KIP 7170K Service Manual

Version A.0

SYSTEM SOFTWARE K

Explanation for EMC

1. When this product is installed in North America.

This product complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This product may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC CAUTION
Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the product.

Note: This product has been tested and found to comply with the limits for a Class A digital equipment, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the product is operated in a commercial environment. This product generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual,, may cause harmful interference to radio communications. Operation of this product in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This product complies with Part 15 of FCC Rules and Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this product may not cause interference, and (2) this product must accept any interference, including interference that may cause undesired operation of this product.

Le présent appareil est conforme aux la partie 15 des règles de la FCC et CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Contains FCC ID: VP8-13551 Contains IC: 7391A-13551

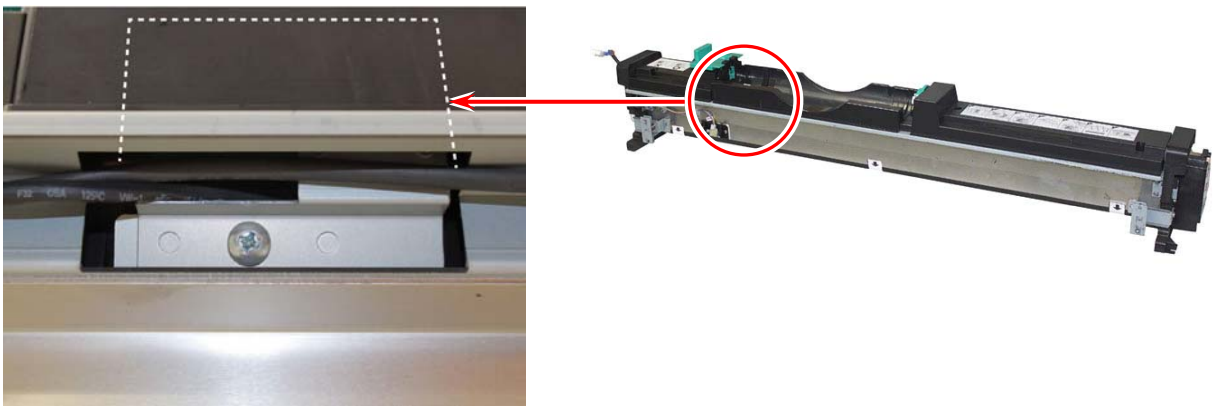
2. When this product is installed in Europe

This product complies with the requirements in CISPR 22 Rules for a Class A computing equipment. Operation of this product in a residential area may cause unacceptable interference to radio and TV reception requiring the operator to take whatever steps are necessary to correct the interference.

Do not install product around other electronic equipment or other precision instruments.
Other equipment may be affected by electrical noise during operation.

If the product is installed near other electronic equipment, such as a TV or a radio, interference to said equipment, such as noise or flickering, may occur.
Use a separate power line and install the PRINTER as far as possible from said equipment.

The position of the photograph has 13551 (Developer unit).
(Refer to [4 Setup of the Machine] Step 11.)



Chapter 1

Introduction

page

1. 1 Features 1- 2

1. 2 Specifications 1- 3
1. 2. 1 General 1- 3
1. 2. 2 Printer part 1- 4
1. 2. 3 Scanner part 1- 6

1. 3 Appearance 1- 7
1. 3. 1 Front 1- 7
1. 3. 2 Rear 1- 8

1. 4 Specifications for Scan Original 1- 9
1. 4. 1 Original - Standard 1- 9
1. 4. 2 Special Documents 1- 9
1. 4. 3 “Do Not Scan” Originals 1-10

1. 5 Specifications for Printing Media 1-13
1. 5. 1 Papers not available to use 1-13
1. 5. 2 Keeping the paper in the custody 1-14
1. 5. 3 Treatment against environmental condition 1-15

1. 1 Features

(1) KIP 7170 is a single footprint Multi-Function Printer which can copy, scan and print. Advanced drivers and comprehensive print utilities make the KIP 7170 an advanced, easy to use system. (some functions may be optional)

(2) KIP HDP technology generates no waste toner.

(3) The combination of the KIP HDP Plus imaging system with mono-component minute toner produces high definition lines, distinctive greyscale and consistent blacks.

(4) The maximum paper width is 36” (914mm) wide, and the minimum is 11” (279mm). The maximum paper length is 6m (with 36” paper) or, and the minimum is 8.5” (210mm).

(5) Up to 600dpi print resolutions with an enhanced scanning system produces the highest quality images controlled by an advanced KIP Image Process System.

(6) Easy access to USB port allows users to provide efficient productivity by using “File to Print” / “Scan to USB” (option).

(7) 2-way print delivery (front, up to 50 sheets of plain paper / rear) suits the preference of the user’s print handling. (rear stacking requires a stacking device, option)

(8) Various media source; roll media feeding (2 rolls), cut sheet manual feeding, Paper Tray multiple cut sheet feeder (option)

(9) Contactless IC card reader for more efficient accounting management (option)

(10) KIP 7170 adopts 12.1 inch screen for the UI, wider than 10.4 for our old products. The capacitive multi-touch screen offers smooth, various and intuitive user operation that a pressure sensing device lacks.

1. 2 Specifications

1. 2. 1 General

Subject	Specification
Model	KIP 7170
Configuration	Console
Power consumption (Maximum)	1,440W (US model) 1,680W (EU / Asia model) (scanner / controller included)
Power consumption (Low power mode)	Conformity with International Energy Star Program
Acoustic noise	Idling ..... Max. 50db Printing ..... Max. 57db (impulse sound excluded) EN ISO 7779
Ozone	Max. 0.05ppm (Measurement method under UL Standard)
Dimensions	In case of attaching UI, Tray 1587mm (Width) x 704mm (Depth) x 1510mm (Height) In case of excluding UI, Tray 1346mm (Width) x 704mm (Depth) x 1105mm (Height)
Weight	About 244kg (538lb)
Environmental condition for usage	(Temperature) 10 to 32 degrees Centigrade / 50 to 89.6 F (Humidity) 15 to 85% RH
Interface	Network Interface (10 BASE-T / 100 BASE-TX / 1000 BASE-T) USB2.0 (5VDC max)
Rating Input Power	In the US : 120V plus/minus 10%, 50/60Hz, 12A In Europe : 220-240V plus 6% or minus 10%, 50/60Hz, 7A

⚠ NOTE

The above specifications are subject to change without notice.

1. 2. 2. Printer part

<table>
<tr><th>Subject</th><th>Specification</th></tr>
<tr><td>Printing method</td><td>LED Array Electro photography</td></tr>
<tr><td>Photoreceptor</td><td>Organic Photoconductive Drum</td></tr>
<tr><td>Print speed</td><td>80mm per second
(Inch) ..... 3.4ppm/E 5.8ppm/D Landscape
(Metric) ..... 3.3ppm/A0 5.6ppm/A1 Landscape</td></tr>
<tr><td>Print head</td><td>LED Array</td></tr>
<tr><td>Resolution of print head</td><td>600dpi x 2400dpi</td></tr>
<tr><td>Print width</td><td>Maximum ..... 914mm / 36”
Minimum ..... or 297mm / 11” (roll media)
or 210mm / 8.5” (cut sheet)</td></tr>
<tr><td>Print length</td><td>Maximum
(Standard) ..... 6,000mm / 19.7ft for 36” / A0 wide (plain paper / bond)
or “5 x Standard length” (plain paper / bond)
“2 x Standard length” (tracing paper / vellum)
“1 x Standard length” (film)
(Option) 200,000mm

Minimum ..... 210mm / 8.5”

NOTE :
If the print is longer than the mentioned above, its image quality or the reliability of paper feeding is not guaranteed.</td></tr>
<tr><td>Paper feeding method</td><td>2 Roll Decks
Manual Feeder (single cut sheet)
Paper tray (multiple cut sheet, option)</td></tr>
<tr><td>Print size
(from Paper Tray, option)</td><td>ISO (mm)

Length / Width
<table><tr><td></td><td>594</td><td>420</td><td>297</td><td>210</td></tr><tr><td>420</td><td>X</td><td></td><td>X</td><td></td></tr><tr><td>297</td><td></td><td>X</td><td></td><td>X</td></tr></table>
ANSI (inch)

Length / Width
<table><tr><td></td><td>24</td><td>22</td><td>18</td><td>17</td><td>12</td><td>11</td><td>9</td><td>8.5</td></tr><tr><td>18</td><td>X</td><td></td><td></td><td></td><td>X</td><td></td><td></td><td></td></tr><tr><td>17</td><td></td><td>X</td><td></td><td></td><td></td><td>X</td><td></td><td></td></tr><tr><td>12</td><td></td><td></td><td>X</td><td></td><td></td><td></td><td>X</td><td></td></tr><tr><td>11</td><td></td><td></td><td></td><td>X</td><td></td><td></td><td></td><td>X</td></tr></table></td></tr>
<tr><td>Warm up time</td><td>Shorter than 4 minutes 30 seconds
(At 23°C, 60%RH, the rated voltage, and plain paper is used)</td></tr>
<tr><td>First print time</td><td>21 seconds (D Landscape, Front Stacking)
(At 23°C, 60%RH, the rated voltage, and plain paper is used)</td></tr>
<tr><td>Fusing method</td><td>Heat and Pressure Rollers</td></tr>
<tr><td>Development method</td><td>Dry type non-magnetic mono-component toner</td></tr>
</table>

Subject	Specification
Media	(Recommended Media) US model: Bond 64g/m^2 to 80g/m^2, US Bond (PB-20) Vellum US Vellum (XV-20) Film 4MIL (PF-4DME) EU / Asia model: Plain Paper 64g/m^2 to 80g/m^2 Tracing Paper Gateway Tracing Paper (73g/m^2) Film NSF4mil
Storage of consumables	(Toner cartridge) Store the cartridge within the temperature range from 0 to 35 degrees Centigrade and within the humidity range from 35 to 85% RH.

⚠ NOTE

The above specifications are subject to change without notice.

1. 2. 3 Scanner part

Subject	Specification
Scanning method	Contact Image Sensor (CIS) (5 pieces of A4 sized CIS)
Light source	LED (R/G/B)
Scanning speed (600 dpi, normal quality) (max)	Monochrome : 65mm/s Grayscale : 65mm/s Color : 22mm/s NOTE : The actual speed may vary by the scan software.
Setting of original	Face up
Starting point of scan	Center
Scan width	Max: 914.4mm / 36” Min : 210mm
Scan length	Max: 6,000mm / 19.7ft (Including the margin area) Min : 210mm / 8.5” (Including the margin area) NOTE : If the print is longer than 6,000mm, its image quality or the reliability of paper feeding is not guaranteed.
Optical resolution	600dpi
Digital resolution	200 / 300 / 400 / 600 dpi
Original transportation	Sheet through type
Transportable original thickness	Max: 1.60mm Min : 0.05mm NOTE : Image quality for an original with 0.25mm or thicker is guaranteed only in a standard size even the scanner physically accepts it.

⚠ NOTE

The above specifications are subject to change without notice.

1. 3 Appearance

1. 3. 1 Front

No.	Name	Function
1	Main Switch	You can turn on/off the KIP 7170.
2	Original Guides	Feed the original under the Scanner Unit along the Original Guides.
3	User Interface	This is a Touch Screen, and many kinds of user operation are available. **PLEASE DO NOT** push the LCD area too strong.
4	Scan Abort Button	While scanning: emergency stop At Standby position: eject
5	Start Button	Starts scanning if the controlling software requires user intervention.
6	Scanner Unit	Read the original with this unit when you make scan or copy.
7	Toner Hatch (Original Table)	Open the Toner Hatch when you replace the Toner Cartridge. Also put the original here and then feed it into the Scanner Unit when you make scan or copy.
8	Engine Unit Open Lever	Pull up these levers when you open the Engine Unit.
9	Bypass Feeder	Feed a cut sheet paper from the Bypass Feeder.
10	Roll Deck	Roll media can be loaded here.
11	Print Tray	These trays catch ejected prints.
12	LED Indicator	Indicates the status of Scanner Unit. **green**: Ready **red**: Error **green** to-and-fro: Scanning **red** flashing:Scanner Unit Open, Jam
13	USB Port	Your USB flash memory storage can be installed here. 5VDC max.
14	Paper Tray (OPTION)	Multiple cut sheets can be stored inside (up to 50)

1. 3. 2 Rear

No.	Name	Function
1	Exit Cover	Open the Exit Cover when you remove the paper misfed inside the Fuser Unit.
2	COM Port	For an optional device (D-Sub Connector 9 pins: 12VDC max.)
3	USB Port	For an optional device Service Use. 5VDC max.
4	LAN Port	Connect the LAN Cable to connect the KIP 7170 to the network. (Do not connect a telephone line)
5	Dehumidify Heater Switch US model : OPTION EU / Asia model : Standard	Turn on the Dehumidify Heater with this switch when you would like to dry the paper in the humid season.
6	Breaker	It is possible to shut off supplying the AC power.
7	Inlet Socket	Connect the Power Cord here.

1. 4 Specifications for Scan Original

A scan original must satisfy the following specifications.

Thickness	0.05mm to 1.60mm
Width	210mm to 914.4mm
Length	210mm to 6,000mm

NOTE :
1. Image quality for an original with 0.25mm or thicker is guaranteed only in a standard size even the scanner physically accepts it.
2. Image quality for an original over 6,000mm in length is not guaranteed.

1. 4. 1 Original Standards

(1) The width of original must range from 8.5” to 36” (210mm to 914.4mm).
(2) The length of original must range 8.5” (210mm) to 6,000mm
(3) The thickness of original must range from 0.05mm to 0.25mm.
(4) The shape of original must be square, and it must be standard sized.
(5) The type of original must belong to any of the followings.
    Plain paper
    Coated paper (High or middle class plain paper is coated with the paint.)
    Tracing paper
    Pansy Trace Paper (Both sides of the film is sandwiched between Tracing paper.)
    Film
    Newspaper
    Cardboard paper

1. 4. 2 Special Documents

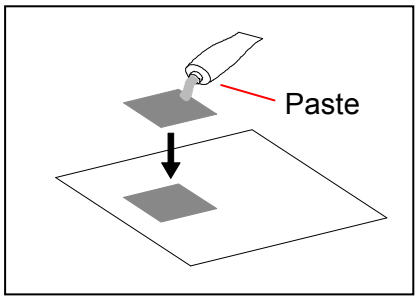
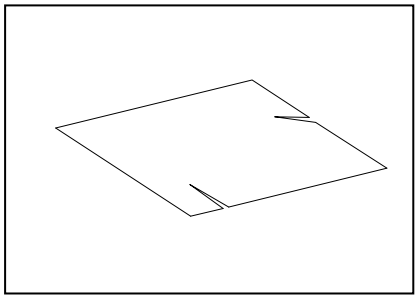
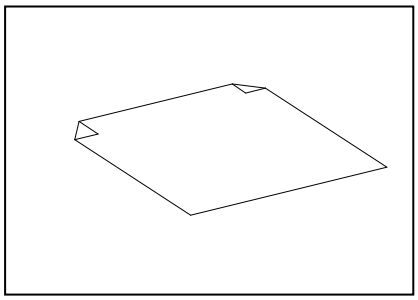
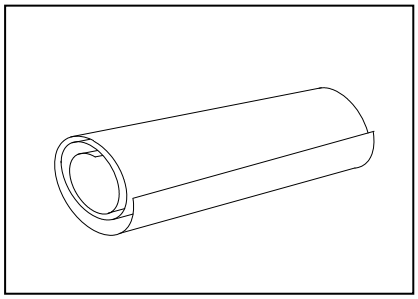
The following kinds of originals are “special”. It is possible to scan them, **but the image quality and feed reliability are not guaranteed**.

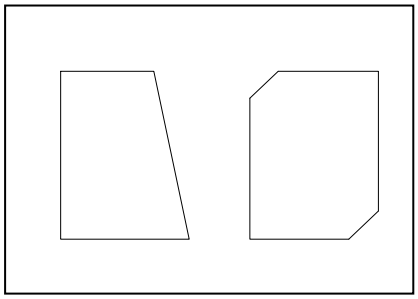
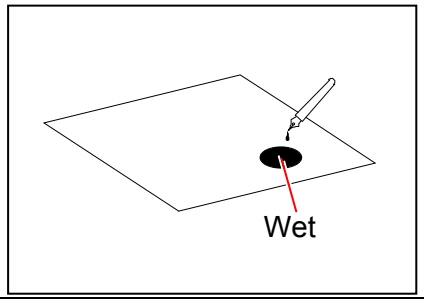
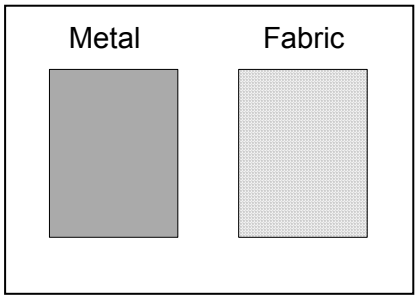
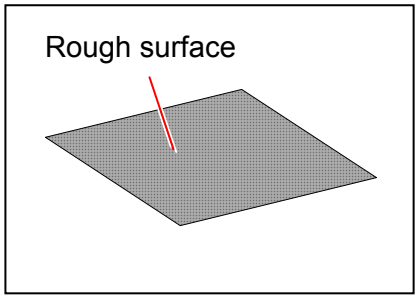
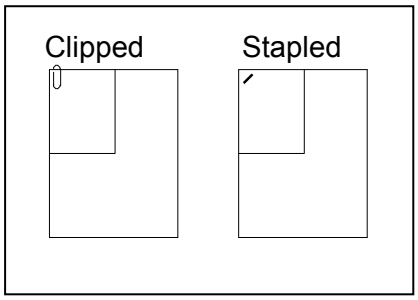
(1) The type of original is acceptable, but the thickness and type may not be:
    Booklets
    Original with a Hanger
    Cut and Pasted originals
(2) These original may not damage the scanner, but these types are NOT recommended: following ones.
    Cloth
    Aluminium Kent Paper

1. 4. 3 “Do Not Scan” Originals

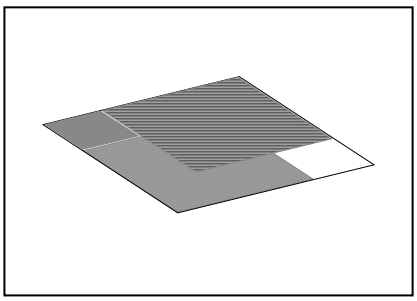
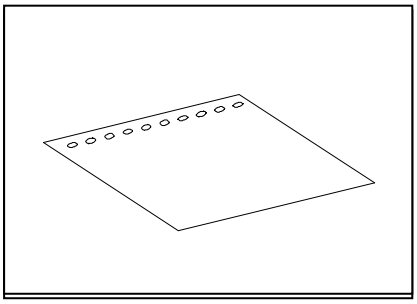
It is impossible to use the following types of originals because they are likely to damage the scanner.

Do not scan the following kinds of original, because you may damage the original or scanner itself!

Sticked with paste	
Torn	
Folded (Leading edge)	
So much curled (Diameter is smaller than 50mm.)	

Not square	
Wet image	
Made of metal or fabric	
Rough surface (Carbon paper for example)	
Clipped or stapled	

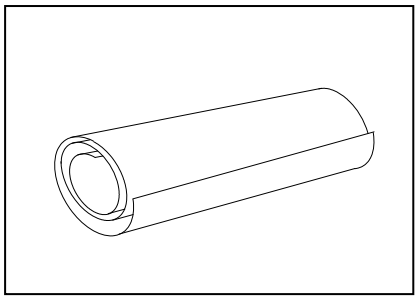
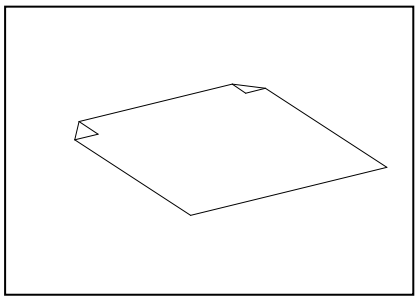
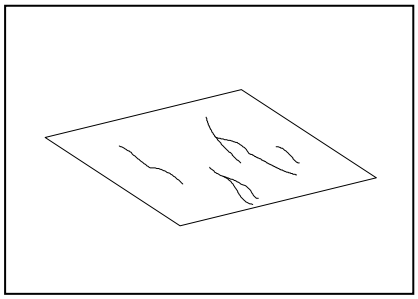
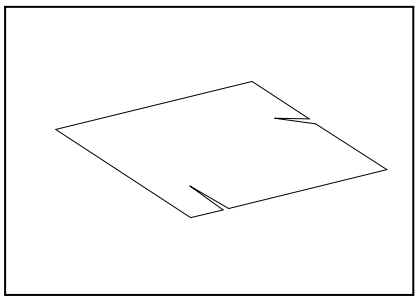
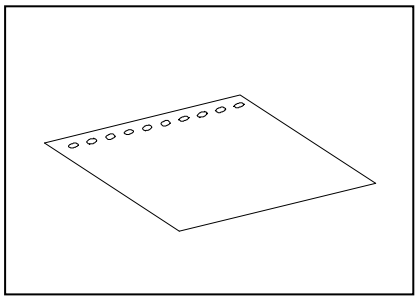
The following kinds of originals can be read with using a carrier sheet.
However, the image quality and feed reliability are not guaranteed.

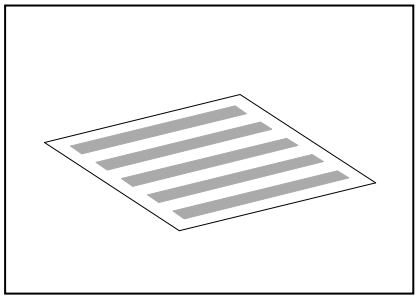
Patched	
Punched	

1. 5 Specifications for Printing Media

1. 5. 1 Papers not available to use

Do not use the following kinds of printing paper because you may damage the print engine!

Excessively curled (a diameter of 50 mm or less)	
Folded	
Creased	
Torn	
Punched	

Paper that has already been used for printing	
Extremely sticky	
Extremely thin and soft	
Extremely slippery	
OHP Film	

⚠ CAUTION

Do not use the paper with staple, or do not use such conductive paper as aluminium foil and carbon paper.
Such paper may become cause for the fire.

⚠ NOTE

(1) Print image may become light if printed on a paper of rough surface.

(2) Print image may become defective if the print paper is much curled.

(3) It will become a cause for paper mis-feed, defective print image or crease of paper if you use a paper that does not satisfy the specification.

(4) Do not use a paper of which surface is very special, such as thermal paper, art paper, aluminium foil, carbon paper and conductive paper.

(5) Do not use papers with unpacked (exposed in high / low temperature & humidity) in a long period. Such papers may result in mis-feed, defective image or paper creasing.

(6) Tracing paper exposed to air over a long period tends to defective printing.
Removing one round on the surface of the tracing roll paper from the beginning is recommended.

(7) Initial cut for the leading edge before making a long print is recommended.

1. 5. 2 Keeping the paper in the custody

Keep the paper in the custody taking care of the following matters.

1. Do not expose the paper to the direct sunlight.
2. Keep the paper away from high humidity. (It must be less than 70%)
3. Put the paper on a flat place
4. If you will keep the paper in the custody, which you have already unpacked, put it into the polyethylene bag to avoid the humidity.

1. 5. 3 Treatment against environmental condition

Humidity(%)	Possible problem	Necessary treatment
Low ↑	"Void of image", "crease of paper" and other problems occurs when you print with plain paper and tracing paper.	1. Install the humidifier in the room, and humidify the room air. 2. Remove the paper from the machine right after the completion of print, and keep it in a polyethylene bag.
	"Void of image" occurs when you print with tracing paper.	If you will not make print soon, remove the tracing paper from the machine and keep it in a polyethylene bag.
40%		Remove the paper from the machine after everyday use, and keep it in a polyethylene bag.
70%	"Void of image" occurs when you print with plain paper and tracing paper.	If you will not make print soon, remove the tracing paper from the machine and keep it in a polyethylene bag.
↓ High	"Void of image", "crease of paper" and other problems occurs when you print with plain paper and tracing paper.	1. Turn on the Dehumidify Heater. (if installed) 2. Remove the paper from the machine right after the completion of print, and keep it in a polyethylene bag.

⚠ NOTE

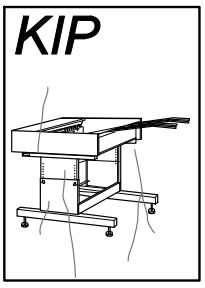
(1) KIP 7100 is equipped with the Dehumidify Heater (option for US model.)
Using it in high humidity environment (65% or higher) is recommended.

(2) "Void of image" and "crease of paper" will occur in case of extremely high or low humidity.

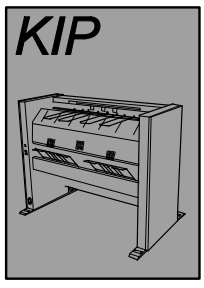
Normal Print

If the media is humidified ; →

Crease of paper

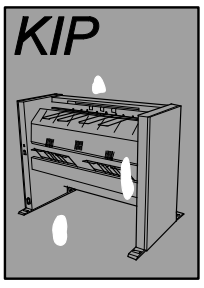


Normal Print



If the media is humidified ; →

Loss of image



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 work to make the machine work at customer's site as same as it has passed our strict inspection before shipment.
A service engineer has to understand machine's function very well. Install the machine in a good environmental place in a correct way, and then check that it works perfectly.

Page

2. 1 Installation Requirements 2- 1

2. 2 Unpacking 2- 2
2. 2. 1 Unpacking 2- 2
2. 2. 2 Confirmation of Accessories 2- 3

2. 3 Leveling KIP 7170 ..... 2- 5

2. 4 Setup of the Machine 2- 7

2. 5 Opening and Closing the LED Head Frame 2-13

2. 6 Installing Monitor 2-19

2. 7 Installing Accessories 2-22

2. 8 Printer Setting 2-25

2. 9 Regional Setting 2-35

2.10 Scanner Adjustment 2-40
2.10. 1 Launching K129 Diag 2-40
2.10. 2 Stitching Adjustment 2-44
2.10. 3 Creating Backup Data 2-60

2. 1 Installation Requirements

The following conditions are required for the installation of the equipment.

1. Power source should be rated as:
   U.S.A: 120V +/-10%, 50/60Hz, 15A or higher
   Europe and Asia: 220-240V+6% or -10%, 50/60Hz, 10A or higher
2. The equipment must be on a dedicated circuit.
3. The outlet must be near the equipment and easily accessible.

1. Make sure to connect this equipment to a properly grounded outlet.
2. The outlet shall be installed near the equipment and shall be easily accessible.

Site Environmental Conditions

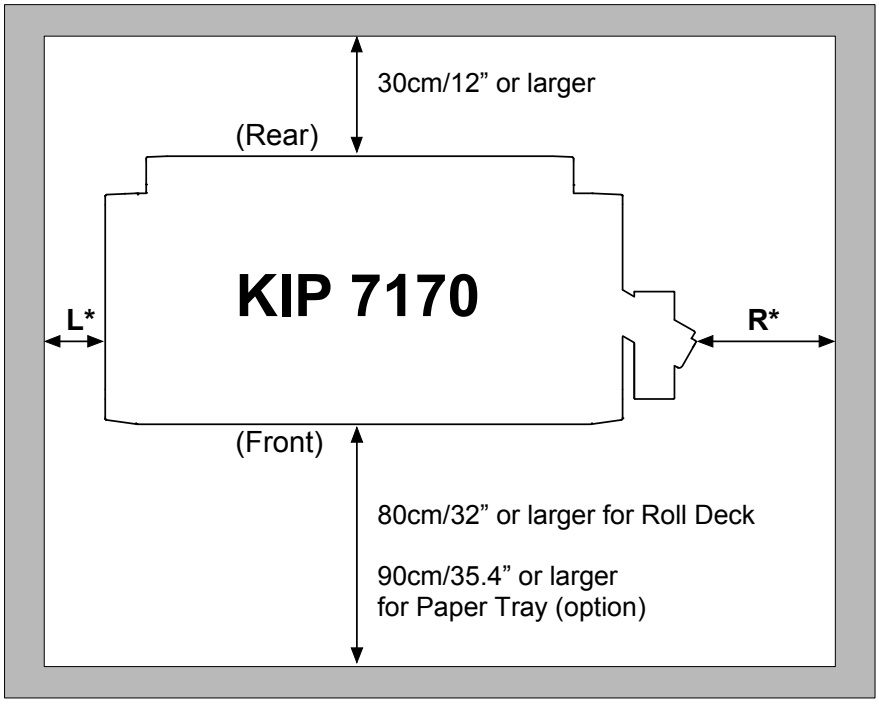
Temperature Range
10 C to 32 C
50 F to 89.6 F
Humidity Range
15% to 85% RH. (NON CONDENSING)

Keep the printer away from water sources, boilers, humidifiers, refrigerators or kerosene (oil) stove.

1. The installation site must not have any open flames, dust or ammonia gases.
2. The equipment must not be exposed to the air vents from heating/cooling systems.
3. The equipment should not be exposed to the direct sunlight. Please draw curtains to block any sunlight.
   When you open the printer (Upper Half), do not expose the Photoconductive Drum to strong (intense) light as this will damage the Drum.

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

Keep ample space around the equipment to ensure comfortable operation.
(Refer to the following figure.) The floor must be level and the strength must be ample to sustain the weight of the equipment.



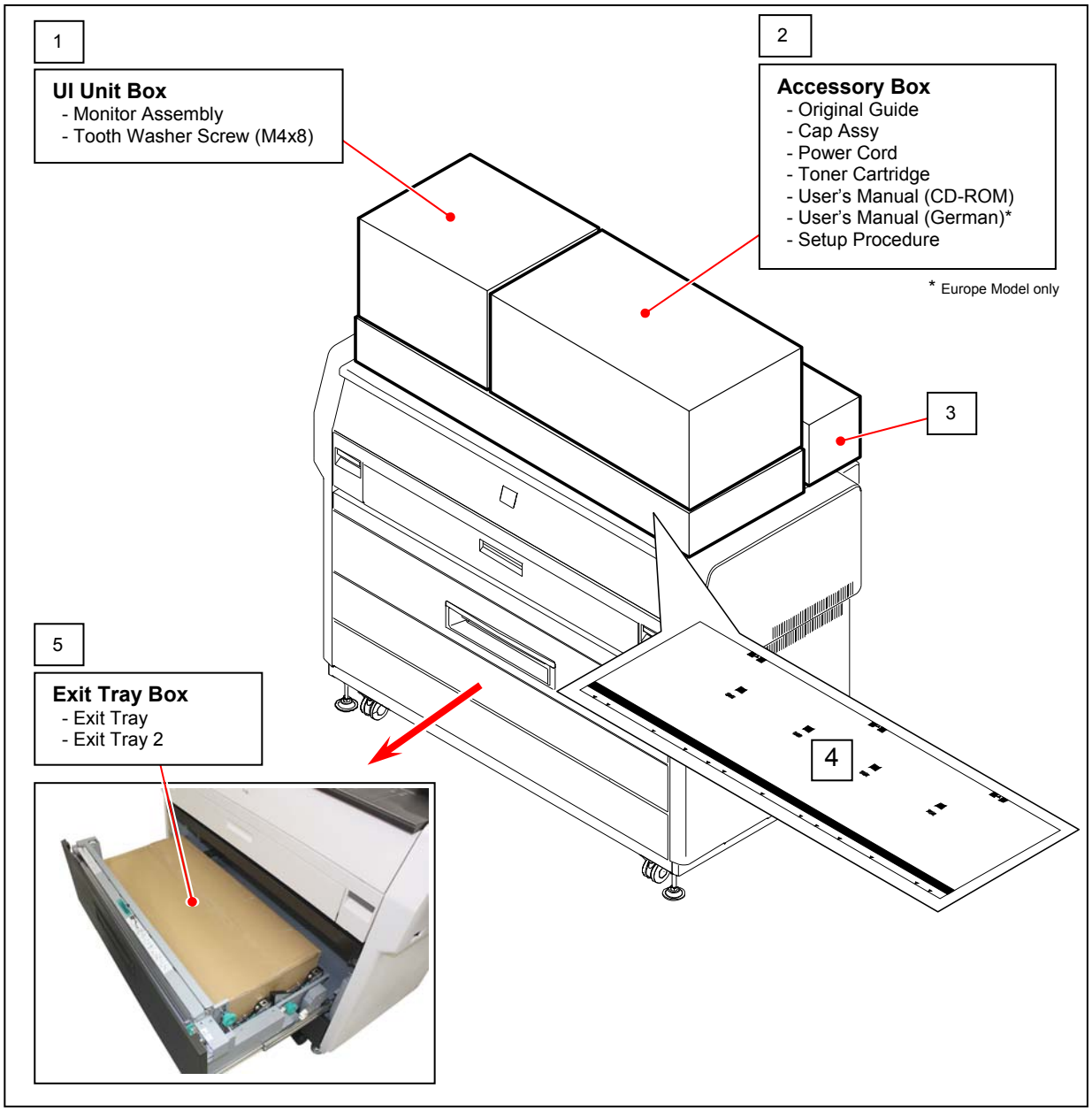
*L+R=35cm/14” or larger
(R must be larger than L)
(L=5cm/2” or larger recommended)

2. 2 Unpacking

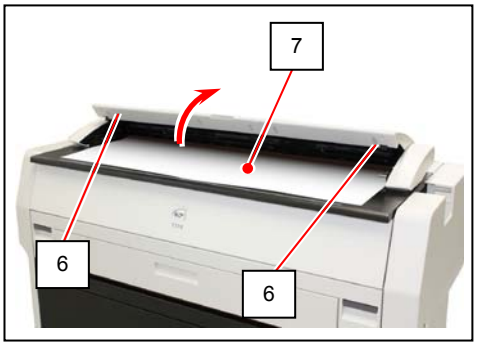
2. 2. 1 Unpacking

1. Unwrap the machine. Put aside the following cardboard boxes.

- Top	:	UI Unit Box (1), Accessory Box (2), empty Drum Box (3)
-Scanner Cover (Inside)	:	Shading Sheet (4)
- Roll Deck (Inside)	:	Exit Tray Box (5)



2. Lift up both sides (6) of the Scanner Unit, and then remove the protection mat (7).
Gently press Scanner Unit down and firmly close it.



2. 2. 2 Confirmation of Accessories

Confirm the following parts are attached to the product.

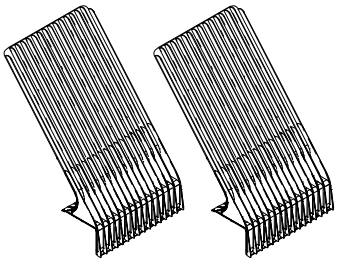
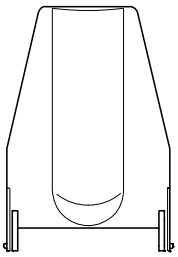
Accessory Box

Item name	Picture	Number of article	Item name	Picture	Number of article
Original Guide 1 & 2		1 each	Cap Assy		4
Toner Cartridge (400g)		2	Power Cord		1
User's Manual (CD Rom)		1	Setup Procedure		1 (This leaflet)
User's Manual (German)	 Europe Model only	1			

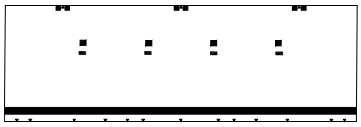
UI Unit Box

Item name	Picture	Number of article	Item name	Picture	Number of article
Monitor Assembly		1	Tooth Washer Screw (M4x8)		4

Exit Tray Box

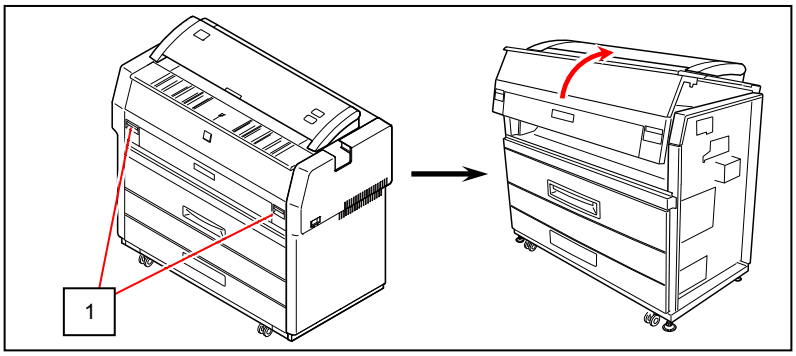
Item name	Picture	Number of article	Item name	Picture	Number of article
Exit Tray		2	Exit Tray 2		1

Others

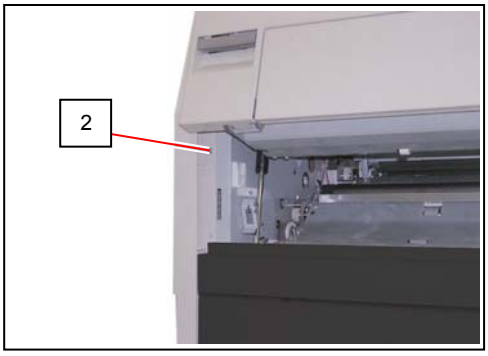
Item name	Picture	Number of article	Item name	Picture	Number of article
Shading Sheet		1	Drum Box (empty)		1

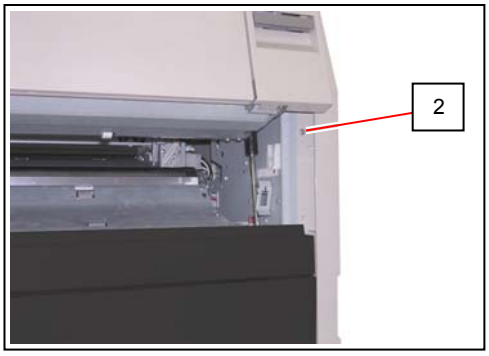
2. 3 Leveling KIP 7170

1. Pull up the Lever 2 (1) to open the Engine.

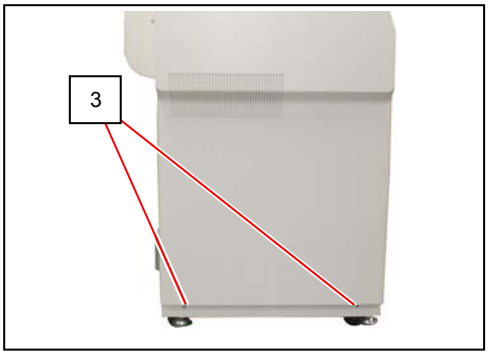


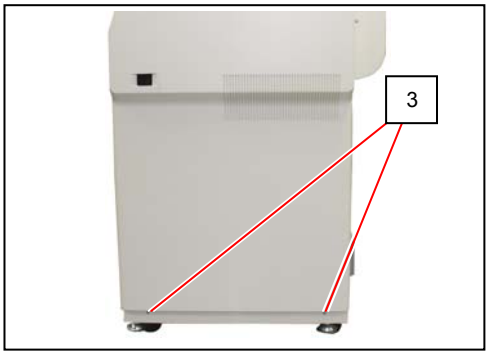
2. Remove the screws (2) at both sides.



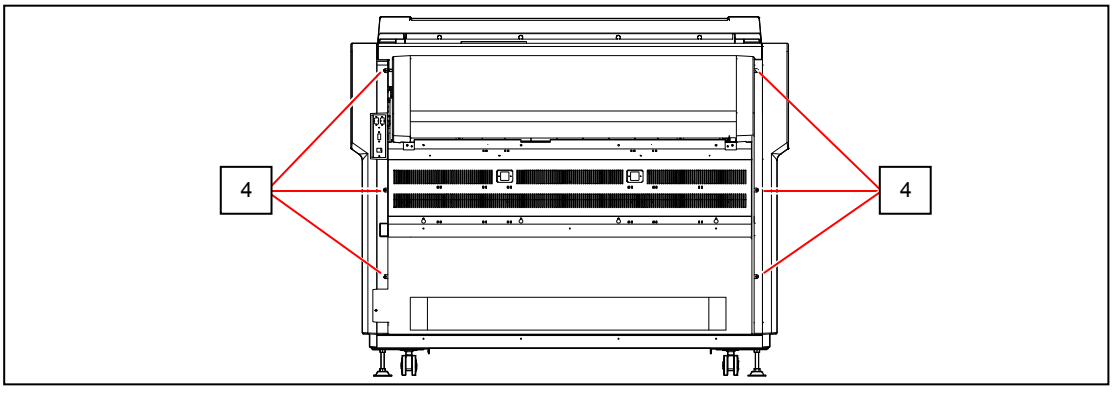


3. Remove 4 screws (3) at the bottom of both sides.

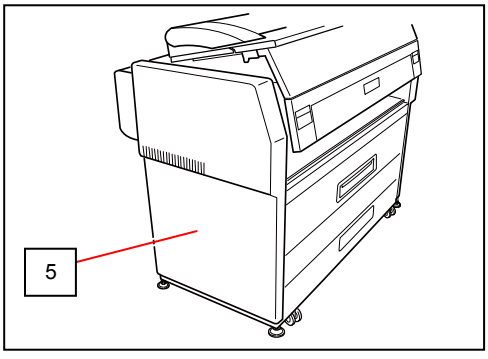


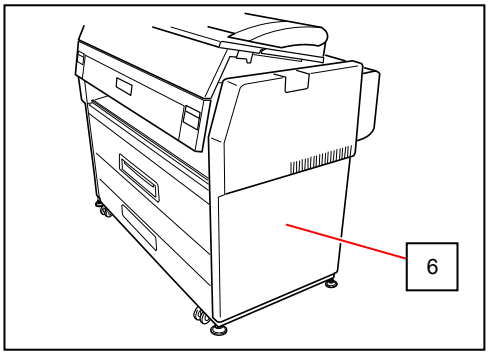


4. Remove 6 screws (4) at the back on both sides.

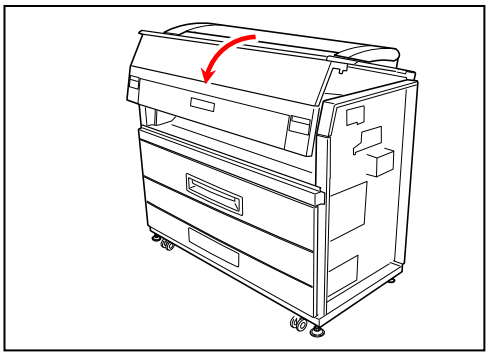


5. Remove the Cover 2 (5) and the Cover 3 (6).

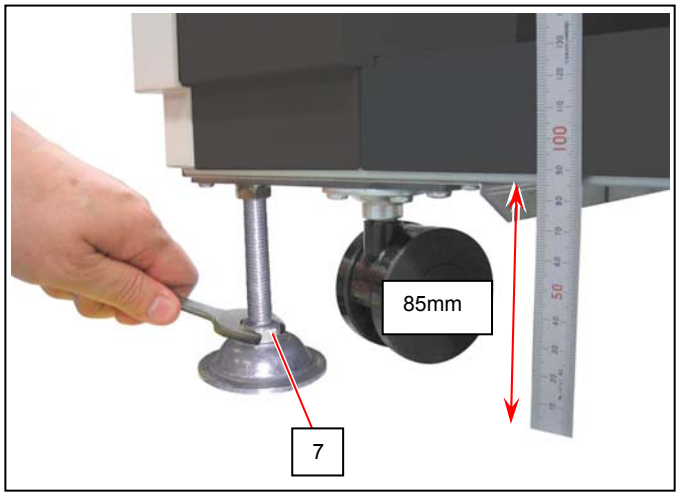




6. Close the Engine Unit.



7. Rotate 4 Leveling Bolts (7) on the bottom of the KIP 7170 with a wrench to bring up the KIP 7170 from the floor.
   Keep 85mm of distance between the bottom plate and the floor. (It is about 80mm before the adjustment.)

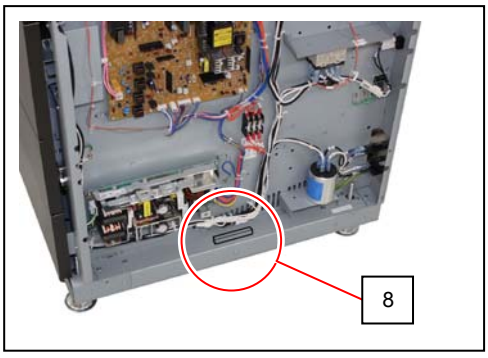


NOTE

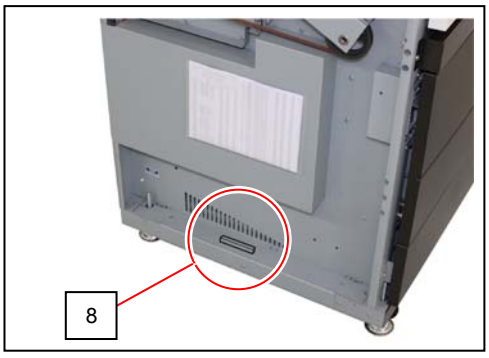
Do not rotate the Levelling Bolts too much.
If the distance between the bottom plate and the floor becomes wider than 95mm, the Adjuster Bolt may be removed.

8. Put a level (8) on the specified positions shown to check the level of the KIP 7170.
   If not leveled, adjust by rotating the Adjustment Bolts.

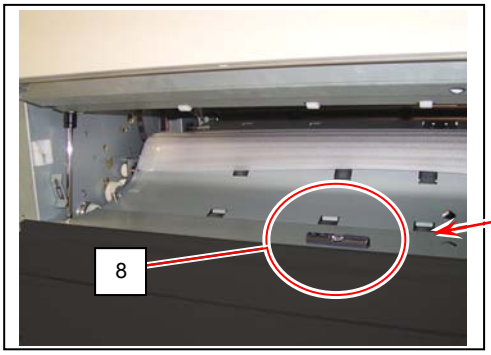
Right

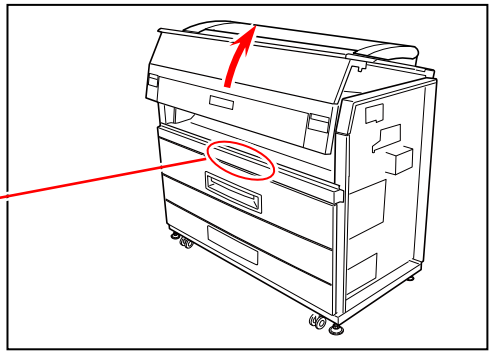


Left



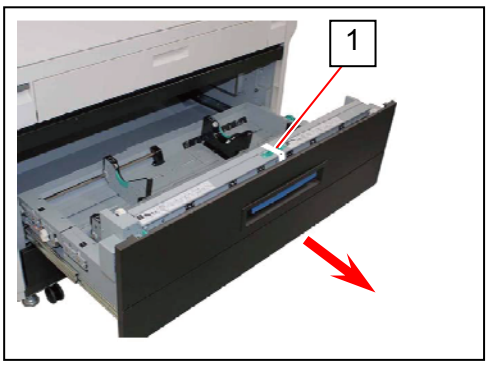
Front



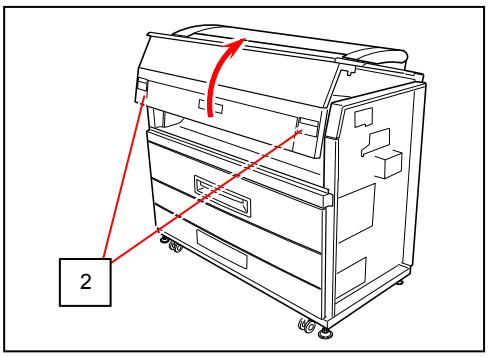


2. 4 Setup of the Machine

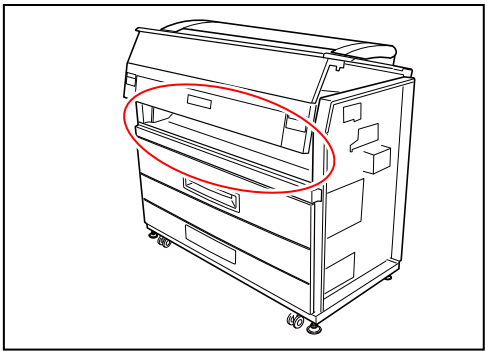
1. Draw out Roll Deck and remove tape (1)

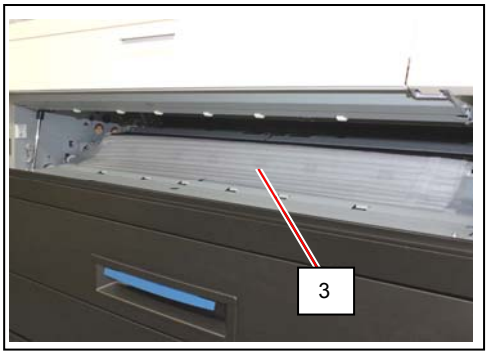


2. Pull up on the Levers (1) to open the Engine.

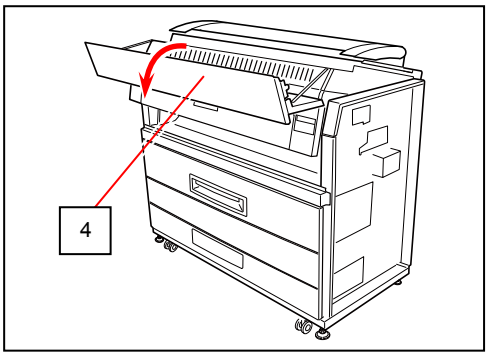


3. Carefully remove the protection mat (3) under the Drum.

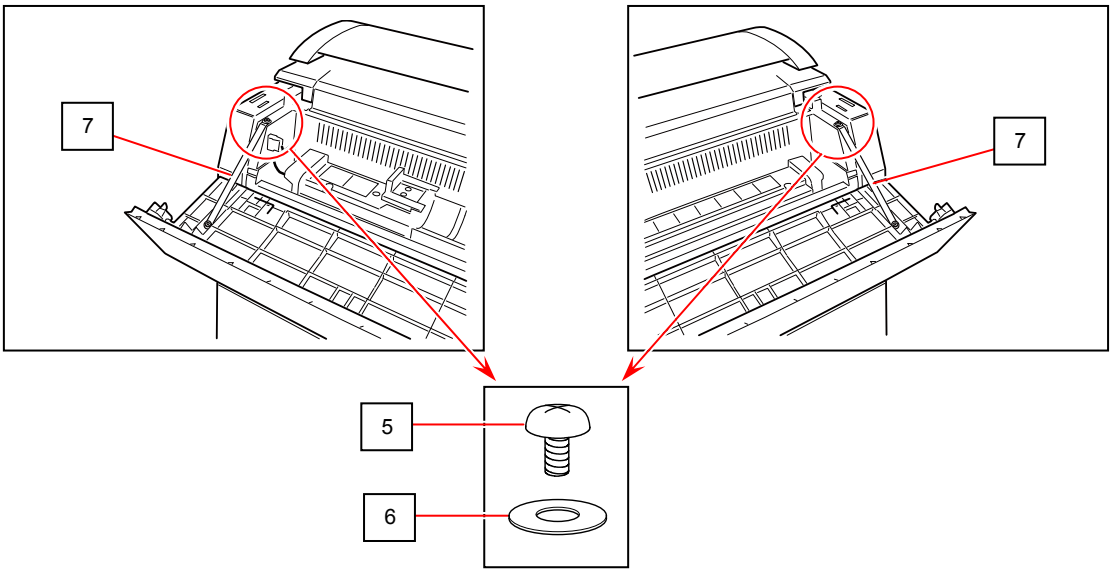




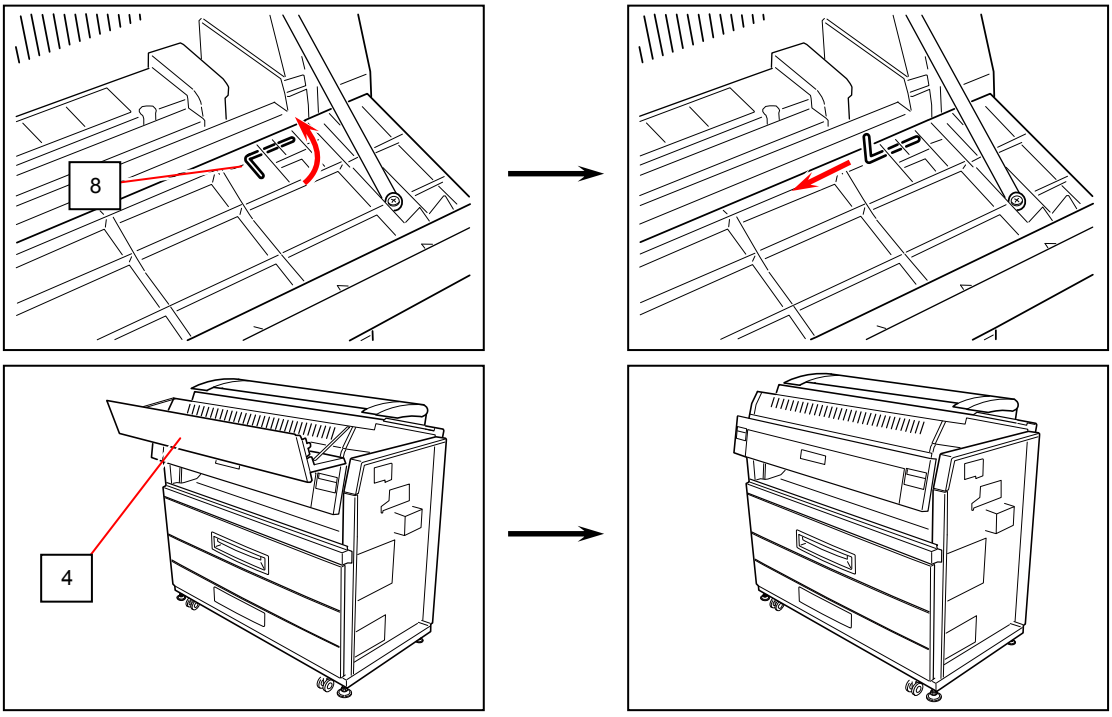
4. Open the Cover 4 (4).



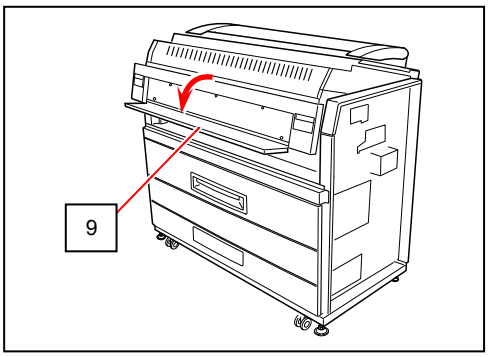
5. Remove the screws (5) and flat washers (6) to release the Bands (7) at both sides.



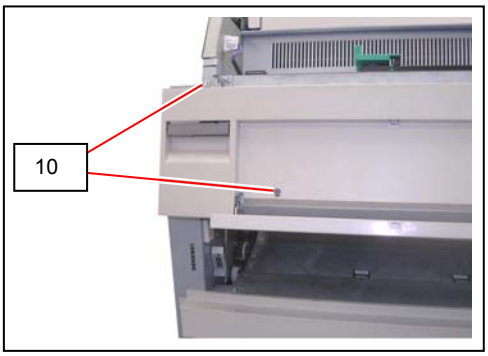
6. Rotate up the Pins (8) and move them to the inside to pull them out from the holes.
Remove the Cover 4 (4).

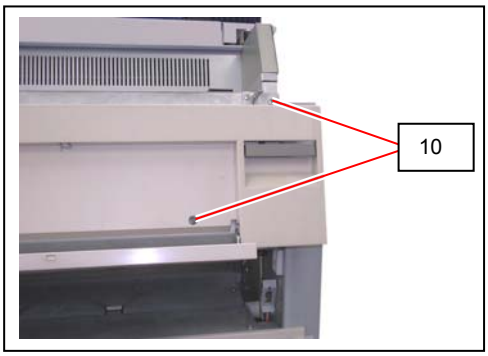


7. Open the Bypass Feeder (9).

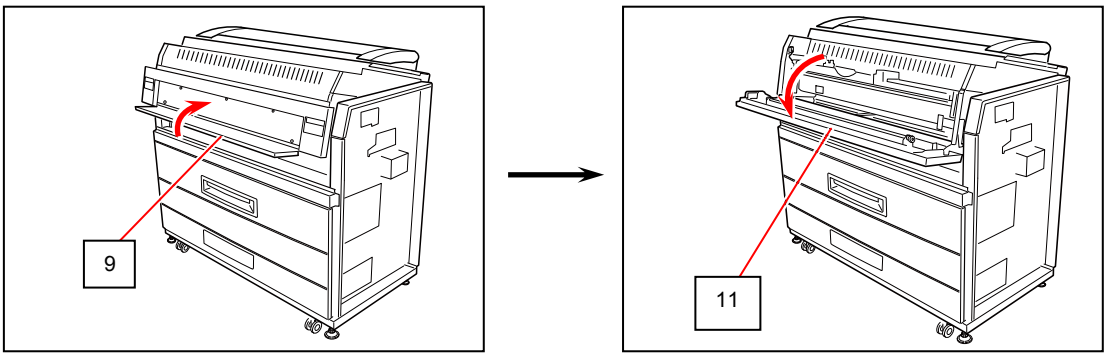


8. Remove 4 pieces of screw (10).

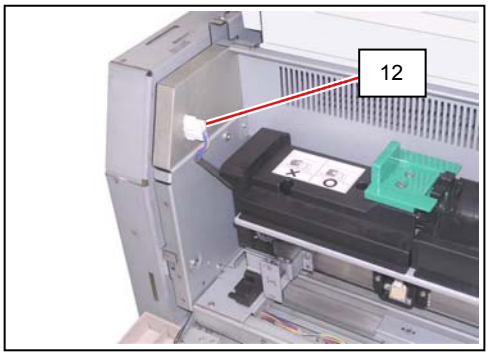




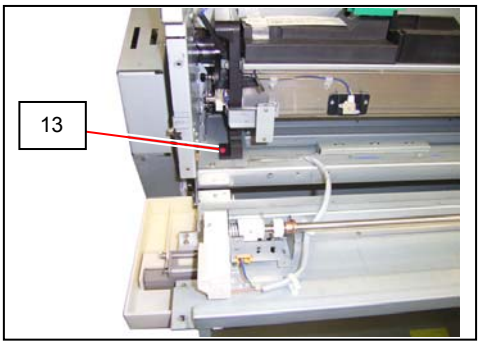
9. Close the Bypass Feeder (9). Open the Developer Press Unit (11).

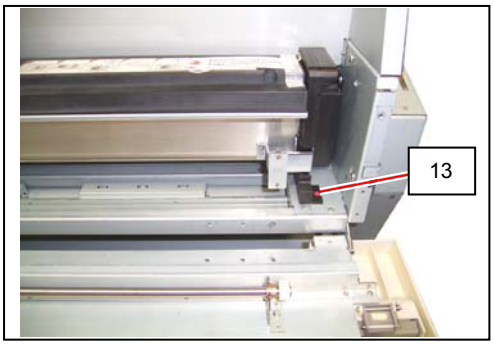


9. Disconnect the connector (12).

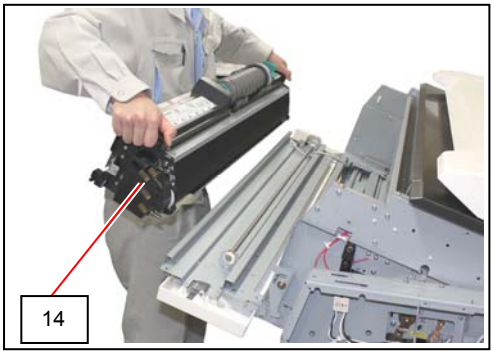


11. Remove 2 pieces of red screw (13) at both sides of the Developer Unit, which protect the Developer Unit from vibration during transportation. (They are no longer required.)

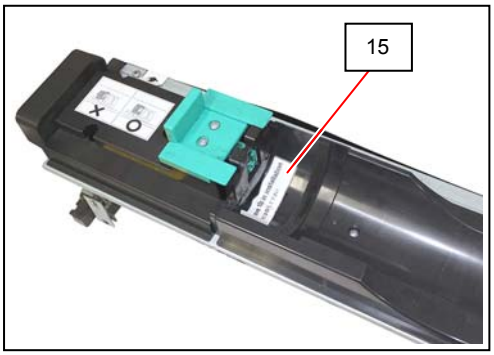




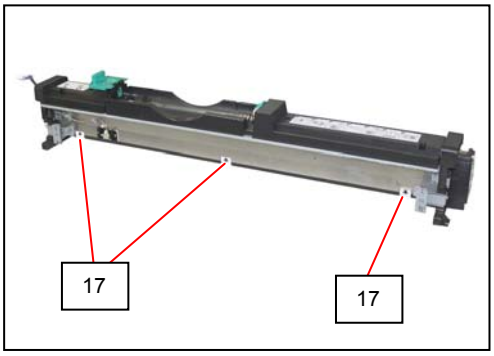
12. Holding both side plates firmly, slide the Developer Unit (14) out of the machine.

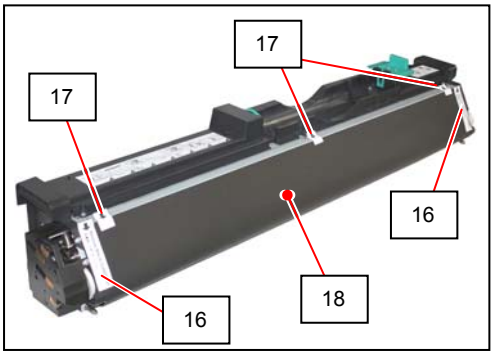


13. Remove 1 label (15) on the toner supply hole of Toner Hopper.

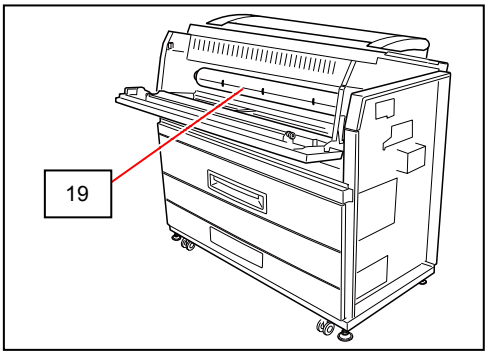


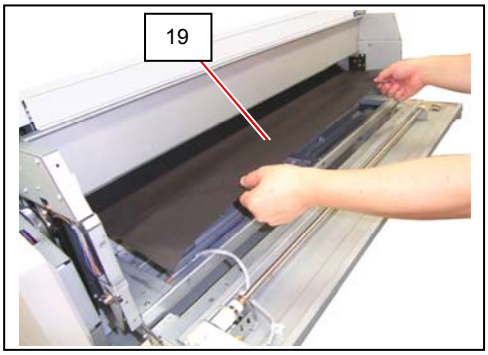
14. Remove 8 labels (16)(17) to remove wrapping sheet (18).



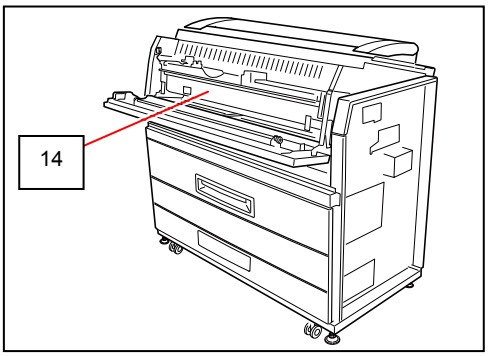


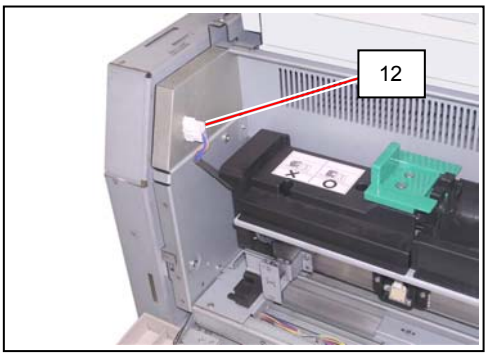
15. The process unit and toner cover should be open. The Photoconductive Drum is covered with a black sheet (19). **Gently** remove it pulling from the front.





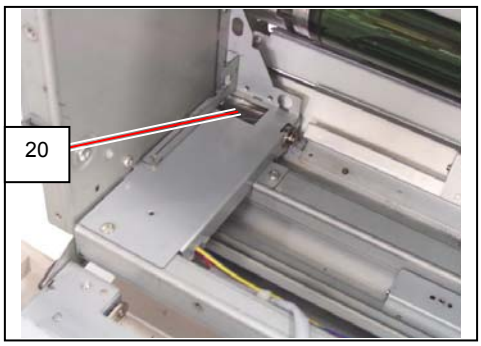
16. Install the Developer Unit (14) to the machine. Connect the connector (12).

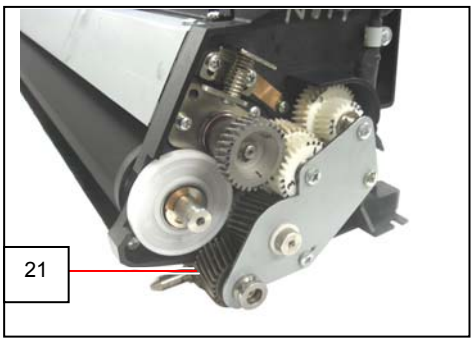




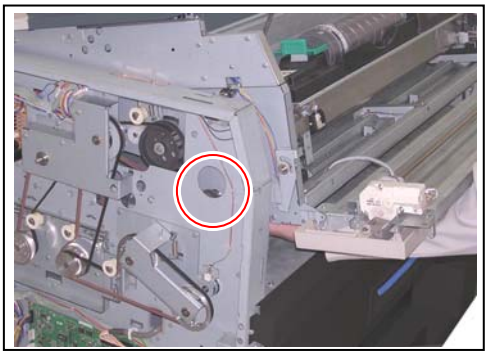
NOTE

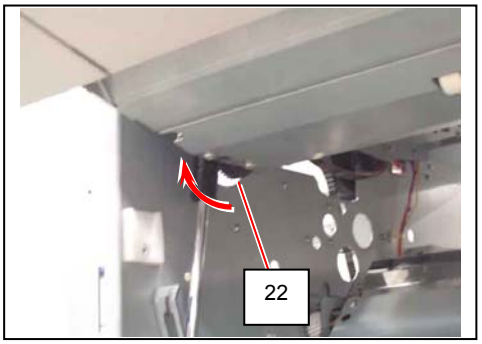
Both the Gear Helical 20T (20) on machine side and the Gear Helical 28T (21) on Developer Unit side must be in gear firmly with each other, but they may not be in gear with each other by just installing the Developer Unit to the machine.



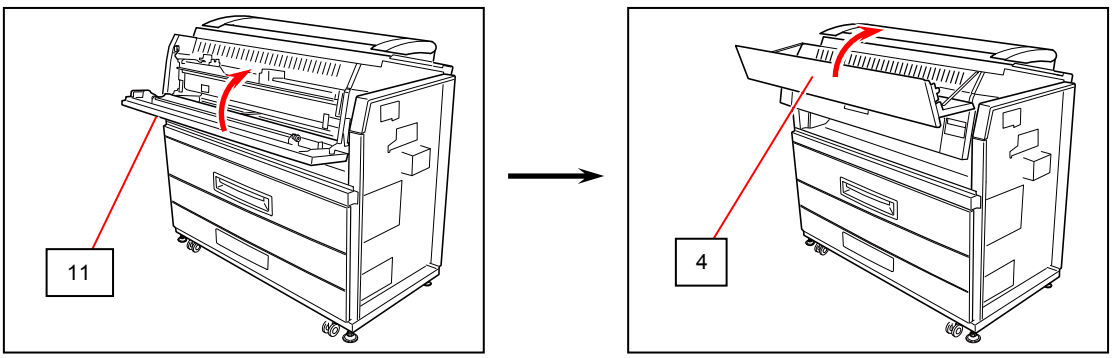


After installing the Developer Unit to the machine, rotate Gear Helical 34T (22: instead of Gear Helical 20T) by hand from under the Engine Unit.
Both gears will be in gear by this way.

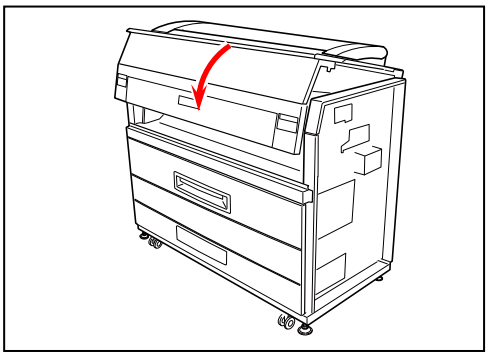




17. Close and fix the Developer Press Unit (11), and put back the Cover 4 (4).

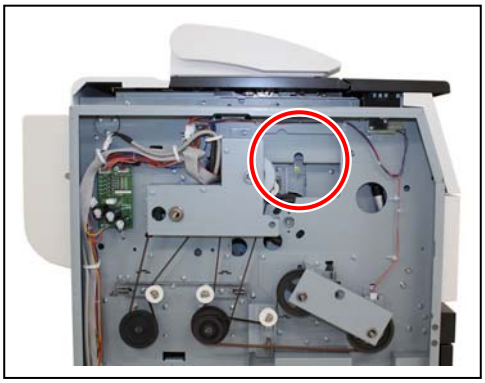


18. Close the Engine Unit.

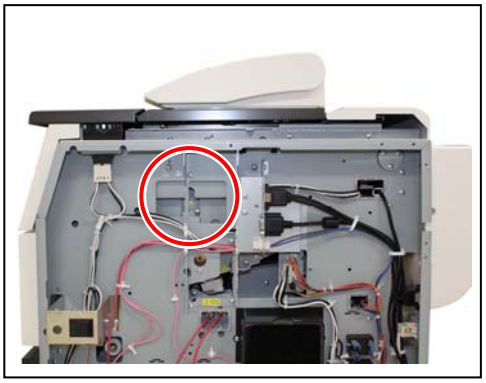


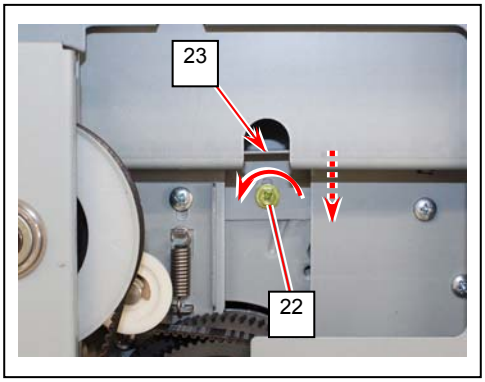
19. Both the LED Head and the Image Corona are locked with the screws (22) being separated from the Drum, not to be damaged during the transportation.
Loosen 2 screws (22). This will release the Fix Bracket (23) to seat the LED Head / Image Corona in position.
After that, pressing the Fix Bracket (23) from above, fix the screw (22).

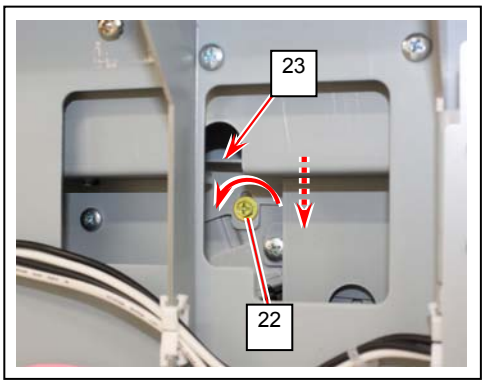
Left side

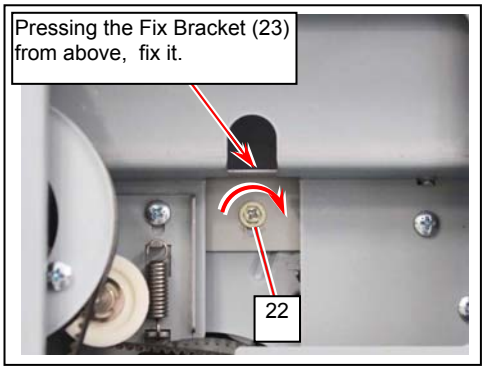


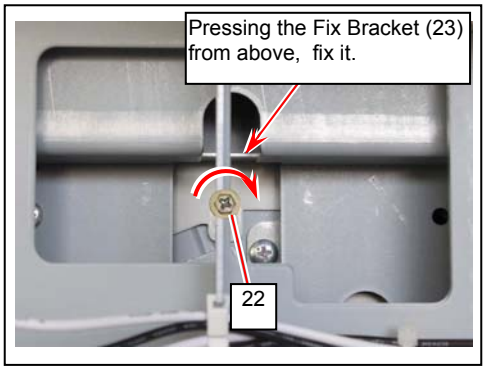
Right side











NOTE

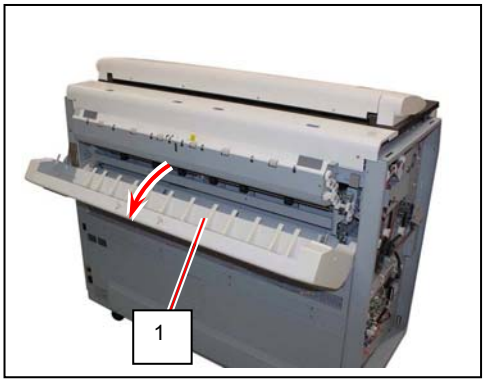
Please satisfy the following requirements before performing Step 19.
(1) The black sheet has been removed from the Drum. (See the former procedure 15.)
(2) The Engine Unit is closed firmly. (See the former procedure 18.)

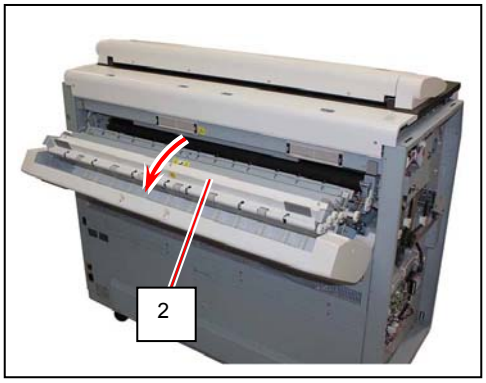
Otherwise a proper distance cannot be kept between LED Head and Drum.

2. 5 Opening and Closing the LED Head Frame

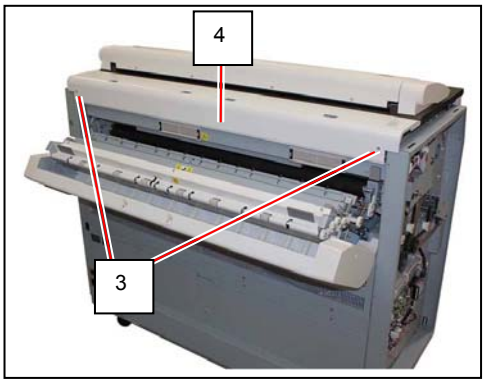
To keep the proper gap between the LED Head and the Drum, make sure to open and close the LED Head Frame .
According to this work, the gap between the LED Head and the Drum becomes the same level as the one before shipping and the more stable image quality can be maintained.

1. Open the Paper Exit Assy (Outside (1) & Inside (2)).

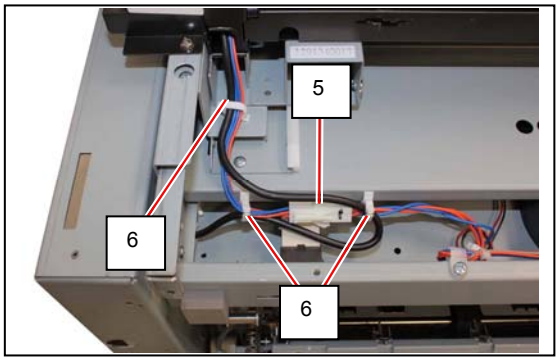




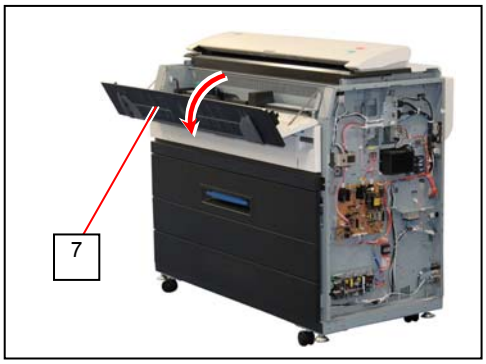
2. Remove 2 screws (3) to remove Cover 10 (4).



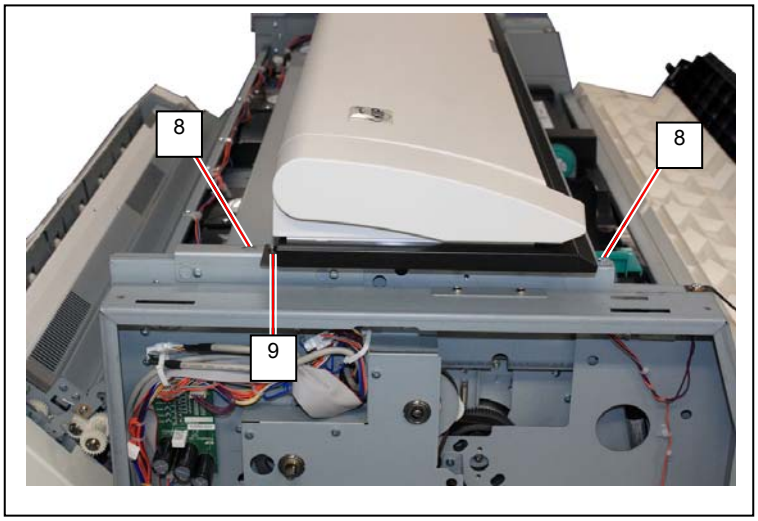
3. Disconnect the connector (5), and open the wire saddles (6) to release the harness.

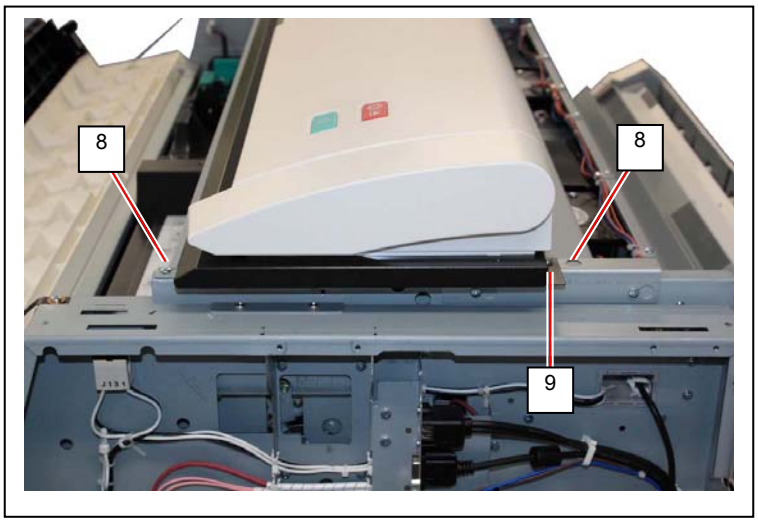


4. Open the Cover 4 (7).

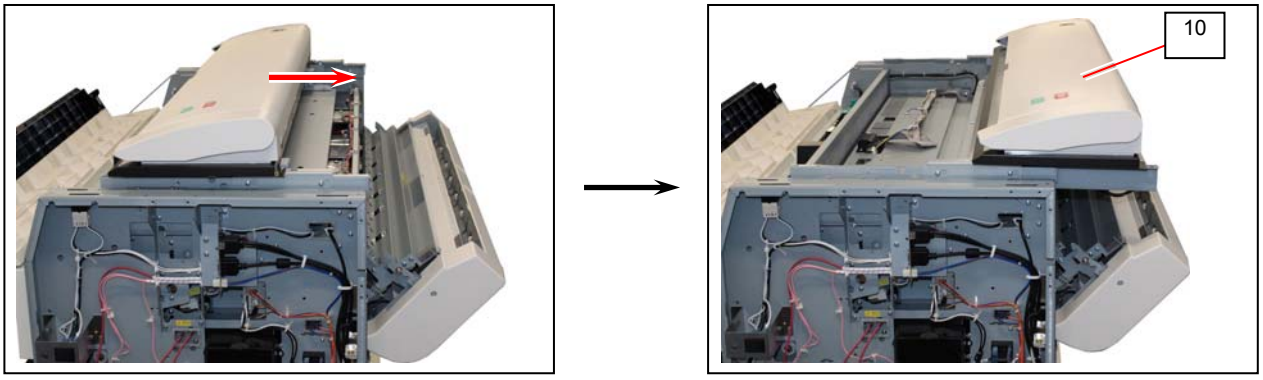


5. Remove 4 pieces of 4x6 screw (8) and 2 pieces of washer screw (9).

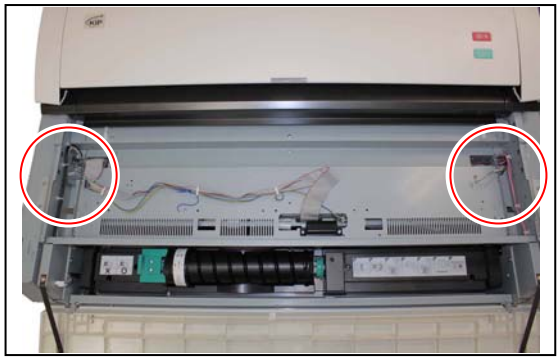


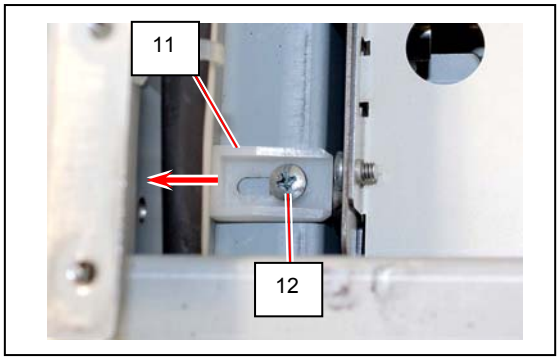


6. Slide the Scanner Unit (10) fully backward.

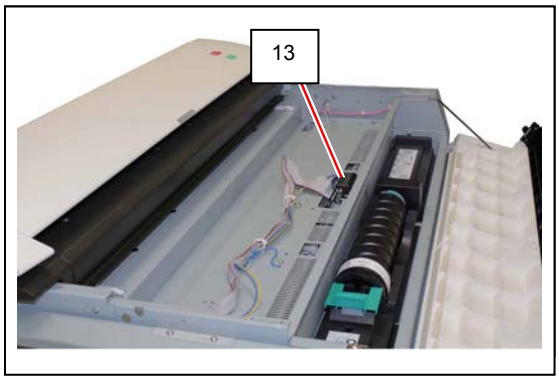


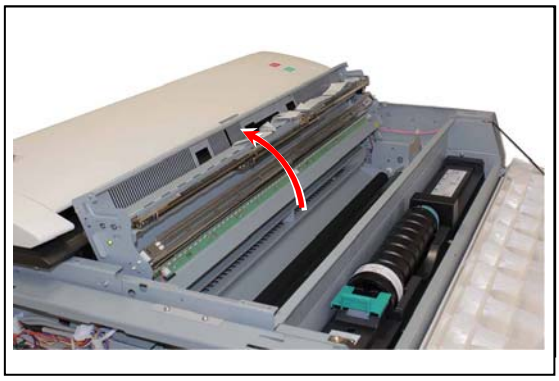
7. There are 2 pieces of Stopper (11) at both sides, which lock the LED Head Frame.
   Loosen the screw (12) and then slide the Stoppers (11) outside to unlock the LED Head Frame.





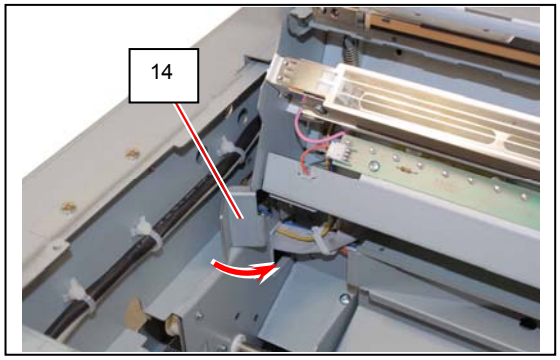
8. Open the LED Head Frame (13).



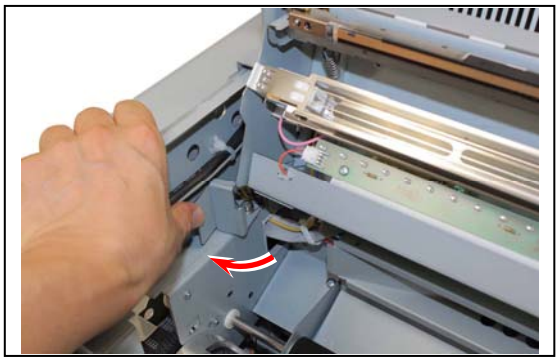


NOTE

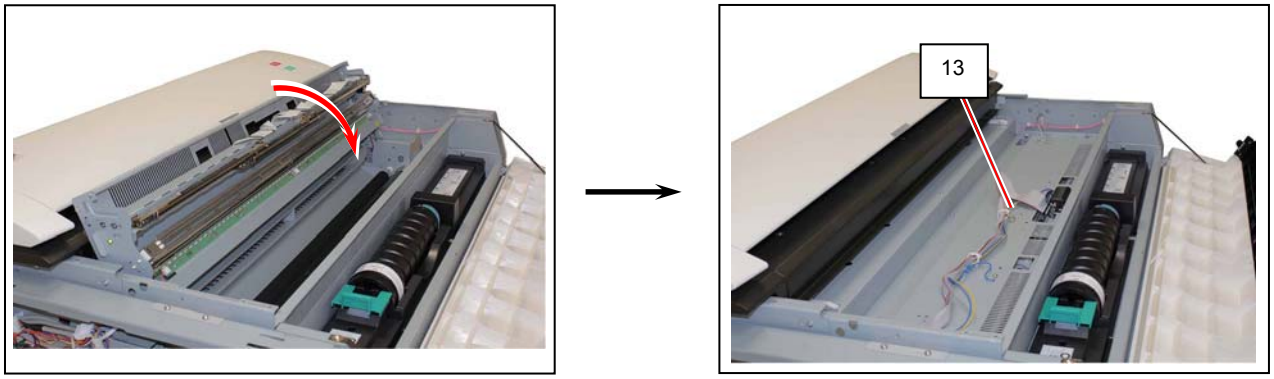
The Stopper 2 (14) comes out automatically to prevent the LED Head Frame from falling down.



Press the Stopper 2 as the right photo if you will close the LED Head Frame.



9. Close the LED Head Frame (13).

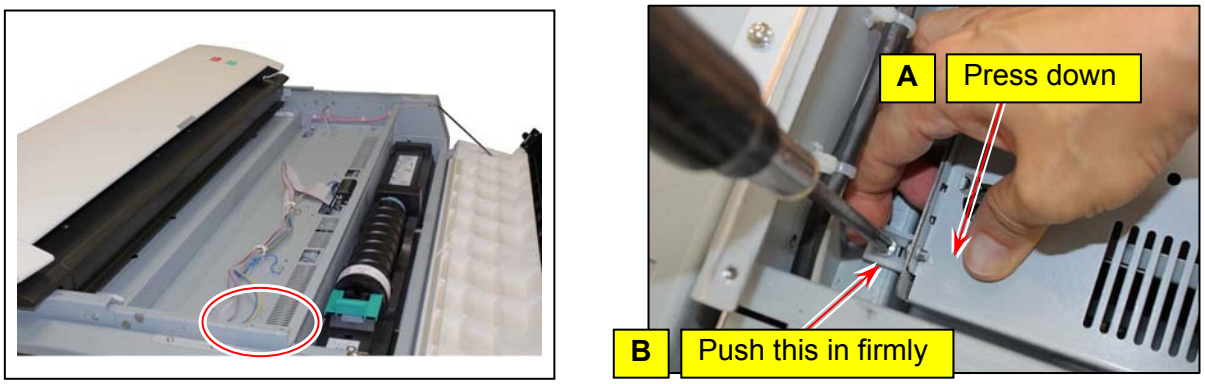


NOTE

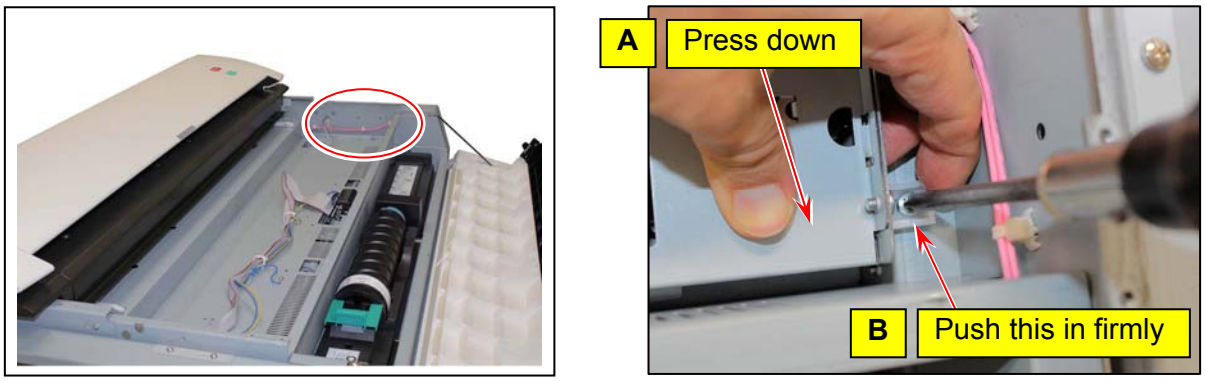
When closing and fixing the LED Head Frame, please take the following steps orderly. The key point is to fix the left side of LED Head Frame first then the right side next, which achieves correct focus of LED Head Frame. **Do not change the order of these steps.**

(1) Close the LED Head Frame.

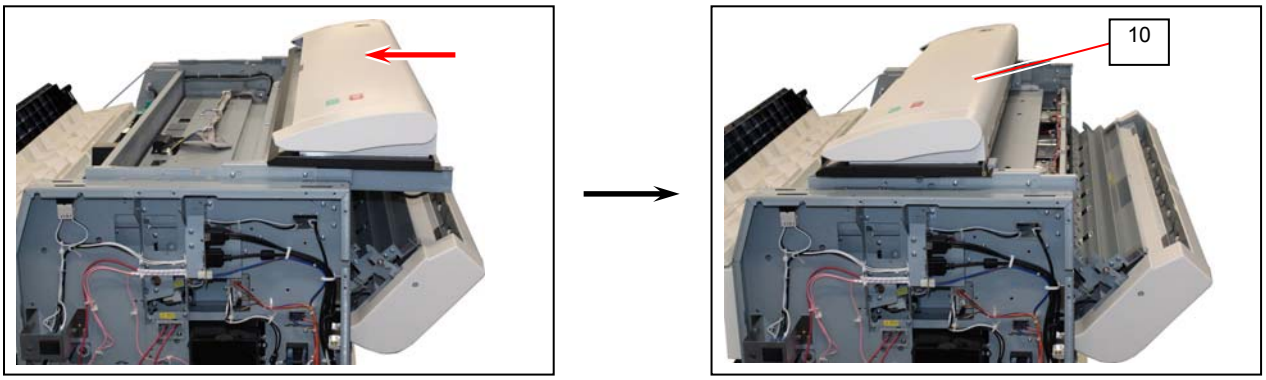
(2) Surely press down and hold the **left side** of LED Head Frame as (A), completely push the white plastic Stopper into the hole as (B), and tighten the screw to fix the Stopper there.



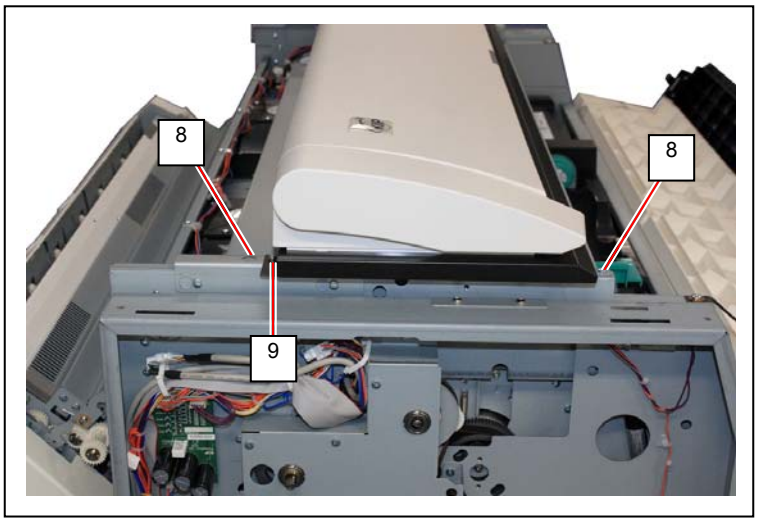
(3) Surely press down and hold the **right side** of LED Head Frame as (A), completely push the white plastic Stopper into the hole as (B), and tighten the screw to fix the Stopper there.

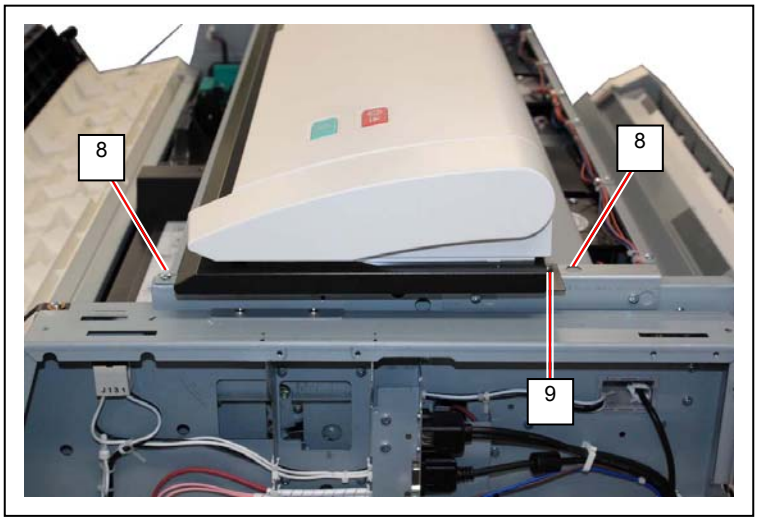


10. Return the Scanner Unit (10) in position.

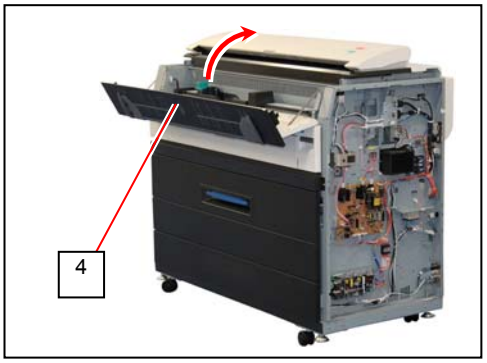


11. Fix the Scanner Unit with 4 screws (8) and 2 tooth washer screws (9).

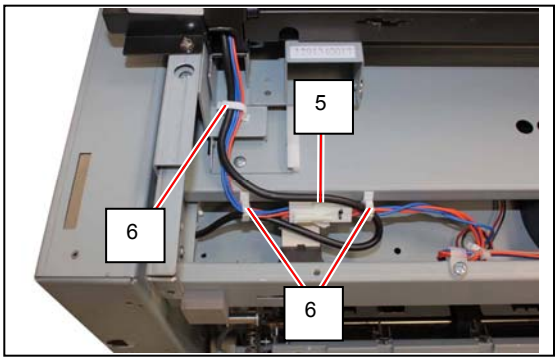




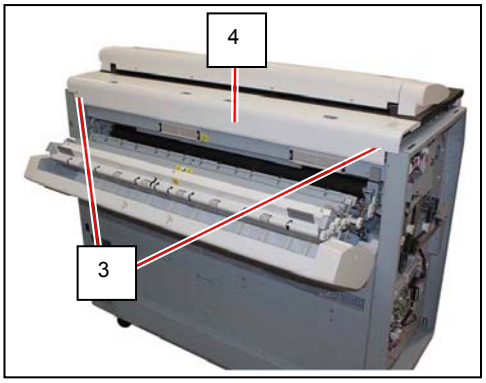
12. Close the Cover 4 (7)



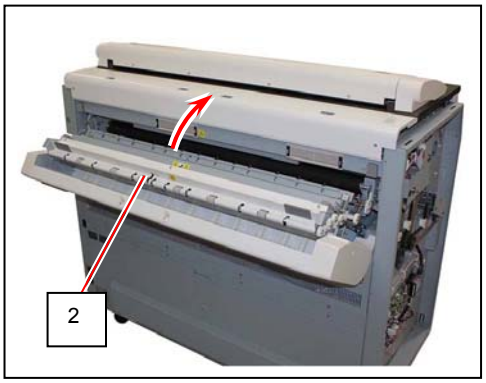
13. Connect the connector (5) and then, fix the DC Harness and USB Cable with Wire Saddle (6).

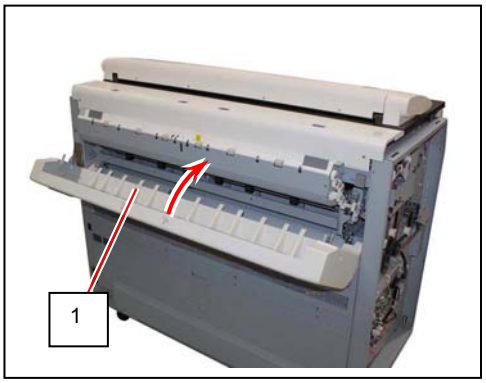


14. Attach the Cover 10 (4) with 2 screws.



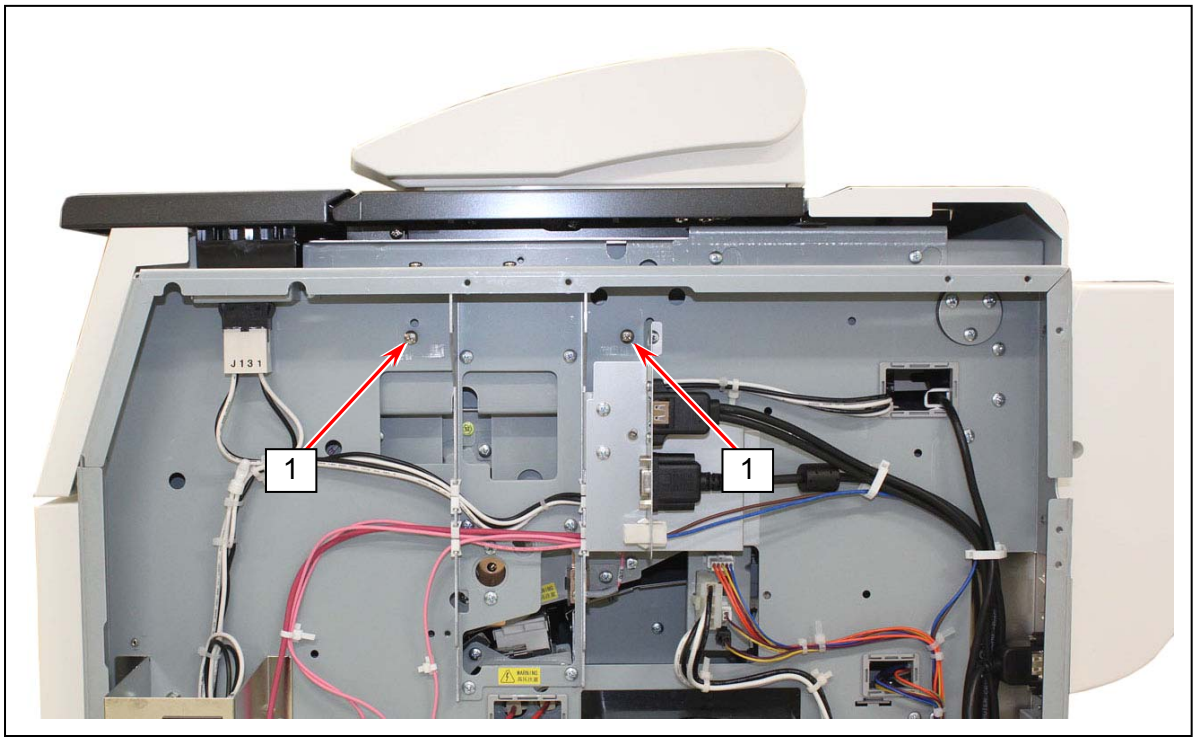
15. Close the Paper Exit Assy (Outside (1) & Inside (2)).



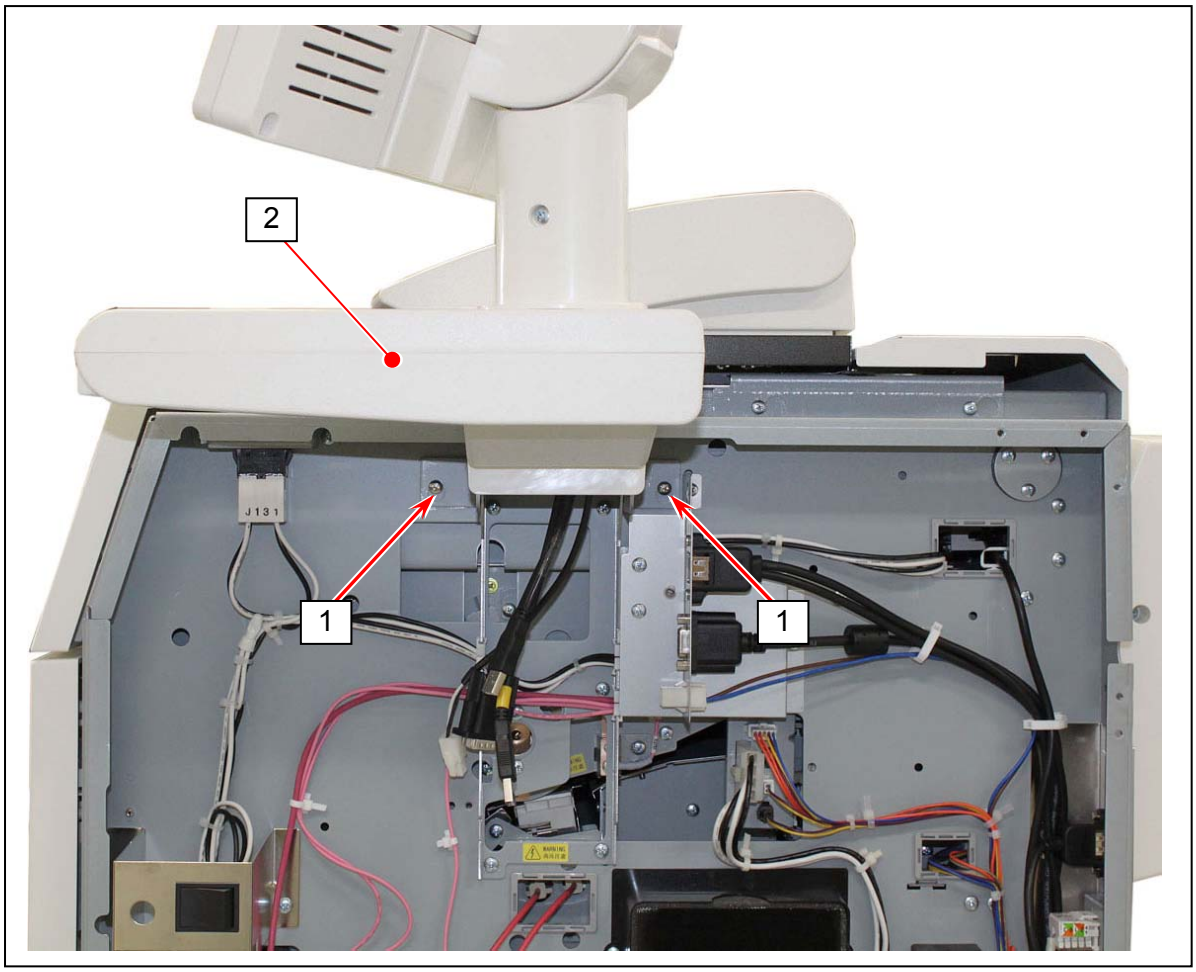


2. 6 Installing Monitor

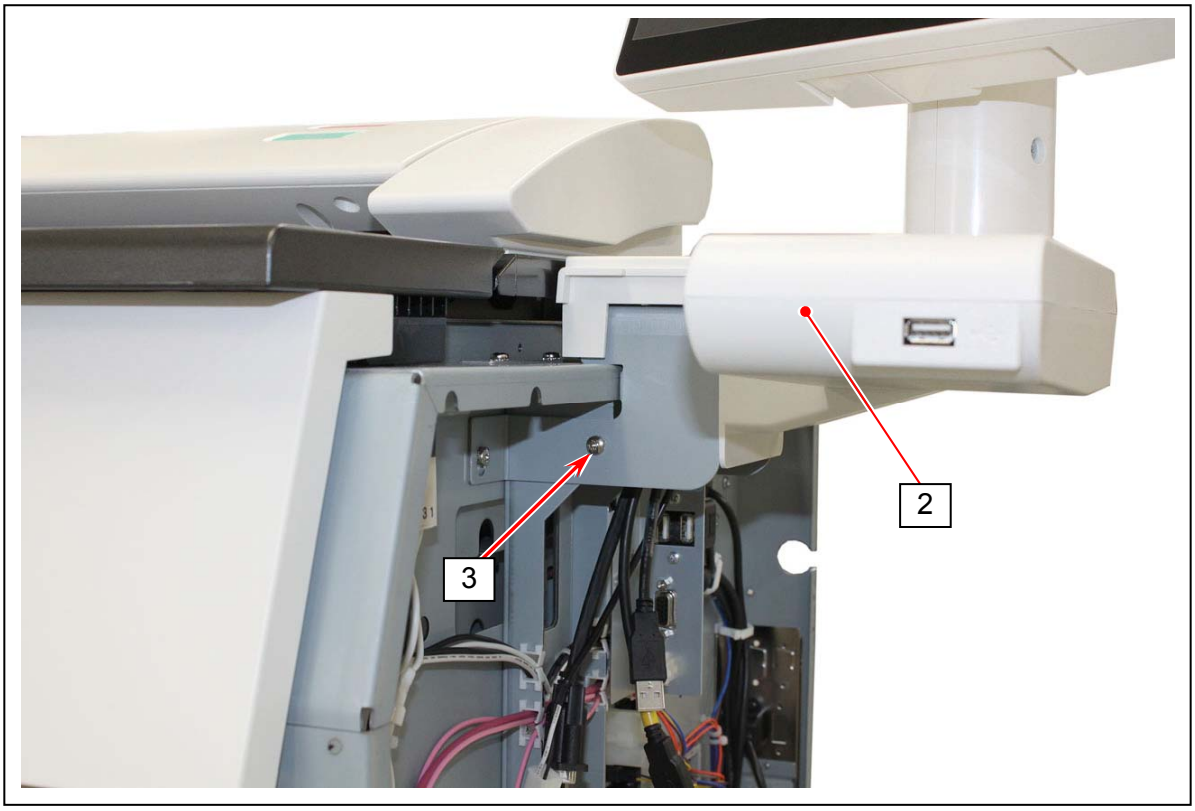
1. Insert 2 Tooth Washer Screws (1) into the screw hole on the right side frame of the machine.

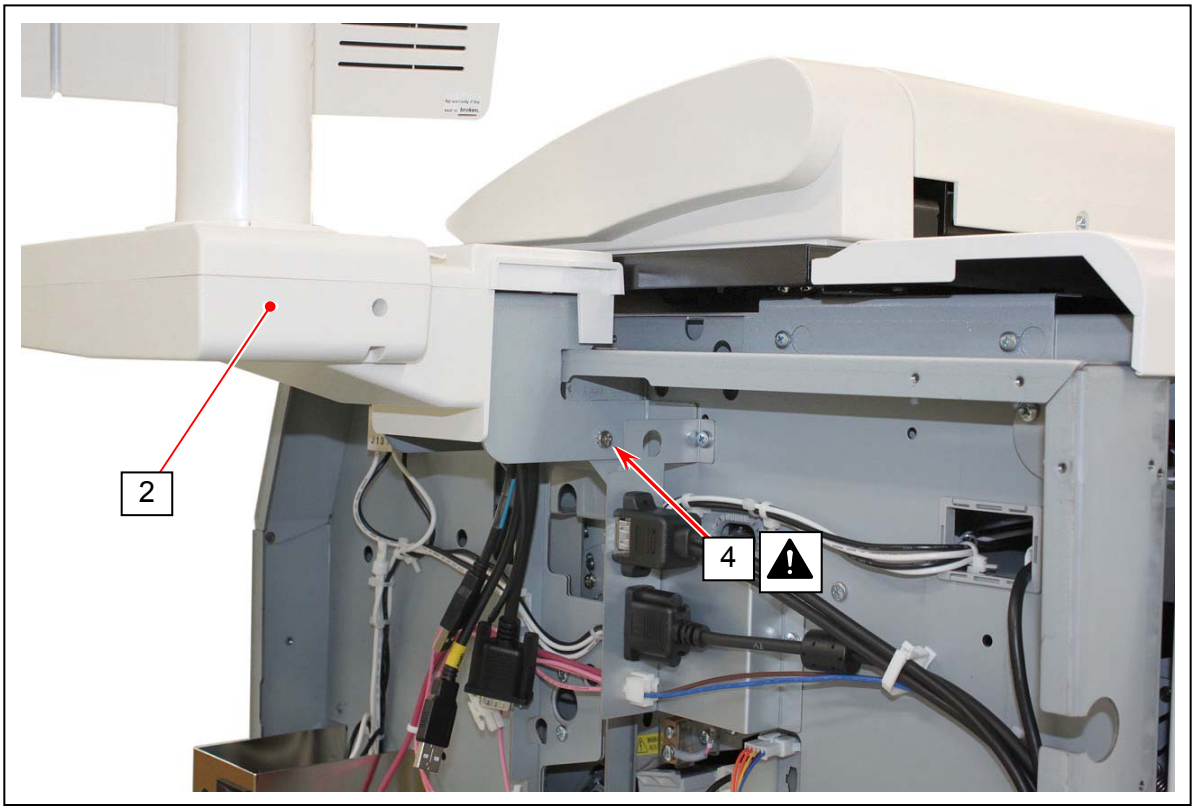


2. Hook Monitor Assy (2) on the Tooth Washer Screws (1).
   Tighten 2 Tooth Washer Screws (1).



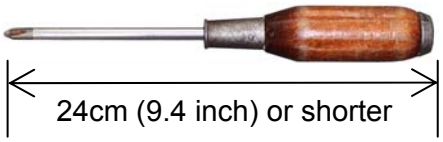
3. Fix Monitor Assy with 2 Tooth Washer Screws (3) (4).



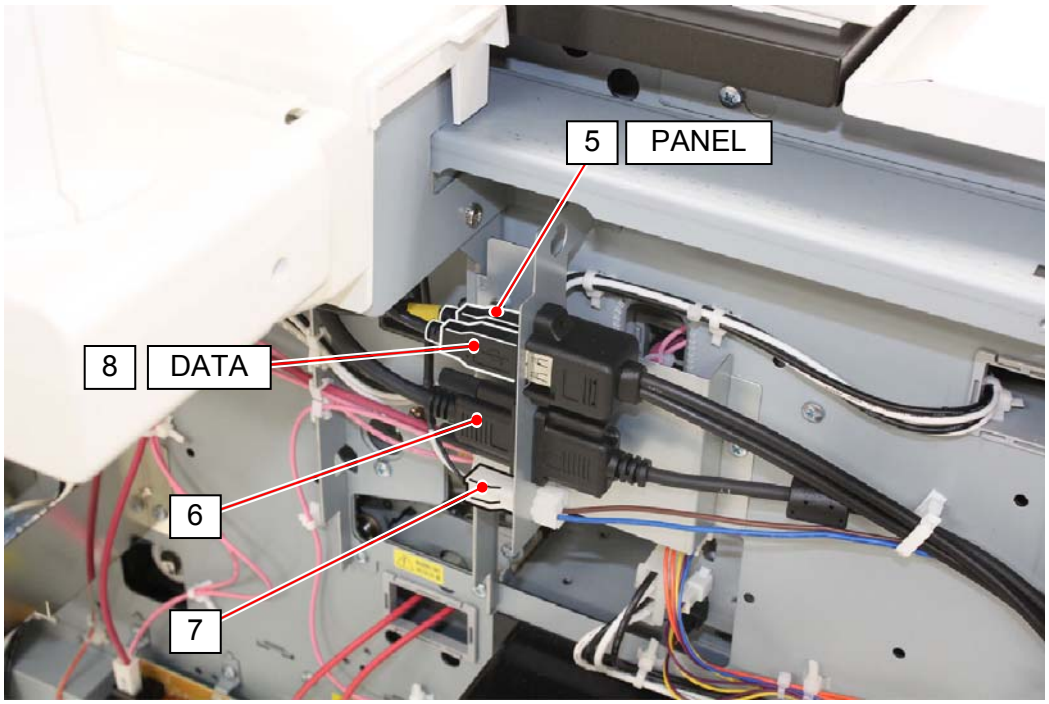


⚠ NOTE

Please use the screw driver which length is 24cm (9.4 inch) or shorter when tightening the screws (4).



4. Connect USB Cable (5, for PANEL), VGA Cable (6) and Power Supply cable (7) to the concerning connectors of the machine frame.
Then connect one more USB Cable (8, for external USB device).

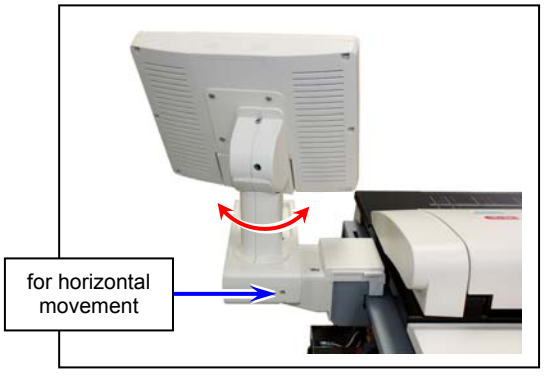


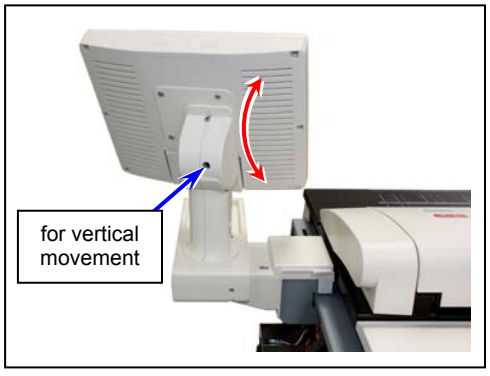
NOTE

Be sure to insert the USB plug of the USB Cables (5) (8) to the correct receptacles. First connect the monitor USB Cable (5) to the back of the 2 connectors on the machine. (left as viewed from front)

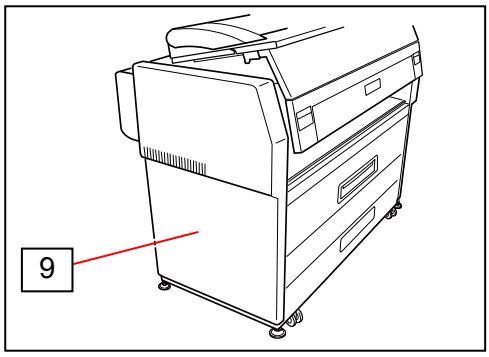
Reference

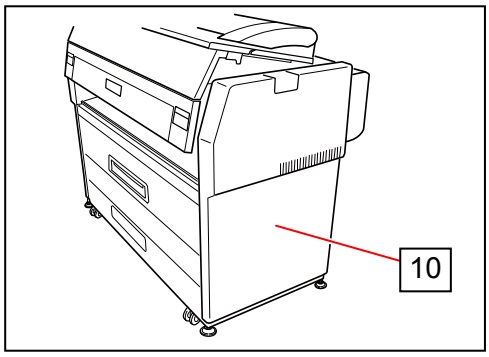
Monitor Assy can be turned up/down and right/left. Adjust the movement by the concerning screw.





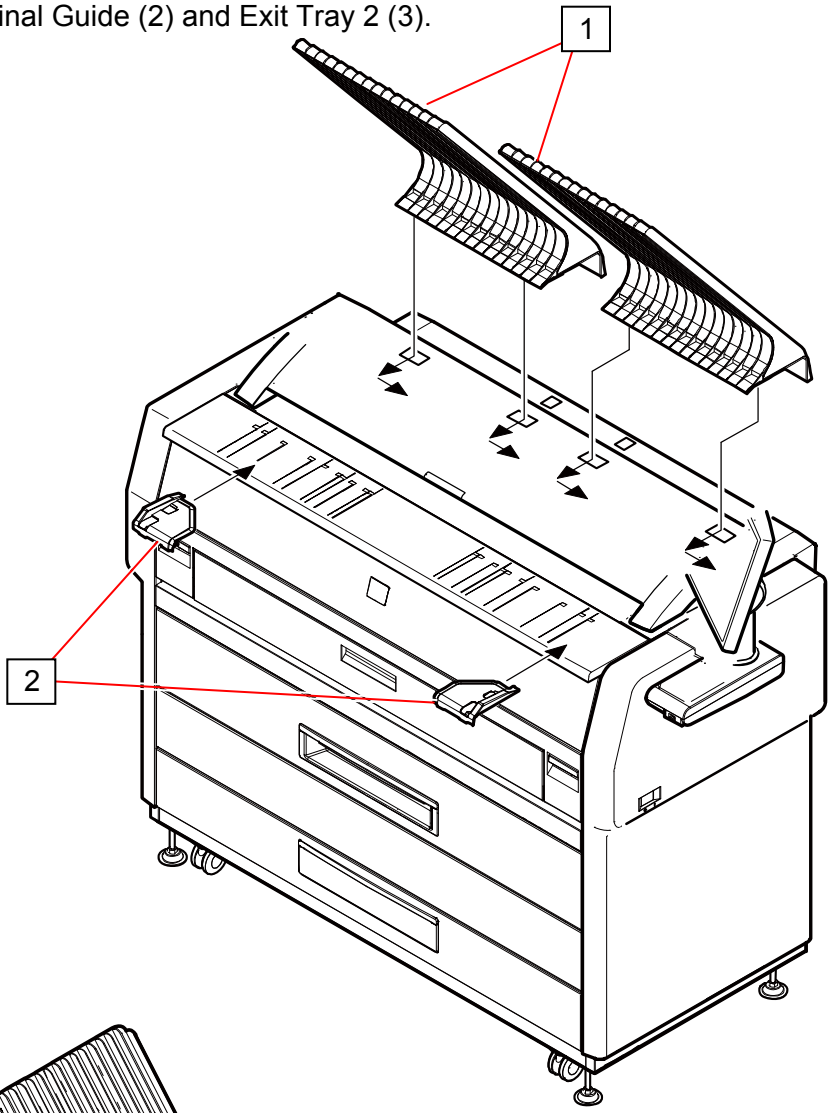
5. Return the Cover 2 (9) and the Cover 3 (10).

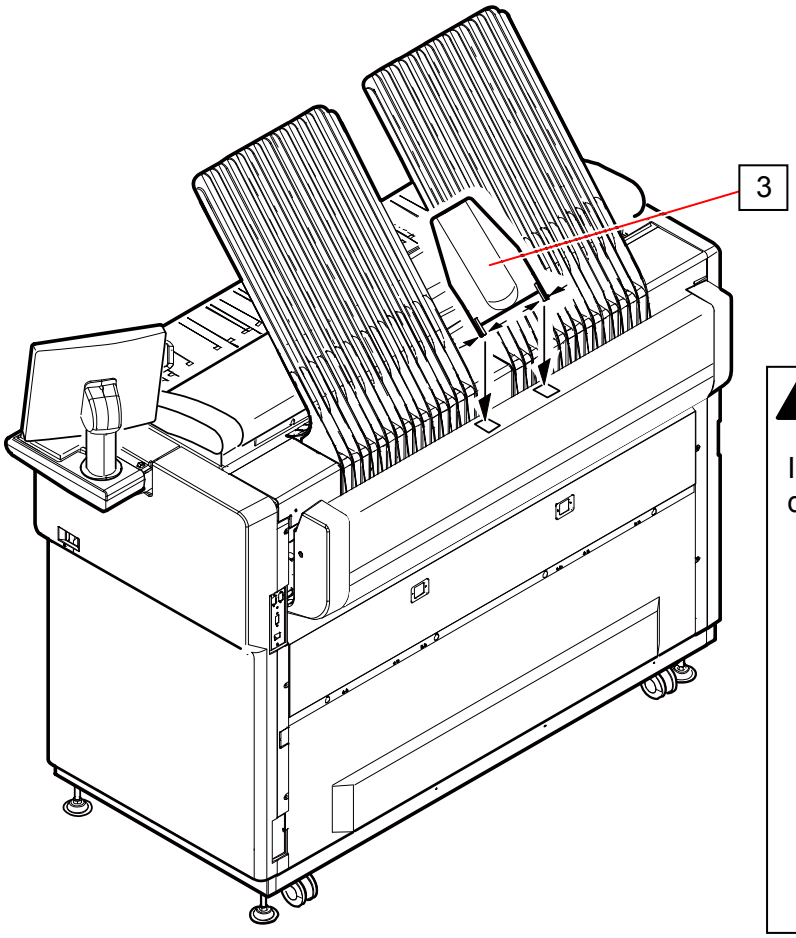




2. 7 Installing Accessories

1. Install Exit Tray (1), Original Guide (2) and Exit Tray 2 (3).

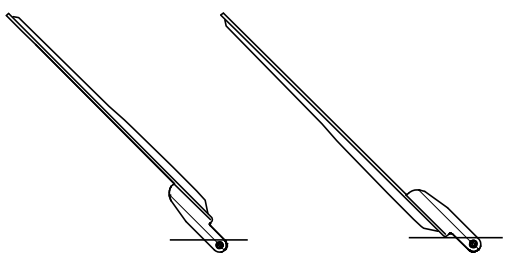




NOTE

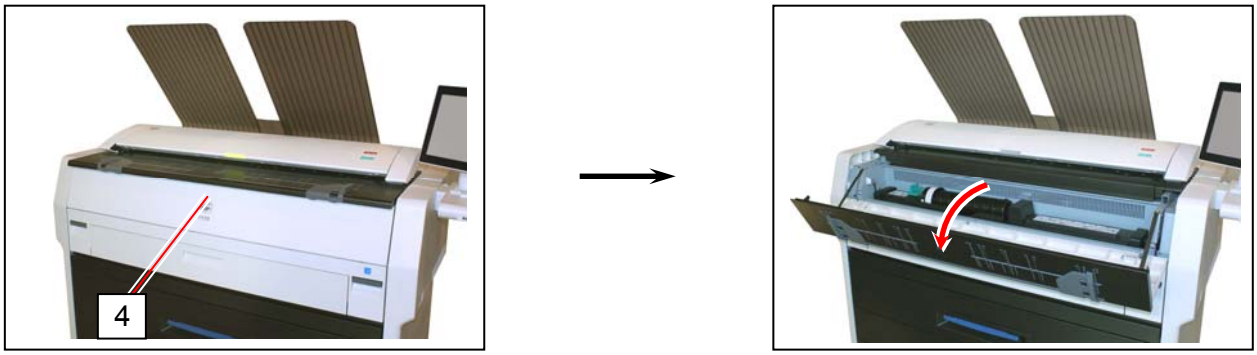
Install Exit Tray 2 (3) in the correct direction. The spine should face down.

Side View



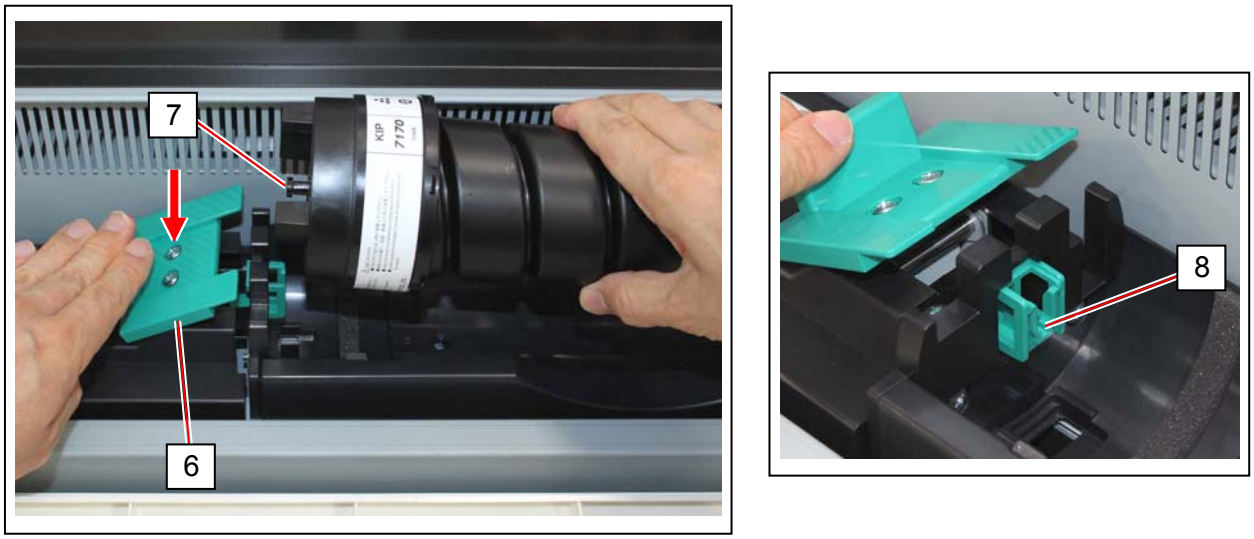
Wrong **Correc**

2. Open Cover 4 (4).



3. Shake Toner Cartridge (5) several times. After shaking, tilt the Toner Cartridge to the cap side.

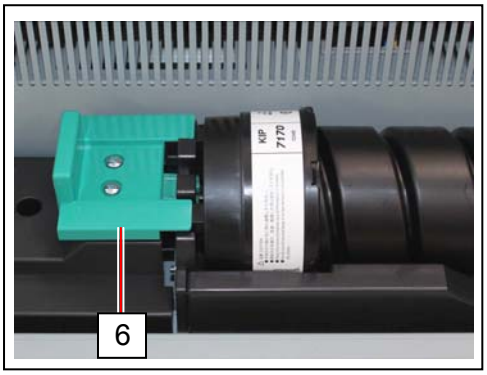
4. Keep pressing down the Cartridge Lock Lever (6). Direct the toner supply hole to the floor, fit the pin (7) on the left side of the cartridge to the groove (8) on the machine side.



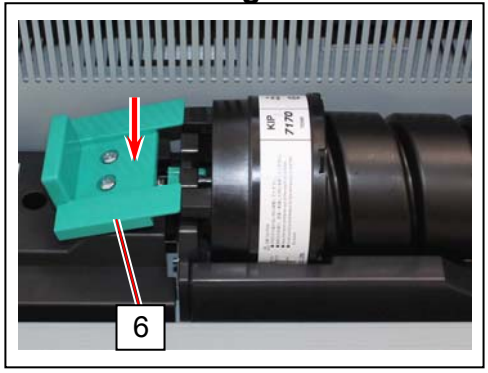
NOTE

Please confirm that the Cartridge Lock Lever (6) firmly locks the Toner Cartridge at the correct position. (It must be at a level position.)

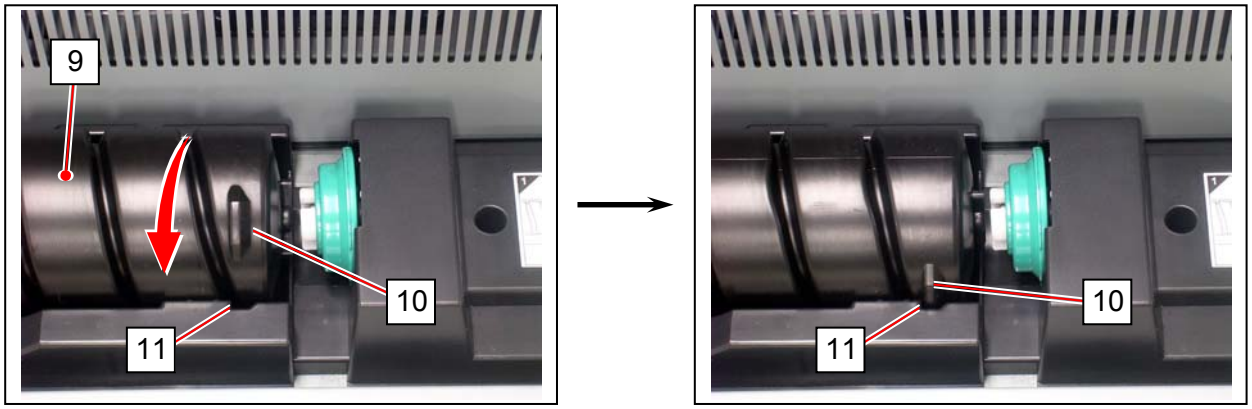
Good



No good

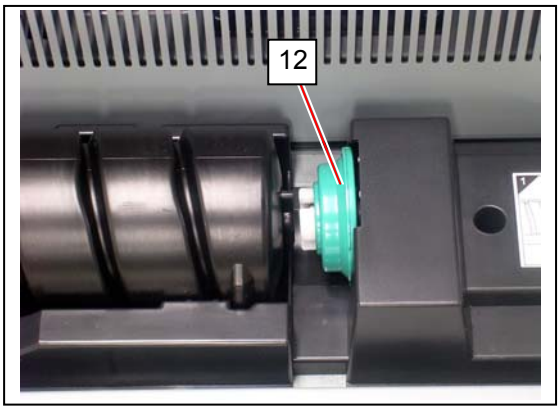


5. Turn the body (9) of the cartridge in one revolution to the arrow direction to open the toner supply hole. Confirm that the projection (10) if fitted into the notch (11).

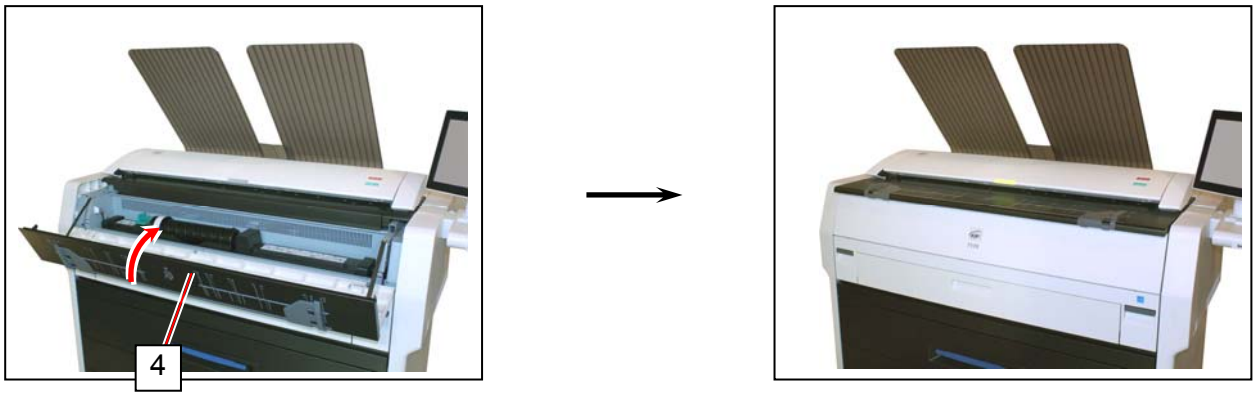


NOTE

It is not necessary to lock the cartridge with the Lever (12). Lever (12) will engage on its own after closing the Toner Hatch.

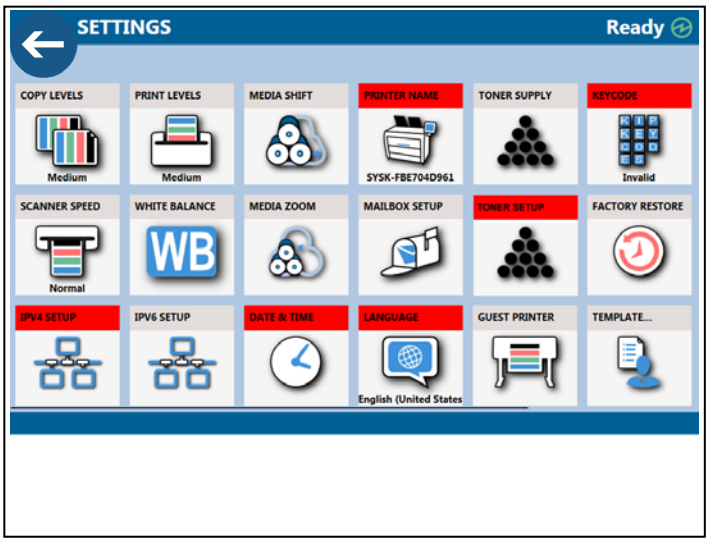


6. Close Cover 4 (4).

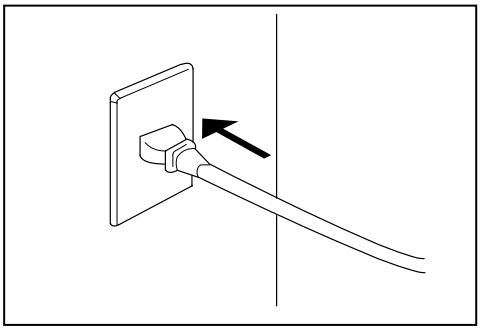


2. 8 Printer Setting

When opening "SETTINGS" screen at an initial start-up of the printer, there are 6 items which are red. As the initial setup is required on these items, please set them by the followings.



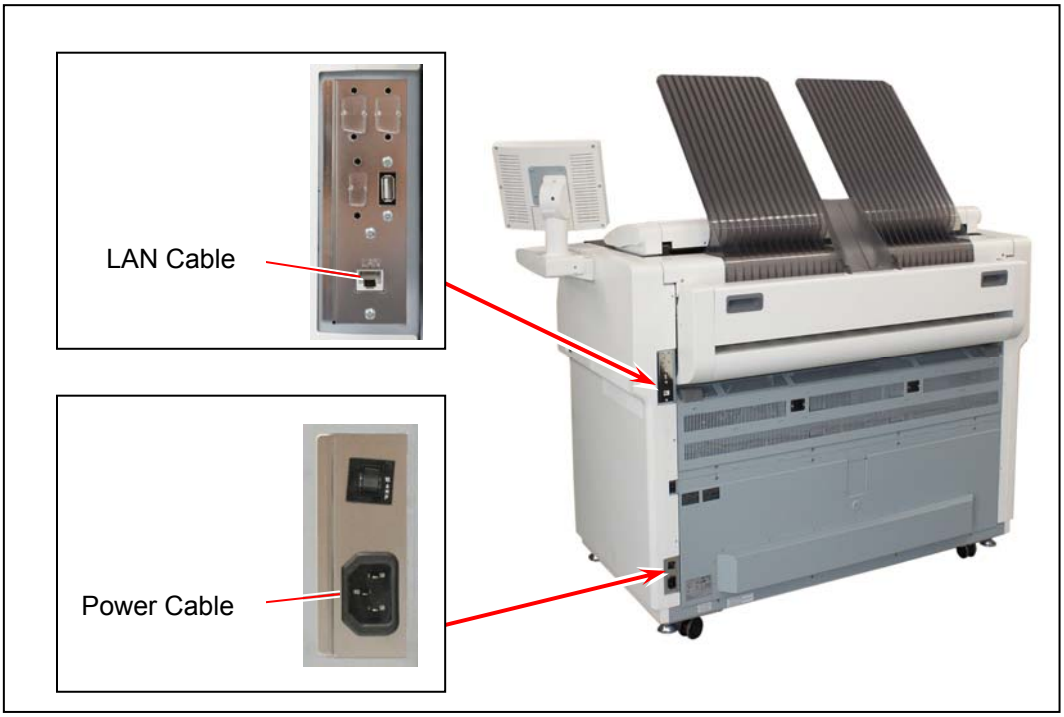
1. Plug the power cord for the printer into a dedicated wall outlet.



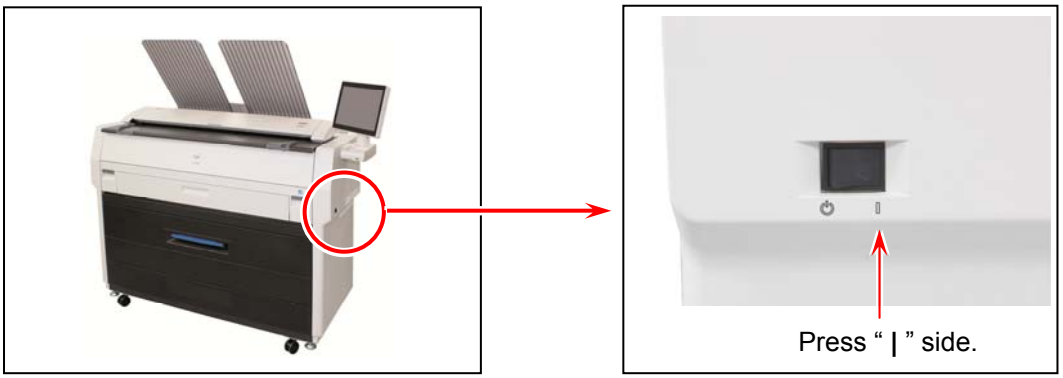
⚠ WARNING

(1) Do not handle the Power Plug with wet hands, or you may receive an electrical shock.
(2) Make sure to ground the machine for safety.
(3) Do not plug the printer into a multi-wiring connector in which other devices are plugged. It may overheat the outlet and may result in a fire.
(4) **The outlet** must satisfy the following conditions.
In U.S.A. : 120V plus/minus 10%, 50/60Hz and 15A
In Europe and Asia : 220-240V plus 6% or minus 10%, 50/60Hz and 10A

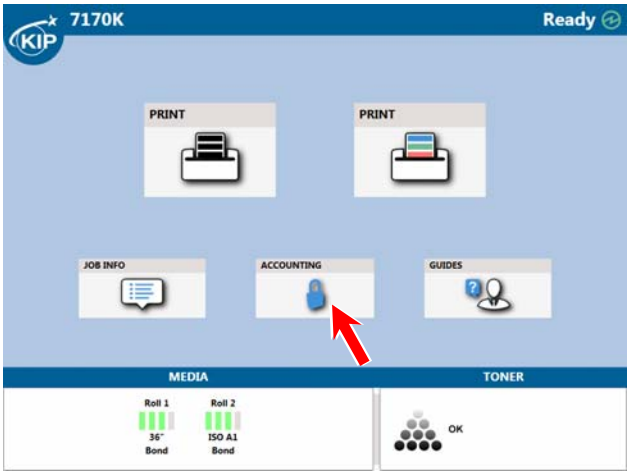
2. Connect Power Cable and LAN Cable with the printer.



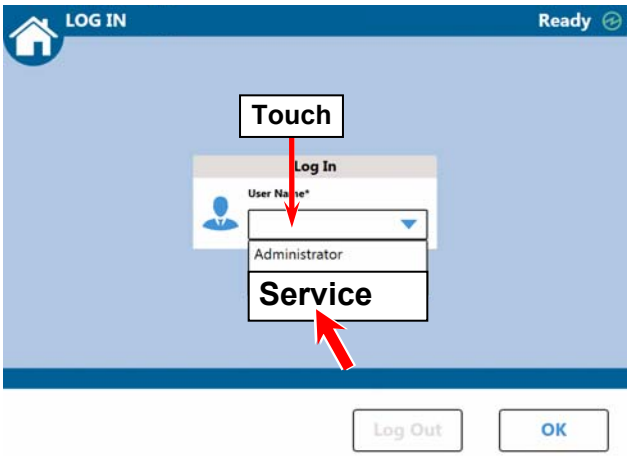
3. Press " | " side to turn on the printer.



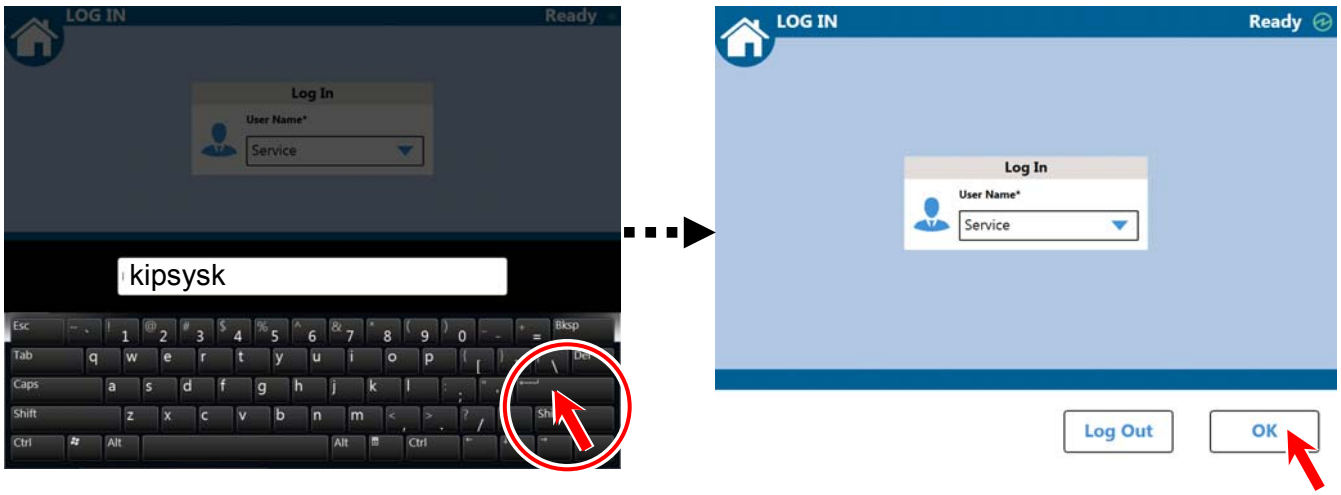
4. “UI Home screen” appears.
   Press [ACCOUNTING].



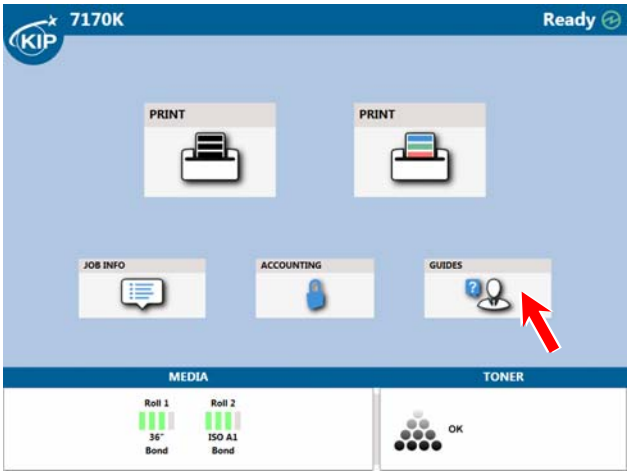
5. Touch the entry field of "User Name", and then select "Service" from the pull-down menu.



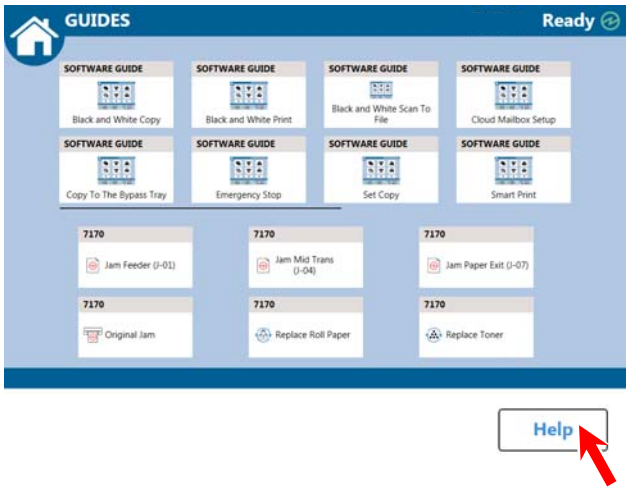
6. Enter "kipsysk" in the password field, press the ENTER key, and then press [OK] in the LOG IN screen to log in with the administrative right.



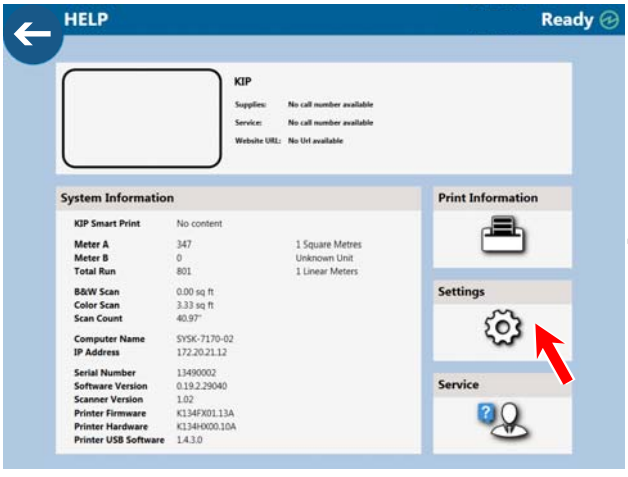
7. Press [GUIDES].

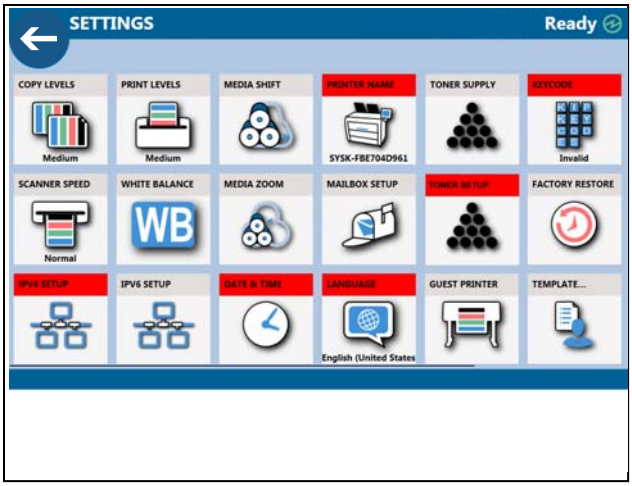


8. Press [Help].

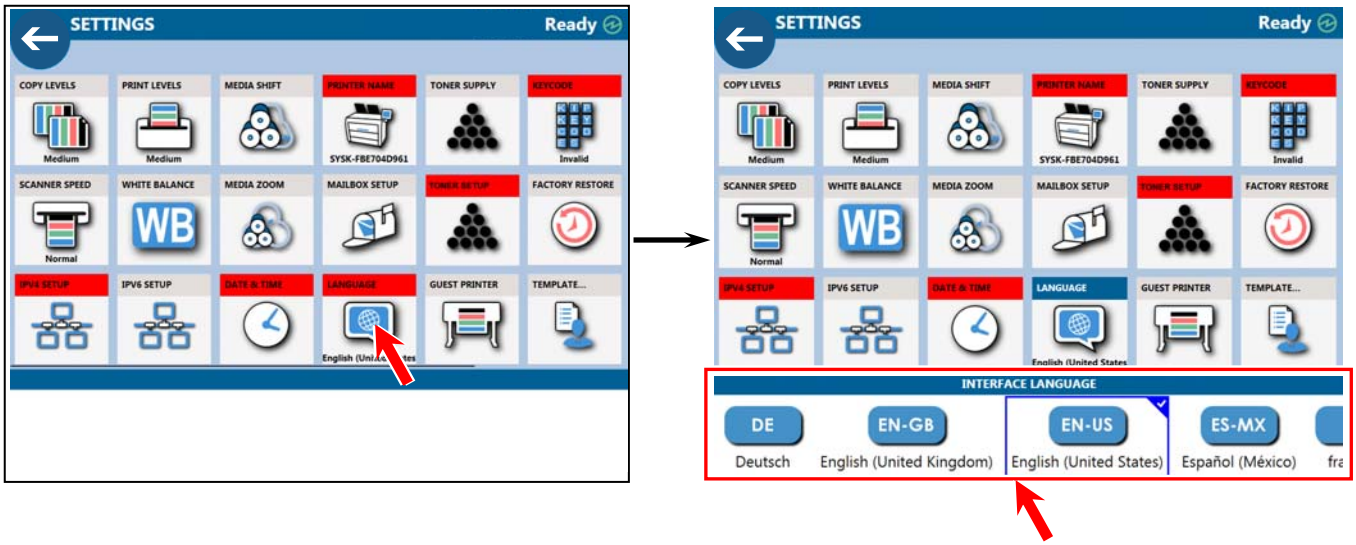


9. Press [Settings]. “SETTINGS” screen appears.

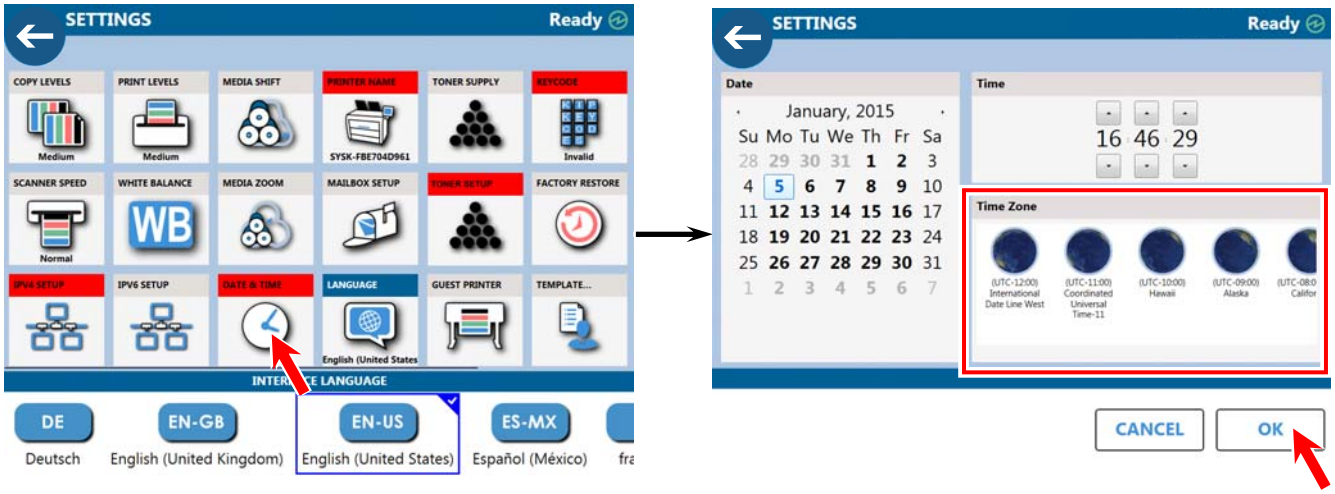




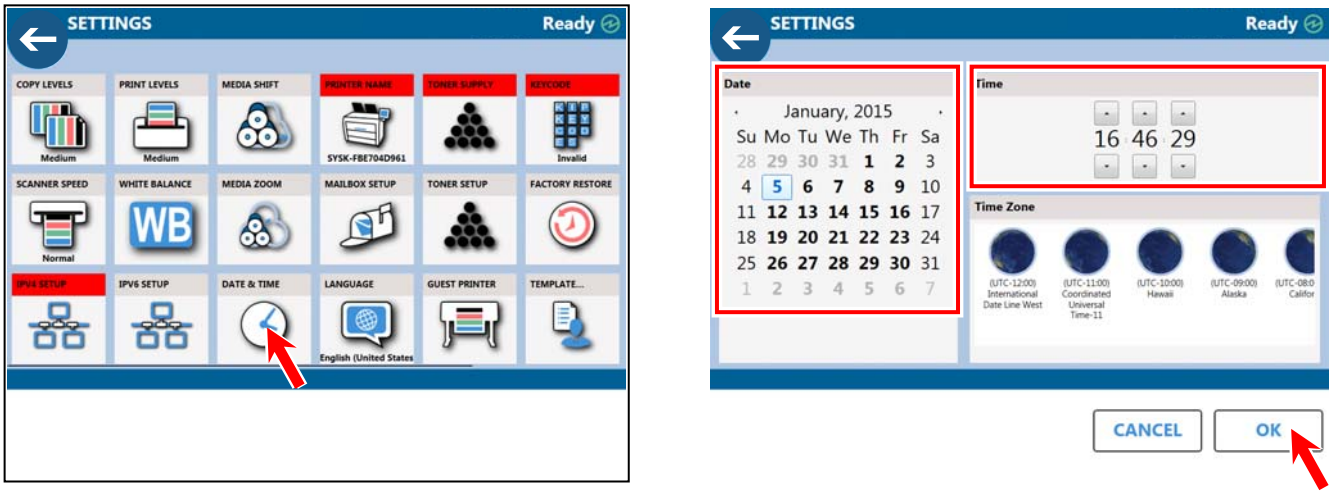
10. Press [LANGUAGE].
    Select a language.



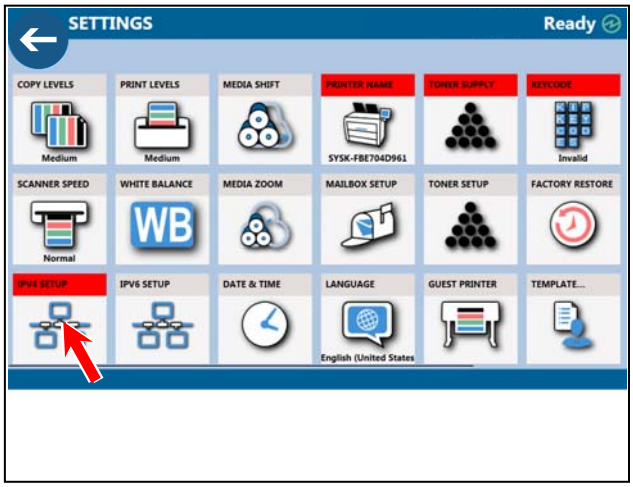
11. Press [DATE & TIME].
    Select your time zone in Time Zone region and then Press [OK].



12. Press DATE & TIME again. Change Date and Time settings according to your region and then press OK.

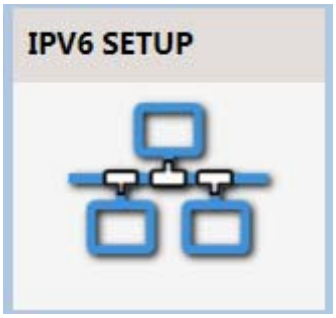


13. Press [IPV4 SETUP] to perform a network setting.

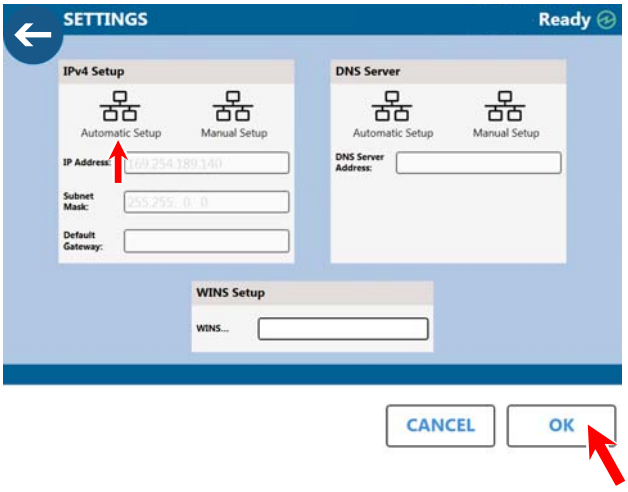


NOTE

Depending on the network environment in which the printer is installed, "IPV6 SETUP" is sometimes used. For this case, please perform the network setting with "IPV6 SETUP". Please contact the network administrator about the network environment.



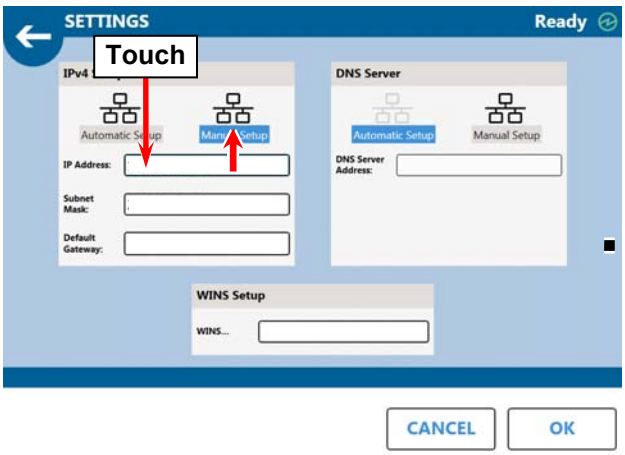
14. Confirm that the printer is surely connected to the network, set the IP Address (and DNS Server, if necessary), and then press [OK] after



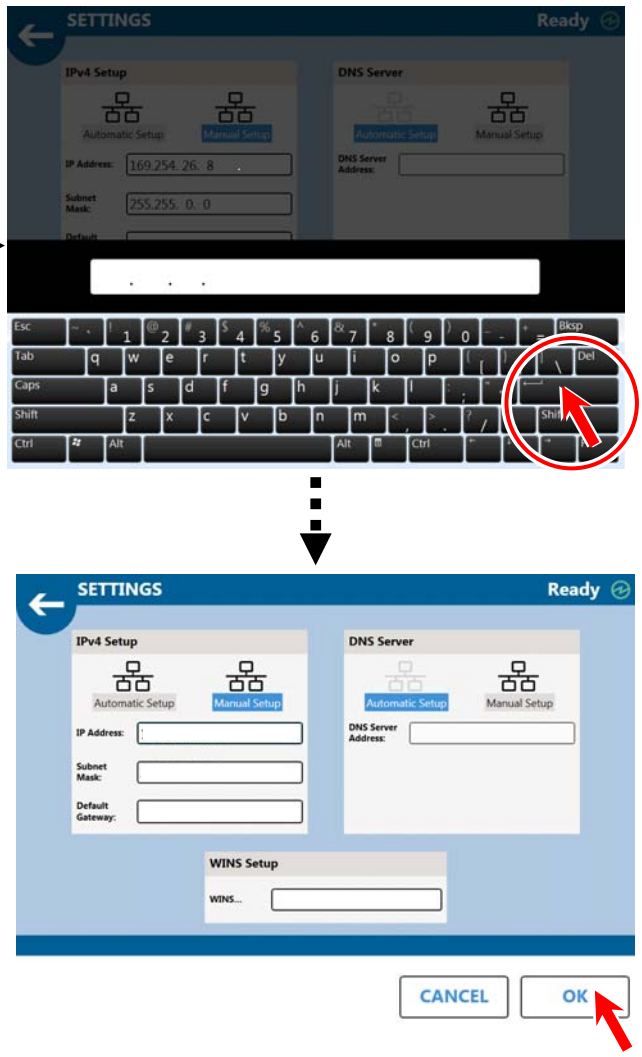
Reference

If "Automatic Setup" is selected, it takes some time to set.

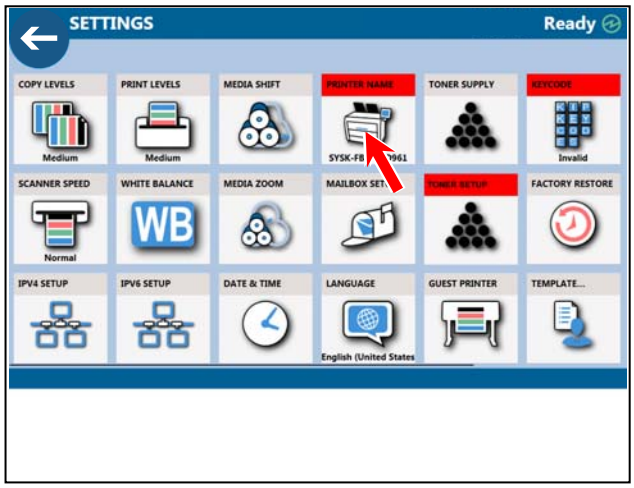
15. If "Manual Setup" is selected, touch the entry screen, enter the IP Address with the software keyboard, and then press [Enter] Key. After that, press [OK] on the “SETTINGS” screen”.

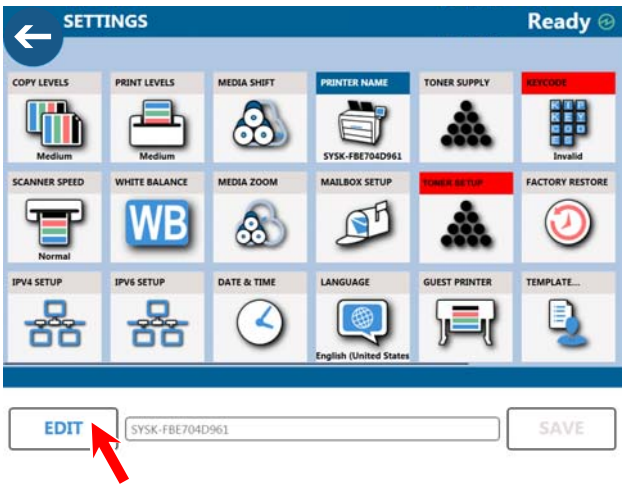


Entry screen appears when [Manual Setup] is pressed.

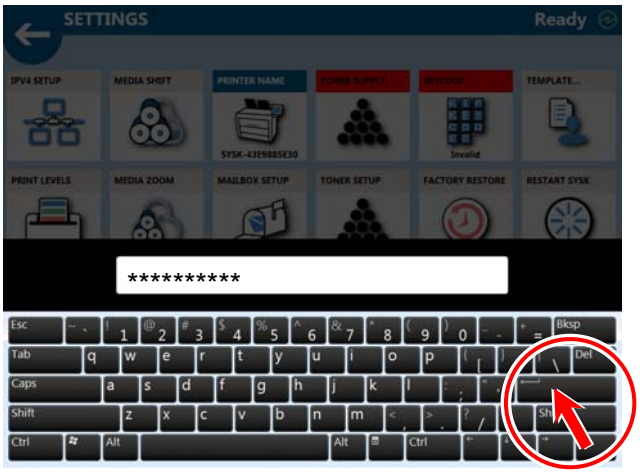


16. Press [PRINTERE NAME] and press [EDIT].

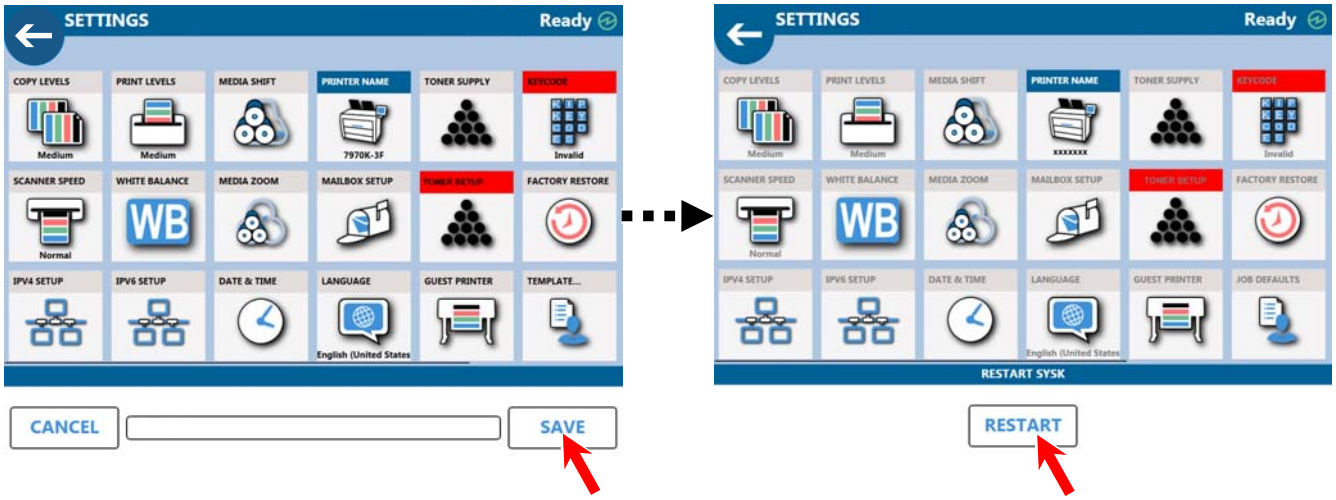




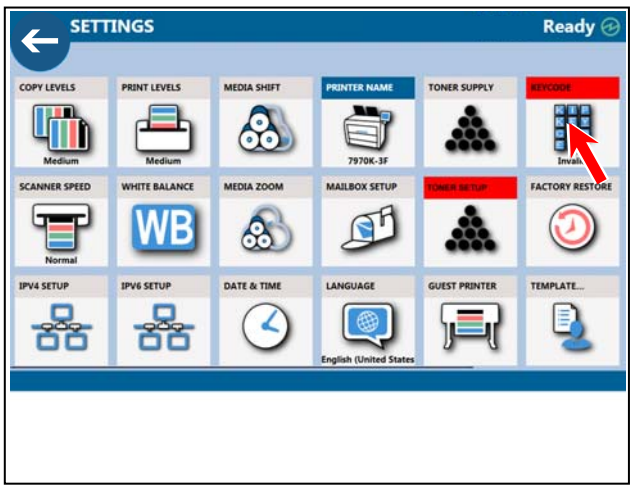
17. Enter the appropriate printer name, and then press [Enter] Key.



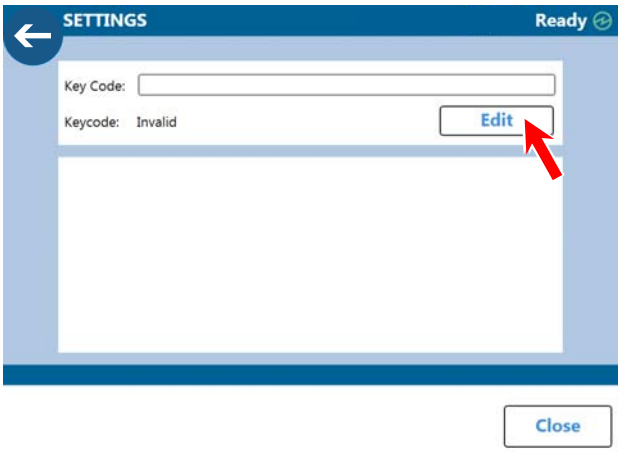
18. When pressing [SAVE], the screen for restarting the controller appears. Press [RESTART].
The printer name is defined by this operation.

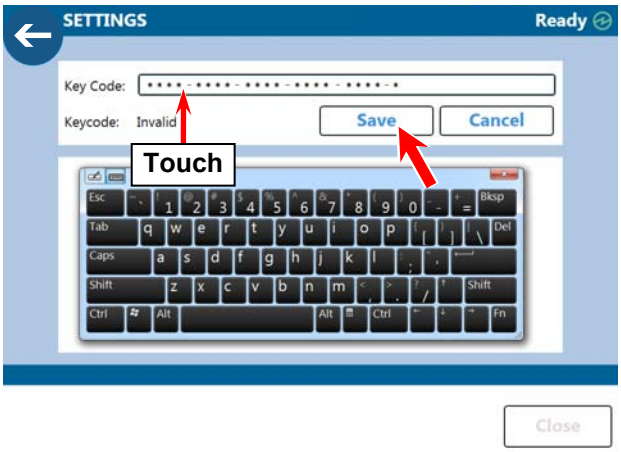


19. After rebooting the controller, open "SETTINGS" screen again, and then press [KEYCODE].

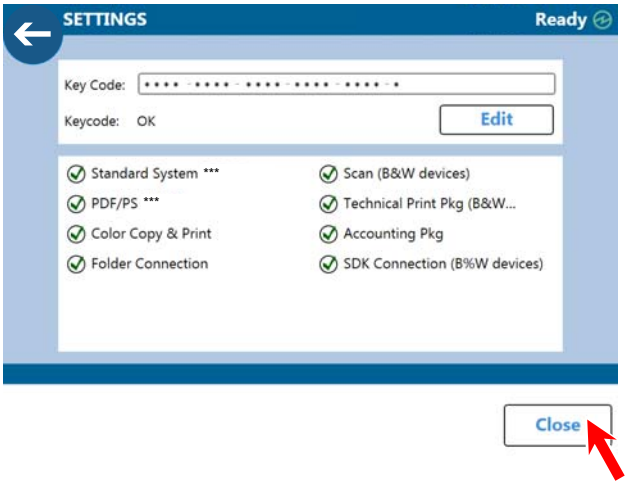


20. Press [Edit].
Touch the entry screen, enter "Key Code", and then press [SAVE].



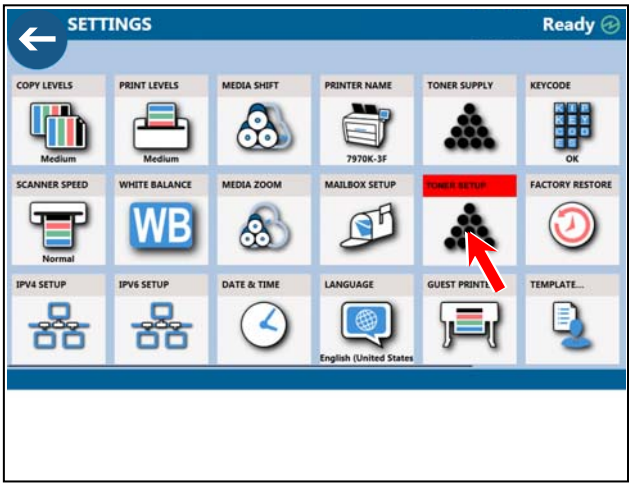


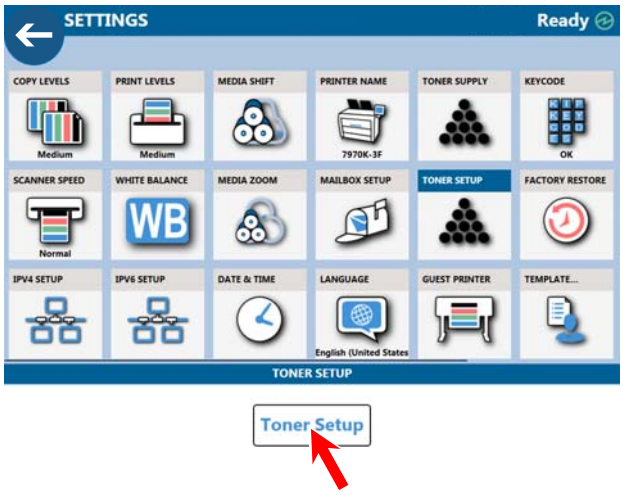
21. If the entered key-code is correct, the corresponded option(s) is checked.
Press [Close].



22. Press [TONER SETUP] and then press [Toner Setup].

Toner Setup Mode is the utility to supply toner powder from an installed Toner Cartridge to Developer Roller, and evens the toner level in it.
It takes approximately 20 minutes to complete.





Reference

1. On the status indication in the upper right, "Warming Up" is displayed while supplying the toner, and "Ready" is displayed when completing the toner supply.

2. The operation of Toner Setup Mode is suspended by accidental power off or door open. The operation will resume and continue in 20 minutes total.

2. 9 Regional Setting

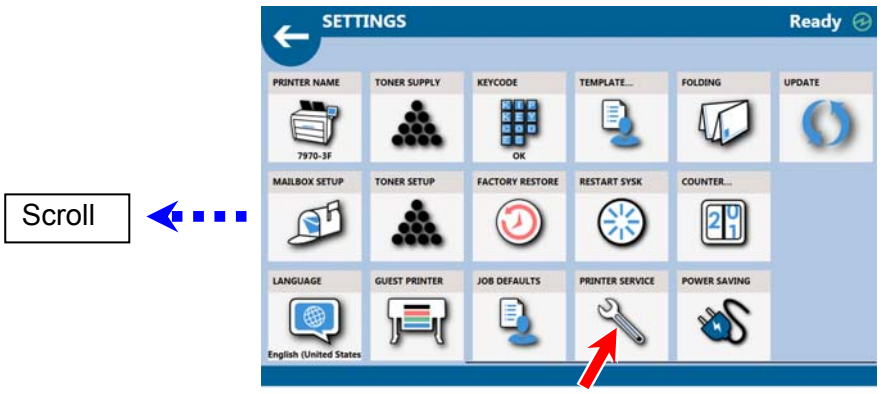
Select a correct region according to the residential area.

> **NOTE**
>
> **Selected regional setting will become effective when the printer is restarted by turning off/on the main switch.**

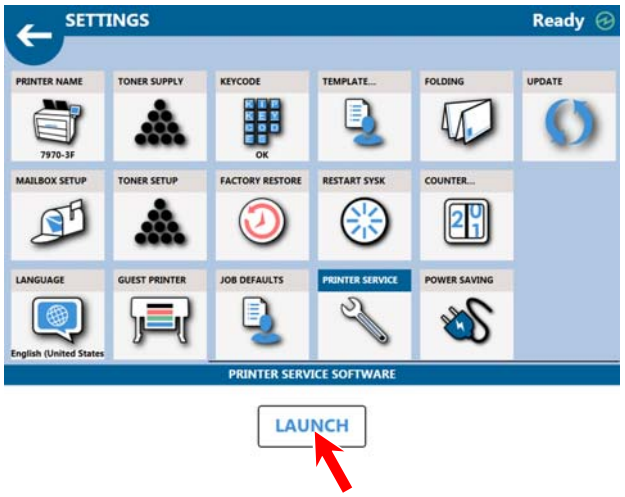
Regional setting is set to the following default values at shipment according to the destination of the product. At any region, please be sure to reconfirm the setting value and correctly change if it is not correct for the actual region of installation.

Destination	Setting value
North America & Canada	01 : NA
China (including Hong Kong)	05 : CN
Europe, Russia & Countries other than the above	02 : EUR

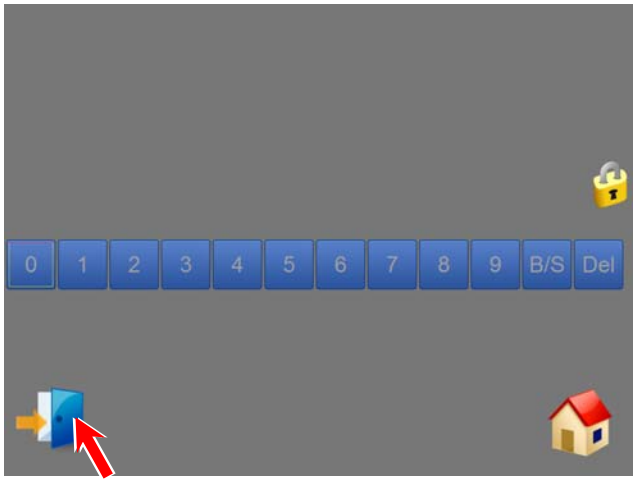
1. Press [PRINTER SERVICE] on the “SETTINGS” screen.

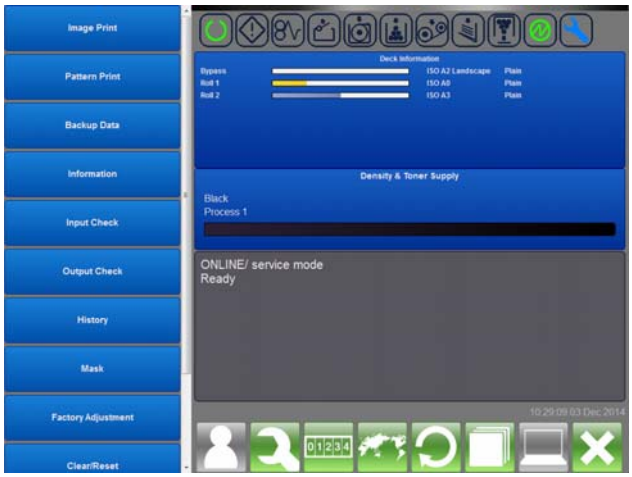


2. Press [LAUNCH].

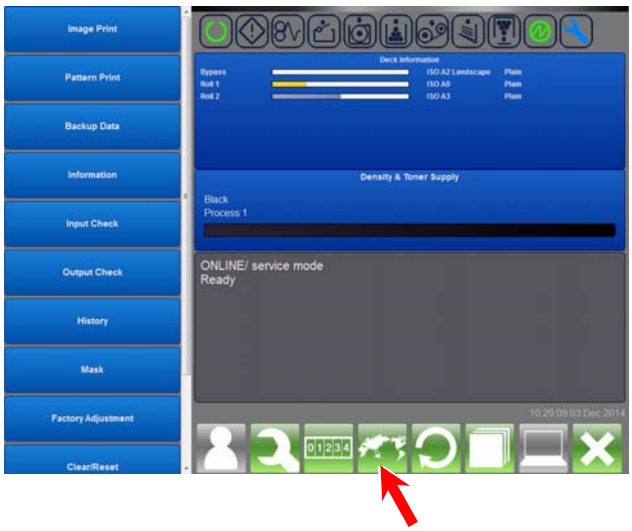


3. Press “Door Icon” to log in Maintenance GUI Home.

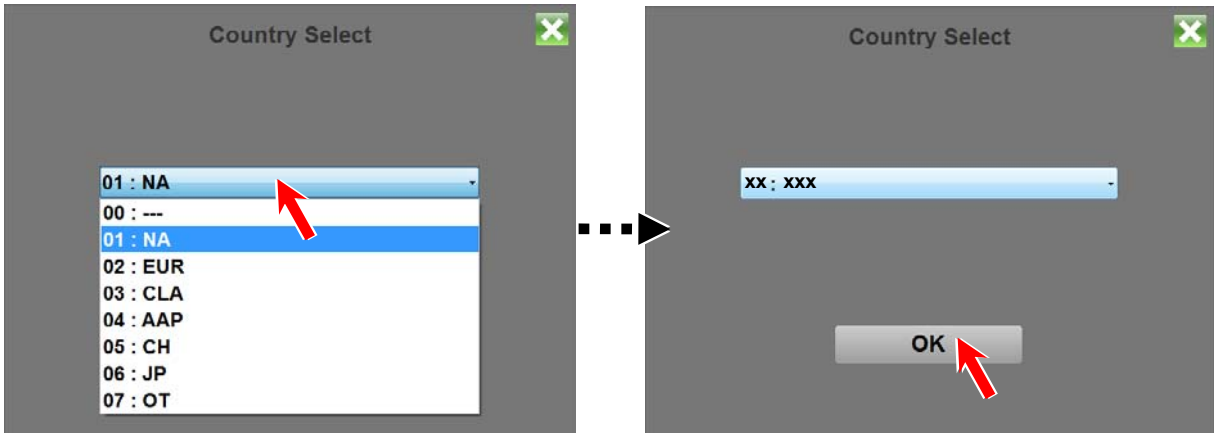




4. Press “Map” Icon in Maintenance GUI Home.



5. According to your residential area, choose a correct regional code in the pull-down menu under and then press “OK”



CODE	Residential area
00: ---	No selection
01: NA	North America & Canada
02: EUR	EU & Russia
03: CLA	Central America & South America
04: AAP	Asia (except China), Middle East, Africa & Oceania
05: CN	China (including Hong Kong)
06: JP	Japan
07: OT	All other region

⚠ DO NOT SET "0"!!

If this setting value is set as "00", the machine cannot get ready.

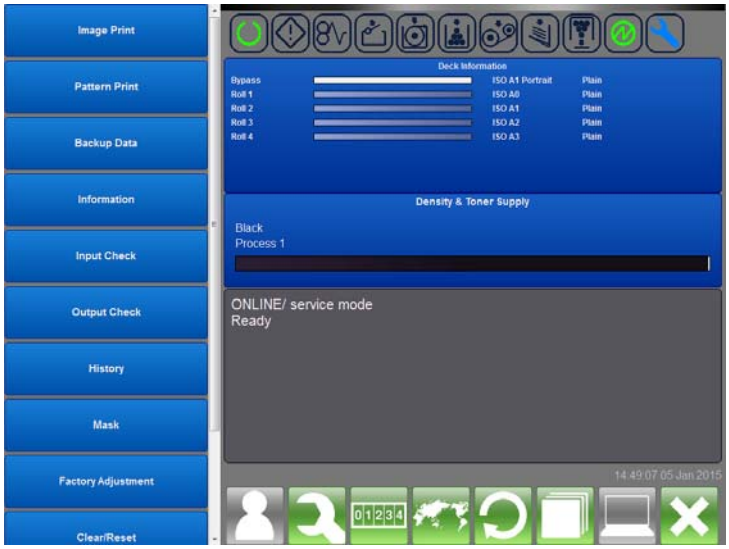
6. Press “ X “ button to close the “Country Select” screen.

7. Turn off the Printer, and turn it on again few seconds later. This will enable the selected regional setting.

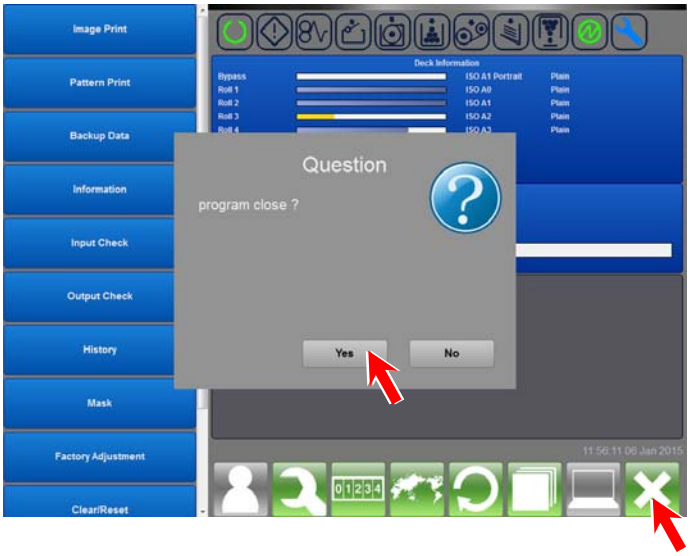
⚠ NOTE

Selected regional setting will become effective when the printer is restarted by turning off/on the main switch.

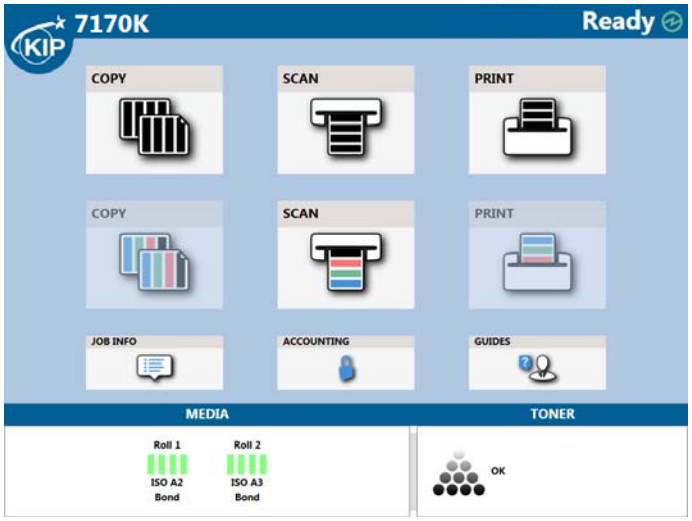
8. When the printer is turned on, it indicates the log-in page of Maintenance GUI.



9. Press “ X “ button.
   Confirmation screen appears. Press [Yes].



10. UI screen will display Home screen in a short time.

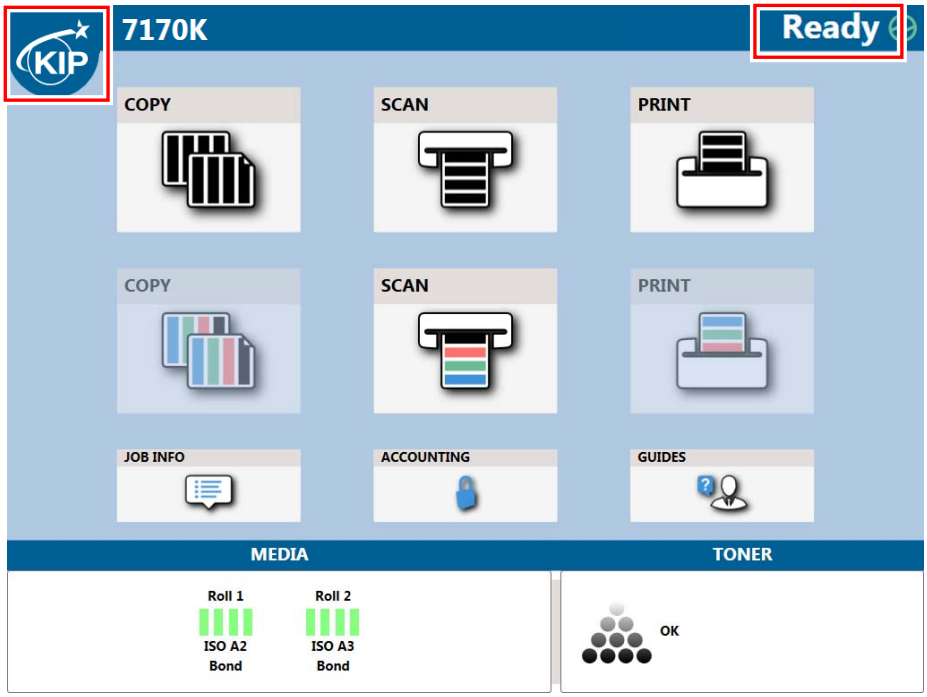


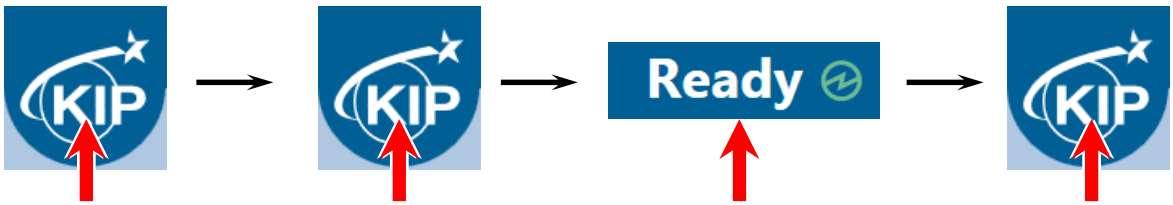
2.10 Scanner Adjustment

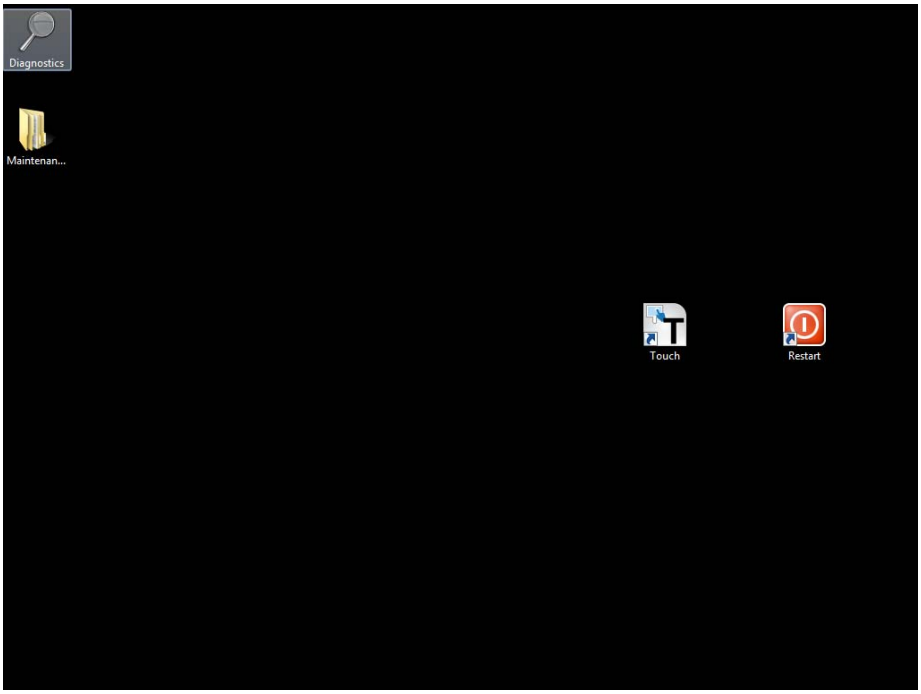
2. 10. 1 Launching K129 Diag

On the UI Home screen, press the Home icon and the status indication quickly in the following order to indicate the desktop screen.

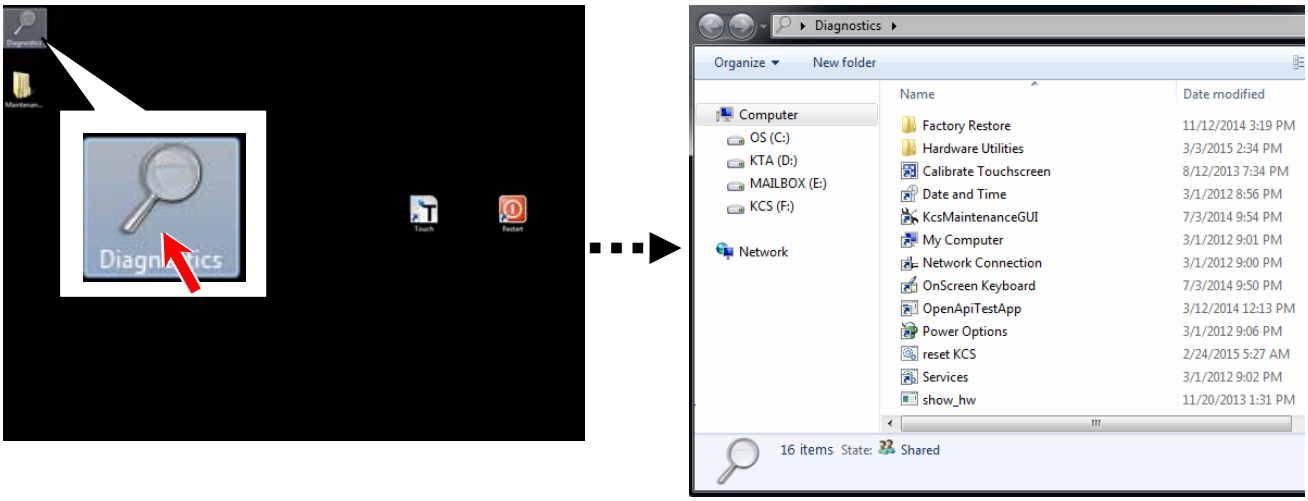
" KIP" icon (twice) → Status indication (once) → "KIP" icon (once)



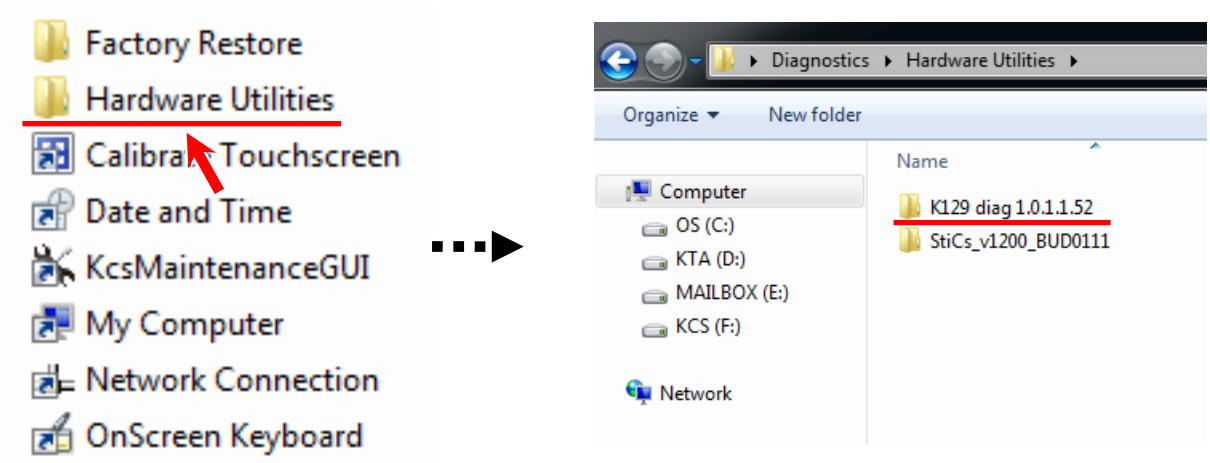




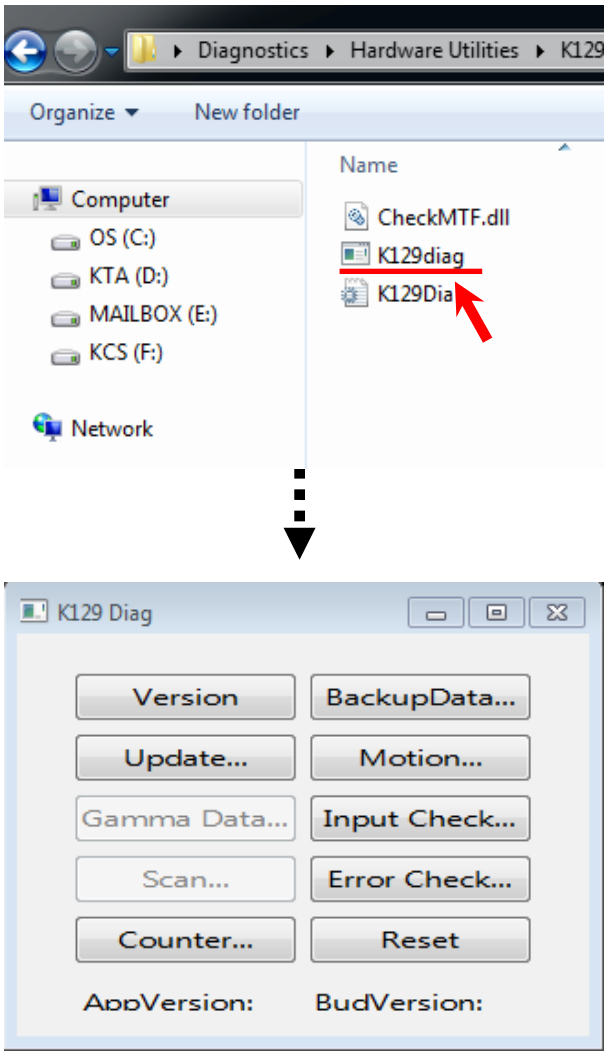
2. Open “Diagnostics” folder.



3. Double click [Hardware Utilities] and [K129 diag X.X.X.X.XX].



4. Run “K129 Diag”.

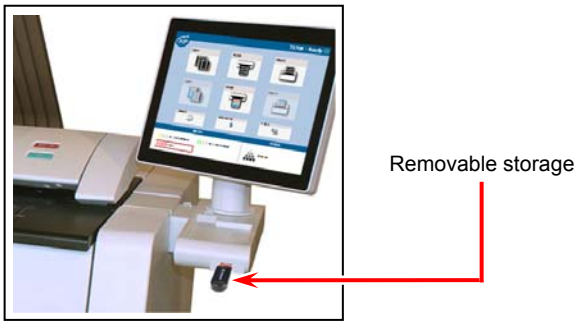


Reference

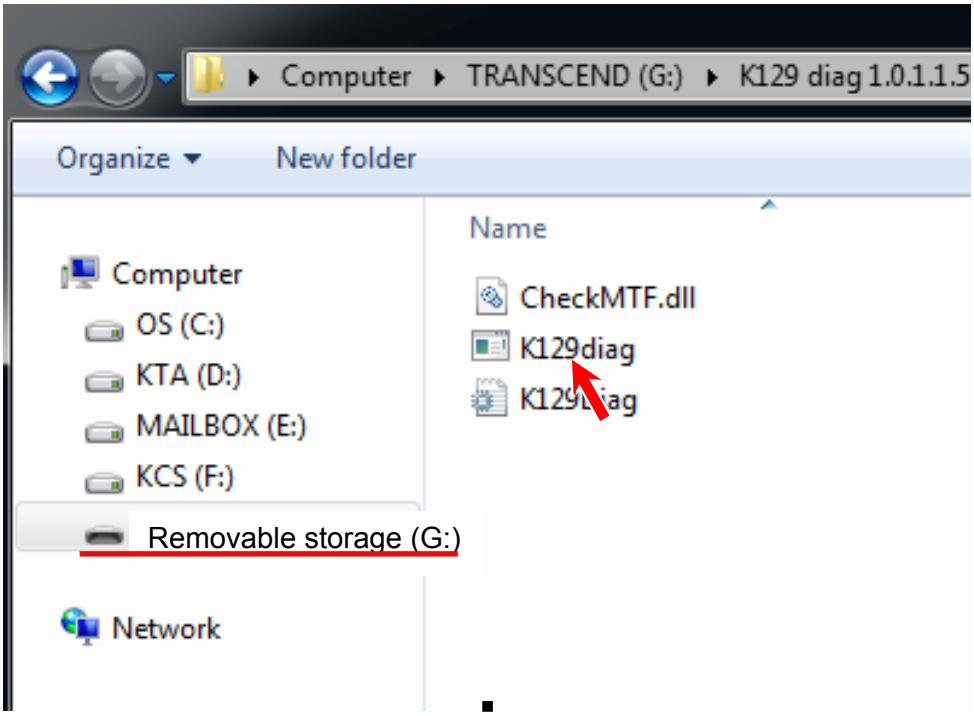
Other ways to run the "K129 Diag" are described on the next page.

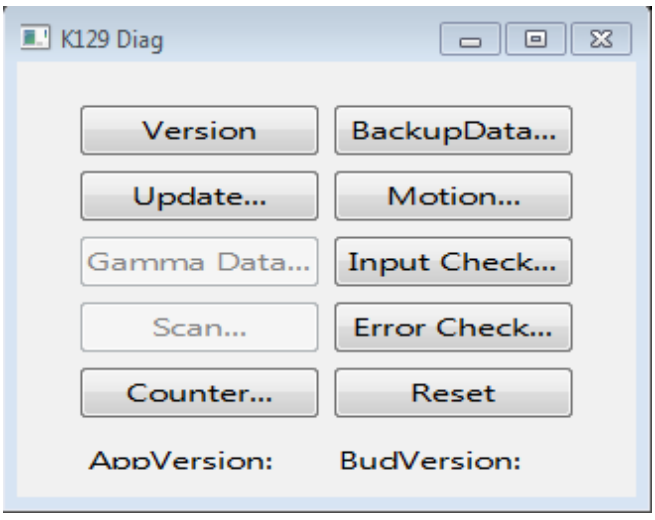
Reference

1. Contact your KIP partner for K129Diag.exe and save it to any available storage on your removable storage. Connect removable storage to UI monitor's connector.



2. Select "Removable Disk", and then run "K129 Diag.exe".

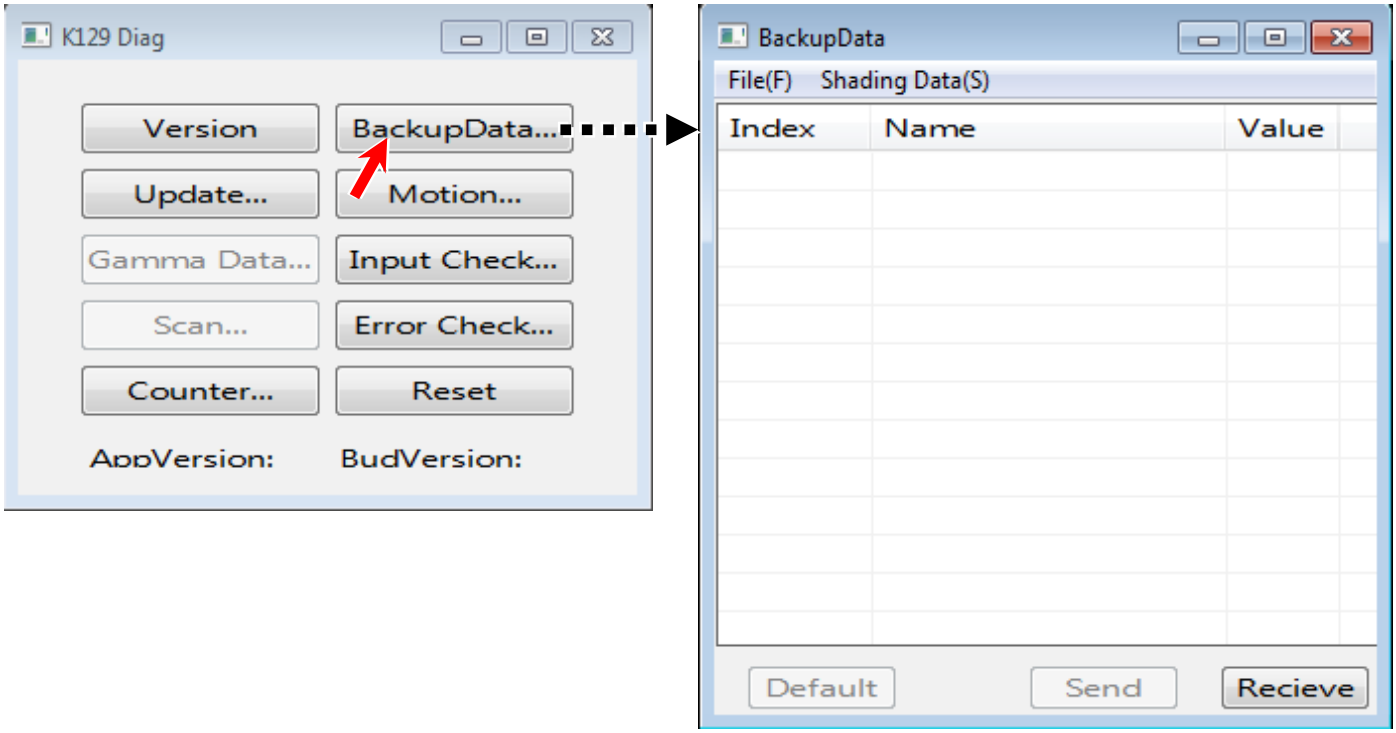




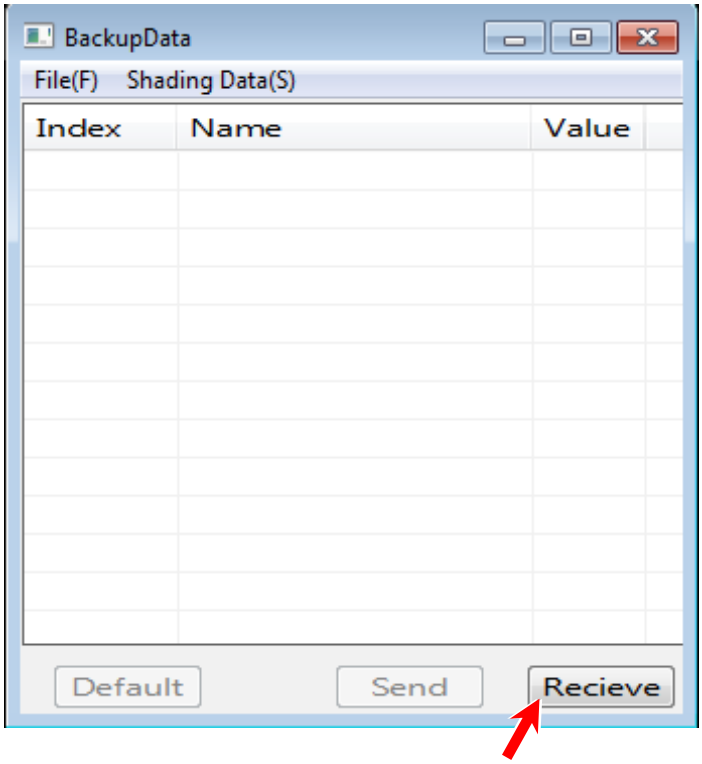
2.10. 2 Stitching Adjustment

> **NOTE**
> BUD No.15 (stitch setting 1) should be temporarily set to OFF “0” during Stitching Adjustment.

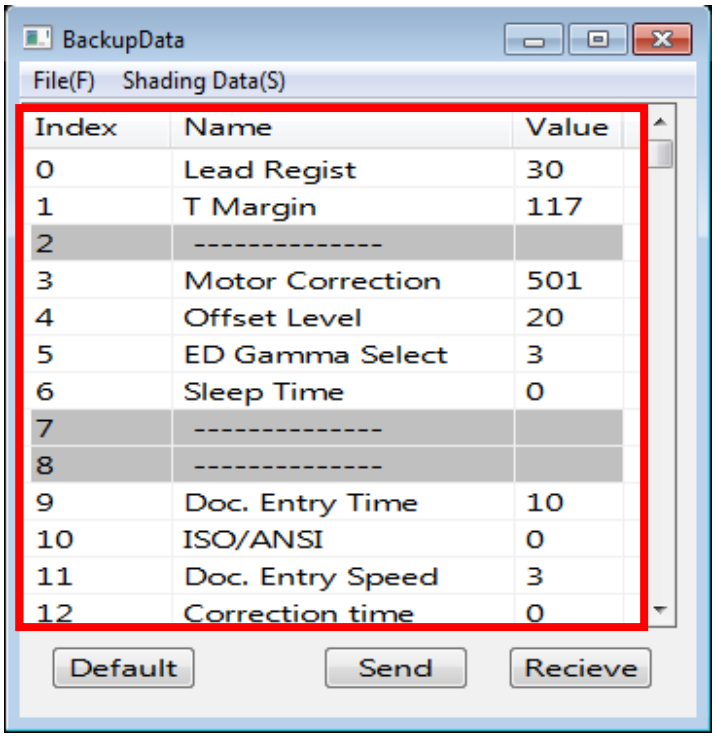
1. Run K129 Diag. Click [BackupData] to recall “Backup Data” sub window.



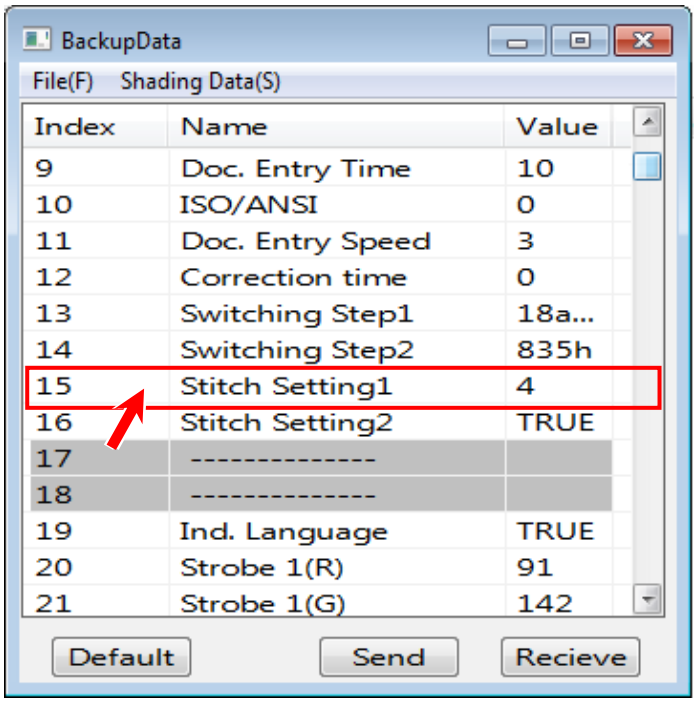
2. Click [Receive]



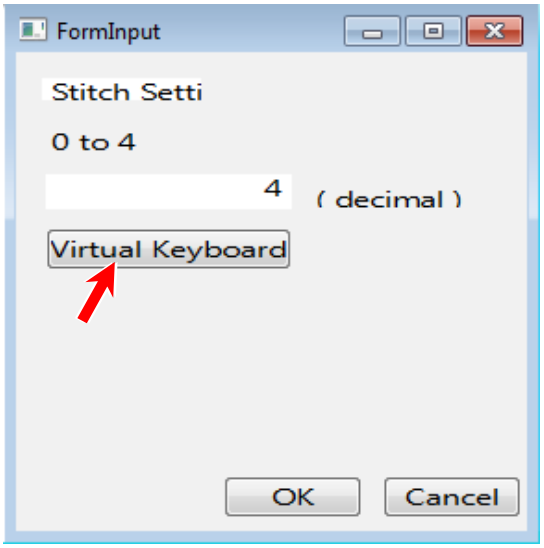
3. The current parameters are retrieved and displayed in the list.



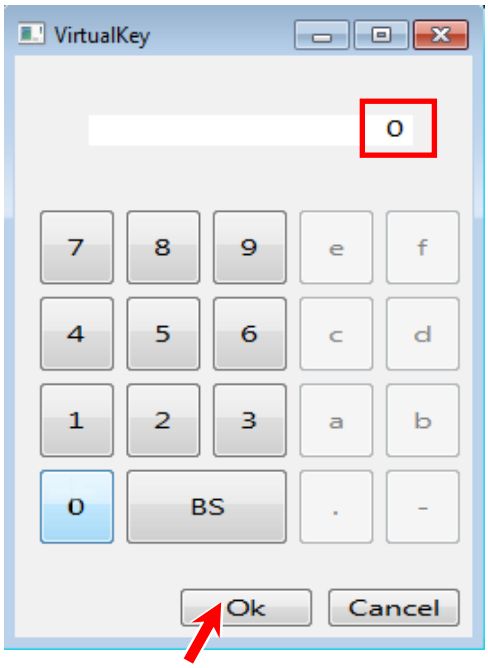
4. Double click on the row No.15 “Stitch Setting 1”.



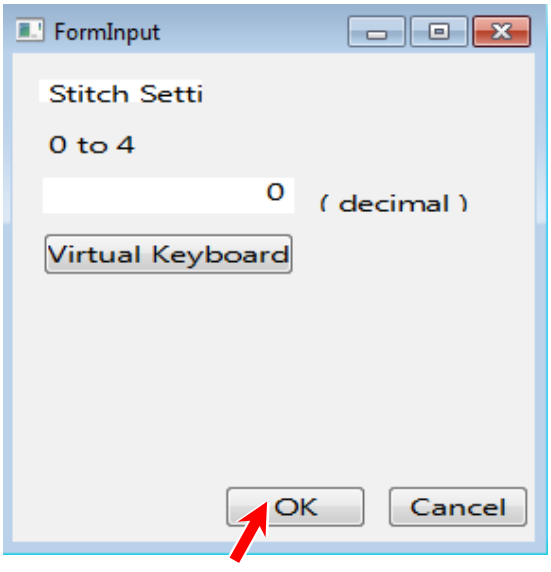
5. In “FormInput” screen, Click [Virtual Keyboard] to display the screen keypad.



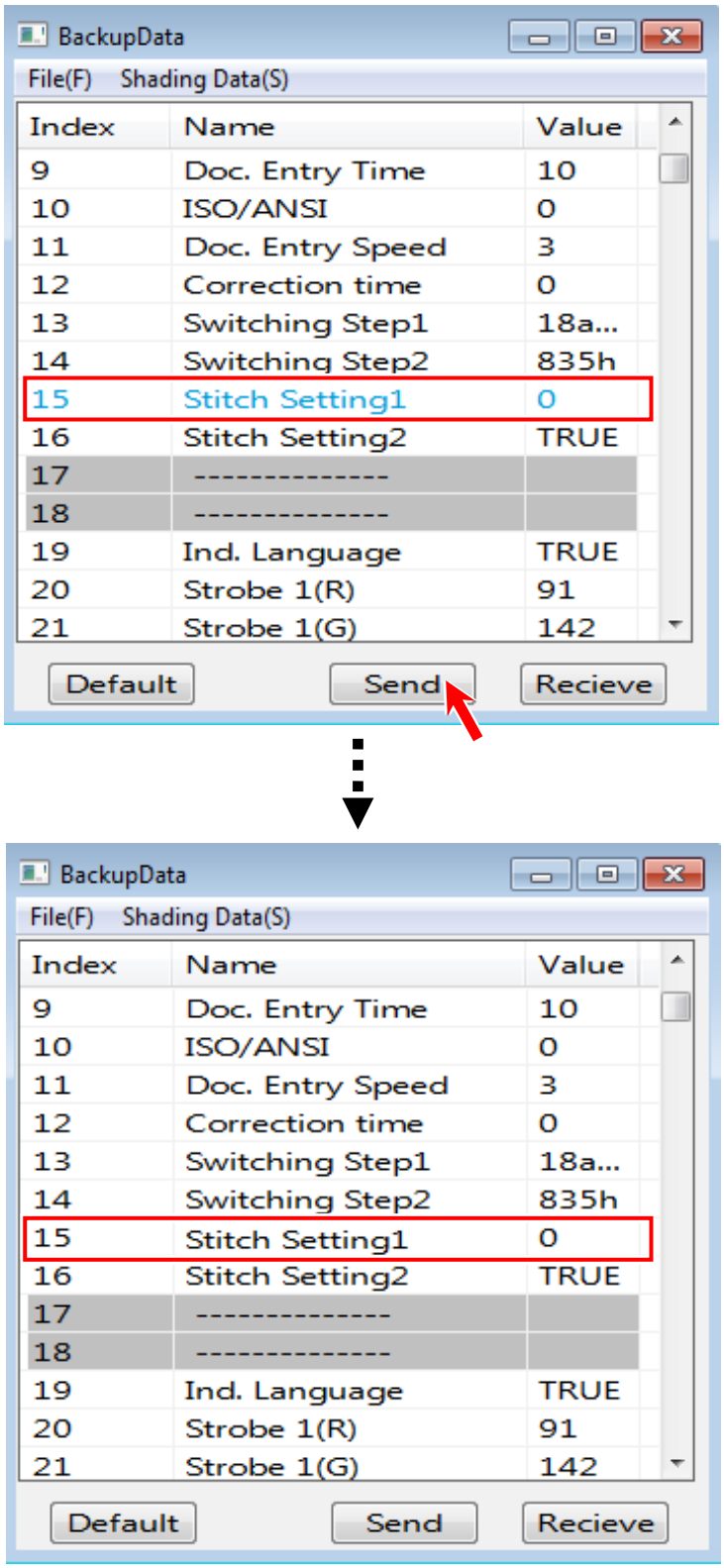
6. Type “0” with keypad, and then click [OK] on the bottom.



7. Click [OK] on the bottom.



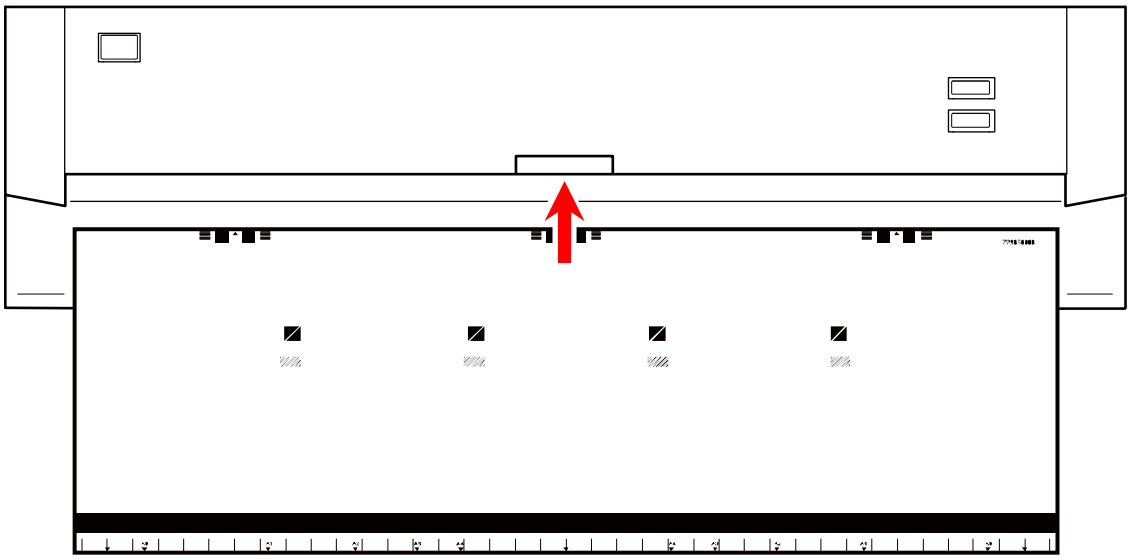
8. The setting change you have made is reflected to the list. It will turn blue.
   Click [Send] on the bottom. The setting change turns black. Now it is sent to the Main Board.



9. To close “BackupData” sub window, click the X button at the upper right corner.

10. Clean Glass DCMNT with a soft cloth.

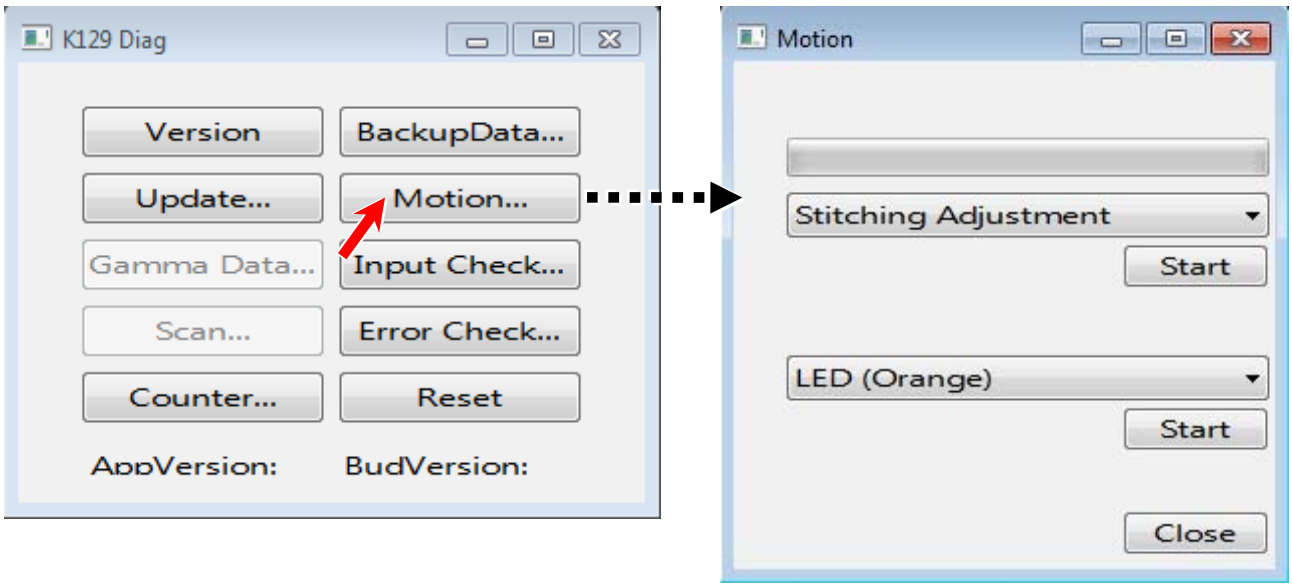
11. Set the Shading Sheet to the scanner noting the arrow direction.



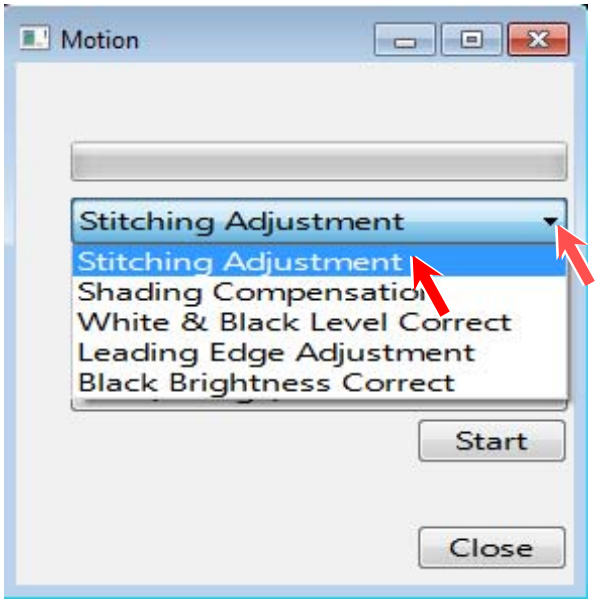
NOTE

No skew insertion. Doing so may cause an incorrect calibration.

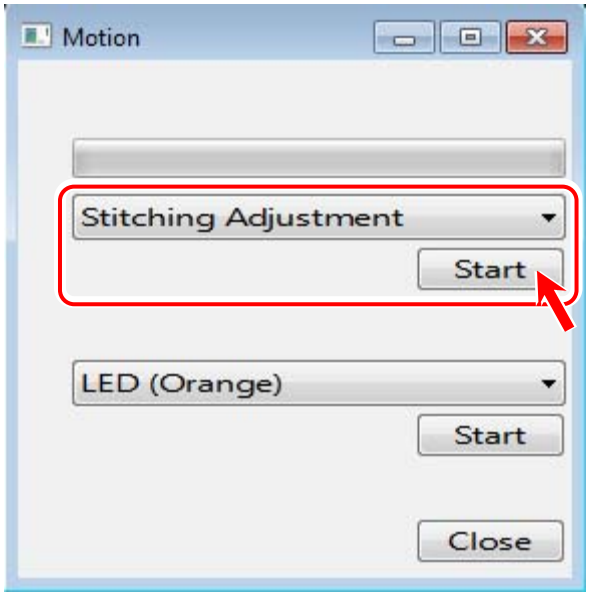
12. Click [Motion] to recall “Motion” sub window.



13. Select “Stitching Adjustment” in the upper drop-down menu.



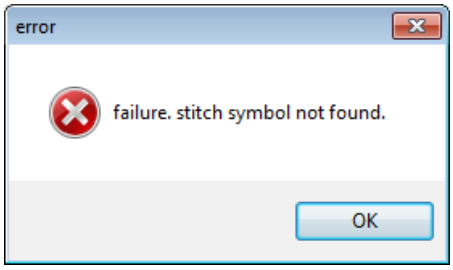
14. Click [Start] beside the upper drop-down menu.



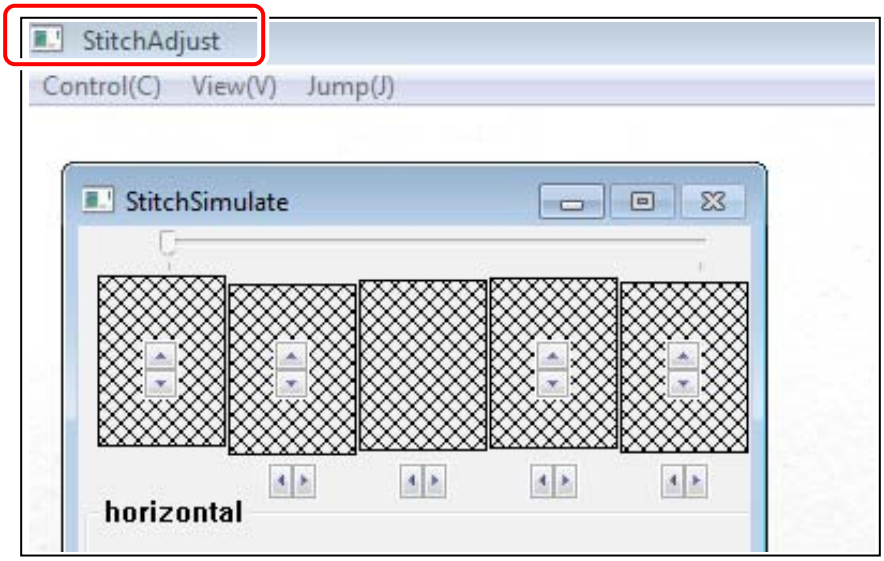
NOTE

If an error message occurs;

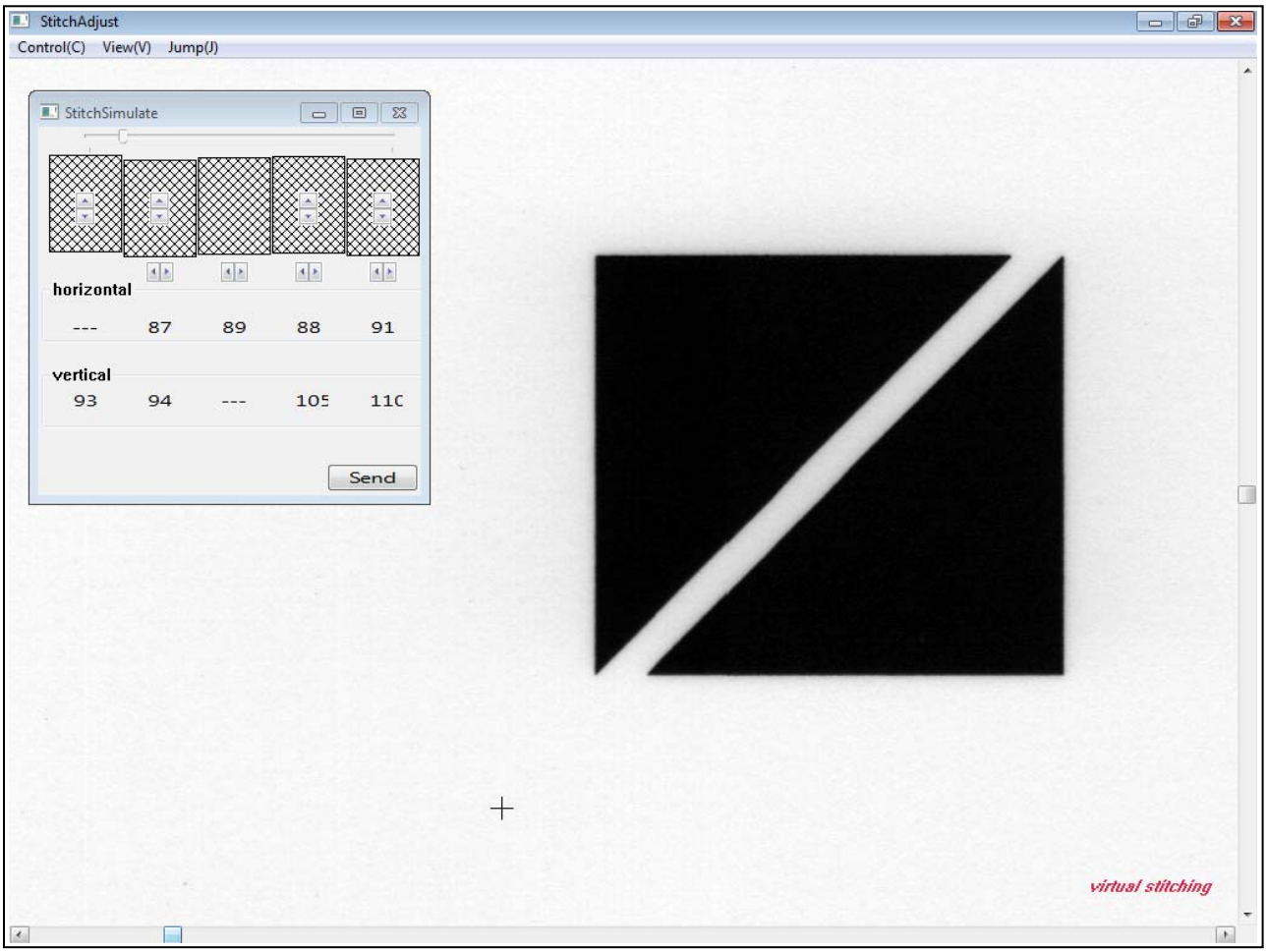
1. Correctly set the Shading Sheet to the scanner.
2. Check for dirt on the Glass DCMNT and the Shading Sheet.



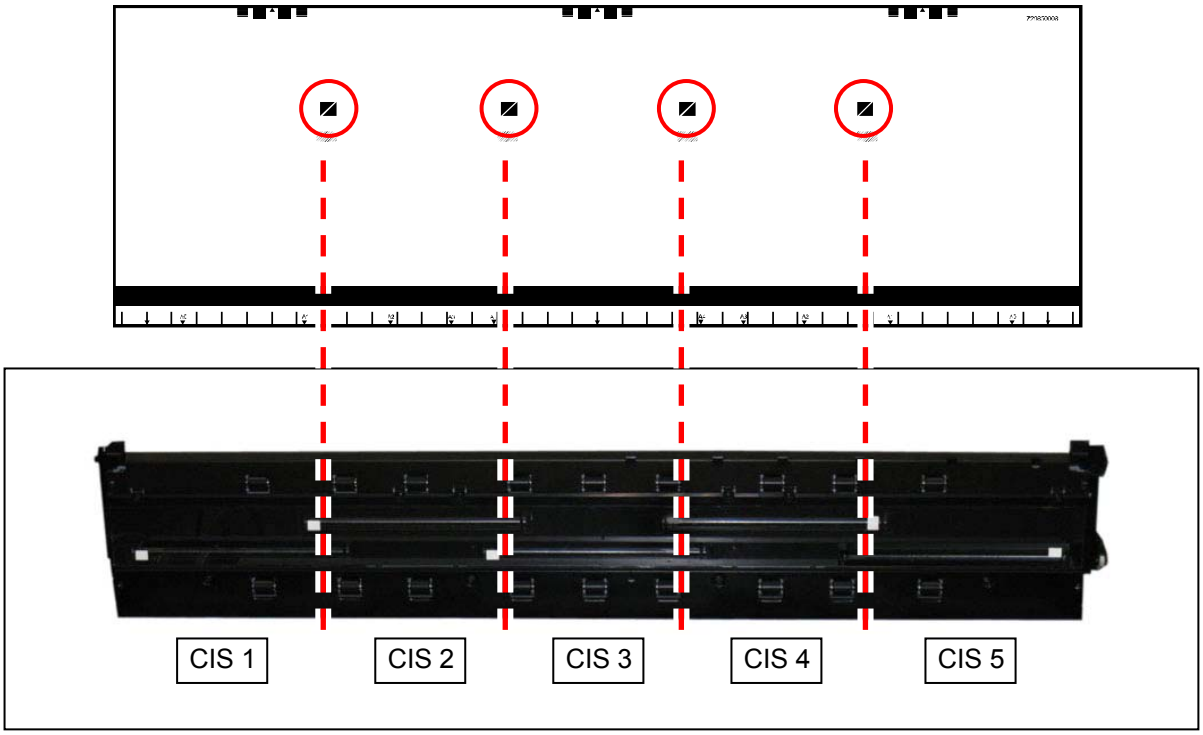
15. When the scanning is finished, two sub windows “Stitch Simulate” and “Stitch Adjust” appear. Enlarge “StitchAdjust” window.



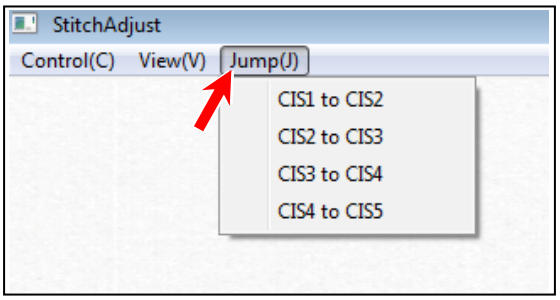
Enlarge “Stitch Adjust” window.

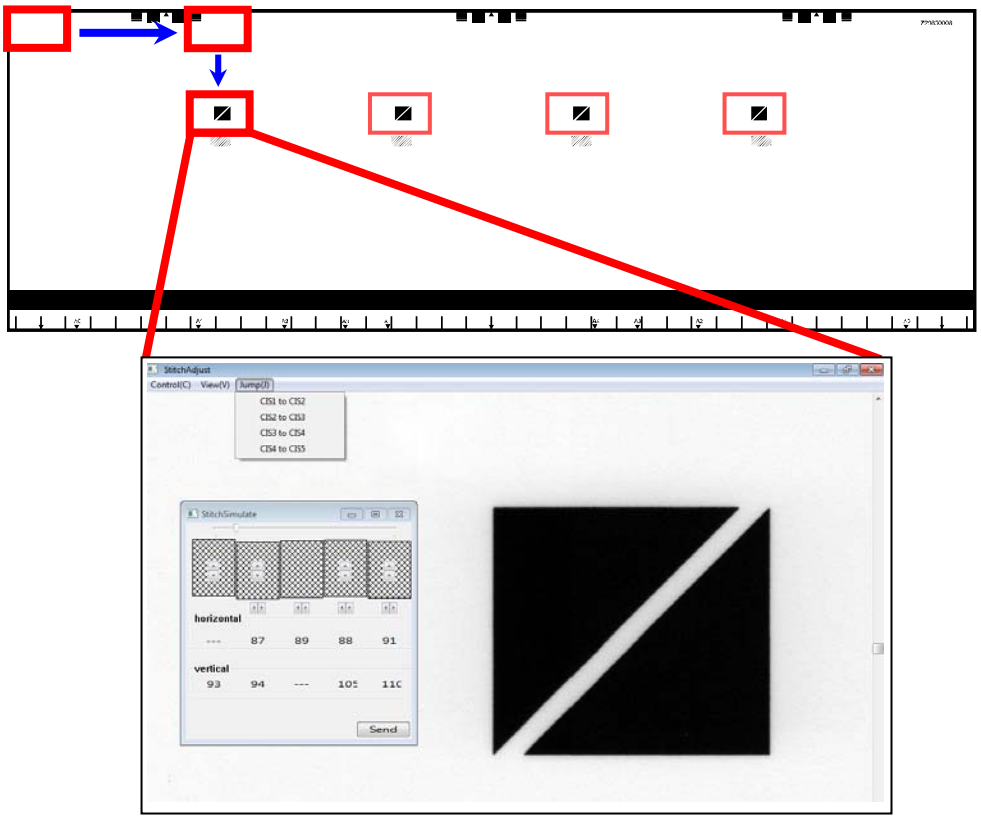


16. There are 4 target signs at every border between the CIS.



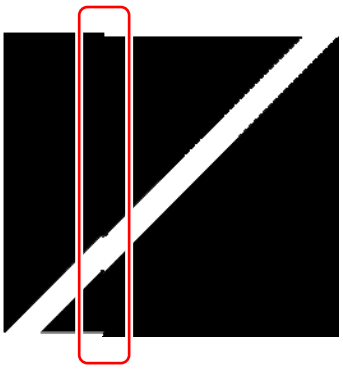
In “Stitch Adjustment” window, Select [Jump] menu, and then click [CIS1 to CIS2]. The display area will jump to the corresponding area on the scanned image. If “Jump” does not move to the target exactly, manually scroll the image to catch the target in the window.



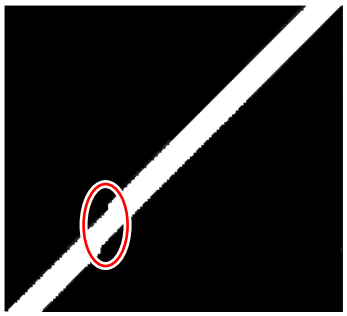


17. Confirm the Stitching Adjustment results.

no misalignment



vertical misalignment
or
this may include vertical &
horizontal misalignment
at a time



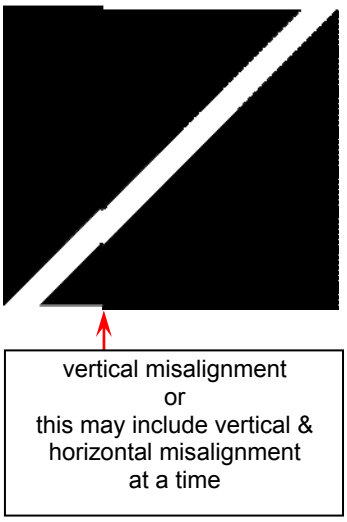
horizontal misalignment

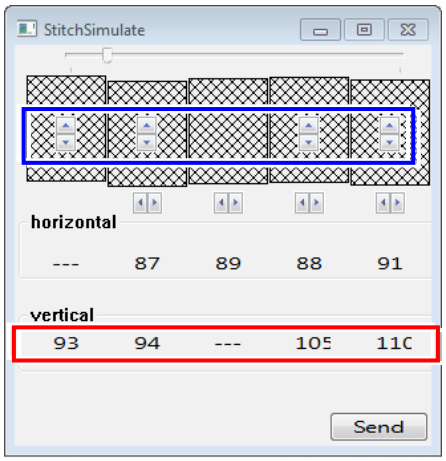
18. Select [Jump] menu, and then click the other CIS borders to confirm the results.
If all of the 4 targets have no misalignment, go to step 25.
If any of the targets has an misalignment, go to step 19 and after for manual correction.

- vertical → Go to step 19.
- horizontal → Go to step 20.

19. First, correct vertical misalignment as follows.

19-1. In “StitchSimulate” window, click the ▲ ▼ buttons (see below in blue frame) to change the setting value for “vertical” (see below in red frame), in order to move the image block vertically.

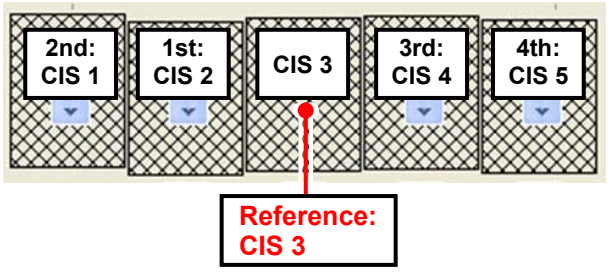




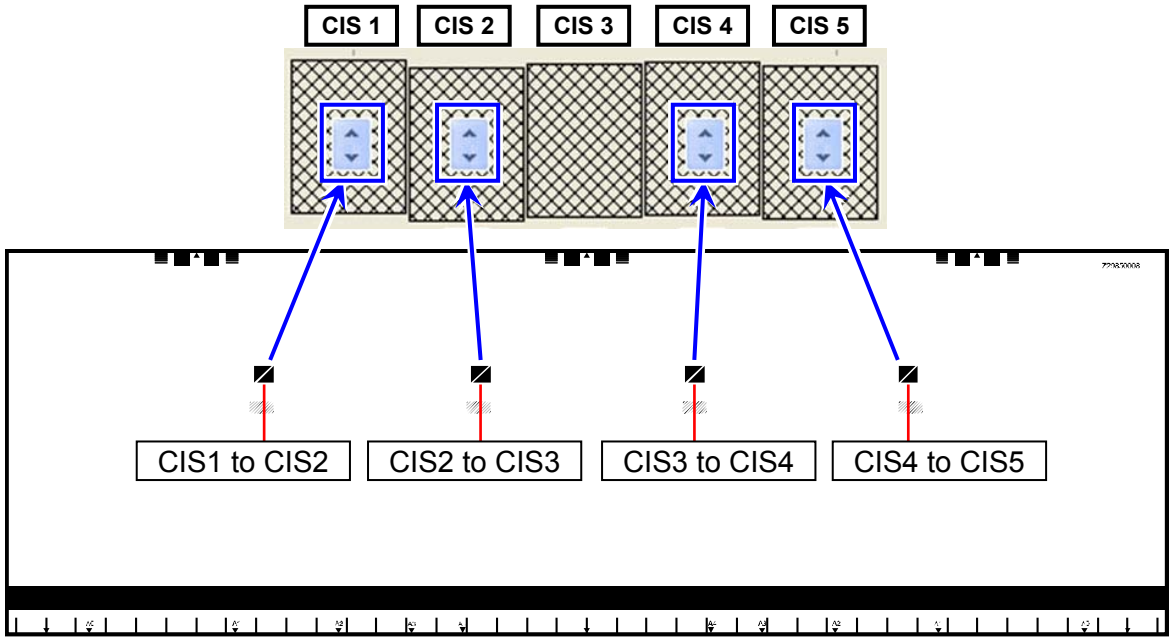
Do the same way for all the 4 targets at the borders.
Setting values will turn red by setting changes. Setting value 1 step = 1 pixel to trailing edge

NOTE

(1) For vertical correction, **CIS 3** is the reference. You are asked to set the distance of shift for CIS 1/2/4/5 against CIS 3. First finalize the shift for CIS 2, and next CIS 1, CIS 4, CIS 5.



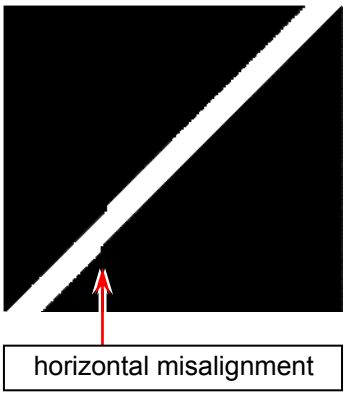
(2) The increase/decrease buttons correspond to the CIS border as follows.

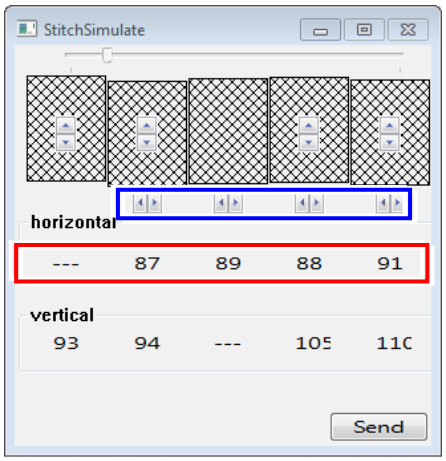


19-2. Image shifting (setting value in red) is not finalized yet. Click [Send].
Once the change is sent to the scanner’s Main Board, setting values turn black.

20. Second, correct horizontal misalignment as follows.

20-1. In “StitchSimulate” window, click the ◄ ► buttons (see below in blue frame) to increase / decrease the setting value for “horizontal” (see below in red frame). This moves the image block horizontally.

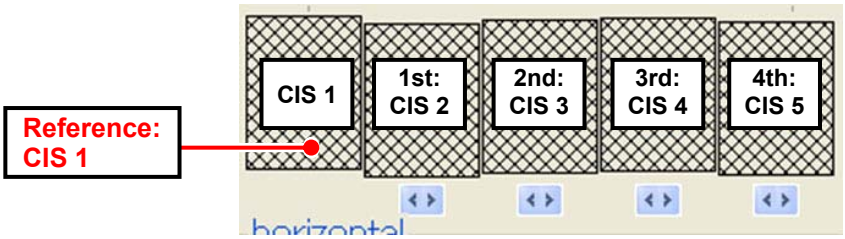




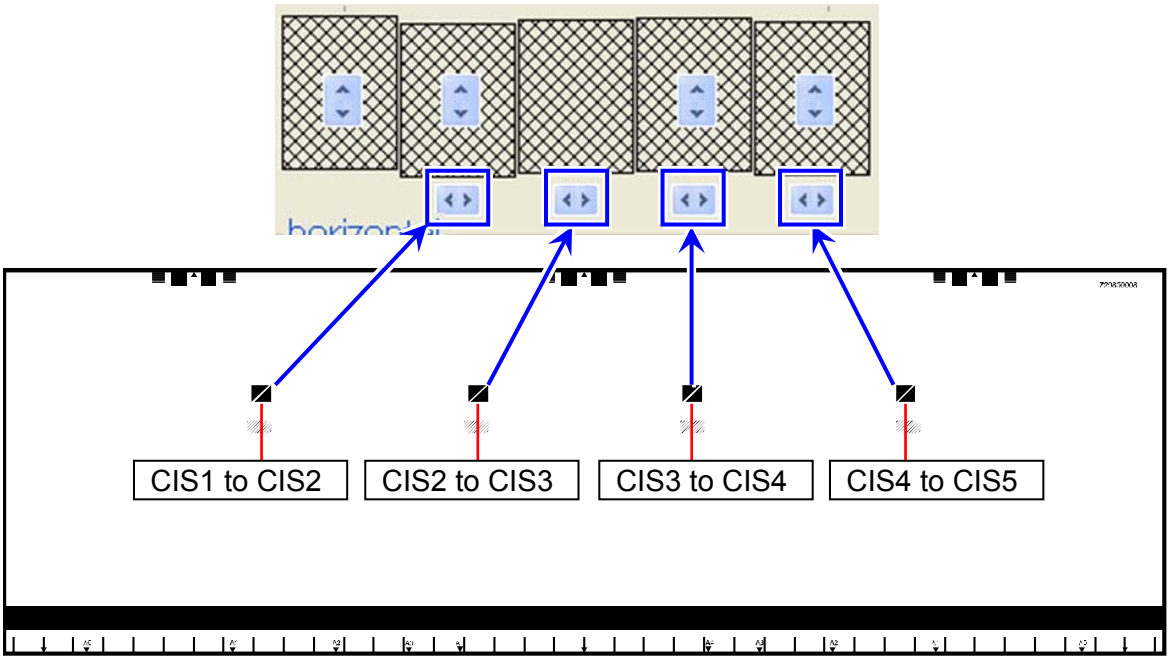
Do the same way for all the 4 targets at the CIS borders if needed.
Setting values will turn red by setting changes. Setting value 1 step = 1 pixel to right

NOTE

(1) For horizontal correction, **CIS 1** is the reference. You are asked to set the distance of shift for CIS 2/3/4/5 against CIS 1. First finalize the shift for CIS 2, and next CIS 3, CIS 4, CIS 5.



(2) The increase/decrease buttons correspond to the CIS border as follows.



20-2. Image shifting (setting value in red) is not finalized yet. Click [Send].
Once the change is sent to the scanner’s Main Board, setting values turn black.

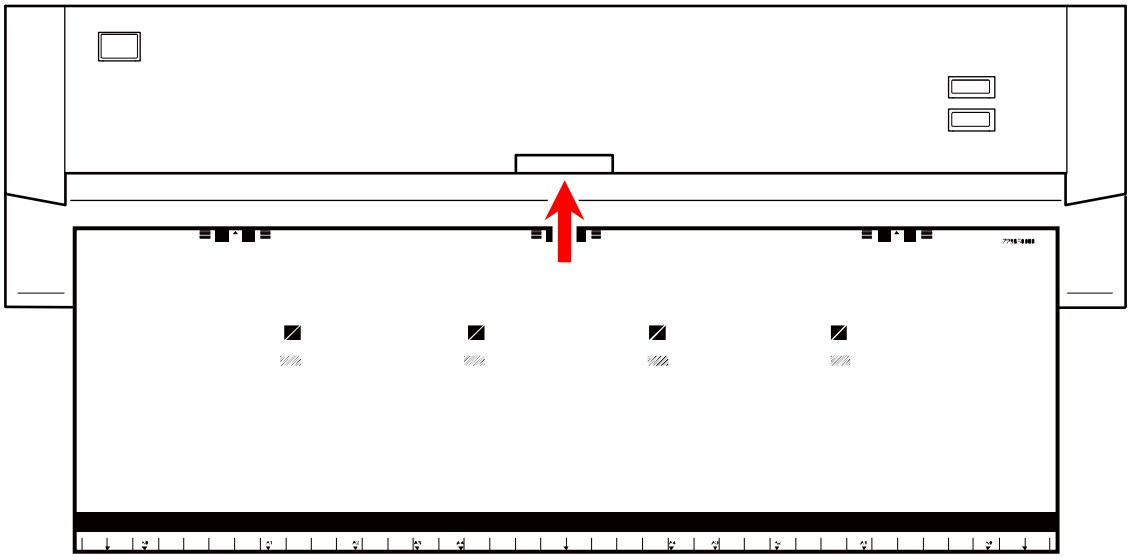
21. The manual correction is reflected to “StitchAdjust” window directly.
Reconfirm the manual correction result on the 4 targets.
If there is still misalignment, go back to step 19 and 20 to remove it.

no misalignment

NOTE

Be sure to reconfirm the manual correction result.

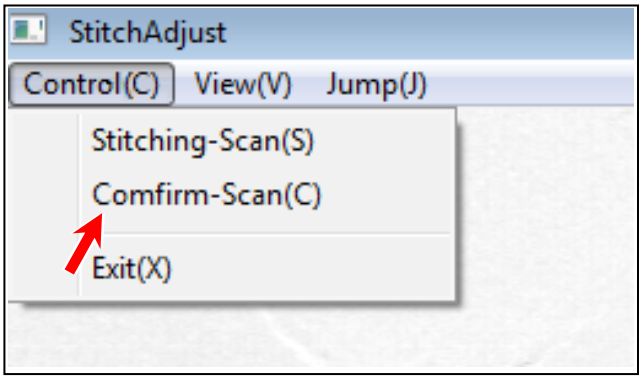
22. Set the Shading Sheet to the scanner noting the arrow direction.



NOTE

No skew insertion. Doing so may cause an incorrect calibration.

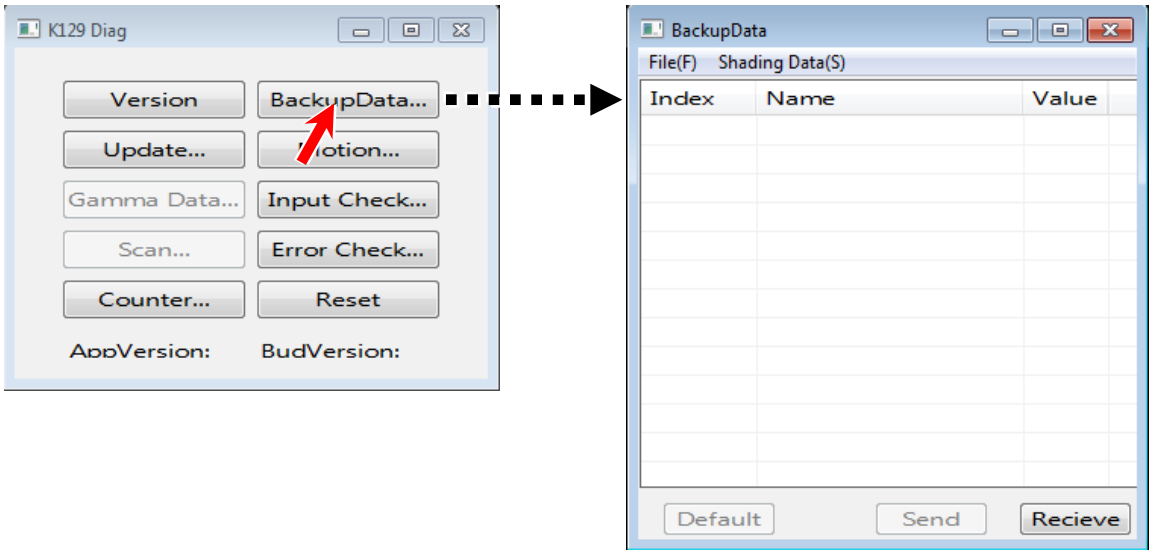
23. In “StitchAdjust” window, select [Control] menu, and then click [Confirm-Scan] to make another scan.



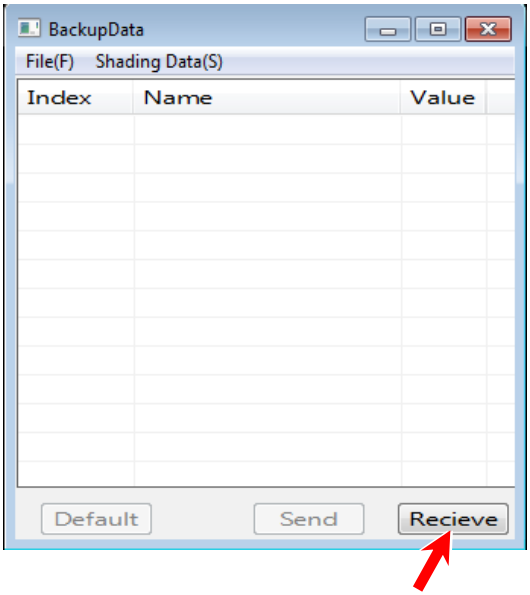
24. The rescan result can be checked in “StitchAdjust” window.

25. Click the X button at the upper right corner to close “StitchAdjust” and “StitchSimulate” sub windows.

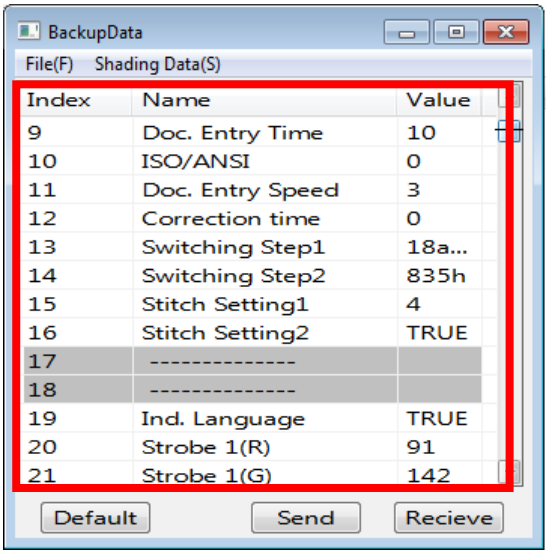
26. Run K129 Diag. Click [BackupData] to recall “Backup Data” sub window.



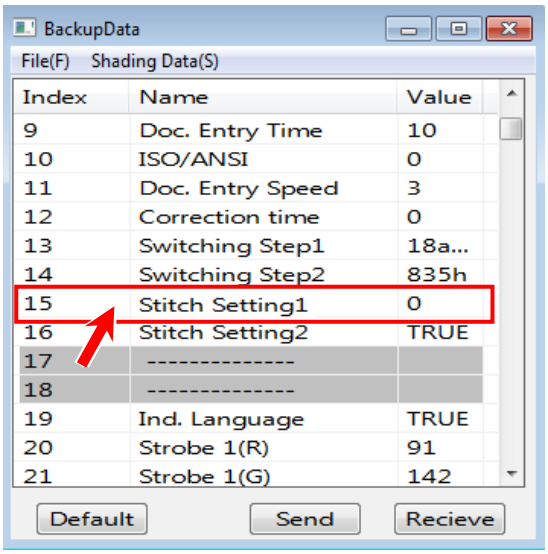
27. Click [Receive]



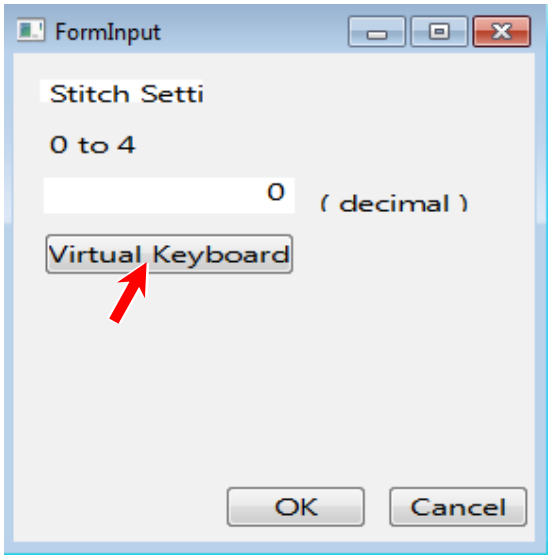
28. The current parameters are retrieved and displayed in the list.



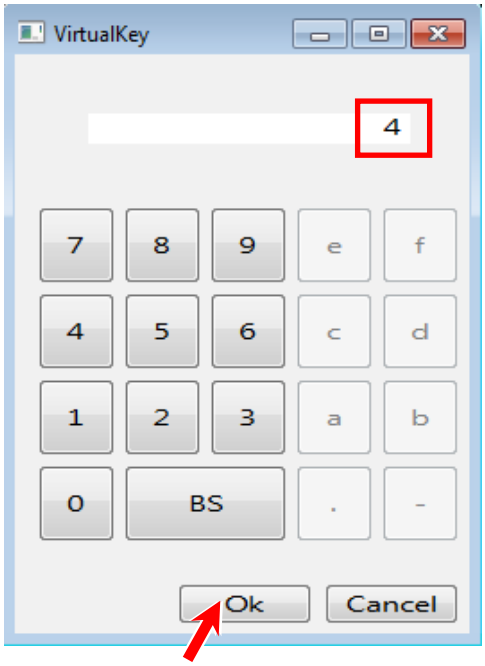
29. Double click on the row No.15 “Stitch Setting 1”.



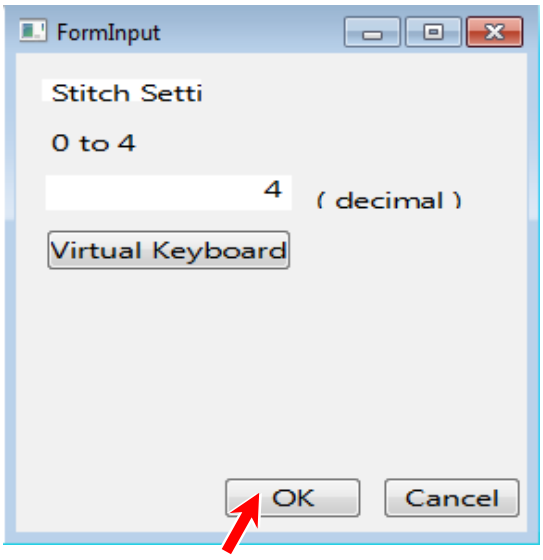
30. In “FormInput” screen, Click [Virtual Keyboard] to display the screen keypad.



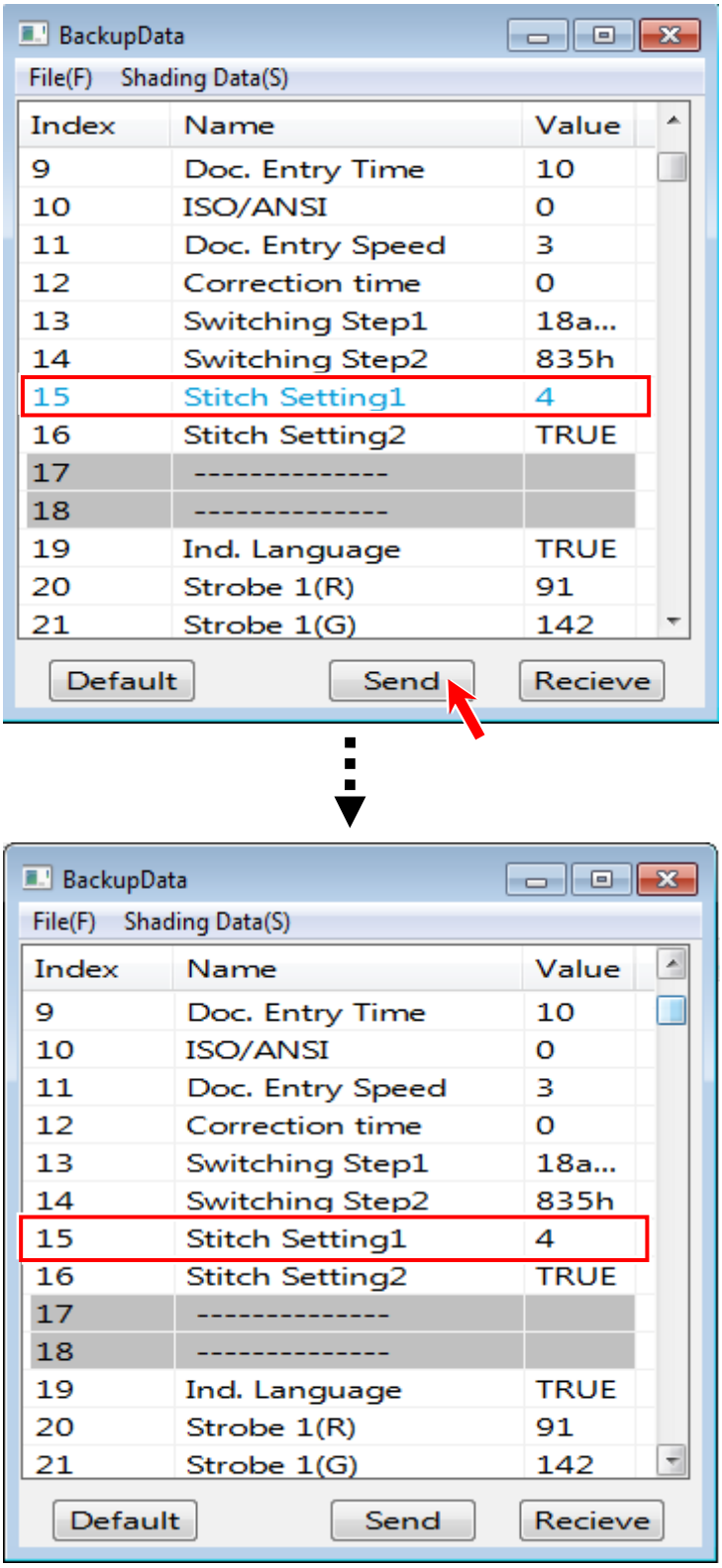
31. Type “4” with keypad, and then click [OK] on the bottom.



32. Click [OK] on the bottom.



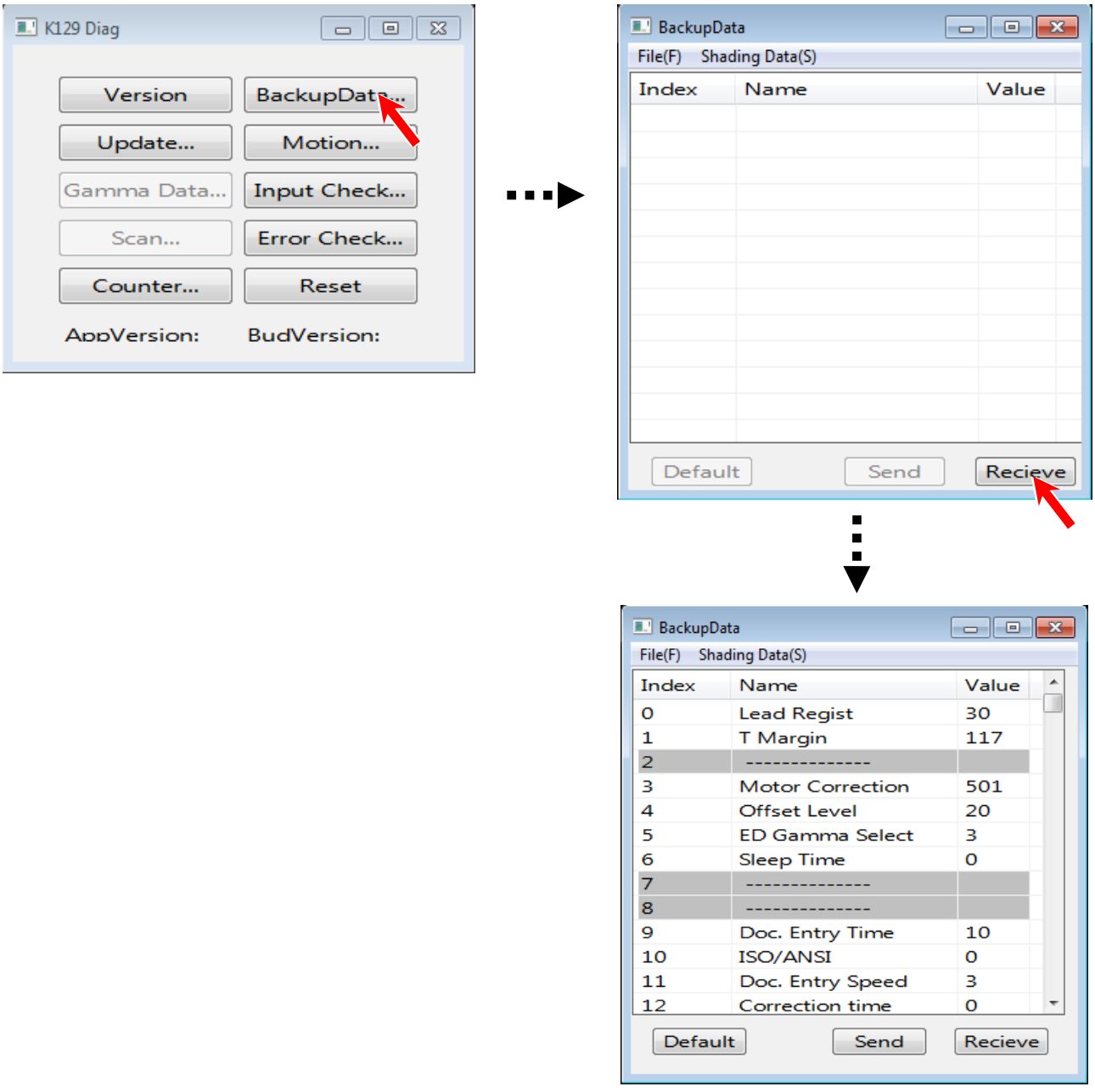
33. The setting change you have made is reflected to the list. It will turn blue.
Click [Send] on the bottom. The setting change turns black. Now it is sent to the Main Board.



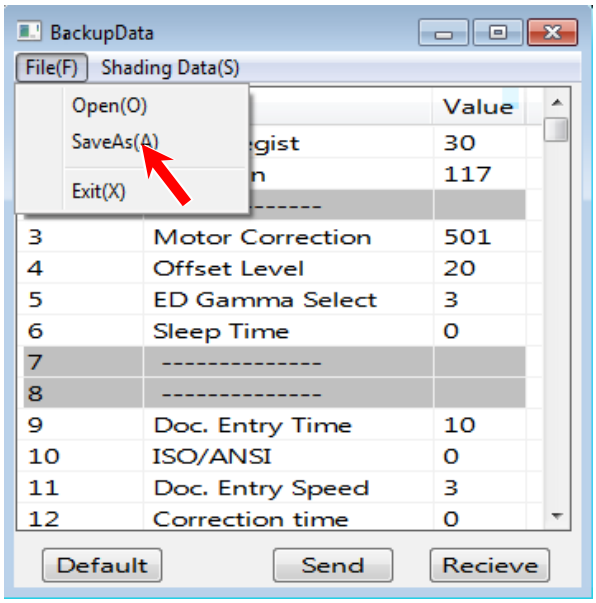
2.10. 3 Creating Backup Data

> **NOTE**
>
> To easily recover the scanner in case of lost / crash of the BUDs, follow the instruction below to create a backup.

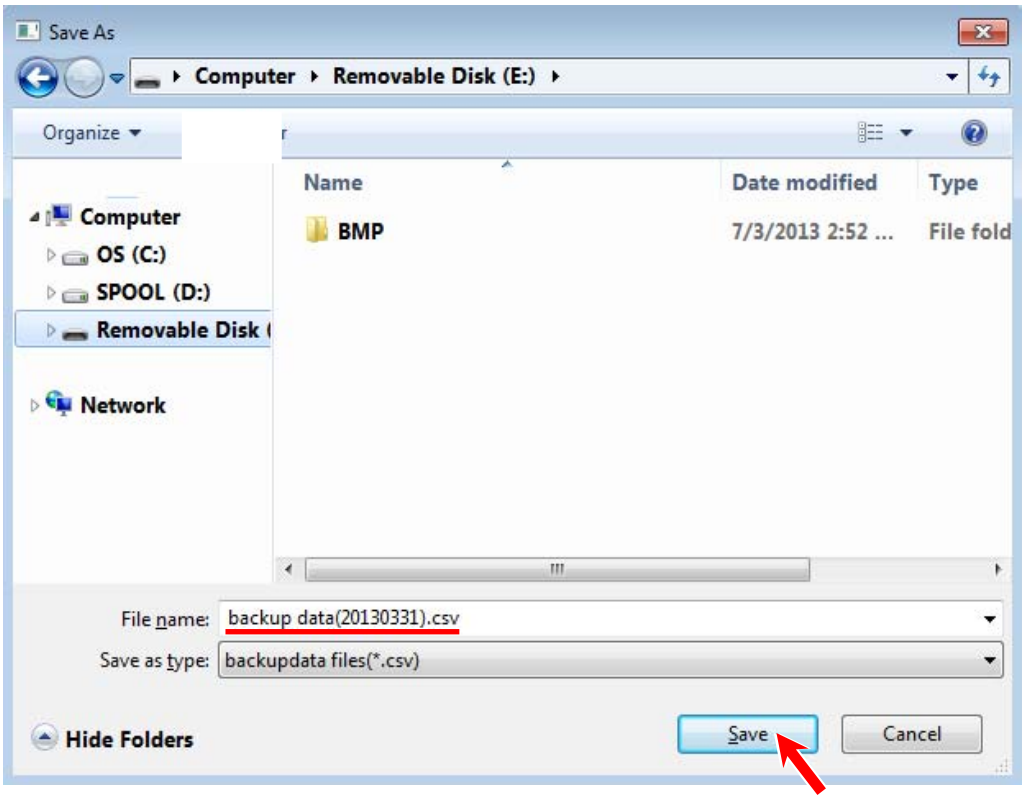
If you have quitted Backup Data window in the previous section, click [Backup Data] in the home screen, click [Receive]



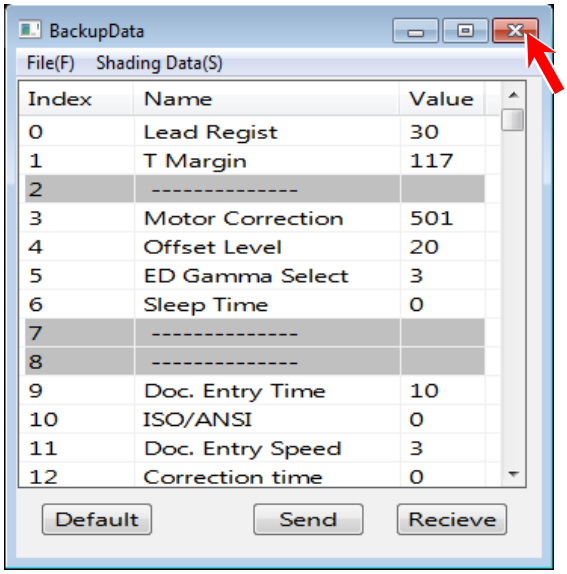
1. Select “File” menu, and click “Save As.”

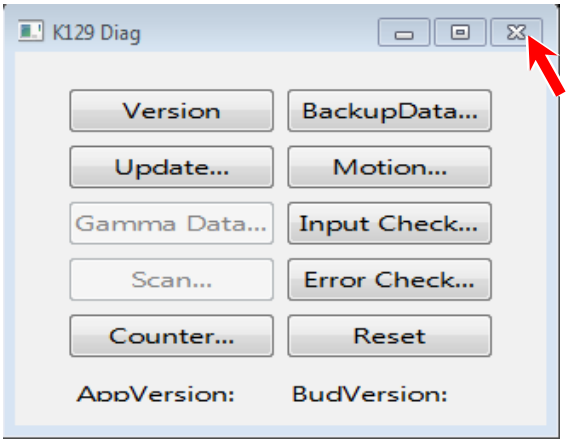


2. Specify the location to create a backup (csv), and then click [Save].

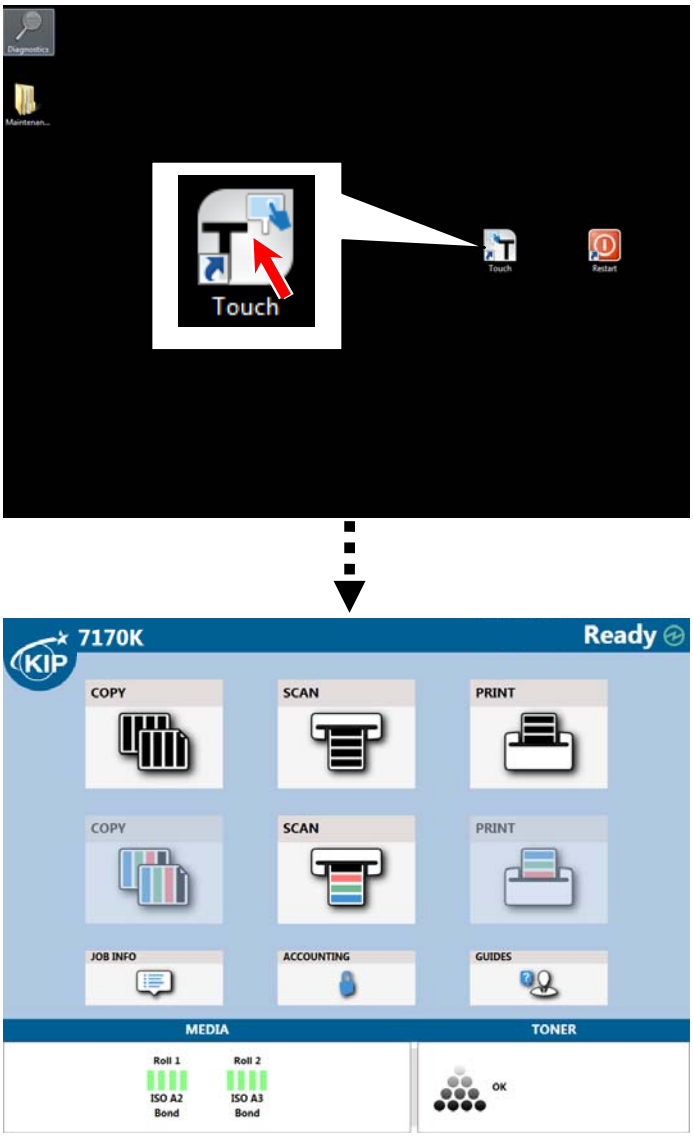


3. Click the X button to quit “BackupData” sub window and K129 Diag.





4. Run “Touch”.
   UI Home screen reappears.



5. Turn off the printer.
   After confirming that the controller is surely shut-down, turn on the printer again. (completed)

Chapter 3

Print / Scan Process

Page

3. 1 Print Process 3- 2
3. 1. 1 Characteristic of toner 3- 2
3. 1. 2 Each step of the print process 3- 3
3. 1. 2. 1 Erasing (Removal of negative electric charges) 3- 5
3. 1. 2. 2 Charge of Drum 3- 6
3. 1. 2. 3 Exposure 3- 7
3. 1. 2. 4 Development 3- 8
3. 1. 2. 5 Transfer 3-10
3. 1. 2. 6 Separation 3-11
3. 1. 2. 7 Drum Cleaning (Removal of remained toner) 3-12
3. 1. 2. 8 Fusing 3-13
3. 1. 3 Controlling the movement of toner in the Developer Unit 3-14
3. 1. 4 Toner Collection Process 3-17
3. 1. 5 Density Compensation Process 3-20

3. 2 Scan Process 3-21
3. 2. 1 Data flow in scan and copy 3-21
3. 2. 2 Positioning process of Image Block 3-22

3. 1 Print Process

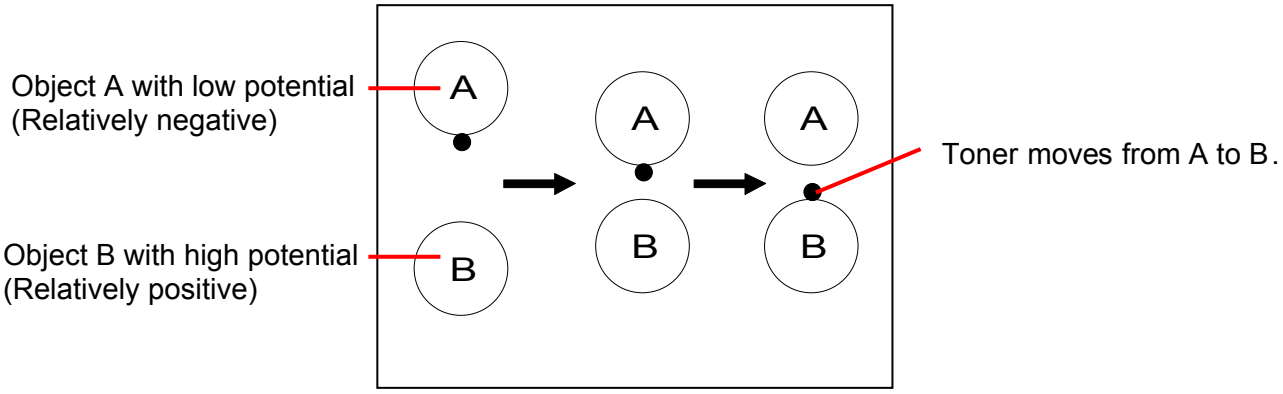
3. 1. 1 Characteristic of toner

The toner used for KIP 7170 has a characteristic to be charged “negative”, which tends to be attracted to a more “positive” object.

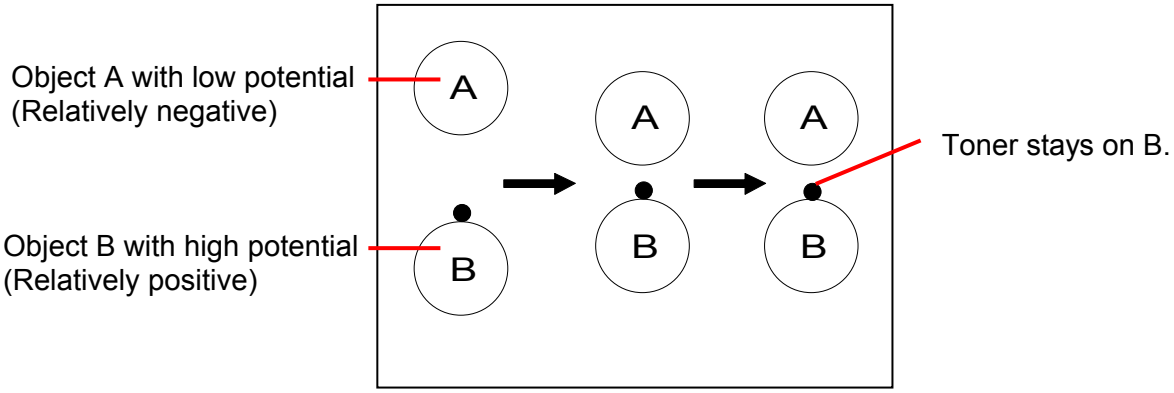
Suppose that there are objects A and B, and the situation is as follows.

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.

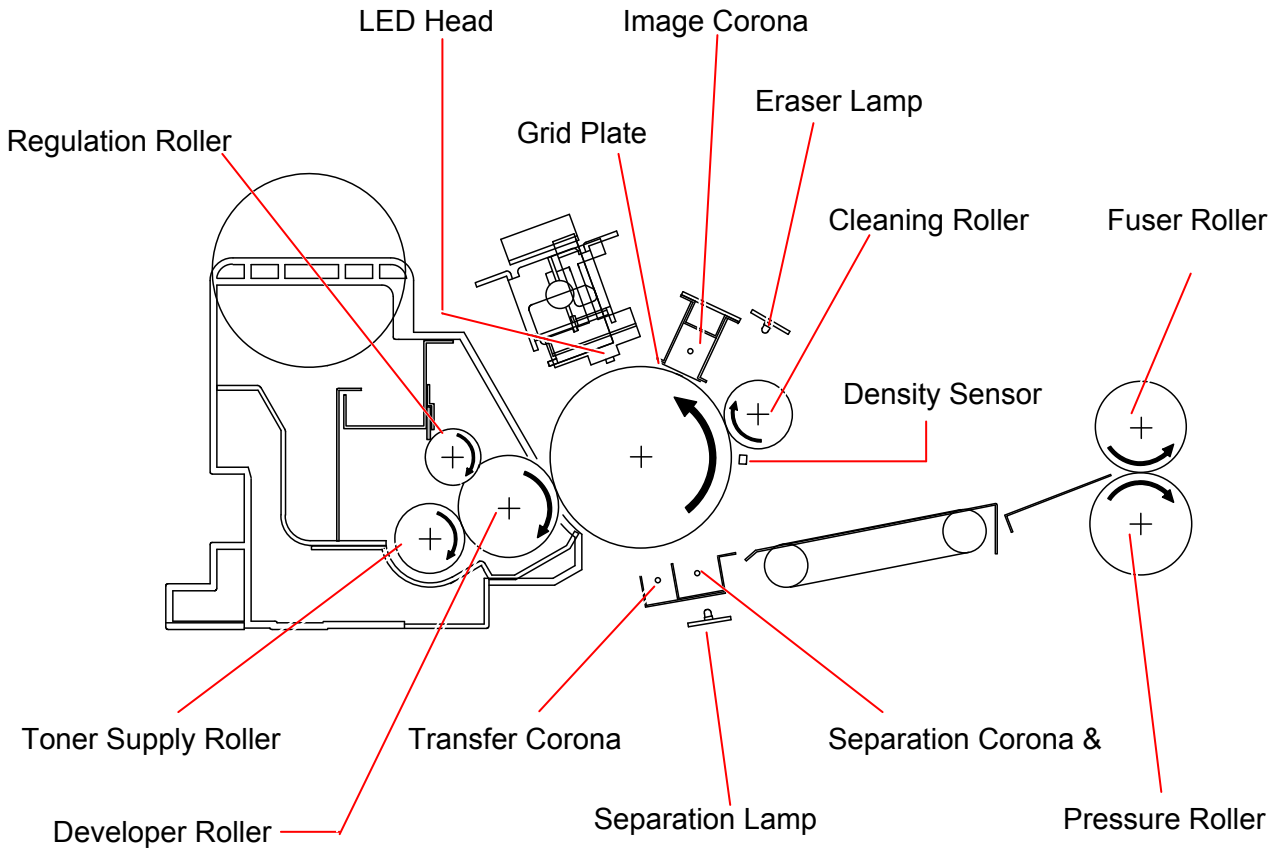


Thus, the toner has a characteristic to move from one place with a lower potential to another place with a higher potential.
If we control the electric potentials, it is possible to move the toner from one place to another as we intend, or it is also possible to remove the toner from an unwanted place.
KIP 7170 controls the electric potentials properly working each part as Drum, Corona Units, Lamps, Developer Unit and Cleaning Roller.
The movement of toner is controlled correctly and several processes as Development, Toner Transfer, Drum Cleaning and etc. are performed.

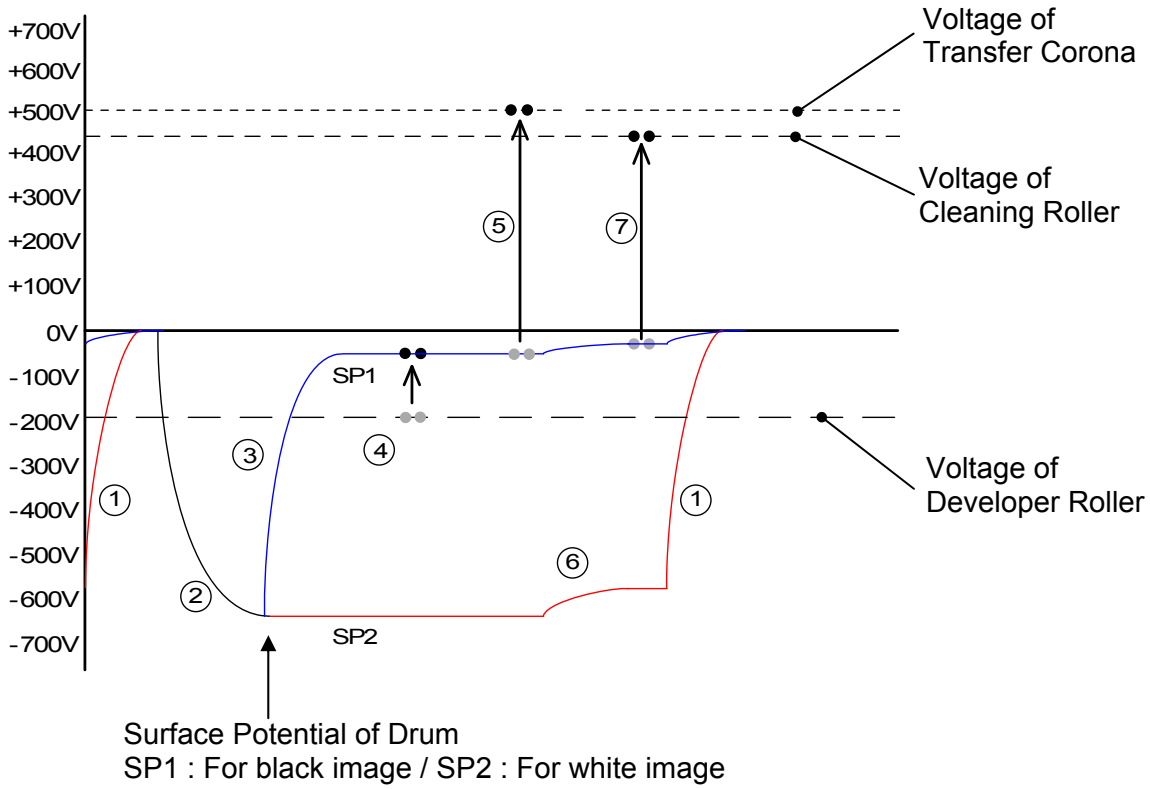
3. 1. 2 Each step of print process

One cycle of print consists of the following 8 processes.

1. Erasing (Removal of negative electric charges)
2. Charge of Drum
3. Exposure
4. Development
5. Transfer
6. Separation
7. Drum Cleaning (Removal of remained toner)
8. Fusing



Processes from 1 to 8 are related with the control of the electric potentials.
The following graphic shows the electric potential at each process and the movement of toner.



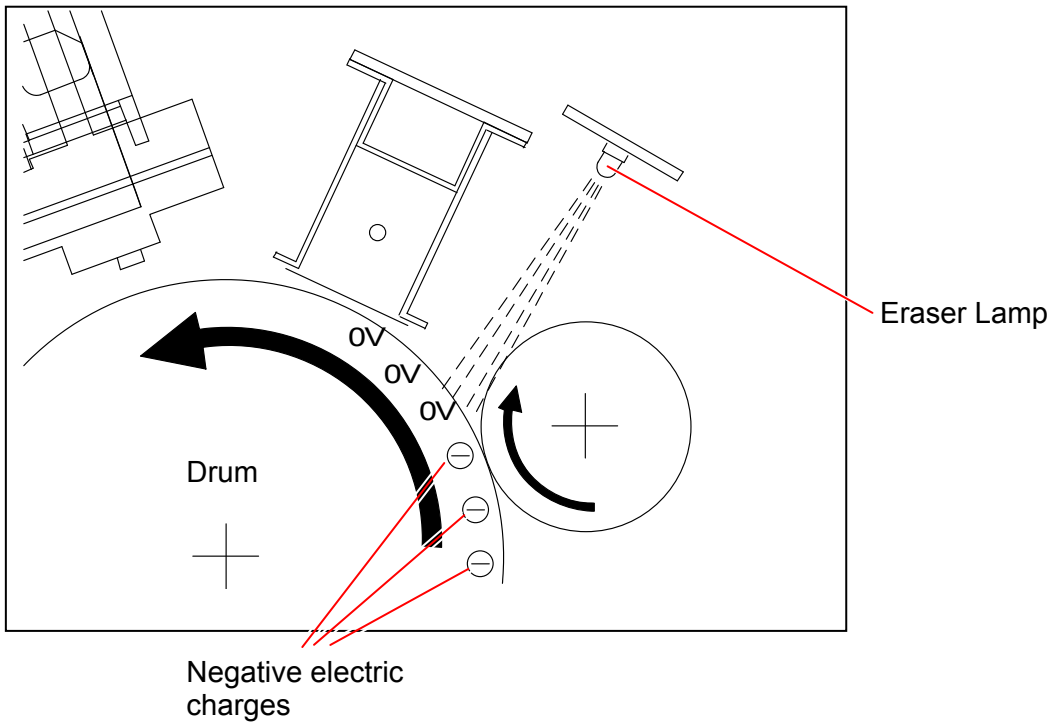
Name of part	Voltage (Current) during Print Cycle	Voltage during Toner Collection Process
Image Corona Wire	-1.3mA +/-0.05mA	-
Grid Plate	-620V +/-30V	-
Developer Roller	-180V +/-5V -200V +/-5V (←CND Mode)	+350V +/-5V
Regulation Roller (Center)	-80V +/-5V against the Developer Roller Bias	-80V +/-5V against the Developer Roller Bias
Regulation Roller (Both sides)	0V (Connected to the ground)	0V (Connected to the ground)
Toner Supply Roller	The same voltage with Developer Roller Bias	The same voltage with Developer Roller Bias
Transfer Corona	Plain Paper: +1.2mA +/-0.05mA Other Media: +1.0mA +/-0.05mA	-
Separation Corona	AC (5.0KV) + DC (-250V +/-5V)	-
Cleaning Roller	+450V +/-5V	-550V +/-5V

Reference

When the printer is going to stop after printing, or when the used Roll Deck is changed with other one, the KIP 7170 will take the “Toner Collection Process” to remove the remained toner and place back into the Developer Unit.
Refer to [3.1.4 Toner Collection Process] for the detail.

3. 1. 2. 1 Erasing (Removal of negative electric charges)

As the first step of print cycle, it is necessary to remove the negative electric charges from the Drum, which have remained there after the former print cycle.
The Drum has a characteristic to lose the negative electric charges if it is exposed to the light. So the Drum is rotated and evenly exposed to the light from the Eraser Lamp.
The electric potential on the Drum becomes 0V (residual potential) by this process.

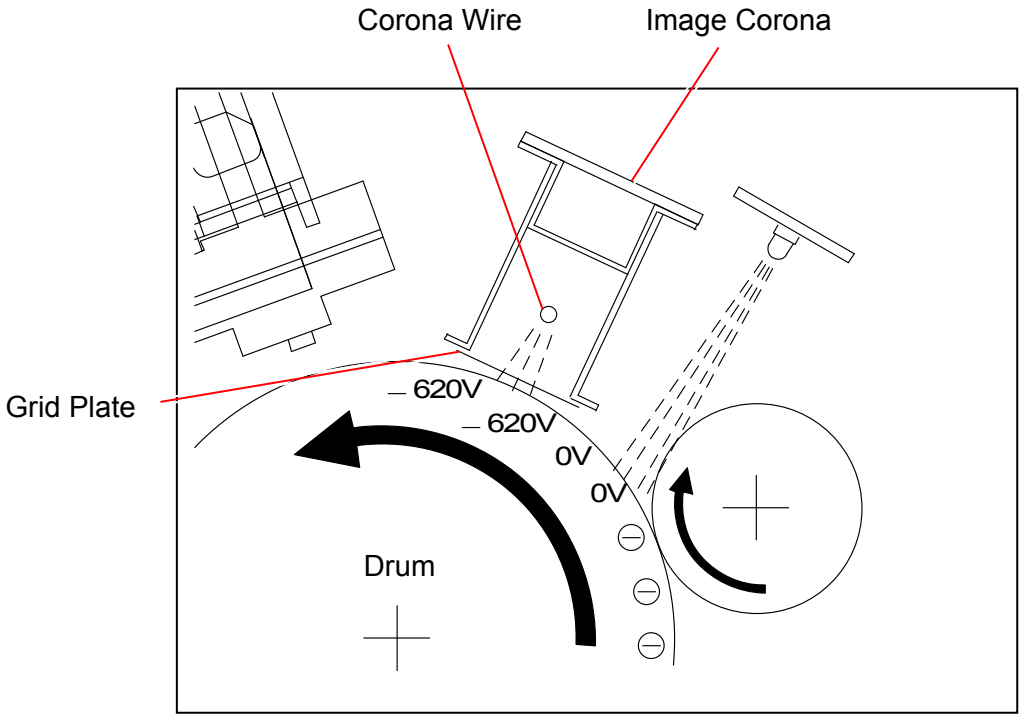


3. 1. 2 .2 Charge of Drum

The Image Corona discharges negative electric charges which are given to the Drum.
The surface of Drum becomes about -620V evenly as a result, which corresponds to the white area of the printed image pattern.
The Grid Plate is also connected to the High Voltage Power Supply individually.

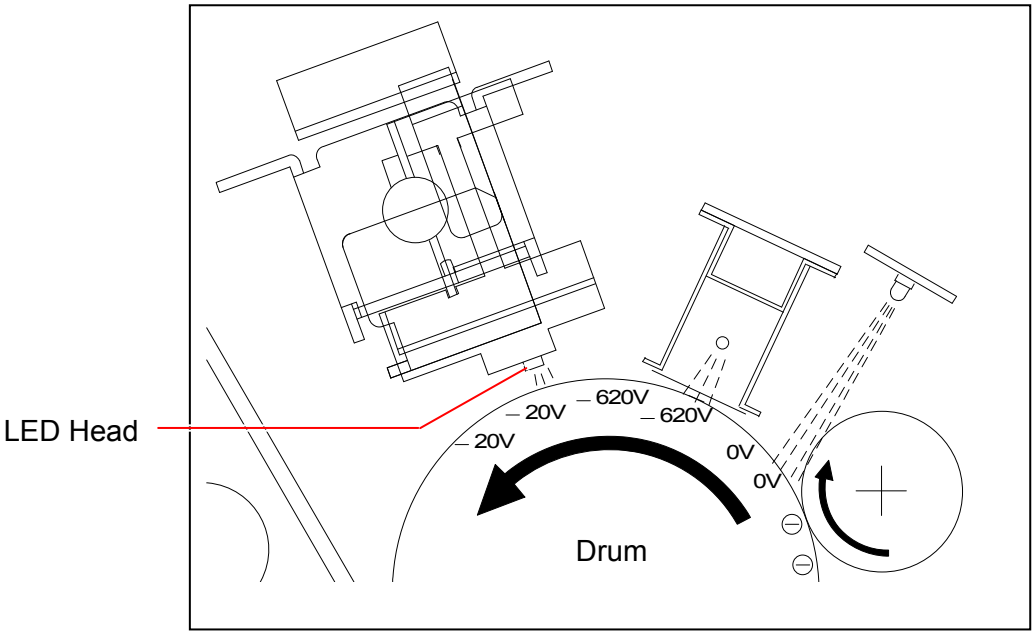
Current and Voltage supplied to the Image Corona Wire is as follows.

Corona Wire ..... -1.3mA +/-0.05mA

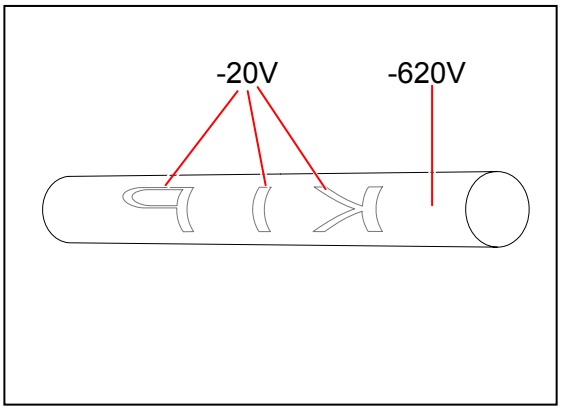


3. 1. 2. 3 Exposure

According to the printed image pattern, the LED Head throws the light (740nm) onto some part of Drum which 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, this part of Drum surface loses the charges and its potential becomes about -20V. (This potential is not constant but is variable by the environment.)
The other part of Drum surface, which was not exposed to the light from the LED Head, keeps -620V of potential which the Image Corona has given.
An invisible electric image pattern that consists of -620V area and the -20V 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

Even if the toner remains on the Drum, it will not block the light from the LED Head as the diameter of toner (9 micrometers) is much smaller than that (42 micrometers) of 1 pixel of LED. The electric charges on the Drum are removed as needed.

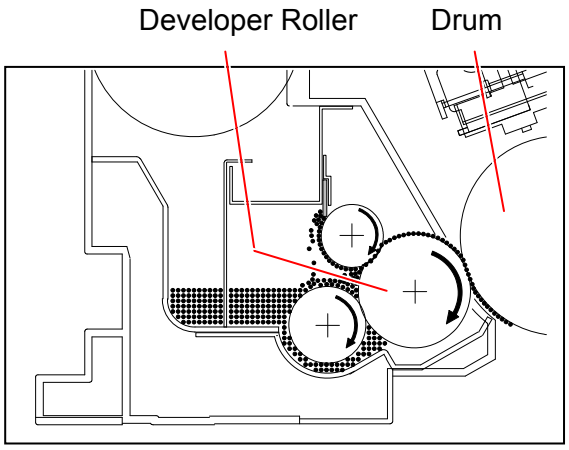
3. 1. 2. 4 Development

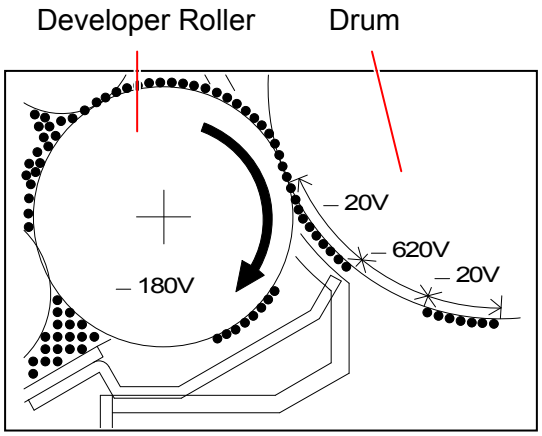
The Developer Roller, which is evenly covered with the toner, is contacted to the Drum because the Developer Unit is pressed to the Drum. (The width of contact point is about 5mm.)
The Developer Roller is supplied with -180V+/-5V (CND Model : -200V+/-5V) during the print cycle. And both -620V area and -20V area exist on the Drum because the Electrostatic Latent Image has been formed in the former Exposure process.

Seen from the voltage of Developer Roller Bias (-180V (CND Model : -200V)), the -20V area on the Drum is relatively “positive”. So the toner moves from the Developer Roller to the -20V area of Drum.

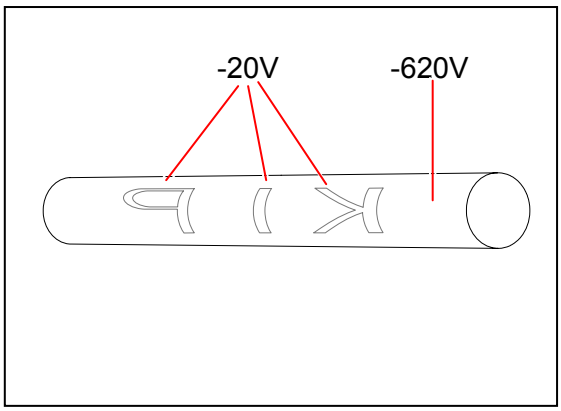
On the other hand, the -620V area is relatively “negative” seen from the Developer Roller.
So the toner does not move to the -620V area but stays on the Developer Roller.

A visible toner image is formed on the Drum as a result.



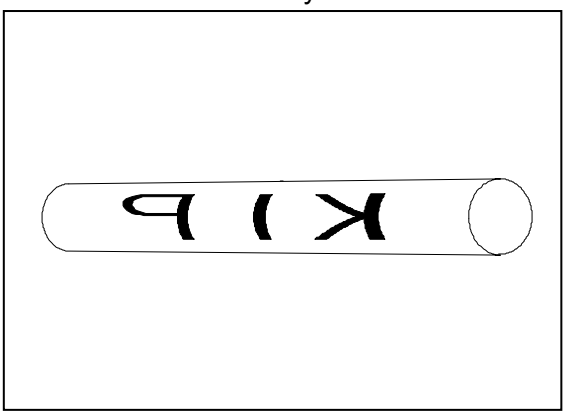


Before Development



(Invisible Electrostatic Latent Image)

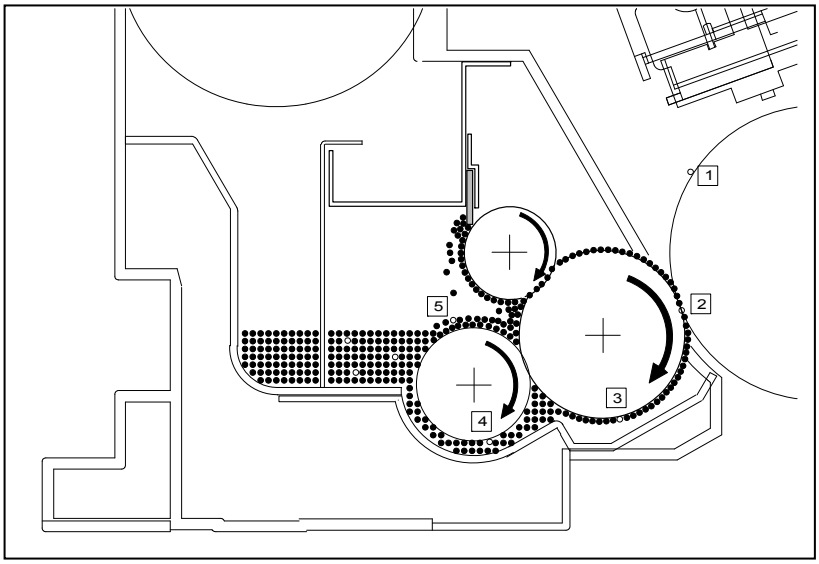
After Development : Toner moves only to -20V area.



(Visible toner image)

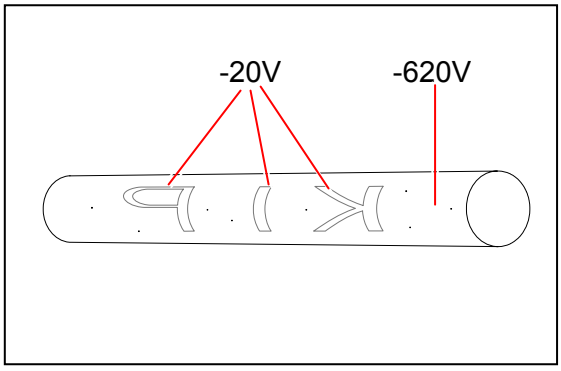
Even if some toner has not been removed by the Cleaning Roller but remained on the -620V area of Drum (It corresponds to the white area of the print) in the later [3.1.2.7 Drum Cleaning], this toner is removed at the time of Development because it moves to the Developer Roller of which potential (-180V (CND Model : -200V)) is higher than that of Drum (-620V).
So there will be no case that unnecessary black spot is printed on the white area of the print.
The remained toner that moved to the Developer Roller is carried into the Developer Unit and then reused.

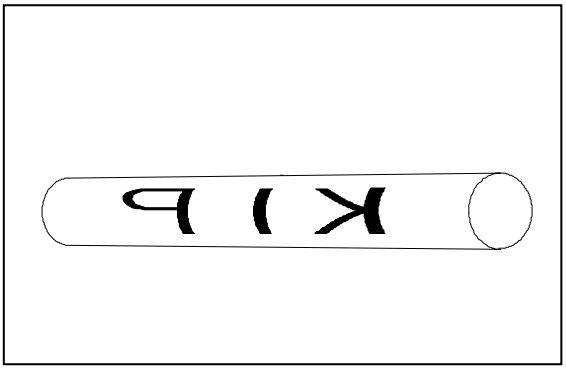
1. Toner remained on the Drum
2. Toner moves from the Drum to the Developer Roller.
3. Developer Roller carries the toner toward the Toner Supply Roller
4. Toner is shifted to the inside of the Developer Unit by the revolution of Toner Supply Roller.
5. Toner is reused.



Before Development
(Toner is remaining on the white area.)

After Development
(Toner is removed from the white area.)





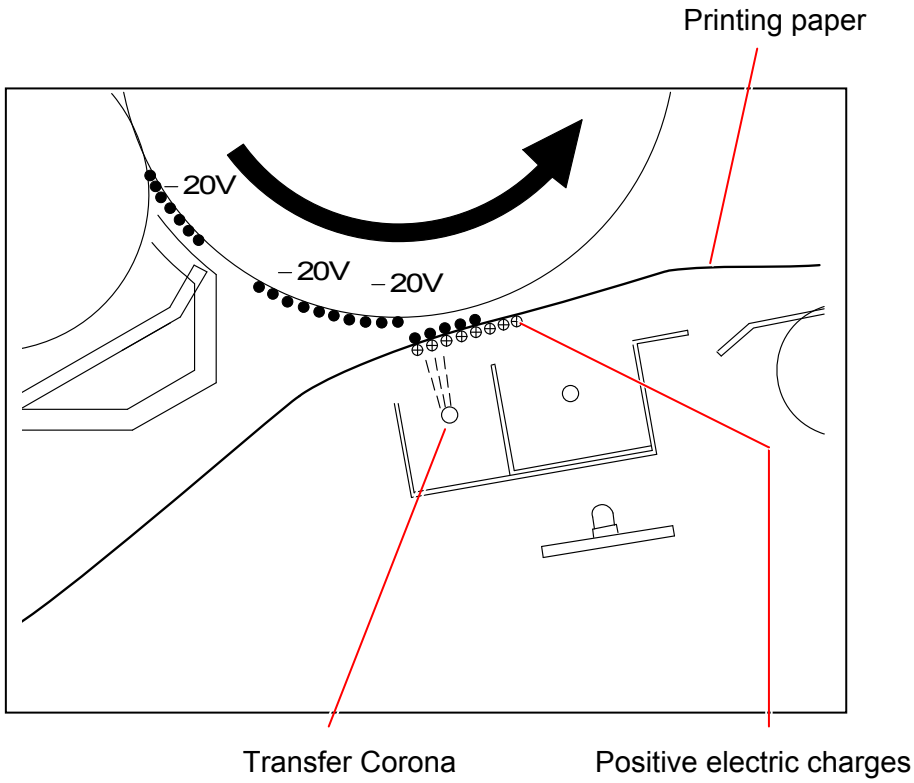
Reference

The Developer Unit has not only the Developer Roller but also 2 more rollers inside which are also supplied with the individual voltages.
The Developer Unit controls the movement of toner in the unit taking advantage of the difference of potentials among these rollers, and covers the Developer Roller with the toner in the end.
Refer to [3.1.3 Controlling the Movement of Toner in the Developer Unit] to learn how the Developer Unit controls the movement.

3. 1. 2. 5 Transfer

The printing paper is charged positively as the Transfer Corona discharges positive electric charges from under the paper.
The toner existing on the -20V area on the Drum will move to the printing paper because the potential of the paper comes to be higher than the Drum by the Transfer Process.
The voltage supplied to the Transfer Corona Wire is as follows.

Transfer Corona Wire:
Plain Paper: +1.2mA +/-0.05mA
Other Media: +1.0mA +/-0.05mA
(When the Insulated Drum is used.)

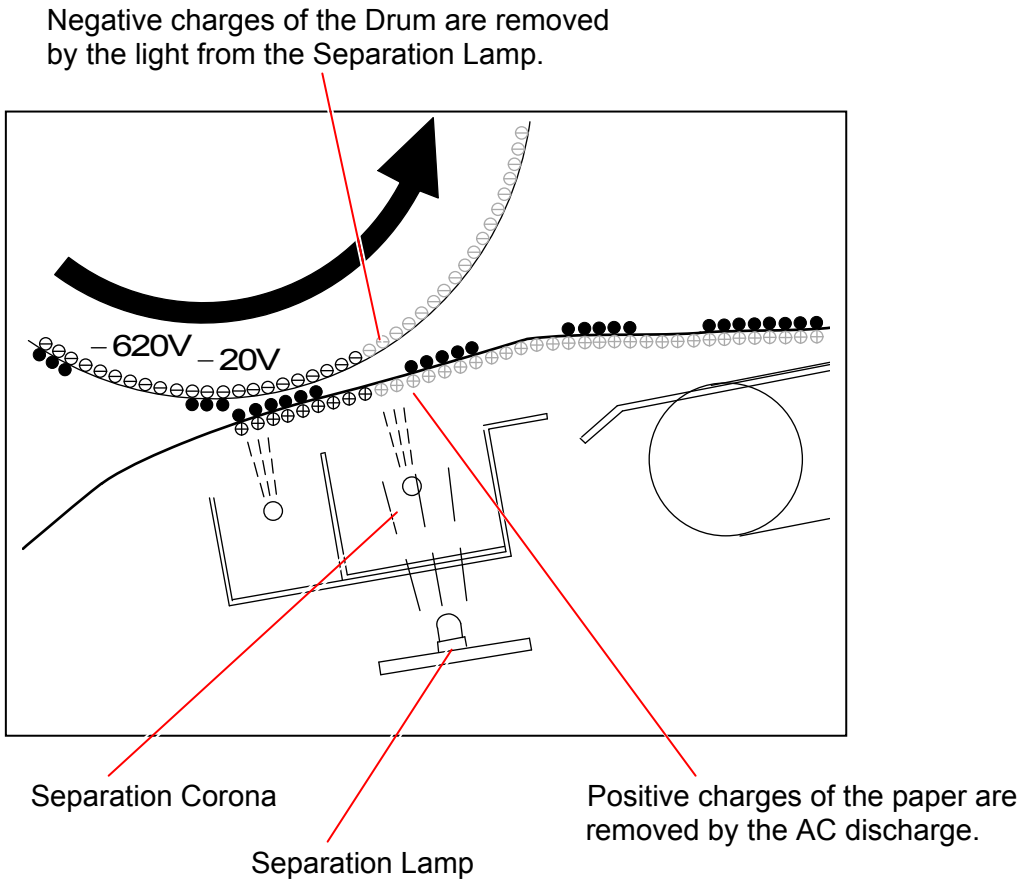


3. 1. 2. 6 Separation

The printing paper is attracted to the Drum after the Transfer because the potential of paper is positive and that of Drum is negative.
It is necessary for avoiding the jam to separate the paper from the Drum by removing the static force between them.
The Separation Corona takes AC discharge being supplied with the AC voltage and the DC voltage.

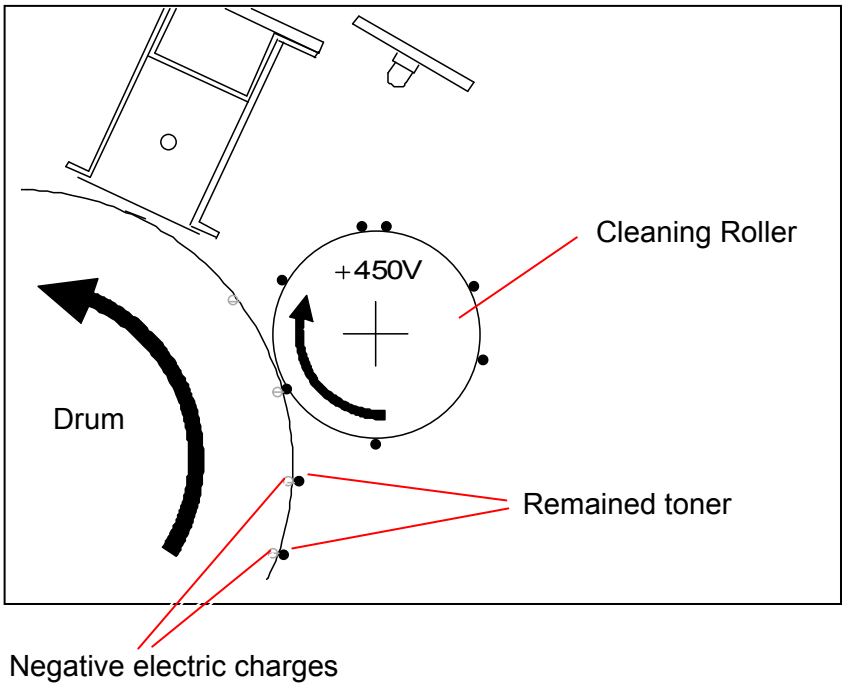
AC voltage : 5.0KV
DC voltage : -250V

As the AC voltage is compensated by the negative DC voltage, the negative charges are generated more than positive ones, which mainly results in removing the positive charges of the printing paper.
On the other hand, the Separation Lamp throws light from under the Corona Wires to remove the negative charges of the Drum.
The static force between the printing paper and the Drum is reduced as a result, and the paper is separated from the Drum by its weight.



3. 1. 2. 7 Drum Cleaning (Removal of remained toner)

Some amount of toner that has not been transferred onto the printing paper is remaining on the Drum.
This remained toner will be removed by the Cleaning Roller.
The Cleaning Roller is supplied with +450V (+/-5V), and there are some negative electric charges on the Drum at this time.
As the Cleaning Roller is relatively “positive” and the Drum is “negative”, the toner moves from the Drum to the Cleaning Roller.

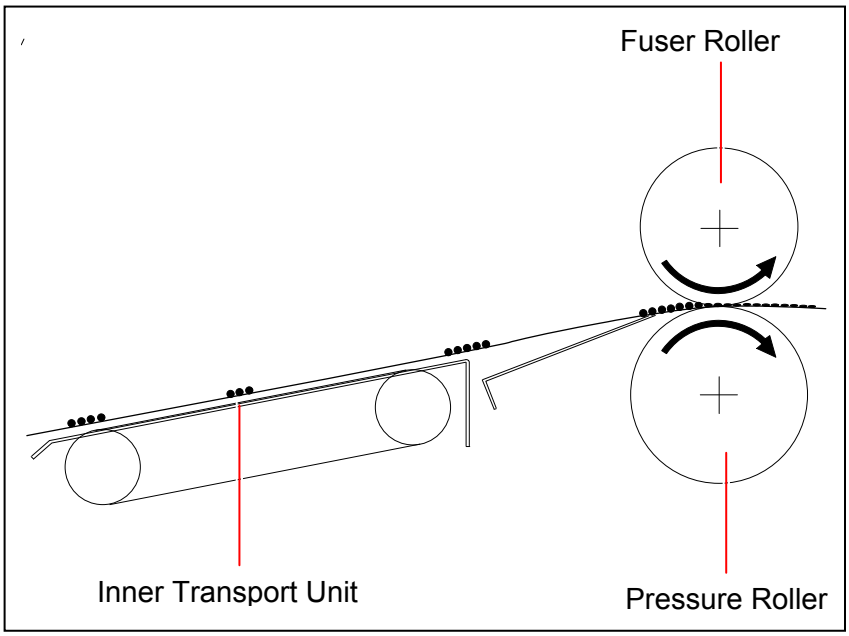


NOTE

If too much toner exists in a small area (like a trace of solid black image) the Cleaning Roller may not be able to remove all of them.
But this toner is removed from the Drum in the Development Process.
Refer to [3.1.2.4 Development].

3. 1. 2. 8 Fusing

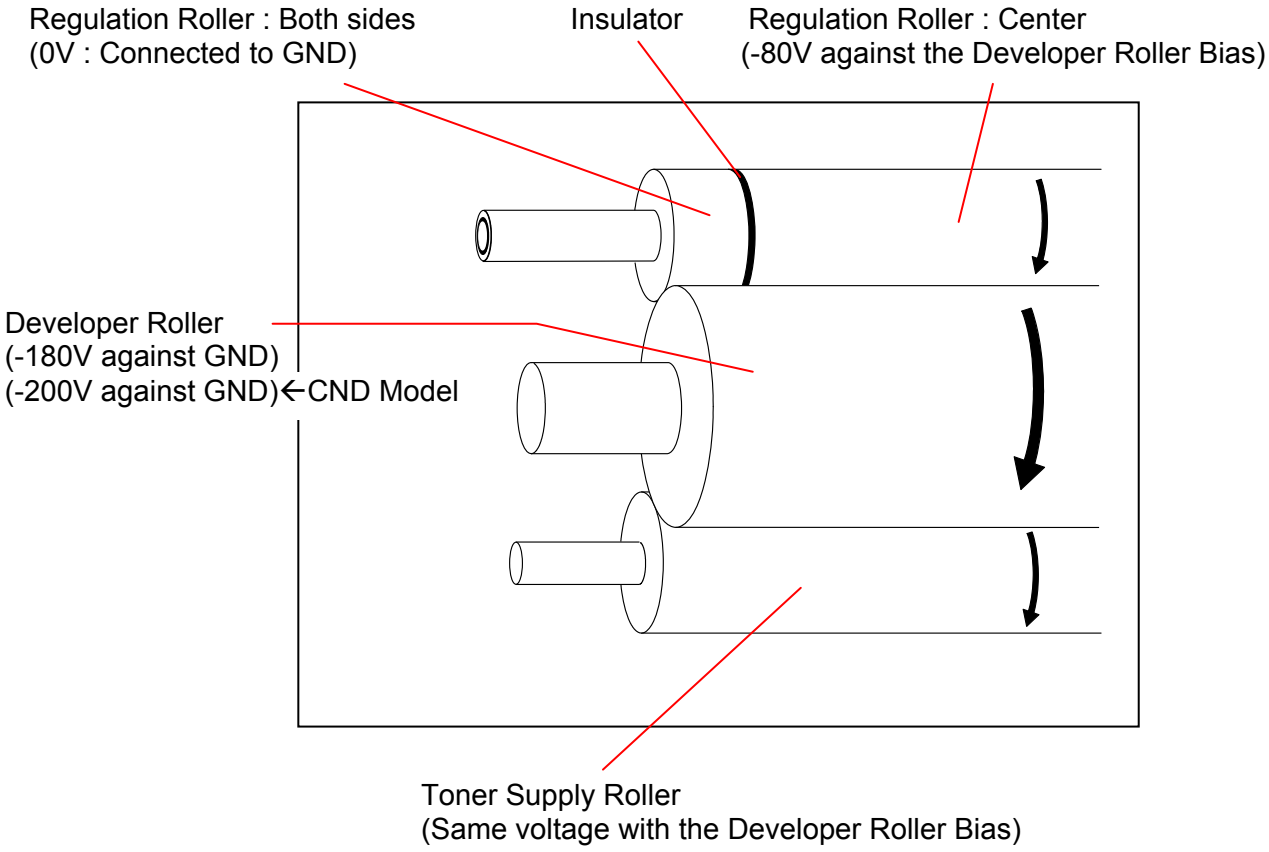
After Transfer / Separation Processes, the printing paper is transported to the Fuser Unit by the Inner Transport Unit.
The Fuser Unit mainly consists of the Fuser Roller and the Pressure Roller.
The Fuser Roller is very hot, and the Pressure Roller is strongly pressed to the Fuser Roller by the spring.
The toner is firmly fused onto the printing paper by the heat and the pressure when the paper passes through between these rollers.



3. 1. 3 Controlling the movement of toner in the Developer Unit

There are 3 kinds of rollers called “Developer Roller”, “Regulation Roller” and “Toner Supply Roller” in the Developer Unit.
Each roller is supplied with its own voltage.
In the following list, the voltage of the Developer Roller (-180V (CND Model : -200V)) is measured against the ground.
The other voltages mean the difference against the voltage of Developer Roller Bias.

Name of roller	Supplied voltage
Developer Roller	-180V +/-5V against the ground -200V +/-5V against the ground (←CND Model)
Regulation Roller (Center)	-80V +/-5V against the Developer Roller Bias
Regulation Roller (Both sides)	0V (Connected to the ground)
Toner Supply Roller	The same voltage with the Developer Roller Bias (Developer Roller and Toner Supply Roller are short circuited being connected with the plate.)



NOTE

The Regulation Roller is divided into central area and both side areas by the insulator, and individual voltage is supplied to each area.

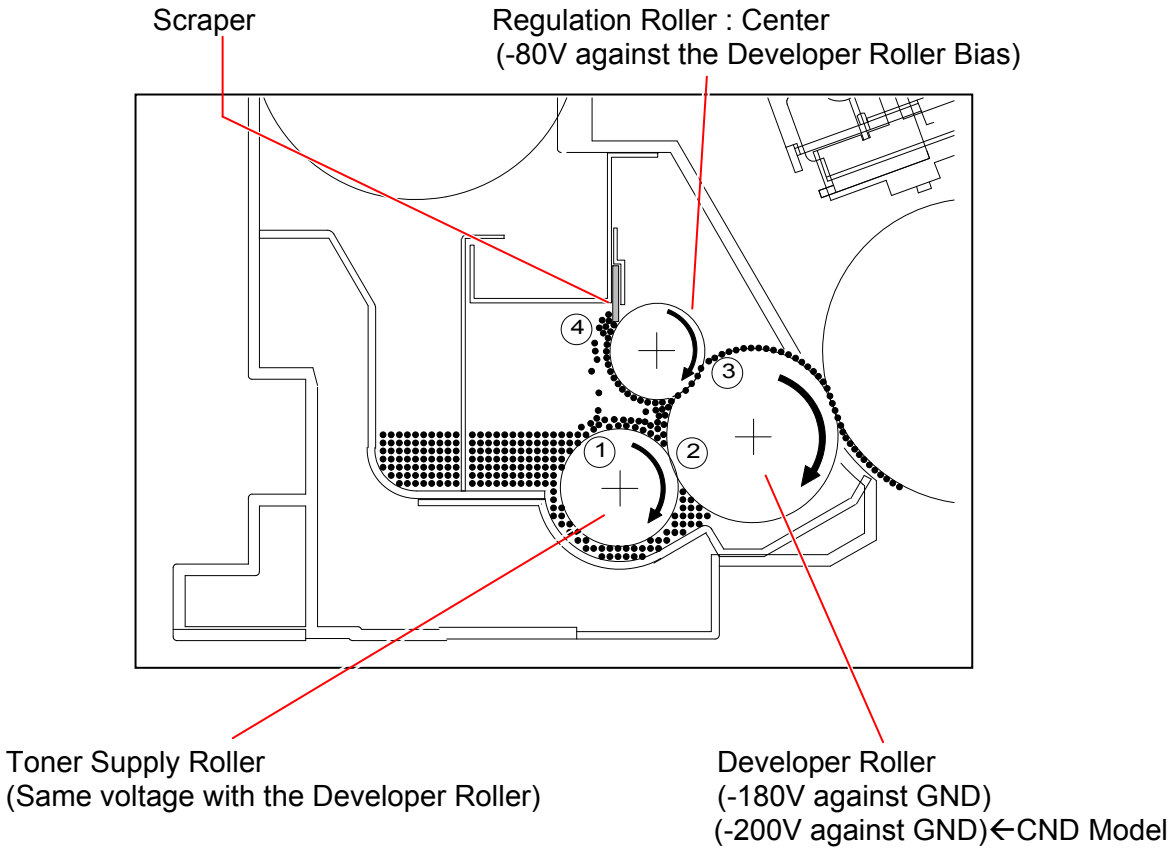
Taking advantage of the difference of potentials among these rollers, the movement of toner is controlled in the Developer Unit as follows.

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

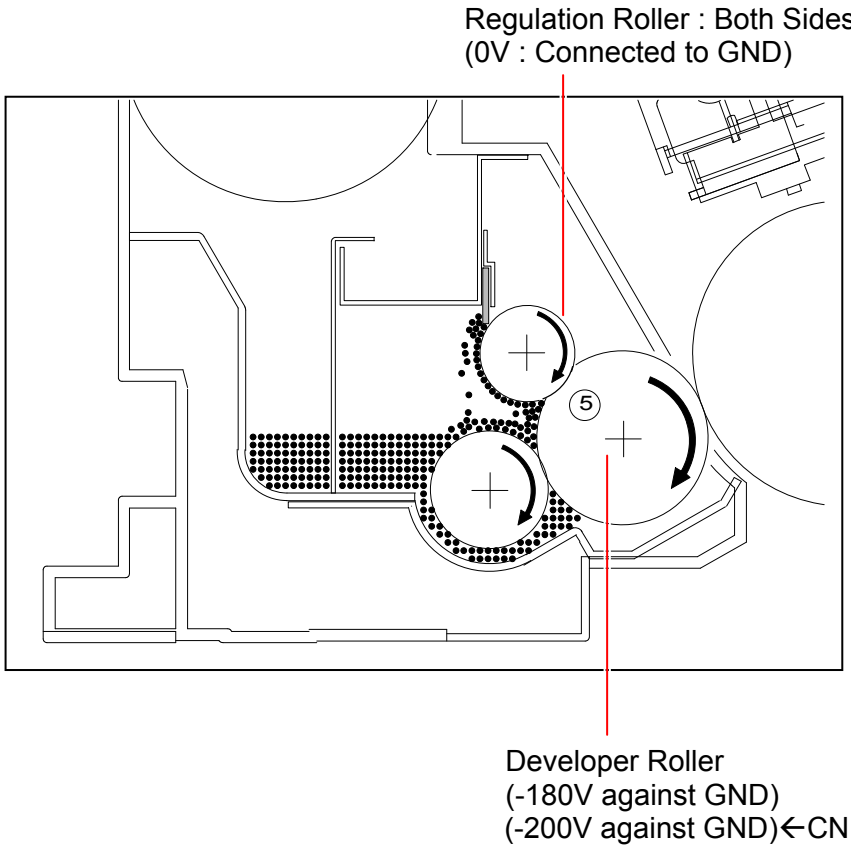
2. When the toner reaches the contact point of these rollers, therefore, it moves onto the Developer Roller.
   Then the Developer Roller carries the toner toward the Regulation Roller.

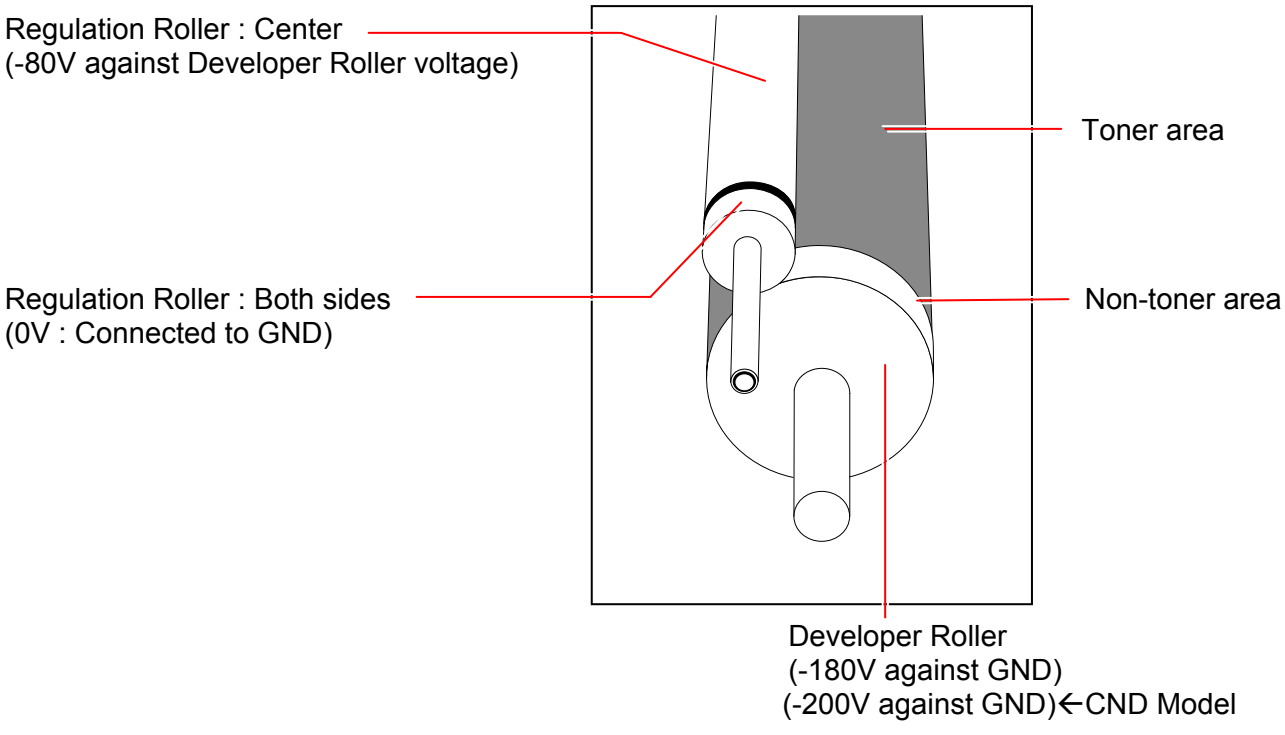
3. The Regulation Roller is strongly pressed to the Developer Roller by the spring, and these 2 rollers move to the opposite direction each other at the contact point.
   Even if the Developer Roller carries more toner than required, the Regulation Roller limits the amount of toner that can pass through between 2 rollers. So 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 80V higher than that of Regulation Roller (Center), the toner which has passed through between rollers is firmly 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 Regulation Roller when it is returned back to the inside.
   This toner is scraped off by the Scraper which is contacted to the Regulation Roller.



5. The voltage of both sides of Regulation Roller is 0V as these parts are connected to the ground.
   It is higher than that of Developer Roller (-180V (CND Model : -200V)).
   When the toner reaches the contact point of these rollers, therefore, it moves onto the Regulation Roller.
   The side areas of the Developer Roller are not covered with the toner as a result, so it is possible to avoid the toner drops into the machine from the side.





3. 1. 4 Toner Collection Process

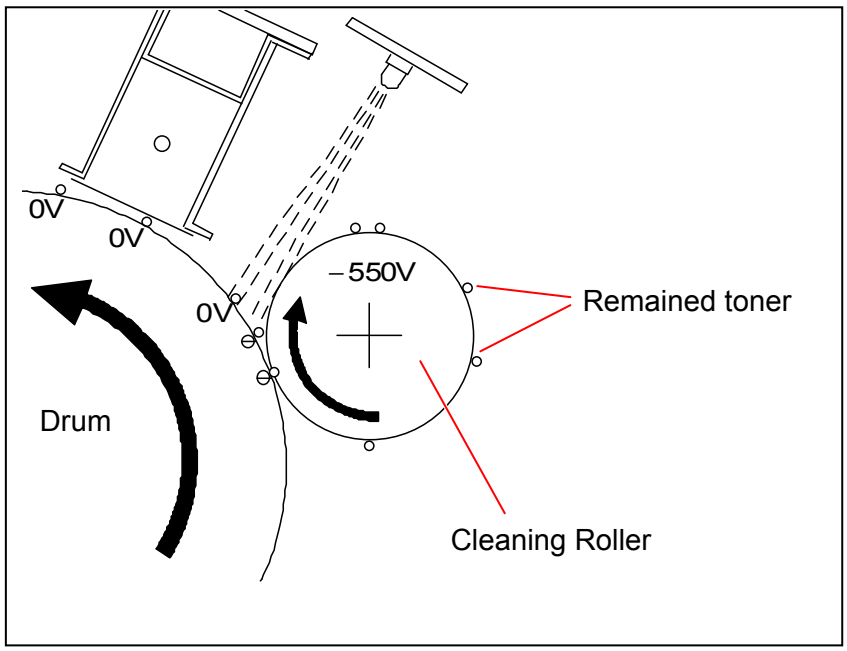
As explained in [3.1.2.7 Drum Cleaning], the Cleaning Roller is supplied with +450V to remove the remained toner from the Drum during the print cycle.
This toner gathered by the Cleaning Roller is returned to the Developer Unit in the following 3 cases.

(1) When the printer has finished printing out all the accumulated print jobs and then going to stop.
(2) When the used roll paper is ended and changed with another one.
(3) When the used roll paper is changed from one to another because the print size specified in the job is different.

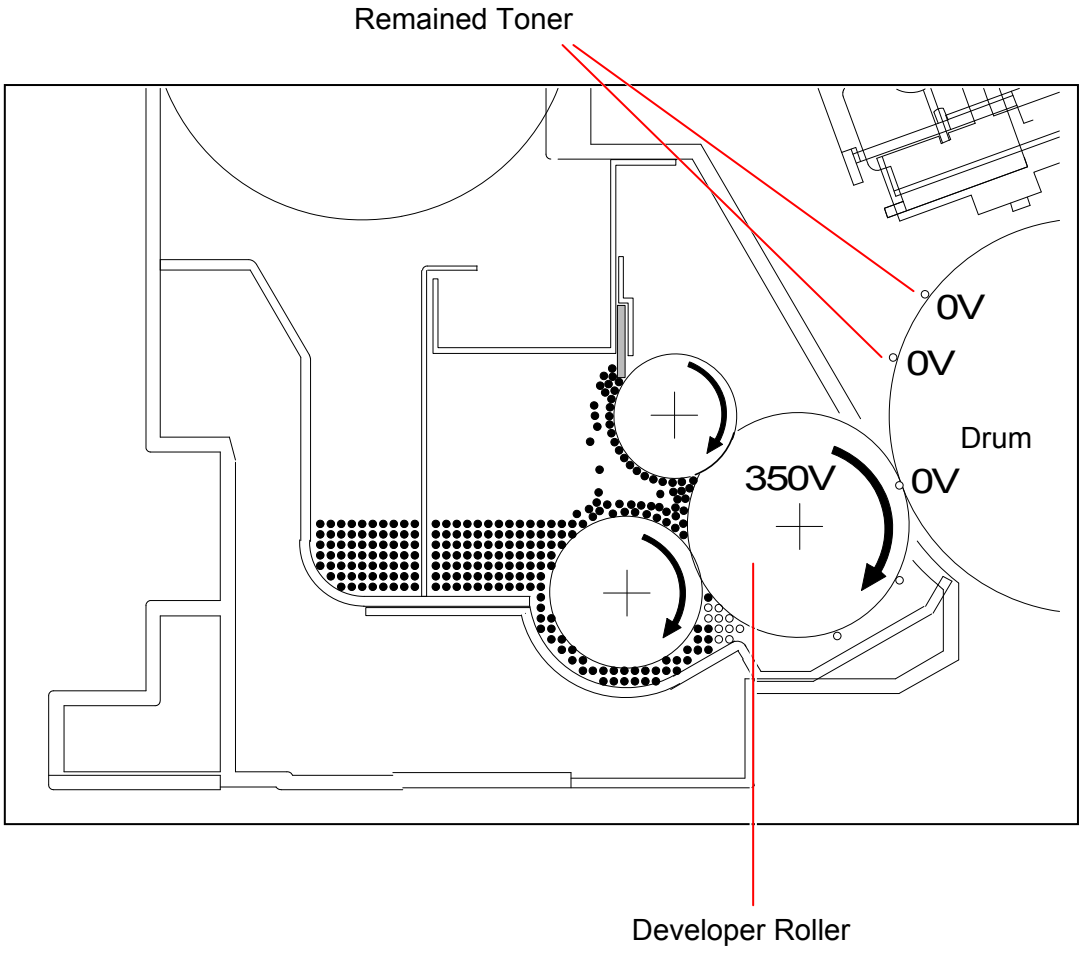
This process to return the toner is called “Toner Collection Process”.
When the trailing edge of the last sheet passes over the Separation Area, the printer will take the Toner Collection Process as follows rotating the Drum for 2 revolutions.

1. The Eraser Lamp throws light onto the Drum to remove the negative electric charges from the Drum. The potential of Drum becomes 0V.

2. The voltage supplied to the Cleaning Roller is changed to -550V in the Toner Collection Process.
   As the potential of Drum becomes higher than that of Cleaning Roller, toner on the Cleaning Roller moves onto the Drum.



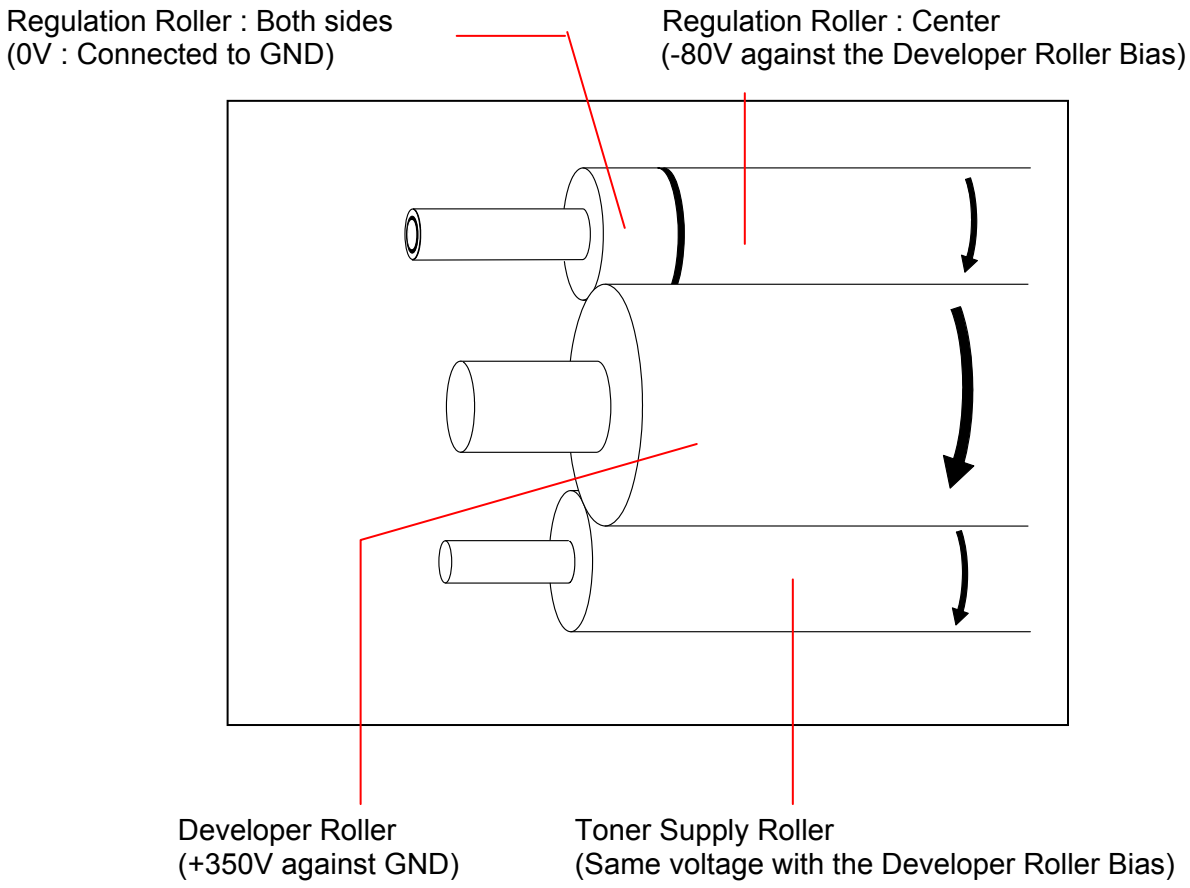
3. The voltage supplied to the Developer Roller is also changed to +350V (+/-5V) in the Toner Collection Process.
   As the potential of Developer Roller becomes higher than that of Drum, toner on the Drum moves onto the Developer Roller.
   Then the toner is carried into the Developer Unit by both the Developer Roller and the Toner Supply Roller.



Reference

Voltages supplied to Regulation Roller and Toner Supply Roller are changed also as follows.

Name of roller	Supplied voltage
Developer Roller	+350V +/-5V against the ground
Regulation Roller (Center)	-80V +/-5V against the Developer Roller Bias
Regulation Roller (Both sides)	0V (Ground)
Toner Supply Roller	Same voltage with the Developer Roller Bias



3. 1. 5 Density Compensation Process

> **NOTE**
>
> **For the CND model**
>
> As the CND model machine does not use “Density Compensation Process”, it is set as “OFF”. Do not change this setting.

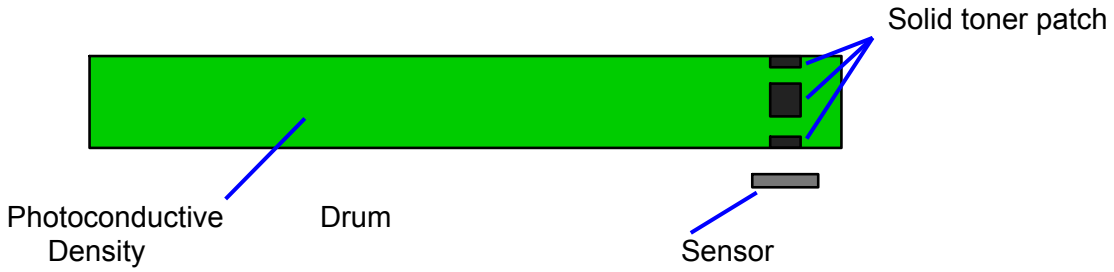
On rare occasion, loss of image density may occur under a special usage. KIP 7170 has the ability to reduce such loss of image density and this enables to maintain a satisfactory image quality regardless of the machine usage.

Density Compensation Process will adjust Developer / Regulation Bias according to their condition to reduce loss of image density in such situation.

In Density Compensation Process, toner density on the surface of Photoconductive Drum is measured by Density Sensor at regular time intervals. According to the result, Developer / Regulation Bias will be automatically adjusted to compensate image density.

Density Measure starts at regular intervals of 18 hours of Main Motor operating time, after the completion of the current print queue.

1. Several solid toner patches are created on the surface of Photoconductive Drum as follows.



2. Density of all the patches is measured by Density Sensor (Density Measure). The average of the patches (Density Value) is calculated.

3. If the Density Value does not meet Target Density, Developer / Regulation Bias will be automatically adjusted based on the current Adjustment Level.
   - If the current Density Value is judged “not enough” (lighter than required), the next level will be applied.
   - If the current Density Value is judged “adequate”, the current level remains.
   - There is possibility for the Density Value to be judged “too much enough” (darker than required), then the previous level will be applied.

	Adjustment Level 0 (default)	Adjustment Level 1	Adjustment Level 2	Adjustment Level 3
Developer Bias (Negative)	**-180V**	-230V	-230V	-230V
Regulation Bias against Developer Bias	**-80V**	-80V	-120V	-160V

4. The adjustment allows image density to stabilize for a satisfactory image quality regardless of the machine usage.

> **NOTE**
>
> An applied Adjustment Level should be reset after replacing Developer / Regulation Roller. For further information, see [8.11.3 Reset of Bias Adjustment by Density Compensation Process].

3. 2 Scan Process

3. 2. 1 Data flow in scan and copy

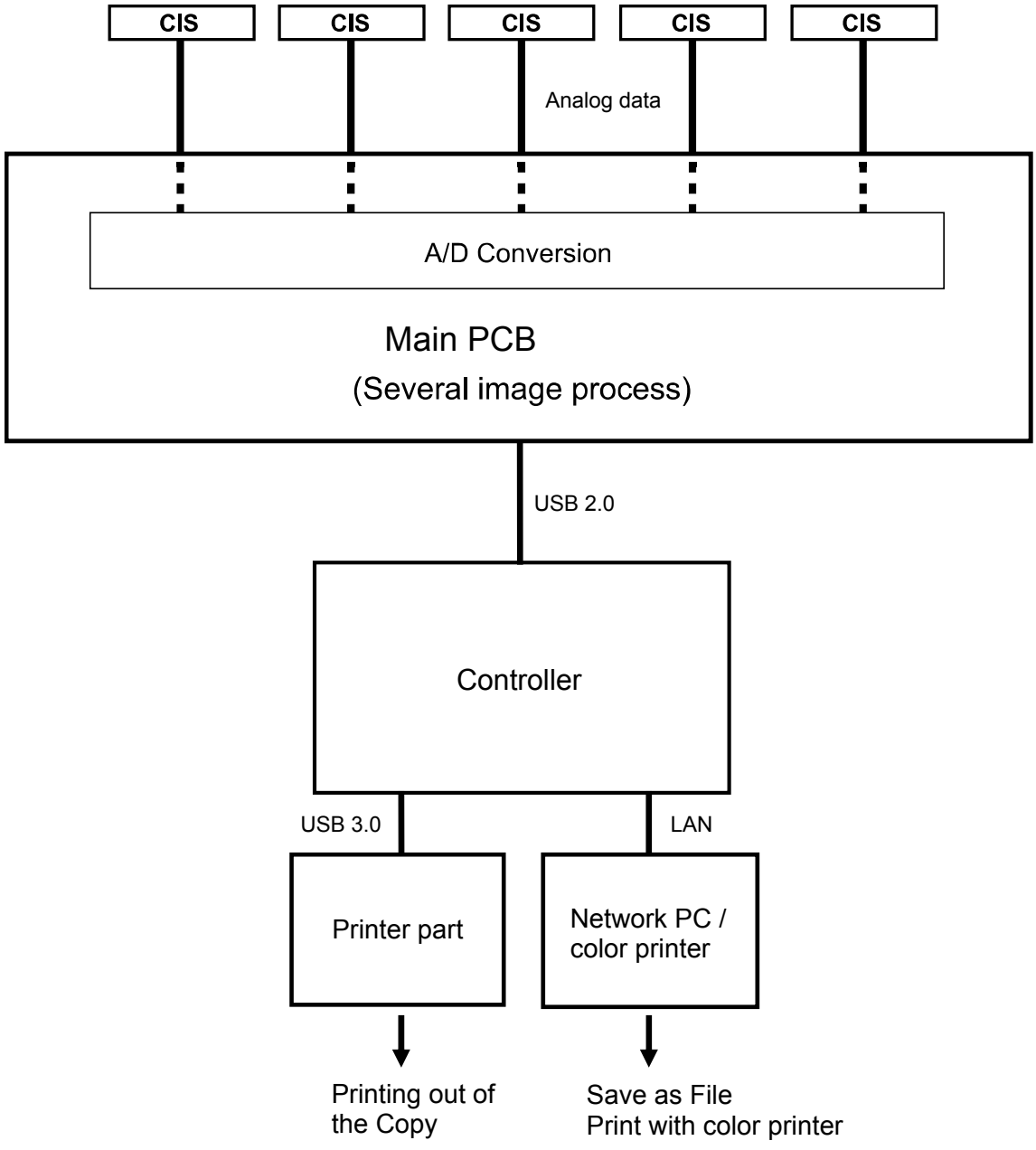
The scanner unit has 5 CIS devices and the Main Board.

1. CIS reads the image pattern of original and then send the analog data to the Main Board.

2. The Main Board converts the analog data into digital data.

3. Main Board takes a proper image process according to the settings configured with K129 Diag.. It outputs the image data to the Controller through the USB 2.0.

4. Controller outputs the image data to the KIP printer through the USB 3.0 on copy, or it outputs to the Network PC through the LAN cable on Scan to File.



3. 2. 2 Positioning process of Image Block

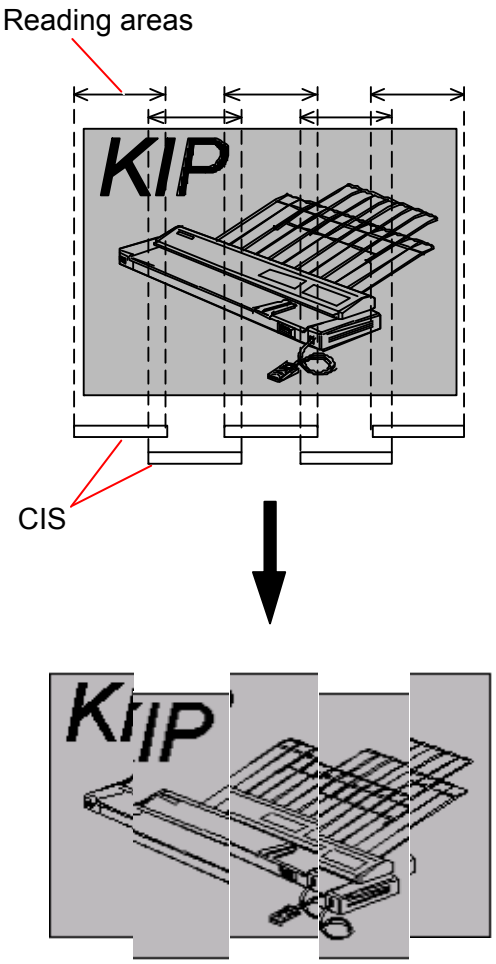
The scanner part of KIP 7170 reads the image of original with 5 - CIS (Contact Image Sensor).
As these CIS are arranged in 2 rows, there occurs a vertical gap of image among the image blocks. So it is necessary to remove this gap by vertical positioning process (Y offset).
Also the reading area of these 5 pieces of CIS overlaps each other some degree. It means some image pixels are commonly included in the neighboring two Image Blocks. It is very hard to recognize the image because many images are duplicated. To prevent this kind of problem, it is necessary to remove the duplication of image pixels by horizontal positioning process (X overlap).
The Main PCB performs these positioning processes.

> **⚠ NOTE**
>
> The KIP 7170 performs these positioning processes (X overlap & Y offset) according to the setting specified through K-129 Diag.
> Please refer to [8.22.6.2 Stitching] for this setting.

[Explanation]

5 pieces of CIS are arranged in 2 rows as the following illustration, with some amount of their reading area overlapping each other.
So the reading data initially inputted to the Main PCB is as follows.

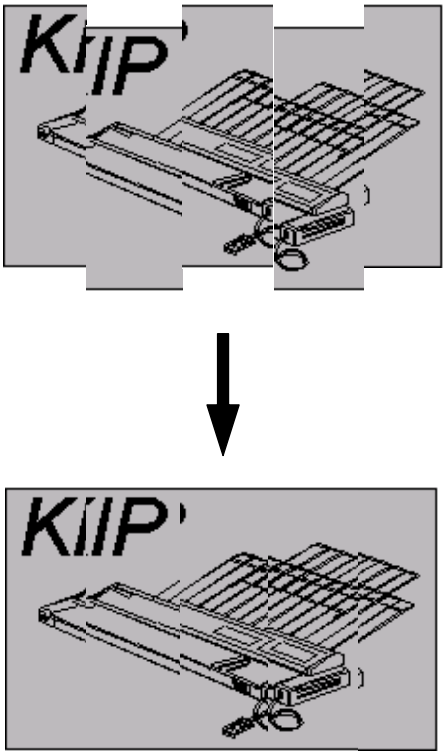
(1) There occurs a vertical gap of image among the image blocks.
(2) Some image pixels are commonly included (duplicating) in the neighboring two Image Blocks.



The image data before the positioning process

The Main PCB removes the vertical gap among the Image Block according to the positioning setting (Y offset) specified through K-129 Diag.

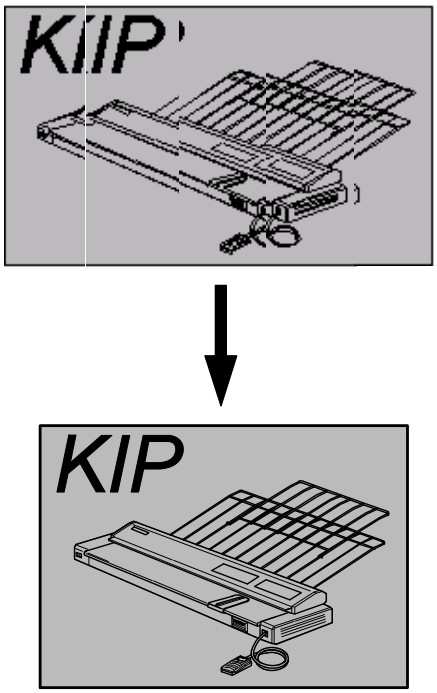
The image data before the positioning process



The image data after the positioning process (Y offset)

Also the Main PCB removes the duplication of image pixels among the Image Blocks according to the positioning setting (X overlap) specified through K-129 Diag.

The image data after the positioning process (Y offset)



The image data after the positioning process (X overlap)

Chapter 4

Electrical

Page

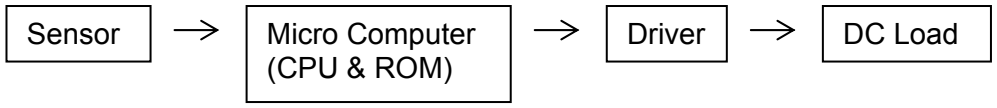
4. 1 General Information 4- 2

4. 2 Electrical Components Location 4- 3
4. 2. 1 Right side 4- 3
4. 2. 2 Left side 4- 6
4. 2. 3 Back side 4- 7
4. 2. 4 LED Head Frame 4-11
4. 2. 5 Main Frame 4-13
4. 2. 6 Developer Unit 4-16
4. 2. 7 Fuser Unit 4-17
4. 2. 8 Roll Deck 4-20
4. 2. 9 Cutter Unit 4-23
4. 2.10 Inner Transport Unit 4-24
4. 2.11 Scanner Unit 4-25

4. 3 Check & Adjustment of Analog Output from HV Power Supply 4-30
4. 3. 1 Situations necessary to check the analog output 4-30
4. 3. 2 Analog Voltage to Image Corona 4-31
4. 3. 3 Analog Voltage to Transfer Corona 4-33
4. 3. 4 AC Component to Separation Corona 4-35
4. 3. 5 DC Component to Separation Corona 4-37
4. 3. 6 Negative Developer Bias to Developer Roller 4-39
4. 3. 7 Positive Developer Bias to Developer Roller 4-41
4. 3. 8 Bias gap between Developer Roller and Regulation Roller 4-43
4. 3. 9 Positive Cleaning Roller Bias (Print Cycle) 4-45
4. 3. 10 Negative Cleaning Roller Bias (Toner Collection Process) 4-47

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.



DC Controller has an LED, meaning that 5VDC is applied on this DC Controller safely.

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

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

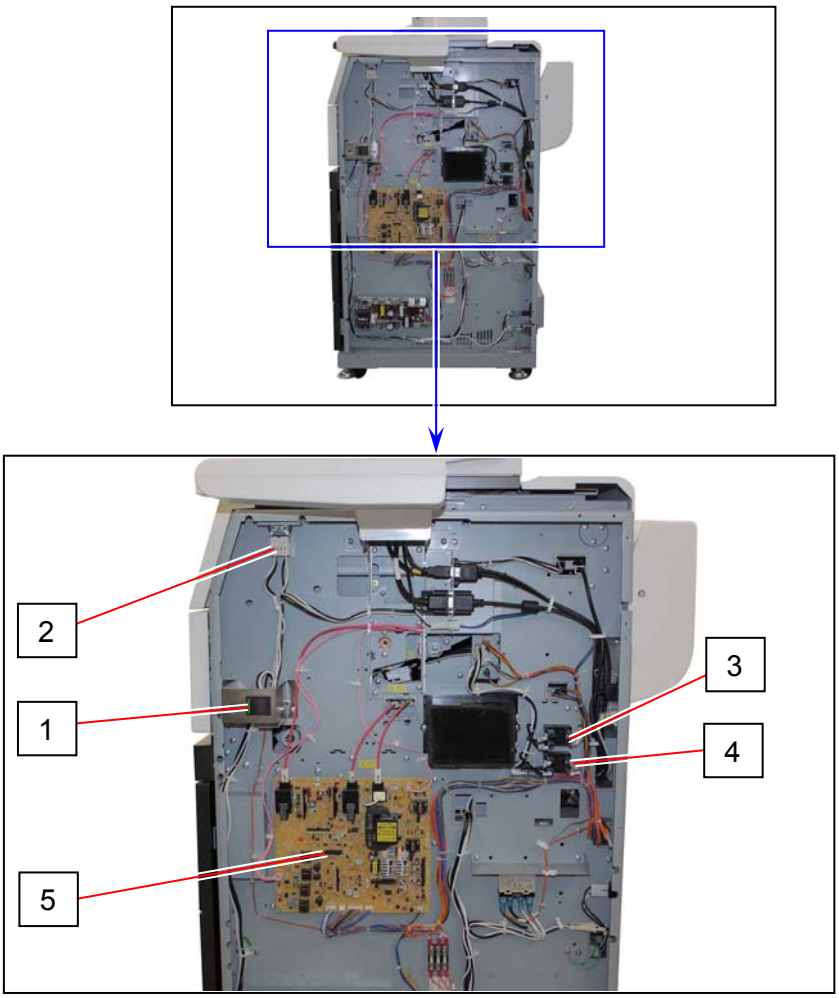
⚠ CAUTION

There is a battery (CR2032) on the Motherboard of the controller.

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the manufacturer.
Dispose of used batteries according to the manufacturer's instructions.
As for the waste disposal of bat tery, dispose in accordance with lo cal state and federal relations.

4. 2 Electrical Components Location

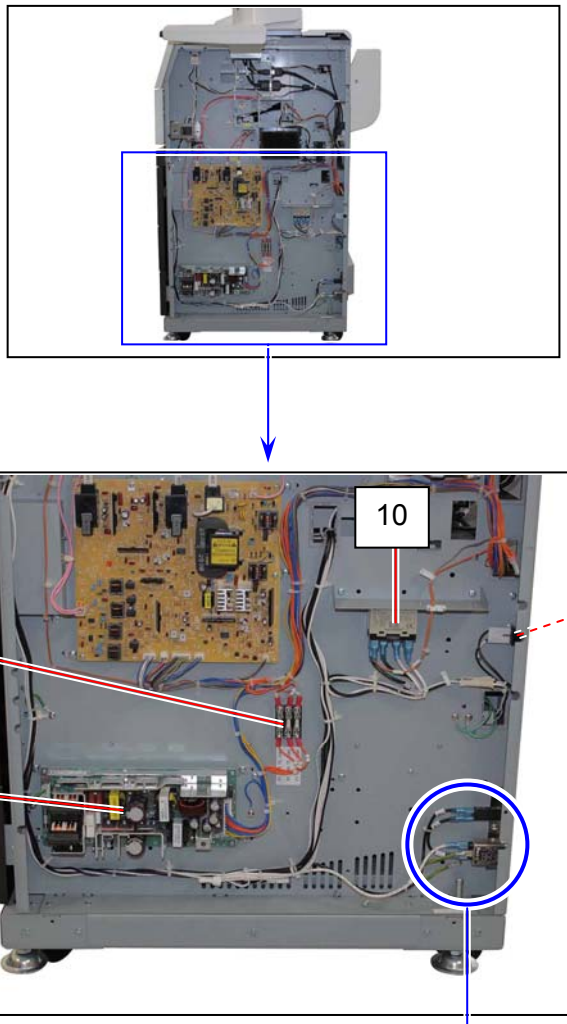
4. 2. 1 Right Side



Item	Symbol	Signal name	Name	Type	Function
1	SW1	(POWER-OFF)	Switch	AJ8R2004BBCF	Turning on and off the machine
2	MS1		Switch	FA1L-AA22	Shuts off the AC power to the DCP1 when Toner Hatch or the right side of Engine Unit is opened
3	SSR1		Solid State Relay	AQJ416V (US) AQJ426V (EU)	ON / OFF control of the Fuser
4	SSR2		Solid State Relay	AQJ416V (US) AQJ426V (EU)	ON / OFF control of the Fuser
5	HV1 HV2 HV3 HVP4 --- OUTPUT2 OUTPUT3 OUTPUT5	HV_IM HV_TR HV_AC --- BIAS_TRG BIAS_SW	HV Power Supply	EUK1MGA60HA	Outputting the high voltage to each of the following components. (1) Image Corona (HV1) (2) Transfer Corona (HV2) (3) Separation Corona (HV3) (4) Developer Roller (OUTPUT2) (5) Regulation Roller (OUTPUT3) (6) Cleaning Roller (OUTPUT5)

NOTE

Developer Bias (OUTPUT 2, 3) is outputted (or stopped) by the signal “BIAS_TRG”.
The polarity of Bias is decided by the signal “BIAS_SW”

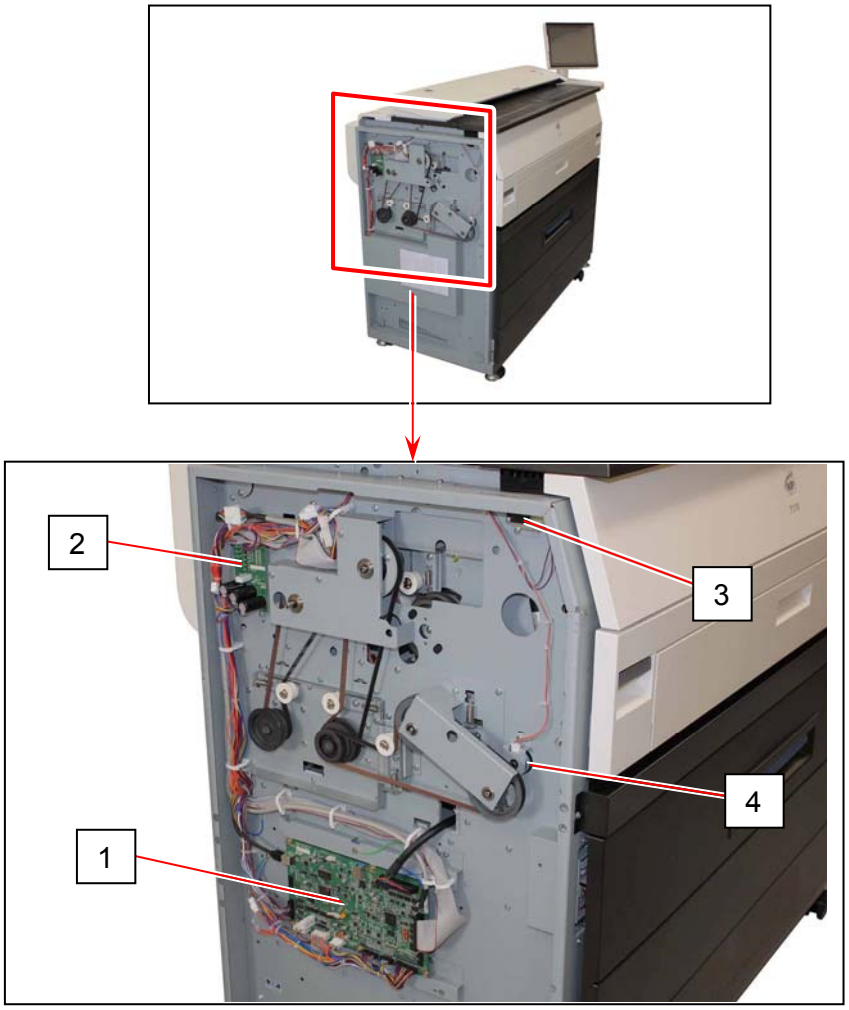


(120V model)

(230V model)

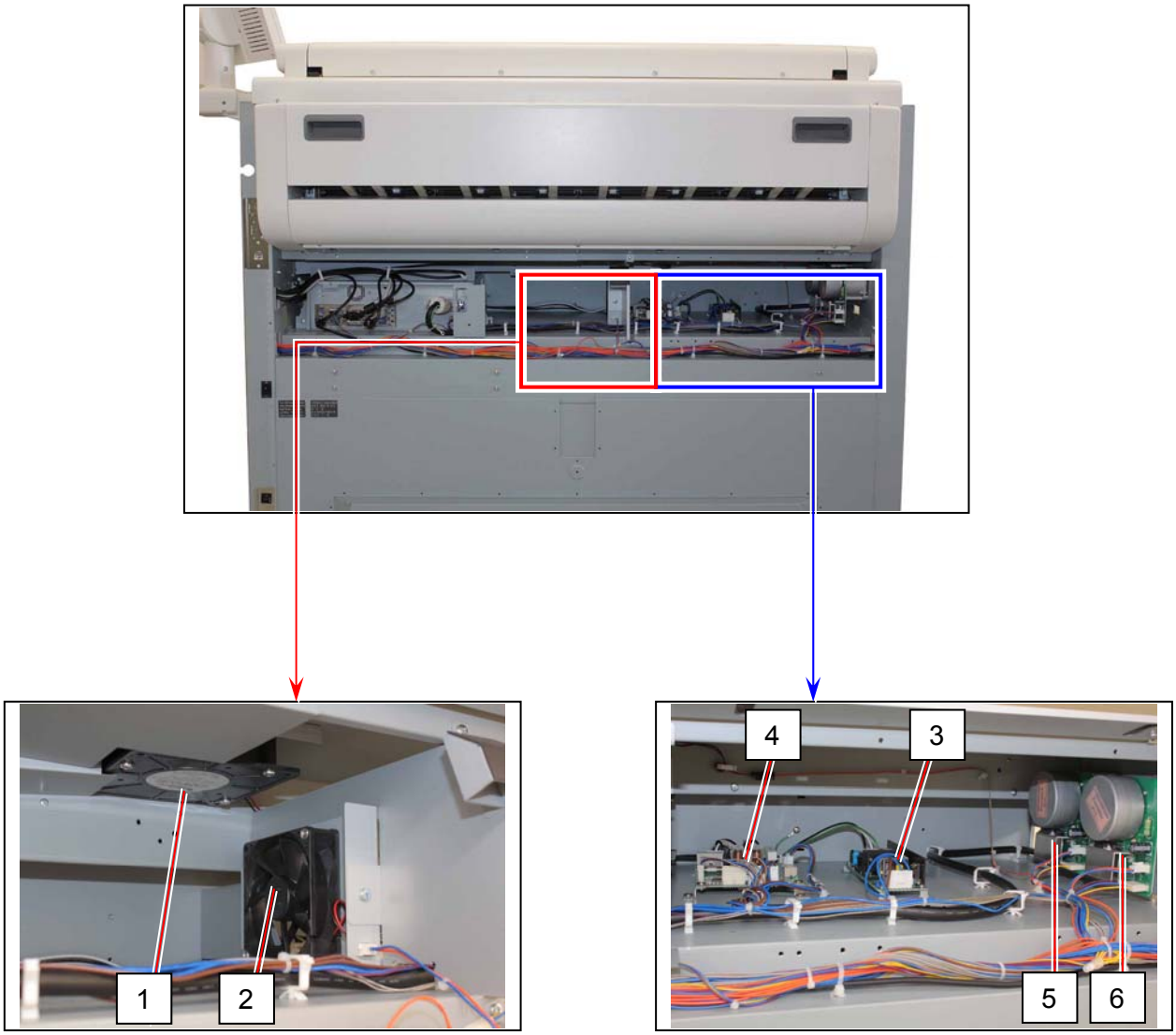
Item	Symbol	Signal name	Name	Type	Function
7	DCP1	-	DC Power Supply	LEB225F-0524-U	Outputting each 24VDC, 5VDC and 0VDC
8	F1 F2 F3	-	Fuse	Walter TSC3.15AH or LITTLE 0215 3.15MXP	Protecting the 24VDC from the over-current If you replace the fuses, make sure to use one listed left.
9	SW2	-	Switch (Option)	SDDJE1	Turning on and off the Dehumidify Heater
10	RY1	-	Relay	G7L-2A-TUB (DC24V)	Supplying the power to the Lamp (H1, H2). (It stops supplying the power to the Lamp when Switch (MS3) or Thermostat (TS1, TS2) is open.)
11	LF1	-	Noise Filter		Removing the noise from the AC line **Used on 120V model**
12	CB1	-	Breaker	X28-XQ1A-15	Protecting the AC line from the over-current **Used on 120V model**
13	LF1	-	Noise Filter	RG-208F2	Removing the noise from the AC line **Used on 230V model**
14	INLET	-	Inlet		Inputting the AC Power **Used on 230V model**
15	CB1	-	Breaker	X28-XQ1A-10	Protecting the AC line from the over-current **Used on 230V model**

4. 2. 2 Left Side



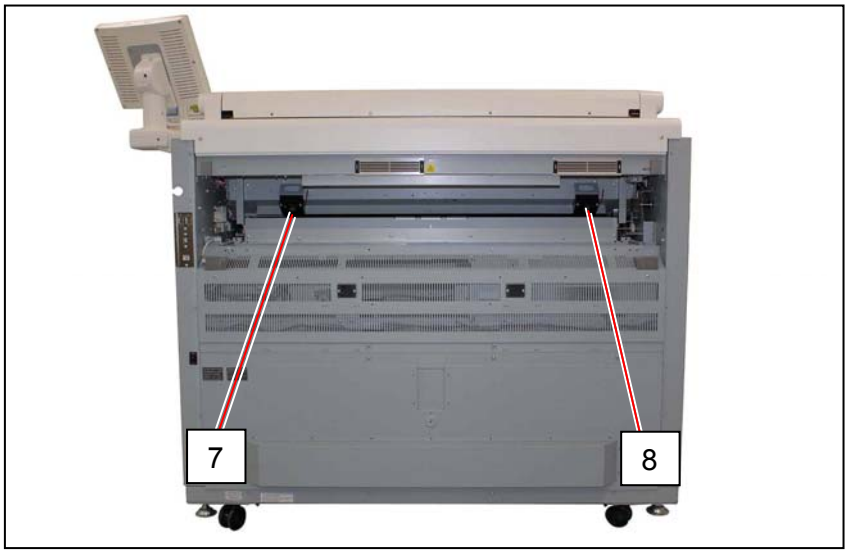
Item	Symbol	Signal name	Name	Type	Function
1	PW13420	-	PW13420 PCB Assy	PW13420	Overall sequence control
2	PW6654-02B	-	PW6654 02B PCB Assy	PW6654-02B	Driver for the motors, clutches and so on
3	MS4	-	Switch	V-162-1C25 10E	Detecting whether or not the Toner Hatch or the left side of Engine Unit is opened (The machine does not shut off the AC power even if the MS4 detects either of them is opened.)
4	CL1	REGIST_CL	Clutch	MIC5NE-45	Meeting the image head and leading edge of paper each other

4. 2. 3 Back Side

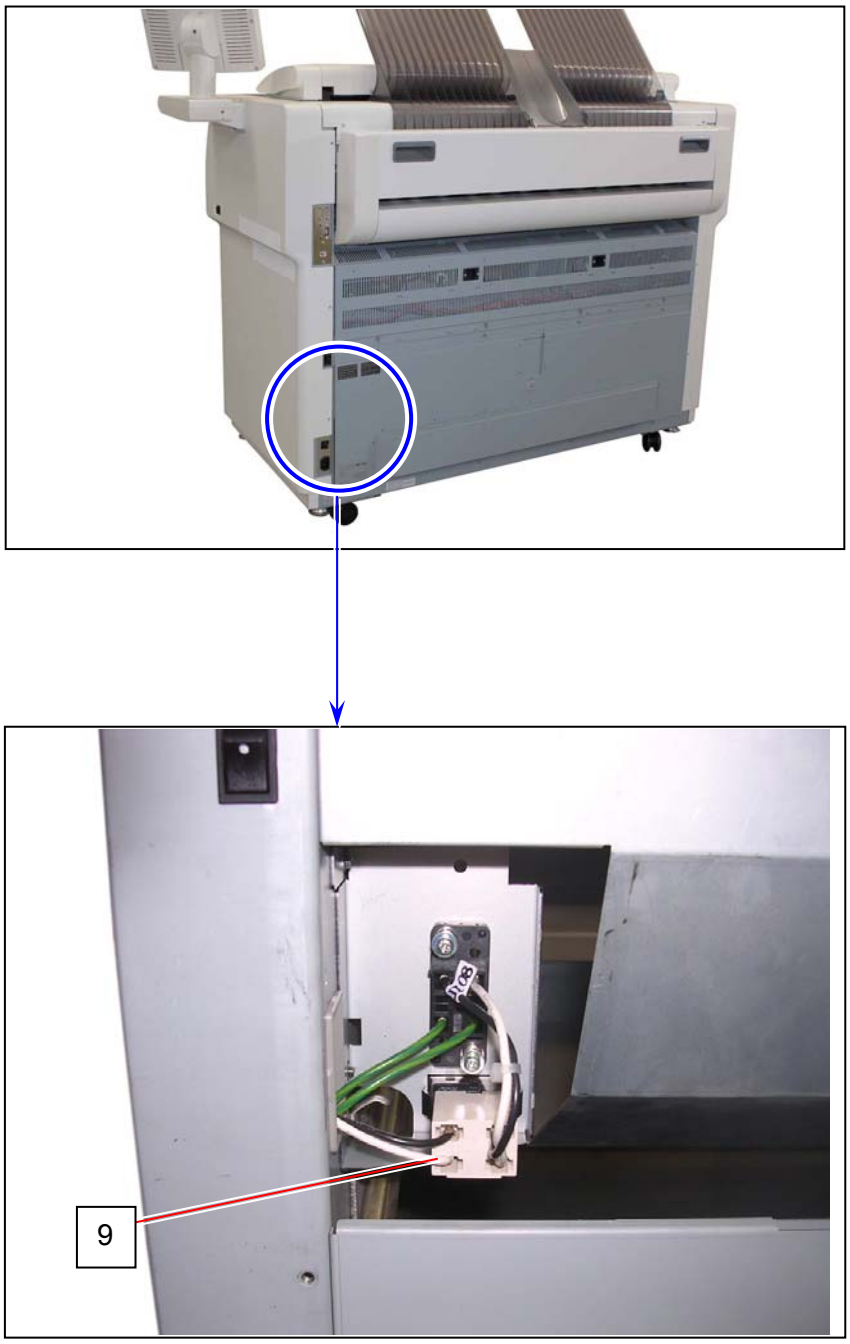


Item	Symbol	Signal name	Name	Type	Function
1	BL7	-	Blower	D12F-24BL 05	Assisting to transport the paper on the Inner Transport Unit
2	BL8	-	Fan	ASFN90372 90	Cooling down the IPS Controller
3	DCP2	-	DC Power Supply	ZWS75BAF12	Supplying the DC power to both the UI and the PW11724.
4	PW11724	-	PW11724 PCB ASSY	PW11724	- Lightning surge protector - Shutting down the controller
5	M1	MAMTR	DC Motor	DRG-6236-226	Driving the Drum, Developer Unit and paper feeding section
6	M2	HEAT_M	DC Motor	DRG-6236-226B	Driving the Fuser Unit

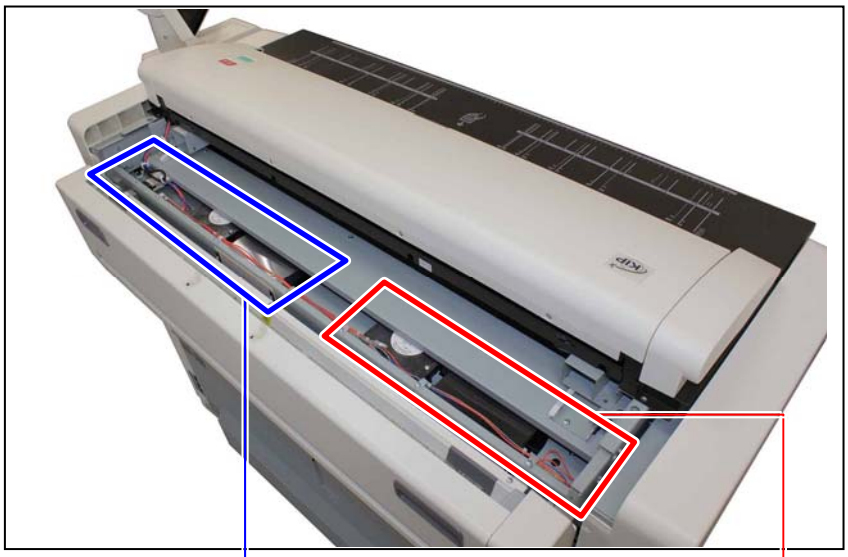
(Fuser Unit omitted)

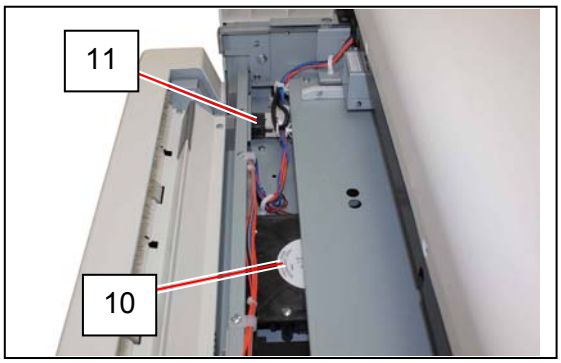


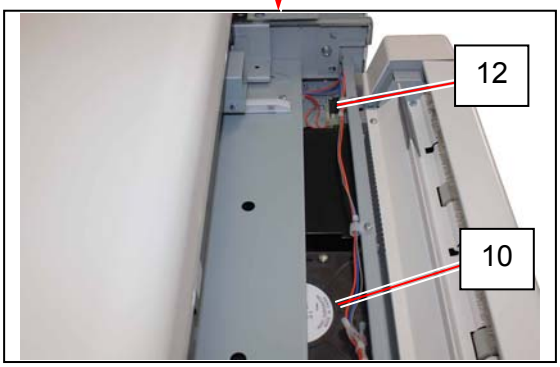
Item	Symbol	Signal name	Name	Type	Function
7	BL5		Fan	ASFN60372	Supporting media feeding approach
8	BL6		Fan	ASFN60372	Supporting media feeding approach



Item	Symbol	Signal name	Name	Type	Function
9	MS8		Switch (Optional in USA)	FA2L-BA22	It stops supplying the AC power to the Dehumidify Heater when the Roll Deck is opened.

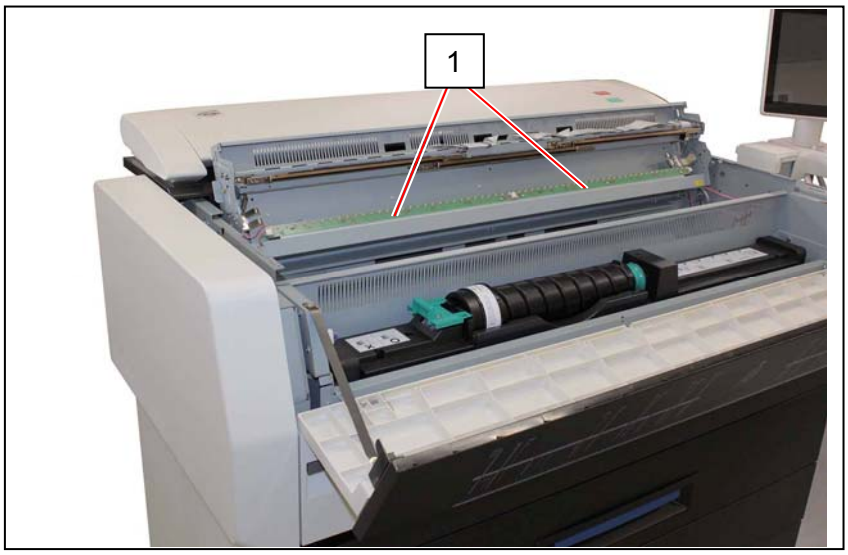




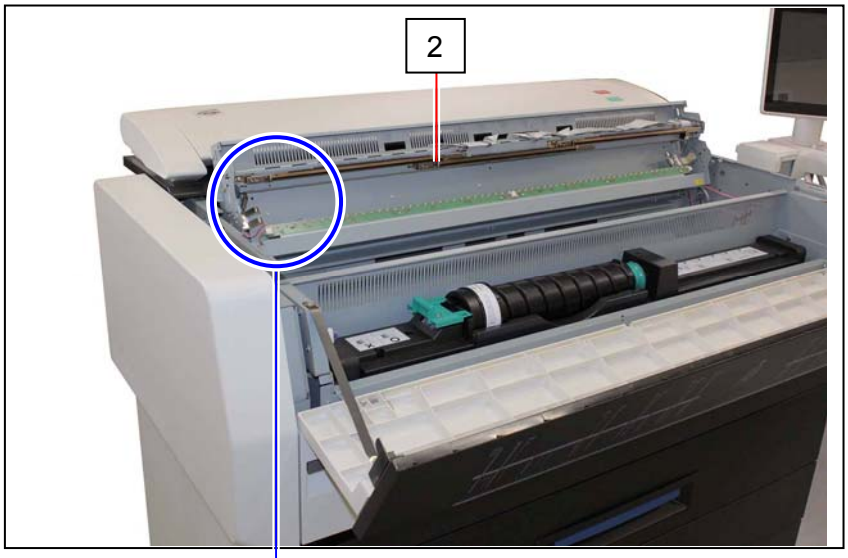


Item	Symbol	Signal name	Name	Type	Function
10	BL3 & BL4	HEAT_BL_L HEAT_BL_R	Blower	D12F-24BL 05	Exhausting the inside air. (They are equipped with the Ozone Filter.)
11	MS2		Switch	FA1L-AA22	Shuts off the AC power to the DCP1 when the right side of Heater Hatch is opened.
12	MS3		Switch	V-162-1C25 10E	Detecting whether or not the left side of Heater Hatch is opened. (The machine does not shut off the AC power even if the MS3 detects the Heater Hatch is opened.)

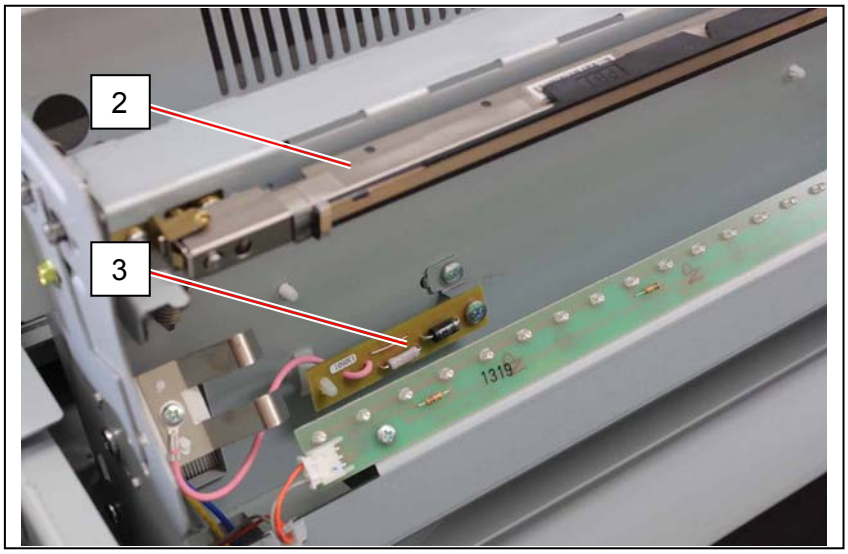
4. 2. 4 LED Head Frame



Item	Symbol	Signal name	Name	Type	Function
1	PW6631	ER1	Eraser PCB A	PW6631	Removing the negative electric charges from the Drum at the beginning of the Print Process



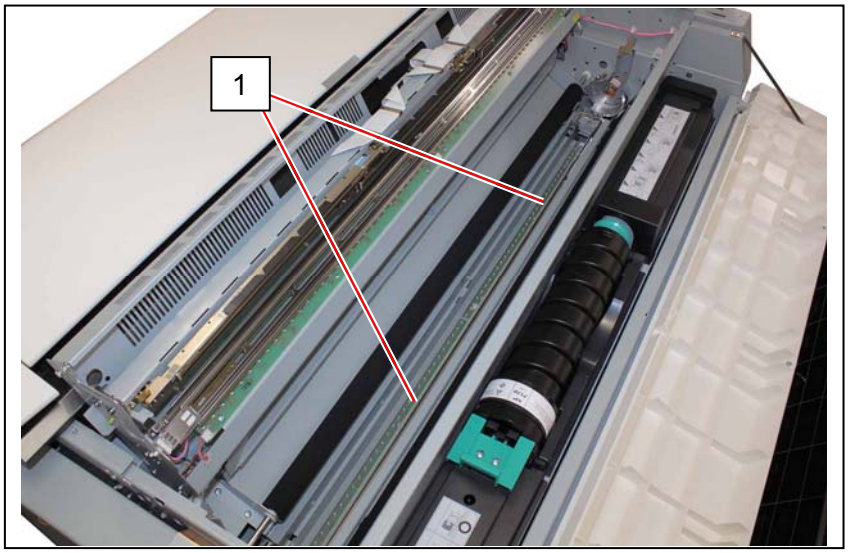
(Image Corona Unit removed)

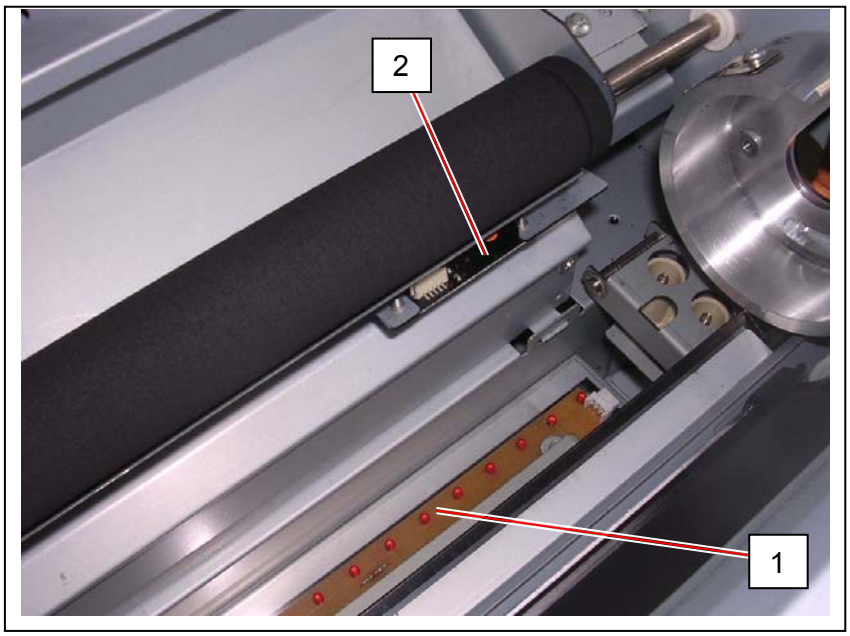


Item	Symbol	Signal name	Name	Type	Function
2	LED HEAD		LED Head Assy	LH6604 (53TRK x 3pcs.)	Creating latent Images on Drum
3	PW6693		HV-ZD Assy	PW6693	Keeping the Grid Voltage constant (Control of the surface potential)

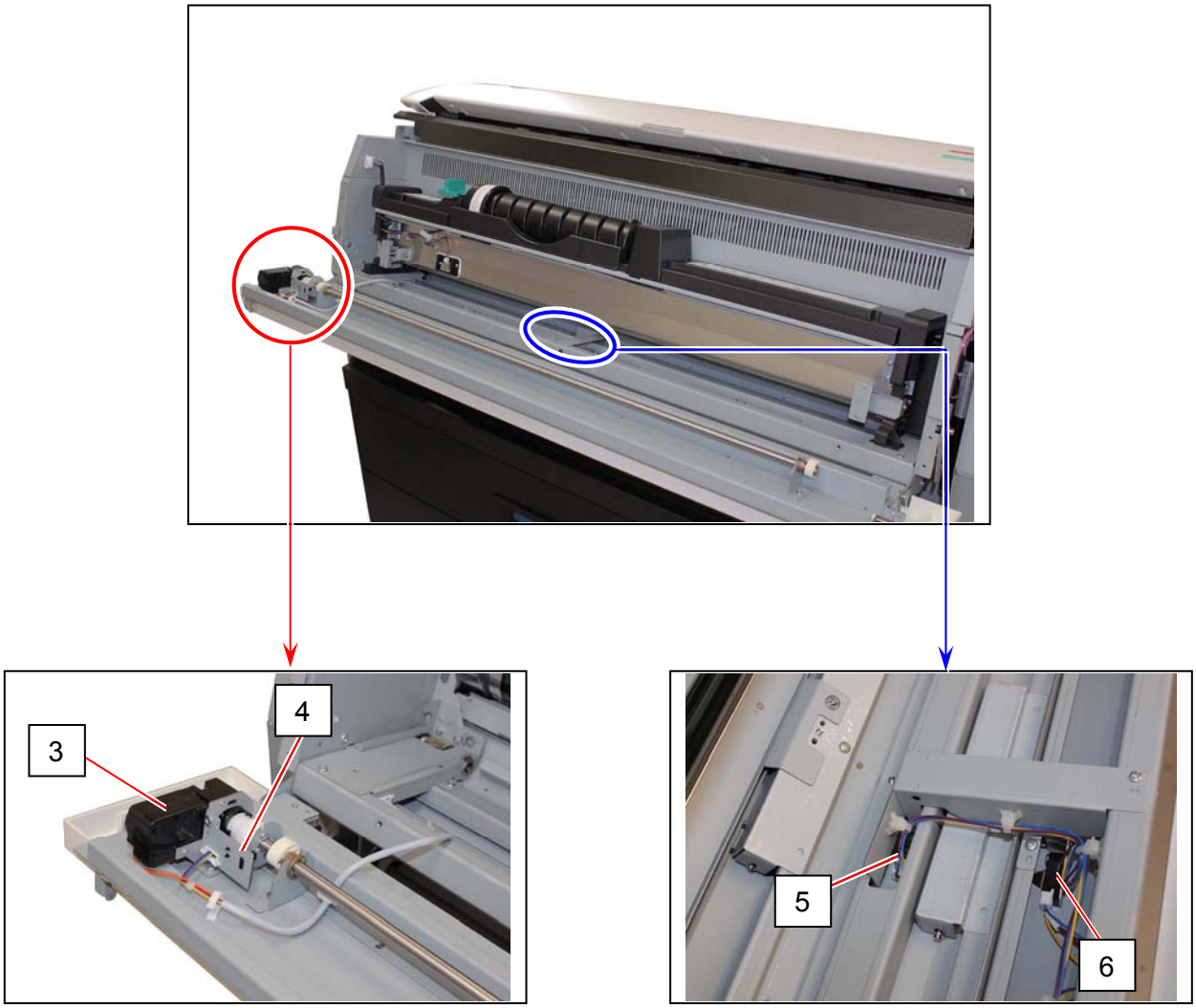
4. 2. 5 Main Frame

(Drum removed)

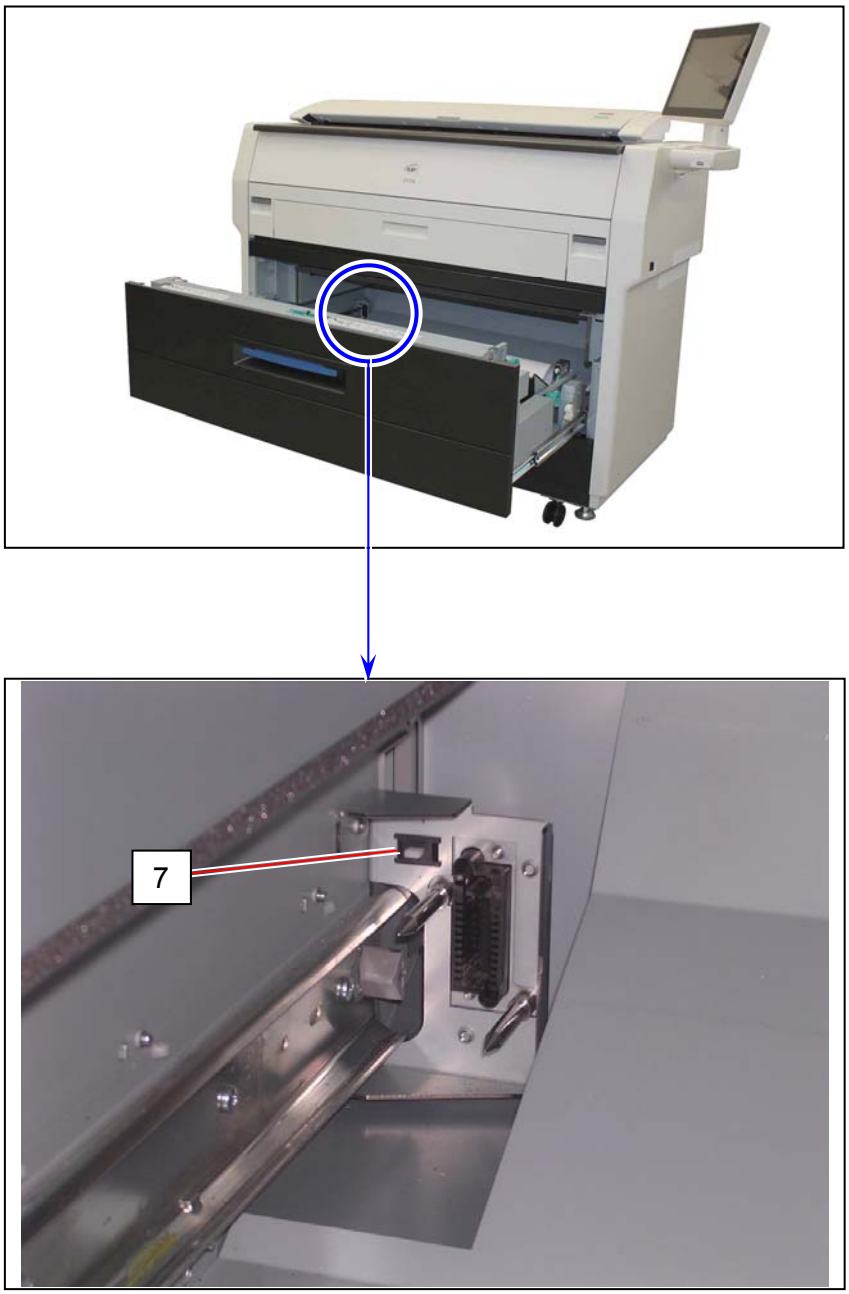




Item	Symbol	Signal name	Name	Type	Function
1	PW6631	ER2	Eraser PCB A	PW6631	Assisting the paper separation by removing the electric charges from the Drum at the time of Separation Process
2	DENS-S	PH11	Toner Density Sensor	GP2Y40010K0F	Detecting the toner density on the drum surface. Outputting analog voltage to PW13420

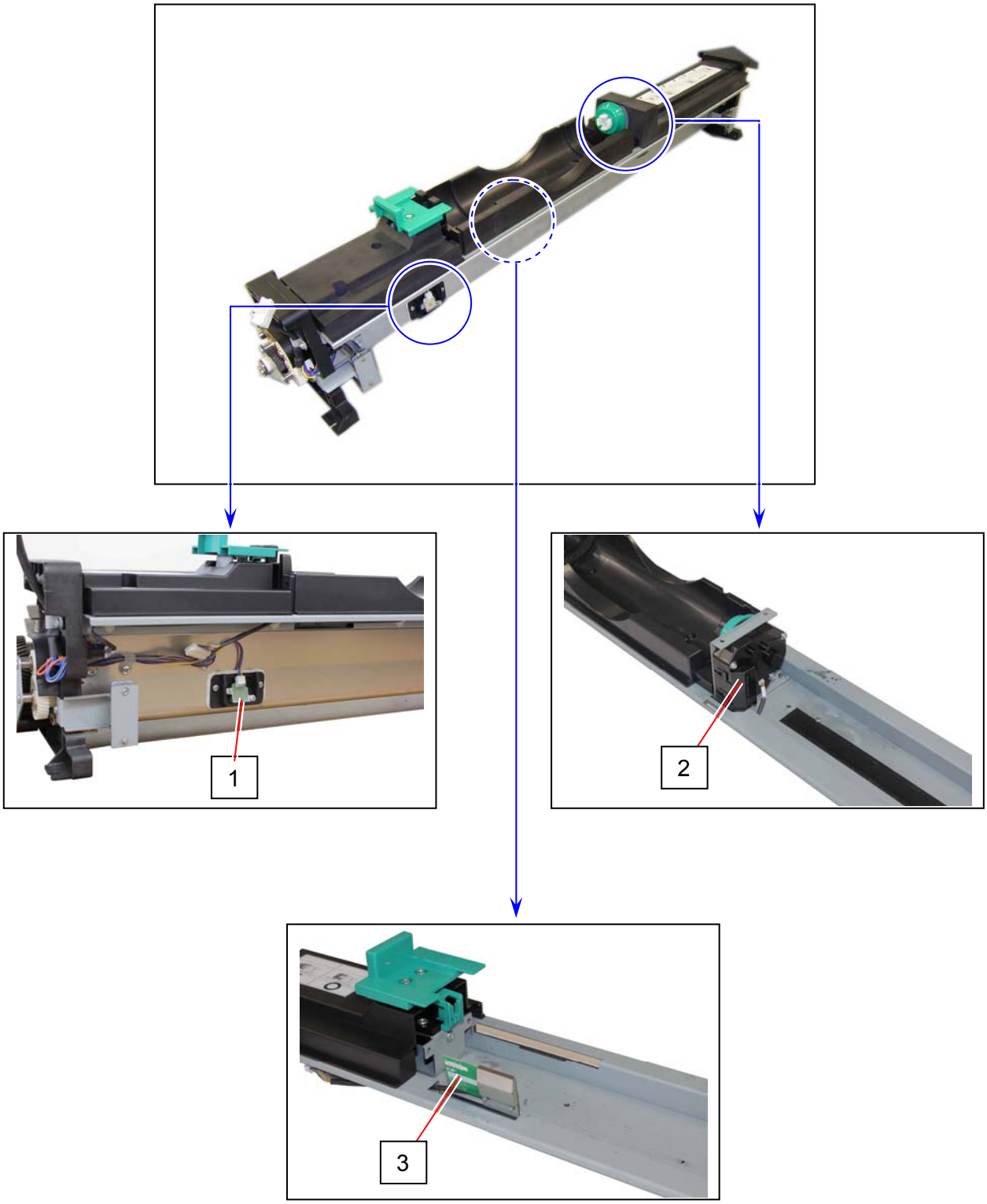


Item	Symbol	Signal name	Name	Type	Function
3	M4	PRESS_M	Motor Set Geard 9J06M10301	20-04301	Pressing the Developer Unit to the Drum (Or keeping the Developer Unit away from the Drum)
4	PH4	PRESS_S	Sensor	GP1A73LCS2F (Or GP1A73A000J)	Detecting the Developer Unit is pressed or kept away
5	PH1	REGIST_S	Sensor	PS117ED1	Detecting the paper at the Registration Area Detecting the paper length of cut sheets
6	PH5	MAN_IN	Sensor	PS117ED1	Detecting the set of cut sheet paper



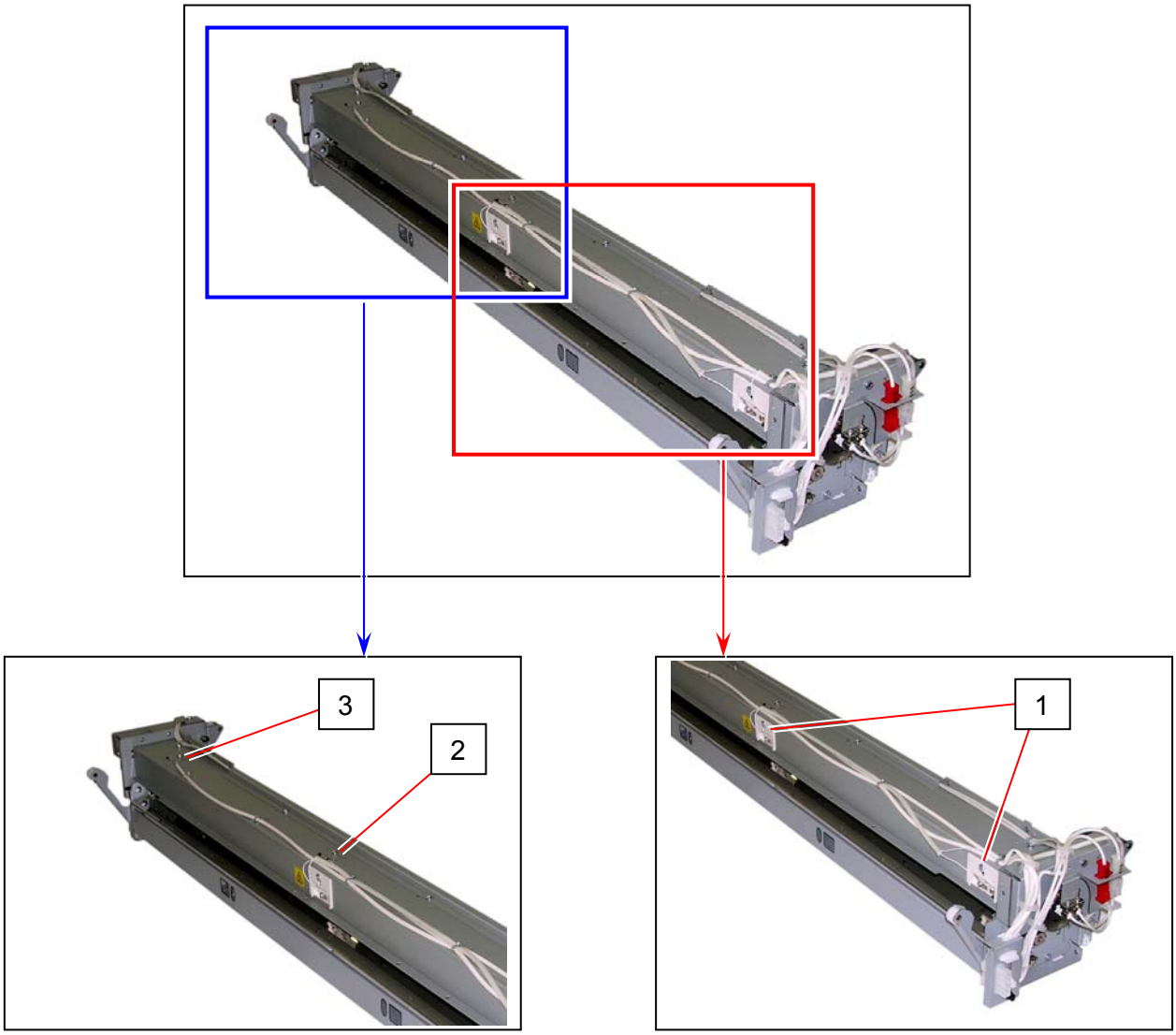
Item	Symbol	Signal name	Name	Type	Function
7	MS5	DOOR-OPEN	Switch	CS1A-B2CA	Detecting the Roll Deck Open Error

4. 2. 6 Developer Unit

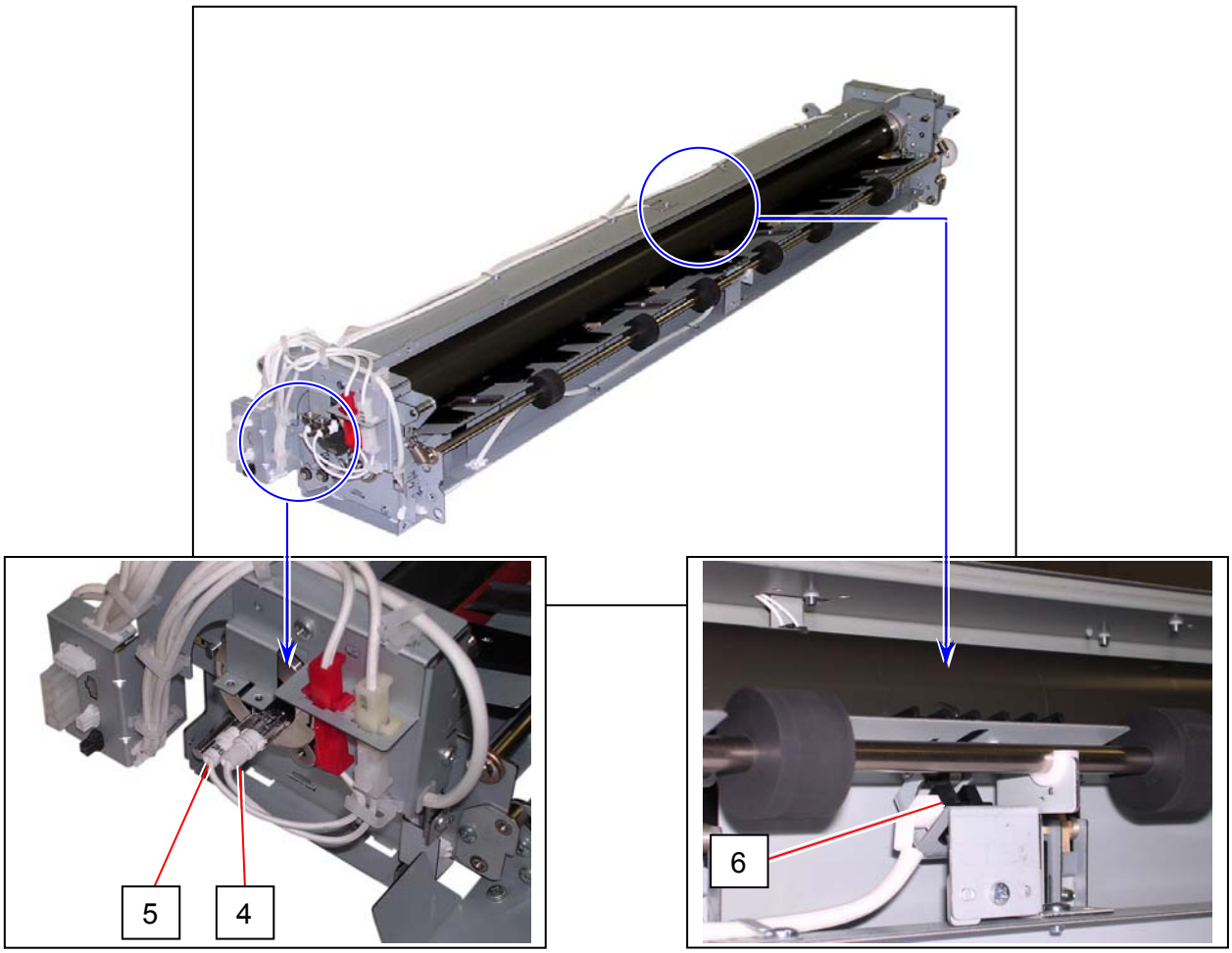


Item	Symbol	Signal name	Name	Type	Function
1	TLS1	TONER_S	Sensor	TSP15DA10C-01	Detecting whether or not the toner exists in the Developer Unit
2	M3	TONER_M	Motor Set Geard	MA-D05-008	Driving the Toner Hopper to supply the toner to the Developer Unit
3			KNC PCB	PW13551	Reads the information of IC Tag on Toner Cartridge.

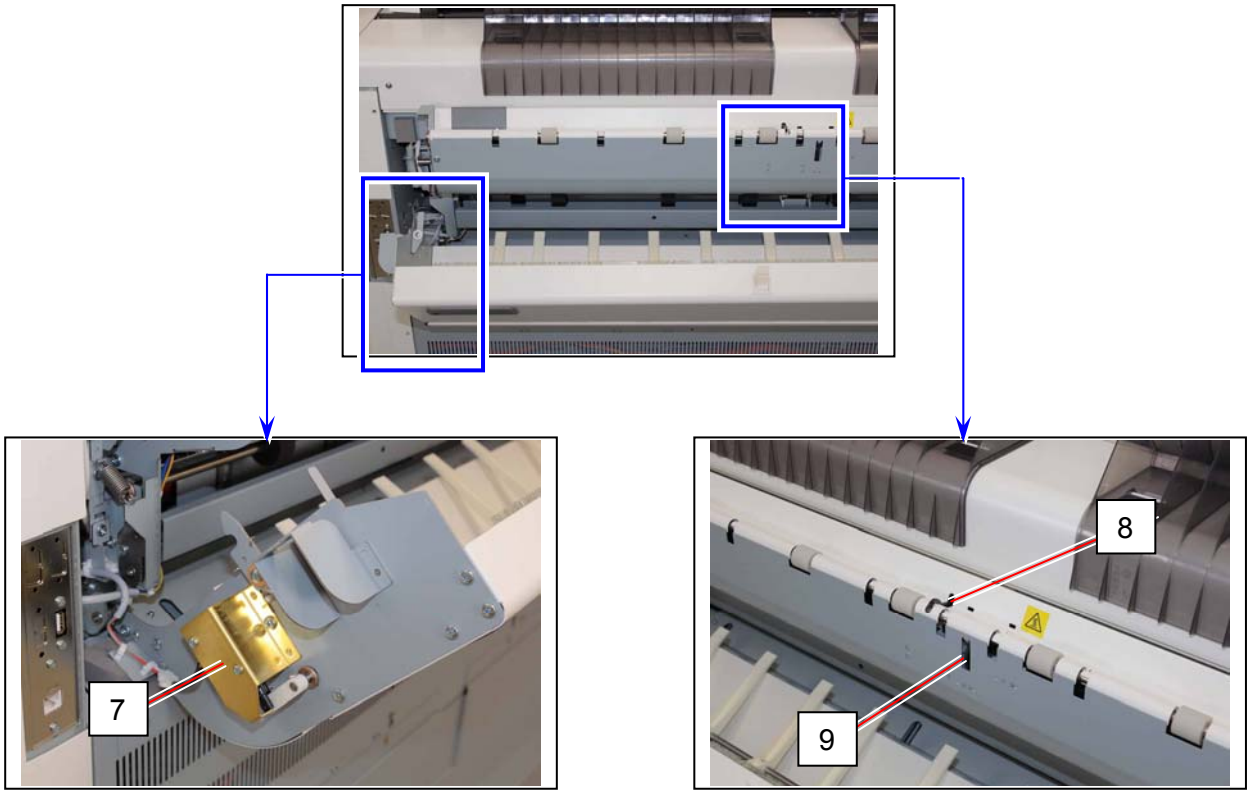
4. 2. 7 Fuser Unit



Item	Symbol	Signal name	Name	Type	Function
1	TS1 TS2		Thermostat	CH-152-35-170	Preventing over-heat
2	TH1	TH1	Thermistor	FS-K0113	Detecting the temperature on the central area of Fuser Roller
3	TH2	TH2	Thermistor 3	FS-K0115	Detecting the temperature on the driven side of Fuser Roller

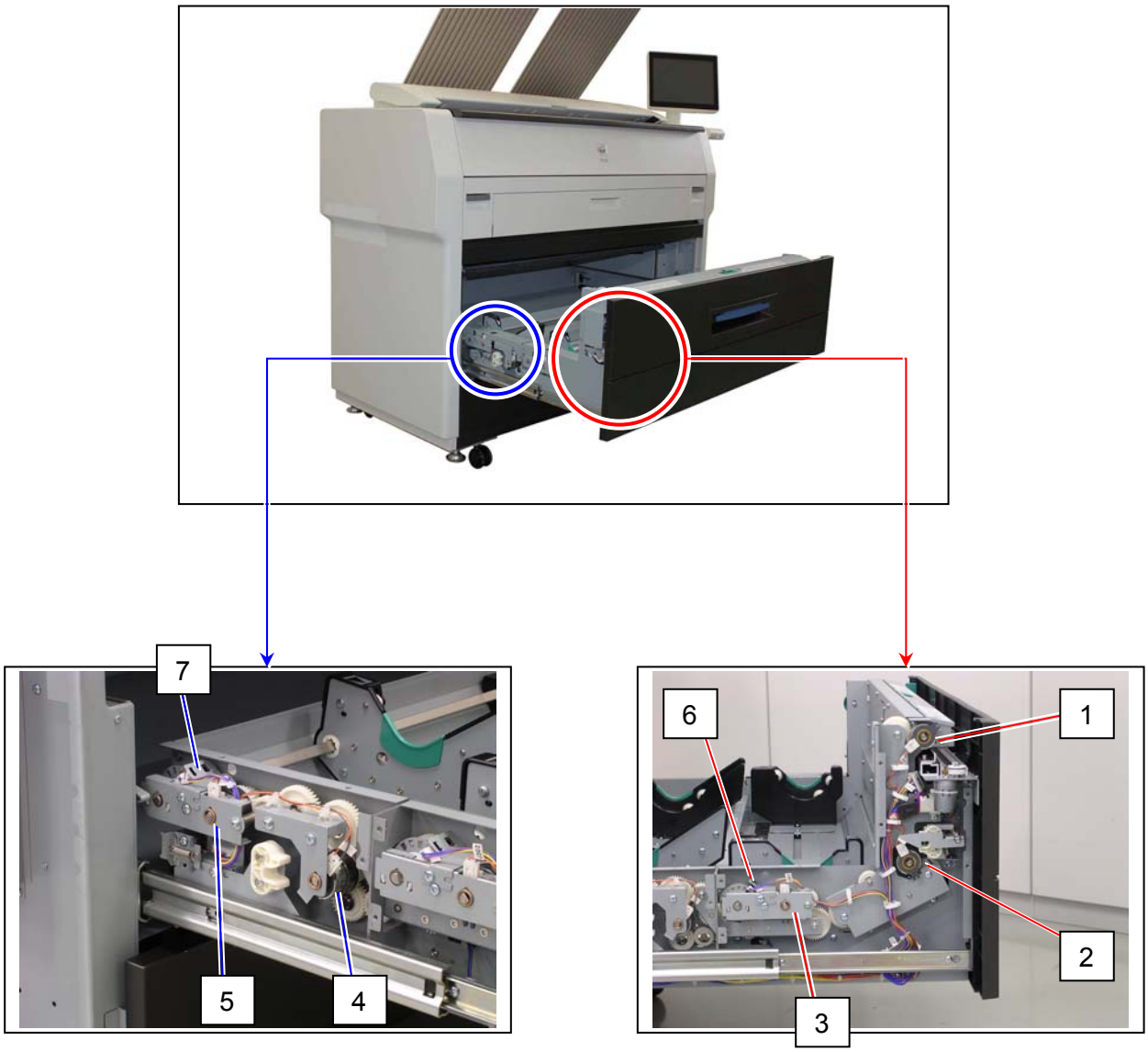


Item	Symbol	Signal name	Name	Type	Function
4	H1		Lamp 120V : Z166800001 230V : Z166800003		Heating up the central part of Fuser Roller
5	H2		Lamp 120V : Z166800002 230V : Z166800004		Heating up the right and the left part of Fuser Roller
6	PH3	HEAT_EXIT	Sensor	GP1A73A000J	Detecting the paper mis-feed at the exit area



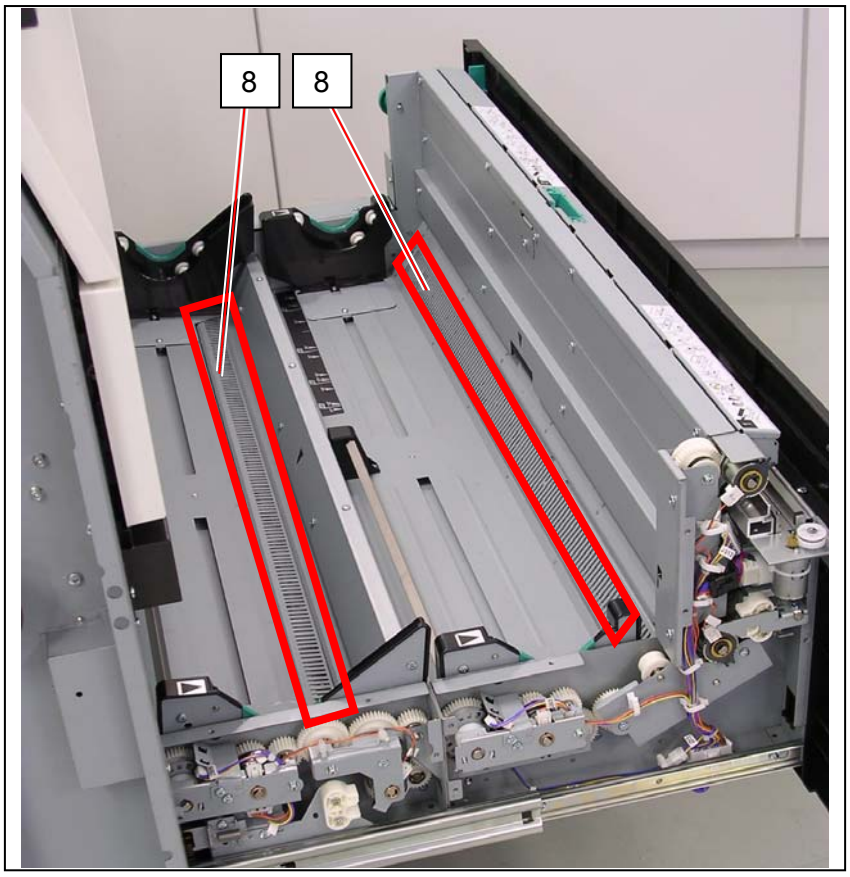
Item	Symbol	Signal name	Name	Type	Function
7	SL1	STACK_SL	Solenoid	STC-SN10E	Deciding print path to either top / rear
8	PH15	STACK_S	Sensor	GP1A73LCS2F (Or GP1A73A000J)	Detecting stacked prints
9	PH16	STACKJ_S	Sensor	GP1A73A000J	Detecting the paper mis-feed after Fuser Unit

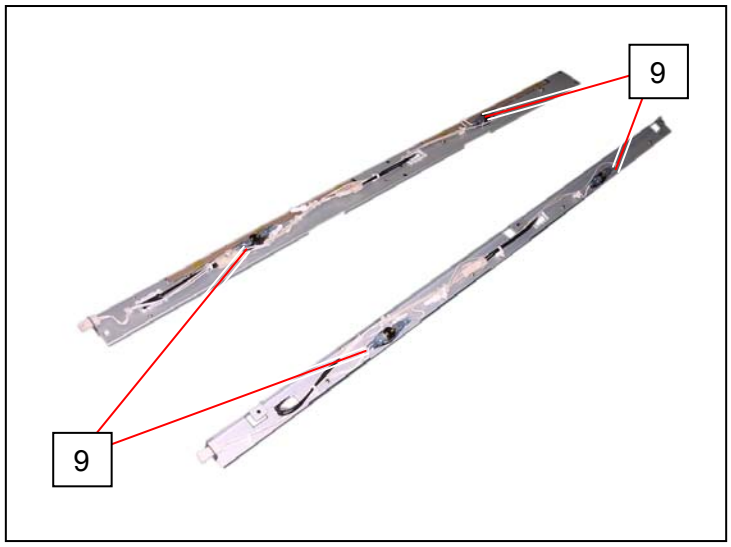
4. 2. 8 Roll Deck



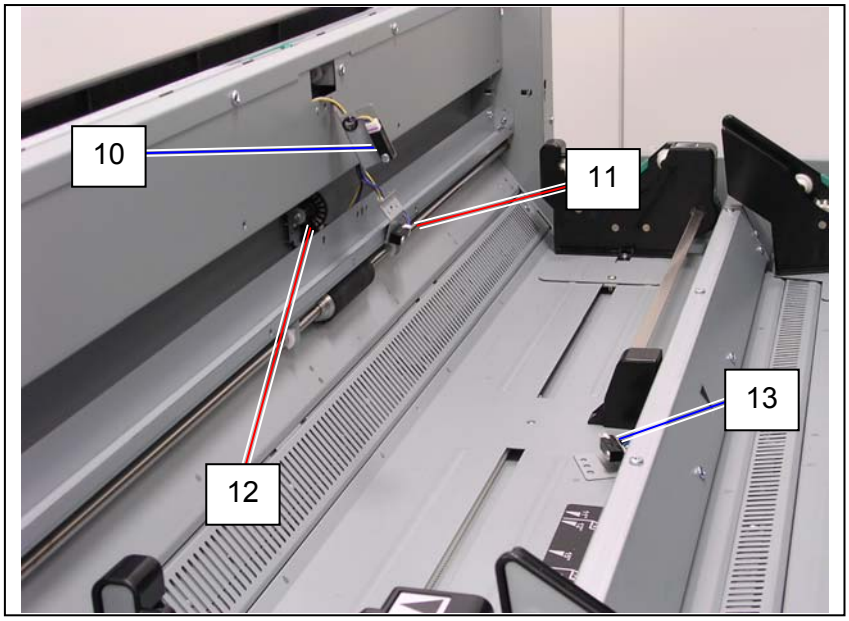
Item	Symbol	Signal name	Name	Type	Function
1	CL3	FEED_CL	Clutch	MIC5NE-45	Feeding the roll paper from both Roll 1 and Roll 2
2	CL4	R1FD_CL	Clutch	MIC8NE-23	Feeding the Roll 1 forward
3	CL5	R1BK_CL	Clutch	MIC8NE-09	Rewinding the Roll 1
4	CL6	R2FD_CL	Clutch	MIC8NE-23	Feeding the Roll 2 forward
5	CL7	R2BK_CL	Clutch	MIC8NE-09	Rewinding the Roll 2
6	PH8	R1ENC_S	Sensor	GP1A73LCS2F (Or GP1A73A000J)	Detecting “paper end” of Roll 1
7	PH10	R2ENC_S	Sensor	GP1A73LCS2F (Or GP1A73A000J)	Detecting “paper end” of Roll 2

(Dehumidify Heater: option for US model)



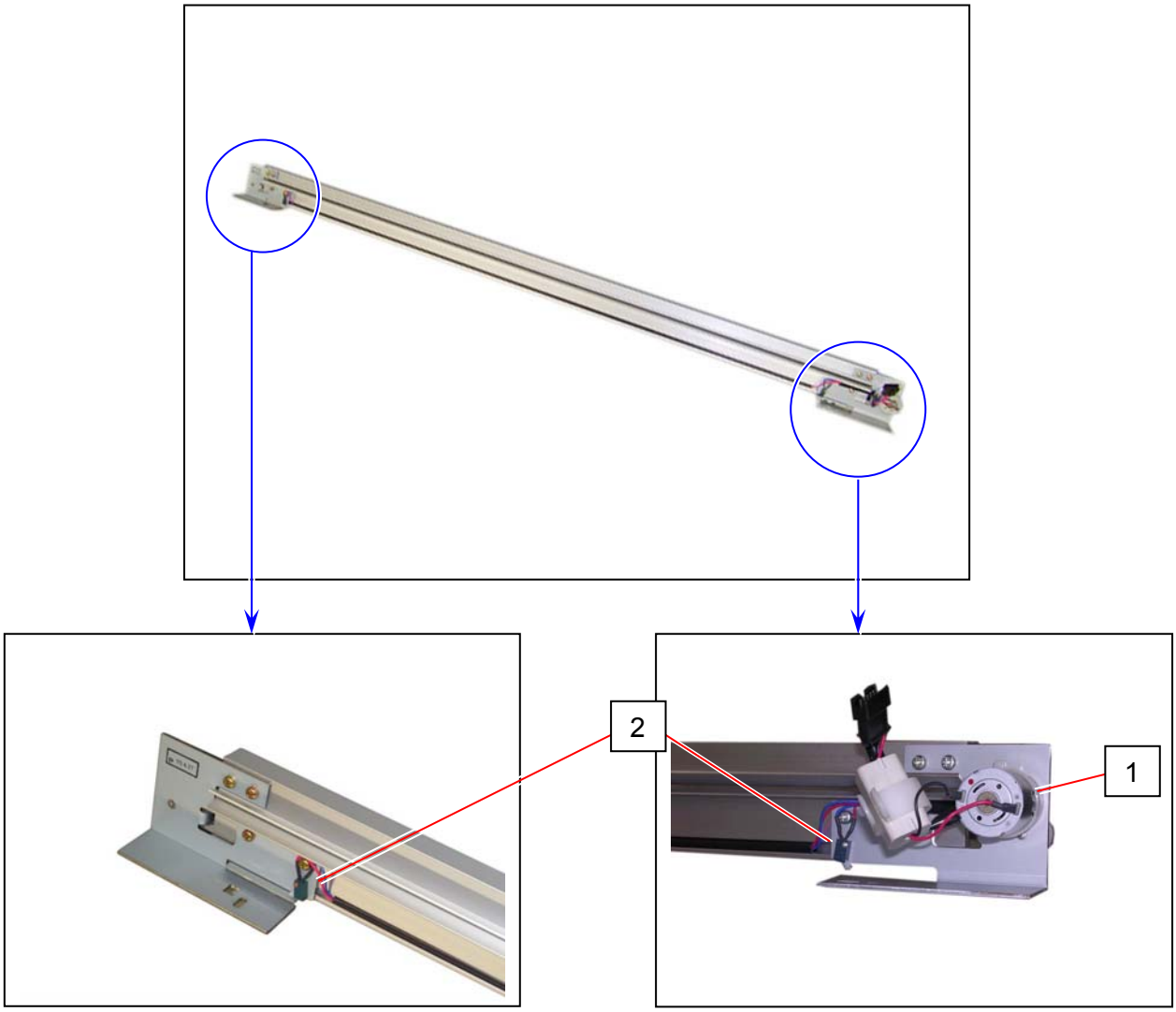


Item	Symbol	Signal name	Name	Type	Function
8	H3 H4 H5 H6		Resister	120V 1K 15W 230V 3.5K 15W	Dehumidifying the roll paper
9	TS3 TS4 TS5 TS6		Thermostat	2455RM-158-37	Controlling the temperature of Resister (The Resisters turn on when the Thermostat detects some decided temperature, and they turn off when it detects another decided temperature.)



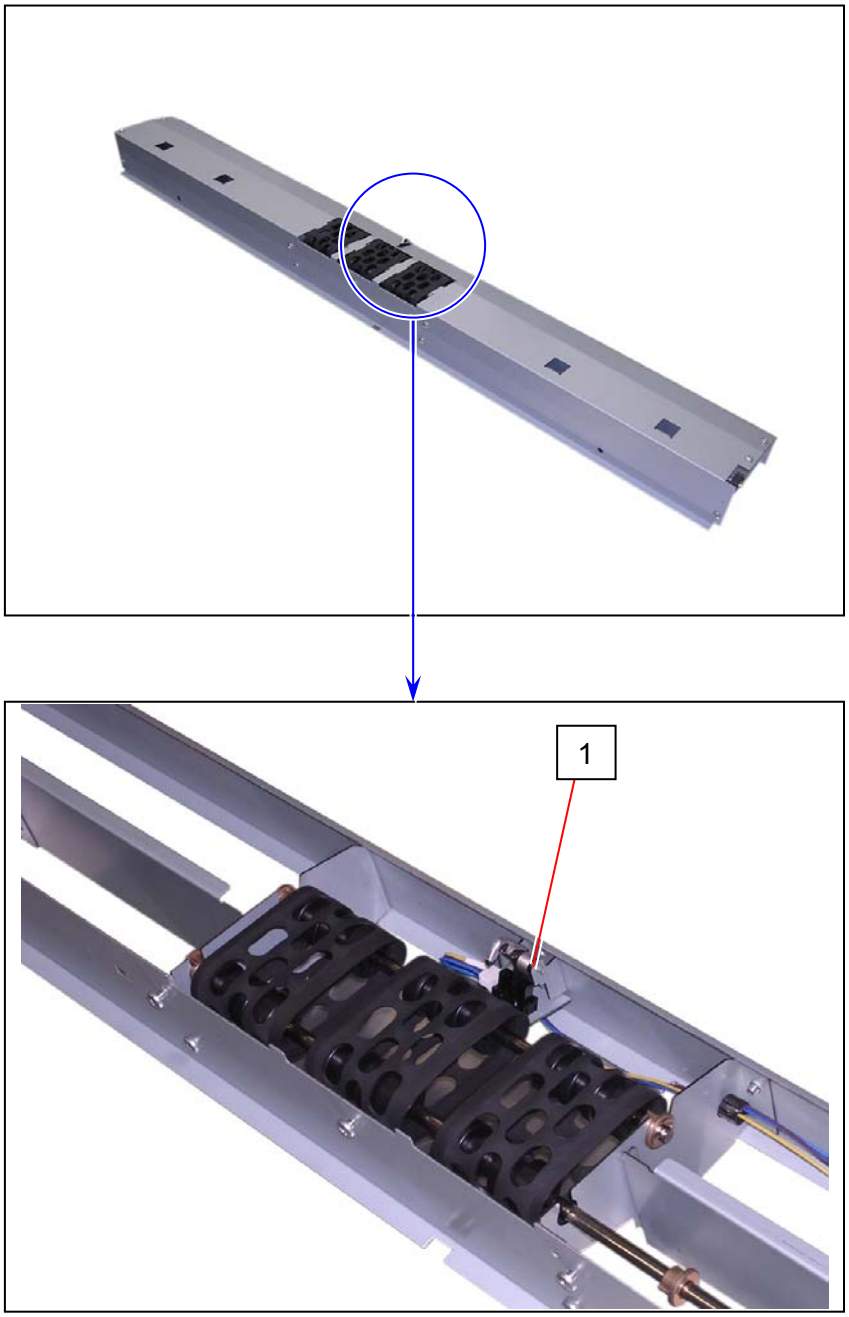
Item	Symbol	Signal name	Name	Type	Function
10	PH6	R_EDGE	Sensor	PS117ED1	Detecting the trailing edge of the roll paper
11	PH7	R1SET_S	Sensor	PS117ED1	Detecting the set of Roll 1
12	PH12	FEED_ENC	Sensor	GP1A73LCS2F (Or GP1A73A000J)	Detecting the length of the proceeding paper to be cut
13	PH9	R2SET_S	Sensor	PS117ED1	Detecting the set of Roll 2

4. 2. 9 Cutter Unit



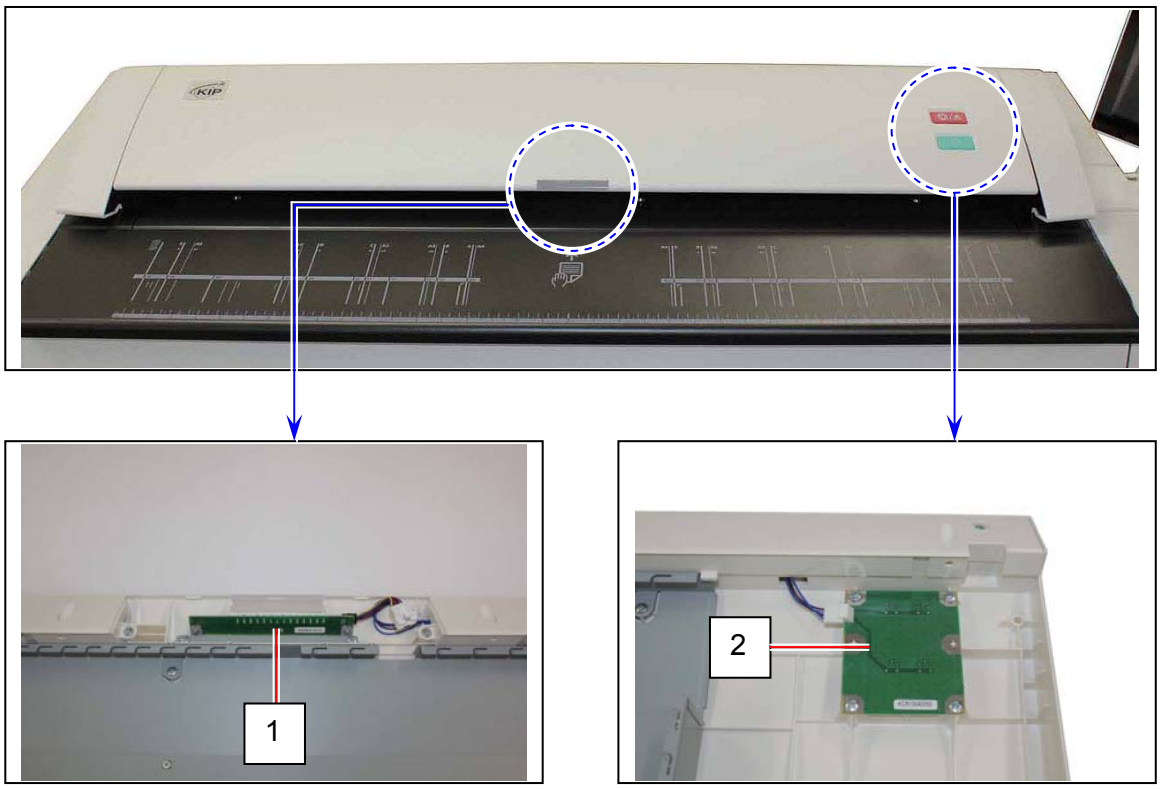
Item	Symbol	Signal name	Name	Type	Function
1	M5		Cutter Motor	-	Moving the Cutter Blade
2	MS6 MS7		Cutter Home Position Sensor	-	Detecting the Home Position of Cutter Blade.

4. 2. 10 Inner Transport Unit

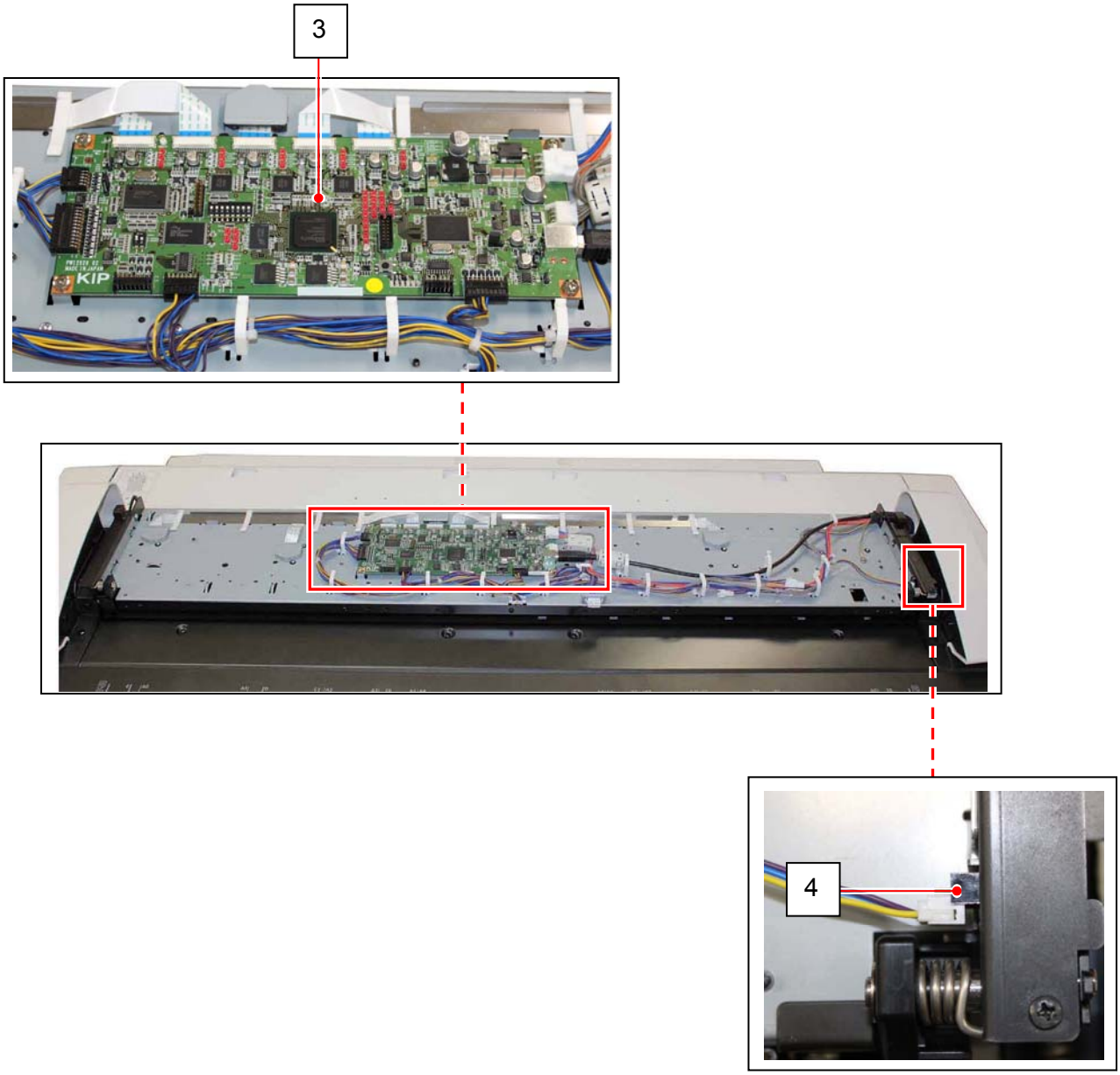


Item	Symbol	Signal name	Name	Type	Function
1	PH2	STRIP_S	Sensor	GP1A73A000J	Detecting the paper mis-feed at the Separation Area

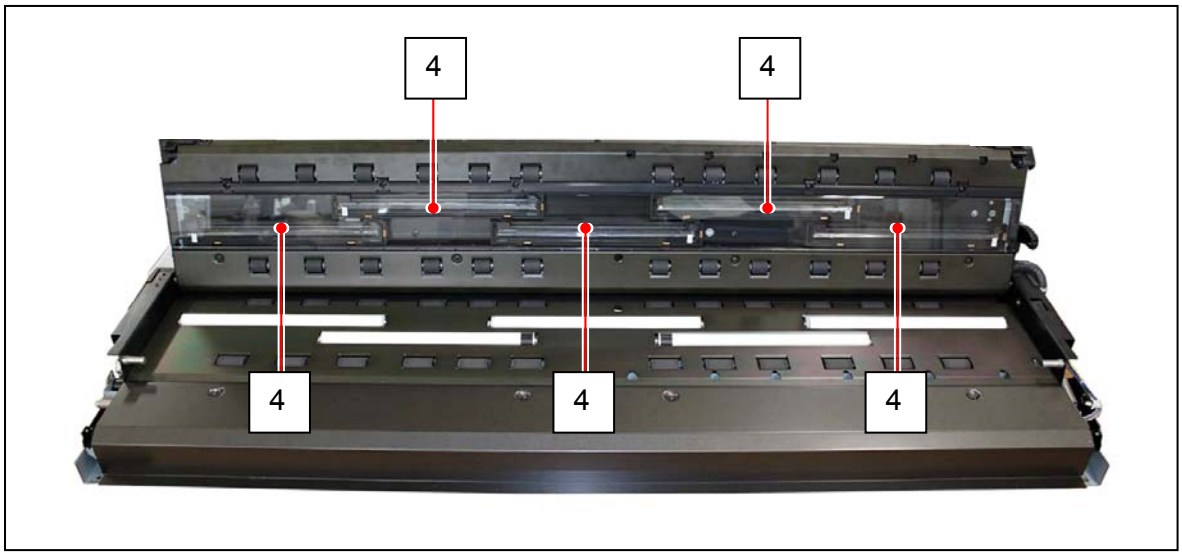
4. 2. 11 Scanner Unit

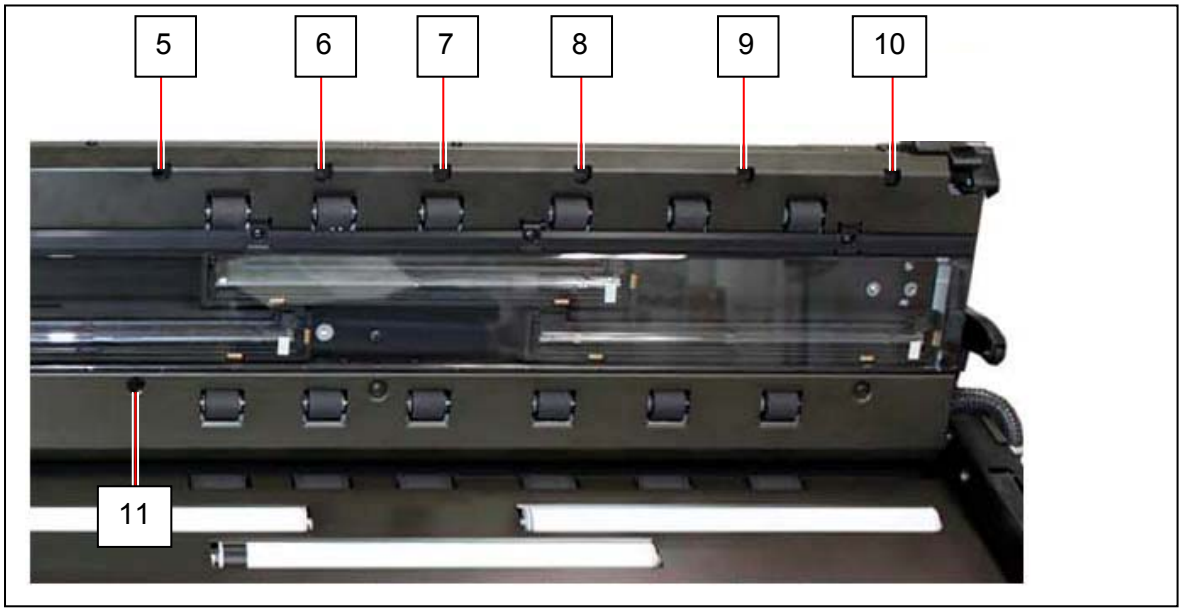


Item	Symbol	Signal name	Name	Type	Function
1	PW12930-01		LED DISPLAY BOAD ASSY	PW12930-01	Indicates the scanner's status. **green**: Ready **green** to-and-fro: Scanning **red**: Error **red** flashing: Cover Open, Jam
2	PW12975-01		SW CONTROL BOARD ASSY	PW12975 01	Has 2 switches for user Intervention "Stop/Eject" and "Start".

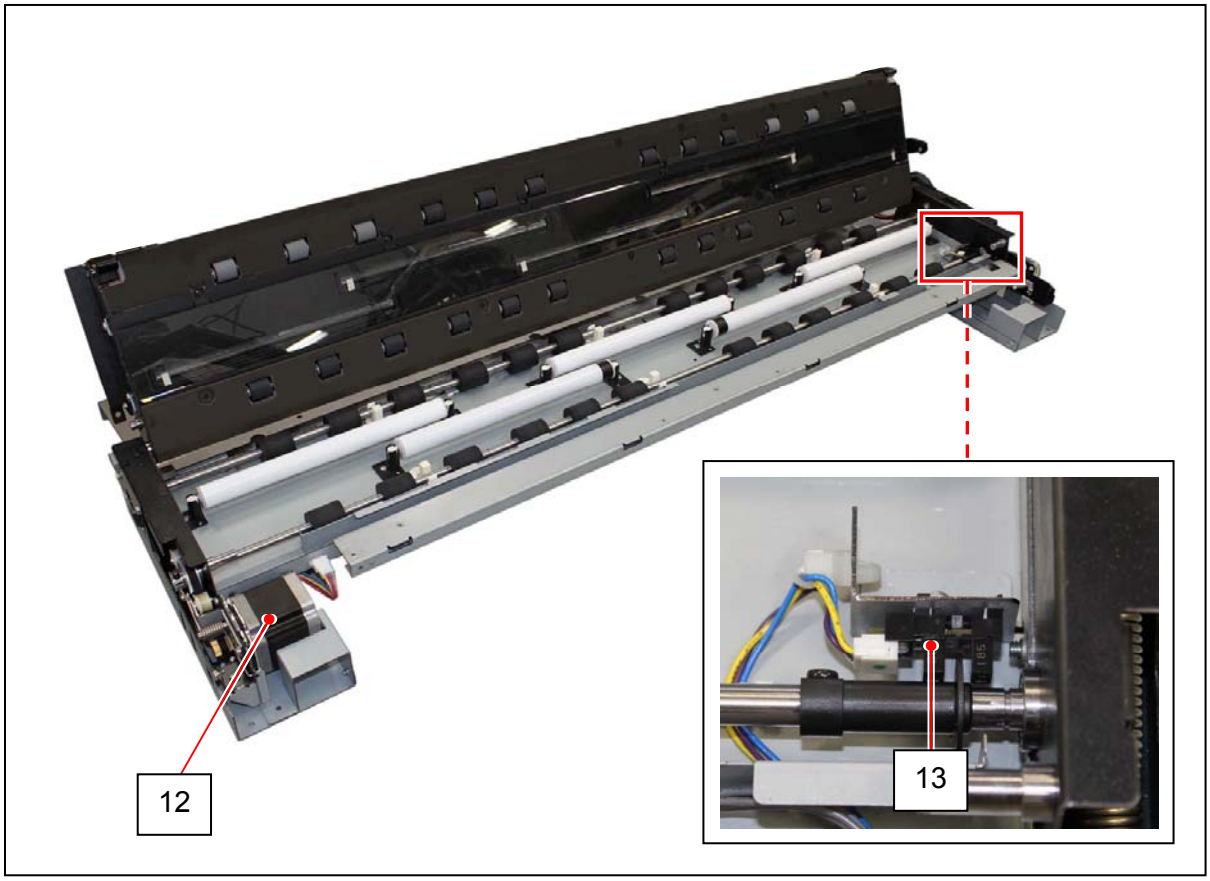


Item	Symbol	Signal name	Name	Type	Function
3	PW12920		D CON (Data Controller PCB)	PW12920-02	Converts the analog data sent by CIS into digital data. Then takes some image processes to the digital data and sends it to KIP Printer via USB cable.
4	S_PH8		Sensor	LG248BL1	Detects whether Upper Unit is opened.





Item	Symbol	Signal name	Name	Type	Function
4			CIS Sensor	FL06G-W07	Reads the image of original, and then send the analog data to D CON (Data Controller PCB).
5	S_PH1		Sensor	PS122GD4-A	Detects the original to be inserted. Detects original width A4 (Portrait)
6	S_PH2		Sensor	PS122GD4-A	Detects original widths A4 (Landscape), A3, 11” and 12”.
7	S_PH3		Sensor	PS122GD4-A	Detects original widths A2, 17” and 18”.
8	S_PH4		Sensor	PS122GD4-A	Detects original widths A1, 22” and 24”.
9	S_PH5		Sensor	PS122GD4-A	Detects original widths A0, 30”, 34”.
10	S_PH6		Sensor	PS122GD4-A	Detects original widths 36”.
11	S_PH7		Sensor	PS122GD4-A	Detects the original mis-feed.



Item	Symbol	Signal name	Name	Type	Function
12	M6		Motor	103H7123-5746	Transports the original.
13	S_PH9		Sensor	LG248BL1	Detects rotations of FEED ROLLER

4. 3 Check & Adjustment of Analog Output from HV Power Supply

4. 3. 1 Situations necessary to check the analog output

It is necessary to check the analog output from High Voltage Power Supply after replacing the following parts.

PW13420 PCB (DC Controller)
HV Power Supply PCB (EUK1MGA60HA)

Please check the analog output for each of the following part, and please adjust if it is out of the specified range.
Each “Reference page” in the list shows how to check and adjust each item.

Check Item	Reference page
Analog Voltage to the Image Corona	4-30
Analog Voltage to the Transfer Corona	4-32
AC Component to the Separation Corona	4-34
DC Component to the Separation Corona	4-36
Negative Developer Bias to the Developer Roller	4-38
Positive Developer Bias to the Developer Roller	4-40
Bias gap between Developer Roller and Regulation Roller	4-42
Positive Cleaning Roller Bias (Print Cycle)	4-44
Negative Cleaning Roller Bias (Toner Collection Process)	4-46

Reference

Please try to replace the PW13420 PCB or HV Power Supply PCB if you have the following kinds of problem.

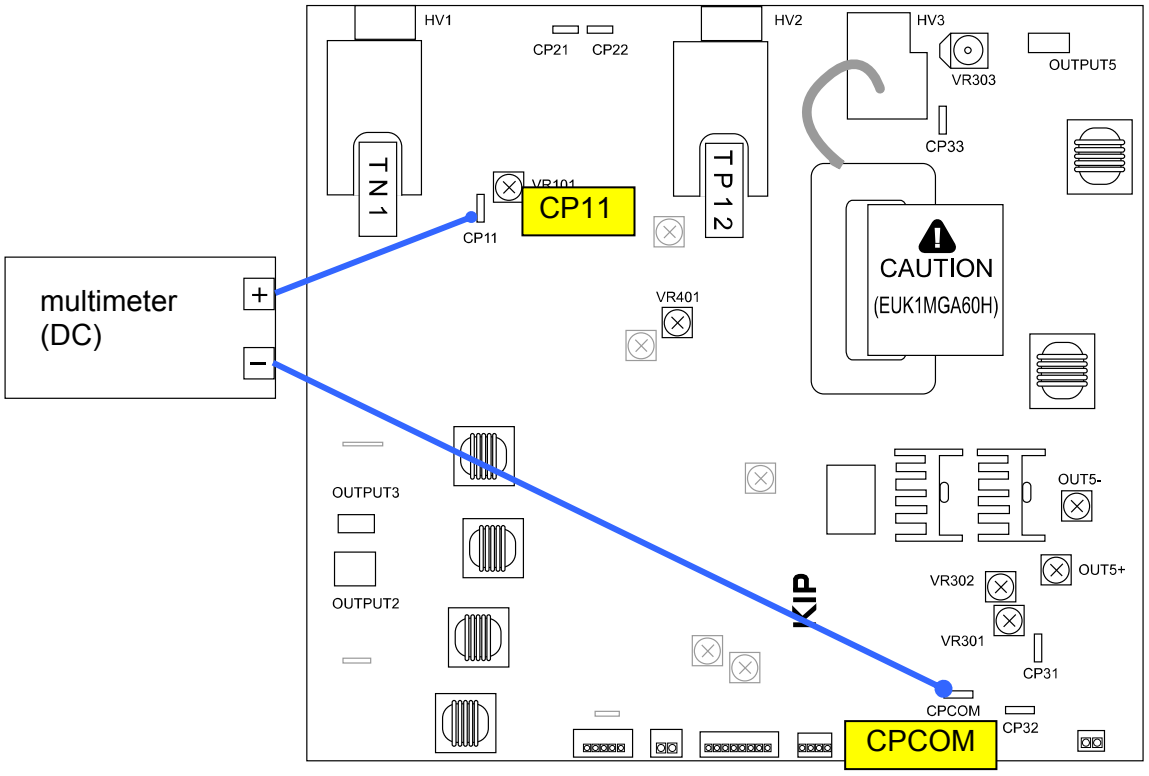
PW13420 PCB
(1) When the UI indicates abnormal indication although the UI has no problem.
(2) When the electric component such as motor or lamp does not work properly although such component has no problem.

HV Power Supply PCB (EUK1MGA60HA)
When the output to Image Corona / Transfer Corona / Separation Corona / Developer Roller / Toner Supply Roller / Regulation Roller / Cleaning Roller is abnormal.

4. 3. 2 Analog Voltage to Image Corona

The standard value of the voltage outputted from the HV Power Supply PCB to the Image Corona is **1.30 +/-0.05V**.
Check and adjust the output current in the following way.

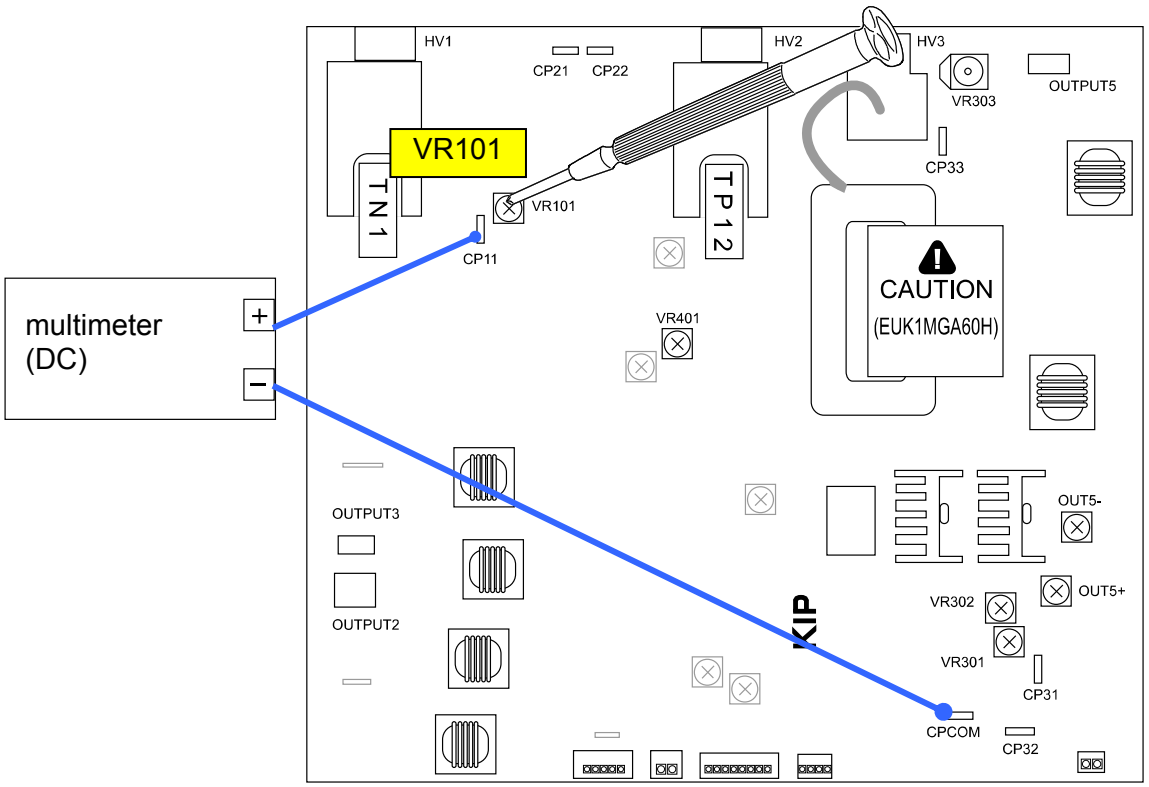
1. Connect the “+” cable of the multi-meter to the “CP11” pin on the HV Power Supply PCB (EUK1MGA60HA).
   Also connect the “-” one to the “CPCOM”.
   And then, select the DC volt range on the multi-meter.



2. Make a Test Print making reference to [8. 3 Pattern Print] .
   As the high voltage is supplied to the Image Corona during the Test Print, check the voltage with the multi-meter.

   Standard value of the output voltage to the Image Corona is **1.30 +/-0.05V**.

3. Adjust the output voltage if it does not satisfy **1.30 +/-0.05V**.
   To adjust it, rotate the VR101 with a screwdriver.



4. 3. 3 Analog Voltage to Transfer Corona

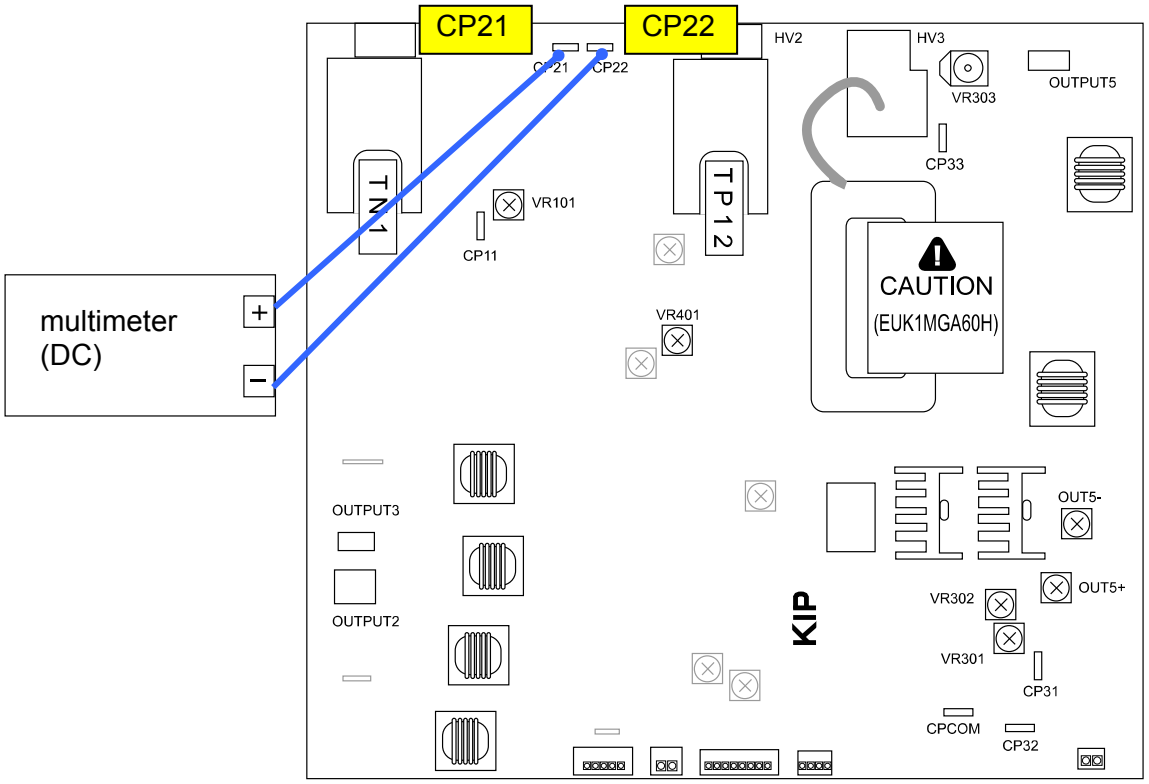
The standard value of the voltage outputted from the HV Power Supply PCB to the Transfer Corona is specified to each type of paper as follows.

Plain paper	**1.20 +/-0.05V**
Tracing paper	**1.00 +/-0.05V**
Film	**1.00 +/-0.05V**

Check and adjust the output current in the following way.

> **NOTE**
>
> The above values are just the standard values we have adjusted at the time of shipment.
> Of course you may change these values according to the usage condition.

1. Connect the “+” cable of the multi-meter to the “CP21” pin on the HV Power Supply PCB (EUK1MGA60HA).
   Also connect the “-” one to the “CP22” pin.
   And then, select the DC volt range on the multi-meter.



2. Select the Test Print Mode, and make a test print using each type of paper (plain paper, tracing paper & Film) making reference to [8. 3 Pattern Print].

   As the high voltage is supplied to the Transfer Corona during the Test Print, check the voltage with the multi-meter.

   Standard values of the output voltages to the Transfer Corona are:
   - Plain paper ..... **1.20 +/-0.05V**
   - Tracing paper ..... **1.00 +/-0.05V**
   - Film ..... **1.00 +/-0.05V**

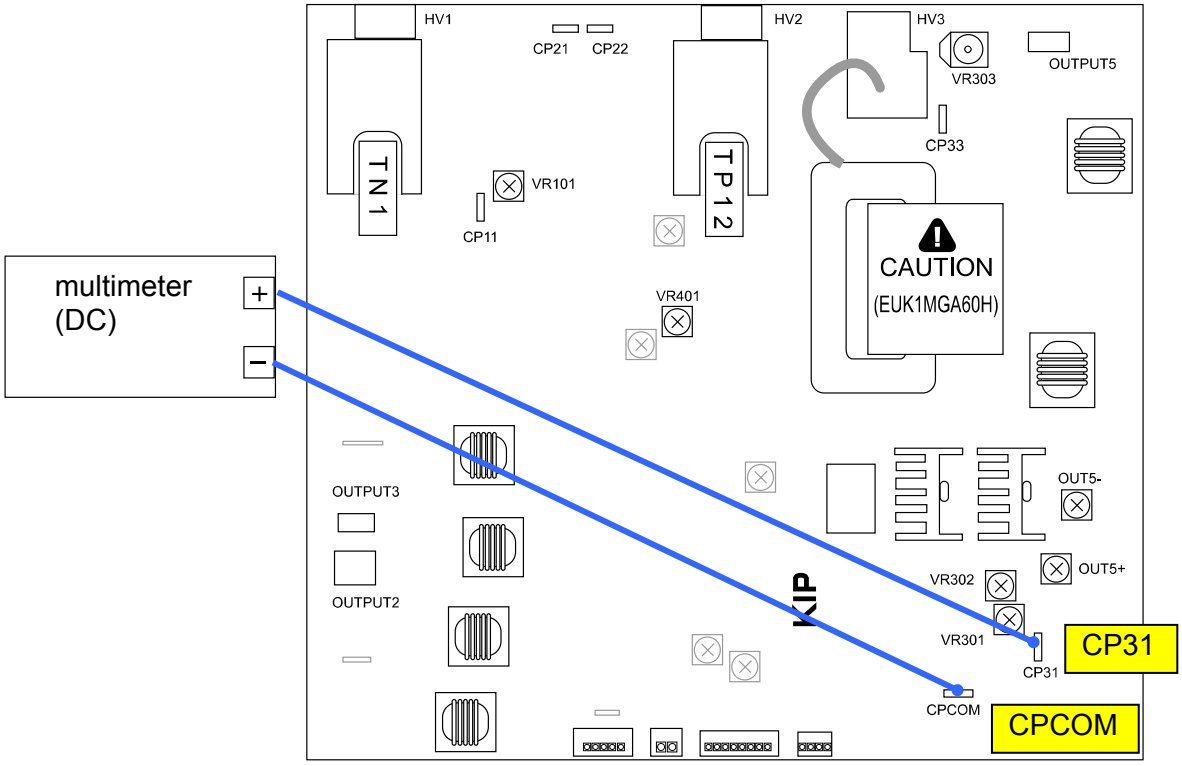
3. Adjust the output voltage if it does not satisfy the above specifications.
   Select the Adjustment Mode, select each of following Sub Mode Numbers, and change the setting value so that the output voltage satisfies the above specifications.
   Refer to [8.4.3.13 Transfer Voltage (No.029 to 034)] for the detail.

Sub Mode No.	Contents
029	Transfer Voltage (Plain paper)
030	Transfer Voltage (Tracing paper)
031	Transfer Voltage (Film)
032	Transfer Voltage (Plain paper : Special)
033	Transfer Voltage (Tracing paper : Special)
034	Transfer Voltage (Film : Special)

4. 3. 4 AC Component to Separation Corona

The standard value of the AC Component outputted from the HV Power Supply PCB to the Separation Corona is **5.00 +/-0.05V**.
Check and adjust the AC Component in the following way.

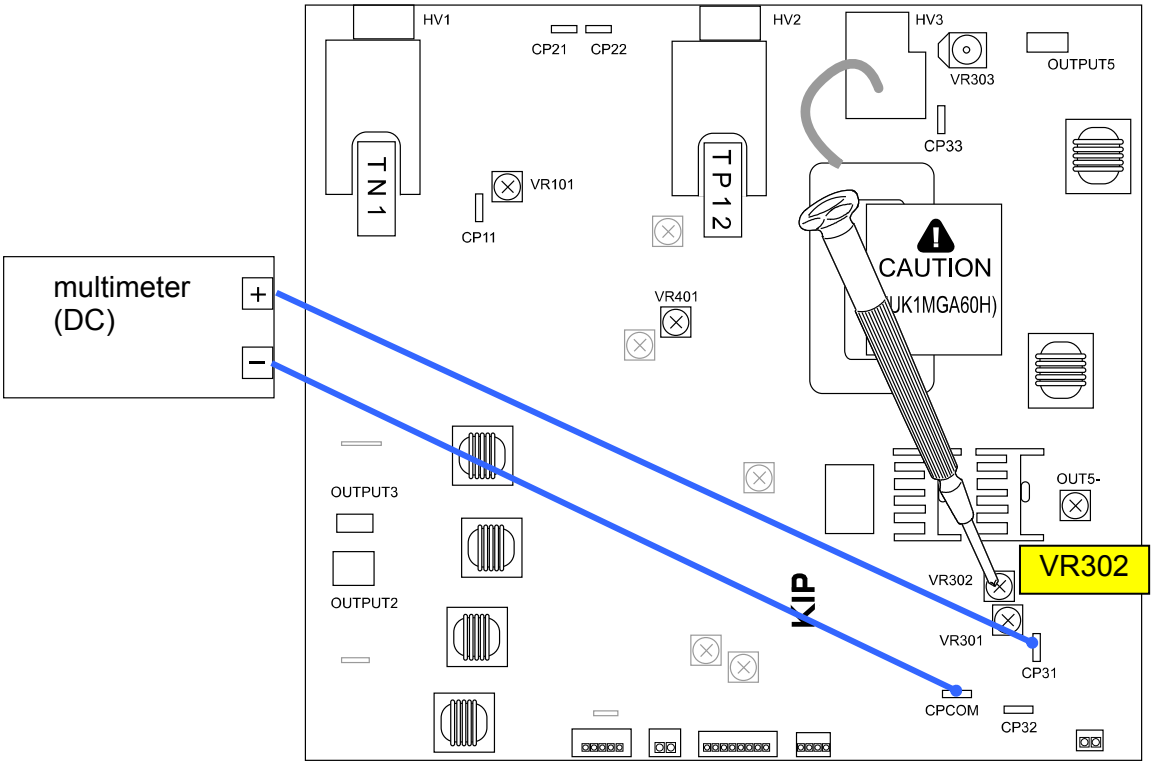
1. Connect the “+” cable of the multi-meter to the “CP31” pin on the HV Power Supply PCB (EUK1MGA60HA).
   Also connect the “-” one to the “CPCOM” pin.
   And then, select the DC volt range on the multi-meter.



2. Make a Test Print making reference to [8. 3 Pattern Print].
   As the high voltage is supplied to the Image Corona during the Test Print, check the voltage with the multi-meter.

   Standard value of the AC Component to the Separation Corona is **5.00 +/-0.05V**.

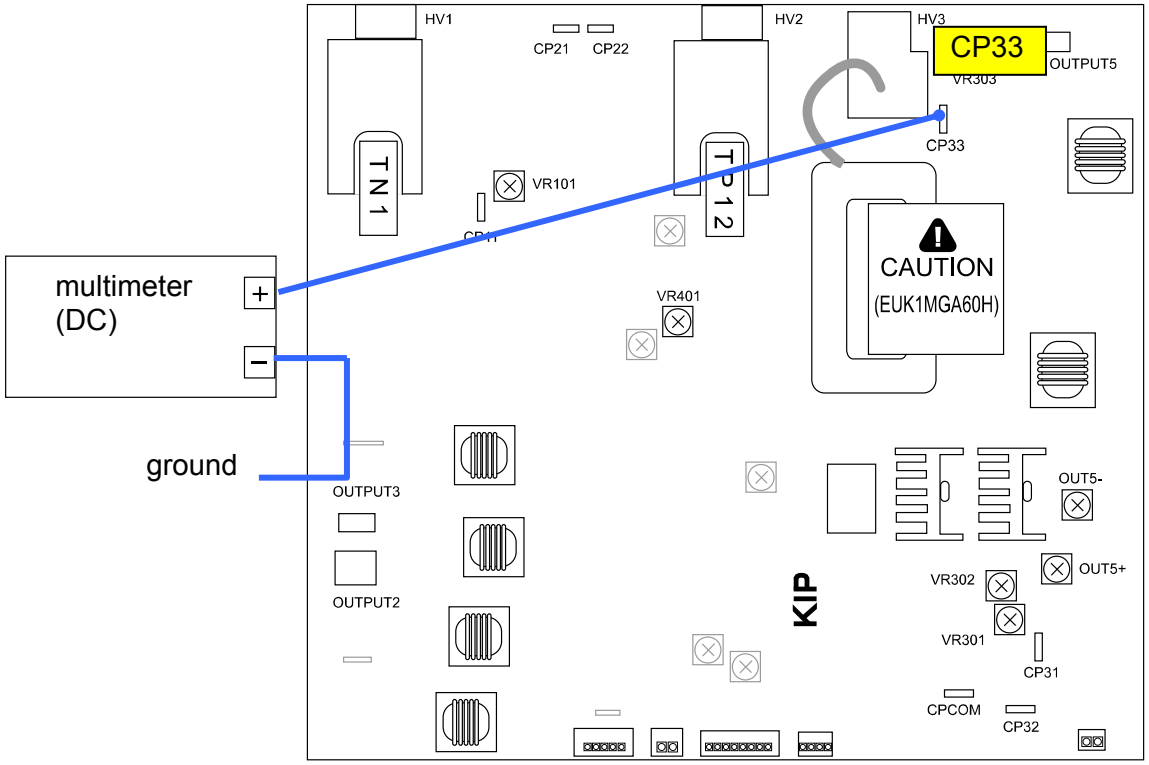
3. Adjust the AC Component if it does not satisfy **5.00 +/-0.05V**.
   To adjust it, rotate the VR302 with a screwdriver.



4. 3. 5 DC Component to Separation Corona

The standard value of the DC Component outputted from the HV Power Supply PCB to the Separation Corona is **-250 +/-5V**.
Check and adjust the DC Component in the following way.

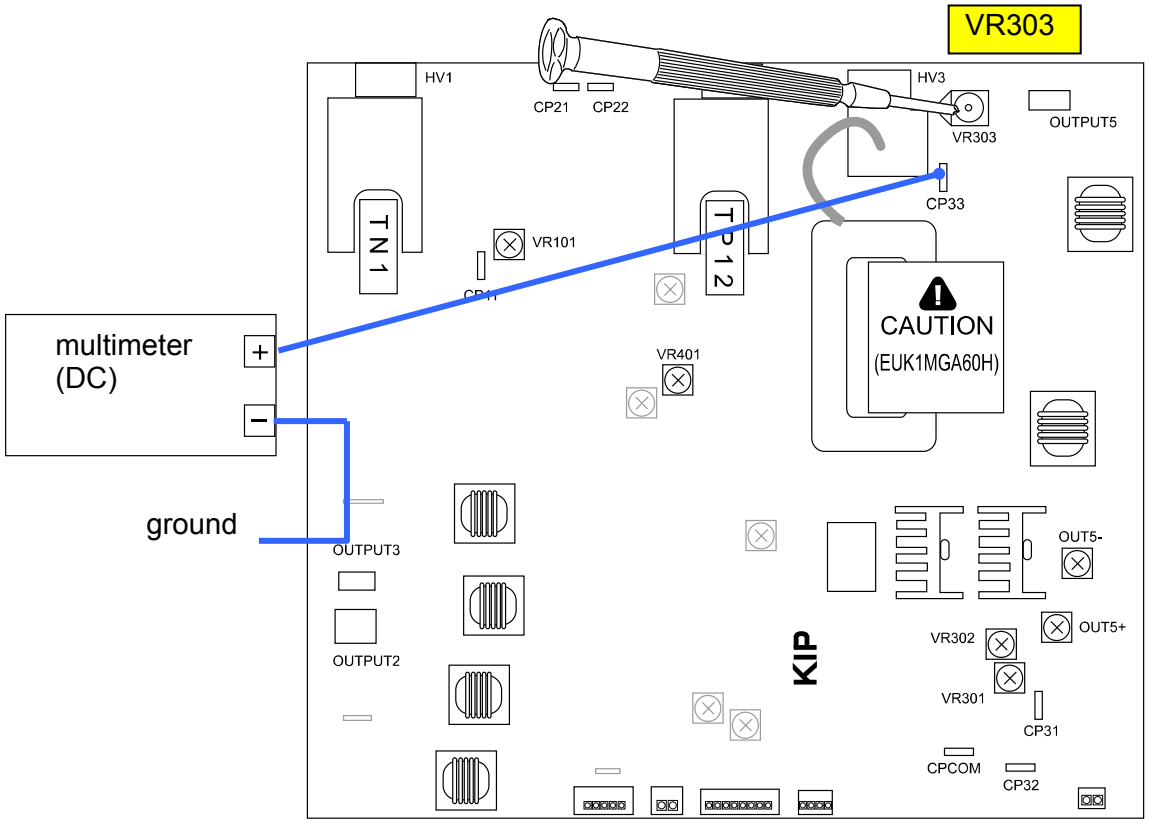
1. Connect the “+” cable of the multi-meter to the “CP33” pin on the HV Power Supply PCB (EUK1MGA60HA).
   Also connect the “-” one to the ground.
   And then, select the DC volt range on the multi-meter.



2. Make a Test Print making reference to [8. 3 Pattern Print].
   As the high voltage is supplied to the Image Corona during the Test Print, check the voltage with the multi-meter.

   Standard value of the DC Component to the Separation Corona is **-250 +/-5V**.

3. Adjust the DC Component if it does not satisfy **-250 +/-5V**.
   To adjust it, rotate the VR303 with a screwdriver.



4. 3. 6 Negative Developer Bias to Developer Roller

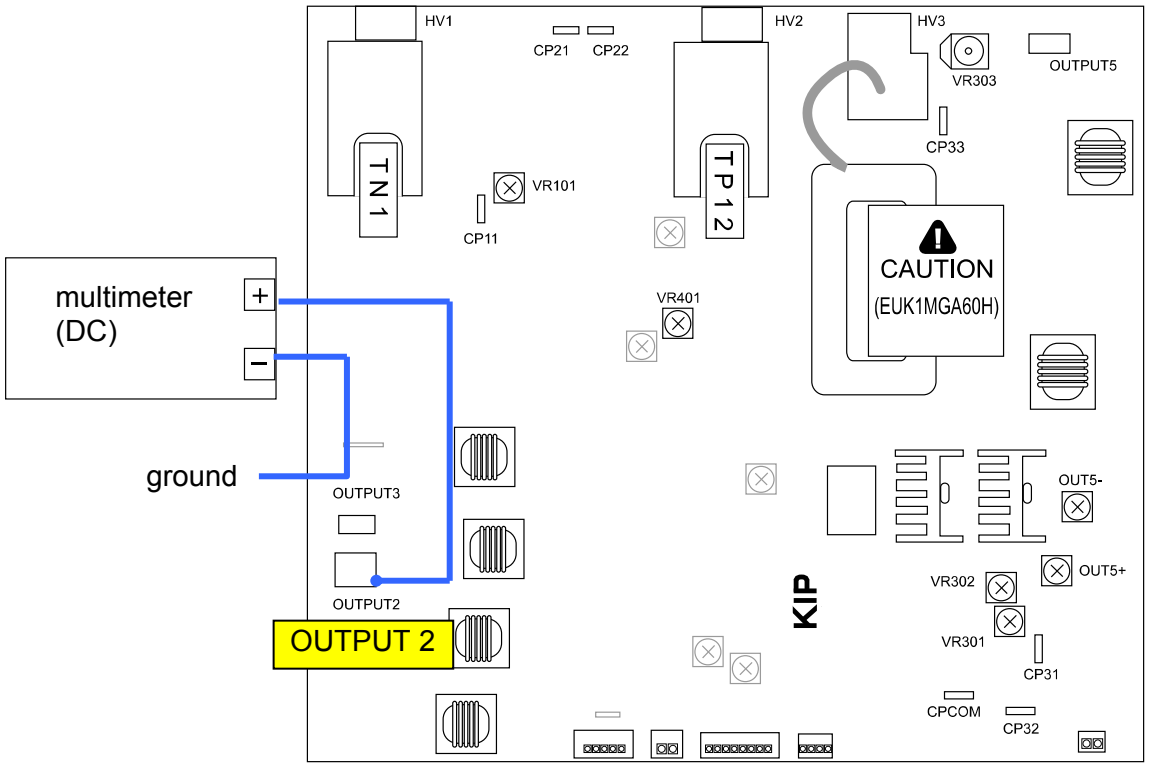
The Negative Developer Bias means the voltage supplied to the Developer Roller during the Print Cycle.
The standard value of the Negative Developer Bias is as follows for each type of paper.

Plain paper	**-180 +/-5V against the ground (-200 +/-5V : CND Model)**
Tracing paper	**-180 +/-5V against the ground (-200 +/-5V : CND Model)**
Film	**-180 +/-5V against the ground (-200 +/-5V : CND Model)**

Check and adjust the Negative Developer Bias in the following way.

> **⚠ NOTE**
>
> The above values are just the standard values we have adjusted at the time of shipment.
> Of course you may change these values according to the usage condition.

1. Connect the “+” cable of the multi-meter to the “OUTPUT2” pin on the HV Power Supply PCB (EUK1MGA60HA).
   Also connect the “-” one to the ground.
   And then, select the DC volt range on the multi-meter.



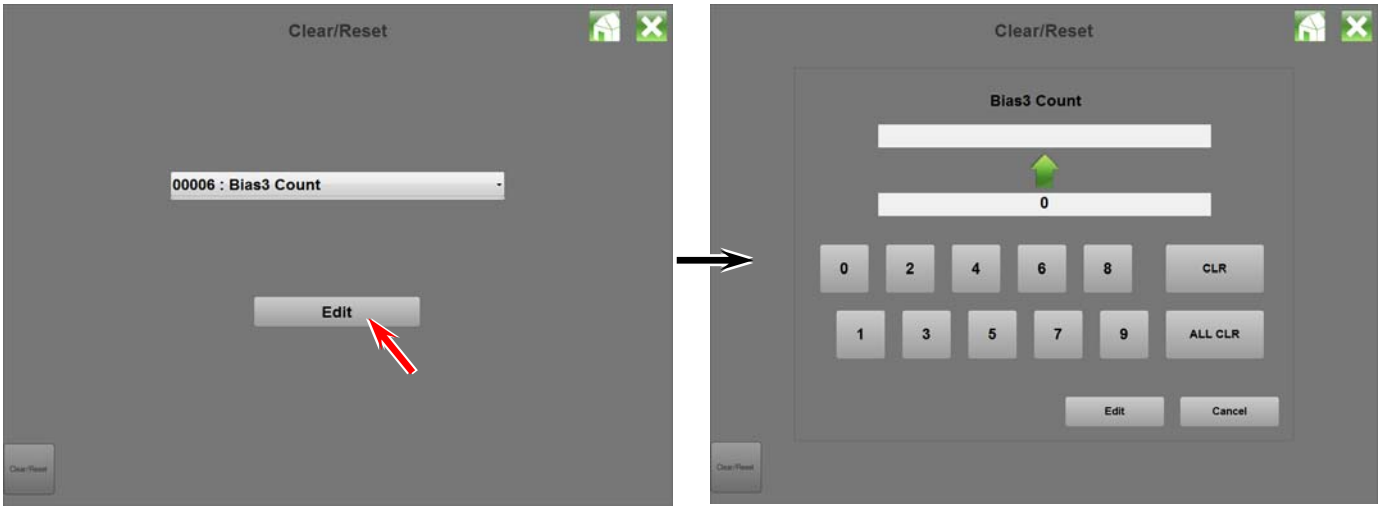
2. Make a Test Print making reference to [8. 3 Pattern Print].
As the Negative Developer Bias is supplied to the Developer Roller during the Test Print, check the voltage with the multi-meter.
The standard value of the Negative Developer Bias for each type of media is:

Plain paper ..... **-180 +/-5V against the ground (-200 +/-5V : CND Model)**
Tracing paper ..... **-180 +/-5V against the ground (-200 +/-5V : CND Model)**
Film ..... **-180 +/-5V against the ground (-200 +/-5V : CND Model)**

If the above values are not satisfied, go to the next step.

3. If the value (voltage) is -230 +/- 5V, Developer Bias may be automatically adjusted by Density Compensation Process.
(As the CND model machine does not use "Density Compensation Process", it is set as "OFF".)

Enter [Clear/Reset] → "0006 Bias3 Count".



The voltage "-230V +/- 5V" is correct when the value shows "1" / "2" / "3".

current Auto Adjustment Level	Supposed Developer Bias
0	-180 +/-5V
1 / **2** / **3**	-230 +/-5V

Refer to [8.11.3 Reset of Bias Adjustment by Density Compensation Process] for checking the current Auto Adjustment Level.
If not satisfied, go to the next step for manual Developer Bias adjustment.

4. Select the Adjustment Mode, select each of following Sub Mode Numbers, and change the setting value so that the output voltage satisfies **-180 +/-5V (CND Model : -200V) against the ground**.
Refer to [8.4.3.11 Developer Bias (No.022 to 027)] for the detail.

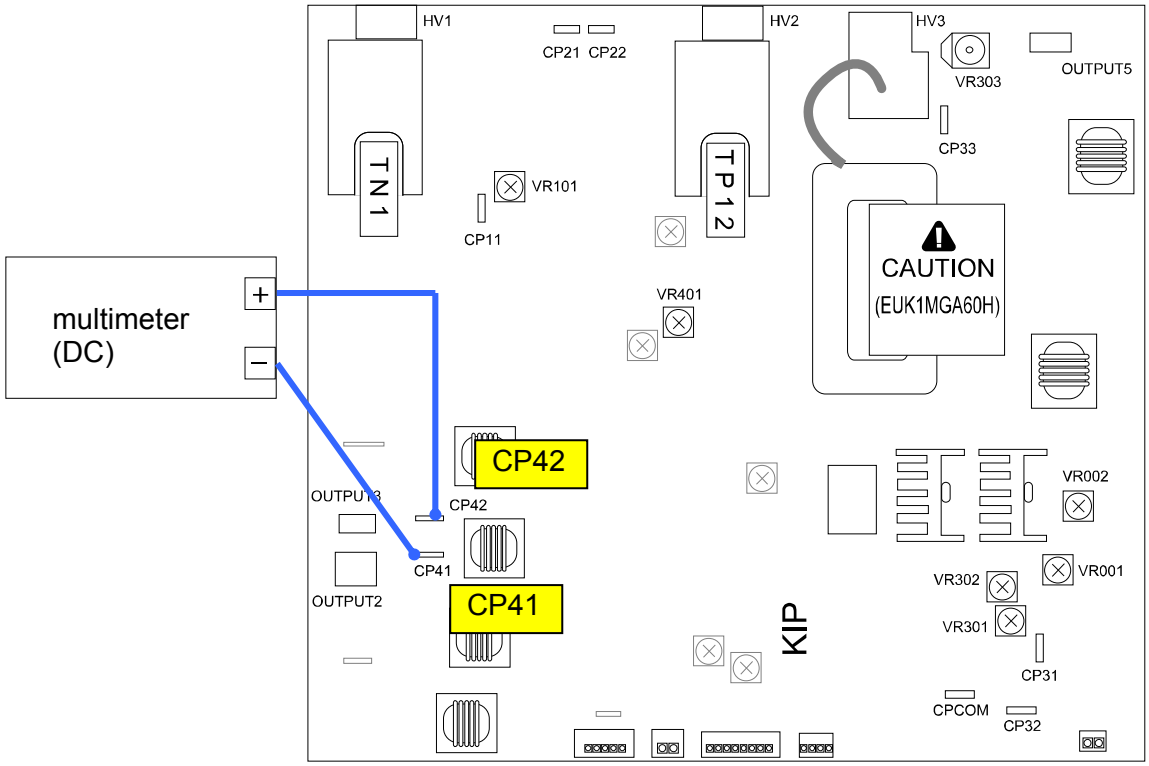
Sub Mode No.	Contents
022	Developer Bias (Plain paper)
023	Developer Bias (Tracing paper)
024	Developer Bias (Film)
025	Developer Bias (Plain paper : Special)
026	Developer Bias (Tracing paper : Special)
027	Developer Bias (Film : Special)

4. 3. 7 Positive Developer Bias to Developer Roller

The Positive Developer Bias means the voltage supplied to the Developer Roller during the Cleaning Cycle.
The standard value of the Positive Developer Bias is **0.350 +/-0.005V against the CP42**.

Check and adjust the Negative Developer Bias in the following way.

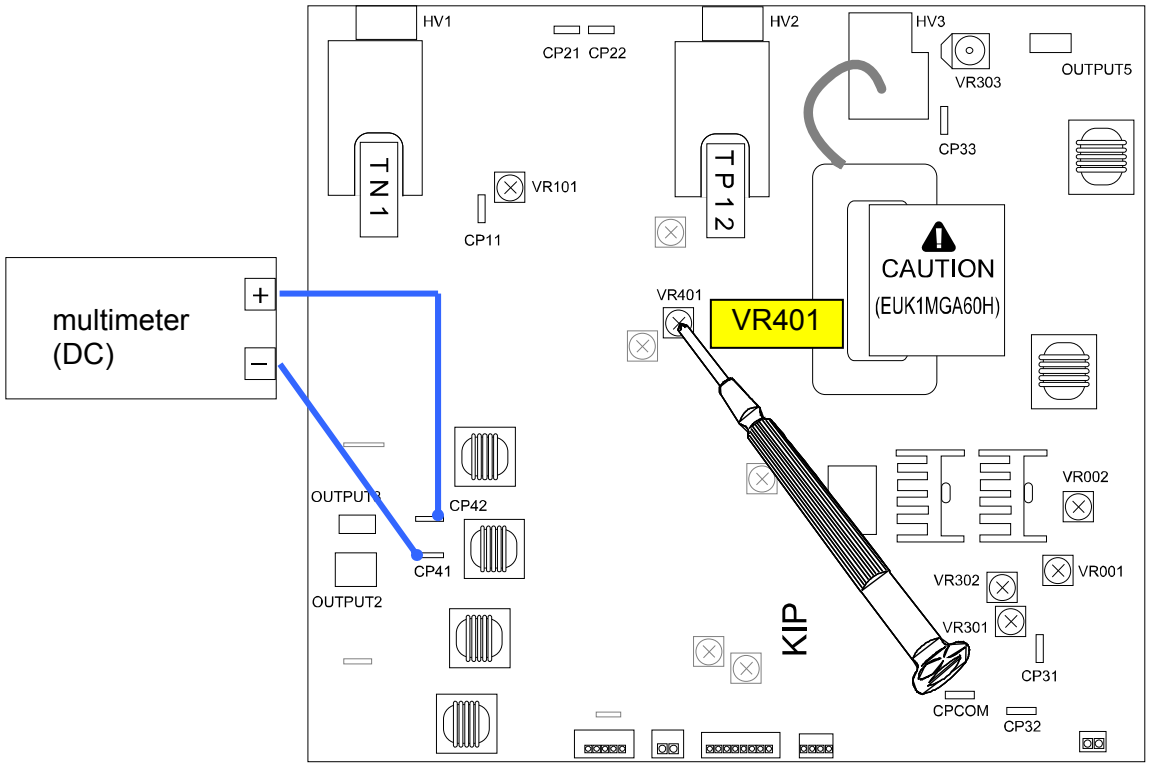
1. Connect the “+” cable of the multi-meter to “CP41” pin on the HV Power Supply PCB (EUK1MGA60HA).
   Also connect the “-” one to “CP42”.
   And then, select the DC volt range on the multi-meter.



2. Make a Test Print making reference to [8. 3 Pattern Print].
   The Positive Developer Bias is supplied to the Developer Roller for some seconds after the printed paper has been ejected.
   Check the voltage with the multi-meter during that period.

   The standard value of the Positive Developer Bias is **0.350 +/-0.005V against the CP42**.
   If this is not satisfied, go to the next step for the adjustment.

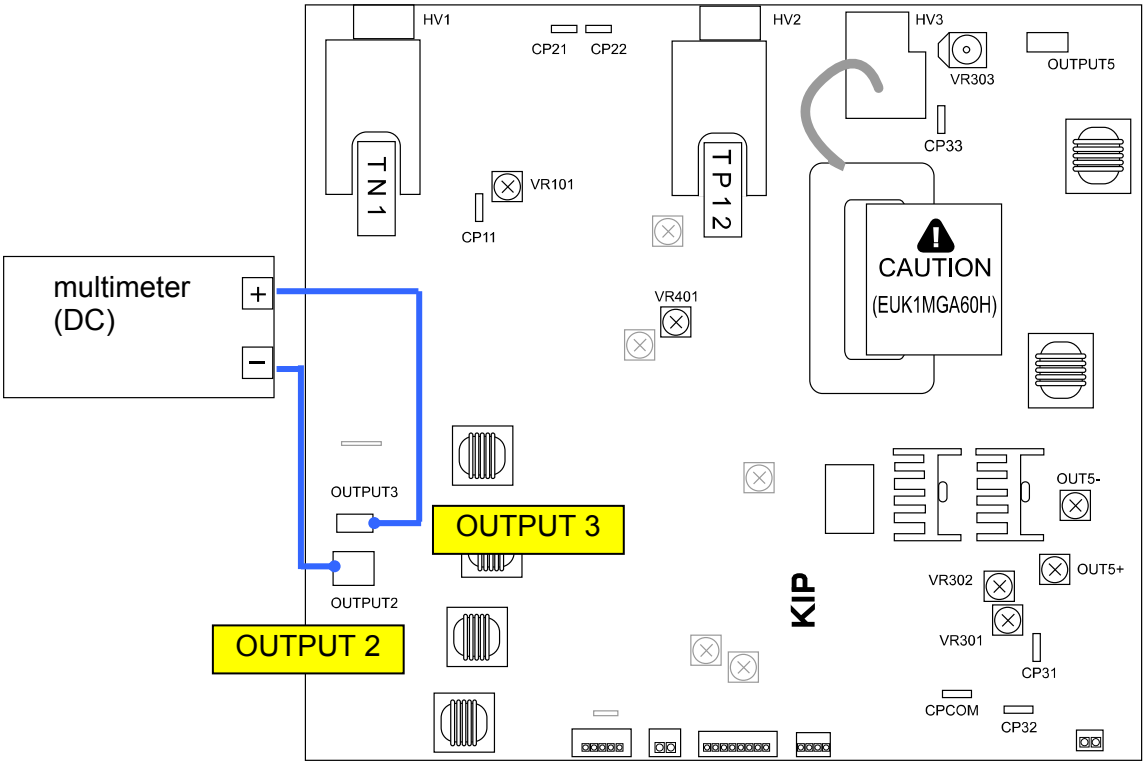
3. Adjust the Positive Developer Bias rotating the VR401, so that it should satisfy **0.350 +/-0.005V against the CP42**.



4. 3. 8 Bias gap between Developer Roller and Regulation Roller

The standard value of the Bias gap between Developer Roller and Regulation Roller is **80 +/-5V**.
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 (EUK1MGA60HA).
   Also connect the “-” one to the “OUTPUT2” pin.
   And then, select the DC volt range on the multi-meter.



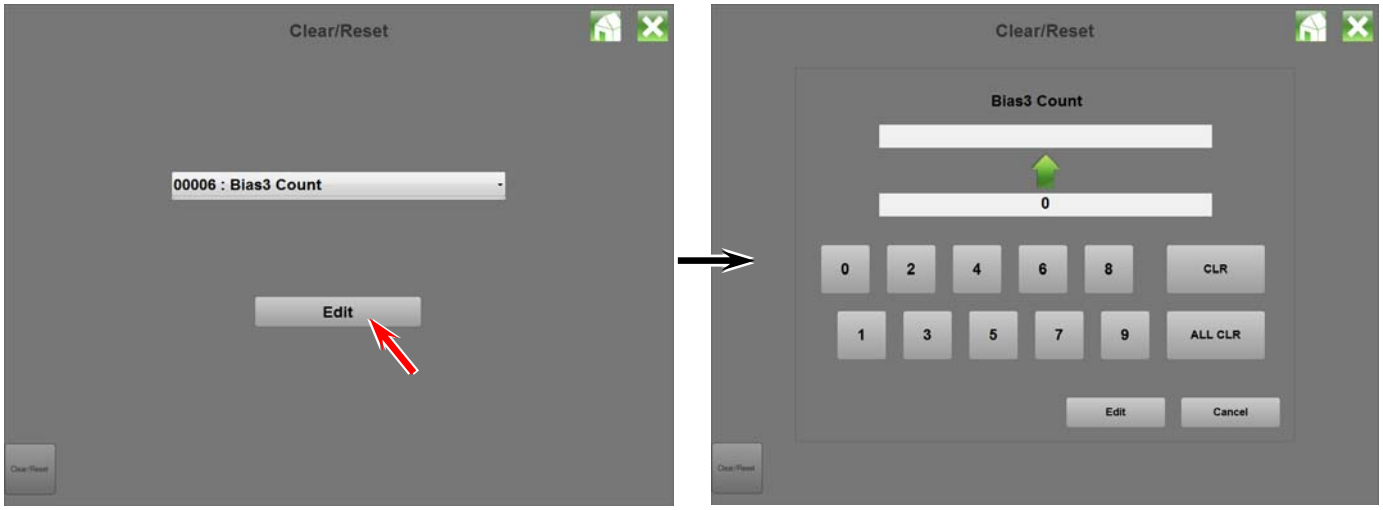
2. Make a Test Print making reference to [8. 3 Pattern Print].
   As the Bias is supplied to both the Developer Roller and the Regulation Roller, check the Bias gap between them with the multi-meter.

   The standard value of the Bias gap between Developer Roller and Regulation Roller is **80 +/-5V**.

   If the above value is not satisfied, go to the next step 3 for the adjustment.

3. If the value (voltage) is “120 +/-5V” or “160 +/- 5V”, Regulation Bias may be automatically adjusted by Density Compensation Process.
(As the CND model machine does not use “Density Compensation Process”, it is set as “OFF”.)

Enter [Clear/Reset] → “0006 Bias3 Count”.



The voltage “120V +/- 5V” is correct when the value shows “2”.
The voltage “160V +/- 5V” is correct when the value shows “3”.

current Auto Adjustment Level	Supposed Bias Gap
0 / **1**	80 +/-5V
2	120 +/-5V
3	160 +/-5V

Refer to [8.11.3 Reset of Bias Adjustment by Density Compensation Process] for checking the current Auto Adjustment Level.

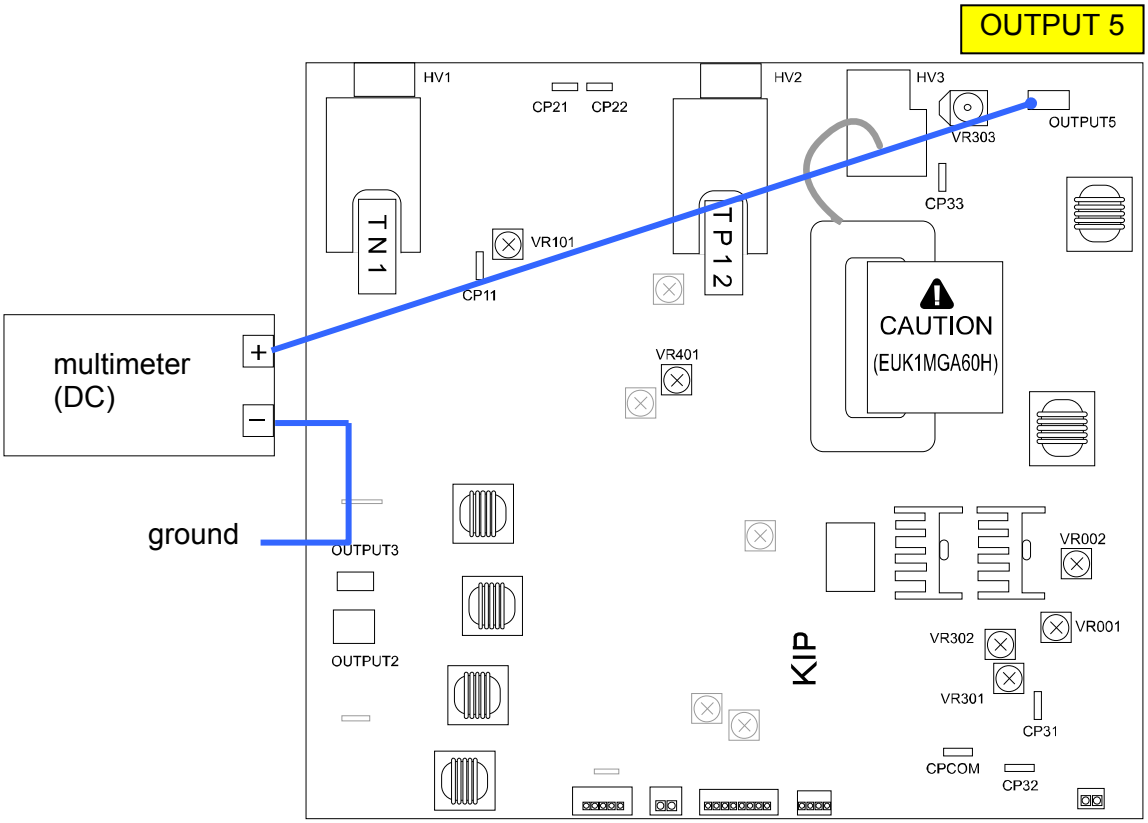
If not satisfied, go to the next step for manual Regulation Bias adjustment.

4. Select the Adjustment Mode, select Sub Mode No. 622, and change the value so that the output voltage satisfies **80 +/-5V**.
Refer to [8. 4.3.100 Regulation Bias (No.622)] for the detail.

4. 3. 9 Positive Cleaning Roller Bias (Print Cycle)

The Positive Cleaning Roller Bias means the voltage supplied to the Cleaning Roller during the Print Process.
The standard value of the Positive Cleaning Roller Bias is **+450 +/-5V**.
Check and adjust it in the following way.

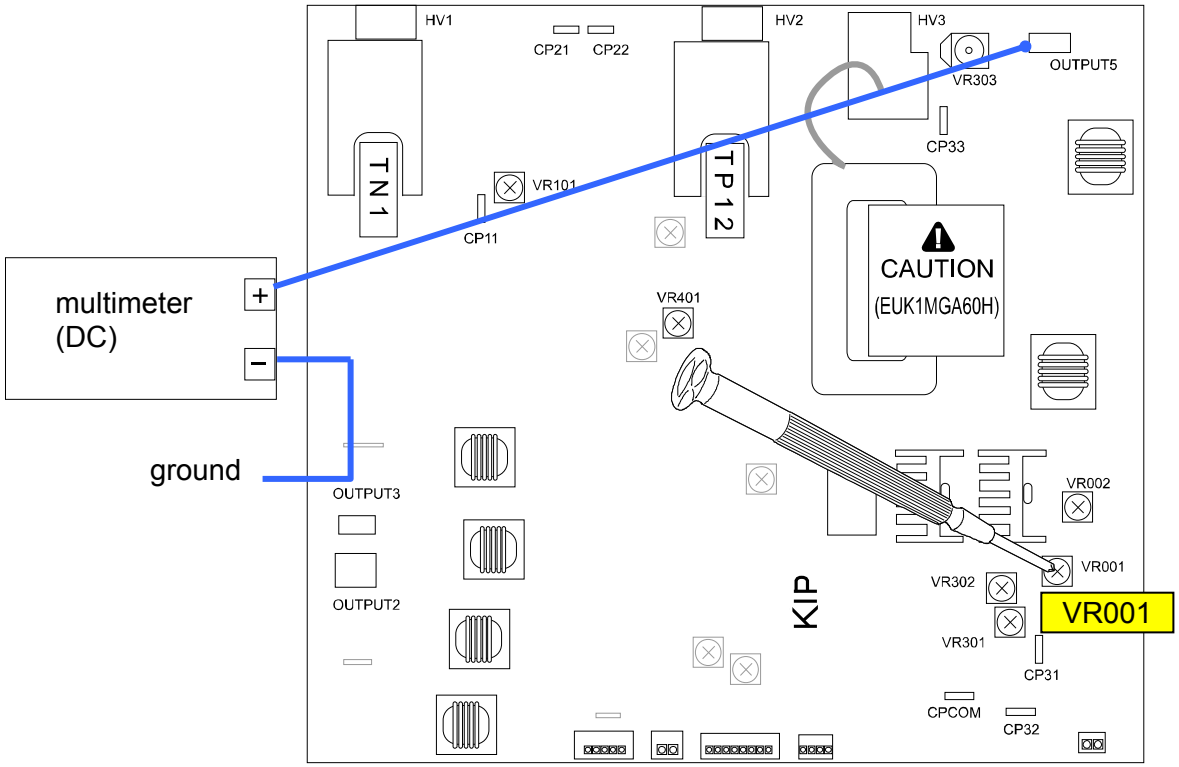
1. Connect the “+” cable of the multi-meter to the “OUTPUT 5” pin on the HV Power Supply PCB
   Also connect the “-” one to the ground.
   And then, select the DC volt range on the multi-meter.



2. Make a Test Print making reference to [8. 3 Pattern Print].
   As the Positive Cleaning Roller Bias is supplied during the Test Print, check the voltage value with the multi-meter.

   Standard value of the Positive Cleaning Roller Bias is **+450 +/-5V**.

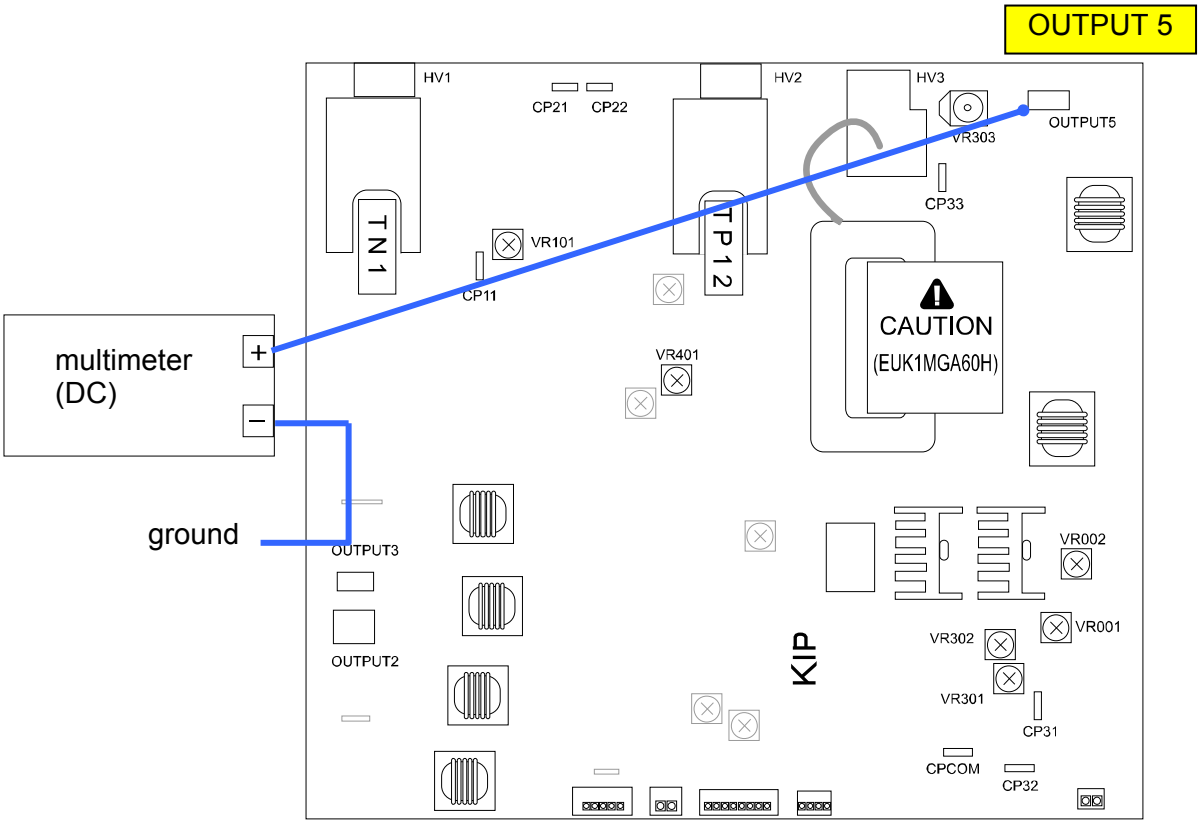
3. Adjust the Positive Cleaning Roller Bias if it does not satisfy **+450 +/-5V**.
   To adjust it, rotate the VR001 with a screwdriver.



4. 3.10 Negative Cleaning Roller Bias (Toner Collection Process)

The Negative Cleaning Roller Bias means the voltage supplied to the Cleaning Roller during the Toner Collection Process, which is done after the completion of Print Process.
The standard value of the Negative Cleaning Roller Bias is **-550 +/-5V**.
Check and adjust it in the following way.

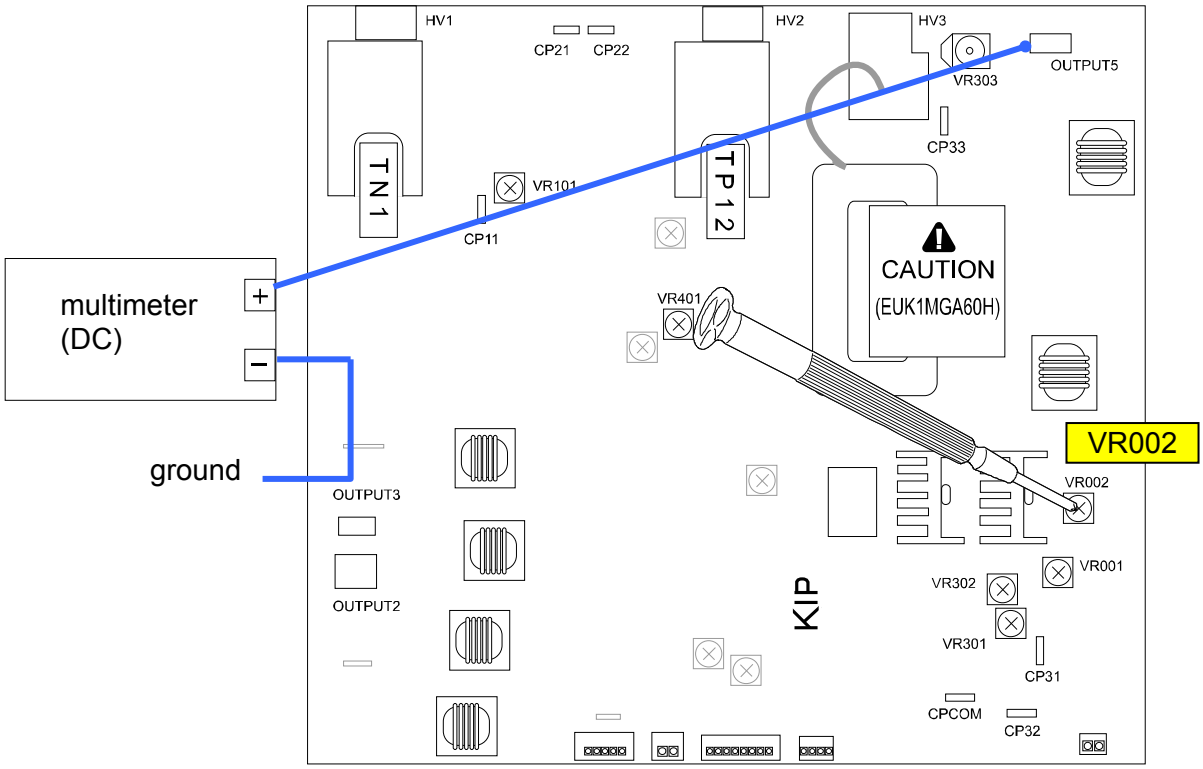
1. Connect the "+" cable of the multi-meter to the "OUTPUT 5" pin on the HV Power Supply PCB
   Also connect the "-" one to the ground.
   And then, select the DC volt range on the multi-meter.



2. Make a Test Print making reference to [8. 3 Pattern Print].
   The Toner Collection Process works for some seconds after the printed paper has been ejected.
   Check the voltage value with the multi-meter during that period.

   Standard value of the Negative Cleaning Roller Bias is **-550 +/-5V**.

3. Adjust the Negative Cleaning Roller Bias if it does not satisfy **-550 +/-5V**.
   To adjust it, rotate the VR002 with a screwdriver.



Chapter 5

Mechanical

page

5. 1 Outer Covers 5- 1
5. 1. 1 Removal of Side Covers 5- 1
5. 1. 2 Removal of Cover 15 ..... 5- 3
5. 1. 3 Removal of Top Cover 5- 4

5. 2 Developer Unit 5- 6
5. 2. 1 Removal of the Developer Unit 5- 6
5. 2. 2 Replacement of Recommended Periodic Replacement Parts 5- 9
5. 2. 3 Replacement of Roller Supply 5- 41
5. 2. 4 Replacement of Screw Assy 5- 44
5. 2. 5 Replacement of DC Motor 5- 52
5. 2. 6 Replacement of Sensor (TLS1) 5- 54
5. 2. 7 Replacement of KNC PCB 5- 55
5. 2. 8 Adjustment of the space between gears
(Necessary to adjust after replacing the Developer Unit) 5- 57
5. 2. 9 Readjustment of the pressure of Regulation Roller 5- 63

5. 3 Fuser Unit 5- 79
5. 3. 1 Removal of Fuser Unit 5- 79
5. 3. 2 Reinstallation of Fuser Unit 5- 85
5. 3. 3 Replacement of Recommended Periodic Replacement Parts 5- 87
5. 3. 4 Replacement of Roller Pressure 5-105
5. 3. 5 Fuser Pressure Adjustment (NIP width check) 5-117
5. 3. 6 Replacement of Thermistor (TH1, TH2) 5-118
5. 3. 7 Replacement of Thermostat (TS1, TS2) 5-120
5. 3. 8 Replacement of Exit Sensor (PH3) 5-121

5. 4 Roll Deck ~~5-127~~
5. 4. 1 Replacement of Cutter Assembly 5-127
5. 4. 2 Replacement of Clutches (CL3, CL4, CL5) of Roll 1 5-130
5. 4. 3 Replacement of Clutches (CL6, CL7) of Roll 2 5-132
5. 4. 4 Replacement of Timing Belt 633 5-134
5. 4. 5 Replacement of Timing Belt 453 5-138
5. 4. 6 Replacement of Timing Belt 330 5-140
5. 4. 7 Replacement of Sensors (PH6, PH7, PH9, PH12) 5-141
5. 4. 8 Replacement of Sensors (PH8) 5-144
5. 4. 9 Replacement of Sensors (PH10) 5-146
5. 4.10 Replacement of Dehumidify Heater (Roll 1) 5-148
5. 4.11 Replacement of Dehumidify Heater (Roll 2) 5-151

5. 5 Photoconductive Drum ~~5-155~~
5. 5. 1 Replacement of the Photoconductive Drum 5-155
5. 5. 2 How to fix the Aluminum Blocks 5-164
5. 5. 2. 1 Fixing Block with Drum Block Fix Tool 5-166
5. 5. 2. 2 Fixing Block by hand (w/o Drum Block Fix Tool) 5-172
5. 5. 3 Cleaning of Photoconductive Drum 5-176
5. 5. 4 Replacement of Belt 4 5-177

5. 6 LED Head 5-179
5. 6. 1 Replacement of the LED Head Unit 5-179
5. 6. 2 LED focus adjustment 5-192
5. 6. 2. 1 Check of the Test Pattern Image 5-192
5. 6. 2. 2 Positioning of the Aluminum Blocks 5-193
5. 6. 2. 3 Focus Adjustment with Spacers 5-209
5. 6. 2. 4 Adjustment of density balance among 3 LED blocks (if necessary) 5-215

5. 7 Image Corona 5-216
5. 7. 1 Removal of the Image Corona Unit 5-216
5. 7. 2 Replacement of the Corona Wire 5-223

5. 8 Transfer / Separation Corona 5-228
5. 8. 1 Removal of the Transfer / Separation Corona 5-228
5. 8. 2 Replacement of Corona Wires 5-230

5. 9 Engine Frame 5-233
5. 9. 1 Replacement of DC Motor (M4) and Developer Press Sensor (PH4) 5-233
5. 9. 2 Replacement of Manual Set Sensor (PH5) & Registration Sensor (PH1) 5-237
5. 9. 3 Replacement of Fans (BL5, BL6) 5-239
5. 9. 4 Replacement of Blowers (BL3, BL4) 5-240

5.10 Inner Transport Unit 5-243
5.10. 1 Removal of the Inner Transport Unit 5-243
5.10. 2 Replacement of Sensor (PH2) & Belt 5-244

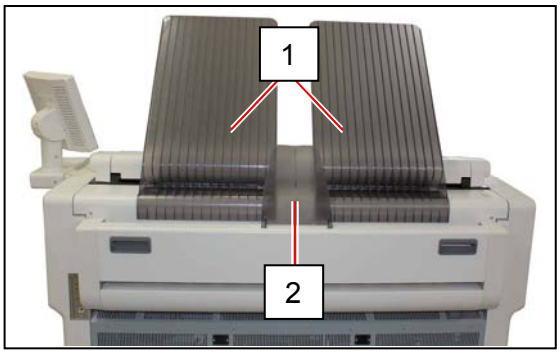
5.11 Main Frame 5-247
5.11. 1 Replacement of DC Motors (M1, M2), Belt8, Belt9, Belt 7 5-247
5.11. 2 Replacement of Clutch (CL1) 5-255
5.11. 3 Replacement of Blower (BL7) 5-259
5.11. 4 Replacement of Fan (BL8) 5-262

5. 12 Scanner Unit 5-263
5. 12. 1 Removal of Scanner Unit 5-263
5. 12. 2 Replacement of Belt 5-270
5. 12. 3 Replacement of Motor Assy 5-276
5. 12. 4 Replacing Sheet Roller (Platen) 5-280
5. 12. 5 Replacing Main Board (PW12920) 5-290
5. 12. 6 Replacing CIS 5-294
5. 12. 7 Replacing Size Sensor & Jam Sensor 5-300
5. 12. 8 Replacing Home Position Sensor 5-309
5. 12. 9 Replacing Open Switch 5-317
5. 12.10 Replacing Emergent Stop Switch 5-327

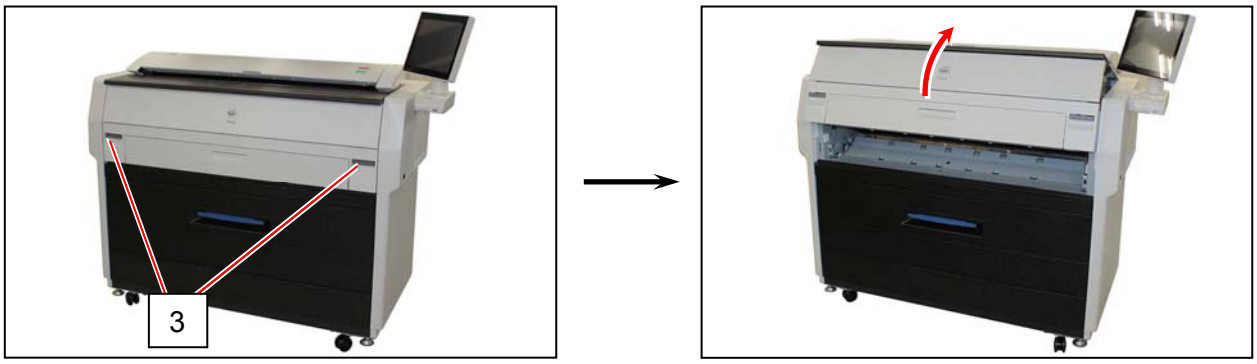
5. 1 Outer Covers

5. 1. 1 Removal of Side Covers

1. Remove 2 pieces of Exit Tray (1) and Exit Tray 2 (2).

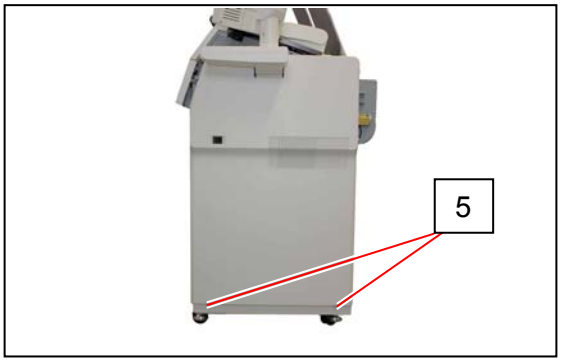


2. Pull up the Lever 2 (3) to open the Engine Unit.

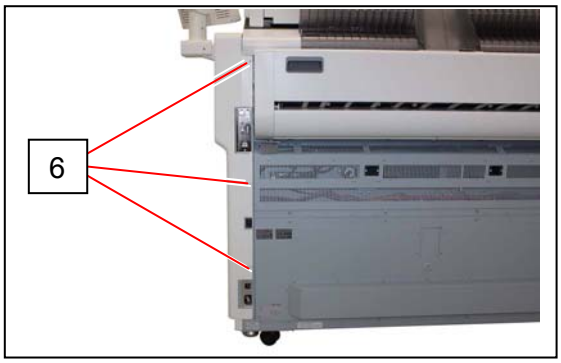


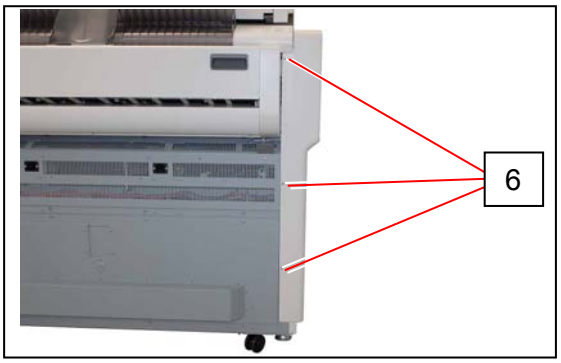
3. Remove the screws (4) at both sides.

4. Remove 4 pieces of screw (5) at both sides.



5. Remove 6 pieces of screw (6) at both sides.

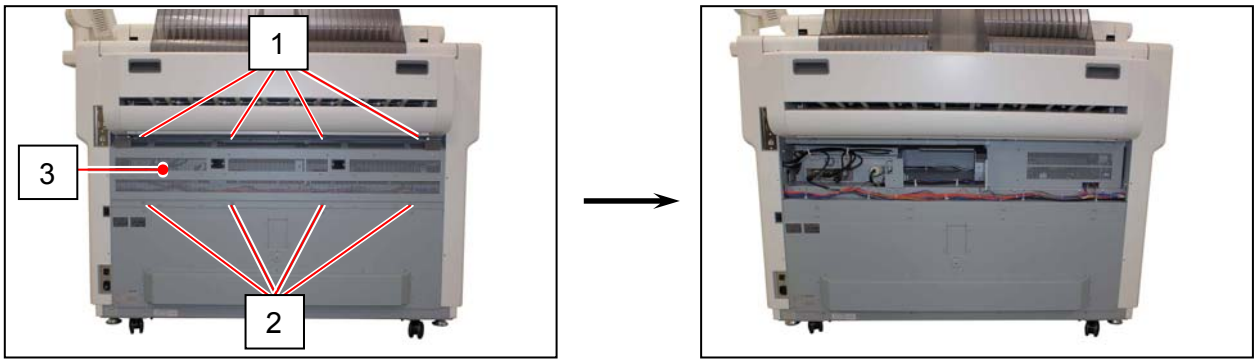




6. Remove both Cover 2 (7) and Cover 3 (8).

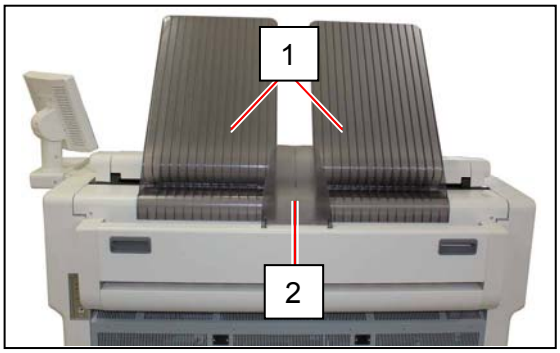
5. 1. 2 Removal of Cover 15

1. Remove 4 pieces of screw (1), loosen 4 pieces of screw (2), and then remove the Cover 15 (3).

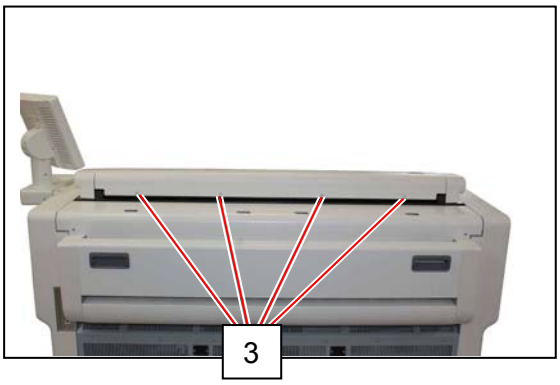


5. 1. 3 Removal of Top Cover

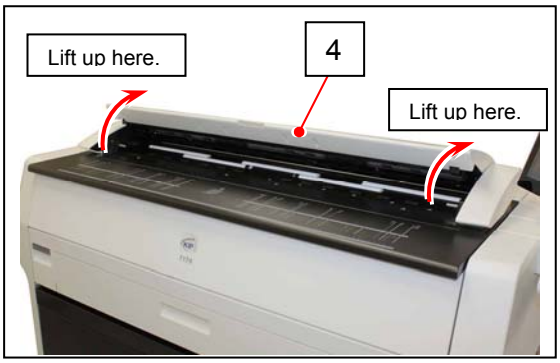
1. Remove 2 pieces of Exit Tray (1) and Exit Tray 2 (2).



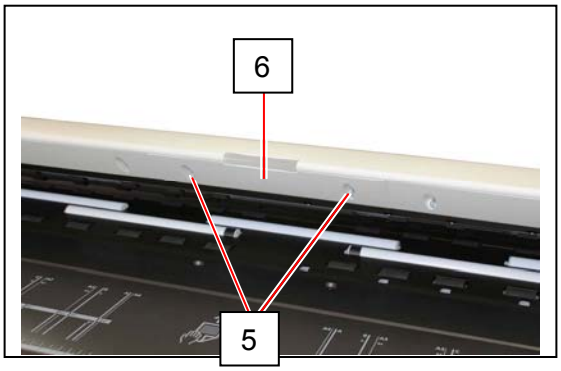
2. Remove 4 screws (3) on the back.



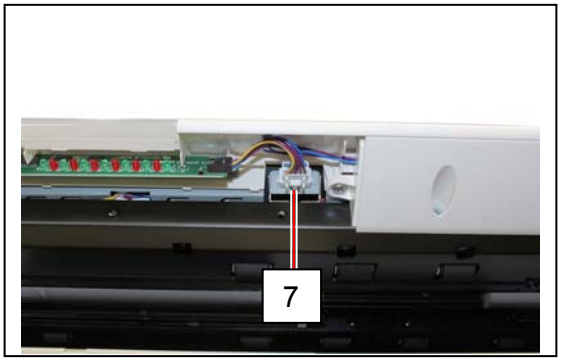
3. Lift up both sides of the Upper Unit (4).



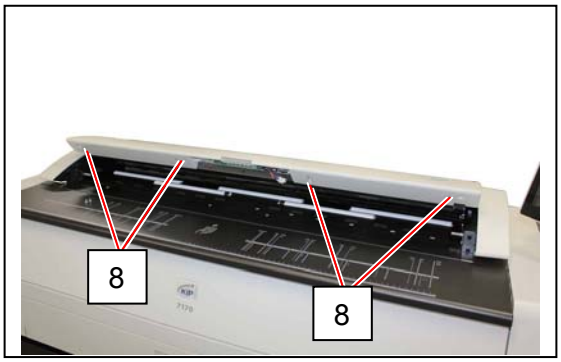
4. Remove 2 screws (5) to remove the Front Cover (6: middle).



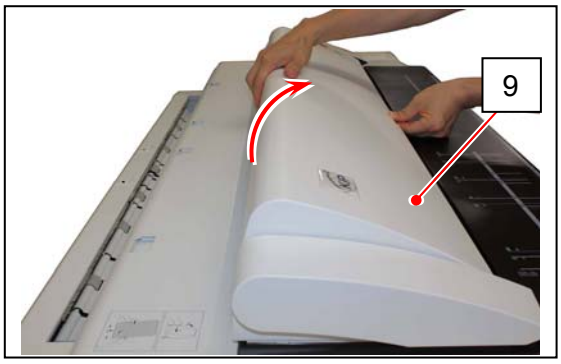
5. Disconnect 1 connector (7).



6. Remove 4 screws (8) on the front.



7. Remove the Top Cover (9).



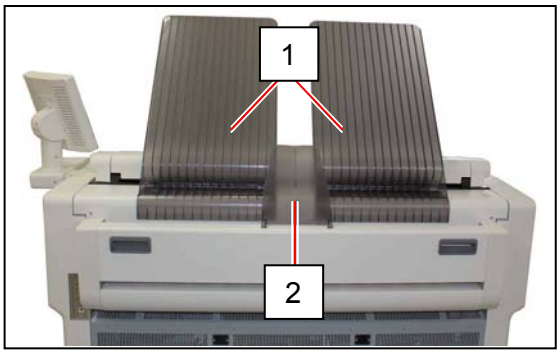
NOTE

For reassembling, fit the front end of the Top Cover to the Upper Unit.

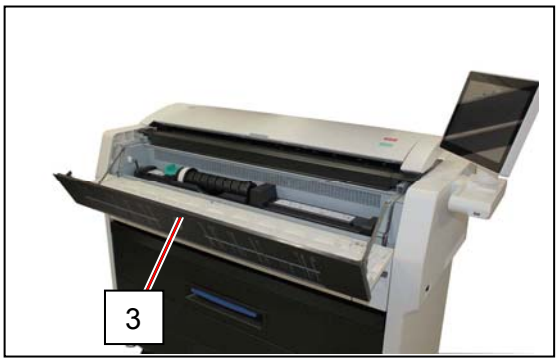
5. 2 Developer Unit

5. 2. 1 Removal of the Developer Unit

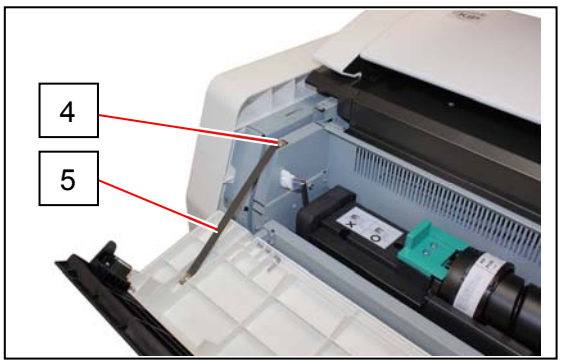
1. Remove 2 pieces of Exit Tray (1) and Exit Tray 2 (2).

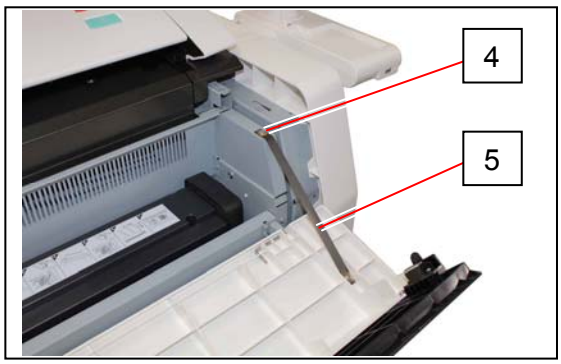


2. Open the Cover 4 (3).

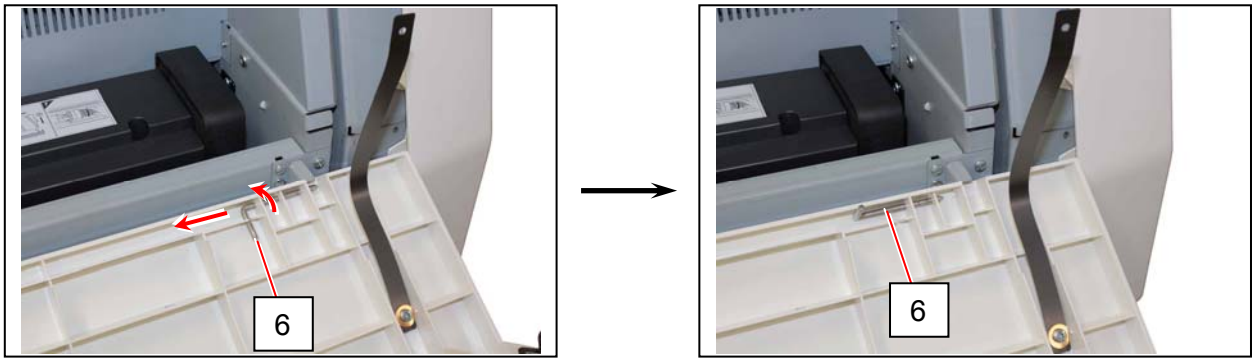


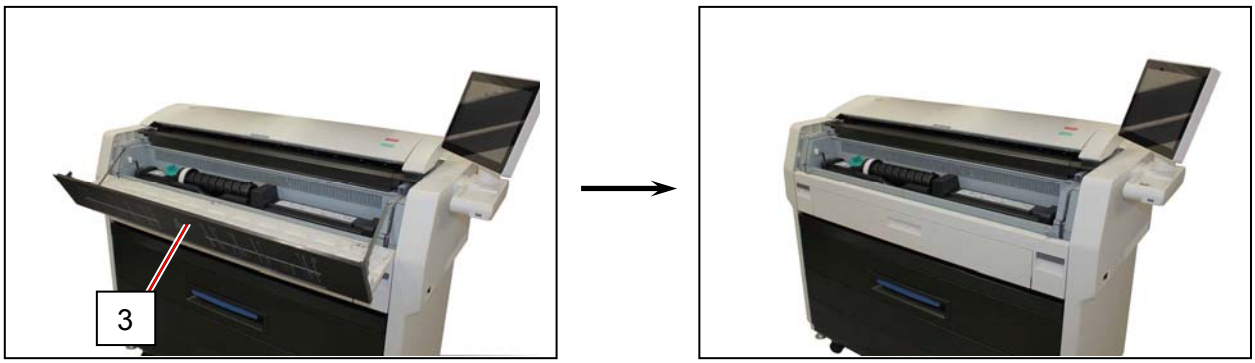
3. Remove the 4x6 screws and washers (4) at both sides to make the Bands (5) free.



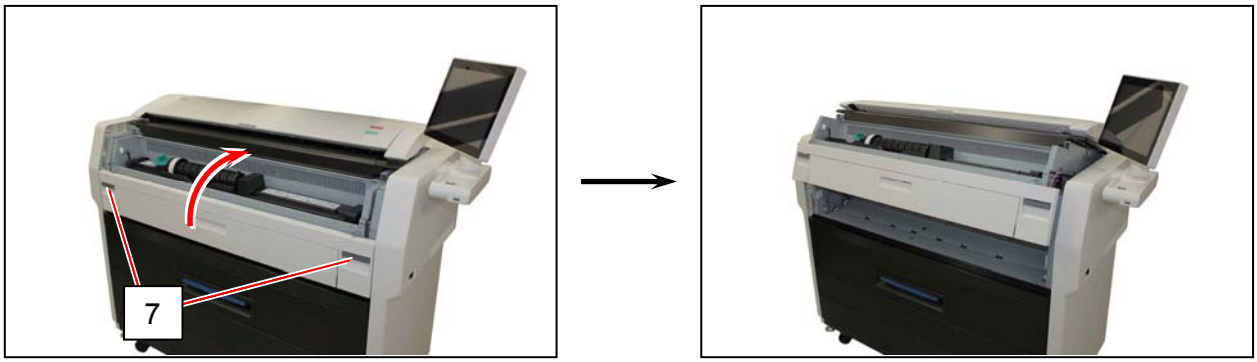


4. There are Pins (6) at both sides.
   Pull them up and then slide them inward to remove the Cover 4 (3).





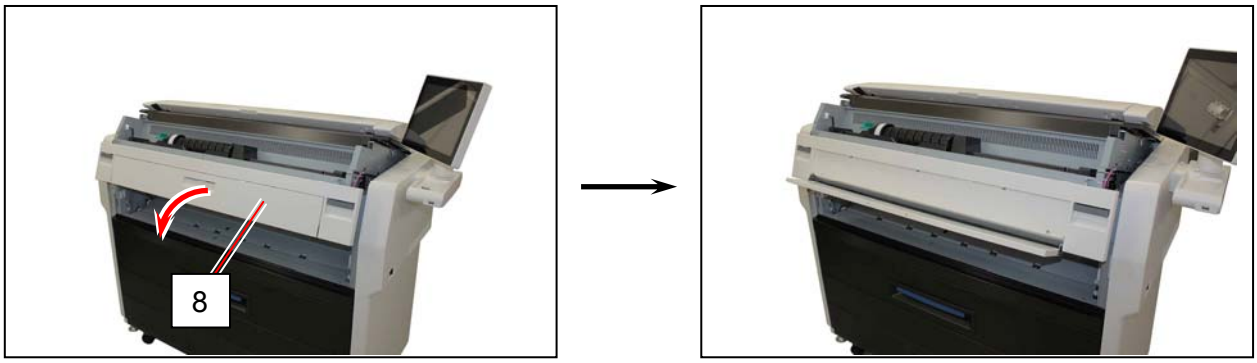
5. Pull up the Lever 2 (7) to open the Engine Unit.



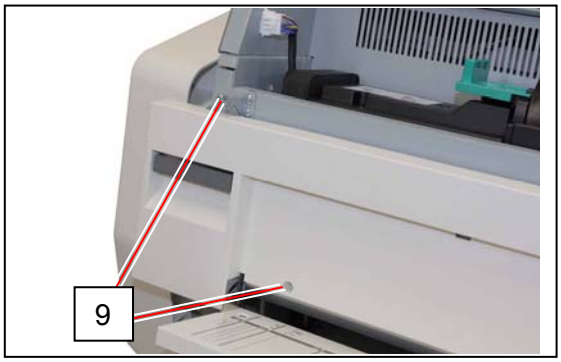
NOTE

It is impossible to remove the Developer Unit if the Engine Unit is closed, because the driving gears are firmly locked when closed.

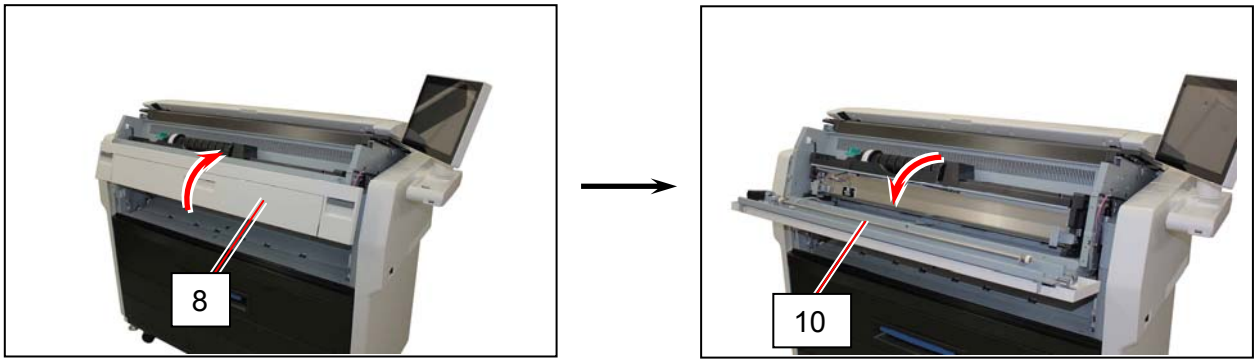
6. Open the Bypass Feeder (8).



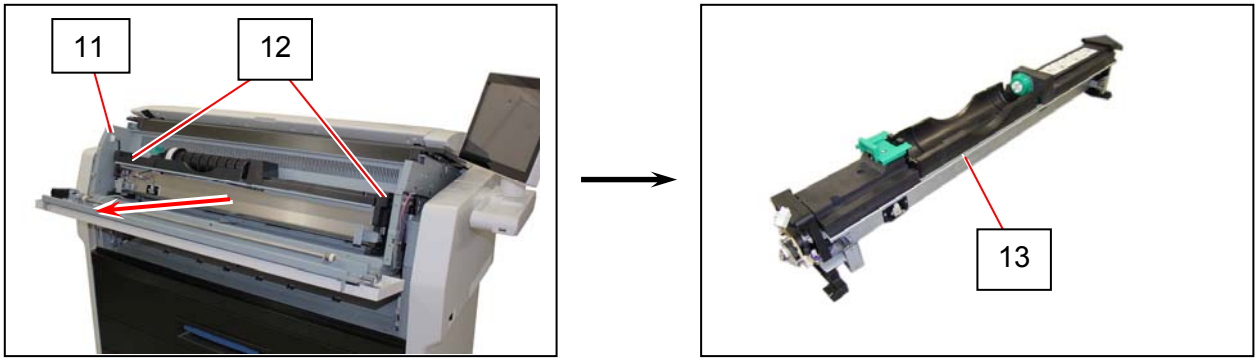
7. Remove 4 pieces of 4x8 screw (9).



8. Close the Bypass Feeder (8), and then open the Developer Press Unit (10).



9. Disconnect the connector (11). Holding both Side Plates (12), remove the Developer Unit (13) from the machine.



NOTE

If you replace the whole Developer Unit, it is necessary to adjust the space between developer driving gears.
Refer to [5.2.7 Adjustment of the space between gears (Necessary to adjust after replacing the Developer Unit)].

5. 2. 2 Replacement of Recommended Periodic Replacement Parts

NOTE

(1) A periodic replacement for the following parts is recommended.
This section shows how to replace all of them in one sequent operation.
Refer to this section as well for replacement individual part listed below.

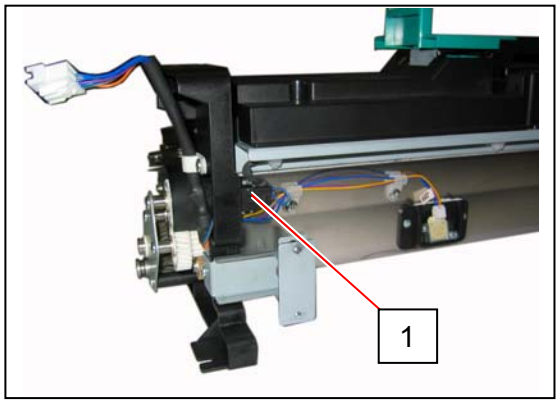
Item	Number of article	Remarks
Scraper	1	All of these parts are contained in "Developer Maintenance Kit A" (Z160980020).
Sheet	2	
Sheet 2	2	
Roller Developer	1	
Sheet 3	2	
Sheet 4	2	
Blade Roller	1	
Seal R2 Assy	1	
Seal L2 Assy	1	
Seal 1	2	
Seal 23	2	
Seal 3	2	
Seal 4	2	

(2) Remove all the toner from Developer Unit before replacing the above parts.

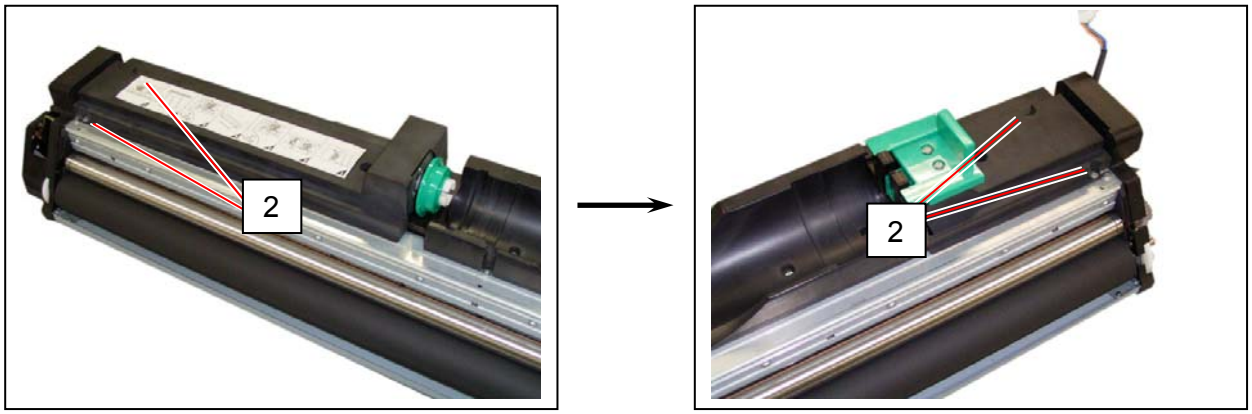
(3) After replacing Developer / Blade Rollers, an applied Bias Adjustment should be reset manually with using Service Mode - Clear Mode.

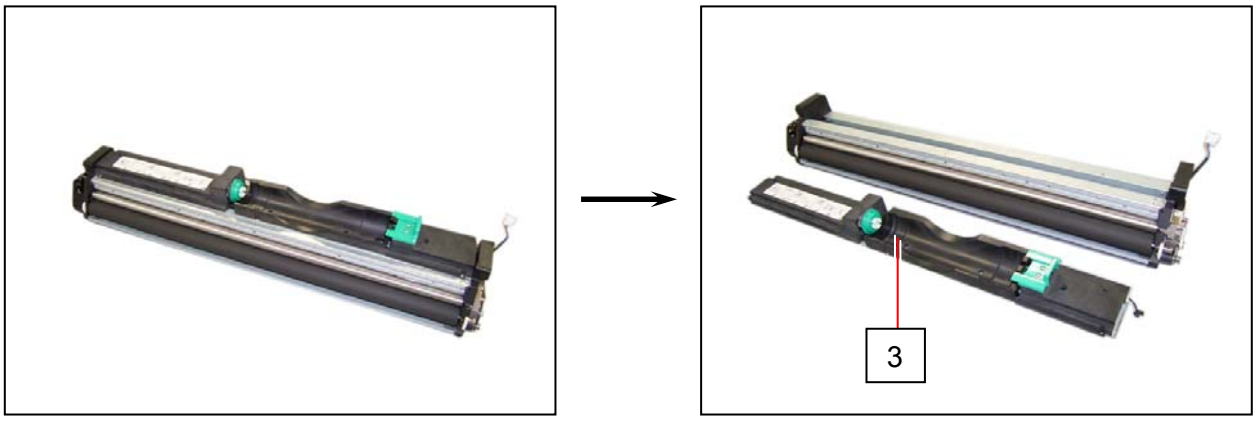
1. Remove the Developer Unit from the machine making reference to [5.2.1 Removal of the Developer Unit].

2. Disconnect the connector (1).

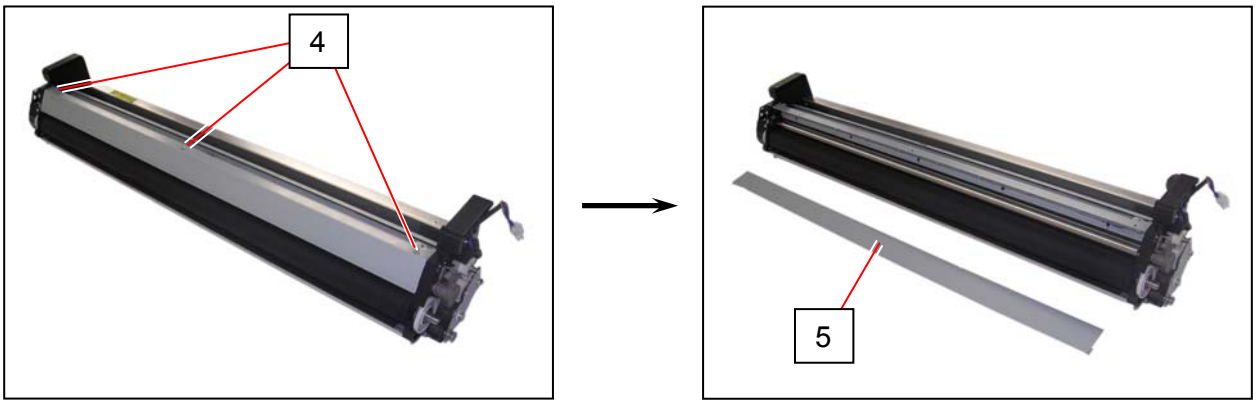


3. Remove 4 pieces of 4x6 screws (2) to remove the Hopper Assembly (3).

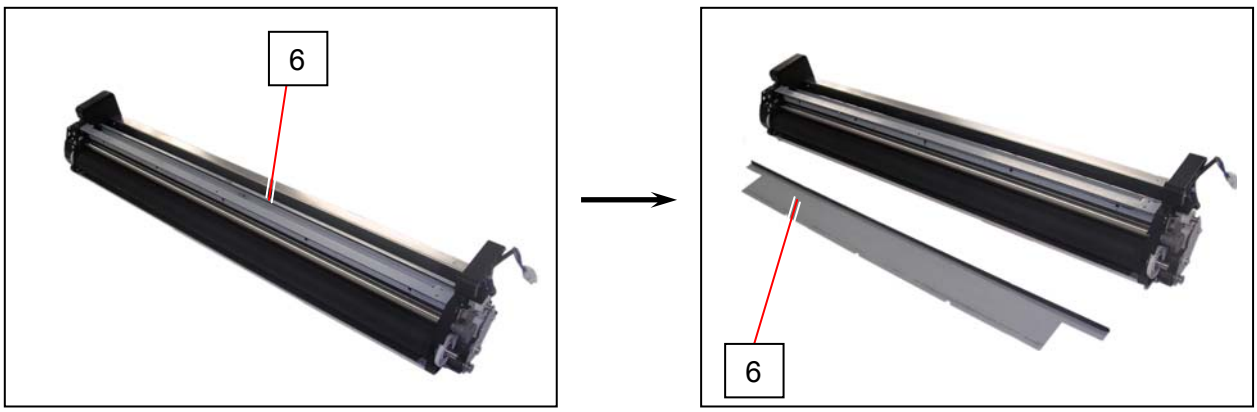




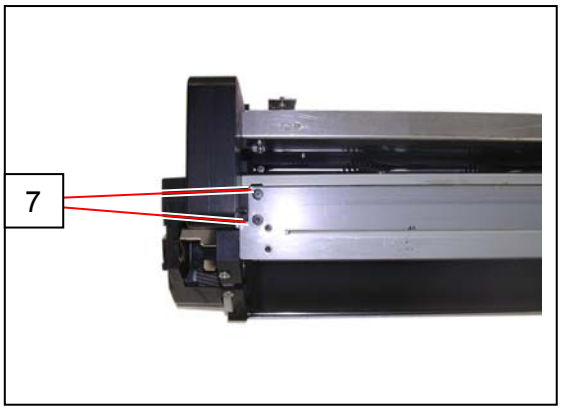
4. Remove 3 pieces of M4x6 screws (4) to remove Cover (5).

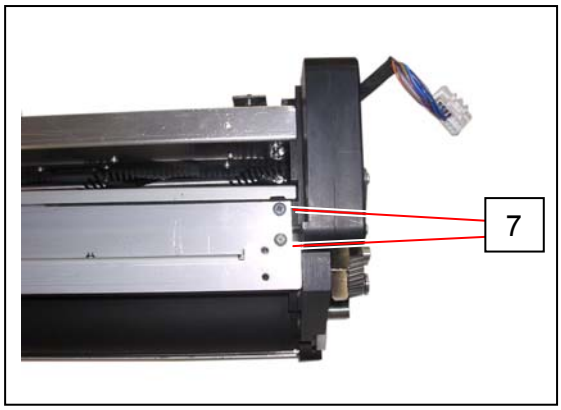


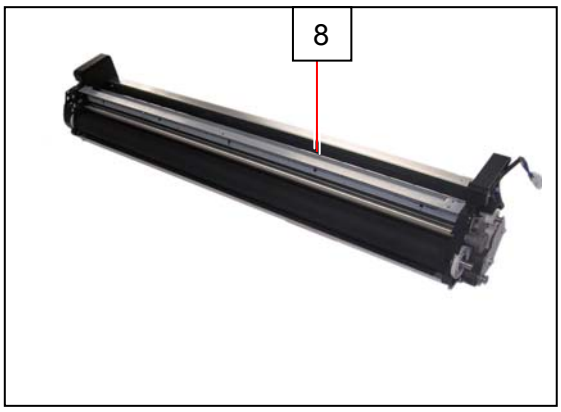
5. Remove Separator (6).

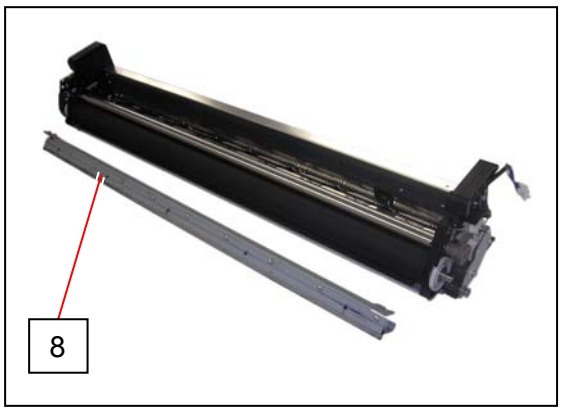


6. Remove 4 pieces of 4x6 screw (7) to remove Scraper Assembly (8).

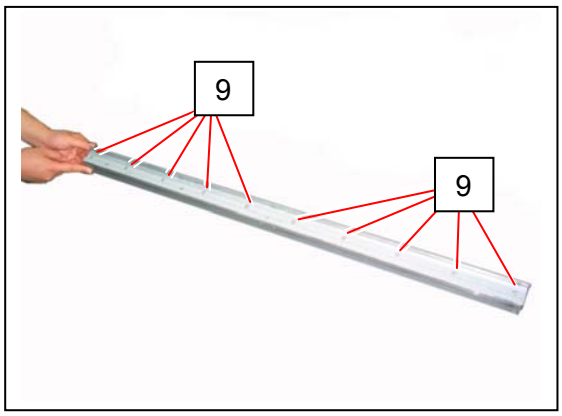


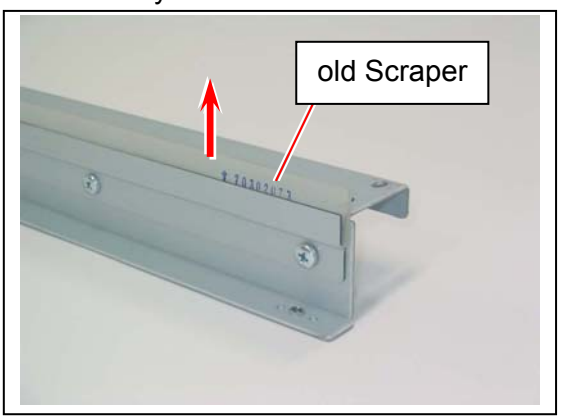






7. Loosen 10 screws (9) to remove Scraper from Scraper Assembly.

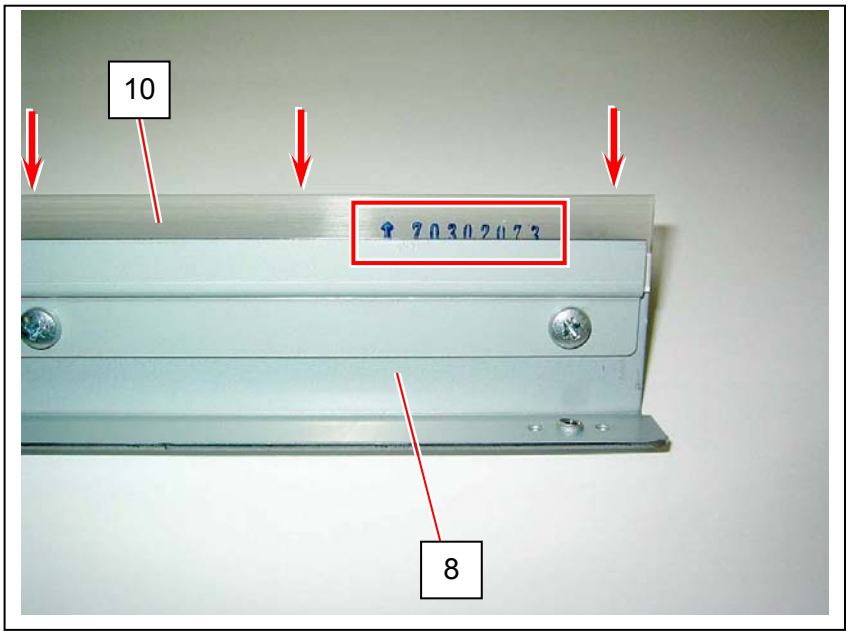




NOTE

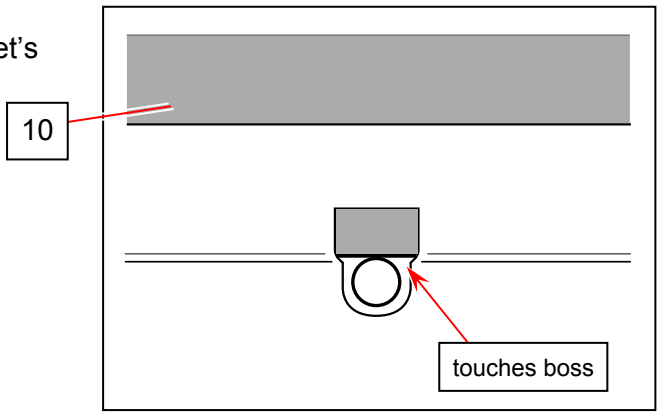
Just loosen the screws as little as possible to remove Scraper.
Doing so will reduce the new Scraper's wave.

8. Put Scraper (10) in Scraper Assembly (8) and push Scraper's edge to the inside.
   Scraper (10) should be placed that the numbers printed on one side face can be read in correct orientation.

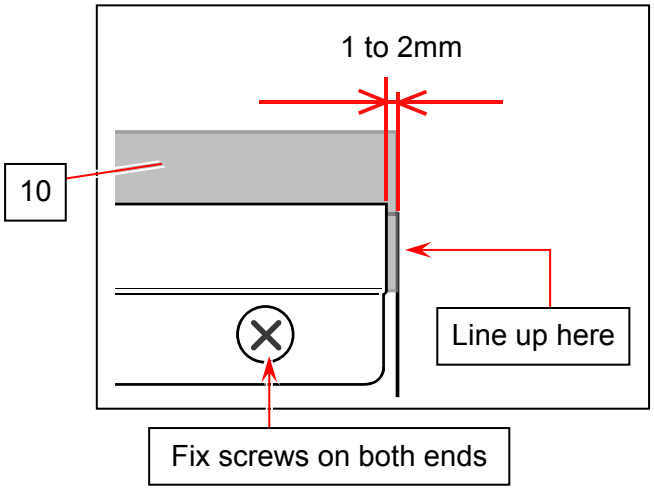


NOTE

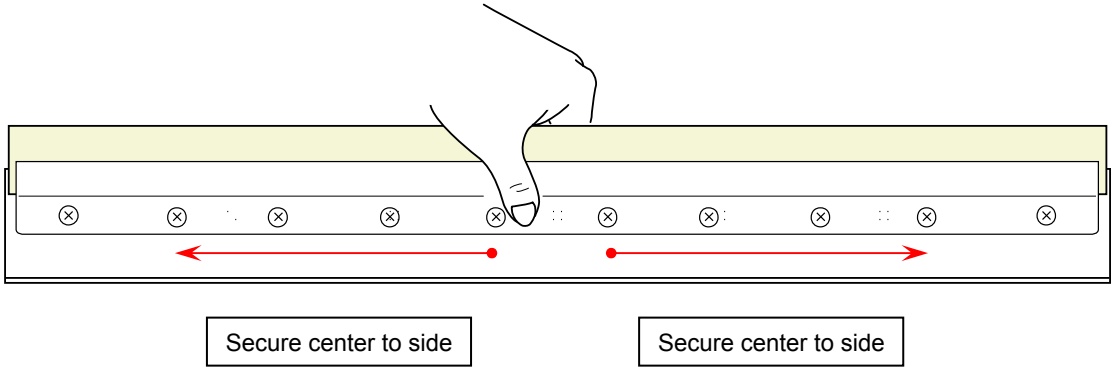
Visually check that Scraper's bottom edge touches the round boss through the bracket's opening.



9. Adjust Scraper so that its side edges stick out in 1 to 2mm from the side rim of the bracket.
   Then temporarily tighten the screws on both ends.



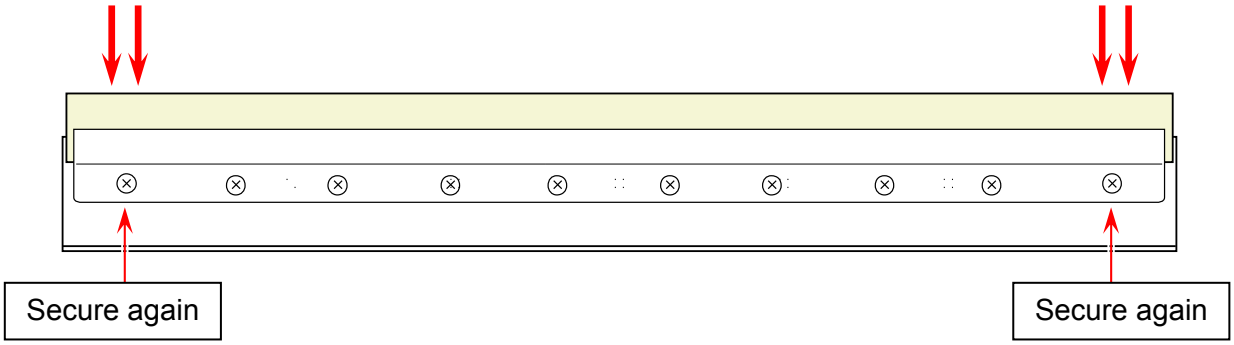
10. Tighten the screws from the center to the sides with holding around each screw on the bracket.



NOTE

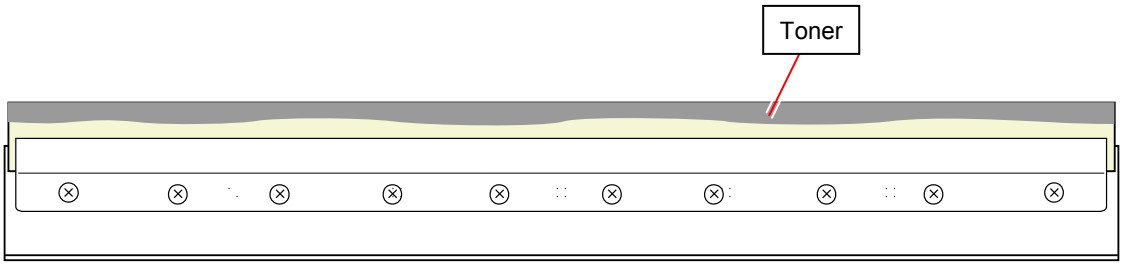
Be sure to check for wave on Scraper's edge. If there is, go back to step 7 to install Scraper again.

11. Slightly loosen the screws on both ends. With pushing the edge inside, tighten the screws.



12. Hold both ends of Scraper Assembly and turn it upside down so that the Scraper's edge direct the floor. If Scraper falls or has a slip, apply Seal 5 (Z054601260) to the bracket's inside to reduce the gap.

13. Again check for wave on Scraper's edge. If it is OK, rub toner powders on the edge.



NOTE

(1) Toner powders on the edge reduce friction between the edge and the Drum's surface. If there is no toner on the edge, Scraper may flip up or damage.

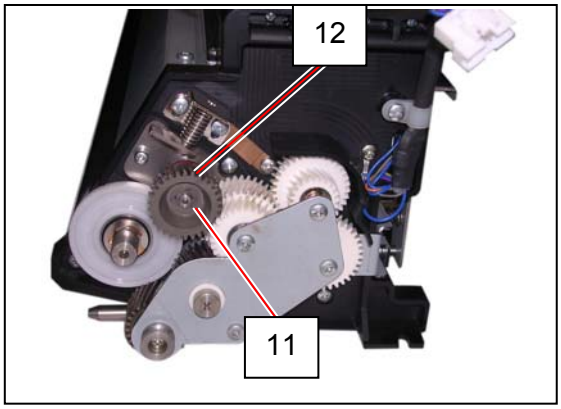
(2) The edge must be straight. Otherwise the toner will not be scraped off properly.

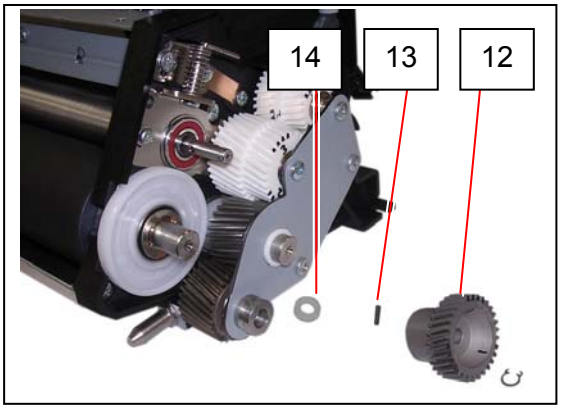
14. Remove all the toner from Developer Unit.

NOTE

Do not reuse the removed toner.

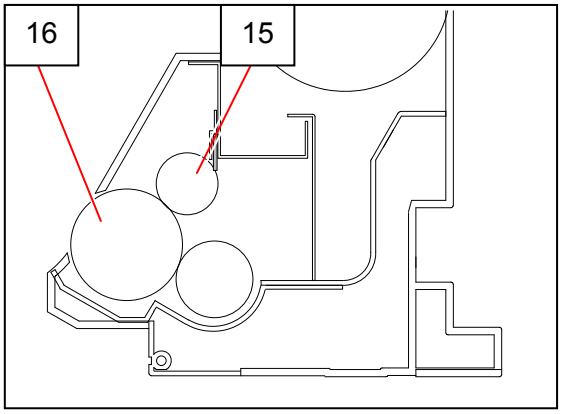
15. On the driving side, remove Retaining Ring-C (11: C6) to remove Gear Helical 30T (12), Parallel Pin (13: 2.5x10) and Collar 3 (14) from Blade Roller shaft.



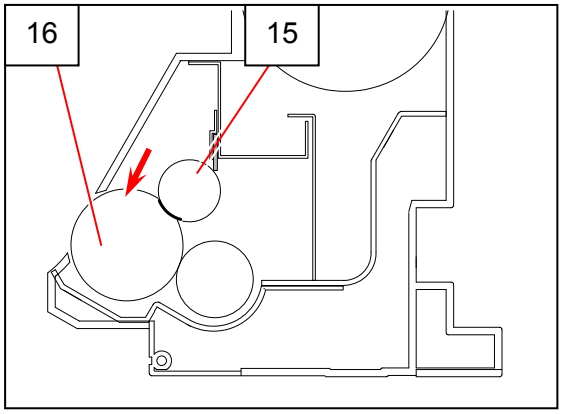


NOTE

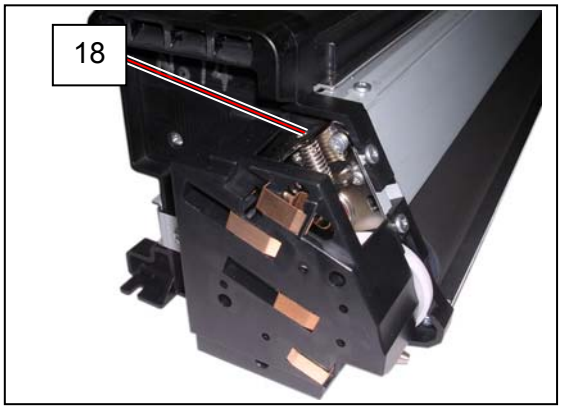
Blade Roller (15) is pressed onto / released from Developer Roller (16) by Bracket 4 (17) (on the driving side) and Bracket 5 (18) (on the electrode plate side).
When reassembling, Blade Roller (15) should be pressed onto Roller Developer (16).
Pressurizing will be required prior to reinstallation of Gear Helical 30T (12).

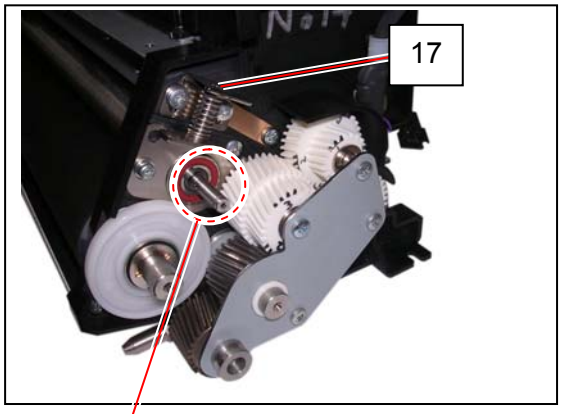


not pressurized



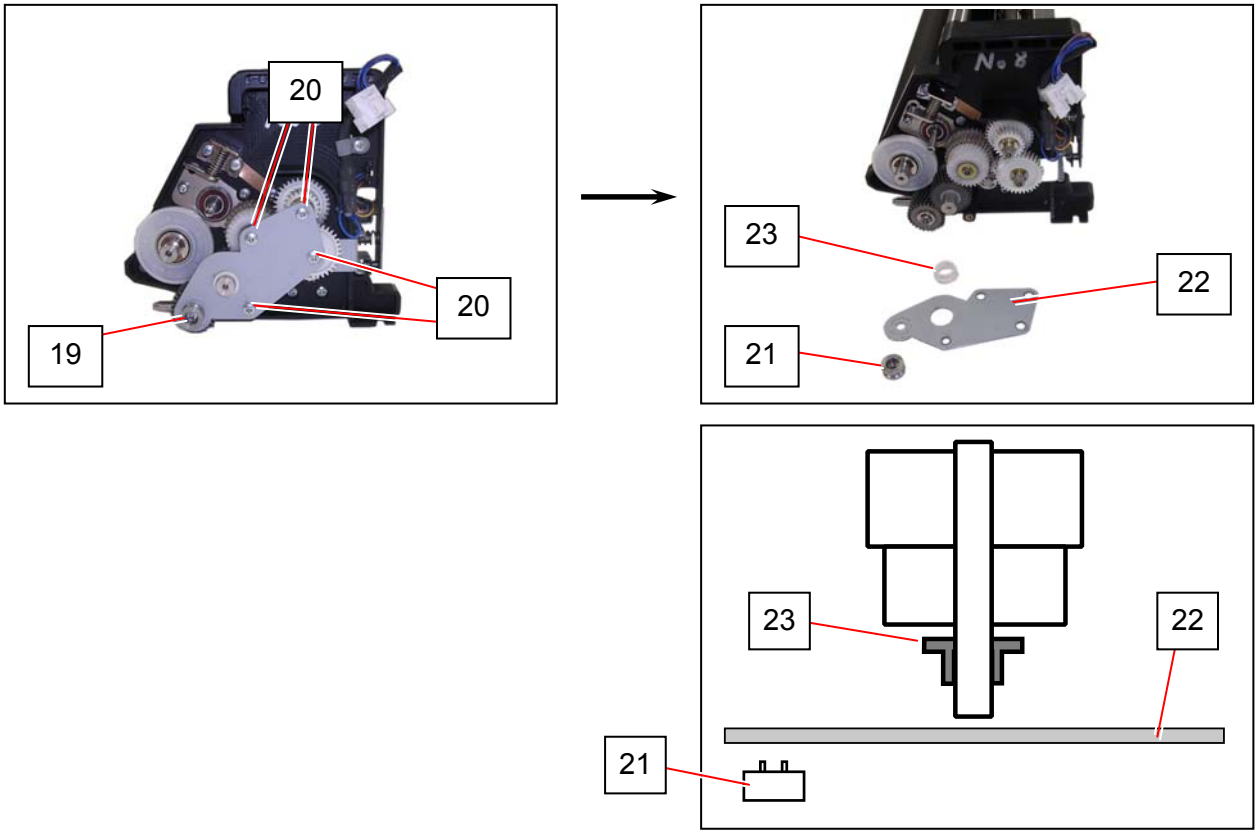
pressurized



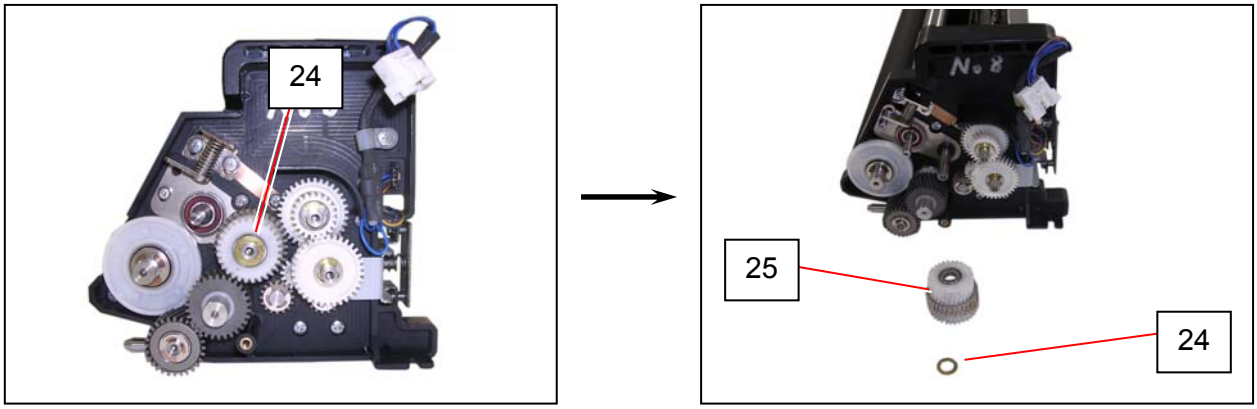


Pressurize without Gear Helical 30T (12)

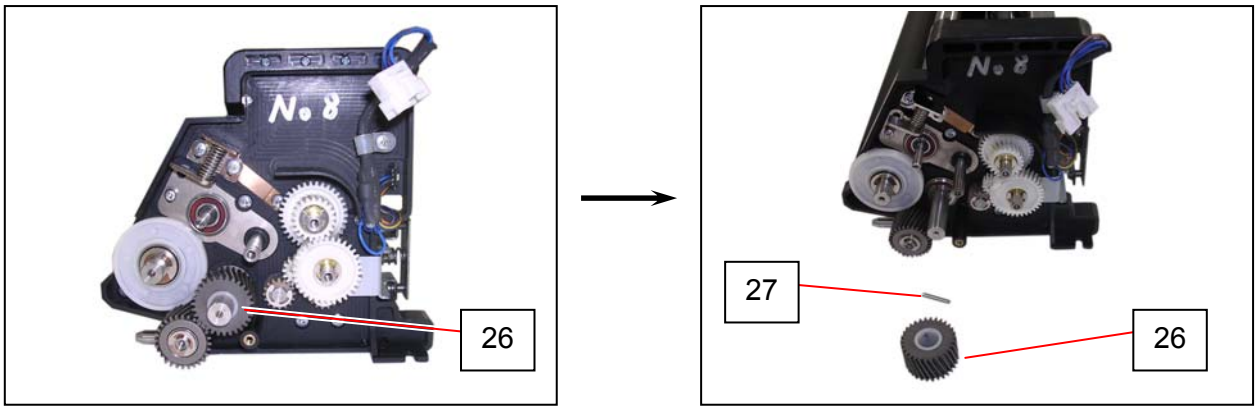
16. Remove 5 screws (19: M4x8) (20: M4x6) to remove Pin 4 (21), Plate 9 (22), Collar (23).



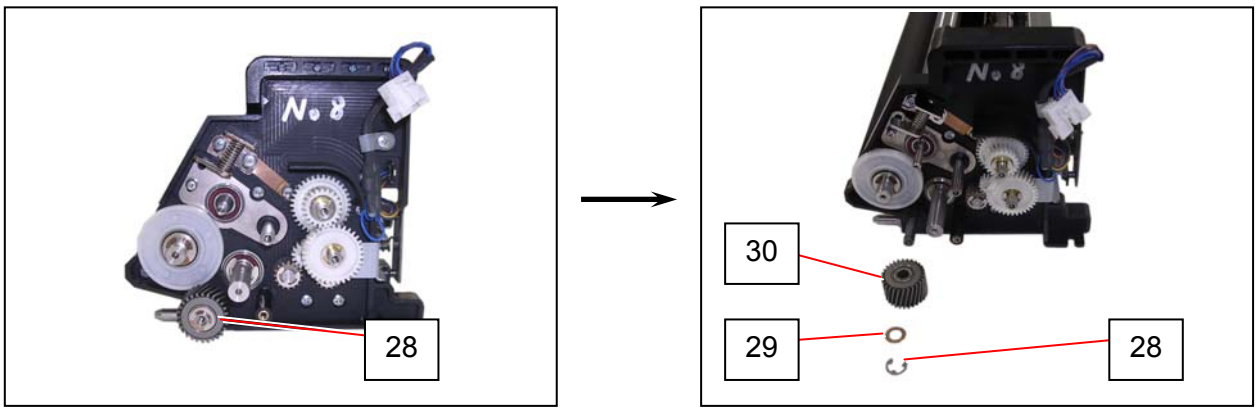
17. Remove Washer (24: 8.1x14x0.5t) and Gear 29T-34T Assy (25)



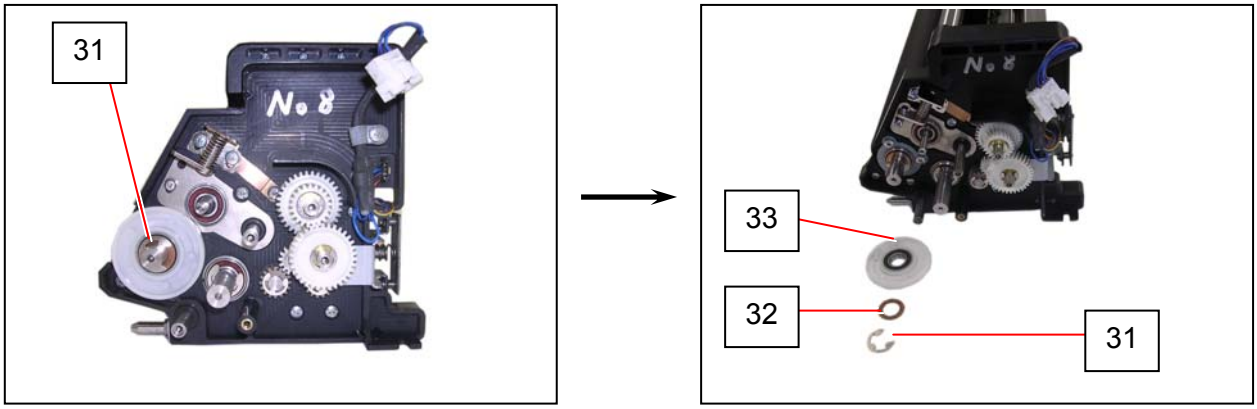
18. Remove Gear Helical 30T (26) and Parallel Pin (27: 3x20) from Toner Supply Roller shaft.
If you cannot remove Parallel Pin (27) at this time, remove it after the later step 15.



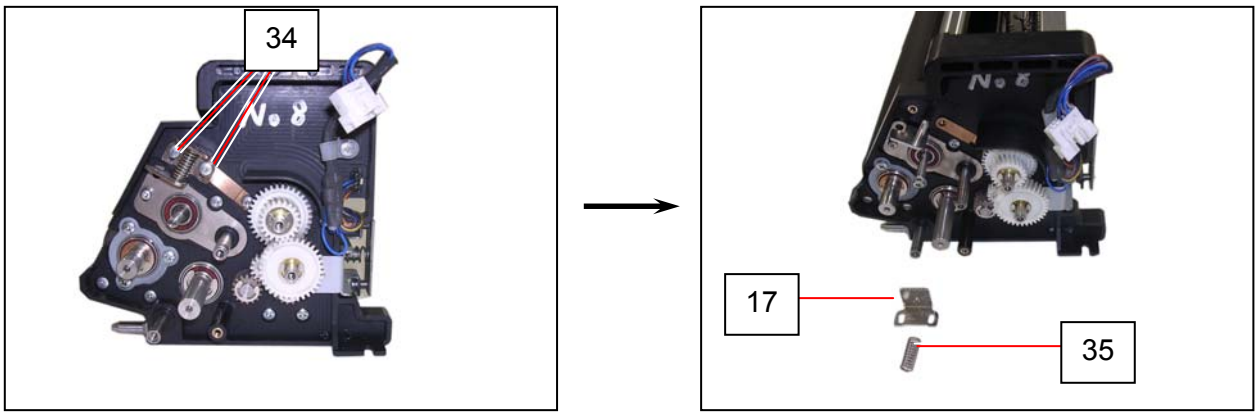
19. Remove Retaining Ring-E (28: E7) to remove Washer (29: 8.1x12x0.2t) and Gear Helical 28T Assy (30).



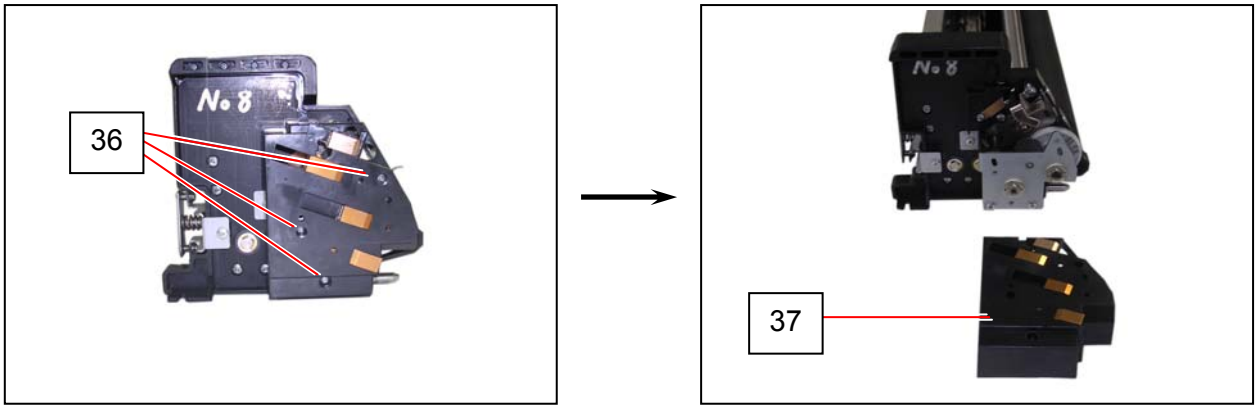
20. Remove Retaining Ring-E (31: E10) to remove Washer (32: 12.2x20x0.5t) and Counter Roller (33) from Developer Roller shaft.



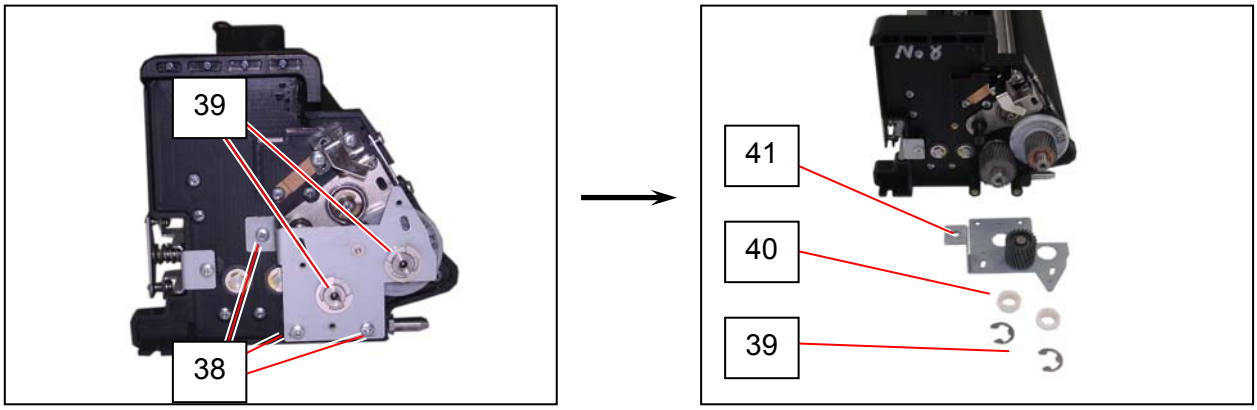
21. Remove 2 screws (34: M4x8) to remove Bracket 4 (17) and Spring (35).
At this time, Blade Roller on the driving side will be released from Roller Developer by unsecured Bracket 4 (17).

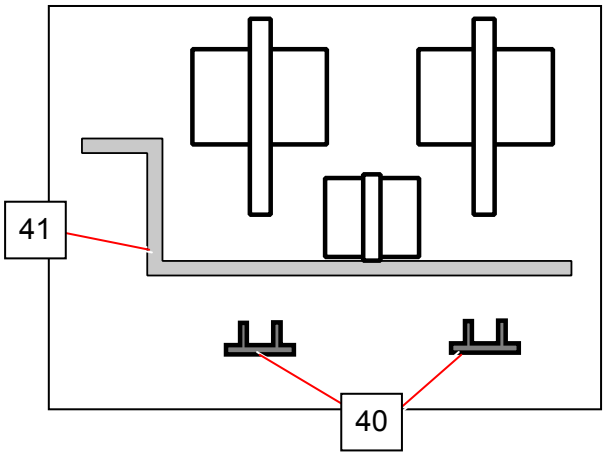


22. <u>On the electrode plate side</u>, remove 3 screws (36) to remove Holder 2 Assy (37).

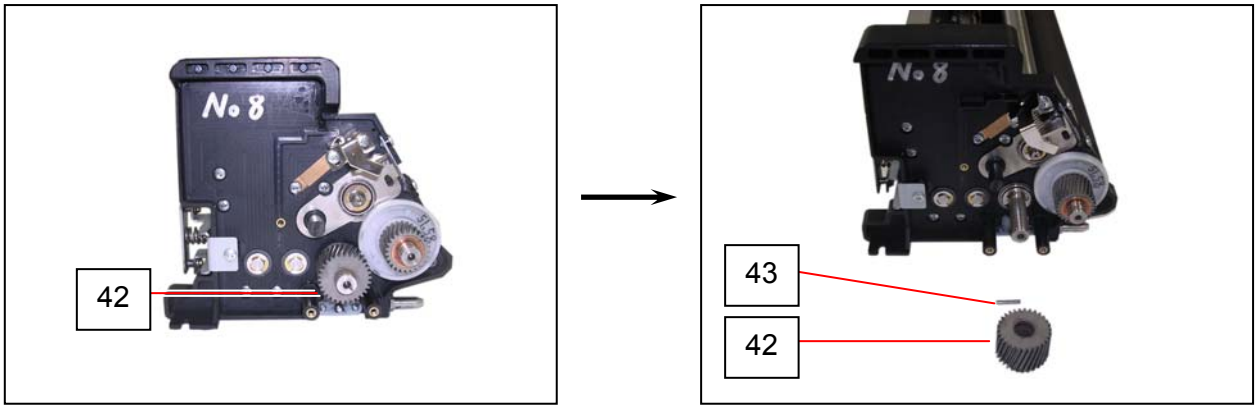


23. Remove 3 screws (38: M4x6) and 2 Retaining Ring-E (39: E10) to remove Collar (40) and Bracket 10 Assy (41).

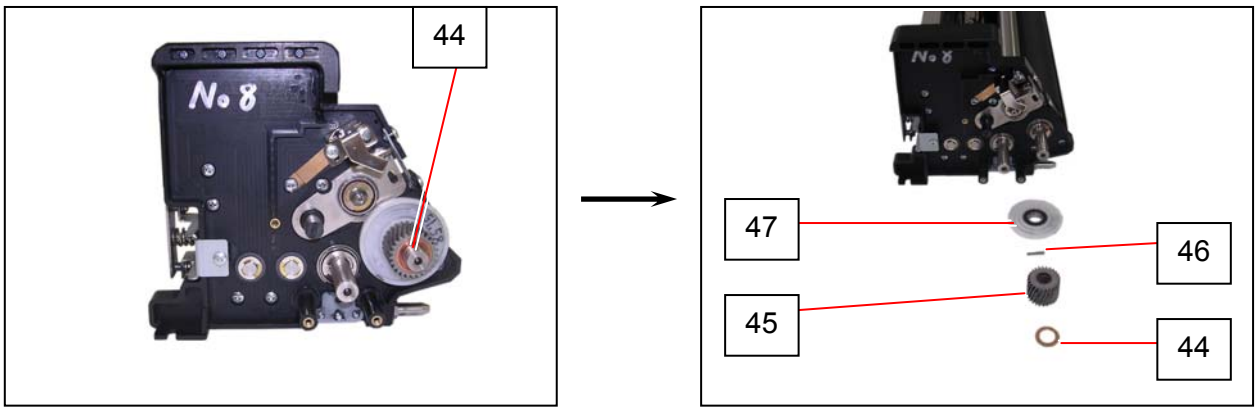




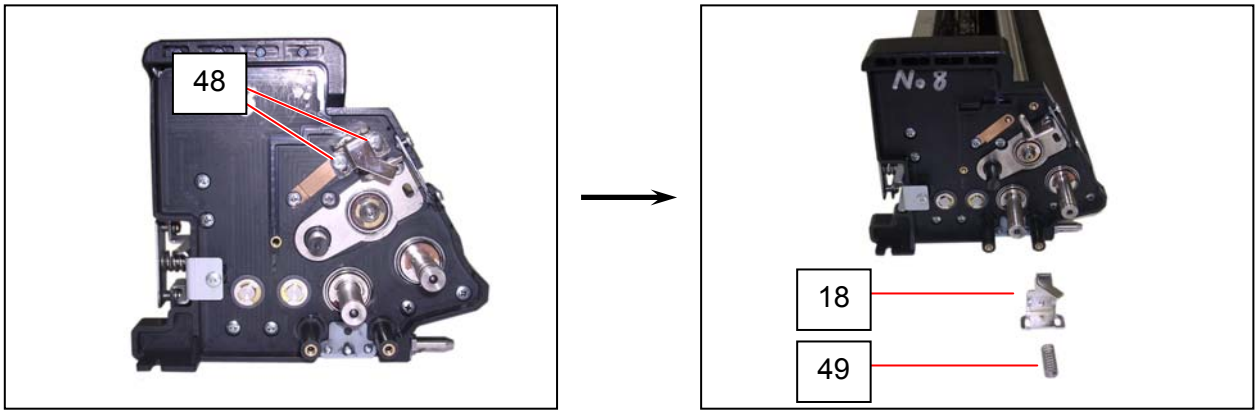
24. Remove Gear Helical 30T (42) and Parallel Pin (43: 3x16) from Toner Supply Roller shaft.



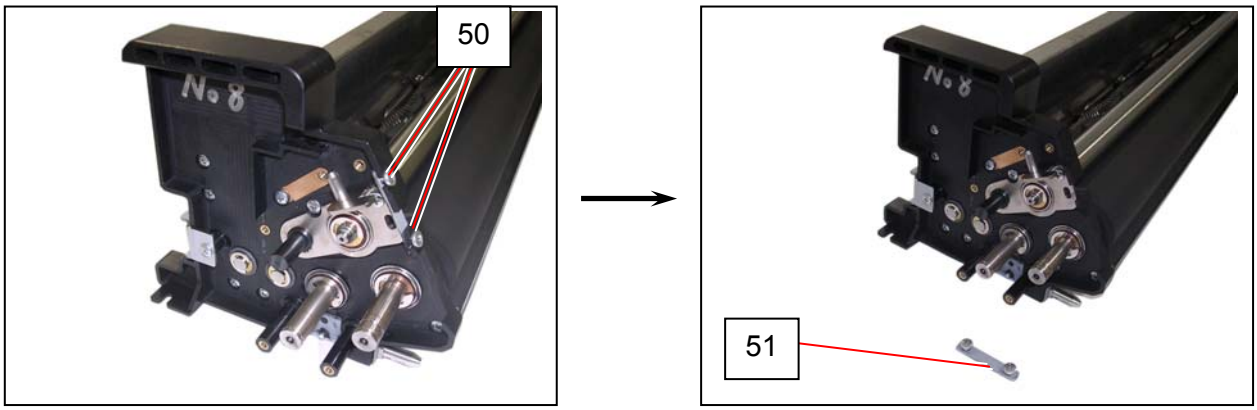
25. Remove Washer (44: 12.1x20x0.2t), Gear Helical 25T (45), Parallel Pin (46: 3x16), Counter Roller (47) from Roller Developer shaft.



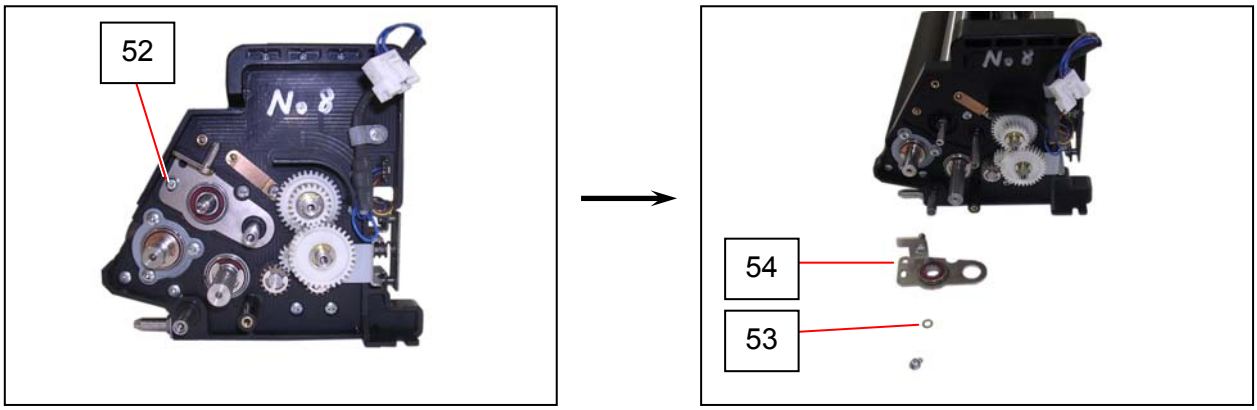
26. Remove 2 screws (48: M4x6) to remove Bracket 5 (18) and Spring (49).
At this time, Blade Roller on the electrode plate side will be released from Roller Developer by unsecured Bracket 5 (18).



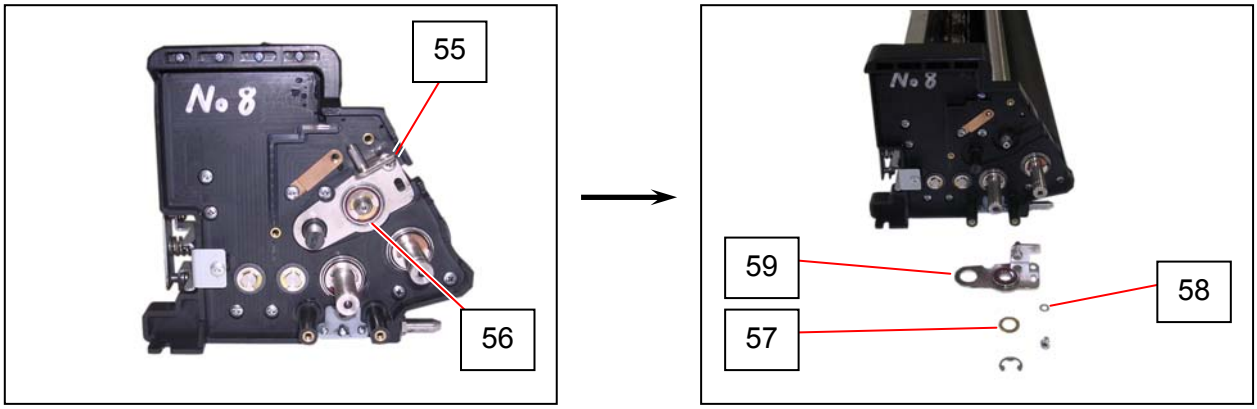
27. Loosen 2 screws (50) to remove Bracket 19 (51).



28. On the driving side, remove 1 pan head screw (52: M4x8 W/ SW FW) to remove 1 flat washer (53: M4) and Bracket 6 Assy (54).

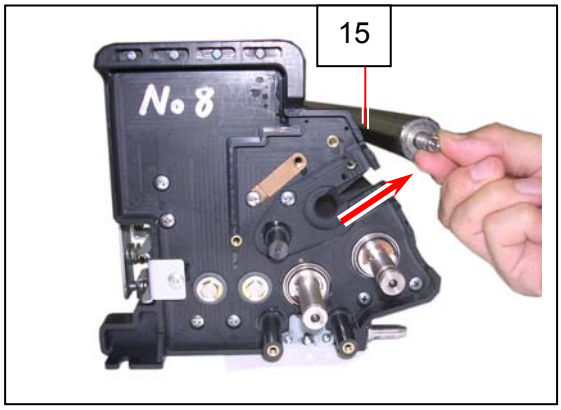


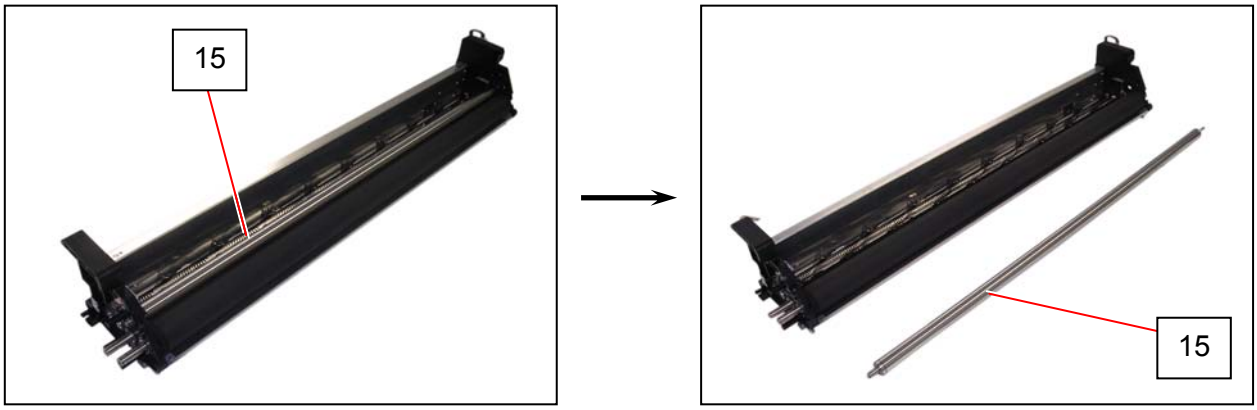
29. On the electrode plate side, remove 1 pan head screw (55: M4x8 W/ SW FW) and Retaining Ring-E (56: E8) to remove Washer (57: 10.1x16x0.5t), Flat Washer (58: M4), Bracket 7 Assy (59).



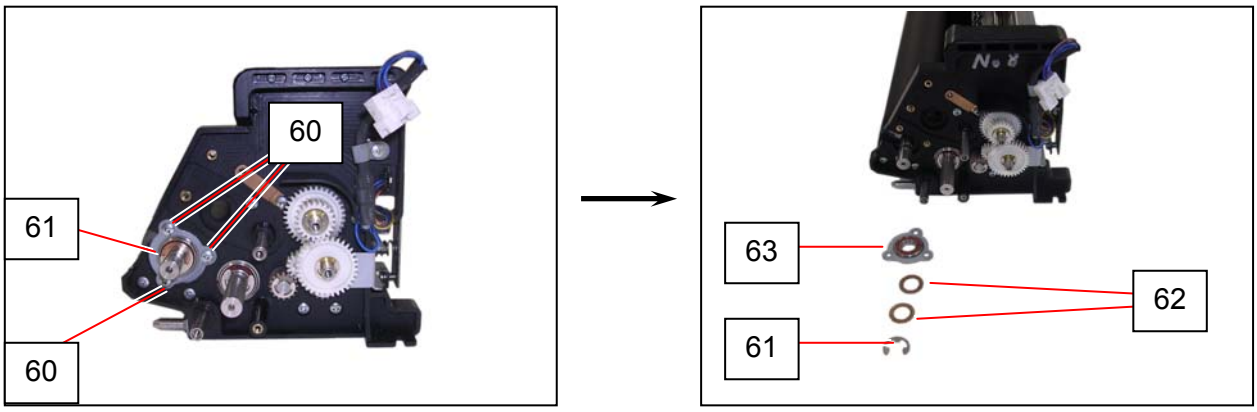
K134sm5e4

30. Remove Blade Roller (15) from Developer Unit.
Do not install the new Blade Roller at this time.

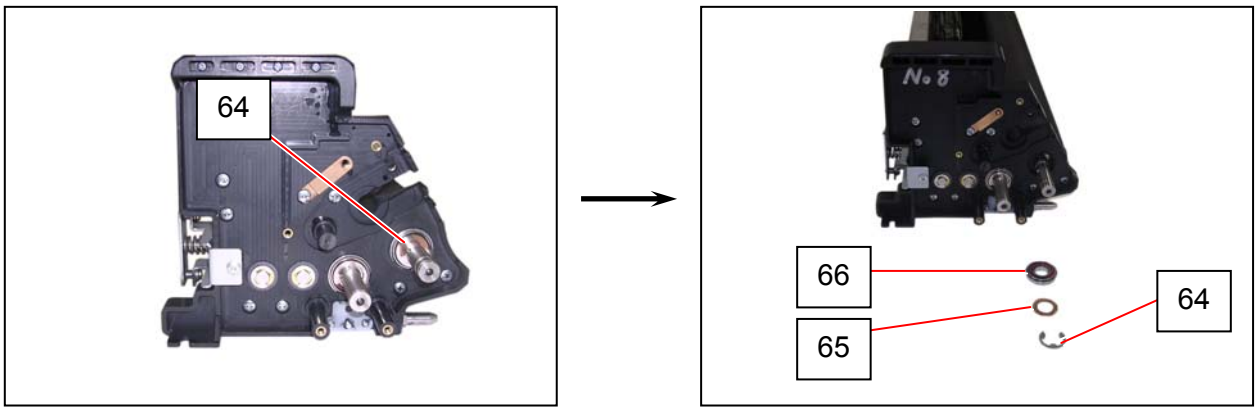




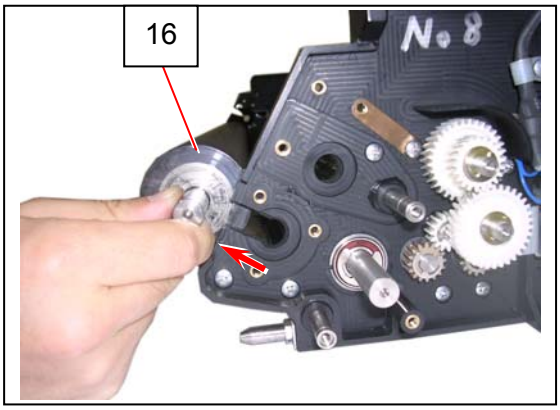
31. On the driving side, remove 3 screws (60: M4x6) and Retaining Ring-E (61: E10) to remove Washers (62: 12.2 x 20 x 0.5t), Bracket 8 Assy (63).

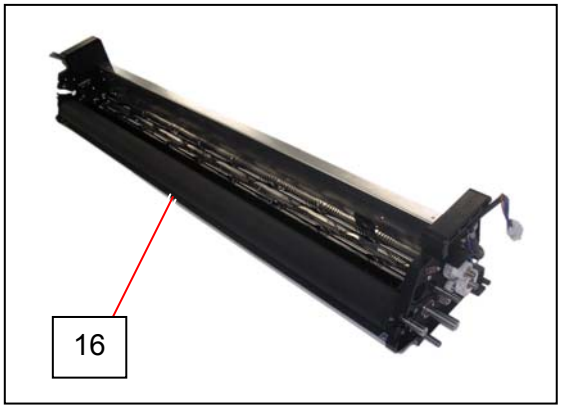


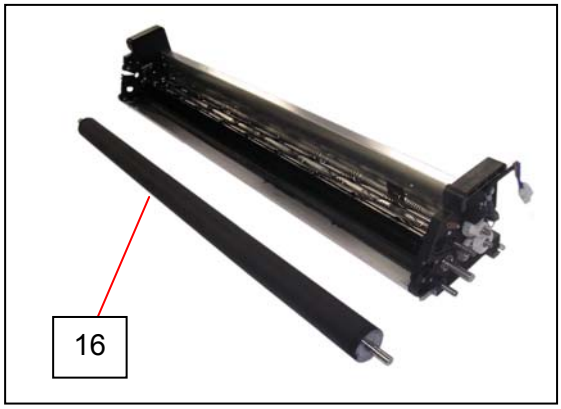
32. On the electrode plate side, remove Retaining Ring-E (64: E10) to remove Washer (65: 12.2x20x0.5t), Bearing (66).



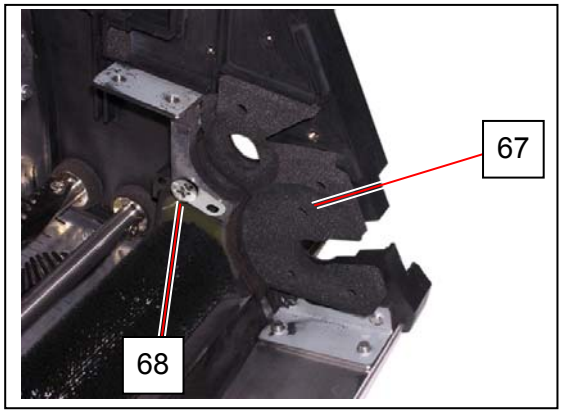
33. Remove Roller Developer (16).
Do not install the new Roller Developer at this time.

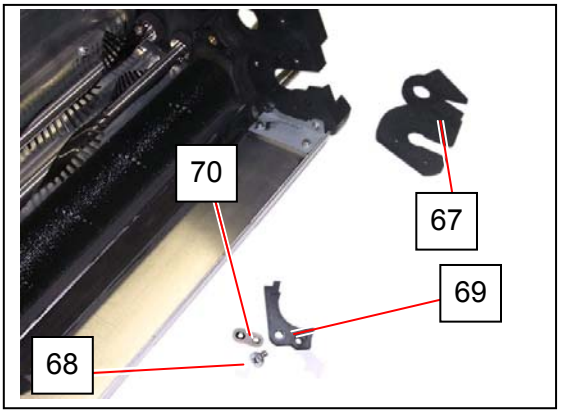




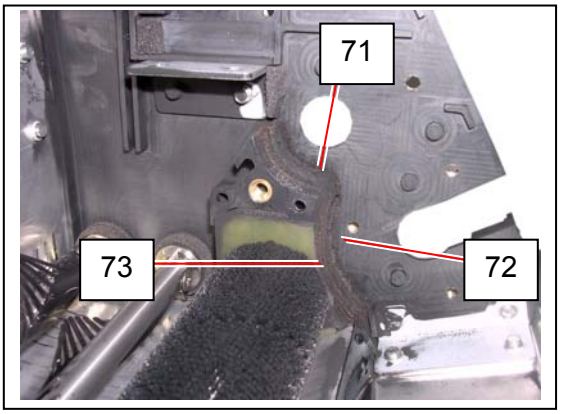


34. On each side, remove Seal 1 (67).
Remove 1 screw (68) to remove Seal R2 Assy / Seal L2 Assy (69) and Support Bracket(70).



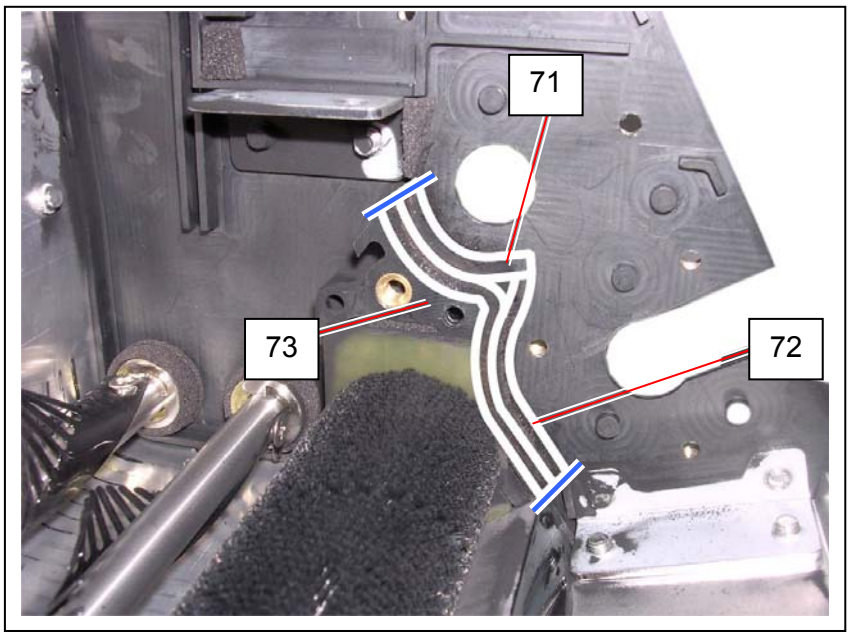


35. On each side, remove Seal 23 (71: upper), Seal 4 (72: lower), Seal 3 (73: under).
Replace **Seal 23**, **Seal 4** and **Seal 3** with new ones.

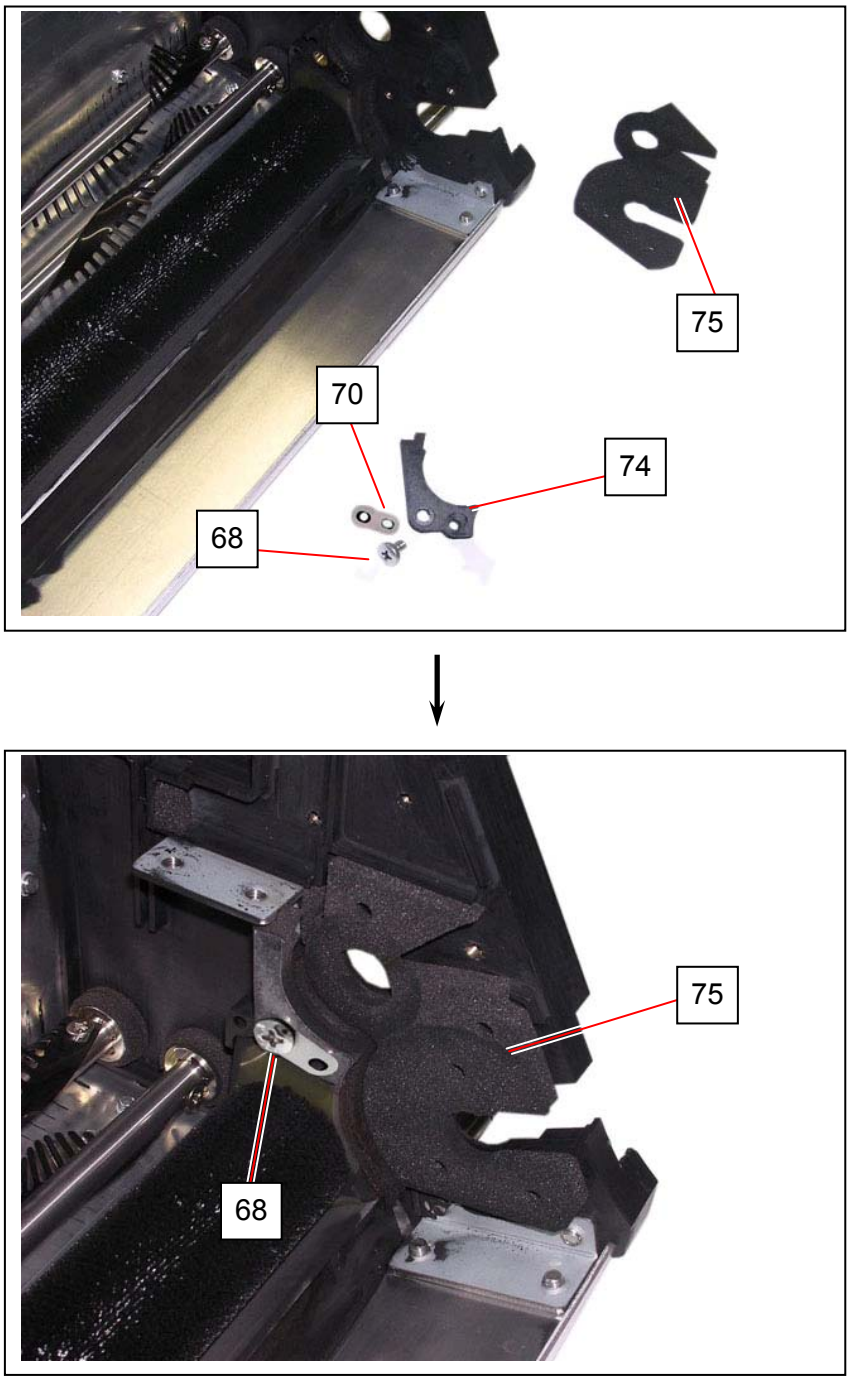


NOTE

Align the bottom end of Seal 3 (73) to the rib inside the side plate.
Align the far ends of Seal 23 (71) and Seal 4 (72) to the top and bottom ends of Seal 3 (73) respectively.



36. Install the new **Seal R2 Assy** / **Seal L2 Assy** (74), Support Bracket (70), **Seal 1** (75).

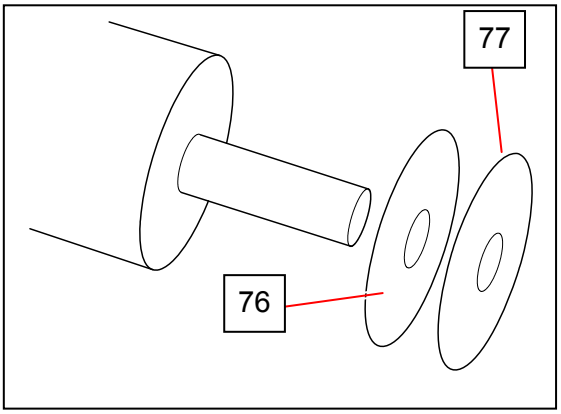


NOTE

(1) Fit the positioning boss to the longer hole on Support Bracket (70).

(2) Do not tighten the screws (68) so much as the seals (74) will be transformed.

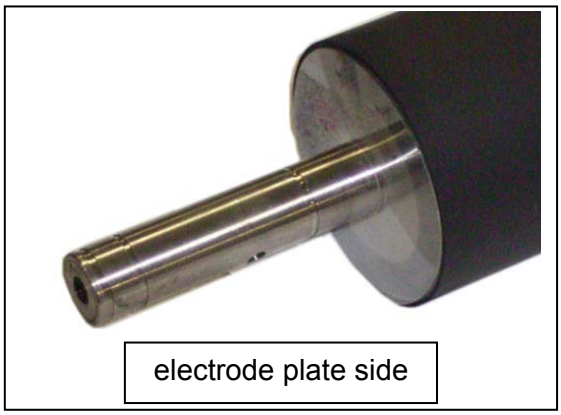
37. Apply the new **Sheet 3** (76), **Steet 4** (77) to both sides of the new Developer Roller. Keep water or grease away from between the sheets.



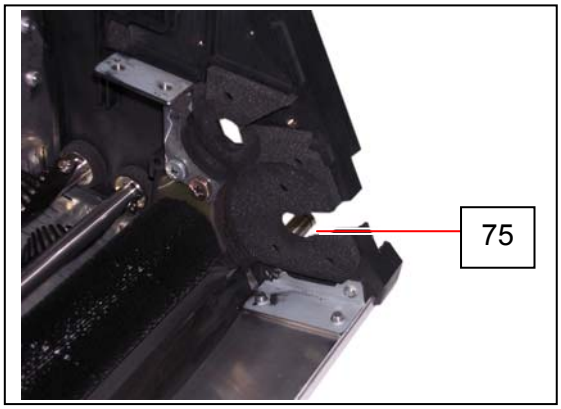
38. Install the new **Developer Roller** to Developer Unit and fix it with the bearings.

NOTE

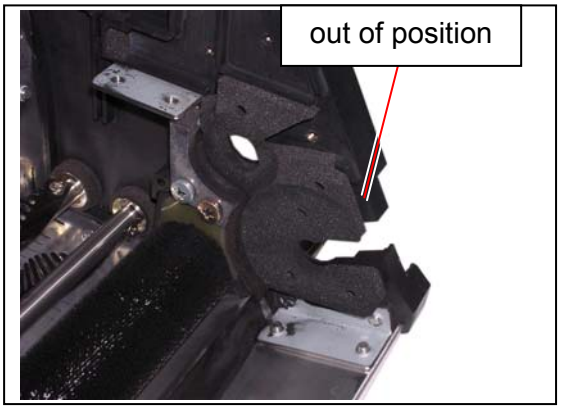
(1) Note the installation direction. The shorter shaft should be placed to the driving side.



(2) Seal 1 (75) on each side should be seated in position along the bosses.



Correct

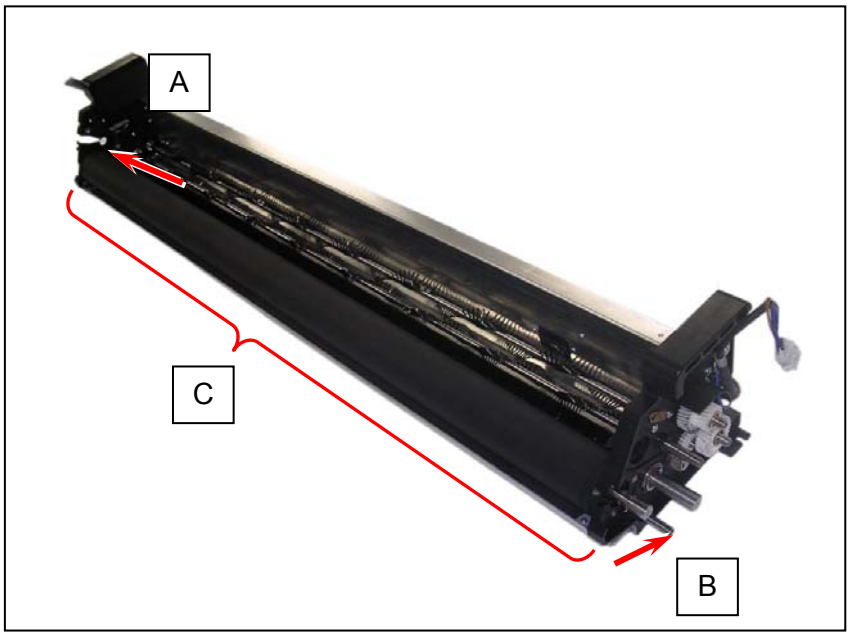


Wrong

(continued on the next page)

NOTE

(3) Push Roller Developer against Seal 1 on the electrode plate side (A) to hold and keep its original position when reassembling.



(4) While installing toward (A) then (B), be careful not to damage Sheet 3 and Sheet 4 on Roller Developer shaft.

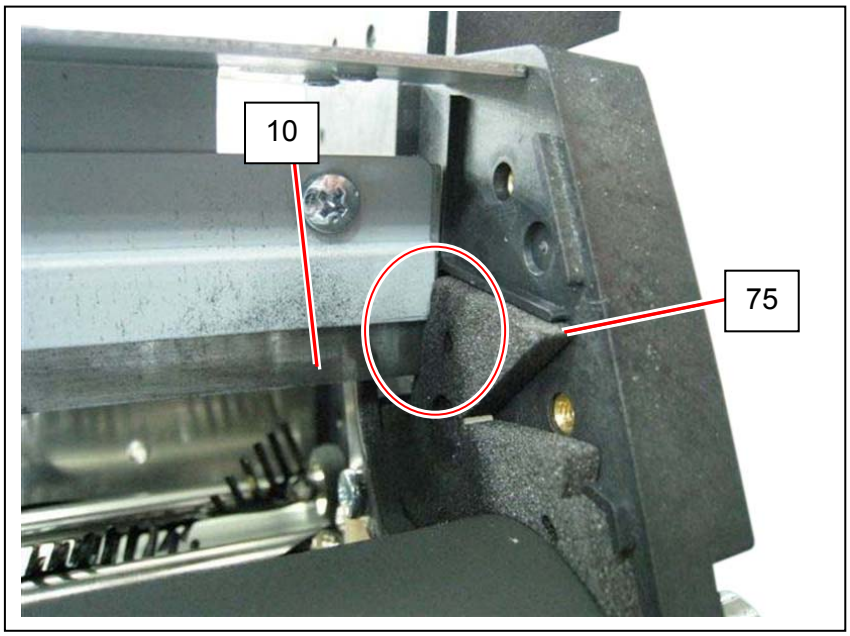
(5) Do not bump Roller Developer on the frame rim (C).

39. Reinstall Scraper Assembly.

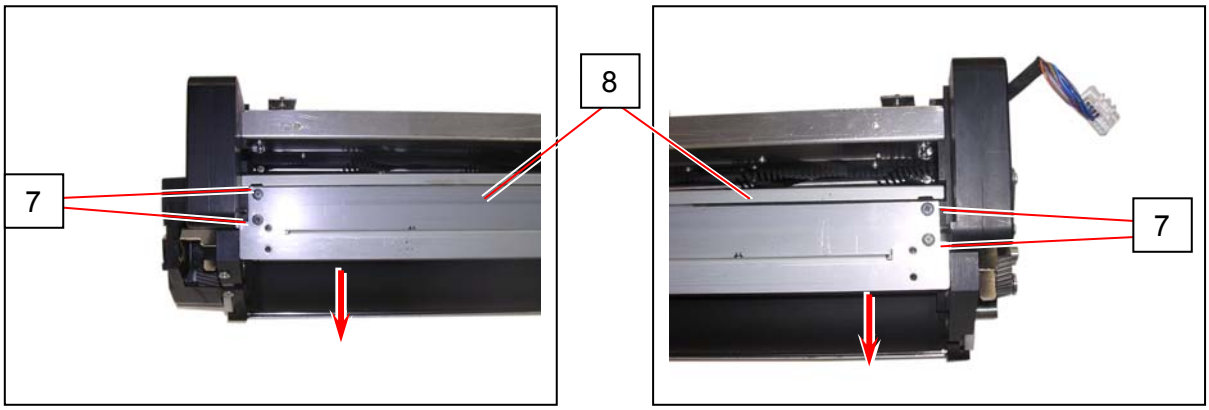
NOTE

(1) For Scraper Assembly and Blade Roller, please reinstall Scraper Assembly first and then locate Blade Roller in position later. This will avoid making Scraper's edge waving.

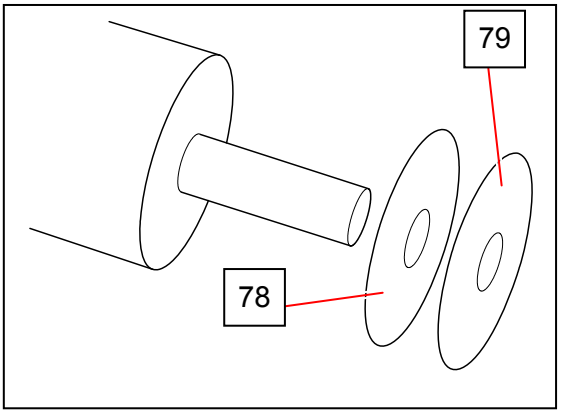
(2) After reinstalling Scraper Assembly, check that neither Scraper (10) nor Seal 1 (75) flips up on both sides.



(3) Tighten the screws (7) with pushing Scraper Assembly (8) to the arrow direction to be close to Blade Roller.



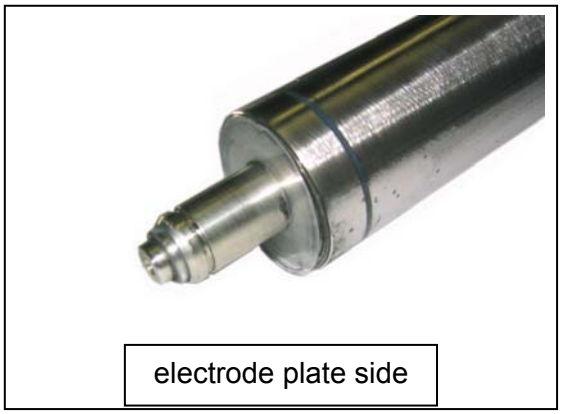
40. Apply the new **Sheet** (78), **Sheet 2** (79) to both sides of the new Blade Roller.
Keep water or grease away from between the sheets.

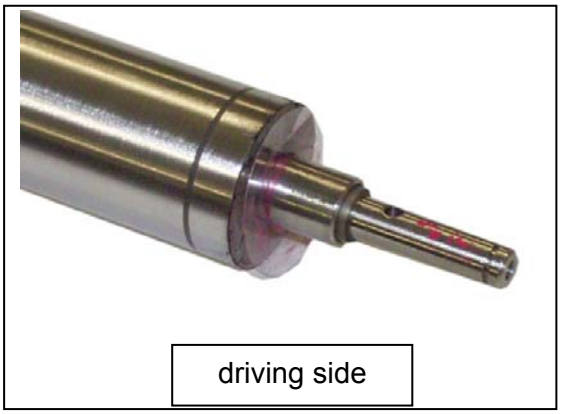


41. Install the new **Blade Roller** to Developer Unit and fix it with the brackets.

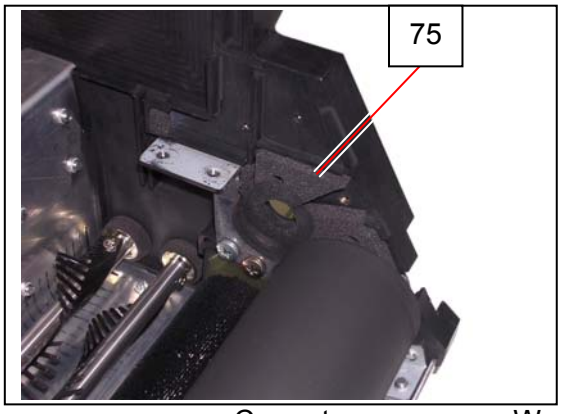
NOTE

(1) Note the installation direction. The longer shaft should be placed to the driving side.

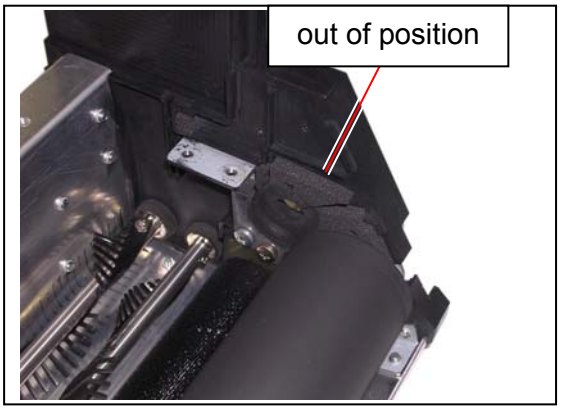




(2) Seal 1 (75) on each side should be seated in position along the bosses.

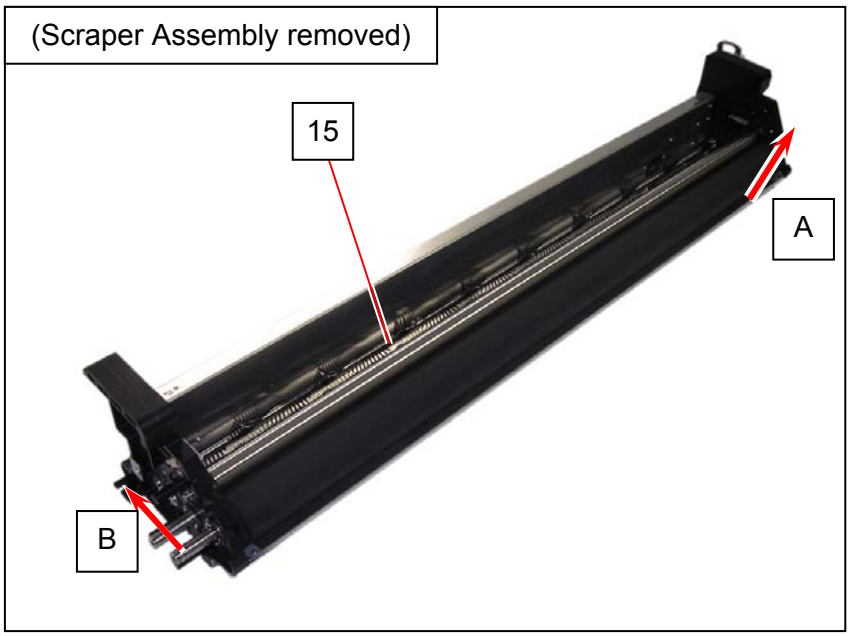


Correct



Wrong

(3) Push Blade Roller (15) against Seal 1 (A) on the driving side to hold and keep its original position, then push on the electrode plate side (B).



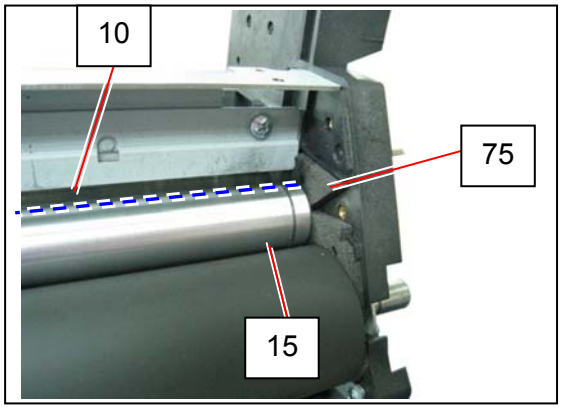
(4) During installing toward (A) then (B), be careful not to damage Sheet (78) and Sheet 2 (79) on Blade Roller shaft.

(continued on the next page)

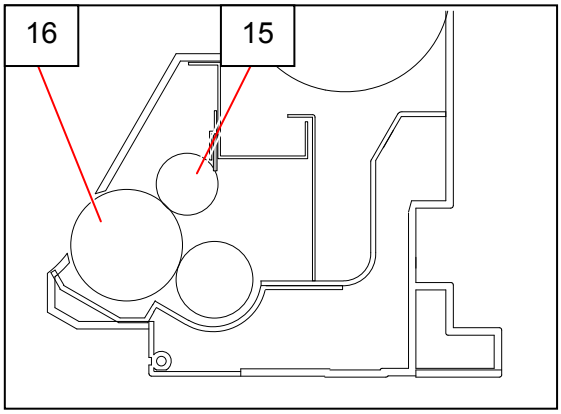
NOTE

(5) After installing, check that Seal 1 (75), Sheet (78), Sheet 2 (79) are not damaged or deformed.

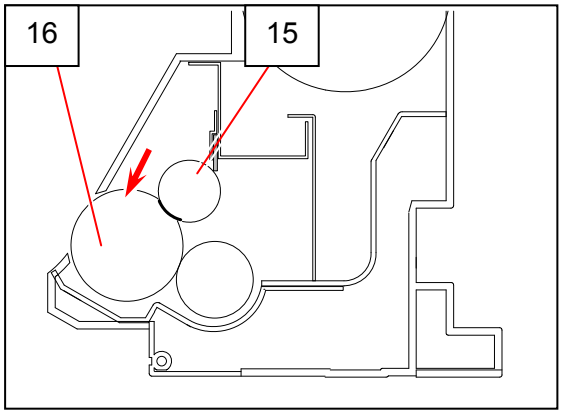
(6) After locating, check that Scraper (10) is not wavy.



(7) Blade Roller (15) is pressed onto / released from Developer Roller (16) by Bracket 4 (on the driving side) and Bracket 5 (on the electrode plate side).
Now Blade Roller (15) has been located in position, it should be pressed onto Roller Developer (16) at the later step.



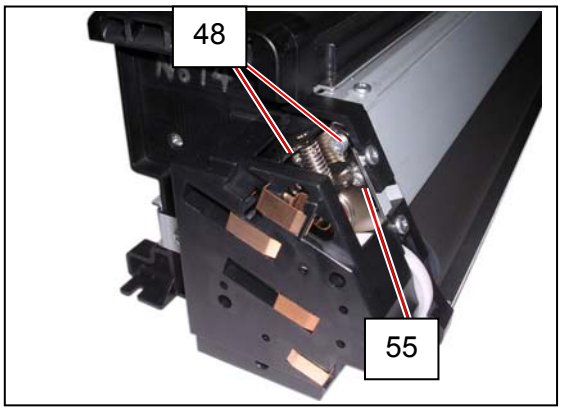
not pressurized

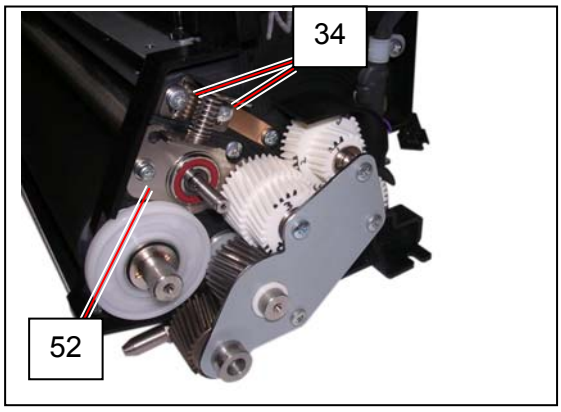


pressurized

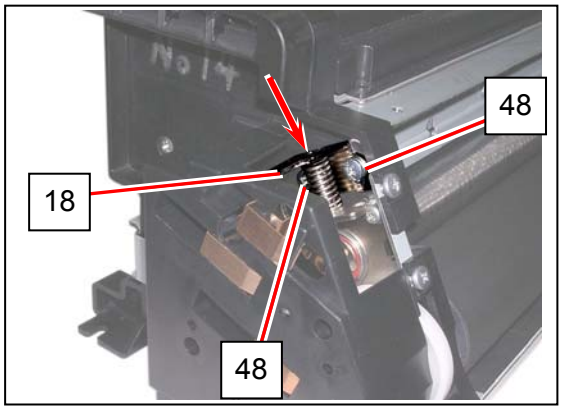
42. Replace all the components except Gear Helical 30T (12), Separator (4) and Hopper Assy (3) in position.

43. Make sure that the 6 screws (48) (55) (34) (52) are installed loose. If not, loosen them.

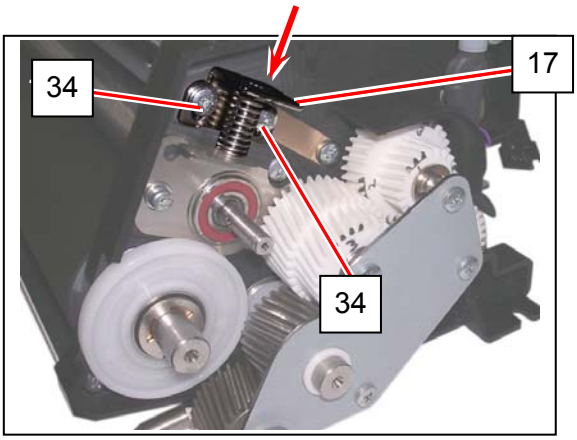




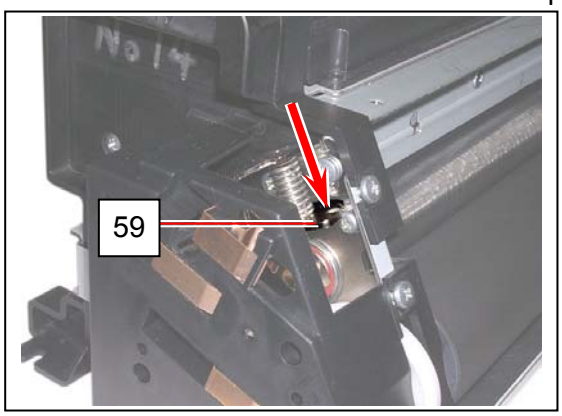
44. On the electrode plate side, fully press down the top of Bracket 5 (18). With pressing, tighten 2 screws (48) to secure Bracket 5 (18).

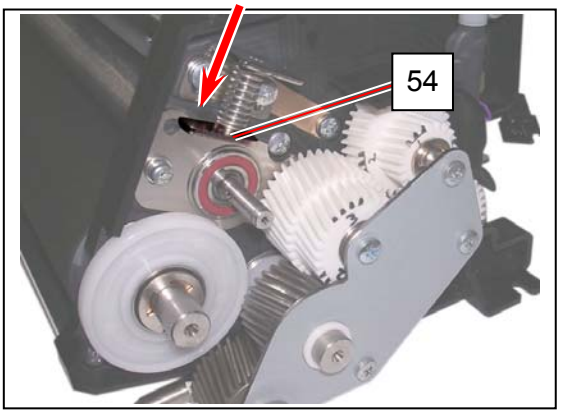


45. On the driving side, fully press down the top of Bracket 4 (17). With pressing, tighten 2 screws (34) to secure Bracket 4 (17).



46. Press down the top of Bracket 7 Assy (59) and Bracket 6 Assy (54) at a time. This will allow Blade Roller to be seated in the correct position.

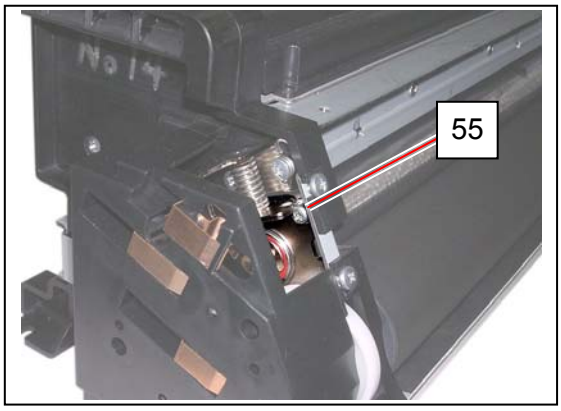


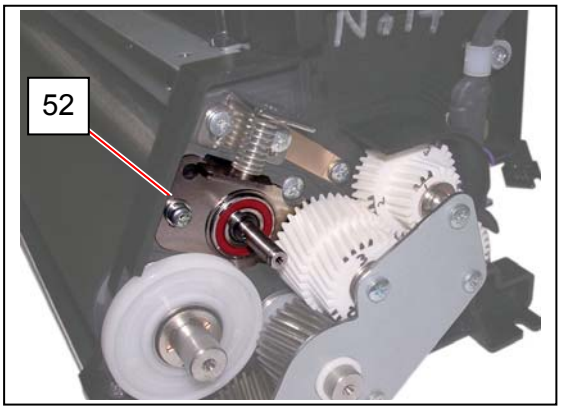


NOTE

(1) Press down both Bracket 7 Assy and Bracket 6 Assy at the same time. Pressing only one side may lose the correct pressure balance between the electrode plate side and the gear side.

(2) Do not turn the screws (55) (52) for Bracket 7 Assy / Bracket 6 Assy at this point. Follow the later instruction to correctly tighten the screws (55) (52).

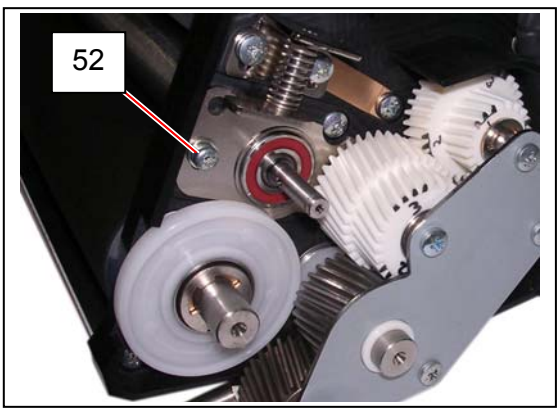


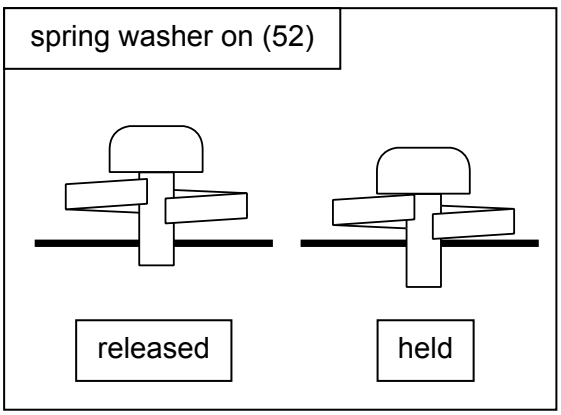


47. Turn the screw (52) in just enough revolution so that its spring washer is held in the gap.

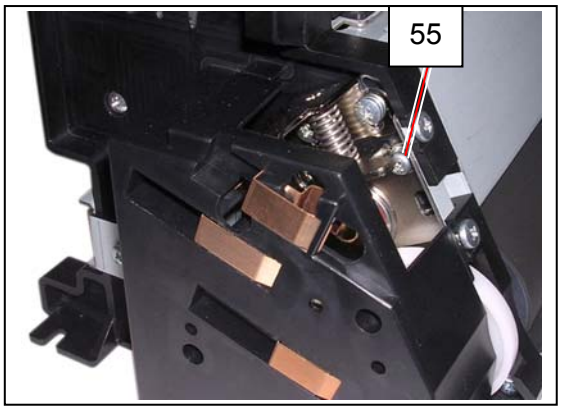
NOTE

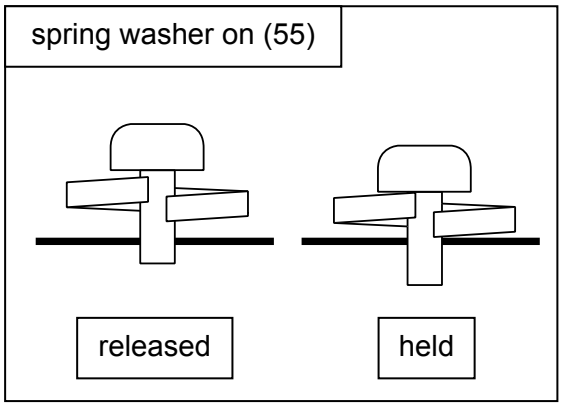
Do not tighten the screw (52) (55) firmly at this point of time. Otherwise proper and even pressurization of Blade Roller between left/right may fail, and this will make the toner layer on Roller Developer get thicker than required.



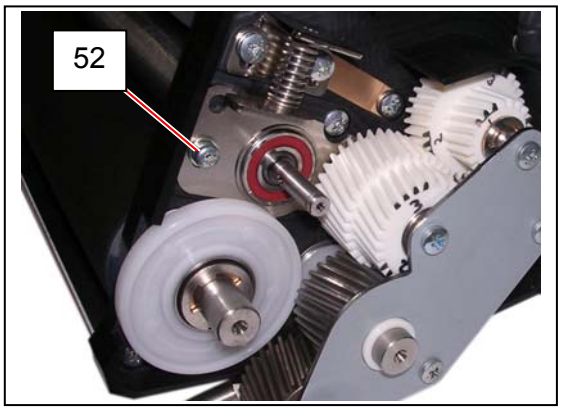


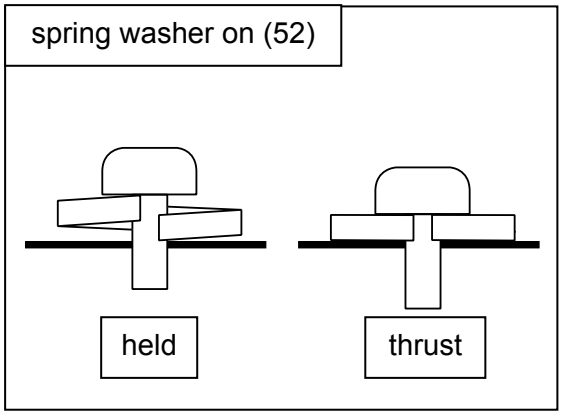
48. Turn the screw (55) in just enough revolution so that its spring washer is held in the gap.



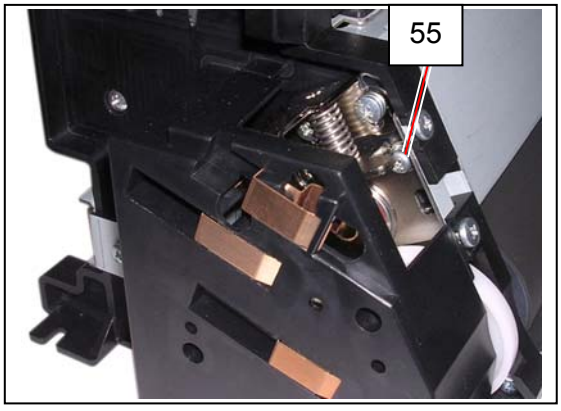


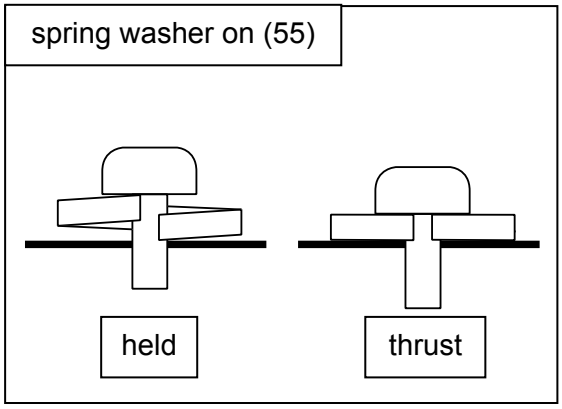
49. Turn the screw (52) in just enough revolution so that its spring washer is thrust in the gap. Do not turn it completely.



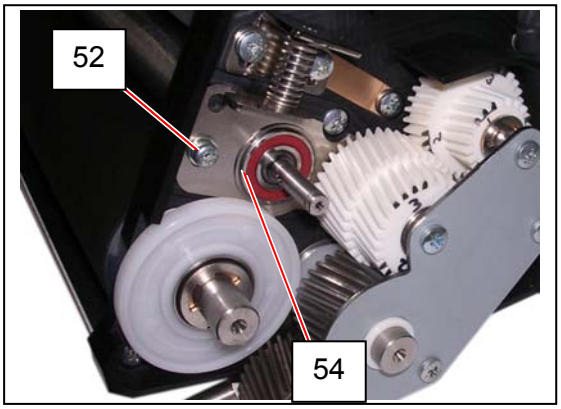


50. Turn the screw (55) in just enough revolution so that its spring washer is thrust in the gap. Do not turn it completely.





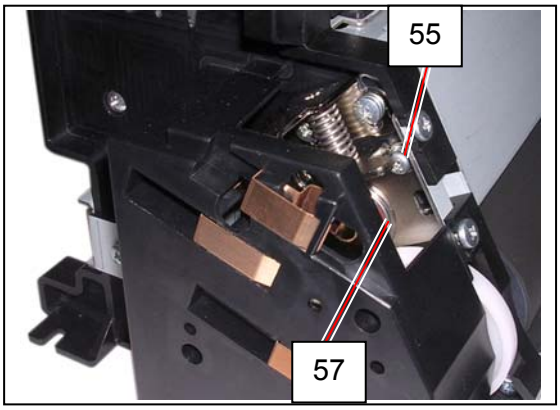
51. Slowly tighten the screw (52) to secure Bracket 6 Assy (54).



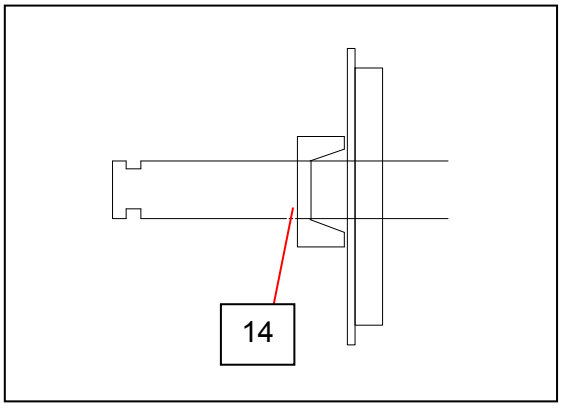
NOTE

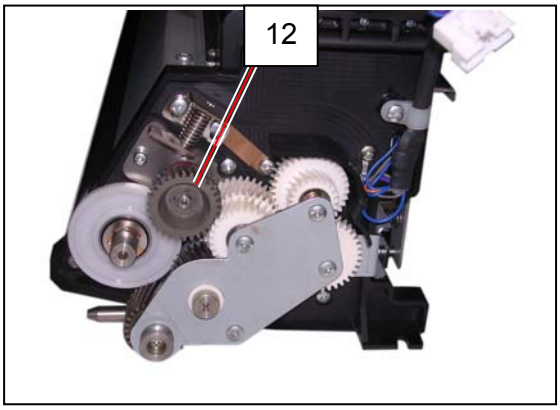
Do not tighten the screw (52) (55) quickly at this point of time. Otherwise proper and even pressurization of Blade Roller between left/right may fail, and this will make the toner layer on Roller Developer get thicker than required.

52. Slowly tighten the screw (55) to secure Bracket 7 Assy (57) in the same way with the previous step.

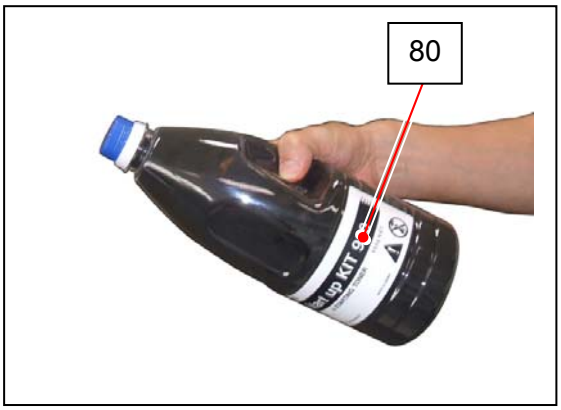


53. On the driving side, reinstall Collar 3 (14), Parallel Pin, Gear Helical 30T (12) and Retaining Ring-E to Blade Roller shaft.

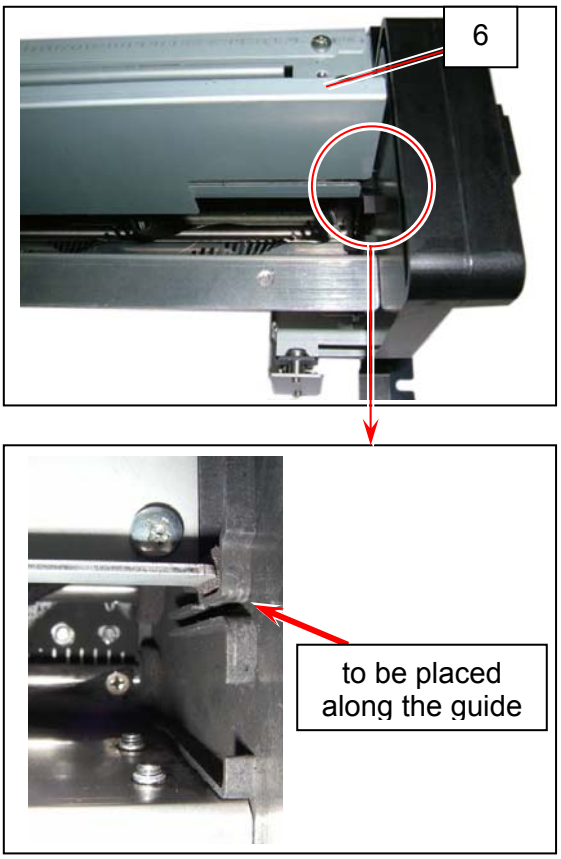




54. Shake the Starting Toner Bottle (80) well, and evenly add the toner to Developer Unit.

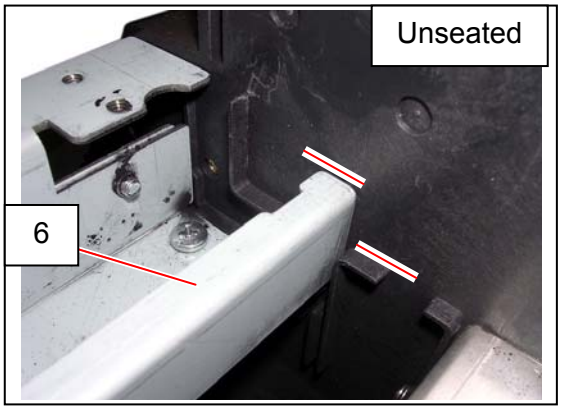


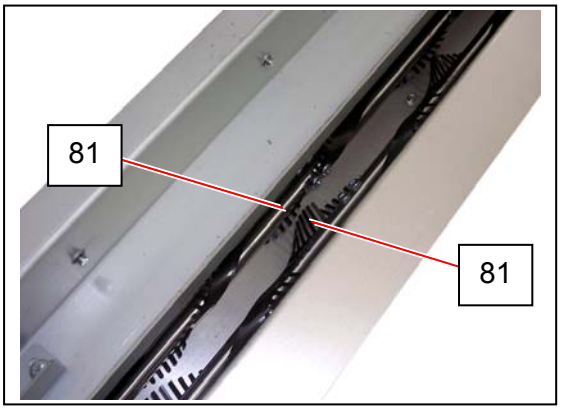
55. Along the guide on the side plates, gently place Separator (6) on the added toner.
Do not push it in.



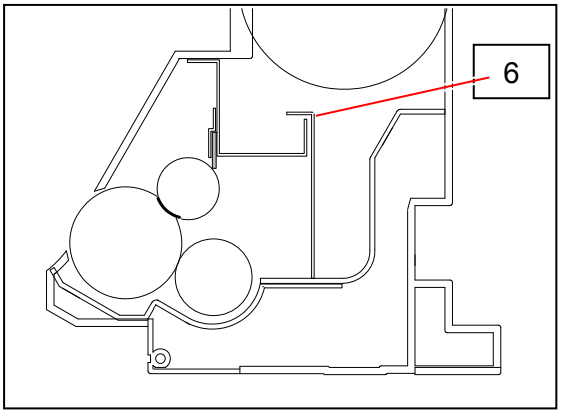
NOTE

(1) Just put Separator (6) on the toner. It will be placed unseated. Do not push it completely at this time. Doing so may damage the plastic screw mylars (81) on the 2 shafts

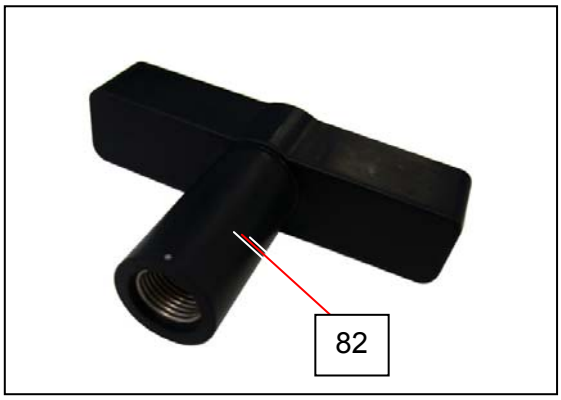


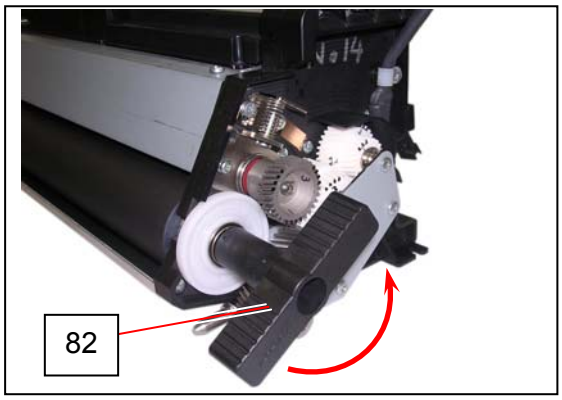


(2) Be careful of the direction of Separator (6).
Do not install it in the wrong direction.



56. Insert Developer Handle (82) to the shaft of Roller Developer, and gently turn Developer Handle (82).
Separator will sink in the toner. Turn Developer Handle (82) until Separator sinks in position.

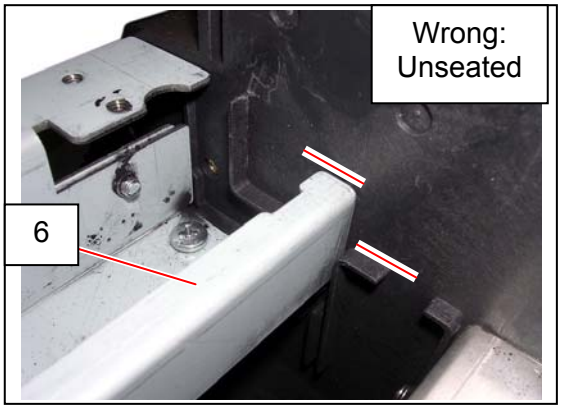


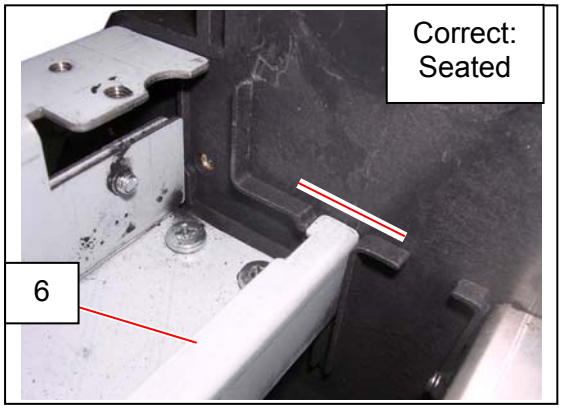


NOTE

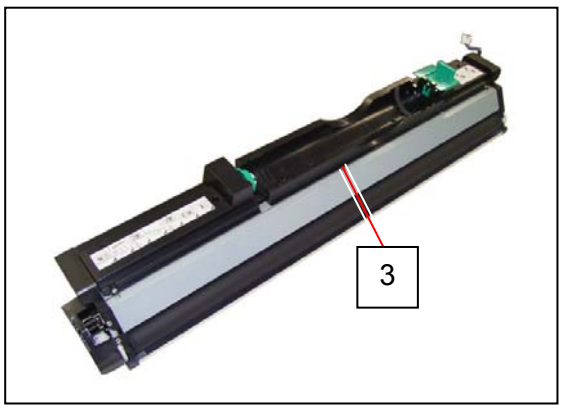
(1) Slowly turn Developer Handle. Otherwise the toner may spill out.

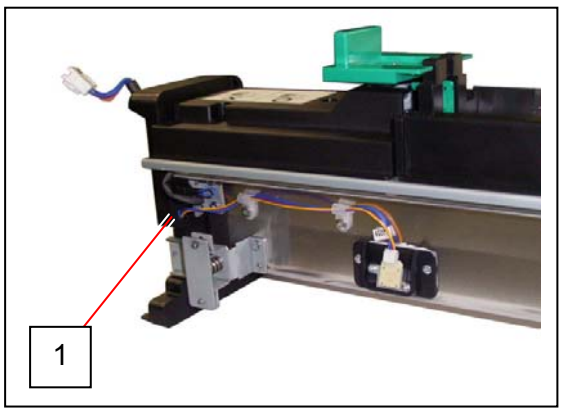
(2) Make sure that Separator (6) completely sinks in position by a 1/2 or more rotation of Developer Handle.
If not in position, the plastic screw mylars may be damaged at the next step.



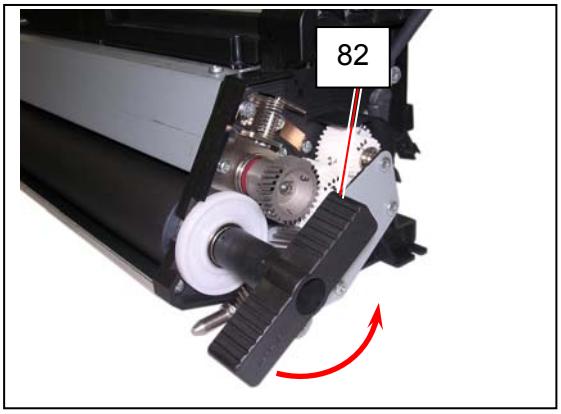


57. Replace the Hopper Assembly (3) and connect the connector (1).





58. Install Developer Handle (82) to Roller Developer shaft. Rotate Roller Developer several times so that the roller surface is covered with the toner.



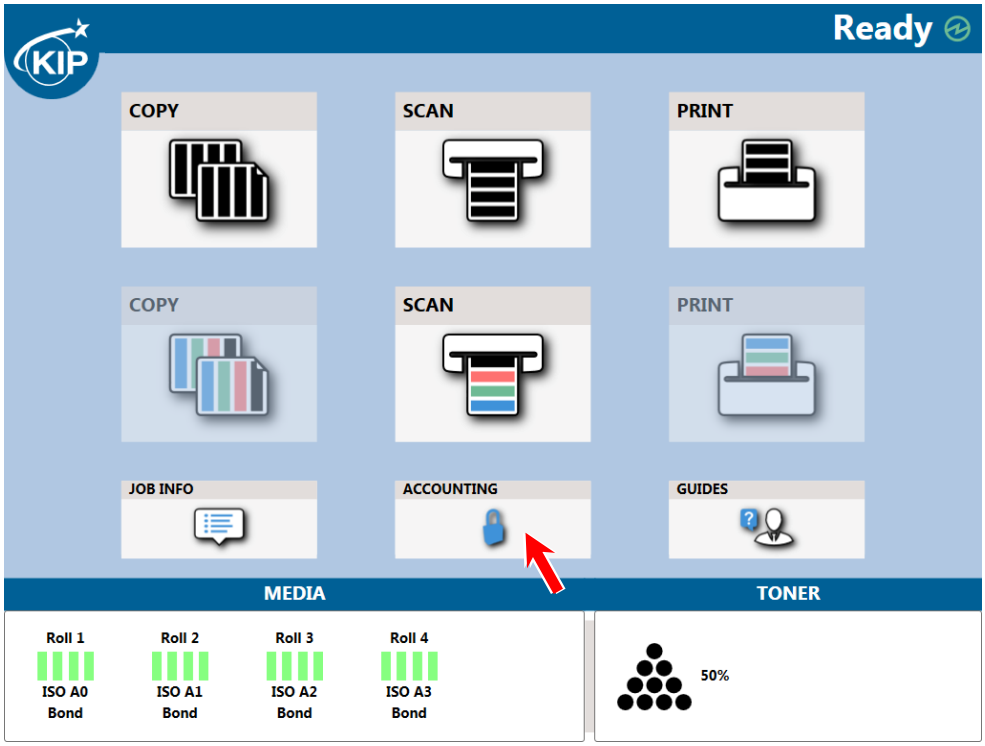
NOTE

If the pressures of Blade Roller on either or both sides are weaker than required, the toner layer on the Developer Unit will be much thicker than required when you rotate the Roller Developer in the above procedure 53.
Pressurize the Blade Roller in the correct way in this case.
Refer to [5.2.8 Readjustment of the Pressure of Regulation Roller].

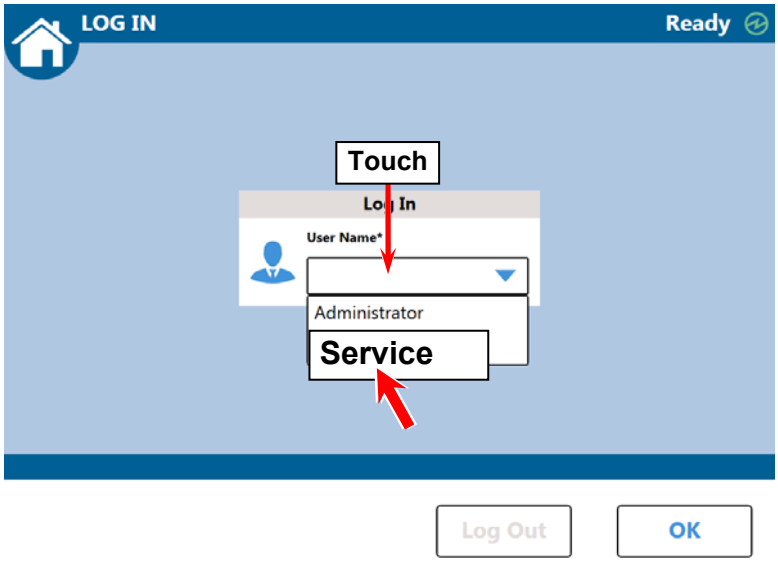
59. Reinstall Developer Unit to the machine.

60. Turn on the machine.

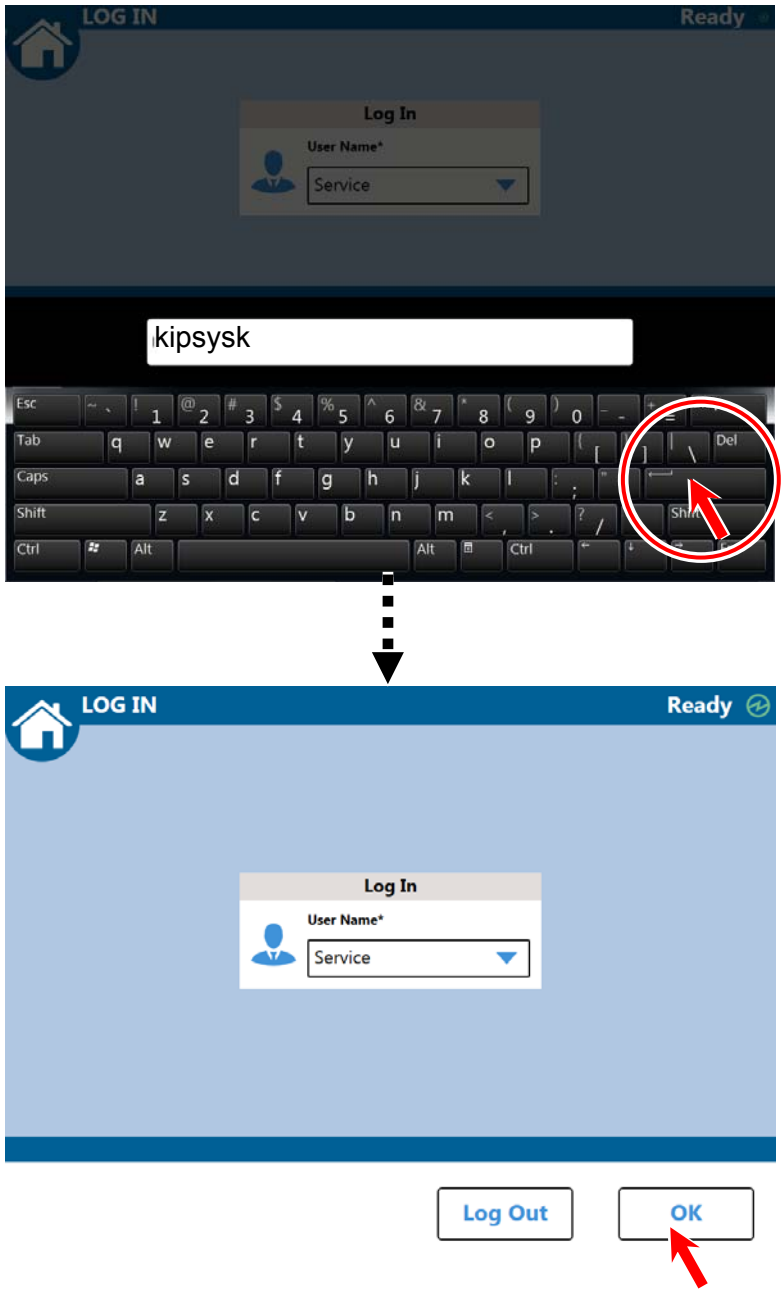
61. Press [ACCOUNTING].



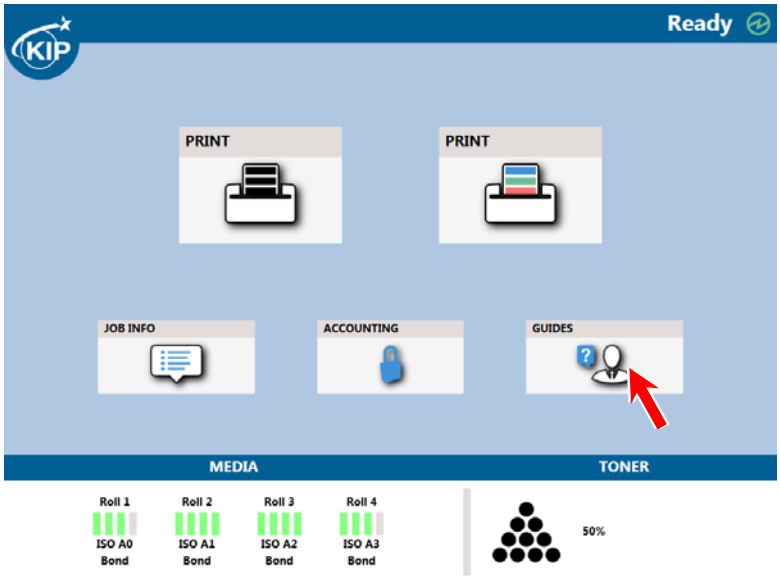
62. Touch the entry field of "User Name", and then select "Service" from the pull-down menu.



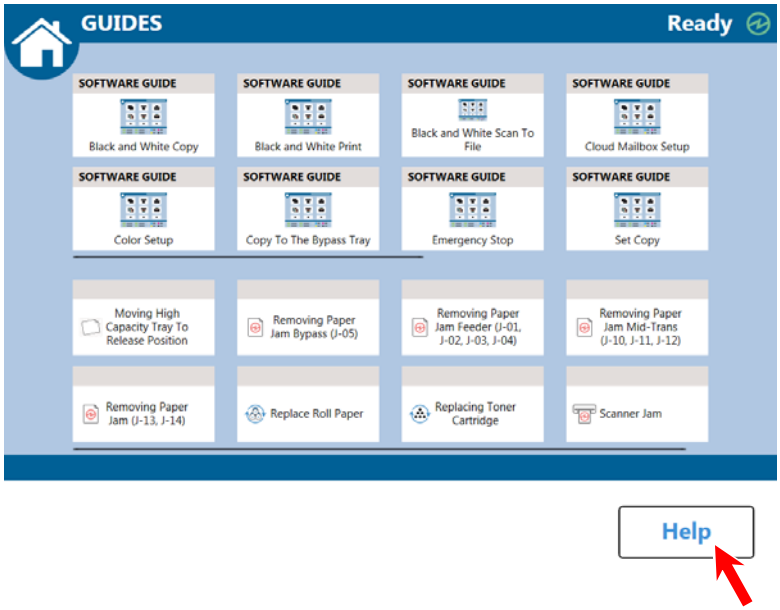
63. Enter "kipsysk" in the password field, press the ENTER key, and then press [OK] in the LOG IN screen to log in with the administrative right.



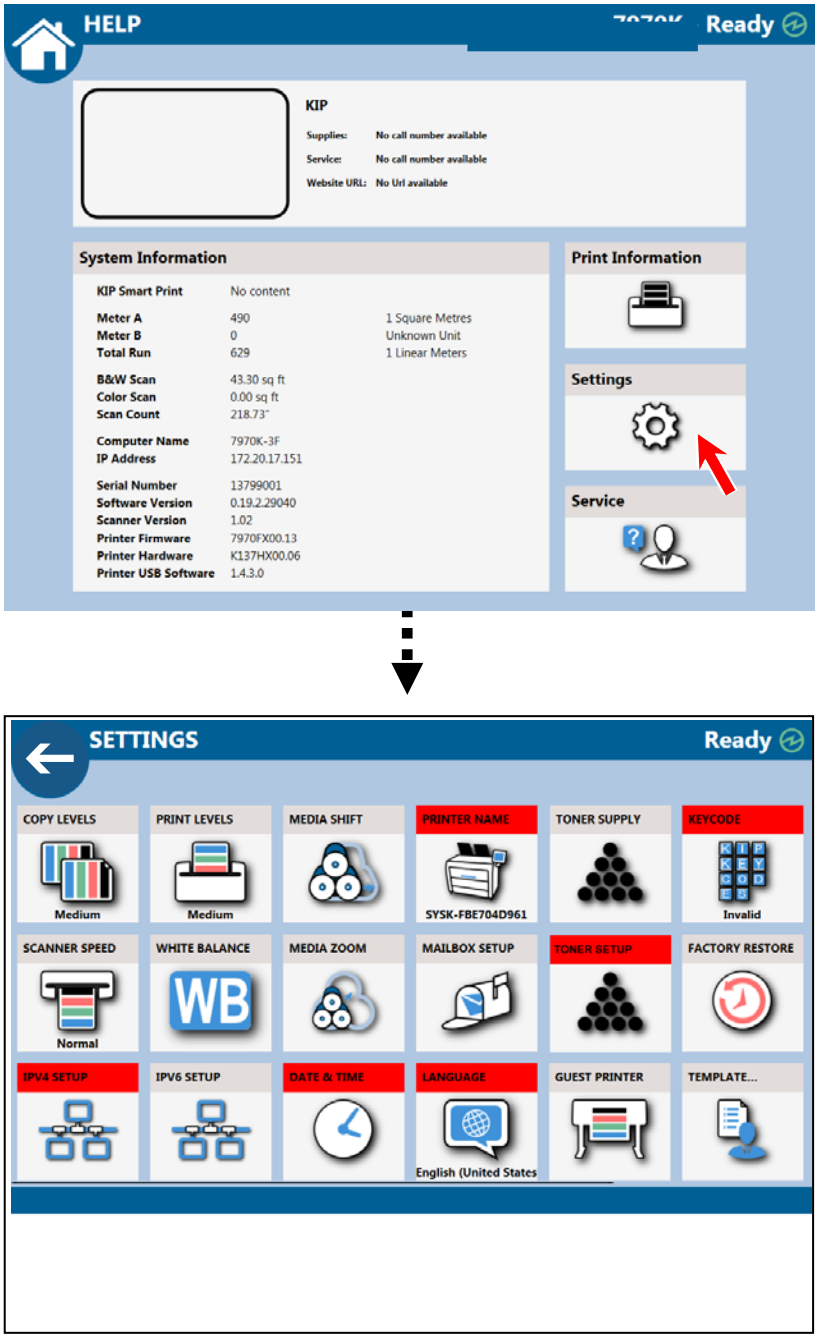
64. Press [GUIDES].



65. Press [Help].



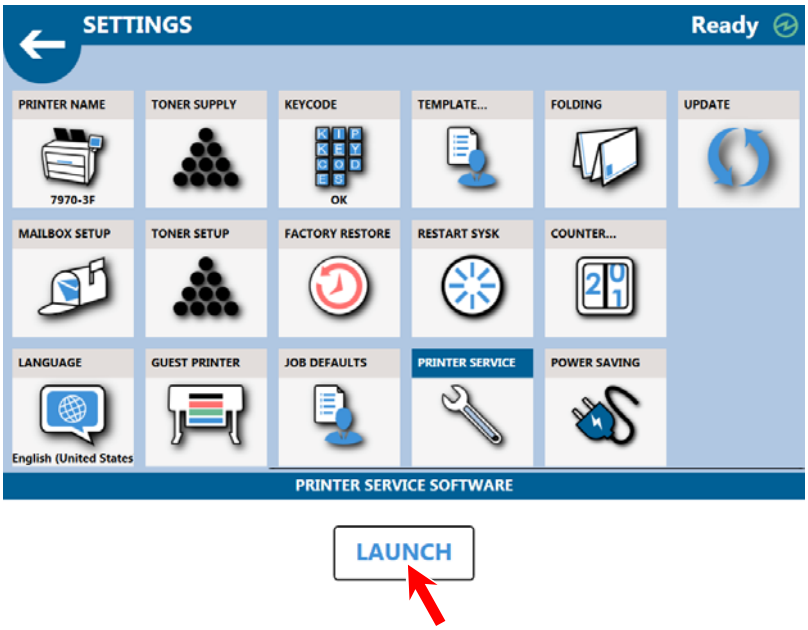
66. Press [Settings]. “SETTINGS” screen appears.



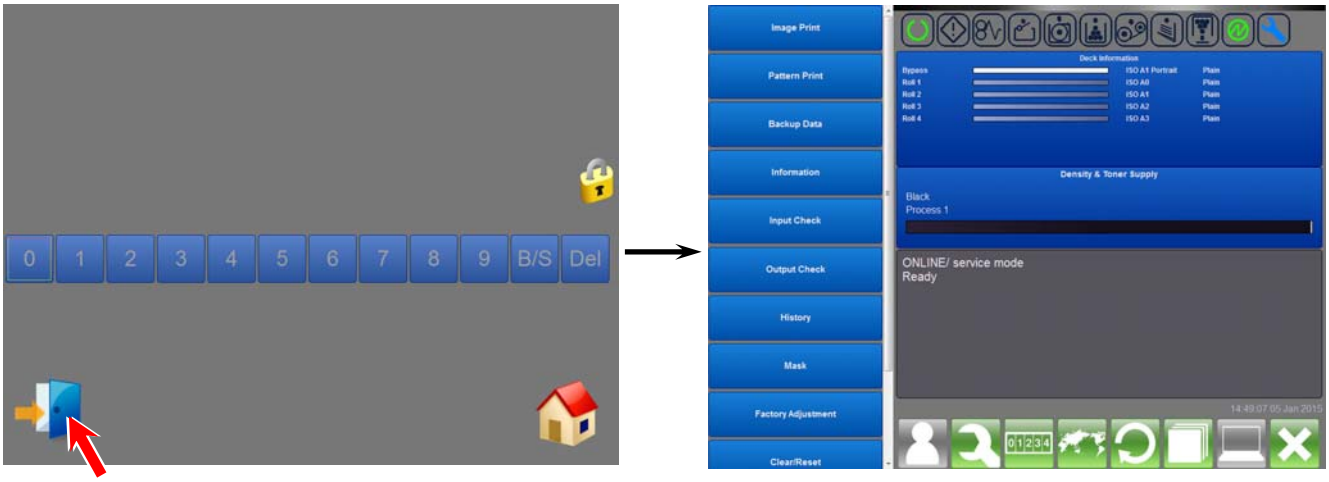
67. Press [PRINTER SERVICE] on the “SETTINGS” screen.

Scroll

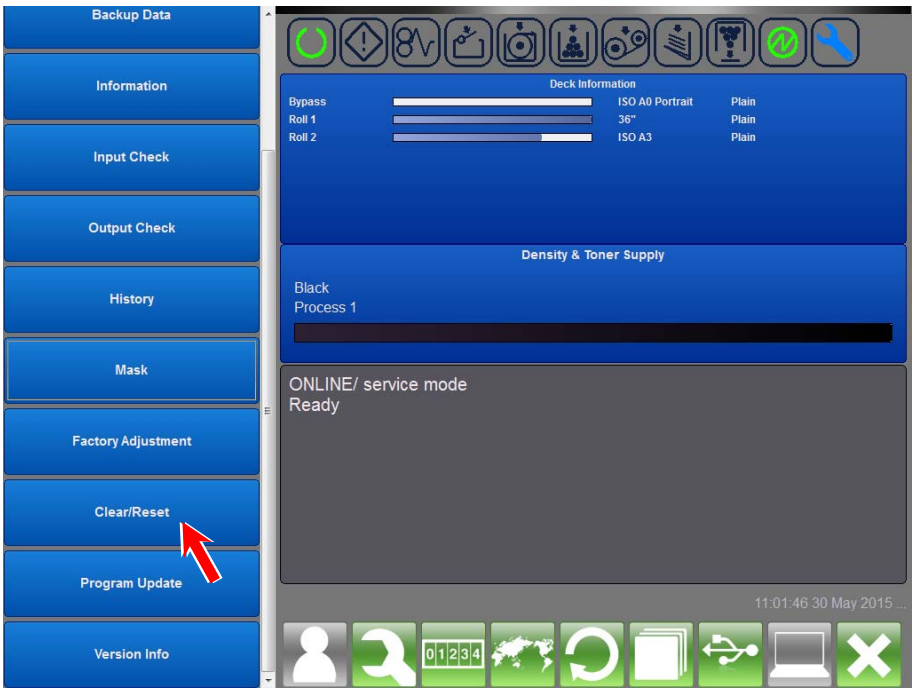
68. Press [LAUNCH].



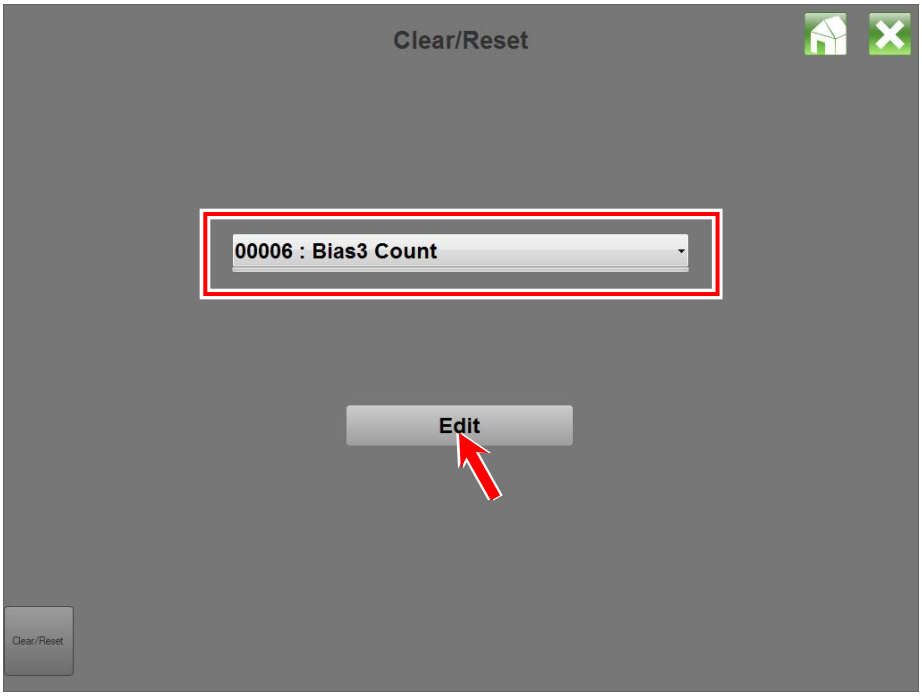
69. Press ”Door” Icon to log in Maintenance GUI.



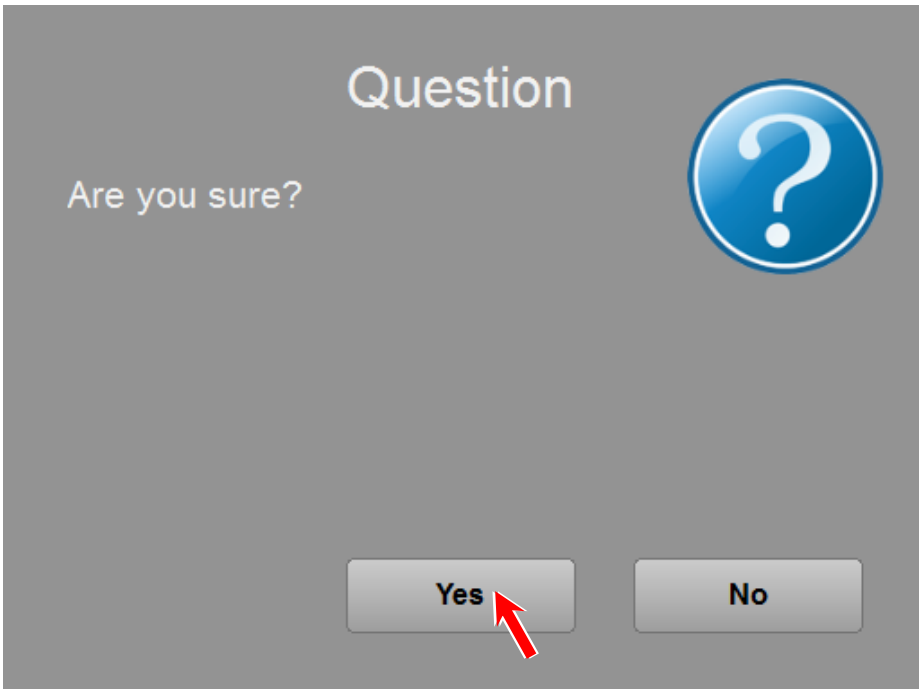
70. Press [Clear / Reset].



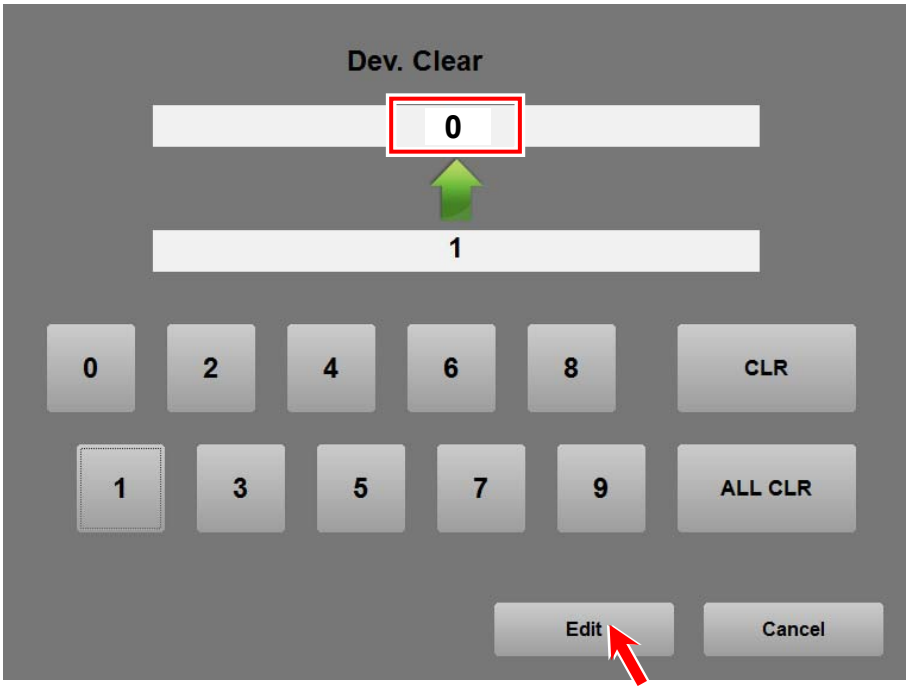
71. Select [00006　Bias 3 Count] from “Clear/Reset” menu. Press [Edit].



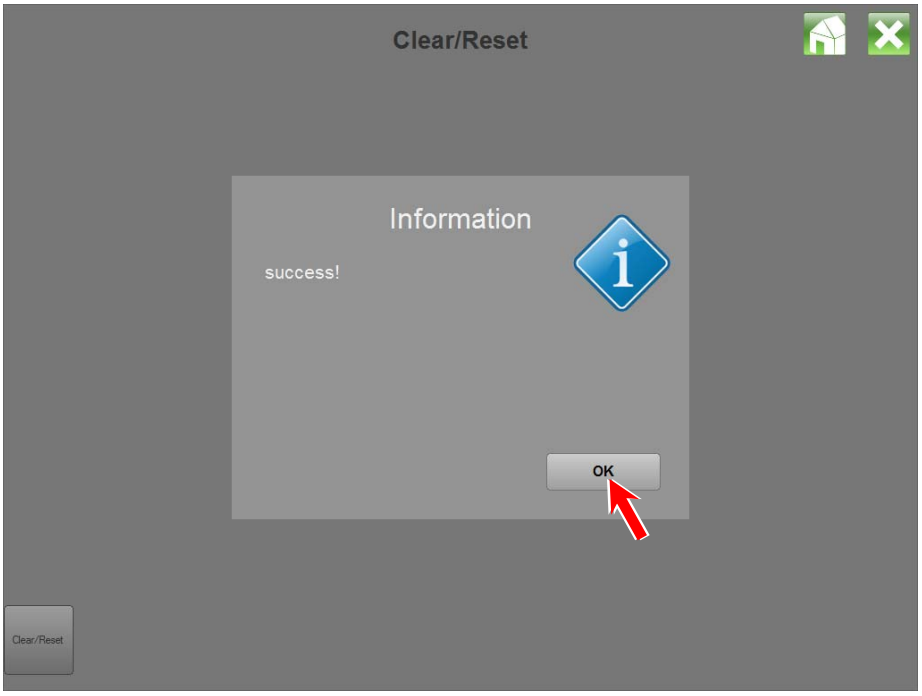
72. Confirmation screen appears. Press [Yes].



73. Input screen appears.
Input “0” with On-screen Keypad. Press [Edit].



74. "Reset of Bias Adjustment by Density Compensation Process" is completed.
Press [OK].



NOTE

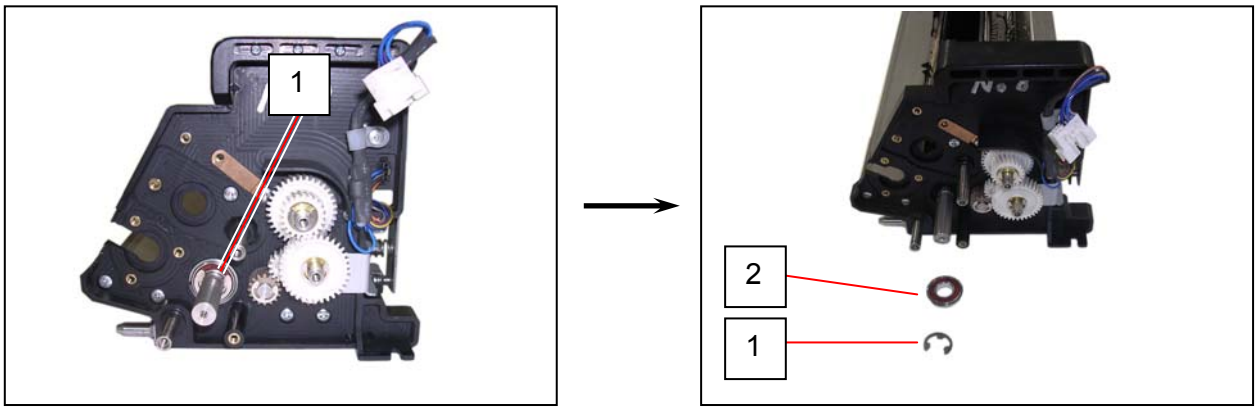
The required value for the KIP7170 to reset Bias Adjustment by Density Compensation Process is “0”.

“**0**” to “**3**” correspond to the adjustment level in Density Compensation Process.
For example, if you interchange the Developer Unit with your spare unit, you can manually set a certain adjustment level that would be suitable for your spare unit.

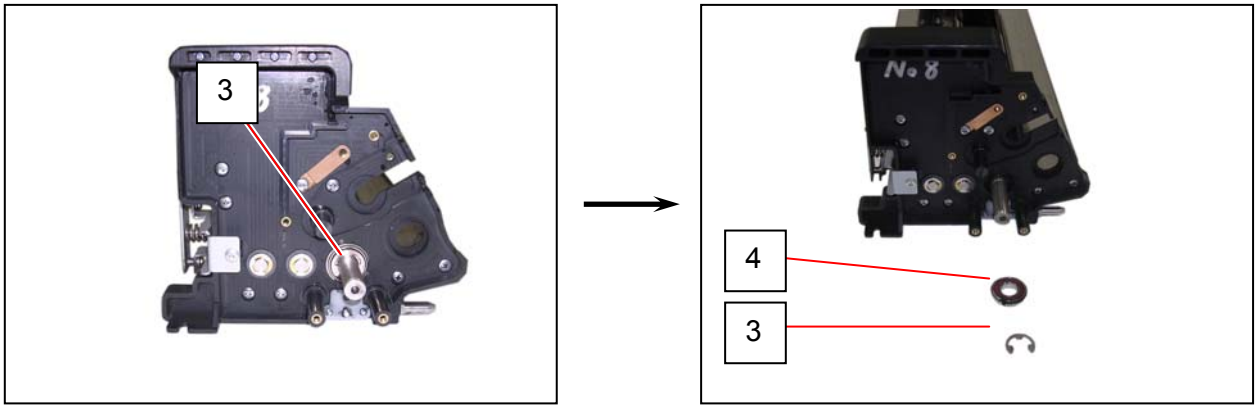
5. 2. 3 Replacement of Roller Supply

1. Remove Blade Roller and Roller Developer from Developer Unit making reference to [5. 2. 2 Replacement of Developer Unit Components].

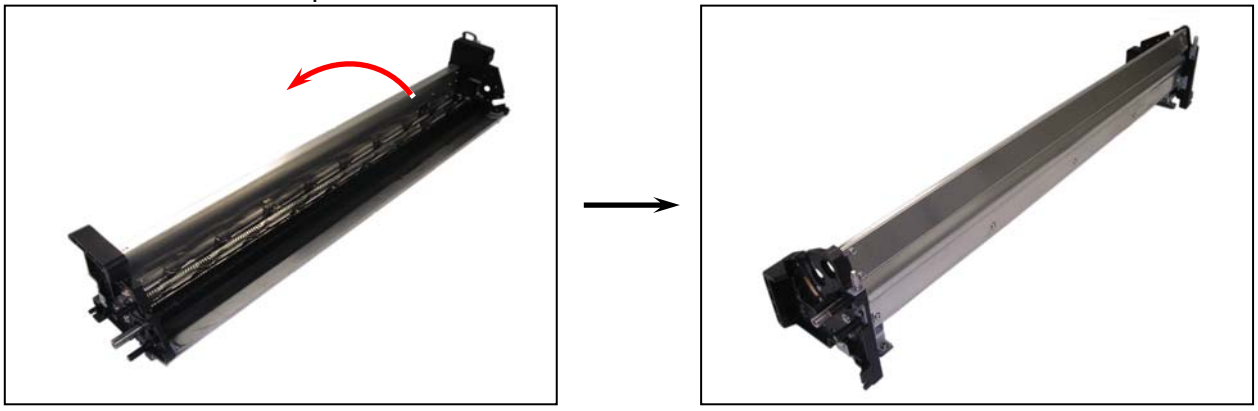
2. Remove Retaining Ring-E (1: E10) to remove Bearing (2).



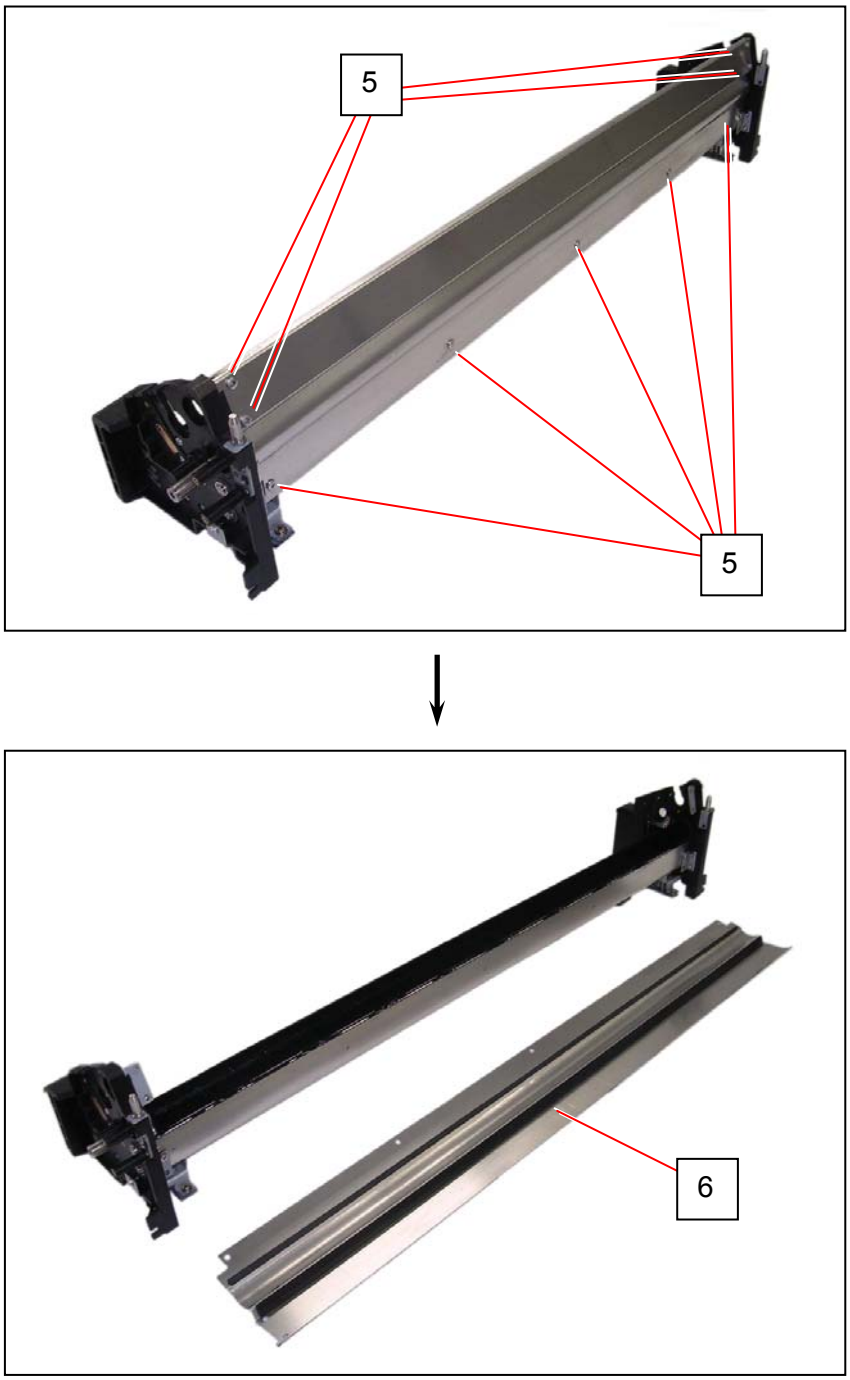
3. On the electrode plate side, remove Retaining Ring-E (3: E10) to remove Bearing (4).



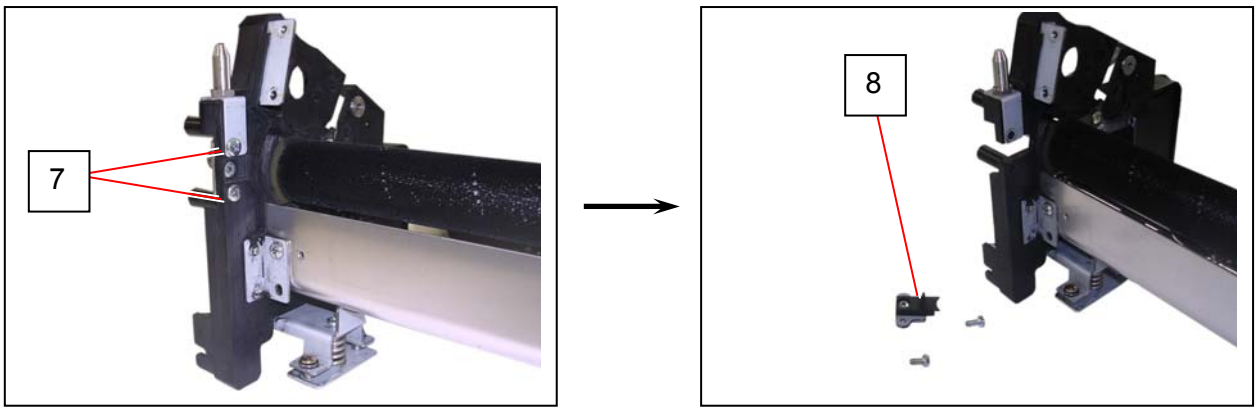
4. Turn the whole Developer Unit frame to the arrow direction to be laid down.



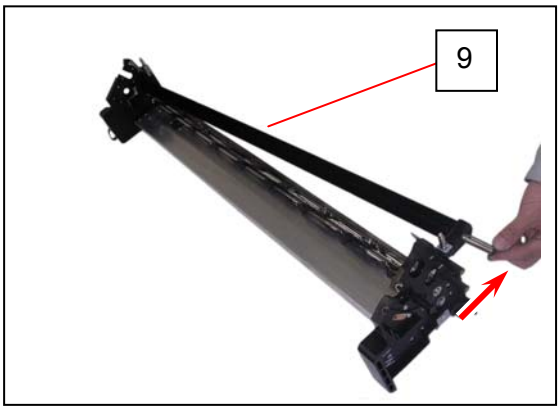
5. Remove 9 screws (5) to remove Frame 2 (6).

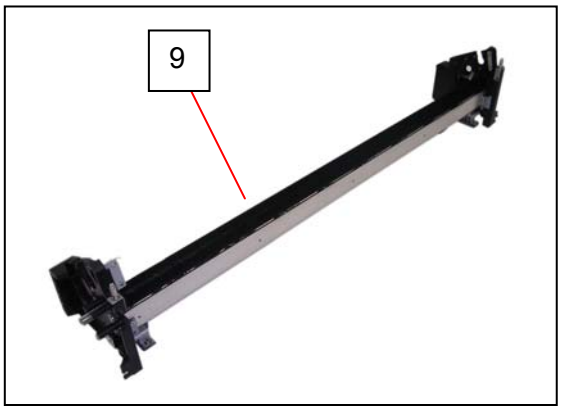


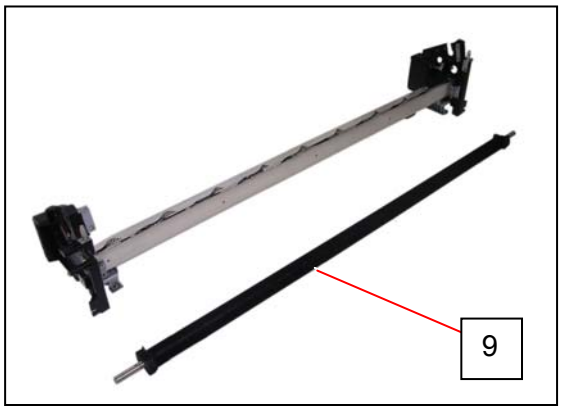
6. Remove 2 screws (7) to remove Bracket Assy (8).



7. Remove Toner Supply Roller (9).





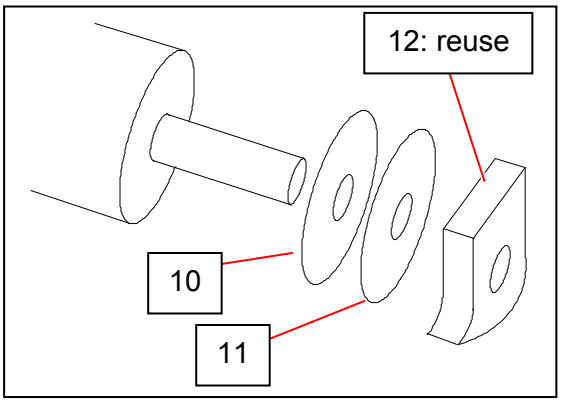


NOTE

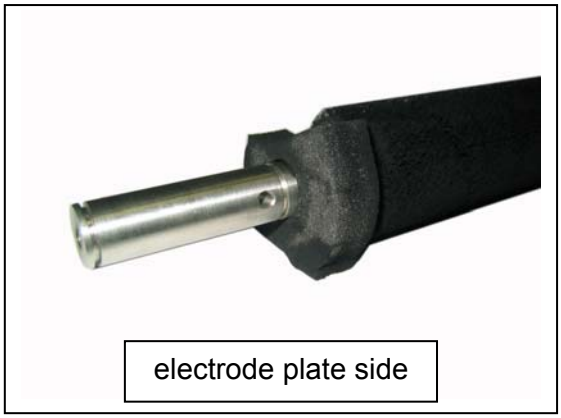
(1) Sheet 6 (10), Sheet 5 (11), Seal R Assy or Seal L Assy (12) are attached on each side shaft of Roller Supply.

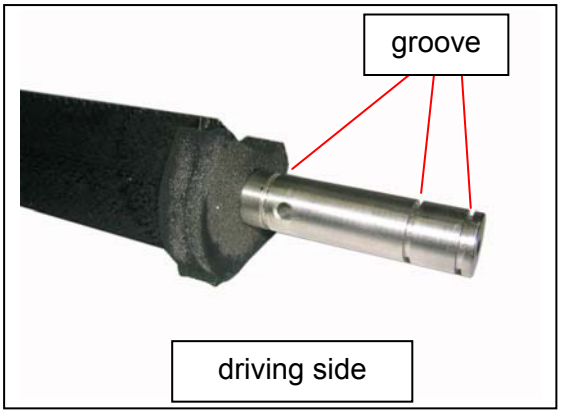
Remove them from the old Roller Supply and then install them to the new Roller Supply. (Be careful not to dispose them.)

Keep water or grease away from between the sheets.



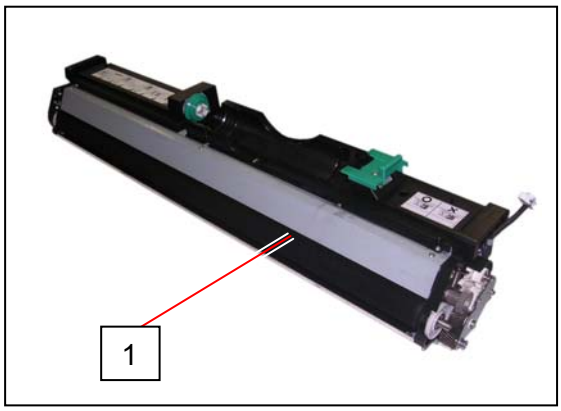
(2) Note the installation direction. The shaft with three grooves should be placed to the driving side.



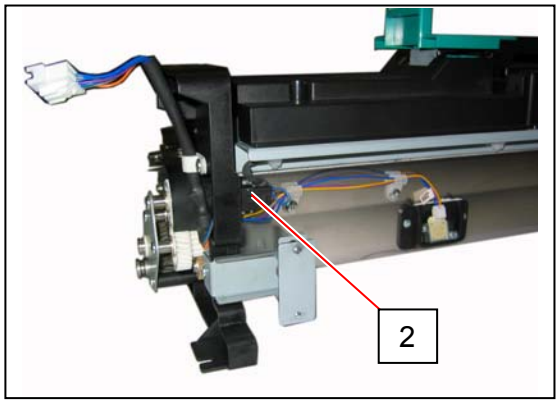


5. 2. 4 Replacement of Screw Assy

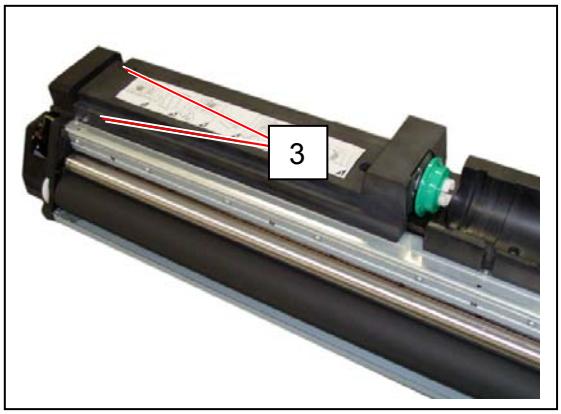
1. Remove the Developer Unit (1) from the machine making reference to [5. 2. 1 Removal of the Developer Unit].

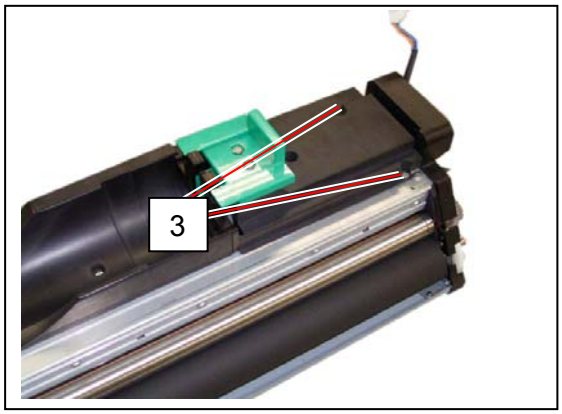


2. Disconnect the connector (2).

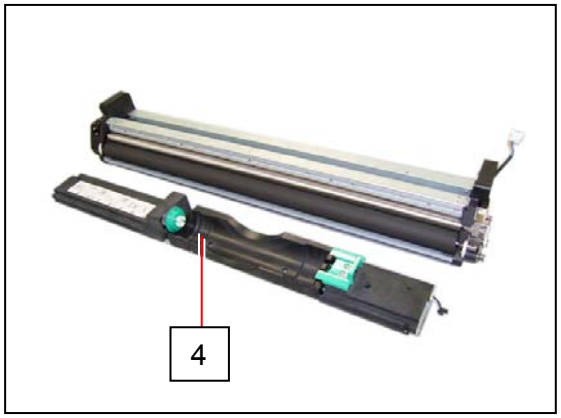


3. Remove 4 pieces of 4x6 screws (3) which fix the Hopper Assembly (4).

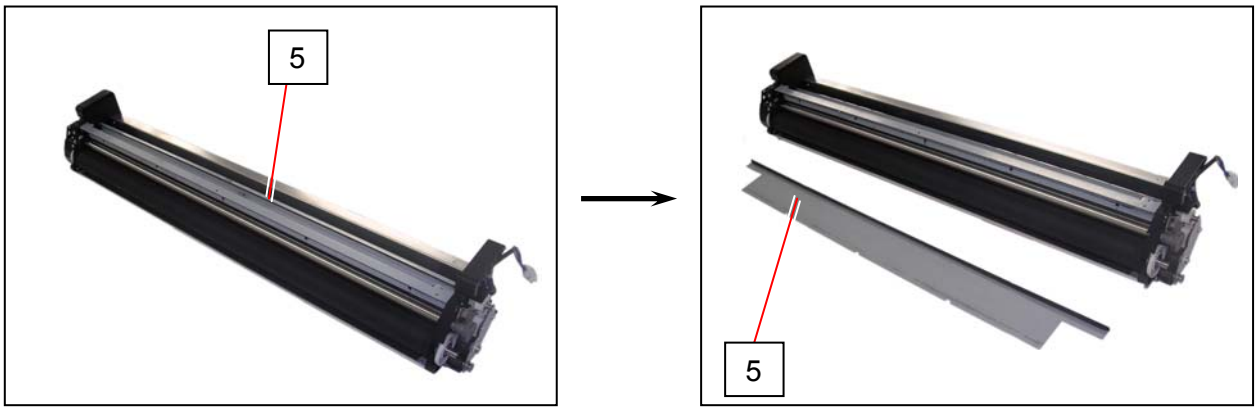




4. Remove the Hopper Assembly (4).



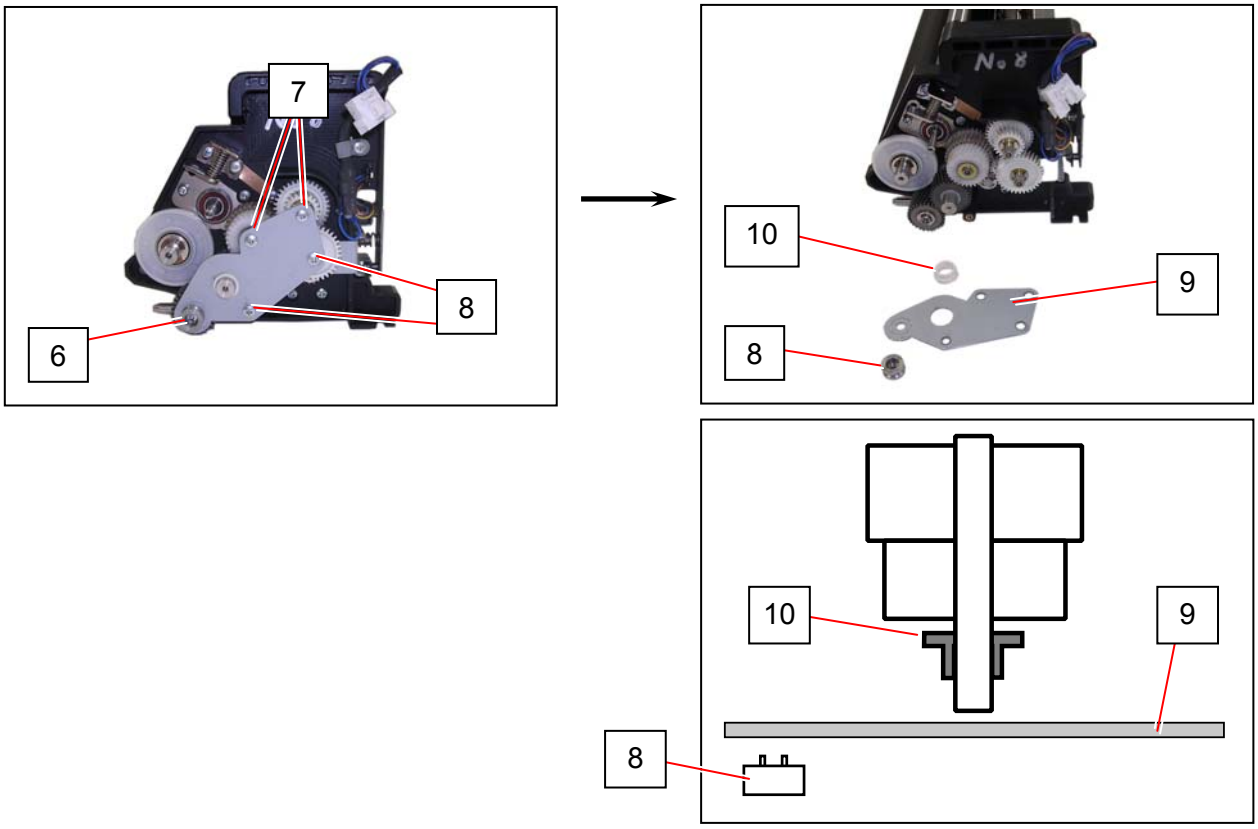
5. Remove Separator (5).



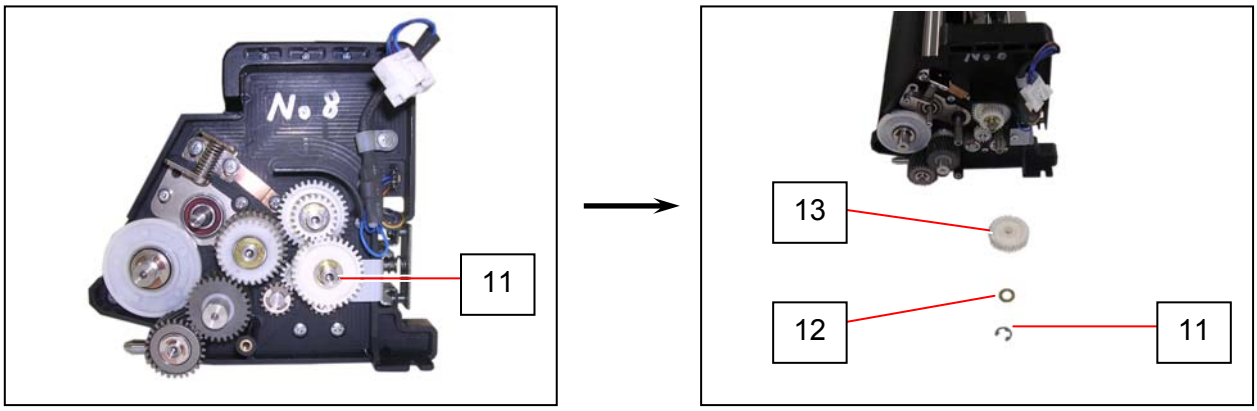
6. Remove all the toner from Developer Unit.

> **NOTE**
>
> Do not reuse the removed toner.

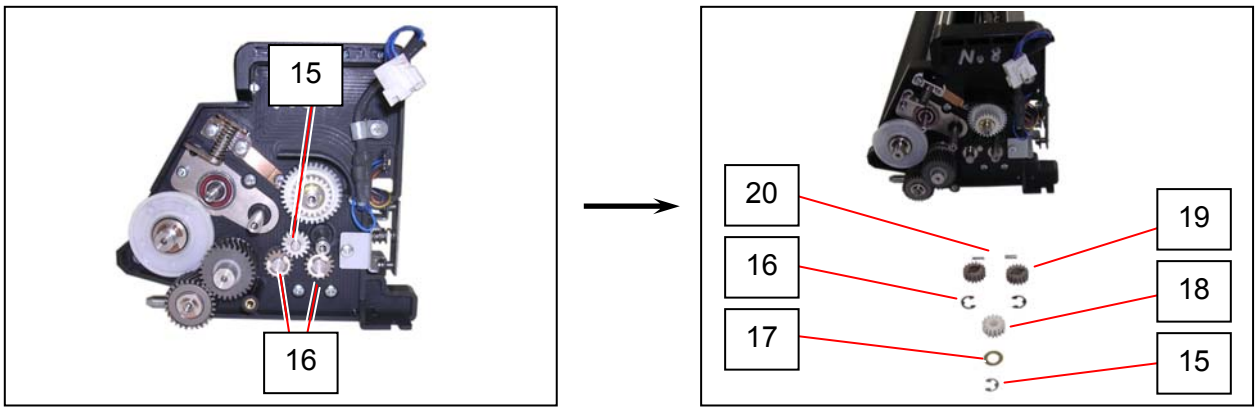
7. Remove 5 screws (6: M4x8) (7: M4x6) to remove Pin 4 (8), Plate (9), Collar (10).



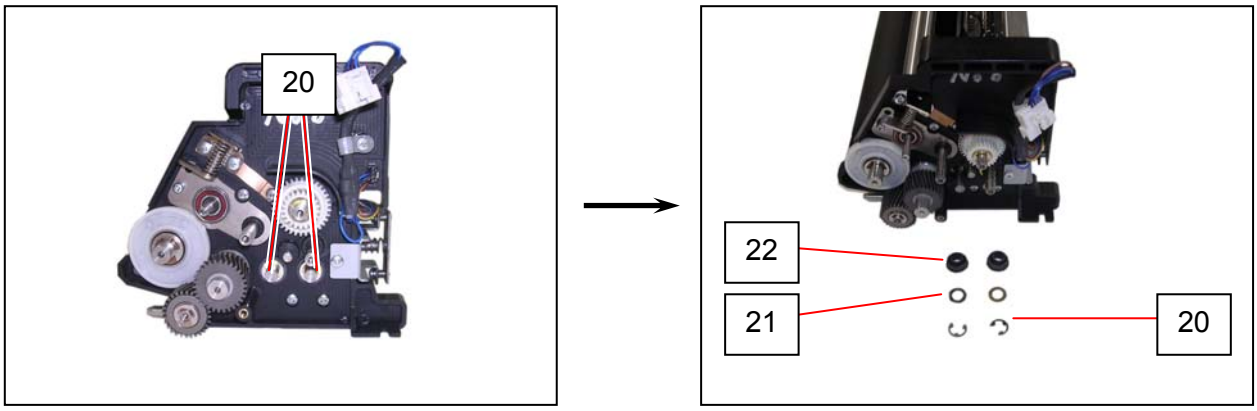
8. Remove Retaining Ring-E (11: E7) to remove Spacer (12), Gear 16T-34T (13).



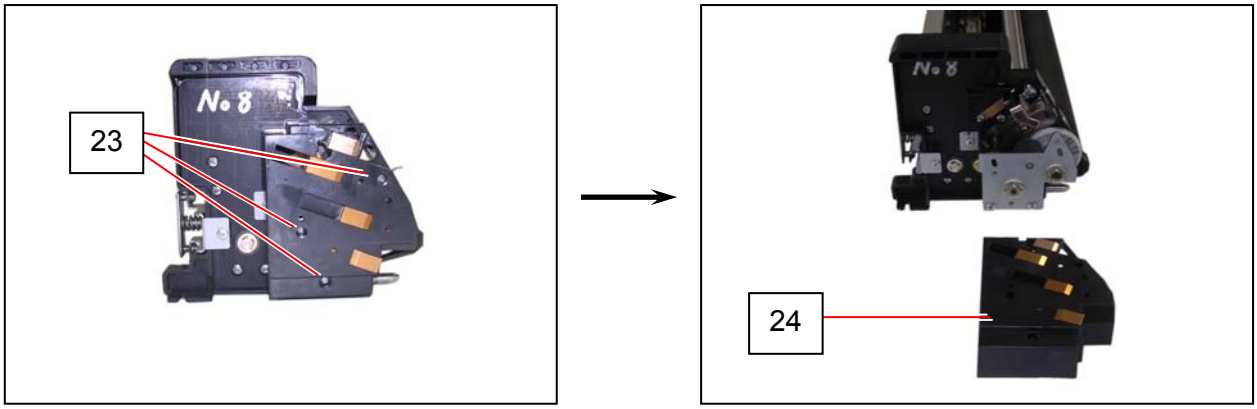
9. Remove Retaining Ring-E (14: E5) (15: E7) to remove Washer (16), Gear 15T (17), Gear 16T (18) and Parallel Pin (19).



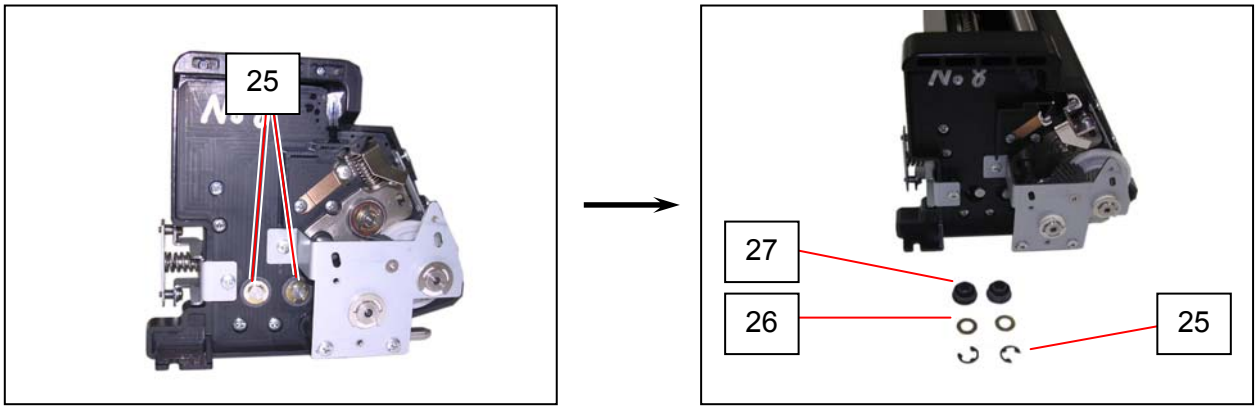
10. Remove Retaining Ring-E (20) to remove Washer (21) and Bush (22).



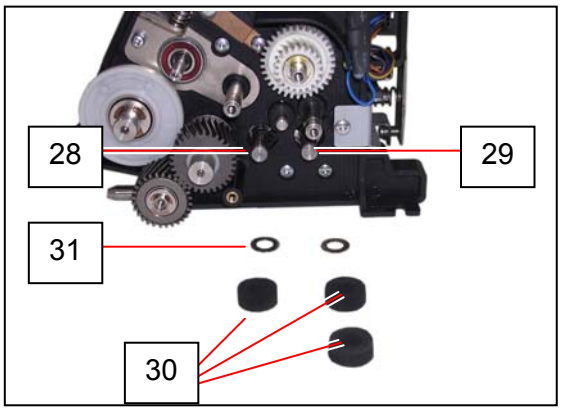
11. On the electrode plate side, remove 3 screws (23) to remove Holder 2 Assy (24).

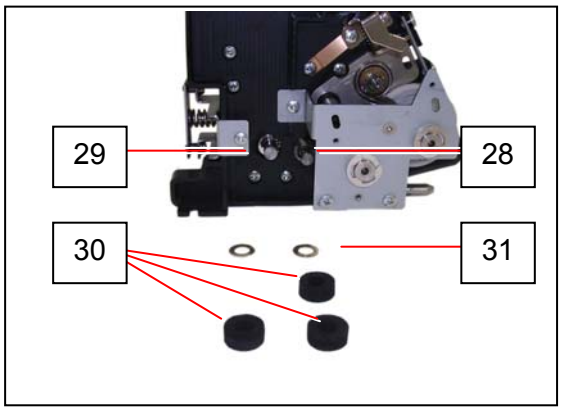


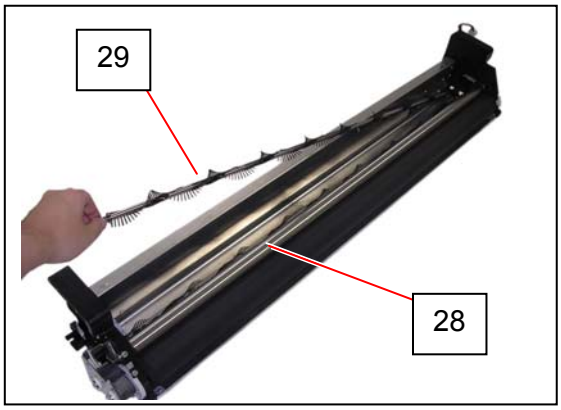
12. Remove Retaining Ring-E (25) to remove Washer (26) and Bush (27).

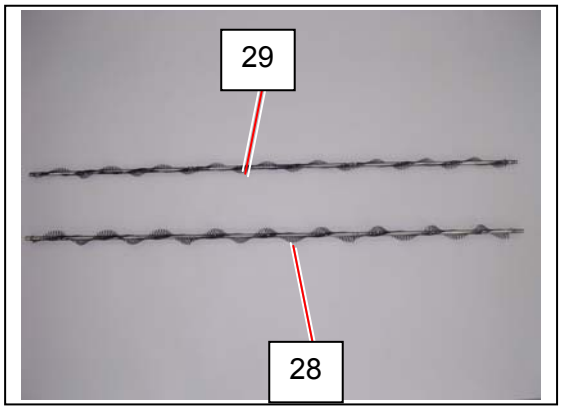


13. Remove Screw A Assy (28: near Roller Supply), Screw B Assy (29: far from Roller Supply). Remove Side Seal (30) and Washer (31) on both ends of Screw A Assy (28) and Screw B Assy (29).

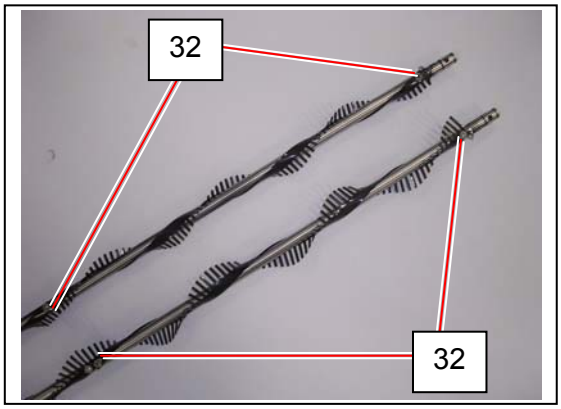


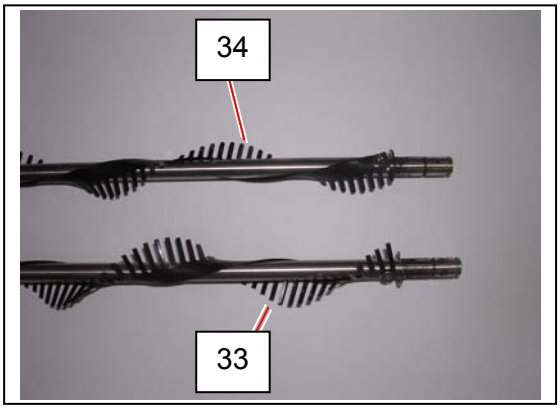






14. Remove each 2 screws (32: M3x5) to remove Screw A (33) / Screw B (34).



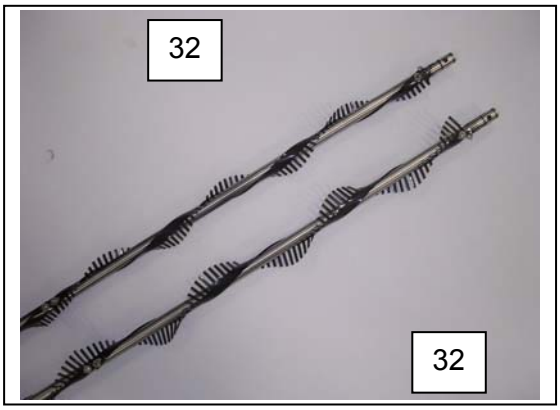


NOTE

When replacing Screw A (33) / Screw B (34), please note the followings.

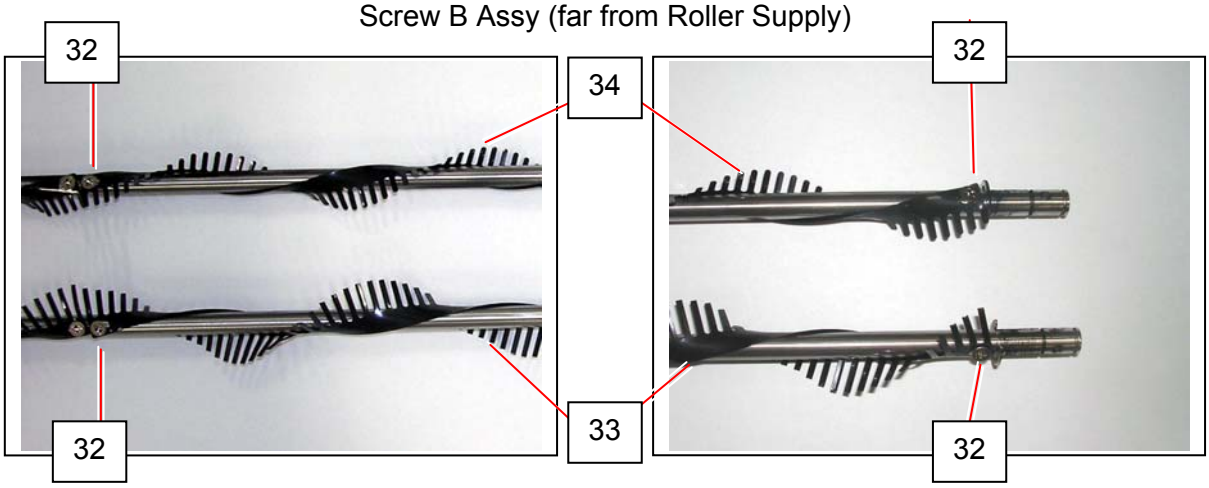
(1) Note the twisting direction around the shaft.

(2) Each Screw A (33) / Screw B (34) has a 3 twist between the screws (32).



(3) Screw A (33) / Screw B (34) are fragile. Gently turn the screws (32) to fix Screw A (33) / Screw B (34).

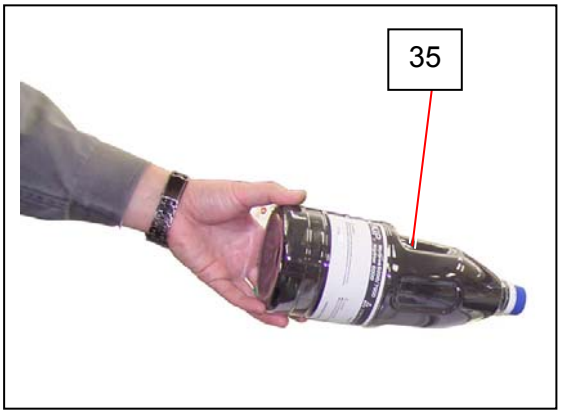
Screw B Assy (far from Roller Supply)



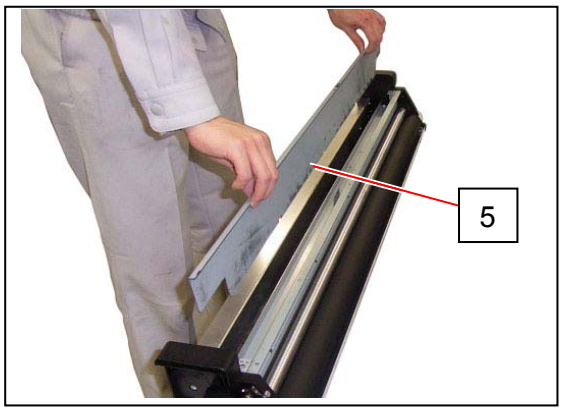
Screw A Assy (near Roller Supply)

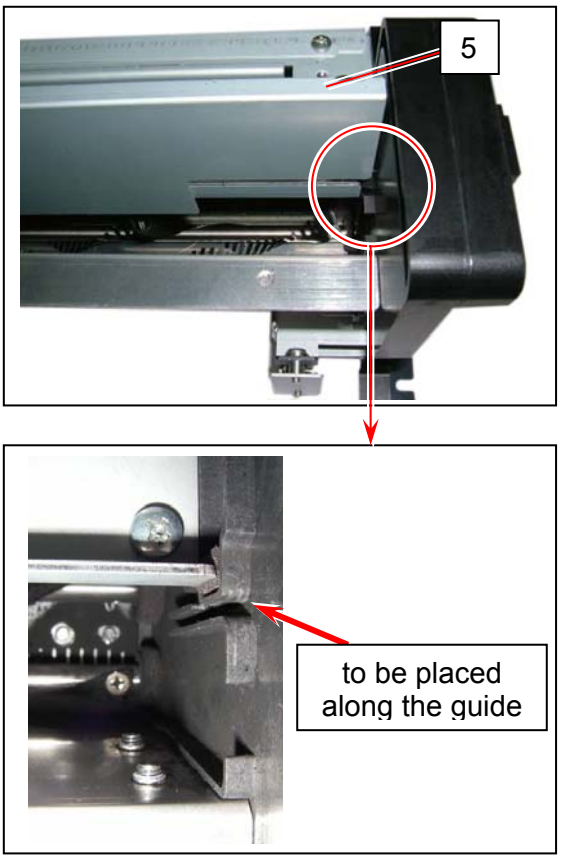
15. Replace all the components except Separator (5) and Hopper Assy (4) in position.

16. Shake the Starting Toner Bottle (35) well, and evenly add the toner to Developer Unit.



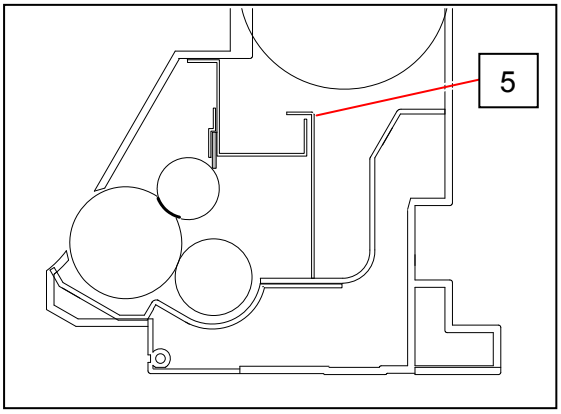
17. Along the guide on the side plates, gently place Separator (5) on the added toner.
Do not push it in.



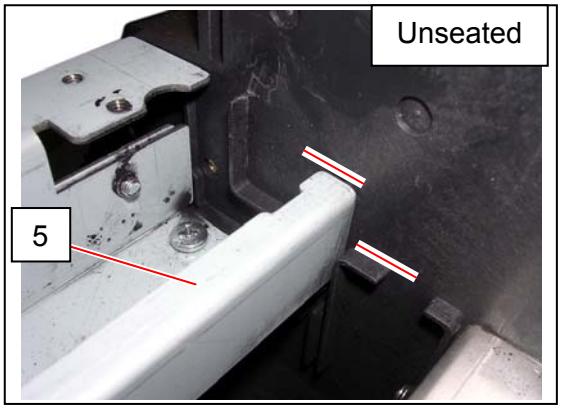


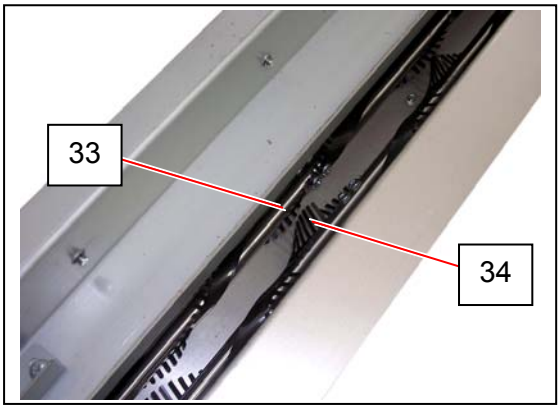
NOTE

(1) Be careful of the direction of Separator (5).
Do not install it in the wrong direction.

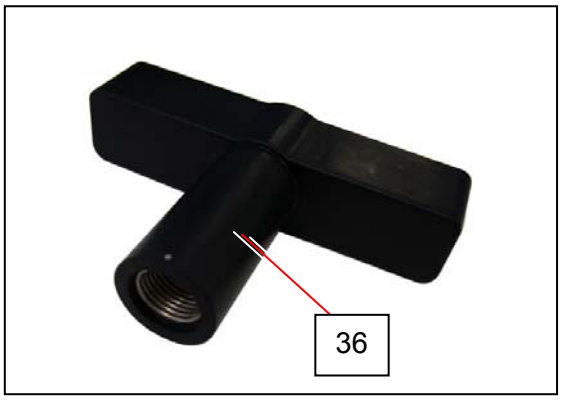


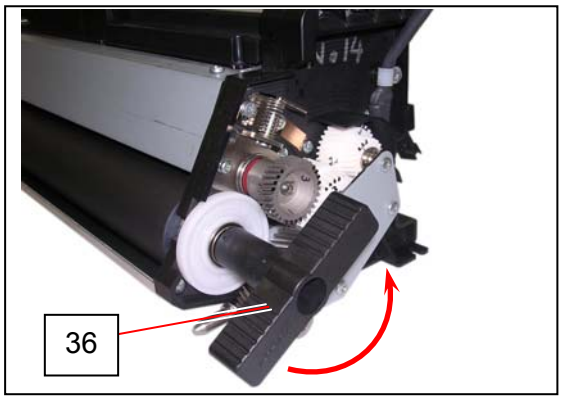
(2) Just put Separator (5) on the toner. It will be placed unseated. Do not push it completely at this time. Doing so may damage Screw A (33) and Screw B (34).





18. Insert Developer Handle (36) to the shaft of Roller Developer, and gently turn Developer Handle (36).
Separator will sink in the toner. Turn Developer Handle (36) until Separator sinks in position.

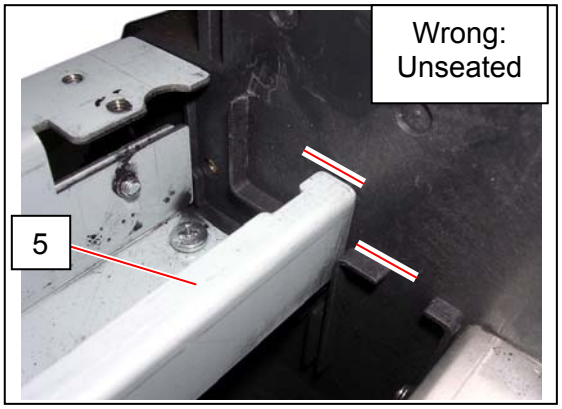


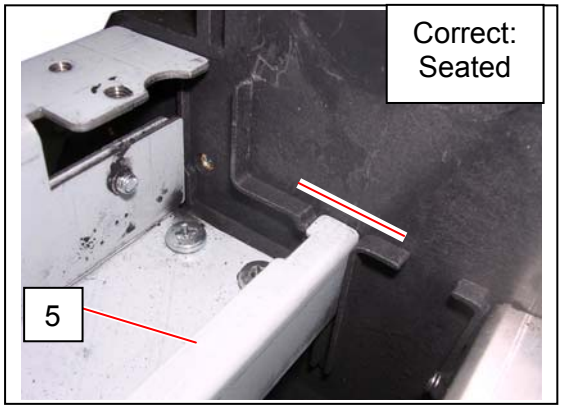


NOTE

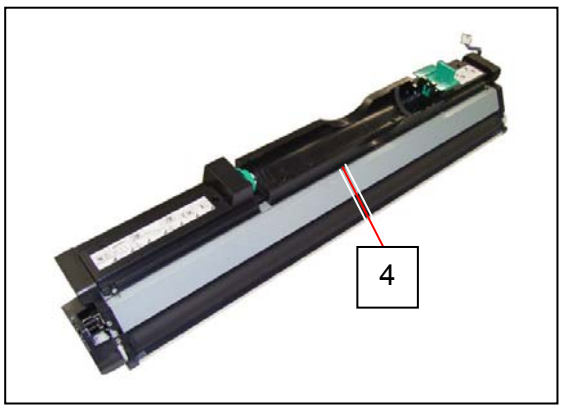
(1) Slowly turn Developer Handle. Otherwise the toner may spill out.

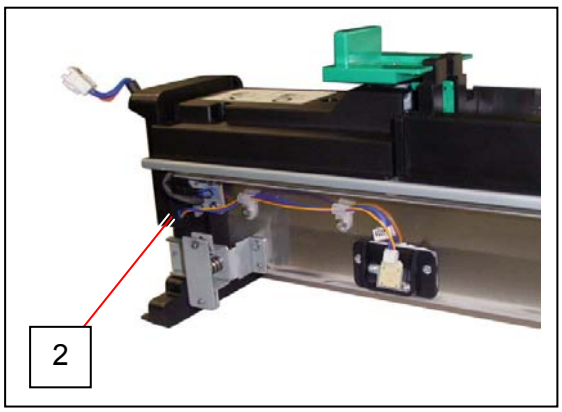
(2) Make sure that Separator (5) completely sinks in position by a 1/2 or more rotation of Developer Handle.
If not in position, the plastic screwing sheets may be damaged at the next step.





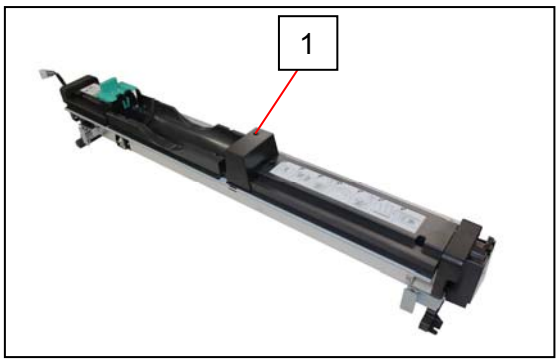
19. Replace the Hopper Assembly (4) and connect the connector (2).

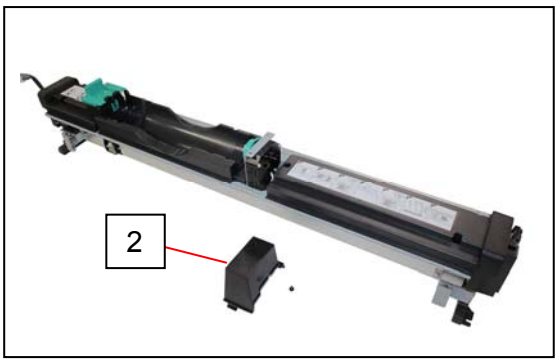




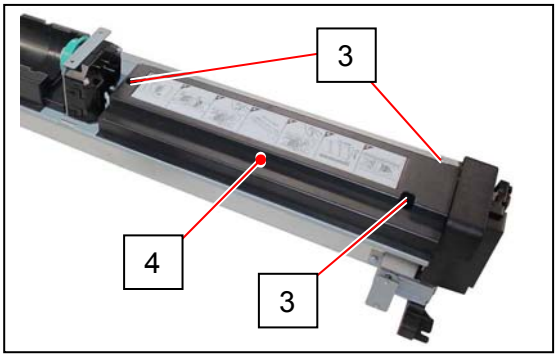
5. 2. 5 Replacement of DC Motor

1. Remove 1 screw (1) to remove the Cover (2).

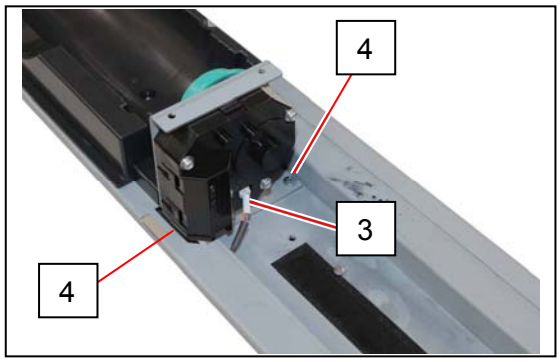


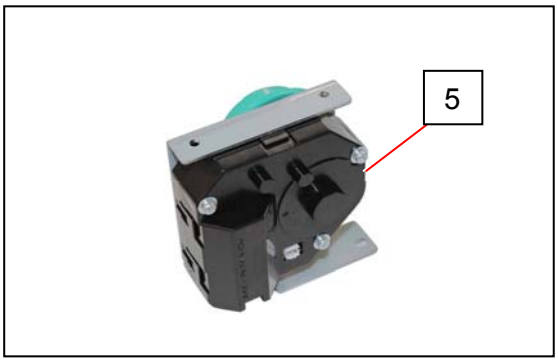


2. Remove 3 screws (3) to remove the Cover (4).

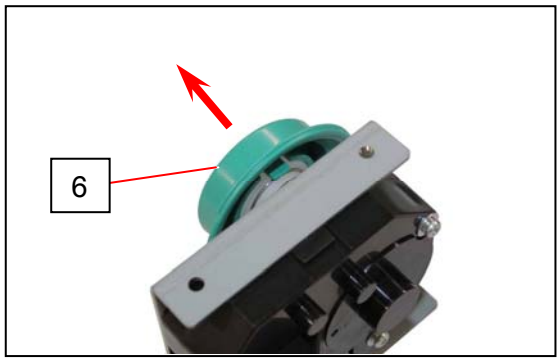


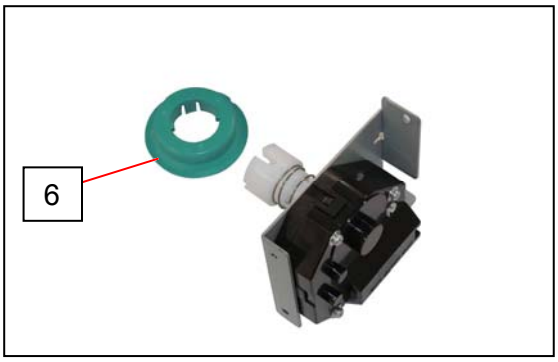
3. Disconnect the connector (3), remove 2 screws (4), and then remove the motor assembly (5).



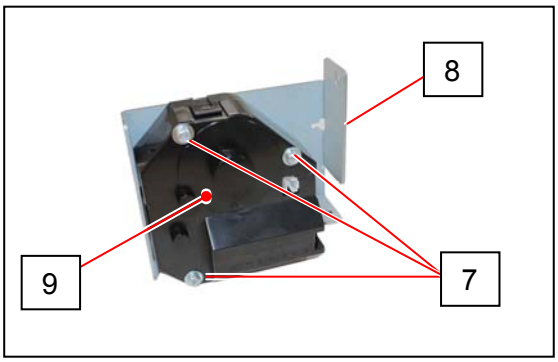


4. Remove the Joint R (6).



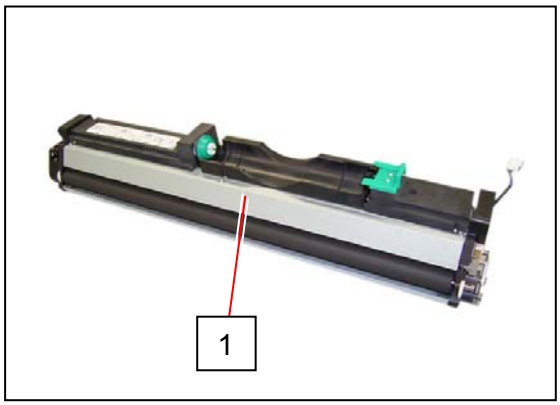


5. Remove 3 pieces of 3x20 screw (7) to remove the Bracket 19 (8).
Replace the DC Motor (9) with the new one.

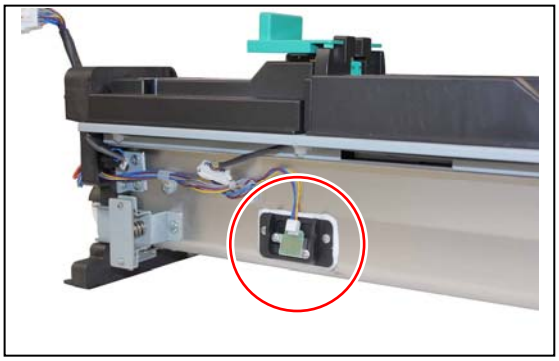


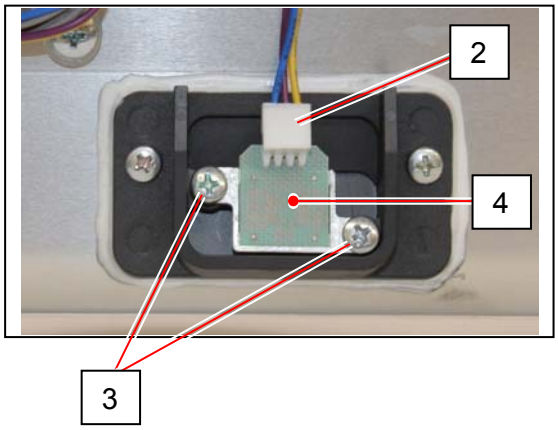
5. 2. 6 Replacement of Sensor (TLS1)

1. Remove the Developer Unit (1) from the machine making reference to [5. 2. 1 Removal of the Developer Unit].



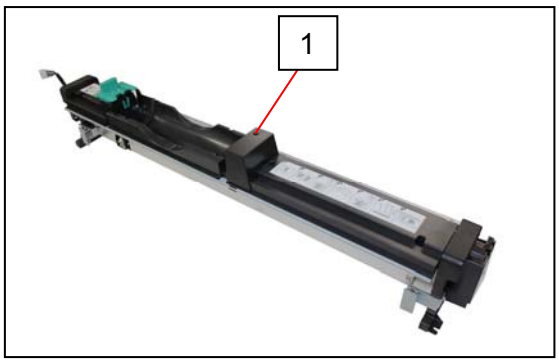
2. Disconnect the connector (2), and remove 2 pieces of 3x6 screw (3) to remove the Sensor (4). Replace the Sensor (4) with the new one.

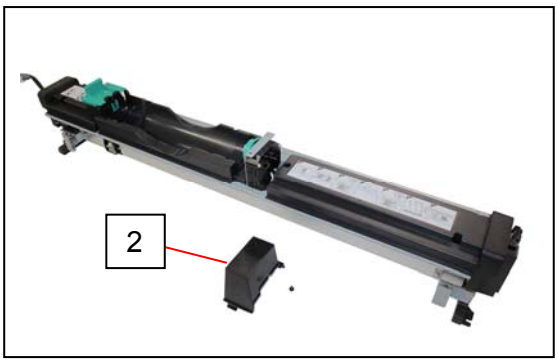




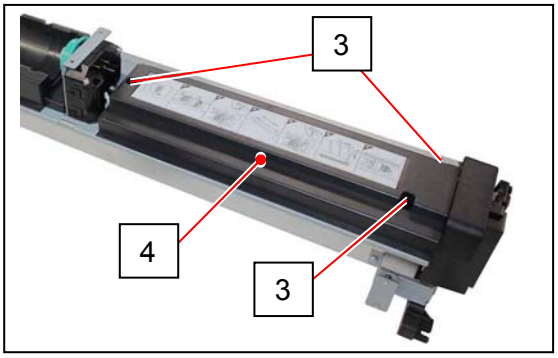
5. 2. 7 Replacement of KNC PCB

1. Remove 1 screw (1) to remove the Cover (2).

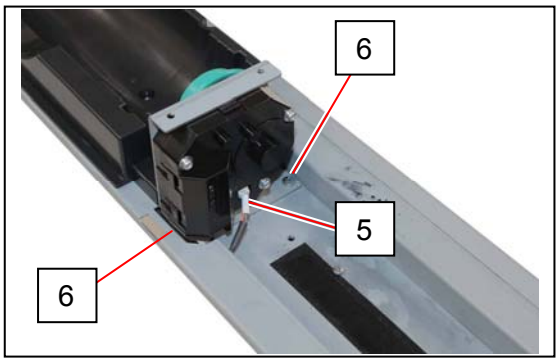


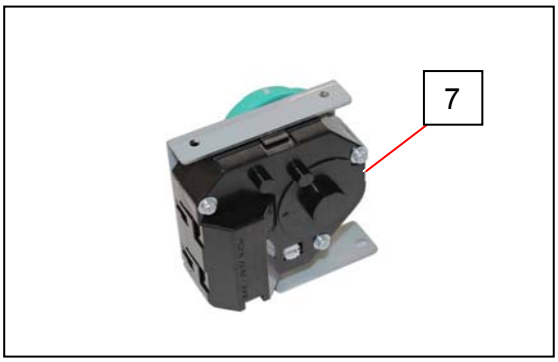


2. Remove 3 screws (3) to remove the Cover (4).

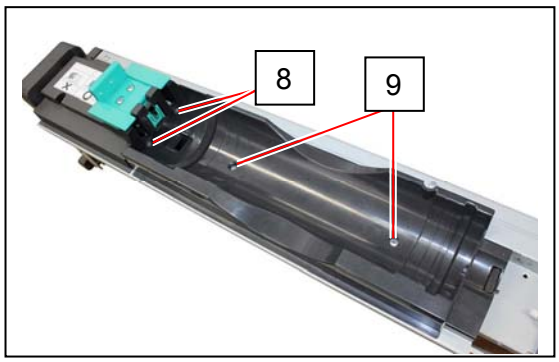


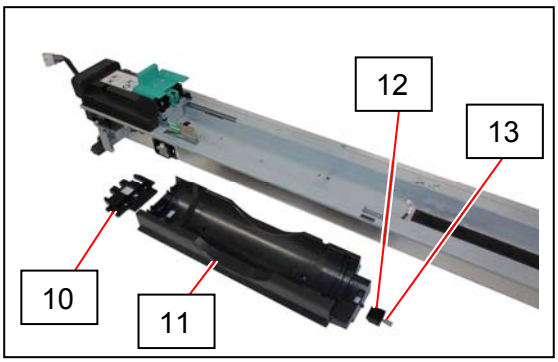
3. Disconnect the connector (5), remove 2 screws (6), and then remove the motor assembly (7).



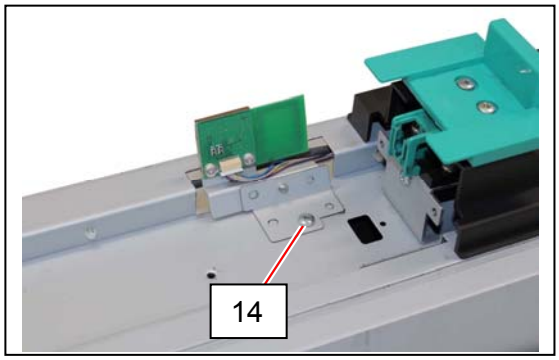


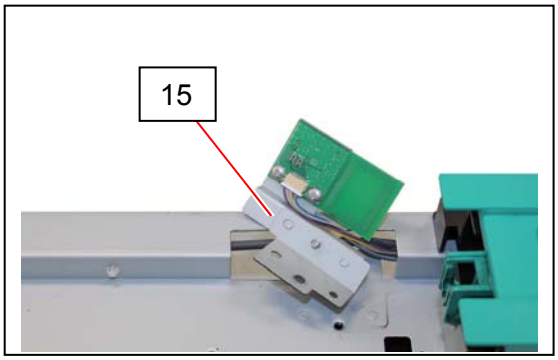
4. Remove 4 screws (8: M4x8, 9: M4x6) to remove Position Plate (10), Holder (11), Hook (12) and Spring (13).



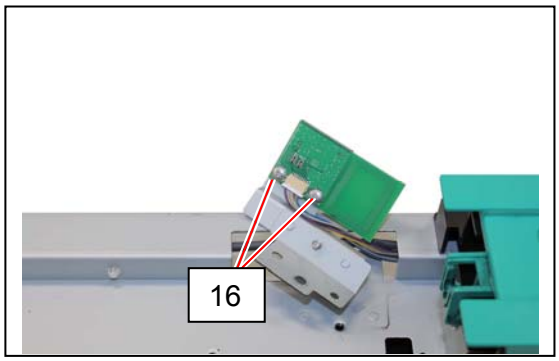


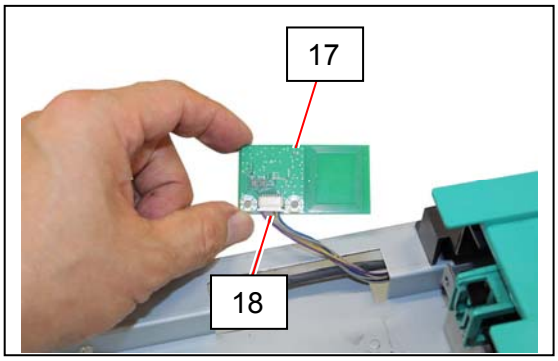
5. Remove 1 screw (14) to remove PCB Bracket (15).





6. Remove 2 screws (16) to remove KNC PCB (17) from PCB Bracket.
Disconnect the connector (18), and then replace the new one.



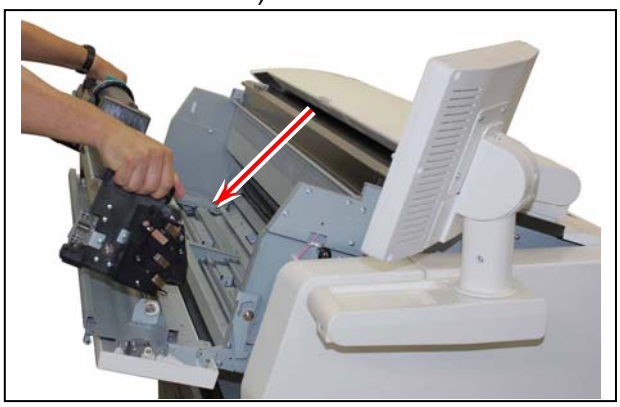


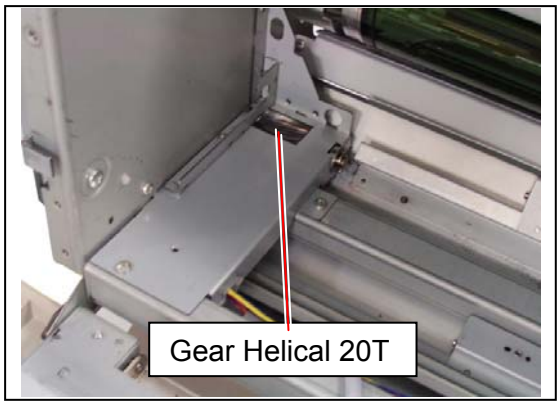
5. 2. 8 Adjustment of the space between gears (Necessary to adjust after replacing the Developer Unit)

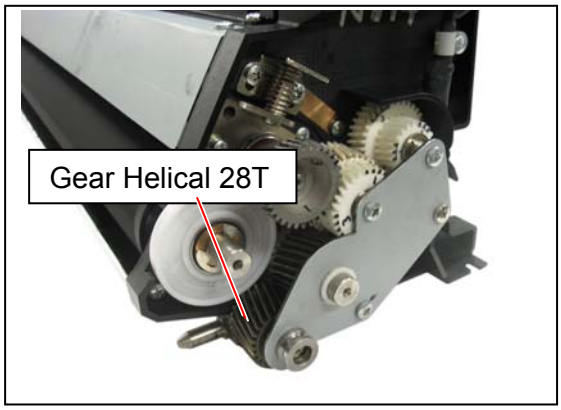
NOTE

You do not have to adjust the space between gears basically as it has been adjusted in the factory.
But please do it only when you replace the whole Developer Unit.

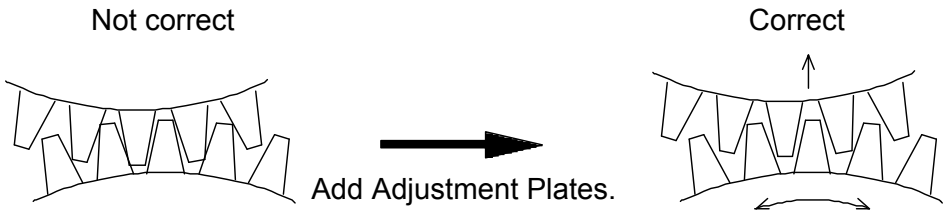
The Developer Unit is driven by the Gear Helical 20T on the machine and the Gear Helical 28T on the Developer Unit.
There must be a little mechanical play between these gears. (In another word there must be a little space between them.)







If there is no space between these gears, **the gear may be broken.**
In this case it is necessary to add Adjustment Plates to keep a space.

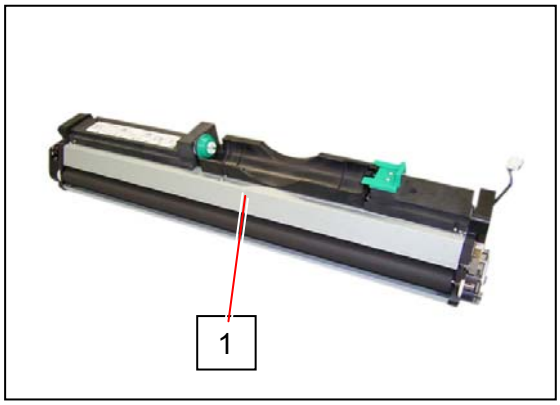


There is not enough space between gears. (Gears may be broken)

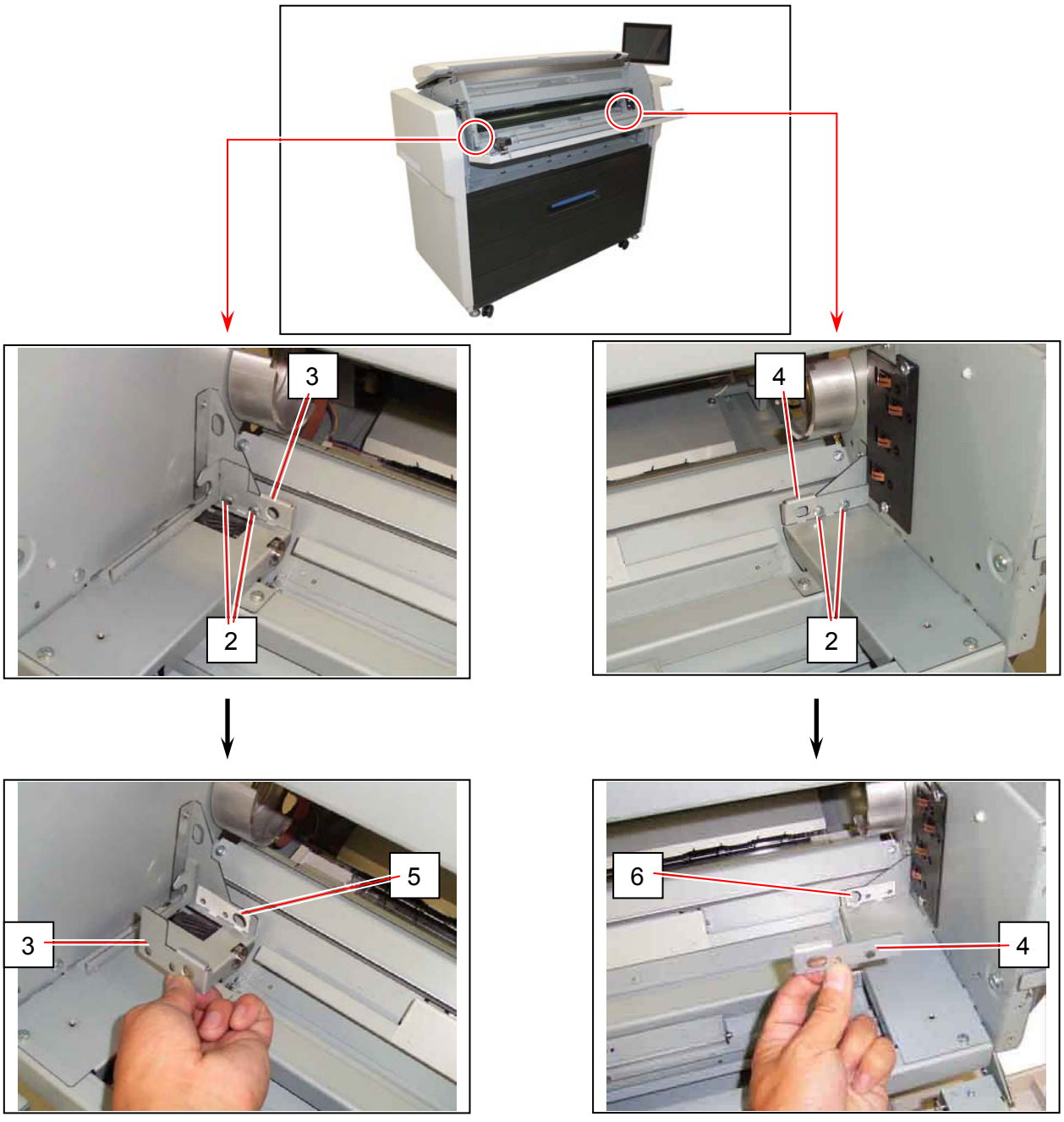
Some space is kept between gears.

Refer to the next page how to add the Adjustment Plates.

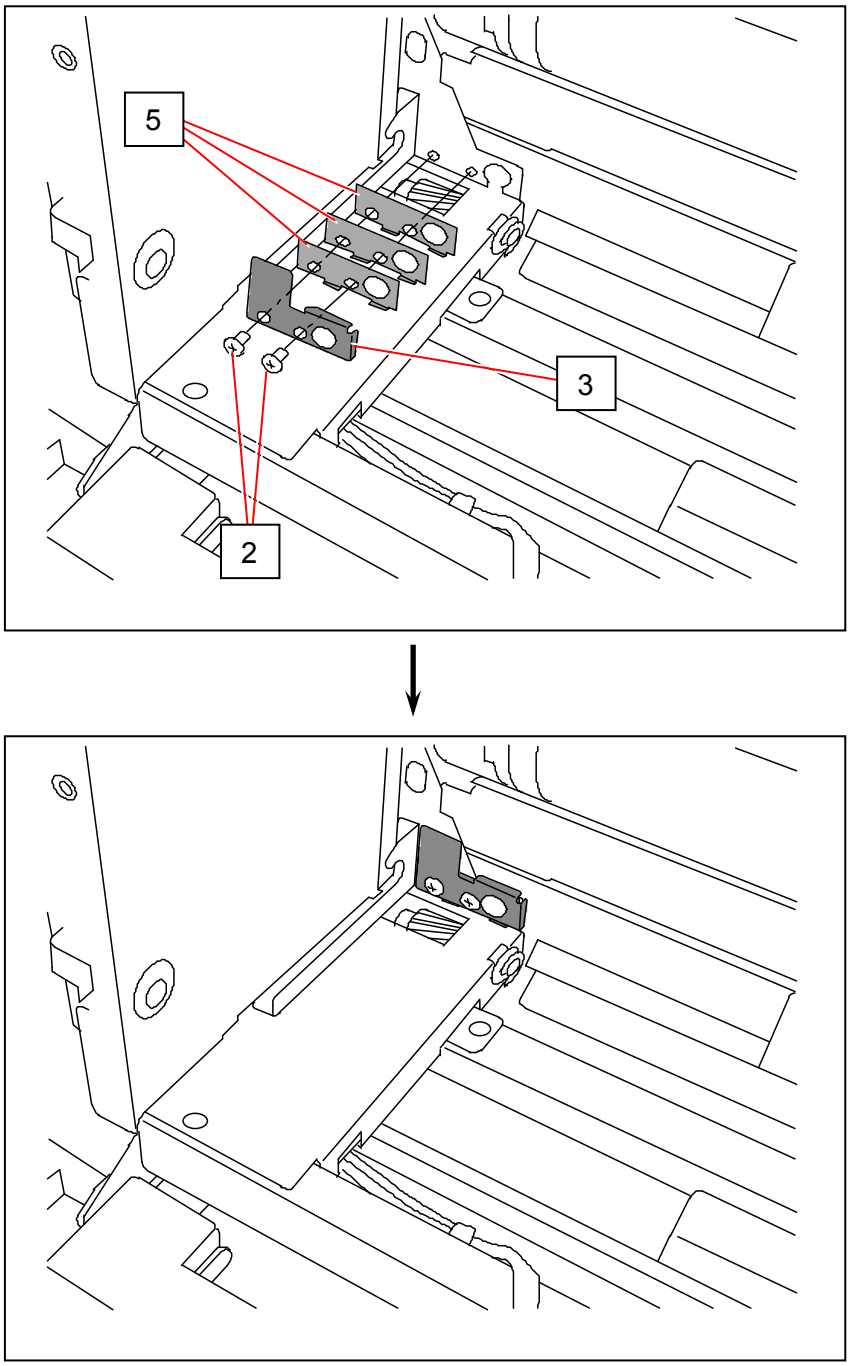
1. Remove the Developer Unit (1) from the machine making reference to [5. 2. 1 Removal of the Developer Unit].



2. Remove 2 screws (2) to remove each Bracket 32 (3) on the left and Bracket 33 (4) on the right. You will find Adjustment Plate (5) and Adjustment Plate 2 (6).



3. On the left side, add (or remove) as many Adjustment Plate (5) as required, cover them with the Bracket 32 (3), and then fix with 2 screws (2).

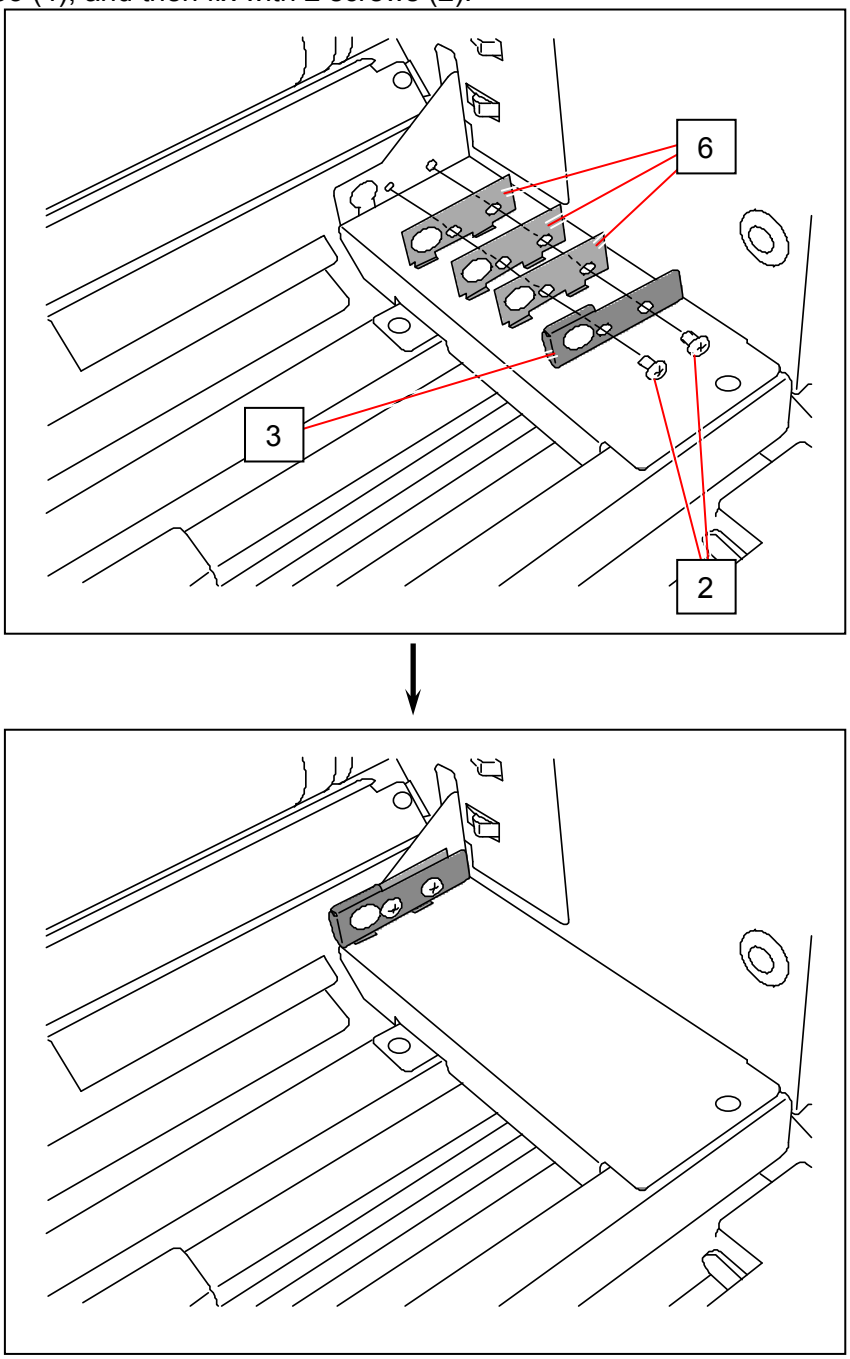


NOTE

The following 3 kinds of Spacers are used on the left side of the machine.

Spacer	Z053101200 (thickness is 0.05mm)
Spacer 5	Z053101350 (0.1mm)
Spacer 3	Z053101330 (0.2mm)

4. On the right side, add (or remove) as many Adjustment Plate 2 (6) as required, cover them with the Bracket 33 (4), and then fix with 2 screws (2).



NOTE

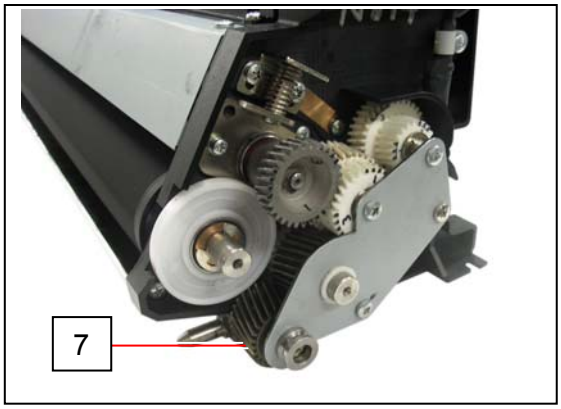
The following 3 kinds of Spacers are used on the left side of the machine.

Spacer 2	Z053101210 (thickness is 0.05mm)
Spacer 6	Z053101360 (0.1mm)
Spacer 4	Z053101340 (0.2mm)

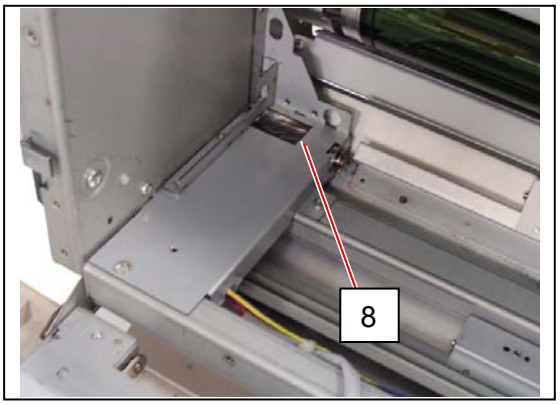
5. Put back the Developer Unit (1) to the machine.

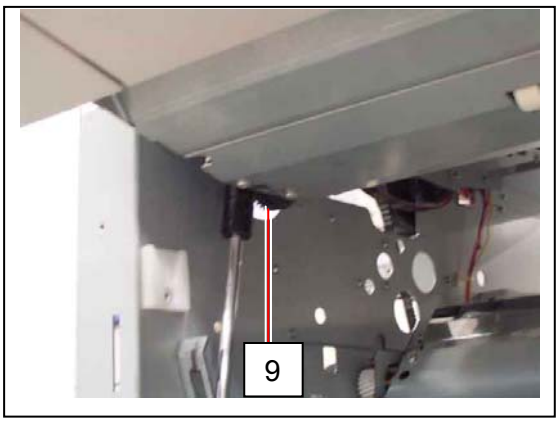
6. There is Gear Helical 28T (7) on Developer Unit side. There is Gear Helical 20T (8) on Engine Unit, and also there is Gear Helical 34T (9) on Engine Unit.

   Gear Helical 28T (7) and Gear Helical 20T (8) are contacted each other when the Developer Unit is on the machine. Gear Helical 34T (9) drives Gear Helical 20T (8).



(Top of Engine Unit)



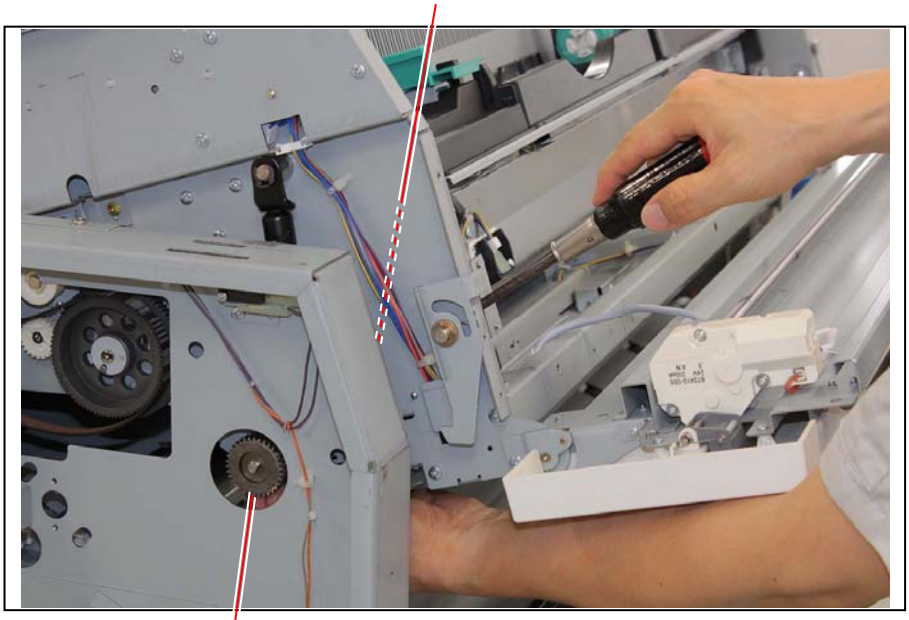


(Bottom of Engine Unit)

(continued on the next page)

Holding the Gear Helical 28T (7) firmly with one hand, move the Gear Helical 34T (9) with another hand whether there is any mechanical play between Gear Helical 28T (7) and Gear Helical 20T (8).

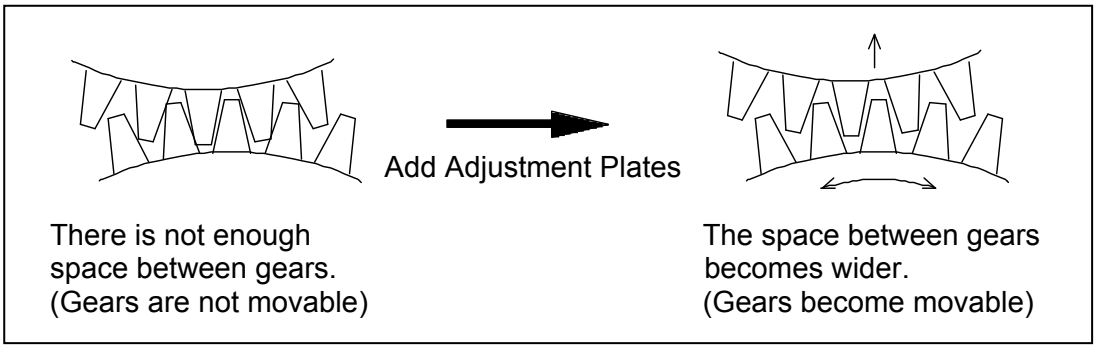
Hold the Gear Helical 28T with one hand.



Move Gear Helical 34T (instead of Gear Helical 20T) with another hand.

7. There must be a little mechanical play between Gear Helical 28T (7) and Gear Helical 20T (8). (In another word there must be a little space between them.)

   If the gear could not be moved at all when you check them on the former procedure 6, it means there is not enough space between gears. **The gear may be broken in this case.**
   In this case, add more Adjustment Plates by the way instructed at the procedures 3 and 4.

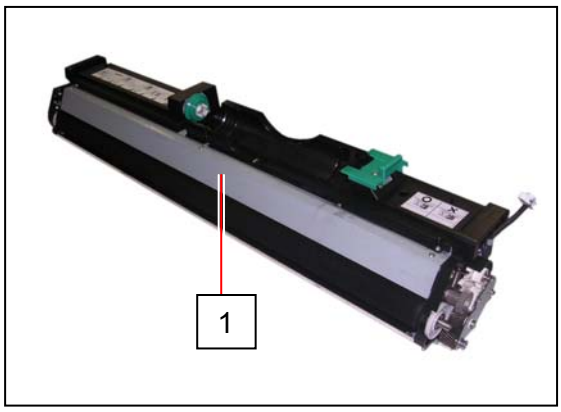


5. 2. 9 Readjustment of the Pressure of Regulation Roller

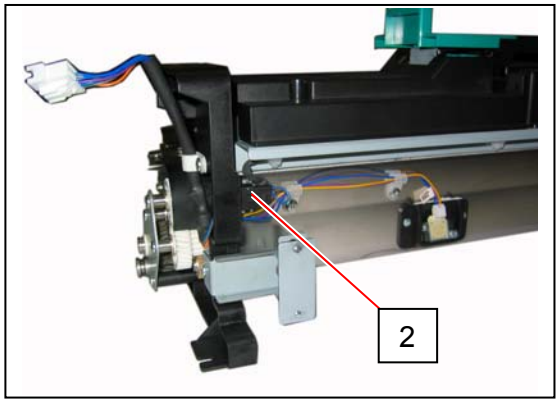
If the pressure of Blade Roller is weak, the toner layer on the Developer Unit will be much thicker than required when you rotate the Developer Roller.
Pressurize the Blade Roller in the correct way as shown below in this case.
(You will not be able to pressurize it successfully by the usual way of pressurization once a too thick toner layer is created.)

To correct the pressure of Blade Roller against Developer Roller, remove the thicker toner layer on the contact point between Blade Roller and Developer Roller.

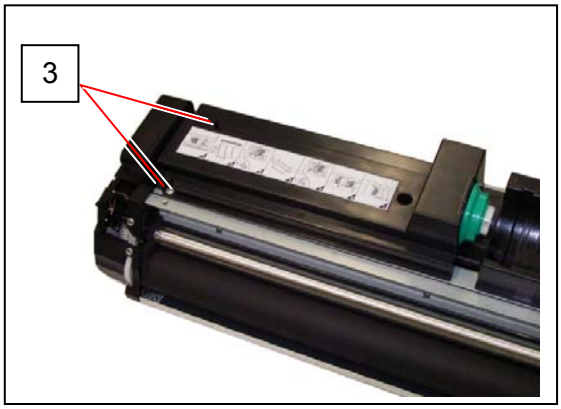
1. Remove the Developer Unit (1) from the machine making reference to [5. 2. 1 Removal of the Developer Unit].

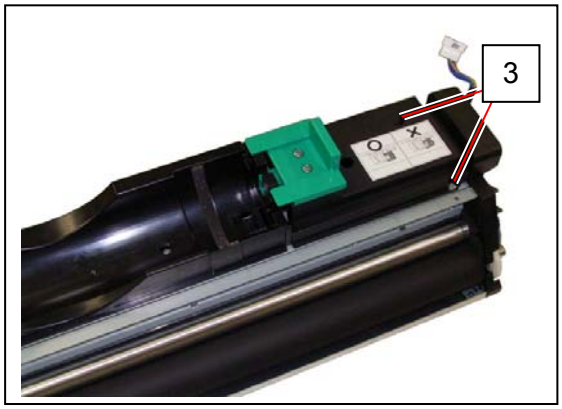


2. Disconnect the connector (2).

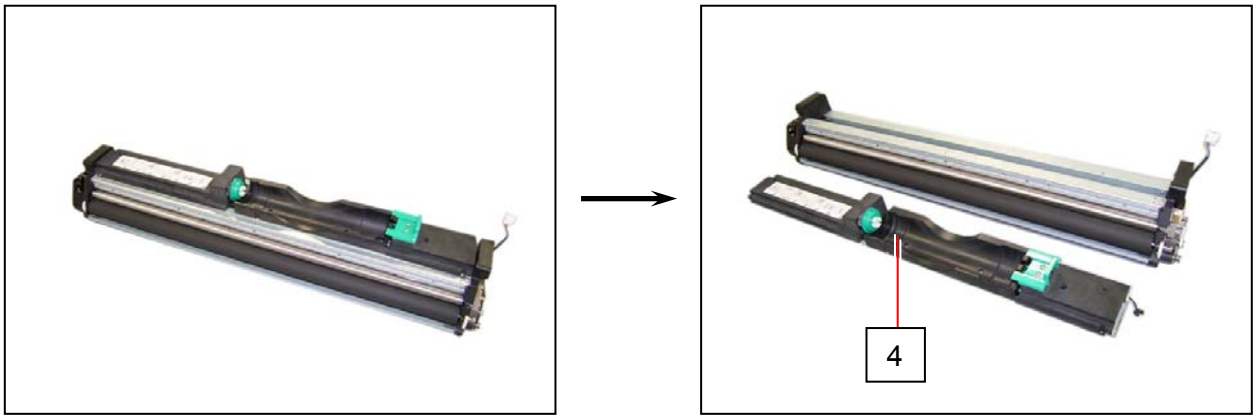


3. Remove 4 screws (3).

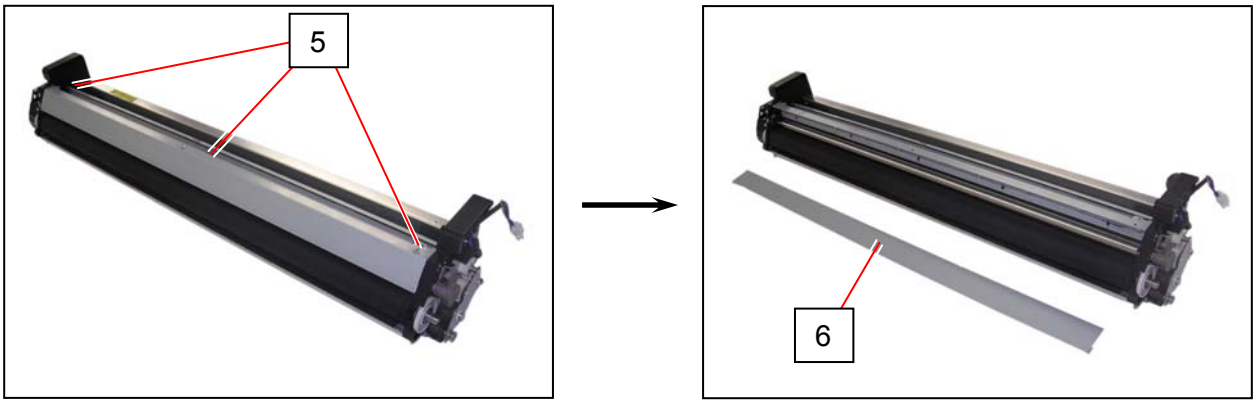




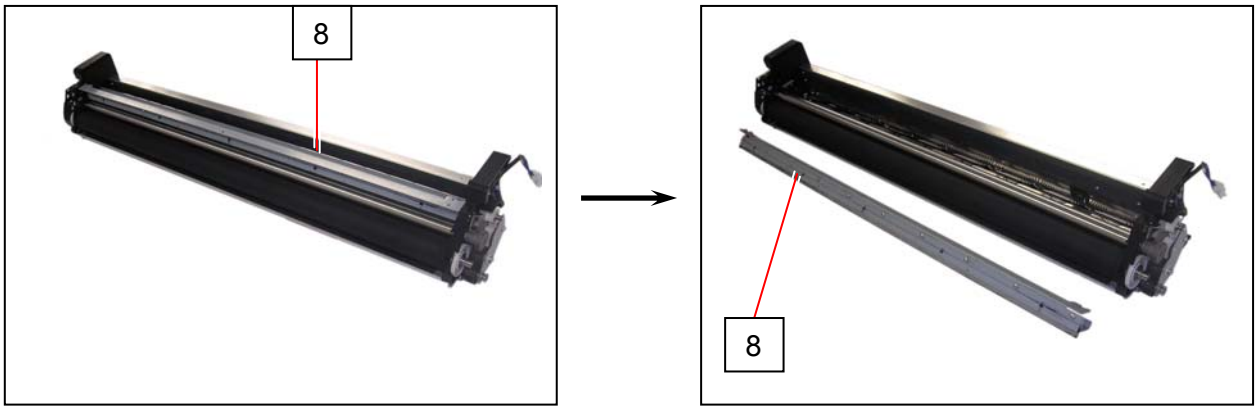
4. Remove the Hopper Assembly (4).



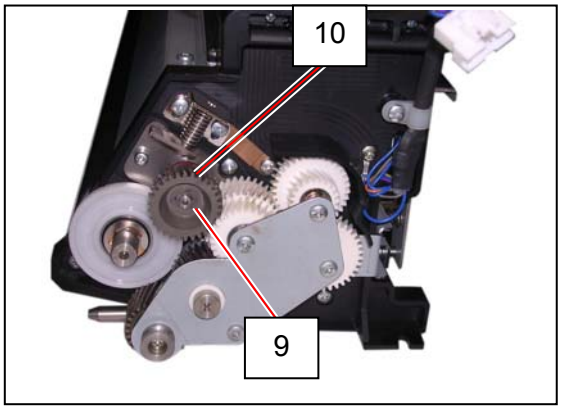
5. Remove 3 pieces of M4x6 screws (5) to remove Cover (6).

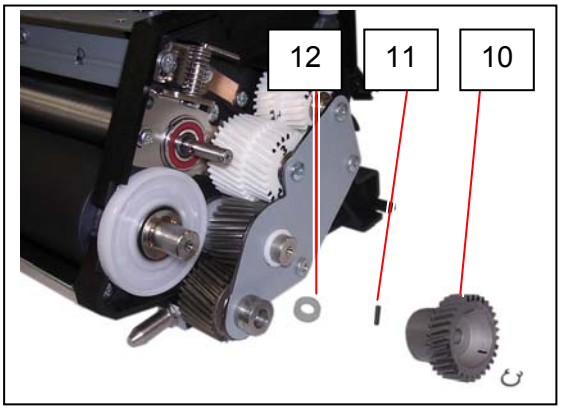


6. Remove 4 pieces of 4x6 screw (7) to remove Scraper Assembly (8).



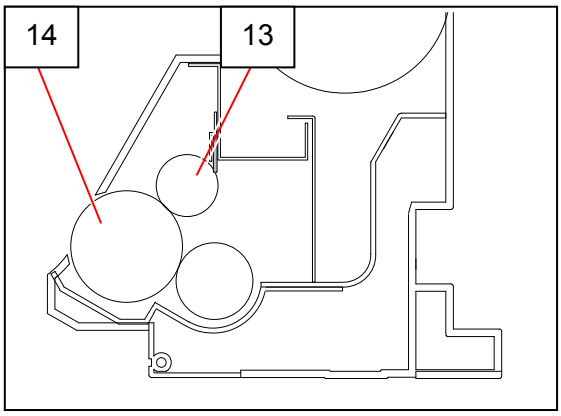
7. On the driving side, remove Retaining Ring-C (9: C6) to remove Gear Helical 30T (10), Parallel Pin (11: 2.5x10) and Collar 3 (12) from Blade Roller shaft.



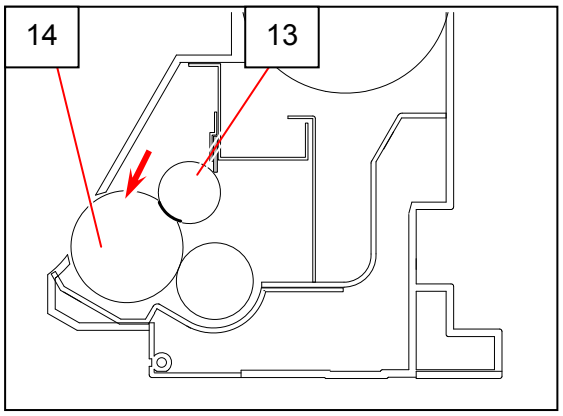


NOTE

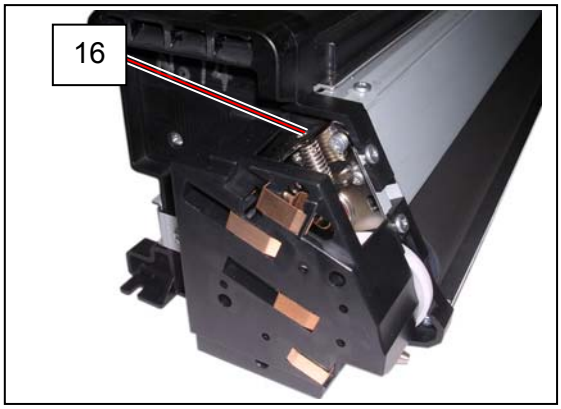
Blade Roller (13) is pressed onto / released from Developer Roller (14) by Bracket 4 (15) on the driving side, by Bracket 5 (16) on the electrode plate side. When reassembling, re-pressurization should be required prior to reinstallation of Gear Helical 30T (10).

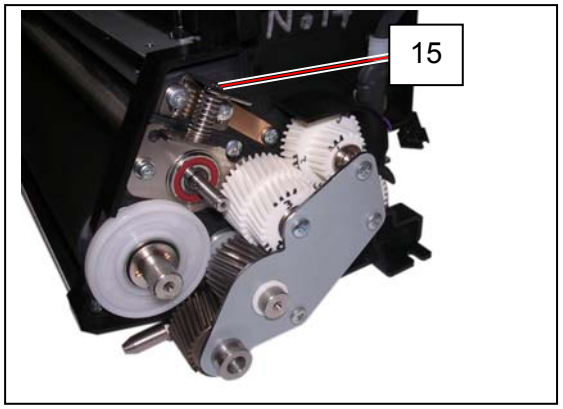


not pressurized

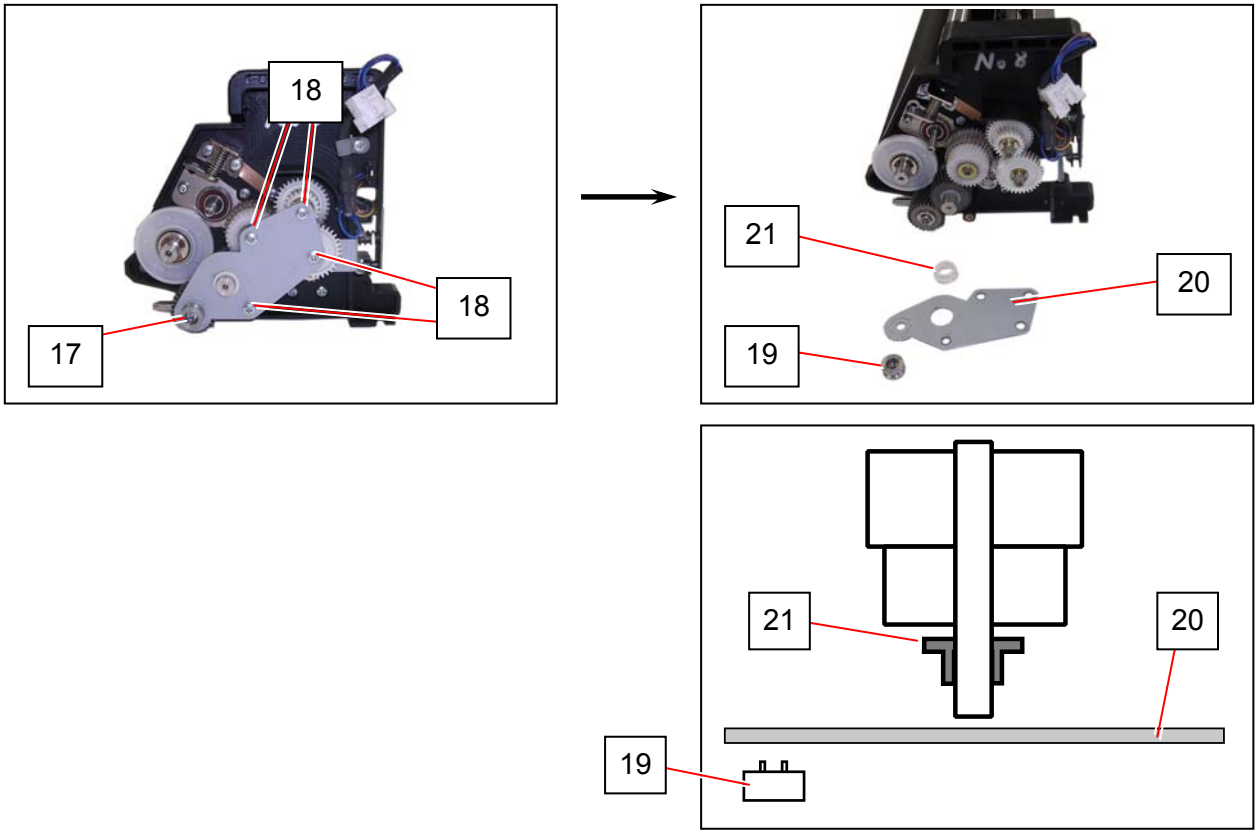


pressurized

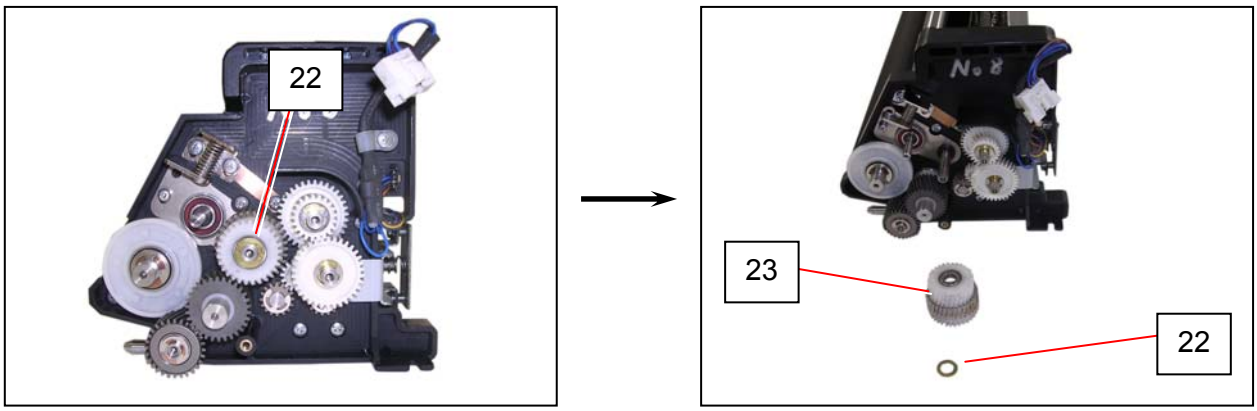




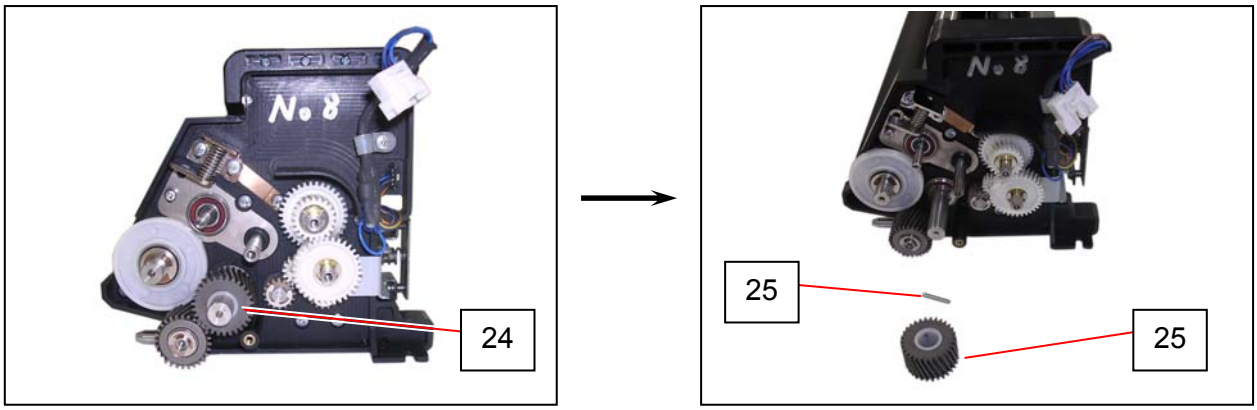
8. Remove 5 screws (17: M4x8) (18: M4x6) to remove Pin 4 (19), Plate 9 (20), Collar (21).



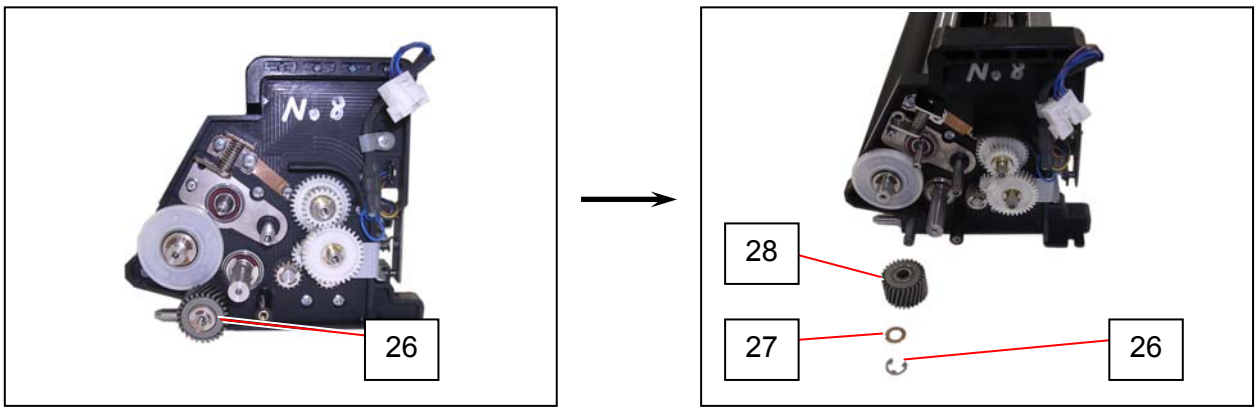
9. Remove Washer (22: 8.1x14x0.5t) and Gear 29T-34T Assy (23)



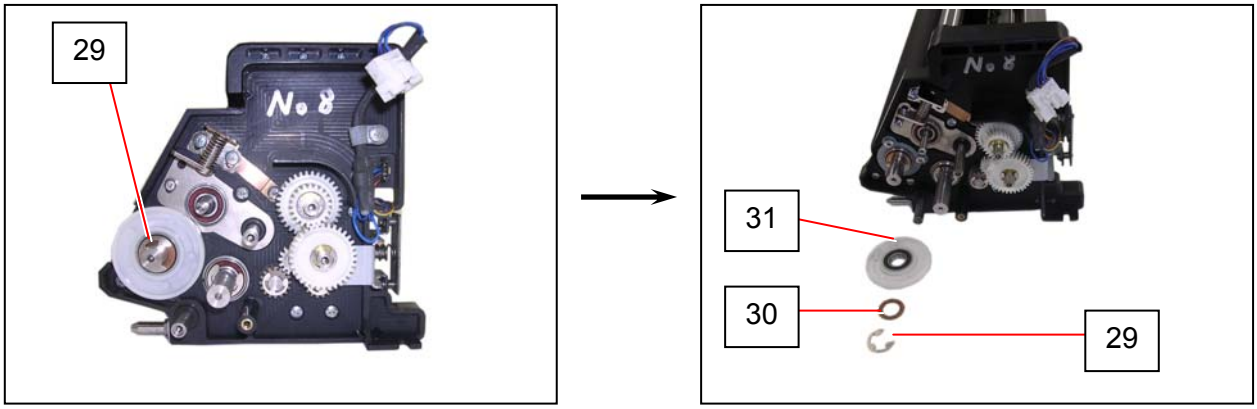
10. Remove Helical 30T (24) and Parallel Pin (25: 3x20) from Toner Supply Roller shaft.
If you cannot remove Parallel Pin (25) at this time, remove it after the later step 12.



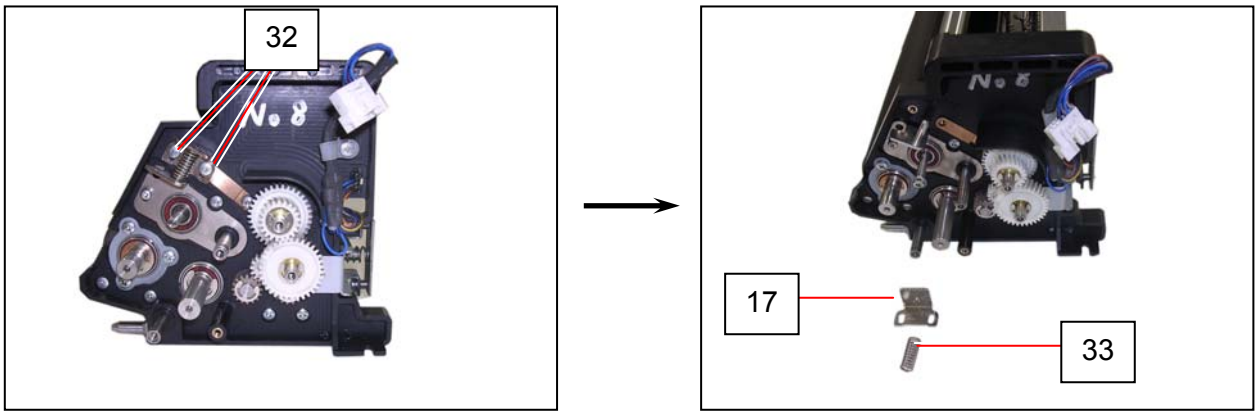
11. Remove Retaining Ring-E (26: E7) to remove Washer (27: 8.1x12x0.2t) and Gear Helical 28T Assy (28).



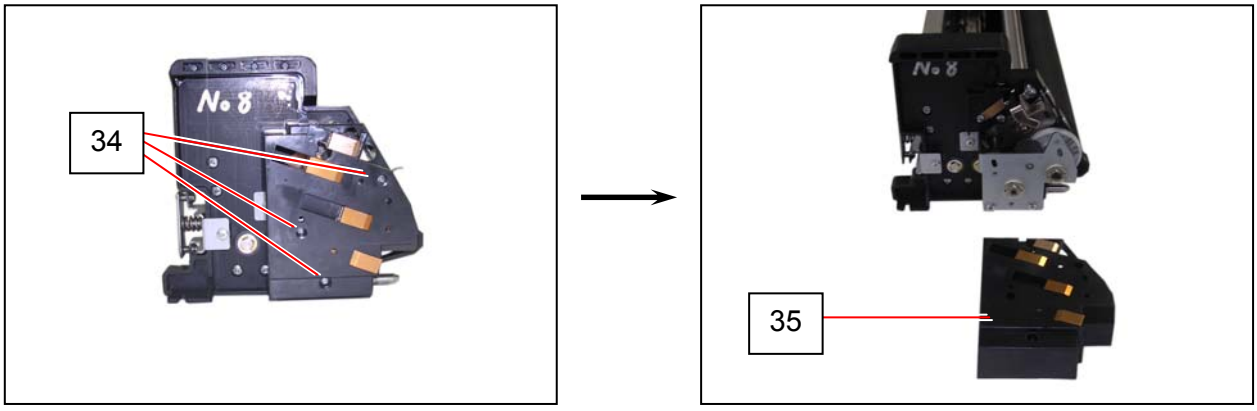
12. Remove Retaining Ring-E (29: E10) to remove Washer (30: 12.2x20x0.5t) and Counter Roller (31) from Developer Roller shaft.



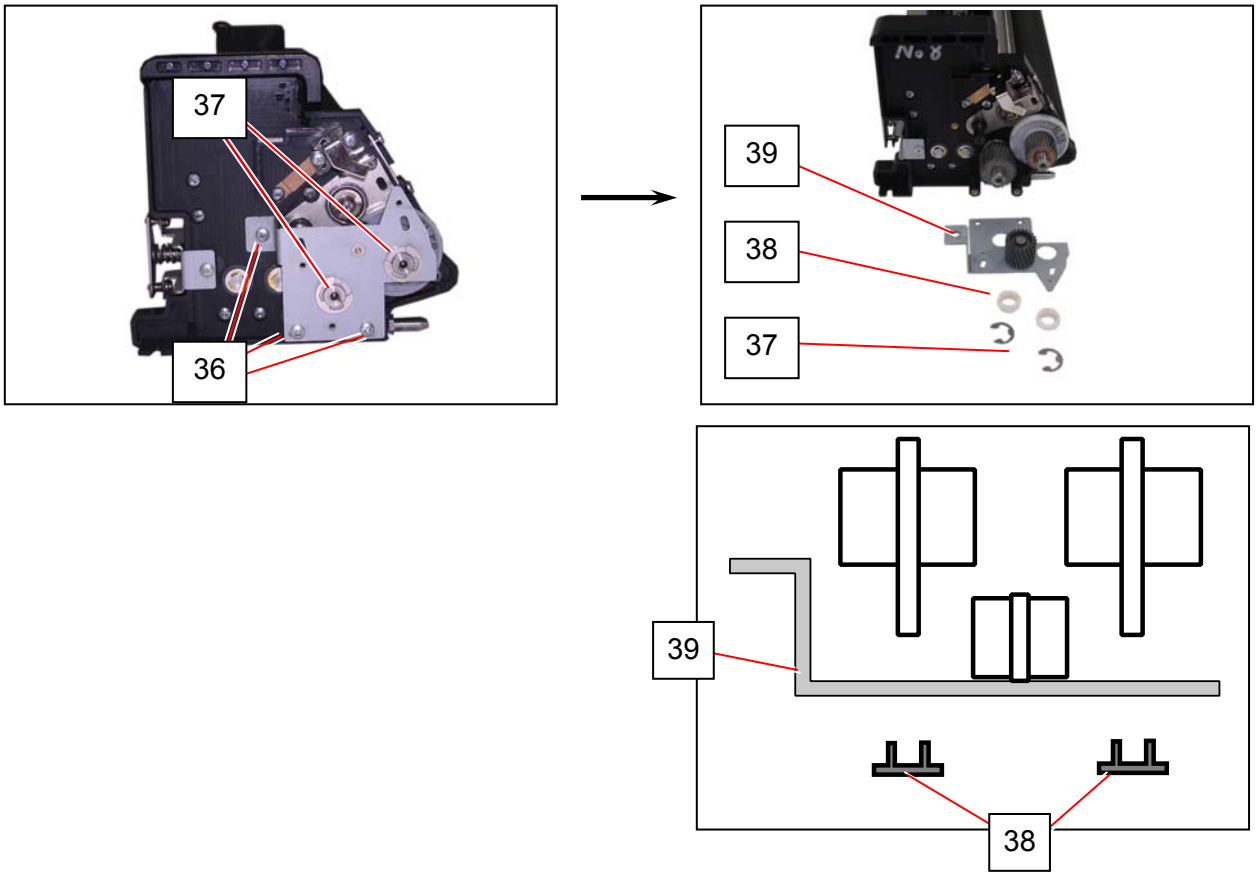
13. Remove 2 screws (32: M4x8) to remove Bracket 4 (15) and Spring (33).



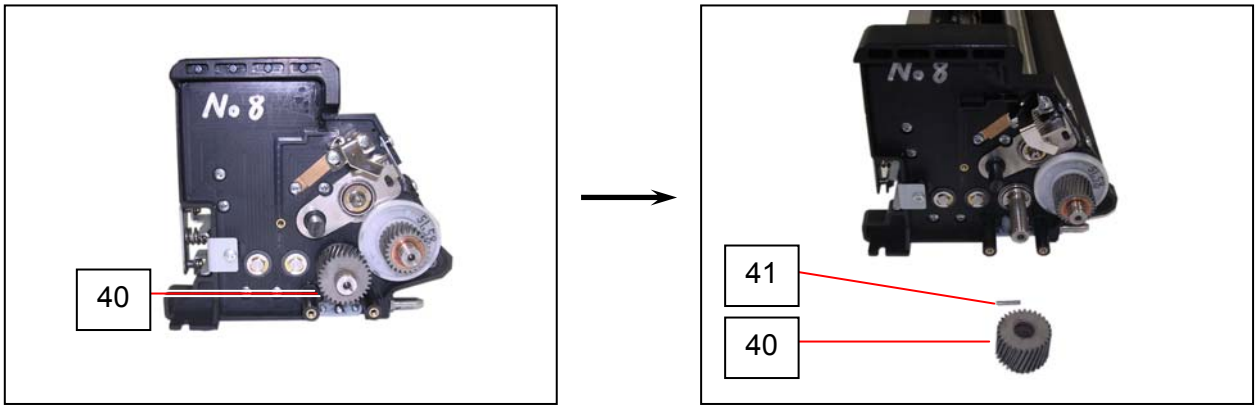
14. <u>On the electrode plate side</u>, remove 3 screws (34) to remove Holder 2 Assy (35).



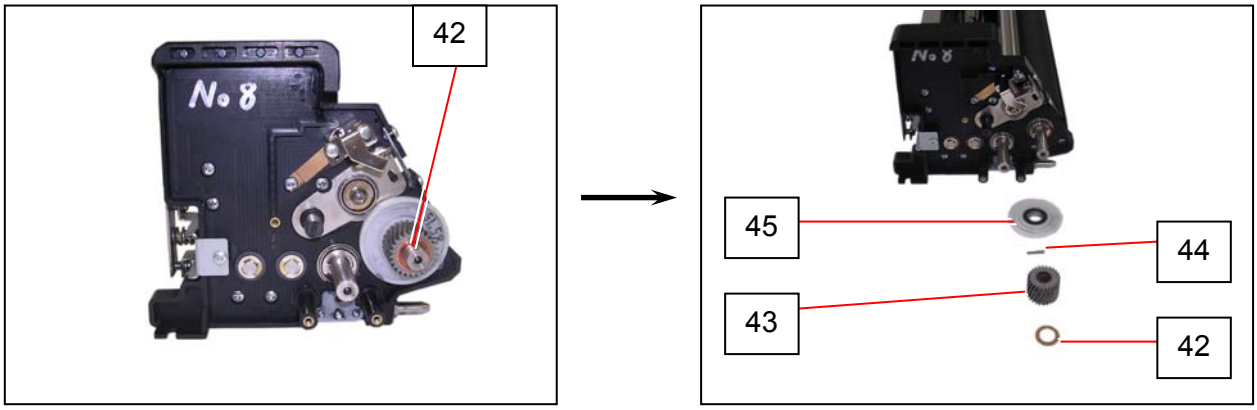
15. Remove 3 screws (36: M4x6) and 2 Retaining Ring-E (37: E10) to remove Collar (38) and Bracket 10 Assy (39).



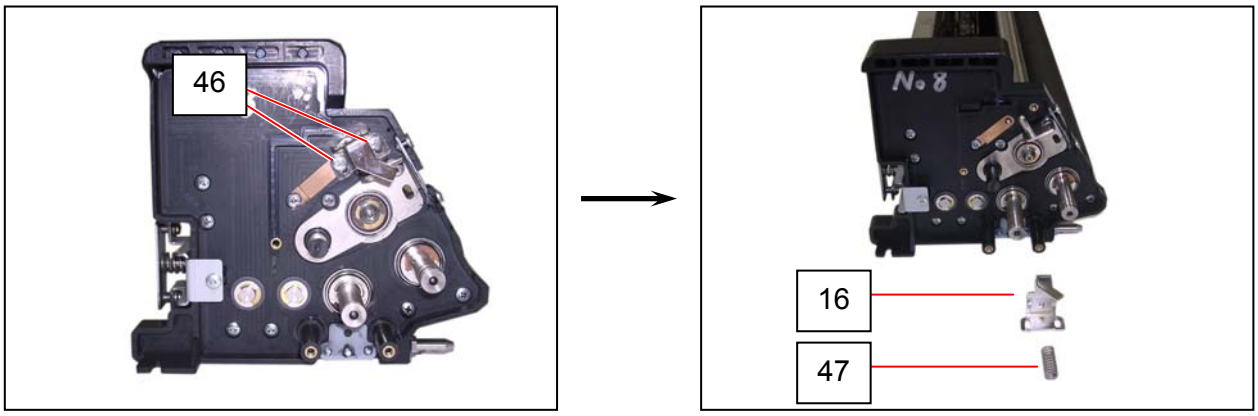
16. Remove Gear Helical 30T (40) and Parallel Pin (41: 3x16) from Toner Supply Roller shaft.



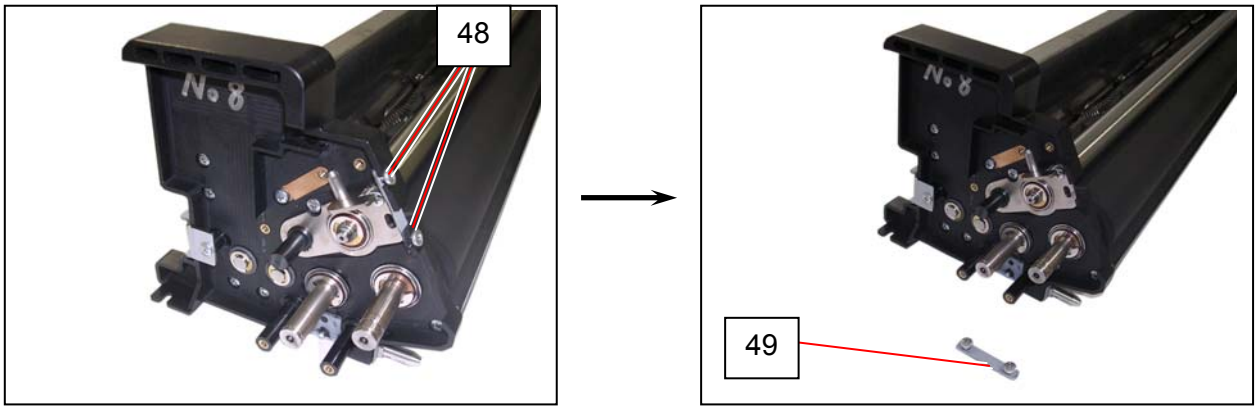
17. Remove Washer (42: 12.1x20x0.2t), Gear Helical 25T (43), Parallel Pin (44: 3x16), Counter Roller (45) from Developer Roller shaft.



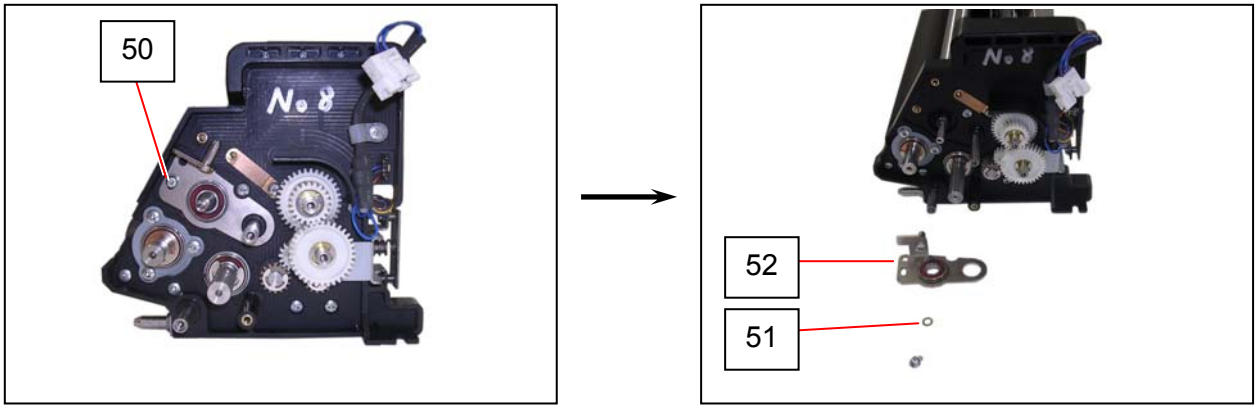
18. Remove 2 screws (46: M4x6) to remove Bracket 5 (16) and Spring (47).



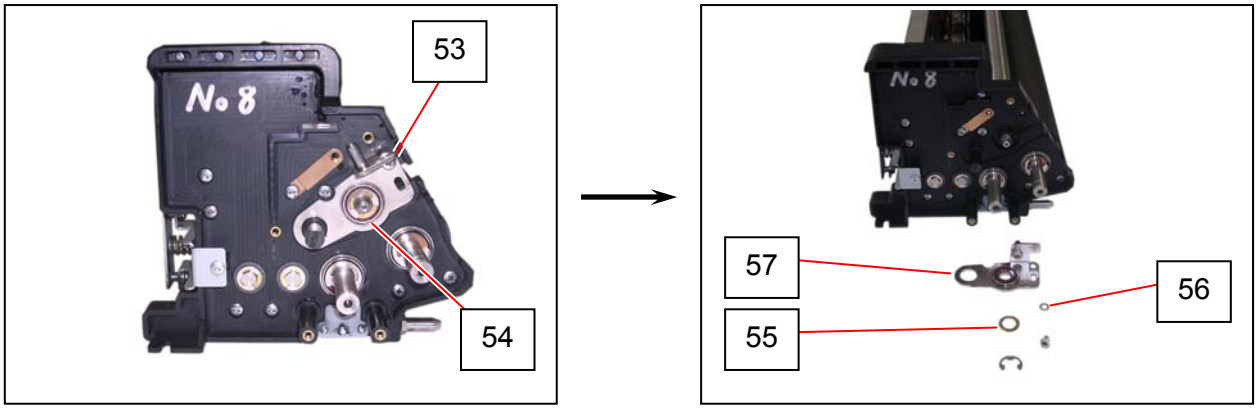
19. Loosen 2 screws (48) to remove Bracket 19 (49).



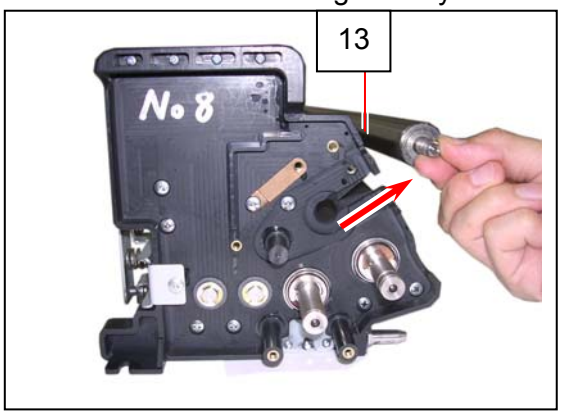
20. <u>On the driving side</u>, remove 1 pan head screw (50: M4x8 W/ SW FW) to remove 1 flat washer (51: M4) and Bracket 6 Assy (52).

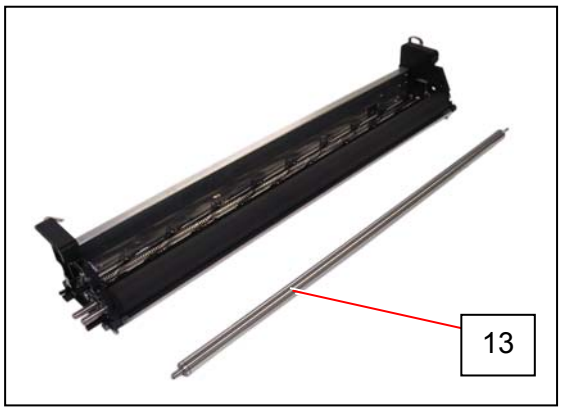


21. <u>On the electrode plate side</u>, remove 1 pan head screw (53: M4x8 W/ SW FW) and Retaining Ring-E (54: E8) to remove Washer (55: 10.1x16x0.5t), Flat Washer (56: M4), Bracket 7 Assy (59).



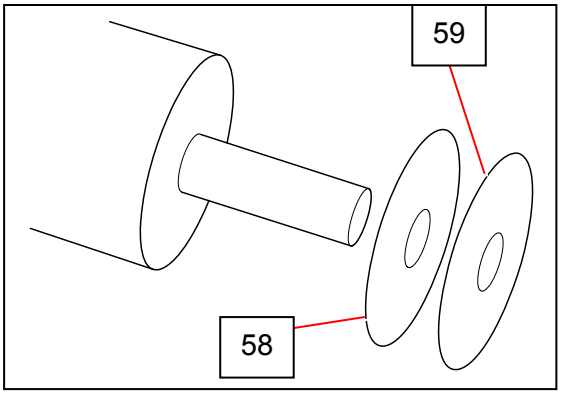
22. Remove Blade Roller (13) from Developer Unit.
Clean Blade Roller if it gets dirty.



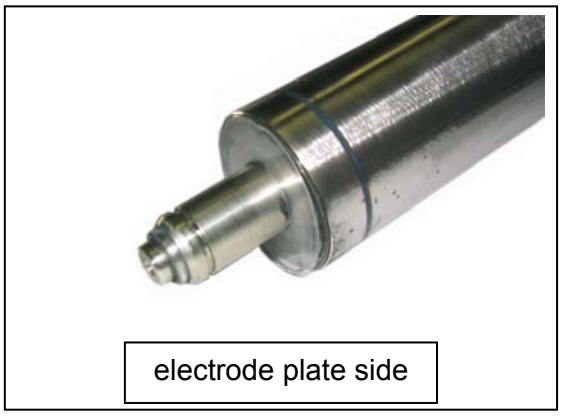


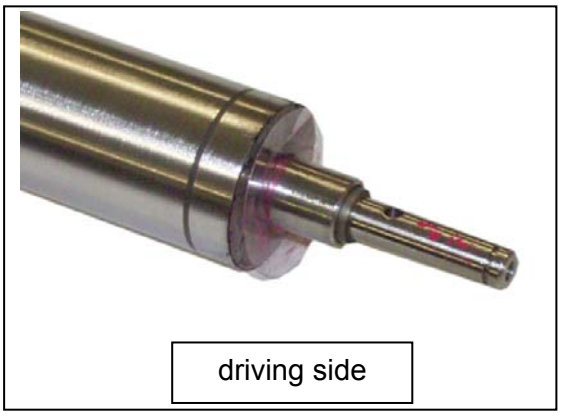
NOTE

(1) Be careful not to damage Sheet (58) and Sheet 2 (59) on Blade Roller shaft.

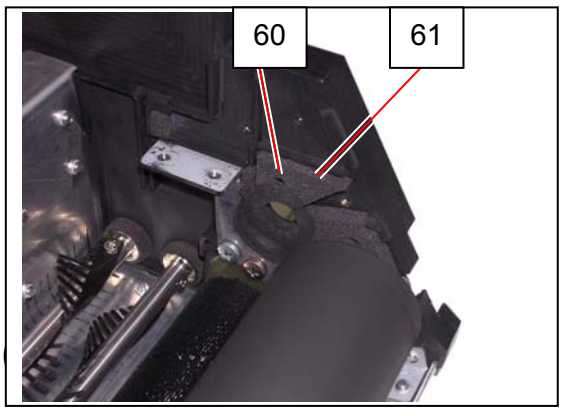


(2) Note the installation direction. The longer shaft should be placed to the driving side.

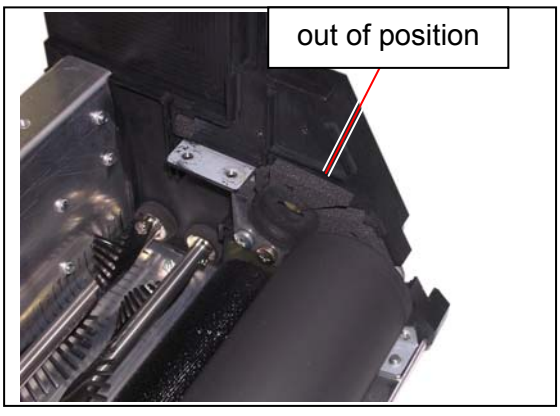




(3) Seal 1 (60) on each side should be seated in position along the boss (61).

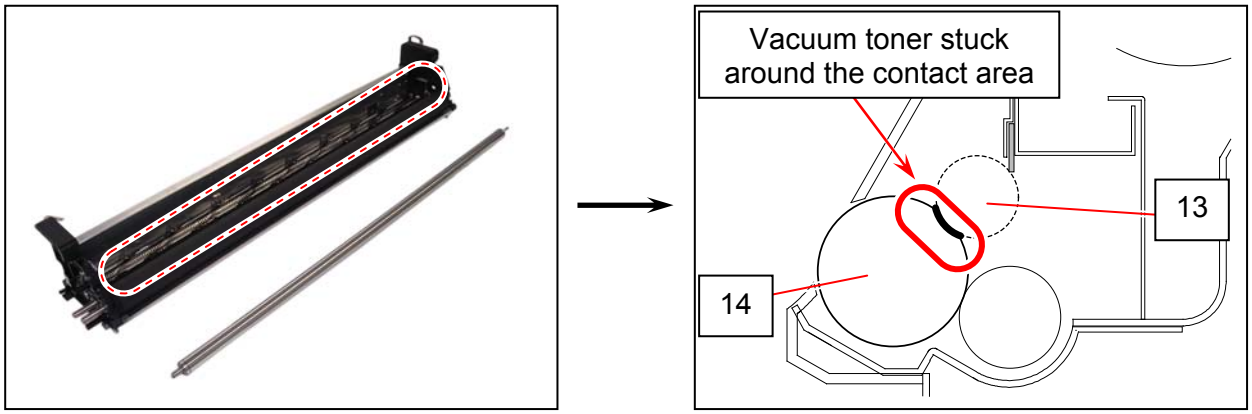


Correct



Wrong

23. On Developer Roller (14), vacuum the toner around the contact point against Blade Roller (13).



NOTE

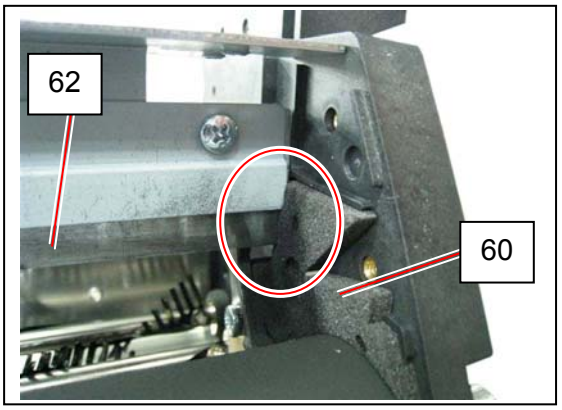
If some toner remains on the surface of Roller Developer, the toner will cushion the pressure by Blade Roller. This will prevent a proper pressurization.

24. Reinstall Scraper Assembly (8).

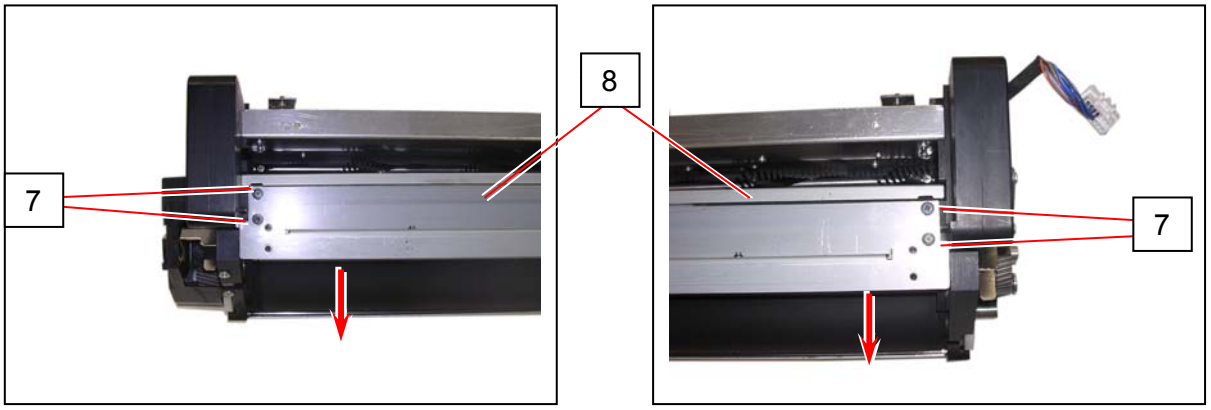
NOTE

(1) For Scraper Assembly and Blade Roller, please reinstall Scraper Assembly first and then locate Blade Roller in position later. This will avoid making Scraper's edge waving.

(2) After reinstalling Scraper Assembly, check that neither Scraper (62) nor Seal 1 (60) flips up on both sides.



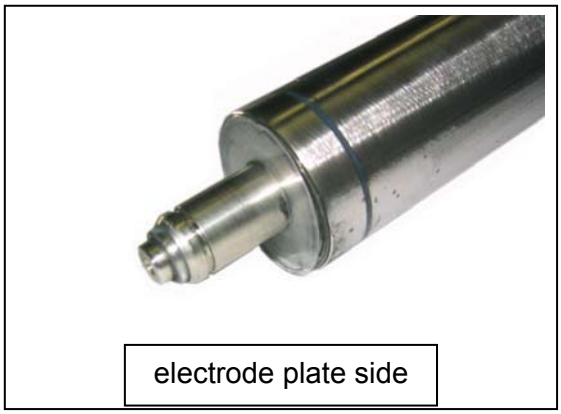
(3) Tighten the screws (7) with pushing Scraper Assembly (8) to the arrow direction to be close to Blade Roller.

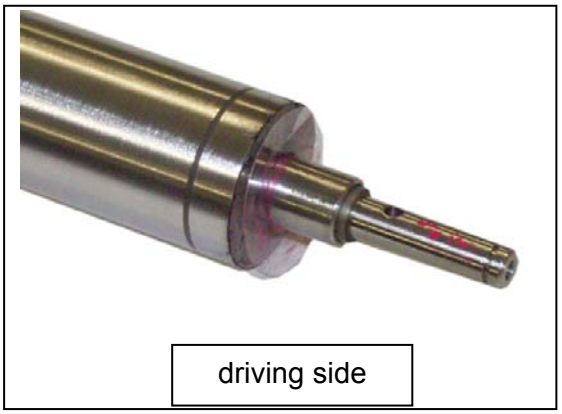


25. Reinstall Blade Roller (13).

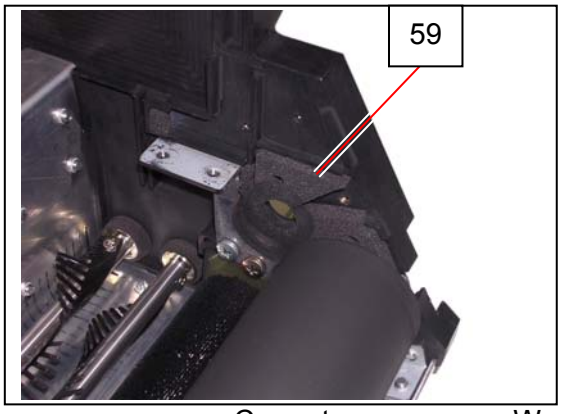
NOTE

(1) Note the installation direction. The longer shaft should be placed to the driving side.

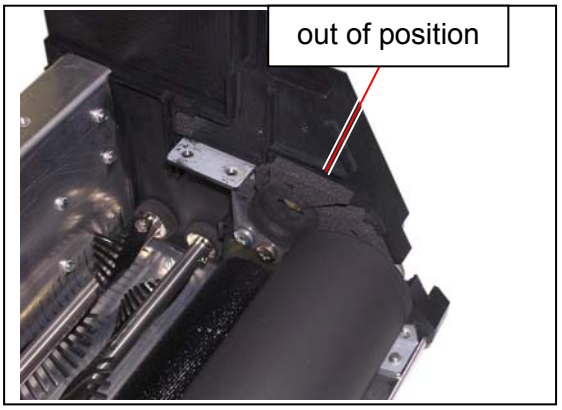




(2) Seal 1 (59) on each side should be seated in position along the bosses.

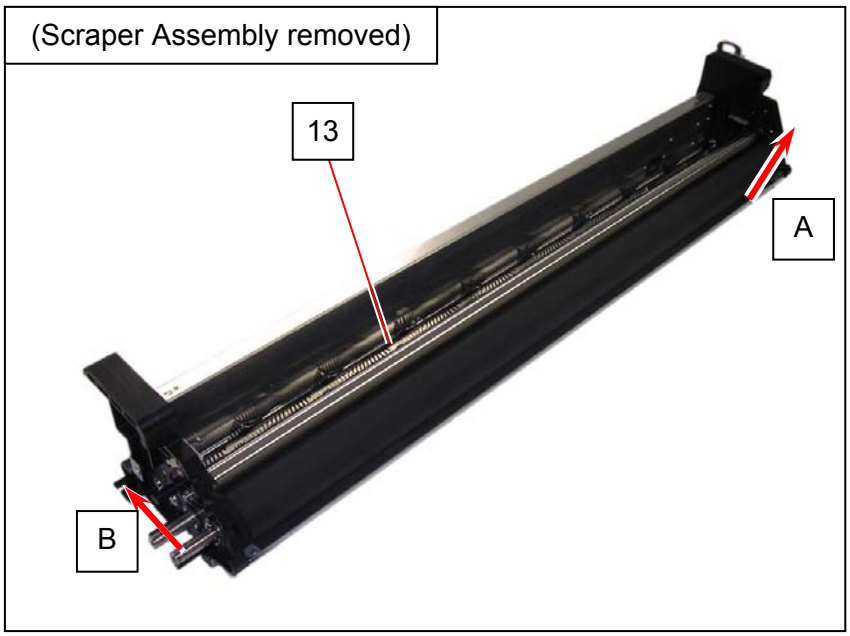


Correct



Wrong

(3) Push Blade Roller (13) against Seal 1 (A) on the driving side to hold and keep its original position, then push on the electrode plate side (B).



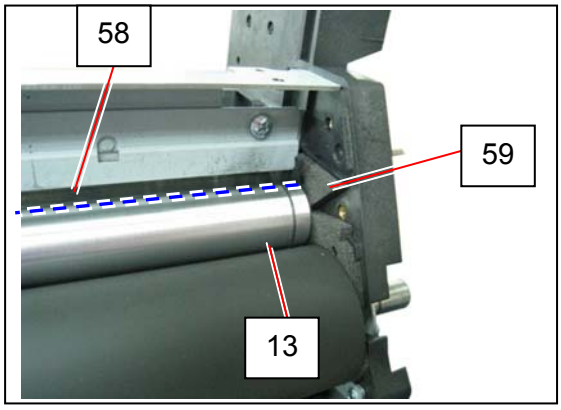
(4) During installing toward (A) then (B), be careful not to damage Sheet (78) and Sheet 2 (79) on Blade Roller shaft.

(continued on the next page)

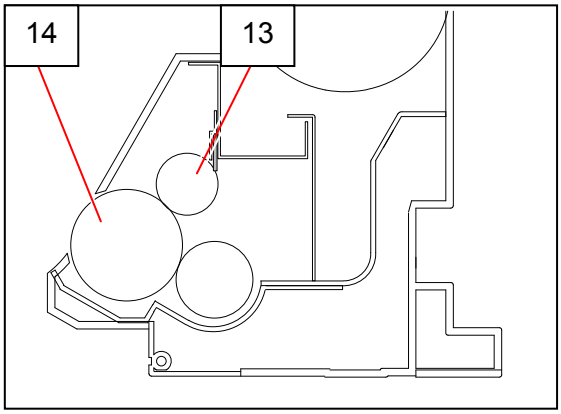
NOTE

(5) After installing, check that Seal 1 (59), Sheet / Sheet 2 (on Blade Roller shaft) are not damaged or deformed.

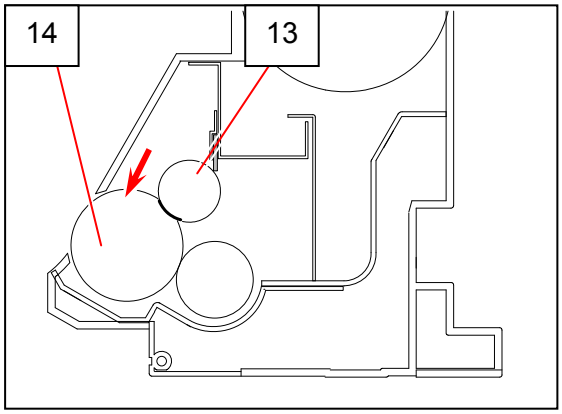
(6) After locating, check that Scraper (58) is not wavy.



(7) Blade Roller (13) is pressed onto / released from Developer Roller (14) by Bracket 4 (on the driving side) and Bracket 5 (on the electrode plate side).
Now Blade Roller (13) has been located in position, it should be pressed onto Roller Developer (14) at the later step.



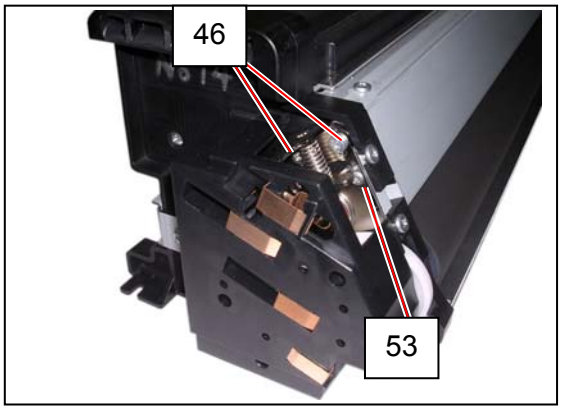
not pressurized

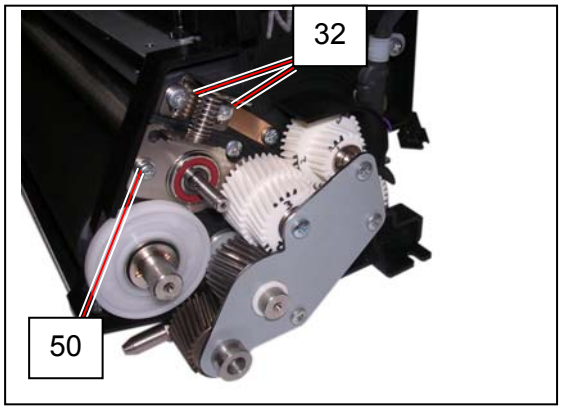


pressurized

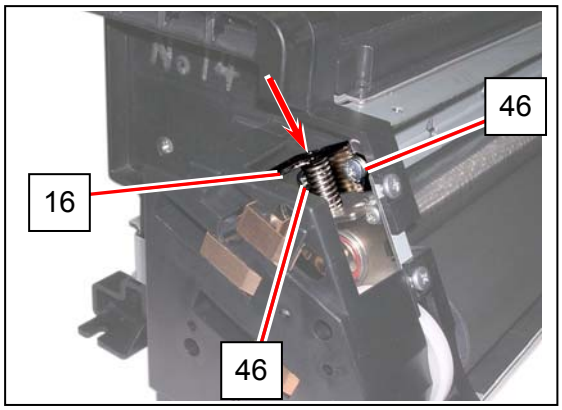
26. Replace all the components except Gear Helical 30T (10) and Hopper Assy (4) in position.

27. Make sure that the 6 screws (46) (53) (32) (50) are installed loose.

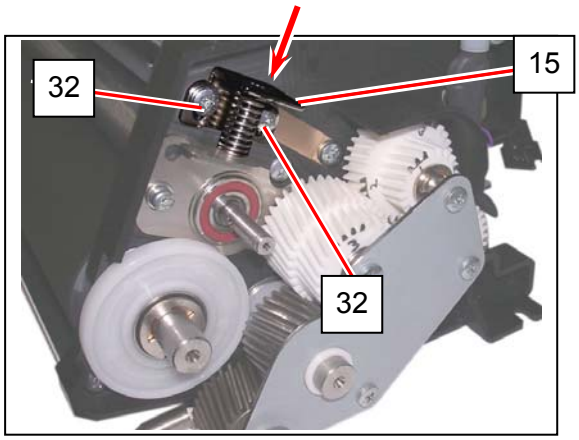




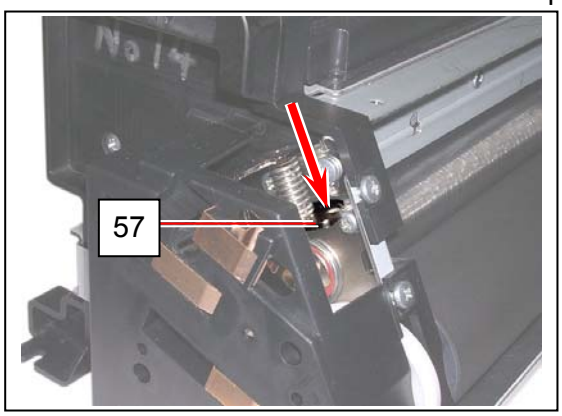
28. On the electrode plate side, fully press down the top of Bracket 5 (16). With pressing, tighten 2 screws (46) to secure Bracket 5 (16).

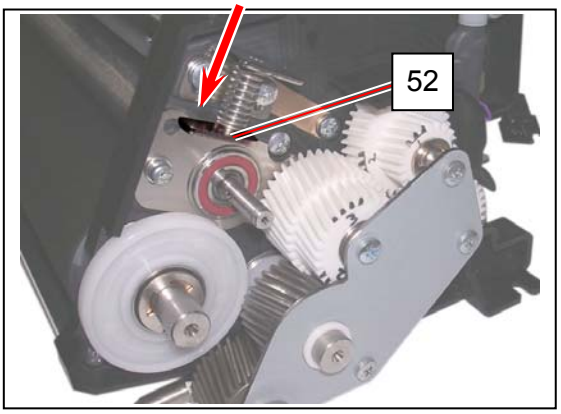


29. On the driving side, fully press down the top of Bracket 4 (15). With pressing, tighten 2 screws (32) to secure Bracket 4 (15).



30. Press down the top of Bracket 7 Assy (57) and Bracket 6 Assy (52) at a time. This will allow Blade Roller to be seated in the correct position.

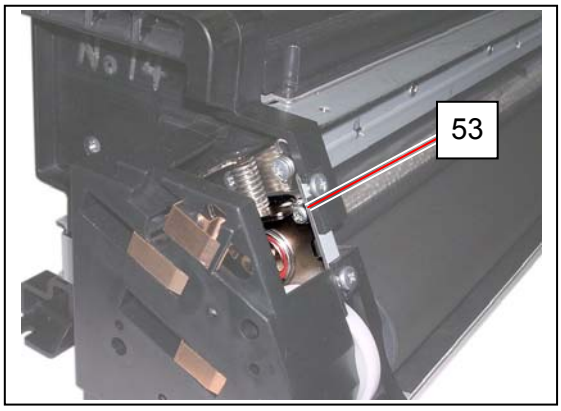


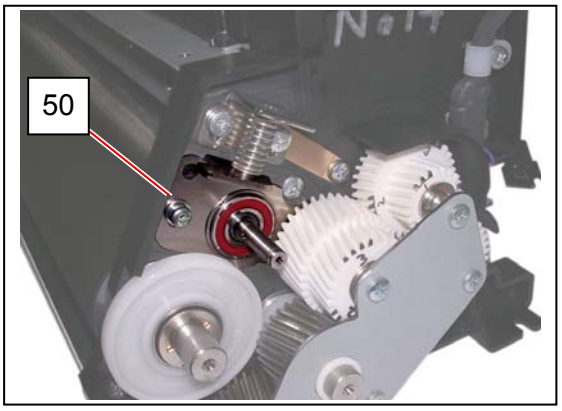


NOTE

(1) Press down both Bracket 7 Assy and Bracket 6 Assy at the same time. Pressing only one side may lose the correct pressure balance between the electrode plate side and the gear side.

(2) Do not turn the screws (53) (50) for Bracket 7 Assy / Bracket 6 Assy at this point. Follow the later instruction to correctly tighten the screws (53) (50).

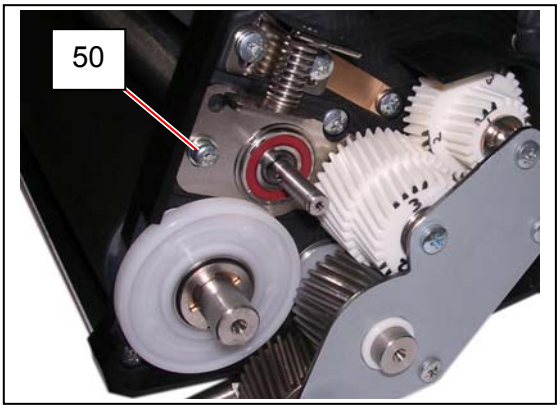


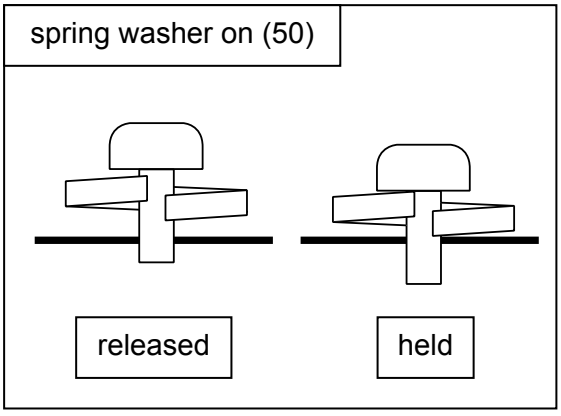


31. Turn the screw (50) in just enough revolution so that its spring washer is held in the gap.

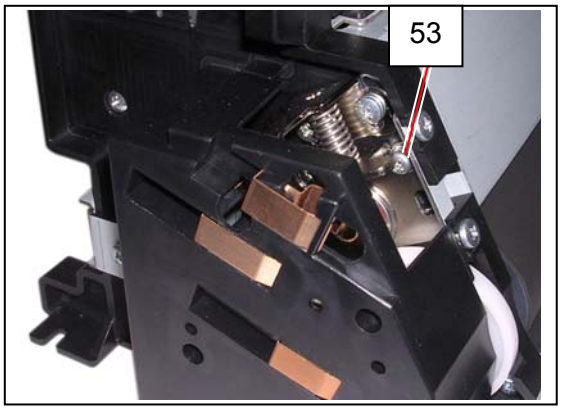
NOTE

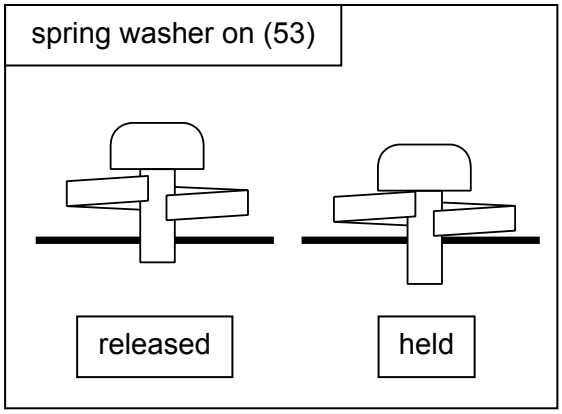
Do not tighten the screw (50) (53) firmly at this point of time. Otherwise proper and even pressurization of Blade Roller between left/right may fail, and this will make the toner layer on Roller Developer get thicker than required.



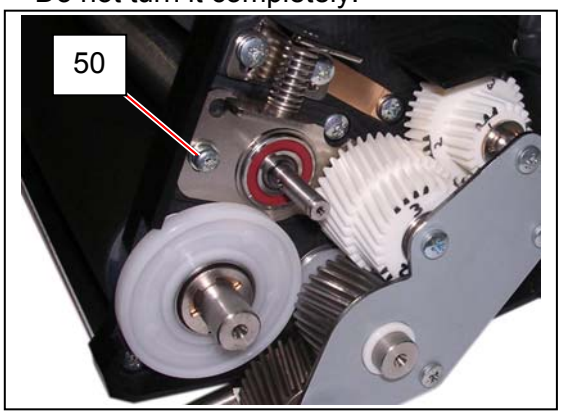


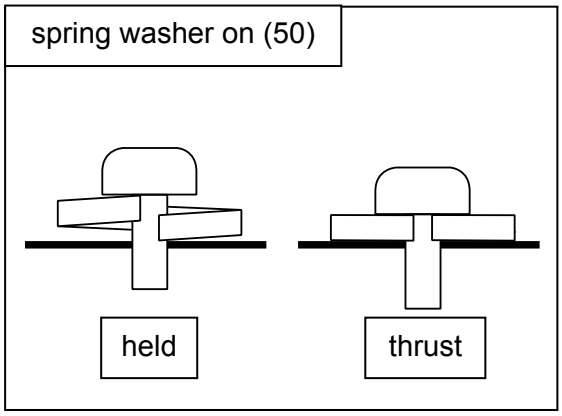
32. Turn the screw (53) in just enough revolution so that its spring washer is held in the gap.



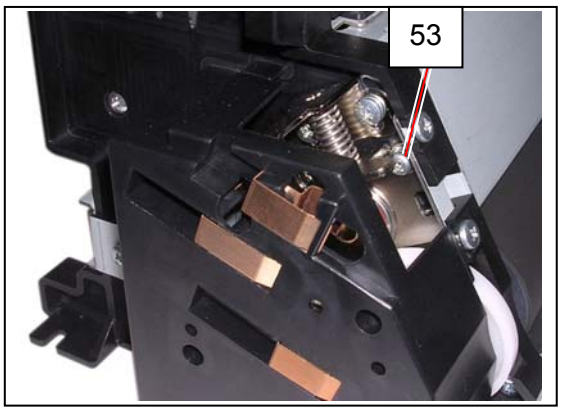


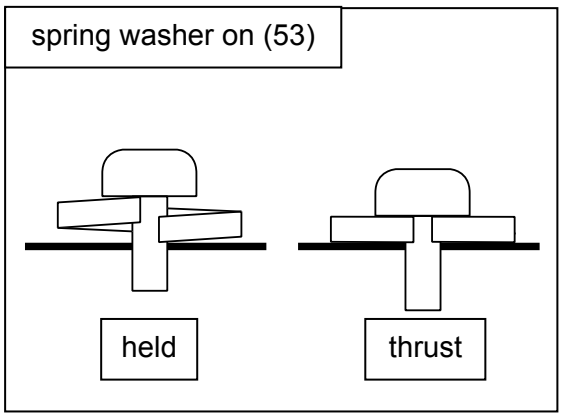
33. Turn the screw (50) in just enough revolution so that its spring washer is thrust in the gap. Do not turn it completely.



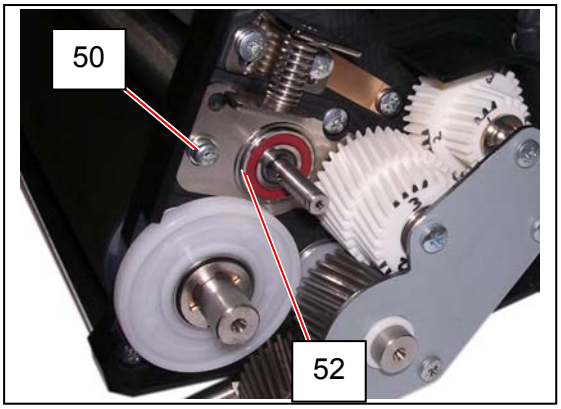


34. Turn the screw (53) in just enough revolution so that its spring washer is thrust in the gap. Do not turn it completely.





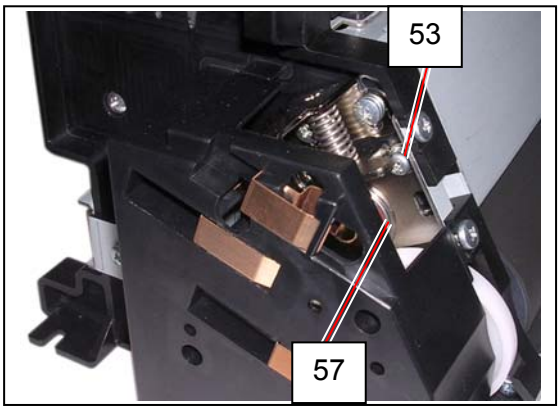
35. Slowly tighten the screw (50) to secure Bracket 6 Assy (52).



NOTE

Do not tighten the screw (50) quickly at this time. Otherwise proper and even pressurization of Blade Roller between both the sides may be failed, and this will make the toner layer on Developer Roller get thicker than required.

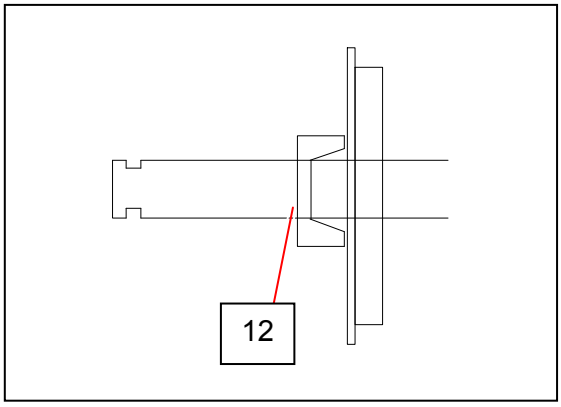
36. Slowly tighten the screw (53) to secure Bracket 7 Assy (57).

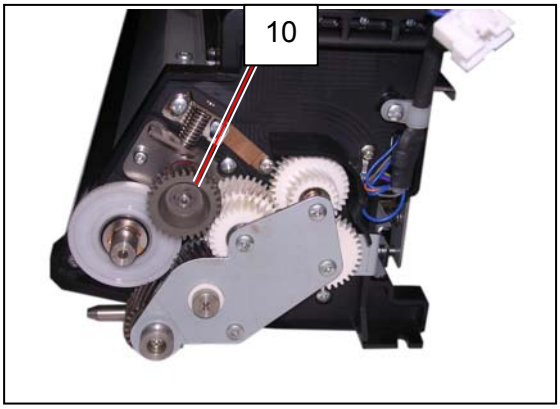


NOTE

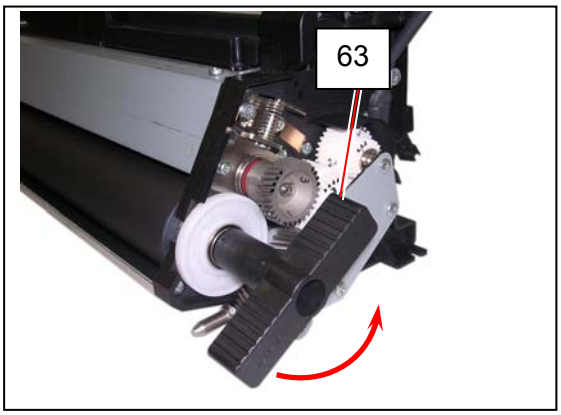
Do not tighten the screw (53) quickly at this time. Otherwise proper and even pressurization of Blade Roller between both the sides may be failed, and this will make the toner layer on Developer Roller get thicker than required.

37. On the driving side, reinstall Collar 3 (12), Parallel Pin, Gear Helical 30T (10) and Retaining Ring-E to Blade Roller shaft.





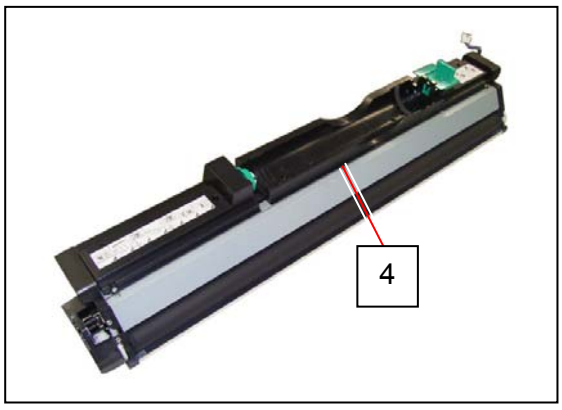
38. Install Developer Handle (63) to Developer Roller shaft. Rotate Developer Roller several times so that the roller surface is covered with the toner.

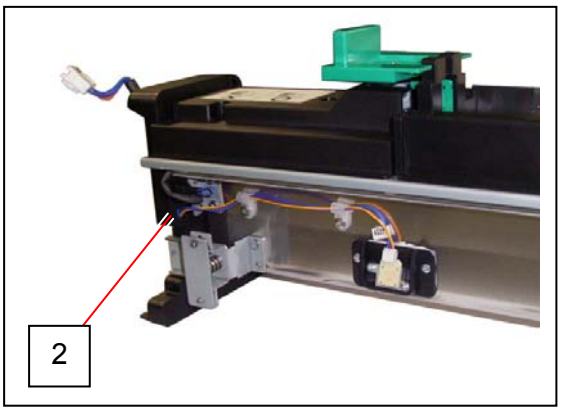


NOTE

If the pressures of Blade Roller on either or both sides are weaker than required, the toner layer on the Developer Unit will be much thicker than required when you rotate the Roller Developer.
Retry to pressurize the Blade Roller in the correct way in this case.

39. Replace the Hopper Assembly (4) and connect the connector (2).

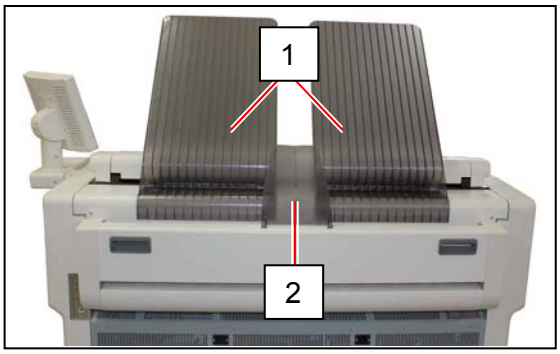




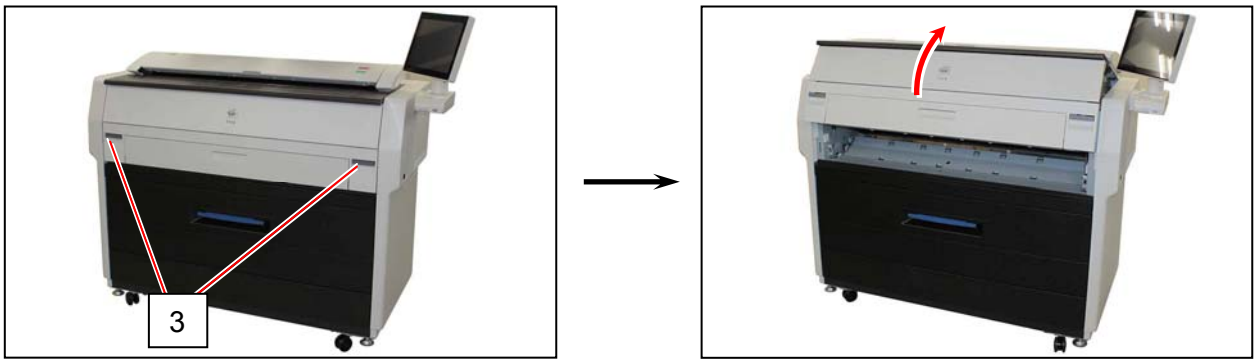
5. 3 Fuser Unit

5. 3. 1 Removal of Fuser Unit

1. Remove 2 pieces of Exit Tray (1) and Exit Tray 2 (2).

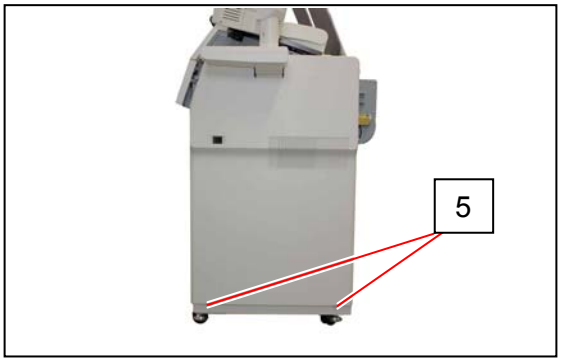


2. Pull up the Lever 2 (3) to open the Engine Unit.

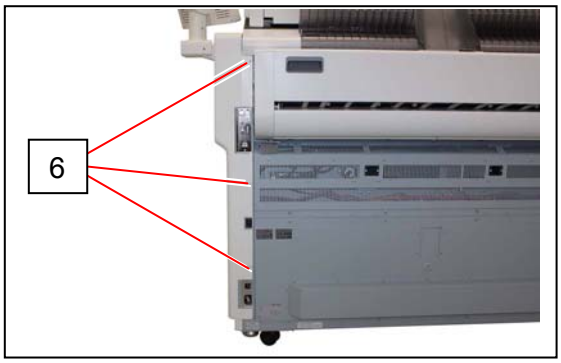


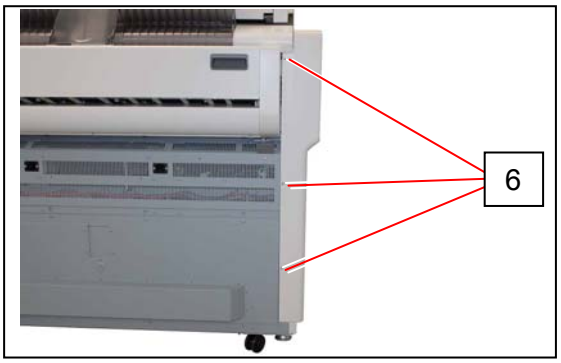
3. Remove the screws (4) at both sides.

4. Remove 4 pieces of screw (5) at both sides.



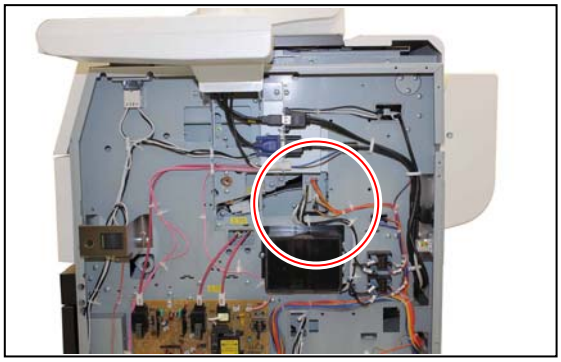
5. Remove 6 pieces of screw (6) at both sides.

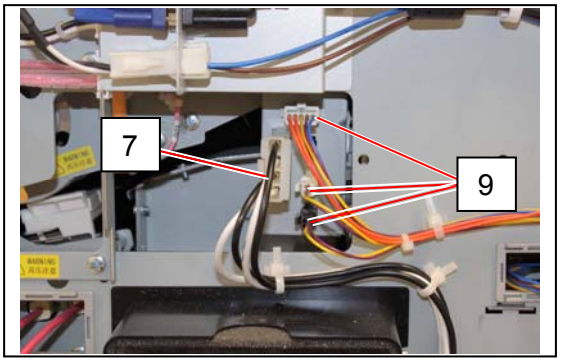




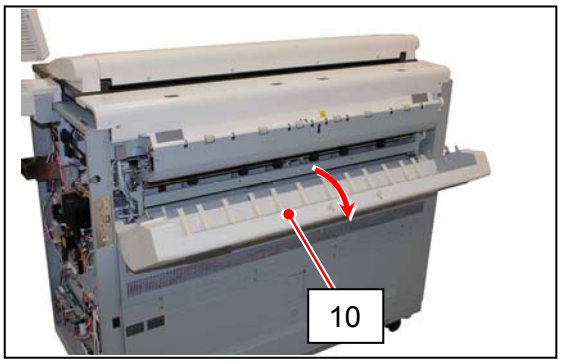
6. Remove Cover 2 (7) and Cover 3 (8).

7. Disconnect 4 connectors (9).

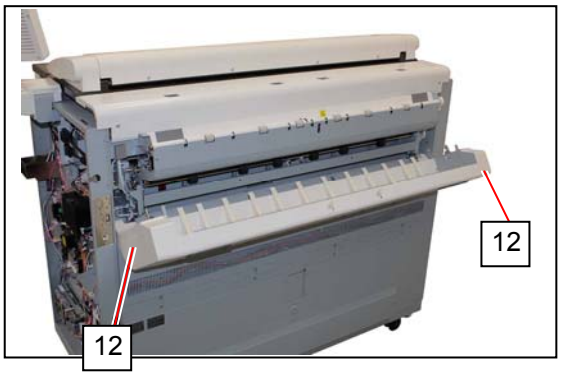


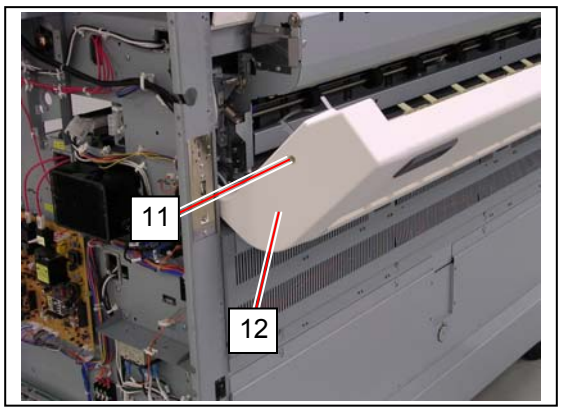


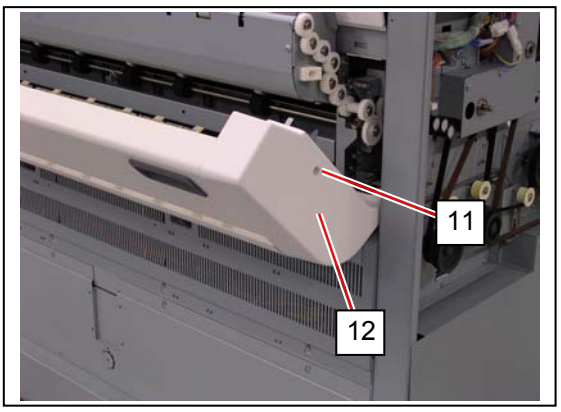
8. Open Exit Cover (10).



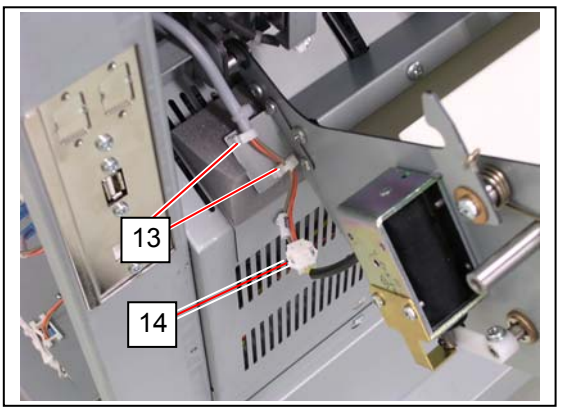
9. Remove 2 screws (11) to remove Exit Side Cover R / L (12).



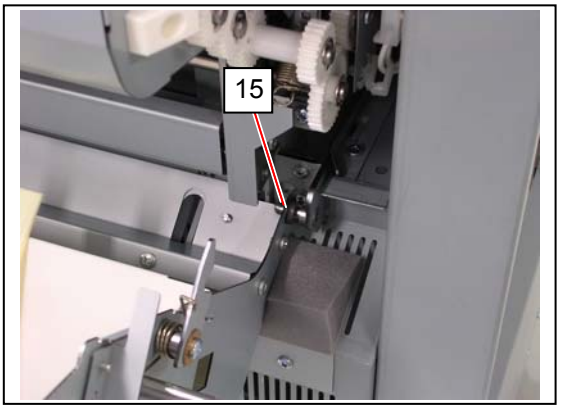




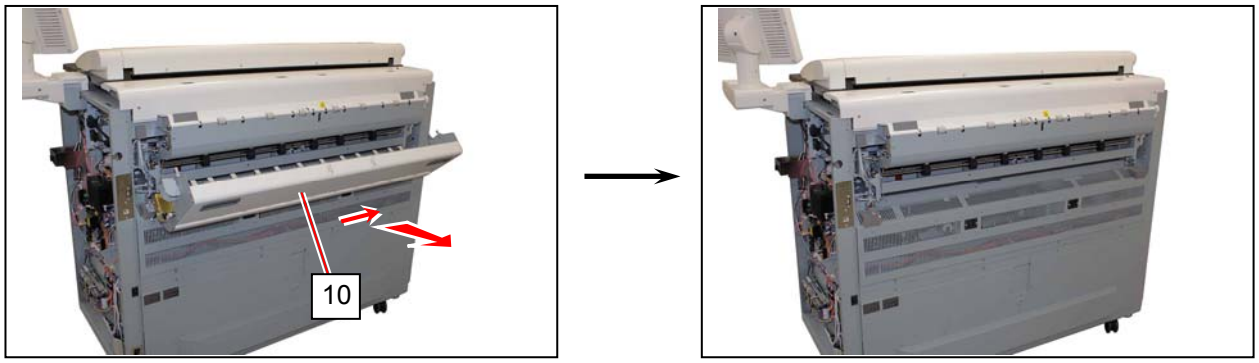
10. Open 2 clamps (13) and disconnect 1 connector (14).



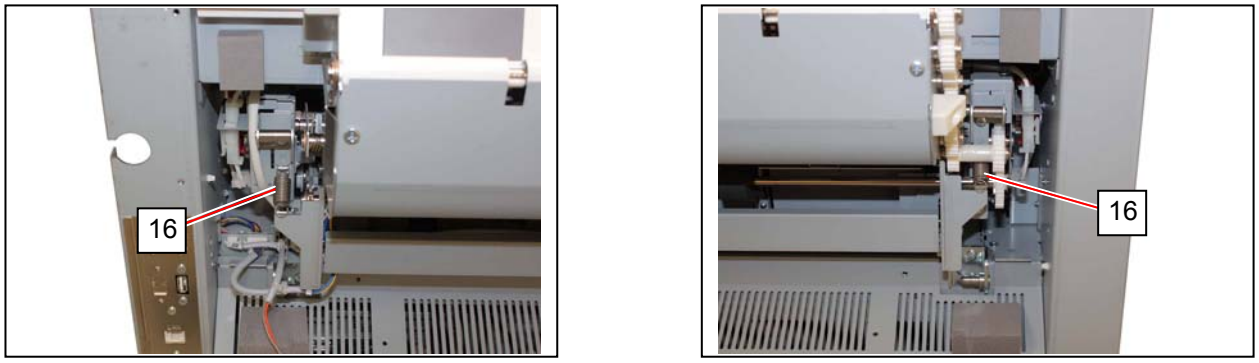
11. On the left side (your right hand), remove 1 piece of KL Clip (15).



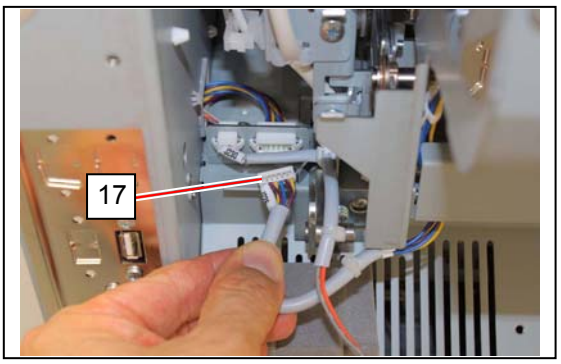
12. Slide Exit Cover (10) to the arrow direction (right hand side) to remove it from the machine.



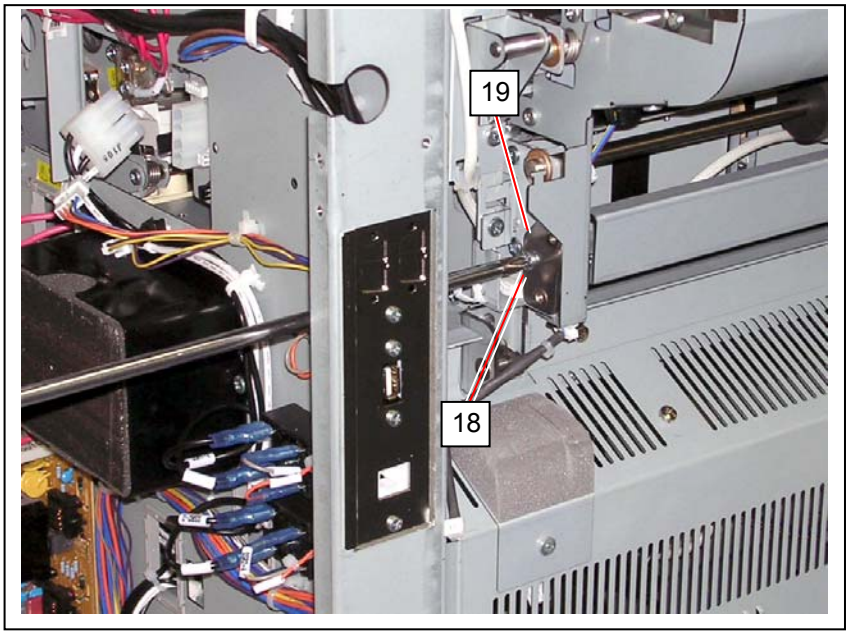
13. Release the springs (16) on both sides.



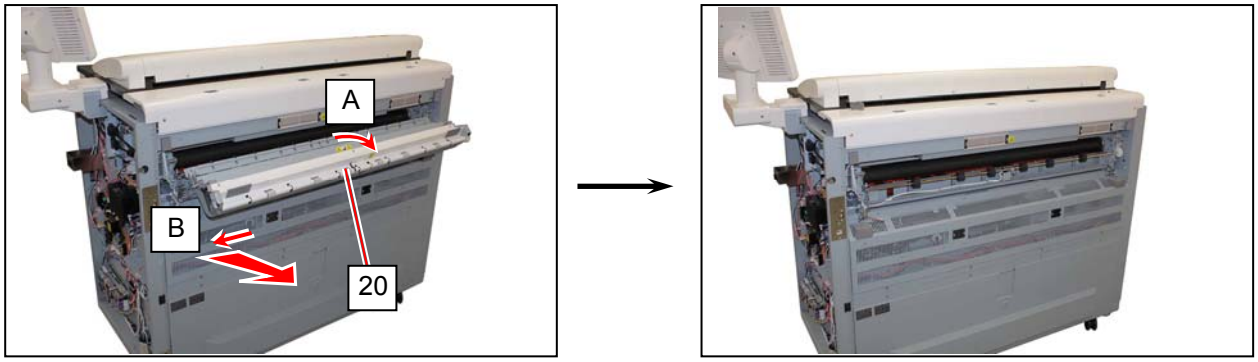
14. Remove 1 connector (17).



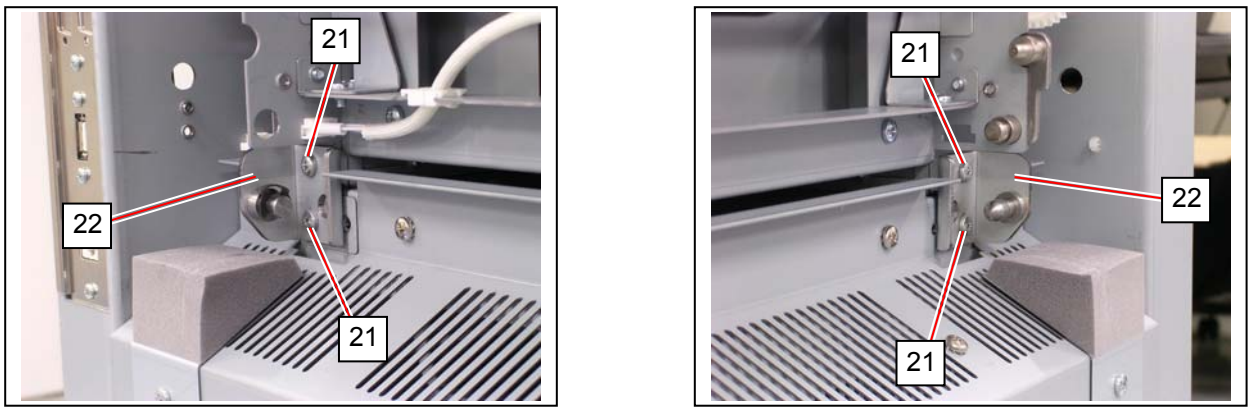
15. Remove 1 screw (18) to release the hinge bracket (19).



16. Firmly hold Fuser Cover (20). Slightly open it (A) and remove the hinge bracket (19).
Slide Fuser Cover (20) to the arrow direction (left hand side) (B) to remove it from the machine.

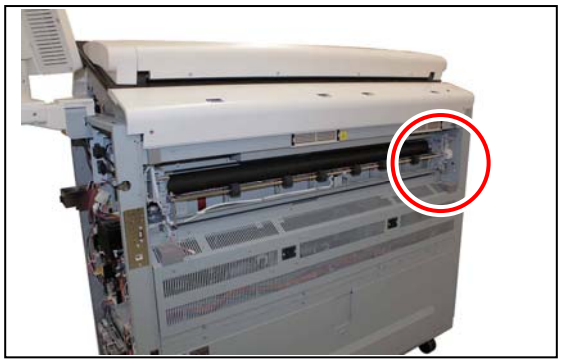


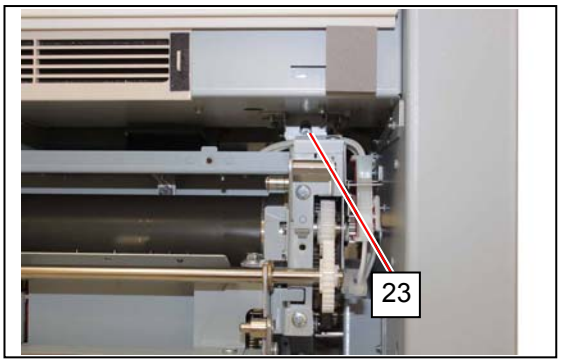
17. Remove 4 screws (21) to remove Bracket R / L (22).



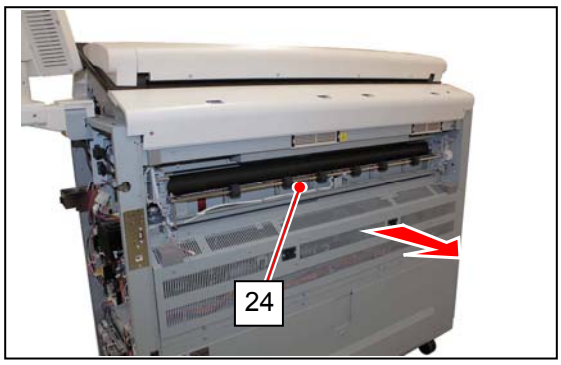
18. Open the Engine Unit.

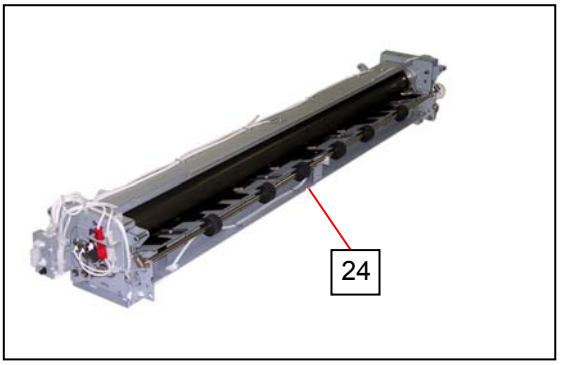
19. Loosen 1 screw (23) to release the drive side of Fuser Unit.





20. Pull and remove Fuser Unit (24) from the machine.



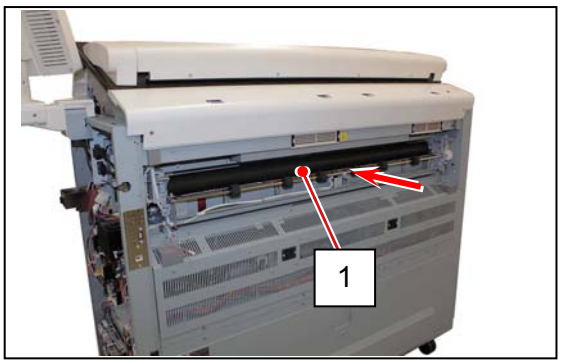


5. 3. 2 Reinstallation of Fuser Unit

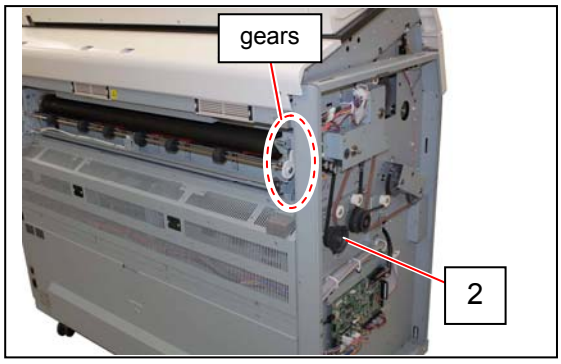
Reference

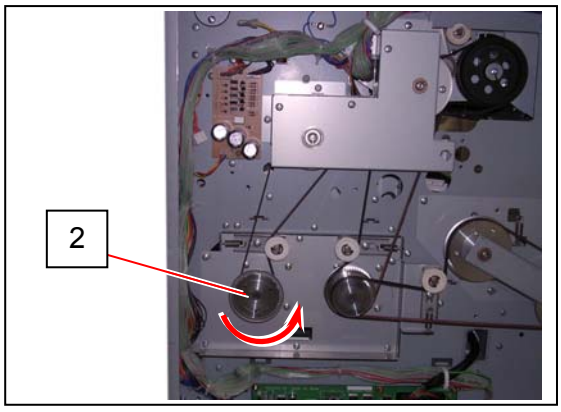
This section shows Fuser Unit with Paper Exit Assy removed for clarification.

1. With Engine Unit **open**, fully mount Fuser Unit (1) to the machine



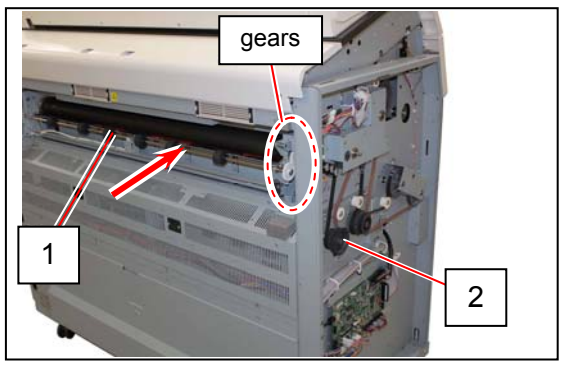
2. On the left side of the machine, rotate Pulley (2) counterclockwise to check the gear engagement between Fuser Unit and the machine.

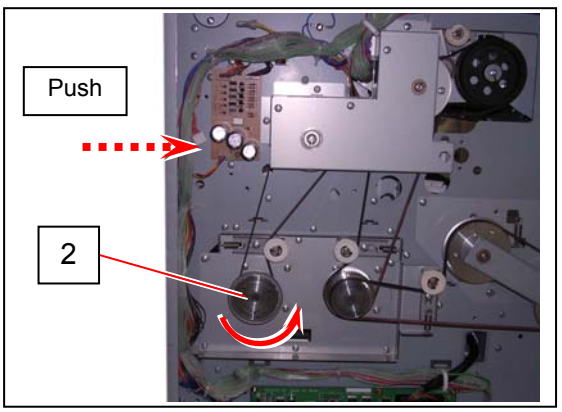




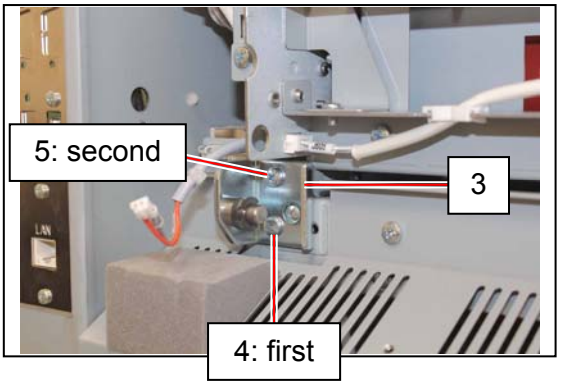
NOTE

If the gears on Fuser Unit and Pulley (2) do not move together, the engagement may fail. With pushing Fuser Unit (1) to the machine inside, rotate Pulley (2) again to obtain the correct engagement.

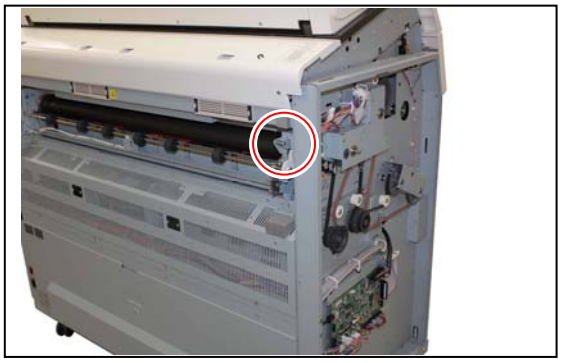


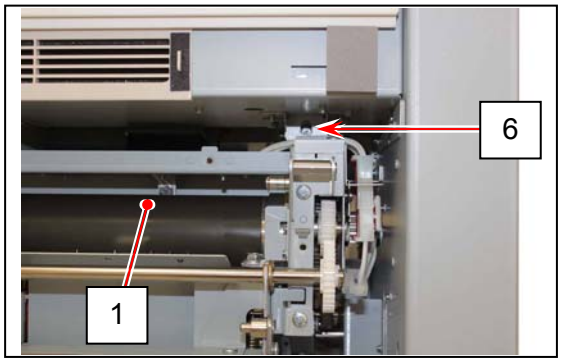


3. Install the brackets (3) with the screws (4) (5).
   Tighten the lower one (4) and then the upper one (5).

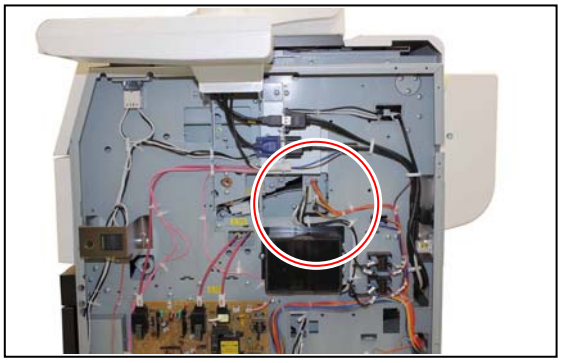


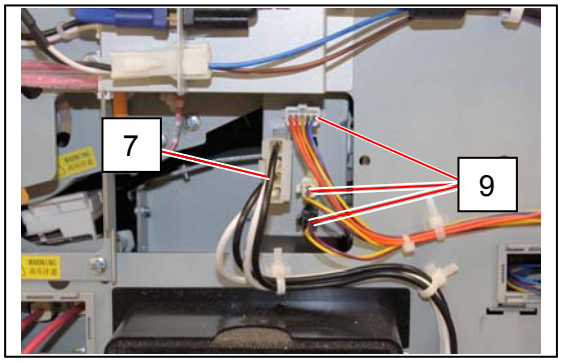
4. Tighten the screw (6) to fix Fuser Unit (1) to the machine.





5. Reconnect the connectors (7).





6. Reinstall Paper Exit Assy (if removed), Cover 2 and Cover 3.

7. Close Engine Unit.

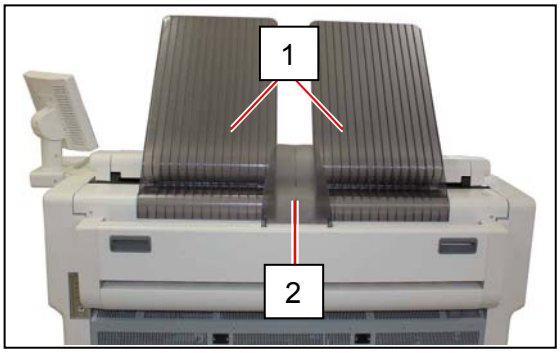
5. 3. 3 Replacement of Recommended Periodic Replacement Parts

NOTE

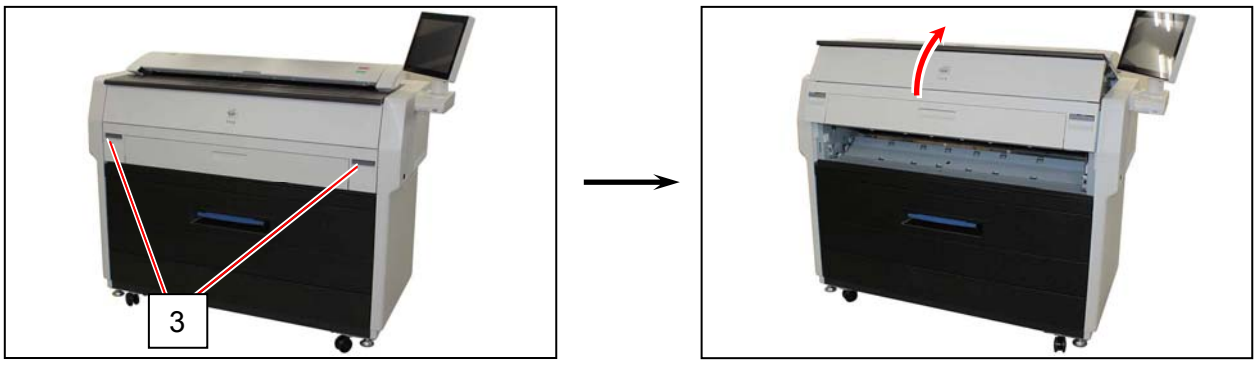
A periodic replacement for them is recommended.
This section shows how to replace all of them in one sequent operation.

Item	Number of article	Remarks
Roller Fusing	1	All of these parts are contained in "Fuser Maintenance Kit" (Z160980040)
Bush	2	
Nail Stripping (Upper)	13	
Nail Lower	6	

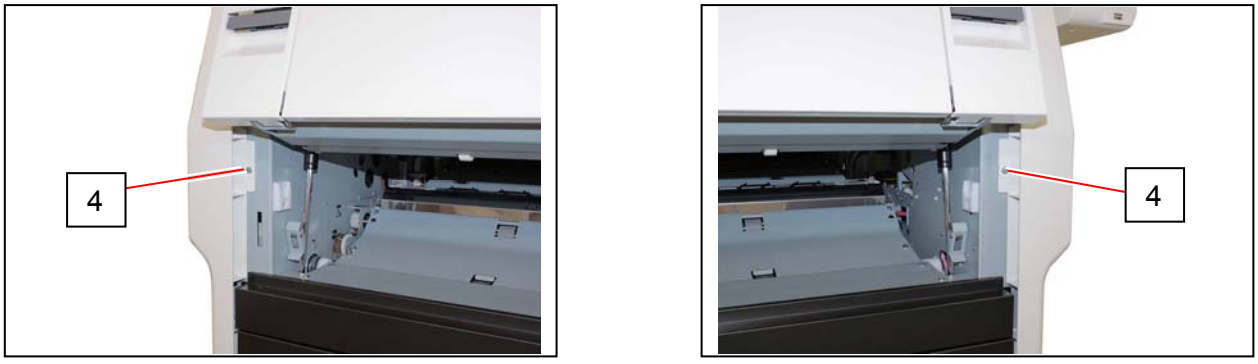
1. Remove 2 pieces of Exit Tray (1) and Exit Tray 2 (2).



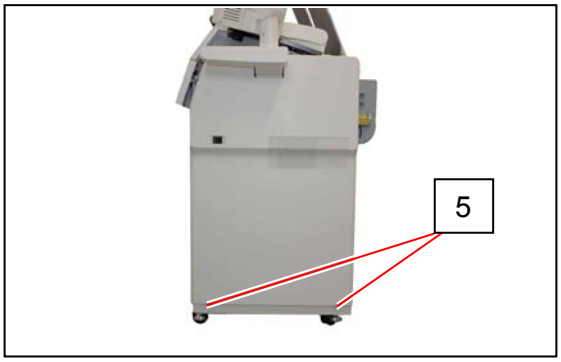
2. Pull up the Lever 2 (3) to open the Engine Unit.



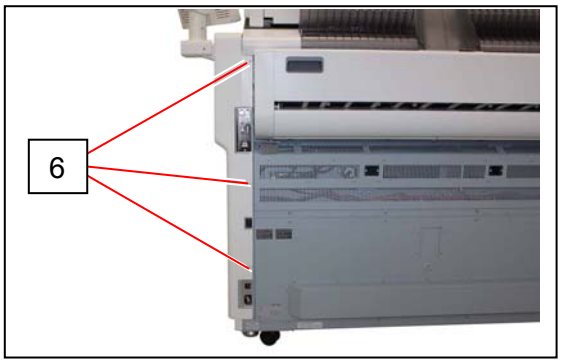
3. Remove the screws (4) at both sides.

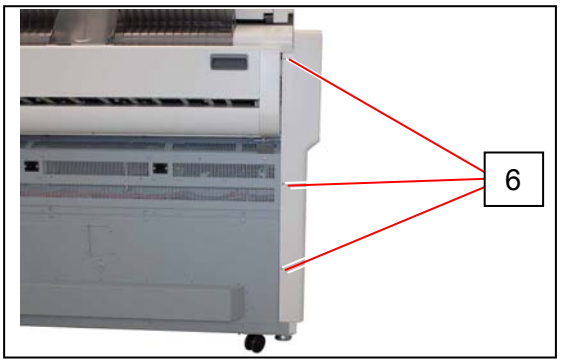


4. Remove 4 pieces of screw (5) at both sides.



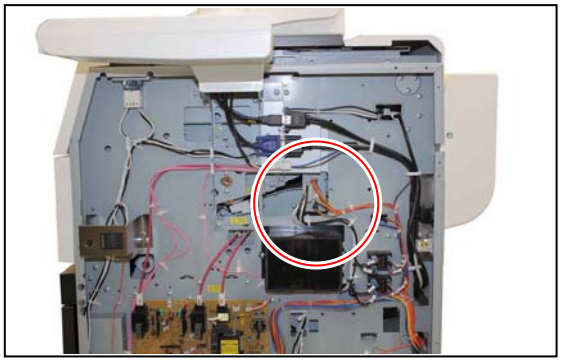
5. Remove 6 pieces of screw (6) at both sides.

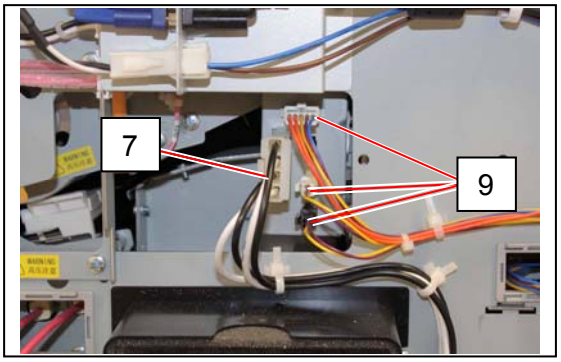




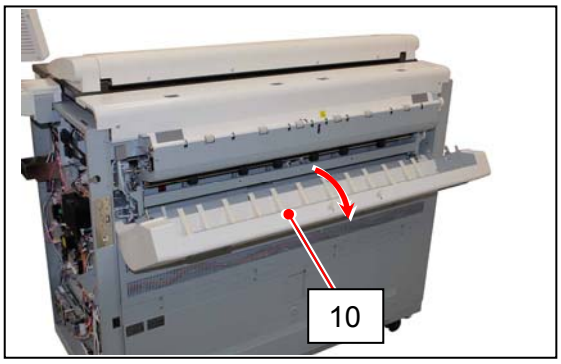
6. Remove Cover 2 (7) and Cover 3 (8).

7. Disconnect 4 connectors (9).

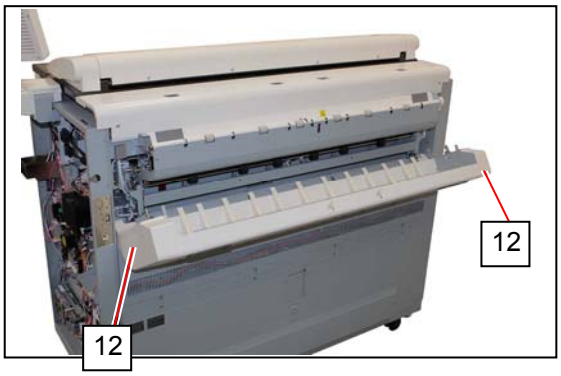


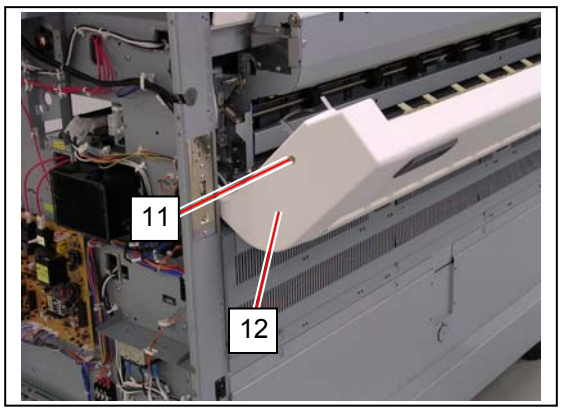


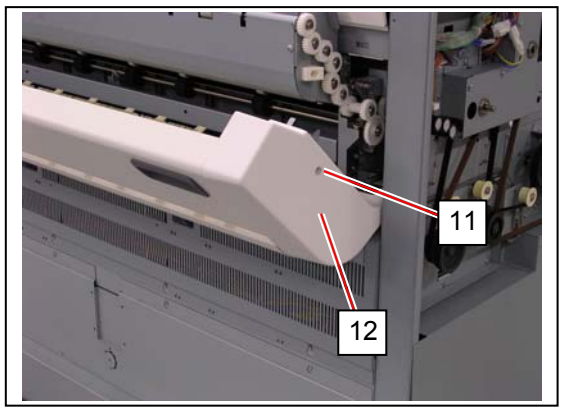
8. Open Exit Cover (10).



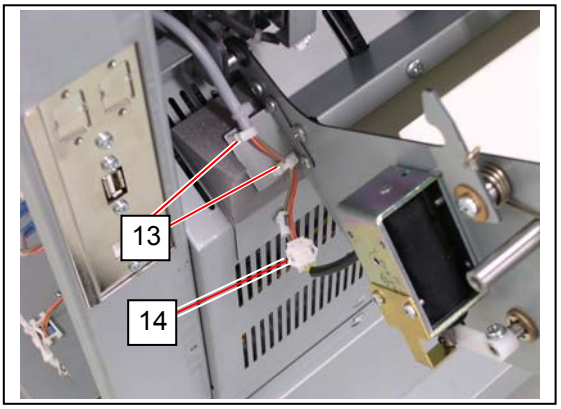
9. Remove 2 screws (11) to remove Exit Side Cover R / L (12).



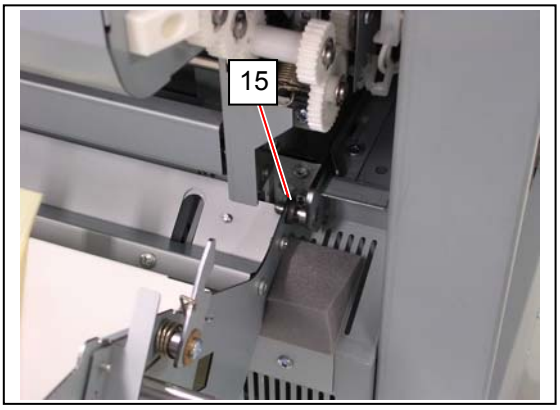




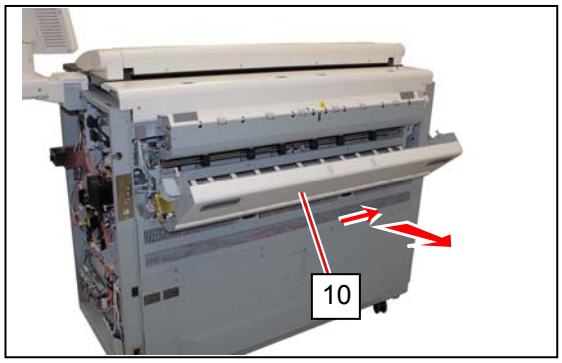
10. Open 2 clamps (13) and disconnect 1 connector (14).

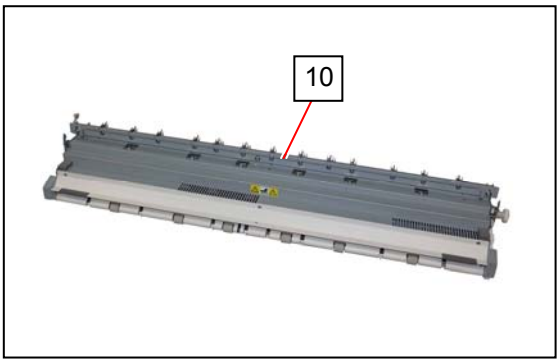


11. On the left side (your right hand), remove 1 piece of KL Clip (15).

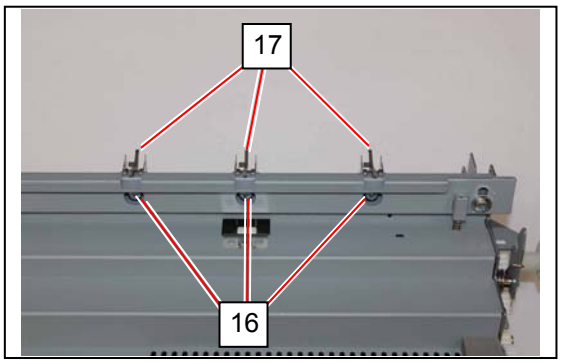


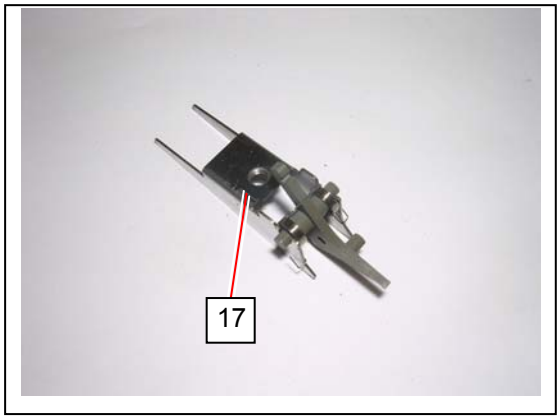
12. Slide Exit Cover (10) to the arrow direction (right hand side) to remove it from the machine.





13. Remove the 4x6 screw (16) to remove each Nail Stripping Assembly (17).

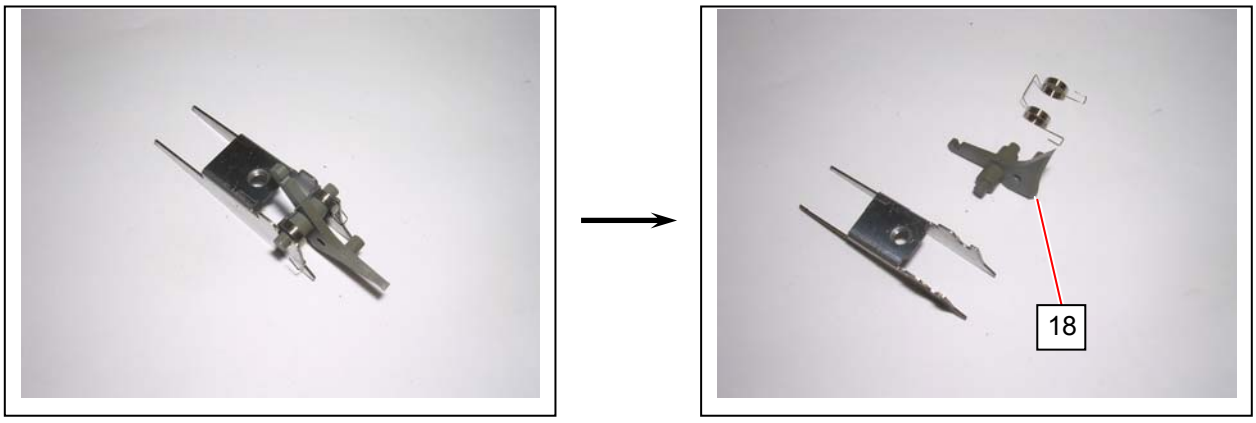




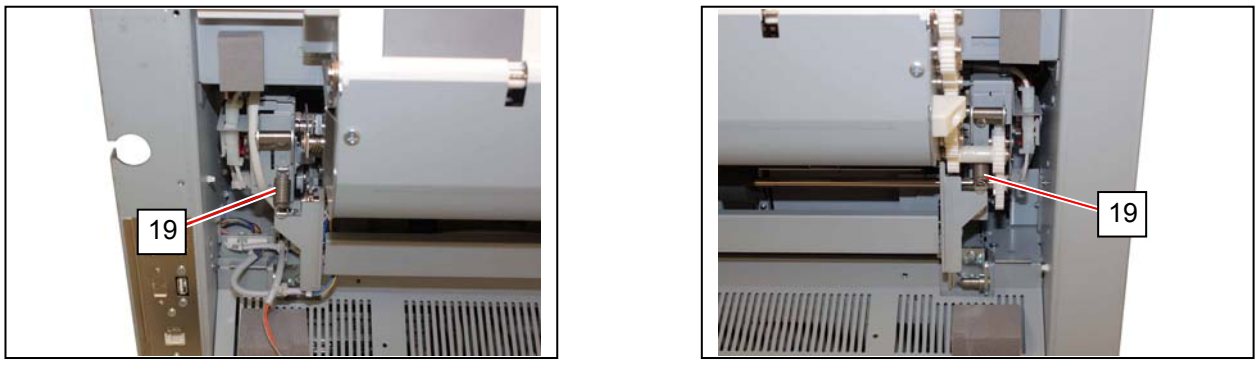
NOTE

When reassembling, fix Nail Stripping Assembly with the screw while holding Nail Stripping Assembly down. This will allow Nail Stripping Assembly to be installed correctly (just upright).

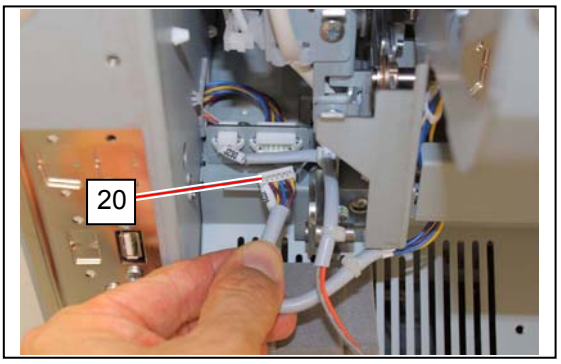
14. Disassemble the Nail Stripping Assembly as the following photo.
Replace the **Nail Stripping** (18) with the new one.



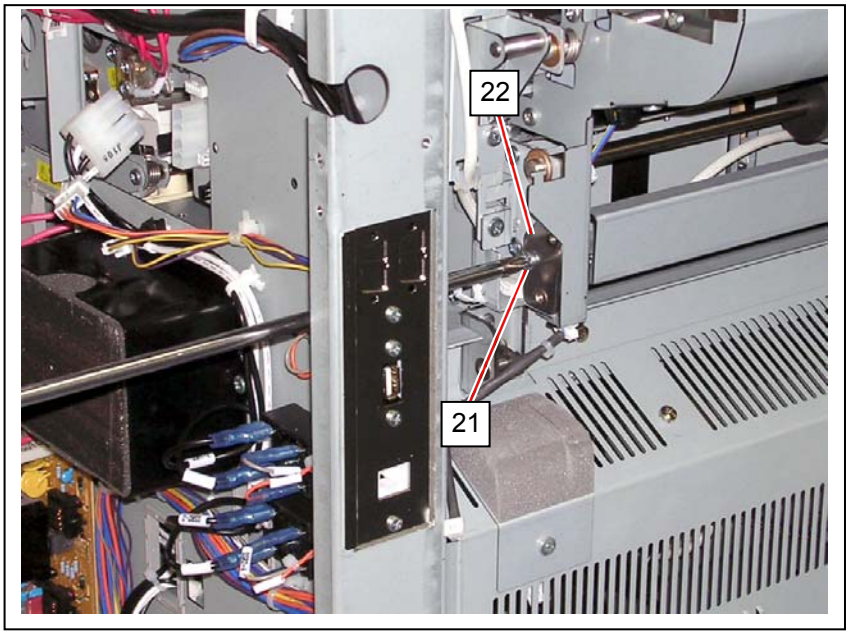
15. Release the springs (19) on both sides.



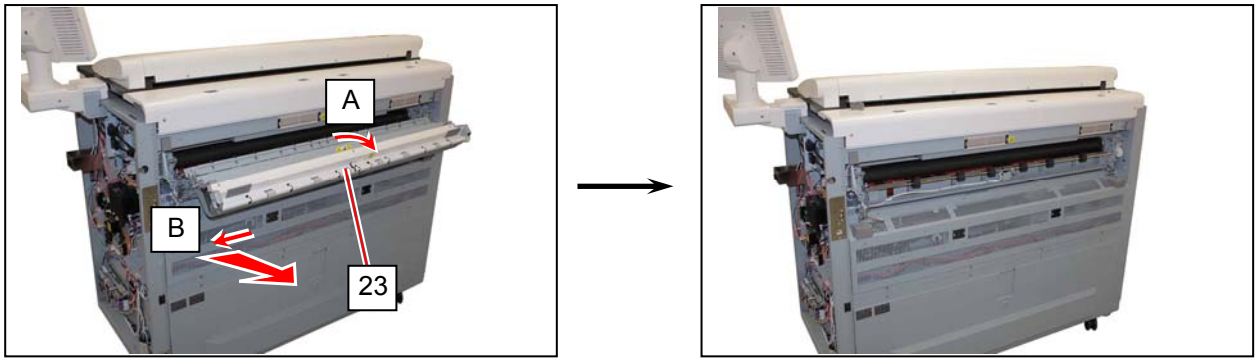
16. Remove 1 connector (20).



17. Remove 1 screw (21) to release the hinge bracket (22).



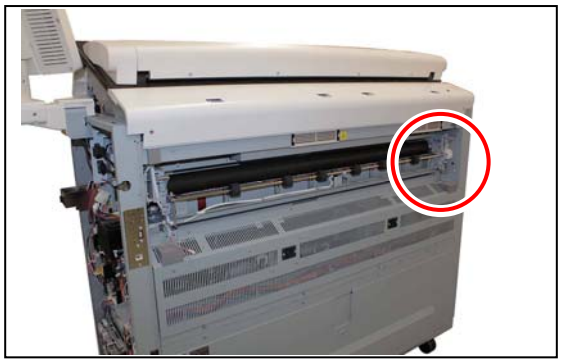
18. Firmly hold Fuser Cover (23). Slightly open it (A) and remove the hinge bracket (22).
Slide Fuser Cover (23) to the arrow direction (left hand side) (B) to remove it from the machine.

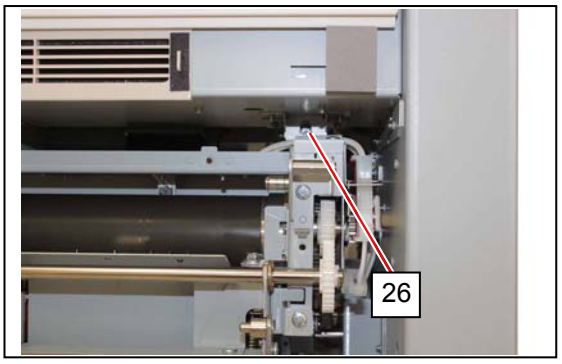


19. Remove 4 screws (24) to remove Bracket R / L (25).

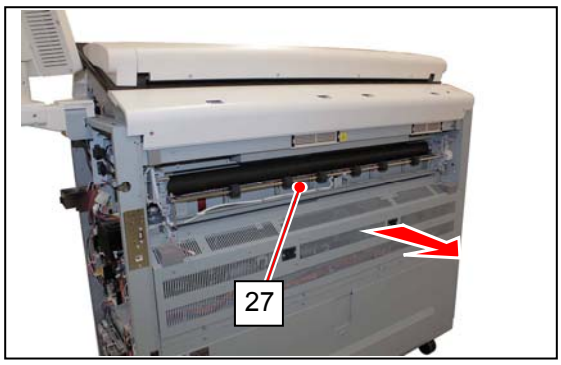
20. Open the Engine Unit.

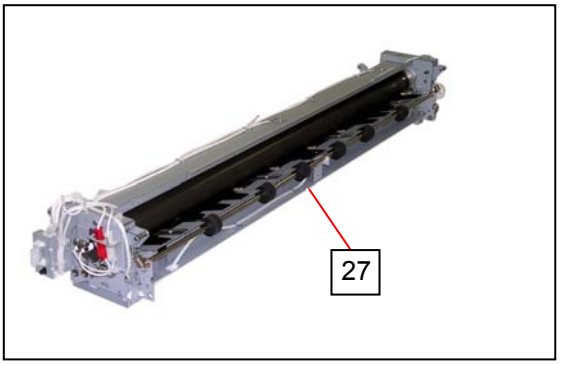
21. Loosen 1 screw (26) to release the drive side of Fuser Unit.





22. Pull and remove Fuser Unit (27) from the machine.





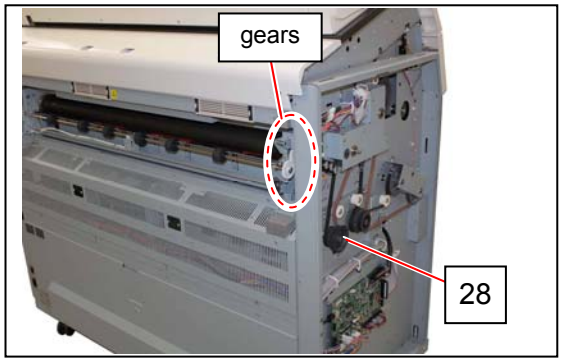
NOTE

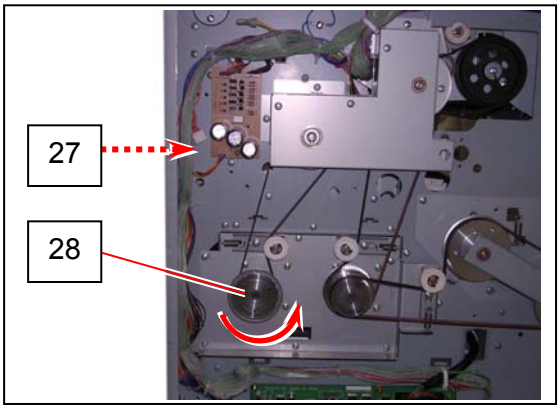
To reinstall Fuser Unit, follow the instruction below.

(1) With Engine Unit open, fully mount Fuser Unit (27) to the machine.

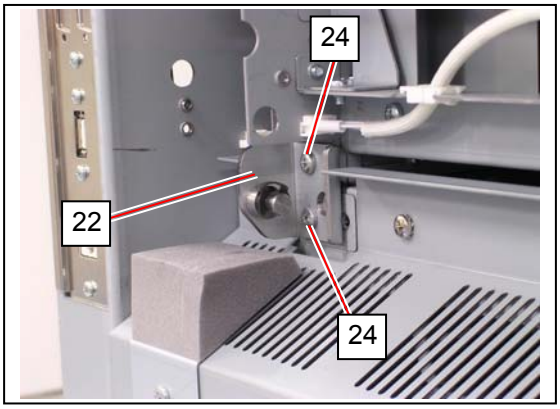
(2) On the left side of the machine, rotate Pulley (28) counterclockwise to check the gear engagement between Fuser Unit and the machine.

If the gears on Fuser Unit and Pulley (28) do not move together, the engagement may fail. With pushing Fuser Unit (27) to the machine inside, rotate Pulley (28) again to obtain the correct engagement.

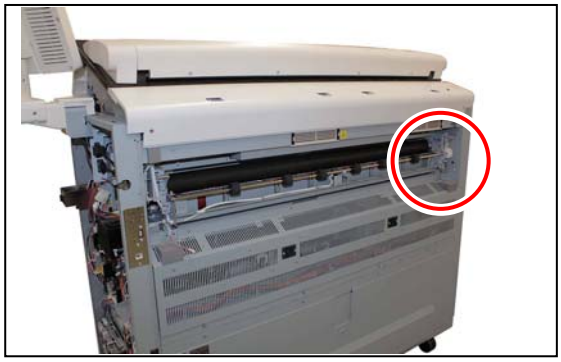


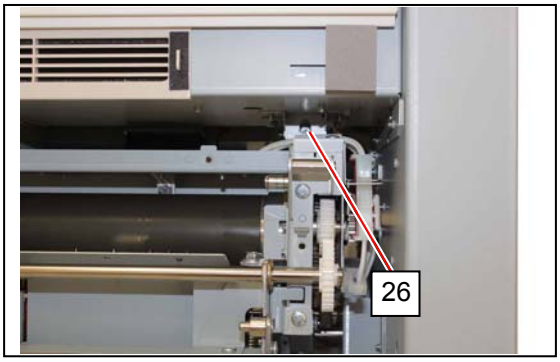


(3) Install Bracket (25) with the screws (24). Tighten the lower screw and then the upper.

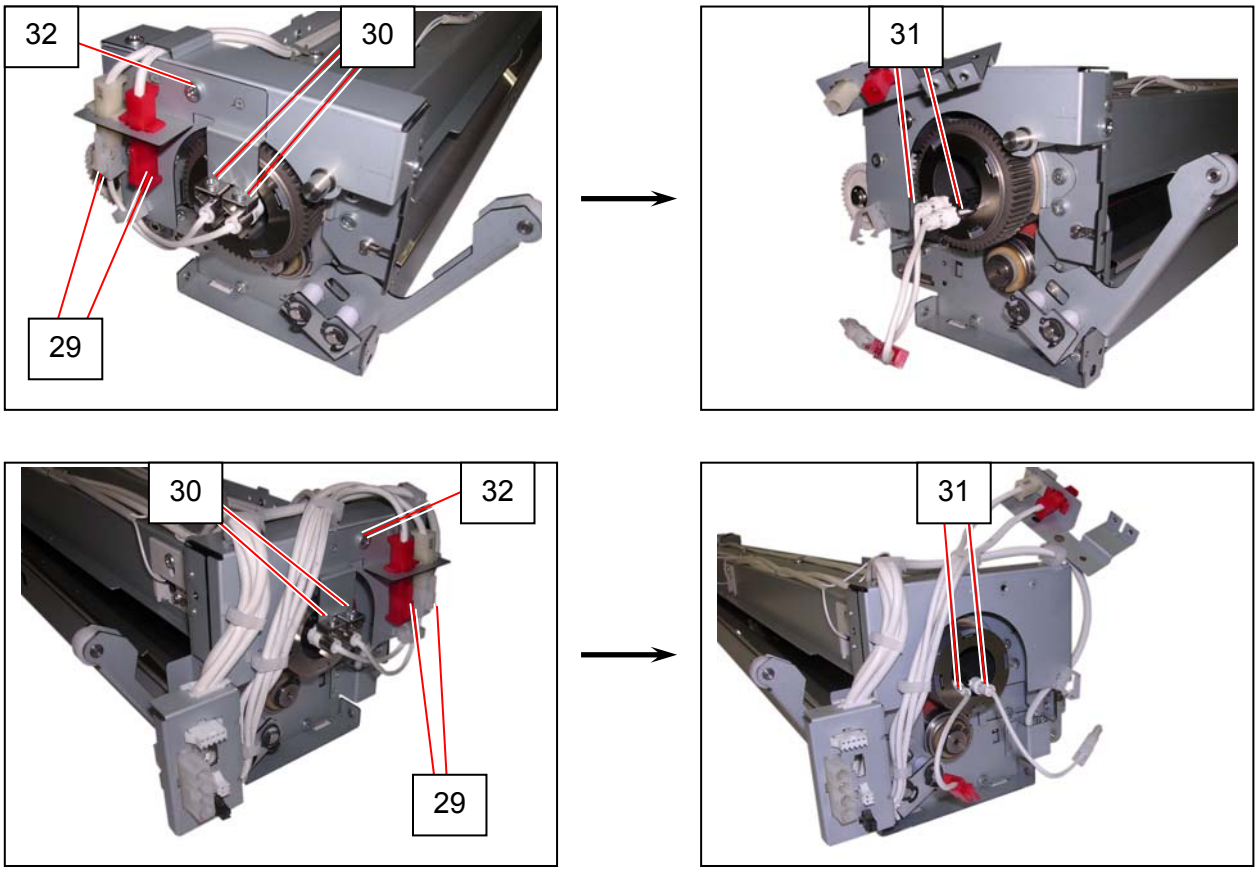


(4) Tighten the screw (26) to fix Fuser Unit to the machine.

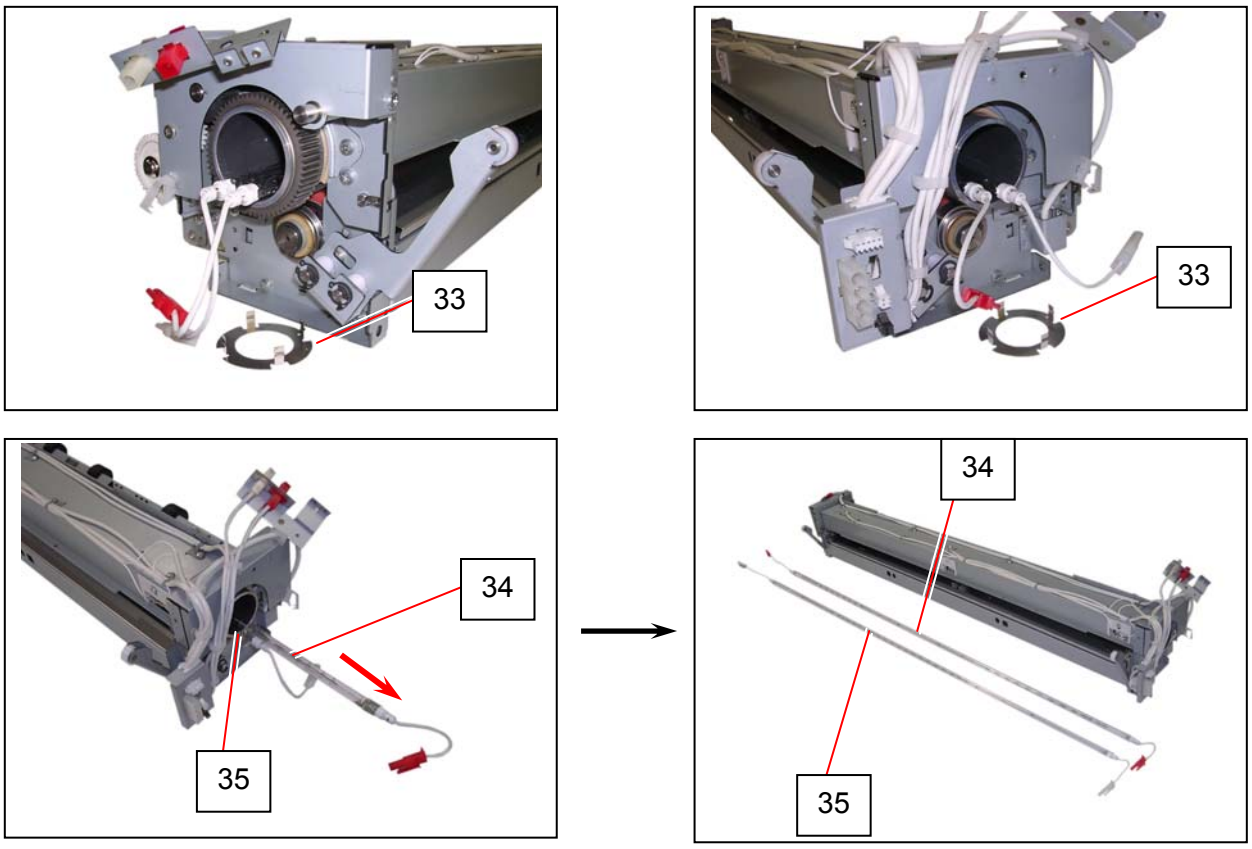




23. Disconnect the connectors (29). Remove 4 screws (30) to release IR Lamps (31).
Remove 2 screws (32) to release the connector brackets.



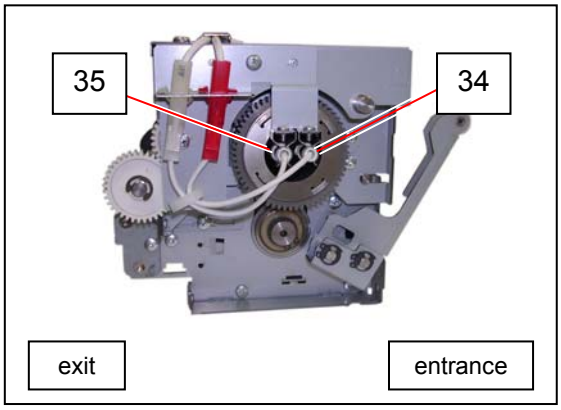
24. Remove Cover (33) on both sides of Roller Fusing.
Gently pull IR Lamps (34: red) (35: white) toward either way to remove them.

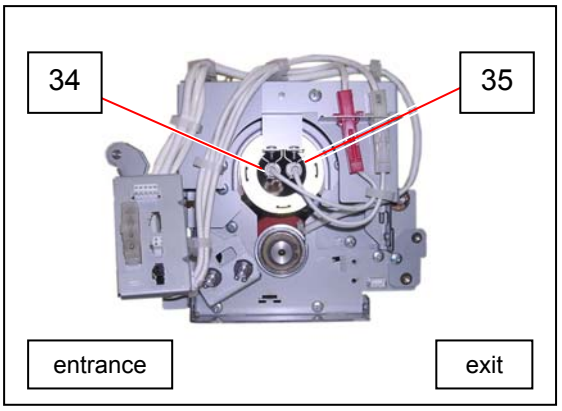


NOTE

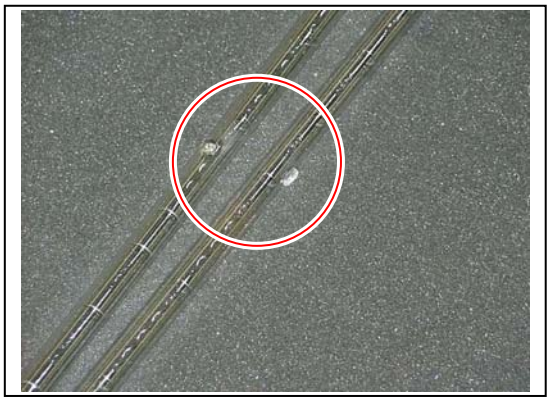
(1) Do not touch the glass part of the Lamp with a bare hand.

(2) Do not interchange the IR Lamps (34) (35). One with red connectors (34) should be installed to the media entrance side and the other with white connectors (35) to the media exit side.

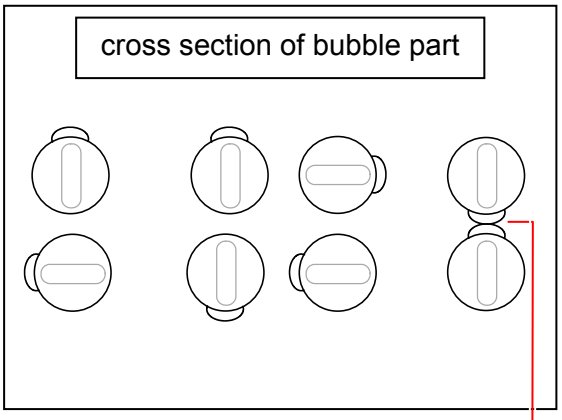




(3) There is a bubble (projection) on the glass part of IR Lamp.
If the bubbles of both IR Lamps touch each other, IR Lamps will be broken because of vibration or heat.
Make sure not to face the bubbles each other. Install the IR Lamps so that the bubbles will be located far from each other.



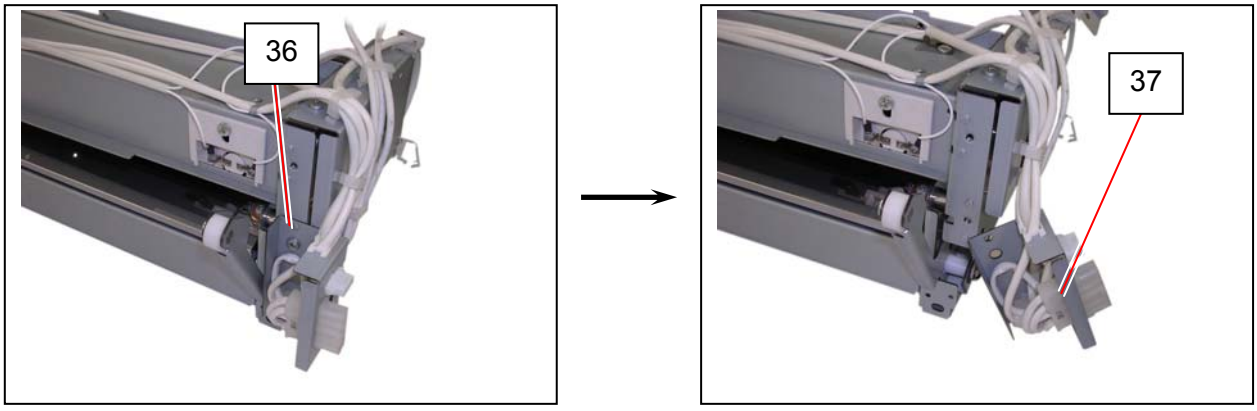
Correct



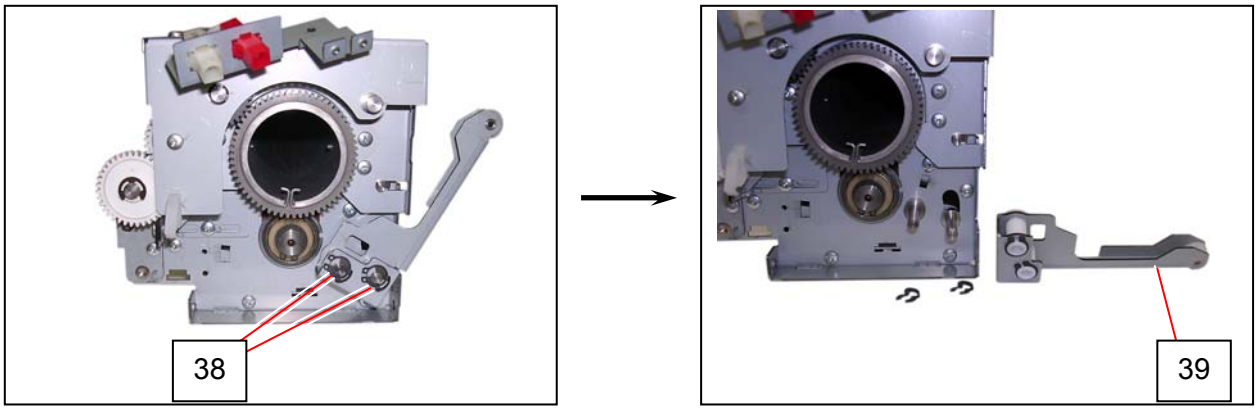
Correct Wrong: touching

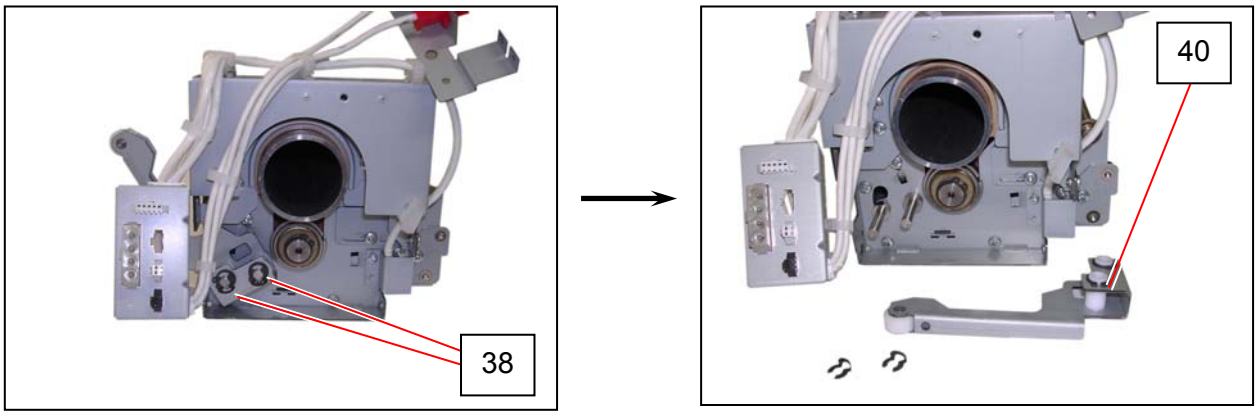
(4) IR Lamps can be installed to Fuser Unit in either way.

25. On the connector side, remove 1 screw (36) to release Bracket 10 Assy (37).

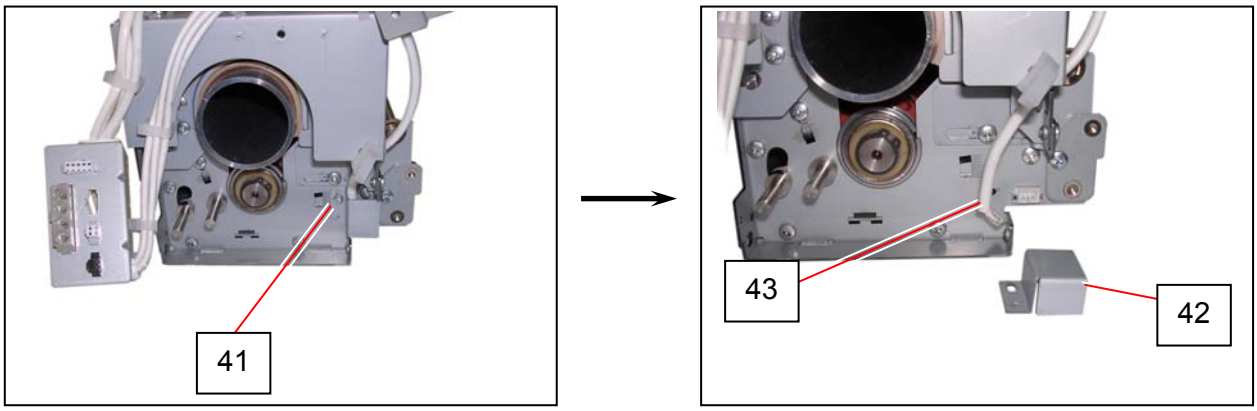


26. On both sides, remove 4 KL Clips (38) to remove Arm 4 (39) and Arm 3 (40).

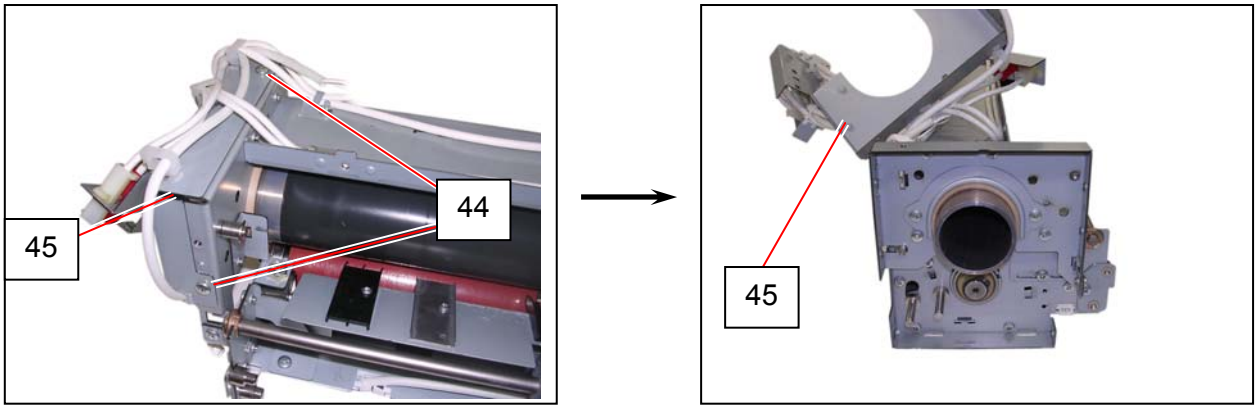




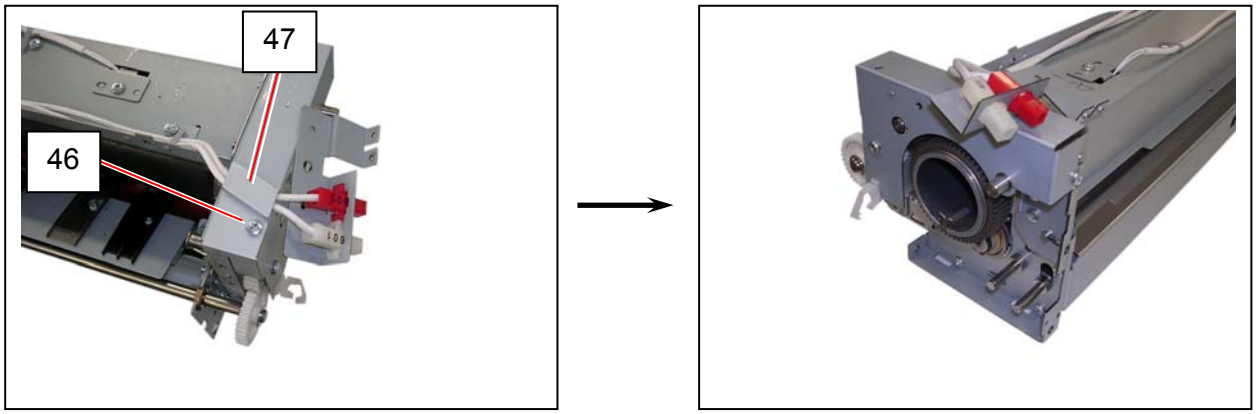
27. On the connector side, remove 1 screw (41) to remove Cover 2 (42). Disconnect the harness (43).



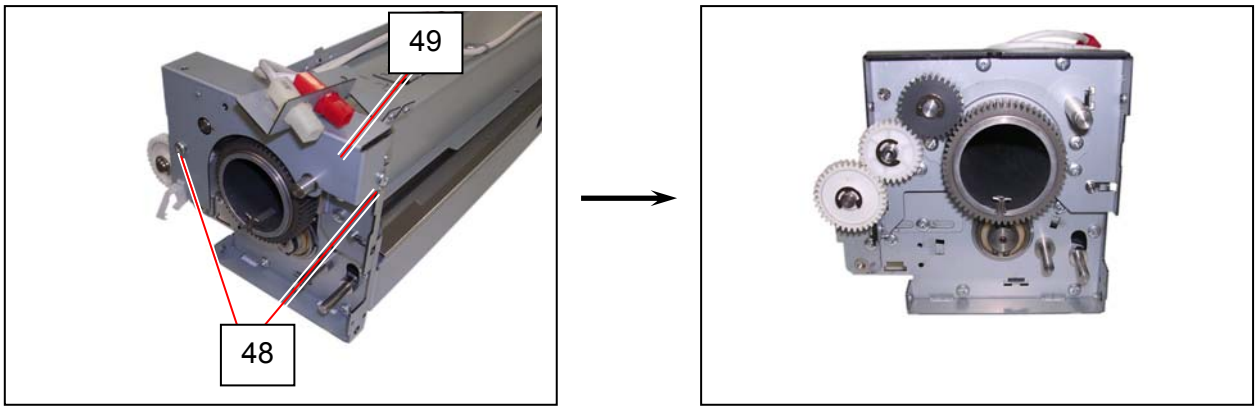
28. Remove 2 screws (44) to remove Bracket 6 Assy (45).



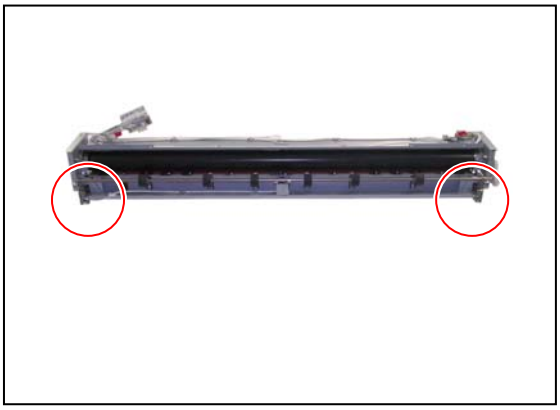
29. On the gear side, remove 1 screw (46) to remove Bracket 20 (47).

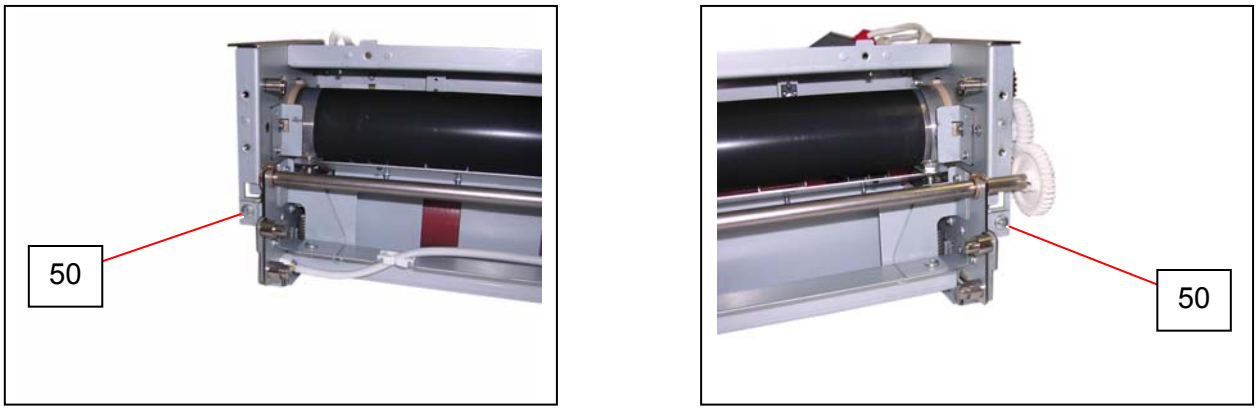


30. Remove 2 screws (48) to remove Bracket 7 Assy (49).

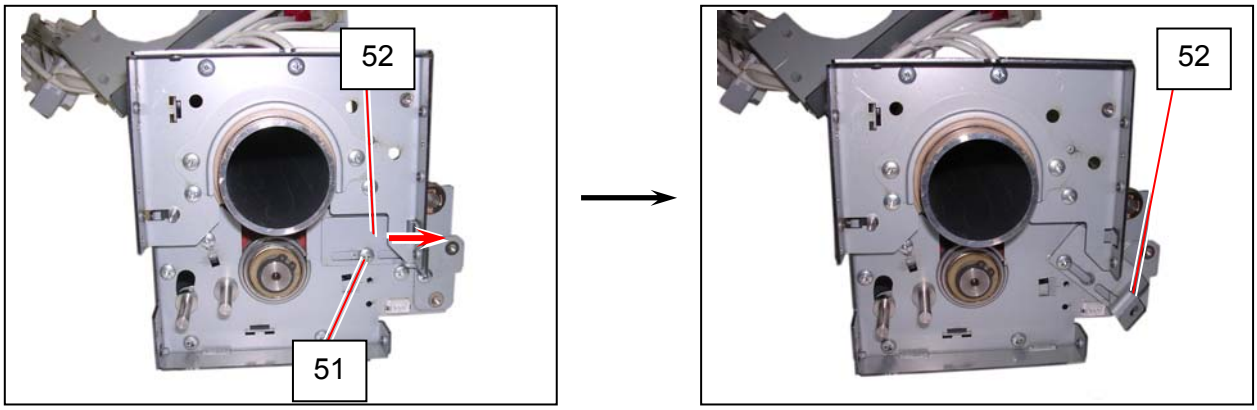


31. Remove 2 screws (50) on the media exit side.

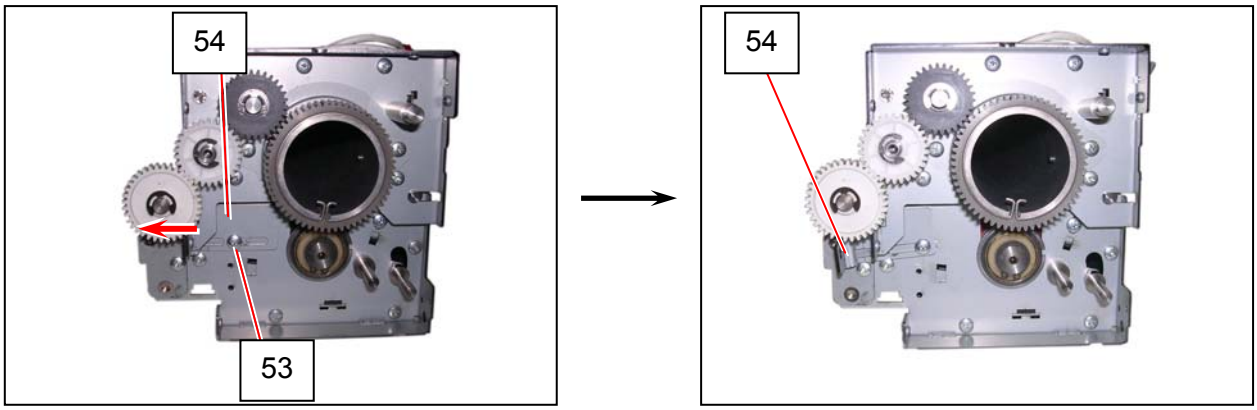




32. On the connector side, loosen 1 screw (51) to release Bracket 2 (52).



33. On the gear side, loosen 1 screw (53) to release Bracket 3 (54).

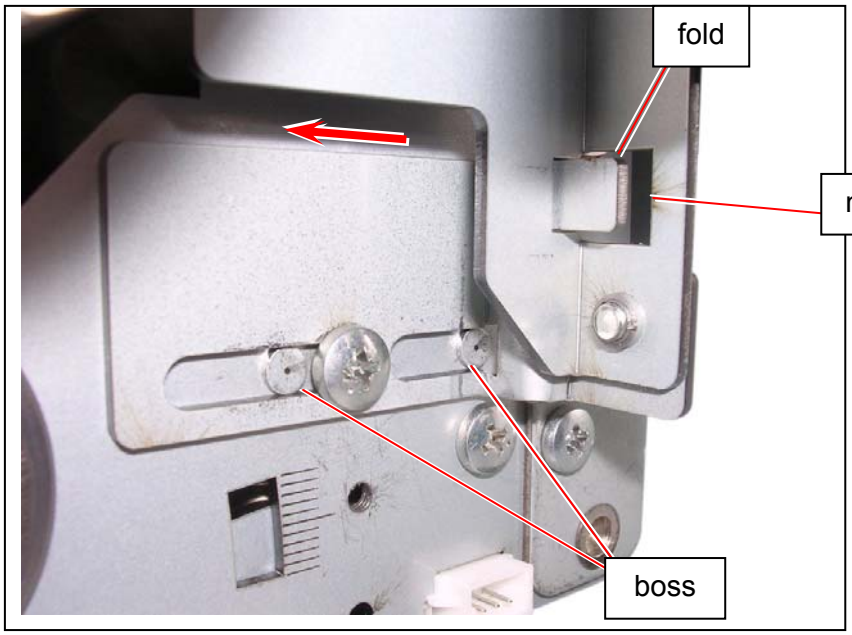


NOTE

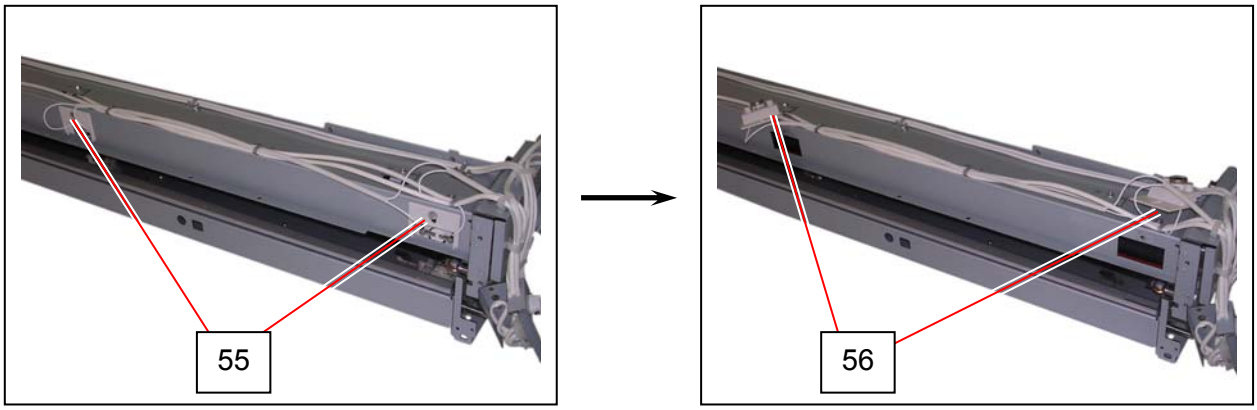
Reinstall Bracket 2 (52) and Bracket 3 (54) in the correct position.

(1) Fully push to slide the bracket to the arrow direction so that the fold portion on the bracket will fit into the notch on Fuser Upper Unit.

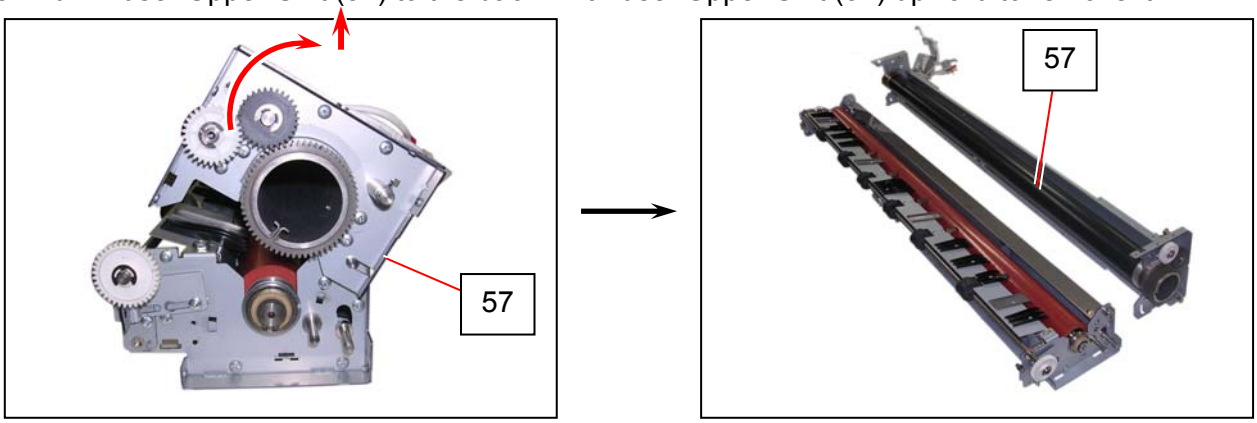
(2) The 2 positioning bosses locate the bracket. The bracket should not ride over them.



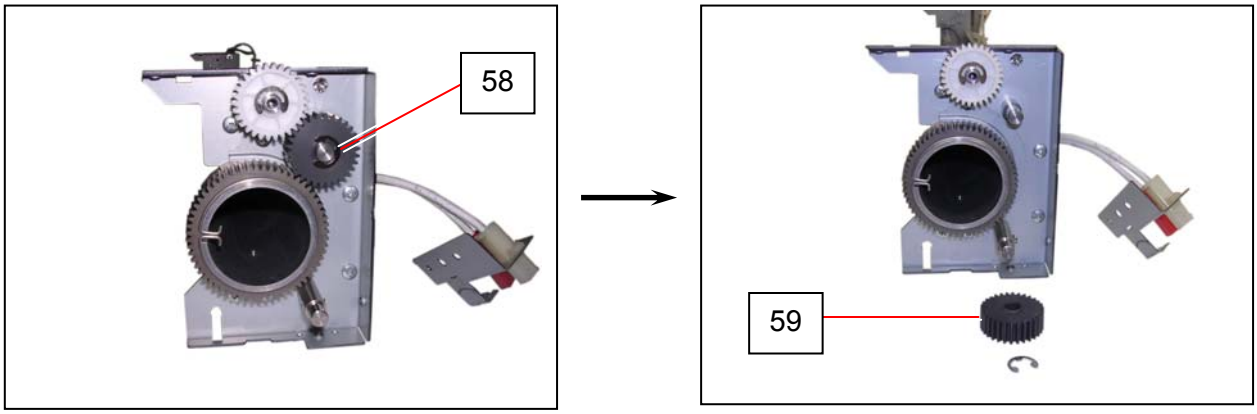
34. On the media entrance side, remove 2 screws (55) to release Thermostat Bracket (56).



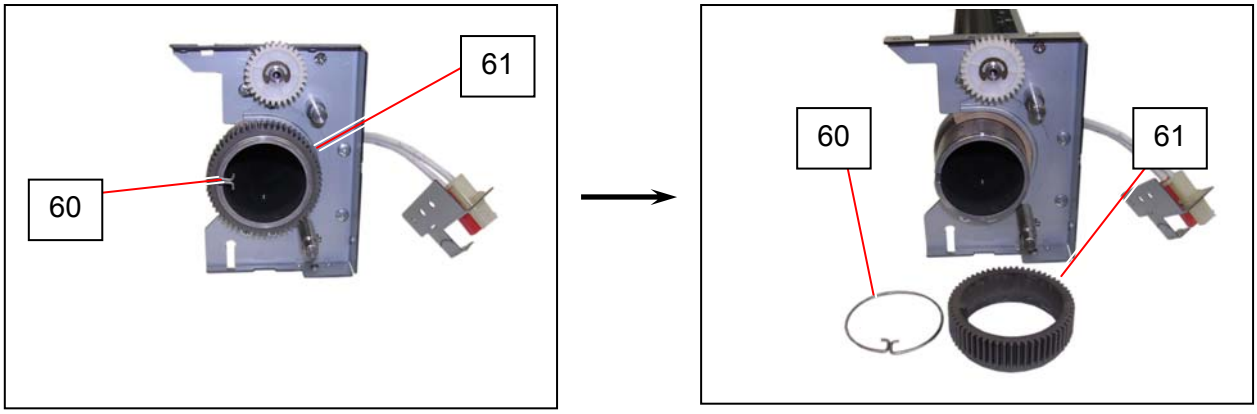
35. Turn Fuser Upper Unit (57) to the back. Lift Fuser Upper Unit (57) upward to remove it.



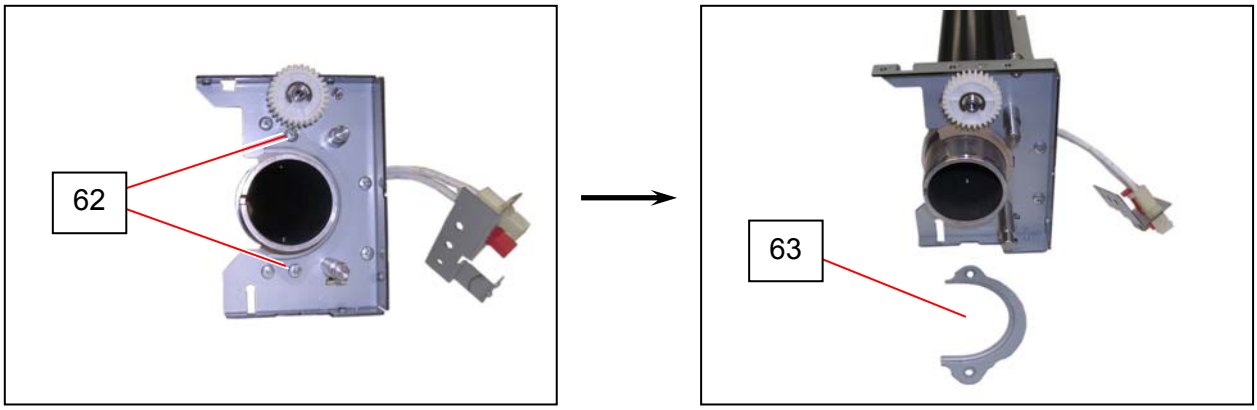
36. On the gear side of Fuser Upper Unit, remove Retaining Ring-E (58) to remove Gear 30T (59).



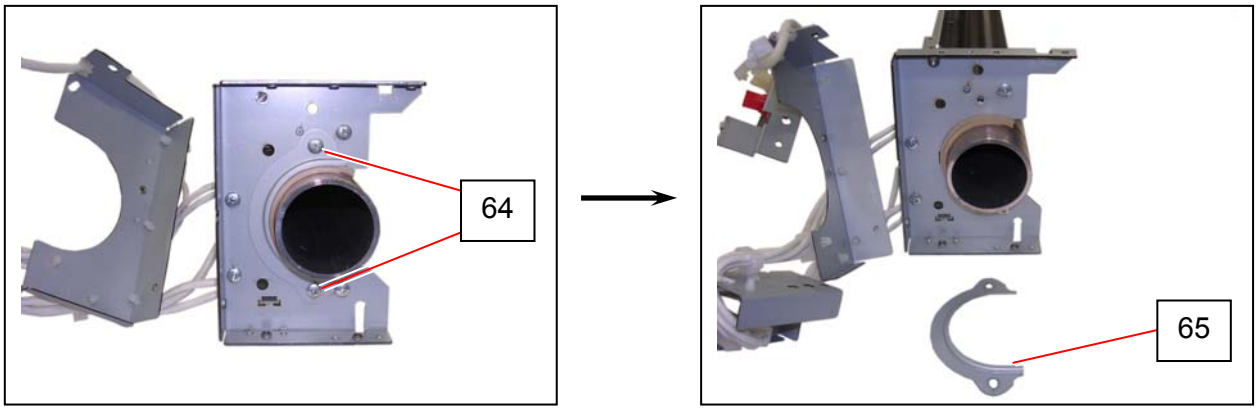
37. Remove Stopper (60) to remove Gear 60T (61).



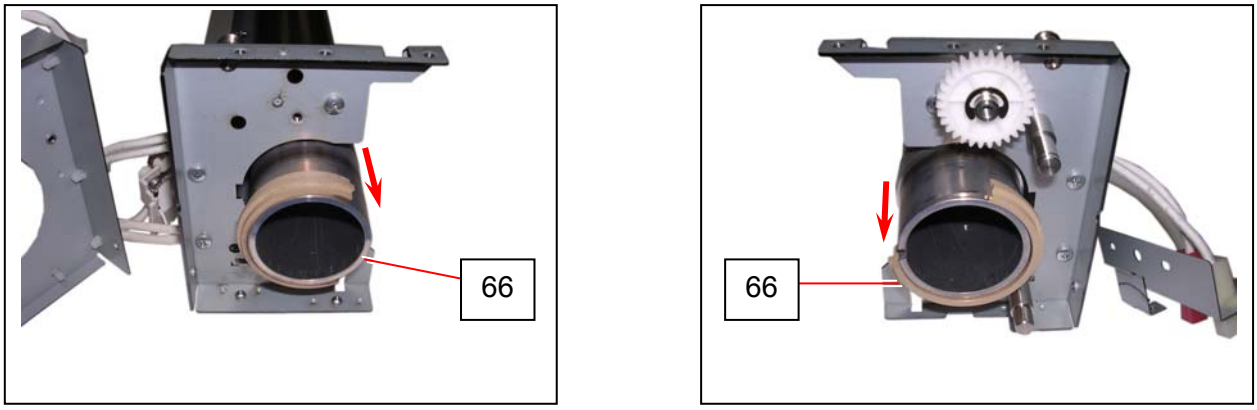
38. Remove 2 screws (62) to remove Bearing Holder (63).



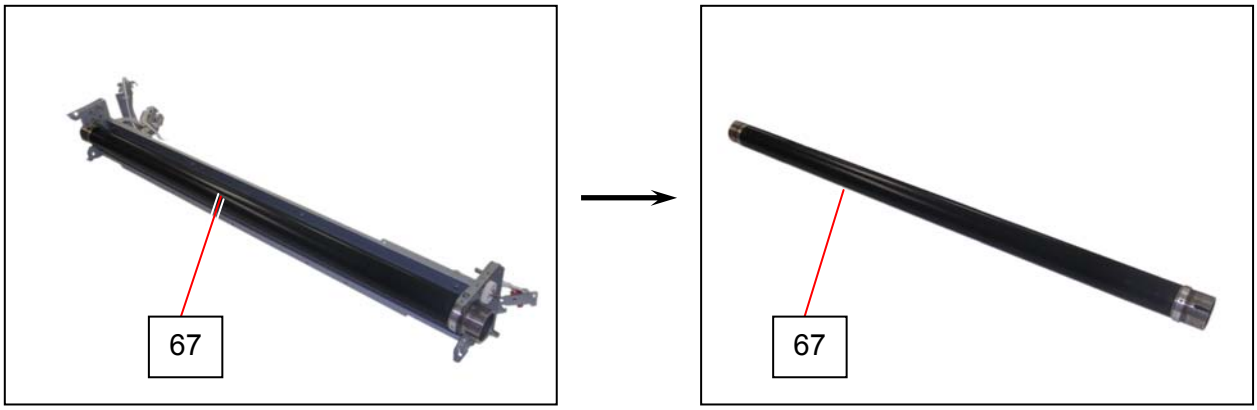
39. On the connector side of Fuser Upper Unit, remove 2 screws (64) to remove Bearing Holder (65).



40. On both sides, remove Bush (66).
Replace **Bush** with new ones.

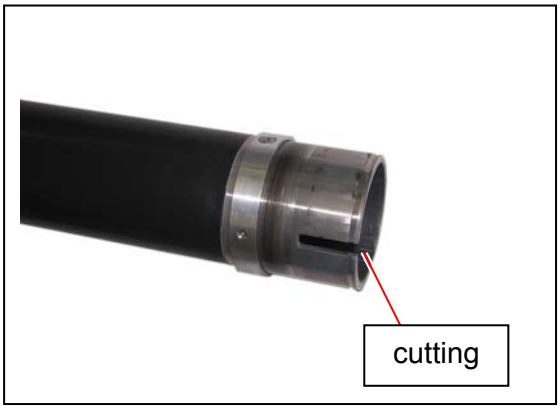


41. Remove Roller Fusing (67).

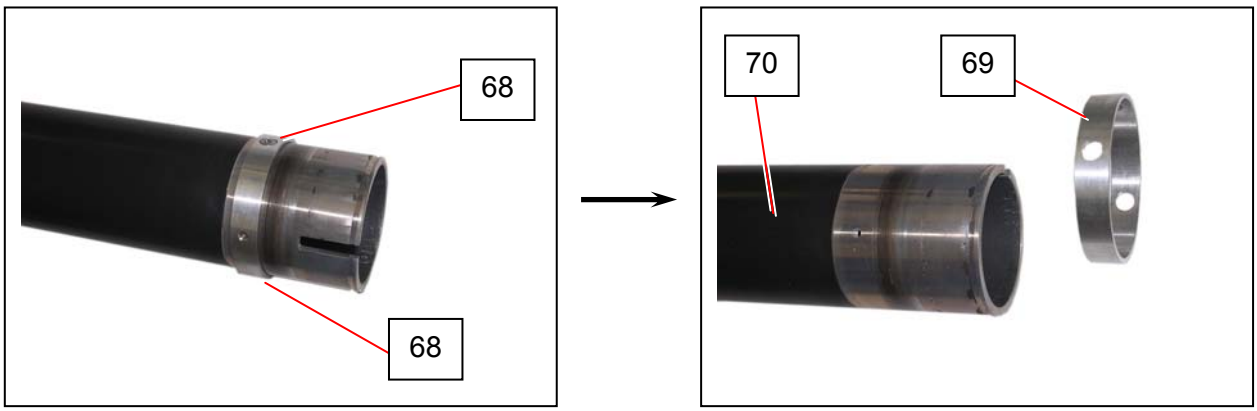


NOTE

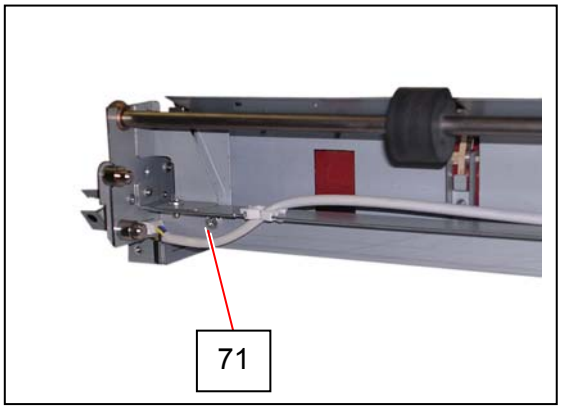
Install Roller Fusing to Upper Fuser Assy in the correct direction. One end with a cutting should be placed to the gear side.

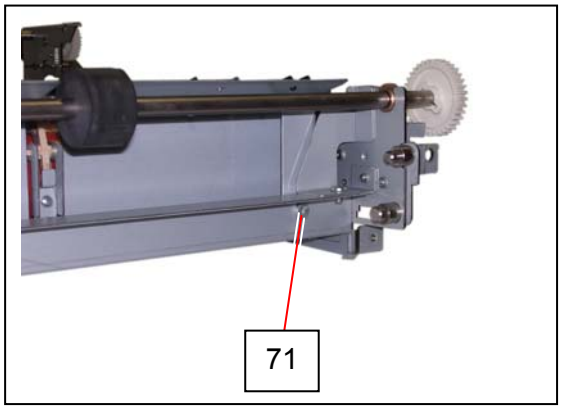


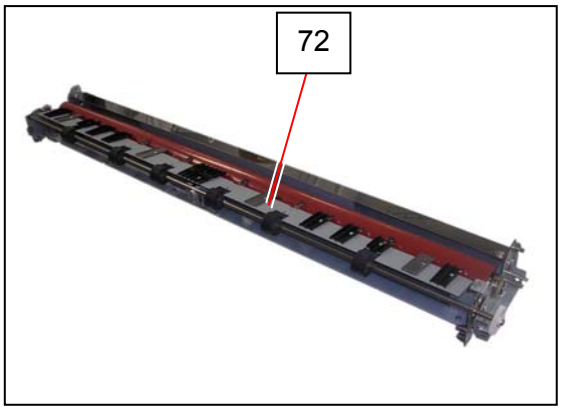
42. Remove 2 screws (68) to remove Collar (69) from Roller Fusing (70).
Replace **Roller Fusing** with a new one.

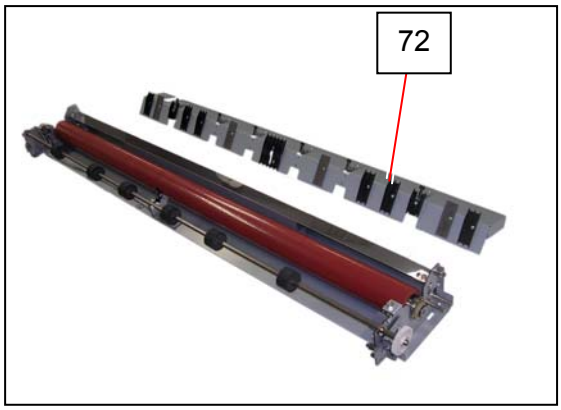


43. On the media exit side of Fuser Lower Unit, remove 2 screws (71) to remove Guide Plate 2 Assy (72).

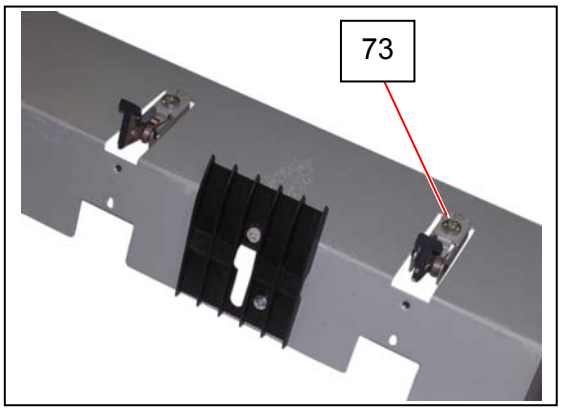


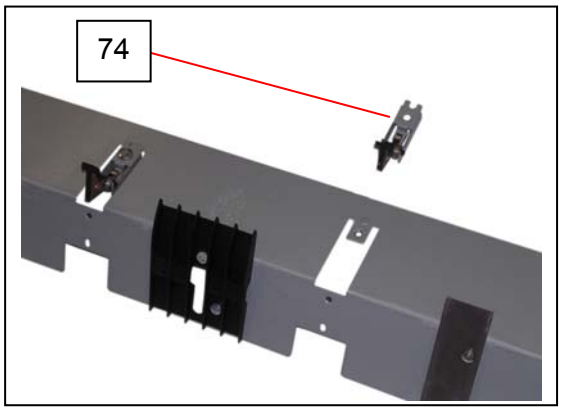




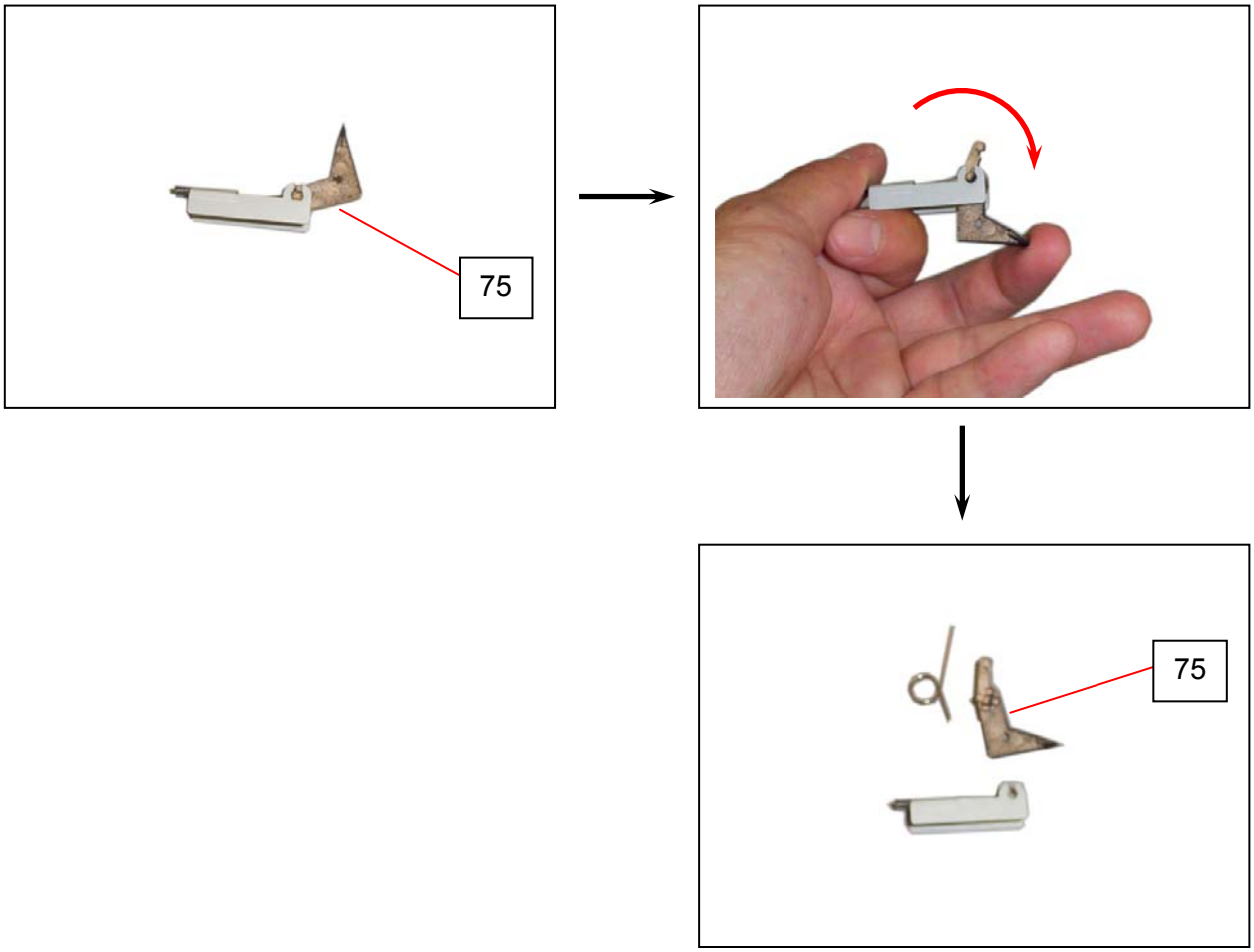


44. Remove 1 screw (73) to remove each Nail Lower Assy (74).



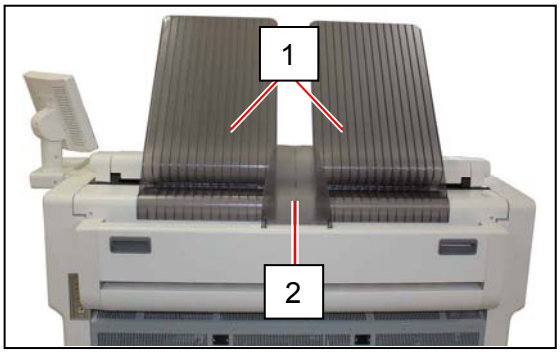


45. Turn Nail Lower (75) to remove it from the bracket.
Replace **Nail Lower** with a new one.



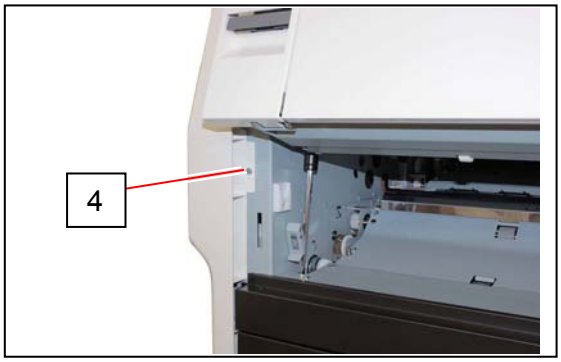
5. 3. 4 Replacement of Roller Pressure

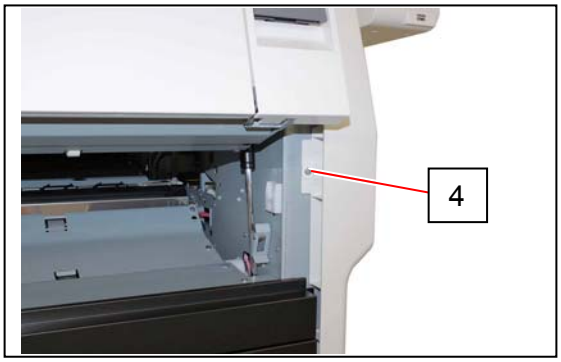
1. Remove 2 pieces of Exit Tray (1) and Exit Tray 2 (2).



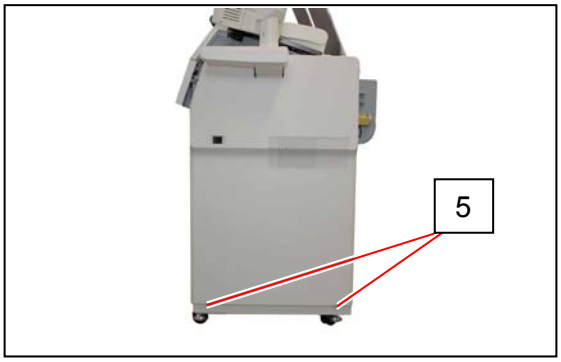
2. Pull up the Lever 2 (3) to open the Engine Unit.

3. Remove the screws (4) at both sides.

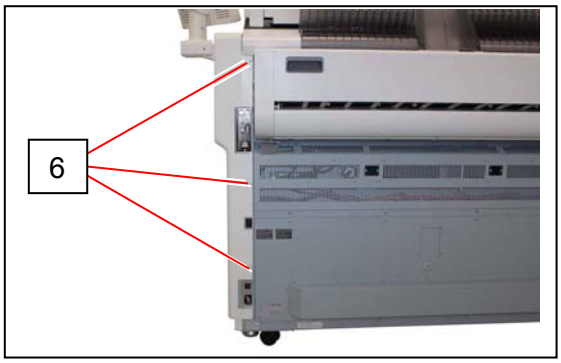


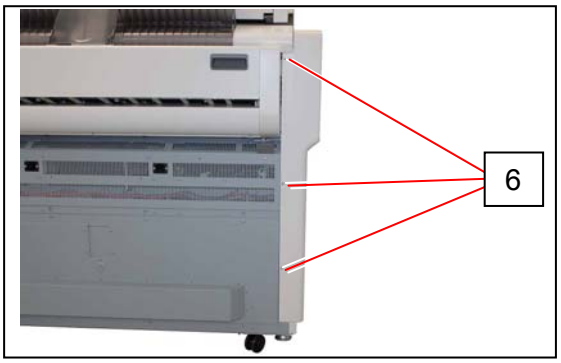


4. Remove 4 pieces of screw (5) at both sides.



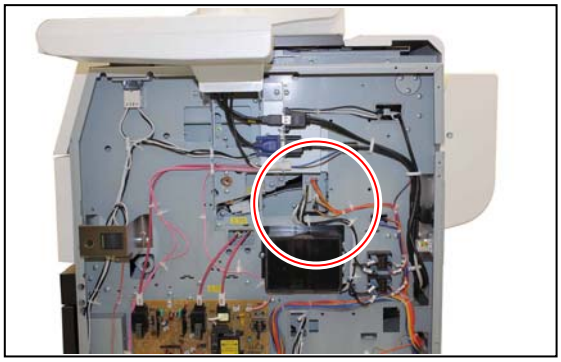
5. Remove 6 pieces of screw (6) at both sides.

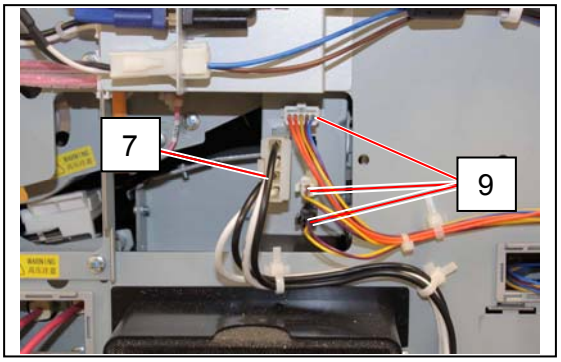




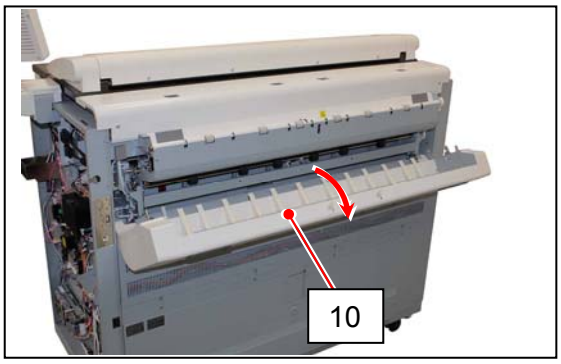
6. Remove Cover 2 (7) and Cover 3 (8).

7. Disconnect 4 connectors (9).

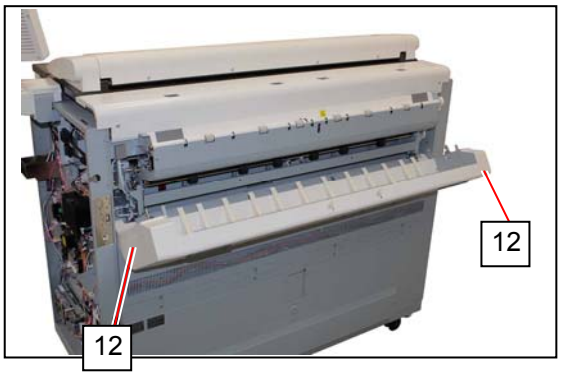


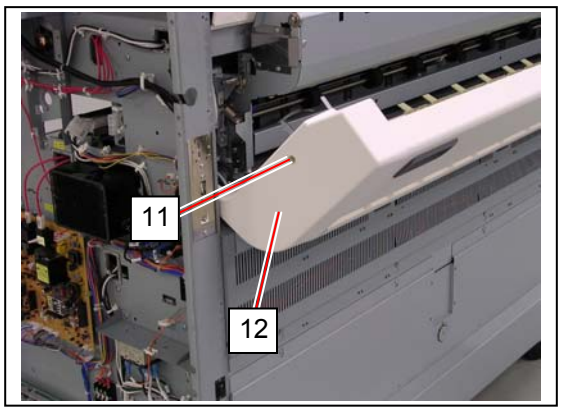


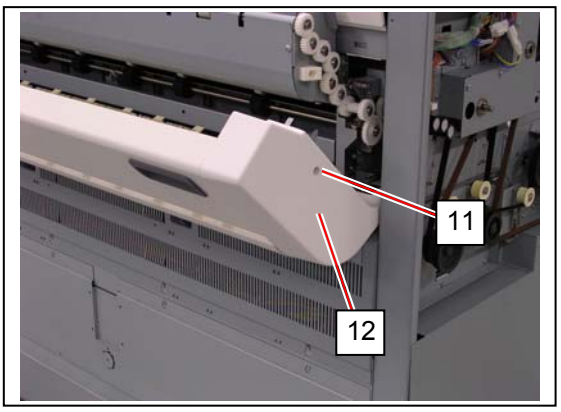
8. Open Exit Cover (10).



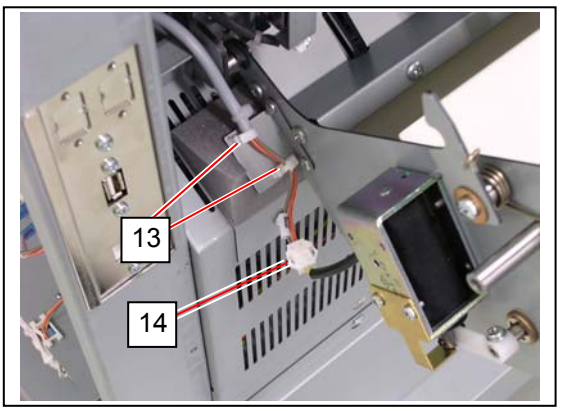
9. Remove 2 screws (11) to remove Exit Side Cover R / L (12).



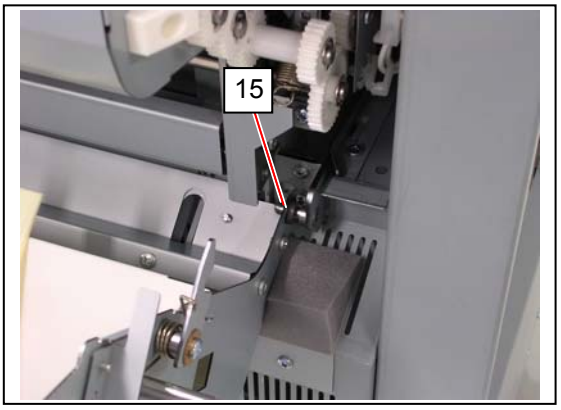




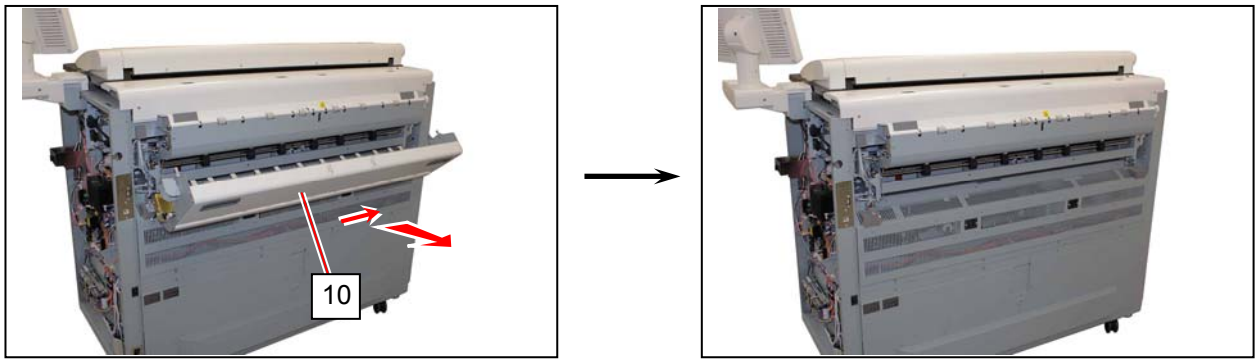
10. Open 2 clamps (13) and disconnect 1 connector (14).



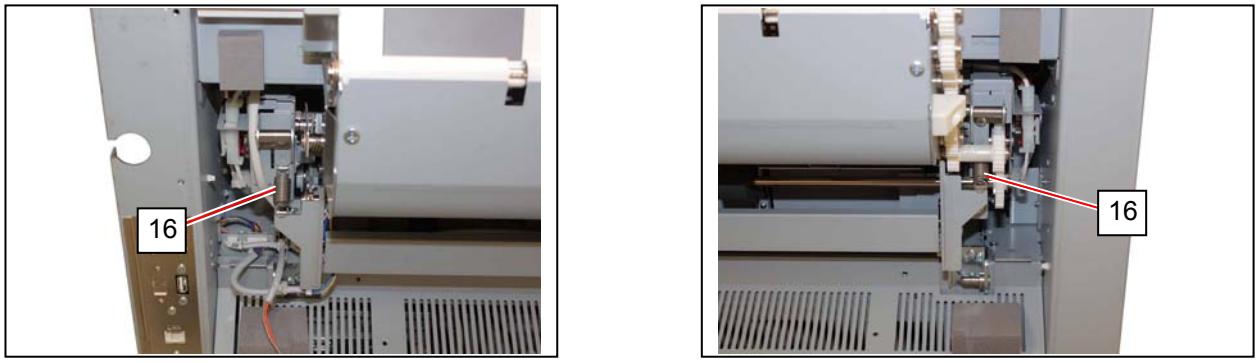
11. On the left side (your right hand), remove 1 piece of KL Clip (15).



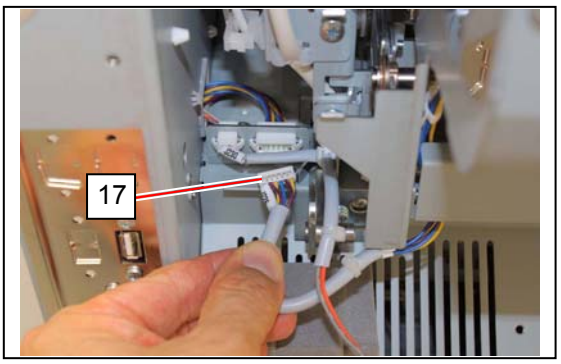
12. Slide Exit Cover (10) to the arrow direction (right hand side) to remove it from the machine.



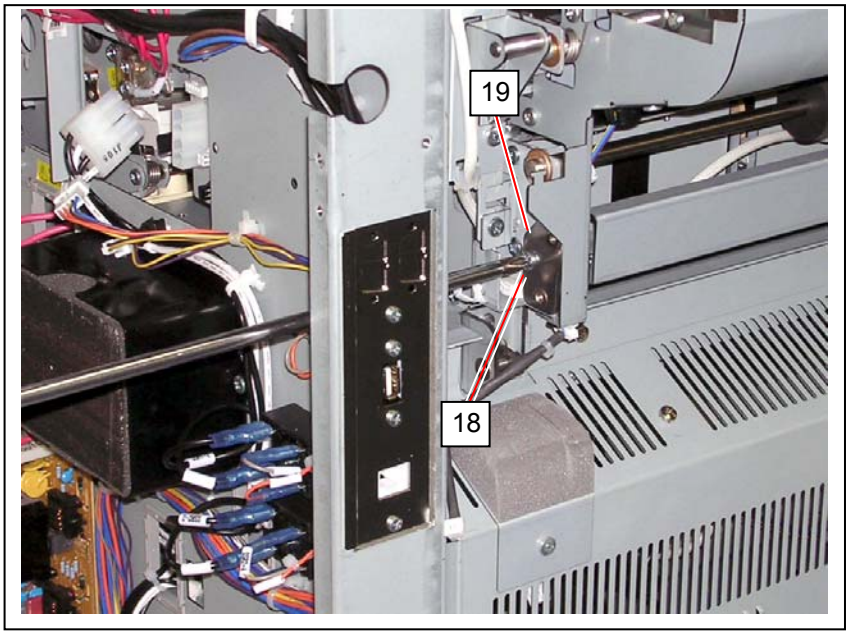
13. Release the springs (16) on both sides.



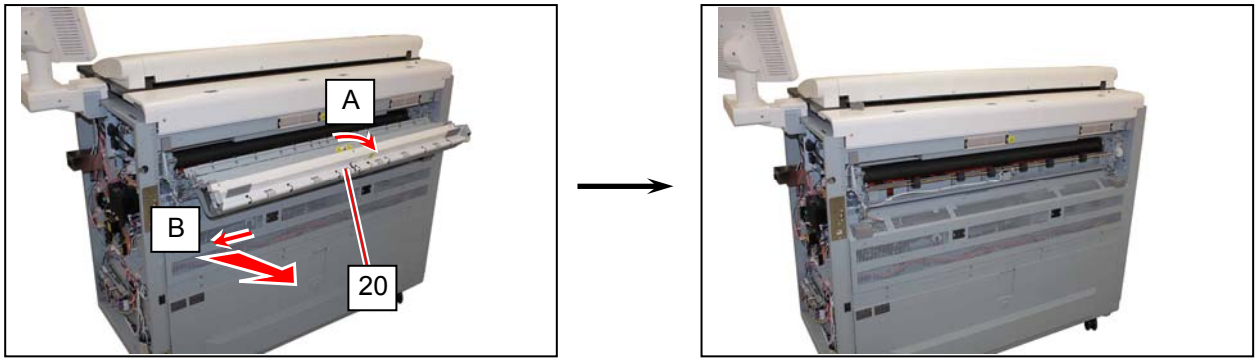
14. Remove 1 connector (17).



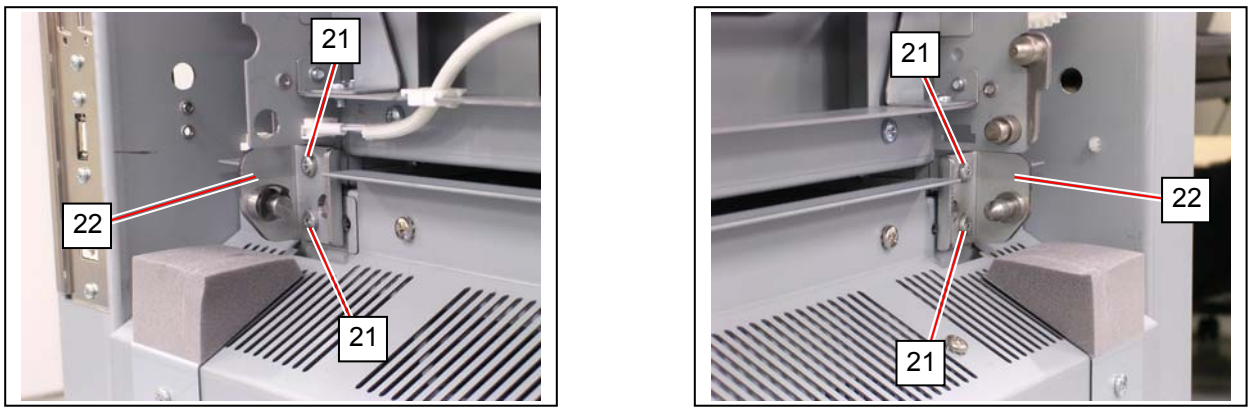
15. Remove 1 screw (18) to release the hinge bracket (19).



16. Firmly hold Fuser Cover (20). Slightly open it (A) and remove the hinge bracket (19).
Slide Fuser Cover (20) to the arrow direction (left hand side) (B) to remove it from the machine.

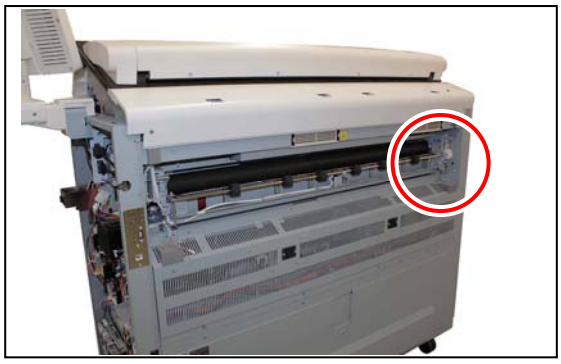


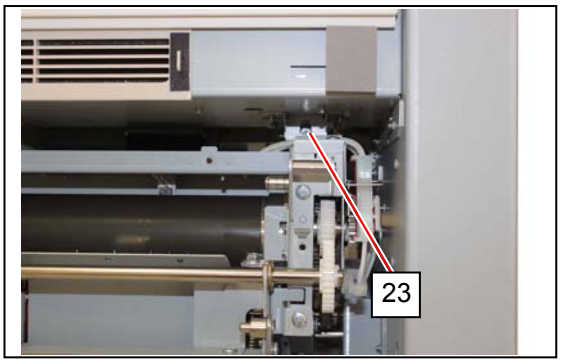
17. Remove 4 screws (21) to remove Bracket R / L (22).



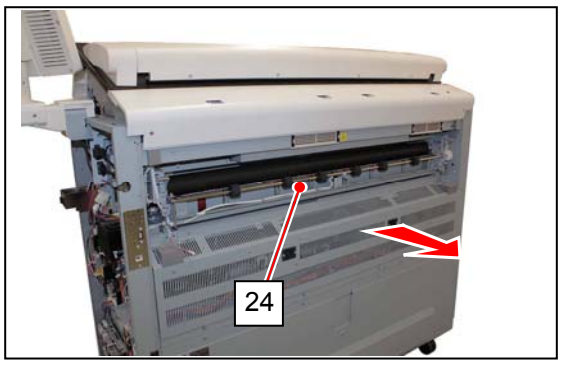
18. Open the Engine Unit.

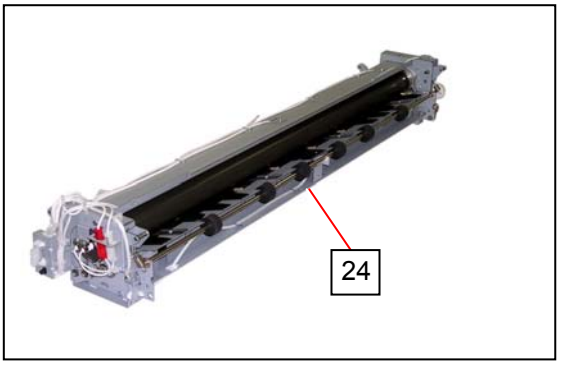
19. Loosen 1 screw (23) to release the drive side of Fuser Unit.





20. Pull and remove Fuser Unit (24) from the machine.





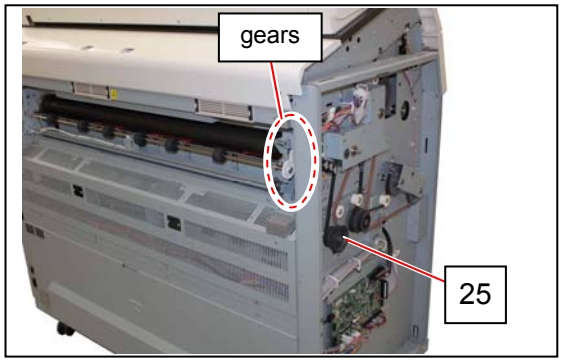
NOTE

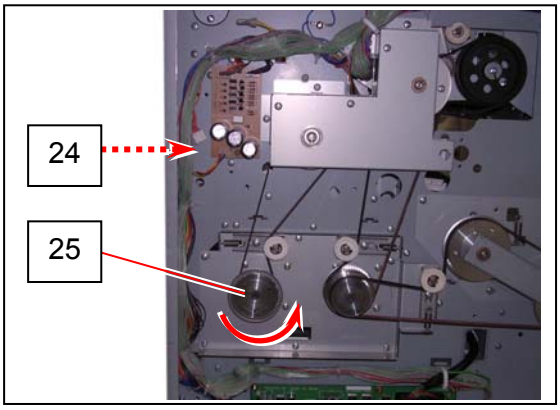
To reinstall Fuser Unit, follow the instruction below.

(1) With Engine Unit open, fully mount Fuser Unit (24) to the machine.

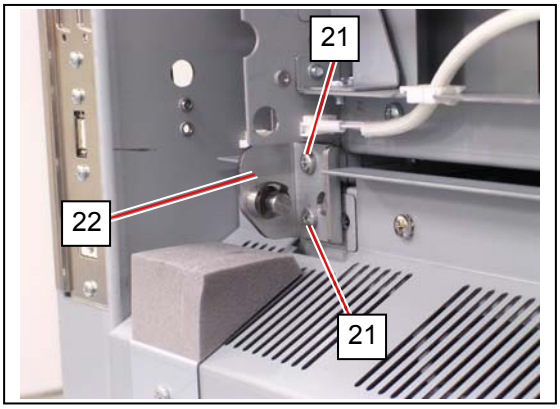
(2) On the left side of the machine, rotate Pulley (25) counterclockwise to check the gear engagement between Fuser Unit and the machine.

If the gears on Fuser Unit and Pulley (25) do not move together, the engagement may fail. With pushing Fuser Unit (24) to the machine inside, rotate Pulley (25) again to obtain the correct engagement.

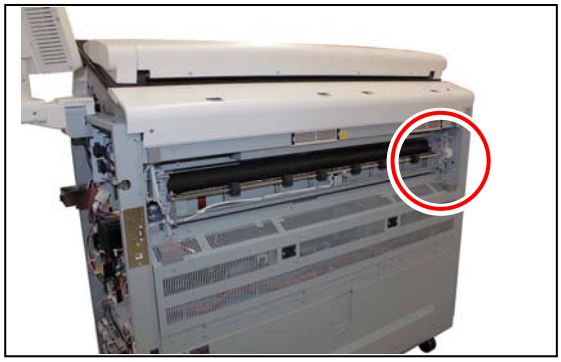


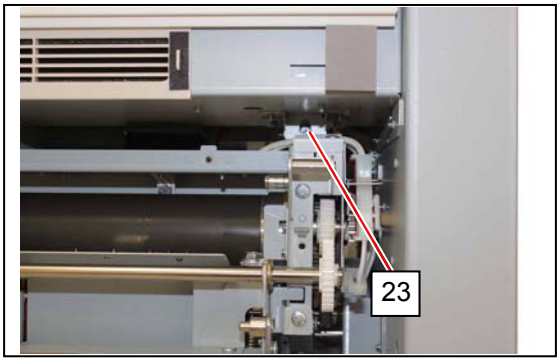


(3) Install Bracket (22) with the screws (21). Tighten the lower screw and then the upper.

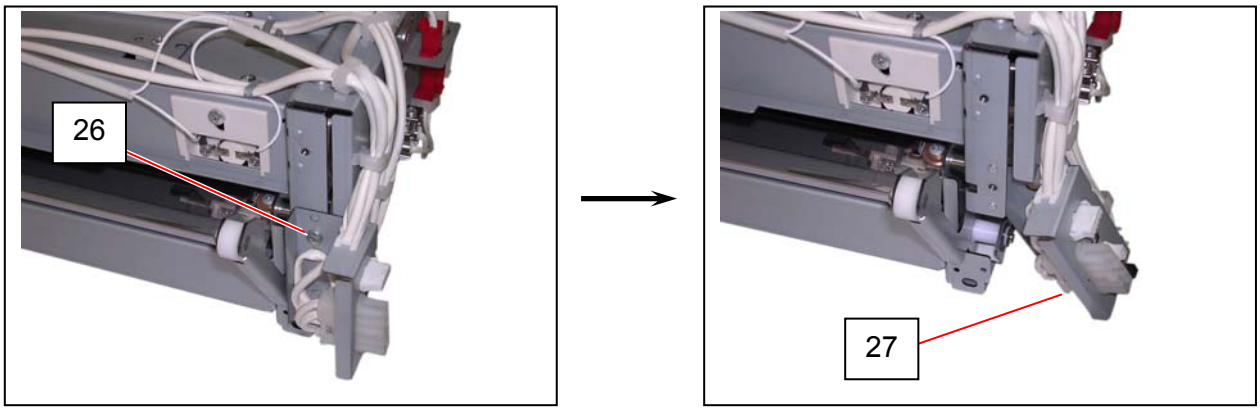


(4) Tighten the screw (23) to fix Fuser Unit to the machine.

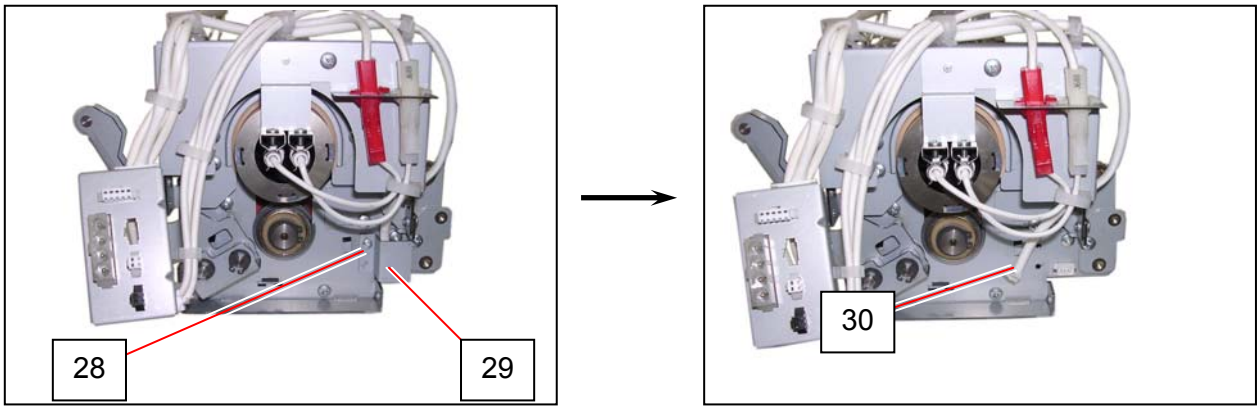




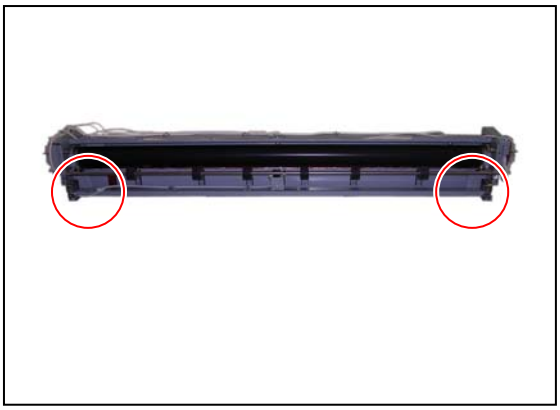
21. On the connector side, remove 1 screw (26) to release Bracket 10 Assy (27).

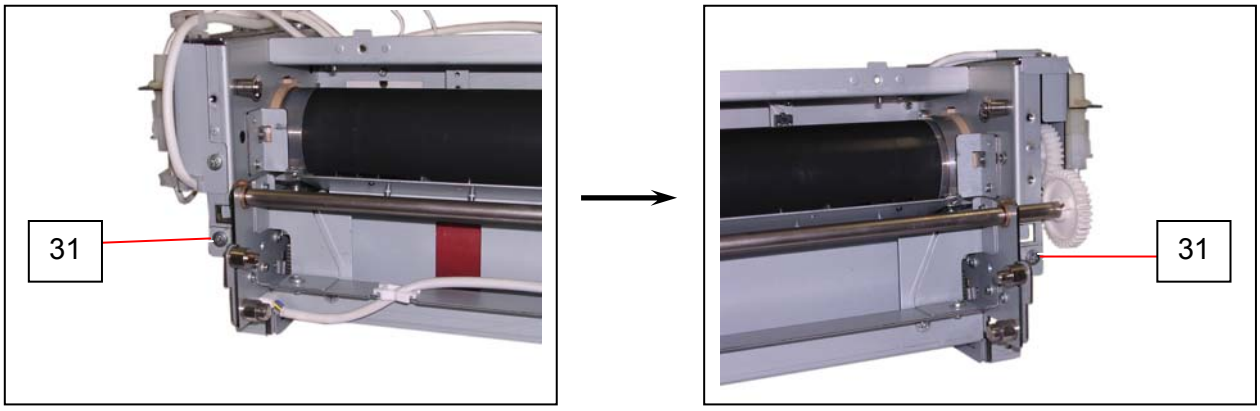


22. On the connector side, remove 1 screw (28) to remove Cover 2 (29). Disconnect the harness (30).

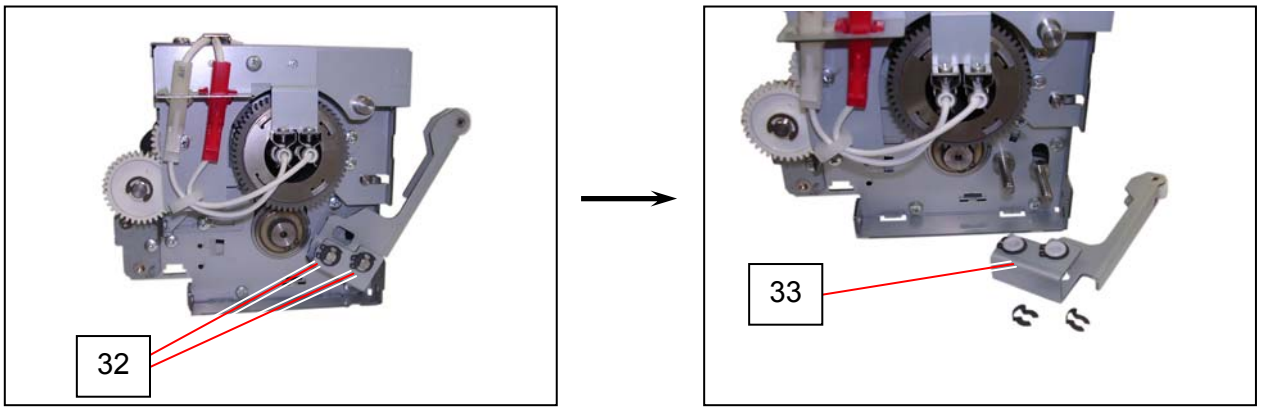


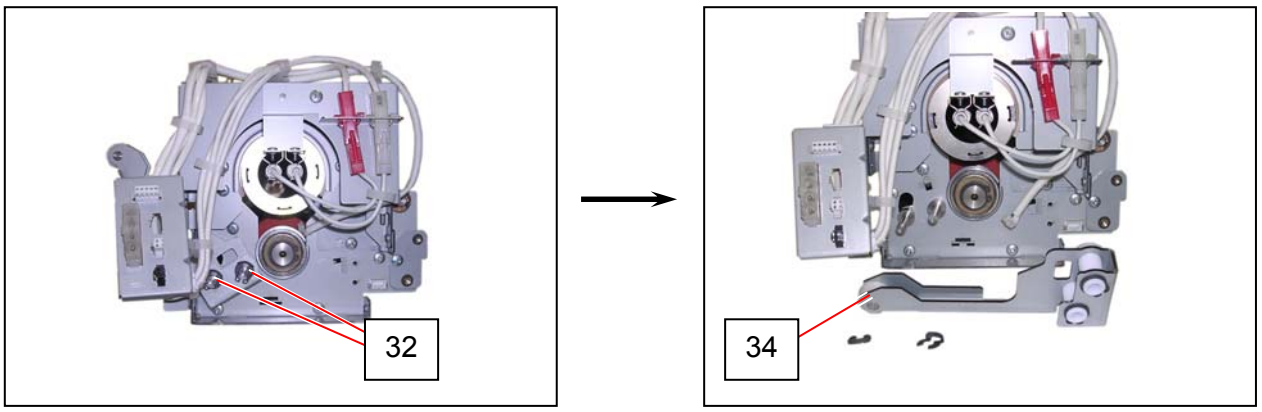
23. Remove 2 screws (31) on the media exit side.



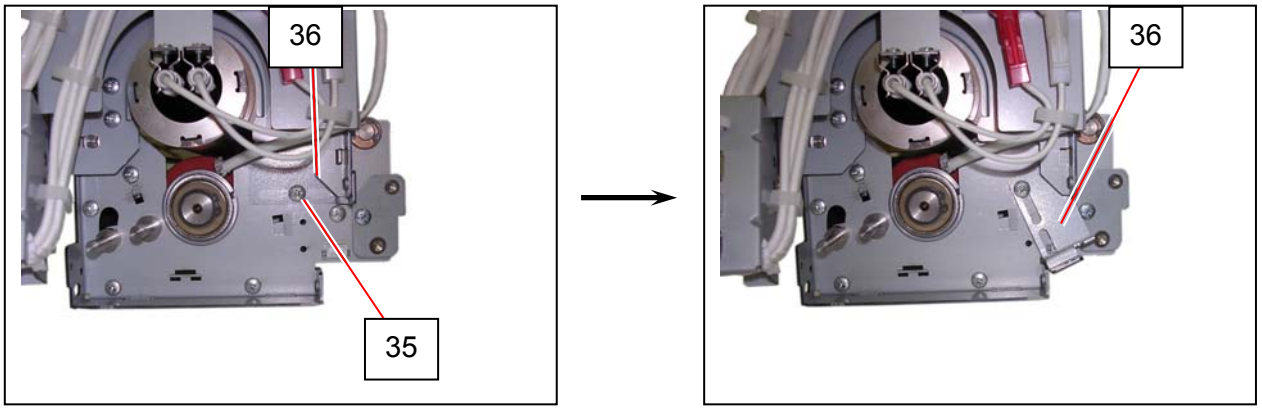


24. On both sides, remove 4 grip rings (32) to remove Arm 4 (33) and Arm 3 (34).

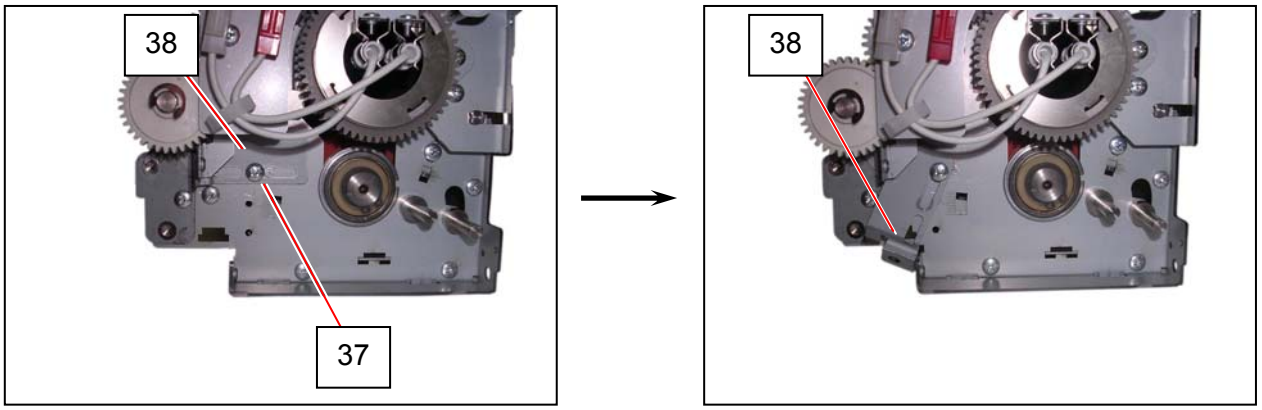




25. On the connector side, loosen 1 screw (35) to release Bracket 2 (36).



26. On the gear side, loosen 1 screw (37) to release Bracket 3 (38).

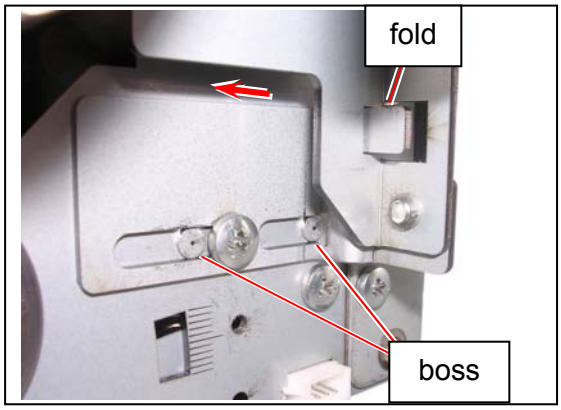


NOTE

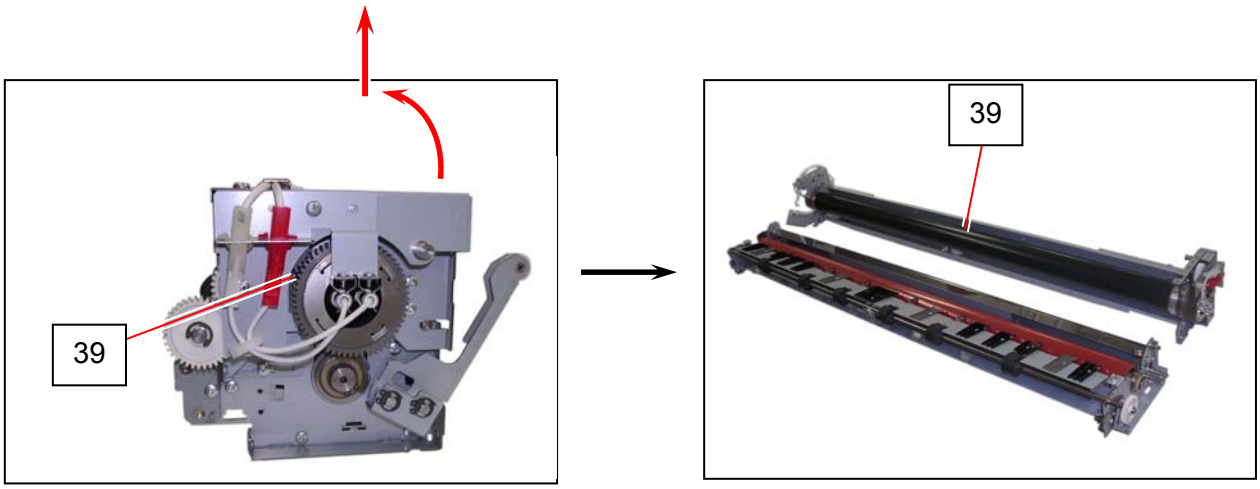
Reinstall Bracket 2 (36) and Bracket 3 (38) in the correct position.

(1) Fully push the bracket to the arrow direction so that the fold portion on the bracket will fit into the notch on Fuser Upper Unit.

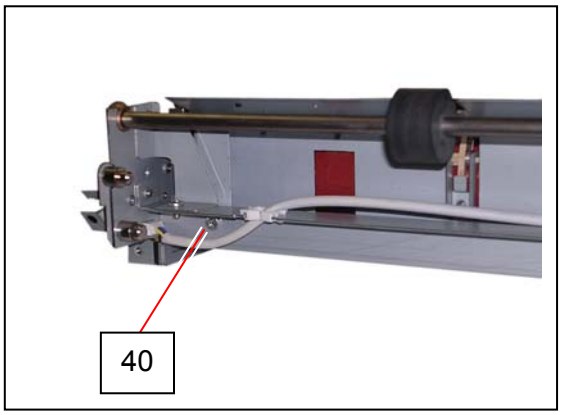
(2) The 2 positioning bosses locate the bracket. The bracket should not ride over them.

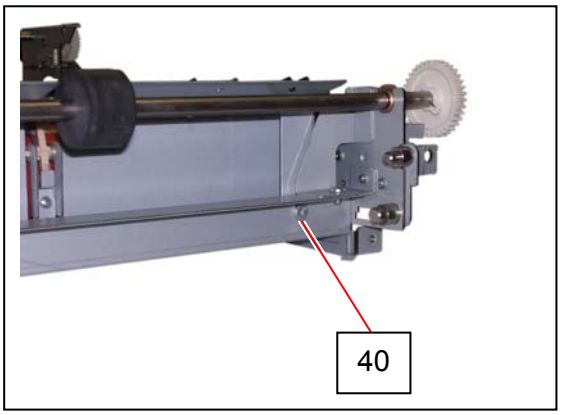


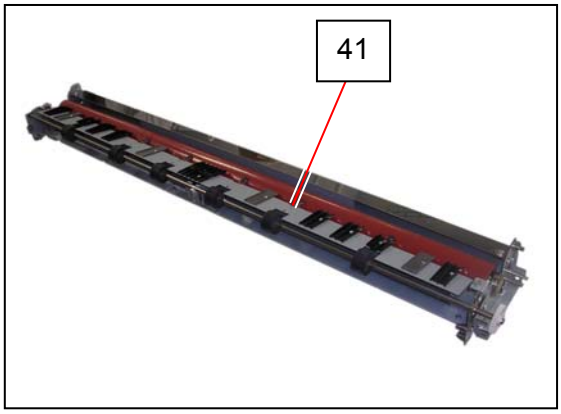
27. Turn Fuser Upper Unit (39) to the back. Lift Fuser Upper Unit upward to remove it.

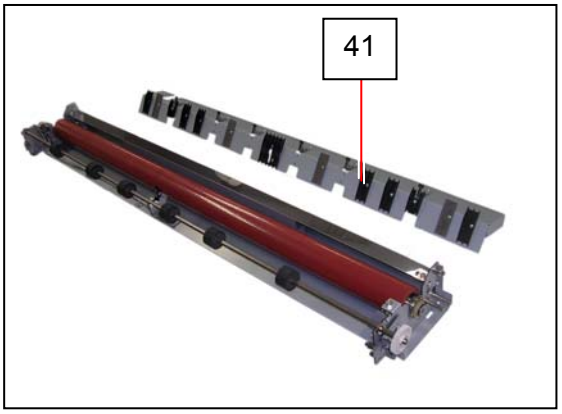


28. On the media exit side of Fuser Lower Unit, remove 2 screws (40) to remove Guide Plate 2 Assy (41).

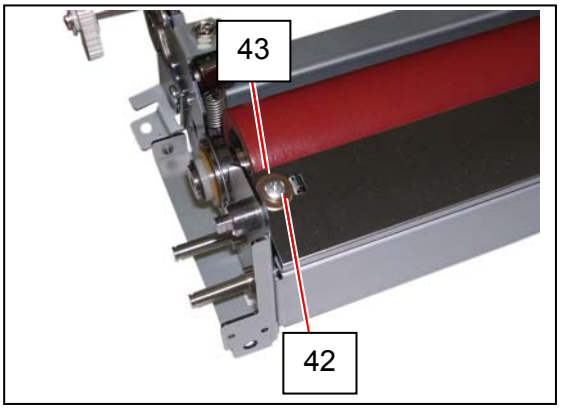


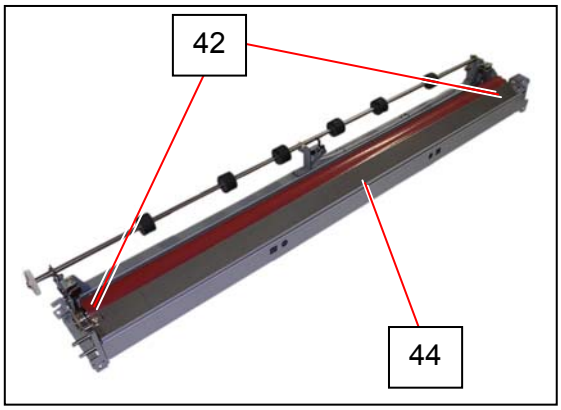






29. Remove 2 screws (42) to remove Washer Special (43) and Guide Plate (44).

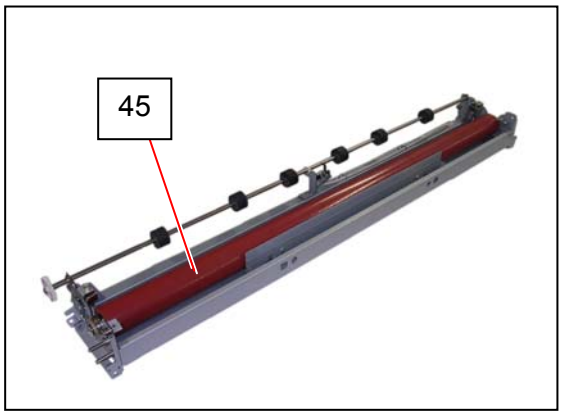




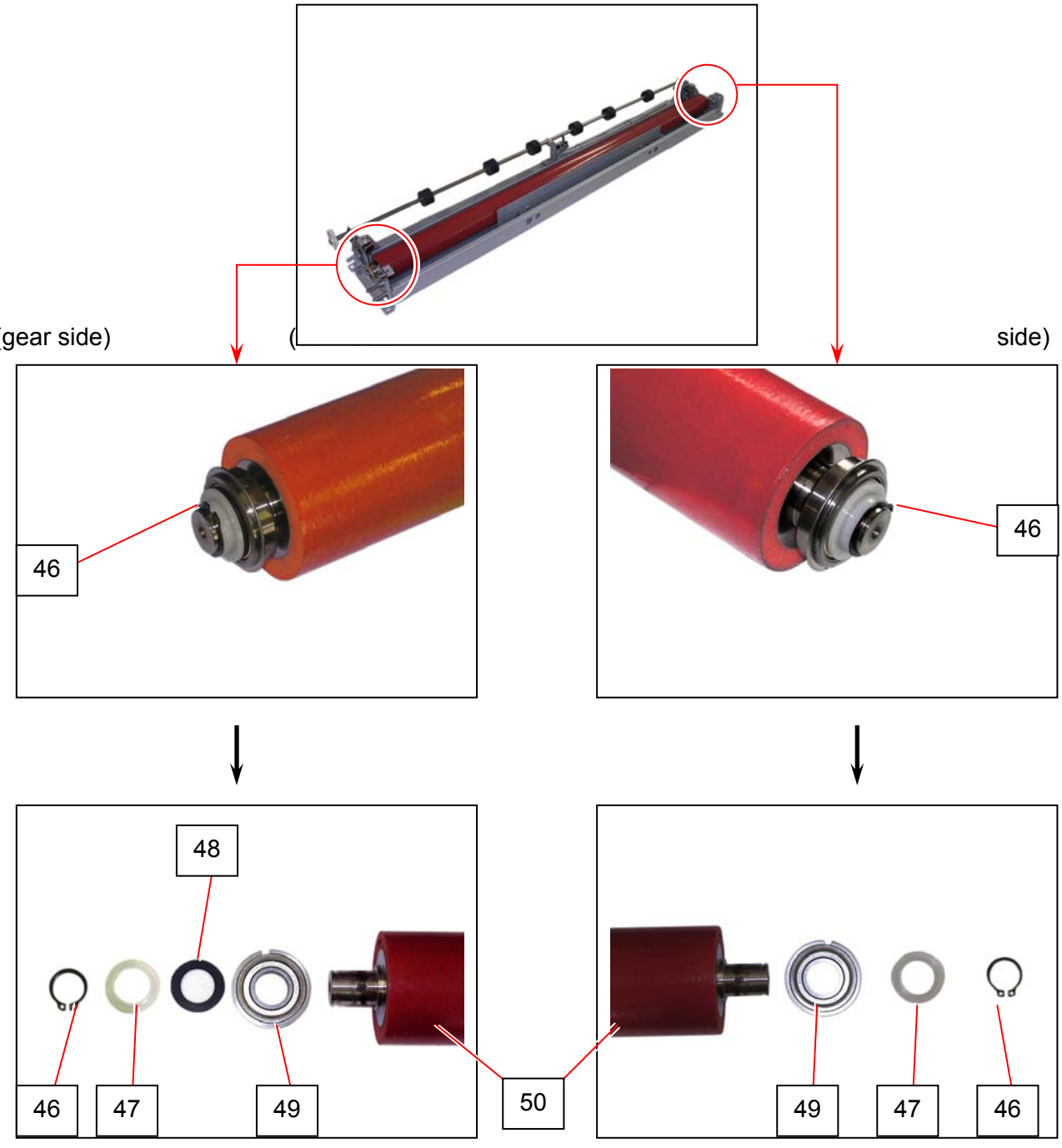
NOTE

When reassembling, make sure that the holes of Guide Plate fit the bosses on the bracket on both side. Guide Plate should not ride over the bosses.

30. Remove Pressure Roller (45) from the unit.



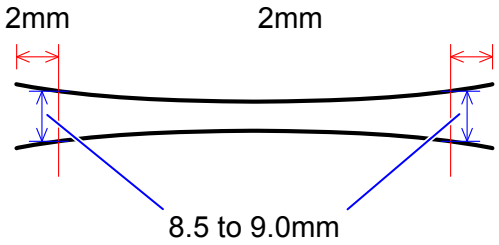
31. Remove Retaining Ring-C (46) to remove Collar (47) (48: only on the gear side), Bearing (49) from each shaft end of Roller Pressure (50).
Replace **Roller Pressure** with a new one.



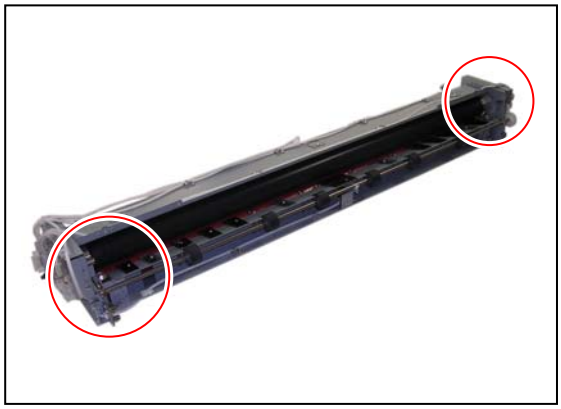
5. 3. 5 Fuser Pressure Adjustment (NIP width check)

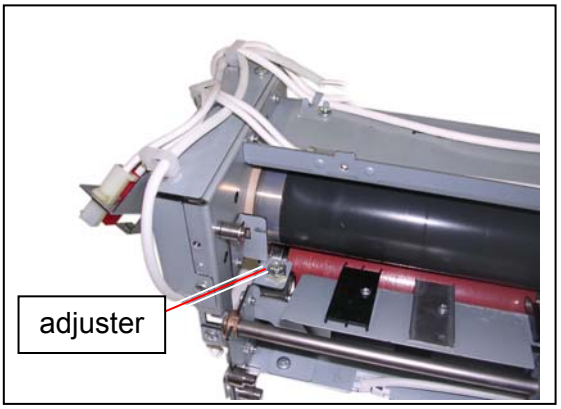
1. Load a tracing paper roll in 36"/A0 width into any available Roll Deck.
2. Make a test print in pattern No.2 S(0) with the roll in 297mm length.
3. When the test print's leading edge appears within 50mm at the exit cover, stop the print process by opening any cover. At this point, the black area on the print will be nipped between Fuser Roller and Pressure Roller.
4. Leave the print there in 10 seconds. After that, remove the test print from the machine.
5. The test print has a shiny band on its printing surface, which has been created by pressure between Fuser Roller and Pressure Roller.
   Check that the nip widths at the reference points meet the following specification.

   - Within 2mm inside from the side edges: 8.5 to 9.0mm



6. If the nip width at any point is not proper, adjust the fuser pressure with the pressure adjuster.

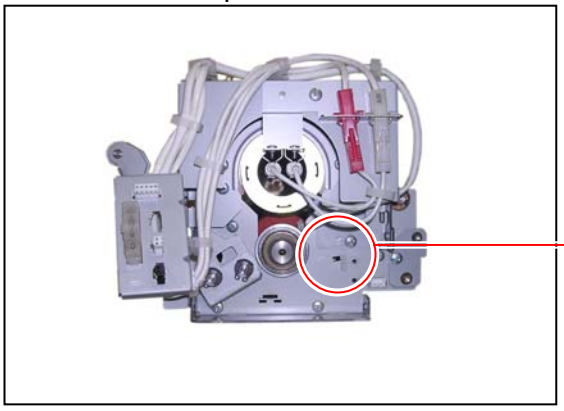




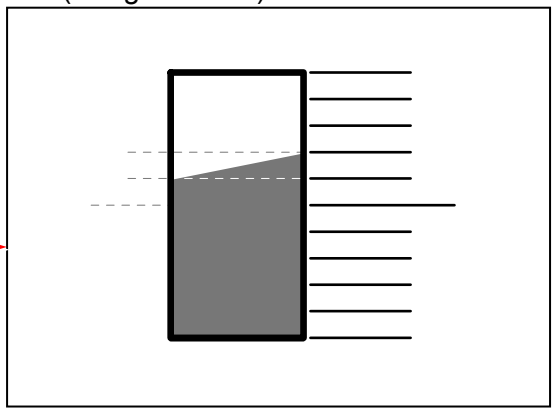
(ex. machine right side)

Reference

The default fuser pressure can be checked as follows. (tilting +1 to +2)



(ex. machine right side)

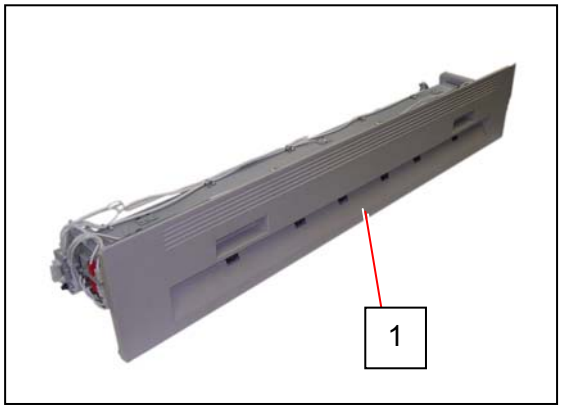


default

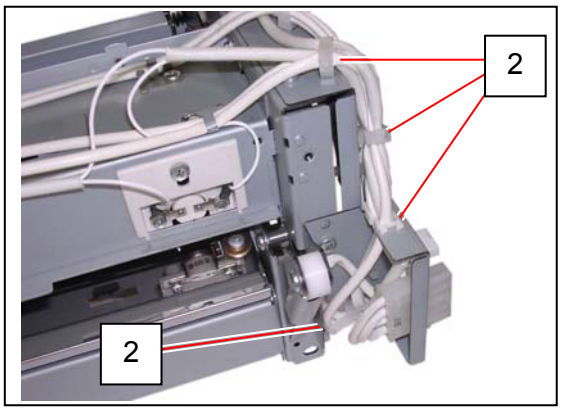
7. Make another test print and check the nip widths until they meet the specification.

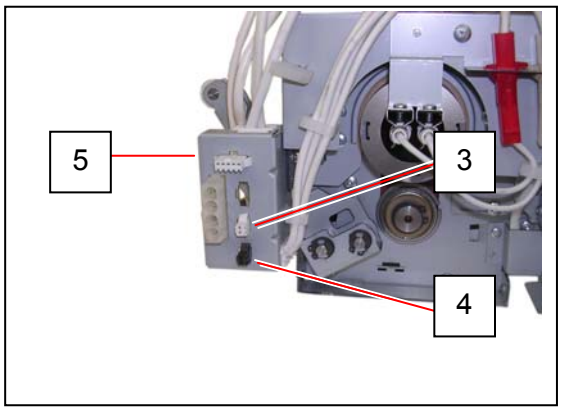
5. 3. 6 Replacement of Thermistor (TH1, TH2)

1. Remove the Fuser Unit (1) from the machine making reference to [5. 3. 1 Removal of the Fuser Unit].

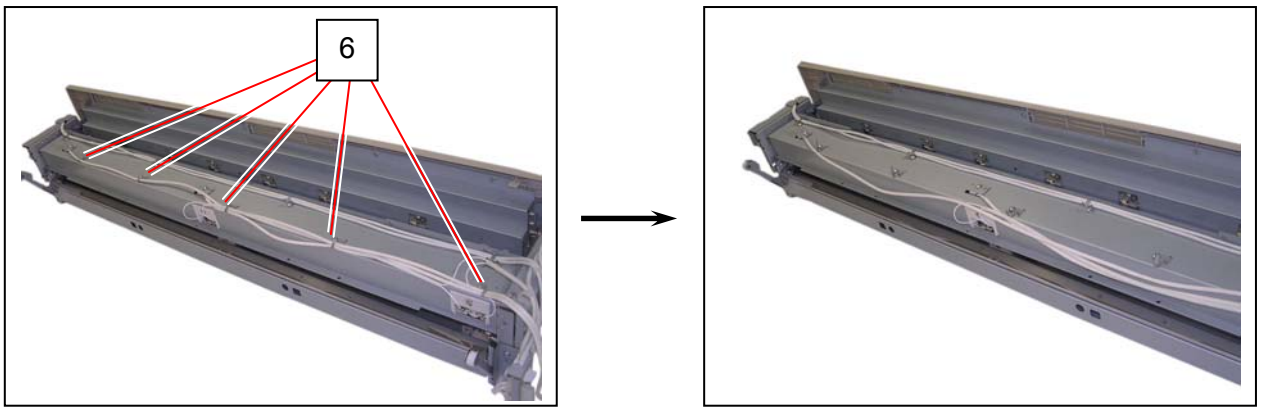


2. Release the harness from the clamps (2).
   Remove the connectors (3: TH1, white) (4: TH2, black) from Bracket 10 Assy (5).

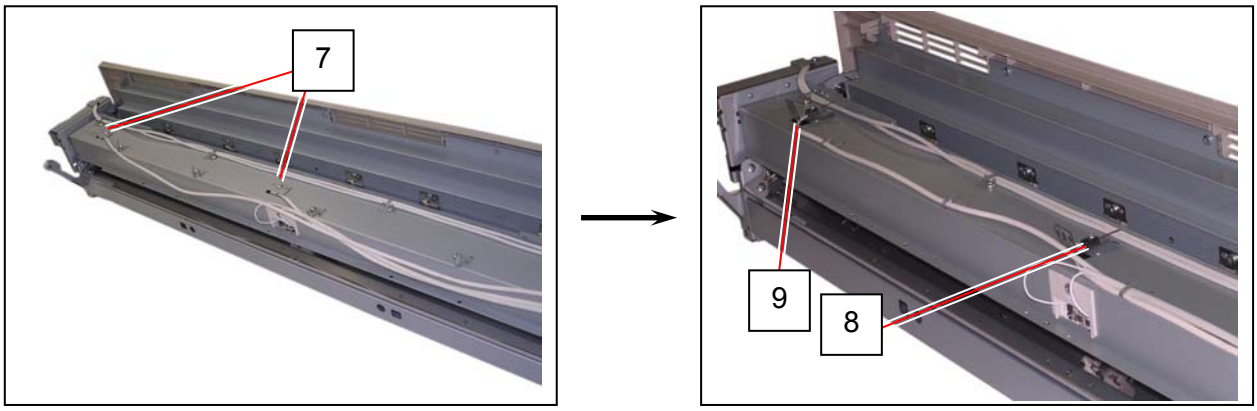




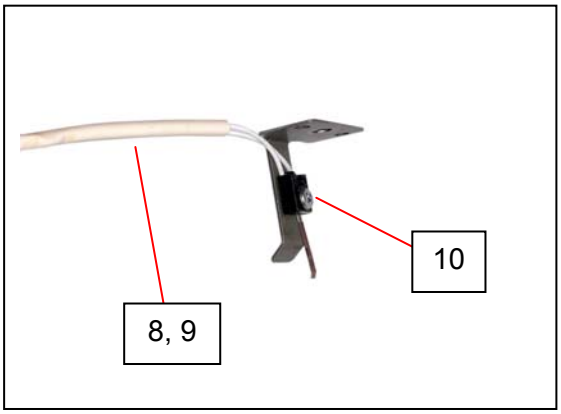
3. Release the harness from the clapms (6).



4. Remove each 1 screw (7) to release Thermistor Assy (8: TH1, short harness) and Thermistor 3 Assy (9: TH3, long harness).

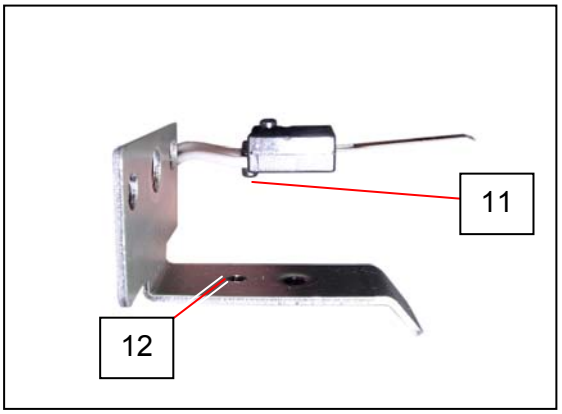


5. Remove 1 screw (10) to replace Thermistor (8: TH1) (9: TH2) with a new one.



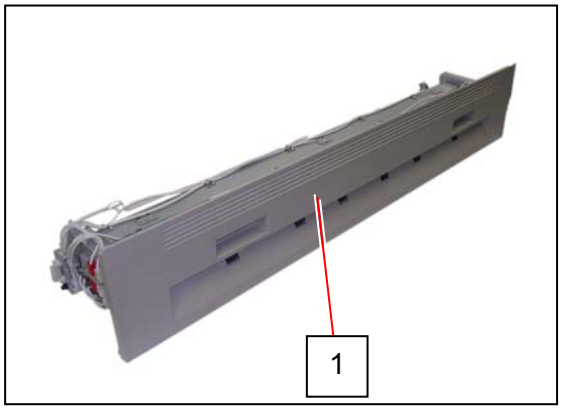
NOTE

Be careful of the direction of Thermistor when reassembling.
The projection (11) nearer to the harness should be inserted to the positioning hole (12).

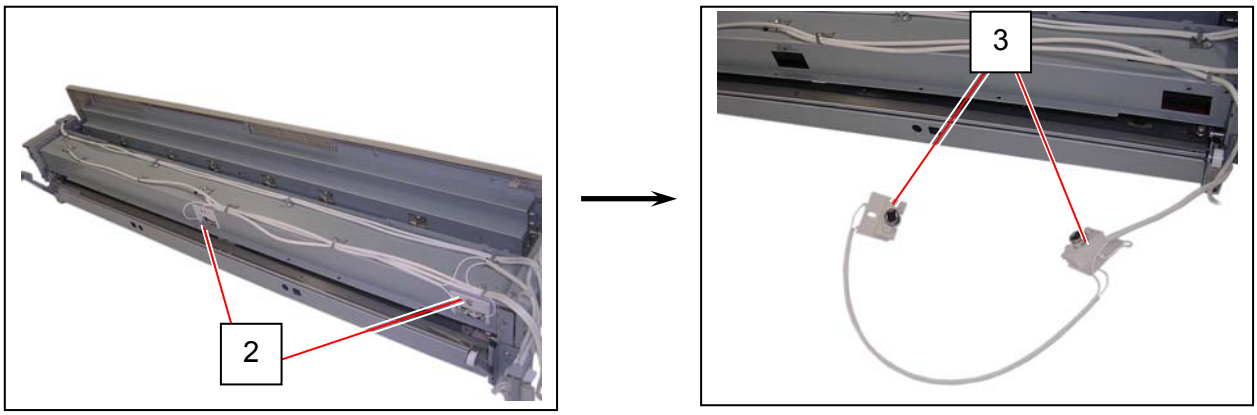


5. 3. 7 Replacement of Thermostat (TS1, TS2)

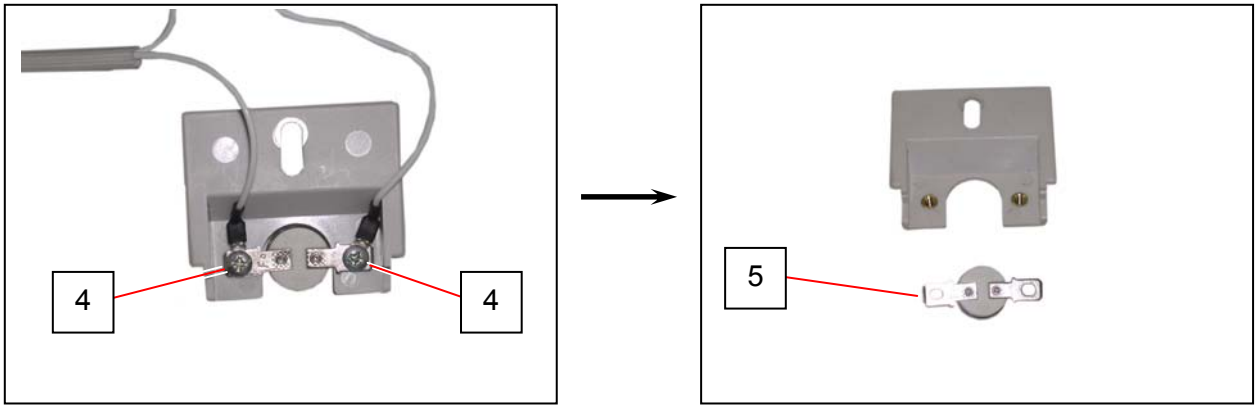
1. Remove the Fuser Unit (1) from the machine making reference to [5. 3. 1 Removal of the Fuser Unit].



2. Remove 2 screws (2: M4x6) to remove Thermostat Assy (3).

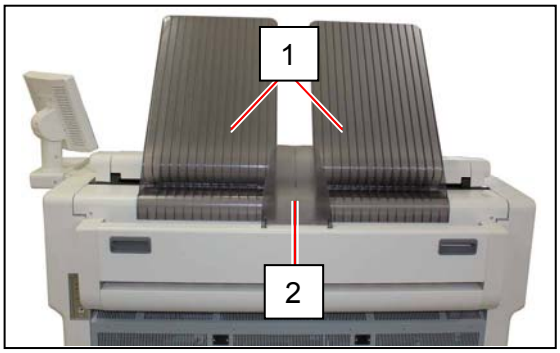


3. Remove 2 screws (4: M3x4) to remove the Thermostat (5).
Replace the Thermostat (5) with the new one.



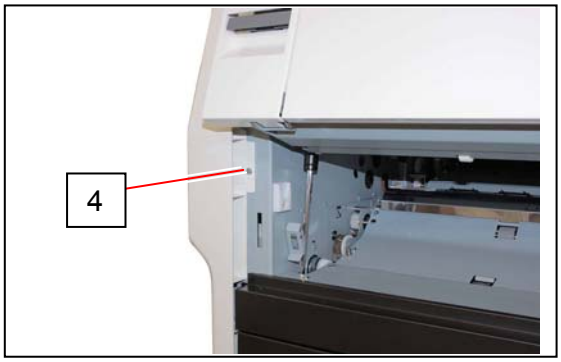
5. 3. 8 Replacement of Exit Sensor (PH3)

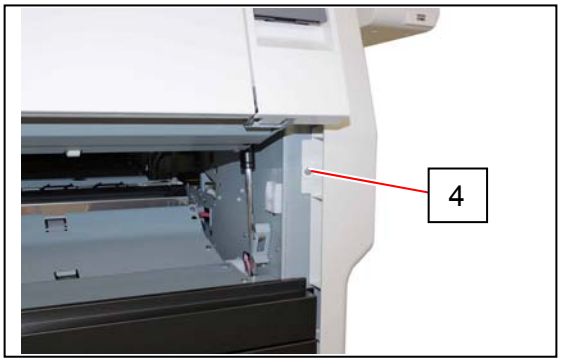
1. Remove 2 pieces of Exit Tray (1) and Exit Tray 2 (2).



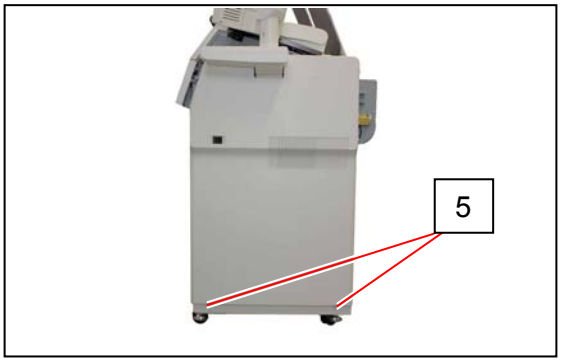
2. Pull up the Lever 2 (3) to open the Engine Unit.

3. Remove the screws (4) at both sides.

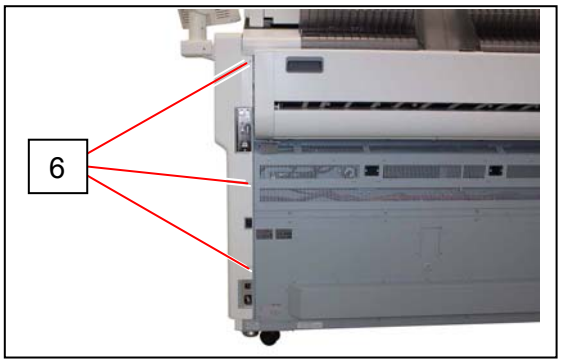


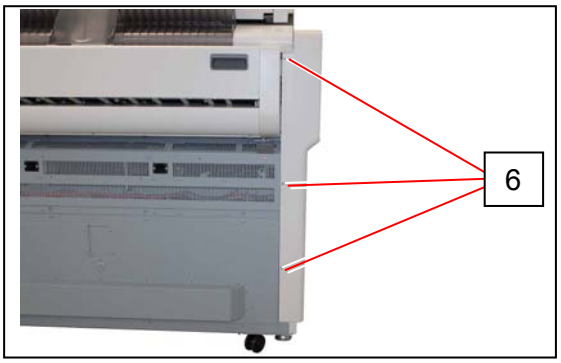


4. Remove 4 pieces of screw (5) at both sides.



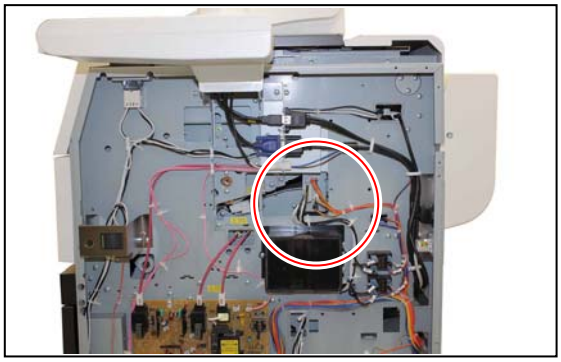
5. Remove 6 pieces of screw (6) at both sides.

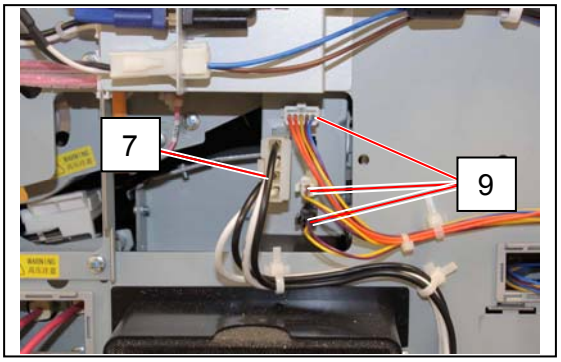




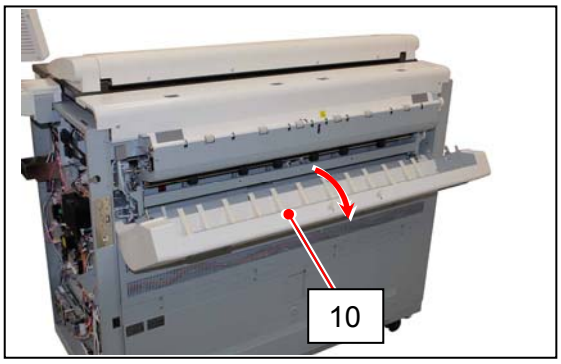
6. Remove Cover 2 (7) and Cover 3 (8).

7. Disconnect 4 connectors (9).

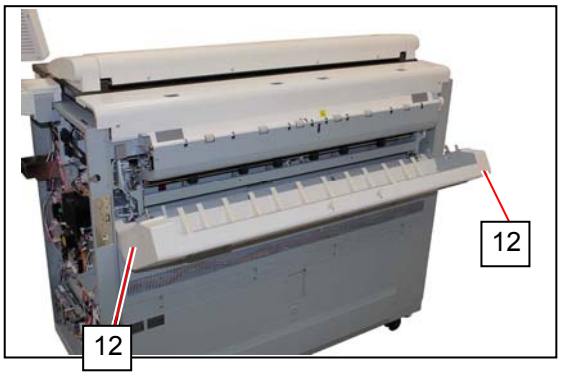


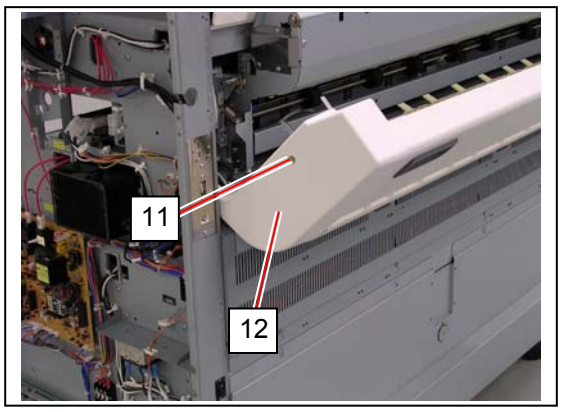


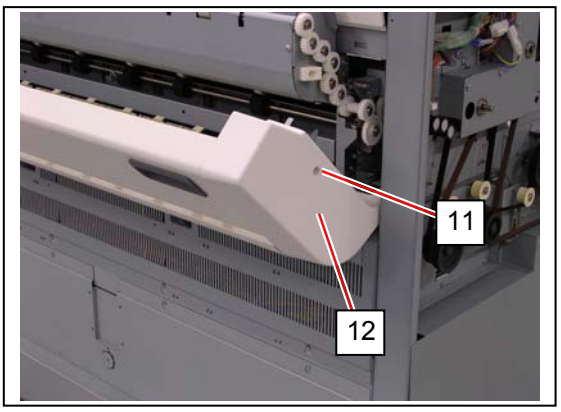
8. Open Exit Cover (10).



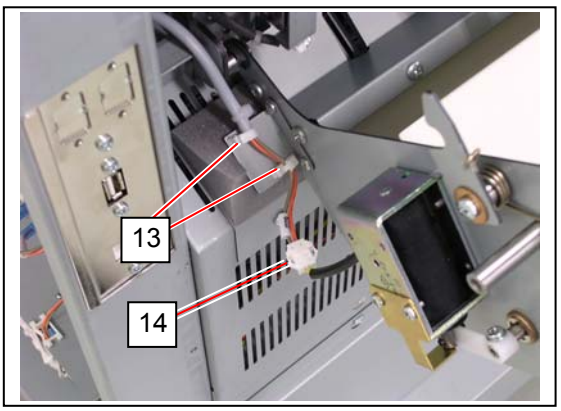
9. Remove 2 screws (11) to remove Exit Side Cover R / L (12).



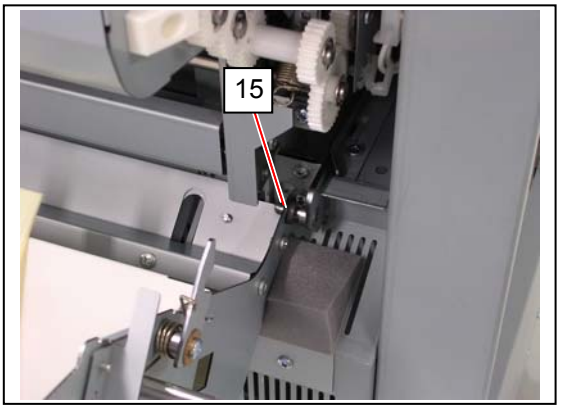




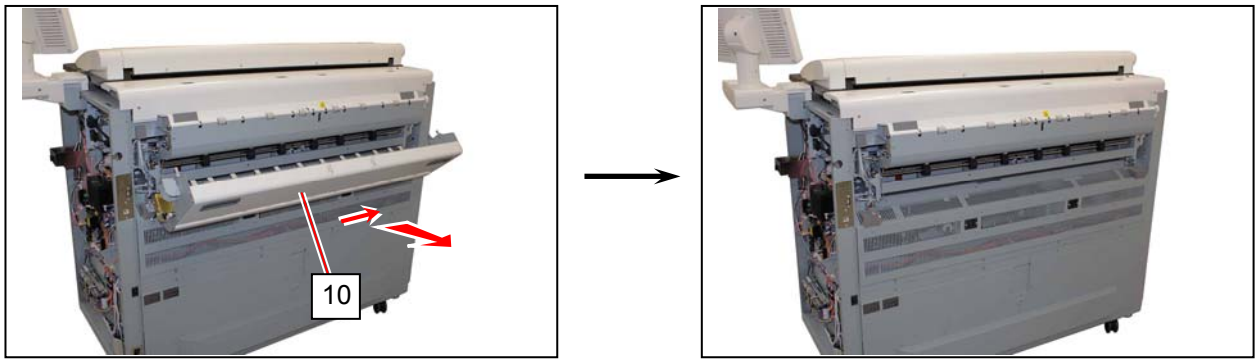
10. Open 2 clamps (13) and disconnect 1 connector (14).



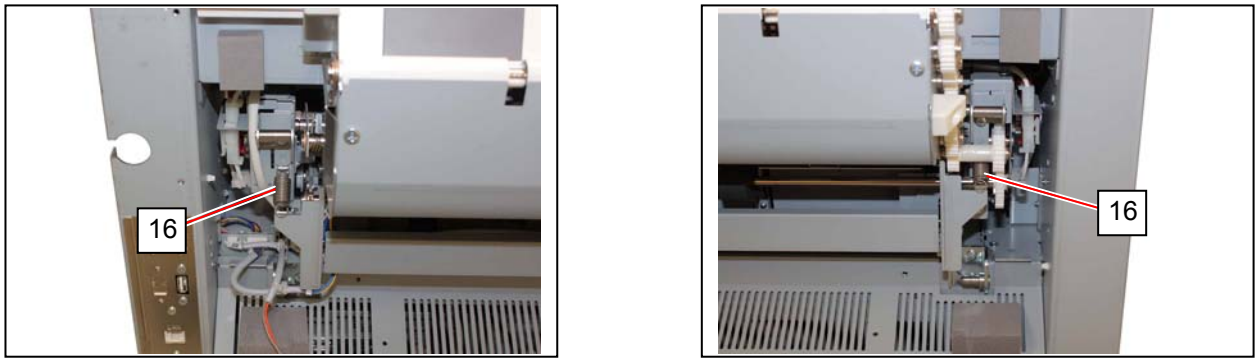
11. On the left side (your right hand), remove 1 piece of KL Clip (15).



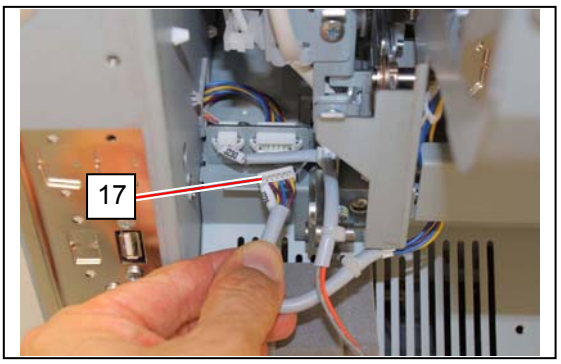
12. Slide Exit Cover (10) to the arrow direction (right hand side) to remove it from the machine.



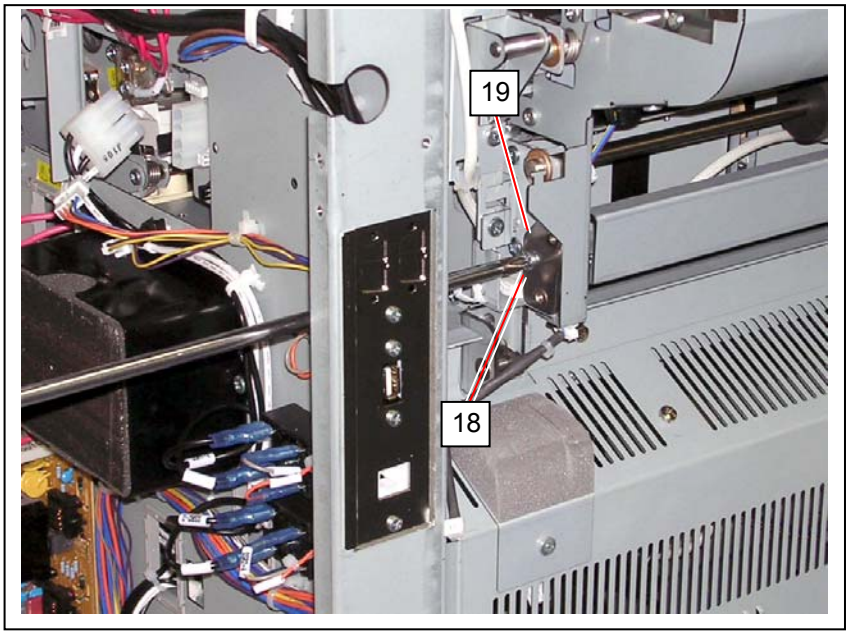
13. Release the springs (16) on both sides.



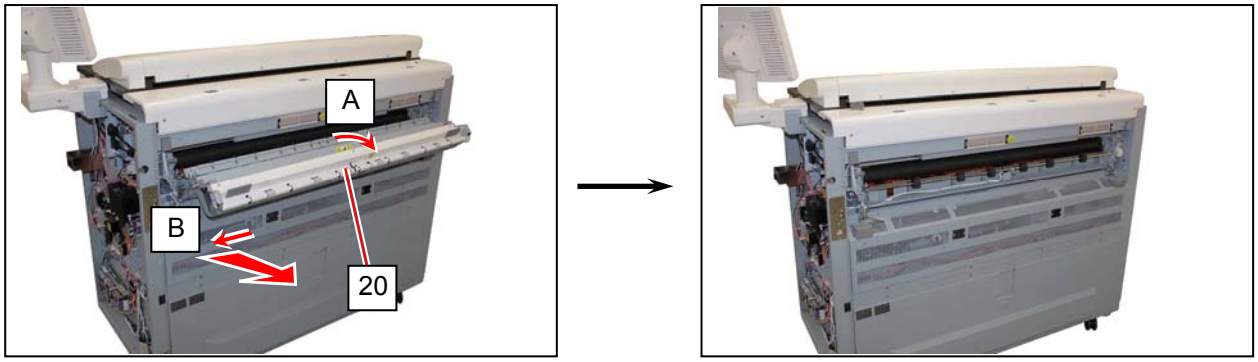
14. Remove 1 connector (17).



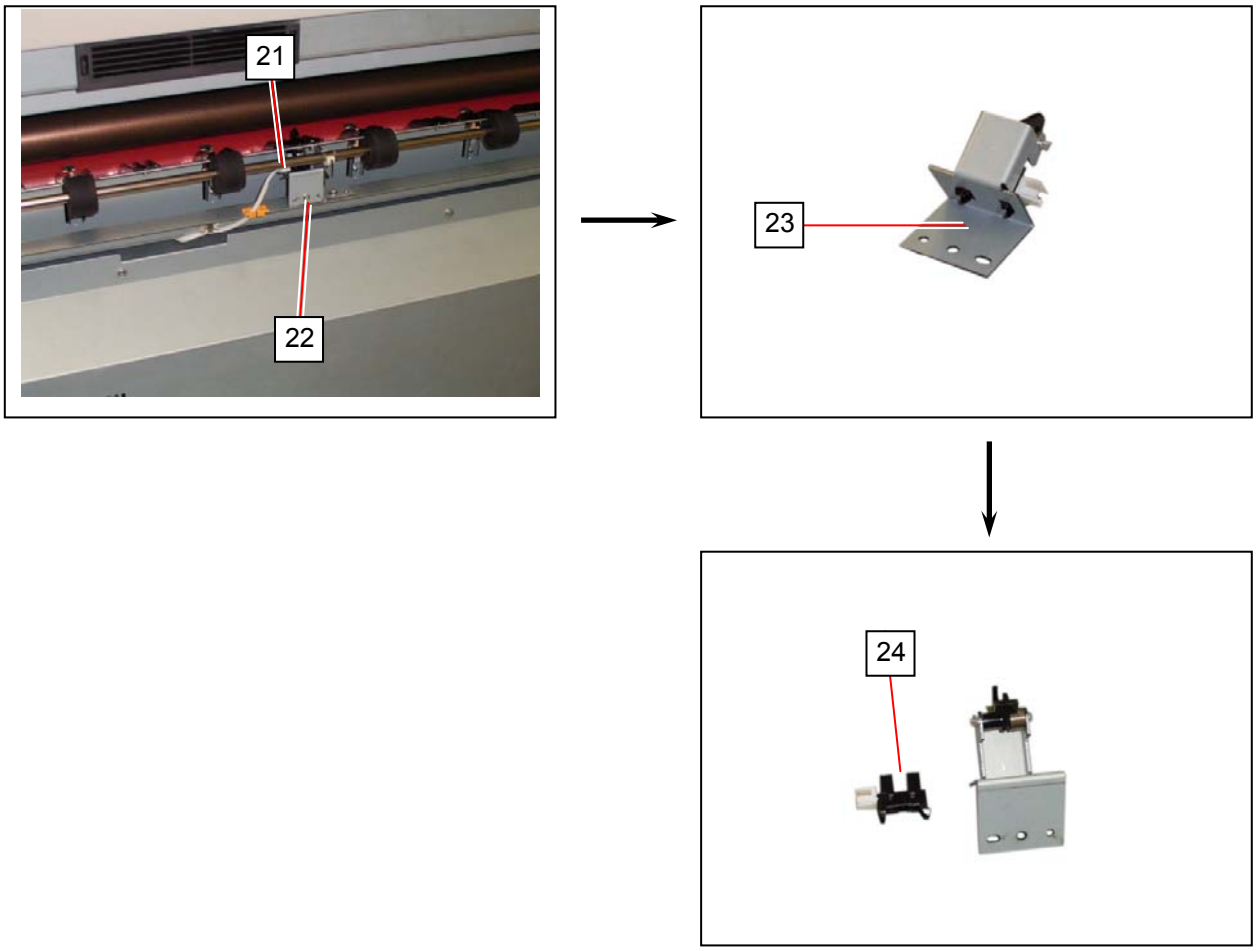
15. Remove 1 screw (18) to release the hinge bracket (19).



16. Firmly hold Fuser Cover (20). Slightly open it (A) and remove the hinge bracket (19).
Slide Fuser Cover (20) to the arrow direction (left hand side) (B) to remove it from the machine.



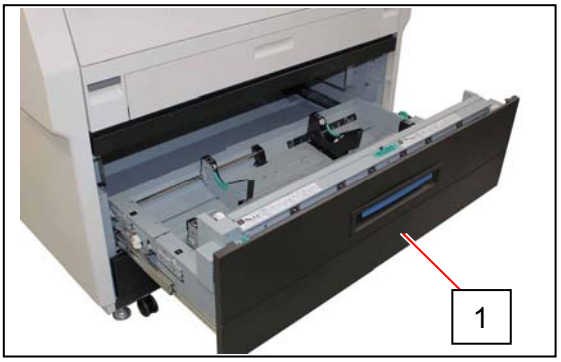
17. Remove the harness (21) and remove the screw (22) to remove Exit Sensor Assy (23).
Remove Exit Sensor (24) form Exit Sensor Assy (23). Replace Exit Sensor with a new one.



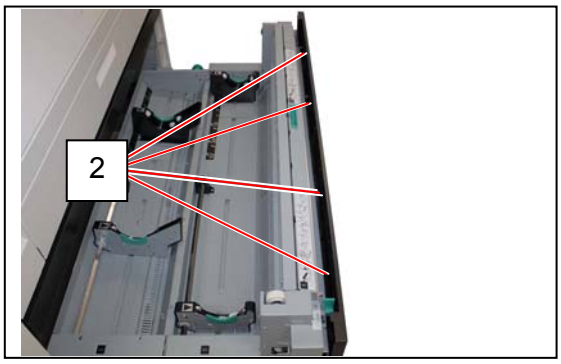
5. 4 Roll Deck

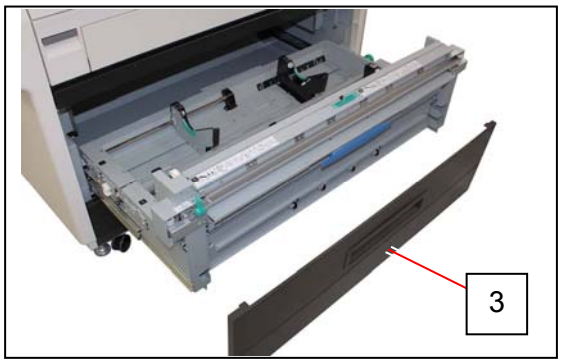
5. 4. 1 Replacement of Cutter Assembly

1. Draw out the Roll Deck (1).



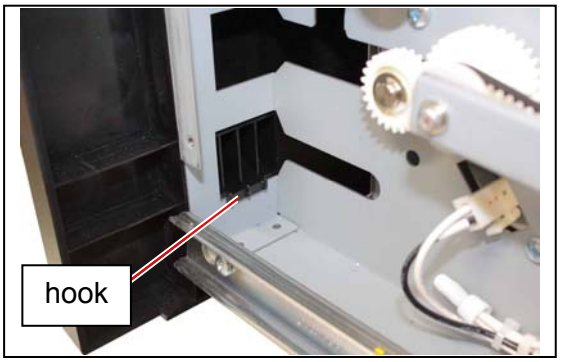
2. Remove 4 screws (2) to remove Cover 1 (3).



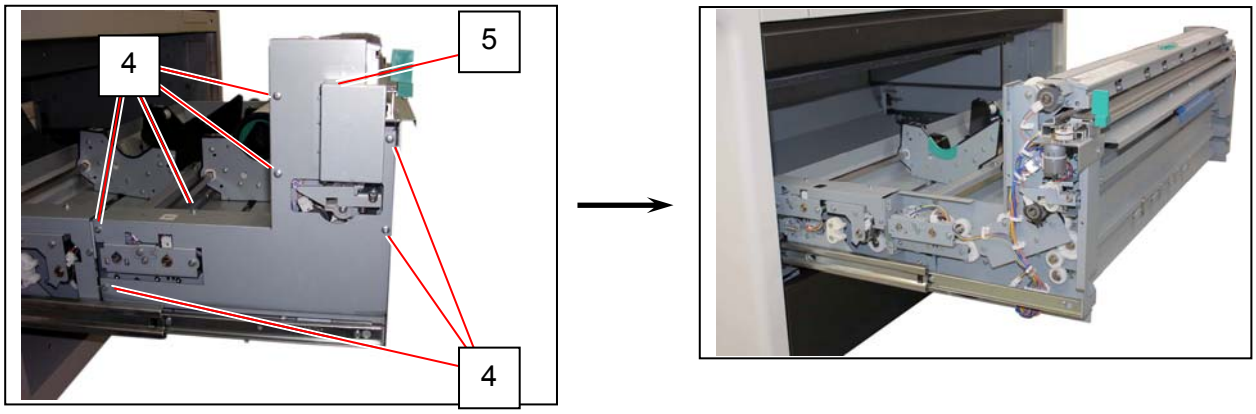


NOTE

Make sure to insert the hooking part to the slit as the following photo when you put back the Cover 1 (3).

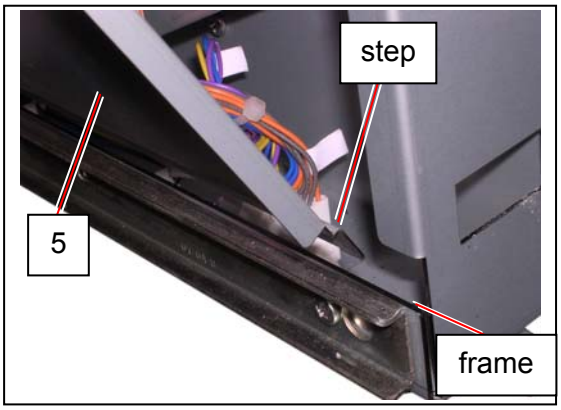


3. Remove 7 screws (4) to remove Cover 14 (5).

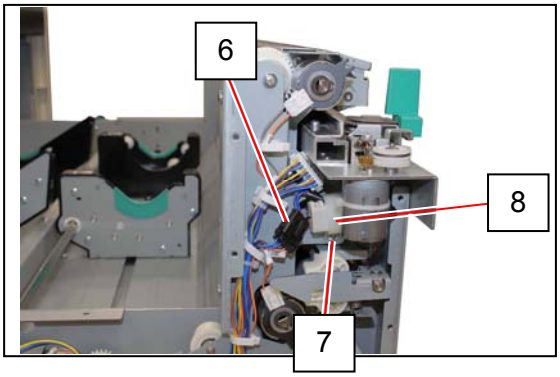


NOTE

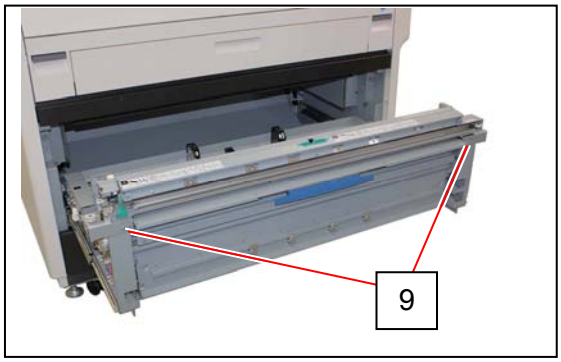
Make sure that the step part on the bottom side of Cover 14 (5) is inside the bottom frame.

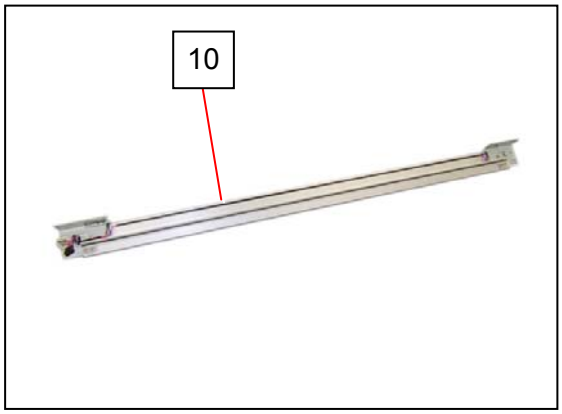


4. Disconnect the connector (6).
   Remove 1 screw (7) and remove the clamp (8) to release the core.



5. Remove 2 screws on the front (9) to remove Cutter Assy (10).
   Replace the whole Cutter Assy with a new one.

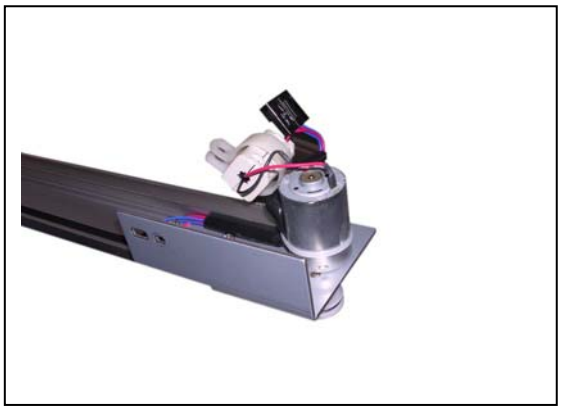




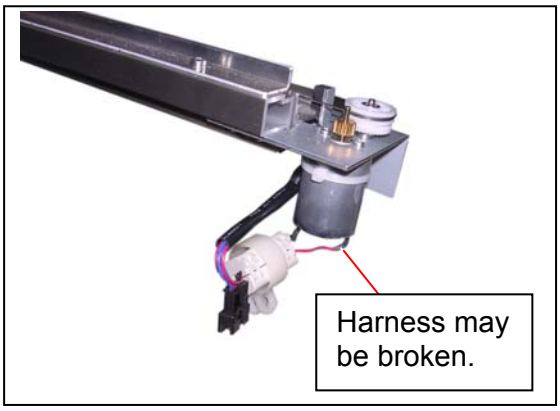
⚠ NOTE

(1) Reuse the clamp (8) and the core for a new Cutter Assembly.

(2) Put the Cutter Assembly with the Cutter Motor up.
   If you put it with the Cutter Motor down, you will break the Cutter Motor Harness.

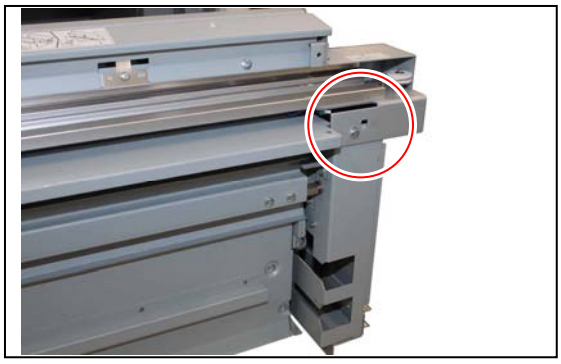


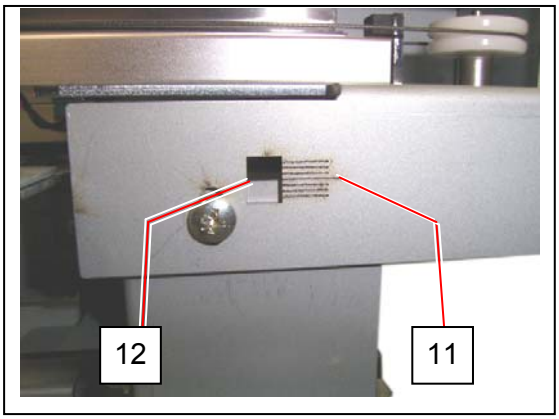
Good



No good

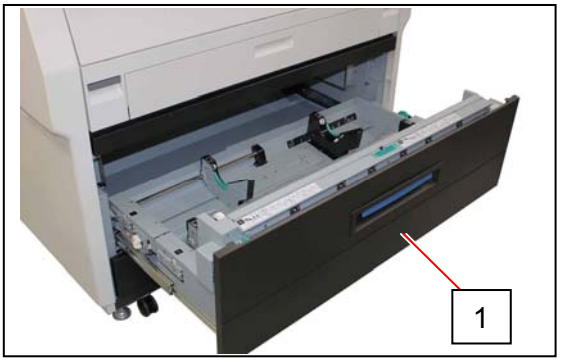
(3) There is the Height Guide (11) on the right side.
   Please fix the Cutter Assembly aligning the plate (12) and the central line of Height Guide (11) each other.



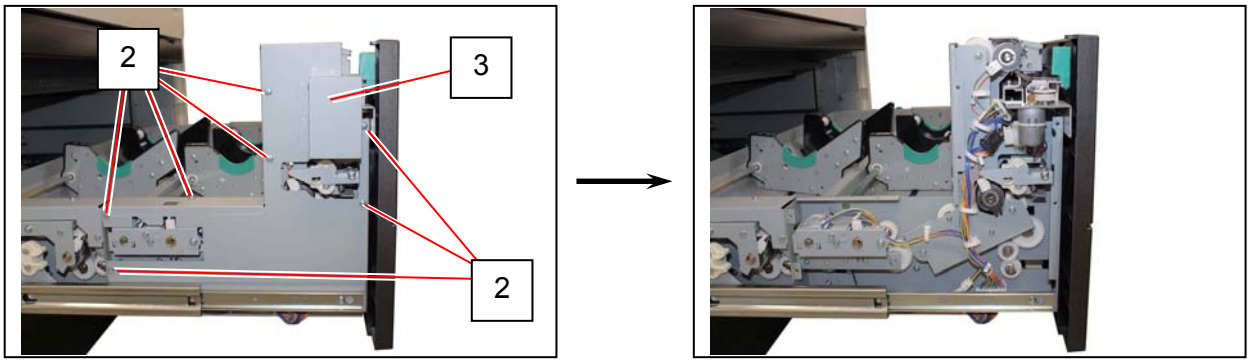


5. 4. 2 Replacement of Clutches (CL3, CL4, CL5) of Roll 1

1. Draw out the Roll Deck (1).

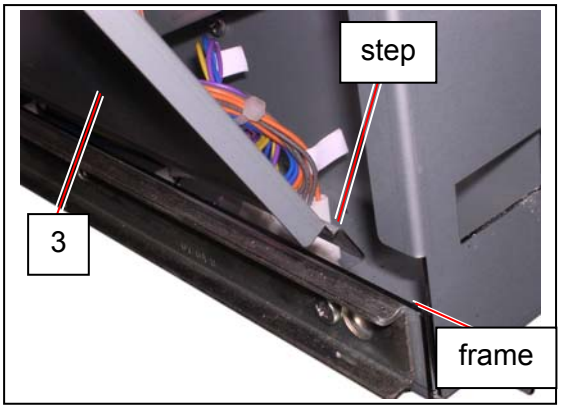


2. Remove 7 screws (2) to remove Cover 14 (3).

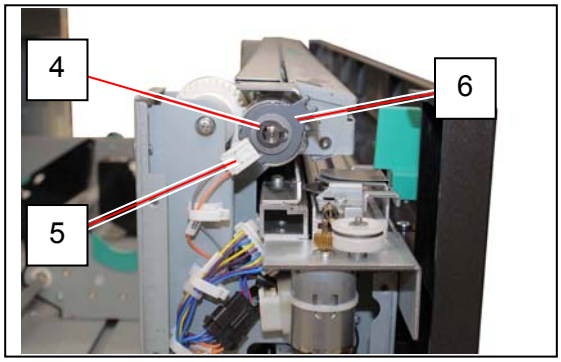


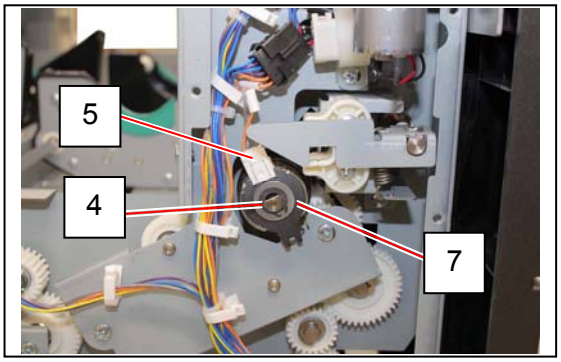
NOTE

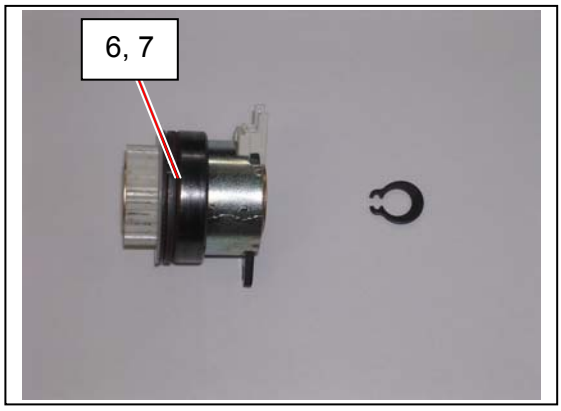
Make sure that the step part on the bottom side of Cover 14 (3) is inside the bottom frame.



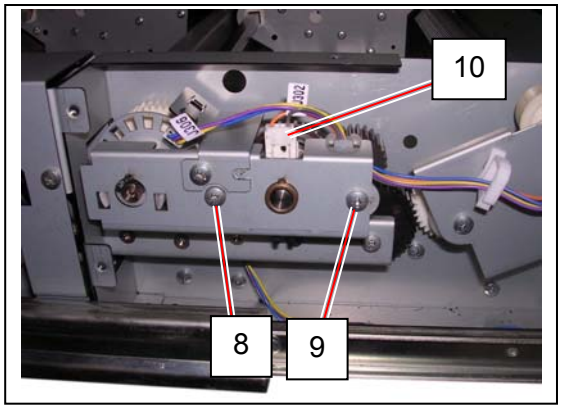
3. Remove Retaining Ring-C (4) and disconnect the harness (5) to remove each Clutch (6: CL3) or Clutch (7: CL4).
Replace Clutch with a new one.

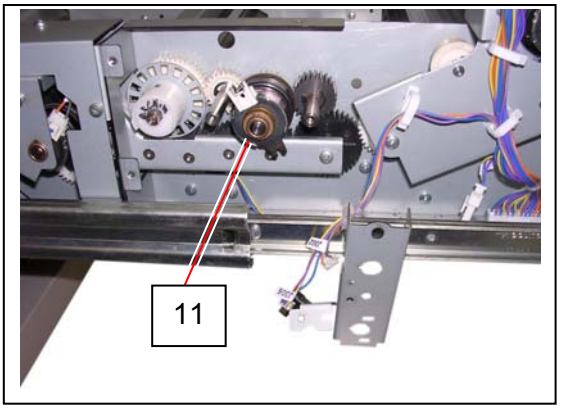


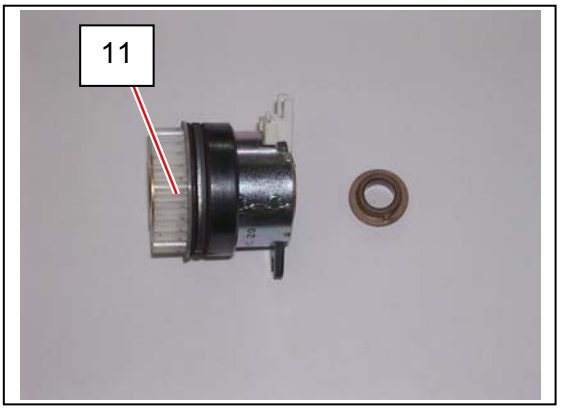




4. Remove 1 Bind Head Screw (8) and 1 Pan Head Screw (9), disconnect the harness (10) to remove Clutch (11: CL5). Replace Clutch with a new one.

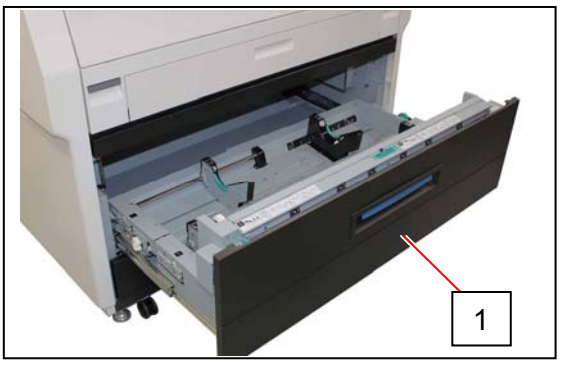




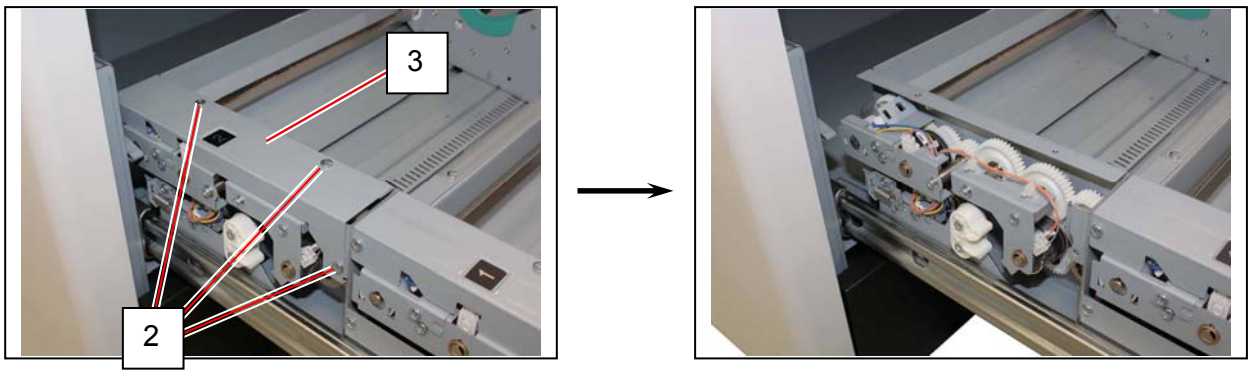


5. 4. 3 Replacement of Clutches (CL6, CL7) of Roll 2

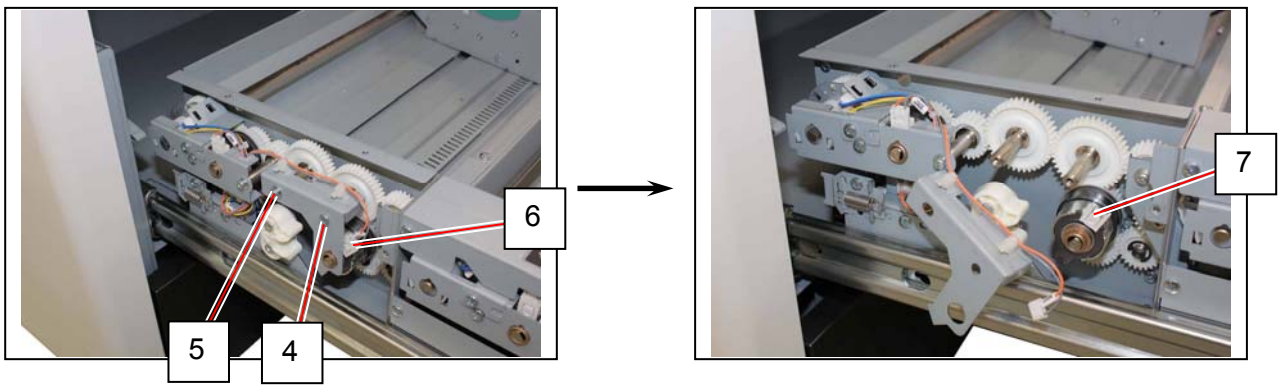
1. Draw out the Roll Deck (1).

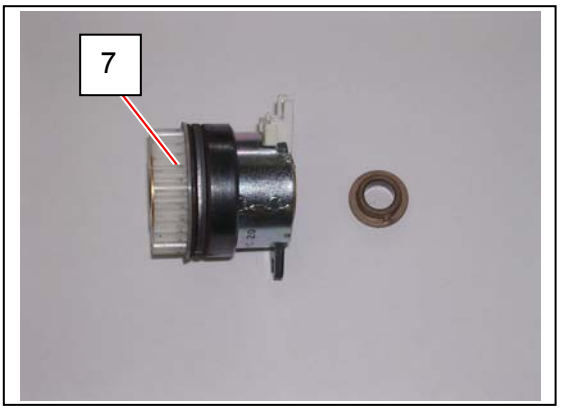


2. Remove 3 screws (2) to remove Cover 16 (3).

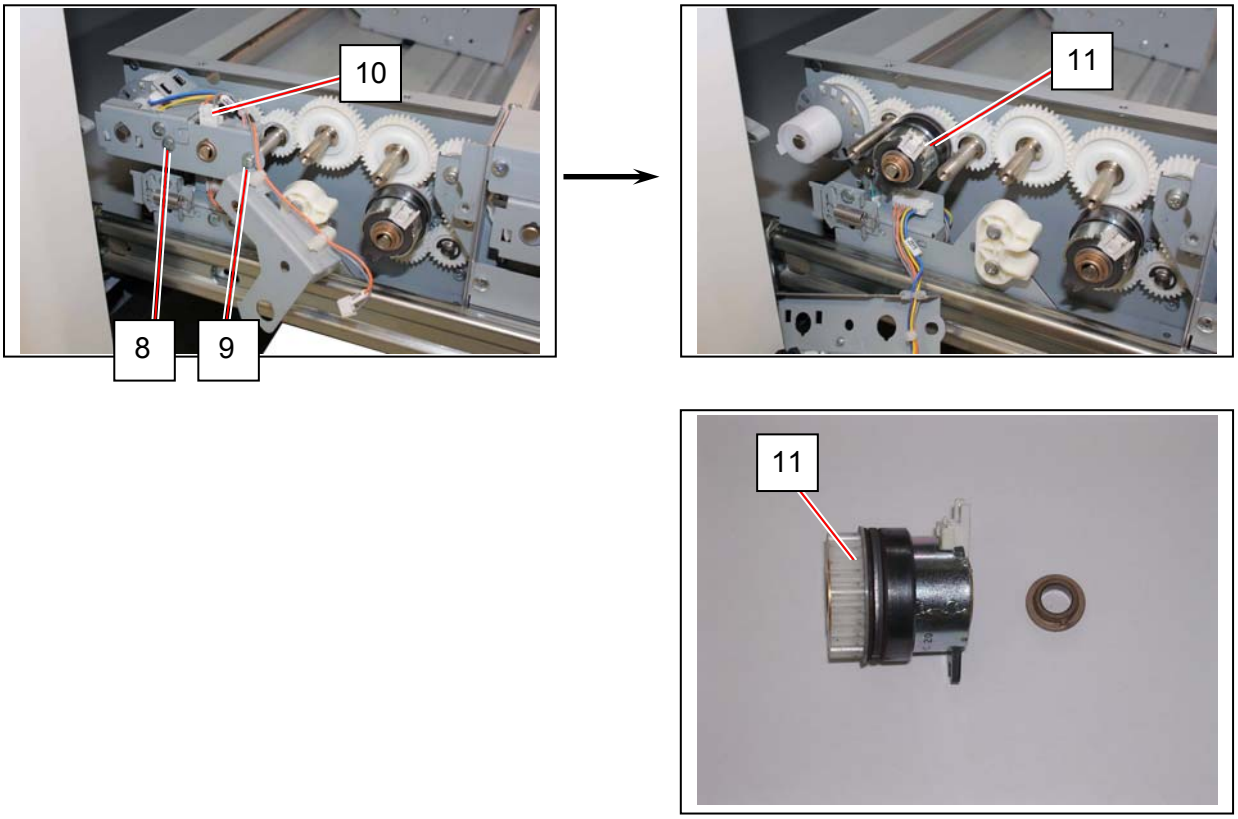


3. Remove 1 Bind Head Screw (4) and 1 Pan Head Screw (5), disconnect the harness (6) to remove Clutch (7: CL6). Replace Clutch with a new one.



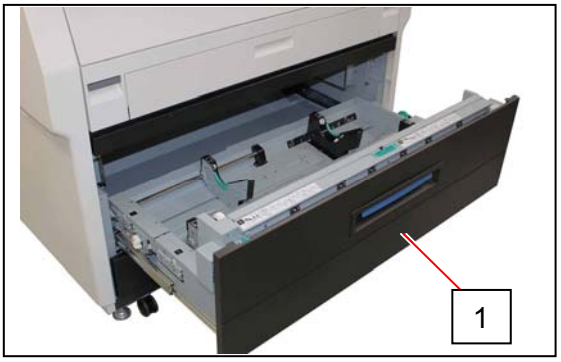


4. Remove 1 Bind Head Screw (8) and 1 Pan Head Screw (9), disconnect the harness (10) to remove Clutch (11: CL7). Replace Clutch with a new one.

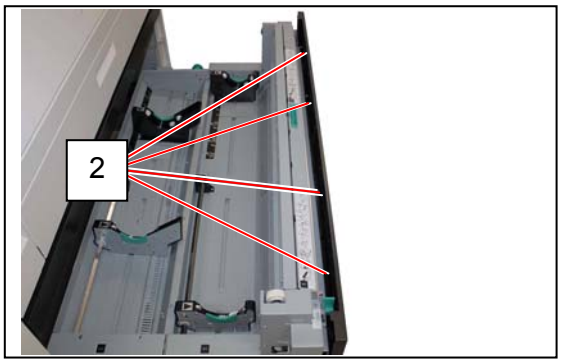


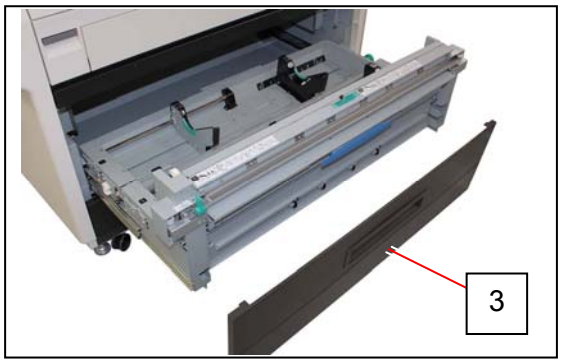
5. 4. 4 Replacement of Timing Belt 633

1. Draw out the Roll Deck (1).



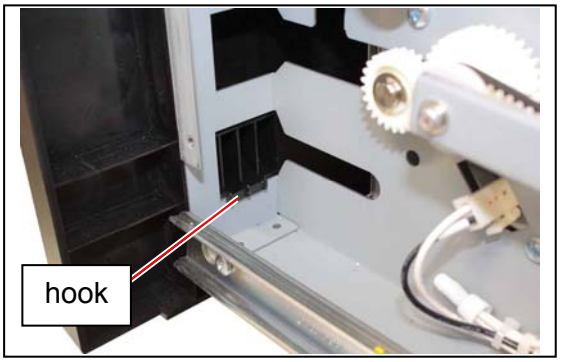
2. Remove 4 screws (2) to remove Cover 1 (3).



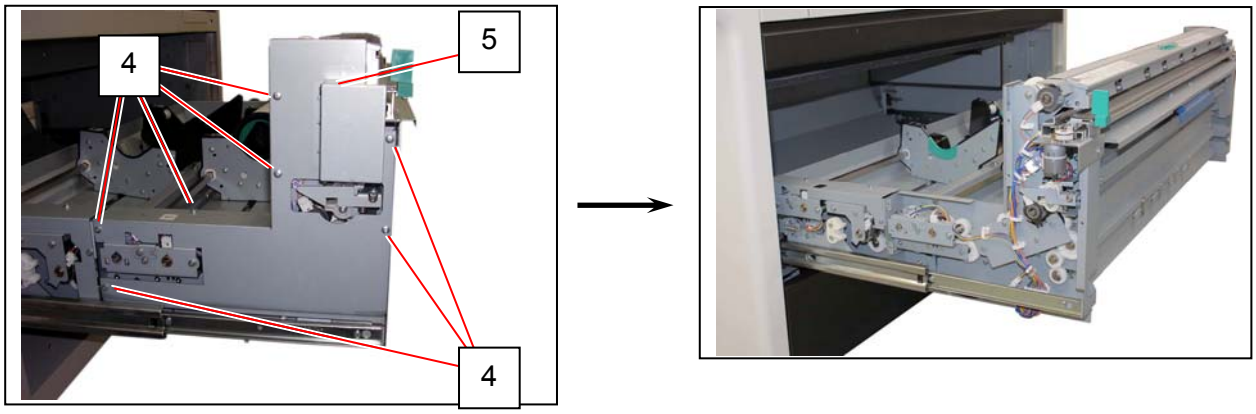


NOTE

Make sure to insert the hooking part to the slit as the following photo when you put back the Cover 1 (3).

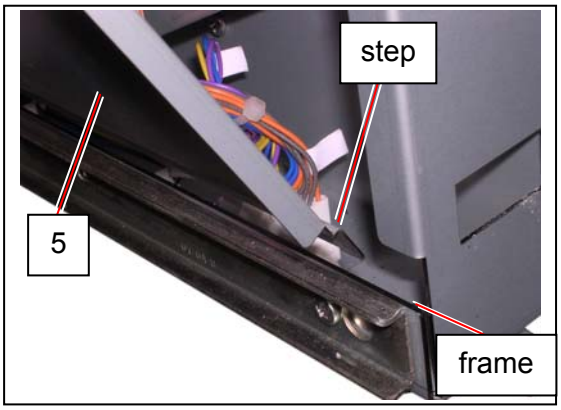


3. Remove 7 screws (4) to remove Cover 14 (5).

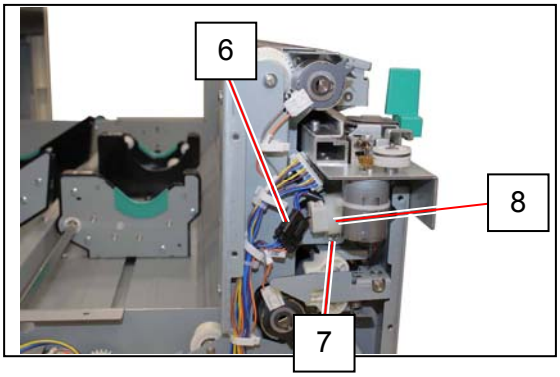


NOTE

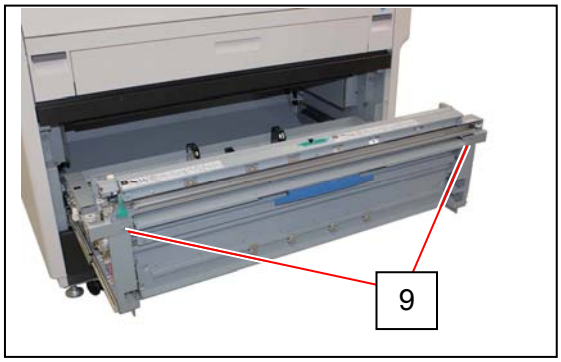
Make sure that the step part on the bottom side of Cover 14 (5) is inside the bottom frame.

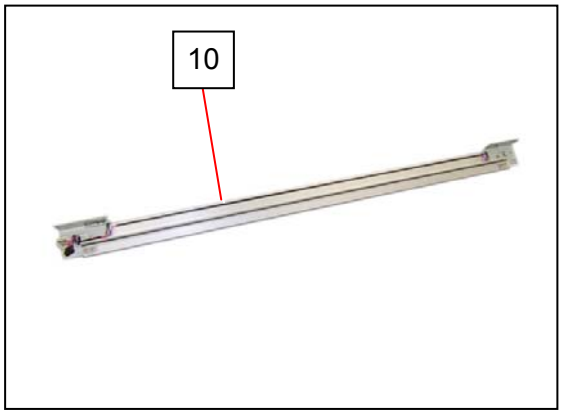


4. Disconnect the connector (6).
   Remove 1 screw (7) and remove the clamp (8) to release the core.

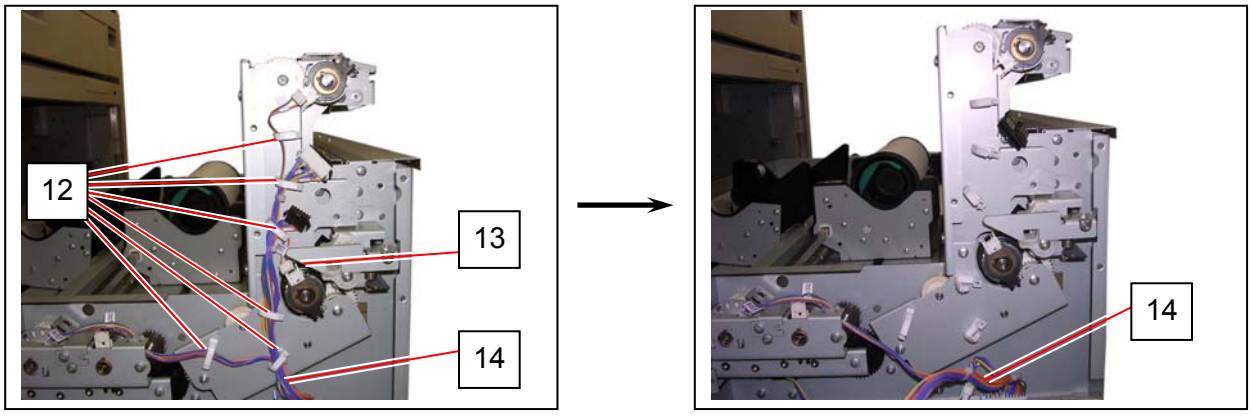


5. Remove 2 screws on the front (9) to remove Cutter Assy (10).
   Replace the whole Cutter Assy with a new one.

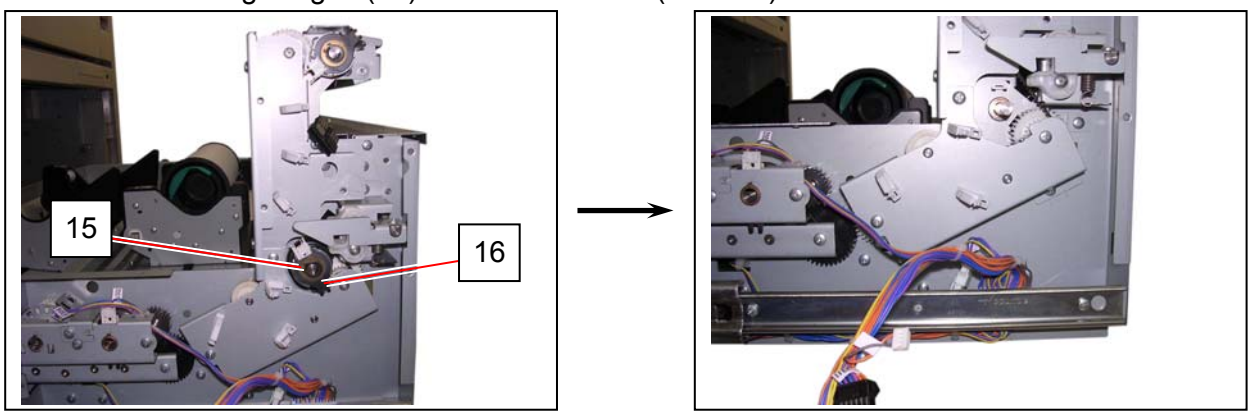




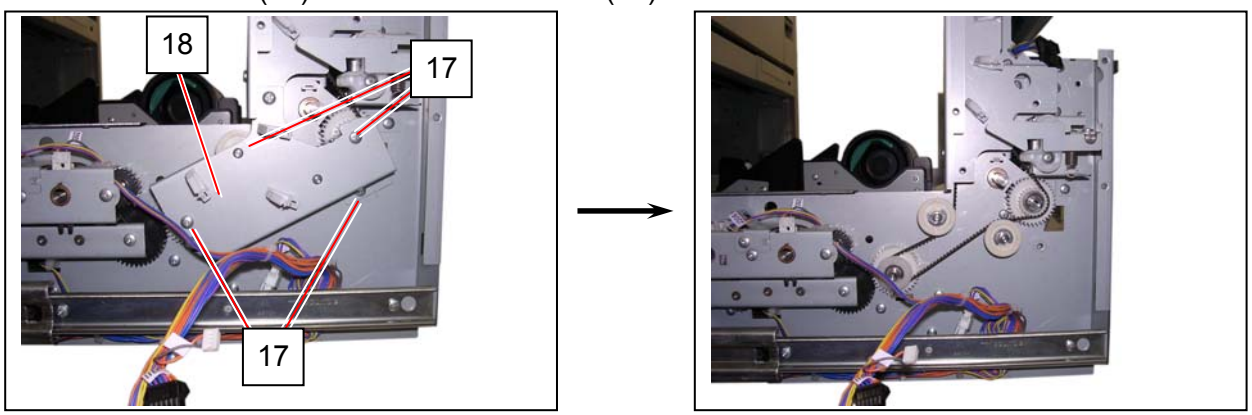
6. Open 6 wire saddles (12) and release 3 connectors (13) to release the harness (14).



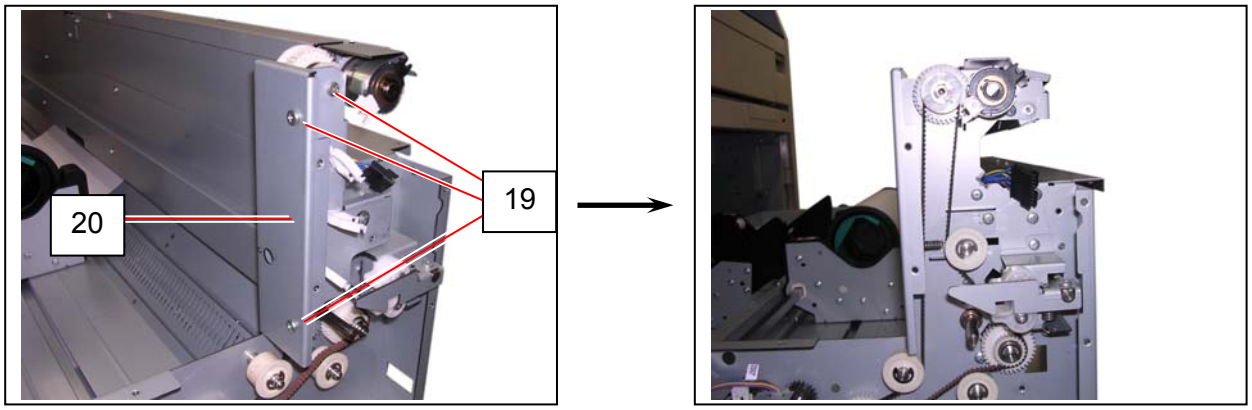
7. Remove Retaining Ring-C (15) to remove Clutch (16: CL4).



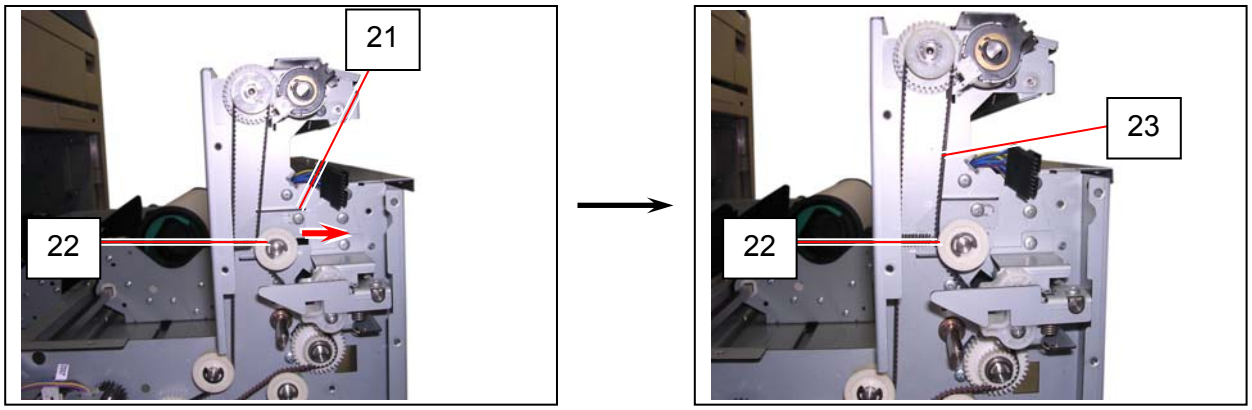
8. Remove 4 screws (17) to remove Bracket 33 (18).

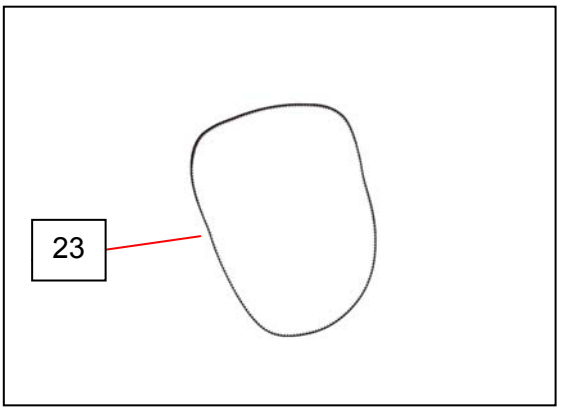


9. Remove 3 screws (19) to remove Bracket 32 (20).



10. Loosen 1 screw (21) to release Pulley 3 (22). Push Pulley 3 (22) to the arrow direction and fix it. Replace Timing Belt 633 (23) with a new one.



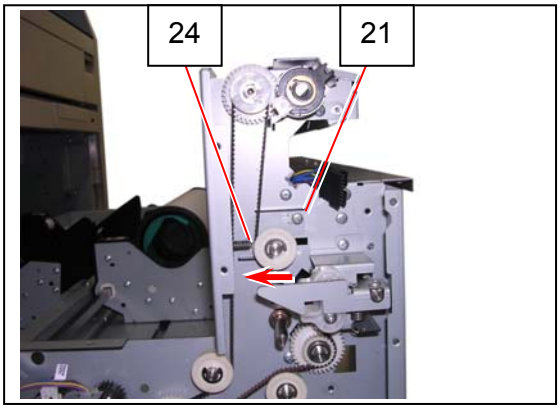


NOTE

You do not have to adjust the belt tension.

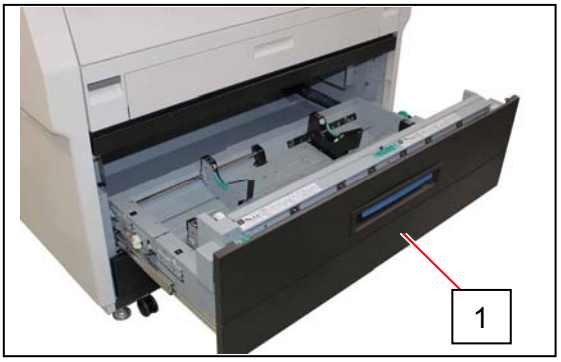
Replace Bracket 32 (20) first and then tighten the screw (21). The Spring Coil 12 (24) gives a proper tension to the Timing Belt.

(Bracket 32 removed in the picture for easy understanding.)

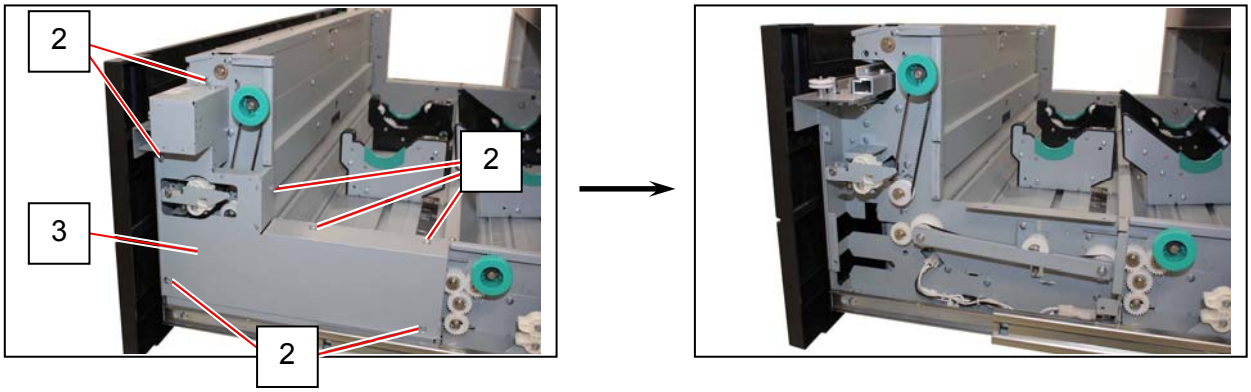


5. 4. 5 Replacement of Timing Belt 453

1. Draw out the Roll Deck (1).

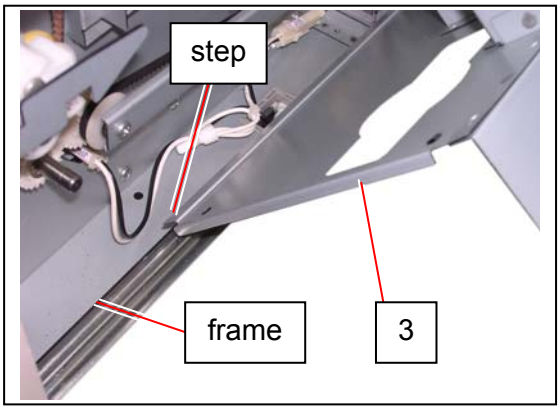


2. Remove 7 screws (2) to remove Cover 22 (3).

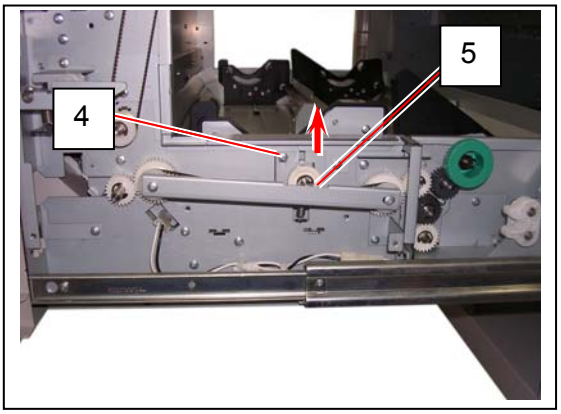


NOTE

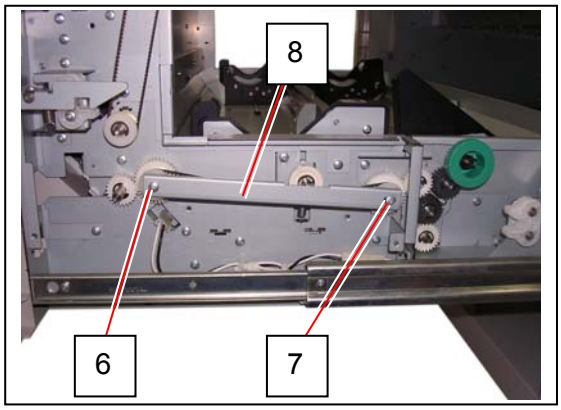
Make sure that the step part on the bottom side of Cover 22 (3) is inside the bottom frame.

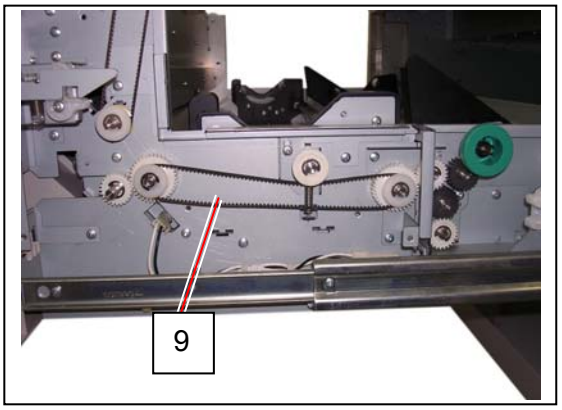


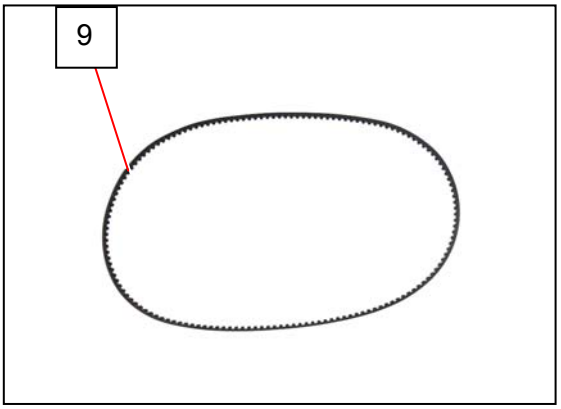
3. Loosen 1 screw (4) to release Pulley 3 (5). Move Pulley 3 (5) upward and fix it the screw (4) to release Timing Belt 453.



4. Remove 1 Bind Head Screw (6) and 1 Pan Head Screw (7) to remove Bracket 12 (8). Replace Timing Belt 453 (9) with a new one.



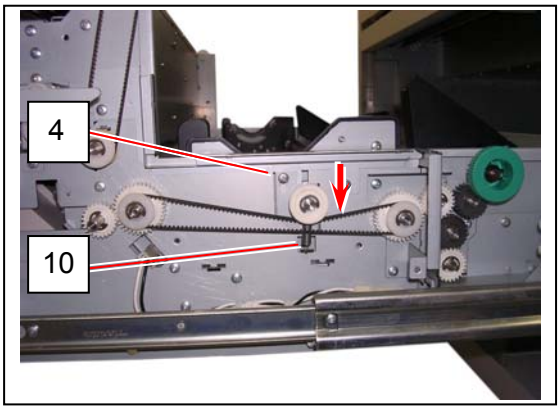




NOTE

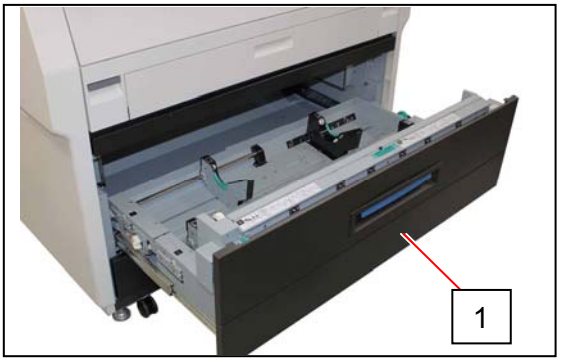
You do not have to adjust the belt tension.

Replace Bracket 12 (8) and then tighten the screw (4) The Spring Coil 11 (10) gives a proper tension to the Timing Belt 480.

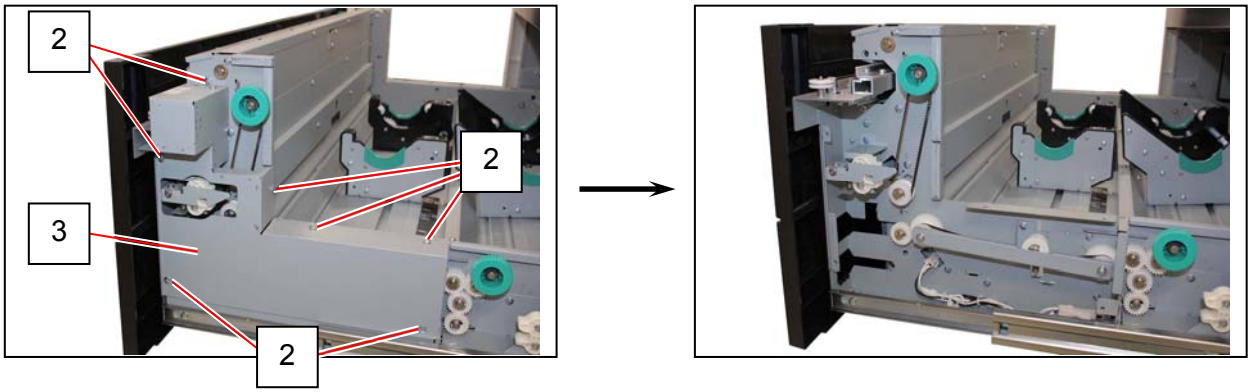


5. 4. 6 Replacement of Timing Belt 330

1. Draw out the Roll Deck (1).

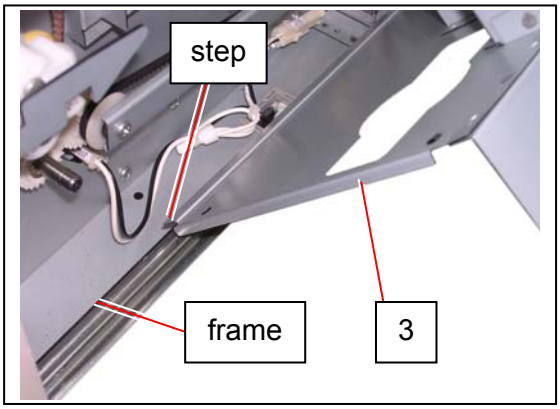


2. Remove 7 screws (2) to remove Cover 22 (3).

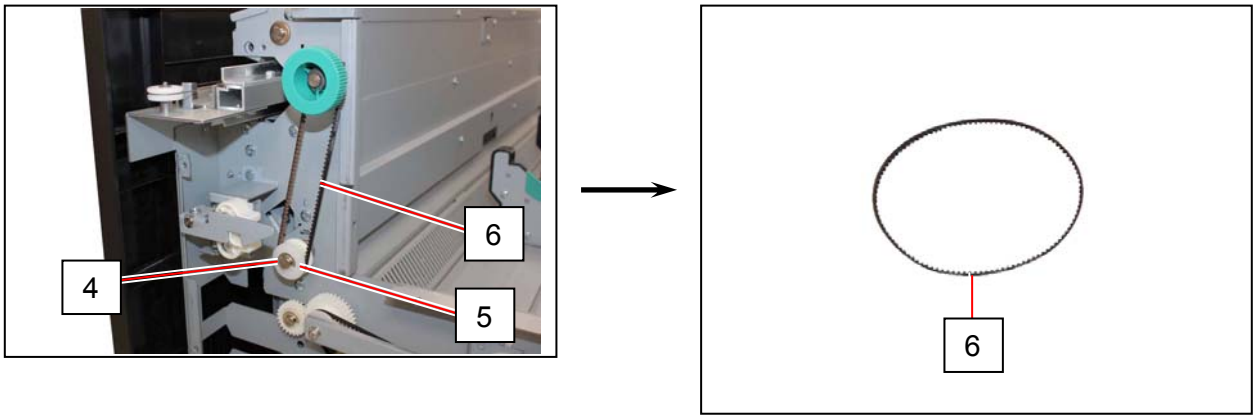


NOTE

Make sure that the step part on the bottom side of Cover 22 (3) is inside the bottom frame.



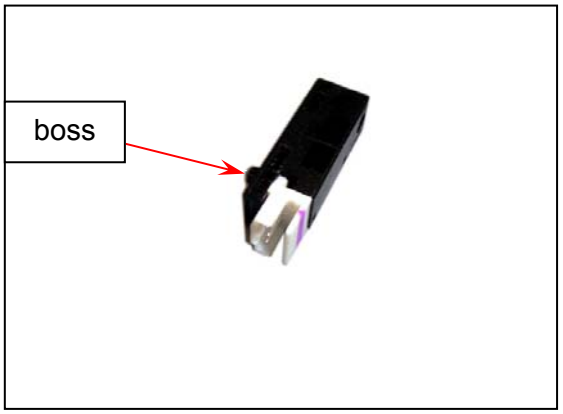
3. Remove Retaining Ring-E (4) to remove Collar (5).
   Replace Timing Belt (6) with a new one.

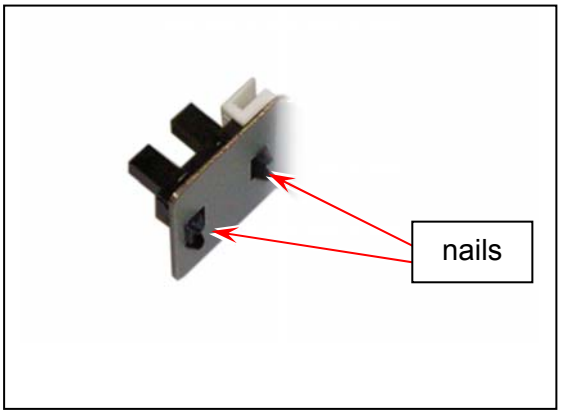


5. 4. 7 Replacement of Sensor (PH6, PH7, PH9, PH12)

NOTE

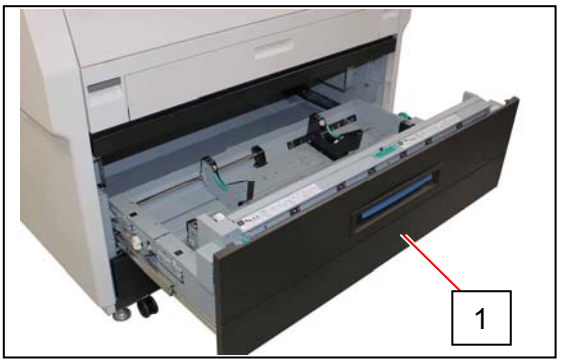
(1) When reassembling, fit a boss or nails on the sensor into holes on the sensor bracket.



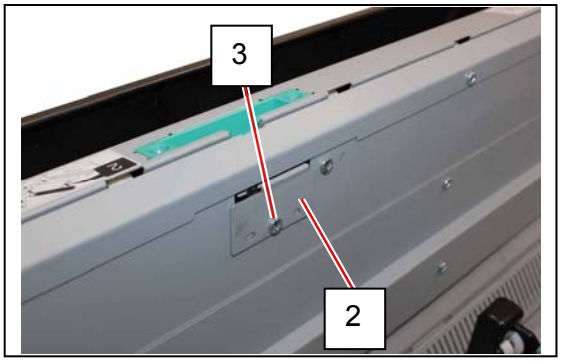


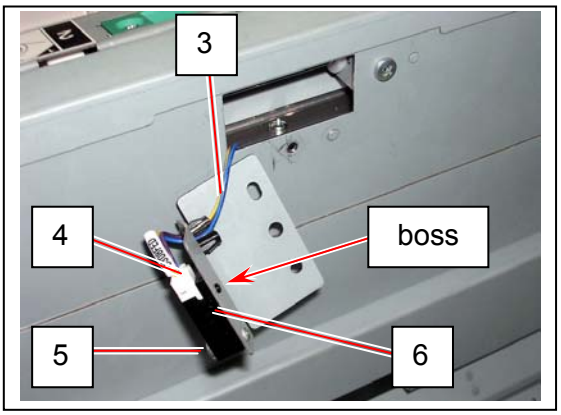
(2) When reassembling, fit positioning bosses on the frame (or the sensor bracket) into the corresponding holes.

1. Draw out the Roll Deck (1).
   Remove a roll media if mounted.

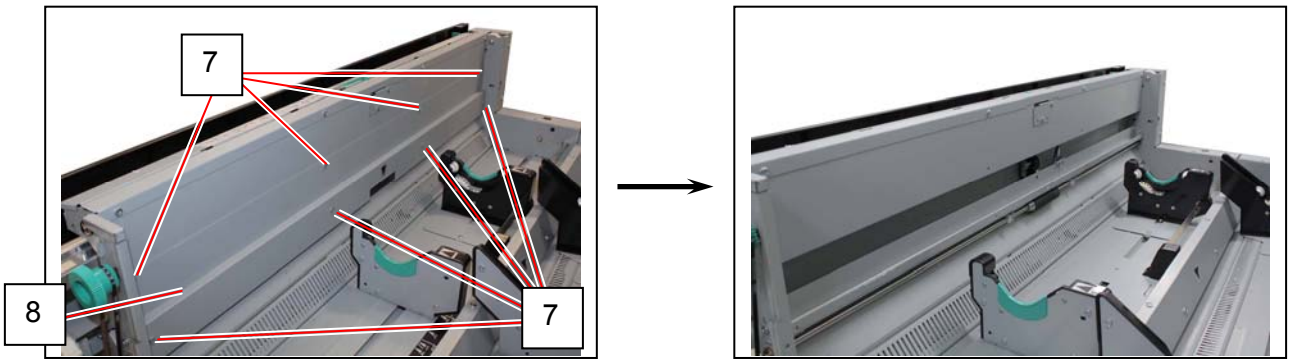


2. Remove 1 screw (2) to release the sensor bracket (3). Remove the connector (4) and 1 screw (5) to replace Sensor (3: PH6) with a new one.

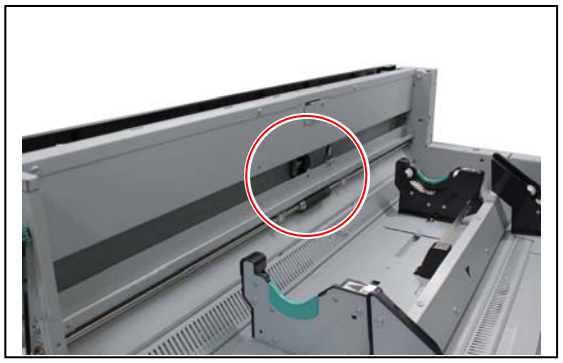


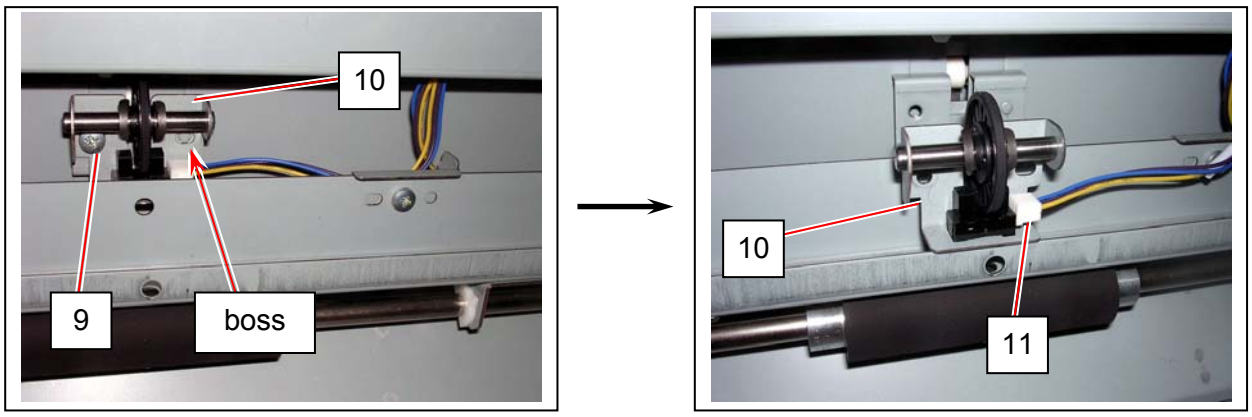


3. Remove 8 screws (7) to remove Plate (8).

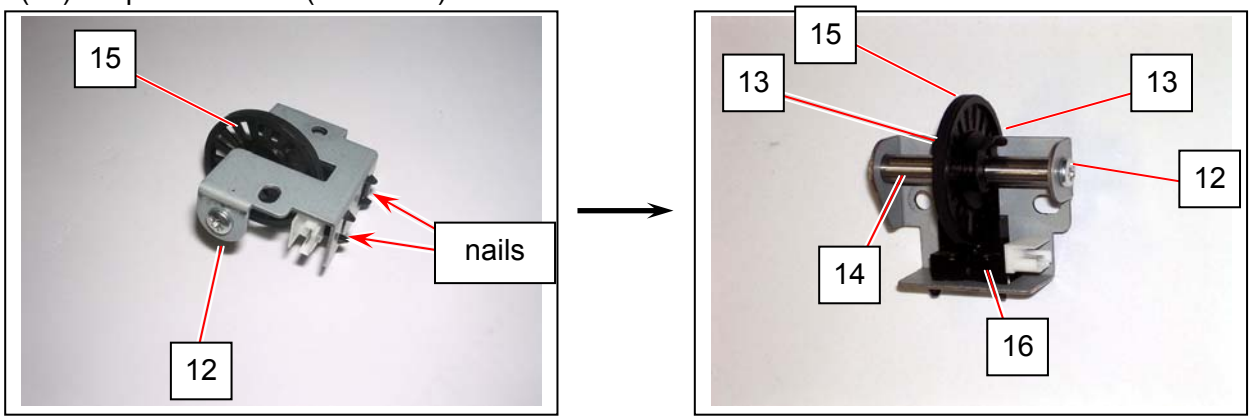


4. Remove 1 screw (9) to release the sensor bracket (10). Remove the connector (11) to remove the bracket (10).

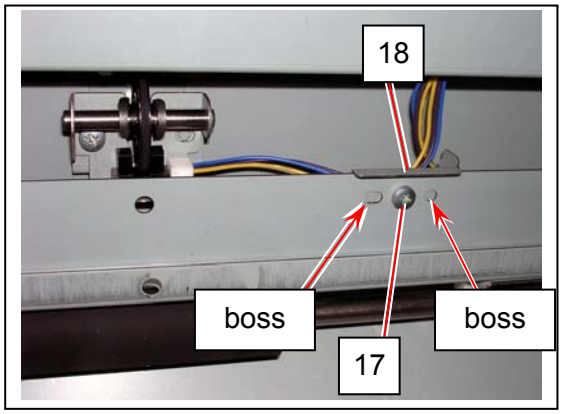


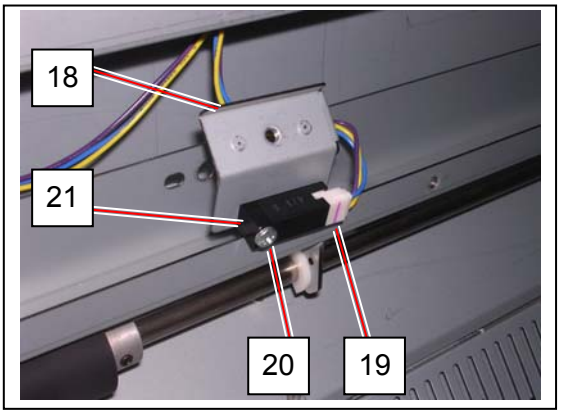


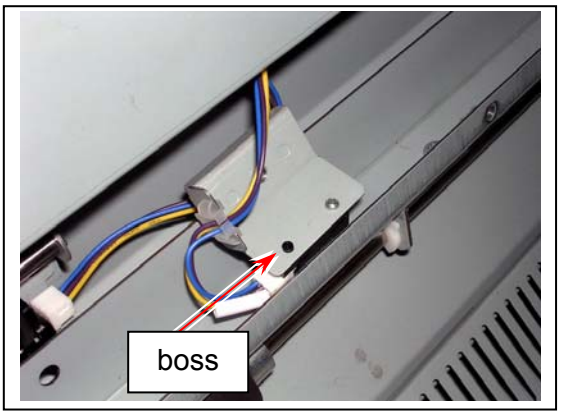
5. Remove 1 screw (12: M3x6) and 2 KL Clips (13) to remove Shaft 4 (14) and Encoder 2 Assy (15). Replace Sensor (16: PH12) with a new one.



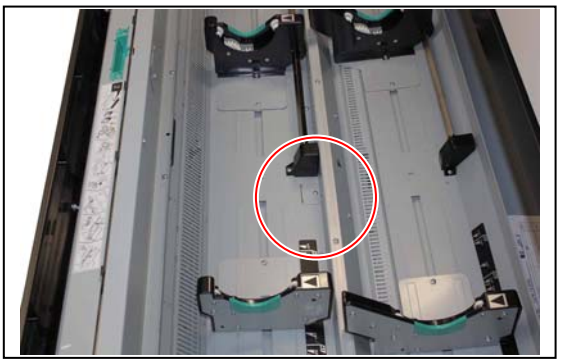
6. Remove 1 screw (17) to release the sensor bracket (18). Remove the connector (19) and 1 screw (20) to replace Sensor (21: PH7) with a new one.

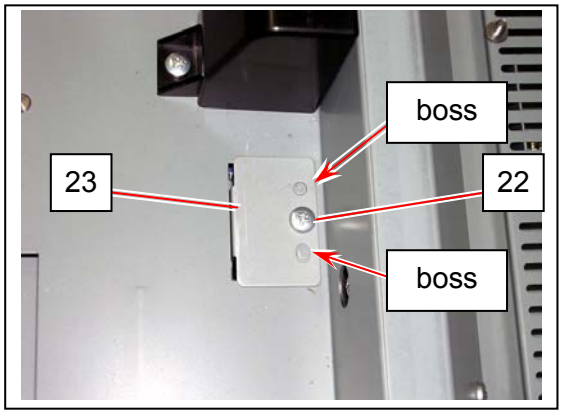


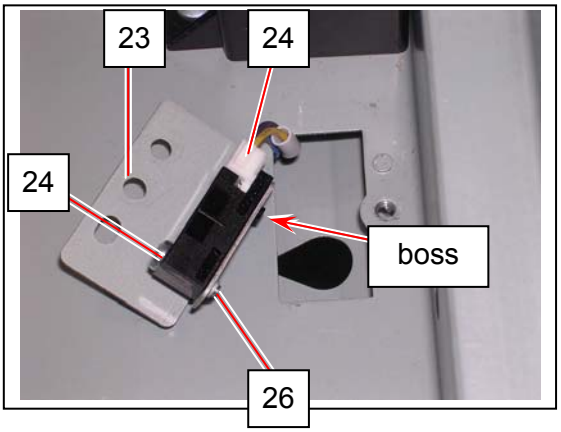




7. Remove 1 screw (22) to release the sensor bracket (23). Remove the connector (24) and t1 screw (25) to replace Sensor (26: PH9) with a new one.

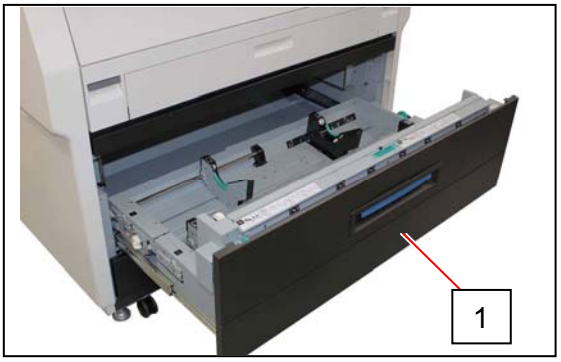




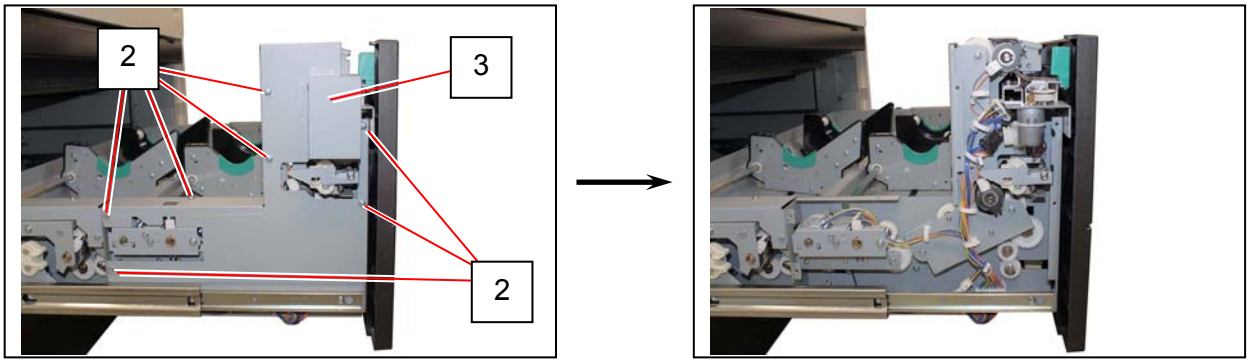


5. 4. 8 Replacement of Sensor (PH8)

1. Draw out the Roll Deck (1).

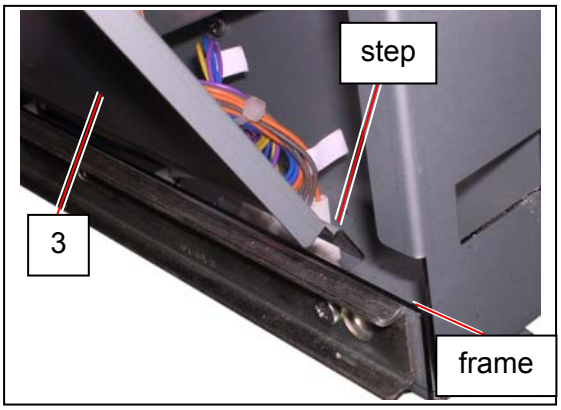


2. Remove 7 screws (2) to remove Cover 14 (3).

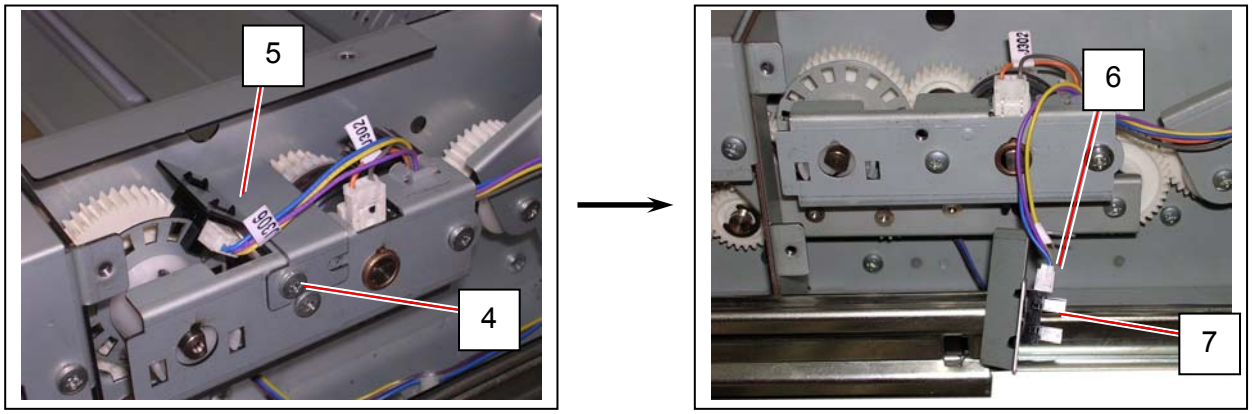


NOTE

Make sure that the step part on the bottom side of Cover 14 (3) is inside the bottom frame.

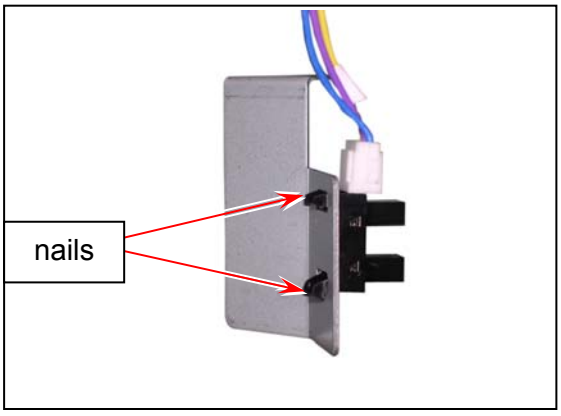


3. Remove 1 screw (4) to release the sensor bracket (5). Remove 1 connector (6) to replace Sensor (7: PH8) with a new one.

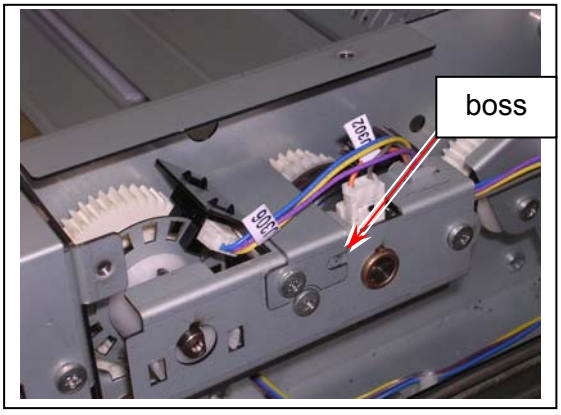


NOTE

(1) When reassembling, fit a boss or nails on the sensor into holes on the sensor bracket.

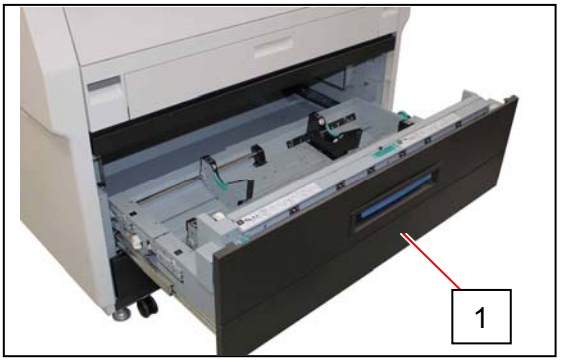


(2) When reassembling, fit the positioning boss on the frame into the notch on the bracket.

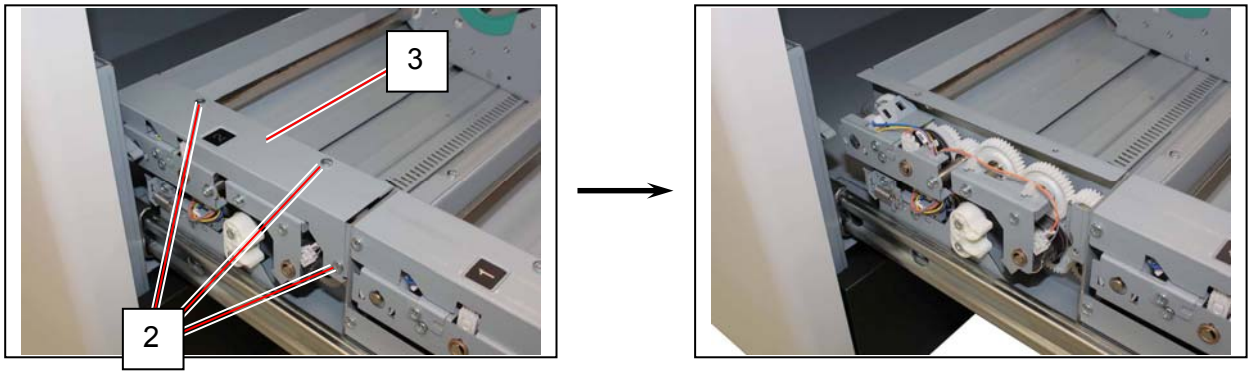


5. 4. 9 Replacement of Sensor (PH10)

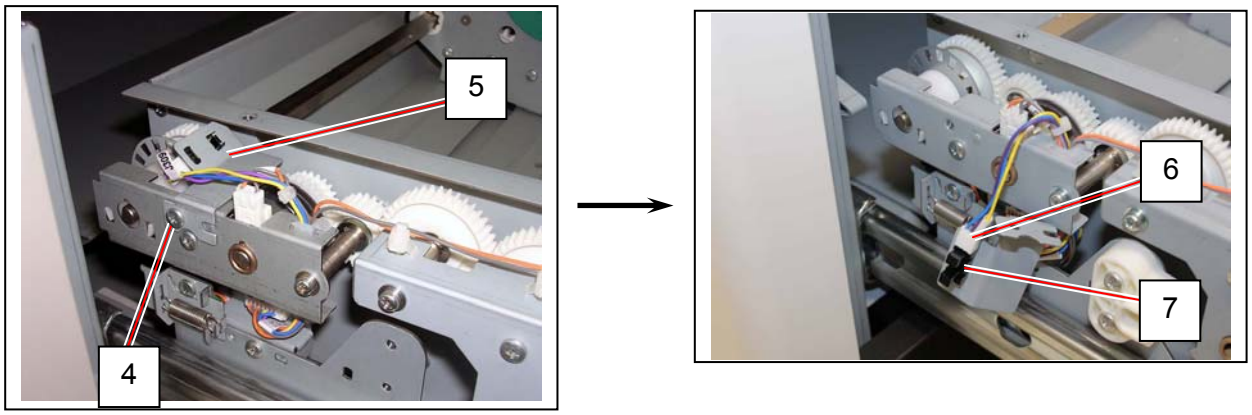
1. Draw out the Roll Deck (1).



2. Remove 3 screws (2) to remove Cover 16 (3).

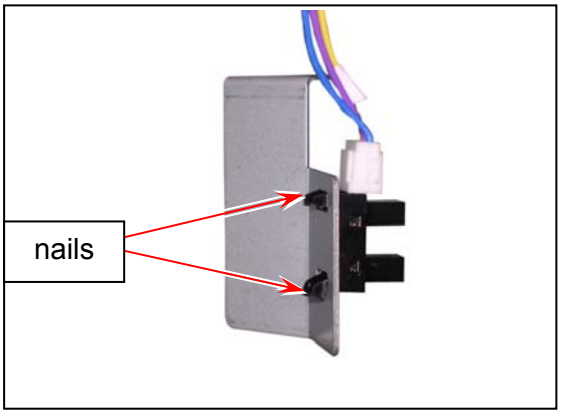


3. Remove 1 screw (4) to release the sensor bracket (5). Remove 1 connector (6) to replace Sensor (7: PH10) with a new one.

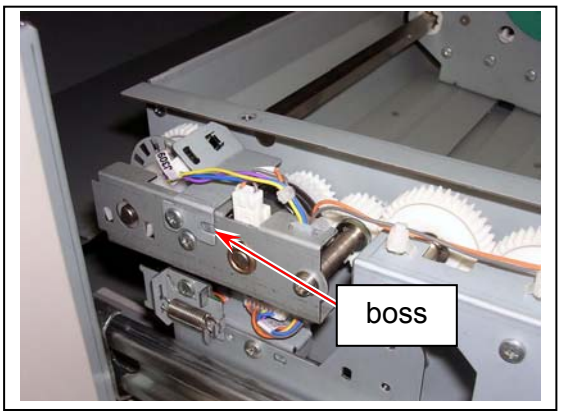


NOTE

(1) When reassembling, fit a boss or nails on the sensor into holes on the sensor bracket.

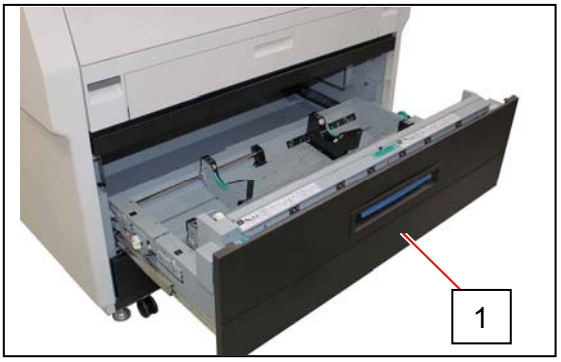


(2) When reassembling, fit the positioning boss on the frame into the notch on the bracket.

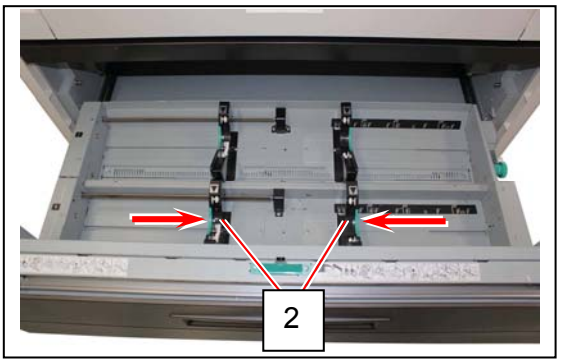


5. 4. 10 Replacement of Dehumidify Heater (Roll 1)

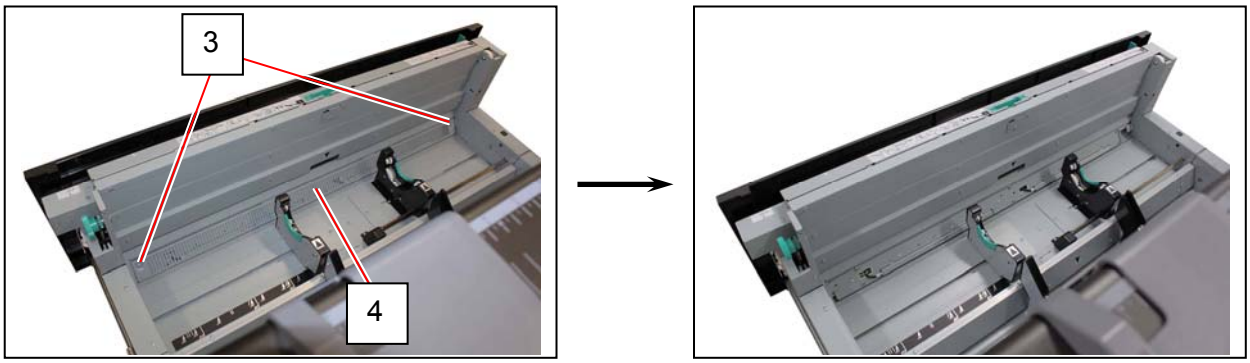
1. Draw out the Roll Deck (1).



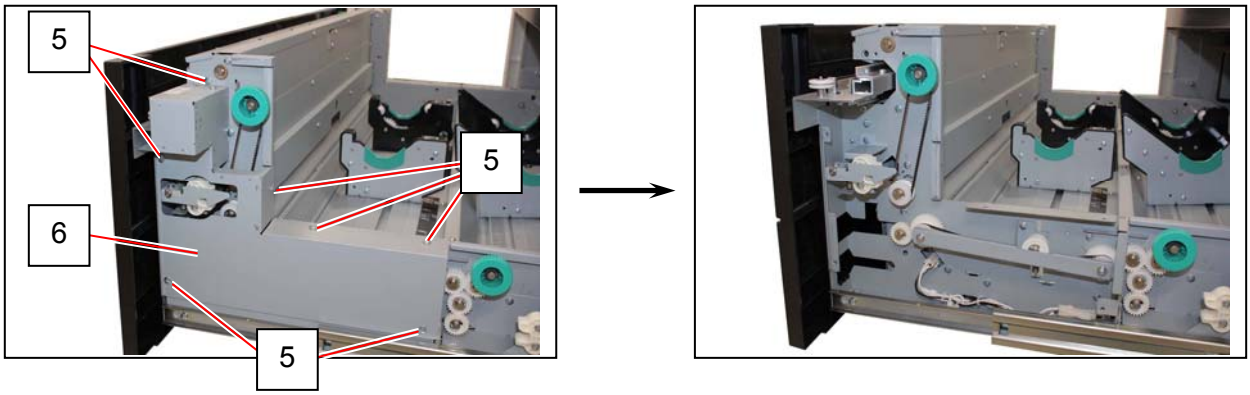
2. Move Slide Guide (2) toward the middle.



3. Remove 2 screws (3) to remove Cover 15 (4).

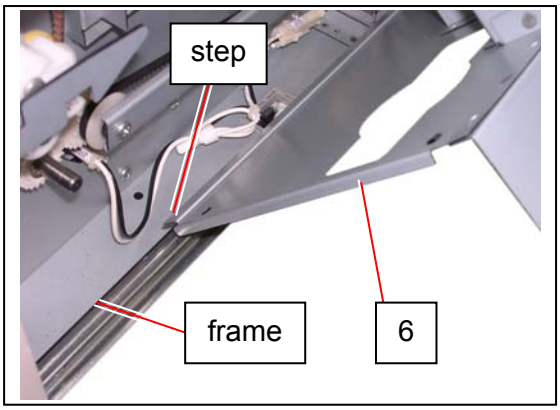


2. Remove 7 screws (5) to remove Cover 22 (6).

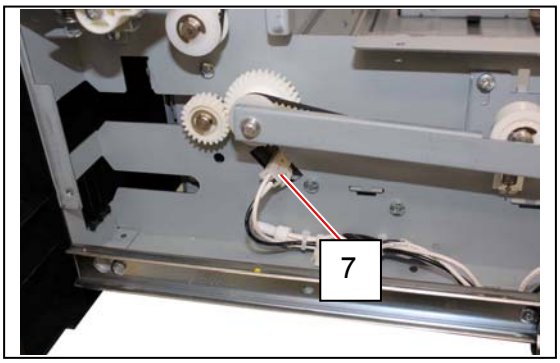


NOTE

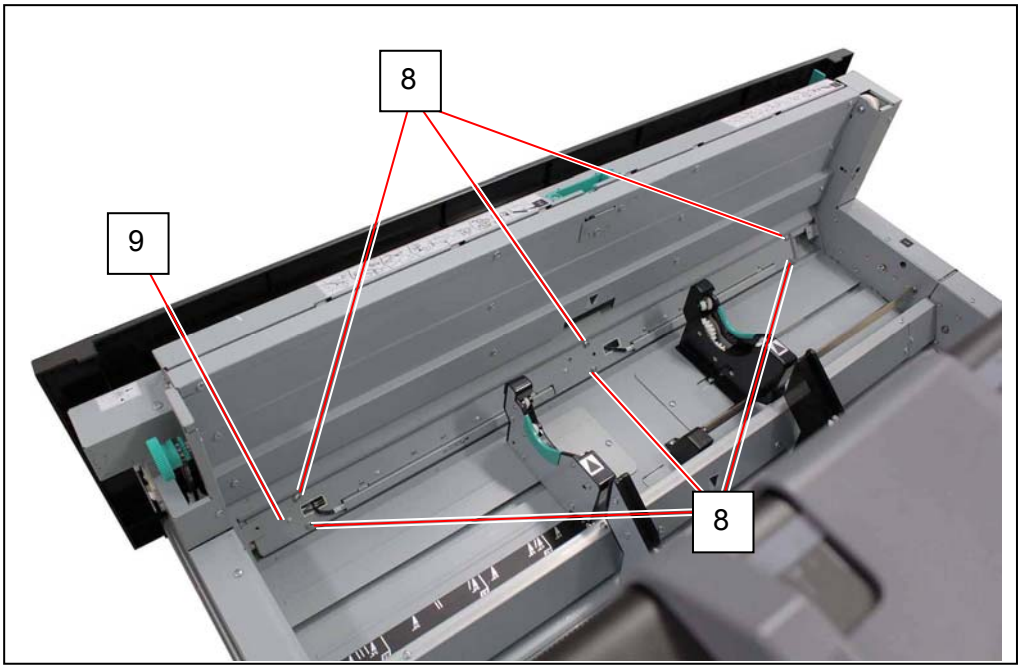
Make sure that the step part on the bottom side of Cover 22 (6) is inside the bottom frame.

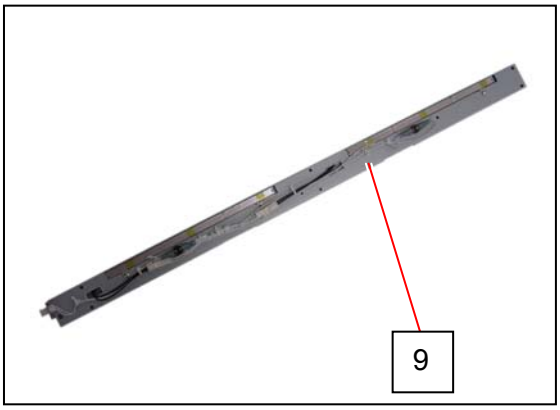


5. Disconnect 1 connector (7).

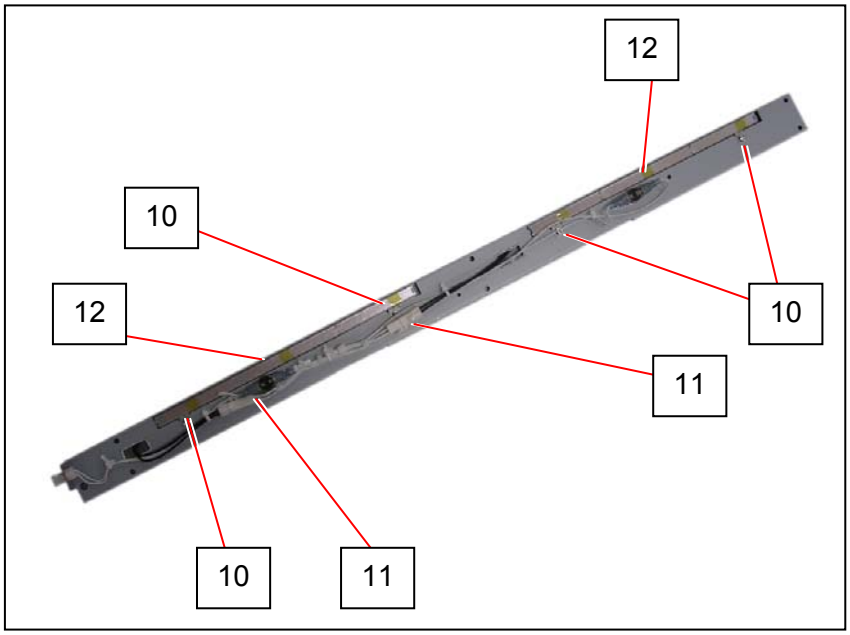


6. Remove 6 screws (8) to remove Roll 1 dehumidifier casing (9).



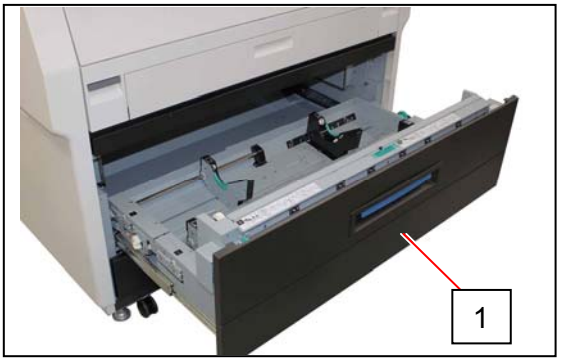


7. Remove 2 screws (10) and 1 connector (11) from each Resistor (12).
Replace Resistor (square type) with a new one.

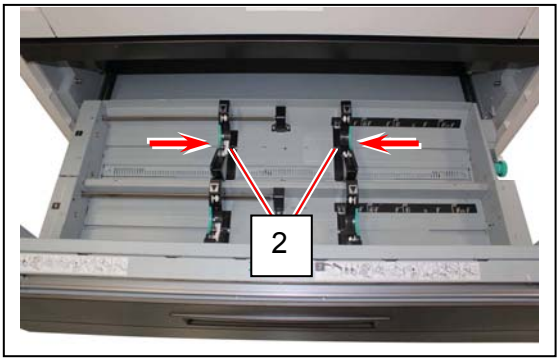


5. 4. 11 Replacement of Dehumidify Heater (Roll 2)

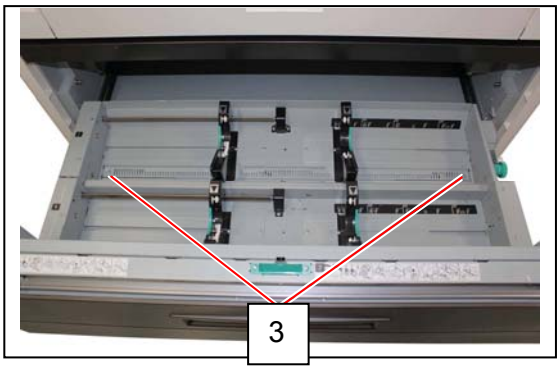
1. Draw out the Roll Deck (1).



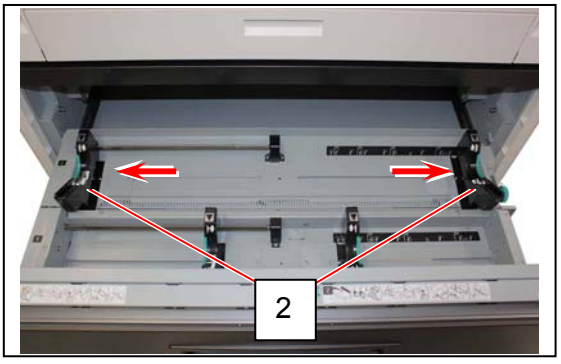
2. Move Slide Guide (2) toward the middle.



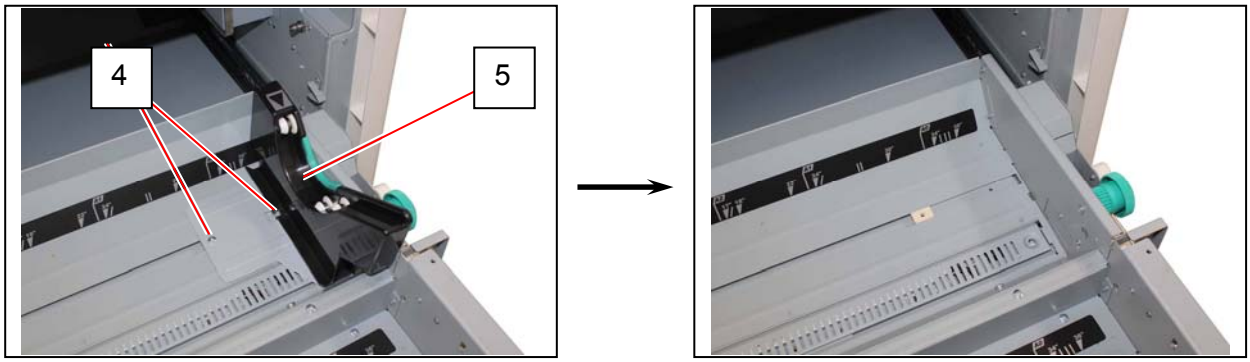
3. Remove 2 screws (3).



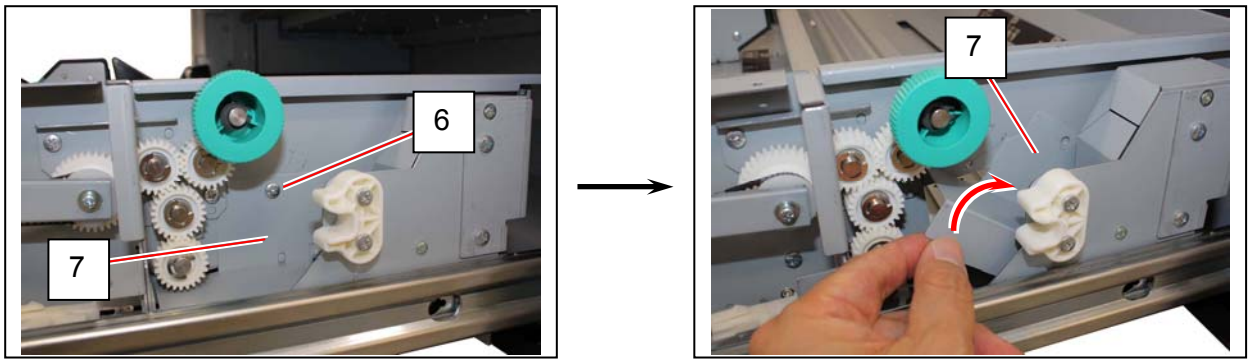
4. Move Slide Guide (2) toward the far end.



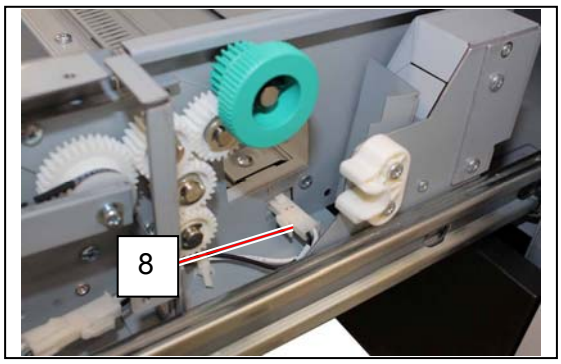
5. Remove 2 screws (4) to remove Slide Guide 2 R Assy (5).



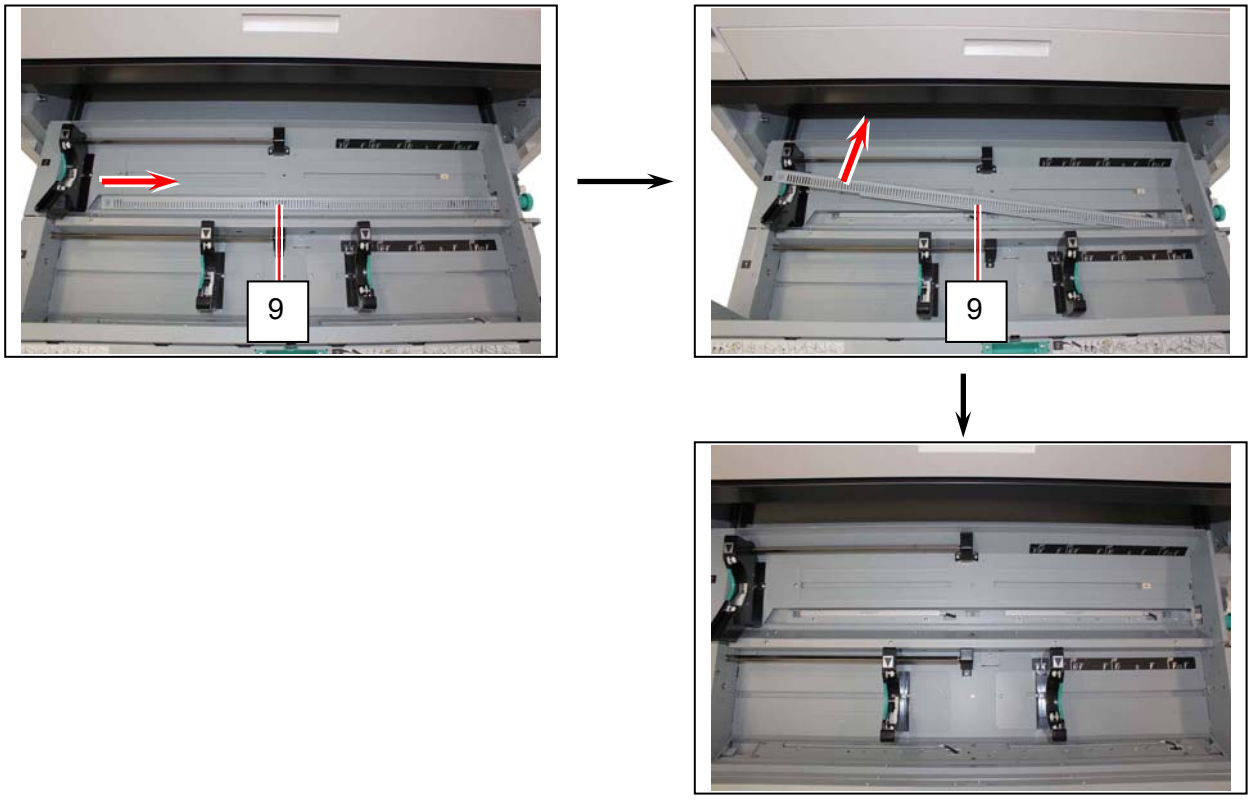
6. Remove 1 screw (6) to move Cover 7 (7).



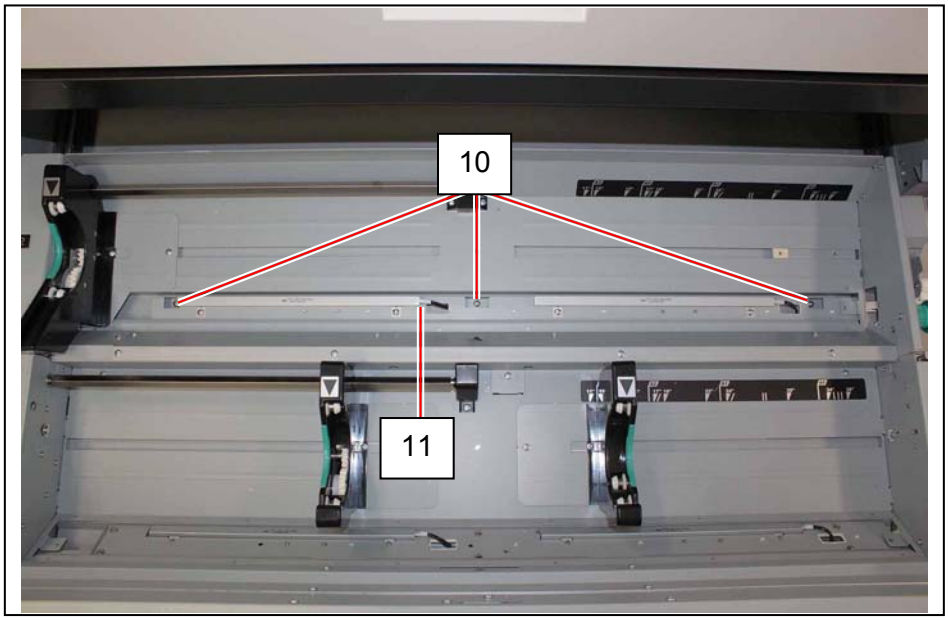
7. Disconnect 1 connector (8).

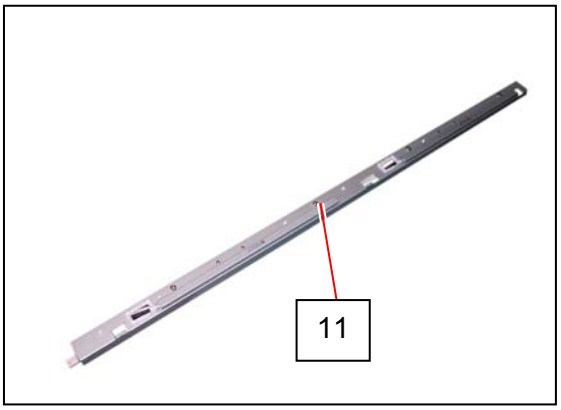


8. Move Cover 4 (9) to the arrow direction to remove it.

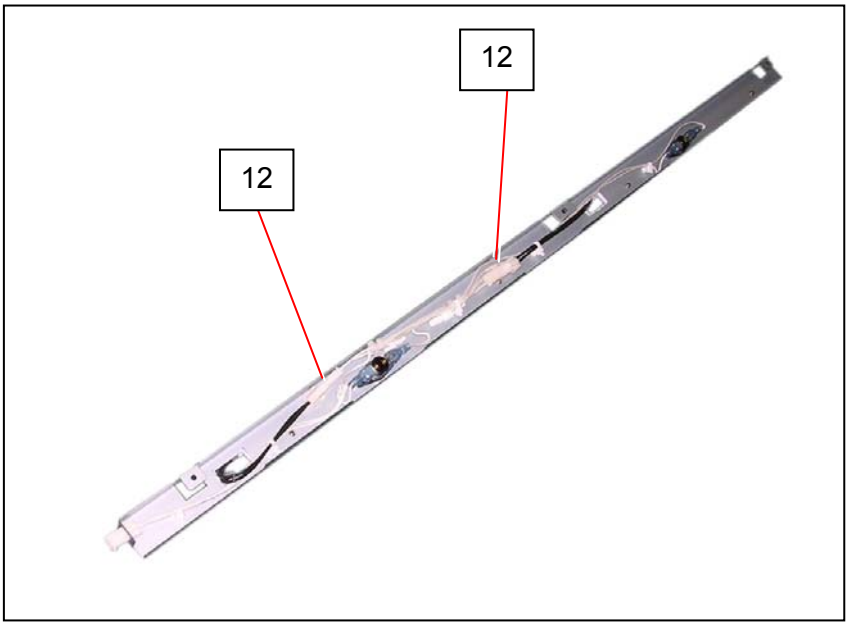


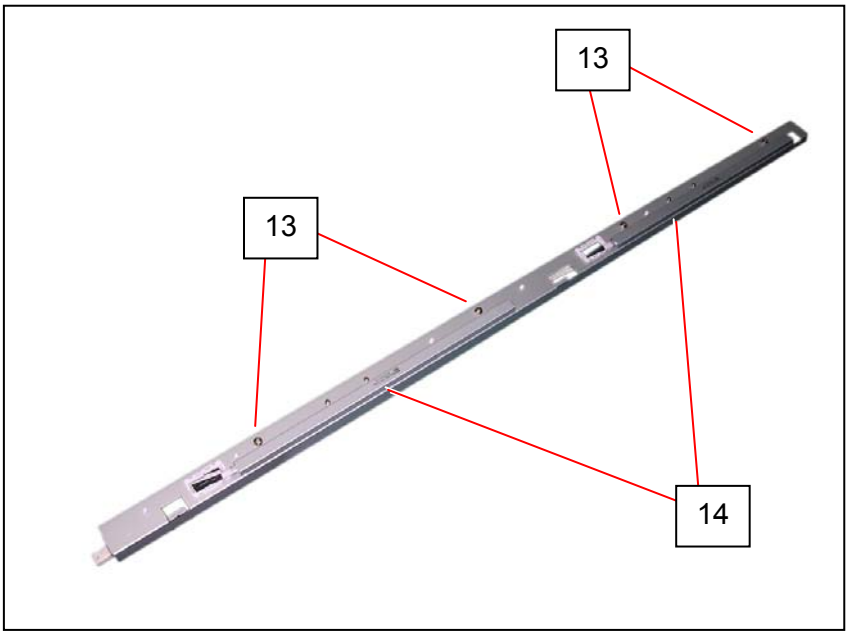
9. Remove 3 screws (10) to remove Roll 2 dehumidifier casing (11).





10. Disconnect 1 connector (12). Remove 2 screws (13).
Remove and replace Resistor (square type) (14) with a new one.

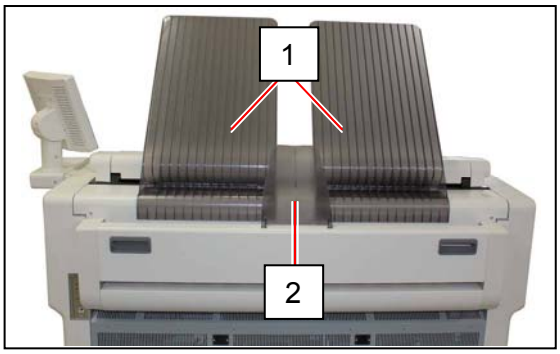




5. 5 Photoconductive Drum

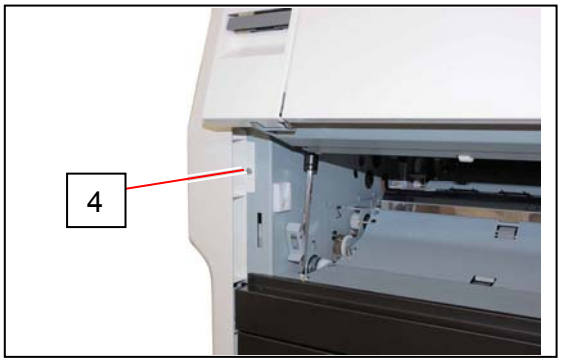
5. 5. 1 Replacement of the Photoconductive Drum

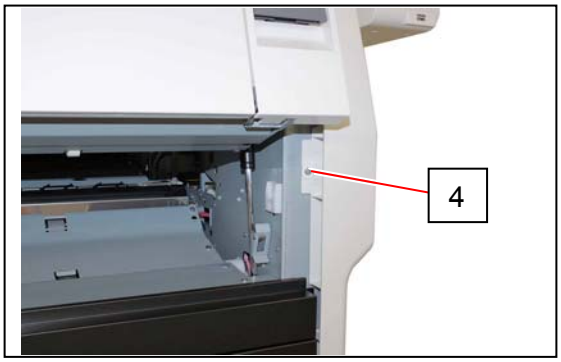
1. Remove 2 pieces of Exit Tray (1) and Exit Tray 2 (2).



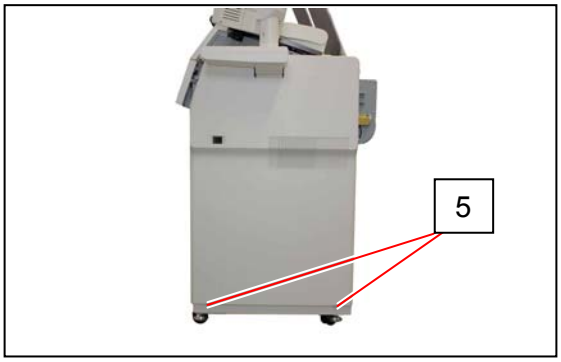
2. Pull up the Lever 2 (3) to open the Engine Unit.

3. Remove the screws (4) at both sides.

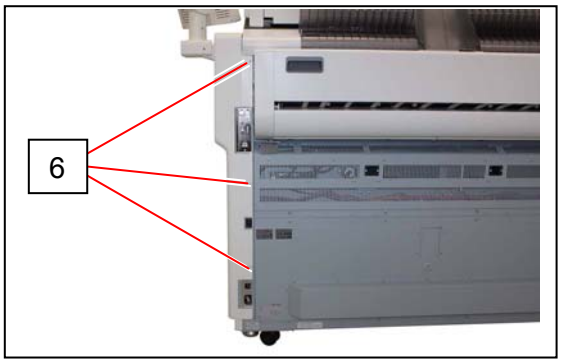


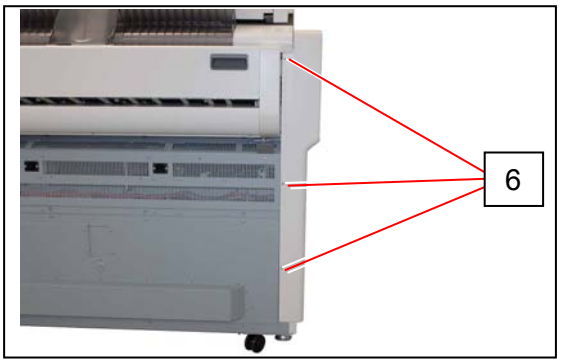


4. Remove 4 pieces of screw (5) at both sides.



5. Remove 5 pieces of screw (6) at both sides.

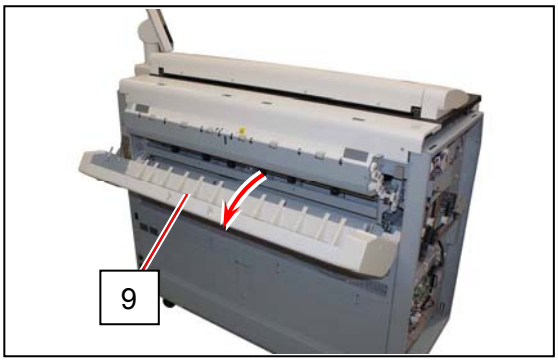


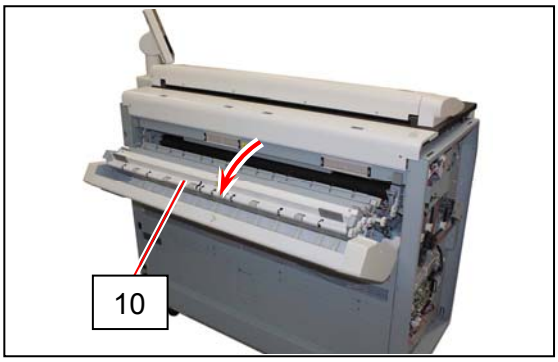


6. Remove both Cover 2 (7) and Cover 3 (8).

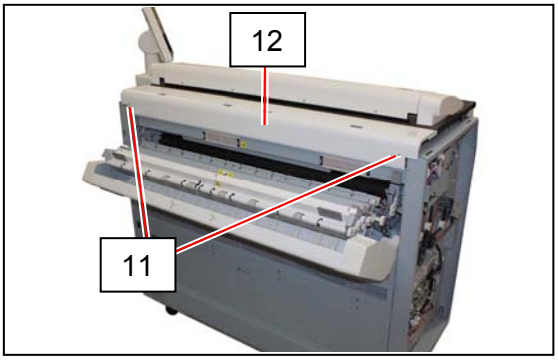
7. Close the Engine Unit.

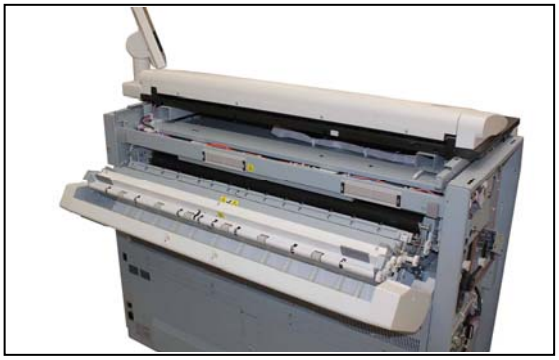
8. Open the Paper Exit Assy (Outside (9) & Inside (10)).



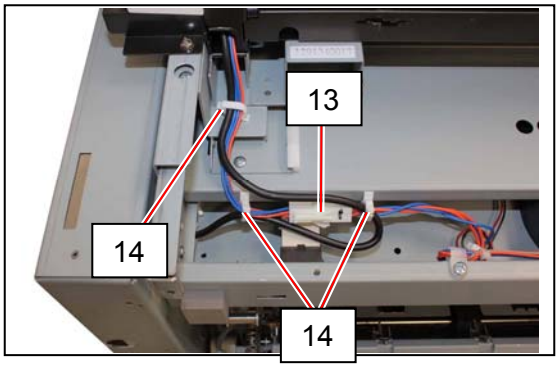


9. Remove 2 screws (11) to remove Cover 10 (12).

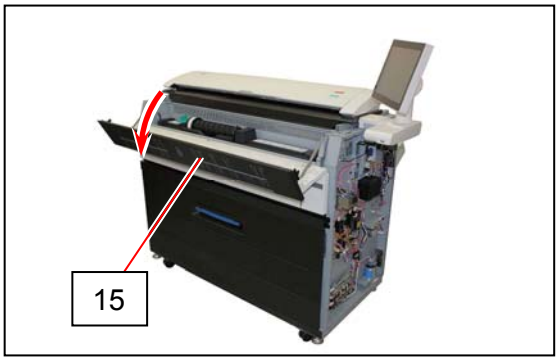




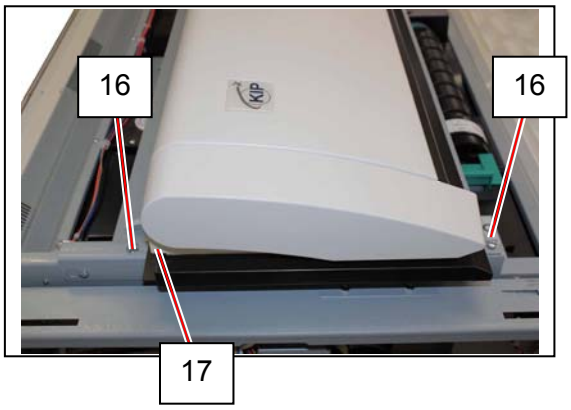
10. Disconnect the connector (13), and open the wire saddles (14) to release the harness.

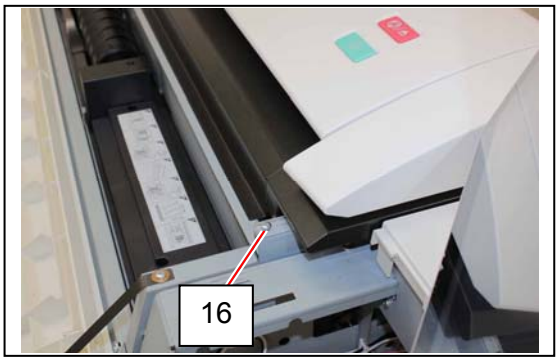


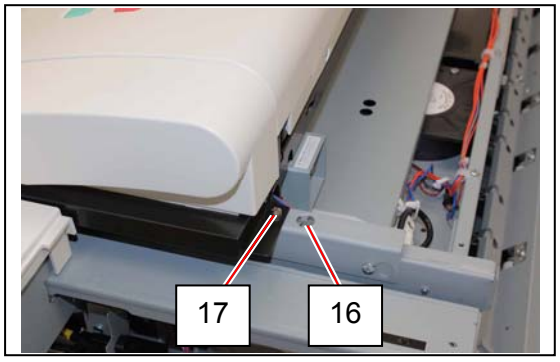
11. Open the Cover 4 (15).



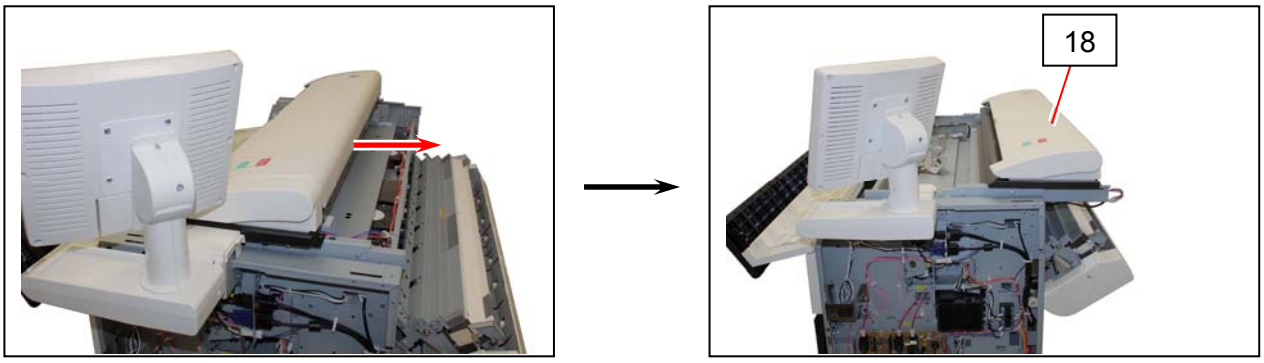
12. Remove 4 pieces of 4x6 screw (16) and 2 pieces of washer screw (17).



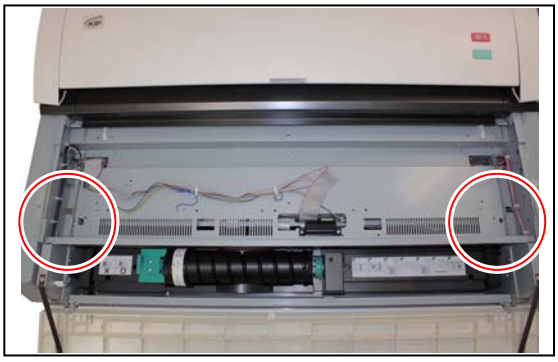


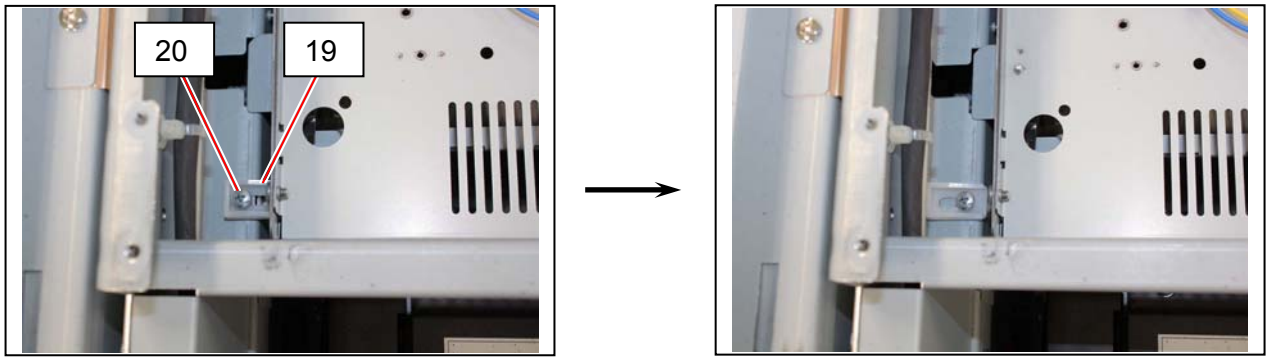


13. Slide the Scanner Unit (18) fully backward.



14. There are 2 pieces of Stopper (19) at both sides, which lock the LED Head Frame.
Loosen the screw (20) and then slide the Stoppers (19) outside to unlock the LED Head Frame.

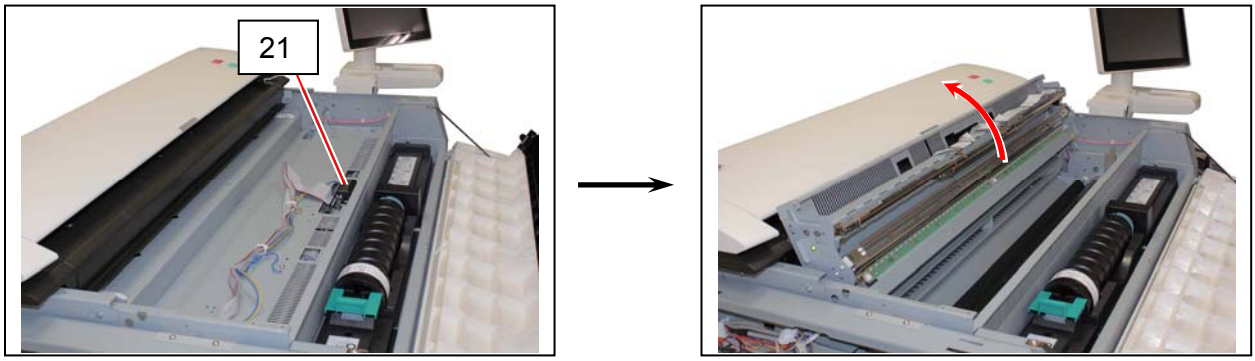




Lock position

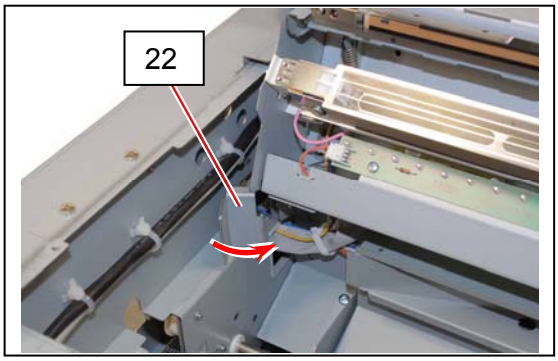
Unlock position

15. Open the LED Head Frame (21).

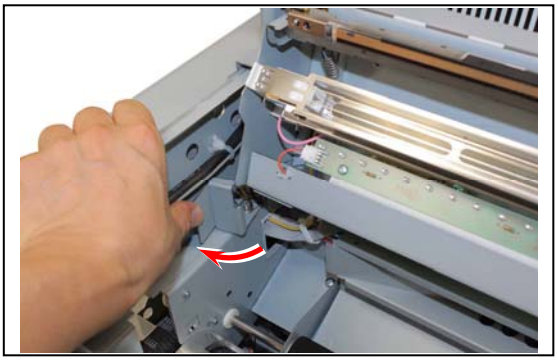


NOTE

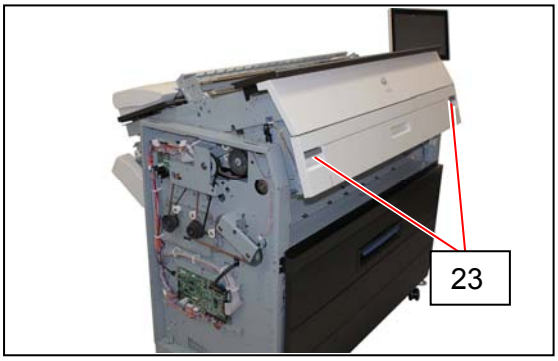
The Stopper 2 (22) comes out automatically to prevent the LED Head Frame from falling down.



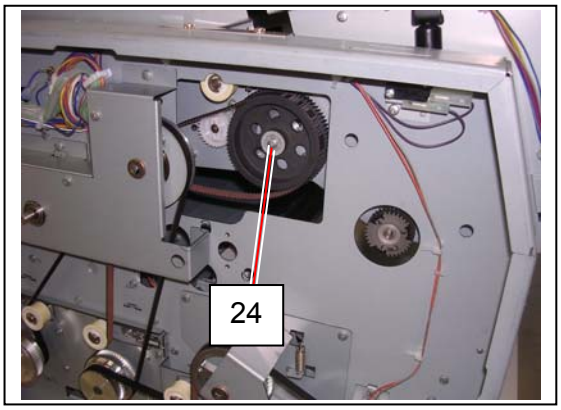
Press the Stopper 2 as the right photo if you will close the LED Head Frame.

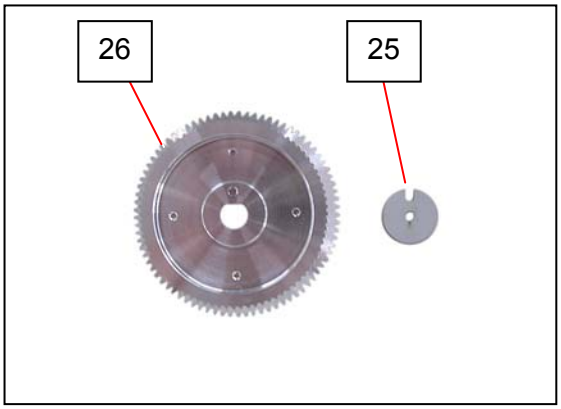


16. Pull up the Lever 2 (23) to open the Engine Unit.



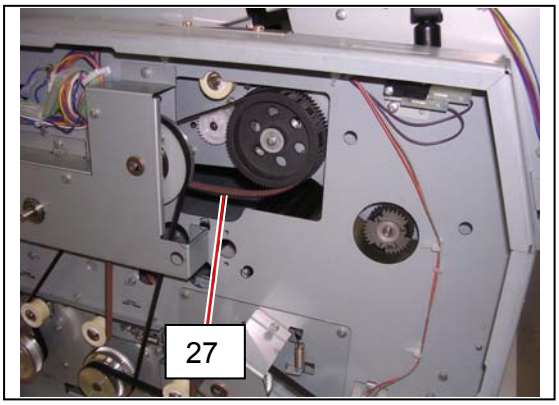
16. Remove 1 tooth washer screw (24: M4x8), and remove Plate 2 (25) and Pulley Gear (26).



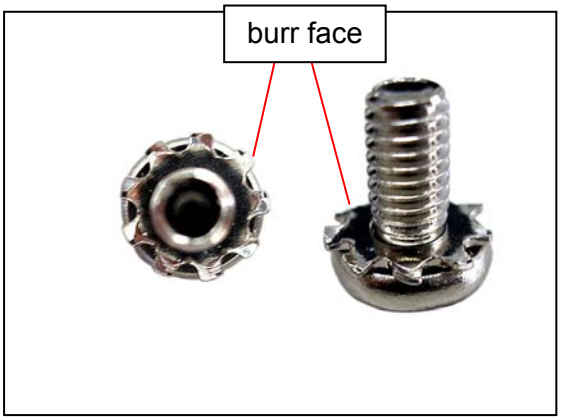


NOTE

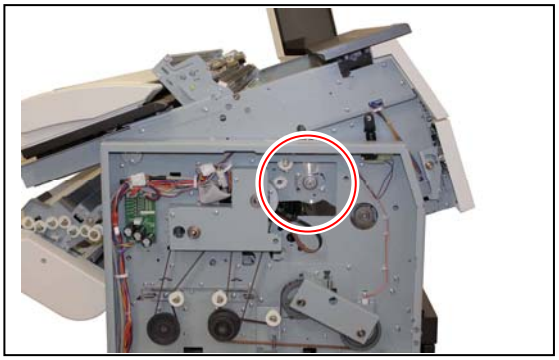
(1) Belt 4 (27) is automatically loosed with Engine Unit open.
It will be strained with Engine Unit closed.

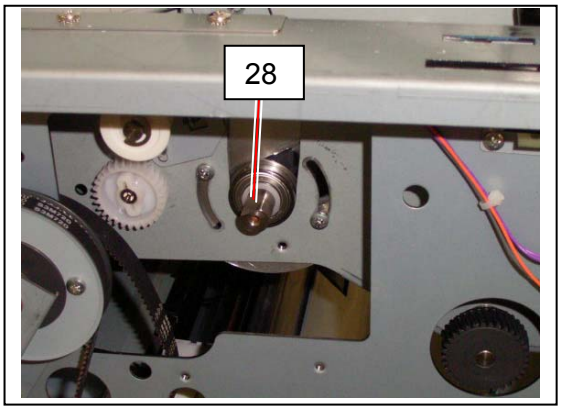


(2) The tooth washer screw (24) has a tooth washer of which burr face meets the composition surface.



17. Remove the Collar (28) from the left Drum Shaft.

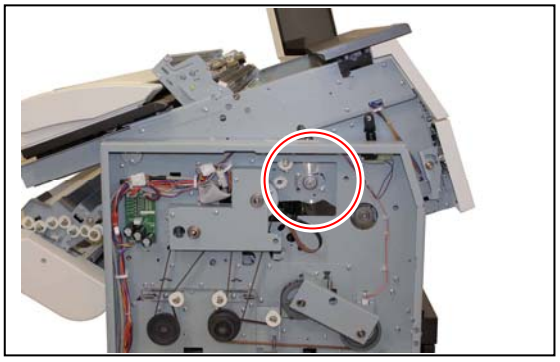


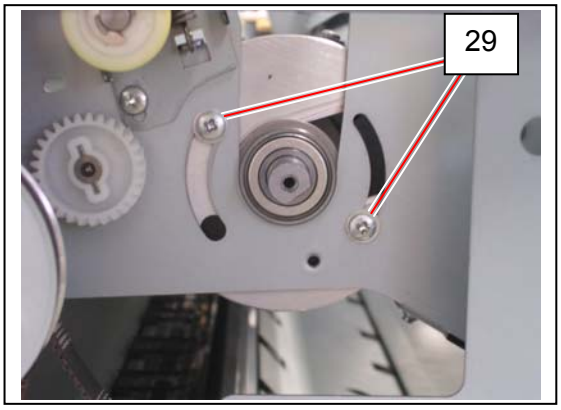


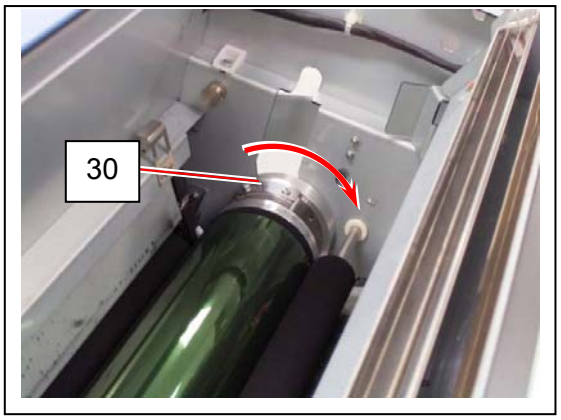
NOTE

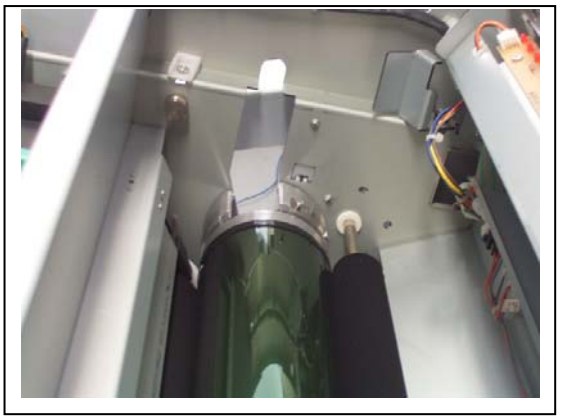
The new (spare) Drum Assembly does not include the Collar (28).
So please reuse it.

18. There are 2 pieces of screw (29) on the left which fix the Block (30).
Loosen these screws (29) and rotate the Block (30) as the arrow marks.

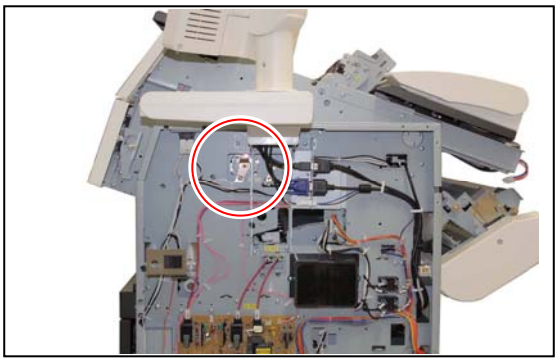


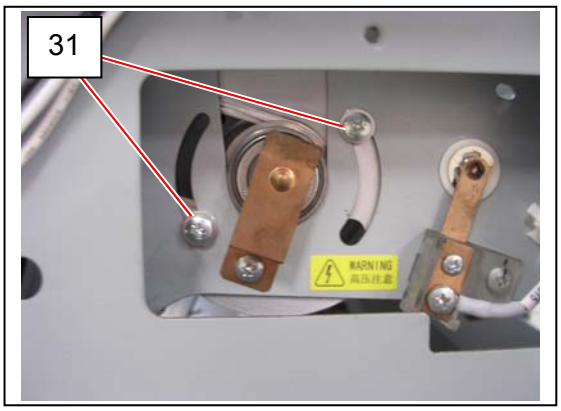


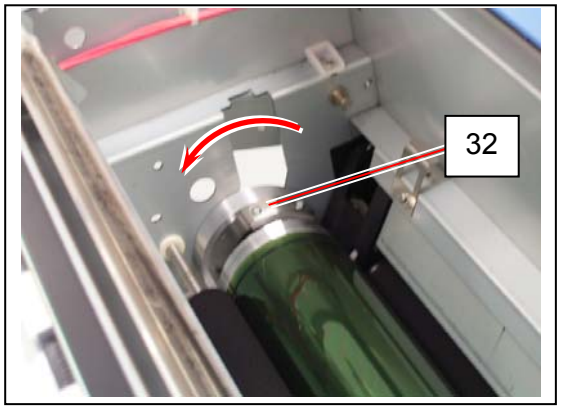


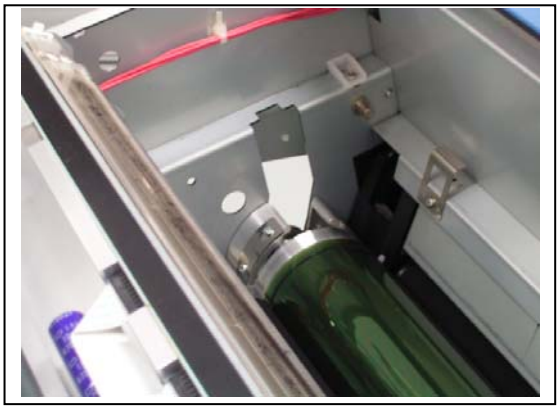


19. Similarly loosen 2 pieces of screw (31) on the right and rotate the Block 2 (32) as the arrow marks.

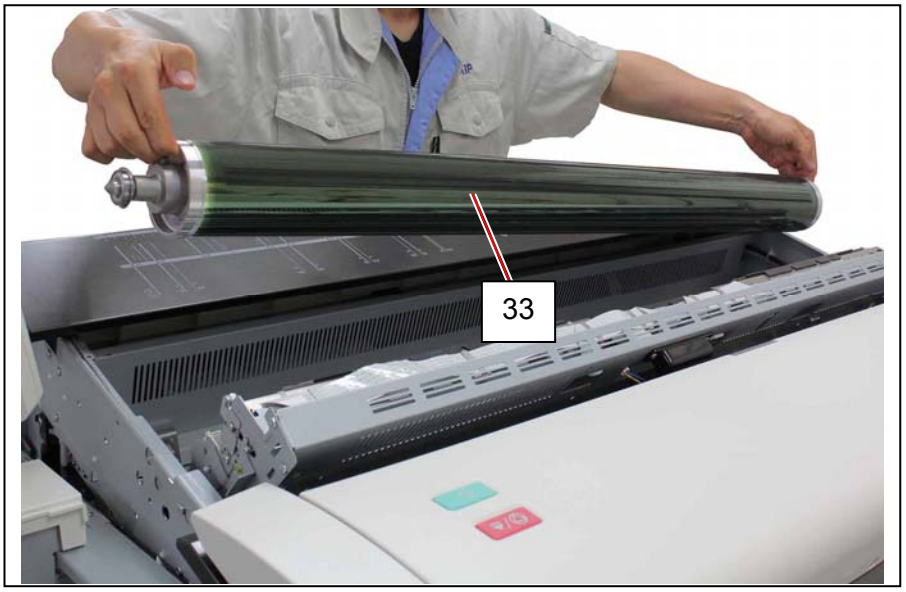








20. Remove Photoconductive Drum (33), and replace it with the new one.

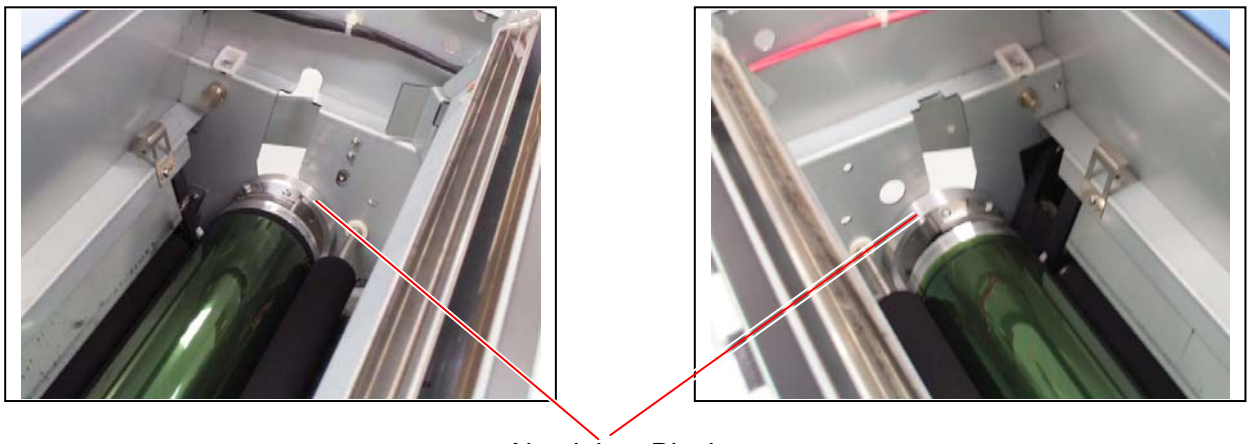


⚠ NOTE

The Aluminium Block (30) and (32) maintain the focus of the LED Head.
Therefore it is necessary to re-position them correctly after replacing the Photoconductive Drum.
Please fix them making reference to [5.5.2 How to fix the Aluminium Blocks].

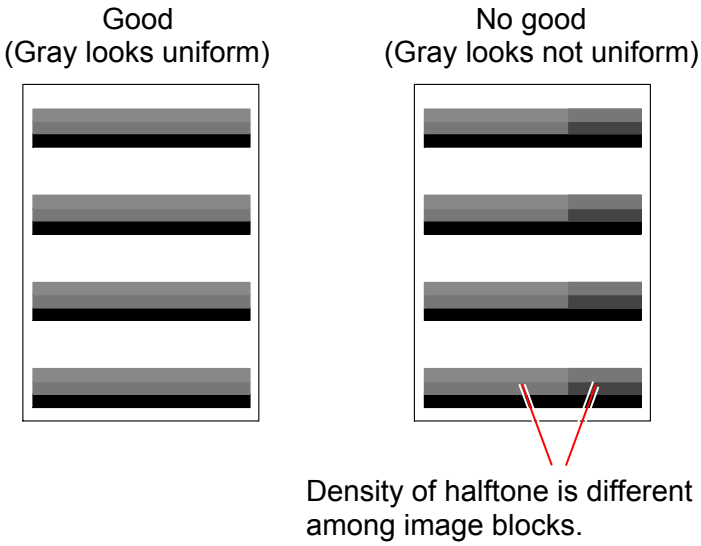
5. 5. 2 How to fix the Aluminium Blocks

There are Aluminium Blocks at both sides of the Drum Shaft.
As they maintain the focus of LED Head, it is necessary to re-position them correctly after replacing the Photoconductive Drum.



Aluminium Blocks

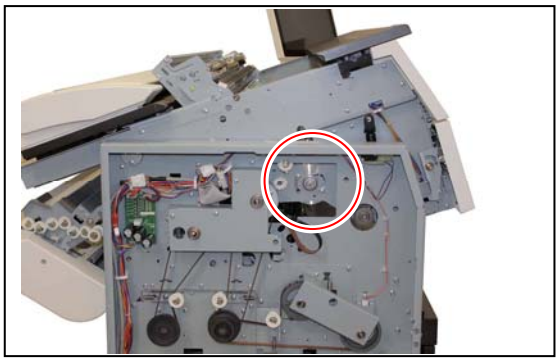
Print out the Test Pattern No.3 to check if the Aluminium Blocks are fixed at the correct position.
The density of halftone is uniform as the following left image if the Aluminium Blocks are fixed at the correct positions (focus is good).
But the density of halftone is different among image blocks as the following right image if blocks are not fixed correctly (focus is not good).



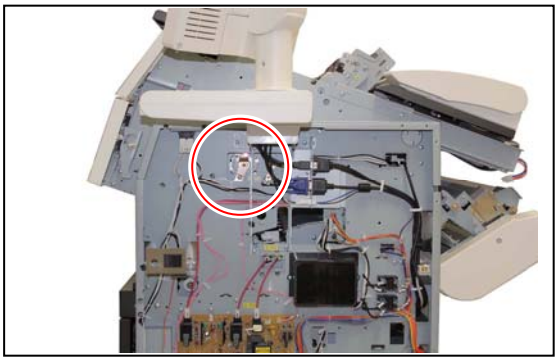
If the focus of LED Head is not good, fix the Aluminium Blocks properly making reference to the next page.

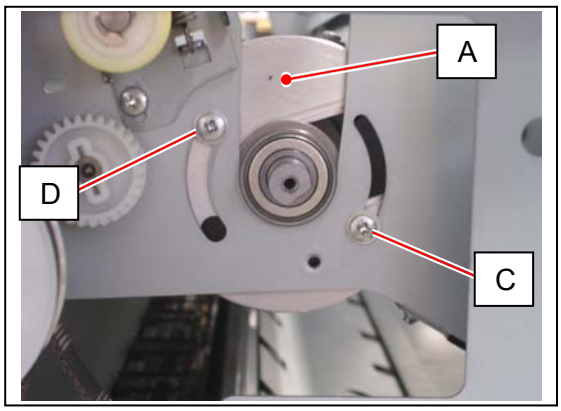
There are Aluminium Blocks (A) (B) at both sides, and each of them is fixed with 2 screws (C) (D).

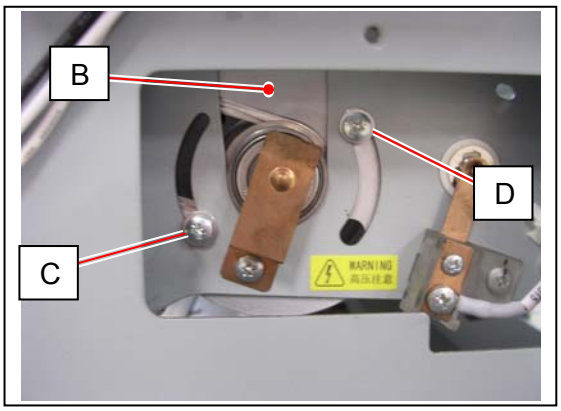
Left side



Right side



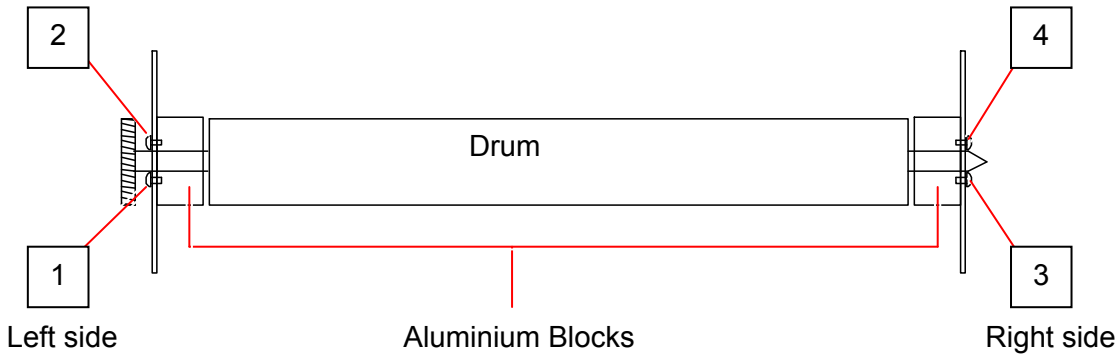




Do as follows to fix the Aluminium Blocks correctly.

a) Always fix the Aluminium Block of the **left (A) first and then right (B).**
b) When you tighten 2 screws (C) (D) to fix each Aluminium Block, always tighten **the lower one (C) first and then the upper one (D)**.

The following picture shows the order to tighten the screws. **Tighten in the order as 1 to 4 necessarily**.

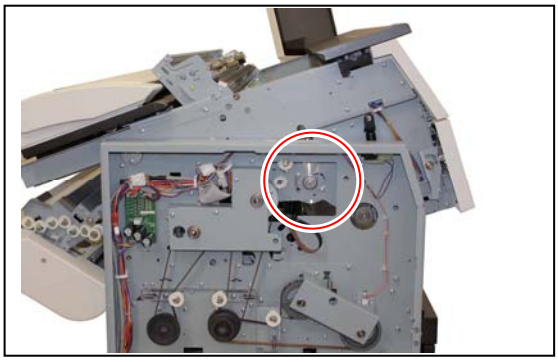


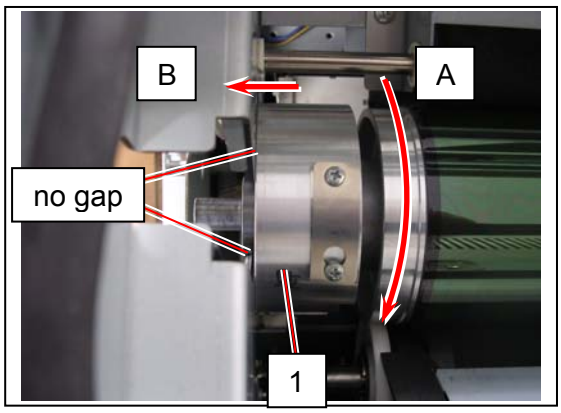
NOTE

The focus of LED Head will become defective if you do not satisfy the above requirements.
Refer to the later pages for greater details.
Using Drum Block Fix Tool (P/N Z168580040) is recommended.

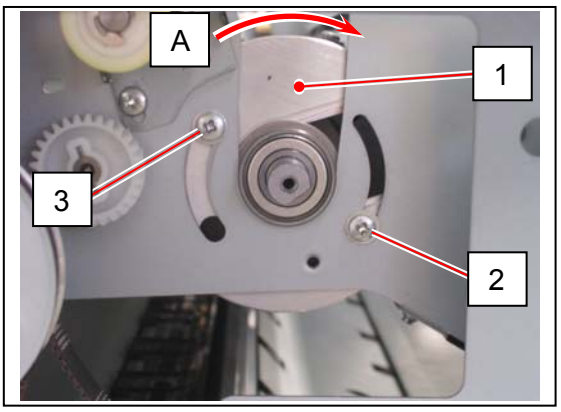
5. 5. 2. 1 Fixing Block with Drum Block Fix Tool

1. Rotate the left Block (1) fully to the arrow direction (A: to front) and also press it to the arrow direction (B: to outside). This will remove any gap between Block (1) and the side frame of the machine.
   With holding Block (1), tighten the screws (2) (3) just enough turn to fix Block (1) temporarily.





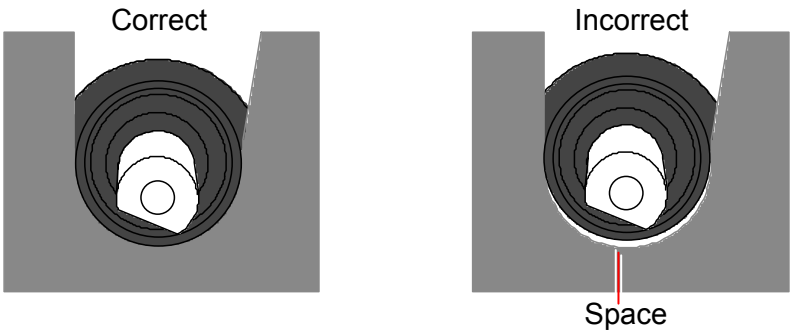
(Seen from the top of machine)



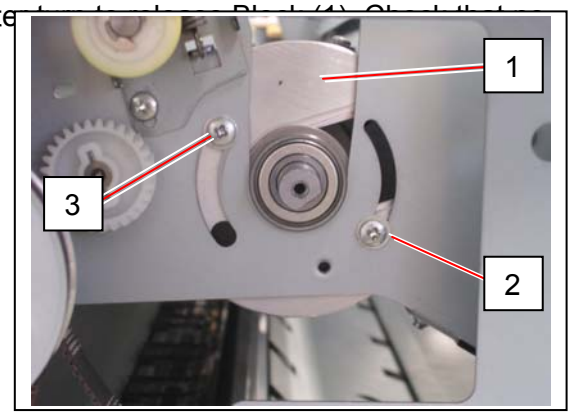
(Seen from the outside of machine)

NOTE

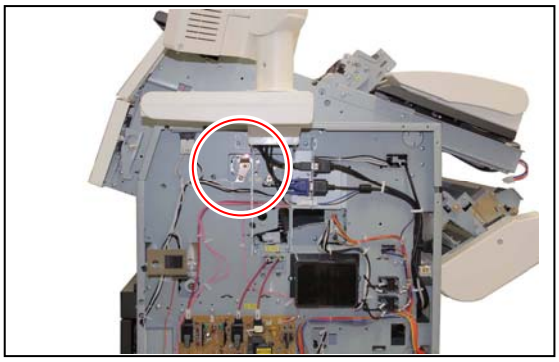
There should be no space between the Bearing and U-shape opening.
The LED focus will become defective if there is any space.

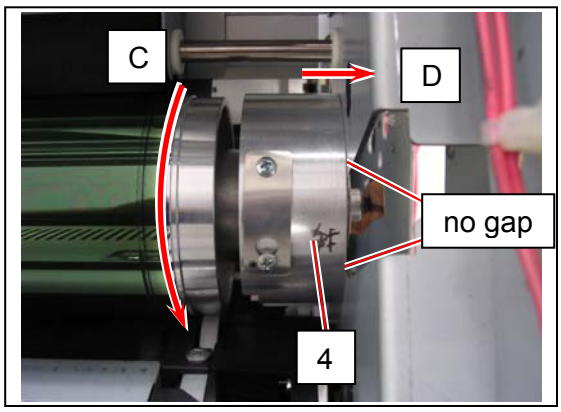


2. Loosen the screws (2) (3) in a (approximately) quarte
excessive backlash to sideways appears.

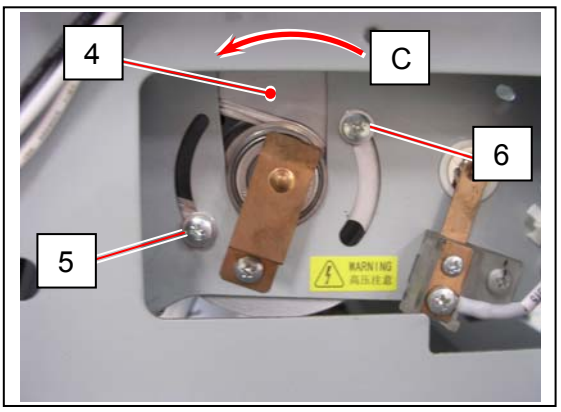


3. Similarly to step 1, rotate the right Block (4) fully to the arrow direction (C: to front) and also press it to the arrow direction (D: to outside). This will remove any gap between Block (4) and the side frame of the machine.
With holding Block (4), tighten the screws (5) (6) just enough turn to fix Block (6) temporarily.



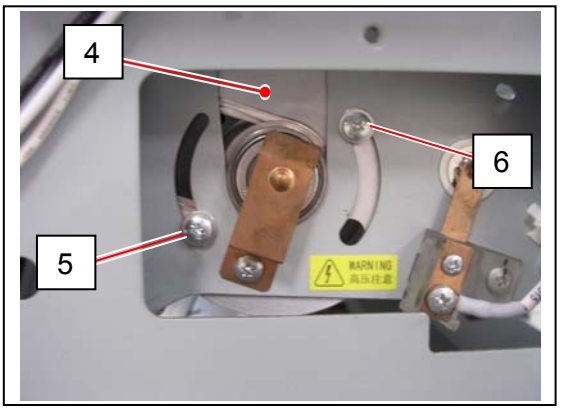


(Seen from the top of machine)

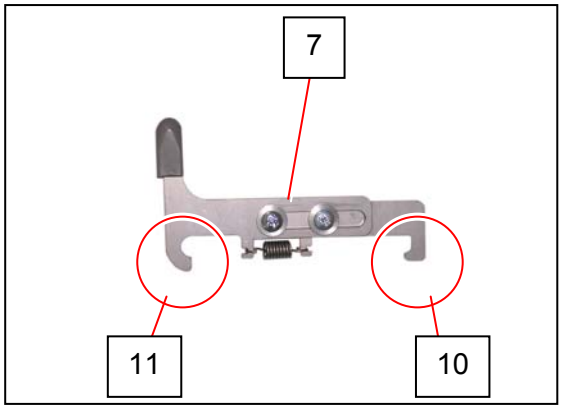


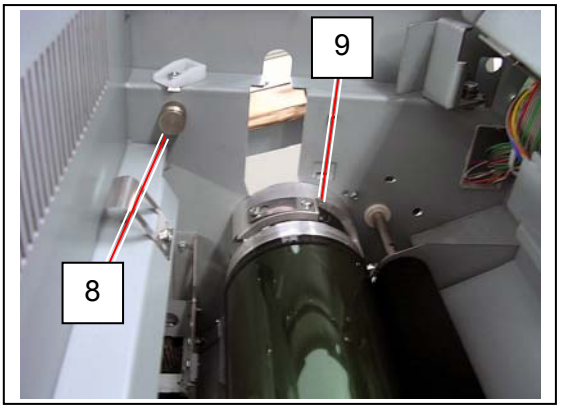
(Seen from the outside of machine)

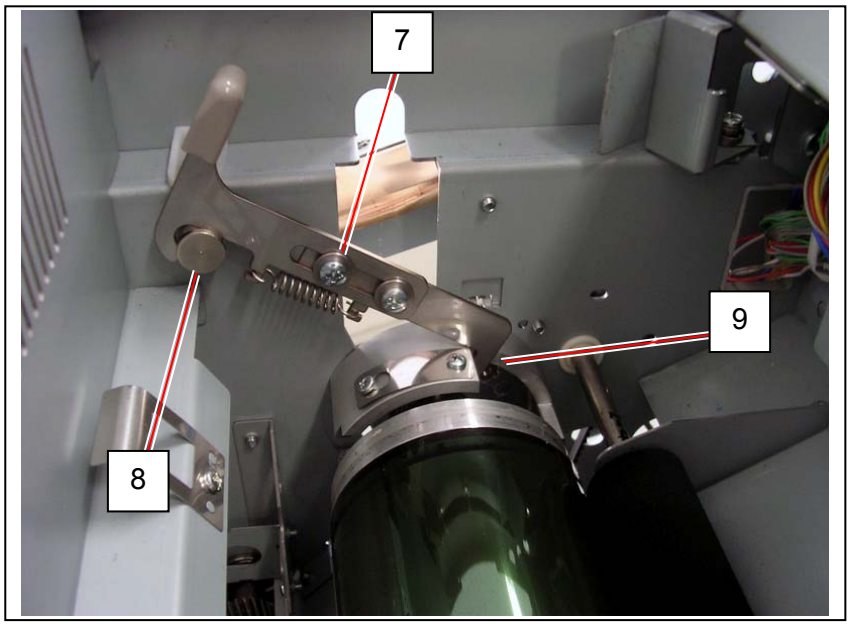
4. Loosen the screws (5) (6) in a (approximately) quarter turn to release Block (4). Check that no excessive backlash to sideways appears.



5. On the left side, hook Drum Block Fix Tool (7) on between the pin (8) on the frame and the U-shape opening (9) of Block (1).
Hook the rear hook (10) the rim of the U-shape opening (9) and the front hook (11) in the groove of the pin (8).



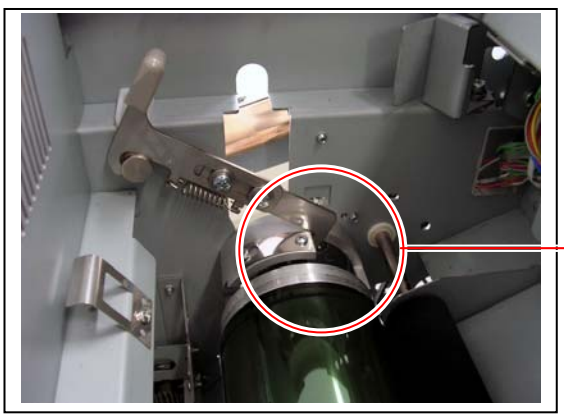


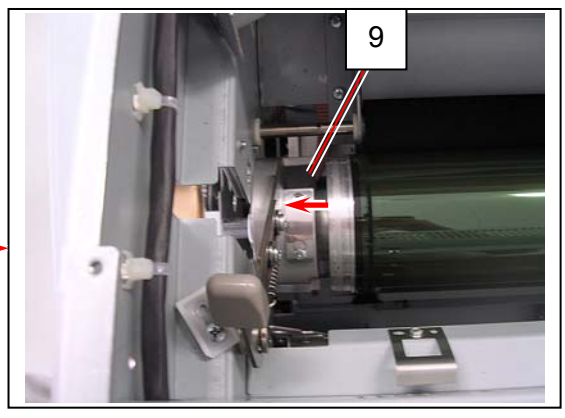


NOTE

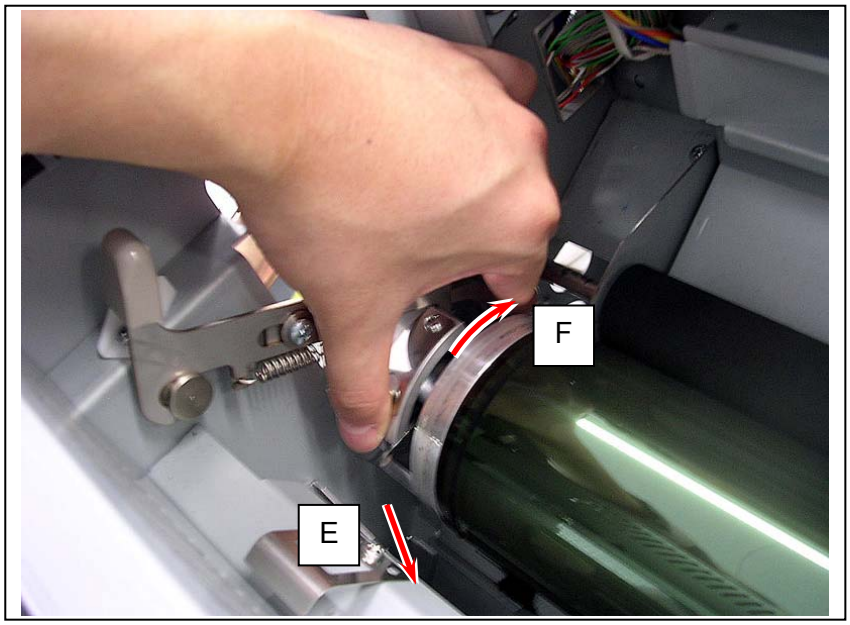
(1) Handle Drum Block Fix Tool with care. Be sure not to damage Drum or any other components when removing/attaching it.

(2) Set the rear hook (10) against the corner rim of U-shape opening (9).

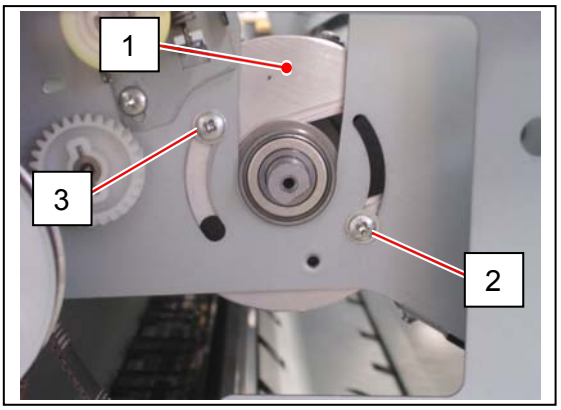




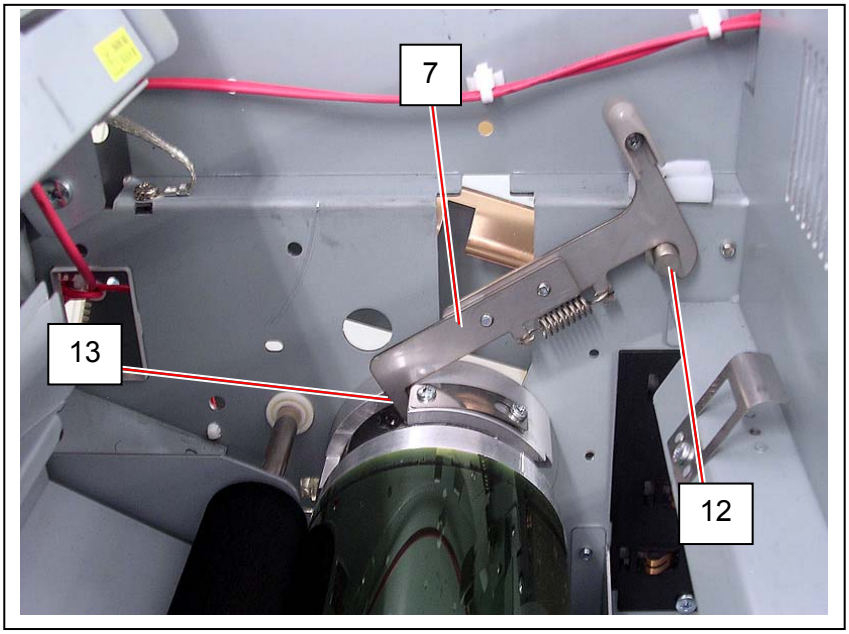
6. With pressing Block (1) down (E), slightly turn Block to the arrow direction (F) and release it to locate Block correctly by restoring spring.



7. Tighten the lower screw (2) and then the upper screw (3) to secure Block (1).



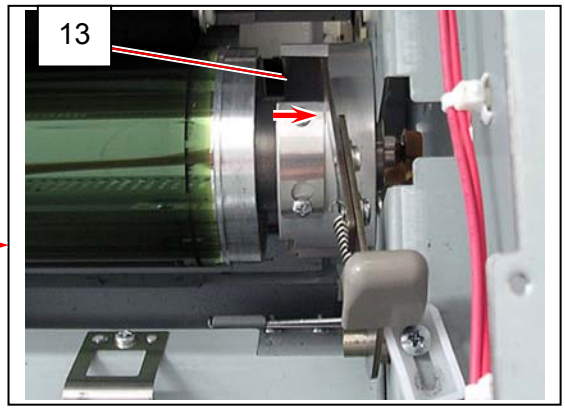
8. Similarly to step 5, on the right side, hook Drum Block Fix Tool (7) on between the pin (12) on the frame and the U-shape opening (13) of Block (4).



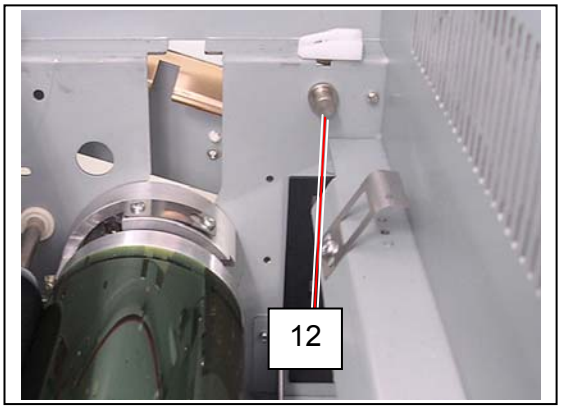
NOTE

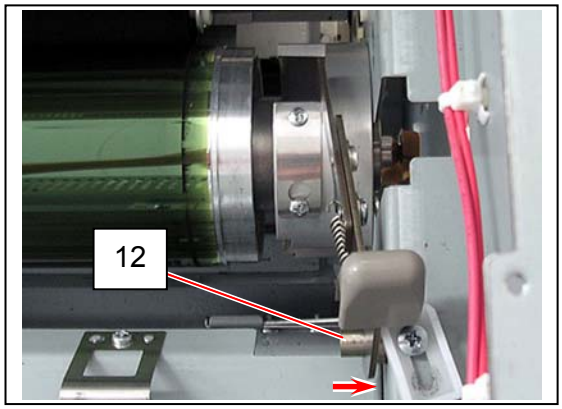
(1) Handle Drum Block Fix Tool with care. Be sure not to damage Drum or any other components when removing/attaching it.

(2) Set the rear hook (10) against the corner rim of U-shape opening (13).

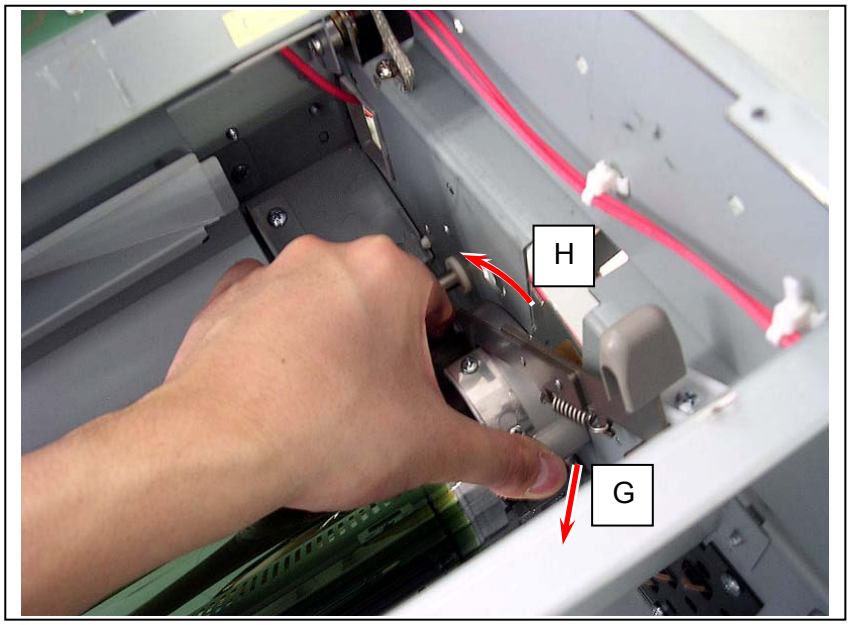


(3) Set the front hook (11) against the step on the pin (12).

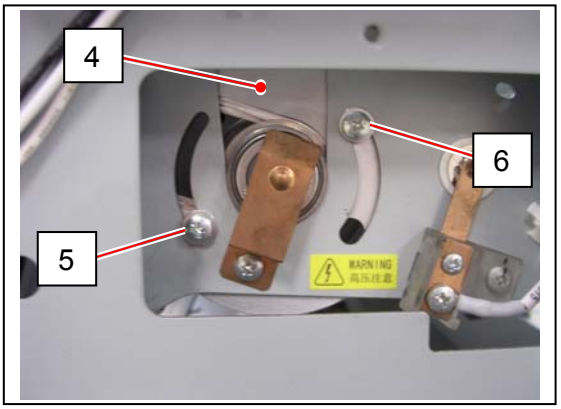




9. Similarly to step 6, with pressing Block (4) down (G), slightly turn Block to the arrow direction (H) and release it to locate Block correctly by restoring spring.



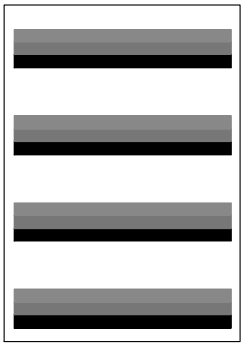
10. Tighten the lower screw (5) and then the upper screw (6) to secure Block (4).



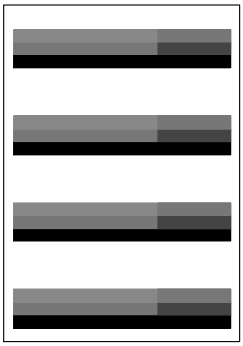
11. Remove Drum Block Fix Tool. Replace all the parts in position and turn on the machine.

12. Print out the Test Pattern No.3, and confirm that the density of halftone is uniform.
If it is still not uniform, fix Blocks again.

Good
(Gray looks uniform)



No good
(Gray looks not uniform)

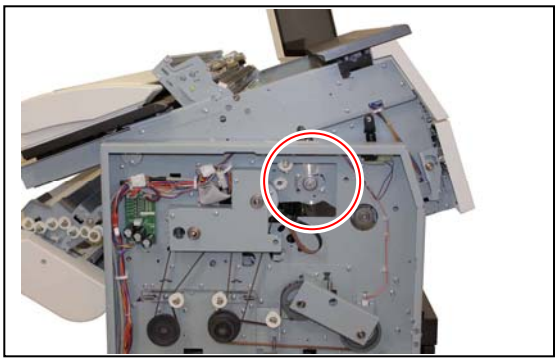


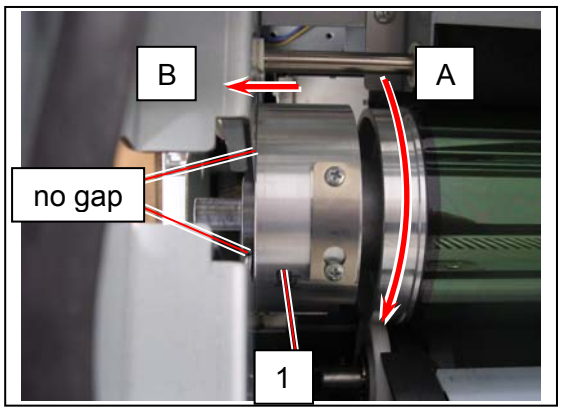
NOTE

Only reseating Drum may lose LED Head focus on rare occasion even Blocks have been fixed properly. in such case please refer to [5.6.2.3 Focus Adjustment with Spacers] on page 5-274.

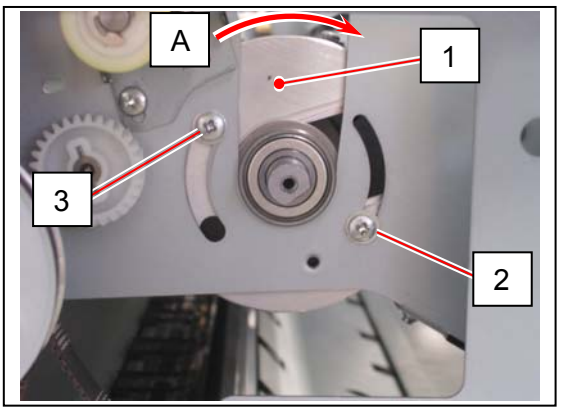
5. 5. 2. 2 Fixing Block by hand (w/o Drum Block Fix Tool)

1. Rotate the left Block (1) fully to the arrow direction (A: to front) and also press it to the arrow direction (B: to outside). This will remove any gap between Block (1) and the side frame of the machine.
   With holding Block (1), tighten the screws (2) (3) just enough turn to fix Block (1) temporarily.





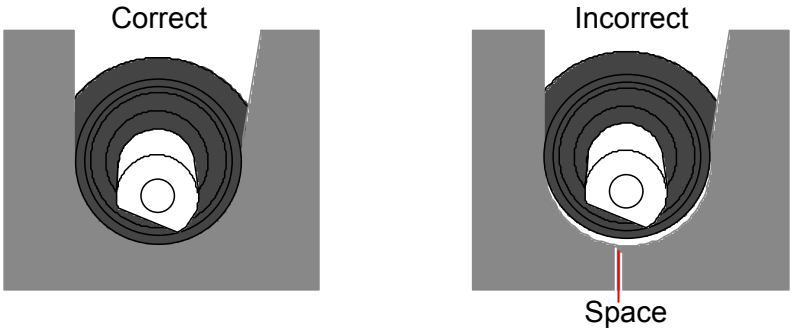
(Seen from the top of machine)



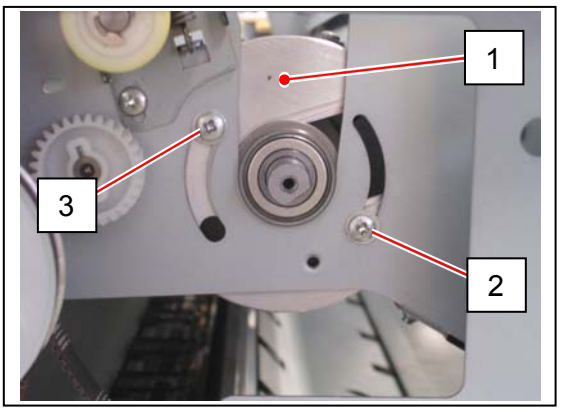
(Seen from the outside of machine)

NOTE

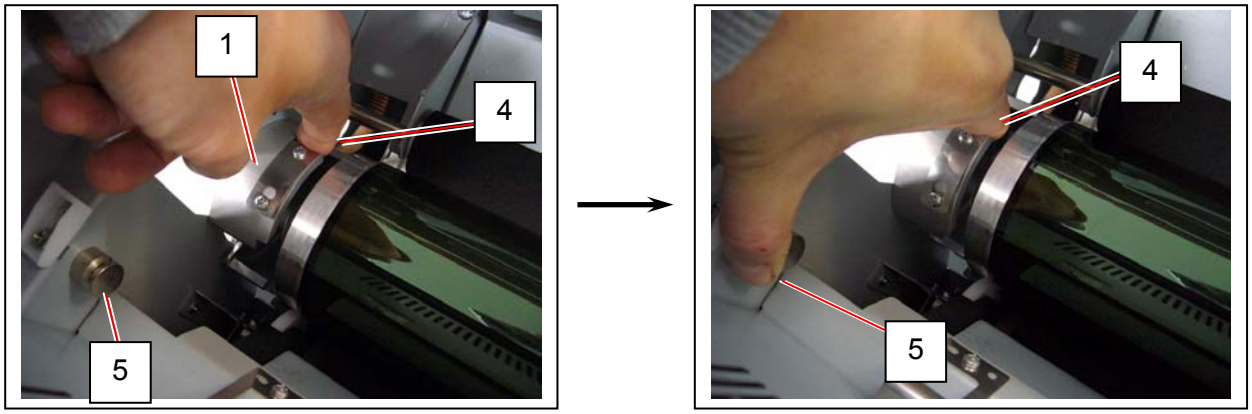
There should be no space between the Bearing and U-shape opening.
The LED focus will become defective if there is any space.

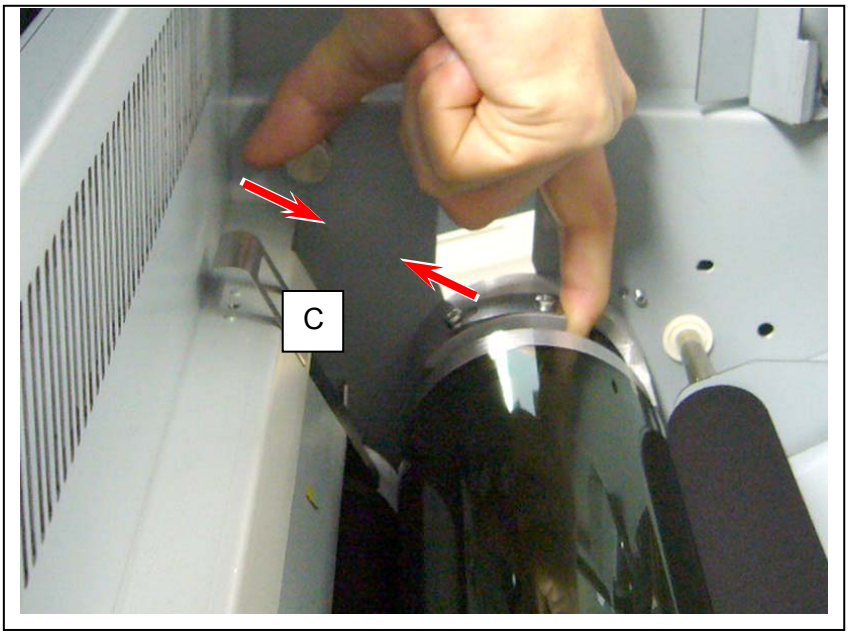


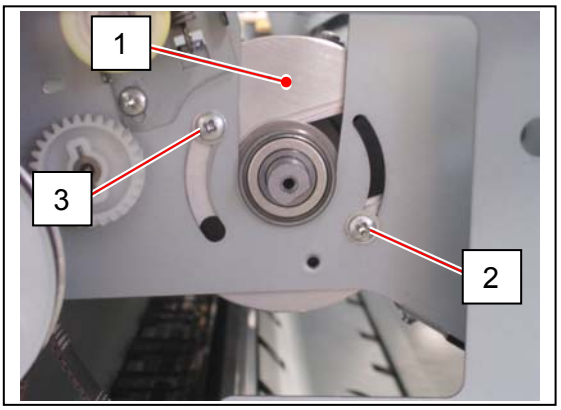
2. Loosen the screws (2) (3) in a (approximately) quarter turn to release Block (1). Check that no excessive backlash to sideways appears.



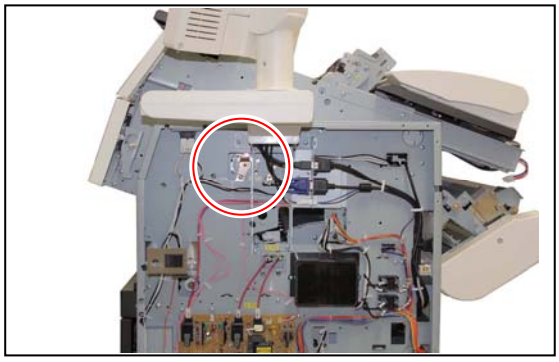
3. Put your finger inside the U-shape opening (4) of Block (1). Put the other finger on the pin (5) of the frame.
   Push the fingers toward each other (C: inside). Note that the entire Block (1) is shifted towards the pin (5) by the finger at the U-shape opening (4).
   While pushing and holding, tighten the lower screw (2) and then the upper screw (3) to secure Block (1).

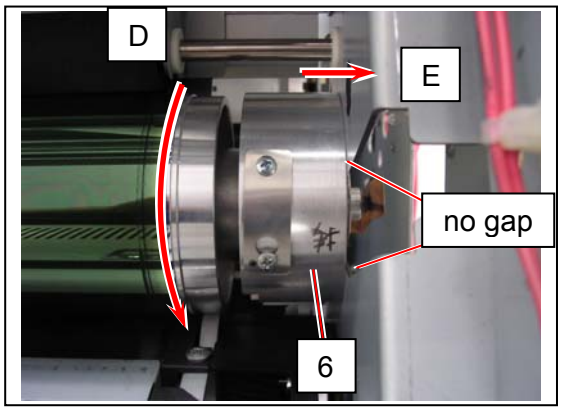




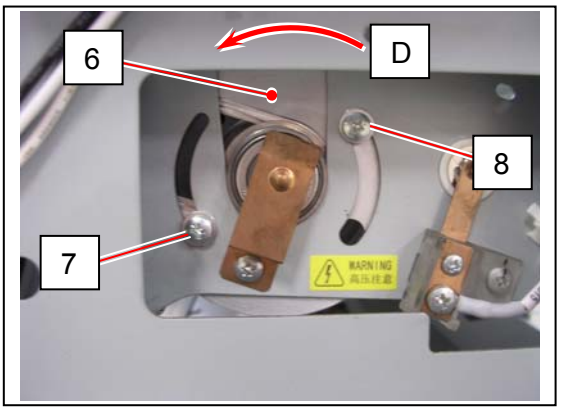


4. Similarly to step 1, rotate the right Block (6) fully to the arrow direction (D: to front) and also press it to the arrow direction (E: to outside). This will remove any gap between Block (6) and the side frame of the machine.
   With holding Block (6), tighten the screws (7) (8) just enough turn to fix Block (6) temporarily.



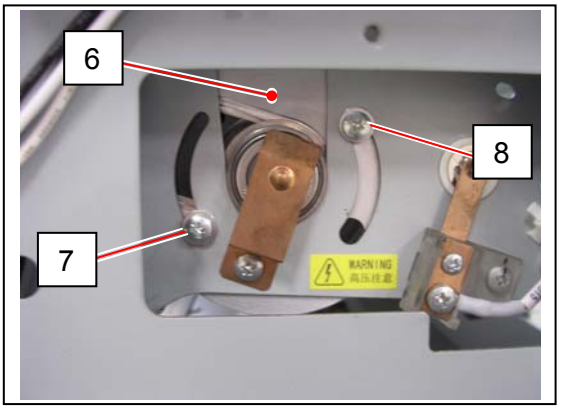


(Seen from the top of machine)

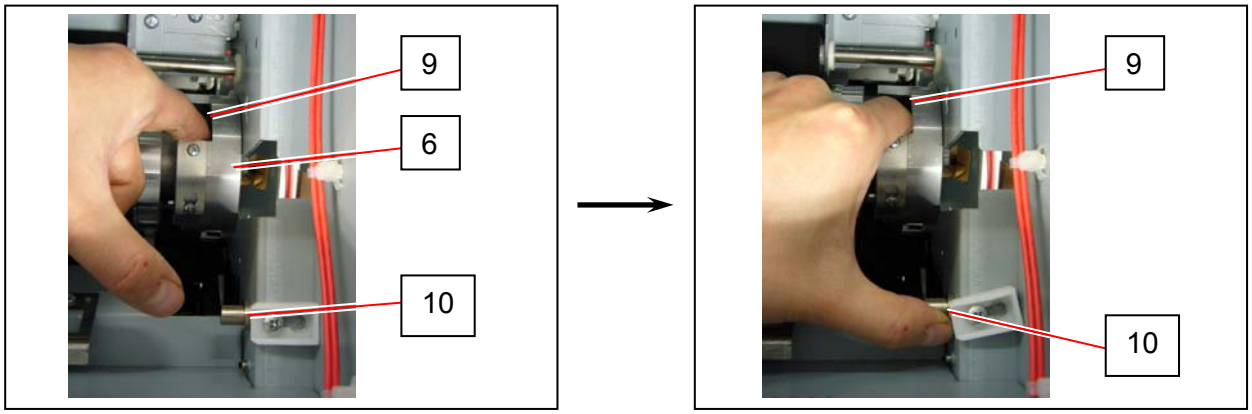


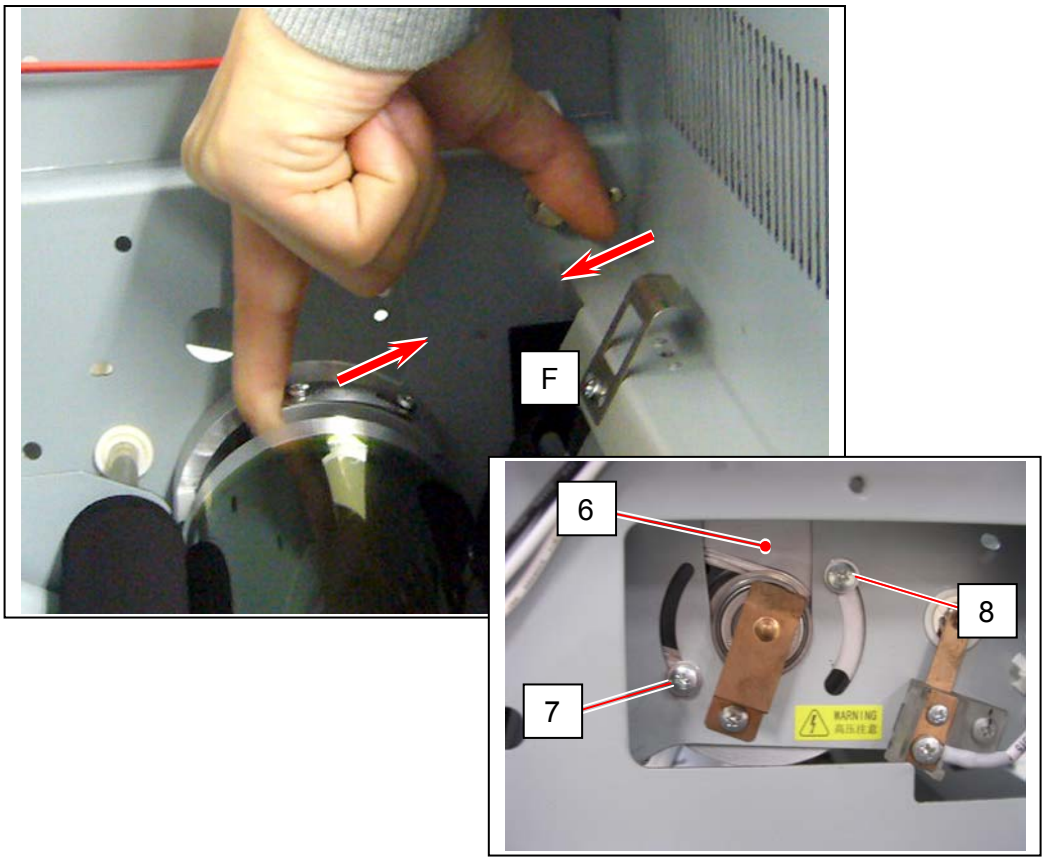
(Seen from the outside of machine)

5. Loosen the screws (7) (8) in a (approximately) quarter turn to release Block (6). Check that no excessive backlash to sideways appears.



6. Similarly to step 3, put your finger inside the U-shape opening (9) of Block (6) and put the other finger on the pin (10) of the frame.
   Push the fingers toward each other (F: inside). Note that the entire Block (6) is shifted towards the pin (10) by the finger at the U-shape opening (9).
   While pushing and holding, tighten the lower screw (7) and then the upper screw (8) to secure Block (6).



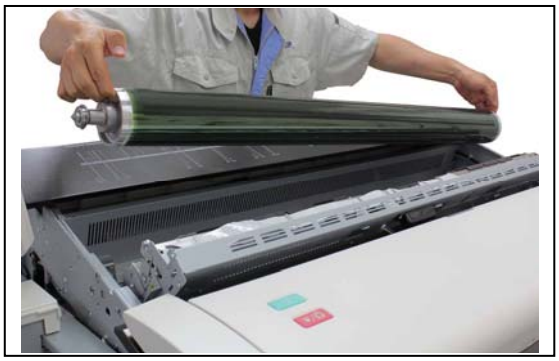


7. Print out the Test Pattern No.3, and confirm that the density of halftone is uniform.
   If it is still not uniform, fix Blocks again.

Good (Gray looks uniform) No good (Gray looks not uniform)

5. 5. 3 Cleaning of Photoconductive Drum

1. Remove the Photoconductive Drum from the machine making reference to [5. 5. 1 Replacement of the Photoconductive Drum].

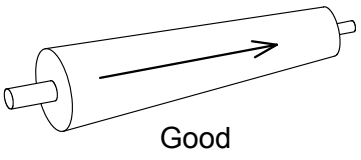


2. Wipe the surface of Photoconductive Drum with a dry cloth.
3. If the toner strongly sticks on the surface and it is impossible to remove it, wipe with the cloth impregnated with the alcohol.
4. After using the alcohol, wipe all surface of Drum with a cloth impregnated with water so that there should be no unevenness of cleaning.
5. Wipe all surface of Drum with a dry cloth, and dry the Drum leaving in a dark place for about 10 minutes.
6. Put back the Drum to the machine.

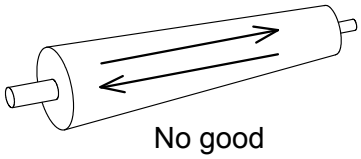
⚠ NOTE

(1) A defective image may be printed right after the cleaning (about 10 to 20 sheets of A0), but it will be fixed naturally as the time passes.

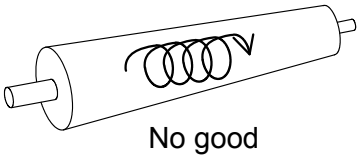
(2) Wipe the surface always to one direction.
You will damage the Drum if you wipe in other ways.



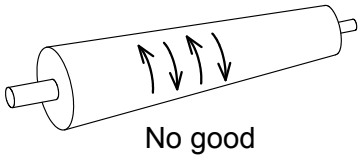
Good



No good



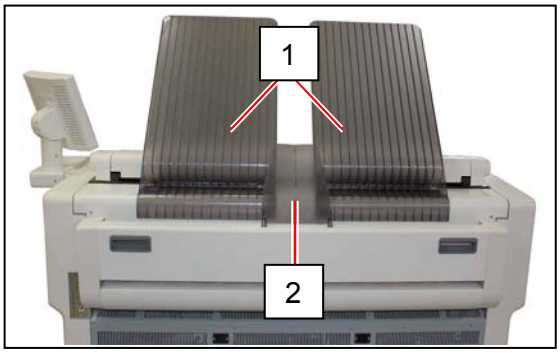
No good



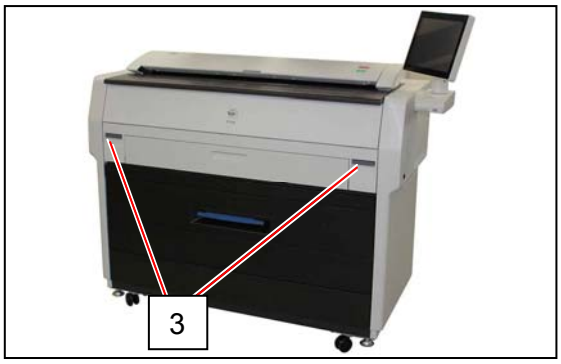
No good

5. 5. 4 Replacement of Belt 4

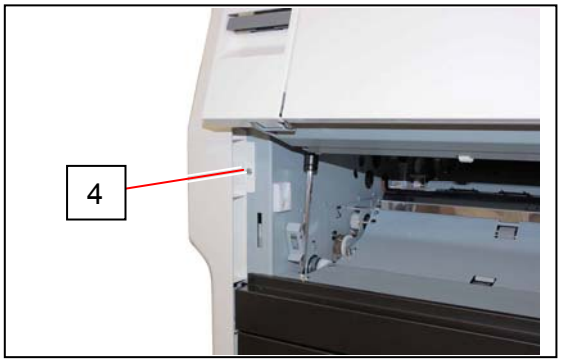
1. Remove 2 pieces of Exit Tray (1) and Exit Tray 2 (2).

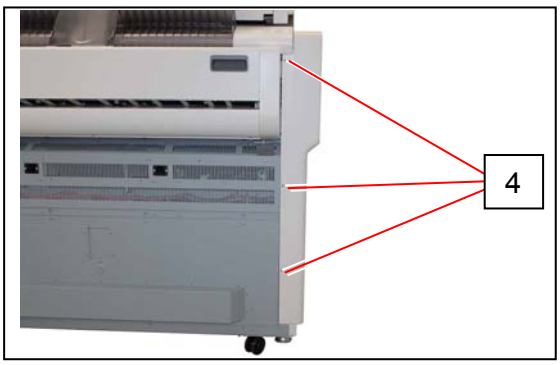


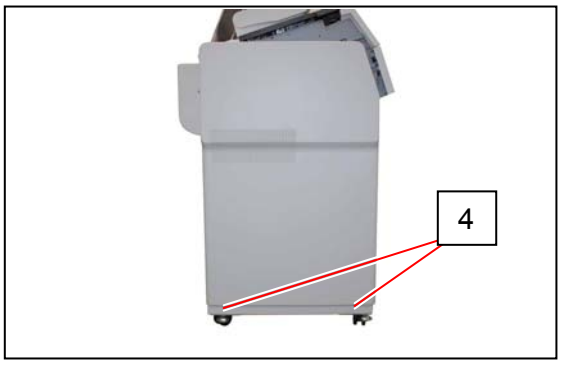
2. Pull up the Lever 2 (3) to open the Engine Unit.



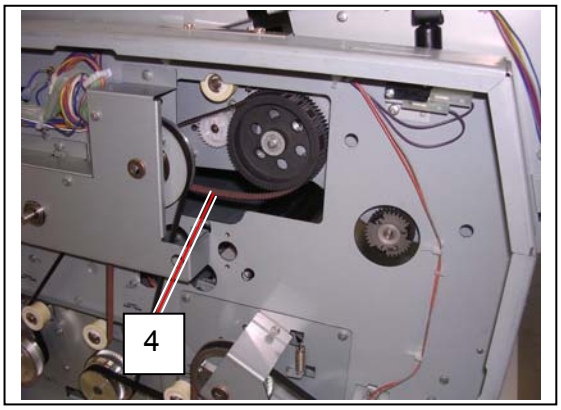
3. Remove 6 screws (4) to remove Cover 2 (5).







4. Remove Belt 4 (4).



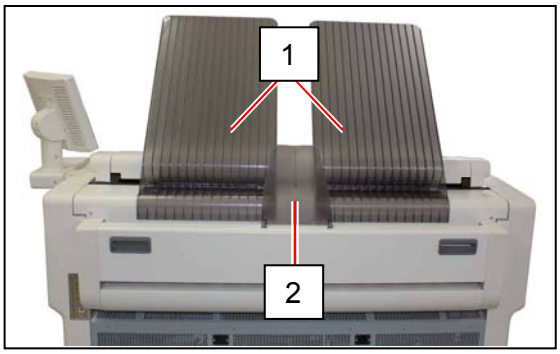
NOTE

Belt 4 is automatically unfastened if only you open the Engine Unit.

5. 6 LED Head

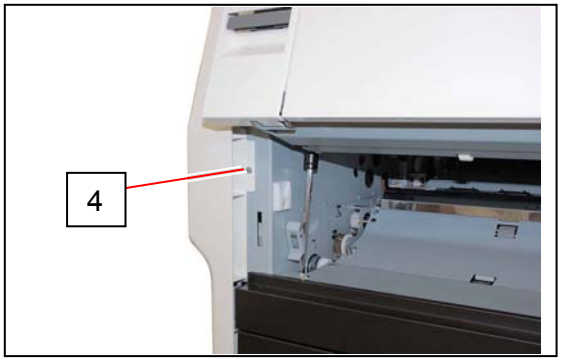
5. 6. 1 Replacement of the LED Head Unit

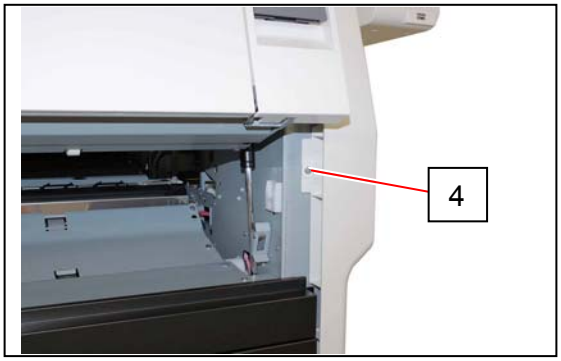
1. Remove 2 pieces of Exit Tray (1) and Exit Tray 2 (2).



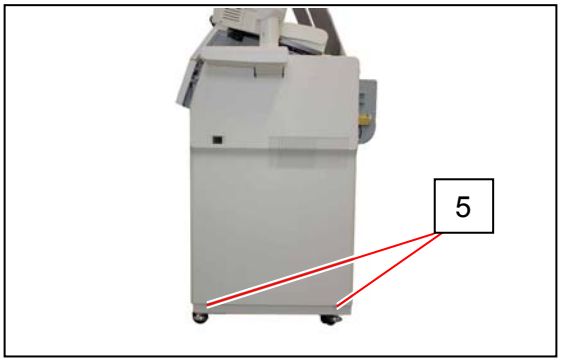
2. Pull up the Lever 2 (3) to open the Engine Unit.

3. Remove the screws (4) at both sides.

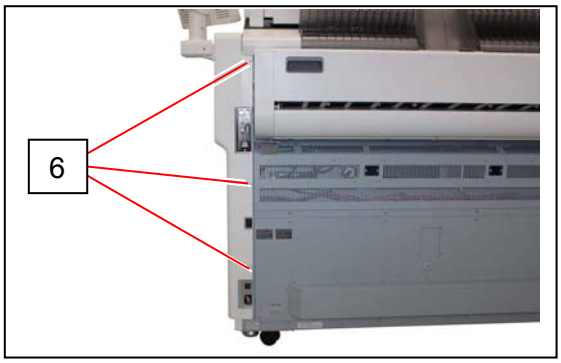


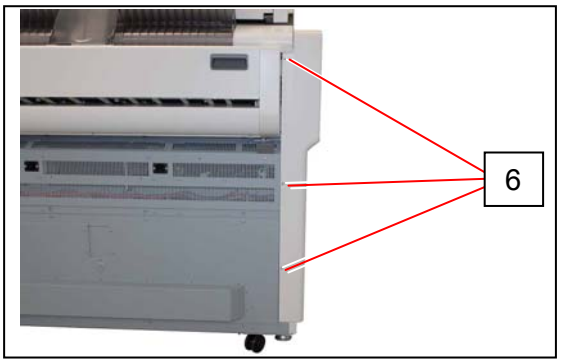


4. Remove 4 pieces of screw (5) at both sides.



5. Remove 5 pieces of screw (6) at both sides.

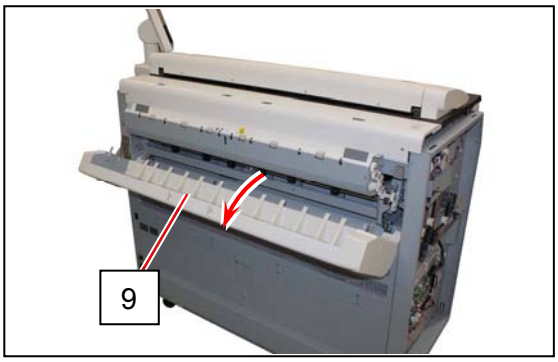


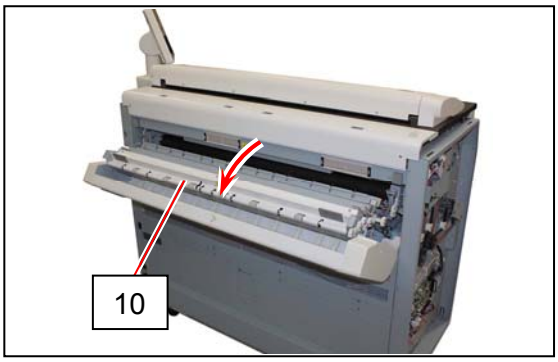


6. Remove both Cover 2 (7) and Cover 3 (8).

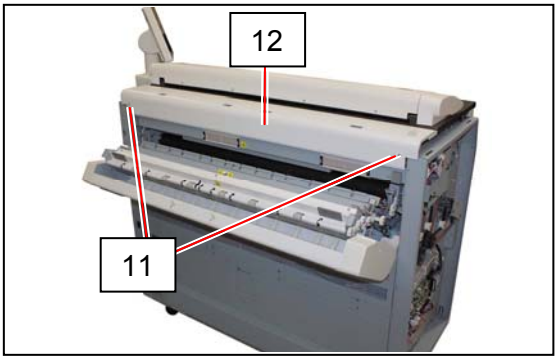
7. Close the Engine Unit.

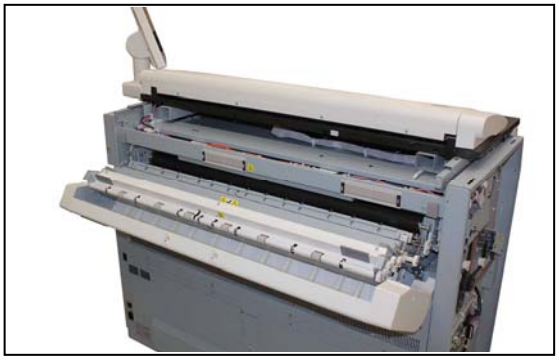
8. Open the Paper Exit Assy (Outside (9) & Inside (10)).



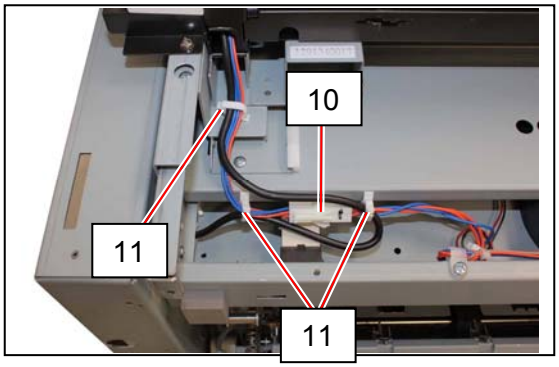


9. Remove 2 screws (11) to remove Cover 10 (12).

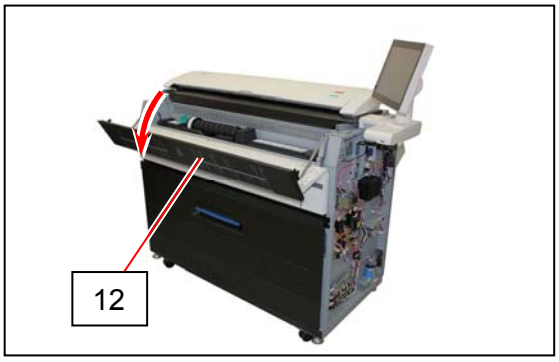




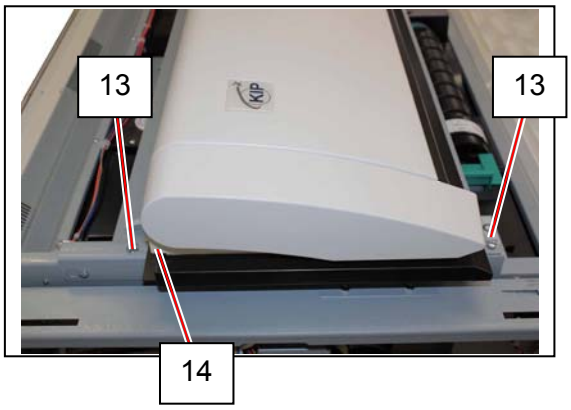
10. Disconnect the connector (10), and open the wire saddles (11) to release the harness.

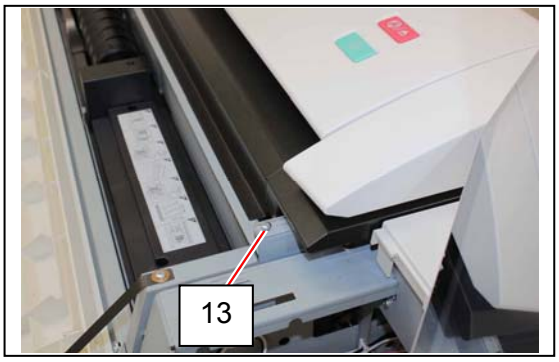


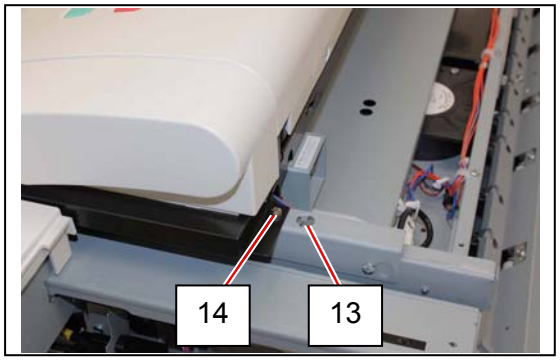
11. Open the Cover 4 (12).



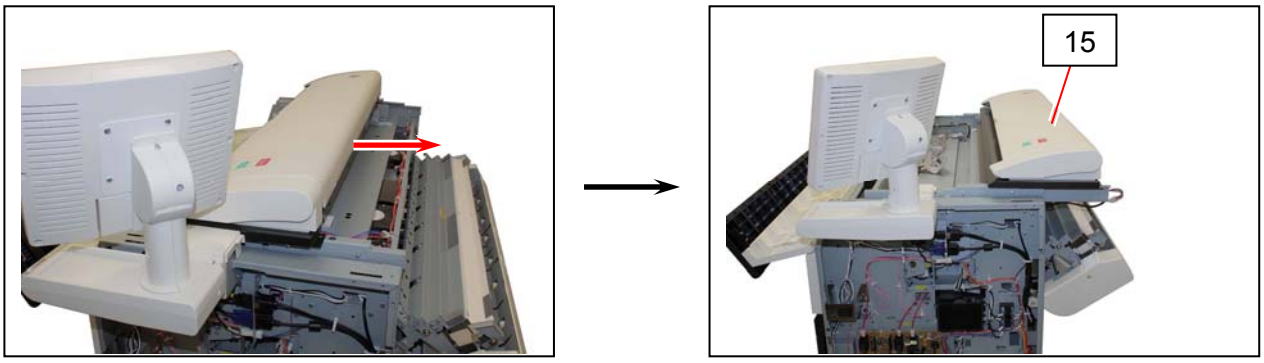
12. Remove 4 pieces of 4x6 screw (13) and 2 pieces of washer screw (14).



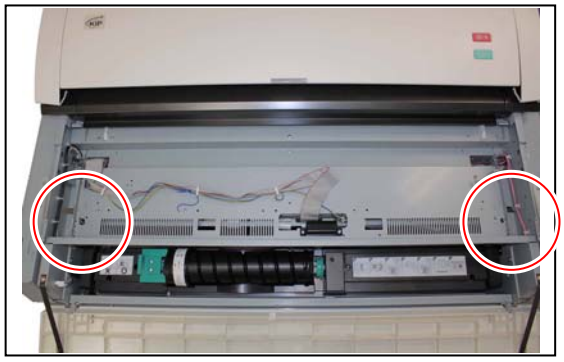


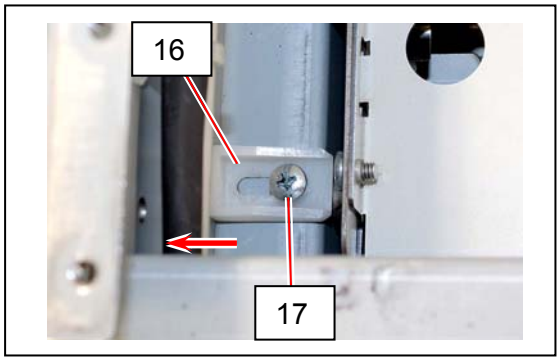


13. Slide the Scanner Unit (15) fully backward.



14. There are 2 pieces of Stopper (16) at both sides, which lock the LED Head Frame.
Loosen the screw (17) and then slide the Stoppers (16) outside to unlock the LED Head Frame.



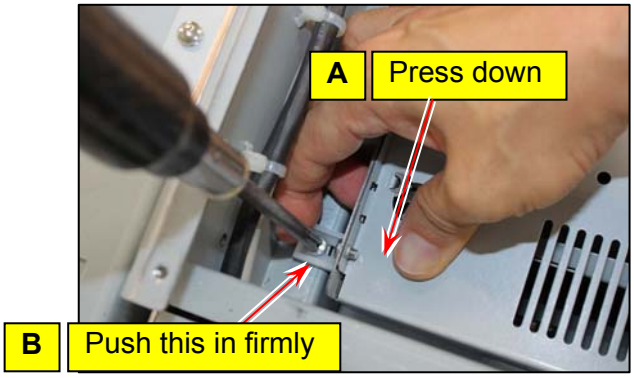


NOTE

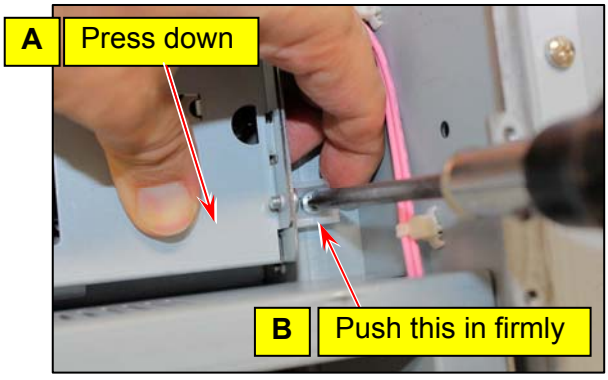
When closing and fixing the LED Head Frame, please take the following steps orderly. The key point is to fix the left side of LED Head Frame first then the right side next, which achieves correct focus of LED Head Frame. **Do not change the order of these steps.**

(1) Close the LED Head Frame.

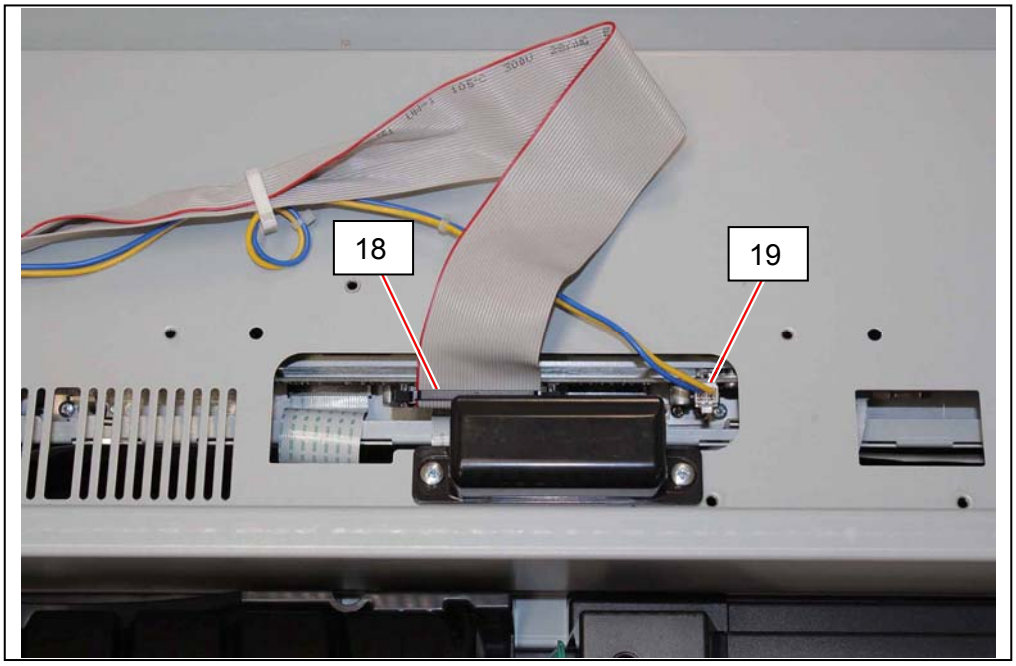
(2) Surely press down and hold the **left side** of LED Head Frame as (A), completely push the white plastic Stopper into the hole as (B), and tighten the screw to fix the Stopper there.



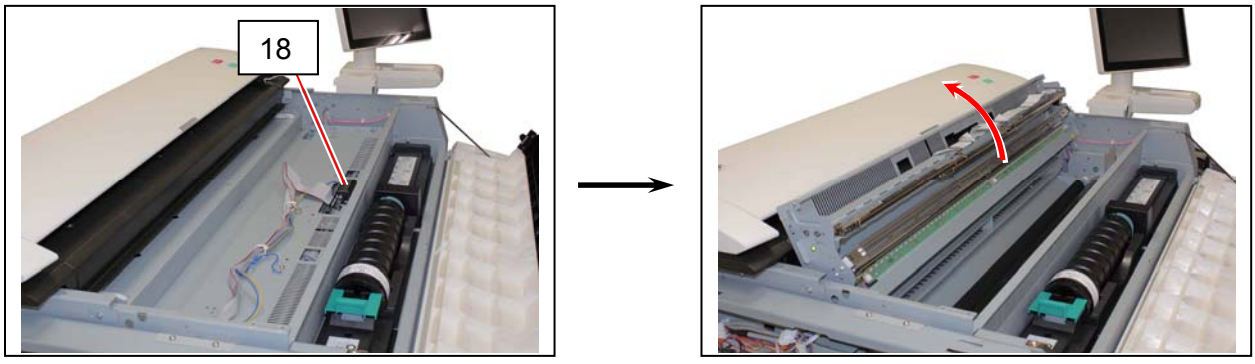
(3) Surely press down and hold the **right side** of LED Head Frame as (A), completely push the white plastic Stopper into the hole as (B), and tighten the screw to fix the Stopper there.



15. Disconnect 2 connectors (18) (19).

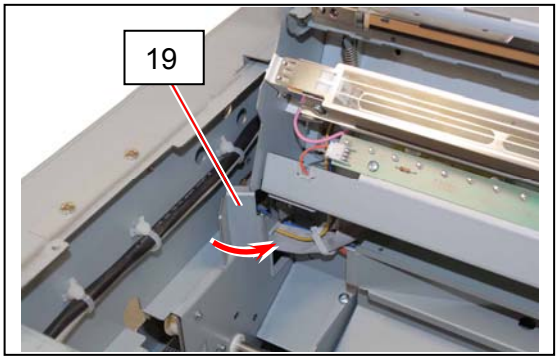


16. Open the LED Head Frame (18).

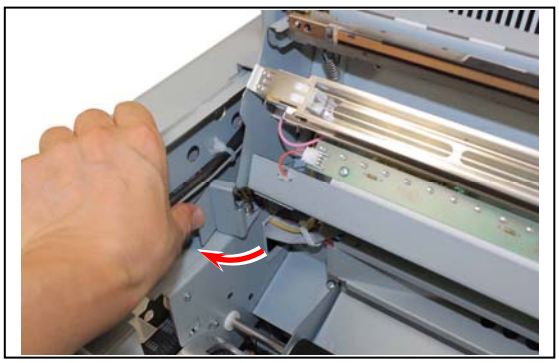


NOTE

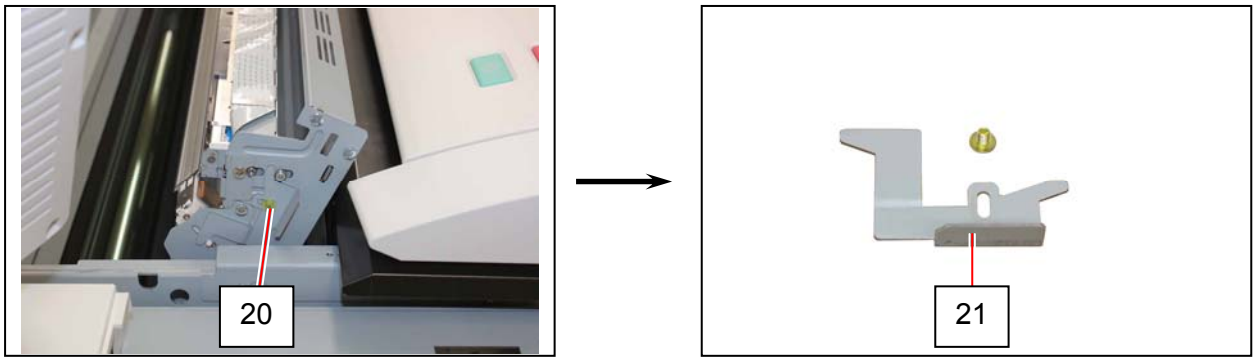
The Stopper 2 (19) comes out automatically to prevent the LED Head Frame from falling down.



Press the Stopper 2 as the right photo if you will close the LED Head Frame.



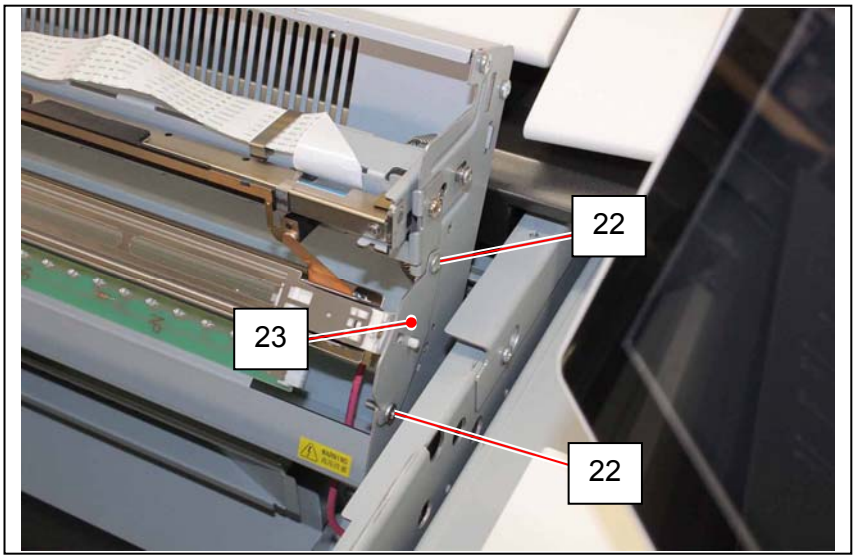
17. Remove the 4x6 screw (20) to remove the Fixing Bracket (21) on the right.



NOTE

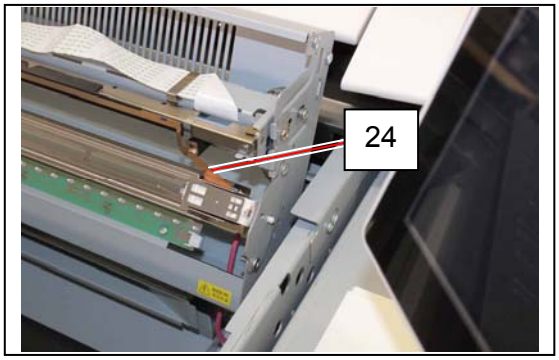
Fixing Bracket (21) is required only when the machine is in delivery or when it is moved long way from one place to another. Printer operates without problem even if this is removed. If you have no chance to move the machine from current installation place, therefore, it is recommended to keep it removed.

18. Loosen 2 pieces of 4x10 screw (22) to make the Plate (23) enough movable.

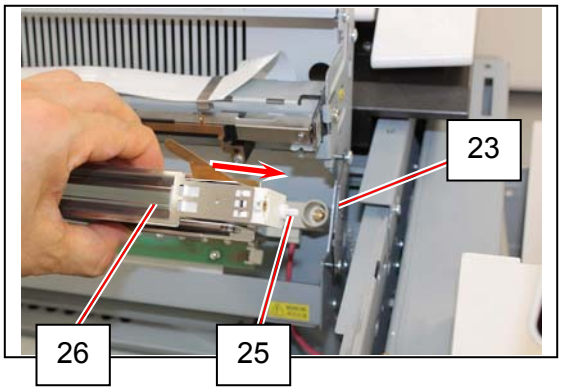


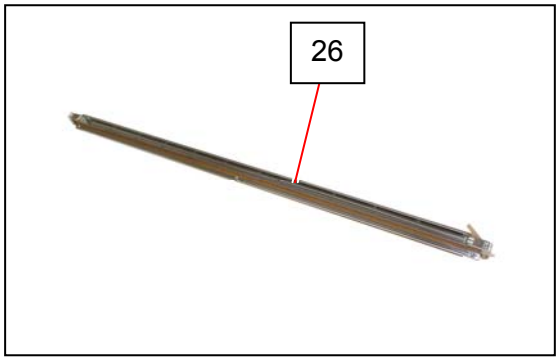
NOTE

Be careful not to damage/deform/stretch Leaf Spring 2 (24).
Doing so may damage LED Head Unit.



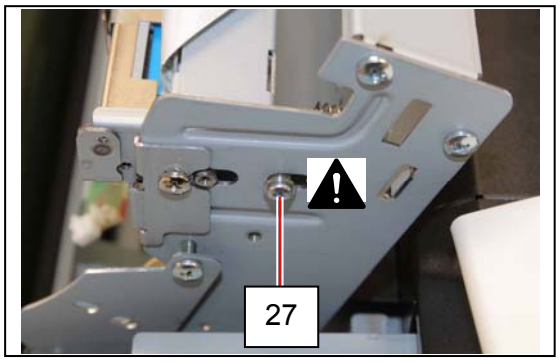
19. Move the Plate (23) to the right to release the pin (25) of Corona Block.
Then remove the Image Corona Unit (26).

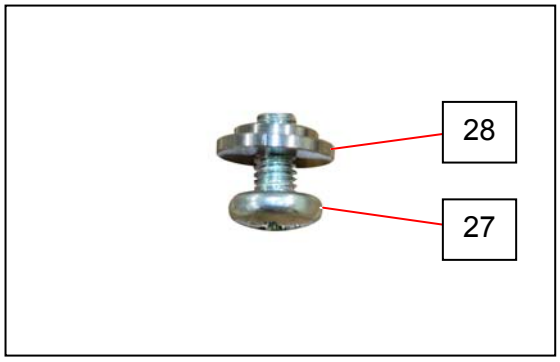




20. Remove 1 screw (27) to remove the Collar (28).

> **NOTE**
>
> Do not drop the Collar (28) into the machine when removing it.

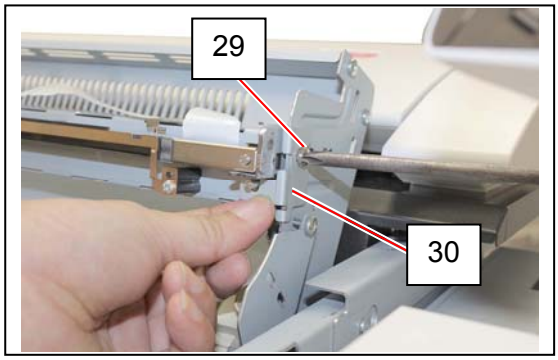


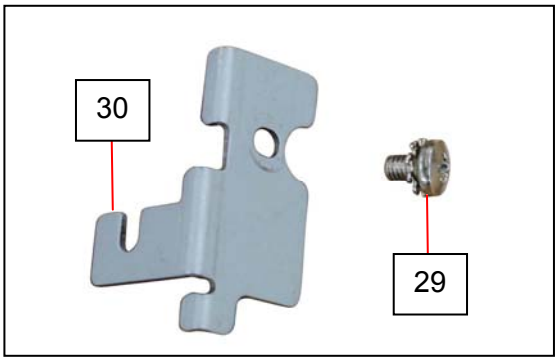


21. Remove 1 tooth washer screw (29) to remove Bracket (30).

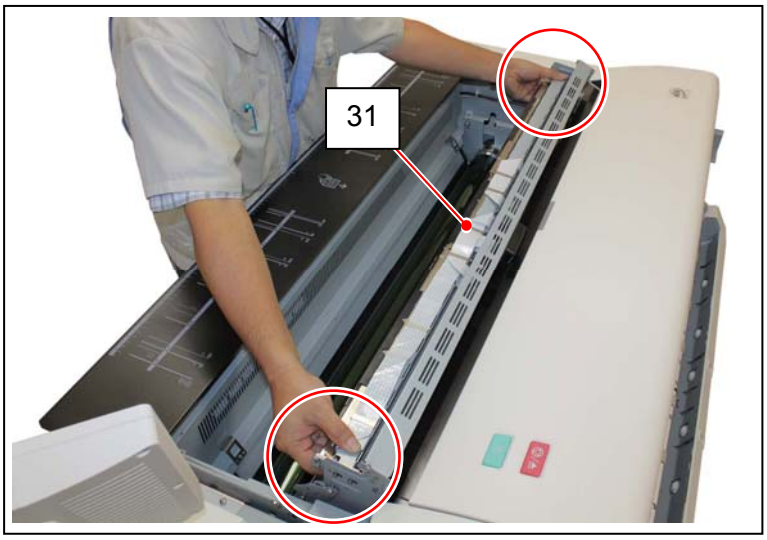
NOTE

Surely hold the Bracket (30) by hand when removing the screw (29) so as not to drop it into the machine.



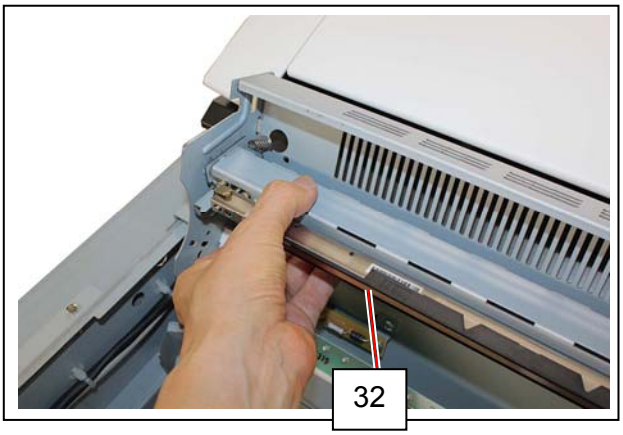


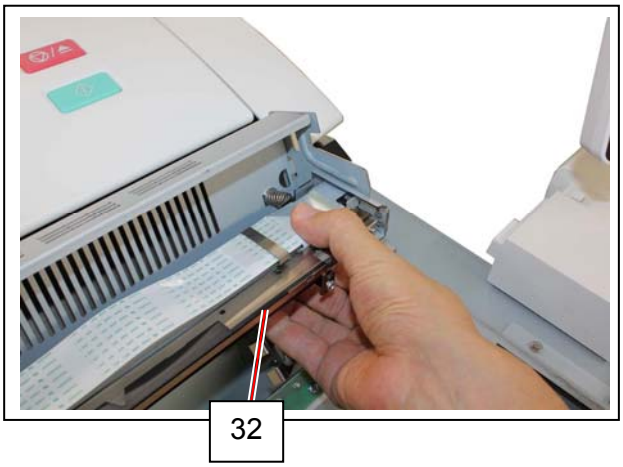
22. For removing the LED Head (31), catch both ends first.



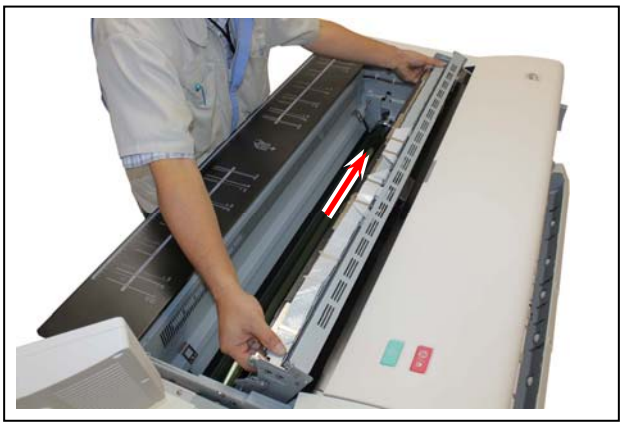
NOTE

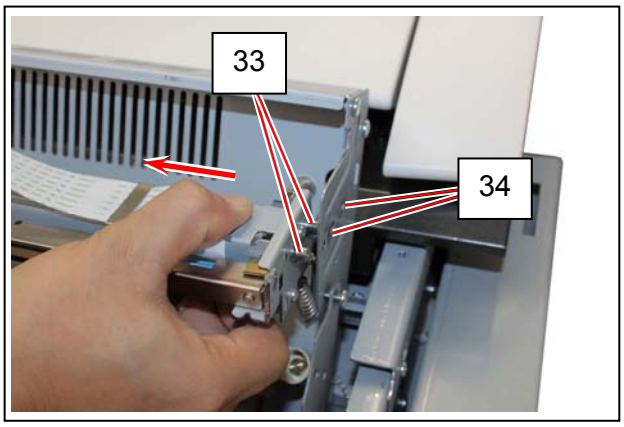
Do not hold or touch the lens array parts (32).



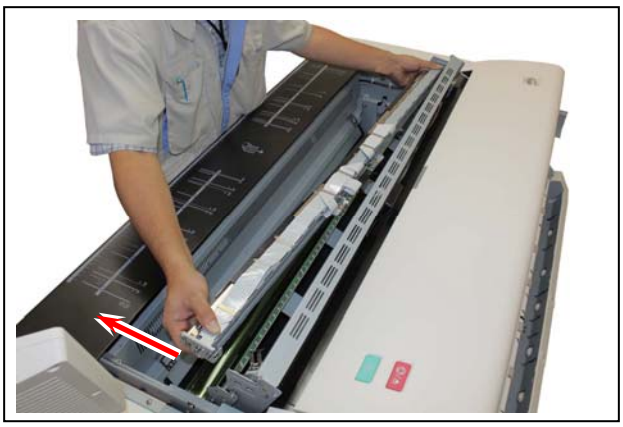


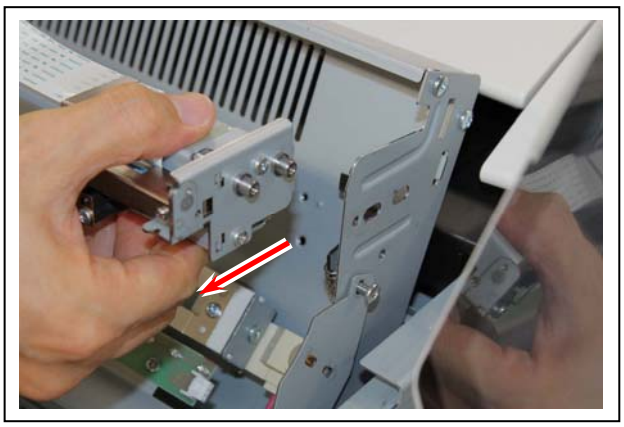
23. Move the LED head Unit leftward to pull out its 2 bars (33) on the right from the holes (34) on the right side plate of Movable Unit.



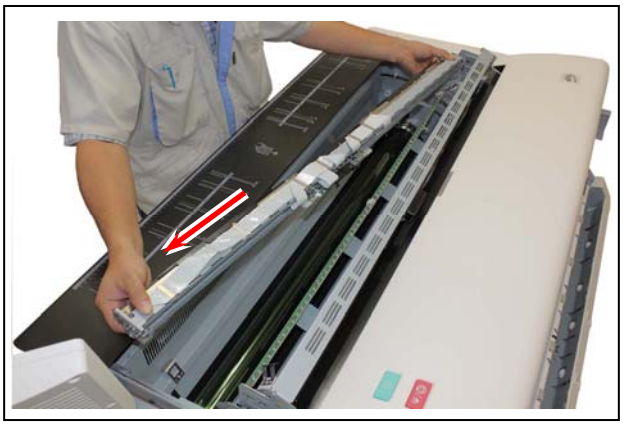


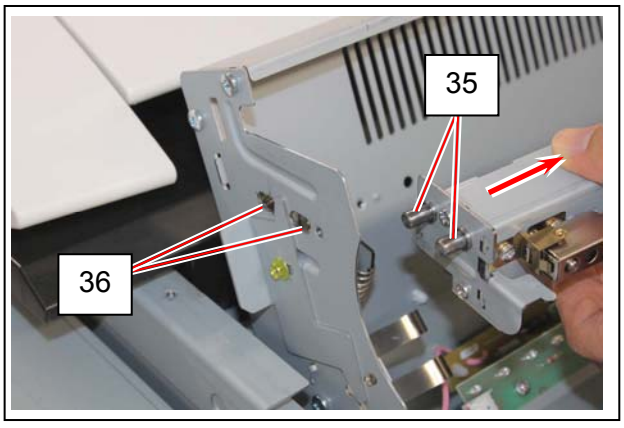
24. Move the right end of LED Head Unit a little frontward so that it is completely out of the Movable Unit.

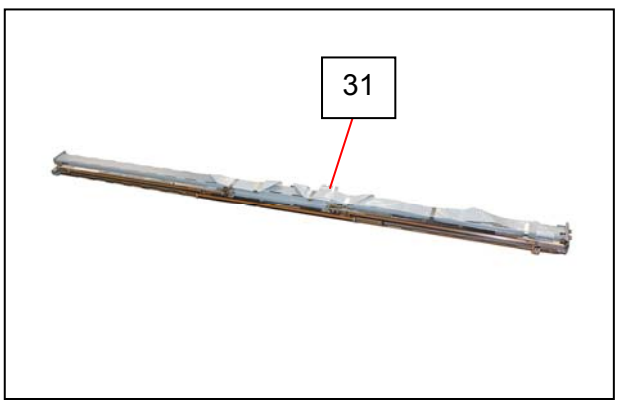




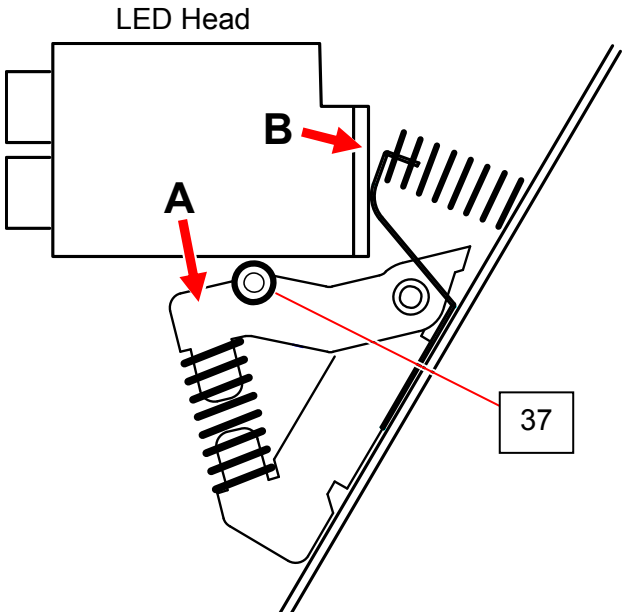
25. Move the LED head Unit rightward to pull out its 2 bars (35) on the left from the holes (36) on the left side plate of Movable Unit. As this will completely remove the LED Head Unit (31) from the machine, replace it with the new one. **And see the following pages for correctly installing the new LED Head.**

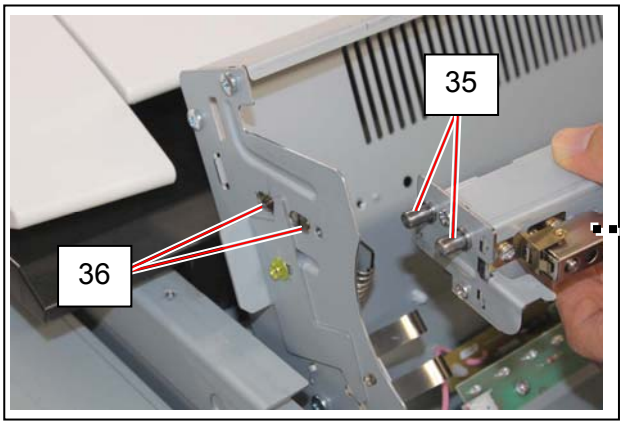


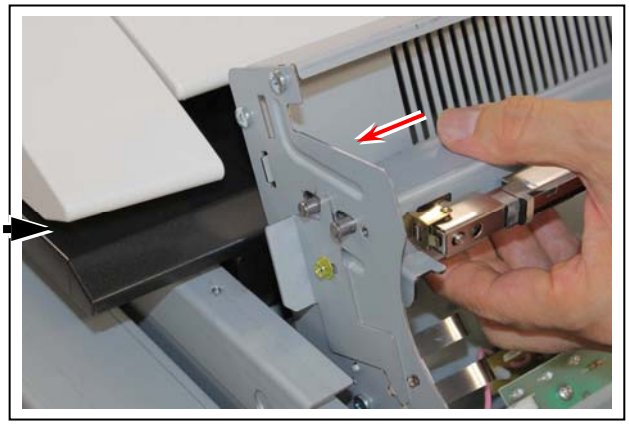




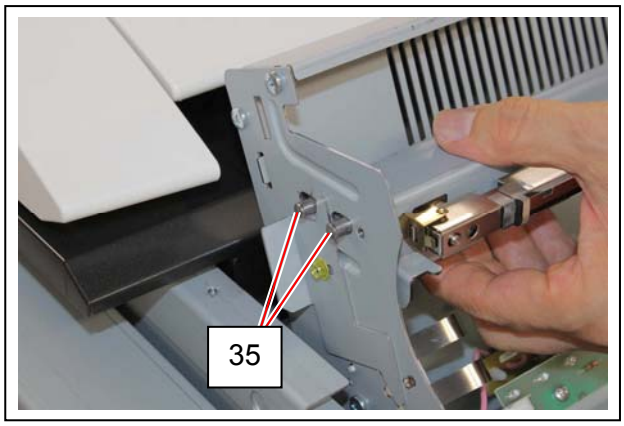
26. There is a white roller (37) on the LED Tension Bracket on the left. At first put the left end of LED Head Unit on this white roller (37).
Then press and hold the left end of unit in the directions of arrows (A) and (B) same time to push down both 2 tension springs, and slide the entire unit leftward to fit 2 bars (35) into the holes (36).

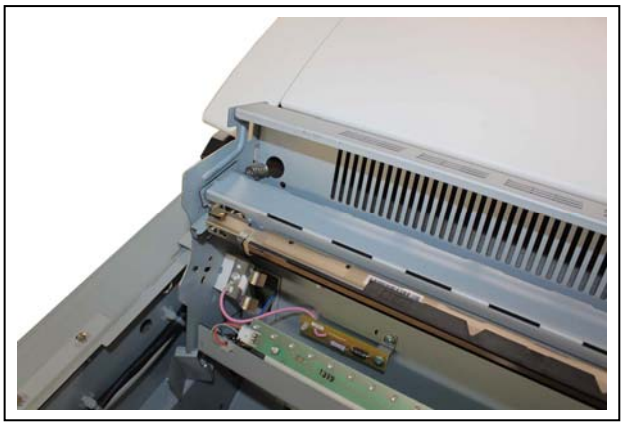




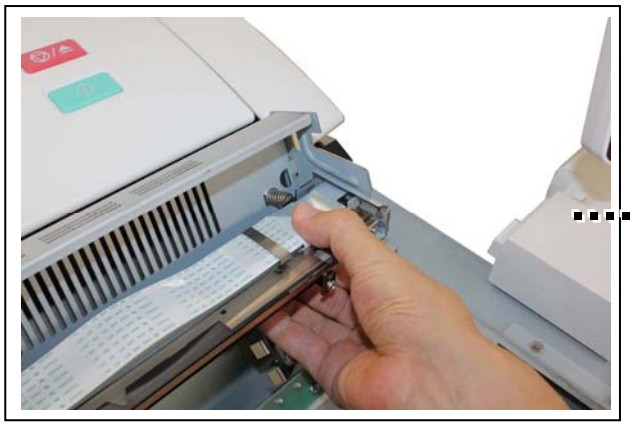


27. After confirming 2 bars (35) on the left are surely fitted into the holes, leave your hand from the LED Head Unit.



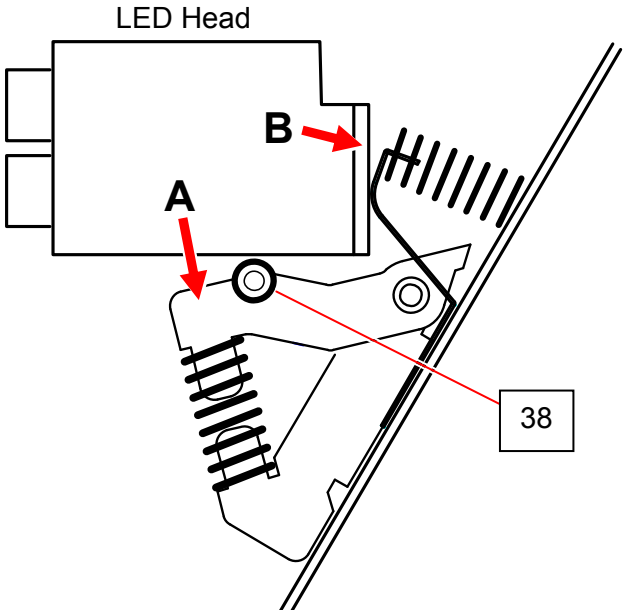


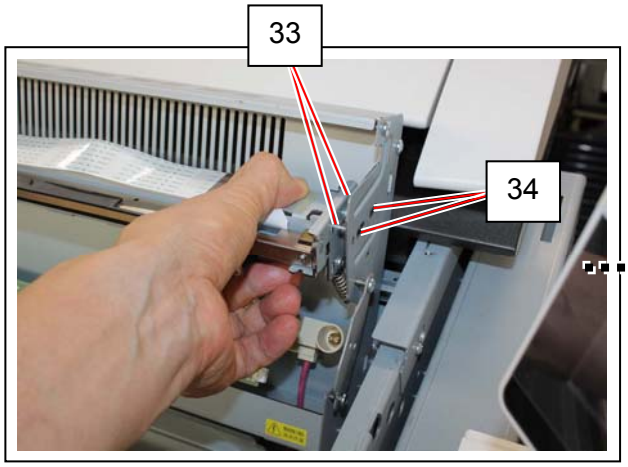
28. Catch the right end of LED Head Unit by <u>left hand</u> for ease of later operation.

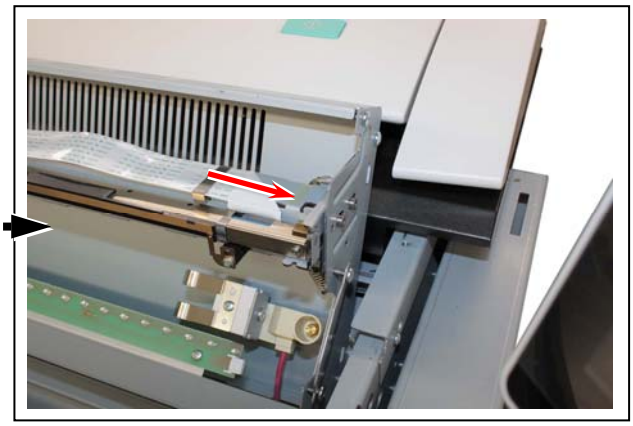


Catch the right end of unit by left hand.

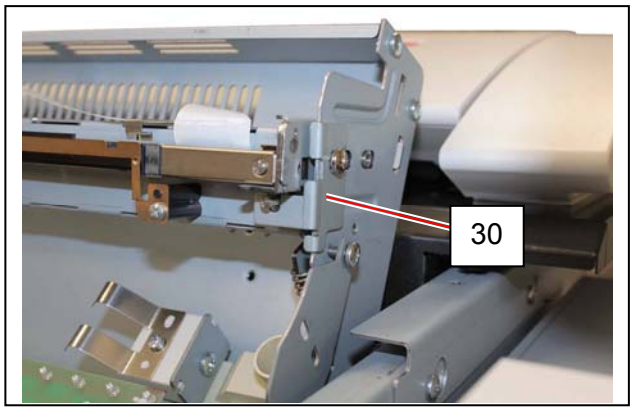
29. Similar as you have done in the former step 26, at first put the right end of LED Head Unit on the white roller (38) on the LED Tension Bracket on the right.
Then press and hold the right end of unit in the directions of arrows (A) and (B) same time to push down both 2 tension springs, and slide the entire unit rightward to fit 2 bars (33) into the holes (34).

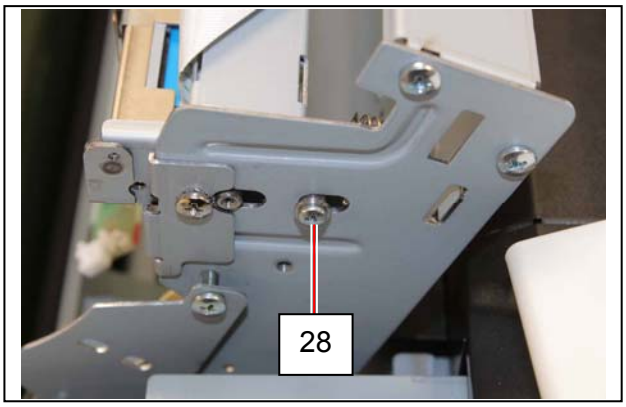






30. Put the Bracket (30) back in its original position on the right of Movable Unit, and fix it with 1 tooth washer screw.





NOTE

As it is necessary to check and adjust the LED Head focus after replacement, go to the next section [5. 6. 2 LED focus adjustment] and follow the instruction.

5. 6. 2 LED focus adjustment (if necessary adjust density balance among 3 LED blocks)

Please adjust the focus of LED Head after the replacement of LED Head.
Also adjust it if you have lost the correct focus by some reason.

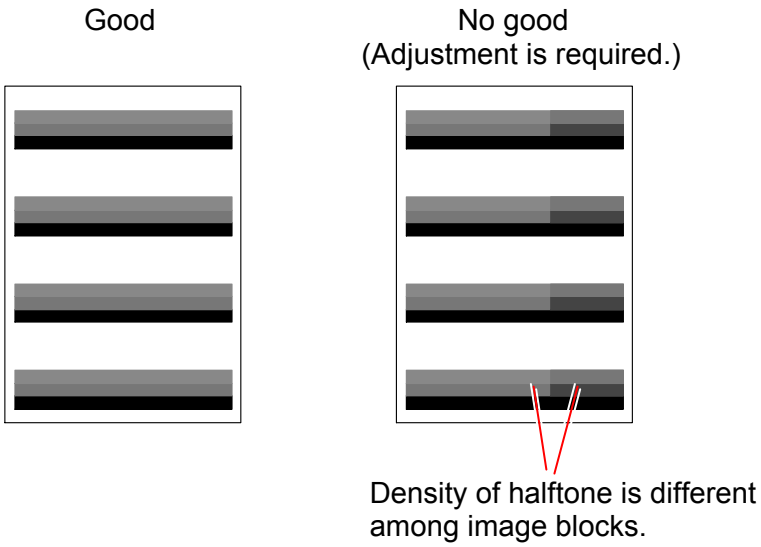
Adjust the focus by the following 4 steps.
(1) Check of the Test Pattern Image
(2) Positioning of the Aluminium Blocks
(3) Focus Adjustment with Spacers
(4) Adjustment of density balance among 3 LED blocks **IF NECESSARY**
(Item (4) may be needed if difference of density is still seen after performing the item (3).)

5. 6. 2. 1 Check of the Test Pattern Image

Print out the Test Pattern No.3 in the Service Mode, and check its halftone image.

If the density of halftone is uniform as the following left image, you do not have to make anything because the focus is correctly adjusted.

But it is different among image blocks as the following right image, it is necessary to adjust the focus.
Go to [5. 6. 2. 2 Positioning of the Aluminium Blocks] on the next page in this case.



5. 6. 2. 2 Positioning of the Aluminium Blocks

There are Aluminium Blocks at both sides of the Drum, which adjust the distance between LED Head and Drum. If the LED focus is not correct, at first it is necessary to place them at the correct positions in the following way.

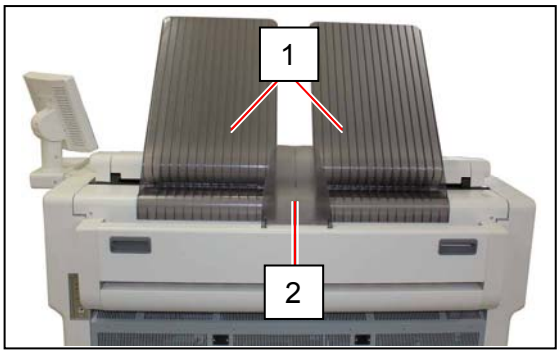
NOTE

Using Drum Block Fix Tool is recommended.

Blocks can be fix properly without Drum Block Fix Tool, in such case please follow the later step 23 for further information.

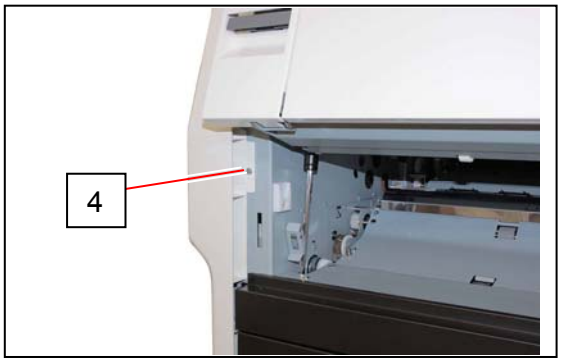
Drum Block Fix Tool
Z168580040

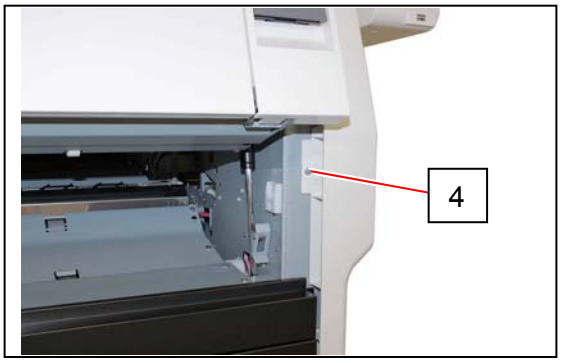
1. Remove 2 pieces of Exit Tray (1) and Exit Tray 2 (2).



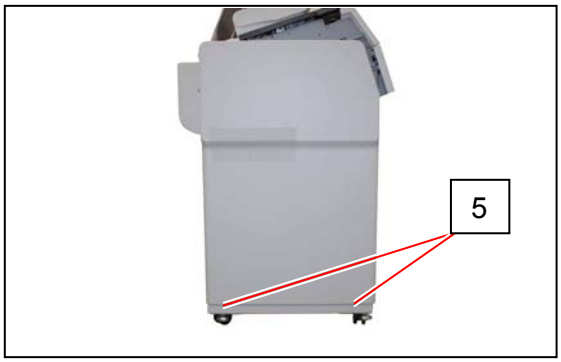
2. Pull up the Lever 2 (3) to open the Engine Unit.

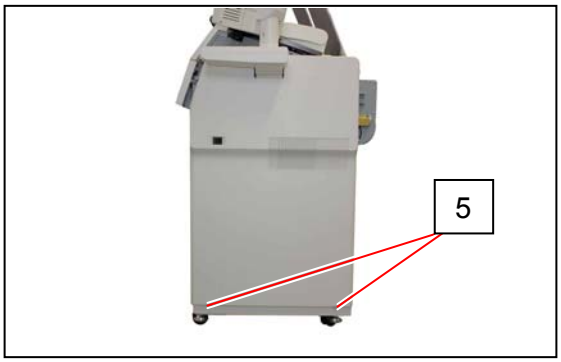
3. Remove the screws (4) at both sides.



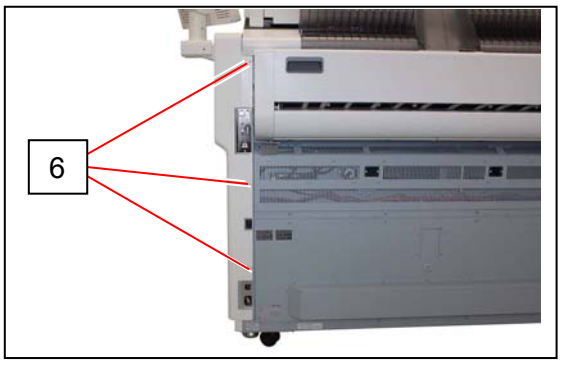


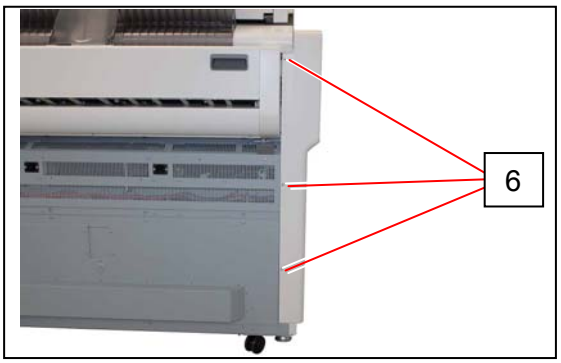
4. Remove 4 pieces of screw (5) at both sides.





5. Remove 5 pieces of screw (6) at both sides.

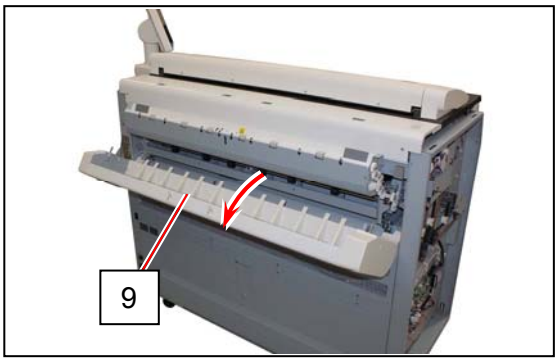


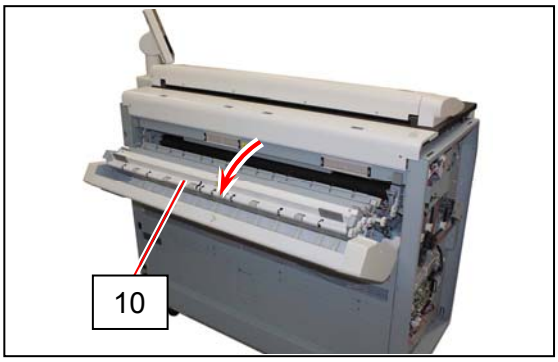


6. Remove both Cover 2 (7) and Cover 3 (8).

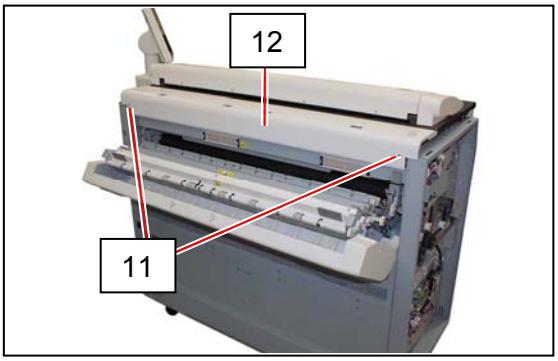
7. Close the Engine Unit.

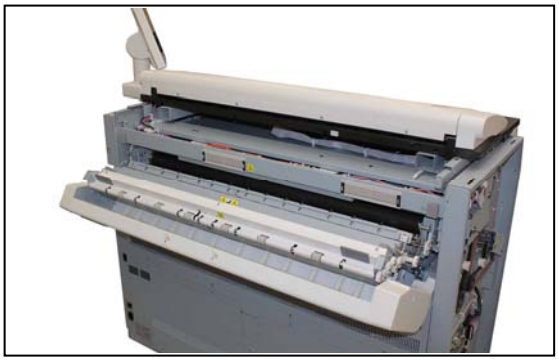
8. Open the Paper Exit Assy (Outside (9) & Inside (10)).



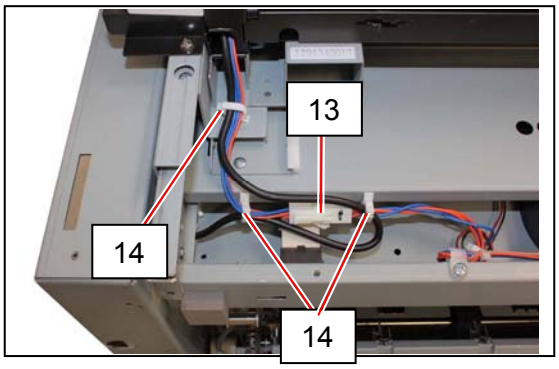


9. Remove 2 screws (11) to remove Cover 10 (12).

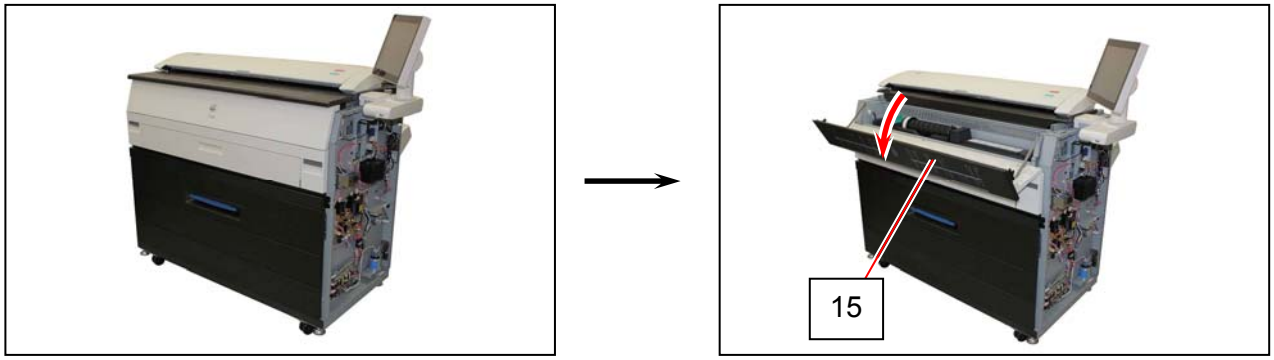




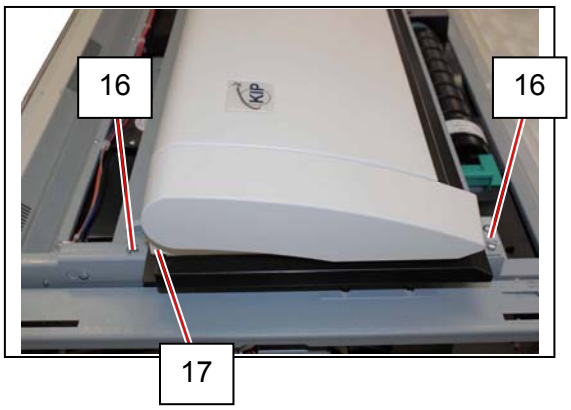
10. Disconnect the connector (13), and open the wire saddles (14) to release the harness.

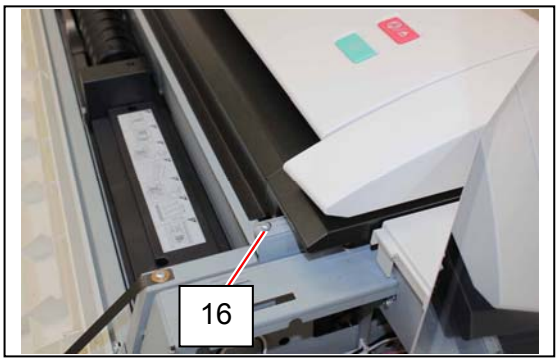


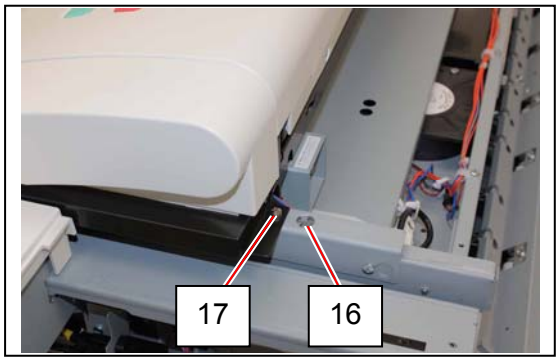
11. Open the Cover 4 (15).



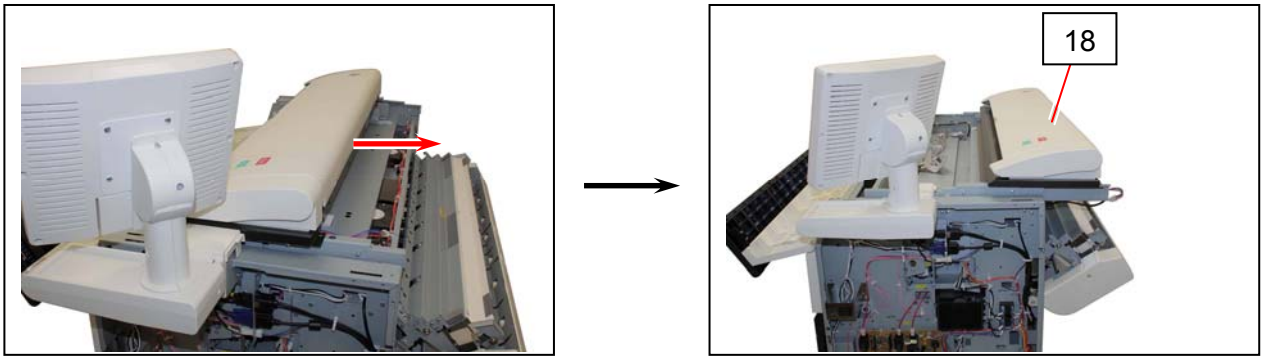
12. Remove 4 pieces of 4x6 screw (16) and 2 pieces of washer screw (17).



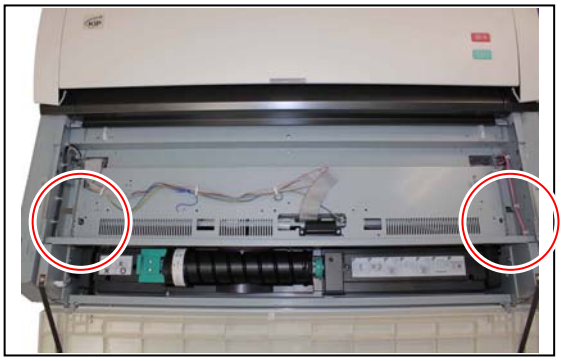


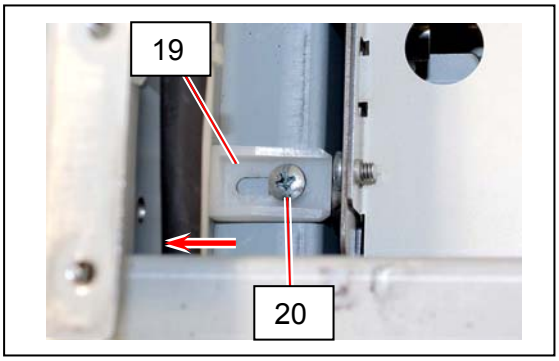


13. Slide the Scanner Unit (18) fully backward.



14. There are 2 pieces of Stopper (19) at both sides, which lock the LED Head Frame.
Loosen the screw (20) and then slide the Stoppers (19) outside to unlock the LED Head Frame.



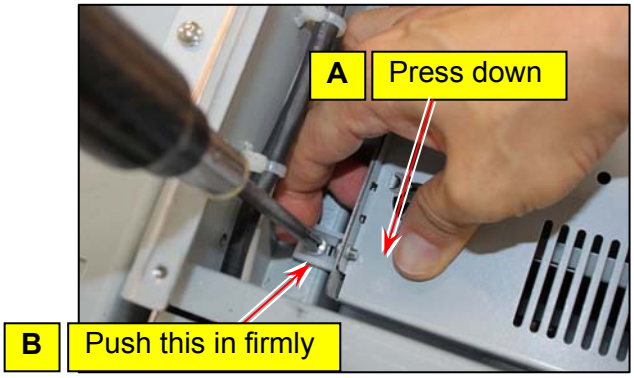


NOTE

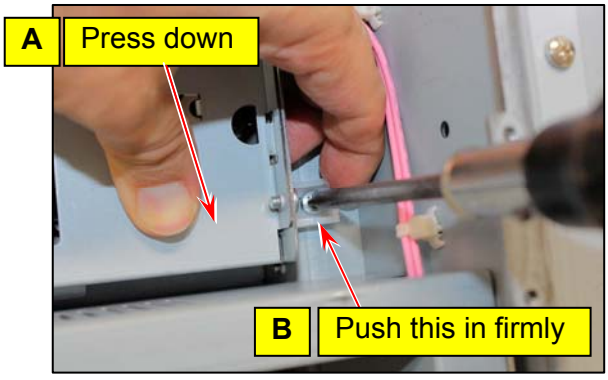
When closing and fixing the LED Head Frame, please take the following steps orderly. The key point is to fix the left side of LED Head Frame first then the right side next, which achieves correct focus of LED Head Frame. **Do not change the order of these steps.**

(1) Close the LED Head Frame.

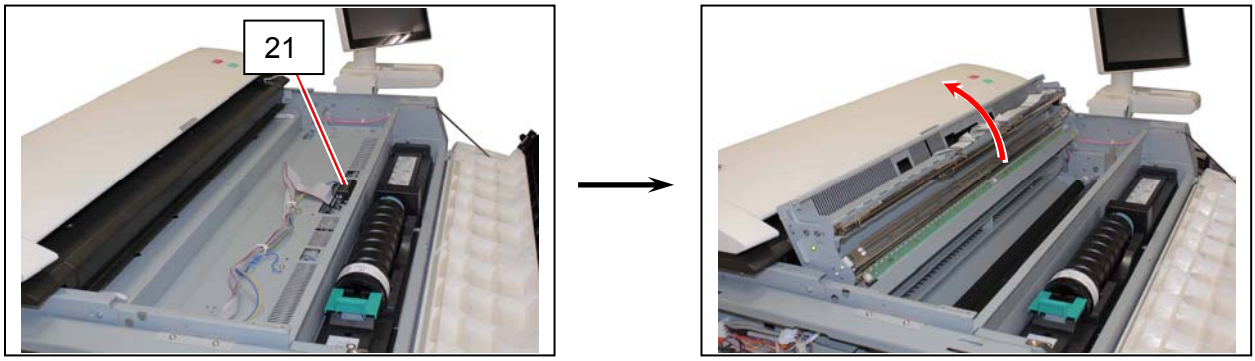
(2) Surely press down and hold the **left side** of LED Head Frame as (A), completely push the white plastic Stopper into the hole as (B), and tighten the screw to fix the Stopper there.



(3) Surely press down and hold the **right side** of LED Head Frame as (A), completely push the white plastic Stopper into the hole as (B), and tighten the screw to fix the Stopper there.

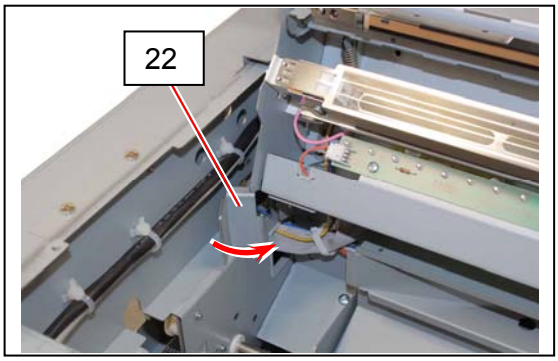


15. Open the LED Head Frame (21).

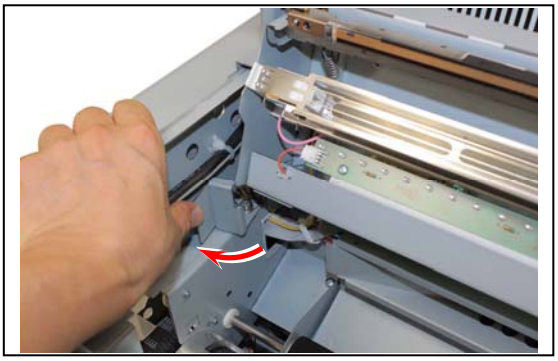


NOTE

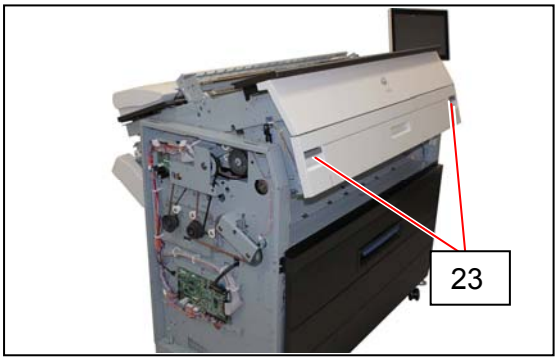
The Stopper 2 (22) comes out automatically to prevent the LED Head Frame from falling down.



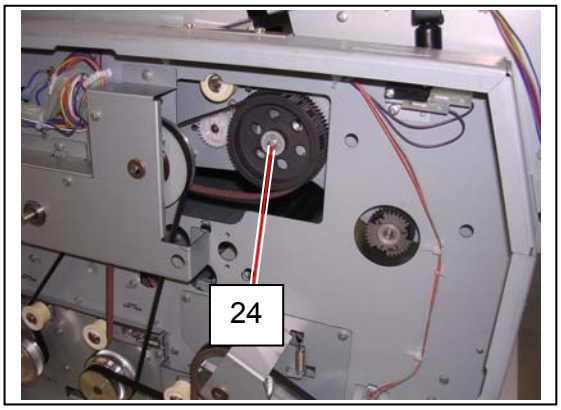
Press the Stopper 2 as the right photo if you will close the LED Head Frame.

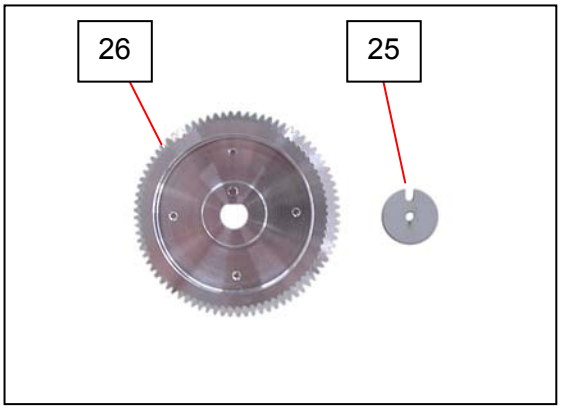


16. Pull up the Lever 2 (23) to open the Engine Unit.



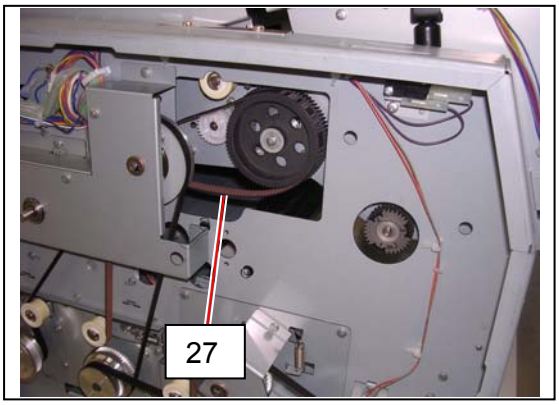
17. Remove 1 tooth washer screw (24: M4x8), and remove Plate 2 (25) and Pulley Gear (26).



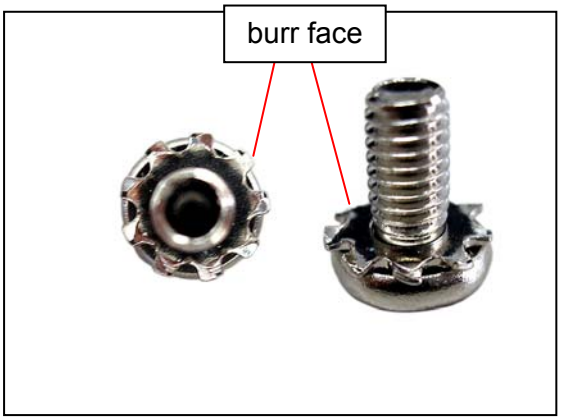


NOTE

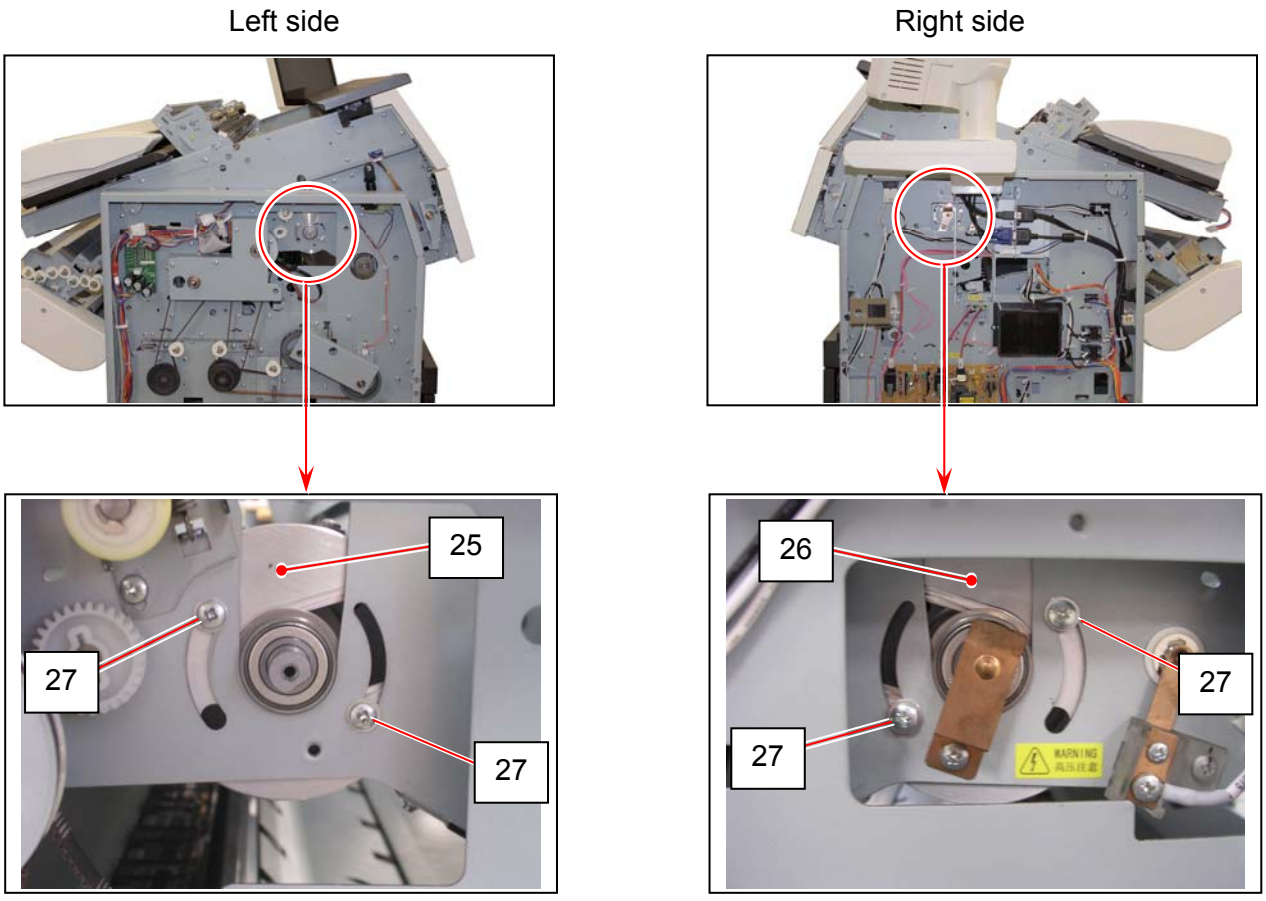
(1) Belt 4 (27) is automatically loosed with Engine Unit open.
It will be strained with Engine Unit closed.



(2) The tooth washer screw (24) has a tooth washer of which burr face meets the composition surface.



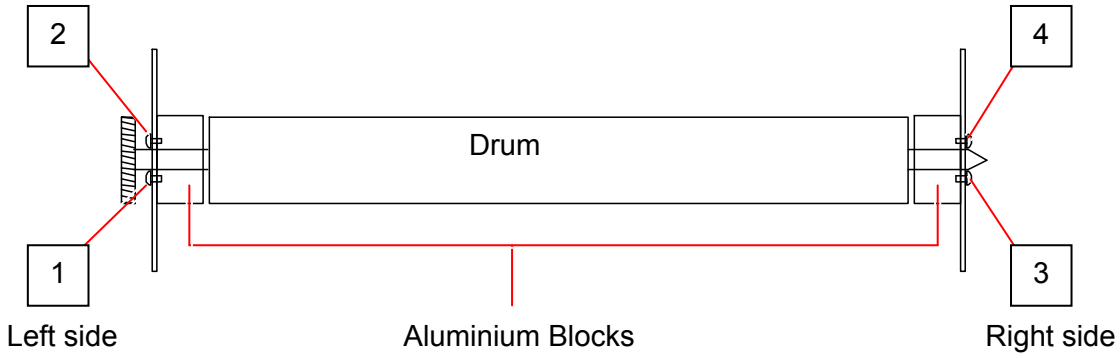
18. There are Aluminium Block (25: left) (26: right) and each of them is fixed with 2 screws (27).



Do as follows to fix the Aluminium Blocks correctly.

a) Always fix the Aluminium Block of the **left (25) first and then right (26).**
b) When you tighten 2 screws (C) (D) to fix each Aluminium Block, always tighten **the lower one (C) first and then the upper one (D)**.

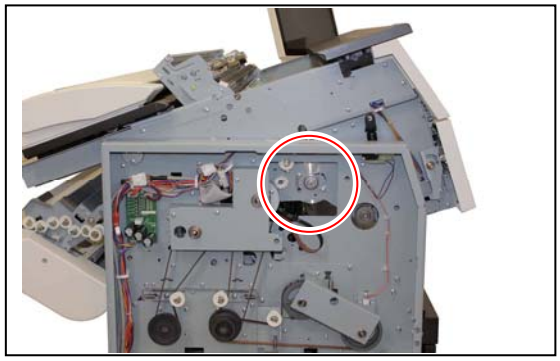
The following picture shows the order to tighten the screws. **Tighten in the order as 1 to 4 necessarily**.

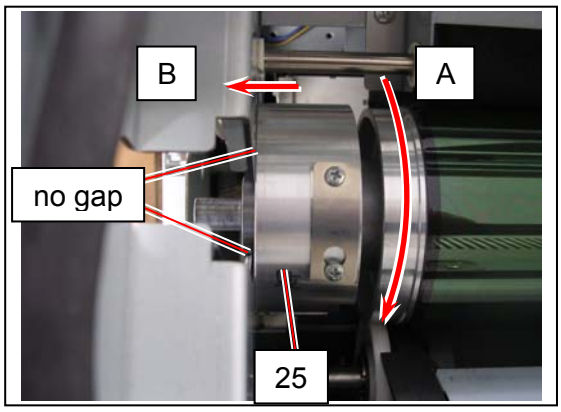


NOTE

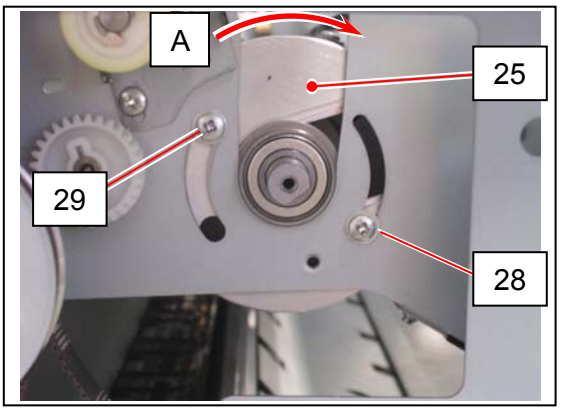
The focus of LED Head will become defective if you do not satisfy the above requirements. Refer to the later pages for greater details.

19. Rotate the left Block (25) fully to the arrow direction (A: to front) and also press it to the arrow direction (B: to outside). This will remove any gap between Block (25) and the side frame of the machine.
With holding Block (25), tighten the screws (28) (29) just enough turn to fix Block (25) temporarily.





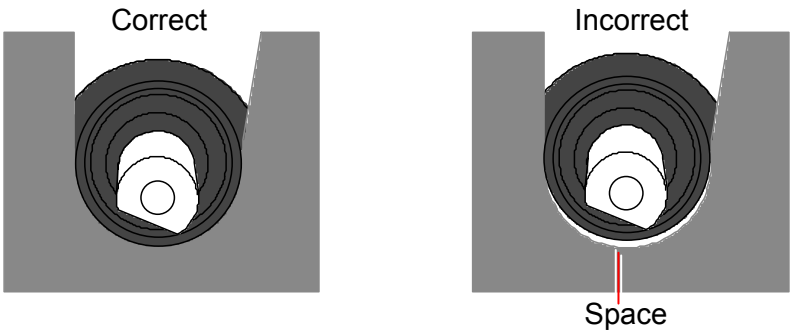
(Seen from the top of machine)



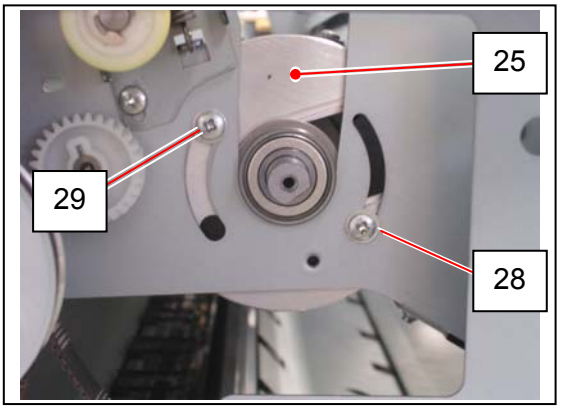
(Seen from the outside of machine)

NOTE

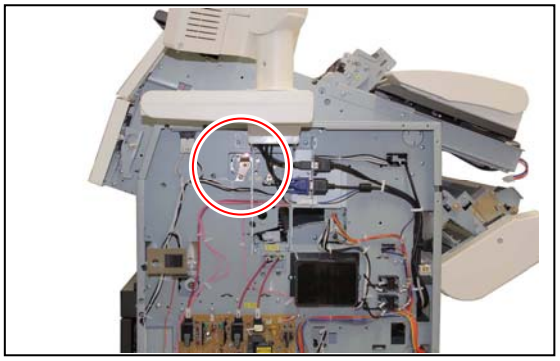
There should be no space between the Bearing and U-shape opening.
The LED focus will become defective if there is any space.

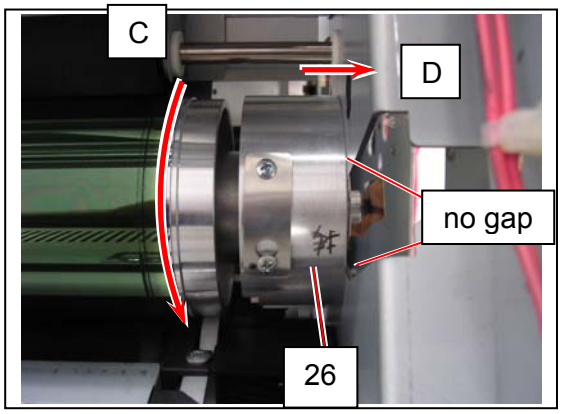


20. Loosen the screws (28) (29) in a (approximately) quarter turn to release Block (25). Check that no excessive backlash to sideways appears.

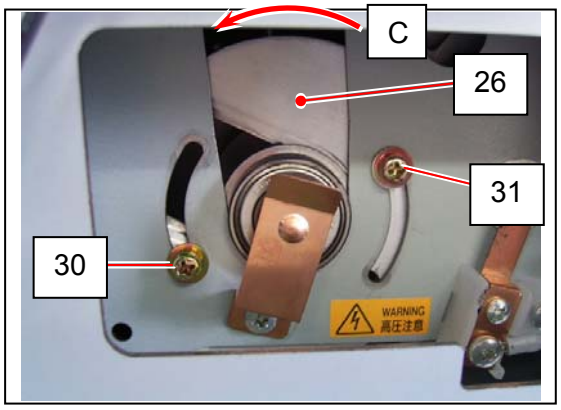


21. Similarly to step 19, rotate the right Block (26) fully to the arrow direction (C: to front) and also press it to the arrow direction (D: to outside). This will remove any gap between Block (26) and the side frame of the machine.
With holding Block (26), tighten the screws (30) (31) just enough turn to fix Block (26) temporarily.



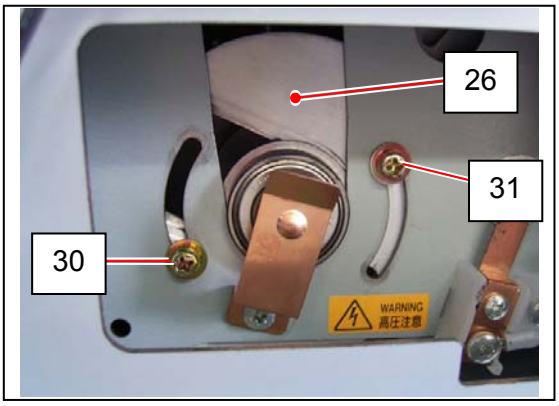


(Seen from the top of machine)



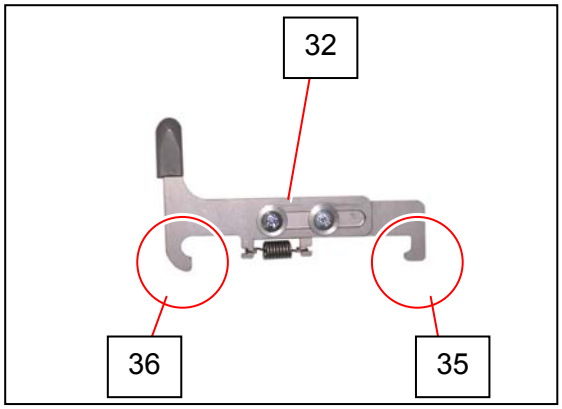
(Seen from the outside of machine)

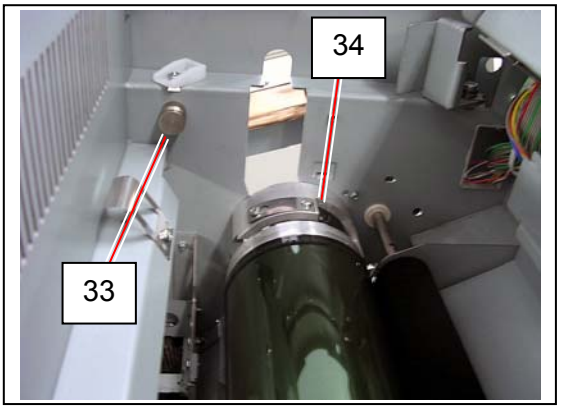
22. Loosen the screws (30) (31) in a (approximately) quarter turn to release Block (4). Check that no excessive backlash to sideways appears.

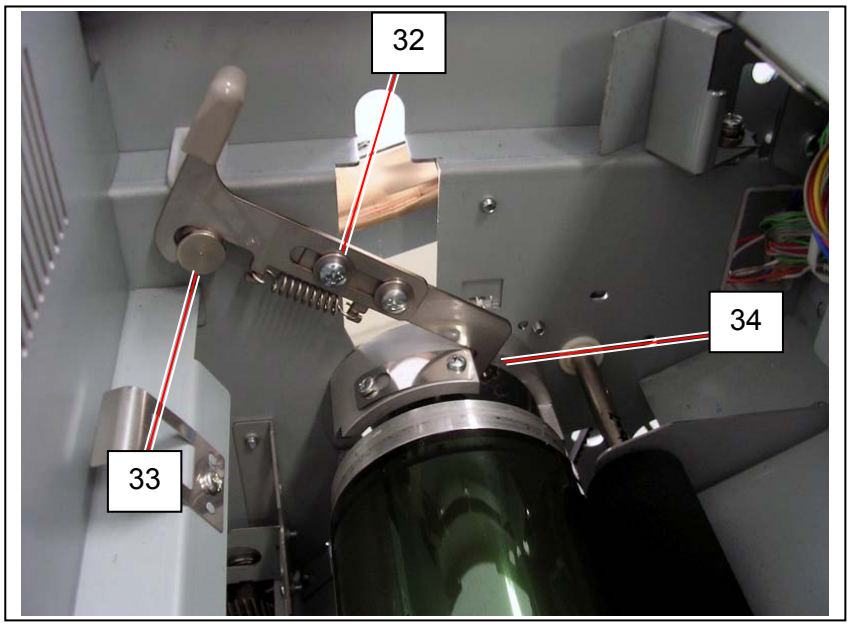


23. Fix Blocks with Drum Block Fix Tool (or by hand). Go to step 23-1 for using Drum Block Fix Tool. Go to step 24 for without Drum Block Fix Tool.

23-1. On the left side, hook Drum Block Fix Tool (32) on between the pin (33) on the frame and the U-shape opening (34) of Block (25).
Hook the rear hook (35) the rim of the U-shape opening (34) and the front hook (36) in the groove of the pin (33).



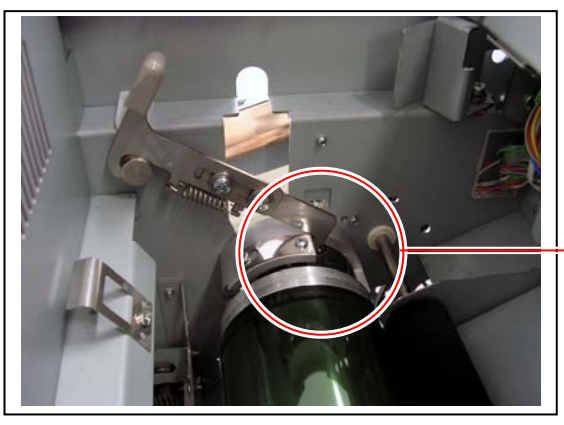


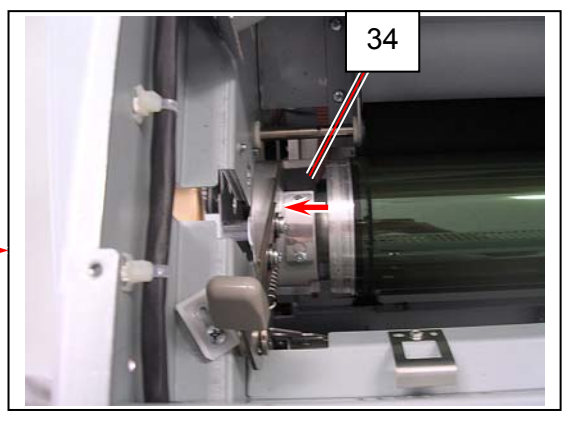


NOTE

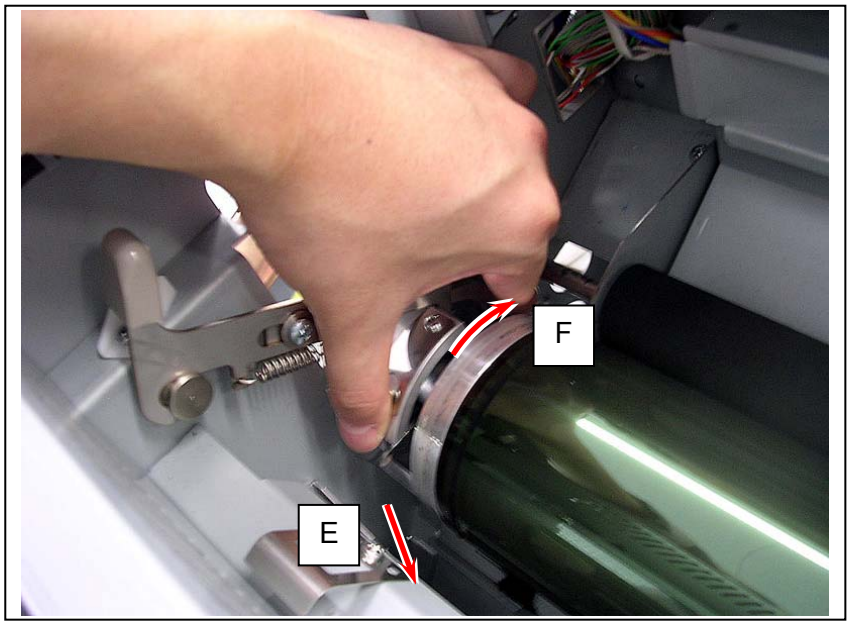
(1) Handle Drum Block Fix Tool with care. Be sure not to damage Drum or any other components when removing/attaching it.

(2) Set the rear hook (35) against the corner rim of U-shape opening (34).

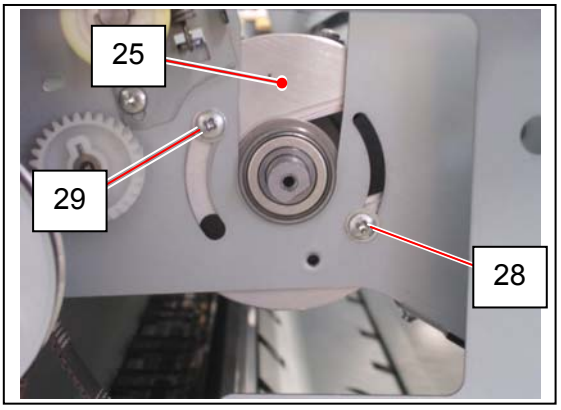




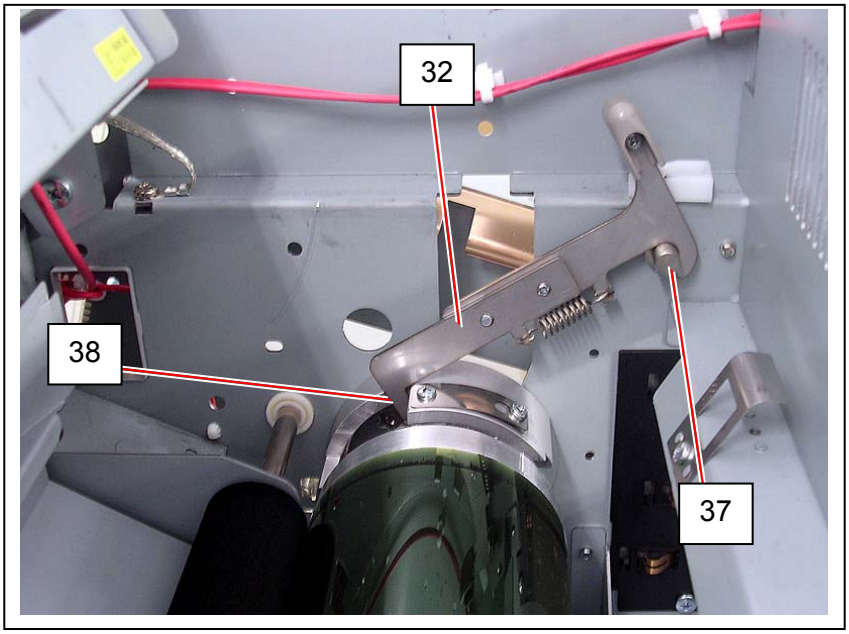
23-2. With pressing Block (25) down (E), slightly turn Block to the arrow direction (F) and release it to locate Block correctly by restoring spring.



23-3. Tighten the lower screw (28) and then the upper screw (29) to secure Block (25).



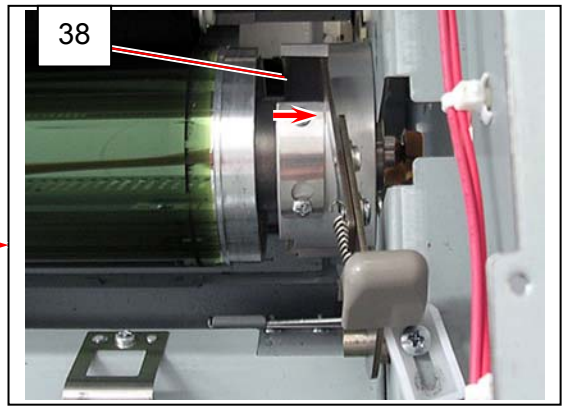
23-4. Similarly to step 23-2, on the right side, hook Drum Block Fix Tool (32) on between the pin (37) on the frame and the U-shape opening (38) of Block (26).



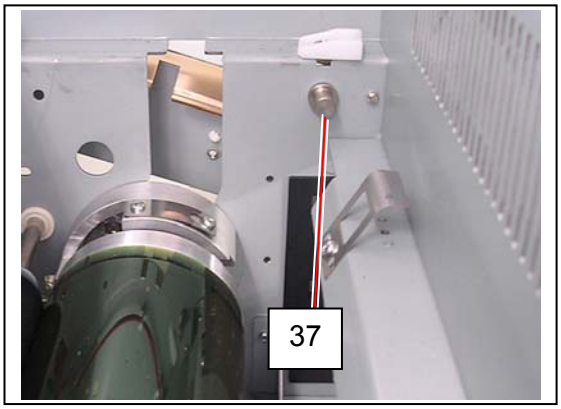
NOTE

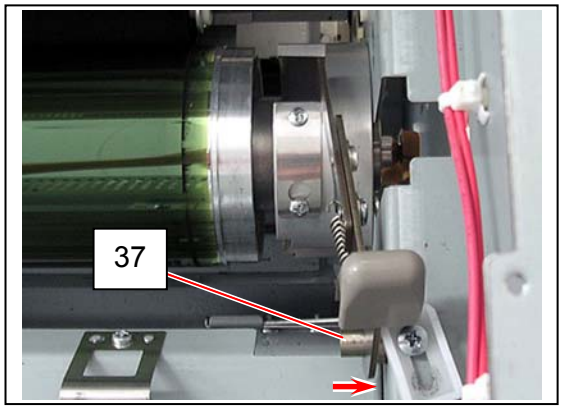
(1) Handle Drum Block Fix Tool with care. Be sure not to damage Drum or any other components when removing/attaching it.

(2) Set the rear hook (35) against the corner rim of U-shape opening (38).

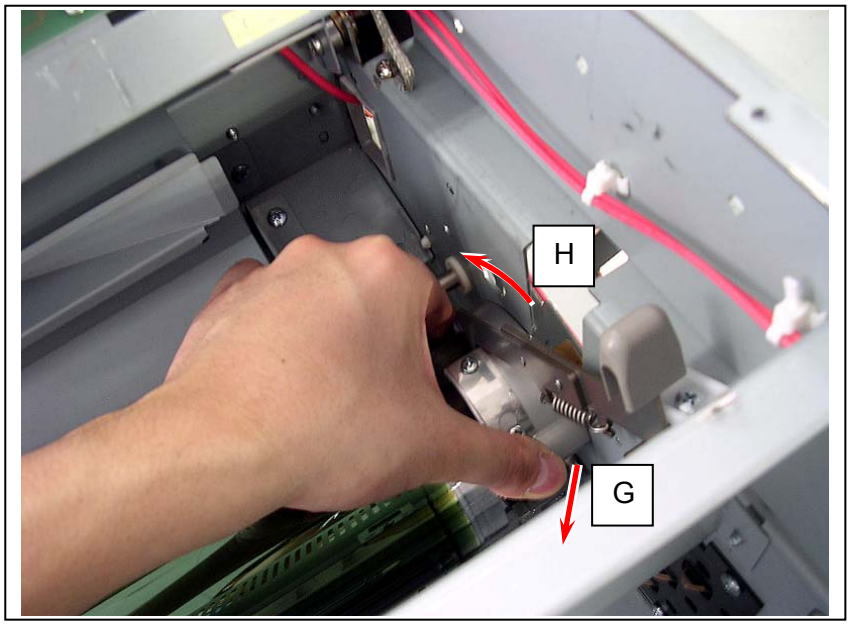


(3) Set the front hook (36) against the step on the pin (37).

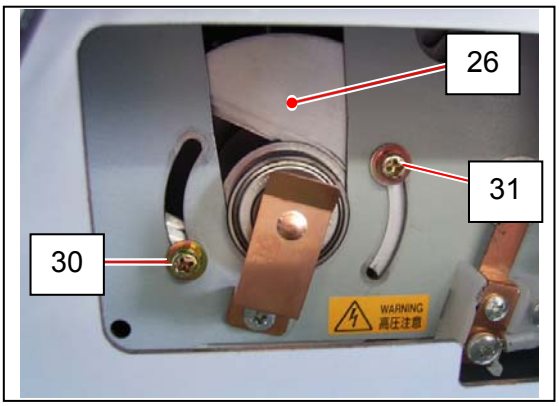




23-5. Similarly to step 23-2, with pressing Block (26) down (G), slightly turn Block to the arrow direction (H) and release it to locate Block correctly by restoring spring.

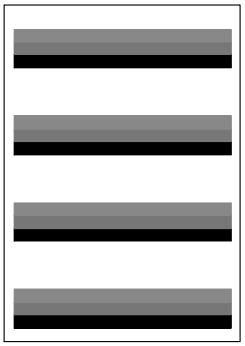
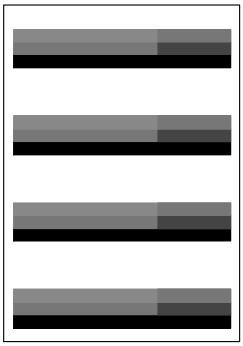


23-6. Tighten the lower screw (30) and then the upper screw (31) to secure Block (26).



23-7. Remove Drum Block Fix Tool. Replace all the parts in position.

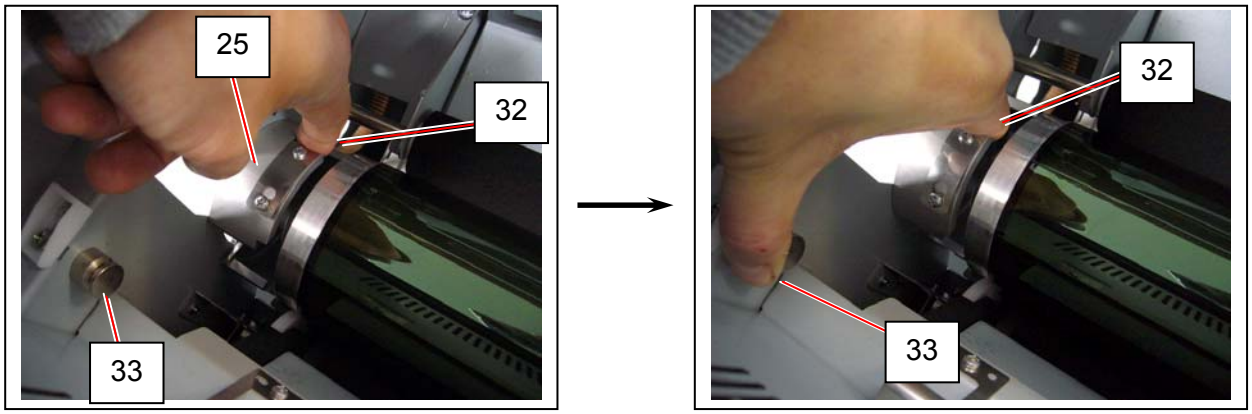
23-8. Print out the Test Pattern No.3, and confirm that the density of halftone is uniform.
If it is still not uniform, fix Blocks again.

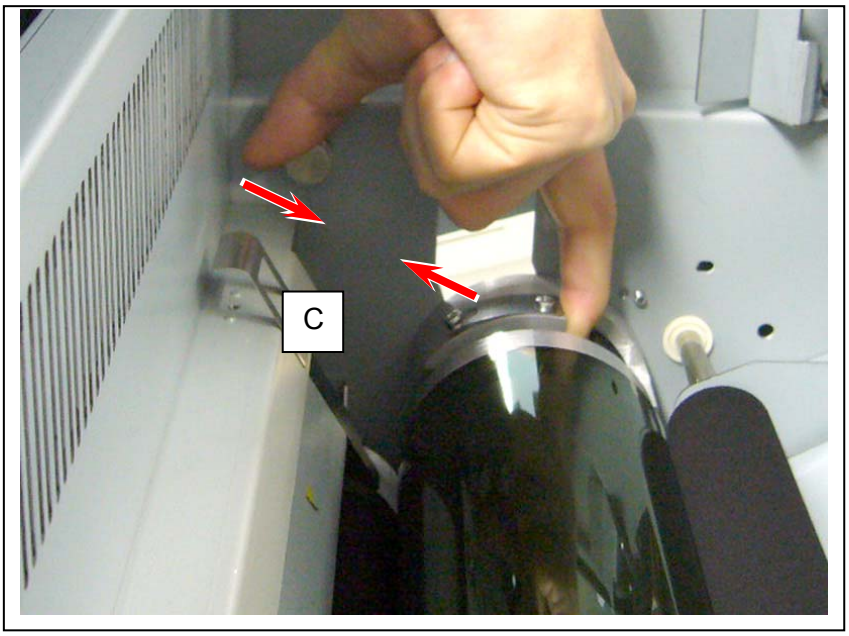
Good (Gray looks uniform)	No	good (Gray looks not uniform)
		

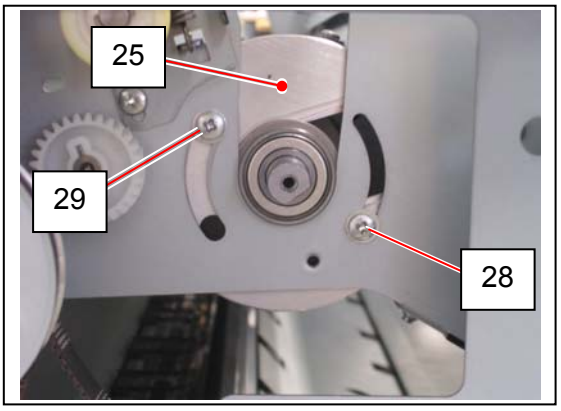
If it is still not uniform although you have fixed the Aluminium Blocks correctly, it is necessary to make focus adjustment with Spacers.
Go to [5. 6. 2. 3 Focus Adjustment with Spacers].

24. Follow the instruction below to fix Blocks without Drum Block Fix Tool.

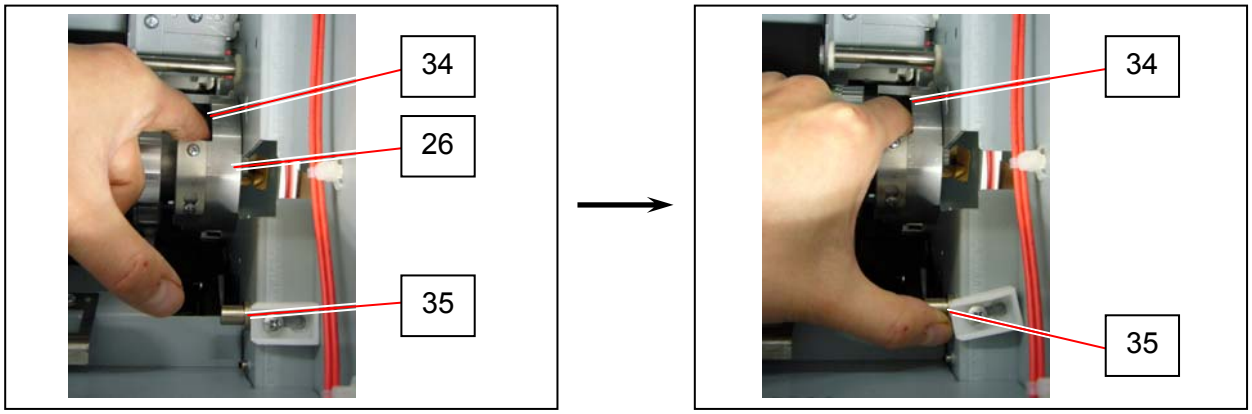
24-1. Put your finger inside the U-shape opening (32) of Block (25). Put the other finger on the pin (33) of the frame.
Push the fingers toward each other (C: inside). Note that the entire Block (25) is shifted towards the pin (33) by the finger at the U-shape opening (32).
While pushing and holding, tighten the lower screw (28) and then the upper screw (29) to secure Block (25).

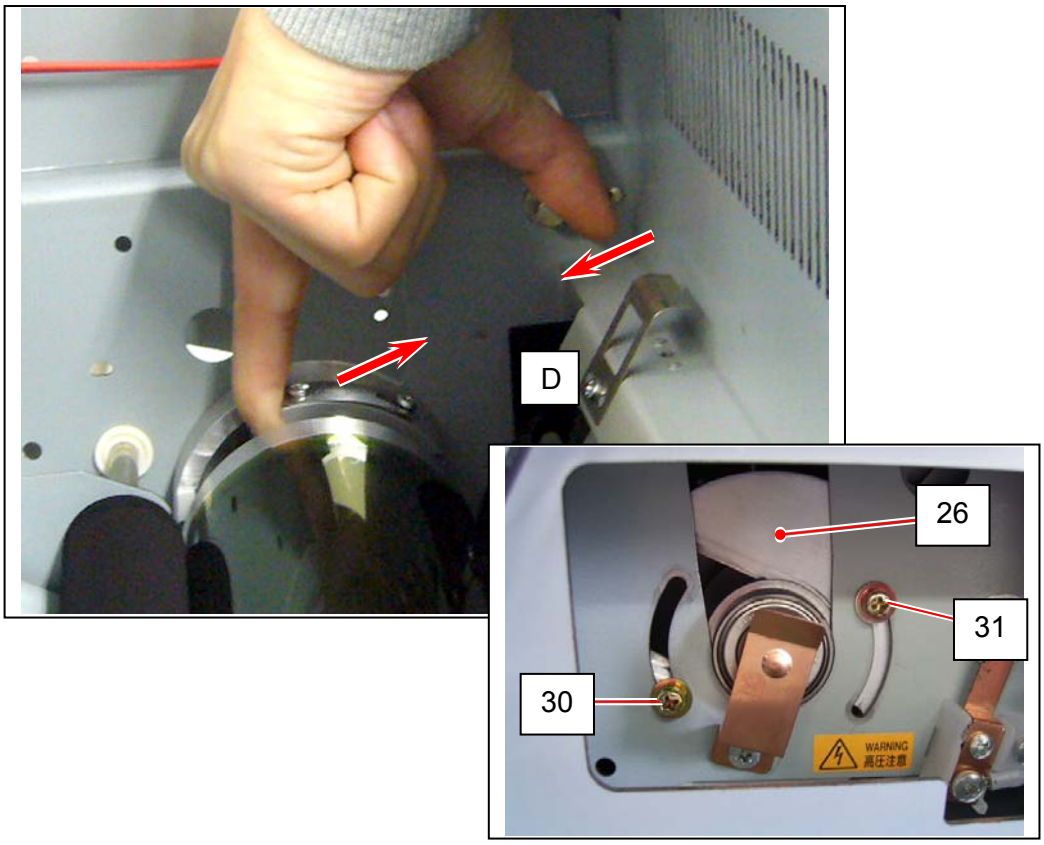






24-2. Similarly to step 24-1, put your finger inside the U-shape opening (34) of Block (26) and put the other finger on the pin (35) of the frame.
Push the fingers toward each other (D: inside). Note that the entire Block (26) is shifted towards the pin (35) by the finger at the U-shape opening (34).
While pushing and holding, tighten the lower screw (30) and then the upper screw (31) to secure Block (26).





24-3. Print out the Test Pattern No.3, and confirm that the density of halftone is uniform.
If it is still not uniform, fix Blocks again.

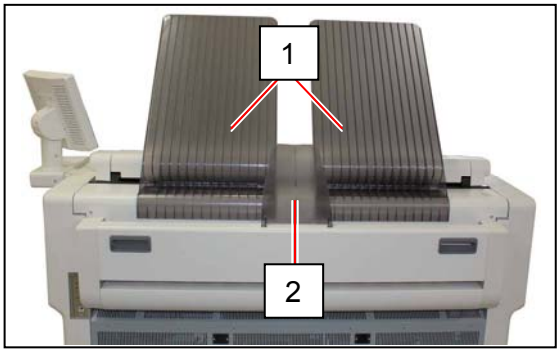
Good	No good
(Gray looks uniform)	(Gray looks not uniform)

If it is still not uniform although you have fixed the Aluminium Blocks correctly, it is necessary to make focus adjustment with Spacers.
Go to [5. 6. 2. 3 Focus Adjustment with Spacers].

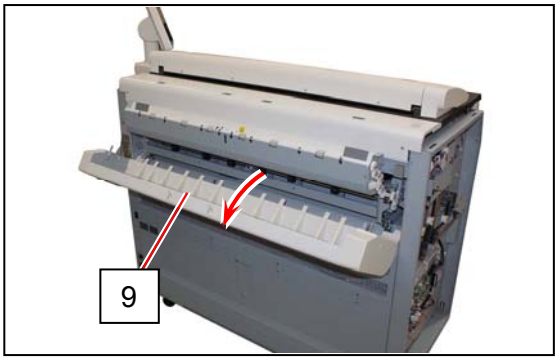
5. 6. 2. 3 Focus Adjustment with Spacers

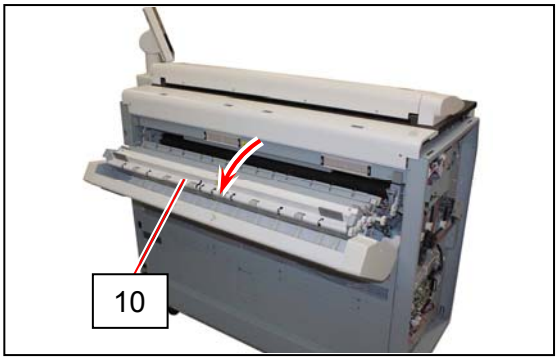
There may be the case that the focus of LED is not correct even if you have placed the Aluminium Blocks at both sides of the Drum Shaft correctly.
This is because the height of the LED is mechanically different between left and right by some reason.
In this case adjust the height by adding or removing the Spacers.

1. Remove 2 pieces of Exit Tray (1) and Exit Tray 2 (2).

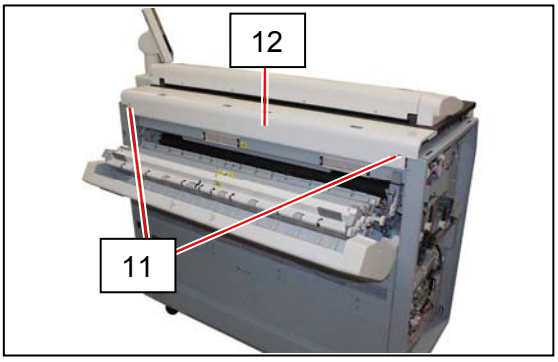


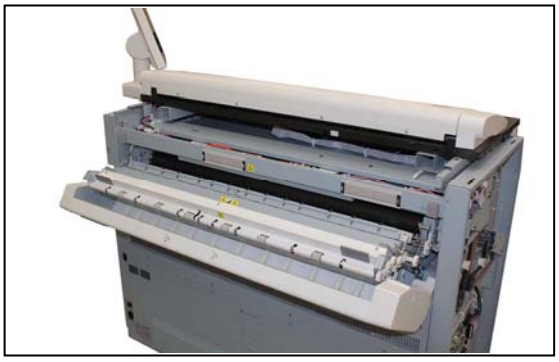
8. Open the Paper Exit Assy (Outside (9) & Inside (10)).



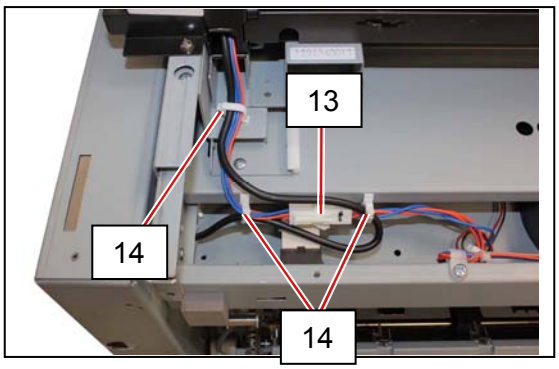


9. Remove 2 screws (11) to remove Cover 10 (12).

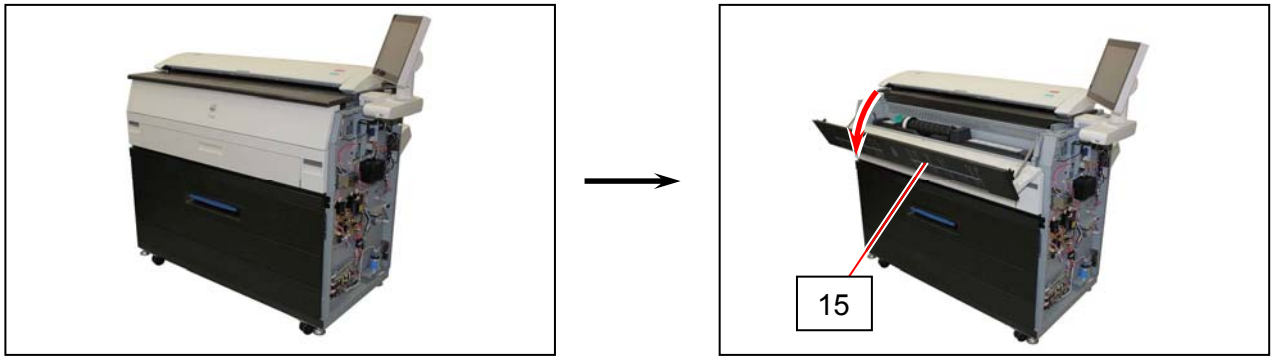




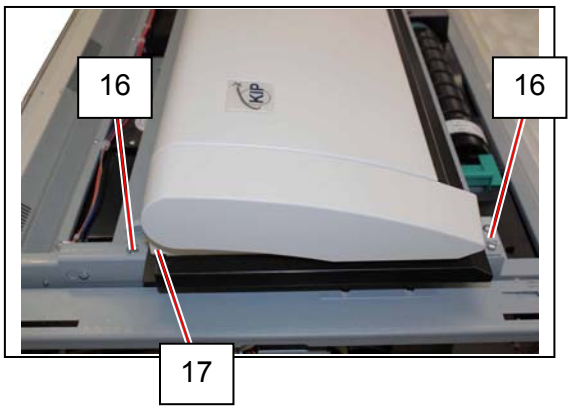
10. Disconnect the connector (13), and open the wire saddles (14) to release the harness.

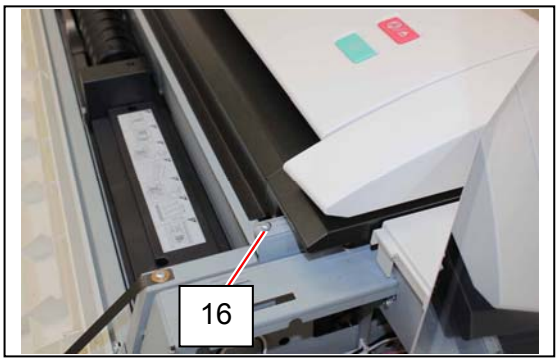


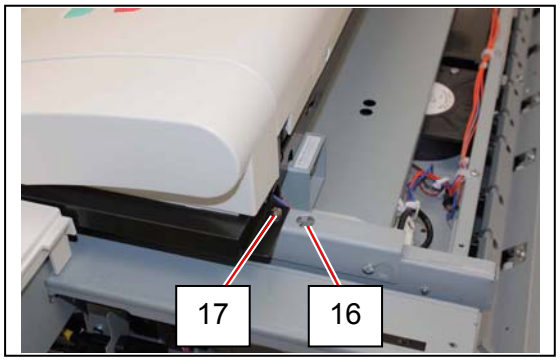
11. Open the Cover 4 (15).



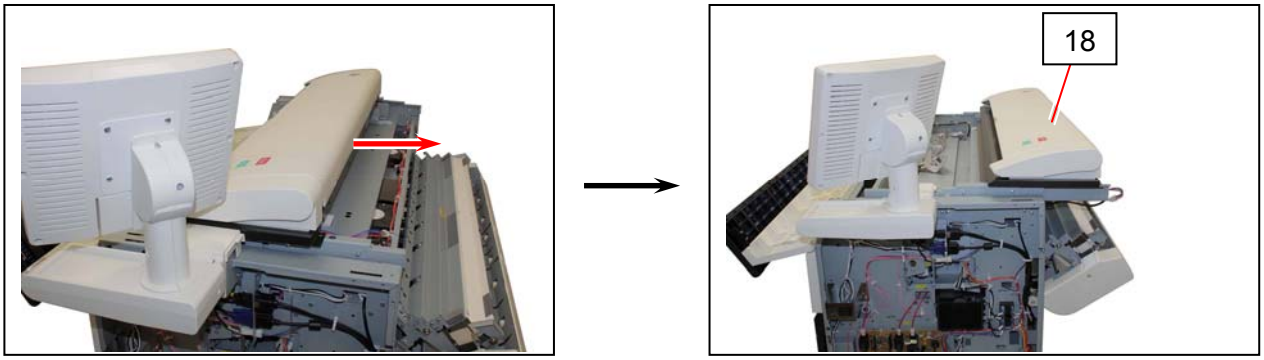
12. Remove 4 pieces of 4x6 screw (16) and 2 pieces of washer screw (17).



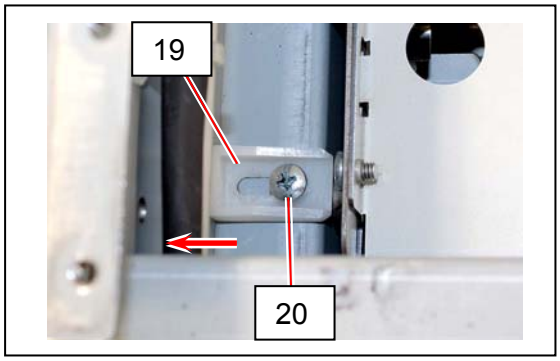




13. Slide the Scanner Unit (18) fully backward.



14. There are 2 pieces of Stopper (19) at both sides, which lock the LED Head Frame.
Loosen the screw (20) and then slide the Stoppers (19) outside to unlock the LED Head Frame.

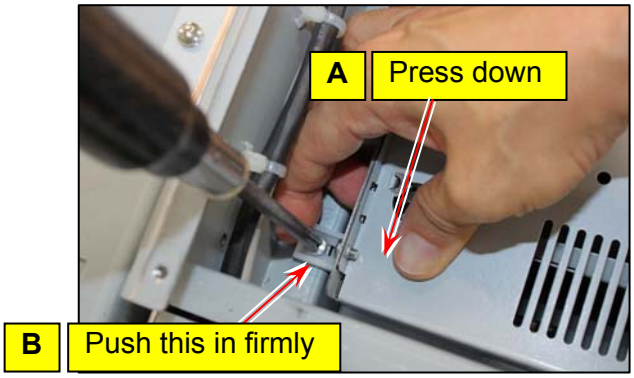


⚠ NOTE

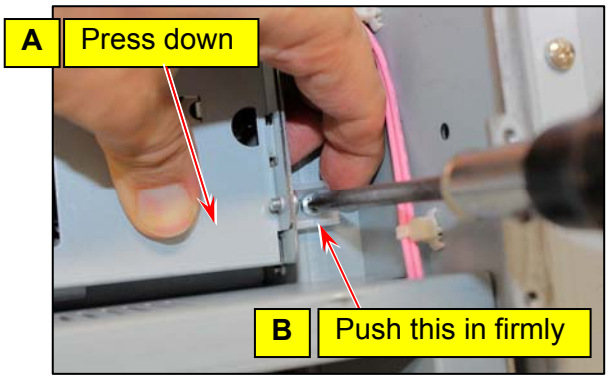
When closing and fixing the LED Head Frame, please take the following steps orderly. The key point is to fix the left side of LED Head Frame first then the right side next, which achieves correct focus of LED Head Frame. **Do not change the order of these steps.**

(1) Close the LED Head Frame.

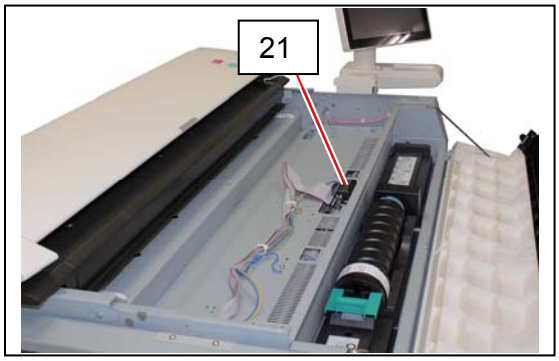
(2) Surely press down and hold the **left side** of LED Head Frame as (A), completely push the white plastic Stopper into the hole as (B), and tighten the screw to fix the Stopper there.

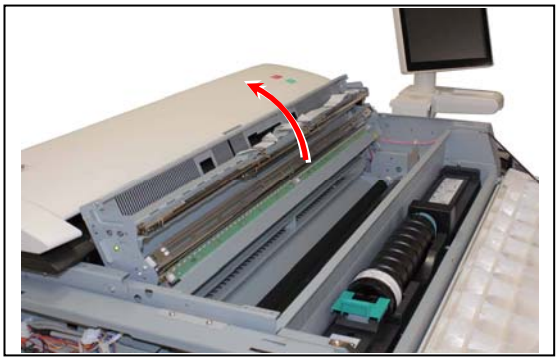


(3) Surely press down and hold the **right side** of LED Head Frame as (A), completely push the white plastic Stopper into the hole as (B), and tighten the screw to fix the Stopper there.



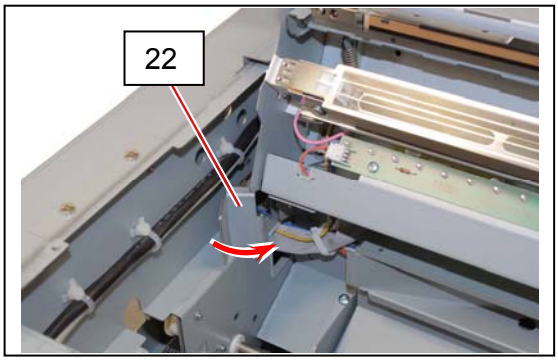
15. Open the LED Head Frame (21).



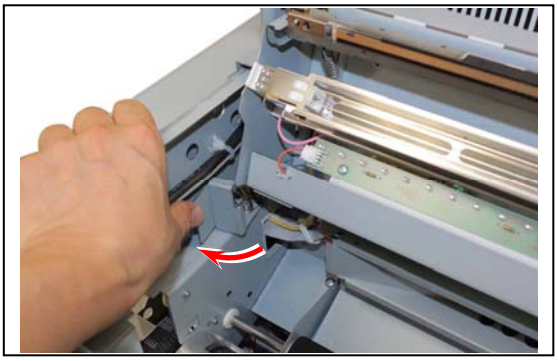


NOTE

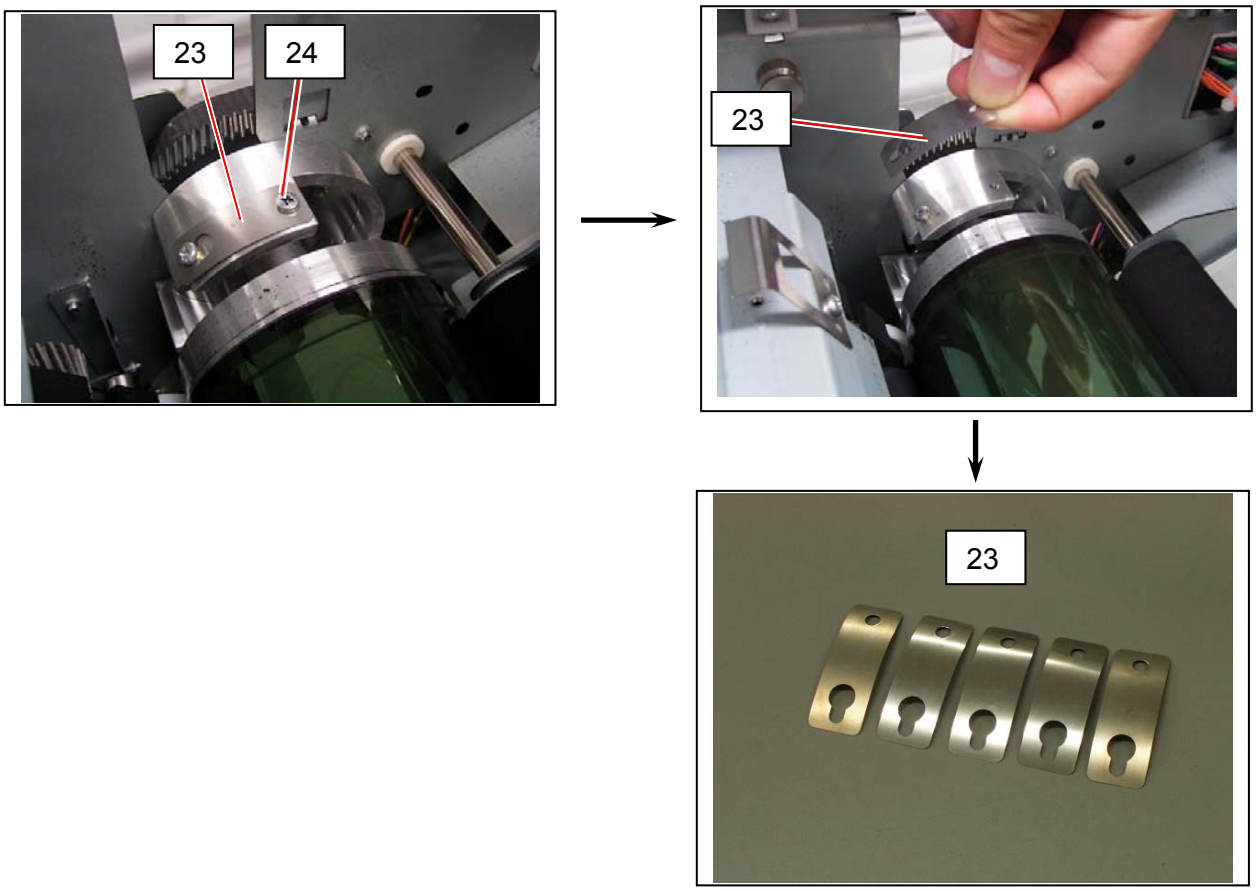
The Stopper 2 (22) comes out automatically to prevent the LED Head Frame from falling down.



Press the Stopper 2 as the right photo if you will close the LED Head Frame.



16. There are Spacers (23) on each Aluminium Block at both sides.
The height of the LED Head can be adjusted by adding more Spacer or removing some of them.
Remove the screw (24), and remove all Spacers (23) at first.
And then adjust the height of LED Head adding or removing the Spacers (23).

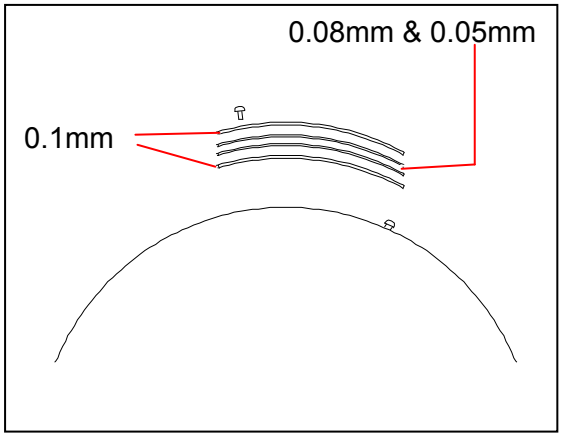


⚠ NOTE

(1) The number of Spacers initially installed is individually different machine to machine.

(2) There are 3 kinds of spacers such as “0.1mm”, “0.08mm” and “0.05mm” in thickness. Please find the best combination by making several times of trial.

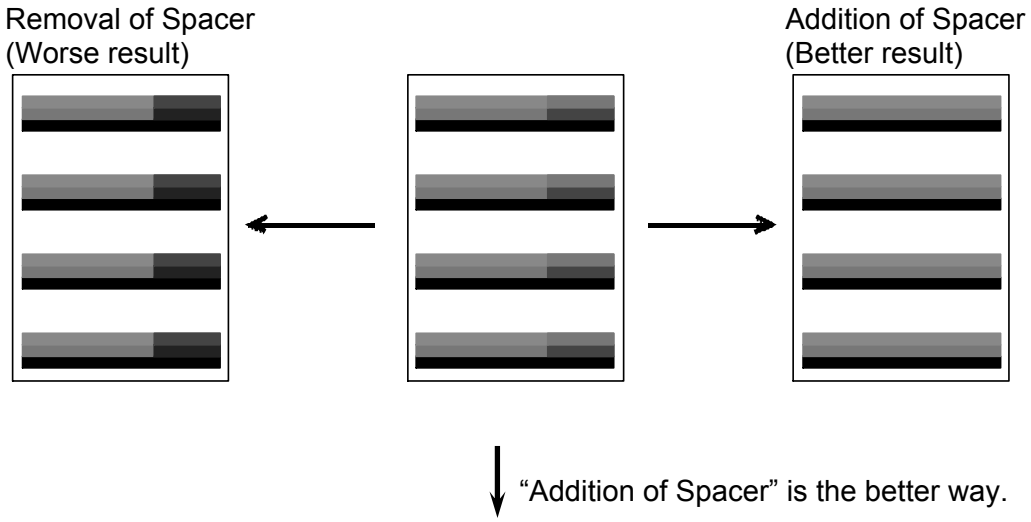
(3) Basically thinner Spacers (0.08mm & 0.05mm ones) must be held between the 0.1mm Spacer as the right picture.



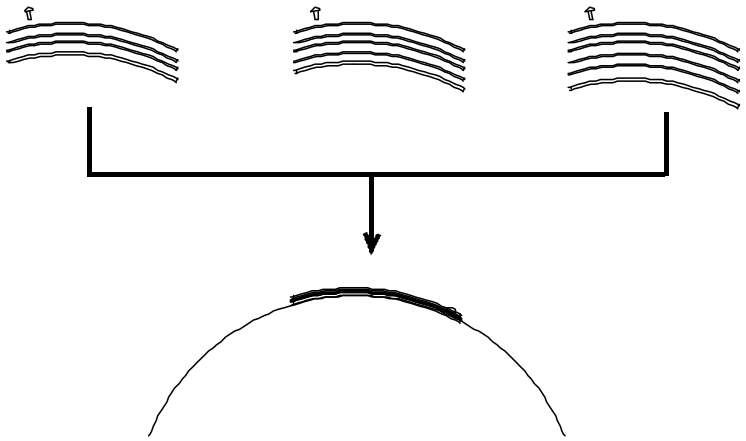
⚠ NOTE

(4) It is quite not clear which of “addition” or “removal” of Spacer is effective to solve the focus problem.
(Even if the defective image caused by the focus problem looks same, for example, it is fixed by “addition” in some case but in another case it is fixed by “removal”.

Only the way to find the best focus is just “trial”.
Please try both “removal” and “addition” to find which way the image becomes better.
After finding the better way, try several combinations of Spacers to find the best height.



Try several combinations of Spacers by adding the Spacers gradually.



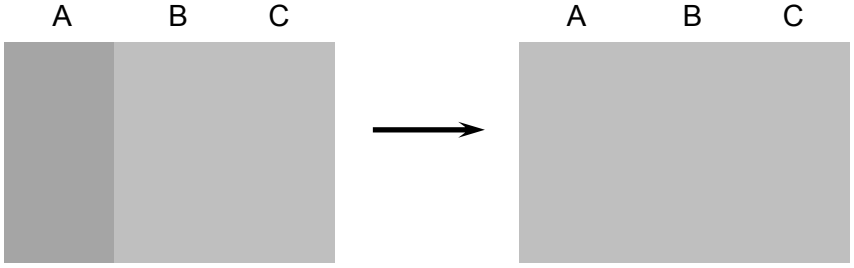
5. 6. 2. 4 Adjustment of density balance among 3 LED blocks (if necessary)

If the densities among 3 LED blocks still look different slightly even after the Focus adjustment with Spacers, please adjust the density balance.

The items No.769, 770 and 771 of the Adjustment Mode allows for increasing or decreasing the density of each LED block. Please set to higher value for increasing the density, and vice versa.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/AS		
769	Darkness of LED Head Block A	160	160	0 to 200	-
770	Darkness of LED Head Block B	160	160	0 to 200	
771	Darkness of LED Head Block C	160	160	0 to 200	

(Example of adjustment)
If the LED block A (left) looks darker than other 2 blocks, set the No.769 to lower value.



As for the details of these settings, see each of the following section.
- [8. 4. 3.142 Darkness of LED Head Block A (No. 769)]
- [8. 4. 3.143 Darkness of LED Head Block B (No. 770)]
- [8. 4. 3.144 Darkness of LED Head Block C (No. 771)]

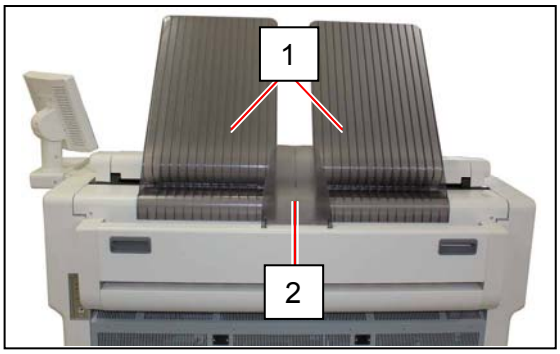
⚠ NOTE

If the difference of setting values between 2 blocks gets bigger than 20 during the trial to balance their densities, please see the former section [5.6.2.3 Focus Adjustment with Spacers] again and review if the adjustment with using the Spacer is correctly done or not.

5. 7 Image Corona

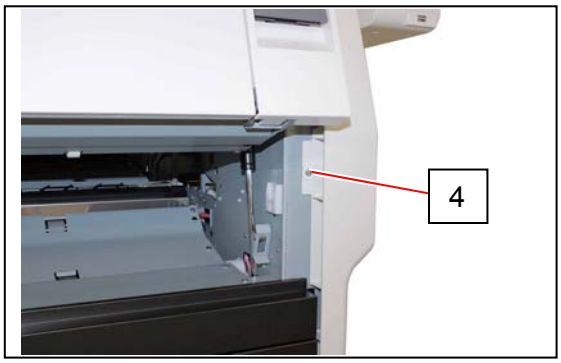
5. 7. 1 Removal of the Image Corona Unit

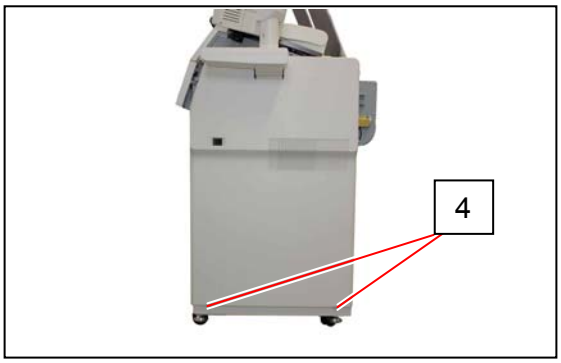
1. Remove 2 pieces of Exit Tray (1) and Exit Tray 2 (2).

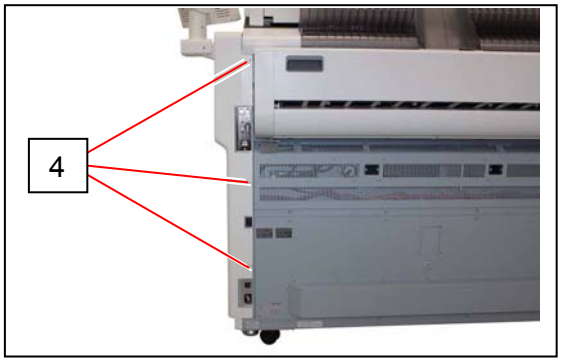


2. Pull up the Lever 2 (3) to open the Engine Unit.

3. Remove the 6 screws (4) to remove the Cover 3 (5).

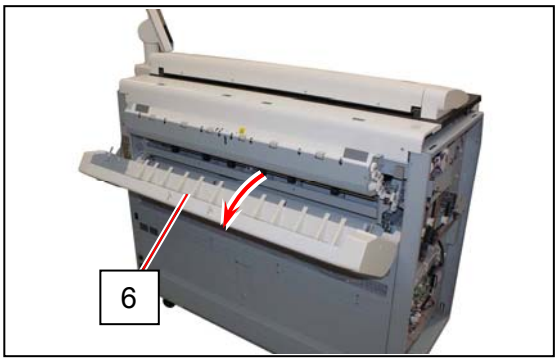


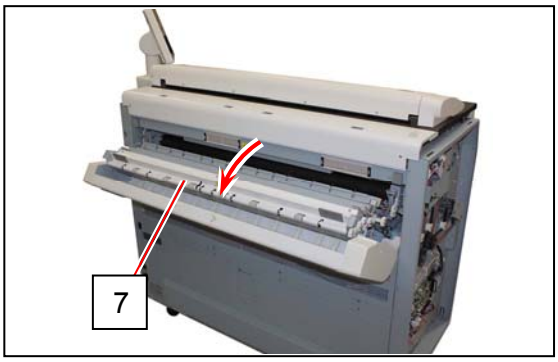




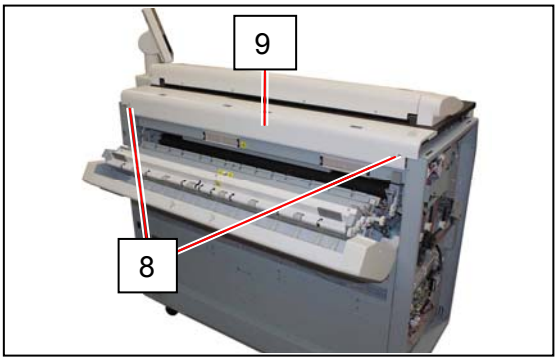
4. Close the Engine Unit.

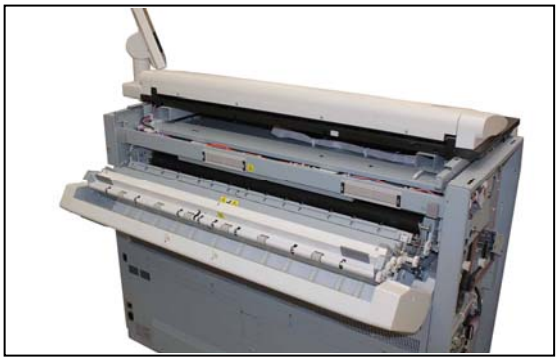
5. Open the Paper Exit Assy (Outside (6) & Inside (7)).



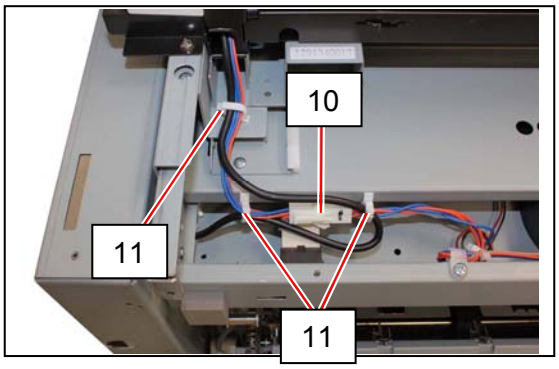


6. Remove 2 screws (8) to remove Cover 10 (9).

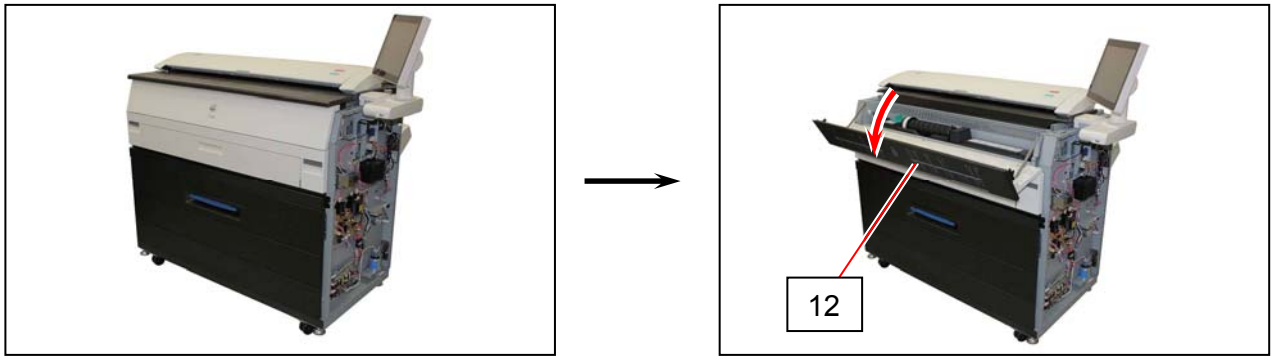




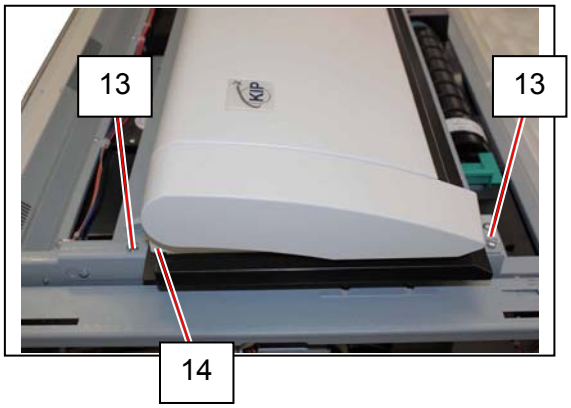
7. Disconnect the connector (10), and open the wire saddles (11) to release the harness.

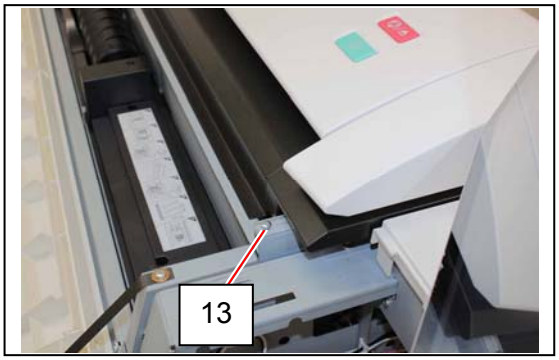


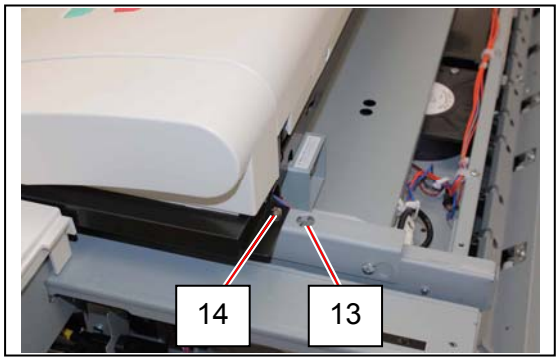
8. Open the Cover 4 (12).



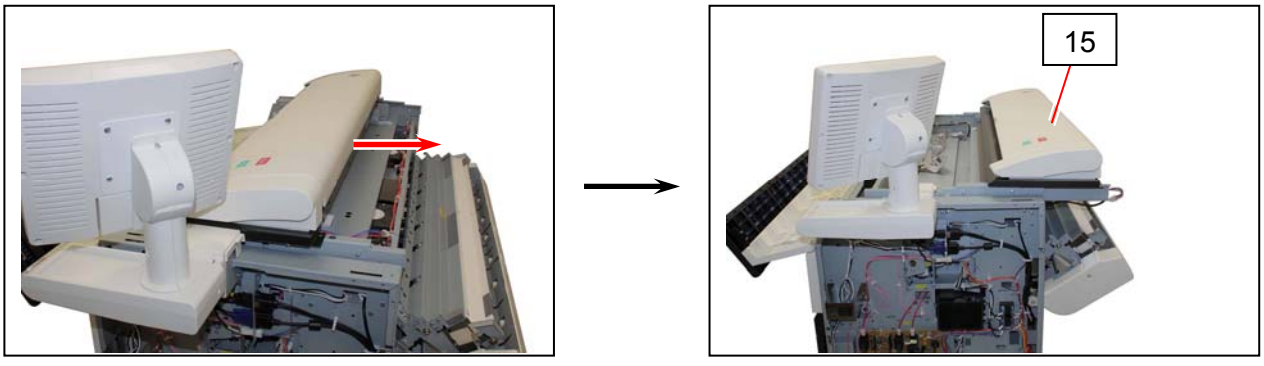
9. Remove 4 pieces of 4x6 screw (13) and 2 pieces of washer screw (14).



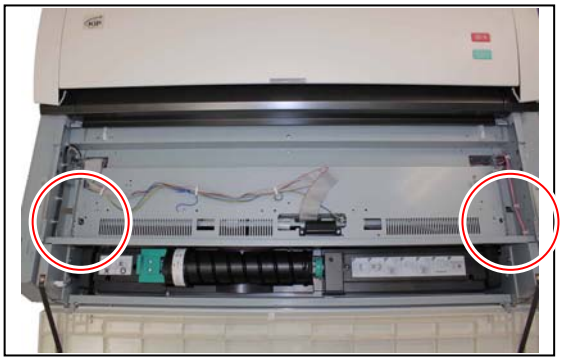


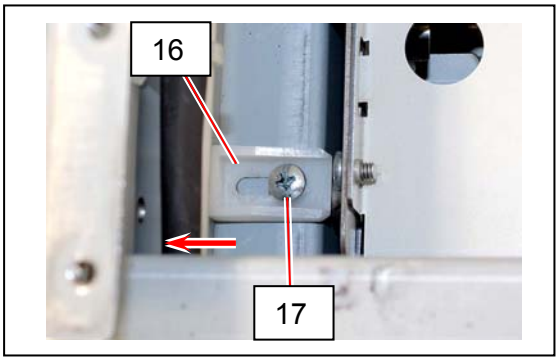


10. Slide the Scanner Unit (15) fully backward.



11. There are 2 pieces of Stopper (16) at both sides, which lock the LED Head Frame.
Loosen the screw (17) and then slide the Stoppers (16) outside to unlock the LED Head Frame.



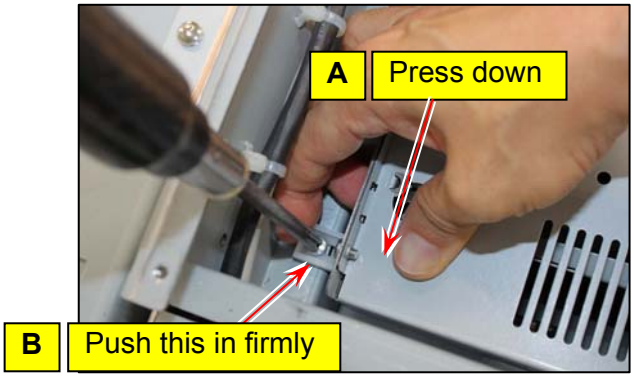


NOTE

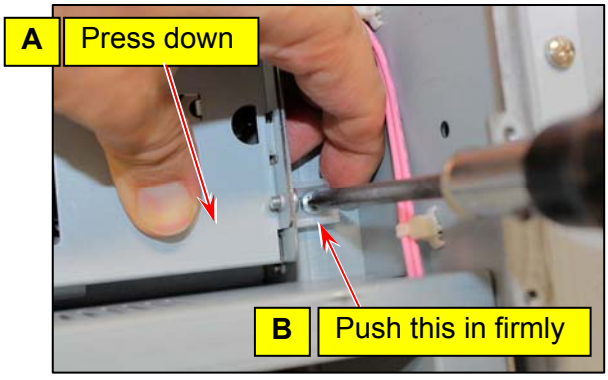
When closing and fixing the LED Head Frame, please take the following steps orderly. The key point is to fix the left side of LED Head Frame first then the right side next, which achieves correct focus of LED Head Frame. **Do not change the order of these steps.**

(1) Close the LED Head Frame.

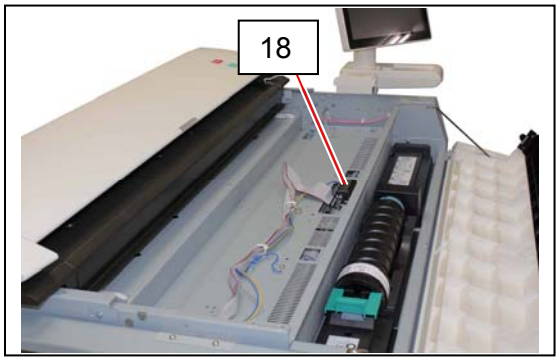
(2) Surely press down and hold the **left side** of LED Head Frame as (A), completely push the white plastic Stopper into the hole as (B), and tighten the screw to fix the Stopper there.

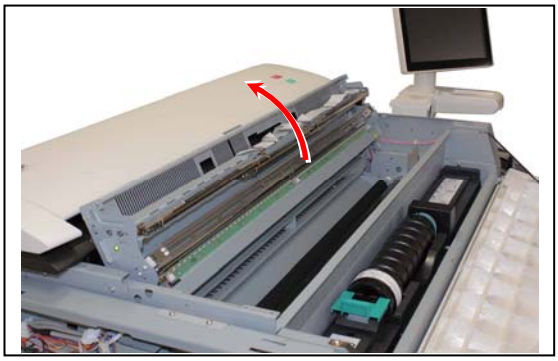


(3) Surely press down and hold the **right side** of LED Head Frame as (A), completely push the white plastic Stopper into the hole as (B), and tighten the screw to fix the Stopper there.



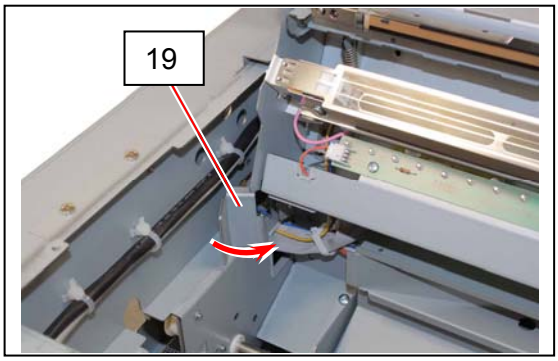
12. Open the LED Head Frame (18).



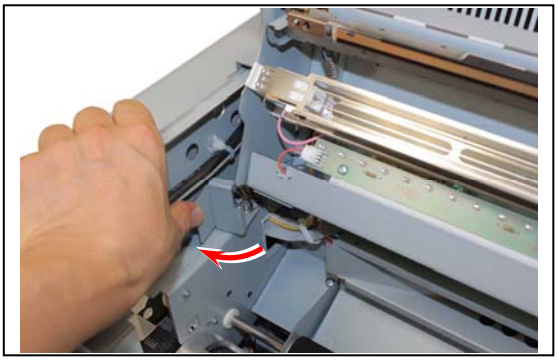


NOTE

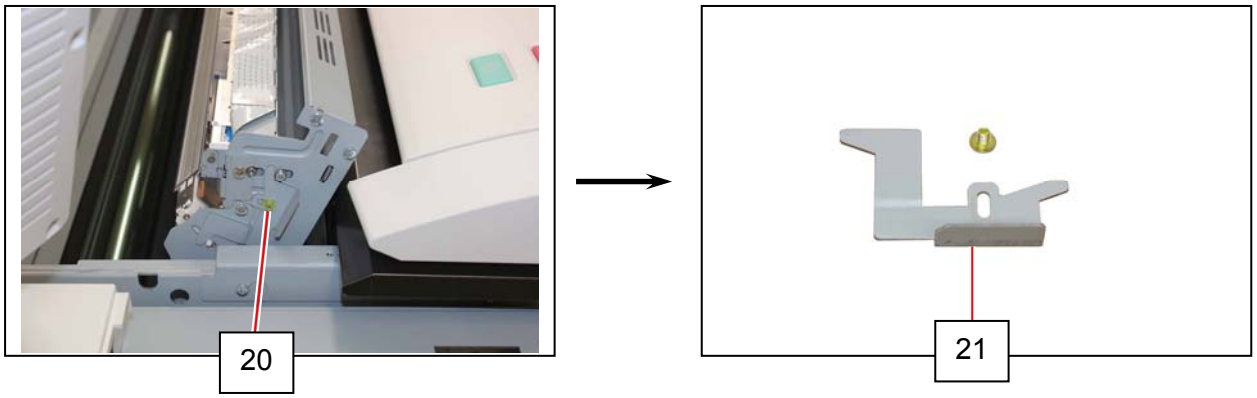
The Stopper 2 (19) comes out automatically to prevent the LED Head Frame from falling down.



Press the Stopper 2 as the right photo if you will close the LED Head Frame.



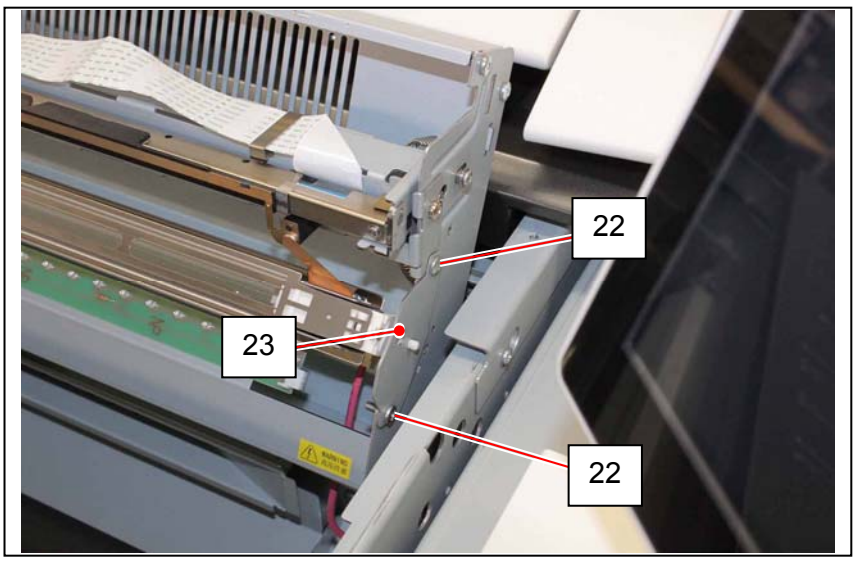
13. Remove the 4x6 screw (20) to remove the Fixing Bracket (21) on the right.



NOTE

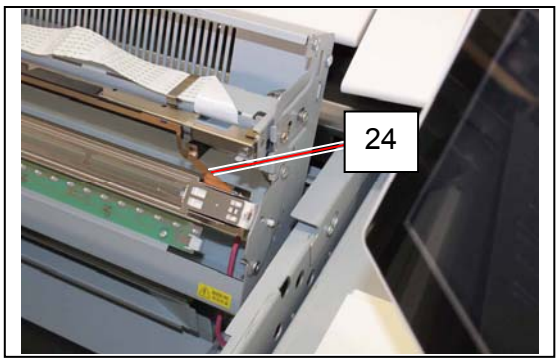
Fixing Bracket (21) is required only when the machine is in delivery or when it is moved long way from one place to another. Printer operates without problem even if this is removed. If you have no chance to move the machine from current installation place, therefore, it is recommended to keep it removed.

14. Loosen 2 pieces of 4x10 screw (22) to make the Plate (23) enough movable.

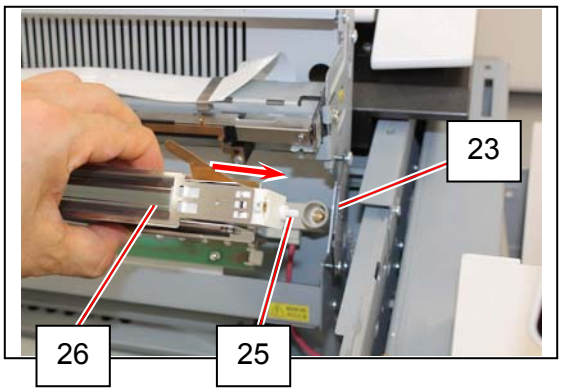


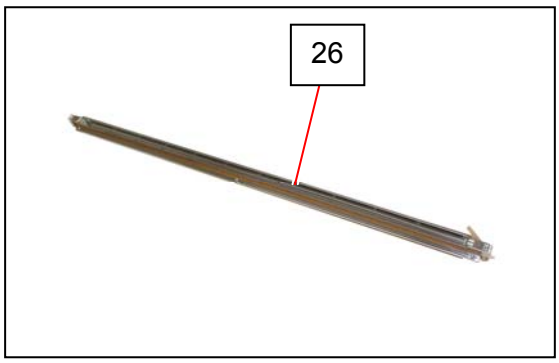
NOTE

Be careful not to damage/deform/stretch Leaf Spring 2 (24).
Doing so may damage LED Head Unit.



15. Move the Plate (23) to the right to release the pin (25) of Corona Block.
Then remove the Image Corona Unit (26).





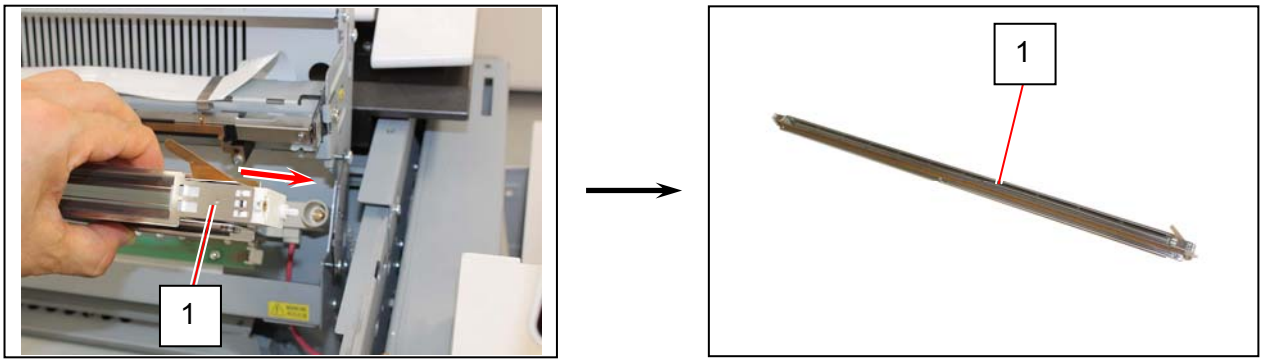
5. 7. 2 Replacement of the Corona Wire

NOTE

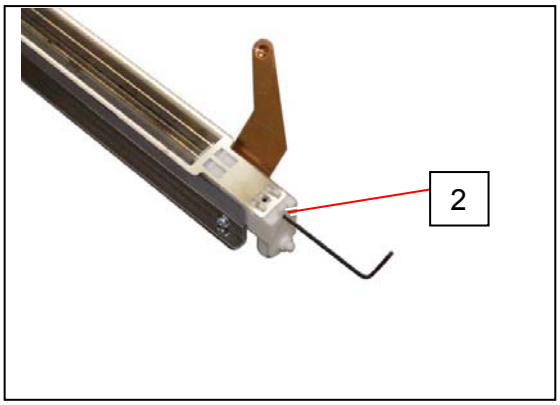
A periodic replacement for the following parts is recommended.

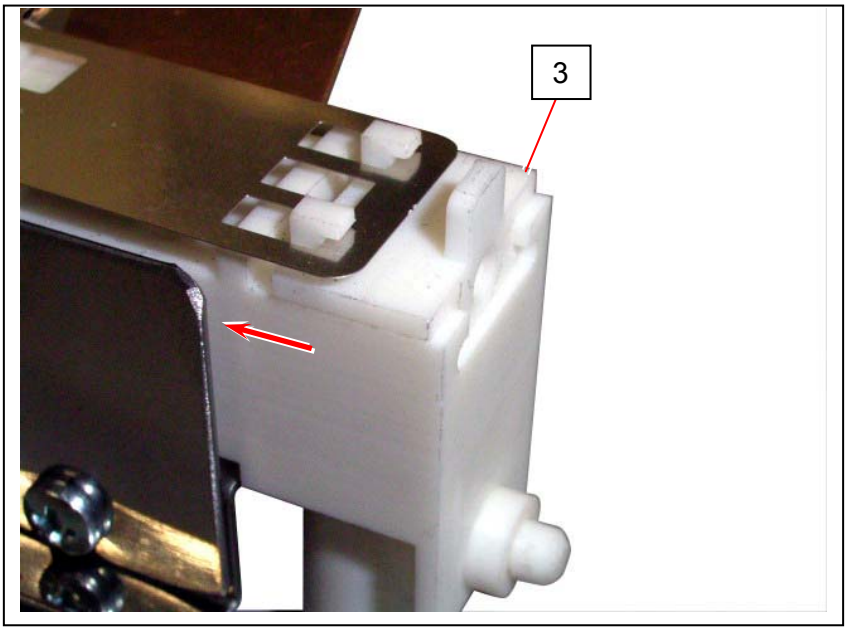
Item	Number of article	Remarks
Corona Wire (1) Assy	1	All of these parts are contained in "Corona Wire Kit" (Z160980200)
Spring 2	1	

1. Remove the Image Corona Unit (1) from the machine making reference to [5. 7. 1 Removal of the Image Corona Unit].



2. Loosen the Set Screw (2) with hexagon wrench.
The Block 3 (3) moves to the arrow mark and the Grid Plate is unfastened.



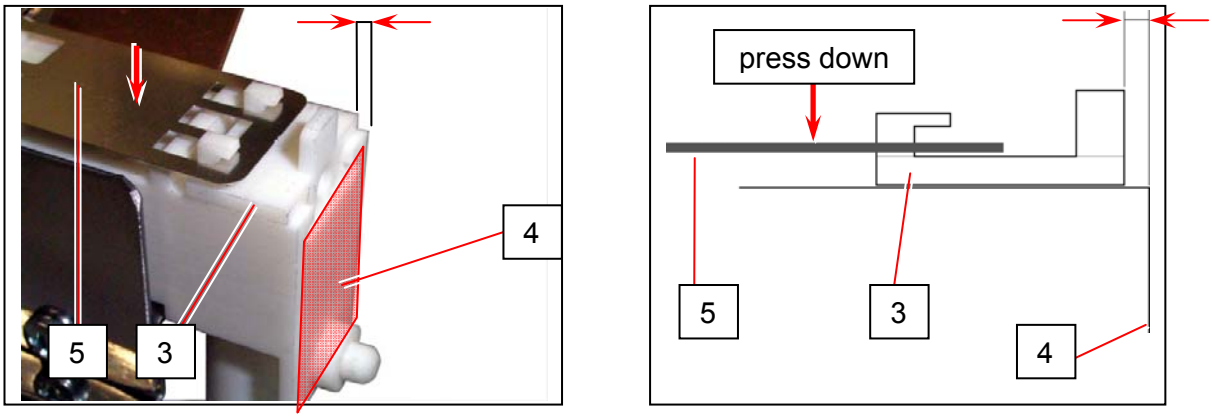


NOTE

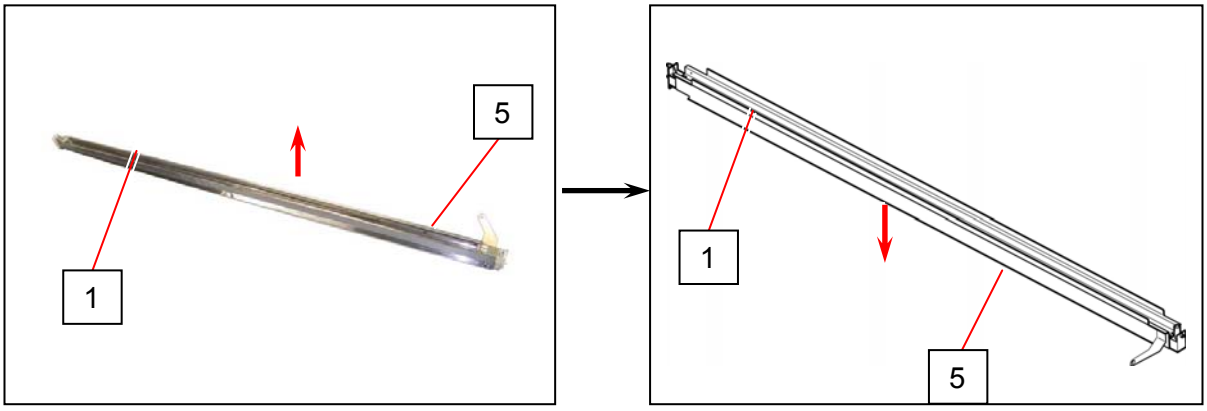
Check the following when reassembling.

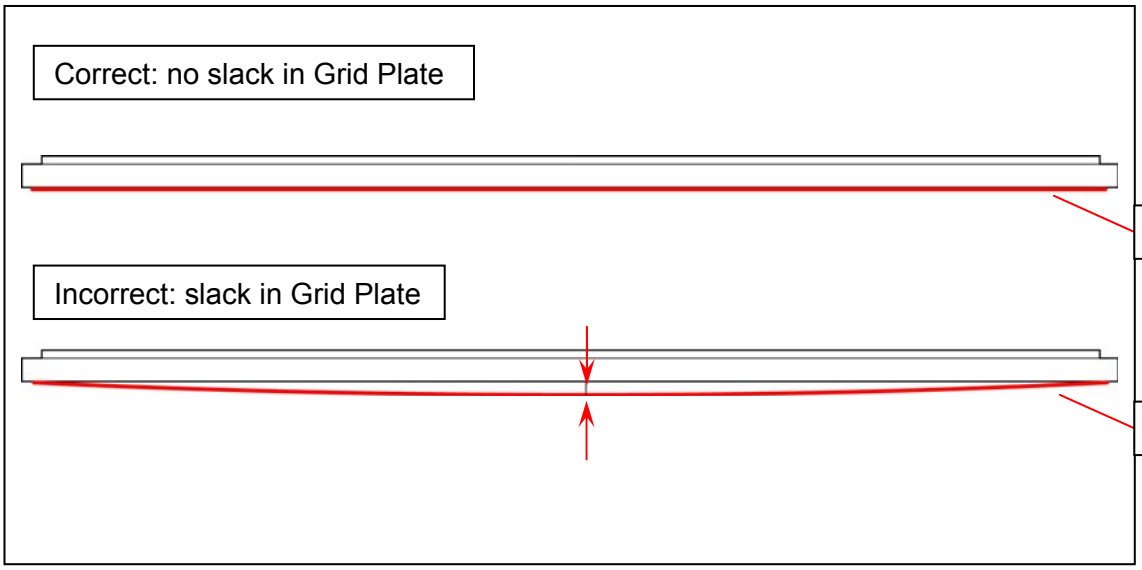
(1) The side edge of Block 3 (3) should stop at 0.5mm short of the side face (4) of the corona block for a proper tension.
Rotate a hexagon wrench in either direction with pressing down Grid Plate (5).

0.5mm 0.5mm

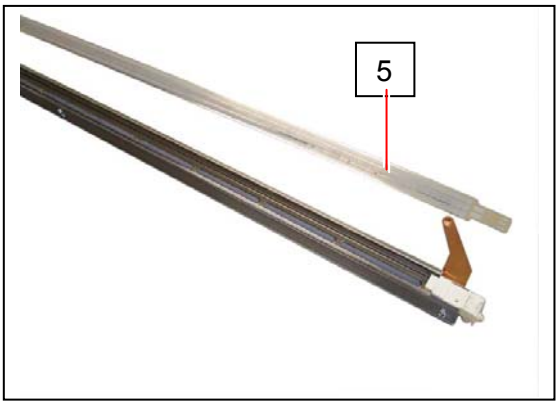


(2) Carry Image Corona Unit (1) by both corona blocks so that Grid Plate (5) faces the floor.
Make sure that Grid Plate (5) has no excess slack (in less than 1mm) on the middle of the housing.





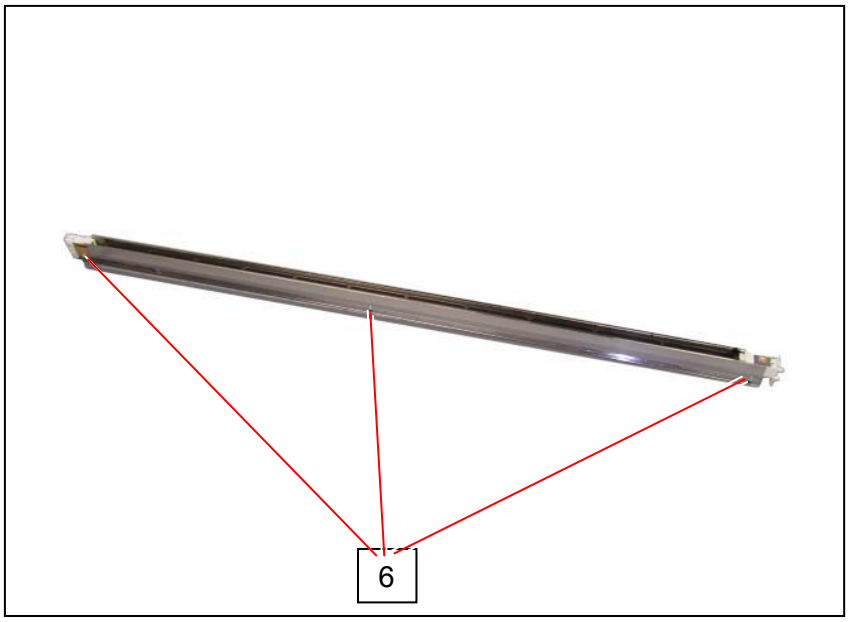
3. Remove the Grid Plate (5).

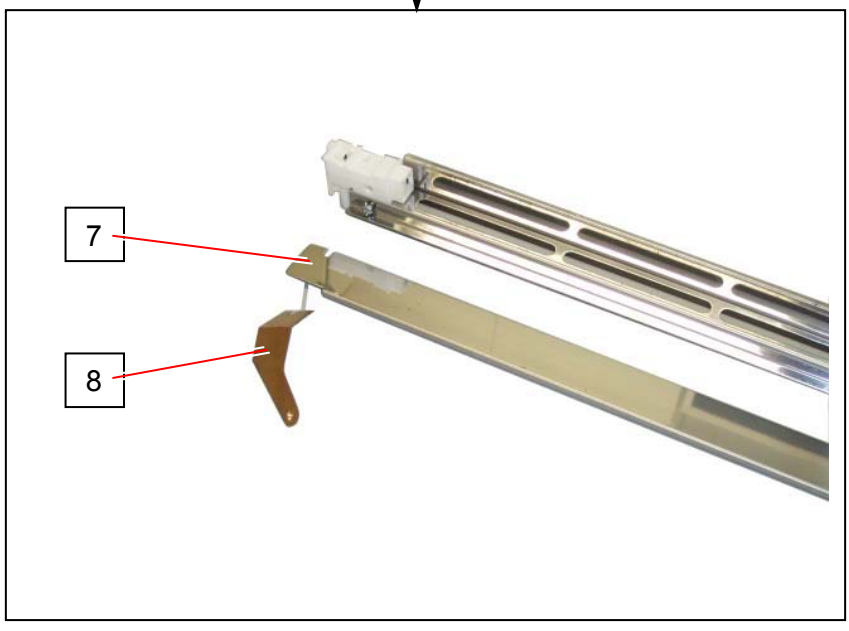


NOTE

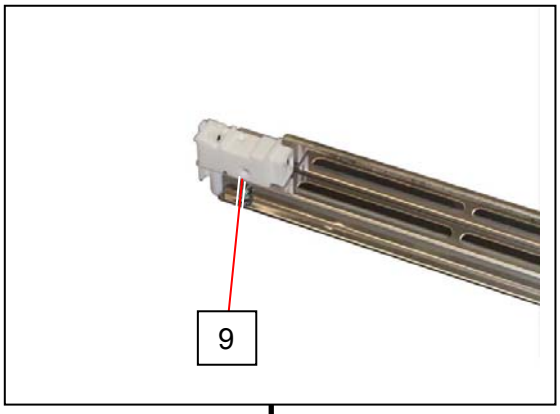
If Grid Plate is dirty, wash it with the neutral detergent and then with water. Dry it well after washing.

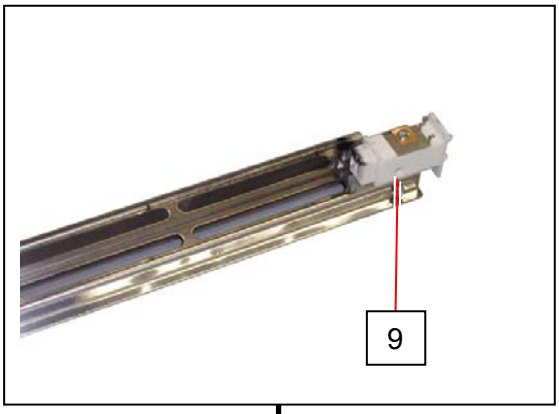
4. Loosen 3 pieces of 3x6 screw (6), and then remove Corona Housing (7) and Plate Electrode (8).

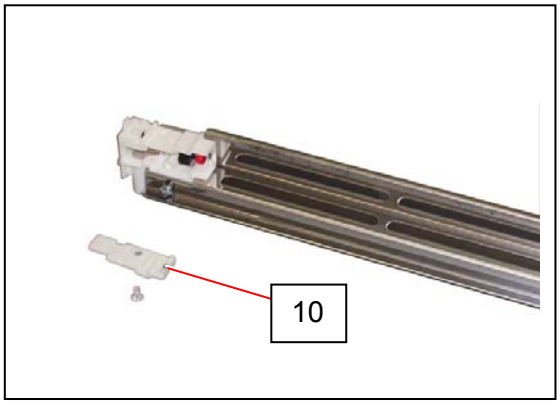


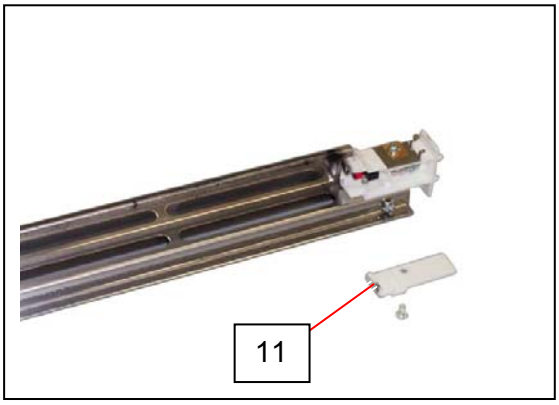


5. Remove the Flush Head Screw (9), and remove each Cover (10) and Cover 2 (11).

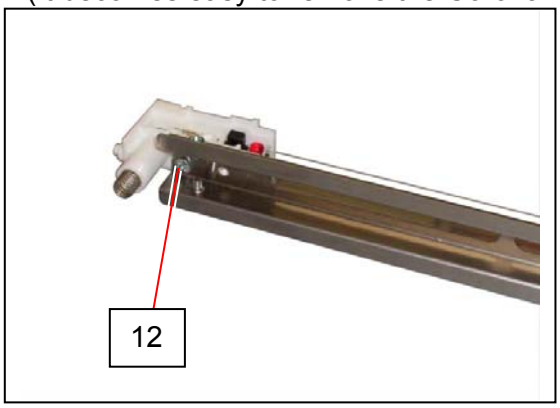


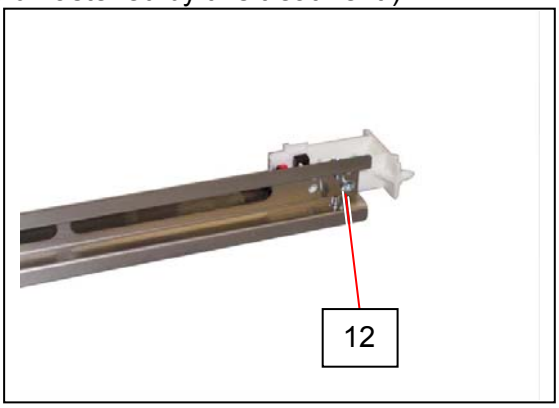




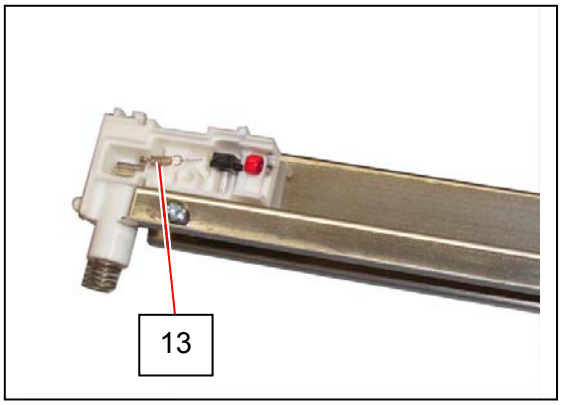


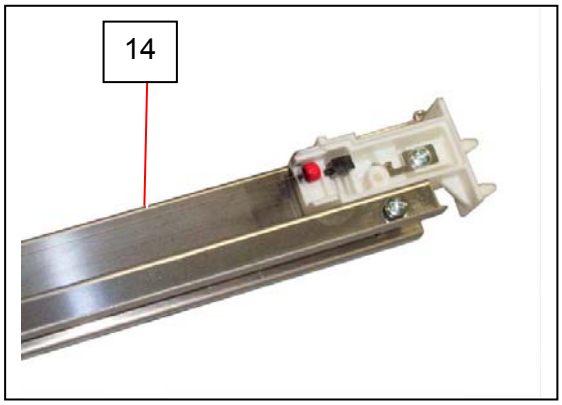
6. Loosen the screws (12) to lower the Height Adjuster.
(It becomes easy to remove the Corona Wire as it is unfastened by this treatment.)





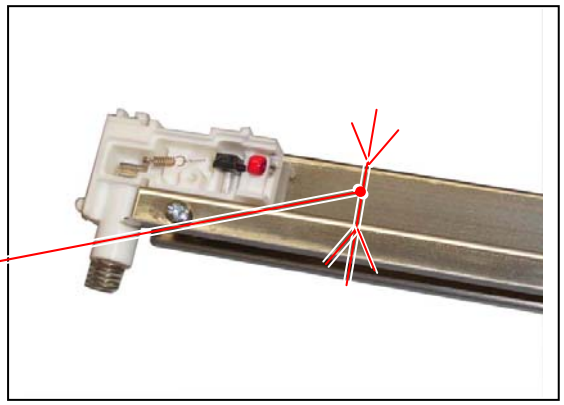
7. Remove **Spring 2** (13) and **Corona Wire 1 Assy** (14).
   Replace **Spring 2** (13) and **Corona Wire 1 Assy** (14) with new ones.



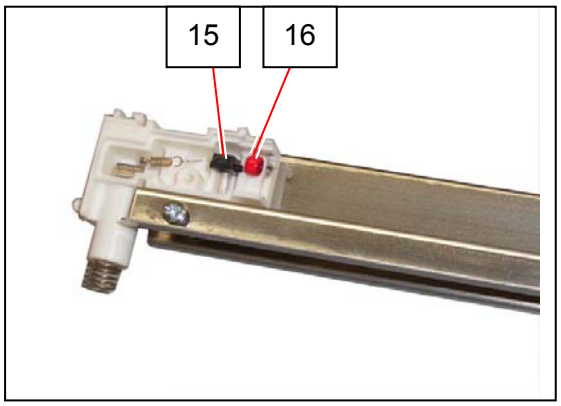


NOTE

(1) Please keep 11mm between Corona Wire (14) and bottom plate of the Corona Unit after the replacement.



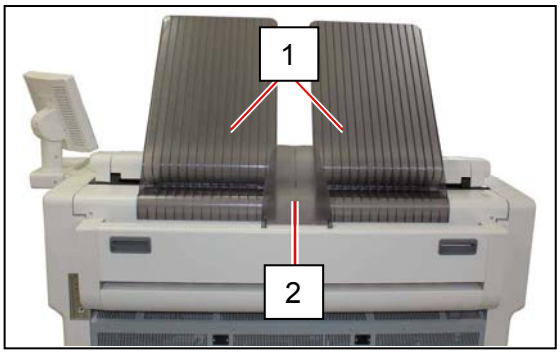
(2) Fit the Corona Wire into the groove of Height Adjuster (15).
Also fit the beads (16) into the correct positions.



5. 8 Transfer / Separation Corona

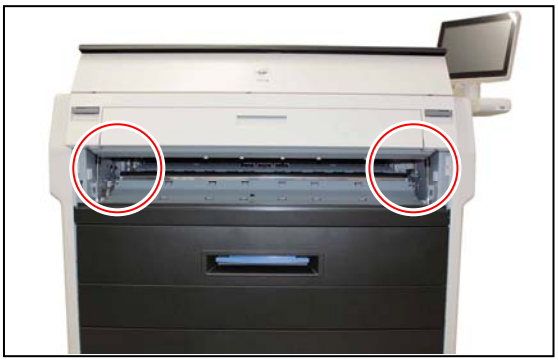
5. 8. 1 Removal of the Transfer / Separation Corona

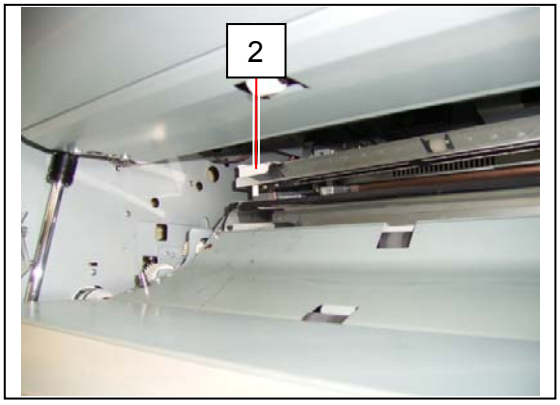
1. Remove 2 pieces of Exit Tray (1) and Exit Tray 2 (2).

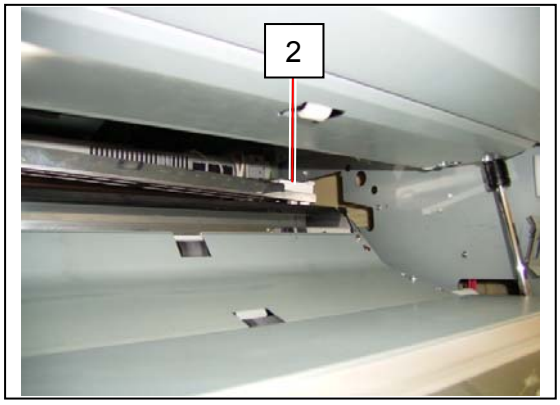


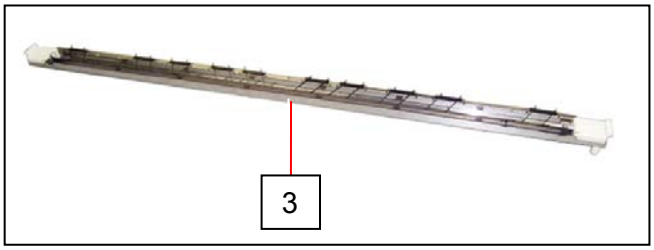
2. Pull up the Lever 2 (3) to open the Engine Unit.

3. Holding both Corona Blocks (2: white plastic), remove the Transfer / Separation Corona (3) from the machine.









NOTE

There is the Drum above the Transfer / Separation Corona.
Do not touch it.

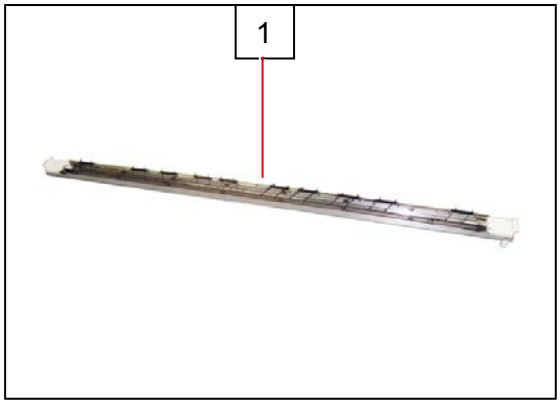
5. 8. 2 Replacement of Corona Wires

NOTE

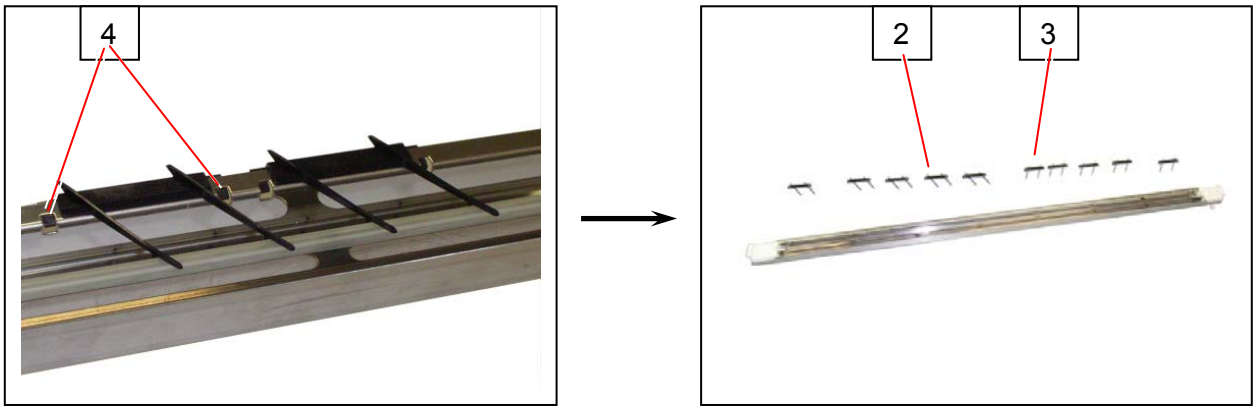
A periodic replacement for the following parts is recommended.

Item	Number of article	Remarks
Corona Wire	2	All of these parts are contained in "Corona Wire Kit" (Z160980200)
Wire Spring	4	

1. Remove the Transfer / Separation Corona (1) making reference to [5. 8. 1 Removal of the Transfer / Separation Corona].



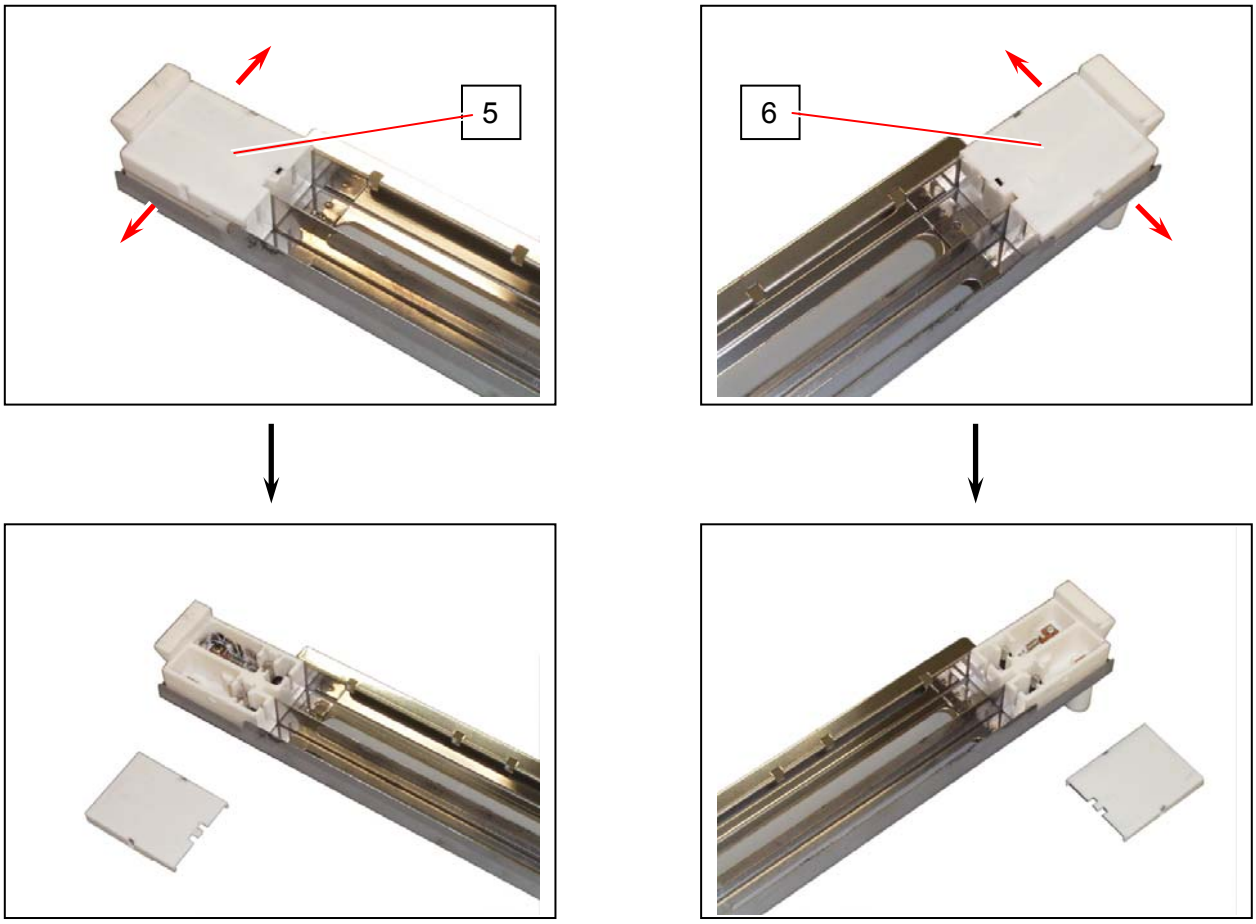
2. There are 5 pieces of Corona Guards A (2) and Corona Guards B (3) on the housing. Remove them pressing the stoppers (4) with such tool as a screwdriver.



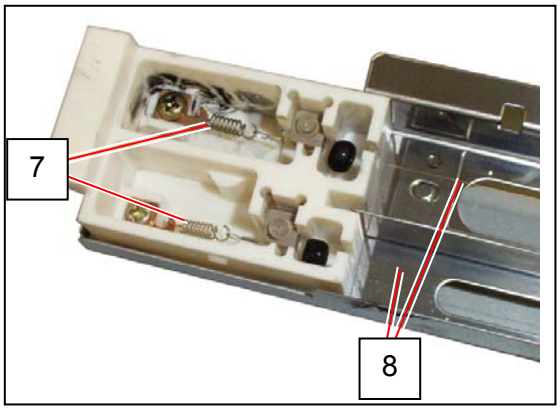
NOTE

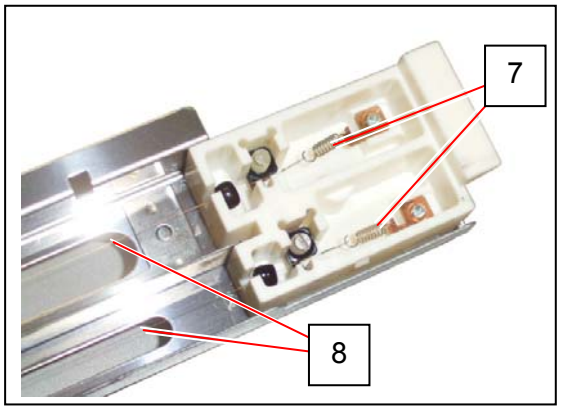
Do not replace the position of Corona Guards A (2) and Corona Guards B (3) at the time of reassembly.

3. Remove both Covers 3 (5) (6) pulling their sides outward.



4. Remove 4 pieces of **Wire Springs** (7) and **Corona Wires** (8).
Replace **Wire Springs** (7) and **Corona Wires** (8) with new ones.



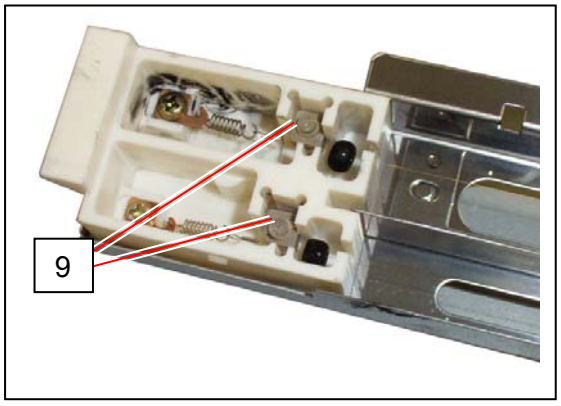


NOTE

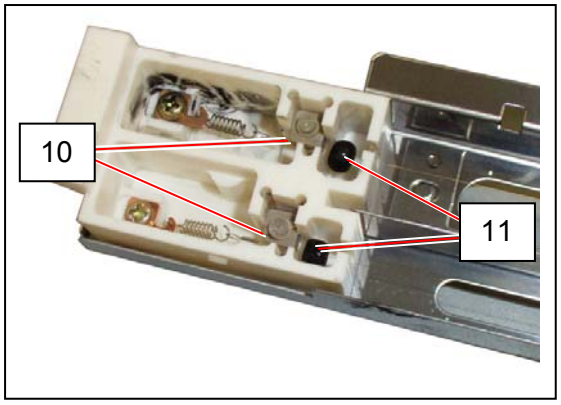
(1) Do not touch the wire part. Pinch the hook part of both ends to handle Corona Wire.

(2) Keep 11mm distance (height) between each Corona Wire and bottom plate of the housing.

To adjust the distance, rotate the screws (9) with a flathead screwdriver.



(3) Fit the Corona Wire into the groove of Height Adjuster (10).
Also fit the beads (11) into the correct positions.

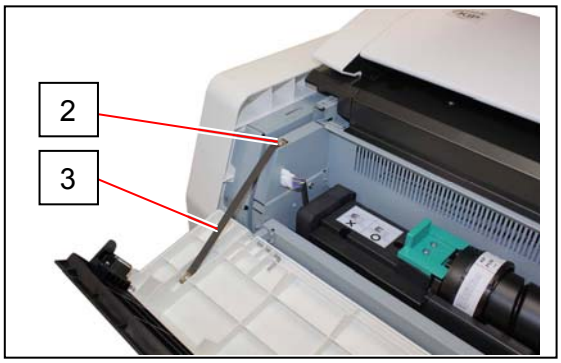


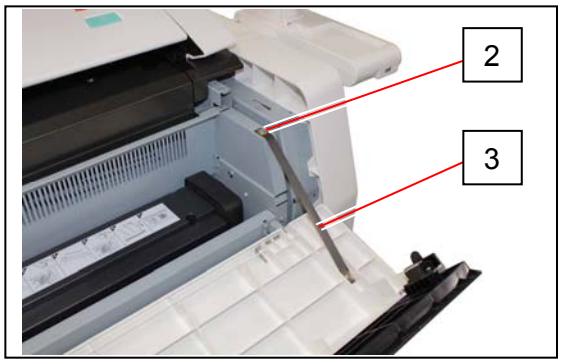
5. 9 Engine Frame

5. 9. 1 Replacement of DC Motor (M4) and Developer Press Sensor (PH4)

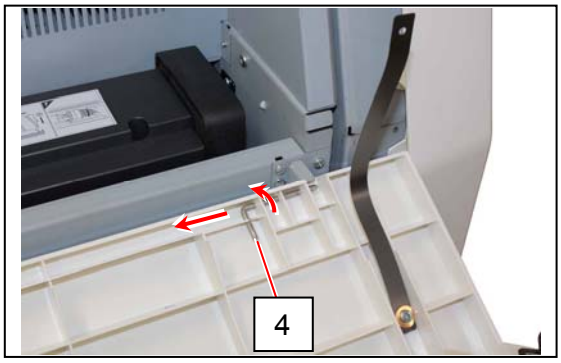
1. Open the Cover 4 (1).

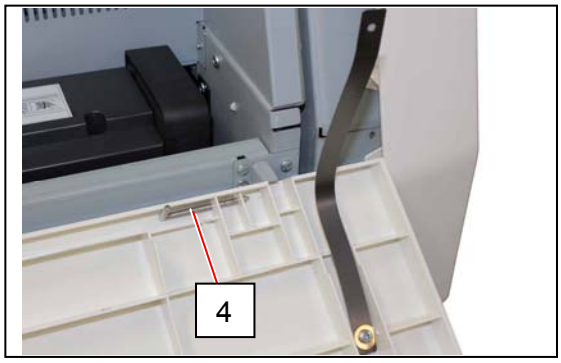
2. Remove the 4x6 screws and washers (2) at both sides to make the Bands (3) free.



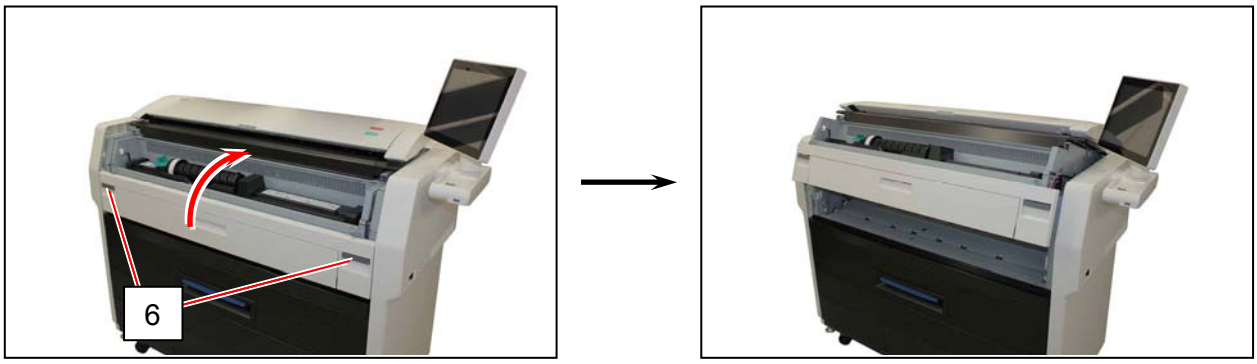


3. There are Pins (4) at both sides.
   Pull them up and then slide them inward to remove the Cover 4 (5).





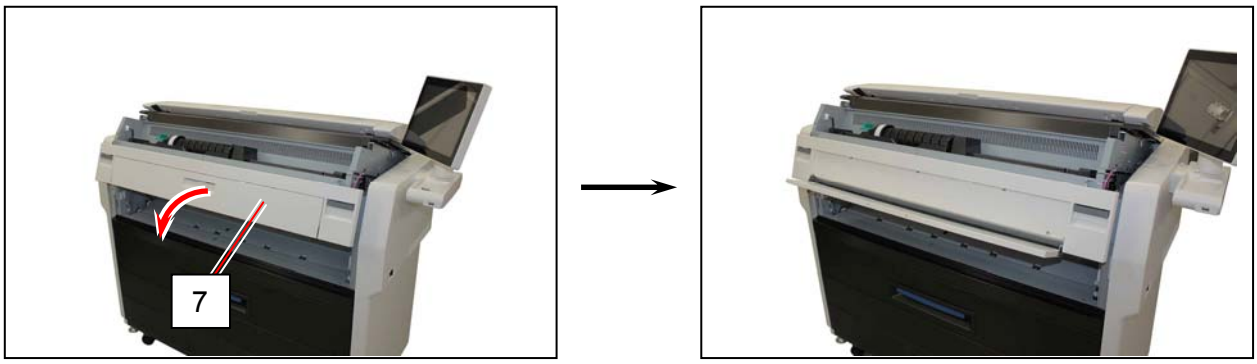
4. Pull up the Lever 2 (6) to open the Engine Unit.



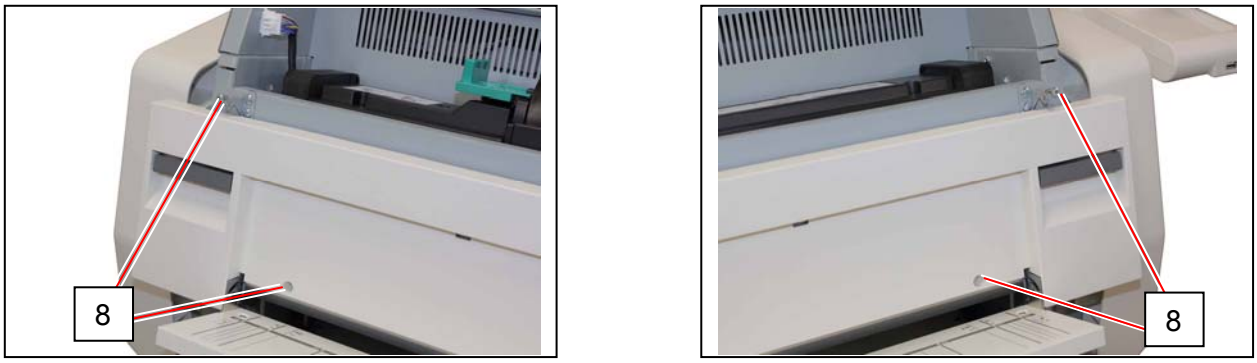
NOTE

It is impossible to remove the Developer Unit if the Engine Unit is closed, because the driving gears are firmly locked when closed.

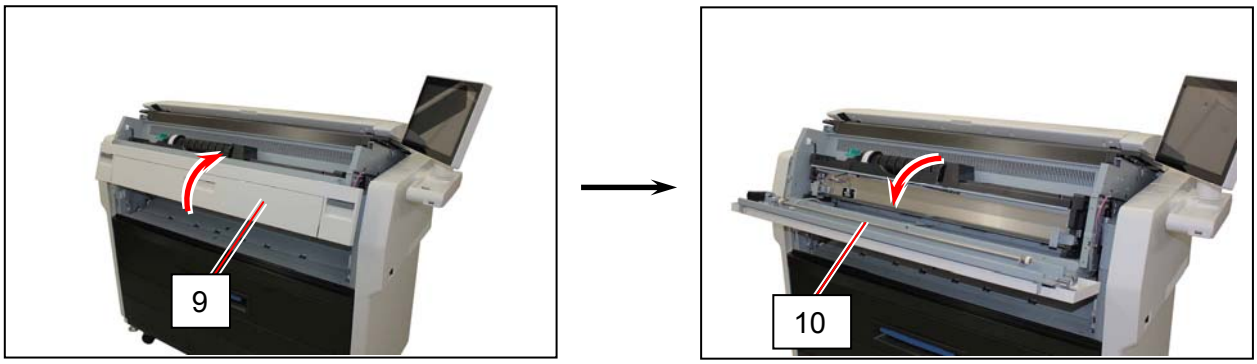
5. Open the Bypass Feeder (7).



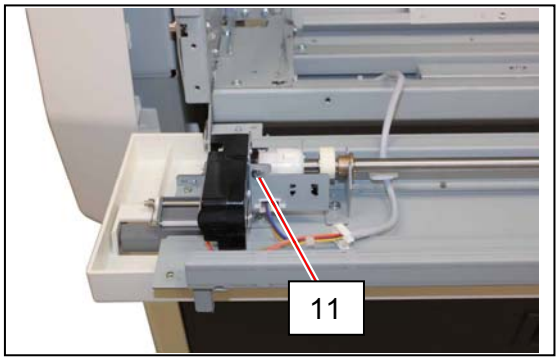
6. Remove 4 pieces of 4x8 screw (8).

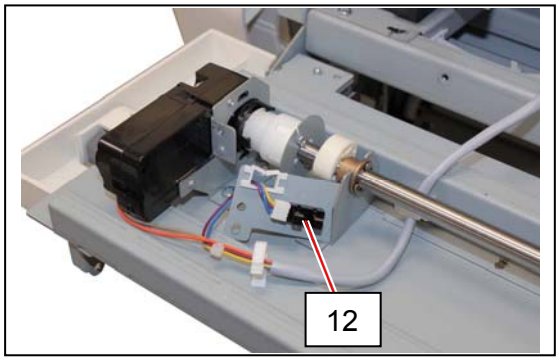


7. Close the Bypass Feeder (9), and then open the Developer Press Unit (10).

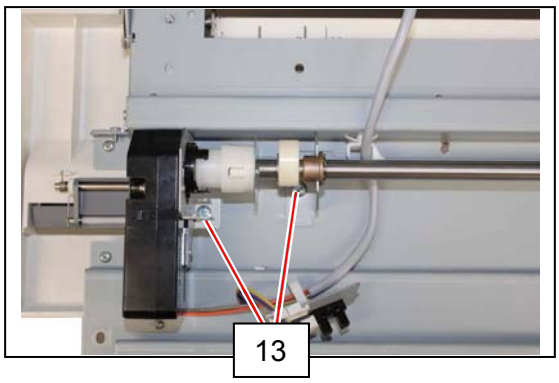


8. Remove 1 screw (11) to remove Sensor Bracket (12).
   Replace the sensor with the new one.

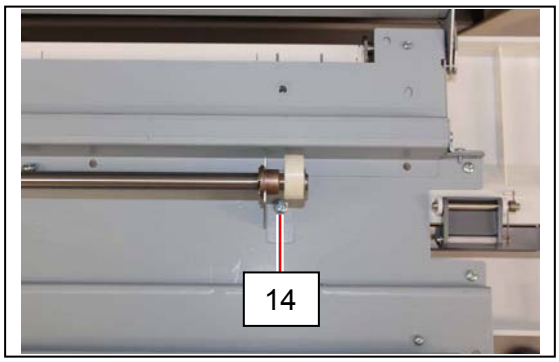




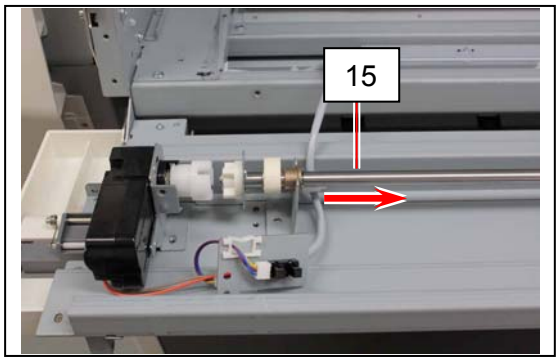
9. Remove 2 screws (13).



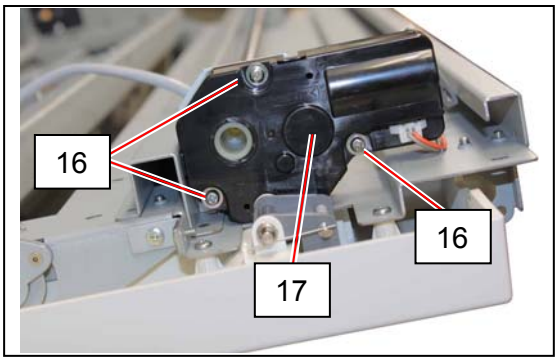
10. Remove 1 screw (14).



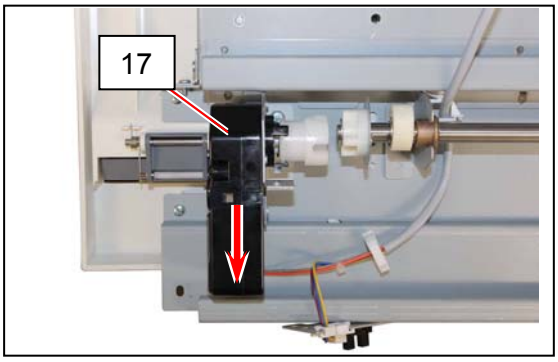
11. Slide the shaft (15) to arrow direction.



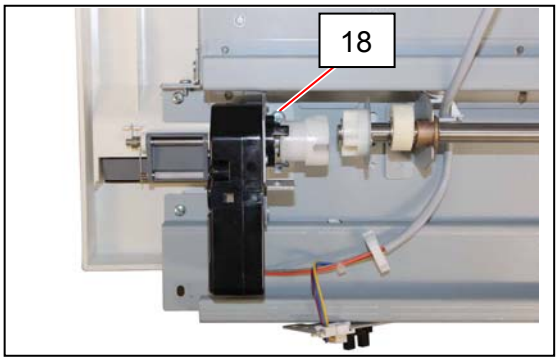
12. Remove 3 screws (16) form the Motor (17).

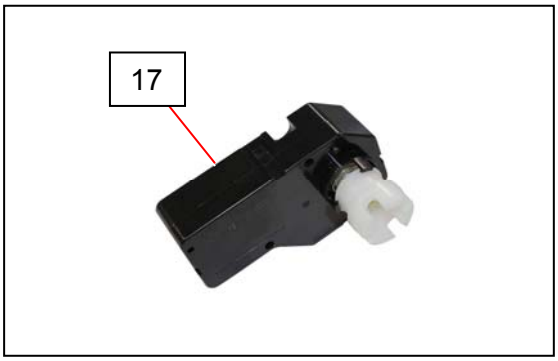


13. Slide the DC Motor (17) to arrow direction.



14. Remove 1 screw (18) to remove the Motor (17).
Replace the Motor (17) with the new one.

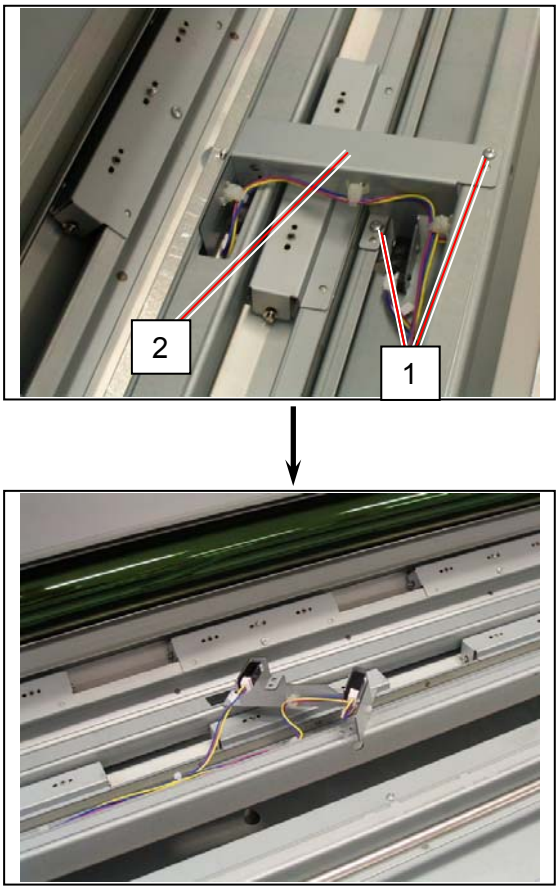




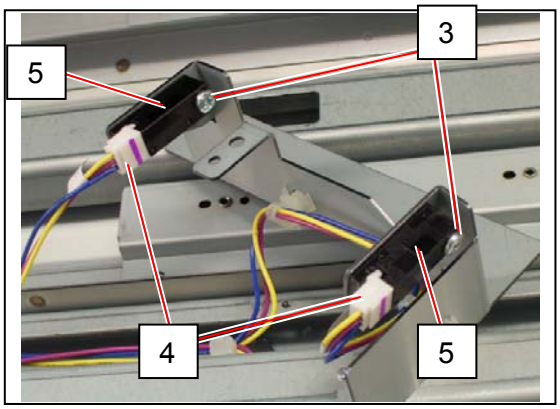
5. 9. 2 Replacement of Manual Set Sensor (PH5) & Registration Sensor (PH1)

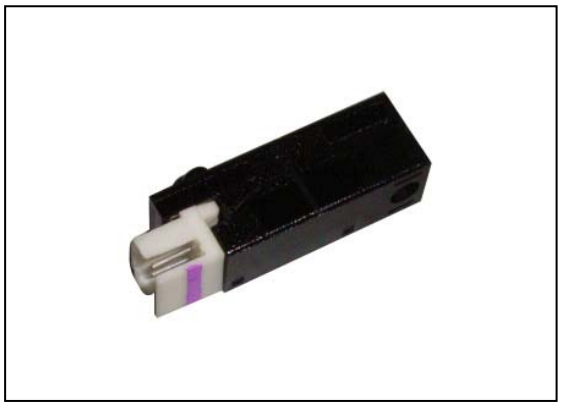
1. Remove the Developer Unit from the machine making reference to [5. 2. 1 Removal of the Developer Unit].

2. Remove 2 pieces of 3x6 screw (1), and then turn over the Bracket 11 (2).



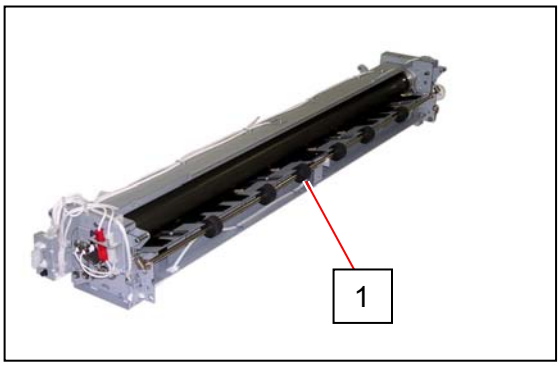
3. Remove the screw (3) and disconnect the connector (4) to remove each Sensor (5 : Manual Set Sensor or Registration Sensor).
   Replace Sensor (5) with the new one.



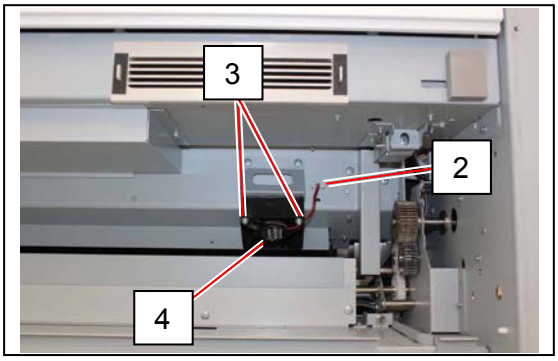


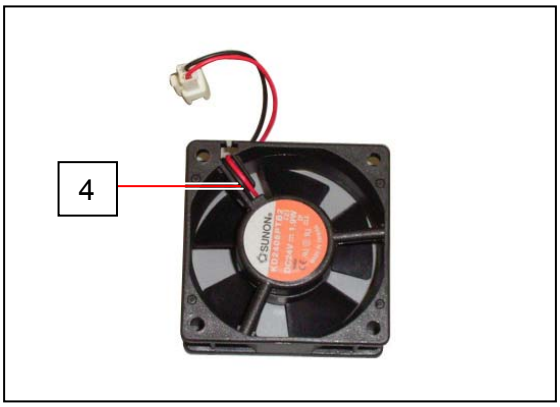
5. 9. 3 Replacement of Fans (BL5, BL6)

1. Remove the Fuser Unit (1) from the machine making reference to [5. 3. 1 Removal of the Fuser Unit].



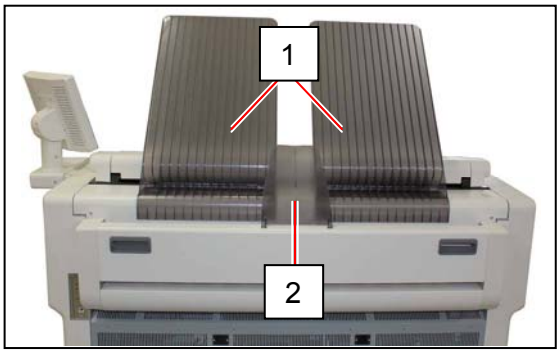
2. Disconnect the connector (2), remove 2 screws (3), and remove each Fan (4) with the bracket. Remove 2 screws from the bracket and replace Fan(BL5 / BL6) with the new one.



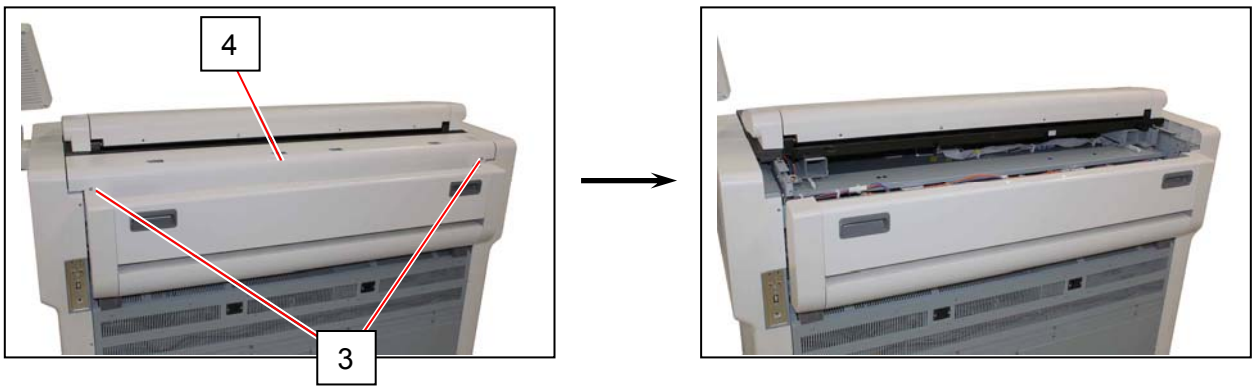


5. 9. 4 Replacement of Blowers (BL3, BL4)

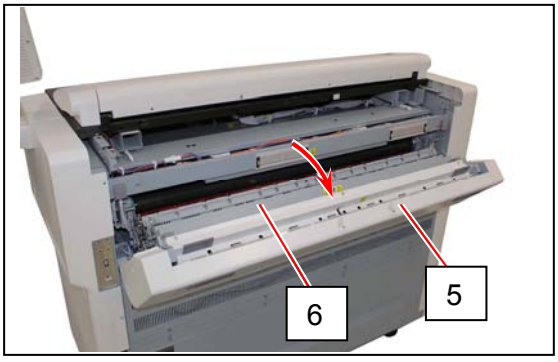
1. Remove 2 pieces of Exit Tray (1) and Exit Tray 2 (2).



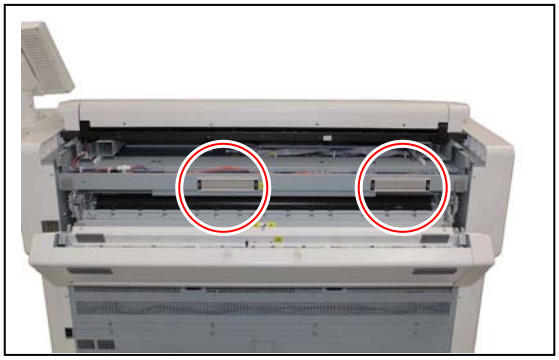
2. Remove 2 pieces of 4x6 screw (3) to remove the Cover 10 (4).

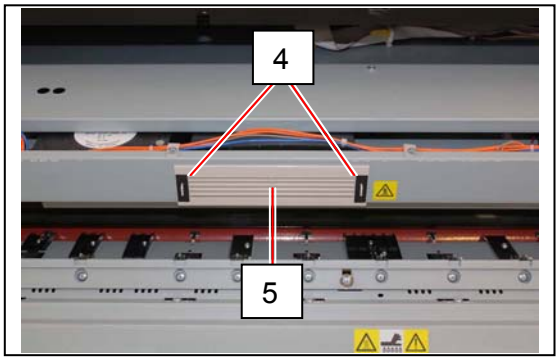


3. Open the Paper Exit Assy (Outside (5) & Inside (6)).

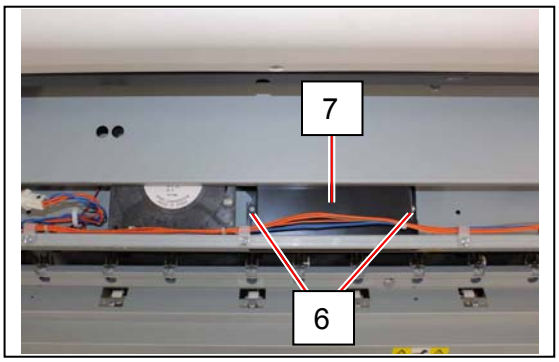


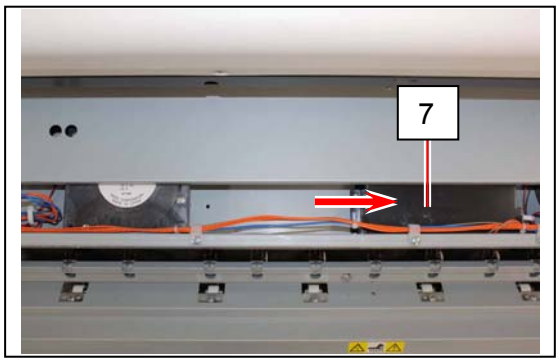
4. Moving the stopper levers (4) to the inside, remove each Duct 5 (5) with Filter 4.



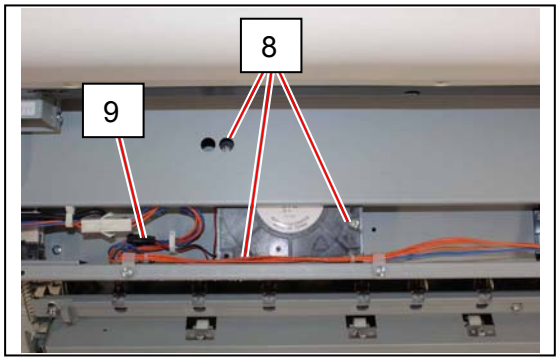


5. Remove 2 pieces of 4x6 screw (6), and then slide the Duct 6 (7) to the left.

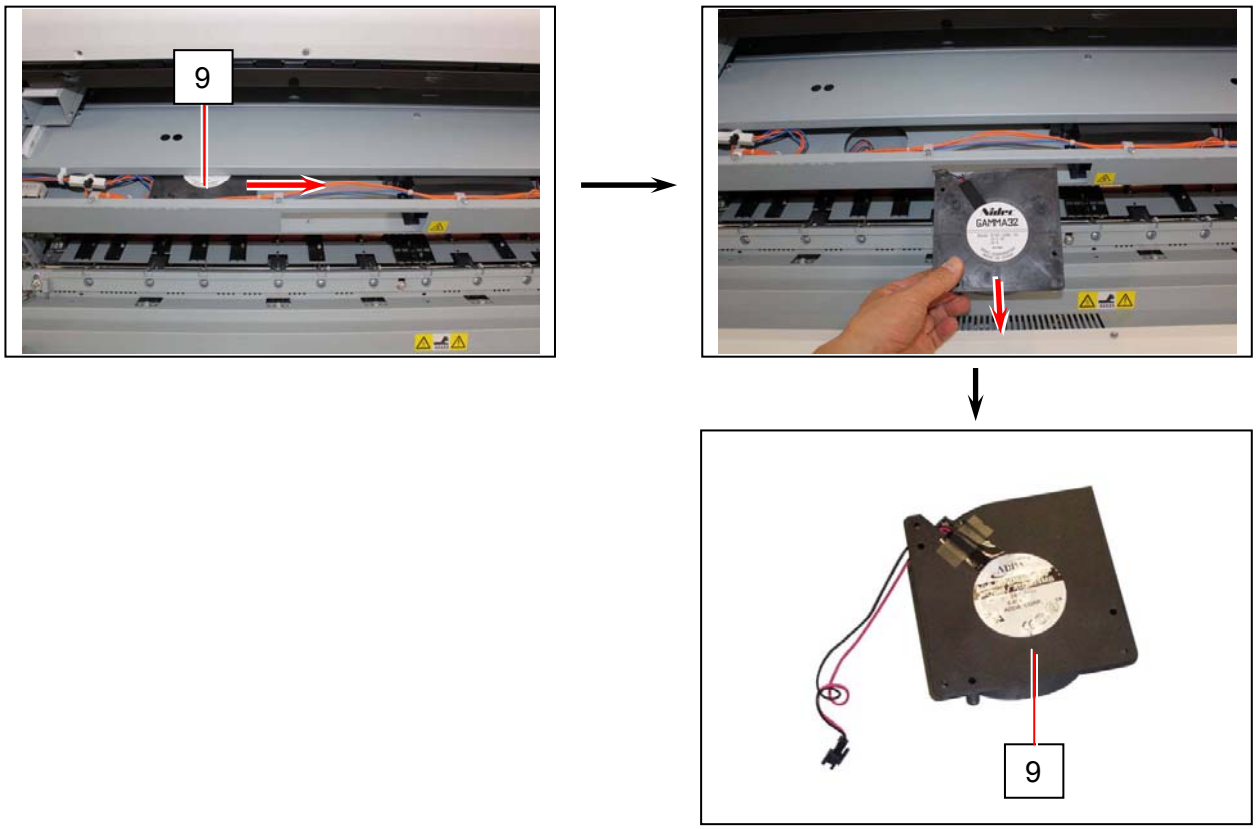




6. Remove 3 pieces of 4x35 screw (8) and disconnect the connector (9).



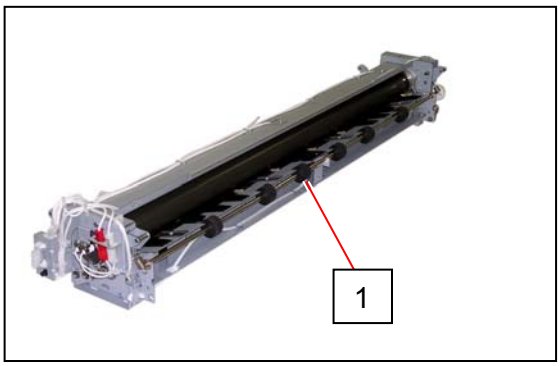
6. Remove the Blower (9 : BL3 & BL4) moving as the following photos.



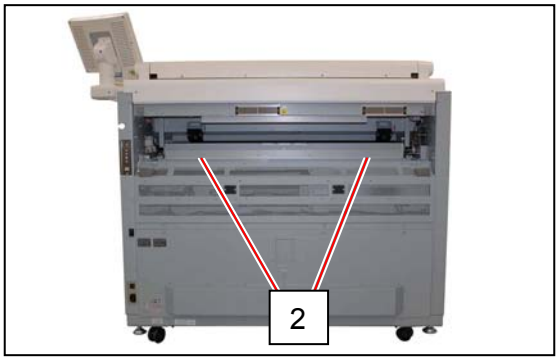
5. 10 Inner Transport Unit

5. 10. 1 Removal of the Inner Transport Unit

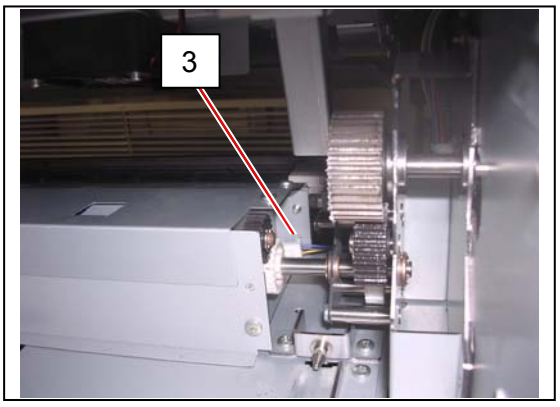
1. Remove the Fuser Unit (1) from the machine making reference to [5. 3. 1 Removal of the Fuser Unit].

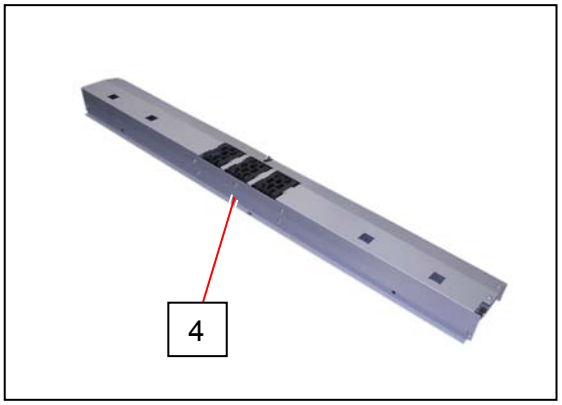


2. Remove 2 pieces of 4x6 screw (2).



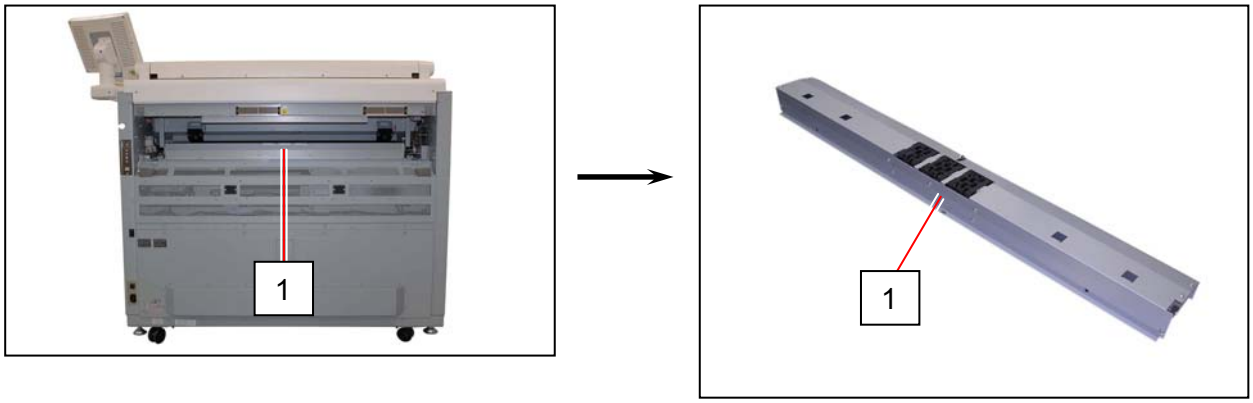
3. Disconnect the connector on the left (3), and then remove Inner Transport Unit (4).



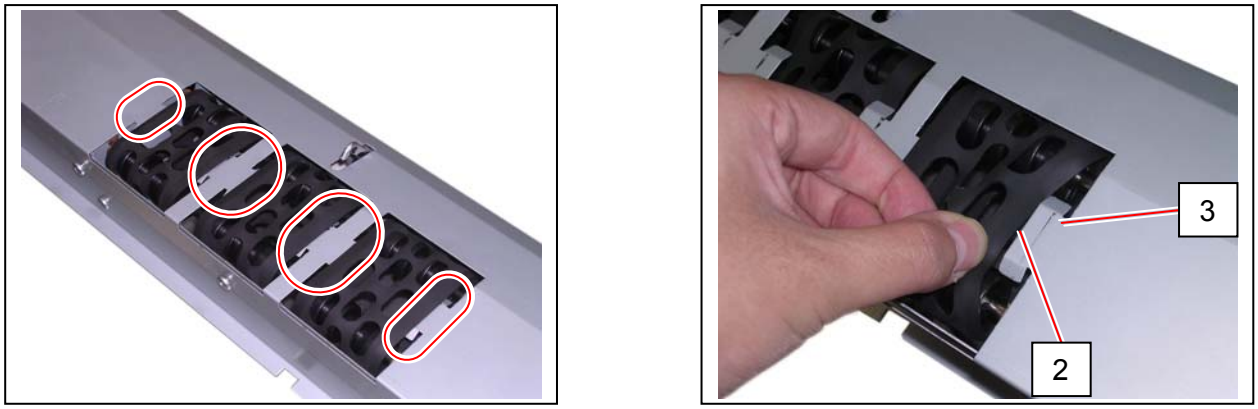


5. 10. 2 Replacement of Sensor (PH2) & Belt

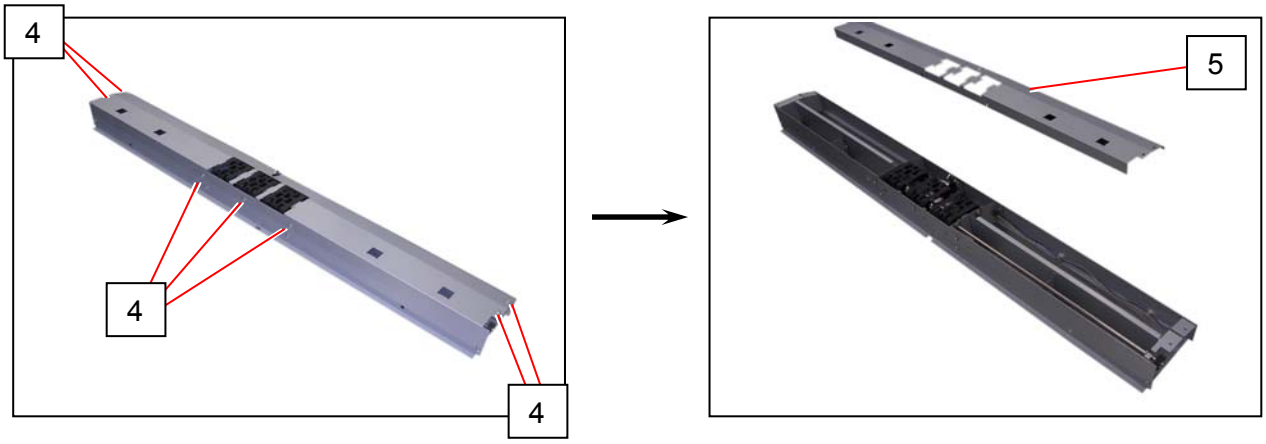
1. Remove the Inner Transport Unit (1) from the machine making reference to [5.10. 1 Removal of the Inner Transport Unit].



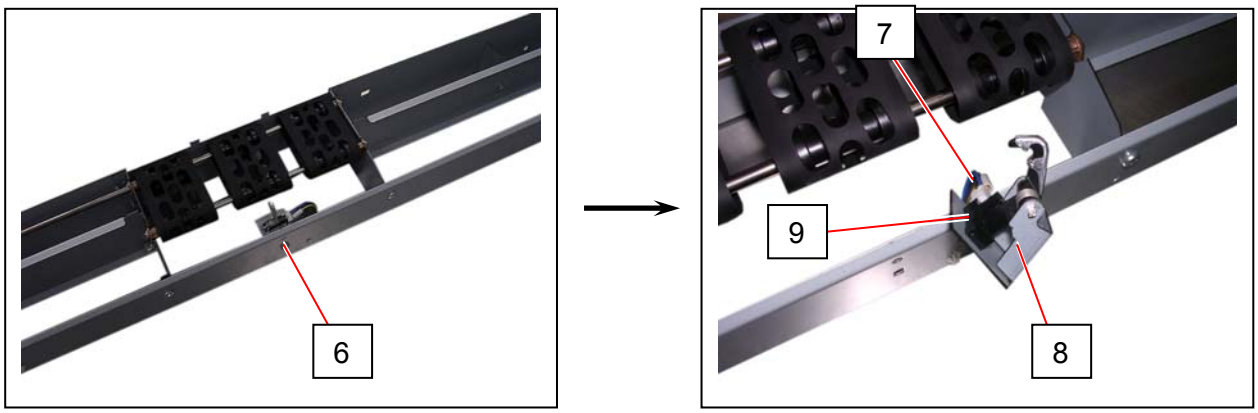
2. Tuck the rim of Belts (2) under the tab of Guide Plate (3)



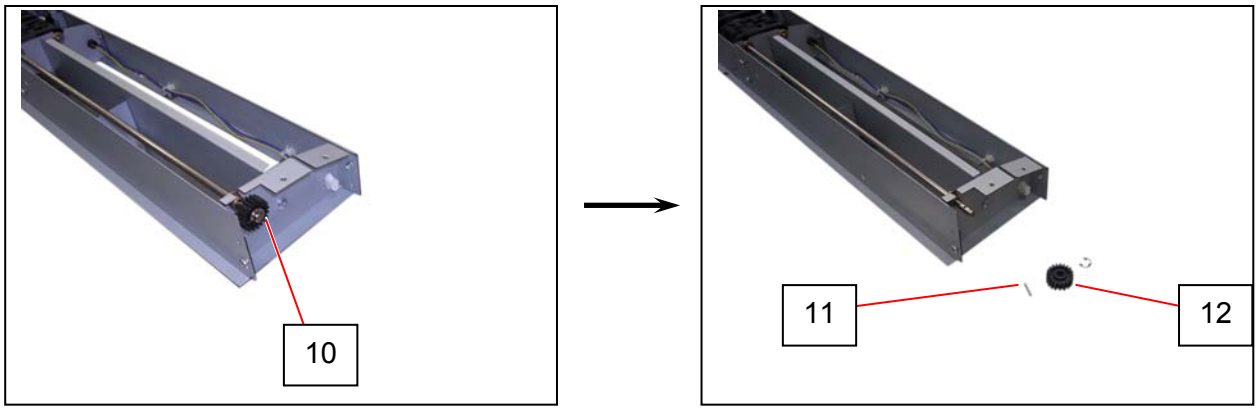
3. Remove 7 pieces of 4x6 screw (4) to remove Guide Plate (5).



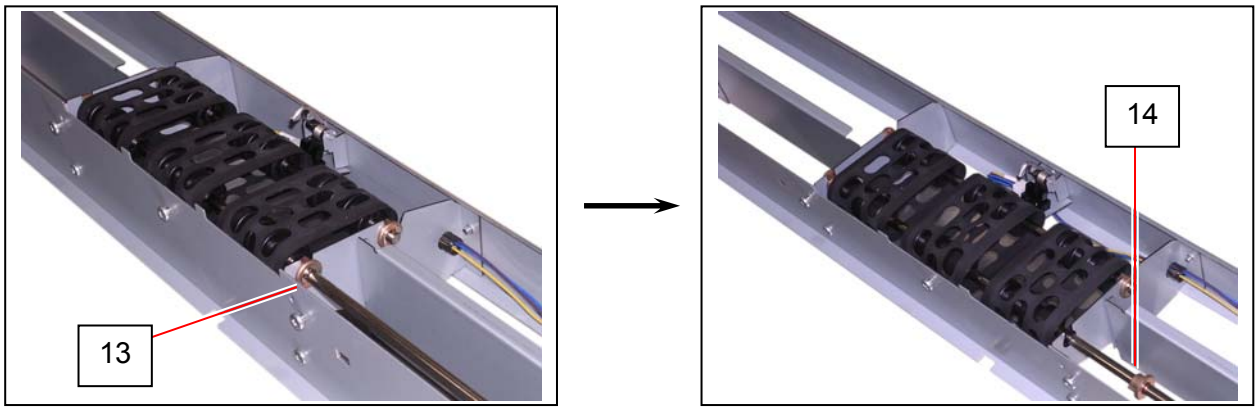
4. Remove 1 screw (6) and the harness (7) to release the sensor bracket (8).
   Remove Sensor (9) from the bracket (8) and replace Sensor with a new one.



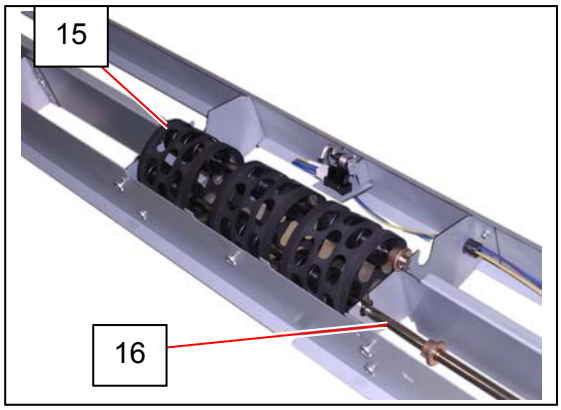
5. Remove Retaining Ring-E (10) to remove Gear (11) and Parallel Pin (12).

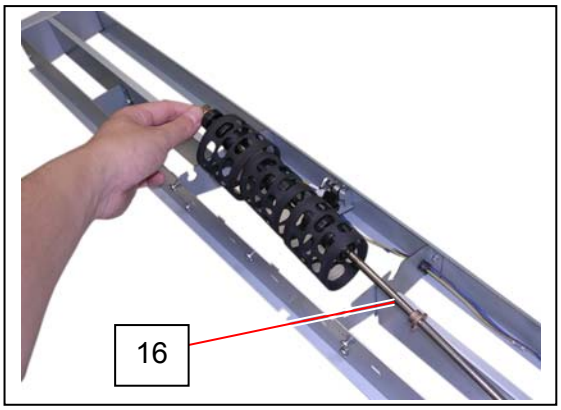


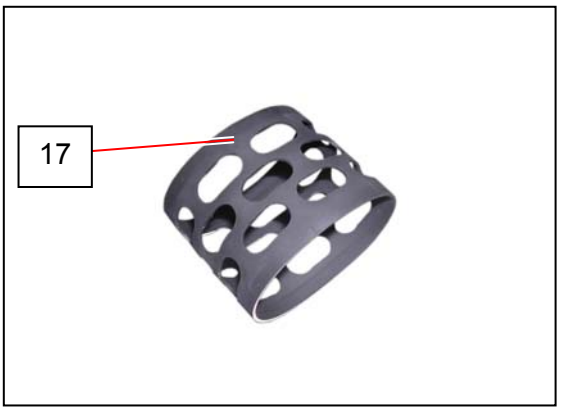
6. Remove Retaining Ring-E in the middle (13) to release Bearing (14).



7. Release Shaft 3 (15: shorter) to remove Shaft 2 (16: longer) from the unit.
   Remove and replace Belt (17) with new ones.

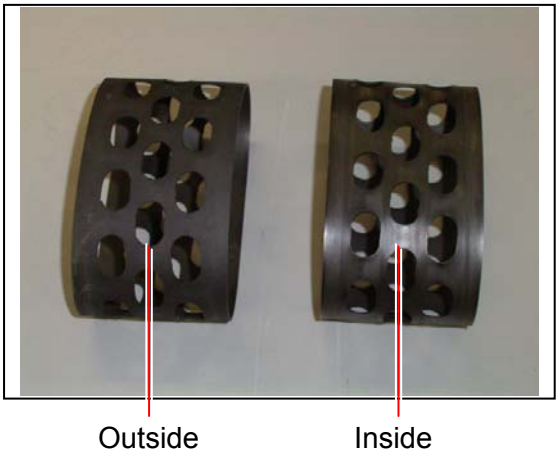






NOTE

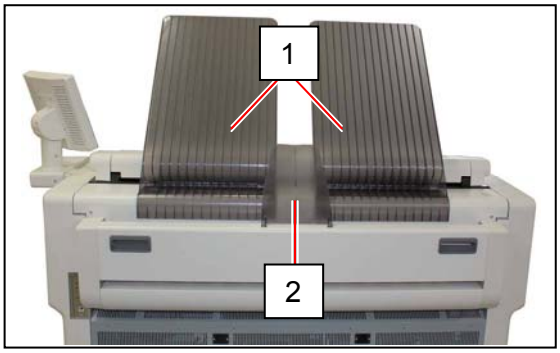
Be careful of the outside/inside of the Belt (17).
The smooth and shiny side of it should be inside.



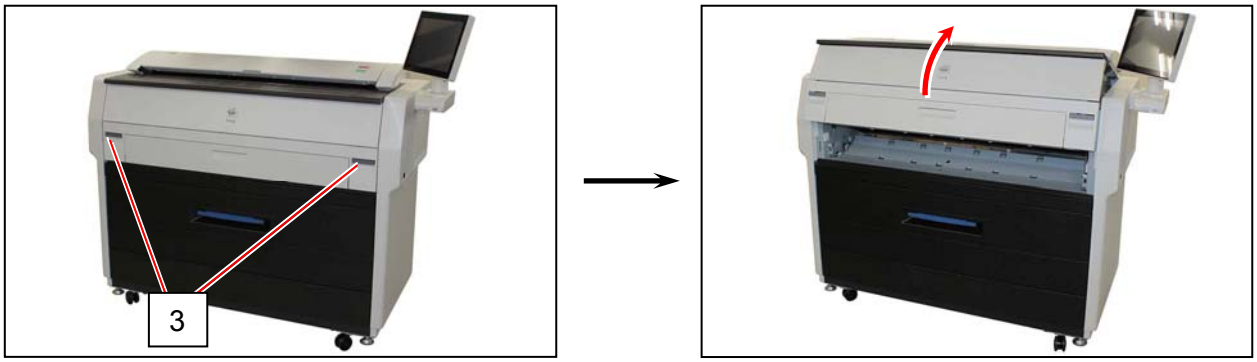
5. 11 Main Frame

5. 11. 1 Replacement of DC Motors (M1, M2), Belt 8, Belt 9, Belt 7

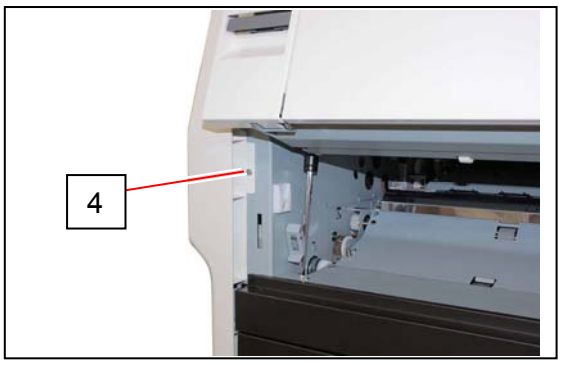
1. Remove 2 pieces of Exit Tray (1) and Exit Tray 2 (2).

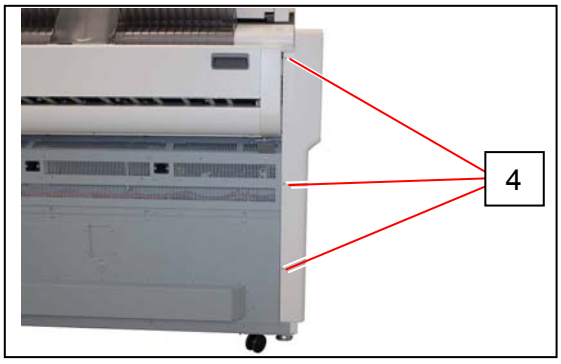


2. Pull up the Lever 2 (3) to open the Engine Unit.



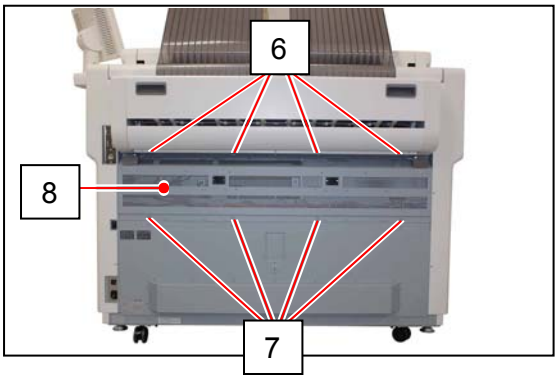
3. Remove the 6 screws (4) to remove the Cover 2 (5).



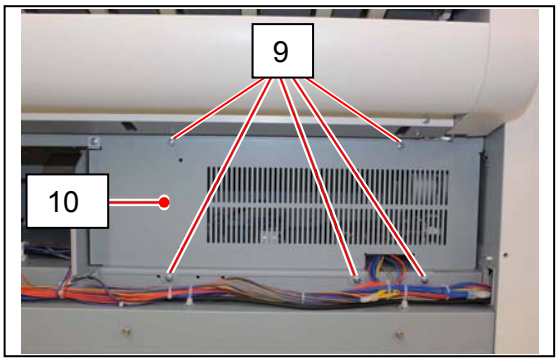


4. Close the Engine Unit.

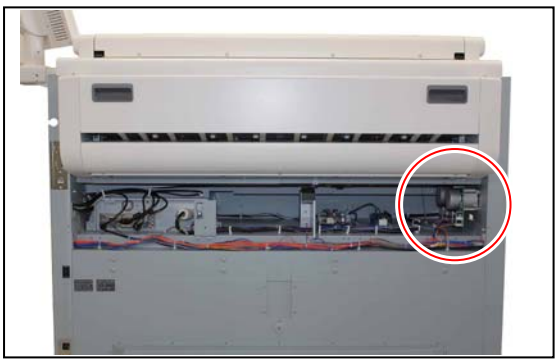
5. Remove 4 pieces of 4x6 screw (6), loosen 4 pieces of 4x6 screw (7), and then remove the Cover 15 (8).

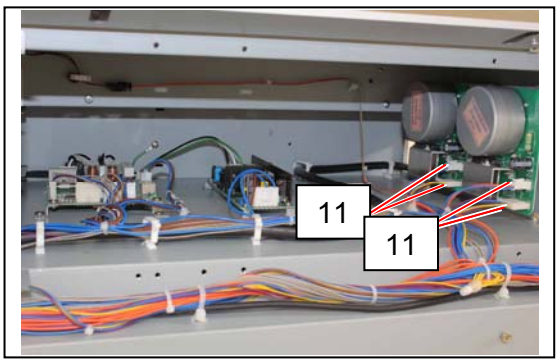


6. Remove 5 screws (9) to remove Case 5 (10).

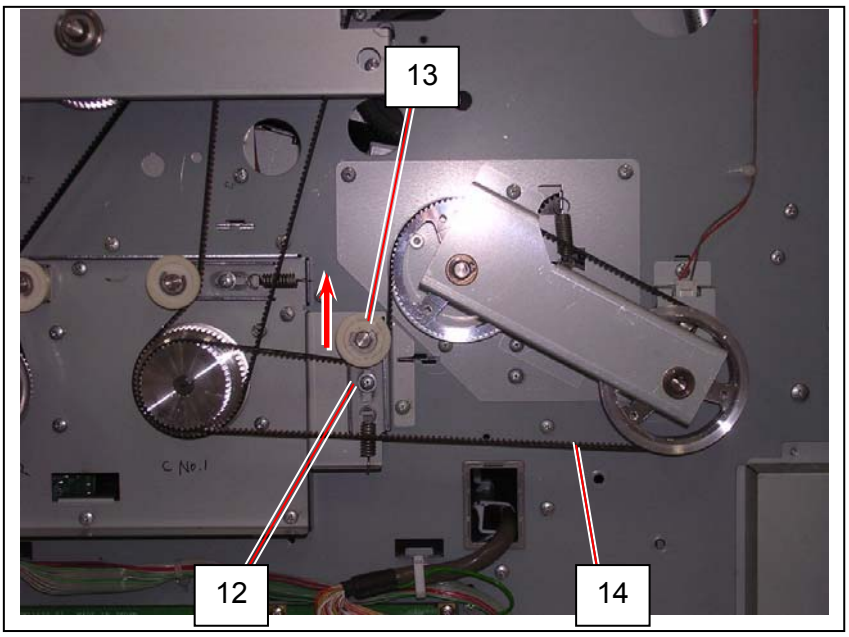


7. Disconnect 4 connectors (11).





8. Loosen the 4x6 screw (12). Move the Pulley 3 (13) toward the arrow mark and secure it to slacken Belt 8 (14).

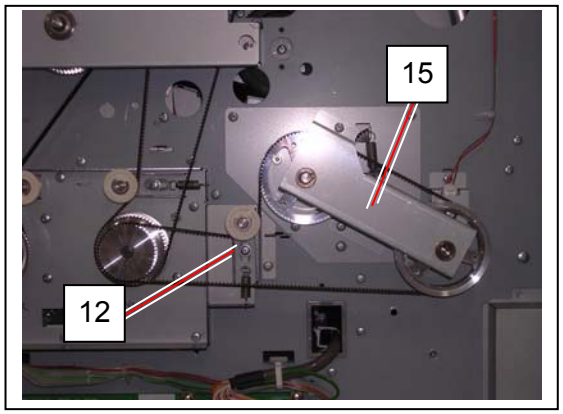


NOTE

To adjust the tension of the Belt 8, do as follows.
If you do not make the following works, Belt 8 may slip because the tension is not correct.

a) Replace Bracket (15) before tensioning.

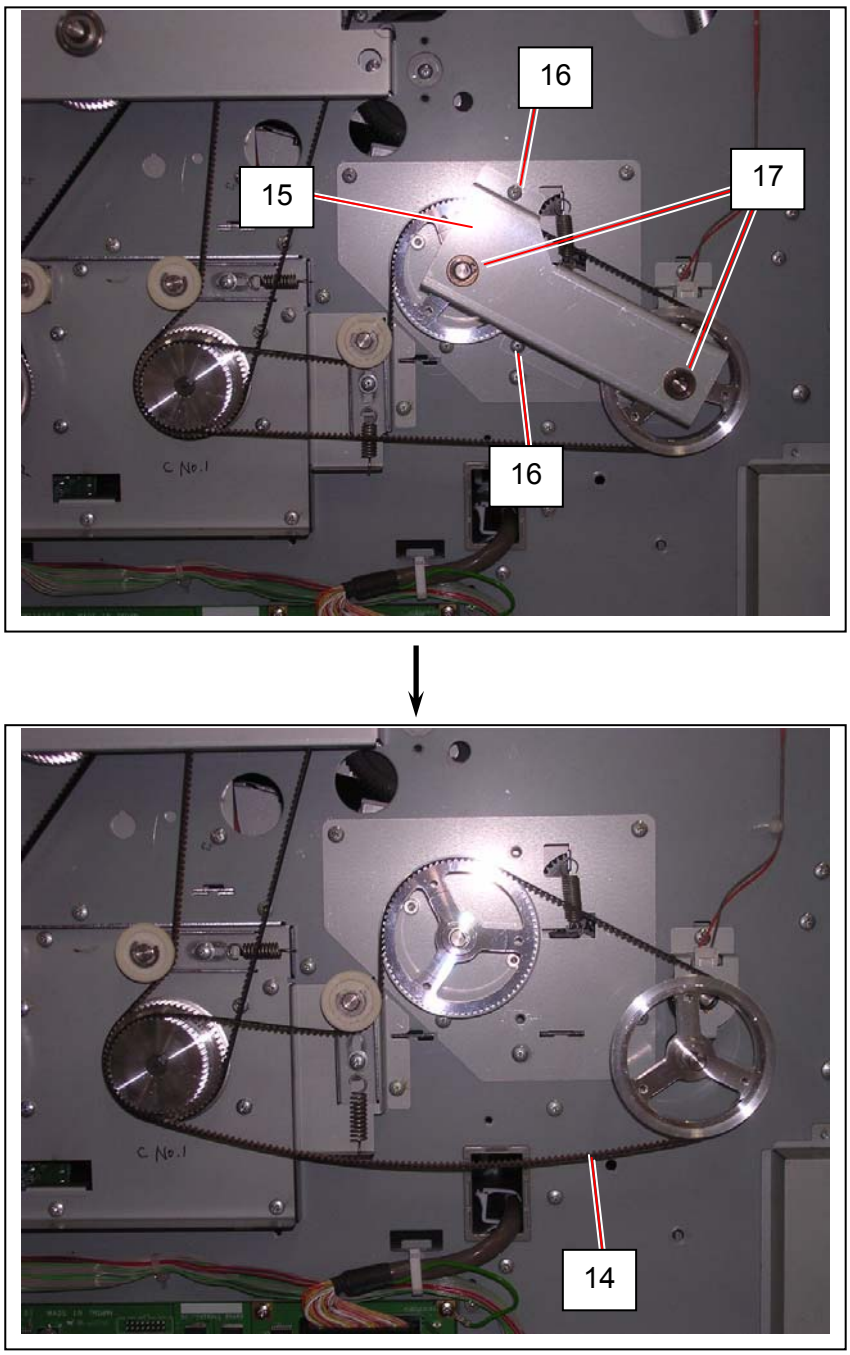
b) Giving the spring tension to the Belt 8, tighten the screw (12) of Pulley 3 (13).



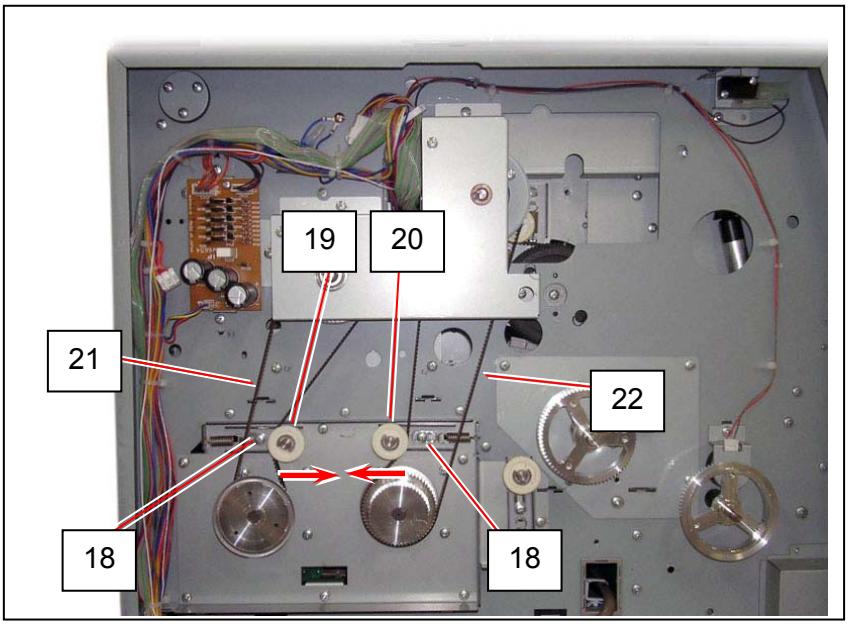
c) Turn on the machine, and then turn it off some seconds later.
The Belt 8 is driven by the motor, and it may be slackened around the Pulley 3 at this time.

d) Loosen the screw to release the Pulley 3.
The slack of Belt 8 generated by the above c) is removed because the Tension Spring pulls the Pulley 3.
Then tighten the screw again.

9. Remove 2 screws (16), Grip Ring and Bearing (17) to remove Bracket (15).
   Replace Belt 8 (14: 90S3M756) with the new one.



10. Loosen 2 screws (18). Move the Pulley (19) (20) toward the arrow mark and secure them to slacken Belt 9 (21) and Belt 7 (22).

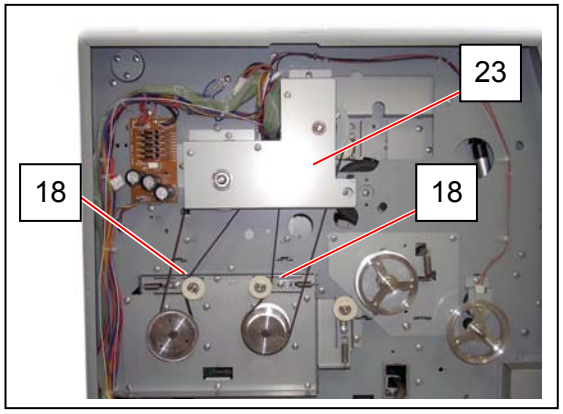


⚠ NOTE

To adjust the tension of the Belt 9 and Belt 7, do as follows.
If you do not make the following works, the belts may slip because the tension is not correct.

a) Replace Bracket (23) before tensioning.

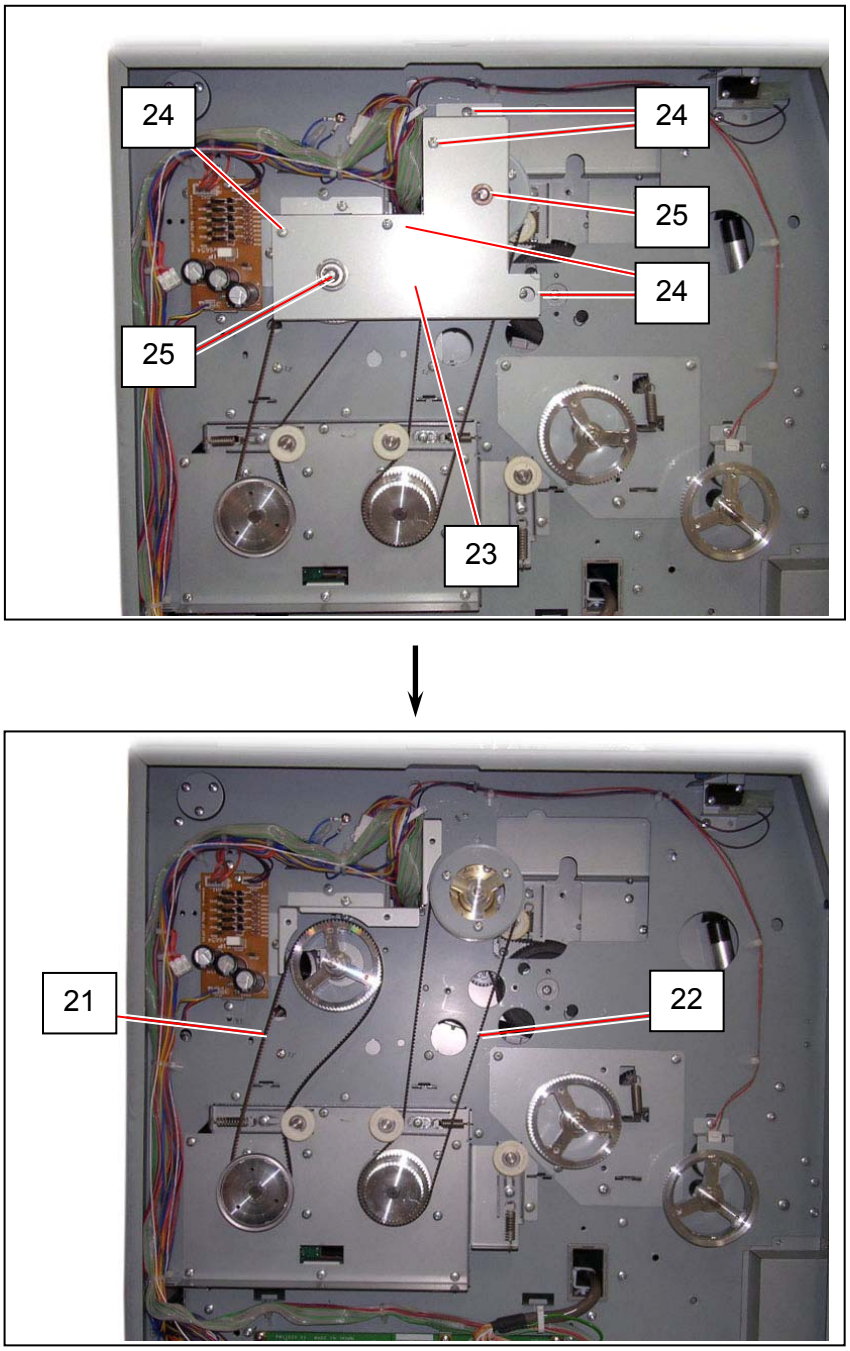
b) Giving the spring tension to the belt, tighten the screw (18) of each Pulley.



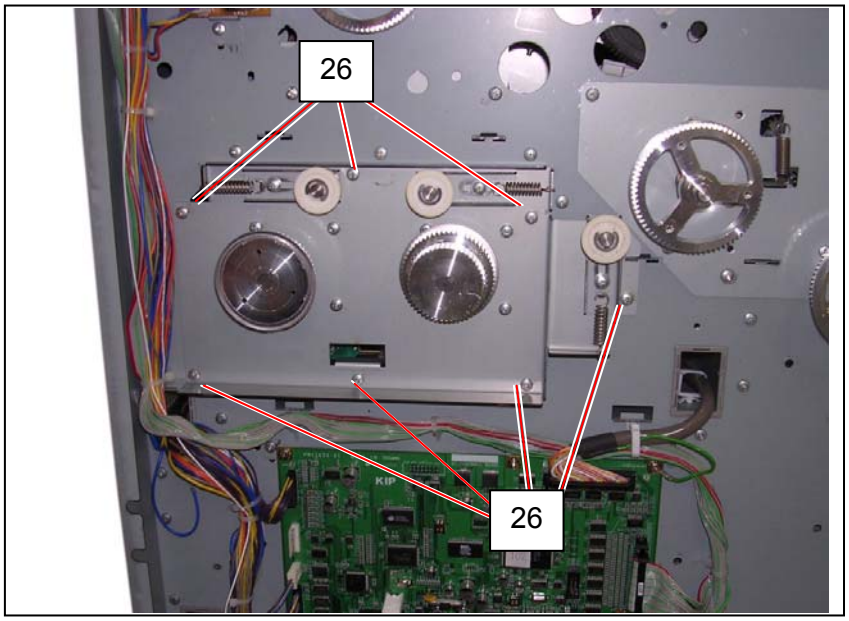
c) Turn on the machine, and then turn it off some seconds later.
The belts are driven by the motor, and it may be slackened around the Pulley at this time.

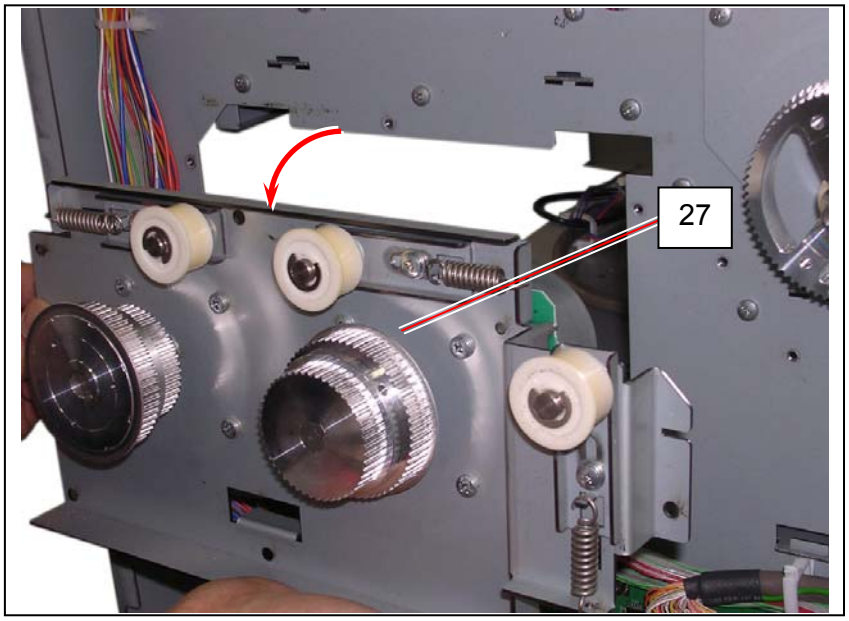
d) Loosen the screw to release the Pulley.
The slack of the belts generated by the above c) is removed because the Tension Spring pulls the Pulley.
Then tighten the screw again.

11. Remove 5 screws (24), Grip Ring and Bearing (25) to remove Bracket (23).
Remove and replace Belt 9 (21: 90S3M576) and Belt 7 (22: 90S3M699) with new ones.



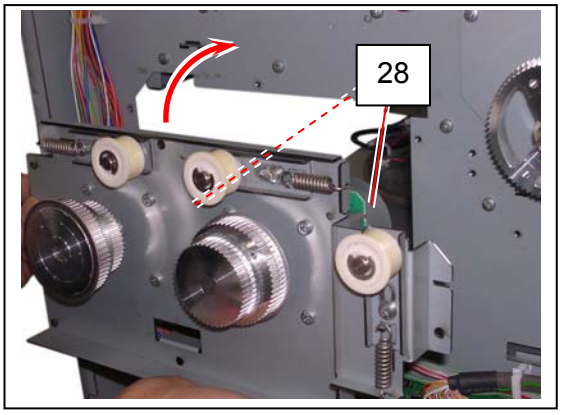
12. Remove 7 pieces of 4x10 screw (26) to remove the Plate 6 Assembly (27).

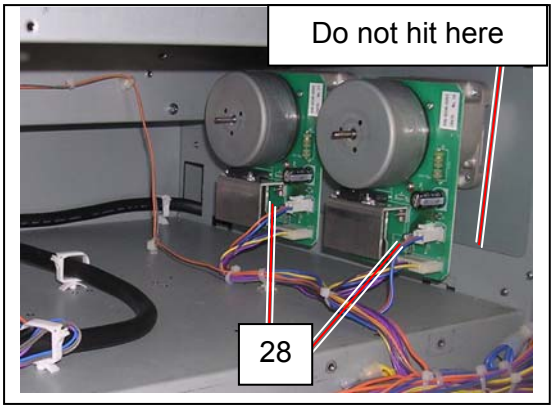




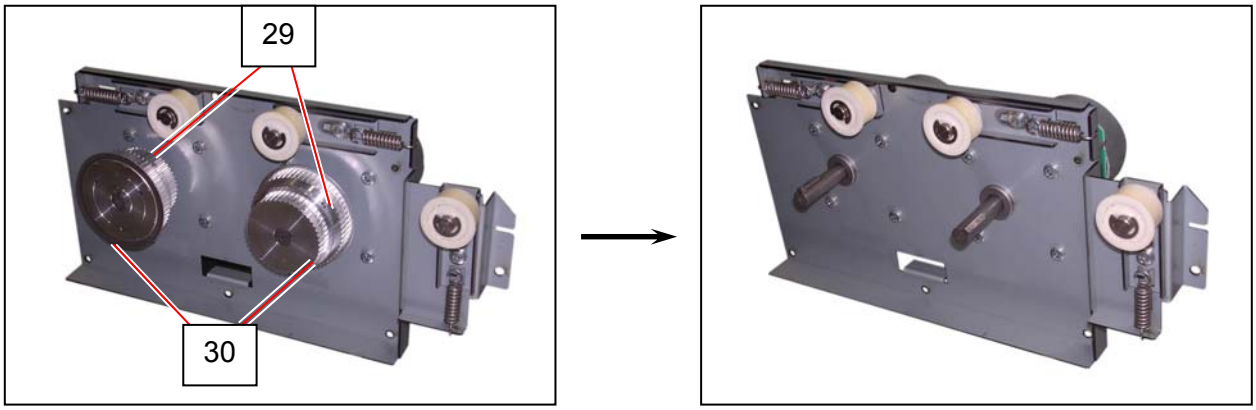
NOTE

When reassembling, do not bump DC Motor (28) and its PCB on the frame rim.



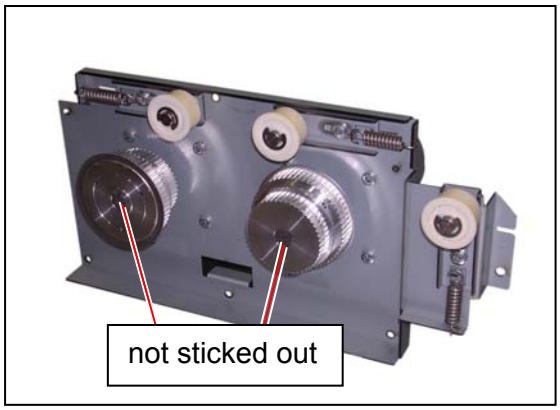


13. Remove Set Screws (29) on the side surface to remove each Pulley 4 (30).

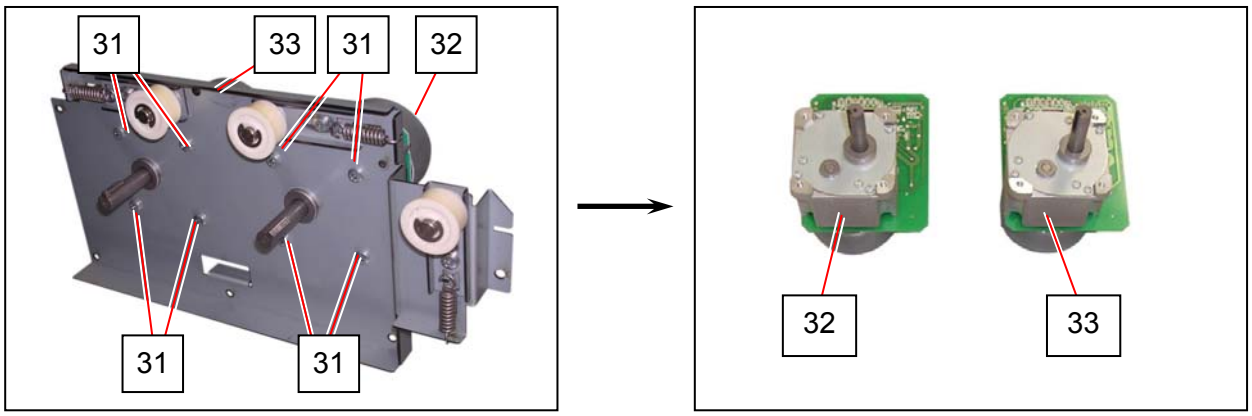


NOTE

The tip of the motor shaft should be aligned with the outside surface of Pulley 4.

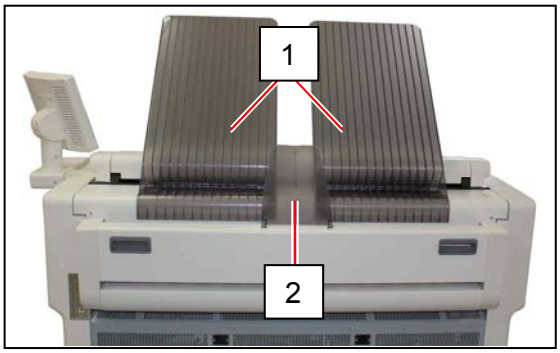


14. Remove 4 pieces of 4x10 screws (31) to remove DC Motor (32: Main) (33: Fuser).
Replace DC Motor (32) (33) with a new one.



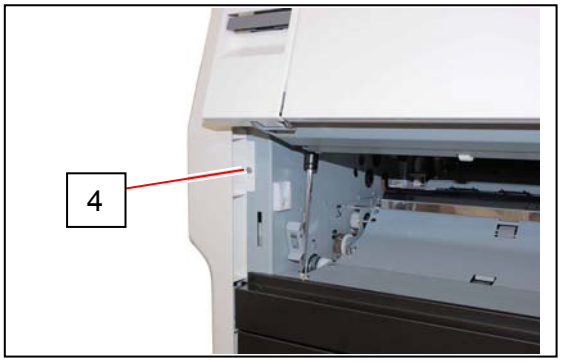
5. 11. 2 Replacement of Clutch (CL1)

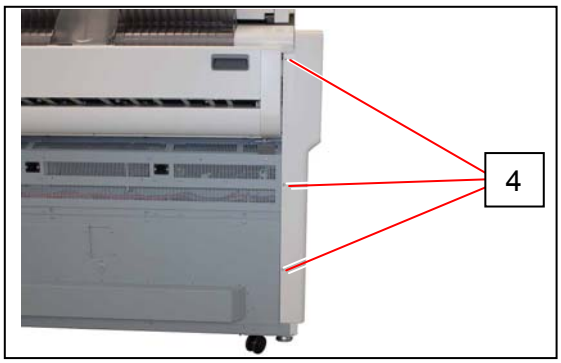
1. Remove 2 pieces of Exit Tray (1) and Exit Tray 2 (2).



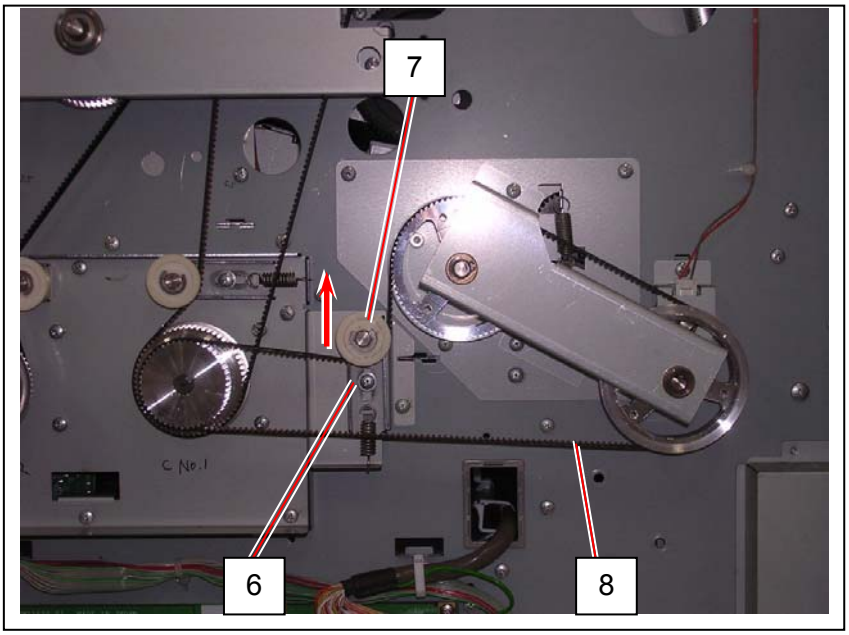
2. Pull up the Lever 2 (3) to open the Engine Unit.

3. Remove the 6 screws (4) to remove the Cover 2 (5).





4. Loosen the 4x6 screw (6), move the Pulley 3 (7) toward the arrow mark and secure it to slacken Belt 8 (8).

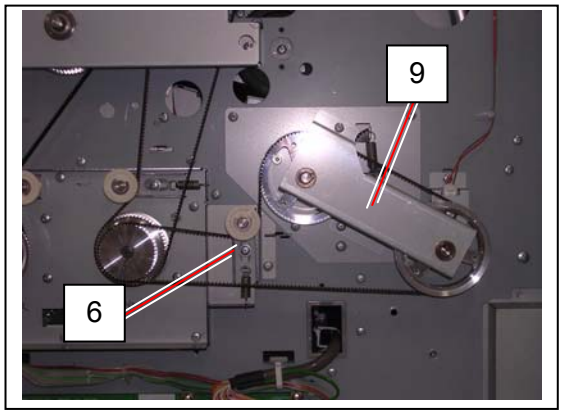


NOTE

To adjust the tension of the Belt 8, do as follows.
If you do not make the following works, Belt 8 may slip because the tension is not correct.

a) Replace Bracket (9) before tensioning.

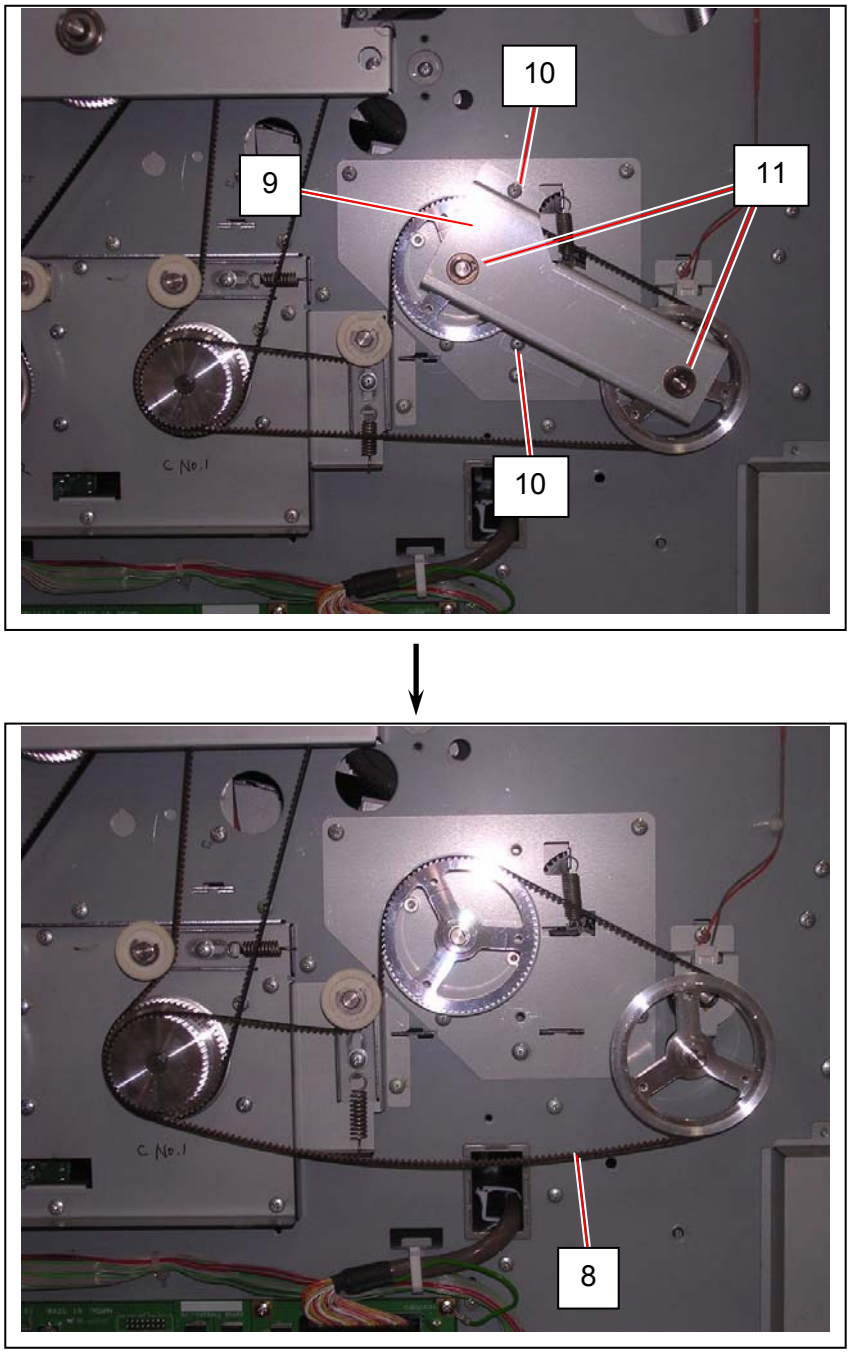
b) Giving the spring tension to the Belt 8, tighten the screw (6) of Pulley 3 (7).



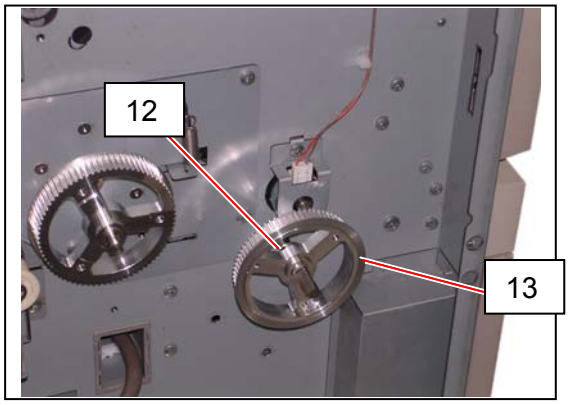
c) Turn on the machine, and then turn it off some seconds later.
The Belt 8 is driven by the motor, and it may be slackened around the Pulley 3 at this time.

d) Loosen the screw to release the Pulley 3.
The slack of Belt 8 generated by the above c) is removed because the Tension Spring pulls the Pulley 3.
Then tighten the screw again.

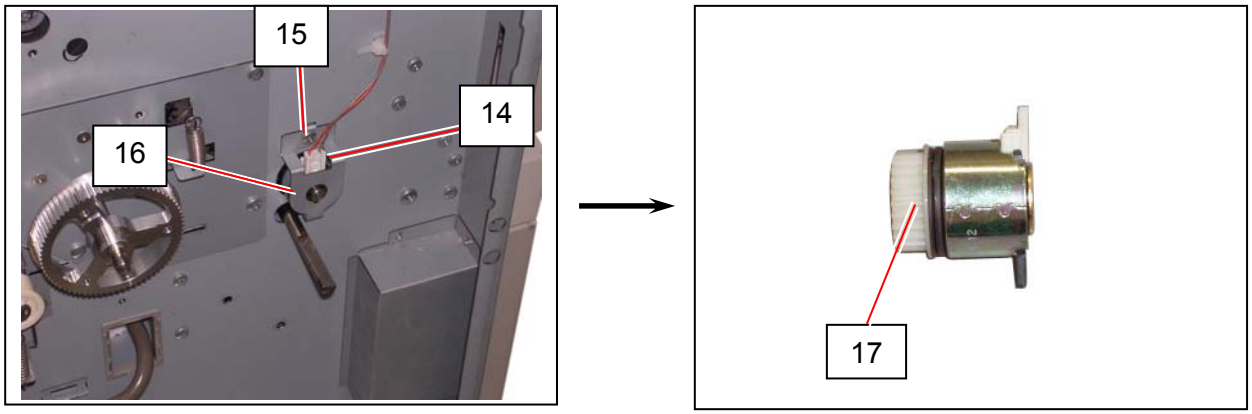
5. Remove 2 screws (10), Grip Ring and Bearing (11) to remove Bracket (9).
   Remove Belt 8 (8).



6. Remove the Hex. Cap Screw (12) to remove the Pulley 13 (13).

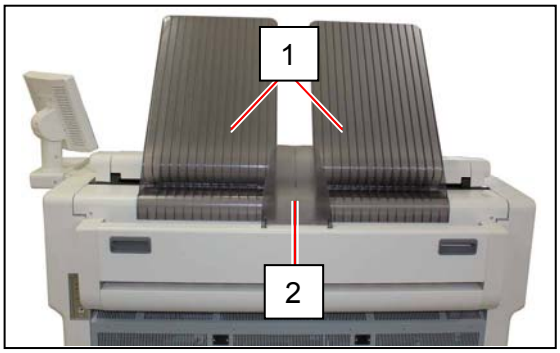


7. Disconnect the connector (14), and remove the 4x6 screw (15) to remove Bracket Clutch (16), Clutch (17).
Replace Clutch (17) with the new one.



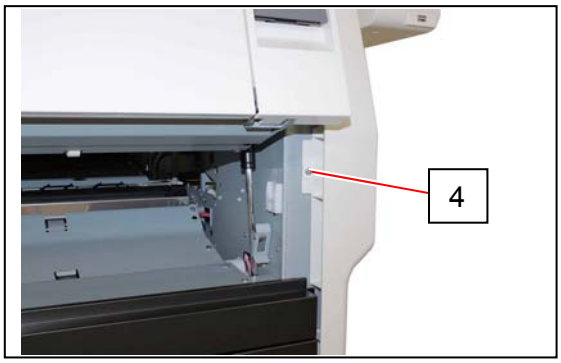
5. 11. 3 Replacement of Blower (BL7)

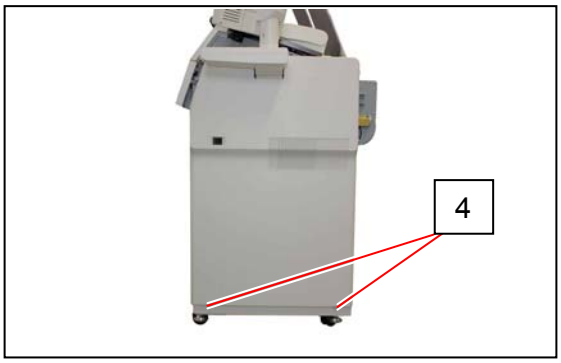
1. Remove 2 pieces of Exit Tray (1) and Exit Tray 2 (2).

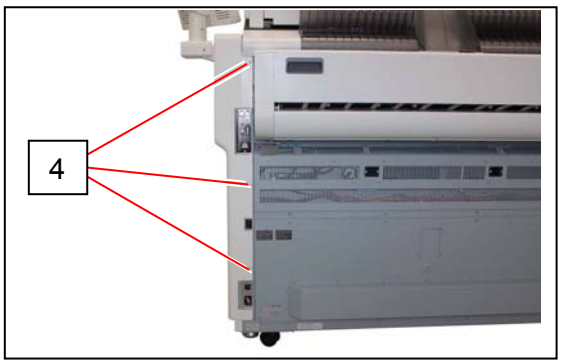


2. Pull up the Lever 2 (3) to open the Engine Unit.

3. Remove the 6 screws (4) to remove the Cover 3 (5).

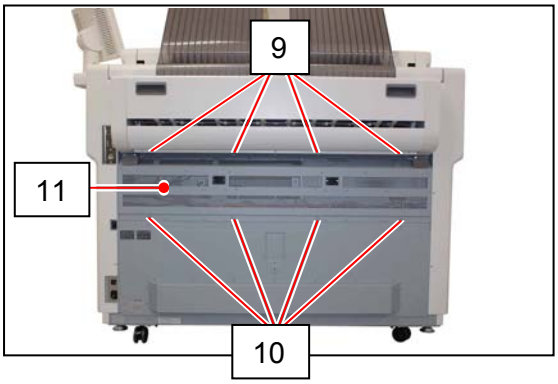




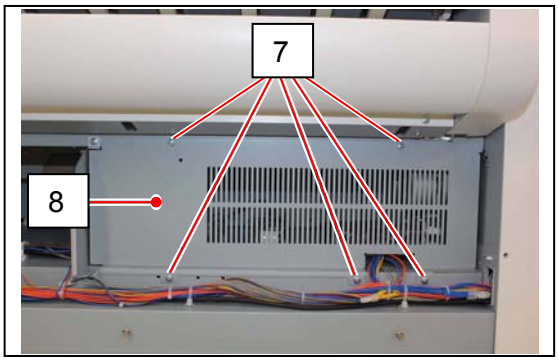


4. Close the Engine Unit.

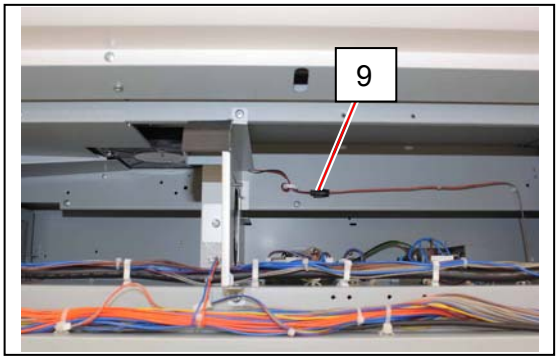
8. Remove 4 pieces of 4x6 screw (9), loosen 4 pieces of 4x6 screw (10), and then remove the Cover 15 (11).



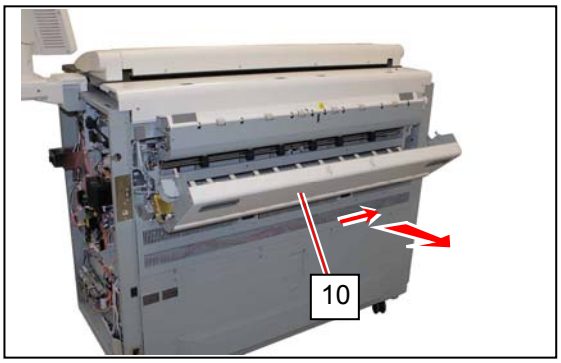
9. Remove 5 screws (7) to remove Case 5 (8).



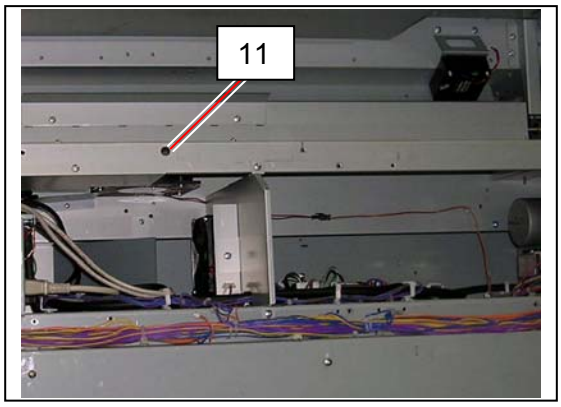
10. Disconnect the connector (9).

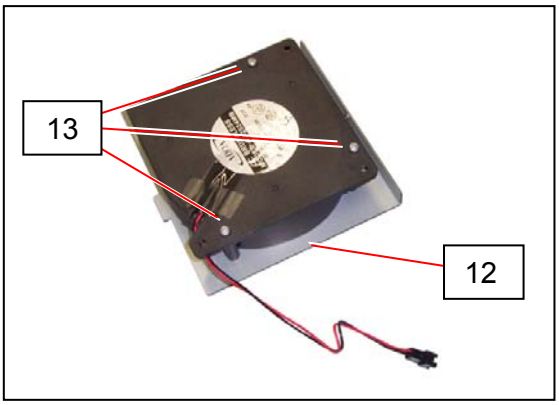


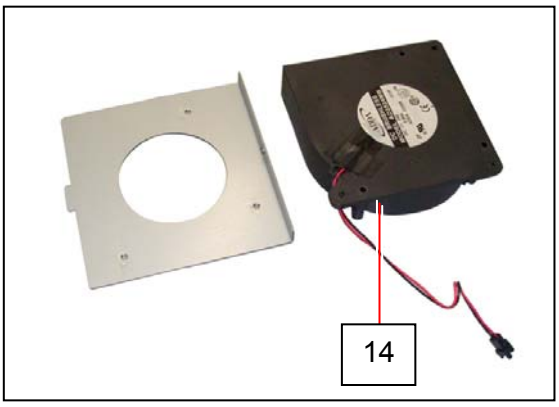
11. Remove the Paper Exit Assy (Outside) (10) making reference to [5. 3. 1 Removal of Fuser Unit].



12. Remove 1 screw (11), and then remove the Bracket Blower (12).
Remove 3 screws (13) to replace Blower (14) with the new one.

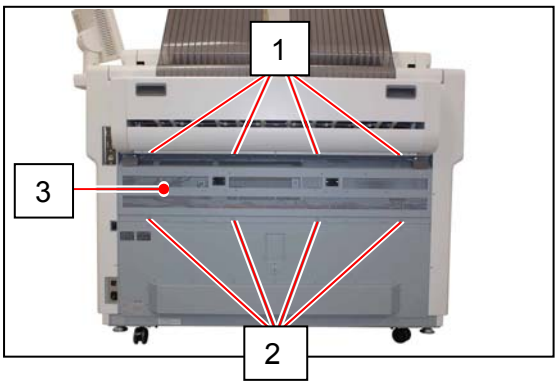




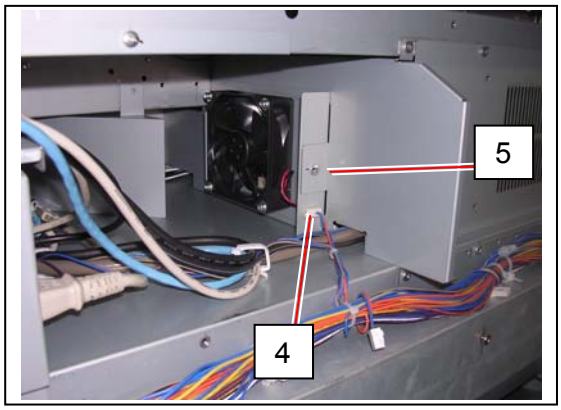


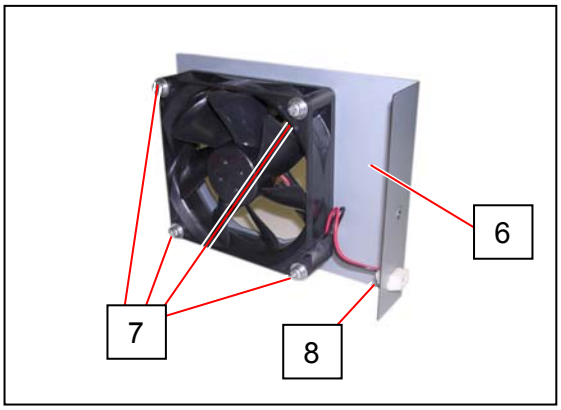
5. 11. 4 Replacement of Fan (BL8)

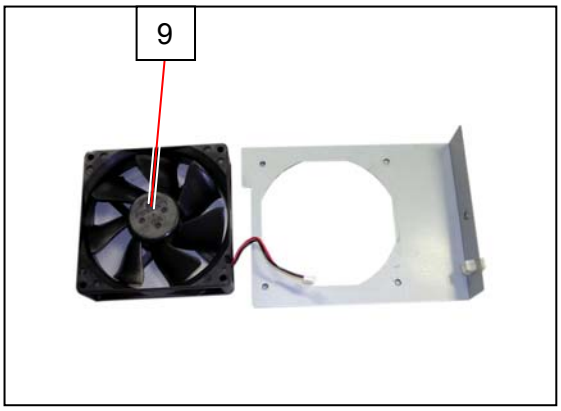
1. Remove 4 pieces of 4x6 screw (1), loosen 4 pieces of 4x6 screw (2), and then remove the Cover 15 (3).



2. Disconnect the connector (4), remove 1 screw (5), and then remove the Fan Bracket (6). Remove 4 screws (7) and 1 connector (8) to replace Fan (9) with a new one.



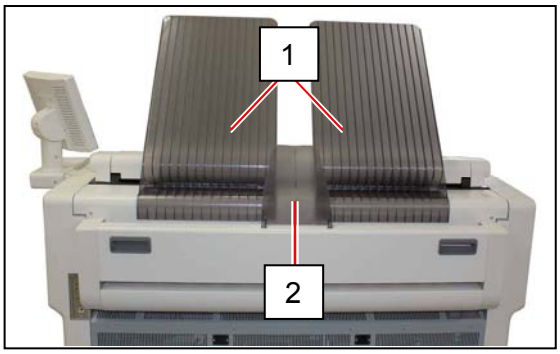




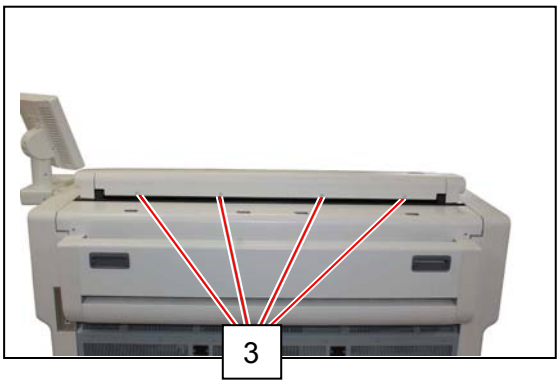
5. 12 Scanner Unit

5. 12. 1 Removal of Scanner Unit

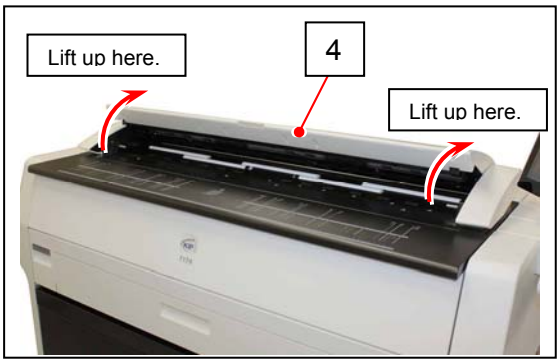
1. Remove 2 pieces of Exit Tray (1) and Exit Tray 2 (2).



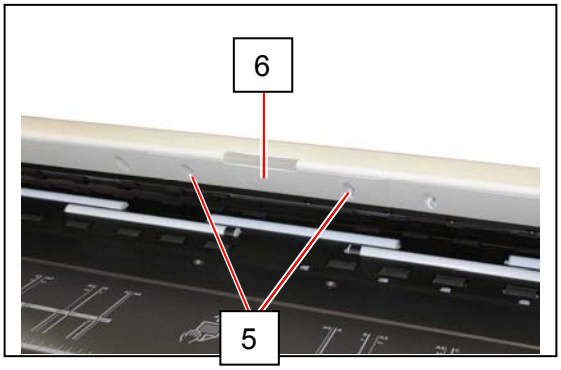
2. Remove 4 screws (3) on the back.



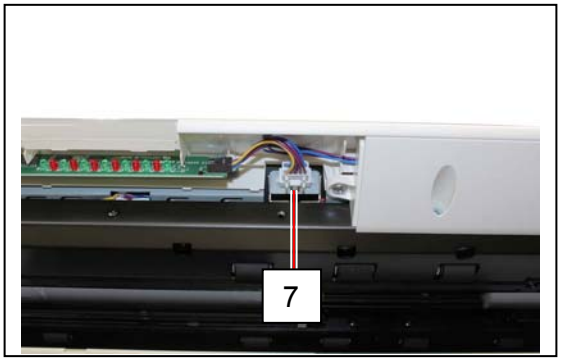
3. Lift up both sides of the Upper Unit (4).



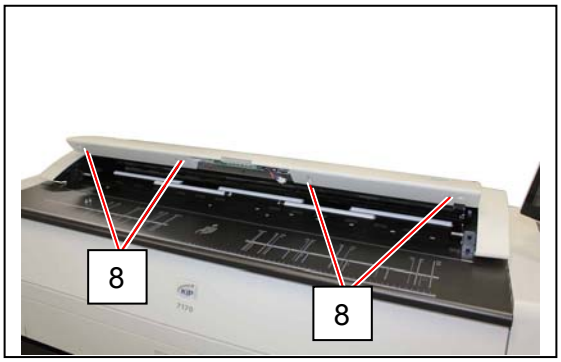
4. Remove 2 screws (5) to remove the Front Cover (6: middle).



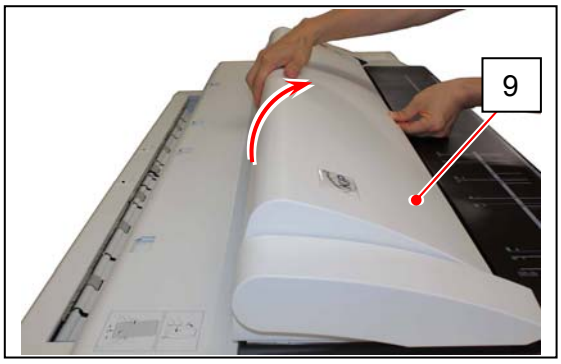
5. Disconnect 1 connector (7).



6. Remove 4 screws (8) on the front.



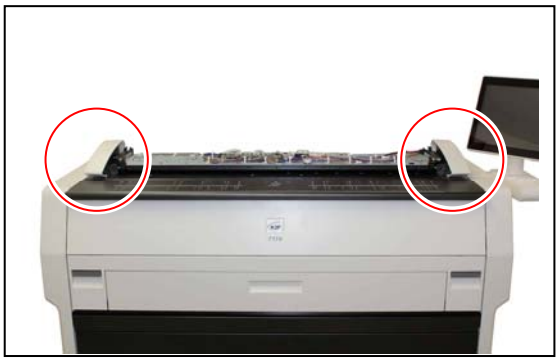
7. Remove the Top Cover (9).

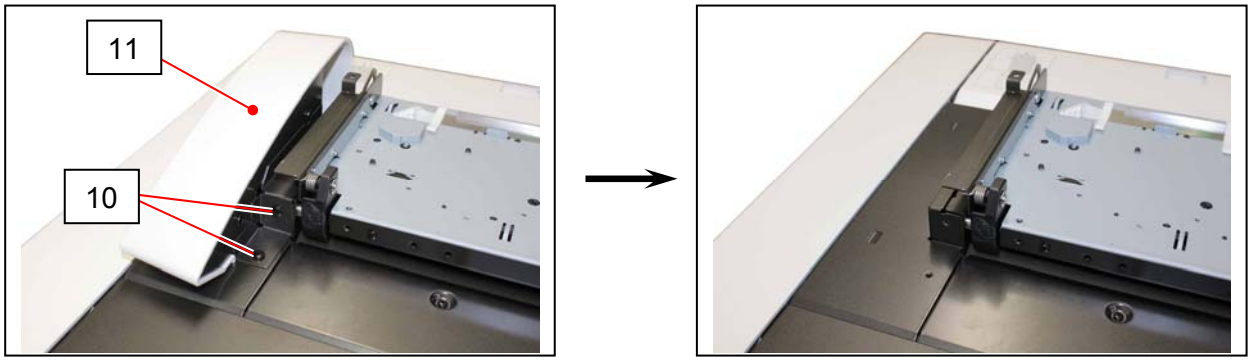


NOTE

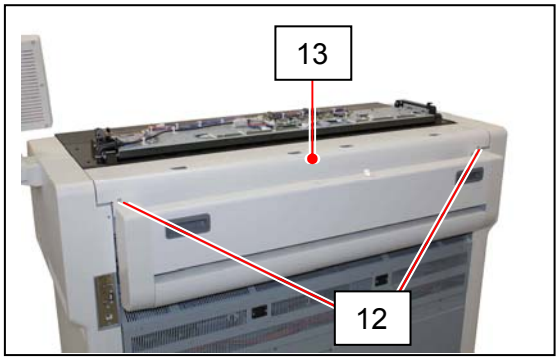
For reassembling, fit the front end of the Top Cover to the Upper Unit.

8. On both sides, Remove 2 screws (10) to remove the Scanner Side Covers (11).

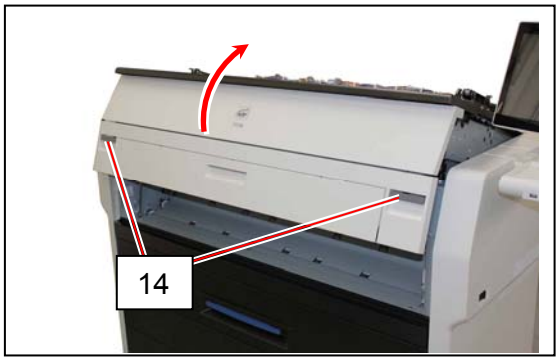




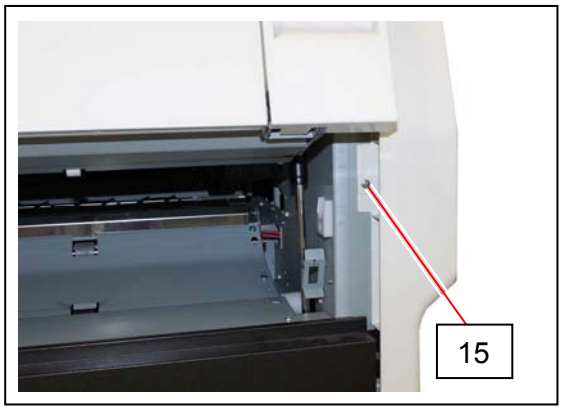
9. Remove 2 tooth washer screws (12) to remove Cover 10 (13).

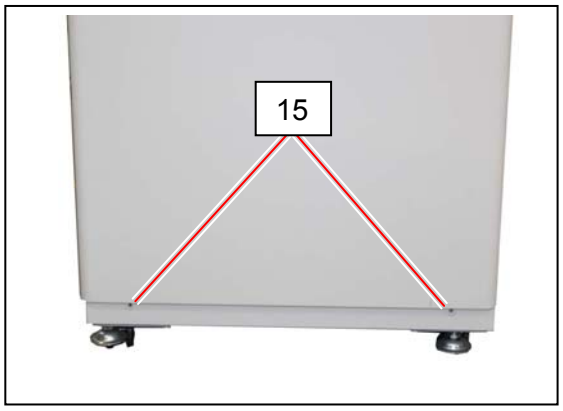


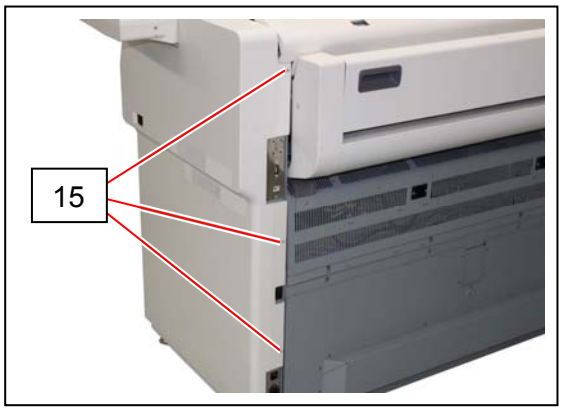
10. Pull up Lever 2 (14) to open the Engine Unit.



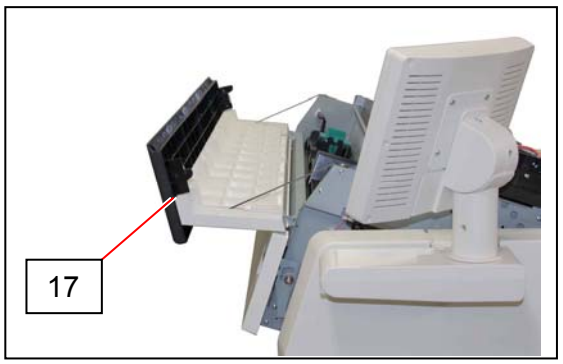
11. Remove 6 screws (15) to remove the Cover 3 (16).



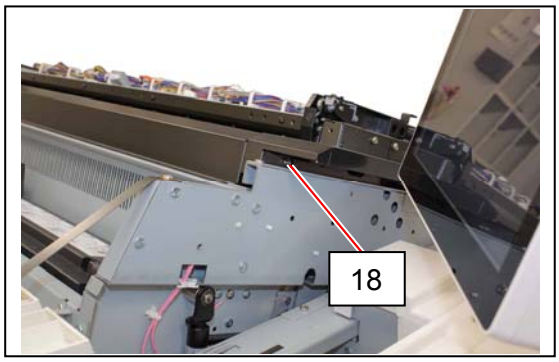


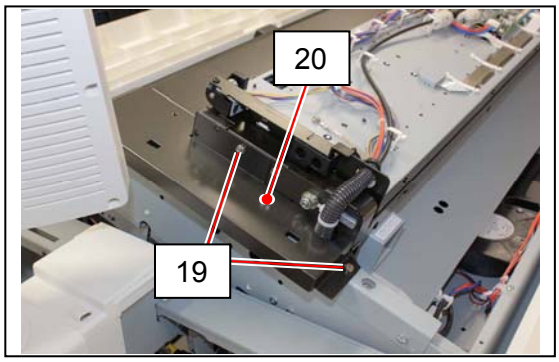


12. Open the Toner Cover (17).

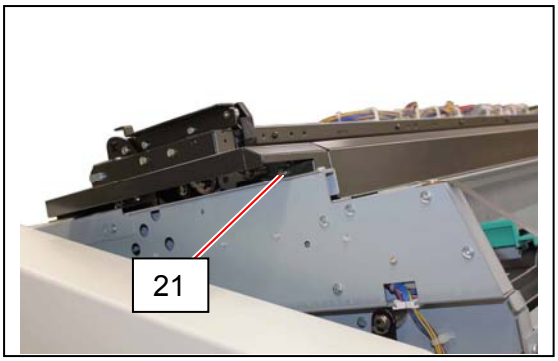


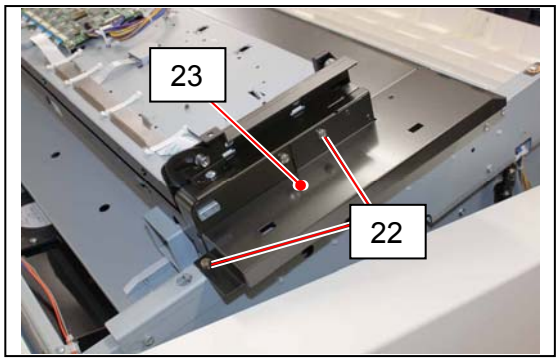
13. Loosen 1 screw (18).
Remove 2 screws (19) to remove the Cover 6 (20).



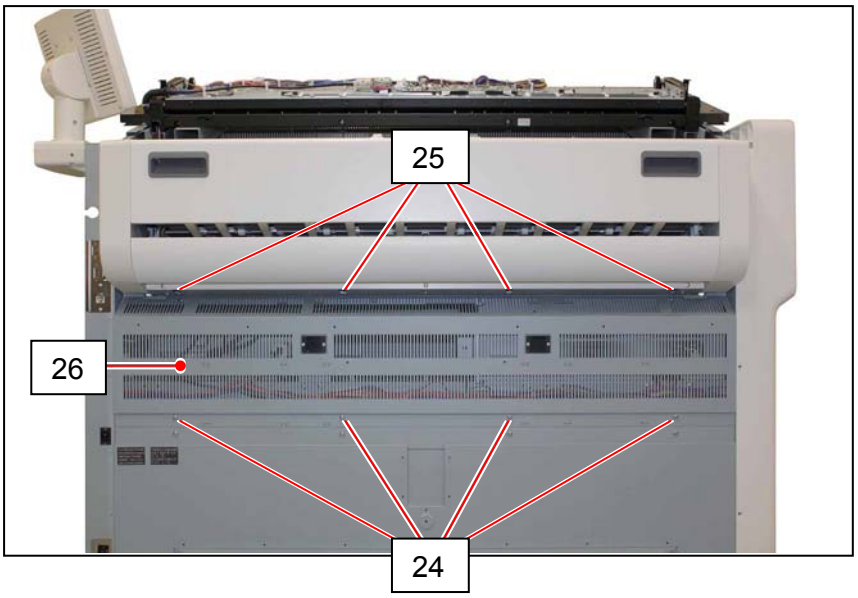


14. Loosen 1 screw (21).
    Remove 2 screws (22) to remove the Cover 5 (23).

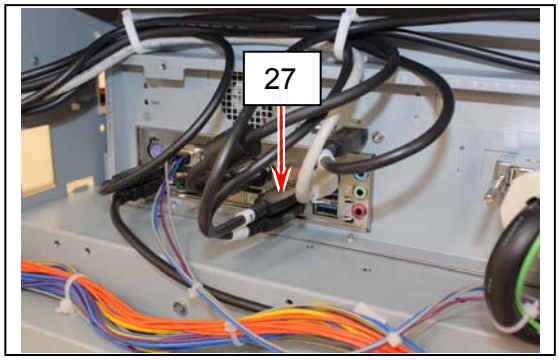




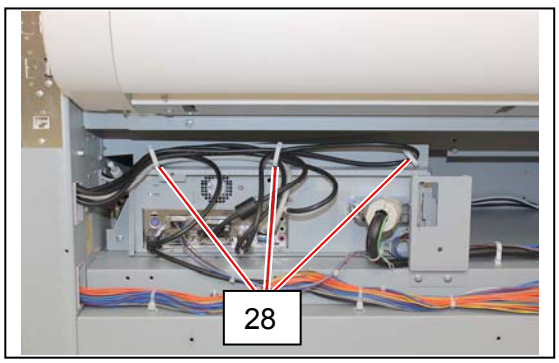
15. Loosen 4 screws (24) and remove 4 screws (25) to remove the Cover 15 (26).



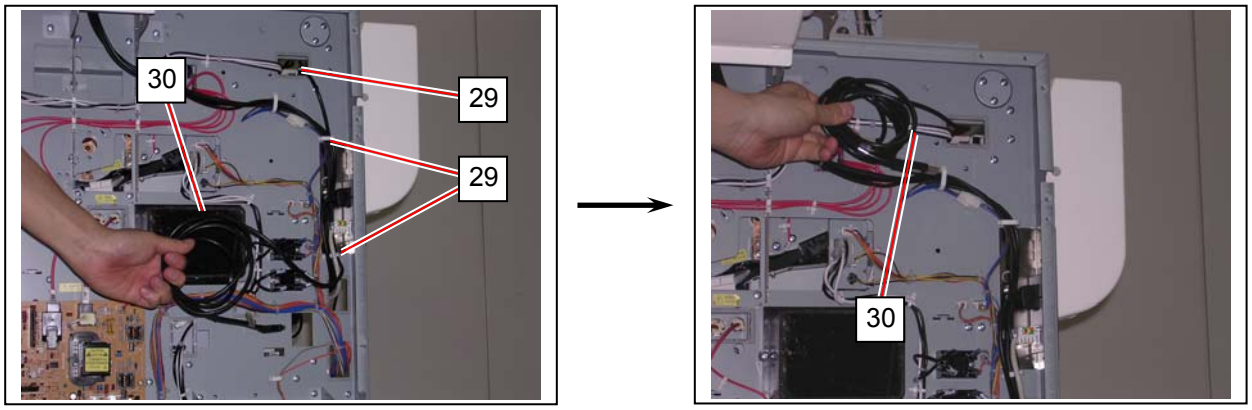
16. Disconnect the Scanner USB Cable (27: with the label “SC”) from the upper right USB port of IPS.



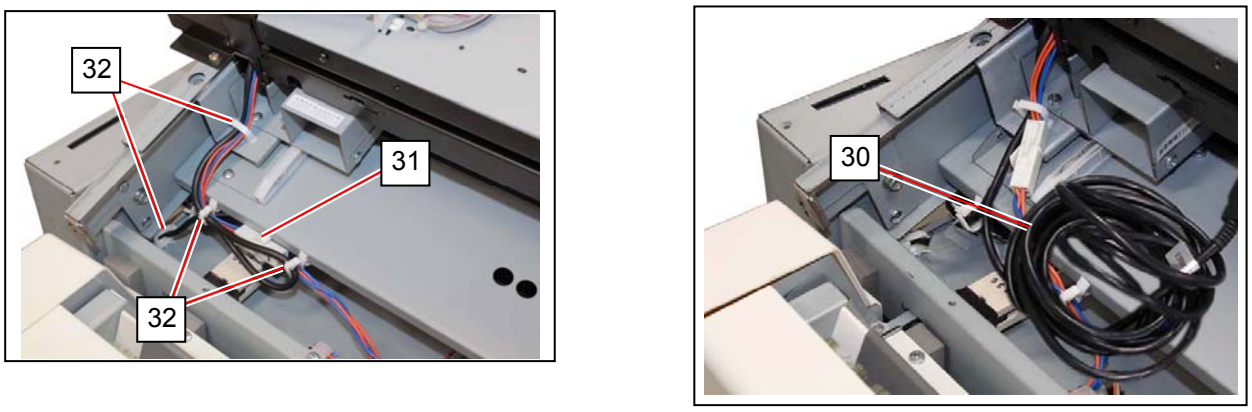
17. Open 3 wire saddles (28) to release the Scanner USB Cable.



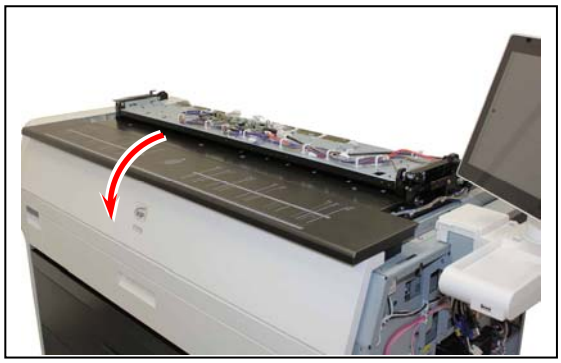
18. On the right side, open 3 wire saddles (29) to release the Scanner USB Cable (30).



19. Disconnect the connector (31). Open the wire saddles (32) to release the Scanner USB Cable (30).



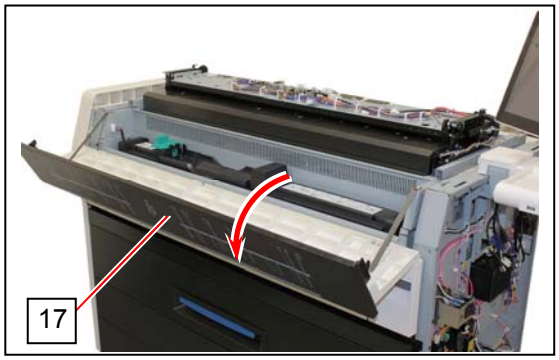
20. Close the Engine Unit.



NOTE

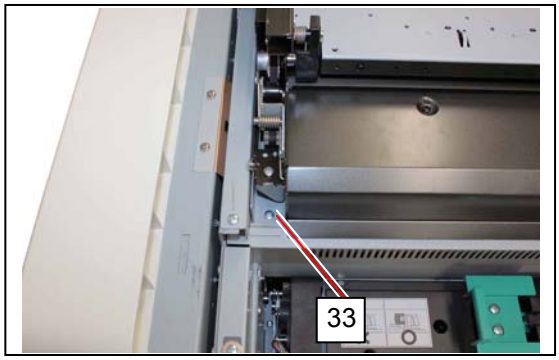
Be sure to close the Engine Unit before removing the screws which fix the Scanner Unit. Otherwise the Scanner Unit may fall down and damage.

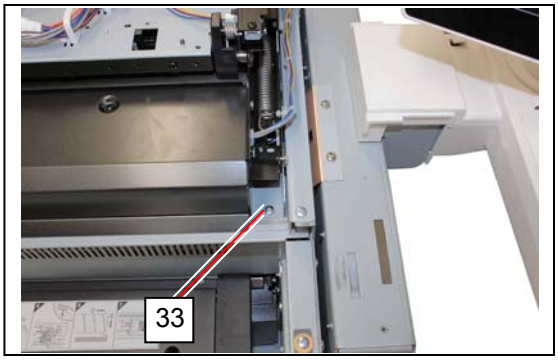
21. Open the Toner Cover (17).



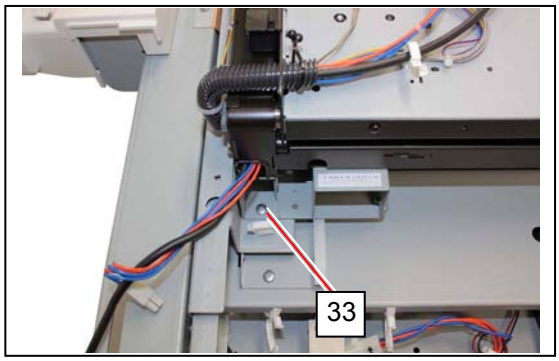
22. Remove 4 screws (33) which fix the Scanner Unit.

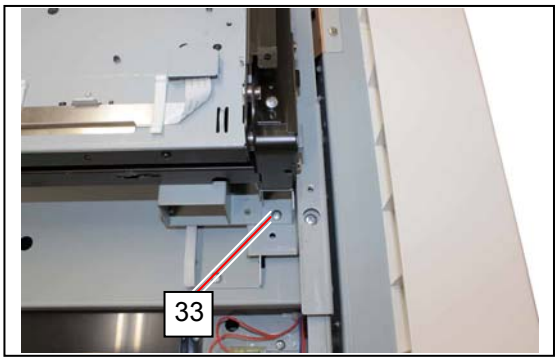
(Front side)



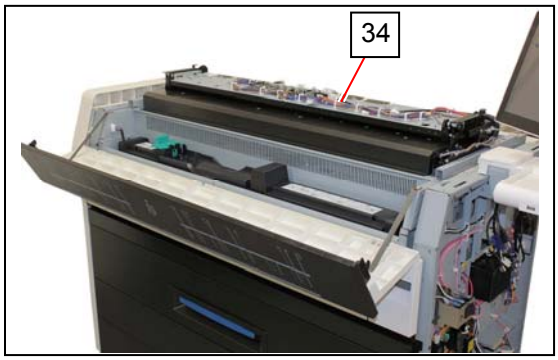


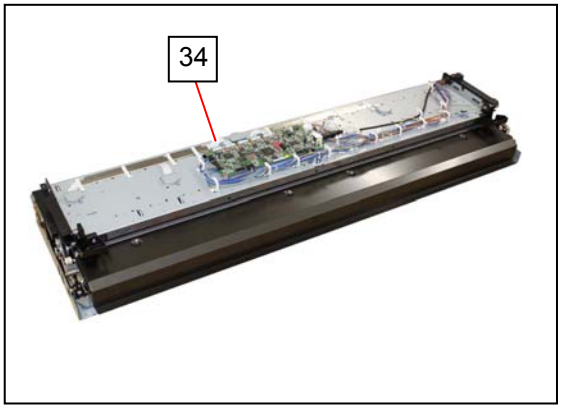
(Rear side)





23. Remove the Scanner Unit (34) from the machine.



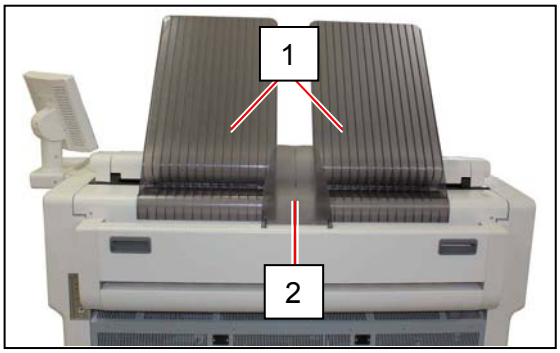


CAUTION

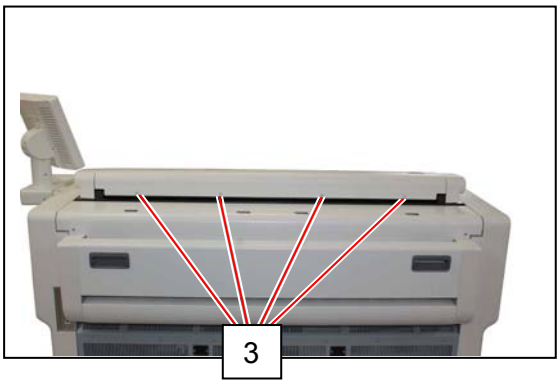
Please carry the Scanner Unit by 2 persons as it is heavy.

5. 12. 2 Replacement of Belt

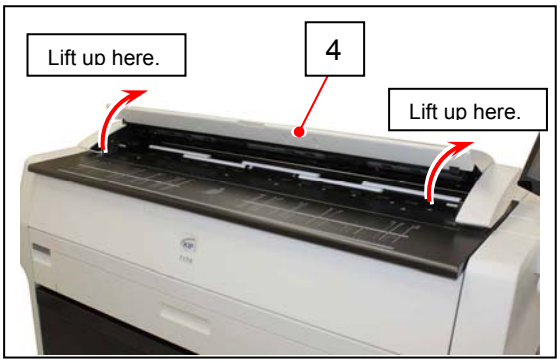
1. Remove 2 pieces of Exit Tray (1) and Exit Tray 2 (2).



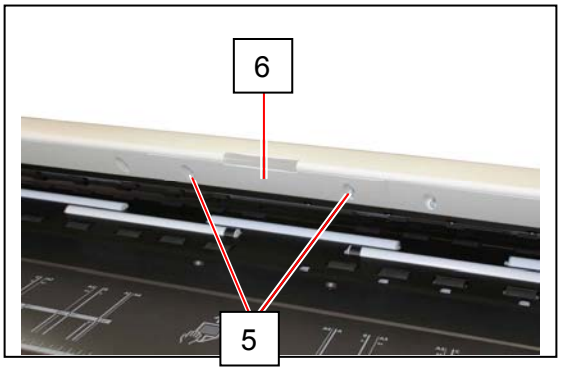
2. Remove 4 screws (3) on the back.



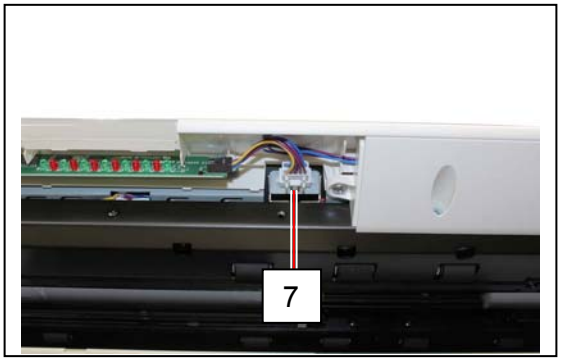
3. Lift up both sides of the Upper Unit (4).



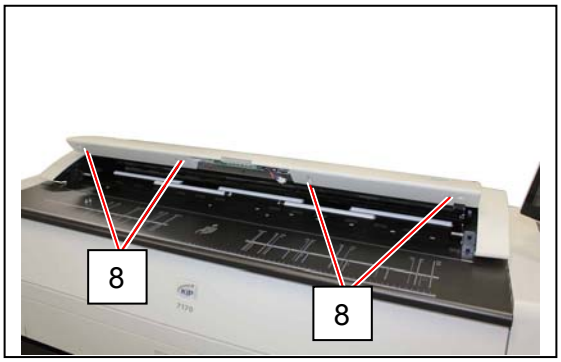
4. Remove 2 screws (5) to remove the Front Cover (6: middle).



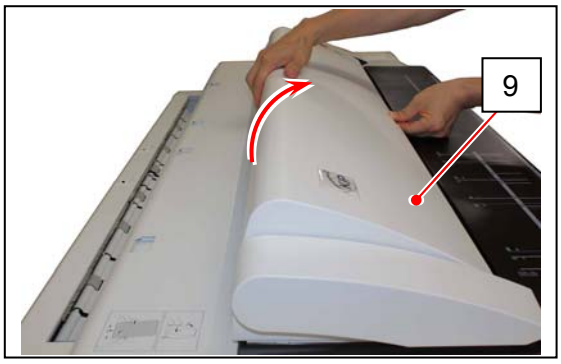
5. Disconnect 1 connector (7).



6. Remove 4 screws (8) on the front.



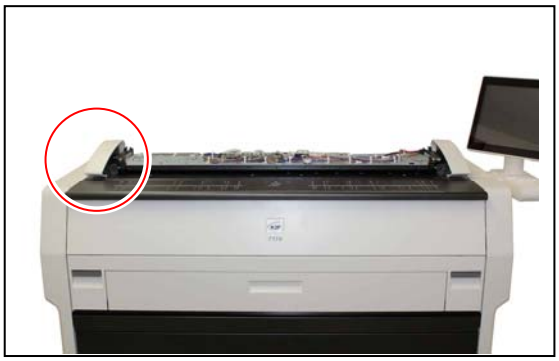
7. Remove the Top Cover (9).

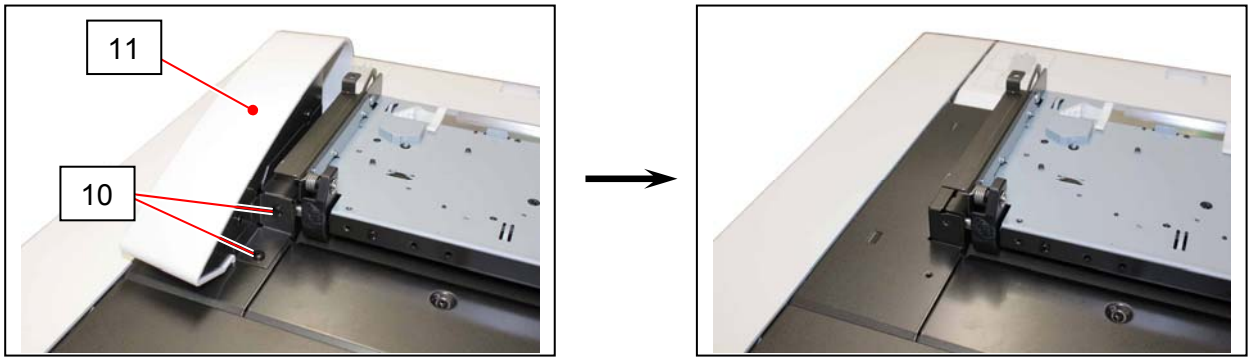


NOTE

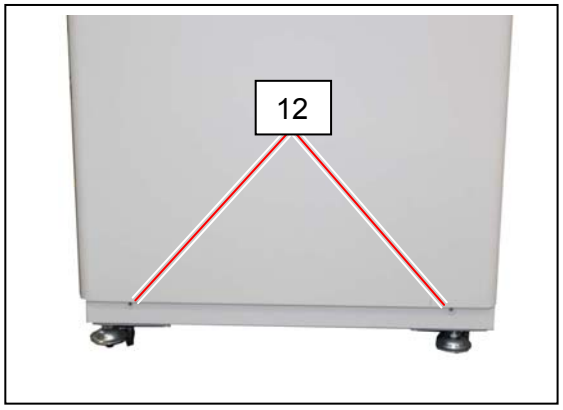
For reassembling, fit the front end of the Top Cover to the Upper Unit.

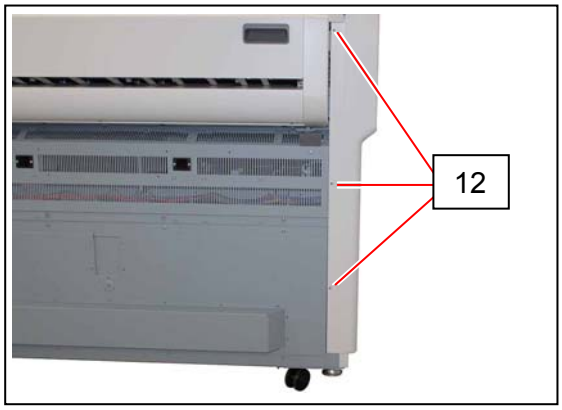
8. On left side, Remove 2 screws (10) to remove the Scanner Side Cover (11).



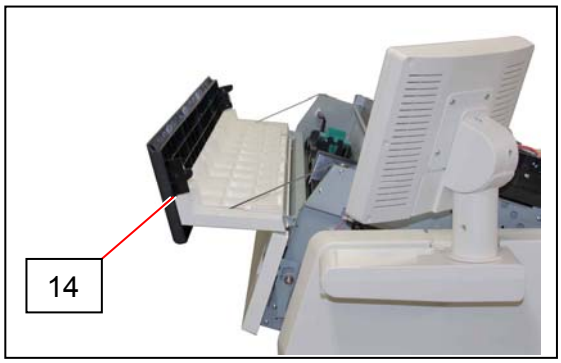


9. Remove 6 screws (12) to remove the Cover 2 (13).

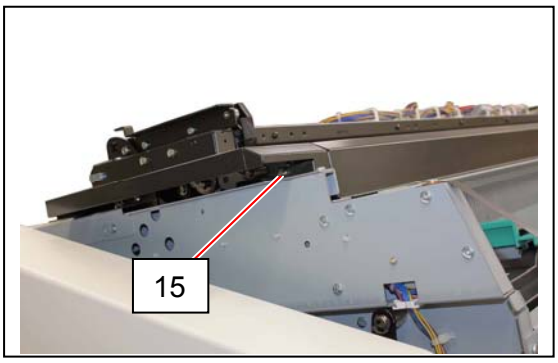


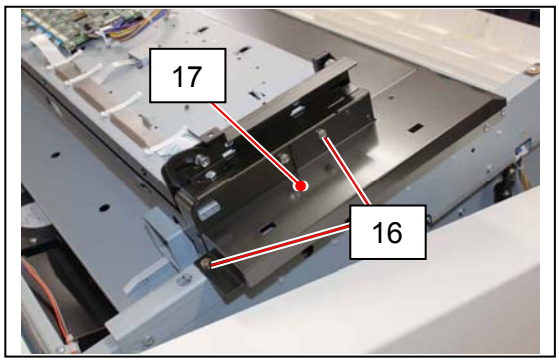


10. Open the Toner Cover (14).

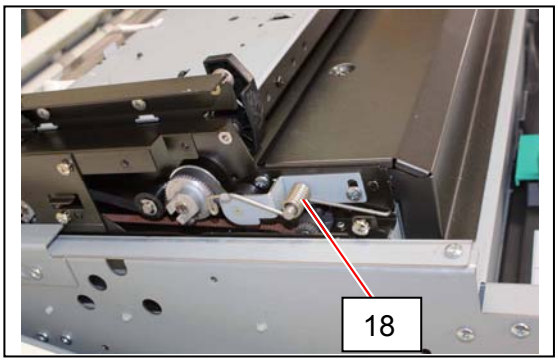


11. Loosen 1 screw (15).
Remove 2 screws (16) to remove the Cover 5 (17).

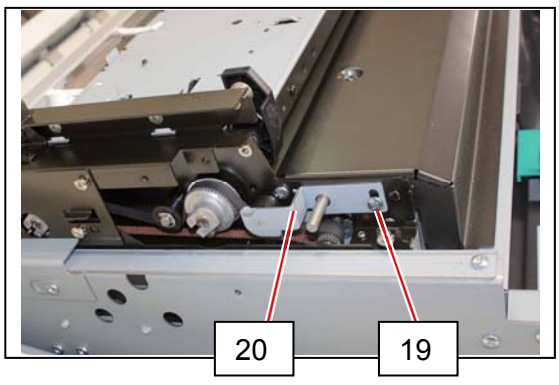




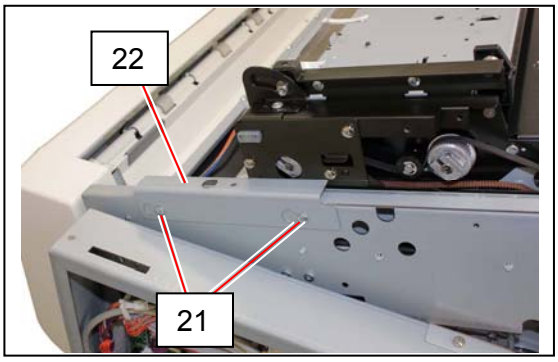
12. Remove the Spring (18).



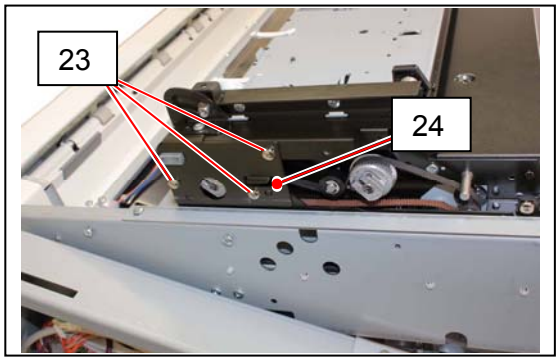
13. Remove 1 Screw (19) to remove the Tension Plate (20).



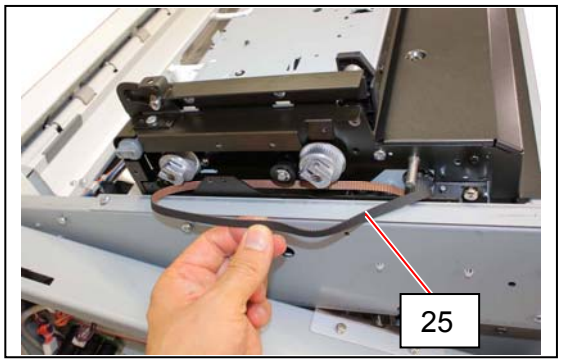
14. Loosen 2 screws (21) to remove the Bracket (22).



15. Remove 3 screws (23) to remove the Bracket (24).

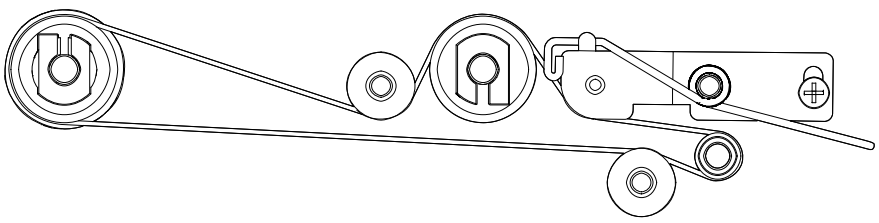


16. Remove the Belt (25).
Replace the Belt with a new one.



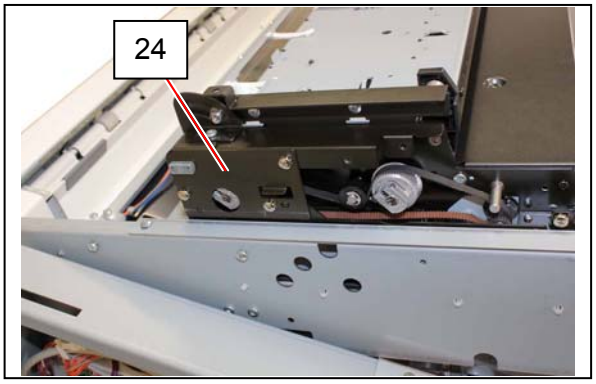
Reference

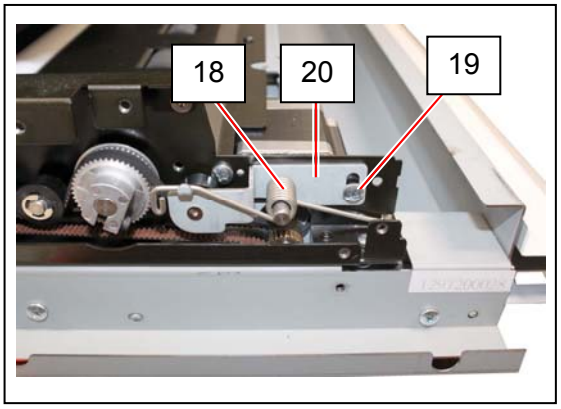
Joint the driving gears and pulleys with the new Belt (25) by the following arrangement.



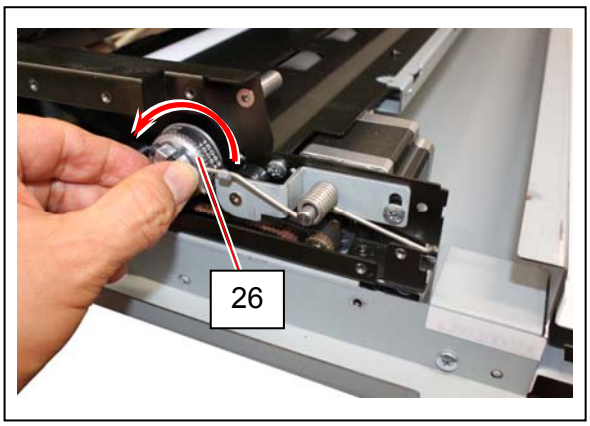
In order to apply right tension on the "Belt", it is necessary to execute following procedure before proceeding.

17. Put Bracket (24), Tension Plate (20) and Spring (18) back in their original positions. Also put screw (19) back in the original position and turn it slightly but not tightly, just to allow the Tension Plate (20) to move smoothly.

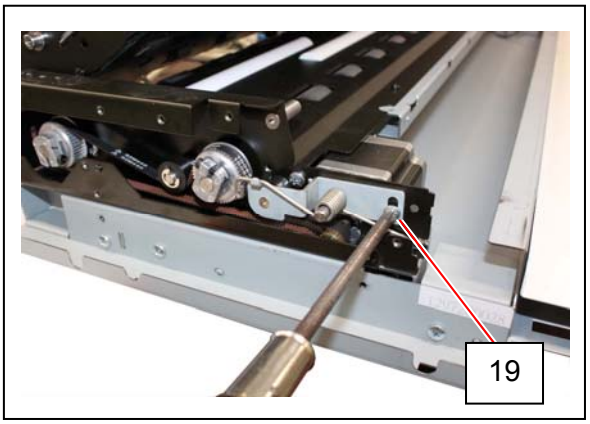




18. Rotate the 45T Pulley (26) few revolutions in the direction of arrow.

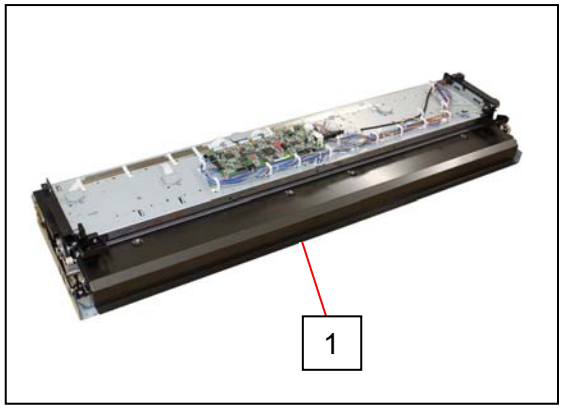


19. Turn the screw (20) tightly.

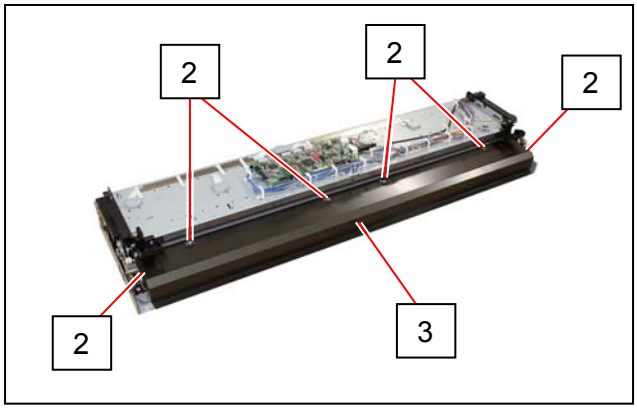


5. 12. 3 Replacement of Motor Assy

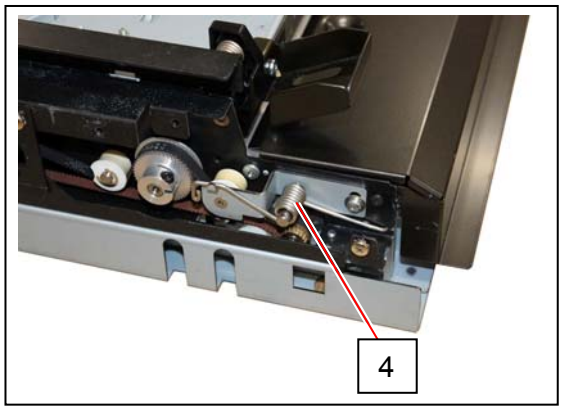
1. Remove the Scanner Unit (1) from the machine making reference to [5.13. 1 Removal of the Scanner Unit].

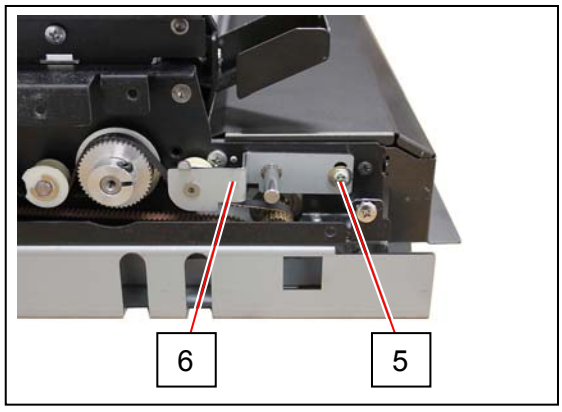


2. Remove 6 screws (2) to remove the SHEET GUIDE (3).

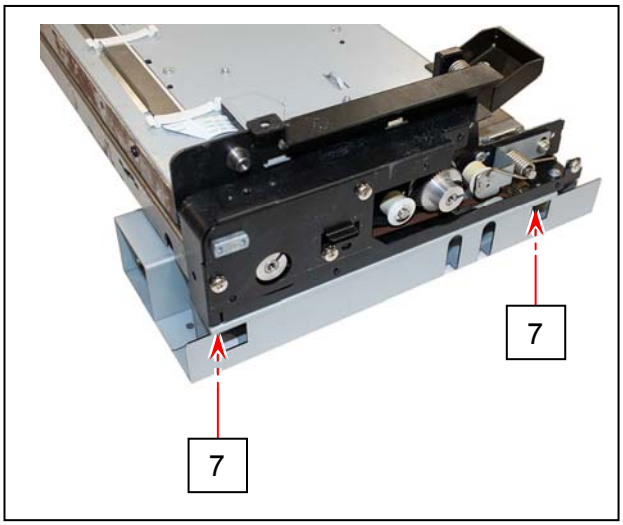


3. Remove the Spring (4), and then remove the screw (5) to remove the Tension Plate (6).

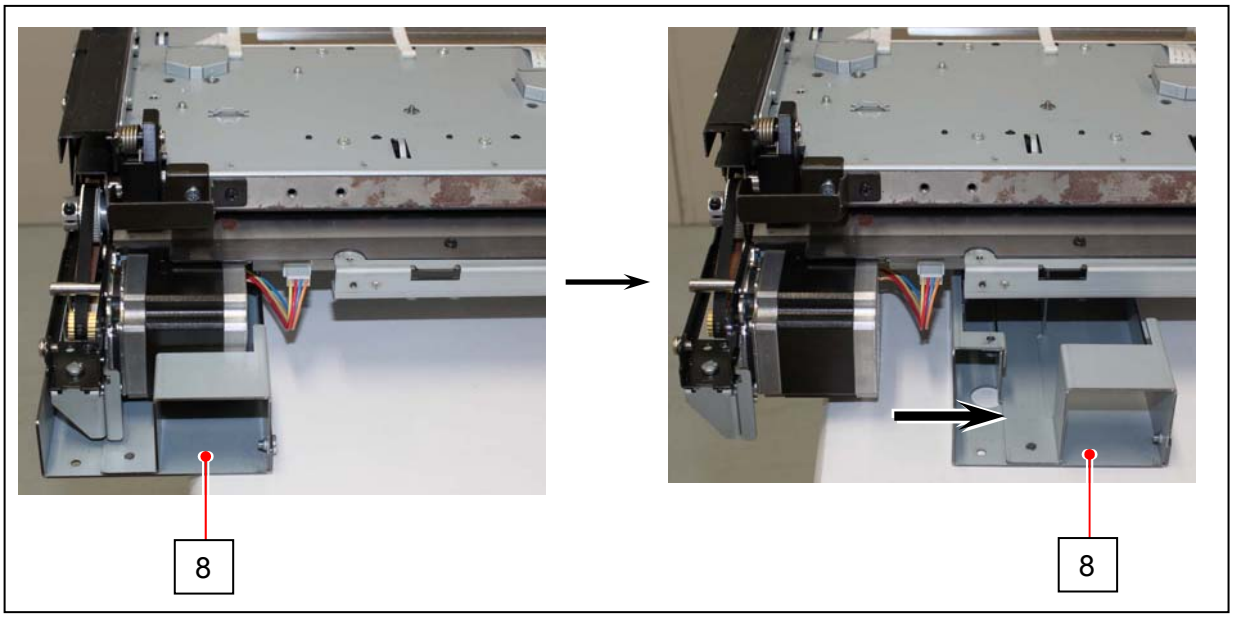




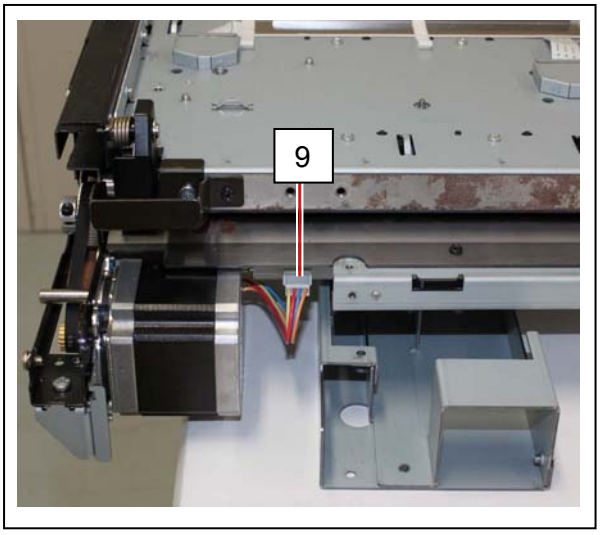
4. Remove 2 screws (7).



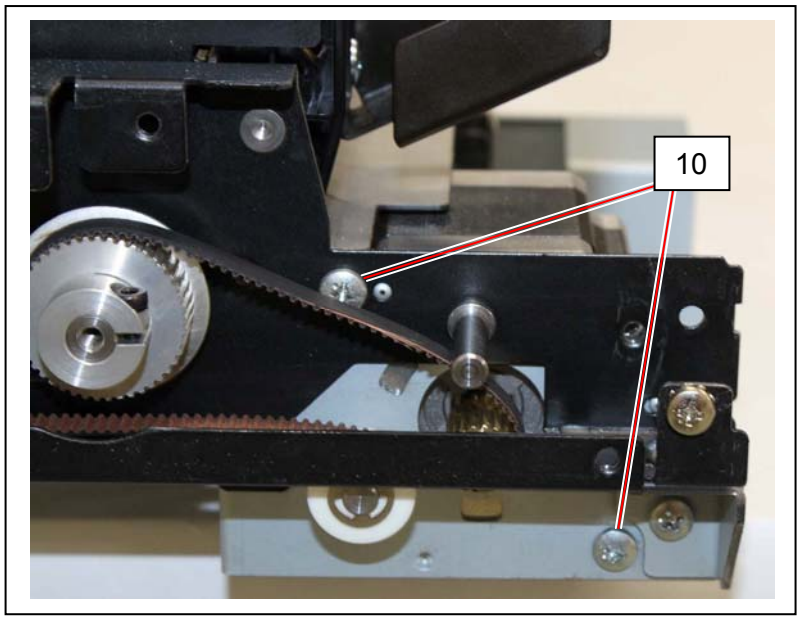
5. Move “Bracket (8)” to inside by pulling up “Scanner Unit”.

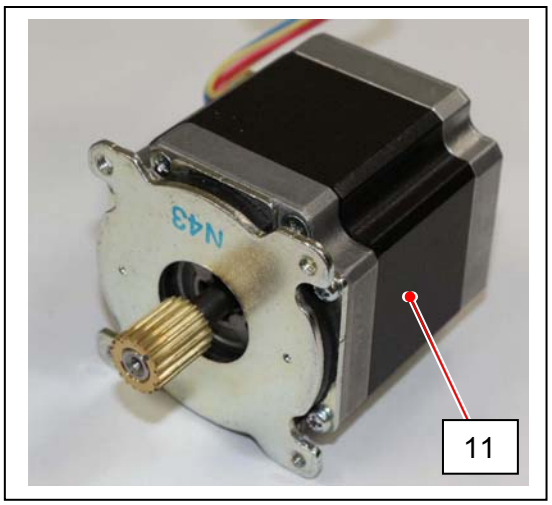


6. Disconnect connector (9).



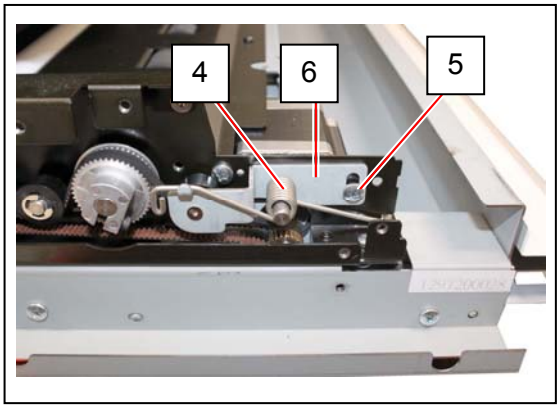
7. Remove 2 screws (10) to remove Motor Assy (11).
   Replace Motor Assy with new one.



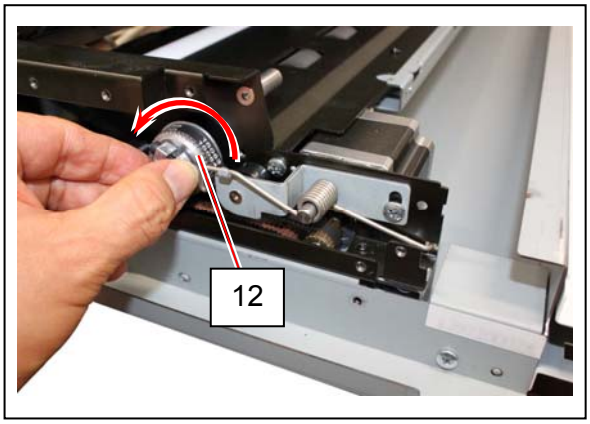


In order to apply right tension on the "Belt", it is necessary to execute following procedure before proceeding.

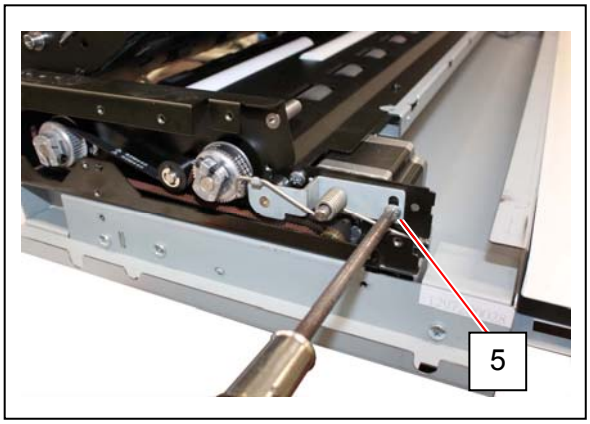
8. Put Tension Plate (6) and Spring (4) back in their original positions. Also put screw (5) back in the original position and turn it slightly but not tightly, just to allow the Tension Plate (6) to move smoothly.



9. Rotate the 45T Pulley (12) few revolutions in the direction of arrow.

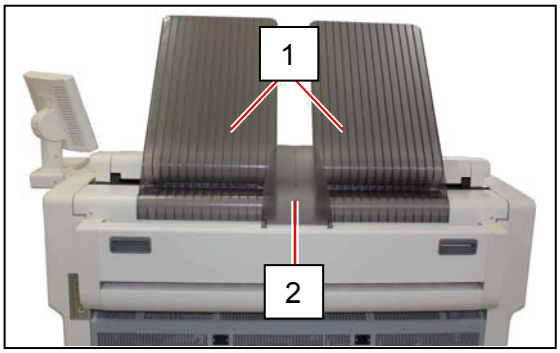


10. Turn the screw (5) tightly.

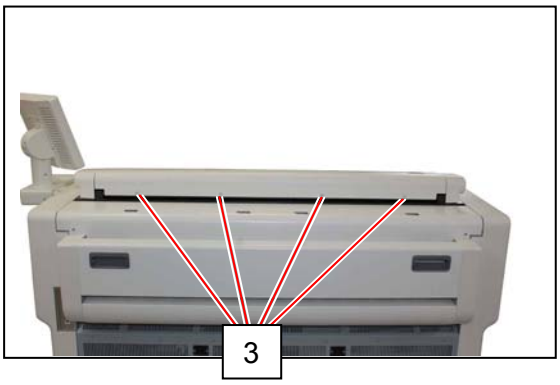


5. 12. 4 Replacing Sheet Roller (Platen)

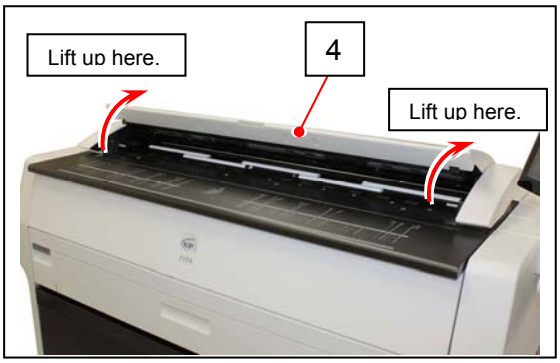
1. Remove 2 pieces of Exit Tray (1) and Exit Tray 2 (2).



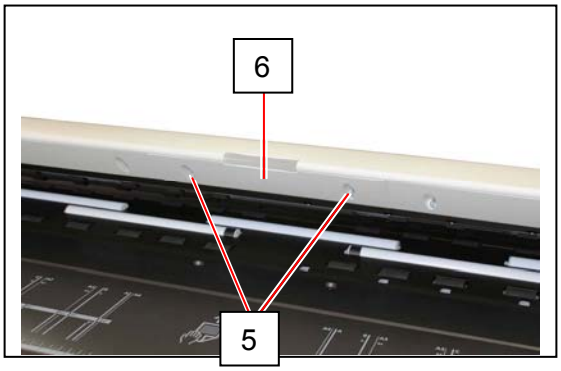
2. Remove 4 screws (3) on the back.



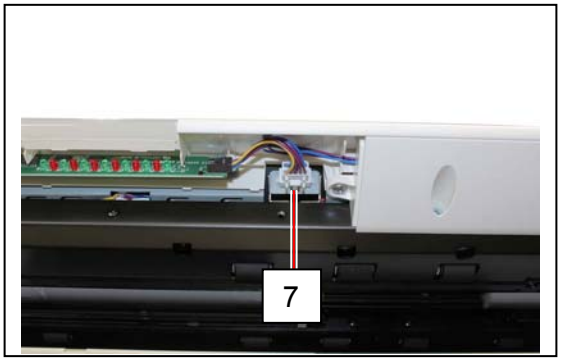
3. Lift up both sides of the Upper Unit (4).



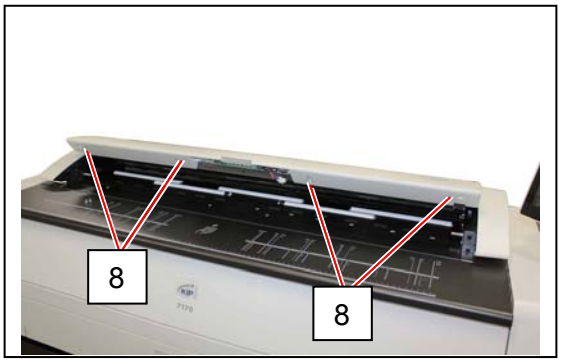
4. Remove 2 screws (5) to remove the Front Cover (6: middle).



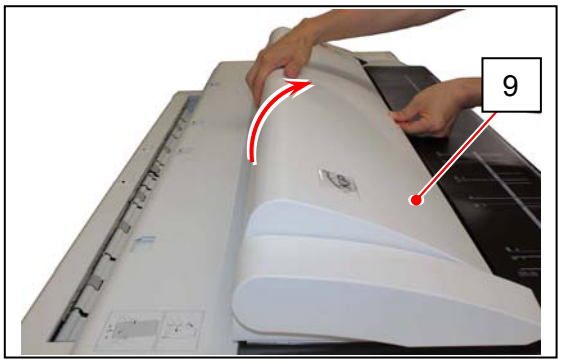
5. Disconnect 1 connector (7).



6. Remove 4 screws (8) on the front.



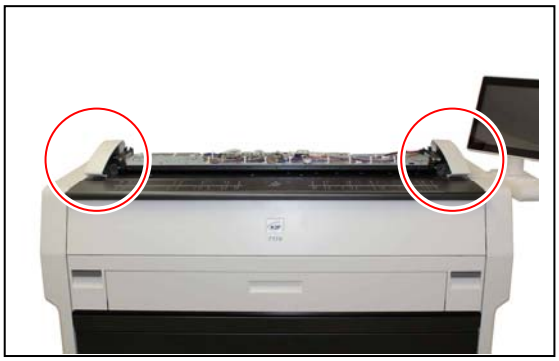
7. Remove the Top Cover (9).

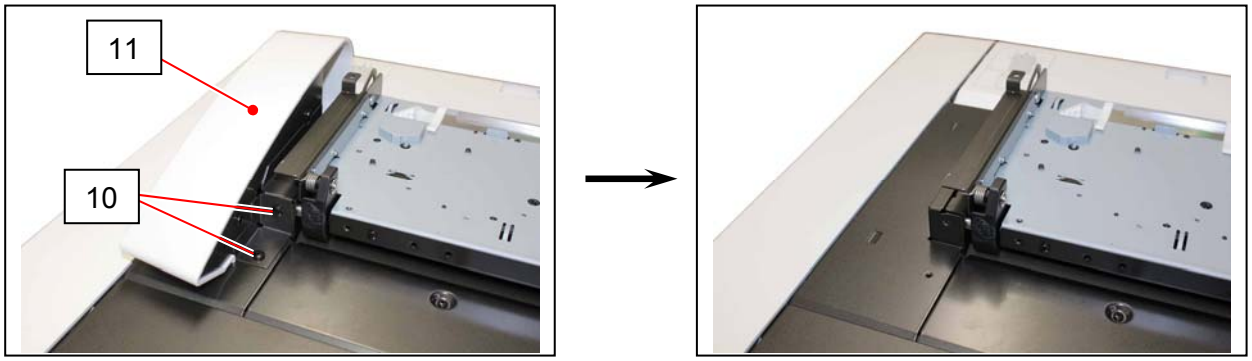


NOTE

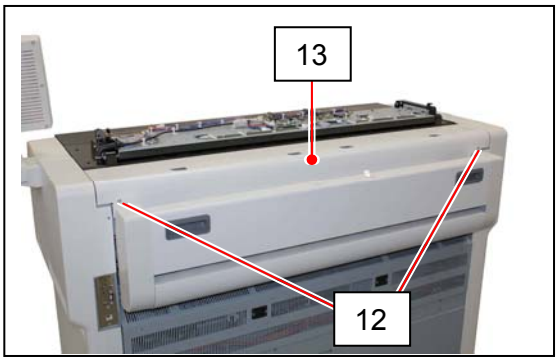
For reassembling, fit the front end of the Top Cover to the Upper Unit.

8. On both sides, Remove 2 screws (10) to remove the Scanner Side Covers (11).

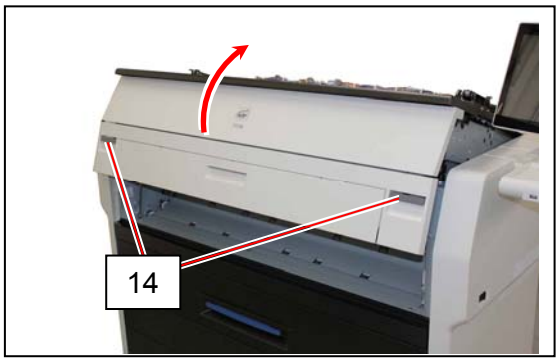




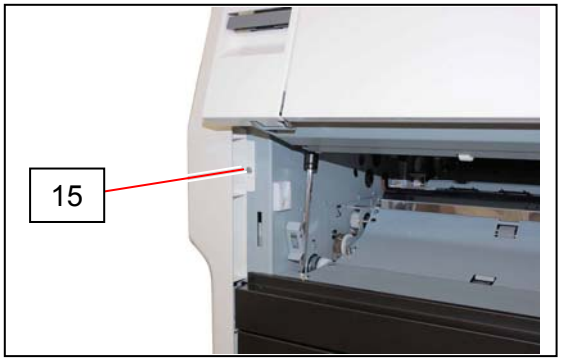
9. Remove 2 tooth washer screws (12) to remove Cover 10 (13).

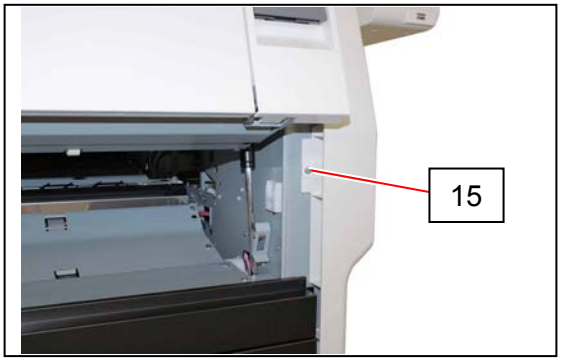


10. Pull up Lever 2 (14) to open the Engine Unit.

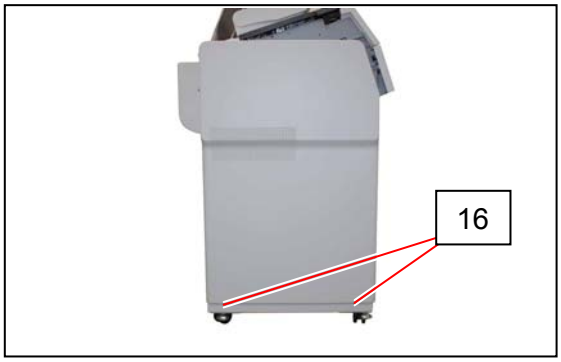


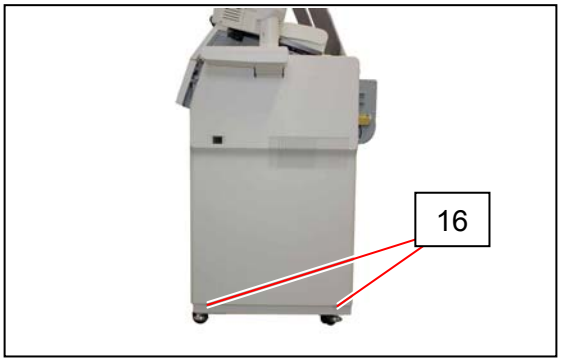
11. Remove the screws (15) at both sides.



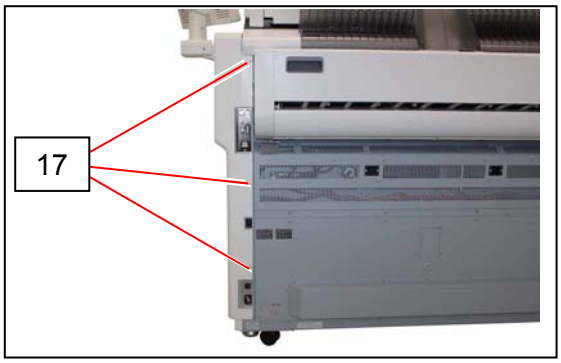


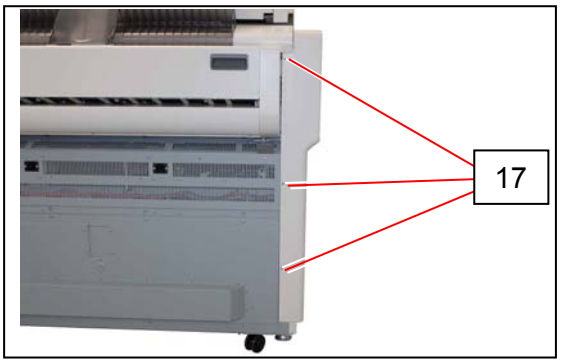
12. Remove 4 pieces of screw (16) at both sides.





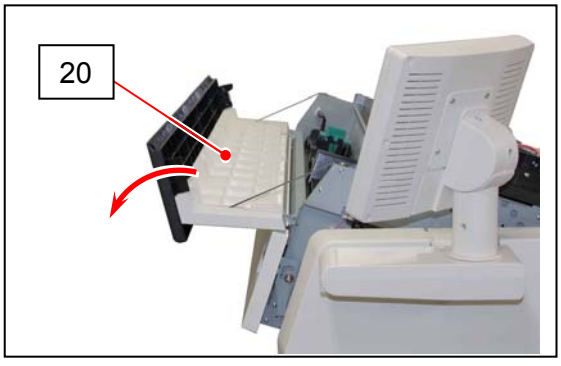
13. Remove 6 pieces of screw (17) at both sides.



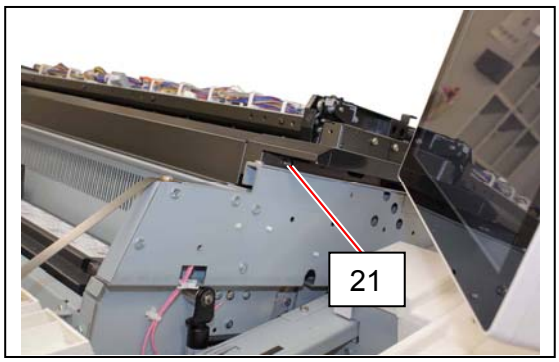


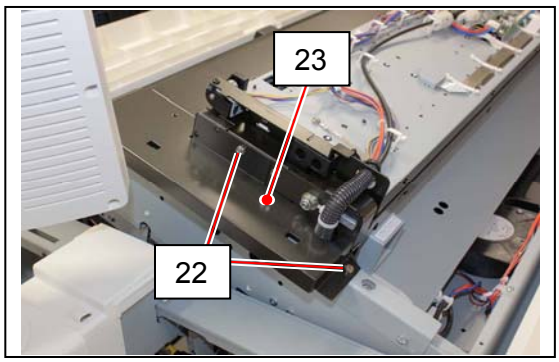
14. Remove both Cover 2 (18) and Cover 3 (19).

15. Open Toner Cover (20).

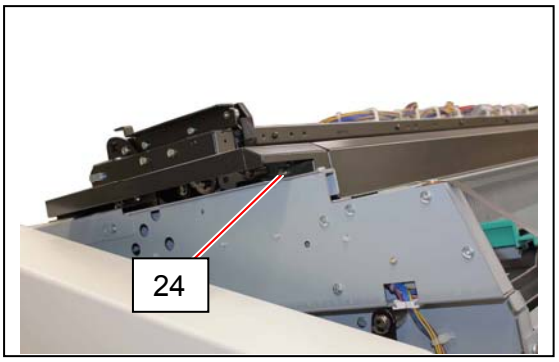


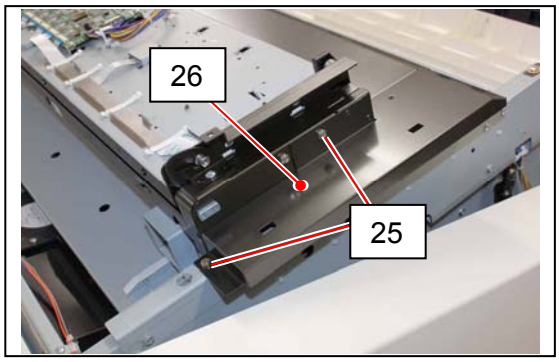
16. Loosen 1 screw (21).
Remove 2 screws (22) to remove the Cover 6 (23).



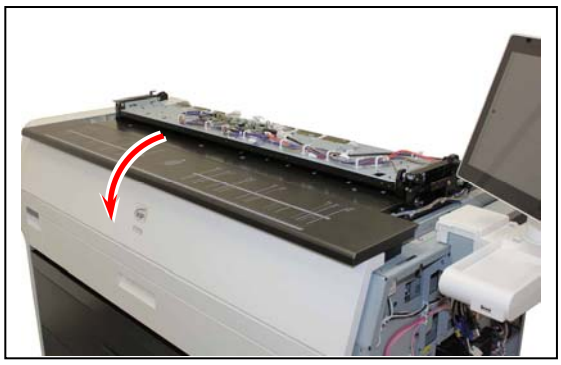


17. Loosen 1 screw (24).
Remove 2 screws (25) to remove the Cover 5 (26).

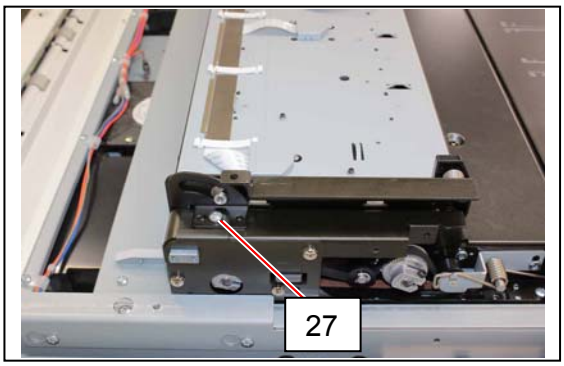


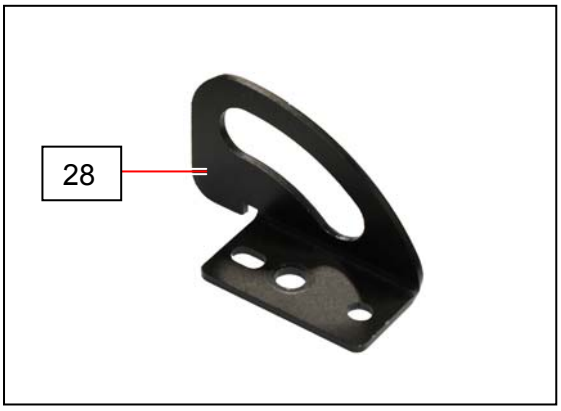


18. Close the Engine Unit.

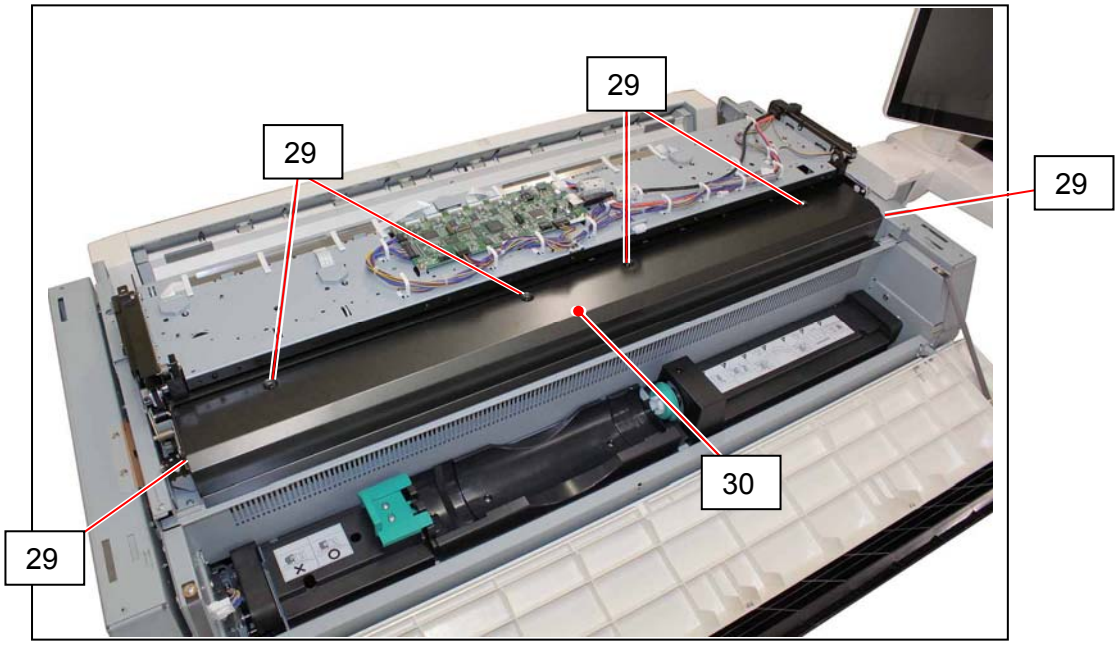


19. Remove 1 screw (27) to remove Stopper Plate (28).

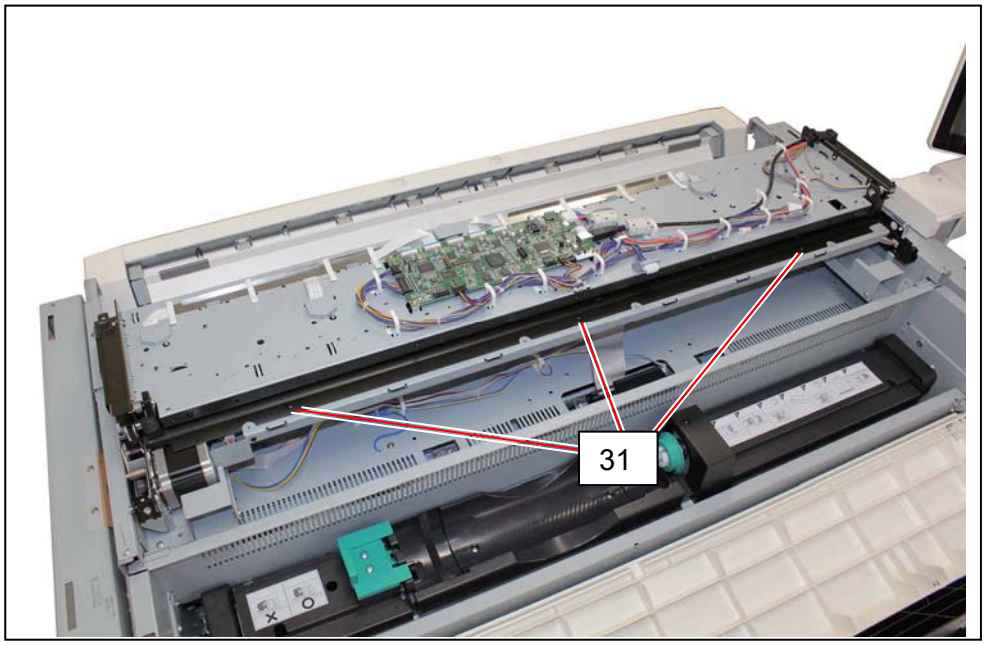




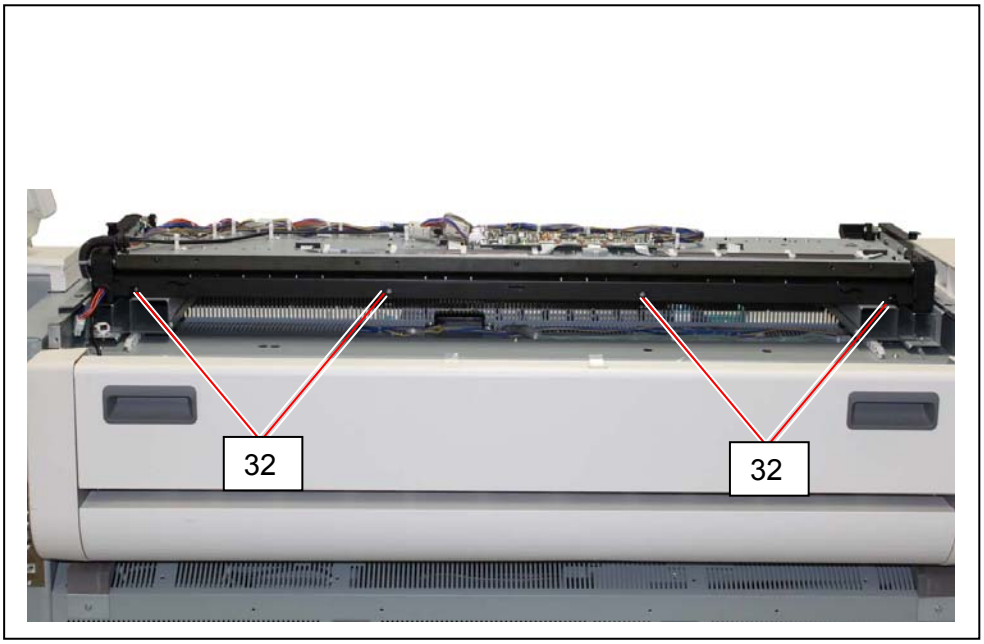
20. Remove 6 screws (29) to remove Sheet Guide (30).

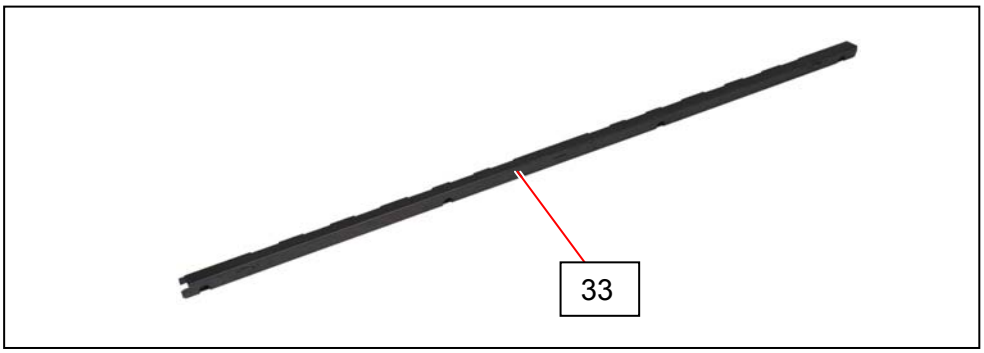


21. Remove 3 screws (31).

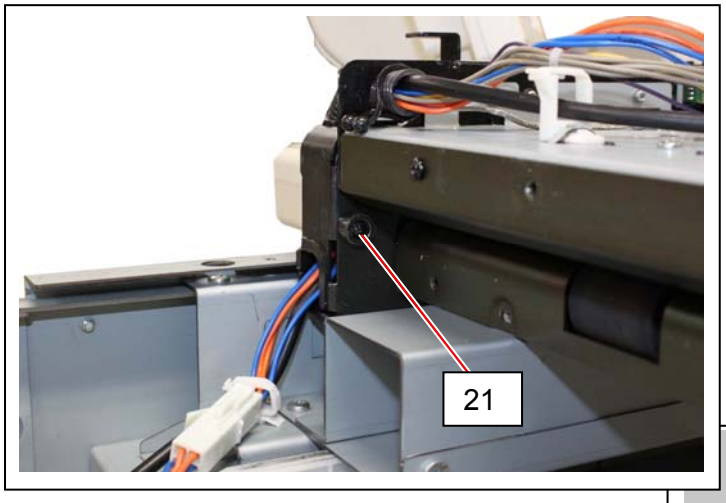


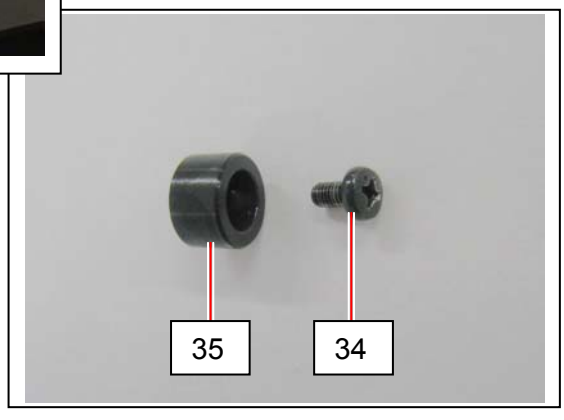
22. Remove 4 screws (32) to remove Exit Guide (33)



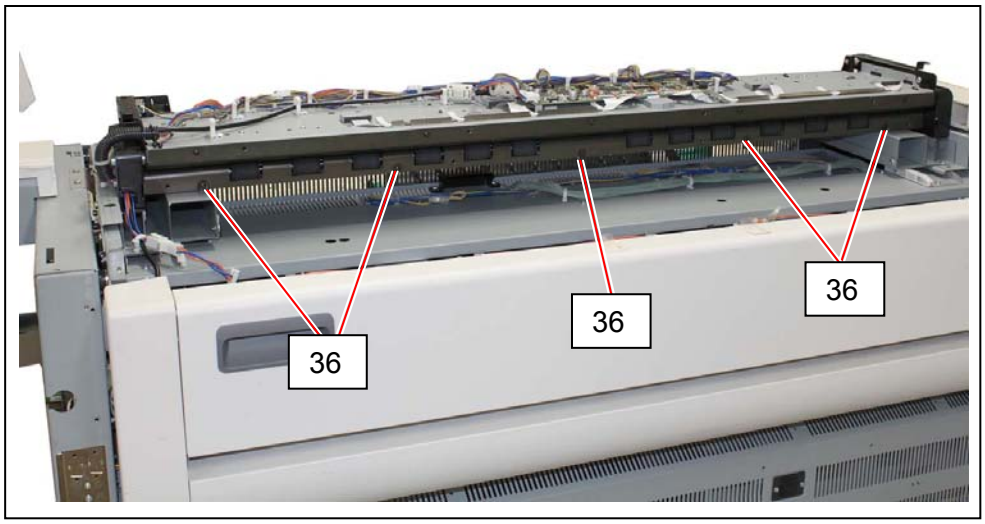


23. Remove 1 screw (34) to remove Stopper (35).

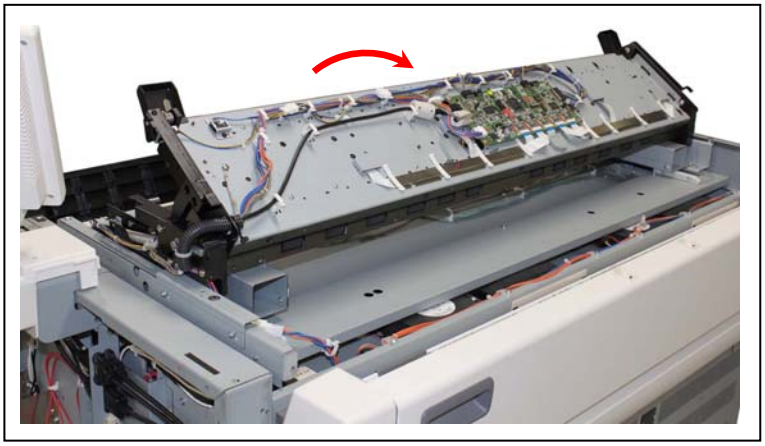




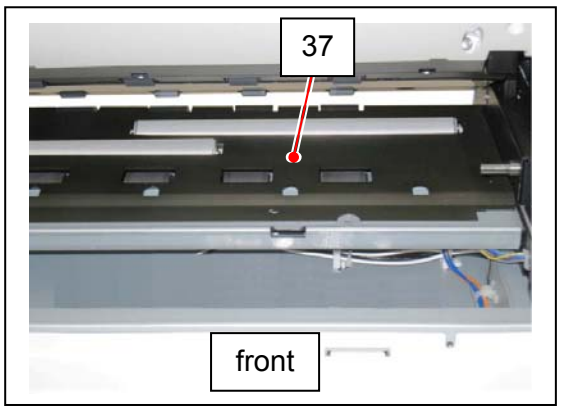
24. Remove 5 screws (36).

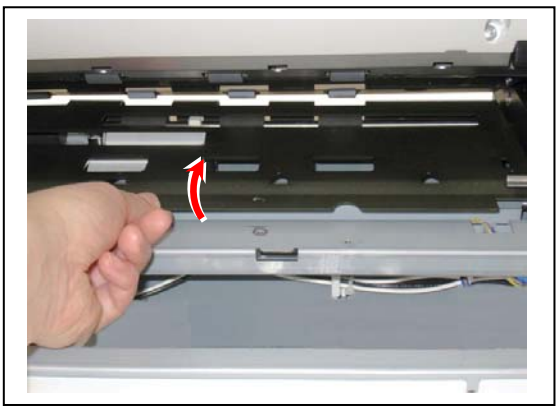


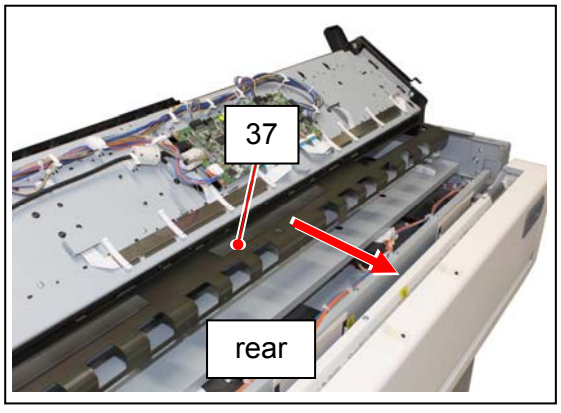
25. Open the Upper Unit

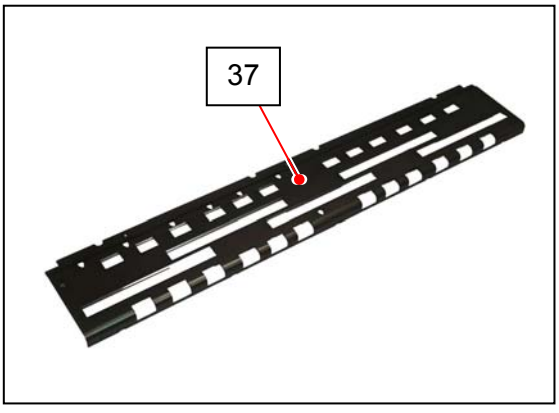


26. Lift up the front side of the Lower Unit Guide Plate (37) to escape from the rollers.
Pull and remove the Lower Unit Guide Plate (37) to the rear side.



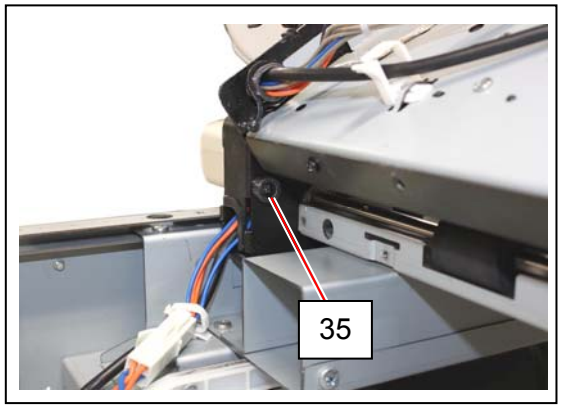






K134sm5eJ

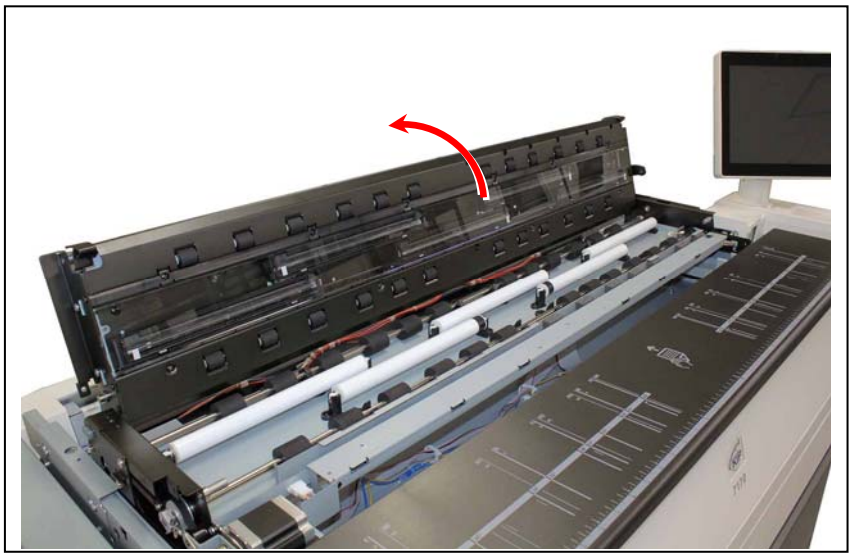
27. Return Stopper (35) in position.



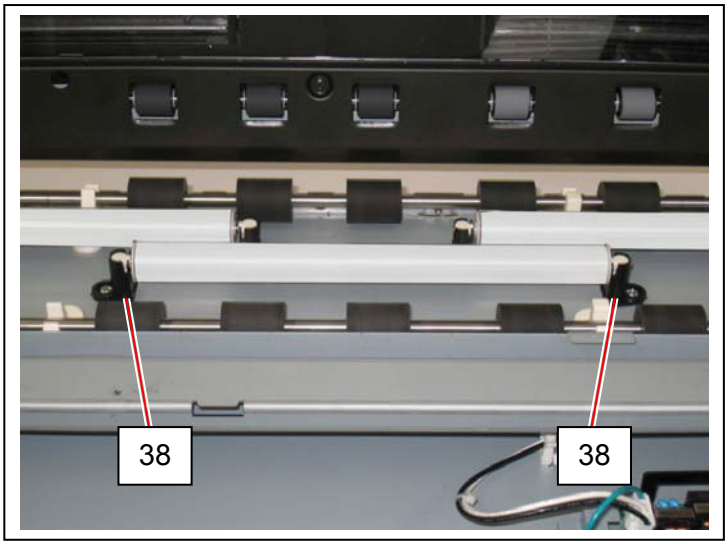
NOTE

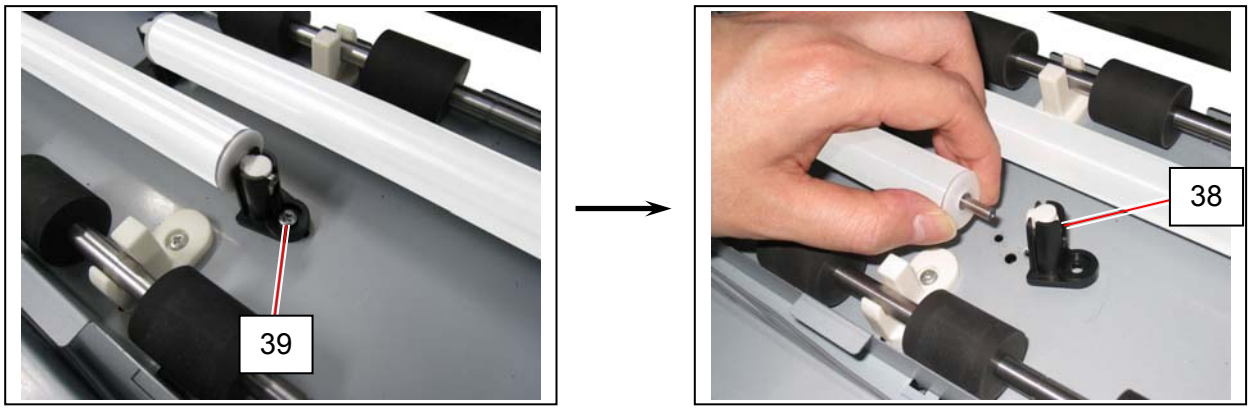
During this procedure, it is possible to go down “Upper Unit” to backside and may possible make damage on “Harness” and “Damper” during this procedure. So, it is necessary to surely install “Stopper (35) and then proceed.

28. Open the Upper Unit.

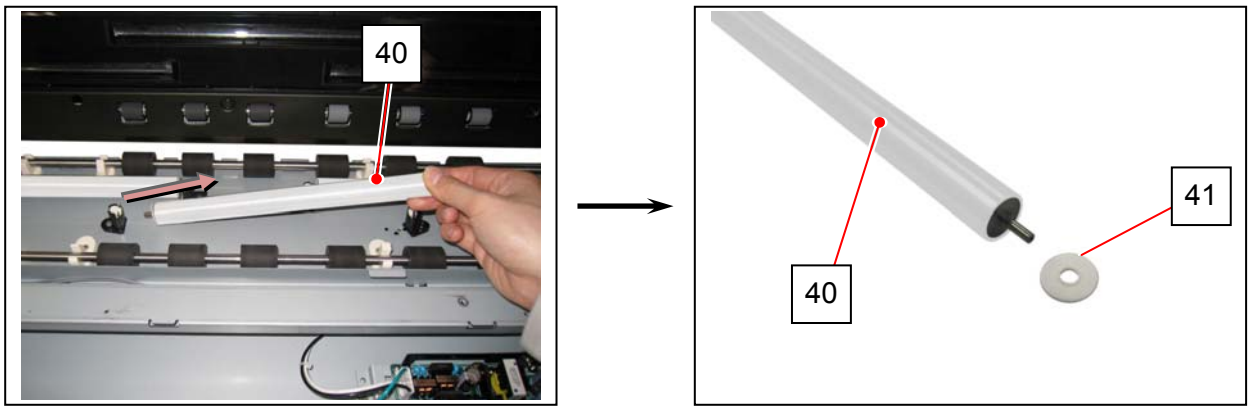


29. Each Sheet Roller is set in a pair of the holders (38).
Remove 1 screw (39) on either side to remove the holder (38).





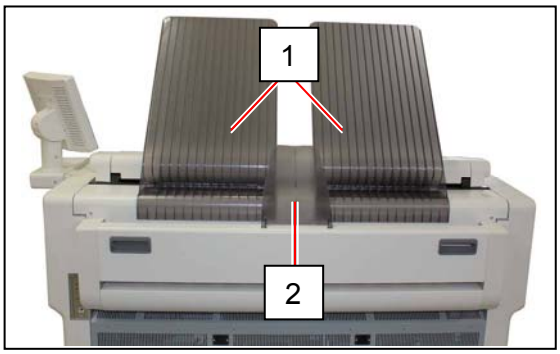
30. Pull and remove the Sheet Roller (40) from the other holder (38). Replace the Sheet Roller (40) with a new one.
The white collars on both ends (41) of the Sheet Roller (40) should be reused.



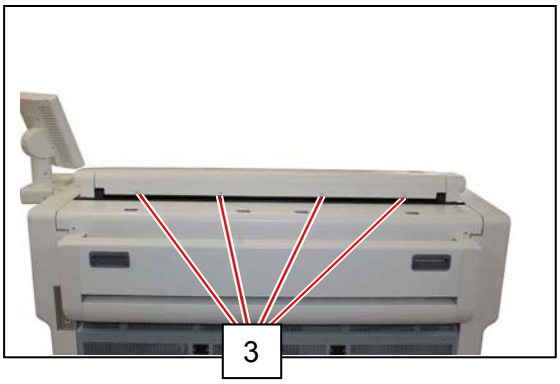
5. 12. 5 Replacing Main Board (PW12920)

> **NOTE**
>
> After replacement, the Main Board requires importing a backup data.
> You have to **save the current backup data and shading data** to utilize the spare Main Board without any fail. Otherwise you will be requested to get the factory backup from the manufacturer.

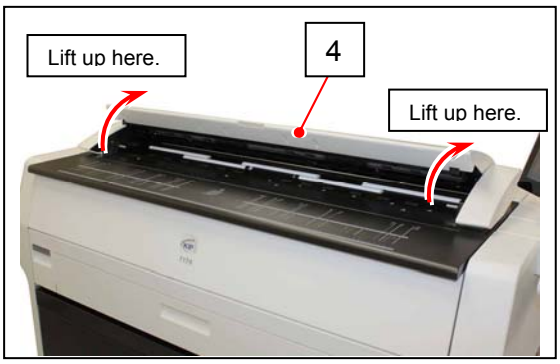
1. Remove 2 pieces of Exit Tray (1) and Exit Tray 2 (2).



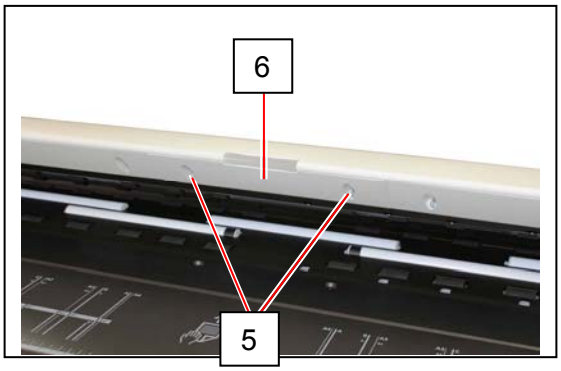
2. Remove 4 screws (3) on the back.



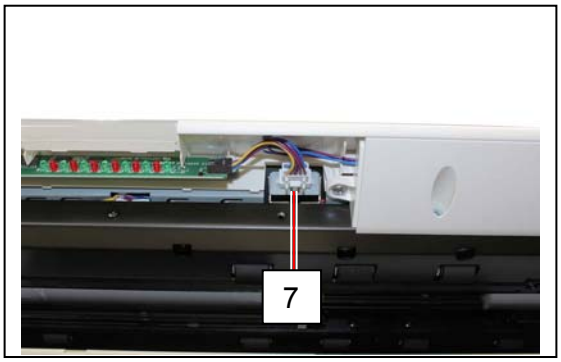
3. Lift up both sides of the Upper Unit (4).



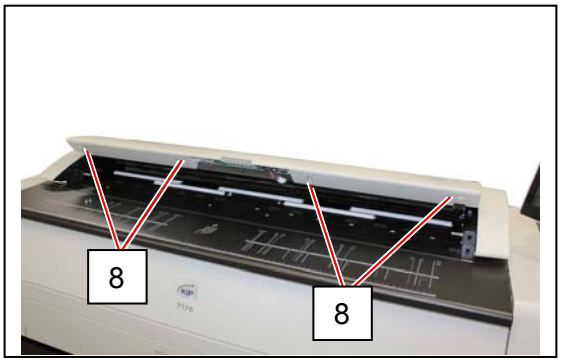
4. Remove 2 screws (5) to remove the Front Cover (6: middle).



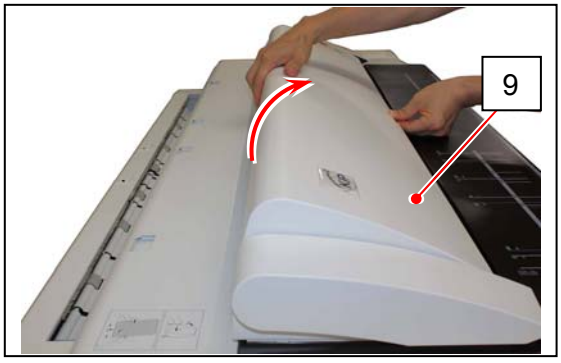
5. Disconnect 1 connector (7).



6. Remove 4 screws (8) on the front.



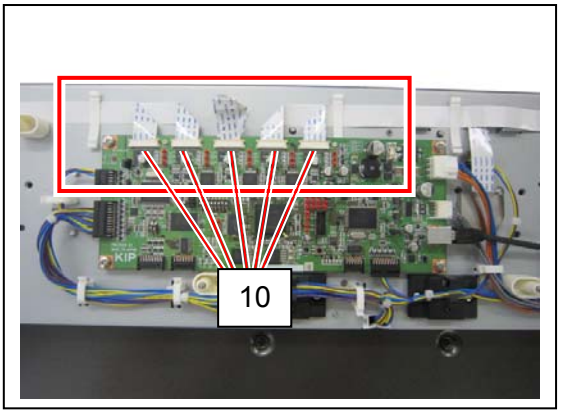
7. Remove the Top Cover (9).

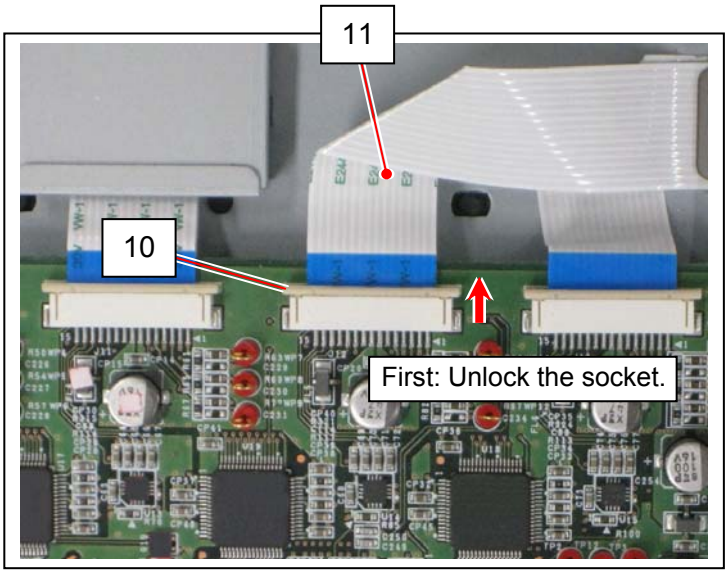


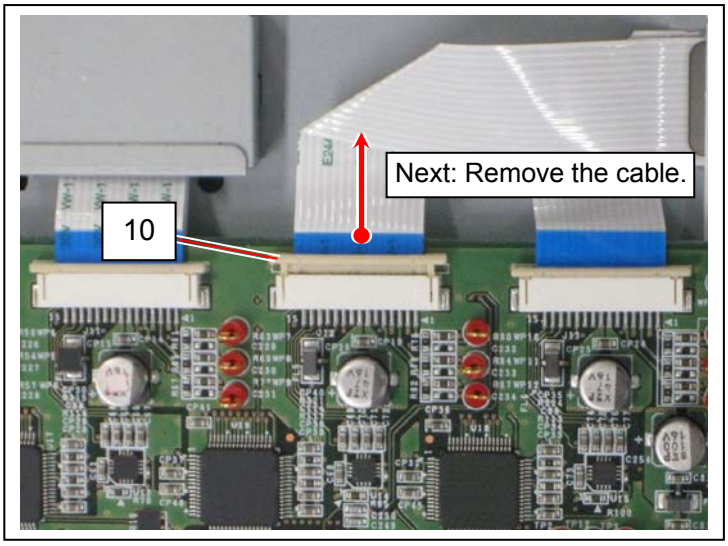
NOTE

For reassembling, fit the front end of the Top Cover to the Upper Unit.

8. Unlock all the 5 flat cable's terminal socket (10), and then gently remove 5 flat cables (11).





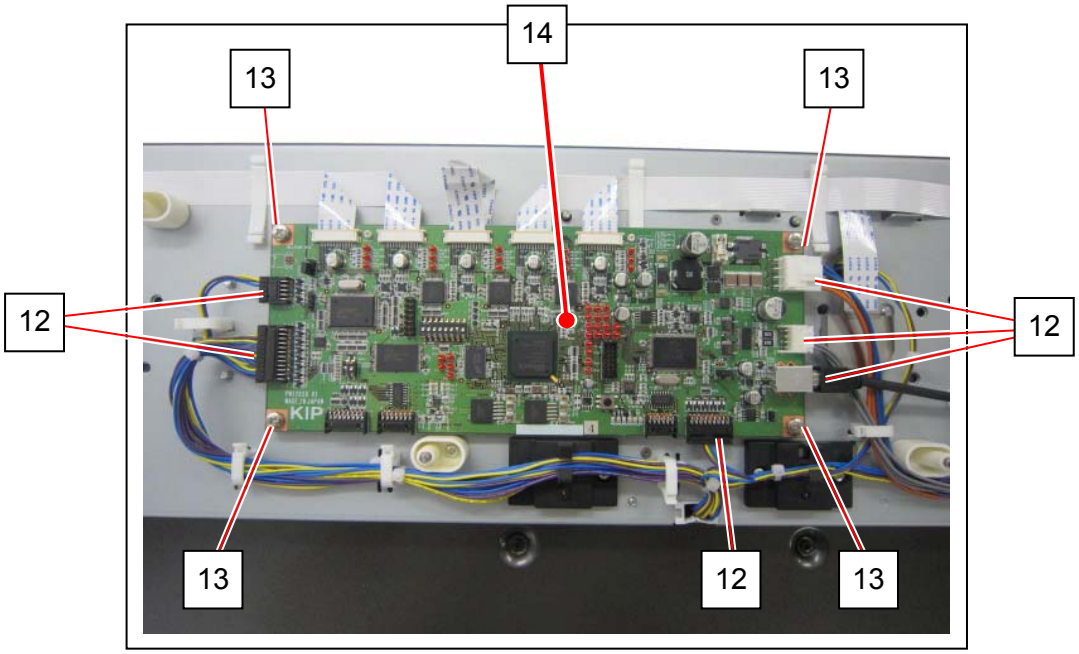


NOTE

(1) **FRAGILE.** Handle the flat cables with great care.

(2) For reassembling, first confirm that the terminal socket has been released. Next gently insert the flat cable's end to the terminal correctly.
Reassembling incorrectly would lead abnormal scan image, for example the concerning area of the scanned image turns solid black.

9. Disconnect all the other cables (12), remove 4 screws (13) on every corner, and then replace the Main Board (14) with a new one.

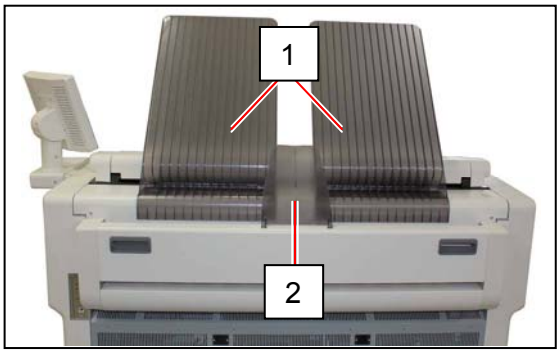


NOTE

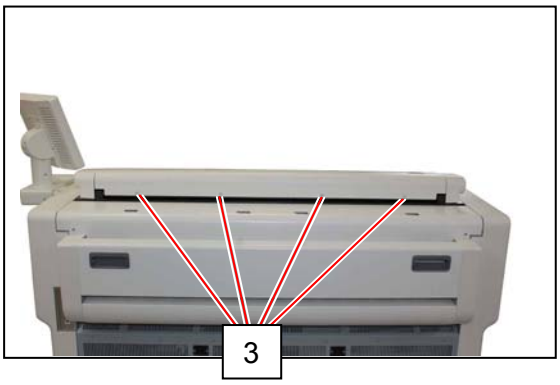
After replacement, the Main Board requires importing backup data and Shading Adjustments.

5. 12. 6 Replacing Original Glass

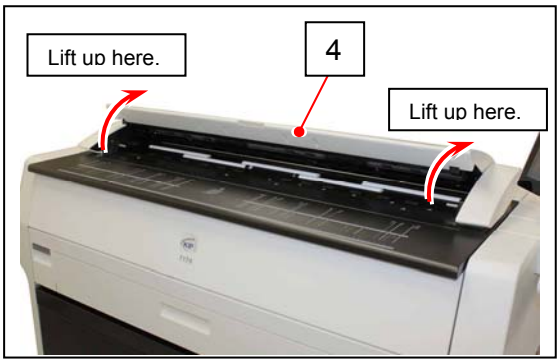
1. Remove 2 pieces of Exit Tray (1) and Exit Tray 2 (2).



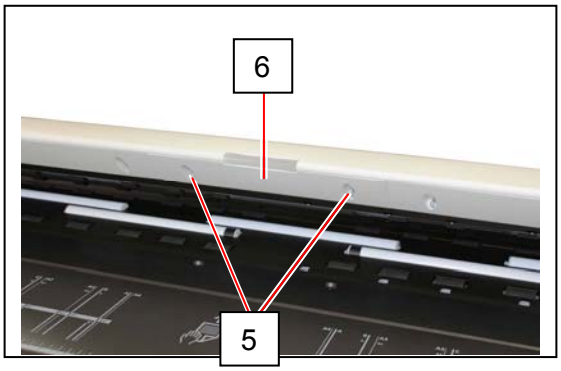
2. Remove 4 screws (3) on the back.



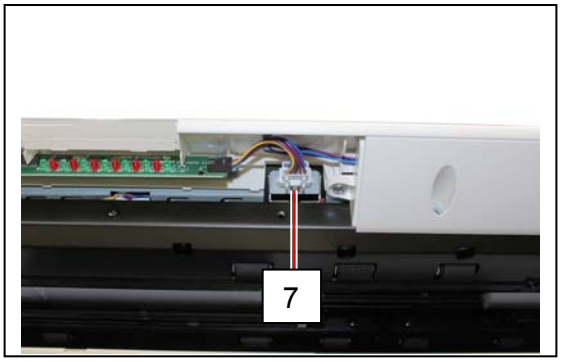
3. Lift up both sides of the Upper Unit (4).



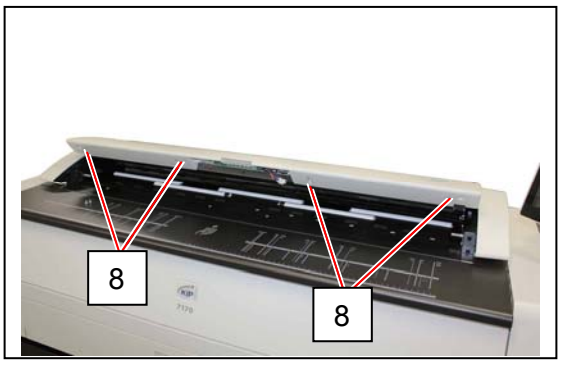
4. Remove 2 screws (5) to remove the Front Cover (6: middle).



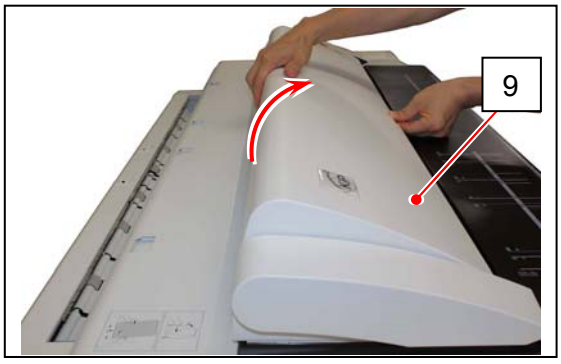
5. Disconnect 1 connector (7).



6. Remove 4 screws (8) on the front.



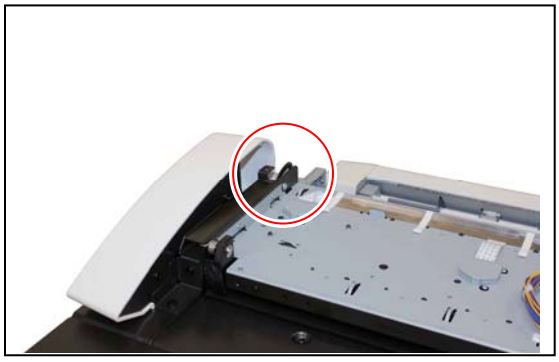
7. Remove the Top Cover (9).

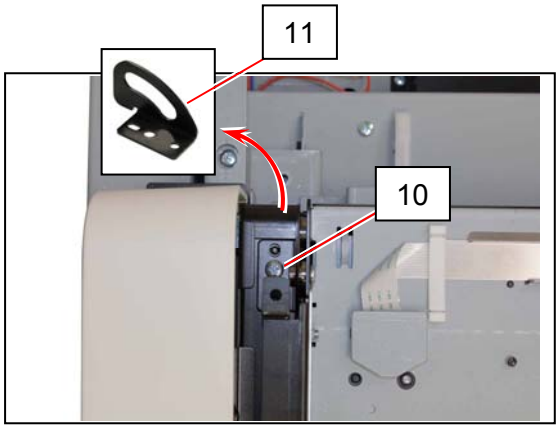


NOTE

For reassembling, fit the front end of the Top Cover to the Upper Unit.

8. Remove 1 screw (10) to remove Stopper Plate (11).

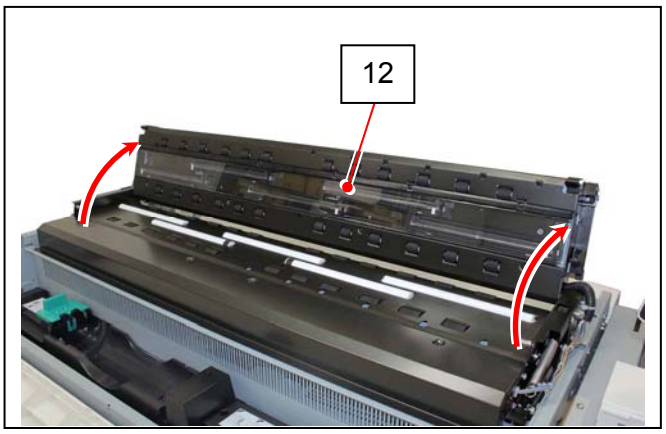




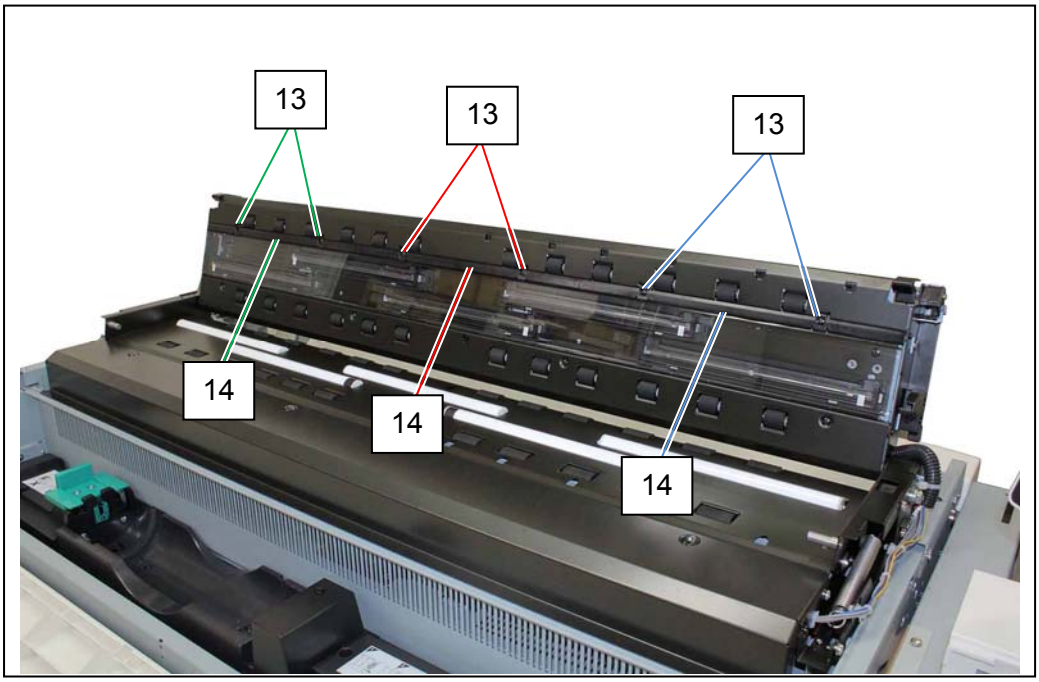
Reference

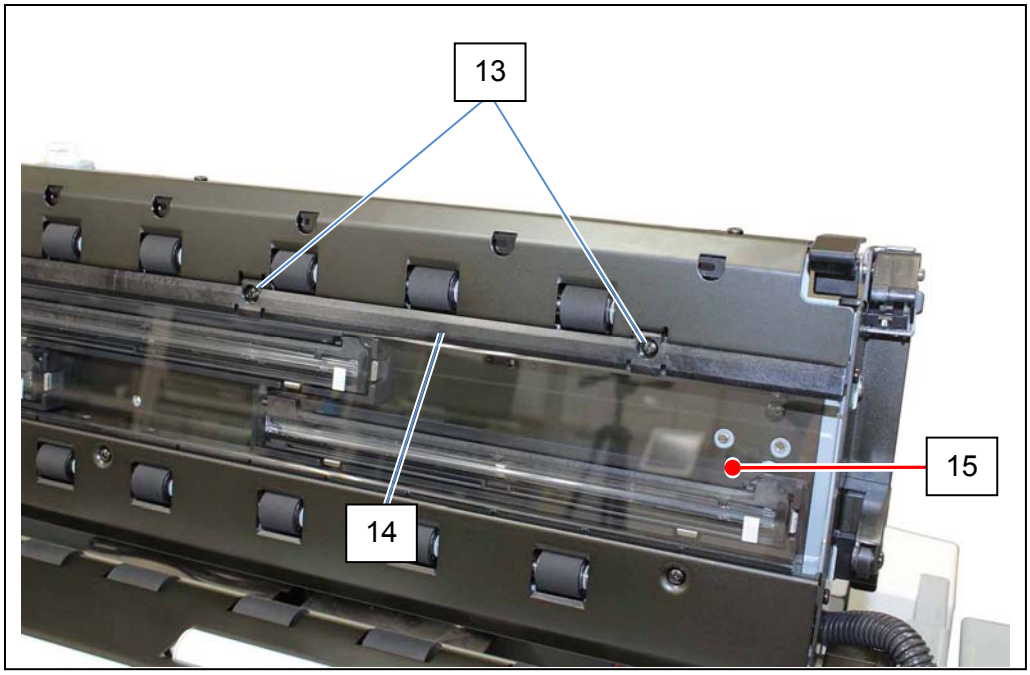
The Stopper Plate (11) is a safety to limit the motion range of the Upper Unit at “operation position 40 degrees”. In this section, another safety at “service position 100 degrees” works.

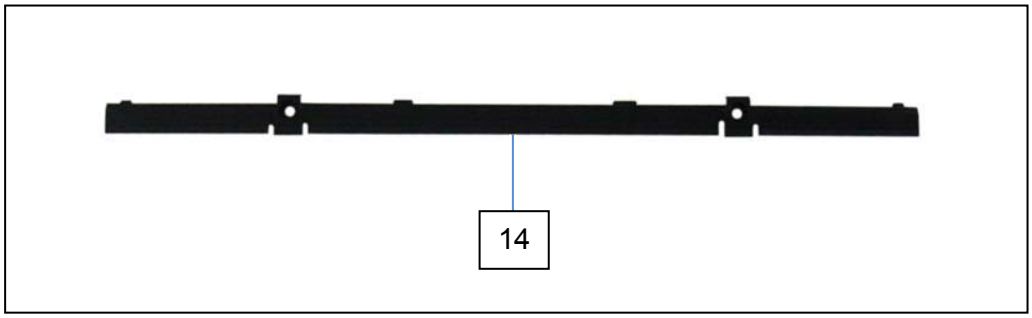
9. Fully open the Upper Unit (12). The Upper Unit is now open at 100 degrees.



10. Remove 6 screws (13) to remove 3 Glass Holders (14).
As the Upper Unit is now open at 100 degrees, the Glass DCMNT (15) will stay without supporting.



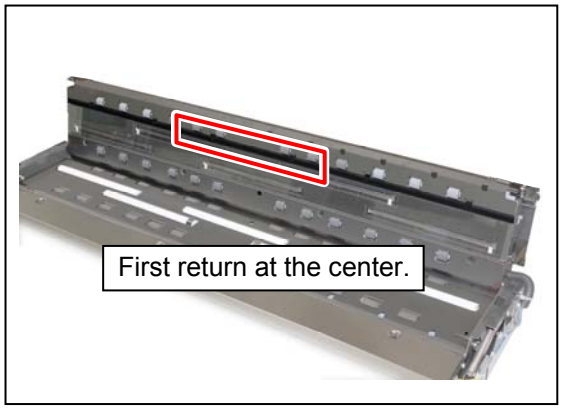




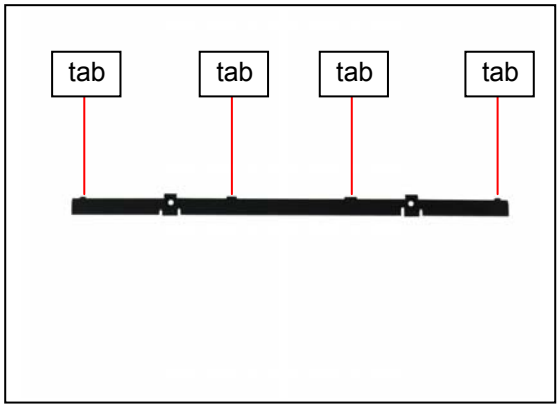
NOTE

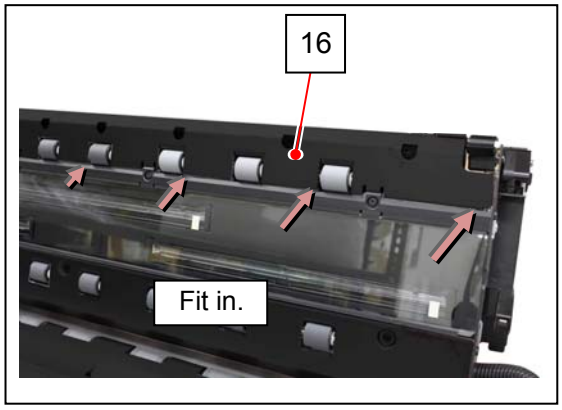
(1) Keep in mind that there is no fixation on the Glass DCMNT at this point.
It may fall if you close the Upper Unit.

(2) For reassembling, first reinstall the Glass Holder at the center.

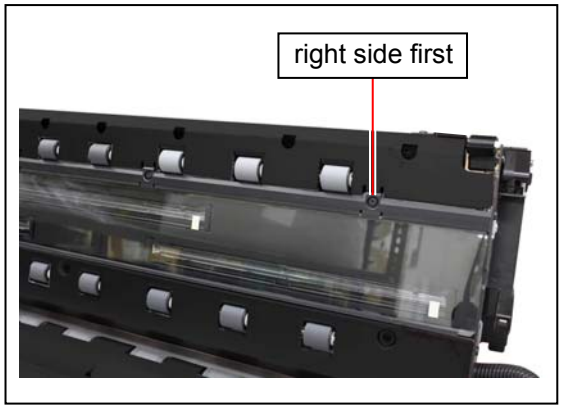


(3) For reassembling, fit the 4 tab parts under the Upper Front Guide Plate (16).

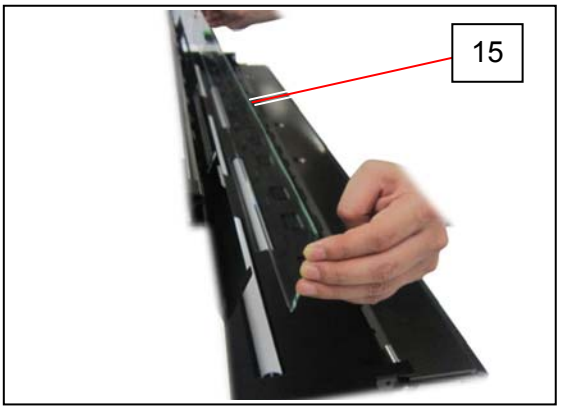




(4) For reassembling, first tighten the screw (13) on the right side.



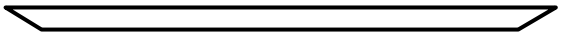
11. Remove the Glass DCMNT (15).



NOTE

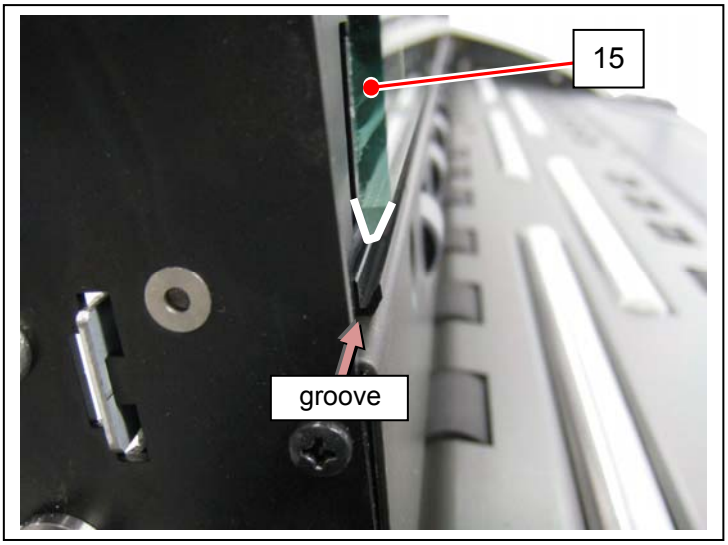
(1) The wider face with 5 stickers should be the inner face. (CIS side)
The narrower face should be the outer face. (document side)

Inner face (CIS side)

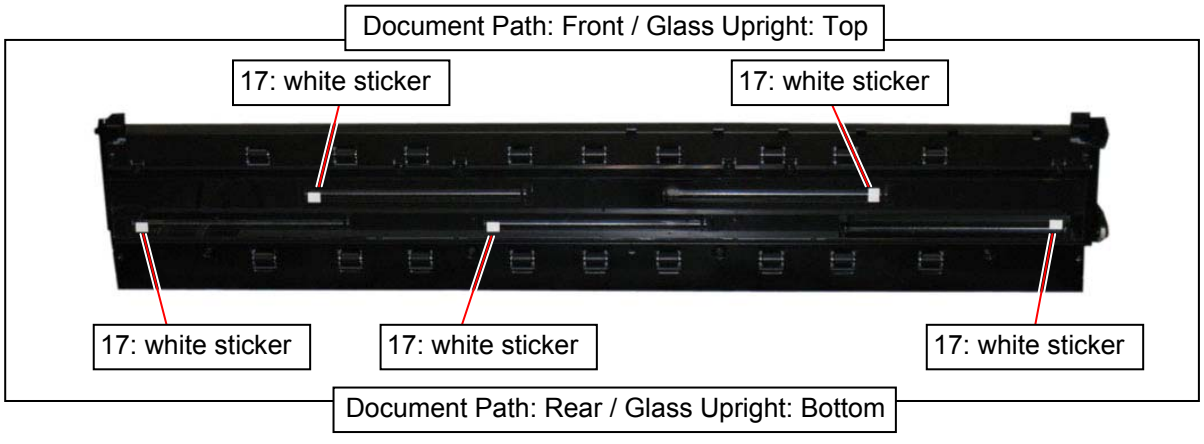


Outer face (document side)

(2) For reassembling, fit the glass's edge in the groove.



(3) There are 5 portions of the white sticker (17) on the Glass DCMNT's inner face.
This is for self calibration (white level).
For reassembling, 2-sticker row should correspond to the front CIS row as follows.



(4) For reassembling, press the Glass DCMNT against the left side.

5. 12. 7 Replacing CIS

NOTE

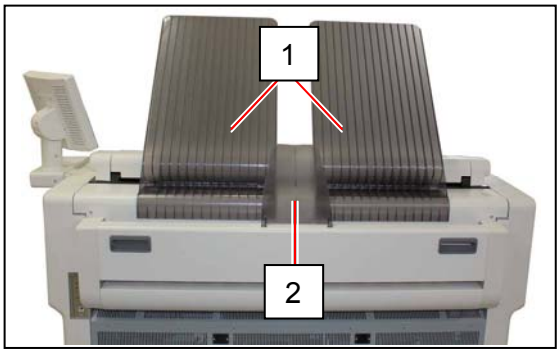
CIS Sensor is classified into classes according to wavelength variations of their LED.

All 5 pieces of CIS on a certain scanner should belong in the identical class to assure even image quality (brightness, color quality and etc) among image blocks.

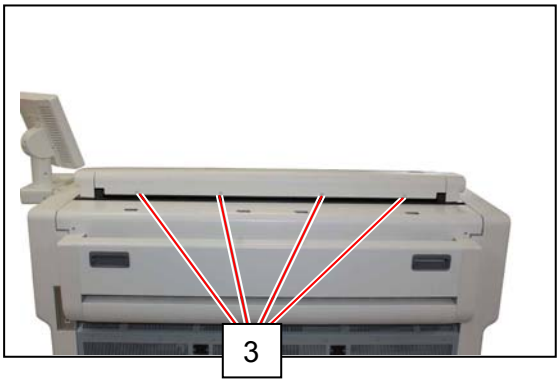
Be sure to check which CIS class is used to the scanner before replacing to avoid class mixing. Otherwise even image quality cannot be expected.

Equipped CIS class can be checked with the label on CIS itself or the label at the rear of the scanner.

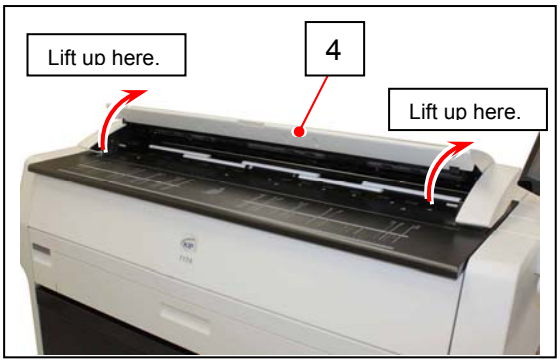
1. Remove 2 pieces of Exit Tray (1) and Exit Tray 2 (2).



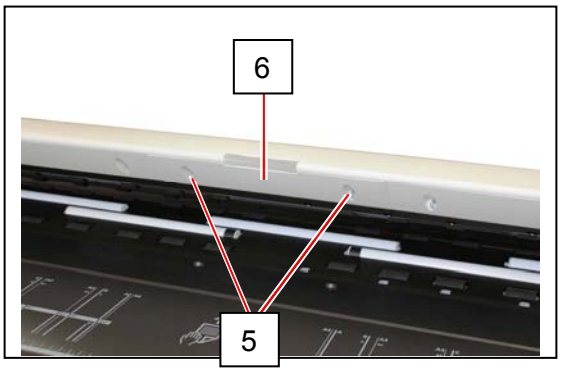
2. Remove 4 screws (3) on the back.



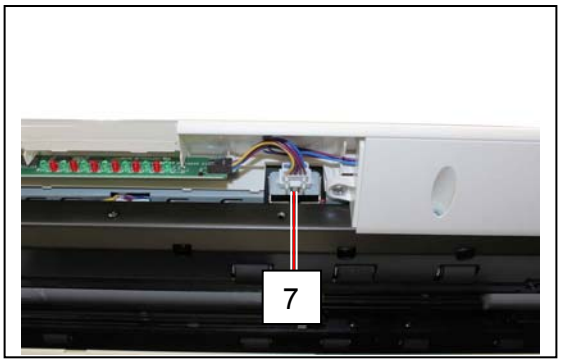
3. Lift up both sides of the Upper Unit (4).



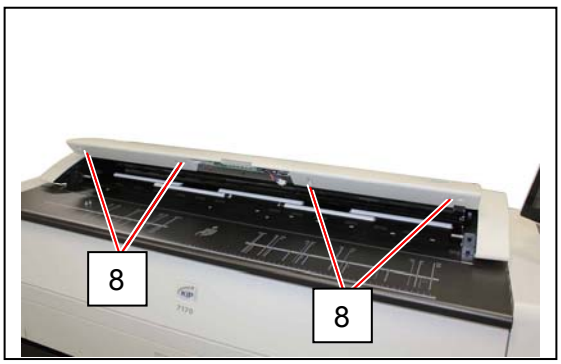
4. Remove 2 screws (5) to remove the Front Cover (6: middle).



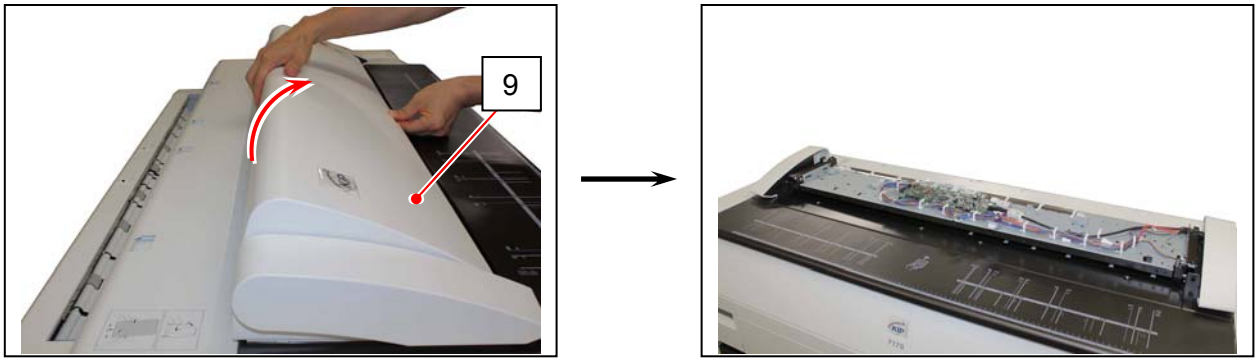
5. Disconnect 1 connector (7).



6. Remove 4 screws (8) on the front.



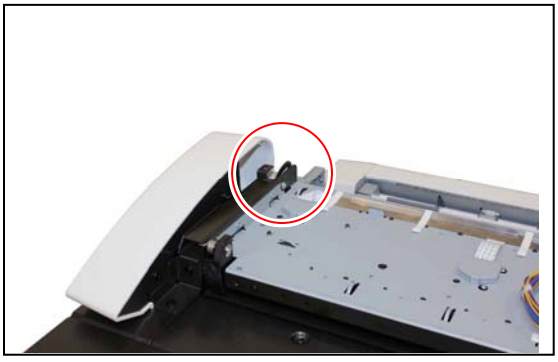
7. Remove the Top Cover (9).

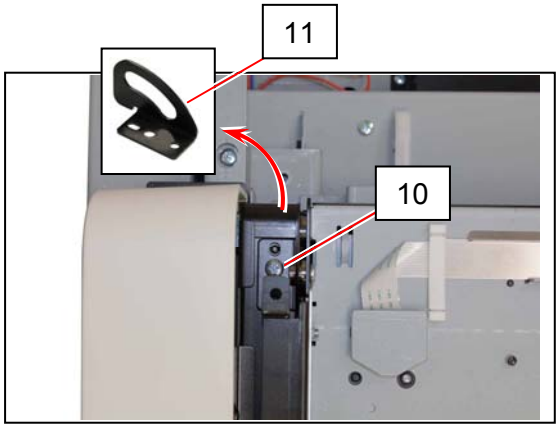


NOTE

For reassembling, fit the front end of the Top Cover to the Upper Unit.

8. Remove 1 screw (10) to remove Stopper Plate (11).

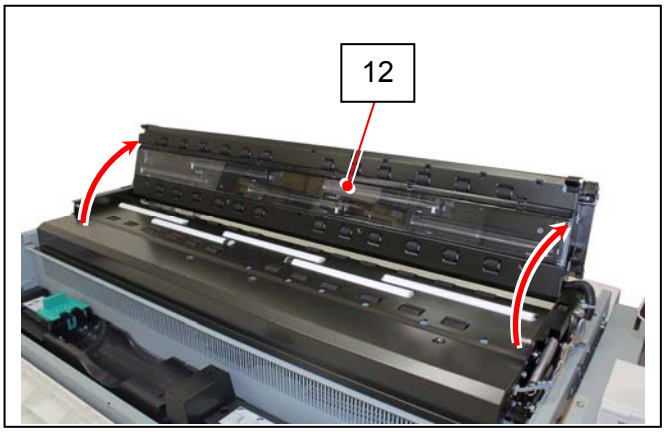




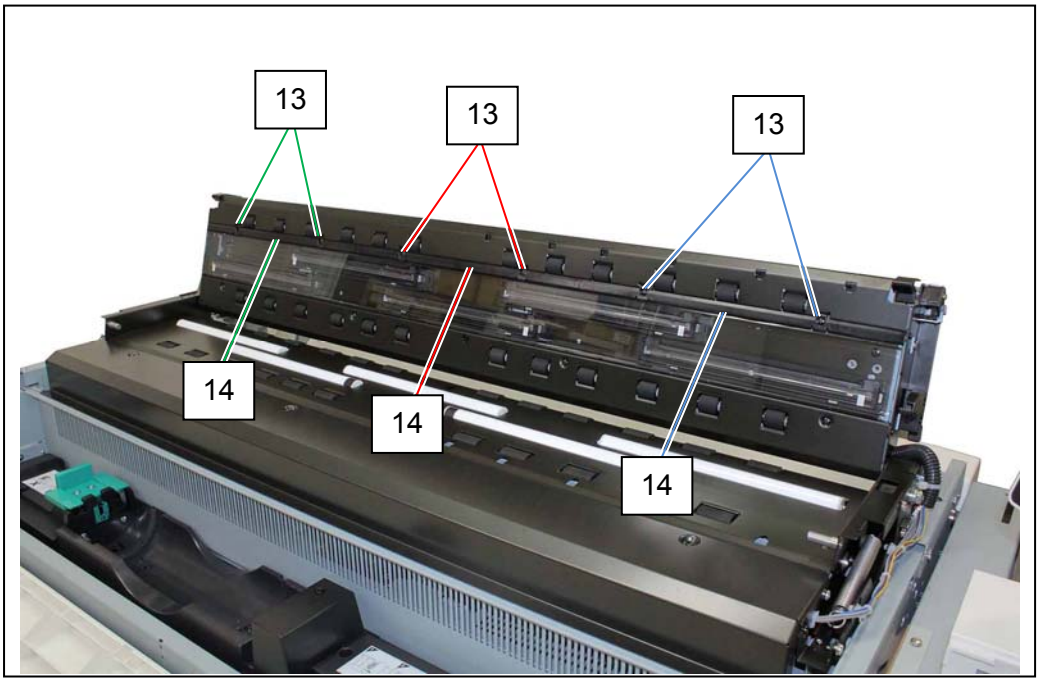
Reference

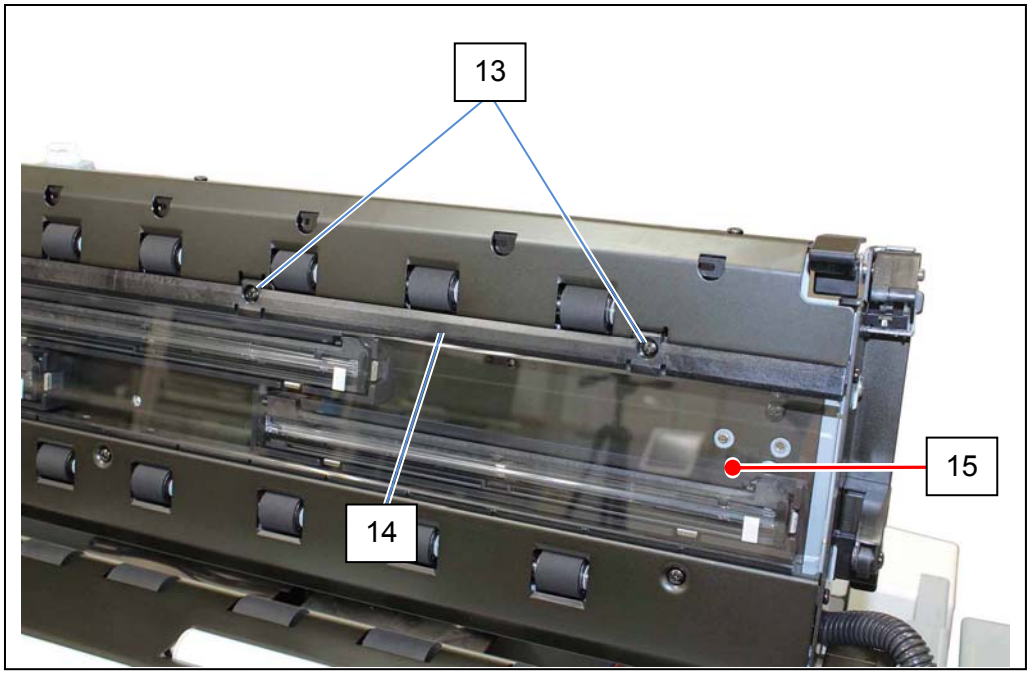
The Stopper Plate (11) is a safety to limit the motion range of the Upper Unit at “operation position 40 degrees”. In this section, another safety at “service position 100 degrees” works.

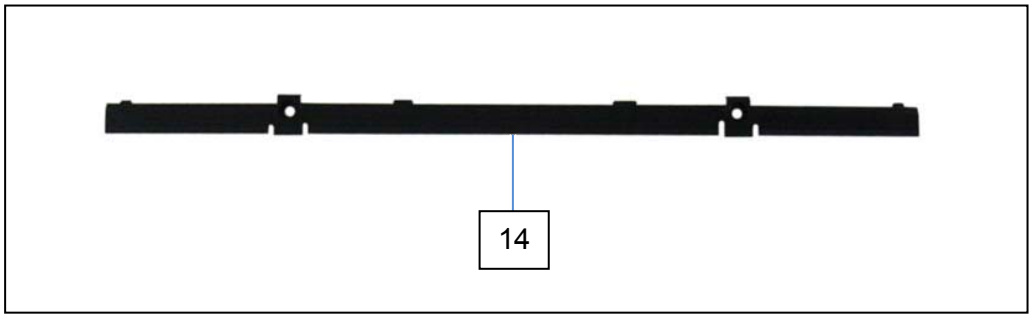
9. Fully open the Upper Unit (12). The Upper Unit is now open at 100 degrees.



10. Remove 6 screws (13) to remove 3 Glass Holders (14).
As the Upper Unit is now open at 100 degrees, the Glass DCMNT (15) will stay without supporting.



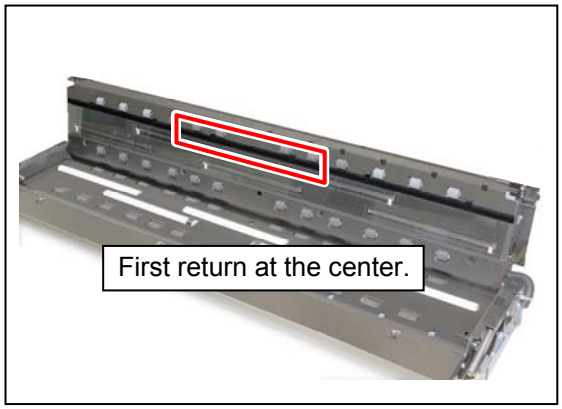




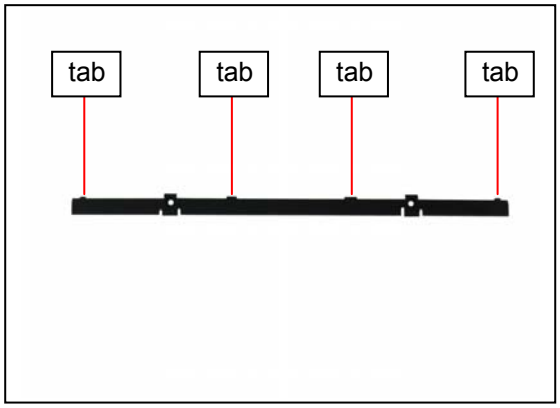
NOTE

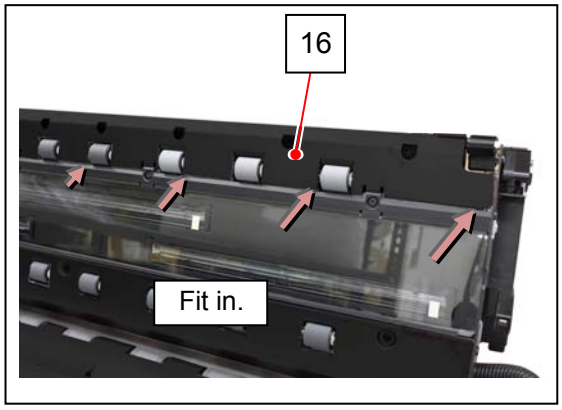
(1) Keep in mind that there is no fixation on the Glass DCMNT at this point.
It may fall if you close the Upper Unit.

(2) For reassembling, first reinstall the Glass Holder at the center.

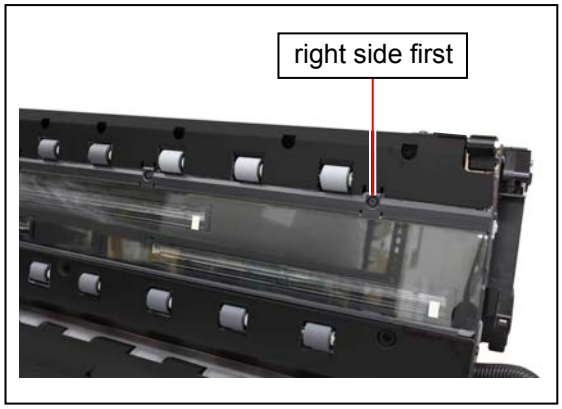


(3) For reassembling, fit the 4 tab parts under the Upper Front Guide Plate (16).

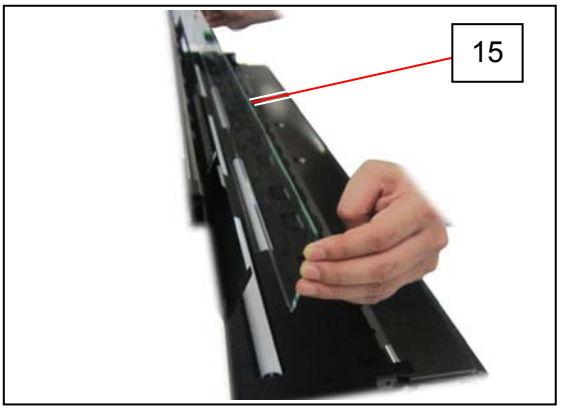




(4) For reassembling, first tighten the screw (13) on the right side.



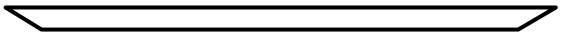
11. Remove the Glass DCMNT (15).



NOTE

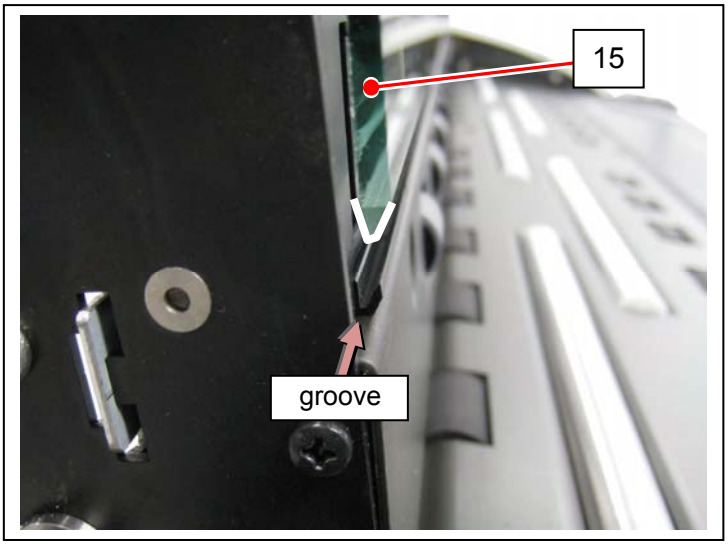
(1) The wider face with 5 stickers should be the inner face. (CIS side)
The narrower face should be the outer face. (document side)

Inner face (CIS side)

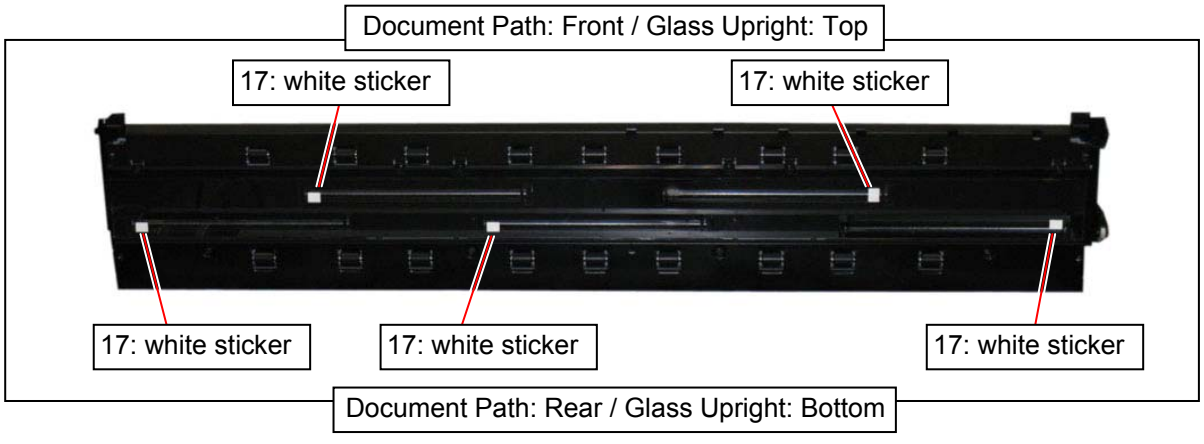


Outer face (document side)

(2) For reassembling, fit the glass's edge in the groove.

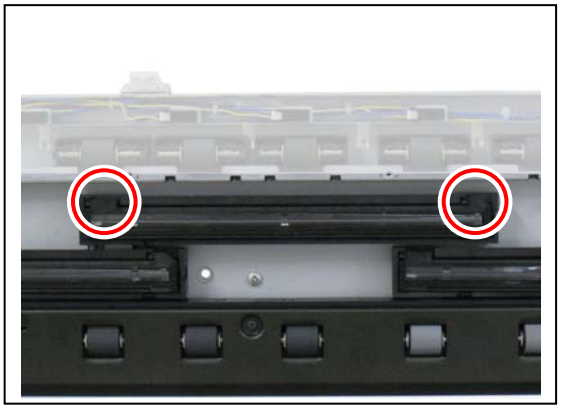


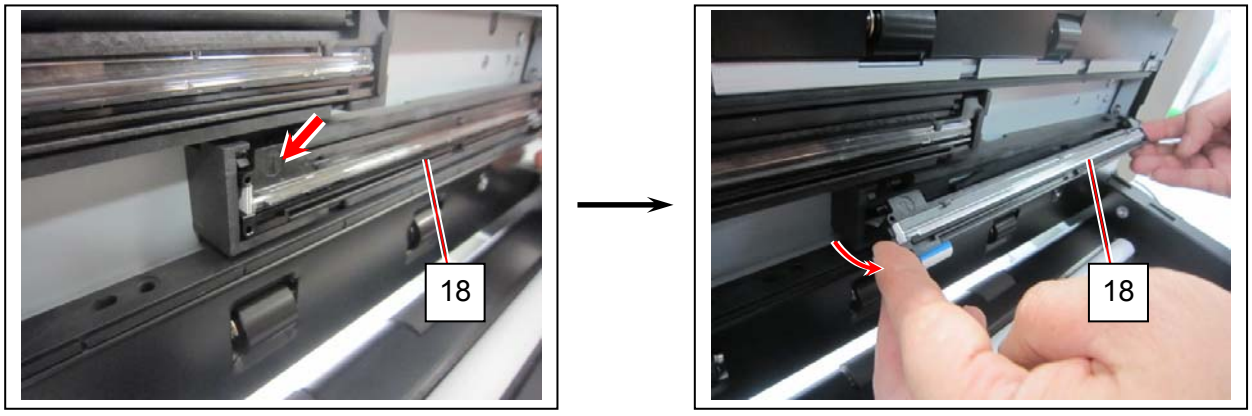
(3) There are 5 portions of the white sticker (17) on the Glass DCMNT's inner face.
This is for self calibration (white level).
For reassembling, 2-sticker row should correspond to the front CIS row as follows.



(4) For reassembling, press the Glass DCMNT against the left side.

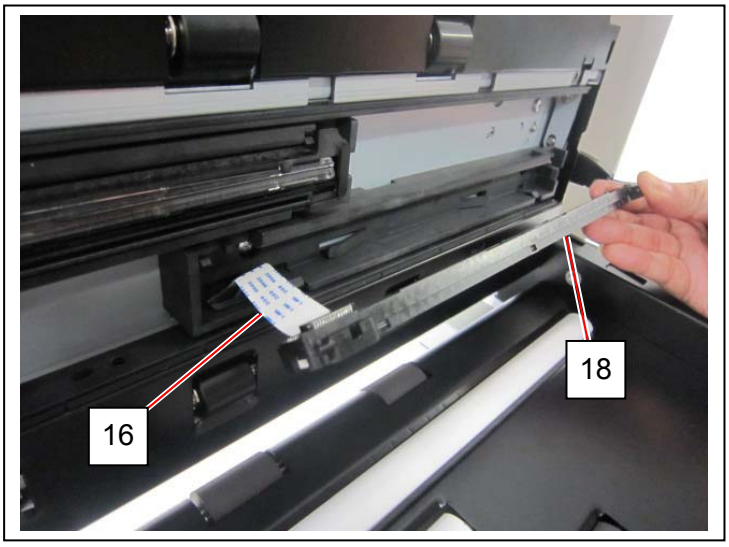
12. Press the flat areas on both sides to pivot the CIS (18).





NOTE

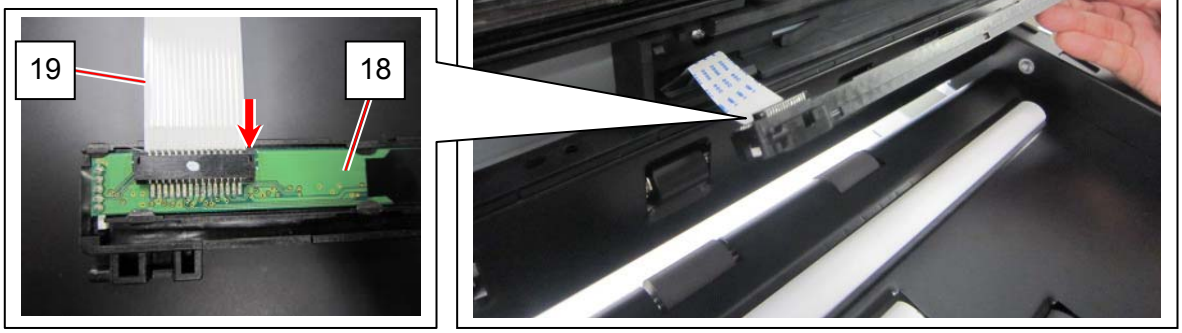
(1) At this point, just release the CIS (18) from the CIS Holder. The CIS is still connected with the flat cable (19). Never pull the CIS by force.



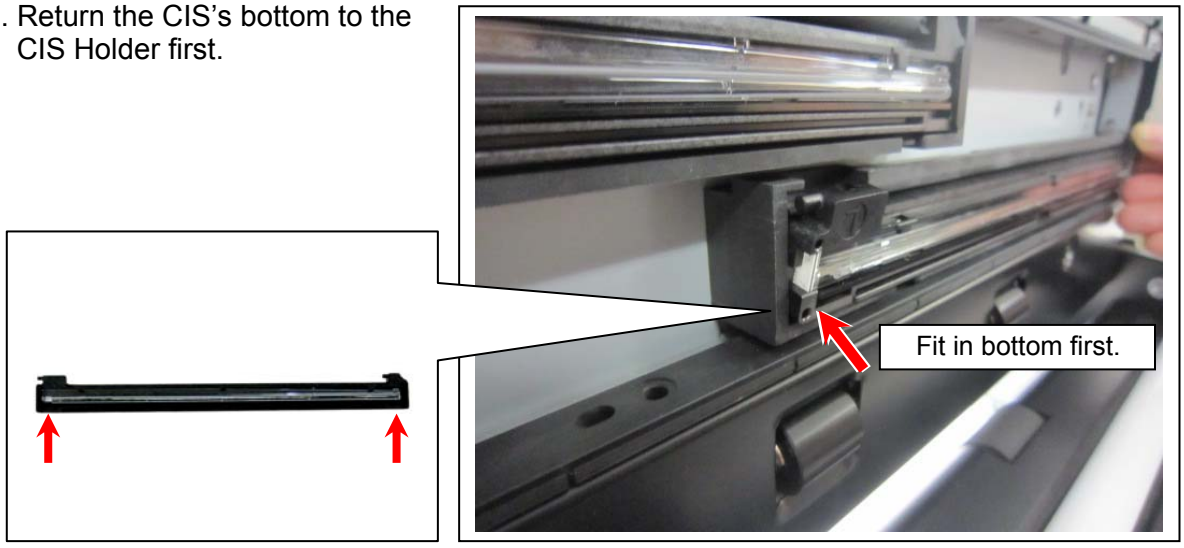
NOTE

(2) For reassembling, follow the instruction below.

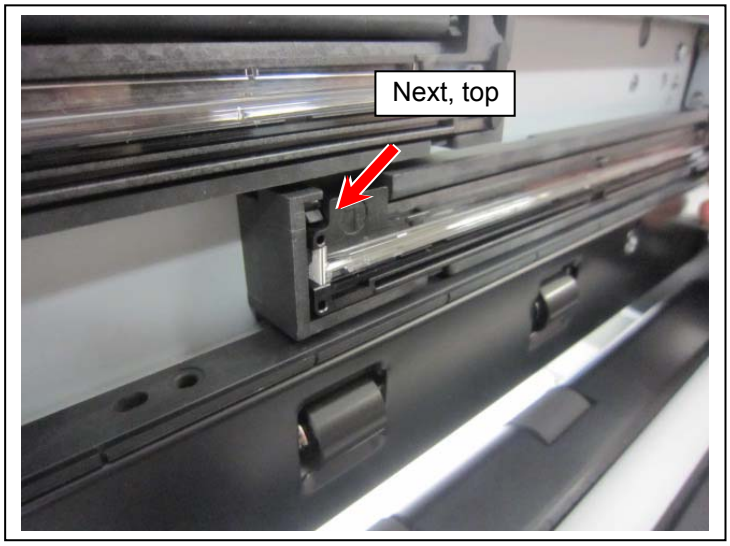
1. Insert the flat cable (19) to the CIS (18).



2. Return the CIS's bottom to the CIS Holder first.

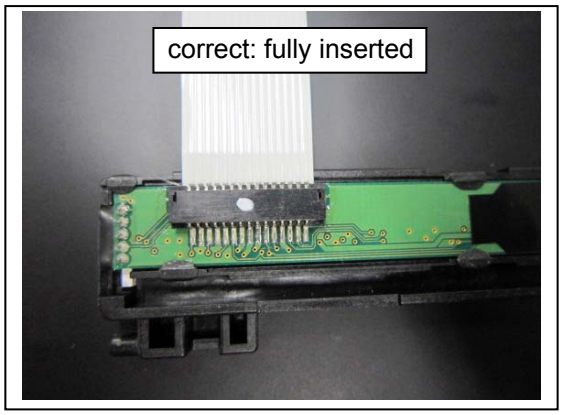


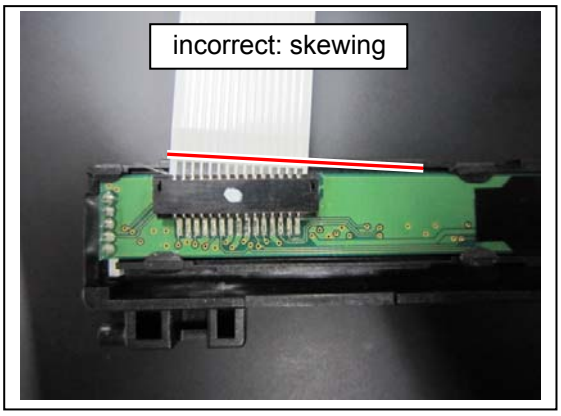
3. Return the CIS's top to the CIS Holder until the Holder's latch surely catches the CIS.

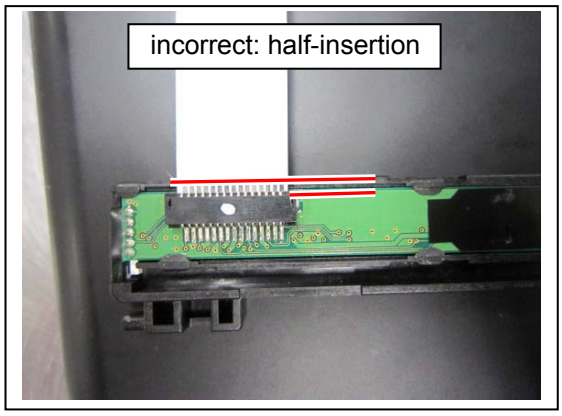


NOTE

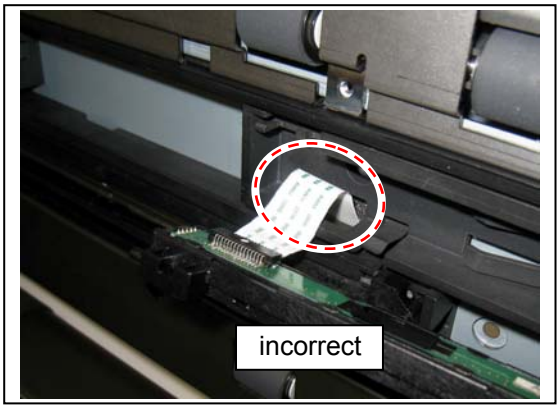
(3) For the flat cables, avoid skewing or half-insertion.

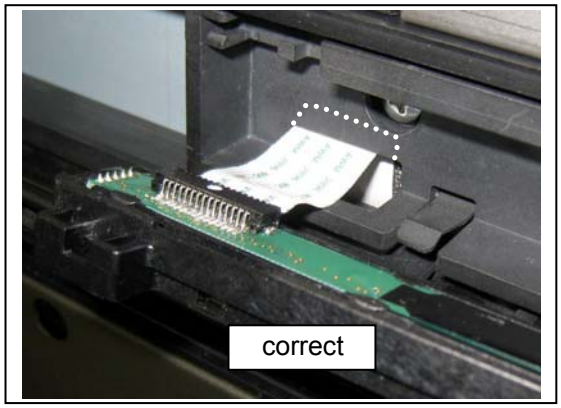




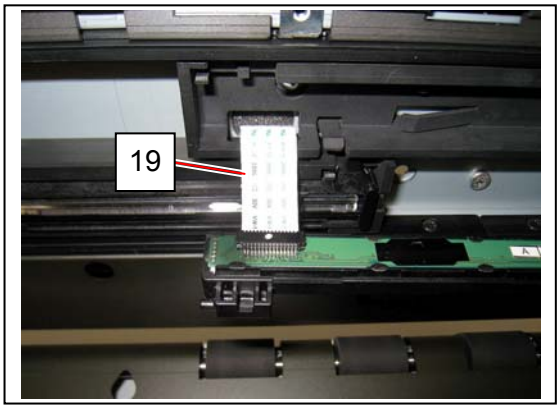


(4) For the flat cables, tuck the excess stretch under the CIS Holder.





13. Carefully disconnect the flat cable (19).

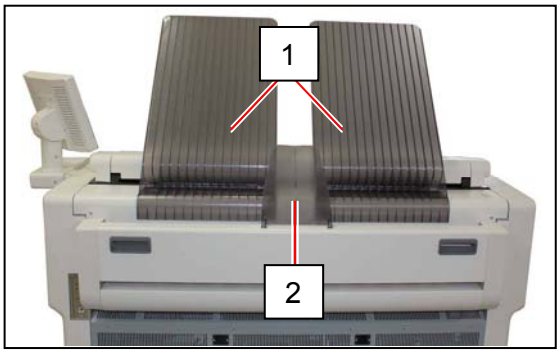


NOTE

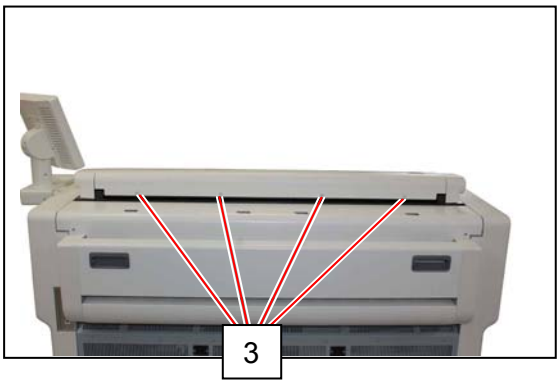
After replacement, the CIS requires Shading / Stitch Adjustments / Black Brightness Correct.

5. 12. 8 Replacing Size Sensor & Jam Sensor

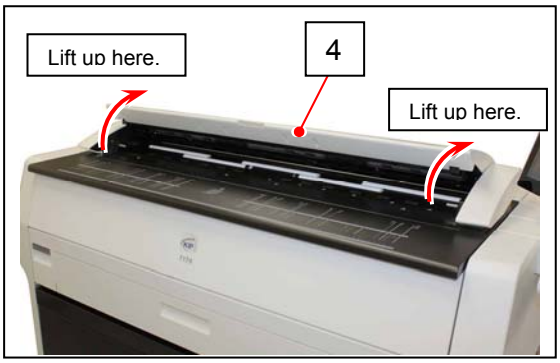
1. Remove 2 pieces of Exit Tray (1) and Exit Tray 2 (2).



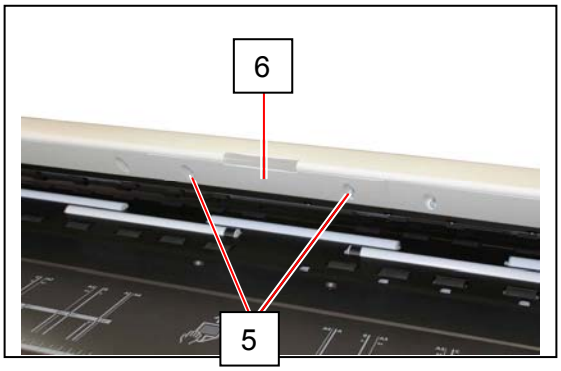
2. Remove 4 screws (3) on the back.



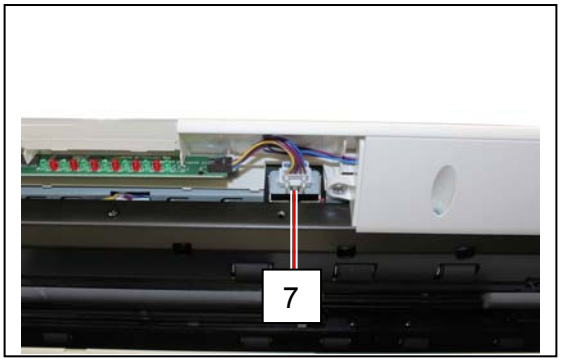
3. Lift up both sides of the Upper Unit (4).



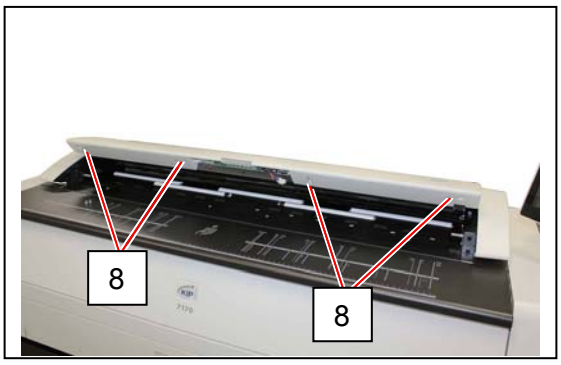
4. Remove 2 screws (5) to remove the Front Cover (6: middle).



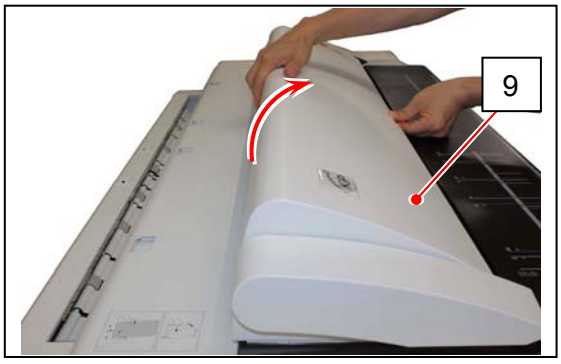
5. Disconnect 1 connector (7).



6. Remove 4 screws (8) on the front.



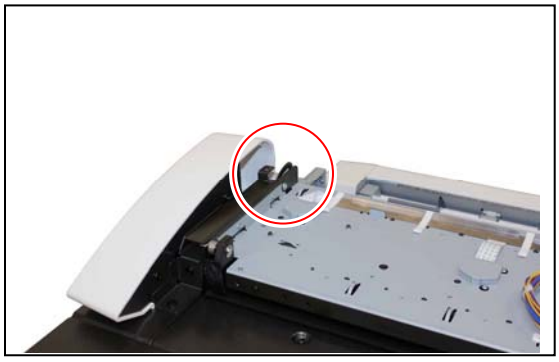
7. Remove the Top Cover (9).

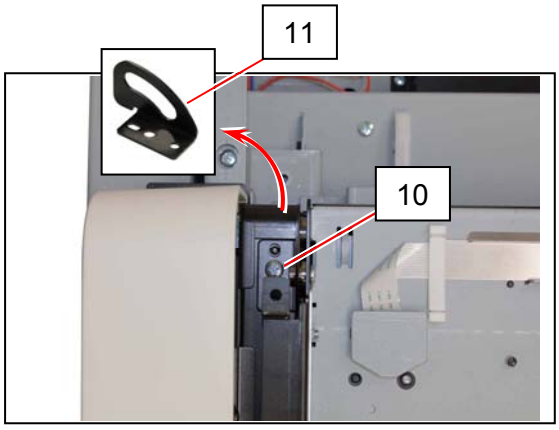


NOTE

For reassembling, fit the front end of the Top Cover to the Upper Unit.

8. Remove 1 screw (10) to remove Stopper Plate (11).

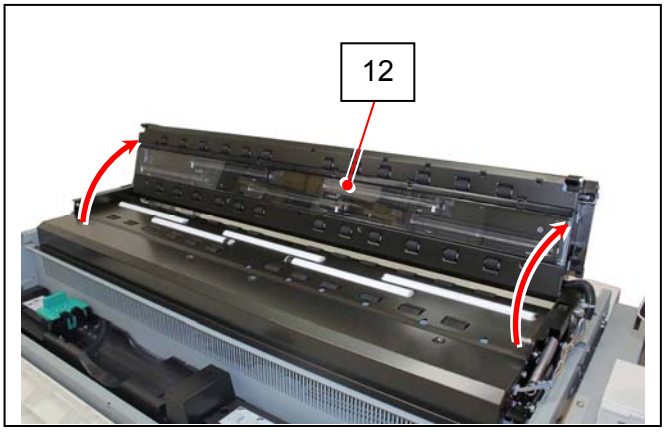




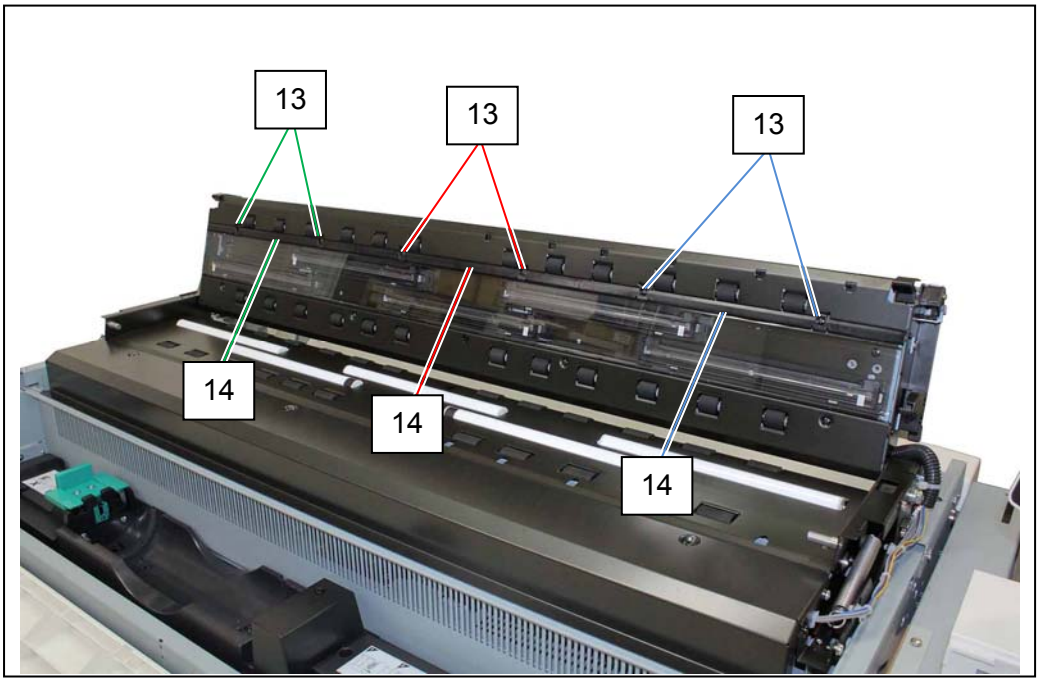
Reference

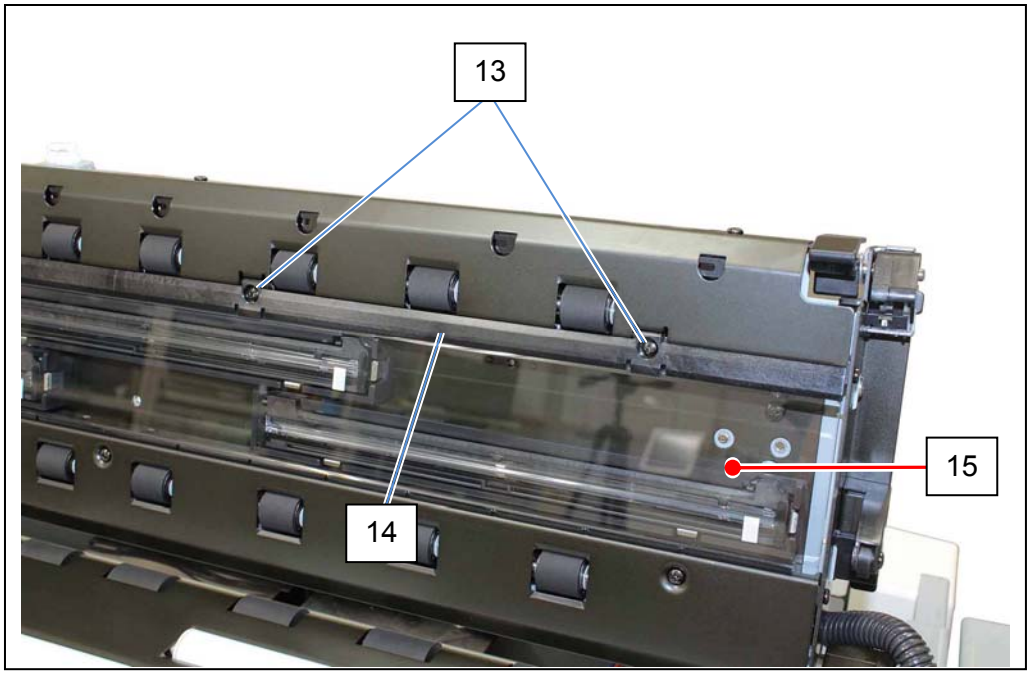
The Stopper Plate (11) is a safety to limit the motion range of the Upper Unit at “operation position 40 degrees”. In this section, another safety at “service position 100 degrees” works.

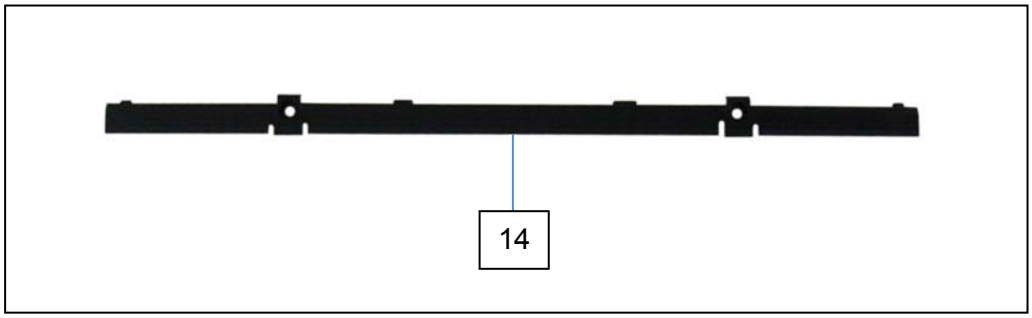
9. Fully open the Upper Unit (12). The Upper Unit is now open at 100 degrees.



10. Remove 6 screws (13) to remove 3 Glass Holders (14).
As the Upper Unit is now open at 100 degrees, the Glass DCMNT (15) will stay without supporting.



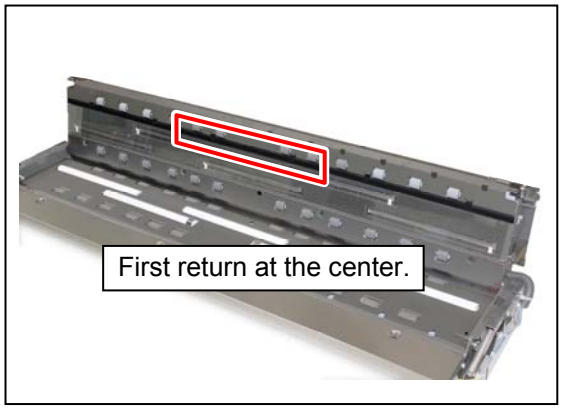




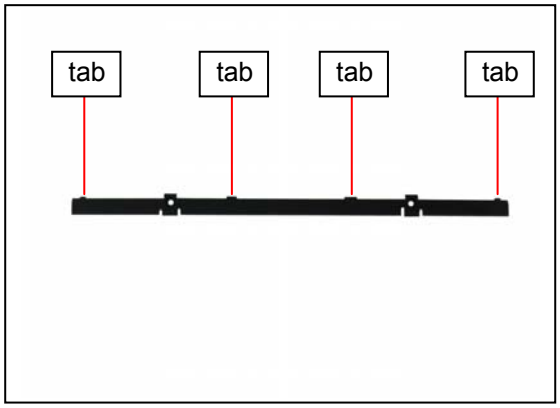
NOTE

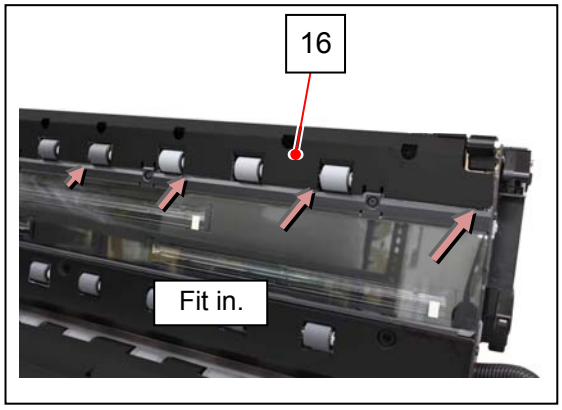
(1) Keep in mind that there is no fixation on the Glass DCMNT at this point.
It may fall if you close the Upper Unit.

(2) For reassembling, first reinstall the Glass Holder at the center.

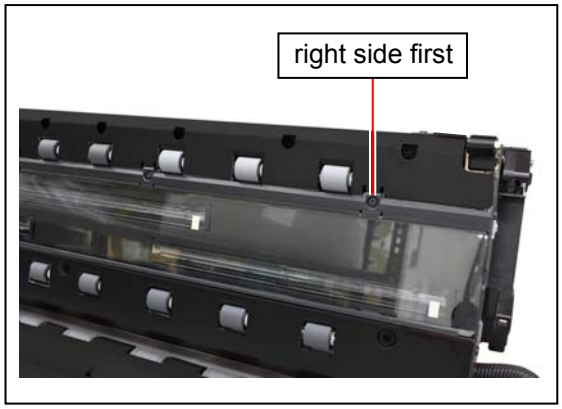


(3) For reassembling, fit the 4 tab parts under the Upper Front Guide Plate (16).

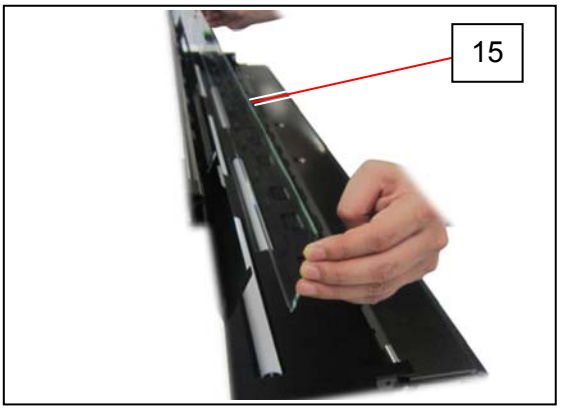




(4) For reassembling, first tighten the screw (13) on the right side.



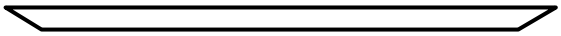
11. Remove the Glass DCMNT (15).



NOTE

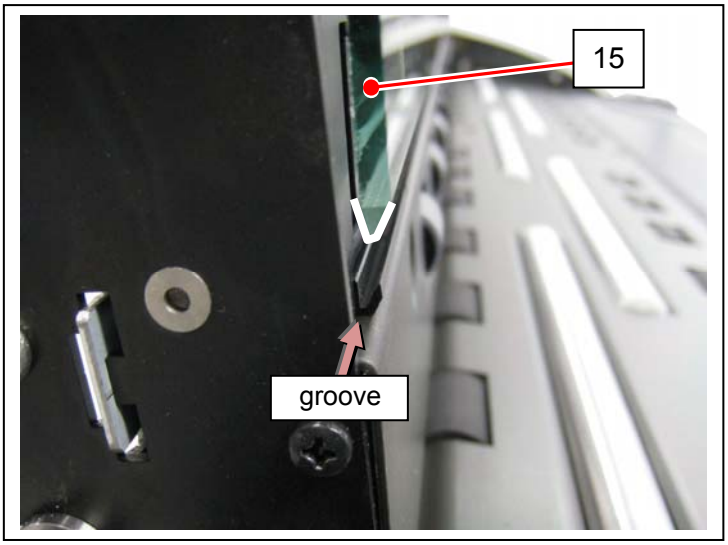
(1) The wider face with 5 stickers should be the inner face. (CIS side)
The narrower face should be the outer face. (document side)

Inner face (CIS side)

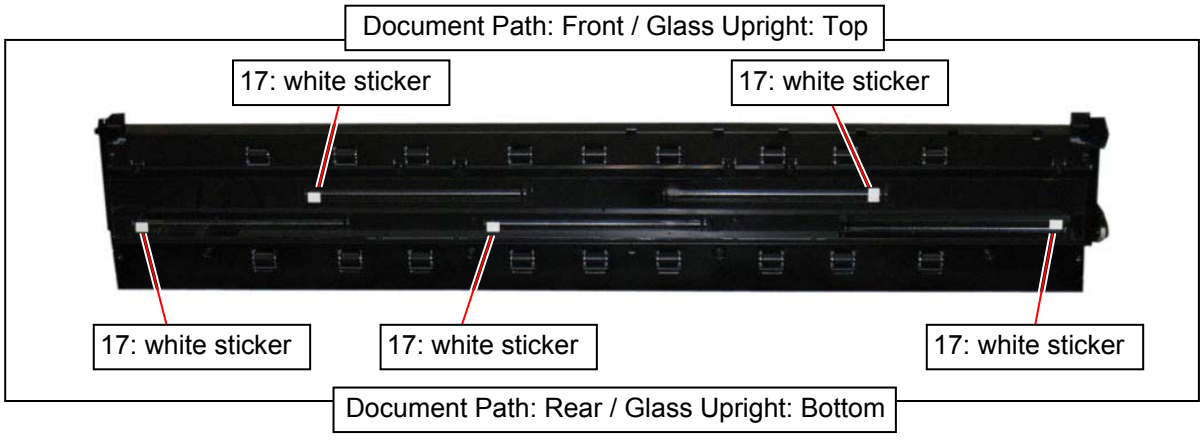


Outer face (document side)

(2) For reassembling, fit the glass's edge in the groove.



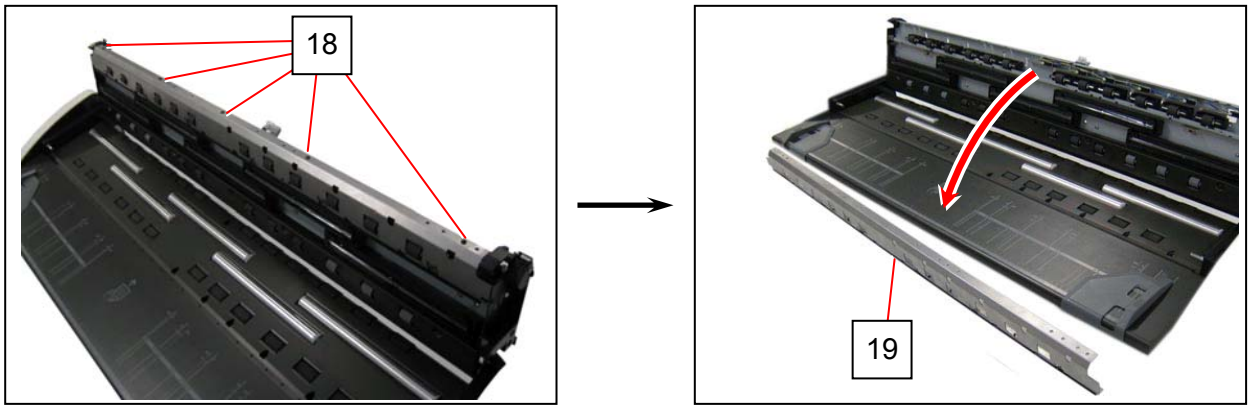
(3) There are 5 portions of the white sticker (17) on the Glass DCMNT's inner face.
This is for self calibration (white level).
For reassembling, 2-sticker row should correspond to the front CIS row as follows.



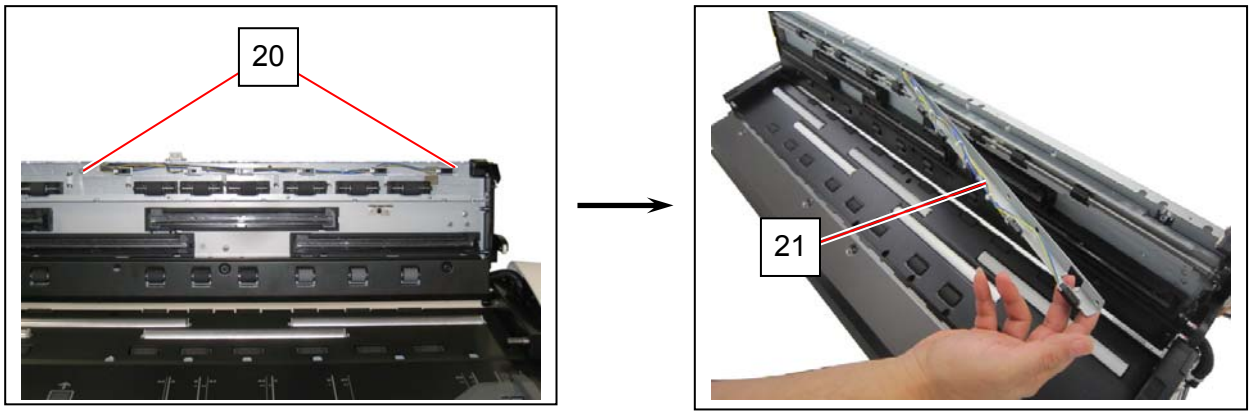
(4) For reassembling, press the Glass DCMNT against the left side.

(For the front sensors: size detection)

12. Remove 5 screws (18) on the front (Upper Unit upright: top) to remove the Upper Front Guide Plate (19).

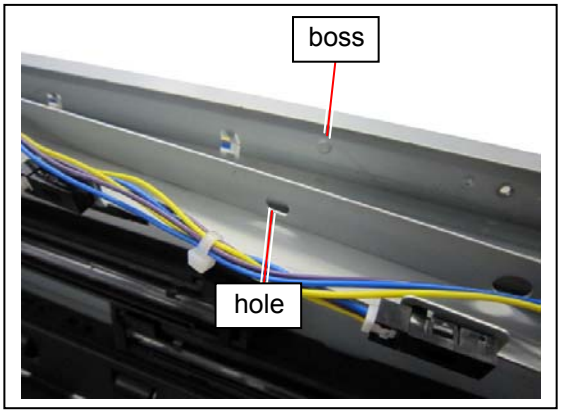


13. Remove 2 screws (20) to release the sensor bracket (21).

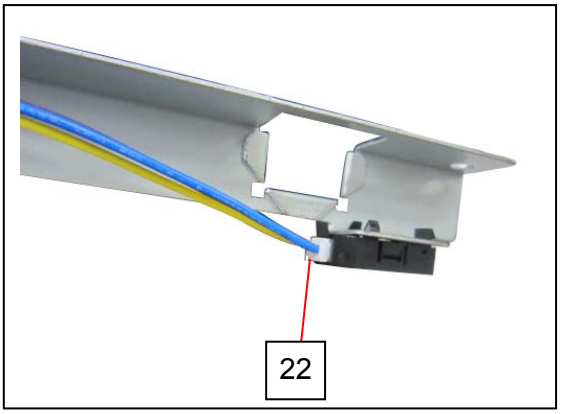


NOTE

For reassembling, fit the boss (Upper Unit) to the hole (sensor bracket).

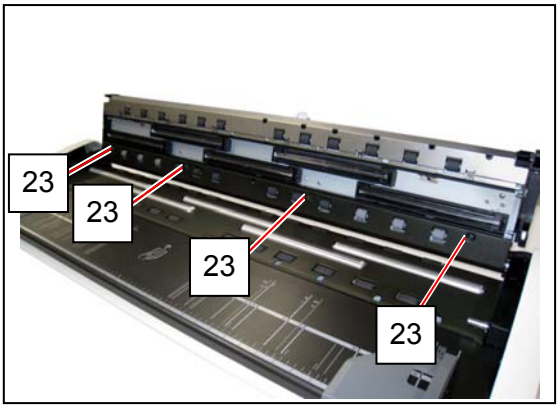


14. Disconnect the harness (22) and release the sensor from the bracket.

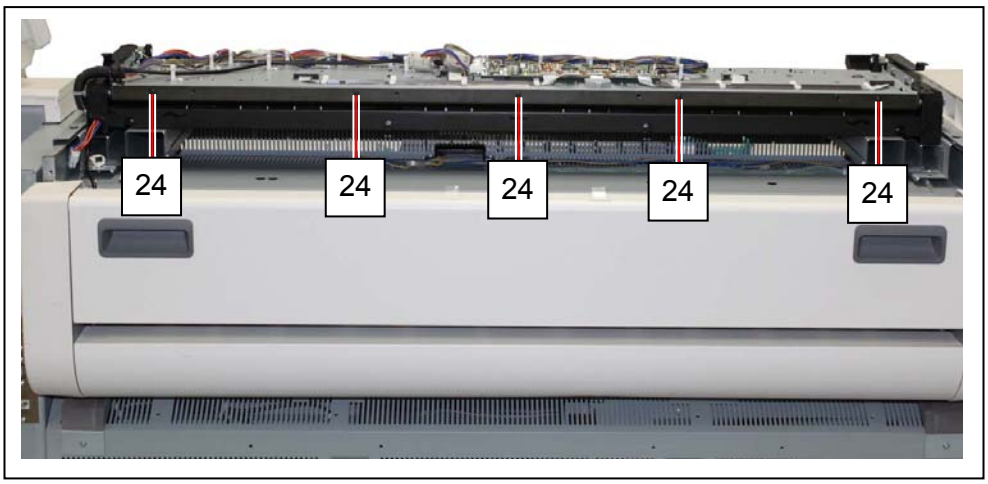


(For the rear sensor: jam detection)

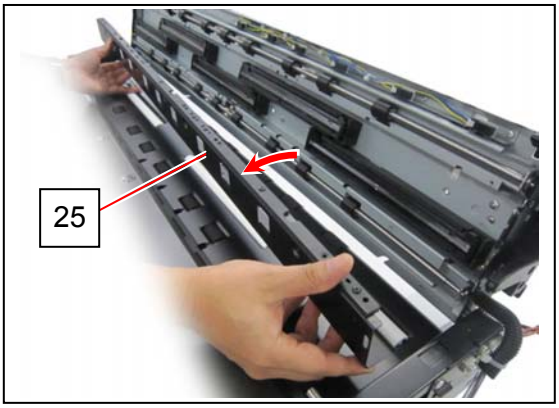
15. Remove 4 screws (23).



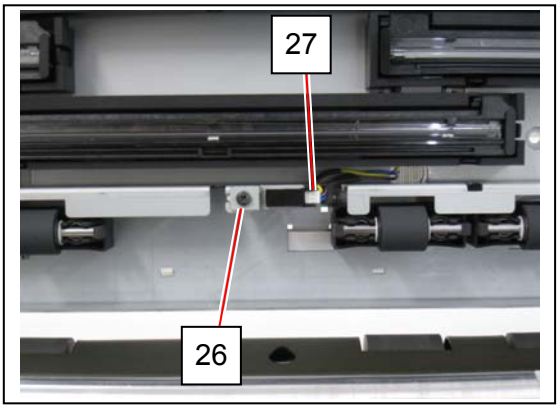
16. Remove 5 screws (24) on the rear.



17. Remove the Upper Rear Guide Plate (25).

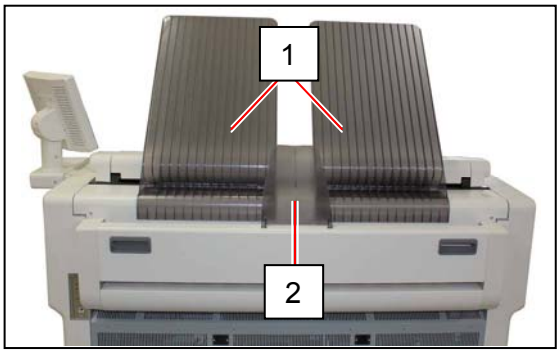


18. Remove 1 screw (26) to release the sensor bracket. Disconnect the harness (27). Release the sensor from the bracket.

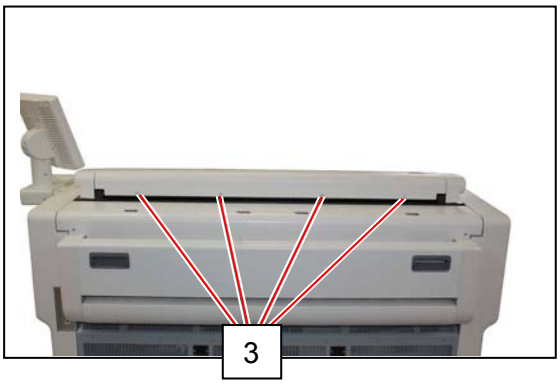


5. 12. 9 Replacing Home Position Sensor

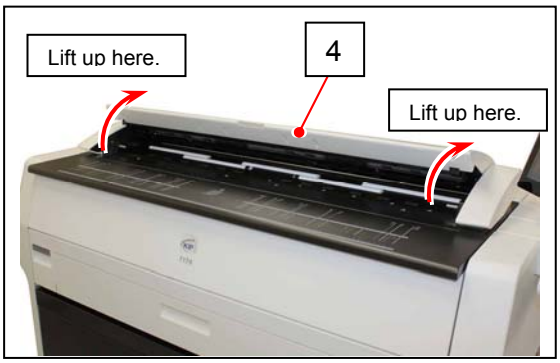
1. Remove 2 pieces of Exit Tray (1) and Exit Tray 2 (2).



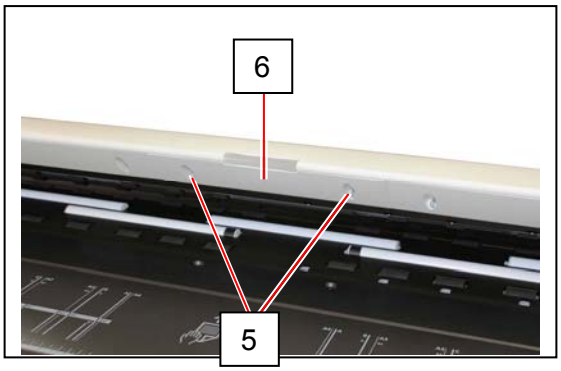
2. Remove 4 screws (3) on the back.



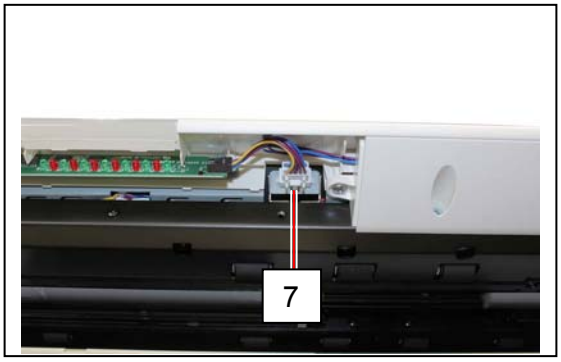
3. Lift up both sides of the Upper Unit (4).



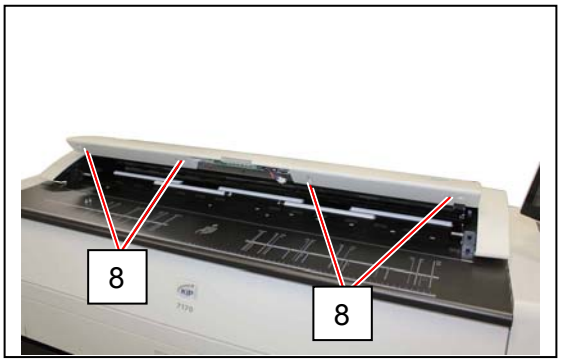
4. Remove 2 screws (5) to remove the Front Cover (6: middle).



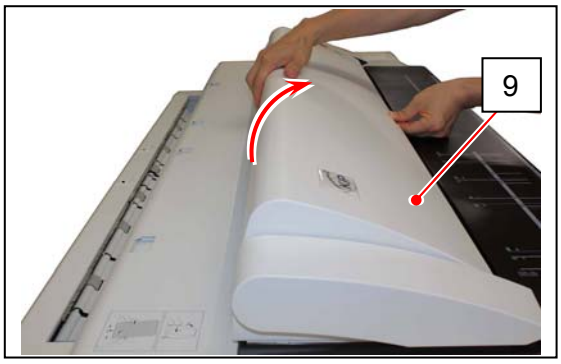
5. Disconnect 1 connector (7).



6. Remove 4 screws (8) on the front.



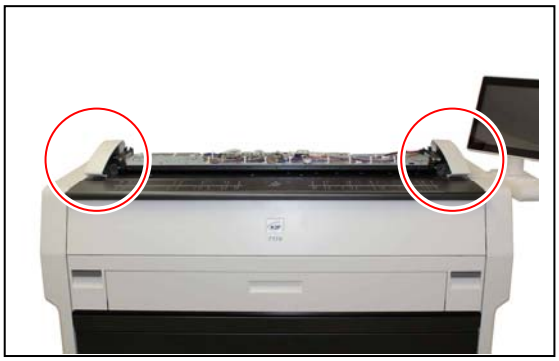
7. Remove the Top Cover (9).

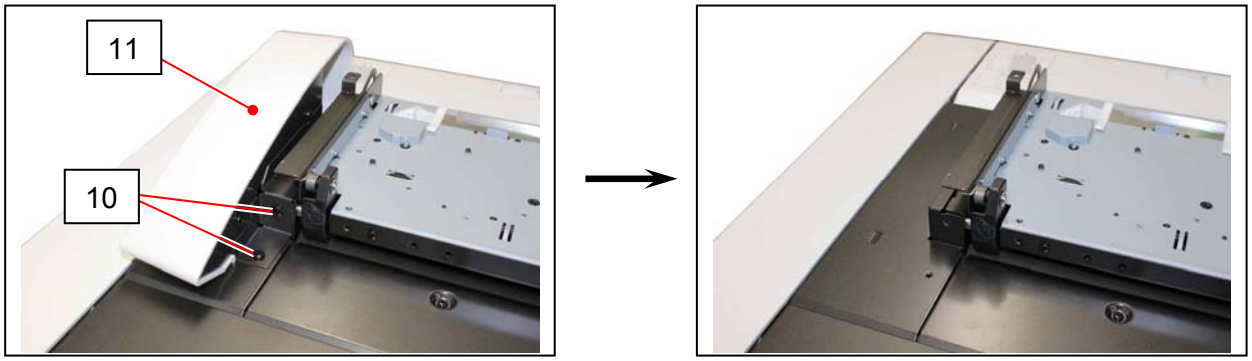


NOTE

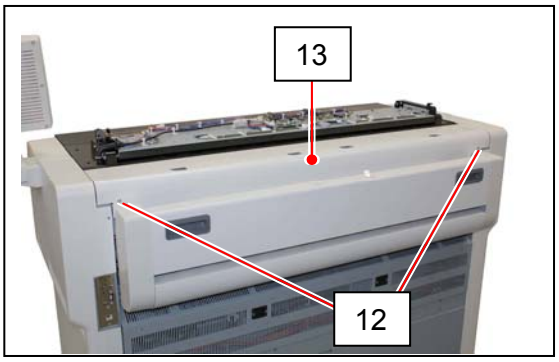
For reassembling, fit the front end of the Top Cover to the Upper Unit.

8. On both sides, Remove 2 screws (10) to remove the Scanner Side Covers (11).

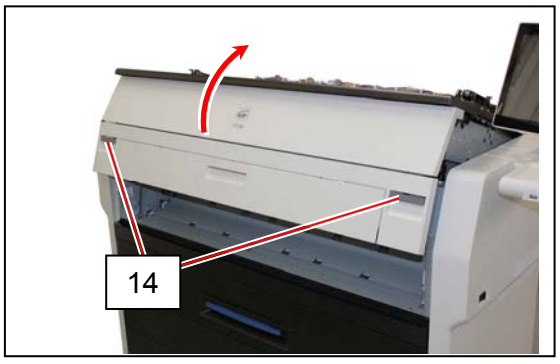




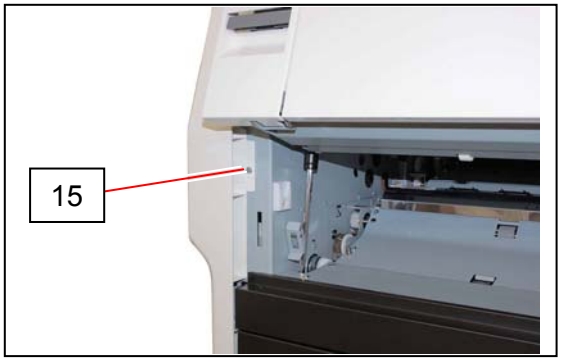
9. Remove 2 tooth washer screws (12) to remove Cover 10 (13).

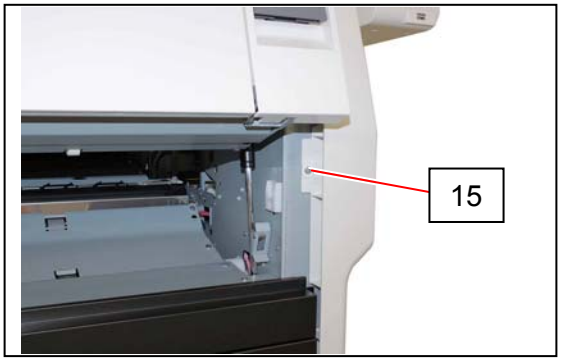


10. Pull up Lever 2 (14) to open the Engine Unit.

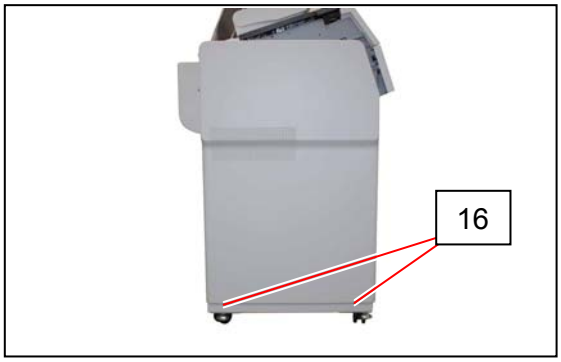


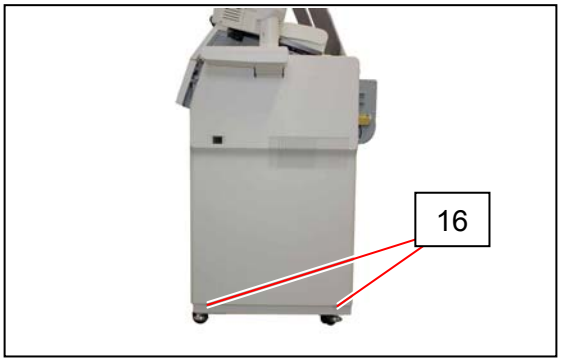
11. Remove the screws (15) at both sides.



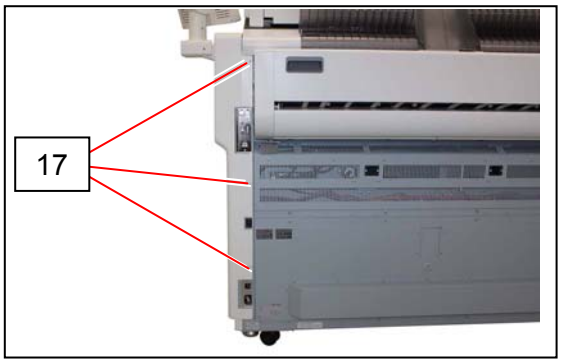


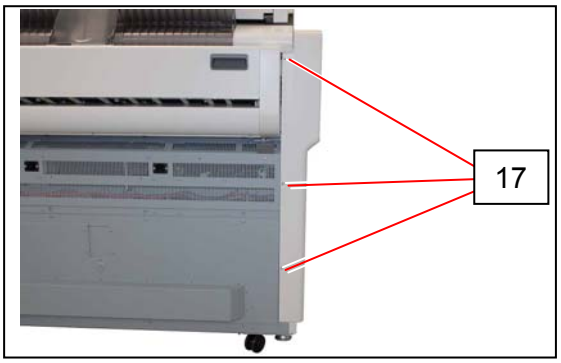
12. Remove 4 pieces of screw (16) at both sides.





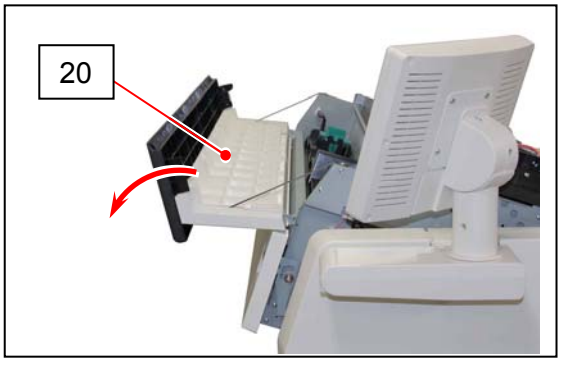
13. Remove 6 pieces of screw (17) at both sides.



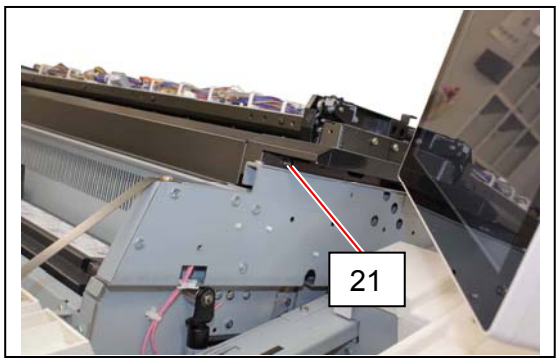


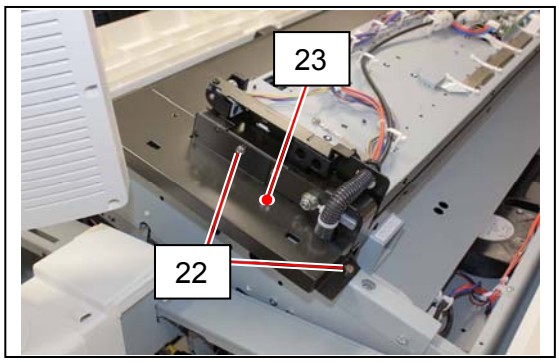
14. Remove both Cover 2 (18) and Cover 3 (19).

15. Open Toner Cover (20).

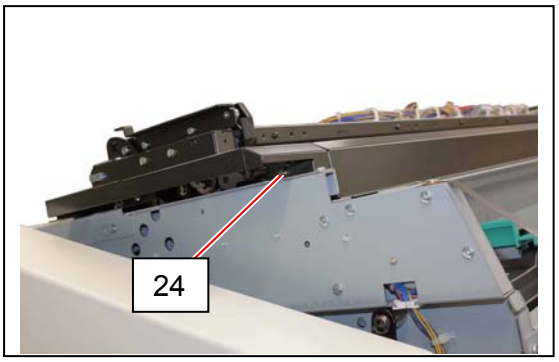


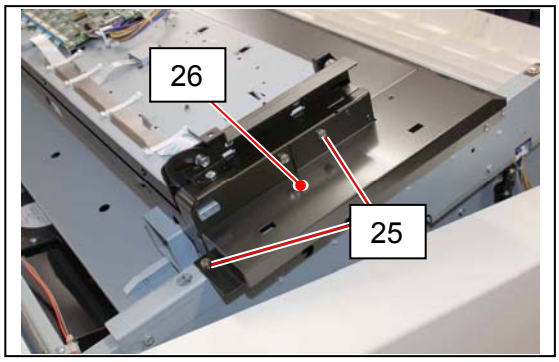
16. Loosen 1 screw (21).
Remove 2 screws (22) to remove the Cover 6 (23).



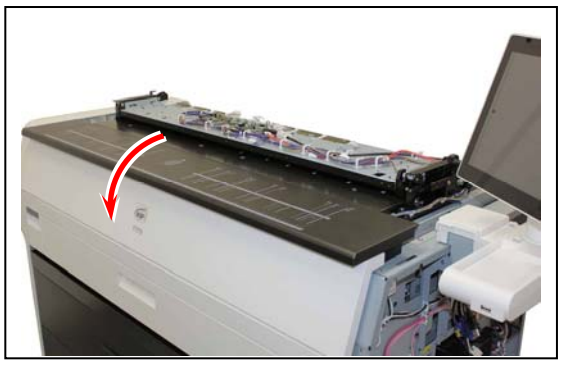


17. Loosen 1 screw (24).
Remove 2 screws (25) to remove the Cover 5 (26).

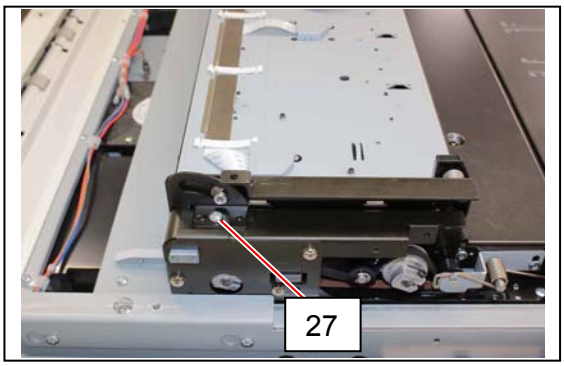


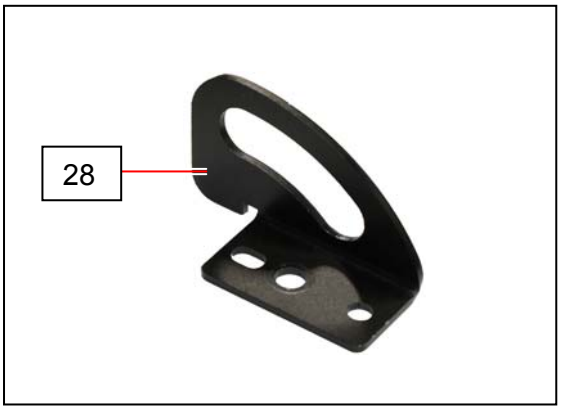


18. Close the Engine Unit.

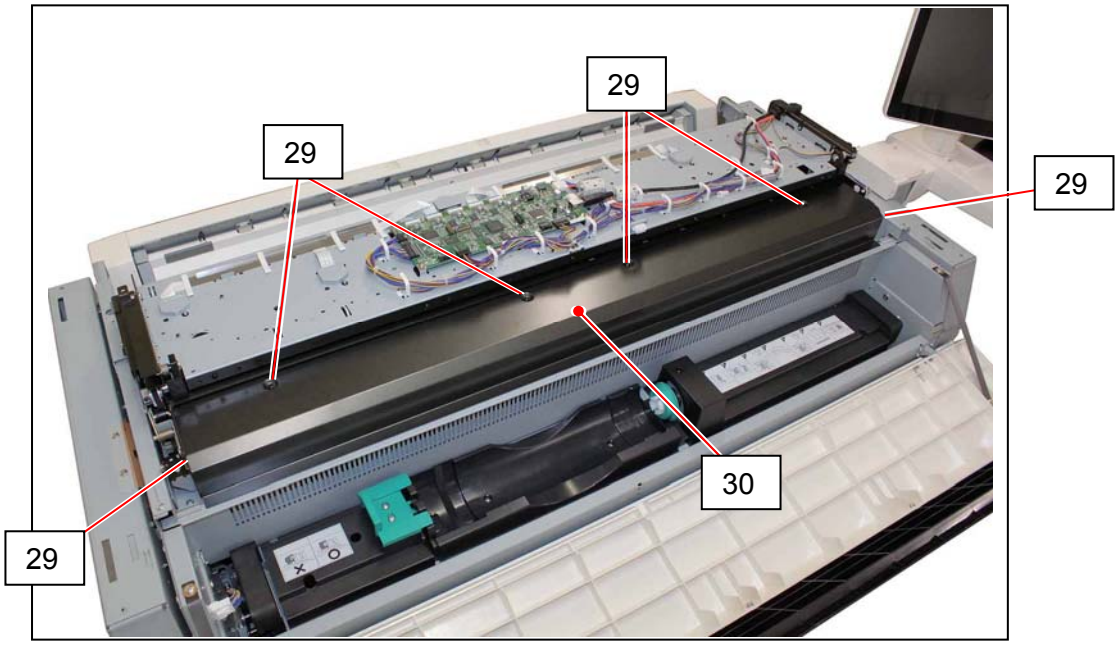


19. Remove 1 screw (27) to remove Stopper Plate (28).

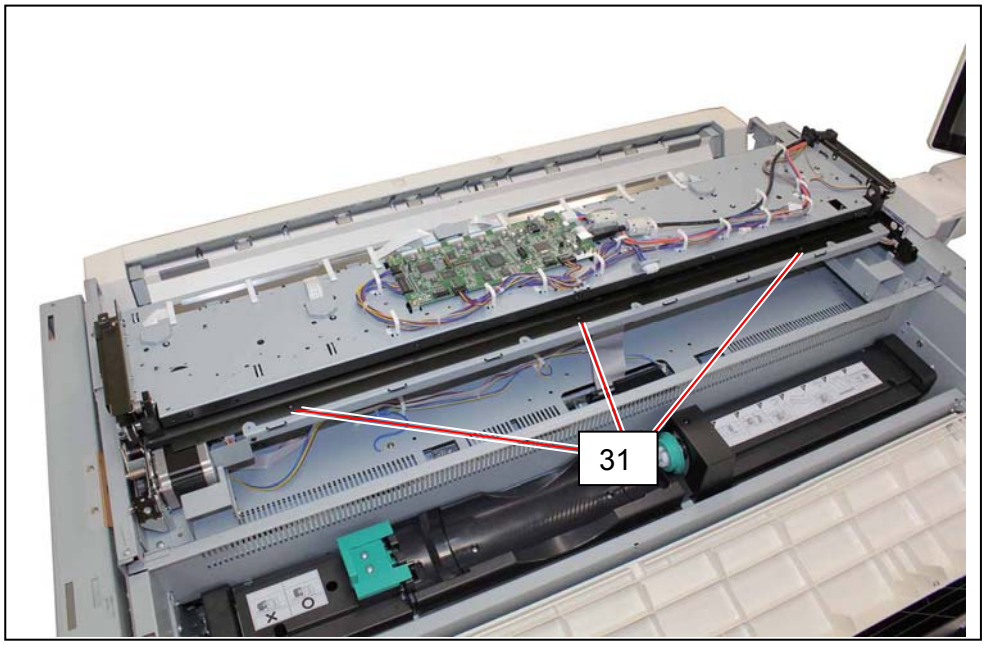




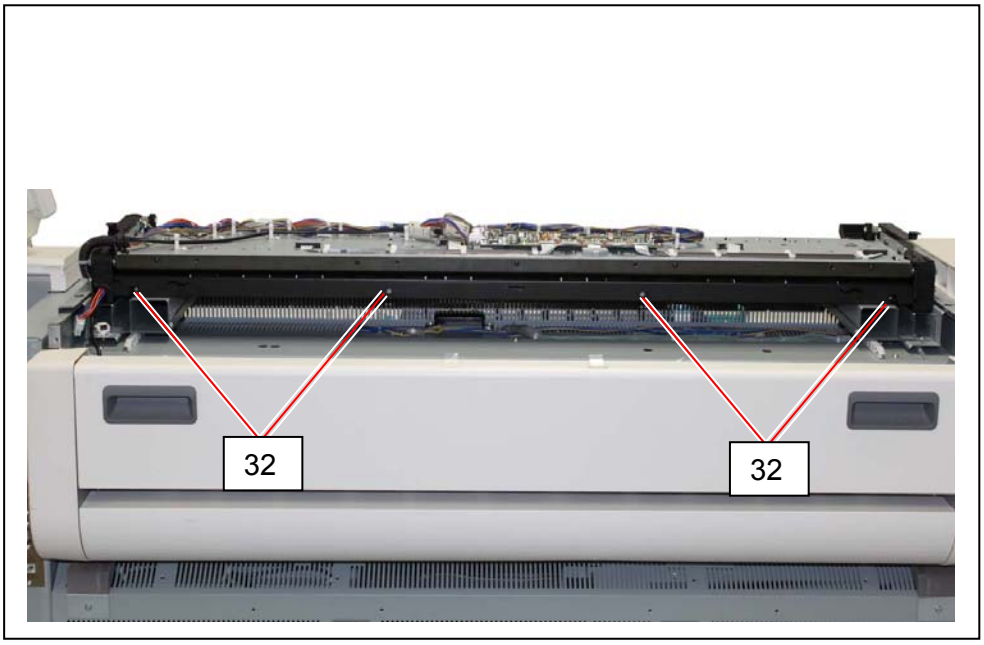
20. Remove 6 screws (29) to remove Sheet Guide (30).

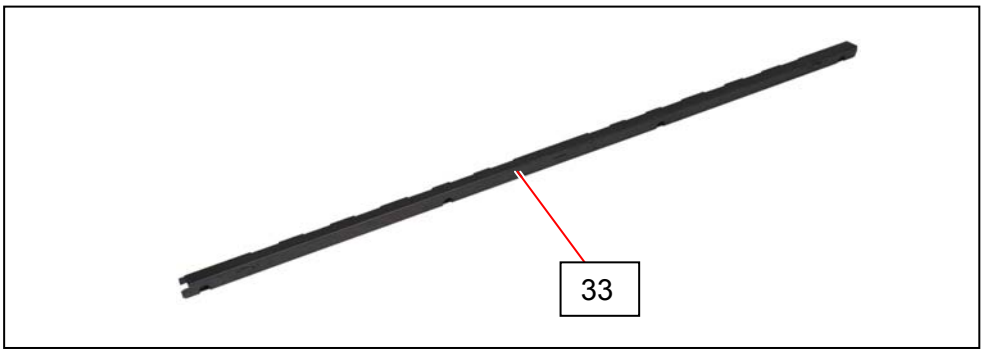


21. Remove 3 screws (31).

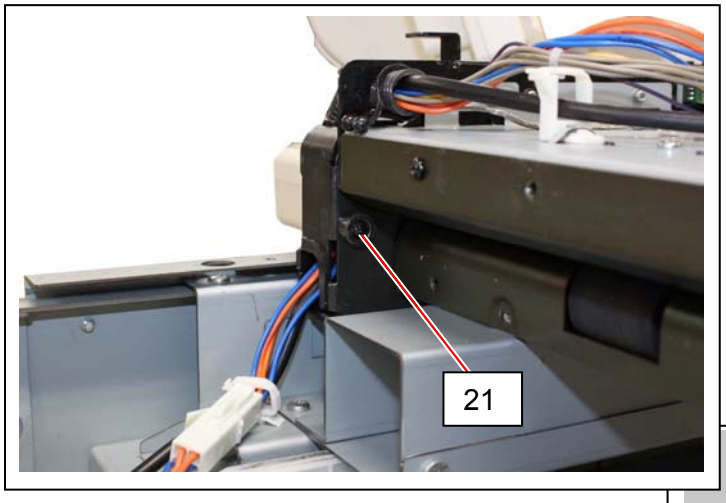


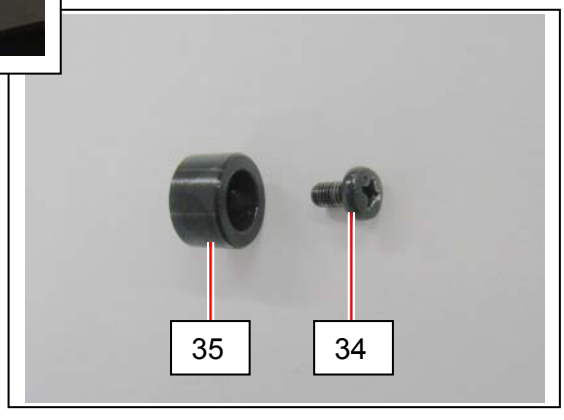
22. Remove 4 screws (32) to remove Exit Guide (33)



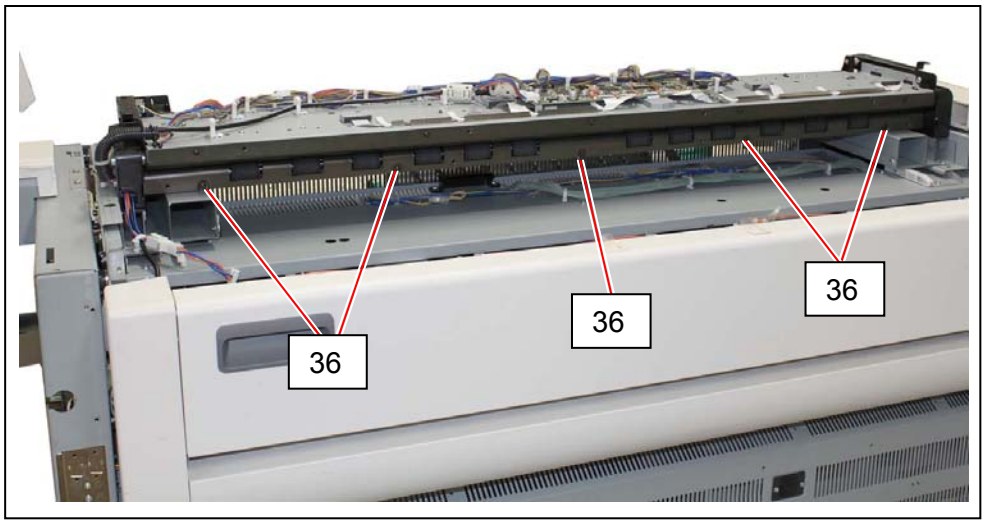


23. Remove 1 screw (34) to remove Stopper (35).

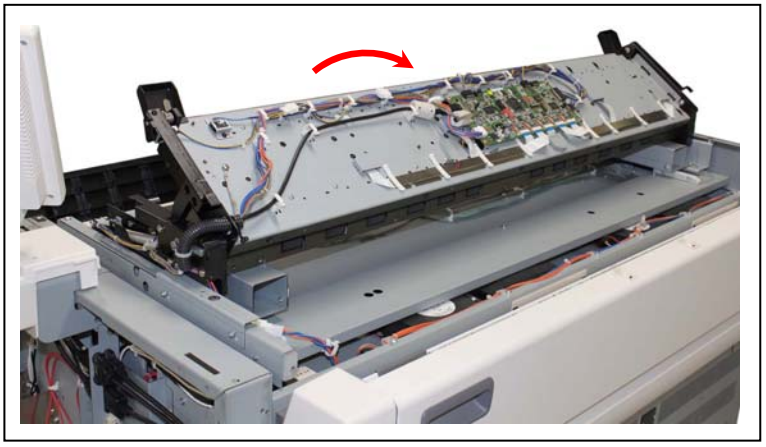




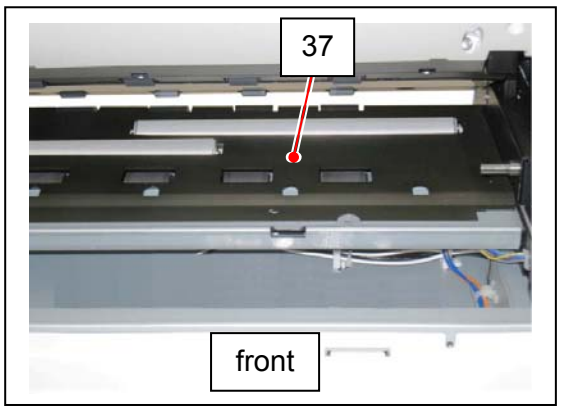
24. Remove 5 screws (36).

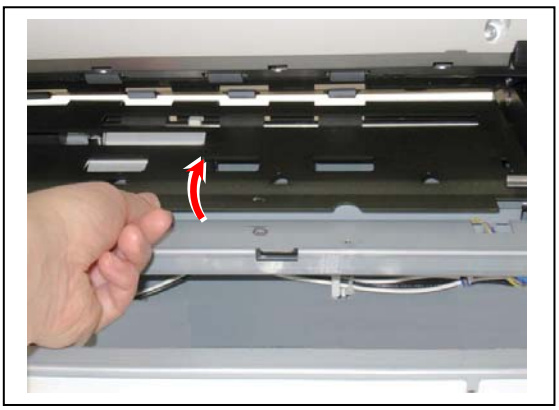


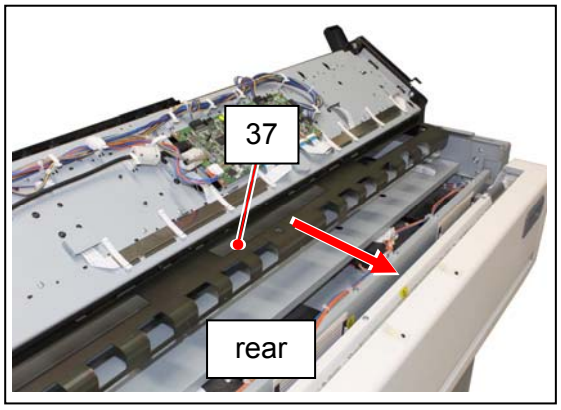
25. Open the Upper Unit

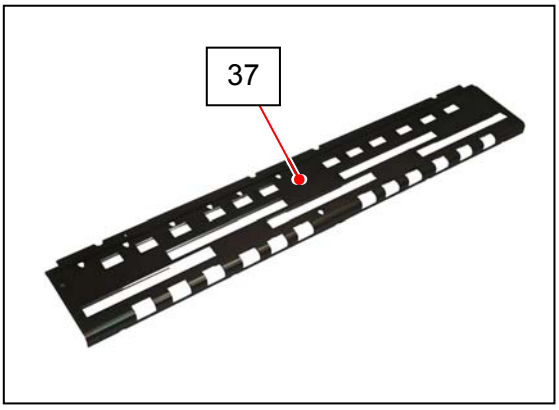


26. Lift up the front side of the Lower Unit Guide Plate (37) to escape from the rollers.
Pull and remove the Lower Unit Guide Plate (37) to the rear side.



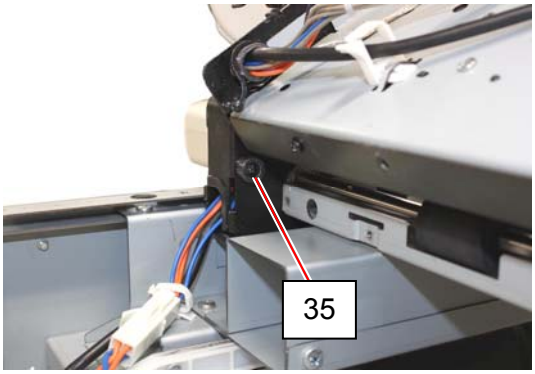






K134sm5eJ

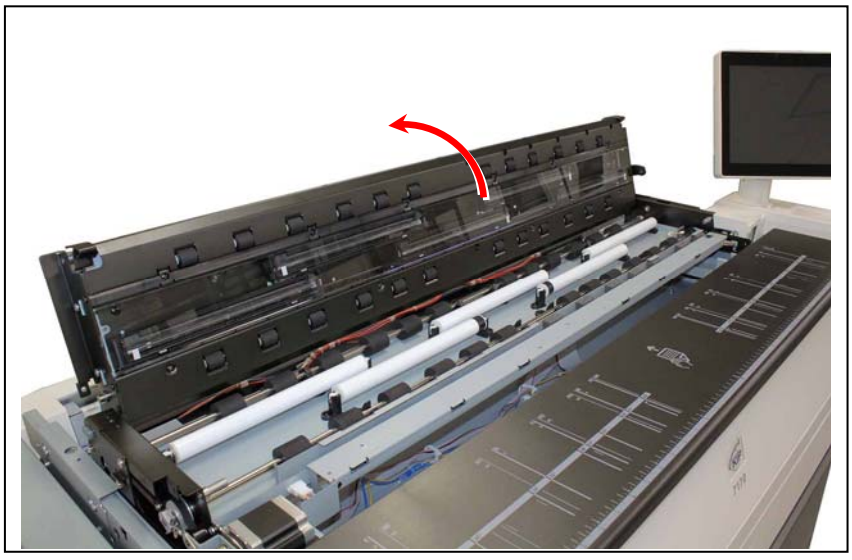
27. Return Stopper (35) in position.



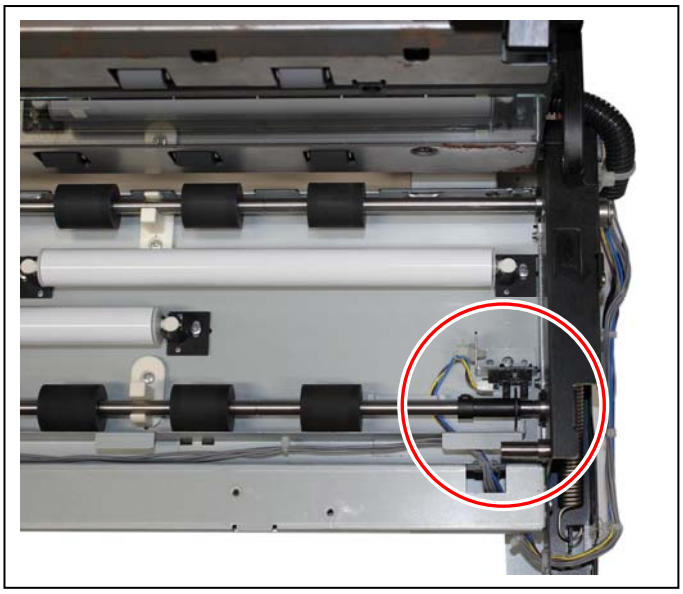
NOTE

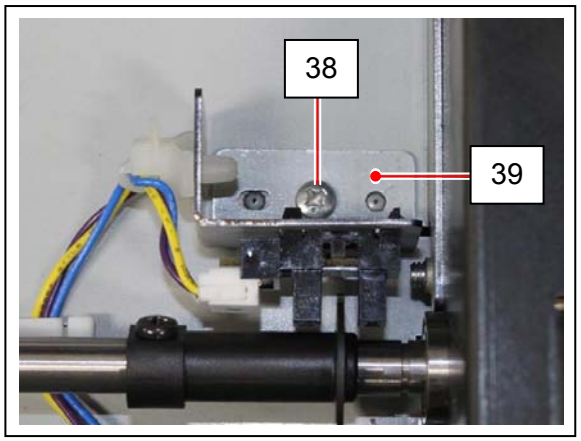
During this procedure, it is possible to go down “Upper Unit” to backside and may possible make damage on “Harness” and “Damper” during this procedure. So, it is necessary to surely install “Stopper (35) and then proceed.

28. Open the Upper Unit.

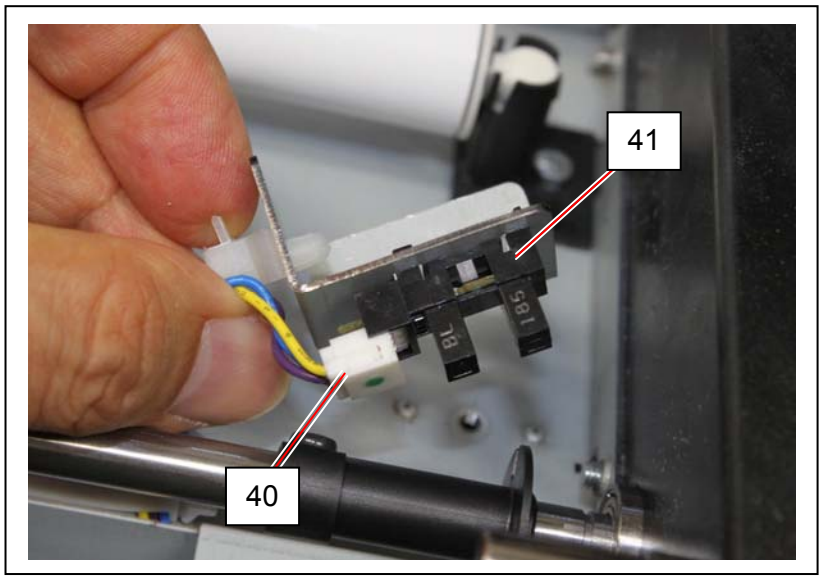


29. Remove 1 screw (38) to remove Sensor Bracket (39).



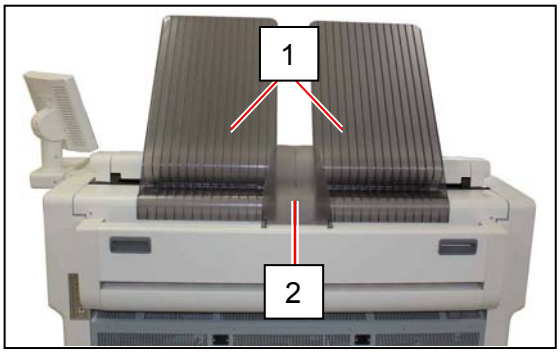


30. Disconnect the connector (40).
Replace Home Position Sensor (41) with a new one.

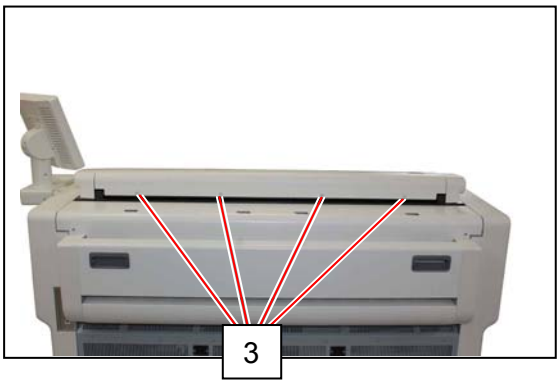


5. 12. 10 Replacing Open Switch

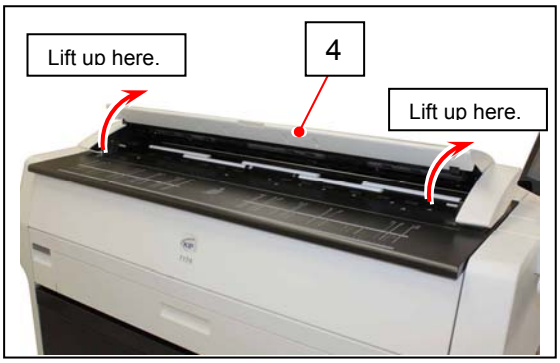
1. Remove 2 pieces of Exit Tray (1) and Exit Tray 2 (2).



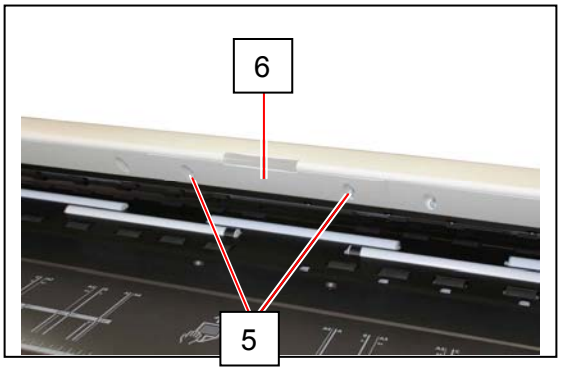
2. Remove 4 screws (3) on the back.



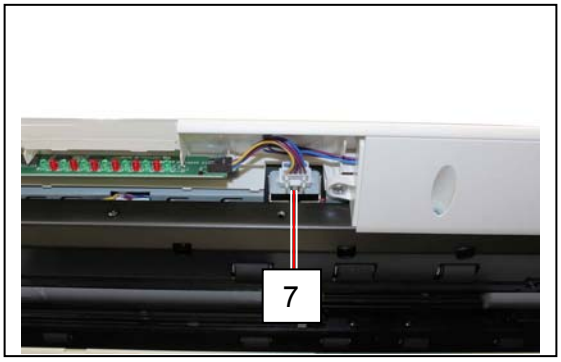
3. Lift up both sides of the Upper Unit (4).



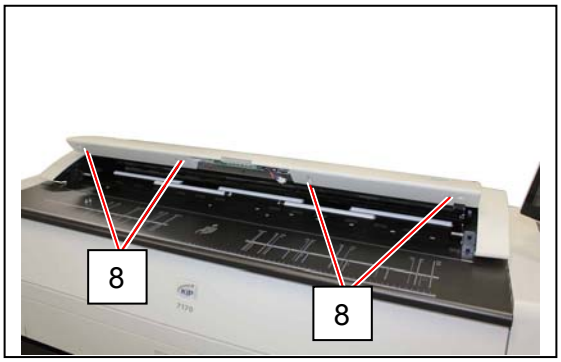
4. Remove 2 screws (5) to remove the Front Cover (6: middle).



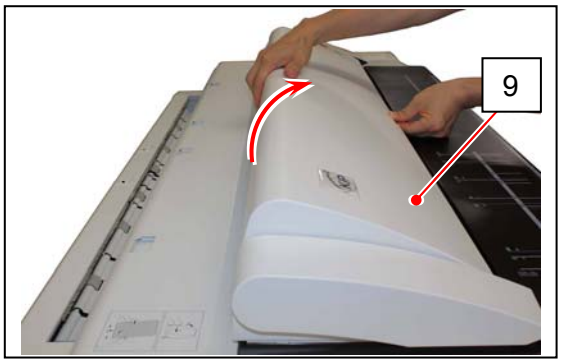
5. Disconnect 1 connector (7).



6. Remove 4 screws (8) on the front.



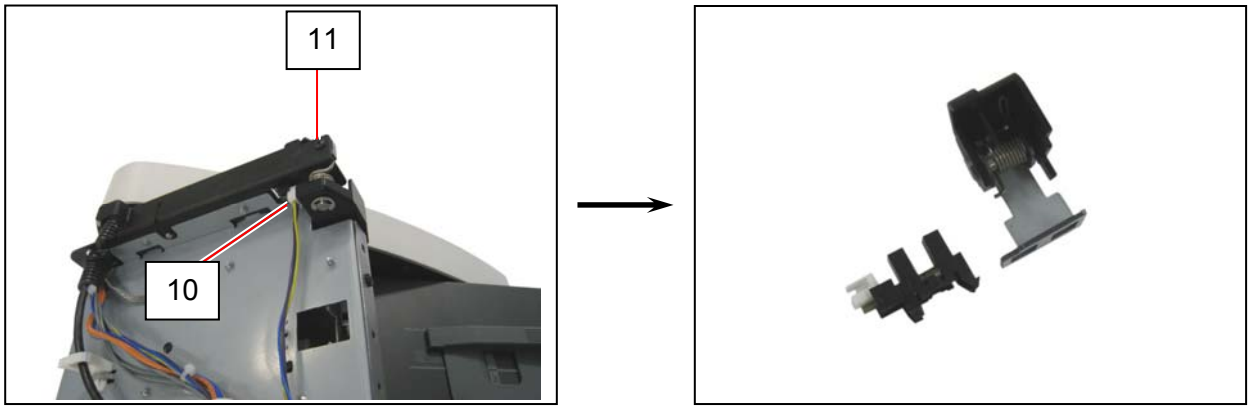
7. Remove the Top Cover (9).



NOTE

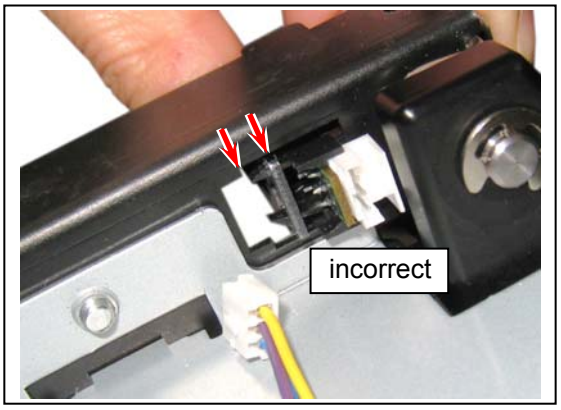
For reassembling, fit the front end of the Top Cover to the Upper Unit.

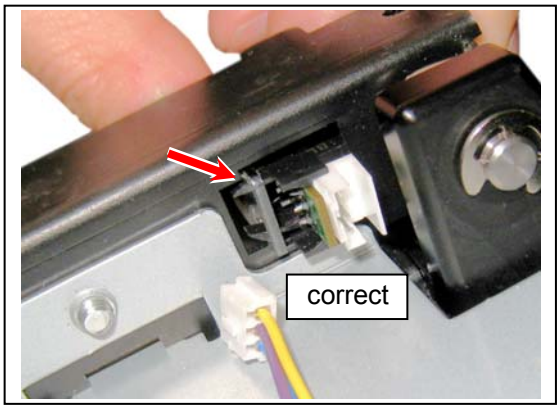
8. Disconnect the harness (10), and then remove 1 screw (11) to release the sensor bracket. Release the sensor form the bracket.



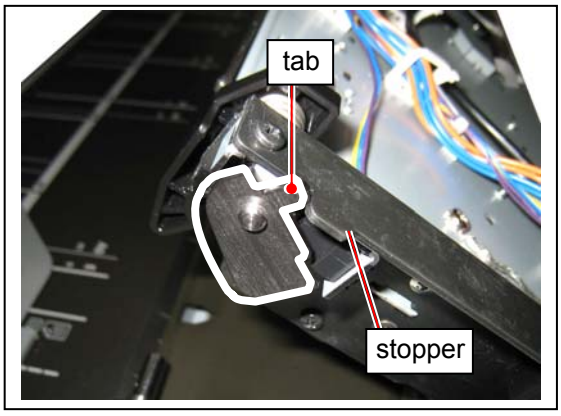
NOTE

(1) For reassembling, adjust the location of the sensor bracket so as to touch with the dent of the opening.





(2) For reassembling, the tab part should come the front of its stopper.



Chapter 6

Maintenance

page

6. 1 Recommended Periodic Replacement Parts 6- 2

6. 2 Maintenance 6- 3
6. 2. 1 List of periodic maintenance items & maintenance intervals 6- 3
6. 2. 2 List of “as required” basis maintenance items 6- 4
6. 2. 3 Maintenance operations 6- 5
6. 2. 3. 1 Cleaning of scanner (Scan Glass, Rollers, Guide Plate & Sensors) 6- 5
6. 2. 3. 2 Cleaning of UI Assy (Touch Panel) 6- 9
6. 2. 3. 3 Lubrication of driving gears on machine frame 6-10
6. 2. 3. 4 Lubrication of HV copper plates in developer unit 6-11
6. 2. 3. 5 Lubrication of HV copper plates on machine frame 6-11

6. 3 Service Kit 6-12

6. 4 Service Tool List 6-13

6. 5 Disposal of machine 6-14

KIP 7170K - PM Schedule (Square Feet)

r1

-Please keep this form with the KIP 7170K ; Please perform PMs as scheduled

-As the PM comes due and items replaced or cleaned, please denote with an "X" in the Confirmation box. Please note nomenclature below.

Part / Description	Qty	Part Number	Square Feet X 1000																			
			Code	50	Complete	100	Complete	150	Complete	200	Complete	250	Complete	300	Complete	350	Complete	400	Complete	450	Complete	500	Complete
Document Glass (scanner)			#	C		C		C		C		C		C		C		C		C		C	
Document Rollers (scanner)			#			C				C				C				C				C	
Photoreceptor	1	Z344700010														R							
Charge Wire - Kit (includes Tr, Sep, Im wires)	1	Z160980200	#	C		C		C		R		C		C		C		R		C		C	
Grid Screen			#			C				C				C				C				C	
LED Head			#	C		C		C		C		C		C		C		C		C		C	
Developer Space Discs			#			C				C				C				C				C	
Lube Gears						L				L				L				L				L	
Developer Roller - Kit	1	Z160980020								R								R					
Roll Compartment & Interior			@	C		C		C		C		C		C		C		C		C		C	
Knife			@							C								C					
Filter - Kit	1	Z160980220	@	C		C		C		C		C		C		R		C		C		C	
Fuser - Kit	1	Z160980040														R							
Lube Gears						L				L				L				L				L	
Fuser Fingers				C		C		C		C		C		C		C		C		C		C	
Pressure Roller										C								C					
Thermostat										C								C					
Thermistor										C								C					
Exterior Covers / GUI			#	C		C		C		C		C		C		C		C		C		C	

# = Clean with glass cleaner and wipe dry	C = Clean	R = Replace	L = Lubricate
@ = Clean with vacuum	I = Inspect	A = Adjust position	

Subject to change without notice

Actual intervals may vary due to customer requirements / installation location

KIP 7170K - PM Schedule (Square Feet)

r1

-Please keep this form with the KIP 7170K ; Please perform PMs as scheduled

-As the PM comes due and items replaced or cleaned, please denote with an "X" in the Confirmation box. Please note nomenclature below.

Part / Description	Qty	Part Number	Square Feet X 1000																			
			Code	550	Complete	600	Complete	650	Complete	700	Complete	750	Complete	800	Complete	850	Complete	900	Complete	950	Complete	1000	Complete
Document Glass (scanner)			#	C		C		C		C		C		C		C		C		C		C	
Document Rollers (scanner)			#			C				C				C				C				C	
Photoreceptor	1	Z344700010								R													
Charge Wire - Kit (includes Tr, Sep, Im wires)	1	Z160980200	#	C		R		C		C		C		R		C		C		C		R	
Grid Screen			#			C								C				C				C	
LED Head			#	C		C		C		C		C		C		C		C		C		C	
Developer Space Discs			#			C								C				C				C	
Lube Gears						L				L				L				L				L	
Developer Roller - Kit	1	Z160980020				R								R								R	
Roll Compartment & Interior			@	C		C		C		C		C		C		C		C		C		C	
Knife			@			C								C								C	
Filter - Kit	1	Z160980220	@	C		C		C		R		C		C		C		C		C		C	
Fuser - Kit	1	Z160980040								R													
Lube Gears						L				L				L				L				L	
Fuser Fingers				C		C		C		C		C		C		C		C		C		C	
Pressure Roller						C								C								C	
Thermostat						C								C								C	
Thermistor						C								C								C	
Exterior Covers / GUI			#	C		C		C		C		C		C		C		C		C		C	

# = Clean with glass cleaner and wipe dry	C = Clean	R = Replace	L = Lubricate
@ = Clean with vacuum	I = Inspect	A = Adjust position	

Subject to change without notice

Actual intervals may vary due to customer requirements / installation location

KIP 7170K - PM Schedule (Linear Meters)

r1

-Please keep this form with the KIP 7170K ; Please perform PMs as scheduled

-As the PM comes due and items replaced or cleaned, please denote with an "X" in the Confirmation box. Please note nomenclature below.

Part / Description	Qty	Part Number	Linear Meters X 1000																			
			Code	6	Complete	12	Complete	18	Complete	24	Complete	30	Complete	36	Complete	42	Complete	48	Complete	54	Complete	60	Complete
Document Glass (scanner)			#	C		C		C		C		C		C		C		C		C		C	
Document Rollers (scanner)			#			C				C				C				C				C	
Photoreceptor	1	Z344700010												R									
Charge Wire - Kit (includes Tr, Sep, Im wires)	1	Z160980200	#	C		C		R		C		C		R		C		C		R		C	
Grid Screen			#			C				C				C				C				C	
LED Head			#	C		C		C		C		C		C		C		C		C		C	
Developer Space Discs			#			C				C				C				C				C	
Lube Gears						L				L				L				L				L	
Developer Roller - Kit	1	Z160980020								R								R					
Roll Compartment & Interior			@	C		C		C		C		C		C		C		C		C		C	
Knife			@							C								C					
Filter - Kit	1	Z160980220	@	C		C		C		C		C		R		C		C		C		C	
Fuser - Kit	1	Z160980040												R									
Lube Gears						L				L				L				L				L	
Fuser Fingers				C		C		C		C		C		C		C		C		C		C	
Pressure Roller										C								C					
Thermostat										C								C					
Thermistor										C								C					
Exterior Covers / GUI			#	C		C		C		C		C		C		C		C		C		C	

# = Clean with glass cleaner and wipe dry	C = Clean	R = Replace	L = Lubricate
@ = Clean with vacuum	I = Inspect	A = Adjust position	

Subject to change without notice

Actual intervals may vary due to customer requirements / installation location

KIP 7170K - PM Schedule (Linear Meters)

r1

-Please keep this form with the KIP 7170K ; Please perform PMs as scheduled

-As the PM comes due and items replaced or cleaned, please denote with an "X" in the Confirmation box. Please note nomenclature below.

Part / Description	Qty	Part Number	Linear Meters X 1000																			
			Code	66	Complete	72	Complete	78	Complete	84	Complete	90	Complete	96	Complete	102	Complete	108	Complete	114	Complete	120	Complete
Document Glass (scanner)			#	C		C		C		C		C		C		C		C		C		C	
Document Rollers (scanner)			#			C				C				C				C				C	
Photoreceptor	1	Z344700010				R												R					
Charge Wire - Kit (includes Tr, Sep, Im wires)	1	Z160980200	#	C		R		C		C		R		C		C		R		C		C	
Grid Screen			#			C				C				C				C				C	
LED Head			#	C		C		C		C		C		C		C		C		C		C	
Developer Space Discs			#			C				C				C				C				C	
Lube Gears						L				L				L				L				L	
Developer Roller - Kit	1	Z160980020				R								R								R	
Roll Compartment & Interior			@	C		C		C		C		C		C		C		C		C		C	
Knife			@			C								C								C	
Filter - Kit	1	Z160980220	@	C		R		C		C		C		C		C		R		C		C	
Fuser - Kit	1	Z160980040				R												R					
Lube Gears						L				L				L				L				L	
Fuser Fingers				C		C		C		C		C		C		C		C		C		C	
Pressure Roller						C								C								C	
Thermostat						C								C								C	
Thermistor						C								C								C	
Exterior Covers / GUI			#	C		C		C		C		C		C		C		C		C		C	

# = Clean with glass cleaner and wipe dry	C = Clean	R = Replace	L = Lubricate
@ = Clean with vacuum	I = Inspect	A = Adjust position	

Subject to change without notice

Actual intervals may vary due to customer requirements / installation location

SYSTEM SOFTWARE K

KIP 7170K

Preventative Maintenance
Performed every 50,000 sq ft or 6000 linear meters

Step #1 - Prepare Machine

- ❑ Ask User on Printer Performance / Image Quality
- ❑ Run Test Print
- ❑ Locate the "KIP 7170K PM Schedule" Form
  Check off each item completed
  Replace noted items as this procedure progresses
- ❑ Remove Drum (into Box)
- ❑ Remove side and top covers

Step #2 - Corona Units

- ❑ Clean Grid Screen (Simple Green, then rinse with water and let dry on paper towel)
- ❑ Clean 1st Charge wires and case (Glass cleaner)
- ❑ Clean transfer / separation wires and case (Glass cleaner)

Step #3 - LED Print Head

- ❑ Clean LED lens (Glass cleaner)

Step #4 - Clean Interior of Printer

- ❑ Separation fans / air guides
- ❑ Transport belts
- ❑ Transfer guide plates etc.

Step #5 - Development Unit

- ❑ Clean spacing rollers
- ❑ Vacuum any toner dust from ends of developer unit
- ❑ Vacuum around toner hopper inlet
- ❑ Clean / lube gears (only as needed with G501 grease / Lithium grease - see Chapter 6 in Service Manual)

Step #6 - Paper Decks

- ❑ Vacuum paper dust
- ❑ Inspect media collars

Step #7 - Air Flow

- ❑ Vacuum Ozone Filters
- ❑ Confirm all fans and blowers are clean

Step #8 - Fuser Section

- ❑ Clean upper Nails
- ❑ Clean lower Nails
- ❑ Clean and lube gears (as needed with High temp. grease - see Chapter 6 in Service Manual)

Step #9 - Cutter Assembly

- ❑ Clean paper dust

Step #10 - Run test pattern #1 and #3 and verify print quality (save prints)

Step #11 - Scanner

- ❑ Remove glass and clean both sides
- ❑ Clean original rollers

Step #12 - Clean Panels and Covers

Step #13 - Make copies / prints

Step #14 - Speak with key operator on your evaluation / status

6. 1 Recommended Periodic Replacement Parts

For keeping the machine quality in a satisfactory level, a periodic replacement for the following parts is recommended.
A damaged part (even if it looks not) may result in a critical failure.

Location	Part Name	Quantity	Remarks
Developer Unit	Scraper	1	"Developer Maintenance Kit A" (P/N: Z160980020)
	Sheet	2	
	Sheet 2	2	
	Roller Developer	1	
	Sheet 3	2	
	Sheet 4	2	
	Blade Roller	1	
	Seal R2 Assy	1	
	Seal L2 Assy	1	
	Seal 1	2	
	Seal 23	2	
	Seal 3	2	
	Seal 4	2	
Image Corona	Corona Wire (1) Assy	1	"Corona Wire Kit" (P/N: Z160980200)
	Spring 2	1	
Transfer / Separation Corona	Corona Wire	2	
	Wire Spring	4	
Main Frame	Filter 4	1	"Filter Kit" (P/N: Z160980220)
Fuser Upper Area	Filter 3 Assy	2	
Fuser Unit	Roller Fusing	1	"Fuser Maintenance Kit" (P/N: Z160980040)
	Bush	2	
	Nail Stripping	13	
	Nail Lower	6	
Engine Frame	Photoconductive Drum	1	P/N Z344700010

6. 2 Maintenance

Please perform the following periodic and occasional maintenances to keep the machine in a good condition and to get a superior image.

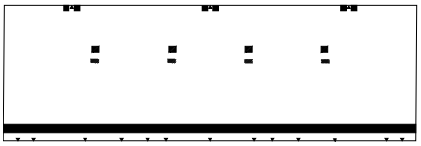
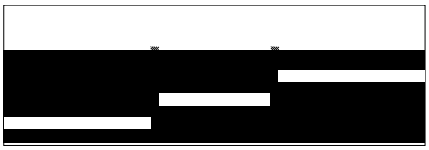
6. 2. 1 List of periodic maintenance items & maintenance intervals

The following list shows the maintenance items that have to be performed periodically. It also shows the intervals to perform these maintenances.

Unit / Area	Maintenance part	Maintenance interval See "PM Schedule"				Remarks
Developer Unit	Counter Roller			X		Clean with a cloth impregnated with alcohol.
Fuser Unit	Roller Fusing			X		Clean with a cloth impregnated with alcohol.
	Roller Pressure			X		Clean with a cloth impregnated with alcohol.
	Nail Stripping	X				Clean with a dry cloth.
	Nail Lower	X				Clean with a dry cloth.
	Thermistor			X		Clean with a dry cloth.
	Thermostat			X		Clean with a dry cloth.
Image Corona	Corona Wire	X				Clean with a cloth impregnated with water then with a dry cloth.
	Corona Housing	X				Clean with a cloth impregnated with water then with a dry cloth.
Transfer / Separation Corona	Corona Wire	X				Clean with a cloth impregnated with water then with a dry cloth.
	Corona Housing	X				Clean with a cloth impregnated with water then with a dry cloth.
Engine Frame	LED Head (Selfoc Lens)	X				Clean with a dry cloth.
	Photoconductive Drum	X				Read [5.5.3 Cleaning of Photoconductive Drum] for the way of cleaning.
Main Frame	Machine inside	X				

6. 2. 2 List of “as required” basis maintenance items

The following list shows the maintenance items that have to be performed when necessary.

Unit / Area	Maintenance part	Maintenance interval	Remarks
UI	UI Assy (Touch Panel)	If required.	Clean with a dry cloth. **See [6.2.3.2 Cleaning of UI Assy (Touch Panel)] on later page for the actual operation.**
Scanner	Scan Glass	If required.	Clean with a cloth impregnated with the equal mixture of water and neutral detergent. **See [6.2.3.1 Cleaning of scanner (Scan Glass, Rollers, Guide Plate & Sensors)] on later page for the actual operation.**
	Feed Rollers (White Rollers)	If required.	Clean with a cloth impregnated with alcohol. **See [6.2.3.1 Cleaning of scanner (Scan Glass, Rollers, Guide Plate & Sensors)] on later page for the actual operation.**
	Feed Rollers (Rubber Rollers)	If required.	Clean with a cloth impregnated with alcohol. **See [6.2.3.1 Cleaning of scanner (Scan Glass, Rollers, Guide Plate & Sensors)] on later page for the actual operation.**
	Guide Plate	If required.	Clean with a dry cloth. **See [6.2.3.1 Cleaning of scanner (Scan Glass, Rollers, Guide Plate & Sensors)] on later page for the actual operation.**
	Sensor	If required.	Clean with a dry cotton pads. **See [6.2.3.1 Cleaning of scanner (Scan Glass, Rollers, Guide Plate & Sensors)] on later page for the actual operation.**
	Calibration - Shading	If required.	**See [8.22.6 Motion] for further information.** The following adjustment sheets are needed.  SHADING SHEET (for Calibration and Stitching)  CORRECTION CHART (for Black Brightness Correct)
	Calibration - Stitch adjustment	If required.	
	Calibration - Black brightness correct	If required.	
Machine frame	Driving Gears	If required.	Apply silicone grease to the gears. **See [6.2.3.3 Lubrication of driving gears on machine frame] for further details.**
	HV copper plates	If required.	Apply electric conductive grease to the HV copper plates. **See [6.2.3.2 Lubrication of HV copper plates in developer unit] for further details.**
Developer Unit	HV copper plates	If required.	Apply electric conductive grease to the HV copper plates. **See [6.2.3.2 Lubrication of HV copper plates in developer unit] for further details.**

6. 2. 3 Maintenance operations

6. 2. 3. 1 Cleaning of scanner (Scan Glass, Rollers, Guide Plate & Sensors)

It is recommended to clean each Scan Glass, Feeding Rollers and Guide Plates as the scan/copy image may become defective if these parts are dirty.
It is also recommended to clean the Sensors because dirt on any sensor may result in incorrect detection of original.

⚠ NOTE

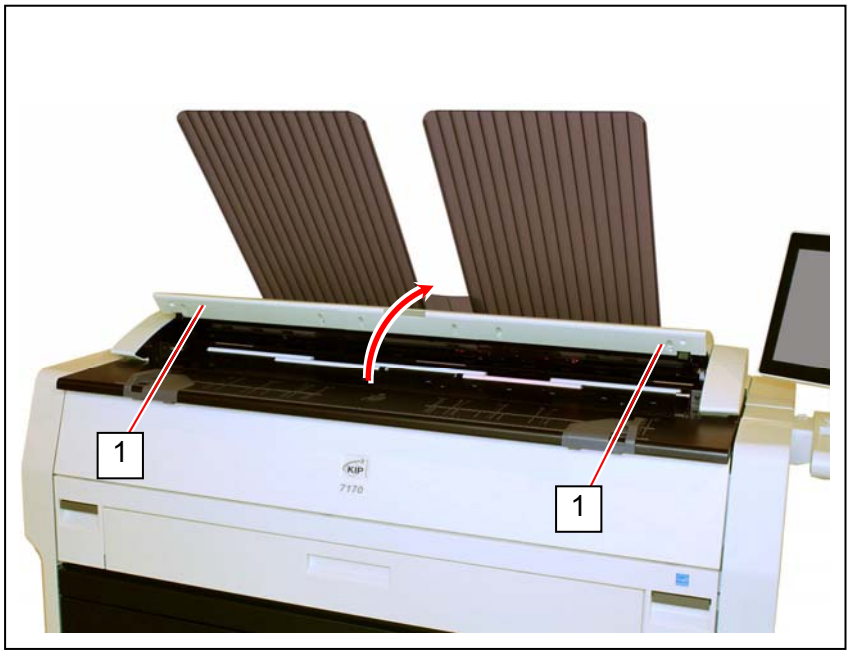
(1) Open/close the Upper Unit with holding both sides of the Upper Unit.

(2) Be careful not to catch your finger in the Upper Unit.

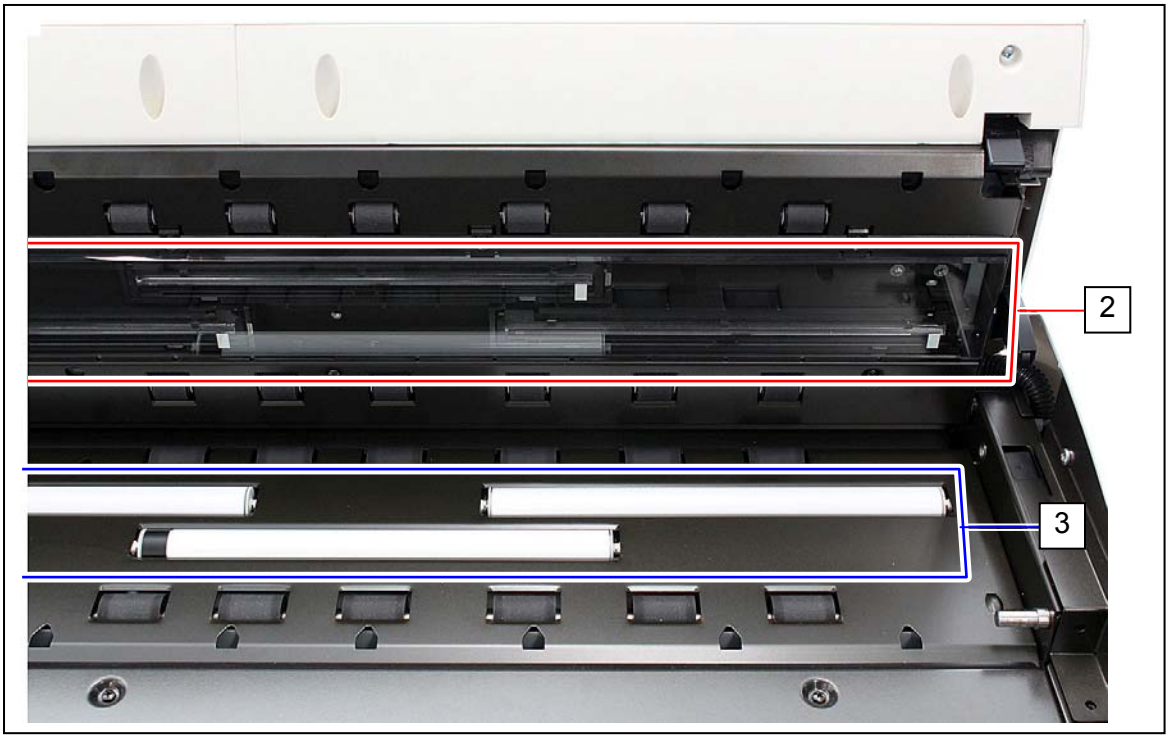
(3) For ease of visual check, this document shows the Upper Unit fully open (not actual wide).

1. Turn off KIP 7170.

2. Lift up both sides (1) of the Scanner Unit.



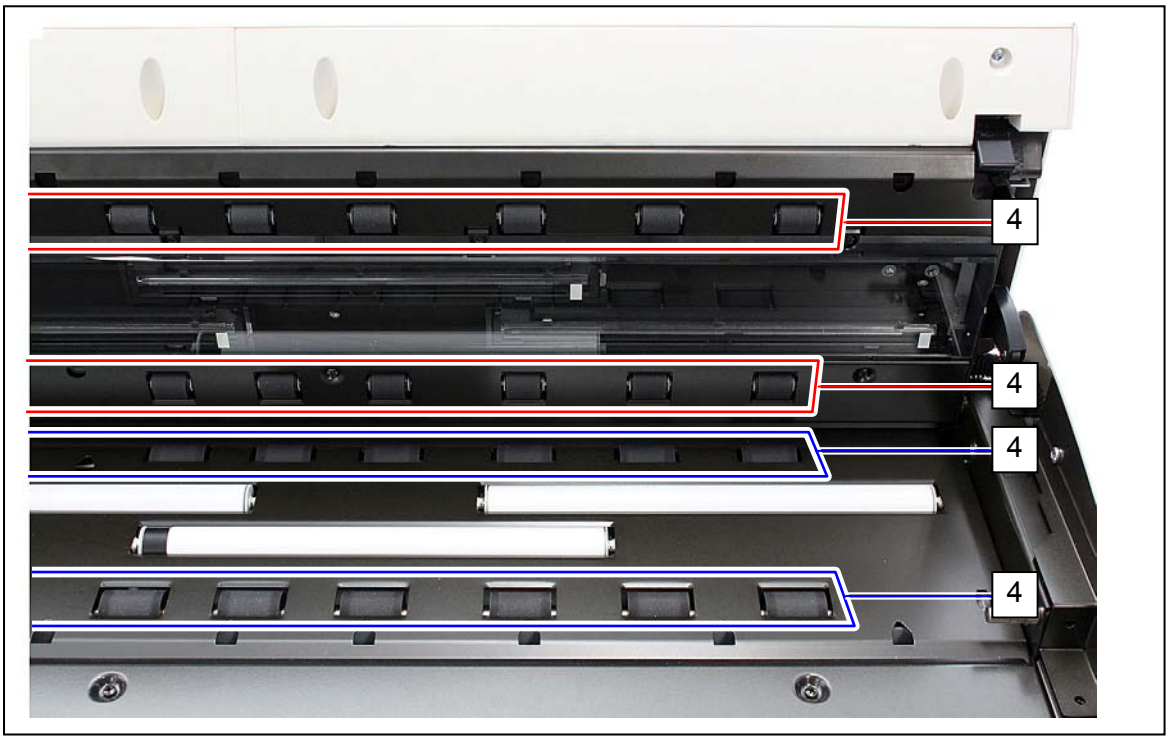
3. Gently wipe the Scan Glass (2) and Feed Rollers (white) (3) with a soft cloth.
   Equal mixture of water and neutral detergent can be used.



NOTE

Do not use organic solvent, glass cleaner and anti-static spray for the cleaning.

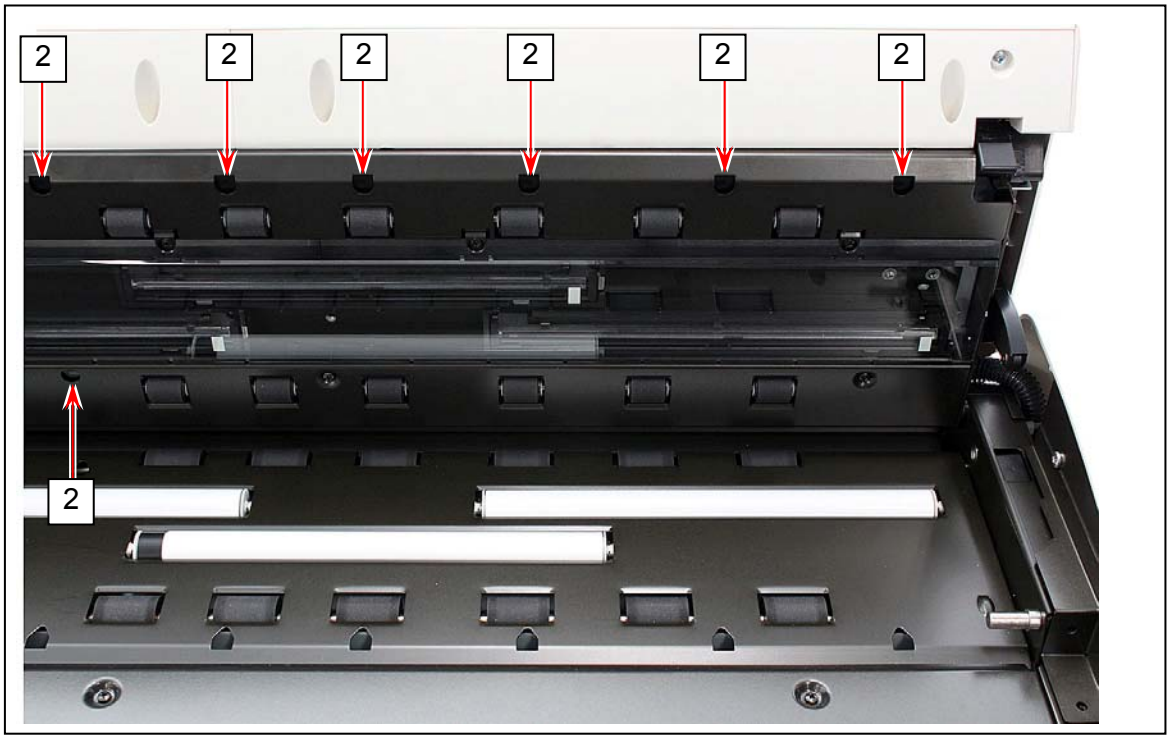
4. Wipe the Feed Rollers (rubber) (4) with a dry cloth.



5. Wipe dry the Feeding Rollers.

6. Wipe the Upper Guide Plate (5) and the Lower Guide Plate (6) with a dry cloth.

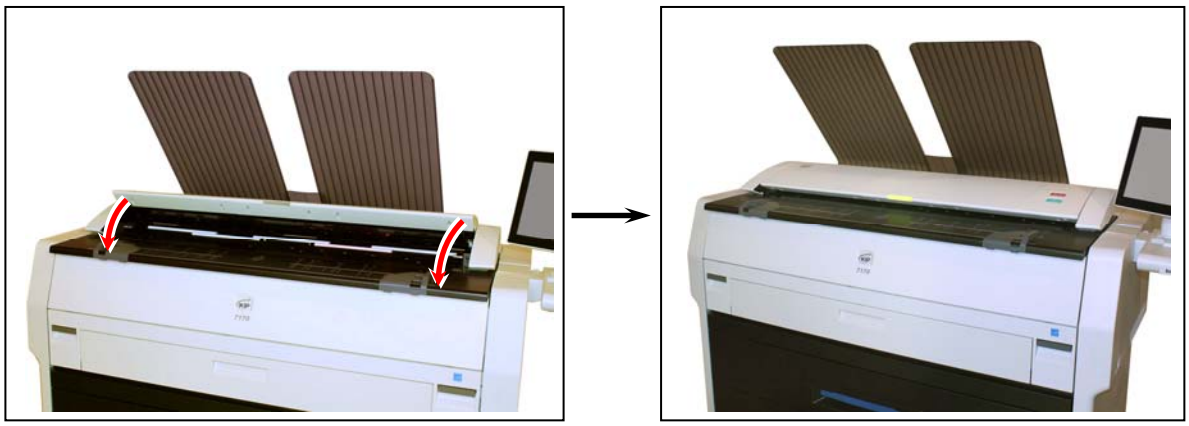
8. Gently wipe Sensors (2) with a dry cotton bud.



NOTE

Do not use water, organic solvent, glass cleaner or antistatic spray for cleaning.

9. Gently press Scanner Unit down and firmly close it.



NOTE

Press down Scanner Unit on both side to close it.
Do not close it by pressing only one side down.

6. 2. 3. 2 Cleaning of UI Assy (Touch Panel)

1. Wipe the Touch Screen with a dry cloth.

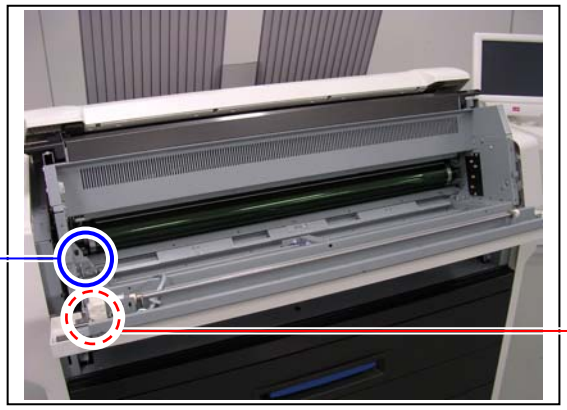
⚠ NOTE

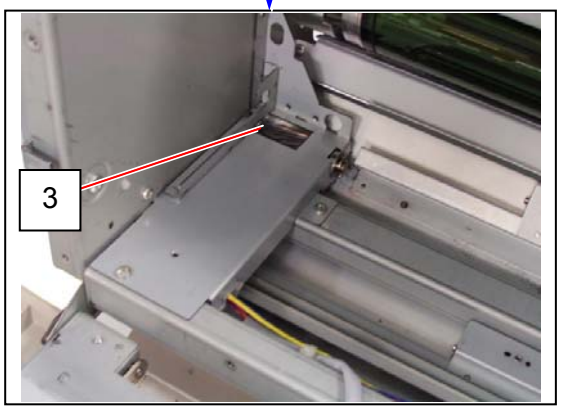
Do not use water, alcohol, organic solvent and glass cleaner for the cleaning.

6. 2. 3. 3 Lubrication of driving gears on machine frame

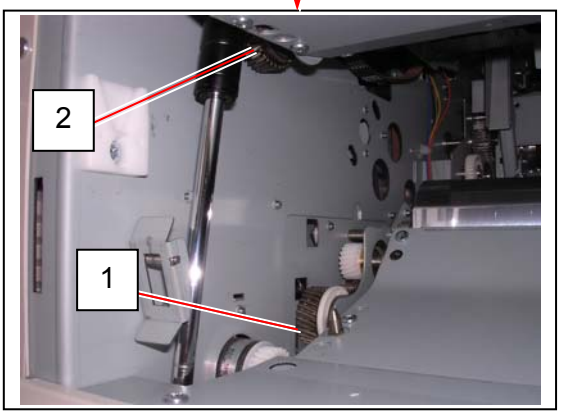
Please apply an adequate amount of silicon grease to the gears shown in below. Recommended lubrication term is in every 18,000m.

Remove Developer Unit and Fuser Unit.
Apply grease to Gear 3 (1), Gear Helical 34T (2), Gear Helical 20T (3).
Apply heat-proof grease to Gear 36T (4).

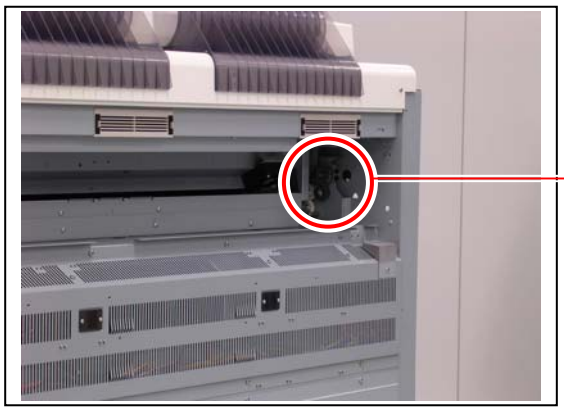




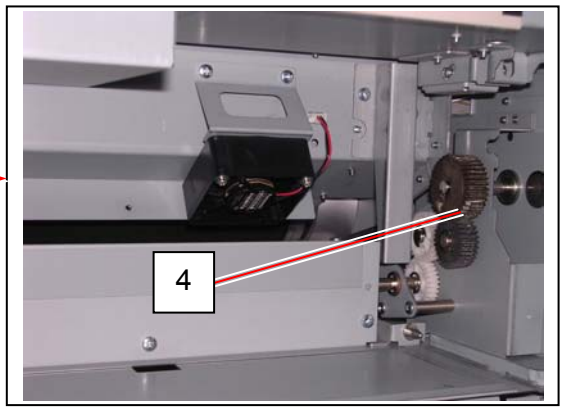
Engine Unit from top, Developer Unit removed



Engine Unit open, Developer Unit removed



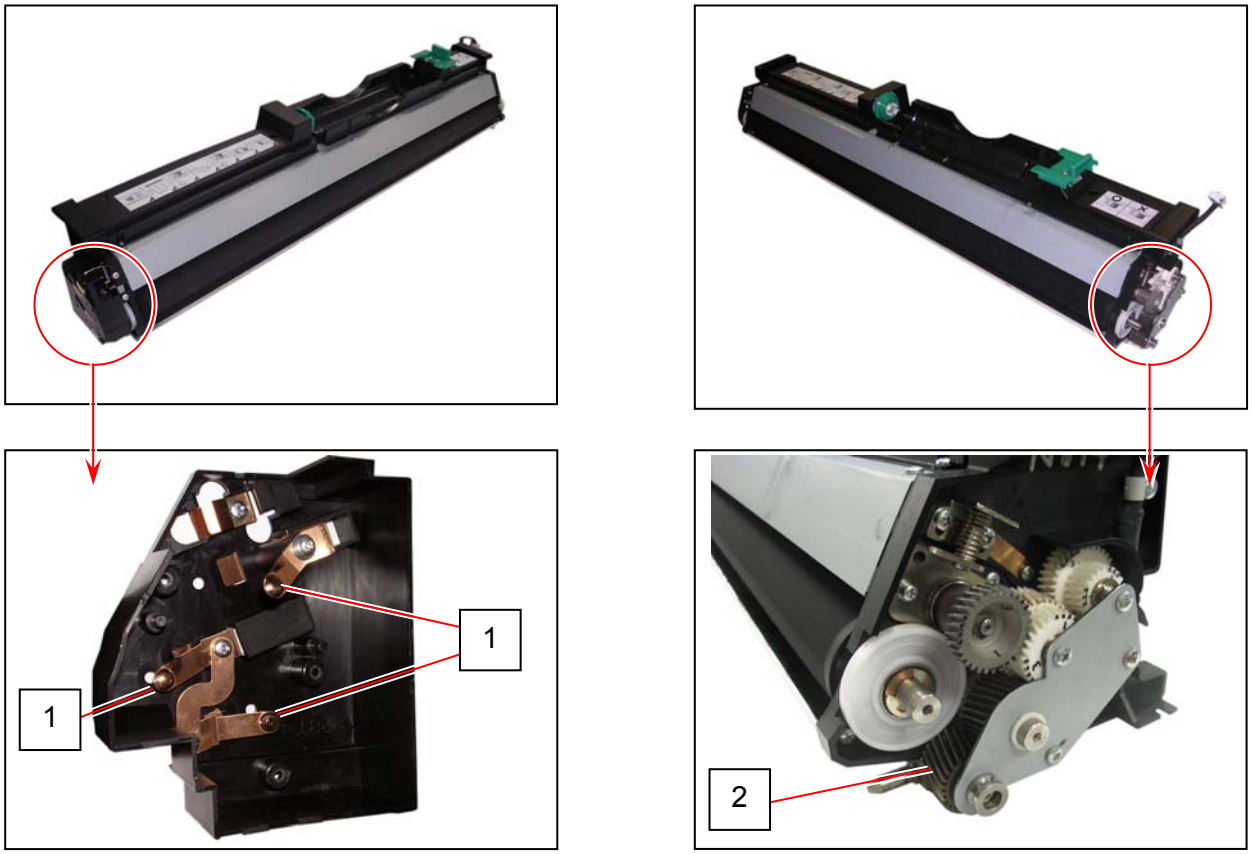
From rear, Fuser Unit removed



6. 2. 3. 4 Lubrication of HV copper plates in developer unit

Please apply an adequate amount of electric conductive grease to the gears shown in below.
Recommended lubrication term is in every 18,000m.

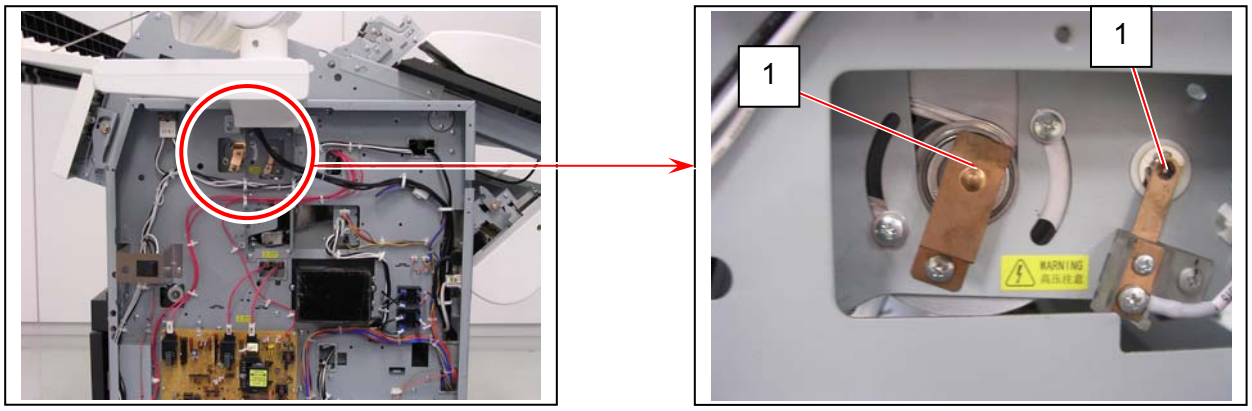
Remove Developer Unit.
Apply conductive grease to the contacting points for Developer/Blade/Toner Supply Rollers on the metal plates (1).
Apply grease to Gear Helical 28T (2).



6. 2. 3. 5 Lubrication of HV copper plates on machine frame

Please apply an adequate amount of electric conductive grease to the gears shown in below.
Recommended lubrication term is in every 18,000m.

Open Engine Unit.
Apply conductive grease to the contacting points for Photoconductive Drum / Cleaning Roller on the metal plates (1).



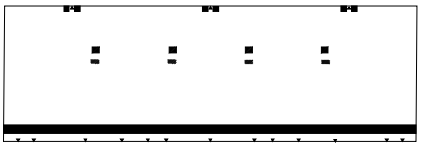
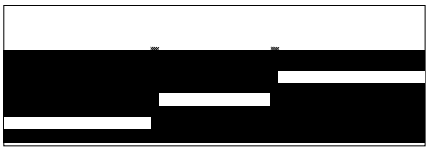
6. 3 Service Kit

The following service kits are assigned taking the serviceability into consideration.

Kit Name (Part Number)	Contained Parts	Quantity	Remarks
Starting Kit 7170 (Z340980030)	Starting Toner (500g)	1	[5.2.2 Replacement of Recommended Periodic Replacement Parts]
Developer Maintenance Kit A (Z160980020)	Scraper	1	[5.2.2 Replacement of Recommended Periodic Replacement Parts]
	Sheet	2	
	Sheet 2	2	
	Roller Developer	1	
	Sheet 3	2	
	Sheet 4	2	
	Blade Roller	1	
	Seal R2 Assy	1	
	Seal L2 Assy	1	
	Seal 1	2	
	Seal 23	2	
	Seal 3	2	
	Seal 4	2	
Developer Seal Set (Z160980150)	Seal R2 Assy	1	
	Seal L2 Assy	1	
	Seal 1	2	
	Seal 23	2	
	Seal 3	2	
	Seal 4	2	
Corona Wire Kit (Z160980200)	Corona Wire (1) Assy	1	[5.7.2 Replacement of Corona Wire]
	Spring 2	1	
	Corona Wire	2	[5.8.2 Replacement of Corona Wire]
	Wire Spring	4	
Filter Kit (Z160980220)	Filter 4	1	right, middle rear, upper
	Filter 3 Assy	2	
Fuser Maintenance Kit (Z160980040)	Roller Fusing	1	[5.3.2 Replacement of Recommended Periodic Replacement Parts]
	Bush	2	
	Nail Stripping	13	
	Nail Lower	6	
Nail Stripping Set (Z160980190)	Nail Stripping	13	
Nail Lower Set (Z160980130)	Nail Lower	6	
Toner Kit 7170 (Z340970010)	Toner Cartridge	2	
Photoconductive Drum (Z344700010)	Photoconductive Drum	1	[5.5.1 Replacement of Photoconductive Drum]

6. 4 Service Tool List

Here is the table to list special tools for field service.
It is recommended to check them through in Parts Manual and Techinical Bulletin for the latest information.

Part Name (Part Number)	Appearance / Usage Requirement	Related Section
DEV HANDLE ASSY (Developer Handle) (Z050320050)		5.2.2 Replacement of Recommended Replacement Parts 5.2.3 Replacement of Toner Supply Roller 5.2.8 Readjustment of the pressure of Regulation Roller
DRUM BLOCK FIX TOOL (Z168580040)		5.5.2 How to fix the Aluminum Blocks 5.5.3 Cleaning of Photoconductive Drum 5.6.2 LED focus adjustment
SPACER SET (LED focus) t0.1mm t0.08mm t0.05mm (Z160980210)		5.6.2 LED focus adjustment
SHADING SHEET (Z298500082)		8.22.6.1 Shading 8.22.6.2 Stitching
CORRECTION CHART (Z298500380)		8.22.6.3 Black Brightness Correct
K129 Diag (Scanner adjustment)	Windows 7 (64 bit / 32 bit), Vista (32bit), XP (32 bit)	8.22.6.1 Shading 8.22.6.2 Stitching 8.22.6.3 Black Brightness Correct 8.22.4 Backup Data 8.22.5 Update

6. 5 Disposal of machine

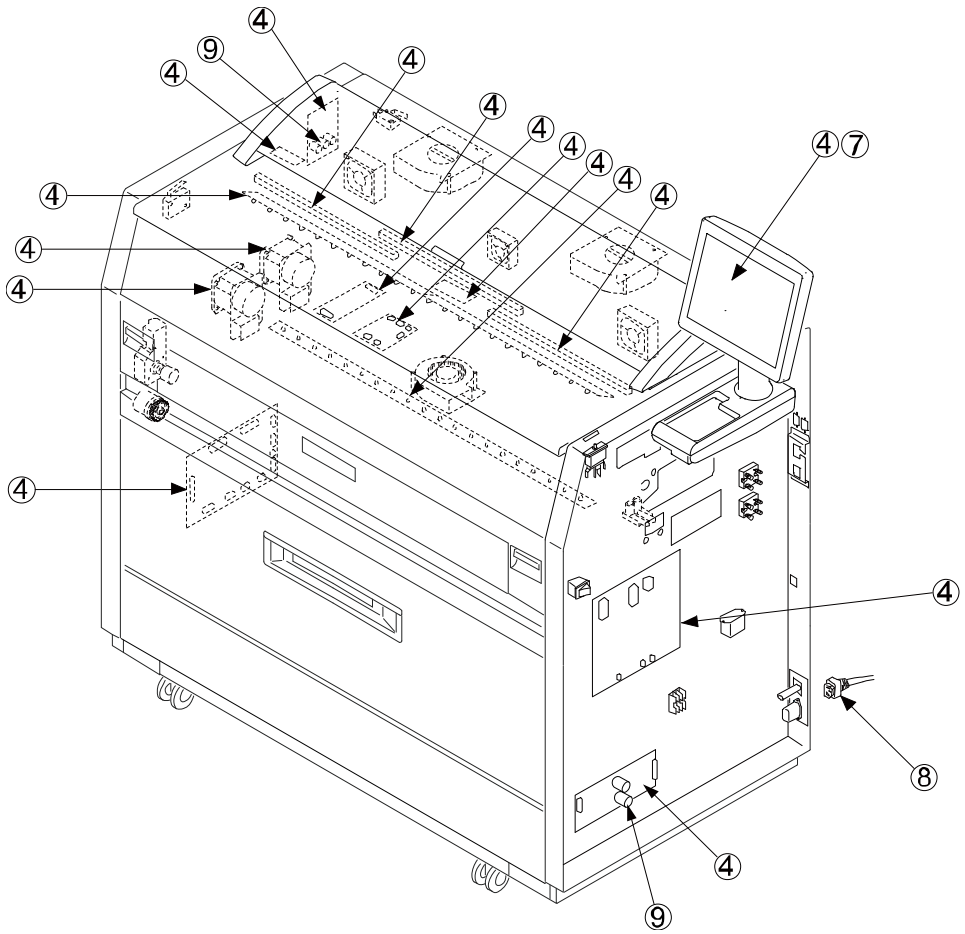
Location of parts which should be removed from the waste machine

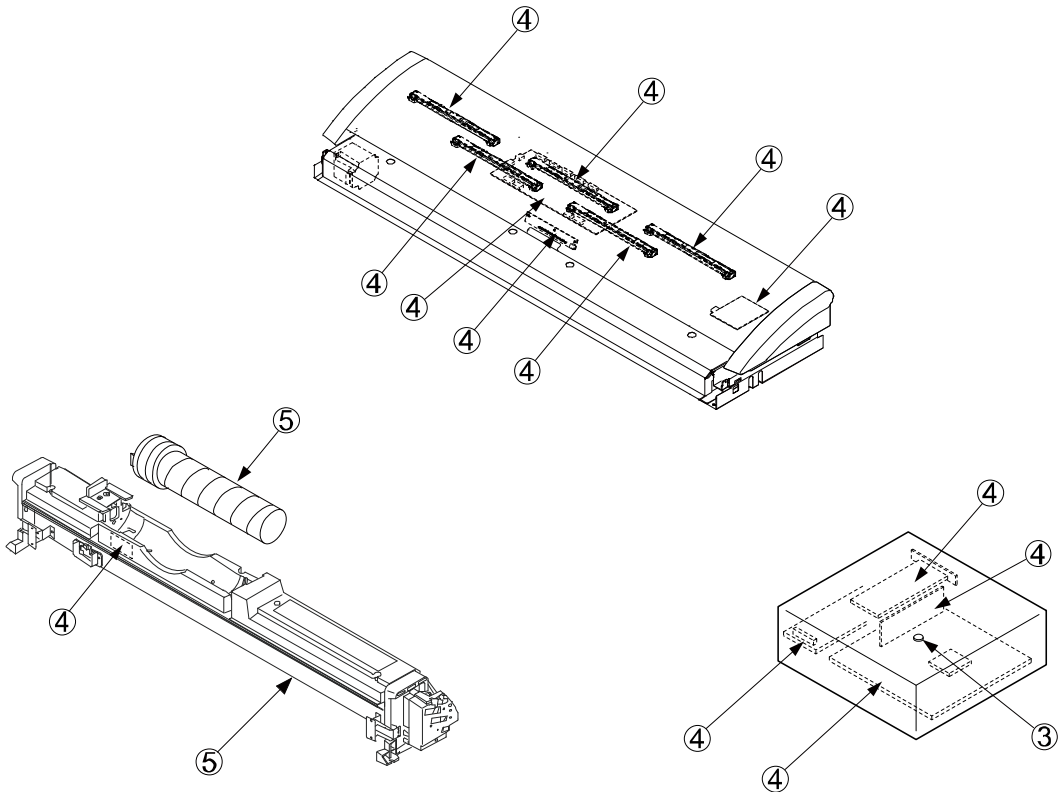
> **⚠ NOTE**
>
> The illustrated components below must be disposed of by a waste disposer.

1. polychlorinated biphenyls (PCB) containing capacitors in accordance with Council Directive 96/59/EC of 16 September 1996 on the disposal of polychlorinated biphenyls and polychlorinated terphenyls (PCB/PCT)(1),
2. mercury containing components, such as switches or backlighting lamps,
3. batteries
4. printed circuit boards of mobile phones generally, and of other devices if the surface of the printed circuit board is greater than 10 square centimeters,
5. toner cartridges, liquid and pasty, as well as colour toner,

> **⚠ NOTE**
>
> Flammable. Do not dispose of used toner or Toner Cartridge in the fire.
> Doing so may increase a risk of explosion.

6. plastic containing brominated flame retardants,
7. liquid crystal displays (together with their casing where appropriate) of a surface greater than 100 square centimeters and all those back-lighted with gas discharge lamps,
8. external electric cables,
9. electrolyte capacitors containing substances of concern (height > 25 mm, diameter > 25 mm or proportionately similar volume)




④
④
④
④
④
④
④
④
⑤
④
⑤
④
④
④
④
③

Chapter 7

Troubleshooting

Page

7. 1 Troubleshooting - Printer Errors 7- 3
7. 1. 1 Countermeasures - Operator Call Errors 7- 3
7. 1. 1. 1 Manual (By-Pass Paper) feed “Delay” 7- 3
7. 1. 1. 2 Roll 1/2 Set Sensor “Delay” 7- 3
7. 1. 1. 3 Feed (R-EDGE) Sensor “Delay”, “Early” 7- 4
7. 1. 1. 4 Registration Sensor “Delay”, “Stay”, “Early”, “Remained” 7- 5
7. 1. 1. 5 Separation Sensor “Delay”, “Stay”, “Early”, “Remained” 7- 5
7. 1. 1. 6 Fuser Exit Sensor “Delay”, “Stay”, “Early”, “Remained” 7- 6
7. 1. 1. 7 Exit Encoder (STACKJ_S) Sensor Jam 7- 6
7. 1. 1. 8 Optional Device Jam “Delay”, “Stay” 7- 6
7. 1. 1. 9 Deck Open 7- 7
7. 1. 1.10 Deck Jam 7- 7
7. 1. 1.11 Manual Set NG 7- 8
7. 1. 1.12 Toner Empty 7- 8
7. 1. 1.13 The door opened during the print 7- 9
7. 1. 1.14 Stacker Communication Error 7- 9
7. 1. 1.15 Abnormal variation in cut length 7- 9
7. 1. 1.16 Output tray full 7- 9
7. 1. 2 Countermeasures - Service Call Errors 7-10
7. 1. 2. 1 Cutter Error (E-0101h/E-257) 7-12
7. 1. 2. 2 Process 1 Developer Set Motor Error (E-0301h/E-769) 7-12
7. 1. 2. 3 Process 1 Developer Drum Motor Error (E-0302h/E-770) 7-13
7. 1. 2. 4 Out of Process 1 Developer Error (E-0310h/E-784) 7-13
7. 1. 2. 5 Abnormal output of Process 1 1st Charger (E-0320h/E-800) 7-13
Abnormal output of Process 1 Transfer Charger (E-0321h/E-801) 7-13
Abnormal output of Process 1 Separation Charger (E-0322h/E-802) 7-13
7. 1. 2. 6 Abnormal output of Process 1 Developer Bias (E-0323h/E-803) 7-14
7. 1. 2. 7 Process 1 LED Printhead 1 Error (E-0330h/E-816) 7-14
Process 1 LED Printhead 2 Error (E-0331h/E-817) 7-14
Process 1 LED Printhead 3 Error (E-0332h/E-818) 7-14
7. 1. 2. 8 Process 1 Density Sensor Error (E-0335h/E-821) 7-15
7. 1. 2. 9 Process 1 Density Compensation Error (E-0336h/E-822) 7-15
7. 1. 2.10 Counter-A Error (E-0800h/E-2048) 7-15
7. 1. 2.11 Fuser Low-Temp Error (E-0900h/E-2304) 7-16
Fuser Thermostat Error (E-0903hE-2307) 7-16
7. 1. 2.12 Fuser Over-Temp Error (E-0901h/E-2305) 7-17
7. 1. 2.13 Fuser Motor Error (E-0920h/E-2336) 7-17
7. 1. 2.14 Backup Data Write Error (E-0A00h/E-2560) 7-18
7. 1. 2.15 Main Board Error (E-0A20h/E-2592) 7-18
7. 1. 2.16 KNC1 Error (E-0A41h/E-2625) 7-18

7. 2 Troubleshooting - Image Quality Defects 7-19
7. 2. 1 Basic Image Adjustment 7-19
7. 2. 2 Countermeasures - Image Quality Defects 7-20
7. 2. 2. 1 Halftone is too light 7-20
7. 2. 2. 2 Halftone and solid black are too light 7-22
7. 2. 2. 3 The whole image is extremely light 7-23
7. 2. 2. 4 Density is uneven 7-24

7. 2. 2. 5 Totally appeared foggy image 7-24
7. 2. 2. 6 Foggy image or blurred black wide line (vertical) 7-25
7. 2. 2. 7 Clear black thin line (vertical) 7-25
7. 2. 2. 8 White line (Vertical) 7-26
7. 2. 2. 9 Void of image 7-27
7. 2. 2.10 Dirt on the back of the print 7-28
7. 2. 2.11 Defective fusing 7-28
7. 2. 2.12 Defective image placement, No Leading Edge 7-29
7. 2. 2.13 Jitter 7-29
7. 2. 2.14 Image looks not sharp 7-30
7. 2. 2.15 Uneven image density (vertical) 7-30
7. 2. 2.16 Completely white (No image) 7-31
7. 2. 2.17 Completely black 7-31
7. 2. 2.18 Crease of paper 7-32
7. 2. 2.19 Double image 7-33
7. 2. 2.20 Dirt on the print (Offset) 7-34
7. 2. 2.21 Image Void on Long Print without Crease 7-34
7. 2. 2.22 Crease on Long Print (and image void at a time) 7-35

7. 3 Troubleshooting - Scanner Defects 7-37
7. 3. 1 Countermeasures - scanner operation 7-37
7. 3. 1. 1 Original can not be set (Old Scanner) (Scanner does not transport) 7-37
7. 3. 1. 2 Scanner does not start scanning from the original set position 7-38
7. 3. 1. 3 Original can not be set (Original feeding does not stop) 7-38
7. 3. 1. 4 Original is mis-fed 7-38
7. 3. 1. 5 Motor rotates endlessly at the time of turning on 7-38
7. 3. 1. 6 Scanner is not recognized 7-39
7. 3. 1. 7 Check of Size Sensors 7-39
7. 3. 1. 8 Check of Document Sensor Front 7-40
7. 3. 1. 9 Check of Document Sensor Rear 7-40
7. 3. 2 Countermeasures - scanner image quality 7-41
7. 3. 2. 1 Completely black 7-41
7. 3. 2. 2 Vertical black lines 7-41
7. 3. 2. 3 Vertical white lines 7-41
7. 3. 2. 4 Some image is lost at the boundary of Image Blocks 7-41
7. 3. 2. 5 Vertical image gap between Image Blocks 7-41
7. 3. 2. 6 Image quality is not good 7-42
7. 3. 2. 7 Density is different between left and right 7-42
7. 3. 2. 8 Difference of image density between image blocks 7-42

7. 4 Touch Screen Calibration 7-43

7. 5 Internal Counter Error 7-46

7. 1 Troubleshooting - Printer Errors

7. 1. 1 Countermeasures - Operator Call Errors

Reference

Delay : Paper arrives the sensor much later than required timing.
Stay : Paper exists on the sensor for longer time than required.
Early : Paper arrives the sensor much earlier than required timing.
Remained : Paper has already existed on the sensor when turning on the machine.

7. 1. 1. 1 Manual (By-Pass Paper) feed “Delay”

By-Pass Paper Feed Jam (J-00000001)

Cause	Checking order	Checking	Result	Treatment

7. 1. 1. 2 Roll 1/2 Set Sensor “Delay”

Jam at Paper Deck 1 (J-00000002)

Cause	Checking order	Checking	Result	Treatment
Installation of roll paper	1	Is the roll paper correctly installed to the Roll Decks 1/2?	No	Install it correctly.
Roll 1 Set Sensor (PH7)	2	Check the status of Roll Set Sensors in Input Check of the Service Mode. Signal Code : 00105 **R1SET-S** (Roll 1 Set Sensor) 00106 **R2SET-S** (Roll 2 Set Sensor) Is the status “H” when the roll paper is set?	No	1. Is there any problem with the Drawer Connector which connects the machine and the Roll Deck. 2. Check if there is any problem with the wire connected to the Roll Set Sensor. 3. Replace the Roll Set Sensor if there is no problem with the wire.
Roll 1 Feed Clutch (CL4)	3	Check the operation of Roll 1 Feed Clutch in Output Check of the Service Mode. Device Code : 00006 **R1FD-CL** (Roll 1 Feed Clutch) 00008 **R2FD-CL** (Roll 2 Feed Clutch) Does the clutch operate when you change the output signal from “L” to “H”?	No	1. Check if there is any problem with the wire connected to the Roll Feed Clutch. 2. Replace the Roll Feed Clutch if there is no problem with the wire.
Main Motor (M1)	4	Check the status of Roll 1 Set Sensor in Input Check of the Service Mode while making the following operation. (Signal Code : 00105 / 00106) 1. Set the leading edge of roll between feeding rollers. (Leading edge must not pass over the Roll Set Sensor.) 2. Close the Roll Deck. Does the status change from “L” to “H” when the machine is transporting the paper?	No	1. Check the driving belts of the Roll Deck. 2. Check if there is any problem with the wire connected to the Main Motor. 3. Replace the Main Motor if there is no problem with the wire.
			Yes	1. Remove the whole Roll Deck, and then re-install it to the machine correctly.

7. 1. 1. 3 Feed (R-EDGE) Sensor “Delay”, “Early”

Jam at Paper Deck 1 (J-00000002)
Middle Paper Feed Jam (J-00000100)

Cause	Checking order	Checking	Result	Treatment
Mis-feed of paper	1	Does the paper mis-fed occur between Roll 1 Set Sensor and Feed Sensor?	Yes	Remove the mis-fed paper.
Feed Sensor (PH6)	2	Check the status of Feed Sensor in Input Check of the Service Mode. Signal Code : 00108 **FEED-S (R-EDGE)**(Feed Sensor) Is the status “L” when the paper is not passing beside the sensor? And is it “H” when the paper is passing beside the sensor?	No	1. Is there any problem with the Drawer Connector which connects the machine and the Roll Deck. 2. Check if there is any problem with the wire connected to the Feed Sensor. 3. Replace the Feed Sensor if there is no problem with the wire.
Cutter Home Position Sensor (MS6 & MS7)	3	Check the status of Cutter Home Position Sensors in Input Check of the Service Mode. Cutter Home Position Signal Code : 00094 **MS-CUTR** (Right) 00095 **MS-CUTL** (Left) Is the status “H” when the Cutter is at each home position? And is it “L” when the Cutter is not at the home position?	No	1. Check if there is any problem with the wire connected to the Cutter Home Position Sensor. 2. Replace the Cutter Home Position Sensors if there is no problem with the wire.
Driving mechanism	4	Check the operation of Feed Clutch in Output Check of the Service Mode. Device Code : 00010 **FEED-CL** (Feed Clutch) Also open and close the Roll Deck, and check if the Main Motor rotates correctly. Does each Feed Clutch and Main Motor operate correctly?	No	Replace the Feed Clutch or Main Motor if it is defective.

7. 1. 1. 4 Registration Sensor “Delay”, “Stay”, “Early”, “Remained”

Registration Part Jam (J-00000200)

Cause	Checking order	Checking	Result	Treatment
Mis-feed of paper	1	Does the paper mis-fed occur around the Registration Roller?	Yes	Remove the mis-fed paper.
Registration Sensor (PH1)	2	Check the status of Registration Sensor in Input Check of the Service Mode. Signal Code : 00100 **REGIST-S**(Registration Sensor) Is the status “L” when the paper is not passing beside the sensor? And is it “H” when the paper is passing beside the sensor?	No	1. Check if there is any problem with the wire connected to the Registration Sensor. 2. Replace the Registration Sensor if there is no problem with the wire.
Engine Unit	3	Is the Engine Unit closed firmly until it is locked? (Is the pressure around the Registration Roller correct?)	No	1. Close the Engine Unit firmly. 2. Adjust the pressure around the Registration Roller.
Driving mechanism	4	Check the operation of Registration Clutch in Output Check of the Service Mode. Device Code : 00011 **REG.-CL** (Registration Clutch) Also open and close the Roll Deck, and check if the Main Motor rotates correctly. Does each Registration Clutch and Main Motor operate correctly?	No	Replace the Registration Clutch or Main Motor if it is defective.

7. 1. 1. 5 Separation Sensor “Delay”, “Stay”, “Early”, “Remained”

Registration Part Jam (J-00000200)

Cause	Checking order	Checking	Result	Treatment
Mis-feed of paper	1	Does the paper mis-fed occur around the separation area?	Yes	Remove the mis-fed paper.
Separation Sensor (PH2)	2	Check the status of Separation Sensor in Input Check of the Service Mode. Signal Code : 00010 **SEP-S** (STRIP_S) (Separation Sensor) Is the status “L” when the paper is not passing beside the sensor? And is it “H” when the paper is passing beside the sensor?	No	1. Check if there is any problem with the wire connected to the Separation Sensor. 2. Replace the Separation Sensor if there is no problem with the wire.
Transfer / Separation Corona	3	Is the Transfer / Separation Corona Unit installed to the machine correctly?	Yes	Install the Transfer / Separation Corona Unit correctly.
		Is the Corona Wire broken?	Yes	Replace the Corona Wire.
HV Power Supply	4	Is the output from the HV Power Supply to the Separation Corona correct?	No	Replace the HV Power Supply.

7. 1. 1. 6 Fuser Exit Sensor “Delay”, “Stay”, “Early”, “Remained”

Exit Part (Top) Jam (J-04000000)

Cause	Checking order	Checking	Result	Treatment
Mis-feed of paper	1	Does the paper mis-fed occur around the fuser area?	Yes	Remove the mis-fed paper.
Exit Sensor (PH3)	2	Check the status of Exit Sensor in Input Check of the Service Mode. Signal Code : 00011 **EXIT-S** (HEAT_EXIT) (ExitSensor) Is the status “L” when the paper is not passing beside the sensor? And is it “H” when the paper is passing beside the sensor?	No	1. Check if there is any problem with the wire connected to the Exit Sensor. 2. Replace the Exit Sensor if there is no problem with the wire.

7. 1. 1. 7 Exit Encoder (STACKJ_S) Sensor Jam

Exit Part (Rear) Jam (J-08000000)

Cause	Checking order	Checking	Result	Treatment
Mis-feed of paper	1	Does the paper mis-fed occur around the fuser area?	Yes	Remove the mis-fed paper.
Exit Encoder (STACKJ_S) (PH16)	2	Check the status of Exit Sensor in Input Check of the Service Mode. Signal Code : 00111 **EXIT-ENC** (STACKJ-S) (Encoder Sensor (Exit)) Does the status change “L” and “H” when the paper feeds?	No	1. Check if there is any problem with the wire connected to the Encoder sensor (Exit). 2. Replace the Encoder Sensor (Exit) if there is no problem with the wire.

7. 1. 1. 8 Optional Device Jam “Delay”, “Stay”

Stacker Jam (J-10000000)

Cause	Checking order	Checking	Result	Treatment
Installation Position	1	Is the distance between the printer and the optional device not appropriate (too far away)?	Yes	Install it correctly.
Mis-feed of paper	2	Does the paper mis-fed occur in the optional device?	Yes	Remove the mis-fed paper
Sensor in the optional device	3	Under the sensor detects the media, turn off/on the printer. Does “Stacker Jam (J-10000000)” occur?	No	1. Check if there is any problem with the wire connected to the sensor. 2. Replace the sensor if there is no problem with the wire.

7. 1. 1. 9 Deck Open

Cause	Checking order	Checking	Result	Treatment
Roll Deck	1	Is the Roll Deck opened?	Yes	Close it firmly.
Switch (MS5)	2	Check the status of the following signal in Input Check of the Service Mode. Signal Code : 00009 **DOOROPEN**(Roll Deck Open) Is the status “L” when the Roll Deck is closed? And is it “H” when the Roll Deck is opened?	No	1. Check if there is any problem with the wire connected to the Switch (MS5). 2. Replace the Switch (MS5) if there is no problem with the wire.

7. 1. 1.10 Deck Jam

Cause	Checking order	Checking	Result	Treatment
Mis-feed of paper	1	Does the paper mis-fed occur in the Roll Deck?	Yes	Remove the mis-fed paper.
Installation of roll paper	2	Is the roll paper correctly installed to the Roll Deck 2?	No	Install it correctly.
Roll 1 Set Sensor (PH7) Roll 2 Set Sensor (PH9)	3	Check the status of Roll 1 Set Sensor and Roll 2 Set Sensor in Input Check of the Service Mode. Signal Code : 00105 **R1SET-S** (Roll 1 Set Sensor) 00106 **R2SET-S** (Roll 2 Set Sensor) Is the status of each sensor “H” when you set the roll paper?	No	1. Is there any problem with the Drawer Connector which connects the machine and the Roll Deck. 2. Check if there is any problem with the wire connected to each sensor. 3. Replace the concerning sensor if there is no problem with the wire.
Roll 1 Feed Clutch (CL4) Roll 2 Feed Clutch (CL6) Roll 1 Back Clutch (CL5) Roll 2 Back Clutch (CL7)	4	Check the operation of the following clutches in Output Check of the Service Mode. Device Code : 00006 **R1FD-CL** (Roll 1 Feed Clutch) 00007 **R1BK-CL** (Roll 1 Back Clutch) 00008 **R2FD-CL** (Roll 2 Feed Clutch) 00009 **R2BK-CL** (Roll 2 Back Clutch) Does each clutch operate correctly?	No	1. Check if there is any problem with the wire connected to each clutch. 2. Replace the concerning clutch if there is no problem with the wire.
Main Motor (M1)	5	Check the status of Roll 1 Set Sensor and Roll 2 Set Sensor in Input Check of the Service Mode while making the following operation. Signal Code : 00105 **R1SET-S** (Roll 1 Set Sensor) 00106 **R2SET-S** (Roll 2 Set Sensor) 1. Set the leading edge of each roll paper between the concerning feeding rollers. (Leading edge must not pass over each Roll 1 (2) Set Sensor.) 2. Close the Roll Deck. Does the status change from “L” to “H” when the machine is transporting the paper?	No	1. Check the driving belts of the Roll Deck. 2. Check if there is any problem with the wire connected to the Main Motor. 3. Replace the Main Motor if there is no problem with the wire.
			Yes	1. Remove the whole Roll Deck, and then re-install it to the machine correctly.

7. 1. 1.11 Manual Set NG

Cause	Checking order	Checking	Result	Treatment
Mis-feed	1	Have you already set the cut sheet paper to the Bypass Feeder before you turned on the machine?	Yes	Remove the paper.
Manual Set Sensor	2	Check the status of Manual Feed Sensor in Input Check of the Service Mode. Signal Code : 00008 **MAININ_S**(Manual Set Sensor) Is the status “L” when the paper is not passing beside the sensor? And is it “H” when the paper is passing beside the sensor?	No	1. Check if there is any problem with the wire connected to the Manual Set Sensor. 2. Replace the Manual Set Sensor if there is no problem with the wire.
Registration Sensor	3	Check the status of Registration Sensor in Input Check of the Service Mode. Signal Code : 00100 **REGIST-S** (Registration Sensor) Is the status “L” when the paper is not passing beside the sensor? And is it “H” when the paper is passing beside the sensor?	No	1. Check if there is any problem with the wire connected to Registration Sensor. 2. Replace the Registration Sensor if there is no problem with the wire.
Engine Unit	4	Is Engine Unit closed firmly? (Is the pressure around Registration Roller correct?)	No	1. Close Engine Unit firmly. 2. Adjust the pressure around Registration Roller.
Driving mechanism	5	Check the operation of Registration Clutch in Output Check of the Service Mode. Device Code : 00011 **REG.-CL** (Registration Clutch) Open and close Roll Deck and check if Main Motor rotates correctly. Does each Registration Clutch and Main Motor operate correctly?	No	Replace the Registration Clutch or Main Motor if it is defective.

7. 1. 1.12 Toner Empty

Cause	Checking order	Checking	Result	Treatment
Toner Cartridge	1	Is there enough toner in the Toner Cartridge?	No	Replace the Toner Cartridge.
Toner Supply Motor (M3)	2	Check the operation of Toner Supply Motor by the following 2 ways. 1. Turn on the machine and check the action of Toner Supply Motor at that time. 2. Enter Factory Adjustment Mode and carry out Sub Mode No.05. Press [*] Key when the machine is operating. (Toner Supply Motor rotates during [*] Key pressed.) Does Toner Supply Motor operate correctly in both cases?	No	1. Check if there is any problem with the wires among Toner Supply Motor, PW6654 02B PCB and PW13420 PCB. 2. Replace the Toner Supply Motor if there is no problem with the wire.

(continued on the next page)

Cause	Checking order	Checking	Result	Treatment
Toner Sensor (TLS1)	3	Confirm that the Toner Sensor is not buried in the toner. Then check the status of Toner Sensor in the Input/Output Mode of the Service Mode. Signal Code : 00107 **TONER-S**(Toner Sensor) Is the status “H” when the Toner Sensor is covered with the toner? And is it “L” when the sensor is not covered?	No	Replace the Toner Sensor.
			Yes	Replace the PW13420 PCB.

7. 1. 1.13 The door opened during the print

Cause	Checking order	Checking	Result	Treatment
Mis-feed of paper	1	Is there a paper anywhere in the machine?	Yes	Open the Exit Cover and the Engine Unit, and then remove the paper. (Cut the paper manually if it has not been cut yet.)
Switch (MS5)	2	Check the status of the following signal in Input Check of the Service Mode. Signal Code : 00009 **DOOROPEN** (Roll Deck Open) Is the status “L” when the Roll Deck is closed? And is it “H” when the Roll Deck is opened?	No	1. Check if there is any problem with the wire connected to the Switch (MS5). 2. Replace the Switch (MS5) if there is no problem with the wire.
Fuse	3	Does the fuse (F2) have a proper conductivity?	No	Replace the fuse (F2).

7. 1. 1.14 Abnormal variation in cut length

Cause	Checking order	Checking	Result	Treatment
Sensor (PH12) with encoder	1	Check the status of the following signal in Input Check of the Service Mode. Signal Code : 00109 **RENC-S** (FEED_ENC) (Feed Encoder) Is the status changed “H” and “L” alternately when rotating the encoder by hand?	No	1. Check if there is any problem with the wire connected to the Sensor (PH12). 2. Replace the Sensor (PH12) if there is no problem with the wire.
	2	Does the encoder rotate smoothly when feeding media by Feed Knob?	No	Replace the shaft or bracket that supports the encoder.

7. 1. 1.15 Stacker Communication Error

Cause	Checking order	Checking	Result	Treatment
Receiving PCB (PW5490) Transmission PCB (PW5491)	1	Does the externally reflected light get into the Receiving PCB / the Transmission PCB?	Yes	Block the light getting into the Receiving PCB / the Transmission PCB.
			No	Replace the Receiving PCB / the Transmission PCB.

7. 1. 2 Countermeasures - Service Call Errors

The followings are the names of Service Call Errors and the conditions that those errors occur.

Error Code	Error Indication	Conditions
E-0101h /E-257	Cutter Error	1. The Cutter Home Sensor Signal (MSCUT_L or MSCUT_R) does not change to “H” within 100 millisecond since the Cutter has started the operation. 2. The Cutter Home Sensor Signal (MSCUT_L or MSCUT_R) does not change to “L” within 1 second since the Cutter has started the operation.
E-0301h /E-769	Process 1 Developer Set Motor Error	The Developer Press Sensor Signal (PRESS_S) does not change to “L” within 30 seconds after turning on.
E-0302h /E-770	Process 1 Developer Drum Motor Error	The Main Motor Output Detection Signal (MAINM_LD) continues to be “H” for 3 seconds or longer when the Main Motor is rotating.
E-0310h /E-784	Out of Process 1 Developer Error	1. The Connector J-253 is not connected. 2. The Switch (MS4) is “open” condition, which detects open/close of Engine Unit or Toner Hatch.
E-0320h /E-800	Abnormal output of Process 1 1st Charger	The Image Corona Output Detection Signal (IM_LD) continues to be “L” for 1 second or longer when the Image Corona is ON.
E-0321h /E-801	Abnormal output of Process 1 Transfer Charger	The Transfer Corona Output Detection Signal (TR_LD) continues to be “L” for 1 second or longer when the Transfer Corona is ON.
E-0322h /E-802	Abnormal output of Process 1 Separation Charger	The Separation Corona Output Detection Signal (AC_LD) continues to be “L” for 1 second or longer when the Separation Corona is ON.
E-0323h /E-803	Abnormal output of Process 1 Developer Bias	Due to abnormality of Developer, Cleaning Roller or HV Power Supply PCB, Bias Output Detection Signal (BIAS_LD) continues to be “L” for 1 second or longer when a specified bias is supplied to the corresponding Developer Unit components.
E-0330h /E-816	Process 1 LED Printhead 1 Error	FPGA fails in transferring an adjustment data to the left block of LED Head after turning on the printer.
E-0331h /E-817	Process 1 LED Printhead 2 Error	FPGA fails in transferring an adjustment data to the central block of LED Head after turning on the printer.
E-0332h /E-818	Process 1 LED Printhead 3 Error	FPGA fails in transferring an adjustment data to the right block of LED Head after turning on the printer.

Error Code	Error Indication	Conditions
E-0335h /E-821	Process 1 Density Sensor Error	The default output of Density Sensor reaches less than 0.1V or more than 1.3V.
E-0336h /E-822	Process 1 Density Compensation Error	The gap between the default output and the standard output of Density Sensor reaches less than 2V.
E-0800h /E-2048	Counter-A Error	The Counter Connection Detection Signal (COUNT_OPN) continues to be “L” for 1 second or longer after turning on.
E-0900h /E-2304	Fuser Low-Temp Error	1. Fuser Temperature at the time of turning on was 50 to 100 °C, but it does not rise up to 120 °C within 150 seconds after that. 2. Fuser Temperature at the time of turning on was higher than 100 °C, but it does not rise up to the setting temperature within 330 seconds after that.
		The difference of temperature between center and side of fuser becomes 50 °C or more.
		The Lamp of fuser lights (Signal HEAT1 is “H”) to heat up the Fuser Roller in the ready condition, but even 1 °C of temperature rise can not be accomplished within 30 seconds.
E-0901h /E-2305	Fuser Over-Temp Error	Fuser Temperature reaches over 230 °C.
E-0903h /E-2307	Fuser Thermostat Error	Fuser Temperature does not reach 50 °C within 120 seconds after turning on.
E-0920h/E-2336	Fuser Motor Error	The Fuser Motor Output Detection Signal (HEATM_LD) continues to be “H” for 3 seconds or longer when the Fuser Motor is rotating.
E-0A00h /E-2560	Backup Data Write Error	Access to f-ram is failed.
E-0A20h /E-2592	Main Board Error	Initialization of FPGA is failed after turning on.
E-0A41h /E-2625	KNC1 Error	The information in IC Tag does not correctly match such information as “model” and “regional setting”.

7. 1. 2. 1 Cutter Error (E-0101h/E-257)

Cause	Checking order	Checking	Result	Treatment
Wires	1	Is the wire between Cutter Unit and PW13420 PCB connected properly?	No	Connect it properly.
Cutter Home Position Sensors (MS6 & MS7)	2	Check the status of the following signals in Input Check of the Service Mode. Cutter Home Position Signal Code : 00094 **MS_CUTR** (Right) 00095 **MS_CUTL** (Left) Is the status "L" when the Cutter is at each home position?	No	Replace the Cutter Unit.
Developer Press Sensor (PH4)	3	Check the operation of Cutter in Output Check of the Service Mode. Device Code : 00027 **M5-CUTL** (Cutter Motor 1) 00028 **M5-CUTR** (Cutter Motor 2) Does the Cutter operate?	No	Replace the Cutter Unit.

7. 1. 2. 2 Process 1 Developer Set Motor Error (E-0301h/E-769)

Cause	Checking order	Checking	Result	Treatment
Wires	1	Are the wires among Developer Press Sensor (PH4), PW13420 PCB, PW6654 02 PCB and Developer Press Motor (M4) connected properly?	No	Connect them properly.
Developer Press Motor (M4) PW6654 02B PCB	2	Turn off the machine, and then turn it on again. Is the Developer Unit moved to the Drum side?	No	Replace the Developer Press Motor or PW6654 02B Assy.
Developer Press Sensor (PH4)	3	Select the Signal Code "00104 **PRESS-S**" (Developer Press Sensor) in Input Check, and then turn on the machine again. Does the status change from "H" to "L" after turning on?	No	Replace the Developer Press Sensor.
Fuse	4	Does the fuse (F3) have a proper conductivity?	No	Replace the fuse (F3).

7. 1. 2. 3 Process 1 Developer Drum Motor Error (E-0302h/E-770)

Cause	Checking order	Checking	Result	Treatment
Wires	1	Is the wire between Main Motor and PW13420 PCB connected properly?	No	Connect it properly.
DC Power Supply (DCP1) or Fuse	2	Confirm that the machine is turned on, and then check the voltage of the orange line (J220-4). Is it 24V?	No	Replace the DC Power Supply if there is no problem with the wires.
		Confirm that the machine is turned off, and then check whether or not each Fuse is broken. Is any Fuse broken?	Yes	Replace the Fuse.
Main Motor (M1)	3	Check the operation of Main Motor in Output Check of the Service Mode. Device Code : 00000 **MAIN-TRG** (Main Motor) Does the Main Motor operate correctly?	No	Replace the Main Motor.

7. 1. 2. 4 Out of Process 1 Developer Error (E-0310h/E-784)

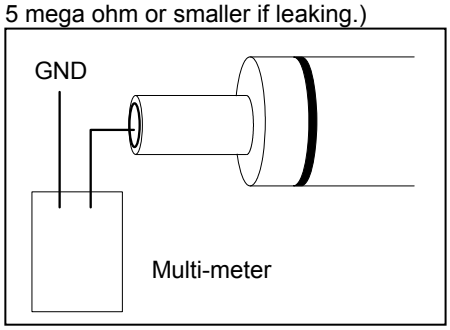
Cause	Checking order	Checking	Result	Treatment
Wires	1	Is the wire between Developer Unit and PW13420 PCB connected properly?	No	Connect it properly.
Switch (MS4)	2	Is the actuator of Switch correctly pressed down when you close the Engine Unit or Toner Hatch?	No	Adjust the positions of Switch (or Toner Hatch and Engine Unit).

7. 1. 2. 5 Abnormal output of Process 1 Error

Abnormal output of Process 1 1st Charger (E-0320h/E-800)
Abnormal output of Process 1 Transfer Charger (E-0321h/E-801)
Abnormal output of Process 1 Separation Charger (E-0322h/E-802)

Cause	Checking order	Checking	Result	Treatment
Wires	1	Are wires among Image Corona, HV Power Supply PCB and PW13420 PCB connected properly?	No	Connect them properly.
Image Corona	2	Is the Image Corona dirty?	Yes	Clean each Corona Wire, Grid Plate and housing.
		Is the Corona Wire broken?	Yes	Replace the Corona Wire.
Cleaning Roller	3	Does the bias terminal plate touch to Cleaning Roller shaft properly?	No	Remove and reapply conductive grease to Cleaning Roller shaft. Relocate the bias terminal plates properly.
		Is grease applied enough?	No	Remove and reapply conductive grease to Cleaning Roller shaft.
Transfer Corona	4	Is the Transfer Corona dirty?	Yes	Clean each Corona Wire and housing.
		Is the Corona Wire broken?	Yes	Replace the Corona Wire.
Separation Corona	5	Is the Separation Corona dirty?	Yes	Clean each Corona Wire and housing.
		Is the Corona Wire broken?	Yes	Replace the Corona Wire.
HV Power Supply	6	Can you fix the problem if you replace the HV Power Supply?	Yes	OK

7. 1. 2. 6 Abnormal output of Process 1 Developer Bias (E-0323/E-803)

Cause	Checking order	Checking	Result	Treatment
Wires	1	Are wires among Developer Unit, HV Power Supply PCB and PW13420 PCB connected properly?	No	Connect them properly.
Developer Unit	2	Is the toner spill out from the Developer Unit? (Or is there any similar problem?)	Yes	Clean each Corona Wire, Grid Plate and housing.
		Is the high voltage of Regulation Roller leaking? (The resistance between the central part of Regulation Roller and the Ground is 5 mega ohm or smaller if leaking.)  	Yes	Replace the Regulation Roller.
Cleaning Roller	3	Is Copper Plate pressed to the shaft of Cleaning Roller for secure contact?	No	Deform the Copper Plate a little by hand so that it surely presses the shaft. Remove old conductive grease and apply new one.
		Is there enough conductive grease?	No	Remove old conductive grease and apply new one.
HV Power Supply	4	Can you fix the problem if you replace the HV Power Supply?	Yes	OK

7. 1. 2. 7 Process 1 LED Printhead Error

Process 1 LED Printhead 1 Error (E-0330h/E-816)
Process 1 LED Printhead 2 Error (E-0331h/E-817)
Process 1 LED Printhead 3 Error (E-0332h/E-818)

Cause	Checking order	Checking	Result	Treatment
Wires	1	Are the wires between LED Head and PW13420 PCB connected properly?	No	Connect them properly.
LED Head	2	Can you fix the problem if you replace LED Head?	Yes	OK
PW13420 PCB	3	Can you fix the problem if you replace PW13420 PCB?	Yes	OK

7. 1. 2. 8 Process 1 Density Sensor Error (E-0335h/E-821)

Cause	Checking order	Checking	Result	Treatment
Wires	1	Is the wire between Toner Density Sensor and PW13420 PCB connected properly?	No	Connect it properly.
Density Sensor (PH11)	2	Can you fix the problem if you replace Density Sensor?	No	Replace PW13420 with a new one.

7. 1. 2. 9 Process 1 Density Compensation Error (E-0336h/E-822)

Cause	Checking order	Checking	Result	Treatment
Wires	1	Is the wire between Toner Density Sensor and PW13420 PCB connected properly?	No	Connect it properly.
Density Sensor (PH11)	2	Can you fix the problem if you replace Density Sensor?	No	Replace PW13420 with a new one.

7. 1. 2.10 Counter-A Error (E-0800h/E-2048)

Cause	Checking order	Checking	Result	Treatment
Service Mode	1	Has the setting of Backup Data Item “No.00813 Counter option setting” set to “1”?	Yes	Set it to “0”.

7. 1. 2.11 Fuser Low-Temp Error

Fuser Low-Temp Error (E-0900h/E-2304)
Fuser Thermostat Error (E-0903hE-2307)

Cause	Checking order	Checking	Result	Treatment
Error clearance	1	Have you cleared the fuser error in the Error Clear Mode? (Refer to 8.11 Clear/Reset)	Yes	Wait until the Fuser Unit is enough cooled down. Then select the Error Clear Mode and clear the concerning error.
Wires	2	Are wires among Lamp (H1, H2), Solid State Relay (SSR1) and Thermistors (TH1 & TH2) connected properly?	No	Connect them properly.
Lamp (H1, H2)	3	Unplug the machine, and then check the resistance of Lamp (H1, H2) with the multi-meter. Is it 15k ohm or lower?	No	Replace the Lamp.
Thermistors (TH1 & TH2)	4	Select the Information Mode, and then check the temperature of fuser detected by Thermistors (TH1 & TH2). Item No. : 00 (Fuser temperature 1) 01 (Fuser temperature 2) Is each temperature normal?	No	Replace the concerning Thermistor.
DC Power Supply (DCP1) or Fuse	5	Confirm that the machine is turned on, and then check the voltage of the orange line (J220-4). Is it 24V?	No	Replace the DC Power Supply if there is no problem with the wires.
		Confirm that the machine is turned off, and then check whether or not each Fuse is broken. Is any Fuse broken?	Yes	Replace the Fuse.
Relay (RY1)	6	Select Output Check, and then change the signal of the following signal to “H”. Device Code : 00022 **HEAT-RY** (Fuser Relay) And check the resistance between the following points. Between RY1-2 and RY1-4 Between RY1-6 and RY1-8 Is the each resistance almost 0 ohm?	No	Replace the Relay.
Solid State Relay (SSR1)	7	Select Output Check, and then change the signal of the following signals to “H”. Device Code : 00022 **HEAT-RY** (Fuser Relay) 00021 **HEAT1** (Fuser Lamp 1) Then check the voltage between J105-1 and J105-2. Is it 0V? **CAUTION** **Change the signal of “21” (Fuser Lamp 1) to “L” after checking!**	Yes	Replace the Solid State Relay
			No	Replace the PW13420 PCB.

7. 1. 2.12 Fuser Over-Temp Error (E-0901h/E-2305)

Cause	Checking order	Checking	Result	Treatment
Error clearance	1	Have you cleared the fuser error in the Error Clear Mode? (Refer to 8.11 Clear/Reset)	Yes	Wait until the Fuser Unit is enough cooled down. Then select the Error Clear Mode and clear the concerning error.
Wires	2	Are wires among Lamp (H1, H2), Solid State Relay (SSR1) and Thermistors (TH1 & TH2) connected properly?	No	Connect them properly.
Solid State Relay (SSR1)	3	Does the error occur again even if you have cleared it in the Error Clear Mode?	Yes	Replace the Solid State Relay.
Thermistors (TH1 & TH2)	4	Select the Information Mode, and then check the temperature of fuser detected by Thermistors (TH1 & TH2). Item No. : 00 (Fuser temperature 1) 01 (Fuser temperature 2) Is each temperature normal?	No	Replace the concerning Thermistor.

7. 1. 2.13 Fuser Motor Error (E-0920h/E-2336)

Cause	Checking order	Checking	Result	Treatment
Wires	1	Is the wire between Fuser Motor and PW13420 PCB connected properly?	No	Connect it properly.
DC Power Supply (DCP1) or Fuse	2	Confirm that the machine is turned on, and then check the voltage of the orange line (J220-4). Is it 24V?	No	Replace the DC Power Supply if there is no problem with the wires.
		Confirm that the machine is turned off, and then check whether or not each Fuse is broken. Is any Fuse broken?	Yes	Replace the Fuse.
Fuser Motor (M2)	3	Check the operation of Fuser Motor in Output Check of the Service Mode. Device Code : 00001 **FMTR-TRG** (Fuser Motor) Does the Fuser Motor operate correctly?	No	Replace the Fuser Motor.

7. 1. 2.14 Backup Data Write Error (E-0A00h/E-2560)

Cause	Checking order	Checking	Result	Treatment
PW13420 PCB	1	Can you fix the problem if you replace the PW13420 PCB?	Yes	OK

7. 1. 2.15 Main Board Error (E-0A20h/E-2592)

Cause	Checking order	Checking	Result	Treatment
PW13420 PCB	1	Can you fix the problem if you replace the PW13420 PCB?	Yes	OK

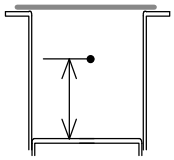
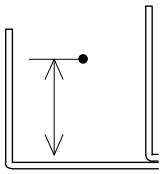
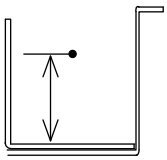
7. 1. 2.16 KNC1 Error (E-0A41h/E-2625)

Cause	Checking order	Checking	Result	Treatment
Toner Cartridge	1	Is the correct toner, which is dedicated for KIP 7170, installed to the machine?	No	Install the correct Toner Cartridge.
	2	Can you fix the problem if you replace the Toner Cartridge with another one?	Yes	OK
Wires	3	Are the wires between KNC PCB and PW13420 PCB connected properly?	No	Connect them properly
KNC PCB	4	Can you fix the problem if you replace KNC PCB?	Yes	OK
PW13420 PCB	5	Can you fix the problem if you replace PW13420 PCB?	Yes	OK

7. 2 Troubleshooting - Image Quality

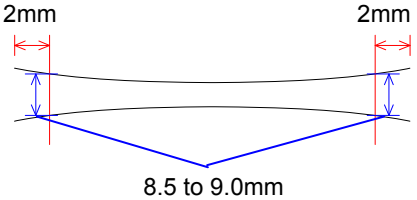
7. 2. 1 Basic Image Adjustment

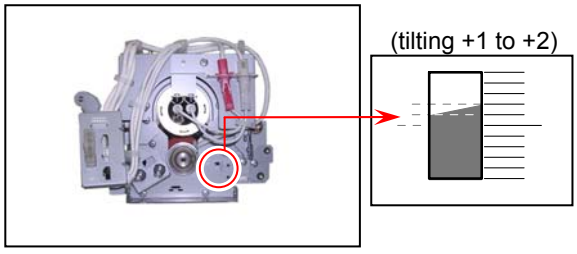
The followings are the settings specified to the image creation components.
When a defective image is printed out, please check whether or not these settings are satisfied for the beginning.

Component	Check Point (PW13420)	Designated voltage	Way of adjustment	Corona Wire Height
Image Corona	CP11 (+) CPCOM (-)	1.3 +/-0.05VDC	VR101	 11mm
Transfer Corona	CP21 (+) CP22 (-)	Plain paper: 1.2 +/-0.05VDC other media: 1.0 +/-0.05VDC	Backup Data No.029 (Plain) No.030 (Tracing) No.031 (Film)	 11 mm
Separation Corona (AC)	CP31 (+) CPCOM (-)	5.0 +/-0.05V	VR302	 11mm
Separation Corona (DC)	CP33 (+) Ground (-)	-250 +/-5VDC	VR303	
Negative Developer Roller Bias	OUTPUT2 (+) Ground (-)	-180 +/-5VDC -200 +/-5VDC (←CND Model)	Backup Data No.022 (Plain) No.023 (Tracing) No.024 (Film)	
Positive Developer Roller Bias	CP41 (+) CP42 (-)	0.350 +/-0.005V	VR401	
Toner Supply Roller Bias	OUTPUT1 (+) OUTPUT2 (-)	the same voltage as Developer Bias	-	
Regulation Roller Bias	OUTPUT2 (+) OUTPUT3 (-)	-80 +/-5VDC	Backup Data No.622	
Positive Cleaning Roller Bias	OUTPUT5 (+) Ground (-)	+450 +/-5VDC	VR001	
Negative Cleaning Roller Bias	OUTPUT5 (+) Ground (-)	-550 +/-5VDC	VR002	

NIP Width

Test Pattern #02_00 with a tracing paper (36" or A0)

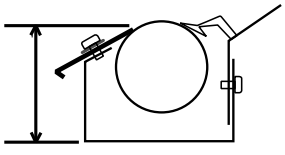




Entrance Guide Plate Height

(to both adjusters)

From the frame bottom surface,
Side : 70.7 to 71.3mm
Middle : 73.7 to 74.3mm (US)
: 74.5 to 75.1mm (EU)



7. 2. 2 Countermeasures - Image Quality

7. 2. 2. 1 Halftone is too light

Check the following matters with the Pattern Print, pattern: #01_00 and pattern: #03_00.
If necessary use other Test Patterns.

Cause	Checking order	Checking	Result	Treatment
	1	Try to readjust each image creation component according to [7.2.1 Basic Image Adjustment]. Is the problem fixed?	Yes	OK
LED Head	2	Is the Lens Array of LED Head dirty?	Yes	Clean it.
Paper	3	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	4	Is the Image Corona dirty?	Yes	Clean each Corona Wire, Grid Plate and housing, or replace the Corona Wire if it is too dirty.
		Is the input voltage to the Image Corona correct?	No	Readjust the input voltage making reference to [4. 3. 2 Check & Adjustment of Analog Voltage to the Image Corona]. Or replace the HV Power Supply PCB.
Eraser Lamp	5	Does the Eraser Lamp light properly?	No	1. Check the wire connected to the Eraser Lamp. 2. Check or replace the Eraser Lamp.
Separation Lamp	6	Does the Separation Lamp light properly?	No	1. Check the wire connected to the Separation Lamp. 2. Check or replace the Separation Lamp.
Transfer Corona	7	Is the Transfer / Separation Corona dirty?	Yes	Clean each Corona Wire and housing, or replace the Corona Wire if it is too dirty.
		Is the input voltage to the Transfer Corona correct?	No	Readjust the input voltage making reference to [4. 3. 3 Check & Adjustment of Analog Voltage to the Transfer Corona]. Or replace the HV Power Supply PCB.
Contact points of Developer Bias	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.
HV Power Supply PCB	9	Can you fix the problem if you replace the HV Power Supply PCB?	Yes	OK

Cause	Checking order	Checking	Result	Treatment
Installation of Developer Unit	10	Is the driving gear on the left of the Developer Unit surely fitted to the driving mechanism on machine side?	No	Check whether or not the Cam of Developer Press Unit surely presses the Developer Unit. Check the concerning gears.
Developer Unit	11	Is the Developer Roller evenly covered with the toner?	No	Check the whole Developer Unit to find the cause.
			Yes	Replace the Photoconductive Drum.

7. 2. 2. 2 Halftone and solid black are too light

Check the following matters with the Pattern Print, pattern: #01_00 and pattern: #03_00.
If necessary use other Test Patterns.

Cause	Checking order	Checking	Result	Treatment
	1	Try to readjust each image creation component according to [7.2.1 Basic Image Adjustment]. Is the problem fixed?	Yes	OK
	2	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 7.
Transfer Corona	3	Is the Transfer/Separation Corona installed to the machine correctly?	No	Install it correctly.
		Is the high voltage of Transfer Corona leaking?	Yes	Clean the Transfer Corona.
Paper	4	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.
Lead Wire	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.
Input voltage to the Transfer Corona	6	Is a correct voltage supplied from the HV Power Supply to the Transfer Corona?	No	Readjust the input voltage making reference to [4. 3. 3 Check & Adjustment of Analog Voltage to the Transfer Corona]. Or replace the HV Power Supply PCB.
Dirt of the LED Head	7	Is the LED Head dirty?	Yes	Clean it.
Developer Unit	8	Is the Developer Roller evenly covered with the toner?	No	Check the whole Developer Unit to find the cause.
	9	Is the Developer Unit firmly pressed toward the Drum? (Do Counter Rollers at both sides of the Developer Roller touch the Drum Unit?)	No	Remove the Developer Unit, and then install it to the machine correctly. Check the Developer Press Unit.
Installation of Developer Unit	10	Is the driving gear on the left of the Developer Unit surely fitted to the driving mechanism on machine side?	No	Check whether or not the Cam of Developer Press Unit surely presses the Developer Unit. Check the concerning gears.
Toner Sensor	11	Is there enough toner in the Developer Unit?	No	1. Check the wire or the connector connected to the Toner Sensor. 2. Check the Toner Sensor.
			Yes	Replace the Photoconductive Drum.

7. 2. 2. 3 The whole image is extremely light

Check the following matters with the Pattern Print, pattern: #01_00 and pattern: #03_00.
If necessary use other Test Patterns.

Cause	Checking order	Checking	Result	Treatment
	1	Try to readjust each image creation component according to [7.2.1 Basic Image Adjustment]. Is the problem fixed?	Yes	OK
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.
		Do you have the problem only when you use a film?	Yes	Change the setting of Item No.067 (Transfer Assist Setting) in the Backup Data, so that the Separation Lamp works for the film.
	3	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 4.
			No	Go on to the step 8.
Transfer Corona	4	Is the Transfer/Separation Corona installed to the machine correctly?	No	Install it correctly.
		Is the high voltage of Transfer Corona leaking?	Yes	Clean the Transfer Corona.
Lead Wire	5	Is the resistance of Lead Wire about 10 kilo ohms, which connects HV Power Supply and the Transfer Corona?	No	Replace the Lead Wire.
Input voltage to the Transfer Corona	6	Is a correct voltage inputted from the HV Power Supply to the Transfer Corona?	No	Readjust the input voltage making reference to [4. 3. 3 Check & Adjustment of Analog Voltage to the Transfer Corona]. Or replace the HV Power Supply PCB.
Driving mechanism of Developer Unit	7	Is the Developer Unit driving normally?	No	Check the driving mechanism.
Developer Unit	8	Is the Developer Unit firmly pressed toward the Drum? (Are Counter Rollers at both sides of the Developer Roller touch the Drum Unit?)	No	Remove the Developer Unit, and then install it to the machine correctly.
Lead Wire	9	Is the Lead Wire to supply the Developer Bias correctly connected?	No	Connect the Lead Wire correctly.
Developer Bias	10	Is the Developer Unit supplied with the Developer Bias correctly?	No	Check the contact points of Developer Bias, and also check the HV Power Supply.

7. 2. 2. 4 Density is uneven

Check the following matters with the Pattern Print, pattern: #01_00 and pattern: #03_00.
If necessary use other Test Patterns.

Cause	Checking order	Checking	Result	Treatment
Image Corona	1	Is the Image Corona dirty?	Yes	Clean the Image Corona, or replace the Corona Wire.
		Is the height of Corona Wire different between left and right?	Yes	Adjust the height properly.
Installation of Developer Unit	2	Is the Developer Unit firmly pressed toward the Drum? (Do Counter Rollers at both sides of the Developer Roller touch the Drum Unit?)	No	Remove the Developer Unit, and then install it to the machine correctly. Check the Developer Press Unit.
LED Head	3	Is the Lens Array dirty	Yes	Clean it.
Eraser Lamp	4	Are all LED of the Eraser Lamp light properly during the print?	No	1. Replace the Eraser Lamp. 2. Replace the PW13420 PCB.
Developer Unit	5	Is the Developer Roller evenly covered with the toner?	No	1. Clean Regulation Roller. 2. Reinstall Scraper.
		Is the toner accumulating evenly in the Developer Unit?	No	Level the machine correctly.

7. 2. 2. 5 Totally appeared foggy image

Check the following matters with the Pattern Print, pattern: #01_00 and pattern: #04_00.
If necessary use other Test Patterns.

Cause	Checking order	Checking	Result	Treatment
	1	Try to readjust each image creation component according to [7.2.1 Basic Image Adjustment]. Is the problem fixed?	Yes	OK
Developer Unit	2	Is the Developer Roller insulated from the ground?	No	Check the Developer Roller and connector.
Image Corona	3	Is the foggy image printed even if you print a completely white pattern?	Yes	Check the output voltage from the HV Power Supply to the Image Corona. If it is not correct, readjust it.
Developer Bias	4	Is the Developer Unit supplied with a correct Developer Bias during the print?	No	Check the output voltage from the HV Power Supply to the Developer Unit. If it is not correct, readjust it. Or replace the HV Power Supply PCB
Photoconductive Drum	5	Have you used the Photoconductive Drum longer than its part life?	Yes	Replace the Photoconductive Drum.

7. 2. 2. 6 Foggy image or blurred black wide line (vertical)

Check the following matters with the Pattern Print, pattern: #01_00 and pattern: #04_00.
If necessary use other Test Patterns.

Cause	Checking order	Checking	Result	Treatment
Light from the outside	1	Is any light from the outside thrown onto the Drum?	Yes	Install the outer cover correctly.
Image Corona	2	Is the Image Corona dirty?	Yes	Clean the Image Corona, or replace the Corona Wire.
Developer Unit	3	Is the Developer Roller evenly covered with the toner?	No	Check if the Regulation Roller is fixed at the proper position. If not, fix it at the correct position.

7. 2. 2. 7 Clear black thin line (vertical)

Check the following matters with the Pattern Print, pattern: #01_00 and pattern: #04_00..
If necessary use other Test Patterns.

Cause	Checking order	Checking	Result	Treatment
Image Corona	1	Is there something like filament on the Grid Plate, which is contacted to the Drum?	Yes	Remove it.
		Is the Image Corona dirty?	Yes	Clean the Image Corona, or replace the Corona Wire.
Foreign substance	2	Is there some foreign substance on each Corona Unit or LED Head, which is contacted to the Drum?	Yes	Remove it.
Photoconductive Drum	3	Is there any black line or damage on the Drum, of which position corresponds with the black line on the print?	Yes	Clean the Drum making reference to [5. 5. 2 Cleaning of Photoconductive Drum]. Replace the Drum if it is damaged. Be sure to find the cause of the damage.

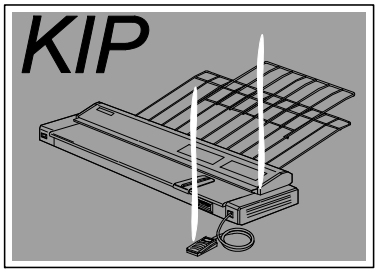
7. 2. 2. 8 White line (Vertical)

Check the following matters with the Pattern Print, pattern: #01_00 and pattern: #07_00.
If necessary use other Test Patterns.

Cause	Checking order	Checking	Result	Treatment
Image Corona	1	Is there something like filament on the Grid Plate, which is contacted to the Drum?	Yes	Remove it.
Dirt of the LED Head	2	Can you fix the problem if you clean the LED Head?	Yes	OK
Transfer/Separation Corona	3	Is there any foreign substance or dirt on the Transfer/Separation Corona?	Yes	Clean the Transfer / Separation Corona.
Developer Unit	4	Is the Developer Roller evenly covered with the toner?	No	Check whether or not there is damage or foreign substance on the Regulation Roller.
Entrance of Fuser Unit	5	Is there any foreign substance or dirt around the entrance area of the Fuser Unit?	Yes	Clean it off
Photoconductive Drum	6	Is there any damage on the Drum, which runs to the direction of Drum rotation.	Yes	Clean the Drum making reference to [5. 5. 2 Cleaning of Photoconductive Drum]. Replace the Drum if it is damaged. Be sure to find the cause of the damage.

7. 2. 2. 9 Void of image

Check the following matters with the Pattern Print, pattern: #01_00 and pattern: #07_00.
If necessary use other Test Patterns.

Cause	Checking order	Checking	Result	Treatment
	1	Print out the Test Pattern #07_00 (halftone). Can you find void of image on the print?	Yes	Go to the step 2.
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.
Developer Unit	3	Does the void of image appear on the print constantly Keeping about 160mm of interval?	Yes	1. Clean the Counter Rollers at both sides of the Developer Roller. 2. Wipe the Developer Roller with a dry cloth. 3. Replace the Developer Roller if damaged.
		Is the void of image mainly runs vertically as follows? 	Yes	1. Check if there is enough toner in the Developer Unit. 2. Also select the Device Status Mode and check the Toner Sensor Signal (Device Code: 107). It must be “L” when the toner is not covering the Toner Sensor. If not, replace the Toner Sensor.
Photoconductive Drum	4	Does the void of image appear on the print constantly Keeping about 251mm of interval?	Yes	Clean Drum making reference to [5. 5. 2 Cleaning of Photoconductive Drum]. Replace Drum if damaged. Be sure to find the cause of the damage.

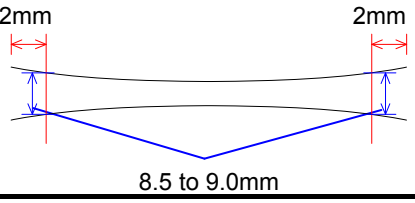
7. 2. 2.10 Dirt on the back of the print

Check the following matters with the Pattern Print, pattern: #01_00 and pattern: #04_00..
If necessary use other Test Patterns.

Cause	Checking order	Checking	Result	Treatment
	1	Try to readjust each image creation component according to [7.2.1 Basic Image Adjustment]. Is the problem fixed?	Yes	OK
Transfer Guide Plates	2	Are Transfer Guides or the black rubber area of the guide plate near Transfer / Separation Corona dirty with the toner?	Yes	Clean them. After that, check the distance between Transfer Guide and Drum. (It should be 0.5 to 0.7mm.)
Developer Unit	3	Is too much toner accumulating under the Developer Roller?	Yes	Clean the Developer Unit.
Inner Transport Unit	4	Is the Inner Transport Unit dirty with the toner?	Yes	Clean it, and also find where the toner came.
Fuser Unit	5	Is the Guide Plate at the entrance of Fuser Unit dirty with the toner?	Yes	Clean it.
		Are Fuser Roller and Pressure Roller dirty with the toner?	Yes	Clean them

7. 2. 2.11 Defective fusing

Check the following matters with the Pattern Print, pattern: #01_00 and pattern: #03_00.
If necessary use other Test Patterns.

Cause	Checking order	Checking	Result	Treatment
Fuser Unit	1	Is the Fuser Roller properly heated up after turning on the machine?	No	Refer to [7. 1. 2. 1 Fuser Error (E-0900, E-0901 & E-0903)] to check the Fuser Unit.
Paper	2	Is the type of paper selected on the UI same with that of actually installed paper?	No	Select the correct paper type on the UI.
		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.
Fusing temperature setting	3	Does the fusing temperature specified in the Service Mode suits with the weight (gram/square meter) of paper?	Yes	Is there any part which is burnt? Replace that part if burnt.
			No	Set the fusing temperature correctly.
Fusing pressure (Nip)	4	Print the pattern #02_00 with a tracing paper (36” or A0), and turn off the machine in the middle of printing. Remove the print from the machine and check the “nip width”. Is it 8.5 to 9.0mm? (Measure at 2 mm from the edge.) 	No	Adjust the fusing pressure correctly.

7. 2. 2.12 Defective image placement, No Leading Edge

Correct leading margin is 5mm (+/-2mm).
Check the following matters with the Pattern Print, pattern: #01_00 and pattern: #07_00.
If necessary use other Test Patterns.

Cause	Checking order	Checking	Result	Treatment
Setting of Leading Registration	1	Is the Leading Registration or Leading Margin properly adjusted in the Service Mode?	No	Adjust it properly.
Feed rollers	2	Have you used the feeding rollers for very long term?	Yes	Replace them.
Registration Clutch	3	Does the Registration Clutch operate correctly without slipping?	No	Replace Registration Clutch.

7. 2. 2.13 Jitter

Check the following matters with the Pattern Print, pattern: #01_00 and pattern: #07_00.
If necessary use other Test Patterns.

Cause	Checking order	Checking	Result	Treatment
Photoconductive Drum and its driving mechanism	1	Does the jitter appear on the print constantly keeping about 251mm of interval?	Yes	1. Check if there is any damage or foreign substance on Pulley on the drum shaft. 2. Check if there is any foreign substance between Drum and Counter Rollers of Developer Unit.
		Does the jitter appear on the print constantly keeping about 3mm of interval?	Yes	Check the engagement of Pulley Gear on the Drum with Belt 4.
Developer Roller	2	Does the void of image appear on the print constantly keeping about 160mm of interval?	Yes	Replace Developer Roller if damaged.
Developer Unit	3	Does the jitter appear on the print constantly keeping about 7.5mm of interval?	Yes	Check if there is any damage or foreign substance on 30T Gear on Regulation Roller shaft (driving side).
		Does the jitter appear on the print constantly keeping about 6.4mm of interval?	Yes	Check if there is any damage or foreign substance on 30T Gear on Supply Roller shaft (driving side) or the driving gears (30T, 25T, 22T) on the electrode plate side.
		Does the jitter appear on the print constantly keeping about 8.6mm of interval?	Yes	Check if there is any damage or foreign substance on the driving gears (16/34T, 21/34T) on the driving side.
		Does the jitter appear on the print constantly keeping about 16.1mm of interval?	Yes	Check if there is any damage or foreign substance on 16T Gears on the screw shafts (driving side)
Fuser Unit	4	Does the jitter appear on the print constantly keeping about 155mm of interval?	Yes	Slightly slow down Fuser Motor Speed 1 or 2 step by step in a concerning media. First half: Speed 1 Last half: Speed 2
	5	Does the jitter appear 60mm from the trailing edge on the print?	Yes	Slightly speed up Fuser Motor Speed 2 step by step in a concerning media.

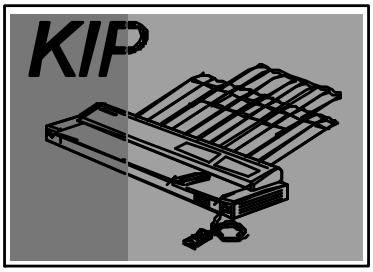
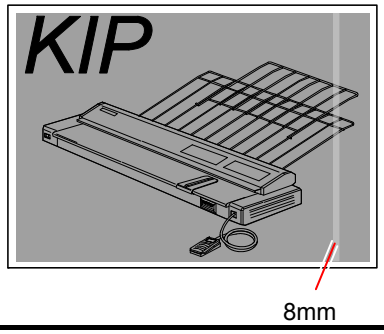
7. 2. 2.14 Image looks not sharp

Check the following matters with the Pattern Print, pattern: #01_00.
If necessary use other Test Patterns.

Cause	Checking order	Checking	Result	Treatment
Dirt of the LED Head	1	Is the LED Head dirty?	Yes	Clean it.
Installation of LED Head	2	Remove the LED Head, and then re-install it to the machine. Is the problem fixed?	Yes	OK
			No	Adjust the gap between LED Head and Drum by adding or removing the thin plates on the Aluminium Block at both sides of the Drum.
Transfer / Separation Corona	3	Is the Transfer / Separation Corona dirty?	Yes	Clean it.

7. 2. 2.15 Uneven image density (vertical)

Check the following matters with the Pattern Print, pattern: #01_00 and pattern: #07_00.
If necessary use other Test Patterns.

Cause	Checking order	Checking	Result	Treatment
Image Corona	1	Is the Image Corona dirty?	Yes	Clean it.
Transfer/Separation Corona	2	Is the Transfer/Separation Corona dirty?	Yes	Clean it.
Installation of LED Head	3	Remove the LED Head, and then re-install it to the machine. Is the problem fixed?	Yes	OK
	4	Is the density of any image block different from that of other blocks? 	Yes	Adjust the gap between LED Head and Drum by adding or removing the Spacers on the Aluminium Block.
	5	Is the width of abnormal density area about 8mm as follows? 	Yes	Replace the LED Head.

7. 2. 2.16 Completely white (No image)

Check the following matters with the Pattern Print, pattern: #01_00.
If necessary use other Test Patterns.

Cause	Checking order	Checking	Result	Treatment
Developer Press Unit	1	Is the Developer Unit correctly pressed to the Drum?	No	Check the Developer Press Unit.
Driving mechanism of Developer Unit	2	Does the Developer Roller rotate during the print?	No	Check the driving mechanism of Process Unit.
Developer Bias	3	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.
LED Head	4	Are connectors of signal cable firmly connected to the LED Head?	No	Connect them firmly.
		Turn off the machine in the middle of printing, and then check the toner image on the Drum. Is there any toner image on the Drum?	No	Replace the LED Head.
Transfer/Separation Corona	5	Is the Transfer Corona Wire broken?	Yes	Replace it.
		Is the Transfer/Separation Corona Unit correctly installed to the machine?	No	Install it correctly.
		If the high voltage leaking from the Transfer Corona?	Yes	Check the Transfer / Separation Corona to find the cause for leaking.
Lead Wire of Transfer Corona	6	Is the connection of Lead Wire correct?	No	Connect it correctly.
		Is the resistance of Lead Wire about 10 kilo ohms, which connects HV Power Supply and the Transfer Corona?	No	Replace the Lead Wire.
HV Power Supply	7	Can you fix the problem if you replace the HV Power Supply?	Yes	OK
PW13420 PCB	8	Can you fix the problem if you replace PW13420 PCB?	Yes	OK

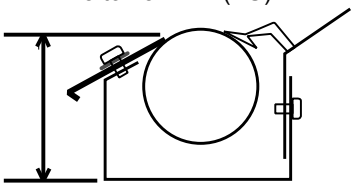
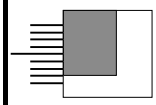
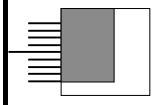
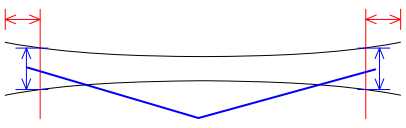
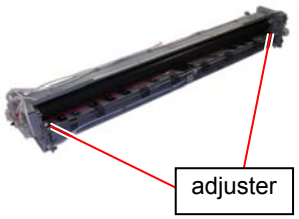
7. 2. 2.17 Completely black

Check the following matters with the Pattern Print, pattern: #01_00 and pattern: #04_00.
If necessary use other Test Patterns.

Cause	Checking order	Checking	Result	Treatment
Image Corona or HV Power Supply PCB	1	Is the Image Corona Wire broken?	Yes	Replace it.
		Is the tension of the Corona Wire correct?	No	Replace it.
		Is the Corona Wire correctly stretched with the spring?	No	Check whether or not the spring is transformed.
		Is a proper high voltage supplied to the Image Corona?	No	Adjust the high voltage, or replace the HV Power Supply PCB
		Is the housing of Image Corona insulated from the ground?	No	Replace the Zener PCB.
PW13420 PCB	2	Can you fix the problem if you replace PW13420 PCB?	Yes	OK

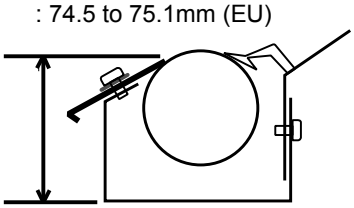
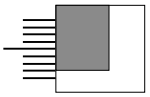
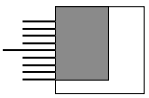
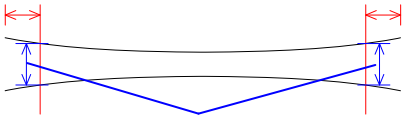
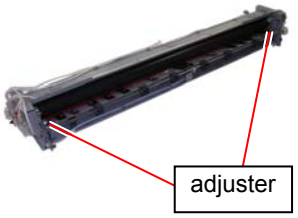
7. 2. 2.18 Crease of paper

Check the following matters with the Pattern Print, pattern: #01_00.
If necessary use other Test Patterns.

Cause	Checking order	Checking	Result	Treatment
	1	Make a continuous printing. Can you find the crease on the 2nd or later prints?	Yes	Go to the following “8”.
Paper	2	Is the type of paper selected on the UI same with that of actually installed paper?	No	Select the correct paper type on the UI.
		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.
		Is the Dehumidify Heater ON although the air is not humid.	Yes	Turn off the Dehumidify Heater.
Lamp (H1, H2) of Fuser	3	Does the Lamp light correctly?	No	Replace it.
Blower (Separation)	4	Is the Blower working properly during a print to help paper transportation?	No	Replace it.
Blower (Fuser Cooler)	5	Is the Blower working properly during a wide print (30”/ 34”/ 36”/ A0) to cool down the Fuser?	No	Replace it.
Fuser Entrance Guide	6	Is the Fuser Entrance Guide transformed? Or Is there anything on the Fuser Entrance Guide?	Yes	Clean or replace it.
		Remove Pressure Roller and measure the location height of Fuser Entrance Guide. Is the height correct? From the frame bottom surface, Side : 70.7 to 71.3mm Middle : 73.7 to 74.3mm (US) : 74.5 to 75.1mm (EU) 	No	Turn the adjuster screw(s) to reach the correct height. Guide Plate Height Adjuster (to both sides)  US: +3 3rd from center  EU: +4 highest
Fusing pressure (Nip)	7	Print the Test Pattern #02_00 with a tracing paper (36” or A0), and turn off the machine in the middle of printing. Remove the print from the machine and check the “nip width”. Is it 8.5 to 9.0mm? (Measure at 2 mm from the edge.) 2mm 2mm  8.5 to 9.0mm	No	Adjust the fusing pressure correctly. 
Fuser Motor speed	8	Is the paper slackened during the transportation when you make a long print?	Yes	Make the Fuser Motor speed faster.

7. 2. 2.19 Double Image

Check the following matters with the Pattern Print, pattern: #01_00.
If necessary use other Test Patterns.

Cause	Checking order	Checking	Result	Treatment
Paper	1	Is the type of paper selected on the UI same with that of actually installed paper?	No	Select the correct paper type on the UI.
		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.
Lamp (H1, H2) of Fuser	2	Does the Lamp light correctly?	No	Replace it.
Blower (Separation)	3	Is the Blower working properly during the print to help paper transportation?	No	Replace it.
Blower (Fuser Cooler)	4	Is the Blower working properly during a wide print (30"/ 34"/ 36"/ A0) to cool down the Fuser?	No	Replace it.
Fuser Entrance Guide	6	Is the Fuser Entrance Guide transformed? Or Is there anything on the Fuser Entrance Guide?	Yes	Clean or replace it.
		Remove Pressure Roller and measure the location height of Fuser Entrance Guide. Is the height correct? From the frame bottom surface, Side : 70.7 to 71.3mm Middle : 73.7 to 74.3mm (US) : 74.5 to 75.1mm (EU) 	No	Turn the adjuster screw(s) to reach the correct height. Guide Plate Height Adjuster (to both sides)  US: +3 3rd from center  EU: +4 highest
Fusing Pressure (Nip)	6	Print the Test Pattern #02_00 with a tracing paper (36" or A0), and turn off the machine in the middle of printing. Remove the print from the machine and check the "nip width". Is it 8.5 to 9.0mm? (Measure at 2 mm from the edge.) 2mm 2mm  8.5 to 9.0mm	No	Adjust the fusing pressure correctly. 
Fusing Temperature	7	Does the fusing temperature specified in the Service Mode suits with the weight (gram/square meter) of paper?	Yes	Is there any part which is burnt? Replace that part if burnt.
			No	Set the fusing temperature correctly.

7. 2. 2.20 Dirt on the print (Offset)

Check the following matters with the Pattern Print, pattern: #02_00.
If necessary use other Test Patterns.

Cause	Checking order	Checking	Result	Treatment
Paper	1	Is the type of paper selected on the UI same with that of actually installed paper?	No	Select the correct paper type on the UI.
Developer Unit or Transfer/Separation Corona	2	Does the paper have dirt before it enters the Fuser Unit?	Yes	Check the Developer Unit or Transfer/Separation Corona to find the cause.
Fuser Unit	3	Clean the Fuser Roller. Do you still have the problem even after the cleaning?	Yes	Decrease the setting value of fusing temperature (-3 to -5).
			No	OK

7. 2. 2. 21 Image Void on Long Print without Crease

The following procedure may address image void on a long print without creases.
Image void without creases would result from a too fast feeding speed.
If you can see image void and a crease at a time, refer to [7.2.2.22 Crease (and image void at a time)].

Cause	Checking order	Checking	Result	Treatment
Except feeding	1	Is everything on [7.2.2.9 Void of Image] clear?	No	Refer to [7.2.2.9 Void of Image] and check all the points.
Cause analysis with image void location	2	Does image void appear before 2x standard length?	Yes	Before 2x standard; Go to step 9.
			No	After 2x standard; Go to step 3.
Feed Clutch Off Timing **lack of slack at cutter region**	3	Decrease Feed Clutch Off Timing in 30 (for shorter clutch operation) on Backup Data. Item No. : 053 (Feed Clutch Off Timing for Roll 1) Item No. : 054 (Feed Clutch Off Timing for Roll 2) Does this fix image void problem?	Yes	OK
	4	Again decrease the Feed Clutch Off Timing in another 30 (for shorter clutch operation). Does this fix image void problem?	Yes	OK
			No	Increase the Feed Clutch Off Timing in 60 to restore the original setting. Go to step 5.
Fuser Motor 4th Speed **print pulled too much after 2x standard**	5	Decrease Fuser Motor 4th Speed that corresponds to the media width/type in 1 (for slower speed) on Backup Data. 4th Speed / Plain / Tracing A3 /12"/11" / 678 / --- A2 /18"/17" / 690 / --- A1 /24"/22" / 702 / --- 30" / 726 / 728 A0 /36"/34" / 714 / 716 Does this fix image void problem?	Yes	OK
	6	Decrease the 4th Speed in another 1 (slower). Does this fix image void problem?	Yes	OK

<table>
<tr><td>Fuser Motor 4th Speed
(cont.)</td><td>7</td><td>Decrease the 4th Speed in another 1 (slower).

Does this fix image void problem?</td><td>No</td><td>Increase the 4th Speed in 3 to restore the original setting.
Go to step 8.</td></tr>
<tr><td rowspan="2">Fuser Motor 3rd Speed</td><td rowspan="2">8</td><td rowspan="2">Decrease Fuser Motor 3rd Speed that corresponds to the media width/type in 1 (for slower speed) on Backup Data.

<table><tr><td>3rd Speed</td><td>Plain</td><td>Tracing</td></tr><tr><td>A3 /12”/11”</td><td>074</td><td>080</td></tr><tr><td>A2 /18”/17”</td><td>110</td><td>116</td></tr><tr><td>A1 /24”/22”</td><td>146</td><td>152</td></tr><tr><td>30”</td><td>440</td><td>446</td></tr><tr><td>A0 /36”/34”</td><td>182</td><td>188</td></tr></table>
Does this fix image void problem?</td><td>Yes</td><td>OK</td></tr>
<tr><td>No</td><td>Go back to step 5.
Decrease the 4th Speed (slower) with remaining the 3rd Speed decreased.

Follow step 5 to 8 until image void disappears.</td></tr>
<tr><td>Fuser Motor 3rd Speed

print pulled too fast before 2x standard</td><td>9</td><td>Decrease Fuser Motor 3rd Speed that corresponds to the media width/type in 1 (for slower speed) on Backup Data.

<table><tr><td>3rd Speed</td><td>Plain</td><td>Tracing</td></tr><tr><td>A3 /12”/11”</td><td>074</td><td>080</td></tr><tr><td>A2 /18”/17”</td><td>110</td><td>116</td></tr><tr><td>A1 /24”/22”</td><td>146</td><td>152</td></tr><tr><td>30”</td><td>440</td><td>446</td></tr><tr><td>A0 /36”/34”</td><td>182</td><td>188</td></tr></table>
Does this fix image void problem?</td><td>No</td><td>Decrease the 3rd Speed in another 1 (slower) until image void disappears.</td></tr>
</table>

7. 2. 2. 22 Crease on Long Print (and image void at a time)

The following procedure may address a crease on a long print.
If a crease and image void can be seen at a time, follow this section.
Creases (and image void seen at a time) would result from a slack on the feeding media, which requires feeding speed adjustment (slightly faster).

<table>
<tr><th>Cause</th><th>Checking order</th><th>Checking</th><th>Result</th><th>Treatment</th></tr>
<tr><td>Except feeding</td><td>1</td><td>Is everything on [7.2.2.18 Crease of paper] clear?</td><td>No</td><td>Refer to [7.2.2.18 Crease of paper] and check all the points.</td></tr>
<tr><td></td><td>2</td><td>If image void appears at a time, is everything on [7.2.2.9 Void of Image] on Service Manual clear?</td><td>No</td><td>Refer to [7.2.2.9 Void of Image] and check all the points.</td></tr>
<tr><td>Cause analysis with image void location</td><td>3</td><td>Does a crease appear before 2x standard length?</td><td>Yes</td><td>Before 2x standard;
Go to step 4.</td></tr>
<tr><td></td><td></td><td></td><td>No</td><td>After 2x standard;
Go to step 7.</td></tr>
<tr><td>Fuser Motor 3rd Speed

slack appears before 2x standard</td><td>4</td><td>Increase Fuser Motor 3rd Speed that corresponds to the media width/type in 1 (for faster speed) on Backup Data.

<table><tr><td>3rd Speed</td><td>Plain</td><td>Tracing</td></tr><tr><td>A3 /12”/11”</td><td>074</td><td>080</td></tr><tr><td>A2 /18”/17”</td><td>110</td><td>116</td></tr><tr><td>A1 /24”/22”</td><td>146</td><td>152</td></tr><tr><td>30”</td><td>440</td><td>446</td></tr><tr><td>A0 /36”/34”</td><td>182</td><td>188</td></tr></table>
Does this fix crease problem?</td><td>No</td><td>Increase the 3rd Speed in another 1 (faster) until creases disappear.

Go to step 5.</td></tr>
<tr><td>Image Void Check</td><td>5</td><td>Is there any image void after 2x standard length?

Note that step 4 would result in image void there.</td><td>Yes</td><td>Image void remains, or has just come after step 4;
Go to step 6.</td></tr>
<tr><td></td><td></td><td></td><td>No</td><td>OK</td></tr>
</table>

<table>
<tr><td rowspan="2">Fuser Motor 4th Speed

print pulled too fast before 2x standard</td><td rowspan="2">6</td><td rowspan="2">Decrease Fuser Motor 4th Speed that corresponds to the media width/type in 1 (for slower speed) on Backup Data.

<table><tr><td>4th Speed</td><td>Plain</td><td>Tracing</td></tr><tr><td>A3 /12”/11”</td><td>678</td><td>---</td></tr><tr><td>A2 /18”/17”</td><td>690</td><td>---</td></tr><tr><td>A1 /24”/22”</td><td>702</td><td>---</td></tr><tr><td>30”</td><td>726</td><td>728</td></tr><tr><td>A0 /36”/34”</td><td>714</td><td>716</td></tr></table>
Does this fix image void problem?</td><td>Yes</td><td>OK</td></tr>
<tr><td>No</td><td>Decrease the 4th Speed in another 1 (slower) until image void disappears.</td></tr>
<tr><td rowspan="3">Fuser Motor 3rd Speed</td><td>7</td><td>Increase Fuser Motor 3rd Speed that corresponds to the media width/type in 1 (for faster speed) on Backup Data.

<table><tr><td>3rd Speed</td><td>Plain</td><td>Tracing</td></tr><tr><td>A3 /12”/11”</td><td>074</td><td>080</td></tr><tr><td>A2 /18”/17”</td><td>110</td><td>116</td></tr><tr><td>A1 /24”/22”</td><td>146</td><td>152</td></tr><tr><td>30”</td><td>440</td><td>446</td></tr><tr><td>A0 /36”/34”</td><td>182</td><td>188</td></tr></table>
Does this fix crease problem?</td><td>Yes</td><td>Go to step 9.</td></tr>
<tr><td rowspan="2">8</td><td rowspan="2">a) <u>No image void seen up to step 7</u>;

Is there any image void that has just come after step 7?

b) <u>Crease and image void seen at a time up to step 7</u>;

Is there any image void shift from after 2x standard length to before 2x standard?</td><td>Yes</td><td>Go to step 10.</td></tr>
<tr><td>No</td><td>- no image void
- no image void shift
Go back to step 7.</td></tr>
<tr><td></td><td>9</td><td>After crease disappears, is there any image void?</td><td>No</td><td>OK</td></tr>
<tr><td>Fuser Motor 4th Speed

slack appears after 2x standard</td><td>10</td><td>First decrease the 3rd Speed (slower) in 1.

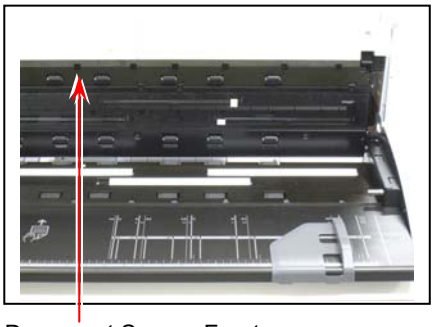
Increase Fuser Motor 4th Speed that corresponds to the media width/type in 1 (for faster speed) on Backup Data.

<table><tr><td>4th Speed</td><td>Plain</td><td>Tracing</td></tr><tr><td>A3 /12”/11”</td><td>678</td><td>---</td></tr><tr><td>A2 /18”/17”</td><td>690</td><td>---</td></tr><tr><td>A1 /24”/22”</td><td>702</td><td>---</td></tr><tr><td>30”</td><td>726</td><td>728</td></tr><tr><td>A0 /36”/34”</td><td>714</td><td>716</td></tr></table>
Does this fix image void / crease problem?</td><td>No</td><td>Increase the 4th Speed in another 1 (faster) until crease and image void disappear.</td></tr>
</table>

7. 3 Troubleshooting - Scanner Defects

7. 3. 1 Countermeasures - Scanner operation

7. 3. 1. 1 Original can not be set (Scanner does not transport)

Cause	Checking order	Checking	Result	Treatment
USB Cable	1	Is the USB Cable connected correctly?	No	Connect it correctly. Or replace it with another one if the cable or pin is damaged or short-circuited.
USB Driver	2	Does the connected PC correctly recognize the USB Driver of scanner?	No	1. Open the Device Manager and check the USB Driver. 2. Reinstall the USB Driver.
Document Sensor Front	3	Does the Document Sensor Front detect the original correctly when you feed it in?  Document Sensor Front	No	1. Clean this sensor. (See [6.2.2 Sensor] for the way of cleaning.) 2. Check the sensor and replace it if broken. (See [7.3.9 Check of Document Sensor Front].)
Motor	4	Open the Upper Unit then press the Open Sensor Switch. Does the feeding roller take any action at this time?	No	1. Check if the cable is surely plugged into the motor. 2. Check the motor and replace it if broken.
Home Position Sensor	5	Open the Upper Unit then press the Open Sensor. Perhaps does the feeding roller rotate in the “rewinding” direction then stops at this moment? (If the machine correctly behaves, the feeding roller at this moment rotates in the “rewinding” direction first then feeding direction.)	Yes	1. Check if the cable is correctly plugged into the Home Position Sensor. 2. Check the Home Position Sensor and replace it if broken.
DC Power Supply	6	Is 24VDC correctly supplied?	No	Check the DC Power Supply and replace it if broken.
Main PCB	7	Can you fix the problem if you replace Main PCB?	Yes	OK

7. 3. 1. 2 Scanner does not start scanning from the original set position

Cause	Checking order	Checking	Result	Treatment
Foreign substance	1	Is there any foreign substance under the Upper Unit?	Yes	Remove it.
Original	2	Does the scan original have a punch hole?	Yes	Put this original in a Carrier Sheet and take scanning.
Size Sensors	3	Is the size of original correctly recognized.	No	1. Clean the sensors. (See [6.2.2 Sensor] for the way of cleaning.) 2. Check the sensors and replace if any one is broken. (See [7.3.8 Check of Size Sensors].)
Motor	4	Does the motor takes any action?	No	Check the motor and replace it if broken.
DC Power Supply	5	Is 24VDC correctly supplied?	No	Check the DC Power Supply and replace it if broken.
Main PCB	7	Can you fix the problem if you replace Main PCB?	Yes	OK

7. 3. 1. 3 Original can not be set (Original feeding does not stop)

Cause	Checking order	Checking	Result	Treatment
Sensor	1	Is any sensor broken?	Yes	Replace the broken sensor.

7. 3. 1. 4 Original is mis-fed

Cause	Checking order	Checking	Result	Treatment
Foreign substance	1	Is there any foreign substance under Upper Unit?	Yes	Remove it.
Document Sensor Front Or Document Sensor Rear	2	Is either Document Sensor Front or Document Sensor Rear broken? (Breakage of either sensors can result in original jam.)	Yes	Replace the broken sensor.

7. 3. 1. 5 Motor rotates endlessly at the time of turning on

Cause	Checking order	Checking	Result	Treatment
Foreign substance	1	Is there any foreign substance under Upper Unit, which blocks the light of sensor?	Yes	Remove it.
Home Position Sensor	2	Is the home position correctly detected?	No	1. Check if the cable is correctly plugged into the Home Position Sensor. 2. Check the Home Position Sensor and replace it if broken.
Cables of Main PCB	3	Are cables correctly and surely plugged to the Main PCB?	No	Plug them correctly to the Main PCB. Replace the cable if it is damaged.
Main PCB	4	Can you fix the problem if you replace Main PCB?	Yes	OK

7. 3. 1. 6 Scanner is not recognized

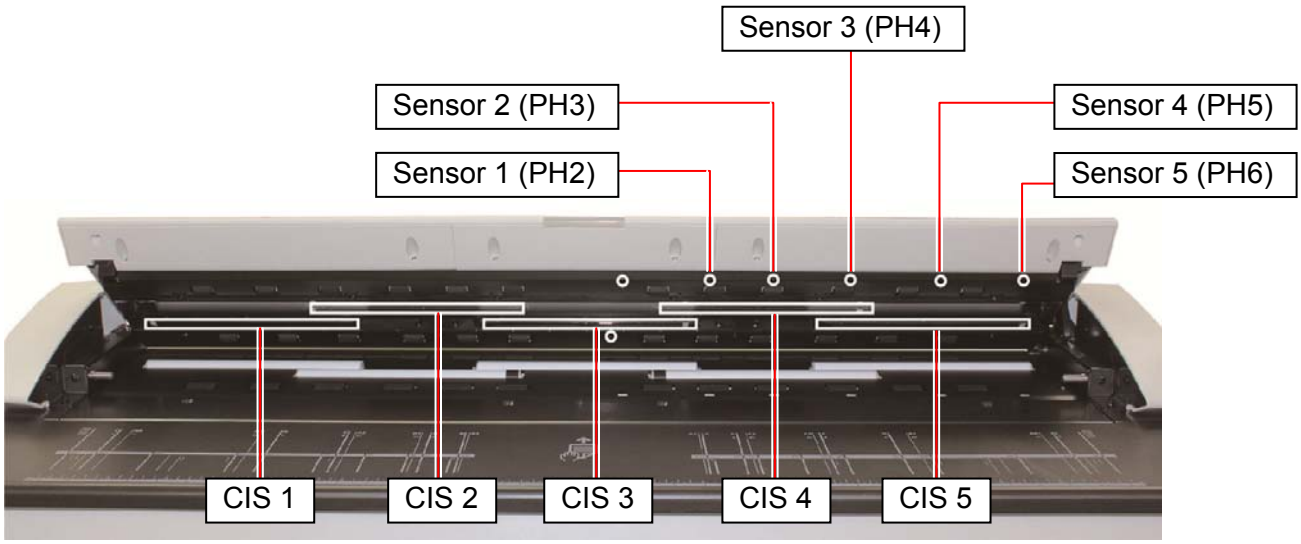
Cause	Checking order	Checking	Result	Treatment
USB Driver	1	Does the connected PC correctly recognize the USB Driver of scanner?	No	1. Open the Device Manager and check the USB Driver. 2. Reinstall the USB Driver.
USB Cable	2	Is the USB Cable connected correctly?	No	Connect it correctly. Or replace it with another one if the cable or pin is damaged or short-circuited.
DC Power Supply	3	Is 24VDC correctly supplied?	No	Check the DC Power Supply and replace it if broken.
Main PCB	4	Prepare another PC that surely can recognize other USB Scanners. Does this PC recognize the KIP 600A when connected?	No	Replace the Main PCB.

7. 3. 1. 7 Check of Size Sensors

1. Open the Upper Unit when the machine is turned on.
2. Turn off the scanner then turn it on again.
3. Insert a piece of paper under each size sensor to block the sensor light.
4. It is possible to check whether the size sensor is working correctly or not by checking the LED of concerning CIS.
   Size sensor and concerning harness and Main PCB are working correctly if the LED of related CIS lights **in red**.
   If it does not light, any of size sensor, harness and Main PCB has any abnormality.

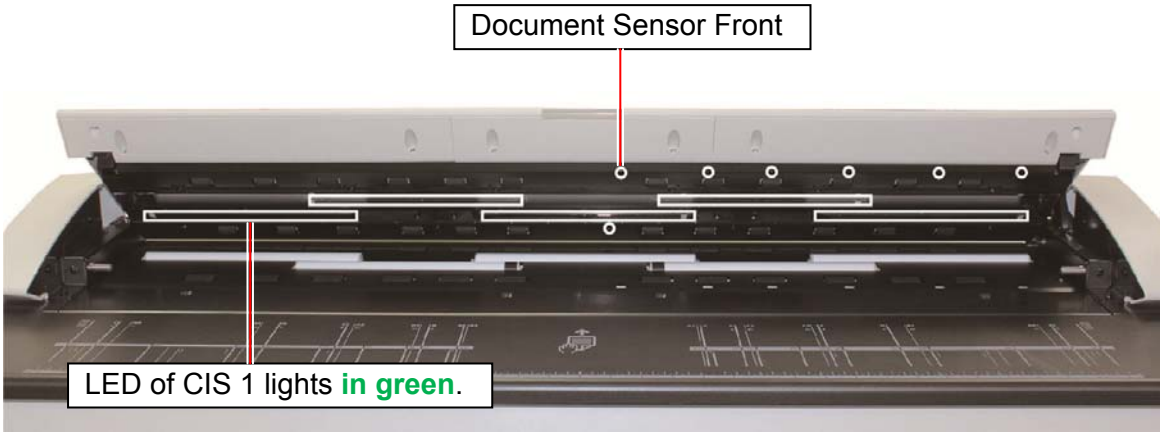
   See the following list for the relationship of size sensor and CIS.

Block the light of Sensor 1 (PH2) → LED of CIS 1 lights in red.	Sensor 1 (PH2) is working fine.
Block the light of Sensor 2 (PH3) → LED of CIS 1 lights in red.	Sensor 2 (PH3) is working fine.
Block the light of Sensor 3 (PH4) → LED of CIS 1 lights in red.	Sensor 3 (PH4) is working fine.
Block the light of Sensor 4 (PH5) → LED of CIS 1 lights in red.	Sensor 4 (PH5) is working fine.
Block the light of Sensor 5 (PH6) → LED of CIS 1 lights in red.	Sensor 5 (PH6) is working fine.



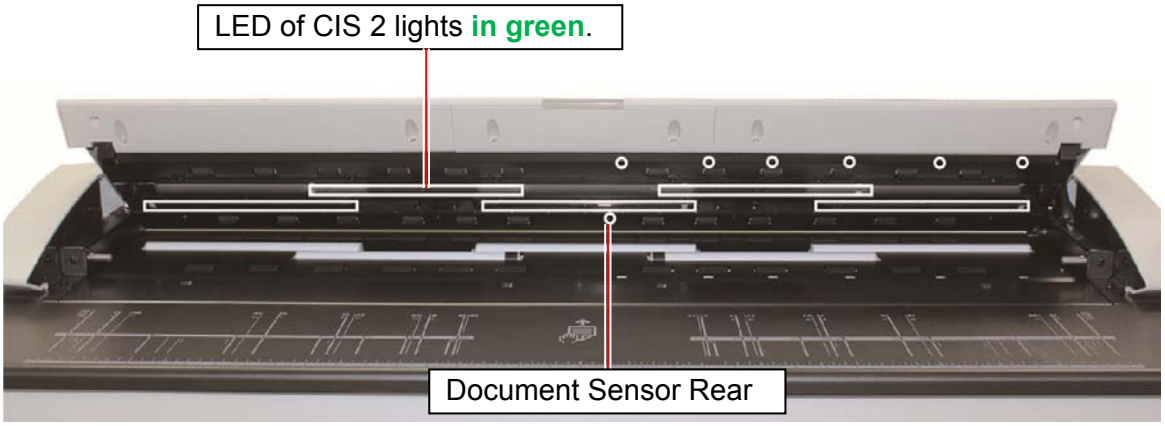
7. 3. 1. 8 Check of Document Sensor Front

1. Open the Upper Unit when the machine is turned on.
2. Turn off the scanner then turn it on again.
3. Insert a piece of paper under the Document Sensor Front to block the sensor light.
4. It is possible to check whether the Document Sensor Front is working correctly or not by checking the LED of CIS 1.
   Document Sensor Front and concerning harness and Main PCB are working correctly if the LED of CIS 1 lights **in green**.
   If it does not light, any of Document Sensor Front, harness and Main PCB has any abnormality.



7. 3. 1. 9 Check of Document Sensor Rear

1. Open the Upper Unit when the machine is turned on.
2. Turn off the scanner then turn it on again.
3. Insert a piece of paper under the Document Sensor Rear to block the sensor light.
4. It is possible to check whether the Document Sensor Rear is working correctly or not by checking the LED of CIS 2.
   Document Sensor Rear and concerning harness and Main PCB are working correctly if the LED of CIS 2 lights **in green**.
   If it does not light, any of Document Sensor Rear, harness and Main PCB has any abnormality.



7. 3. 2 Countermeasures – Scan Image Quality

7. 3. 2. 1 Completely black

Cause	Checking order	Checking	Result	Treatment
LED of CIS	1	Is the LED of each CIS lighting?	No	1. Check DC Power Supply (+24V). Replace it if broken. 2. Replace the CIS. 3. Replace Main PCB.
Cable of CIS	2	Is the cable of each CIS connected properly?	No	Connect it properly, or replace the cable if it is broken.
Shading	3	Can you fix the problem if you make Shading? (See [8.4.1 Shading (White Balance Calibration/Color Calibration)] .)	Yes	OK

7. 3. 2. 2 Vertical black lines

Cause	Checking order	Checking	Result	Treatment
Scan Glass	1	Is there any dirt or damage on the Scan Glass?	Yes	Clean / replace it.
Shading	2	Can you fix the problem if you make Shading? (See [8.6.1 Shading] .)	Yes	OK
Feed Roller	3	Are Feed Rollers dirty?	Yes	Clean them.
CIS	4	Can you fix the problem if you replace the CIS?	Yes	OK

7. 3. 2. 3 Vertical white lines

Cause	Checking order	Checking	Result	Treatment
Scan Glass	1	Is there any dirt or damage on the Scan Glass?	Yes	Clean / replace it.
Shading	2	Can you fix the problem if you make Shading? (See [8.6.1 Shading] .)	Yes	OK
Feed Roller	3	Are Feed Rollers dirty?	Yes	Clean them.
CIS	4	Can you fix the problem if you replace the CIS?	Yes	OK

7. 3. 2. 4 Some image is lost at the boundary of Image Blocks

Cause	Checking order	Checking	Result	Treatment
Block alignment adjustment (Stitching)	1	Can you fix the problem if you re-align the image blocks? (See [8.6.2 Stitching].)	Yes	OK

7. 3. 2. 5 Vertical image gap between Image Blocks

Cause	Checking order	Checking	Result	Treatment
Block alignment adjustment (Stitching)	1	Can you fix the problem if you re-align the image blocks? (See [8.6.2 Stitching] .)	Yes	OK

7. 3. 2. 6 Image quality is not good

Cause	Checking order	Checking	Result	Treatment
Scan Glass	1	Is there any dirt or damage on the Scan Glass?	Yes	Clean / replace it.
Scan resolution	2	Is the scan resolution setting proper?	No	Adjust it properly.

7. 3. 2. 7 Density is different between left and right

Cause	Checking order	Checking	Result	Treatment
Shading	1	Can you fix the problem if you make Shading? (See [8.4.1 Shading] .)	Yes	OK

7. 3. 2. 8 Difference of image density between image blocks

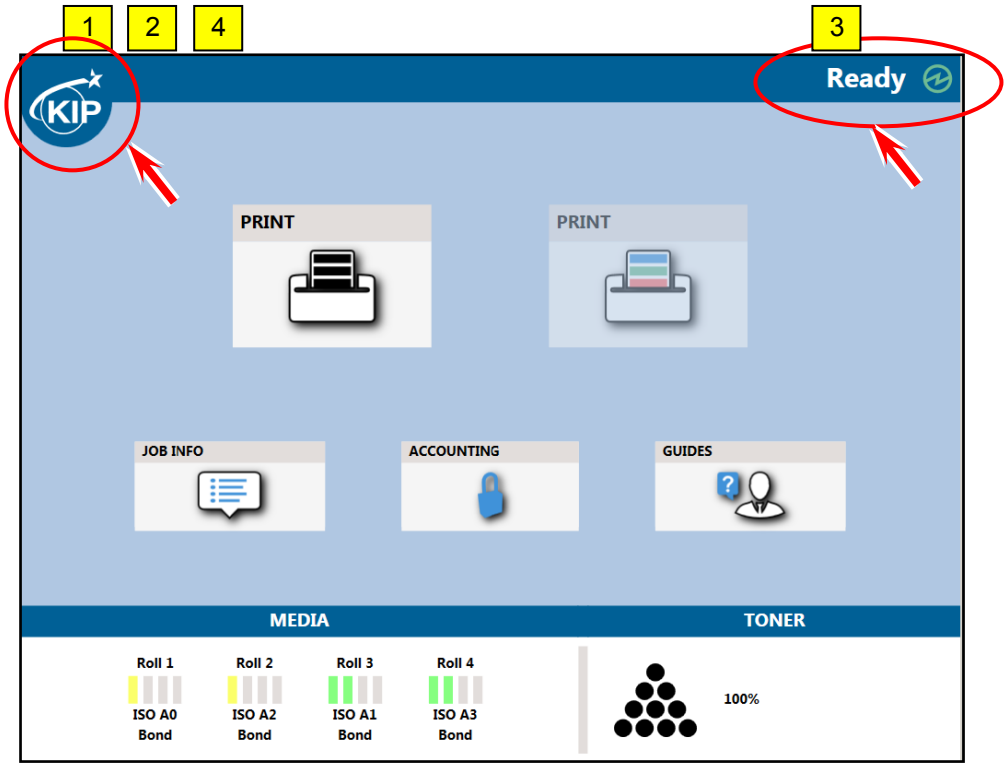
Cause	Checking order	Checking	Result	Treatment
Shading	1	Can you fix the problem if you make Shading? (See [8.4.1 Shading] .)	Yes	OK
Black Brightness Correct	1	Can you fix the problem if you make Black Brightness Correct? (See [8.6.3 Black Brightness Correct] .)	Yes	OK

7. 4 Touch Screen Calibration

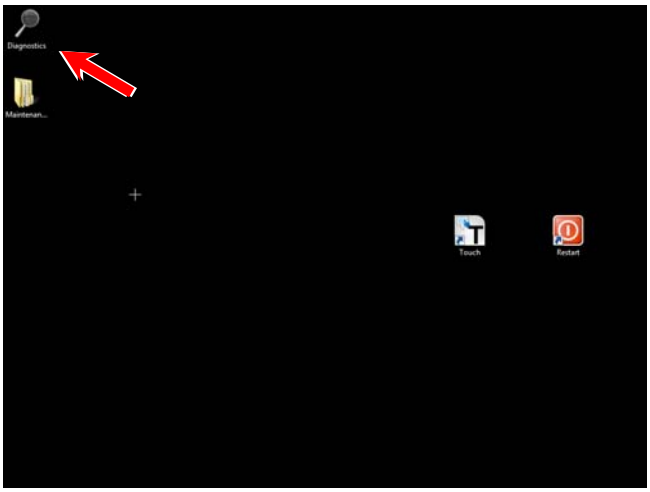
If the cursor position in the screen does not correctly match the tapped position on the panel, the touch screen should be calibrated so that the cursor is located directly underneath your finger or a stylus.

1. Close the user interface by the following operations to access the desktop of controller.

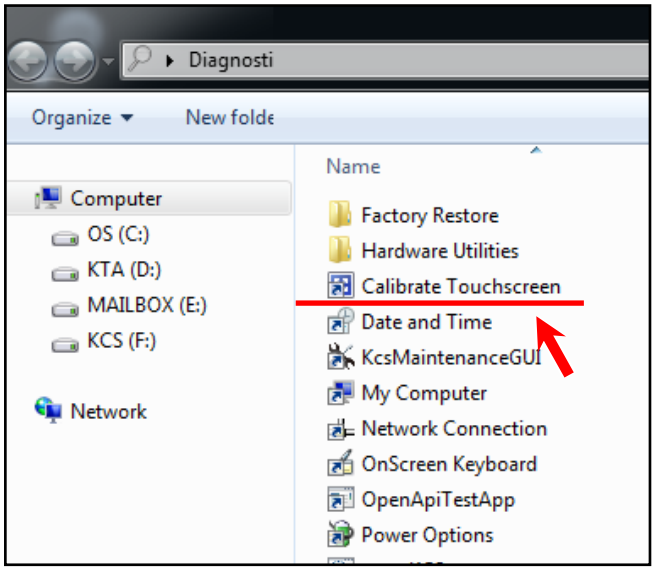
   (1) Press the HOME icon on top-left.
   (2) Press the HOME icon on top-left again.
   (3) Press the indication area of [(Model name) / (status)].
   (4) Press the HOME icon on top-left again.



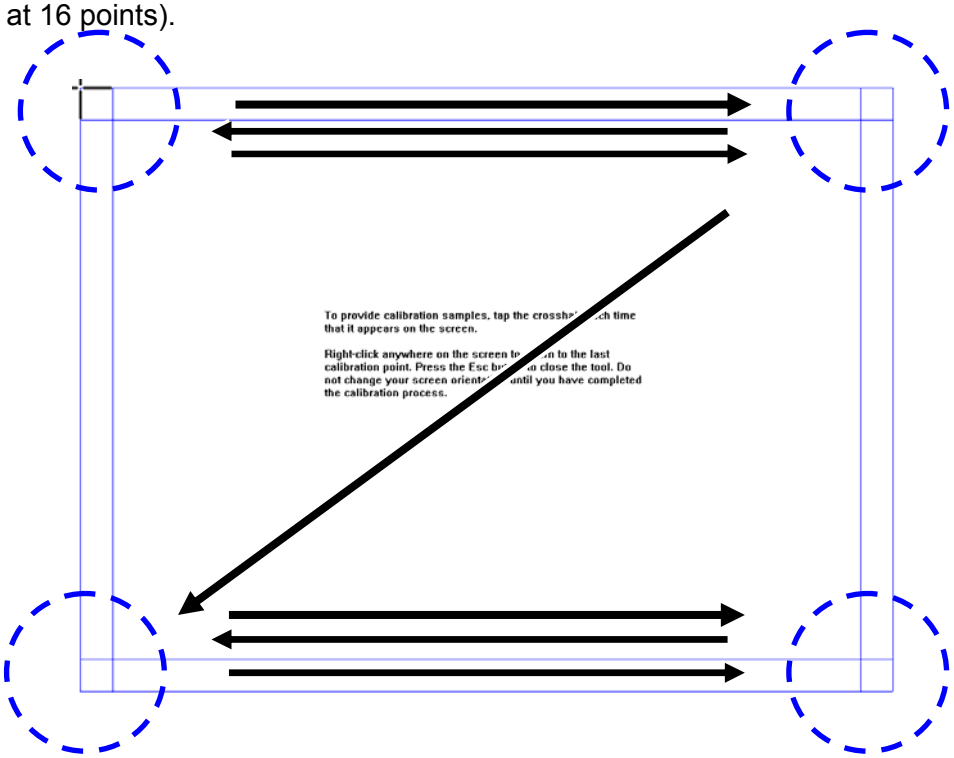
2. The Diagnostics Folder will open when double-clicking [Diagnostics Icon].



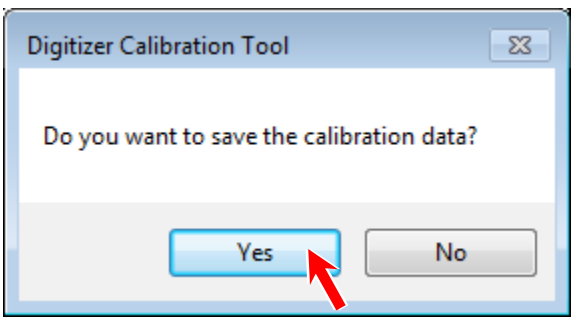
3. Double-click [Calibrate Touchscreen].



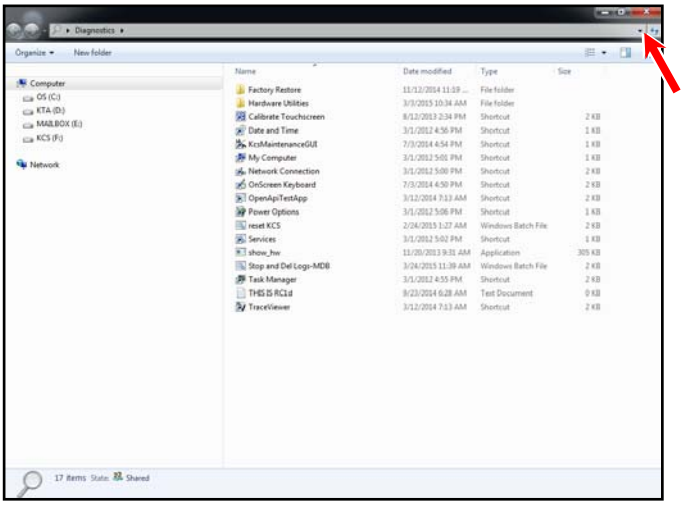
4. A Cross Mark appears on each target point around 4 corners. Whenever you tap the central point of this mark, it then appears on next target point. Repeat this operation totally 16 times (tap at 16 points).

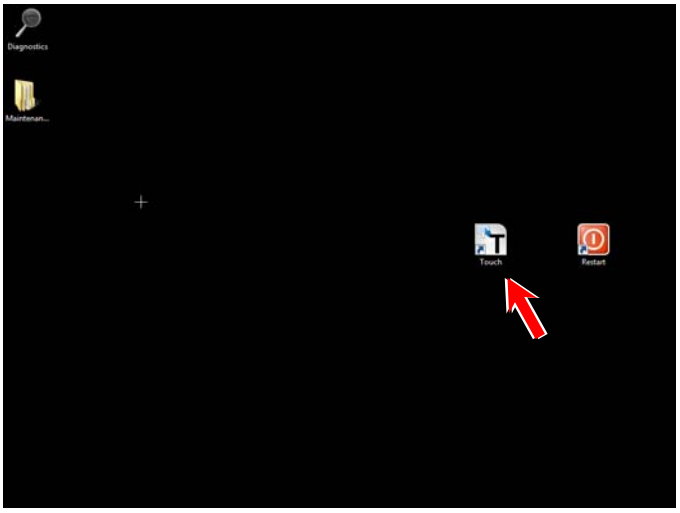


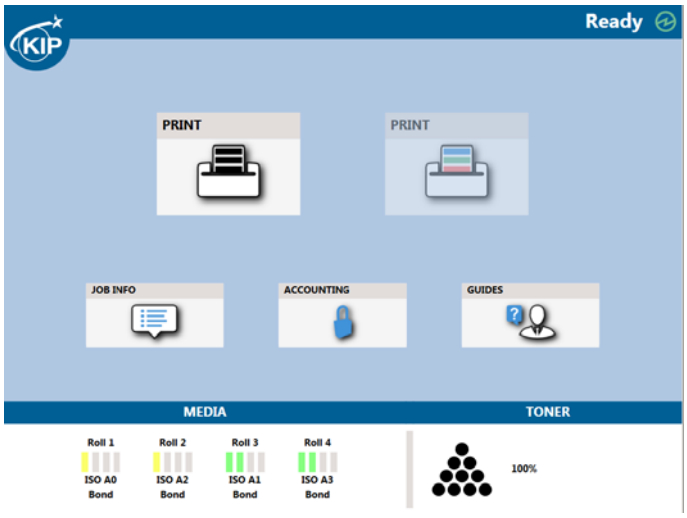
5. Select [Yes] to save the calibration.



6. Close [Diagnostics folder], and then double-click [Touch Icon] to go back to UI Home Screen.

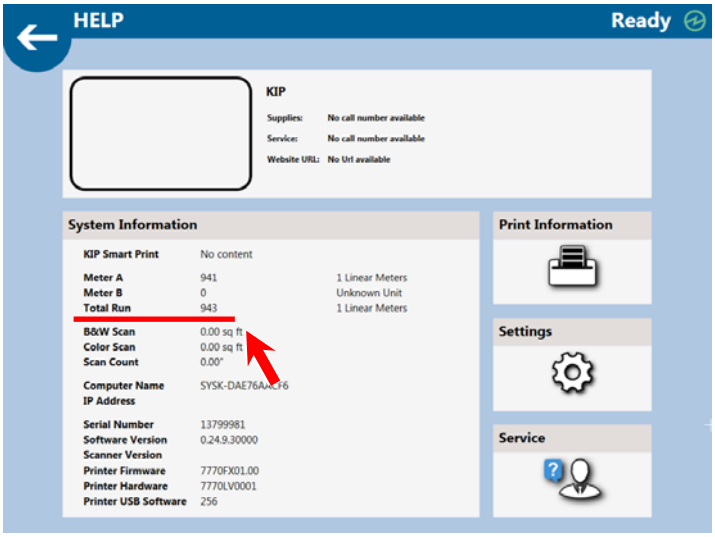




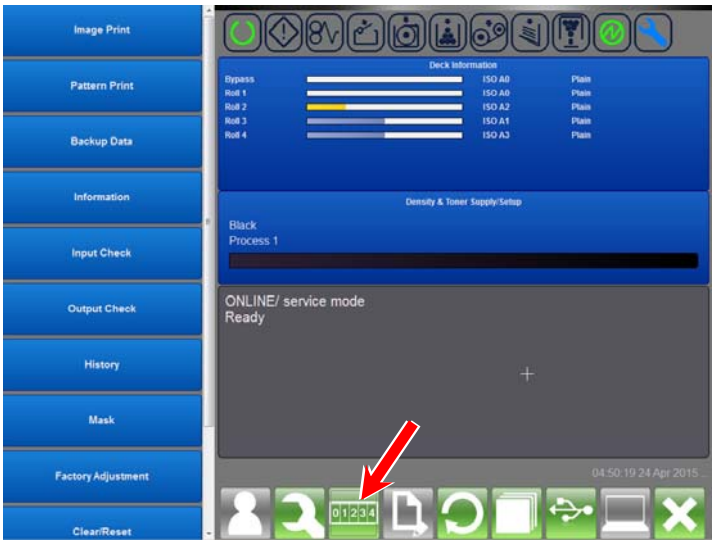


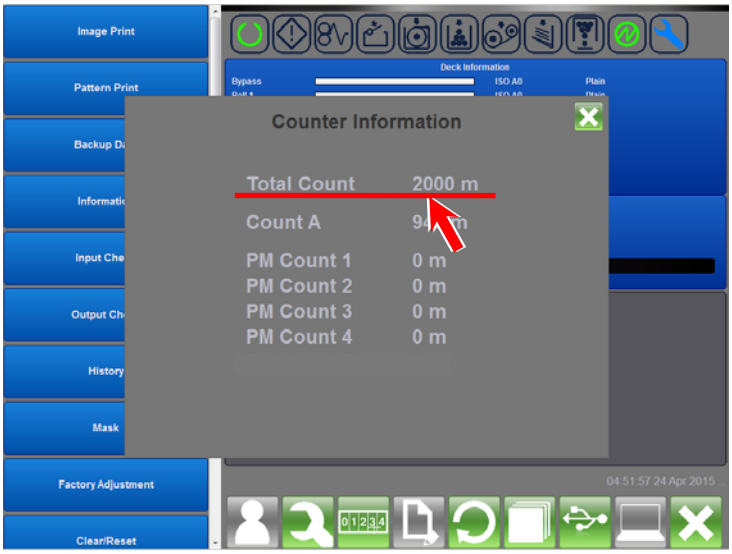
7. 5 Internal Counter Error

The printer has 2 software counters that store Total Count of Print Length.
One is **Total Run** shown in the **HELP** screen, which is stored in **Controller's Hard Drive**.



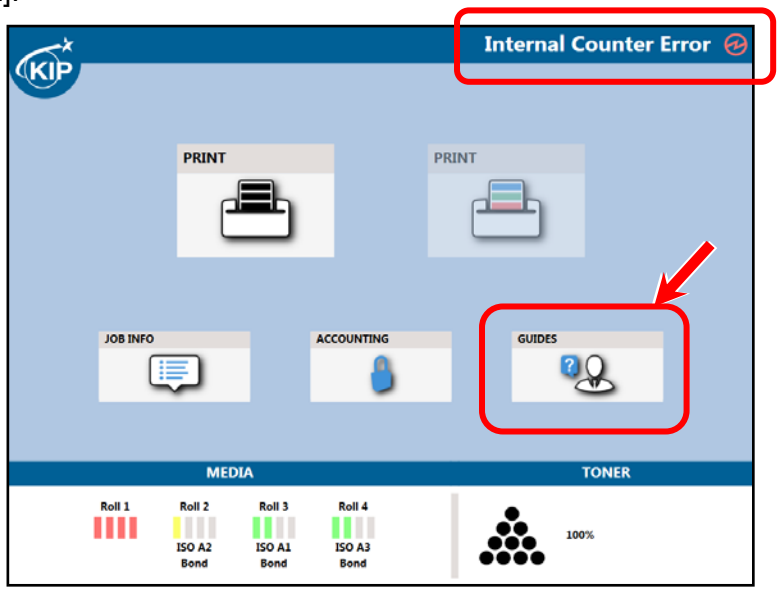
The other is **Total Count** shown in **Counter Information** screen in the **Maintenance GUI**, which is stored in **Printer's DC Controller**.



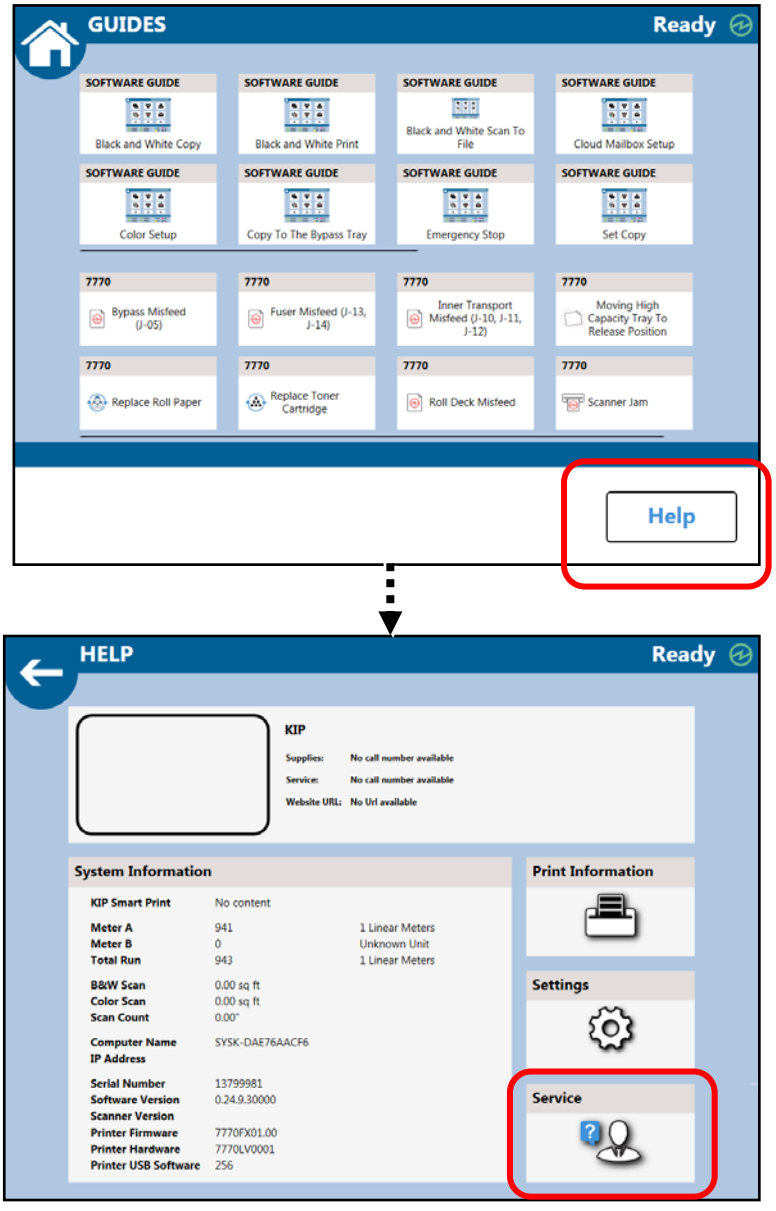


Both counter values normally count the same value each other. If there occurs a mismatch of the count value between 2 counters by some reason, Touch UI indicates "Internal Counter Error" in the status bar on upper-right. Only a service personnel who knows **Service** access account can clear this error by the steps described in below.

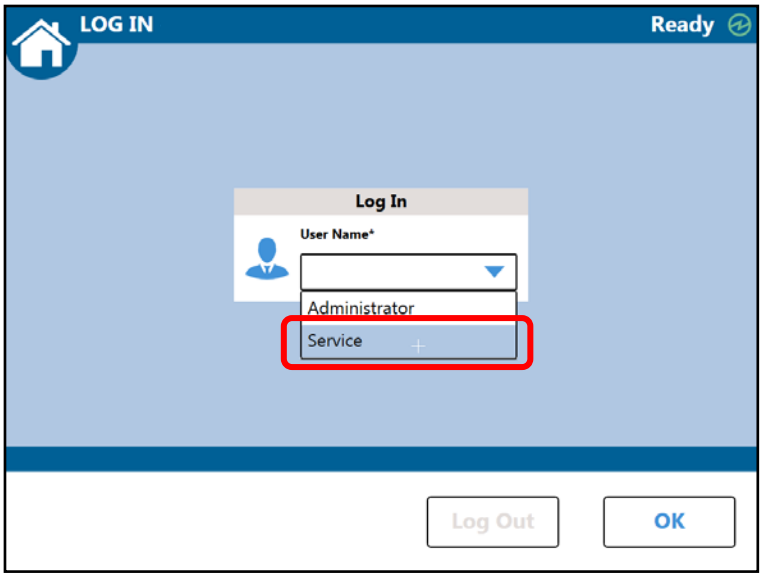
1. Select [GUIDE].



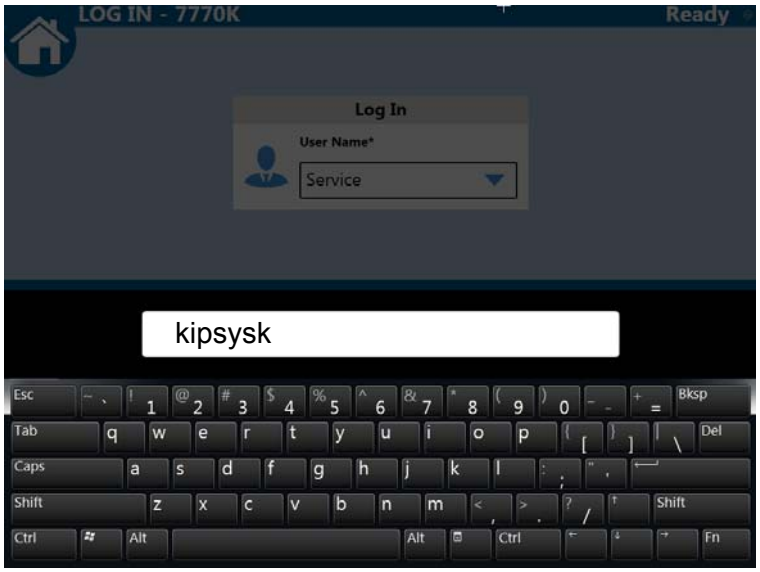
2. Select [Help], then, Select [Service].



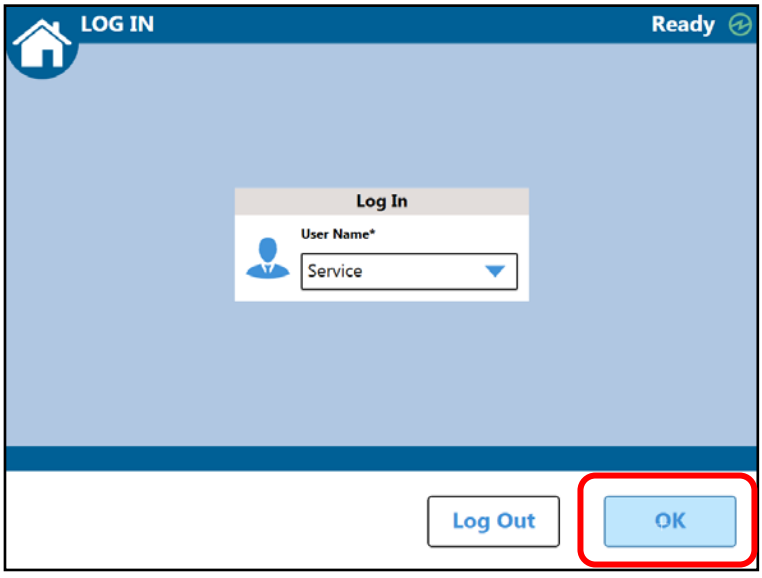
3. Choose [Service] account from pull down menu.



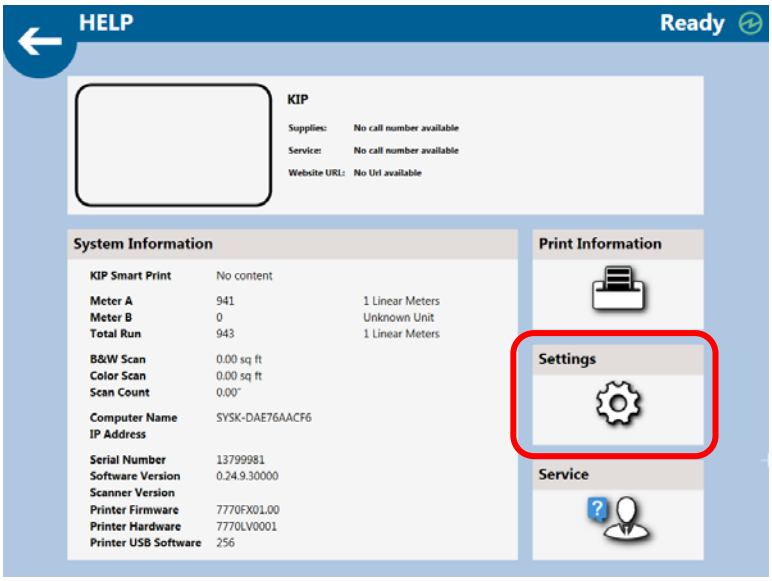
4. Input password [kipsysk] and press [Enter] key button.



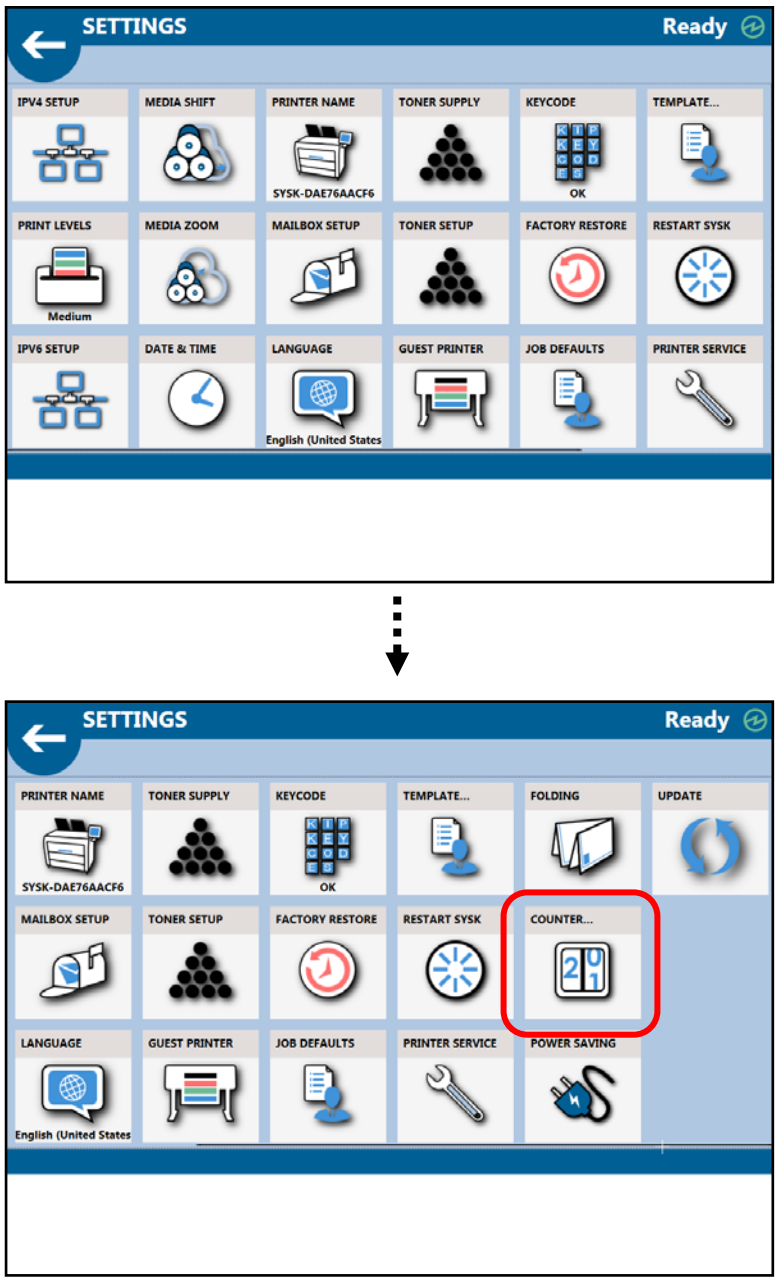
5. Press [OK] button.



6. Select [Settings].



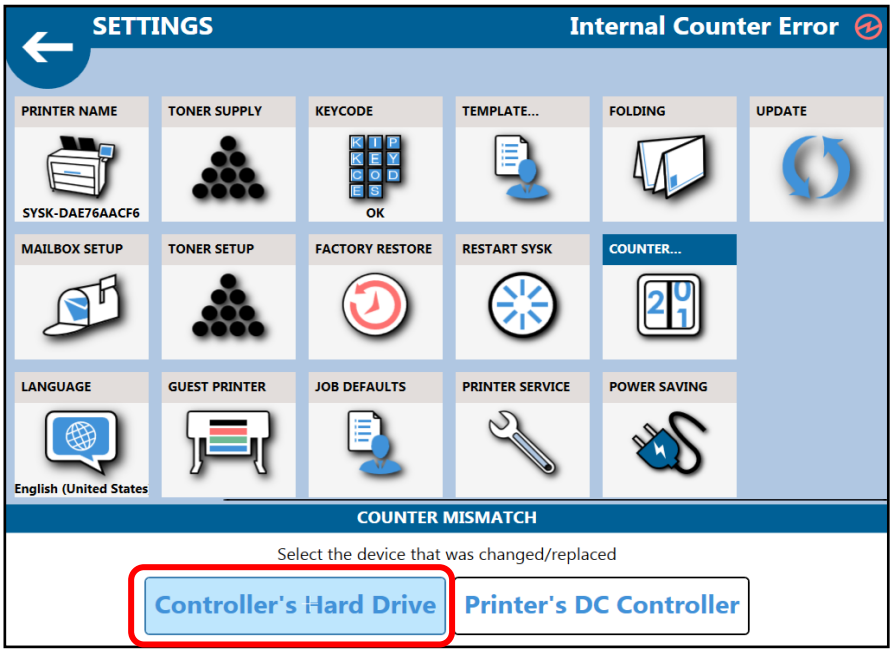
6. Scroll to right side on the screen by swiping. Find [COUNTER MISMATCH] and select it.



7. Select either of 2 buttons **Controller's Hard Drive** or **Printer's DC Controller** according to the device that was changed or replaced.

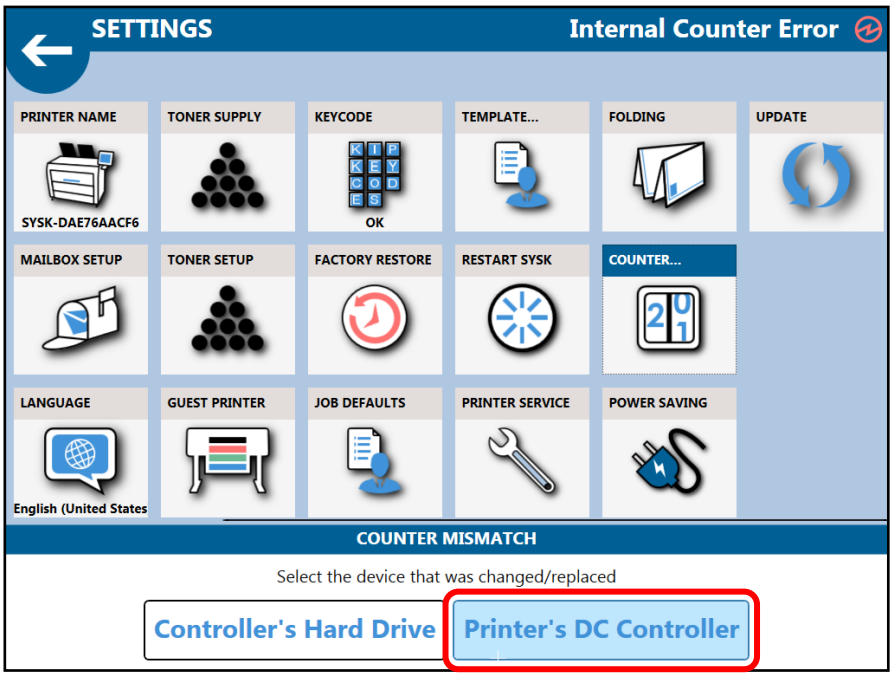
- Please press **Controller's Hard Drive** button when the **Internal Counter Error** started to appear after;
  a) replacement of entire controller unit (or its HDD or SSD)
  b) or after software re-ghosting.

  If **Controller's Hard Drive** button is pressed, the Total Count value stored in printer's DC Controller is copied to controller's hard drive, which clears the **Internal Counter Error** as both devices now have the same value each other.



- Please press **Printer's DC Controller** button when the **Internal Counter Error** started to appear after;
  a) replacement of printer's DC Controller
  b) or Total Count value is lost by some reason.

  If **Printer's DC Controller** button is pressed, the Total Run value stored in controller's Hard Drive is copied to printer's DC Controller, which clears the **Internal Counter Error** as both devices now have the same value each other.



Chapter 8

Maintenance GUI / Utility

Page

8. 1 Maintenance GUI Overview 8- 1
8. 1. 1 Launching Maintenance GUI 8- 2
8. 1. 2 Closing Maintenance GUI 8- 8
8. 1. 3 Update of Maintenance GUI 8- 10

8. 2 Image Print 8- 13
8. 2. 1 Operation procedure of test printing 8- 14

8. 3 Pattern Print 8- 22
8. 3. 1 Operation procedure of test printing 8- 23

8. 4 Backup Data 8- 28
8. 4. 1 Operations in Backup Data 8- 29
8. 4. 1. 1 Change and save of the setting values 8- 29
8. 4. 1. 2 Saving all parameter values into a zip file for backing up (Export) 8- 34
8. 4. 1. 3 Loading the backed up zip file to printer (Import) 8- 38
8. 4. 2 Setting Item List 8- 41
8. 4. 3 Setting Item Explanation 8- 57
8. 4. 3. 1 Leading Registration (No. 000 & 001) 8- 57
8. 4. 3. 2 Trailing Margin (No. 002 & 003) 8- 57
8. 4. 3. 3 Side Margin (Left & Right) (No. 004) 8- 58
8. 4. 3. 4 Side Registration (No. 005 to 007) 8- 59
8. 4. 3. 5 Vertical Alignment of Pixels between Image Blocks (No.014 & 015) 8- 60
8. 4. 3. 6 Cut Length 1 (length information provided) (No.016) 8- 61
8. 4. 3. 7 Cut Length 2 (length information not provided) (No.017) 8- 61
8. 4. 3. 8 Cut Length 3 (Compensation of the length for long print) (No.018) 8- 62
8. 4. 3. 9 Leading Margin (No. 019) 8- 64
8. 4. 3.10 Cut Length 4 (Individual Compensation for Roll 2) (No.020) 8- 65
8. 4. 3.11 Developer Bias (No.022 to 027) 8- 66
8. 4. 3.12 Developer Bias compensation - 1st Drum revolution (No.028) 8- 66
8. 4. 3.13 Transfer Voltage (No.029 to 034) 8- 67
8. 4. 3.14 Separation Corona ON Timing (No.035) 8- 67
8. 4. 3.15 Transfer Corona ON Timing (No.037) 8- 67
8. 4. 3.16 Transfer Corona OFF Timing (No.038) 8- 68
8. 4. 3.17 Print - Fuser Temperature Center (No.039 to 044) 8- 69
8. 4. 3.18 Fuser Temperature to start idling (No.045) 8- 70
8. 4. 3.19 Warm Sleep – Fuser Temperature (No.046) 8- 70
8. 4. 3.20 Fuser Temperature Control Range (No.048 & 049) 8- 71
8. 4. 3.21 Reaction Time of Toner Supply Motor (No.050) 8- 72
8. 4. 3.22 Toner Supply Motor ON Time (No.051) 8- 72
8. 4. 3.23 Dot Enhancement Level (Dither) (No.052) 8- 73
8. 4. 3.24 Feed Clutch OFF time for Roll 1/2 long print (No.053, 054) 8- 74
8. 4. 3.25 Metric or Inch (No.055) 8- 75
8. 4. 3.26 Language (No.056) 8- 75
8. 4. 3.27 Interface Communication Setting (No.057) 8- 75
8. 4. 3.28 Recognition of Paper Tray (No.058) 8- 75
8. 4. 3.29 Counter Unit (No.059) 8- 76

8. 4. 3.30 Maximum print length (No.060) 8- 76
8. 4. 3.31 Stacking Device setting (No.061) 8- 76
8. 4. 3.32 Enable/disable Down Sequence (No.062) 8- 76
8. 4. 3.33 Cut Length 5 & 6
(Length Compensation for Tracing Paper / Film) (No.063, 064) 8- 77
8. 4. 3.34 Drum Reverse Time (No.065) 8- 78
8. 4. 3.35 Fuser Motor Reverse Setting (No.066) 8- 78
8. 4. 3.36 Operation of Separation Lamp (No.067) 8- 79
8. 4. 3.37 Compensation of Fuser Motor Speed for roll paper
(Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679) 8- 80
8. 4. 3.38 Compensation of Fuser Motor Speed for roll paper
(Tracing paper / A3, 12” & 11”) (No.076 to 081, 680, 681) 8- 83
8. 4. 3.39 Compensation of Fuser Motor Speed for roll paper
(Film / A3, 12” & 11”) (No.082 to 087, 682, 683) 8- 84
8. 4. 3.40 Compensation of Fuser Motor Speed for roll paper
(Special plain paper / A3, 12” & 11”) (No.088 to 093, 684, 685) 8- 85
8. 4. 3.41 Compensation of Fuser Motor Speed for roll paper
(Special tracing paper / A3, 12” & 11”) (No.094 to 099) 8- 86
8. 4. 3.42 Compensation of Fuser Motor Speed for roll paper
(Special film / A3, 12” & 11”) (No.100 to 105, 688, 689) 8- 87
8. 4. 3.43 Compensation of Fuser Motor Speed for roll paper
(Plain paper / A2, 18” & 17”) (No.106 to 111, 690, 691) 8- 88
8. 4. 3.44 Compensation of Fuser Motor Speed for roll paper
(Tracing paper / A2, 18” & 17”) (No.112 to 117, 692, 693) 8- 89
8. 4. 3.45 Compensation of Fuser Motor Speed for roll paper
(Film / A2, 18” & 17”) (No.118 to 123, 694, 695) 8- 90
8. 4. 3.46 Compensation of Fuser Motor Speed for roll paper
(Special plain paper / A2, 18” & 17”) (No.124 to 129, 696, 697) 8- 91
8. 4. 3.47 Compensation of Fuser Motor Speed for roll paper
(Special tracing paper / A2, 18” & 17”) (No.130 to 135, 698, 699) 8- 92
8. 4. 3.48 Compensation of Fuser Motor Speed for roll paper
(Special film / A2, 18” & 17”) (No.136 to 141, 700, 701) 8- 93
8. 4. 3.49 Compensation of Fuser Motor Speed for roll paper
(Plain paper / A1, 24” & 22”) (No.142 to 147, 702, 703) 8- 94
8. 4. 3.50 Compensation of Fuser Motor Speed for roll paper
(Tracing paper / A1, 24” & 22”) (No.148 to 153, 704, 705) 8- 95
8. 4. 3.51 Compensation of Fuser Motor Speed for roll paper
(Film / A1, 24” & 22”) (No.154 to 159, 706, 707) 8- 96
8. 4. 3.52 Compensation of Fuser Motor Speed for roll paper
(Special plain paper / A1, 24 & 22”) (No.160 to 165, 708, 709) 8- 97
8. 4. 3.53 Compensation of Fuser Motor Speed for roll paper
(Special tracing paper / A1, 24” & 22”) (No.166 to 171, 710, 711) 8- 98
8. 4. 3.54 Compensation of Fuser Motor Speed for roll paper
(Special film / A1, 24” & 22”) (No.172 to 177, 712, 713) 8- 99
8. 4. 3.55 Compensation of Fuser Motor Speed for roll paper
(Plain paper / A0, 36” & 34”) (No.178 to 183, 714, 715) 8-100
8. 4. 3.56 Compensation of Fuser Motor Speed for roll paper
(Tracing paper / A0, 36” & 34”) (No.184 to 189, 716, 717) 8-101
8. 4. 3.57 Compensation of Fuser Motor Speed for roll paper
(Film / A0, 36” & 34”) (No.190 to 195, 718, 719) 8-102
8. 4. 3.58 Compensation of Fuser Motor Speed for roll paper
(Special plain paper / A0, 36 & 34”) (No.196 to 201, 720, 721) 8-103
8. 4. 3.59 Compensation of Fuser Motor Speed for roll paper
(Special tracing paper / A0, 36” & 34”) (No.202 to 207, 722, 723) 8-104
8. 4. 3.60 Compensation of Fuser Motor Speed for roll paper
(Special film / A0, 36” & 34”) (No.208 to 213, 724, 725) 8-105
8. 4. 3.61 Main Motor Speed (No.310 to 315) 8-106
8. 4. 3.62 Fuser Motor Speed (36” / 34” / 30” / 24” / 22” / A0 / B1 / A1)
(No.316 to 321) 8-106
8. 4. 3.63 Separation Corona OFF Timing (No.322 to 327) 8-106

8. 4. 3.64 Compensation of Fuser Motor Speed for cut sheet paper (Plain paper / A3, A2, 12”, 11”, 18” & 17”) (No.328 to 333) 8-107
8. 4. 3.65 Compensation of Fuser Motor Speed for cut sheet paper (Tracing paper / A3, A2, 12”, 11”, 18” & 17”) (No.334 to 339) 8-108
8. 4. 3.66 Compensation of Fuser Motor Speed for cut sheet paper (Film / A3, A2, 12”, 11”, 18” & 17”) (No.340 to 345) 8-109
8. 4. 3.67 Compensation of Fuser Motor Speed for cut sheet paper (Special plain paper / A3, A2, 12”, 11”, 18” & 17”) (No.346 to 351) 8-110
8. 4. 3.68 Compensation of Fuser Motor Speed for cut sheet paper (Special tracing paper / A3, A2, 12”, 11”, 18” & 17”) (No.352 to 357) 8-111
8. 4. 3.69 Compensation of Fuser Motor Speed for cut sheet paper (Special film / A3, A2, 12”, 11”, 18” & 17”) (No.358 to 363) 8-112
8. 4. 3.70 Compensation of Fuser Motor Speed for cut sheet paper (Plain paper / A1, 24” & 22”) (No.364 to 369) 8-113
8. 4. 3.71 Compensation of Fuser Motor Speed for cut sheet paper (Tracing paper / A1, 24” & 22”) (No.370 to 375) 8-114
8. 4. 3.72 Compensation of Fuser Motor Speed for cut sheet paper (Film / A1, 24” & 22”) (No.376 to 381) 8-115
8. 4. 3.73 Compensation of Fuser Motor Speed for cut sheet paper (Special plain paper / A1, 24” & 22”) (No.382 to 387) 8-116
8. 4. 3.74 Compensation of Fuser Motor Speed for cut sheet paper (Special tracing paper / A1, 24” & 22”) (No.388 to 393) 8-117
8. 4. 3.75 Compensation of Fuser Motor Speed for cut sheet paper (Special film / A1, 24” & 22”) (No.394 to 399) 8-118
8. 4. 3.76 Compensation of Fuser Motor Speed for cut sheet paper (Plain paper / A0, 36” & 34”) (No.400 to 405) 8-119
8. 4. 3.77 Compensation of Fuser Motor Speed for cut sheet paper (Tracing paper / A0, 36” & 34”) (No.406 to 411) 8-120
8. 4. 3.78 Compensation of Fuser Motor Speed for cut sheet paper (Film / A0, 36” & 34”) (No.412 to 417) 8-121
8. 4. 3.79 Compensation of Fuser Motor Speed for cut sheet paper (Special plain paper / A0, 36 & 34”) (No.418 to 423) 8-122
8. 4. 3.80 Compensation of Fuser Motor Speed for cut sheet paper (Special tracing paper / A0, 36” & 34”) (No.424 to 429) 8-123
8. 4. 3.81 Compensation of Fuser Motor Speed for cut sheet paper (Special film / A0, 36” & 34”) (No.430 to 435) 8-124
8. 4. 3.82 Compensation of Fuser Motor Speed for roll paper (Plain paper / 30”) (No.436 to 441, 726, 727) 8-125
8. 4. 3.83 Compensation of Fuser Motor Speed for roll paper (Tracing paper / 30”) (No.442 to 447, 728, 729) 8-126
8. 4. 3.84 Compensation of Fuser Motor Speed for roll paper (Film / 30”) (No.448 to 453, 730, 731) 8-127
8. 4. 3.85 Compensation of Fuser Motor Speed for roll paper (Special plain paper / 30”) (No.454 to 459, 732, 733) 8-128
8. 4. 3.86 Compensation of Fuser Motor Speed for roll paper (Special tracing paper / 30”) (No.460 to 465, 734, 735) 8-129
8. 4. 3.87 Compensation of Fuser Motor Speed for roll paper (Special film / 30”) (No.466 to 471, 736, 737) 8-130
8. 4. 3.88 Compensation of Fuser Motor Speed for cut sheet paper (Plain paper / 30”) (No.472 to 477) 8-131
8. 4. 3.89 Compensation of Fuser Motor Speed for cut sheet paper (Tracing paper / 30”) (No.478 to 483) 8-132
8. 4. 3.90 Compensation of Fuser Motor Speed for cut sheet paper (Film / 30”) (No.484 to 489) 8-133
8. 4. 3.91 Compensation of Fuser Motor Speed for cut sheet paper (Special plain paper / 30”) (No.490 to 495) 8-134
8. 4. 3.92 Compensation of Fuser Motor Speed for cut sheet paper (Special tracing paper / 30”) (No.496 to 501) 8-135
8. 4. 3.93 Compensation of Fuser Motor Speed for cut sheet paper (Special film / 30”) (No.502 to 507) 8-136

8. 4. 3.94 Transfer Voltage applied at 100mm from trailing edge (Plain paper / Tracing paper / Film) (No.508 to 510) 8-137
8. 4. 3.95 Transfer Voltage applied at 70mm from trailing edge (Plain paper / Tracing paper / Film) (No.511 to 513) 8-137
8. 4. 3.96 Fuser Motor Speed applied at 30mm from trailing edge (Plain paper / Tracing paper / Film) (No.514 to 516) 8-137
8. 4. 3.97 Judgment value for Additional Cut Length for Non-standard Size Prints (No.613 to 616) 8-138
8. 4. 3.98 Additional Cut Length for Non-standard Size Prints (No.617 to 620) 8-140
8. 4. 3.99 Toner Supply Roller Bias (No.621) 8-140
8. 4. 3.100 Regulation Bias (No.622) 8-140
8. 4. 3.101 Density Sensor Standard Output (No.623) 8-141
8. 4. 3.102 Density Sensor Analog Voltage (No.624) 8-141
8. 4. 3.103 Print - Fuser Temperature Side (12”/11”/A3) (No.625 to 630) 8-142
8. 4. 3.104 Print - Fuser Temperature Side (18”/17”/15”/A2) (No.631 to 636) 8-142
8. 4. 3.105 Print - Fuser Temperature Side (24”/22”/A1) (No.637 to 642) 8-143
8. 4. 3.106 Print - Fuser Temperature Side (36”/34”/30”/A0/B1) (No.643 to 648) 8-143
8. 4. 3.107 Density Sensor Output Monitor (No.649) 8-144
8. 4. 3.108 Regulation Bias Increment for Auto Adjustment Level 2 & 3 (No.650) 8-144
8. 4. 3.109 Total Increment of Regulation Bias Adjustment (No.651) 8-144
8. 4. 3.110 Density Compensation ON/OFF (No.652) 8-145
8. 4. 3.111 Target Density (No.653) 8-146
8. 4. 3.112 Regulation Bias Maximum (No.654) 8-146
8. 4. 3.113 Density Measure Interval (No.655, 656) 8-147
8. 4. 3.114 Developer Bias Increment for Auto Adjustment Level 1 & after (No.657) 8-147
8. 4. 3.115 Ready - Fuser Temperature Center (No.660 to 665) 8-148
8. 4. 3.116 Ready - Fuser Temperature Side (No.666 to 671) 8-148
8. 4. 3.117 Fuser Motor Speed (18” / 17” / 15” / 12” / 11” / A2 / A3) (No. 672 to 677) 8-149
8. 4. 3.118 Compensation of Fuser Motor Speed 4 (No.678 to 737) 8-149
8. 4. 3.119 Standby - Fuser Temperature (No.738, 739) 8-150
8. 4. 3.120 Assist Fan Off Timing (No.740 to 742) 8-150
8. 4. 3.121 Fuser Motor Speed applied at 100mm from trailing edge (36” / 34” / 30” / A0 / B1 width) (No.743 to 745) 8-151
8. 4. 3.122 Roll 2 Forward Standby ON/OFF (No.746) 8-151
8. 4. 3.123 Roll 2 Forward Standby Position Adjustment (No.747) 8-151
8. 4. 3.124 Roll 2 Rewind Timer (No. 748) 8-151
8. 4. 3.125 Tracing Mode (No. 749) 8-152
8. 4. 3.126 Roll 1 Setting Mode (No. 750) 8-152
8. 4. 3.127 Disable HV Error Detection Mode (No. 751) 8-152
8. 4. 3.128 Definition of long print (used for Auto Initial Cut after Long Print) (No. 753) 8-153
8. 4. 3.129 Trigger of Auto Initial Cut after Long Print (Number of long prints) (No.754) 8-153
8. 4. 3.130 Length of trim cut for Auto Initial Cut before Print (No. 755) 8-155
8. 4. 3.131 Leading Registration for Paper Tray (No. 756) 8-156
8. 4. 3.132 Trailing Margin for Paper Tray (No. 757) 8-156
8. 4. 3.133 Side Registration for Paper Tray (No. 758) 8-157
8. 4. 3.134 Number of prints available for stacking on Upper Print Tray (No. 759 to 761) 8-158
8. 4. 3.135 Paper Tray Motor Speed (No. 762) 8-158
8. 4. 3.136 Time for detecting paper jam in Paper Tray (No. 763) 8-158
8. 4. 3.137 Interval time for rotating Fuser Roller (No.764) 8-159
8. 4. 3.138 Length of trim cut for Auto Initial Cut after Long Print (No.765) 8-159
8. 4. 3.139 Specification of Interface Communication (No.766) 8-159
8. 4. 3.140 Horizontal Alignment of LED Head block A & B (No. 767) 8-159
8. 4. 3.141 Horizontal Alignment of LED Head block B & C (No. 768) 8-160
8. 4. 3.142 Darkness of LED Head Block A (No. 769) 8-161
8. 4. 3.143 Darkness of LED Head Block B (No. 770) 8-161

8. 4. 3.144 Darkness of LED Head Block C (No. 771) 8-162
8. 4. 3.145 Darkness of LED Head (all 3 blocks) (No. 772) 8-162
8. 4. 3.146 Parameters of Image Enhancement Level 0 (No. 773 to 782) 8-163
8. 4. 3.147 Parameters of Image Enhancement Level 1 (No. 783 to 792) 8-163
8. 4. 3.148 Parameters of Image Enhancement Level 2 (No. 793 to 802) 8-164
8. 4. 3.149 Parameters of Image Enhancement Level 3 (No. 803～812) 8-164
8. 4. 3.150 Counter option setting (No.813) 8-164
8. 4. 3.151 Darkness adjustment for the boundary between blocks A & B (No. 814) 8-165
8. 4. 3.152 Darkness adjustment for the boundary between blocks B & C (No. 815) 8-166
8. 4. 3.153 Selection of roll deck to perform “Auto Initial Cut before Print” (No.816) 8-167
8. 4. 3.154 Timer of “Auto Initial Cut before Print” (No.817) 8-168
8. 4. 3.155 Regional setting (No.818) 8-168
8. 4. 3.156 Detection Time of Fuser Temperature Heat-up Error (No.819 to 821) 8-169
8. 4. 3.157 Running setting (No.822) 8-170

8. 5 Information 8-171
8. 5. 1 Operation in Information 8-172
8. 5. 2 List of Analog Data Monitor 8-173

8. 6 Input Check 8-174
8. 6. 1 Operation in Input Check 8-175
8. 6. 2 Input / Output Signal list 8-176

8. 7 Output Check 8-178
8. 7. 1 Operation in Output Check 8-179
8. 7. 2 Output Signal List 8-182

8. 8 History 8-183
8. 8. 1 Operation in History 8-184

8. 9 Mask 8-186
8. 9. 1 Mask List 8-187
8. 9. 2 Operation in Error Mask 8-188
8. 9. 3 Operation in Jam Mask 8-190

8.10 Factory Adjustment 8-192

8.11 Clear/Reset 8-193
8.11. 1 Operation in Clear/Reset 8-194
8.11. 2 Changing Counter Value 8-195
8.11. 3 Reset of Bias Adjustment by Density Compensation Process 8-198

8.12 Program Update 8-200
8.12. 1 Operation in Program Update 8-201

8.13 Version Info 8-204
8.13. 1 Indication in Version Info 8-205

8.14 Deck Information 8-206
8.14. 1 Operation in Deck Information 8-207

8.15 Density & Toner Supply 8-208
8.15. 1 Operation in Density & Toner Supply 8-209

8.16 Printer Function (Wrench Icon) 8-211
8.16. 1 Operation in Printer Function 8-212

8.17 Counter Information 8-213
8.17. 1 Operation in Counter Information 8-214

8.18 Regional Setting 8-215

8.19 Communication Reset 8-218

8.20 Active Modes 8-219

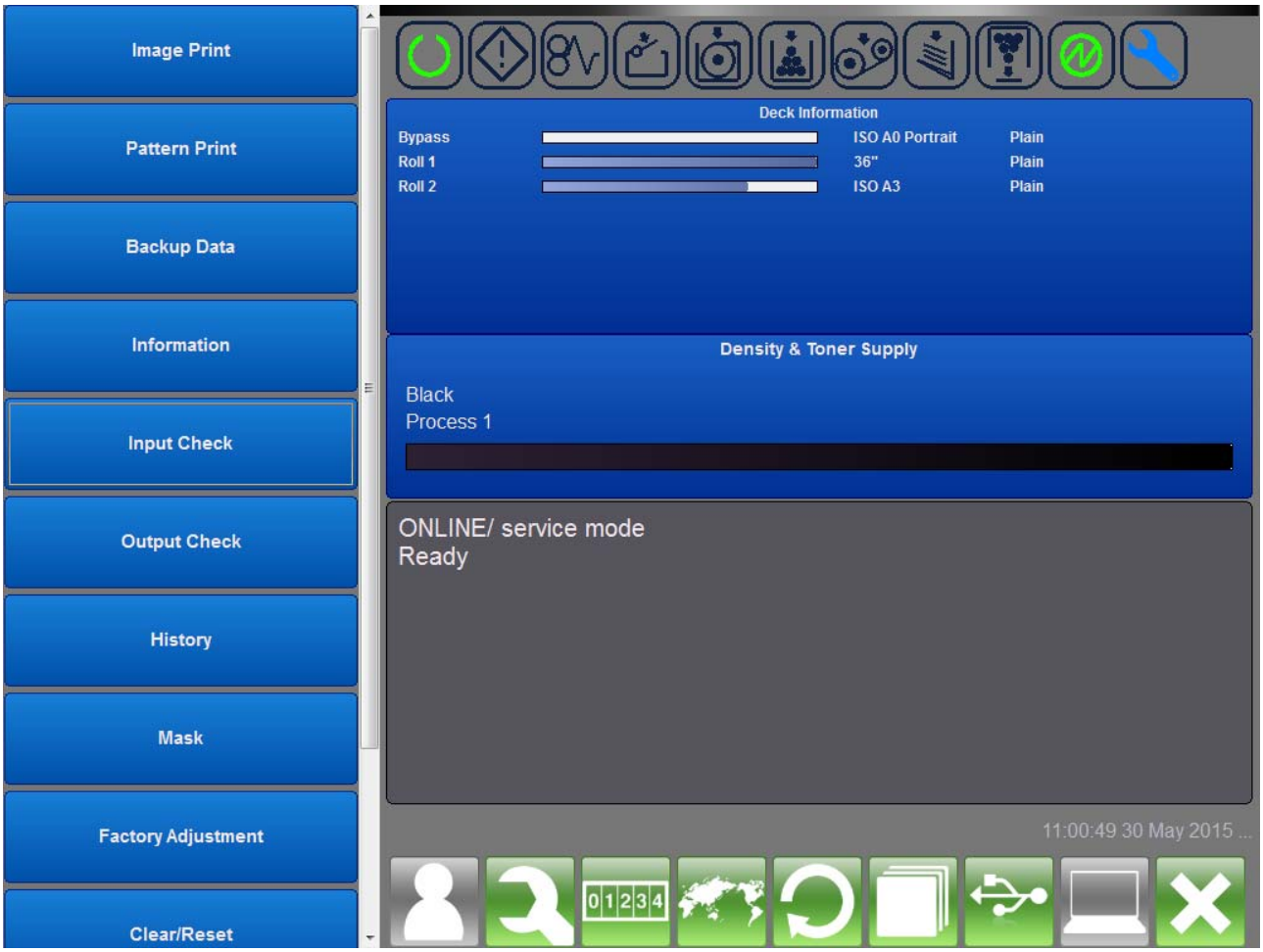
8.21 USB Eject 8-221

8.22 K129 Diag 8-222
8.22. 1 K129 Diag Overview 8-222
8.22. 2 Starting K129 Diag 8-224
8.22. 3 Version 8-225
8.22. 4 Backup Data 8-226
8.22. 4. 1 Changing Backup Data 8-226
8.22. 4. 2 Saving the Current Backup Data 8-232
8.22. 4. 3 Editing Backup Data File 8-234
8.22. 4. 4 Restoring Backup Data 8-235
8.22. 4. 5 Backup Data List 8-238
8.22. 4. 6 BUD Descriptions 8-242
0 Lead Regist 8-242
1 T Margin 8-242
3 Motor Correction 8-242
4 Offset Level 8-242
5 ED Gamma Select 8-243
6 Sleep Time 8-243
9 Doc. Entry Time 8-243
10 ISO/ANSI 8-243
11 Doc. Entry Speed 8-243
12 Correction Time 8-244
13 Switching Step1 8-244
14 Switching Step2 8-244
15 Stitch Setting1 8-245
16 Stitch Setting2 8-245
19 Ind. Language 8-245
20 - 34 Strobe 8-246
35 - 46 Offset Block, Gain Block 8-246
47 - 51 Luminance 8-247
52 - 55 CIS Main 8-247
56 - 59 CIS Sub 8-248
60 Digital Gain 8-248
61 Platen Samp Time 8-248
62 - 65 CIS Detail 8-248
66 Overlap Image 8-249
67 Special Scan 8-249
68 Strobe Level 8-249
70 - 117 Stitch Adjust 8-249
118, 119 Doc. Set pxl1 8-250
120, 121 Doc. Set thr1 8-250
122, 123 Doc. Set pxl2 8-250
124, 125 White Std pxl 8-250
126 - 145 Platen Data 8-251
146 - 165 CIS Offset 8-252
166 - 180 Sub Strobe 8-253
181 - 200 CIS Offset2 8-253
201 - 204 White Std pxl3 8-253
205 Samp Block Data 8-253
206 Target Gain Value 8-253

207 CIS Slope 8-253
208 Gain Threshold 8-254
209 Sampling Width 8-254
8.22. 4. 7 Saving Shading Data 8-255
8.22. 4. 8 Restoring Shading Data 8-257
8.22. 5 Update 8-259
8.14. 5. 1 Sending Firmware to Scanner 8-259
8.22. 6 Motion 8-262
8.22. 6. 1 Shading 8-263
8.22. 6. 2 Stitching 8-266
8.22. 6. 3 Black Brightness Correct 8-283
8.22. 6. 4 Other menu on Adjustment 8-291
8.22. 6. 5 Operation Check 8-292
8.22. 7 Input Check 8-294
8.22. 7. 1 Getting Input Signal 8-294
8.22. 7. 2 Signal List 8-296
8.22. 8 Error Check 8-297
8.22. 8. 1 Getting Error Status 8-297
8.22. 8. 2 Error List 8-298
8.22. 9 Counter 8-299
8.22.10 Reset 8-299
8.22.11 Serial Manager 8-300
8.22.11. 1 Serial Manager System Requirements 8-301
8.22.11. 2 Starting Serial Manager 8-301
8.22.11. 3 Registration S/N to Scanner Main Board 8-302

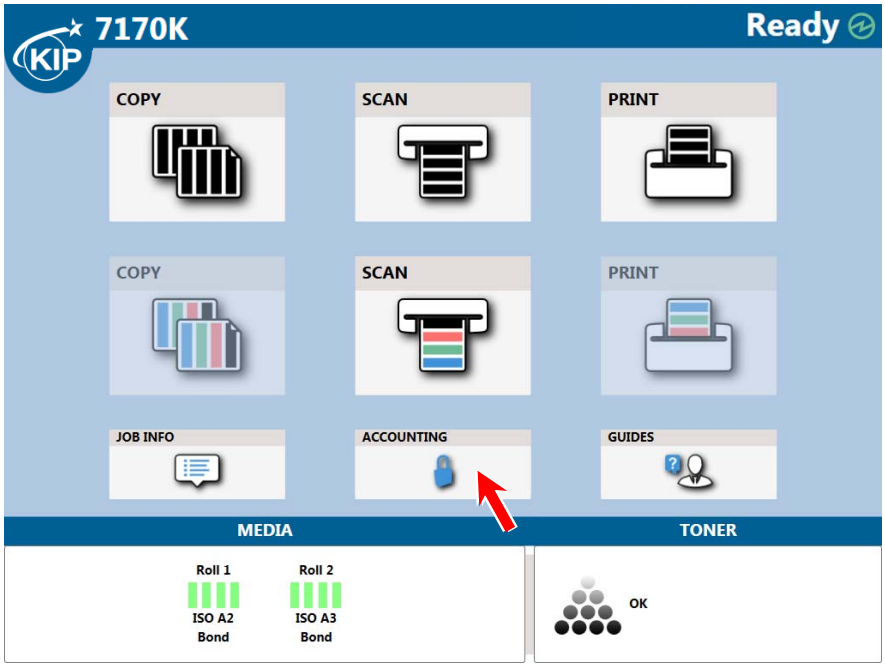
8. 1 Maintenance GUI Overview

Maintenance GUI is a software application that allows overall technical service operations for the printer by easy touch panel operation, which is pre-installed in the control software. A service technician is able to use this software for status monitor, operation check, configuration of parameters and etc.

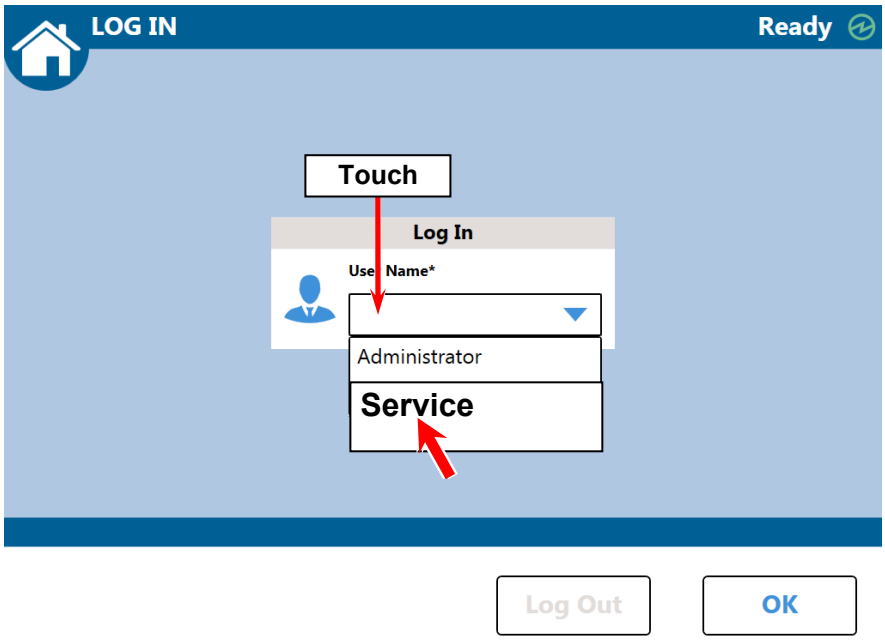


8. 1. 1 Launching Maintenance GUI

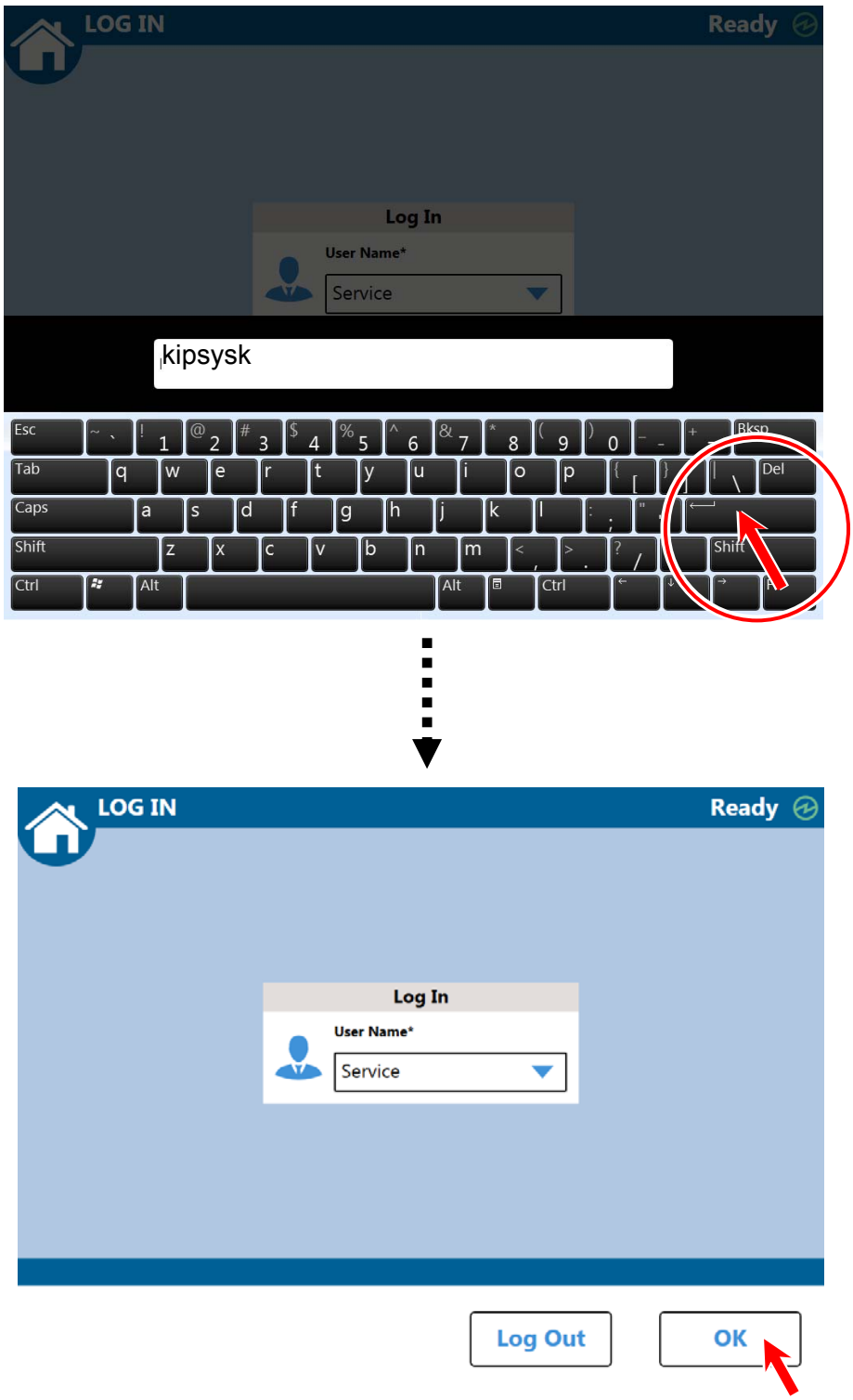
1. Press **ACCOUNTING** in the HOME screen of Touch Panel.



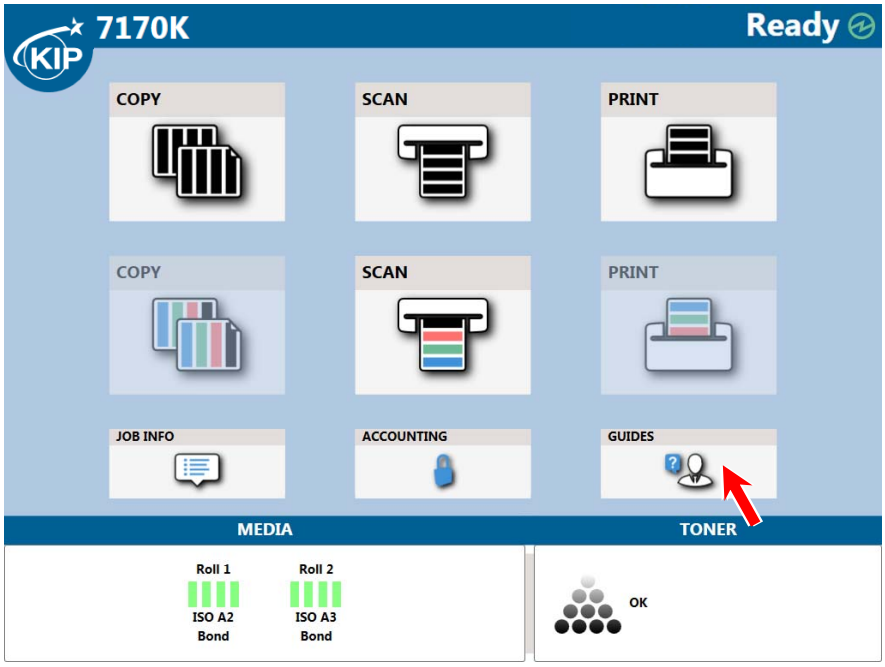
2. Touch the entry field of "User Name", and then select "Service" from the pull-down menu.



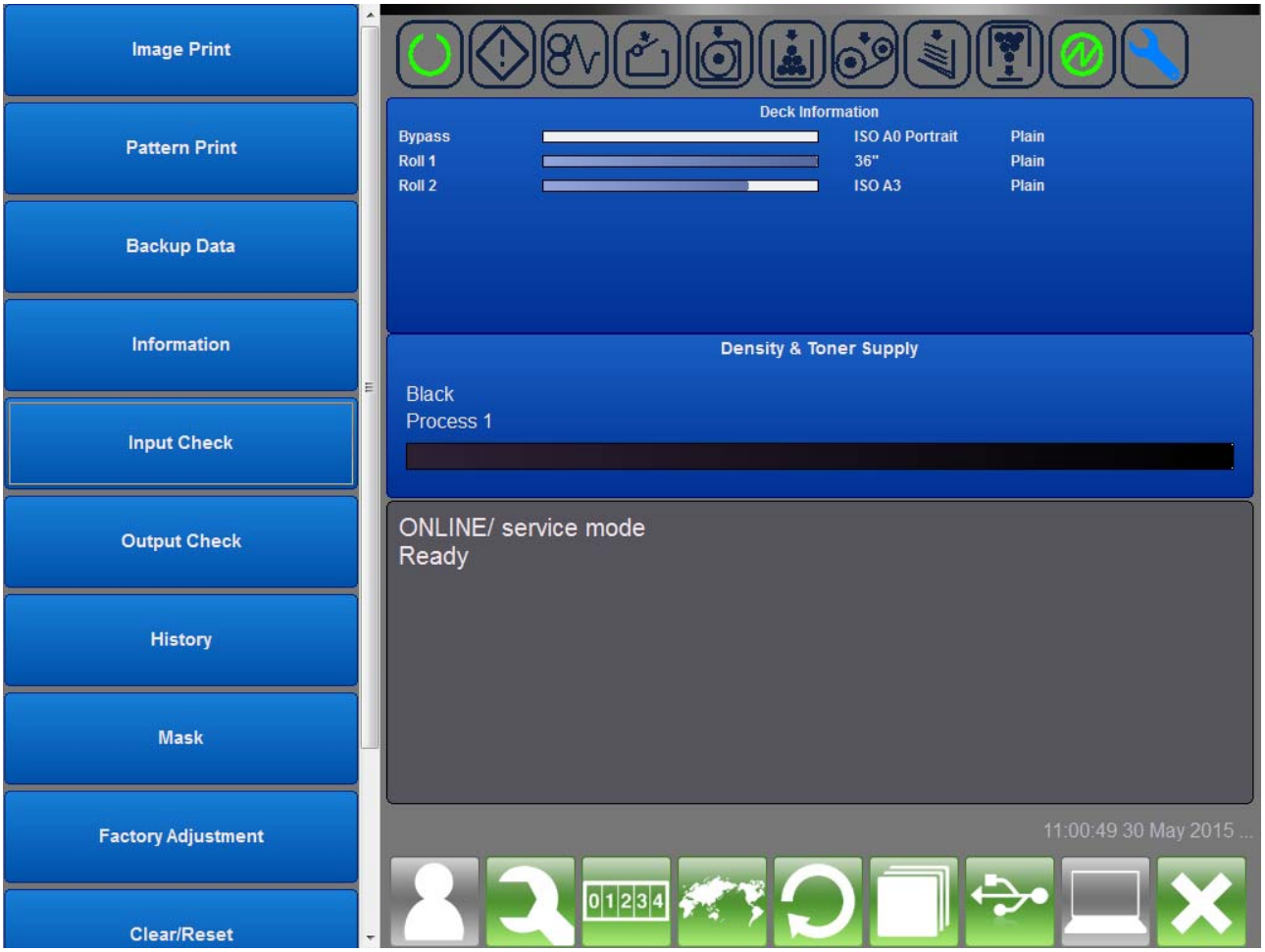
3. Enter "kipsysk" in the password field, press the ENTER key, and then press [OK] in the LOG IN screen to log in with the administrative right.



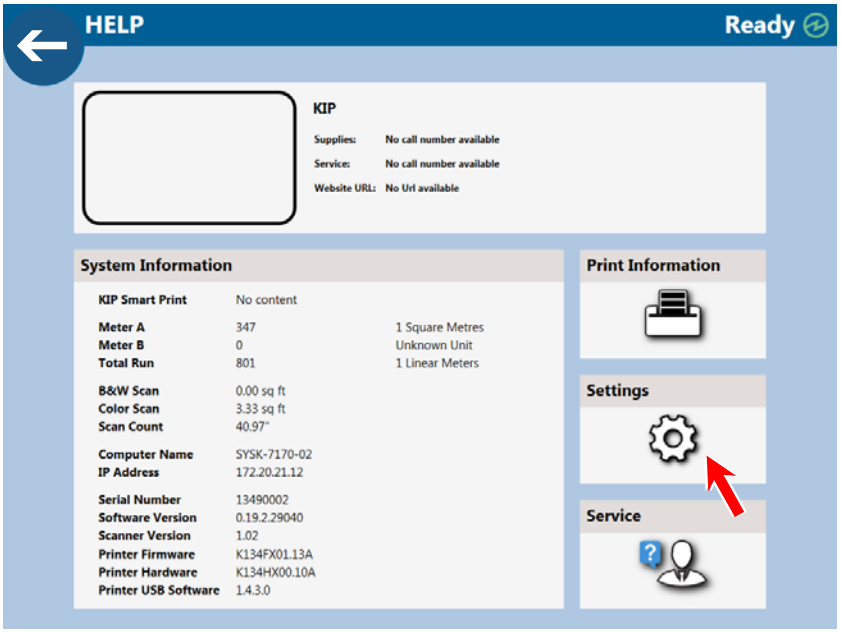
4. Press **GUIDES**.

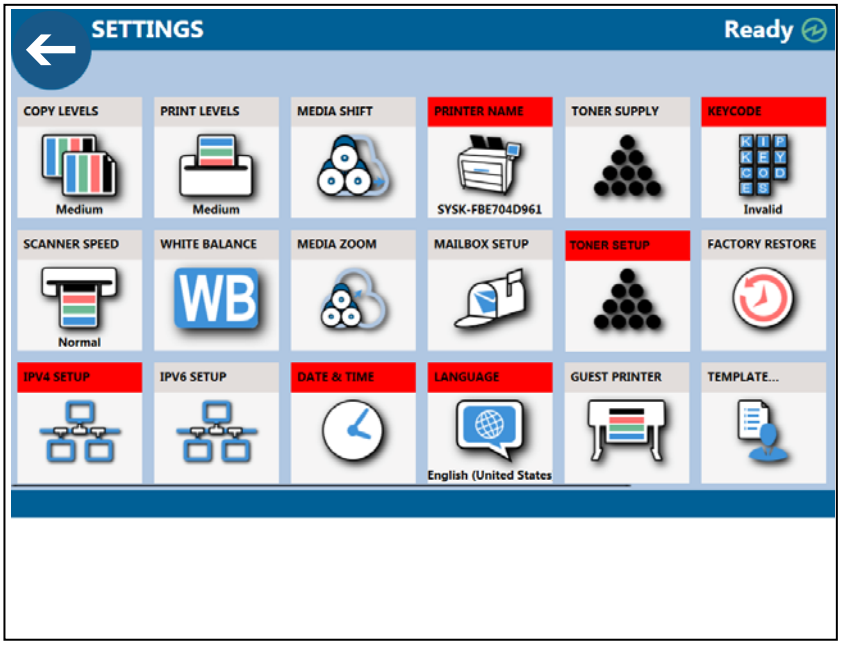


5. Press **Help**.

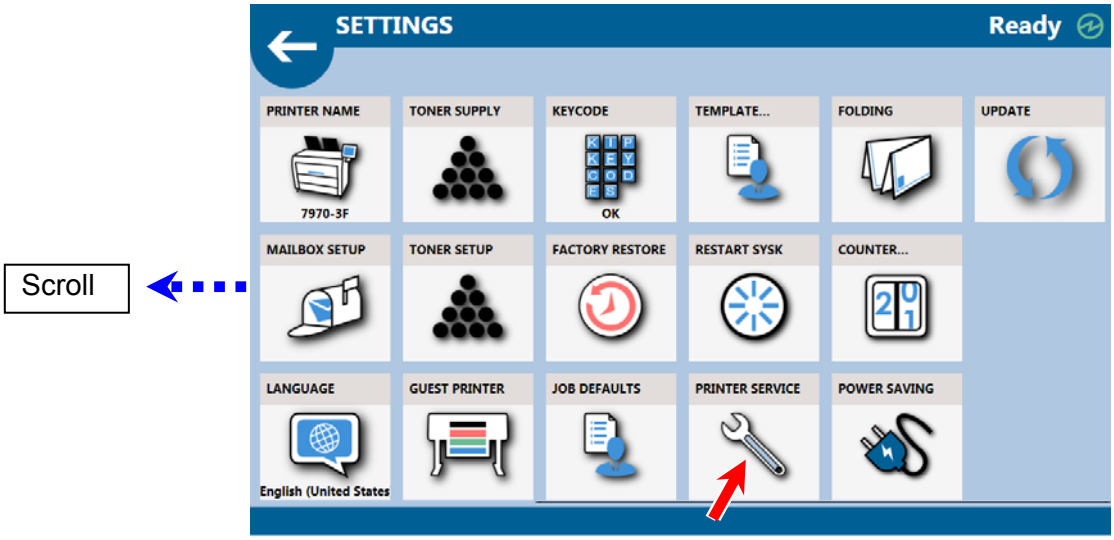


6. Press Setting to indicate SETTINGS page.

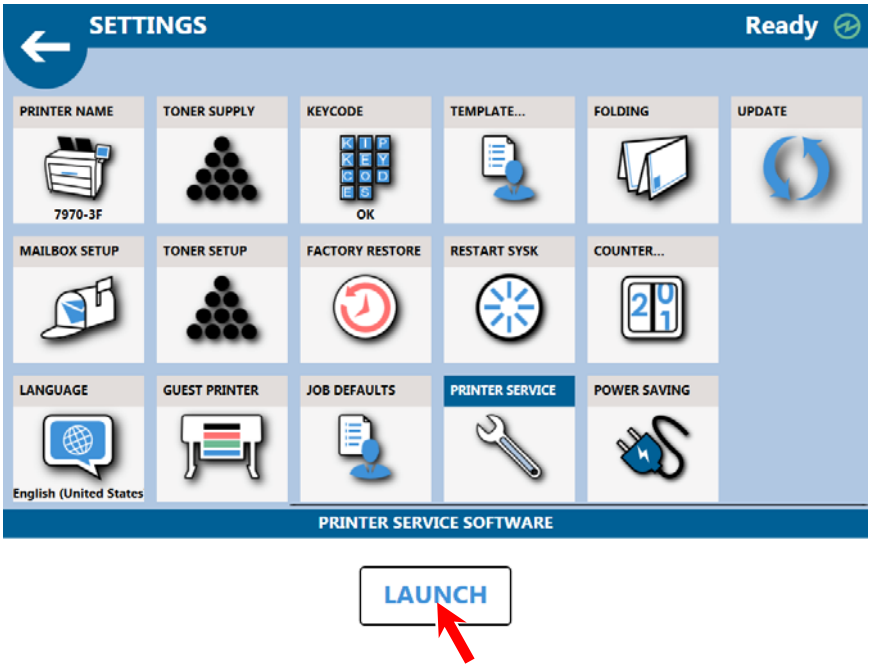




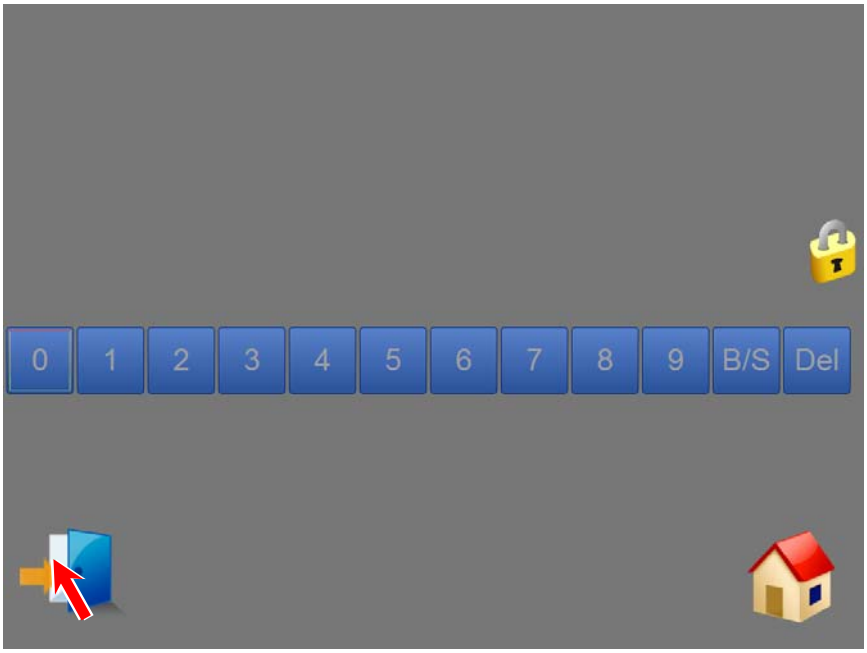
7. In SETTINGS page, flick or swipe on the touch panel to scroll the page rightward. Find **PRINTER SERVICE** and press it.

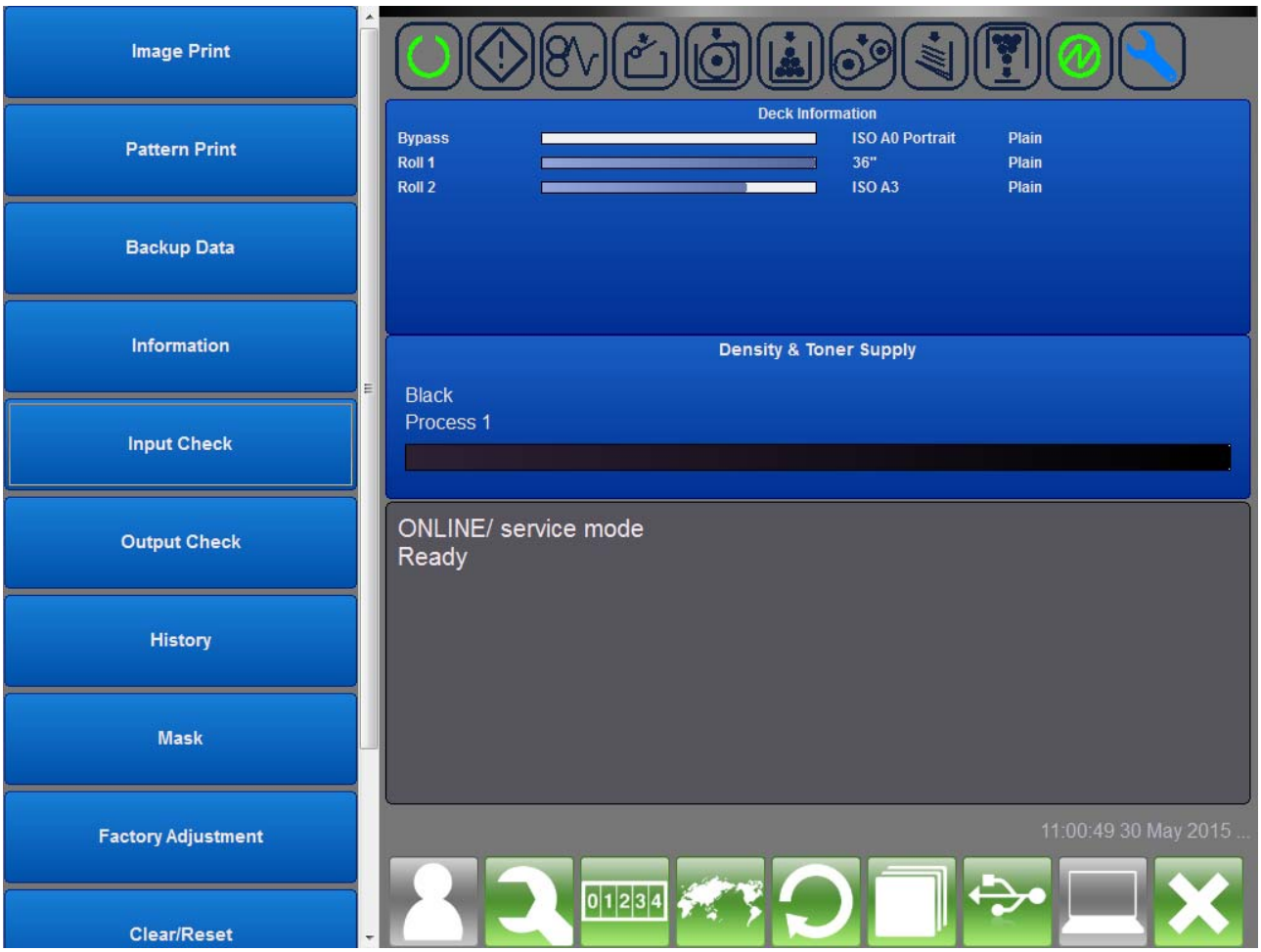


8. Press **LAUNCH**.



9. Press the door icon on the bottom-left to run the Maintenance GUI.

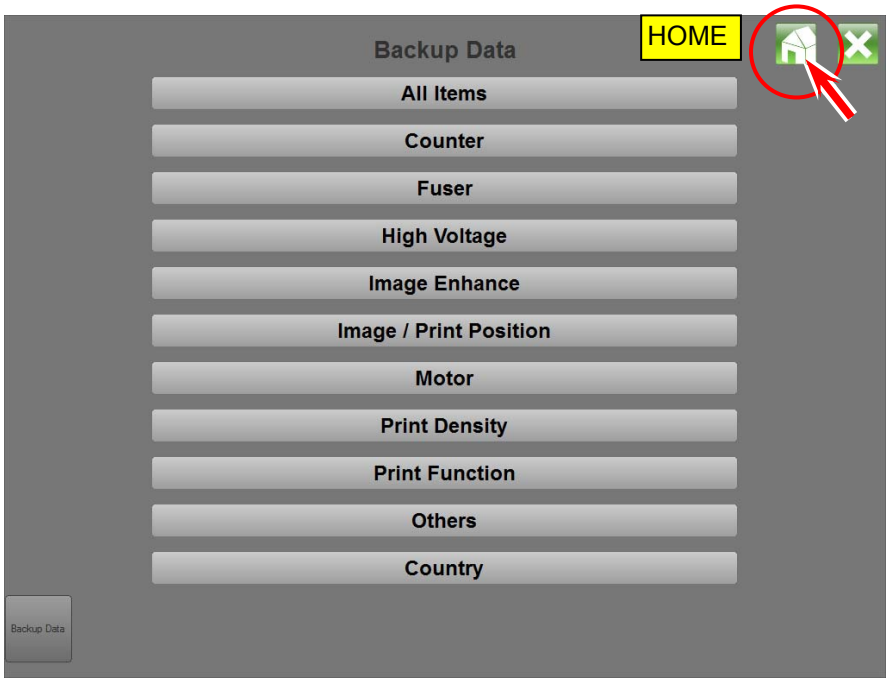




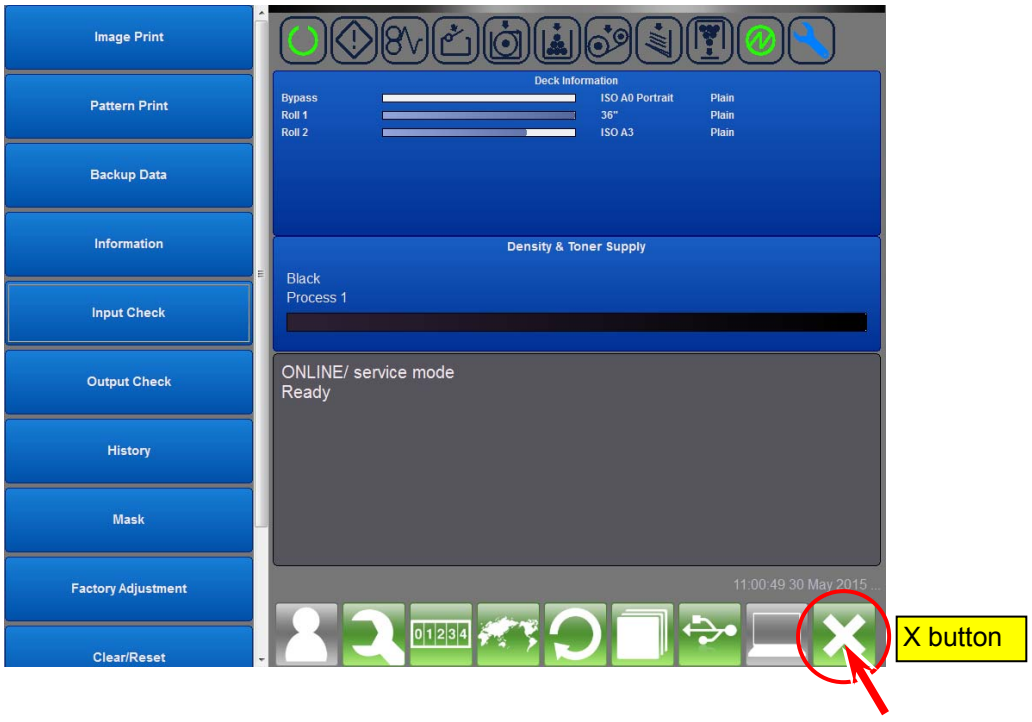
Maintenance GUI Home Screen

8. 1. 2 Closing Maintenance GUI

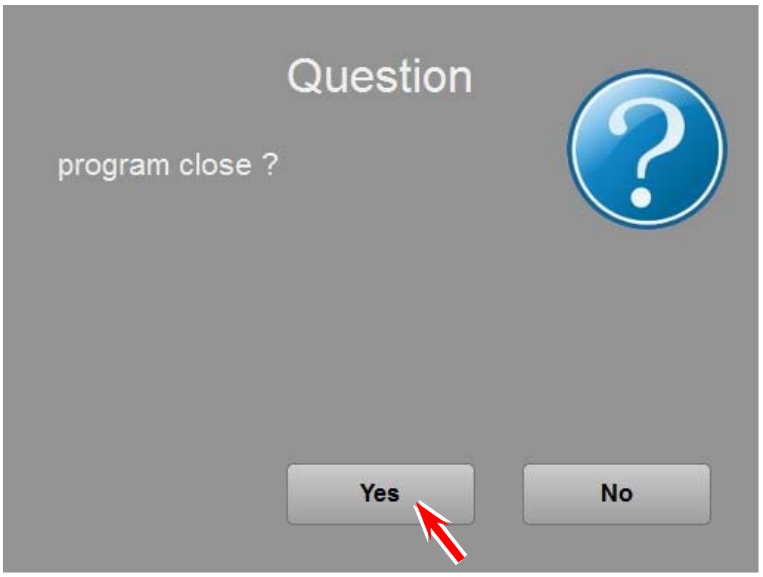
1. Press "HOME" icon in each sub page of the Maintenance GUI to indicate the home screen.



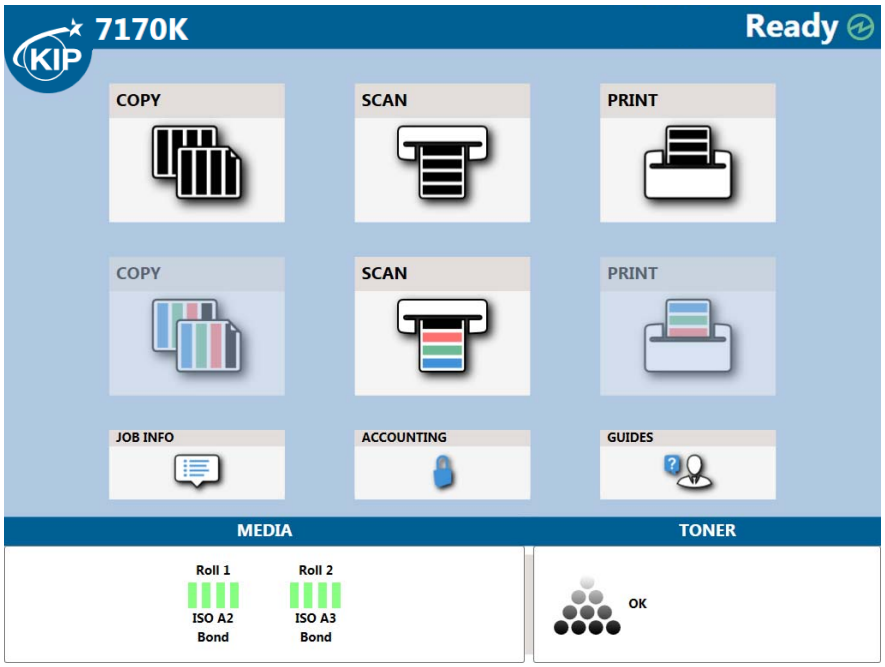
2. Press **X** button on bottom-right.



3. When a confirmation message is indicated, press **Yes**.



4. The Maintenance GUI closes indicating the HOME screen of user interface instead.



8. 1. 3 Update of Maintenance GUI

It is sometimes required to update the Maintenance GUI application when the printer control programs such as Firmware and FPGA are updated. See the following procedure for updating.

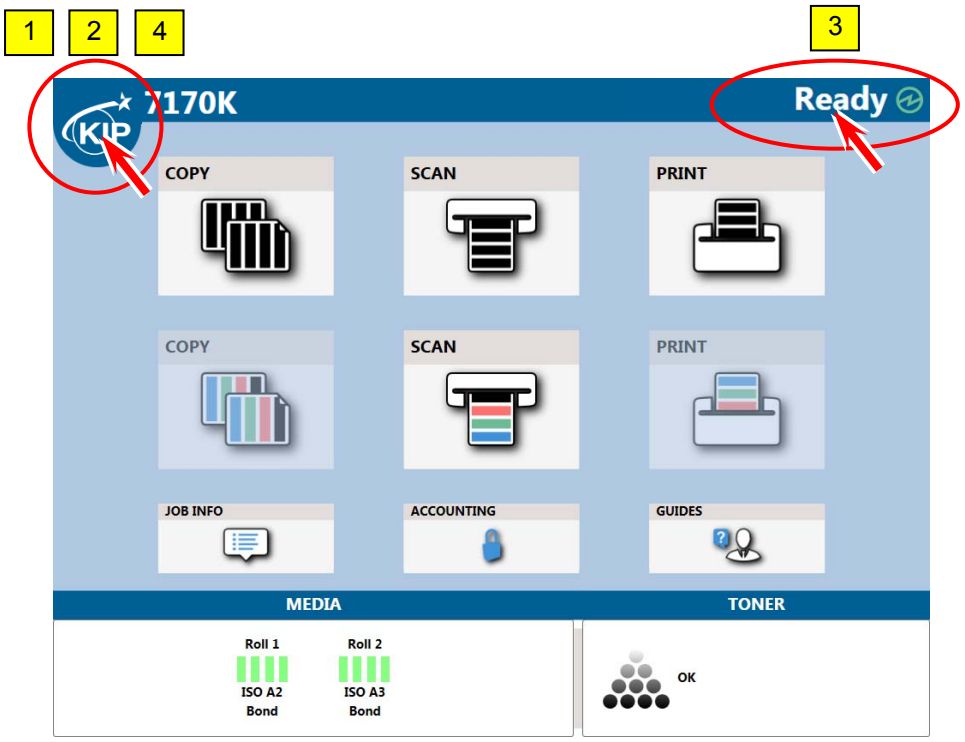
1. New version of Maintenance GUI application is provided by a zip file format. Unzip it to retrieve the following 4 files

   - KcsMaintenanceGUI.exe
   - KcsUpdate.dll.
   - OpenApi.dll
   - KcsCode.xml

   Save all of them in a transportable device such as USB memory stick.

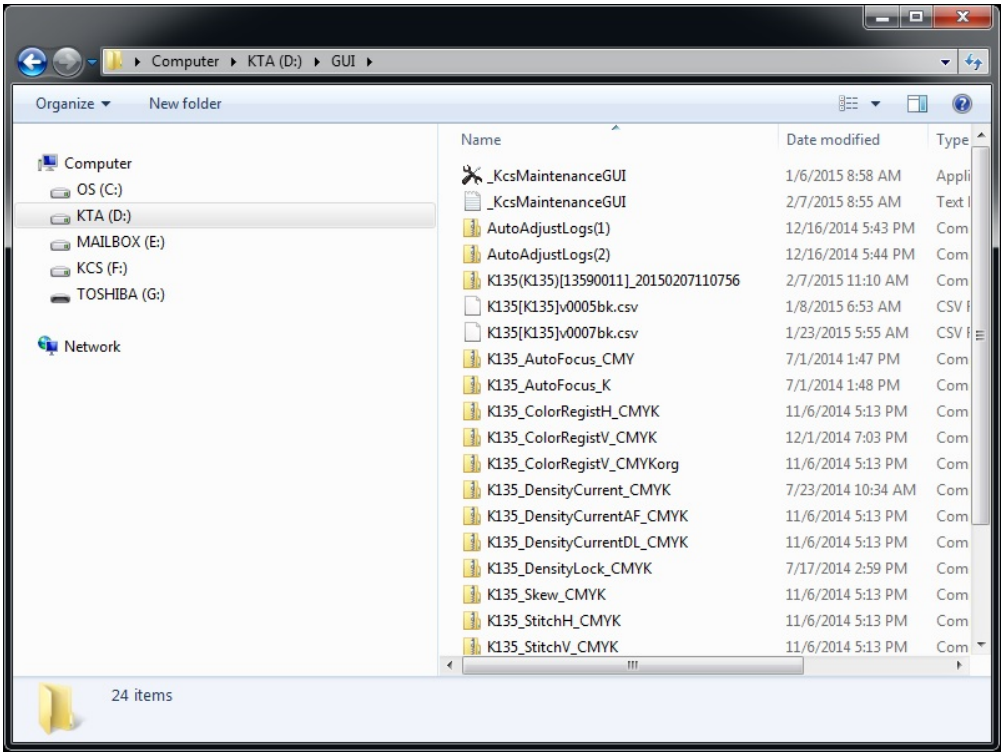
2. Close the user interface by the following operations to access the desktop of controller.

   (1) Press the HOME icon on top-right.
   (2) Press the HOME icon on top-right again.
   (3) Press the indication area of [(Model name) – (status)].
   (4) Press the HOME icon on top-right again.



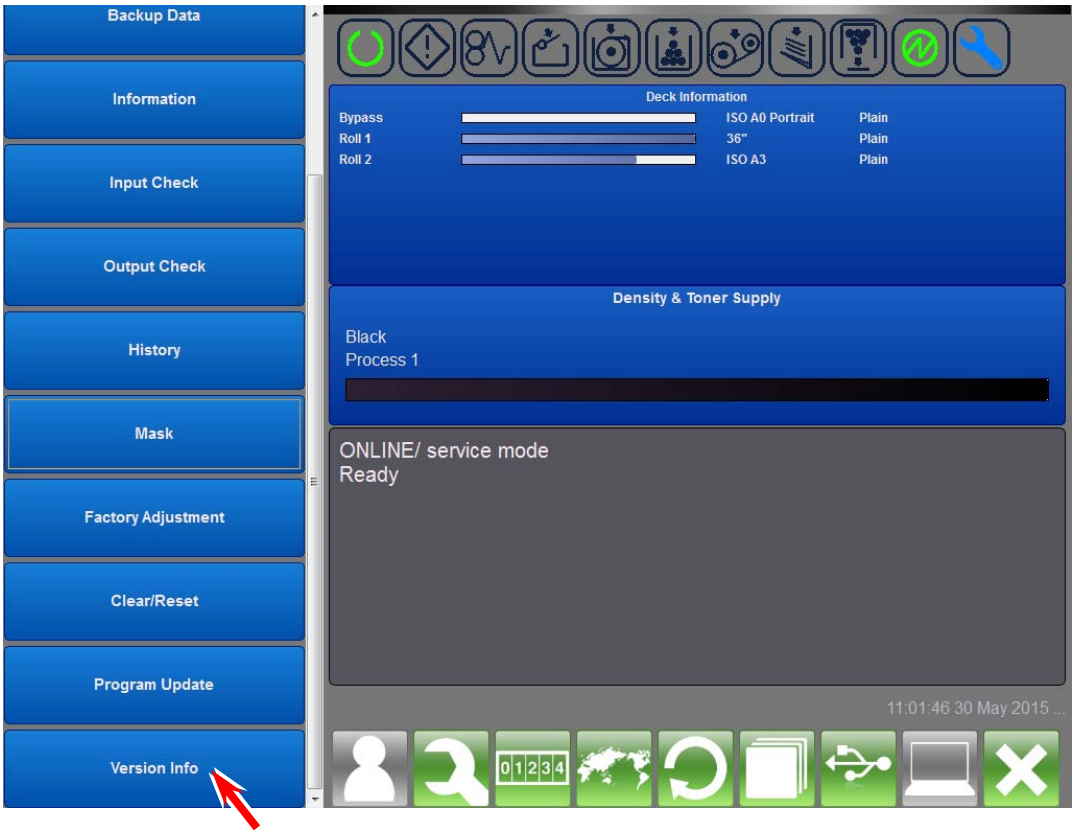
3. Browse to **D\:GUI** by such as Windows Explorer, and copy and paste the following 4 files which you retrieved at the former step 1. This will update the Maintenance GUI application.

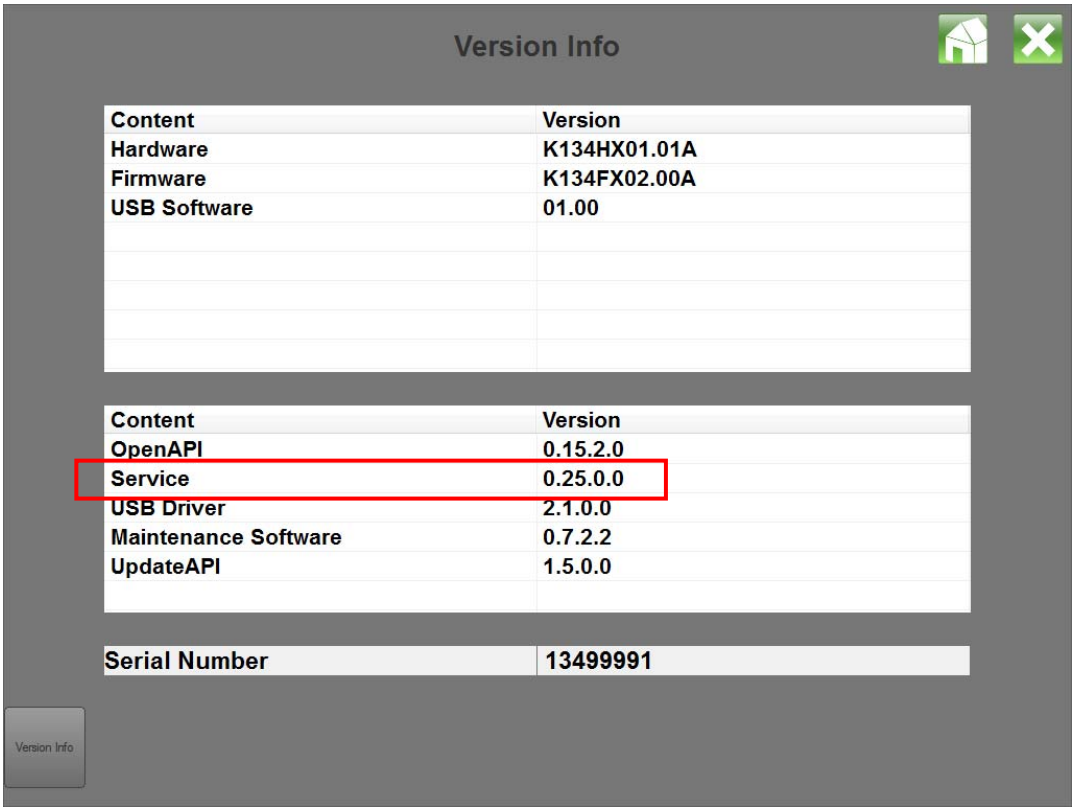
   - KcsMaintenanceGUI.exe
   - KcsUpdate.dll.
   - OpenApi.dll
   - KcsCode.xml



Reference

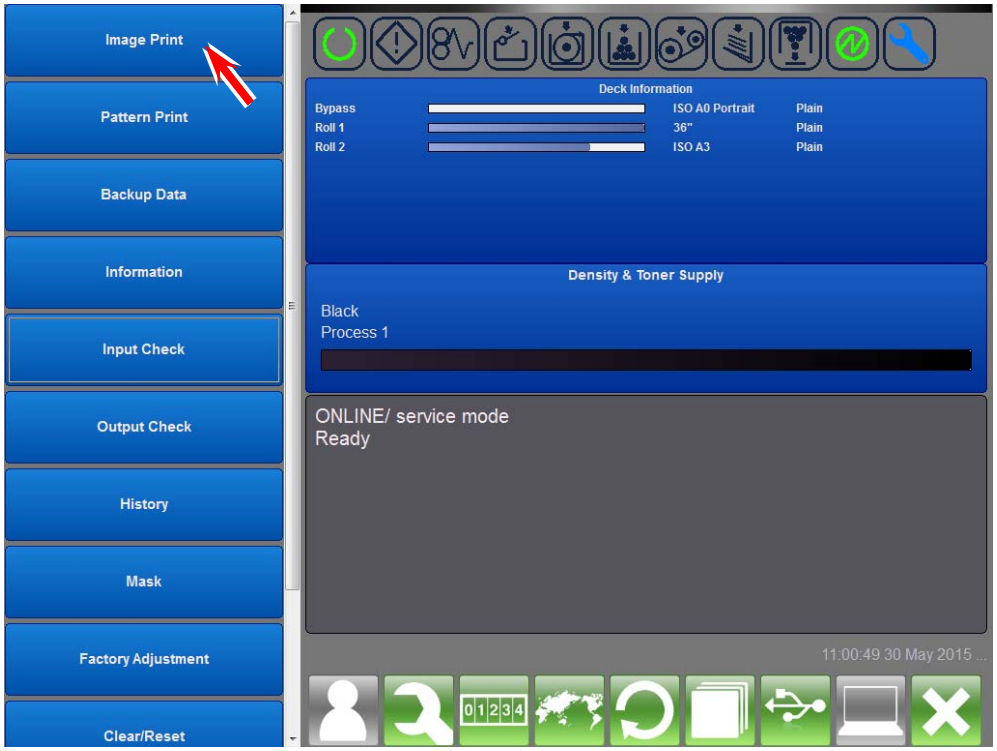
You will be able to check the current version of Maintenance GUI in **Version Info**.

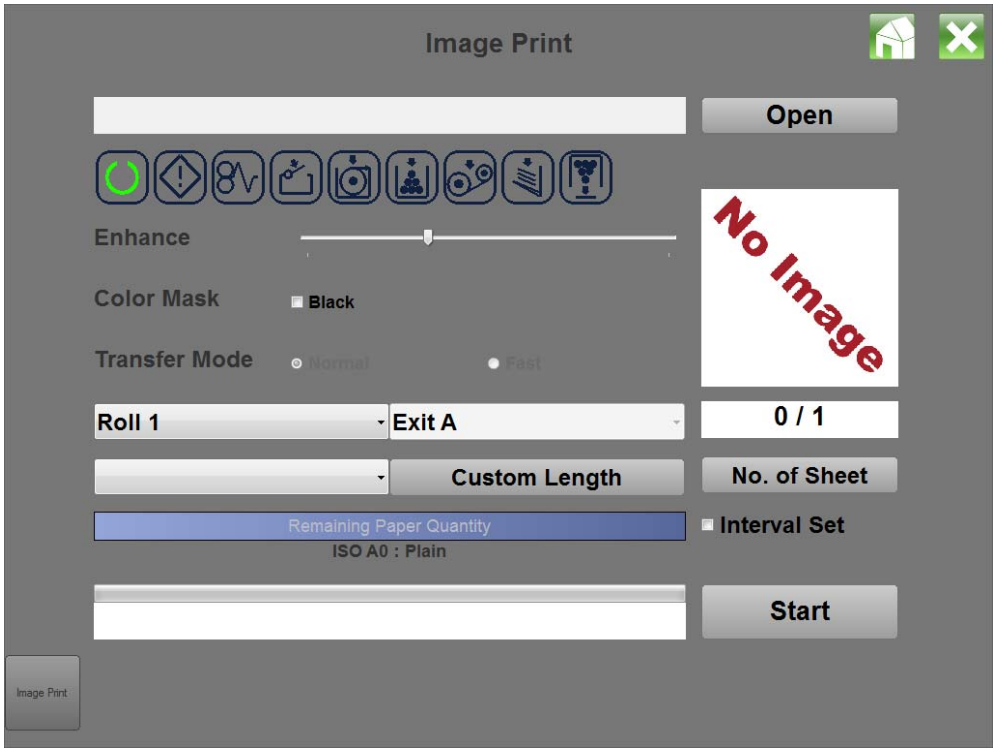




8. 2 Image Print

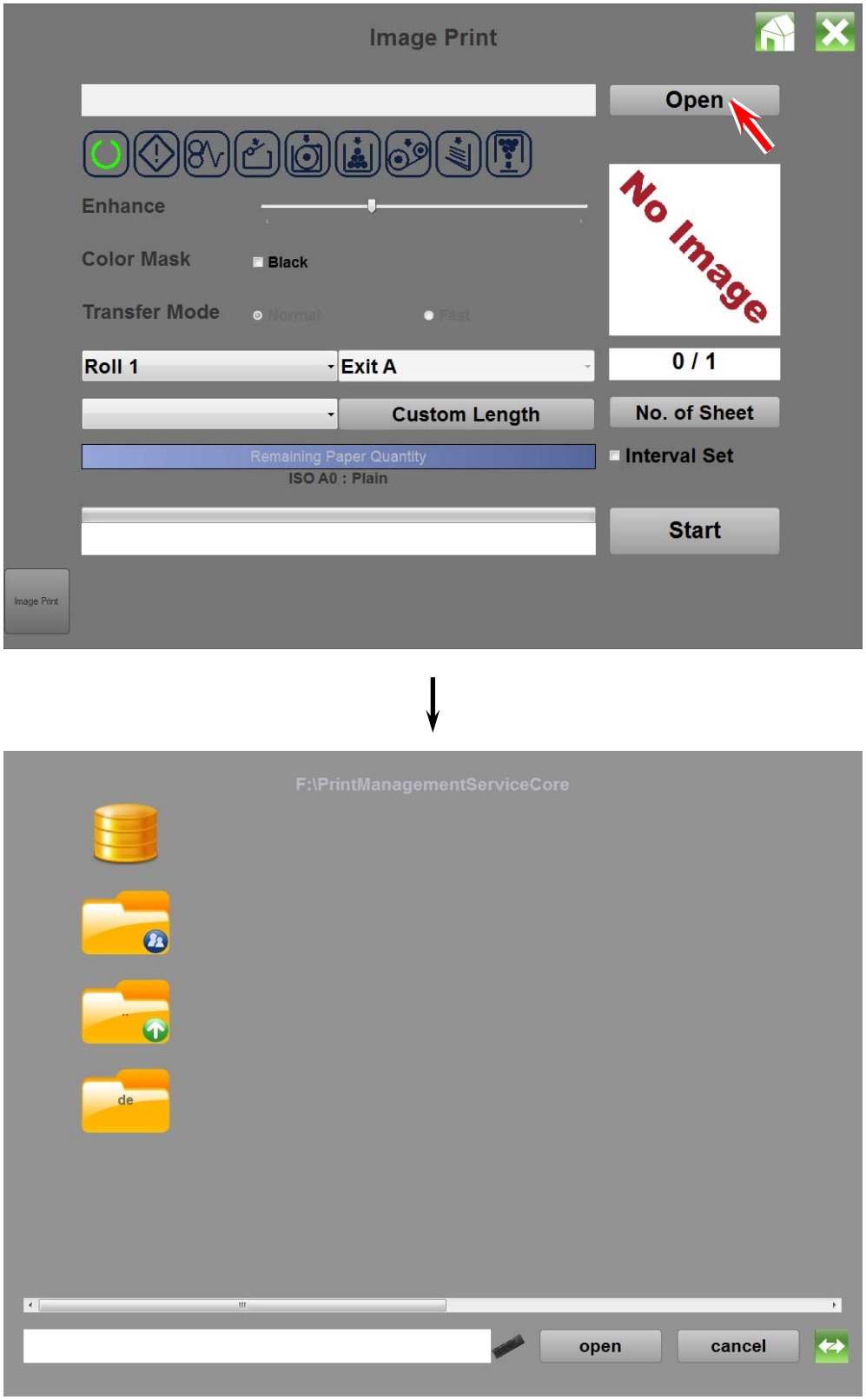
Image Print allows an operator to print some internal test patterns for such purposes as operation check, performance check, troubleshooting and etc.



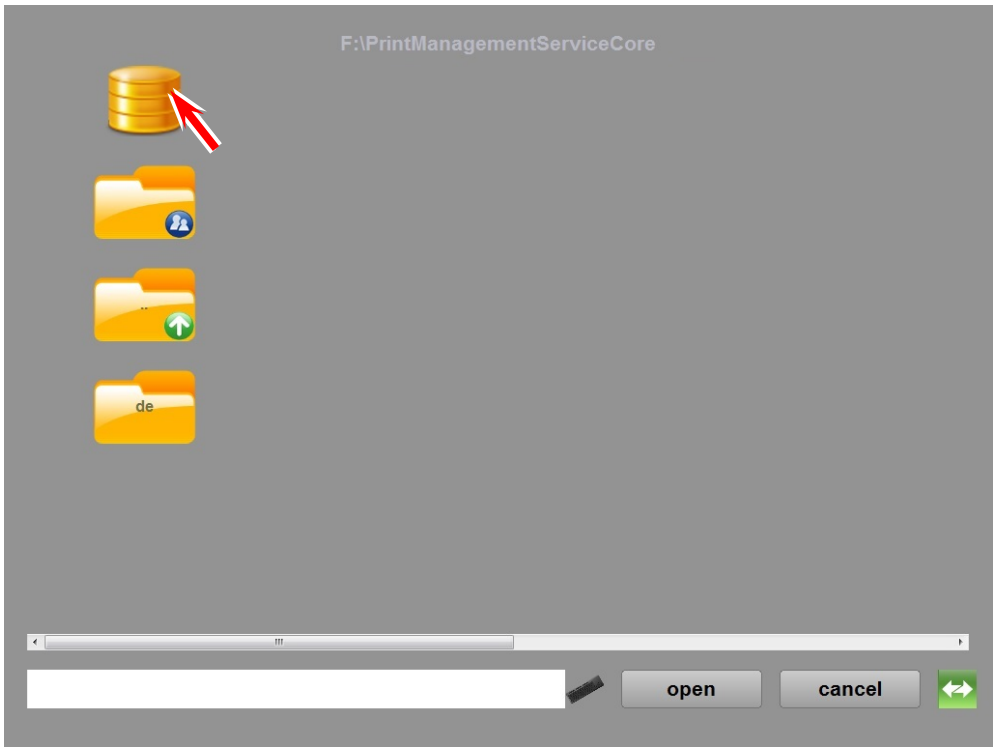


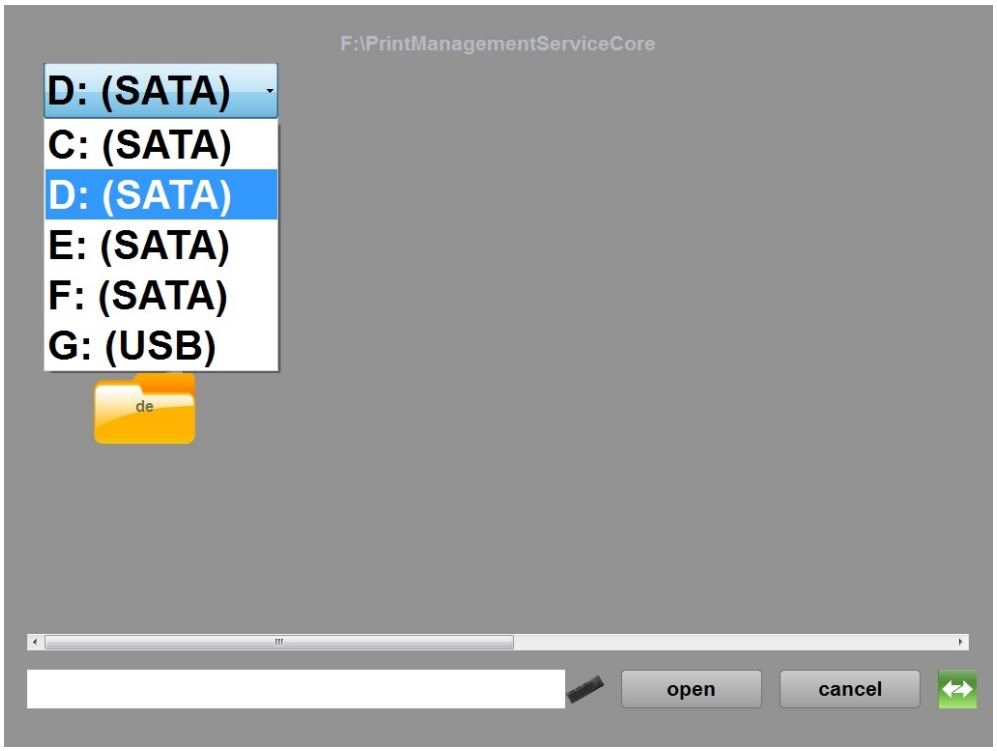
8. 2. 1 Operation procedure of test printing

1. Press **Open** in the Image Print page. A file selection page is indicated.



2. The top section of the page shows the path of currently selected folder. If you will select another drive, press an icon on top-right and then select the necessary folder in the list.

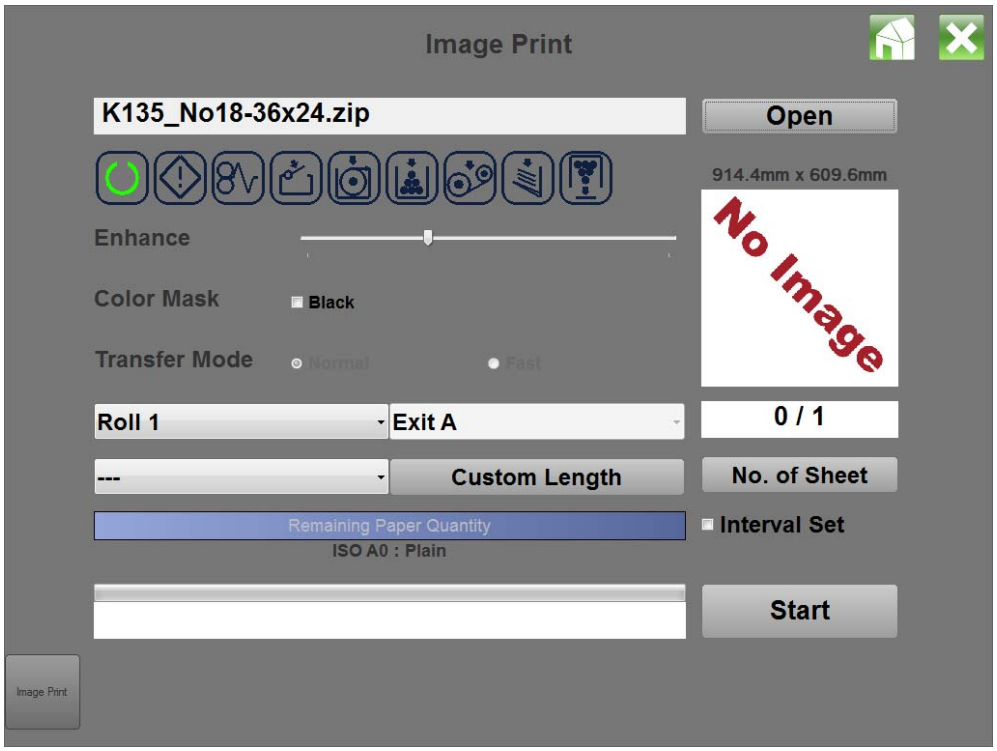




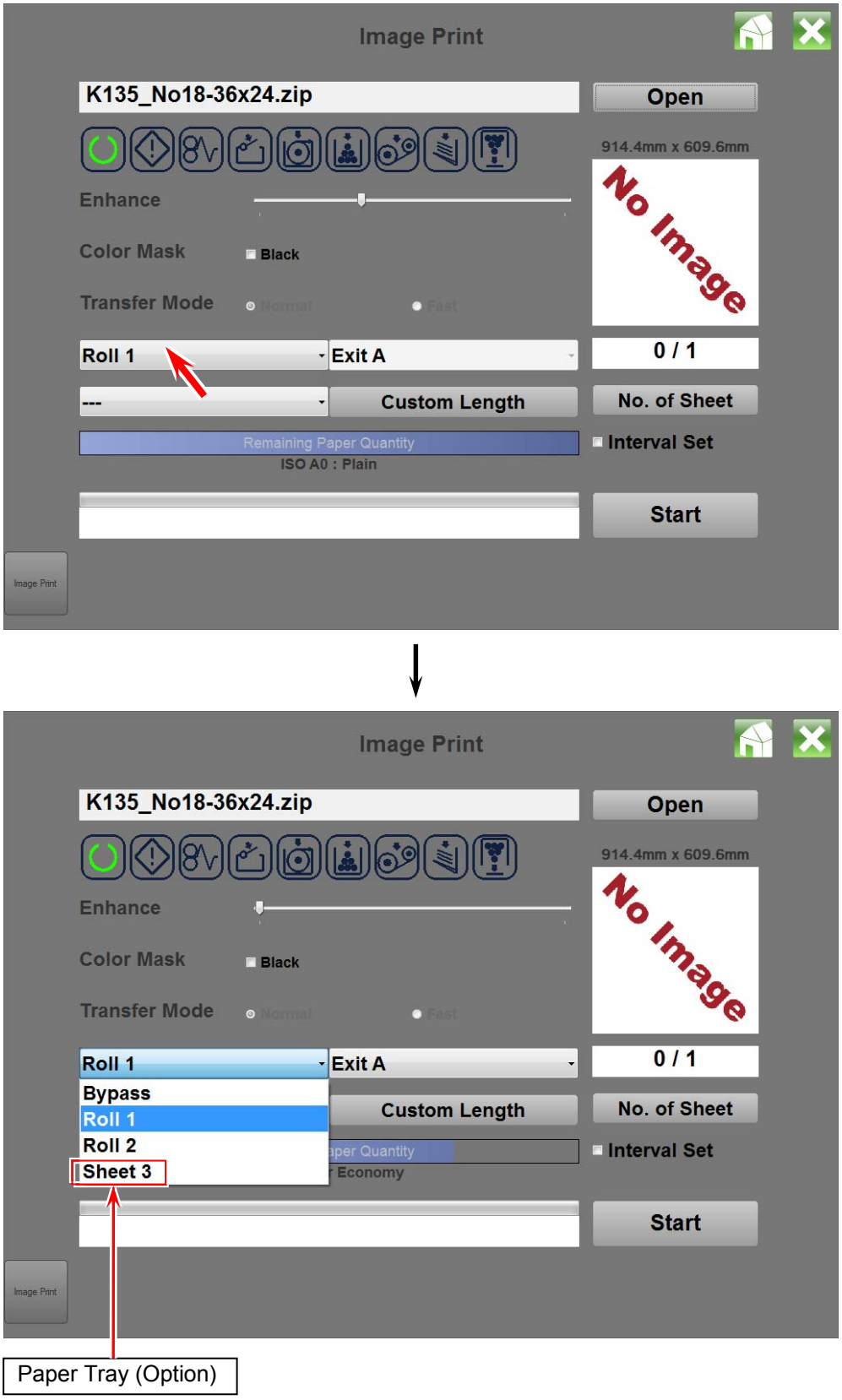
Reference

Whenever  on bottom-right is pressed, the file selection page switches between “icon indication” and “detailed text indication”.

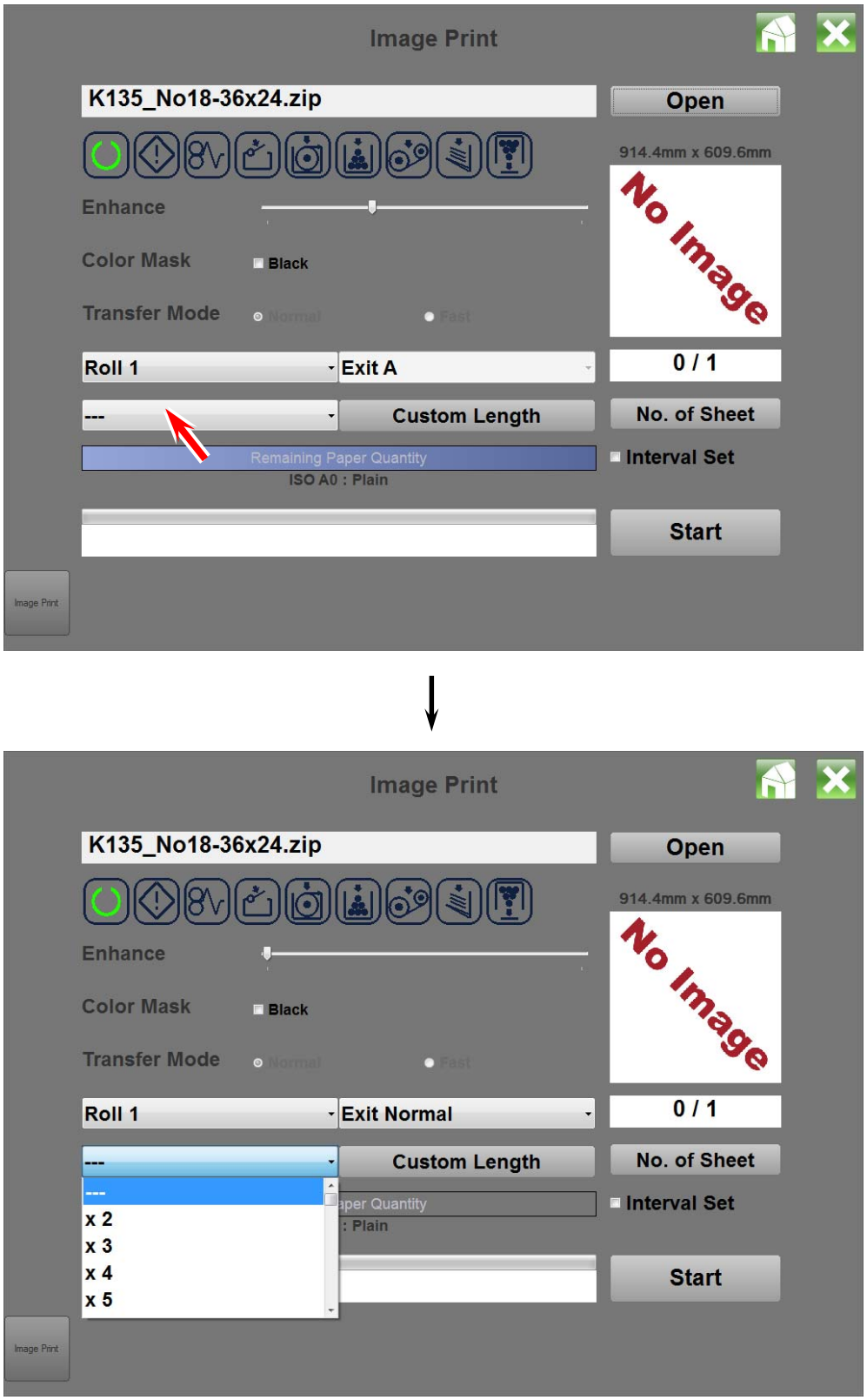
3. Internal test patterns are saved in the controller by zip file format. Select any zip file to print and then press **open**.



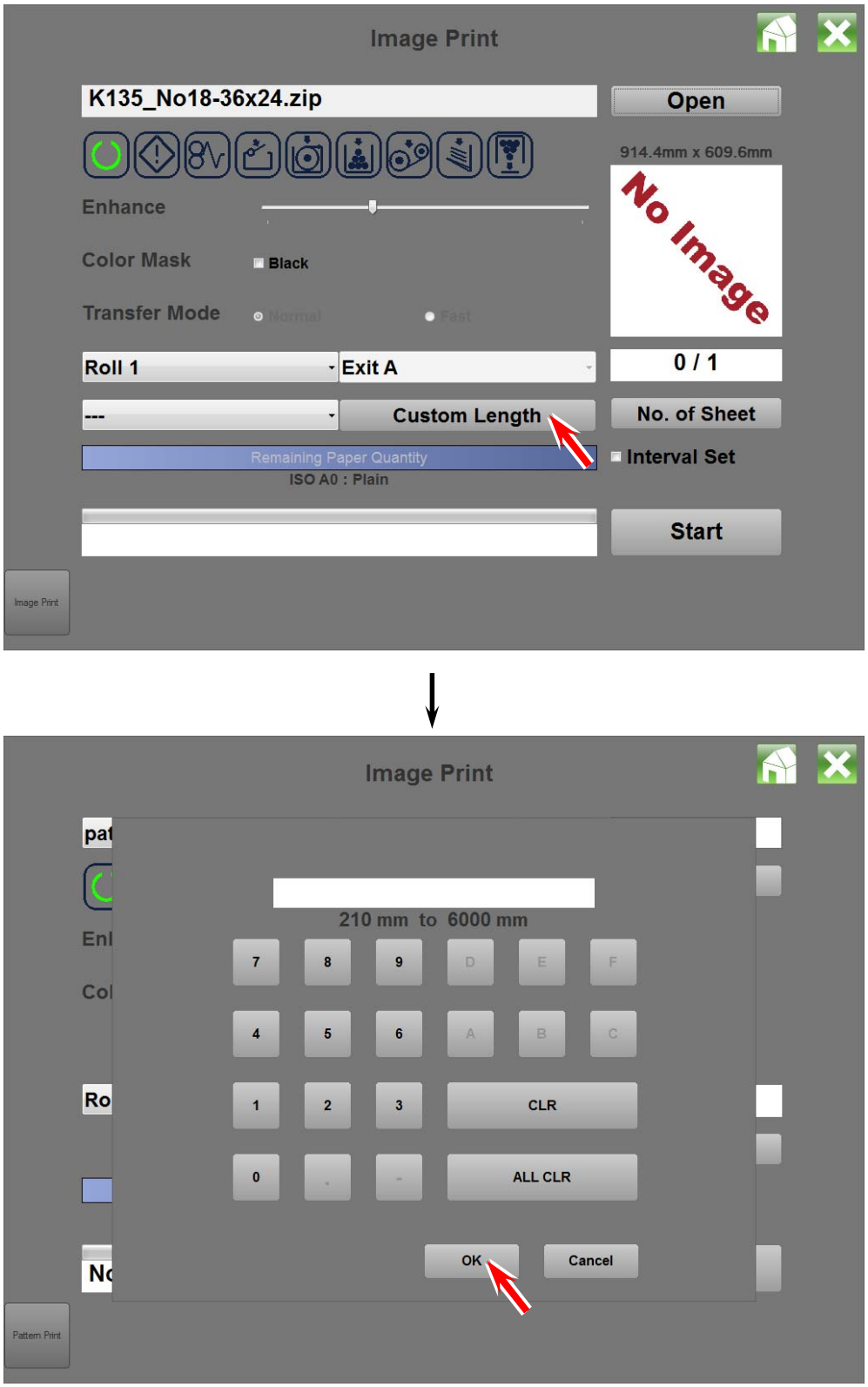
4. Press the drop down menu of media source and select a source of printing media used for test printing. Selectable items are rolls 1 to 2, Bypass and Sheet 3 (Option).



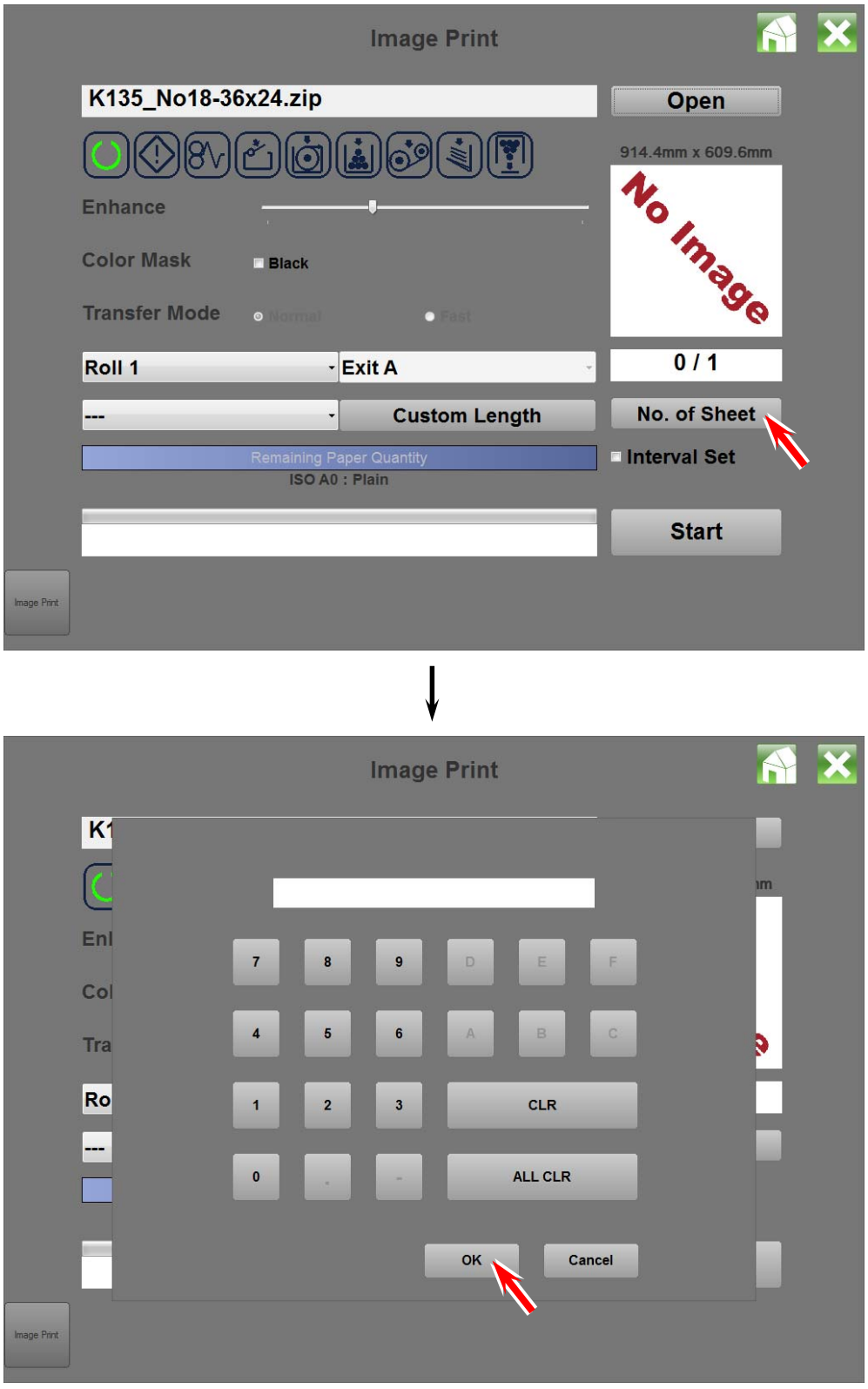
5. If necessary specify “repeat setting” that specifies how many times the selected image is printed on the same sheet of media. If you select [x2] for example, the selected image is printed twice on the same media.



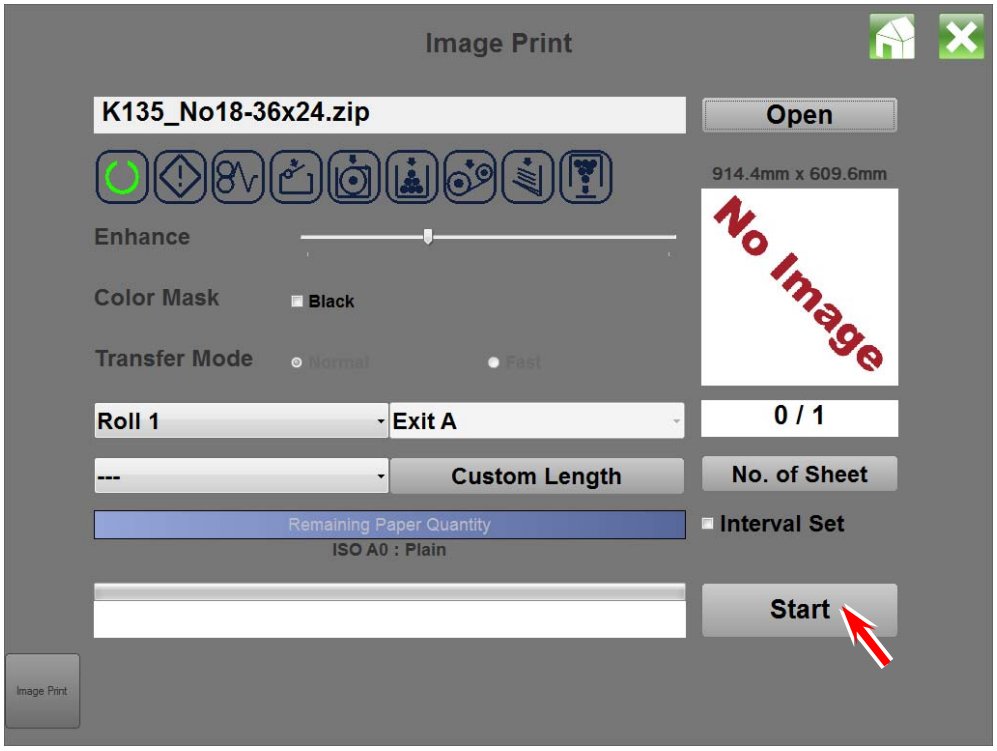
6. If necessary specify the length to cut the print media with Ten Key. Available length is from 210mm to 6000mm by 1mm increment. Press OK after entering the value.



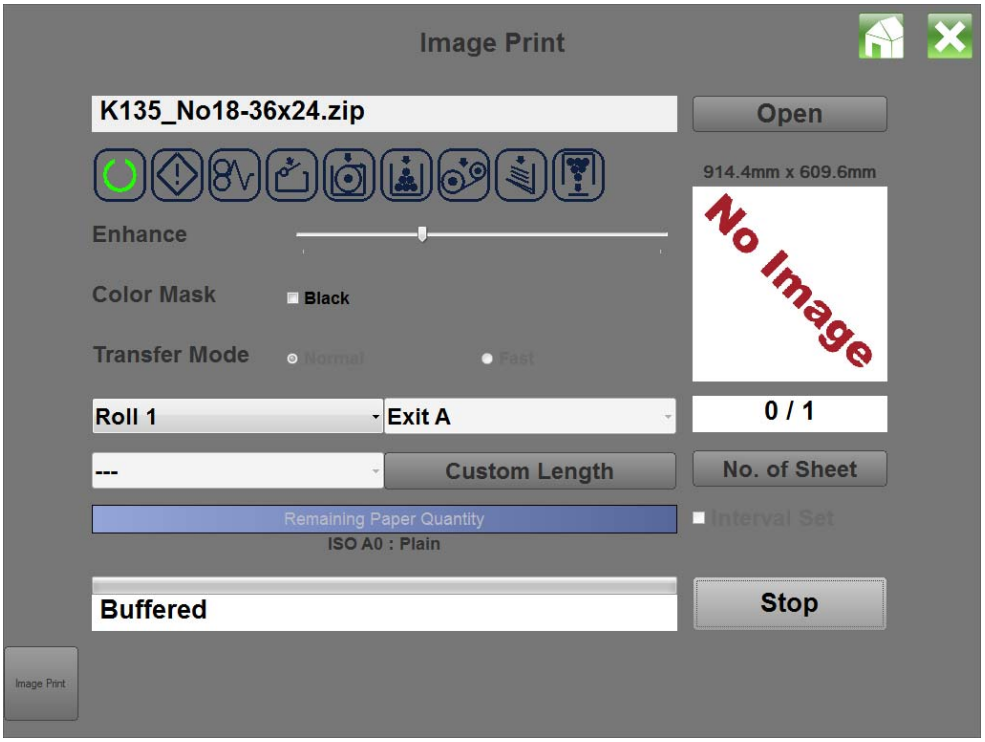
7. Press **No. of Sheet** button to indicate the Ten Key, enter the number of sheets to print, and then press **OK**.



8. Press **Start** to start printing.

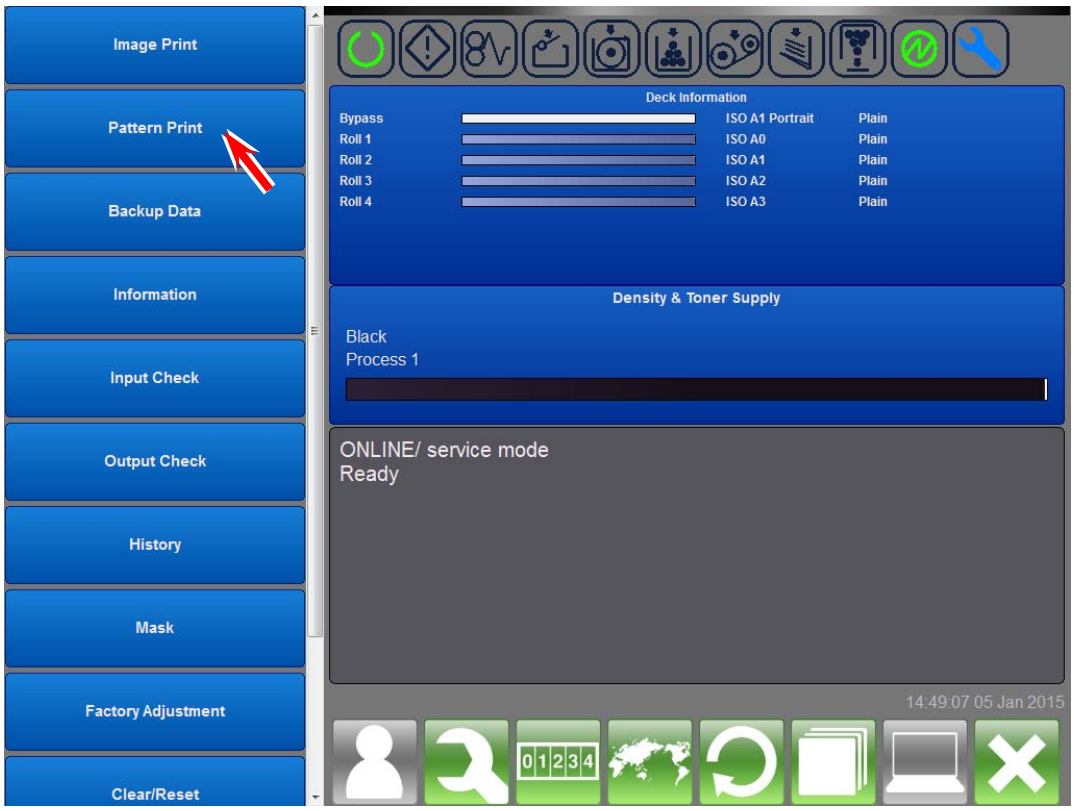


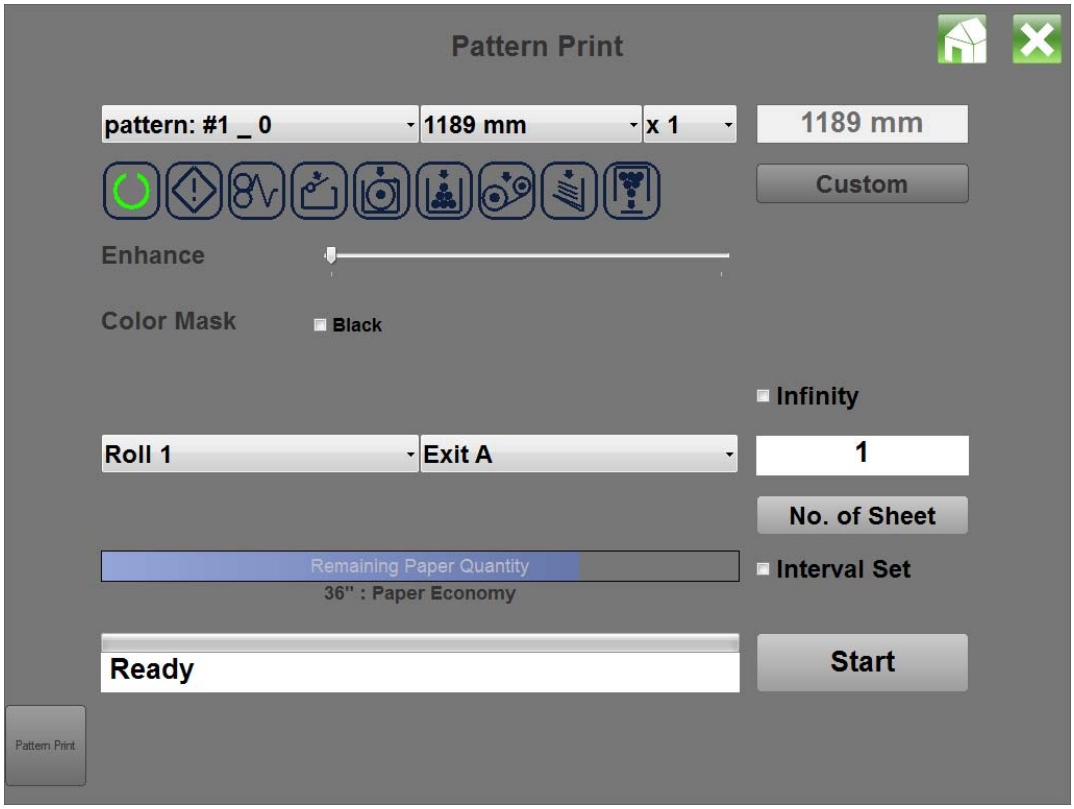
The status indication part on the bottom of the page shows the current status in real time. Press **Stop** to stop printing in the middle



8. 3 Pattern Print

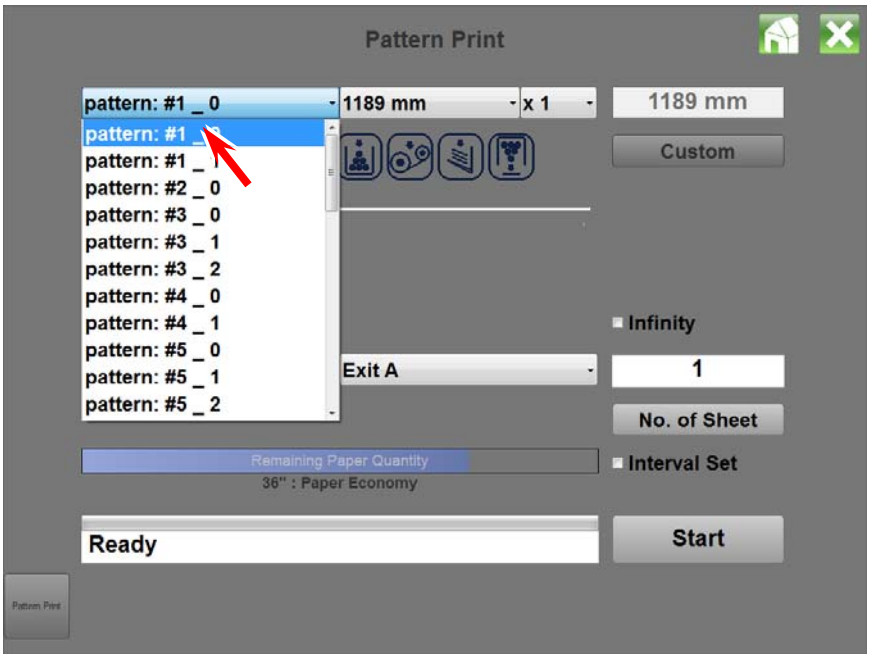
Image Print allows an operator to print some internal test patterns for such purposes as operation check, performance check, troubleshooting and etc.





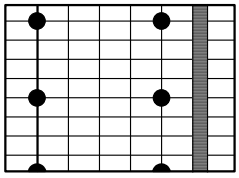
8. 3. 1 Operation procedure of test printing

1. Select any pattern in the pull-down menu, which is to be printed out.



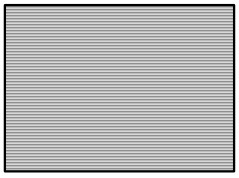
The followings are selectable patterns.

Pattern : #01



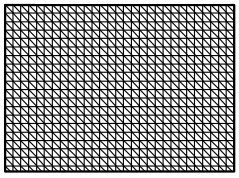
Pattern : #04

Pattern : #07



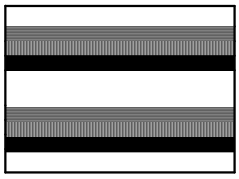
Pattern : #02

Pattern : #05

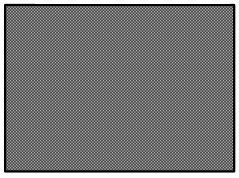


Pattern : #08

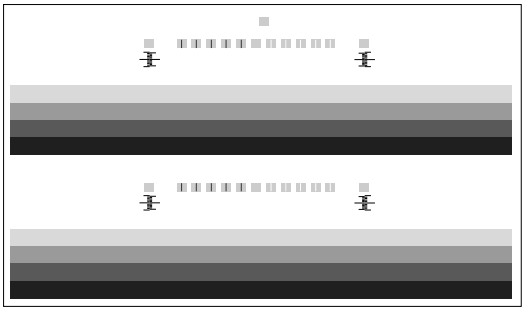
Pattern : #03



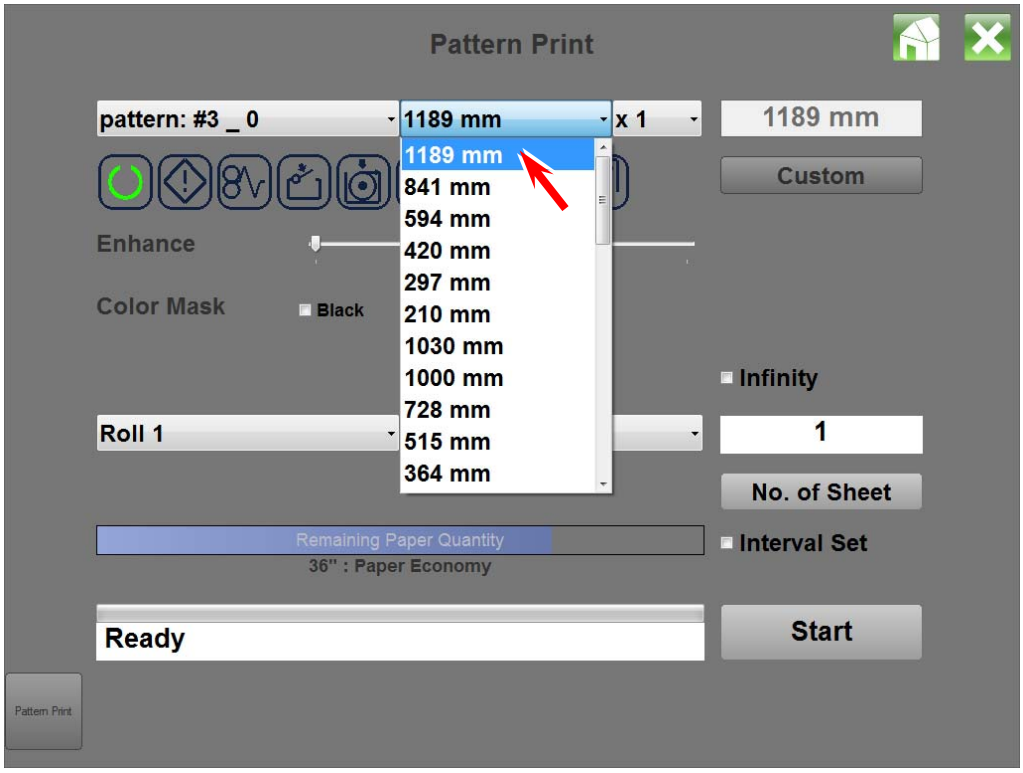
Pattern : #06



Pattern : #09

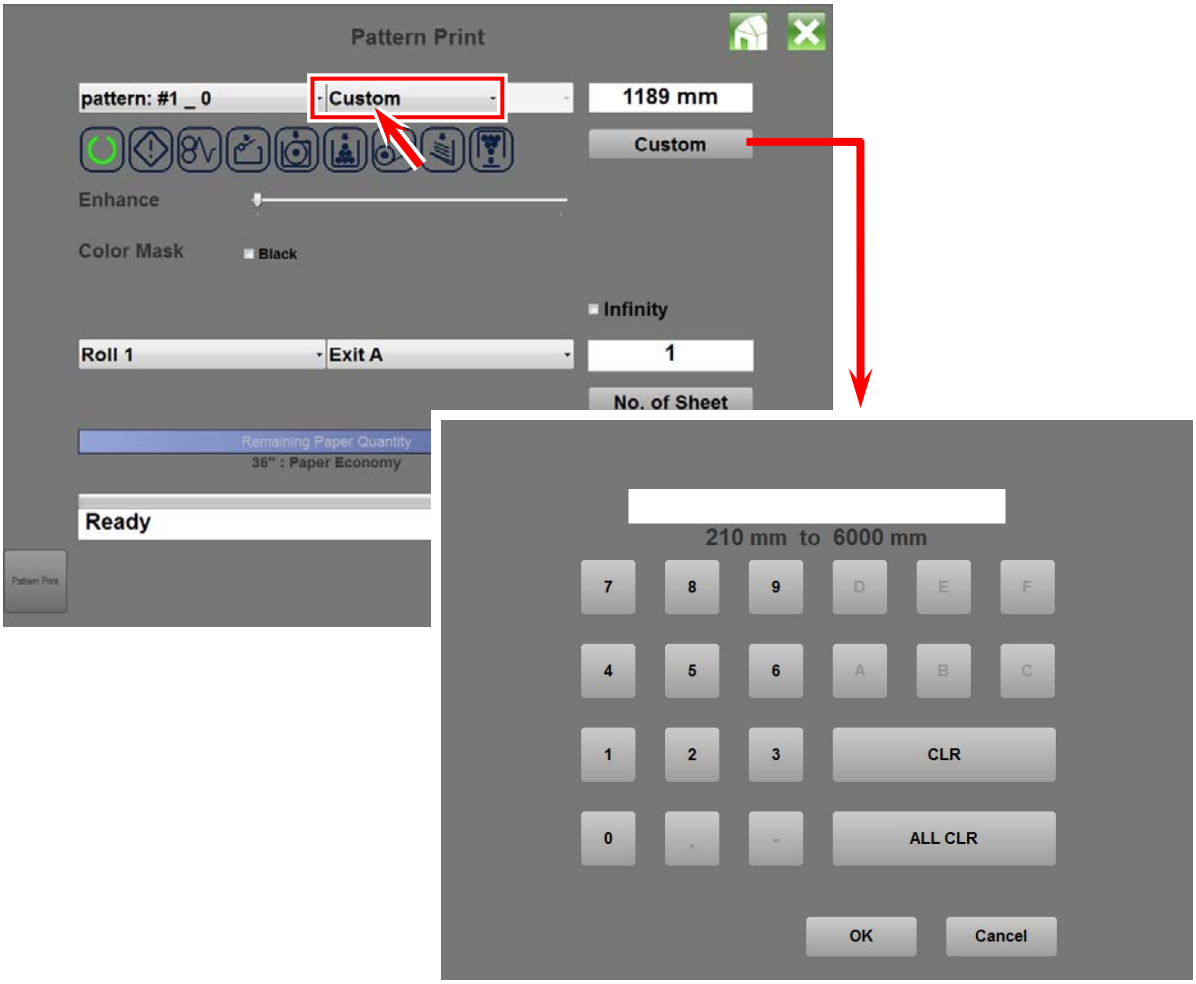


2. Select a print length in the pull-down menu.

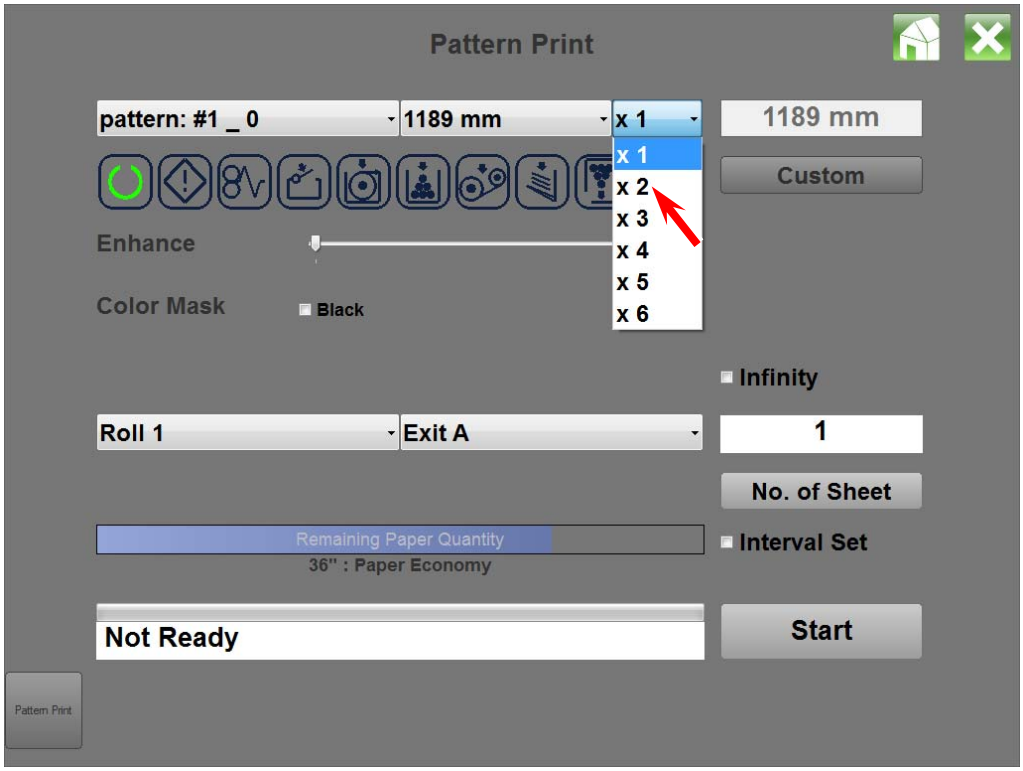


Reference

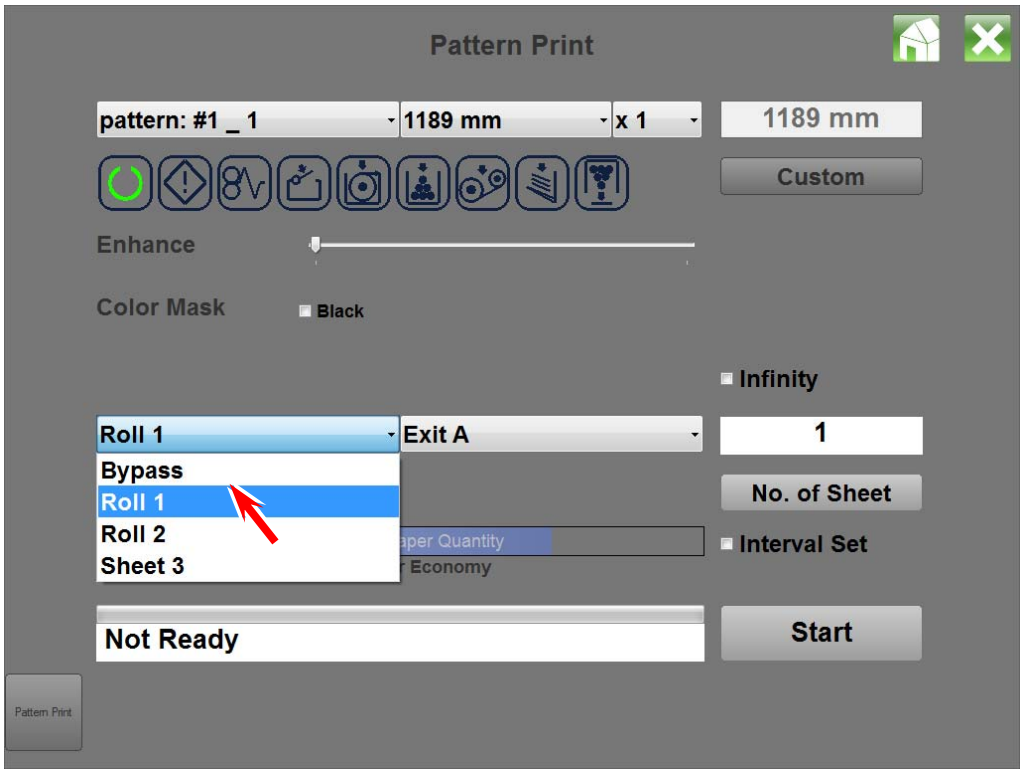
[Custom] button is enables when the print length is set to "Custom". And pressing [Custom] button will allow for directly inputting any preferable print length. [Custom] button gets enabled only when the print length is set to "Custom".



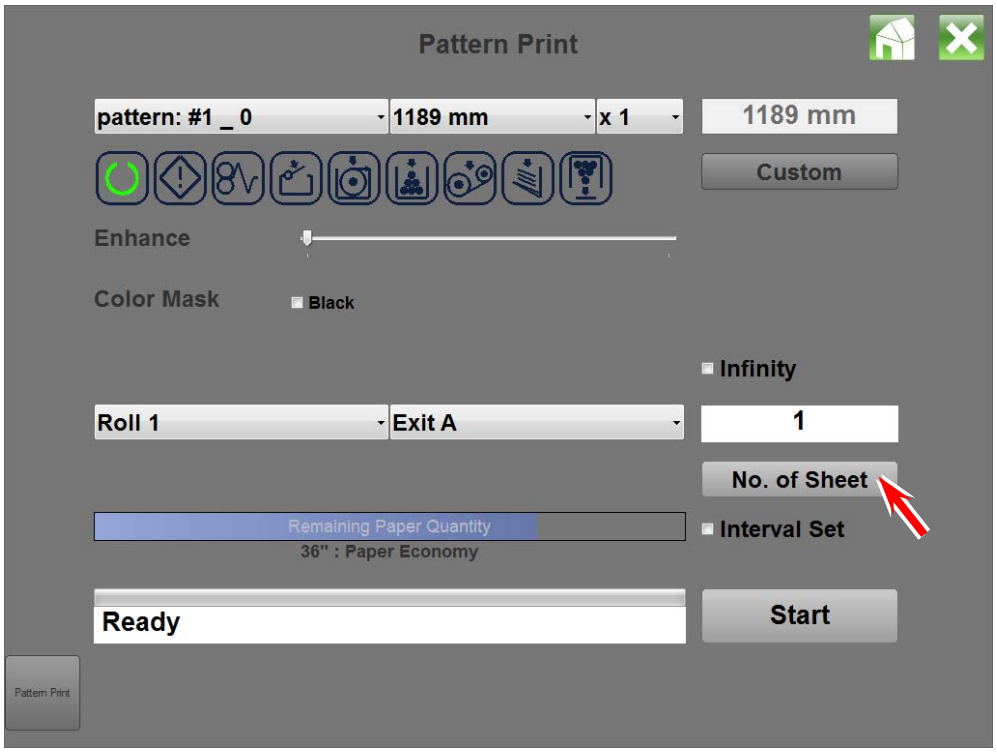
3. If necessary specify “repeat setting” that specifies how many times the selected image is printed on the same sheet of media. If you select [x2] for example, the selected image is printed twice on the same media.

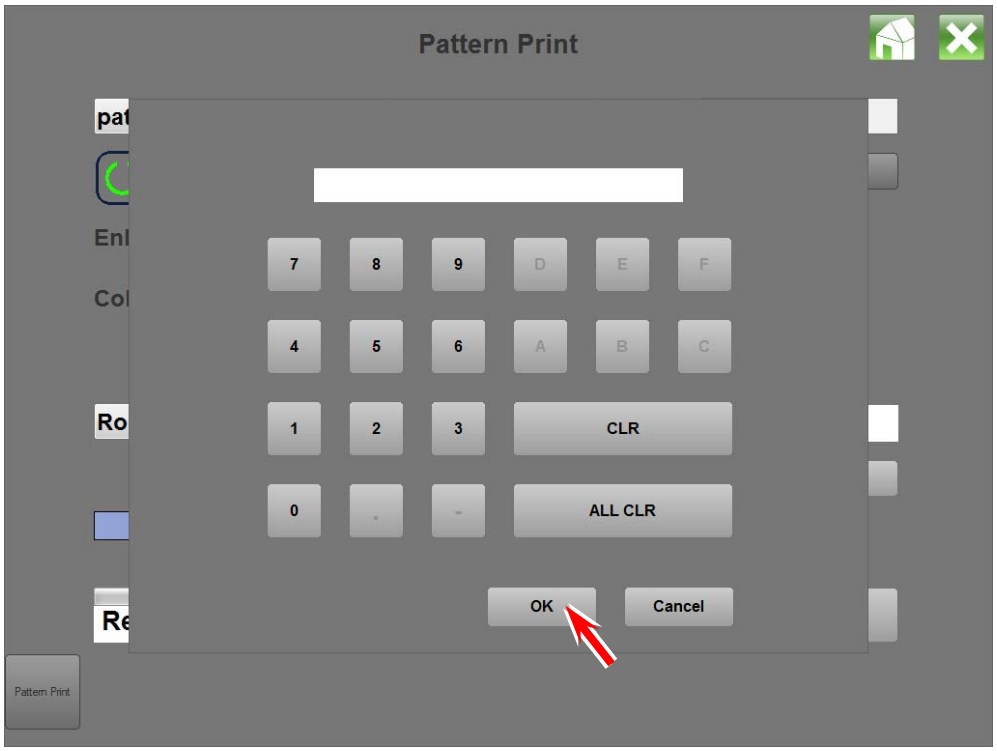


4. Press the drop down menu of media source and select a source of printing media used for test printing.

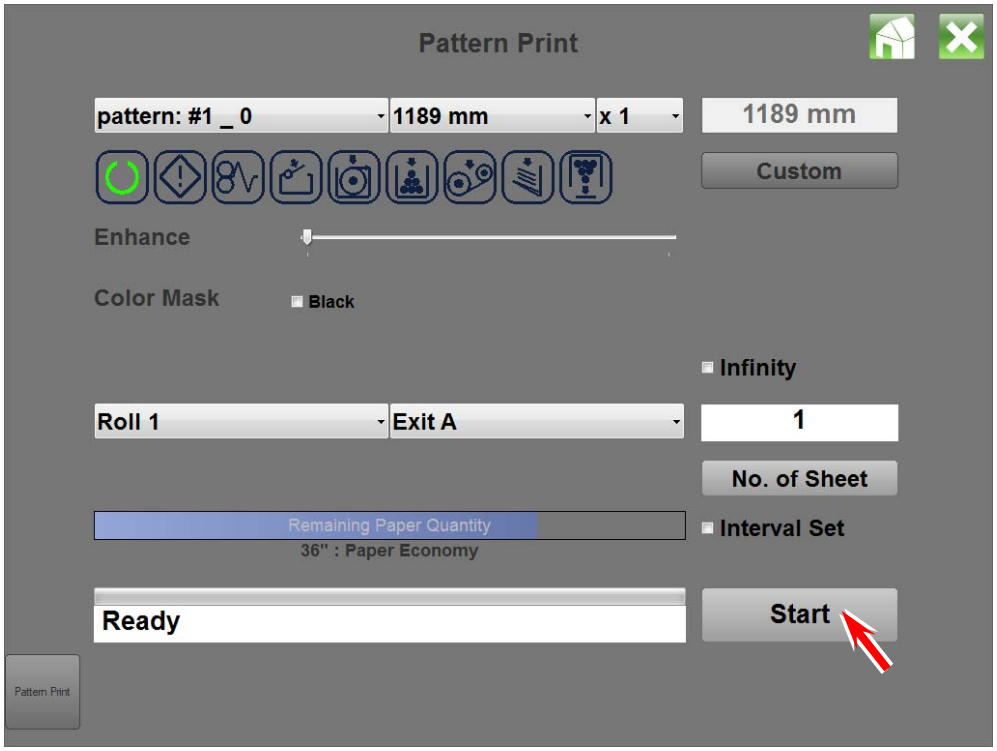


5. Press **No. of Sheet** button to indicate the Ten Key, enter the number of sheets to print, and then press **OK**.

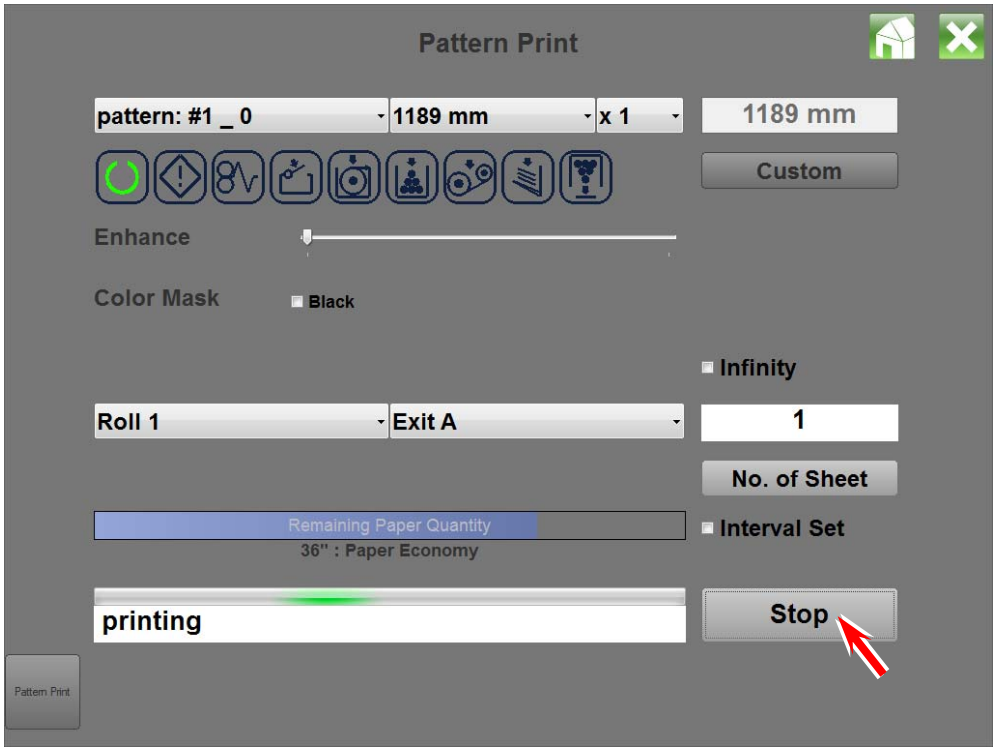




6. Press **Start** to start printing.

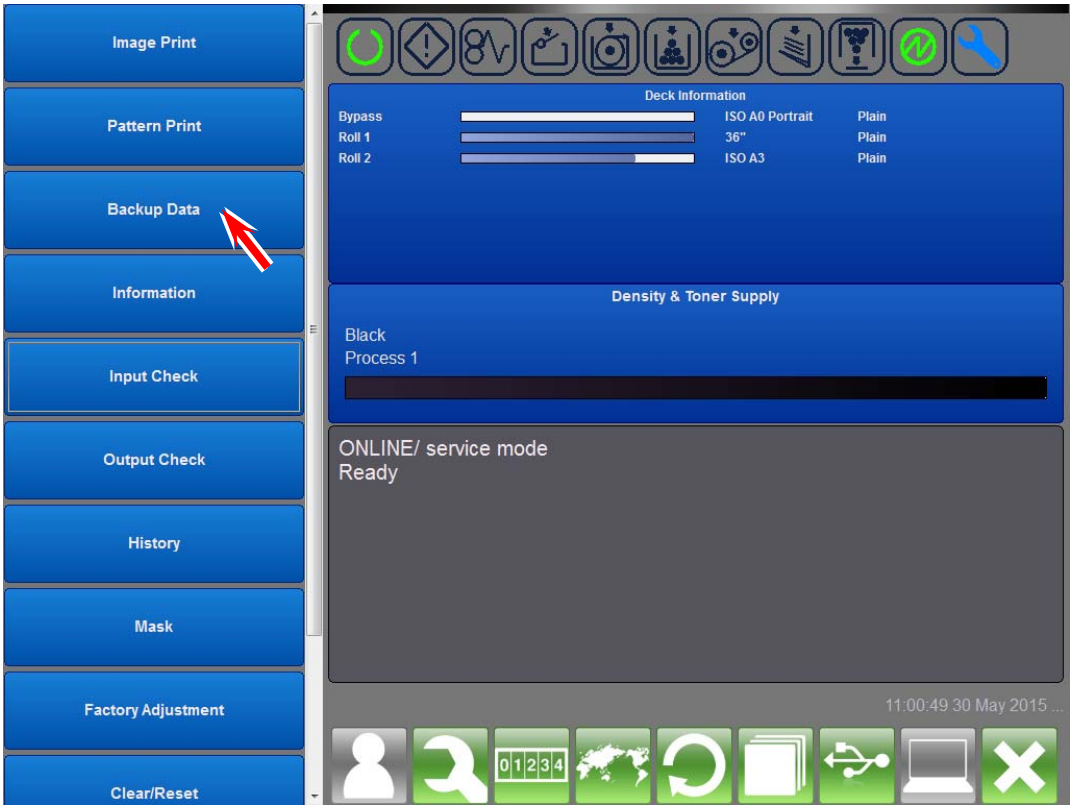


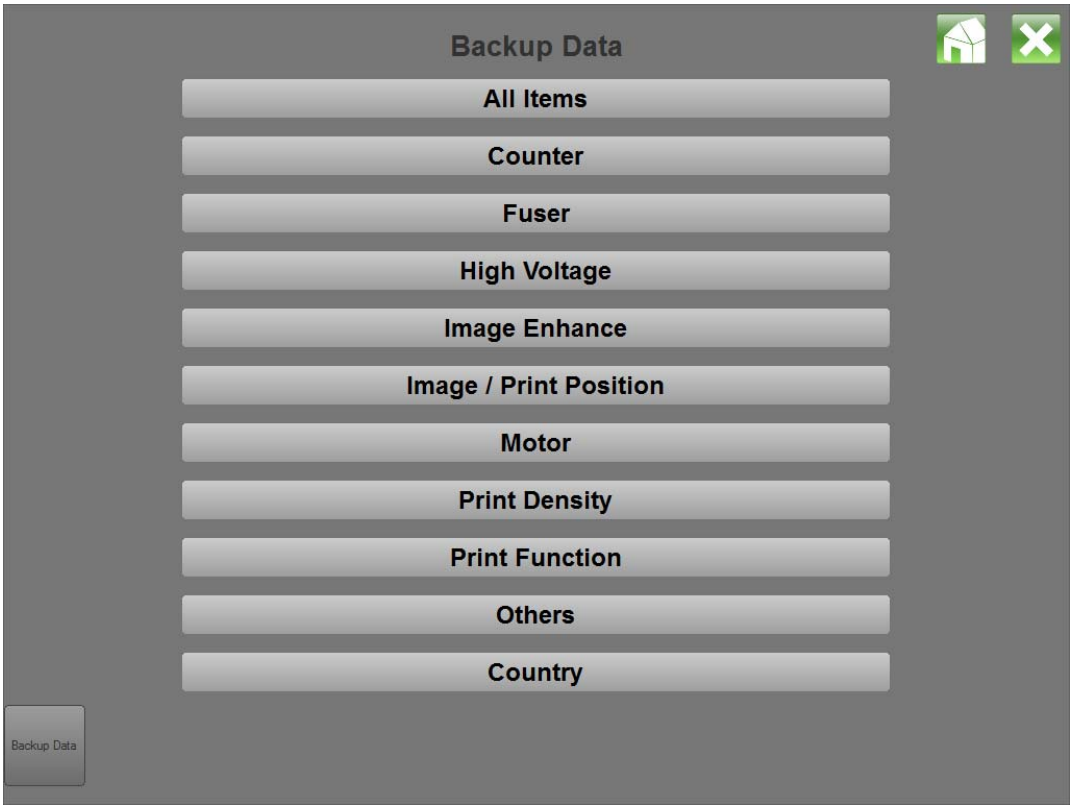
The status indication part on the bottom of the page shows the current status in real time. Press **Stop** to stop printing in the middle



8. 4 Backup Data

Backup Data allows a service technician to adjust or customize the values of several printer parameters in order to optimize the printer to meet the usage condition or requirement. It also allows for saving (backing up) all parameter values in a zip file as well as loading such file back to the printer.

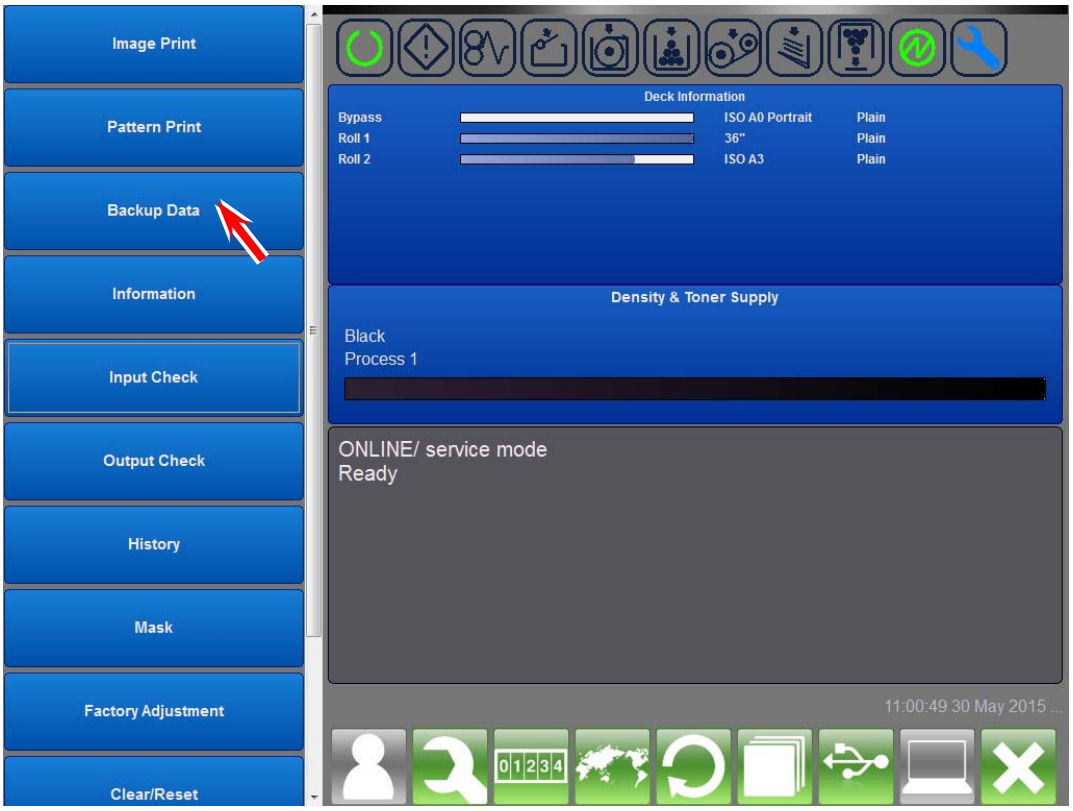


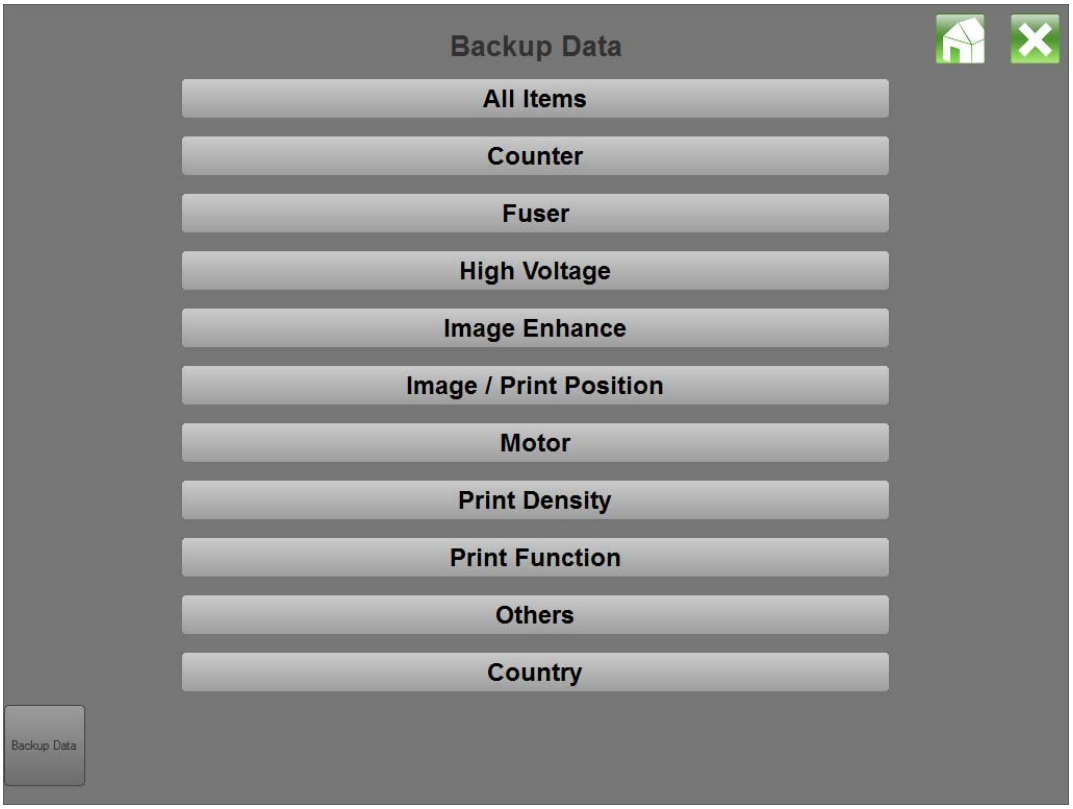


8. 4. 1 Operations in Backup Data

8. 4. 1. 1 Change and save of the setting values

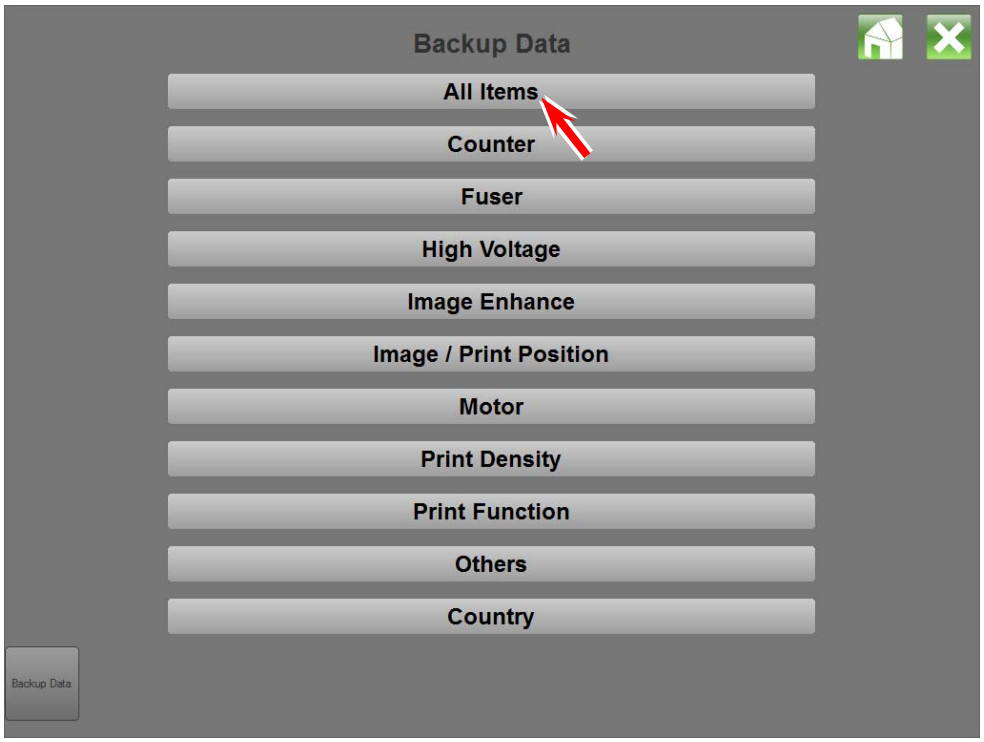
1. Select Backup Data in the HOME of Maintenance GUI.





2. Select a button of required setting group in which your required setting item is categorized. Or if you do not know in which group your required setting is categorized, press **All Items** to access all setting items.

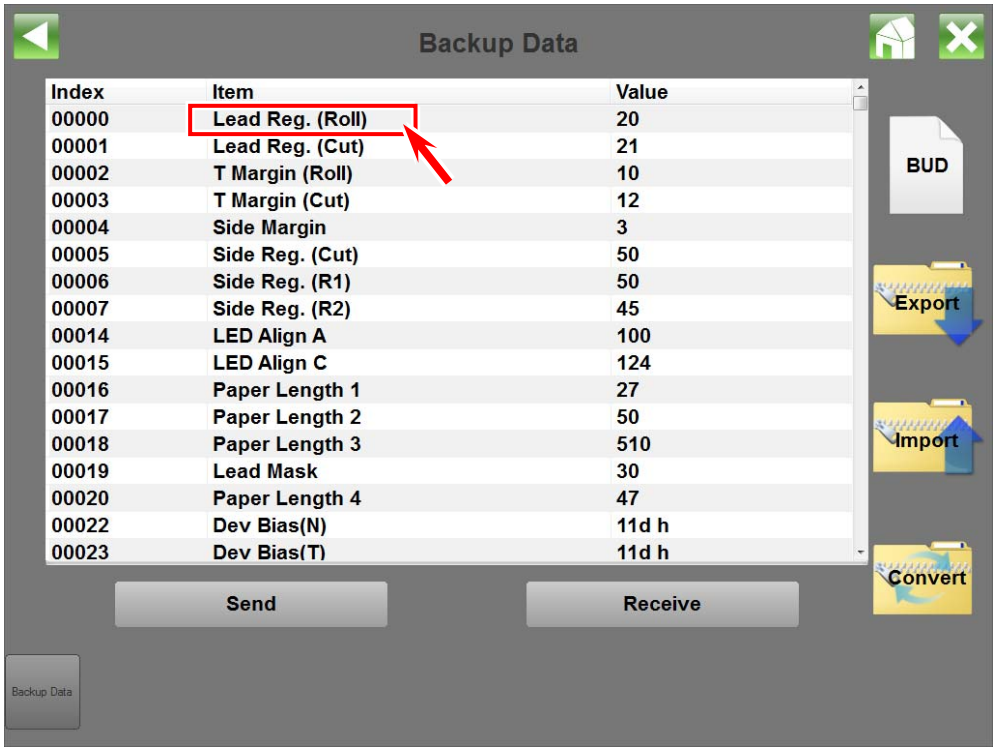
Example: **All Items** is selected.



Reference

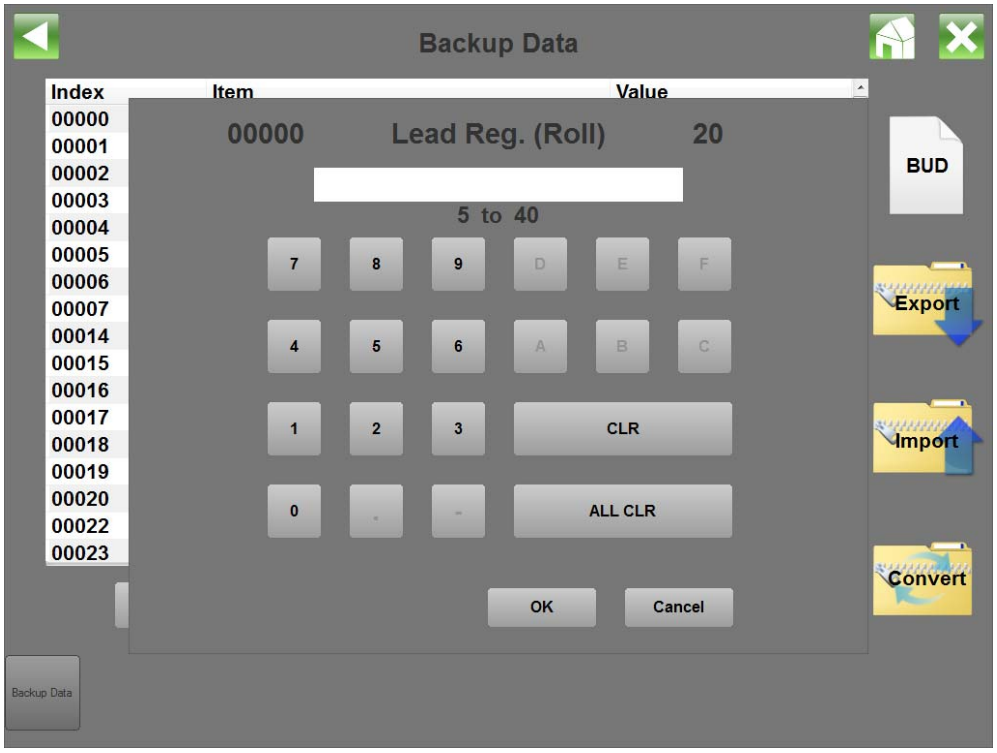
Setting items in Backup Data are categorized into some function groups for allowing quicker searching. For example, "Motor" includes all setting items related with the motors, and "High Voltage" does all about high voltage settings.

3. Select the item of which setting value you will change. (Example : Lead Reg. (Roll))

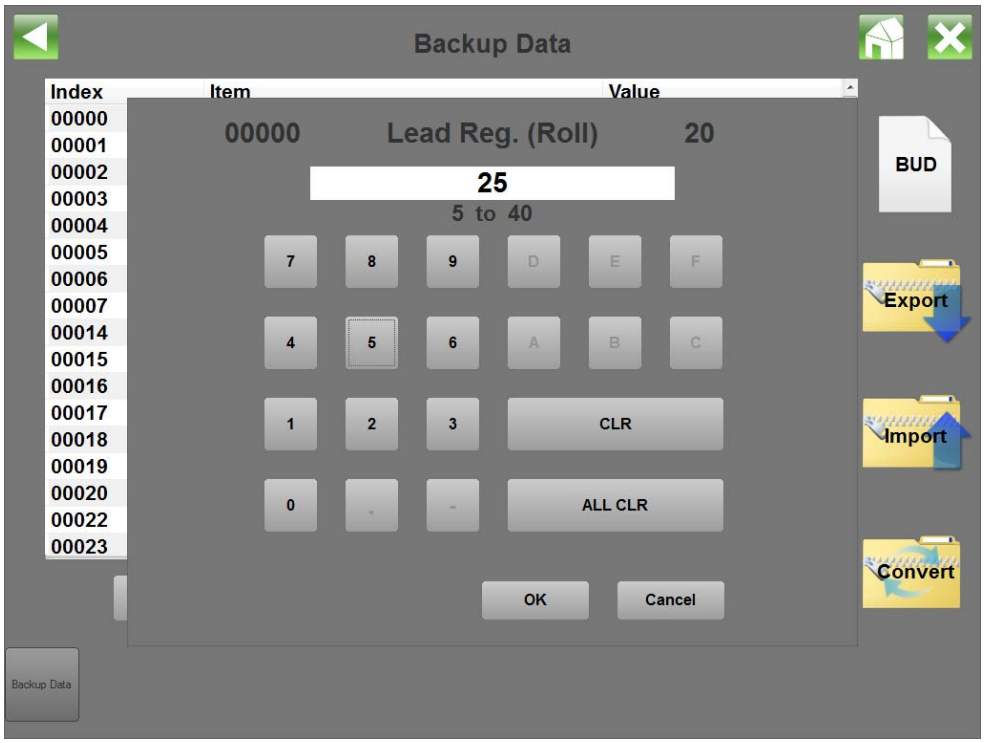


4. A Ten Key Pad pops up with showing the selected “item No.” (00000), “item name” Lead Reg. (Roll) and “current setting value” (20) on the top line.
A white rectangle area under them is the area to enter a new setting value. Enter the new requested value here with Ten Key.

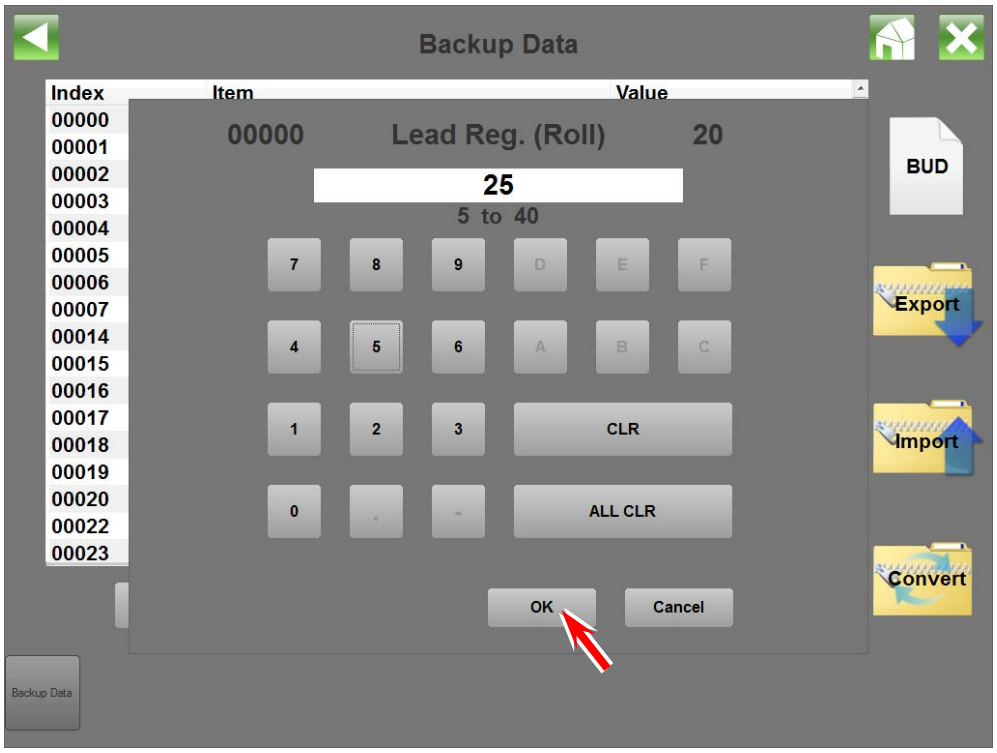
> **NOTE**
>
> The meaning of the setting value differs item to item. Please see the concerning description page in [8.4.2 Backup Data Items List].



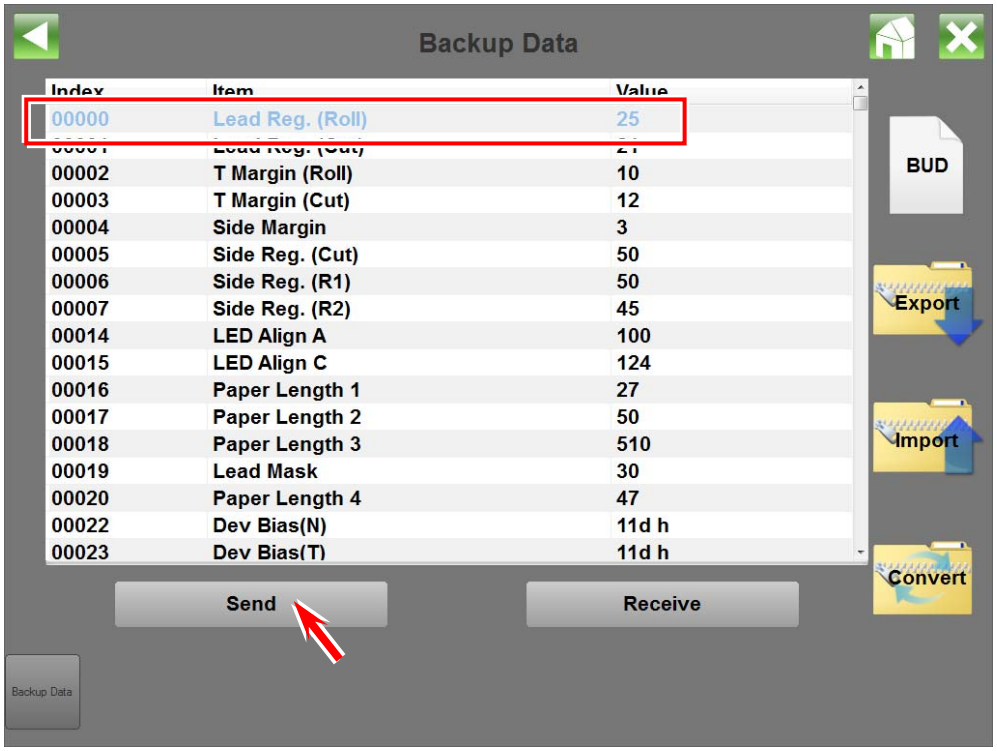
(Example : Change the value from 20 to 25.)



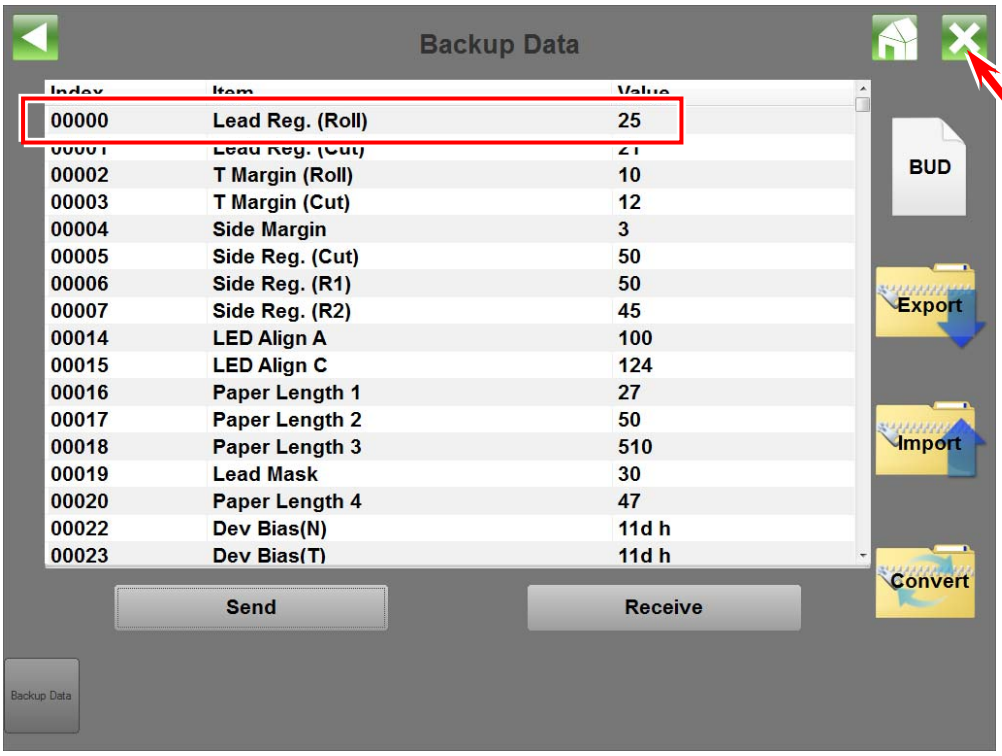
5. Press **OK** to close the Ten Key Pad. The new setting value is not yet valid at this moment.



6. The item name of which setting value you changed is shown by blue, meaning that the setting value was changed but it is neither saved nor valid.
Press **Send**.



7. The blue item is now shown by black, meaning that the new setting value is saved. **But it is still not yet valid**. Close the Backup Data setting screen pressing **X** button on top right.



8. Turn off the printer and turn it on again, which finally validates the new setting value.

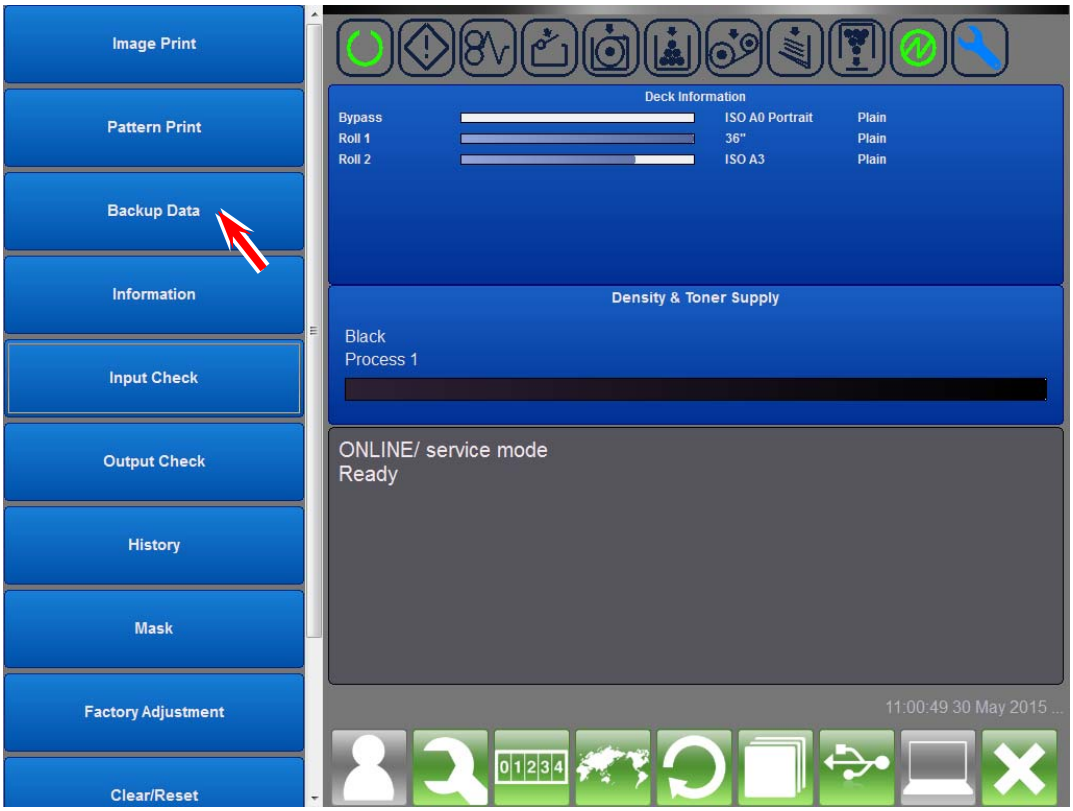
8. 4. 1. 2 Saving all parameter values into a zip file for backing up (Export)

It is possible to save important printer settings and information in a zip file for backup purpose.
What saved in the zip file are all parameter values (Backup Data values), counter values, error/jam history and etc.
This zip file will be used for recovering all information on the printer by loading back.

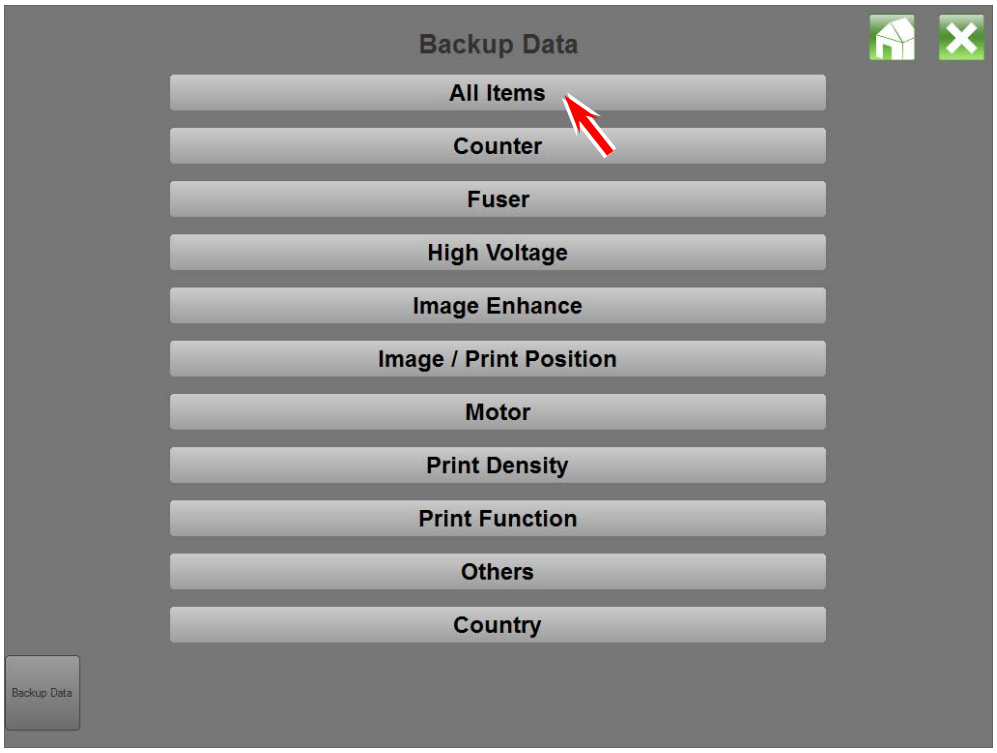
Reference

Contents of the zip file are as follows.
- Setting data of Backup Data (.bud)
- List of Backup Data values for viewing (.html)
- List of error/jam history for viewing (.html)
- Internal data (.csv)
- Log of Maintenance GUI (.log)

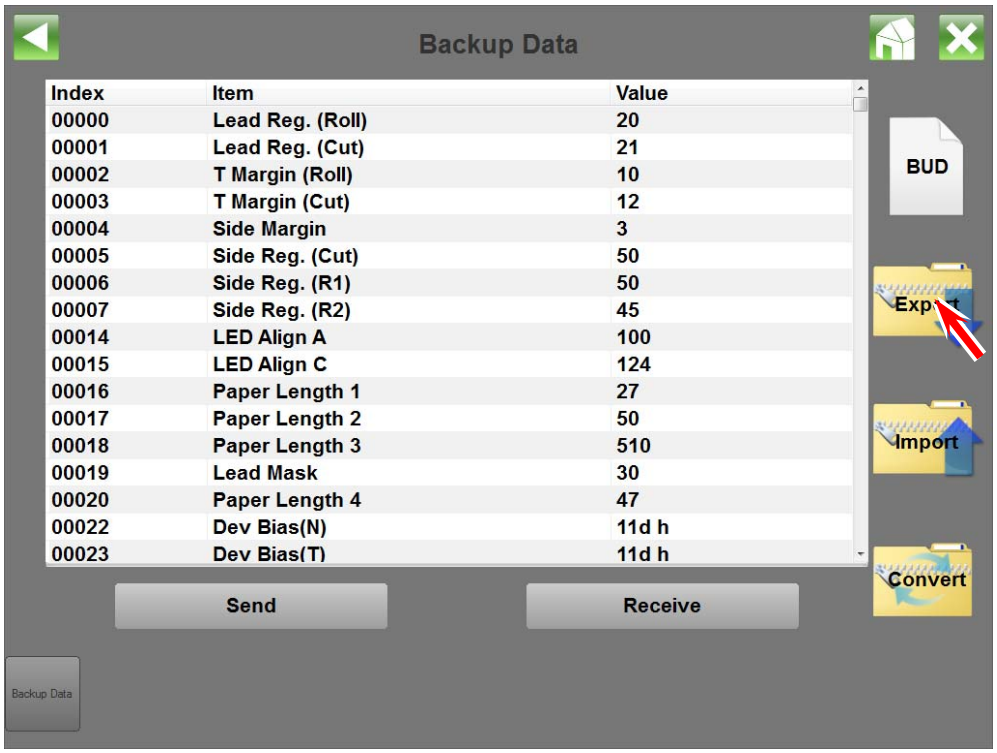
1. Select Backup Data in the HOME of Maintenance GUI.



2. Press **All Items**.



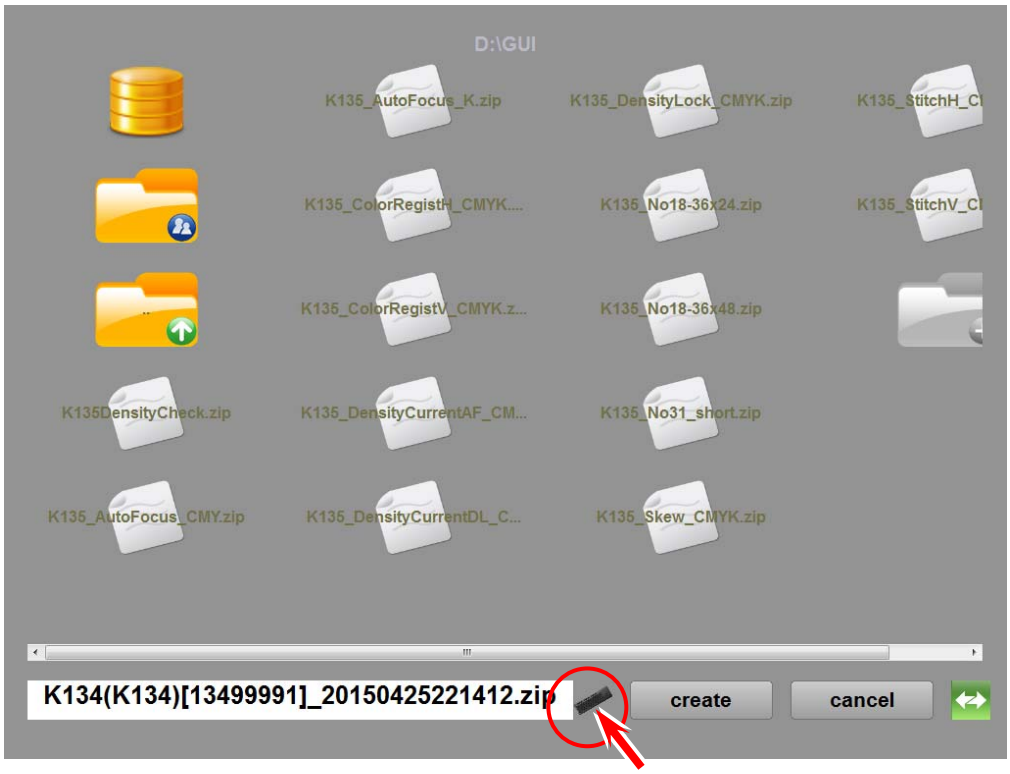
3. Press **Export**.



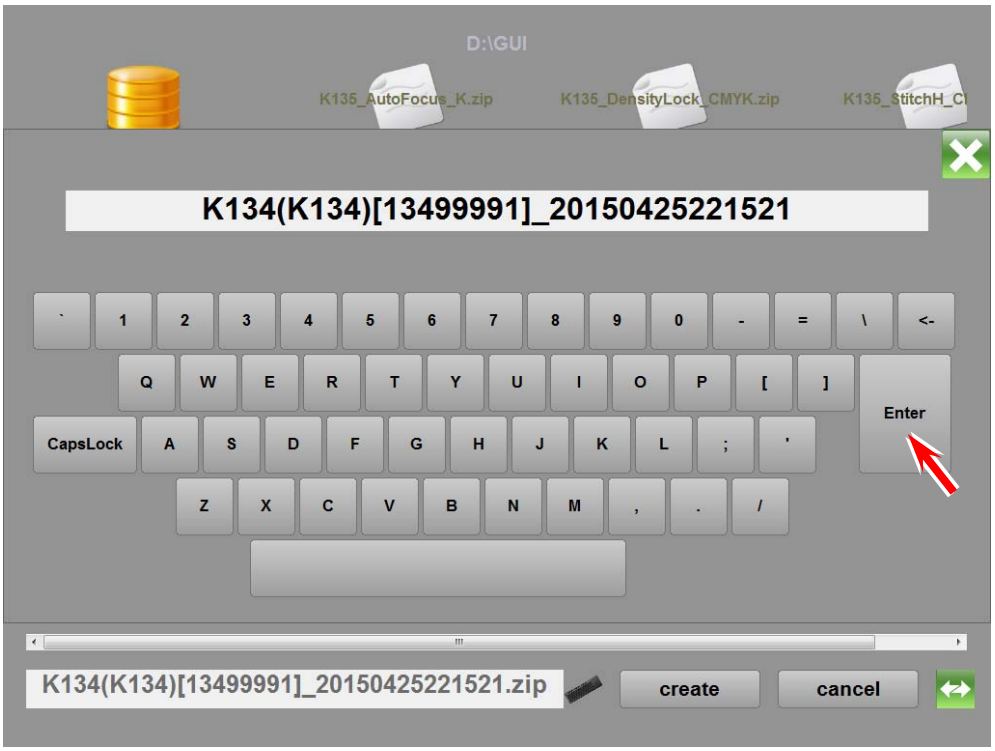
4. It is possible in the next screen to select the save location as well as changing the file name. The file name is automatically given according to the serial number and date and time as;

   [K134 (K134) (serial number)_(year)(month)(day)(hour)(minute)(second).zip]

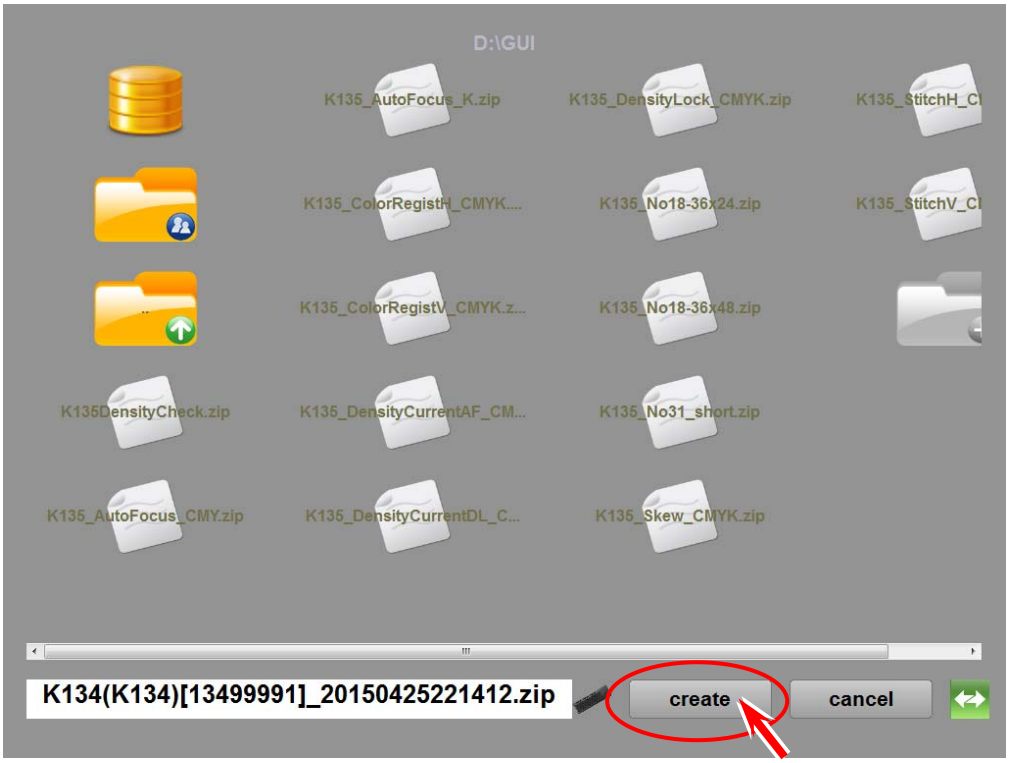
   If you will like to change the file name, press the Key Board icon on the bottom to indicate the software keyboard.



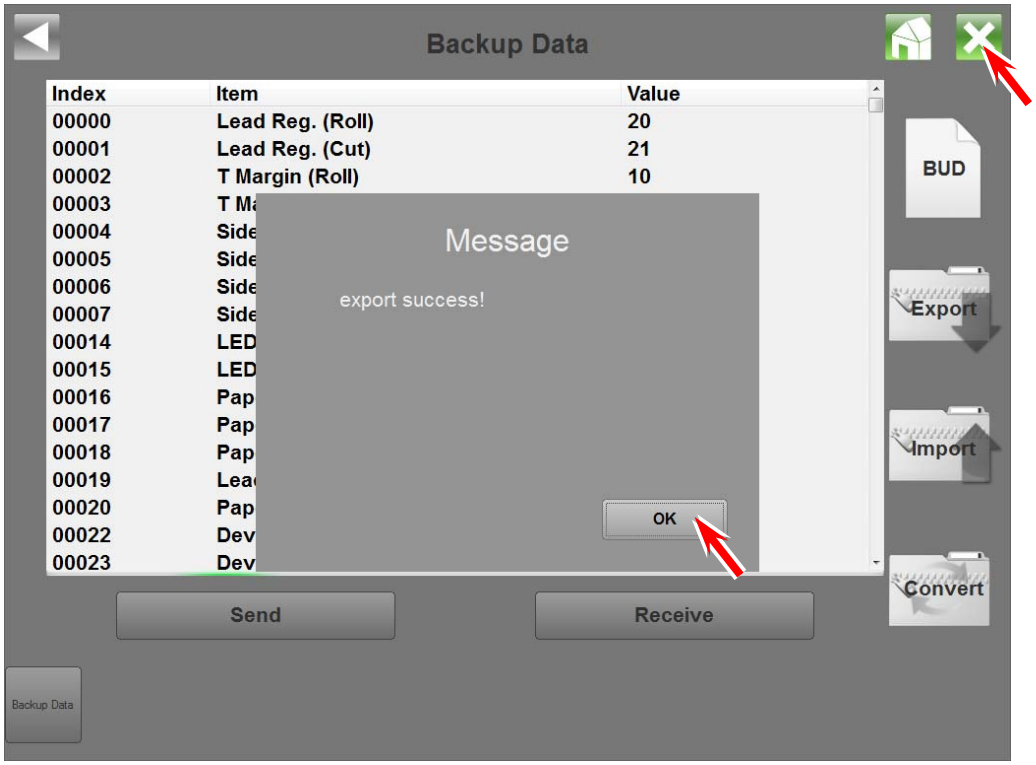
5. Enter your preferable name in the software keyboard and then press **Enter**.



6. Press **create** to save.



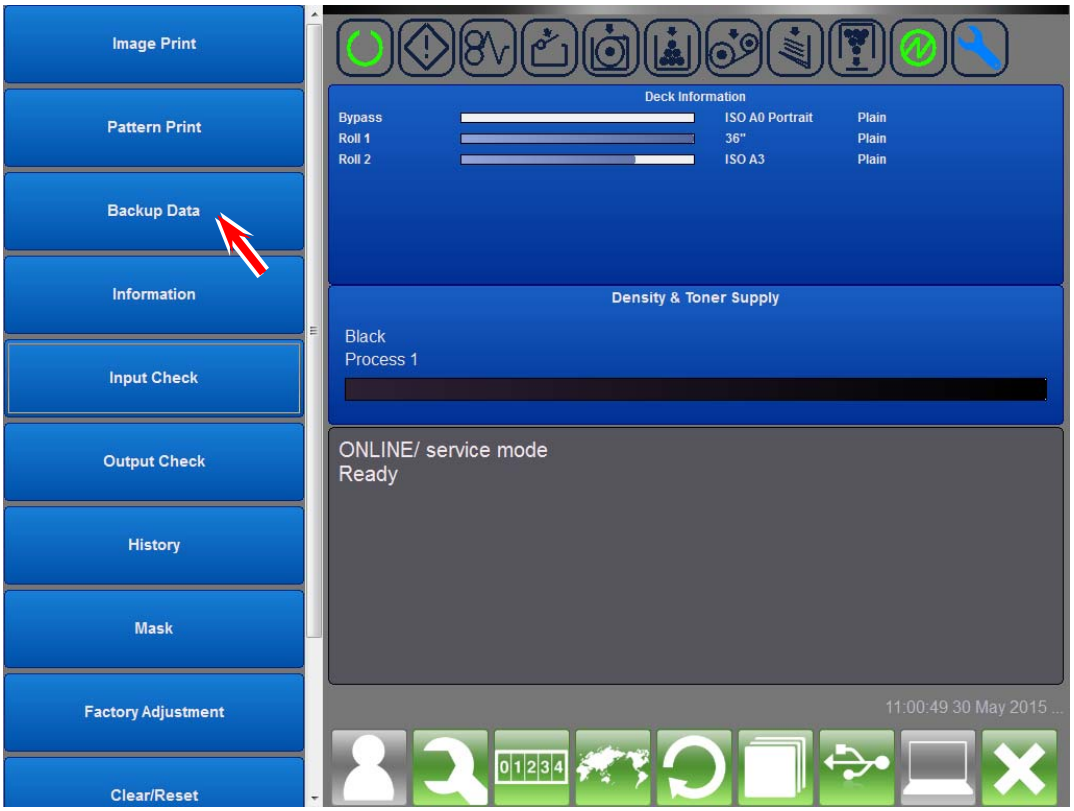
7. A dialog box notifies the completion of file saving. Press **OK** in the dialog box and then **X** on upper right.



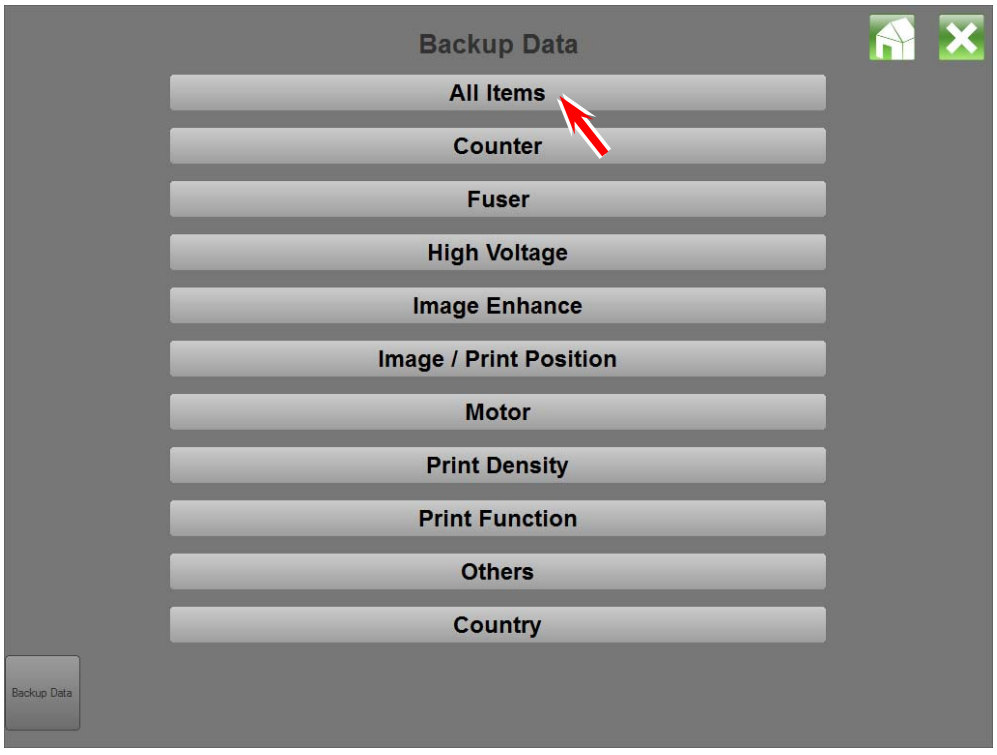
8. 4. 1. 3 Loading the backed up zip file to printer (Import)

It is possible to load the backed up zip file to the printer and applies all the contents such as printer parameter values and etc.

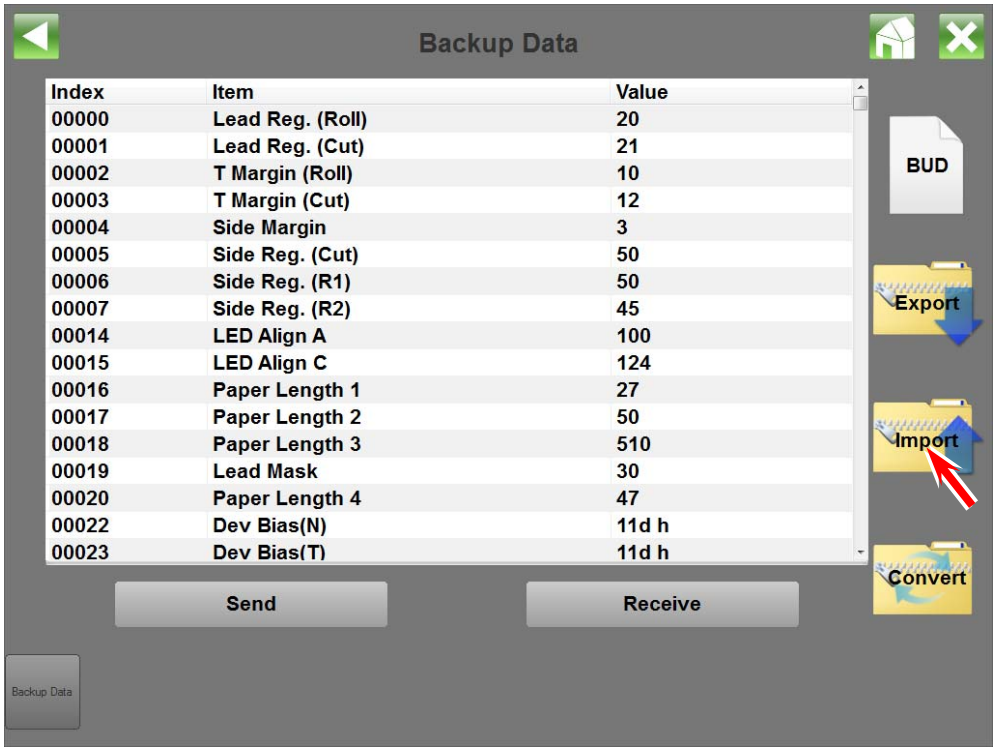
1. Select Backup Data in the HOME of Maintenance GUI.



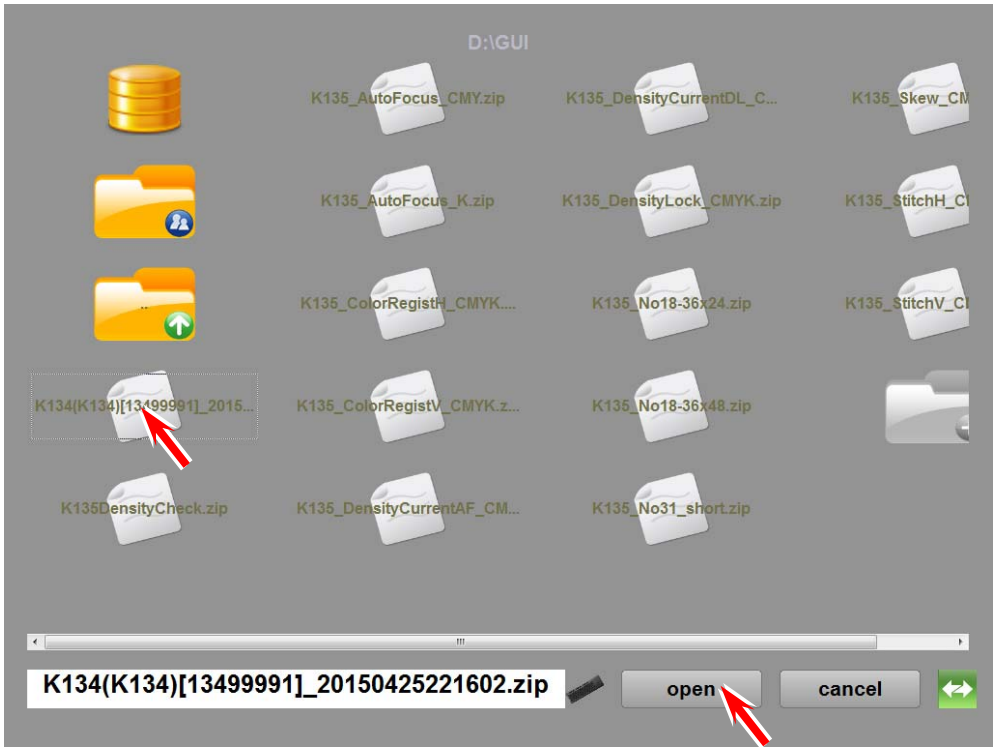
2. Press **All Items**.



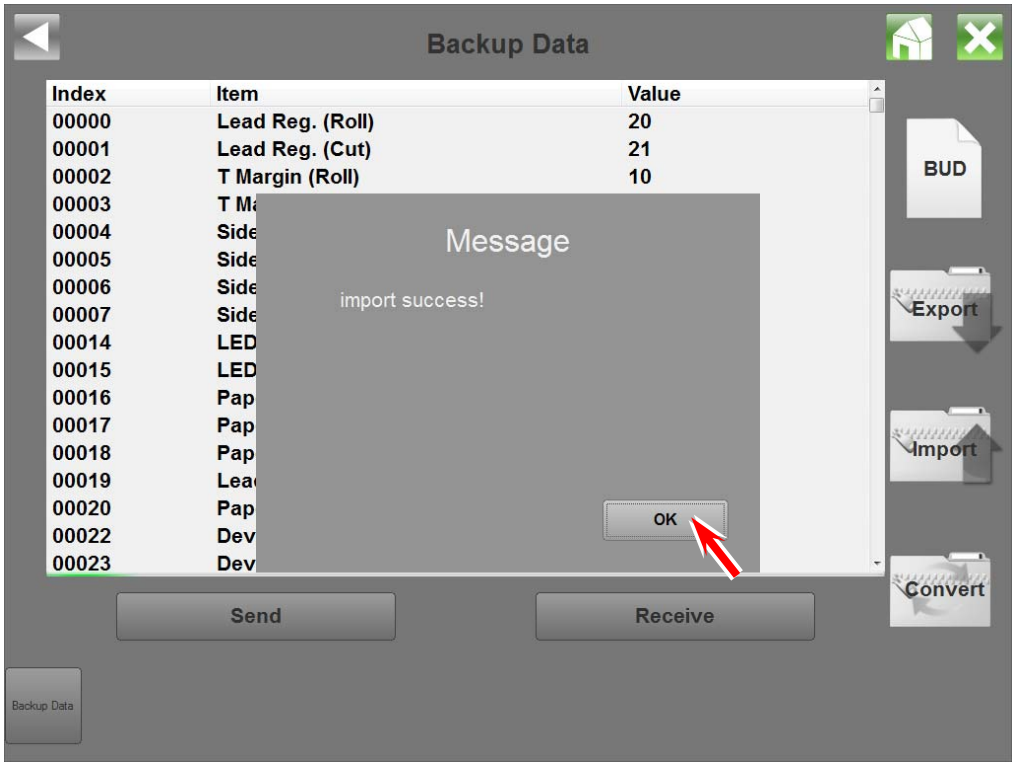
3. Press **Import**.



4. A file selection page is indicated. Select the requested zip file and then press **open**. This will load all the saved contents in the zip file and change the concerning items on printer just as saved.



5. A dialog box notifies the completion of loading. However, all loaded items such as Backup Data values have not yet been validated. Press OK to close the dialog box and then X button on upper-right.



6. Turn off the printer and turn it on again, which finally validates all the loaded items.

8. 4. 2 Setting Item List

NOTE: All items grayed are not generally for field technician use

Item No.	Setting Item	Unit	Default Value				Setting range
			USA	EUR / AS	CN	CND	
000	Leading Registration (Roll paper)	1mm	19	19	19	19	5 to 40
001	Leading Registration (Cut sheet paper)	1mm	19	19	19	19	5 to 40
002	Trailing Margin (Roll paper)	1mm	9	9	9	9	5 to 40
003	Trailing Margin (Cut sheet paper)	1mm	10	10	10	10	5 to 40
004	Side Margin (Left and right)	1mm	3	3	3	3	0 to 20
005	Side Registration (Cut sheet)	0.1mm	50	50	50	50	0 to 100
006	Side Registration (Roll 1)	0.1mm	50	50	50	50	0 to 100
007	Side Registration (Roll 2)	0.1mm	50	50	50	50	0 to 100
008 to 013	Reserved						
014	Vertical Alignment of Pixels between Image Blocks A & B	0.5 pixel	100	100	100	100	0 to 200
015	Vertical Alignment of Pixels between Image Blocks B & C	0.5 pixel	100	100	100	100	0 to 200
016	Cut Length 1 (length information provided)	0.16mm	50	50	50	50	0 to 100
017	Cut Length 2 (length information not provided)	0.16mm	50	50	50	50	0 to 100
018	Cut Length 3 (Compensation of the length for a long print)	0.1mm	475	475	475	475	0 to 999
019	Leading Margin	0.1mm	30	30	30	30	0 to 50
020	Cut Length 4 (Individual Compensation for Roll 2)	0.16mm	50	50	50	50	0 to 100
021	Reserved						
022	Developer Bias (Plain Paper)	Hexadecimal	11d	11d	11d	14E	0 to 3FF
023	Developer Bias (Tracing Paper)	Hexadecimal	11d	11d	11d	14E	0 to 3FF
024	Developer Bias (Film)	Hexadecimal	11d	11d	11d	14E	0 to 3FF
025	Developer Bias (Special Media/Plain Paper)	Hexadecimal	11d	11d	11d	14E	0 to 3FF
026	Developer Bias (Special Media/Tracing Paper)	Hexadecimal	11d	11d	11d	14E	0 to 3FF
027	Developer Bias (Special Media/Film)	Hexadecimal	11d	11d	11d	14E	0 to 3FF
028	Developer Bias compensation - 1st Drum revolution	-	0	0	0	0	0 to 204
029	Transfer Voltage (Plain Paper)	Hexadecimal	2Ad	2Ad	2Ad	2Ad	0 to 3FF
030	Transfer Voltage (Tracing Paper)	Hexadecimal	202	202	202	202	0 to 3FF
031	Transfer Voltage (Film)	Hexadecimal	202	202	202	202	0 to 3FF
032	Transfer Voltage (Special Media/Plain Paper)	Hexadecimal	202	202	202	202	0 to 3FF
033	Transfer Voltage (Special Media/Tracing Paper)	Hexadecimal	202	202	202	202	0 to 3FF
034	Transfer Voltage (Special Media/Film)	Hexadecimal	202	202	202	202	0 to 3FF
035	Separation Corona ON Timing	1mm	50	50	50	50	0 to 100
036	Reserved						
037	Transfer Corona ON Timing	1mm	48	48	48	48	0 to 100
038	Transfer Corona OFF Timing	1mm	20	20	20	20	0 to 100
039	Print - Fuser Temperature Center (Plain)	1°C	160	165	165	165	120 to 180
040	Print - Fuser Temperature Center (Tracing)	1°C	160	170	160	155	120 to 180
041	Print - Fuser Temperature Center (Film)	1°C	177	170	170	155	120 to 180
042	Print - Fuser Temperature Center (Special / Plain)	1°C	160	160	160	160	120 to 180
043	Print - Fuser Temperature Center (Special / Tracing)	1°C	160	160	160	160	120 to 180
044	Print - Fuser Temperature Center (Special / Film)	1°C	177	177	177	177	120 to 180
045	Fuser temperature to Start Idling	1°C	120	120	120	130	100 to 140
046	Warm Sleep - Fuser Temperature	1°C	100	100	100	100	100 to 160
047	Reserved						
048	Fuser Temperature Control Range (In the print cycle)	1°C	1	1	1	1	1 to 6
049	Fuser Temperature Control Range (Stand by)	1°C	2	2	2	2	1 to 6
050	Reaction Time of Toner Supply Motor	1 Second	15	15	15	15	1 to 30
051	Toner Supply Motor ON Time	1 Second	10	10	10	10	1 to 30
052	Dot Enhancement Level (Dither)	-	1	1	1	1	1 to 3
053	Feed Clutch OFF Time for Roll 1 long print	1msec.	230	230	230	230	80 to 360
054	Feed Clutch OFF Time for Roll 2 long print	1msec.	230	230	230	230	80 to 360
055	Metric or Inch	-	1	0	0	0	0 to 1
056	Language	-	1	1	1	1	0 to 1
057	Interface Communication Setting	-	2	2	2	2	0 to 2
058	Recognition of Paper Tray	-	0	0	0	0	0 to 1
059	Counter Unit	-	5	0	0	0	0 to 5
060	Maximum print length	-	1	1	1	1	0 to 1
061	Stacking Device Setting	-	0	0	0	0	0 to 1
062	Enable/disable Down Sequence	-	0	0	0	0	0 to 1
063	Cut length 5 (Length compensation for tracing paper)	-	100	100	100	100	0 to 200
064	Cut length 6 (Length compensation for film)	-	100	86	86	86	0 to 200
065	Drum Reverse Time	1 millisecond	30	30	30	30	10 to 70

NOTE: All items grayed are not generally for field technician use

Item No.	Setting Item	Unit	Default Value				Setting range
			USA	EUR / AS	CN	CND	
066	Fuser Motor Reverse Setting	-	0	0	0	0	0 to 1
067	Operation of Separation Lamp	-	5	5	5	5	1 to 7
068	Reserved						
069	Reserved						
070	Fuser Motor 1st Speed (Roll) (Plain Paper / A3, 12" & 11")	0.04mm/s	34	39	39	39	0 to 80
071	Switch Timing to Fuser Motor 1st Speed (Roll) (Plain Paper / A3, 12" & 11")	0.5 seconds	1	1	1	1	0 to 300
072	Fuser Motor 2nd Speed (Roll) (Plain Paper / A3, 12" & 11")	0.04mm/s	35	42	42	42	0 to 80
073	Switch Timing to Fuser Motor 2nd Speed (Roll) (Plain Paper / A3, 12" & 11")	0.5 seconds	1	1	1	1	0 to 300
074	**Fuser Motor 3rd Speed (Roll) (Plain Paper / A3, 12" & 11")**	**0.04mm/s**	**50**	**48**	**48**	**48**	**0 to 80**
075	Switch Timing to Fuser Motor 3rd Speed (Roll) (Plain Paper / A3, 12" & 11")	0.5 seconds	5	5	5	5	0 to 300
076	Fuser Motor 1st Speed (Roll) (Tracing / A3, 12" & 11")	0.04mm/s	33	36	36	36	0 to 80
077	Switch Timing to Fuser Motor 1st Speed (Roll) (Tracing / A3, 12" & 11")	0.5 seconds	1	1	1	1	0 to 300
078	Fuser Motor 2nd Speed (Roll) (Tracing / A3, 12" & 11")	0.04mm/s	39	44	44	44	0 to 80
079	Switch Timing to Fuser Motor 2nd Speed (Roll) (Tracing / A3, 12" & 11")	0.5 seconds	1	3	3	3	0 to 300
080	**Fuser Motor 3rd Speed (Roll) (Tracing / A3, 12" & 11")**	**0.04mm/s**	**44**	**44**	**44**	**44**	**0 to 80**
081	Switch Timing to Fuser Motor 3rd Speed (Roll) (Tracing / A3, 12" & 11")	0.5 seconds	5	5	5	5	0 to 300
082	Fuser Motor 1st Speed (Roll) (Film / A3, 12" & 11")	0.04mm/s	50	50	50	50	0 to 80
083	Switch Timing to Fuser Motor 1st Speed (Roll) (Film / A3, 12" & 11")	0.5 seconds	2	2	2	2	0 to 300
084	Fuser Motor 2nd Speed (Roll) (Film / A3, 12" & 11")	0.04mm/s	50	50	50	50	0 to 80
085	Switch Timing to Fuser Motor 2nd Speed (Roll) (Film / A3, 12" & 11")	0.5 seconds	4	4	4	4	0 to 300
086	Fuser Motor 3rd Speed (Roll) (Film / A3, 12" & 11")	0.04mm/s	40	40	40	40	0 to 80
087	Switch Timing to Fuser Motor 3rd Speed (Roll) (Film / A3, 12" & 11")	0.5 seconds	0	0	0	0	0 to 300
088	Fuser Motor 1st Speed (Roll) (Special Media / Plain Paper / A3, 12" & 11")	0.04mm/s	40	40	40	40	0 to 80
089	Switch Timing to Fuser Motor 1st Speed (Roll) (Special Media / Plain Paper / A3, 12" & 11")	0.5 seconds	0	0	0	0	0 to 300
090	Fuser Motor 2nd Speed Setting (Roll) (Special Media / Plain Paper / A3, 12" & 11")	0.04mm/s	40	40	40	40	0 to 80
091	Switch Timing to Fuser Motor 2nd Speed (Roll) (Special Media / Plain Paper / A3, 12" & 11")	0.5 seconds	0	0	0	0	0 to 300
092	Fuser Motor 3rd Speed (Roll) (Special Media / Plain Paper / A3, 12" & 11")	0.04mm/s	40	40	40	40	0 to 80
093	Switch Timing to Fuser Motor 3rd Speed (Roll) (Special Media / Plain Paper / A3, 12" & 11")	0.5 seconds	0	0	0	0	0 to 300
094	Fuser Motor 1st Speed (Roll) (Special Media / Tracing / A3, 12" & 11")	0.04mm/s	40	40	40	40	0 to 80
095	Switch Timing to Fuser Motor 1st Speed (Roll) (Special Media / Tracing / A3, 12" & 11")	0.5 seconds	0	0	0	0	0 to 300
096	Fuser Motor 2nd Speed (Roll) (Special Media / Tracing / A3, 12" & 11")	0.04mm/s	40	40	40	40	0 to 80
097	Switch Timing to Fuser Motor 2nd Speed (Roll) (Special Media / Tracing / A3, 12" & 11")	0.5 seconds	0	0	0	0	0 to 300
098	Fuser Motor 3rd Speed (Roll) (Special Media / Tracing / A3, 12" & 11")	0.04mm/s	40	40	40	40	0 to 80
099	Switch Timing to Fuser Motor 3rd Speed (Roll) (Special Media / Tracing / A3, 12" & 11")	0.5 seconds	0	0	0	0	0 to 300
100	Fuser Motor 1st Speed (Roll) (Special Media / Film / A3, 12" & 11")	0.04mm/s	40	40	40	40	0 to 80
101	Switch Timing to Fuser Motor 1st Speed (Roll) (Special Media / Film / A3, 12" & 11")	0.5 seconds	0	0	0	0	0 to 300
102	Fuser Motor 2nd Speed (Roll) (Special Media / Film / A3, 12" & 11")	0.04mm/s	40	40	40	40	0 to 80
103	Switch Timing to Fuser Motor 2nd Speed (Roll) (Special Media / Film / A3, 12" & 11")	0.5 seconds	0	0	0	0	0 to 300

NOTE: All items grayed are not generally for field technician use

Item No.	Setting Item	Unit	Default Value				Setting range
			USA	EUR / AS	CN	CND	
104	Fuser Motor 3rd Speed (Roll) (Special Media / Film / A3, 12" & 11")	0.04mm/s	40	40	40	40	0 to 80
105	Switch Timing to Fuser Motor 3rd Speed (Roll) (Special Media / Film / A3, 12" & 11")	0.5 seconds	0	0	0	0	0 to 300
106	Fuser Motor 1st Speed (Roll) (Plain Paper / A2, 18" & 17")	0.04mm/s	30	31	31	31	0 to 80
107	Switch Timing to Fuser Motor 1st Speed (Roll) (Plain Paper / A2, 18" & 17")	0.5 seconds	3	3	3	3	0 to 300
108	Fuser Motor 2nd Speed (Roll) (Plain Paper / A2, 18" & 17")	0.04mm/s	32	36	36	36	0 to 80
109	Switch Timing to Fuser Motor 2nd Speed (Roll) (Plain Paper / A2, 18" & 17")	0.5 seconds	4	4	4	4	0 to 300
110	**Fuser Motor 3rd Speed (Roll) (Plain Paper / A2, 18" & 17")**	**0.04mm/s**	**31**	**38**	**38**	**38**	**0 to 80**
111	Switch Timing to Fuser Motor 3rd Speed (Roll) (Plain Paper / A2, 18" & 17")	0.5 seconds	6	6	6	6	0 to 300
112	Fuser Motor 1st Speed (Roll) (Tracing / A2, 18" & 17")	0.04mm/s	33	40	40	40	0 to 80
113	Switch Timing to Fuser Motor 1st Speed (Roll) (Tracing / A2, 18" & 17")	0.5 seconds	2	1	1	1	0 to 300
114	Fuser Motor 2nd Speed (Roll) (Tracing / A2, 18" & 17")	0.04mm/s	38	44	44	44	0 to 80
115	Switch Timing to Fuser Motor 2nd Speed (Roll) (Tracing / A2, 18" & 17")	0.5 seconds	3	5	5	5	0 to 300
116	**Fuser Motor 3rd Speed (Roll) (Tracing / A2, 18" & 17")**	**0.04mm/s**	**38**	**45**	**45**	**45**	**0 to 80**
117	Switch Timing to Fuser Motor 3rd Speed (Roll) (Tracing / A2, 18" & 17")	0.5 seconds	5	5	5	5	0 to 300
118	Fuser Motor 1st Speed (Roll) (Film / A2, 18" & 17")	0.04mm/s	50	50	50	50	0 to 80
119	Switch Timing to Fuser Motor 1st Speed (Roll) (Film / A2, 18" & 17")	0.5 seconds	2	2	2	2	0 to 300
120	Fuser Motor 2nd Speed (Roll) (Film / A2, 18" & 17")	0.04mm/s	50	50	50	50	0 to 80
121	Switch Timing to Fuser Motor 2nd Speed (Roll) (Film / A2, 18" & 17")	0.5 seconds	6	6	6	6	0 to 300
122	Fuser Motor 3rd Speed (Roll) (Film / A2, 18" & 17")	0.04mm/s	40	40	40	40	0 to 80
123	Switch Timing to Fuser Motor 3rd Speed (Roll) (Film / A2, 18" & 17")	0.5 seconds	0	0	0	0	0 to 300
124	Fuser Motor 1st Speed (Roll) (Special Media / Plain Paper / A2, 18" & 17")	0.04mm/s	40	40	40	40	0 to 80
125	Switch Timing to Fuser Motor 1st Speed (Roll) (Special Media / Plain Paper / A2, 18" & 17")	0.5 seconds	0	0	0	0	0 to 300
126	Fuser Motor 2nd Speed (Roll) (Special Media / Plain Paper / A2, 18" & 17")	0.04mm/s	40	40	40	40	0 to 80
127	Switch Timing to Fuser Motor 2nd Speed (Roll) (Special Media / Plain Paper / A2, 18" & 17")	0.5 seconds	0	0	0	0	0 to 300
128	Fuser Motor 3rd Speed (Roll) (Special Media / Plain Paper / A2, 18" & 17")	0.04mm/s	40	40	40	40	0 to 80
129	Switch Timing to Fuser Motor 3rd Speed (Roll) (Special Media / Plain Paper / A2, 18" & 17")	0.5 seconds	0	0	0	0	0 to 300
130	Fuser Motor 1st Speed (Roll) (Special Media / Tracing / A2, 18" & 17")	0.04mm/s	40	40	40	40	0 to 80
131	Switch Timing to Fuser Motor 1st Speed (Roll) (Special Media / Tracing / A2, 18" & 17")	0.5 seconds	0	0	0	0	0 to 300
132	Fuser Motor 2nd Speed (Roll) (Special Media / Tracing / A2, 18" & 17")	0.04mm/s	40	40	40	40	0 to 80
133	Switch Timing to Fuser Motor 2nd Speed (Roll) (Special Media / Tracing / A2, 18" & 17")	0.5 seconds	0	0	0	0	0 to 300
134	Fuser Motor 3rd Speed (Roll) (Special Media / Tracing / A2, 18" & 17")	0.04mm/s	40	40	40	40	0 to 80
135	Switch Timing to Fuser Motor 3rd Speed (Roll) (Special Media / Tracing / A2, 18" & 17")	0.5 seconds	0	0	0	0	0 to 300
136	Fuser Motor 1st Speed (Roll) (Special Media / Film / A2, 18" & 17")	0.04mm/s	40	40	40	40	0 to 80
137	Switch Timing to Fuser Motor 1st Speed (Roll) (Special Media / Film / A2, 18" & 17")	0.5 seconds	0	0	0	0	0 to 300

NOTE: All items grayed are not generally for field technician use

Item No.	Setting Item	Unit	Default Value				Setting range
			USA	EUR / AS	CN	CND	
138	Fuser Motor 2nd Speed (Roll) (Special Media / Film / A2, 18" & 17")	0.04mm/s	40	40	40	40	0 to 80
139	Switch Timing to Fuser Motor 2nd Speed (Roll) (Special Media / Film / A2, 18" & 17")	0.5 seconds	0	0	0	0	0 to 300
140	Fuser Motor 3rd Speed (Roll) (Special Media / Film / A2, 18" & 17")	0.04mm/s	40	40	40	40	0 to 80
141	Switch Timing to Fuser Motor 3rd Speed (Roll) (Special Media / Film / A2, 18" & 17")	0.5 seconds	0	0	0	0	0 to 300
142	Fuser Motor 1st Speed (Roll) (Plain Paper / A1, 24" & 22")	0.04mm/s	39	35	35	35	0 to 80
143	Switch Timing to Fuser Motor 1st Speed (Roll) (Plain Paper / A1, 24" & 22")	0.5 seconds	3	1	1	1	0 to 300
144	Fuser Motor 2nd Speed (Roll) (Plain Paper / A1, 24" & 22")	0.04mm/s	28	36	36	36	0 to 80
145	Switch Timing to Fuser Motor 2nd Speed (Roll) (Plain Paper / A1, 24" & 22")	0.5 seconds	6	3	3	3	0 to 300
146	**Fuser Motor 3rd Speed (Roll) (Plain Paper / A1, 24" & 22")**	**0.04mm/s**	**40**	**40**	**40**	**40**	**0 to 80**
147	Switch Timing to Fuser Motor 3rd Speed (Roll) (Plain Paper / A1, 24" & 22")	0.5 seconds	6	16	16	16	0 to 300
148	Fuser Motor 1st Speed (Roll) (Tracing / A1, 24" & 22")	0.04mm/s	37	42	42	42	0 to 80
149	Switch Timing to Fuser Motor 1st Speed (Roll) (Tracing / A1, 24" & 22")	0.5 seconds	4	3	3	3	0 to 300
150	Fuser Motor 2nd Speed (Roll) (Tracing / A1, 24" & 22")	0.04mm/s	39	43	43	43	0 to 80
151	Switch Timing to Fuser Motor 2nd Speed (Roll) (Tracing / A1, 24" & 22")	0.5 seconds	9	9	9	9	0 to 300
152	**Fuser Motor 3rd Speed (Roll) (Tracing / A1, 24" & 22")**	**0.04mm/s**	**39**	**40**	**40**	**40**	**0 to 80**
153	Switch Timing to Fuser Motor 3rd Speed (Roll) (Tracing / A1, 24" & 22")	0.5 seconds	8	8	8	8	0 to 300
154	Fuser Motor 1st Speed (Roll) (Film / A1, 24" & 22")	0.04mm/s	42	42	42	42	0 to 80
155	Switch Timing to Fuser Motor 1st Speed (Roll) (Film / A1, 24" & 22")	0.5 seconds	2	2	2	2	0 to 300
156	Fuser Motor 2nd Speed (Roll) (Film / A1, 24" & 22")	0.04mm/s	42	42	42	42	0 to 80
157	Switch Timing to Fuser Motor 2nd Speed (Roll) (Film / A1, 24" & 22")	0.5 seconds	14	14	14	14	0 to 300
158	Fuser Motor 3rd Speed (Roll) (Film / A1, 24" & 22")	0.04mm/s	40	40	40	40	0 to 80
159	Switch Timing to Fuser Motor 3rd Speed (Roll) (Film / A1, 24" & 22")	0.5 seconds	0	0	0	0	0 to 300
160	Fuser Motor 1st Speed (Roll) (Special Media / Plain Paper / A1, 24" & 22")	0.04mm/s	40	40	40	40	0 to 80
161	Switch Timing to Fuser Motor 1st Speed (Roll) (Special Media / Plain Paper / A1, 24" & 22")	0.5 seconds	0	0	0	0	0 to 300
162	Fuser Motor 2nd Speed (Roll) (Special Media / Plain Paper / A1, 24" & 22")	0.04mm/s	40	40	40	40	0 to 80
163	Switch Timing to Fuser Motor 2nd Speed (Roll) (Special Media / Plain Paper / A1, 24" & 22")	0.5 seconds	0	0	0	0	0 to 300
164	Fuser Motor 3rd Speed (Roll) (Special Media / Plain Paper / A1, 24" & 22")	0.04mm/s	40	40	40	40	0 to 80
165	Switch Timing to Fuser Motor 3rd Speed (Roll) (Special Media / Plain Paper / A1, 24" & 22")	0.5 seconds	0	0	0	0	0 to 300
166	Fuser Motor 1st Speed (Roll) (Special Media / Tracing / A1, 24" & 22")	0.04mm/s	40	40	40	40	0 to 80
167	Switch Timing to Fuser Motor 1st Speed (Roll) (Special Media / Tracing / A1, 24" & 22")	0.5 seconds	0	0	0	0	0 to 300
168	Fuser Motor 2nd Speed (Roll) (Special Media / Tracing / A1, 24" & 22")	0.04mm/s	40	40	40	40	0 to 80
169	Switch Timing to Fuser Motor 2nd Speed (Roll) (Special Media / Tracing / A1, 24" & 22")	0.5 seconds	0	0	0	0	0 to 300
170	Fuser Motor 3rd Speed (Roll) (Special Media / Tracing / A1, 24" & 22")	0.04mm/s	40	40	40	40	0 to 80
171	Switch Timing to Fuser Motor 3rd Speed (Roll) (Special Media / Tracing / A1, 24" & 22")	0.5 seconds	0	0	0	0	0 to 300

NOTE: All items grayed are not generally for field technician use

Item No.	Setting Item	Unit	Default Value				Setting range
			USA	EUR / AS	CN	CND	
172	Fuser Motor 1st Speed (Roll) (Special Media / Film / A1, 24" & 22")	0.04mm/s	40	40	40	40	0 to 80
173	Switch Timing to Fuser Motor 1st Speed (Roll) (Special Media / Film / A1, 24" & 22")	0.5 seconds	0	0	0	0	0 to 300
174	Fuser Motor 2nd Speed (Roll) (Special Media / Film / A1, 24" & 22")	0.04mm/s	40	40	40	40	0 to 80
175	Switch Timing to Fuser Motor 2nd Speed (Roll) (Special Media / Film / A1, 24" & 22")	0.5 seconds	0	0	0	0	0 to 300
176	Fuser Motor 3rd Speed (Roll) (Special Media / Film / A1, 24" & 22")	0.04mm/s	40	40	40	40	0 to 80
177	Switch Timing to Fuser Motor 3rd Speed (Roll) (Special Media / Film / A1, 24" & 22")	0.5 seconds	0	0	0	0	0 to 300
178	Fuser Motor 1st Speed (Roll) (Plain Paper / A0, 36" & 34")	0.04mm/s	31	29	29	29	0 to 80
179	Switch Timing to Fuser Motor 1st Speed (Roll) (Plain Paper / A0, 36" & 34")	0.5 seconds	6	1	1	1	0 to 300
180	Fuser Motor 2nd Speed (Roll) (Plain Paper / A0, 36" & 34")	0.04mm/s	29	35	35	35	0 to 80
181	Switch Timing to Fuser Motor 2nd Speed (Roll) (Plain Paper / A0, 36" & 34")	0.5 seconds	14	10	10	10	0 to 300
182	**Fuser Motor 3rd Speed (Roll) (Plain Paper / A0, 36" & 34")**	**0.04mm/s**	**36**	**38**	**38**	**38**	**0 to 80**
183	Switch Timing to Fuser Motor 3rd Speed (Roll) (Plain Paper / A0, 36" & 34")	0.5 seconds	8	17	17	17	0 to 300
184	Fuser Motor 1st Speed (Roll) (Tracing / A0, 36" & 34")	0.04mm/s	32	36	36	36	0 to 80
185	Switch Timing to Fuser Motor 1st Speed (Roll) (Tracing / A0, 36" & 34")	0.5 seconds	3	3	3	3	0 to 300
186	Fuser Motor 2nd Speed (Roll) (Tracing / A0, 36" & 34")	0.04mm/s	38	34	34	34	0 to 80
187	Switch Timing to Fuser Motor 2nd Speed (Roll) (Tracing / A0, 36" & 34")	0.5 seconds	13	13	13	13	0 to 300
188	**Fuser Motor 3rd Speed (Roll) (Tracing / A0, 36" & 34")**	**0.04mm/s**	**40**	**39**	**39**	**39**	**0 to 80**
189	Switch Timing to Fuser Motor 3rd Speed (Roll) (Tracing / A0, 36" & 34")	0.5 seconds	8	8	8	8	0 to 300
190	Fuser Motor 1st Speed (Roll) (Film / A0, 36" & 34")	0.04mm/s	35	38	38	38	0 to 80
191	Switch Timing to Fuser Motor 1st Speed (Roll) (Film / A0, 36" & 34")	0.5 seconds	2	2	2	2	0 to 300
192	Fuser Motor 2nd Speed (Roll) (Film / A0, 36" & 34")	0.04mm/s	40	43	43	43	0 to 80
193	Switch Timing to Fuser Motor 2nd Speed (Roll) (Film / A0, 36" & 34")	0.5 seconds	18	18	18	18	0 to 300
194	Fuser Motor 3rd Speed (Roll) (Film / A0, 36" & 34")	0.04mm/s	40	40	40	40	0 to 80
195	Switch Timing to Fuser Motor 3rd Speed (Roll) (Film / A0, 36" & 34")	0.5 seconds	0	0	0	0	0 to 300
196	Fuser Motor 1st Speed (Roll) (Special Media / Plain Paper / A0, 36" & 34")	0.04mm/s	40	40	40	40	0 to 80
197	Switch Timing to Fuser Motor 1st Speed (Roll) (Special Media / Plain Paper / A0, 36" & 34")	0.5 seconds	0	0	0	0	0 to 300
198	Fuser Motor 2nd Speed (Roll) (Special Media / Plain Paper / A0, 36" & 34")	0.04mm/s	40	40	40	40	0 to 80
199	Switch Timing to Fuser Motor 2nd Speed (Roll) (Special Media / Plain Paper / A0, 36" & 34")	0.5 seconds	0	0	0	0	0 to 300
200	Fuser Motor 3rd Speed (Roll) (Special Media / Plain Paper / A0, 36" & 34")	0.04mm/s	40	40	40	40	0 to 80
201	Switch Timing to Fuser Motor 3rd Speed (Roll) (Special Media / Plain Paper / A0, 36" & 34")	0.5 seconds	0	0	0	0	0 to 300
202	Fuser Motor 1st Speed (Roll) (Special Media / Tracing / A0, 36" & 34")	0.04mm/s	40	40	40	40	0 to 80
203	Switch Timing to Fuser Motor 1st Speed (Roll) (Special Media / Tracing / A0, 36" & 34")	0.5 seconds	0	0	0	0	0 to 300
204	Fuser Motor 2nd Speed (Roll) (Special Media / Tracing / A0, 36" & 34")	0.04mm/s	40	40	40	40	0 to 80
205	Switch Timing to Fuser Motor 2nd Speed (Roll) (Special Media / Tracing / A0, 36" & 34")	0.5 seconds	0	0	0	0	0 to 300

NOTE: All items grayed are not generally for field technician use

Item No.	Setting Item	Unit	Default Value				Setting range
			USA	EUR / AS	CN	CND	
206	Fuser Motor 3rd Speed (Roll) (Special Media / Tracing / A0, 36" & 34")	0.04mm/s	40	40	40	40	0 to 80
207	Switch Timing to Fuser Motor 3rd Speed (Roll) (Special Media / Tracing / A0, 36" & 34")	0.5 seconds	0	0	0	0	0 to 300
208	Fuser Motor 1st Speed (Roll) (Special Media / Film / A0, 36" & 34")	0.04mm/s	40	40	40	40	0 to 80
209	Switch Timing to Fuser Motor 1st Speed (Roll) (Special Media / Film / A0, 36" & 34")	0.5 seconds	0	0	0	0	0 to 300
210	Fuser Motor 2nd Speed (Roll) (Special Media / Film / A0, 36" & 34")	0.04mm/s	40	40	40	40	0 to 80
211	Switch Timing to Fuser Motor 2nd Speed (Roll) (Special Media / Film / A0, 36" & 34")	0.5 seconds	0	0	0	0	0 to 300
212	Fuser Motor 3rd Speed (Roll) (Special Media / Film / A0, 36" & 34")	0.04mm/s	40	40	40	40	0 to 80
213	Switch Timing to Fuser Motor 3rd Speed (Roll) (Special Media / Film / A0, 36" & 34")	0.5 seconds	0	0	0	0	0 to 300
214 to 309	Reserved	-					
310	Main Motor Speed (Plain paper)	-	36	36	36	36	0 to 80
311	Main Motor Speed (Tracing paper)	-	40	40	40	40	0 to 80
312	Main Motor Speed (Film)	-	40	40	40	40	0 to 80
313	Main Motor Speed (Special plain paper)	-	40	40	40	40	0 to 80
314	Main Motor Speed (Special tracing paper)	-	40	40	40	40	0 to 80
315	Main Motor Speed (Special film)	-	40	40	40	40	0 to 80
316	**Fuser Motor Speed (36" / 34" / 30" / 24" / 22" / A0 / B1 / A1) (Plain)**	**-**	**33**	**35**	**35**	**35**	**0 to 80**
317	**Fuser Motor Speed (36" / 34" / 30" / 24" / 22" / A0 / B1 / A1) (Tracing)**	**-**	**39**	**55**	**55**	**55**	**0 to 80**
318	**Fuser Motor Speed (36" / 34" / 30" / 24" / 22" / A0 / B1 / A1) (Film)**	**-**	**50**	**50**	**50**	**50**	**0 to 80**
319	Fuser Motor Speed (36" / 34" / 30" / 24" / 22" / A0 / B1 / A1) (Special / Plain)	-	40	40	40	40	0 to 80
320	Fuser Motor Speed (36" / 34" / 30" / 24" / 22" / A0 / B1 / A1) (Special / Tracing)	-	40	40	40	40	0 to 80
321	Fuser Motor Speed (36" / 34" / 30" / 24" / 22" / A0 / B1 / A1) (Special / Film)	-	40	40	40	40	0 to 80
322	Separation Corona OFF Timing (Plain paper)	1mm	25	25	25	25	0 to 100
323	Separation Corona OFF Timing (tracing paper)	1mm	25	25	25	25	0 to 100
324	Separation Corona OFF Timing (Film)	1mm	22	25	25	25	0 to 100
325	Separation Corona OFF Timing (Special plain paper)	1mm	18	18	18	18	0 to 100
326	Separation Corona OFF Timing (Special tracing paper)	1mm	18	18	18	18	0 to 100
327	Separation Corona OFF Timing (Special film)	1mm	23	23	23	23	0 to 100
328	Fuser Motor 1st Speed (Cut sheet) (Plain Paper / A3, A2, 12", 11", 18" & 17")	0.04mm/s	30	31	31	31	0 to 80
329	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Plain Paper / A3, A2, 12", 11", 18" & 17")	0.5 seconds	3	3	3	3	0 to 300
330	Fuser Motor 2nd Speed (Cut sheet) (Plain Paper / A3, A2, 12", 11", 18" & 17")	0.04mm/s	32	36	36	36	0 to 80
331	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Plain Paper / A3, A2, 12", 11", 18" & 17")	0.5 seconds	4	4	4	4	0 to 300
332	Fuser Motor 3rd Speed (Cut sheet) (Plain Paper / A3, A2, 12", 11", 18" & 17")	0.04mm/s	31	38	38	38	0 to 80
333	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Plain Paper / A3, A2, 12", 11", 18" & 17")	0.5 seconds	6	6	6	6	0 to 300
334	Fuser Motor 1st Speed (Roll) (Tracing / A3, 12" & 11")	0.04mm/s	33	40	40	40	0 to 80
335	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Tracing / A3, A2, 12", 11", 18" & 17")	0.5 seconds	2	1	1	1	0 to 300
336	Fuser Motor 2nd Speed (Cut sheet) (Tracing / A3, A2, 12", 11", 18" & 17")	0.04mm/s	38	44	44	44	0 to 80
337	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Tracing / A3, A2, 12", 11", 18" & 17")	0.5 seconds	3	5	5	5	0 to 300
338	Fuser Motor 3rd Speed (Cut sheet) (Tracing / A3, A2, 12", 11", 18" & 17")	0.04mm/s	38	45	45	45	0 to 80
339	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Tracing / A3, A2, 12", 11", 18" & 17")	0.5 seconds	5	2	2	2	0 to 300
340	Fuser Motor 1st Speed (Cut sheet) (Film / A3, A2, 12", 11", 18" & 17")	0.04mm/s	50	50	50	50	0 to 80
341	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Film / A3, A2, 12", 11", 18" & 17")	0.5 seconds	2	6	6	6	0 to 300

NOTE: All items grayed are not generally for field technician use

Item No.	Setting Item	Unit	Default Value				Setting range
			USA	EUR / AS	CN	CND	
342	Fuser Motor 2nd Speed (Cut sheet) (Film / A3, A2, 12", 11", 18" & 17")	0.04mm/s	50	40	40	40	0 to 80
343	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Film / A3, A2, 12", 11", 18" & 17")	0.5 seconds	6	0	0	0	0 to 300
344	Fuser Motor 3rd Speed (Cut sheet) (Film / A3, A2, 12", 11", 18" & 17")	0.04mm/s	40	40	40	40	0 to 80
345	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Film / A3, A2, 12", 11", 18" & 17")	0.5 seconds	0	0	0	0	0 to 300
346	Fuser Motor 1st Speed (Cut sheet) (Special Media / Plain Paper / A3, A2, 12", 11", 18" & 17")	0.04mm/s	40	40	40	40	0 to 80
347	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Special Media / Plain Paper / A3, A2, 12", 11", 18" & 17")	0.5 seconds	0	0	0	0	0 to 300
348	Fuser Motor 2nd Speed (Cut sheet) (Special Media / Plain Paper / A3, A2, 12", 11", 18" & 17")	0.04mm/s	40	40	40	40	0 to 80
349	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Special Media / Plain Paper / A3, A2, 12", 11", 18" & 17")	0.5 seconds	0	0	0	0	0 to 300
350	Fuser Motor 3rd Speed (Cut sheet) (Special Media / Plain Paper / A3, A2, 12", 11", 18" & 17")	0.04mm/s	40	40	40	40	0 to 80
351	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Special Media / Plain Paper / A3, A2, 12", 11", 18" & 17")	0.5 seconds	0	0	0	0	0 to 300
352	Fuser Motor 1st Speed (Cut sheet) (Special Media / Tracing / A3, A2, 12", 11", 18" & 17")	0.04mm/s	40	40	40	40	0 to 80
353	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Special Media / Tracing / A3, A2, 12", 11", 18" & 17")	0.5 seconds	0	0	0	0	0 to 300
354	Fuser Motor 2nd Speed (Cut sheet) (Special Media / Tracing / A3, A2, 12", 11", 18" & 17")	0.04mm/s	40	40	40	40	0 to 80
355	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Special Media / Tracing / A3, A2, 12", 11", 18" & 17")	0.5 seconds	0	0	0	0	0 to 300
356	Fuser Motor 3rd Speed (Cut sheet) (Special Media / Tracing / A3, A2, 12", 11", 18" & 17")	0.04mm/s	40	40	40	40	0 to 80
357	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Special Media / Tracing / A3, A2, 12", 11", 18" & 17")	0.5 seconds	0	0	0	0	0 to 300
358	Fuser Motor 1st Speed (Cut sheet) (Special Media / Film / A3, A2, 12", 11", 18" & 17")	0.04mm/s	40	40	40	40	0 to 80
359	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Special Media / Film / A3, A2, 12", 11", 18" & 17")	0.5 seconds	0	0	0	0	0 to 300
360	Fuser Motor 2nd Speed (Cut sheet) (Special Media / Film / A3, A2, 12", 11", 18" & 17")	0.04mm/s	40	40	40	40	0 to 80
361	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Special Media / Film / A3, A2, 12", 11", 18" & 17")	0.5 seconds	0	0	0	0	0 to 300
362	Fuser Motor 3rd Speed (Cut sheet) (Special Media / Film / A3, A2, 12", 11", 18" & 17")	0.04mm/s	40	40	40	40	0 to 80
363	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Special Media / Film / A3, A2, 12", 11", 18" & 17")	0.5 seconds	0	0	0	0	0 to 300
364	Fuser Motor 1st Speed (Cut sheet) (Plain Paper / A1, 24" & 22")	0.04mm/s	37	35	35	35	0 to 80
365	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Plain Paper / A1, 24" & 22")	0.5 seconds	3	3	3	3	0 to 300
366	Fuser Motor 2nd Speed (Cut sheet) (Plain Paper / A1, 24" & 22")	0.04mm/s	30	33	33	33	0 to 80
367	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Plain Paper / A1, 24" & 22")	0.5 seconds	6	8	8	8	0 to 300
368	Fuser Motor 3rd Speed (Cut sheet) (Plain Paper / A1, 24" & 22")	0.04mm/s	40	41	41	41	0 to 80
369	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Plain Paper / A1, 24" & 22")	0.5 seconds	6	8	8	8	0 to 300
370	Fuser Motor 1st Speed (Cut sheet) (Tracing / A1, 24" & 22")	0.04mm/s	36	42	42	42	0 to 80
371	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Tracing / A1, 24" & 22")	0.5 seconds	3	3	3	3	0 to 300
372	Fuser Motor 2nd Speed (Cut sheet) (Tracing / A1, 24" & 22")	0.04mm/s	41	43	43	43	0 to 80
373	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Tracing / A1, 24" & 22")	0.5 seconds	9	9	9	9	0 to 300
374	Fuser Motor 3rd Speed (Cut sheet) (Tracing / A1, 24" & 22")	0.04mm/s	39	40	40	40	0 to 80
375	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Tracing / A1, 24" & 22")	0.5 seconds	8	8	8	8	0 to 300

NOTE: All items grayed are not generally for field technician use

Item No.	Setting Item	Unit	Default Value				Setting range
			USA	EUR / AS	CN	CND	
376	Fuser Motor 1st Speed (Cut sheet) (Film / A1, 24" & 22")	0.04mm/s	42	42	42	42	0 to 80
377	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Film / A1, 24" & 22")	0.5 seconds	2	2	2	2	0 to 300
378	Fuser Motor 2nd Speed (Cut sheet) (Film / A1, 24" & 22")	0.04mm/s	42	42	42	42	0 to 80
379	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Film / A1, 24" & 22")	0.5 seconds	14	14	14	14	0 to 300
380	Fuser Motor 3rd Speed (Cut sheet) (Film / A1, 24" & 22")	0.04mm/s	40	40	40	40	0 to 80
381	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Film / A1, 24" & 22")	0.5 seconds	0	0	0	0	0 to 300
382	Fuser Motor 1st Speed (Cut sheet) (Special Media / Plain Paper / A1, 24" & 22")	0.04mm/s	40	40	40	40	0 to 80
383	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Special Media / Plain Paper / A1, 24" & 22")	0.5 seconds	0	0	0	0	0 to 300
384	Fuser Motor 2nd Speed (Cut sheet) (Special Media / Plain Paper / A1, 24" & 22")	0.04mm/s	40	40	40	40	0 to 80
385	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Special Media / Plain Paper / A1, 24" & 22")	0.5 seconds	0	0	0	0	0 to 300
386	Fuser Motor 3rd Speed (Cut sheet) (Special Media / Plain Paper / A1, 24" & 22")	0.04mm/s	40	40	40	40	0 to 80
387	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Special Media / Plain Paper / A1, 24" & 22")	0.5 seconds	0	0	0	0	0 to 300
388	Fuser Motor 1st Speed (Cut sheet) (Special Media / Tracing / A1, 24" & 22")	0.04mm/s	40	40	40	40	0 to 80
389	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Special Media / Tracing / A1, 24" & 22")	0.5 seconds	0	0	0	0	0 to 300
390	Fuser Motor 2nd Speed (Cut sheet) (Special Media / Tracing / A1, 24" & 22")	0.04mm/s	40	40	40	40	0 to 80
391	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Special Media / Tracing / A1, 24" & 22")	0.5 seconds	0	0	0	0	0 to 300
392	Fuser Motor 3rd Speed (Cut sheet) (Special Media / Tracing / A1, 24" & 22")	0.04mm/s	40	40	40	40	0 to 80
393	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Special Media / Tracing / A1, 24" & 22")	0.5 seconds	0	0	0	0	0 to 300
394	Fuser Motor 1st Speed (Cut sheet) (Special Media / Film / A1, 24" & 22")	0.04mm/s	40	40	40	40	0 to 80
395	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Special Media / Film / A1, 24" & 22")	0.5 seconds	0	0	0	0	0 to 300
396	Fuser Motor 2nd Speed (Cut sheet) (Special Media / Film / A1, 24" & 22")	0.04mm/s	40	40	40	40	0 to 80
397	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Special Media / Film / A1, 24" & 22")	0.5 seconds	0	0	0	0	0 to 300
398	Fuser Motor 3rd Speed (Cut sheet) (Special Media / Film / A1, 24" & 22")	0.04mm/s	40	40	40	40	0 to 80
399	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Special Media / Film / A1, 24" & 22")	0.5 seconds	0	0	0	0	0 to 300
400	Fuser Motor 1st Speed (Cut sheet) (Plain Paper / A0, 36" & 34")	0.04mm/s	26	26	26	26	0 to 80
401	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Plain Paper / A0, 36" & 34")	0.5 seconds	4	3	3	3	0 to 300
402	Fuser Motor 2nd Speed (Cut sheet) (Plain Paper / A0, 36" & 34")	0.04mm/s	27	27	27	27	0 to 80
403	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Plain Paper / A0, 36" & 34")	0.5 seconds	10	10	10	10	0 to 300
404	Fuser Motor 3rd Speed (Cut sheet) (Plain Paper / A0, 36" & 34")	0.04mm/s	33	37	37	37	0 to 80
405	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Plain Paper / A0, 36" & 34")	0.5 seconds	8	8	8	8	0 to 300
406	Fuser Motor 1st Speed (Cut sheet) (Tracing / A0, 36" & 34")	0.04mm/s	29	42	42	42	0 to 80
407	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Tracing / A0, 36" & 34")	0.5 seconds	3	3	3	3	0 to 300
408	Fuser Motor 2nd Speed (Cut sheet) (Tracing / A0, 36" & 34")	0.04mm/s	35	38	38	38	0 to 80
409	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Tracing / A0, 36" & 34")	0.5 seconds	13	13	13	13	0 to 300
410	Fuser Motor 3rd Speed (Cut sheet) (Tracing / A0, 36" & 34")	0.04mm/s	36	39	39	39	0 to 80

NOTE: All items grayed are not generally for field technician use

Item No.	Setting Item	Unit	Default Value				Setting range
			USA	EUR / AS	CN	CND	
411	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Tracing / A0, 36" & 34")	0.5 seconds	8	8	8	8	0 to 300
412	Fuser Motor 1st Speed (Cut sheet) (Film / A0, 36" & 34")	0.04mm/s	35	38	38	38	0 to 80
413	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Film / A0, 36" & 34")	0.5 seconds	2	2	2	2	0 to 300
414	Fuser Motor 2nd Speed (Cut sheet) (Film / A0, 36" & 34")	0.04mm/s	42	43	43	43	0 to 80
415	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Film / A0, 36" & 34")	0.5 seconds	18	18	18	18	0 to 300
416	Fuser Motor 3rd Speed (Cut sheet) (Film / A0, 36" & 34")	0.04mm/s	40	40	40	40	0 to 80
417	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Film / A0, 36" & 34")	0.5 seconds	0	0	0	0	0 to 300
418	Fuser Motor 1st Speed (Cut sheet) (Special Media / Plain Paper / A0, 36" & 34")	0.04mm/s	40	40	40	40	0 to 80
419	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Special Media / Plain Paper / A0, 36" & 34")	0.5 seconds	0	0	0	0	0 to 300
420	Fuser Motor 2nd Speed (Cut sheet) (Special Media / Plain Paper / A0, 36" & 34")	0.04mm/s	40	40	40	40	0 to 80
421	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Special Media / Plain Paper / A0, 36" & 34")	0.5 seconds	0	0	0	0	0 to 300
422	Fuser Motor 3rd Speed (Cut sheet) (Special Media / Plain Paper / A0, 36" & 34")	0.04mm/s	40	40	40	40	0 to 80
423	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Special Media / Plain Paper / A0, 36" & 34")	0.5 seconds	0	0	0	0	0 to 300
424	Fuser Motor 1st Speed (Cut sheet) (Special Media / Tracing / A0, 36" & 34")	0.04mm/s	40	40	40	40	0 to 80
425	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Special Media / Tracing / A0, 36" & 34")	0.5 seconds	0	0	0	0	0 to 300
426	Fuser Motor 2nd Speed (Cut sheet) (Special Media / Tracing / A0, 36" & 34")	0.04mm/s	40	40	40	40	0 to 80
427	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Special Media / Tracing / A0, 36" & 34")	0.5 seconds	0	0	0	0	0 to 300
428	Fuser Motor 3rd Speed (Cut sheet) (Special Media / Tracing / A0, 36" & 34")	0.04mm/s	40	40	40	40	0 to 80
429	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Special Media / Tracing / A0, 36" & 34")	0.5 seconds	0	0	0	0	0 to 300
430	Fuser Motor 1st Speed (Cut sheet) (Special Media / Film / A0, 36" & 34")	0.04mm/s	40	40	40	40	0 to 80
431	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Special Media / Film / A0, 36" & 34")	0.5 seconds	0	0	0	0	0 to 300
432	Fuser Motor 2nd Speed (Cut sheet) (Special Media / Film / A0, 36" & 34")	0.04mm/s	40	40	40	40	0 to 80
433	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Special Media / Film / A0, 36" & 34")	0.5 seconds	0	0	0	0	0 to 300
434	Fuser Motor 3rd Speed (Cut sheet) (Special Media / Film / A0, 36" & 34")	0.04mm/s	40	40	40	40	0 to 80
435	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Special Media / Film / A0, 36" & 34")	0.5 seconds	0	0	0	0	0 to 300
436	Fuser Motor 1st Speed (Roll) (Plain Paper / 30")	0.04mm/s	29	28	28	28	0 to 80
437	Switch Timing to Fuser Motor 1st Speed (Roll) (Plain Paper / 30")	0.5 seconds	5	5	5	5	0 to 300
438	Fuser Motor 2nd Speed (Roll) (Plain Paper / 30")	0.04mm/s	32	33	33	33	0 to 80
439	Switch Timing to Fuser Motor 2nd Speed (Roll) (Plain Paper / 30")	0.5 seconds	11	9	9	9	0 to 300
440	**Fuser Motor 3rd Speed (Roll) (Plain Paper / 30")**	**0.04mm/s**	**37**	**36**	**36**	**36**	**0 to 80**
441	Switch Timing to Fuser Motor 3rd Speed (Roll) (Plain Paper / 30")	0.5 seconds	7	7	7	7	0 to 300
442	Fuser Motor 1st Speed (Roll) (Tracing / 30")	0.04mm/s	34	33	33	33	0 to 80
443	Switch Timing to Fuser Motor 1st Speed (Roll) (Tracing / 30")	0.5 seconds	4	4	4	4	0 to 300
444	Fuser Motor 2nd Speed (Roll) (Tracing / 30")	0.04mm/s	38	44	44	44	0 to 80
445	Switch Timing to Fuser Motor 2nd Speed (Roll) (Tracing / 30")	0.5 seconds	11	11	11	11	0 to 300

NOTE: All items grayed are not generally for field technician use

Item No.	Setting Item	Unit	Default Value				Setting range
			USA	EUR / AS	CN	CND	
446	**Fuser Motor 3rd Speed (Roll) (Tracing / 30")**	**0.04mm/s**	**40**	**41**	**41**	**41**	**0 to 80**
447	Switch Timing to Fuser Motor 3rd Speed (Roll) (Tracing / 30")	0.5 seconds	8	8	8	8	0 to 300
448	Fuser Motor 1st Speed (Roll) (Film / 30")	0.04mm/s	40	40	40	40	0 to 80
449	Switch Timing to Fuser Motor 1st Speed (Roll) (Film / 30")	0.5 seconds	0	0	0	0	0 to 300
450	Fuser Motor 2nd Speed (Roll) (Film / 30")	0.04mm/s	40	40	40	40	0 to 80
451	Switch Timing to Fuser Motor 2nd Speed (Roll) (Film / 30")	0.5 seconds	0	0	0	0	0 to 300
452	Fuser Motor 3rd Speed (Roll) (Film / 30")	0.04mm/s	40	40	40	40	0 to 80
453	Switch Timing to Fuser Motor 3rd Speed (Roll) (Film / 30")	0.5 seconds	0	0	0	0	0 to 300
454	Fuser Motor 1st Speed (Roll) (Special Media / Plain Paper / 30")	0.04mm/s	40	40	40	40	0 to 80
455	Switch Timing to Fuser Motor 1st Speed (Roll) (Special Media / Plain Paper / 30")	0.5 seconds	0	0	0	0	0 to 300
456	Fuser Motor 2nd Speed (Roll) (Special Media / Plain Paper / 30")	0.04mm/s	40	40	40	40	0 to 80
457	Switch Timing to Fuser Motor 2nd Speed (Roll) (Special Media / Plain Paper / 30")	0.5 seconds	0	0	0	0	0 to 300
458	Fuser Motor 3rd Speed (Roll) (Special Media / Plain Paper / 30")	0.04mm/s	40	40	40	40	0 to 80
459	Switch Timing to Fuser Motor 3rd Speed (Roll) (Special Media / Plain Paper / 30")	0.5 seconds	0	0	0	0	0 to 300
460	Fuser Motor 1st Speed (Roll) (Special Media / Tracing / 30")	0.04mm/s	40	40	40	40	0 to 80
461	Switch Timing to Fuser Motor 1st Speed (Roll) (Special Media / Tracing / 30")	0.5 seconds	0	0	0	0	0 to 300
462	Fuser Motor 2nd Speed (Roll) (Special Media / Tracing / 30")	0.04mm/s	40	40	40	40	0 to 80
463	Switch Timing to Fuser Motor 2nd Speed (Roll) (Special Media / Tracing / 30")	0.5 seconds	0	0	0	0	0 to 300
464	Fuser Motor 3rd Speed (Roll) (Special Media / Tracing / 30")	0.04mm/s	40	40	40	40	0 to 80
465	Switch Timing to Fuser Motor 3rd Speed (Roll) (Special Media / Tracing / 30")	0.5 seconds	0	0	0	0	0 to 300
466	Fuser Motor 1st Speed (Roll) (Special Media / Film / 30")	0.04mm/s	40	40	40	40	0 to 80
467	Switch Timing to Fuser Motor 1st Speed (Roll) (Special Media / Film / 30")	0.5 seconds	0	0	0	0	0 to 300
468	Fuser Motor 2nd Speed (Roll) (Special Media / Film / 30")	0.04mm/s	40	40	40	40	0 to 80
469	Switch Timing to Fuser Motor 2nd Speed (Roll) (Special Media / Film / 30")	0.5 seconds	0	0	0	0	0 to 300
470	Fuser Motor 3rd Speed (Roll) (Special Media / Film / 30")	0.04mm/s	40	40	40	40	0 to 80
471	Switch Timing to Fuser Motor 3rd Speed (Roll) (Special Media / Film / 30")	0.5 seconds	0	0	0	0	0 to 300
472	Fuser Motor 1st Speed (Cut sheet) (Plain Paper / 30")	0.04mm/s	28	28	28	28	0 to 80
473	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Plain Paper / 30")	0.5 seconds	5	5	5	5	0 to 300
474	Fuser Motor 2nd Speed (Cut sheet) (Plain Paper / 30")	0.04mm/s	30	33	33	33	0 to 80
475	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Plain Paper / 30")	0.5 seconds	9	9	9	9	0 to 300
476	Fuser Motor 3rd Speed (Cut sheet) (Plain Paper / 30")	0.04mm/s	34	36	36	36	0 to 80
477	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Plain Paper / 30")	0.5 seconds	7	7	7	7	0 to 300
478	Fuser Motor 1st Speed (Cut sheet) (Tracing / 30")	0.04mm/s	34	33	33	33	0 to 80
479	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Tracing / 30")	0.5 seconds	4	4	4	4	0 to 300
480	Fuser Motor 2nd Speed (Cut sheet) (Tracing / 30")	0.04mm/s	38	44	44	44	0 to 80

NOTE: All items grayed are not generally for field technician use

Item No.	Setting Item	Unit	Default Value				Setting range
			USA	EUR / AS	CN	CND	
481	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Tracing / 30")	0.5 seconds	11	11	11	11	0 to 300
482	Fuser Motor 3rd Speed (Cut sheet) (Tracing / 30")	0.04mm/s	40	41	41	41	0 to 80
483	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Tracing / 30")	0.5 seconds	8	8	8	8	0 to 300
484	Fuser Motor 1st Speed (Cut sheet) (Film / 30")	0.04mm/s	40	40	40	40	0 to 80
485	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Roll) (Film / 30")	0.5 seconds	0	0	0	0	0 to 300
486	Fuser Motor 2nd Speed (Roll) (Cut sheet) (Film / 30")	0.04mm/s	40	40	40	40	0 to 80
487	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Film / 30")	0.5 seconds	0	0	0	0	0 to 300
488	Fuser Motor 3rd Speed (Cut sheet) (Film / 30")	0.04mm/s	40	40	40	40	0 to 80
489	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Film / 30")	0.5 seconds	0	0	0	0	0 to 300
490	Fuser Motor 1st Speed (Cut sheet) (Special Media / Plain Paper / 30")	0.04mm/s	40	40	40	40	0 to 80
491	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Special Media / Plain Paper / 30")	0.5 seconds	0	0	0	0	0 to 300
492	Fuser Motor 2nd Speed (Cut sheet) (Special Media / Plain Paper / 30")	0.04mm/s	40	40	40	40	0 to 80
493	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Special Media / Plain Paper / 30")	0.5 seconds	0	0	0	0	0 to 300
494	Fuser Motor 3rd Speed (Cut sheet) (Special Media / Plain Paper / 30")	0.04mm/s	40	40	40	40	0 to 80
495	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Special Media / Plain Paper / 30")	0.5 seconds	0	0	0	0	0 to 300
496	Fuser Motor 1st Speed (Cut sheet) (Special Media / Tracing / 30")	0.04mm/s	40	40	40	40	0 to 80
497	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Special Media / Tracing / 30")	0.5 seconds	0	0	0	0	0 to 300
498	Fuser Motor 2nd Speed (Cut sheet) (Special Media / Tracing / 30")	0.04mm/s	40	40	40	40	0 to 80
499	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Special Media / Tracing / 30")	0.5 seconds	0	0	0	0	0 to 300
500	Fuser Motor 3rd Speed (Cut sheet) (Special Media / Tracing / 30")	0.04mm/s	40	40	40	40	0 to 80
501	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Special Media / Tracing / 30")	0.5 seconds	0	0	0	0	0 to 300
502	Fuser Motor 1st Speed (Cut sheet) (Special Media / Film / 30")	0.04mm/s	40	40	40	40	0 to 80
503	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Special Media / Film / 30")	0.5 seconds	0	0	0	0	0 to 300
504	Fuser Motor 2nd Speed (Cut sheet) (Special Media / Film / 30")	0.04mm/s	40	40	40	40	0 to 80
505	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Special Media / Film / 30")	0.5 seconds	0	0	0	0	0 to 300
506	Fuser Motor 3rd Speed (Cut sheet) (Special Media / Film / 30")	0.04mm/s	40	40	40	40	0 to 80
507	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Special Media / Film / 30")	0.5 seconds	0	0	0	0	0 to 300
508	Transfer Voltage applied at 100mm from trailing edge (Plain paper)	Hexadecimal	3FF	3FF	3FF	3FF	000 to 7FE
509	Transfer Voltage applied at 100mm from trailing edge (Tracing paper)	Hexadecimal	3FF	3FF	3FF	3FF	000 to 7FE
510	Transfer Voltage applied at 100mm from trailing edge (Film)	Hexadecimal	3FF	3FF	3FF	3FF	000 to 7FE
511	Transfer Voltage applied at 70mm from trailing edge (Special / Plain paper)	Hexadecimal	4BC	4BC	4BC	4BC	000 to 7FE
512	Transfer Voltage applied at 70mm from trailing edge (Special / Tracing paper)	Hexadecimal	592	592	592	592	000 to 7FE
513	Transfer Voltage applied at 70mm from trailing edge (Special / Film)	Hexadecimal	3FF	3FF	3FF	3FF	000 to 7FE
514	Fuser Motor Speed applied at 30mm from trailing edge (Plain paper)	-	13	13	13	13	0 to 80
515	Fuser Motor Speed applied at 30mm from trailing edge (Tracing paper)	-	19	8	8	8	0 to 80

NOTE: All items grayed are not generally for field technician use

Item No.	Setting Item	Unit	Default Value				Setting range
			USA	EUR / AS	CN	CND	
516	Fuser Motor Speed applied at 30mm from trailing edge (Film)	-	0	0	0	0	0 to 80
517 to 612	Reserved						
613	Judgement Value for Additional Cut Length for Non-standard Size Prints (36"/ 34"/ 30"/ A0 / B1)	1mm	1	1	1	1	1 to 20
614	Judgement Value for Additional Cut Length for Non-standard Size Prints (24"/ 20"/ A1)	1mm	1	1	1	1	1 to 20
615	Judgement Value for Additional Cut Length for Non-standard Size Prints (18"/ 17"/ 15"/ A2)	1mm	1	1	1	1	1 to 20
616	Judgement Value for Additional Cut Length for Non-standard Size Prints (12"/ 11"/ A3)	1mm	1	1	1	1	1 to 20
617	Additional Cut Length for Non-standard Size Prints (36"/ 34"/ 30"/ A0 / B1)	1mm	0	0	0	0	0 to 35
618	Additional Cut Length for Non-standard Size Prints (24"/ 22"/ A2)	1mm	0	0	0	0	0 to 35
619	Additional Cut Length for Non-standard Size Prints (18"/ 17"/ 15"/ A2)	1mm	0	0	0	0	0 to 35
620	Additional Cut Length for Non-standard Size Prints (12"/ 11"/ A3)	1mm	0	0	0	0	0 to 35
621	Toner Supply Roller Bias	Hexadecimal	d0	d0	d0	d0	0 to 3FF
622	**Regulation Bias**	**Hexadecimal**	**dE**	**dE**	**dE**	**dE**	**0 to 3FF**
623	Density Sensor Standard Output		0	0	0	0	0 to 614
624	Density Sensor Analog Voltage		0	0	0	0	0 to 614
625	**Print - Fuser Temperature Side (Plain) (12" / 11" / A3)**	**1°C**	**160**	**145**	**145**	**165**	**120 to 180**
626	**Print - Fuser Temperature Side (Tracing) (12" / 11" / A3)**	**1°C**	**160**	**150**	**140**	**135**	**120 to 180**
627	**Print - Fuser Temperature Side (Film) (12" / 11" / A3)**	**1°C**	**177**	**170**	**170**	**155**	**120 to 180**
628	Print - Fuser Temperature Side (Special / Plain) (12" / 11" / A3)	1°C	160	160	160	160	120 to 180
629	Print - Fuser Temperature Side (Special / Tracing) (12" / 11" / A3)	1°C	160	160	160	160	120 to 180
630	Print - Fuser Temperature Side (Special media / Film) (12" / 11" / A3)	1°C	177	170	170	170	120 to 180
631	**Print - Fuser Temperature Side (Plain) (18" / 17" / 15" / A2)**	**1°C**	**160**	**165**	**165**	**165**	**120 to 180**
632	**Print - Fuser Temperature Side (Tracing) (18" / 17" / 15" / A2)**	**1°C**	**160**	**170**	**160**	**155**	**120 to 180**
633	**Print - Fuser Temperature Side (Film) (18" / 17" / 15" / A2)**	**1°C**	**177**	**170**	**170**	**155**	**120 to 180**
634	Print - Fuser Temperature Side (Special / Plain) (18" / 17" / 15" / A2)	1°C	160	160	160	160	120 to 180
635	Print - Fuser Temperature Side (Special / Tracing) (18" / 17" / 15" / A2)	1°C	160	160	160	160	120 to 180
636	Print - Fuser Temperature Side (Special / Film) (18" / 17" / 15" / A2)	1°C	177	170	170	170	120 to 180
637	**Print - Fuser Temperature Side (Plain) (24" / 22" / A1)**	**1°C**	**160**	**165**	**165**	**165**	**120 to 180**
638	**Print - Fuser Temperature Side (Tracing) (24" / 22" / A1)**	**1°C**	**160**	**170**	**160**	**155**	**120 to 180**
639	**Print - Fuser Temperature Side (Film) (24" / 22" / A1)**	**1°C**	**177**	**170**	**170**	**155**	**120 to 180**
640	Print - Fuser Temperature Side (Special / Plain) (24" / 22" / A1)	1°C	160	160	160	160	120 to 180
641	Print - Fuser Temperature Side (Special / Tracing) (24" / 22" / A1)	1°C	160	160	160	160	120 to 180
642	Print - Fuser Temperature Side (Specia / Film) (24" / 22" / A1)	1°C	177	170	170	170	120 to 180
643	**Print - Fuser Temperature Side (Plain) (36" / 34" / 30" / A0 / B1)**	**1°C**	**160**	**165**	**165**	**165**	**120 to 180**
644	**Print - Fuser Temperature Side (Tracing) (36" / 34" / 30" / A0 / B1)**	**1°C**	**160**	**170**	**160**	**155**	**120 to 180**
645	**Print - Fuser Temperature Side (Film) (36" / 34" / 30" / A0 / B1)**	**1°C**	**177**	**170**	**170**	**155**	**120 to 180**
646	Print - Fuser Temperature Side (Special / Plain) (36" / 34" / 30" / A0 / B1)	1°C	160	160	160	160	120 to 180
647	Print - Fuser Temperature Side (Special / Tracing) (36" / 34" / 30" / A0 / B1)	1°C	160	160	160	160	120 to 180
648	Print - Fuser Temperature Side (Special / Film) (36" / 34" / 30" / A0 / B1)	1°C	177	177	177	177	120 to 180
649	Density Sensor Output Monitor		1	1	1	1	0 to 4

NOTE: All items grayed are not generally for field technician use

Item No.	Setting Item	Unit	Default Value				Setting range
			USA	EUR / AS	CN	CND	
650	Regulation Bias Increment for Auto Adjustment Level 2 and 3	0.5V	68	68	68	68	0 to 200
651	Total Increment of Regulation Bias Adjustment	0.5V	0	0	0	0	0 to 800
652	Density Compensation ON/OFF	-	1	1	1	0	0 to 1
653	Target Density		135	135	135	135	110 to 150
654	Regulation Bias Maximum	-	293	293	293	293	0 to 1023
655	Density Measure Interval at power on	1 hour	18	18	18	18	1 to 100
656	Density Measure Interval at Print Completion	1 hour	18	18	18	18	1 to 100
657	Developer Bias Increment for Auto Adjustment Level 1 and after		125	125	125	125	0 to 400
658	Reserved						
659	Reserved						
660	Ready - Fuser Temperature Center (Plain)	1°C	160	160	160	165	120 to 180
661	Ready - Fuser Temperature Center (Tracing)	1°C	160	170	160	155	120 to 180
662	Ready - Fuser Temperature Center (Film)	1°C	177	177	177	155	120 to 180
663	Ready - Fuser Temperature Center (Special / Plain)	1°C	160	160	160	160	120 to 180
664	Ready - Fuser Temperature Center (Special / Tracing)	1°C	160	160	160	160	120 to 180
665	Ready - Fuser Temperature Center (Special / Film)	1°C	177	170	170	170	120 to 180
666	Ready - Fuser Temperature Side (Plain)	1°C	159	159	159	165	120 to 180
667	Ready - Fuser Temperature Side (Tracing)	1°C	159	180	170	165	120 to 180
668	Ready - Fuser Temperature Side (Film)	1°C	177	170	170	155	120 to 180
669	Ready - Fuser Temperature Side (Special / Plain)	1°C	159	159	159	159	120 to 180
670	Ready - Fuser Temperature Side (Special / Tracing)	1°C	159	159	159	159	120 to 180
671	Ready - Fuser Temperature Side (Special / Film)	1°C	177	170	170	170	120 to 180
672	**Fuser Motor Speed (18" / 17" / 15" / 12" / 11" / A2 / A3) (Plain)**		**50**	**50**	**50**	**50**	**0 to 80**
673	**Fuser Motor Speed (18" / 17" / 15" / 12" / 11" / A2 / A3) (Tracing)**		**57**	**60**	**60**	**60**	**0 to 80**
674	**Fuser Motor Speed (18" / 17" / 15" / 12" / 11" / A2 / A3) (Film)**		**50**	**50**	**50**	**50**	**0 to 80**
675	Fuser Motor Speed (18" / 17" / 15" / 12" / 11" / A2 / A3) (Special / Plain)		40	40	40	40	0 to 80
676	Fuser Motor Speed (18" / 17" / 15" / 12" / 11" / A2 / A3) (Special / Tracing)		40	40	40	40	0 to 80
677	Fuser Motor Speed (18" / 17" / 15" / 12" / 11" / A2 / A3) (Special / Film)		40	40	40	40	0 to 80
678	**Fuser Motor 4th Speed (Roll) (Plain Paper / A3, 12" & 11")**	**0.04mm/s**	**34**	**37**	**37**	**37**	**0 to 80**
679	Switch Timing to Fuser Motor 4th Speed (Roll) (Plain Paper / A3, 12" & 11")	0.5 seconds	6	8	8	8	0 to 300
680	Fuser Motor 4th Speed (Roll) (Tracing / A3, 12" & 11")	0.04mm/s	40	40	40	40	0 to 80
681	Switch Timing to Fuser Motor 4th Speed (Roll) (Tracing / A3, 12" & 11")	0.5 seconds	0	0	0	0	0 to 300
682	Fuser Motor 4th Speed (Roll) (Film / A3, 12" & 11")	0.04mm/s	40	40	40	40	0 to 80
683	Switch Timing to Fuser Motor 4th Speed (Roll) (Film / A3, 12" & 11")	0.5 seconds	0	0	0	0	0 to 300
684	Fuser Motor 4th Speed (Roll) (Special Media / Plain Paper / A3, 12" & 11")	0.04mm/s	40	40	40	40	0 to 80
685	Switch Timing to Fuser Motor 4th Speed (Roll) (Special Media / Plain Paper / A3, 12" & 11")	0.5 seconds	0	0	0	0	0 to 300
686	Fuser Motor 4th Speed (Roll) (Special Media / Tracing / A3, 12" & 11")	0.04mm/s	40	40	40	40	0 to 80
687	Switch Timing to Fuser Motor 4th Speed (Roll) (Special Media / Tracing / A3, 12" & 11")	0.5 seconds	0	0	0	0	0 to 300
688	Fuser Motor 4th Speed (Roll) (Special Media / Film / A3, 12" & 11")	0.04mm/s	40	40	40	40	0 to 80
689	Switch Timing to Fuser Motor 4th Speed (Roll) (Special Media / Film / A3, 12" & 11")	0.5 seconds	0	0	0	0	0 to 300
690	**Fuser Motor 4th Speed (Roll) (Plain Paper / A2, 18" & 17")**	**0.04mm/s**	**37**	**40**	**40**	**40**	**0 to 80**
691	Switch Timing to Fuser Motor 4th Speed (Roll) (Plain Paper / A2, 18" & 17")	0.5 seconds	10	0	0	0	0 to 300
692	Fuser Motor 4th Speed (Roll) (Tracing / A2, 18" & 17")	0.04mm/s	40	40	40	40	0 to 80
693	Switch Timing to Fuser Motor 4th Speed (Roll) (Tracing / A2, 18" & 17")	0.5 seconds	0	0	0	0	0 to 300
694	Fuser Motor 4th Speed (Roll) (Film / A2, 18" & 17")	0.04mm/s	40	40	40	40	0 to 80
695	Switch Timing to Fuser Motor 4th Speed (Roll) (Film / A2, 18" & 17")	0.5 seconds	0	0	0	0	0 to 300

NOTE: All items grayed are not generally for field technician use

Item No.	Setting Item	Unit	Default Value				Setting range
			USA	EUR / AS	CN	CND	
696	Fuser Motor 4th Speed (Roll) (Special Media / Plain Paper / A2, 18" & 17")	0.04mm/s	40	40	40	40	0 to 80
697	Switch Timing to Fuser Motor 4th Speed (Roll) (Special Media / Plain Paper / A2, 18" & 17")	0.5 seconds	0	0	0	0	0 to 300
698	Fuser Motor 4th Speed (Roll) (Special Media / Tracing / A2, 18" & 17")	0.04mm/s	40	40	40	40	0 to 80
699	Switch Timing to Fuser Motor 4th Speed (Roll) (Special Media / Tracing / A2, 18" & 17")	0.5 seconds	0	0	0	0	0 to 300
700	Fuser Motor 4th Speed (Roll) (Special Media / Film / A2, 18" & 17")	0.04mm/s	40	40	40	40	0 to 80
701	Switch Timing to Fuser Motor 4th Speed (Roll) (Special Media / Film / A2, 18" & 17")	0.5 seconds	0	0	0	0	0 to 300
702	**Fuser Motor 4th Speed (Roll) (Plain Paper / A1, 24" & 22")**	**0.04mm/s**	**35**	**36**	**36**	**36**	**0 to 80**
703	Switch Timing to Fuser Motor 4th Speed (Roll) (Plain Paper / A1, 24" & 22")	0.5 seconds	16	16	16	16	0 to 300
704	Fuser Motor 4th Speed (Roll) (Tracing / A1, 24" & 22")	0.04mm/s	40	40	40	40	0 to 80
705	Switch Timing to Fuser Motor 4th Speed (Roll) (Tracing / A1, 24" & 22")	0.5 seconds	0	0	0	0	0 to 300
706	Fuser Motor 4th Speed (Roll) (Film / A1, 24" & 22")	0.04mm/s	40	40	40	40	0 to 80
707	Switch Timing to Fuser Motor 4th Speed (Roll) (Film / A1, 24" & 22")	0.5 seconds	0	0	0	0	0 to 300
708	Fuser Motor 4th Speed (Roll) (Special Media / Plain Paper / A1, 24" & 22")	0.04mm/s	40	40	40	40	0 to 80
709	Switch Timing to Fuser Motor 4th Speed (Roll) (Special Media / Plain Paper / A1, 24" & 22")	0.5 seconds	0	0	0	0	0 to 300
710	Fuser Motor 4th Speed (Roll) (Special Media / Tracing / A1, 24" & 22")	0.04mm/s	40	40	40	40	0 to 80
711	Switch Timing to Fuser Motor 4th Speed (Roll) (Special Media / Tracing / A1, 24" & 22")	0.5 seconds	0	0	0	0	0 to 300
712	Fuser Motor 4th Speed (Roll) (Special Media / Film / A1, 24" & 22")	0.04mm/s	40	40	40	40	0 to 80
713	Switch Timing to Fuser Motor 4th Speed (Roll) (Special Media / Film / A1, 24" & 22")	0.5 seconds	0	0	0	0	0 to 300
714	**Fuser Motor 4th Speed (Roll) (Plain Paper / A0, 36" & 34")**	**0.04mm/s**	**32**	**33**	**33**	**33**	**0 to 80**
715	Switch Timing to Fuser Motor 4th Speed (Roll) (Plain Paper / A0, 36" & 34")	0.5 seconds	20	20	20	20	0 to 300
716	**Fuser Motor 4th Speed (Roll) (Tracing / A0, 36" & 34")**	**0.04mm/s**	**34**	**40**	**40**	**40**	**0 to 80**
717	Switch Timing to Fuser Motor 4th Speed (Roll) (Tracing / A0, 36" & 34")	0.5 seconds	20	0	0	0	0 to 300
718	Fuser Motor 4th Speed (Roll) (Film / A0, 36" & 34")	0.04mm/s	40	40	40	40	0 to 80
719	Switch Timing to Fuser Motor 4th Speed (Roll) (Film / A0, 36" & 34")	0.5 seconds	0	0	0	0	0 to 300
720	Fuser Motor 4th Speed (Roll) (Special Media / Plain Paper / A0, 36" & 34")	0.04mm/s	40	40	40	40	0 to 80
721	Switch Timing to Fuser Motor 4th Speed (Roll) (Special Media / Plain Paper / A0, 36" & 34")	0.5 seconds	0	0	0	0	0 to 300
722	Fuser Motor 4th Speed (Roll) (Special Media / Tracing / A0, 36" & 34")	0.04mm/s	40	40	40	40	0 to 80
723	Switch Timing to Fuser Motor 4th Speed (Roll) (Special Media / Tracing / A0, 36" & 34")	0.5 seconds	0	0	0	0	0 to 300
724	Fuser Motor 4th Speed (Roll) (Special Media / Film / A0, 36" & 34")	0.04mm/s	40	40	40	40	0 to 80
725	Switch Timing to Fuser Motor 4th Speed (Roll) (Special Media / Film / A0, 36" & 34")	0.5 seconds	0	0	0	0	0 to 300
726	**Fuser Motor 4th Speed (Roll) (Plain Paper / 30")**	**0.04mm/s**	**32**	**30**	**30**	**30**	**0 to 80**
727	Switch Timing to Fuser Motor 4th Speed (Roll) (Plain Paper / 30")	0.5 seconds	20	20	20	20	0 to 300
728	**Fuser Motor 4th Speed (Roll) (Tracing / 30")**	**0.04mm/s**	**34**	**40**	**40**	**40**	**0 to 80**
729	Switch Timing to Fuser Motor 4th Speed (Roll) (Tracing / 30")	0.5 seconds	20	0	0	0	0 to 300
730	Fuser Motor 4th Speed (Roll) (Film / 30")	0.04mm/s	40	40	40	40	0 to 80
731	Switch Timing to Fuser Motor 4th Speed (Roll) (Film / 30")	0.5 seconds	0	0	0	0	0 to 300

NOTE: All items grayed are not generally for field technician use

Item No.	Setting Item	Unit	Default Value				Setting range
			USA	EUR / AS	CN	CND	
732	Fuser Motor 4th Speed (Roll) (Special Media / Plain Paper / 30")	0.04mm/s	40	40	40	40	0 to 80
733	Switch Timing to Fuser Motor 4th Speed (Roll) (Special Media / Plain Paper / 30")	0.5 seconds	0	0	0	0	0 to 300
734	Fuser Motor 4th Speed (Roll) (Special Media / Tracing / 30")	0.04mm/s	40	40	40	40	0 to 80
735	Switch Timing to Fuser Motor 4th Speed (Roll) (Special Media / Tracing / 30")	0.5 seconds	0	0	0	0	0 to 300
736	Fuser Motor 4th Speed (Roll) (Special Media / Film / 30")	0.04mm/s	40	40	40	40	0 to 80
737	Switch Timing to Fuser Motor 4th Speed (Roll) (Special Media / Film / 30")	0.5 seconds	0	0	0	0	0 to 300
738	Standby - Fuser Temperature Center	1°C	167	167	167	165	120 to 180
739	Standby - Fuser Temperature Side	1°C	160	160	160	165	120 to 180
740	Assist Fan Off Timing (18" / 17" / 15" / A2)		8	4	4	4	0 to 8
741	Assist Fan Off Timing (24" / 22" / A1)		8	4	4	4	0 to 8
742	Assist Fan Off Timing (36" / 34" / 30" / A0 / B1)		5	5	5	5	0 to 8
743	Fuser Motor Speed applied at 100mm from trailing edge (36" / 34" / 30" / A0 / B1) (Plain)		0	1	1	1	0 to 80
744	Fuser Motor Speed applied at 100mm from trailing edge (36" / 34" / 30" / A0 / B1) (Tracing)		0	15	15	15	0 to 80
745	Fuser Motor Speed applied at 100mm from trailing edge (36" / 34" / 30" / A0 / B1) (Film)		0	0	0	0	0 to 80
746	Roll 2 Forward Standby ON/OFF		0	0	0	0	0 to 1
747	Roll 2 Forward Standby Position Adjustment	mm	0	0	0	0	0 to 50
748	Roll 2 Rewind Timer	minute	15	15	15	15	0 to 15
749	Tracing Mode		0	0	0	0	0 to 1
750	Roll 1 Setting Mode		0	0	0	0	0 to 1
751	Disable HV Error Detection Mode		0	0	0	0	0 to 1
752	(Reserved)						
753	Definition of long print (used for Auto Initial Cut after Long Print)	100mm	10	10	10	10	10 to 60
754	Trigger of Auto Initial Cut after Long Print (Number of long prints)	sheet	0	0	0	0	0 to 3
755	Length of trim cut for Auto Initial Cut before Print	mm	594	594	594	594	210 to 600
756	Leading Registration for Paper Tray	mm	20	20	20	20	5 to 40
757	Trailing Margin for Paper Tray	mm	20	20	20	20	5 to 40
758	Side Registration for Paper Tray	0.1mm	50	50	50	50	0 to 100
759	Number of prints available for stacking on Upper Print Tray (Plain paper)	1 sheet	50	50	50	50	1 to 100
760	Number of prints available for stacking on Upper Print Tray (Tracing paper)	1 sheet	10	10	10	10	1 to 100
761	Number of prints available for stacking on Upper Print Tray (Film)	1 sheet	1	1	1	1	1 to 100
762	Paper Tray Motor Speed	-	40	40	40	40	0 to 80
763	Time for detecting paper jam in Paper Tray	-	200	200	200	200	0 to 400
764	Interval time for rotating Fuser Roller	1 hour	12	12	12	12	0 to 24
765	Length of trim cut for Auto Initial Cut after Long Print	1mm	210	210	210	210	210 to 600
766	Specification of Interface Communication	-	3	3	3	3	0 to 3
767	**Horizontal Alignment of LED Head block A & B**	**1 pixel**	**60**	**60**	**60**	**60**	**0 to 120**
768	**Horizontal Alignment of LED Head block B & C**	**1 pixel**	**60**	**60**	**60**	**60**	**0 to 120**
769	**Darkness of LED Head Block A**	**-**	**160**	**160**	**160**	**160**	**0 to 200**
770	**Darkness of LED Head Block B**	**-**	**160**	**160**	**160**	**160**	**0 to 200**
771	**Darkness of LED Head Block C**	**-**	**160**	**160**	**160**	**160**	**0 to 200**
772	**Darkness of LED Head (all 3 blocks)**	**-**	**110**	**110**	**110**	**110**	**25 to 200**
773	ENHANCE_1_A_0	-	6	6	6	6	0 to 15
774	ENHANCE_2_A_0	-	10	10	10	10	0 to 15
775	ENHANCE_3_A_0	-	13	13	13	13	0 to 15
776	ENHANCE_4_A_0	-	13	13	13	13	0 to 15
777	ENHANCE_5_A_0	-	13	13	13	13	0 to 15
778	ENHANCE_1_B_0	-	2	2	2	2	0 to 15
779	ENHANCE_2_B_0	-	5	5	5	5	0 to 15
780	ENHANCE_3_B_0	-	6	6	6	6	0 to 15
781	ENHANCE_4_B_0	-	6	6	6	6	0 to 15
782	ENHANCE_5_B_0	-	6	6	6	6	0 to 15

NOTE: All items grayed are not generally for field technician use

Item No.	Setting Item	Unit	Default Value				Setting range
			USA	EUR / AS	CN	CND	
783	ENHANCE_1_A_1	-	6	6	6	6	0 to 15
784	ENHANCE_2_A_1	-	10	10	10	10	0 to 15
785	ENHANCE_3_A_1	-	13	13	13	13	0 to 15
786	ENHANCE_4_A_1	-	14	14	14	14	0 to 15
787	ENHANCE_5_A_1	-	15	15	15	15	0 to 15
788	ENHANCE_1_B_1	-	2	2	2	2	0 to 15
789	ENHANCE_2_B_1	-	5	5	5	5	0 to 15
790	ENHANCE_3_B_1	-	6	6	6	6	0 to 15
791	ENHANCE_4_B_1	-	10	10	10	10	0 to 15
792	ENHANCE_5_B_1	-	13	13	13	13	0 to 15
793	ENHANCE_1_A_2	-	6	6	6	6	0 to 15
794	ENHANCE_2_A_2	-	10	10	10	10	0 to 15
795	ENHANCE_3_A_2	-	13	13	13	13	0 to 15
796	ENHANCE_4_A_2	-	14	14	14	14	0 to 15
797	ENHANCE_5_A_2	-	15	15	15	15	0 to 15
798	ENHANCE_1_B_2	-	5	5	5	5	0 to 15
799	ENHANCE_2_B_2	-	6	6	6	6	0 to 15
800	ENHANCE_3_B_2	-	10	10	10	10	0 to 15
801	ENHANCE_4_B_2	-	13	13	13	13	0 to 15
802	ENHANCE_5_B_2	-	13	13	13	13	0 to 15
803	ENHANCE_1_A_3	-	10	10	10	10	0 to 15
804	ENHANCE_2_A_3	-	13	13	13	13	0 to 15
805	ENHANCE_3_A_3	-	14	14	14	14	0 to 15
806	ENHANCE_4_A_3	-	15	15	15	15	0 to 15
807	ENHANCE_5_A_3	-	15	15	15	15	0 to 15
808	ENHANCE_1_B_3	-	5	5	5	5	0 to 15
809	ENHANCE_2_B_3	-	6	6	6	6	0 to 15
810	ENHANCE_3_B_3	-	10	10	10	10	0 to 15
811	ENHANCE_4_B_3	-	13	13	13	13	0 to 15
812	ENHANCE_5_B_3	-	13	13	13	13	0 to 15
813	Counter option setting	-	0	0	0	0	0 to 1
814	Darkness adjustment for the boundary between blocks A & B	-	2	2	2	2	1 to 5
815	Darkness adjustment for the boundary between blocks B & C	-	2	2	2	2	1 to 5
816	Selection of roll deck to perform “Auto Initial Cut before Print”	-	0	0	0	0	0 to 3
817	Timer of “Auto Initial Cut before Print”	minute	0	0	0	0	0 to 360
818	**Regional setting**	**-**	**1**	**2**	**5**	**5**	**0 to 7**
819	Detection Time of Fuser Temperature Heat-up Error 1	second	120	120	120	120	120 to 240
820	Detection Time of Fuser Temperature Heat 2	Second	150	150	150	150	150 to 240
821	Detection Time of Fuser Temperature Heat 3	second	330	330	330	330	330 to 480
822	Running Setting	-	0	0	0	0	0 to 1

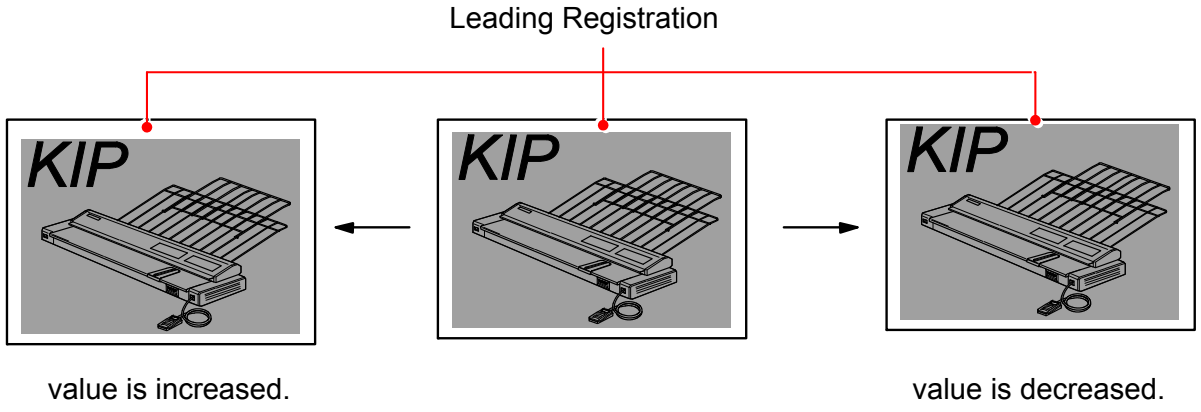
8. 4. 3 Setting Item Explanation

Item No. starts with “4”. For example, KIP Service Software shows 4000, this section shows “No.000”.

8. 4. 3. 1 Leading Registration (No. 000 & 001)

It is possible to specify where to start printing the image at the leading edge of the media.
If you increase the setting value by “+1 “, the head of image is shifted 1mm downward toward the trailing edge As a result the leading margin becomes larger.

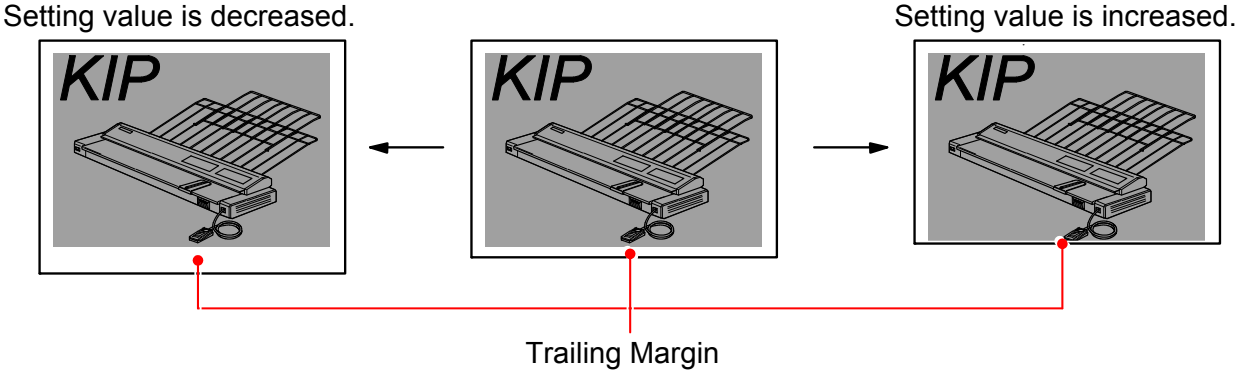
Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
000	Leading Registration (Roll paper)	19	19	19	19	5 to 40	1mm
001	Leading Registration (Cut sheet paper)	19	19	19	19	5 to 40	1mm



8. 4. 3. 2 Trailing Margin (No. 002 & 003)

It is possible to adjust the length of trailing margin.
The length of trailing margin becomes 1mm shorter if you Increase the setting value by “+1 “.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
002	Trailing Margin (Roll paper)	9	9	9	9	5 to 40	1mm
003	Trailing Margin (Cut sheet paper)	10	10	10	10	5 to 40	1mm



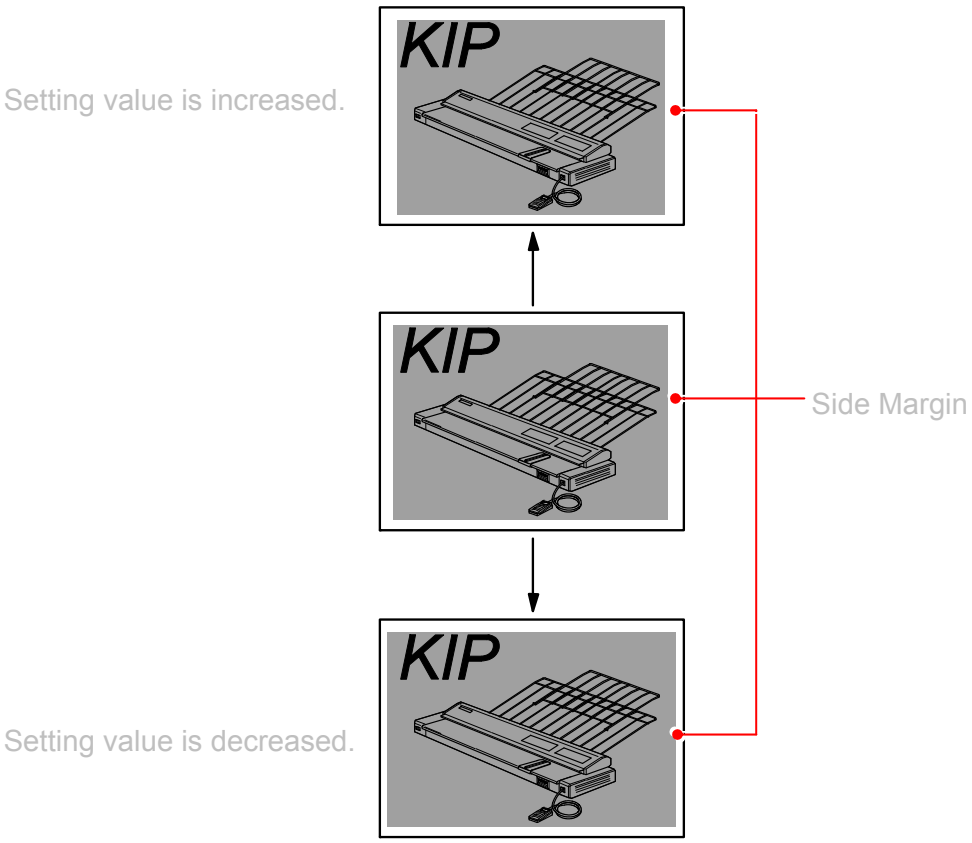
⚠ NOTE

Some trailing image may be lost if you increase the value too much.

8. 4. 3. 3 Side Margin (Left & Right) (No. 004)

It is possible to adjust the amount of side margin. (Both left and right)
Each side margin becomes 1mm wider if you increase the setting value.
(As a result the width of print image becomes 2mm narrower.)

Default value				Setting range	Step of increment
USA	EUR/ASIA	CN	CND		
3	3	3	3	0 to 20	1mm



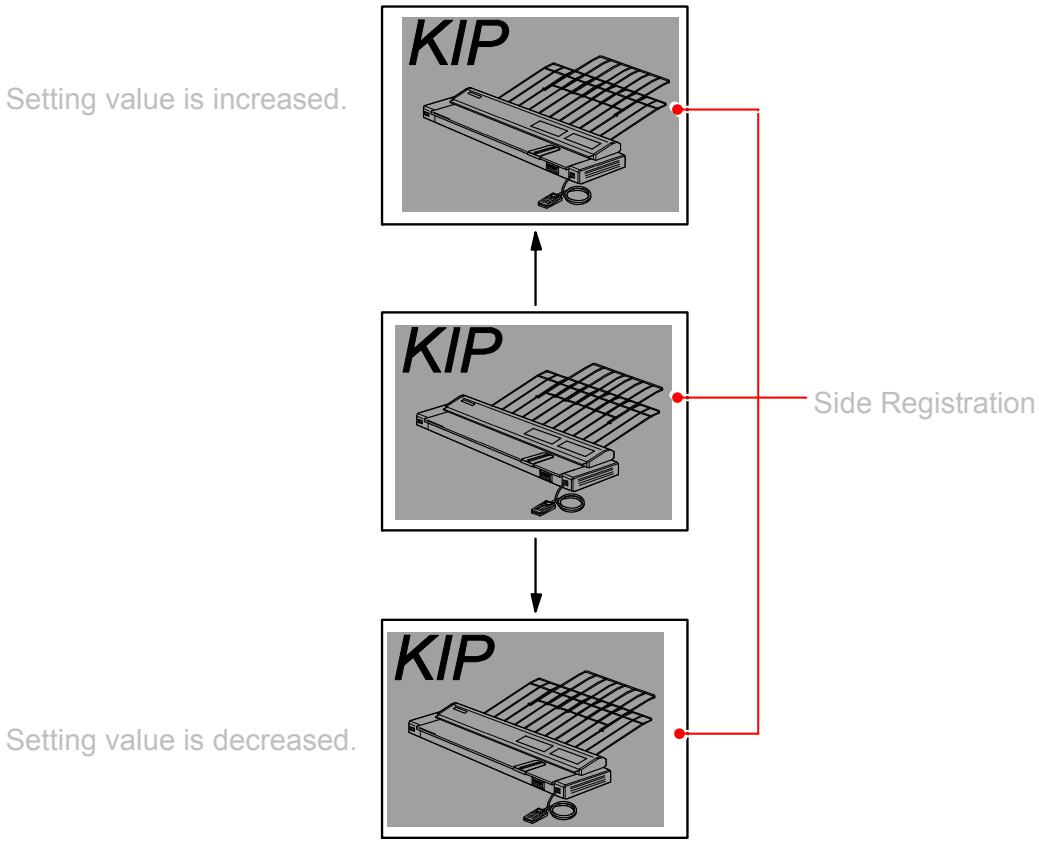
NOTE

Image quality created with a reduced side margin (less than 3 in the setting value) is not guaranteed.

8. 4. 3. 4 Side Registration (No. 005 to 007)

It is possible to specify where to start printing the image at the side edge of the media.
If you increase the setting value by “+1 “, image is shifted 0.1mm to the right.

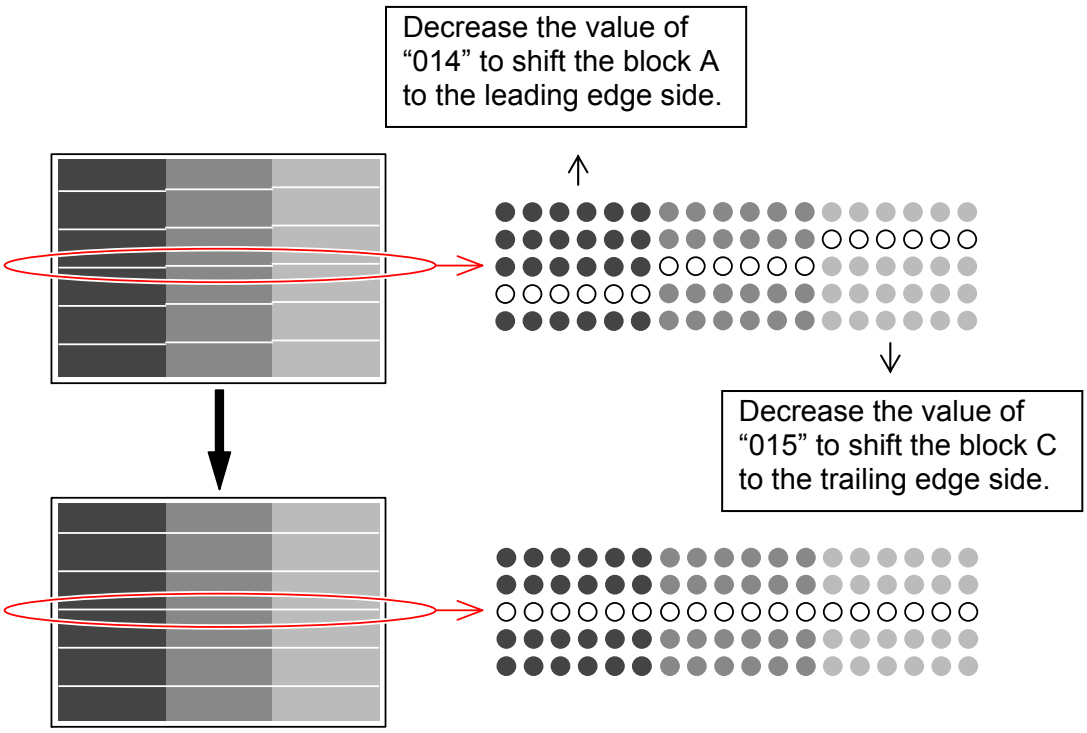
Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
005	Side Registration (Cutsheet)	50	50	50	50	0 to 100	0.1mm
006	Side Registration (Roll 1)	50	50	50	50	0 to 100	0.1mm
007	Side Registration (Roll 2)	50	50	50	50	0 to 100	0.1mm



8. 4. 3. 5 Vertical Alignment of Pixels between Image Blocks (No.014 & 015)

It is possible to align the pixels between Image Blocks if there is a gap of pixels.
The Image Block B is the standard, and both the Image Blocks A and C can be shifted vertically.
If you increase the setting value by “+1”, the whole pixels of the concerning Image Block is shifted “0.5 line (pixel)” to the trailing edge side.
These can be used if a horizontal line has a step at the border of the Blocks.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
014	Vertical Alignment of Pixels between Image Blocks A & B	100	100	100	100	0 to 200	0.5 pixel
015	Vertical Alignment of Pixels between Image Blocks B & C	100	100	100	100	0 to 200	0.5 pixel

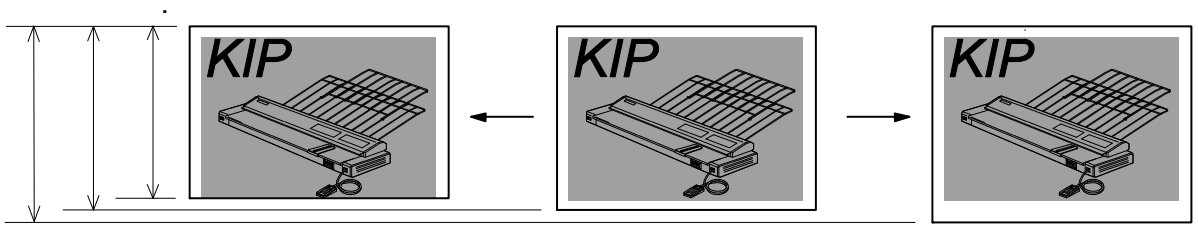


8. 4. 3. 6 Cut Length 1 (length information provided) (No.016)

It is possible to make the print length longer or shorter.
This setting is applied when the print command (plot & copy) is provided with the length information. **(this is command used on all standard pages printed from the IPS)**
If you increase the setting value by “+1”, the print length becomes 0.16mm longer.

Default value				Setting range	Step of increment
USA	EUR/ASIA	CN	CND		
50	50	50	50	0 to 100	1mm

Setting value is increased. Setting value is decreased



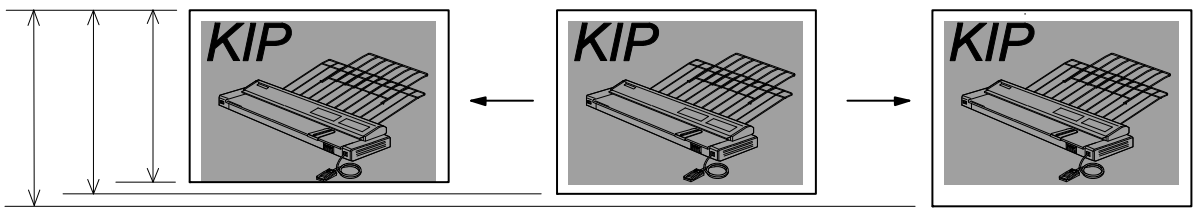
Cut length

8. 4. 3. 7 Cut Length 2 (length information not provided) (No.017)

It is possible to make the print length longer or shorter.
This setting is applied when the print command (plot & copy) is not provided with the length information. **(This is may only be used on LONG prints over 6 meters on the IPS)**
If you increase the setting value by “+1”, the print length becomes 0.16mm longer.

Default value				Setting range	Step of increment
USA	EUR/ASIA	CN	CND		
50	50	50	50	0 to 100	0.16mm

Setting value is increased. Setting value is decreased



Cut length

8. 4. 3. 8 Cut Length 3 (Compensation of the length for long print) (No.018)

When you make a long print, the actual print length may become shorter than expected because the paper is likely to shrink. It is possible in this mode to compensate the print length manually.

The length of long print is not compensated directly, but it is indirectly compensated by correcting the length of A1 print.
If you increase the setting value by “+1”, the length of A1 print becomes 0.1mm longer per 10mm.

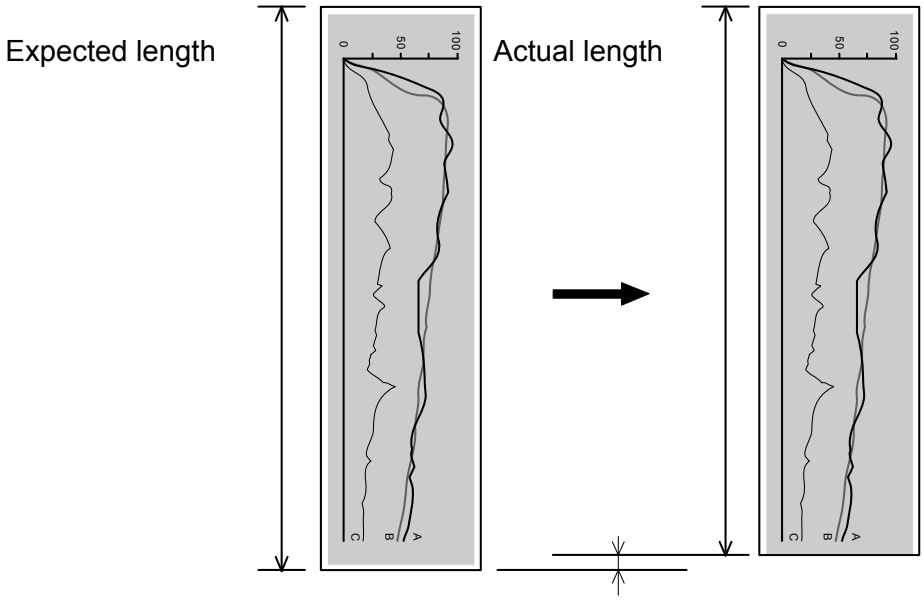
Default value				Setting range	Step of increment
USA	EUR/ASIA	CN	CND		
475	475	475	475	0 to 999	0.1mm

NOTE

It is necessary to finish the adjustment of Cut Length 1 (No.016) before starting the adjustment in this Cut Length 3 (No.018).

[Example of adjustment]

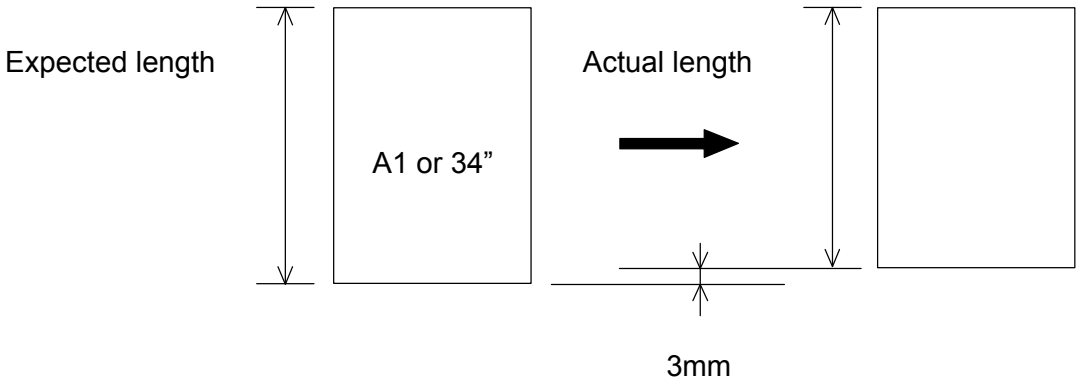
1. Supposing the actual length of a long print is shorter than expected.



Actual length is shorter than expected.

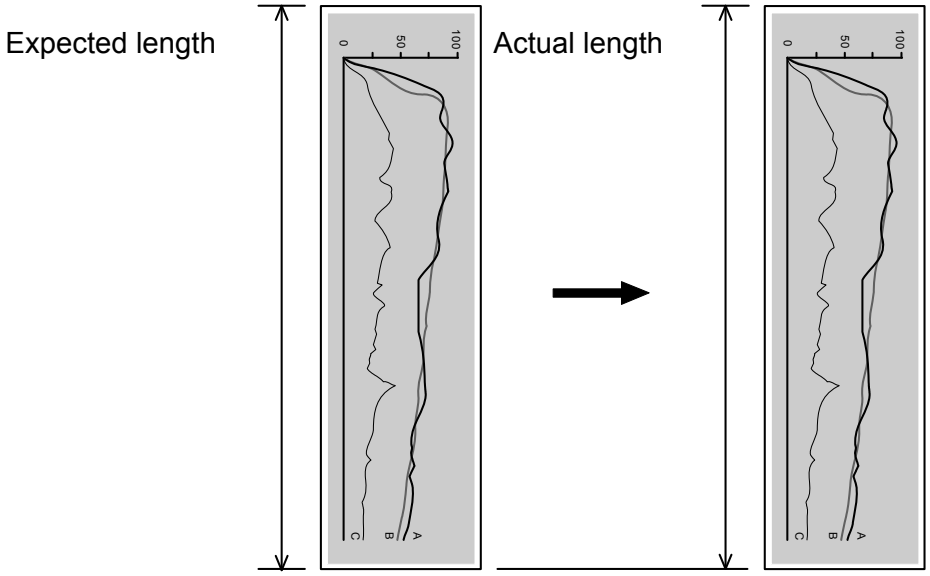
2. Make an A1 (841mm long) or 34” long print.
   Measure the actual length of this A1 or 34” print to know how long millimeter it is shorter than expected.

   (Example: Print out is 838mm, so it is 3mm shorter than expected.)



3. Necessary value for the compensation is 10 times as long as the difference between actual length and expected length.
   It is “30” in this example. (3mm x 10 = 30)
   Specify “30” as the setting value of No.018.

4. Make a long print.
   The actual print out will be as long as expected.



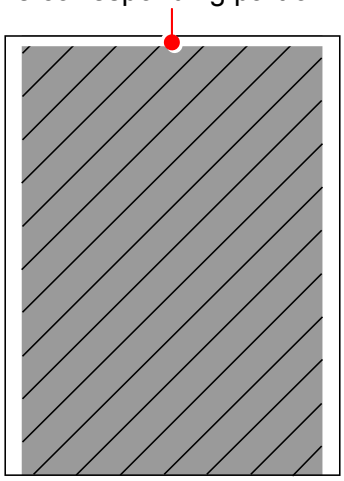
8. 4. 3. 9 Leading Margin (No. 019)

It is possible to adjust the length of the leading margin.
An image portion that corresponds to the given length of the leading margin is not printed.
The length of the leading margin becomes 0.1mm longer if you Increase the setting value by “+1 “.

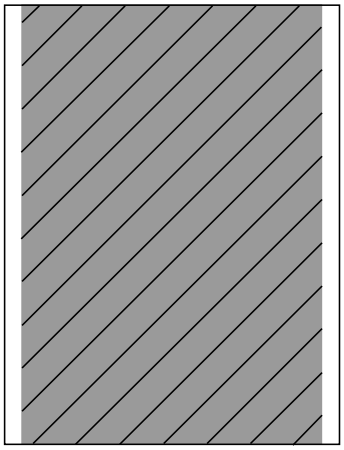
Changing the value to “0” removes whole the margin, thus a portion image on the leading edge will appear.

Default value				Setting range	Step of increment
USA	EUR/ASIA	CN	CND		
30	30	30	30	0 to 50	0.1mm

Default: 30
A 3mm Leading Margin added to leading edge.
Hides the corresponding part of image.



Example: 0
Leading Margin disappears.
Corresponding part of image printed.



NOTE

There is no guarantee of proper operation and image quality with a reduced leading margin (less than 30 in the setting value).

Reference

Setting to “0” may result in a jam in Fuser Unit and a ghost image at approximately 252mm from the leading edge.

8. 4. 3.10 Cut Length 4 (Individual Compensation for Roll 2) (No.020)

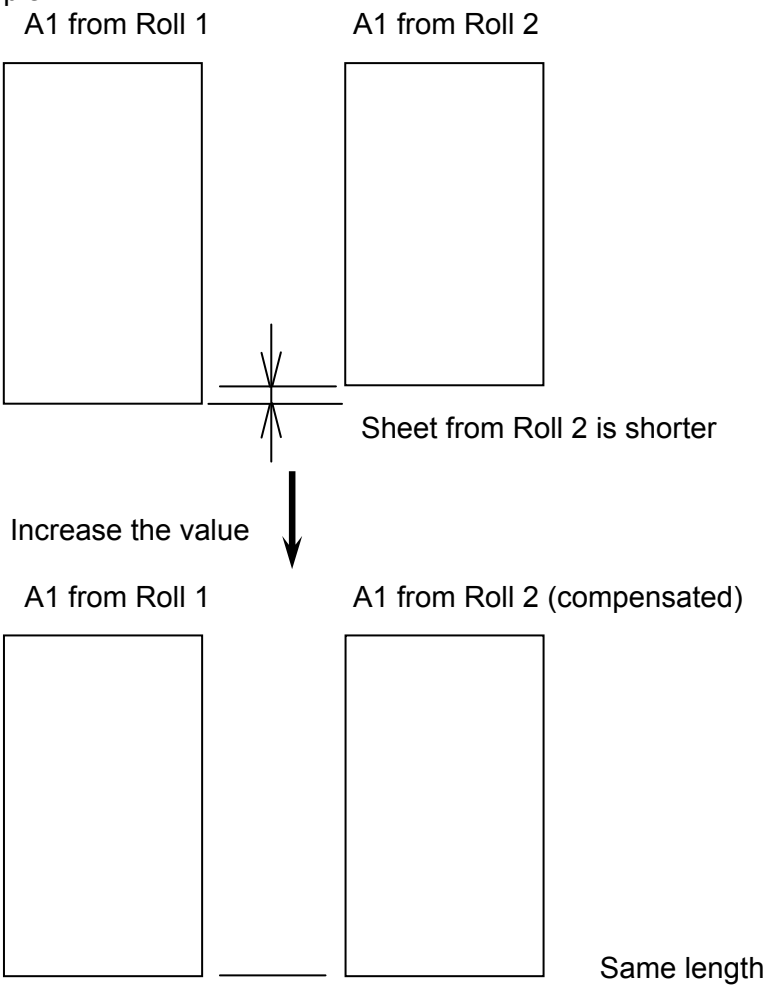
It is possible to compensate the print length of Roll 2 individually.
This setting would be used if a different cut length is provided to Roll 1 and Roll 2.

Measure the length gap between a piece of A1 size sheet from each Roll 1 and 2.

If you increase the setting value by “+1”, the print length of Roll 2 becomes 0.16mm longer.

Default value				Setting range	Step of increment
USA	EUR/ASIA	CN	CND		
50	50	50	50	0 to 100	0.16mm

Exa mple:



⚠ NOTE

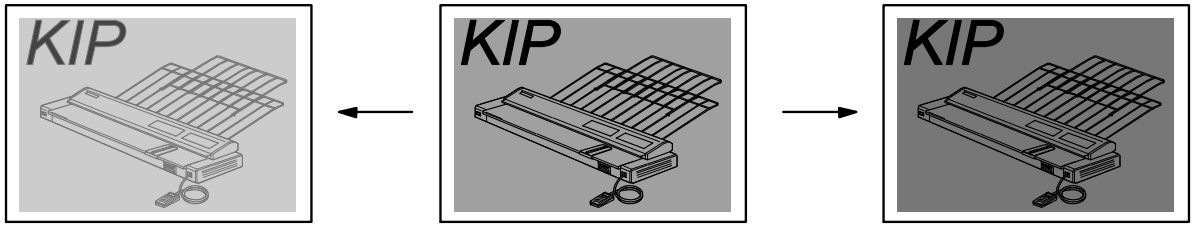
It is necessary to finish the adjustment of Cut Length 1 (No.016) before starting the adjustment in this Cut Length 4 (No.020).

8. 4. 3.11 Developer Bias (No.022 to 027)

It is possible to make the print density darker or lighter by adjusting the Developer Bias (Negative Developer Roller Bias).
The print density becomes lighter if you increase the setting value.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
022	Developer Bias (Plain paper)	11d	11d	11d	14E	0 to 3FF	1
023	Developer Bias (Tracing paper)	11d	11d	11d	14E	0 to 3FF	1
024	Developer Bias (Film)	11d	11d	11d	14E	0 to 3FF	1
025	Developer Bias (Special media / Plain paper)	11d	11d	11d	14E	0 to 3FF	1
026	Developer Bias (Special media / Tracing paper)	11d	11d	11d	14E	0 to 3FF	1
027	Developer Bias (Special media / Film)	11d	11d	11d	14E	0 to 3FF	1

Setting value is increased. Setting value is decreased.



NOTE

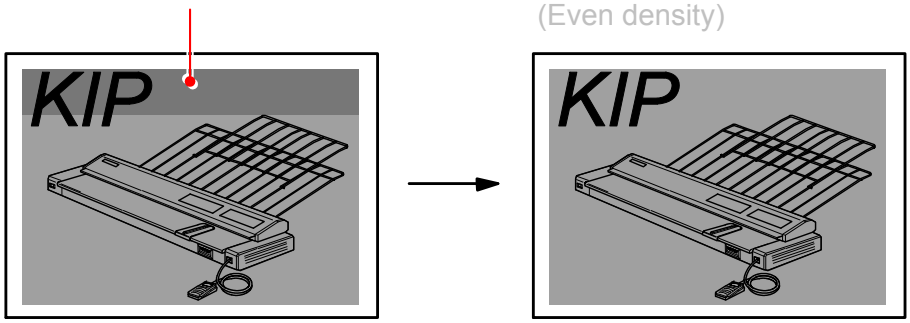
Please adjust the Developer Bias while checking the actual voltage with the multi-meter.

8. 4. 3.12 Developer Bias compensation - 1st Drum revolution (No.028)

It is possible to compensate the Developer Bias only for the 1st Drum revolution.
The print density becomes lighter if you increase the setting value.
(Developer Bias is not compensated at all if the setting value is “0”)

Default value				Setting range
USA	EUR/ASIA	CN	CND	
000	000	000	000	0 to 204

Density of leading area is darker. Setting value is increased. (Even density)



NOTE

There may be the case that the density of leading area, which corresponds to the 1st revolution of Drum, is darker than other area.
In this case compensate the Developer Bias to have even density on both areas.

8. 4. 3.13 Transfer Voltage (No.029 to 034)

It is possible to adjust the analog voltage outputted to the Transfer Corona during the print cycle.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
029	Transfer Voltage (Plain paper)	2Ad	2Ad	2Ad	2Ad	0 to 3FF	1
030	Transfer Voltage (Tracing paper)	202	202	202	202	0 to 3FF	1
031	Transfer Voltage (Film)	202	202	202	202	0 to 3FF	1
032	Transfer Voltage (Special media / Plain paper)	202	202	202	202	0 to 3FF	1
033	Transfer Voltage (Special media / Tracing paper)	202	202	202	202	0 to 3FF	1
034	Transfer Voltage (Special media / Film)	202	202	202	202	0 to 3FF	1

NOTE

Please adjust Transfer Voltage while checking the actual voltage with the multi-meter.

8. 4. 3.14 Separation Corona ON Timing (No.035)

It is possible to adjust the timing that the Separation Corona starts discharging during the print cycle.
If you increase the setting value by “+1”, the timing to start discharging is 1mm delayed.

Default value				Setting range	Step of increment
USA	EUR/ASIA	CN	CND		
50	50	50	50	0 to 100	1mm

8. 4. 3.15 Transfer Corona ON Timing (No.037)

It is possible to adjust the timing that the Transfer Corona starts discharging during the print cycle.
If you increase the setting value by “+1”, the timing to start discharging is 1mm delayed.

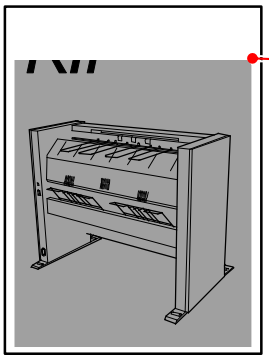
Default value				Setting range	Step of increment
USA	EUR/ASIA	CN	CND		
48	48	48	48	0 to 100	1mm

NOTE

You may lose some leading image as the following example if you increase the setting value too much, because the timing to start discharging is too much delayed.

Normal

Setting value is increased too much.



Transfer Corona starts discharging at this point.

8. 4. 3.16 Transfer Corona OFF Timing (No.038)

It is possible to adjust the timing that the Transfer Corona stops discharging during the print cycle. If you increase the setting value by “+1”, the timing to stop discharging is 1mm delayed.

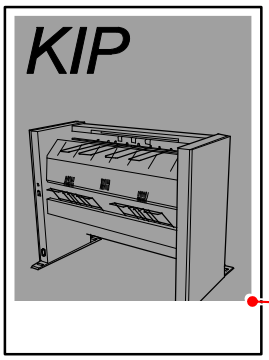
Default value				Setting range	Step of increment
USA	EUR/ASIA	CN	CND		
20	20	20	20	0 to 100	1mm

NOTE

You may lose some trailing image as the following example if you decrease the setting value too much, because the Transfer Corona stops discharging too early.

Normal

Setting value is increased too much.



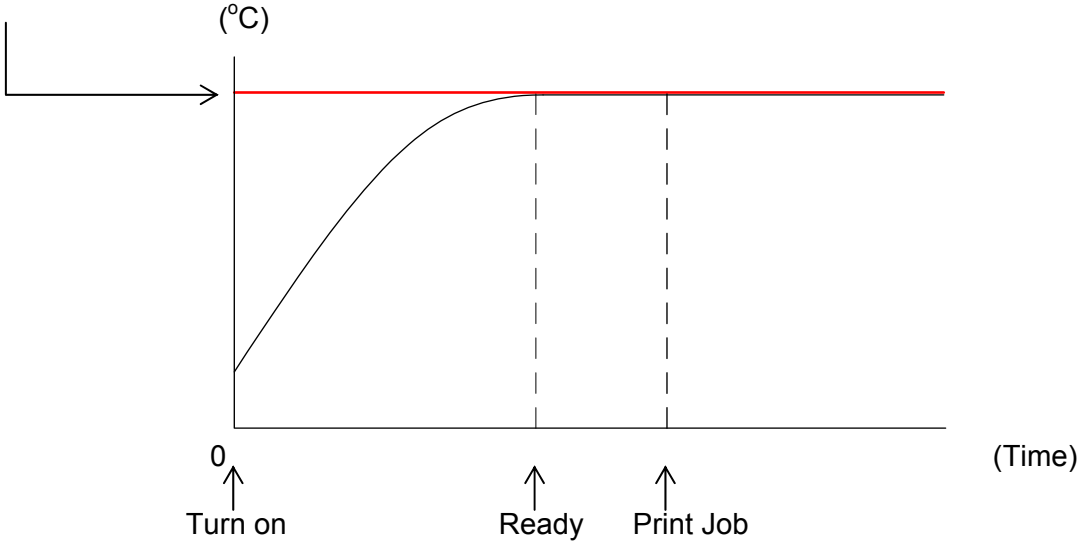
Transfer Corona stops discharging at this point.

8. 4. 3.17 Print - Fuser Temperature Center (No.039 to 044)

It is possible to adjust the center part of Fuser Temperature in a print cycle.
You can specify the temperature for each type of media separately.
The Fuser Temperature becomes 1 degree higher if you increase the setting value by “+1”.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
039	Print - Fuser Temperature Center (Plain)	160	165	165	165	120 to 180	1°C
040	Print - Fuser Temperature Center (Tracing)	160	170	160	155	120 to 180	1°C
041	Print - Fuser Temperature Center (Film)	177	170	170	155	120 to 180	1°C
042	Print - Fuser Temperature Center (Special media / Plain)	160	160	160	160	120 to 180	1°C
043	Print - Fuser Temperature Center (Special media / Tracing)	160	160	160	160	120 to 180	1°C
044	Print - Fuser Temperature Center (Special media / Film)	177	177	177	177	120 to 180	1°C

Setting value of 039 to 044
(Example: Film 170°C)



Reference

(1) The both sides part of Fuser Temperature will be controlled by Print - Fuser Temperature Side (No. 625 to 648) separately.

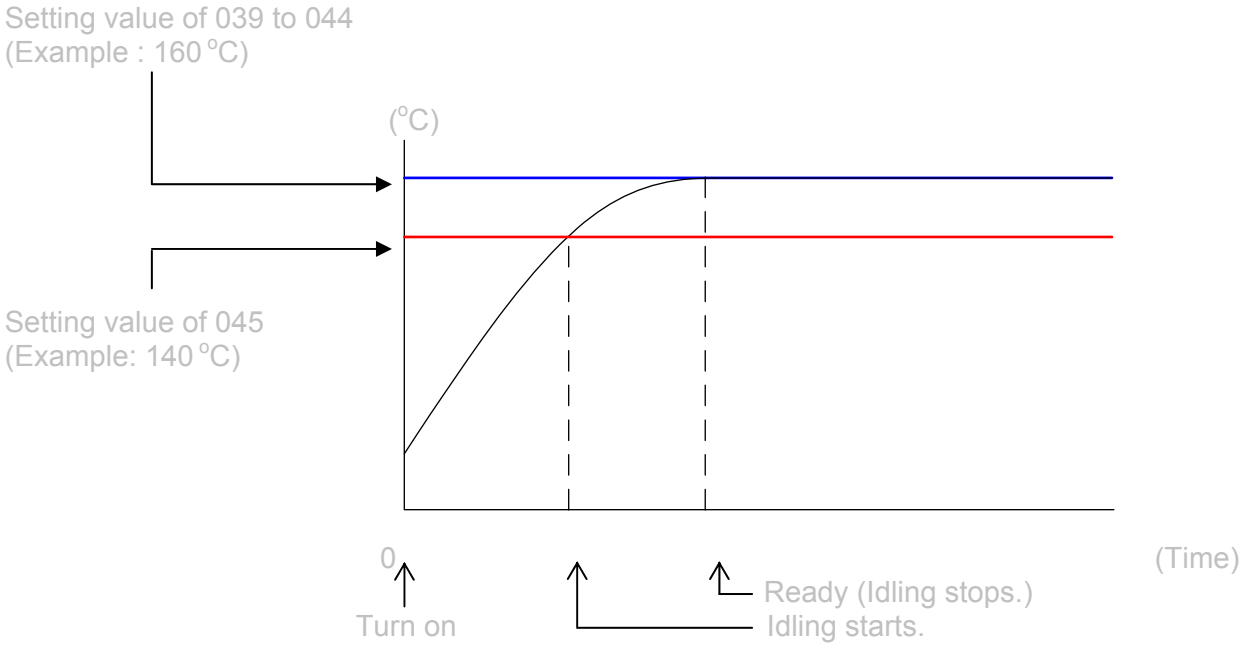
(2) Item List of Fuser Temperature Control (center / side)

	Fuser Center	Fuser Sides
Print (for printing period)	No.039 to 044	No.625 to 648
Ready (target temperature to get “Ready”)	No.660 to 665	No.666 to 671
Standby (during “standby”)	No.738	No.739
Warm Sleep	No.046 (common to both Center / Side)	

8. 4. 3.18 Fuser Temperature to start idling (No.045)

It is possible to decide the temperature to start idling.
When the Fuser Temperature reaches the value specified in this No.045 during the warming up, the Fuser Motor starts rotating to drive the Fuser Roller (idling).

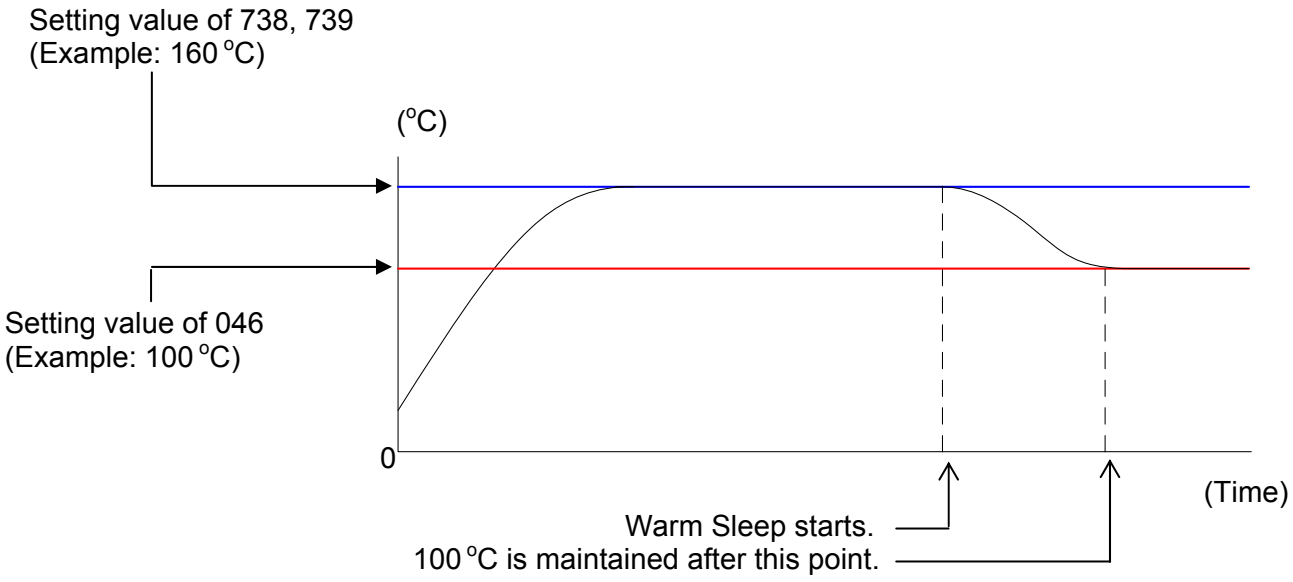
Default value				Setting range	Step of increment
USA	EUR/ASIA	CN	CND		
120	120	120	130	100 to 140	1°C



8. 4. 3.19 Warm Sleep – Fuser Temperature (No.046)

It is possible to decide the temperature which is maintained in the Warm Sleep.

Default value				Setting range	Step of increment
USA	EUR/ASIA	CN	CND		
100	100	100	100	100 to 160	1°C



8. 4. 3.20 Fuser Temperature Control Range (No.048 & 049)

It is possible to specify the control range of temperature of Fuser Roller.

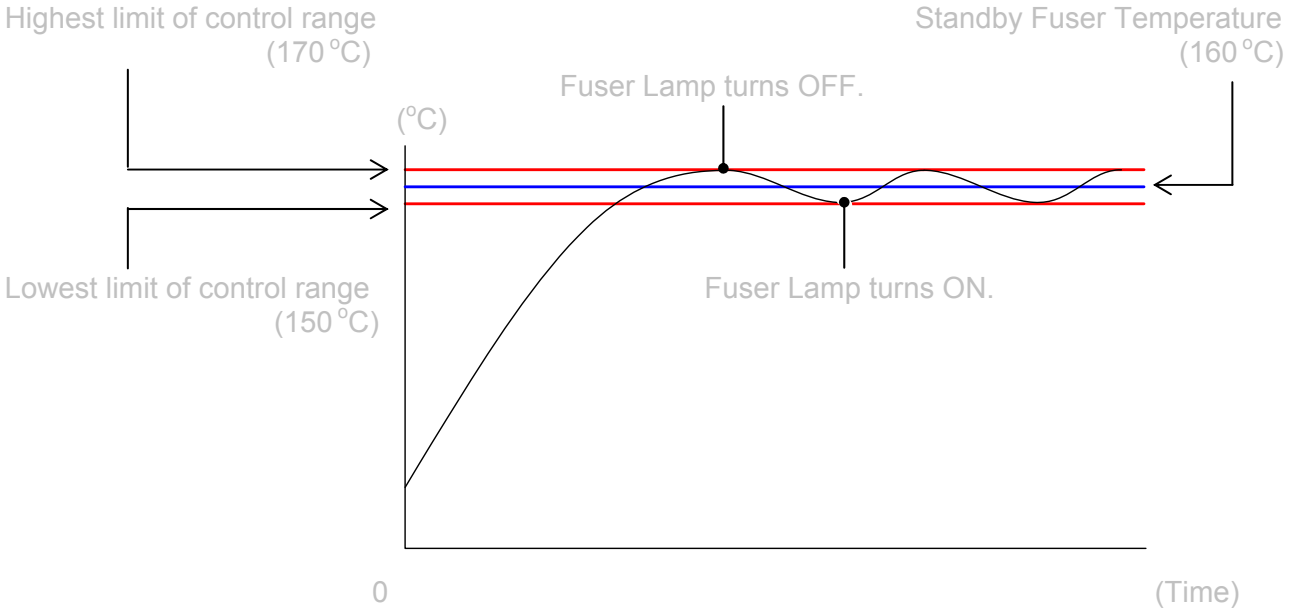
If you specify some setting value “X” on these No.048 and 049, for example, you can decide the highest limit and the lowest one of the control range of temperature.
The highest limit is “Fuser Temperature (Decided in No.039 to 044)” plus the setting value “X”.
And the lowest one is “Fuser Temperature” minus “X”.

The Fuser Lamp continues to light up when the temperature of Fuser Roller is colder than the highest limit, and it is put out when the temperature reaches the highest limit.
The Fuser Roller gradually gets colder after that, and the Fuser Lamp lights again when the temperature reaches the lowest limit.

Control range can be decided separately to each condition “in the print cycle” and “stand by”.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
048	Fuser Temperature Control Range (In the print cycle)	1	1	1	1	1 to 6	1°C
049	Fuser Temperature Control Range (Stand by)	2	2	2	2	1 to 6	1°C

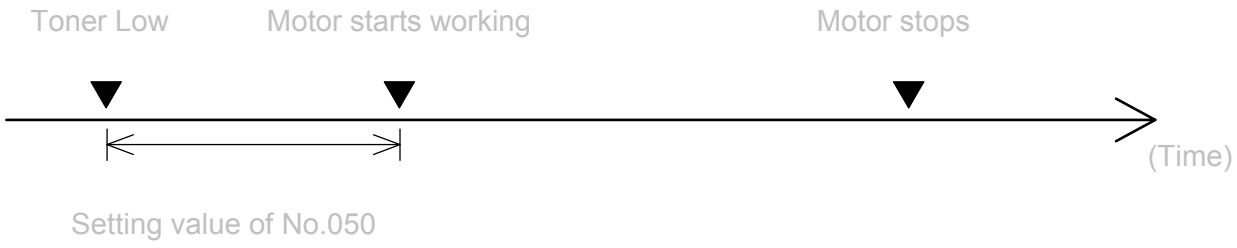
Example: Value of No.048 (Fuser Temperature Control Range) is “10”
Value of No.739 Standby - Fuser Temperature Side) is “160”



8. 4. 3.21 Reaction Time of Toner Supply Motor (No.050)

It is possible to change the reaction time of Toner Supply Motor.
“Reaction time” is the time taken until the Toner Supply Motor starts working since “Toner Low” has been detected.
The reaction time becomes 1 second longer if you increase the setting value by “+1”.

Default value				Setting range	Step of increment
USA	EUR/ASIA	CN	CND		
15	15	15	15	1 to 30	1 second



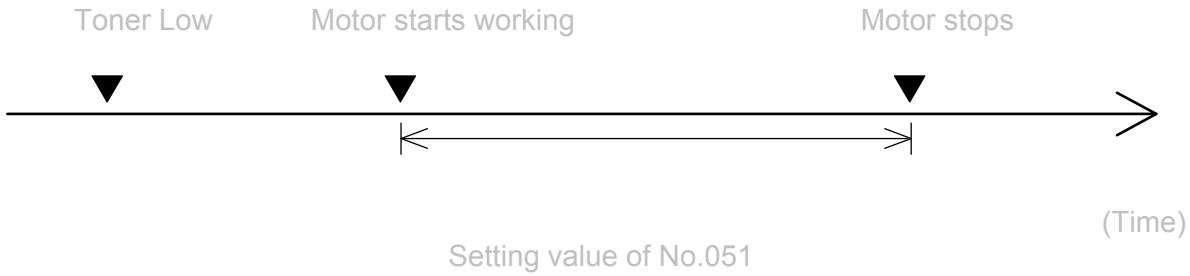
⚠ NOTE

The reaction time may be too long if the image gets lighter and lighter when you make large volume prints continuously.
In this case try to decrease the setting value of No.050 to shorten the reaction time.

8. 4. 3.22 Toner Supply Motor ON Time (No.051)

It is possible change the time the Toner Supply Motor works (ON time).
The ON time becomes 1 second longer if you increase the setting value.

Default value				Setting range	Step of increment
USA	EUR/ASIA	CN	CND		
10	10	10	10	1 to 30	1 second



⚠ NOTE

The ON time may be too short if the image gets lighter and lighter when you make large volume prints continuously.
In this case try to increase the setting value of No.051 to make the ON time longer.

8. 4. 3.23 Dot Enhancement Level (Dither) (No.052)

It is possible to validate the Dot Enhancement function which makes an isolated dot look clearer. An isolated dot image is more emphasized if you increase the setting value.

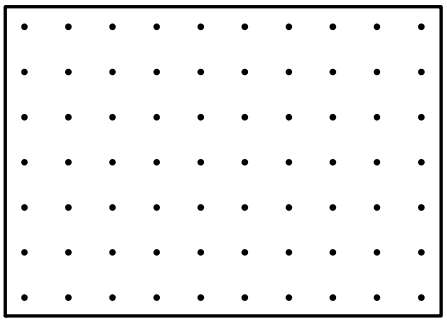
Setting value	Setting Value	Contents
1	1	Emphasized
	2	More emphasized
	3	Most emphasized

Reference

(1) An isolated dot image tends to look so weak.
The Dot Enhancement function emphasizes the isolated dot so that it looks clear.
(Dot Enhancement function emphasizes only the isolated dot. It will not emphasize the dots coming together some degree.)

Dot Enhancement function is OFF.

Dot Enhancement function is ON.

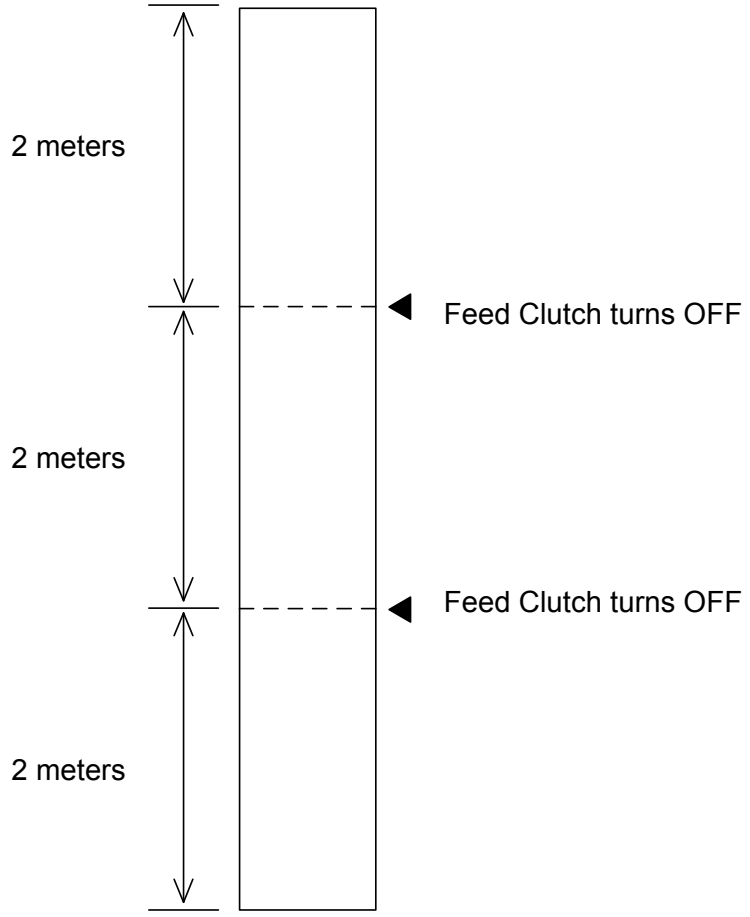


(2) The Dot Enhancement function can be validated in the User Mode.
It will not work if not validated.

8. 4. 3.24 Feed Clutch OFF time for Roll 1/2 long print (No.053, 054)

The Feed Clutch turns OFF for a very short period whenever the machine transports the paper 2 meters long, so as to remove the paper slack in a long printing.
It is possible to specify how long period the Feed Clutch continues to be OFF.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
053	Feed Clutch Off Timing for Roll 1 long print	230	230	230	230	80 to 360	1msec.
054	Feed Clutch Off Timing for Roll 2 long print	230	230	230	230	80 to 360	1msec.



8. 4. 3.25 Metric or Inch (No.055)

It is possible to decide the base format of the print.

Default value				Setting value	Contents
USA	EUR/ASIA	CN	CND		
1	0	0	0	0	Metric
				1	Inch

NOTE

No.055 is effective only to the size format selection available in the UI screen.
This does not effect to the count unit.

8. 4. 3.26 Language (No.056)

NOTE

This setting does not function. Keep the value unchanged.

8. 4. 3.27 Interface Communication Setting (No.057)

It is possible to specify the communication of Interface.

Default value	Setting value	Contents
2	0	Both the A Channel and the B Channel are used alternately. Interface Board communicates with both the image scanner (through A Channel) and the controller (through B Channel) alternately.
	1	The A Channel only is used. Interface Board communicates with image scanner through the A Channel.
	2	The B Channel only is used. Interface Board communicates with controller through the B Channel.

8. 4. 3.28 Recognition of Paper Tray (No.058)

It is possible to make the machine recognize Paper Tray (multiple cut sheet feeder, option) if it is installed.

Default value	Setting value	Contents
0	0	Paper Tray not installed.
	1	Paper Tray installed.

8. 4. 3.29 Counter Unit (No.059)

It is possible to specify the counting unit of Counter.

Default value				Setting value	Contents
USA	EUR/ASIA	CN	CND		
5	2	2	2	0	1 linear meter
				1	0.1 linear meter
				2	1 square meter
				3	0.1 square meter
				4	1 linear foot
				5	1 square foot
				6	Size Count

Reference

Size Count:

A4/A3: 1 count
A2: 2 counts
A1: 3 counts
A0: 5 counts

8. 4. 3.30 Maximum print length (No.060)

It is possible to specify the maximum print length.

Default value	Setting value	Contents
0	0	Maximum print length is 6.0m.
	1	Maximum print length is 200m.

NOTE

We will not guarantee the print quality if the print is longer than the following sizes.

A0 / 36” plain paper 6.0m
Other sizes of plain paper ..... 5 times as long as each standard size
Tracing paper ..... Twice as long as each standard size
Film ..... Standard sizes

8. 4. 3.31 Stacking Device setting (No.061)

It is possible to make the KIP 7170 recognize the optional device (stacker or folder) if connected.

Default value	Setting value	Contents
0	0	Optional device is not connected.
	1	Auto Stacker

8. 4. 3.32 Enable/disable Down Sequence (No.062)

It is possible to enable and disable Down Sequence that allows the printer to pausing printing of a job and recovers the fusing temperature. (Printer restarts printing when it recovers the fusing temperature.)

Default value	Setting value	Contents
0	0	Down Sequence disabled
	1	Down Sequence enabled

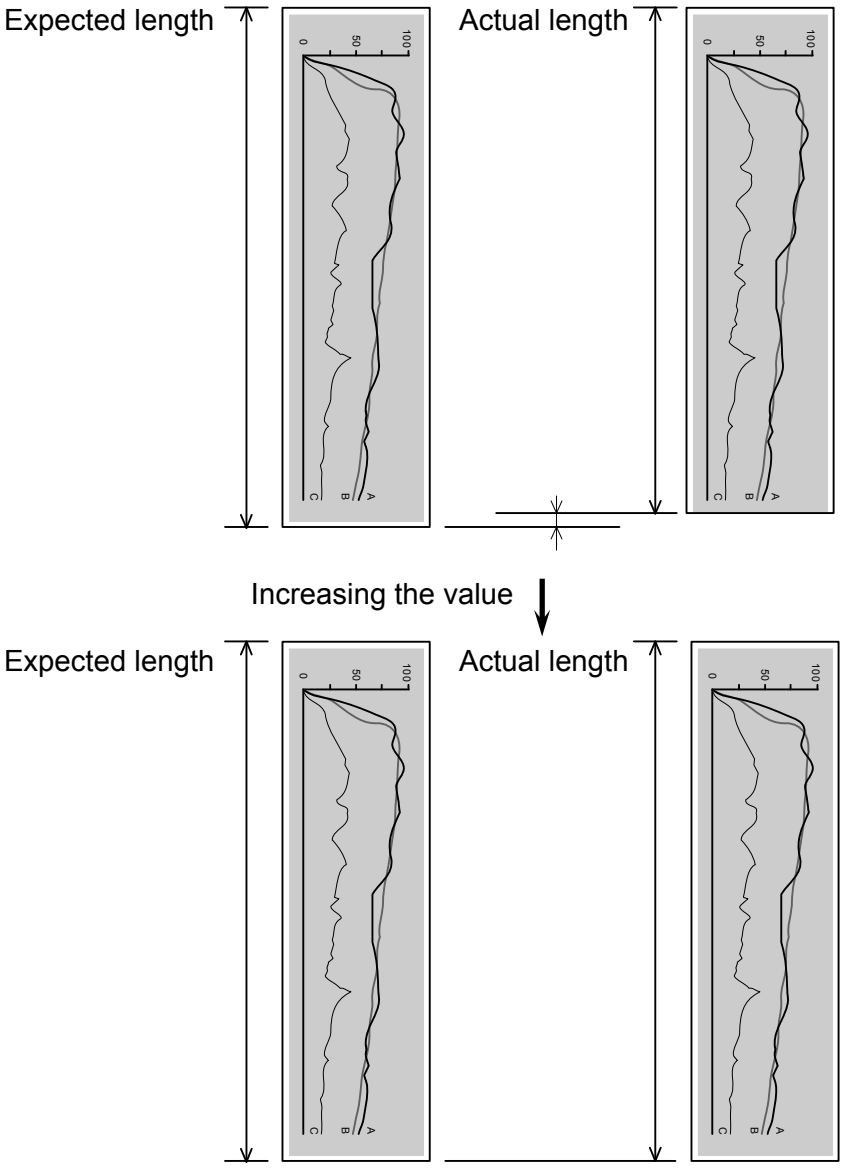
8. 4. 3.33 Cut Length 5 & 6 (Length Compensation for Tracing Paper / Film)(No.063, 064)

It is possible to compensate the print length for the tracing paper and film.
If you increase the setting value by “+1”, the length of the print becomes longer.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
063	Cut Length 5 (Length compensation for tracing paper)	100	100	100	100	0 to 200	depends on paper length
064	Cut Length 6 (Length compensation for film)	90	90	90	90	0 to 200	depends on paper length

An amount of the length to be added / removed against “1” increment of the setting value will vary depending on the length of the media length to be printed.
“1” increment will correspond to the length listed below to be compensated.

paper length	length to be added / removed (Approx.)
A0 (1189mm)	0.16mm
A1 (841mm)	0.11mm
A2 (594mm)	0.08mm
A3 (420mm)	0.05mm
A4 (297mm)	0.04mm



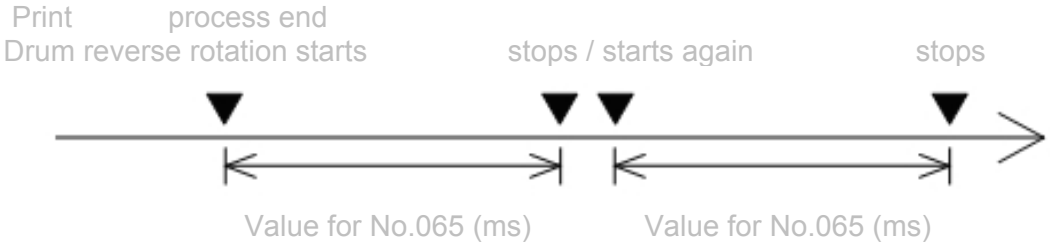
8. 4. 3.34 Drum Reverse Time (No.065)

It is possible to change the period for the Drum reverse rotation.

Developer Roller is strongly pressed to the Drum and that may cause an indentation on Developer Roller's surface. The indentation may result in defective imaging.
The Drum makes a reverse rotation in a given period twice after finishing a job.

Setting a bigger value for No.065 makes the reverse rotation period longer.

Default value				Setting range	Step of increment
USA	EUR/ASIA	CN	CND		
30	30	30	30	10 to 70	1 millisecond



Reference

(1) Drum reverse rotations may produce a slight amount of toner sticking on Drum's surface. This causes a black line about 50mm below the leading edge on a print. Setting a smaller value will reduce such a line.

(2) Setting an extremely small value may cause an indentation on Developer Roller.

8. 4. 3. 35 Fuser Motor Reverse Setting (No.066)

It is possible to make a decision to allow reverse operation of Fuser Motor at the time of Drum Reverse.

Setting value	Contents
0 (default)	Fuser Motor does not make a reverse operation at all
1	Fuser Motor makes a reverse operation in conjunction with Drum Reverse.

NOTE

This setting does not function. Keep the value unchanged.

8. 4. 3.36 Operation of Separation Lamp (No.067)

There may be the case that some type of printing paper has a difficulty in paper separation.
In this case it is possible to assist paper separation by lighting the Separation Lamp.
It is possible in this No.067 to decide to which type of paper the Separation Lamp should light.
Selectable values are from 1 to 7

Default value	Setting value	Contents
5	1	Separation Lamp lights for plain paper.
	2	Separation Lamp lights for tracing paper.
	3	Separation Lamp lights for plain paper and tracing paper.
	4	Separation Lamp lights for film.
	5	Separation Lamp lights for plain paper and film.
	6	Separation Lamp lights for tracing paper and film.
	7	Separation Lamp lights for all kinds of paper.

Reference

Sometimes you can avoid “defect of transfer (light image)” by making the Separation Lamp work.
So if you feel the print image is too light, try to make it work.
You may be able to fix the problem.

8. 4. 3.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd, 4th Speed. It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a plain paper of A3, 12” and 11” sizes by roll paper feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
070	Fuser Motor 1st Speed (Roll / Plain paper / A3, 12” & 11”)	34	39	39	39	0 to 80	0.04mm/s
071	Switch Timing to Fuser Motor 1st Speed (Roll / Plain paper / A3, 12” & 11”)	1	1	1	1	0 to 300	0.5 sec
072	Fuser Motor 2nd Speed (Roll / Plain paper / A3, 12” & 11”)	35	42	42	42	0 to 80	0.04mm/s
073	Switch Timing to Fuser Motor 2nd Speed (Roll / Plain paper / A3, 12” & 11”)	1	1	1	1	0 to 300	0.5 sec
074	Fuser Motor 3rd Speed (Roll / Plain paper / A3, 12” & 11”)	50	48	48	48	0 to 80	0.04mm/s
075	Switch Timing to Fuser Motor 3rd Speed (Roll / Plain paper / A3, 12” & 11”)	5	5	5	5	0 to 300	0.5 sec
678	Fuser Motor 4th Speed (Roll / Plain paper / A3, 12” & 11”)	34	37	37	37	0 to 80	0.04mm/s
679	Switch Timing to Fuser Motor 4th Speed (Roll / Plain paper / A3, 12” & 11”)	6	8	8	8	0 to 300	0.5 sec

Please refer to the next page for further information.

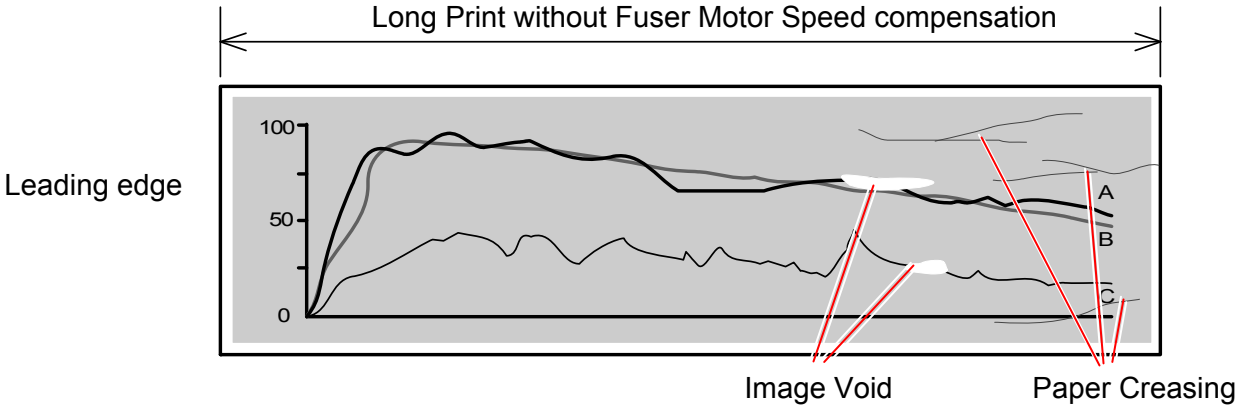
⚠ NOTE

(1) Fuser Motor Speed is factory-adjusted based on an individual machine, and the result is written in the service sheet. Be sure to confirm the service sheet in case of a setting change on Fuser Motor Speed.

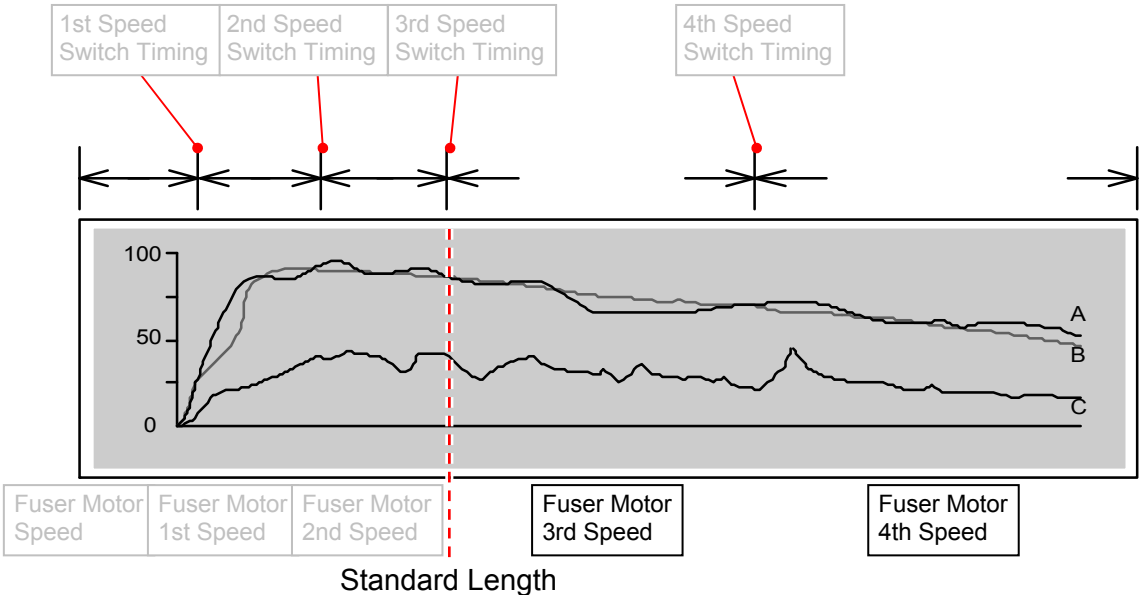
(2) Fuser Motor Speed should be changed with visual check. Remove the right cover and see inside of the machine to check the feeding balance (media not to be pulled too much / without slack, etc).

Reference

"Paper creasing" or "image void" on a long print may be removed by Fuser Motor Speed compensation.



Fuser Motor Speed, Fuser Motor 1/2/3/4 Speed correspond to the area shown as follows.
To remove "paper creasing" or "image void", adjust Fuser Motor **3rd/4th** Speed according to the situation.



NOTE

(1) When "Switching Timing" is set to 0, the subsequent Fuser Motor Speed settings are not applied.
4th Speed is not used when Fuser Motor 4th Speed Switch Timing is set to "0".
3rd/4th Speed is not used when Fuser Motor 3rd Speed Switch Timing is set to "0".

(2) Fuser Motor 3rd/4th Speed are factory-adjusted for the following media width as follows.

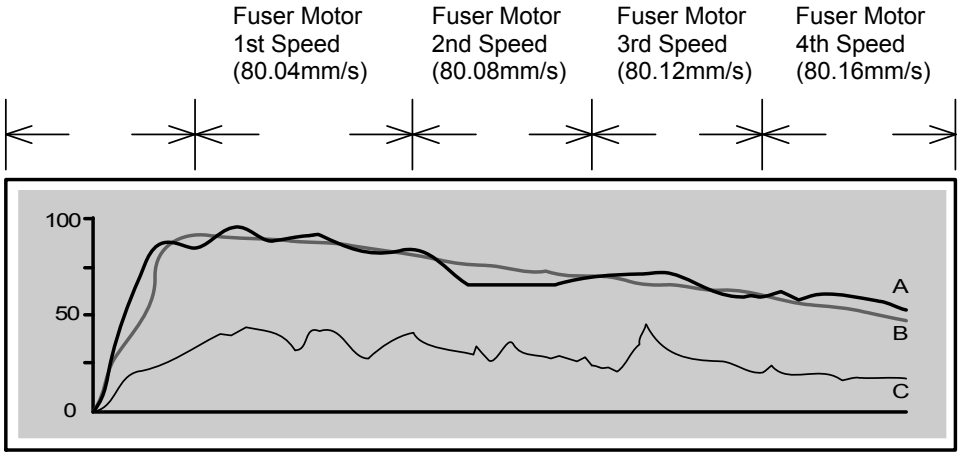
	3rd Speed	4th Speed
plain	all width	all width
tracing/vellum	all width	A0/36"/34"/30" less than above: not used
film	not used	not used
cutsheet (except film)	factory-adjusted	not used

"not used" means that the previous Switch Timing is set to "0" because the corresponding print area exceeds the guaranteed length.

This page explains Fuser Motor Speed Compensation on A3/12”/11” width for example.

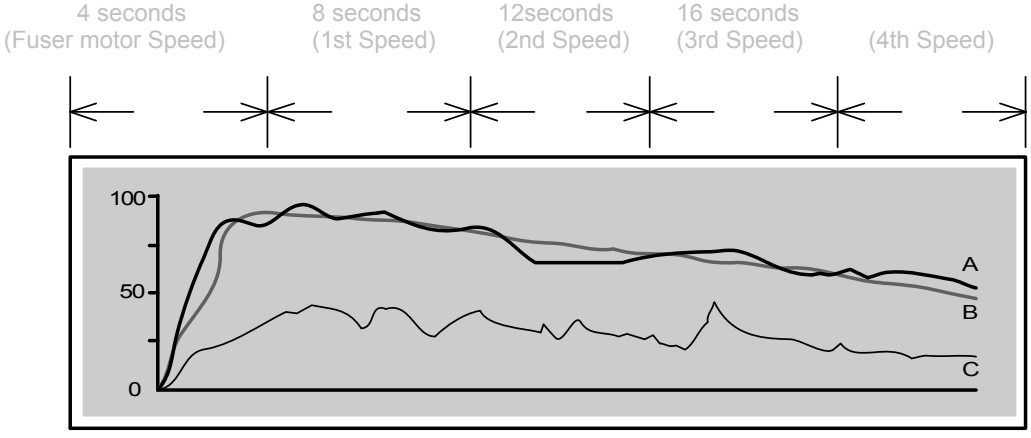
You can specify the Fuser Motor 1st Speed, 2nd, 3rd and 4th in each Item No.070, 072, 074, 678.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.
(The default setting value “40” corresponds to 80mm/second.)

(Example)
Setting value of 070 is “41” ⟶ Fuser Motor 1st Speed is 80.04mm/sec.
Setting value of 072 is “42” ⟶ Fuser Motor 2nd Speed is 80.08mm/sec.
Setting value of 074 is “43” ⟶ Fuser Motor 3rd Speed is 80.12mm/sec.
Setting value of 678 is “44” ⟶ Fuser Motor 4th Speed is 80.16mm/sec.



You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.071, 073, 075, 679.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.
(If you specify “0”, the Fuser Motor Speed does not change.)

(Example)
Setting value of 071 is “8” ⟶ Fuser Motor 1st Speed starts 4 seconds after the Registration Sensor detects the leading edge.
Setting value of 073 is “16” ⟶ Fuser Motor 2nd Speed starts 8 seconds after the start of Fuser Motor 1st Speed.
Setting value of 075 is “24” ⟶ Fuser Motor 3rd Speed starts 12 seconds after the start of Fuser Motor 2nd Speed.
Setting value of 678 is “32” ⟶ Fuser Motor 4th Speed starts 16 seconds after the start of Fuser Motor 3rd Speed.



8. 4. 3.38 Compensation of Fuser Motor Speed for roll paper (Tracing paper / A3, 12” & 11”) (No.076 to 081, 680, 681)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a tracing paper of A3, 12” and 11” sizes by roll paper feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
076	Fuser Motor 1st Speed (Roll / Tracing / A3, 12” & 11”)	33	36	36	36	0 to 80	0.04mm/s
077	Switch Timing to Fuser Motor 1st Speed (Roll / Tracing / A3, 12” & 11”)	1	1	1	1	0 to 300	0.5 sec
078	Fuser Motor 2nd Speed (Roll / Tracing / A3, 12” & 11”)	39	44	44	44	0 to 80	0.04mm/s
079	Switch Timing to Fuser Motor 2nd Speed (Roll / Tracing / A3, 12” & 11”)	1	3	3	3	0 to 300	0.5 sec
080	Fuser Motor 3rd Speed (Roll / Tracing / A3, 12” & 11”)	44	44	44	44	0 to 80	0.04mm/s
081	Switch Timing to Fuser Motor 3rd Speed (Roll / Tracing / A3, 12” & 11”)	5	5	5	5	0 to 300	0.5 sec
680	Fuser Motor 4th Speed (Roll / Tracing / A3, 12” & 11”)	40	40	40	40	0 to 80	0.04mm/s
681	Switch Timing to Fuser Motor 4th Speed (Roll / Tracing / A3, 12” & 11”)	0	0	0	0	0 to 300	0.5 sec

You can specify Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.076, 078, 080, 680.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.077, 079, 081, 681.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.39 Compensation of Fuser Motor Speed for roll paper (Film / A3, 12” & 11”) (No.082 to 087, 682, 683)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a film of A3, 12” and 11” sizes by roll paper feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
082	Fuser Motor 1st Speed (Roll / Film / A3, 12” & 11”)	50	50	50	50	0 to 80	0.04mm/s
083	Switch Timing to Fuser Motor 1st Speed (Roll / Film / A3, 12” & 11”)	2	2	2	2	0 to 300	0.5 sec
084	Fuser Motor 2nd Speed (Roll / Film / A3, 12” & 11”)	50	50	50	50	0 to 80	0.04mm/s
085	Switch Timing to Fuser Motor 2nd Speed (Roll / Film / A3, 12” & 11”)	4	4	4	4	0 to 300	0.5 sec
086	Fuser Motor 3rd Speed (Roll / Film / A3, 12” & 11”)	40	40	40	40	0 to 80	0.04mm/s
087	Switch Timing to Fuser Motor 4th Speed (Roll / Film / A3, 12” & 11”)	0	0	0	0	0 to 300	0.5 sec
682	Fuser Motor 4th Speed (Roll / Film / A3, 12” & 11”)	40	40	40	40	0 to 80	0.04mm/s
683	Switch Timing to Fuser Motor 4th Speed (Roll / Film / A3, 12” & 11”)	0	0	0	0	0 to 300	0.5 sec

You can specify Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.082, 084, 086, 682.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.083, 085, 087, 683.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.40 Compensation of Fuser Motor Speed for roll paper (Special plain paper / A3, 12” & 11”) (No.088 to 093, 684, 685)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a plain paper (special media) of A3, 12” and 11” sizes by roll paper feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
088	Fuser Motor 1st Speed (Roll / Special plain paper / A3, 12” & 11”)	40	40	40	40	0 to 80	0.04mm/s
089	Switch Timing to Fuser Motor 1st Speed (Roll / Special plain paper / A3, 12” & 11”)	0	0	0	0	0 to 300	0.5 sec
090	Fuser Motor 2nd Speed Setting (Roll / Special plain paper / A3, 12” & 11”)	40	40	40	40	0 to 80	0.04mm/s
091	Switch Timing to Fuser Motor 2nd Speed (Roll / Special plain paper / A3, 12” & 11”)	0	0	0	0	0 to 300	0.5 sec
092	Fuser Motor 3rd Speed (Roll / Special plain paper / A3, 12” & 11”)	40	40	40	40	0 to 80	0.04mm/s
093	Switch Timing to Fuser Motor 3rd Speed (Roll / Special plain paper / A3, 12” & 11”)	0	0	0	0	0 to 300	0.5 sec
684	Fuser Motor 4th Speed (Roll / Special plain paper / A3, 12” & 11”)	40	40	40	40	0 to 80	0.04mm/s
685	Switch Timing to Fuser Motor 4th Speed (Roll / Special plain paper / A3, 12” & 11”)	0	0	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.088, 090, 092, 684.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.089, 091, 093, 685.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.41 Compensation of Fuser Motor Speed for roll paper (Special tracing paper / A3, 12” & 11”) (No.094 to 099)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a tracing paper (special media) of A3, 12” and 11” sizes by roll paper feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
094	Fuser Motor 1st Speed (Roll/ Special Media / Tracing / A3, 12” & 11”)	40	40	40	40	0 to 80	0.04mm/s
095	Switch Timing to Fuser Motor 1st Speed (Roll/ Special Media / Tracing / A3, 12” & 11”)	0	0	0	0	0 to 300	0.5 sec
096	Fuser Motor 2nd Speed (Roll/ Special Media / Tracing / A3, 12” & 11”)	40	40	40	40	0 to 80	0.04mm/s
097	Switch Timing to Fuser Motor 2nd Speed (Roll/ Special Media / Tracing / A3, 12” & 11”)	0	0	0	0	0 to 300	0.5 sec
098	Fuser Motor 3rd Speed (Roll/ Special Media / Tracing / A3, 12” & 11”)	40	40	40	40	0 to 80	0.04mm/s
099	Switch Timing to Fuser Motor 3rd Speed (Roll/ Special Media / Tracing / A3, 12” & 11”)	0	0	0	0	0 to 300	0.5 sec
686	Fuser Motor 4th Speed (Roll/ Special Media / Tracing / A3, 12” & 11”)	40	40	40	40	0 to 80	0.04mm/s
687	Switch Timing to Fuser Motor 4th Speed (Roll/ Special Media / Tracing / A3, 12” & 11”)	0	0	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.094, 096, 098, 686.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.095, 097, 099, 687.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.42 Compensation of Fuser Motor Speed for roll paper (Special film / A3, 12” & 11”) (No.100 to 105, 688, 689)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a film (special media) of A3, 12” and 11” sizes by roll paper feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
100	Fuser Motor 1st Speed (Roll / Special film / A3, 12” & 11”)	40	40	40	40	0 to 80	0.04mm/s
101	Switch Timing to Fuser Motor 1st Speed (Roll / Special film / A3, 12” & 11”)	0	0	0	0	0 to 300	0.5 sec
102	Fuser Motor 2nd Speed (Roll / Special film / A3, 12” & 11”)	40	40	40	40	0 to 80	0.04mm/s
103	Switch Timing to Fuser Motor 2nd Speed (Roll / Special film / A3, 12” & 11”)	0	0	0	0	0 to 300	0.5 sec
104	Fuser Motor 3rd Speed (Roll / Special film / A3, 12” & 11”)	40	40	40	40	0 to 80	0.04mm/s
105	Switch Timing to Fuser Motor 3rd Speed (Roll / Special film / A3, 12” & 11”)	0	0	0	0	0 to 300	0.5 sec
688	Fuser Motor 4th Speed (Roll / Special film / A3, 12” & 11”)	40	40	40	40	0 to 80	0.04mm/s
689	Switch Timing to Fuser Motor 4th Speed (Roll / Special film / A3, 12” & 11”)	0	0	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.100, 102, 104, 688.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.101, 103, 105, 689.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.43 Compensation of Fuser Motor Speed for roll paper (Plain paper / A2, 18” & 17”) (No.106 to 111, 690, 691)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a plain paper of A2, 18” and 17” sizes by roll paper feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
106	Fuser Motor 1st Speed (Roll / Plain paper / A2, 18” & 17”)	30	31	31	31	0 to 80	0.04mm/s
107	Switch Timing to Fuser Motor 1st Speed (Roll / Plain paper / A2, 18” & 17”)	3	3	3	3	0 to 300	0.5 sec
108	Fuser Motor 2nd Speed (Roll / Plain paper / A2, 18” & 17”)	32	36	36	36	0 to 80	0.04mm/s
109	Switch Timing to Fuser Motor 2nd Speed (Roll / Plain paper / A2, 18” & 17”)	4	4	4	4	0 to 300	0.5 sec
110	Fuser Motor 3rd Speed (Roll / Plain paper / A2, 18” & 17”)	31	38	38	38	0 to 80	0.04mm/s
111	Switch Timing to Fuser Motor 3rd Speed (Roll / Plain paper / A2, 18” & 17”)	6	6	6	6	0 to 300	0.5 sec
690	Fuser Motor 4th Speed (Roll / Plain paper / A2, 18” & 17”)	37	40	40	40	0 to 80	0.04mm/s
691	Switch Timing to Fuser Motor 4th Speed (Roll / Plain paper / A2, 18” & 17”)	10	0	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.106, 108, 110, 690.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.107, 109, 111, 691.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.44 Compensation of Fuser Motor Speed for roll paper (Tracing paper / A2, 18” & 17”) (No.112 to 117, 692, 693)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a tracing paper of A2, 18” and 17” sizes by roll paper feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
112	Fuser Motor 1st Speed (Roll / Tracing / A2, 18” & 17”)	33	40	40	40	0 to 80	0.04mm/s
113	Switch Timing to Fuser Motor 1st Speed (Roll / Tracing / A2, 18” & 17”)	2	1	1	1	0 to 300	0.5 sec
114	Fuser Motor 2nd Speed (Roll / Tracing / A2, 18” & 17”)	38	44	44	44	0 to 80	0.04mm/s
115	Switch Timing to Fuser Motor 2nd Speed (Roll / Tracing / A2, 18” & 17”)	3	5	5	5	0 to 300	0.5 sec
116	Fuser Motor 3rd Speed (Roll / Tracing / A2, 18” & 17”)	38	45	45	45	0 to 80	0.04mm/s
117	Switch Timing to Fuser Motor 3rd Speed (Roll / Tracing / A2, 18” & 17”)	5	5	5	5	0 to 300	0.5 sec
692	Fuser Motor 4th Speed (Roll / Tracing / A2, 18” & 17”)	40	40	40	40	0 to 80	0.04mm/s
693	Switch Timing to Fuser Motor 4th Speed (Roll / Tracing / A2, 18” & 17”)	0	0	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.112, 114, 116, 692.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.113, 115, 117, 693.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.45 Compensation of Fuser Motor Speed for roll paper (Film / A2, 18” & 17”) (No.118 to 123, 694, 695)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a film of A2, 18” and 17” sizes by roll paper feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
118	Fuser Motor 1st Speed (Roll / Film / A2, 18” & 17”)	50	50	50	50	0 to 80	0.04mm/s
119	Switch Timing to Fuser Motor 1st Speed (Roll / Film / A2, 18” & 17”)	2	2	2	2	0 to 300	0.5 sec
120	Fuser Motor 2nd Speed (Roll / Film / A2, 18” & 17”)	50	50	50	50	0 to 80	0.04mm/s
121	Switch Timing to Fuser Motor 2nd Speed (Roll / Film / A2, 18” & 17”)	6	6	6	6	0 to 300	0.5 sec
122	Fuser Motor 3rd Speed (Roll / Film / A2, 18” & 17”)	40	40	40	40	0 to 80	0.04mm/s
123	Switch Timing to Fuser Motor 3rd Speed (Roll / Film / A2, 18” & 17”)	0	0	0	0	0 to 300	0.5 sec
694	Fuser Motor 4th Speed (Roll / Film / A2, 18” & 17”)	40	40	40	40	0 to 80	0.04mm/s
695	Switch Timing to Fuser Motor 4th Speed (Roll / Film / A2, 18” & 17”)	0	0	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.118, 120, 122, 694.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.119, 121, 123, 695.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.46 Compensation of Fuser Motor Speed for roll paper (Special plain paper / A2, 18” & 17”) (No.124 to 129, 696, 697)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a plain paper (special media) of A2, 18” and 17” sizes by roll paper feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
124	Fuser Motor 1st Speed (Roll / Special plain paper / A2, 18” & 17”)	40	40	40	40	0 to 80	0.04mm/s
125	Switch Timing to Fuser Motor 1st Speed (Roll / Special plain paper / A2, 18” & 17”)	0	0	0	0	0 to 300	0.5 sec
126	Fuser Motor 2nd Speed (Roll / Special plain paper / A2, 18” & 17”)	40	40	40	40	0 to 80	0.04mm/s
127	Switch Timing to Fuser Motor 2nd Speed (Roll / Special plain paper / A2, 18” & 17”)	0	0	0	0	0 to 300	0.5 sec
128	Fuser Motor 3rd Speed (Roll / Special plain paper / A2, 18” & 17”)	40	40	40	40	0 to 80	0.04mm/s
129	Switch Timing to Fuser Motor 3rd Speed (Roll / Special plain paper / A2, 18” & 17”)	0	0	0	0	0 to 300	0.5 sec
696	Fuser Motor 4th Speed (Roll / Special plain paper / A2, 18” & 17”)	40	40	40	40	0 to 80	0.04mm/s
697	Switch Timing to Fuser Motor 4th Speed (Roll / Special plain paper / A2, 18” & 17”)	0	0	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.124, 126, 128, 696.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.125, 127, 129, 697.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.47 Compensation of Fuser Motor Speed for roll paper (Special tracing paper / A2, 18” & 17”) (No.130 to 135, 698, 699)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a tracing paper (special media) of A2, 18” and 17” size by roll paper feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
130	Fuser Motor 1st Speed (Roll / Special tracing / A2, 18” & 17”)	40	40	40	40	0 to 80	0.04mm/s
131	Switch Timing to Fuser Motor 1st Speed (Roll / Special tracing / A2, 18” & 17”)	0	0	0	0	0 to 300	0.5 sec
132	Fuser Motor 2nd Speed (Roll / Special tracing / A2, 18” & 17”)	40	40	40	40	0 to 80	0.04mm/s
133	Switch Timing to Fuser Motor 2nd Speed (Roll / Special tracing / A2, 18” & 17”)	0	0	0	0	0 to 300	0.5 sec
134	Fuser Motor 3rd Speed (Roll / Special tracing / A2, 18” & 17”)	40	40	40	40	0 to 80	0.04mm/s
135	Switch Timing to Fuser Motor 3rd Speed (Roll / Special tracing / A2, 18” & 17”)	0	0	0	0	0 to 300	0.5 sec
698	Fuser Motor 4th Speed (Roll / Special tracing / A2, 18” & 17”)	40	40	40	40	0 to 80	0.04mm/s
699	Switch Timing to Fuser Motor 4th Speed (Roll / Special tracing / A2, 18” & 17”)	0	0	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.130, 132, 134, 698.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.131, 133, 135, 699.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.48 Compensation of Fuser Motor Speed for roll paper (Special film / A2, 18” & 17”) (No.136 to 141, 700, 701)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a film (special media) of A2, 18” and 17” sizes by roll paper feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
136	Fuser Motor 1st Speed (Roll / Special film / A2, 18” & 17”)	40	40	40	40	0 to 80	0.04mm/s
137	Switch Timing to Fuser Motor 1st Speed (Roll / Special film / A2, 18” & 17”)	0	0	0	0	0 to 300	0.5 sec
138	Fuser Motor 2nd Speed (Roll / Special film / A2, 18” & 17”)	40	40	40	40	0 to 80	0.04mm/s
139	Switch Timing to Fuser Motor 2nd Speed (Roll / Special film / A2, 18” & 17”)	0	0	0	0	0 to 300	0.5 sec
140	Fuser Motor 3rd Speed (Roll / Special film / A2, 18” & 17”)	40	40	40	40	0 to 80	0.04mm/s
141	Switch Timing to Fuser Motor 3rd Speed (Roll / Special film / A2, 18” & 17”)	0	0	0	0	0 to 300	0.5 sec
700	Fuser Motor 4th Speed (Roll / Special film / A2, 18” & 17”)	40	40	40	40	0 to 80	0.04mm/s
701	Switch Timing to Fuser Motor 4th Speed (Roll / Special film / A2, 18” & 17”)	0	0	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.136, 138,140, 700.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.137, 139, 141, 701.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.49 Compensation of Fuser Motor Speed for roll paper (Plain paper / A1, 24” & 22”) (No.142 to 147, 702, 703)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a plain paper of A1, 24” and 22” sizes by roll paper feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
142	Fuser Motor 1st Speed (Roll / Plain paper / A1, 24” & 22”)	39	35	35	35	0 to 80	0.04mm/s
143	Switch Timing to Fuser Motor 1st Speed (Roll / Plain paper / A1, 24” & 22”)	3	1	1	1	0 to 300	0.5 sec
144	Fuser Motor 2nd Speed (Roll / Plain paper / A1, 24” & 22”)	28	36	36	36	0 to 80	0.04mm/s
145	Switch Timing to Fuser Motor 2nd Speed (Roll / Plain paper / A1, 24” & 22”)	6	3	3	3	0 to 300	0.5 sec
146	Fuser Motor 3rd Speed (Roll / Plain paper / A1, 24” & 22”)	40	40	40	40	0 to 80	0.04mm/s
147	Switch Timing to Fuser Motor 3rd Speed (Roll / Plain paper / A1, 24” & 22”)	6	16	16	16	0 to 300	0.5 sec
702	Fuser Motor 4th Speed (Roll / Plain paper / A1, 24” & 22”)	35	36	36	36	0 to 80	0.04mm/s
703	Switch Timing to Fuser Motor 4th Speed (Roll / Plain paper / A1, 24” & 22”)	16	16	16	16	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.142, 144, 146, 702.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.143, 145, 147, 703.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.50 Compensation of Fuser Motor Speed for roll paper (Tracing paper / A1, 24” & 22”) (No.148 to 153, 704, 705)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a tracing paper of A1, 24” and 22” sizes by roll paper feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
148	Fuser Motor 1st Speed (Roll / Tracing / A1, 24” & 22”)	37	42	42	42	0 to 80	0.04mm/s
149	Switch Timing to Fuser Motor 1st Speed (Roll / Tracing / A1, 24” & 22”)	4	3	3	3	0 to 300	0.5 sec
150	Fuser Motor 2nd Speed (Roll / Tracing / A1, 24” & 22”)	39	43	43	43	0 to 80	0.04mm/s
151	Switch Timing to Fuser Motor 2nd Speed (Roll / Tracing / A1, 24” & 22”)	9	9	9	9	0 to 300	0.5 sec
152	Fuser Motor 3rd Speed (Roll / Tracing / A1, 24” & 22”)	39	40	40	40	0 to 80	0.04mm/s
153	Switch Timing to Fuser Motor 3rd Speed (Roll / Tracing / A1, 24” & 22”)	8	8	8	8	0 to 300	0.5 sec
704	Fuser Motor 4th Speed (Roll / Tracing / A1, 24” & 22”)	40	40	40	40	0 to 80	0.04mm/s
705	Switch Timing to Fuser Motor 4th Speed (Roll / Tracing / A1, 24” & 22”)	0	0	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.148, 150, 152, 704.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.149, 151, 153, 705.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.51 Compensation of Fuser Motor Speed for roll paper (Film / A1, 24” & 22”) (No.154 to 159, 706, 707)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a film of A1, 24” and 22” sizes by roll paper feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
154	Fuser Motor 1st Speed (Roll / Film / A1, 24” & 22”)	42	42	42	42	0 to 80	0.04mm/s
155	Switch Timing to Fuser Motor 1st Speed (Roll / Film / A1, 24” & 22”)	2	2	2	2	0 to 300	0.5 sec
156	Fuser Motor 2nd Speed (Roll / Film / A1, 24” & 22”)	42	42	42	42	0 to 80	0.04mm/s
157	Switch Timing to Fuser Motor 2nd Speed (Roll / Film / A1, 24” & 22”)	14	14	14	14	0 to 300	0.5 sec
158	Fuser Motor 3rd Speed (Roll / Film / A1, 24” & 22”)	40	40	40	40	0 to 80	0.04mm/s
159	Switch Timing to Fuser Motor 3rd Speed (Roll / Film / A1, 24” & 22”)	0	0	0	0	0 to 300	0.5 sec
706	Fuser Motor 4th Speed (Roll / Film / A1, 24” & 22”)	40	40	40	40	0 to 80	0.04mm/s
707	Switch Timing to Fuser Motor 4th Speed (Roll / Film / A1, 24” & 22”)	0	0	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.154, 156, 158, 706.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.155, 157, 159, 707.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.52 Compensation of Fuser Motor Speed for roll paper (Special plain paper / A1, 24 & 22”) (No.160 to 165, 708, 709)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a plain paper (special media) of A1, 24” and 22” sizes by roll paper feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
160	Fuser Motor 1st Speed (Roll / Special plain paper / A1, 24” & 22”)	40	40	40	40	0 to 80	0.04mm/s
161	Switch Timing to Fuser Motor 1st Speed (Roll / Special plain paper / A1, 24” & 22”)	0	0	0	0	0 to 300	0.5 sec
162	Fuser Motor 2nd Speed (Roll / Special plain paper / A1, 24” & 22”)	40	40	40	40	0 to 80	0.04mm/s
163	Switch Timing to Fuser Motor 2nd Speed (Roll / Special plain paper / A1, 24” & 22”)	0	0	0	0	0 to 300	0.5 sec
164	Fuser Motor 3rd Speed (Roll / Special plain paper / A1, 24” & 22”)	40	40	40	40	0 to 80	0.04mm/s
165	Switch Timing to Fuser Motor 3rd Speed (Roll / Special plain paper / A1, 24” & 22”)	0	0	0	0	0 to 300	0.5 sec
708	Fuser Motor 4th Speed (Roll / Special plain paper / A1, 24” & 22”)	40	40	40	40	0 to 80	0.04mm/s
709	Switch Timing to Fuser Motor 4th Speed (Roll / Special plain paper / A1, 24” & 22”)	0	0	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.160, 162, 164, 708.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.161, 163, 165, 709.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.53 Compensation of Fuser Motor Speed for roll paper (Special tracing paper / A1, 24” & 22”) (No.166 to 171, 710, 711)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a tracing paper (special media) of A1, 24” and 22” size by roll paper feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
166	Fuser Motor 1st Speed (Roll / Special tracing / A1, 24” & 22”)	40	40	40	40	0 to 80	0.04mm/s
167	Switch Timing to Fuser Motor 1st Speed (Roll / Special tracing / A1, 24” & 22”)	0	0	0	0	0 to 300	0.5 sec
168	Fuser Motor 2nd Speed (Roll / Special tracing / A1, 24” & 22”)	40	40	40	40	0 to 80	0.04mm/s
169	Switch Timing to Fuser Motor 2nd Speed (Roll / Special tracing / A1, 24” & 22”)	0	0	0	0	0 to 300	0.5 sec
170	Fuser Motor 3rd Speed (Roll / Special tracing / A1, 24” & 22”)	40	40	40	40	0 to 80	0.04mm/s
171	Switch Timing to Fuser Motor 3rd Speed (Roll / Special tracing / A1, 24” & 22”)	0	0	0	0	0 to 300	0.5 sec
710	Fuser Motor 4th Speed (Roll / Special tracing / A1, 24” & 22”)	40	40	40	40	0 to 80	0.04mm/s
711	Switch Timing to Fuser Motor 4th Speed (Roll / Special tracing / A1, 24” & 22”)	0	0	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.166, 168, 170, 710.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.167, 169, 171, 711.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.54 Compensation of Fuser Motor Speed for roll paper (Special film / A1, 24” & 22”) (No.172 to 177, 712, 713)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a film (special media) of A1, 24” and 22” sizes by roll paper feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
172	Fuser Motor 1st Speed (Roll / Special film / A1, 24” & 22”)	40	40	40	40	0 to 80	0.04mm/s
173	Switch Timing to Fuser Motor 1st Speed (Roll / Special film / A1, 24” & 22”)	0	0	0	0	0 to 300	0.5 sec
174	Fuser Motor 2nd Speed (Roll / Special film / A1, 24” & 22”)	40	40	40	40	0 to 80	0.04mm/s
175	Switch Timing to Fuser Motor 2nd Speed (Roll / Special film / A1, 24” & 22”)	0	0	0	0	0 to 300	0.5 sec
176	Fuser Motor 3rd Speed (Roll / Special film / A1, 24” & 22”)	40	40	40	40	0 to 80	0.04mm/s
177	Switch Timing to Fuser Motor 3rd Speed (Roll / Special film / A1, 24” & 22”)	0	0	0	0	0 to 300	0.5 sec
712	Fuser Motor 4th Speed Roll / Special film / A1, 24” & 22”)	40	40	40	40	0 to 80	0.04mm/s
713	Switch Timing to Fuser Motor 4th Speed (Roll / Special film / A1, 24” & 22”)	0	0	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.172, 174, 176, 712.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.173, 175, 177, 713.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.55 Compensation of Fuser Motor Speed for roll paper (Plain paper / A0, 36” & 34”) (No.178 to 183, 714, 715)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a plain paper of A0, 36” and 34” sizes by roll paper feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
178	Fuser Motor 1st Speed (Roll / Plain paper / A0, 36” & 34”)	31	29	29	29	0 to 80	0.04mm/s
179	Switch Timing to Fuser Motor 1st Speed (Roll / Plain paper / A0, 36” & 34”)	6	1	1	1	0 to 300	0.5 sec
180	Fuser Motor 2nd Speed (Roll / Plain paper / A0, 36” & 34”)	29	35	35	35	0 to 80	0.04mm/s
181	Switch Timing to Fuser Motor 2nd Speed (Roll / Plain paper / A0, 36” & 34”)	14	10	10	10	0 to 300	0.5 sec
182	Fuser Motor 3rd Speed (Roll / Plain paper / A0, 36” & 34”)	36	38	38	38	0 to 80	0.04mm/s
183	Switch Timing to Fuser Motor 3rd Speed (Roll / Plain paper / A0, 36” & 34”)	8	17	17	17	0 to 300	0.5 sec
714	Fuser Motor 4th Speed (Roll / Plain paper / A0, 36” & 34”)	32	33	33	33	0 to 80	0.04mm/s
715	Switch Timing to Fuser Motor 4th Speed (Roll / Plain paper / A0, 36” & 34”)	20	20	20	20	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.178, 180, 182, 714.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.179, 181, 183, 715.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.56 Compensation of Fuser Motor Speed for roll paper (Tracing paper / A0, 36” & 34”) (No.184 to 189, 716, 717)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a tracing paper of A0, 36” and 34” sizes by roll paper feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
184	Fuser Motor 1st Speed (Roll / Tracing / A0, 36” & 34”)	32	36	36	36	0 to 80	0.04mm/s
185	Switch Timing to Fuser Motor 1st Speed (Roll / Tracing / A0, 36” & 34”)	3	3	3	3	0 to 300	0.5 sec
186	Fuser Motor 2nd Speed (Roll / Tracing / A0, 36” & 34”)	38	34	34	34	0 to 80	0.04mm/s
187	Switch Timing to Fuser Motor 2nd Speed (Roll / Tracing / A0, 36” & 34”)	13	13	13	13	0 to 300	0.5 sec
188	Fuser Motor 3rd Speed (Roll / Tracing / A0, 36” & 34”)	40	39	39	39	0 to 80	0.04mm/s
189	Switch Timing to Fuser Motor 3rd Speed (Roll / Tracing / A0, 36” & 34”)	8	8	8	8	0 to 300	0.5 sec
716	Fuser Motor 4th Speed (Roll / Tracing / A0, 36” & 34”)	34	40	40	40	0 to 80	0.04mm/s
717	Switch Timing to Fuser Motor 4th Speed (Roll / Tracing / A0, 36” & 34”)	20	0	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.184, 186, 188, 716.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.185, 187, 189, 717.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.57 Compensation of Fuser Motor Speed for roll paper (Film / A0, 36” & 34”) (No.190 to 195, 718, 719)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a film of A0, 36” and 34” sizes by roll paper feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
190	Fuser Motor 1st Speed (Roll / Film / A0, 36” & 34”)	35	38	38	38	0 to 80	0.04mm/s
191	Switch Timing to Fuser Motor 1st Speed (Roll / Film / A0, 36” & 34”)	2	2	2	2	0 to 300	0.5 sec
192	Fuser Motor 2nd Speed (Roll / Film / A0, 36” & 34”)	40	43	43	43	0 to 80	0.04mm/s
193	Switch Timing to Fuser Motor 2nd Speed (Roll / Film / A0, 36” & 34”)	18	18	18	18	0 to 300	0.5 sec
194	Fuser Motor 3rd Speed (Roll / Film / A0, 36” & 34”)	40	40	40	40	0 to 80	0.04mm/s
195	Switch Timing to Fuser Motor 3rd Speed (Roll / Film / A0, 36” & 34”)	0	0	0	0	0 to 300	0.5 sec
718	Fuser Motor 4th Speed (Roll / Film / A0, 36” & 34”)	40	40	40	40	0 to 80	0.04mm/s
719	Switch Timing to Fuser Motor 4th Speed (Roll / Film / A0, 36” & 34”)	0	0	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.190, 192, 194, 718.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.191, 193, 195, 719.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.58 Compensation of Fuser Motor Speed for roll paper (Special plain paper / A0, 36 & 34”) (No.196 to 201, 720, 721)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a plain paper (special media) of A0, 36” and 34” sizes by roll paper feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
196	Fuser Motor 1st Speed (Roll / Special plain paper / A0, 36” & 34”)	40	40	40	40	0 to 80	0.04mm/s
197	Switch Timing to Fuser Motor 1st Speed (Roll / Special plain paper / A0, 36” & 34”)	0	0	0	0	0 to 300	0.5 sec
198	Fuser Motor 2nd Speed (Roll / Special plain paper / A0, 36” & 34”)	40	40	40	40	0 to 80	0.04mm/s
199	Switch Timing to Fuser Motor 2nd Speed (Roll / Special plain paper / A0, 36” & 34”)	0	0	0	0	0 to 300	0.5 sec
200	Fuser Motor 3rd Speed (Roll / Special plain paper / A0, 36” & 34”)	40	40	40	40	0 to 80	0.04mm/s
201	Switch Timing to Fuser Motor 3rd Speed (Roll / Special plain paper / A0, 36” & 34”)	0	0	0	0	0 to 300	0.5 sec
720	Fuser Motor 4th Speed (Roll / Special plain paper / A0, 36” & 34”)	40	40	40	40	0 to 80	0.04mm/s
721	Switch Timing to Fuser Motor 4th Speed (Roll / Special plain paper / A0, 36” & 34”)	0	0	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.196, 198, 200, 720.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.197, 199, 201, 721.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.59 Compensation of Fuser Motor Speed for roll paper (Special tracing paper / A0, 36” & 34”) (No.202 to 207, 722, 723)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a tracing paper (special media) of A0, 36” and 34” size by roll paper feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
202	Fuser Motor 1st Speed (Roll / Special tracing / A0, 36” & 34”)	40	40	40	40	0 to 80	0.04mm/s
203	Switch Timing to Fuser Motor 1st Speed (Roll / Special tracing / A0, 36” & 34”)	0	0	0	0	0 to 300	0.5 sec
204	Fuser Motor 2nd Speed (Roll / Special tracing / A0, 36” & 34”)	40	40	40	40	0 to 80	0.04mm/s
205	Switch Timing to Fuser Motor 2nd Speed (Roll / Special tracing / A0, 36” & 34”)	0	0	0	0	0 to 300	0.5 sec
206	Fuser Motor 3rd Speed (Roll / Special tracing / A0, 36” & 34”)	40	40	40	40	0 to 80	0.04mm/s
207	Switch Timing to Fuser Motor 3rd Speed (Roll / Special tracing / A0, 36” & 34”)	0	0	0	0	0 to 300	0.5 sec
722	Fuser Motor 4th Speed (Roll / Special tracing / A0, 36” & 34”)	40	40	40	40	0 to 80	0.04mm/s
723	Switch Timing to Fuser Motor 4th Speed (Roll / Special tracing / A0, 36” & 34”)	0	0	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.202, 204, 206, 722.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.203, 205, 207, 723.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.60 Compensation of Fuser Motor Speed for roll paper (Special film / A0, 36” & 34”) (No.208 to 213, 724, 725)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a film (special media) of A0, 24” and 22” sizes by roll paper feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
208	Fuser Motor 1st Speed (Roll / Special film / A0, 36” & 34”)	40	40	40	40	0 to 80	0.04mm/s
209	Switch Timing to Fuser Motor 1st Speed (Roll / Special film / A0, 36” & 34”)	0	0	0	0	0 to 300	0.5 sec
210	Fuser Motor 2nd Speed (Roll / Special film / A0, 36” & 34”)	40	40	40	40	0 to 80	0.04mm/s
211	Switch Timing to Fuser Motor 2nd Speed (Roll / Special film / A0, 36” & 34”)	0	0	0	0	0 to 300	0.5 sec
212	Fuser Motor 3rd Speed (Roll / Special film / A0, 36” & 34”)	40	40	40	40	0 to 80	0.04mm/s
213	Switch Timing to Fuser Motor 3rd Speed (Roll / Special film / A0, 36” & 34”)	0	0	0	0	0 to 300	0.5 sec
724	Fuser Motor 4th Speed (Roll / Special film / A0, 36” & 34”)	40	40	40	40	0 to 80	0.04mm/s
725	Switch Timing to Fuser Motor 4th Speed (Roll / Special film / A0, 36” & 34”)	0	0	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.208, 210, 212, 724.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.209, 211, 213, 725.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.61 Main Motor Speed (No.310 to 315)

It is possible to adjust the speed of Main Motor for each type of paper separately.
If you increase the setting value by “+1”, the motor speed becomes 0.04mm/second faster.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
310	Main Motor Speed (Plain paper)	36	36	36	36	0 to 80	0.04mm/s
311	Main Motor Speed (Tracing paper)	40	40	40	40	0 to 80	0.04mm/s
312	Main Motor Speed (Film)	40	40	40	40	0 to 80	0.04mm/s
313	Main Motor Speed (Special plain paper)	40	40	40	40	0 to 80	0.04mm/s
314	Main Motor Speed (Special tracing paper)	40	40	40	40	0 to 80	0.04mm/s
315	Main Motor Speed (Special film)	40	40	40	40	0 to 80	0.04mm/s

⚠ CAUTION

The Main Motor Speed is the basis for many other print settings.
So you have to re-adjust all of these print settings if you change the Main Motor Speed.

8. 4. 3.62 Fuser Motor Speed (36” / 34” / 30” / 24” / 22” / A0 / B1 / A1) (No.316 to 321)

It is possible to adjust the speed of Fuser Motor for each type of paper separately.
If you increase the setting value by “+1”, the motor speed becomes 0.04mm/second faster.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
316	Fuser Motor Speed (36” / 34” / 30” / 24” / 22” / A0 / B1 / A1) (Plain)	33	35	35	35	0 to 80	0.04mm/s
317	Fuser Motor Speed (36” / 34” / 30” / 24” / 22” / A0 / B1 / A1) (Tracing)	39	55	55	55	0 to 80	0.04mm/s
318	Fuser Motor Speed (36” / 34” / 30” / 24” / 22” / A0 / B1 / A1) (Film)	50	50	50	50	0 to 80	0.04mm/s
319	Fuser Motor Speed (36” / 34” / 30” / 24” / 22” / A0 / B1 / A1) (Special plain)	40	40	40	40	0 to 80	0.04mm/s
320	Fuser Motor Speed (36” / 34” / 30” / 24” / 22” / A0 / B1 / A1) (Special tracing)	40	40	40	40	0 to 80	0.04mm/s
321	Fuser Motor Speed (36” / 34” / 30” / 24” / 22” / A0 / B1 / A1) (Special film)	40	40	40	40	0 to 80	0.04mm/s

Refer to [8. 4. 3.117 Fuser Motor Speed] for narrower originals than the above.

8. 4. 3.63 Separation Corona OFF Timing (No.322 to 327)

It is possible to adjust the timing that the Separation Corona stops discharging during the print cycle.
You can specify the timing for each type of paper separately.
If you increase the setting value by “+1”, the timing to start discharging is 1mm delayed.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
322	Separation Corona OFF Timing (Plain paper)	25	25	25	25	0 to 100	1mm
323	Separation Corona OFF Timing (tracing paper)	25	25	25	25	0 to 100	1mm
324	Separation Corona OFF Timing (Film)	22	25	25	25	0 to 100	1mm
325	Separation Corona OFF Timing (Special plain paper)	18	18	18	18	0 to 100	1mm
326	Separation Corona OFF Timing (Special tracing paper)	18	18	18	18	0 to 100	1mm
327	Separation Corona OFF Timing (Special film)	23	23	23	23	0 to 100	1mm

8. 4. 3.64 Compensation of Fuser Motor Speed for cut sheet paper (Plain paper / A3, A2, 12”, 11”, 18” & 17”) (No.328 to 333)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a plain paper of A2, 18” and 17” sizes by cut sheet bypass feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
328	Fuser Motor 1st Speed (Cut sheet / Plain paper / A3, A2, 12”, 11”, 18” & 17”)	30	31	31	31	0 to 80	0.04mm/s
329	Switch Timing to Fuser Motor 1st Speed (Cut sheet / Plain paper / A3, A2, 12”, 11”, 18” & 17”)	3	3	3	3	0 to 300	0.5 sec
330	Fuser Motor 2nd Speed (Cut sheet / Plain paper / A3, A2, 12”, 11”, 18” & 17”)	32	36	36	36	0 to 80	0.04mm/s
331	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / Plain paper / A3, A2, 12”, 11”, 18” & 17”)	4	4	4	4	0 to 300	0.5 sec
332	Fuser Motor 3rd Speed (Cut sheet / Plain paper / A3, A2, 12”, 11”, 18” & 17”)	31	38	38	38	0 to 80	0.04mm/s
333	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / Plain paper / A3, A2, 12”, 11”, 18” & 17”)	6	6	6	6	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.328, 330 and 332.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.329, 331 and 333.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.65 Compensation of Fuser Motor Speed for cut sheet paper (Tracing paper / A3, A2, 12”, 11”, 18” & 17”) (No.334 to 339)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a tracing paper of A2, 18” and 17” sizes by cut sheet bypass feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
334	Fuser Motor 1st Speed (Cut sheet / Tracing / A3, A2, 12”, 11”, 18” & 17”)	33	40	40	40	0 to 80	0.04mm/s
335	Switch Timing to Fuser Motor 1st Speed (Cut sheet / Tracing / A3, A2, 12”, 11”, 18” & 17”)	2	1	1	1	0 to 300	0.5 sec
336	Fuser Motor 2nd Speed (Cut sheet / Tracing / A3, A2, 12”, 11”, 18” & 17”)	38	44	44	44	0 to 80	0.04mm/s
337	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / Tracing / A3, A2, 12”, 11”, 18” & 17”)	3	5	5	5	0 to 300	0.5 sec
338	Fuser Motor 3rd Speed (Cut sheet / Tracing / A3, A2, 12”, 11”, 18” & 17”)	38	45	45	45	0 to 80	0.04mm/s
339	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / Tracing / A3, A2, 12”, 11”, 18” & 17”)	5	2	2	2	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.334, 336 and 338.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.335, 337 and 339.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.66 Compensation of Fuser Motor Speed for cut sheet paper (Film / A3, A2, 12”, 11”, 18” & 17”) (No.340 to 345)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a film of A2, 18” and 17” sizes by cut sheet bypass feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
340	Fuser Motor 1st Speed (Cut sheet / Film / A3, A2, 12”, 11”, 18” & 17”)	50	50	50	50	0 to 80	0.04mm/s
341	Switch Timing to Fuser Motor 1st Speed (Cut sheet / Film / A3, A2, 12”, 11”, 18” & 17”)	2	6	6	6	0 to 300	0.5 sec
342	Fuser Motor 2nd Speed (Cut sheet / Film / A3, A2, 12”, 11”, 18” & 17”)	50	40	40	40	0 to 80	0.04mm/s
343	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / Film / A3, A2, 12”, 11”, 18” & 17”)	6	0	0	0	0 to 300	0.5 sec
344	Fuser Motor 3rd Speed (Cut sheet / Film / A3, A2, 12”, 11”, 18” & 17”)	40	40	40	40	0 to 80	0.04mm/s
345	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / Film / A3, A2, 12”, 11”, 18” & 17”)	0	0	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.340, 342 and 344.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.341, 343 and 345.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.67 Compensation of Fuser Motor Speed for cut sheet paper (Special plain paper / A3, A2, 12”, 11”, 18” & 17”) (No.346 to 351)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a plain paper (special media) of A2, 18” and 17” sizes by cut sheet bypass feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
346	Fuser Motor 1st Speed (Cut sheet / Special plain paper / A3, A2, 12”, 11”, 18” & 17”)	40	40	40	40	0 to 80	0.04mm/s
347	Switch Timing to Fuser Motor 1st Speed (Cut sheet / Special plain paper / A3, A2, 12”, 11”, 18” & 17”)	0	0	0	0	0 to 300	0.5 sec
348	Fuser Motor 2nd Speed (Cut sheet / Special plain paper / A3, A2, 12”, 11”, 18” & 17”)	40	40	40	40	0 to 80	0.04mm/s
349	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / Special plain paper / A3, A2, 12”, 11”, 18” & 17”)	0	0	0	0	0 to 300	0.5 sec
350	Fuser Motor 3rd Speed (Cut sheet / Special plain paper / A3, A2, 12”, 11”, 18” & 17”)	40	40	40	40	0 to 80	0.04mm/s
351	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / Special plain paper / A3, A2, 12”, 11”, 18” & 17”)	0	0	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.346, 348 and 350.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.347, 349 and 351.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.68 Compensation of Fuser Motor Speed for cut sheet paper (Special tracing paper / A3, A2, 12”, 11”, 18” & 17”) (No.352 to 357)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a tracing paper (special media) of A2, 18” and 17” size by cut sheet bypass feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
352	Fuser Motor 1st Speed (Cut sheet / Special tracing / A3, A2, 12”, 11”, 18” & 17”)	40	40	40	40	0 to 80	0.04mm/s
353	Switch Timing to Fuser Motor 1st Speed (Cut sheet / Special tracing / A3, A2, 12”, 11”, 18” & 17”)	0	0	0	0	0 to 300	0.5 sec
354	Fuser Motor 2nd Speed (Cut sheet / Special tracing / A3, A2, 12”, 11”, 18” & 17”)	40	40	40	40	0 to 80	0.04mm/s
355	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / Special tracing / A3, A2, 12”, 11”, 18” & 17”)	0	0	0	0	0 to 300	0.5 sec
356	Fuser Motor 3rd Speed (Cut sheet / Special tracing / A3, A2, 12”, 11”, 18” & 17”)	40	40	40	40	0 to 80	0.04mm/s
357	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / Special tracing / A3, A2, 12”, 11”, 18” & 17”)	0	0	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.352, 354 and 356.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.353, 355 and 357.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.69 Compensation of Fuser Motor Speed for cut sheet paper (Special film / A3, A2, 12”, 11”, 18” & 17”) (No.358 to 363)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a film (special media) of A2, 18” and 17” sizes by cut sheet bypass feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
358	Fuser Motor 1st Speed (Cut sheet / Special film / A3, A2, 12”, 11”, 18” & 17”)	40	40	40	40	0 to 80	0.04mm/s
359	Switch Timing to Fuser Motor 1st Speed (Cut sheet / Special film / A3, A2, 12”, 11”, 18” & 17”)	0	0	0	0	0 to 300	0.5 sec
360	Fuser Motor 2nd Speed (Cut sheet / Special film / A3, A2, 12”, 11”, 18” & 17”)	40	40	40	40	0 to 80	0.04mm/s
361	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / Special film / A3, A2, 12”, 11”, 18” & 17”)	0	0	0	0	0 to 300	0.5 sec
362	Fuser Motor 3rd Speed (Cut sheet / Special film / A3, A2, 12”, 11”, 18” & 17”)	40	40	40	40	0 to 80	0.04mm/s
363	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / Special film / A3, A2, 12”, 11”, 18” & 17”)	0	0	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.358, 360 and 362.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.359, 361 and 363.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.70 Compensation of Fuser Motor Speed for cut sheet paper (Plain paper / A1, 24” & 22”) (No.364 to 369)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a plain paper of A1, 24” and 22” sizes by cut sheet bypass feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
364	Fuser Motor 1st Speed (Cut sheet / Plain paper / A1, 24” & 22”)	37	35	35	35	0 to 80	0.04mm/s
365	Switch Timing to Fuser Motor 1st Speed (Cut sheet / Plain paper / A1, 24” & 22”)	3	3	3	3	0 to 300	0.5 sec
366	Fuser Motor 2nd Speed (Cut sheet / Plain paper / A1, 24” & 22”)	30	33	33	33	0 to 80	0.04mm/s
367	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / Plain paper / A1, 24” & 22”)	6	8	8	8	0 to 300	0.5 sec
368	Fuser Motor 3rd Speed (Cut sheet / Plain paper / A1, 24” & 22”)	40	41	41	41	0 to 80	0.04mm/s
369	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / Plain paper / A1, 24” & 22”)	6	8	8	8	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.364, 366 and 368.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.365, 367 and 369.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.71 Compensation of Fuser Motor Speed for cut sheet paper (Tracing paper / A1, 24” & 22”) (No.370 to 375)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a tracing paper of A1, 24” and 22” sizes by cut sheet bypass feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
370	Fuser Motor 1st Speed (Cut sheet / Tracing / A1, 24” & 22”)	36	42	42	42	0 to 80	0.04mm/s
371	Switch Timing to Fuser Motor 1st Speed (Cut sheet / Tracing / A1, 24” & 22”)	3	3	3	3	0 to 300	0.5 sec
372	Fuser Motor 2nd Speed (Cut sheet / Tracing / A1, 24” & 22”)	41	43	43	43	0 to 80	0.04mm/s
373	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / Tracing / A1, 24” & 22”)	9	9	9	9	0 to 300	0.5 sec
374	Fuser Motor 3rd Speed (Cut sheet / Tracing / A1, 24” & 22”)	39	40	40	40	0 to 80	0.04mm/s
375	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / Tracing / A1, 24” & 22”)	8	8	8	8	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.370, 372 and 374.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.371, 373 and 375.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.72 Compensation of Fuser Motor Speed for cut sheet paper (Film / A1, 24” & 22”) (No.376 to 381)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a film of A1, 24” and 22” sizes by cut sheet bypass feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
376	Fuser Motor 1st Speed (Cut sheet / Film / A1, 24” & 22”)	42	42	42	42	0 to 80	0.04mm/s
377	Switch Timing to Fuser Motor 1st Speed (Cut sheet / Film / A1, 24” & 22”)	2	2	2	2	0 to 300	0.5 sec
378	Fuser Motor 2nd Speed (Cut sheet / Film / A1, 24” & 22”)	42	42	42	42	0 to 80	0.04mm/s
379	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / Film / A1, 24” & 22”)	14	14	14	14	0 to 300	0.5 sec
380	Fuser Motor 3rd Speed (Cut sheet / Film / A1, 24” & 22”)	40	40	40	40	0 to 80	0.04mm/s
381	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / Film / A1, 24” & 22”)	0	0	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.376, 378 and 380.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.377, 379 and 381.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.73 Compensation of Fuser Motor Speed for cut sheet paper (Special plain paper / A1, 24” & 22”) (No.382 to 387)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a plain paper (special media) of A1, 24” and 22” sizes by cut sheet bypass feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
382	Fuser Motor 1st Speed (Cut sheet / Special plain paper / A1, 24” & 22”)	40	40	40	40	0 to 80	0.04mm/s
383	Switch Timing to Fuser Motor 1st Speed (Cut sheet / Special plain paper / A1, 24” & 22”)	0	0	0	0	0 to 300	0.5 sec
384	Fuser Motor 2nd Speed (Cut sheet / Special plain paper / A1, 24” & 22”)	40	40	40	40	0 to 80	0.04mm/s
385	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / Special plain paper / A1, 24” & 22”)	0	0	0	0	0 to 300	0.5 sec
386	Fuser Motor 3rd Speed (Cut sheet / Special plain paper / A1, 24” & 22”)	40	40	40	40	0 to 80	0.04mm/s
387	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / Special plain paper / A1, 24” & 22”)	0	0	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.382, 384 and 386.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.383, 385 and 387.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.74 Compensation of Fuser Motor Speed for cut sheet paper (Special tracing paper / A1, 24” & 22”) (No.388 to 393)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a tracing paper (special media) of A1, 24” and 22” size by cut sheet bypass feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
388	Fuser Motor 1st Speed (Cut sheet / Special tracing / A1, 24” & 22”)	40	40	40	40	0 to 80	0.04mm/s
389	Switch Timing to Fuser Motor 1st Speed (Cut sheet / Special tracing / A1, 24” & 22”)	0	0	0	0	0 to 300	0.5 sec
390	Fuser Motor 2nd Speed (Cut sheet / Special tracing / A1, 24” & 22”)	40	40	40	40	0 to 80	0.04mm/s
391	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / Special tracing / A1, 24” & 22”)	0	0	0	0	0 to 300	0.5 sec
392	Fuser Motor 3rd Speed (Cut sheet / Special tracing / A1, 24” & 22”)	40	40	40	40	0 to 80	0.04mm/s
393	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / Special tracing / A1, 24” & 22”)	0	0	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.388, 390 and 392.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.389, 391 and 393.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.75 Compensation of Fuser Motor Speed for cut sheet paper (Special film / A1, 24” & 22”) (No.394 to 399)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a film (special media) of A1, 24” and 22” sizes by cut sheet bypass feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
394	Fuser Motor 1st Speed (Cut sheet / Special film / A1, 24” & 22”)	40	40	40	40	0 to 80	0.04mm/s
395	Switch Timing to Fuser Motor 1st Speed (Cut sheet / Special film / A1, 24” & 22”)	0	0	0	0	0 to 300	0.5 sec
396	Fuser Motor 2nd Speed (Cut sheet / Special film / A1, 24” & 22”)	40	40	40	40	0 to 80	0.04mm/s
397	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / Special film / A1, 24” & 22”)	0	0	0	0	0 to 300	0.5 sec
398	Fuser Motor 3rd Speed (Cut sheet / Special film / A1, 24” & 22”)	40	40	40	40	0 to 80	0.04mm/s
399	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / Special film / A1, 24” & 22”)	0	0	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.394, 396 and 398.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.395, 397 and 399.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.76 Compensation of Fuser Motor Speed for cut sheet paper (Plain paper / A0, 36” & 34”) (No.400 to 405)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a plain paper of A0, 36” and 34” sizes by cut sheet bypass feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
400	Fuser Motor 1st Speed (Cut sheet / Plain paper / A0, 36” & 34”)	26	26	26	26	0 to 80	0.04mm/s
401	Switch Timing to Fuser Motor 1st Speed (Cut sheet / Plain paper / A0, 36” & 34”)	4	3	3	3	0 to 300	0.5 sec
402	Fuser Motor 2nd Speed (Cut sheet / Plain paper / A0, 36” & 34”)	27	27	27	27	0 to 80	0.04mm/s
403	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / Plain paper / A0, 36” & 34”)	10	10	10	10	0 to 300	0.5 sec
404	Fuser Motor 3rd Speed (Cut sheet / Plain paper / A0, 36” & 34”)	33	37	37	37	0 to 80	0.04mm/s
405	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / Plain paper / A0, 36” & 34”)	8	8	8	8	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.400, 402 and 404.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.401, 403 and 405.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.77 Compensation of Fuser Motor Speed for cut sheet paper (Tracing paper / A0, 36” & 34”) (No.406 to 411)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a tracing paper of A0, 36” and 34” sizes by cut sheet bypass feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
406	Fuser Motor 1st Speed (Cut sheet / Tracing / A0, 36” & 34”)	29	42	42	42	0 to 80	0.04mm/s
407	Switch Timing to Fuser Motor 1st Speed (Cut sheet / Tracing / A0, 36” & 34”)	3	3	3	3	0 to 300	0.5 sec
408	Fuser Motor 2nd Speed (Cut sheet / Tracing / A0, 36” & 34”)	35	38	38	38	0 to 80	0.04mm/s
409	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / Tracing / A0, 36” & 34”)	13	13	13	13	0 to 300	0.5 sec
410	Fuser Motor 3rd Speed (Cut sheet / Tracing / A0, 36” & 34”)	36	39	39	39	0 to 80	0.04mm/s
411	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / Tracing / A0, 36” & 34”)	8	8	8	8	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.406, 408 and 410.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.407, 409 and 411.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.78 Compensation of Fuser Motor Speed for cut sheet paper (Film / A0, 36” & 34”) (No.412 to 417)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a film of A0, 36” and 34” sizes by cut sheet bypass feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
412	Fuser Motor 1st Speed (Cut sheet / Film / A0, 36” & 34”)	35	38	38	38	0 to 80	0.04mm/s
413	Switch Timing to Fuser Motor 1st Speed (Cut sheet / Film / A0, 36” & 34”)	2	2	2	2	0 to 300	0.5 sec
414	Fuser Motor 2nd Speed (Cut sheet / Film / A0, 36” & 34”)	42	42	42	42	0 to 80	0.04mm/s
415	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / Film / A0, 36” & 34”)	18	18	18	18	0 to 300	0.5 sec
416	Fuser Motor 3rd Speed (Cut sheet / Film / A0, 36” & 34”)	40	40	40	40	0 to 80	0.04mm/s
417	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / Film / A0, 36” & 34”)	0	0	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.412, 414 and 416.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.413, 415 and 417.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.79 Compensation of Fuser Motor Speed for cut sheet paper (Special plain paper / A0, 36 & 34”) (No.418 to 423)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a plain paper (special media) of A0, 36” and 34” sizes by cut sheet bypass feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
418	Fuser Motor 1st Speed (Cut sheet / Special plain paper / A0, 36” & 34”)	40	40	40	40	0 to 80	0.04mm/s
419	Switch Timing to Fuser Motor 1st Speed (Cut sheet / Special plain paper / A0, 36” & 34”)	0	0	0	0	0 to 300	0.5 sec
420	Fuser Motor 2nd Speed (Cut sheet / Special plain paper / A0, 36” & 34”)	40	40	40	40	0 to 80	0.04mm/s
421	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / Special plain paper / A0, 36” & 34”)	0	0	0	0	0 to 300	0.5 sec
422	Fuser Motor 3rd Speed (Cut sheet / Special plain paper / A0, 36” & 34”)	40	40	40	40	0 to 80	0.04mm/s
423	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / Special plain paper / A0, 36” & 34”)	0	0	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.418, 420 and 422.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.419, 421 and 423.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.80 Compensation of Fuser Motor Speed for cut sheet paper (Special tracing paper / A0, 36” & 34”) (No.424 to 429)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a tracing paper (special media) of A0, 36” and 34” size by cut sheet bypass feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA				
424	Fuser Motor 1st Speed (Cut sheet / Special tracing / A0, 36” & 34”)	40	40	40	40	0 to 80	0.04mm/s
425	Switch Timing to Fuser Motor 1st Speed (Cut sheet / Special tracing / A0, 36” & 34”)	0	0	0	0	0 to 300	0.5 sec
426	Fuser Motor 2nd Speed (Cut sheet / Special tracing / A0, 36” & 34”)	40	40	40	40	0 to 80	0.04mm/s
427	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / Special tracing / A0, 36” & 34”)	0	0	0	0	0 to 300	0.5 sec
428	Fuser Motor 3rd Speed (Cut sheet / Special tracing / A0, 36” & 34”)	40	40	40	40	0 to 80	0.04mm/s
429	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / Special tracing / A0, 36” & 34”)	0	0	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.424, 426 and 428.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.425, 427 and 429.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.81 Compensation of Fuser Motor Speed for cut sheet paper (Special film / A0, 36” & 34”) (No.430 to 435)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a film (special media) of A0, 24” and 22” sizes by cut sheet bypass feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
430	Fuser Motor 1st Speed (Cut sheet / Special film / A0, 36” & 34”)	40	40	40	40	0 to 80	0.04mm/s
431	Switch Timing to Fuser Motor 1st Speed (Cut sheet / Special film / A0, 36” & 34”)	0	0	0	0	0 to 300	0.5 sec
432	Fuser Motor 2nd Speed (Cut sheet / Special film / A0, 36” & 34”)	40	40	40	40	0 to 80	0.04mm/s
433	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / Special film / A0, 36” & 34”)	0	0	0	0	0 to 300	0.5 sec
434	Fuser Motor 3rd Speed (Cut sheet / Special film / A0, 36” & 34”)	40	40	40	40	0 to 80	0.04mm/s
435	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / Special film / A0, 36” & 34”)	0	0	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.430, 432 and 434.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.431, 433 and 435.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.82 Compensation of Fuser Motor Speed for roll paper (Plain paper / 30”) (No.436 to 441, 726, 727)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a plain paper of 30” size by roll paper feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
436	Fuser Motor 1st Speed (Roll / plain paper / 30”)	29	28	28	28	0 to 80	0.04mm/s
437	Switch Timing to Fuser Motor 1st Speed (Roll / plain paper / 30”)	5	5	5	5	0 to 300	0.5 sec
438	Fuser Motor 2nd Speed (Roll / plain paper / 30”)	32	33	33	33	0 to 80	0.04mm/s
439	Switch Timing to Fuser Motor 2nd Speed (Roll / plain paper / 30”)	11	9	9	9	0 to 300	0.5 sec
440	Fuser Motor 3rd Speed (Roll / plain paper / 30”)	37	36	36	36	0 to 80	0.04mm/s
441	Switch Timing to Fuser Motor 3rd Speed (Roll / plain paper / 30”)	7	7	7	7	0 to 300	0.5 sec
726	Fuser Motor 4th Speed (Roll / plain paper / 30”)	32	30	30	30	0 to 80	0.04mm/s
727	Switch Timing to Fuser Motor 4th Speed (Roll / plain paper / 30”)	20	20	20	20	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.436, 438, 440, 726.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.437, 439, 441, 727.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.83 Compensation of Fuser Motor Speed for roll paper (Tracing paper / 30”) (No.442 to 447, 728, 729)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a tracing paper of 30” size by roll paper feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
442	Fuser Motor 1st Speed (Roll / tracing / 30”)	34	33	33	33	0 to 80	0.04mm/s
443	Switch Timing to Fuser Motor 1st Speed (Roll / tracing / 30”)	4	4	4	4	0 to 300	0.5 sec
444	Fuser Motor 2nd Speed (Roll / tracing / 30”)	38	44	44	44	0 to 80	0.04mm/s
445	Switch Timing to Fuser Motor 2nd Speed (Roll / tracing / 30”)	11	11	11	11	0 to 300	0.5 sec
446	Fuser Motor 3rd Speed (Roll / tracing / 30”)	40	41	41	41	0 to 80	0.04mm/s
447	Switch Timing to Fuser Motor 3rd Speed (Roll / tracing / 30”)	8	8	8	8	0 to 300	0.5 sec
728	Fuser Motor 4th Speed (Roll / tracing / 30”)	40	40	40	40	0 to 80	0.04mm/s
729	Switch Timing to Fuser Motor 4th Speed (Roll / tracing / 30”)	0	0	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.442, 444, 446, 728.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.443, 445, 447, 729.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.84 Compensation of Fuser Motor Speed for roll paper (Film / 30”) (No.448 to 453, 730, 731)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a film of 30” size by roll paper feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
448	Fuser Motor 1st Speed (Roll / film / 30”)	40	40	40	40	0 to 80	0.04mm/s
449	Switch Timing to Fuser Motor 1st Speed (Roll / film / 30”)	0	0	0	0	0 to 300	0.5 sec
450	Fuser Motor 2nd Speed (Roll / film / 30”)	40	40	40	40	0 to 80	0.04mm/s
451	Switch Timing to Fuser Motor 2nd Speed (Roll / film / 30”)	0	0	0	0	0 to 300	0.5 sec
452	Fuser Motor 3rd Speed (Roll / film / 30”)	40	40	40	40	0 to 80	0.04mm/s
453	Switch Timing to Fuser Motor 3rd Speed (Roll / film / 30”)	0	0	0	0	0 to 300	0.5 sec
730	Fuser Motor 4th Speed (Roll / film / 30”)	40	40	40	40	0 to 80	0.04mm/s
731	Switch Timing to Fuser Motor 4th Speed (Roll / film / 30”)	0	0	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.448, 450, 452, 730.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.449, 451, 453, 731.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.85 Compensation of Fuser Motor Speed for roll paper (Special plain paper / 30”) (No.454 to 459, 732, 733)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a plain paper (special media) of 30” size by roll paper feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA				
454	Fuser Motor 1st Speed (Roll / special plain paper / 30”)	40	40	40	40	0 to 80	0.04mm/s
455	Switch Timing to Fuser Motor 1st Speed (Roll / special plain paper / 30”)	0	0	0	0	0 to 300	0.5 sec
456	Fuser Motor 2nd Speed (Roll / special plain paper / 30”)	40	40	40	40	0 to 80	0.04mm/s
457	Switch Timing to Fuser Motor 2nd Speed (Roll / special plain paper / 30”)	0	0	0	0	0 to 300	0.5 sec
458	Fuser Motor 3rd Speed (Roll / special plain paper / 30”)	40	40	40	40	0 to 80	0.04mm/s
459	Switch Timing to Fuser Motor 3rd Speed (Roll / special plain paper / 30”)	0	0	0	0	0 to 300	0.5 sec
732	Fuser Motor 4th Speed (Roll / special plain paper / 30”)	40	40	40	40	0 to 80	0.04mm/s
733	Switch Timing to Fuser Motor 4th Speed (Roll / special plain paper / 30”)	0	0	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.454, 456, 458, 732.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.455, 457, 459, 733.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.86 Compensation of Fuser Motor Speed for roll paper (Special tracing paper / 30”) (No.460 to 465, 734, 735)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a tracing paper (special media) of 30” size by roll paper feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
460	Fuser Motor 1st Speed (Roll / special tracing / 30”)	40	40	40	40	0 to 80	0.04mm/s
461	Switch Timing to Fuser Motor 1st Speed (Roll / special tracing / 30”)	0	0	0	0	0 to 300	0.5 sec
462	Fuser Motor 2nd Speed (Roll / special tracing / 30”)	40	40	40	40	0 to 80	0.04mm/s
463	Switch Timing to Fuser Motor 2nd Speed (Roll / special tracing / 30”)	0	0	0	0	0 to 300	0.5 sec
464	Fuser Motor 3rd Speed (Roll / special tracing / 30”)	40	40	40	40	0 to 80	0.04mm/s
465	Switch Timing to Fuser Motor 3rd Speed (Roll / special tracing / 30”)	0	0	0	0	0 to 300	0.5 sec
734	Fuser Motor 4th Speed (Roll / special tracing / 30”)	40	40	40	40	0 to 80	0.04mm/s
735	Switch Timing to Fuser Motor 4th Speed (Roll / special tracing / 30”)	0	0	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.460, 462, 464, 734.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.461, 463, 465, 735.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.87 Compensation of Fuser Motor Speed for roll paper (Special film / 30”) (No.466 to 471, 736, 737)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a film (special media) of 30” size by roll paper feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
466	Fuser Motor 1st Speed (Roll / special film / 30”)	40	40	40	40	0 to 80	0.04mm/s
467	Switch Timing to Fuser Motor 1st Speed (Roll / special film / 30”)	0	0	0	0	0 to 300	0.5 sec
468	Fuser Motor 2nd Speed (Roll / special film / 30”)	40	40	40	40	0 to 80	0.04mm/s
469	Switch Timing to Fuser Motor 2nd Speed (Roll / special film / 30”)	0	0	0	0	0 to 300	0.5 sec
470	Fuser Motor 3rd Speed (Roll / special film / 30”)	40	40	40	40	0 to 80	0.04mm/s
471	Switch Timing to Fuser Motor 3rd Speed (Roll / special film / 30”)	0	0	0	0	0 to 300	0.5 sec
736	Fuser Motor 4th Speed (Roll / special film / 30”)	40	40	40	40	0 to 80	0.04mm/s
737	Switch Timing to Fuser Motor 4th Speed (Roll / special film / 30”)	0	0	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.466, 468, 470, 736.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.467, 469, 471, 737.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.88 Compensation of Fuser Motor Speed for cut sheet paper (Plain paper / 30”) (No.472 to 477)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a plain paper of 30” size by cut sheet bypass feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
472	Fuser Motor 1st Speed (Cut sheet / plain paper / 30”)	28	28	28	28	0 to 80	0.04mm/s
473	Switch Timing to Fuser Motor 1st Speed (Cut sheet / plain paper / 30”)	5	5	5	5	0 to 300	0.5 sec
474	Fuser Motor 2nd Speed (Cut sheet / plain paper / 30”)	30	33	33	33	0 to 80	0.04mm/s
475	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / plain paper / 30”)	9	9	9	9	0 to 300	0.5 sec
476	Fuser Motor 3rd Speed (Cut sheet / plain paper / 30”)	34	36	36	36	0 to 80	0.04mm/s
477	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / plain paper / 30”)	7	7	7	7	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.472, 474 and 476.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.473, 475 and 477.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.89 Compensation of Fuser Motor Speed for cut sheet paper (Tracing paper / 30”) (No.478 to 483)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a tracing paper of 30” size by cut sheet bypass feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
478	Fuser Motor 1st Speed (Cut sheet / tracing / 30”)	34	33	33	33	0 to 80	0.04mm/s
479	Switch Timing to Fuser Motor 1st Speed (Cut sheet / tracing / 30”)	4	4	4	4	0 to 300	0.5 sec
480	Fuser Motor 2nd Speed (Cut sheet / tracing / 30”)	38	44	44	44	0 to 80	0.04mm/s
481	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / tracing / 30”)	11	11	11	11	0 to 300	0.5 sec
482	Fuser Motor 3rd Speed (Cut sheet / tracing / 30”)	40	41	41	41	0 to 80	0.04mm/s
483	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / tracing / 30”)	8	8	8	8	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.478, 480 and 482.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.479, 481 and 483.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.90 Compensation of Fuser Motor Speed for cut sheet paper (Film / 30”) (No.484 to 489)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a film of 30” size by cut sheet bypass feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
484	Fuser Motor 1st Speed (Cut sheet / film / 30”)	40	40	40	40	0 to 80	0.04mm/s
485	Switch Timing to Fuser Motor 1st Speed (Cut sheet / film / 30”)	0	0	0	0	0 to 300	0.5 sec
486	Fuser Motor 2nd Speed (Cut sheet / film / 30”)	40	40	40	40	0 to 80	0.04mm/s
487	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / film / 30”)	0	0	0	0	0 to 300	0.5 sec
488	Fuser Motor 3rd Speed (Cut sheet / film / 30”)	40	40	40	40	0 to 80	0.04mm/s
489	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / film / 30”)	0	0	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.484, 486 and 488.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.48. 6. 387 and 489.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.91 Compensation of Fuser Motor Speed for cut sheet paper (Special plain paper / 30”) (No.490 to 495)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a plain paper (special media) of 30” size by cut sheet bypass feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
490	Fuser Motor 1st Speed (Cutsheet / special plain paper / 30”)	40	40	40	40	0 to 80	0.04mm/s
491	Switch Timing to Fuser Motor 1st Speed (Cutsheet / special plain paper / 30”)	0	0	0	0	0 to 300	0.5 sec
492	Fuser Motor 2nd Speed (Cutsheet / special plain paper / 30”)	40	40	40	40	0 to 80	0.04mm/s
493	Switch Timing to Fuser Motor 2nd Speed (Cutsheet / special plain paper / 30”)	0	0	0	0	0 to 300	0.5 sec
494	Fuser Motor 3rd Speed (Cutsheet / special plain paper / 30”)	40	40	40	40	0 to 80	0.04mm/s
495	Switch Timing to Fuser Motor 3rd Speed (Cutsheet / special plain paper / 30”)	0	0	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.490, 492 and 494.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.491, 493 and 495.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.92 Compensation of Fuser Motor Speed for cut sheet paper (Special tracing paper / 30”) (No.496 to 501)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a tracing paper (special media) of 30” size by cut sheet bypass feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
496	Fuser Motor 1st Speed (Cut sheet / special tracing / 30”)	40	40	40	40	0 to 80	0.04mm/s
497	Switch Timing to Fuser Motor 1st Speed (Cut sheet / special tracing / 30”)	0	0	0	0	0 to 300	0.5 sec
498	Fuser Motor 2nd Speed (Cut sheet / special tracing / 30”)	40	40	40	40	0 to 80	0.04mm/s
499	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / special tracing / 30”)	0	0	0	0	0 to 300	0.5 sec
500	Fuser Motor 3rd Speed (Cut sheet / special tracing / 30”)	40	40	40	40	0 to 80	0.04mm/s
501	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / special tracing / 30”)	0	0	0	0	0 to 300	0.5 sec

You can specify Fuser Motor 1st Speed, 2nd, 3rd in each Item No.496, 498 and 500.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.497, 499 and 501.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.93 Compensation of Fuser Motor Speed for cut sheet paper (Special film / 30”) (No.502 to 507)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a film (special media) of 30” size by cut sheet bypass feeding.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
502	Fuser Motor 1st Speed (Cut sheet / special film / 30”)	40	40	40	40	0 to 80	0.04mm/s
503	Switch Timing to Fuser Motor 1st Speed (Cut sheet / special film / 30”)	0	0	0	0	0 to 300	0.5 sec
504	Fuser Motor 2nd Speed (Cut sheet / special film / 30”)	40	40	40	40	0 to 80	0.04mm/s
505	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / special film / 30”)	0	0	0	0	0 to 300	0.5 sec
506	Fuser Motor 3rd Speed Cut sheet / special film / 30”)	40	40	40	40	0 to 80	0.04mm/s
507	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / special film / 30”)	0	0	0	0	0 to 300	0.5 sec

You can specify Fuser Motor 1st Speed, 2nd, 3rd in each Item No.502, 504 and 506.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.503, 505 and 507.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8. 4.5.37 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 4. 3.94 Transfer Voltage applied at 100mm from trailing edge (Plain paper / Tracing paper / Film) (No.508 to 510)

It is possible to adjust the analog voltage to Transfer Corona on 100mm end of a print.
This section does not function and is reserved for future update.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ ASIA	CN	CND		
508	Transfer Voltage applied at 100mm from trailing edge (Plain)	3FF	3FF	3FF	3FF	0 to 7FE	Hexadecimal
509	Transfer Voltage applied at 100mm from trailing edge (Tracing)	3FF	3FF	3FF	3FF	0 to 7FE	Hexadecimal
510	Transfer Voltage applied at 100mm from trailing edge (Film)	3FF	3FF	3FF	3FF	0 to 7FE	Hexadecimal

8. 4. 3.95 Transfer Voltage applied at 70mm from trailing edge (Plain paper / Tracing paper / Film) (No.511 to 513)

It is possible to adjust the analog voltage to Transfer Corona on 70mm end of a print.
A setting combination among No.511 to No.516 can reduce ghost images on the bottom area of a print in some cases.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ ASIA	CN	CND		
511	Transfer Voltage applied at 70mm from trailing edge (Plain)	4BC	4BC	4BC	4BC	0 to 7FE	Hexadecimal
512	Transfer Voltage applied at 70mm from trailing edge (Tracing)	592	592	592	592	0 to 7FE	Hexadecimal
513	Transfer Voltage applied at 70mm from trailing edge (Film)	3FF	3FF	3FF	3FF	0 to 7FE	Hexadecimal

8. 4. 3.96 Fuser Motor Speed applied at 30mm from trailing edge (Plain paper / Tracing paper / Film) (No.514 to 516)

It is possible to adjust the speed of Fuser Motor driving on 30mm end of a print.
A setting combination among No.511 to No.516 can reduce ghost images on the bottom area of a print in some cases.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ ASIA	CN	CND		
514	Fuser Motor Speed applied at 30mm from trailing edge (Plain)	13	13	13	13	0 to 80	0.04mm/s
515	Fuser Motor Speed applied at 30mm from trailing edge (Tracing)	19	8	8	8	0 to 80	0.04mm/s
516	Fuser Motor Speed applied at 30mm from trailing edge (Film)	0	0	0	0	0 to 80	0.04mm/s

8. 4. 3.97 Judgment value for Additional Cut Length for Non-standard Size Prints (No.613 to 616)

It is possible to avoid the lack of trailing image on the non-standard size print, by providing additional paper length by service modes 4-617 to 4-620 (Additional Cut Length for non-standard size print).

Additional Cut Length specified by service mode 4-617 to 4-620 is not always provided.

Whether or not it is provided is judged by service mode 4-613 to 4-616 (Judgment value for "Additional Cut Length for non-standard size print".)

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
613	Judgment value for Additional Cut Length for Non-standard Size Prints (36"/ 34"/ 30"/ A0 / B1)	1	1	1	1	1 to 20	1mm
614	Judgment value for Additional Cut Length for Non-standard Size Prints (24"/ 20"/ A1)	1	1	1	1	1 to 20	1mm
615	Judgment value for Additional Cut Length for Non-standard Size Prints (18"/ 17"/ 15"/ A2)	1	1	1	1	1 to 20	1mm
616	Judgment value for Additional Cut Length for Non-standard Size Prints (12"/ 11"/ A3)	1	1	1	1	1 to 20	1mm

Reference

(1) Which Judgement Value / Additional Cut Length setting is applied to a non-standard size print depends on the corresponding roll width.

Roll Width	Standard Size	Standard Cut Length	Judgement Value	Additional Length
36"	36"x48"	1219mm	No.613	No.617
841mm	A0	1189mm		
34"	34"x44"	1118mm		
30"	30"x42"	1067mm		
728mm	B1	1030mm		
24"	24"x36"	914mm	No.614	No.618
22"	22"x34"	864mm		
594mm	A1	841mm		
18"	18"x24"	610mm	No.615	No.619
420mm	A2	594mm		
17"	17"x22"	559mm		
15"	15"x21"	533mm		
12"	12"x18"	457mm	No.616	No.620
11"	11"x17"	432mm		
297mm	A3	420mm		

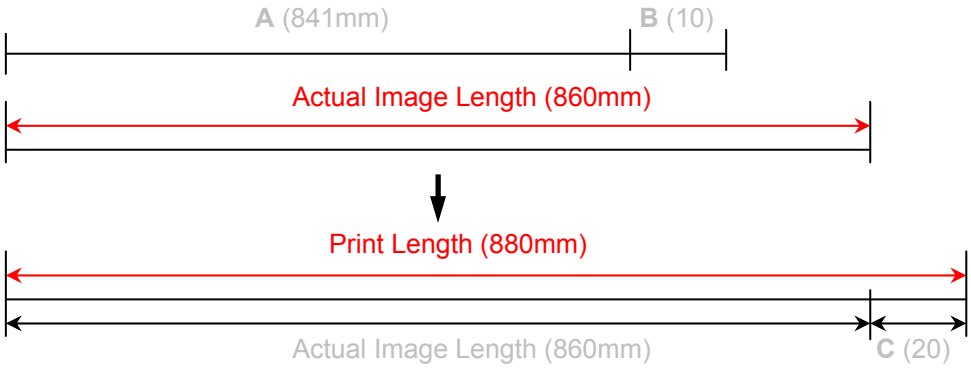
(next page)

Reference

(2) If the actual image length is longer than (or equal to) “A+B”, “C” is provided to the trailing edge of non-standard size print.

A: Standard Cut Length (depends on roll width)
B: Value of “Judgement Value for “Additional Cut Length for Non-standard Size Prints”
C: Value of “Additional Cut Length for Non-standard Size Prints”

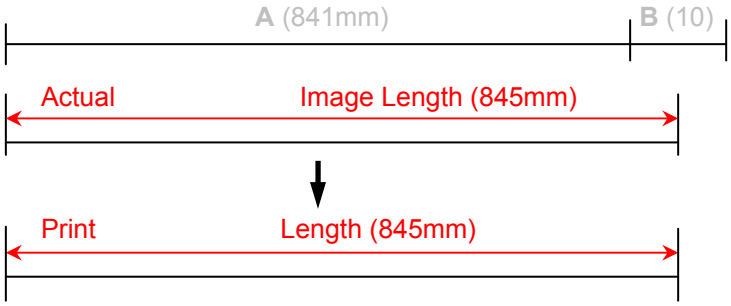
<Example> Actual Image Length: 860mm
A: 841mm (A1 roll width)
B: 10
C: 20



(3) If the actual image length is shorter than “A+B”, the print is cut as long as the actual image length. (“C” is not provided to the trailing edge of the print.)

A: Standard Cut Length (depends on roll width)
B: Value of “Judgement Value for “Additional Cut Length for Non-standard Size Prints”
C: Value of “Additional Cut Length for Non-standard Size Prints”

<Example> Actual Image Length: 845mm
A: 841mm (A1 roll width)
B: 10
C: 20



8. 4. 3.98 Additional Cut Length for Non-standard Size Prints (No.617 to 620)

It is possible to avoid the lack of trailing image on the non-standard size print, by providing additional paper length by service modes 4-617 to 4-620 (Additional Cut Length for non-standard size print).

Additional Cut Length specified by service mode 4-617 to 4-620 is not always provided.

Whether or not it is provided is judged by service mode 4-613 to 4-616 (Judgment value for "Additional Cut Length for non-standard size print".)

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
617	Additional Cut Length for Non-standard Size Prints (36"/ 34"/ 30"/ A0 / B1)	0	0	0	0	0 to 35	1mm
618	Additional Cut Length for Non-standard Size Prints (24"/ 22"/ A2)	0	0	0	0	0 to 35	1mm
619	Additional Cut Length for Non-standard Size Prints (18"/ 17"/ 15"/ A2)	0	0	0	0	0 to 35	1mm
620	Additional Cut Length for Non-standard Size Prints (12"/ 11"/ A3)	0	0	0	0	0 to 35	1mm

Refer to [8. 4.3.97 Judgement value for Additional Cut Length for Non-standard Size Prints (Service mode 613 to 616)].

8. 4. 3. 99 Toner Supply Roller Bias (No.621)

It is possible to make bias adjustment for Toner Supply Roller.

Default Value	Setting Range	Step of increment
d0	000 to 3FF	Hexadecimal

⚠ NOTE

This setting does not function. Change of this setting has no effect on the machine operation.

8. 4. 3. 100 Regulation Bias (No.622)

It is possible to make the print density darker or lighter by adjusting Regulation Bias (Center). The print density becomes darker if you increase the setting value.

Default Value	Setting Range	Step of increment
dE	000 to 3FF	Hexadecimal

⚠ NOTE

Please adjust Regulation Bias while checking the actual voltage with the multi-meter.

8. 4. 3. 101 Density Sensor Standard Output (No.623)

NOTE

This setting has been factory-adjusted. Keep the value unchanged.

It is possible to change the default analog output of Density Sensor.
“Density Sensor Standard Output” (No.623) and “Density Sensor Analog Voltage” (No.624) are used for Density Measure.

Default Value	Setting Range	Step of increment
0	0 to 614	1

8. 4. 3. 102 Density Sensor Analog Voltage (No.624)

NOTE

This setting has been factory-adjusted. Keep the value unchanged.

It is possible to change the default analog output of Density Sensor.
“Density Sensor Standard Output” (No.623) and “Density Sensor Analog Voltage” (No.624) are used for Density Measure.

Default Value	Setting Range	Step of increment
0	0 to 768	1

8. 4. 3. 103 Print - Fuser Temperature Side (12”/11”/A3) (No.625 to 630)

It is possible to adjust the side part of Fuser Temperature in a print cycle.
You can specify the temperature for each type and size of media separately.
The Fuser Temperature becomes 1 degree higher if you increase the setting value by “+1”.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
625	Print - Fuser Temperature Side (Plain) (12” / 11” / A3)	160	145	145	165	120 to 180	1°C
626	Print - Fuser Temperature Side (Tracing) (12” / 11” / A3)	160	150	140	135	120 to 180	1°C
627	Print - Fuser Temperature Side (Film) (12” / 11” / A3)	177	170	170	155	120 to 180	1°C
628	Print - Fuser Temperature Side (Special / Plain) (12” / 11” / A3)	160	160	160	160	120 to 180	1°C
629	Print - Fuser Temperature Side (Special / Tracing) (12” / 11” / A3)	160	160	160	160	120 to 180	1°C
630	Print - Fuser Temperature Side (Special media / Film) (12” / 11” / A3)	177	170	170	170	120 to 180	1°C

Reference

The center part of Fuser Temperature will be controlled by Print - Fuser Temperature Center (No. 039 to 044) separately.
Refer to [8. 4. 3.17 Print - Fuser Temperature Center (No.039 to 044)] for further information.

8. 4. 3. 104 Print - Fuser Temperature Side (18”/17”/15”/A2) (No.631 to 636)

It is possible to adjust the side part of Fuser Temperature in a print cycle.
You can specify the temperature for each type and size of media separately.
The Fuser Temperature becomes 1 degree higher if you increase the setting value by “+1”.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
631	Print - Fuser Temperature Side (Plain) (18” / 17” / 15” / A2)	160	165	165	165	120 to 180	1°C
632	Print - Fuser Temperature Side (Tracing) (18” / 17” / 15” / A2)	160	170	160	155	120 to 180	1°C
633	Print - Fuser Temperature Side (Film) (18” / 17” / 15” / A2)	177	170	170	155	120 to 180	1°C
634	Print - Fuser Temperature Side (Special / Plain) (18” / 17” / 15” / A2)	160	160	160	160	120 to 180	1°C
635	Print - Fuser Temperature Side (Special / Tracing) (18” / 17” / 15” / A2)	160	160	160	160	120 to 180	1°C
636	Print - Fuser Temperature Side (Special / Film) (18” / 17” / 15” / A2)	177	170	170	170	120 to 180	1°C

Reference

The center part of Fuser Temperature will be controlled by Print - Fuser Temperature Center (No. 039 to 044) separately.
Refer to [8. 4. 3.17 Print - Fuser Temperature Center (No.039 to 044)] 8-53 for further information.

8. 4. 3. 105 Print - Fuser Temperature Side (24”/22”/A1) (No.637 to 642)

It is possible to adjust the side part of Fuser Temperature in a print cycle.
You can specify the temperature for each type and size of media separately.
The Fuser Temperature becomes 1 degree higher if you increase the setting value by “+1”.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
637	Print - Fuser Temperature Side (Plain) (24” / 22” / A1)	160	165	165	165	120 to 180	1°C
638	Print - Fuser Temperature Side (Tracing) (24” / 22” / A1)	160	170	160	155	120 to 180	1°C
639	Print - Fuser Temperature Side (Film) (24” / 22” / A1)	177	170	170	155	120 to 180	1°C
640	Print - Fuser Temperature Side (Special / Plain) (24” / 22” / A1)	160	160	160	160	120 to 180	1°C
641	Print - Fuser Temperature Side (Special / Tracing) (24” / 22” / A1)	160	160	160	160	120 to 180	1°C
642	Print - Fuser Temperature Side (Special / Film) (24” / 22” / A1)	177	170	170	170	120 to 180	1°C

Reference

The center part of Fuser Temperature will be controlled by Print - Fuser Temperature Center (No. 039 to 044) separately.
Refer to [8. 4. 3.17 Print - Fuser Temperature Center (No.039 to 044)] for further information.

8. 4. 3. 106 Print - Fuser Temperature Side (36”/34”/30”/A0/B1) (No.643 to 648)

It is possible to adjust the side part of Fuser Temperature in a print cycle.
You can specify the temperature for each type and size of media separately.
The Fuser Temperature becomes 1 degree higher if you increase the setting value by “+1”.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
643	Print - Fuser Temperature Side (Plain) (36” / 34” / 30” / A0 / B1)	160	165	165	165	120 to 180	1°C
644	Print - Fuser Temperature Side (Tracing) (36” / 34” / 30” / A0 / B1)	160	170	160	155	120 to 180	1°C
645	Print - Fuser Temperature Side (Film) (36” / 34” / 30” / A0 / B1)	177	170	170	155	120 to 180	1°C
646	Print - Fuser Temperature Side (Special / Plain) (36” / 34” / 30” / A0 / B1)	160	160	160	160	120 to 180	1°C
647	Print - Fuser Temperature Side (Special / Tracing) (36” / 34” / 30” / A0 / B1)	160	160	160	160	120 to 180	1°C
648	Print - Fuser Temperature Side (Special / Film) (36” / 34” / 30” / A0 / B1)	177	177	177	177	120 to 180	1°C

Reference

The center part of Fuser Temperature will be controlled by Print - Fuser Temperature Center (No. 039 to 044) separately.
Refer to [8. 4. 3.17 Print - Fuser Temperature Center (No.039 to 044)] for further information.

8. 4. 3. 107 Density Sensor Output Monitor (No.649)

⚠ NOTE

This setting is factory-use only. Keep the value unchanged.

It is possible to change the mode to monitor the default analog output of Density Sensor.

Default Value	Setting Range
1	0 to 4

8. 4. 3. 108 Regulation Bias Increment for Auto Adjustment Level 2 & 3 (No.650)

⚠ NOTE

This setting has been factory-adjusted. Keep the value unchanged.

It is possible to change the amount (increment) of Regulation Bias on Auto Adjustment.
A specified increment of Regulation Bias will be applied at switching to Auto Adjustment Level 2 and Level 3.

The default voltage value of the increment is about 40V (corresponding to “80” in the setting value) for switching to Auto Adjustment Level 2 and 3.

If you increase the setting value by “+1”, the increment of Regulation Bias Adjustment becomes about 0.5V higher.

Default Value	Setting Range	Step of increment
68	0 to 200	0.5V

8. 4. 3. 109 Total Increment of Regulation Bias Adjustment (No.651)

⚠ NOTE

This setting can be used for checking purpose only.
Setting change is allowed to factory-use only. Keep the value unchanged.

It is possible to check the total amount (increment) of currently applied Regulation Bias Adjustment by Density Compensation.

It is possible to add a 0.5V to the total amount of Regulation Roller Bias Adjustment directly.

Default Value	Setting Range	Step of increment
0	0 to 800	0.5V

8. 4. 3. 110 Density Compensation ON/OFF (No.652)

It is possible to decide whether Density Compensation is enabled.

Setting value	Contents
0	Density Compensation Process is disabled
1	Density Compensation Process is enabled

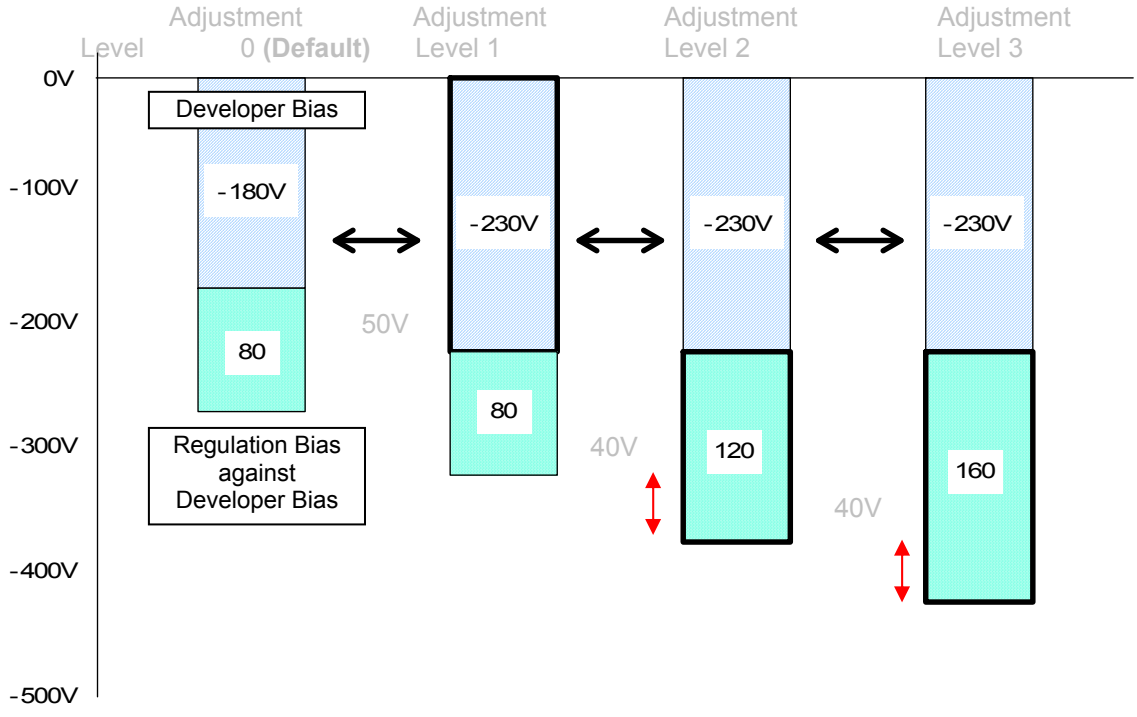
Default value			
USA	EUR/ASIA	CN	CND
1	1	1	0

Reference

Density Compensation Process is performed as follows.

1. Several solid patches are created on Drum and are measured by Density Sensor at a regular interval of Main Motor operating time (No.655).
   This is called Density Measure.
2. If the current density value (calculated based on Density Measure) does not meet Target Density (No.653), one of the Adjustment Level listed below will be applied.
3. Developer Bias and Regulation Bias (No.650) will be adjusted based on the current Adjustment Level.

	Adjustment Level 0 **(Default)**	Adjustment Level 1	Adjustment Level 2	Adjustment Level 3
Developer Bias (Negative)	-180V	**-230V**	-230V	-230V
Regulation Bias against Developer Bias	-80V	-80V	**-120V**	**-160V**



NOTE

Even if Developer Unit is replaced, still the current Auto Adjustment will continue to be applied.

An applied Auto Adjustment Level should be manually set to "000000" after replacing Developer Unit / Developer overhaul.

8. 4. 3. 111 Target Density (No.653)

> **NOTE**
>
> This setting has been factory-adjusted. Keep the value unchanged.

It is possible to change Target Density that should be achieved and maintained for consistent print density.
If the current density does not meet Target Density, Regulation (Developer) Bias will be automatically adjusted based on the current Adjustment Level.

- If the current Density Value is judged “not enough” (lighter than required), the next level will be applied.
- If the current Density Value is judged “adequate”, the current level remains.
- There is possibility for the Density Value to be judged “too much enough” (darker than required), then the previous level will be applied.

If you increase the setting value by “+1”, Target Density will rise and thus Auto Adjustment Level would be switched to the next level earlier.

Default Value	Setting Range	Step of increment
135	110 to 150	1

8. 4. 3. 112 Regulation Bias Maximum (No.654)

> **NOTE**
>
> This setting has been factory-adjusted. Keep the value unchanged.

It is possible to change the maximum of Regulation Bias.
When the total value amount of Regulation Bias (No.622) and Total Increment of Regulation Bias Adjustment (No.641) reaches to the value of this setting, Regulation Bias cannot raise any more.

If you increase the setting value by “+1”, the maximum of Regulation Bias increases.

Default Value	Setting Range	Step of increment
293	0 to 1023	1

8. 4. 3. 113 Density Measure Interval (No.655, 656)

> **NOTE**
>
> This setting has been factory-adjusted. Keep the value unchanged.

It is possible to change an interval of Density Measure.
When Bias 3 Time in Information Mode reaches a specified period in this setting, Density Measure will run.
There are 2 kind of the trigger to check Bias 3 Time whether the period passes.

(1) At the time of turning on the machine
(2) After completion of the current print queue

If you increase the setting value by “+1”, the interval of Density Measure becomes 1 hour longer.

Item No.	Setting Item	Default Value	Setting range	Step of increment
655	Density Measure Interval at Power on	18	1 to 100	1 hour
656	Density Measure Interval at Print Completion	18	1 to 100	1 hour

8. 4. 3. 114 Developer Bias Increment for Auto Adjustment Level 1 and after (No.657)

> **NOTE**
>
> This setting has been factory-adjusted. Keep the value unchanged.

It is possible to change the amount (increment) of Developer Bias Adjustment.
A specified increment of Developer Bias will be applied at switching to and as of Auto Adjustment Level 1.

The default voltage value of the increment is approximately 50V (corresponding to “80” in the setting value) for switching to Auto Adjustment Level 1. The increased Developer Bias will be applied to the subsequent Auto Adjustment Level.

If you increase the setting value by “+1”, the increment of Developer Bias Adjustment becomes higher.

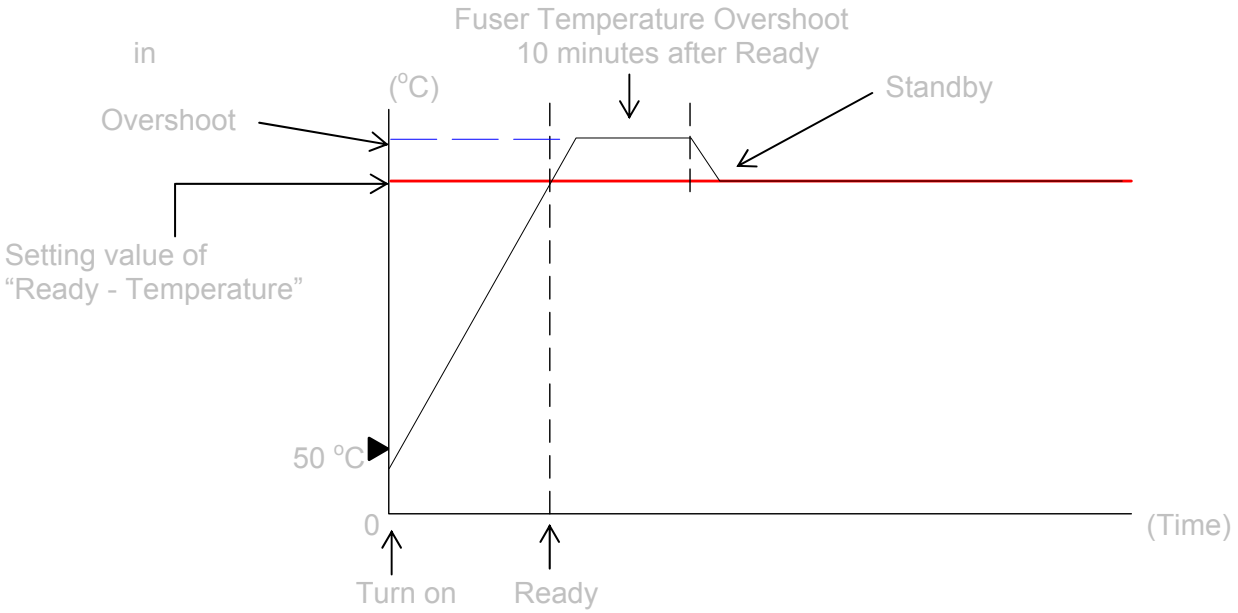
Default Value	Setting Range	Step of increment
125	0 to 400	1

8. 4. 3. 115 Ready - Fuser Temperature Center (No.660 to 665)

It is possible to specify “Ready” temperature.
You can specify the temperature for each type of media separately.
This setting will be applied only when Fuser Temperature is below 50°C at turning on the machine.
The Fuser Temperature becomes 1 degree higher if you increase the setting value by “+1”.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/AS	CN	CND		
660	Ready - Fuser Temperature Center (Plain)	160	160	160	165	120 to 180	1°C
661	Ready - Fuser Temperature Center (Tracing)	160	170	160	155	120 to 180	1°C
662	Ready - Fuser Temperature Center (Film)	177	177	177	155	120 to 180	1°C
663	Ready - Fuser Temperature Center (Special / Plain)	160	160	160	160	120 to 180	1°C
664	Ready - Fuser Temperature Center (Special / Tracing)	160	160	160	160	120 to 180	1°C
665	Ready - Fuser Temperature Center (Special / Film)	177	170	170	170	120 to 180	1°C

After reaching “Ready”, fuser temperature will rise 10 °C higher than “Ready” (Overshoot) in 10 minutes. Then it will be maintained within “Standby” temperature.



8. 4. 3. 116 Ready - Fuser Temperature Side (No.666 to 671)

It is possible to specify “Ready” temperature.
You can specify the temperature for each type of media separately.
This setting will be applied only when Fuser Temperature is below 50°C at turning on the machine.
The Fuser Temperature becomes 1 degree higher if you increase the setting value by “+1”.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/AS	CN	CND		
666	Ready - Fuser Temperature Side (Plain)	159	159	159	165	120 to 180	1°C
667	Ready - Fuser Temperature Side (Tracing)	159	180	170	165	120 to 180	1°C
668	Ready - Fuser Temperature Side (Film)	177	170	170	155	120 to 180	1°C
669	Ready - Fuser Temperature Side (Special / Plain)	159	159	159	159	120 to 180	1°C
670	Ready - Fuser Temperature Side (Special / Tracing)	159	159	159	159	120 to 180	1°C
671	Ready - Fuser Temperature Side (Special / Film)	177	170	170	170	120 to 180	1°C

8. 4. 3. 117 Fuser Motor Speed (18” / 17” / 15” / 12” / 11” / A2 / A3) (No. 672 to 677)

It is possible to adjust the speed of Fuser Motor for each type of paper separately.
If you increase the setting value by “+1”, the motor speed becomes 0.04mm/second faster.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
672	Fuser Motor Speed (18” / 17” / 15” / 12” / 11” / A2 / A3) (Plain paper)	50	50	50	50	0 to 80	0.04mm/s
673	Fuser Motor Speed (18” / 17” / 15” / 12” / 11” / A2 / A3) (Tracing paper)	57	60	60	60	0 to 80	0.04mm/s
674	Fuser Motor Speed (18” / 17” / 15” / 12” / 11” / A2 / A3) (Film paper)	50	50	50	50	0 to 80	0.04mm/s
675	Fuser Motor Speed (18” / 17” / 15” / 12” / 11” / A2 / A3) (Special plain paper)	40	40	40	40	0 to 80	0.04mm/s
676	Fuser Motor Speed (18” / 17” / 15” / 12” / 11” / A2 / A3) (Special tracing paper)	40	40	40	40	0 to 80	0.04mm/s
677	Fuser Motor Speed (18” / 17” / 15” / 12” / 11” / A2 / A3) (Special film)	40	40	40	40	0 to 80	0.04mm/s

For Fuser Motor Speed in larger size, refer to [8. 4. 3.62 Fuser Motor Speed (36” / 34” / 30” / 24” / 22” / A0 / B1 / A1) (No.316 to 321)].

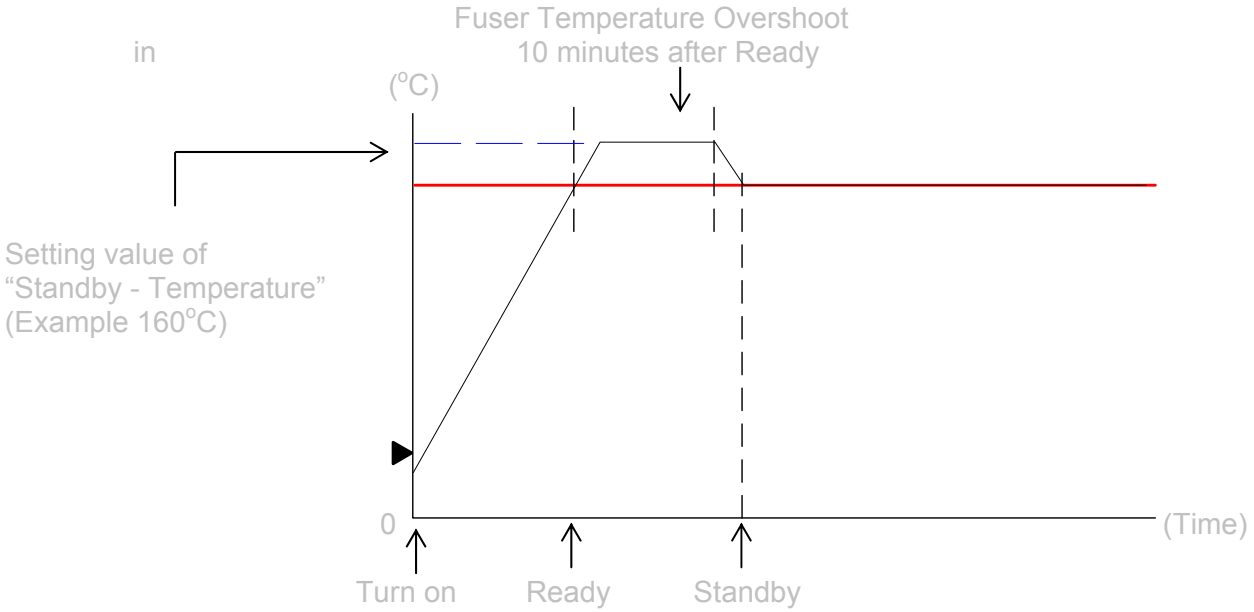
8. 4. 3. 118 Compensation of Fuser Motor Speed 4 (No.678 to 737)

Fuser Motor Speed 4 and its switch timing are explained on Fuser Motor Speed 1, 2, 3 together.
Please refer to [8. 4. 3.37 Compensation of Fuser Speed 1 (No.070 to 075)] and the concerning pages for media type / size.

8. 4. 3. 119 Standby - Fuser Temperature (No.738, 739)

It is possible to adjust the Fuser Temperature to be maintained while waiting for a print job. You can specify the temperature for the center and the sides separately.
This setting is applied after the period of Fuser Temperature Overshoot (+10°C against "Ready - Temperature" in 10 minutes).
The Fuser Temperature becomes 1 degree higher if you increase the setting value by "+1".

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/ASIA	CN	CND		
738	Standby - Fuser Temperature Center	167	167	167	165	120 to 180	1°C
739	Standby - Fuser Temperature Side	160	160	160	165	120 to 180	1°C



8. 4. 3. 120 Assist Fan Off Timing (No.740 to 742)

Assist Fan stops at a regular period after the trailing edge of a print of in 15" or wider reaches Registration Sensor. It is possible to change the timing of Assist Fan off.
This setting may be a solution for image void on the trailing center.

If you increase the setting value by "+1", the timing of Assist Fan off becomes 0.125 seconds later.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/AS	CN	CND		
740	Assist Fan Off Timing (18" / 17" / 15" / A2)	8	4	4	4	0 to 8	0.125 sec
741	Assist Fan Off Timing (24" / 22" / A1)	8	4	4	4	0 to 8	0.125 sec
742	Assist Fan Off Timing (36" / 34" / 30" / A0 / B1)	5	5	5	5	0 to 8	0.125 sec

8. 4. 3. 121 Fuser Motor Speed applied at 100mm from trailing edge (36” / 34” / 30” / A0 / B1 width) (No.743 to 745)

It is possible to adjust the speed of Fuser Motor driving on 100mm end of a print in 36” / 34” / 30” / A0 / B1 width.
This setting may be a solution for image void on the trailing center.

If you increase the setting value by “+1”, speed of Fuser Motor driving becomes 0.04mm/s slower than the applied speed at that point.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/AS	CN	CND		
743	Fuser Motor Speed applied at 100mm from trailing edge (36” / 34” / 30” / A0 / B1 width) (Plain)	0	1	1	1	0 to 80	0.04mm/s
744	Fuser Motor Speed applied at 100mm from trailing edge (36” / 34” / 30” / A0 / B1 width) (Tracing)	0	15	15	15	0 to 80	0.04mm/s
745	Fuser Motor Speed applied at 100mm from trailing edge (36” / 34” / 30” / A0 / B1 width) (Film)	0	0	0	0	0 to 80	0.04mm/s

8. 4. 3. 122 Roll 2 Forward Standby ON/OFF (No.746)

The default Standby Position for the leading edge of Roll 2 is located directly below the set sensor (PH9). This setting will feed the leading edge to Forward Standby Position (approximately 252mm forward from the default Standby Position).

Default value	Setting value	Contents
0	0	Roll 2 Leading Edge stays at the set sensor
	1	Roll 2 Leading Edge goes Forward Standby Position

8. 4. 3. 123 Roll 2 Forward Standby Position Adjustment (No.747)

This setting can adjust Roll 2 Forward Standby Position (approximately 202 to 252mm forward from the default Roll 2 Standby Position) with Roll 2 Forward Standby on. When the setting value increases by 1, Roll 2 Forward Standby Position will shift backward to the default Standby Position in 1mm. (“0” for 252mm forward, “50” for 202mm forward)

Default Value	Setting Range	Step of increment
0	0 to 50	1mm

8. 4. 3. 124 Roll 2 Rewind Timer (No. 748)

This setting can work as a timer to rewind Roll 2 media from Forward Standby Position to the default Standby Position with Roll 2 Forward Standby on. When the setting value decreases by 1, the interval of rewinding Roll 2 media to the default Standby Position becomes 1 minute shorter. When the setting value is "0", the roll media is not rewound.

Default Value	Setting Range	Step of increment
15	0 to 15	1 min

8. 4. 3. 125 Tracing Mode (No. 749)

Even in “ready” condition, the fuser temperature is controlled slightly lower than “Print” temperature in order to reduce inside temperature.
It quickly rises up to “Print” temperature at the same time as the printer starts printing an output job. This setting will keep media feeding wait for the completion of the fuser temperature recovery.

Note that Tracing Mode is effective only for an extremely thin tracing paper (off-specification).

Setting value	Setting value	Contents
1	0	Fuser temperature starts recovery as soon as a print job is sent.
	1	A print on tracing paper will start after recovery of fuser temperature.

8. 4. 3. 126 Roll 1 Setting Mode (No. 750)

The default Standby Position for the leading edge of Roll 1 is located directly below the set sensor (PH7). This setting will allow the leading edge of a roll media that has kept waiting a long period in a special circumstance to move about 20mm forward from the default Standby Position.
This will keep the edge from waving.

Note that Roll 1 Setting Mode is effective only for an extremely thin roll media (off-specification).

Setting value	Setting value	Contents
0	0	Roll 1 Leading Edge stays at the set sensor
	1	Roll 1 Leading Edge goes 20mm forward from the set sensor.

8. 4. 3. 127 Disable HV Error Detection Mode (No. 751)

“Disable HV Error Detection Mode” functions just as Error Mask Mode for high voltage errors. This allows the system to ignore service call errors regarding high voltage power supply (E-31, E-32, E-33, E-34) and prevents the concerning error code from being displayed both on the sub UI and the touch screen.
“Disable HV Error Detection Mode” ON is not canceled by turning off the machine, but remains until set to OFF manually.

Setting value	Setting value	Contents
0	0	HV error detection works normally.
	1	The system ignores any HV Error.

⚠ NOTE

TAKE GREAT CARE. The system ignores high voltage errors caused by ANY REASON while “Disable HV Error Detection Mode” is ON.
It is recommended that “Disable HV Error Detection Mode” remains OFF in the usual usage.

8. 4. 3. 128 Definition of long print (used for Auto Initial Cut after Long Print) (No. 753)

Item No.753 defines the length of long print that is used to judge whether or not the “Auto Initial Cut after Long Print” functions. If this is set to 20 for example, the definition of long print is 2000mm, and all the prints longer than 2000mm are judges “long prints”. If certain sheets (configured by item No.754) of long length prints are continuously done, “Auto Initial Cut after Long Print” takes trim cut between long lngth prints.

See [REFERENCE] on next page for further details about the “Auto Initial Cut after Long Print”.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/AS	CN	CND		
753	Definition of “long print” applied in Auto Initial Cut after Long Print	10	10	10	10	10 to 60	100mm

8. 4. 3. 129 Trigger of Auto Initial Cut after Long Print (Number of long prints) (No.754)

Item No.754 defines the number of long length prints that triggers “Auto Initial Cut after Long Print”. If this is set to 2 for example, “Auto Initial Cut after Long Print” takes trim after the 2nd one of continuous long length prints.

See [REFERENCE] on next page for further details about the “Auto Initial Cut after Long Print”.

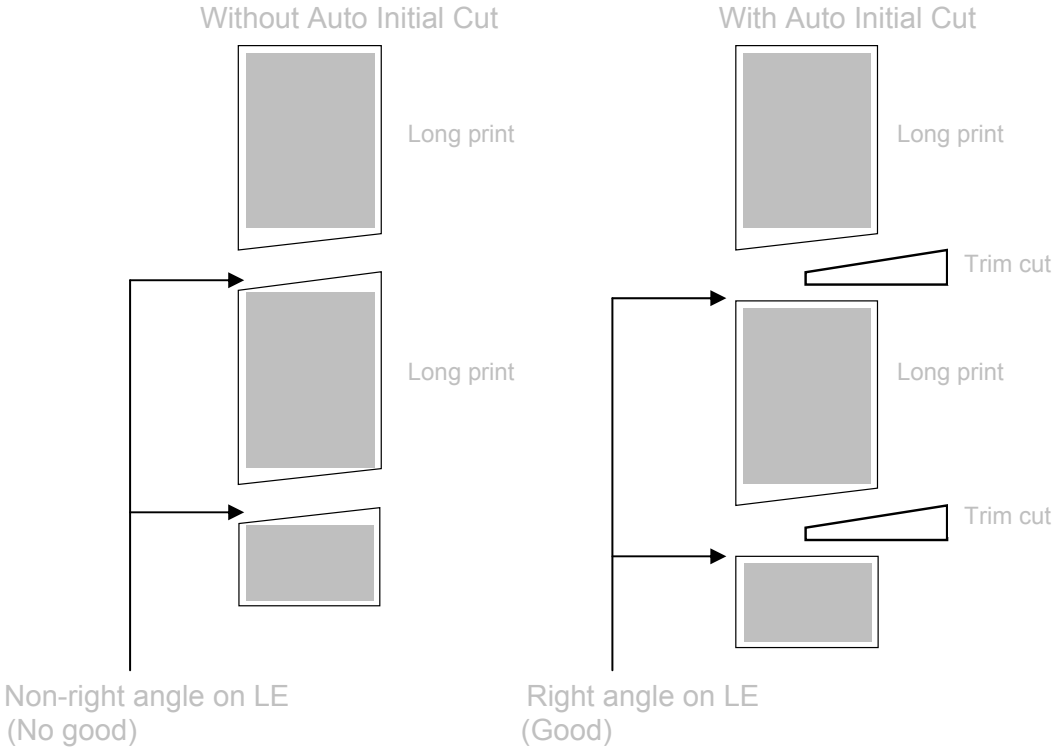
Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/AS	CN	CND		
754	Trigger of Auto Initial Cut after Long Print (Number of long prints)	0	0	0	0	0 to 3	*number of sheets

Reference

Auto Initial Cut after Long Print

It tends to happen that the machine cuts a roll media at an angle toward the feeding direction when some sheets of long length prints are performed continuously. When the next print is started afterward with having non-right angle on the leading edge, media feeding for that print may become unstable and incorrect, and it may cause print quality defect.

If the leading edge is trimmed before starting next printing, it helps to have right angle on the leading edge and eventually allows for correct and stable media feeding. KIP7170 has a feature called “Auto Initial Cut after Long Print” that automatically takes trim cut between long length prints as long as necessary conditions are satisfied.



Necessary conditions that must be satisfied are “length of long print” and “Continuous number of long length prints”. When both conditions are satisfied the Suto Initial Cut after Long Print takes trim cut.

Length of long print

Printer has a definition value for long length print, which is configured by the item No.753. If a print is longer than this definition value, this print is judges as long length print and 1st condition for Auto Initial Cut is satisfied. If shorter, it is not judged as long length prin.

Continuous number of long length prints

Auto Initial Cut after long print functions when certain sheets of long length prints are continuously performed. Definition for “certain sheets” is configured by the item No.754. If it is set to 3 for example, printer takes trim cut after printing 3 sheets of long length prints continuously.

8. 4. 3. 130 Length of trim cut for Auto Initial Cut before Print (No. 755)

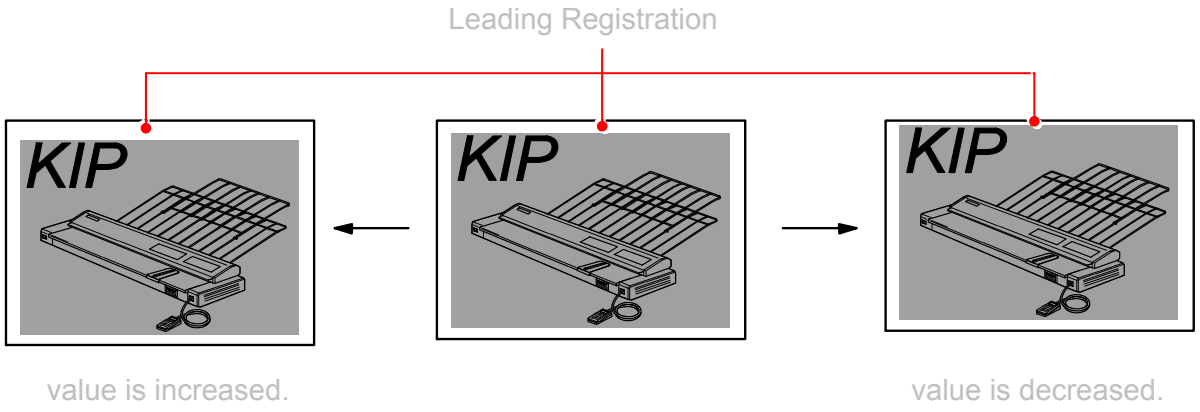
⚠ NOTE

This setting does not function. Keep the value unchanged.

8. 4. 3. 131 Leading Registration for Paper Tray (No. 756)

It is possible to specify where to start printing the image at the leading edge of a sheet from the Paper Tray.
If you increase the setting value by “+1 “, the head of image is shifted 1mm downward toward the trailing edge As a result the leading margin becomes larger.

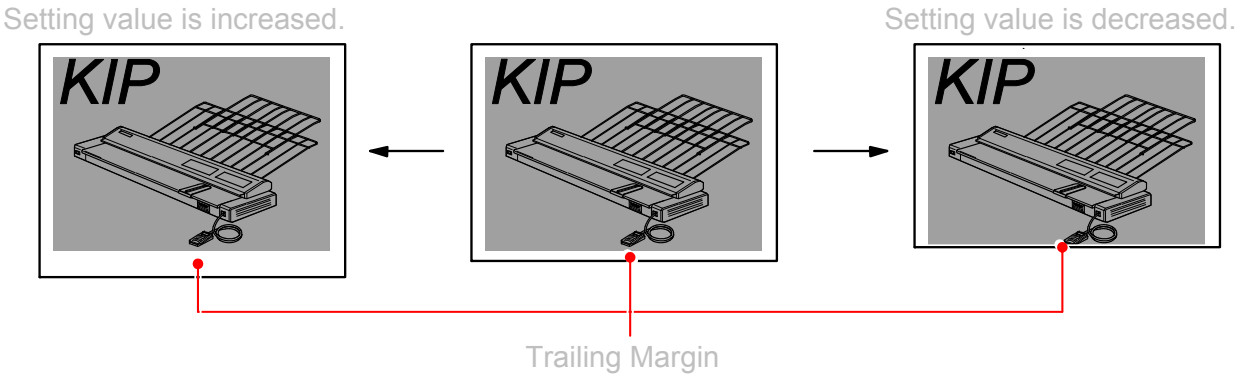
Default Value	Setting Range	Step of increment
20	5 to 40	1mm



8. 4. 3. 132 Trailing Margin for Paper Tray (No. 757)

It is possible to adjust the length of trailing margin of a sheet from the Paper Tray.
The length of trailing margin becomes 1mm longer if you Increase the setting value by “+1 “.

Default Value	Setting Range	Step of increment
20	5 to 40	1mm



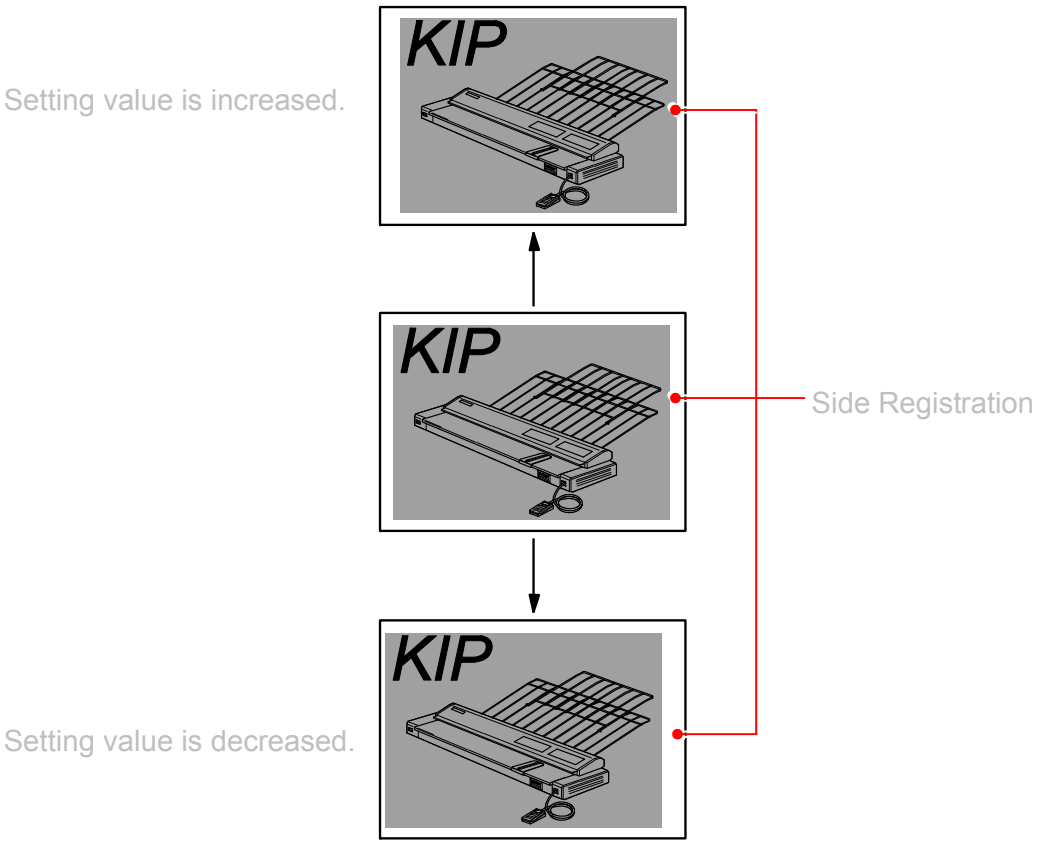
NOTE

Some trailing image may be lost if you decrease the value too much.

8. 4. 3. 133 Side Registration for Paper Tray (No. 758)

It is possible to specify where to start printing the image at the side edge of a sheet from the Paper Tray.
If you increase the setting value by “+1 “, image is shifted 0.1mm to the right.

Default Value	Setting Range	Step of increment
50	0 to 100	0.1mm



8. 4. 3. 134 Number of prints available for stacking on Upper Print Tray (No. 759 to 761)

When the Upper Print Tray receives certain sheets of prints, printer interrupts printing and indicates a notification message in touch screen to suggest the operator to remove the stacked prints. Printer then restarts printing when the stacked prints are removed.

These items No.759 to 761 specify how many prints can be stacked on the Upper Print Tray before interrupting printing. Setting is available per media.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/AS	CN	CND		
759	Number of prints available for stacking on Upper Print Tray (Plain paper)	50	50	50	50	1 to 100	number of sheets
760	Number of prints available for stacking on Upper Print Tray (Tracing paper)	10	10	10	10	1 to 100	number of sheets
761	Number of prints available for stacking on Upper Print Tray (Film)	1	1	1	1	1 to 100	number of sheets

8. 4. 3. 135 Paper Tray Motor Speed (No. 762)

It is possible to adjust the speed of Paper Tray Motor. If you increase the setting value by “+1”, the motor speed becomes 0.4mm/second (0.5%) faster.

Default Value	Setting Range	Step of increment
40	0 to 80	0.4mm/s

⚠ NOTE

This setting has been factory-adjusted. Keep the value unchanged.

8. 4. 3. 136 Time for detecting paper jam in Paper Tray (No. 763)

This item No.763 decides the time for detecting paper jam in Paper Tray. The time for detecting the jam becomes longer by additional 1ms if you increase the value by 1.

Default Value	Setting Range	Step of increment
200	0 to 400	1ms

⚠ NOTE

This setting has been factory-adjusted. Keep the value unchanged.

8. 4. 3. 137 Interval time for rotating Fuser Roller (No.764)

When a certain interval time passes in stand by condition or in warm sleep mode, with Cold Sleep set to OFF, fuser roller is rotated a little to change the contact point between Pressure Roller. This item No.764 specifies the interval time.

Default Value	Setting Range	Step of increment
12	0 to 24	1 hour

⚠ NOTE

This setting has been factory-adjusted. Keep the value unchanged.

8. 4. 3. 138 Length of trim cut for Auto Initial Cut after Long Print (No.765)

Item No. 765 specifies the length of trim cut performed by “Auto Initial Cut after Long Print”.

Default Value	Setting Range	Step of increment
210	210 to 600	1 mm

8. 4. 3. 139 Specification of Interface Communication (No.766)

This setting is related with the Interface communication.

⚠ NOTE

Do not change this as factory setting value must be kept.

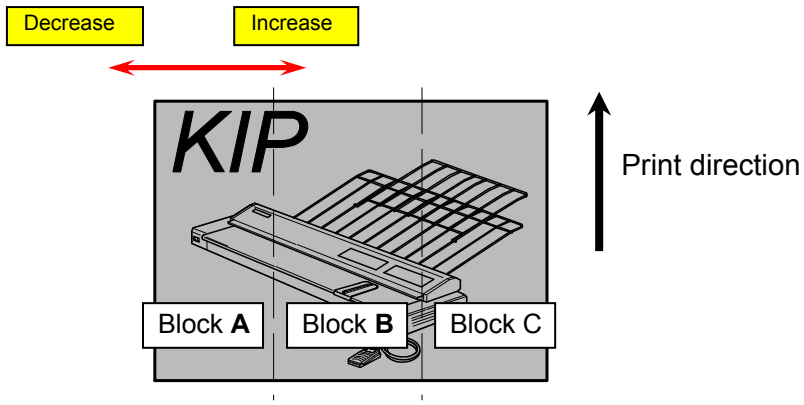
Default Value	Setting Range	Step of increment
0	0 to 1	-

8. 4. 3. 140 Horizontal Alignment of LED Head block A & B (No. 767)

Item No.767 adjusts the horizontal alignment of image blocks A (left) and B (center) of LED Head. Block B (center) is the reference for the adjustment, so the change of value moves block A (left) left or right to achieve correct alignment.

- Increment of the value by “1” moves the block A to the right by 1 pixel, whchi is useful for removing a white vertical line (missing of pixel) between blocks A and B.
- Decrement of the value by “1” moves the block A to the left by 1 pixel, which is useful for removing a dark vertical line (duplication of pixel) between blocks A and B.

Default Value	Setting Range	Step of increment
60	0 to 120	1pixel

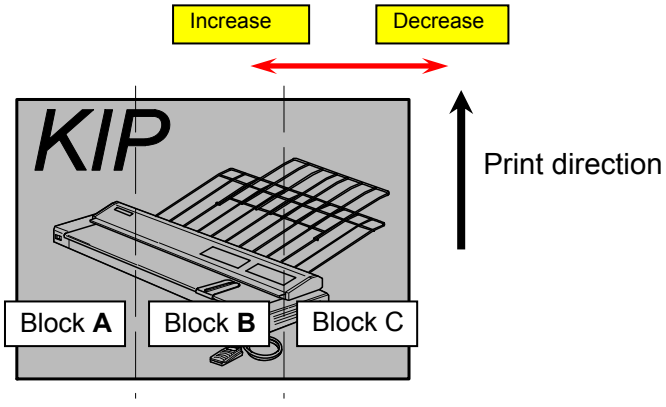


8. 4. 3. 141 Horizontal Alignment of LED Head block B & C (No. 768)

Item No.768 adjusts the horizontal alignment of image blocks B (center) and C (right) of LED Head. Block B (center) is the reference for the adjustment, so the change of value moves block C (right) left or right to achieve correct alignment.

- Increment of the value by “1” moves the block C to the left by 1 pixel, which is useful for removing a white vertical line (missing of pixel) between blocks B and C.
- Decrement of the value by “1” moves the block C to the right by 1 pixel, which is useful for removing a dark vertical line (duplication of pixel) between blocks B and C.

Default Value	Setting Range	Step of increment
60	0 to 120	1pixel

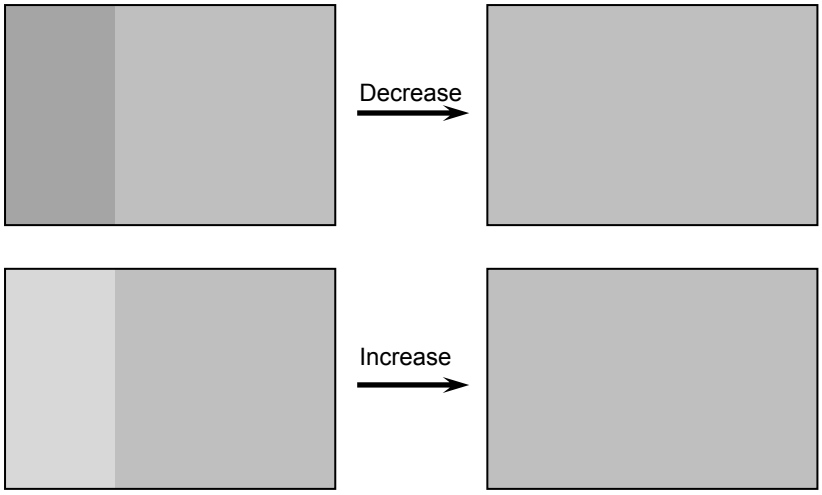


8. 4. 3. 142 Darkness of LED Head Block A (No. 769)

Item No.769 adjusts the darkness of the block A of LED Head.

- Increment of the value makes all the images in block A darker.
- Decrement of the value makes all the images in block A lighter.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/AS	CN	CND		
769	Darkness of LED Head Block A	160	160	160	160	0 to 200	-

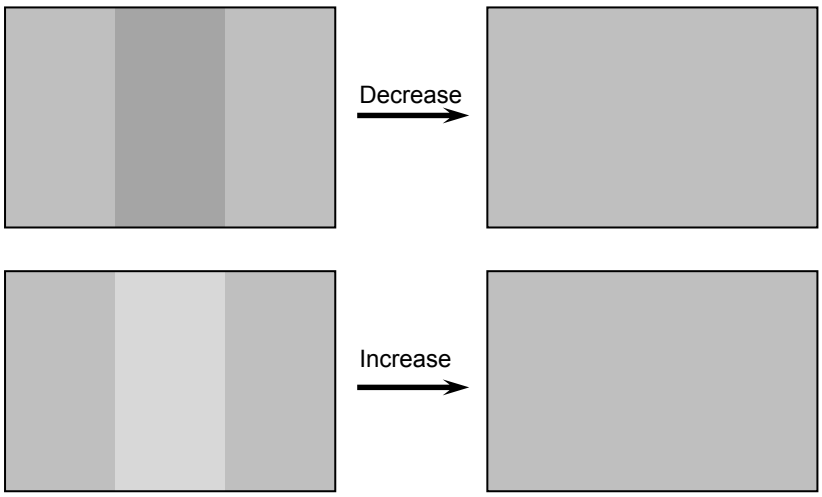


8. 4. 3. 143 Darkness of LED Head Block B (No. 770)

Item No.770 adjusts the darkness of the block B of LED Head.

- Increment of the value makes all the images in block B darker.
- Decrement of the value makes all the images in block B lighter.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/AS	CN	CND		
770	Darkness of LED Head Block B	160	160	160	160	0 to 200	-

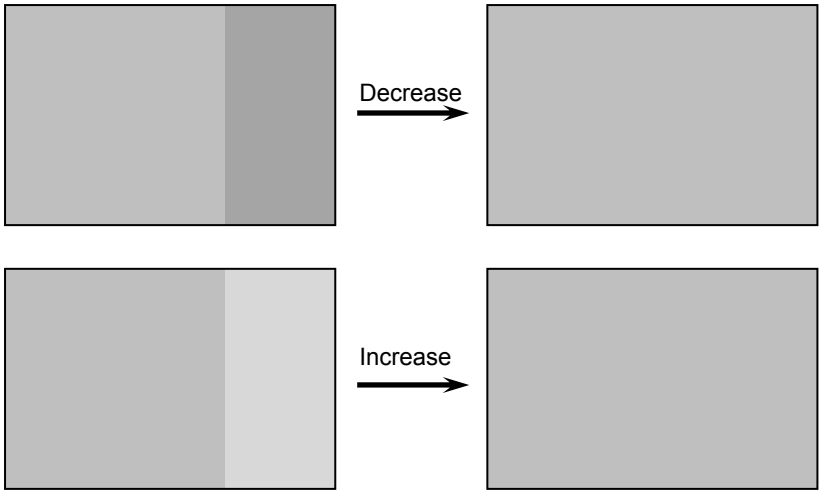


8. 4. 3. 144 Darkness of LED Head Block C (No. 771)

Item No.771 adjusts the darkness of the block C of LED Head.

- Increment of the value makes all the images in block C darker.
- Decrement of the value makes all the images in block C lighter.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/AS	CN	CND		
771	Darkness of LED Head Block C	160	160	160	160	0 to 200	-

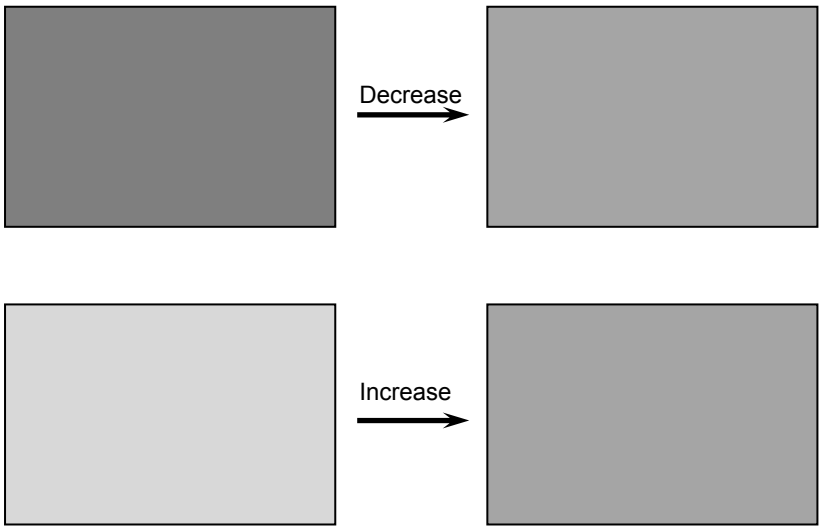


8. 4. 3. 145 Darkness of LED Head (all 3 blocks) (No. 772)

Item No.772 adjusts the darkness of the block C of LED Head.

- Increment of the value makes all the images darker.
- Decrement of the value makes all the images lighter.

Default Value	Setting Range	Step of increment
110	25 to 200	



8. 4. 3. 146 Parameters of Image Enhancement Level 0 (No. 773 to 782)

All these are the parameters regarding Image Enhancement Level 0.

⚠ NOTE

Do not change these settings as optimum factory values must be kept.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/AS	CN	CND		
773	ENHANCE_1_A_0	6	6	6	6	0 to 15	-
774	ENHANCE_2_A_0	10	10	10	10	0 to 15	-
775	ENHANCE_3_A_0	13	13	13	13	0 to 15	-
776	ENHANCE_4_A_0	13	13	13	13	0 to 15	-
777	ENHANCE_5_A_0	13	13	13	13	0 to 15	-
778	ENHANCE_1_B_0	2	2	2	2	0 to 15	-
779	ENHANCE_2_B_0	5	5	5	5	0 to 15	-
780	ENHANCE_3_B_0	6	6	6	6	0 to 15	-
781	ENHANCE_4_B_0	6	6	6	6	0 to 15	-
782	ENHANCE_5_B_0	6	6	6	6	0 to 15	-

8. 4. 3. 147 Parameters of Image Enhancement Level 1 (No. 783 to 792)

All these are the parameters regarding Image Enhancement Level 1.

⚠ NOTE

Do not change these settings as optimum factory values must be kept.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/AS	CN	CND		
783	ENHANCE_1_A_1	6	6	6	6	0 to 15	-
784	ENHANCE_2_A_1	10	10	10	10	0 to 15	-
785	ENHANCE_3_A_1	13	13	13	13	0 to 15	-
776	ENHANCE_4_A_1	14	14	14	14	0 to 15	-
787	ENHANCE_5_A_1	15	15	15	15	0 to 15	-
788	ENHANCE_1_B_1	2	2	2	2	0 to 15	-
789	ENHANCE_2_B_1	5	5	5	5	0 to 15	-
790	ENHANCE_3_B_1	6	6	6	6	0 to 15	-
791	ENHANCE_4_B_1	10	10	10	10	0 to 15	-
792	ENHANCE_5_B_1	13	13	13	13	0 to 15	-

8. 4. 3. 148 Parameters of Image Enhancement Level 2 (No. 793 to 802)

All these are the parameters regarding Image Enhancement Level 2.

⚠ NOTE

Do not change these settings as optimum factory values must be kept.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/AS	CN	CND		
793	ENHANCE_1_A_2	6	6	6	6	0 to 15	-
794	ENHANCE_2_A_2	10	10	10	10	0 to 15	-
795	ENHANCE_3_A_2	13	13	13	13	0 to 15	-
796	ENHANCE_4_A_2	14	14	14	14	0 to 15	-
797	ENHANCE_5_A_2	15	15	15	15	0 to 15	-
798	ENHANCE_1_B_2	5	5	5	5	0 to 15	-
799	ENHANCE_2_B_2	6	6	6	6	0 to 15	-
800	ENHANCE_3_B_2	10	10	10	10	0 to 15	-
801	ENHANCE_4_B_2	13	13	13	13	0 to 15	-
802	ENHANCE_5_B_2	13	13	13	13	0 to 15	-

8. 4. 3. 149 Parameters of Image Enhancement Level 3 (No. 803～812)

All these are the parameters regarding Image Enhancement Level 3.

⚠ NOTE

Do not change these settings as optimum factory values must be kept.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/AS	CN	CND		
803	ENHANCE_1_A_3	10	10	10	10	0 to 15	-
804	ENHANCE_2_A_3	13	13	13	13	0 to 15	-
805	ENHANCE_3_A_3	14	14	14	14	0 to 15	-
806	ENHANCE_4_A_3	15	15	15	15	0 to 15	-
807	ENHANCE_5_A_3	15	15	15	15	0 to 15	-
808	ENHANCE_1_B_3	5	5	5	5	0 to 15	-
809	ENHANCE_2_B_3	6	6	6	6	0 to 15	-
810	ENHANCE_3_B_3	10	10	10	10	0 to 15	-
811	ENHANCE_4_B_3	13	13	13	13	0 to 15	-
812	ENHANCE_5_B_3	13	13	13	13	0 to 15	-

8. 4. 3. 150 Counter option setting (No.813)

This is a parameter related with hardware counter.

Default Value	Setting Range	Step of increment
0	0 or 1	-

⚠ NOTE

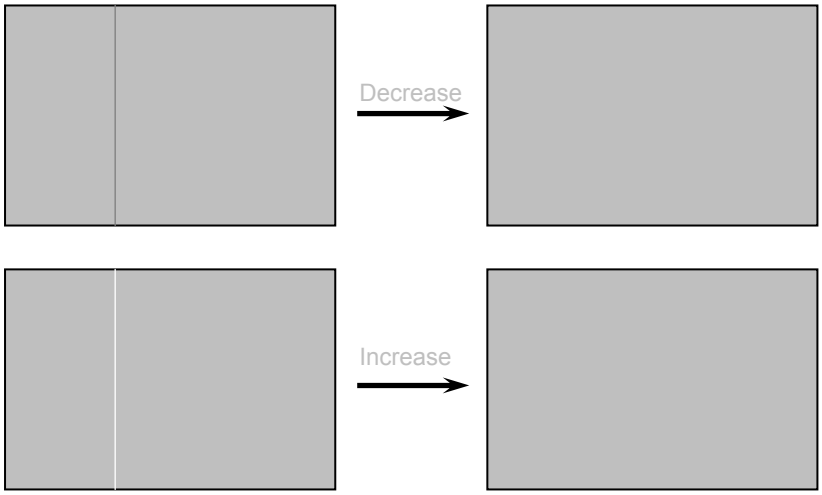
Do not change the setting value as factory value (0) must be kept.

8. 4. 3. 151 Darkness adjustment for the boundary between blocks A & B (No. 814)

Item No. 814 adjusts the darkness of only few limited pixels on the boundary between blocks A and B. If there is a white vertical line or dark one on the boundary of blocks A and B that can not be removed completely by adjusting the Item No. 767 (Horiontal Alignment of LED Head block A & B), such vertical lines may become less visible if you change the setting of this item No.814.

- Increment of value increases the darkness of only very few pixels on the boundary between blocks A and B, which makes a dark vertical line on the boundary lighter and less visible.
- Decrement of value decreases the darkness of only very few pixels on the boundary between blocks A and B, which makes a white vertical line on the boundary darker and less visible.

Default Value	Setting Range	Step of increment
2	1 to 5	-



NOTE

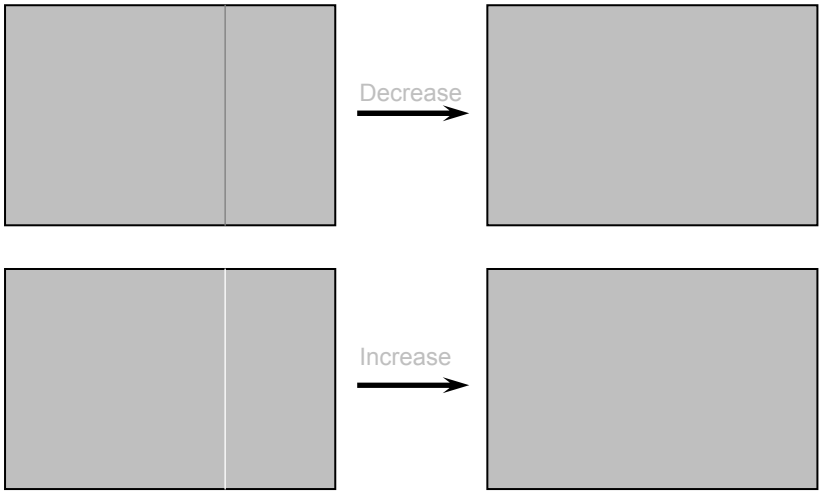
Please adjust the Item No. 767 (Horiontal Alignment of LED Head block A & B) first. If it does not remove vertical white or dark line in boundary part, adjust this item No.814.

8. 4. 3. 152 Darkness adjustment for the boundary between blocks B & C (No. 815)

Item No. 815 adjusts the darkness of only few limited pixels on the boundary between blocks B and C. If there is a white vertical line or dark one on the boundary of blocks B and C that can not be removed completely by adjusting the Item No. 768 (Horiontal Alignment of LED Head block B & C), such vertical lines may become less visible if you change the setting of this item No.815.

- Increment of value increases the darkness of only very few pixels on the boundary between blocks B and C, which makes a dark vertical line on the boundary lighter and less visible.
- Decrement of value decreases the darkness of only very few pixels on the boundary between blocks B and C, which makes a white vertical line on the boundary darker and less visible.

Default Value	Setting Range	Step of increment
2	1 to 5	-



NOTE

Please adjust the Item No. 768 (Horiontal Alignment of LED Head block B & C) first. If it does not remove vertical white or dark line in boundary part, adjust this item No.815.

8. 4. 3. 153 Selection of roll deck to perform “Auto Initial Cut before Print” (No.816)

⚠ NOTE

This setting does not function. Keep the value unchanged.

8. 4. 3. 154 Timer of “Auto Initial Cut before Print” (No.817)

No.817 sets a timer of “Auto Initial Cut before Print”. If the timer is set to 20 minutes for example;
- “Auto Initial Cut before Print” takes trim cut before starting to print a job if 20 or more minutes has passed since the last printing.
- Printer simply starts printing a job without trim cut if 20 minutes has not yet passed since the last printing.

Default Value	Setting Range	Step of increment
0	0 to 360	1 minute

8. 4. 3. 155 Regional setting (No.818)

No.818 allows for selecting a region according to the installation area of product.

Setting value	Region
0: ---	No selection (Do not select this)
1: NA	North America & Canada
2: EUR	EU & Russia
3: CLA	Central America & South America
4: AAP	Asia (except China), Middle East, Africa & Oceania
5: CN	China (including Hong Kong)
6: JP	Japan
7: OT	All other region

⚠ NOTE

Selected regional setting will become effective when the printer is restarted by turning off/on the main switch.

Regional setting is set to the following default values at shipment according to the destination of the product. At any region, please be sure to reconfirm the setting value and correctly change if it is not correct for the actual region of installation.

Destination	Setting value
North America & Canada	1 : NA
Europe & all other contries	2 : EUR
China (including Hong Kong)	5 : CN

⚠ DO NOT SET "0"!!

If this setting value is set as "0", the machine cannot get ready.

8. 4. 3. 156 Detection Time of Fuser Temperature Heat-up Error (No. 819 to 821)

> **⚠ NOTE**
>
> **Do not change the setting value!**
> Changing these setting value is not required in the field under the normal operation.

It is possible to adjust the detection time of fuser temperature heat-up error.

Item No.	Setting Item	Default value				Setting range	Step of increment
		USA	EUR/AS	CN	CND		
819	Detection Time of Fuser Temperature Heat-up Error 1	120	120	120	120	120 to 240	1 second
820	Detection Time of Fuser Temperature Heat-up Error 2	150	150	150	150	150 to 240	1 second
821	Detection Time of Fuser Temperature Heat-up Error 3	330	330	330	330	330 to 480	1 second

Detection Time of Fuser Temperature Heat-up Error 1 (No. 819)
If the fuser temperature does not rise up from 0 to 50 degrees C. within 120 seconds "Fuser Temperature Rising Error (E-000)" occurs.
It is possible to adjust the detection time for this error. (A part in the following figure)

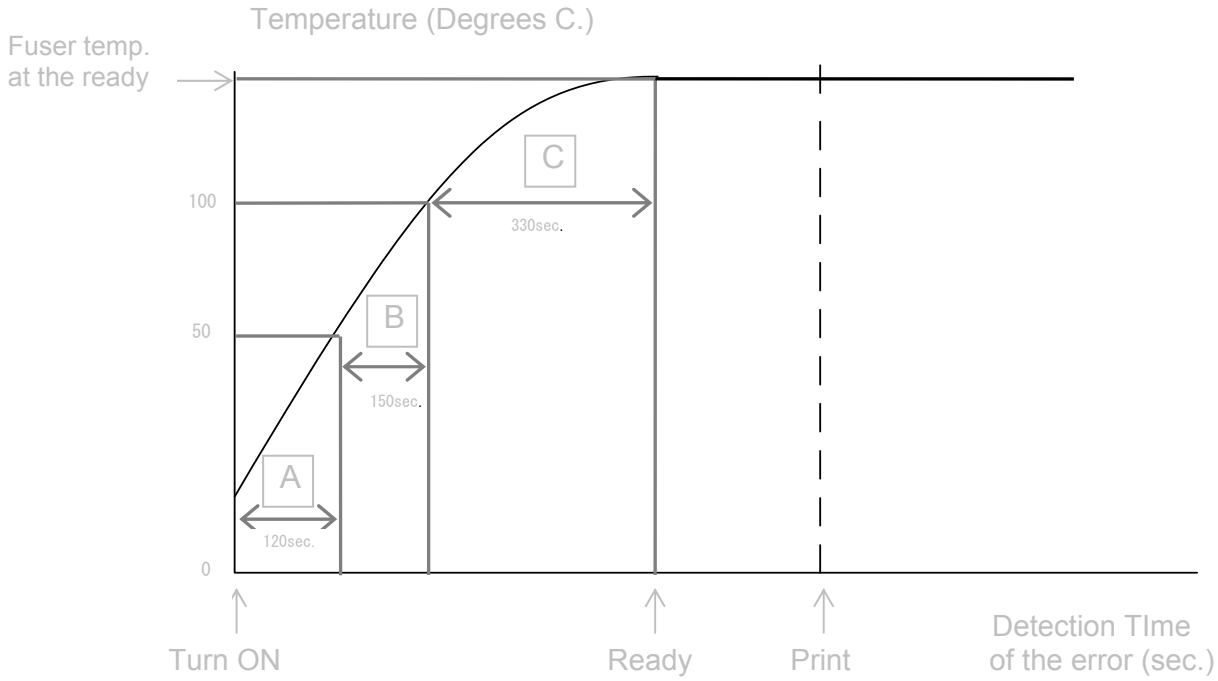
When the setting value is increased by "1", the detection time for the error becomes 1 second longer.

Detection Time of Fuser Temperature Heat-up Error 2 (No. 820)
If the fuser temperature does not rise up from 50 to 100 degrees C. within 150 seconds, "Fuser Low Temperature Error (E-002)" occurs.
It is possible to adjust the detection time for this error. (B part in the following figure)

When the setting value is increased by "1", the detection time for the error becomes 1 second longer.

Detection Time of Fuser Temperature Heat-up Error 3 (No. 821)
If the fuser temperature does not rise up from 100 degrees C. to the fuser temperature at the ready within 330 seconds, "Fuser Low Temperature Error (E-002)" occurs.
It is possible to adjust the detection time for this error. (C part in the following figure)

When the setting value is increased by "1", the detection time for the error becomes 1 second longer.



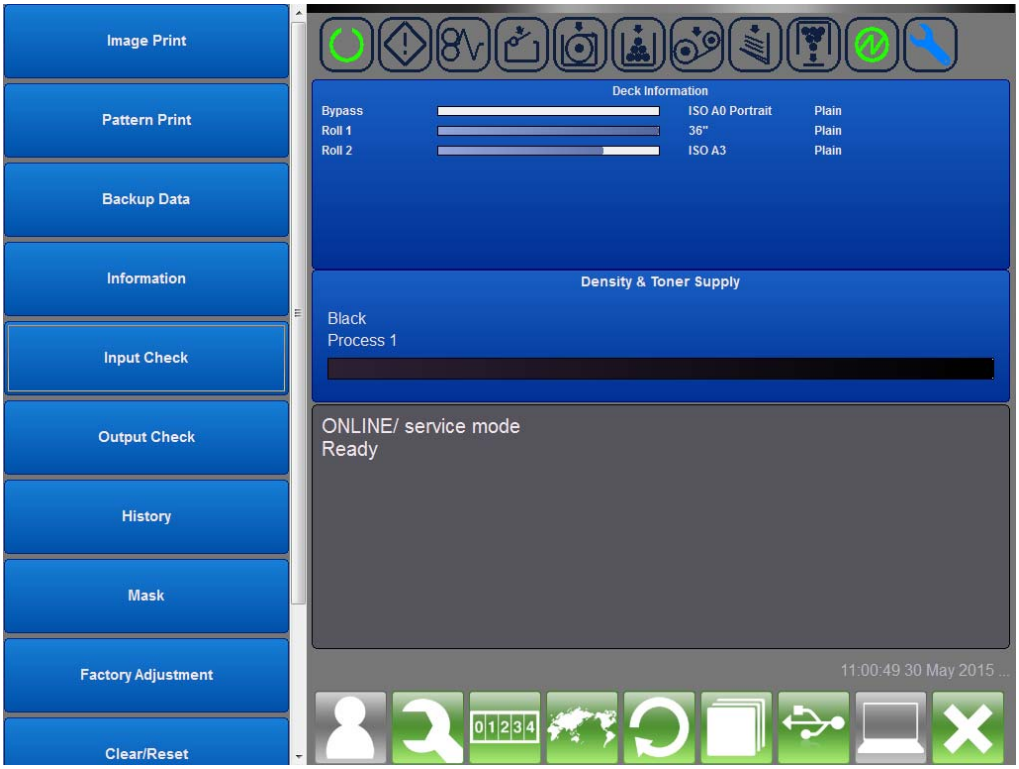
8. 4. 3. 157 Running Setting (No. 822)

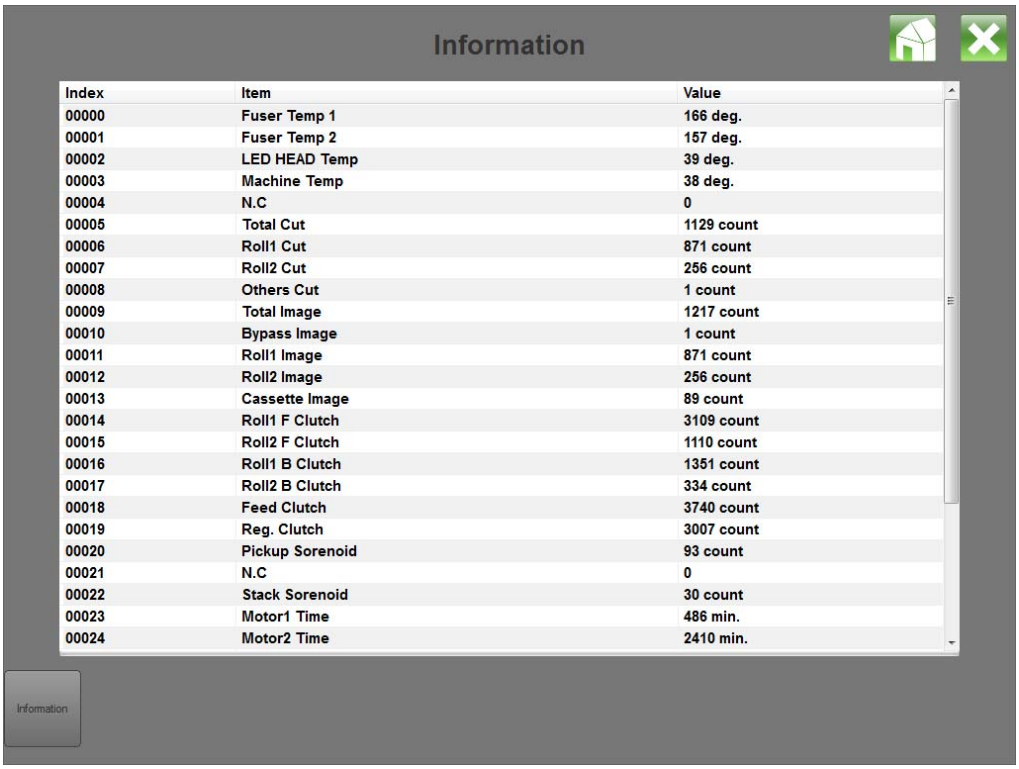
⚠ NOTE

Do not change the setting value!
This mode is factory use only.

8. 5 Information

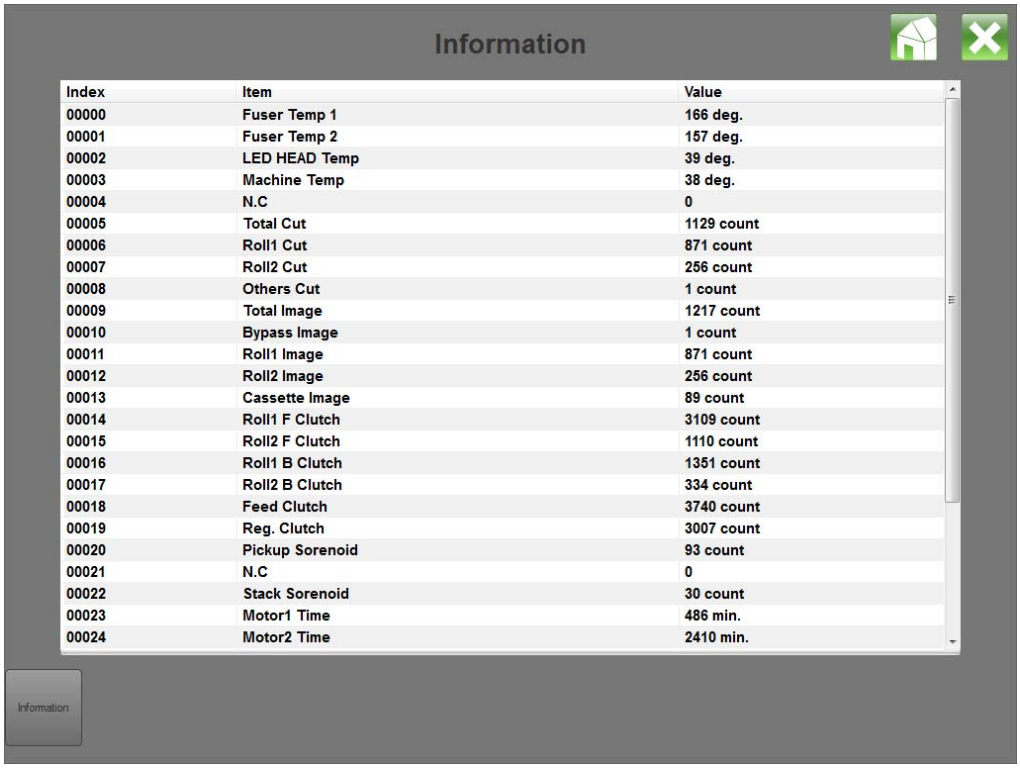
It is possible to monitor several kinds of data/information of printer.





8. 5. 1 Operation in Information

Find the requested item under [Item] in the list and check the data or information for the selected item under [Value].



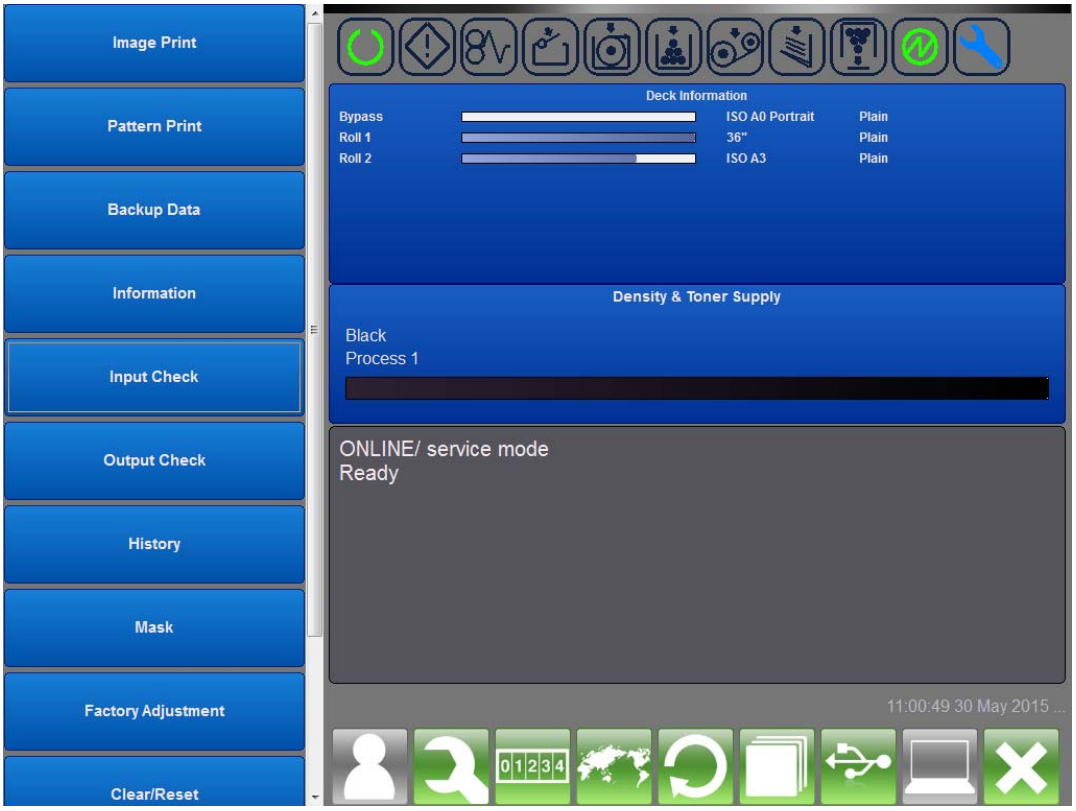
For details about [Item] and [Detail], see the next page.

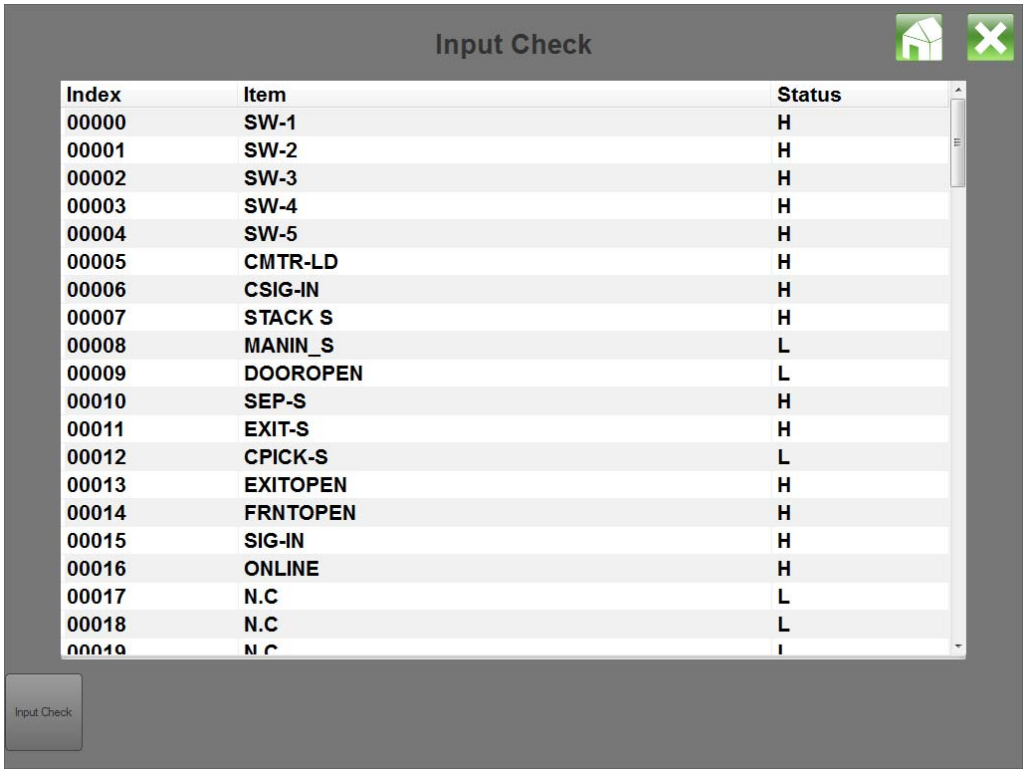
8. 5. 2 List of Analog Data Monitor

Data Code	Item	Unit	Remarks	Contents
00	Fuser Temp 1	Centigrade	Calculated Value	temperature detected by the thermistor on the center of the Fuser Unit
01	Fuser Temp 2	Centigrade	Calculated Value	temperature detected by the thermistor on the right of the Fuser Unit
02	LED HEAD Temp	Centigrade	Calculated Value	temperature detected on LED Head
03	Machine Temp	Centigrade	Calculated Value	temperature detected on PW13420
04	(Reserved)	-	-	-
05	Total Cut			number of operation times in total for media cut with any source / situation
06	Roll1 Cut			number of operation times for media cutting from Roll 1
07	Roll2 Cut			number of operation times for media cutting from Roll 2
08	Others Cut			number of operation times for media cutting for trim cut
09	Total Image			number of operation times in total for printing operation with any source
10	Bypass Image			number of operation times for printing operation on Roll 1
11	Roll1 Image			number of operation times for printing operation on Roll 2
12	Roll2 Image			number of operation times for printing operation on Bypass Feeder
13	Cassette Image			number of operation times for printing operation on Paper Tray
14	Roll1 F Clutch			number of operation times of Roll 1 Feed Clutch
15	Roll2 F Clutch			number of operation times of Roll 2 Feed Clutch
16	Roll1 B Clutch			number of operation times of Roll 1 Back Clutch
17	Roll2 B Clutch			number of operation times of Roll 2 Back Clutch
18	Feed Clutch			number of operation times of Feed Clutch
19	Reg. Clutch			number of operation times of Registration Clutch
20	Pickup Solenoid			number of operation times of Pickup Solenoid
21	(Reserved)	-	-	-
22	Stack Solenoid			number of operation times of Stack Solenoid
23	Motor 1 Time	minute		total operation time of Main Motor
24	Motor 2 Time	minute		total operation time of Fuser Motor
25	LED ON Time	minute		total lighting-up time of LED Head
26	Motor 3 Time	minute		total operation time of Paper Tray Motor
27	Bias 3 Time	minute		operation time of Main Motor from the last Density Measure
28	Density V0	[V]		Reference voltage of density sensor
29	Density V1	[V]		Operating voltage of the density sensor
30	Density Vr	[V]		Voltage at the time of density reading
31	Density W Level		no use	
32	Density B Level		no use	

8. 6 Input Check

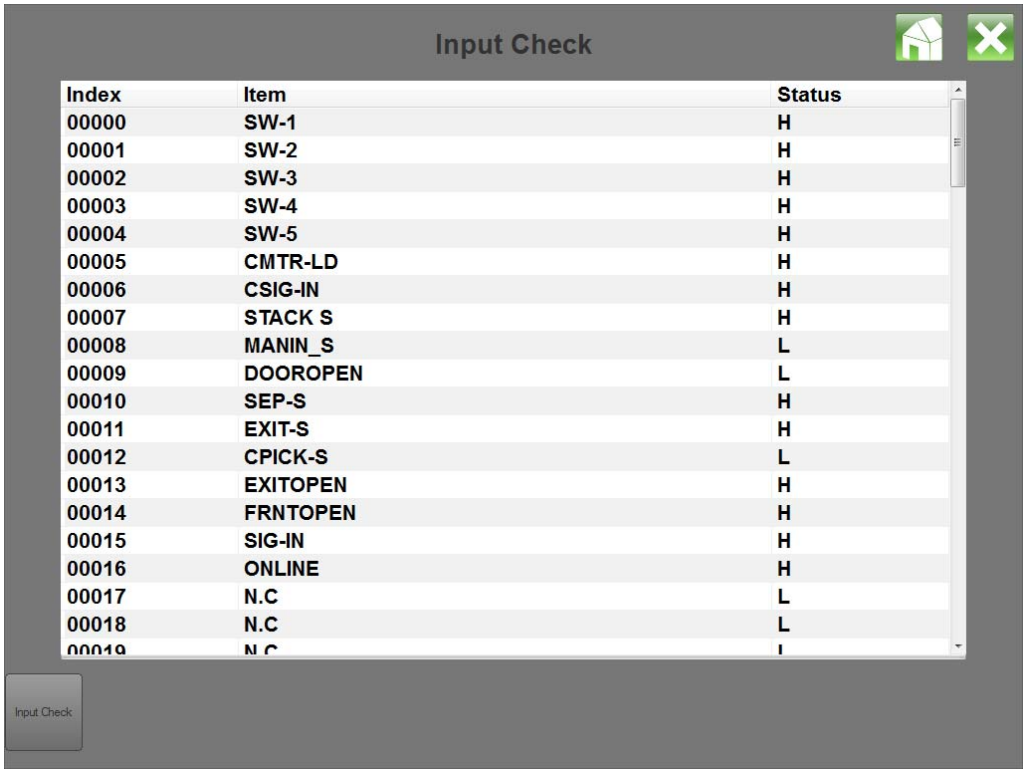
A service technician can check whether or not the status of input signal from each electric component is normal.





8. 6. 1 Operation in Input Check

Find the requested item under [Item] in the list and check the status of the input signal from the selected item under [Status]. The status is shown by H or L.



See next page to know which electric component is corresponded to the item name in the list as well as the meaning of H/L status.

8. 6. 2 Input / Output Signal list

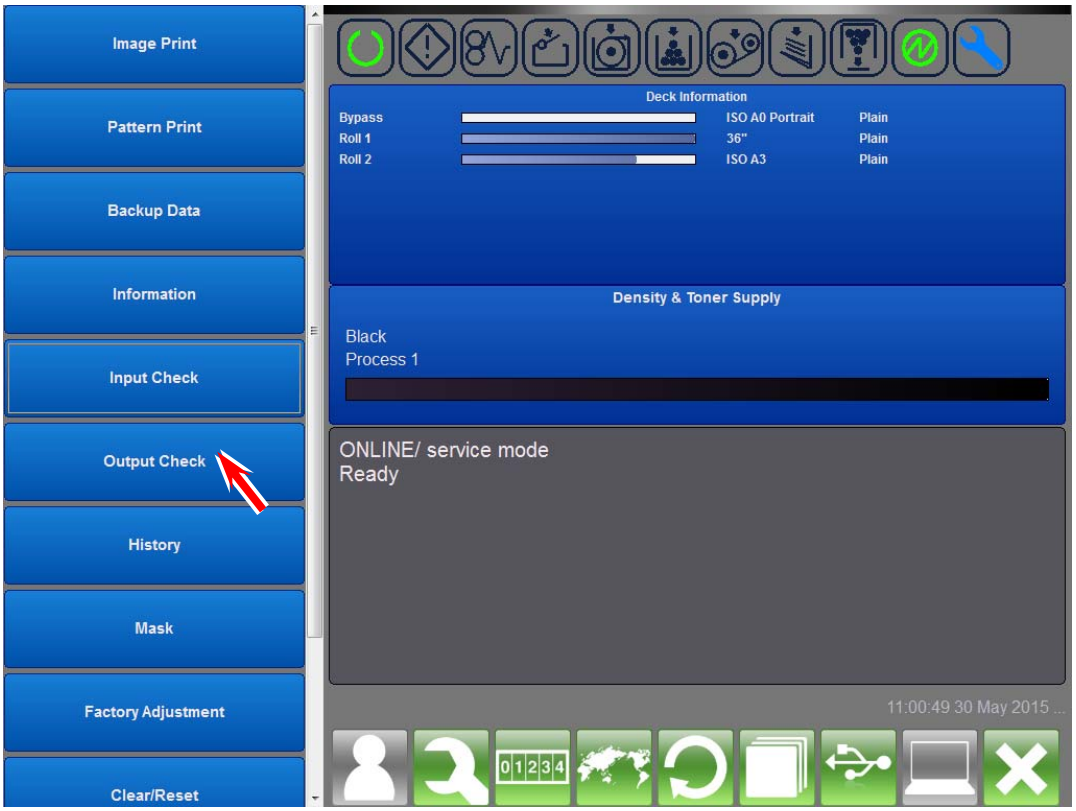
Grayed : Factory use only.

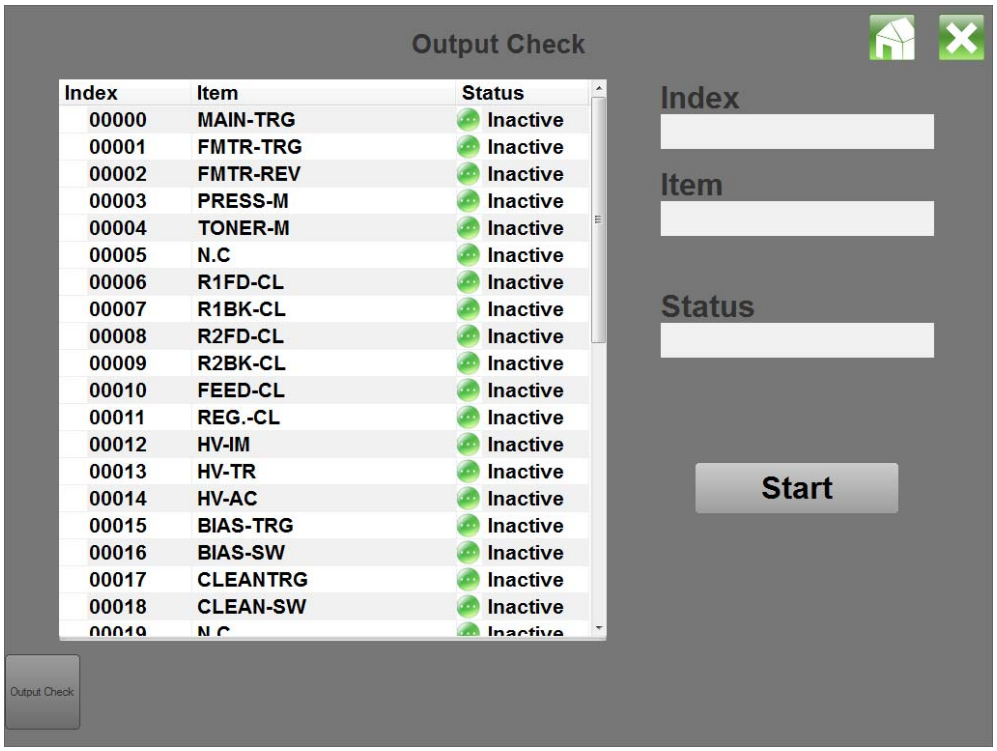
Index	Item	IC Port	Connector	Signal Name	Input / Output	Status
00000	SW-1	IC3-P20	J205-17	Input Switch 1	Input	L : ON
00001	SW-2	IC3-P21	J205-18	Input Switch 2	Input	L : ON
00002	SW-3	IC3-P22	J205-19	Input Switch 3	Input	L : ON
00003	SW-4	IC3-P23	J205-20	Input Switch 4	Input	L : ON
00004	SW-5	IC3-P24	J205-21	Input Switch 5	Input	L : ON
00005	CMTR-LD	IC3-P25	J202-7	Paper Tray Motor Output Detection	Input	-
00006	CSIG-IN	IC3-P26	J202-8	Paper Tray Received Signal	Input	Not used
00007	STACK S	IC3-P27	J204-1	Stack Sensor	Input	L : Paper detected
00008	MAININ_S	IC3-P40	J204-20	Manual Feed Sensor	Input	H : Paper detected
00009	DOOROPEN	IC3-P41	J204-21	Roll Deck Open	Input	H : Open
00010	SEP-S	IC3-P42	J204-22	Separation Sensor	Input	L : Paper detected
00011	EXIT-S	IC3-P43	J204-23	Exit Sensor	Input	L : Paper detected
00012	CPICK-S	IC3-P44	J204-24	Paper Tray Pick-up sensor	Input	H : Paper detected
00013	EXITOPEN	IC3-P45	J207-16	Exit Door Open	Input	L : Open
00014	FRNTOPEN	IC3-P46	J207-15	Front Door Open	Input	L : Open
00015	SIG-IN	IC3-P47	J204-27	Stacker Input	Input	
00016	ONLINE	IC3-60	J205-15	Online LED	Output	H : ON
00017	N.C	IC3-61	J207-14			
00018	N.C	IC3-62	J215-7			
00019	N.C	IC3-63	J215-8			
00020	STACK-SL	IC3-64	J207-13	Paper Exit switching solenoid	Output	H : Front (Upper)
00021	SIG-OUT	IC3-65	J204-28	Stacker Output	Output	
00022	H BLW(L)	IC3-66	J207-12	Fuser Blower (Low)	Output	H : ON
00023	H BLW(H)	IC3-67	J207-12	Fuser Blower (High)	Output	H : ON
00024	MAIN-TRG	IC3-P10	J206-7	Main Motor	Output	H : Rotate
00025	FUMTRTRG	IC3-P11	J206-8	Fuser Motor	Output	H : Rotate
00026	HV-IM	IC3-P12	J206-9	Image Corona	Output	H : Output
00027	HV-TR	IC3-P13	J206-10	Transfer Corona	Output	H : Output
00028	HV-AC	IC3-P14	J206-11	Separation Corona	Output	H : Output
00029	BIAS-TRG	IC3-P15	J206-12	Developer Bias	Output	H : Output
00030	BIAS-SW	IC3-P16	J206-13	Developer Bias Polarity Switch	Output	L : Positive Bias
00031	N.C	IC3-P17	J206-14			
00032	MAIN-DIR	IC3-P30	J206-15	Main Motor Reversal Rotation	Output	H : Reverse(CCW)
00033	PRESS-M	IC3-P31	J206-16	Developer Press Motor	Output	H : Rotate
00034	TONER-M	IC3-P32	J206-17	Hopper Motor	Output	H : Rotate
00035	CLEAN-SW	IC3-P33	J206-18	Cleaning Roller Voltage Polarity Switch	Output	L : Positive
00036	FEED-BLW	IC3-P34	J206-22	Blower (BL7) Control	Output	H : Rotate
00037	HEAT1	IC3-P35	J206-25	SSR ON/OFF Signal 1	Output	H : Heater Lamp lights
00038	COOLERBL	IC3-P36	J206-26	Fuser Cooling Fan	Output	H : Rotate
00039	POWER-SW	IC3-P37	J206-27	Power Switch Output	Output	H : OFF
00040	TR LED	IC3-P50	J207-3	Separation Lamp Control	Output	H : Lighting
00041	COUNT	IC3-P51	J207-4			
00042	HEAT-RY	IC3-P52	J207-5	Fuser Relay	Output	H : ON
00043	SELECTCL	IC3-P53		Clutch Selection (Roll 1 or 2)	Output	H : Roll 1
00044	FOWD-CL	IC3-P54	J207-6(R1) J207-8(R2)	Roll 1&2 Feed Clutch	Output	H : ON
00045	BACK-CL	IC3-P55	J207-9(R1) J208-9(R2)	Roll 1&2 Back Clutch	Output	H : ON
00046	FEED-CL	IC3-P56	J207-10	Feed Clutch	Output	H : ON
00047	REG.-CL	IC3-P57	J207-11	Registration Clutch	Output	H : ON
00048	COUNT-CN	IC3-P80	J207-4	Counter Connection Detection	Input	
00049	MAMTR-LD	IC3-P81	J203-14	Main Motor Output Detection	Input	
00050	FUMTR-LD	IC3-P82	J203-15	Fuser Motor Output Detection	Input	
00051	DIS-CN	IC3-P83	J203-16	Developer Connection Detection	Input	
00052	IM-LD	IC3-P84	J203-17	Image Corona Output Detection	Input	
00053	TR-LD	IC3-P85	J203-18	Transfer Corona Output Detection	Input	

Signal Code	Symbol	IC Port	Connector	Signal Name	Input / Output	Status
00054	AC-LD	IC3-P86	J203-19	Separation Corona Output Detection	Input	
00055	BIAS-LD	IC3-P87	J203-20	Developer Bias Output Detection	Input	
00056	N.C	IC3-P70				
00057	N.C	IC3-P71				
00058	N.C	IC3-P72				
00059	N.C	IC3-P73				
00060	N.C	IC3-P74				
00061	FMTR-DIR	IC3-P75	J215-4	Fuser Motor Reverse	Output	H : Reverse(CCW)
00062	HEAT2	IC3-P76	J215-5	SSR ON/OFF 2	Output	H : Heater Lamp lights
00063	N.C	IC3-P77				
00064	CMTR-TRG	IC3-P90	J215-9	Paper Tray Motor		H : Rotate
00065	CMTR-CLK	IC3-P91	J215-10	Paper Tray signal		
00066	PICK-SL	IC3-P92	J215-12	Paper Tray Pickup Solenoid		H: On
00067	DENS-S	IC3-P93	J215-13	Density Sensor Output 1		H: On
00068	N.C	IC3-P94	J215-14			
00069	N.C	IC3-P95	J215-15			
00070	N.C	IC3-P96	J215-16			
00071	BOARDLED	IC3-P97		PW13420 PCB LED	Output	H: Lights
00072	N.C	IC6-P10				
00073	N.C	IC6-P11				
00074	N.C	IC6-P12				
00075	N.C	IC6-P13				
00076	N.C	IC6-P14				
00077	N.C	IC6-P15				
00078	N.C	IC6-P16				
00079	CLEANTRG	IC6-P17	J206-5	Cleaning Roller Bias	Output	H : Output
00080	LCD-CLK	IC6-P20		LCD Clock		
00081	LCD-DATA	IC6-P21		LCD Data		
00082	LCD-EN	IC6-P23	J205-6	LCD Enable		
00083	LCD-WE	IC6-P24	J205-5	Data Read / Write Selection	Output	
00084	LCD-RS	IC6-P22	J205-4	LCD Input Selection	Output	
00085	N.C	IC6-P25	J206-28			
00086	N.C	IC6-P26	J206-6			
00087	N.C	IC6-P27				
00088	N.C	IC6-P32				
00089	N.C	IC6-P33				
00090	N.C	IC6-P51				
00091	N.C	IC6-P30				
00092	N.C	IC6-P31				
00093	N.C	IC6-P50				
00094	MS_CUTR	IC6-P60	J204-5	Cutter Home Position Sensor (Right)	Input	L : Staying at Home Position
00095	MS_CUTL	IC6-P61	J204-6	Cutter Home Position Sensor (Left)	Input	L : Staying at Home Position
00096	M5_CUTL	IC6-P63	J207-1	Cutter Motor 1	Output	H : Rotate
00097	M5_CUTR	IC6-P62	J207-2	Cutter Motor 2	Output	H : Rotate
00098	N.C	IC6-P34				
00099	N.C	IC6-P64				
00100	REGIST-S	IC6-P65	J204-7	Registration Sensor	Input	H : Paper detected
00101	R1ENC-S	IC6-P66	J204-8	Roll 1 Encoder	Input	
00102	R2ENC-S	IC6-P67	J204-9	Roll 2 Encoder	Input	
00103	VLC-OFF	IC6-PG0		LCD Indication ON/OFF	Output	H : Indicating
00104	PRESS-S	IC6-PA5	J204-10	Developer Press Sensor	Input	L : Detecting
00105	R1SET-S	IC6-PA6	J204-11	Roll 1 Set Sensor	Input	H : Paper detected
00106	R2SET-S	IC6-PA7	J204-12	Roll 2 Set Sensor	Input	H : Paper detected
00107	TONER-S	AN5	J203-6	Toner Sensor	Input	H : Toner detected
00108	FEED-S	IC6-PF7	J204-13	Feed Sensor	Input	H : Paper detected
00109	RENC-S	IC6-PF1	J204-26	Feed Encoder		
00110	CSET-S	IC6-PF2	J204-25	Media set sensor (Paper Tray)	Input	H : Paper detected
00111	EXIT-ENC	IC6-PG3	J214-1	Encoder sensor (Exit)	Input	
00112	CST-OPEN	IC6-P44	J203-6	Paper Tray open	Input	L : Open

8. 7 Output Check

It is possible to let each single electric component function by sending an operation signal.

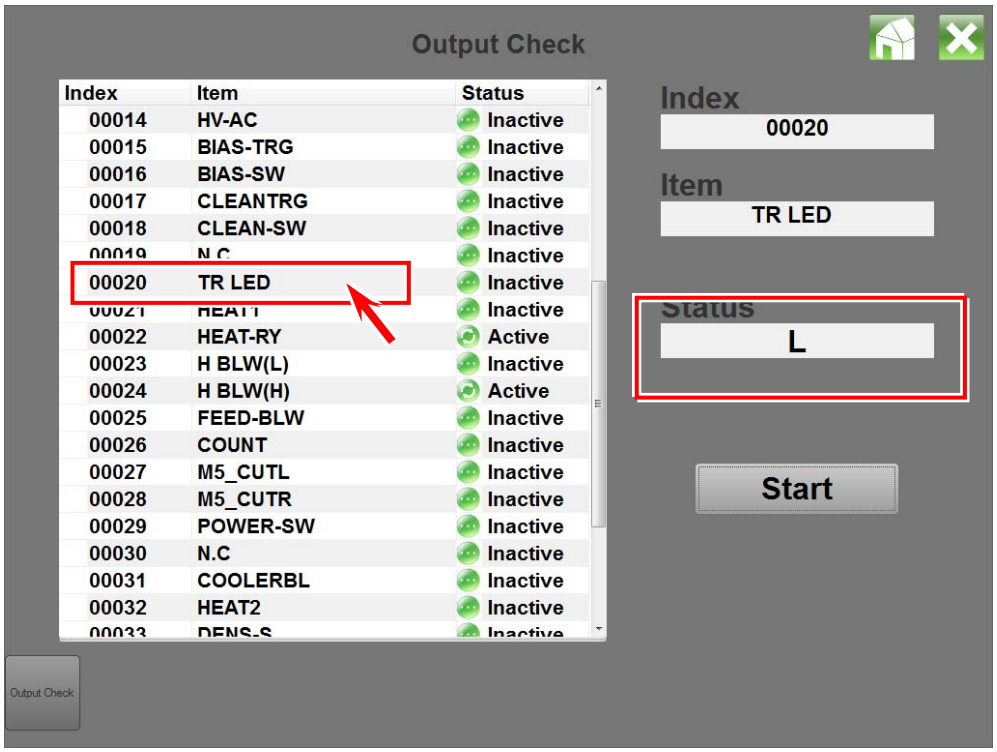




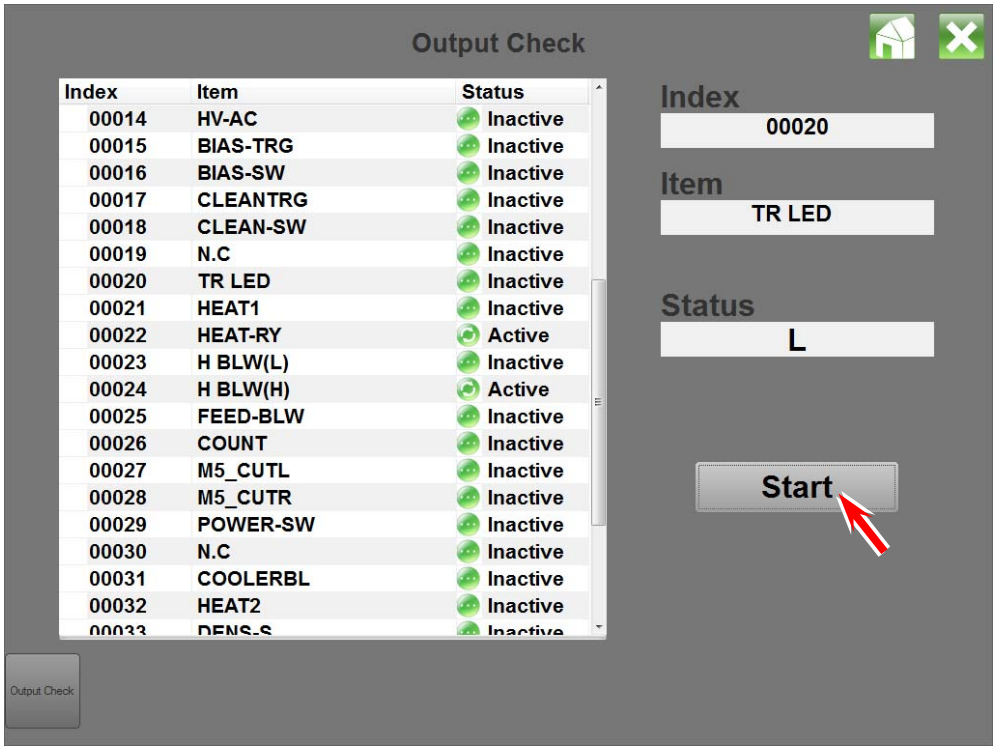
8. 7. 1 Operation in Output Check

1. Find the requested item under [Item] in the list and select it by touching on the touch panel. The **Status** area shows the current signal status of the selected item.

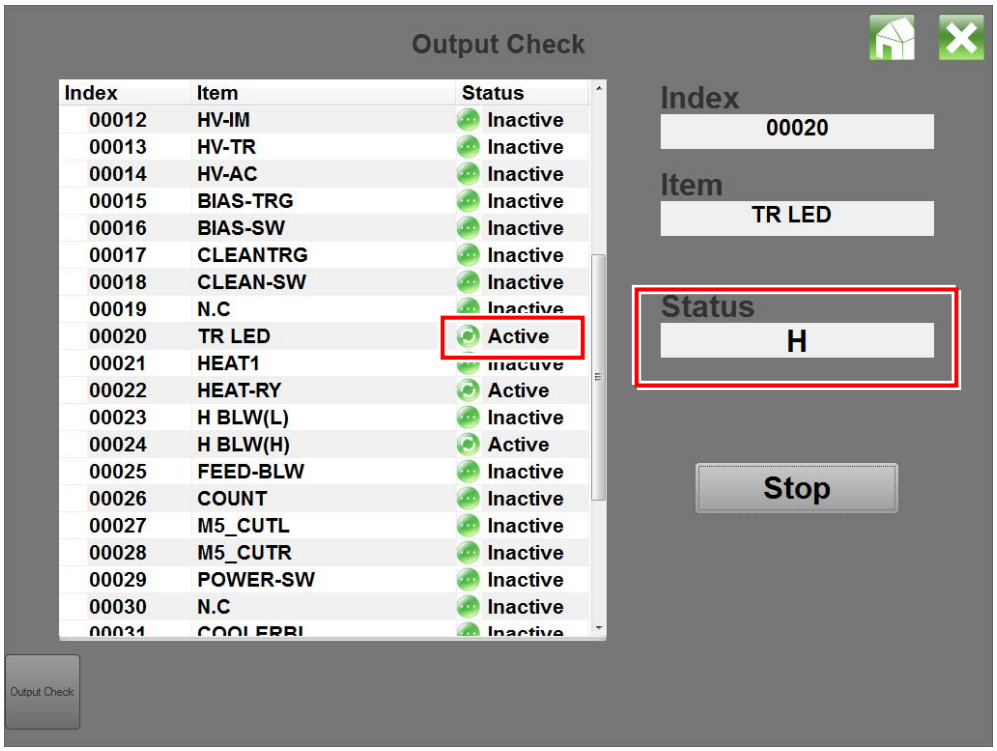
   (Example : [00020 TR LED] is selected. Signal status is L now.)



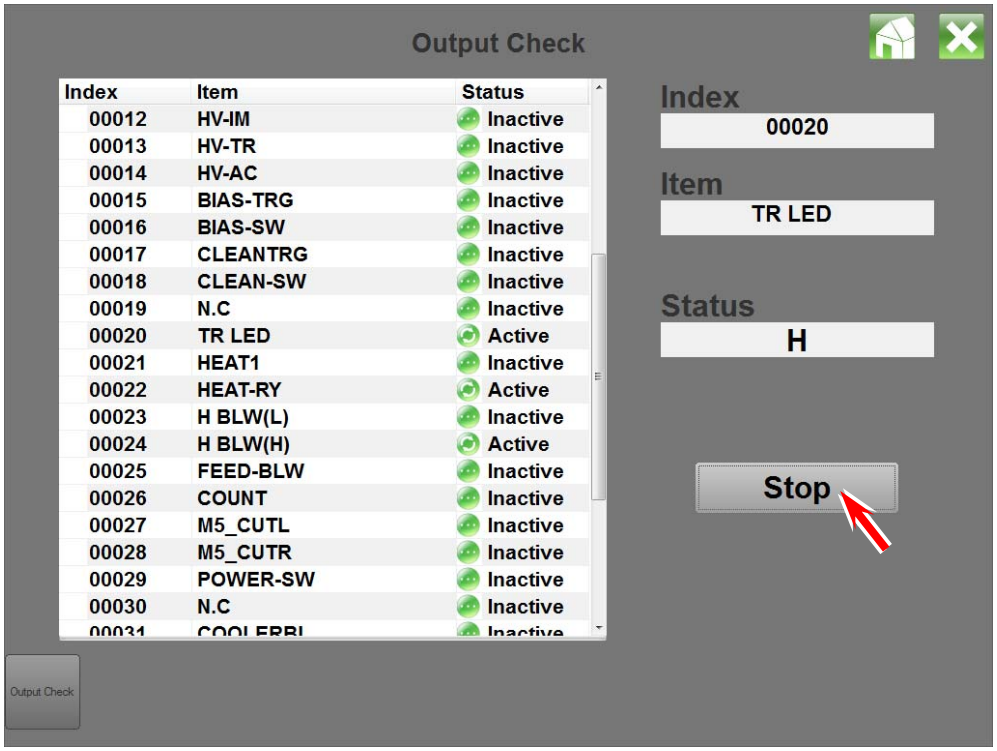
2. Press **Start** to output an operation signal.



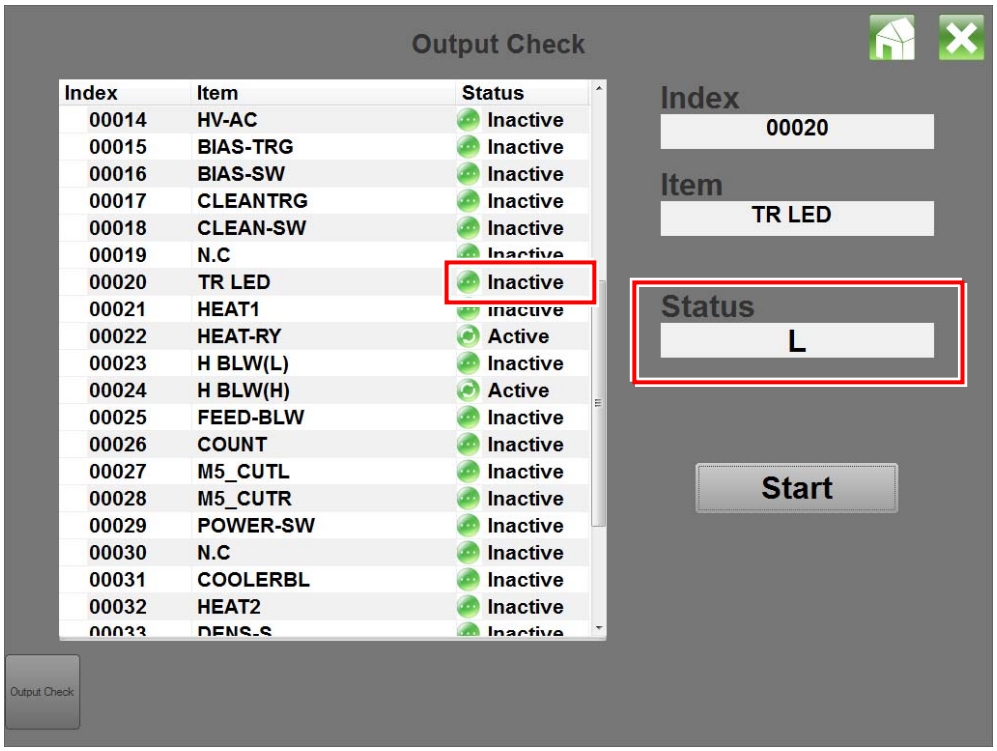
3. When the operation signal is output the signal status in **Status** area changes and the concerning electric component operates. "Active" is shown for the selected item in the list while the electric component is operating.



4. There are 3 ways to stop the operation according to the type of selected component.
   - Some components stop automatically by themselves, so just wait until they stop.
   - Some components stop automatically by themselves when particular time passes, so just wait until they stop. Or it is possible to stop them by pressing **Stop**.
   - Some components can be stopped by pressing **Stop** manually.



5. When the electric component stops operating the signal status in **Status** area changes. "Inactive" is shown for the selected item in the list also.

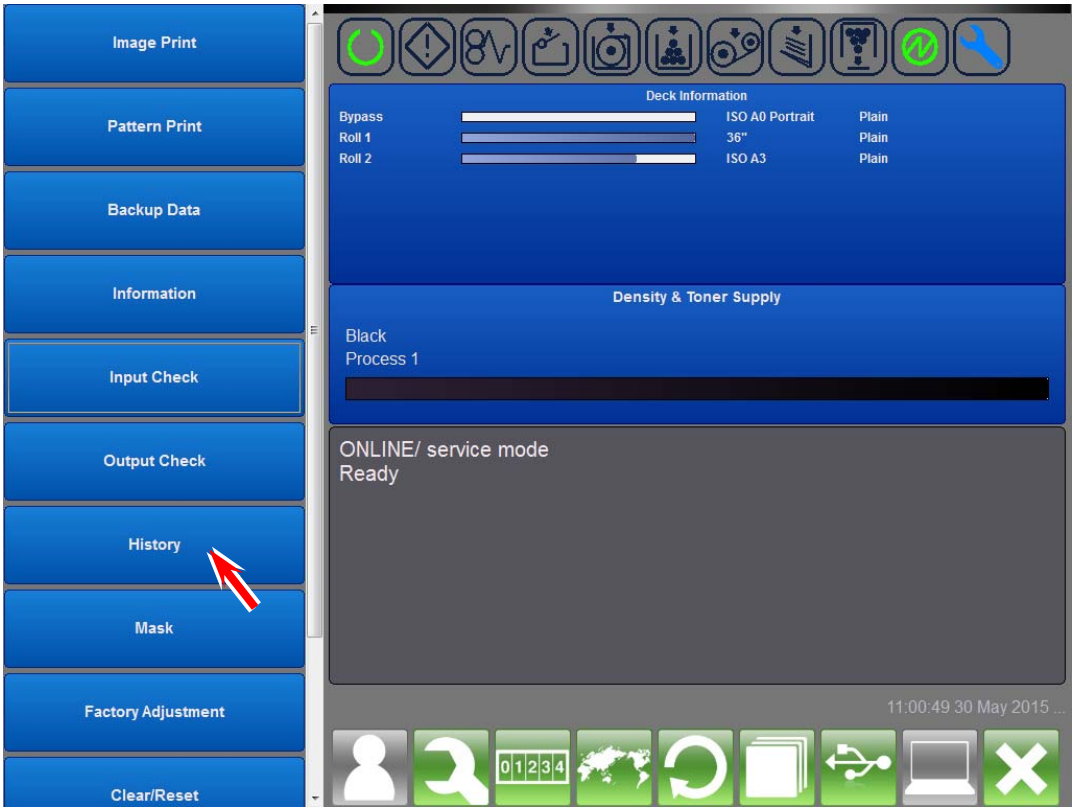


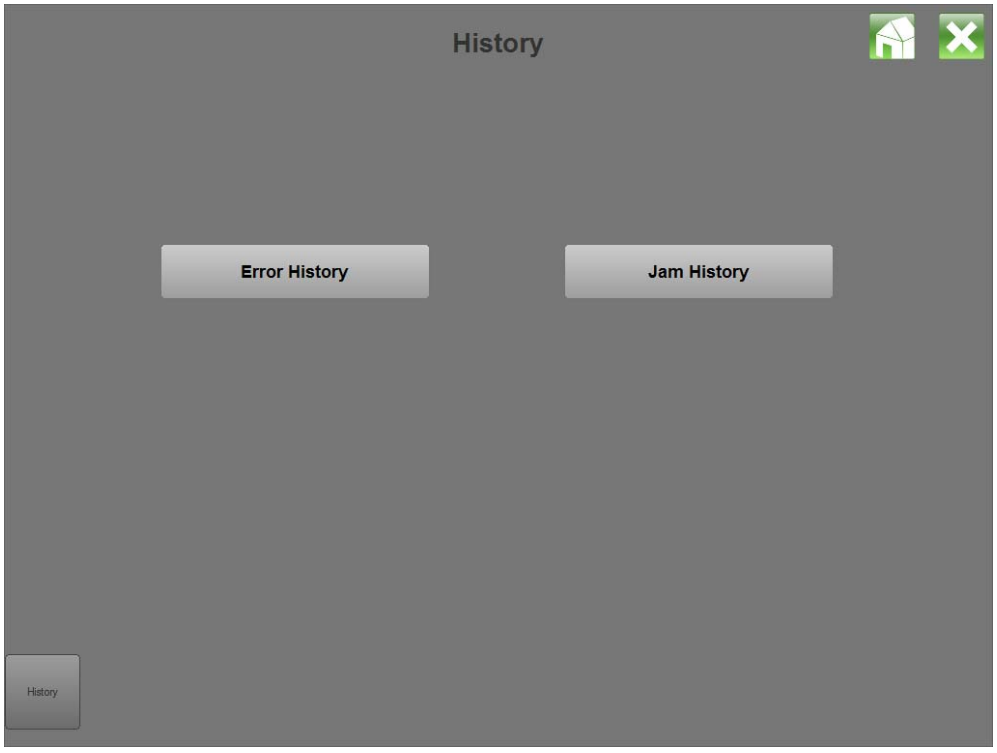
8. 7. 2 Output Signal List

Signal Code	Signal Name	Target item
00000	MAIN-TRG	Main Motor
00001	FMTR-TRG	Fuser Motor
00002	FMTR-REV	Fuser Motor (reversal rotation)
00003	PRESS-M	Developer Press Motor
00004	TONER-M	Toner Supply Motor
00005	NC	----
00006	R1FD-CL	Roll 1 Feed Clutch
00007	R1BK-CL	Roll 1 Back Clutch
00008	R2FD-CL	Roll 2 Feed Clutch
00009	R2BK-CL	Roll 2 Back Clutch
00010	FEED-CL	Feed Clutch
00011	REG.-CL	Registration Clutch
00012	HV-IM	Image Corona
00013	HV-TR	Transfer Corona
00014	HV-AC	Separation Corona
00015	BIAS-TRG	Developer Bias
00016	BIAS-SW	Positive/Negative selection of Developer Bias
00017	CLEANTRG	Cleaning Roller Bias
00018	CLEAN-SW	Positive/Negative selection of Cleaning Roller Voltage
00019	NC	----
00020	TR LED	Transfer Assist LED
00021	HEAT1	Fuser Lamp 1
00022	HEAT-RY	Fuser Relay
00023	H BLW(L)	Fuser Blower (Low speed)
00024	H BLW(H)	Fuser Blower (High speed)
00025	FEED-BLW	Paper Feed Blower
00026	COUNT	Counter
00027	M5_CUTL	Cutter Motor (blade moves to left)
00028	M5_CUTR	Cutter Motor (blade moves to right)
00029	POWER-SW	Main Switch
00030	NC	----
00031	COOLERBL	Cooling Fan
00032	HEAT2	Fuser Lamp 2
00033	DENS_S	Density Sensor
00034	NC	----
00035	CMTR-TRG	Paper Tray Motor
00036	PICK-SL	Pickup Solenoid
00037	NC	----
00038	STACK_SL	Stacker Solenoid

8. 8 History

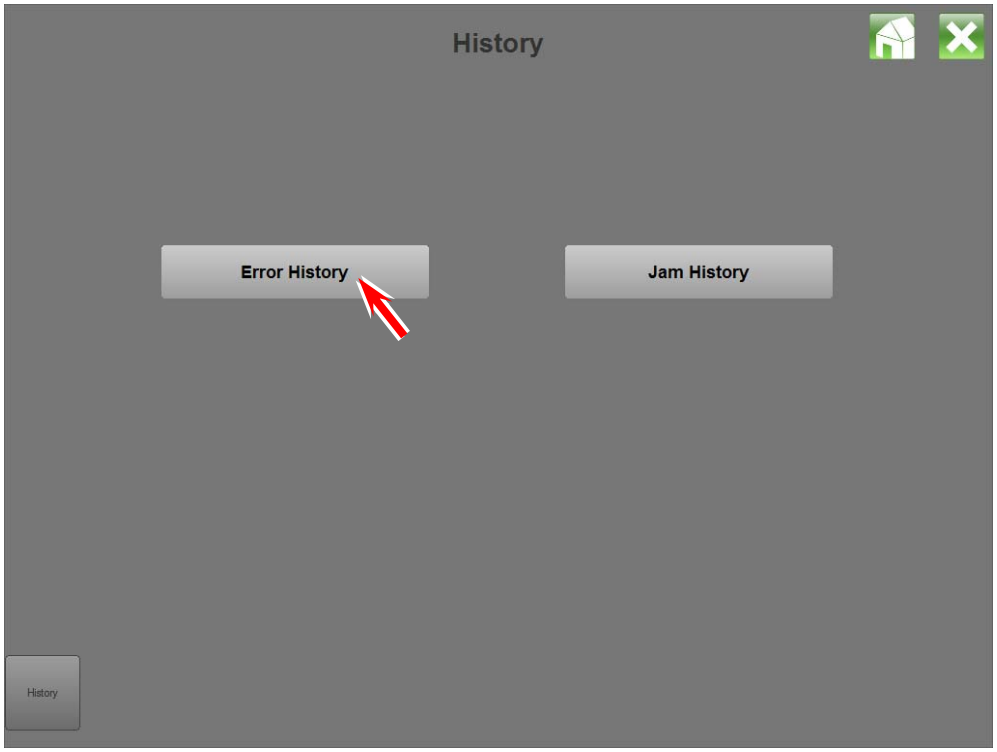
History shows the histories of service call errors and paper jams orderly from old to new, with the counter value of the occurrence time.





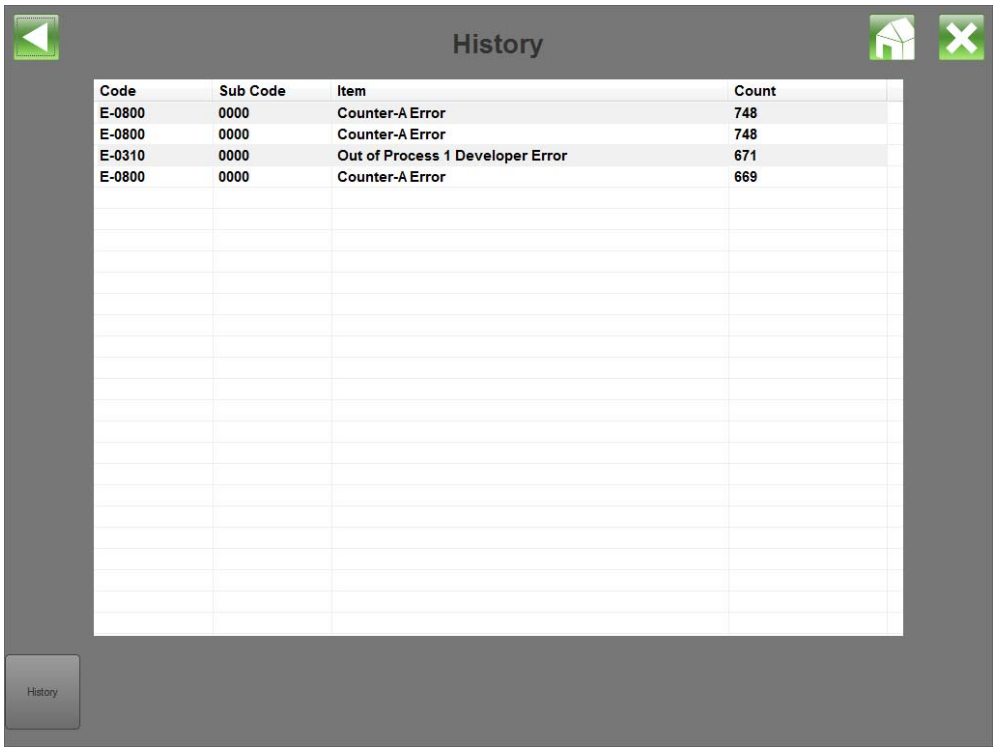
8. 8. 1 Operation in History

1. Press **Error History** for checking the history of errors.

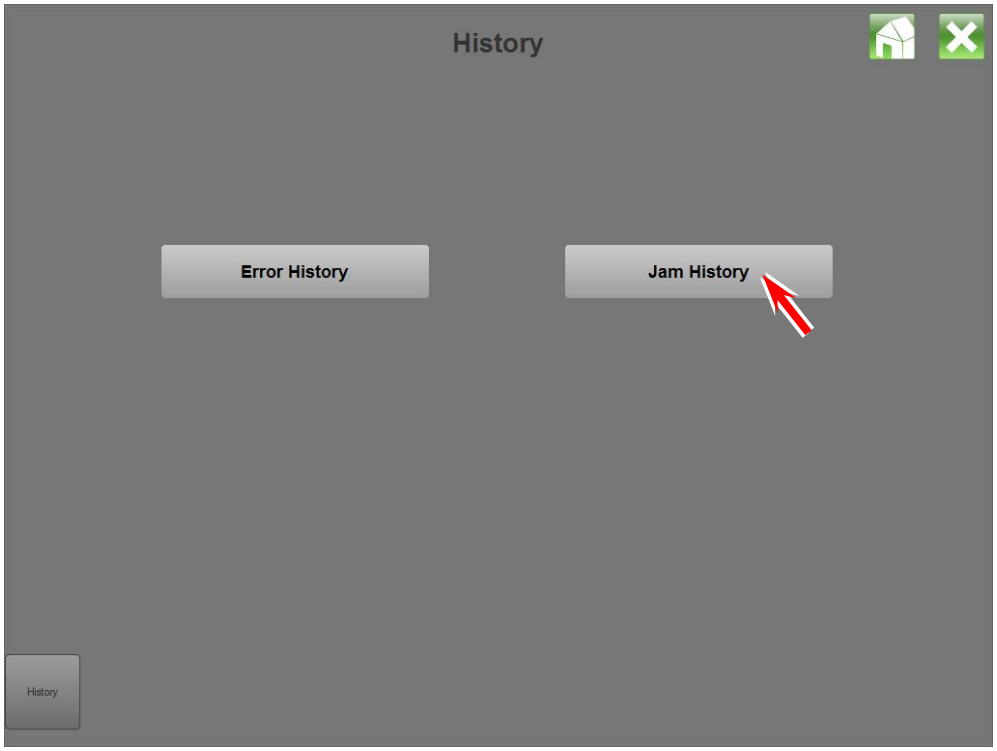


2. History of the recent errors are listed orderly. Newer errors are listed on upper section of the list.

Code	Unique error code for the error
Sub Code	Not used
Item	Name of error
Count	Counter value at the time of occurrence

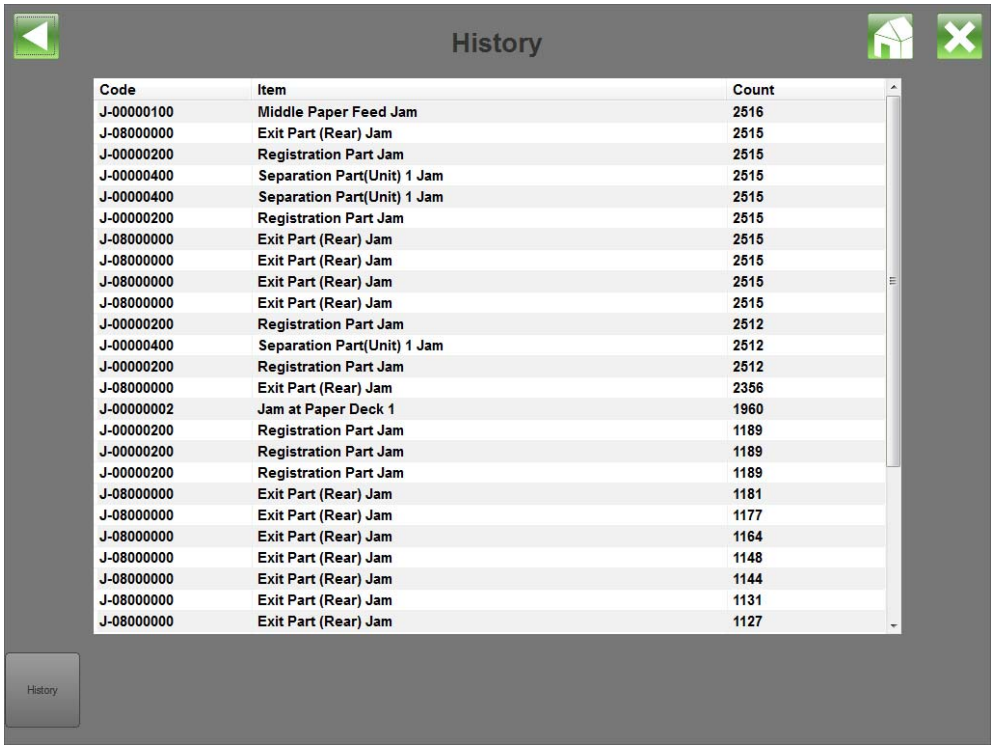


3. Press **Jam History** for checking the history of jams.



4. History of the recent jams are listed orderly. Newer jams are listed on upper section of the list.

Code	Unique jam code for the jam
Sub Code	Not used
Item	Name of error
Count	Counter value at the time of occurrence

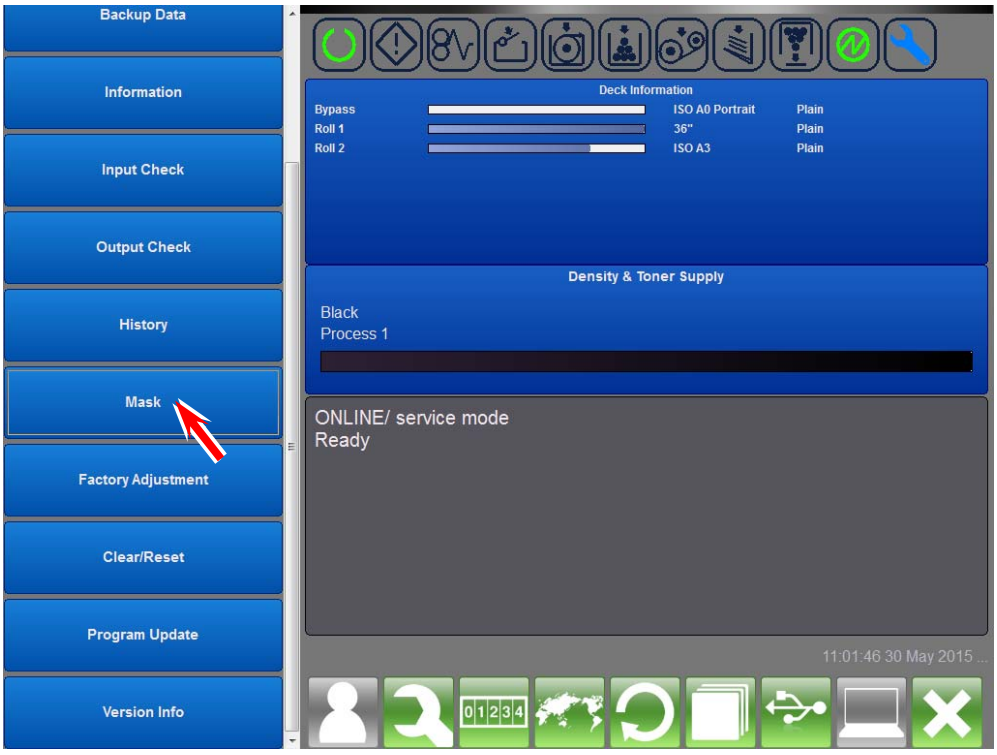


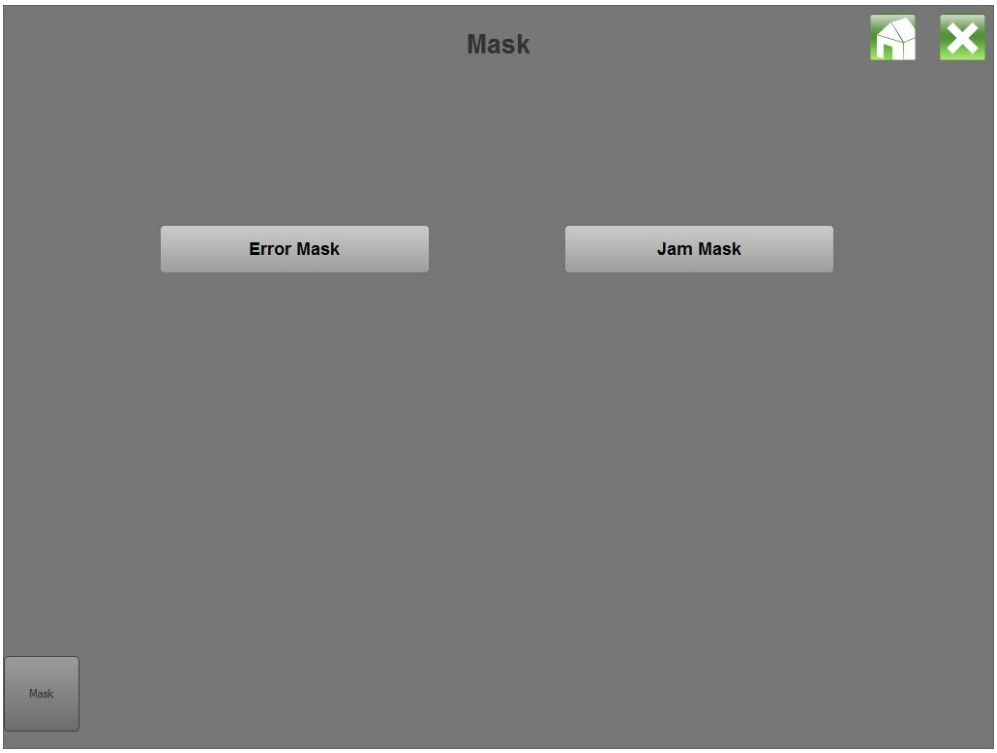
Code	Item	Count
J-00000100	Middle Paper Feed Jam	2516
J-08000000	Exit Part (Rear) Jam	2515
J-00000200	Registration Part Jam	2515
J-00000400	Separation Part(Unit) 1 Jam	2515
J-00000400	Separation Part(Unit) 1 Jam	2515
J-00000200	Registration Part Jam	2515
J-08000000	Exit Part (Rear) Jam	2515
J-08000000	Exit Part (Rear) Jam	2515
J-08000000	Exit Part (Rear) Jam	2515
J-08000000	Exit Part (Rear) Jam	2515
J-00000200	Registration Part Jam	2512
J-00000400	Separation Part(Unit) 1 Jam	2512
J-00000200	Registration Part Jam	2512
J-08000000	Exit Part (Rear) Jam	2356
J-00000002	Jam at Paper Deck 1	1960
J-00000200	Registration Part Jam	1189
J-00000200	Registration Part Jam	1189
J-00000200	Registration Part Jam	1189
J-08000000	Exit Part (Rear) Jam	1181
J-08000000	Exit Part (Rear) Jam	1177
J-08000000	Exit Part (Rear) Jam	1164
J-08000000	Exit Part (Rear) Jam	1148
J-08000000	Exit Part (Rear) Jam	1144
J-08000000	Exit Part (Rear) Jam	1131
J-08000000	Exit Part (Rear) Jam	1127

8. 9 Mask

If the printer indicates any error (J-****/E-****), it is possible to mask (ignore, not to detect) it in Mask Mode (Jam/Error). The error (J-****/E-****) you have chosen to mask will not be detected by masking. You can temporarily operate the printer as usual as normal condition even if a cause of the error is not removed yet.

> **NOTE**
>
> Masking condition will be automatically canceled once you quit KIP Service Software or turn off the printer.





8. 9. 1 Mask List

Error Mask

Index	Item	Contents	*Error Code
00000	Main Motor	Main Motor Error	E-0302 / E-770
00001	Fuser Motor	Fuser Motor Error	E-0920 / E-2336
00002	Press Motor	Developer Press Motor Error	E-0301 / E-769
00003	Dev. Set	Developer Unit Set Error	E-0310 / E-784
00004	Counter	Counter Error	E-0800 / E-2048
00005	Im Corona	Image Corona Output Error	E-0320 / E-800
00006	Tr Corona	Transfer Corona Output Error	E-0321 / E-801
00007	Sp Corona	Separation Corona Output Error	E-0322 / E-802
00008	Dev. Bias	Developer Bias Error	E-0323 / E-803
00009	FPGA	FPGA Error	----
00010	Density Sensor	Density Sensor Error	E-0335 / E-821 E-0336 / E822
00011	Cassette Motor	Cassette (Paper Tray) Motor Error	----

*Error Code expression in Hexadecimal Number / in Decimal Number

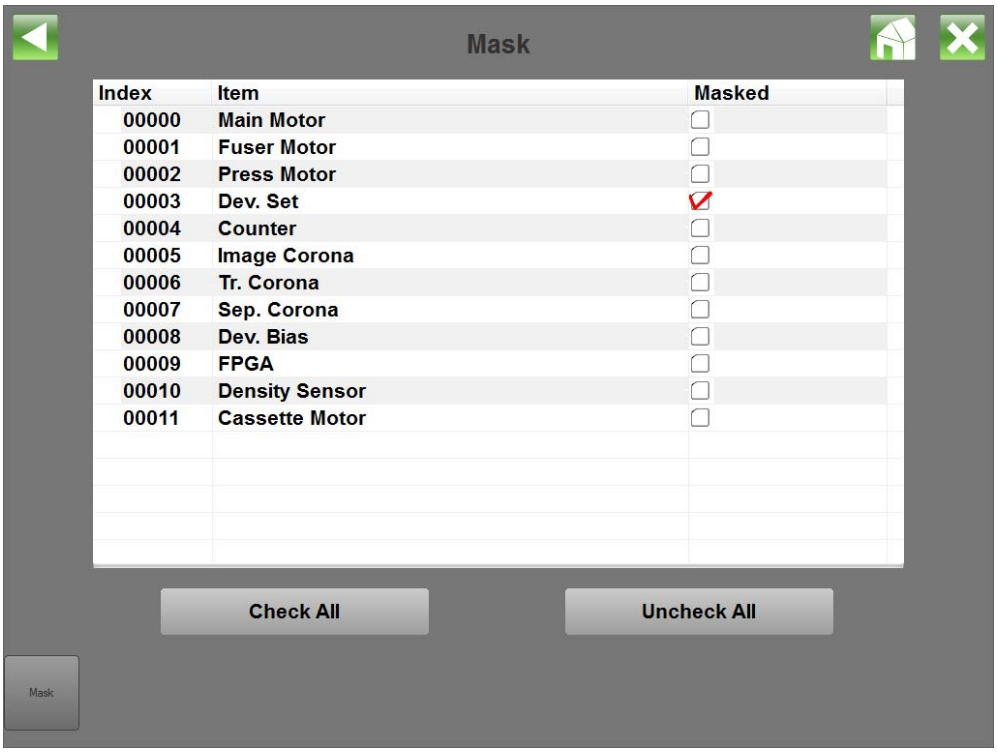
Jam Mask

Index	Item	Contents	*Error Code
00000	Roll2 Set Sensor	Roll 2 Deck Jam	J-00000002
00001	Roll1 Set Sensor	Roll 1 Deck Jam	J-00000002
00002	Feed Sensor	Feeding Jam	J-00000100
00003	Regist Sensor	Registration Jam	J-00000200
00004	Manual Sensor	Manual Jam	J-00000001
00005	Sep, Sensor	Internal Jam	J-00000400
00006	Exit Sensor	Fuser / Exit Cover Jam	J-08000000
00007	N.C	----	----
00008	Pickup Sensor	Pickup Jam (Paper Tray)	J-00000004
00009	Exit Encoder	Exit Encoder Jam	J-04000000

8. 9. 2 Operation in Error Mask

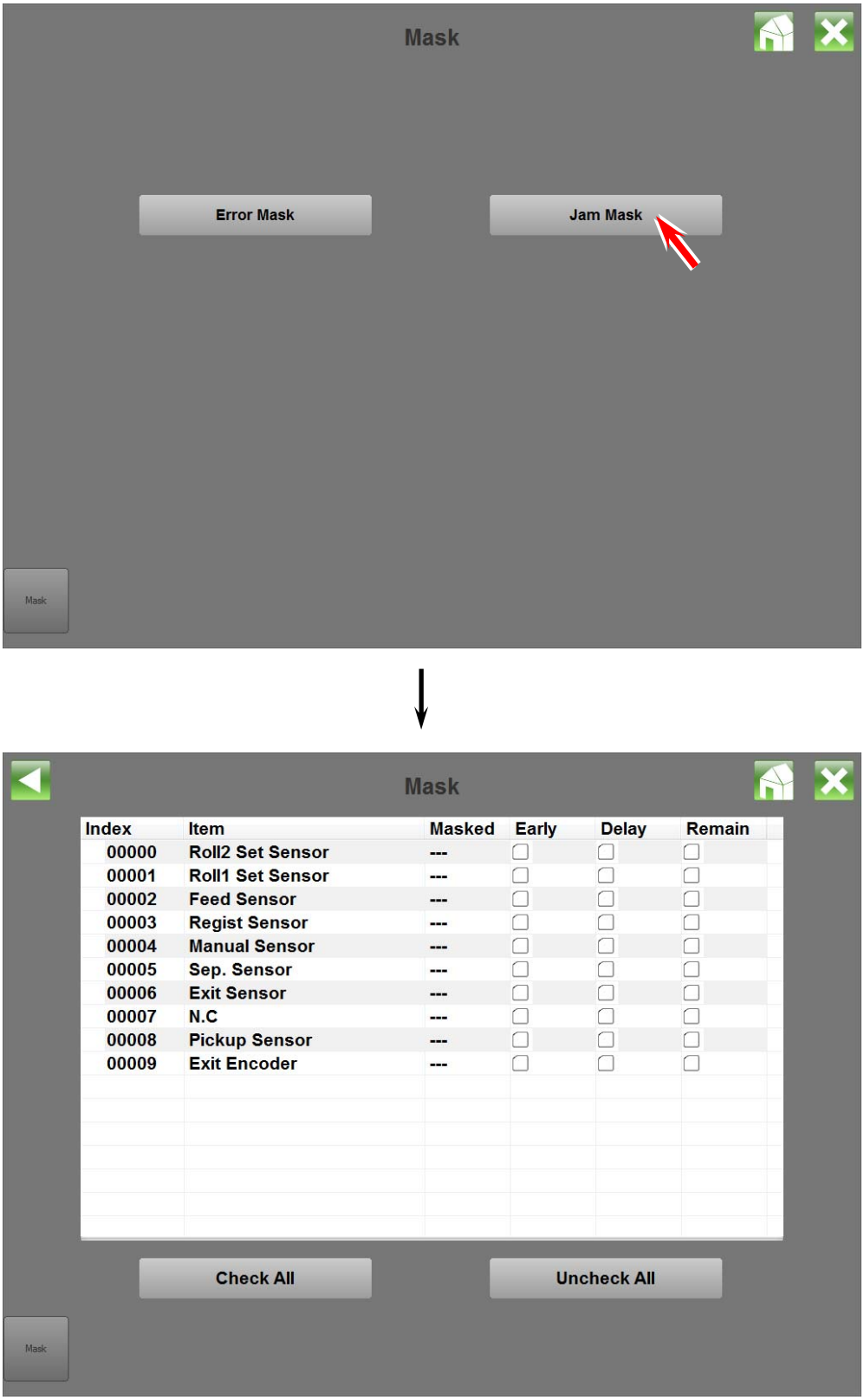
1. Press **Error Mask**.

2. Check items that you want to mask. Then the concerning sensor starts to ignore the checked Error.

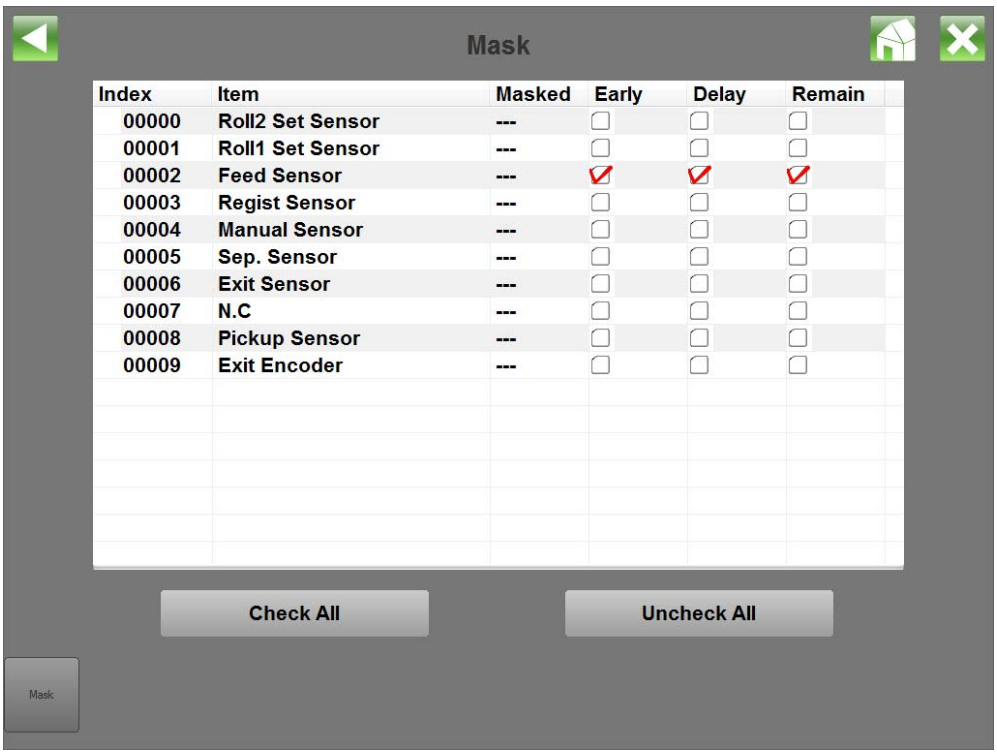


8. 9. 3 Operation in Jam Mask

1. Press **Jam Mask**.



2. Select the desired target.



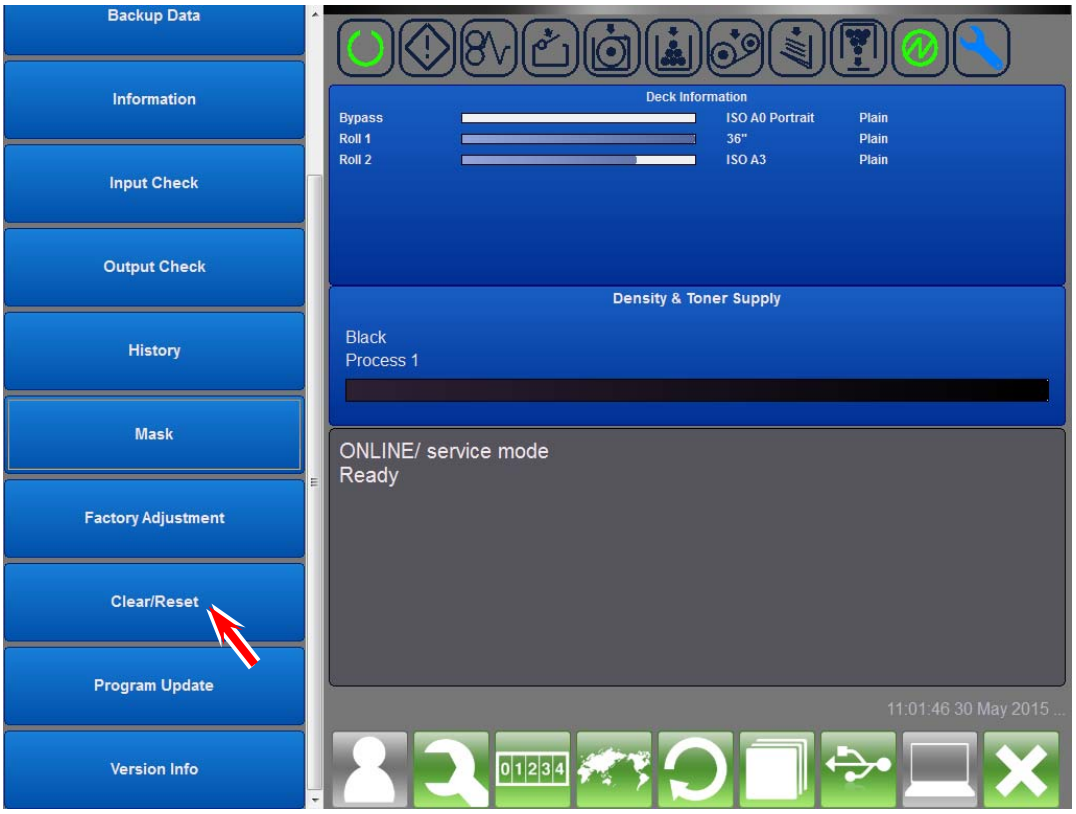
8.10 Factory Adjustment

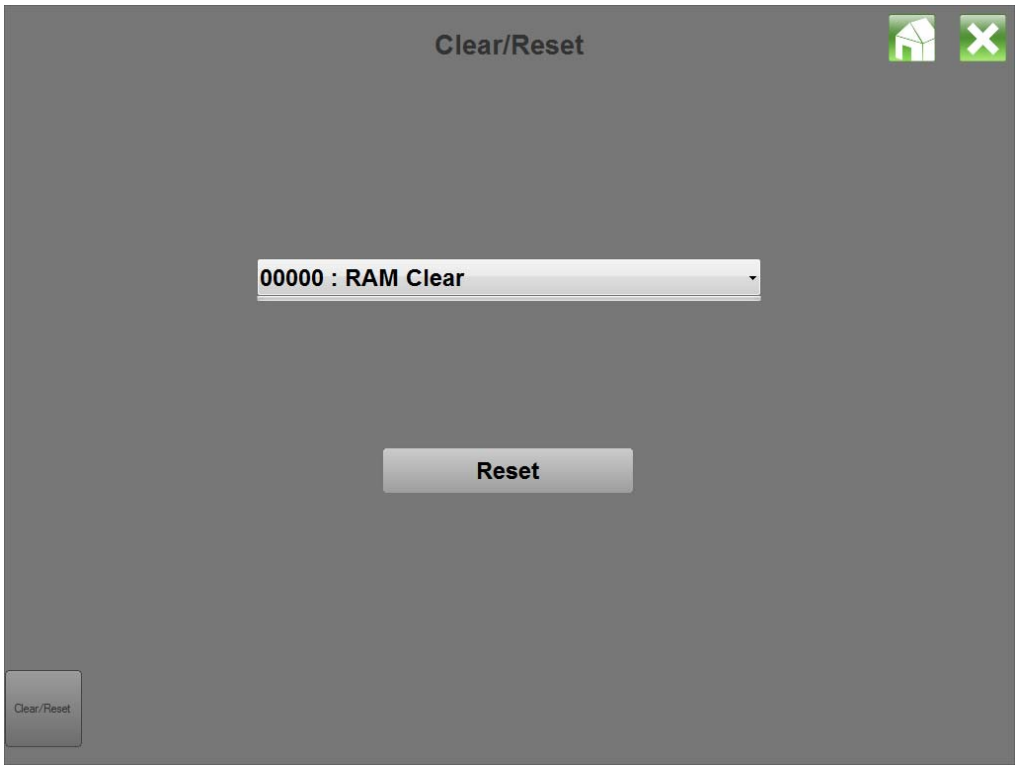
This mode is mainly used at factory for adjustment and product operation test.

> **NOTE**
>
> Factory Adjustment Mode is not available in Service Mode. Factory Use Only.

8.11 Clear/Reset

This mode clears or resets several important information or data. **Please pay great attention for any operation in this mode.**





8.11. 1 Operation in Clear/Reset

The followings are the available operations in Clear/Reset. **Please pay great attention for any operation in this mode as it is no longer available to recover the current information or data once cleared or reset carelessly.**

Item No.	Name	Contents
0000	RAM Clear	Clears any stored data in the memory in PW13420 PCB
0001	Error Clear	Clears *E-0900/2304, *E-0901/2305, *E-0903/2307 from the memory in PW13420 PCB
0002	Jam Info Clear	Clears Jam records J-**** in Jam History list
0003	Err Info Clear	Clears Error records E-**** in Error History list
0004	Print Count	Changes the counter value for Print Count (unit selectable)
0005	Total Count	Changes the counter value for Total Count (linear meter)
0006	Bias3 Count	Initializes Developer / Regulation Bias adjusted with Density Compensation Process
0007	Tonner Supply 1	Starts toner supply / agitation in Developer Unit
0008	PM Count 1	Clear the PM Count 1
0009	PM Count 2	Clear the PM Count 2
0010	PM Count 3	Clear the PM Count 3
0011	PM Count 4	Clear the PM Count 4
0012	Info Data Clear	Clears the Items 0002, 0003 and 0013 to 0034 at a time
0013	Total Cut	Clears each information item from the memory in PW13420 PCB, which are indicated by Information Mode See [8. 5 Information]
0014	Roll1 Cut	
0015	Roll2 Cut	
0016	Other Cut	
0017	Total Image	
0018	Bypass Image	
0019	Roll1 Image	
0020	Roll2 Image	
0021	Cassette Image	
0022	Roll1 F Clutch	
0023	Roll2 F Clutch	
0024	Roll1 B Clutch	
0025	Roll2 B Clutch	
0026	Feed Clutch	
0027	Reg. Clutch	
0028	Pickup Solenoid	
0029	N.C	
0030	Stack Solenoid	
0031	Motor1 Time	
0032	Motor2 Time	
0033	LED on Time	
0034	Motor3 Time	
0035	Factory Clear	

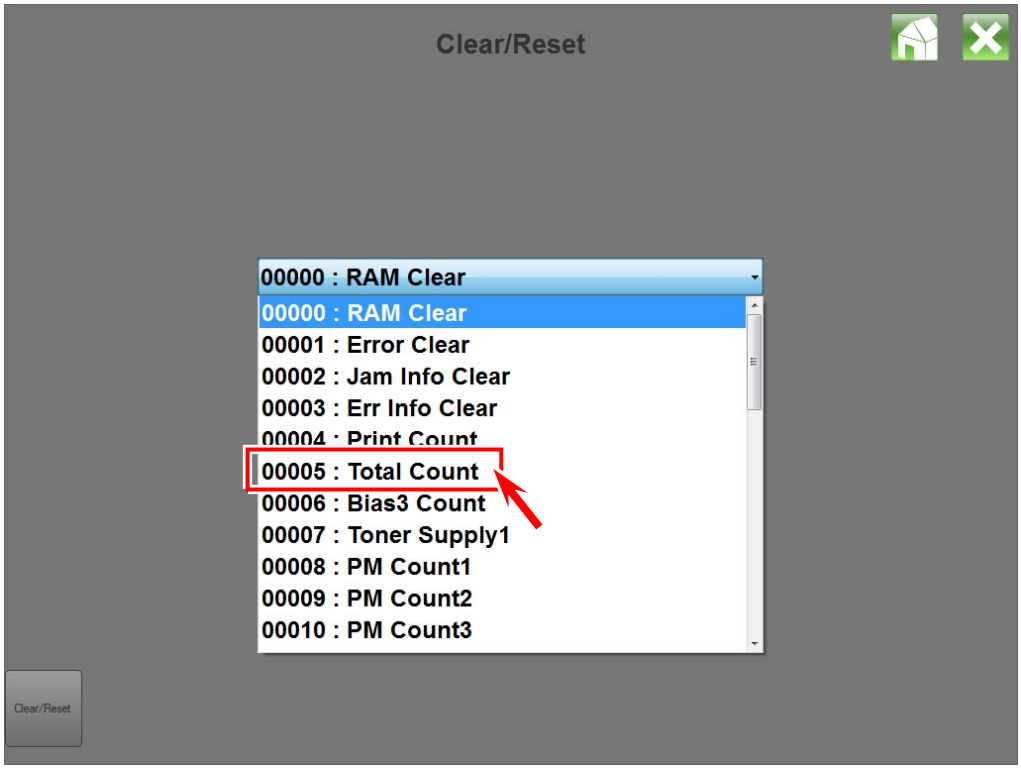
*Error code expression in Hexadecimal Number / in Decimal Number

⚠ NOTE

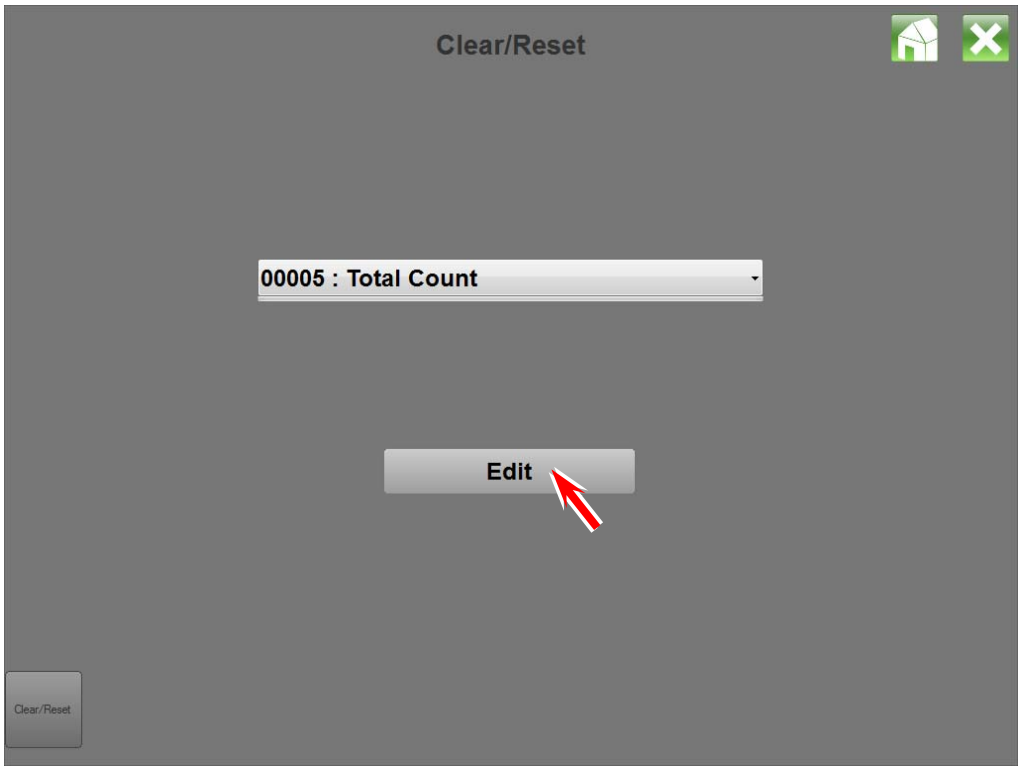
PRINT COUNT (00004) and TOTAL COUNT (00005) are stored on both PW13420 and the Controller. The counting memory is always verified between them. If you replace one of them, the other will automatically override the Count memory to the replaced component.

8. 11. 2 Changing Counter Value

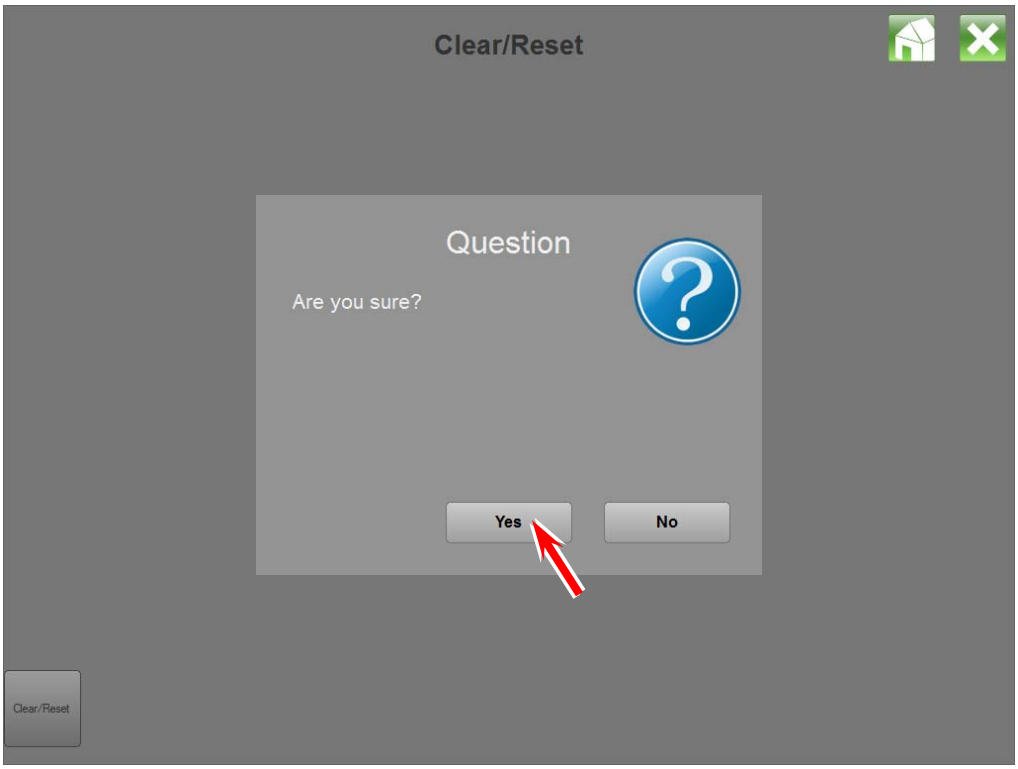
1. Press **Total Count**.



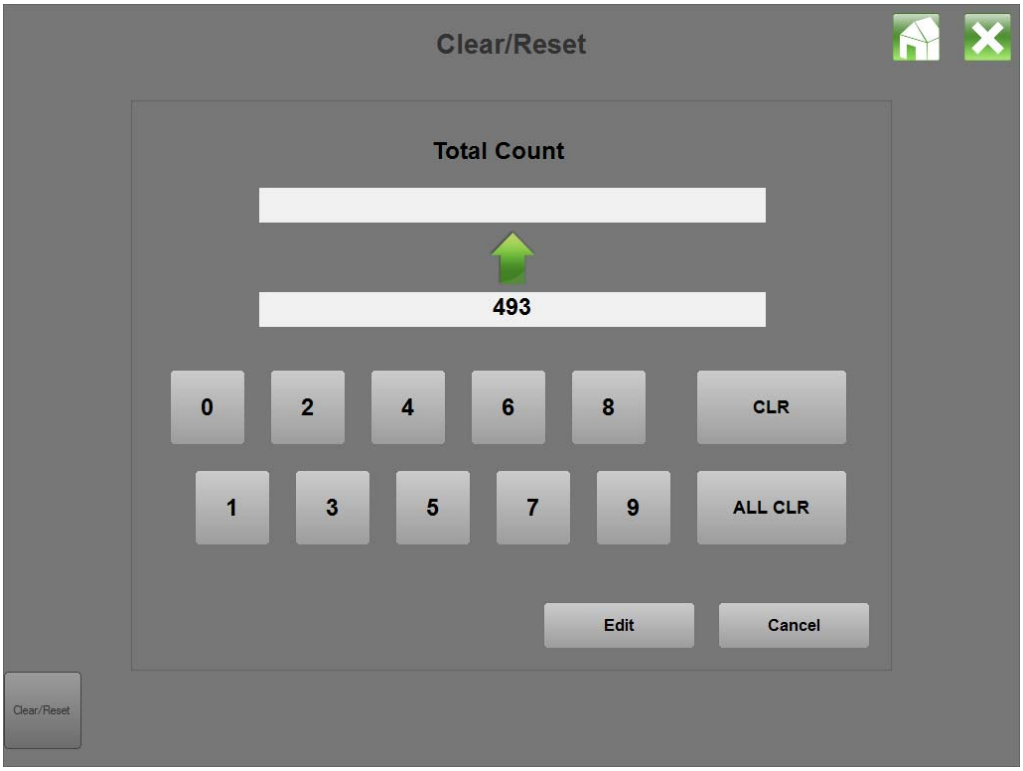
2. Press **Edit**.



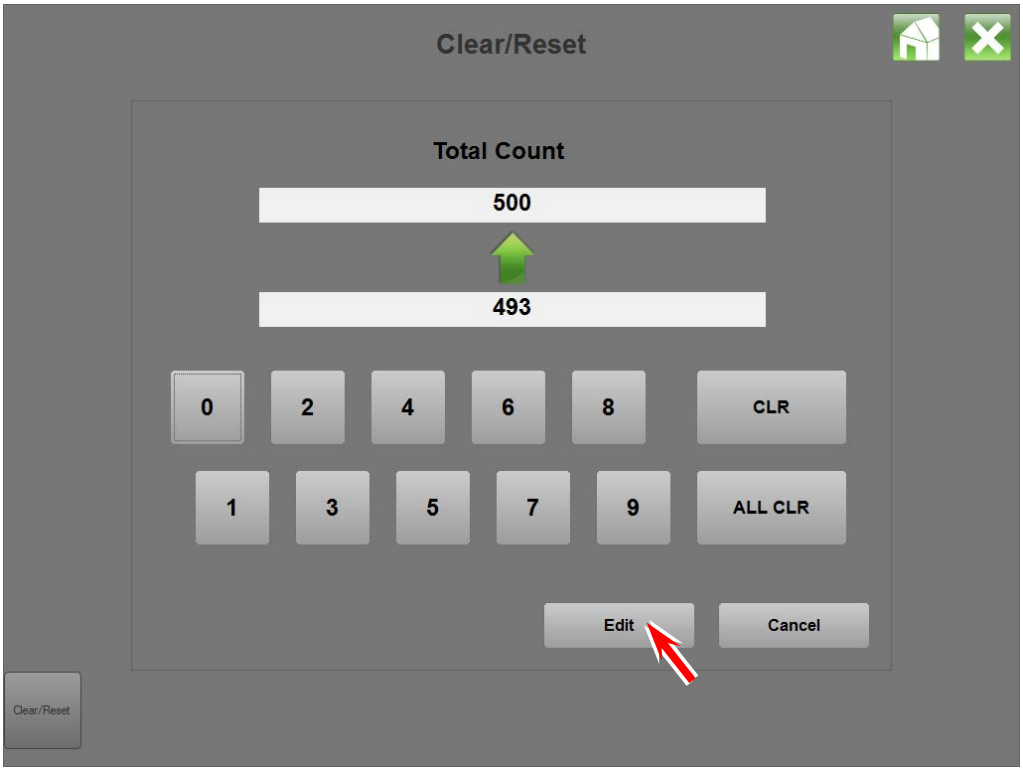
3. You are prompted if you will really clear or reset the information/data. Press **Yes** if you will do.



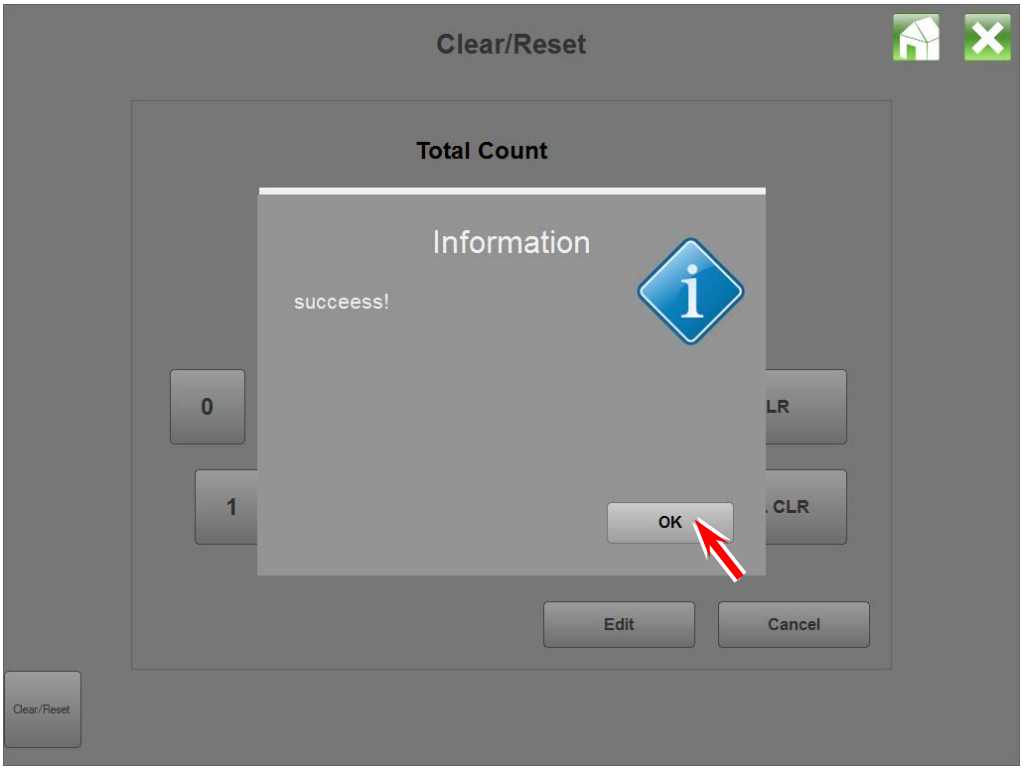
4. The lower field with some value shows the current counted value of Total Counter. Enter new value in the upper vacant field with ten keys.



5. Press **Edit** to enable new value.



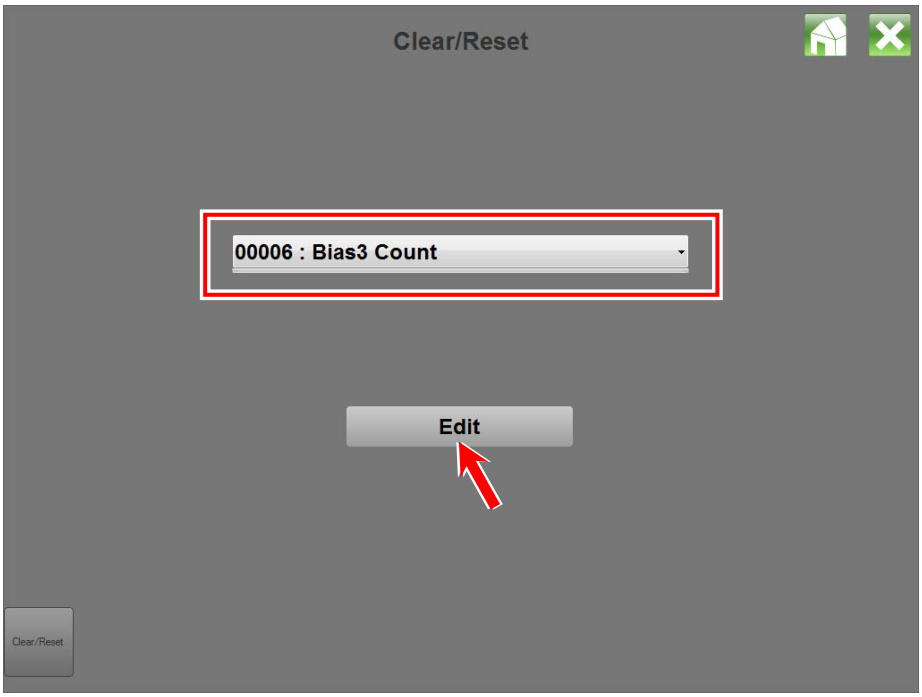
6. Close the following message pressing **OK**.



8.11.3 Reset of Bias Adjustment by Density Compensation Process

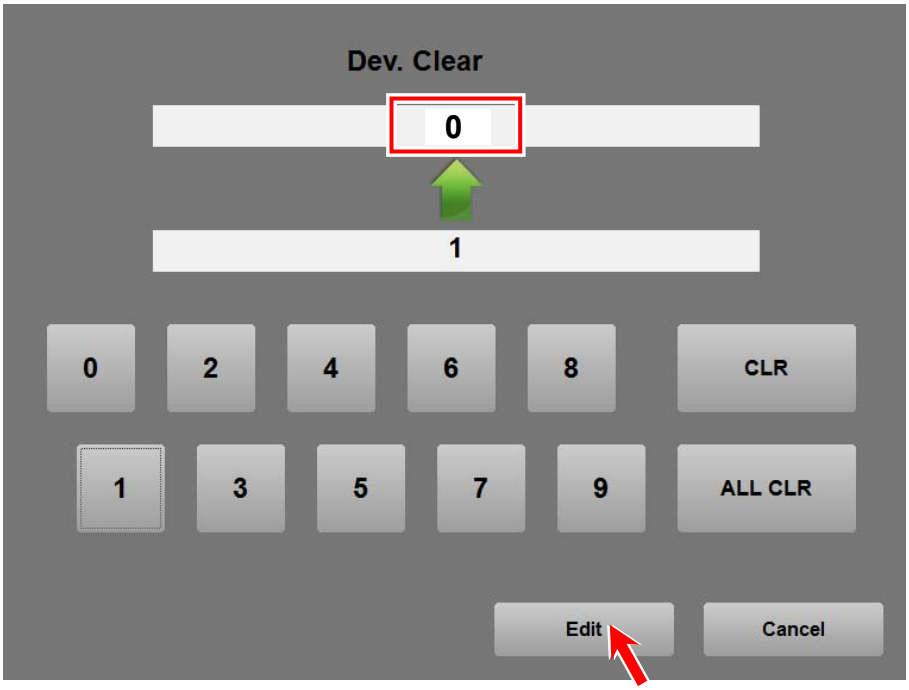
> **NOTE**
>
> After replacing Developer Unit / Developer Roller / toner refreshment, you must reset bias adjustment by Density Compensation Process.
> Otherwise a darker image appears because the adjusted values are too high voltage for the refreshed Developer Unit.

1. Select [00006 Bias 3 Count] from “Clear/Reset” menu. Press [Edit].



2. Confirmation screen appears. Press [Yes].

3. Input screen appears.
   Input “0” with On-screen Keypad. Press [Edit].



4. "Reset of Bias Adjustment by Density Compensation Process" is completed.
   Press [OK].

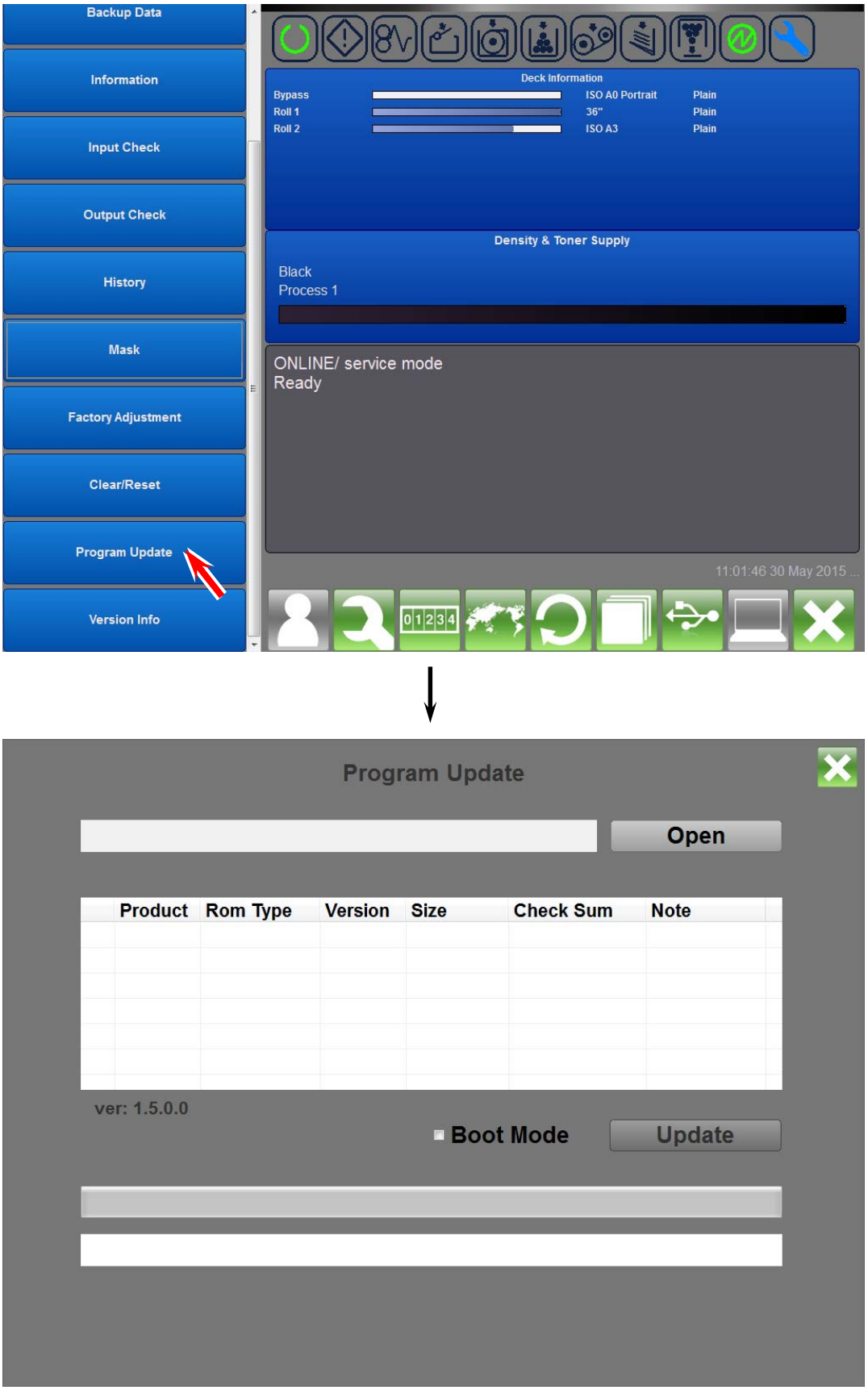
NOTE

The required value for the KIP7170 to reset Bias Adjustment by Density Compensation Process is “0”.

“**0**” to “**3**” correspond to the adjustment level in Density Compensation Process.
For example, if you interchange the Developer Unit with your spare unit, you can manually set a certain adjustment level that would be suitable for your spare unit.

8.12 Program Update

Printer control programs such as firmware and FPGA (hardware) are updated.

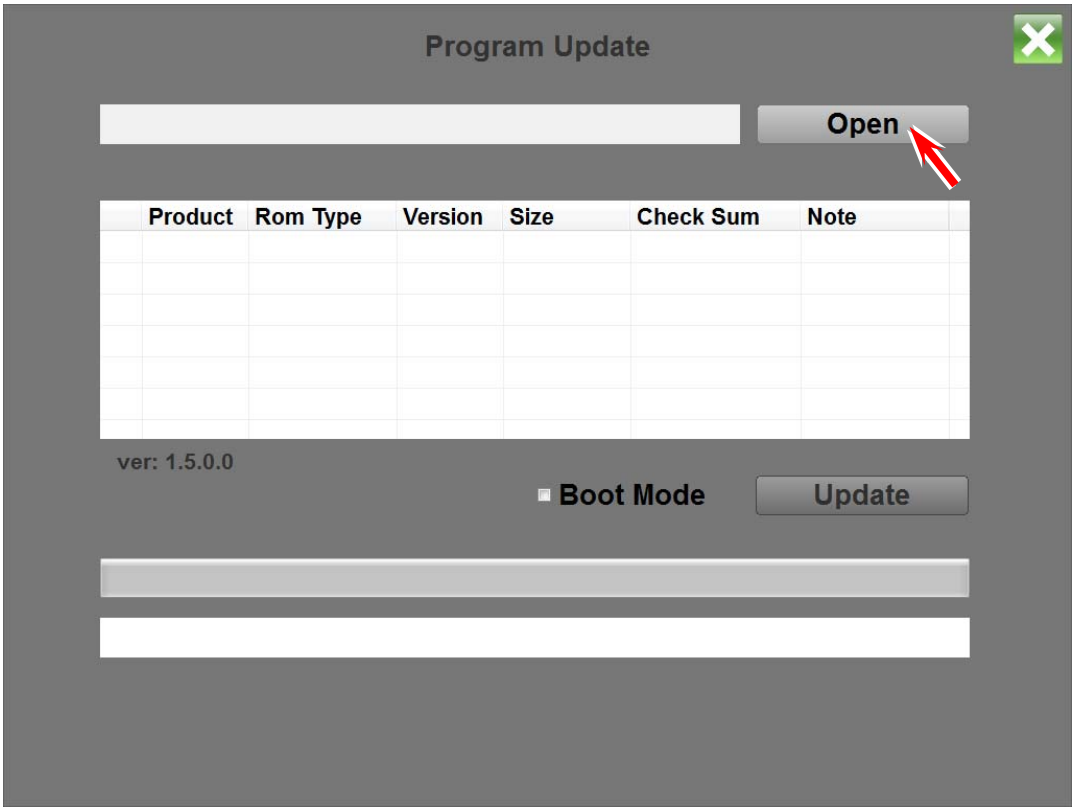


8.12. 1 Operation in Program Update

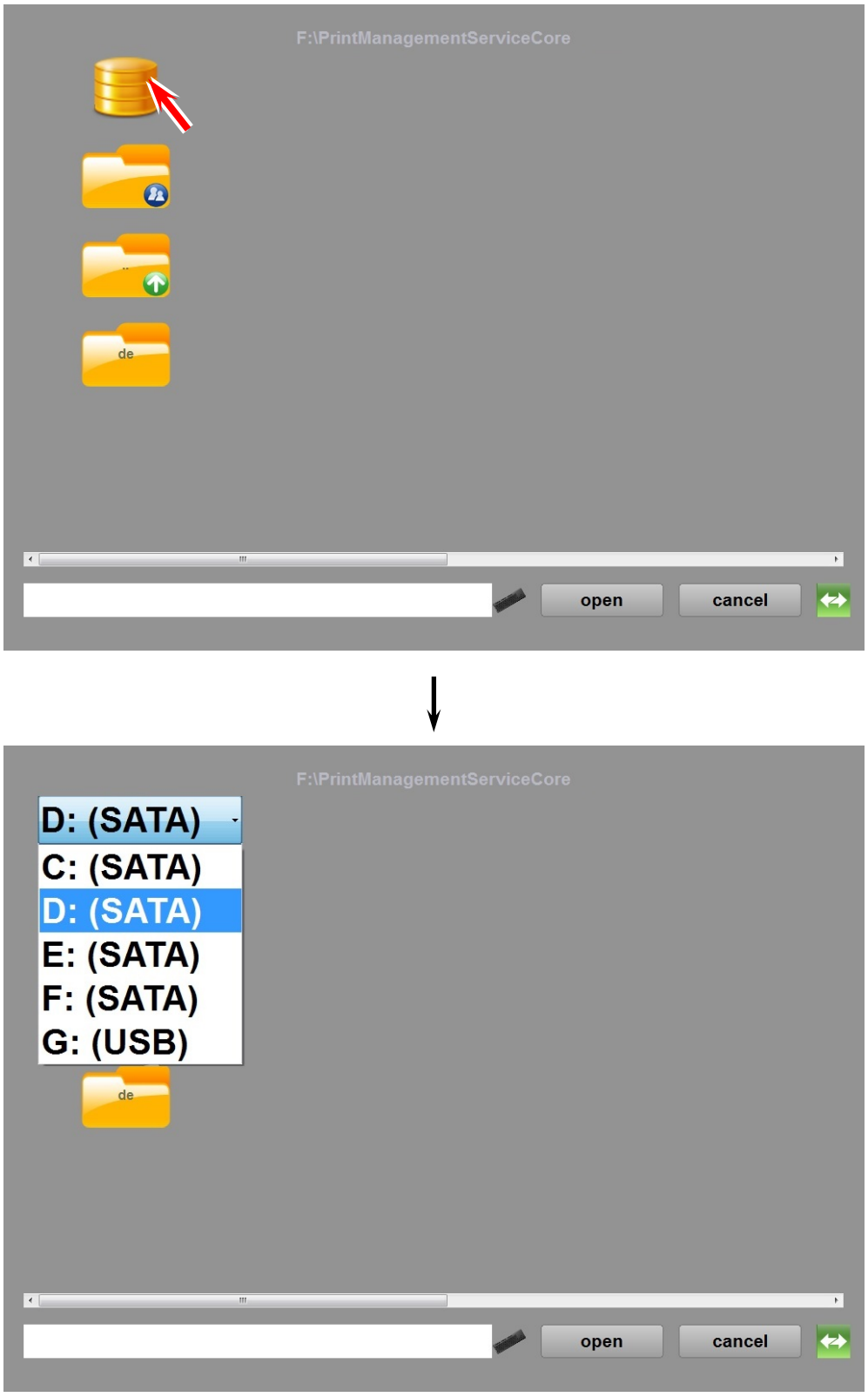
1. Prepare a zip file for update, which includes printer firmware and FPGA. Copy it to any removable device as USB memory stick, and plug it into the printer.

> **Reference**
>
> Printer firmware and FPGA must be used by correct combination of the versions. Therefore, a zip file released to the field includes correct combination of these programs. Just use this zip file for updating without unzipping.

2. Press **Open** to indicate the file selection page.

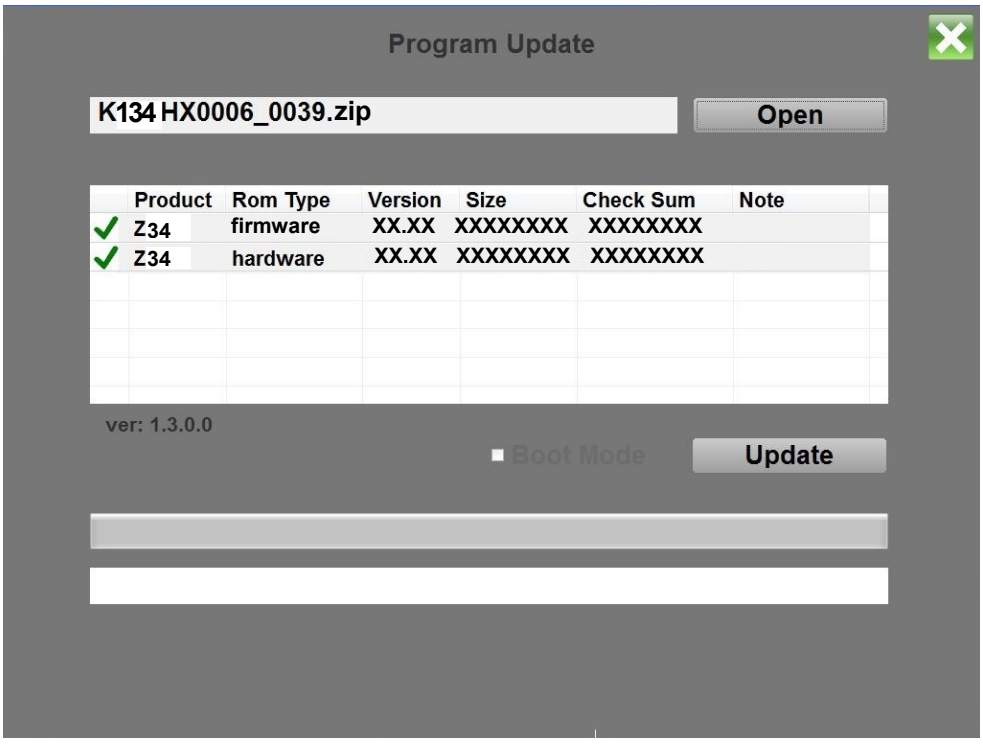


3. The path to the current folder is indicated on the top of the page. Click the drive selection icon on top-left and then choose the correct drive in the list.



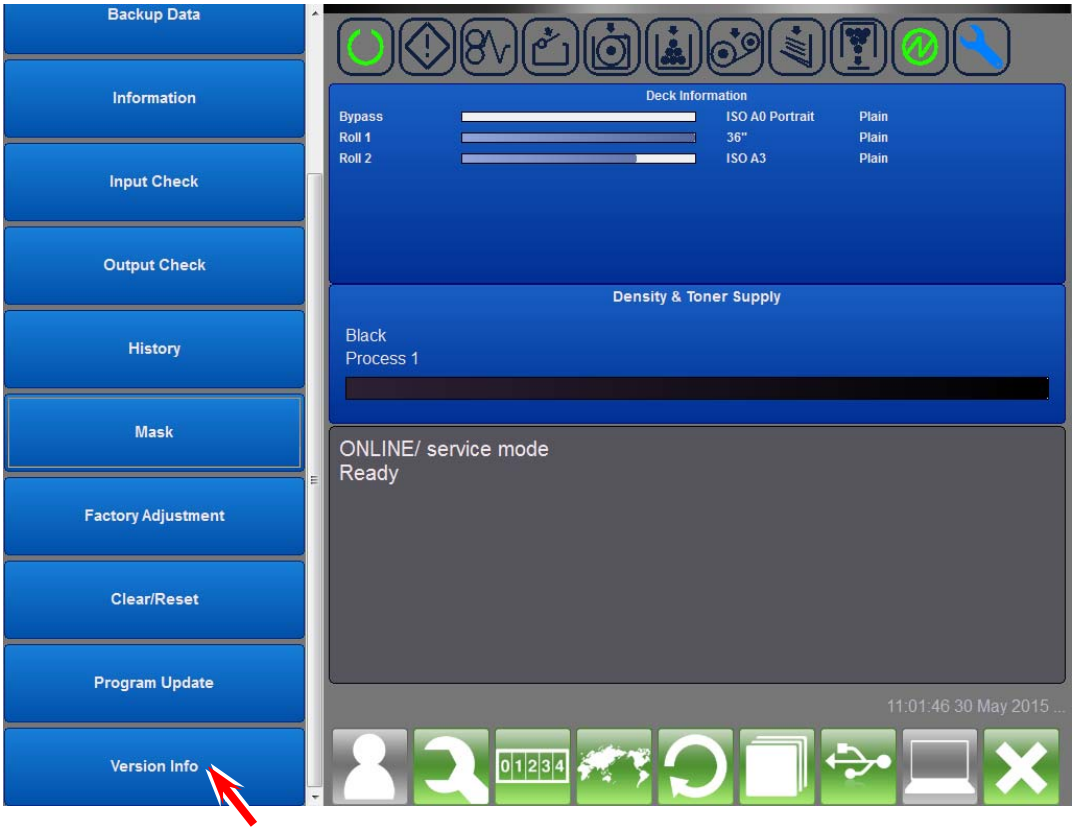
4. Select the update zip file and then press **open**.

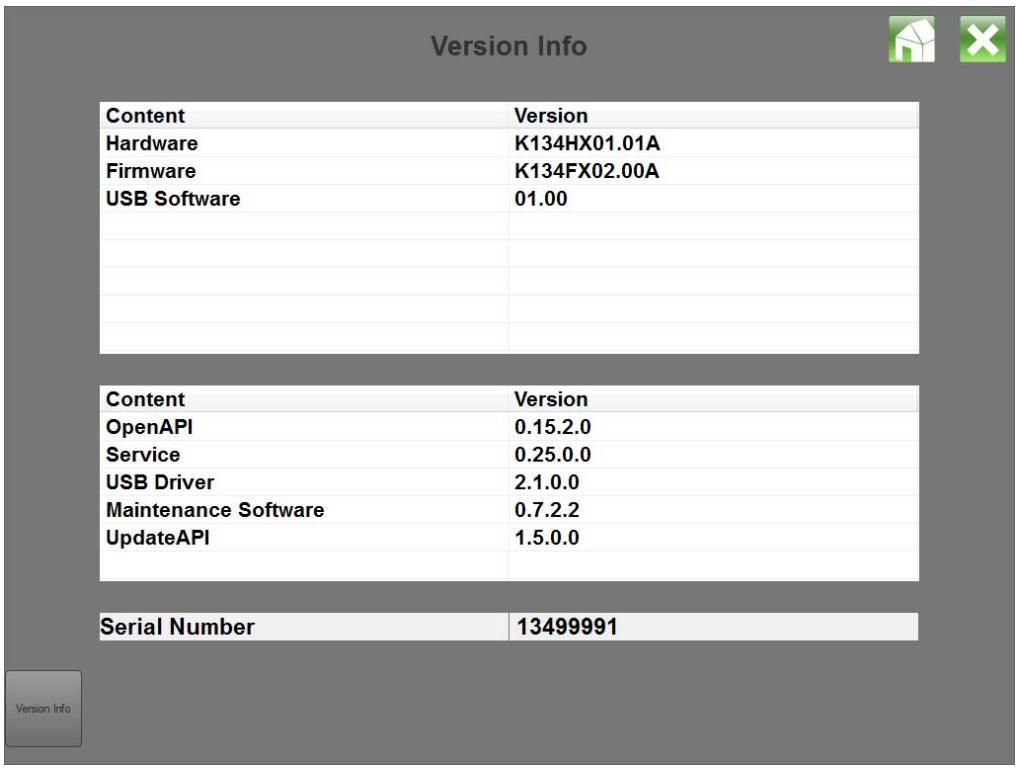
5. The firmware and FPGA in the zip file is read. Confirm that both programs are checked and then press **Update**. Wait for a while until updating completes.



8.13 Version Info

Version Info indicates the versions of printer control programs.



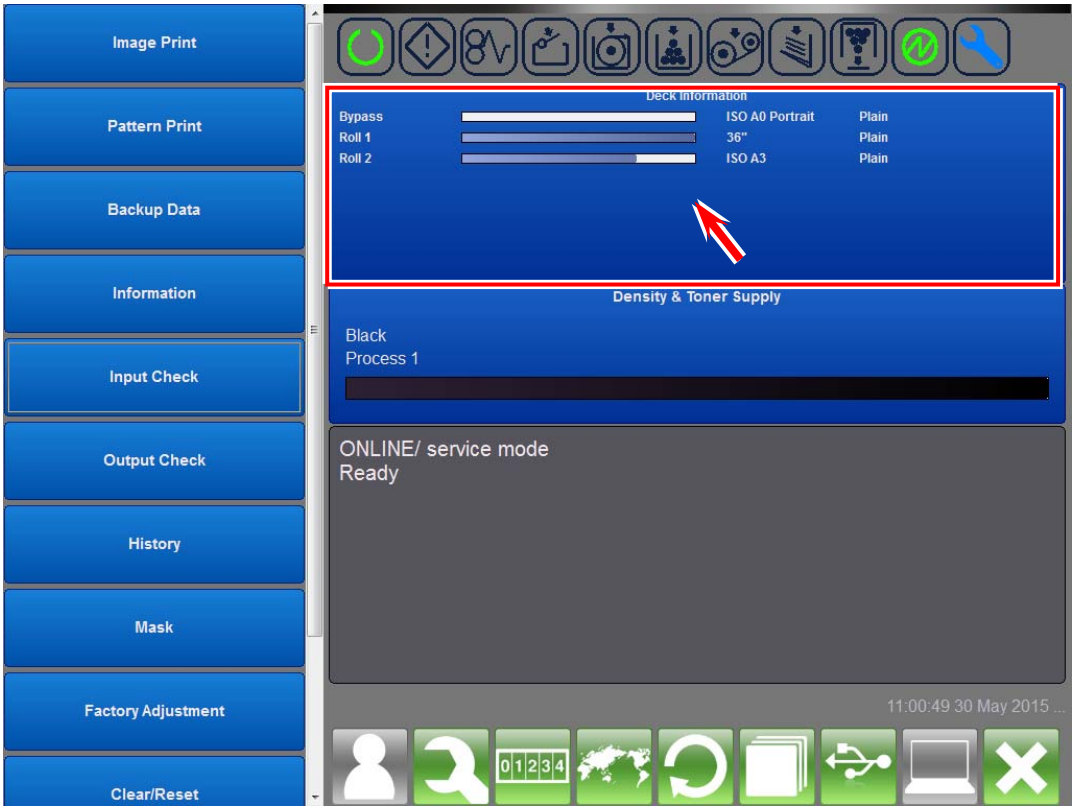


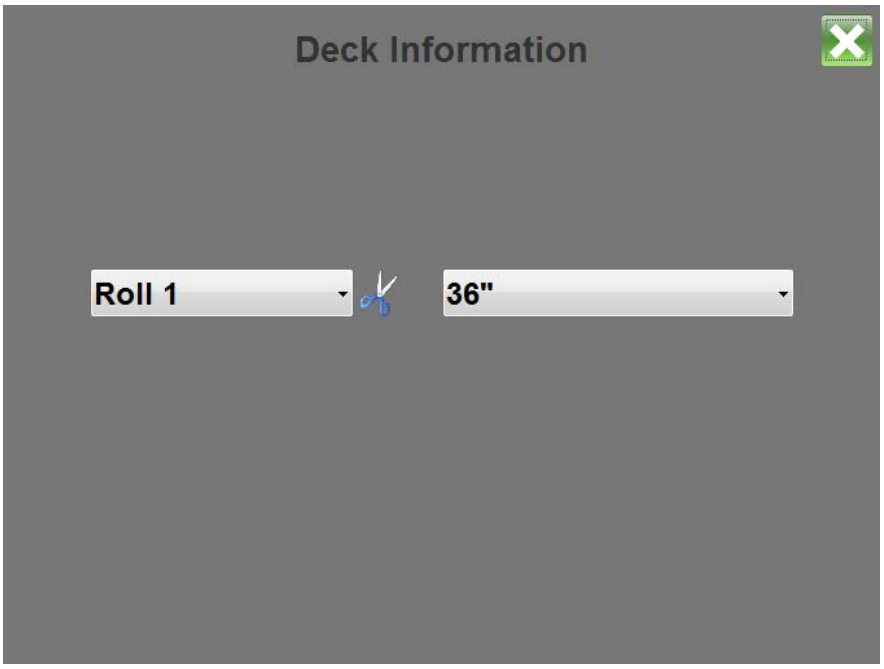
8.13. 1 Indication in Version Info

Hardware	Version of FPGA that takes media feeding control and high voltage control
Firmware	Version of Firmware that takes overall printer controls
USB Software	Version of USB program file
OpenAPI	Version of KCS communication module
Service	Version of KCS Windows Service
USB Driver	Version of USB Driver
Maintenance Software	Version of Maintenance GUI
UpdateAPI	Version of communication module for updating
Serial Number	Printer serial number

8.14 Deck Information

Press of Deck Information region on the home of Maintenance GUI opens a dialog for media setting.

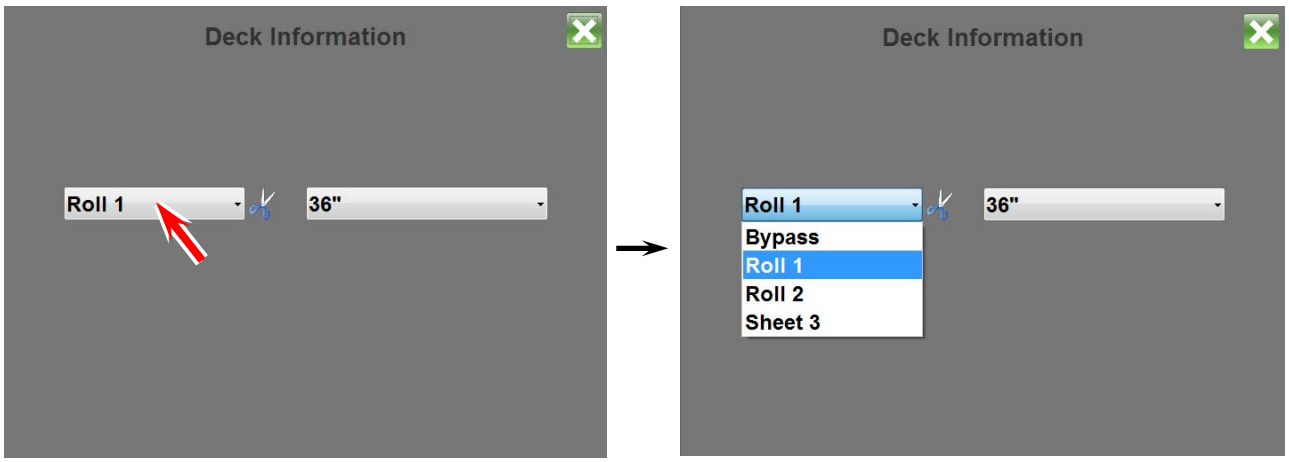




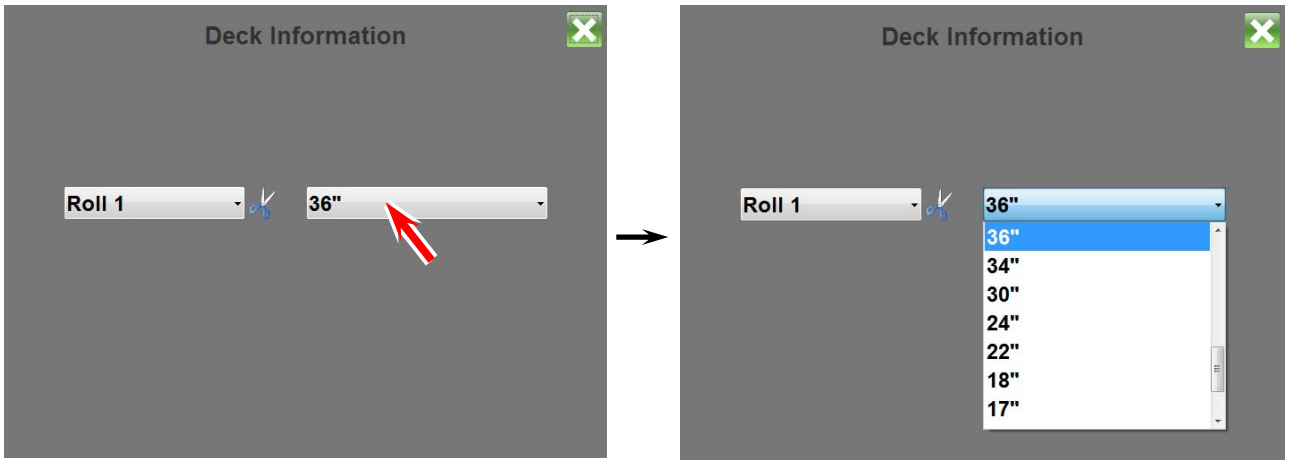
8.14. 1 Operation in Deck Information

Deck Information dialog allows for entering the width of media.

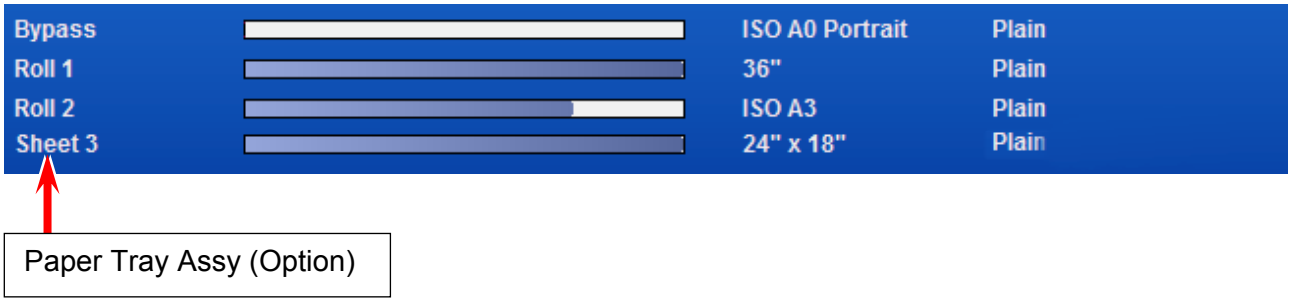
1. First, select the media source in the left list.



2. Then select the width of media in the right list.



3. Selected media width is shown on the home of Maintenance GUI with the information of remaining volume of roll.



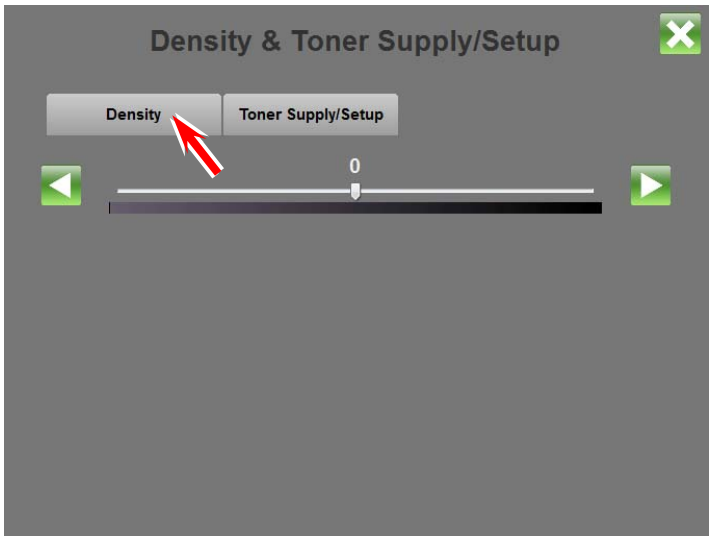
8.15 Density & Toner Supply

Press of Density & Toner Supply region on the home of Maintenance GUI opens a dialog for density setting and toner supply operation.

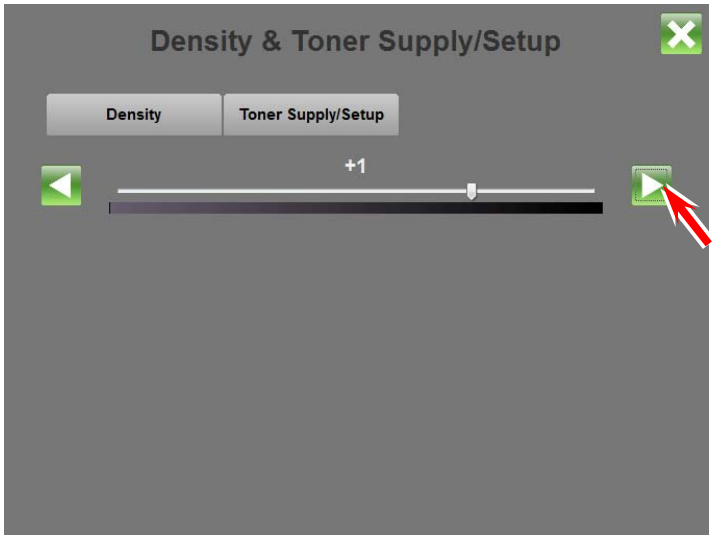
8.15. 1 Operation in Density & Toner Supply

It is possible to increase or decrease the density. It is also possible to supply additional toner to the developer unit optionally.

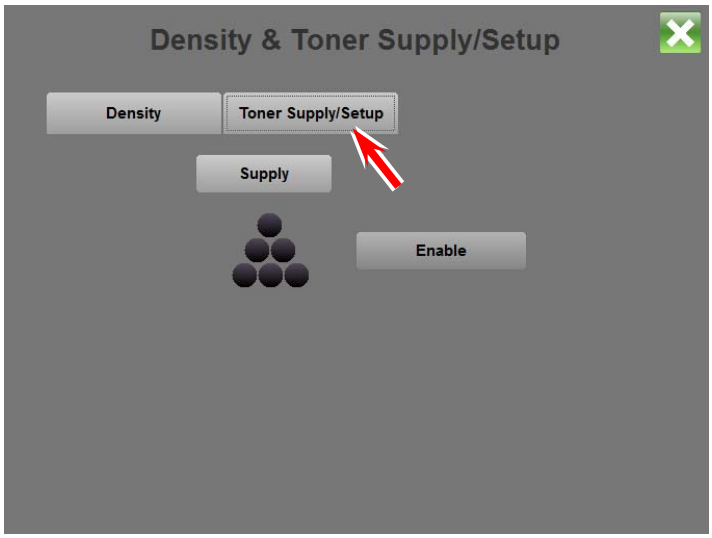
1. For changing the density, press **Density**.



2. Change the density level by drag the slider or pressing the triangle icons.
   Density is standard level when set to 0, and increment and decrement by up to +/-2 is available.

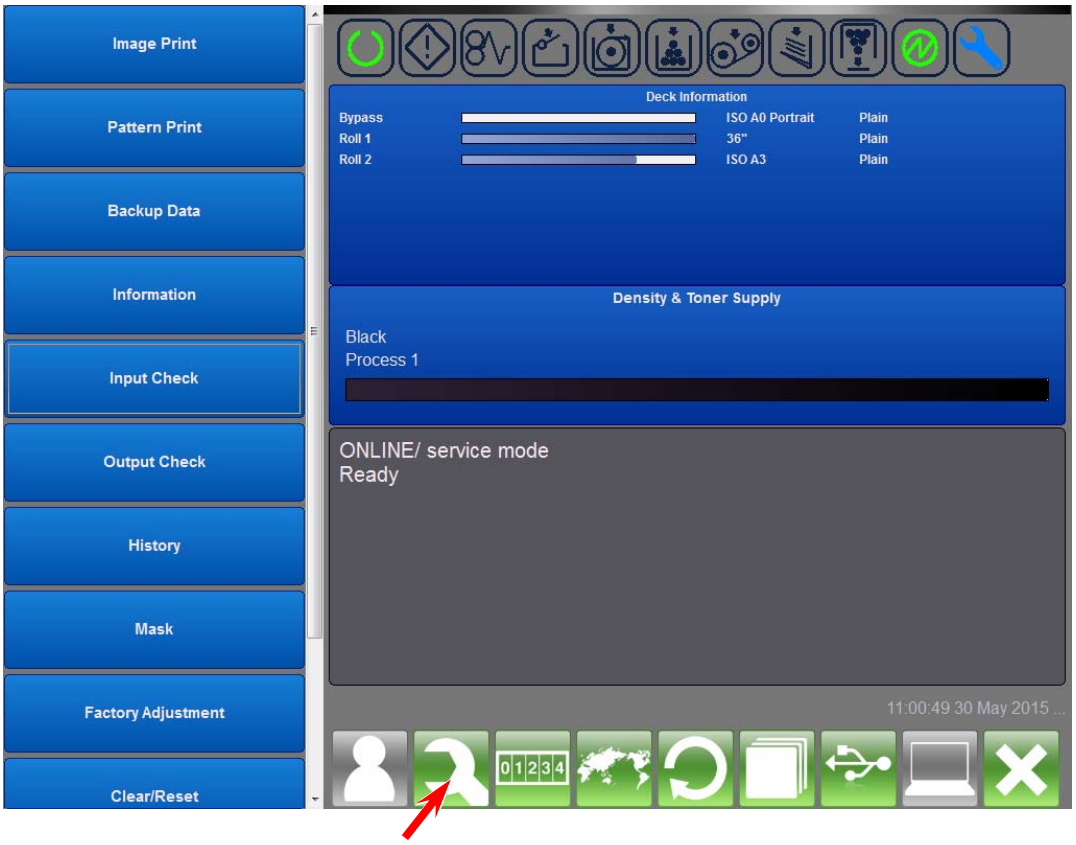


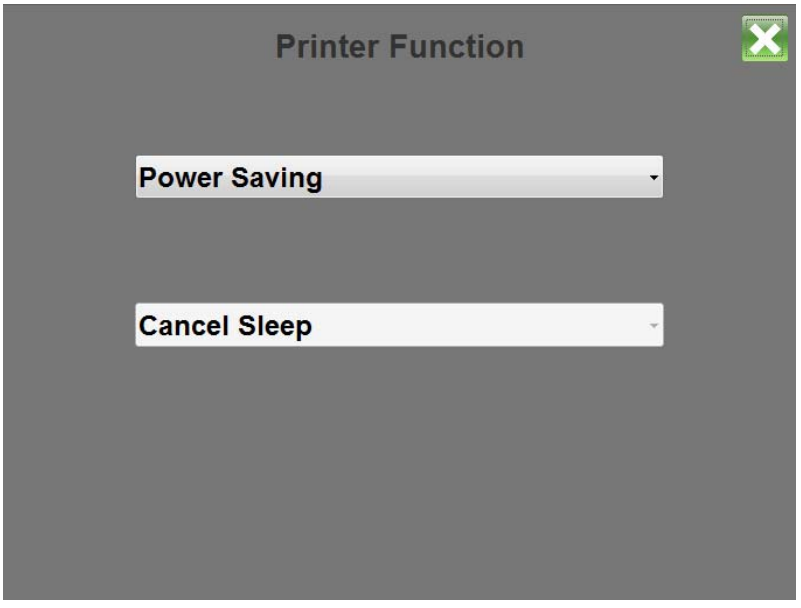
3. Press **Toner Supply/Setup** for supplying additional toner to the developer unit.



8.16 Printer Function (Wrench Icon)

Press of the Wrench icon on the bottom of Maintenance GUI opens a Printer Function dialog that allows several printer operations.





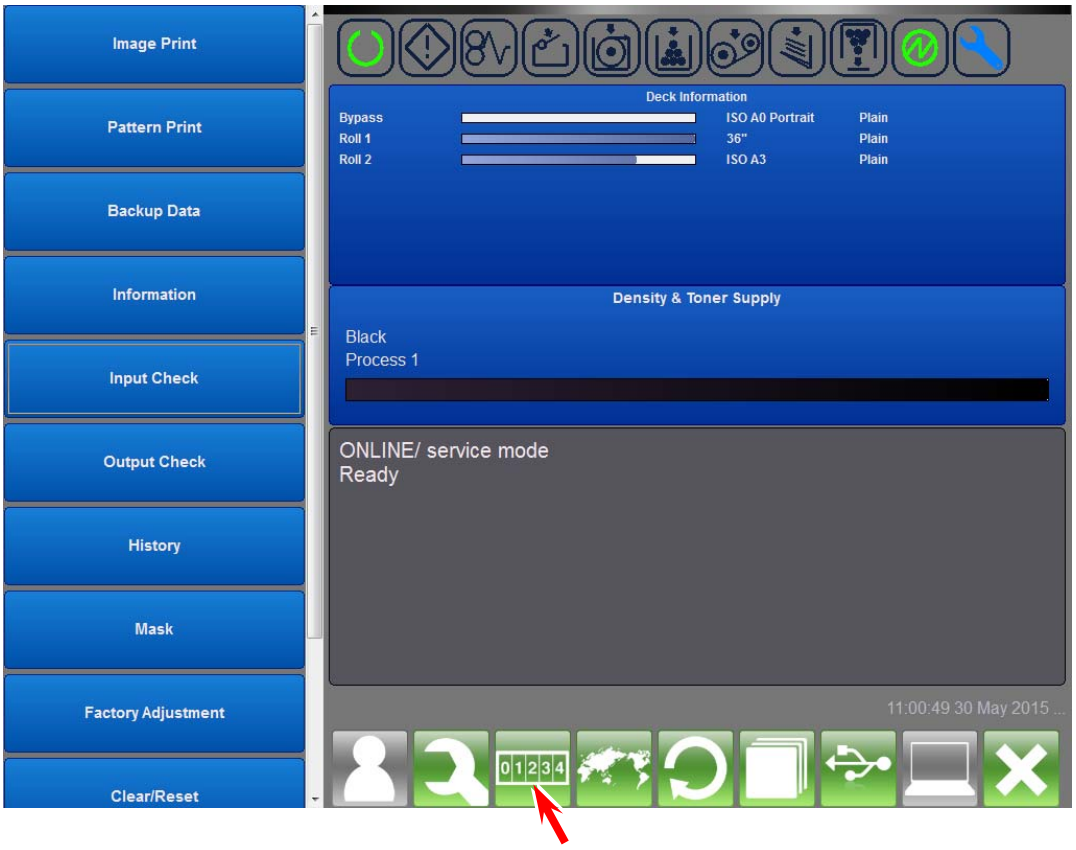
8.16. 1 Operation in Printer Function

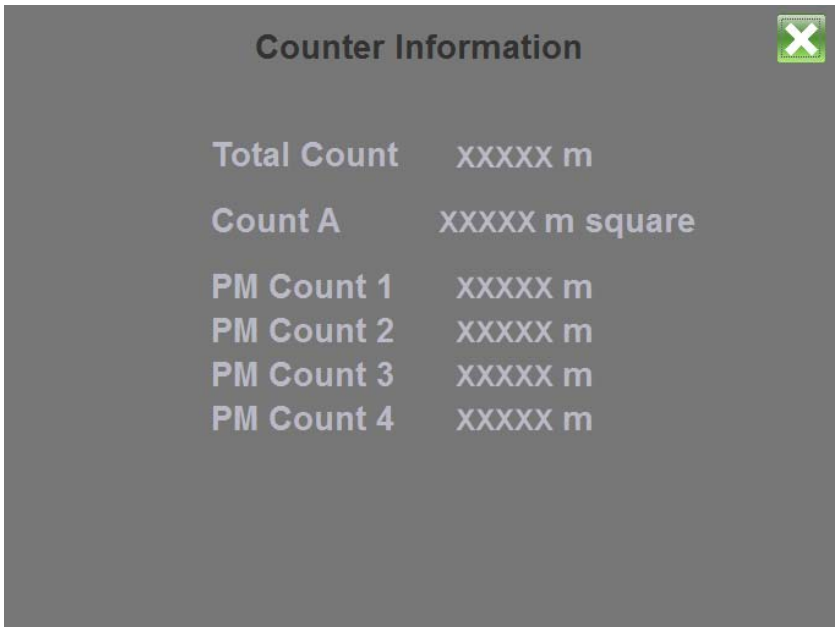
At first select required function category in the upper list and then select the required function in the lower list.

Function category	Function	Executed operation
Power Saving	Cancel Sleep	Canceling the "sleep mode".
Printer Cleaning	Corona Wire	None (not supported)
	LED Head	None (not supported)
Alignment	Density Adjust	None (not supported)
	LED Head Joint Adjust	None (not supported)
Toner Setup	Toner Setup	Toner Setup for initial toner supply is executed.
Toner Supply	Toner Supply	Toner supplies for 10 minutes to the Developer unit.

8.17 Counter Information

Press of the Counter icon on the bottom of Maintenance GUI opens a Counter Information dialog that allows for checking the counter values.



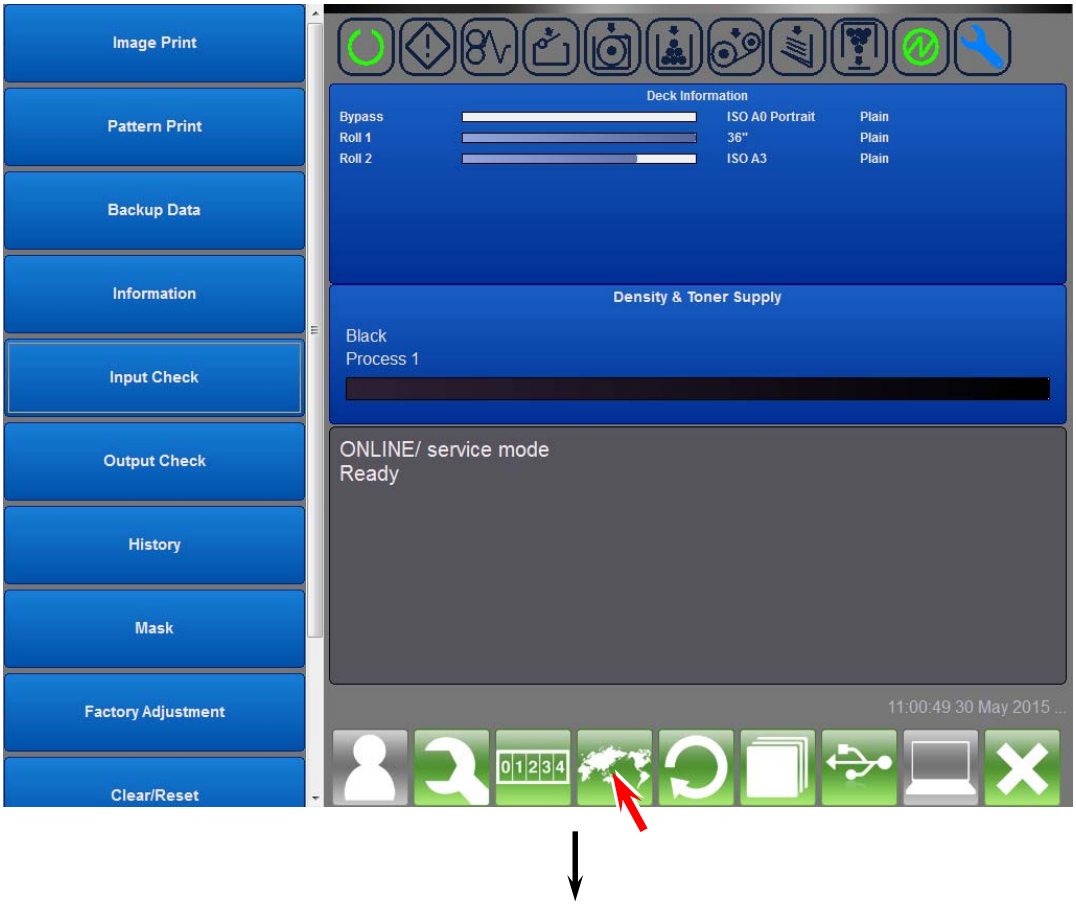


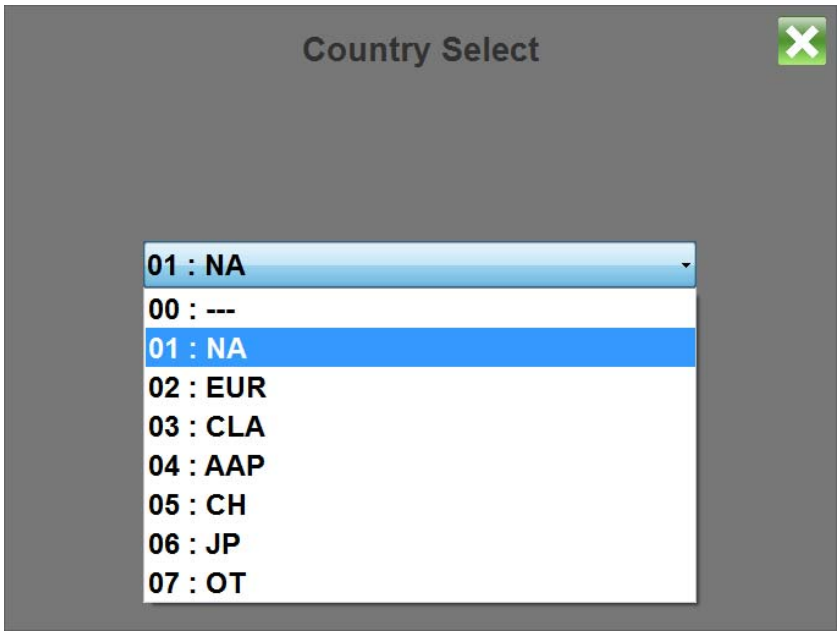
8.17. 1 Operation in Counter Information

Name of counter	Counted target
Total Count	Counting unit is always linear meter.
Count A	Print Count
PM Count 1	Print length of PM Count 1 [m]
PM Count 2	Print length of PM Count 2 [m]
PM Count 3	Print length of PM Count 3 [m]
PM Count 4	Print length of PM Count 4 [m]

8.18 Regional Setting

"Regional setting" allows for selecting a region according to the installation area of product.

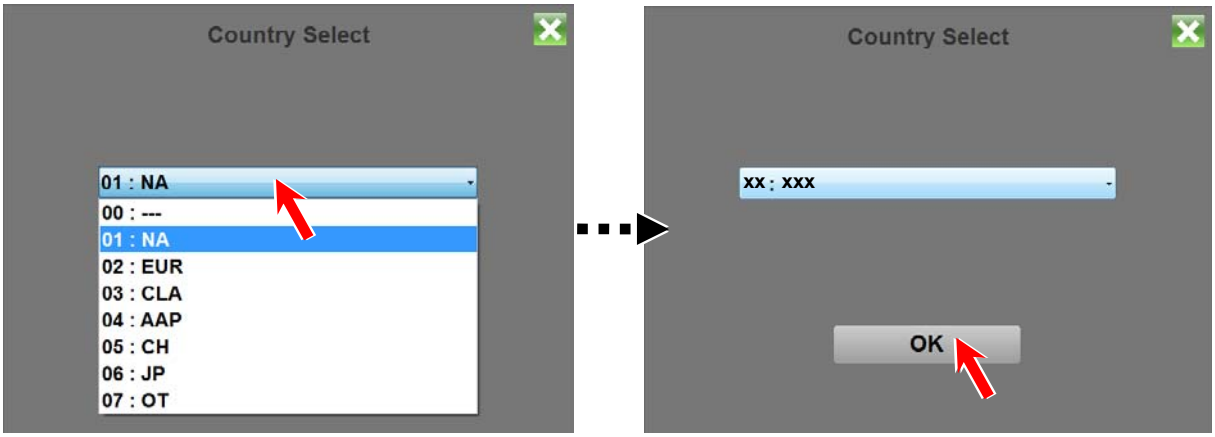




⚠ NOTE

Selected regional setting will become effective when the printer is restarted by turning off/on the main switch.

1. According to your residential area, choose a correct regional code in the pull-down menu under and then press “OK”



CODE	Residential area
00: ---	No selection
01: NA	North America & Canada
02: EUR	EU & Russia
03: CLA	Central America & South America
04: AAP	Asia (except China), Middle East, Africa & Oceania
05: CN	China (including Hong Kong)
06: JP	Japan
07: OT	All other region

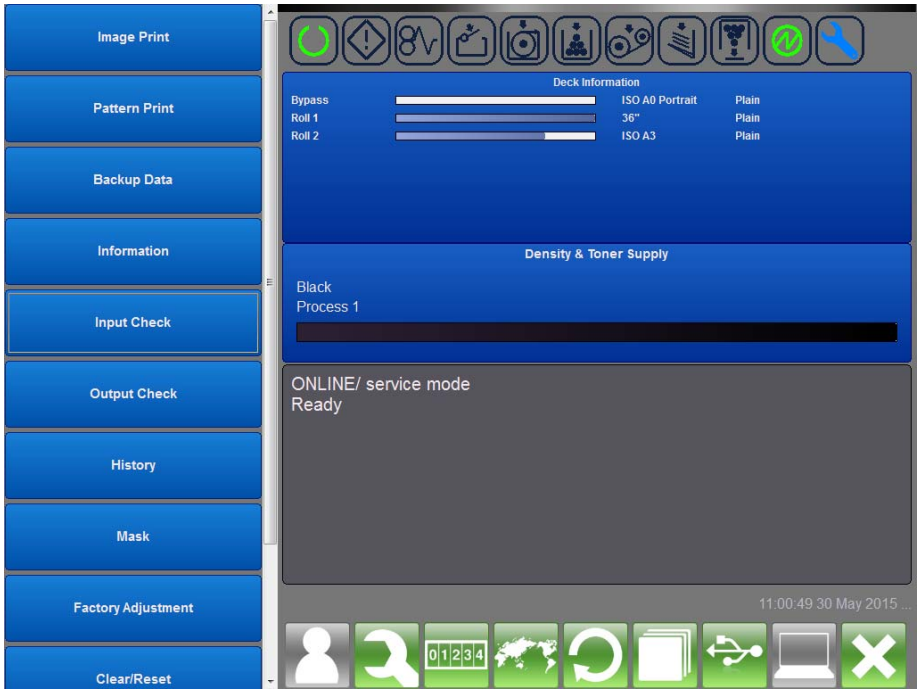
⚠ DO NOT SET "0"!!

If this setting value is set as "00", the machine cannot get ready.

2. Press “ X “ button to close the “Country Select” screen.

3. Turn off the Printer, and turn it on again few seconds later. This will enable the selected regional setting.

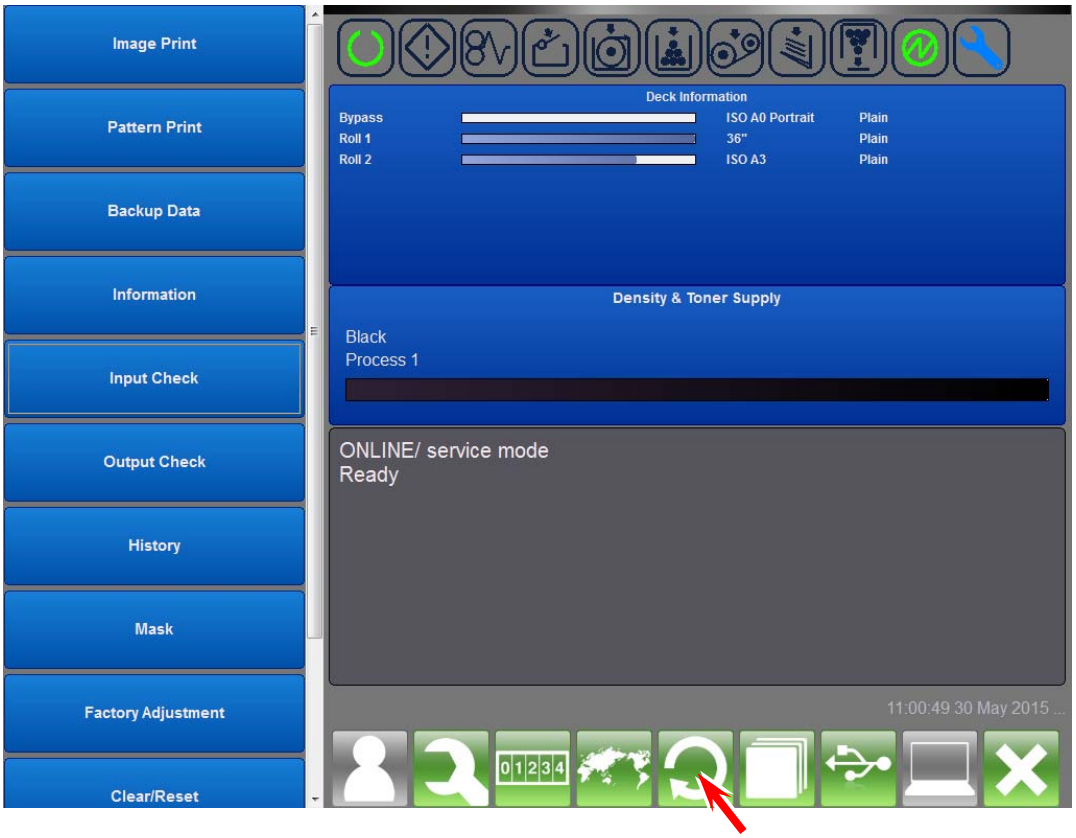
4. When the printer is turned on, it indicates the log-in page of Maintenance GUI.

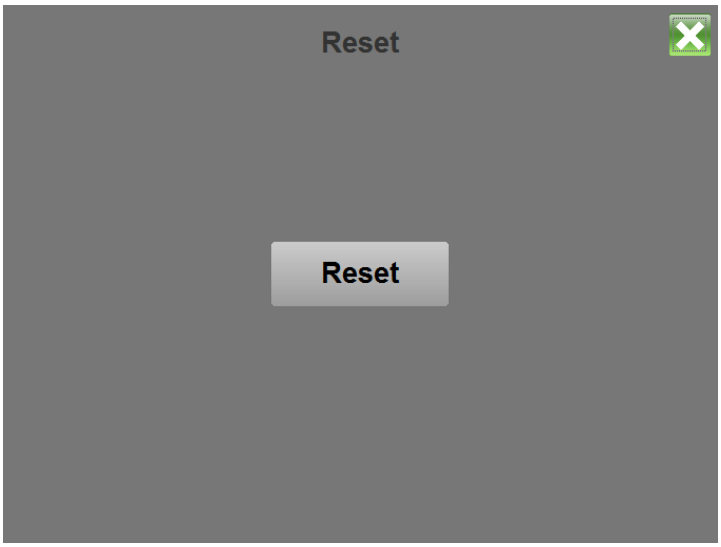


8.19 Communication Reset

NOTE

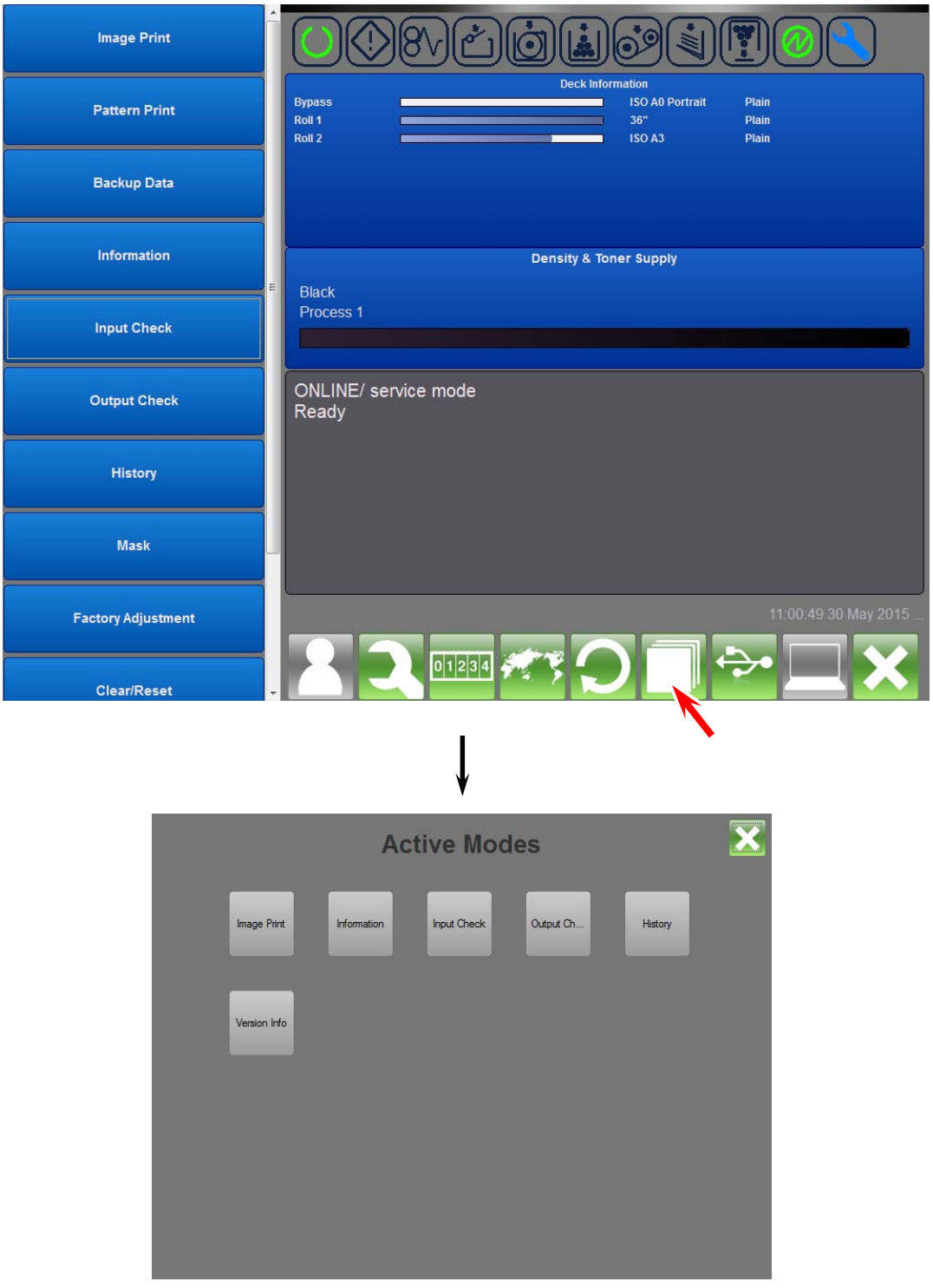
This function is not used in the market.



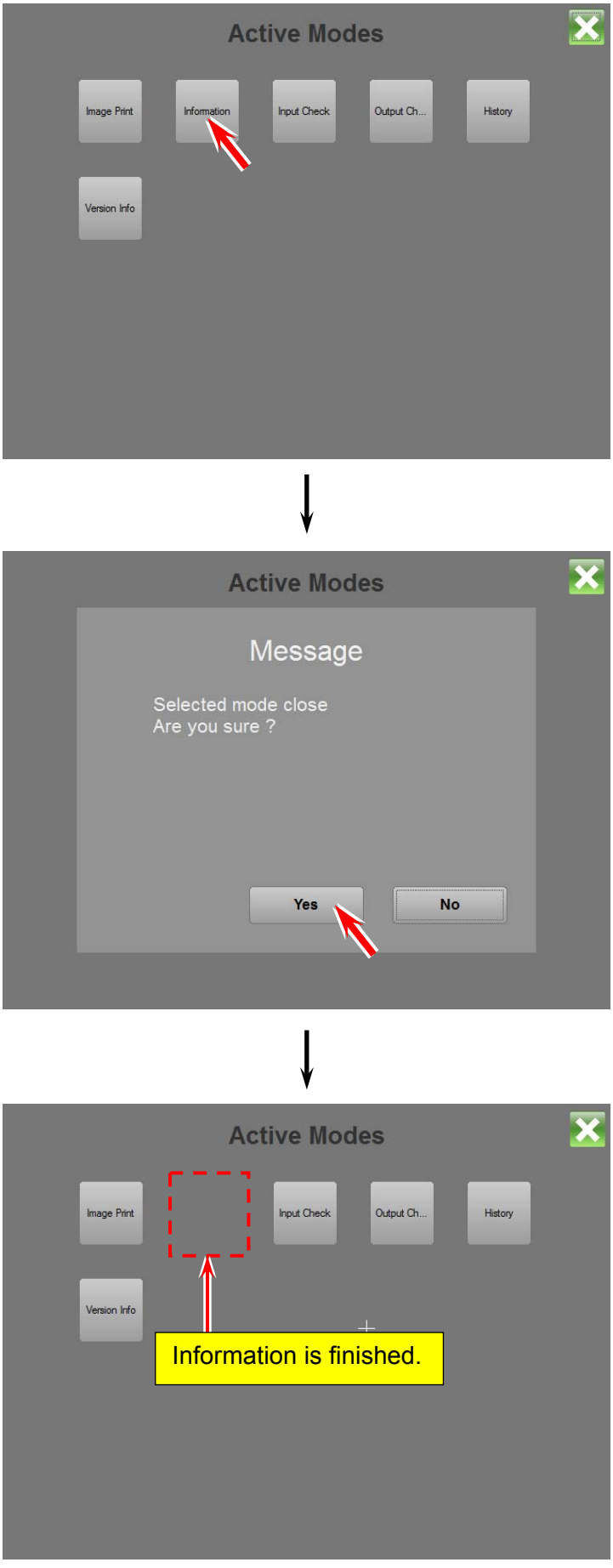


8.20 Active Modes

The Maintenance GUI can activate multiple menu functions at the same time, such as Backup Data, Input Check and etc. Active Modes allows for confirming what items are currently active, and also it allows for closing unnecessary item.

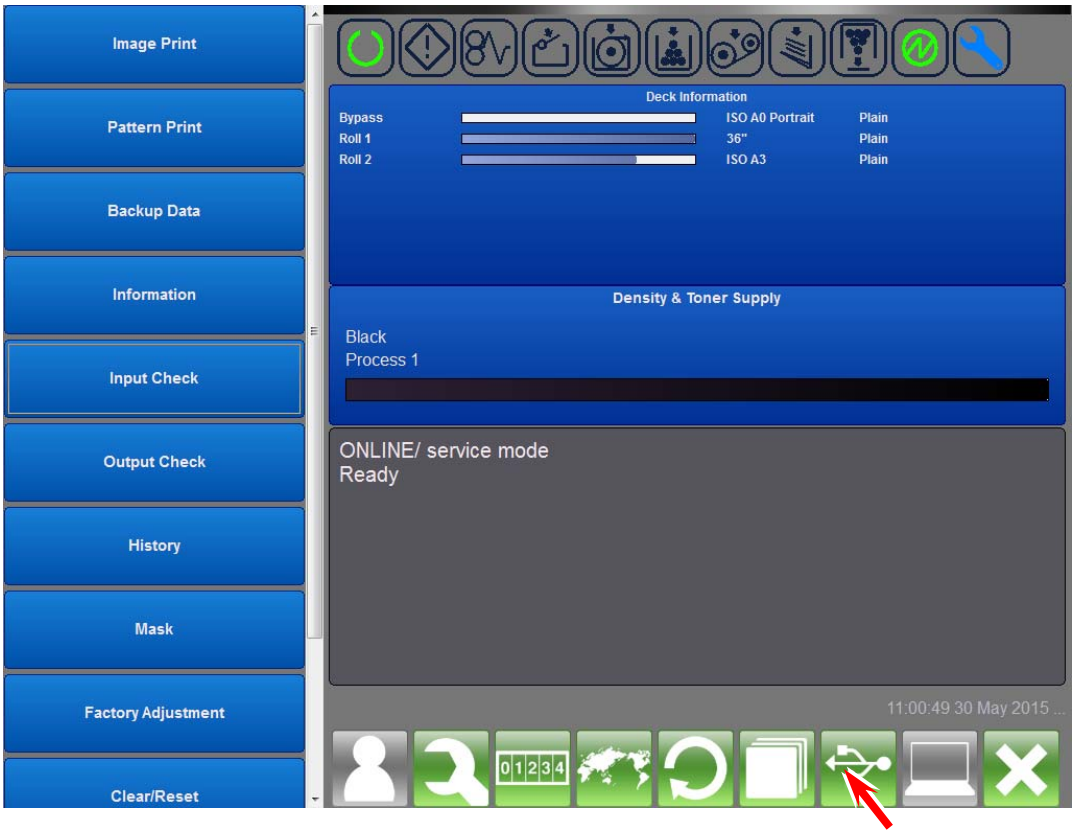


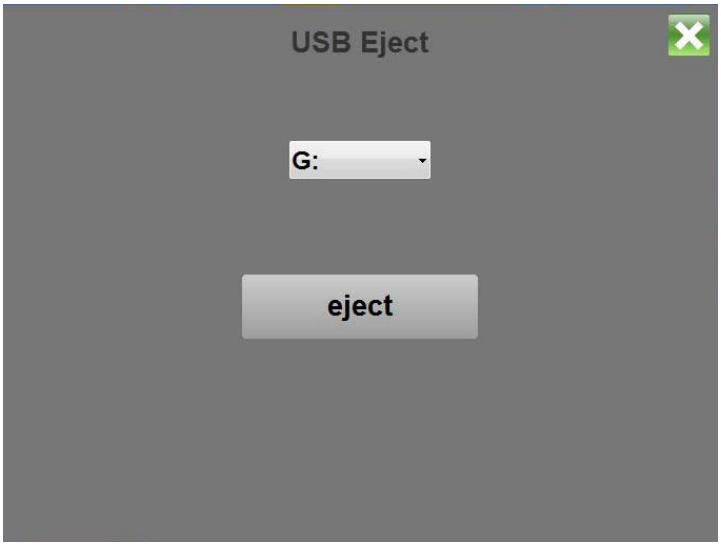
If any function button is pressed, you are asked by a message box if you will finish the concerning function. Press **Yes** to close it.



8.21 USB Eject

USB Eject safely removes a USB memory stick from the printer. Select the drive of USB memory stick and then press **eject** to remove.

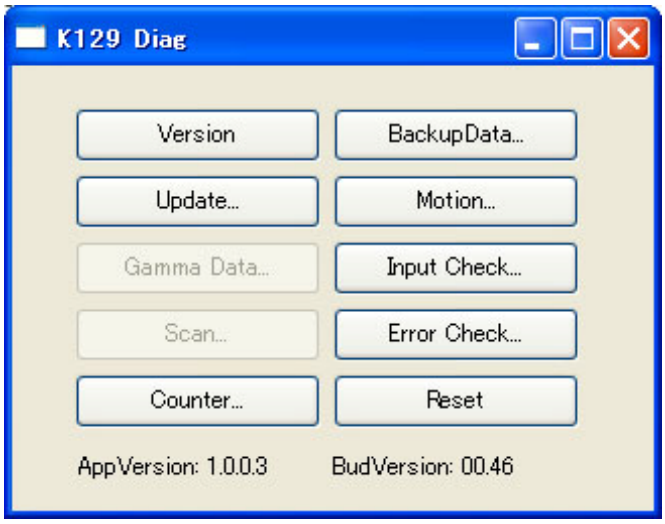




8.22 K129 Diag

8.22. 1 K129 Diag Overview

“K129 Diag” is an integrated utility application that operates as an interface for monitoring, checking and setting configuration for field service.

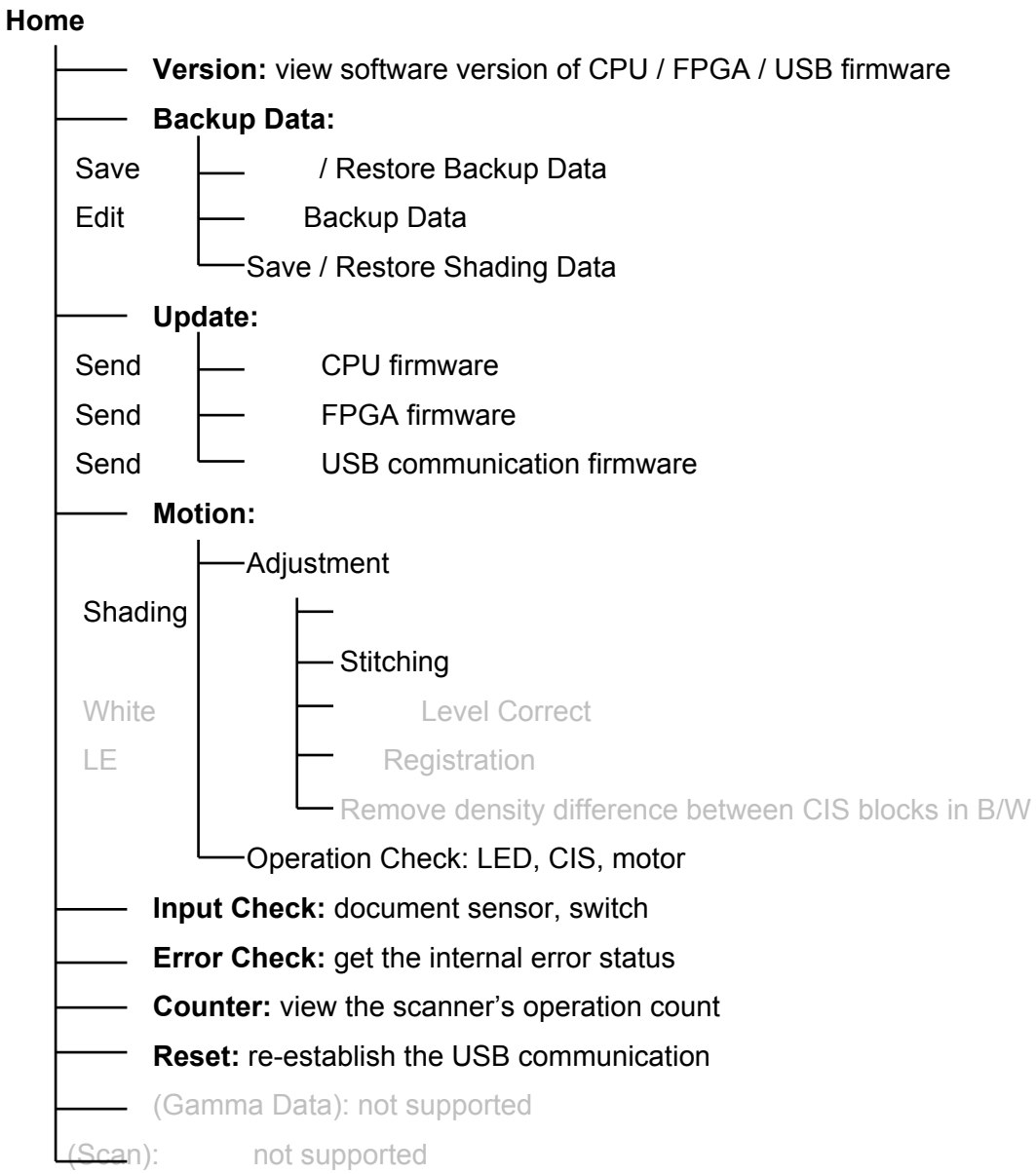


K129 Diag Home (version 1.0.0.3.49)

K129 Diag is required when;

- the D CON (Scanner Main Board) is replaced
- one of the CIS is replaced
- you want to create a recovery point of the parameters (= backup)
- you have to import the existing backup data to the scanner (= restore)
- you want to confirm the detailed error status
- you want to upgrade the firmware...

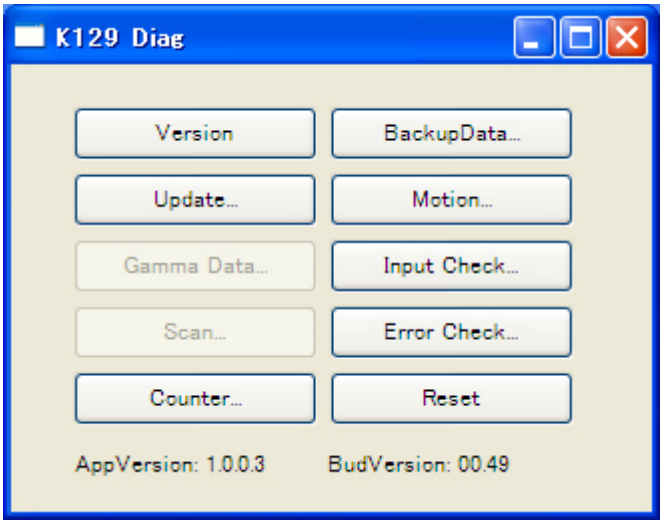
K129 Diag Tree Diagram of Screen Hierarchy



8.22. 2 Starting K129 Diag

Get the latest (or the proper version of) **K129Diag.exe** and save it to any available storage on your PC / removable storage.

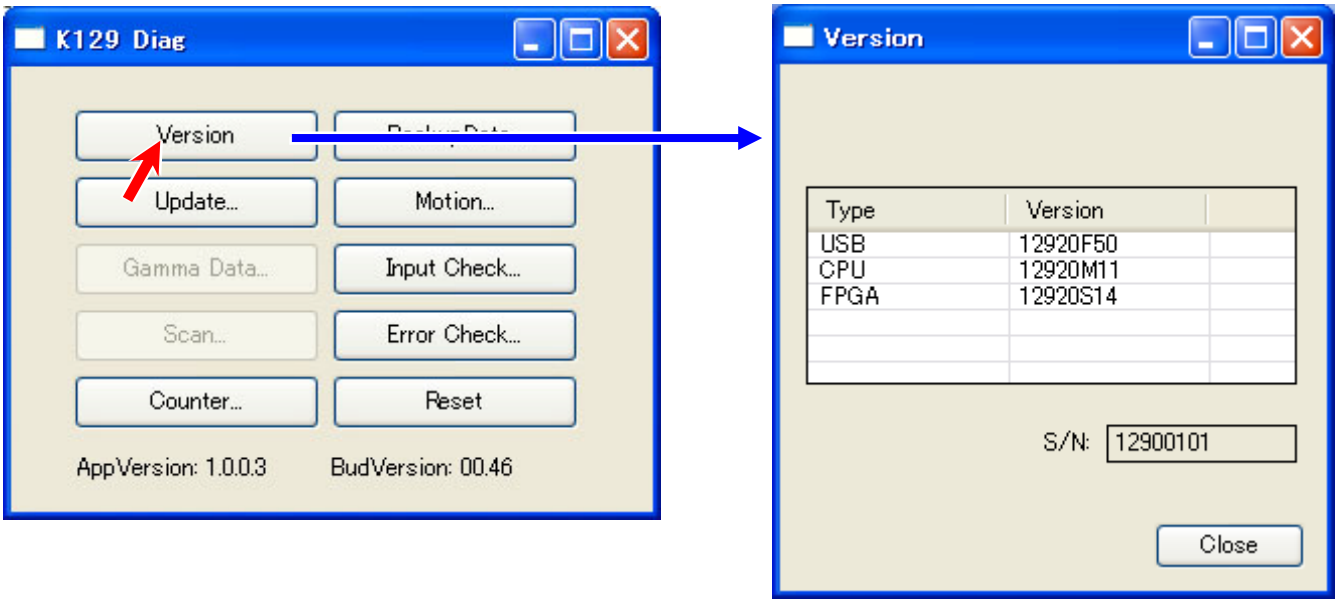
Just run K129Diag.exe.



K129 Diag Home (version 1.0.0.3.49)

8.22. 3 Version

Pressing [Version] recalls “Version” sub window that has a list of the current version information about 3 firmware categories.



(may vary from the actual information)

Type	contents	version number convention
USB	USB communication firmware	12920F**
CPU	hardware control software	12920M**
FPGA	image processing software	12920S**

Another information is the equipment’s serial No.

To close “Version” sub window, click the X button at the upper right corner.

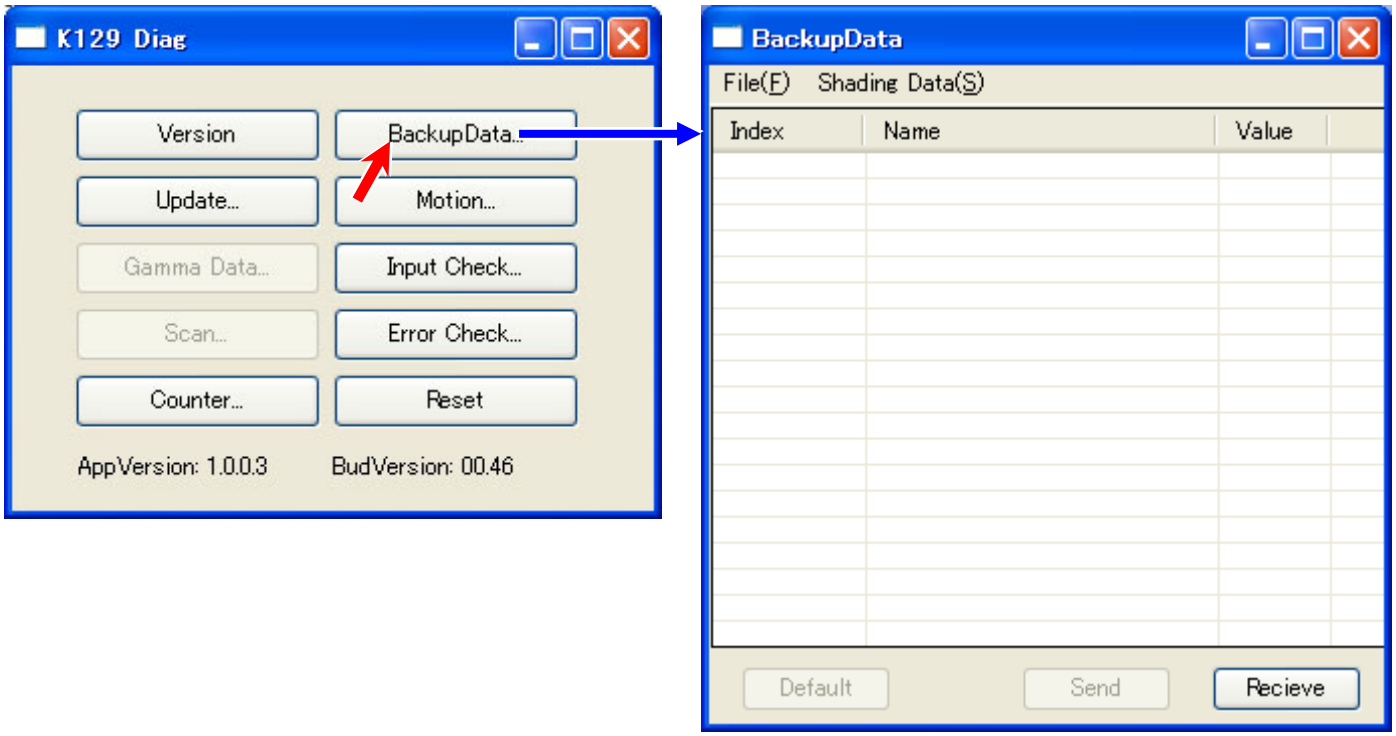
8.22. 4 Backup Data

Setting items regarding the scanner firmware and their setting values is called “Backup Data = BUD (BackUpData).”
Backup Data can be changed (= can enter a setting value), saved as a backup purpose (= can create a list of the current setting value) and restored (= can import an existing setting value list).

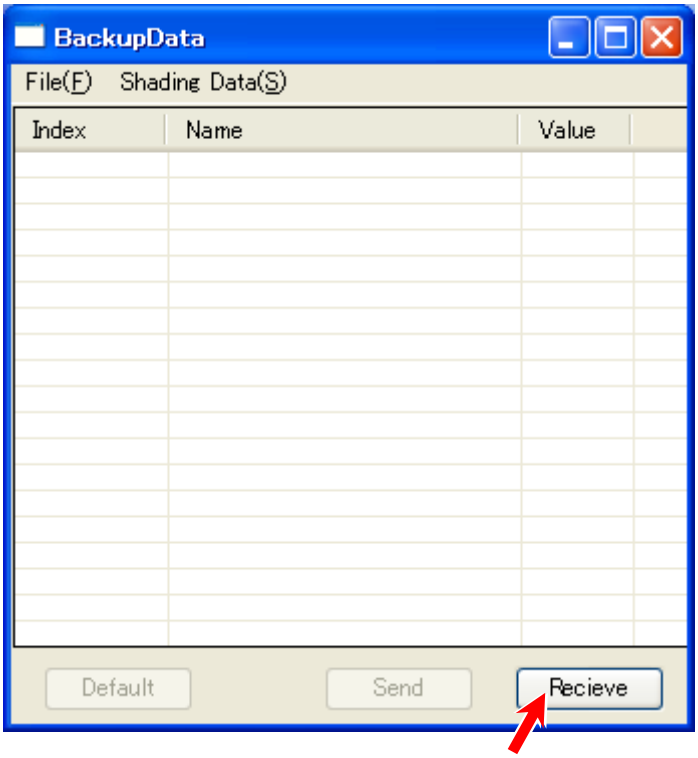
8.22. 4. 1 Changing Backup Data

> **NOTE**
> It is highly recommended to create a backup prior to setting change.
> For backup procedure, see [8.22. 4.2 Saving the Current Backup Data].

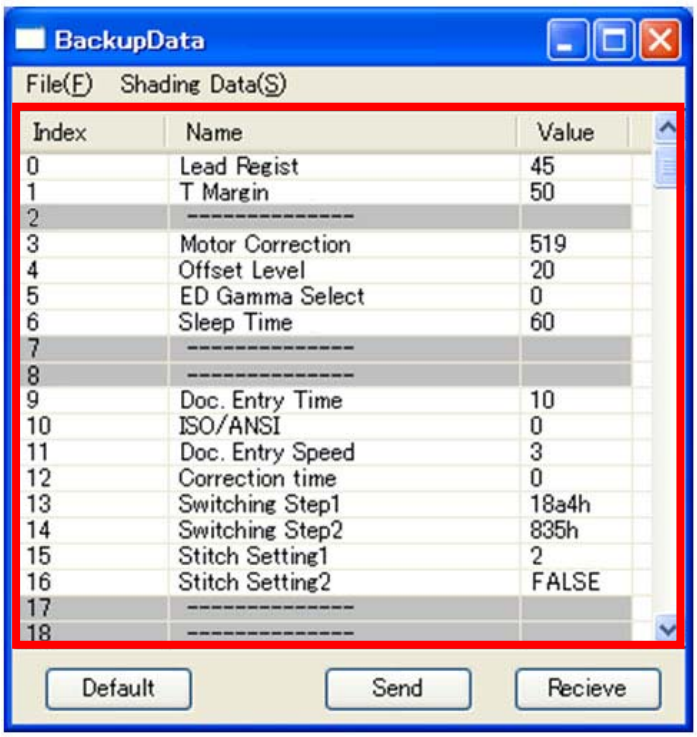
1. Click [BackupData] to recall “Backup Data” sub window.



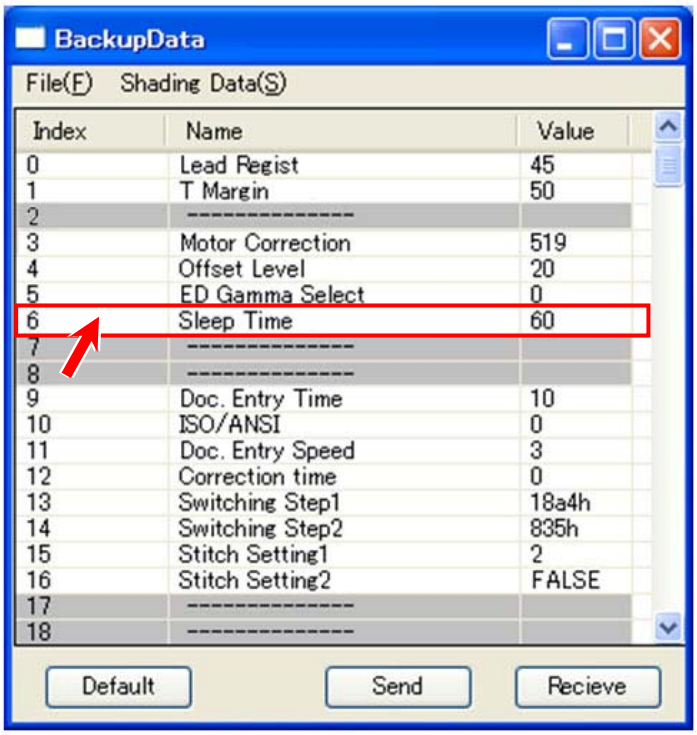
2. Click [Receive]



3. The current parameters are retrieved and displayed in the list.

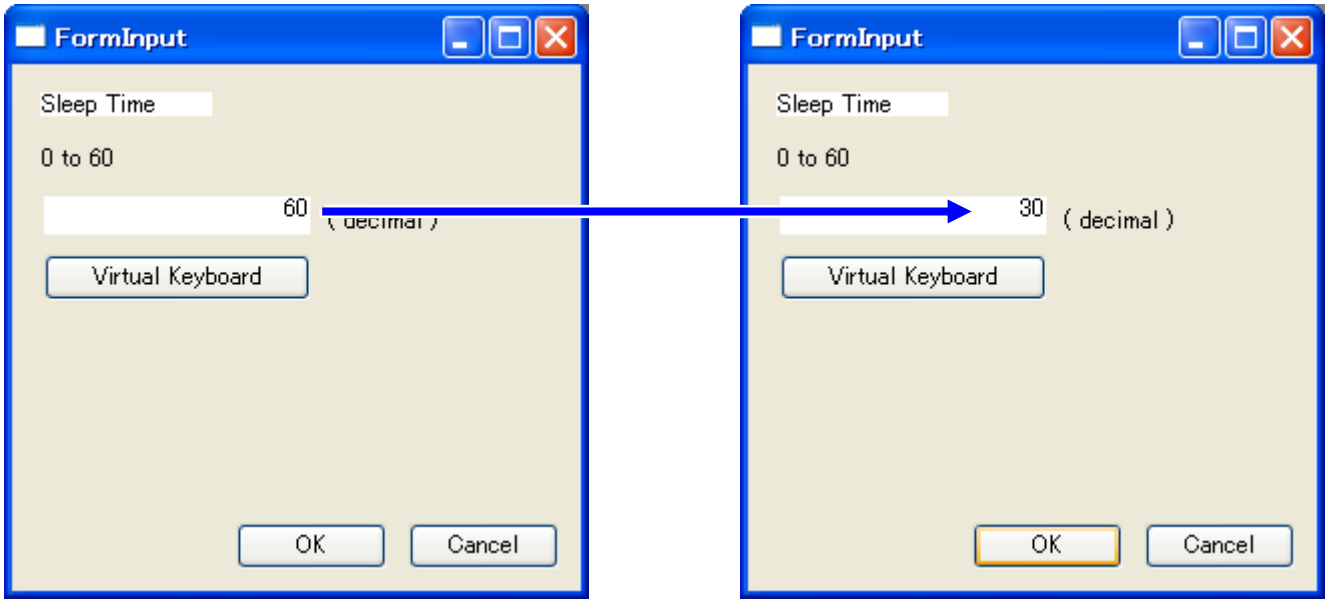


4. Double click on the row you want to change the setting value.
   This section uses “6 Sleep Time 60” for example.

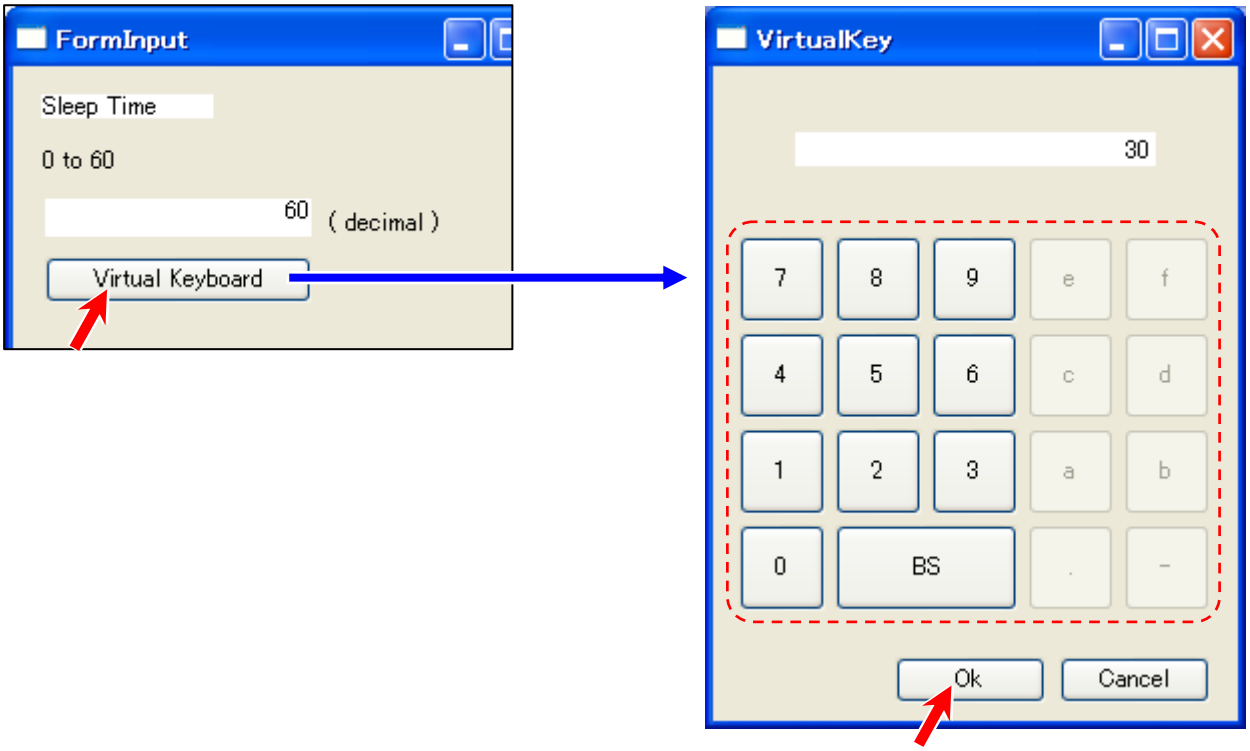


5. “Input” pad pops up. Directly type a value with your keyboard.
Clicking the field is not available. There is no caret functionality. (flashing “ | “ cursor)

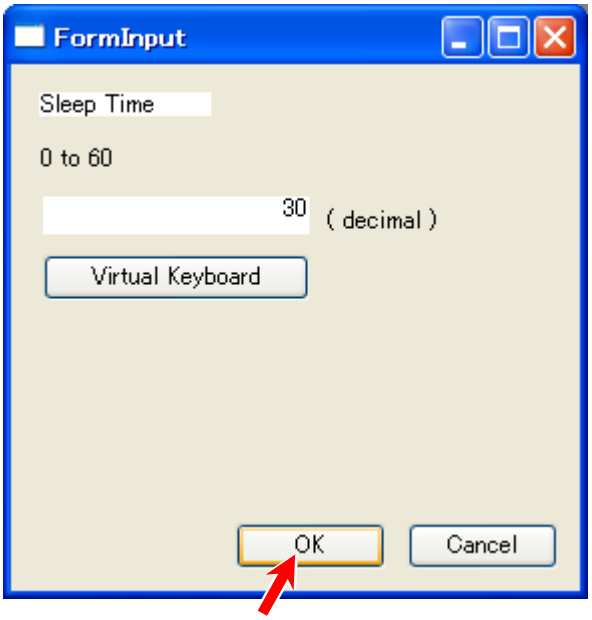
> **NOTE**
>
> Clicking the field displays a caret (flashing “ | ” cursor), but while the caret is flashing, a key entry with your keyboard device is **NOT** accepted.



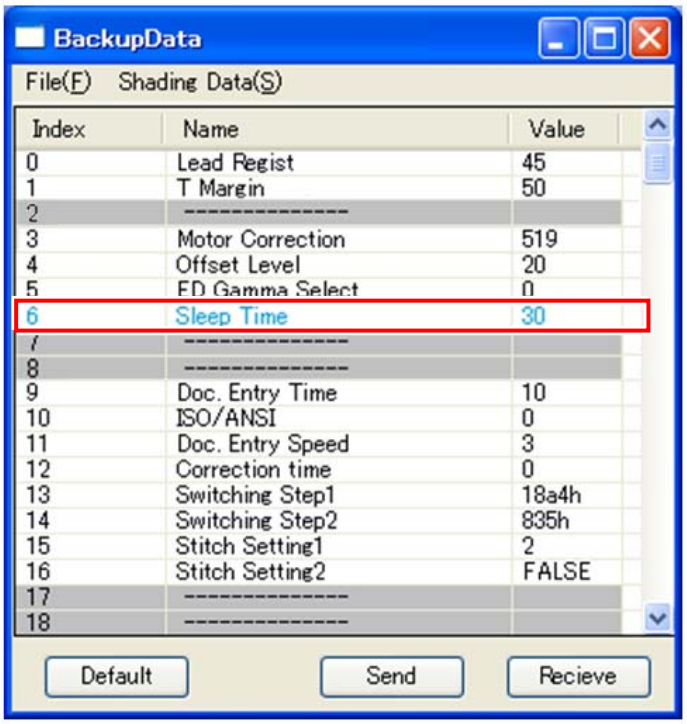
The on-screen keypad is available. Press a number you want to input on the touchscreen.
To finalize the input, press [OK] on the bottom.



6. Click [OK] on the bottom.



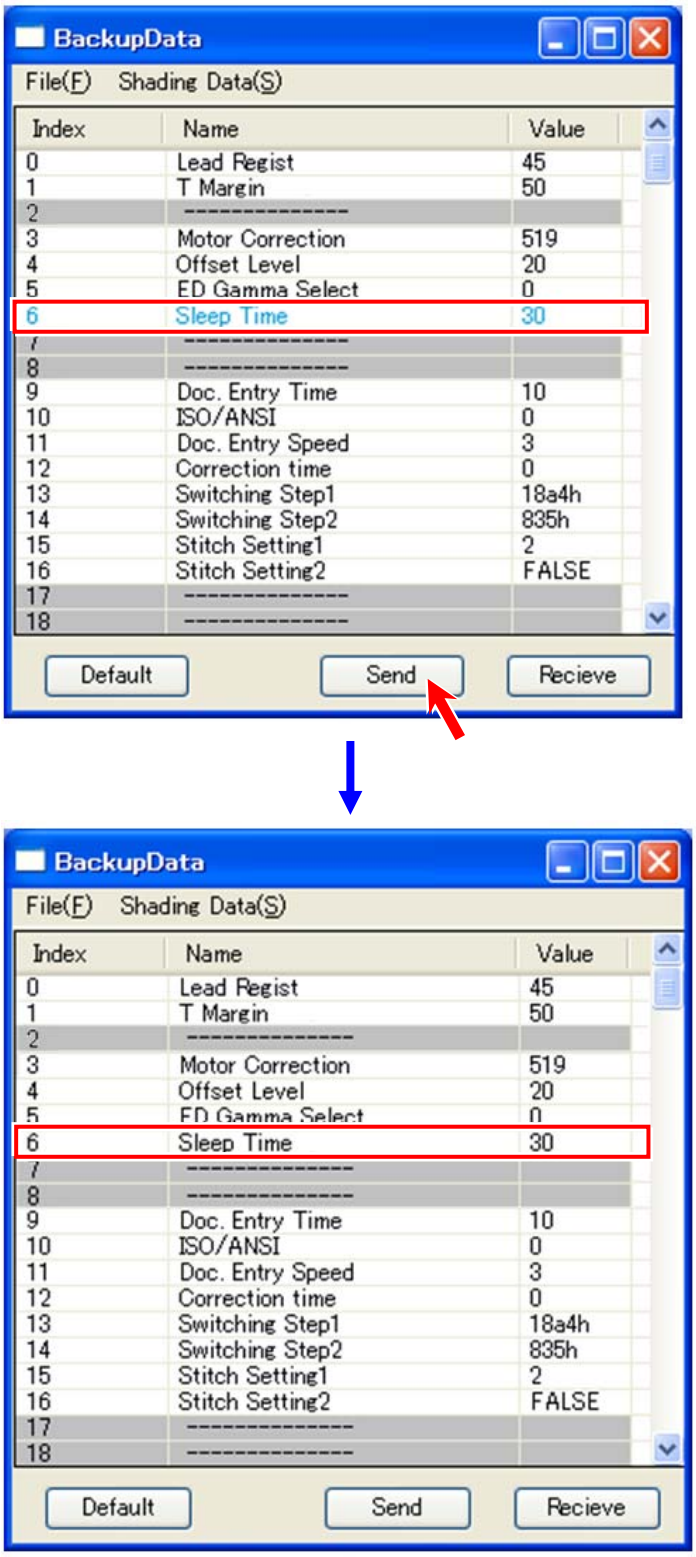
7. The setting change you have made is reflected to the list. It will turn blue.



The other parameters can be changed in the same way in this period.

> **NOTE**
>
> At this time the setting change(s) is not validated yet.

8. Click [Send] on the bottom. The setting change(s) turns black.
   Now it is sent to the D CON (Scanner Main Board).

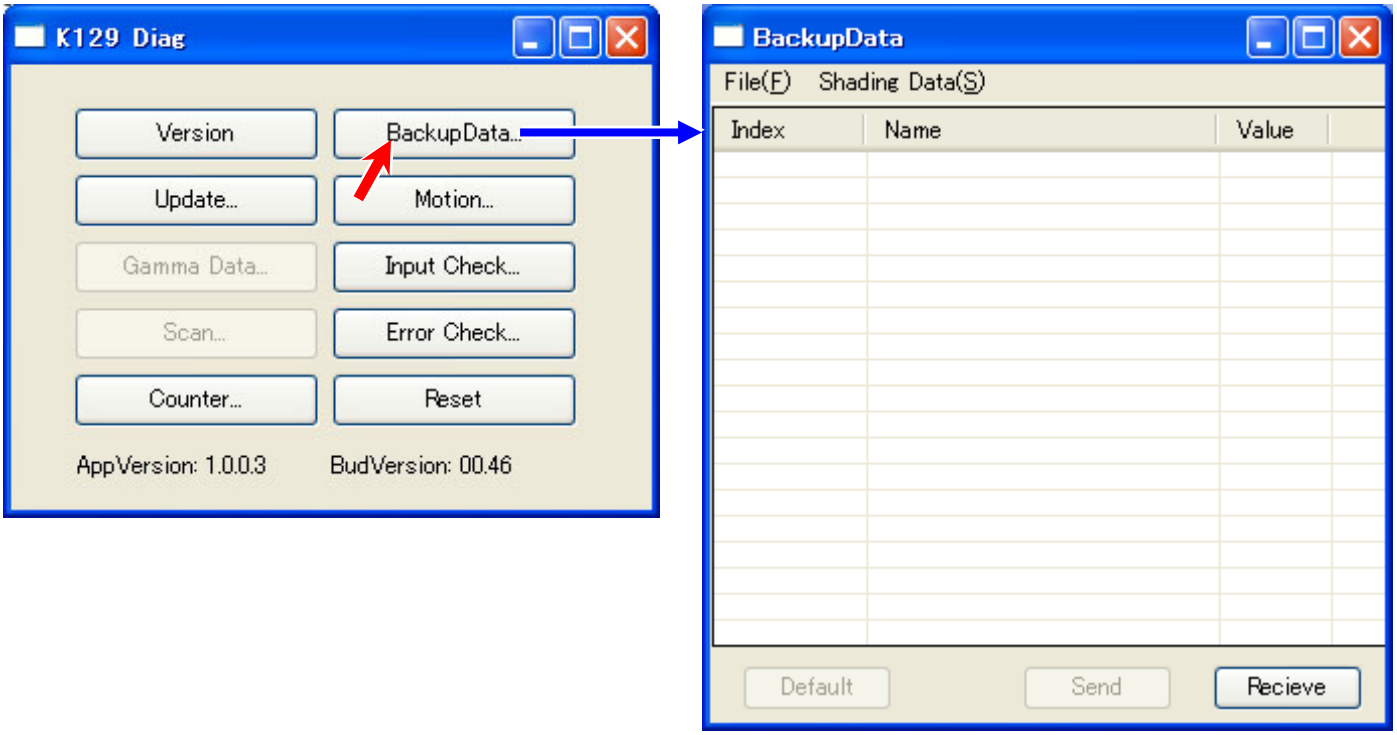


9. To close “BackupData” sub window, click the X button at the upper right corner.

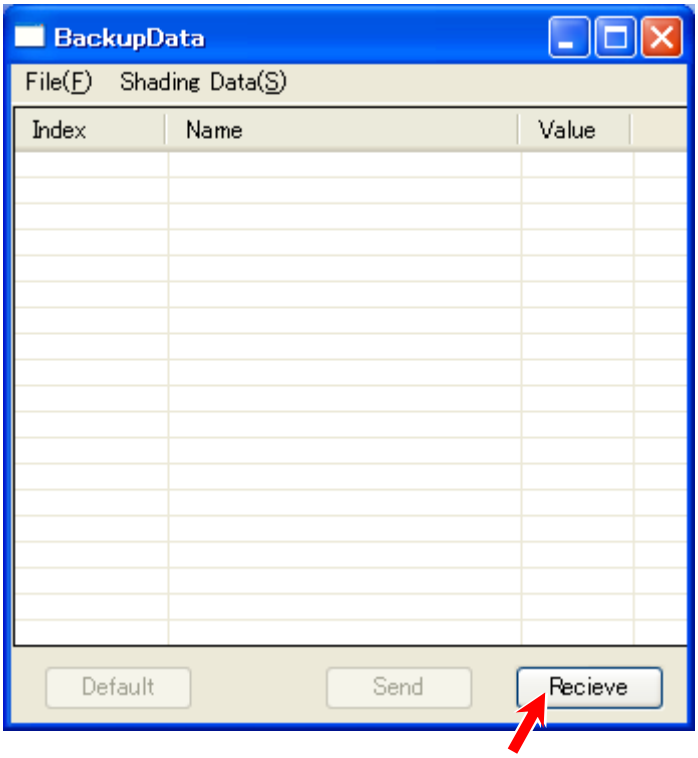
8.22. 4. 2 Saving the Current Backup Data

The current Backup Data (settings for hardware control) can be saved as a backup data file. (*.csv)
This file will be reused for restoring / replacing the D CON (Scanner Main Board).

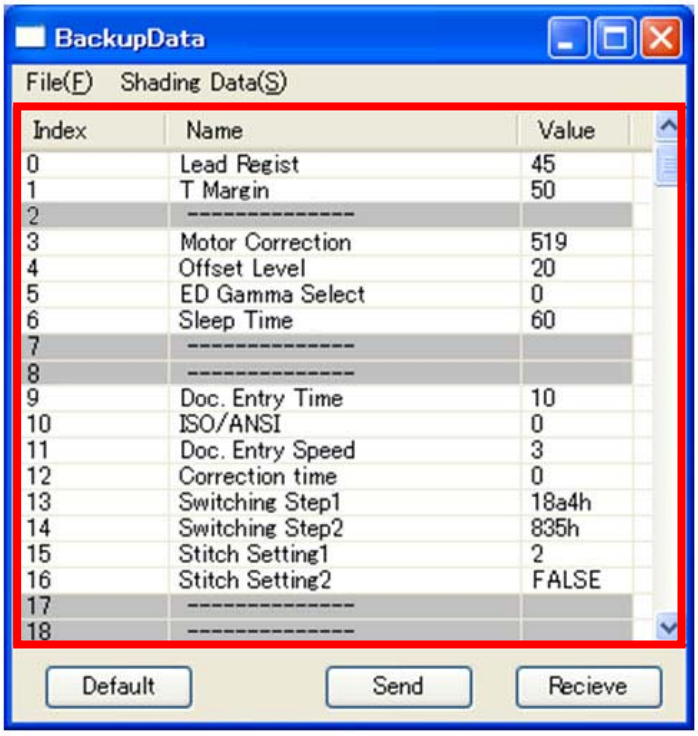
1. Click [BackupData] to recall “Backup Data” sub window.



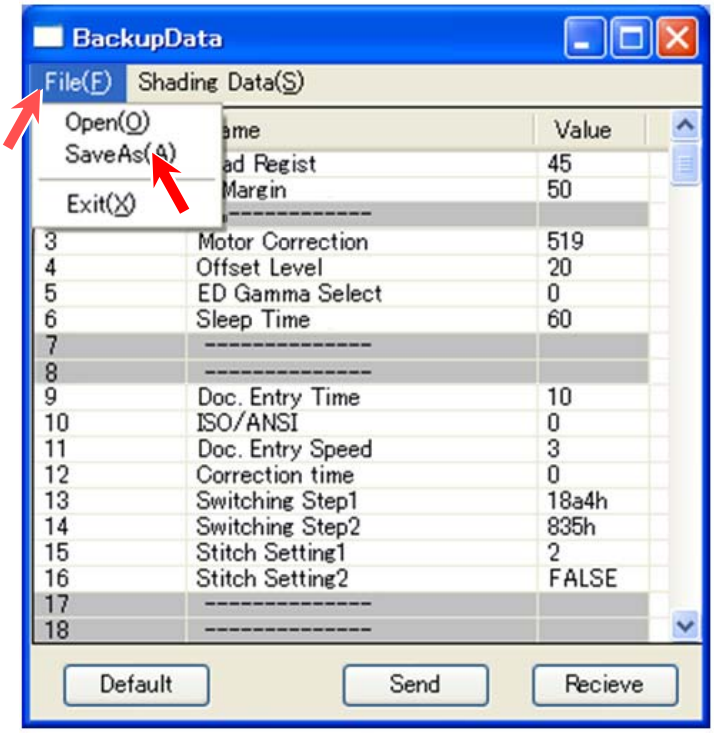
2. Click [Receive]



3. The current parameters are retrieved and displayed in the list.



4. Select [File] menu, and then click [Save As].



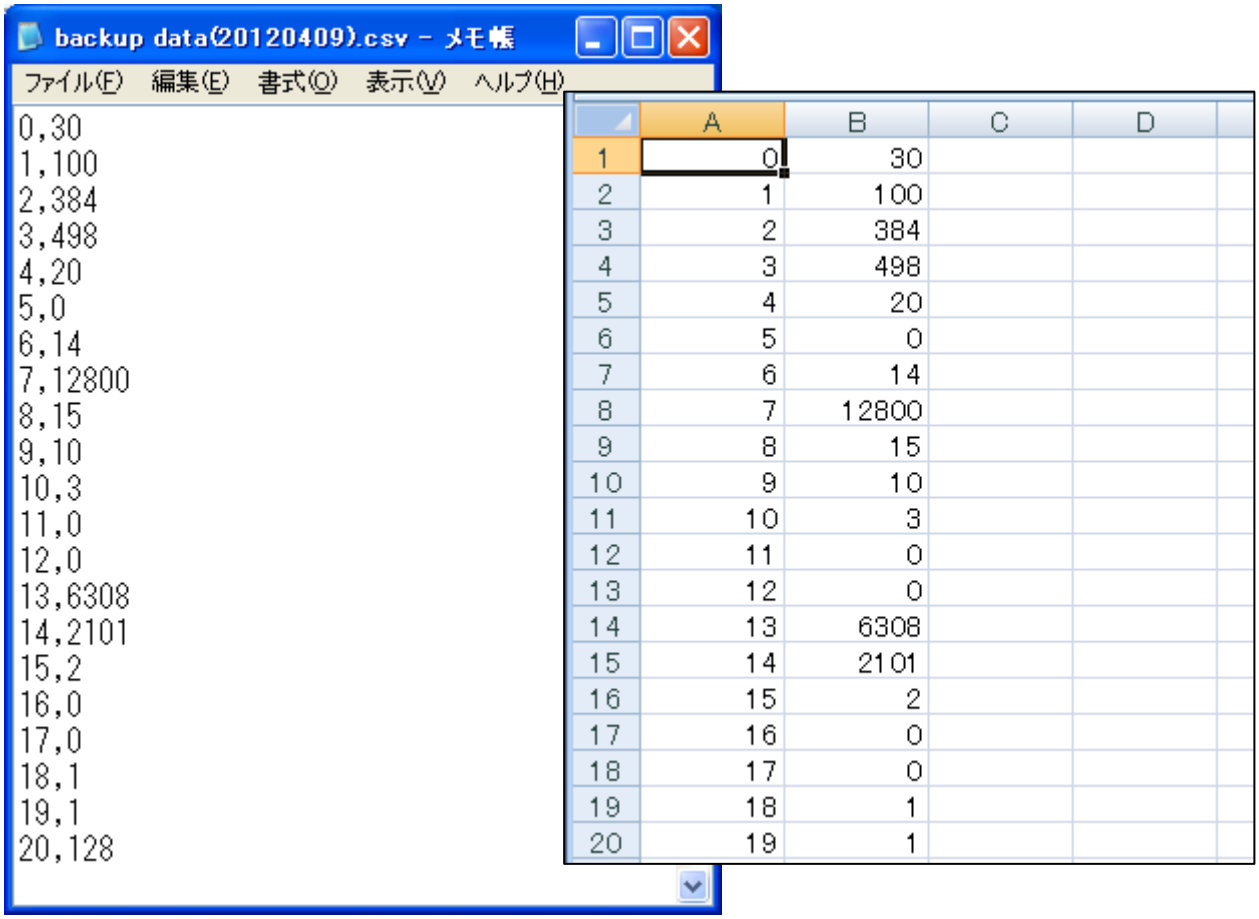
5. Specify a location to save the backup data file. (*.csv)
   You can supply a file name for the csv.

8.22. 4. 3 Editing Backup Data File

You can edit a saved backup data file. (*.csv) Such an edited file can be used for restoring / setting change purpose.

1. Open the backup data file (*.csv) with Notepad or Microsoft Excel for example.

2. (Notepad) You may change the numbers to the right of comma.
   (Microsoft Excel) You may change values in the second column “B”.



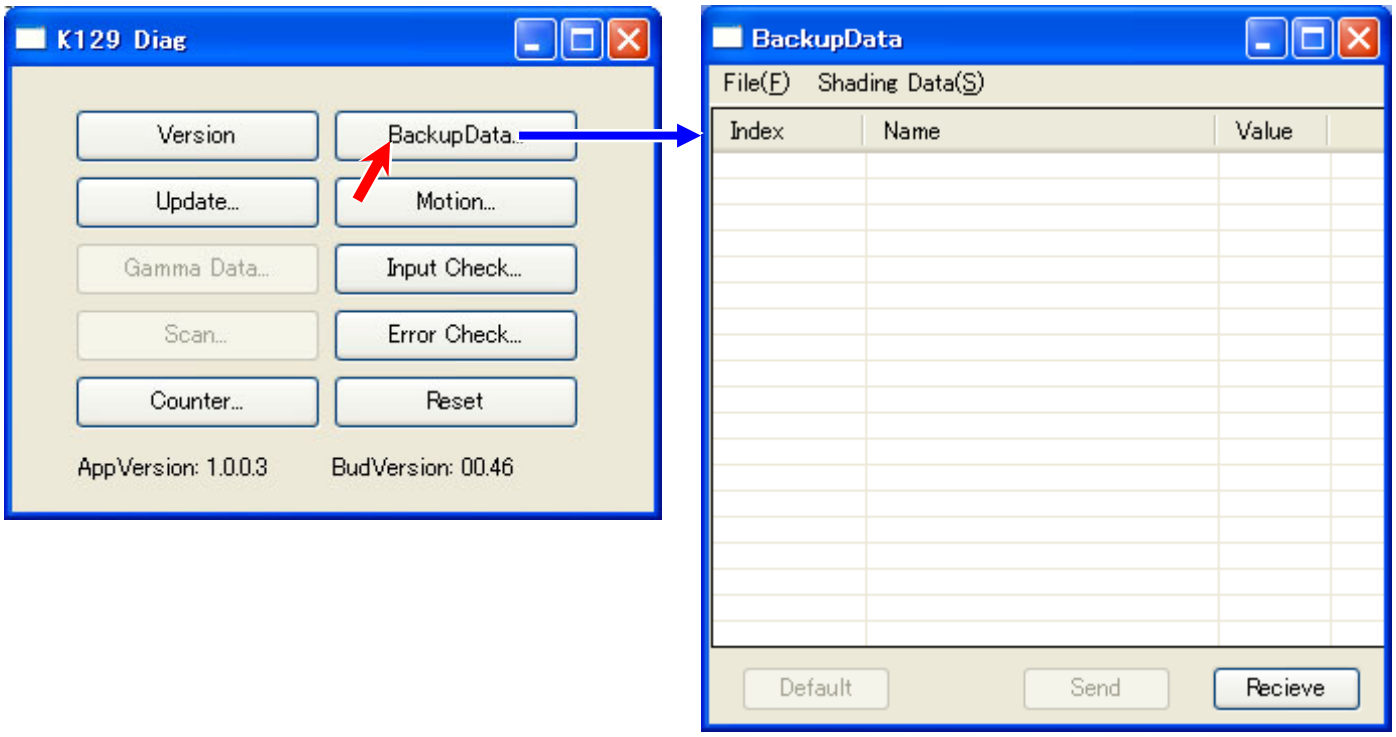
3. Save the file.

4. You can use the file for restoring / setting change purpose.
   Do not delete unchanged lines.

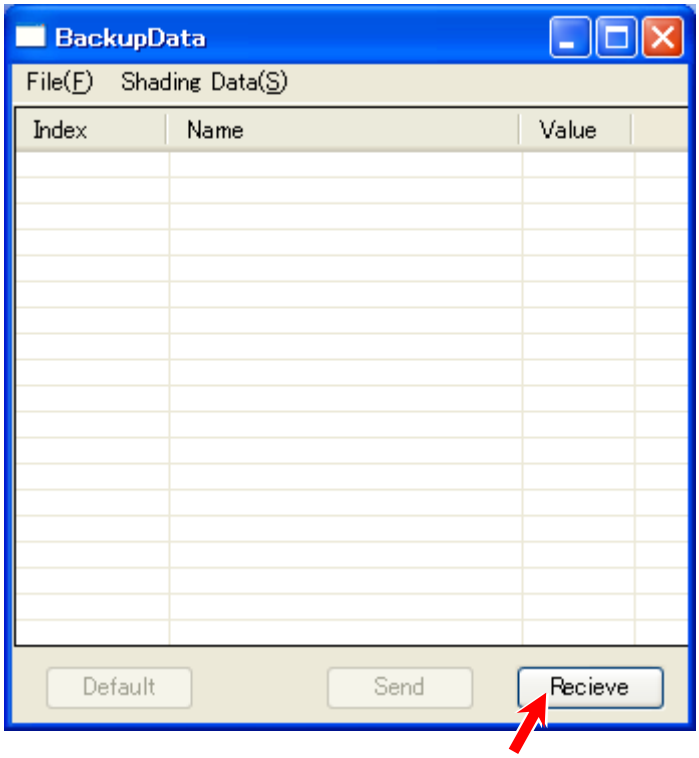
8.22. 4. 4 Restoring Backup Data

Importing an existing backup data file (*.csv) also requires retrieving the current parameters.

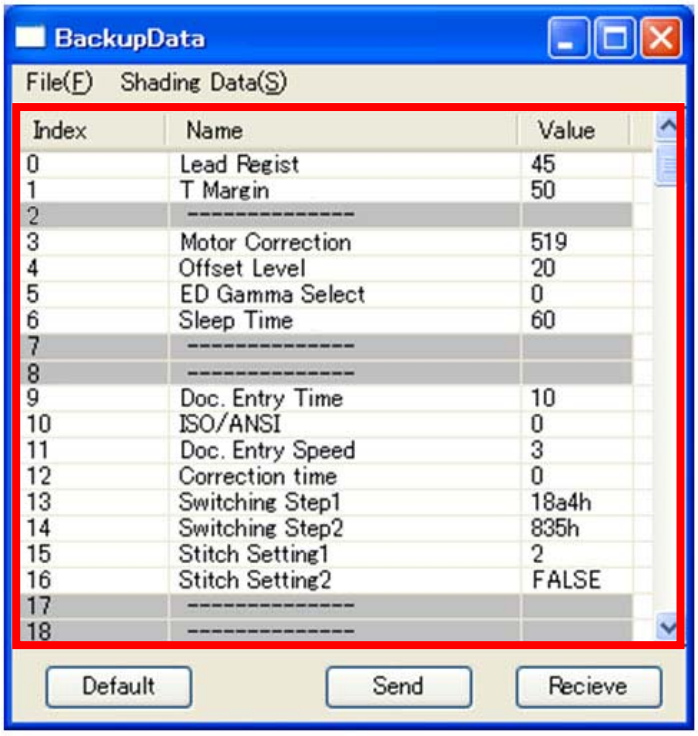
1. Click [BackupData] to recall “Backup Data” sub window.



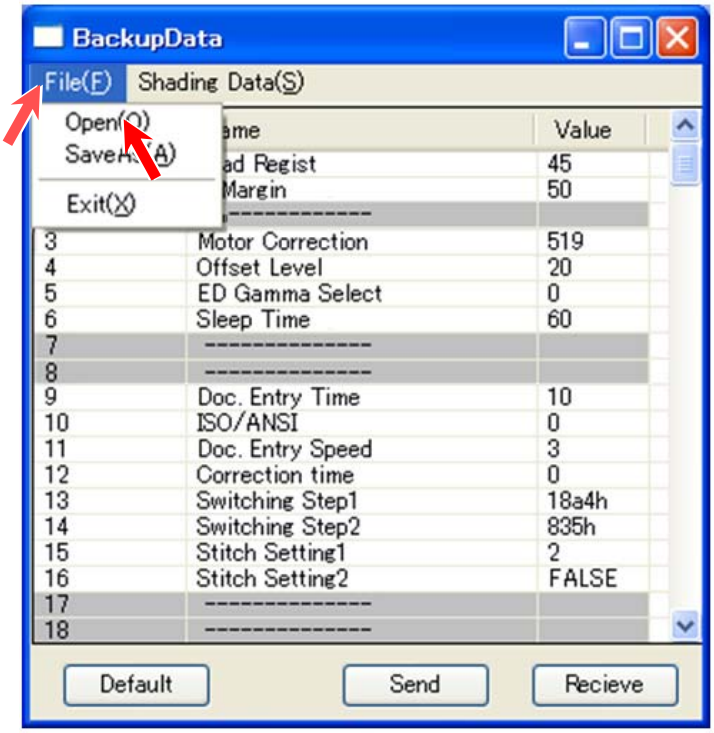
2. Click [Receive]



3. The current parameters are retrieved and displayed in the list.

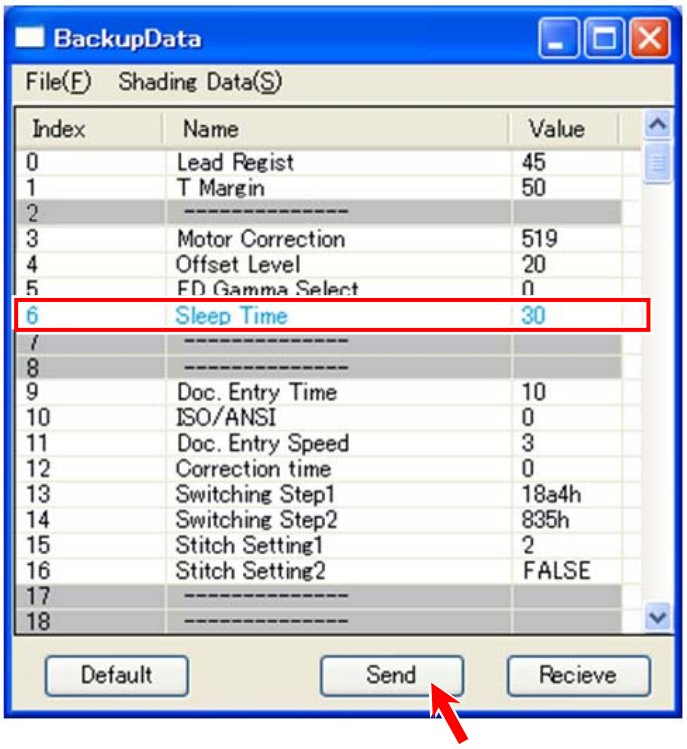


4. Select [File] menu, and then click [Open].



5. Specify a backup data file (*.csv) you want to import.

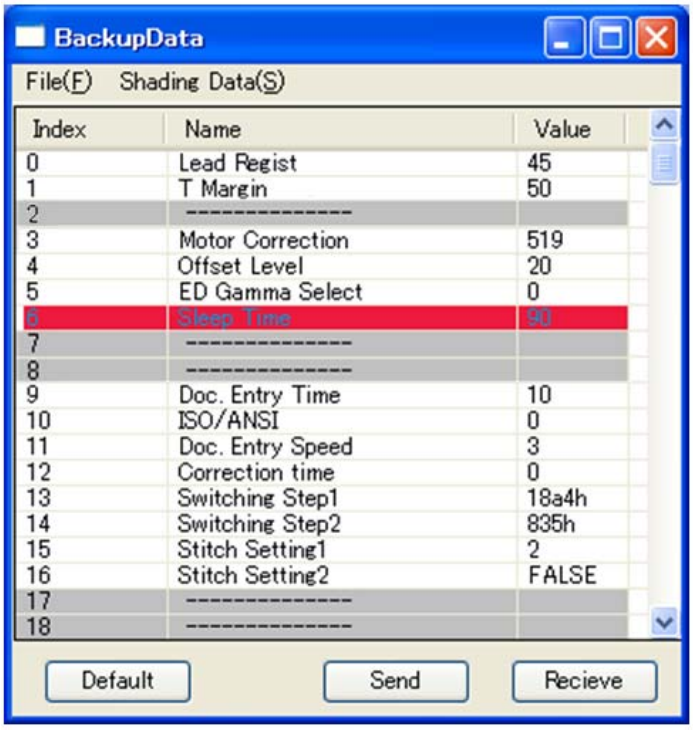
6. Once the backup data file is selected, setting difference(s) (between the current setting value and one from the backup data file) turns blue.
   Click [Send] on the bottom. The setting value(s) from the backup data file turns black.
   Now it is sent to the Main Board.



NOTE

(1) At this time setting value(s) from the backup data file has just been sent to the Main Board, but is not validated yet.

(2) If the selected backup data file includes invalid setting value(s), the concerning row in the list will turn red. The scanner does not accept the backup data currently listed in the window.



7. To close “BackupData” sub window, click the X button at the upper right corner.

8.22. 4. 5 Backup Data List

No.	Subject	Setting Range	Reference	Unit
0	Lead Regist	0 - 60	30	0.1mm
1	T Margin	0 - 200	100	0.1mm
2	reserved		0	
3	Motor Correction	400 - 600	500	-
4	Offset Level	20 - 100	20	-
5	ED Gamma Select	0 - 4	3	(mode selector)
6	Sleep Time	0 - 60	14	1 minute
7	reserved		0	
8	reserved		0	
9	Doc. Entry Time	5 - 50	10	0.1 second
10	ISO/ANSI	0 - 3	3	(mode selector)
11	Doc. Entry Speed	0 - 9	3	(mode selector)
12	Correction Time	0 - 30	10	1 minute
13	Switching Step1	0x0000 - 0xFFFF	0x18A4	-
14	Switching Step2	0x0000 - 0xFFFF	0x0835	-
15	Stitch Setting1	0 - 3	2	(mode selector)
16	Stitch Setting2	0 - 1	1	(mode selector)
17	reserved		0	
18	reserved		0	
19	Ind. Language		1	
20	Strobe 1(R)	1 255	128	
21	Strobe 1(G)			
22	Strobe 1(B)	1 255	128	
23	Strobe 2(R)	1 255	128	
24	Strobe 2(G)	1 255	128	
25	Strobe 2(B)	1 255	128	
26	Strobe 3(R)	1 255	128	
27	Strobe 3(G)	1 255	128	
28	Strobe 3(B)	1 255	128	
29	Strobe 4(R)	1 255	128	
30	Strobe 4(G)	1 255	128	
31	Strobe 4(B)	1 255	128	
32	Strobe 5(R)	1 255	128	
33	Strobe 5(G)	1 255	128	
34	Strobe 5(B)	1 255	128	
35	Offset Block1-1	0 255	128	
36	Offset Block1-2	0 255	128	
37	Gain Block1-1	0 255	0	
38	Gain Block1-2	0 255	0	
39	Offset Block2-1	0 255	128	
40	Offset Block2-2	0 255	128	
41	Gain Block2-1	0 255	0	
42	Gain Block2-2	0 255	0	
43	Offset Block3-1	0 255	128	
44	Offset Block3-2	0 255	128	
45	Gain Block3-1	0 255	0	
46	Gain Block3-2	0 255	0	
47	Luminance 1	1 999	500	
48	Luminance 2	1 999	500	
49	Luminance 3	1 999	500	
50	Luminance 4	1 999	500	
51	Luminance 5	1 999	500	
52	cis1/cis2 Main	0 200	100	
53	cis2/cis3 Main	0 200	100	
54	cis3/cis4 Main	0 200	100	
55	cis4/cis5 Main	0 200	100	
56	cis1 Sub	50 150	100	
57	cis2 Sub	50 150	100	
58	cis4 Sub	50 150	100	

No.	Subject	Setting Range		Reference	Unit
59	cis5 Sub	50	150	100	
60	Digital Gain	0	2	1	
61	Platen Samp Time	5	50	10	
62	cis1 Detail	0	7	3	
63	cis2 Detail	0	7	3	
64	cis4 Detail	0	7	3	
65	cis5 Detail	0	7	3	
66	Overlap Image	0	1	0	
67	Special Scan	0	2	0	
68	Strobe Level	0	9	0	
69	Reserved	0	0	0	
70	Stitch Adjust1	0	200	100	
71	Stitch Adjust2	0	200	100	
72	Stitch Adjust3	0	200	100	
73	Stitch Adjust4	0	200	100	
74	Stitch Adjust5	0	200	100	
75	Stitch Adjust6	0	200	100	
76	Stitch Adjust7	0	200	100	
77	Stitch Adjust8	0	200	100	
78	Stitch Adjust9	0	200	100	
79	Stitch Adjust10	0	200	100	
80	Stitch Adjust11	0	200	100	
81	Stitch Adjust12	0	200	100	
82	Stitch Adjust13	0	200	100	
83	Stitch Adjust14	0	200	100	
84	Stitch Adjust15	0	200	100	
85	Stitch Adjust16	0	200	100	
86	Stitch Adjust17	0	200	100	
87	Stitch Adjust18	0	200	100	
88	Stitch Adjust19	0	200	100	
89	Stitch Adjust20	0	200	100	
90	Stitch Adjust21	0	200	100	
91	Stitch Adjust22	0	200	100	
92	Stitch Adjust23	0	200	100	
93	Stitch Adjust24	0	200	100	
94	Stitch Adjust25	0	200	100	
95	Stitch Adjust26	0	200	100	
96	Stitch Adjust27	0	200	100	
97	Stitch Adjust28	0	200	100	
98	Stitch Adjust29	0	200	100	
99	Stitch Adjust30	0	200	100	
100	Stitch Adjust31	0	200	100	
101	Stitch Adjust32	0	200	100	
102	Stitch Adjust33	0	200	100	
103	Stitch Adjust34	0	200	100	
104	Stitch Adjust35	0	200	100	
105	Stitch Adjust36	0	200	100	
106	Stitch Adjust37	0	200	100	
107	Stitch Adjust38	0	200	100	
108	Stitch Adjust39	0	200	100	
109	Stitch Adjust40	0	200	100	
110	Stitch Adjust41	0	200	100	
111	Stitch Adjust42	0	200	100	
112	Stitch Adjust43	0	200	100	
113	Stitch Adjust44	0	200	100	
114	Stitch Adjust45	0	200	100	
115	Stitch Adjust46	0	200	100	
116	Stitch Adjust47	0	200	100	
117	Stitch Adjust48	0	200	100	
118	Doc. Set pxl1(B)	0	0xFFFF	0x13A9	
119	Doc. Set pxl1(W)	0	0xFFFF	0x10F4	

No.	Subject	Setting Range		Reference	Unit
120	Doc. Set thr(B)	0	0xFFFF	0x0032	
121	Doc. Set thr(W)	0	0xFFFF	0x0032	
122	Doc. Set pxl2(B)	0	0xFFFF	0x000A	
123	Doc. Set pxl2(W)	0	0xFFFF	0x02BC	
124	White Std pxl1	0	0xFFFF	0x0028	
125	White Std pxl2	0	0xFFFF	0x1360	
126	Platen Data1	0	1024	0	
127	Platen Data2	0	1024	0	
128	Platen Data3	0	1024	0	
129	Platen Data4	0	1024	0	
130	Platen Data5	0	1024	0	
131	Platen Data R1	0	1024	0	
132	Platen Data R2	0	1024	0	
133	Platen Data R3	0	1024	0	
134	Platen Data R4	0	1024	0	
135	Platen Data R5	0	1024	0	
136	Platen Data G1	0	1024	0	
137	Platen Data G2	0	1024	0	
138	Platen Data G3	0	1024	0	
139	Platen Data G4	0	1024	0	
140	Platen Data G5	0	1024	0	
141	Platen Data B1	0	1024	0	
142	Platen Data B2	0	1024	0	
143	Platen Data B3	0	1024	0	
144	Platen Data B4	0	1024	0	
145	Platen Data B5	0	1024	0	
146	Cis Offset R1	0	64	32	
147	Cis Offset G1	0	64	32	
148	Cis Offset B1	0	64	32	
149	Cis Offset K1	0	64	32	
150	Cis Offset R2	0	64	32	
151	Cis Offset G2	0	64	32	
152	Cis Offset B2	0	64	32	
153	Cis Offset K2	0	64	32	
154	Cis Offset R3	0	64	32	
155	Cis Offset G3	0	64	32	
156	Cis Offset B3	0	64	32	
157	Cis Offset K3	0	64	32	
158	Cis Offset R4	0	64	32	
159	Cis Offset G4	0	64	32	
160	Cis Offset B4	0	64	32	
161	Cis Offset K4	0	64	32	
162	Cis Offset R5	0	64	32	
163	Cis Offset G5	0	64	32	
164	Cis Offset B5	0	64	32	
165	Cis Offset K5	0	64	32	
166	Sub Strobe 1(R)	1	255	128	
167	Sub Strobe 1(G)	1	255	128	
168	Sub Strobe 1(B)	1	255	128	
169	Sub Strobe 2(R)	1	255	128	
170	Sub Strobe 2(G)	1	255	128	
171	Sub Strobe 2(B)	1	255	128	
172	Sub Strobe 3(R)	1	255	128	
173	Sub Strobe 3(G)	1	255	128	
174	Sub Strobe 3(B)	1	255	128	
175	Sub Strobe 4(R)	1	255	128	
176	Sub Strobe 4(G)	1	255	128	
177	Sub Strobe 4(B)	1	255	128	
178	Sub Strobe 5(R)	1	255	128	
179	Sub Strobe 5(G)	1	255	128	
180	Sub Strobe 5(B)	1	255	128	

No.	Subject	Setting Range	Reference	Unit
181	Cis Offset2 R1	0 1023	512	
182	Cis Offset2 G1	0 1023	512	
183	Cis Offset2 B1	0 1023	512	
184	Cis Offset2 K1	0 1023	512	
185	Cis Offset2 R2	0 1023	512	
186	Cis Offset2 G2	0 1023	512	
187	Cis Offset2 B2	0 1023	512	
188	Cis Offset2 K2	0 1023	512	
189	Cis Offset2 R3	0 1023	512	
190	Cis Offset2 G3	0 1023	512	
191	Cis Offset2 B3	0 1023	512	
192	Cis Offset2 K3	0 1023	512	
193	Cis Offset2 R4	0 1023	512	
194	Cis Offset2 G4	0 1023	512	
195	Cis Offset2 B4	0 1023	512	
196	Cis Offset2 K4	0 1023	512	
197	Cis Offset2 R5	0 1023	512	
198	Cis Offset2 G5	0 1023	512	
199	Cis Offset2 B5	0 1023	512	
200	Cis Offset2 K5	0 1023	512	
201	White Std pxl3			
202	White Std pxl4			
203	White Std pxl5			
204	White Std pxl6			
205	Reserved			
206	Reserved			
207	Reserved			
208	Reserved			
209	Sampling Width			
210 to 270	Reserved			
271	Correction Block	0 - 1	1	(mode selector)
272	Block Threshold	1 - 255	100	---
273	CIS Slope2	1 - 100	35	---

* as of July 2013

8.22. 4. 6 BUD Descriptions

> **NOTE**
>
> Auto adjustment features uses many parameters here.
> A setting change on grayed items may malfunction the auto adjustments as intended.

0 Lead Regist

BUD No.0 is to shift the start timing of reading.
Increasing the value moves the start timing to the trailing edge side. (reading starts later)
Decreasing the value moves the start timing to the leading edge side. (reading starts earlier)

setting range	step of increment
0 to 60	0.1mm

1 T Margin

BUD No.1 is to shift the stop timing of reading.
Increasing the value moves the stop timing to the trailing edge side. (reading stops later)
Decreasing the value moves the stop timing to the leading edge side. (reading stops earlier)

setting range	step of increment
0 to 200	0.1mm

3 Motor Correction

> **NOTE**
>
> Factory adjusted. Keep the value unchanged.

BUD No.3 is to compensate the Document Motor.

setting range
400 to 600

4 Offset Level

> **NOTE**
>
> Fixed value. Keep the value unchanged.

BUD No.4 is a parameter for the definition of the Black Level.

setting range
20 to 100

5 ED Gamma Select

BUD No.5 is a mode selector of which “Error Diffusion Gamma” mode to be used.
This is to be decided by your system configuration. Choose the correct combination.

setting value	Contents
0	tentative default
1	KIP 7170 connects to a PC
2	KIP 7170 connects to an IPS
3	reserved
4	reserved

6 Sleep Time

BUD No.6 is a timer setting for the scanner to run sleep mode. (Auto Power OFF)
The period of inactivity can be specified. The setting value “0” means Auto Power OFF disabled.

setting range	step of increment
0 to 60	1 minute

9 Doc. Entry Time

BUD No.9 is a timer setting for the scanner to catch an inserted original.
Decreasing the value takes longer time to catch the original’s leading edge.

setting range	step of increment
5 to 50	0.1 second

10 ISO/ANSI

BUD No.10 is a table selector of the original width definition.
The definition is usually specified by the scan software.

setting range
0 to 3

11 Doc. Entry Speed

BUD No.11 is a speed selector to catch an inserted original.
Increasing the value moves the original to the standby position slower.

setting range	
0 to 9	0: fastest 9: slowest

12 Correction Time

NOTE

Fixed value. Keep the value unchanged.

BUD No.12 is a reserved parameter for “white level compensation”.

Reference

Shading defines the “black level” / “white level” for each pixel.
Shading also averages the reading level (black level / white level) for the pixels on each CIS image block borders. This is to diminish visual density gap at the borders.

BUD has several “fixed” or “factory adjusted” items for auto adjustments such as No.12.
A setting change on them may malfunction the auto adjustments as intended.

13 Switching Step1

NOTE

Factory adjusted. Keep the value unchanged.

BUD No.13 is a speed setting of the feed roller’s eccentricity compensation.

setting range
0x0000 to 0xFFFF

14 Switching Step2

NOTE

Factory adjusted. Keep the value unchanged.

BUD No.14 is a speed setting of the feed roller’s eccentricity compensation.

setting range
0x0000 to 0xFFFF

15 Stitch Setting1

BUD No.15 is a mode selector for “fade transition stitch” at CIS borders. This is to diminish visual density gap between CIS. This is effective for scanning with filters for Color, Grayscale, mono “Photo”.

setting value	Contents
0	OFF (Select “0” before starting Stitching Adjustment)
1	ON1: not supported
2	ON2 / without Black Brightness Correct (default for Firmware M14 S16 and before)
3	ON3: not supported
4	ON4 with Black Brightness Correct (default for Firmware M15 S17 and after)

NOTE

Stitching Adjustment should be done with BUD No.15 set to “zero”.
Be sure to reset it to “the original value” after Stitching Adjustment is done.

16 Stitch Setting2

NOTE

Factory adjusted. Keep the value unchanged.

BUD No.16 is a mode selector for feed speed compensation.

setting value	Contents
0	Feed speed constant
1	Feed speed compensated according to No.70 - 117.

19 Ind. Language

NOTE

Reserved. Keep the value unchanged.

BUD No.19 is a reserved setting for developers.

20 - 34 Strobe

BUD No.20 to 34 are a parameter for CIS's illuminating time in color scanning.
Increasing the value gets scanned images lighter.
Be noted that Shading will calibrate the possible best values for No.20 to 34.

> **⚠ NOTE**
>
> Shading will overwrite BUD No.20 to 34.

BUD No.	Name	Setting Range
20	Strobe 1 (R) CIS 1 light source R illuminating time for color scanning	1 to 255
21	Strobe 1 (G) CIS 1 light source G illuminating time for color scanning	
22	Strobe 1 (B) CIS 1 light source B illuminating time for color scanning	
23	Strobe 2 (R) CIS 2 light source R illuminating time for color scanning	
24	Strobe 2 (G) CIS 2 light source G illuminating time for color scanning	
25	Strobe 2 (B) CIS 2 light source B illuminating time for color scanning	
26	Strobe 3 (R) CIS 3 light source R illuminating time for color scanning	
27	Strobe 3 (G) CIS 3 light source G illuminating time for color scanning	
28	Strobe 3 (B) CIS 3 light source B illuminating time for color scanning	
29	Strobe 4 (R) CIS 4 light source R illuminating time for color scanning	
30	Strobe 4 (G) CIS 4 light source G illuminating time for color scanning	
31	Strobe 4 (B) CIS 4 light source B illuminating time for color scanning	
32	Strobe 5 (R) CIS 5 light source R illuminating time for color scanning	
33	Strobe 5 (G) CIS 5 light source G illuminating time for color scanning	
34	Strobe 5 (B) CIS 5 light source B illuminating time for color scanning	

35 - 46 Offset Block, Gain Block

> **⚠ NOTE**
>
> Shading will overwrite here. No manual input is recommended.

BUD No.35 to 46 are a parameter for "black level compensation".
Be noted that Shading will calibrate the possible best values for No.35 to 46.

47 - 51 Luminance

> **NOTE**
>
> Shading will overwrite BUD No.47 to 51.

BUD No.47 to 51 are a parameter for CIS's light intensity in mono scanning.
Increasing the value gets scanned images lighter.
Be noted that Shading will calibrate the possible best values for No.47 to 51.

BUD No.	Name	Setting Range
47	Luminance 1 CIS 1 light intensity for mono scanning	1 to 255
48	Luminance 2 CIS 2 light intensity for mono scanning	
49	Luminance 3 CIS 3 light intensity for mono scanning	
50	Luminance 4 CIS 4 light intensity for mono scanning	
51	Luminance 5 CIS 5 light intensity for mono scanning	

52 - 55 CIS Main

> **NOTE**
>
> Stitch Adjustment will overwrite BUD No.52 to 55.

BUD No.52 to 55 are a parameter for pixel shift in main scanning direction. (horizontal = left/right)
Increasing the value moves the concerning CIS block image (and the later blocks together) to the right in 1 pixel. CIS 1 (far left) is the reference.
Be noted that Stitching Adjustment will calibrate the possible best values for No.52 to 55.

BUD No.	Name	Setting Range	Step of increment
52	cis1/cis2 Main block image horizontal shift of CIS 2 (and CIS 3/4/5 together)	0 to 200	1 pixel
53	cis2/cis3 Main block image horizontal shift of CIS 3 (and CIS 4/5 together)		
54	cis3/cis4 Main block image horizontal shift of CIS 4 (and CIS 5 together)		
55	cis4/cis5 Main block image horizontal shift of CIS 5		

56 - 59 CIS Sub

> **NOTE**
>
> Stitch Adjustment will overwrite BUD No.56 to 59.

BUD No.56 to 59 are a parameter for pixel shift in sub scanning direction. (vertical = top/bottom)
Increasing the value moves the concerning CIS block image to the bottom in 1 pixel. CIS 3 (center) is the reference.
Be noted that Stitching Adjustment will calibrate the possible best values for No.56 to 59.

BUD No.	Name	Setting Range	Step of increment
56	cis1 Sub block image vertical shift of CIS 1	50 to 150	1 pixel
57	cis2 Sub block image vertical shift of CIS 2		
58	cis4 Sub block image vertical shift of CIS 4		
59	cis5 Sub block image vertical shift of CIS 5		

60 Digital Gain

> **NOTE**
>
> Fixed value. Keep the value unchanged.

BUD No.60 is a fixed setting for developers.

setting value	Contents
0	Correction for transparent documents activated according to No.181-200
1	Correction for transparent documents activated based on pre-programmed (fixed) parameters.
2	not supported.

61 Platen Samp Time

> **NOTE**
>
> Reserved. Keep the value unchanged.

BUD No.61 is a reserved parameter for “white level compensation”.

62 - 65 CIS Detail

> **NOTE**
>
> Reserved. Keep the value unchanged.

BUD No.62 to 65 are a reserved parameter for Stitching Adjustment.

66 Overlap Image

NOTE

Reserved. Keep the value unchanged.

BUD No.66 is a reserved parameter for Stitching Adjustment.

67 Special Scan

NOTE

Reserved. Keep the value unchanged.

BUD No.67 is a reserved parameter for Shading.

68 Strobe Level

NOTE

Reserved. Keep the value unchanged.

BUD No.68 is a reserved parameter for “white level correction”.

70 - 117 Stitch Adjust

NOTE

Factory adjusted. Keep the value unchanged.

BUD No.70 to 117 are a parameter for feed speed compensation.

BUD No.	Name	Setting Range
70 - 85	Stitch Adjust 1 - 16 Feed speed compensation for front roller solo feeding	0 to 200
86 - 101	Stitch Adjust 17 - 32 Feed speed compensation for front & rear rollers combi feeding	
102 - 117	Stitch Adjust 33 - 48 Feed speed compensation for rear roller solo feeding	

118, 119 Doc. Set pxl1

NOTE

Fixed value. Keep the value unchanged.

BUD No.118, 119 are a parameter for the leading edge detection by CIS 2.

120, 121 Doc. Set thr1

NOTE

Fixed value. Keep the value unchanged.

BUD No.120, 121 are a parameter for the leading edge detection process.

122, 123 Doc. Set pxl2

NOTE

Fixed value. Keep the value unchanged.

BUD No.122, 123 are a parameter for the leading edge detection by CIS 4.

124, 125 White Std pxl

NOTE

Reserved. Keep the value unchanged.

BUD No.124, 125 are a reserved parameter for “white level correction”.

> **NOTE**
>
> Shading will overwrite BUD No.126 to 145. No manual input is recommended.

BUD No.126 to 145 are a memory for the current performance of reading white level.
There are 2 reference points;
- black level reading on Shading Chart
- white level reading on Platen Roller

The higher value gets lighter.

BUD No.	Name	Setting Range
126	Platen Data 1 current black level on CIS 1 (with Shading chart)	0 to 1024
127	Platen Data 2 current black level on CIS 2 (with Shading chart)	
128	Platen Data 3 current black level on CIS 3 (with Shading chart)	
129	Platen Data 4 current black level on CIS 4 (with Shading chart)	
130	Platen Data 5 current black level on CIS 5 (with Shading chart)	
131	Platen Data R1 (Reserved) current white level on CIS 1 in R (with Platen)	
132	Platen Data R2 (Reserved) current white level on CIS 2 in R (with Platen)	
133	Platen Data R3 (Reserved) current white level on CIS 3 in R (with Platen)	
134	Platen Data R4 (Reserved) current white level on CIS 4 in R (with Platen)	
135	Platen Data R5 (Reserved) current white level on CIS 5 in R (with Platen)	
136	Platen Data G1 current white level on CIS 1 in G (with Platen)	
137	Platen Data G2 current white level on CIS 2 in G (with Platen)	
138	Platen Data G3 current white level on CIS 3 in G (with Platen)	
139	Platen Data G4 current white level on CIS 4 in G (with Platen)	
140	Platen Data G5 current white level on CIS 5 in G (with Platen)	
141	Platen Data B1 (Reserved) current white level on CIS 1 in B (with Platen)	
142	Platen Data B2 (Reserved) current white level on CIS 2 in B (with Platen)	
143	Platen Data B3 (Reserved) current white level on CIS 3 in B (with Platen)	
144	Platen Data B4 (Reserved) current white level on CIS 4 in B (with Platen)	
145	Platen Data B5 (Reserved) current white level on CIS 5 in B (with Platen)	

NOTE

Shading and Black Brightness Correct will overwrite BUD No.146 to 165.

BUD No.146 to 165 are a memory to store the calibrated parameters for “black level compensation”.
Increasing the value gets the concerning CIS block image lighter.

BUD No.	Name	Setting Range
146	CIS offset R1 CIS 1 calibration result for black level compensation in R	0 to 64
147	CIS offset G1 CIS 1 calibration result for black level compensation in G	
148	CIS offset B1 CIS 1 calibration result for black level compensation in B	
149	CIS offset K1 CIS 1 calibration result for black level compensation	
150	CIS offset R2 CIS 2 calibration result for black level compensation in R	
151	CIS offset G2 CIS 2 calibration result for black level compensation in G	
152	CIS offset B2 CIS 2 calibration result for black level compensation in B	
153	CIS offset K2 CIS 2 calibration result for black level compensation	
154	CIS offset R3 CIS 3 calibration result for black level compensation in R	
155	CIS offset G3 CIS 3 calibration result for black level compensation in G	
156	CIS offset B3 CIS 3 calibration result for black level compensation in B	
157	CIS offset K3 CIS 3 calibration result for black level compensation	
158	CIS offset R4 CIS 4 calibration result for black level compensation in R	
159	CIS offset G4 CIS 4 calibration result for black level compensation in G	
160	CIS offset B4 CIS 4 calibration result for black level compensation in B	
161	CIS offset K4 CIS 4 calibration result for black level compensation	
162	CIS offset R5 CIS 5 calibration result for black level compensation in R	
163	CIS offset G5 CIS 5 calibration result for black level compensation in G	
164	CIS offset B5 CIS 5 calibration result for black level compensation in B	
165	CIS offset K5 CIS 5 calibration result for black level compensation	

166 - 180 Sub Strobe

> **NOTE**
>
> Shading will overwrite BUD No.166 to 180. No manual input is recommended.

BUD No.166 to 180 are a parameter for “white level compensation”.

181 - 200 CIS Offset2

> **NOTE**
>
> Shading and Black Brightness Correct will overwrite BUD No.181 to 200.
> No manual input is recommended.

BUD No.181 to 200 are a parameter for “black level compensation” and “white level compensation”.

201 - 204 White Std pxl3

> **NOTE**
>
> Reserved. Keep the value unchanged.

BUD No.201 to 204 are a reserved parameter for “white level compensation”.

205 Samp Block Data

> **NOTE**
>
> Reserved. Keep the value unchanged.

BUD No.205 is a reserved setting for developers.

206 Target Gain Value

> **NOTE**
>
> Reserved. Keep the value unchanged.

BUD No.206 is a reserved setting for developers.

207 CIS Slope

> **NOTE**
>
> Fixed value. Keep the value unchanged.

BUD No.207 is a parameter for “white level compensation”.

208 Gain Threshold

> **NOTE**
>
> Reserved. Keep the value unchanged.

BUD No.208 is a reserved setting for developers.

209 Sampling Width

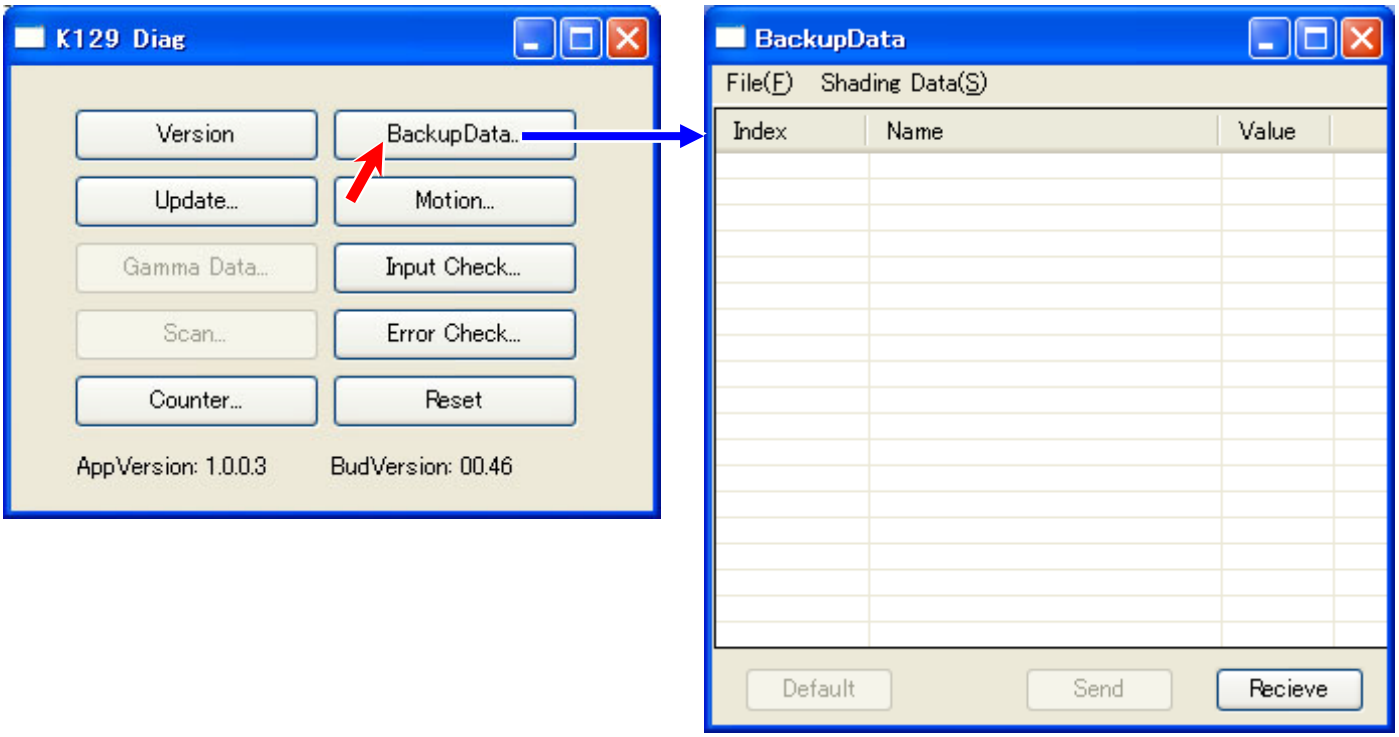
> **NOTE**
>
> Reserved. Keep the value unchanged.

BUD No.209 is a reserved parameter for “white level compensation”.

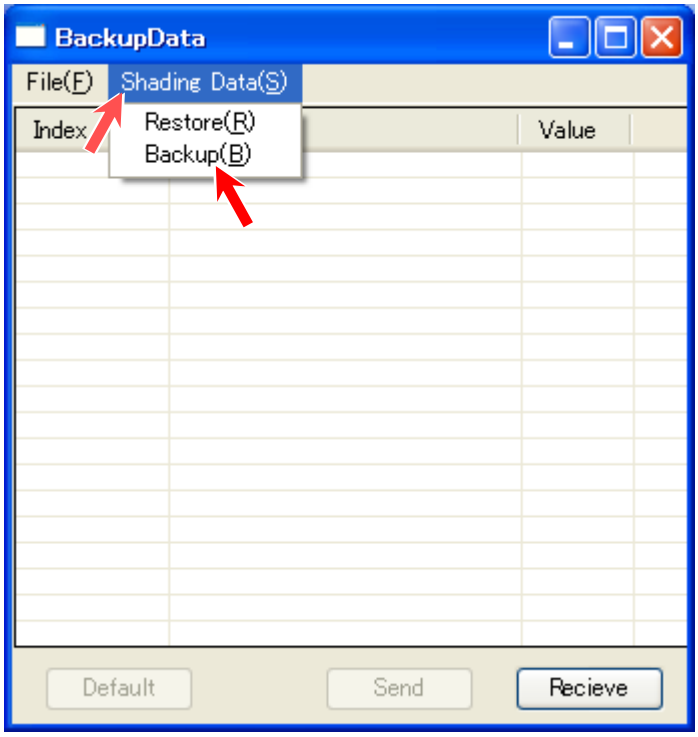
8.22. 4. 7 Saving Shading Data

The current Shading Data (internal parameters for B/W level and image processing) can be saved as a shading data file. (*.bin)
This file will be reused for restoring / replacing the Main Board.

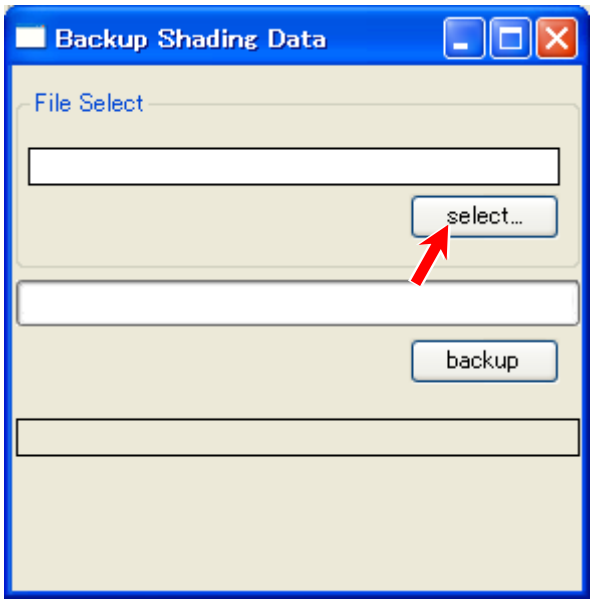
1. Click [BackupData] to recall “Backup Data” sub window.



2. Select [Shading Data] menu, and then click [Backup] to recall “Backup Shading Data” sub window.

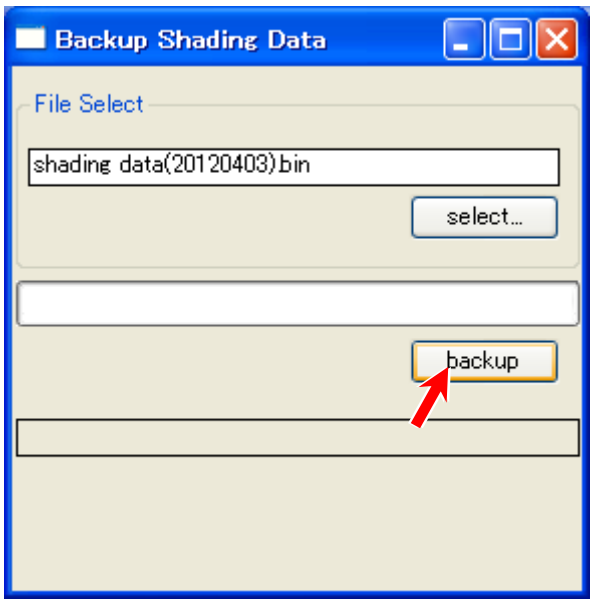


3. Click [select].



4. Specify a location to save the shading data file. (*.bin)
   You can supply its file name.

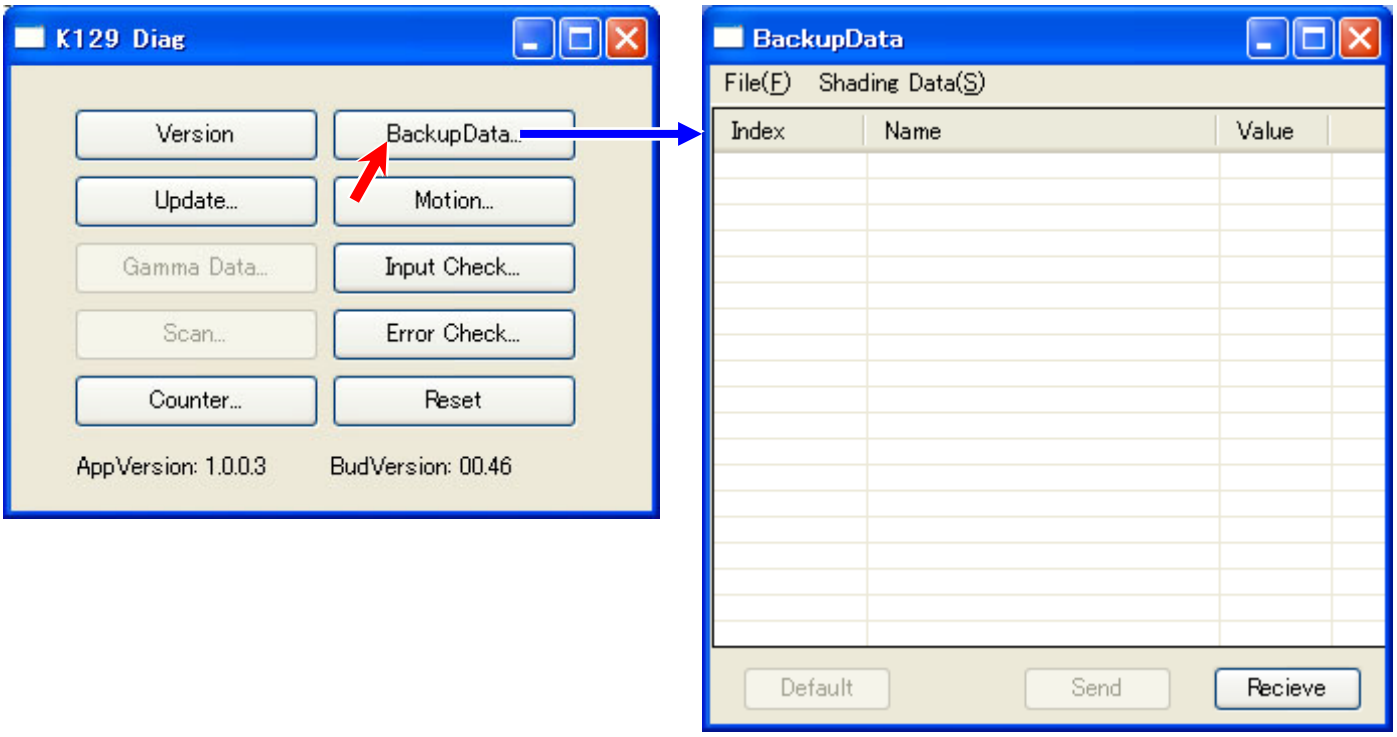
5. The given file name appears in the upper field. Click [backup].



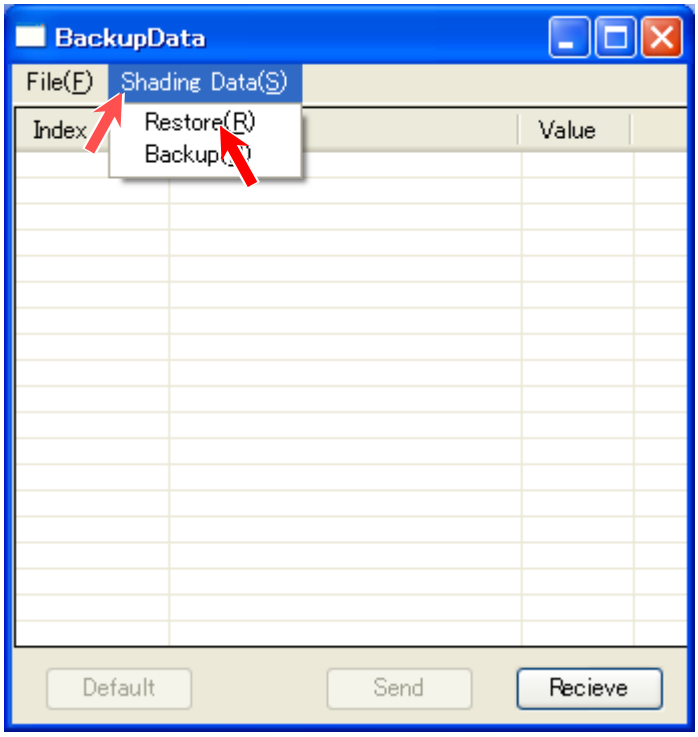
6. When “done” is displayed, saving the file is completed
   Click the X button at the upper right corner to close “Backup Shading Data” sub window.

8.22. 4. 8 Restoring Shading Data

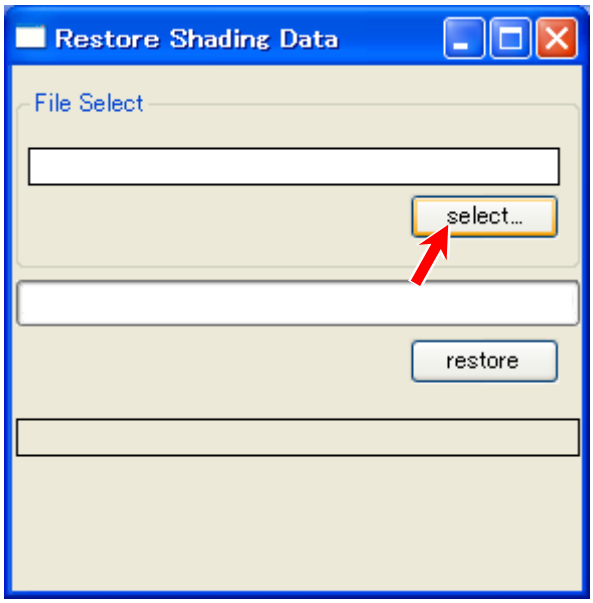
1. Click [BackupData] to recall “Backup Data” sub window.



2. Select [Shading Data] menu, and then click [Restore] to recall “Backup Shading Data” sub window.

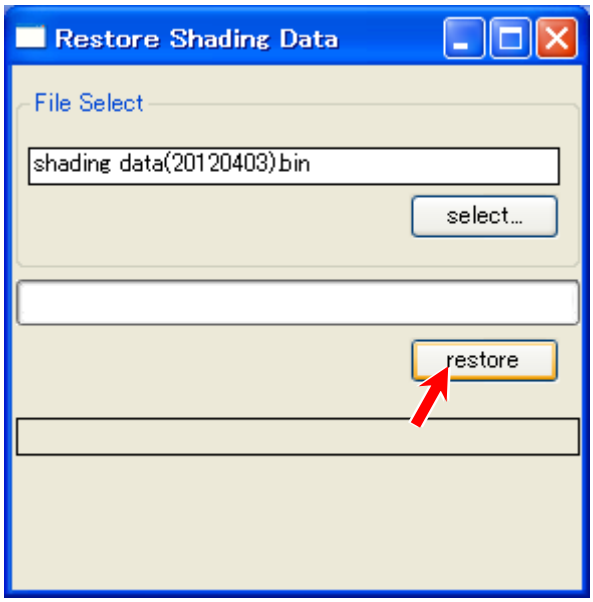


3. Click [select].



4. Specify a shading data file (*.bin) you want to import.

5. The selected file name appears in the upper field. Click [restore].



6. When “done” is displayed, sending the shading data file to the scanner is completed
   Click the X button at the upper right corner to close “Restore Shading Data” sub window.

> **NOTE**
>
> At this time the shading data has just been sent to the Main Board, but is not validated yet.

7. Turn off the scanner. Wait 3 seconds and then turn it on.
   Now the selected shading data file is validated.

> **NOTE**
>
> If you quickly turn off and on again, “The device can run faster...” balloon would pop up.
> This is because the scanner firmware may be loaded to the scanner’s memory incorrectly.
> Please wait 3 seconds before turning on again.

8.22. 5 Update

“Update” is a functionality to send a firmware file of “CPU” “FPGA” “USB” to the D CON (Scanner Main Board).

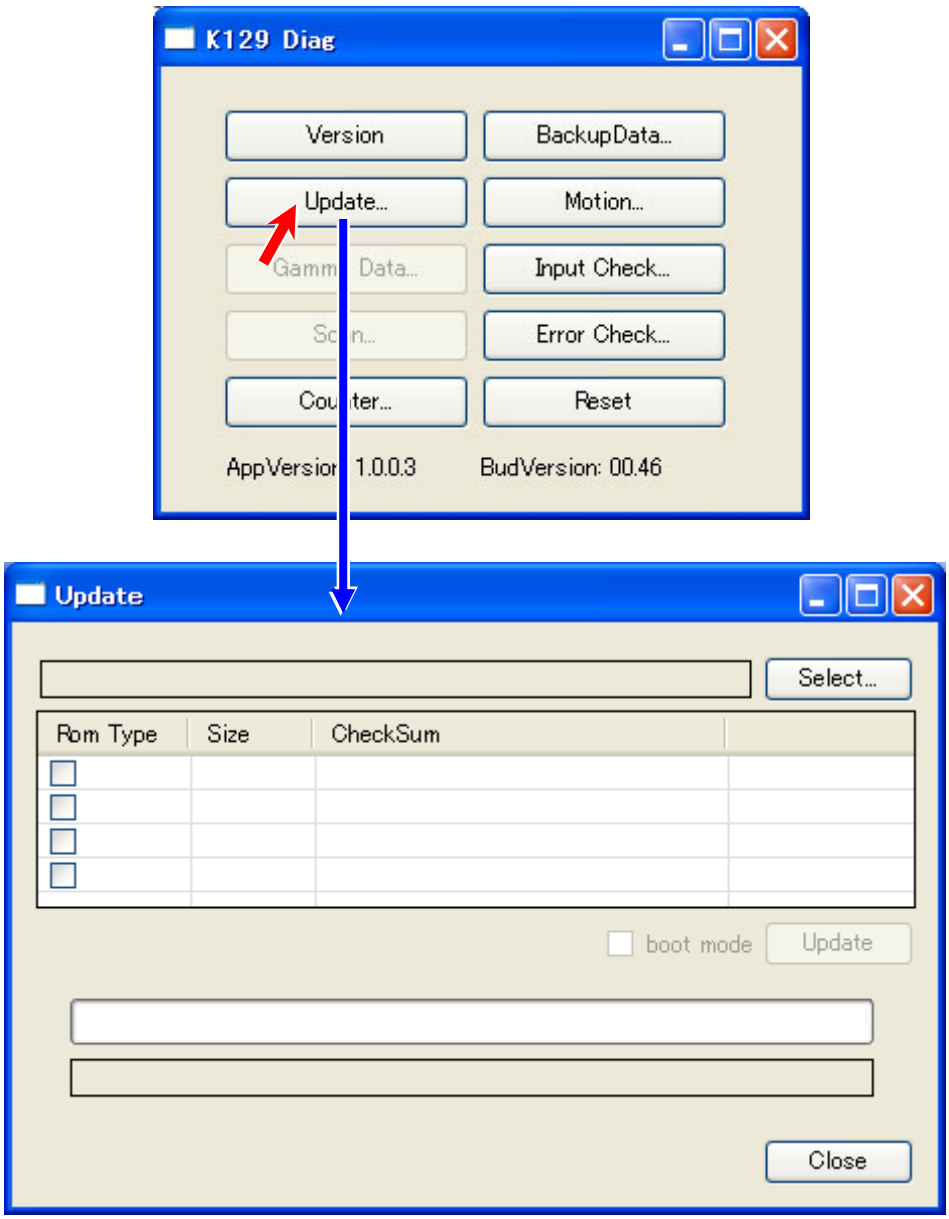
> **NOTE**
>
> Updating “CPU” “FPGA” “USB” does not change the current parameters for “backup data”. This is applied even if an interruption occurs while updating.

8.22. 5. 1 Sending Firmware to Scanner

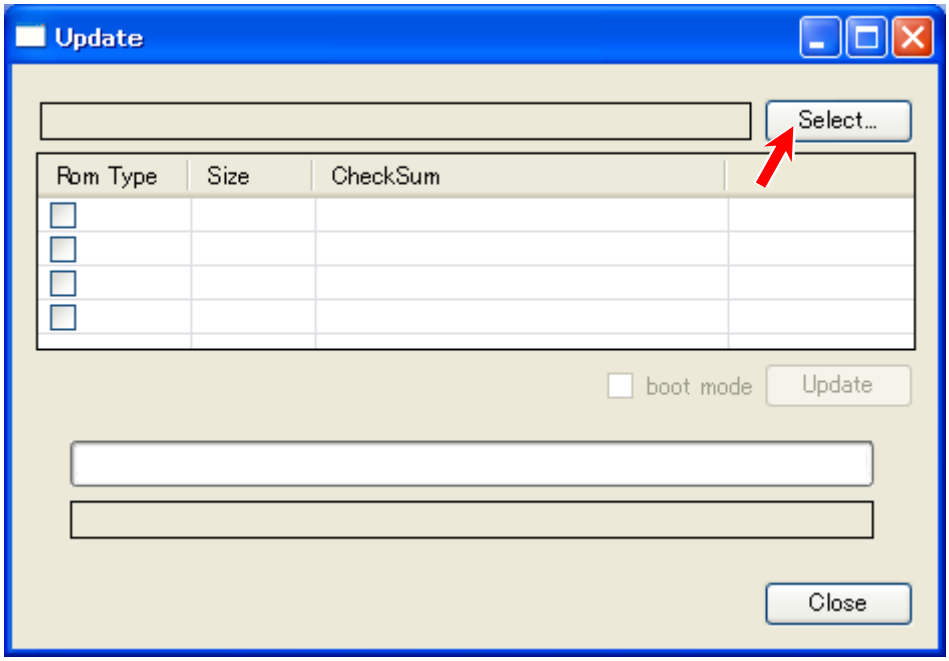
1. Save a delivered firmware file to any available storage on the PC / removable storage.

Type	contents	Firmware File Extension
USB	USB communication firmware	12920F**.iic
CPU	hardware control software	12920M**.mot
FPGA	image processing software	12920S**.bin

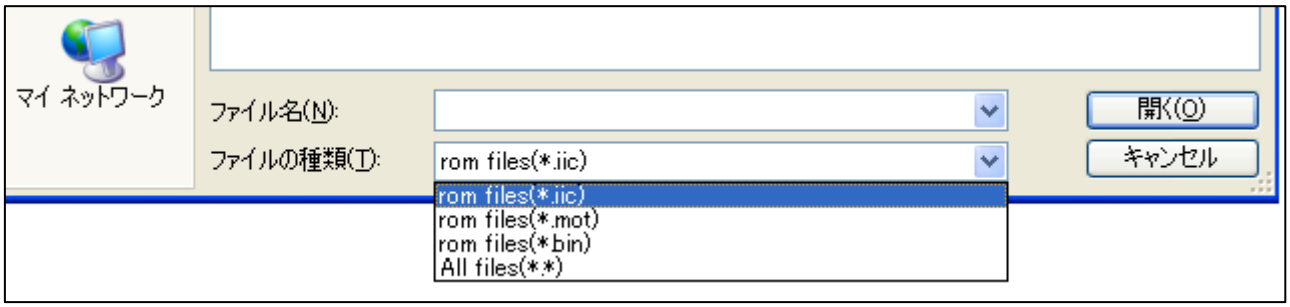
2. Run K129 Diag, and click [Update].



3. Click [Select].

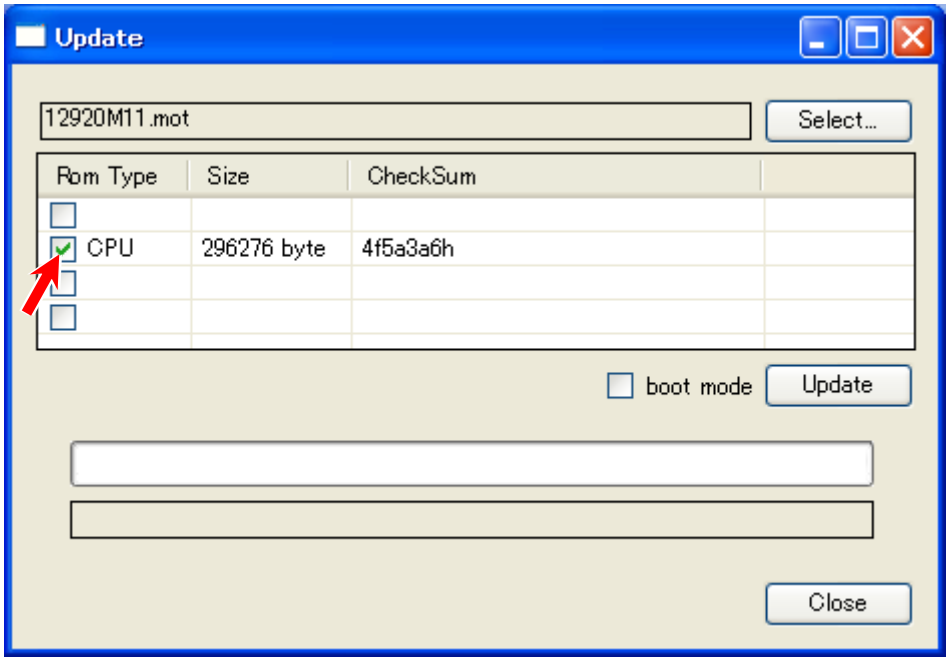


4. Specify a firmware file you want to apply.

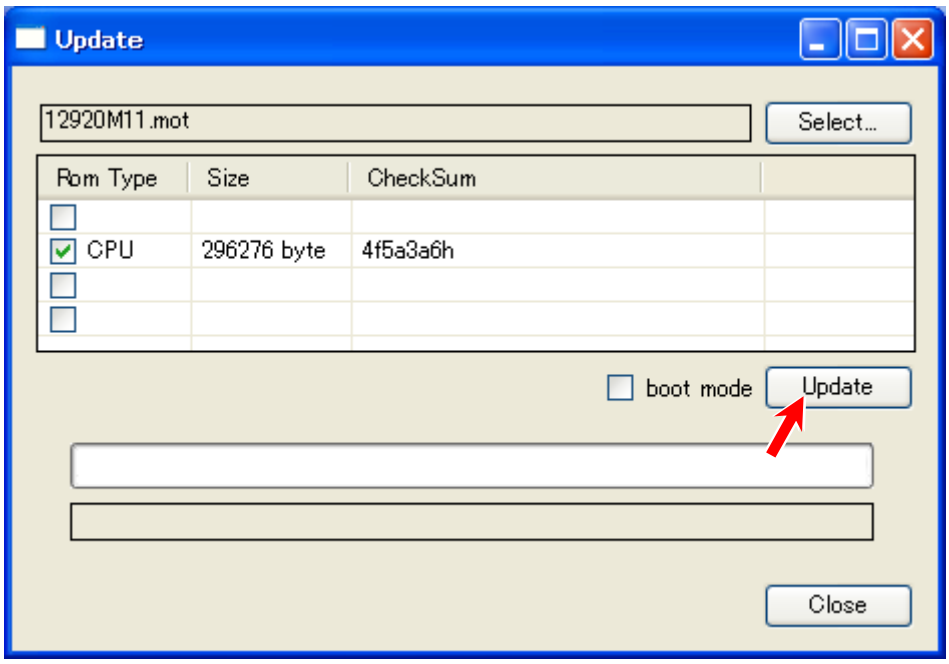


Type	contents	Firmware File Extension
USB	USB communication firmware	12920F** **.iic**
CPU	hardware control software	12920M** **.mot**
FPGA	image processing software	12920S** **.bin**

5. The selected file name is displayed in the list. Put a check in the checkbox beside the file.

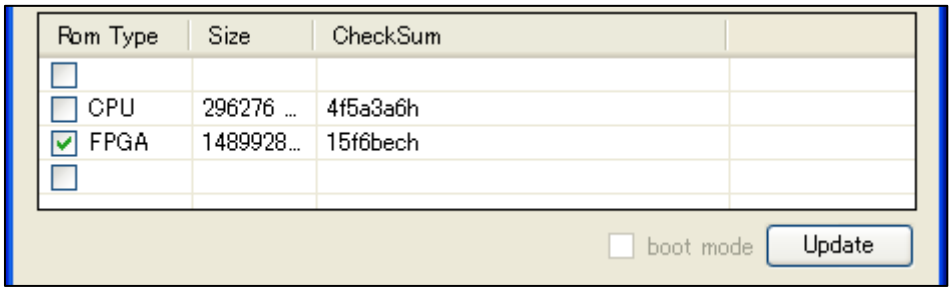


6. [Upload] button in the middle-right is now activated. Click it to send the firmware file to the Main Board.



NOTE

You may add another firmware file (for example: CPU, and then FPGA) in the list, but you can send only one file that is having a check mark at a time. The following example only FPGA will be sent to the Main Board.



7. When “done” is displayed, sending the firmware file to the scanner is completed
Click the X button at the upper right corner to close “Update” sub window.

NOTE

At this time the firmware file has just been sent to the Main Board, but is not applied yet.

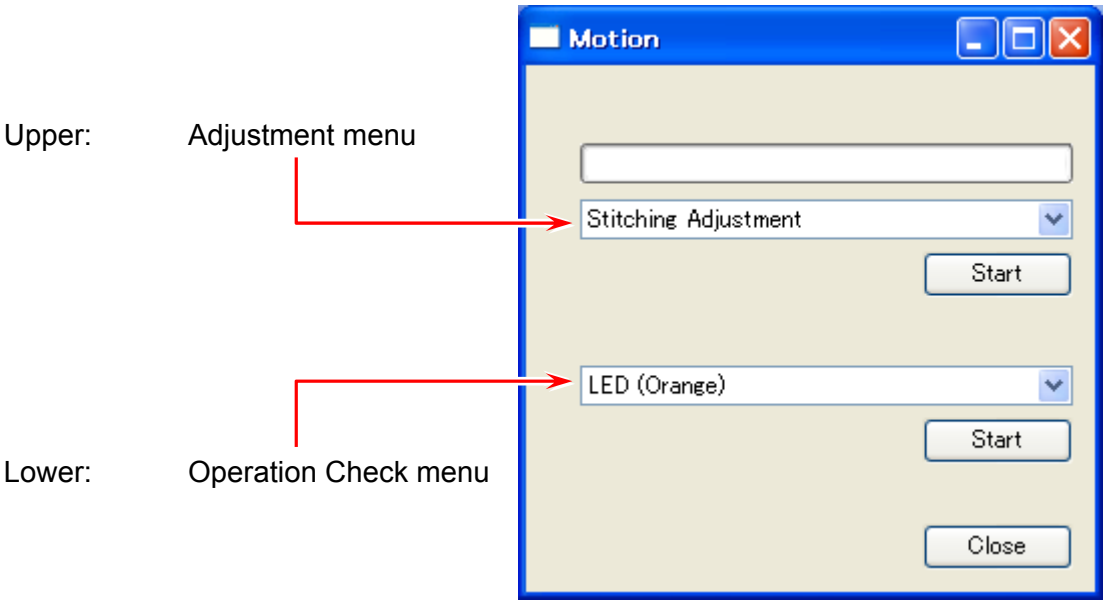
8. Turn off the scanner. Wait 3 seconds and then turn it on.
Now the selected shading data file is validated.

NOTE

If you quickly turn off and on again, “The device can run faster...” balloon would pop up.
This is because the scanner firmware may be loaded to the scanner’s memory incorrectly.
Please wait 3 seconds before turning on again.

8.22. 6 Motion

“Motion” contains 2 major categories, Adjustment and Operation Check.



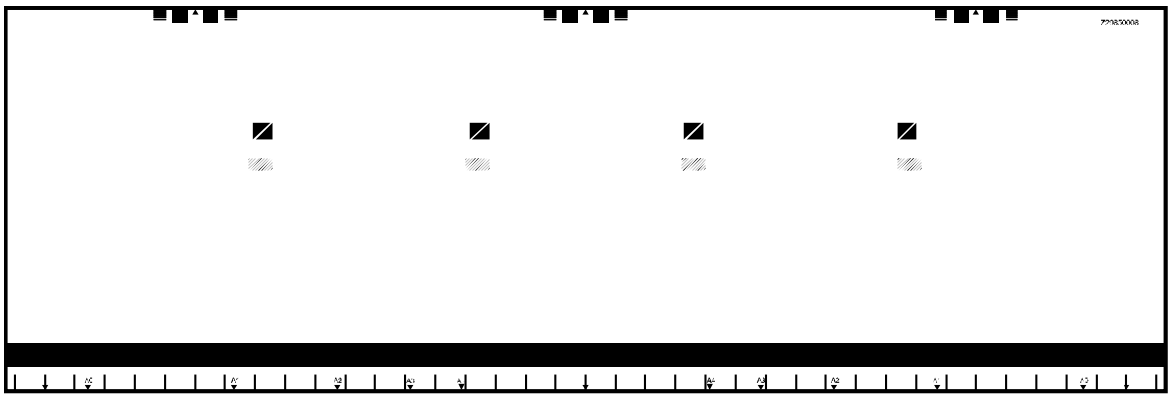
Adjustment menu:

Shading Compensation	creates shading data (defines B/W)	
Stitching Adjustment	calibrates joint coordinates at CIS borders	
* White & Black Level Correct	regular calibration for white level	not supported
* Leading Edge Adjustment	specifies the leading registration	not supported
* Black Brightness Correct	removes black density difference between CIS blocks	not supported
* White Brightness Correct	removes white density difference between CIS blocks	not supported

For Operation Check menu, see [8.14. 6. 3 Operation Check].

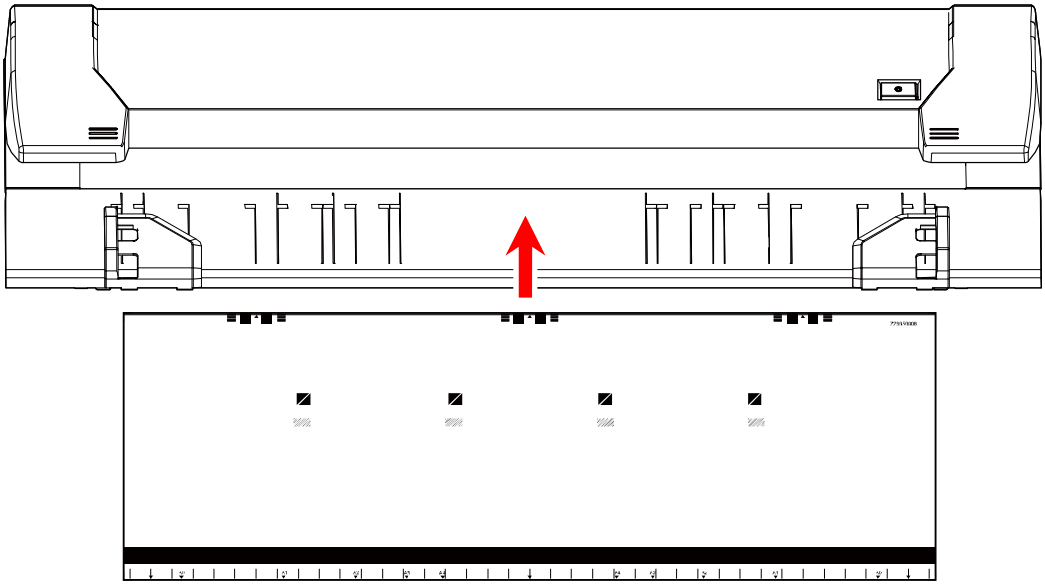
8.22. 6. 1 Shading

Shading Compensation is to set the target black / white level based on a designated calibration chart “Shading Sheet”.
One sheet of This Shading Sheet is included in the accessory box.



1. Clean Glass DCMNT on the scanner part with a soft cloth.

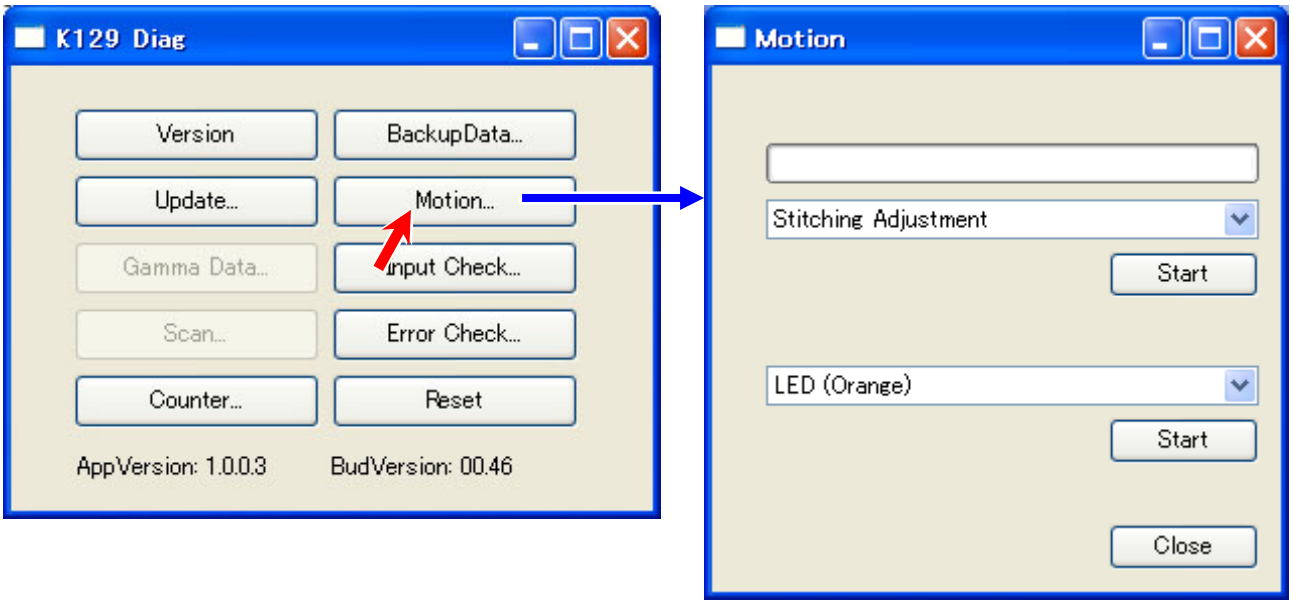
2. Turn on the printer, and set the Shading Sheet to the scanner noting the arrow direction.



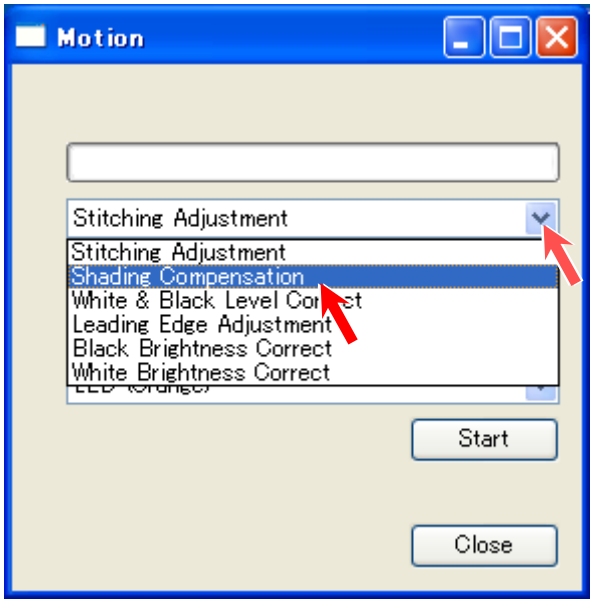
NOTE

No skew insertion. Doing so may cause an incorrect calibration.

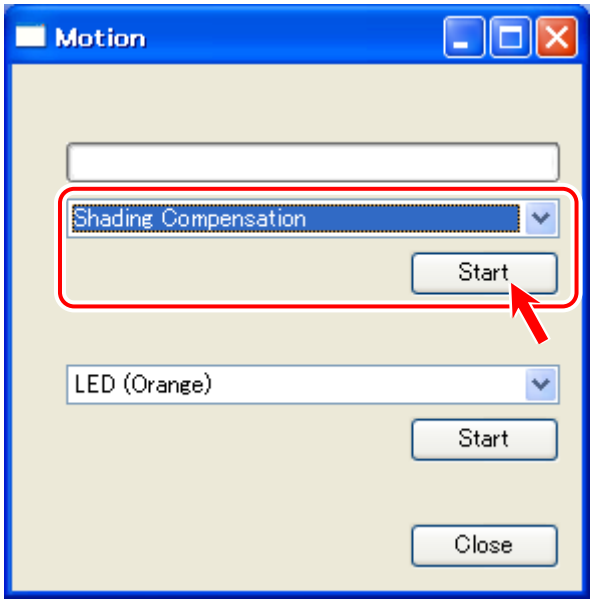
3. Click [Motion] to recall “Motion” sub window.



4. Select “Shading Compensation” in the upper drop-down menu.



5. Click [Start] beside the upper drop-down menu.



NOTE

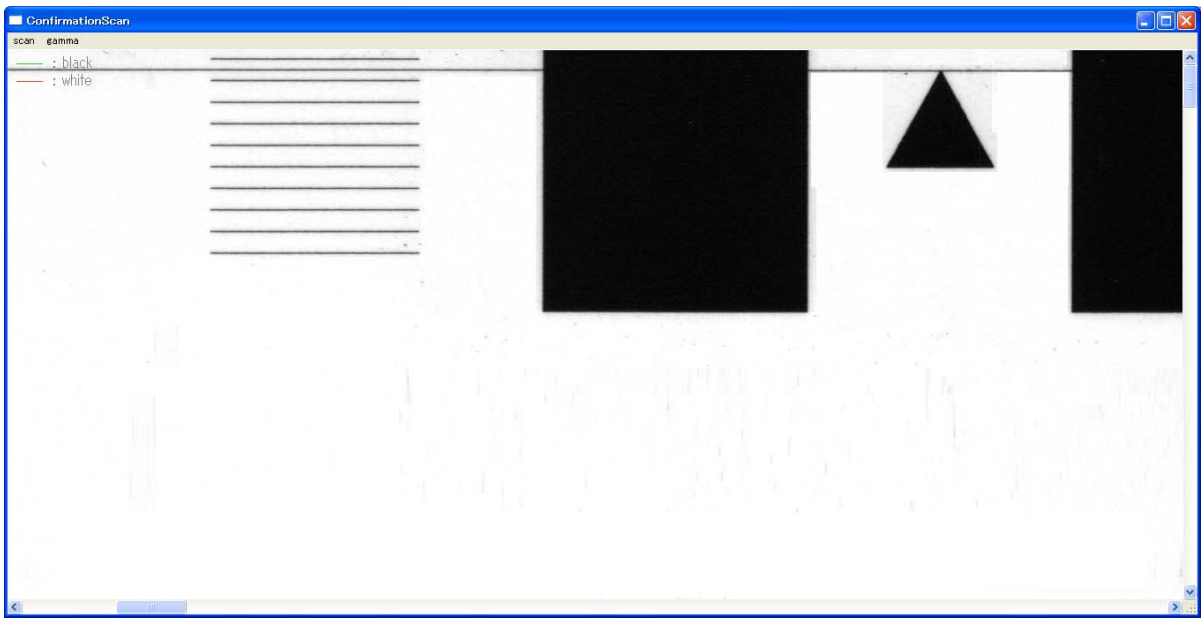
(1) It takes about 6 minutes to complete.

(2) If an error message occurs;
1. Correctly set the Shading Sheet to the scanner.
2. Check for dirt on the Glass DCMNT and the Shading Sheet.

6. When Shading is finished, the system asks you whether you need confirmation.
Click No to finish Shading.

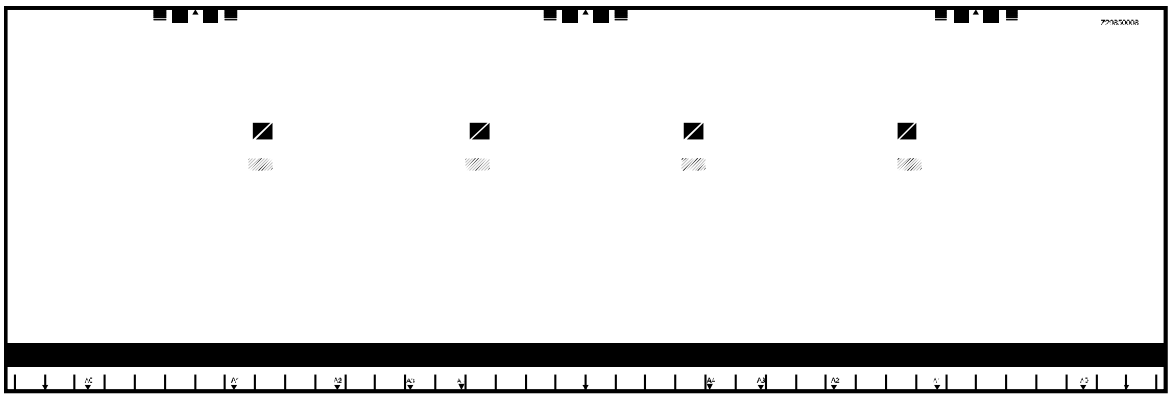
Reference

If you need confirmation, again set the Shading Sheet to the scanner, and then click [Yes].
Another window has the scanned image of Shading Sheet.



8.22. 6. 2 Stitching

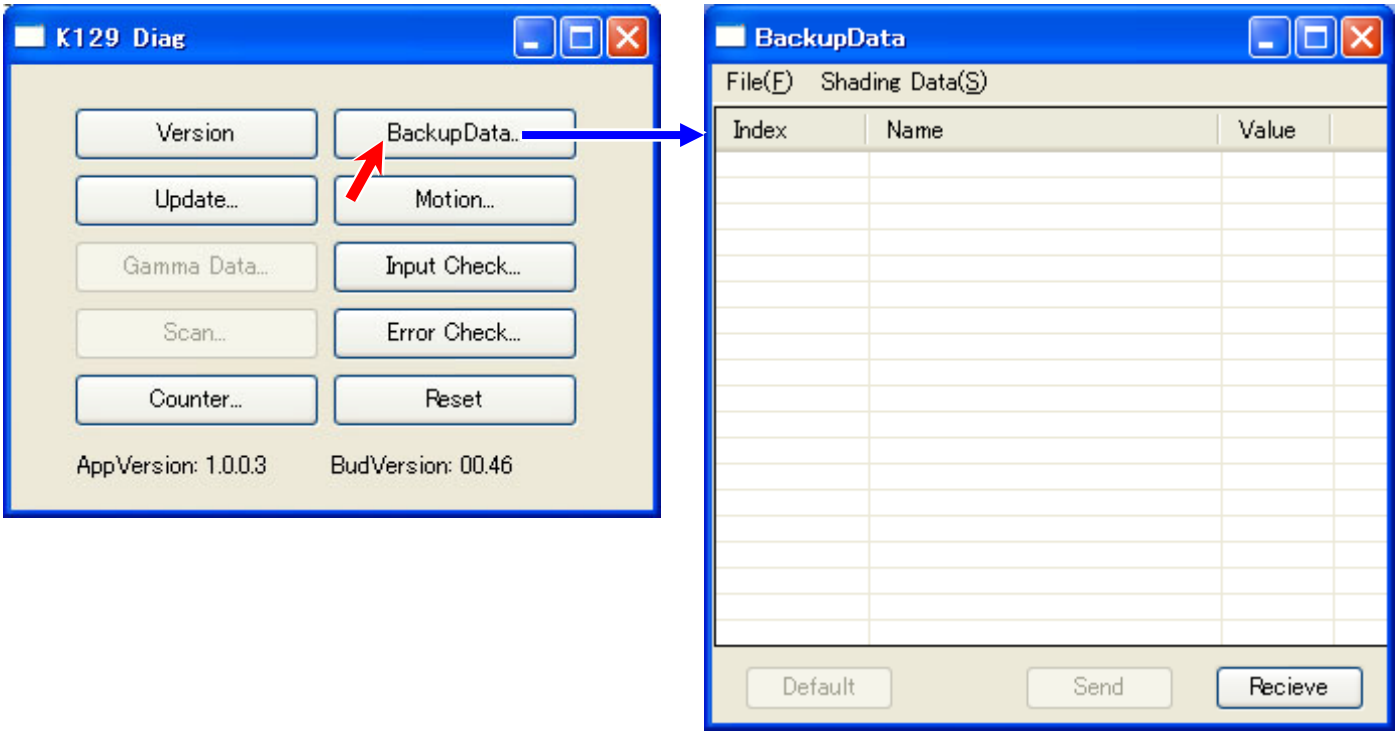
Stitching Adjustment is to set the target black / white level based on a designated calibration chart “Shading Sheet”.
One sheet of This Shading Sheet is included in the accessory box.



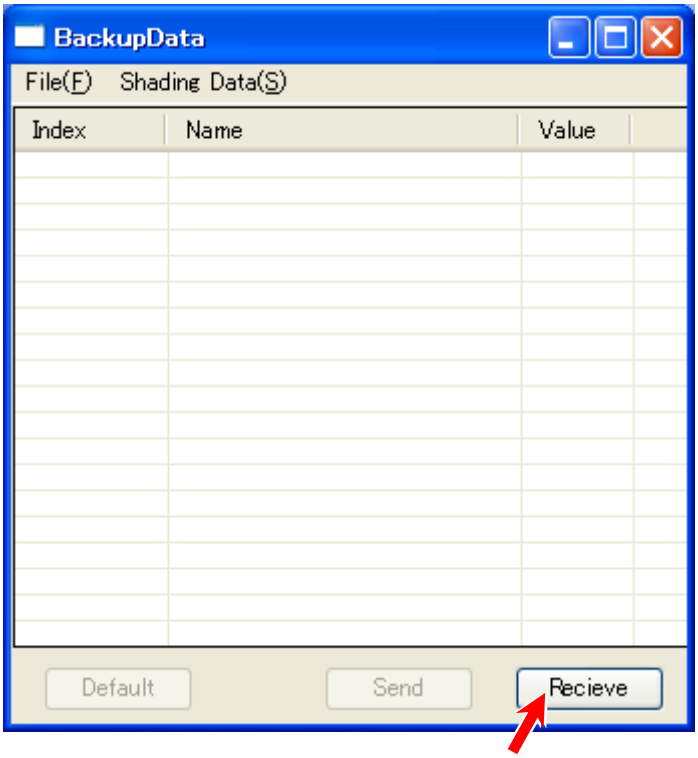
NOTE

BUD No.15 (stitch setting 1) should be temporarily set to OFF “0” during Stitching Adjustment.

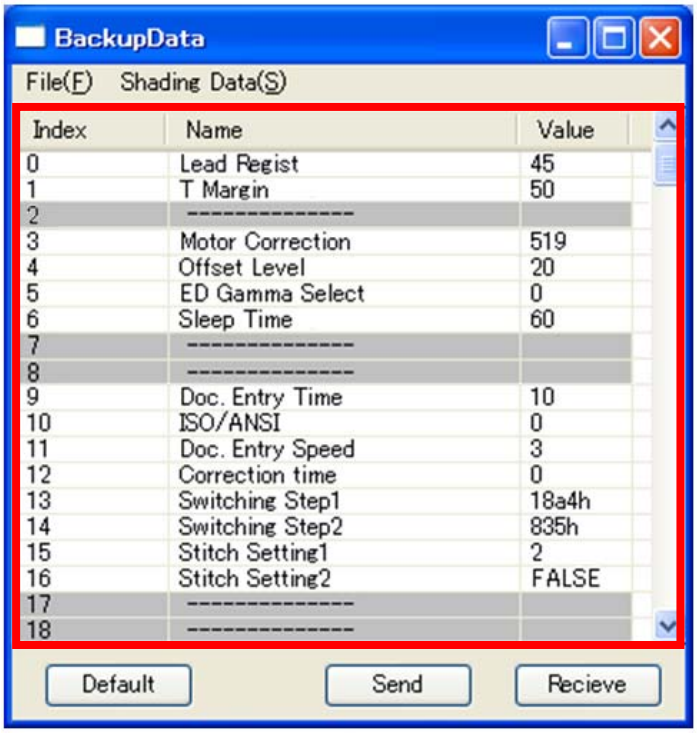
1. Run K129 Diag. Click [BackupData] to recall “Backup Data” sub window.



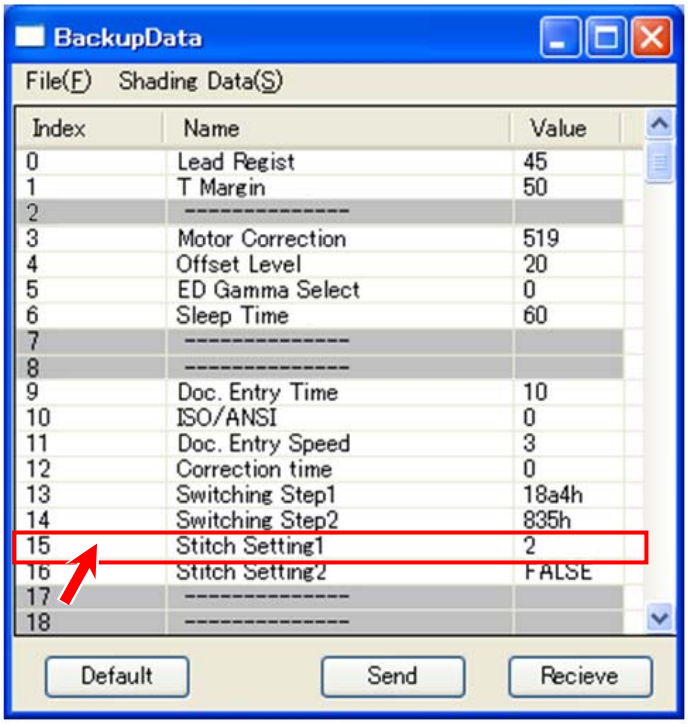
2. Click [Receive]



3. The current parameters are retrieved and displayed in the list.

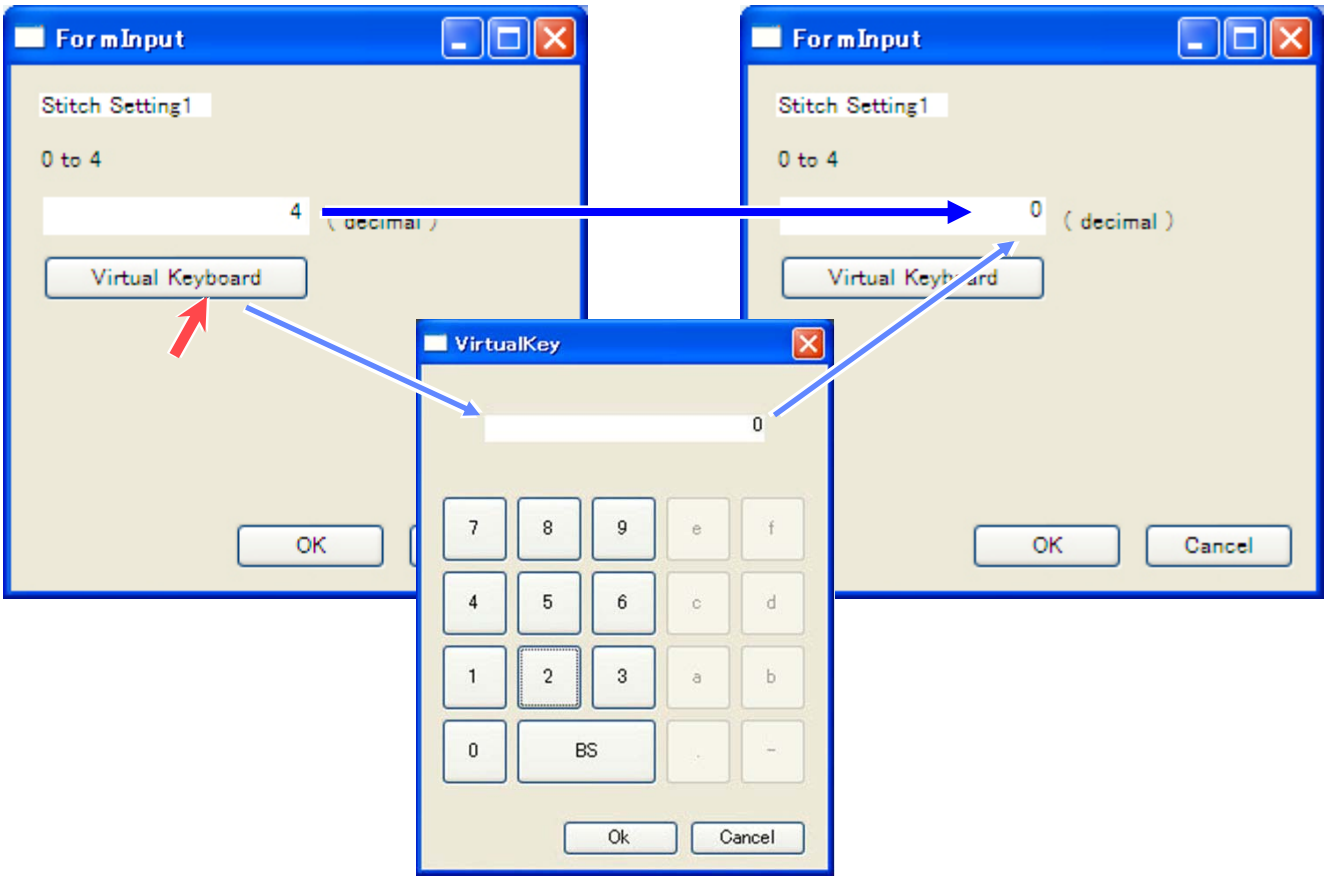


4. Double click on the row No.15 “Stitch Setting 1”.

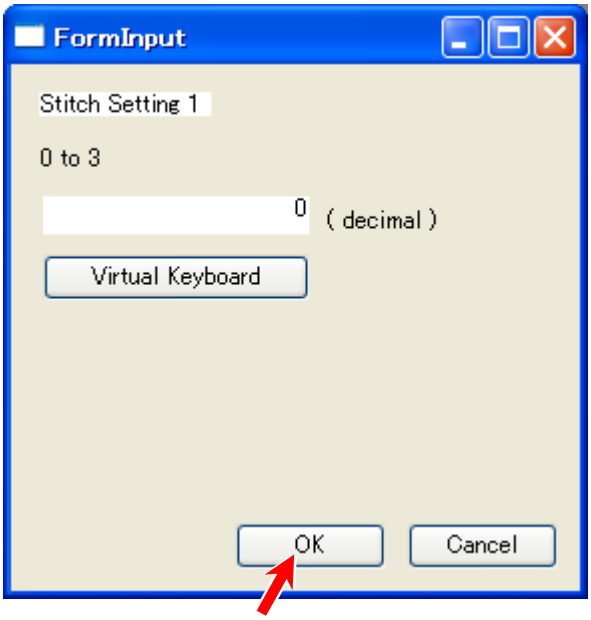


5. “Input” pad pops up. Directly type “0” with your keyboard.
Clicking the field is not available. There is no caret functionality. (flashing “ | “ cursor)

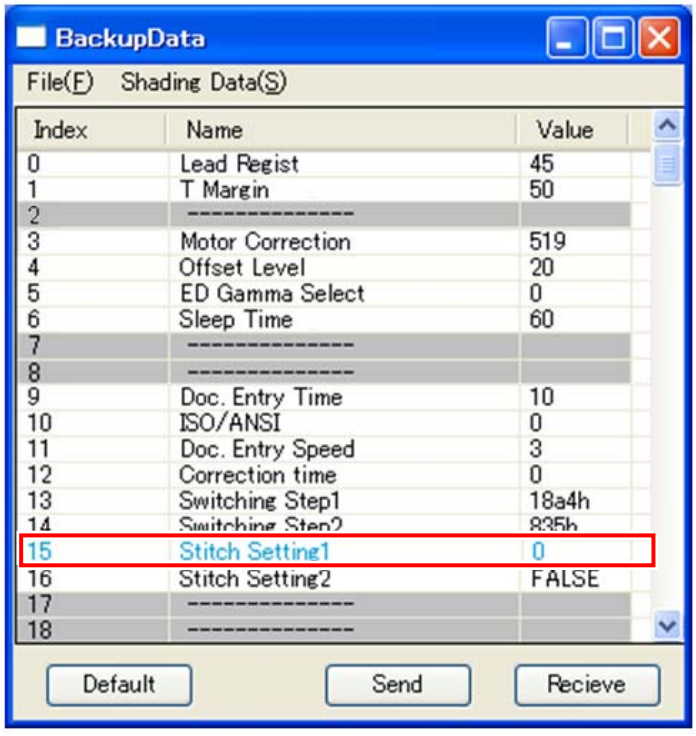
> **NOTE**
> Clicking the field displays a caret (flashing “ | ” cursor), but while the caret is flashing, a key entry with your keyboard device is **NOT** accepted.



6. Click [OK] on the bottom.



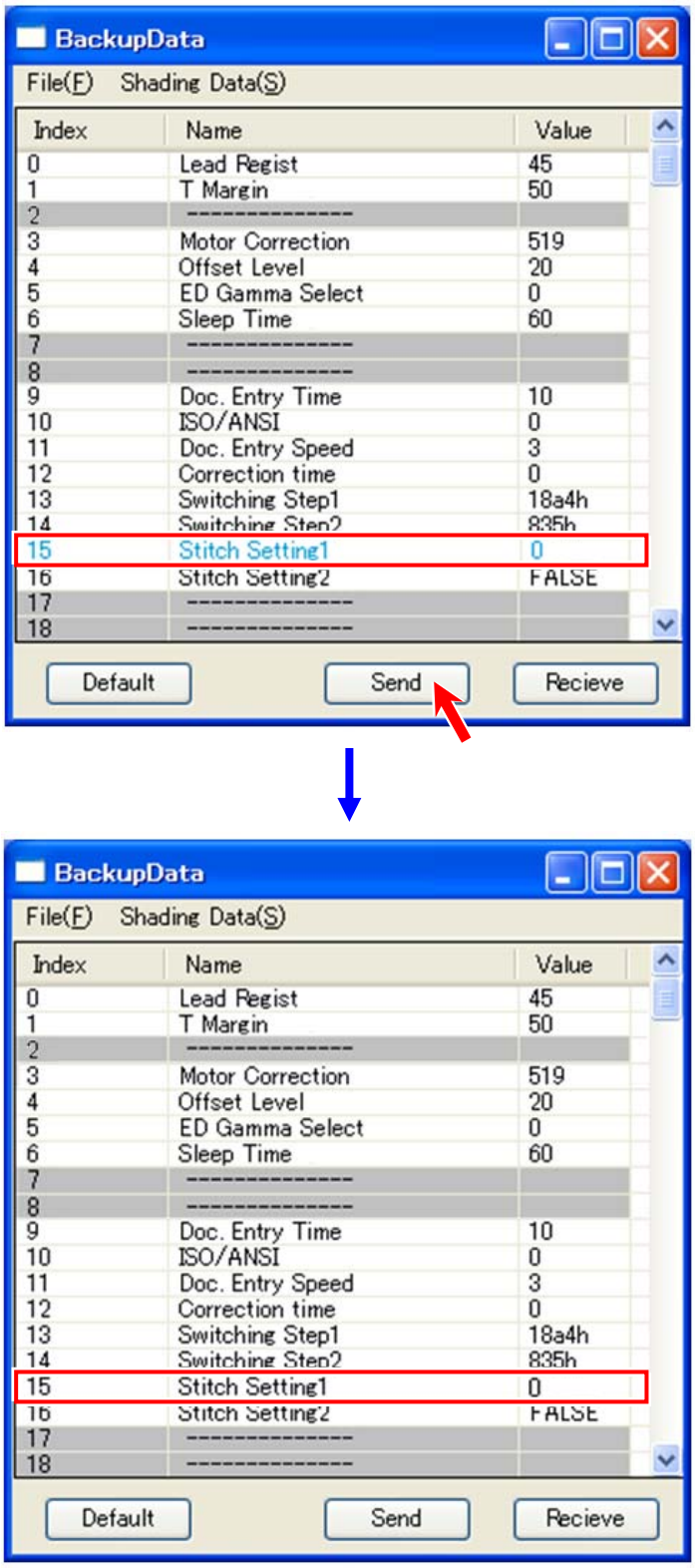
7. The setting change you have made is reflected to the list. It will turn blue.



NOTE

At this moment the new value has not yet become valid.

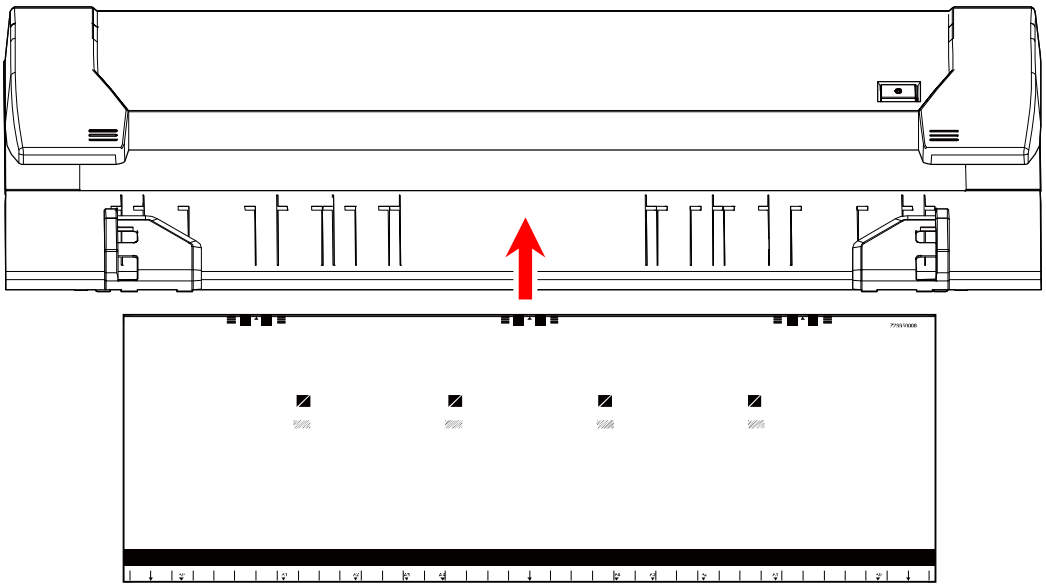
8. Click [Send] on the bottom. The setting change turns black.
   Now it is sent to the D CON.



9. To close “BackupData” sub window, click the X button at the upper right corner.

10. Clean Glass DCMNT with a soft cloth.

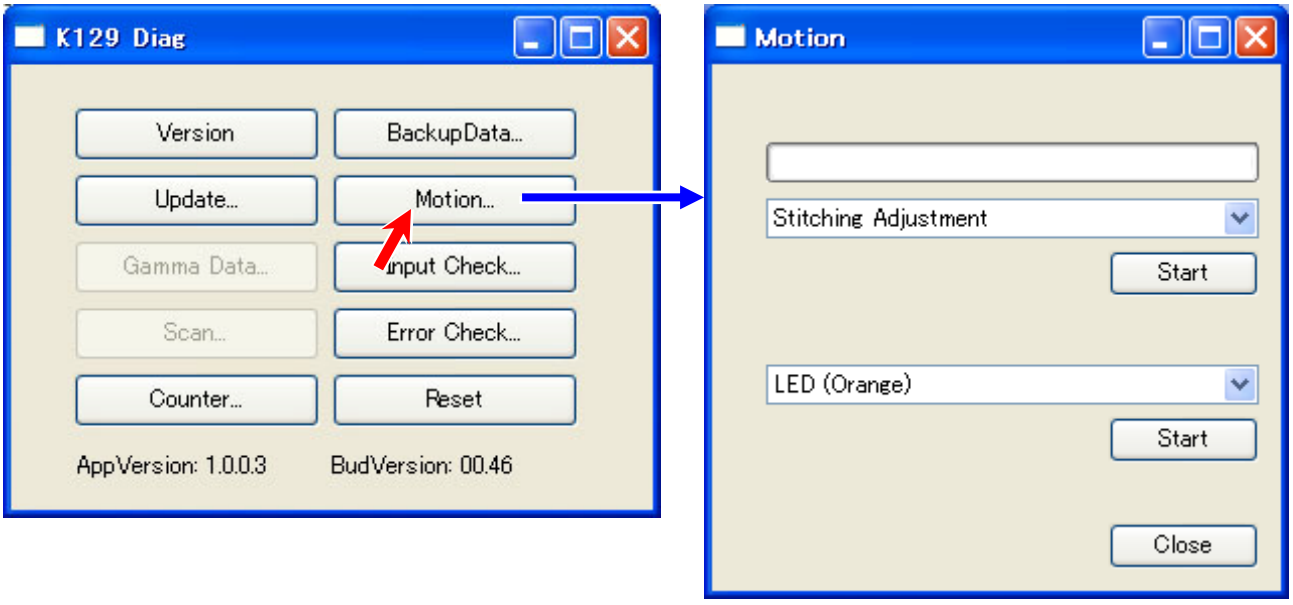
11. Set the Shading Sheet to the scanner noting the arrow direction.



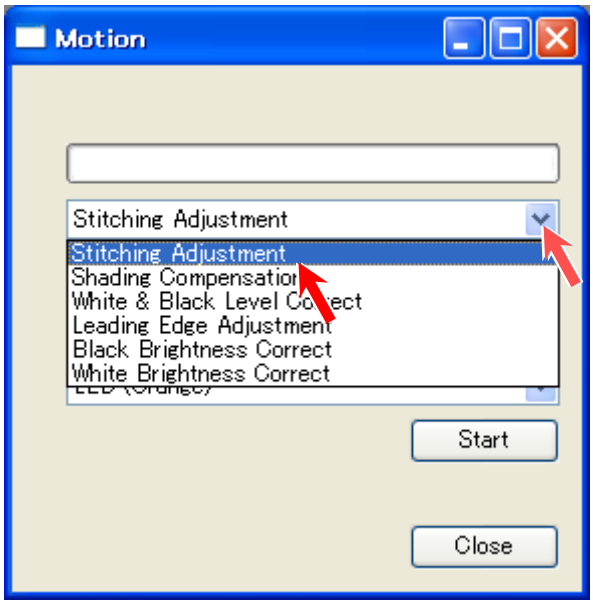
NOTE

No skew insertion. Doing so may cause an incorrect calibration.

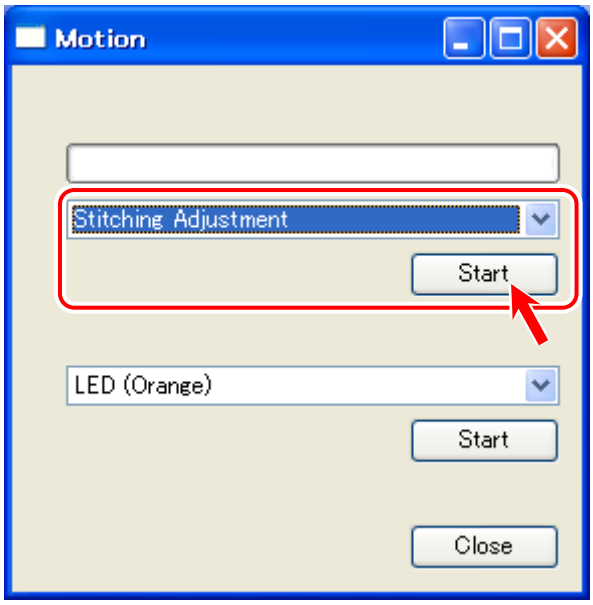
12. Click [Motion] to recall “Motion” sub window.



13. Select “Stitching Adjustment” in the upper drop-down menu.



14. Click [Start] beside the upper drop-down menu.

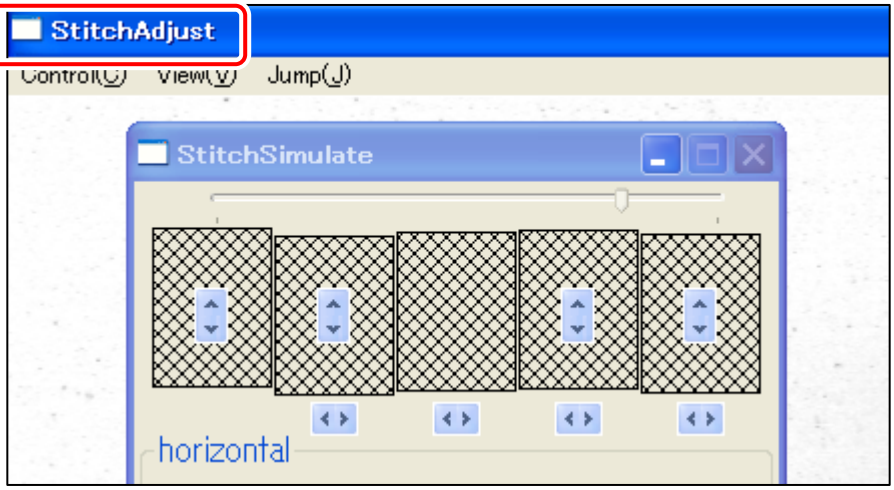


NOTE

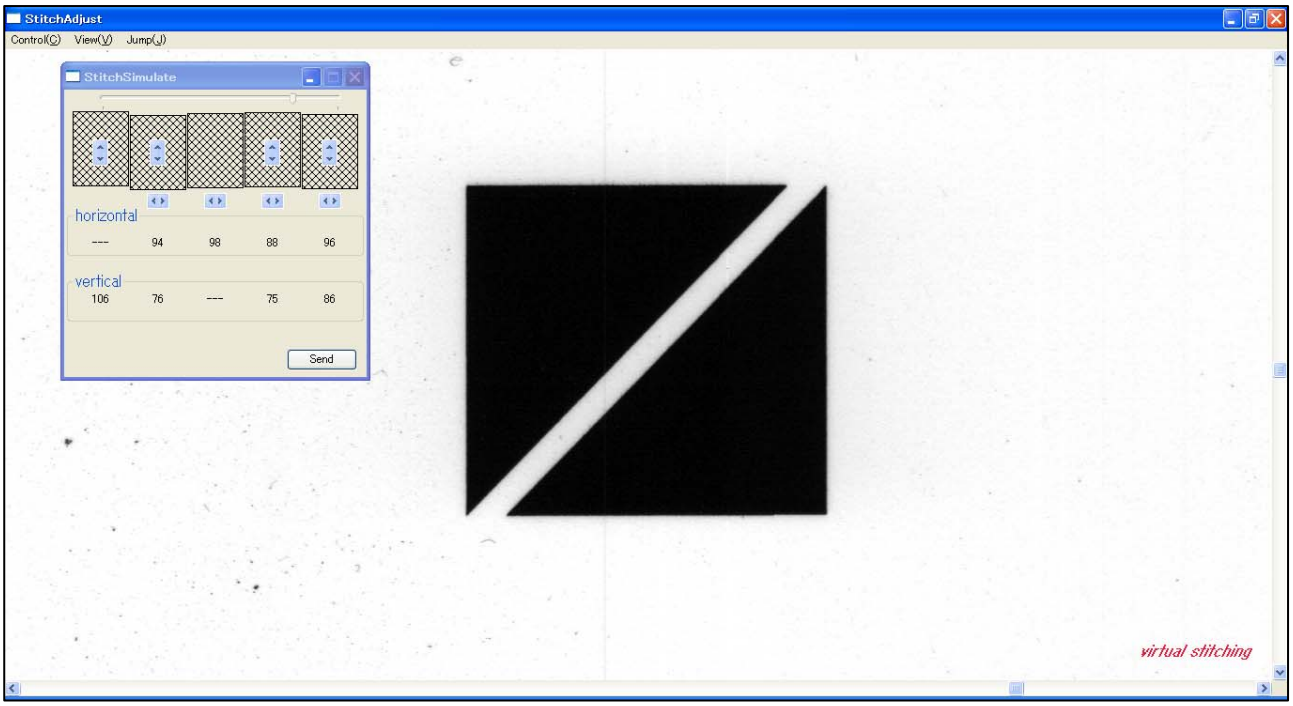
If an error message occurs;

1. Correctly set the Shading Sheet to the scanner.
2. Check for dirt on the Glass DCMNT and the Shading Sheet.

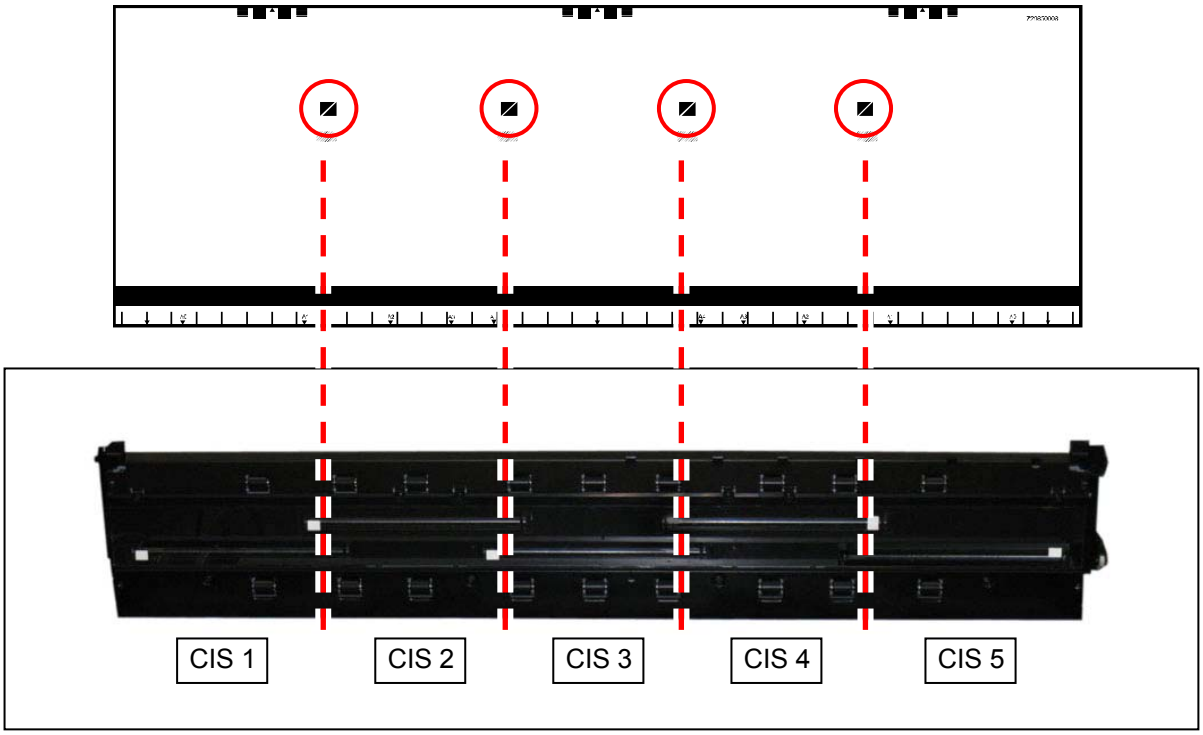
15. When the scanning is finished, two sub windows “Stitch Simulate” and “Stitch Adjust” appear. Enlarge “StitchAdjust” window.



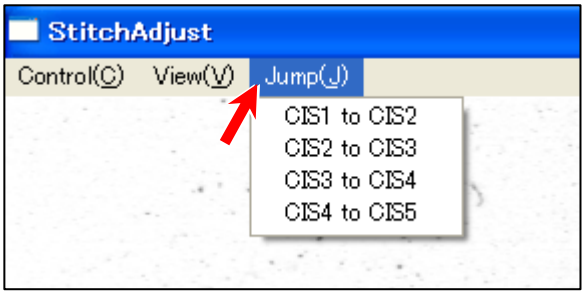
Enlarge “Stitch Adjust” window.

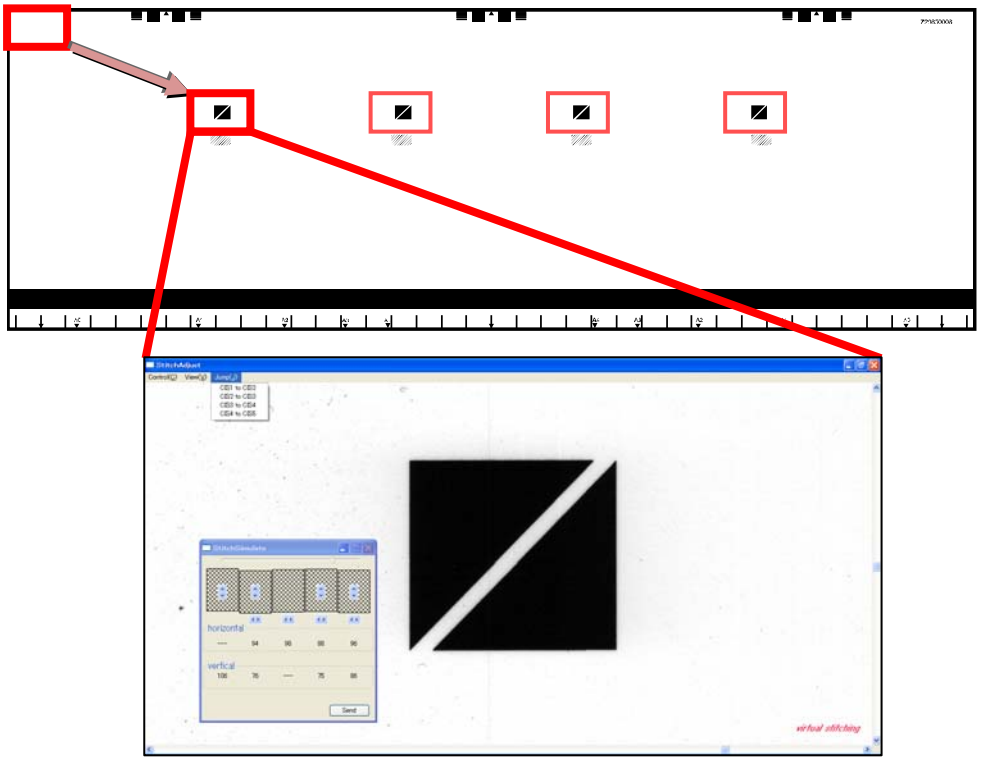


16. There are 4 target signs at every border between the CIS.

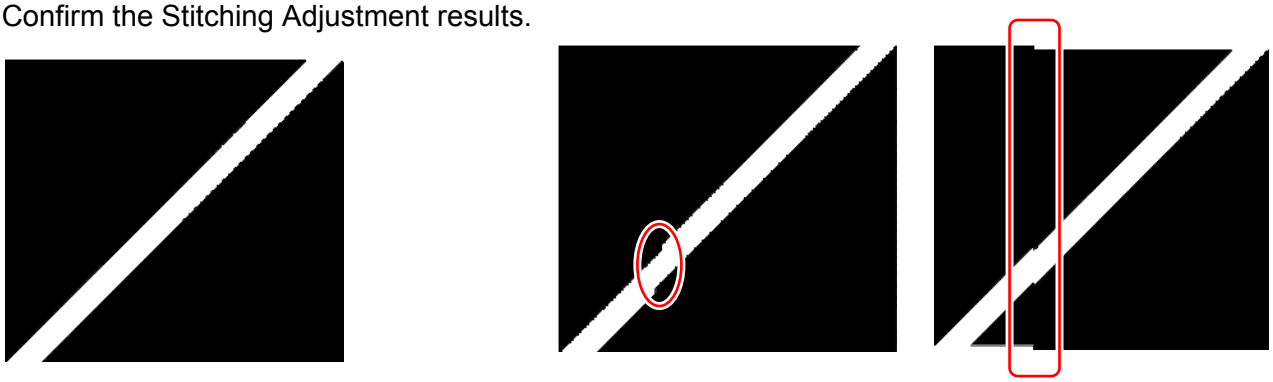


In “Stitch Adjustment” window, Select [Jump] menu, and then click [CIS1 to CIS2]. The display area will jump to the corresponding area on the scanned image.
If “Jump” does not move to the target exactly, manually scroll the image to catch the target in the window.





17. Confirm the Stitching Adjustment results.



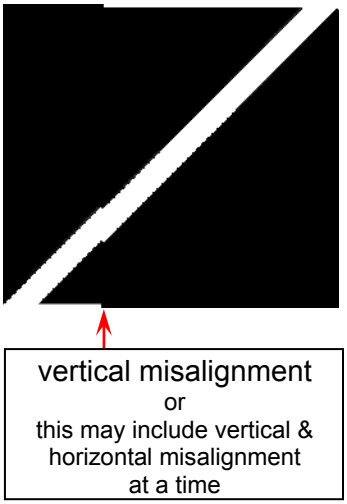
no misalignment	horizontal misalignment	vertical misalignment

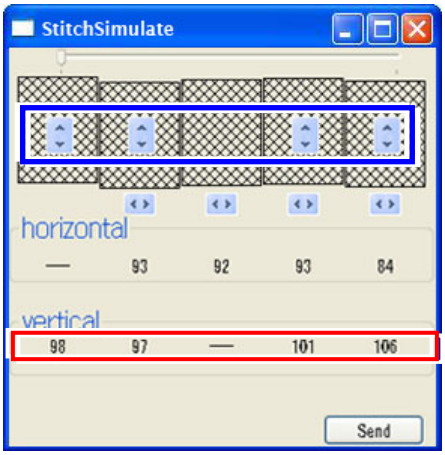
18. Select [Jump] menu, and then click the other CIS borders to confirm the results.
    If all of the 4 targets have no misalignment, go to step 25.
    If any of the targets has an misalignment, go to step 19 and after for manual correction.

    - vertical → Go to step 19.
    - horizontal → Go to step 20.

19. First, correct vertical misalignment as follows.

19-1. In “StitchSimulate” window, click the ▲▼ buttons (see below in blue frame) to change the setting value for “vertical” (see below in red frame), in order to move the image block vertically.



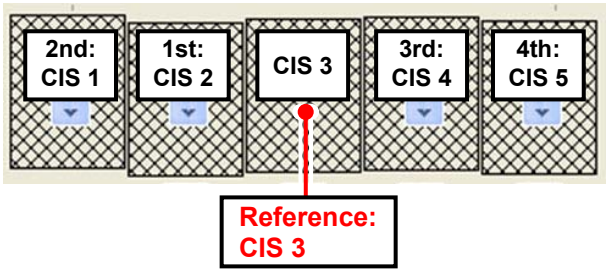


Do the same way for all the 4 targets at the borders.

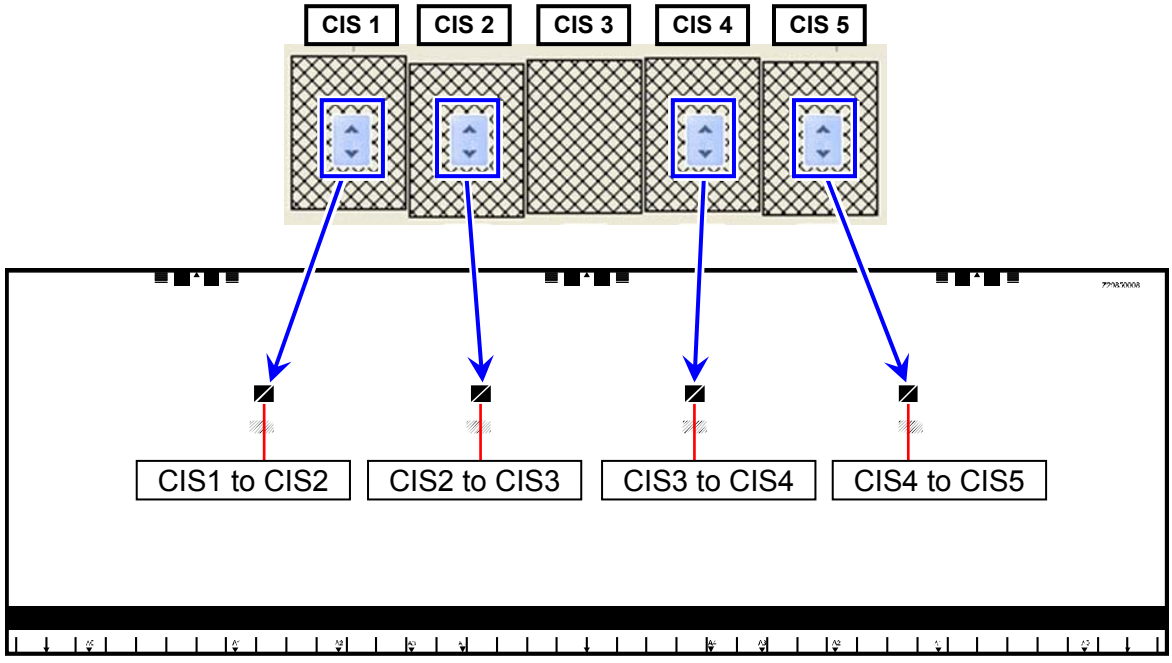
Setting values will turn red by setting changes. Setting value 1 step = 1 pixel to trailing edge

NOTE

(1) For vertical correction, CIS 3 is the reference. You are asked to set the distance of shift for CIS 1/2/4/5 against CIS 3.
First finalize the shift for CIS 2, and next CIS 1, CIS 4, CIS 5.



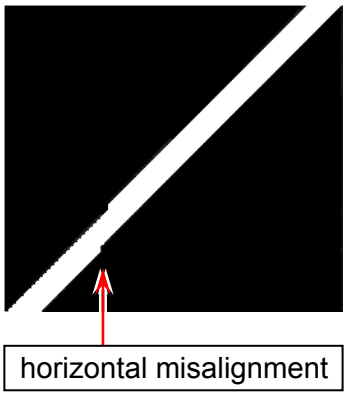
(2) The increase/decrease buttons correspond to the CIS border as follows.

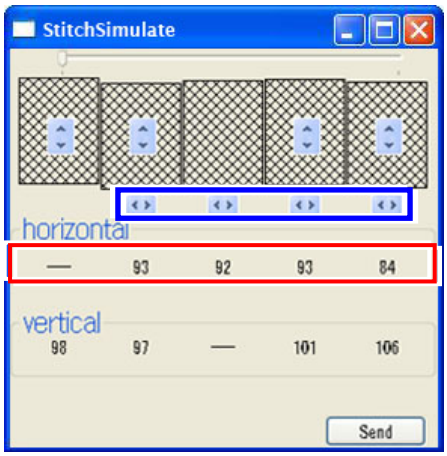


19-2. Image shifting (setting value in red) is not finalized yet. Click [Send].
Once the change is sent to the D CON (Scanner Main Board), setting values turn black.

20. Second, correct horizontal misalignment as follows.

20-1. In “StitchSimulate” window, click the ◀ ▶ buttons (see below in blue frame) to increase / decrease the setting value for “horizontal” (see below in red frame). This moves the image block horizontally.

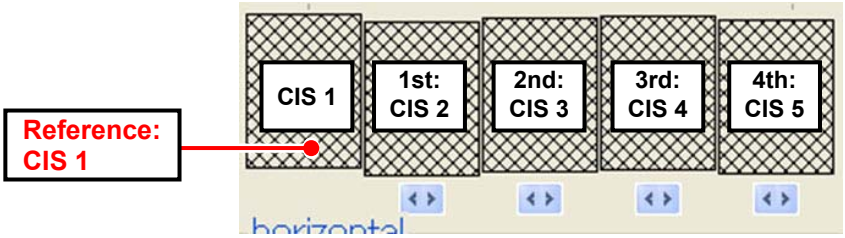




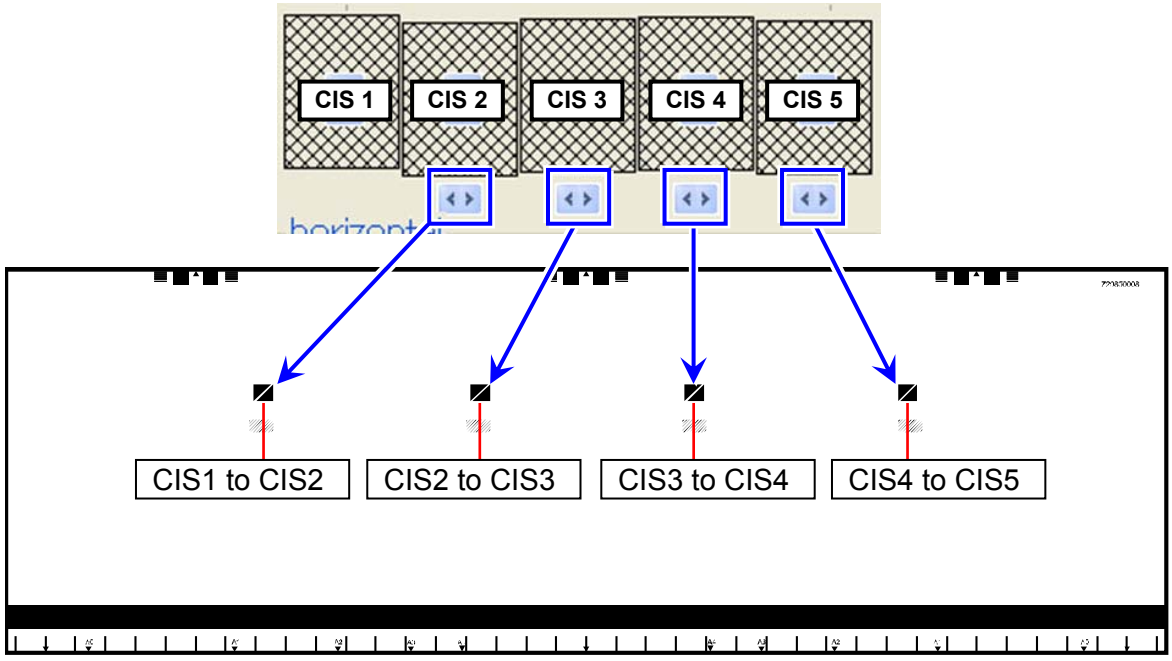
Do the same way for all the 4 targets at the CIS borders if needed.
Setting values will turn red by setting changes. Setting value 1 step = 1 pixel to right

NOTE

(1) For horizontal correction, CIS 1 is the reference. You are asked to set the distance of shift for CIS 2/3/4/5 against CIS 1.
First finalize the shift for CIS 2, and next CIS 3, CIS 4, CIS 5.



(2) The increase/decrease buttons correspond to the CIS border as follows.



20-2. Image shifting (setting value in red) is not finalized yet. Click [Send].
Once the change is sent to the D CON (Scanner Main Board), setting values turn black.

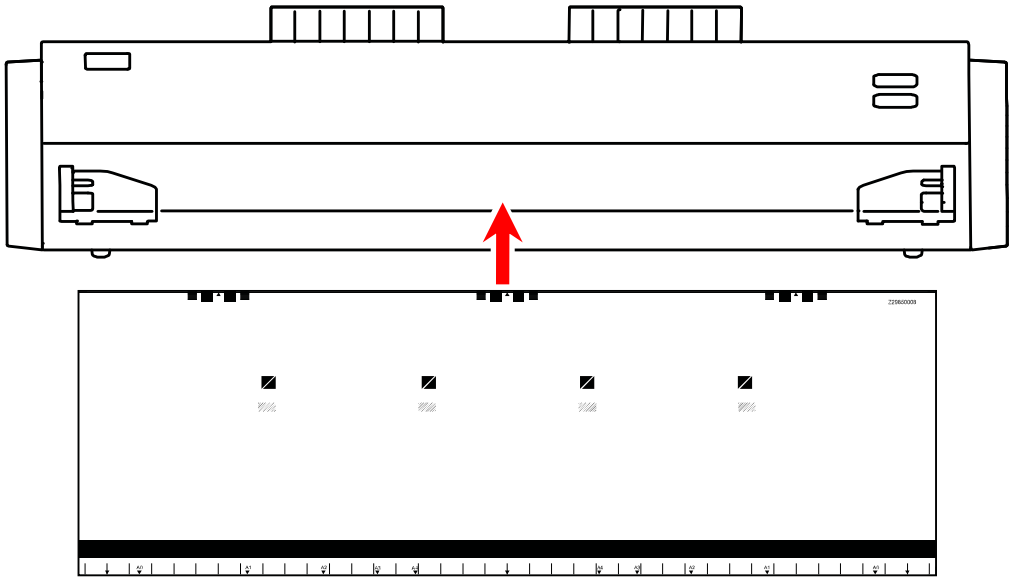
21. The manual correction is reflected to “StitchAdjust” window directly.
    Reconfirm the manual correction result on the 4 targets.
    If there is still misalignment, go back to step 19 and 20 to remove it.

no misalignment

NOTE

Be sure to reconfirm the manual correction result.

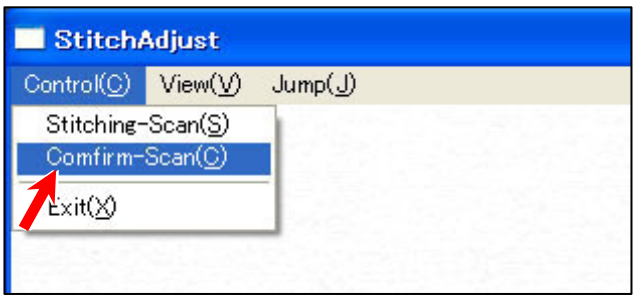
22. Set the Shading Sheet to the scanner noting the arrow direction.



NOTE

No skew insertion. Doing so may cause an incorrect calibration.

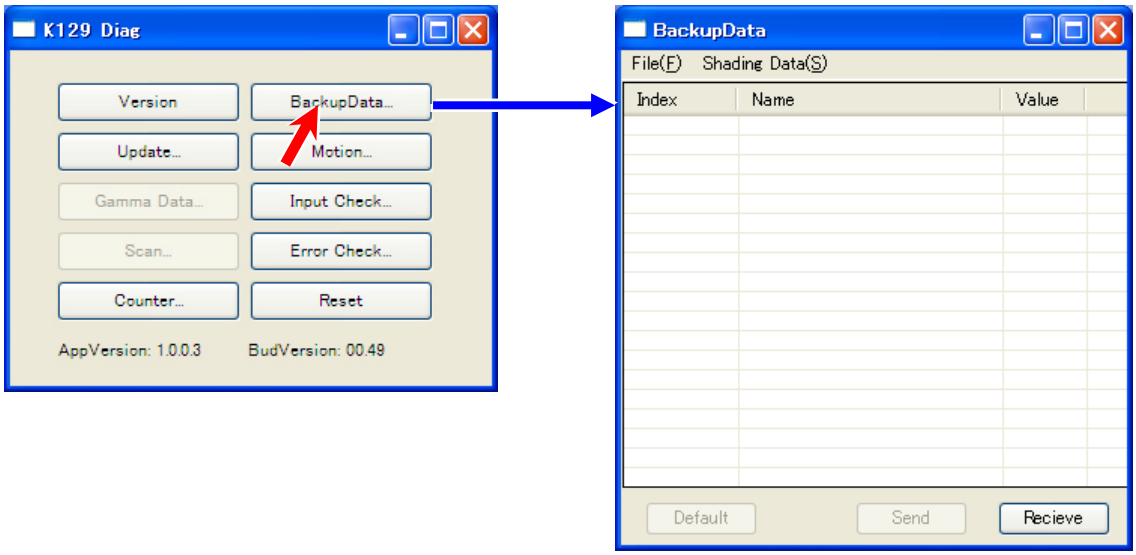
23. In “StitchAdjust” window, select [Control] menu, and then click [Confirm-Scan] to make another scan.



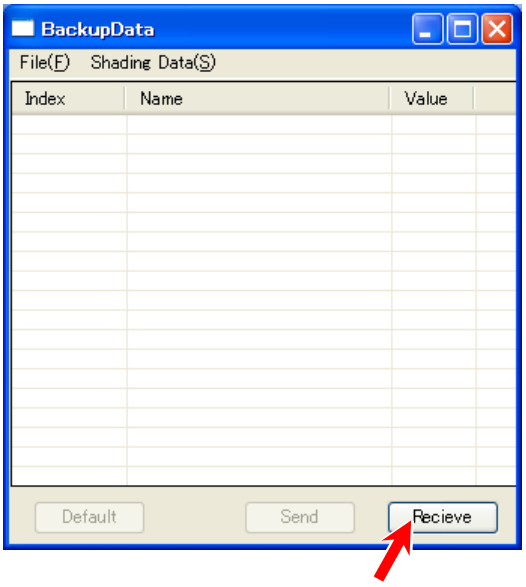
24. The rescan result can be checked in “StitchAdjust” window.

25. Click the X button at the top right corner to close “StitchAdjust” and “StitchSimulate” sub windows.

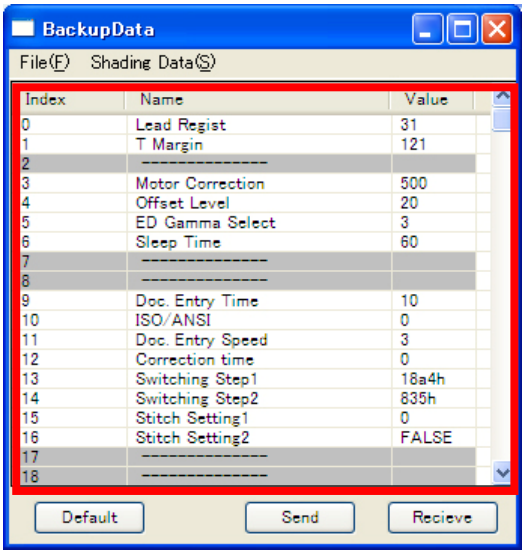
26. Go back to the Home. Click [BackupData] to recall “Backup Data” list sub window.



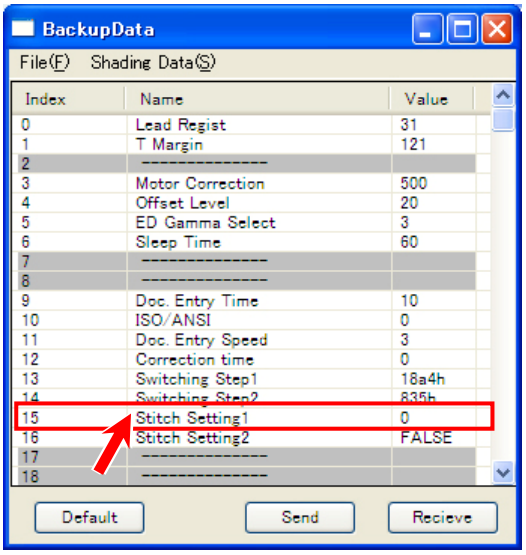
27. Click [Receive]



28. The current parameters are retrieved and displayed in the list.

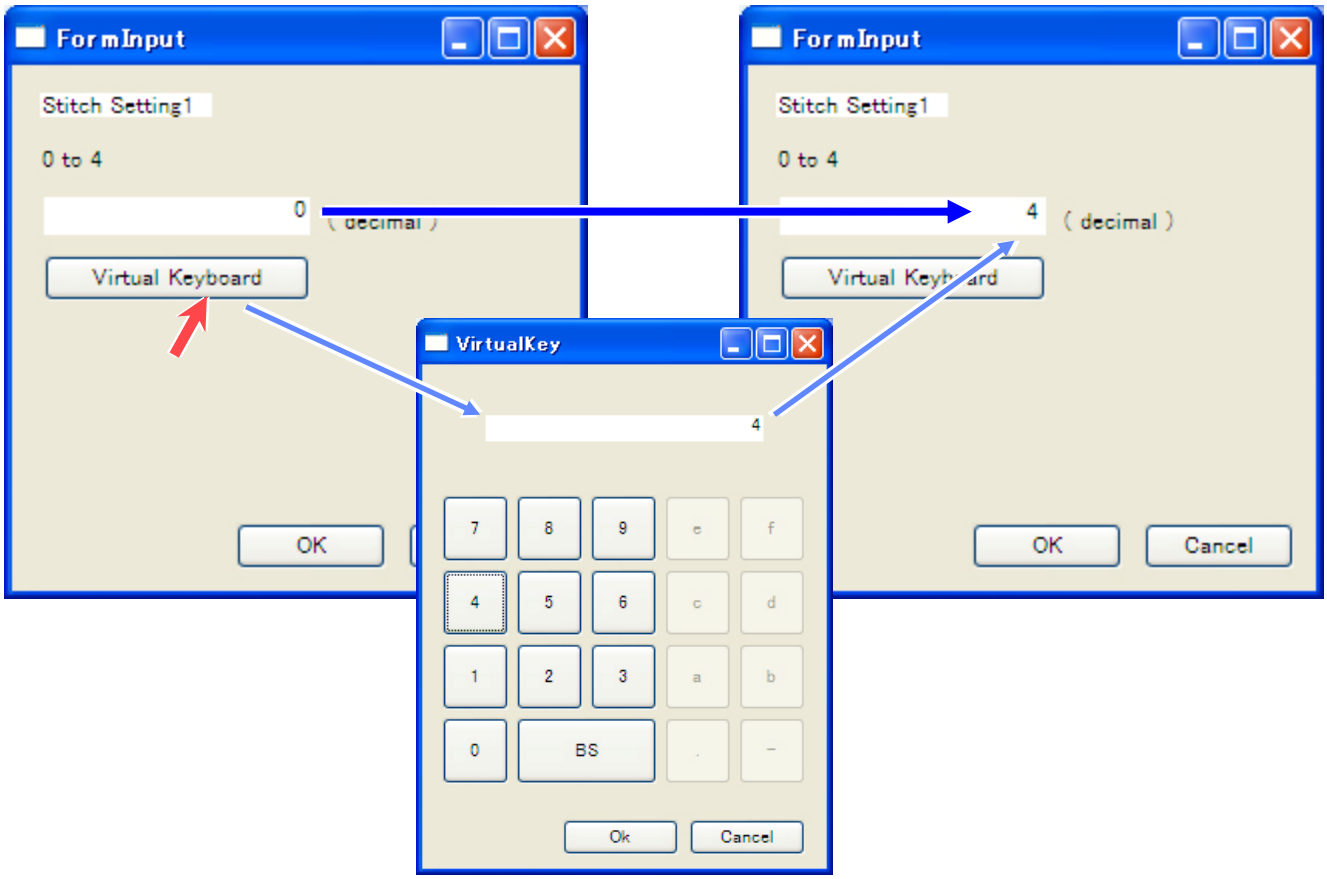


29. Double click on the row No.15 “Stitch Setting 1”.

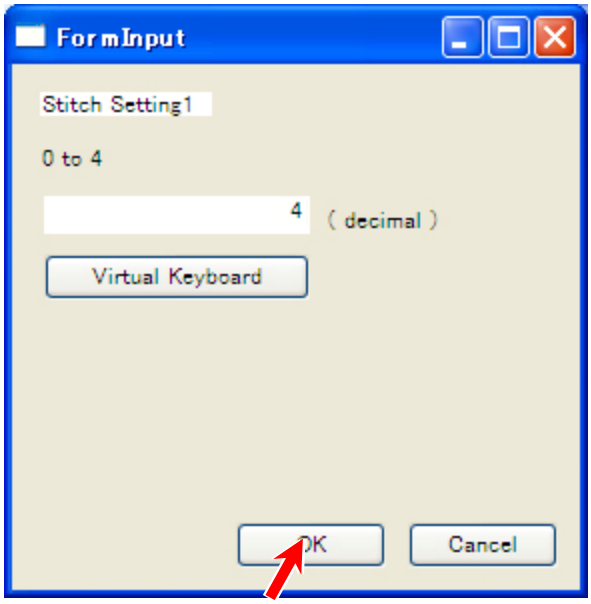


30. “Input” pad pops up. Directly type the number of the original setting (2 or 4) value with your keyboard.

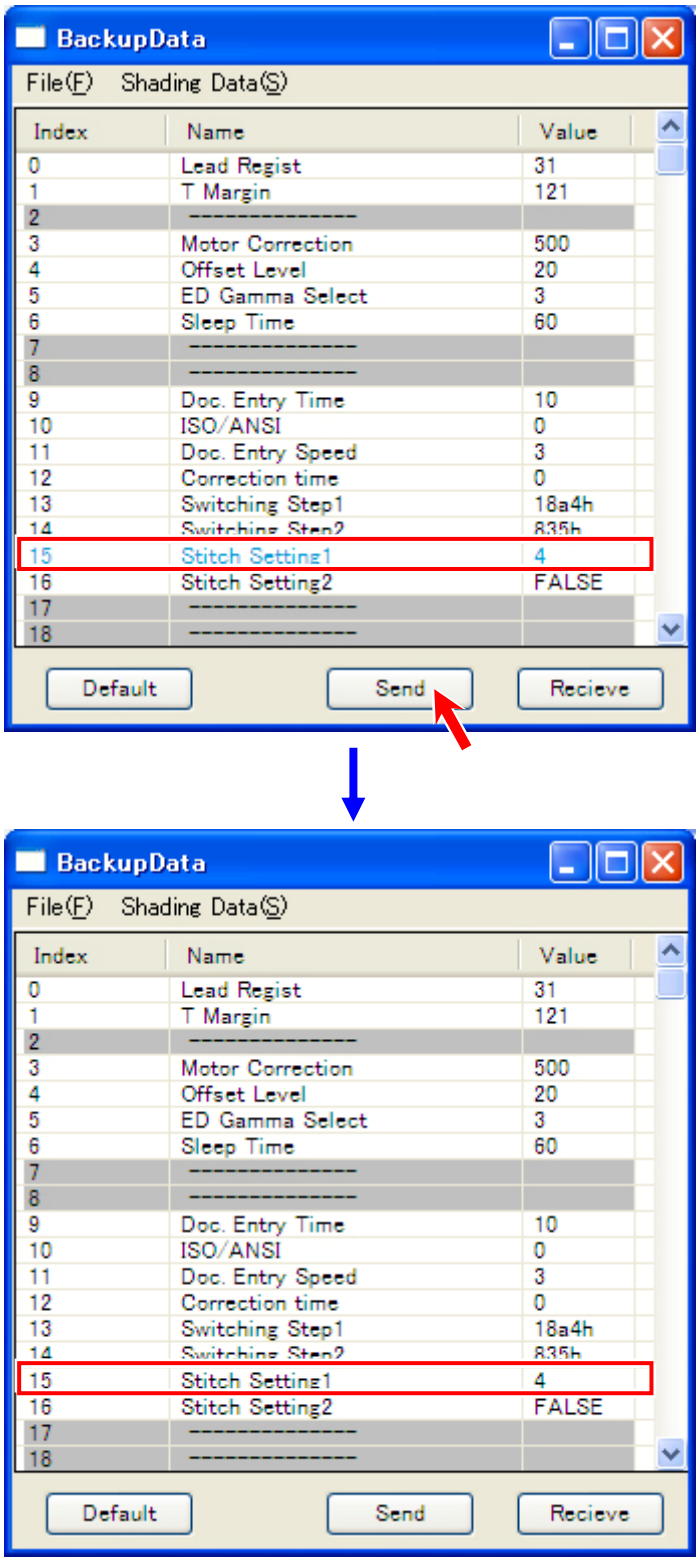
> **NOTE**
>
> Clicking the field displays a caret (flashing “ | ” cursor), but while the caret is flashing, a key entry with your keyboard device is **NOT** accepted.



31. Click [OK] on the bottom.



32. The setting change you have made is reflected to the list. It will turn blue.
Click [Send] on the bottom. The setting change turns black.
Now it is sent to the scanner's Main Board.

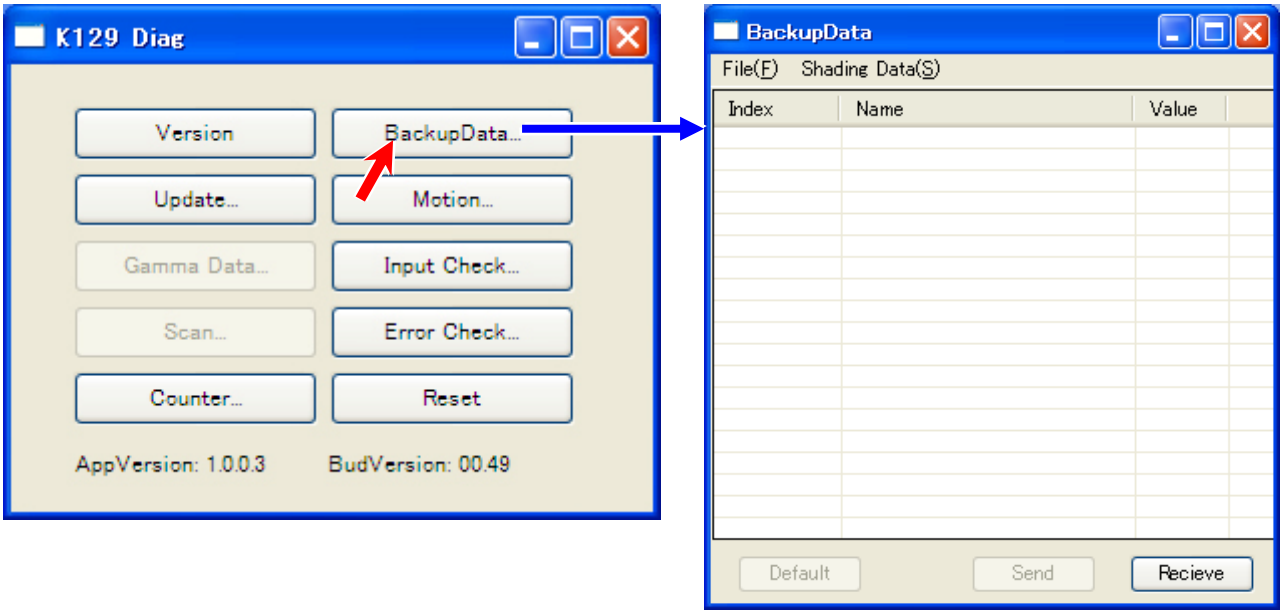


8.22. 6. 3 Black Brightness Correct

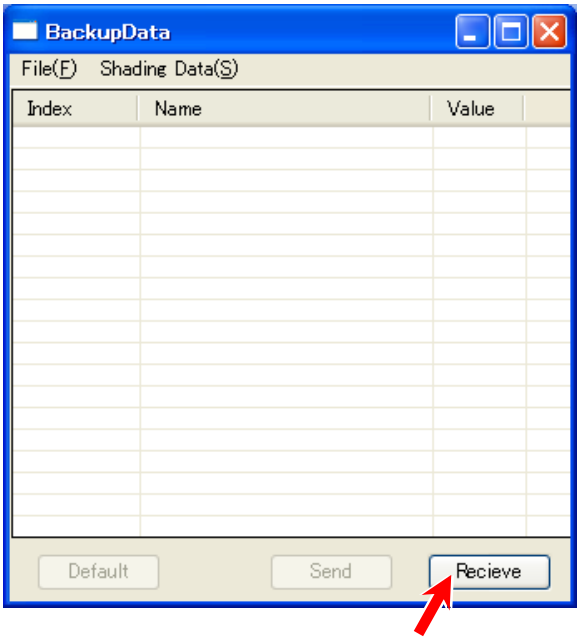
Black Brightness Correct is to define the black level in order to remove density difference between the neighboring CIS image blocks, with using “Black Brightness Correction Chart”.

> **NOTE**
>
> Black Brightness Correct should be done only in the case when the situation meets all of the following conditions.
>
> - the scanner in S/N 12900097 and lower,
> - with the firmware M16/S18 applied for the first time,
> - and such scanners has a heavy density difference between CIS

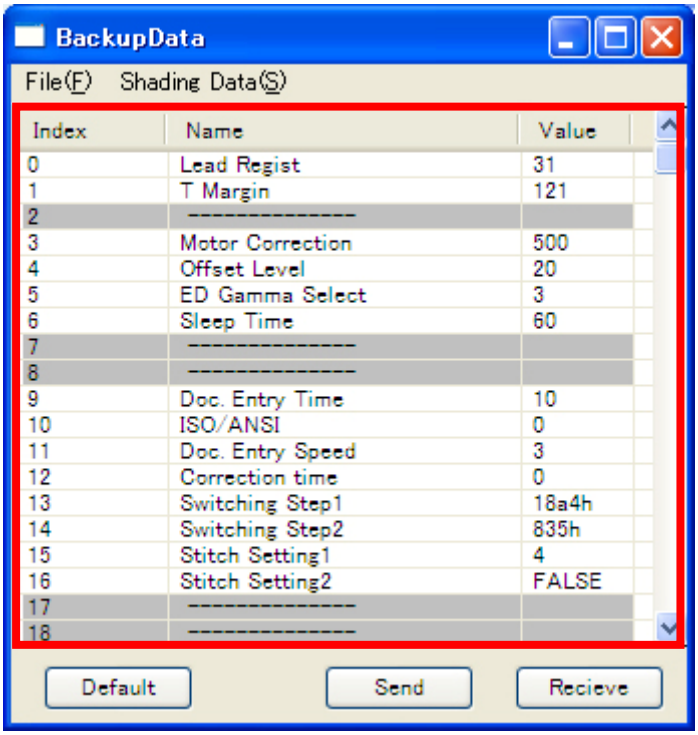
1. Run K129 Diag. Click [BackupData] to recall “Backup Data” list sub window.



2. Click [Receive]



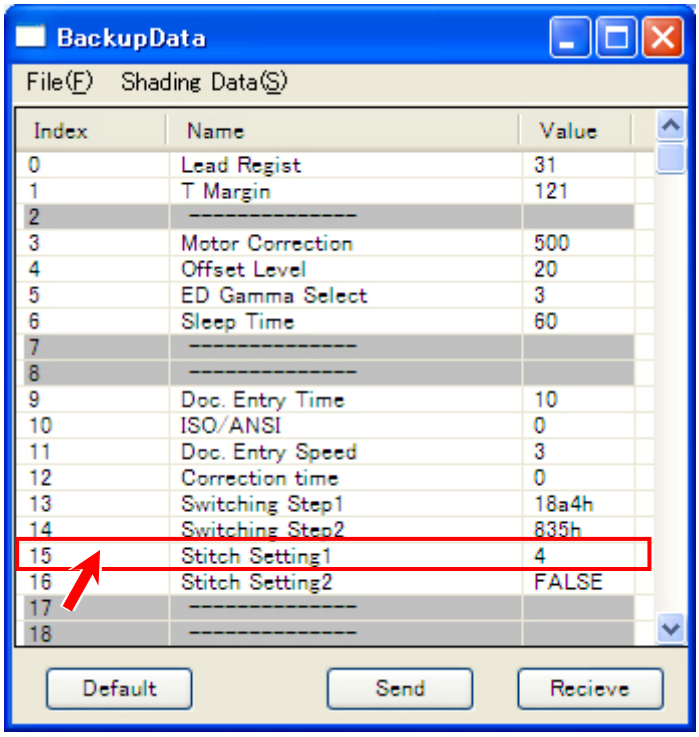
3. The current parameters are retrieved and displayed in the list.



Confirm that the following items are set to “zero”.
If not, see the next page to change setting values to “zero”.
When all the values are “zero”, go to step 9.

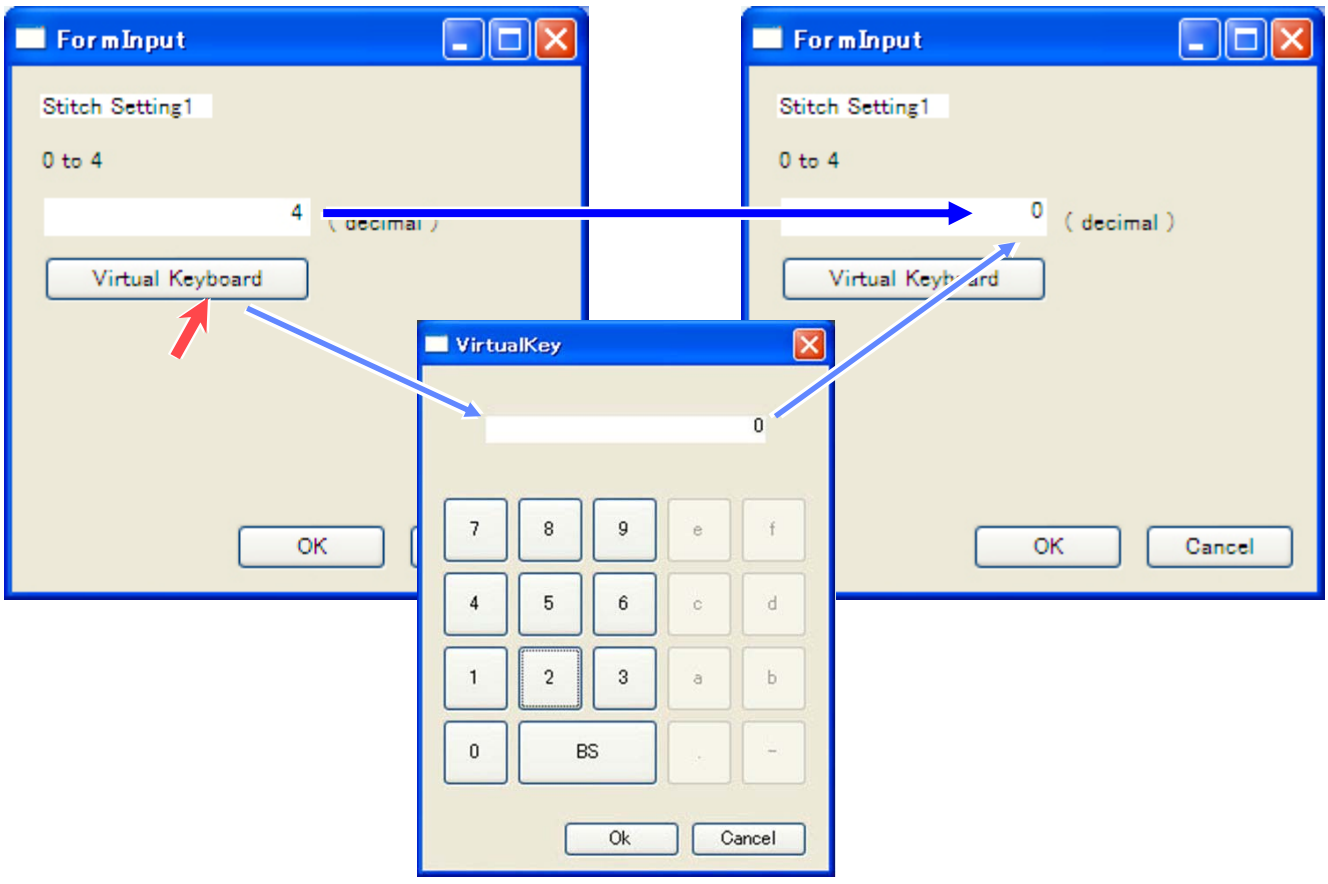
Index	Name	value
15	Stitch Setting1	0
60	Digital gain	0
62	cis1 Detail	0
63	cis2 Detail	0
64	cis4 Detail	0
65	cis5 Detail	0
271	Correction Block	0

4. Follow the instruction below to change the setting value.
   This section uses “15 Stitching Setting1 4” for example.
   Double click on the row you want to change.

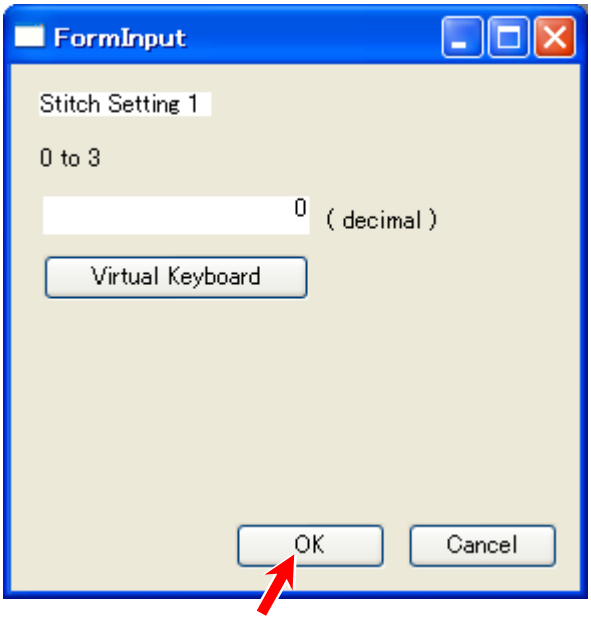


5. “Input” pad pops up. Directly type “0” with your keyboard.

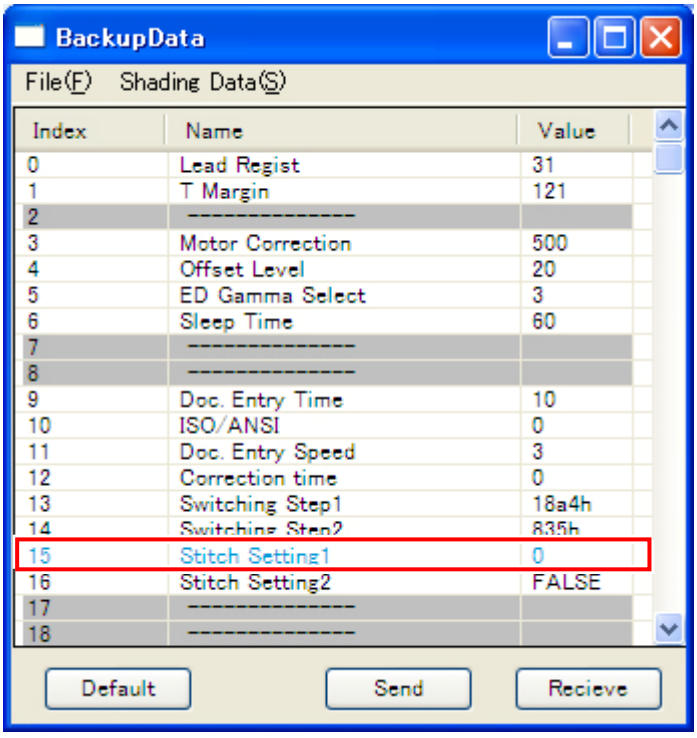
> **NOTE**
> Clicking the field displays a caret (flashing “ | ” cursor), but while the caret is flashing, a key entry with your keyboard device is **NOT** accepted.



6. Click [OK] on the bottom.



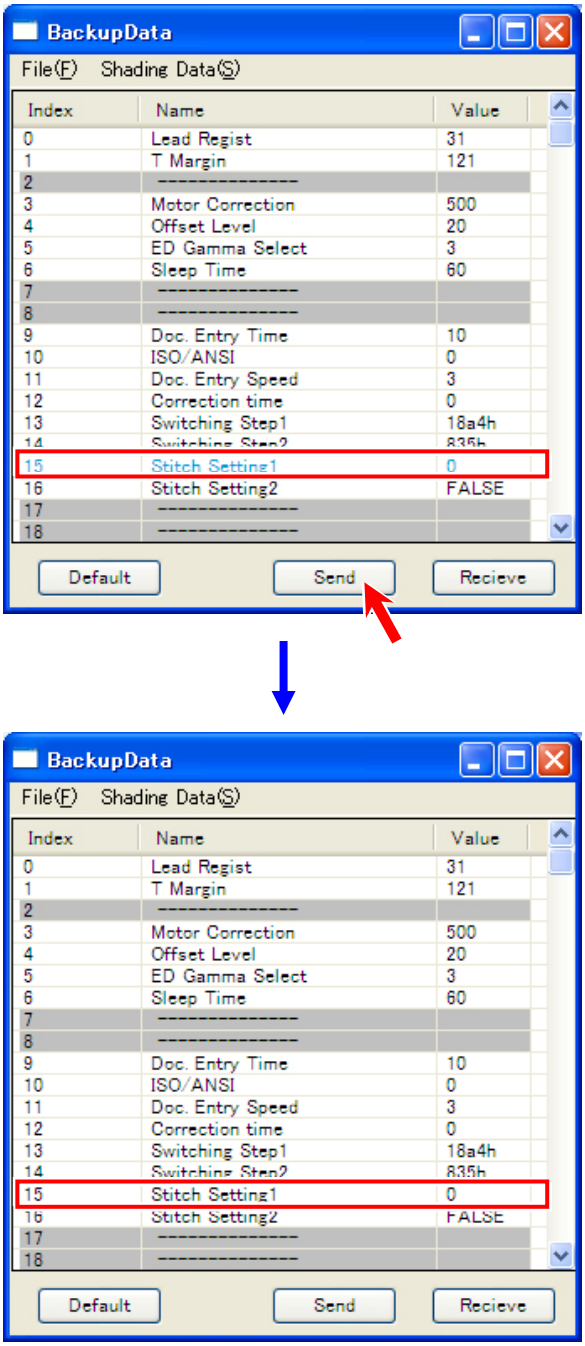
7. The setting change you have made is reflected to the list. It will turn blue.



NOTE

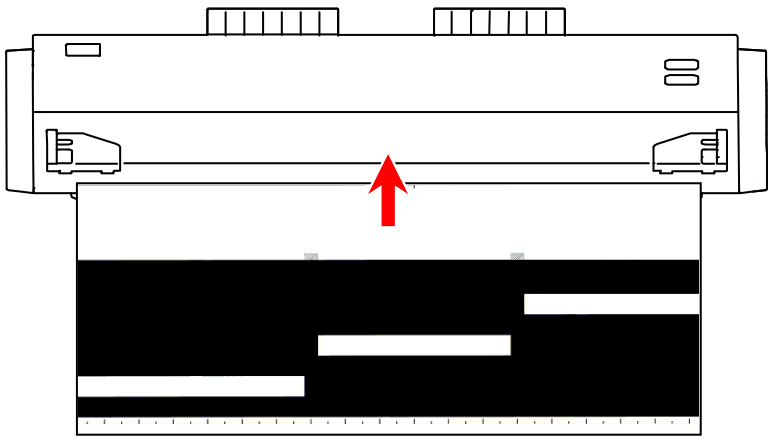
At this moment the new value has not yet become valid.

8. Click [Send] on the bottom. The setting change turns black.
   Now it is sent to the scanner's Main Board.

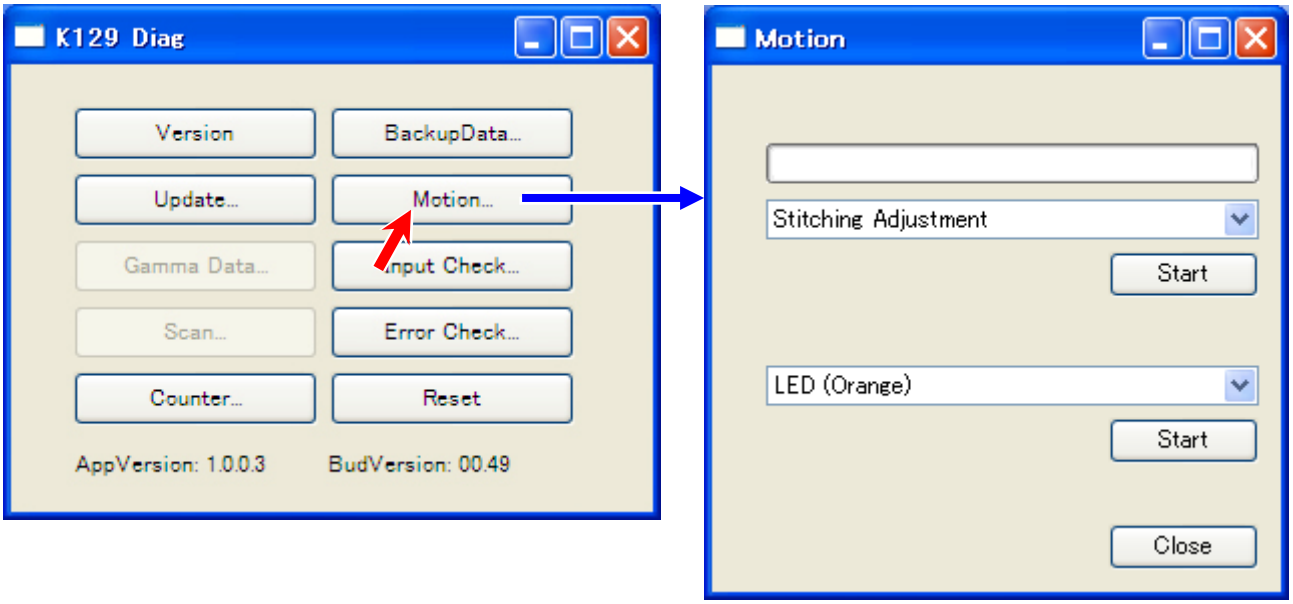


9. To close "BackupData" sub window, click the X button at the top right corner.

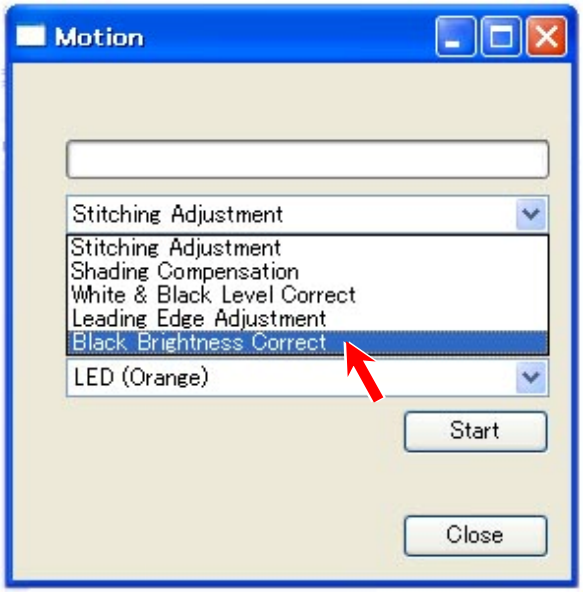
10. Set the Black Brightness Correction Chart to the scanner noting the arrow direction.



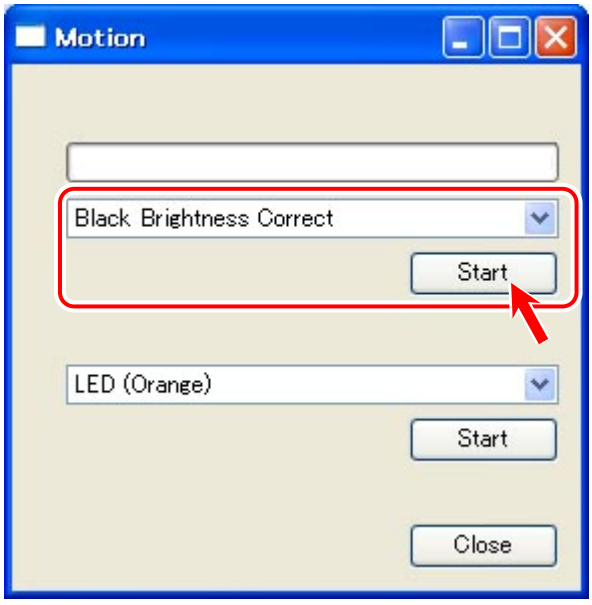
11. Click [Motion] to recall “Motion” sub window.



12. Select “Black Brightness Correct” in the upper drop-down menu.

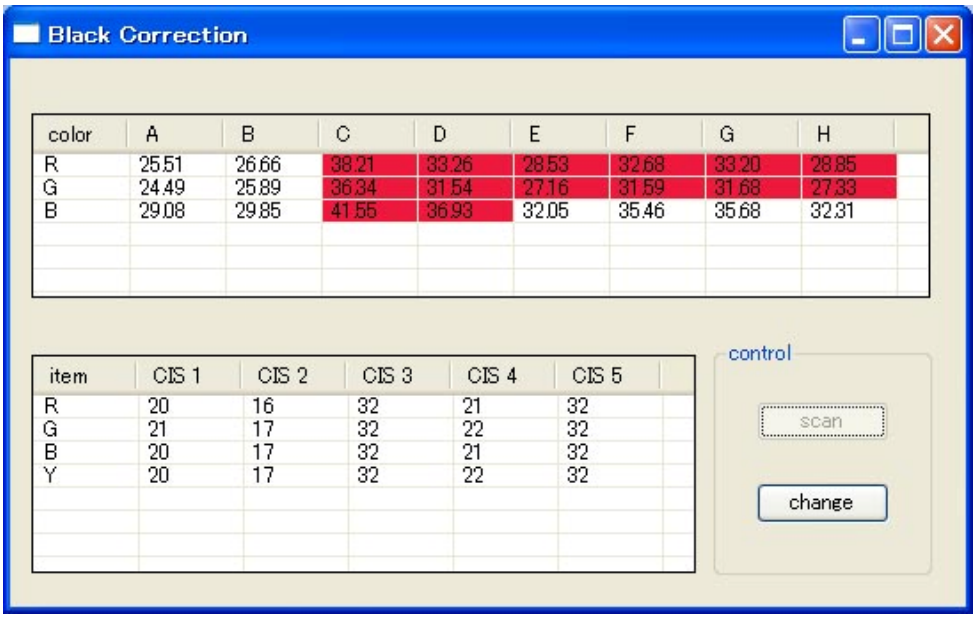


13. Click [Start] beside the upper drop-down menu.



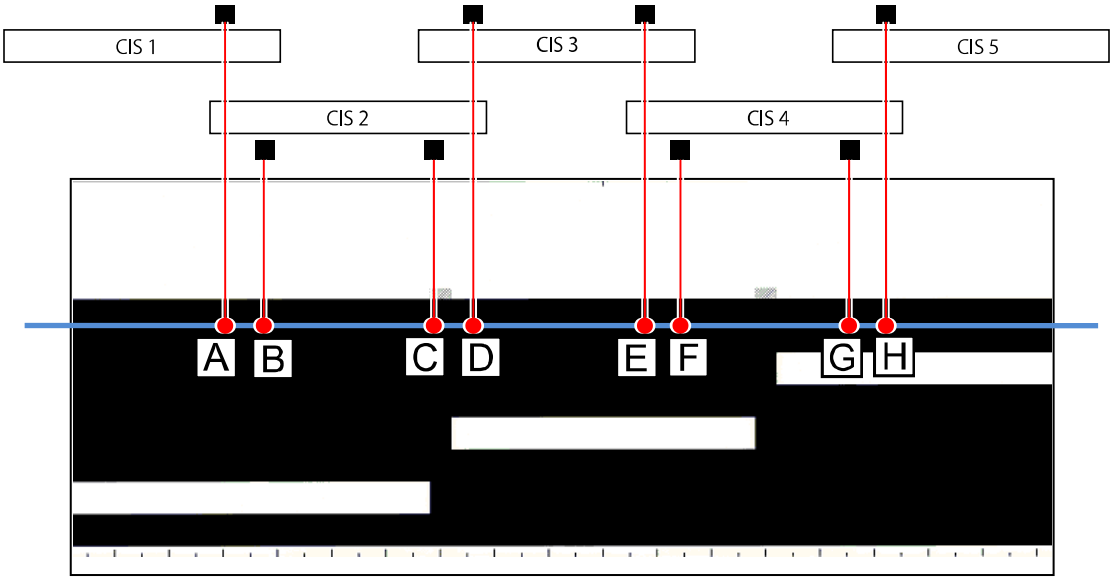
14. After the completion of the scan, “Black Correction” sub window appears.
The upper table shows the measured density at the border areas of each CIS.
At this time, if the values between the neighboring CIS reaches 4.00+, the concerning cell(s) will turn red.

Follow the step 15 until the red cell disappears.
When all the cells turn white, go to step 16.

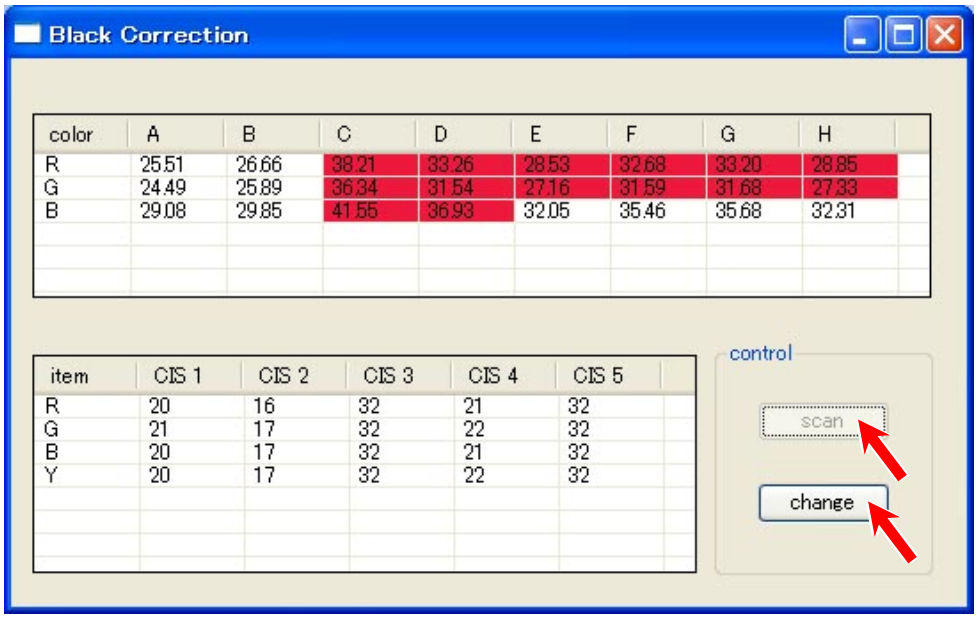


Reference

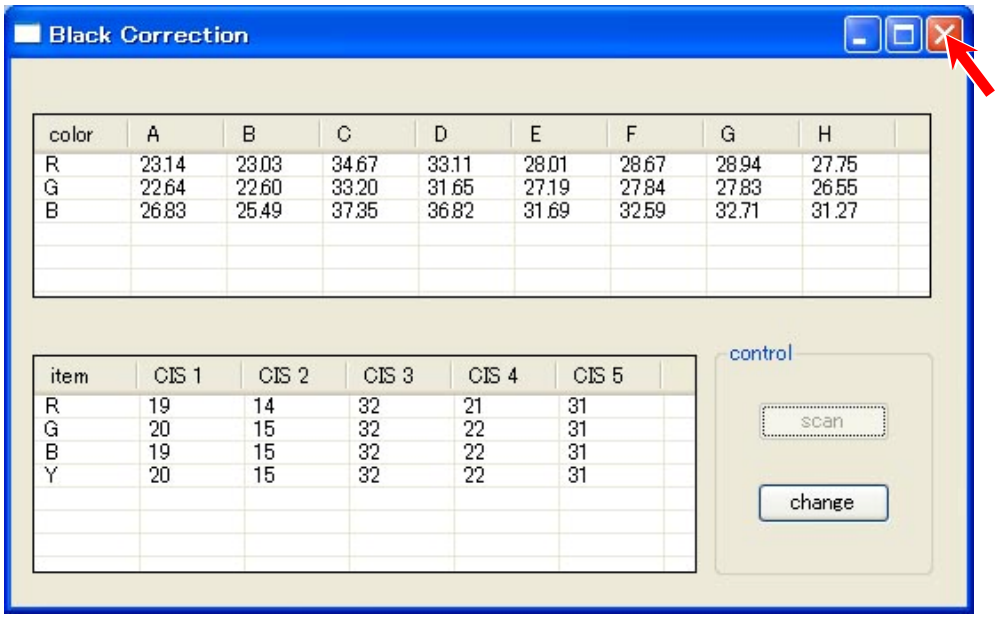
The columns A to H in the upper table correspond to the joint regions as follows.



15. If there is a cell in red, press [change] on the bottom right.
    Set the Black Brightness Correction Chart to the scanner, and then press [scan].
    Do the same way until all the cells turn white.

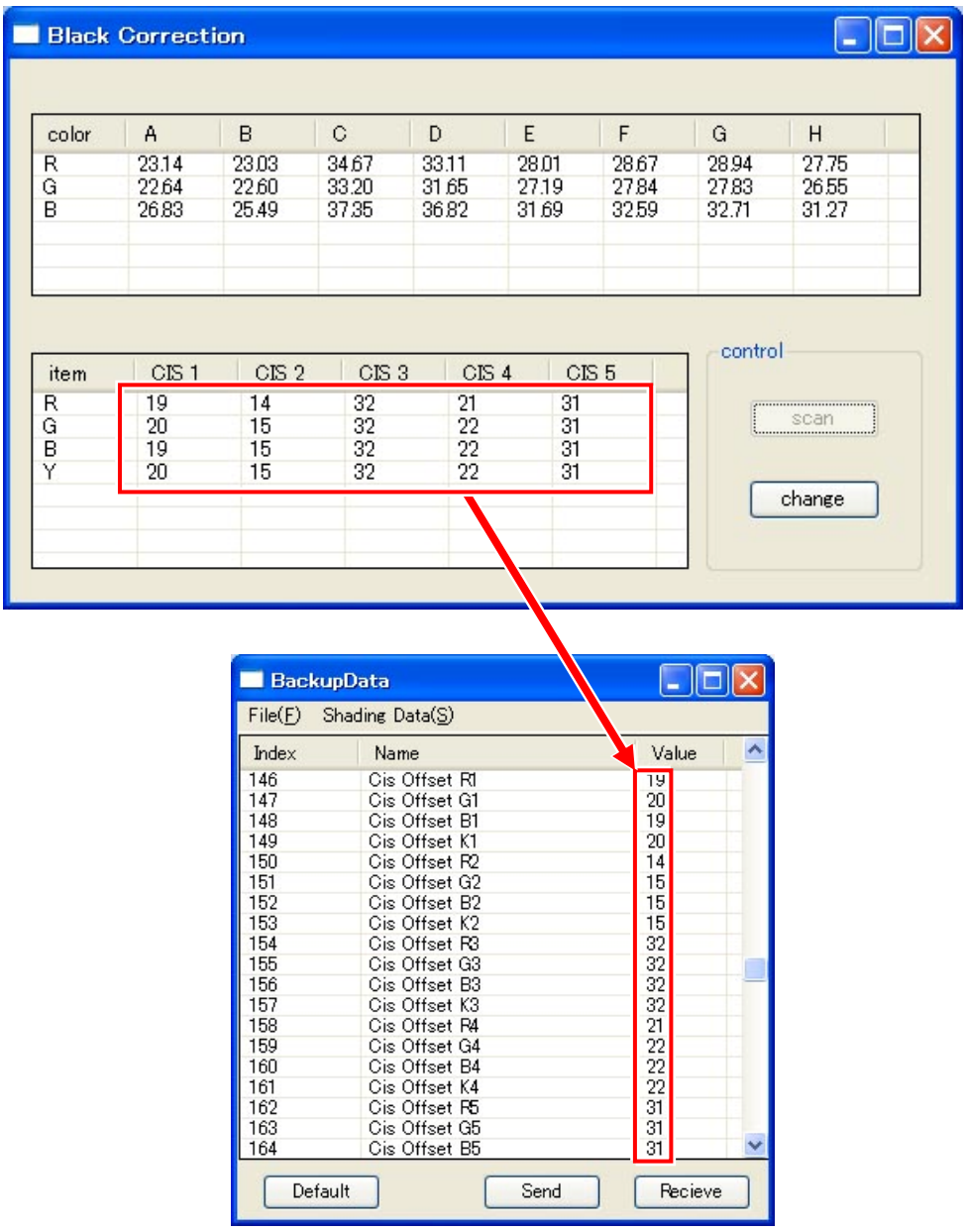


16. When all the cells turn white, click the X button at the top right corner to close “Black Correction” window.



Reference

The lower table, showing “CIS Offset” (calculated values based on the parameters in the upper table), is stored in the BUD No.146 to 165.



17. Change the setting values as follows. See step 1 through 8.

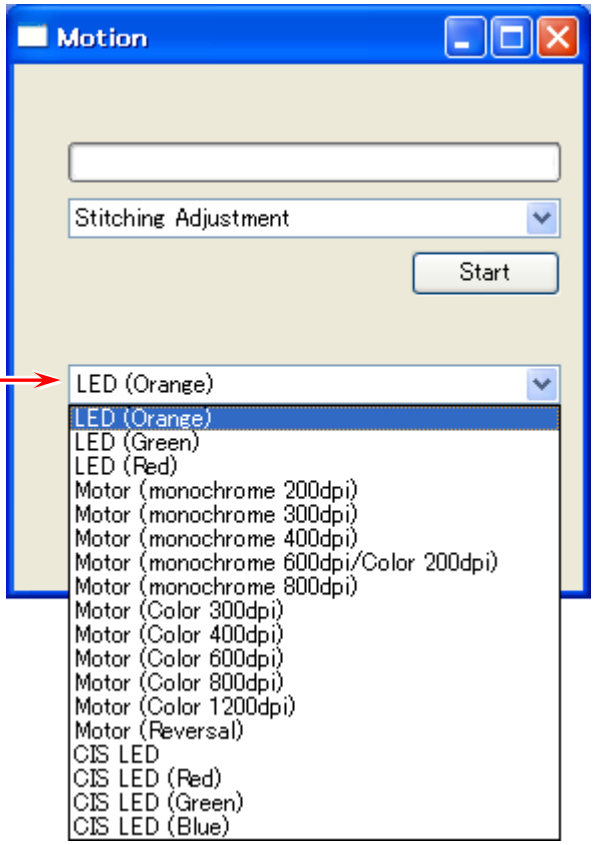
Index	Name	value
15	Stitch Setting1	4
271	Correction Block	1

18. Create a backup. See [8.22.4.2 Saving the Current Backup Data].

8.22. 6. 4 Other menu on Adjustment

Do not use the other options in the upper dropdown menu (for adjustment)

8.22. 6. 5 Operation Check

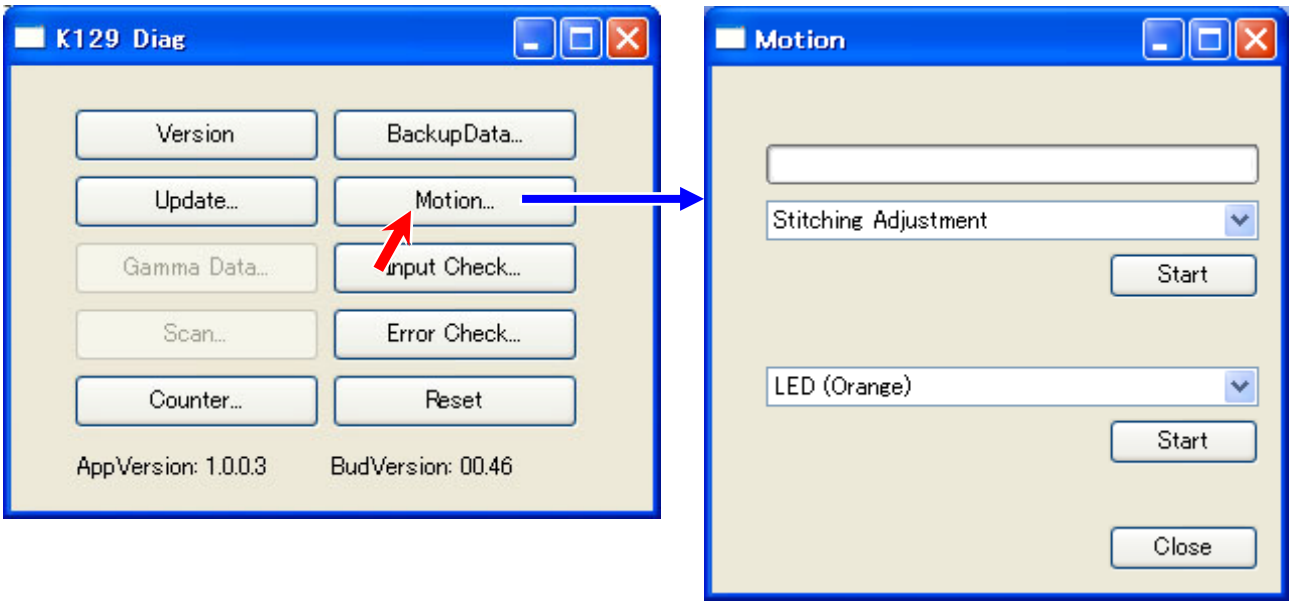


Lower: Operation Check menu

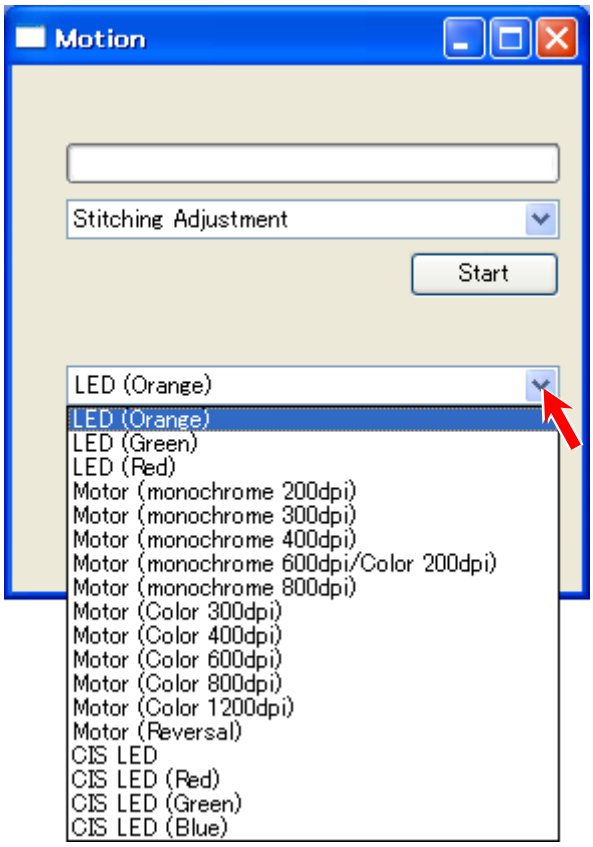
Operation Check menu:

LED (Orange)	lights the LED indicator (at the center of the Upper Unit) in orange
LED (Green)	lights the LED indicator in green
LED (Red)	lights the LED indicator in red
Motor	operates Motor (document feed motor)
Motor (reverse)	operates Motor reverse
CIS LED	lights the R/G/B light source of the CIS
CIS LED (Red)	lights the R light source of the CIS
CIS LED (Green)	lights the G light source of the CIS
CIS LED (Blue)	lights the B light source of the CIS

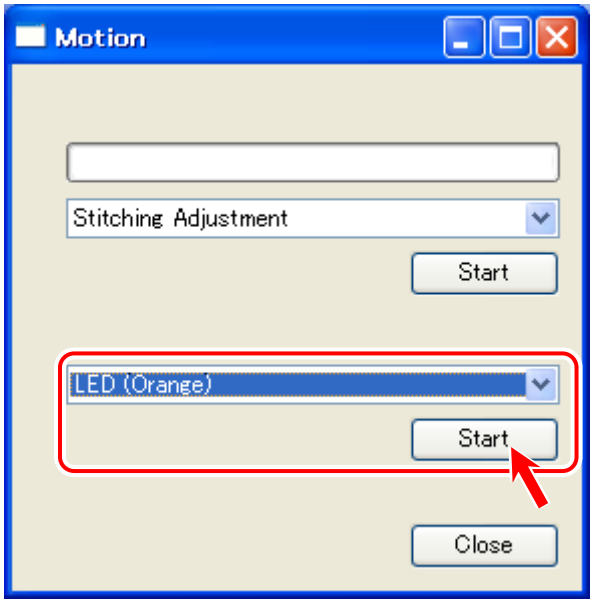
1. Click [Motion] to recall “Motion” sub window.



2. Select one of the component in the lower drop-down menu.



5. Click [Start] beside the upper drop-down menu.
   The selected component operates for some seconds, and then stops.



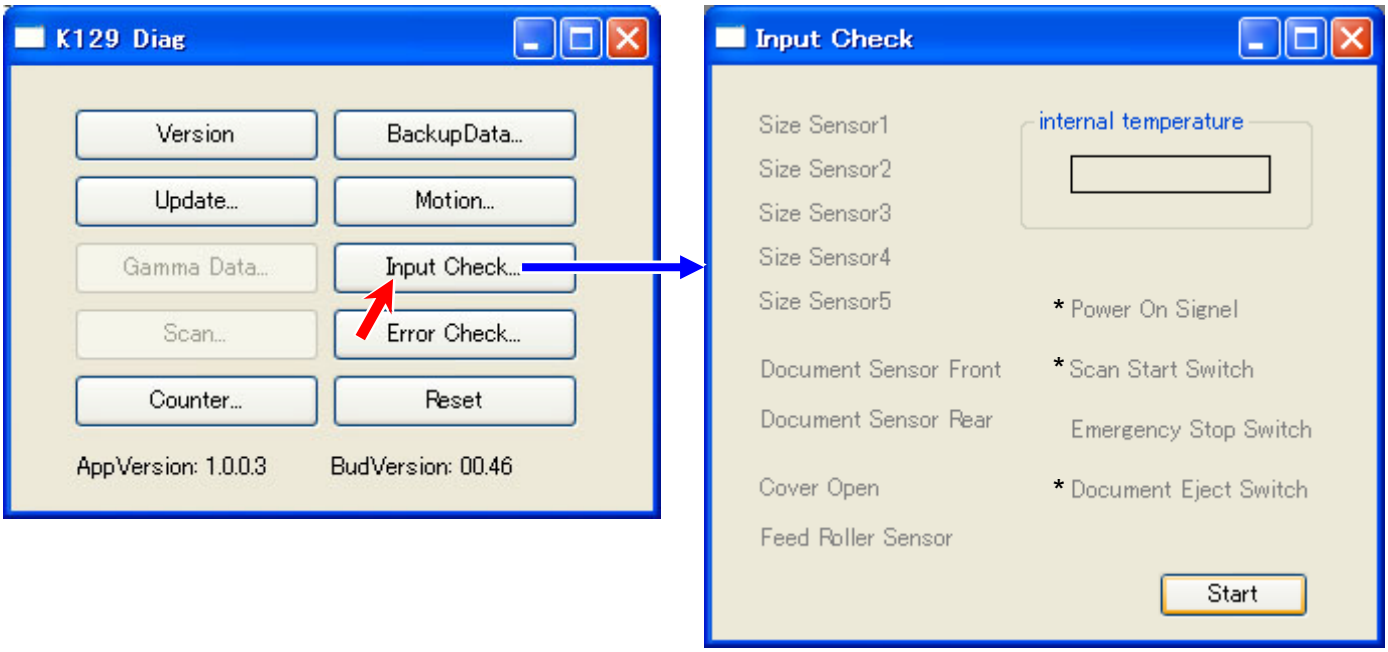
6. To close “Motion” sub window, click the X button at the upper-right corner.

8.22. 7 Input Check

"Input Check" is to be used for I/O check. When a given component gives a correct signal, the name of the component will change the color.

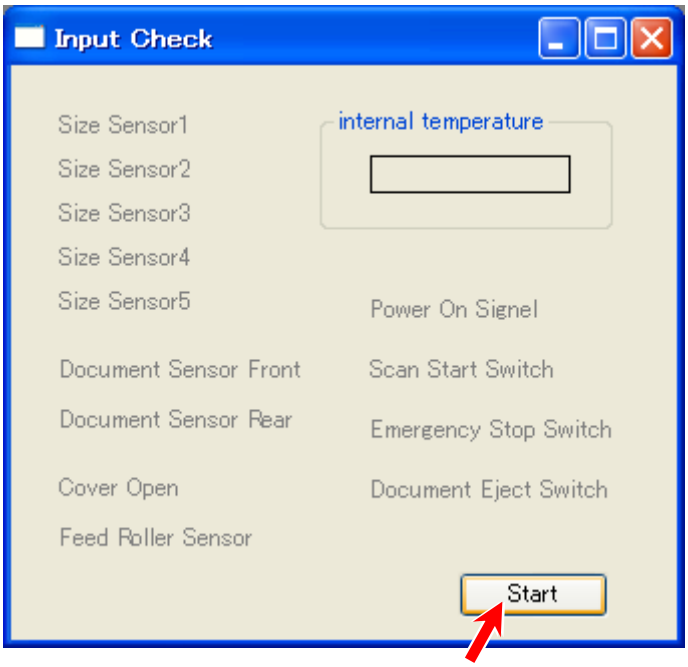
8.22. 7. 1 Getting Input Signal

1. Click [Input Check] to recall "Input Check" sub window.

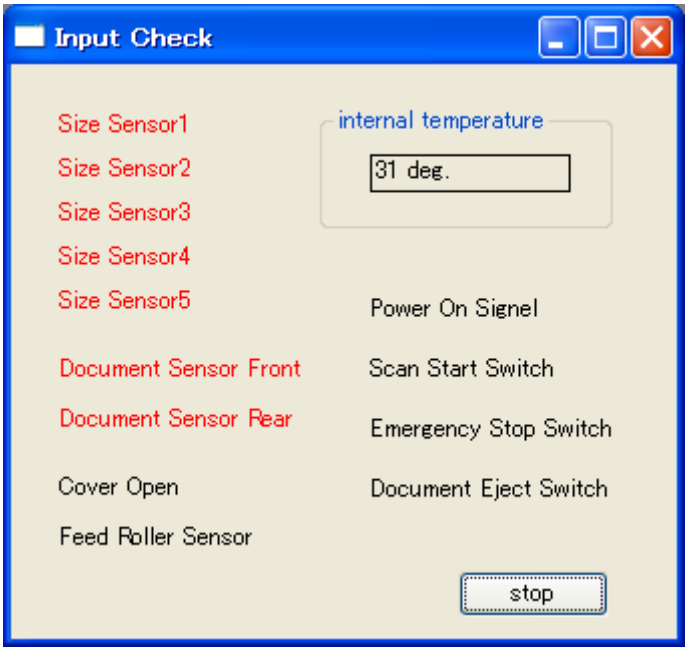


* Not available in KIP7100.

2. The names of the components are grayed at this time. Click [Start].

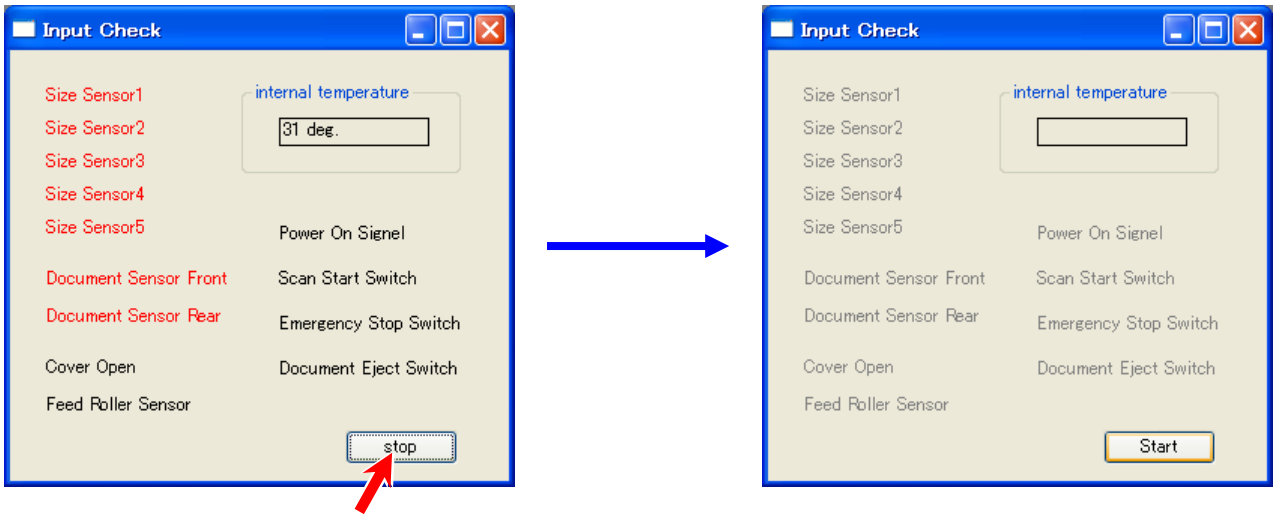


3. Now the names are active. When the status changes on a given component, the name will change the color.



For example, open the Upper Unit, “Cover Open” turns read.

4. To close “Input Check” sub window, click [Stop].



5. Click the X button at the upper-right corner.

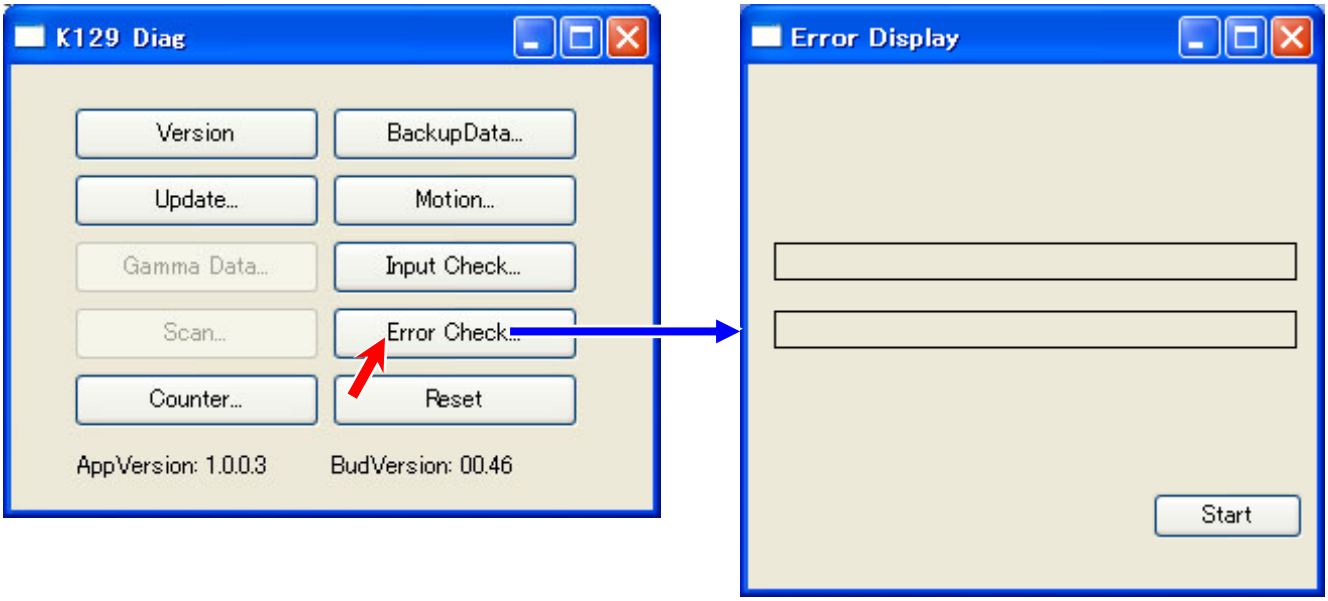
8.22. 7. 2 Signal List

Name	Target	Symbol	default	To change status,
Size Sensor 1	size detection: A4 landscape, A3, 11”, 12”	S_PH2	red	Pass a sheet over the sensor.
Size Sensor 2	size detection: A2, 17”, 18”	S_PH3	red	
Size Sensor 3	size detection: A1, 22”, 24”	S_PH4	red	
Size Sensor 4	size detection: A0, 30”, 34”	S_PH5	red	
Size Sensor 5	size detection: 36”	S_PH6	red	
Document Sensor Front	detects document insertion detects document jam size detection: A4 portrait	S_PH1	red	
Document Sensor Rear	document jam	S_PH7	red	
Cover Open	Upper Unit open	S_PH8	black	Open / close the Upper Unit.
Feed Roller Sensor	Feed Roller rotation	S_PH9	(depends)	Gently rotate the Feed Roller toward the rear.
Power ON Signal	----	----	black	
Scan Start Switch	----	----	black	
Emergency Stop Switch	Emergency Stop Button pressed	S_MS1	black	Press [Emergency Stop] button.
Document Eject Switch	----	----	black	

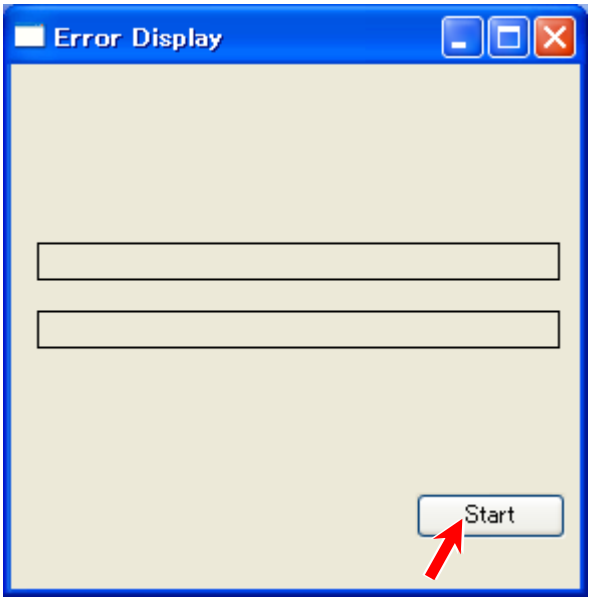
8.22. 8 Error Check

8.22. 8. 1 Getting Error Status

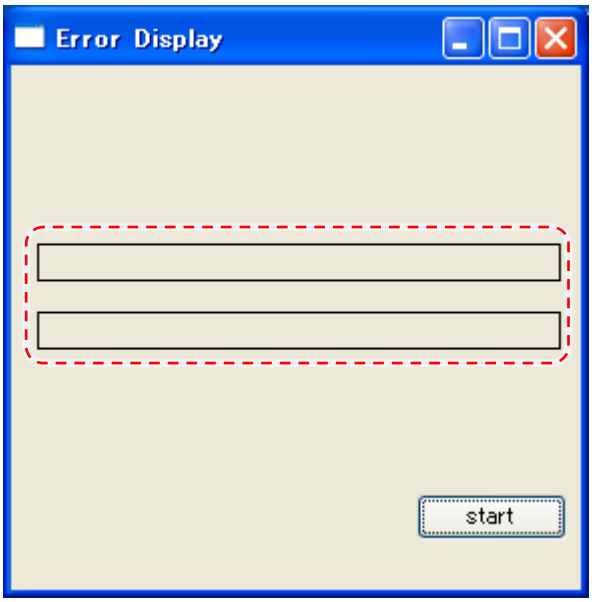
1. Click [Error Check] to recall “Error Check” sub window.



2. Click [Start] on the bottom.



3. Wait several seconds. If there is no error, the fields in the middle of the window indicate nothing.



4. To close “Error Check” sub window, click the X button at the upper-right corner.

8.22. 8. 2 Error List

communication error	Connection lost. - Check for the power supply and USB port.

document cover open	Upper Unit is not closed. - Firmly close the Upper Unit. - Check PH8.

jam at document feed	Document jam is detected. - Remove the jammed document. - Check PH7.

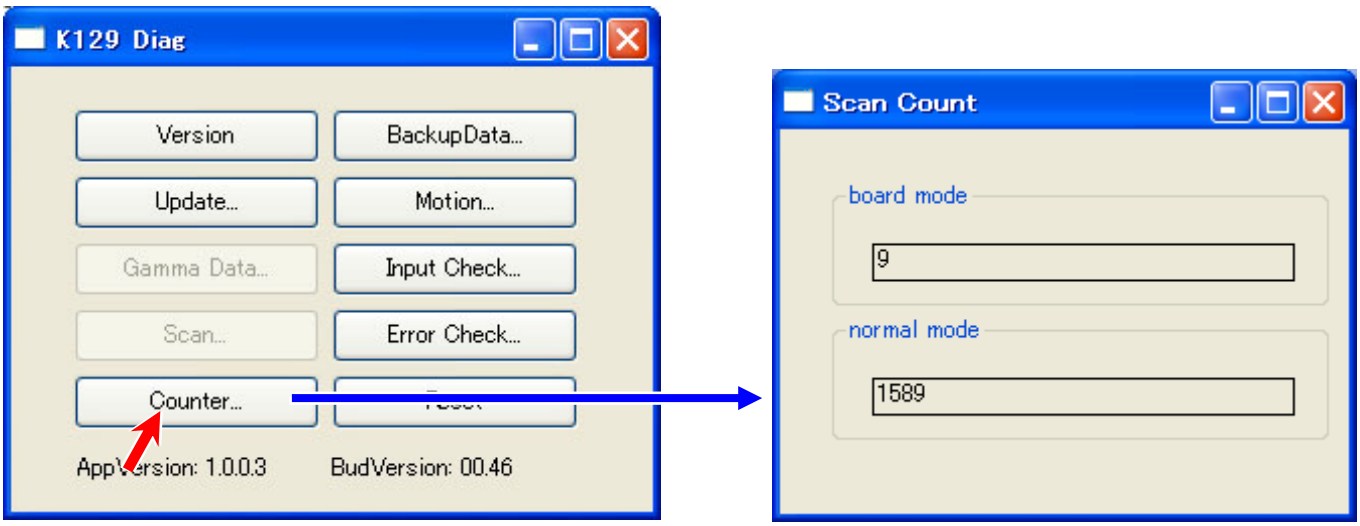
sequence error:

document feed roller HP error	Error on drive system. HP is not detected in the roller’s one rotation. - Check PH9. - Check drive system (gear, roller, motor).
shading sequence error	Shading data is abnormal. - Import the shading data. - Perform Shading Compensation. - Check the main Board.
document width error	Size detection discrepancy. - Check size sensors.

For the detailed troubleshooting procedure, see Chapter 7.

8.22. 9 Counter

Pressing [Counter] recalls “Scan Count” sub window.

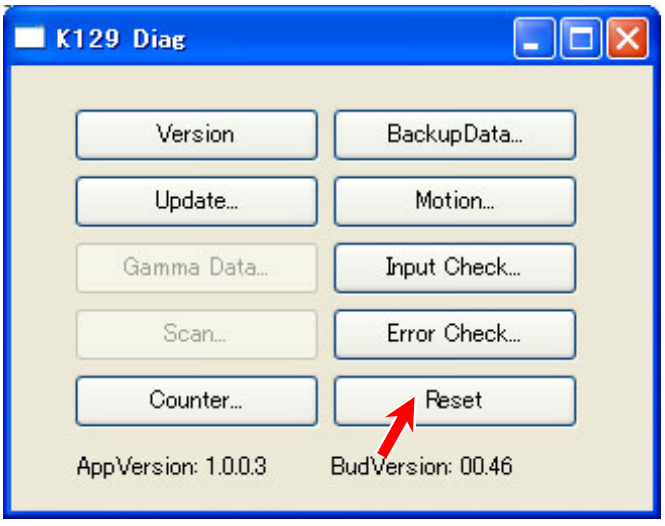


board	scan count for “slow mode” scans
normal	scan count for normal speed

To close “Scan Count” sub window, click the X button at the upper right corner.

8.22.10 Reset

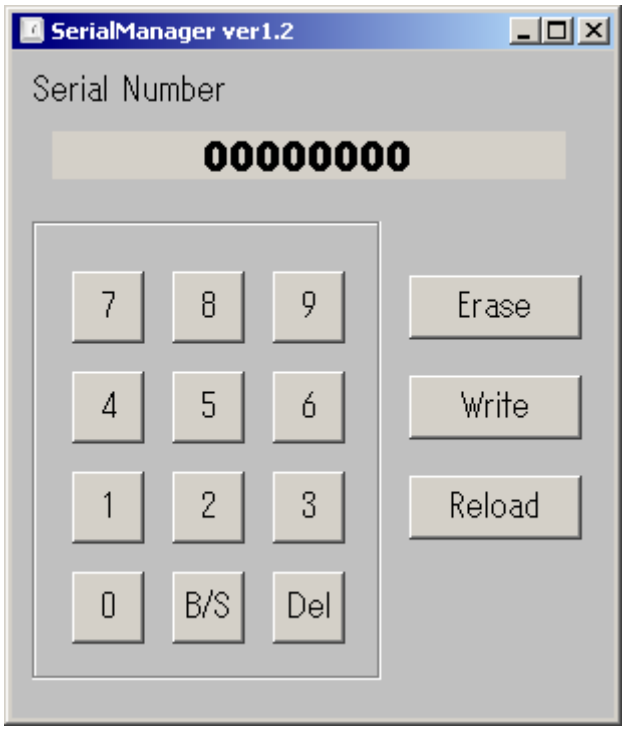
Pressing [Reset] recalls a dialog. If you click [Yes], the communication will be re-established as another session.



8.22.11 Serial Manager

The D CON (Scanner Main Board) stores its serial number (same with the machine S/N). As a service part D CON has no S/N information on it, you will have to write the serial number (with 8 digits) to the D CON.

For writing a serial number, use “Serial manager.exe”.  SerialManeger.exe



NOTE

A Main Board with no S/N written or with a wrong S/N would be detected as an incorrect hardware configuration. Some license key codes may not be accepted.

You cannot enter another S/N any more once registered, including correction of a wrong entry.

8.22. 11. 1 Serial Manager System Requirements

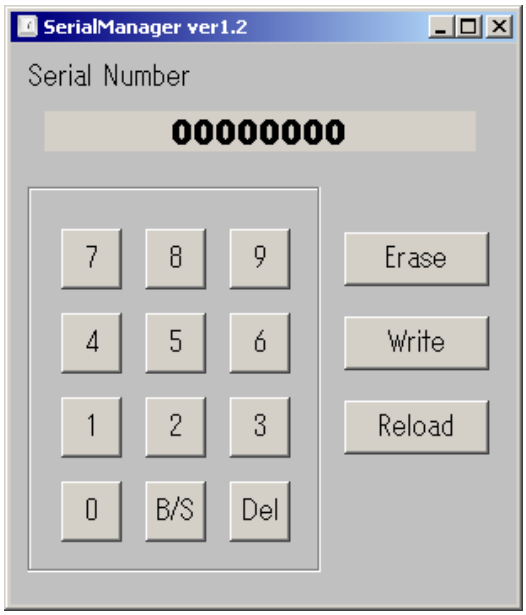
- Microsoft Windows XP / Vista 32 bit, or Windows 7 64 bit / 32 bit Operating System
- USB 2.0 hardware support

> **NOTE**
>
> Get the latest (or the proper version of) **SerialManager*.exe** and save it to any available storage on your PC / removable storage. (no change to the registry required)
>
> As of January 2013: version 1.2

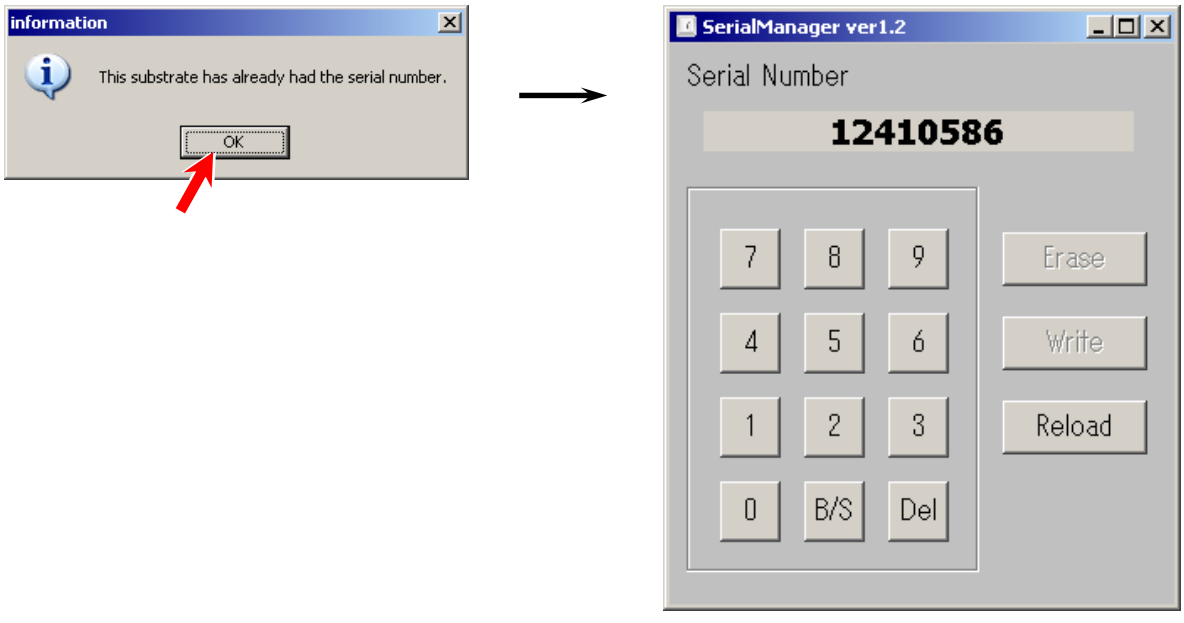
8.22. 11. 2 Starting Serial Manager

Just run “SerialManager.exe.” on your PC.

When your PC connects to a scanner with the **Main Board service part**, Serial Manager shows “00000000” in the Serial Number field.



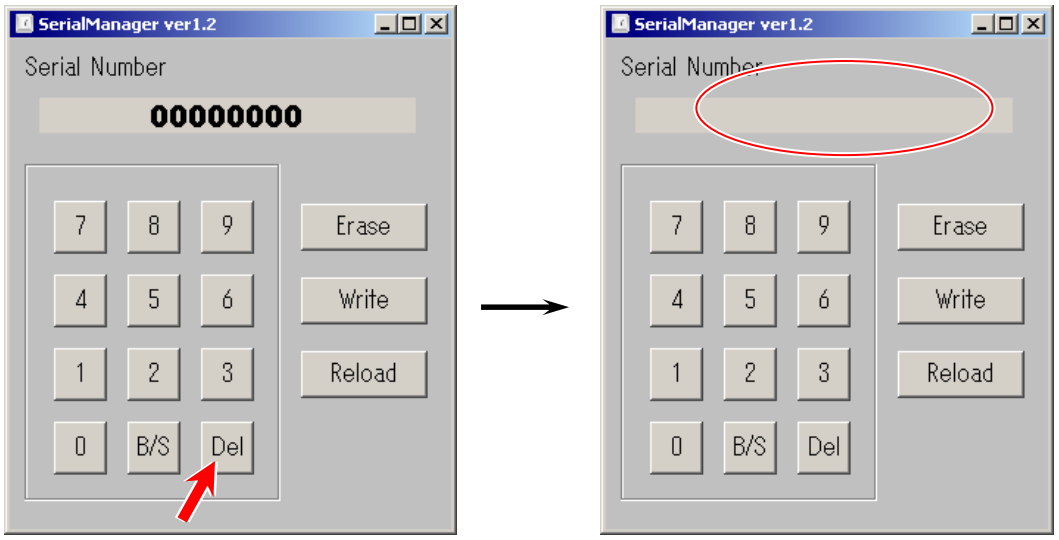
When your PC connects to a scanner with the Main Board having its serial number written already, a notification pops up, and then Serial Manager shows the written serial number.



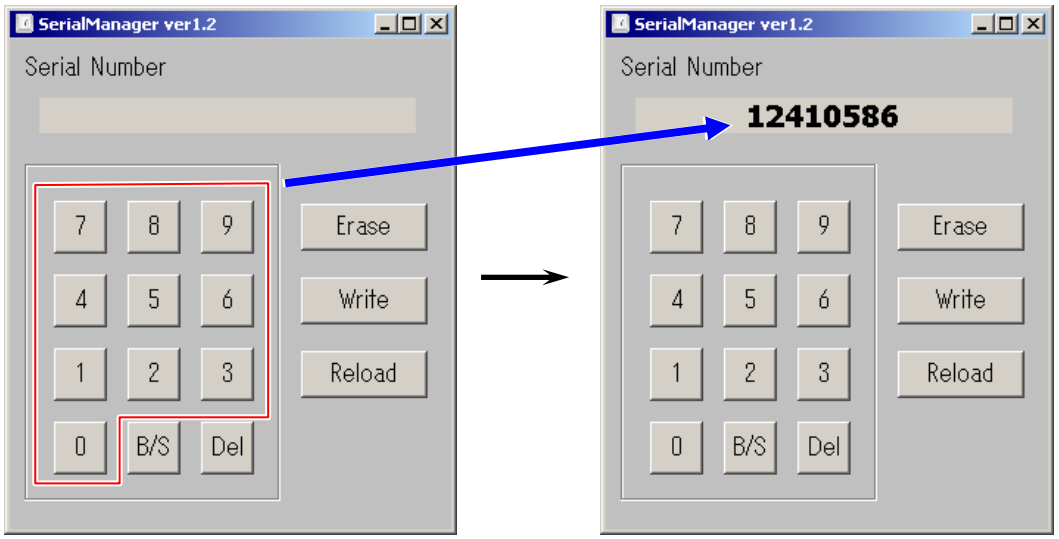
8.22. 11. 3 Registration S/N to Scanner Main Board

1. Run Serial Manager.

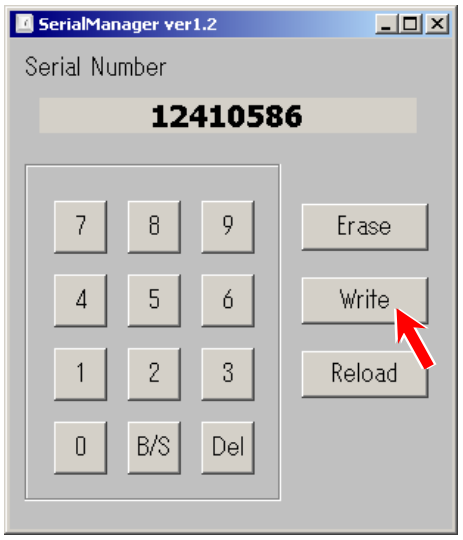
2. Press [Del] to delete the existing “00000000” for a new entry.



3. Enter the correct serial number (8 digits)

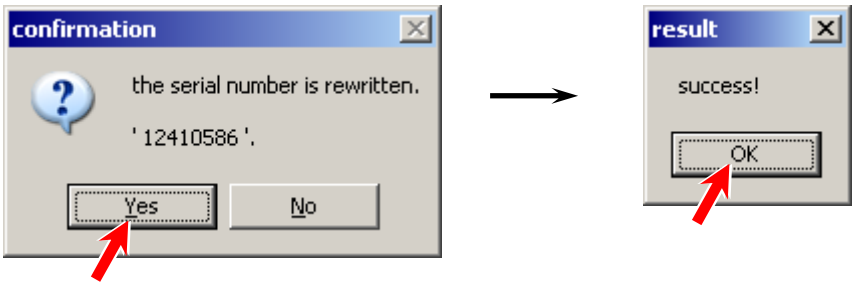


4. Press [Write] to finalize the entry.



> **NOTE**
>
> At this time the entry is not validated yet.

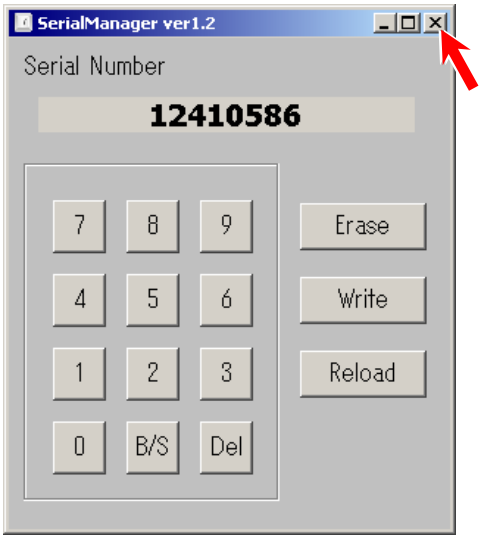
5. Confirmation dialogs pop up.
   Making sure of entering the correct S/N, press [Yes], and then [OK].



> **NOTE**
>
> (1) In case you wrote a wrong number, **DO NOT** close Serial Manager and go back to step 2.
>
> (2) At this time the entered S/N has just been sent to the Main Board, but is not validated yet.

6. To close Serial Manager, press the X button on the top right corner.

> **NOTE**
>
> Once you close Serial Manager, [Write] button will turns gray after that.

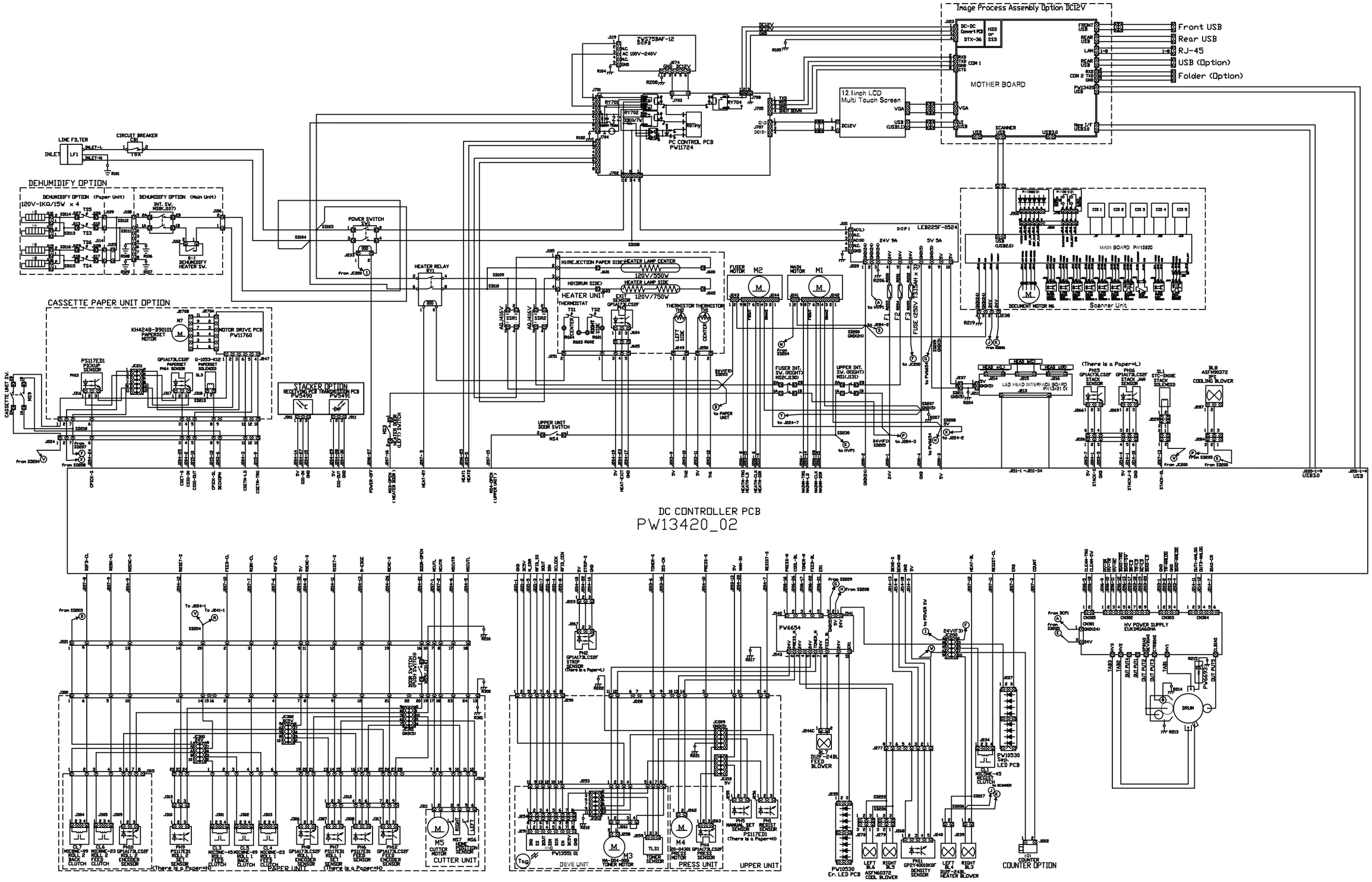


7. Turn off the scanner. Wait 3 seconds and then turn it on.
   Now the entered S/N is written to the Main Board.

> **NOTE**
>
> If you quickly turn off and on again, “The device can run faster...” balloon would pop up.
> This is because the scanner firmware may be loaded to the scanner’s memory incorrectly.
> Please wait 3 seconds before turning on again.

Chapter 9

Appendix



KIP 7170 Overall Circuit Diagram (USA/120V_KCS)

KIP 7170 Overall Circuit Diagram (230V_KCS)