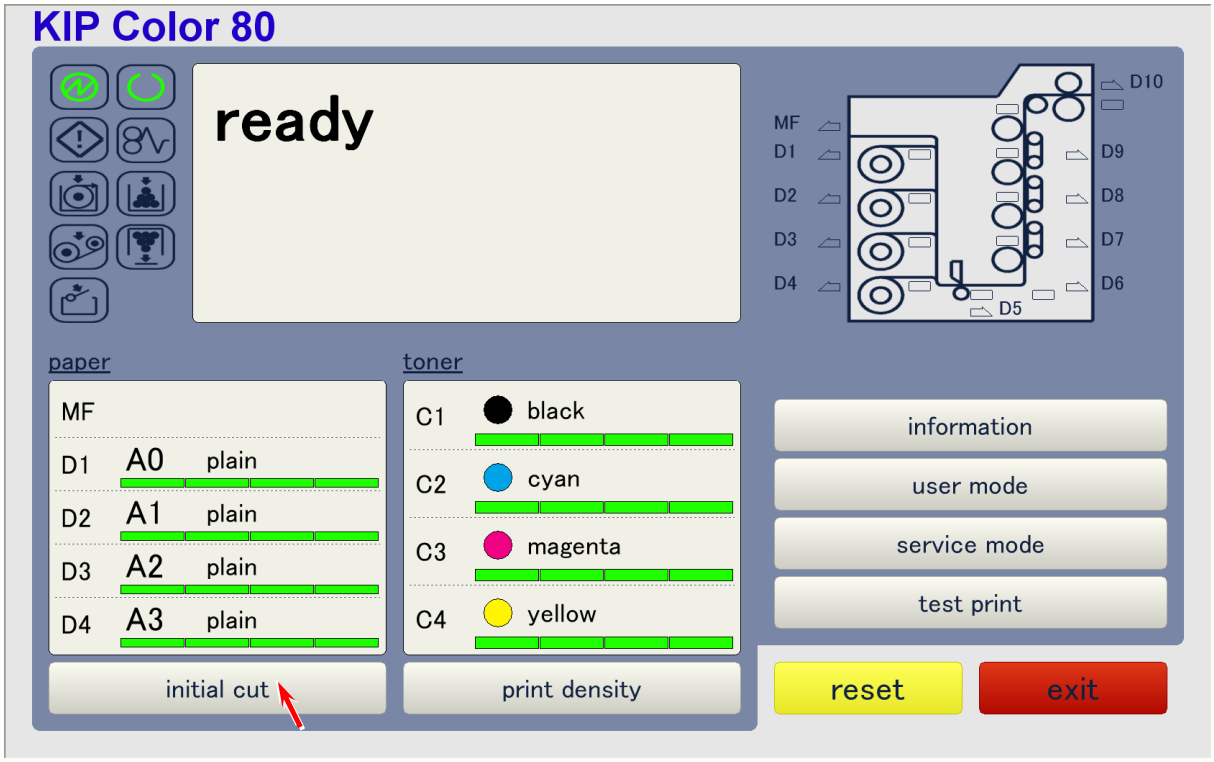




9. 7 Initial Cut Button

Initial cut can be done for each roll media.

- Click on **initial cut** on the main screen.



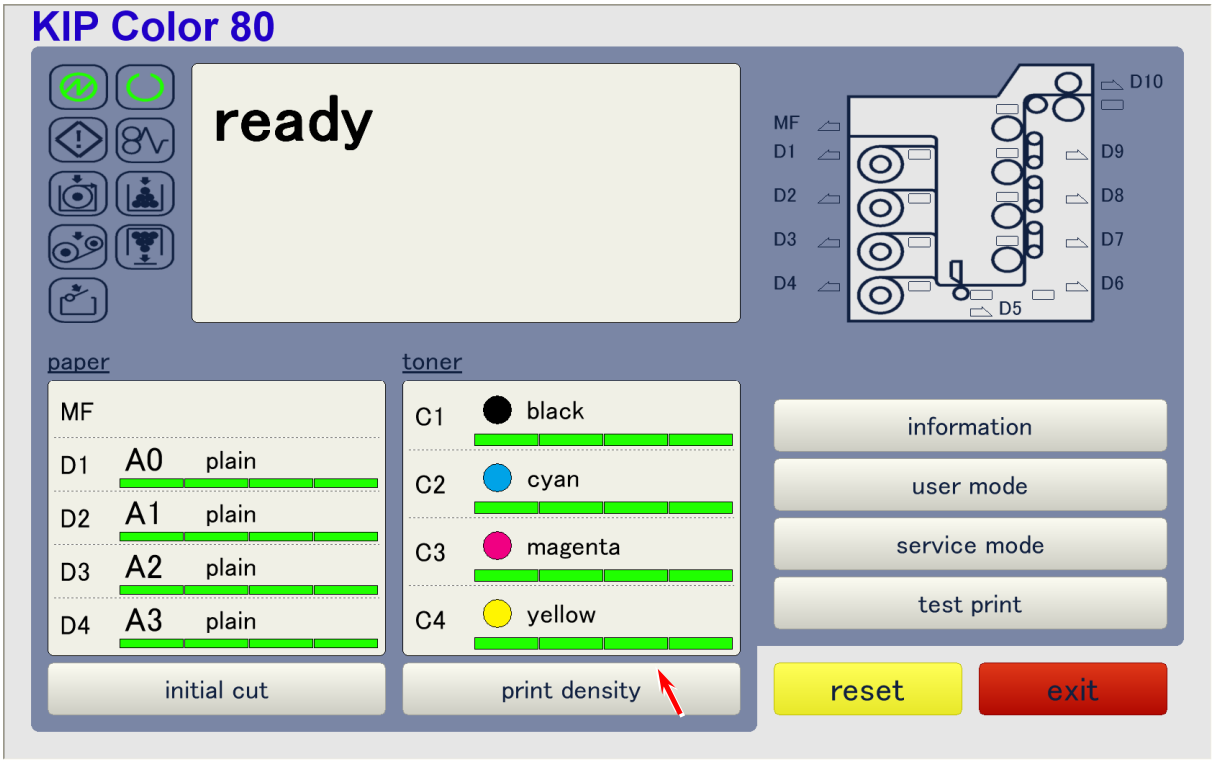
- Choose any roll deck, and the Initial Cut is performed automatically for that roll.



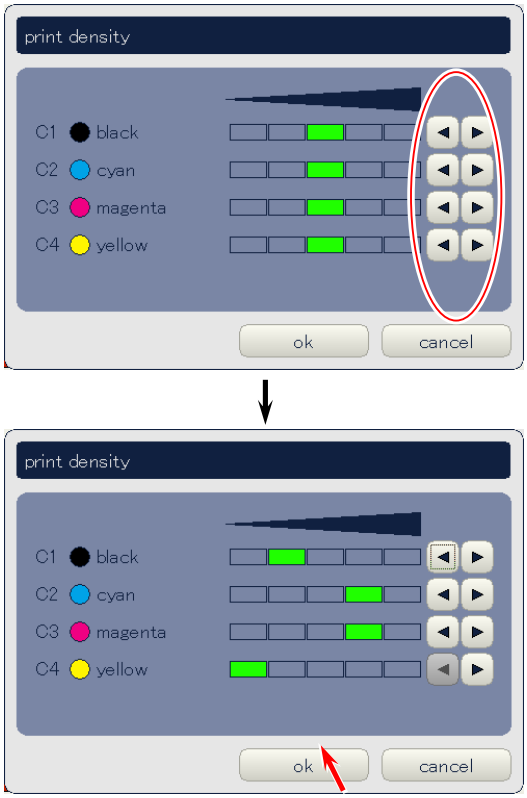
9. 8 Print Density Button

Print density can be adjusted for each color distinctly.

- Click on **print density** on the main screen.

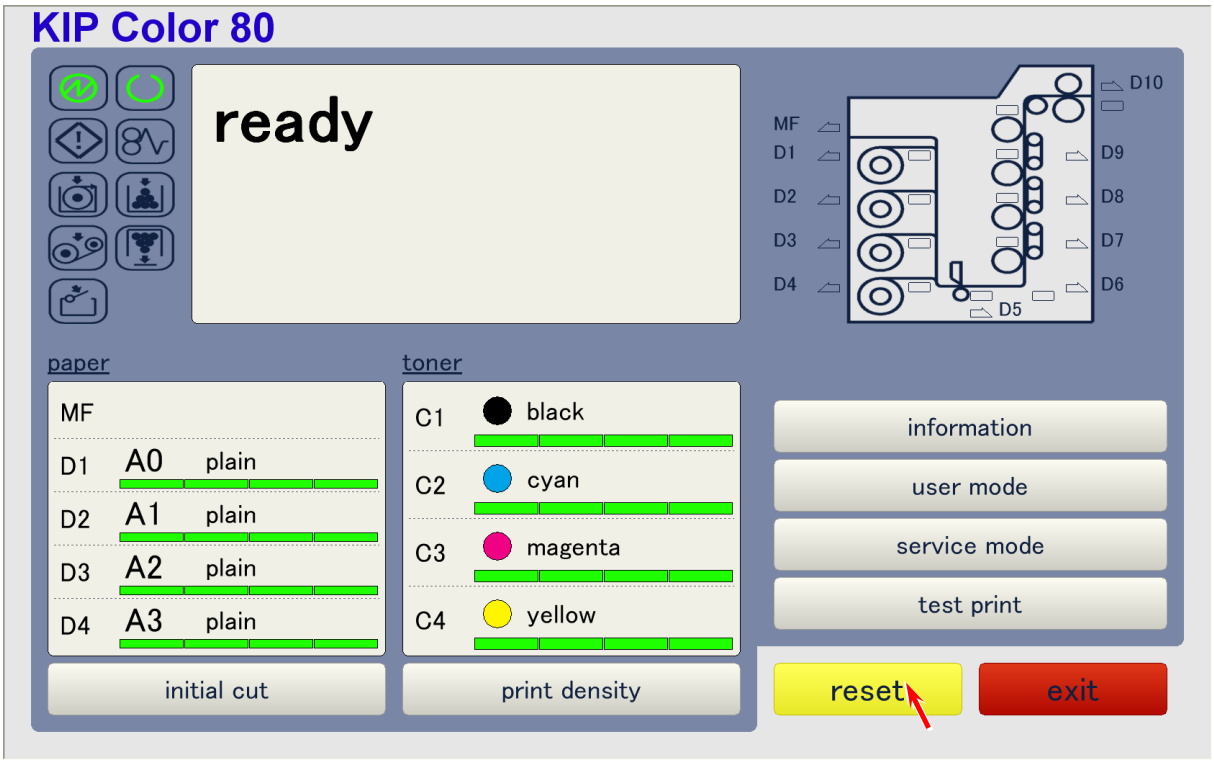


- Using the triangle buttons in the pop up dialog, change the density per color, and click on **ok** finally.



9. 9 Reset Button

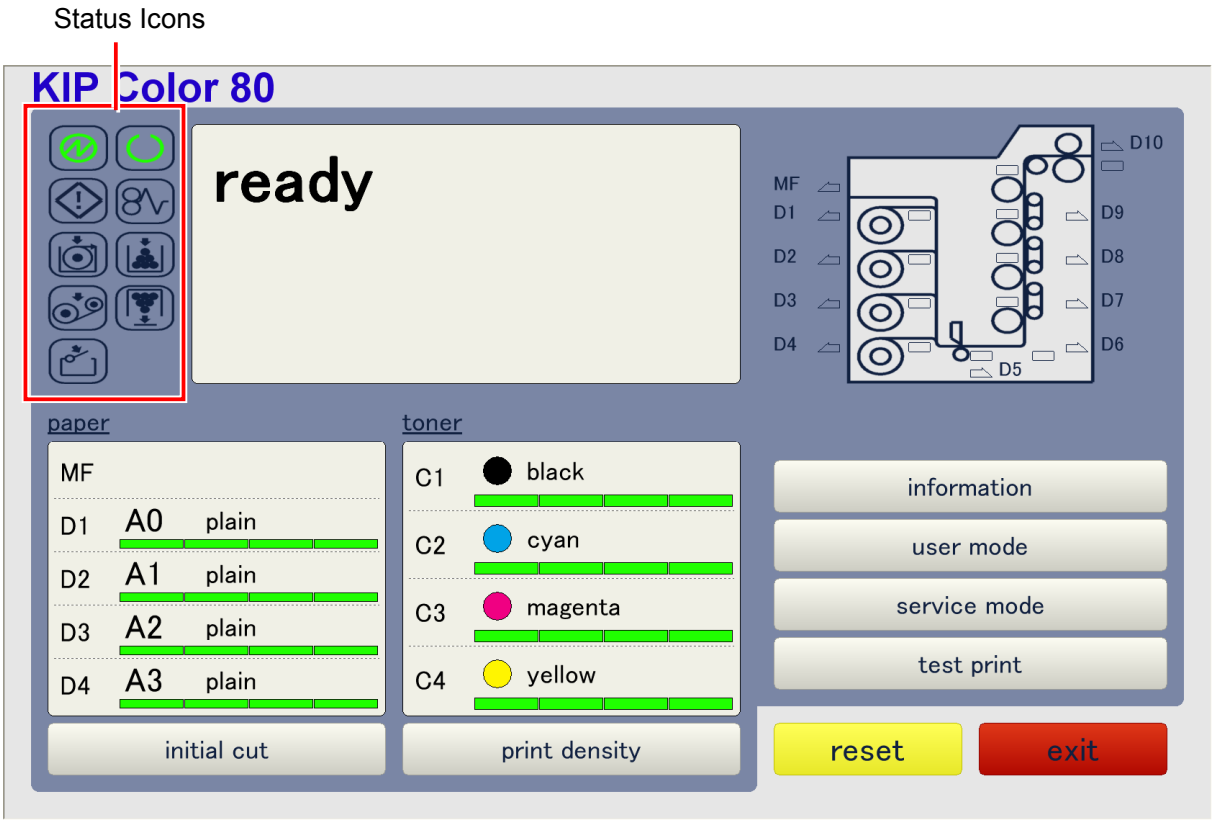
Communication between KIPDiagColor and KIP Color 80 is initialized.



9. 10 Descriptions of Information Items

9.10. 1 Status Icons

Printer status is noticed by the Status Icons.



Status Icon	Name	Status
	Communication Status Indicator	Lighting : Communicating with the printer. Going off : Printer is not connected.
	Printer Status Indication	Lighting : Printer is ready. Flashing : Printer is warming up. Going off : Printer is not ready.
	Error Indicator	Lighting : Any error is happening. Going off : No error is happening.
	Jam Indicator	Lighting : Any jam is happening. Going off : No jam is happening.
	Roll Empty Indicator	Lighting : Any roll is empty. Going off : No roll is empty.

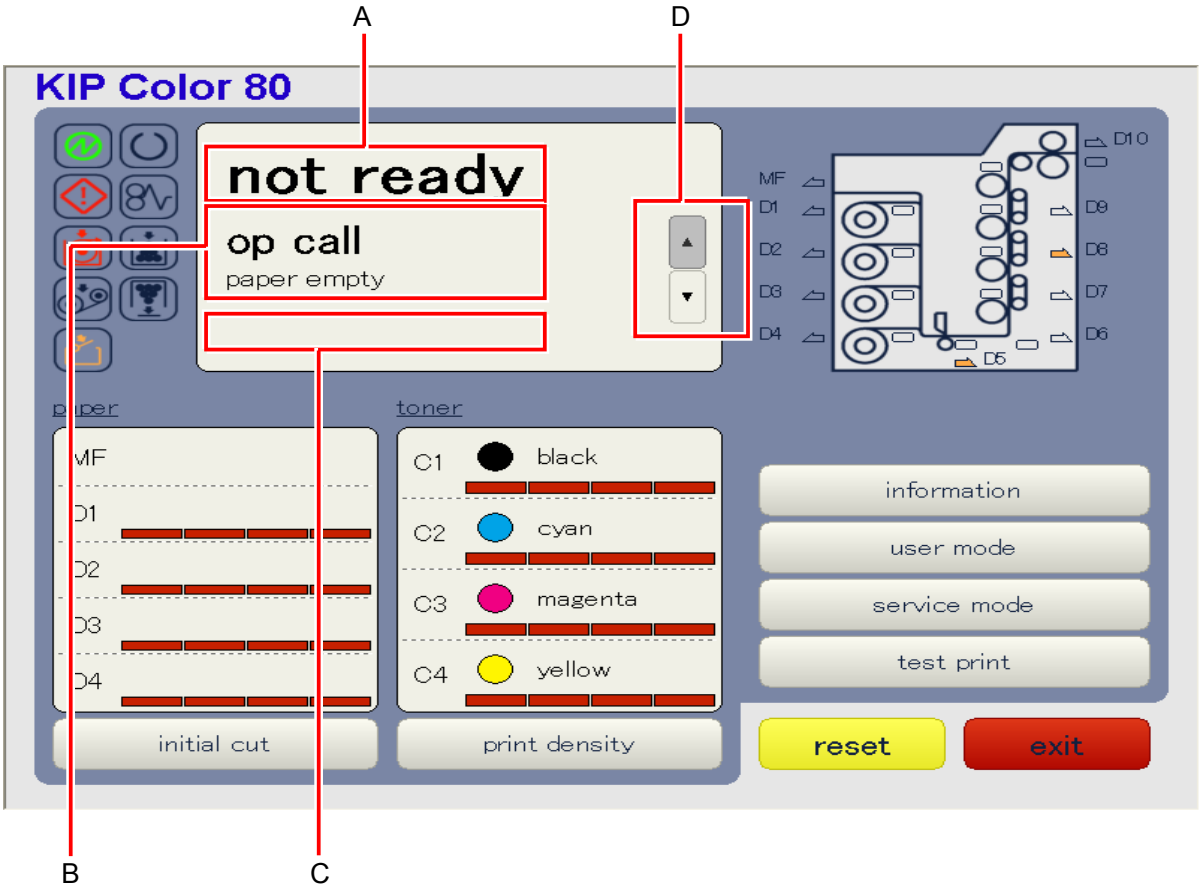
Status Icon	Name	Status
	Toner Empty Indicator	Lighting : Toner is empty. Flashing : Toner is near empty. Going off : Toner empty is not happening.
	Web Empty Indicator	Lighting : Web is empty. Flashing : Web is near empty. Going off : Web empty is not happening.
	Waste Toner Full Indicator	Lighting : Waste Toner is full. Flashing : Waste Toner is near full. Going off : Waste Toner full is not happening.
	Open Indicator	Lighting : Door open is happening. Flashing : Door open warning is happening. Going off : Door open is not happening.

9.10. 2 Message Window

The Message Window on the upper center of the KipDiagColor indicates the status by “message”.

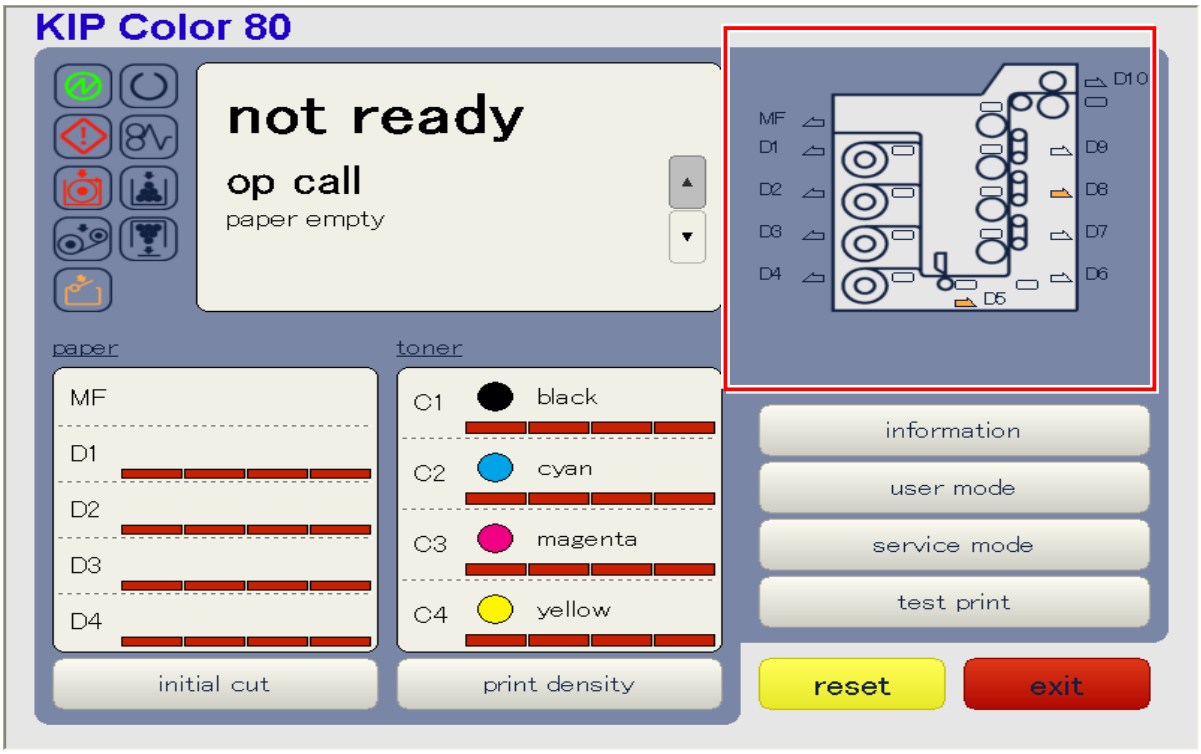
- Upper area (A) indicates the printer status.
- Middle area (B) indicates error message or warning message.
- Bottom area (C) indicates printer mode.

If multiple message have to be indicated, other messages can be indicated by switching the indication pressing the triangle buttons (D).



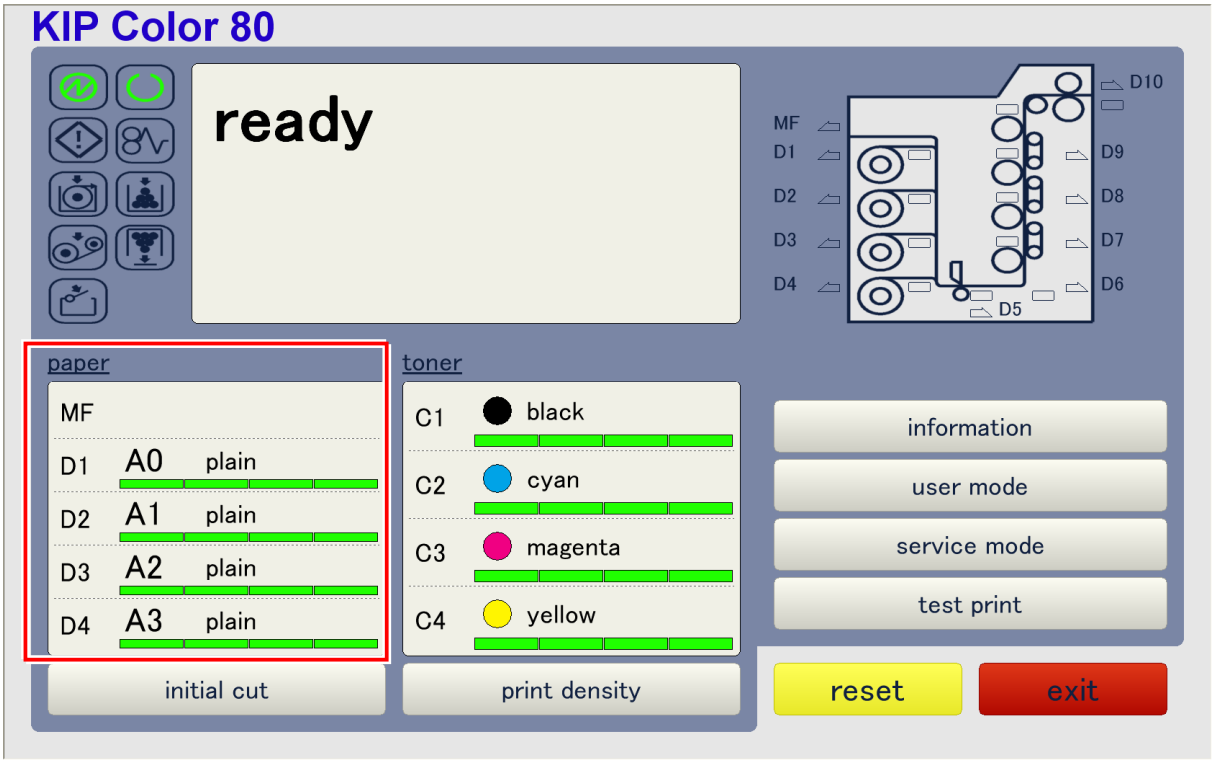
9.10. 3 Jam & Open Location Indicator

KipDiagColor has a Jam & Open Location Indicator that is similar with the one on the Operation Panel of KIP Color 80. The open location is informed by an orange light, and the jam location by a red light.



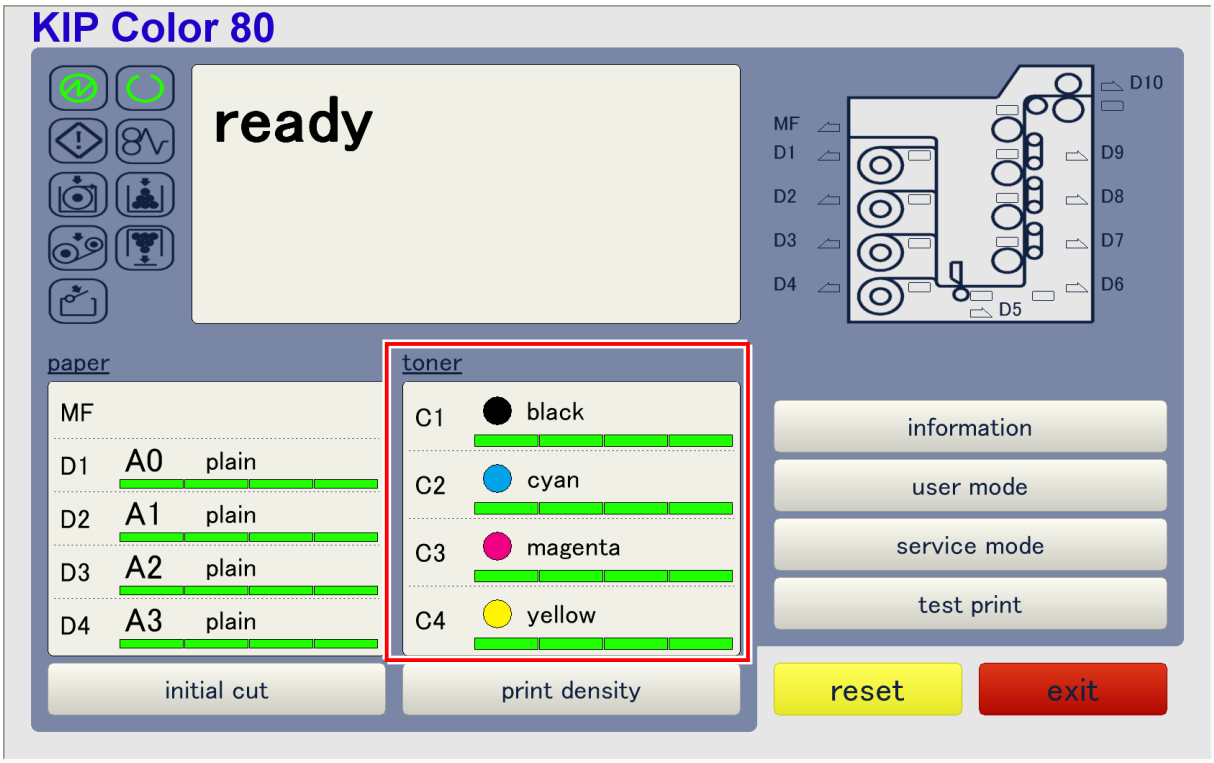
9.10. 4 Paper Information

The media information such as “media width”, “media type” and “remaining level” of each Roll Deck is indicated in the Paper Information area.



9.10. 5 Toner Information

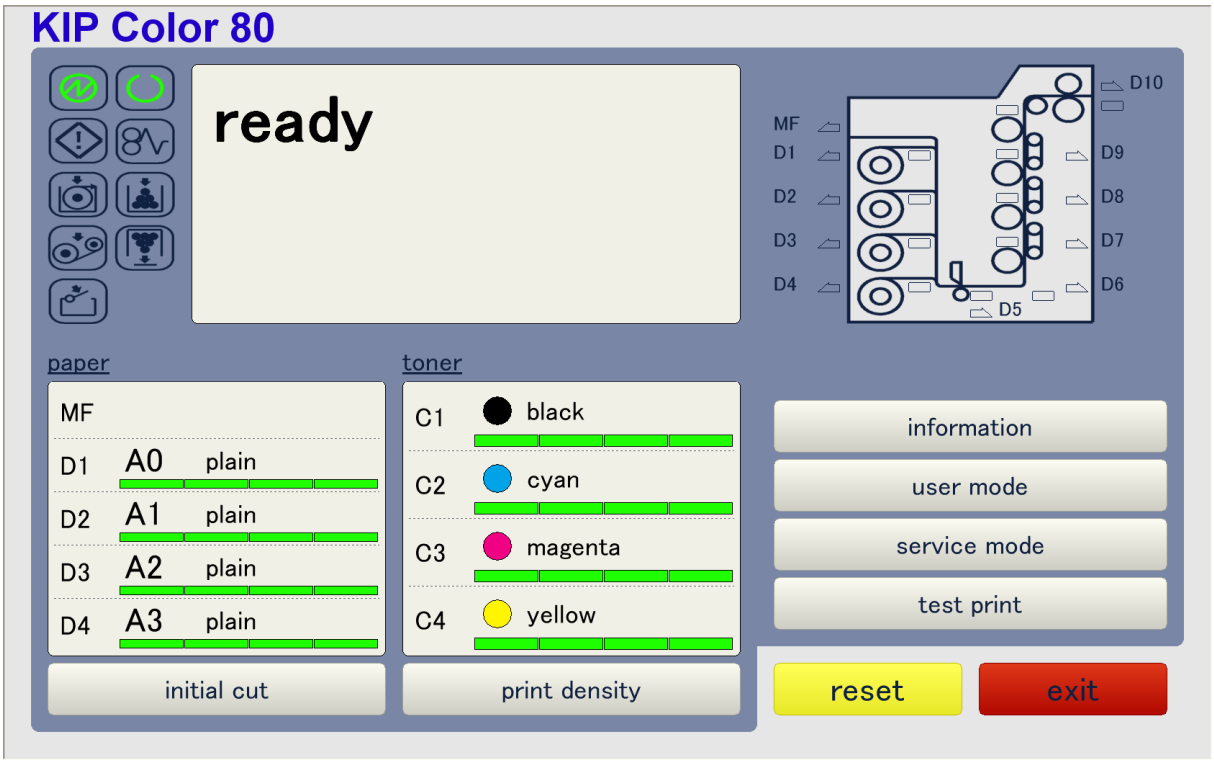
Remaining level of each color of toner is indicated in the Toner Information area.



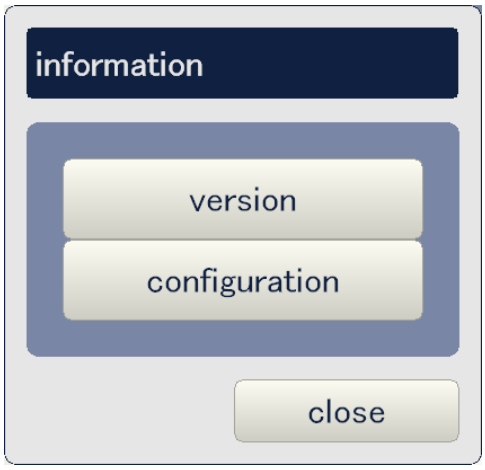
9.10. 6 Information Button

Several kinds of information can be indicated if you press the **information** on the main screen

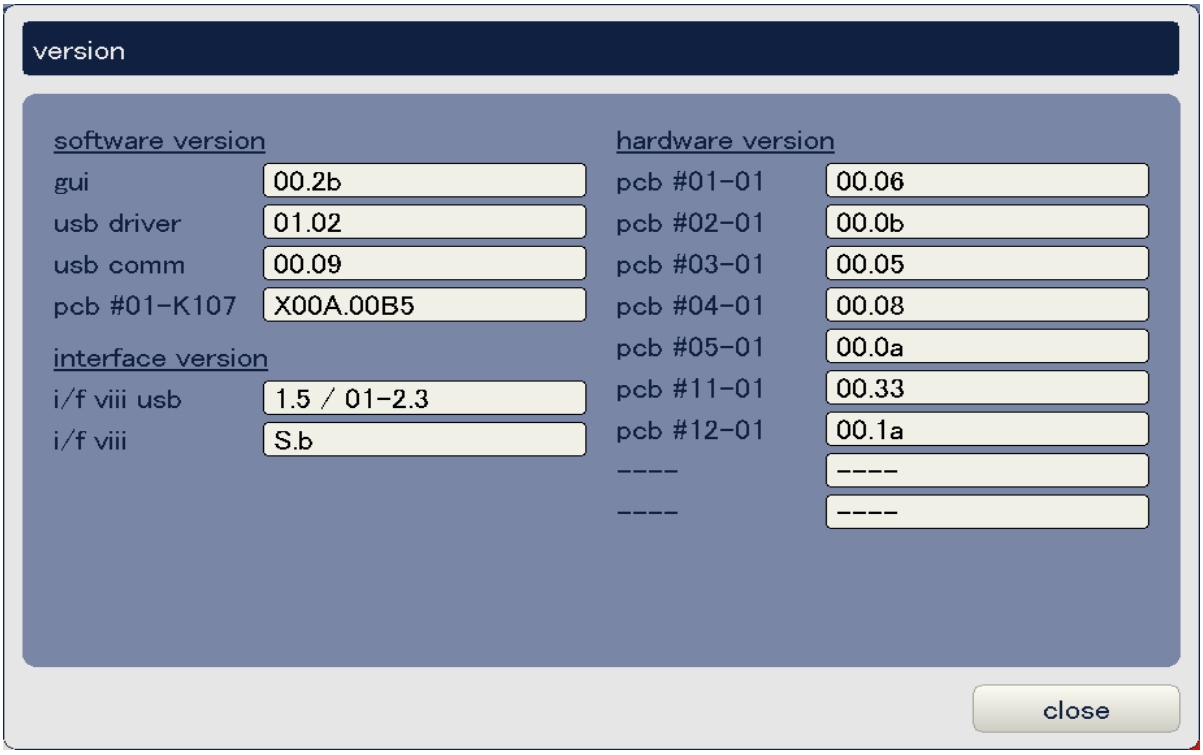
- Click on **information**.



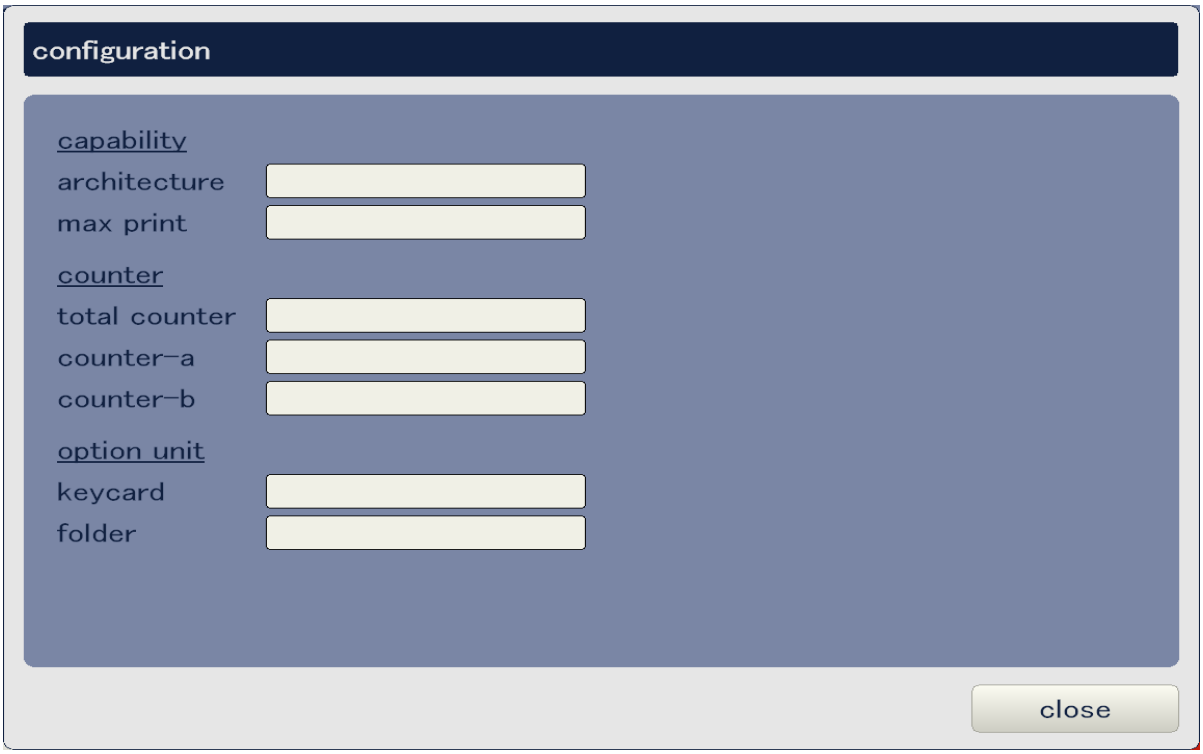
- Select either **version** or **configuration** in the pop up dialog.



- When **version** is pressed, you can access the version information.



- When **configuration** is pressed, you can access the version regarding the printer configuration.



Item		Contents of indicated information
Software version	gui	GUI application version
	usb driver	USB driver version
	usb comm	USB communication firmware version
	pcb #01-K107	Printer firmware version
Interface version	i/f viii usb	I/F8 USB version (for usual communication)
	i/f viii	Version of I/F8
Hardware version	pcb #01-01	FPGA for CPU
	pcb #02-01	FPGA for Interface (I/F8, USB)
	pcb #03-01	FPGA for Memory
	pcb #04-01	FPGA for MTF (Image enhancement)
	pcb #05-01	FPGA for LED (K/C/M/Y)
	pcb #11-01	FPGA for I/O A
	pcb #12-01	FPGA for I/O B
Capability	architecture	Present selection of print format
	max print	Present selection of maximum print length
Counter	total counter	Count value of total counter (unit is always linear meter.)
	counter-a	Count value of counter A
	counter-b	Count value of counter B
Option unit	keycard	Connection of Keycard
	folder	Connection of Folder

Chapter 10

Adjustments

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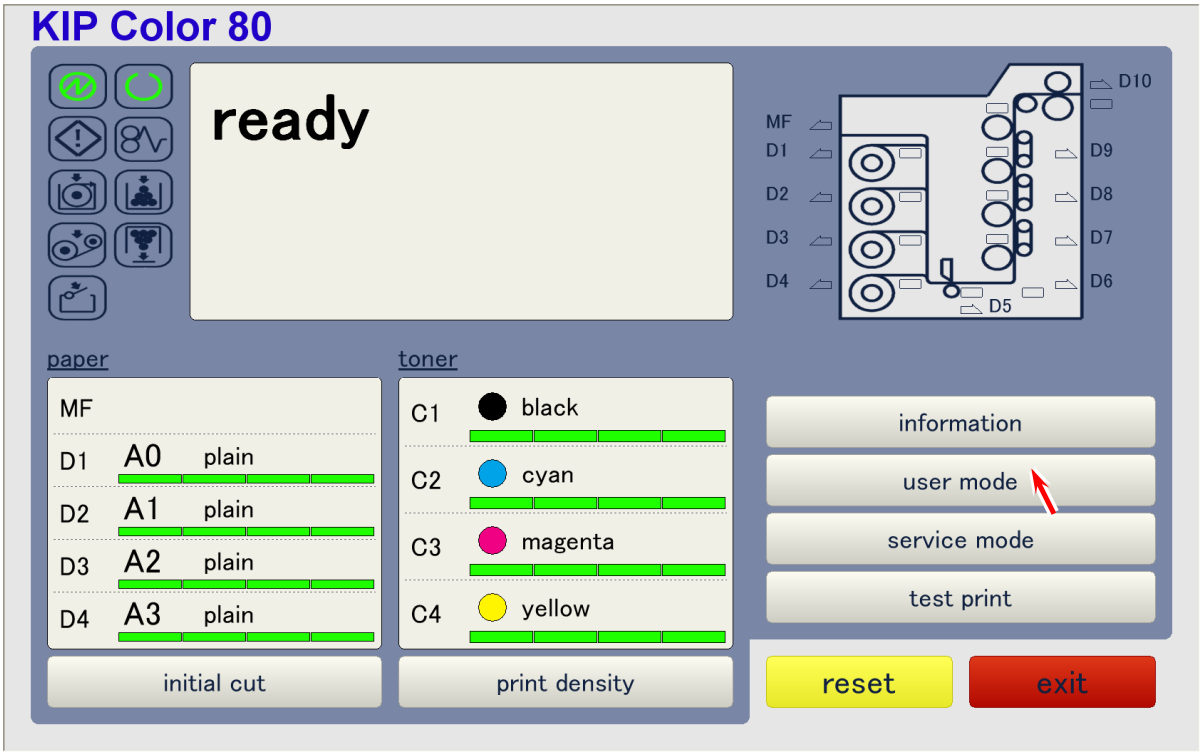
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10. 1 Adjustment of Optical Density

Do as follows for readjusting the Target Density.

> **NOTE**
>
> Normally it is unnecessary to readjust the Target Density.

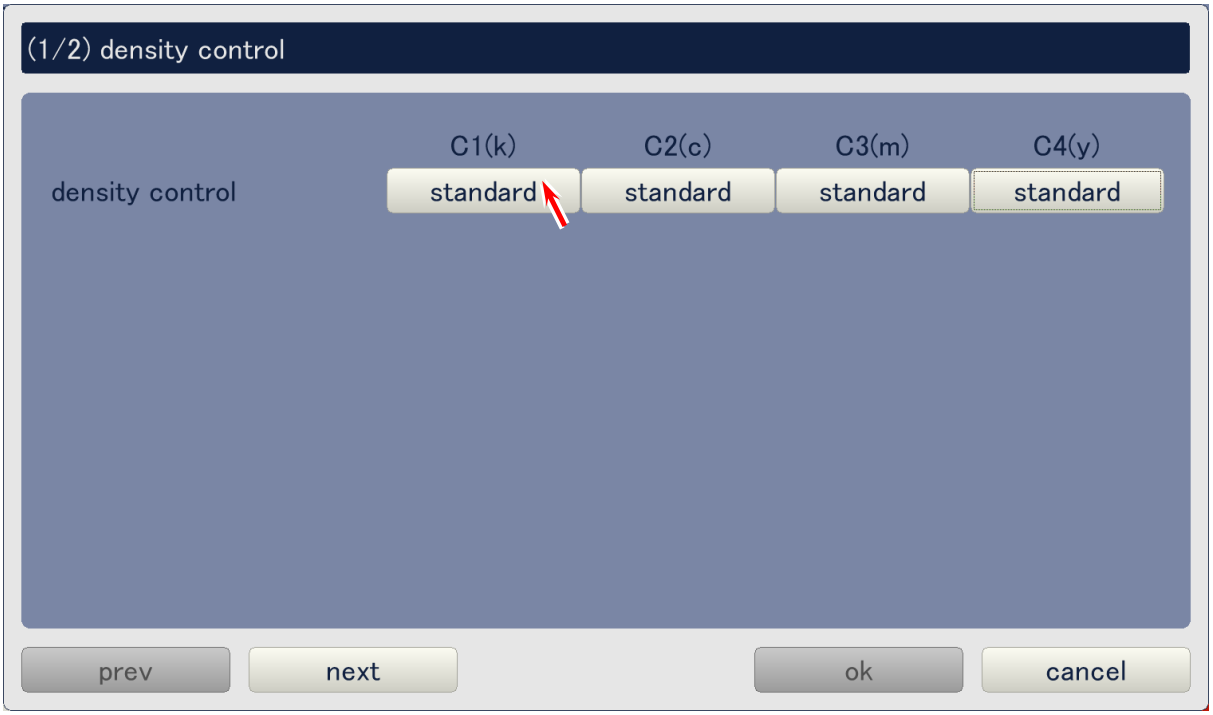
1. Run the KIPDiagColor on the KC80 IPS, and click on user mode..



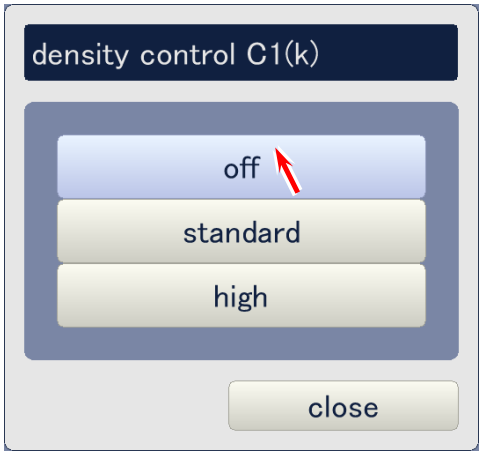
2. Choose **density control** in the user mode menu.



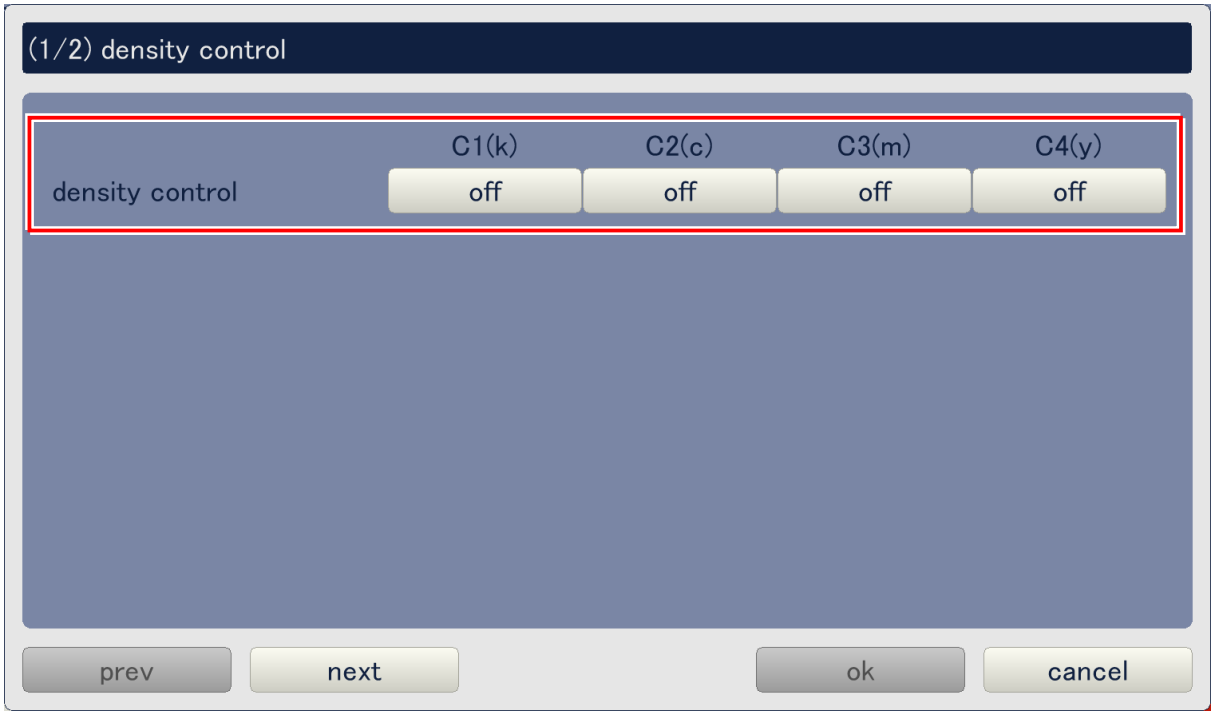
3. Click on each setting button (C1 to C4).



4. Choose **off** for canceling the Auto Density Control for this color.



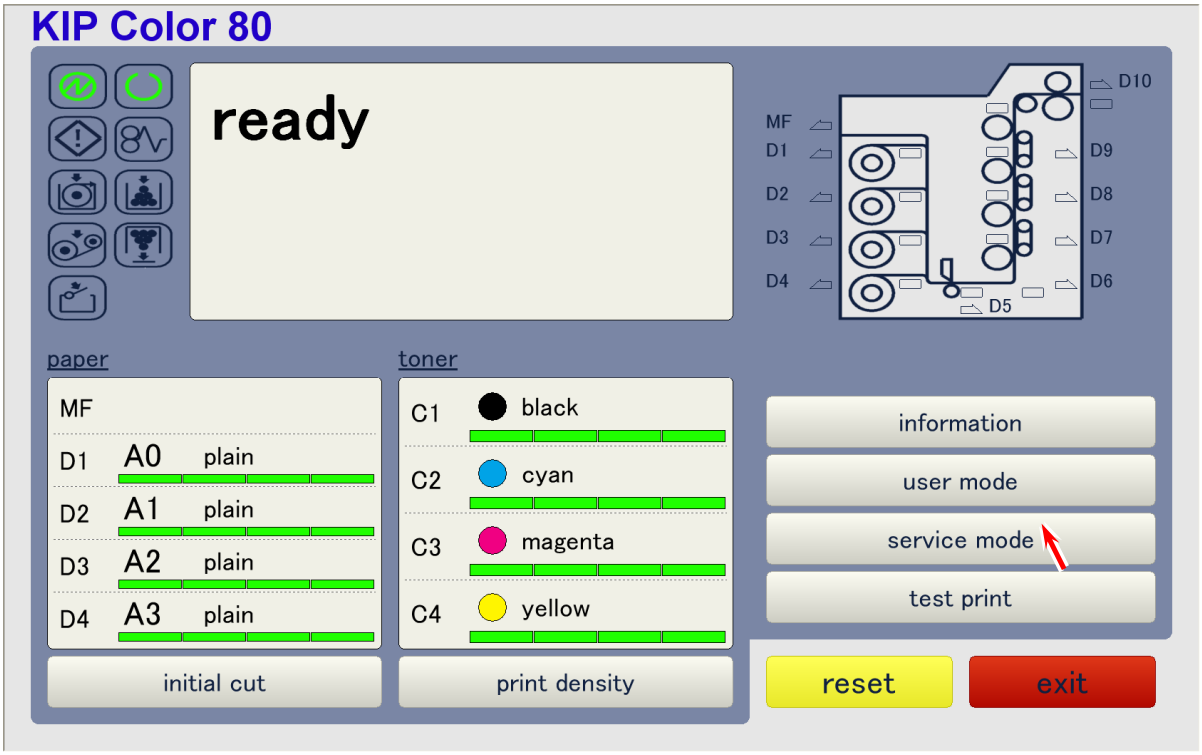
5. Please be sure that the Auto Density Control is cancelled for all colors.



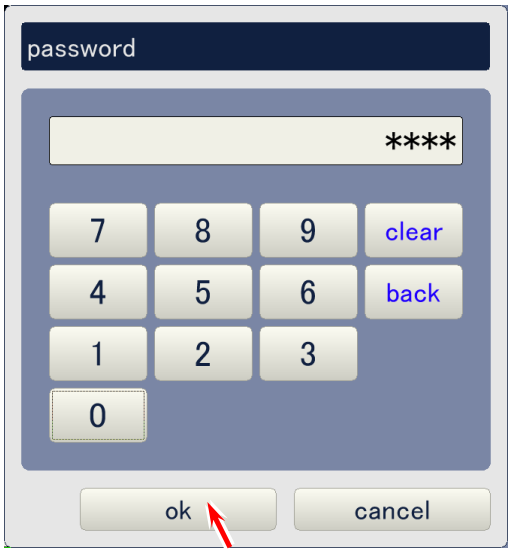
NOTE

The Auto Density Control must be cancelled prior to readjusting the Target Density for avoiding unexpected variation of Developer Bias during adjustment caused by surrounding temperature.

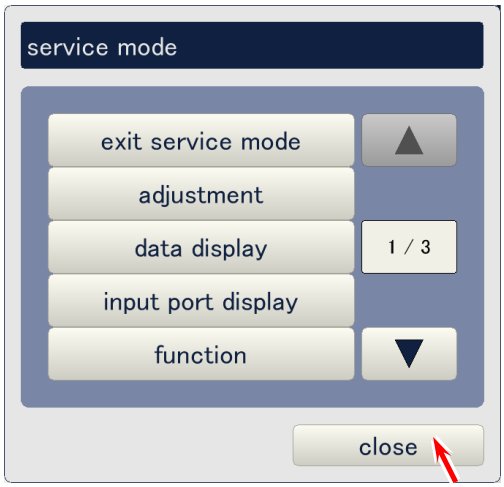
6. Click on **service mode** on the main screen of KIPDiagColor



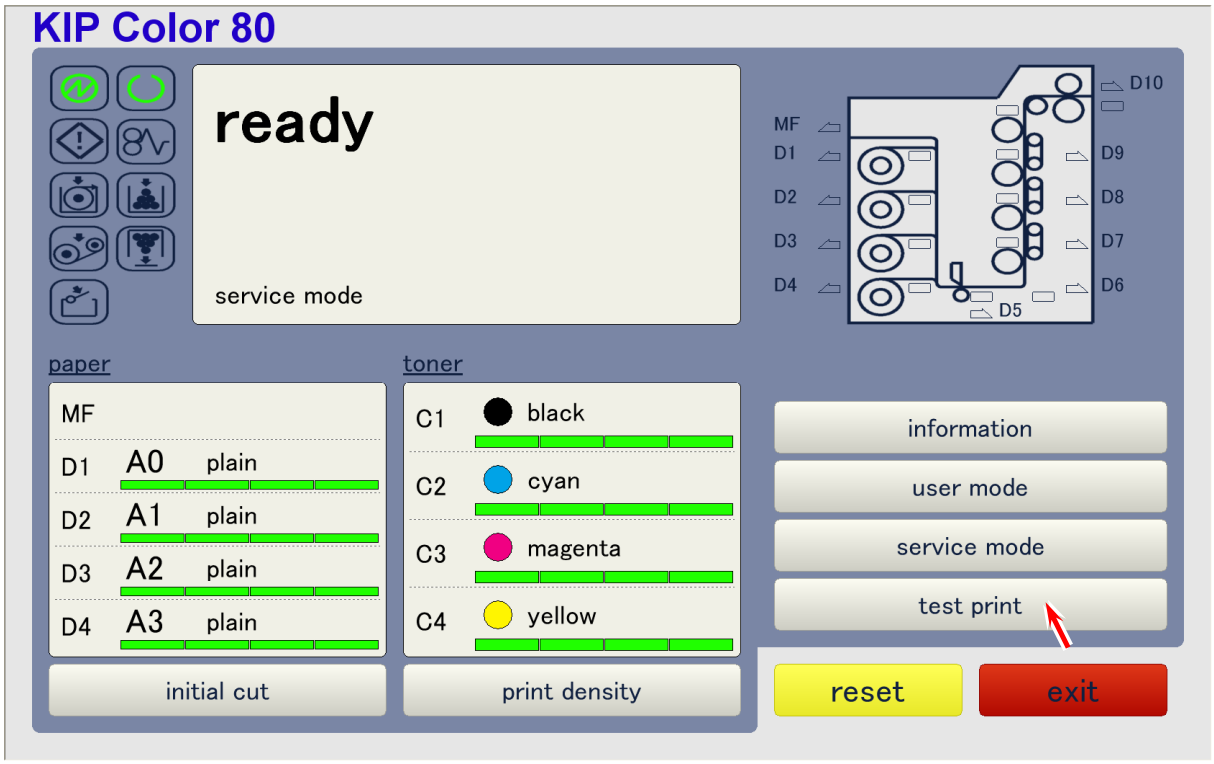
7. Input the service password and click on ok to enter the service mode.
(Password is **0000** in default.)



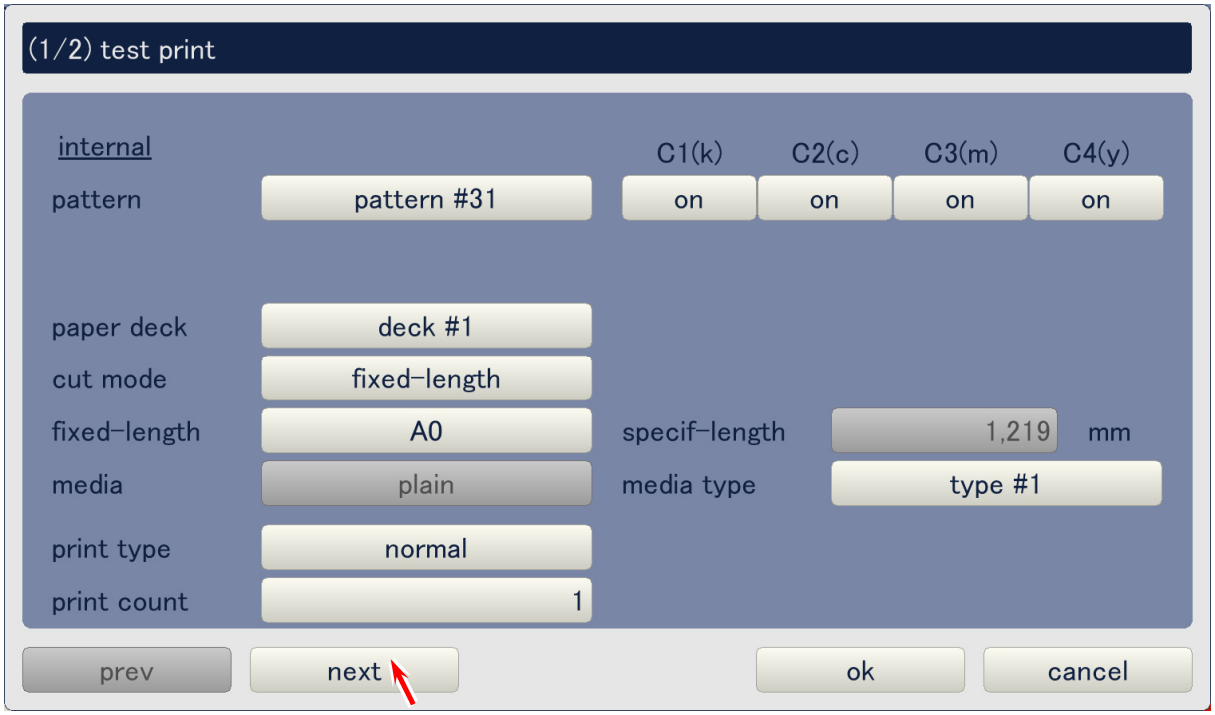
8. Click on **close** to close the service mode menu. (But you are still in the service mode.)



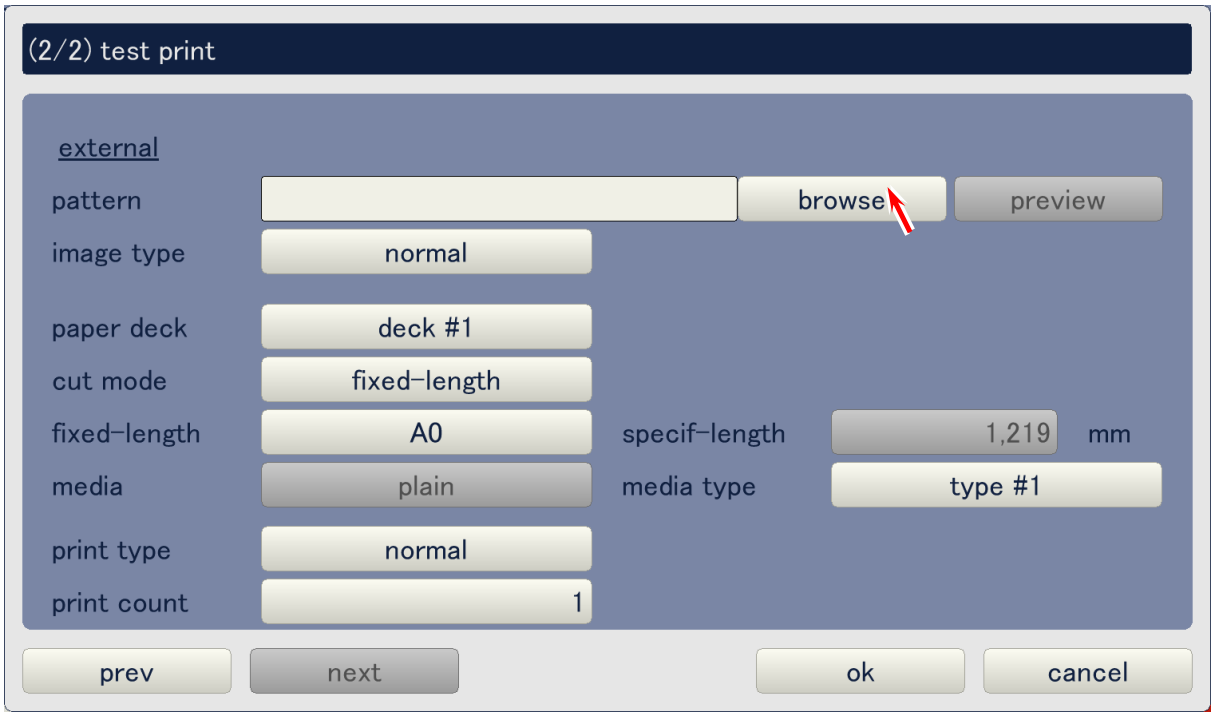
9. Click on **test print**.



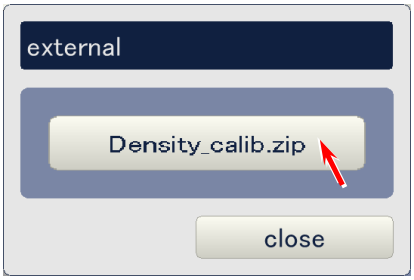
10. Click on **next**.



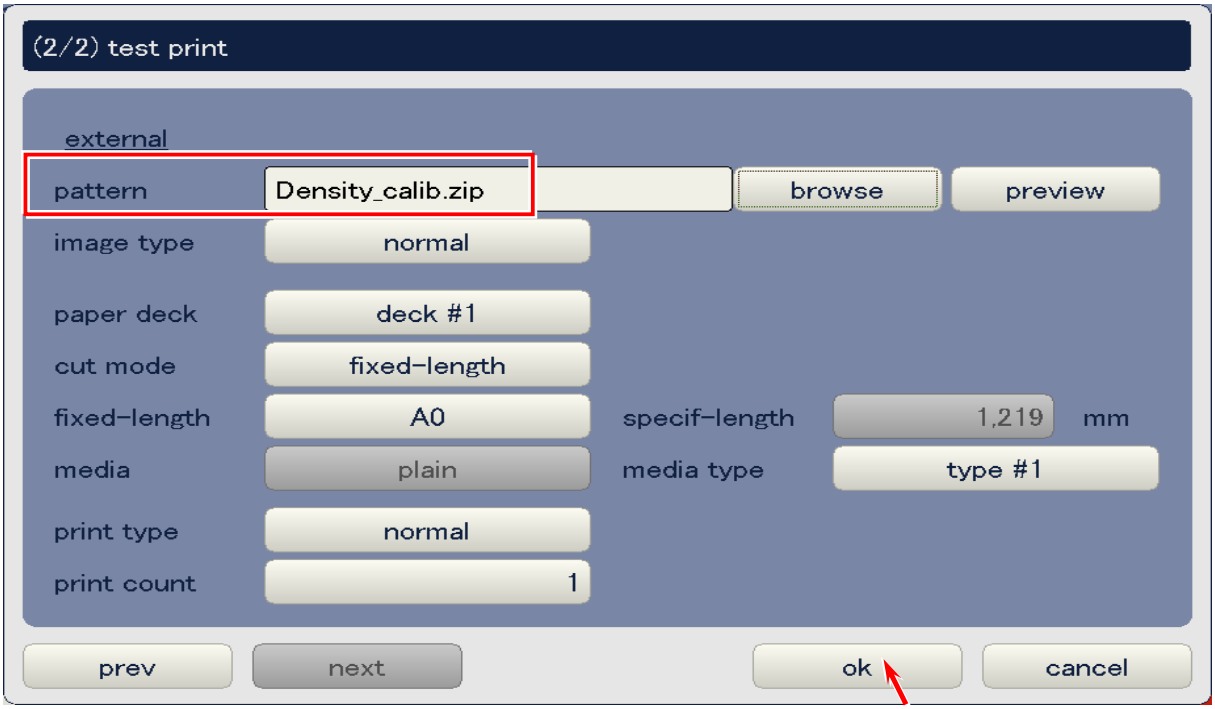
11. Click on **browse**.



12. Choose **Density_calib.zip** in the list. (There is only 1 filename normally.)



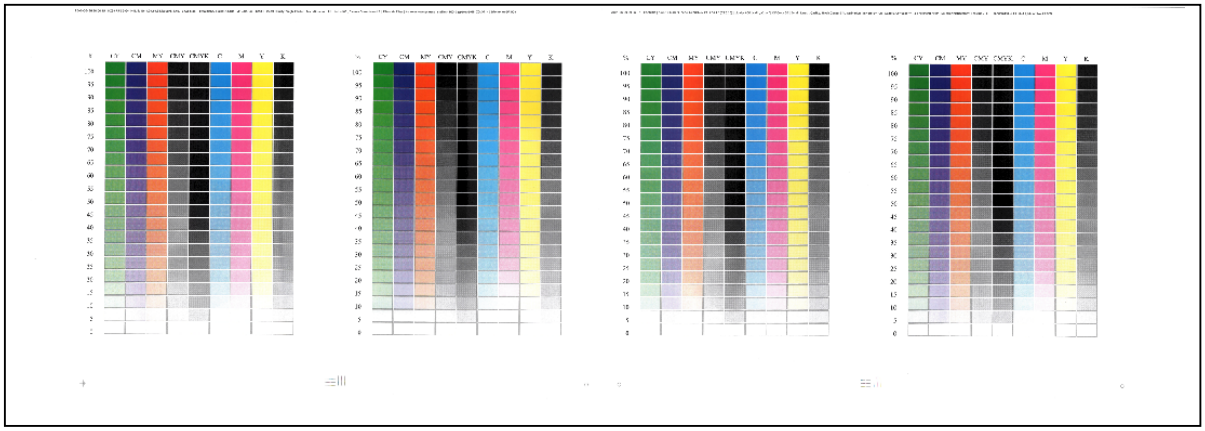
13. After confirming **Density_calib.zip** is indicated, click on **ok** to print this image. (It may be better to set **fixed-length** to A2 because this image is not so long)

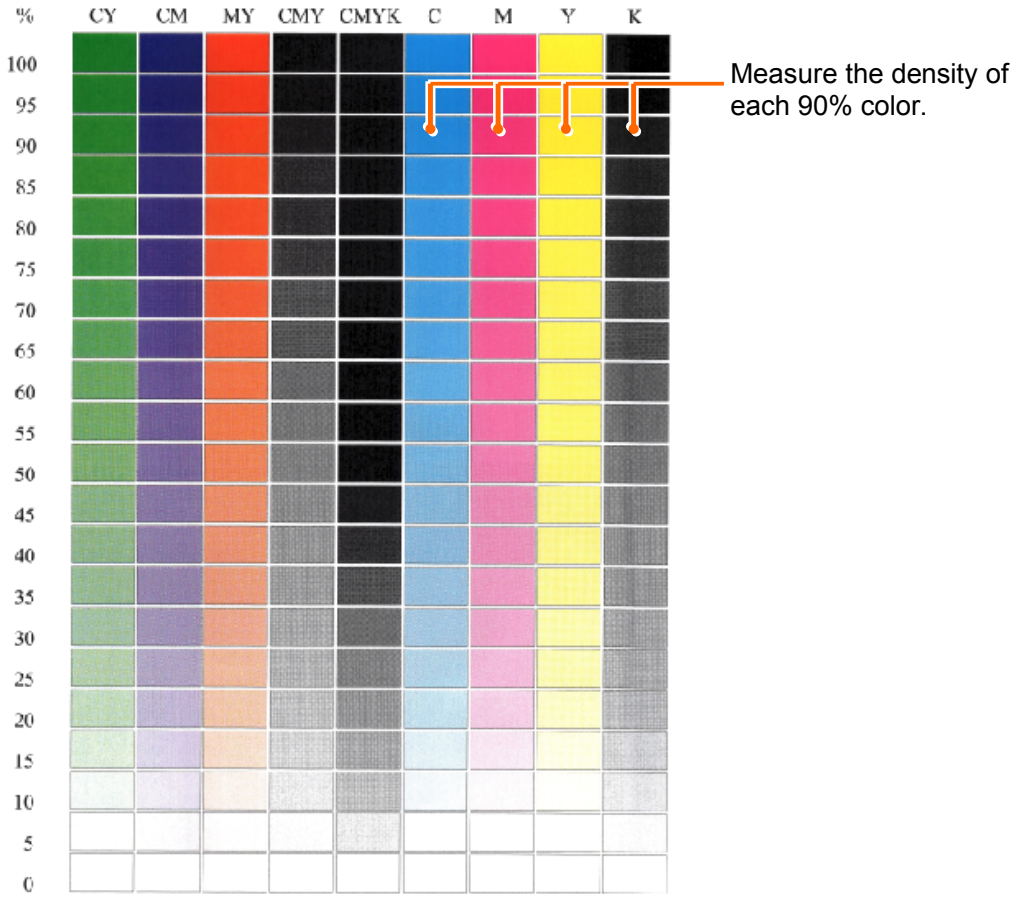


> **NOTE**
>
> Make sure to use **#24 Premium Bond** for printing out.

14. You will get the following pattern that consists of 4 blocks of color images. Measure the density of **90% CMYK** of each block with the densitometer, and take average of the density of each color (CMYK). The required average density of each 90% color is as follows.

K : 1.20 +/-0.03 M : 0.90 +/-0.03
C : 1.10 +/-0.03 Y : 0.80 +/-0.03



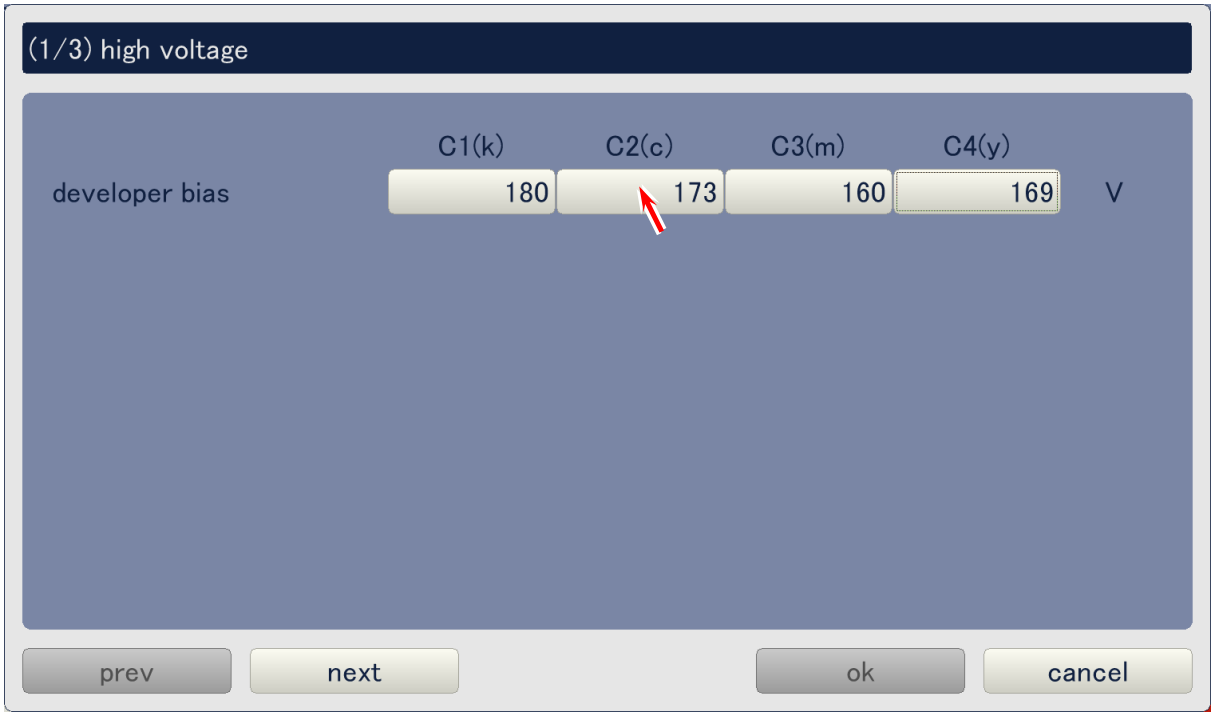


⚠ NOTE

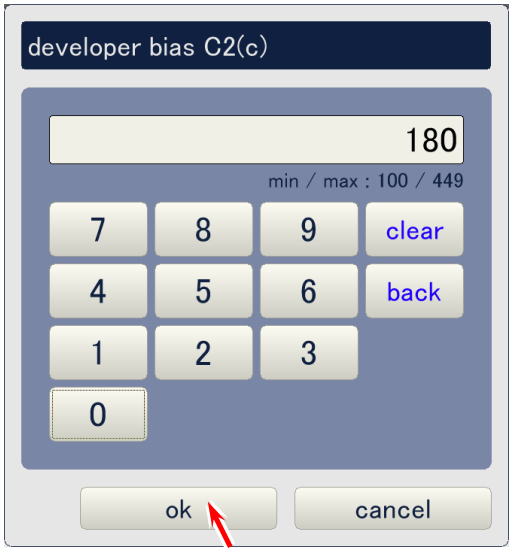
(1) Please put a black paper behind of the above chart for correct measurement.
(2) Set the Status to “T” on the densitometer.
(3) Set the mode to Absolute on the densitometer.
(4) The densitometer must not be equipped with any optional filter.
(5) The above density values are only for #24 Premium Bond.

15. If any color does not satisfy the density requirements shown on the former page, readjustment is required for this color. For readjustment, access the following page by;
    - Click on **service mode** on the main screen of KIPDiagColor.
    - Input the service password when required. (Password is **0000** in default.)
    - Choose **adjustment** in the service mode menu.
    - Choose **high voltage** in the adjustment mode menu.

    Then click on any setting button according to the color to be adjusted. (C1: Black, C2: Cyan, C3: Magenta, C4: Yellow)



16. Change the setting value of Developer Bias in the following pop up window, and click on **ok**.
    - Increment of the value will increase the density of concerning color.
    - Decrement of the value will decrease the density of concerning color.

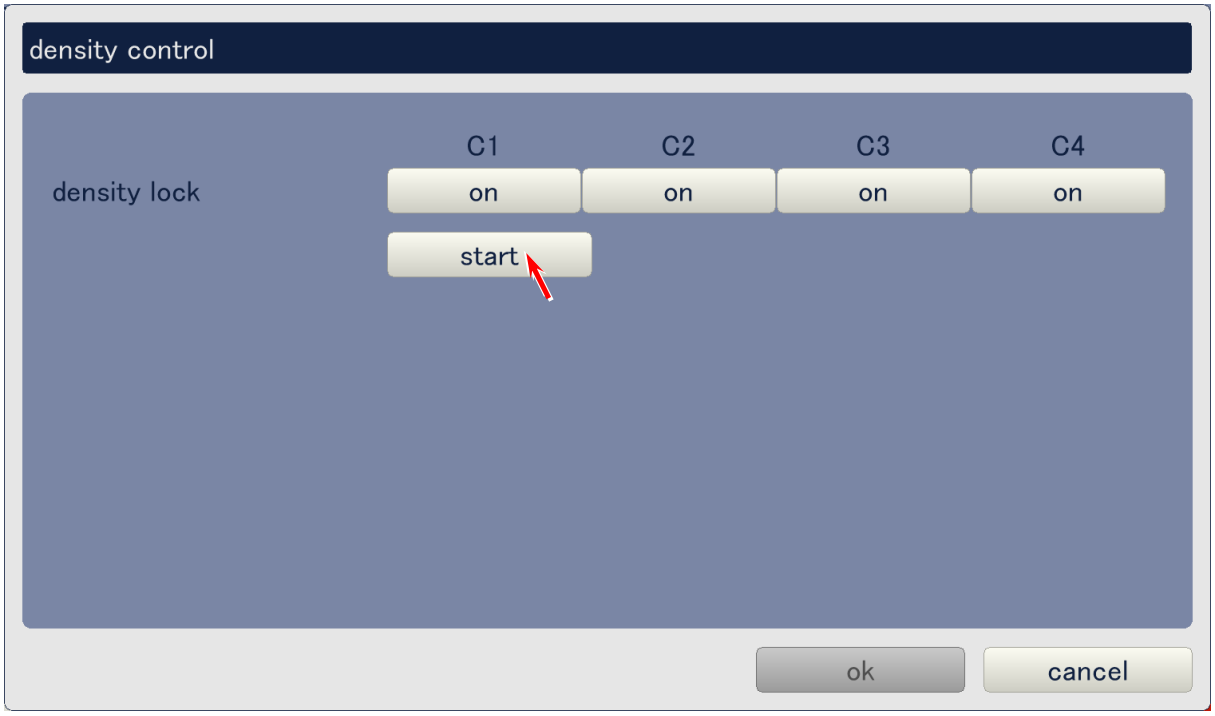


17. Printout the Density_calib.zip and measure the density again if it is within requested range. Change the developer bias again if the density still does not satisfy the requirement.

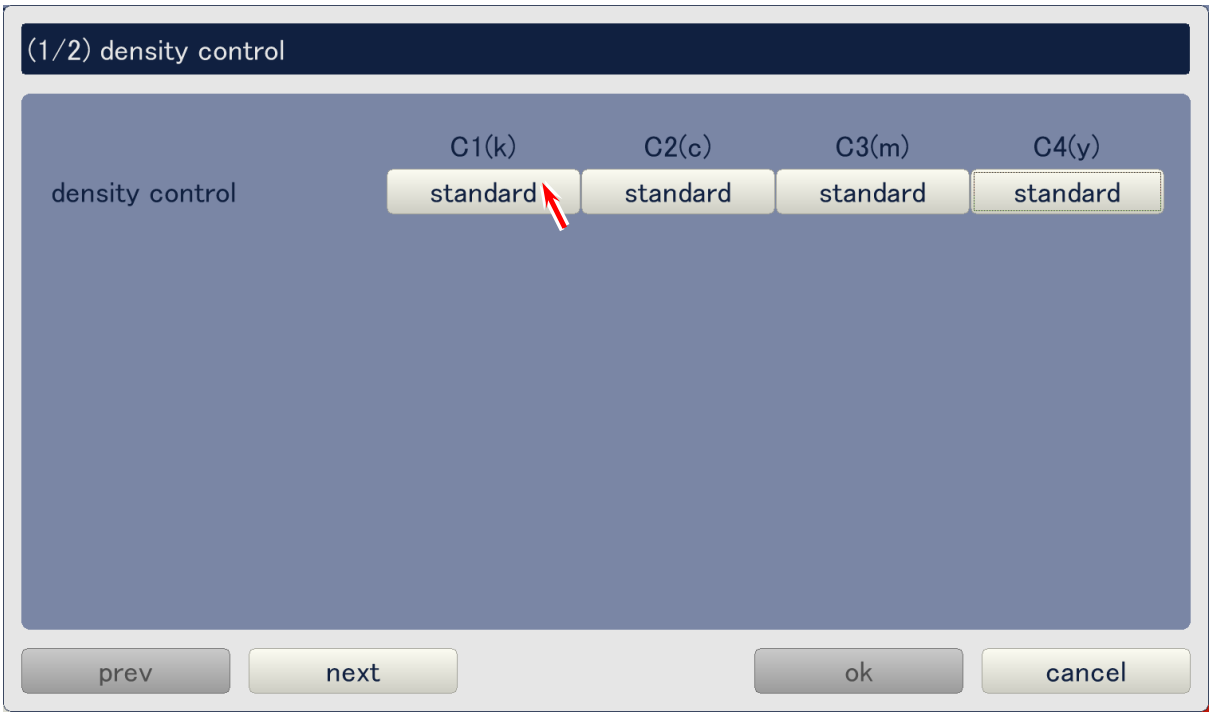
18. When the requested density is achieved correctly, access the following page by;
    - Click on **service mode** on the main screen of KIPDiagColor.
    - Input the service password when required.
    - Choose **adjustment** in the service mode menu.
    - Choose **density control** in the adjustment mode menu.

    This page allows the operator to take Density Lock operation per color. Printer “memorizes” current density as the target density when Density Lock operation is performed.
    Choose **on** for some color (C1 to C4) if Density Lock needs to be performed to this color, and click on **start** to start Density Lock operation.

    Wait until the printer finishes operation. When finished, click on **ok**.



19. Access the following page again by **user mode** – **density control**, and set density control to **standard** for all colors.



20. Print out the external test pattern **Density_calib.zip** again and check if correct density is achieved. If not achieved, please repeat the procedures 13 to 19.

21. Finish the KIPDiagColor when required density is achieved.

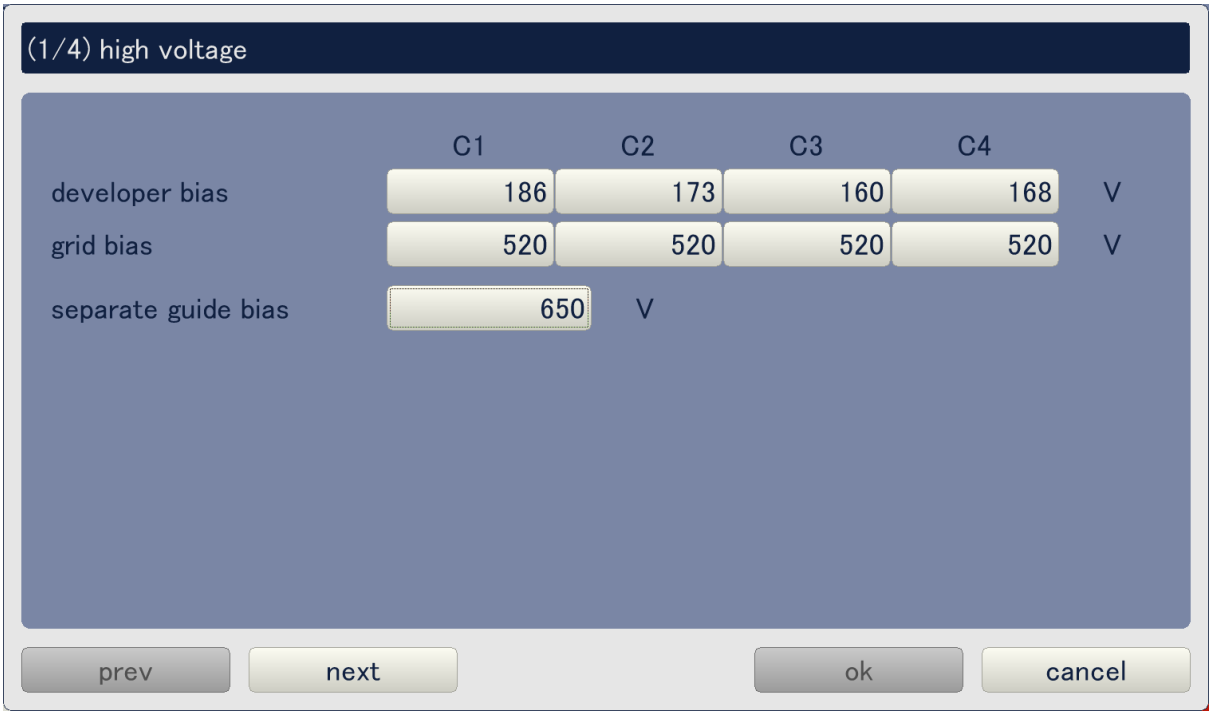
10. 2 Adjustment of Target Surface Potential

If you will readjust the Target Surface Potential for some reason, do as follows.

> **NOTE**
>
> Normally it is unnecessary to readjust the Target Surface Potential.

1. Run the KIPDiagColor on the KC80 IPS.

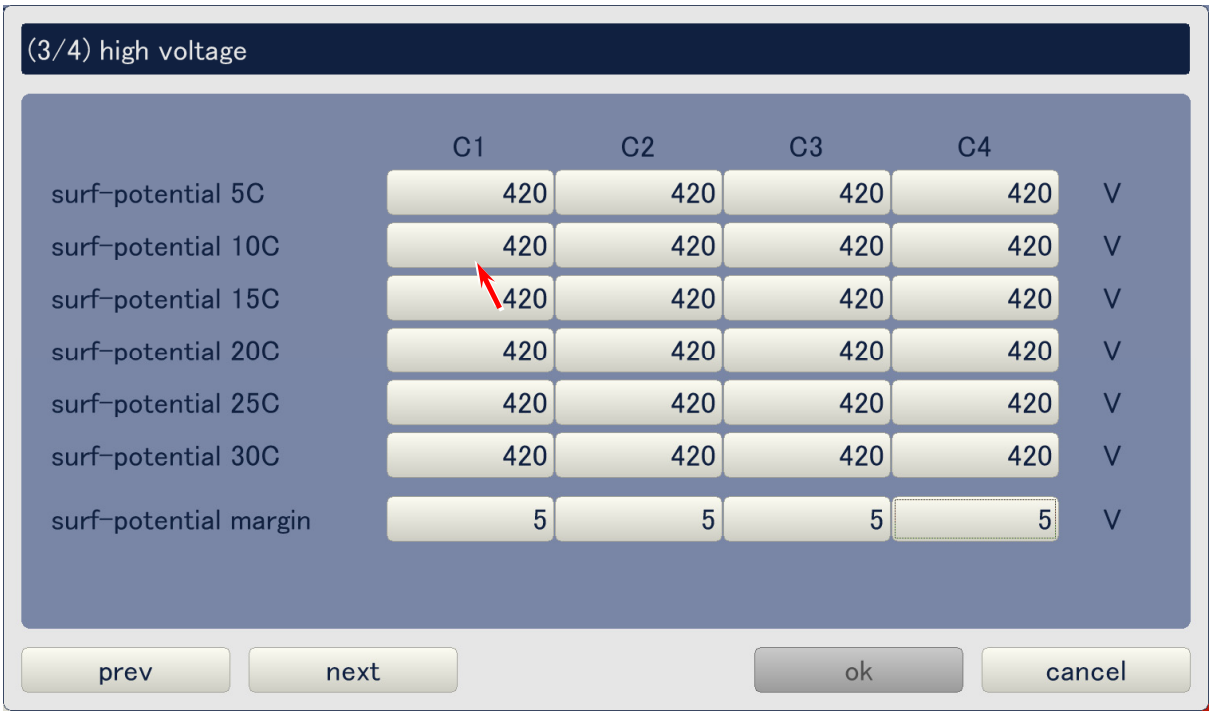
2. Access the following page by;
   - Click on **service mode** on the main screen of KIPDiagColor.
   - Input the service password. (Password is **0000** in default)
   - Choose **option** in the service mode menu.
   - Set **service mode advance** to **on** and click on **ok**.
   - Choose **adjustment** in the service mode menu.
   - Choose **high voltage** in the adjustment mode menu.



> **NOTE**
>
> “Grid bias” and “separate guide bias” are not indicated in the above page if **service mode advance** is not set to on.

3. Target Surface Potential can be set per color and per temperature point. Increment of the value makes the Target Potential higher, which leads to getting a darker image.
   - **CX** means the color.
     C1 : Black
     C2 : Cyan
     C3 : Magenta
     C4 : Yellow
   - **surf-potential #X** means the temperature points.
     #1 : At 5 C°
     #2 : At 10 C°
     #3 : At 15 C°
     #4 : At 20 C°
     #5 : At 25 C°
     #6 : Higher than 30 C°

   To change the value, click on the setting button, input the requested value in the pop up dialog, and click on **ok**.



4. Press [ok] after changing the value.



5. Finish the KIPDiagColor.

10. 3 Operations Necessary for Using New Type of Media

10. 3. 1 Summary

The following steps will enable to use a new type of media on the KC80 printer.

(1) Give a name to new type of media via KIP Production Station.
See later section [10.3.2 Giving an easy-to-understand custom name to new type of media].

(2) Perform Automatic Vertical Color Registration Calibration via KIP Production Station by either **simple** or **advance** mode
See later section [10.3.3 Automatic Vertical Color Registration Calibration via KIP Production Station].

More accurate Vertical Color Registration can be achieved by the following operations if necessary.

(3) Dynamic Length Calibration via KIP Production Station.
See later section [10.3.4 Dynamic Length Calibration for more accurate Vertical Color Registration].

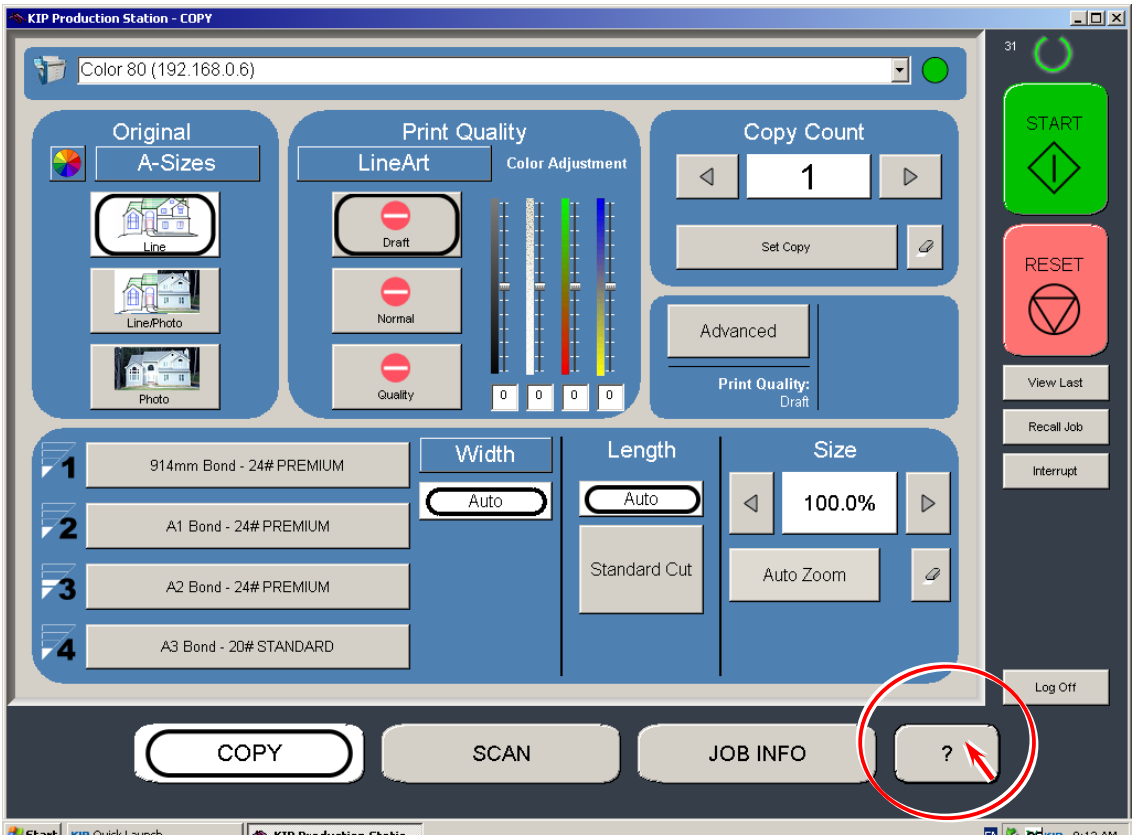
> **⚠ NOTE**
>
> The above operations (2) and (3) also can be done via KIPDiagColor. Both methods can achieve the same result. Please take calibration by either way according to your preference.
>
> Even without Simple Color license necessary for using KIP Production Station, the above operations via KIP Production Station is available.

10. 3. 2 Giving an easy-to-understand custom name to new type of media

Please give an easy-to-understand name to each media type #X according to its manufacturer, product name, weight/thickness and etc.

1. Run KIP Production Station on the KC80 IPS.

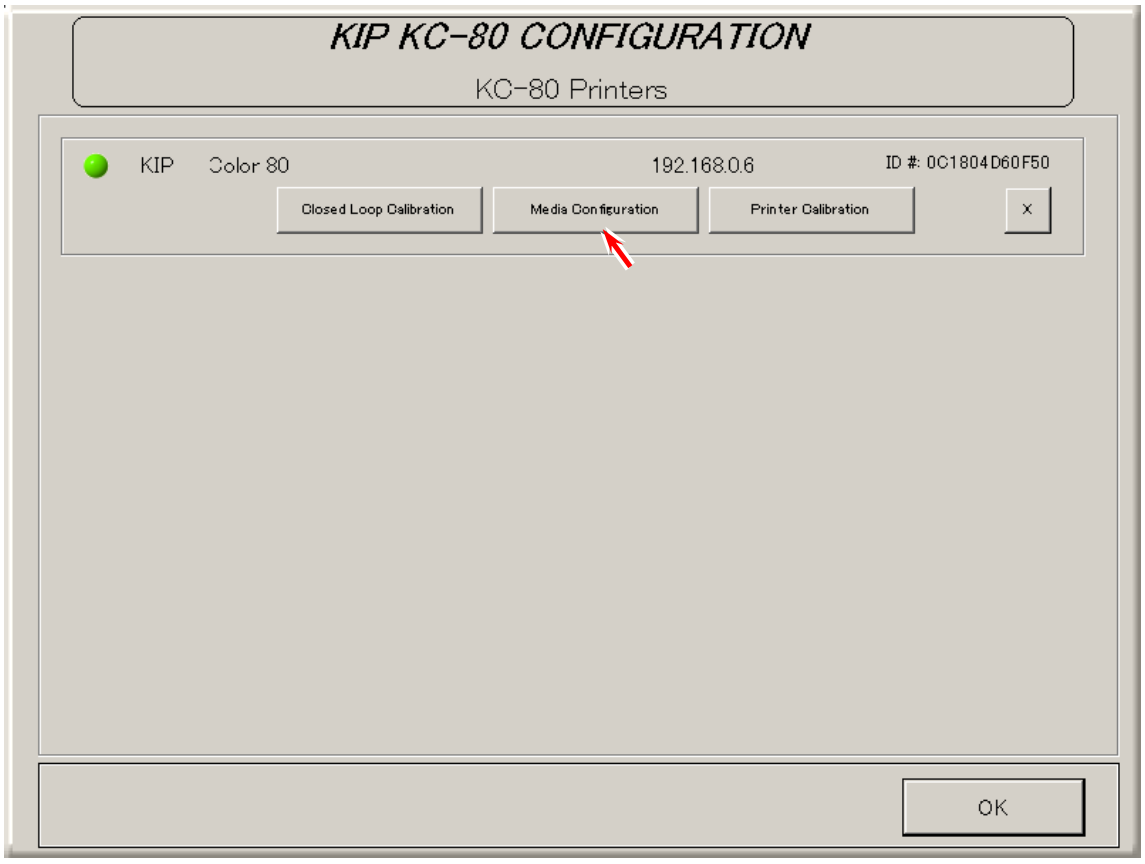
2. Click on **?** icon on the Production Station.



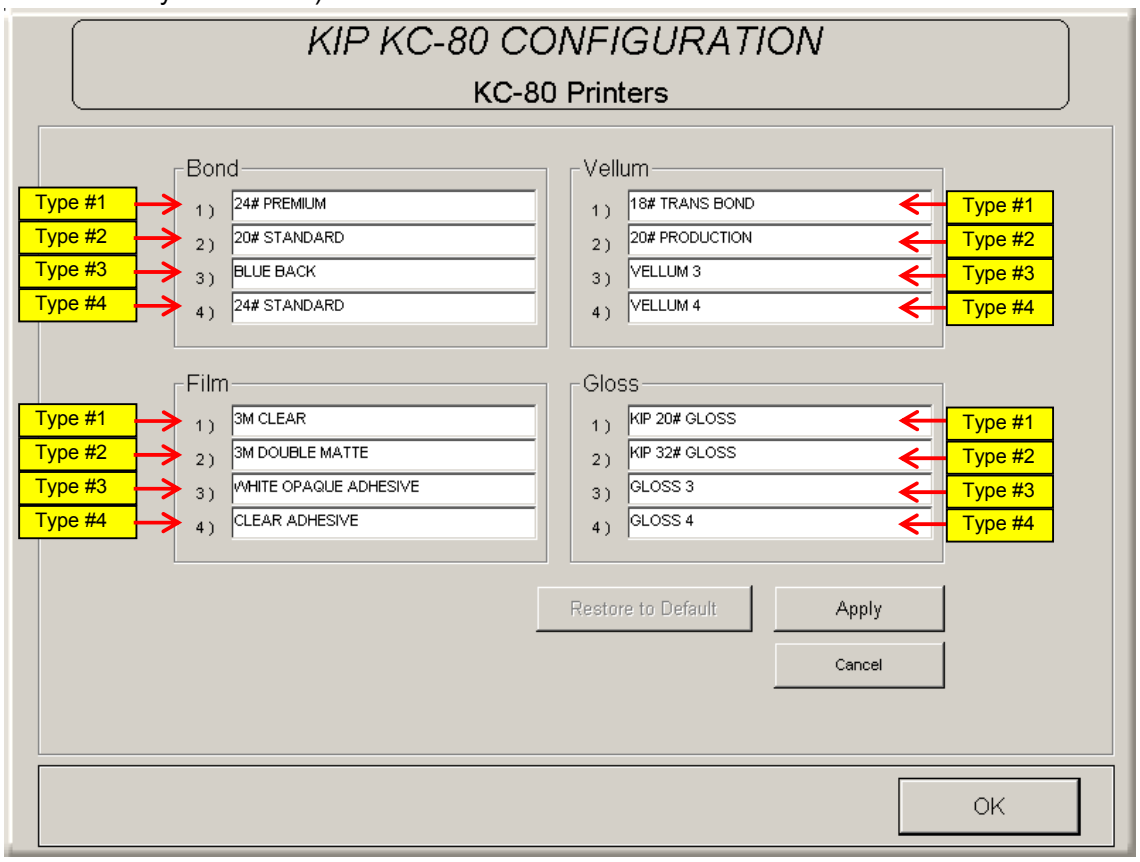
3. Choose **KC80 Config**.

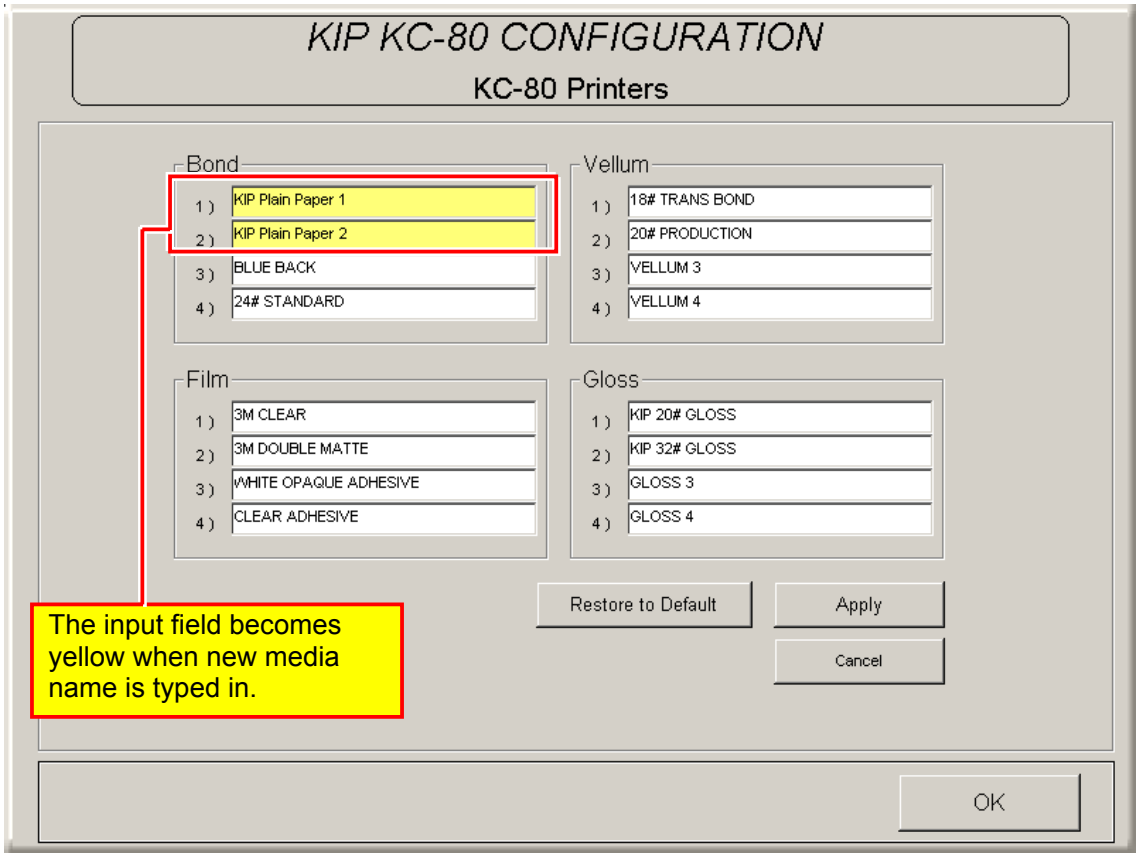


4. Choose **Media Configuration**.

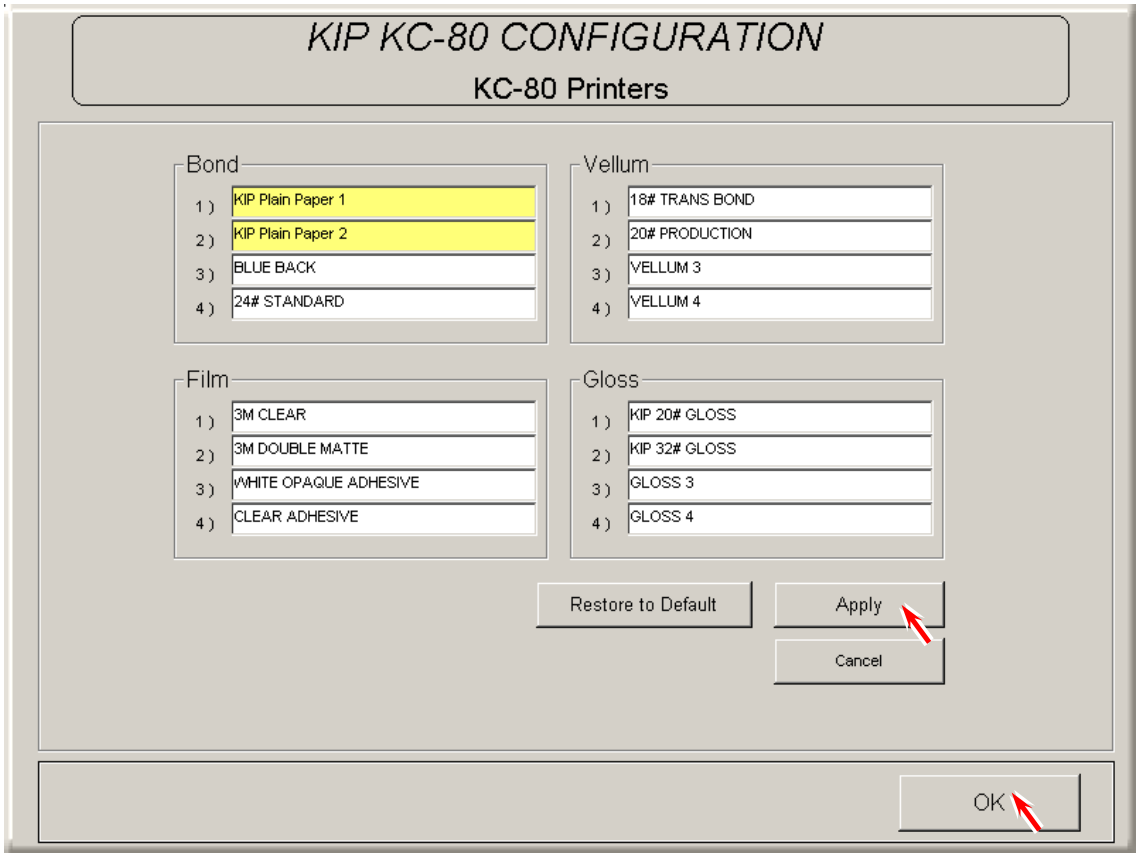


5. Each media can have 4 different media names respectively, which are corresponded to “Type #1-4” on KIPDiagColor. Give a clear and understandable media name to new type of media based on its manufacturer, product name, thickness/weight and etc, and type it in the input field. The input field becomes yellow when a new media name is typed in. (New media name is not yet effective.)





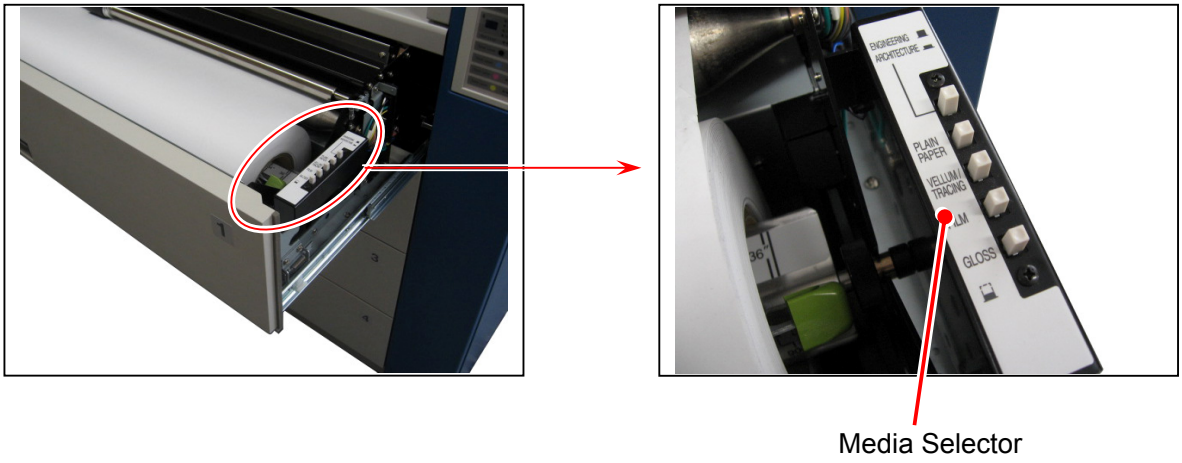
6. Click on **Apply** to make new media names effective. The yellow input fields now become white when the new media names become effective. Click on **OK** after that.



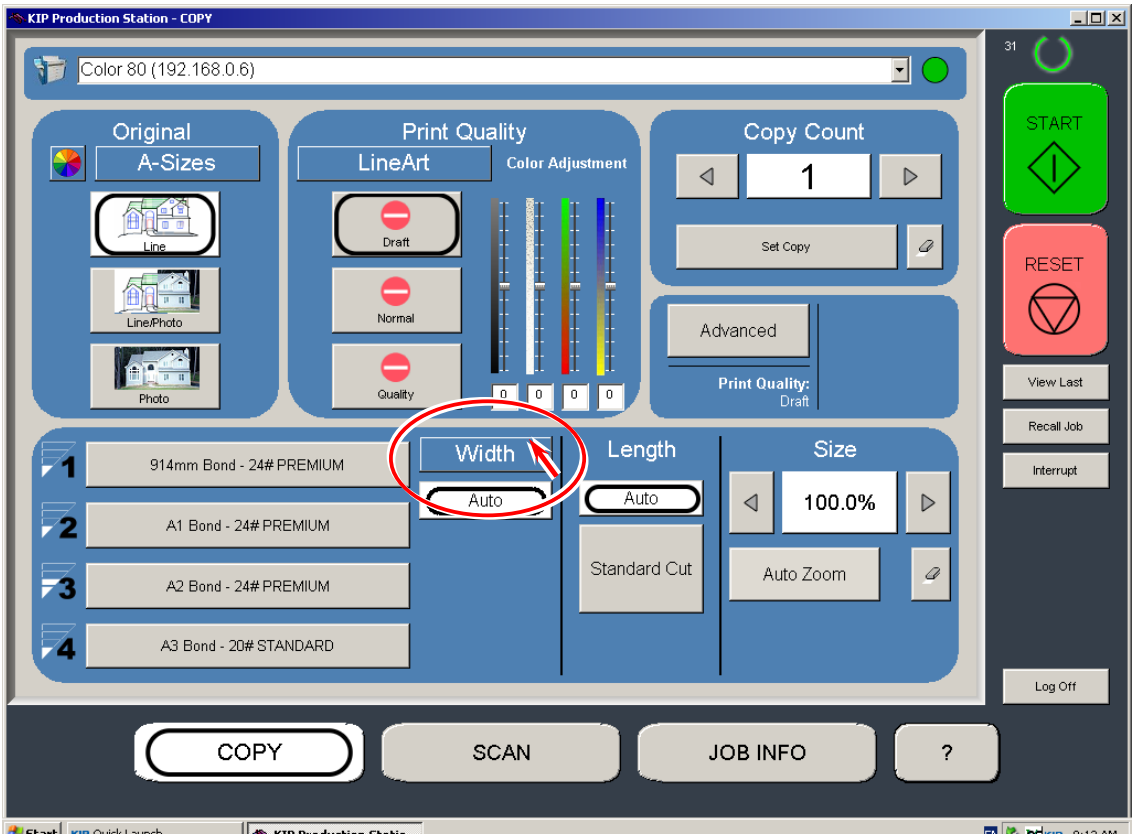
10. 3. 3 Automatic Vertical Color Registration Calibration via KIP Production Station

1. Prepare the roll media to be calibrated.
   Preferably prepare 4 different widths of roll media from each width group for calibrating all widths lineup of this media.

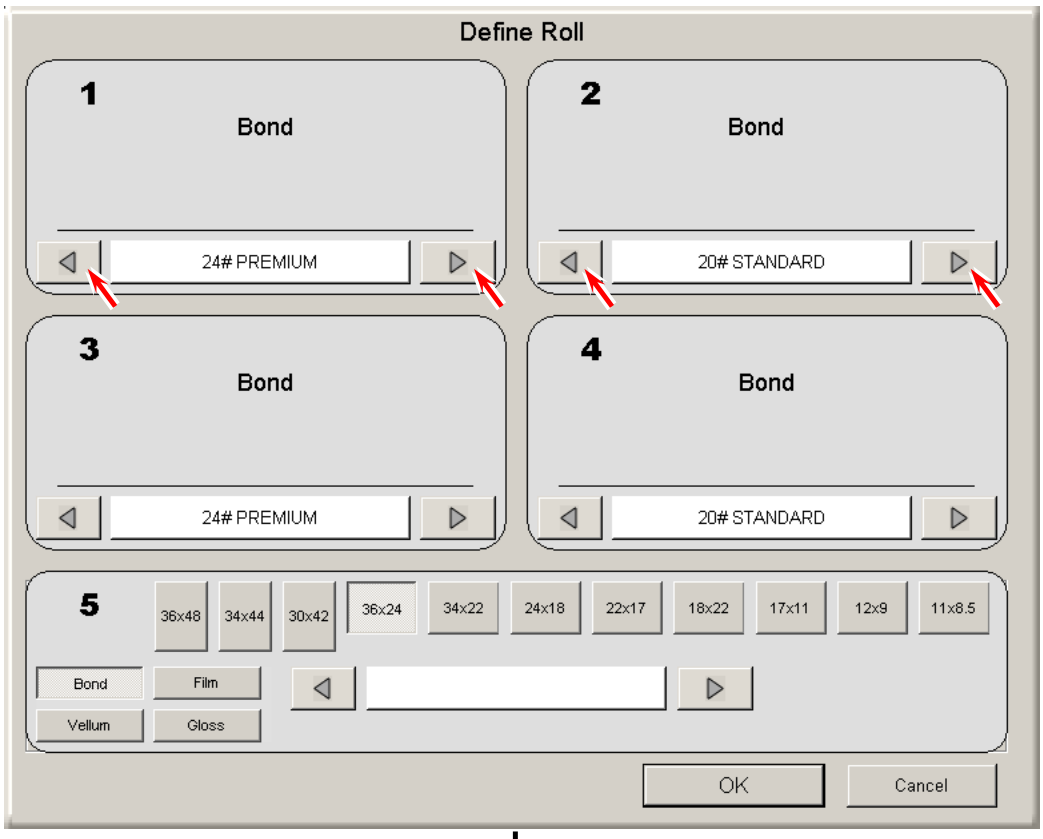
2. Install the roll media onto any Roll Deck, and set the Media Selector correctly.

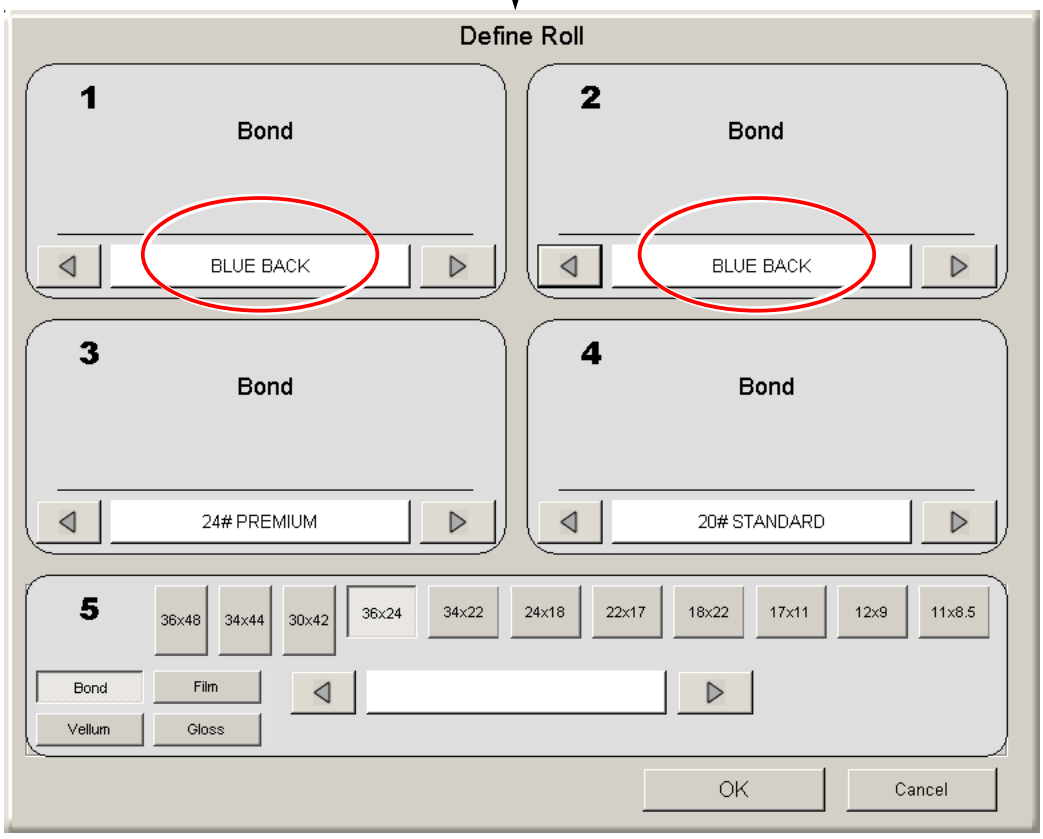


3. Click on **Width** icon on the Copy Page of Production Station.



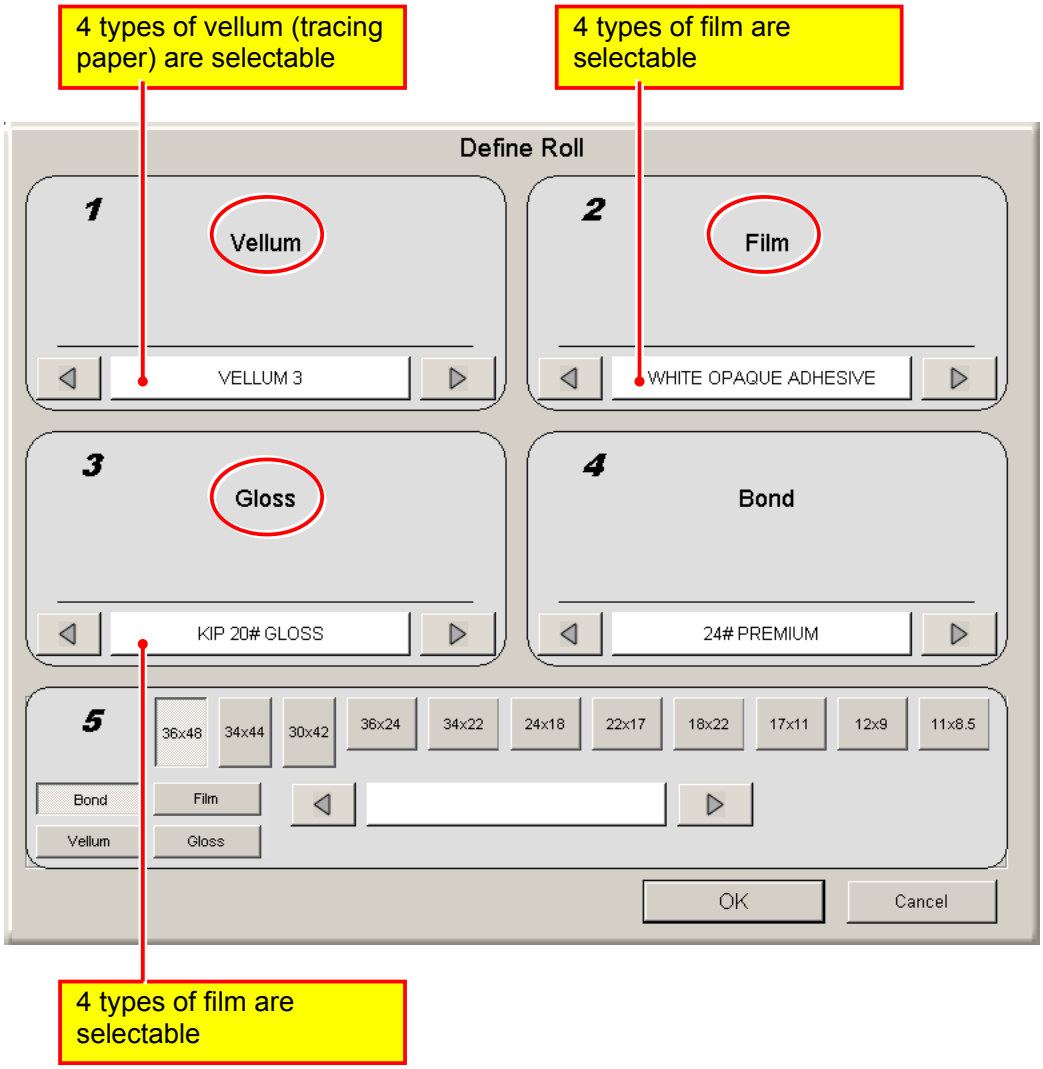
4. The following Define Roll Page indicates the current selection of media type on each roll deck. Using the triangle icons, indicate the media name which is to be calibrated.



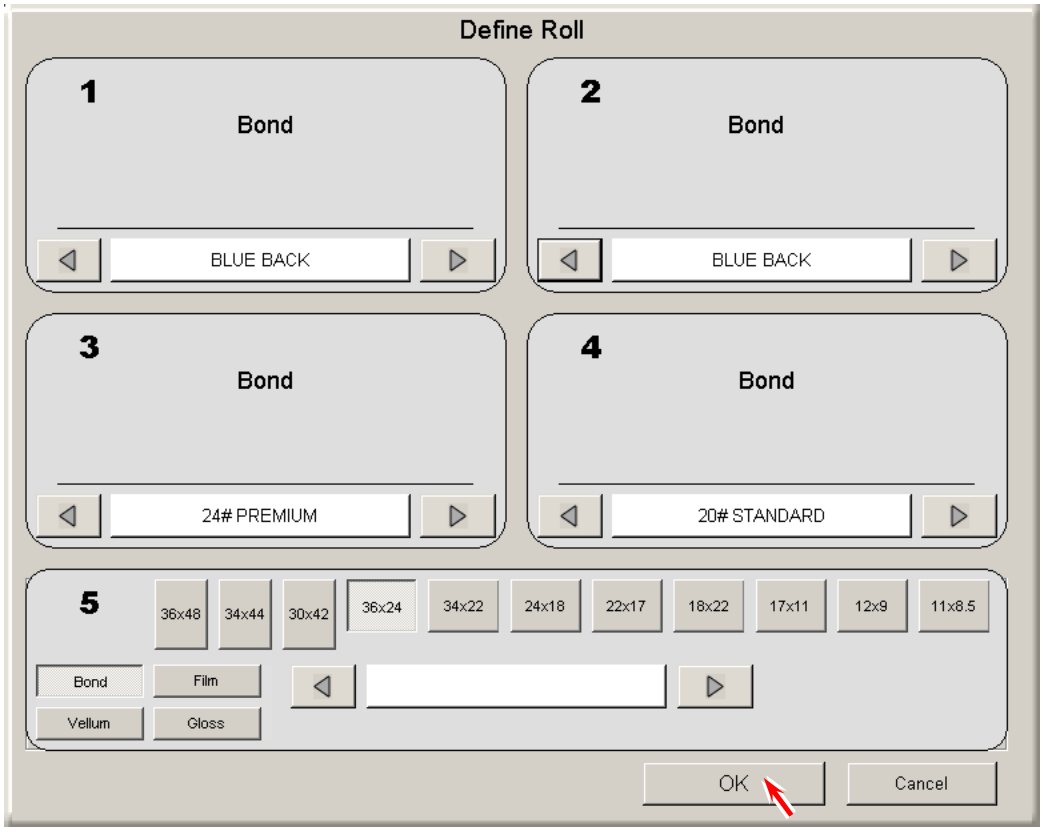


NOTE

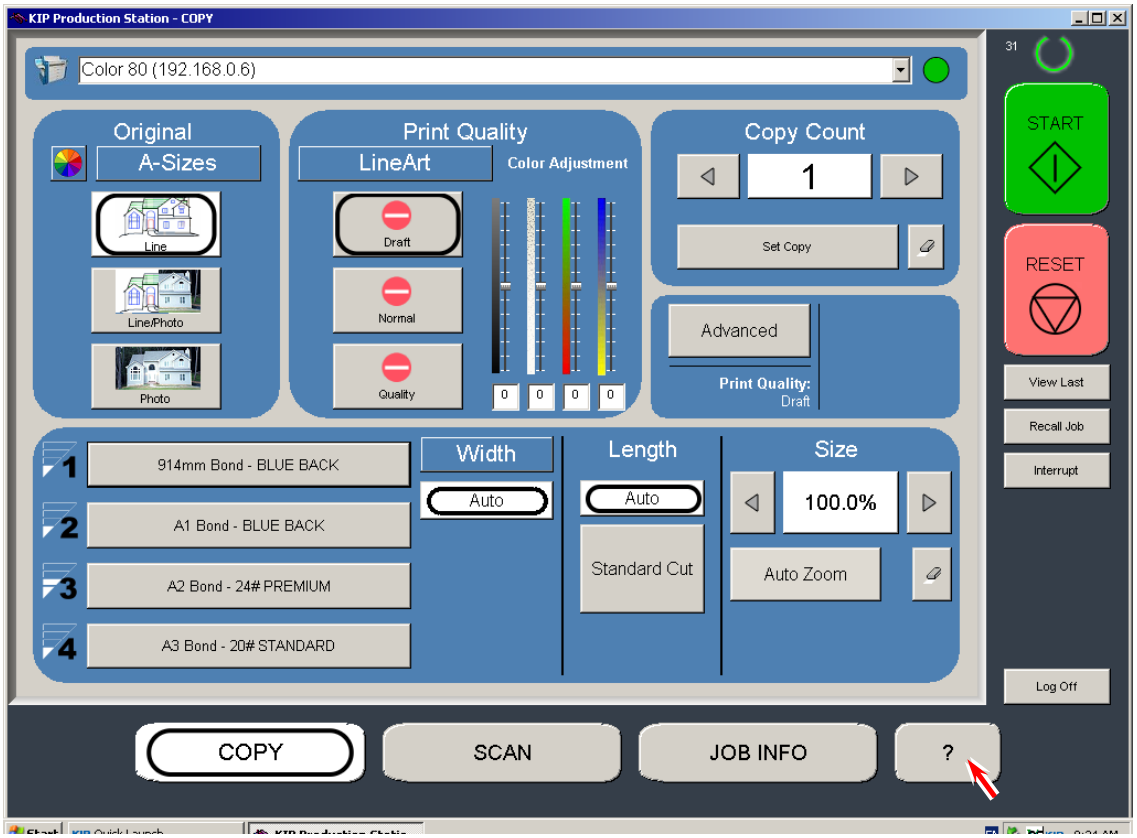
Currently available media is shown per deck on the Define Roll Page, which just follow the Media Selector setting of roll deck. If “bond” is available on some deck, 4 sub types (type #X) of bond (plain paper) is selectable. If you set the Media Selector to vellum (tracing) on the deck, now 4 sub types (type #X) of vellum (tracing paper) become selectable.



5. Click on **OK**.



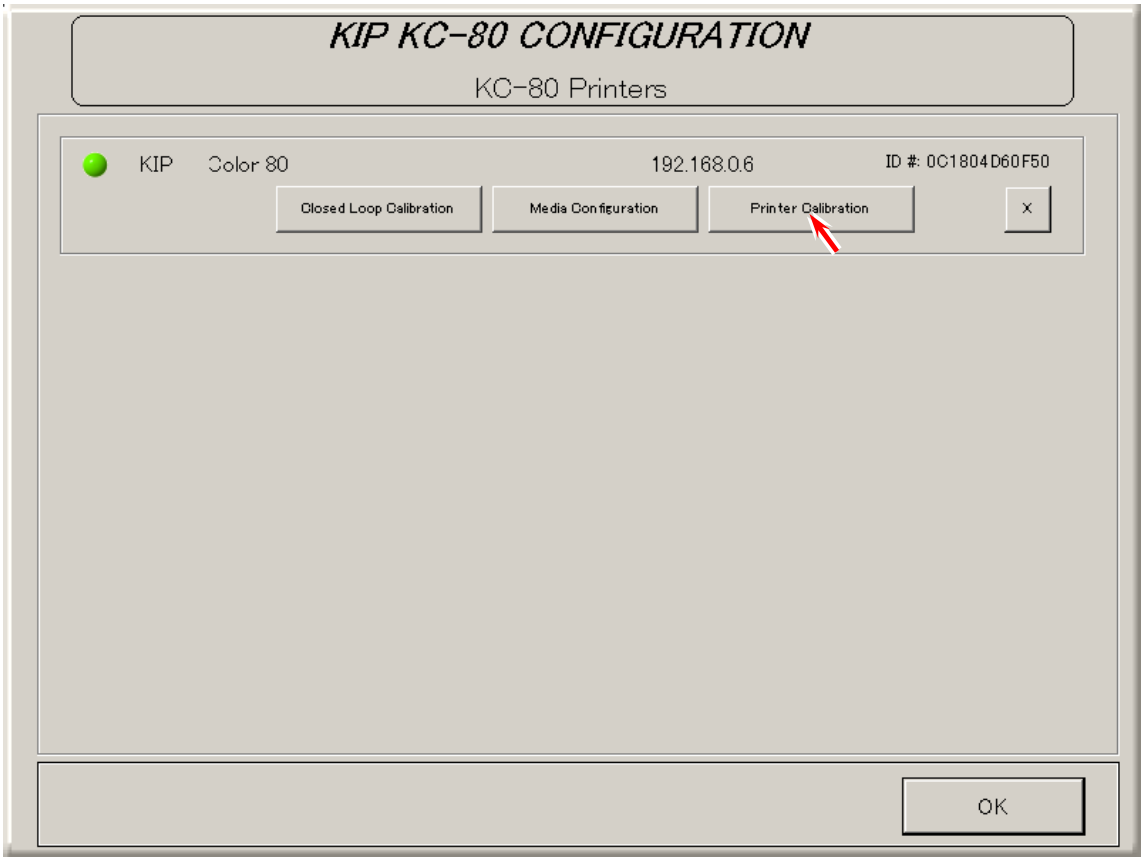
6. Click on the **?** icon.



7. Click on **KC80 Config**.



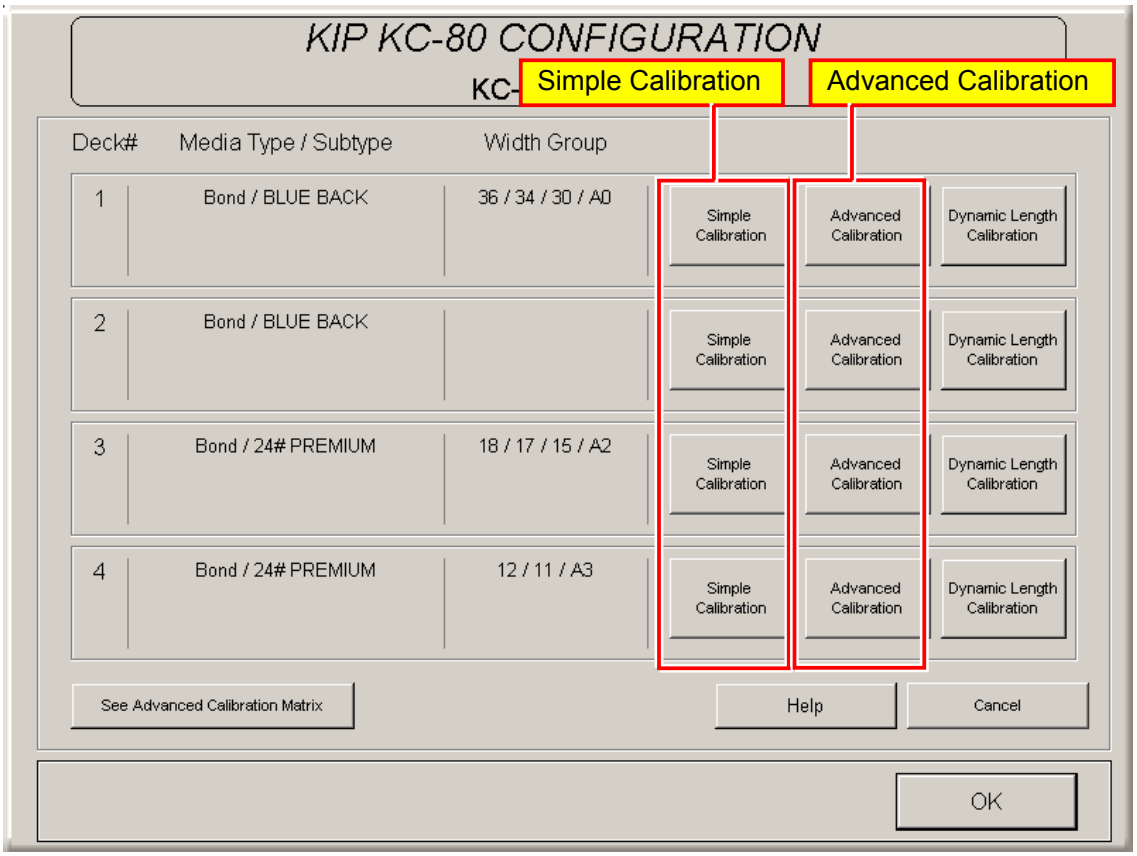
8. Click on **Printer Calibration**.



9. The KC80 IPS has 2 Vertical Color Registration Calibration Modes such as **Simple** Calibration and **Advanced** Calibration. Choose either of them according to the necessity.

- Simple Calibration ..... Basic calibration can be achieved. KC80 prints 3 sheets when this is performed. The calibration process will take about 3 minutes.

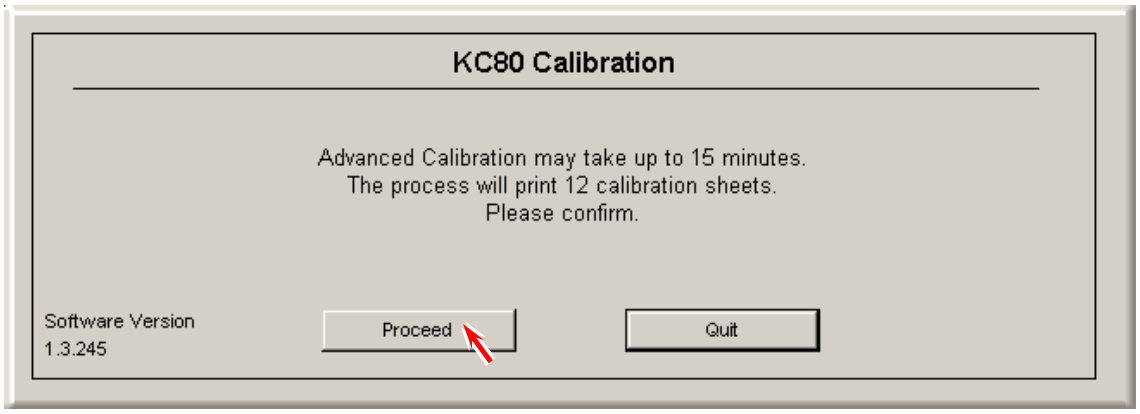
- Advanced Calibration ..... More accurate calibration than “Simple Calibration” can be achieved. KC80 prints 12 sheets when this is performed. The calibration process will take about 15 minutes.



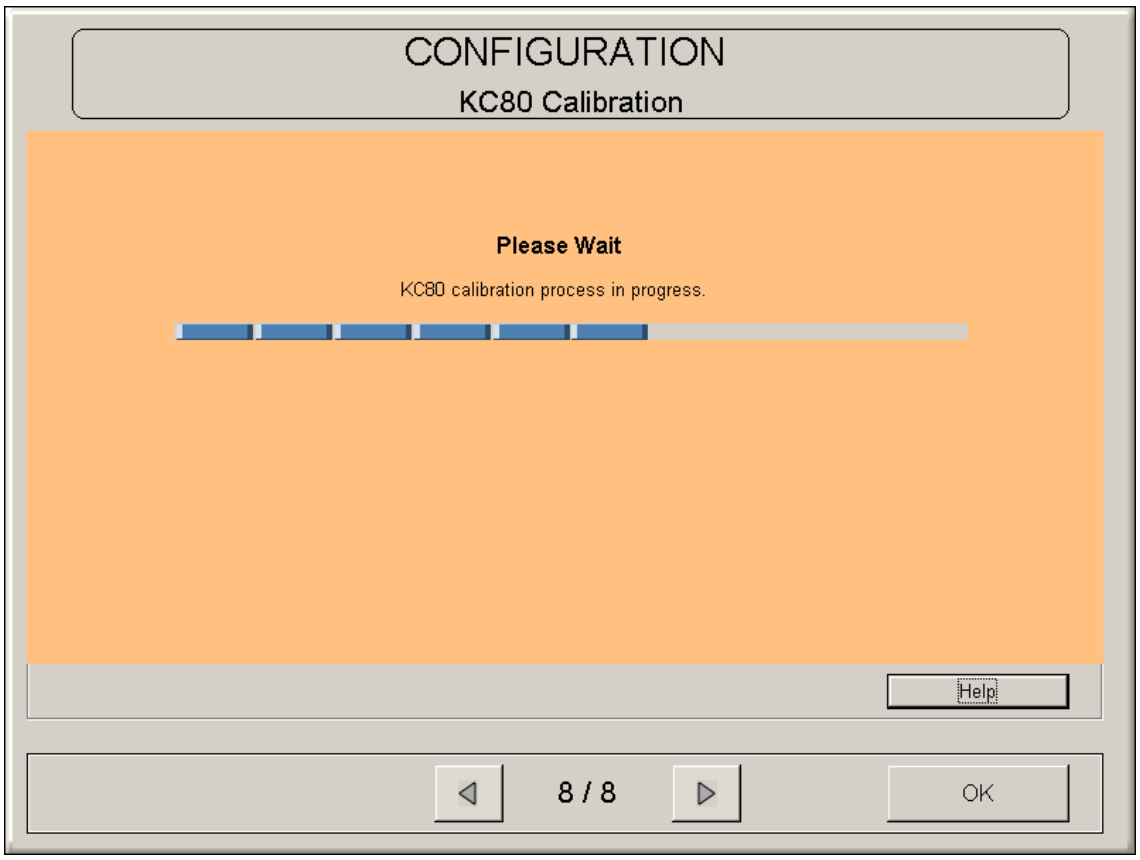
NOTE

See the concerning page of service manual for Dynamic Length Calibration.

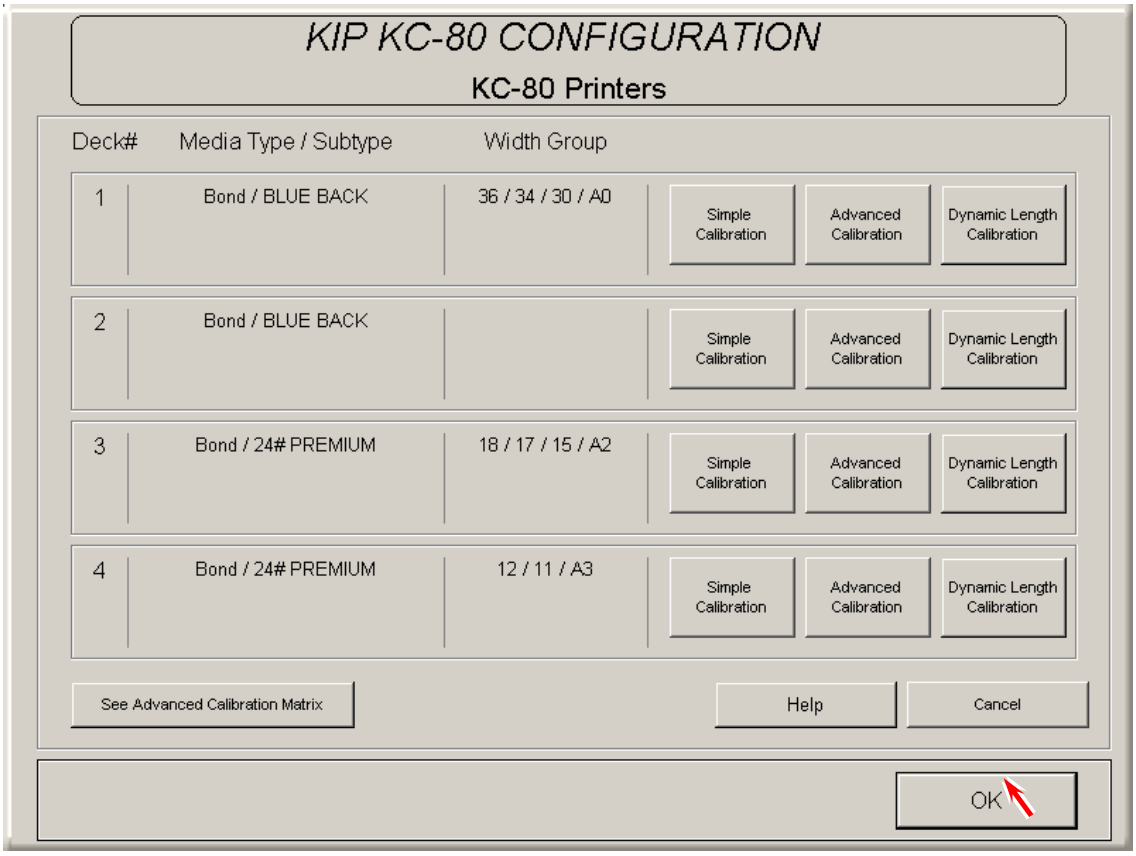
10. Click on **Proceed** if you will start the calibration process.



11. The calibration process starts. Wait until it finishes.



12. Click on **OK** when the calibration process finishes.



13. Calibrate all necessary types and sizes of media in the same way.

> **⚠ NOTE**
>
> (1) Note that a certain paper can not be used unless it is calibrated by the calibration process explained in this section.
>
> (2) Once a media is calibrated using any Roll Deck, all other Roll Deck can accept this media.

10. 3. 4 Dynamic Length Calibration

Dynamic Length Calibration is a feature to achieve the best possible Vertical Color Registration Calibration for certain target print length which operator specifies optionally in advance.

10. 3. 4. 1 Basic idea of Dynamic Length calibration

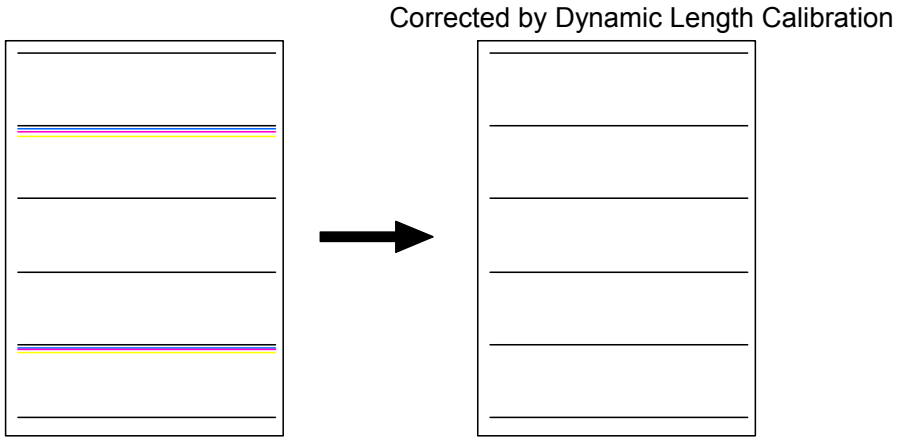
When observing a printed image, there will be a case that 4 colors are surely aligned with each other at some positions but not aligned so precisely at some other places. When taking further observation with printing the same (length of) image repeatedly, one will find that such partial mis-alignment tends to appear not randomly but regularly appear at almost same positions on multiple prints. In another words, the locations of mis-alignment may be “predictable” because of its regularity. If the printer correctly realizes such predictability, it can then take individual software correction according to the prediction for achieving higher accuracy of vertical color registration. This is the basic Idea of Dynamic Length Calibration.

10. 3. 4. 2 Technical description

When a data sampling mode of Dynamic Length Calibration is executed, printer prints out an exclusive calibration pattern by certain print length which the operator specified as “target print length”. Printer reads all of CMYK images on the calibration chart during printing by Color Sensor, realizes the alignment of 4 colors at every vertical point on this print, and takes it as predicted color registration achievement which will always been seen whenever this particular length of print is done. Then it automatically calculates the best calibration value point to point for enabling to achieve correct alignment of 4 colors at every vertical point, and saves it as Dynamic Length Calibration Data for this particular target length. When the print data is as long as this target length (or if it is within applicable length range), the Dynamic Length Calibration feature most appropriately corrects 4 colors alignment point to point with using this data.

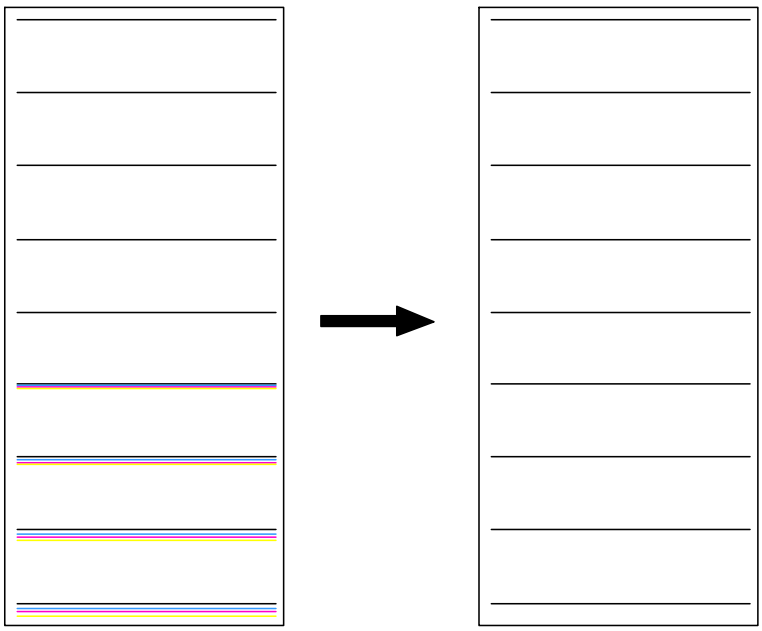
Dynamic Length Calibration is useful for correcting the following types of 4 color mis-alignment.

(1) 4 colors are correctly aligned at many points, but not aligned so precisely at only some points.



(2) Mis-alignment on a long print, which gradually becomes bigger as print gets longer.

Corrected by Dynamic Length Calibration



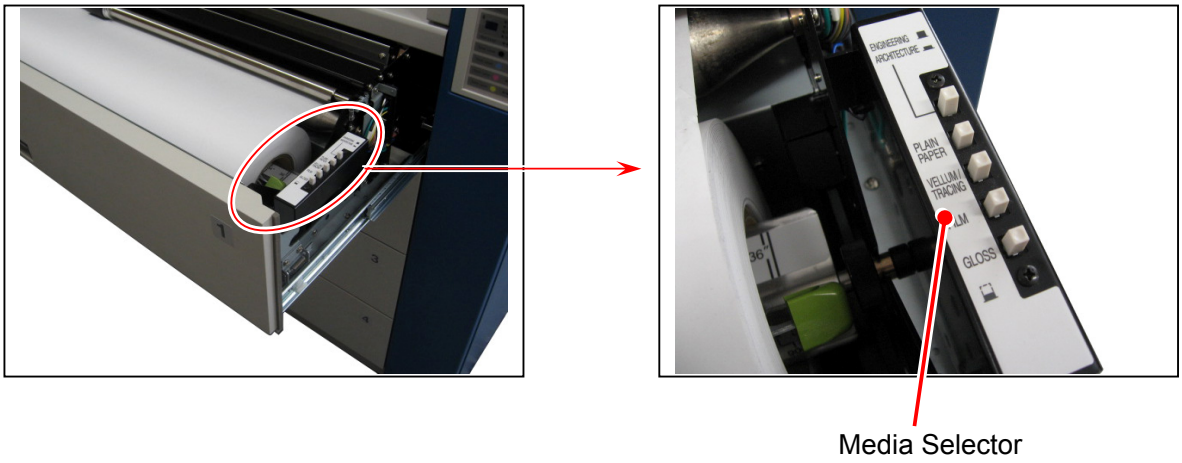
10. 3. 4. 3 Operation

> **NOTE**
>
> **Vertical - advance** needs to be done as basement before taking Line Pitch calibration.

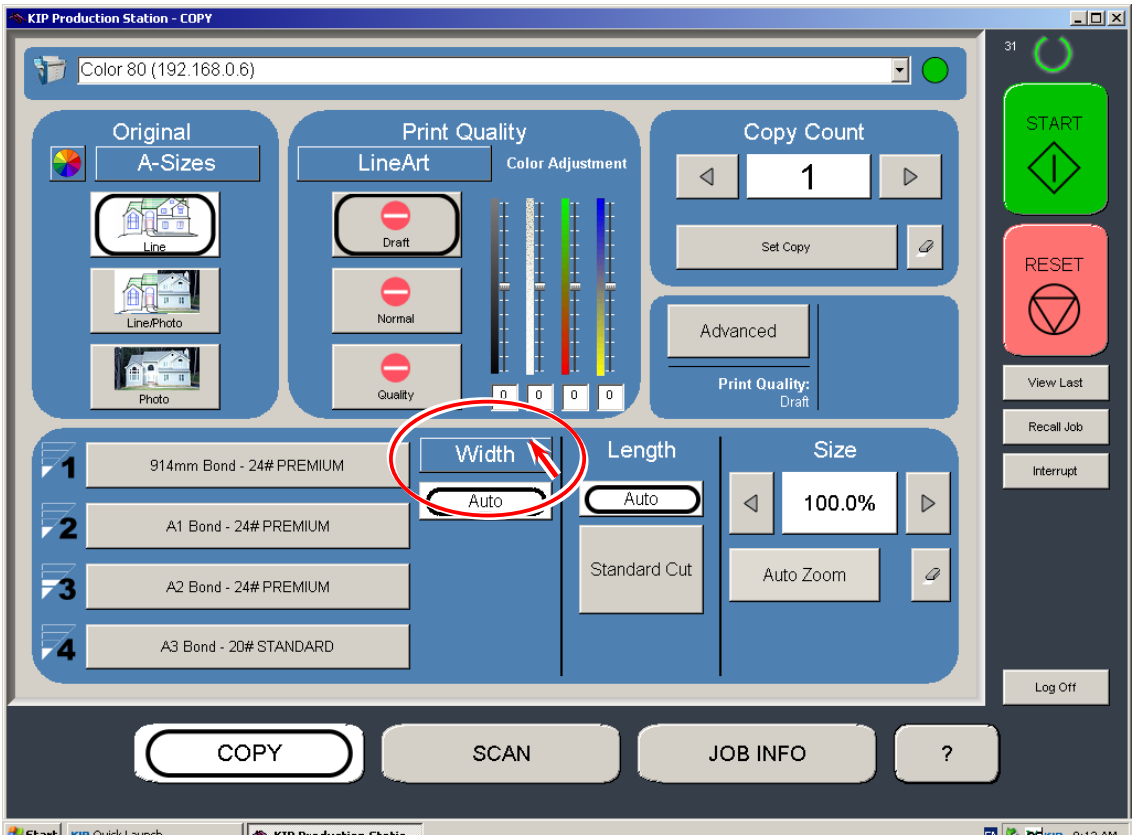
A. Getting sampling data

1. Prepare the roll media to be calibrated.
   Preferably prepare 4 different widths of roll media from each width group for calibrating all widths lineup of this media.

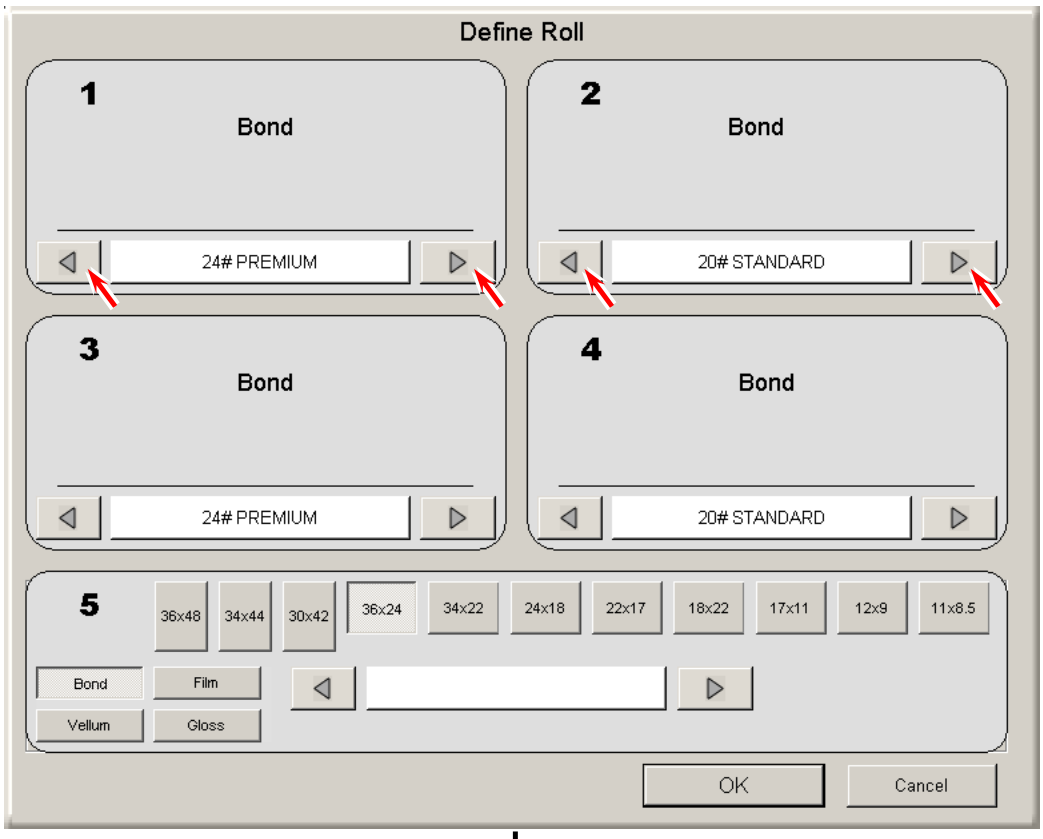
2. Install the roll media onto any Roll Deck, and set the Media Selector correctly.

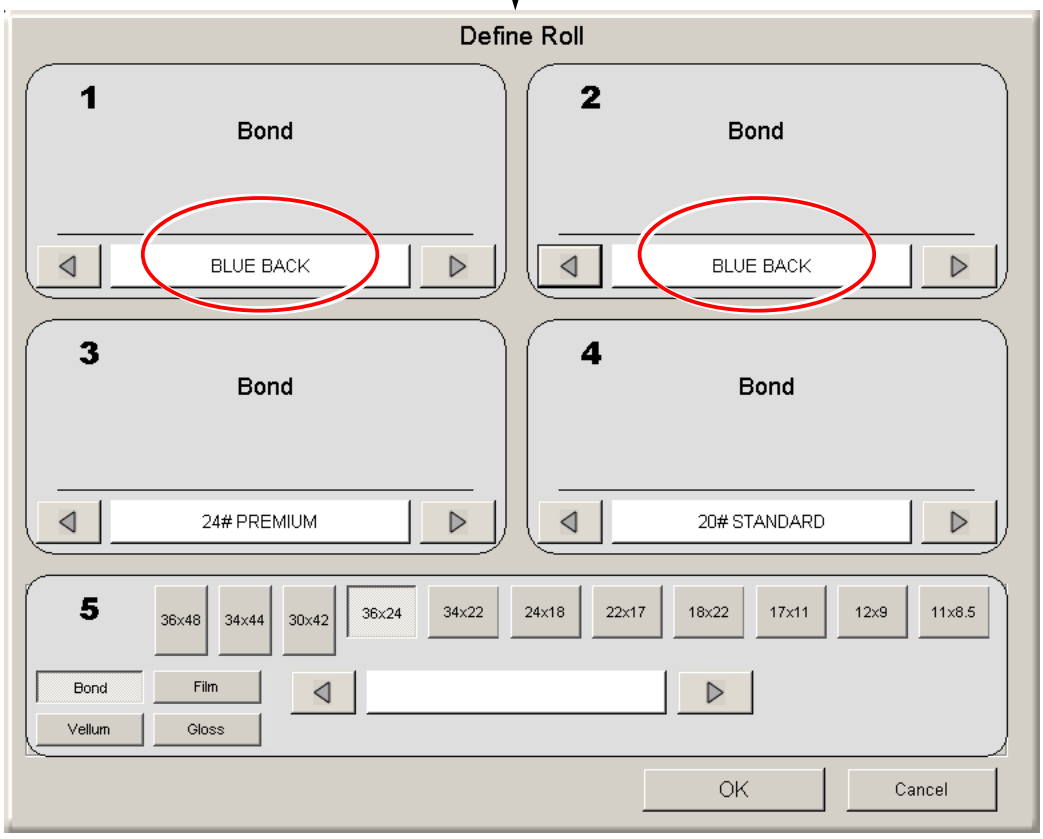


3. Run the KIP Production Station on the KC80 IPS, and click on **Width** icon on the Copy Page.



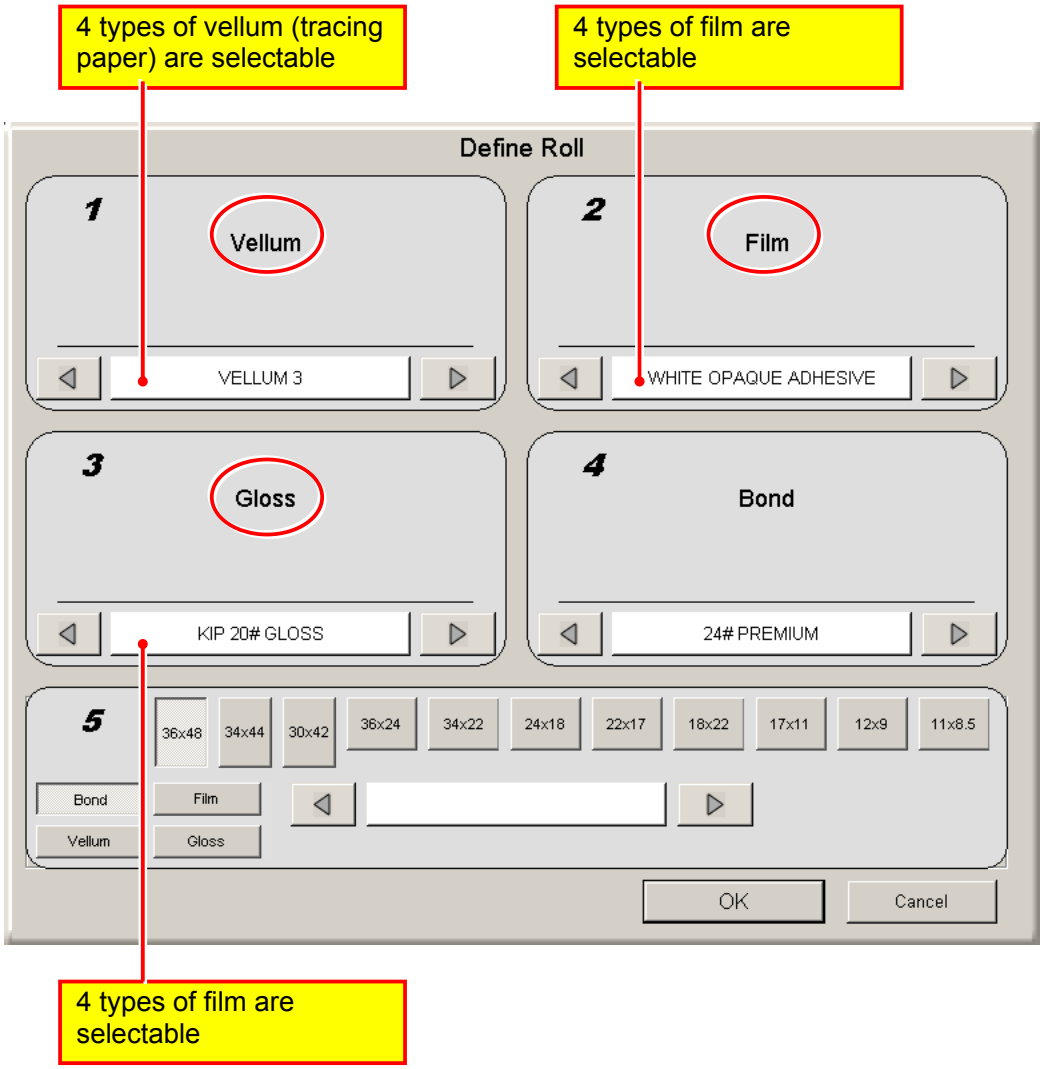
4. The following Define Roll Page indicates the current selection of media type on each roll deck. Indicate the correct media name to be calibrate using triangle icons.



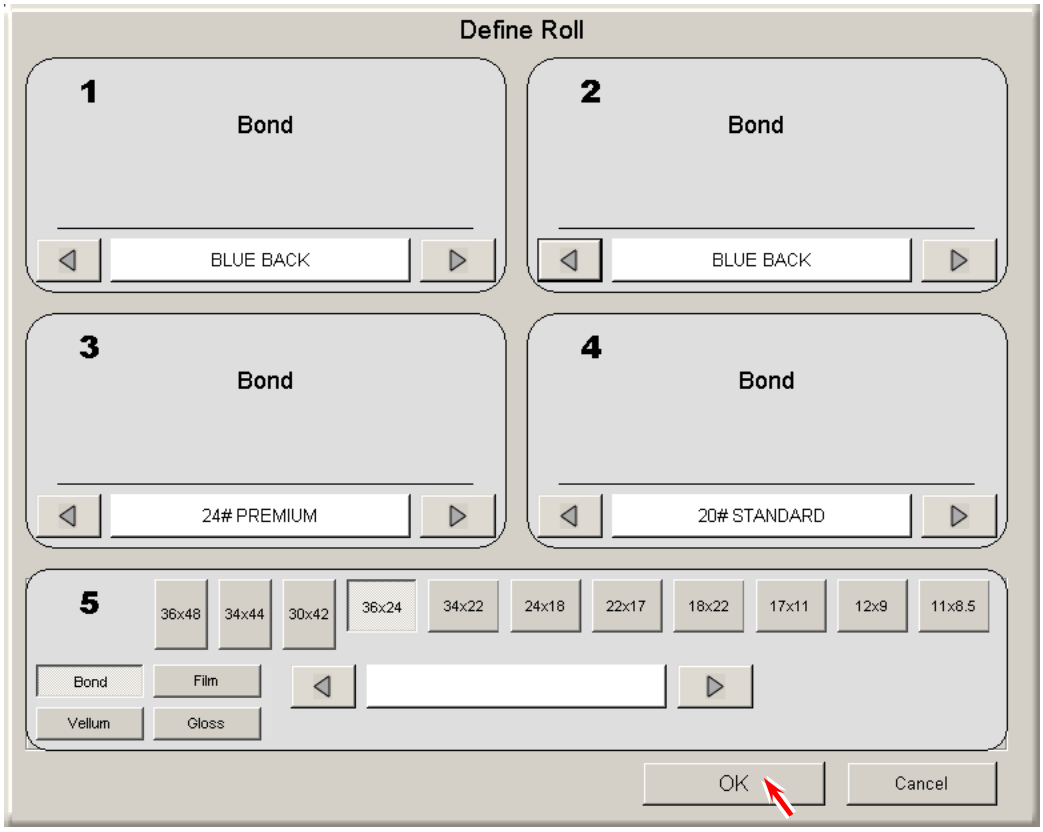


NOTE

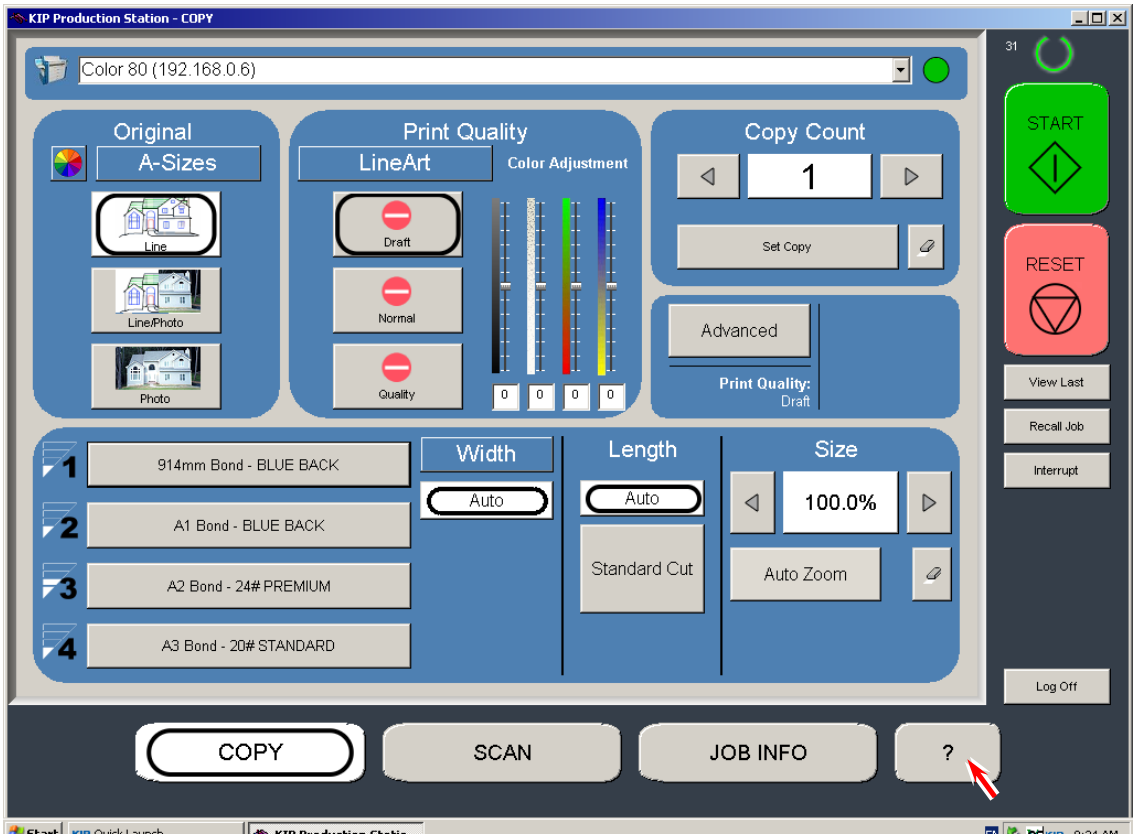
Currently available media is shown per deck on the Define Roll Page, which just follow the Media Selector setting of roll deck. If “bond” is available on some deck, 4 sub types (type #X) of bond (plain paper) is selectable. If you set the Media Selector to vellum (tracing) on the deck, now 4 sub types (type #X) of vellum (tracing paper) become selectable.



5. Click on **OK**.



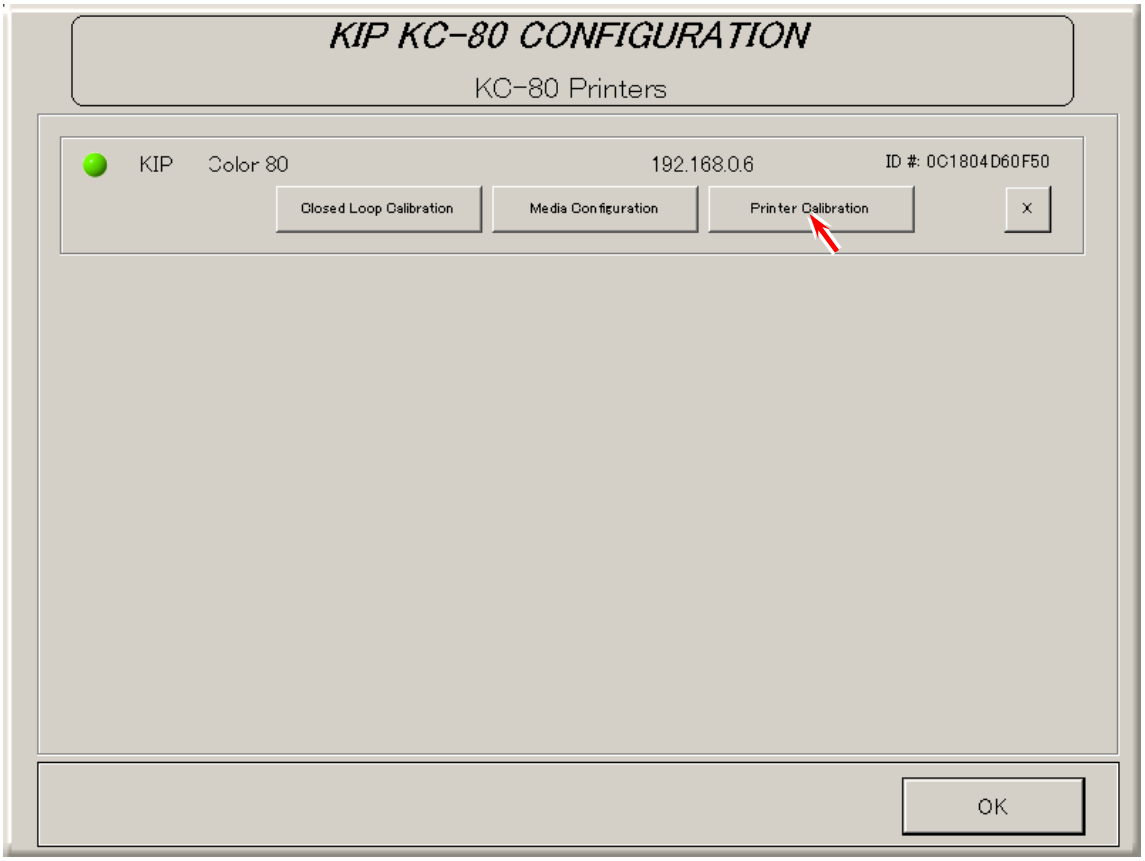
6. Click on the **?** icon.



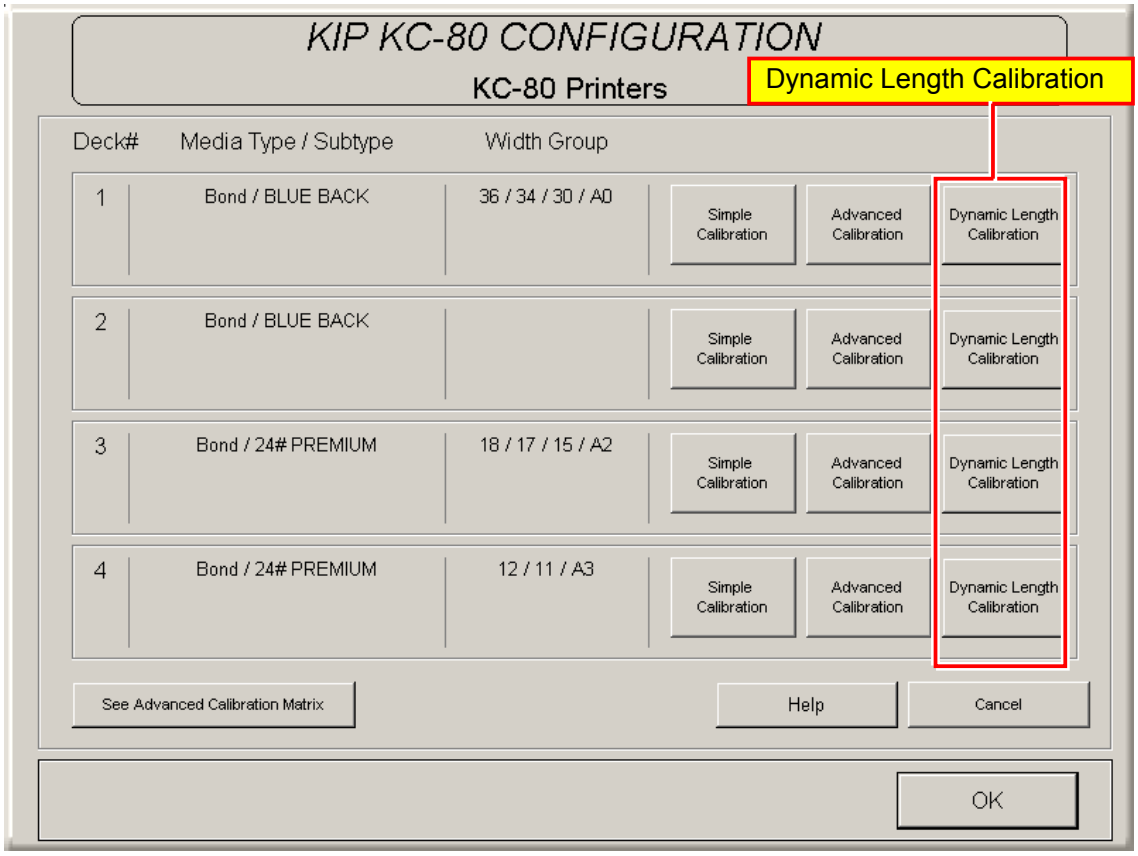
7. Click on **KC80 Config**.



8. Click on **Printer Calibration**.

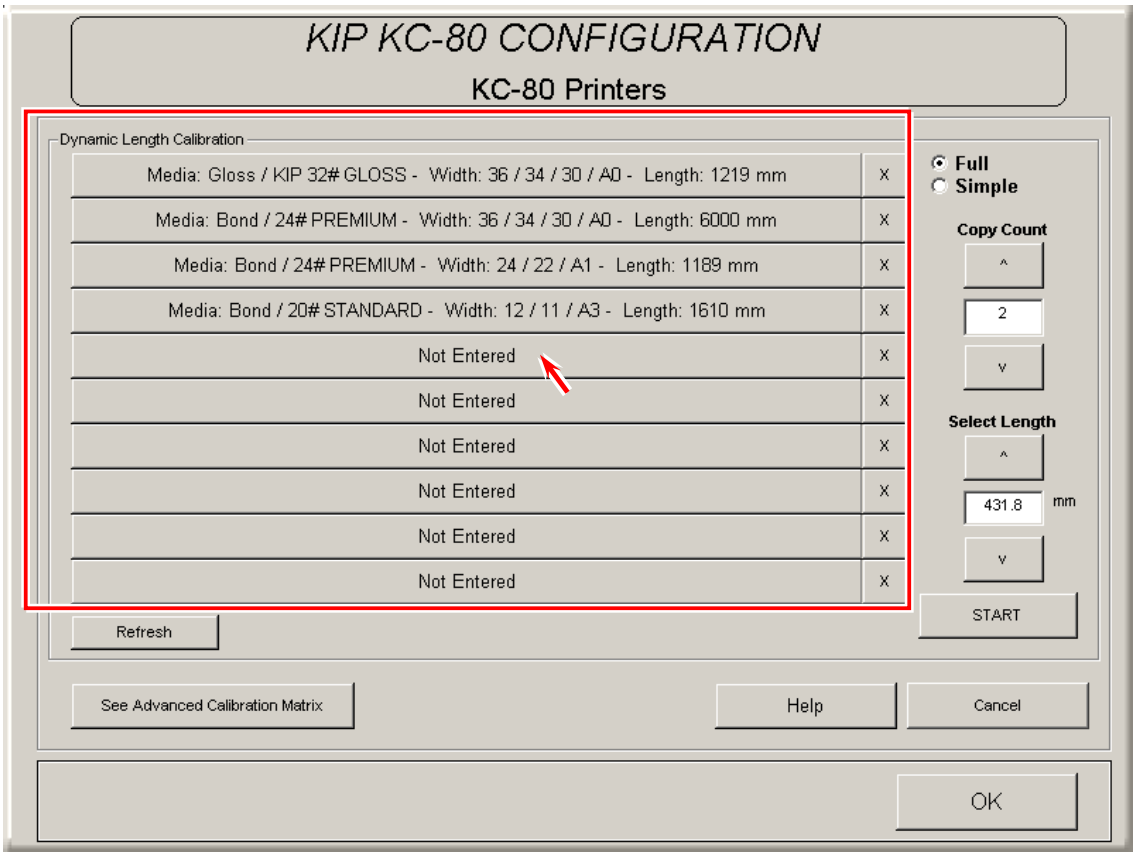


9. Click on Dynamic Length Calibration of concerning deck.



10. The following page lists currently available Dynamic Length Calibration Data. There are 10 data box to save Dynamic Length Calibration Data. If data box already has any Dynamic Length Calibration Data, its target condition (media, media name, width & length) is shown. And “Not Entered” is shown if the data box is empty.

    Choose any data box that is showing **Not Entered**.



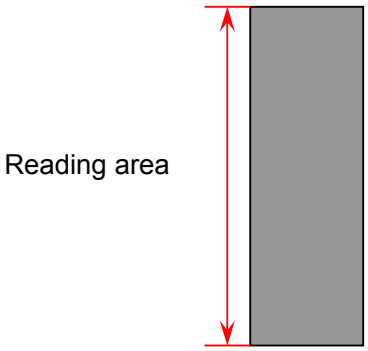
NOTE

(1) If the data box which already has Dynamic Length Calibration Data is selected, current data will be over-written by the new data.

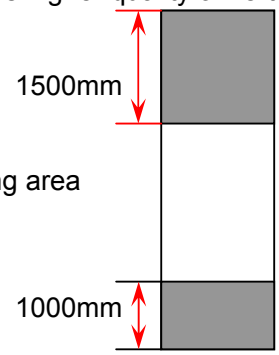
(2) Click on **Refresh** to indicate the latest information.

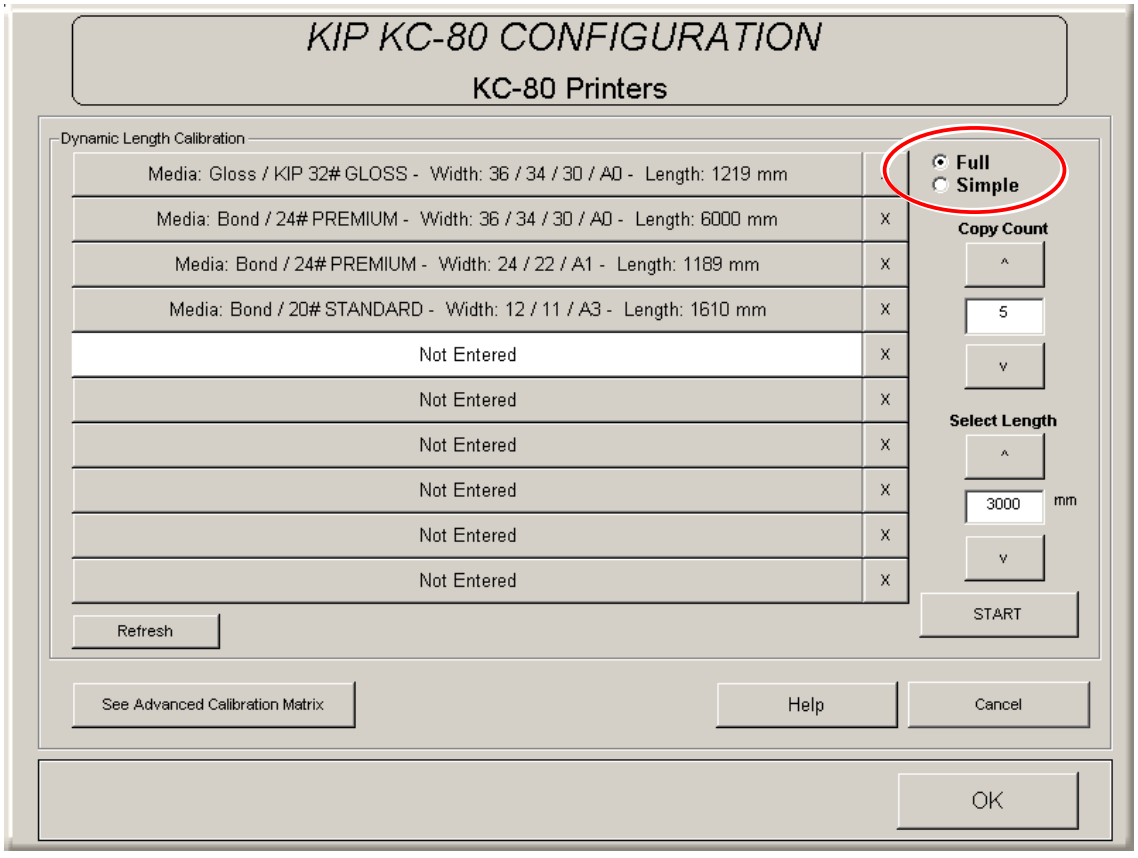
11. Choose either Full or Simple according to the necessity.

- Full ..... Color Sensor reads full length of calibration pattern during Sampling Mode to realize the alignment of 4 clolos at every vertical point. This achieves the highest quality of vertical color registration.

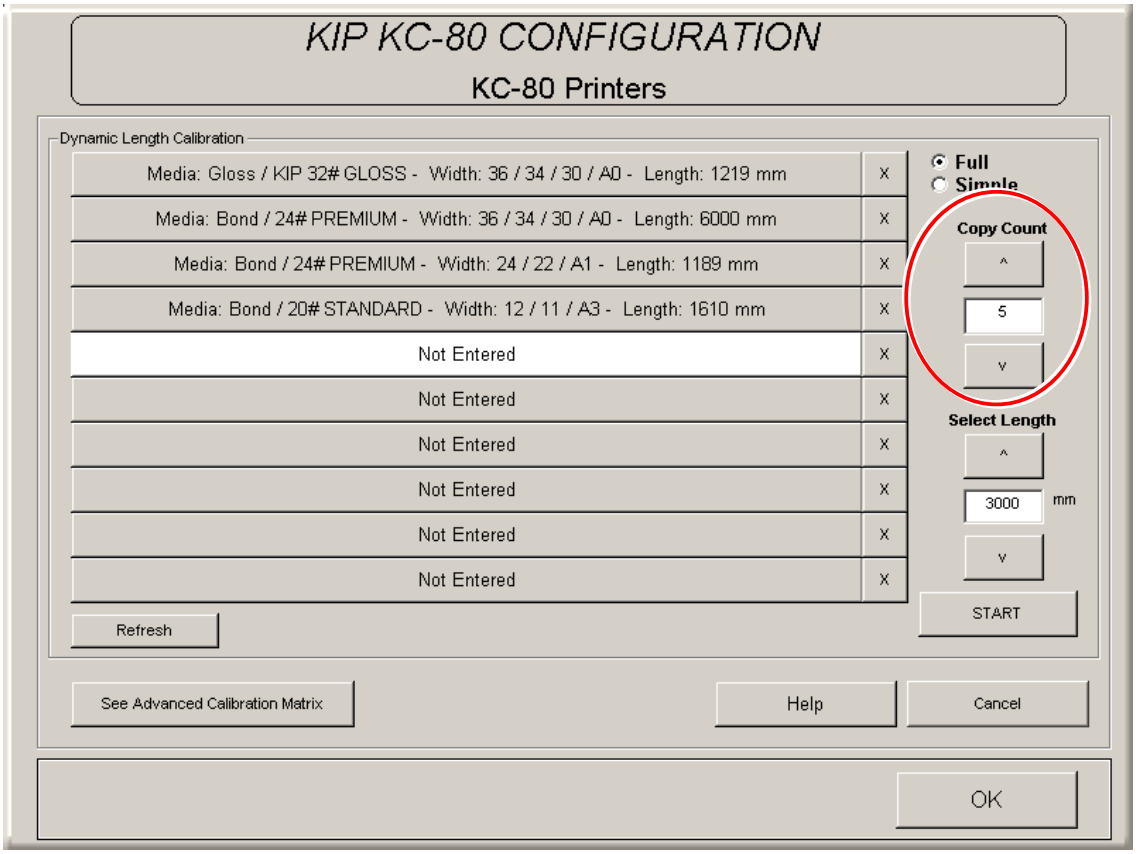


- Simple ..... Color Sensor reads the leading are (1500mm from LE) and trailing area (1000mm from TE) of the calibration pattern during Sampling Mode. This achieves higher quality of vertical color registration.

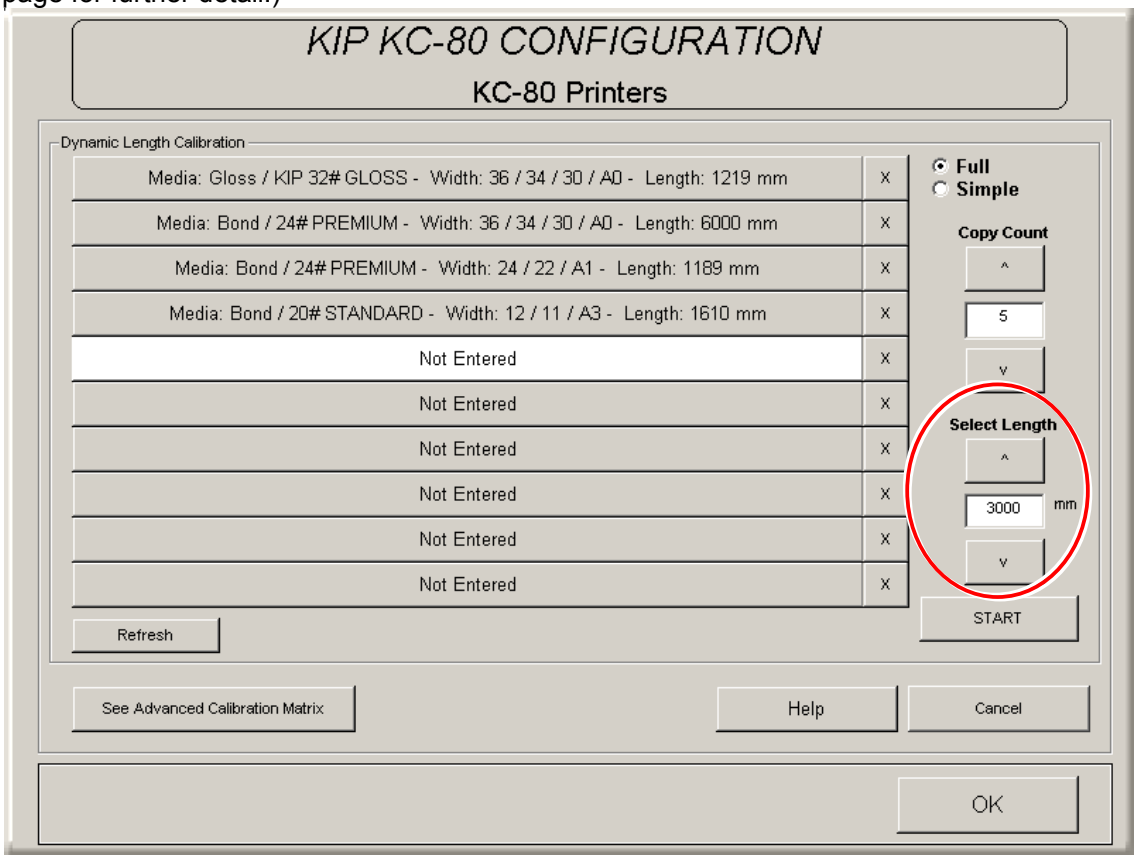




12. **Copy Count** specifies the number of times to print the calibration pattern. More copy count will lead to more accurate Dynamic Length Calibration Data.



13. **Select Length** specifies the target print length which the Dynamic Length Calibration Data is directly applied to. (This also specifies the applicable length range. See NOTE on the next page for further detail.)



⚠ NOTE : Applicable length range of Dynamic Length Calibration Data

The applicable length range of a Dynamic Length Calibration is decided by 2 factors such as **length group** and **tolerance**.

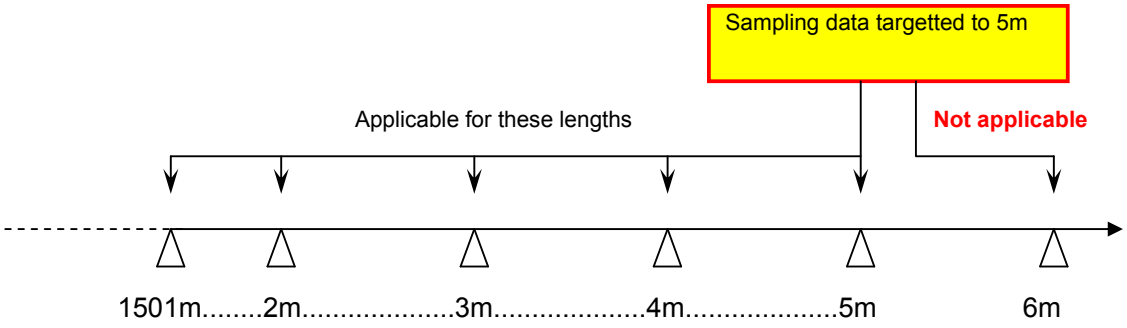
Tolerance

Dynamic Length Calibration divides the available print length of KC80 into 7 length groups as follows.

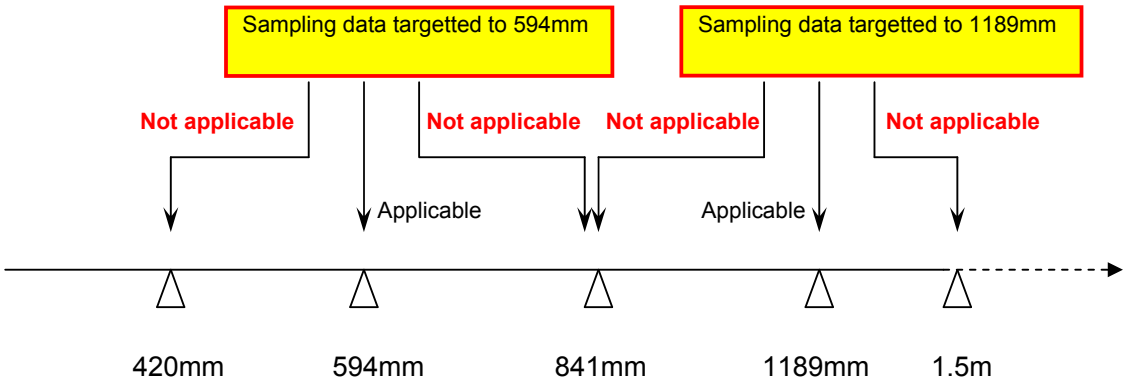
- Length group 1 : 1500mm or shorter
- Length group 2 : 1501 to 8000mm
- Length group 3 : 8001 to 16000mm
- Length group 4 : 16001 to 24000mm
- Length group 5 : 24001 to 32000mm
- Length group 6 : 32001 to 40000mm
- Length group 7 : 40001 to 45000mm

Whether the print length is longer then 1500mm or not decides the applicable range of a Dynamic Length Calibration

(1) **When 1501mm or longer (length groups 2 to 7),** a Dynamic Length Calibration Data that is directly targeting to certain target length Xmm is applied to the target length itself as well as to all other print lengths that are shorter then Xmm and belong to the same length group. For example, a Dynamic Length Calibration Data for “5000mm”, which belongs to the length group 2 (1500 to 8000mm), is applied to 5000mm as well as all other print lengths between 1501 to 5000mm (so far as “tolerance” does not concern).



(2) **When 1500mm or shorter (length group 1)**, a Dynamic Length Calibration Data that is directly targeting to certain target length Xmm is applied to only this target length. For example, if there is a Dynamic Length Calibration Data targeting to “1189mm” that belongs to length group 1, this data is applied only to 1189mm (so far as “tolerance” does not concern).



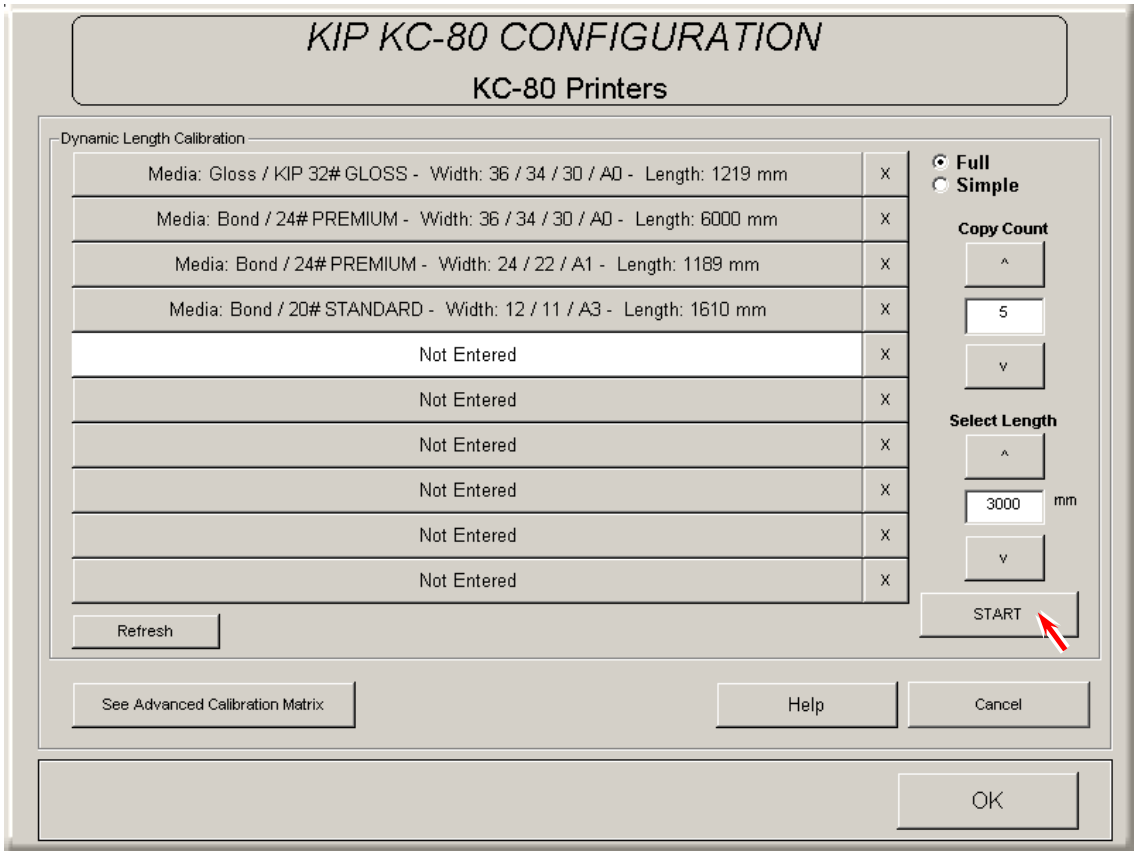
(Continues to next page)

⚠ NOTE

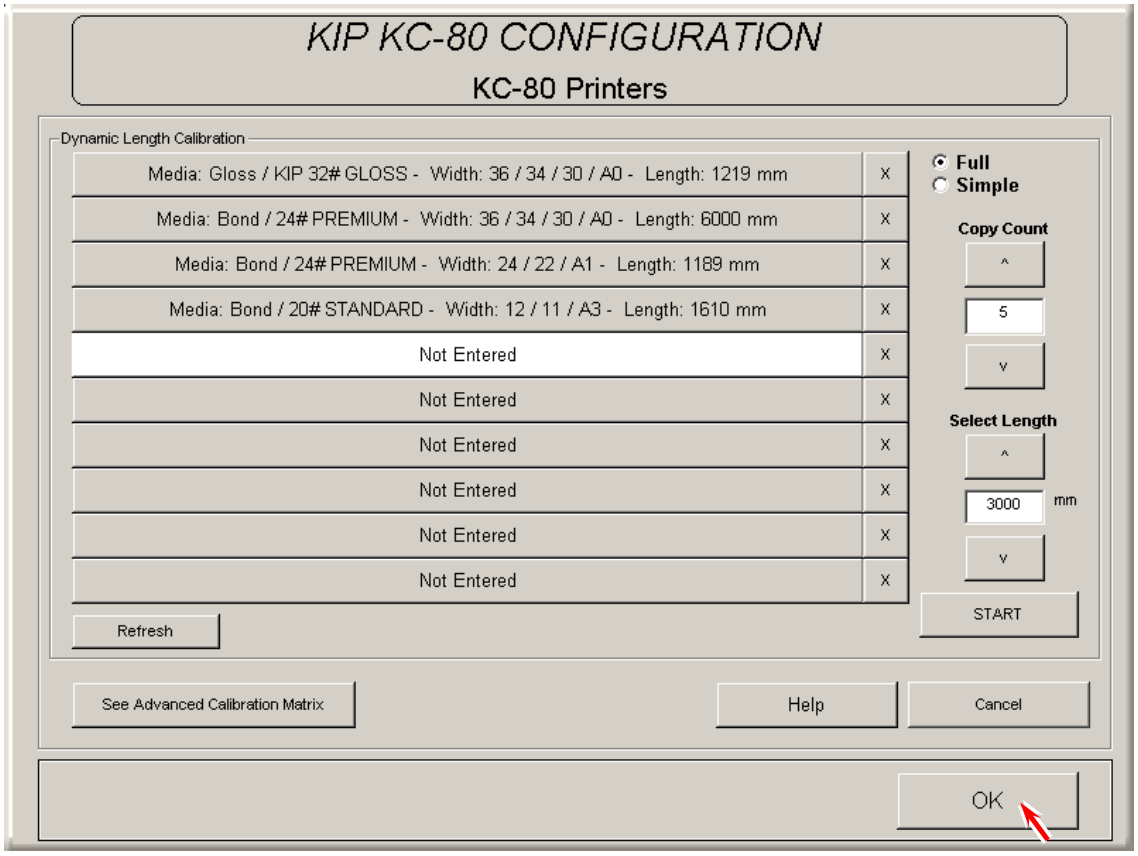
Tolerance
Tolerance expands the applicable length range of a Dynamic Length Calibration Data, which can be specified per length group. If there is Dynamic Length Calibration Data targeting to 3000mm that belongs to the length group1, and if tolerance for length group 1is set to 30mm, this data can be applied to any length between 2970 to 3030mm (3000 +/-30mm).

Note that tolerance can be changed in the service mode of KIPDiagColor. See later section [C. Tolerance].

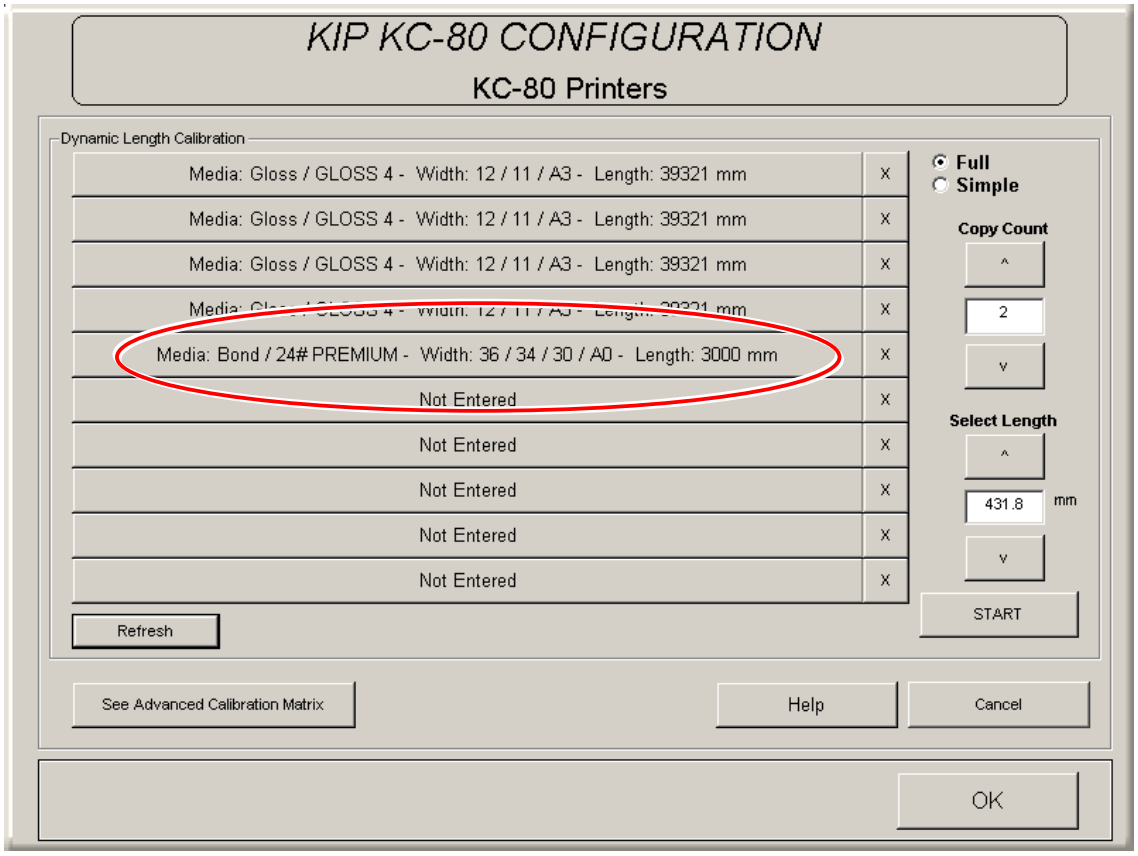
14. Click on **START** to start the data sampling mode. KC80 printer will take printing of calibration pattern according to your settings.



15. Click on OK when the data sampling mode finishes.

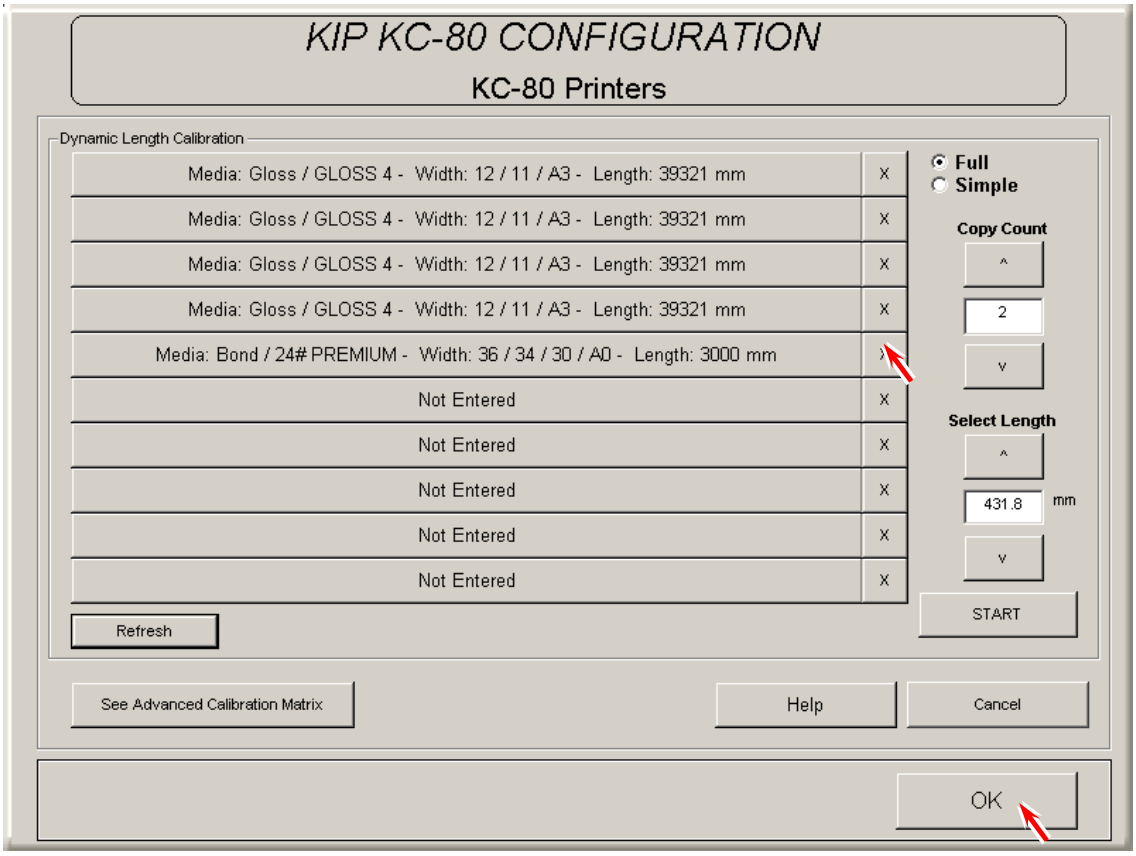


16. If you open the same page again, a Dynamic Length Calibration Data for new target will be listed.



NOTE

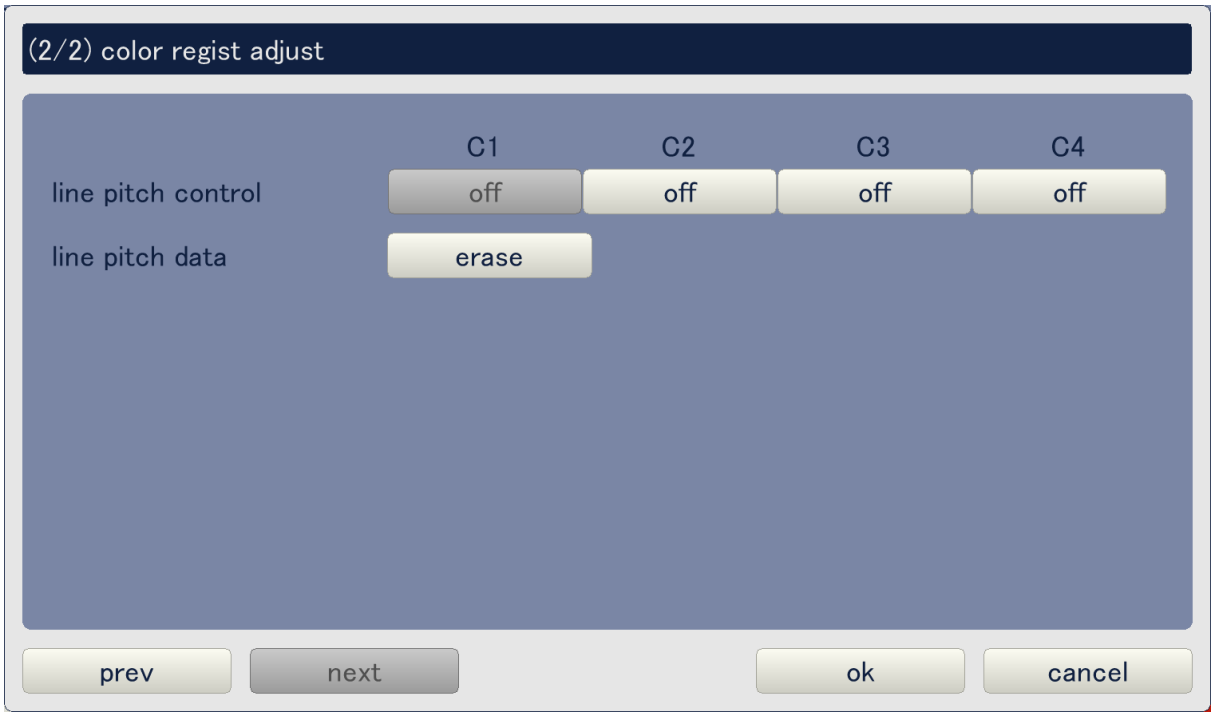
For deleting a Dynamic Length Calibration Data, click on X icon of concerning data then click on OK.



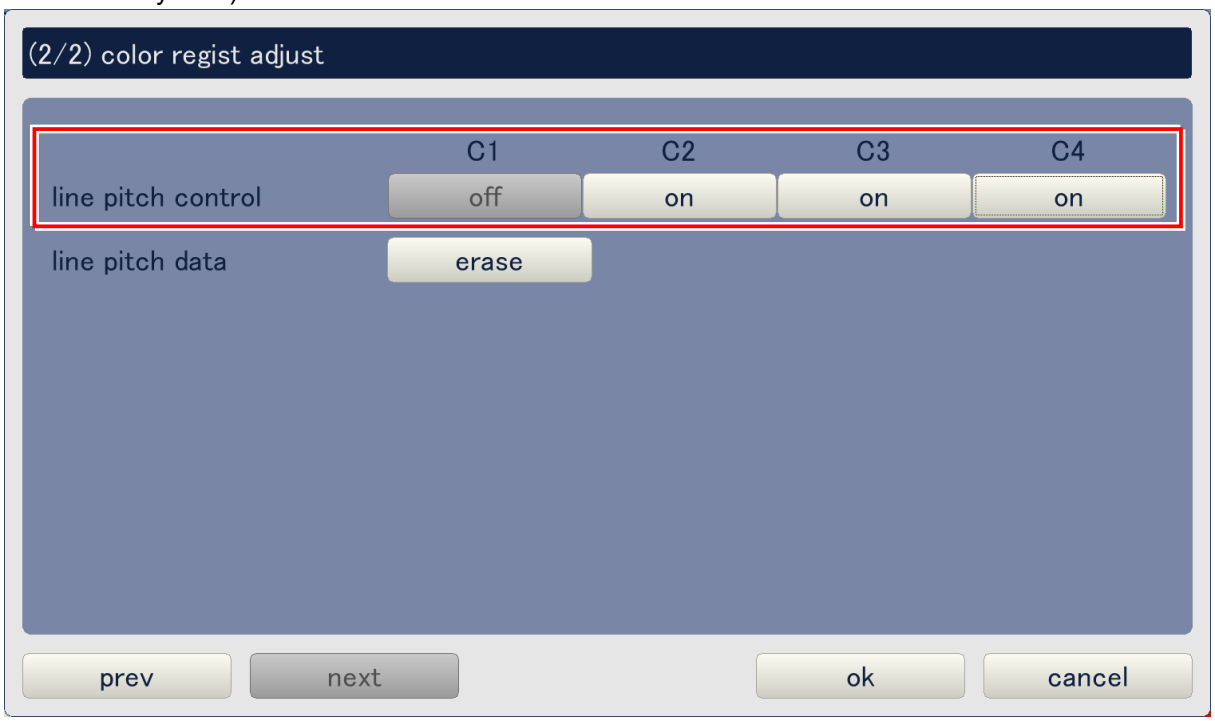
B. Enable Dynamic Length Calibration

Do as follows for enabling the Dynamic Length Calibration. When any print data of which print length is within the applicable length range of any Dynamic Length Calibration Data, this data will be applied to achieve the highest quality of vertical color registration.

1. Run the KIPDiagColor on the KC80 IPS, and access the following page by;
   - Click on **user mode** on the main screen of KIPDiagColor.
   - Choose **color regist adjust** in the user mode menu.
   - Open the 2nd page (2/2) using **next** button.



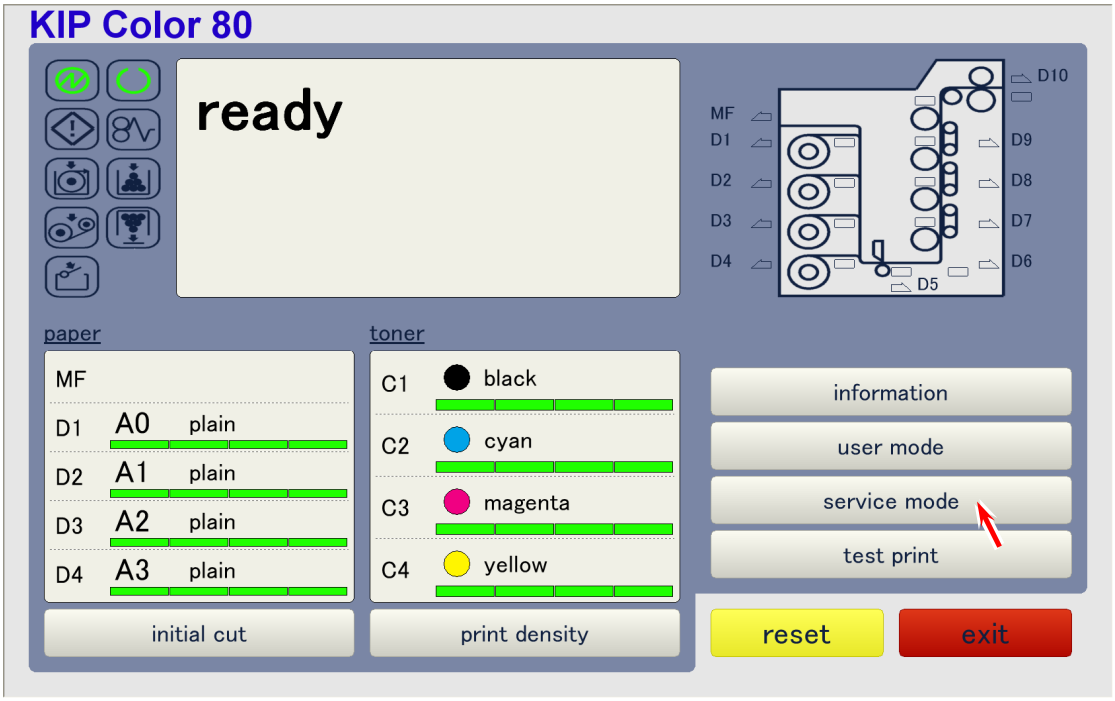
2. Dynamic Length Calibration is enabled per color (C, M & Y). Set **line pitch control** to “on” for enabling Dynamic Length Calibration, and set it to off for disabling. (As Black is the reference, it is always off.)



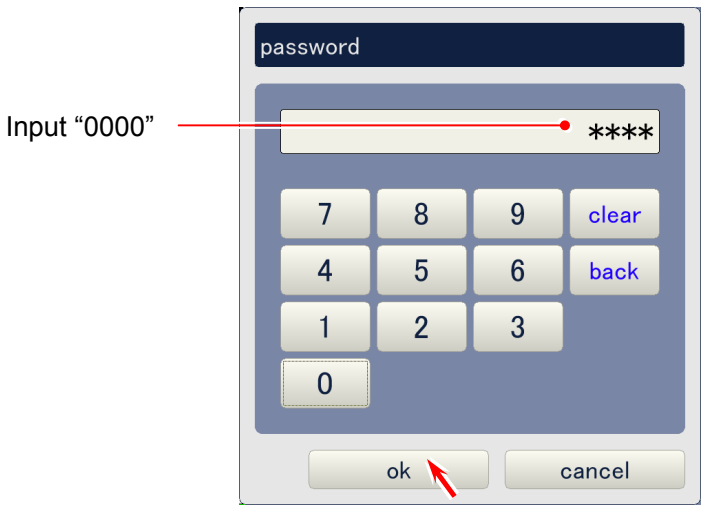
C. Tolerance

Tolerance expands the applicable length range of a Dynamic Length Calibration Data, which can be specified per length group. If there is Dynamic Length Calibration Data targeting to 3000mm that belongs to the length group1, and if tolerance for length group 1is set to 30mm, this data can be applied to any length between 2970 to 3030mm (3000 +/-30mm).

1. Click on **service mode** on the Main Screen



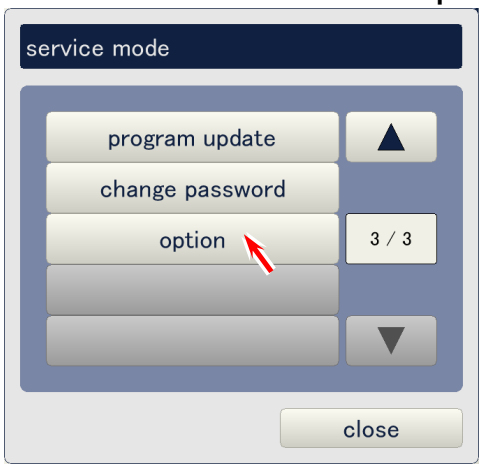
2. Input **0000** (or any custom password you specified) when password entry is required, and click on **ok**. You will enter the **normal service mode**.



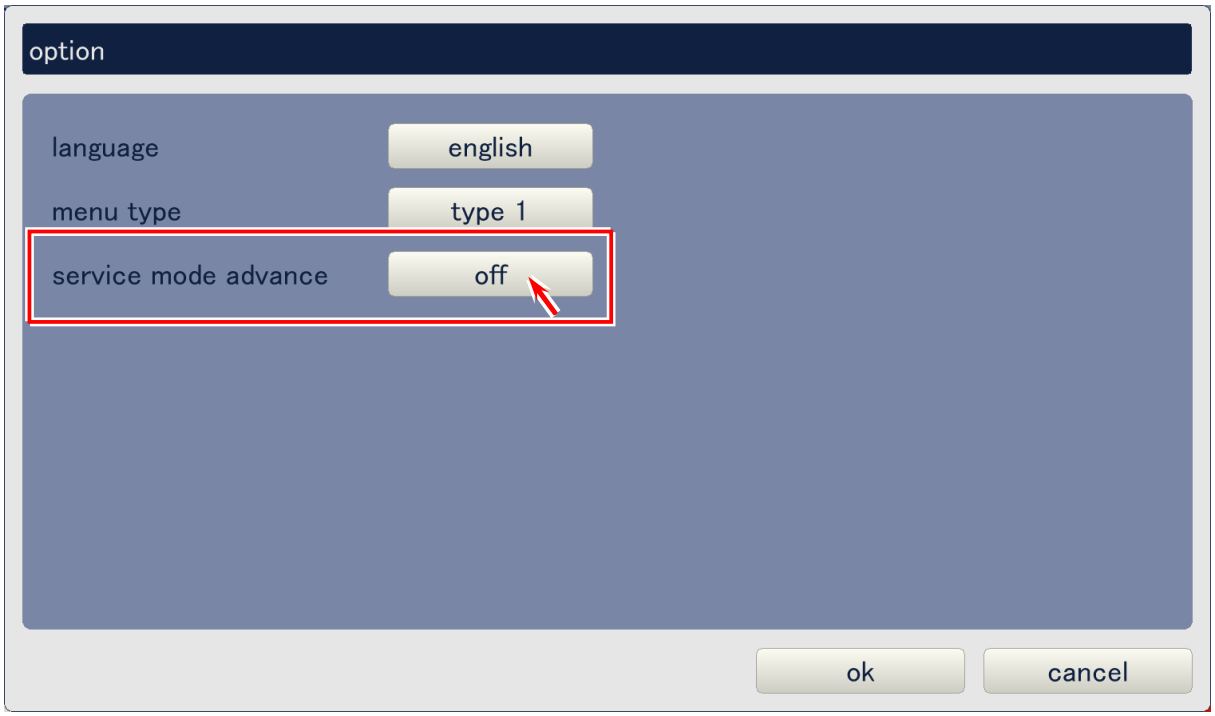
NOTE

You will enter the normal service mode whenever you enter the service mode for the first time after running the KIPDiagColor.

3. Access the 3/3 page of the service mode menu and choose **option**.



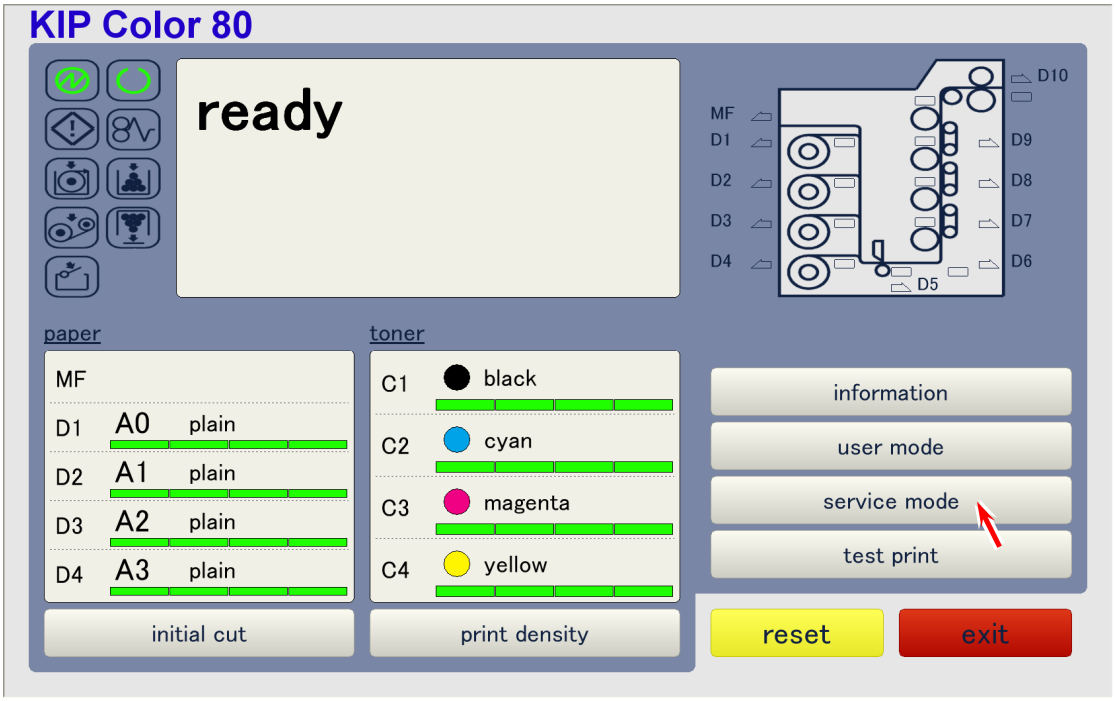
4. **Service mode advance** is set to off (normal service mode) under the default. For setting it to the advanced service mode, click on its setting button.



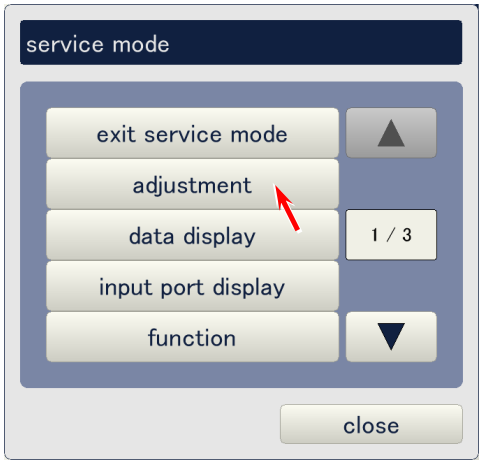
5. Choose **on** in the following dialog to set to the advance service mode.



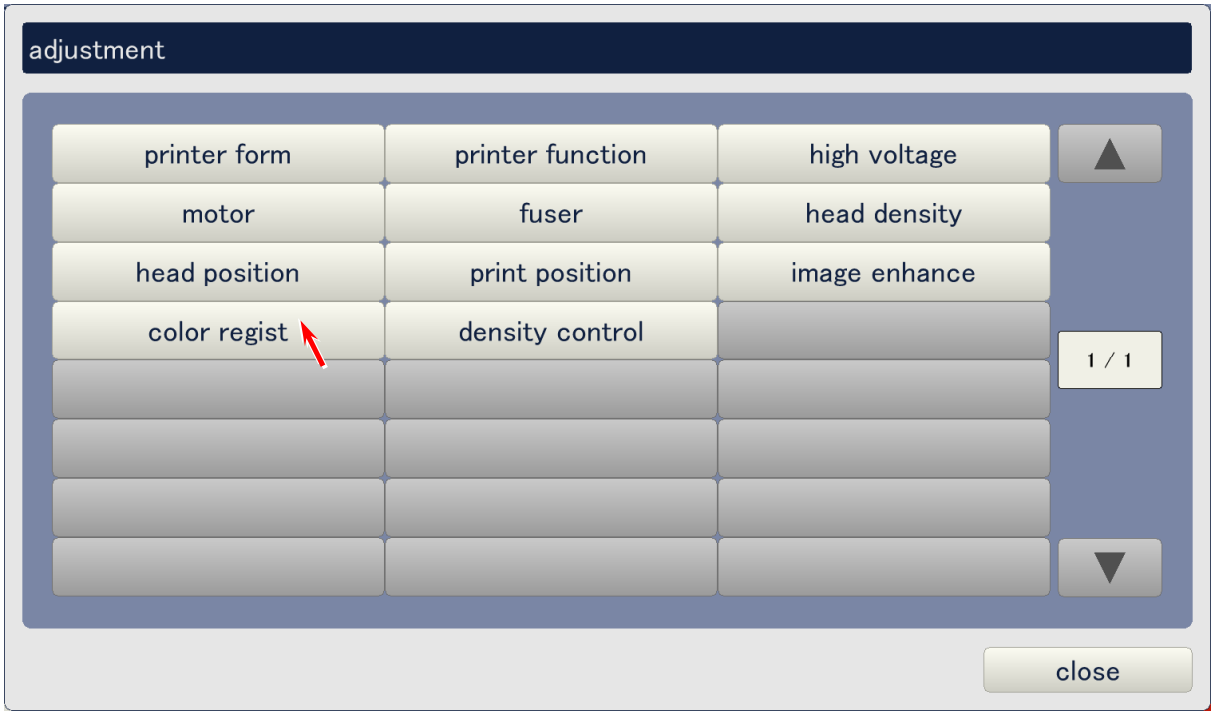
6. Click on **service mode** on the Main Screen



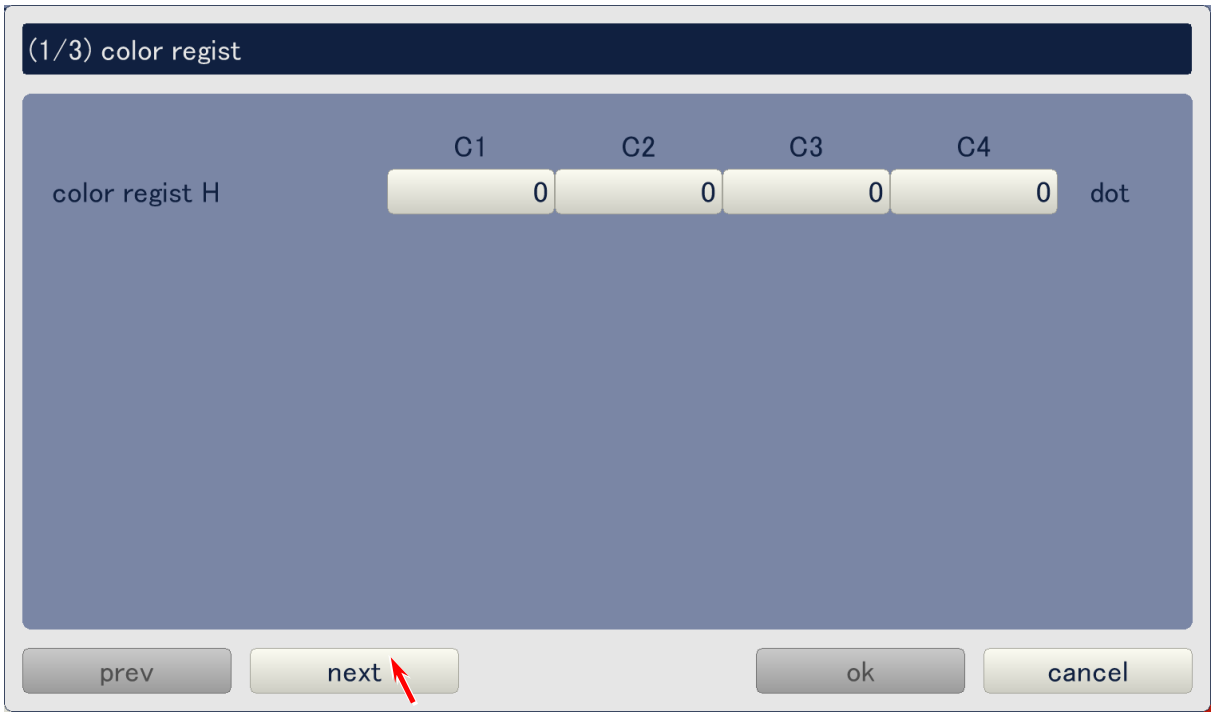
7. Choose **adjustment** in the service mode menu.



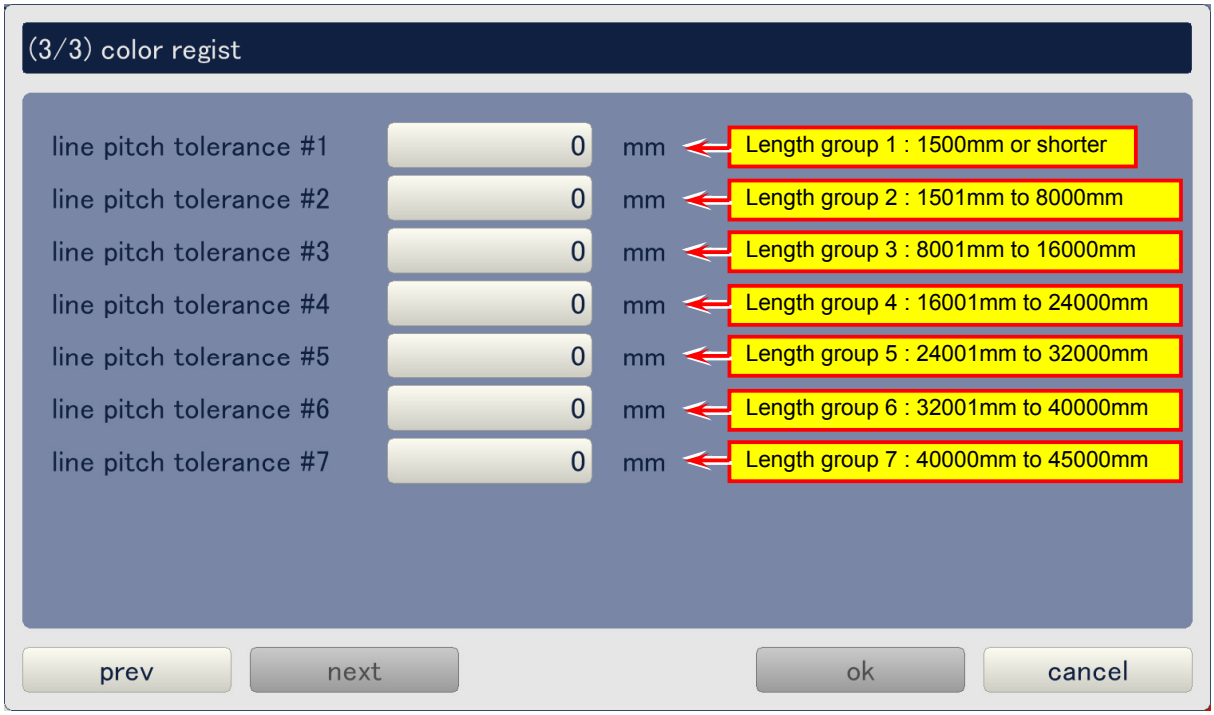
8. Choose **color regist** in the adjustment mode menu.

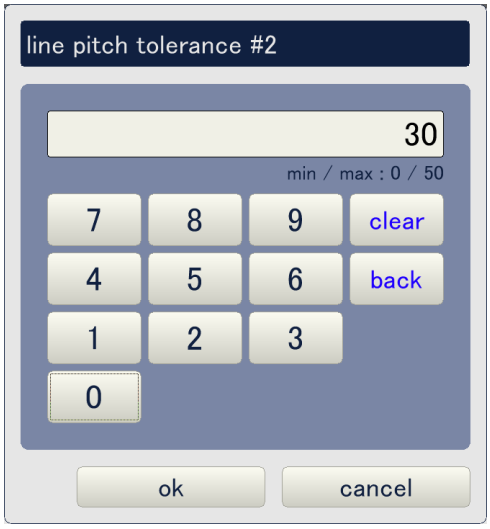


9. Click on next twice to open the 3/3 page.



10. Tolerance can be specified per length group. Click on the button, input the required value in the pop up window, and click on ok. The setting range is 0 to 50mm.





10. 4 Calibration Required after Replacing the LED Head

The following calibrations are required after replacing the LED Head.

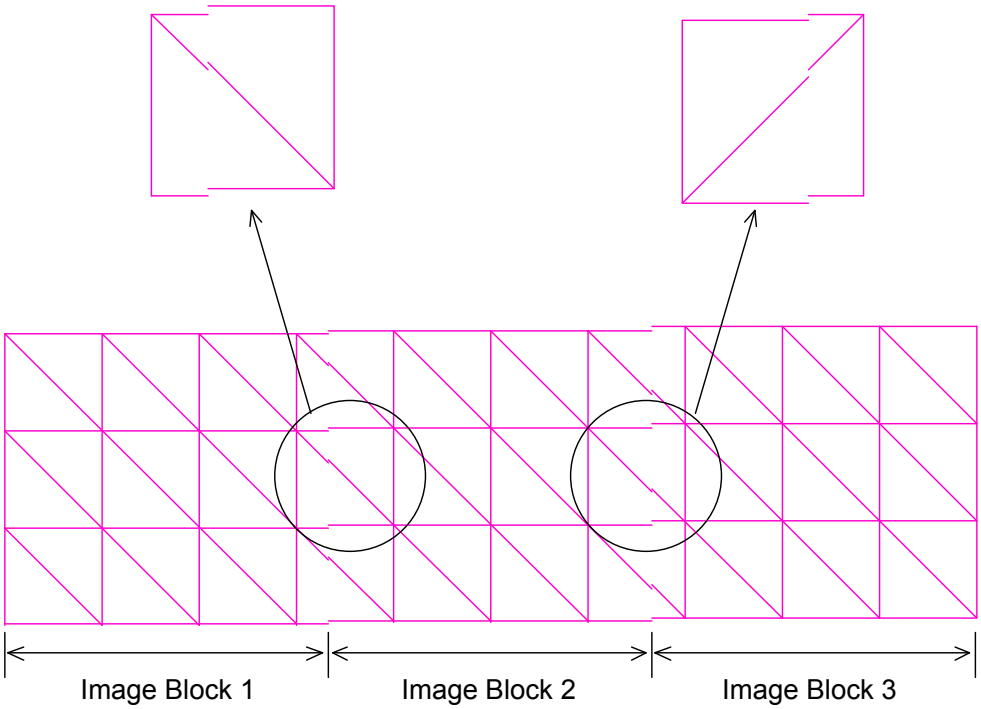
- Vertical stitching of image block
- Horizontal arrangement of image block
- Correction of skew of image block
- Horizontal Color Registration
- Vertical Color Registration by “simple” calibration

10. 4. 1 Vertical stitching of image block

> **⚠ NOTE**
>
> It is impossible to get a correct Vertical Color Registration if the vertical stitching is not correctly adjusted.

1. Print out the Test Pattern No.18 by each single color with 36” wide x 18” long, and check the horizontal lines carefully to find if there is any vertical gap between Image Blocks 1 & 2 and between Image Blocks 2 & 3. The acceptable gap is **smaller than 42 micrometer**. The vertical stitching needs to be adjusted if it is wider than 42 micrometer.

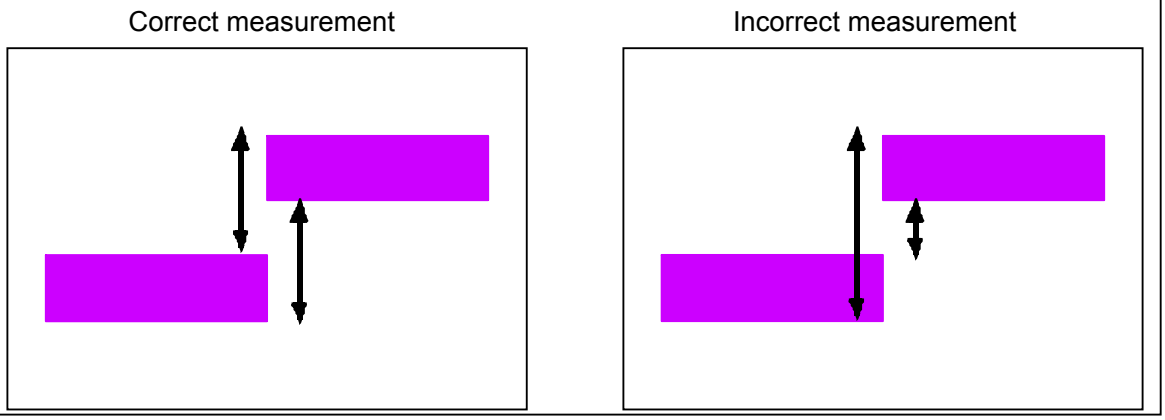
    - If the gap is smaller than 42 micrometer, go to [10.4.2 Horizontal arrangement of image block] on page 10-29.
    - If the gap is larger than 42 micrometer, adjust the vertical stitching as instructed on and after next page.



2. Measure the actual vertical gap with a microscope.

NOTE

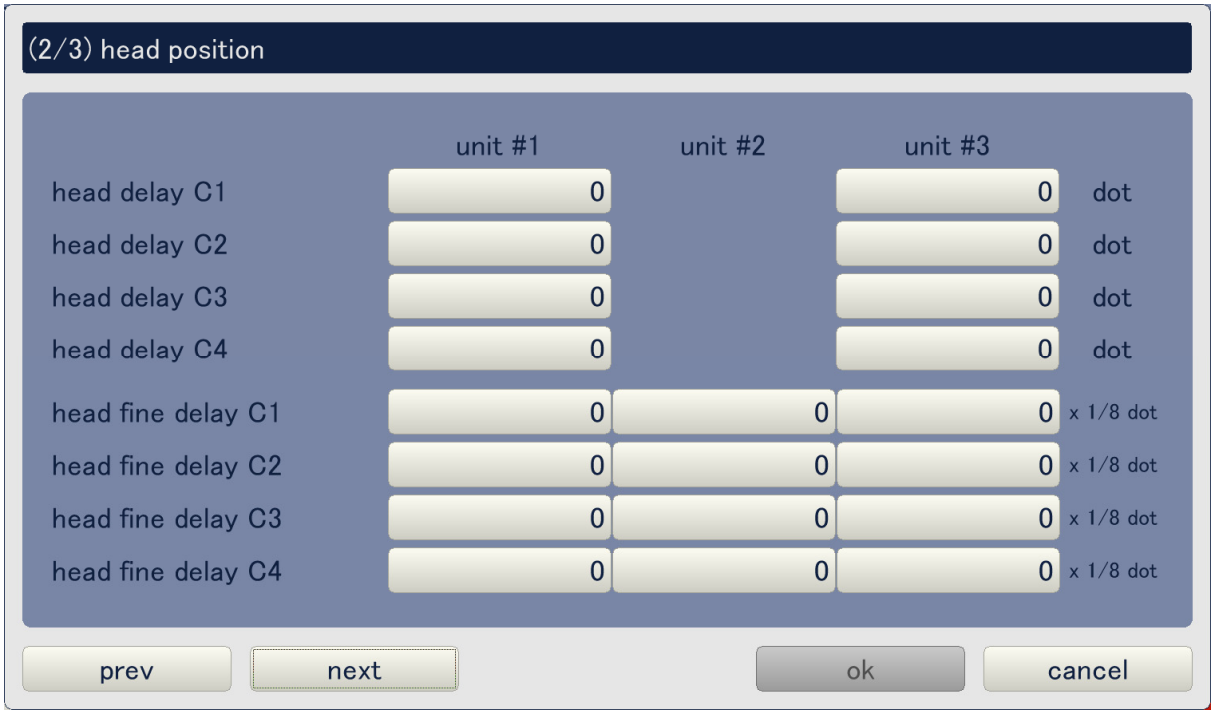
Measure between the upper edges of both lines, or measure both lower edges of them for correct measurement.



3. Using the following formula, calculate how much pixels the target image block should be shifted.
   Vertical gap (mm) / 25.4 x 600 = Required shifting value

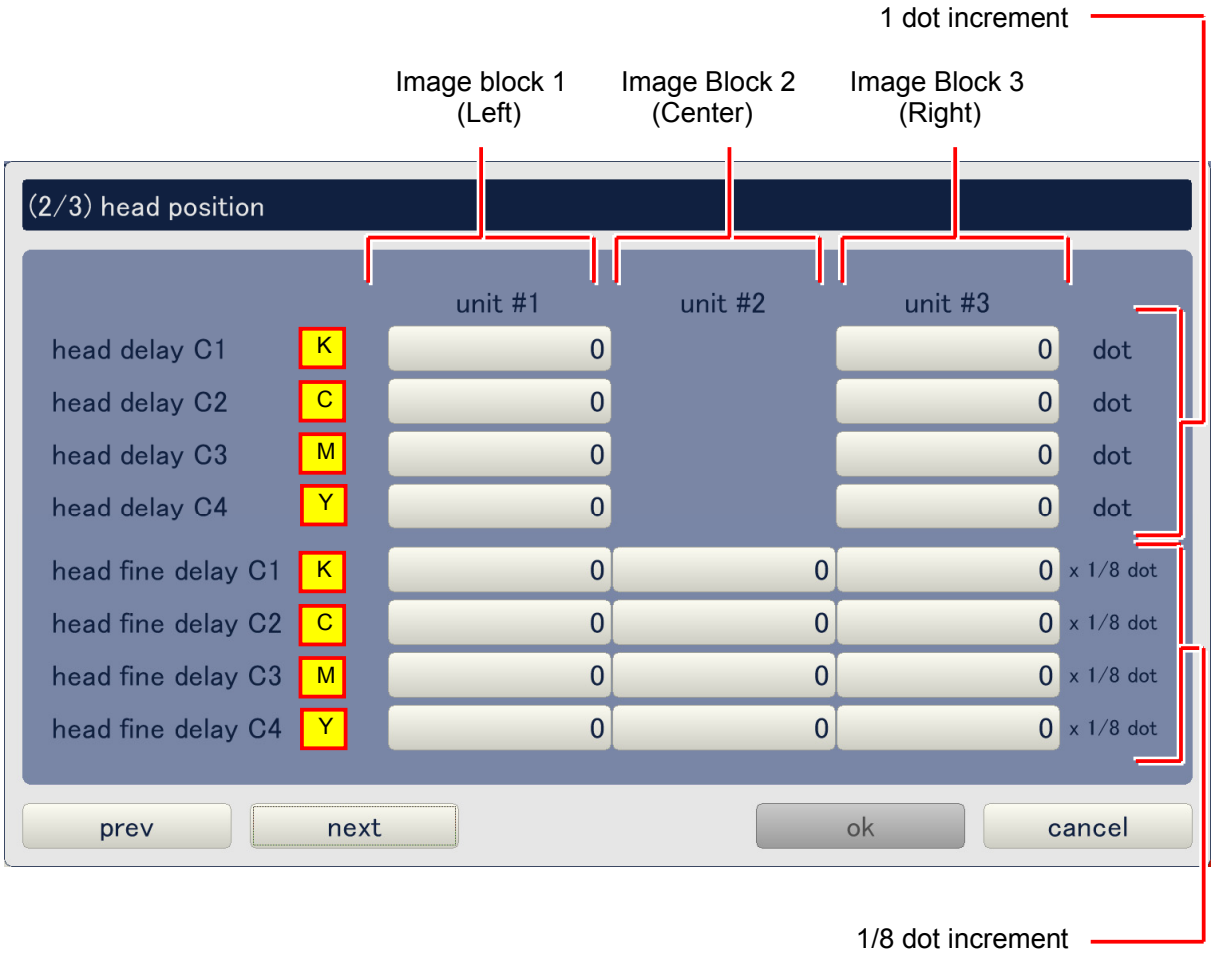
   (Example)
   If there is 0.3mm of vertical gap, the necessary value is calculated as;
   0.3 (mm) / 25.4 x 600 = 7.08
   In this case the target image block needs to be shifted 7 pixels (up or down).

4. Run the KipDiagColor on the KC80 IPS, and access the following page by;
   - Click on **service mode** on the main screen of KipDiagColor.
   - Input the service password. (Password is **0000** in default.)
   - Choose **adjustment** in the service mode menu.
   - Choose **head position** in the adjustment mode menu.
   - Open the 2/3 page using **next** icon.



5. Vertical stitching can be adjusted in the following page.
    - **unit #X** stands for the Image Block. #1 is the left block, #2 is the central one, and #3 is the right one.
    - **head delay (C1 to C4)** is the standard adjustment of vertical stitching by 1 dot increment, and **head fine delay (C1 to C4)** is the fine adjustment by 1/8 dot increment.
        C1 : Black
        C2 : Cyan
        C3 : Magenta
        C4 : Yellow

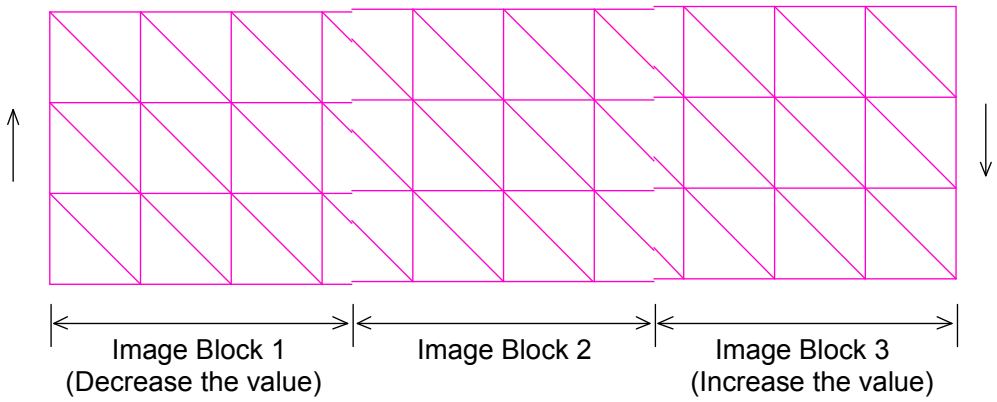
    To change the value, click on the button considering “color” and “image block”, input the necessary value in the pop up dialog, and click on OK. **Increment of the value moves the concerning image block to the trailing edge side.**



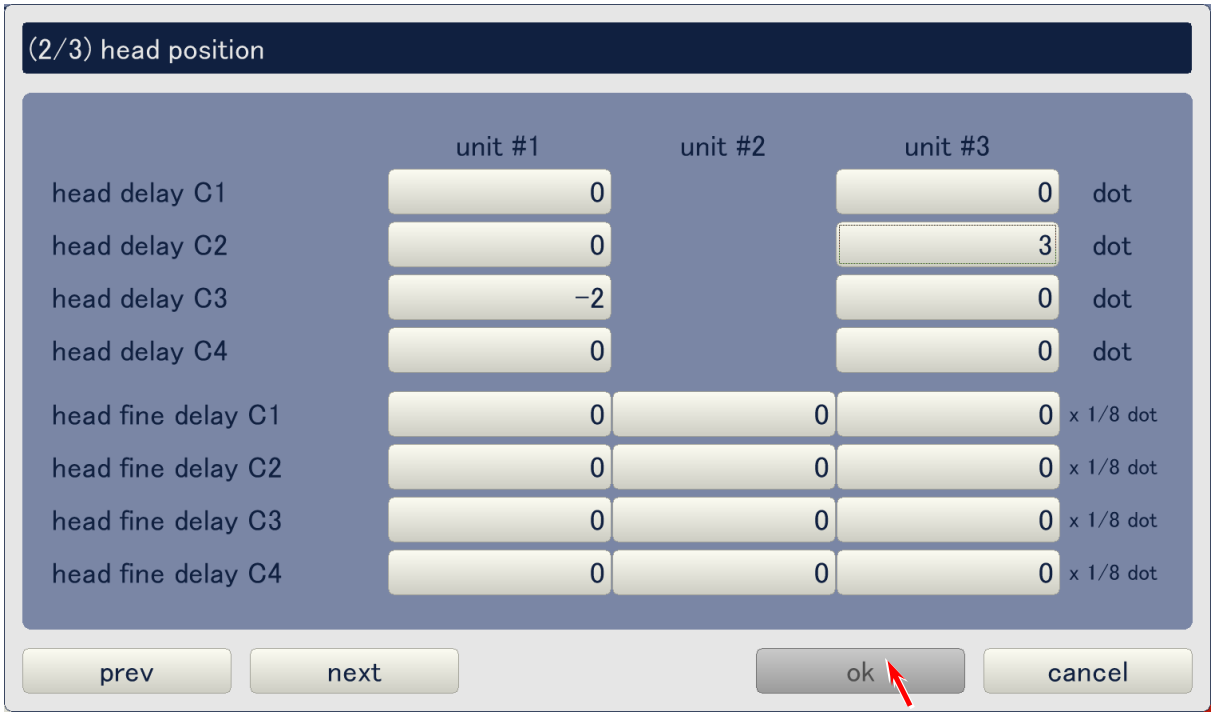
NOTE

Central block (unit #2) is the reference block for left and right blocks. Therefore, standard adjustment is not available.

(Example)
In case of the following example, decrease the value for “C3, unit #1” (Image Block 1 of magenta) to move this block to the leading edge side, and increase the value for “C3, unit #3” (Image Block 3 of magenta) to move this block to the trailing edge side.



6. Click on **ok** to complete the adjustment.



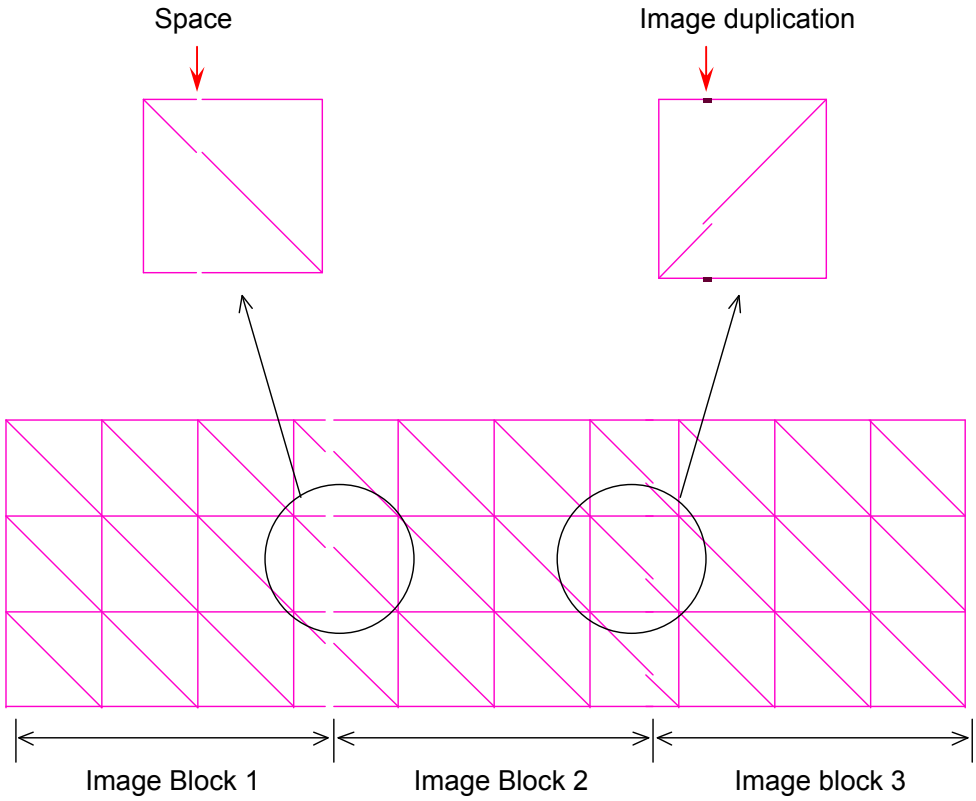
7. When vertical stitching has been adjusted correctly, go to the next section [10.4.2 Horizontal arrangement] on next page.

10. 4. 2 Horizontal arrangement of image block

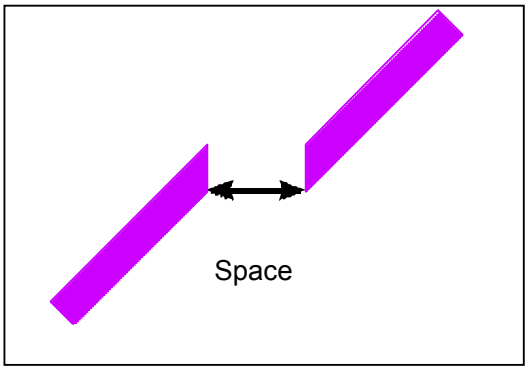
> **NOTE**
>
> It is impossible to get a correct Horizontal Color Registration if the horizontal arrangement is not correctly adjusted.

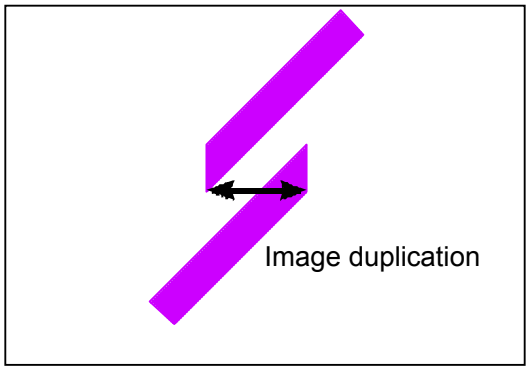
1. Print out the Test Pattern No.18 by each single color with 36” wide x 18” long, and check if there is “space” or “image duplication” on the border of neighboring 2 Image Blocks.

    - If there is no “space” or “image duplication” on the border, go to [10.4.3 Correction of skew of image block] on page 10-33.
    - If either “space” or “image duplication” can be found, adjust the horizontal arrangement as instructed on and after next page.



2. Measure the actual “space” or “image duplication” with a microscope.



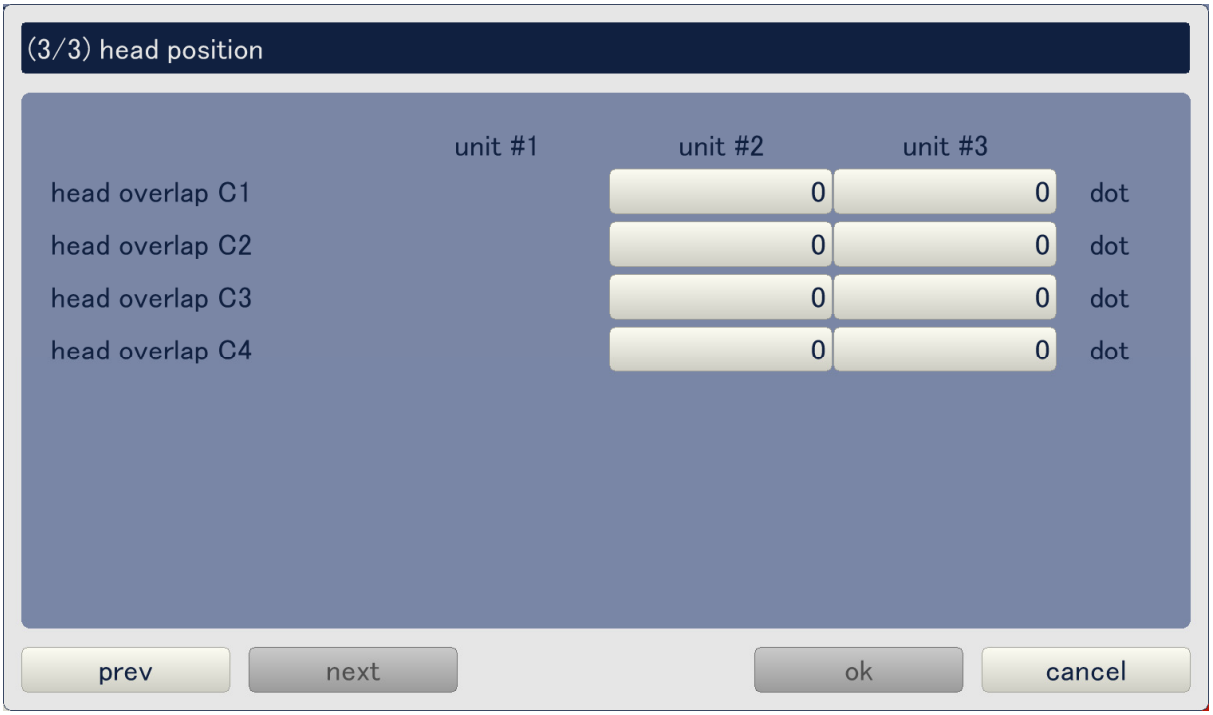


3. Calculate how much pixel the target image block should be shifted using the following formula.
   "Space" or "image duplication" (mm) / 25.4 x 600 = Required shifting value

   (Example)
   If there is 0.3mm of "space" or "image duplication", the necessary value is calculated as;
   0.3 (mm) / 25.4 x 600 = 7.08

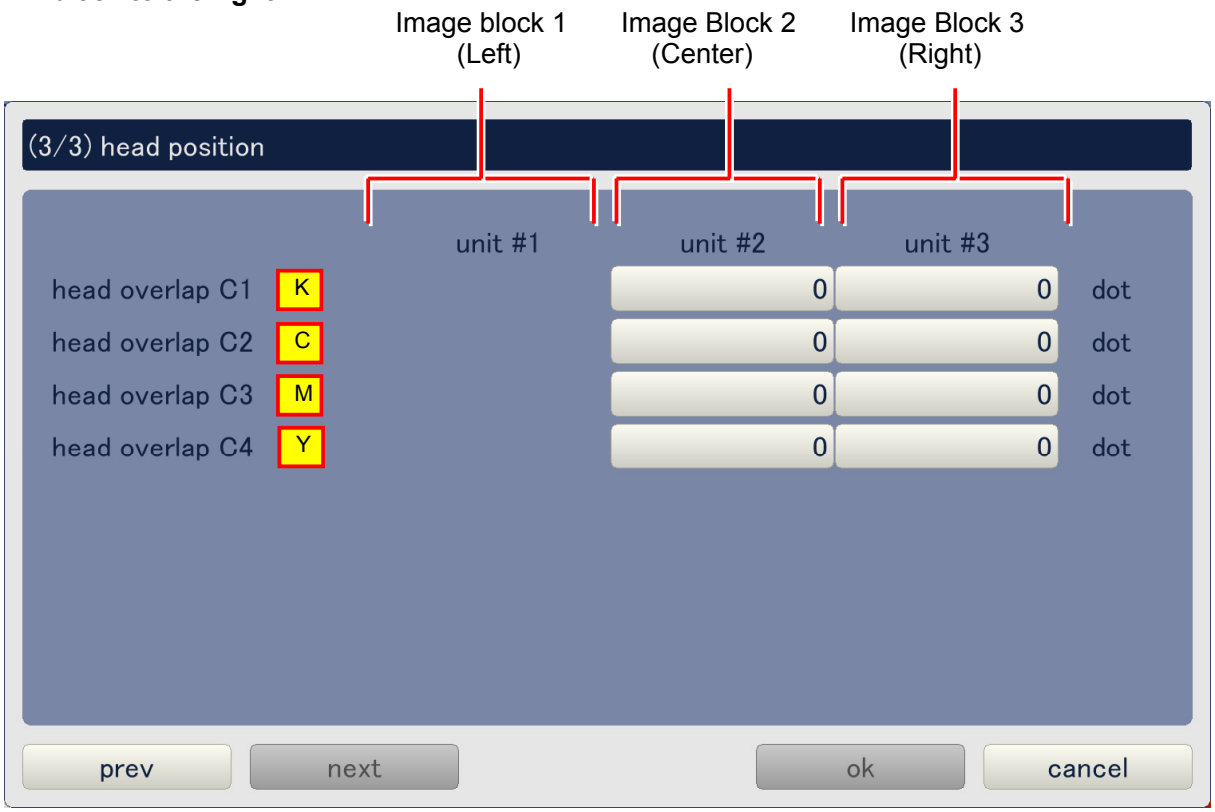
   In this case the target image block needs to be shifted 7 pixels (left or right).

4. Run the KIPDiagColor on the KC80 IPS, and access the following page by;
   - Click on **service mode** on the main screen of KIPDiagColor.
   - Input the service password. (Password is **0000** in default.)
   - Choose **adjustment** in the service mode menu.
   - Choose **head position** in the adjustment mode menu.
   - Open the 3/3 page using **next** icon.



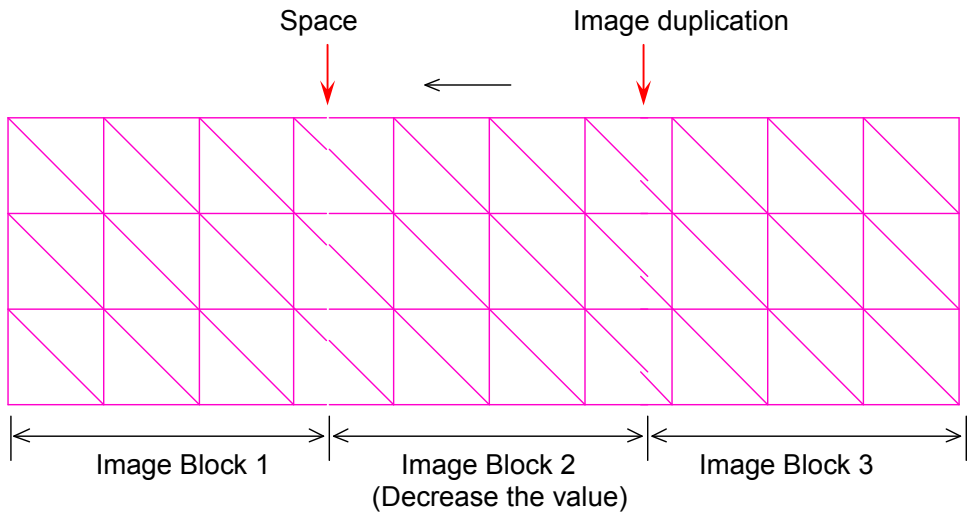
5. Horizontal arrangement can be adjusted by 1 dot increment in the following page.
   - **unit #X stands** for the Image Block. #1is the left block, #2 is the central one, and #3 is the right one. Left block (unit #1) can not be adjusted as it is the reference of adjustment.
   - **head overlap CX** stands for the color.
     C1 : Black
     C2 : Cyan
     C3 : Magenta
     C4 : Yellow

   To change the value, click on the button considering “color” and “image block”, input the value in the pop up dialog, and click on OK. **Increment of the value moves the concerning image block to the right.**

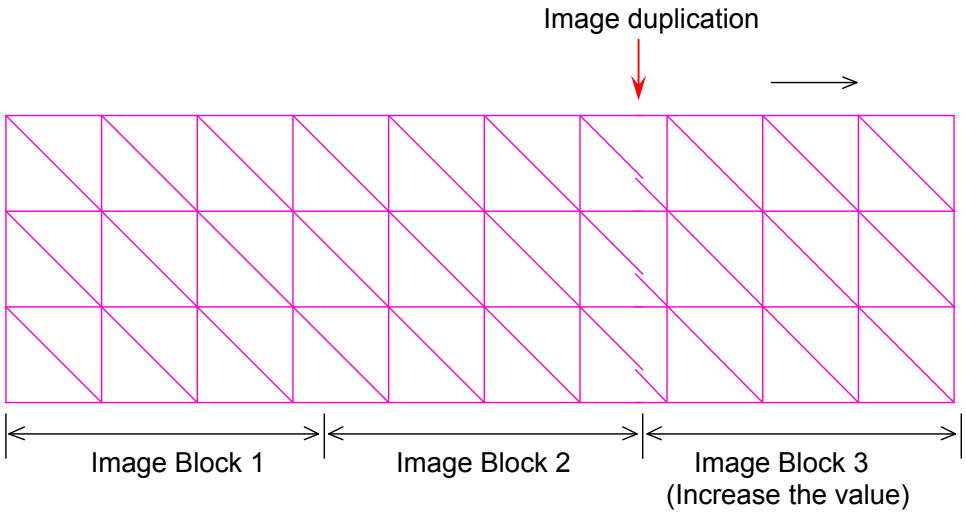


Adjust the central block first then the right block. In case of the following example;

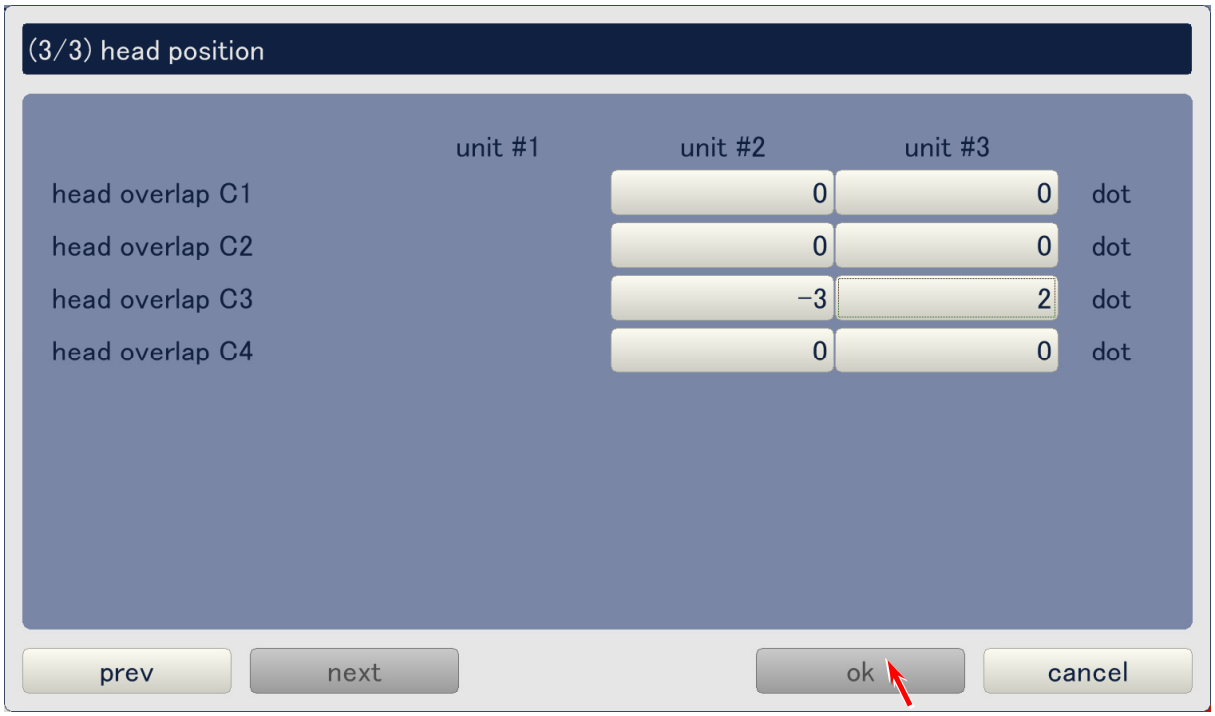
(1) Decrease the value for “C3, unit #2” (Image Block 2 of magenta) to fill the space between blocks 1 and 2 moving the block 2 to the left.



(2) Then increase the value for “C3, unit #3” (Image Block 3 of magenta) to get rid of the image duplication between blocks 2 and 3 moving the block 3 to the right.



6. Click on ok to complete the adjustment.



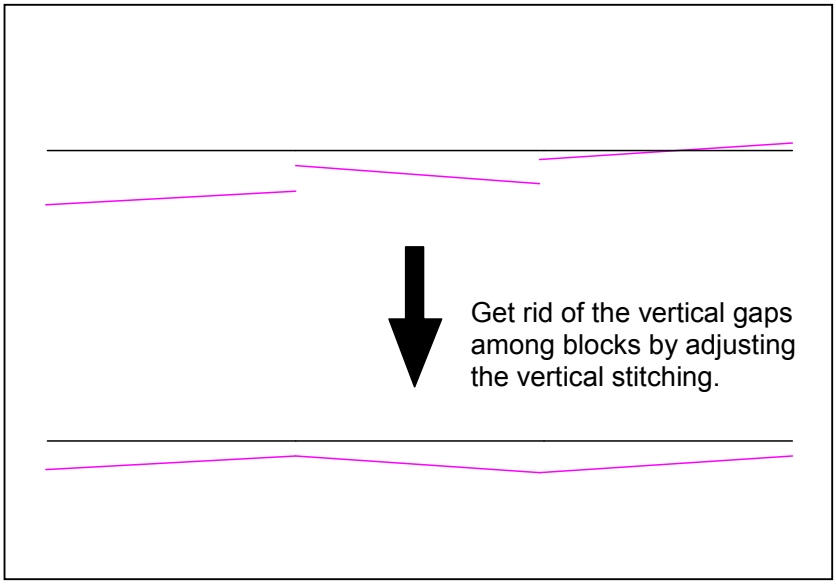
7. When horizontal arrangement has been adjusted correctly, go to the next section [10.4.3 Correction of skew of image block] on next page.

10. 4. 3 Correction of skew of image block

NOTE

(1) It is impossible to get correct Color Registration (H & V) if the image is skew.

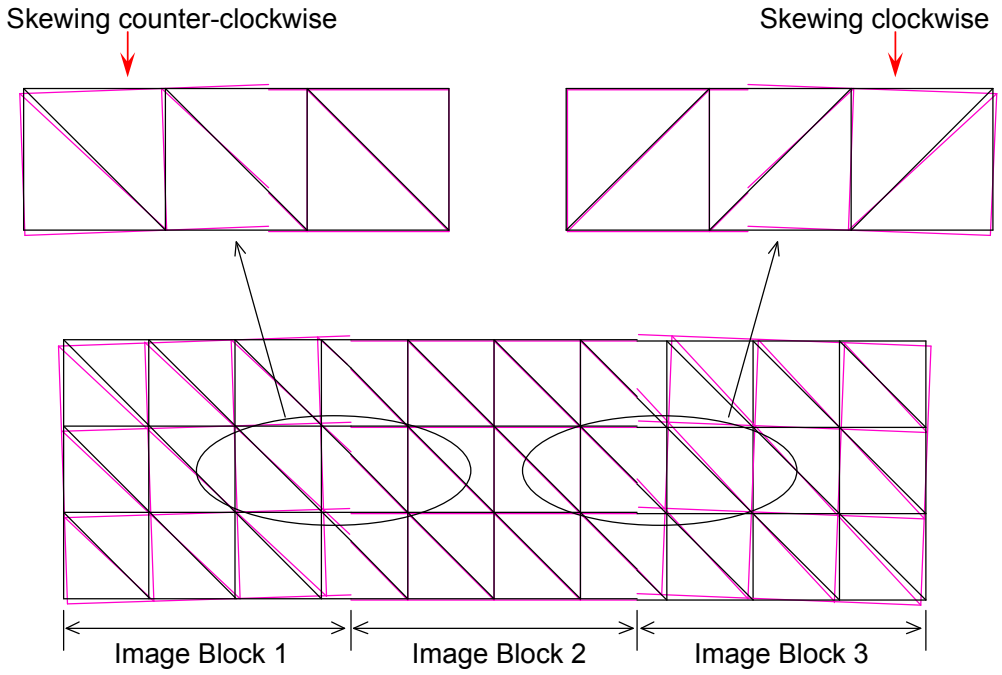
(2) Make sure to finish adjusting “vertical stitching” and “horizontal arrangement” before starting skew adjustment. Especially adjust the vertical stitching to get rid of the vertical gap between image blocks.



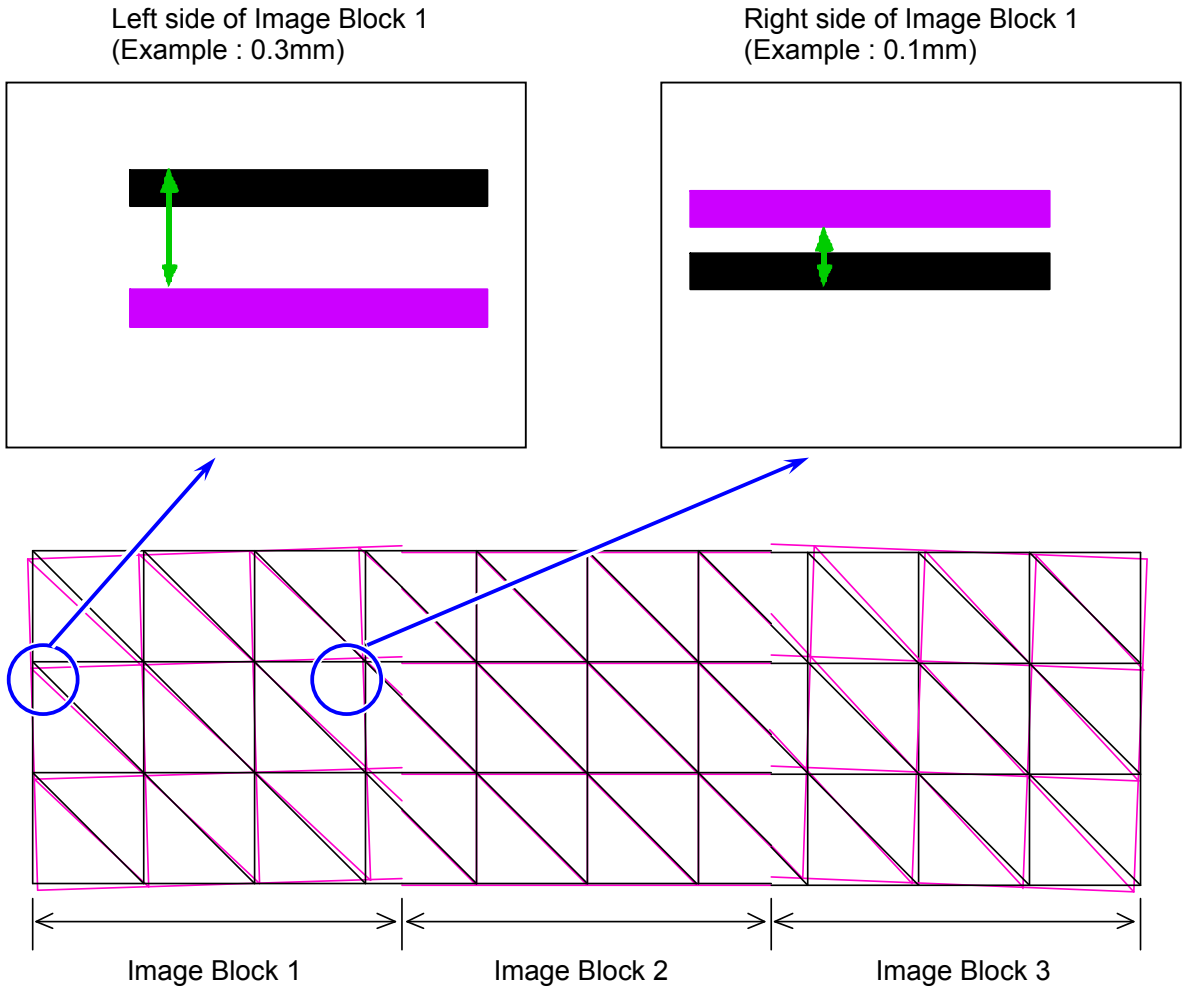
1. Print out the Test Pattern No.18 by dual color (black and “target color”) with 36” wide x 18” long.
   Required combinations of dual color are;
   Black & Cyan
   Black & Magenta
   Black & Yellow

> **NOTE**
>
> Skew adjustment can be achieved taking Black as the standard. Get rid of the skew on black as far as possible before starting skew adjustment on other colors.

- If no skew can be found on every image blocks of every color, go to [10.4.4 Horizontal Color Registration] on page 10-42.
- If any image skew can be found on any image block of any color, it must be corrected by skew adjustment as instructed on and after next page.



2. Measure the vertical gaps between black and target color at both sides of the concerning image block.



3. Take either of the following calculations based on the case to figure out “Skew”.

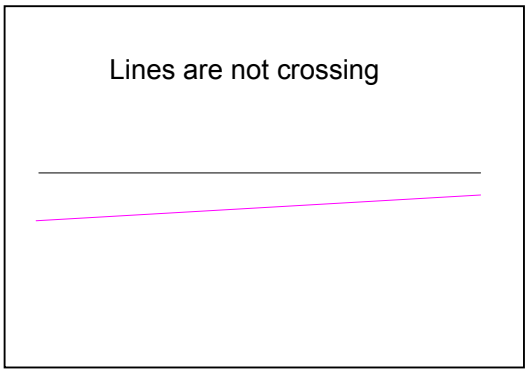
[Case 1]

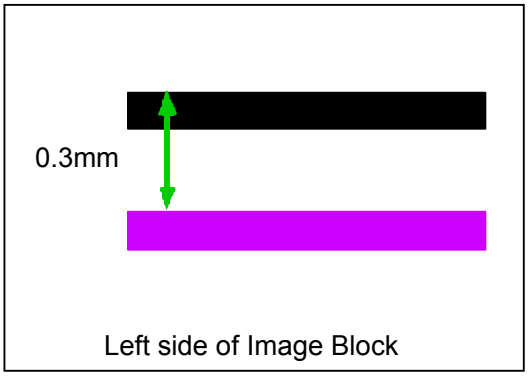
When the lines are not crossing each other, take the following calculation.

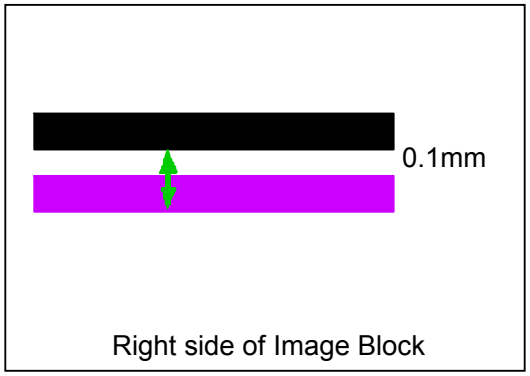
Larger value – smaller value = Skew (of target color against black : mm)

Black and magenta lines are not crossing each other. The “skew” is “0.2mm” in this case.

0.3mm – 0.1mm = 0.2mm (Skew)







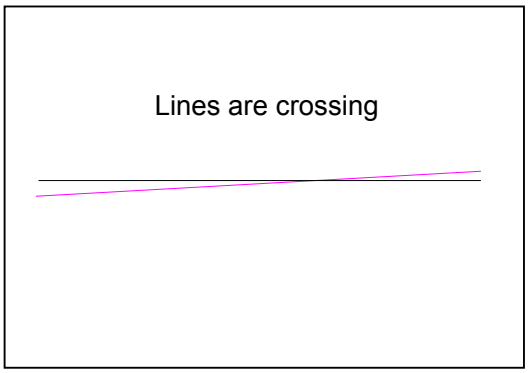
[Case 2]

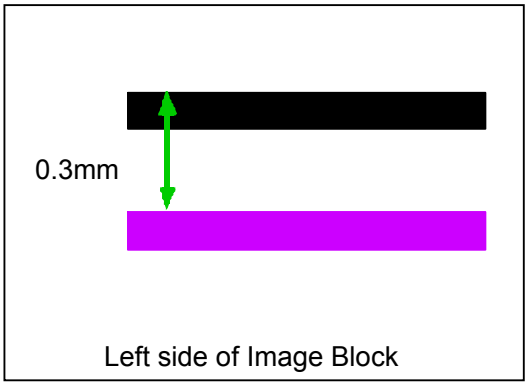
When the lines are crossing each other, take the following calculation.

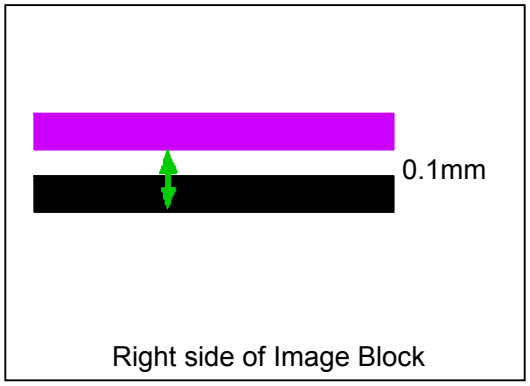
Larger value + smaller value = Skew (of target color against black : mm)

Black and magenta lines are crossing each other. The “skew” is “0.4mm” in this case.

0.3mm + 0.1mm = 0.4mm (Skew)

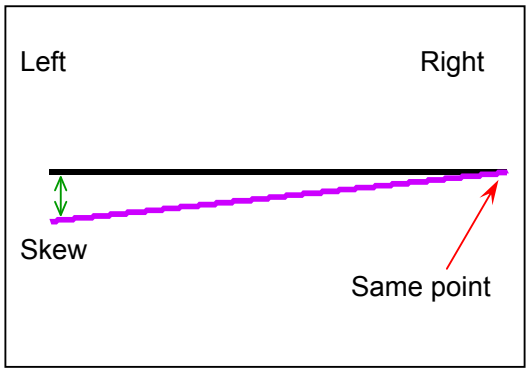






NOTE

The calculated “skew” means the vertical gap between black and target color on one side (end) when both colors possess the same point on another side (end).

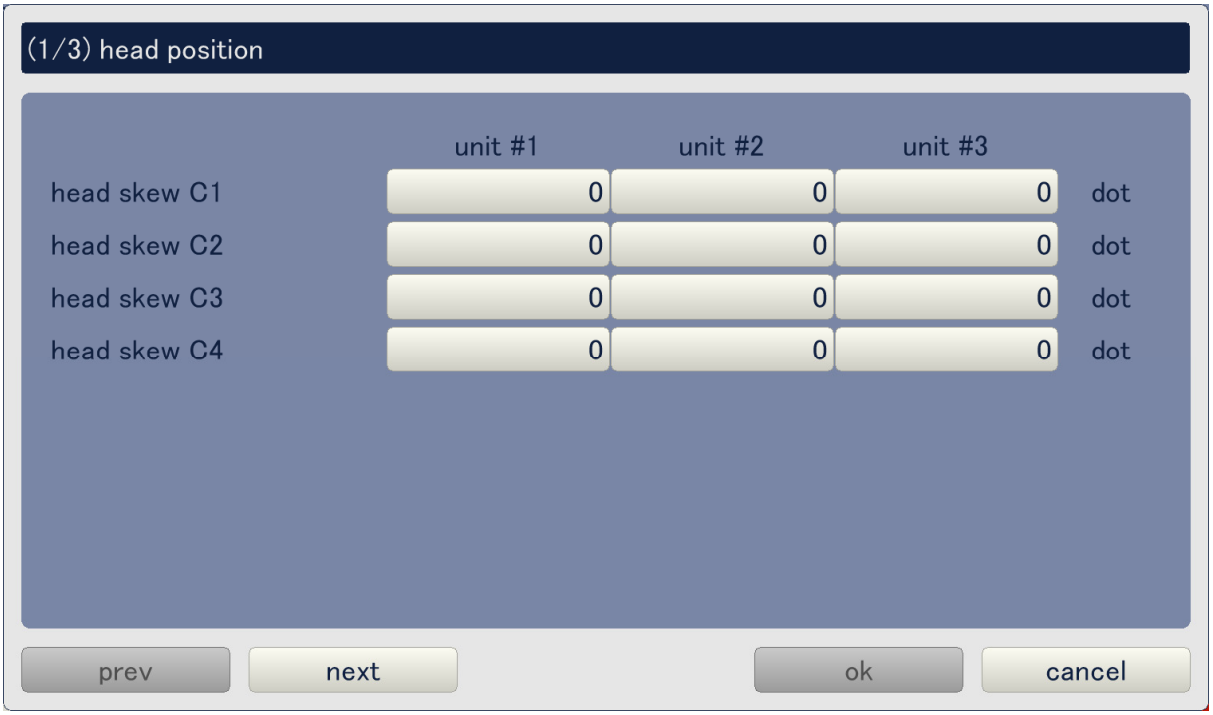


4. Calculate the calibration value (pixel) for the target image block using the following formula.
   ”Skew” (mm) / 25.4 x 600 = Required calibration value for skew

   (Example)
   If the calculated “skew” is 0.4mm, the necessary value is calculated as;
   0.4 (mm) / 25.4 x 600 = 9.44…

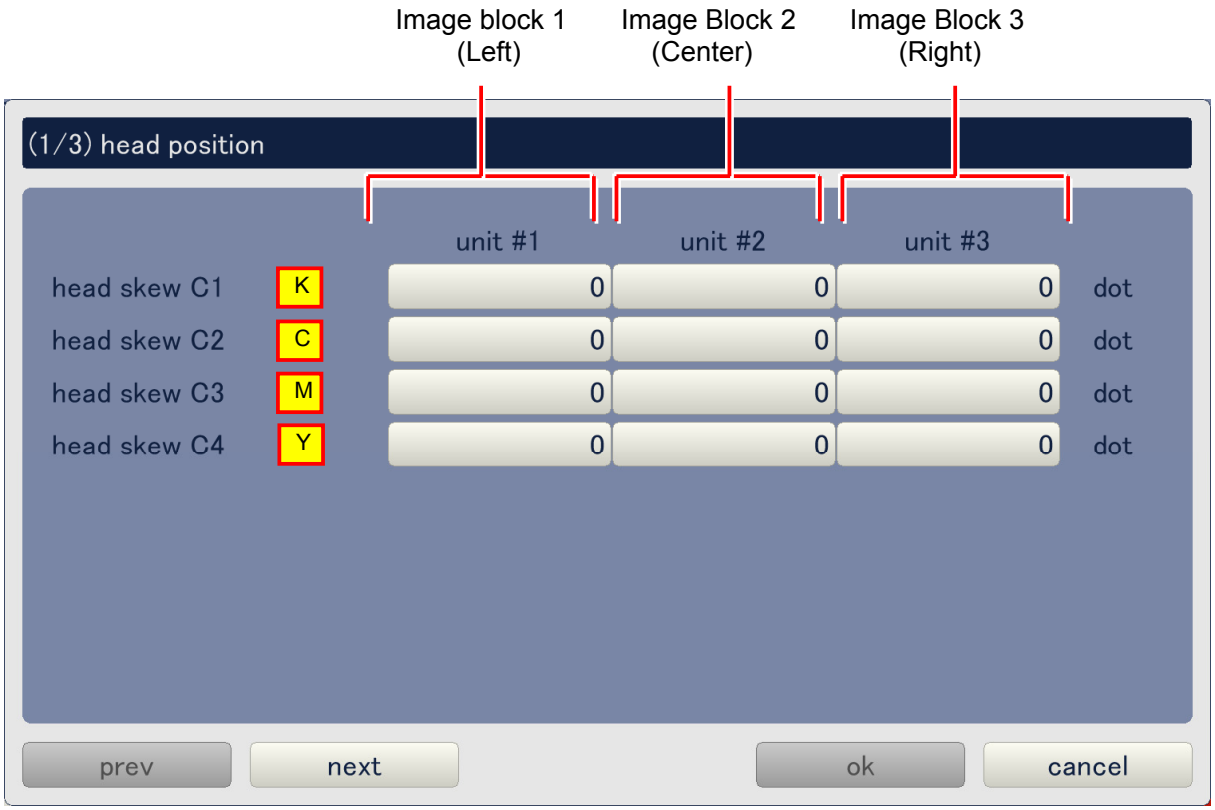
   In this case the target image block needs to be calibrated (rotated clockwise or counter-clockwise) by about 9 pixels.

5. Run the KIPDiagColor on the KC80 IPS, and access the following page by;
   - Click on **service mode** on the main screen of KIPDiagColor.
   - Input the service password. (Password is **0000** in default.)
   - Choose **adjustment** in the service mode menu.
   - Choose **head position** in the adjustment mode menu.



6. Skew adjustment can be adjusted in 1 dot increment in the following page.
   - **unit #X** stands for the Image Block. #1 is the left block, #2 is the central one, and #3 is the right one.
   - **head skew (C1 to C4)** stands for the color.
     C1 : Black C3 : Magenta
     C2 : Cyan C4 : Yellow

   To change the value, click on the button considering the color and image block, input the value in the pop up dialog, and click on OK. **Increment of the value rotates the concerning image block counter-clockwise.**



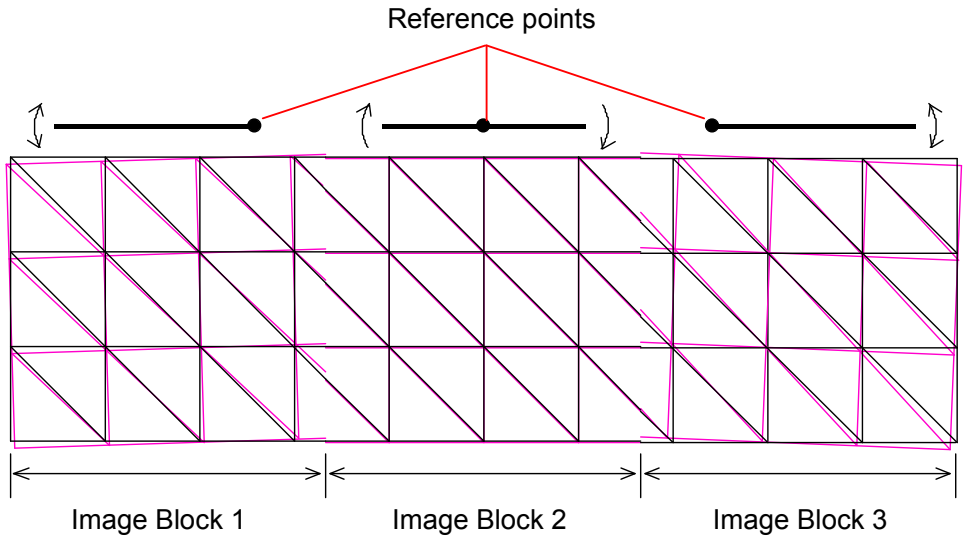
NOTE

(1) Simply input the “Required calibration value for skew” calculated at the procedure 4.

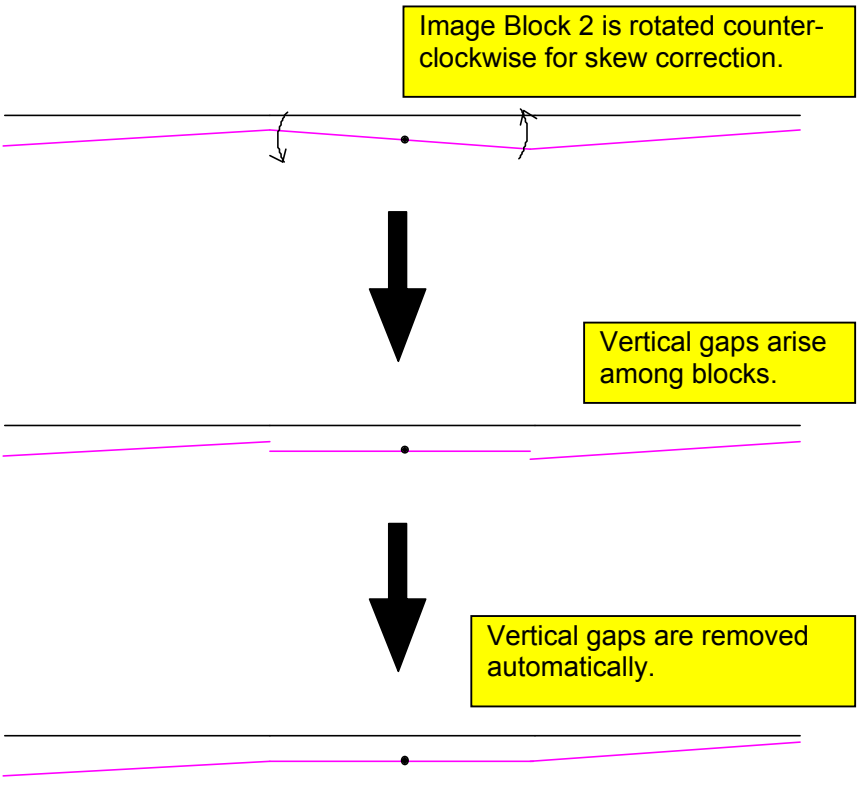
NOTE

(2) Each image block has its own reference points for the rotation.

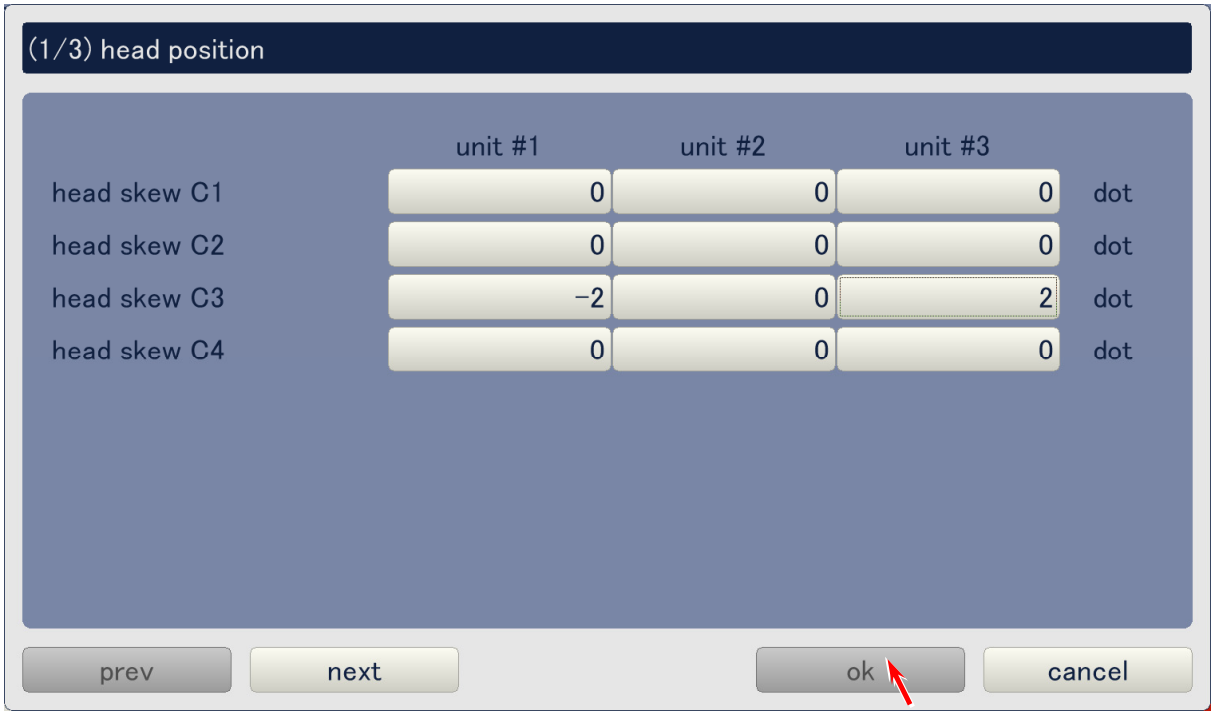
Image Block 1 : Right end of the Image Block 1 (on the border between blocks 1 & 2)
Image Block 2 : Center of the Image Block 2
Image Block 3 : Left end of the Image Block 3 (on the border between blocks 2 & 3)



(3) Skew correction for the Image Block 2 will generate a vertical gap between blocks as its reference point is the center. But this gap is automatically removed if only the vertical stitching has been adjusted correctly in advance.



7. Click on ok to complete the adjustment.



8. **<u>Check the vertical stitching again and readjust if necessary</u>** after correcting the skew. See [3.1 Vertical stitching of image block].

9. When skew has been corrected, go to [10.4.4 Horizontal Color Registration] on next page.

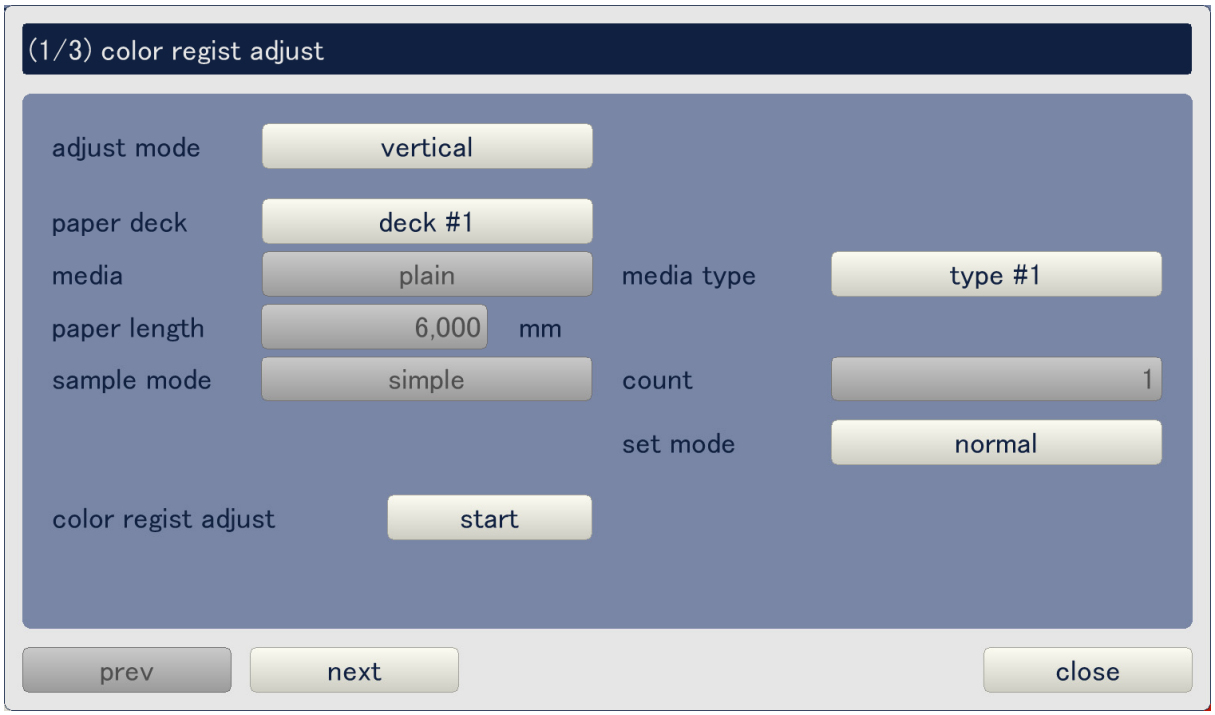
> **⚠ NOTE**
>
> Before starting the Color Registration calibration, print out the Test Pattern No.31 and take final check for LED adjustments. Especially check the gray image carefully if there is space or image duplication on the border of image blocks.

10. 4. 4 Horizontal Color Registration

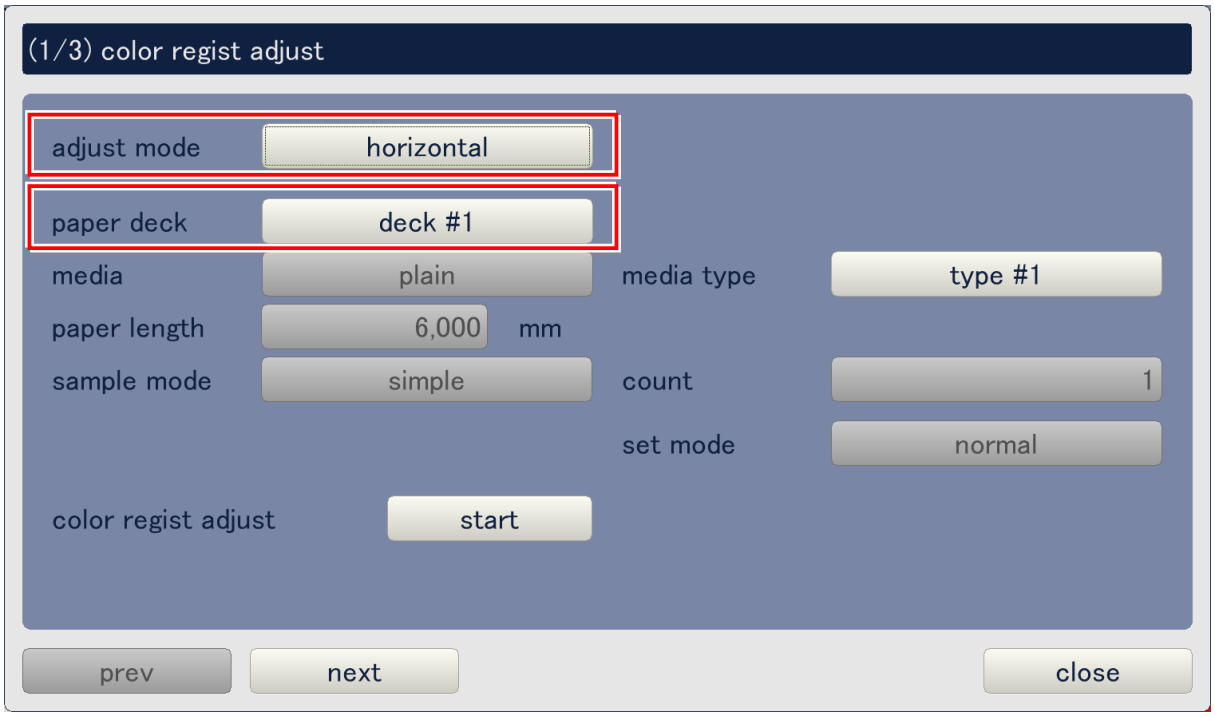
1. Load any 36” wide roll media to the roll deck.

> **NOTE**
>
> Any roll deck can be used for the calibration as difference of the deck has nothing to do with the calibration result.

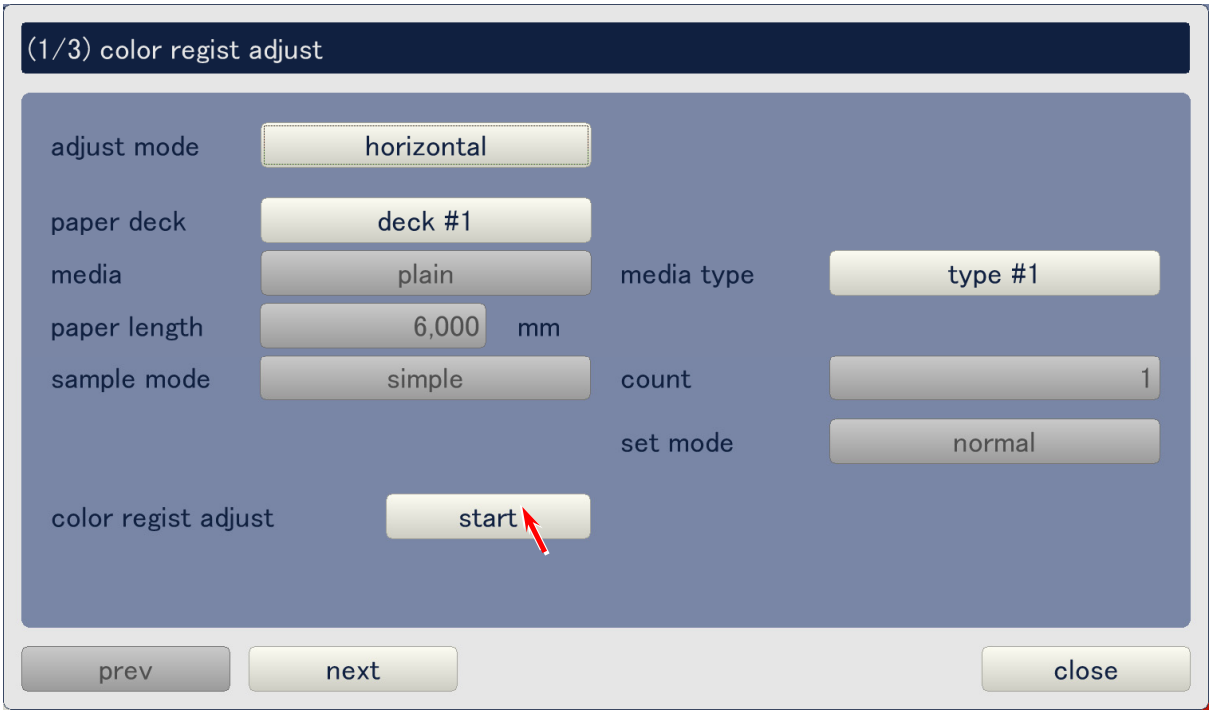
2. Run the KIPDiagColor on the KC80 IPS, and access the following page by;
   - Click on **service mode** on the main screen of KIPDiagColor.
   - Input the service password. (Password is **0000** in default.)
   - Choose **adjustment** in the service mode menu.
   - Choose **color regist adjust** in the menu page (2/3) of the service mode.



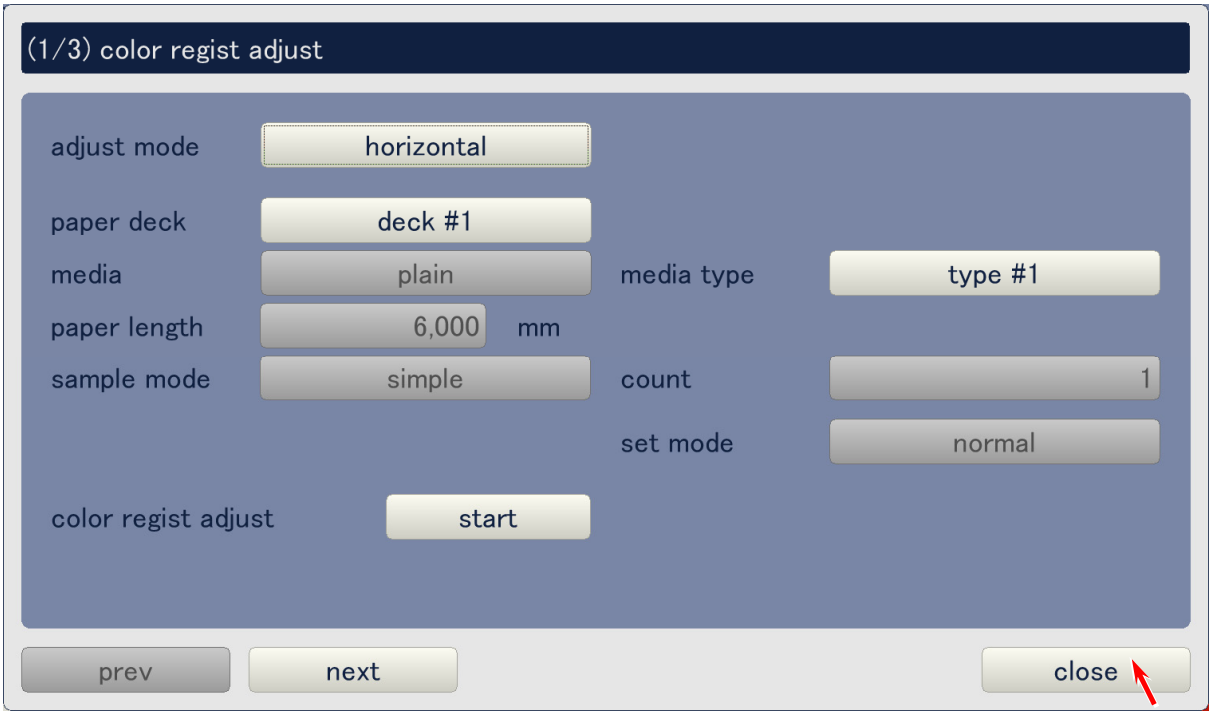
3. Set **adjust mode** to **horizontal**, and set **paper deck** to any roll deck No. that has the roll media to be used for calibration.



4. Click on **start** to start the calibration of Horizontal Color Registration. KC 80 printer will print out 1 sheet of calibration pattern with reading it with the Color Sensor. Then the necessary calibration value is automatically calculated, and it is automatically saved in the concerning setting items in the service mode.



5. Click on **close** to complete the calibration.



6. When the Horizontal Color Registration has been calibrated correctly, go to [10.4.5 Vertical Color Registration (simple calibration)] on next page.

10. 4. 5 Vertical Color Registration (simple calibration)

NOTE

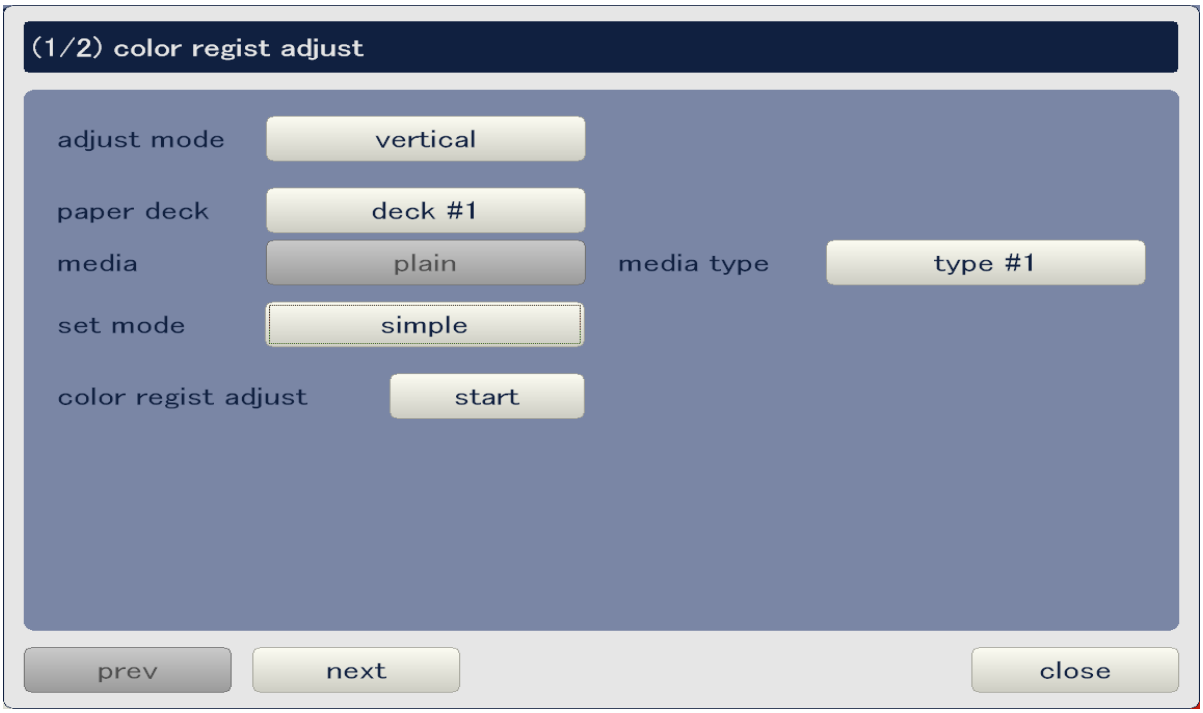
This procedure can be preformed via the IPS software. Please see the "?" - conifg - Media Naming / Calibration screens for a process that may be more suitable for the user and the technician. Please use the "Advanced" button.

Perform the "simple" calibration of Vertical Color Registration as the final work after the replacement of LED Head.

1. Install recommended **36" Premium Bond (24lb)** to any Roll Deck.

> **NOTE**
>
> Any roll deck can be used for the calibration as the difference of roll deck does not affect the calibration result.

2. Run the KIPDiagColor on the KC80 IPS, and access the following page by;
   - Click on **service mode** on the main screen of KIPDiagColor.
   - Input the service password. (Password is **0000** in default.)
   - Choose **color regist adjust** in the service mode menu.

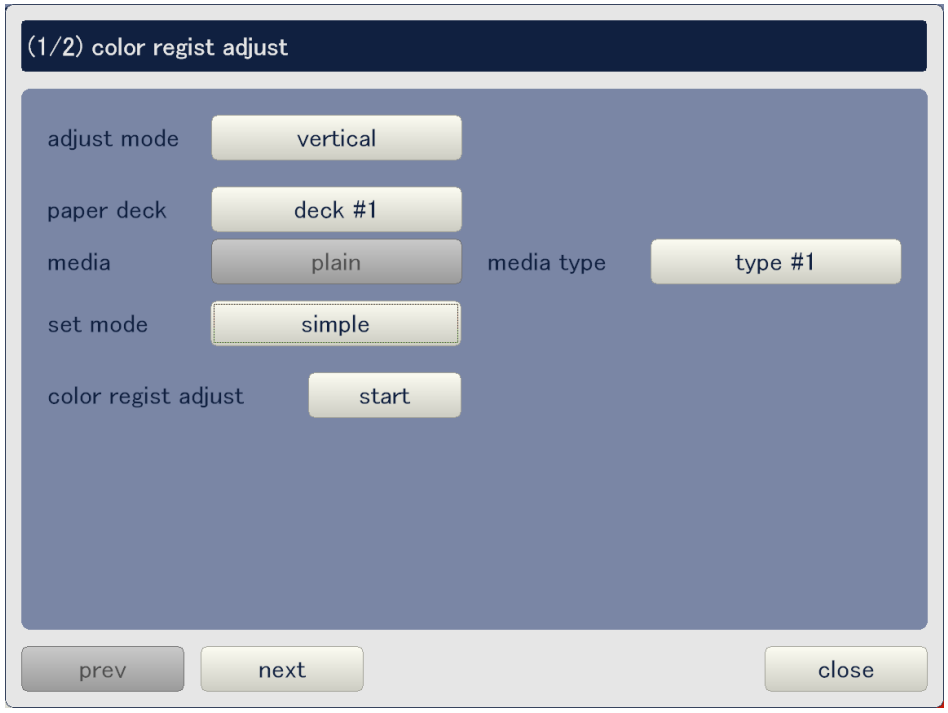


3. Set the setting items in the screen as follows.

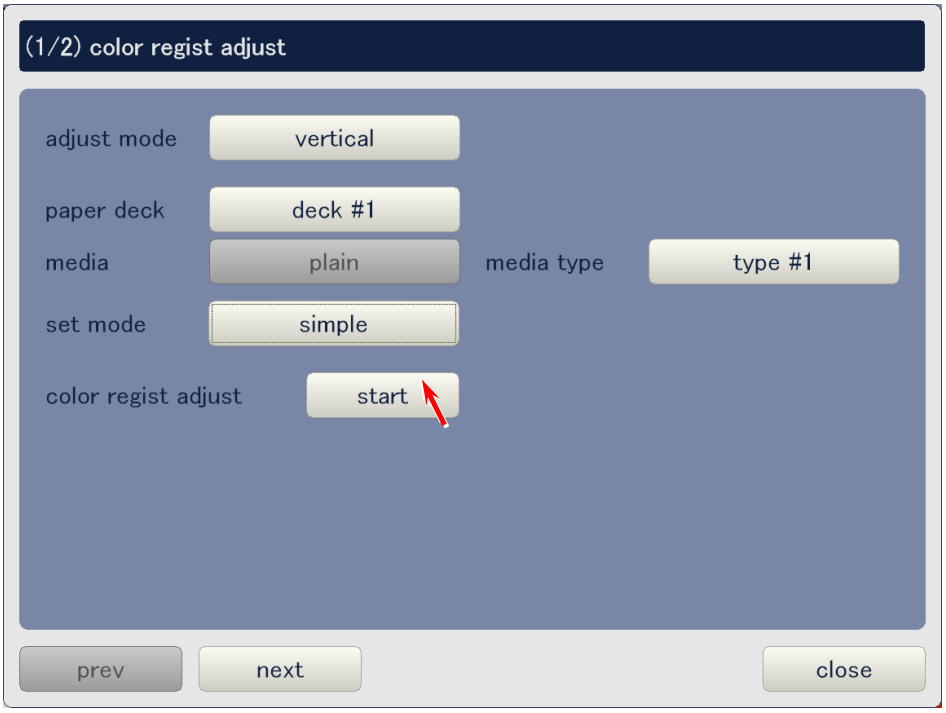
Adjust mode	vertical
Paper deck	(Select the deck you loaded 36” Premium Bond (24lbs).)
Media	(Not selectable. It relies on the Media Selector in the deck.)
Media type	Type #1 (NOTE : Please specify “Type #1” for the recommended 24lbs Premium Bond.)
Set mode	simple

The above settings are directly targeting to make a calibration for the following setting categories.

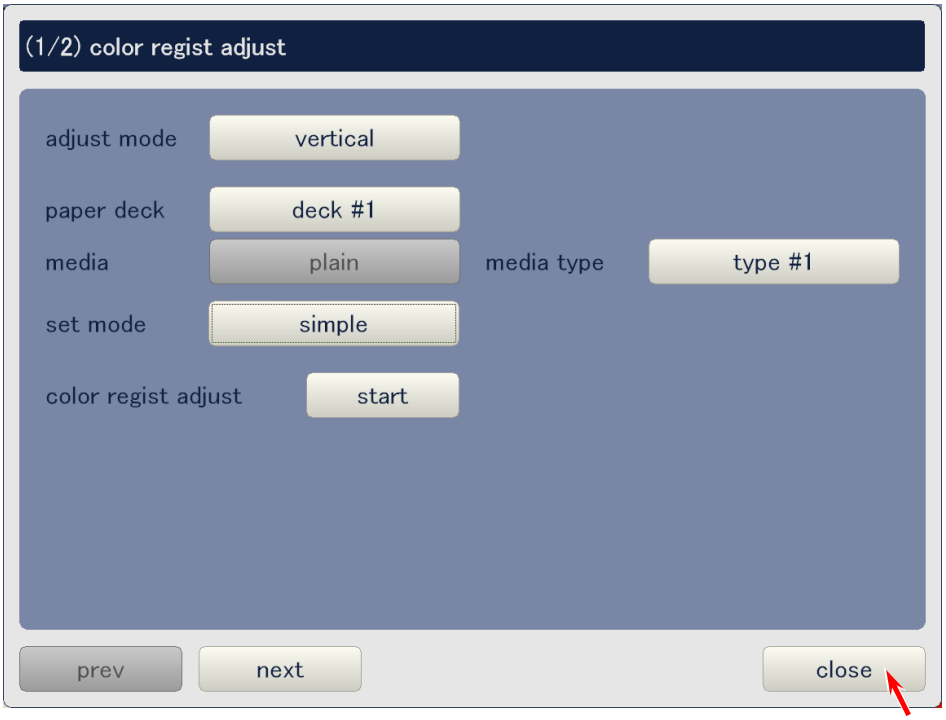
- Plain paper, Type#1, Large, Long
- Plain paper, Type#1, Large, Middle
- Plain paper, Type#1, Large, Short



4. Press [start] to start calibration. KC 80 will print the calibration data on 3 different lengths of sheets (long, middle & short) with the selected media
   The necessary calibration values for these 3 prints are automatically calculated. These values are also applied to all calibration categories of Vertical Color Registration except for “others”.



5. Press [close] finally.



10. 5 Calibration Required after Replacing the CPU PCB (PW10720)

Even if the CPU PCB (PW10720 PCB) is replaced, KC80's many setting parameters can be recovered if the saved "backup ini file" is uploaded from KIPDiagColor to KC80. But only the Vertical Color Registration may not be recovered correctly with this way.

> **⚠ NOTE**
>
> In case the Vertical Color Registration is disturbed after the replacement of CPU PCB, all the setting categories will have the same amount of "disturbance" (vertical gap) equivalently. Therefore "simple" calibration is enough for recovering correct Vertical Color Registration.

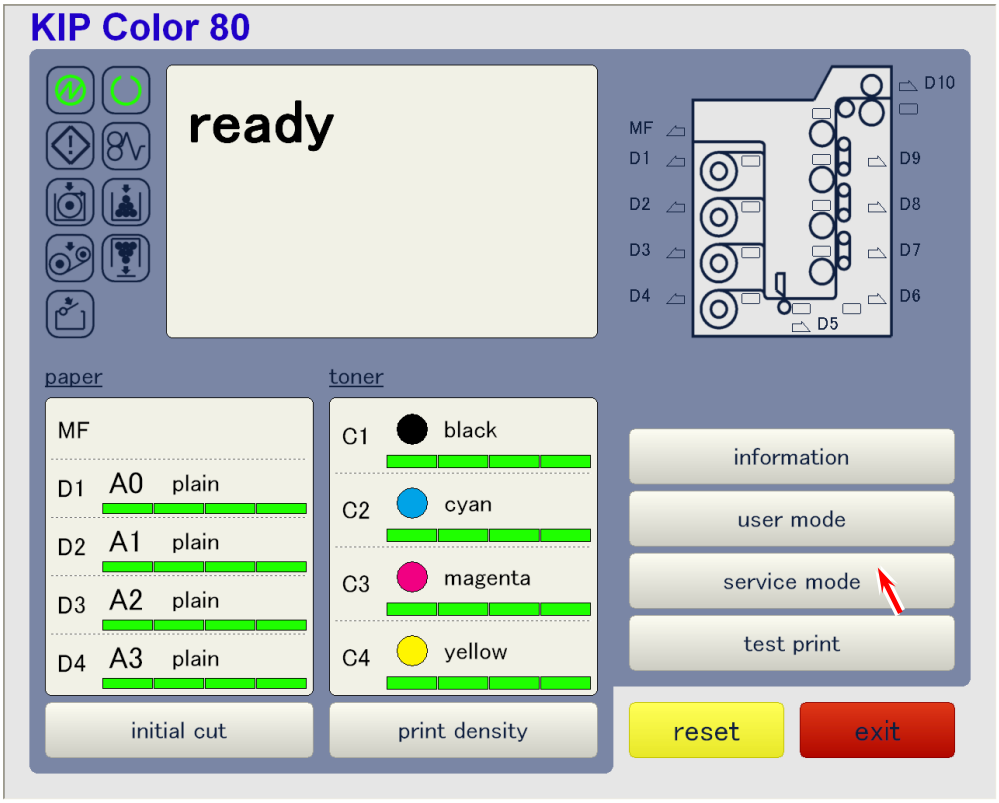
10. 5. 1 Vertical Color Registration - Simple calibration (Copy vertical color registration data of one condition to all other conditions)

1. Load a **36” wide premium bond (24lb) to any Roll Deck**.

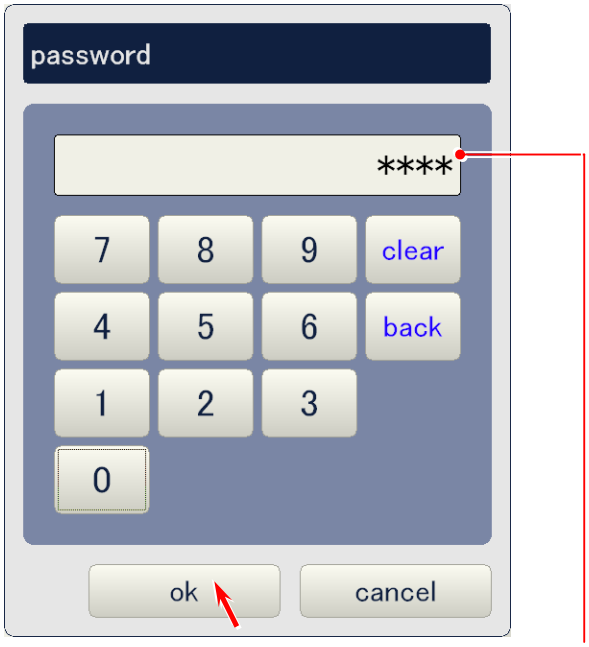
> **NOTE**
>
> Any roll deck can be used for the calibration as the difference of roll deck does not affect the calibration result.

2. Turn on the KC80, and have a communication between KC80 and KIPDiagColor.

3. Press [service mode].

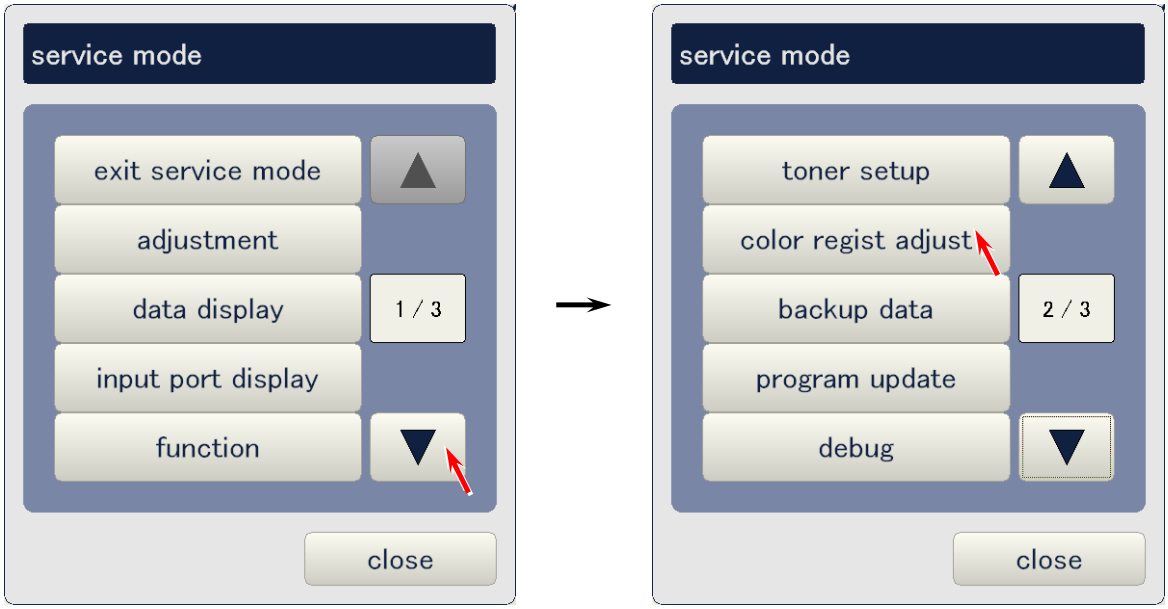


4. The following dialog pops up requiring the service password. Input the password and press [ok] to enter the Service Mode. (Default password is “0000”.)



Service password (0000 in default)

5. Open the 2nd page of service mode menu pressing ▼ icon, and press [color regist adjust].

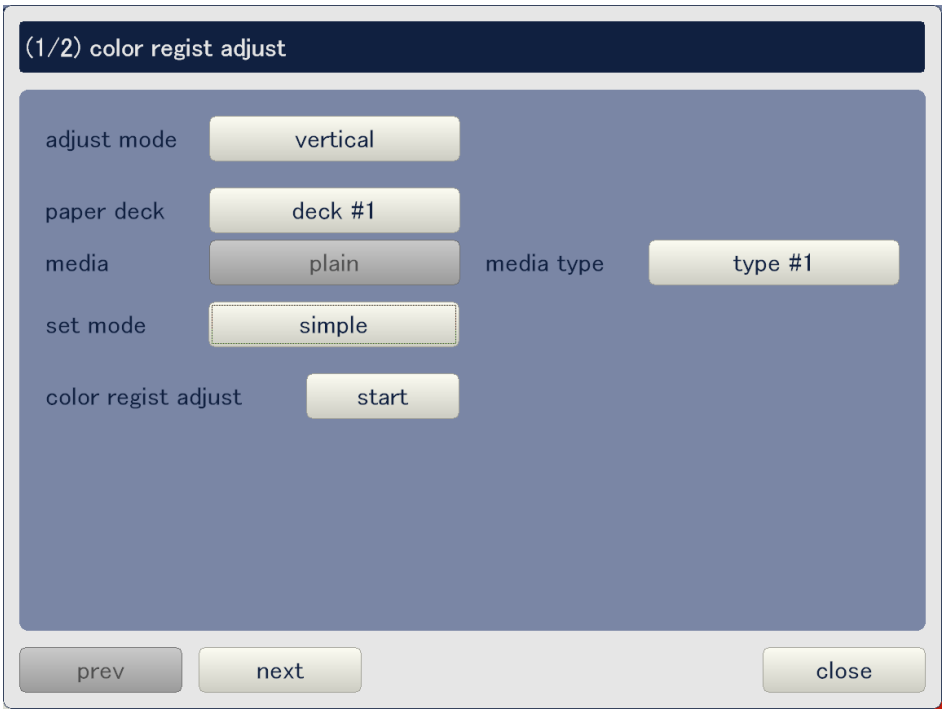


6. Set the color registration settings as follows.

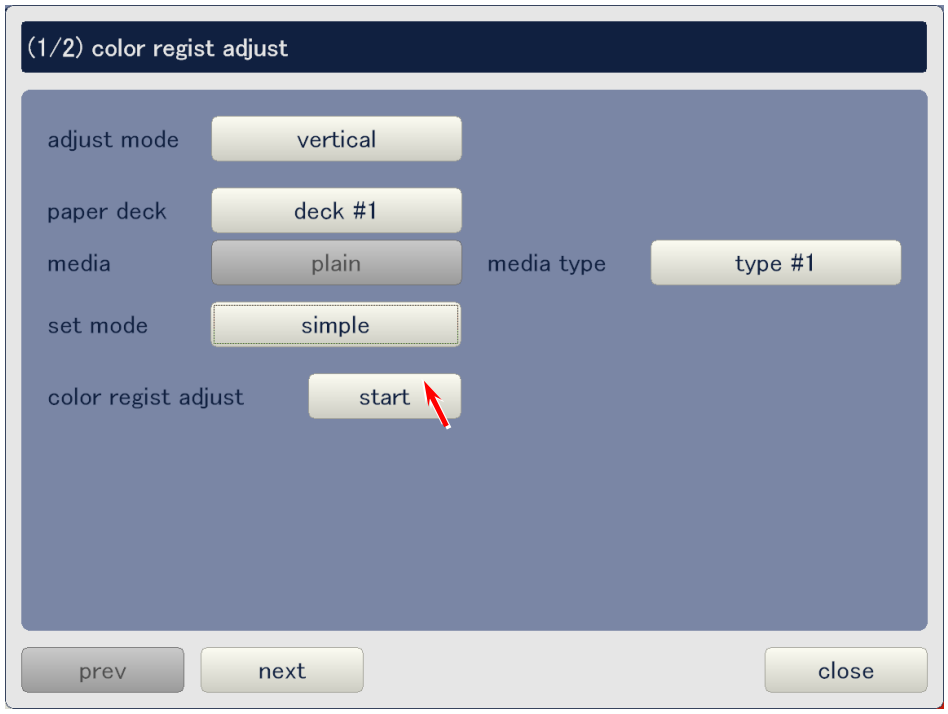
Adjust mode	vertical
Paper deck	(Select the deck you loaded 36” Premium Bond (24lbs).)
Media	(Not selectable. It relies on the Media Selector in the selected deck.)
Media type	type #1
Set mode	simple

The above settings are directly targeting to make a calibration for the following setting categories.

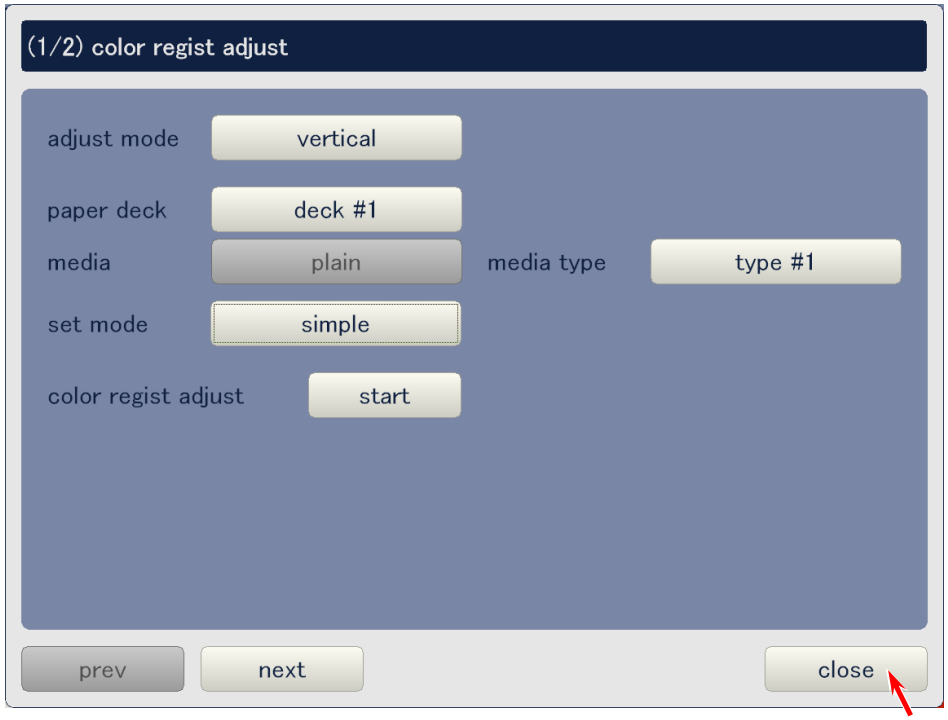
- Plain paper, Type#1, Large, Long
- Plain paper, Type#1, Large, Middle
- Plain paper, Type#1, Large, Short



7. Press [start] to start calibration. KC 80 will print the calibration data on 3 different lengths of sheets. (long, middle & short)
   The necessary calibration values for these 3 prints are automatically calculated. These values are also applied to all calibration categories of Vertical Color Registration except for “others”.



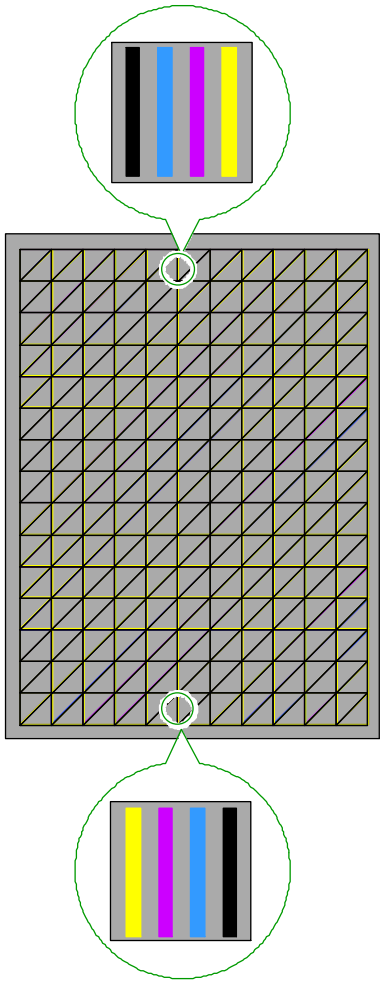
8. Press [close] finally.



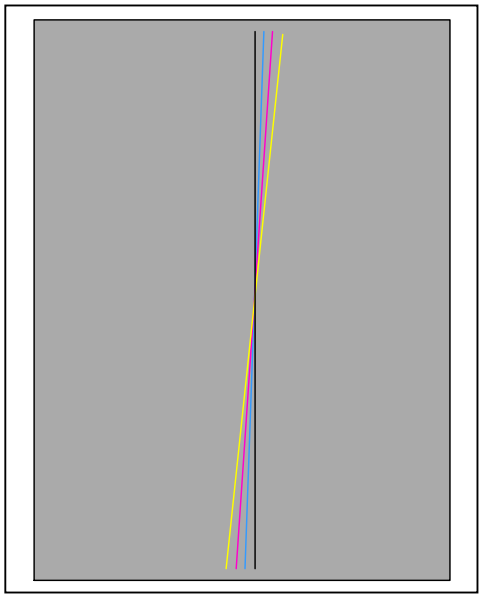
10. 6 Touch-up of Attraction Roller Angle (Required when Horizontal Color Registration can not calibrate correctly)

There may be a case very rarely that the vertical lines of each color do not look overlapped correctly even after the calibration process of Horizontal Color Registration. In such case the order of colors looks “symmetric” between leading edge and trailing edge as the following example. This phenomenon happens if the angle of Attraction Roller becomes improper for some reason. Touch-up its angle as instructed in this section to have proper Horizontal Color Registration.

K, C, M, Y from left to right on LE



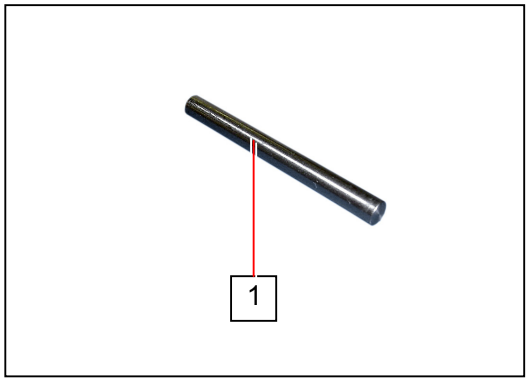
Y, M, C, K from left to right on TE



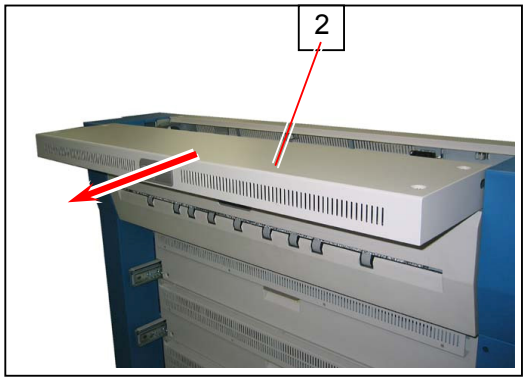
Order of colors is symmetric

1. Prepare an exclusive adjustment tool “Shaft 4” (1).

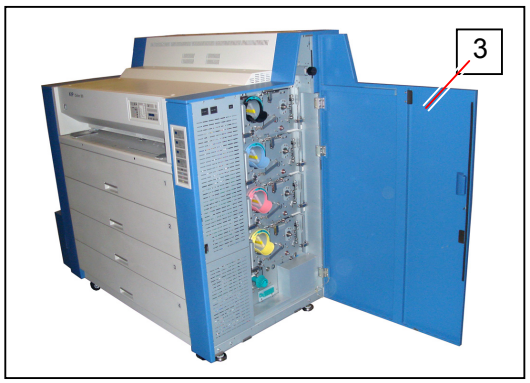
   Shaft 4 : Z078501160



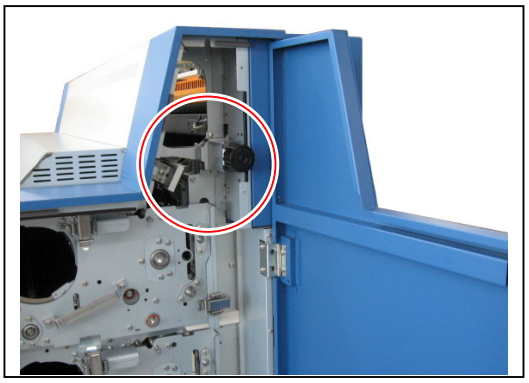
2. Open the Cover 4 (2) on the rear.

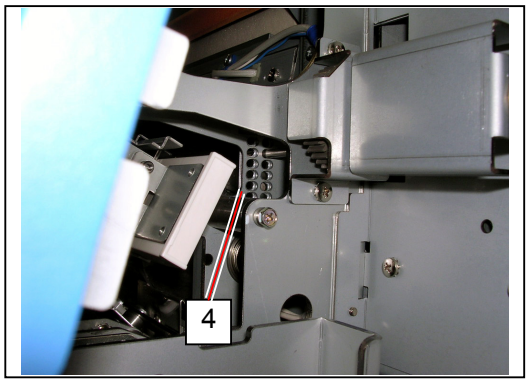


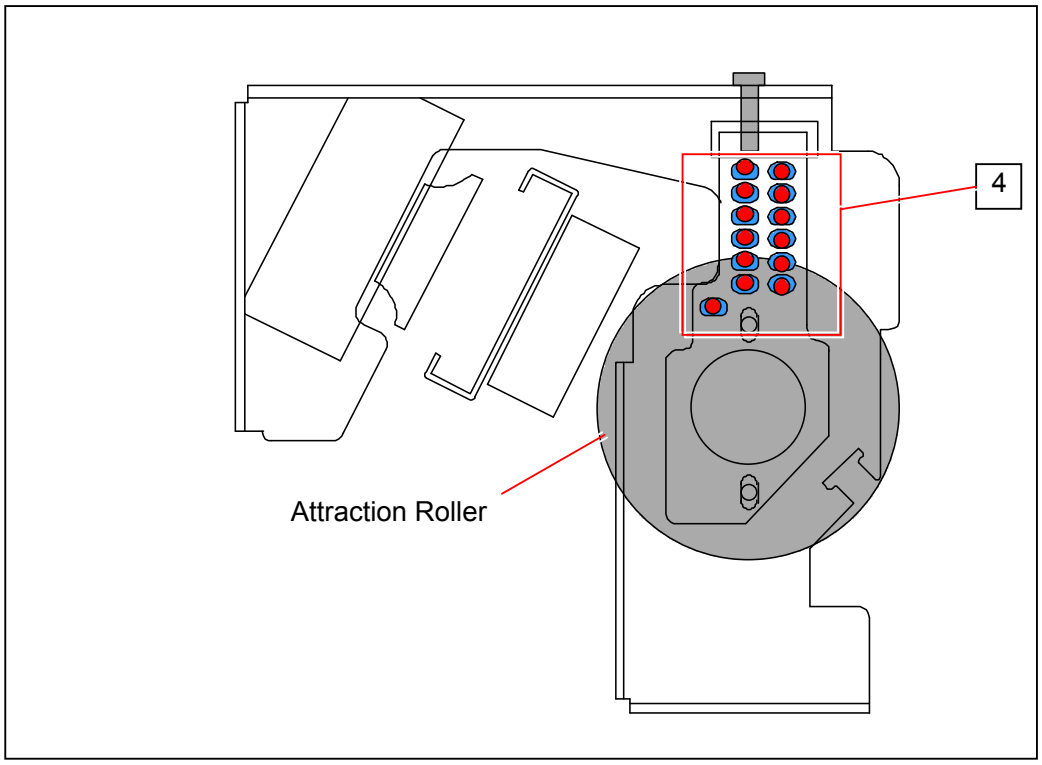
3. Open the Cover 119 (3) on the right.



4. Find the Adjustment Gauges (4) inside of the right side frame of machine, which consists of 13 combinations of “circular hole” and “oval hole”.





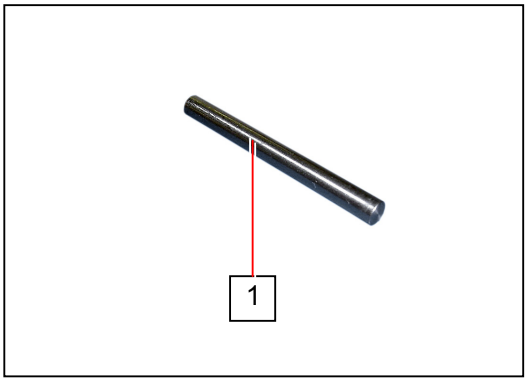


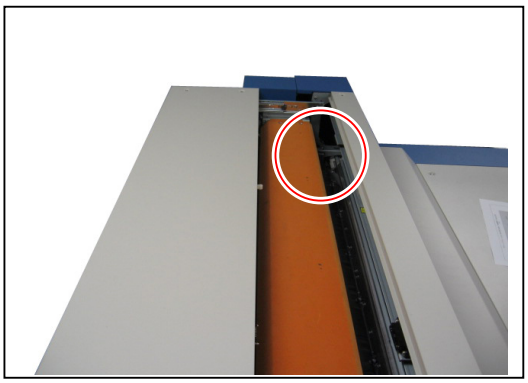
Reference

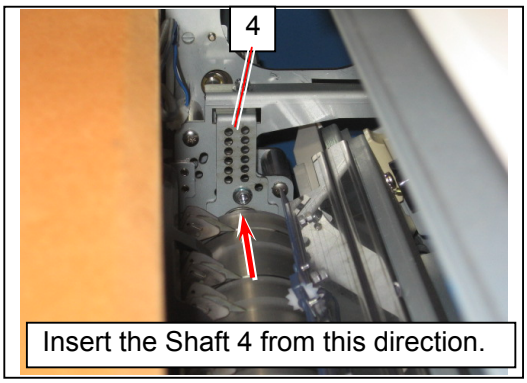
(1) 13 circular holes and 13 oval holes are on different brackets. Circular holes (red ones in the above figure) are on the inside bracket and oval holes (blue ones) are on the outside bracket.

(2) Adjustment Gauges (4) is only on the right side.

5. Try to insert the “Shaft 4” (1) into 13 positions of Adjustment Gauge (4) from inside to outside of The machine.
   There will be only 1 position where you can insert the Shaft 4. Remember this position as it decides the current angle of Attraction Roller.

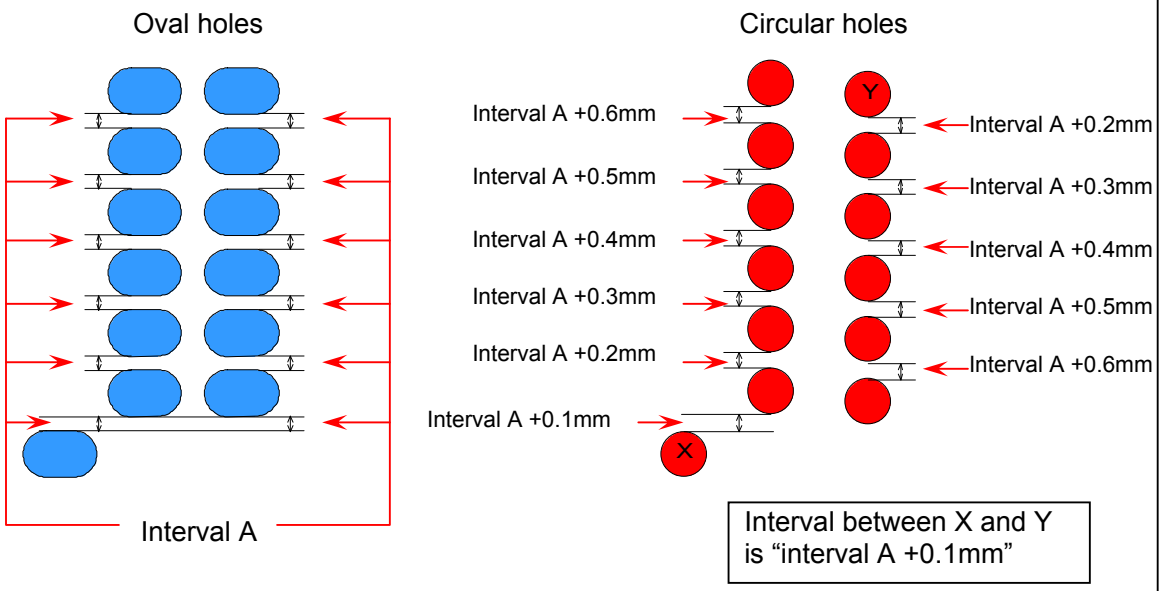






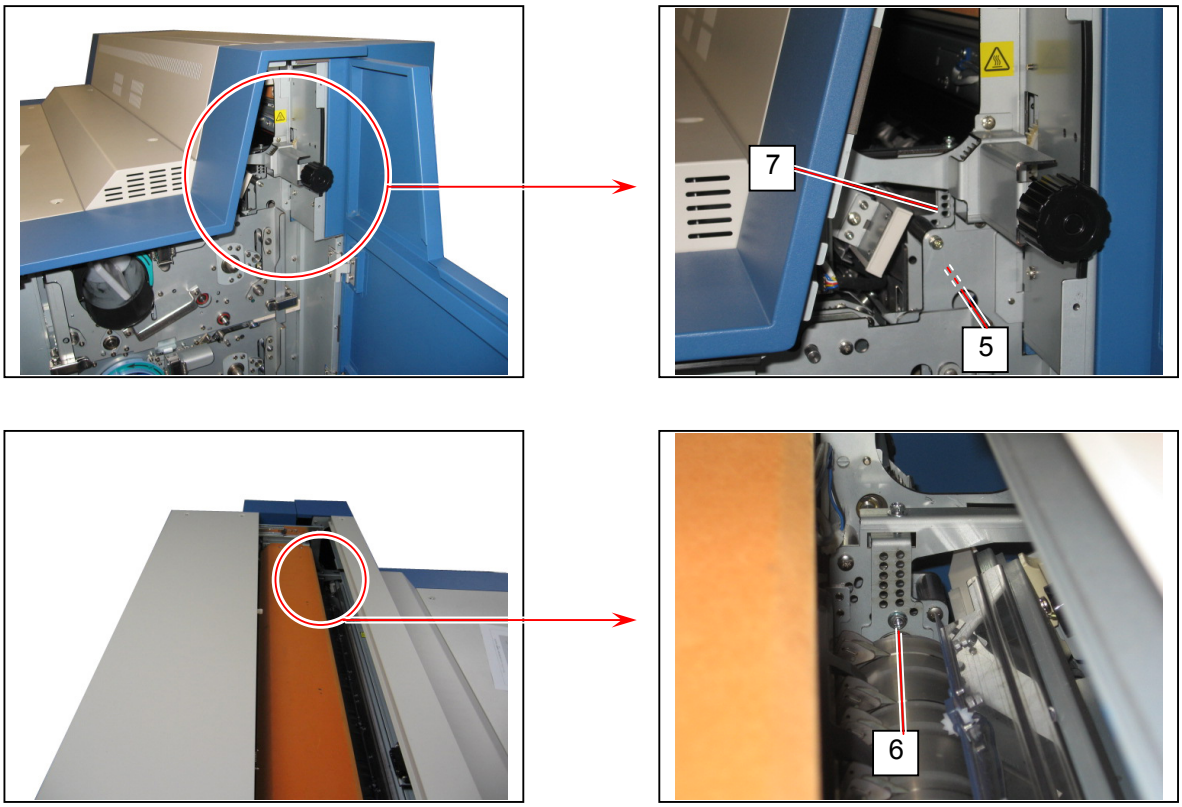
Reference

13 oval holes have the same “interval A” among them. But 13 circular holes have wider interval than “interval A”, and the intervals among them become gradually wider in 0.1mm increment.



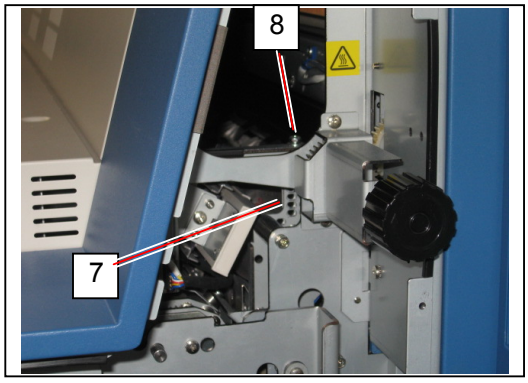
The circular hole and oval hole can overlap with each other at only 1 of 13 positions of Adjustment Gauge (4) for this reason, therefore you can insert the Shaft 4 into only 1 position. (You can not insert it to other 12 positions as both holes do not overlap there.)

6. Loosen the screw (5) from the outside, and loosen the screw (6) from the inside.
   The bracket (7) with oval holes is unlocked when screws (5) and (6) are loosened.



7. The bracket (7) can be moved up or down when the adjustment screw (8) is turned clockwise or counter-clockwise, which as a result changes the angle of Attraction Roller because the bracket (7) holds the right shaft of Attraction Roller.

   The order of color on the print decides which direction the right shaft of Attraction Roller should be moved to.



   a) Lower the bracket (7) with right shaft of Attraction Roller by rotating the adjustment screw (8) counter-clockwise if the vertical color lines are ordered Y, M, C, K from left to right on the leading edge and K, C, M, Y on the trailing edge.



   b) Raise the bracket (7) with right shaft of Attraction Roller by rotating the adjustment screw (8) clockwise if the vertical color lines are ordered K, C, M, Y from left to right on the leading edge and Y, M, C, K on the trailing edge.

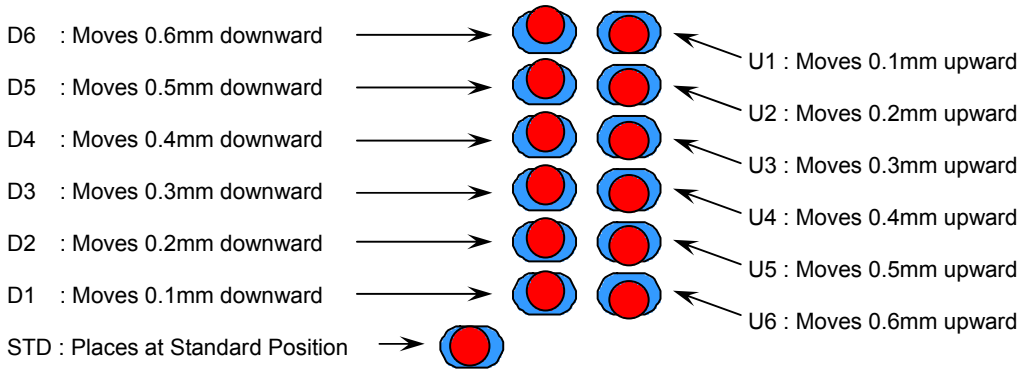


See [Reference] on next page for more effective information on adjustment.

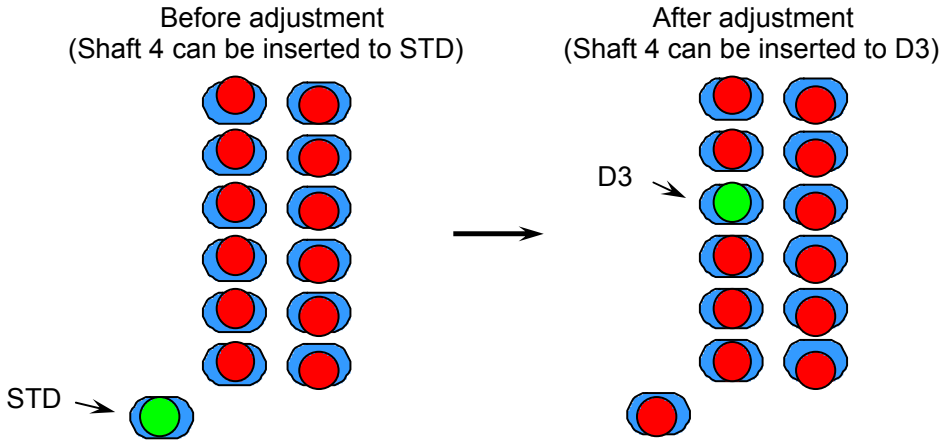
Reference

When the angle of Attraction Roller is to be adjusted, it is recommended to raise or lower its right shaft in 0.1mm increment. This kind of fine adjustment can be achieved by using the circular holes and oval holes of Adjustment Gauge.

The following figure shows the 13 positions of Adjustment Gauge and the compensation value of each position. (Compensation value from “STD”.)

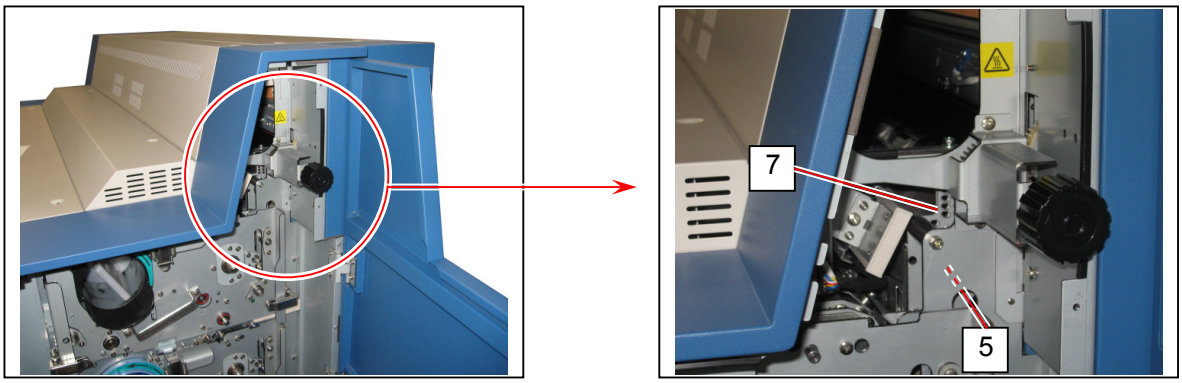


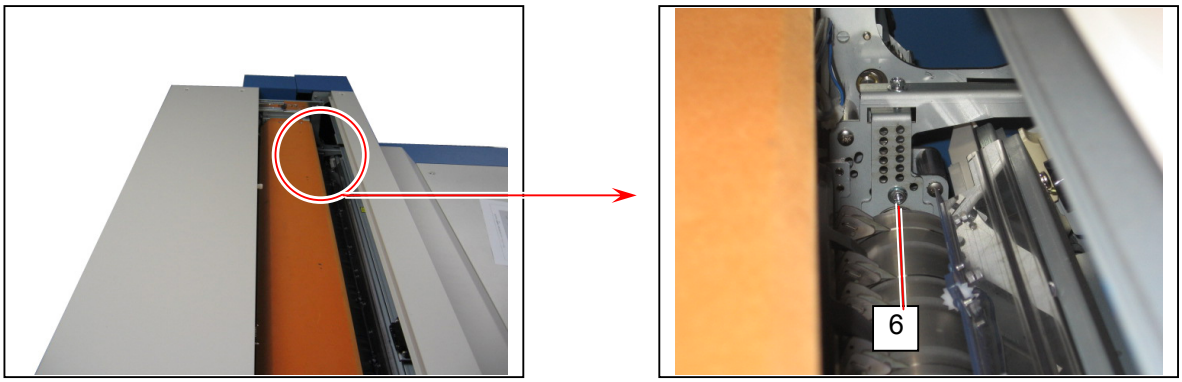
Supposing the original position of Shaft 4 was at “STD” before the adjustment, the right shaft will be moved 0.3mm downward if the position of bracket (7) is adjusted so that the Shaft 4 can be inserted to “D3”.



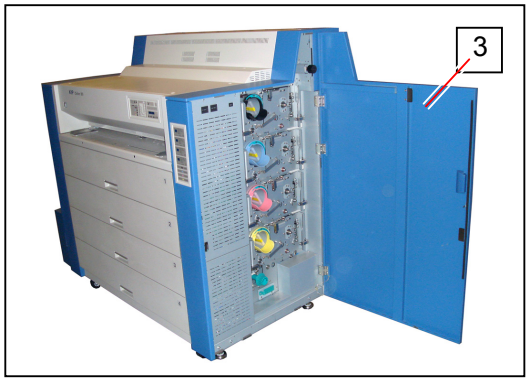
Thus, adjust the angle of Attraction Roller little by little until 4 colors of vertical lines can overlap each other correctly.

8. Tighten the screws (5) and (6) to lock the bracket (7).

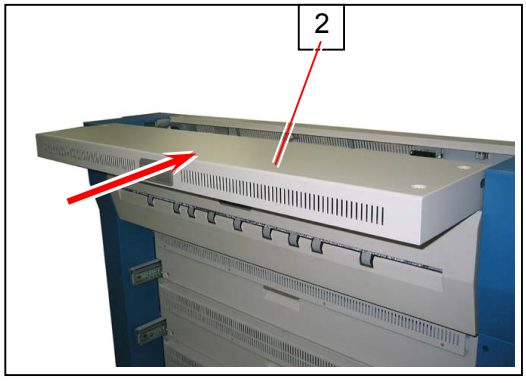




9. Close the Cover 119 (3) on the right.



10. Close the Cover 4 (2) on the rear.



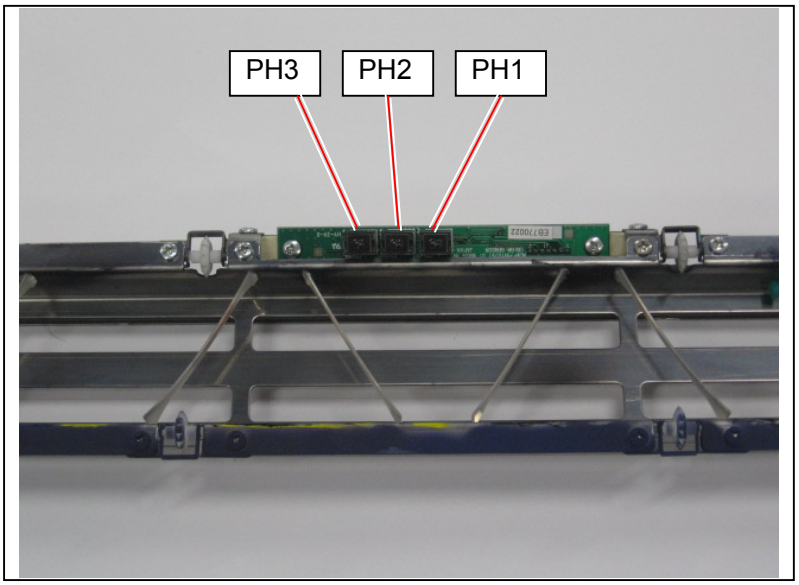
10.7 Adjustment of Color Sensor's Position after Replacement

If the Color Sensor needs to be replaced when broken, place the new Color Sensor in a correct position by the following way.

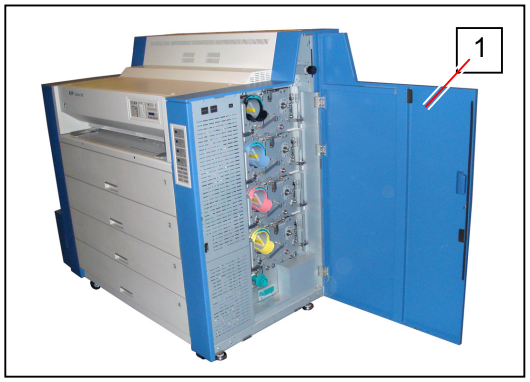
Reference

The Color Sensor PCB has 3 sensors for detecting different color respectively.

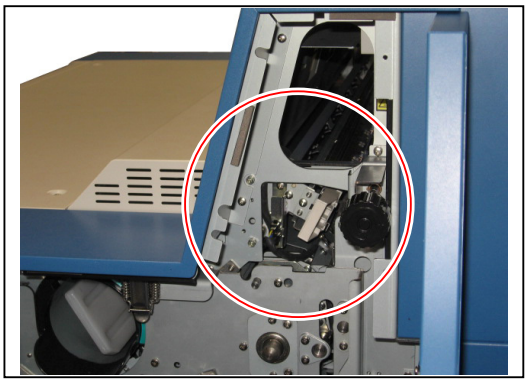
PH1 : Detects Cyan
PH2 : Detects Magenta
PH3 : Detects Yellow

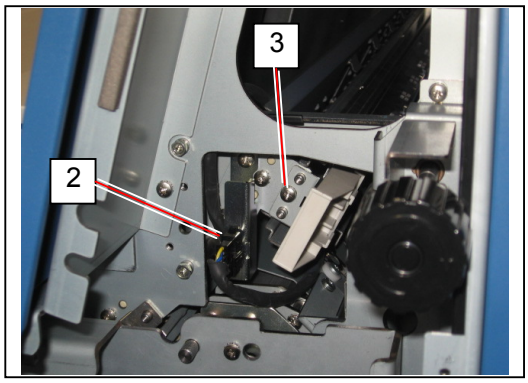


1. Open the Cover 119 (1) on the right.

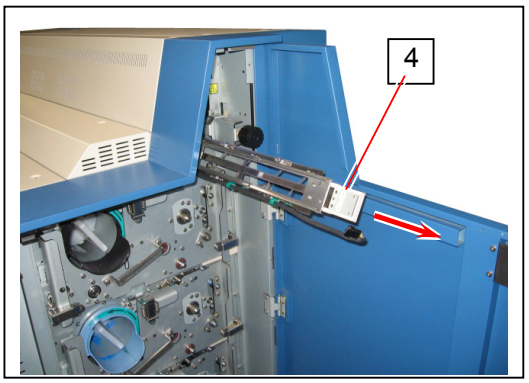


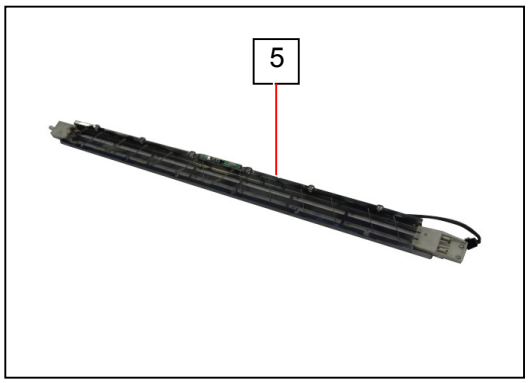
2. Disconnect the connector (2), and remove the screw (3).



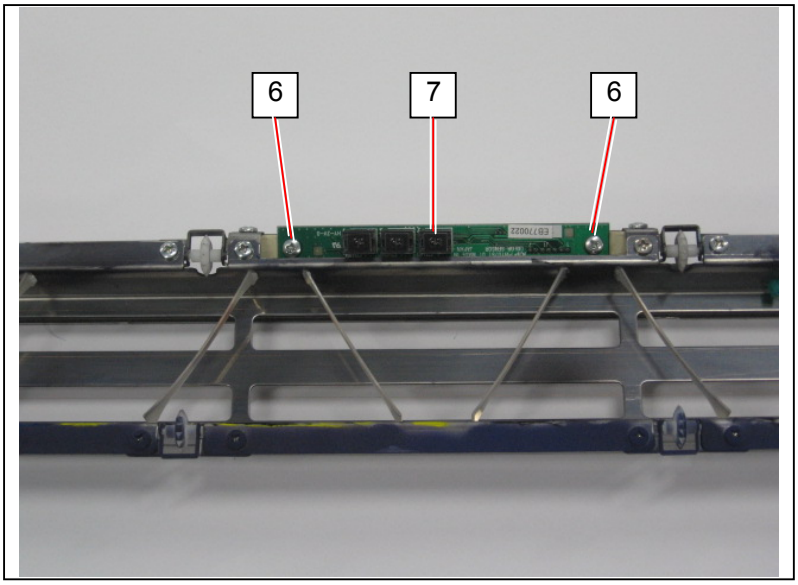


3. Holding the Corona Head (4), pull out the Attraction Corona Unit (5) from the machine.

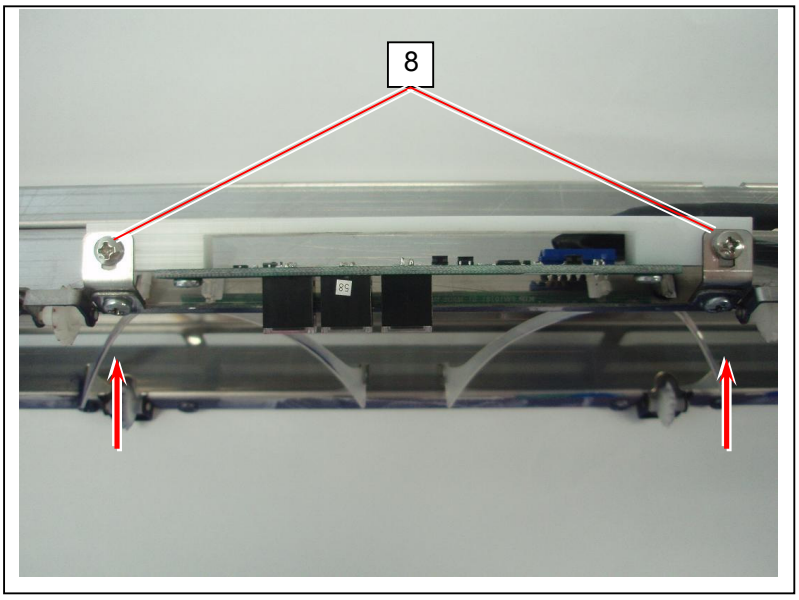




4. Remove 2 screws (6), remove the broken Color Sensor PCB (7), and install the new Color Sensor PCB with screws (6).



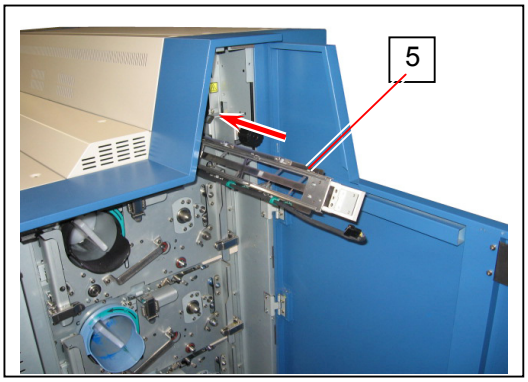
5. Loosen 2 screws (8) after installing the new Color Sensor PCB. Slide the Color Sensor fully in the direction of arrow and fix it there tightening screws (8).

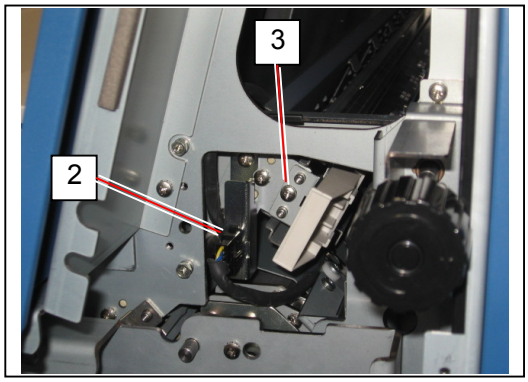


NOTE

The Color Sensor PCB is temporarily placed at the furthest position from the running media by this operation.

6. Return the Attraction Corona Unit (5) to KC80. Then fix the unit with the screw (3) and connect the connector (2).





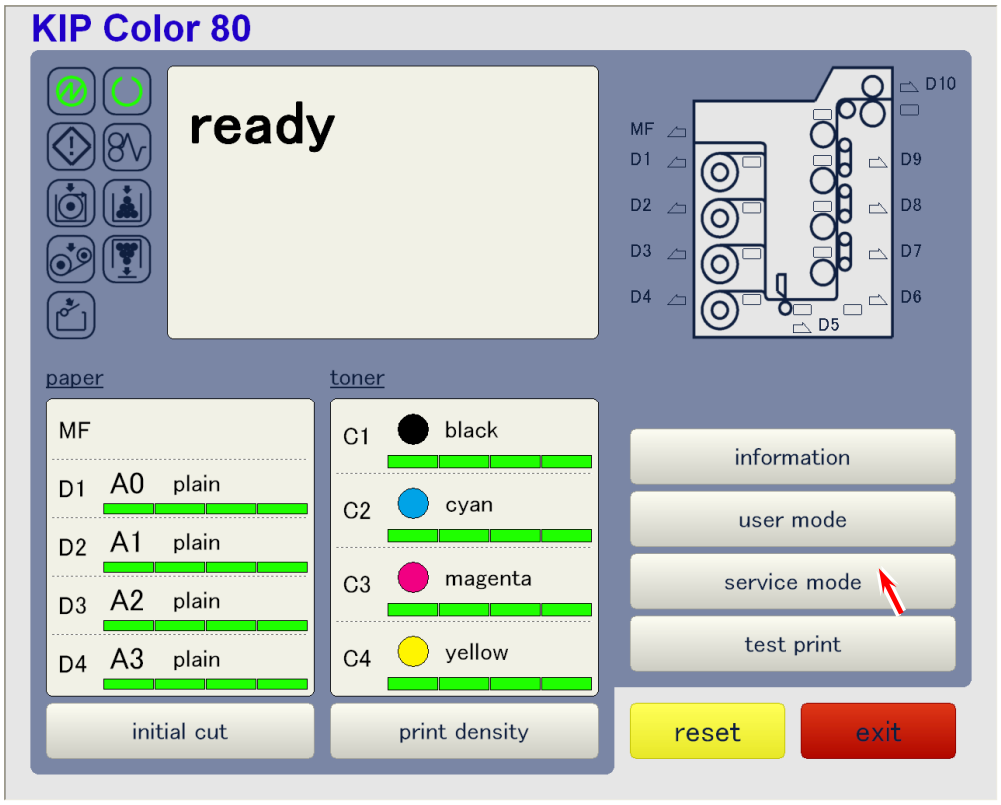
7. Install the 24lbs Premium Bond to any roll deck.

NOTE

Do not use any other type of media for the adjustment.

8. Turn on the KC80, and have a communication between KC80 and KIPDiagColor.

9. Press [service mode].

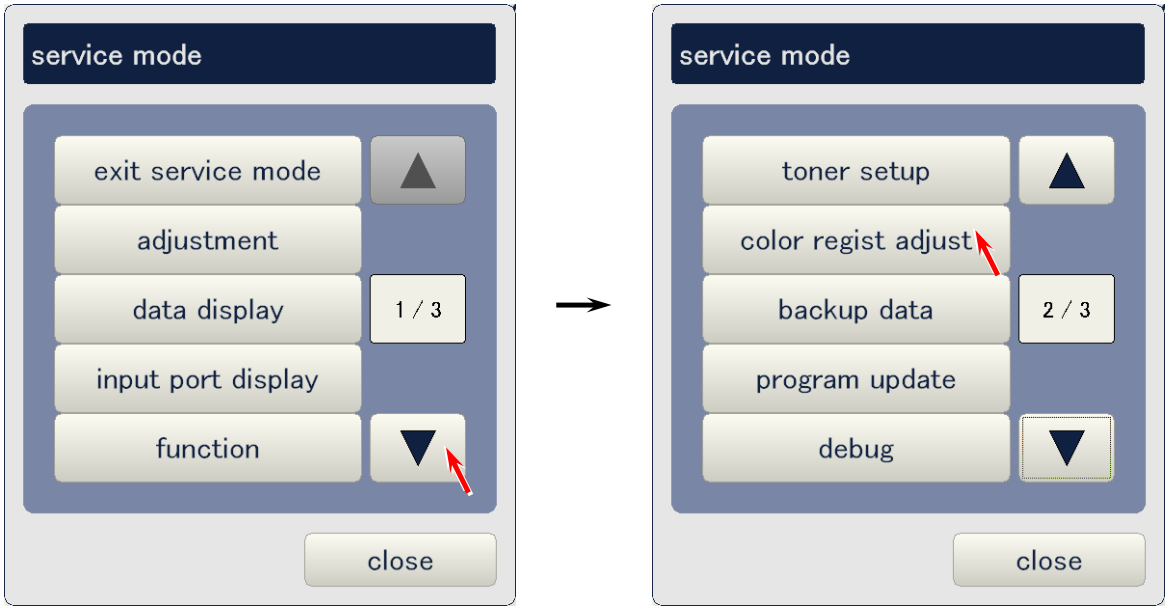


10. The following dialog pops up requiring the service password. Input the password and press [ok] to enter the Service Mode. (Default password is “0000”.)



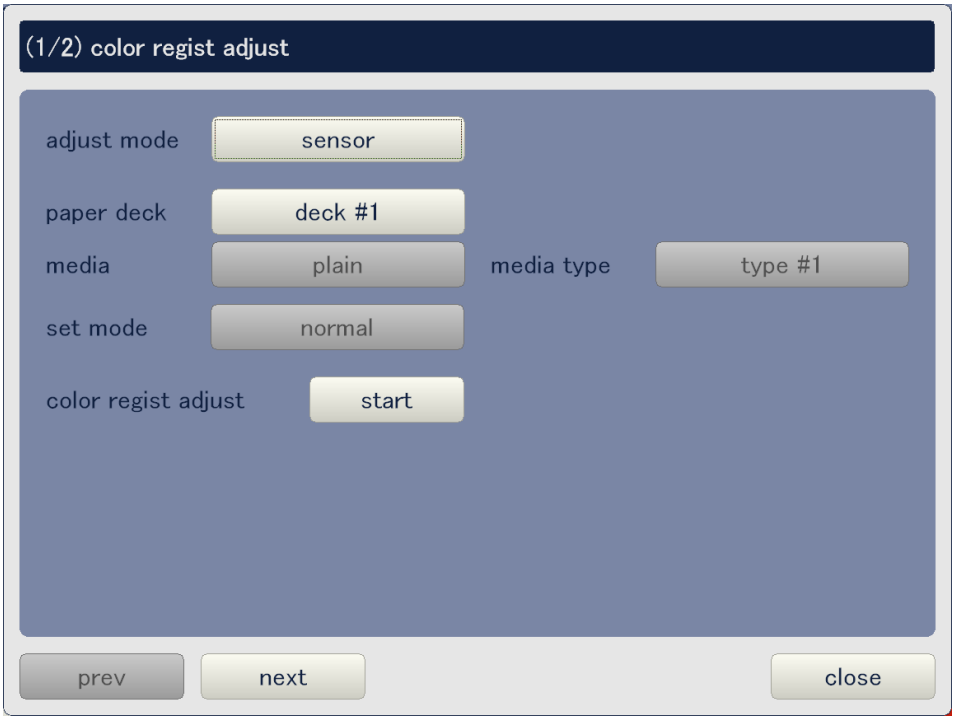
Service password (0000 in default)

11. Open the 2nd page of service mode menu pressing ▼ icon, and press [color regist adjust].



12. Set the setting items in the screen as follows.

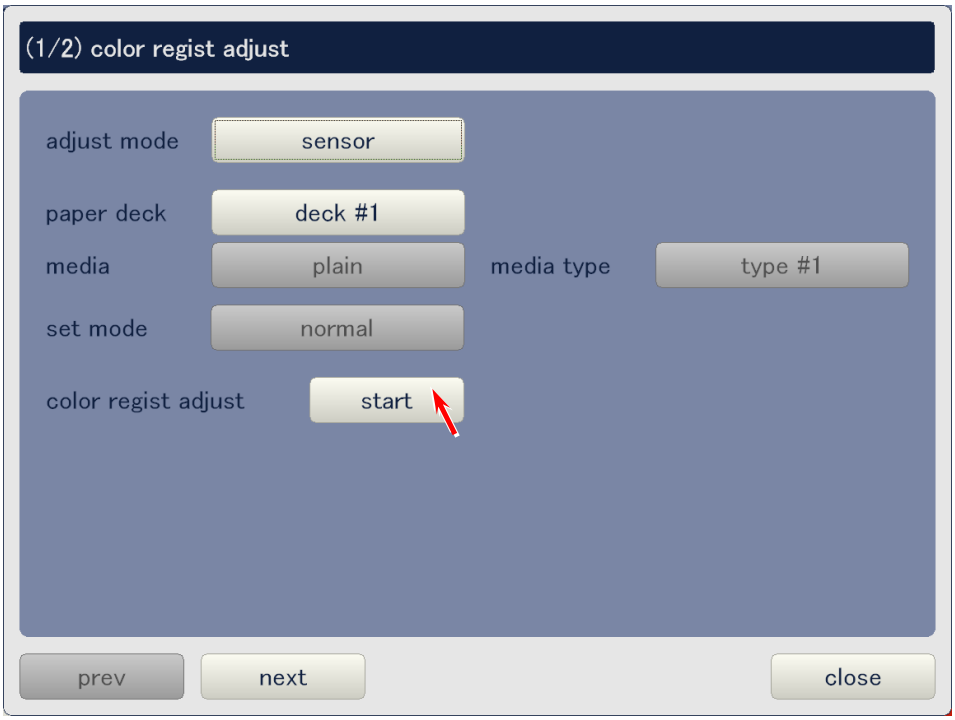
Adjust mode ..... sensor
Paper deck ..... (Select the deck in which you installed the used media)
Media ..... (Not selectable)
Media type ..... (Not selectable)
Set mode ..... (Not selectable)



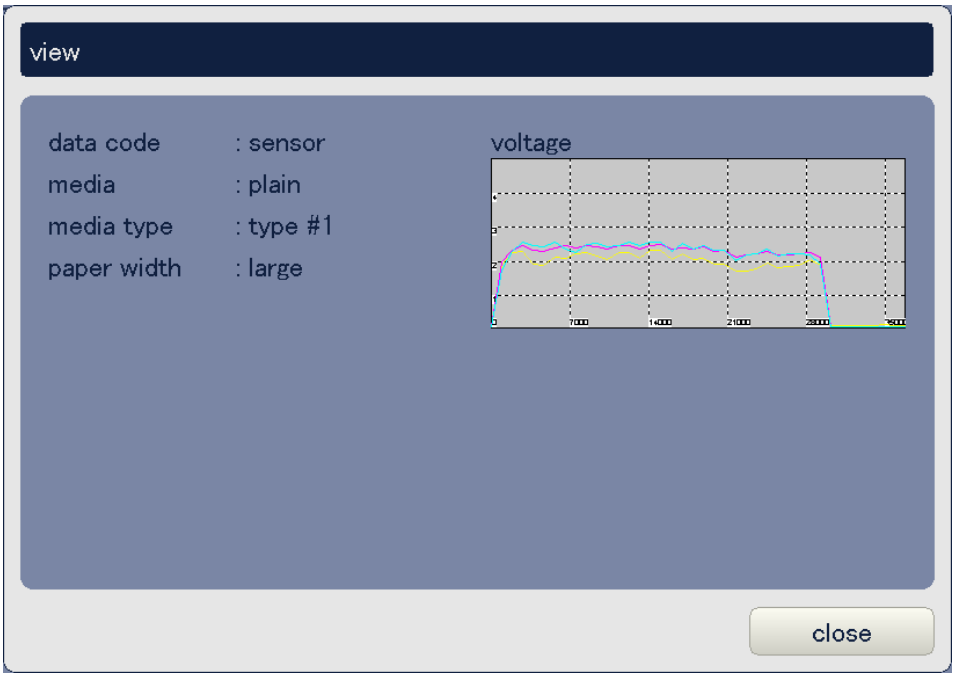
NOTE

Do not use Test Pattern No.2 (white) for the adjustment as it can not achieve proper adjustment.

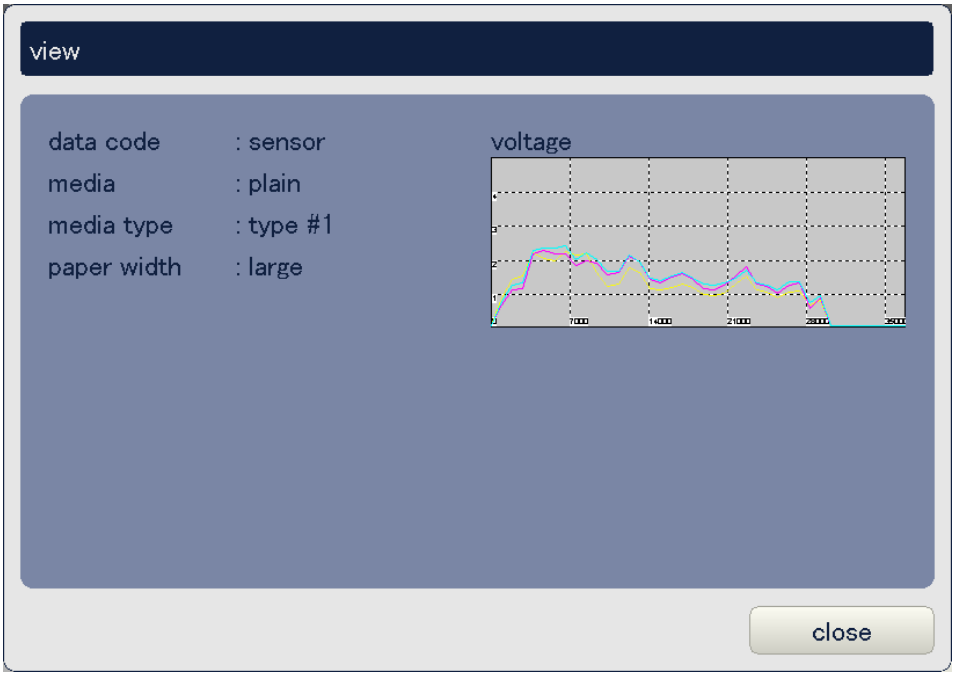
13. Press [start] to perform the Sensor Adjustment Mode. KC80 will print out a blank image (white) in 48” long.



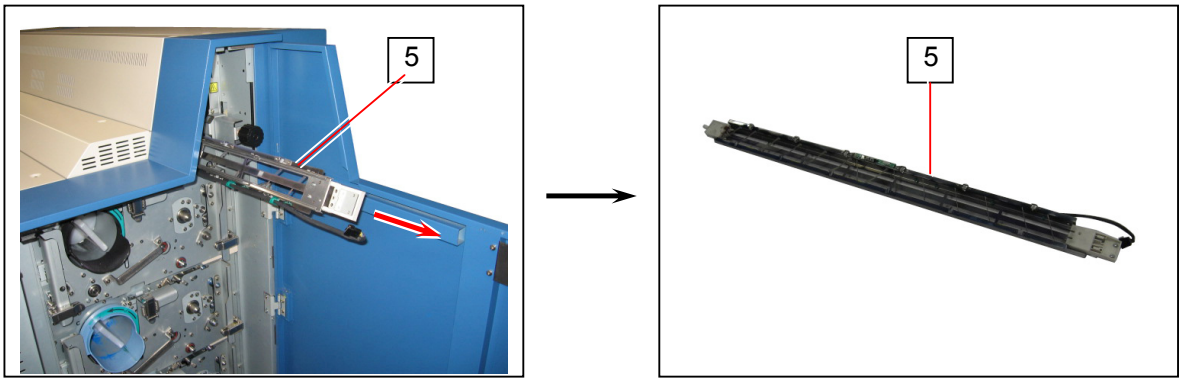
14. The following graphic chart will be indicated when the Sensor Adjustment Mode is finished, which shows the output voltage from each sensor (PH1 to 3). The outputs from all sensors must be **about 2.5V constantly**. (Even if the output decreases momentarily, it must be higher than 2.0V at least.)

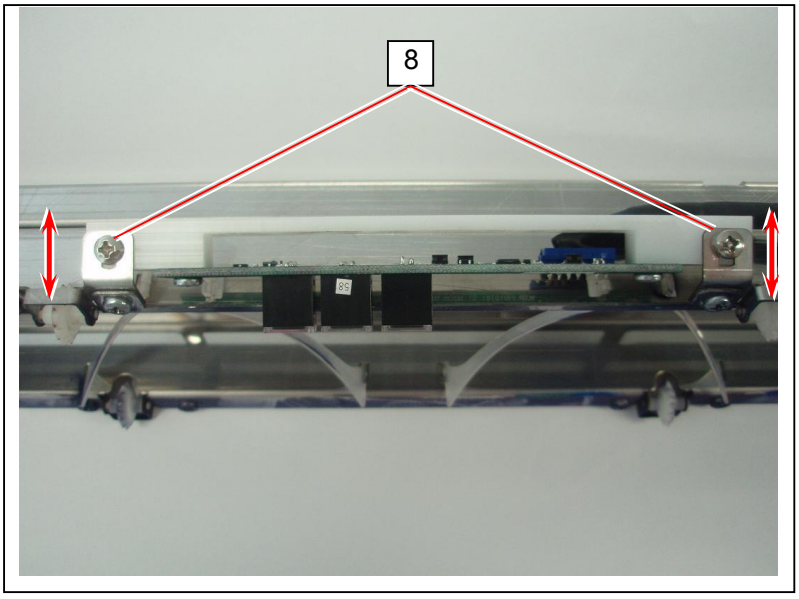


15. The following is an example that the outputs from the sensors are not acceptable.



Remove the Attraction Corona Unit (5) in this case, loosen 2 screws (8), change the position of Color Sensor PCB a little, and tighten the screws (8).
After that, confirm the outputs from the sensors again by performing the Sensor Adjustment Mode. Continue adjusting until the output voltages become acceptable.

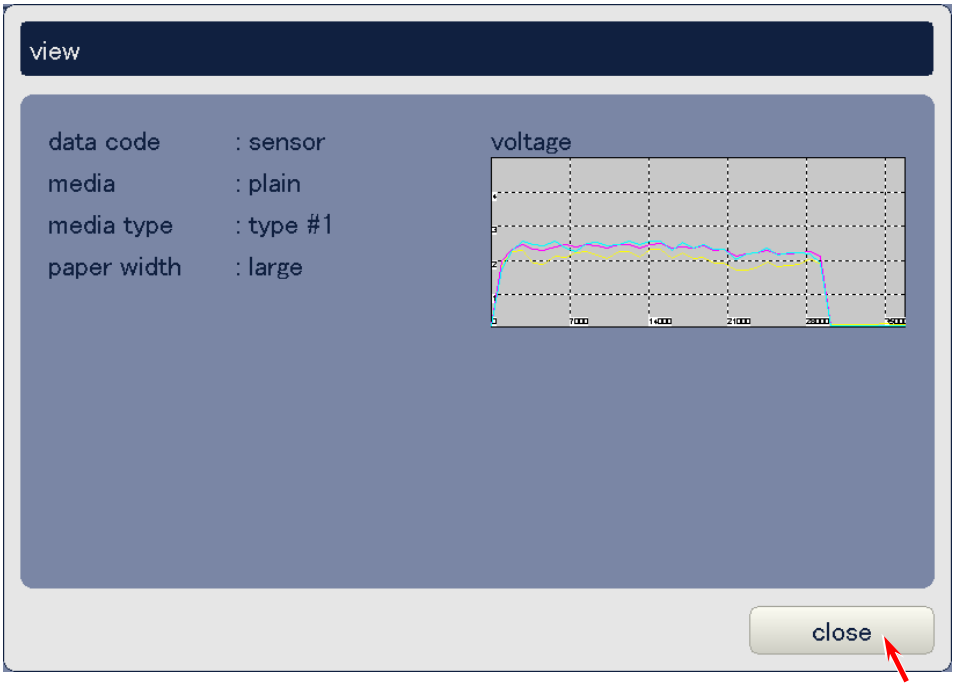




NOTE

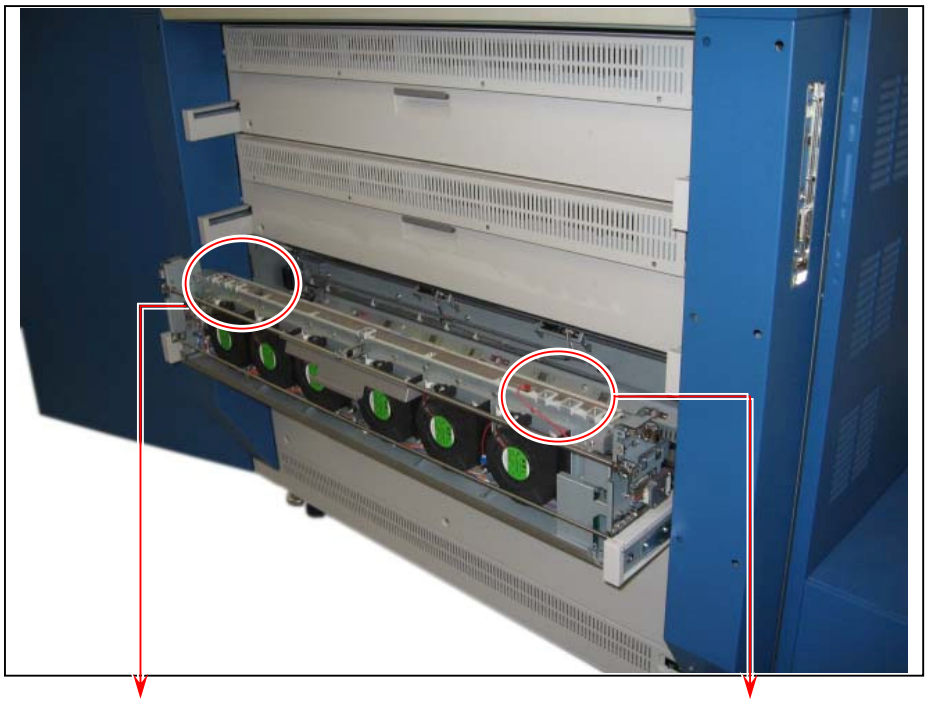
There is no specific rule to find the proper position of Color Sensor PCB. Try to move it little by little and find where the requested voltage is outputted.

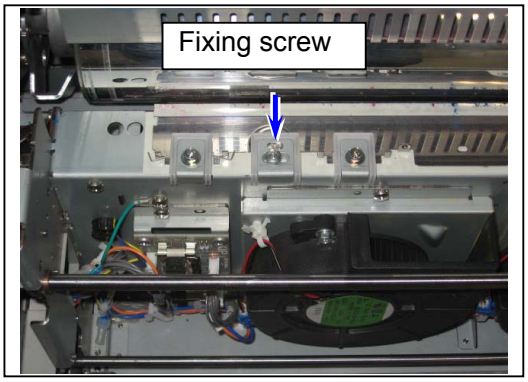
16. Press [close] finally.

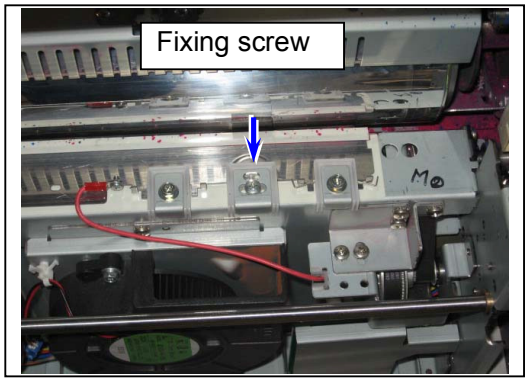


10.8 Adjustment of Gap between TR Guide & Drum

It is unnecessary to make this adjustment in usual case. Only in case the fixing screw of TR Guide is loosened, however, it is needed to recover a proper gap between TR Guide and Drum. (This screw must be loosened if the Feeder Belt of Transportation Units is to be replaced.)



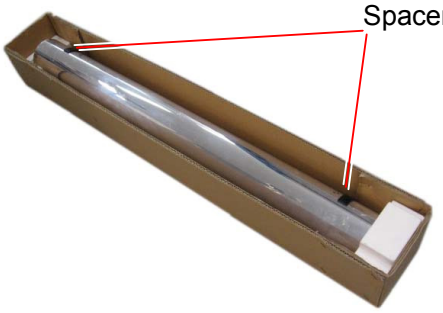




NOTE

An exclusive “Adjust Drum” (Z078560010) is required for the adjustment, which has a spacer for adjusting the gap.

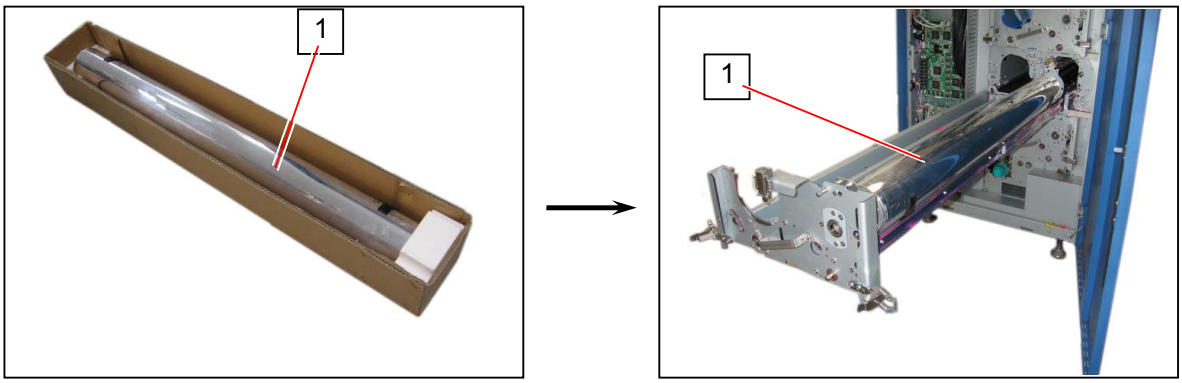
It is possible to make Adjust Drum by yourself with Spacers and used (old) Drum.
See [REFERNCE] on page 10-77.



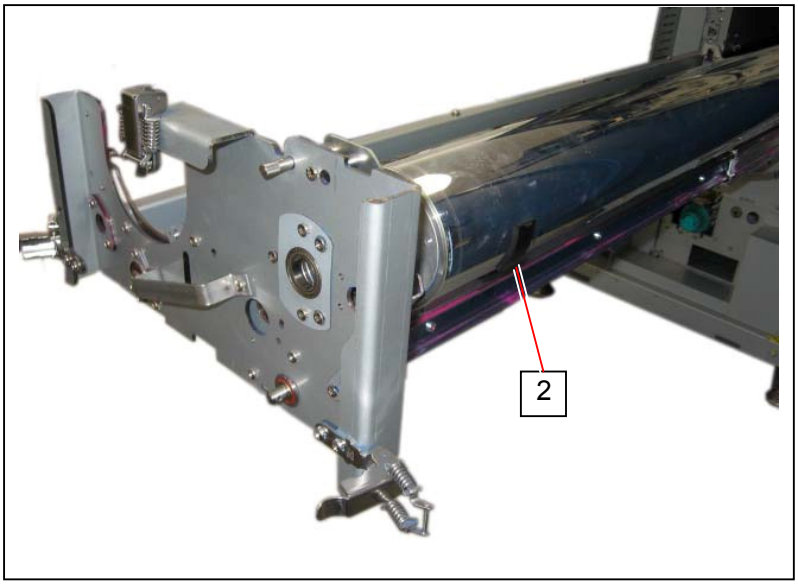
1. Remove the Drum, Cleaner Unit and Developer Unit from the concerning process unit. See the following each page for the procedure.

   - [5.1.3 Removing Drum and Cleaner Unit] on page 5-4
   - [5.1.4 Removing Developer Unit] on page 5-8

2. Install the Adjust Drum (1) to the process unit.



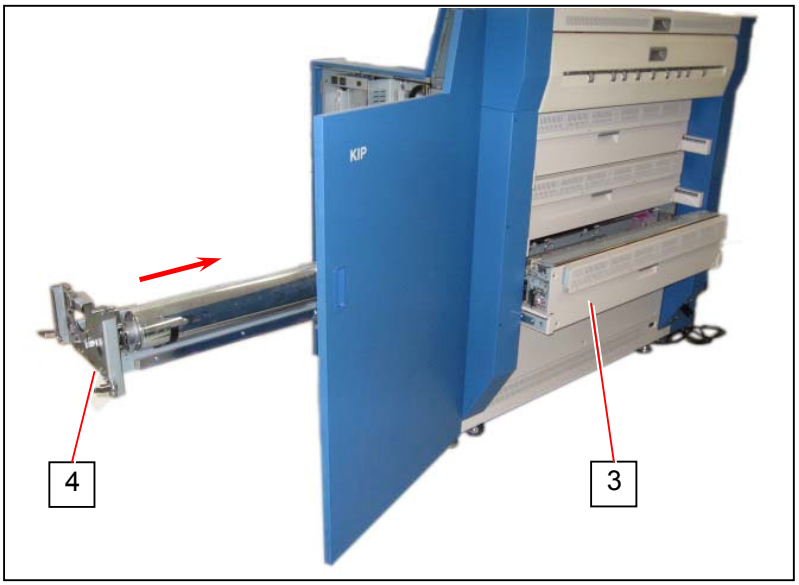
3. Before closing the process unit, place the Spacer (2) of Adjust Drum to the following shown position where the TR Guide will contact.

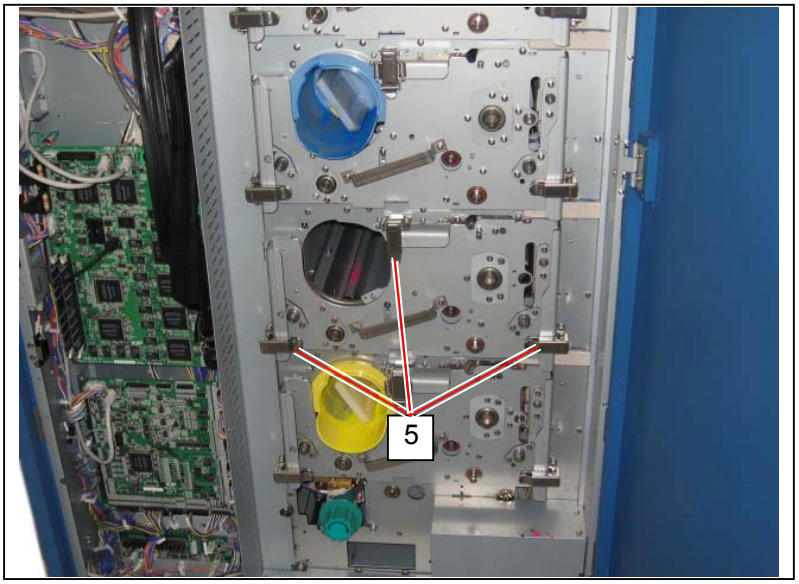


NOTE

If the Spacer (2) is placed at another position, it may hit such sensitive part as LED Head and Corona

4. After confirming that the concerning Transportation Unit (3) is opened, close the process unit (4) and lock it with 3 Stopper Levers (5).

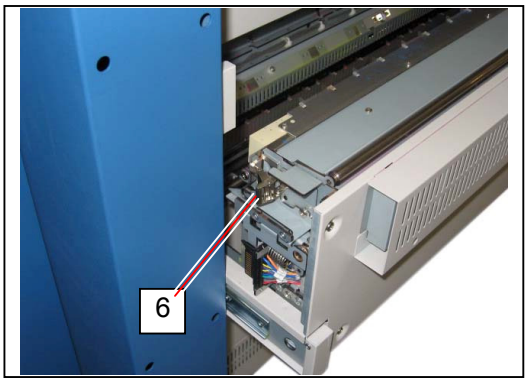


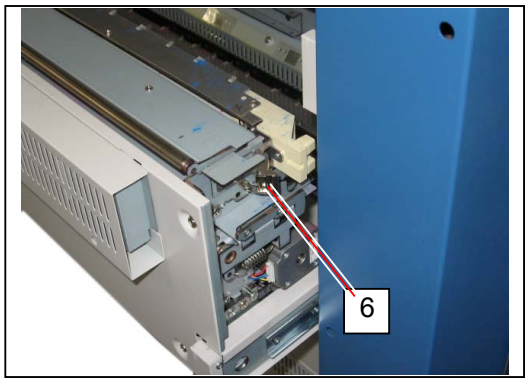


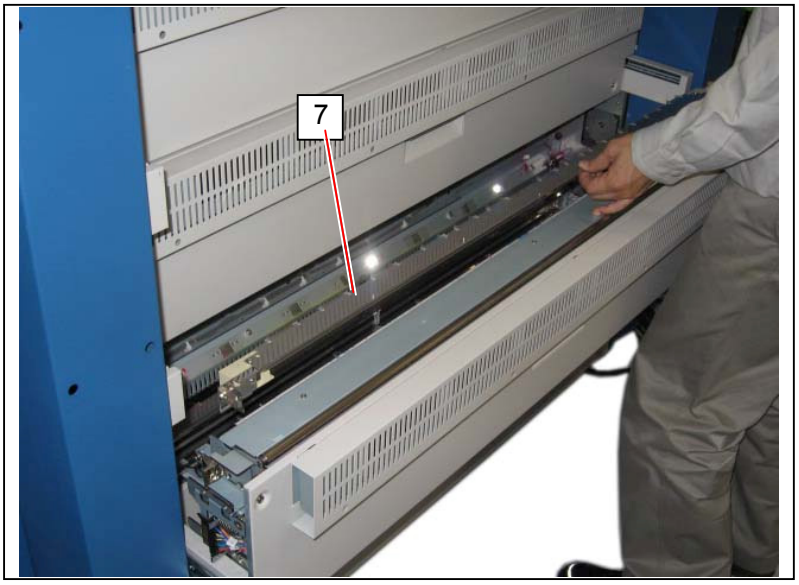
⚠ NOTE

The Spacer (2) will hit the TR Guide if the process unit (4) is closed with Transportation Unit (3) closed, which may deform the TR Guide.

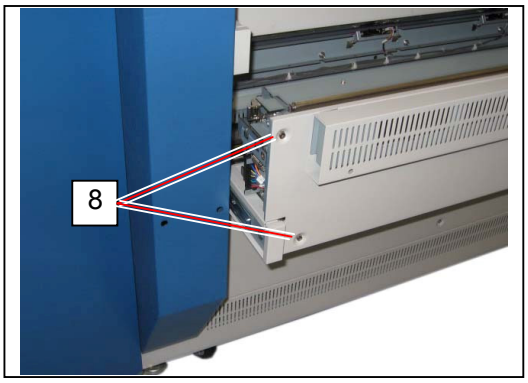
5. Unlock the Levers (6) on both sides, and remove the Transfer Corona (7).

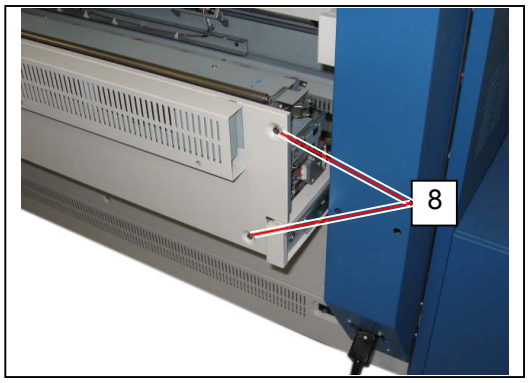


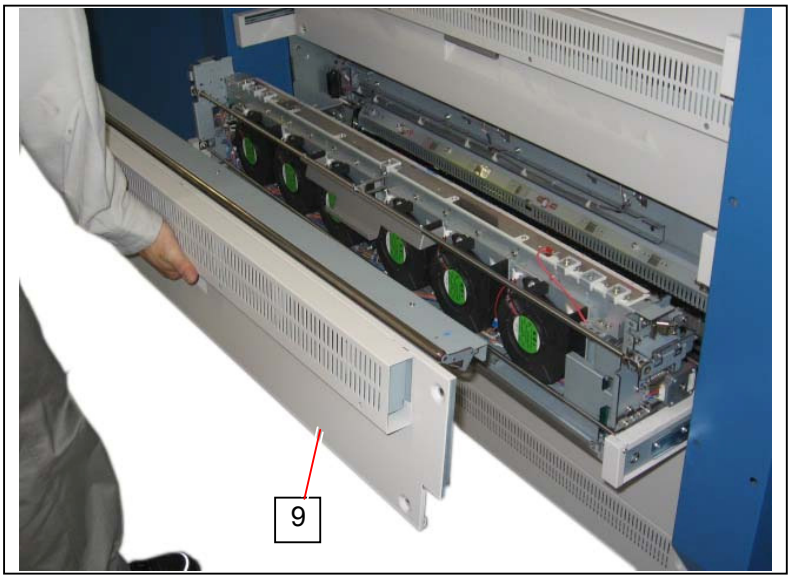




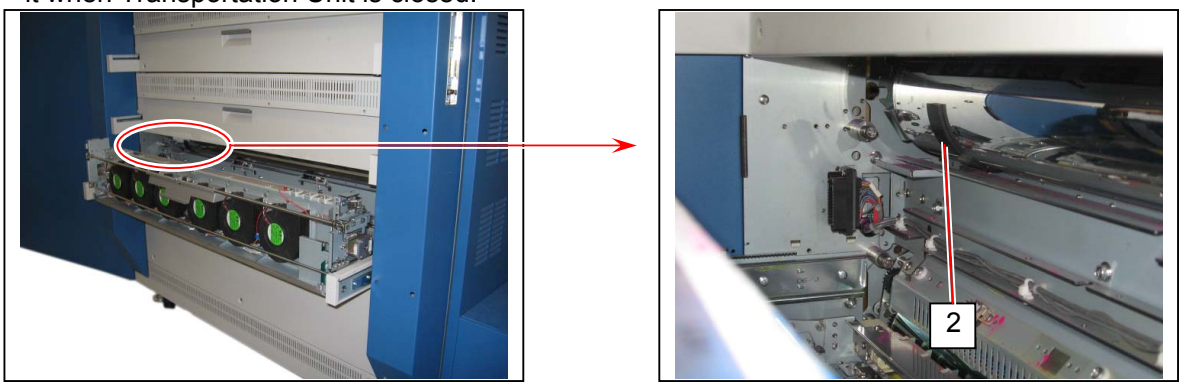
6. Remove 4 screws (8) on both sides, and remove the outer cover (9) of Transportation Unit.



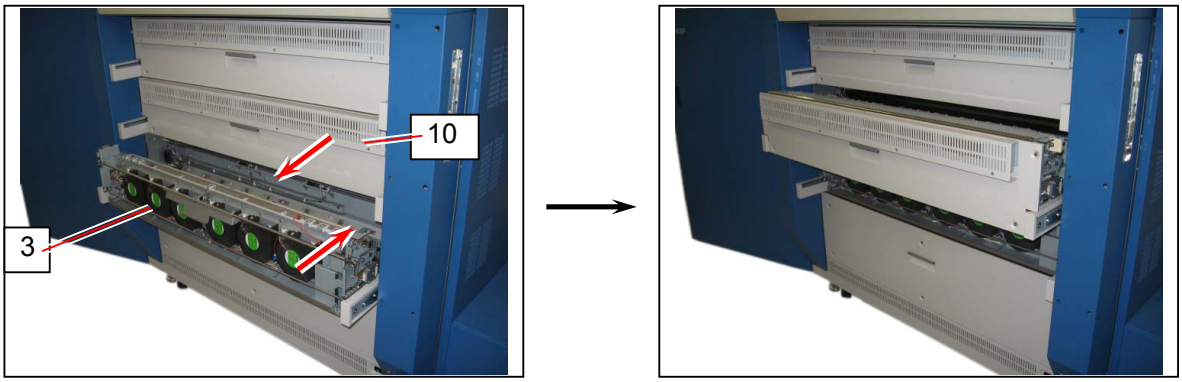




7. Confirm that the Spacer (2) is placed to correct position so that the TR Guide should contact to it when Transportation Unit is closed.



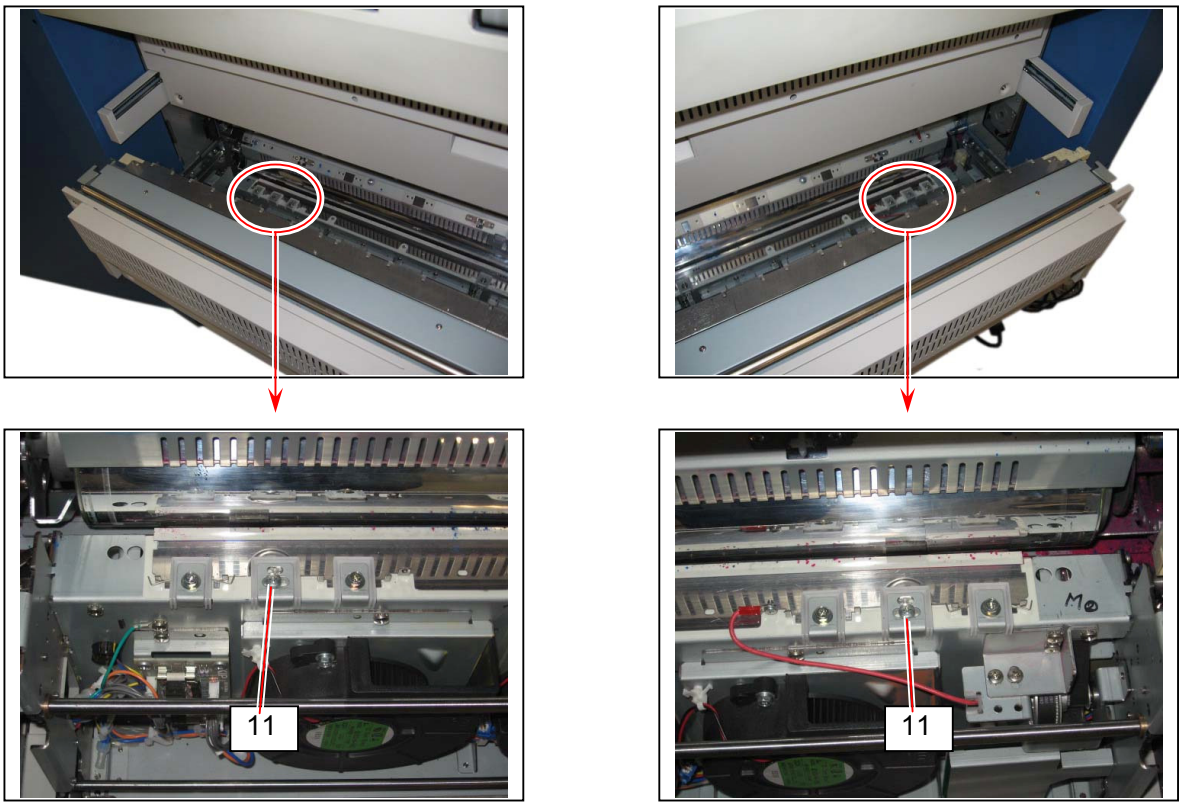
8. Close the Transportation Unit (3) that is on adjustment. And open the Transportation Unit (10) which is right above the adjusted one. By this the screws of TR Guide on Transportation Unit (3) become accessible.
(If you will adjust the TR Guide on Transportation Unit 3 for example, close the Transportation Unit 3 and open the Transportation Unit2.)



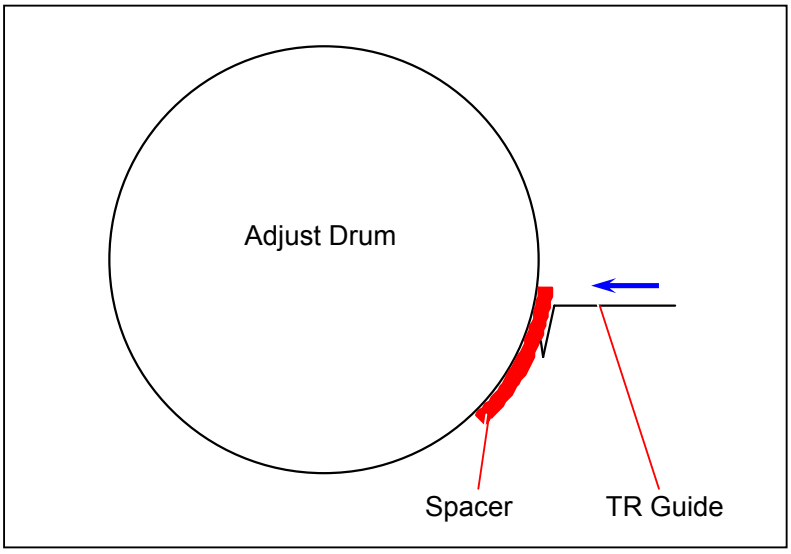
Reference

If you will adjust the TR Guide on Transportation Unit 1, access its fixing screws from the space between Fuser Unit and Transportation Unit 1. If it is hard, remove the whole Fuser Unit.

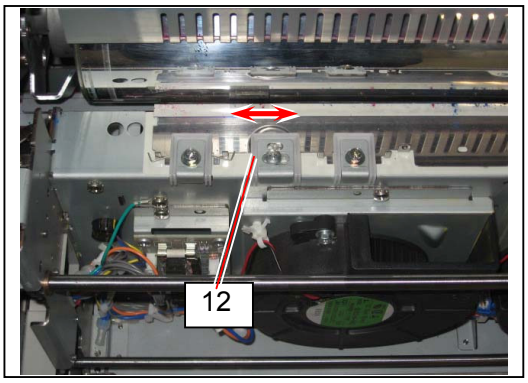
9. Loosen the screws (11) on both sides to unfix the TR Guide.

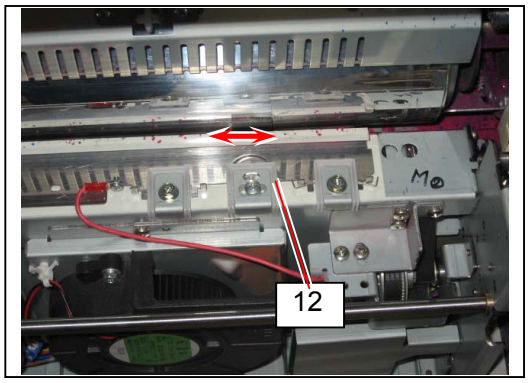


The TR Guide is pressed to the Spacer by the Spring, and keeps a correct gap between Drum.



10. Confirm that the positioning brackets (12) on both sides can be shifted left and right easily.

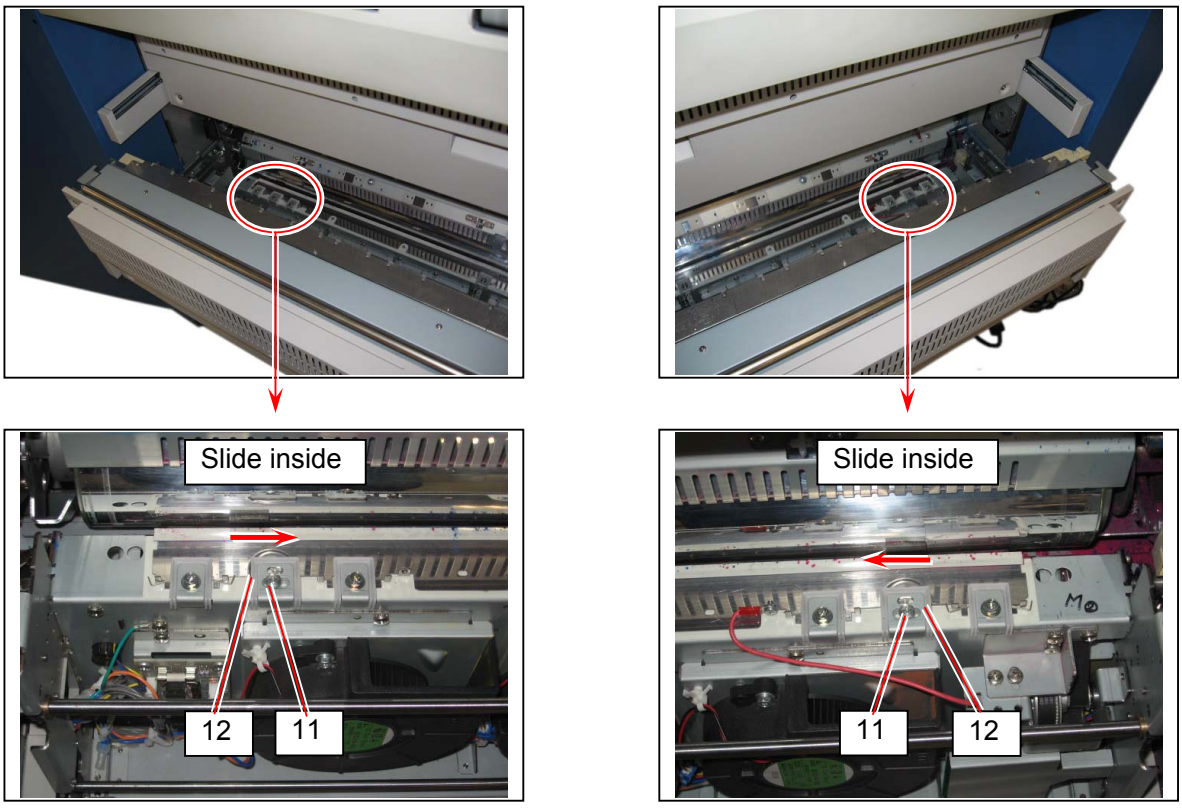




NOTE

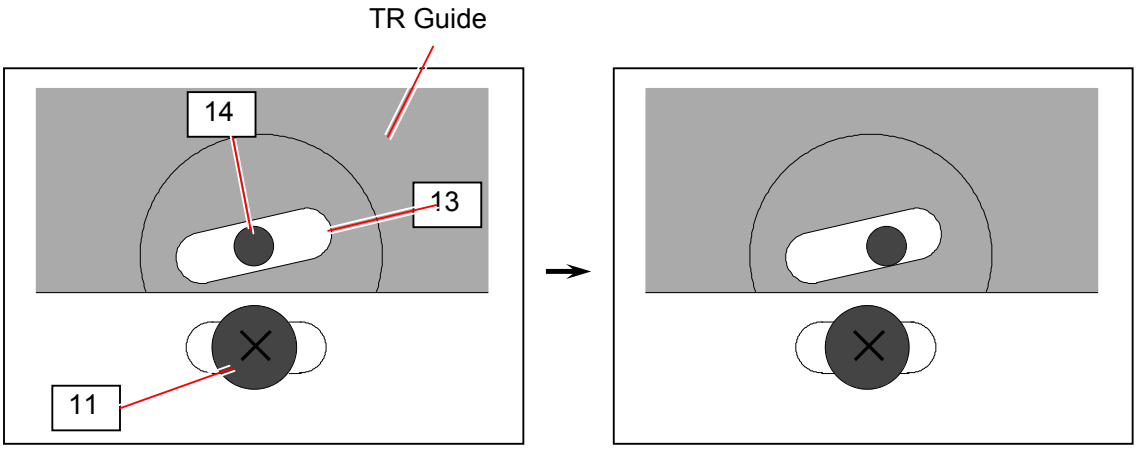
If the positioning bracket can not be shifted easily, the TR Guide may be locked for some reason. Open the Transportation Unit and check the TR Guide. Correct TR Gap adjustment can not be achieved if the TR Guide is locked.

11. Gently shift both positioning brackets (12) inside. When you feel they are contacted to something hard, fix them there by tightening the screws (11) there. The TR Guide is fixed properly keeping a correct gap between Drum. (Do not press the positioning brackets more when they contact something hard.)



NOTE

There is long inclined hole (13) on the TR Guide. And there is a stopper boss (14) inside of the long inclined hole (13), which is a part of the positioning bracket (12).



The TR Guide is keeping a correct gap between Drum as the Spacer (2) of Adjust Drum exists between them. The TR Guide can be locked at this position if you tighten the screw (11) when the stopper boss (14) is contacted to the inside edge of long inclined hole (13). (The springs try to press the TR Guide toward the Drum, but the stopper bosses prevent it. As a result the TR Guide can be locked.).

Reference

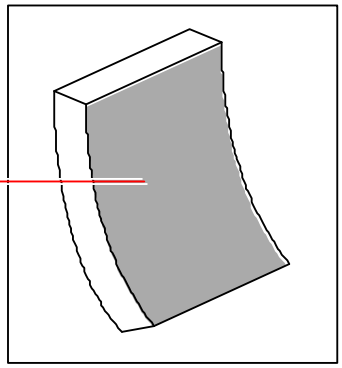
How to Make “Adjust Drum”

It is possible to make the Adjust Drum in the following way, which is used to adjust the gap between Drum and Transfer Guide of KIP Color 80.

1. Prepare 2 pieces of Spacer 2 (Z078501550), 1 piece of old (used) Drum and a double-faced tape. Please use as thin double-faced tape as possible (thinner than about 0.2mm) for correct spacing.

2. Clean the surface of Drum well with the alcohol.

3. Paste the double-faced tape to the inside of each Spacer 2.



4. Paste the Spacers 2 to their correct positions on the Drum as shown in the following picture. Make sure to align them horizontally.

