KIP 800 | Color Series

Service Manual

Version B.1

This service manual includes the basic information about the KIP 800 Series, which is required when you during field service to maintain the product's quality and reliability.

Chapter 1 Introduction	Overview (Features, specifications, name of parts and etc.)
Chapter 2 Installation	Installation requirements, method of installation, connection with PC & printer
Chapter 3 Print / Scan Process & Control	Explanation for the steps of the print / scan process and brief summary of imaging control
Chapter 4 Electrical	Electric parts location
Chapter 5 Mechanical	Parts replacement and mechanical disassembly
Chapter 6 Maintenance	Field maintenance information
Chapter 7 Troubleshooting	Problem resolution
Chapter 8 Service Software	Auto adjustment, backup settings, Diagnosis and etc.
Chapter 9 Adjustment	Adjustment procedure for advanced technical tips
Chapter 10 Scanner Utility (KIP 860 only)	Operating "K129 Diag" for adjustments
Chapter 11 Appendix	General Circuit Diagram

Some of the information included in this manual may be changed by product upgrades. Such information will be informed to you through Technical Bulletins or Engineering Change Orders. Read this service manual and these TBs / ECOs to understand the KIP 800 Series correctly, and you will be able to maintain the product quality for a long period of time.

For KIP authorized dealer only.
All sections of the document are subject to change without notice.

Chapter 1

Introduction

1. 1 Features

(1) KIP 800 Series is an Electro Photographic full color LED printer/MFP.

(2) Selection from 3 models are available according to the requirement.
- KIP 870 : 4 rolls digital printer model
- KIP 860 : 2 rolls MFP model
- KIP 850 : 2 rolls digital printer model

(3) Widths and lengths supported are;
Max. width : 914mm (36”)
Min. width : 279.4mm (11”)
Max. length : 6,000mm (in case of A0/36)
Min. length : 210mm (8.5”)

(4) 600dpi LED print head as well as advanced KIP Image Process System achieve the highest quality images.

(5) Use of Transfer Belt completely divides the toner transfer process into 2 different steps, such as transference of toner image from Drum to Transfer Belt and then Transfer Belt to printing media. Absence of printing media in color registration step highly stabilizes the color image quality.

(6) KIP 800 Series is able to 3.9 A0 prints/minute (80mm/sec) n both color and monochrome modes. (Production speed is 50mm/s when thick media is used.)

(7) Use of CMYK dry toner allows for printing a color image directly on the plain paper or /bond. Prints are already ready for quick use right after the ejection from the printer, with high durability against UV and water.

(9) Easy access to the front USB port allows for quick print by easy touch panel operation.

(10) 12" multi-touch panel allows for tablet-like operation and image viewing.

(11) Use of optional hardware finisher devices helps handling of the finished prints. Available optional finisher are;
- Online Auto Stacker
- Online Folder

1. 2 Specifications

1. 2. 1 Printer part

<table>
<tr><th>Subject</th><th>Specification</th></tr>
<tr><td>Model</td><td>KIP 800 Series
- KIP 870 : 4 rolls digital color printer
- KIP 860 : 2 rolls digital color MFP
- KIP 850 : 2 rolls digital color printer</td></tr>
<tr><td>Type</td><td>Console type full color printer</td></tr>
<tr><td>Printing method</td><td>LED Array Electro Photography</td></tr>
<tr><td>Color</td><td>CMYK</td></tr>
<tr><td>Photoconductor</td><td>Organic Photoconductive Drum</td></tr>
<tr><td>Print speed</td><td>80mm/sec. (3.9 A0/min, 7.5 A1/min.) : Color and monochrome
50mm/sec. Heavy media</td></tr>
<tr><td>Exposure method</td><td>Multi-Level (9 levels) LED Print Head</td></tr>
<tr><td>Resolution</td><td>600dpi x 2400dpi</td></tr>
<tr><td>Print width</td><td>Maximum : 914mm (36 inches)
Minimum : 279.4mm (11 inches)</td></tr>
<tr><td>Print length</td><td>Maximum :
<table><tr><td>Plain Paper / Bond</td><td>5x standard portrait</td><td>6000mm in case of A0/36"</td></tr><tr><td>Tracing Paper / Vellum</td><td>1x standard portrait</td><td></td></tr><tr><td>Film</td><td>1x standard portrait</td><td></td></tr><tr><td>Glossy Paper</td><td>1x standard portrait</td><td></td></tr></table>
Minimum : 210mm (8.5 inches)

NOTE : If the print is longer than the above specification, KIP does not guarantee image quality or the reliability of media feeding system.</td></tr>
<tr><td>Warm up time</td><td>Shorter than 6 minutes
(At 23 degrees centigrade, 60% RH and 230V)</td></tr>
<tr><td>First print time</td><td>Shorter than 35 seconds (A1 landscape)
(From receiving of data through the completion of ejection from rear ejection)</td></tr>
<tr><td>Fusing method</td><td>Heat roller fusing</td></tr>
<tr><td>Development</td><td>Contact type mono component non-magnetic development system
(Initial toner is unnecessary. One toner cartridge contains 1kg.)</td></tr>
<tr><td>Drum charging</td><td>Corona</td></tr>
<tr><td>Primary/Secondary Transfer</td><td>Transfer roller</td></tr>
<tr><td>Separation</td><td>Electrostatic separation (AC)</td></tr>
<tr><td>Media feeding method</td><td>Automatic (4 or 2 rolls) and manual</td></tr>
<tr><td>Input power</td><td>220 to 240V (+6% to -10%), 20A and 50/60Hz</td></tr>
<tr><td>Interface</td><td>Ethernet 10BASE-T, 100 BASE –TX, 1000 BASE-T
USB 2.0 (5VDC max)</td></tr>
<tr><td>Power consumption</td><td>230V, 50/60Hz
Printing ..... 1.9 Kwh (Average)
Warm up ..... 3.4 Kwh (Average)
Ready ..... 0.8 Kwh (Average)
Cold Sleep ..... 3 W (Average)</td></tr>
<tr><td>Acoustic noise</td><td>Less than 65db (Printing)
NOTE : Impact noise such as cutting sound is excluded.
Less than 60db (Ready)
Der höchste Schalldruckpegel gemäß EN ISO 7779 beträgt 70dB(A) oder weniger.</td></tr>
</table>

Subject	Specification
Ozone	Less than 0.05ppm (Average of 8 hours)
Dimensions	KIP 870 : 1,500mm (W) x 1,080mm (D) x 1,220mm (H) KIP 860 : 1,500mm (W) x 1,080mm (D) x 1,155mm (H) KIP 850 : 1,500mm (W) x 1,080mm (D) x 1,015mm (H) NOTE : Touch panel and upper trays are not included.
Weight	KIP 870 About 530kg (1168lb) KIP 860 About 510kg (1124lb) KIP 850 About 485kg (1069lb)
Media	Bond/Plain paper - 70 to 90 g/m^2 (Color and monochrome : 80mm /sec.) - 90 to 160g/m^2 (Heacy media is used : 50mm / sec.) Tracing paper - Film - g/m^2 Gloss - g/m^2
Environmental condition	Standard Environment : 23^{o}C and 60% Temperature ..... 10 to 30 degrees centigrade Humidity ..... 15 to 80% RH
Storage condition of consumables	Print media ..... Wrap the media surely to shut out the humidity. Toner ..... Keep the toner cartridge away from the direct sunlight, and store it in the condition of 0 - 35 ^{o}C and 10 - 85% RH.
Hardware option	- Online Auto Stacker - Online Folder

⚠ NOTE

These specifications may be changed without notice.

1. 2. 2 Scanner part (for KIP860)

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 : Suggest to change “It does not guarantee both scan/copy image quality and original feeding reliability in case the original is non-standard size one of which thickness is 0.25mm or thicker.

⚠ NOTE

These specifications may be changed without notice.

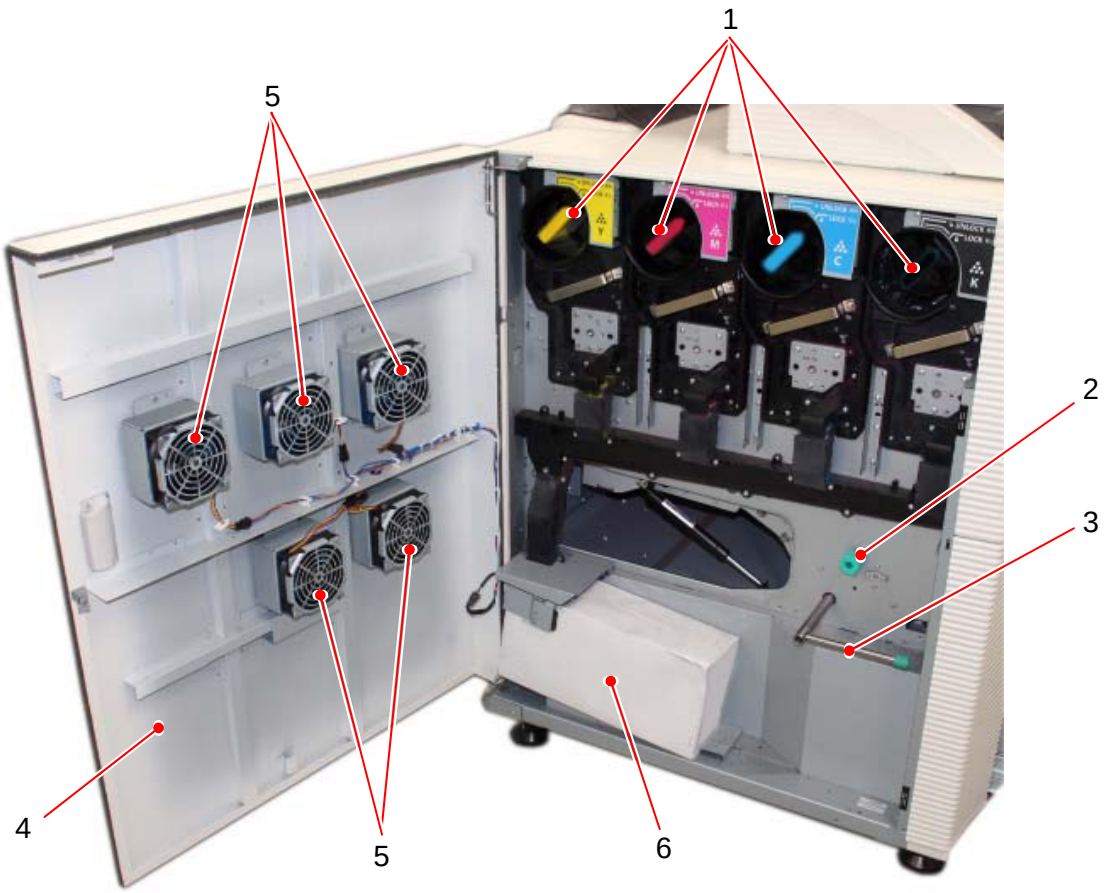
1. 3 Appearance

1. 3. 1 Front view

	Name of part	Function
1	Print Tray	These trays catch ejected prints.
2	Scanner Unit	Read the original with this unit when you make scan or copy. (KIP 860 only)
3	Scan Abort Button	While scanning: emergency stop At Standby position: eject
4	Start Button	Starts scanning if the controlling software requires user intervention.
5	User Interface	This is a Touch Screen, and many kinds of user operation are available. **PLEASE DO NOT** push the LCD area too strong.
6	Bypass Feeder	Feed a cut sheet paper from the Bypass Feeder.
7	Roll Deck	Roll media can be loaded here.
8	Status Indicator	LED indicator indicates the following printer status.

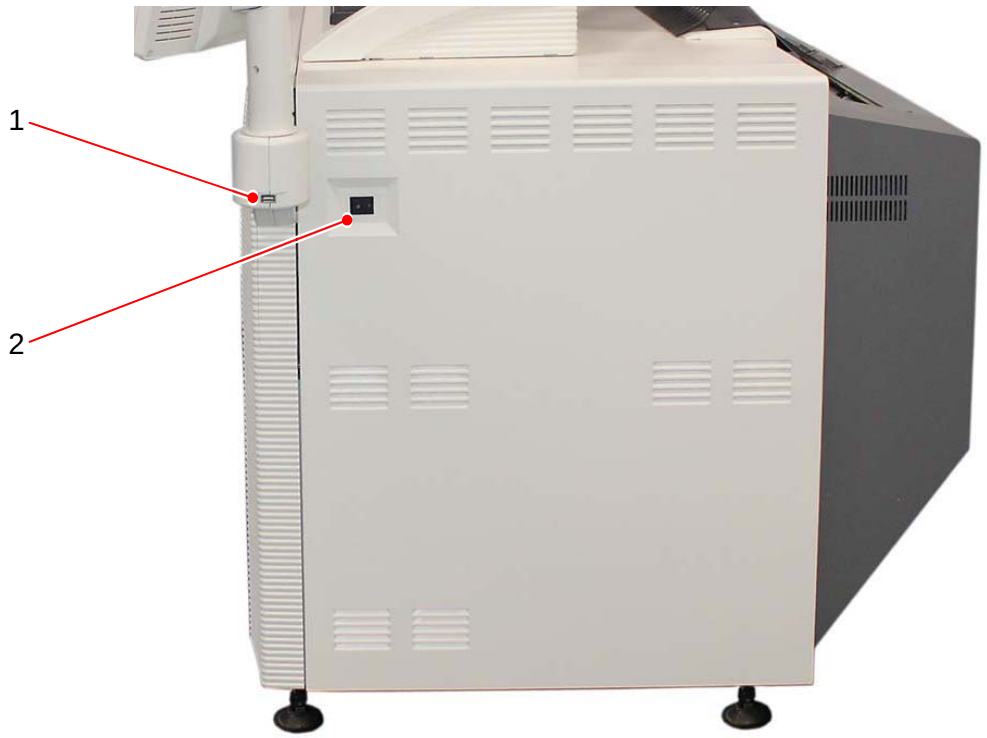
Color	Condition	Status
Green	Light	Ready, Printing
Green	Blink	Warming up.
Orange	Light	Operator Call Error
Red	Light	Service Call Error
Blue	Light	Warm sleep
Blue	Light	Cold sleep
light purple	Light	When printer is power-off and print controller is still power on.

1. 3. 2 Left side view



	Name of part	Function
1	Toner Cartridge	4 Toner Cartridges (cyan, magenta, yellow and black) supplies the toner little by little.
2	Media Feeding Knob	When the paper jam occurs, the media is fed by rotating this knob.
3	Unlock Lever (for the Feeder Unit)	When the paper jam occurs, the Feeder Unit is lowered by this lever to remove the jammed media.
4	Left Side Cover	Open here to replace the Toner Cartridge.
5	Exhaust Fan	It is used for exhausting air inside the machine.
6	Waste Toner Box	Collects the wasted toner.

1. 3. 3 Right side view



	Name of part	Function
1	USB Port	Your USB flash memory storage can be installed here. 5VDC max.
2	Power Switch	Turns on/off the Printer.

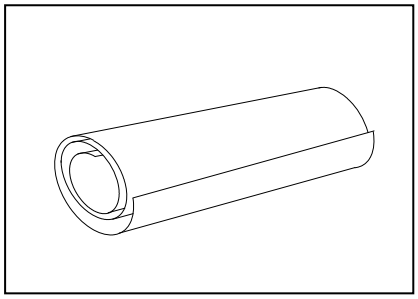
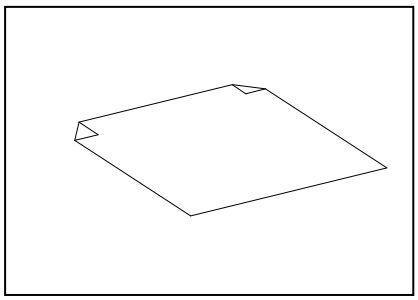
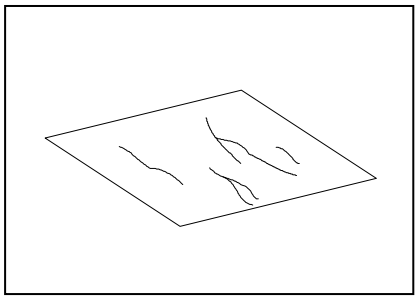
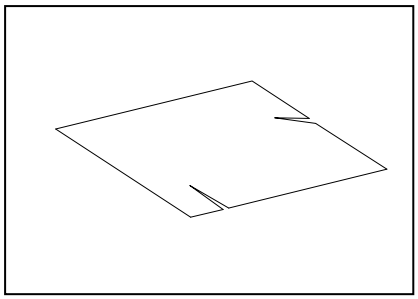
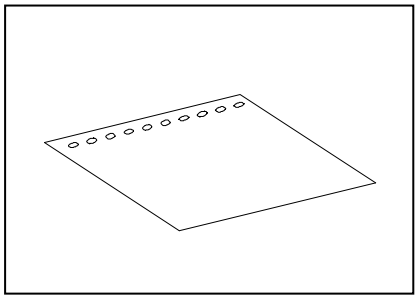
1. 3. 4 Rear view

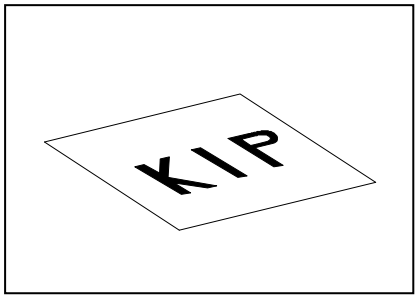
	Name of part	Function
1	Fuser Knob	Rotate this knob when removing the misfed paper in the Fuser Unit.
2	Upper Exit Unit	It ejects prints upward or backward.
3	Fuser Cover	Prints come from the opening on this. Open the Fuser Cover when you remove the paper misfed inside the Fuser Unit.
4	Breaker	It is possible to shut off supplying the AC power.
5	Stacker Port	For a dedicated Auto Stacker for the Printer (DC24V 2A)
6	Inlet Socket	Connect the Power Cord here.

1. 4 Specifications for the Printing Paper

1. 4. 1 Papers not available to use

Do not use the following kinds of printing paper. Doing so may damage the print engine.

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

Pre-printed	
Extremely slippery	
Extremely sticky	
Extremely thin and soft	
OHP Film	

⚠ CAUTION

Do not use the paper with staple, or do not use such conductive paper as aluminium foil and carbon paper.
The above may result in a danger of fire

⚠ NOTE

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

(2) Print image may become defective if the print paper has an excess curl.

(3) It will become a cause for paper mis-feed, defective print image or paper creasing 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 cause a defective printing. Removing one round on the surface of the tracing roll paper from the beginning is recommended.
Refer to [2.3 Replacing Roll Media].

1. 4. 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. 4. 3 Treatment against environmental condition

Take a necessary treatment according to the environmental condition as shown below.

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.	Remove the paper from the machine right after the completion of print, and keep it in a polyethylene bag.

1. 5 Specifications for Scan Original (KIP860 only)

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. 5. 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. 5. 2 Special Documents

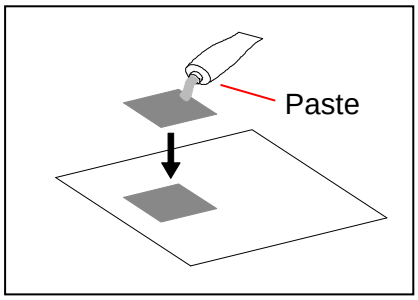
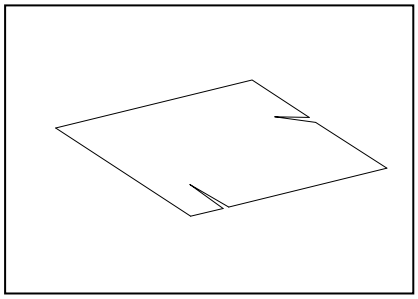
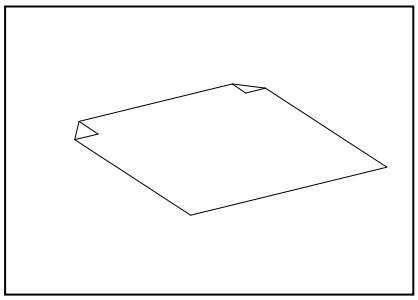
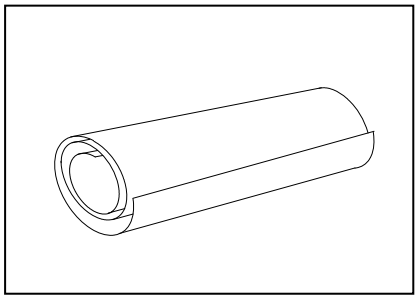
The following kinds of originals are “special”. It is possible to scan them, **but the image quality and feed reliability are not guaranteed**.

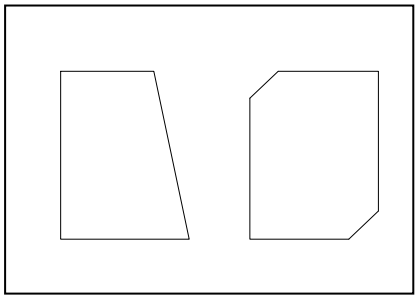
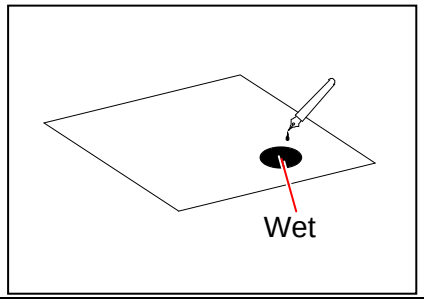
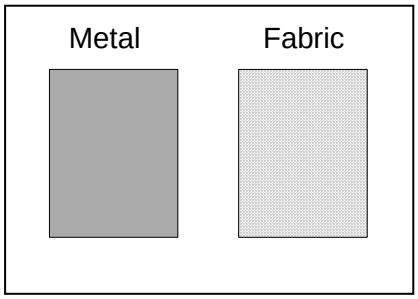
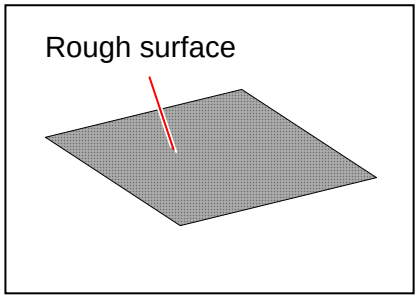
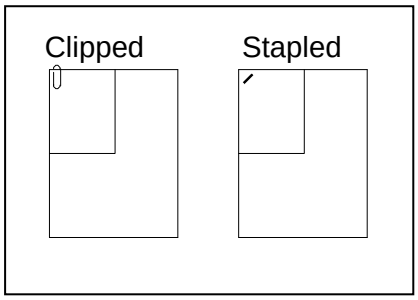
(1) The type of original is acceptable, but the thickness and type may not be:
    Booklets
    Original with a Hanger
    Cut and Pasted originals
(2) These original may not damage the scanner, but these types are NOT recommended: following ones.
    Cloth
    Aluminium Kent Paper

1. 5. 3 “Do Not Scan” Originals

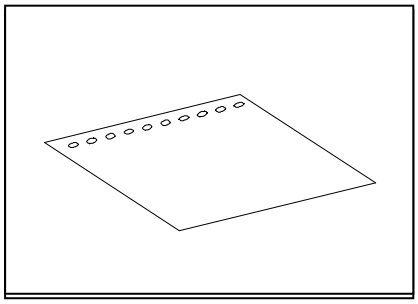
It is impossible to use the following types of originals because they are likely to damage the scanner.

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	

Chapter 2

Installation

Please refer the “KIP 800 Series - Setup Guides” (total of three documents) for most current procedures for the installation of the KIP 800 Series.

The Setup Guides are:

a) included with each new printer (hardcopy)

b) posted on the KIP website for download (PDF format)

Chapter 3

Print / Scan Process & Control

3. 1 General Outline of the Print Process

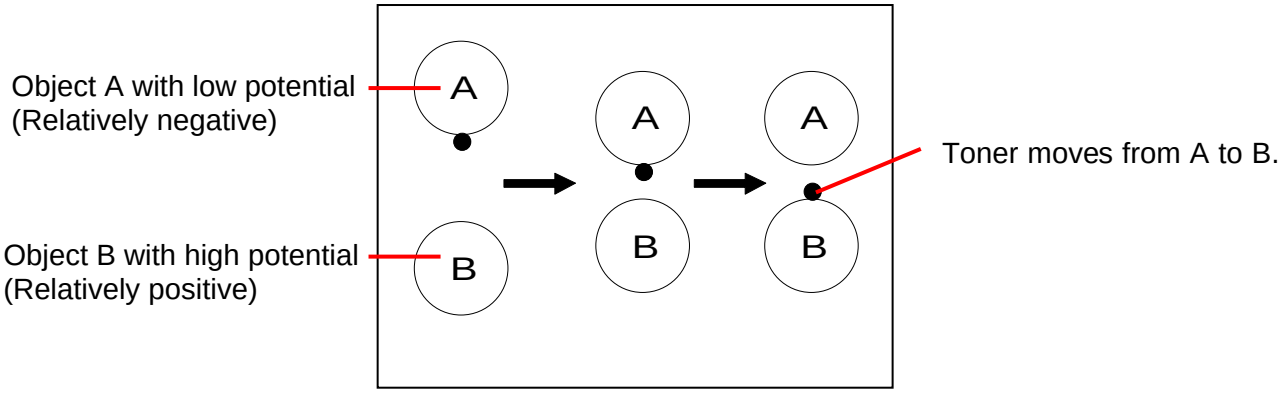
3. 1. 1 Characteristic of toner

The toner of KIP product has a characteristic to be charged “negative”, which tends to stick to a more “positive” object.

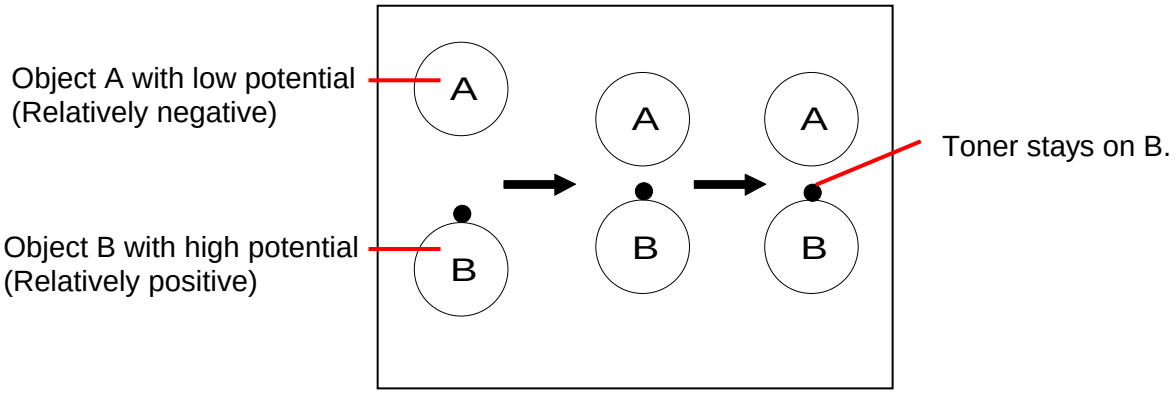
Suppose that there are objects A and B, and the situation is as follows.

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 sticks 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. And the bigger difference of voltage between objects A and B allows more toner to move between them. 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 C7800 controls the electric potentials properly operating each part as Drum, Corona Units and Developer Unit. The movement of toner is controlled correctly and several processes as Development, Toner Transfer, Drum Cleaning and etc. are performed.

3. 1. 2 Overall flow of print process

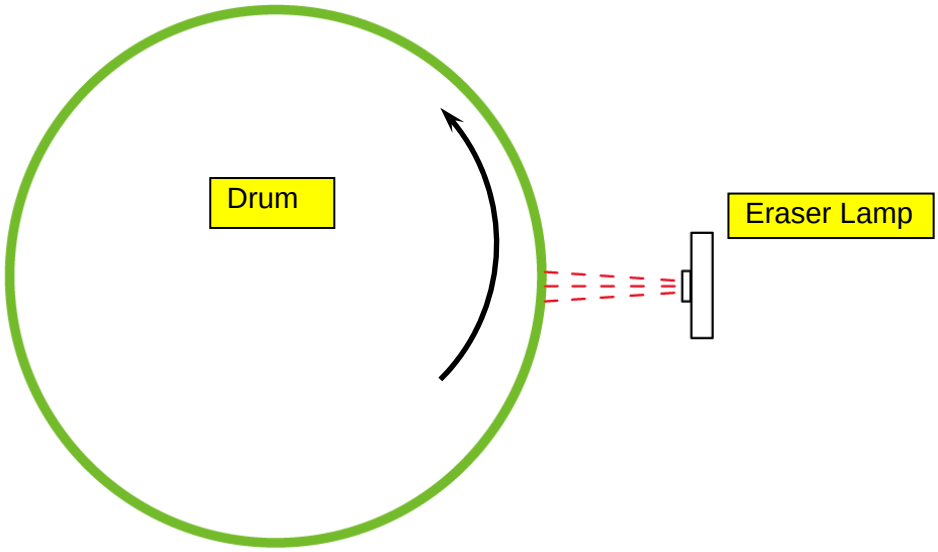
Print process consists of the following 12 steps.

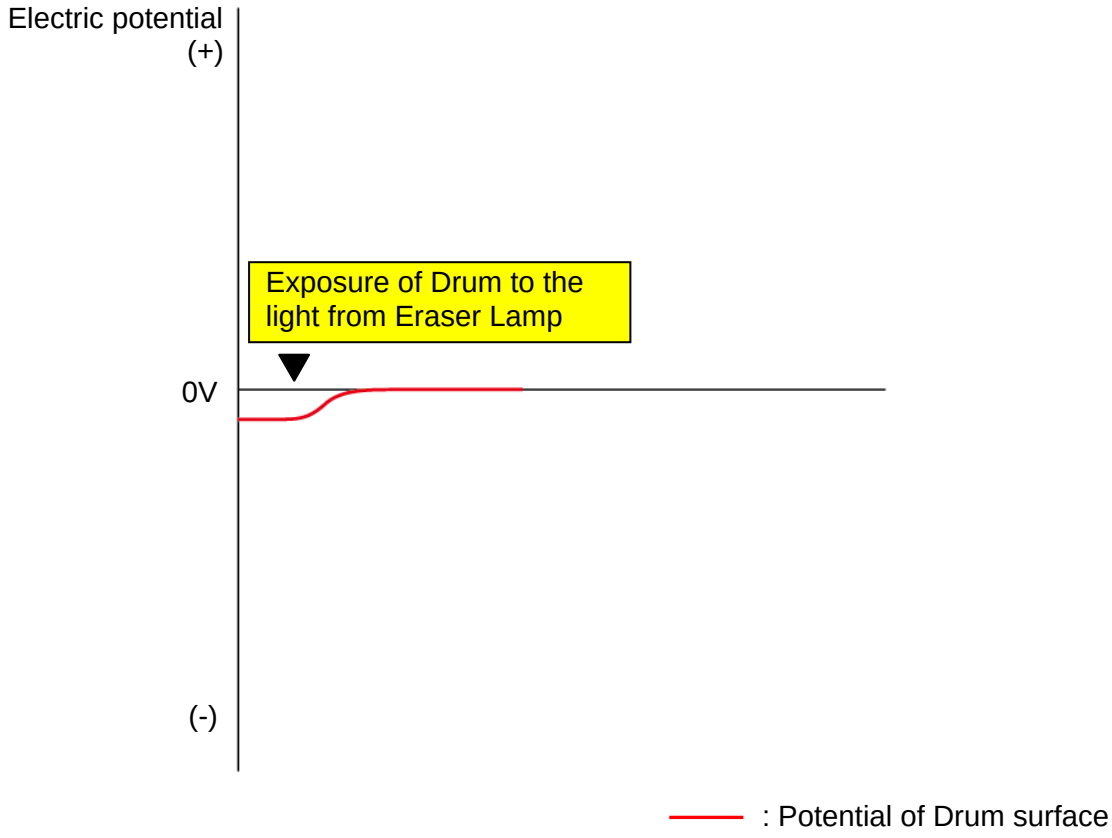
(1) Drum discharging (Removal of negative charges)
(2) Drum charging by Image Corona
(3) Exposure
(4) Development
(5) Primary transfer
(6) Drum cleaning (Removal of residual toner)
(7) Cut of media
(8) Secondary transfer
(9) Discharging of media (Separation from Transfer Belt)
(10) Fusing & media tension adjustment
(11) Ejection of print
(12) Cleaning of Transfer Belt (Removal of residual toner)

3. 2 Description of Each Step of Print Process

3. 2. 1 Drum discharging (Removal of negative charges)

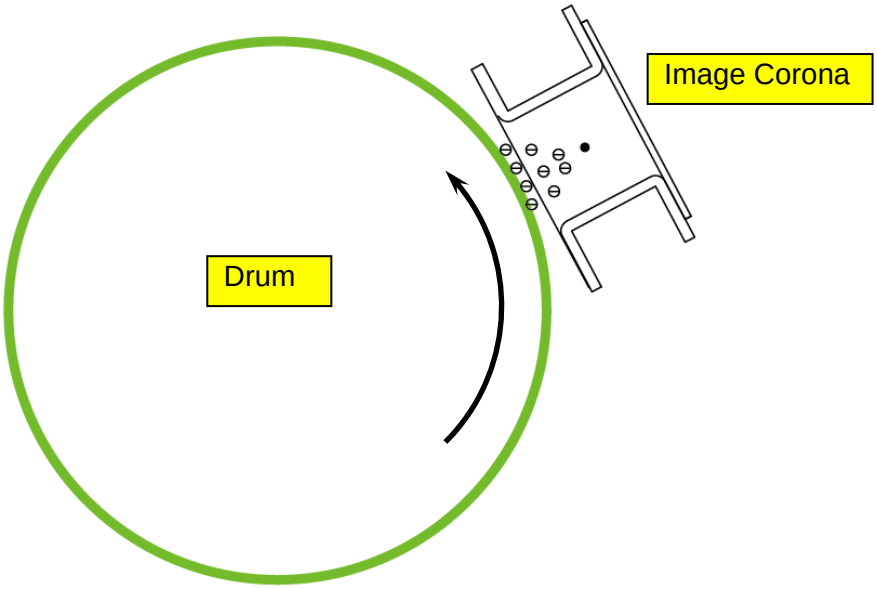
Some negative electric charges are still remaining on the Drum after completing previous image process. These negative charges must be removed before starting the next image process. As the Drum has a characteristic to lose the negative electric charges when exposed to the light, it is rotated and evenly exposed to the infrared light from the Eraser Lamp. All electric potential are removed so the Drum surface becomes 0V.

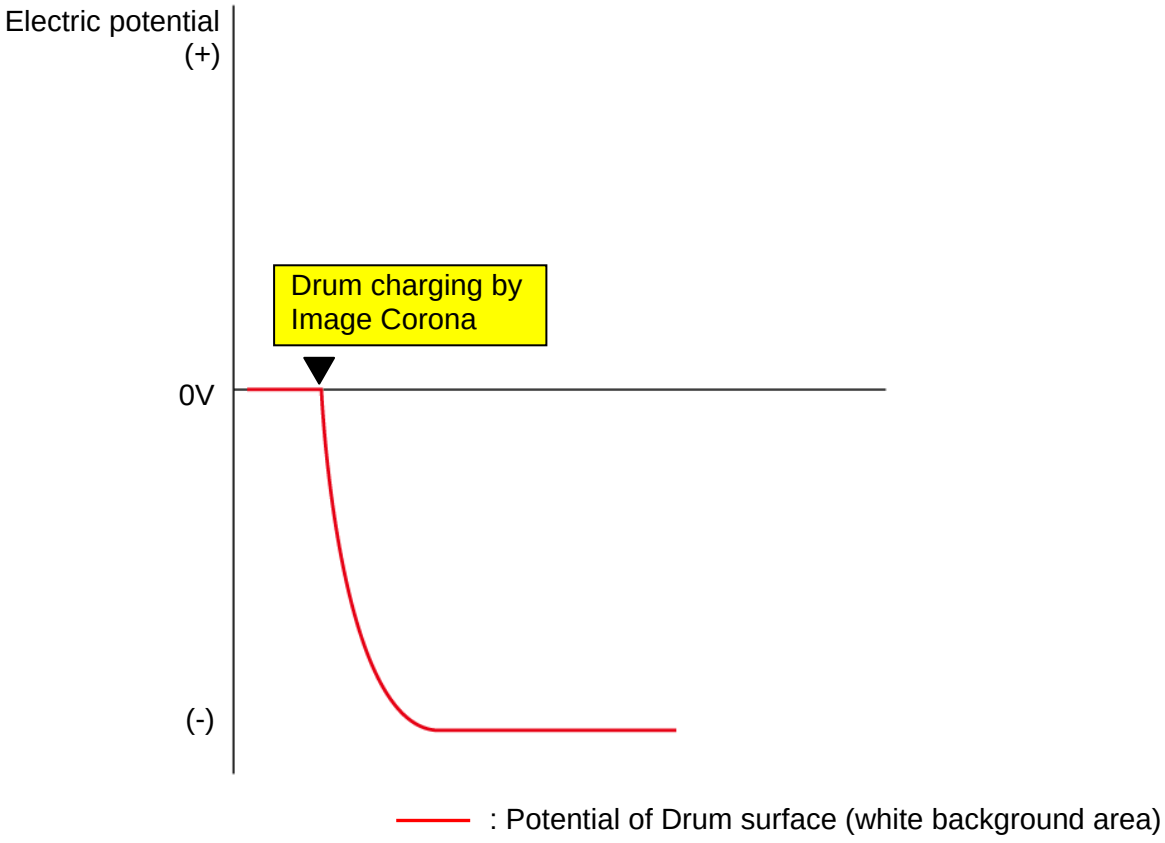




3. 2. 2 Drum charging by Image Corona

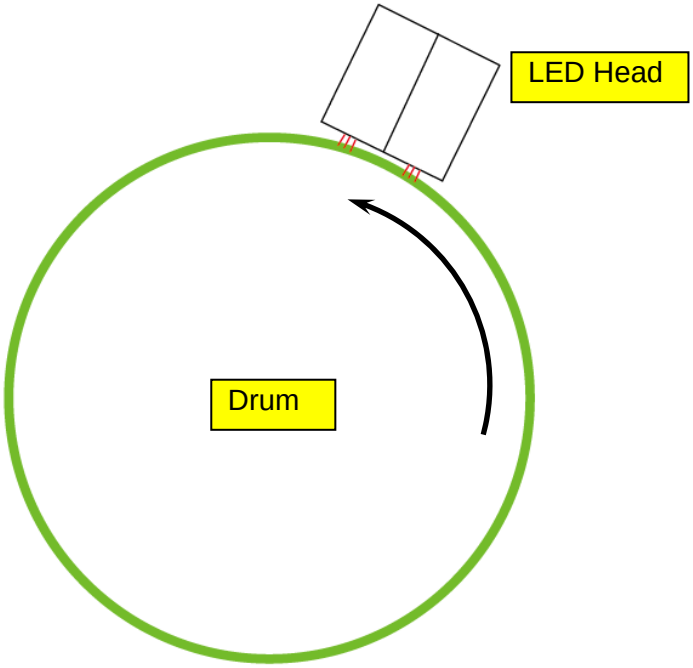
The Image Corona takes negative discharging, and as a result the Drum surface is charged negatively by about -500V evenly. The area of Drum charged by about -500V corresponds to the white background area of the printed image.

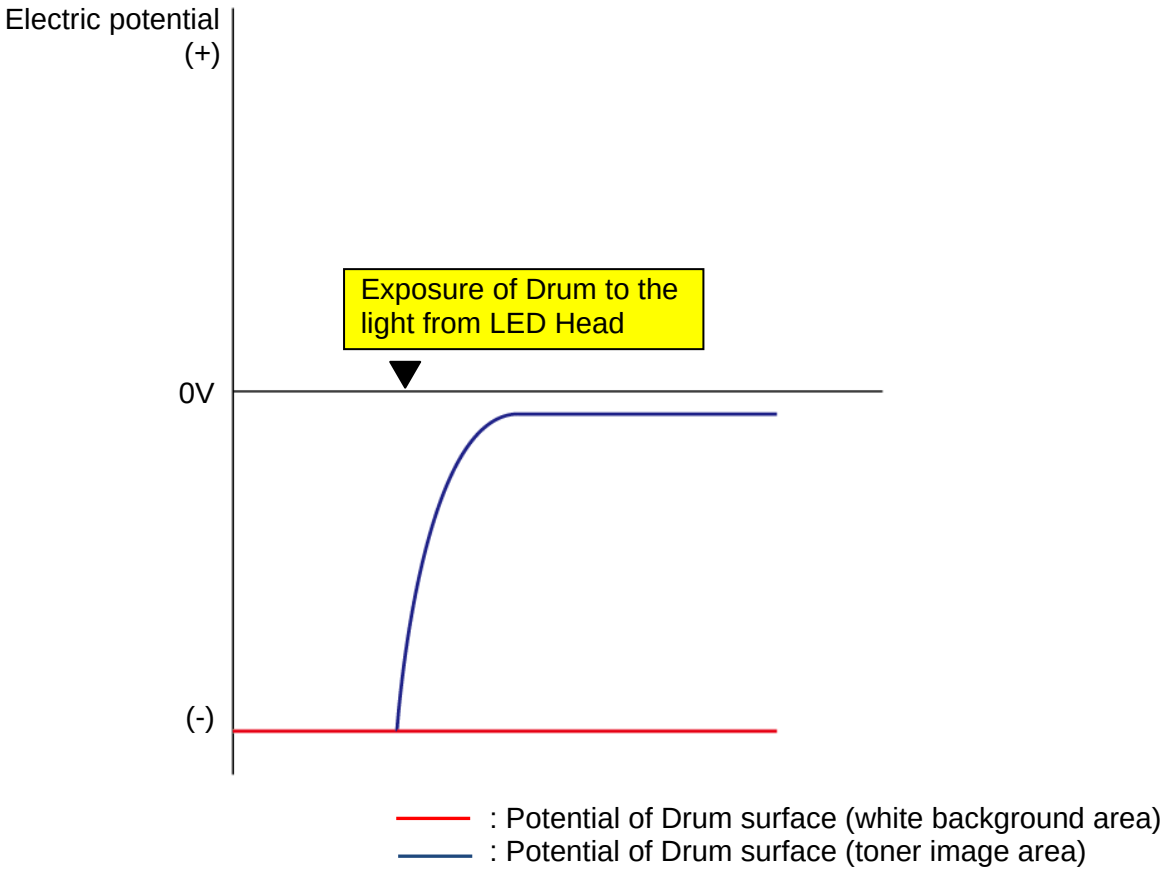




3. 2. 3 Exposure

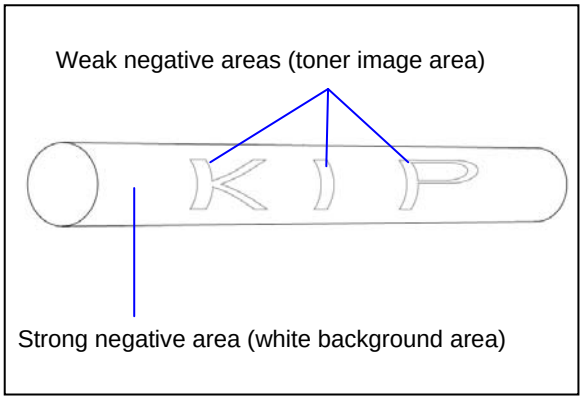
According to the printed image pattern, the LED Head throws light onto some areas of Drum surface that corresponds to the toner image area of printed image pattern. As the Drum has a characteristic to lose the negative electric charges when exposed to the light, the potential of the Drum areas exposed to the light increases to about -30V. Other areas of Drum surface not exposed to the light keeps a strong negative potential of about -500V which has been given by the Image Corona.





An invisible electric image pattern that consists of strongly negative area and weak negative area is formed on the Drum as a result. (This is called “Electrostatic Latent Image”.)

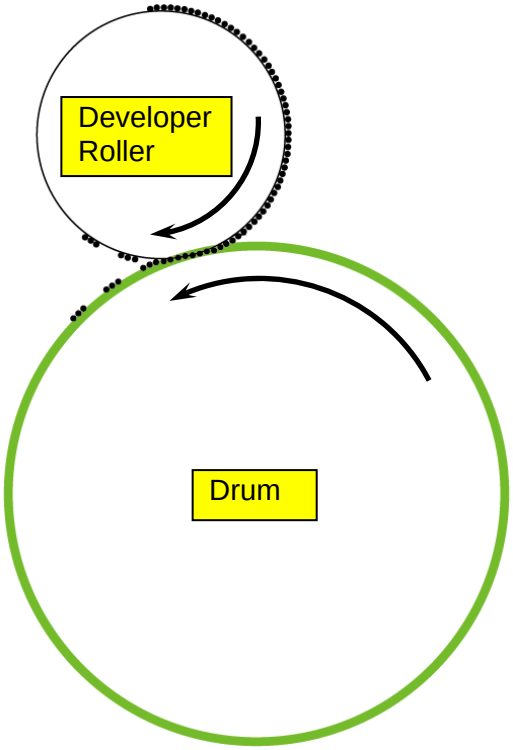
(Potentials of Drum surface after Exposure)



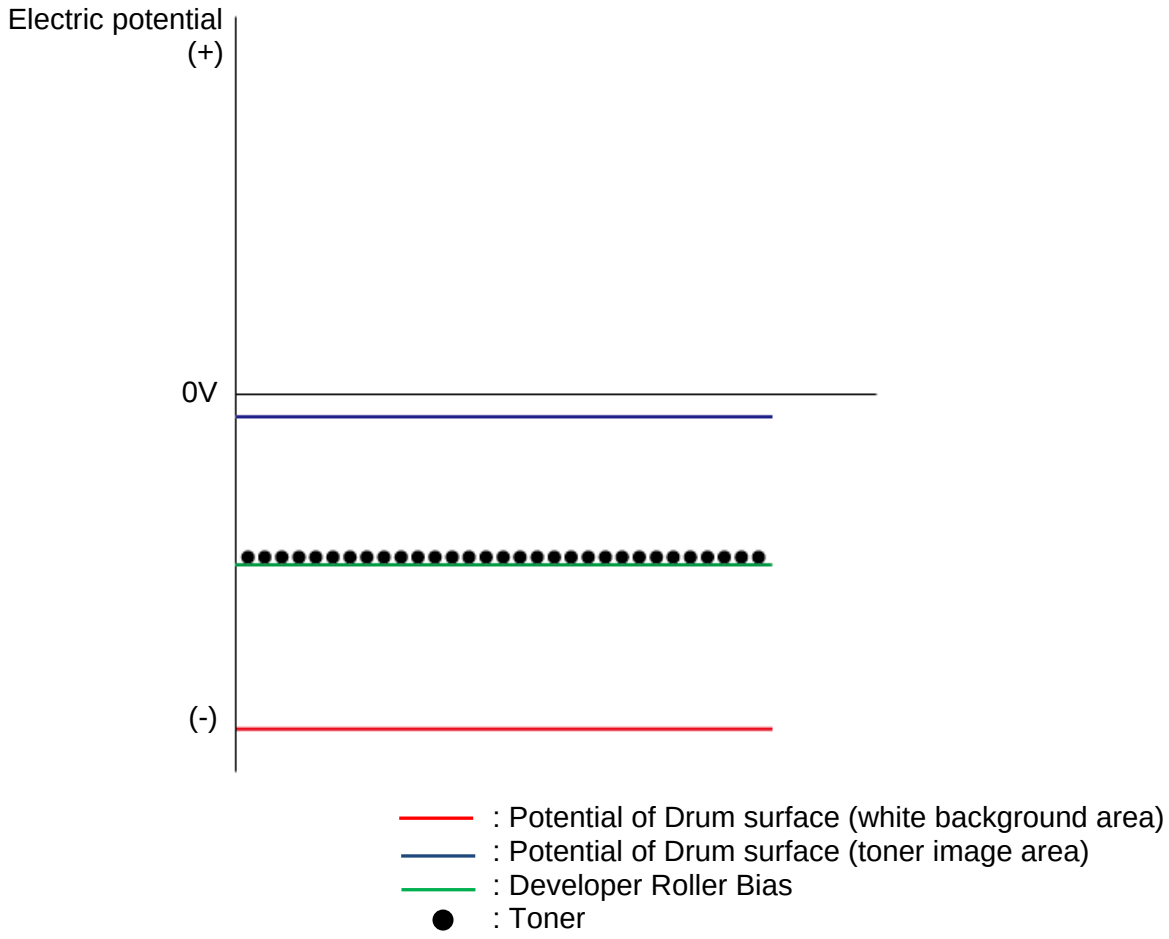
Reference

The actual potential of the Drum areas exposed to the LED light is not always same but it slightly differs “area to area” due to Image Enhancement.

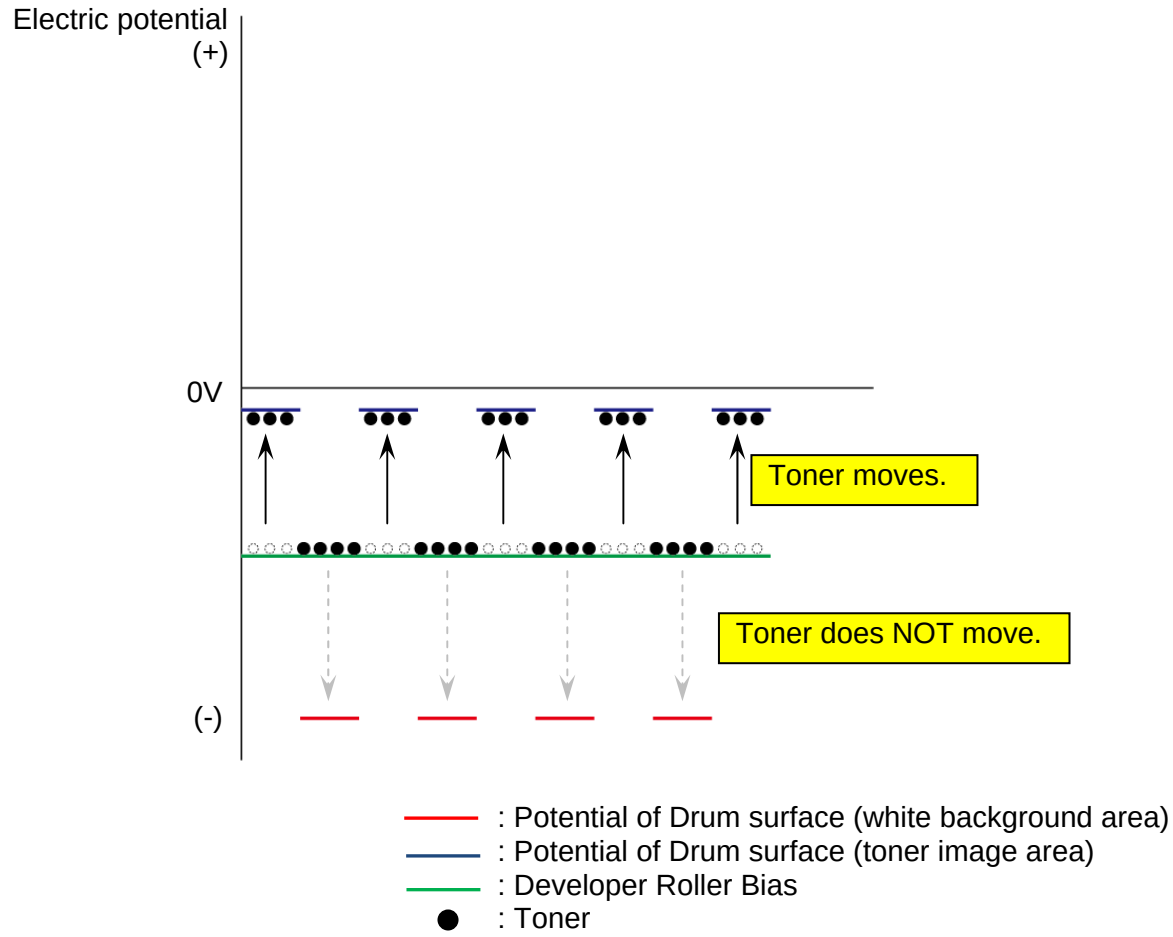
3. 2. 4 Development

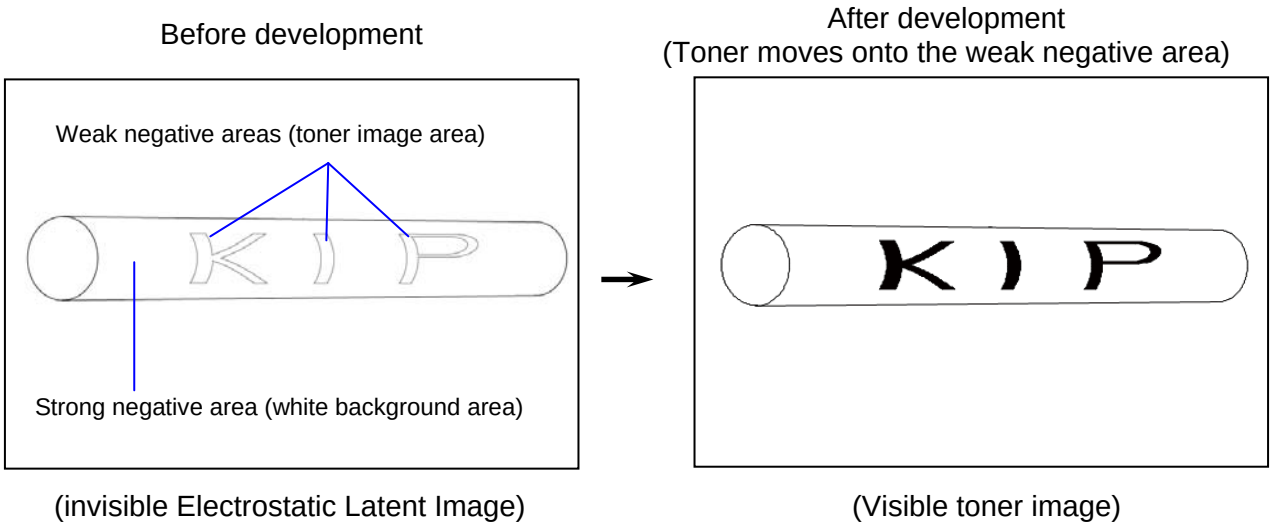


Developer Roller of each color is evenly covered with the toner, and it firmly contacts the Drum. Developer Roller is supplied with a voltage called “Developer Roller Bias” (about -200V) that is properly and flexibly adjusted by the Auto Density Control. Developer Roller Bias is “more negative” than the weak negative Drum area (about -30V : toner image area) and also “less negative” than the strong negative Drum area (about -500V : white background area). The relationship of potentials among these 3 are as follows.



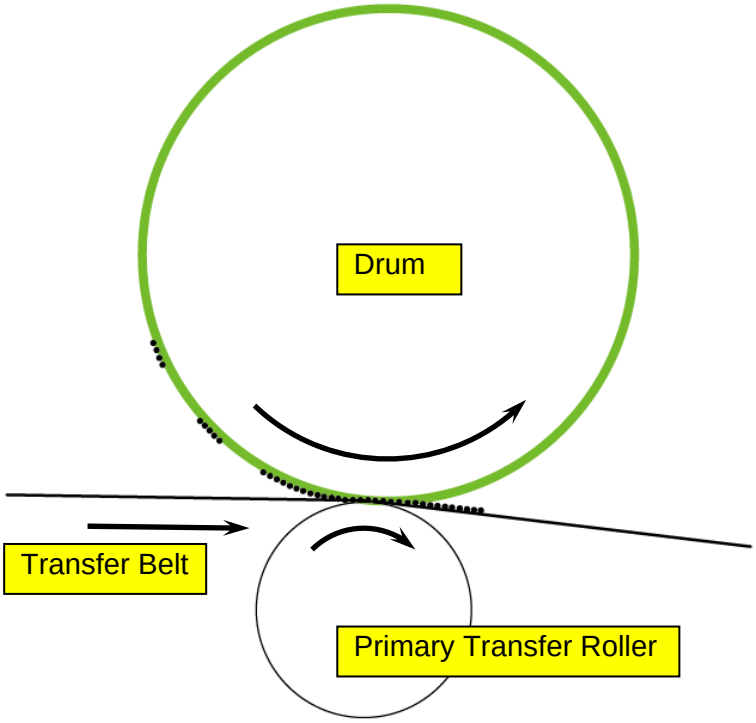
Seen from the Developer Roller Bias which is about -200V, the weak negative Drum area that is charged by about -30V is relatively “positive”, so the toner moves from the Developer Roller to this Drum area. On the other hand, the strong negative Drum area that is charged by about -500V is relatively “negative” when seen from the Developer Roller Bias (about -200V), so the toner remains on the Drum without moving to the Drum. A visible toner image is created on the Drum as a result.



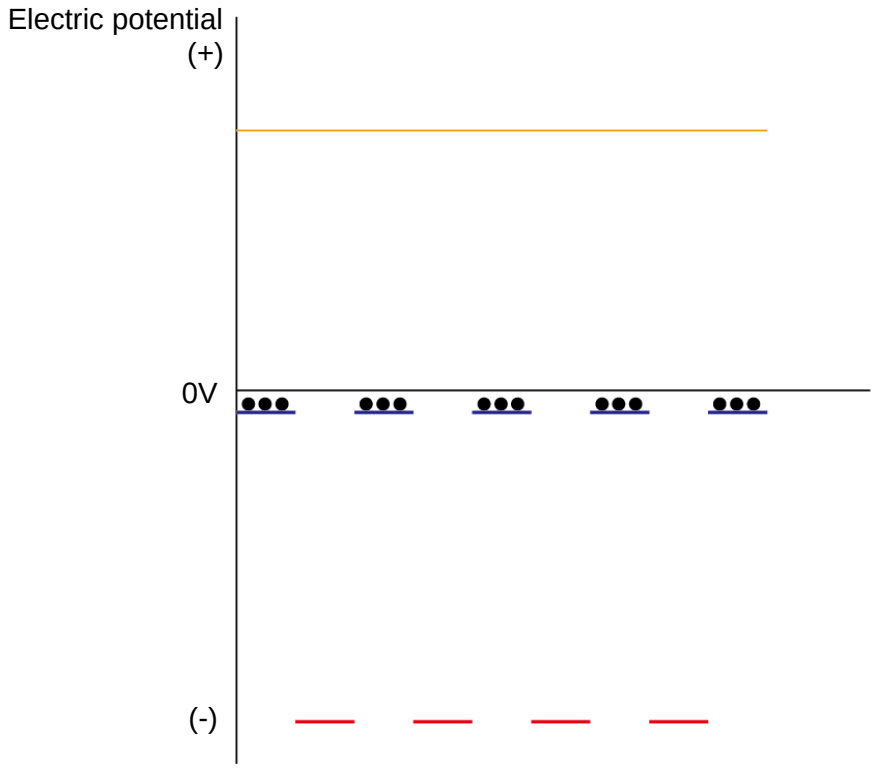


The actual voltage value of Developer Roller Bias is not always same but it is properly adjusted to any optimum voltage within the designated voltage range by the Auto Density Control. The Auto Density Control finds the optimum voltage according to the input from the Density Sensor.

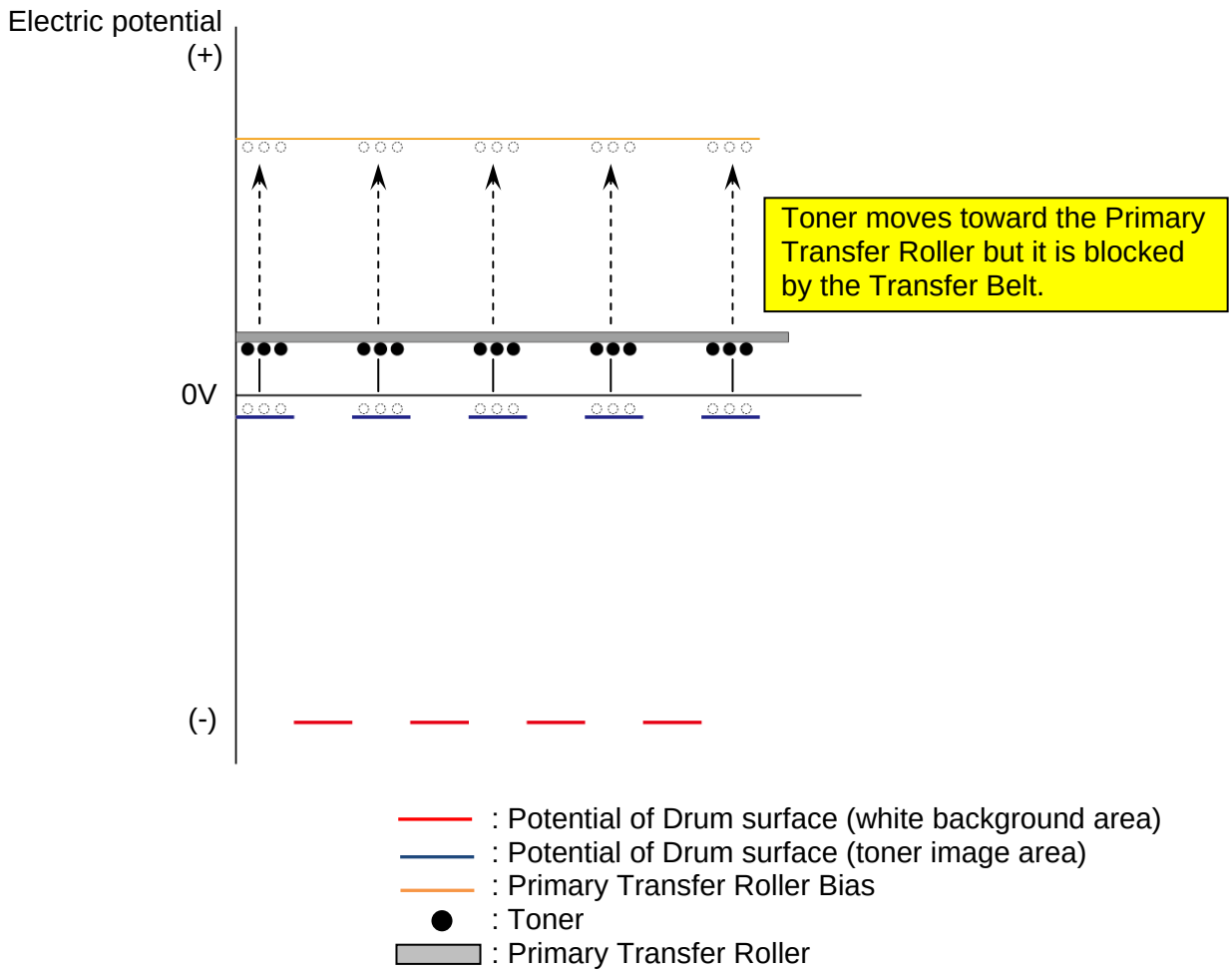
3. 2. 5 Primary Transfer



Primary Transfer Rollers, which are inside of the Transfer Belt, move up to bring the Transfer Belt into contact with Drum when printing starts and both the Drum and the Belt are accelerated enough.
Each Primary Transfer Roller is supplied with a high positive voltage called “Primary Transfer Roller Bias” which appropriately varies in the range of +300 to +2000V according to the environmental condition. On the other hand, the surface of Drum is charged negative and some areas of it are covered with the toner. The following graph shows the relationship of potentials.



Seen from the potential of Drum surface, that of Primary Transfer Roller is relatively “positive”. When the Drum rotates and brings the toner image to the point where it contacts the Transfer Belt, therefore, the toner on the Drum is pulled to the Primary Transfer Roller due to the difference of potential. As the Transfer Belt physically exists between Drum and Primary Transfer Roller, however, the toner pulled to the Primary Transfer Roller is blocked by the Transfer Belt and stays on its surface. This toner is then transported to the next step as the Transfer Belt is driven.

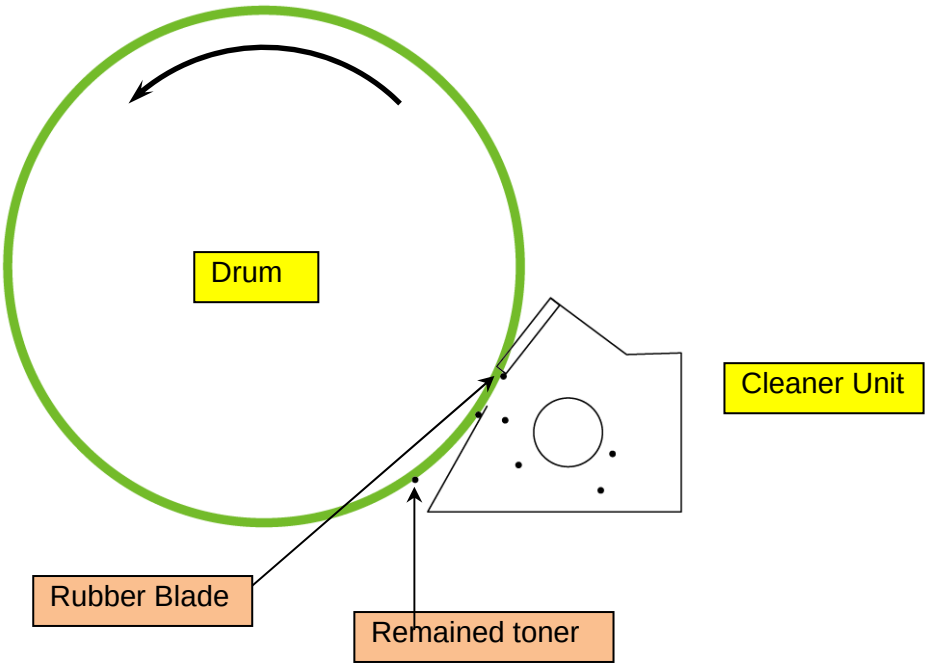


3. 2. 6 Drum Cleaning (Removal of residual toner)

A little toner remains on the Drum even after the Primary Transfer process due to the following reasons.

- A little toner did not move to the Transfer Belt but remained on the Drum.
- A little toner of other colors moved from Transfer Belt to the Drum.

This toner is scraped off by the Cleaner Blade, collected into the Drum Cleaner Unit, and conveyed to the Waste Toner Box.

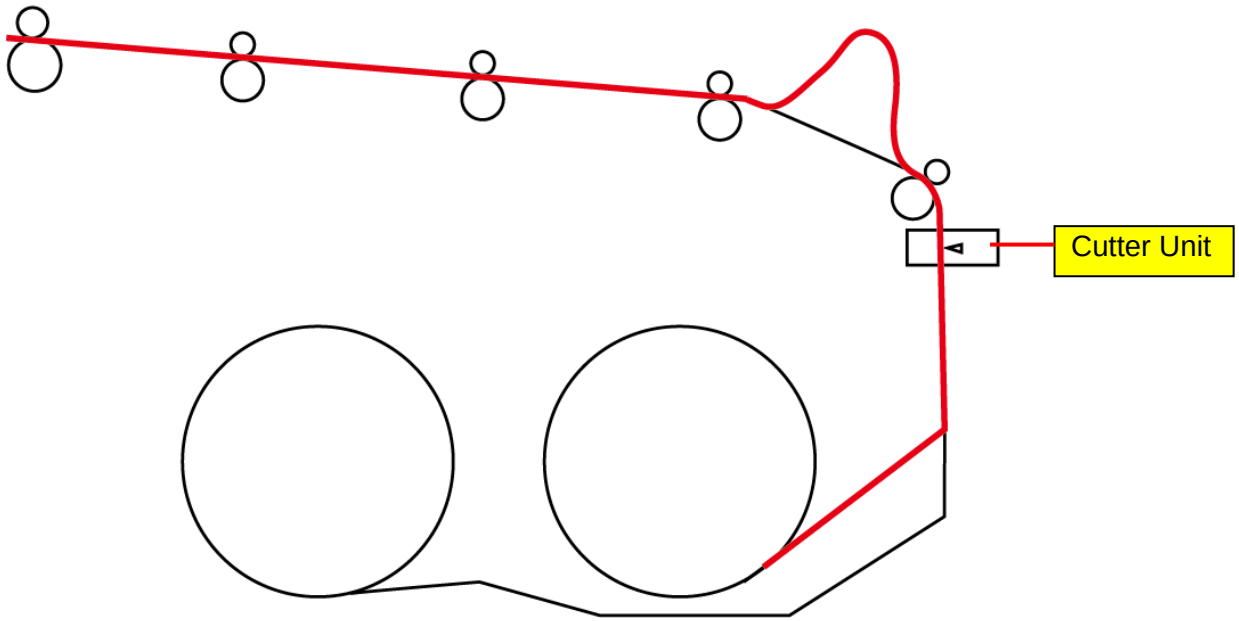


3. 2. 7 Cut of media

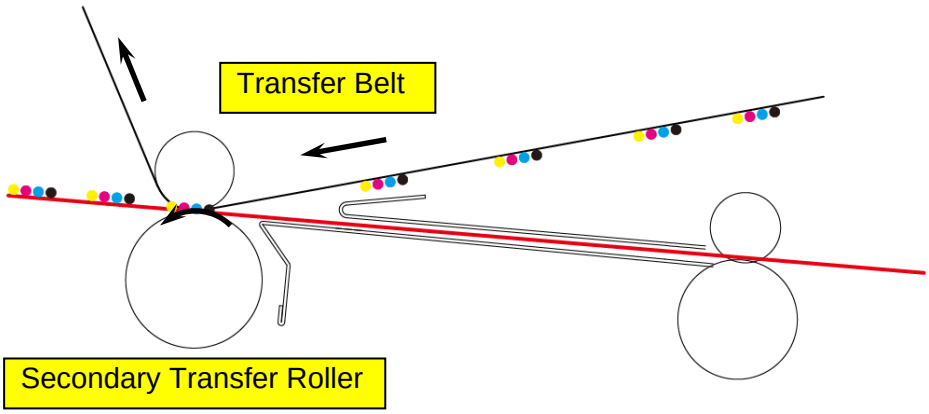
There is a “slider” type Cutter Unit in front of the entrance of Inner Feeder Unit. This cuts the media from all Roll 1 to 4.

- When the print is 360mm or longer, a slack of media is momentarily created right before cutting, which will avoid that the cutting action affects image quality and media feeding. The slack is created between Cutter and the entrance of Inner Feeder unit.
- When the print is shorter than 360mm, printer does not create a slack of media but it just stops feeding the media right before cutting, and it starts feeding again after cutting.

The above behaviours are common for all rolls 1 to 4.

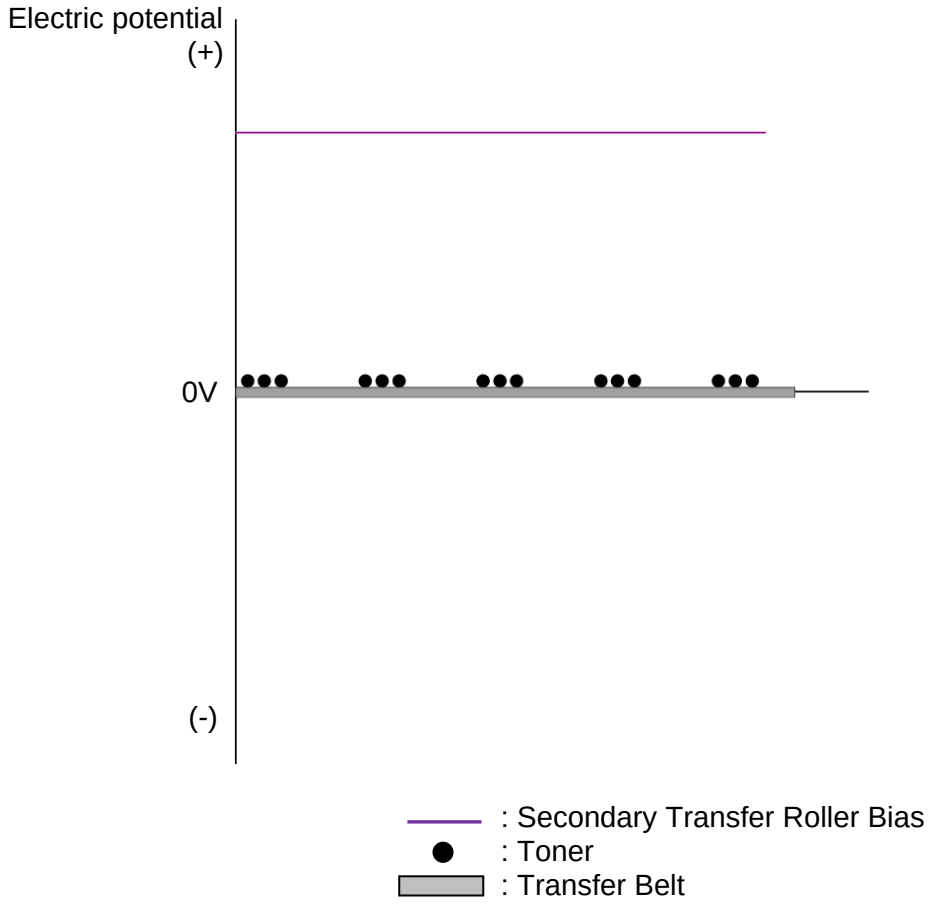


3. 2. 8 Secondary Transfer

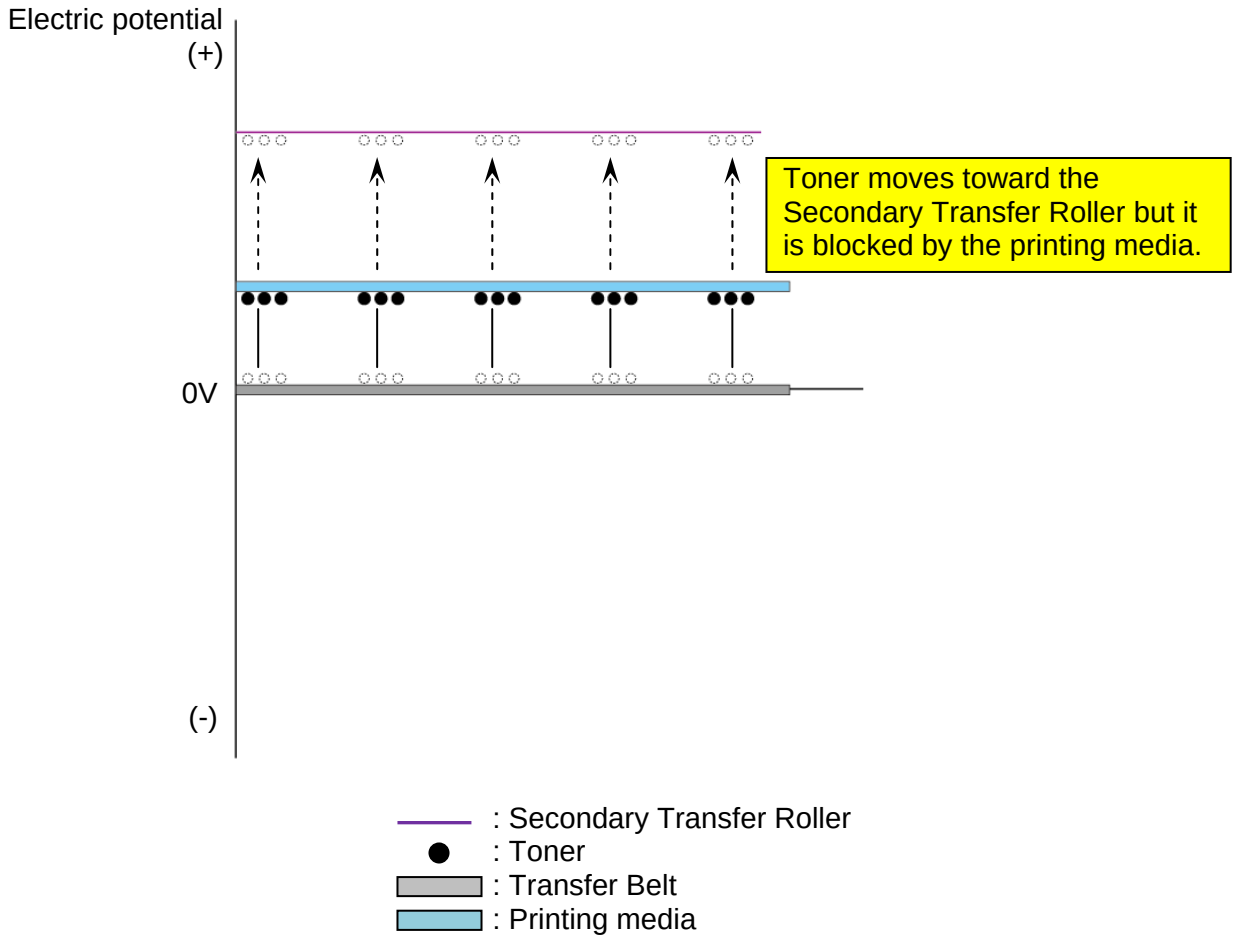


Both the toner image and the printing media are transported to the point where both the Transfer Belt and the Secondary Rollers contact each other, so that the leading edges of them should arrive there simultaneously.

Secondary Transfer Roller is supplied with a high positive voltage called “Secondary Transfer Roller Bias” which appropriately varies in the range of +500 to +3000V according to the environmental condition. On the other hand, the potential of Transfer Belt is almost 0V, and the toner image is on the Transfer Belt. Both of them contact with each other and are rotating in the same direction. The following graph shows the relationship of potentials.



Seen from the potential of Transfer Belt, that of Secondary Transfer Roller is relatively “positive”. When the Transfer Belt rotates and brings the toner image to the point where it contacts the Secondary Transfer Roller, therefore, the toner on the Transfer Belt is pulled to the Secondary Transfer Roller due to the difference of potential. As the printing media physically exists between Transfer Belt and Secondary Transfer Roller, however, the toner pulled to the Secondary Transfer Roller is blocked by the printing media and stays on its surface. This toner is then transported to the next step as the media is transported.

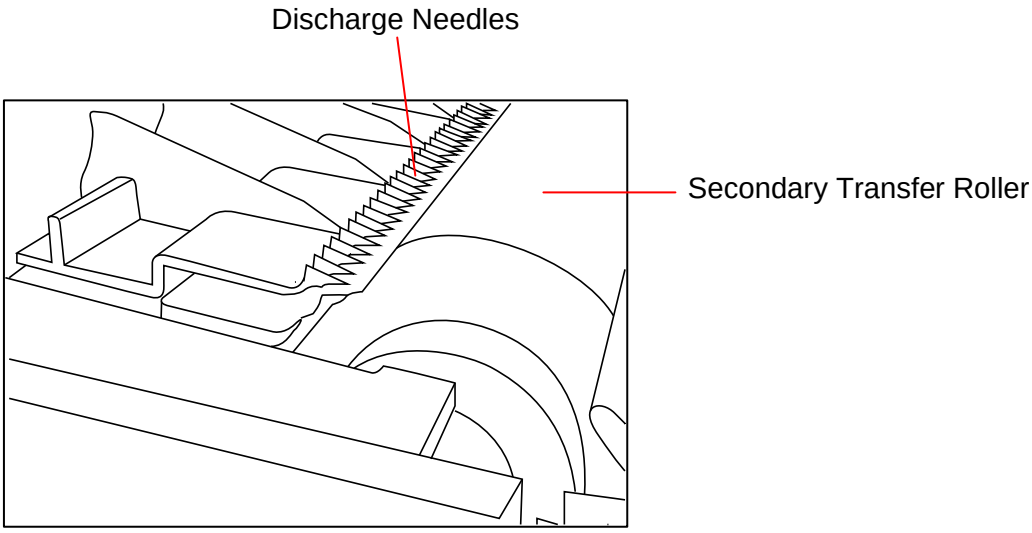


Reference

- When there is a media in between Transfer Belt and Secondary Transfer Roller, a positive voltage ONLY is applied to the Secondary Transfer Roller.
- When there is no media in between, both positive and negative voltages are alternatively applied. The purpose of negative voltage is to remove the toner to prevent the Secondary Transfer Roller to become dirty with toner.

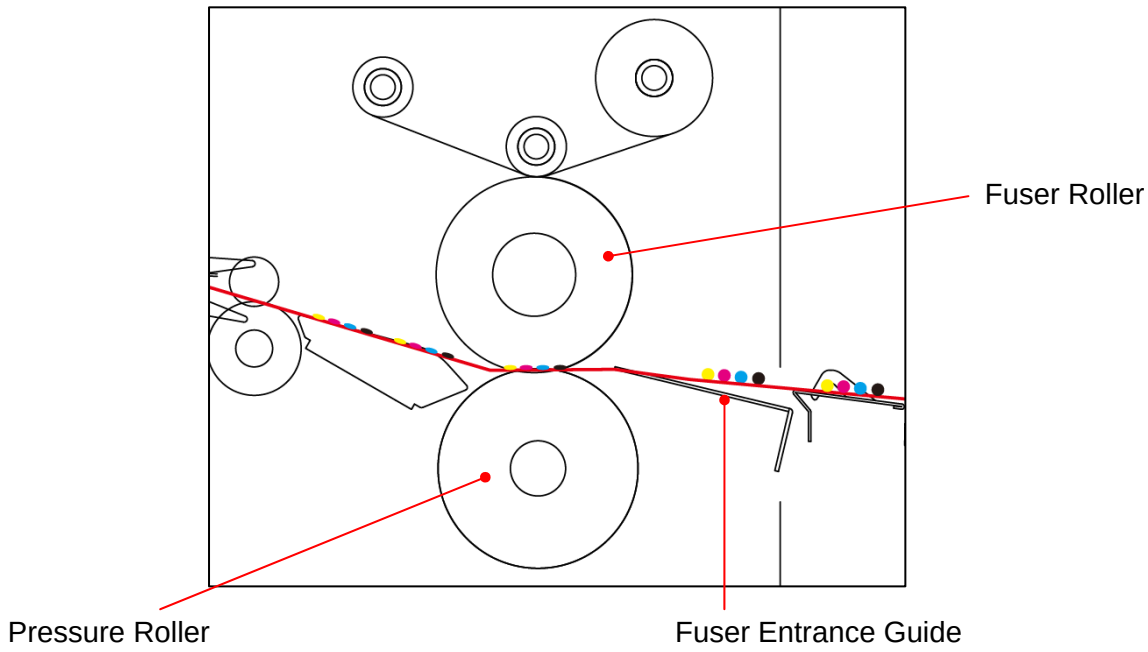
3. 2. 9 Discharging of media (Separation from Transfer Belt)

The printing media is charged positive after the Secondary Transfer process, so it sticks to the Transfer Belt due to the electrostatic force. It is necessary for avoiding a paper jam to smoothly separate the media from Transfer Belt. Therefore, an AC high voltage of 5000Vpp is applied to the Discharge Needles to let them take AC discharging. Both positive and negative charges, which are generated by AC discharging and then given to the printing media and surrounding parts, decrease the electrostatic force and as a result the media separates the Transfer Belt smoothly by its weight.



3. 2.10 Fusing & media tension adjustment

Printing media with unfused toner image is guided to the Fuser section by the Fuser Entrance Guide and then fed in between the Fuser Roller and the Pressure Roller. Both rollers then firmly fixes the toner to the printing media by heating and giving strong pressure.



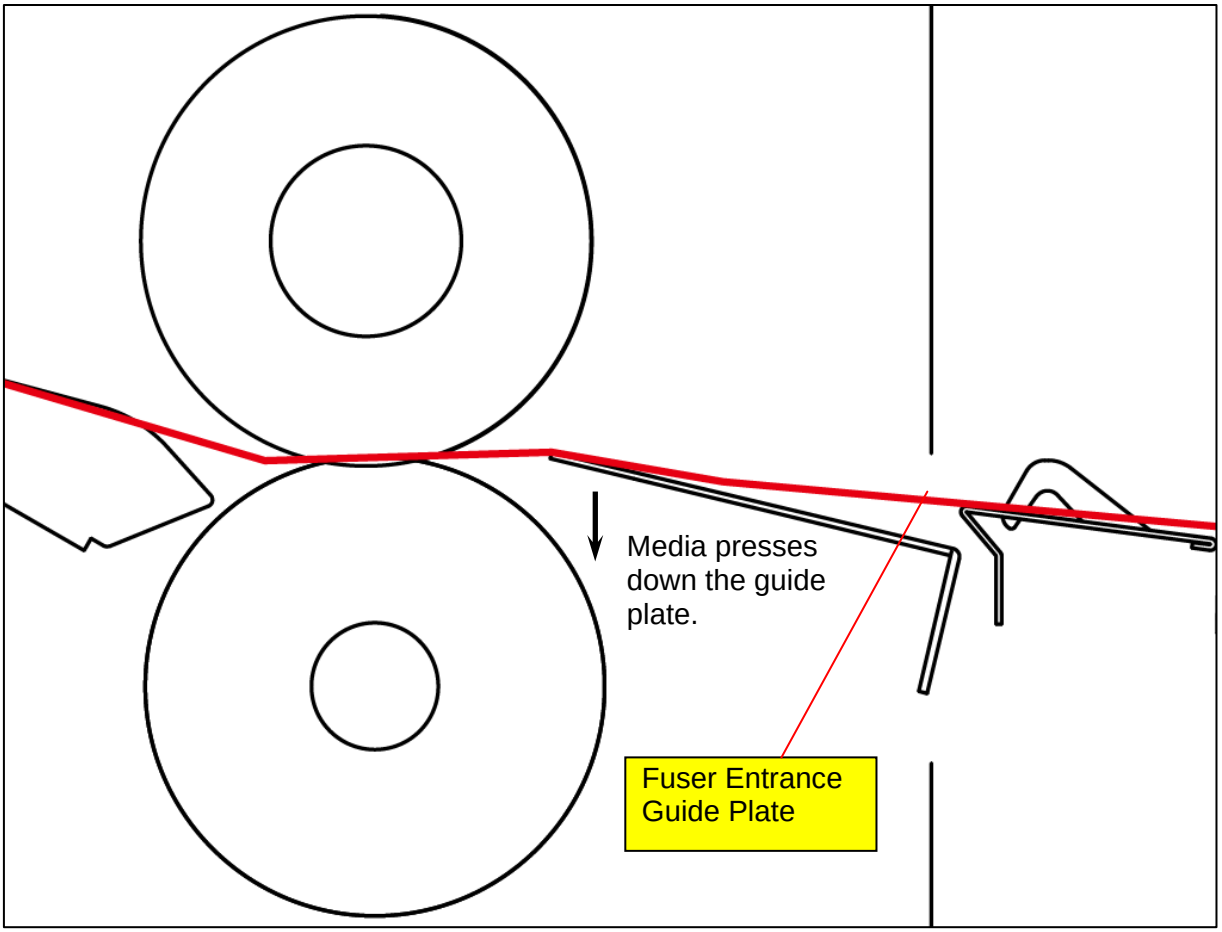
The Fuser section appropriately controls the media tension in order to always transport the media stably.

The Fuser Entrance Guide is a movable plate, which has a sensor actuator on its shaft (support point). When the guide plate is pressed down, the power for pressing down is transmitted to the Fuser Tension Sensor via the actuator on the shaft. And the sensor then outputs certain voltage that varies according to the power to press down the guide plate. The control system reads the output from the sensor and finally considers “how strong” the guide plate is pressed down.

The printing media that is running in the Fuser section is tensioned. The tension is not always constant but it increases and decreases occasionally.

- When the tension of media increases, the Fuser Entrance Guide Plate is press down by stronger power, and the output voltage from Tension Sensor increases as it is pressed more strongly by the actuator.
- When the tension of media decreases, on the contrary, the Fuser Entrance Guide Plate is press down by weaker power, and the output voltage from Tension Sensor decreases as it is pressed less strongly by the actuator.

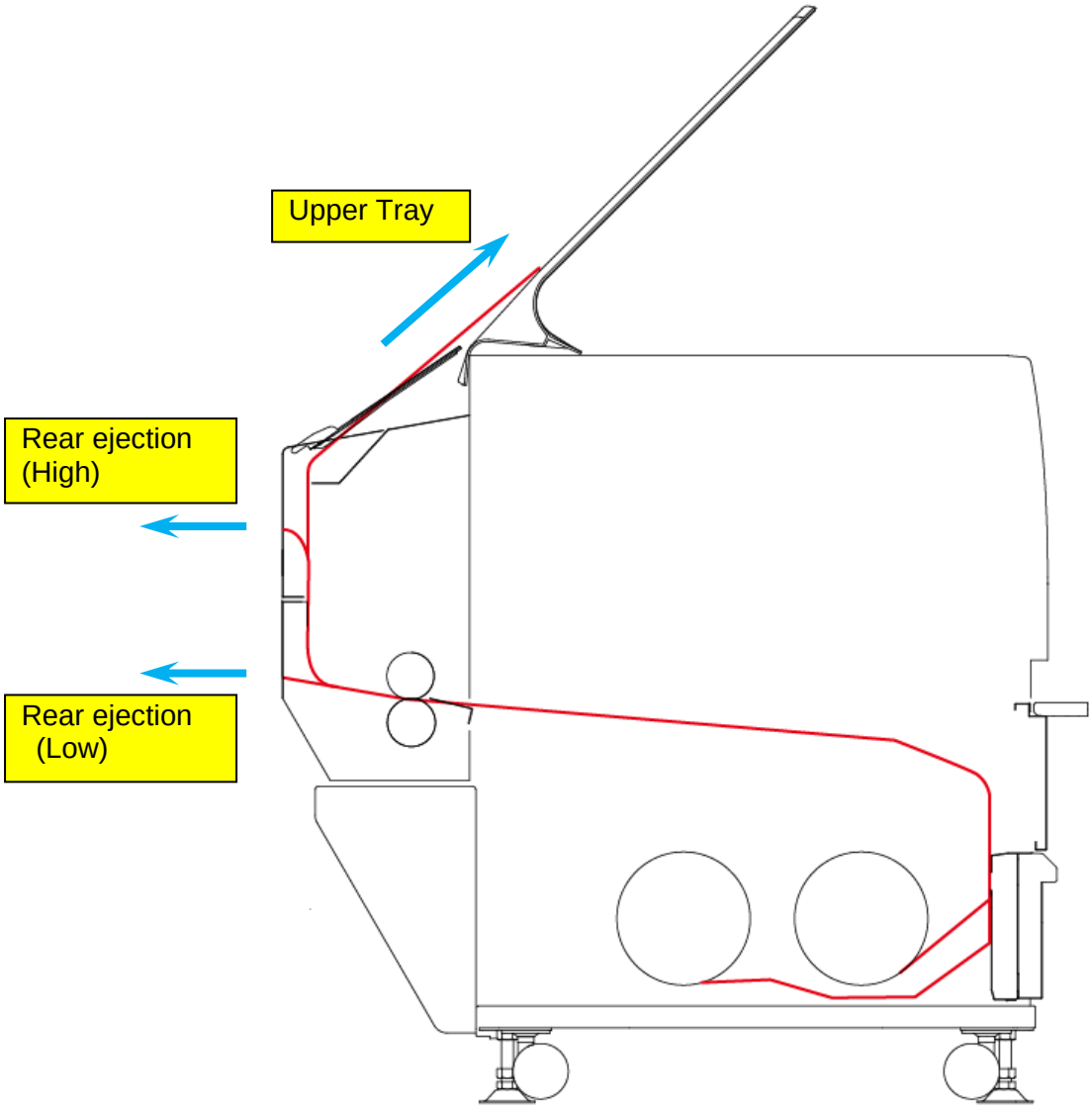
The control system considers the current media tension in real time based on the voltage from the Tension Sensor. It decreases the speed of Fuser Motor when the tension is too strong, and vice versa. This as a result allows for giving a proper tension to the printing media as much as possible throughout printing.



3. 2.11 Ejection of print

Print after fusing is ejected from any of the exits according to the specification in print job. KIP800 series has 3 exits.

- Upper Tray : Available on both 2 & 4 rolls models.
- Rear ejection (High) : Available on 2 rolls models.
  This ejects a print when “rear ejection” is selected on 2 rolls model.
- Rear ejection (Low) : Available on 4 rolls models.
  This ejects a print when “rear ejection” is selected on 4 rolls model.

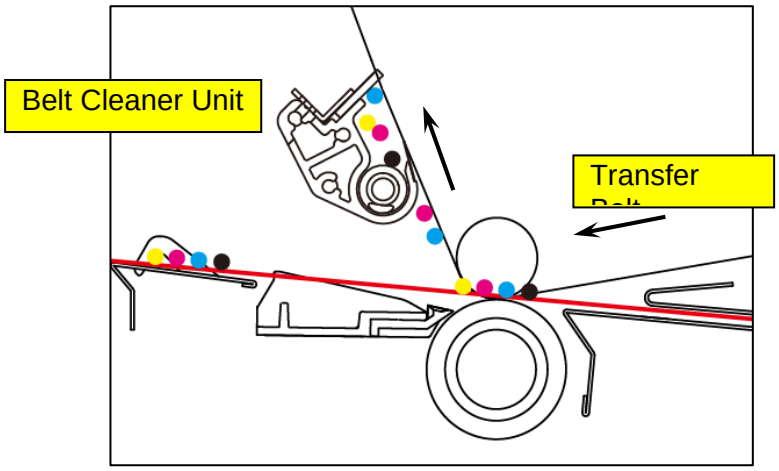


Reference

Selection of rear ejection between “High” and “Low” is available in Backup Data.

3. 2.12 Cleaning of Transfer Belt (Removal of residual toner)

Some toner remains on the Transfer Belt even after the Secondary Transfer process. It is scraped off by the Cleaner Blade, collected into the Belt Cleaner Unit, and conveyed to the Waste Toner Box.



Reference

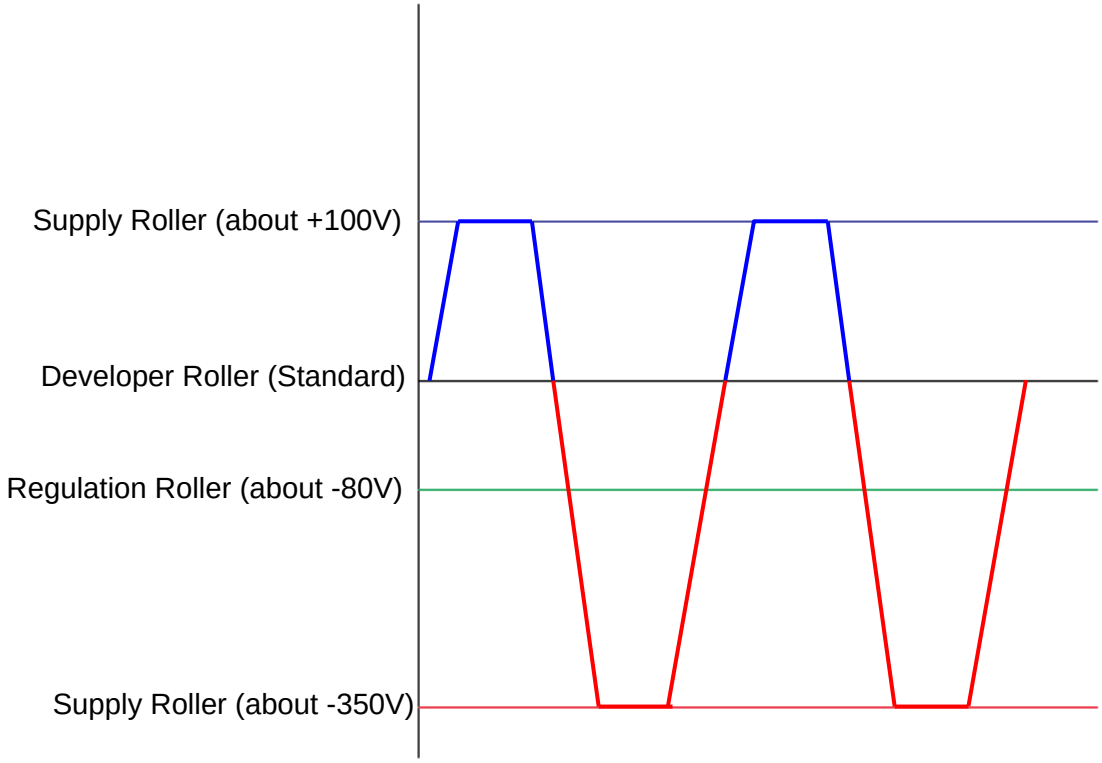
If there remains plenty of toner on the Transfer Belt, in such occasion as after removal of paper jam and etc, the Transfer Belt rotates for 40 seconds continuously for scraping off all remained toner. It is impossible to start printing in this period.

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

Developer Unit has 3 rollers such as “Developer Roller”, “Regulation Roller” and “Supply Roller”. Particular DC voltages are supplied to both Developer Roller and Regulation Roller respectively, while combination of DC and AC voltages are applied to the Supply Roller. The voltage of the Developer Roller is measured against the ground, while the voltages for other rollers are the differential voltage values against the Developer Bias.

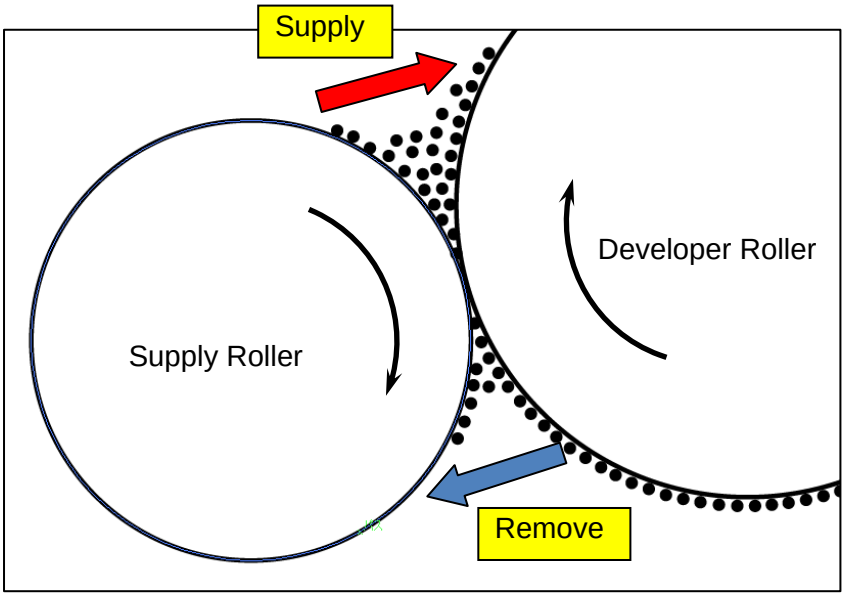
Name of roller	Supplied voltage
Developer Roller	About -200V against the ground
Blade Roller	About -80V against the Developer Roller Bias
Toner Supply Roller	About +100/-350V or peak voltage against the Developer Roller Bias

The following graph shows the relationship of voltages applied to these 3 rollers.



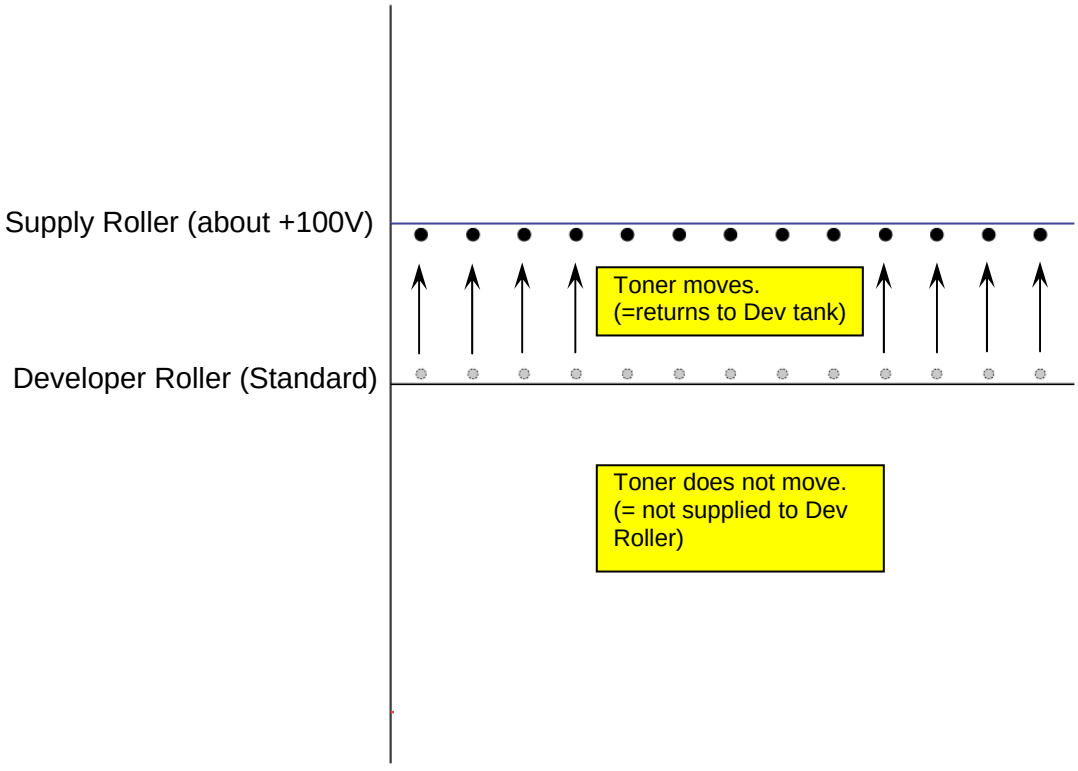
Taking advantage of the difference of voltages, 3 rollers appropriately control the movement of toner in the Developer Unit as in below.

1. Supply Roller and Developer Roller rotate in the same direction, which means 2 rollers move to the other ways respectively at their contact point. What Supply Roller does are (1) to remove the toner on the Developer Roller that did not move onto the Drum in previous development cycle and also (2) to supply fresh toner to the Developer Roller. Both (1) and (2) are performed same time.

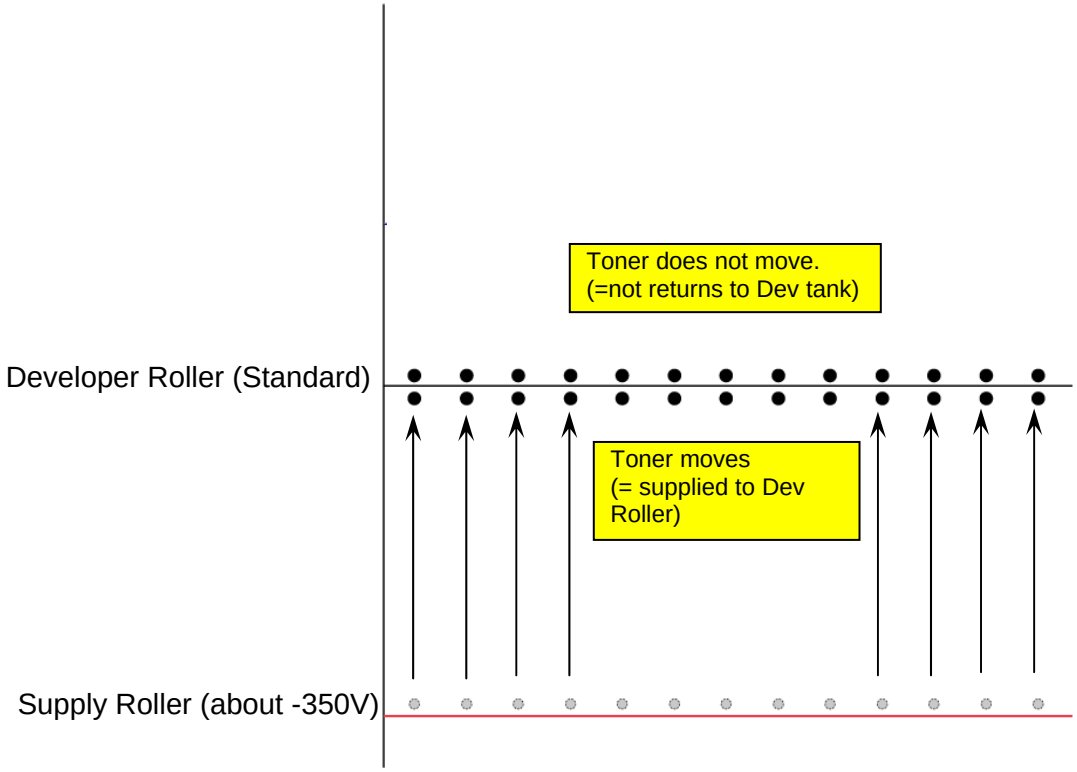


The combination voltage of DC+AC supplied to the Supply Roller sets the peak voltage to +100V/-350V.

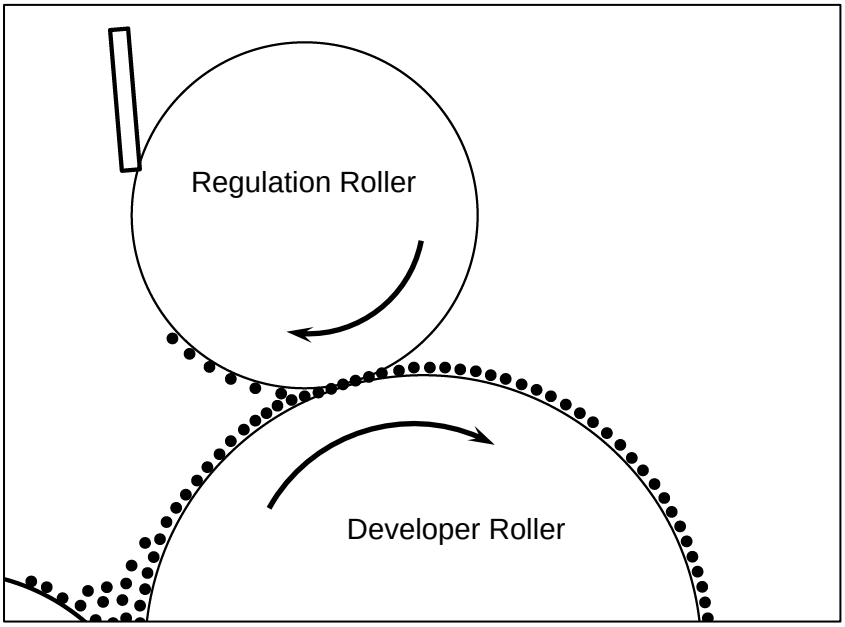
- When the voltage switches to +100V, toner moves from Developer Roller to Supply Roller because the potential of Supply Roller is higher than that of Developer Roller. As a result the toner on the Developer Roller is collected and returned back in the Developer Unit.



- When the voltage switches to -350V, oppositely toner moves from Supply Roller to Developer Roller because the potential of Developer Roller is higher than that of Supply Roller. As a result fresh toner is supplied to the Developer Roller.

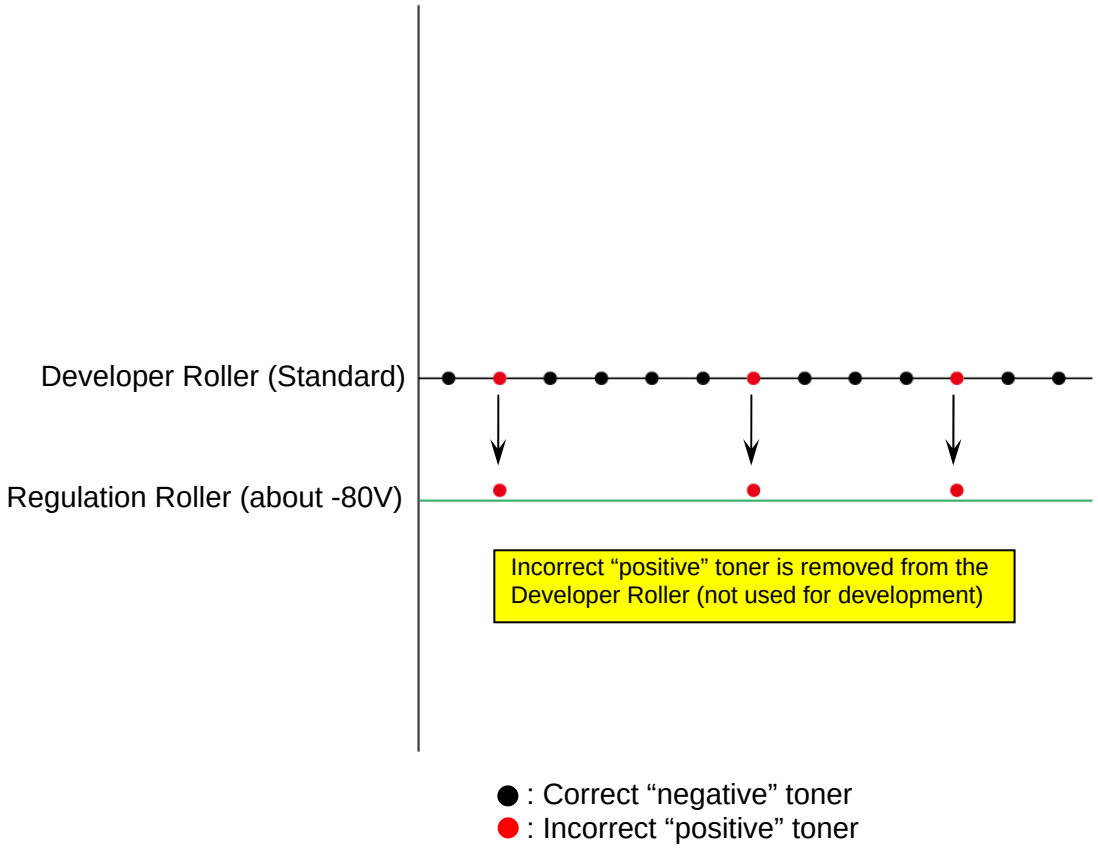


2. Regulation Roller is very strongly pressed to the Developer Roller. Both 2 rollers rotate in the same direction, which means they move to the other ways respectively at their contact point. The voltage supplied to the Regulation Roller is set to about -80V against the Developer Roller Bias. Although the Developer Roller brings plenty of toner to the contact point of 2 rollers, very few amount of toner can pass between 2 rollers because the strong pressure of Regulation Roller greatly limits the amount of toner that can pass between 2 rollers. Also the voltage supplied to the Regulation Roller, which is lower than Developer Roller Bias by 80V, collects “incorrect toner” (=toner incorrectly charged positive) from the Developer Unit to prevent it from passing between 2 rollers. As a result, only very few amount of “correct toner” (=toner correctly charged negative) can pass between 2 rollers which makes very thin layer of toner on the Developer Roller, and all other toners are returned back in the developer unit and wait the next chance.



Reference

The incorrect toner, which is some toner incorrectly charged positive, has opposite characteristic to move from higher potential side to lower potential side. When the incorrect toner is transported to the point where both Regulation Roller and Developer Roller contact with each other, therefore, it is “removed” as it sticks to the Regulation Roller. This as a result prevents such incorrect toner to be used for development.



3. Lots of toner that could not pass between 2 rollers is scraped off by the rubber blade. This toner goes back in the Developer Unit and then waits the next chance.

3. 4 Scan Process (KIP 860 only)

3. 4. 1 Data flow in scan and copy

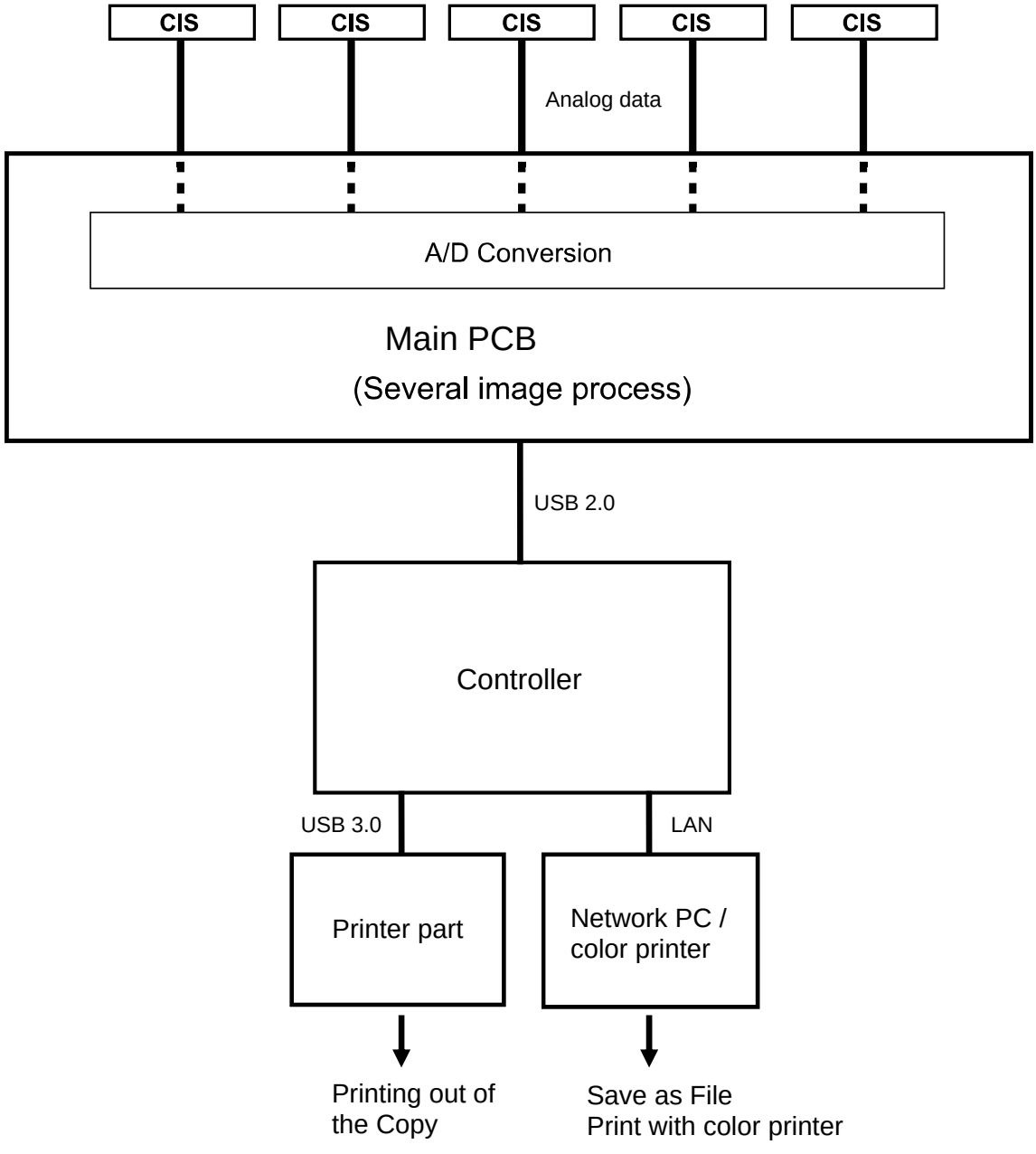
The scanner unit has 5 CIS devices and the Main Board.

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. 4. 2 Positioning process of Image Block

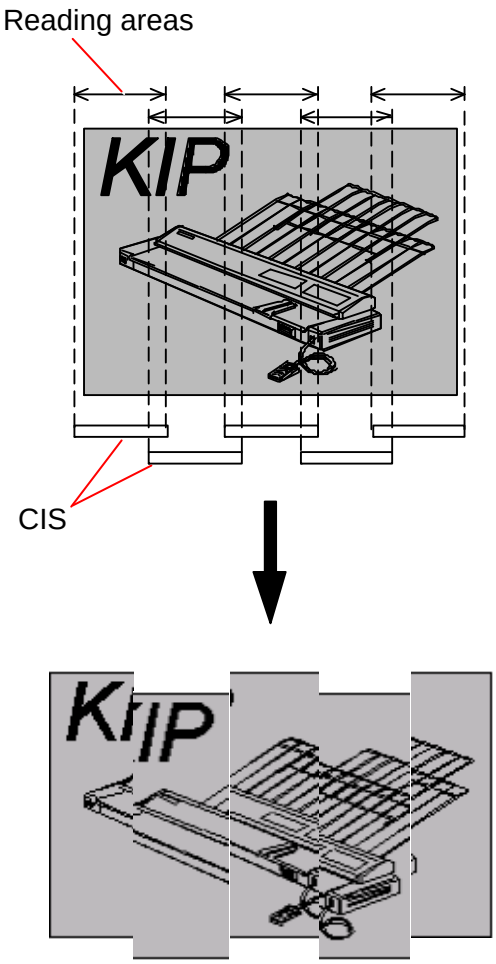
The scanner part of KIP 860 reads the image of original with 5 - CIS (Contact Image Sensor).
As these CIS are arranged in 2 rows, there occurs a vertical gap of image among the image blocks. So it is necessary to remove this gap by vertical positioning process (Y offset).
Also the reading area of these 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**
>
> KIP 860 performs these positioning processes (X overlap & Y offset) according to the setting specified through K-129 Diag.
> Please refer to [10.6.2 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.

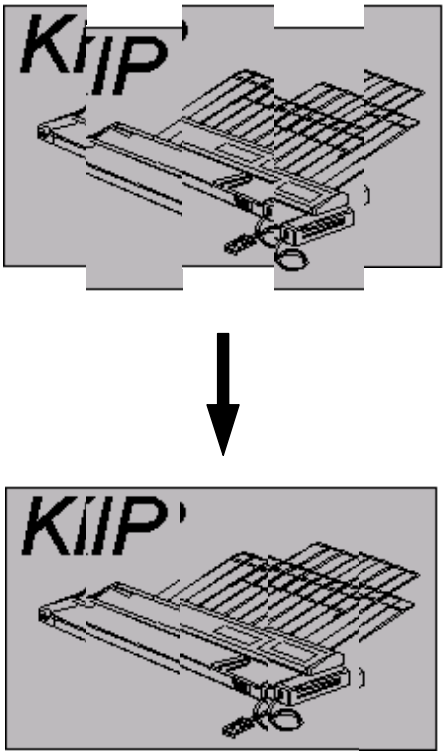
(1) There occurs a vertical gap of image among the image blocks.
(2) Some image pixels are commonly included (duplicating) in the neighboring two Image Blocks.



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.

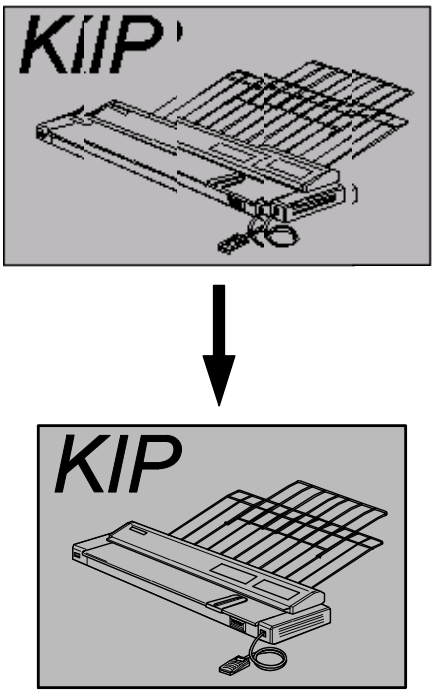
The image data before the positioning process



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)



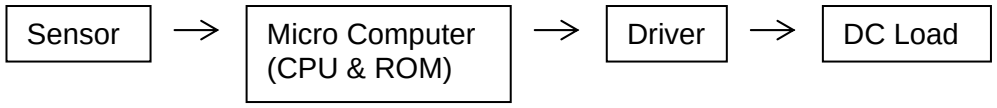
The image data after the positioning process (X overlap)

Chapter 4

Electrical

4. 1 General Information

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



LEDs on DC Controller lights when applied a specified DC.

Red LED : 24VDC
Orange LED : 5VDC
Yellow LED : VBUS_5VDC

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

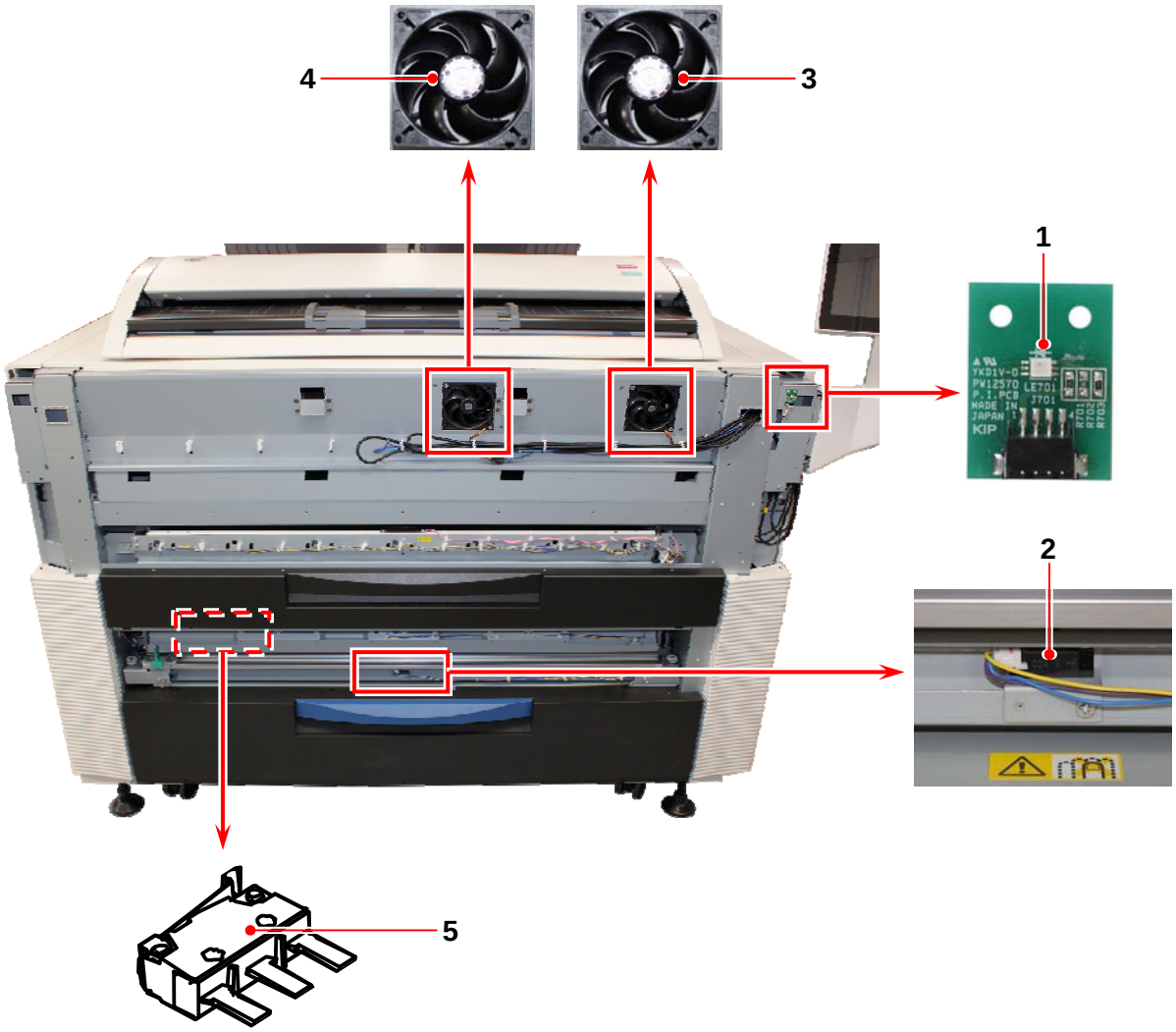
0VDC	Blue
5VDC	Yellow
12VDC	Brown
24VDC	Orange
Signal in to DC Controller (sensors)	Purple
Signal out from DC Controller	Gray

⚠ CAUTION

DOUBLE POLE / NEUTRAL FUSING

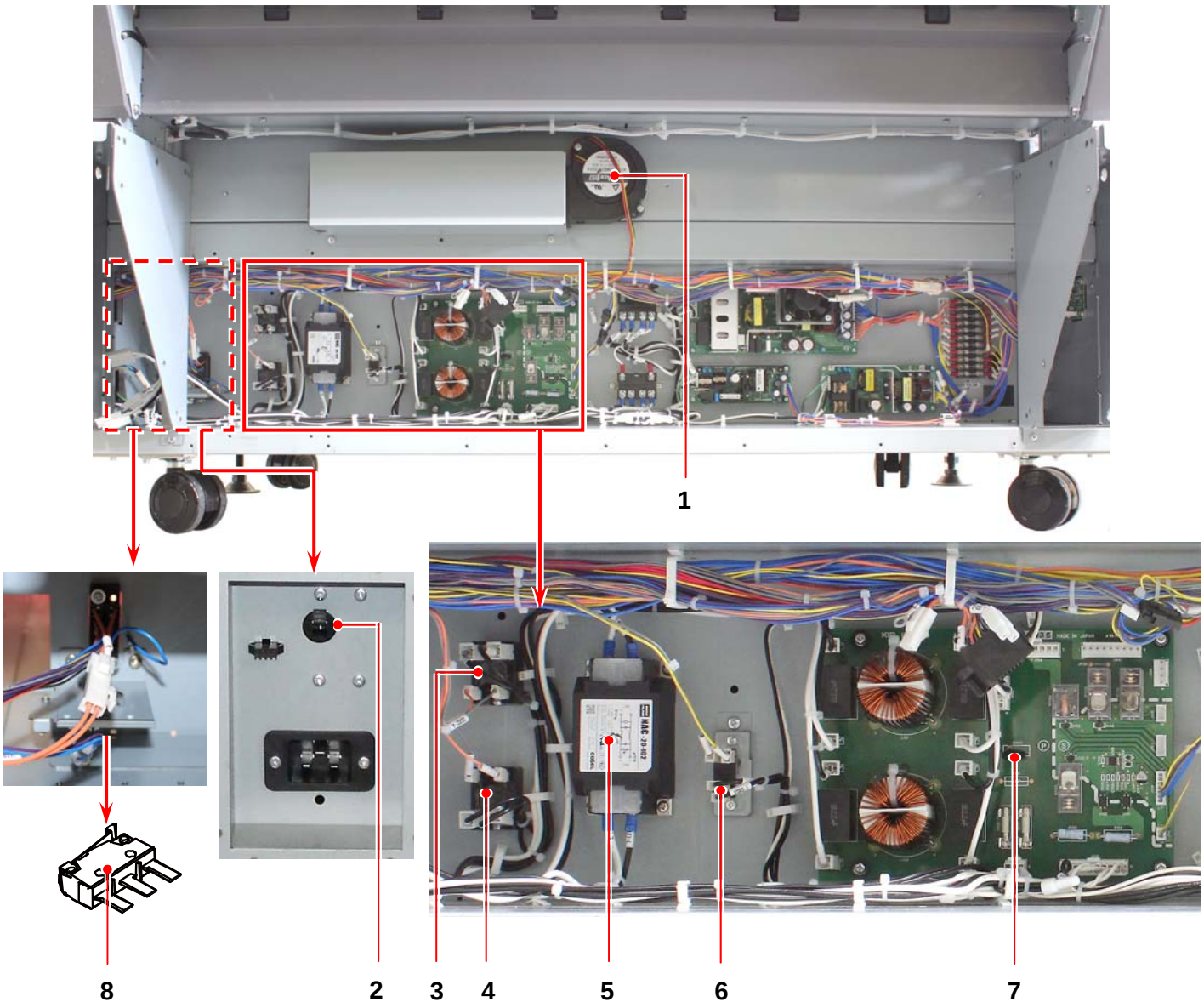
4. 2 Electrical Components Location

4. 2. 1 Front Side

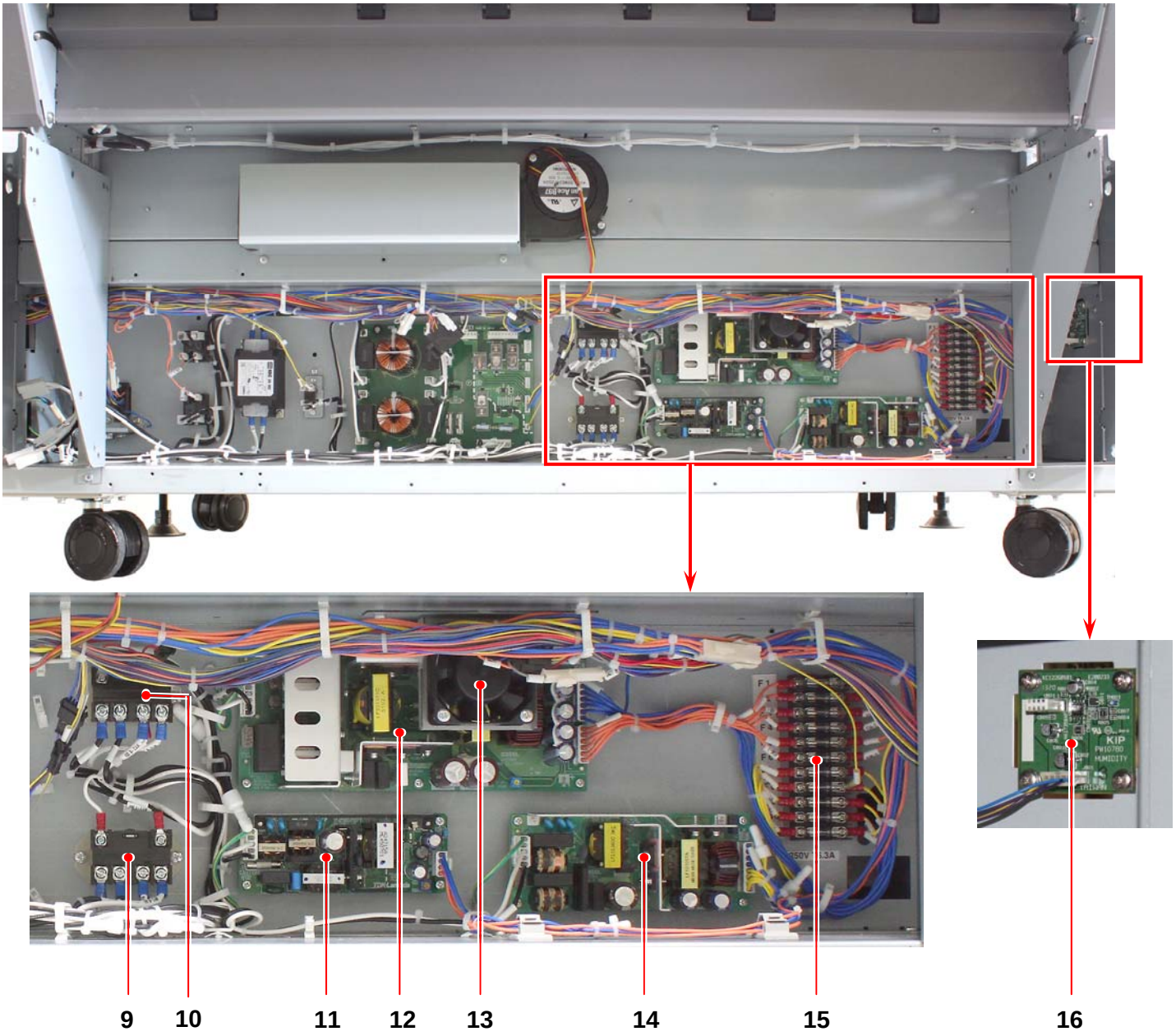


Item	Symbol	Signal name	Name	Type	Function
1	PW12570		Indicator PCB Assy	PW12570	Indicates the machine status by its LED color / illumination pattern
2	PH84		Photo Interrupter	PS117ED1	Paper feed sensor of Cutter region
3	FM7-1		Axial Fan Motor	9GA0924P4J13	For ventilating the inside of the machine.
4	FM7-2		Axial Fan Motor	9GA0924P4J13	For ventilating the inside of the machine.
5	SW6		Micro Switch	D2SW-P2L3T(S)	Detects open/close of Cutter Cover.

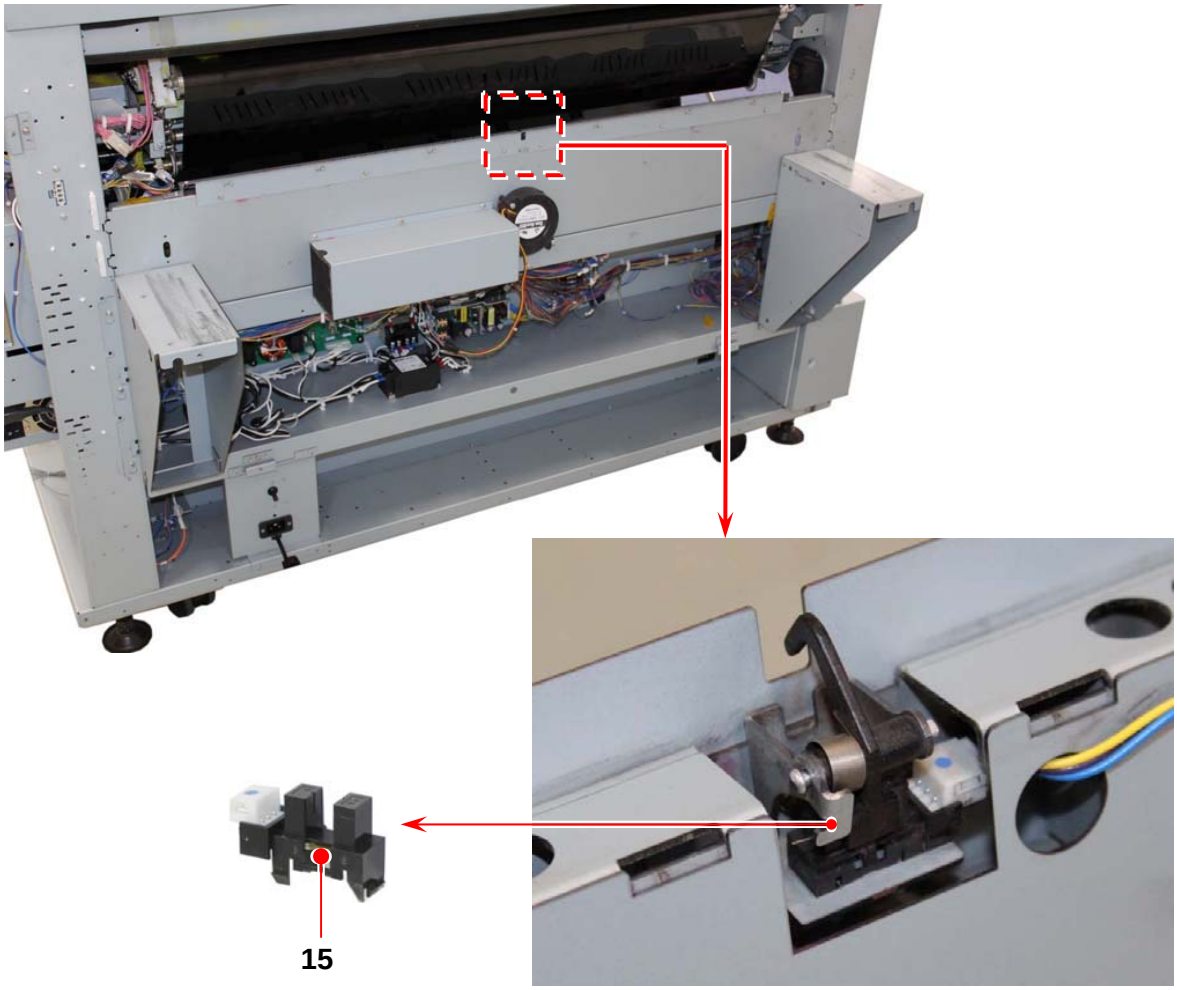
4. 2. 2 Rear Side



Item	Symbol	Signal name	Name	Type	Function
1	FM3		DC Blower	9BMB24P2G04	Adsorption fan for pulling the media.
2	CB1		Circuit Protector	CP32VM/20	Protection from AC over current
3	SSR 2		Solid State Relay	AQJ426V	Controls fuser lamp. SSR2 : Controls H2.
4	SSR 1		Solid State Relay	AQJ426V	Controls fuser lamp. SSR1 : Controls H1.
5	LF1		Line Filter	NAC-20-102	Line Filter
6	RY3		Relay	G2R-1A-T DC5V	Supplies power to the controller.
7	PW14210		AC Terminal PCB Assy	PW14210	AC terminal and anti-flicker (phase control)
8	SW10		Roll Deck Switch	D2SW-P01T(S)	Detects open/close of Roll Deck. SW10-1 SW10-2 (4 Roll Model only)

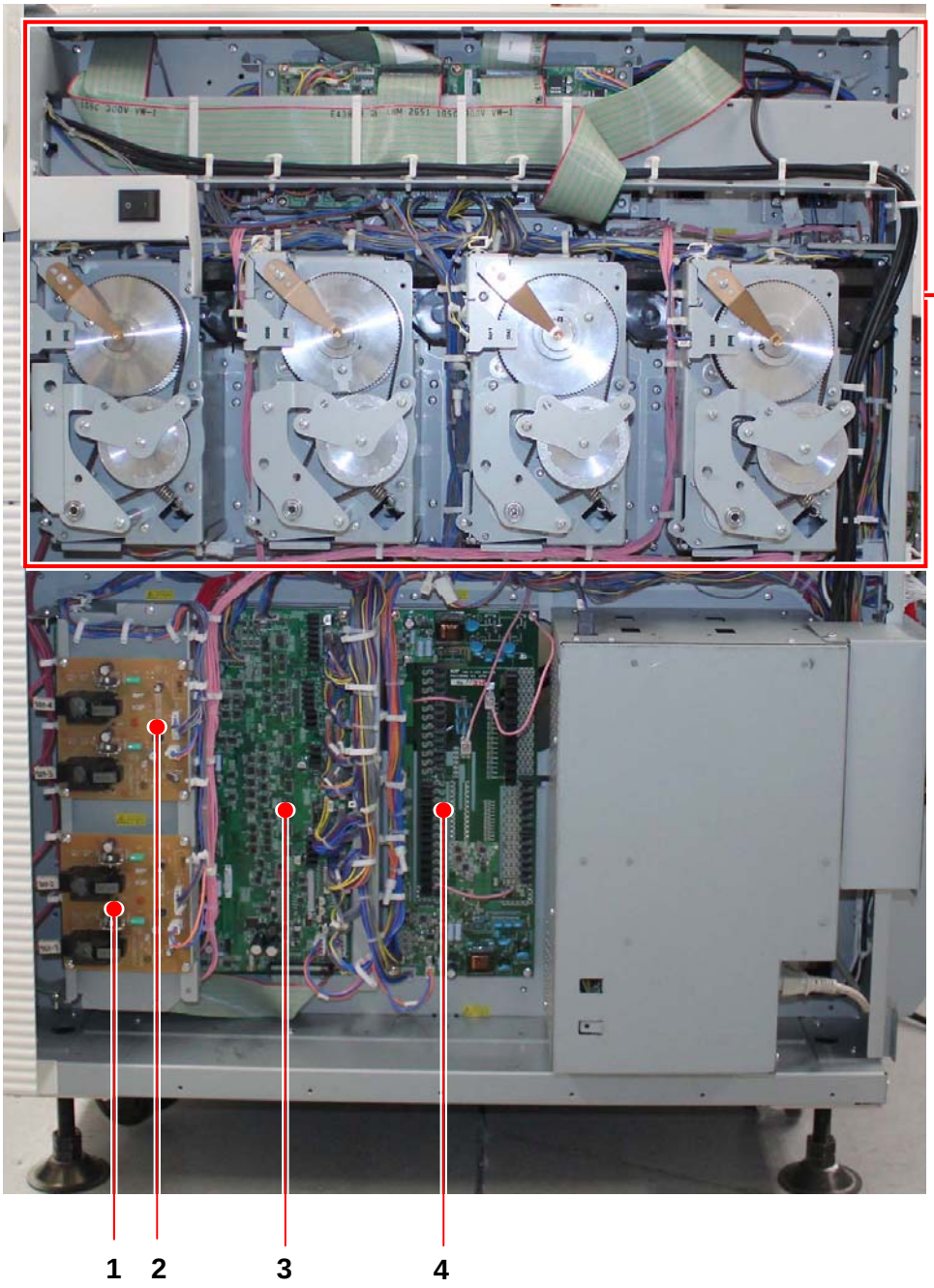


Item	Symbol	Signal name	Name	Type	Function
9	RY2		Relay	G7L-2A-BUB DC12	Supplies AC to fuser lamps and DCP1(24V). (AC is shut off when door or cover is open.)
10	RY1		Relay	G7L-2A-BUB AC200-240	Supplies AC to DCP2(5V & 12V). (AC is supplied even when door or cover is open.)
11	DCP3		DC Power Supply	ZWS50BAF-24EHFP	(KIP 860 only) Supplies 24Vdc to the scanner.
12	DCP1		DC Power Supply	LFP300F-24-J1Y	Supplies 24Vdc to fans, motors, clutches, and other driving system parts.
13	FM5		DCP Cooling Fan	9A0624G413	Cools DCP1 DC Power Supply
14	DCP2		DC Power Supply	LFA100F-5-J1Y	Supplied 5Vdc to sensors, LED Head and PCBs.
15	F1 - F11		Fuse	021806.3 MXP	Protection from over current
16	PW10780		Humidity Sensor PCB 3 Assy	PW10780	Detects both temperature and humidity.

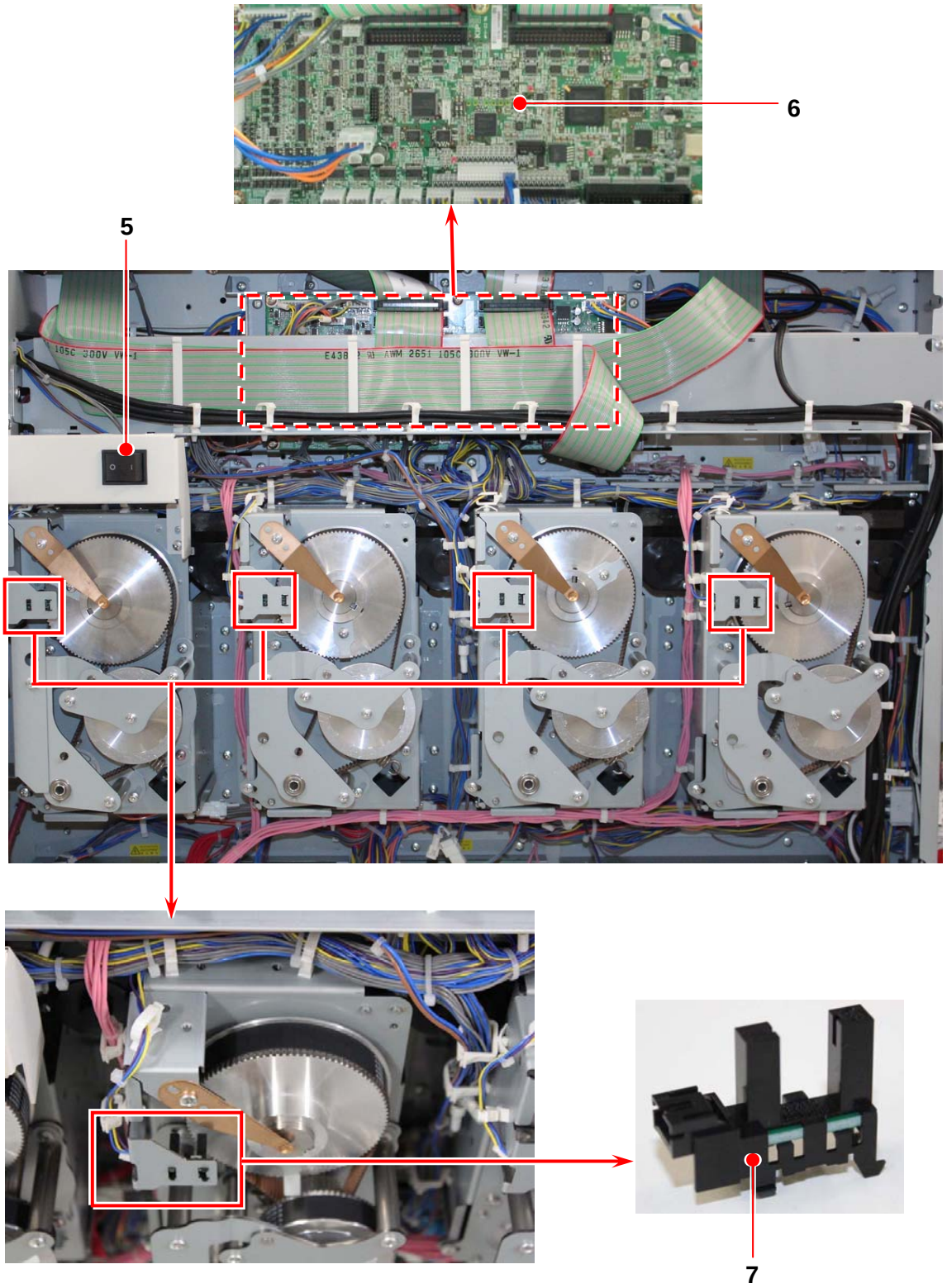


Item	Symbol	Signal name	Name	Type	Function
17	PH72		Photo Interrupter	LG248NL1	Detects separation of Drum from Belt.

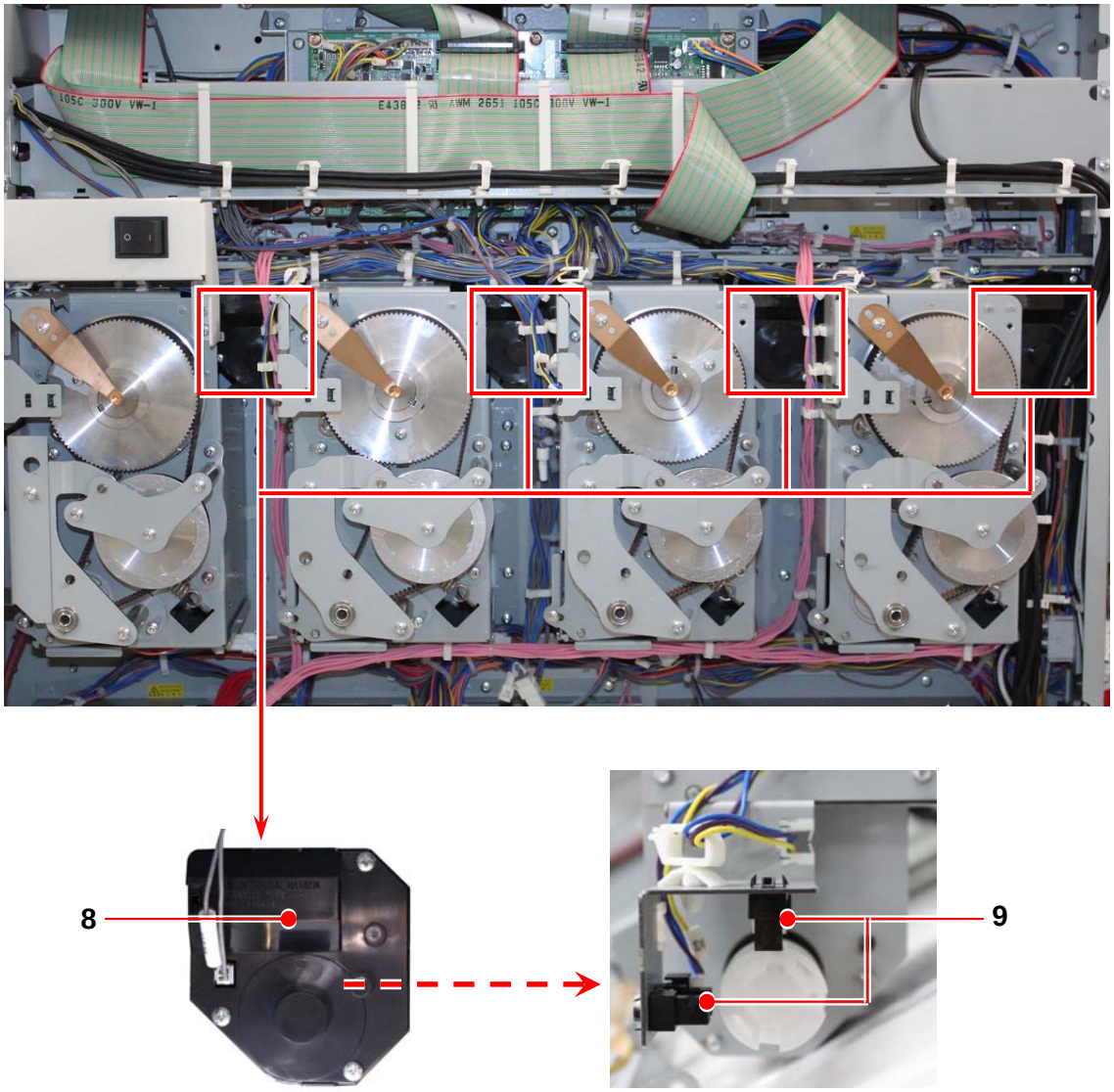
4. 2. 3 Right Side



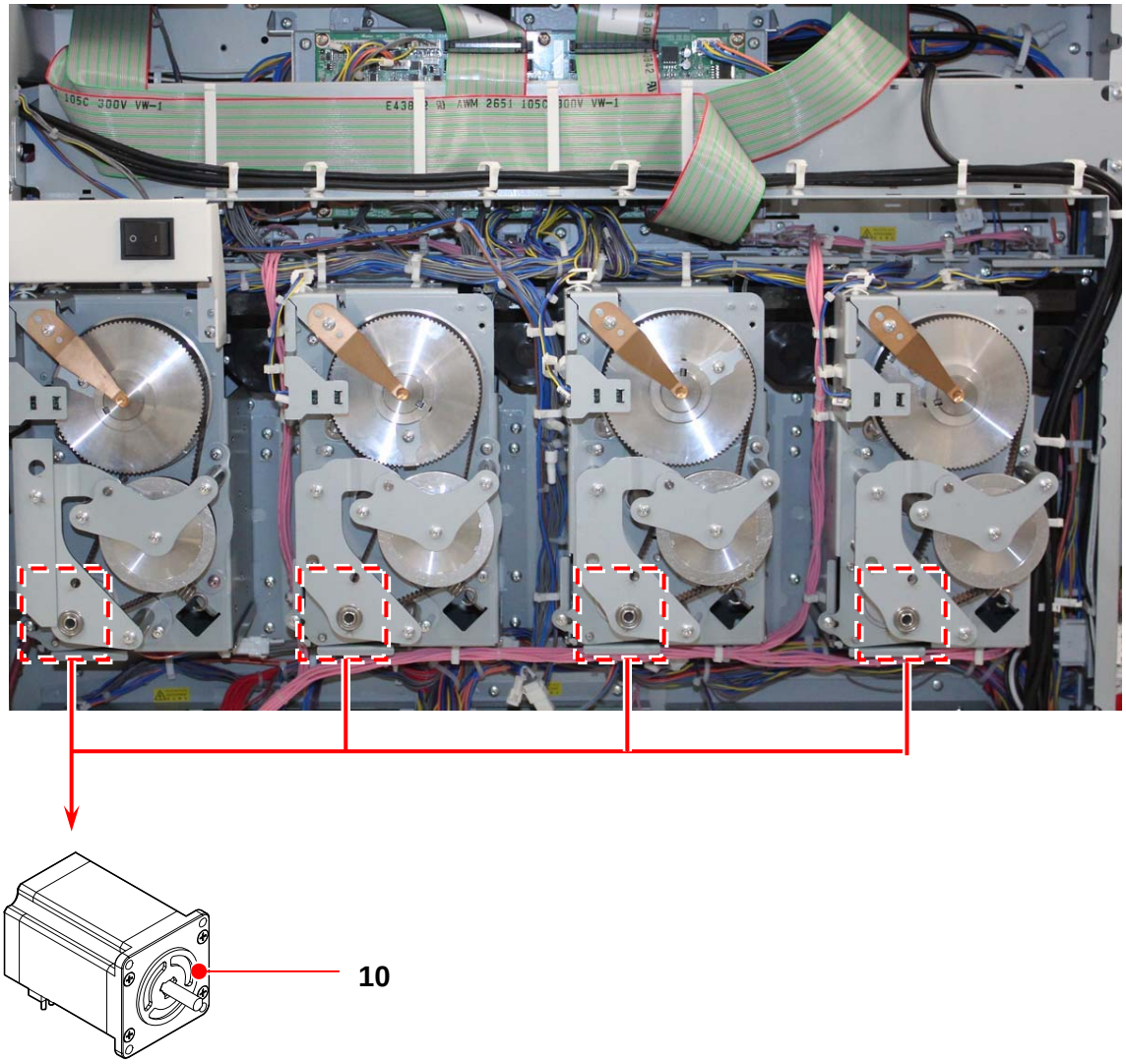
Item	Symbol	Signal name	Name	Type	Function
1	HVP1		High Voltage Power Supply Unit	EUK9MGC74HA	Power Supply for Image Corona (K & C)
2	HVP2		High Voltage Power Supply Unit	EUK9MGC74HA	Power Supply for Image Corona (M & Y)
3	PW13555 03		Digital HV PCB	PW13555 03	Input and Output control for motors, fans, sensors and etc. Power supply for Primary Transfer and Developer Bias (Developer Roller, Supply Roller and Regulation Roller)
4	PW13556 02		Secondary Transfer PCB Assy	PW13556 02	Power Supply for Secondary Transfer and Discharge Needles.



Item	Symbol	Signal name	Name	Type	Function
5	S1		Power Switch	AJ8S701BBC	Turns on/off the printer.
6	PW13520 02		Main Control PCB Assy	PW13520 02	Controls overall sequences of printer.
7	PH 9 PH11 PH13 PH15		Photo Interrupter (Drum Motor Sensor)	KI1306-AALF	Detects the rotation and home position of Drum Motor. PH 9(K) PH11(C) PH13(M) PH15(Y)

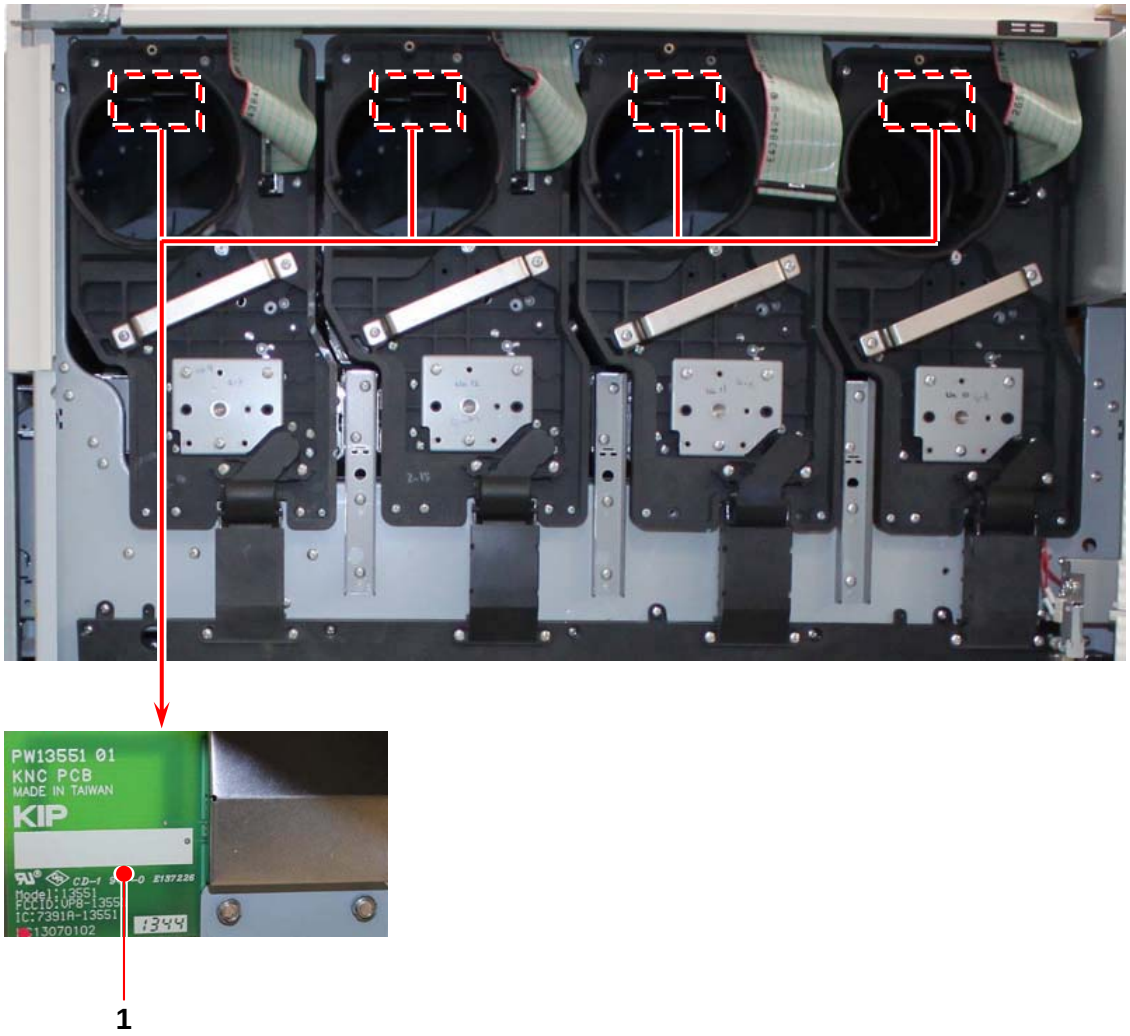


Item	Symbol	Signal name	Name	Type	Function
8	M10-1 M10-2 M10-3 M10-4		Motor Actuator	MA-D04-004	Presses or releases the Developer Unit to/from Drum M10-1(K) M10-2(C) M10-3(M) M10-4(Y)
9	PH1 PH2 PH3 PH4 PH5 PH6 PH7 PH8		Photo Interrupter (Developer Set Sensor)	LG248NL1	Detects the position of Developer. PH1(K:Top) PH2(K:Side) PH3(C:Top) PH4(C:Side) PH5(M:Top) PH6(M:Side) PH7(Y:Top) PH8(Y:Side)

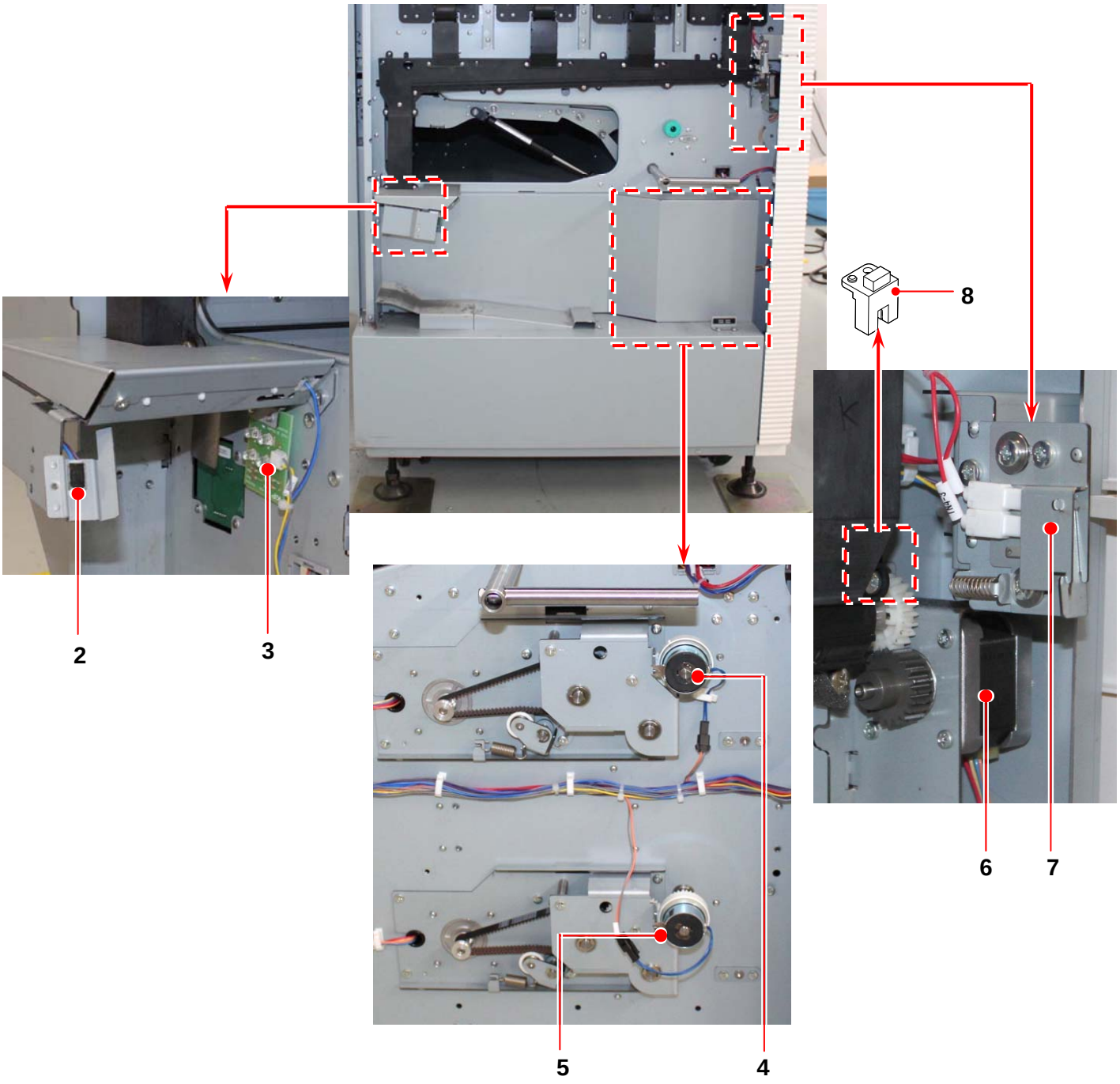


Item	Symbol	Signal name	Name	Type	Function
10	M2-1 M2-2 M2-3 M2-4		Stepping Motor	103H7126-5846	Drives the Drum Motor. M2-1(K) M2-2(C) M2-3(M) M2-4(Y)

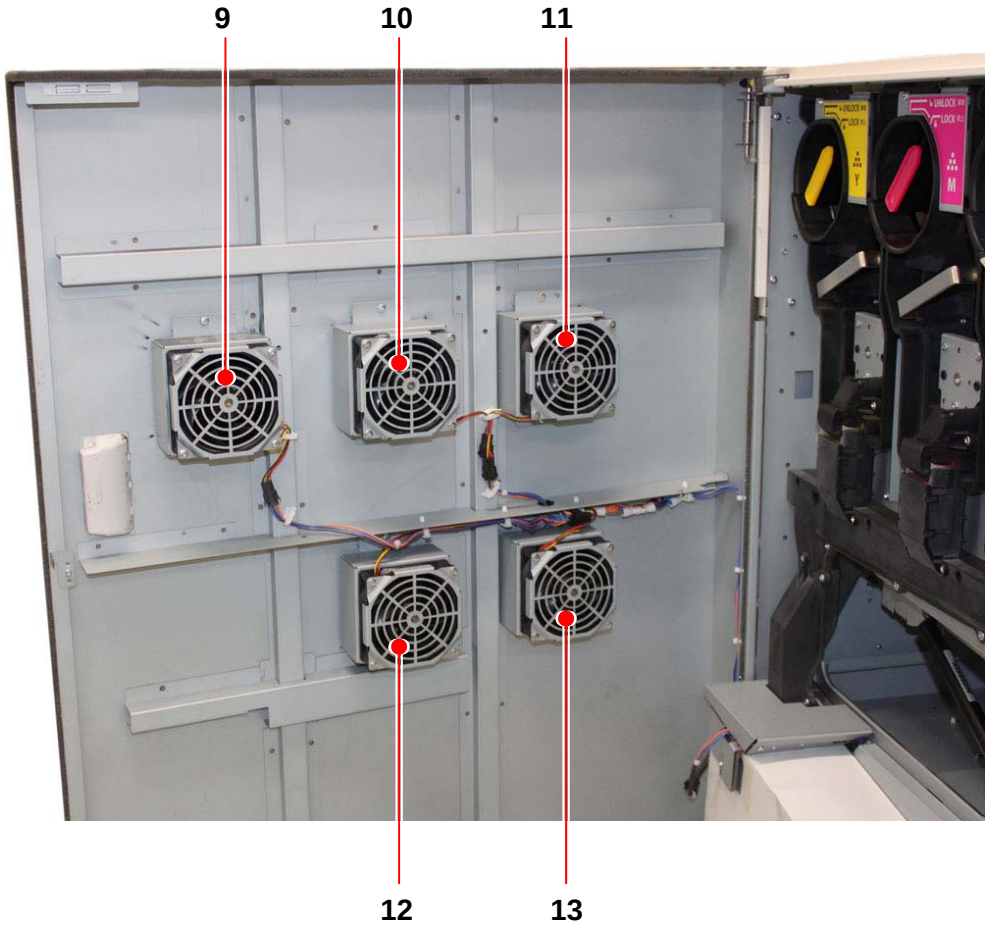
4. 2. 4 Left Side



Item	Symbol	Signal name	Name	Type	Function
1	PW13551		KNC PCB Assy	PW13551	Communicates with the Toner Cartridge. PW13551(K) PW13551(C) PW13551(M) PW13551(Y)

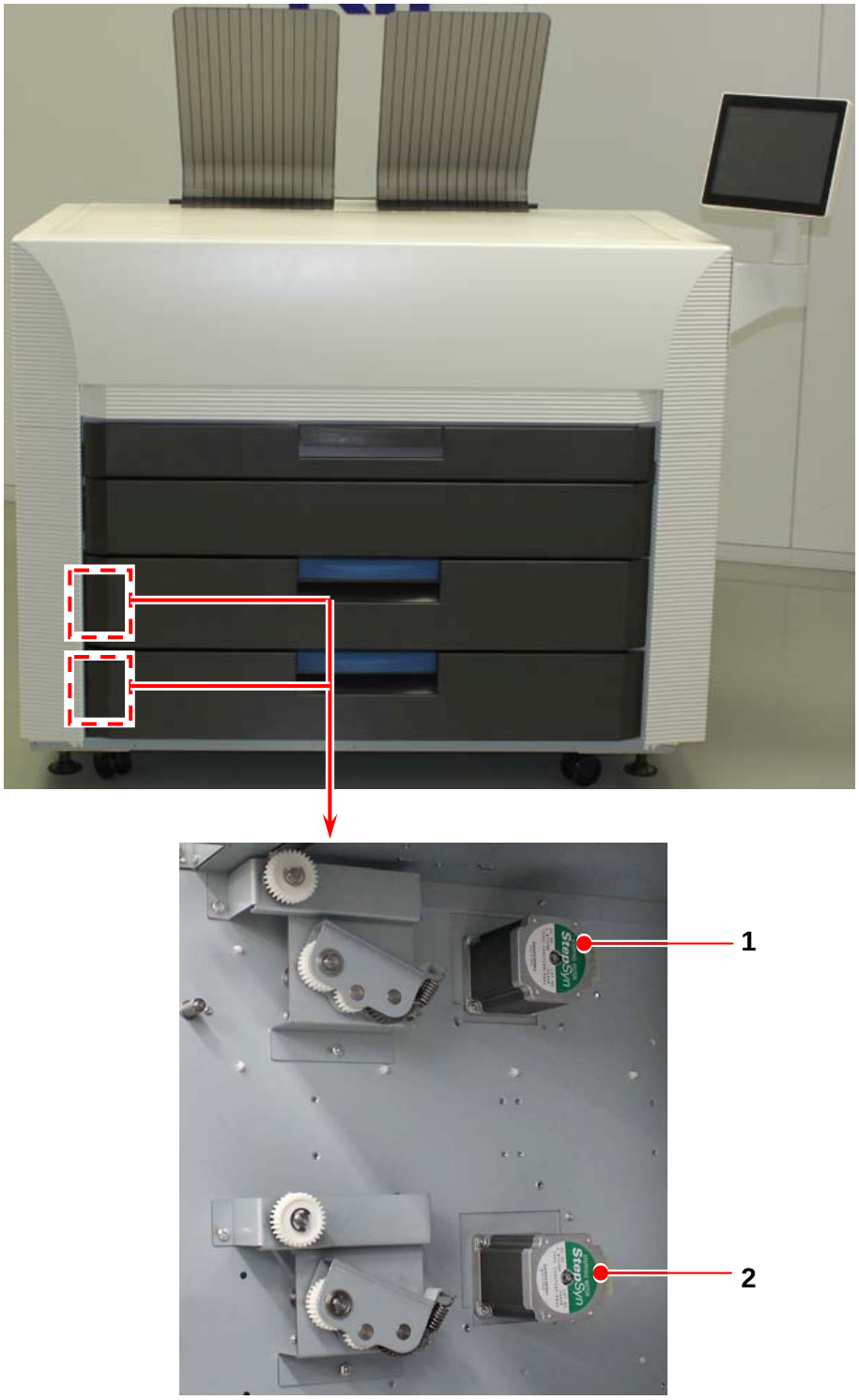


Item	Symbol	Signal name	Name	Type	Function
2	PH71		Photo Sensor	KB1780-AA22LF	Detects waste toner full (receives light)
3	PW12550		LED Light Generation PCB	PW12550	Detects waste toner full (generates light)
4	CL1-1		Clutch	BJ-3.5-E07A	Transports the media in Deck 1 (Roll 1 & 2)
5	CL1-2		Clutch	BJ-3.5-E07A	Transports the media in Deck 2 (Roll 3 & 4)
6	M12		Stepping Motor	103H5205-5259	Transports the waste toner.
7	SW5		Micro Switch	D2SW-P2L3T(S)	Detects open/close of Left Door.
8	PH87		Photo Sensor	KI1232-AA02LF	Detects the rotation of Waste Toner Motor.



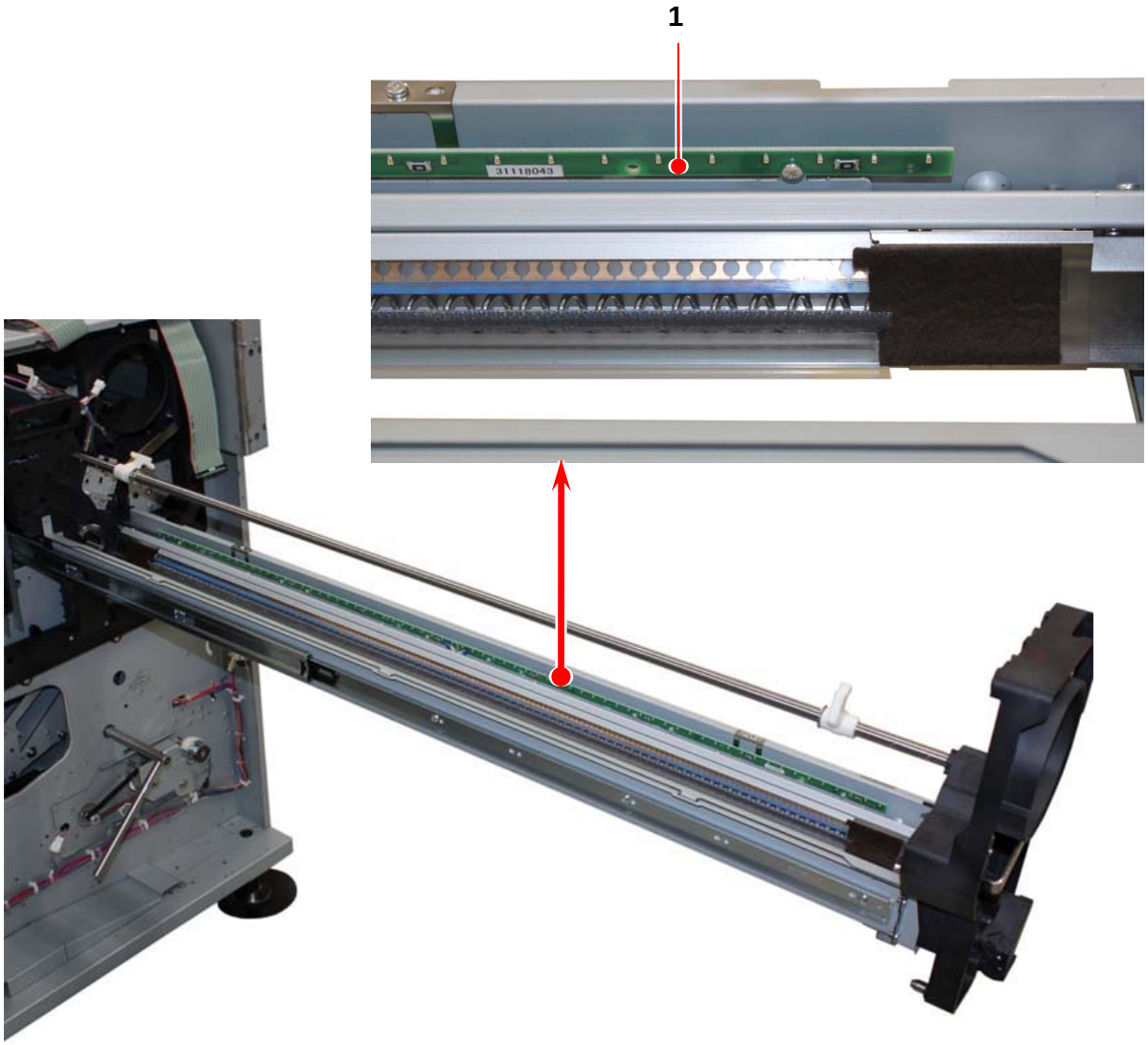
Item	Symbol	Signal name	Name	Type	Function
9	FM8-1		Axial Fan Motor	9GA0924P4J13	For ventilating the inside of the machine.
10	FM8-2		Axial Fan Motor	9GA0924P4J13	For ventilating the inside of the machine.
11	FM8-3		Axial Fan Motor	9GA0924P4J13	For ventilating the inside of the machine.
12	FM8-4		Axial Fan Motor	9GA0924P4J13	For ventilating the inside of the machine.
13	FM8-5		Axial Fan Motor	9GA0924P4J13	For ventilating the inside of the machine.

4. 2. 5 Inside



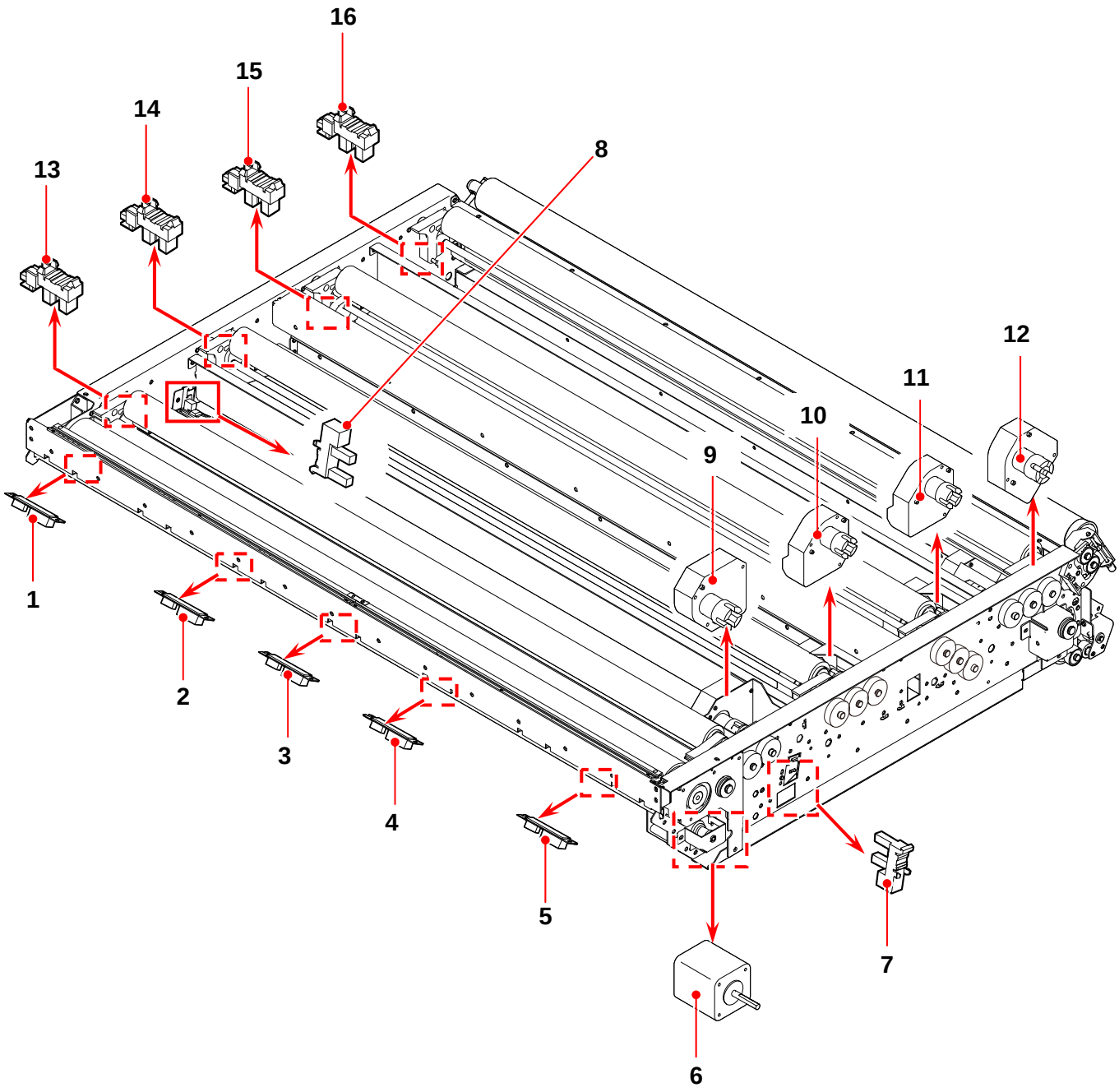
Item	Symbol	Signal name	Name	Type	Function
1	M1-1		Stepping Motor	103H7126-5846	Drives the Deck 1.
2	M1-2		Stepping Motor	103H7126-5846	Drives the Deck 2.

4. 2. 6 Process Unit



Item	Symbol	Signal name	Name	Type	Function
1	PW10730		Eraser Lamp	PW10730	Discharges the Drum by illuminating the surface. PW10730(K) PW10730(C) PW10730(M) PW10730(Y)

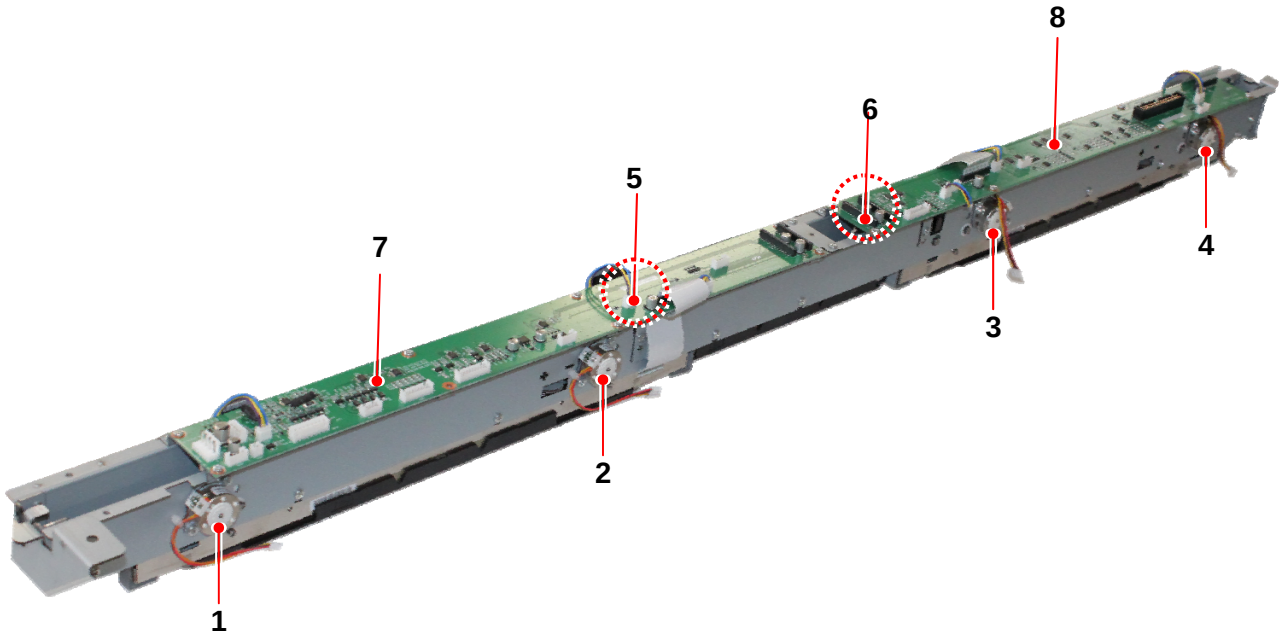
4. 2. 7 Belt Unit



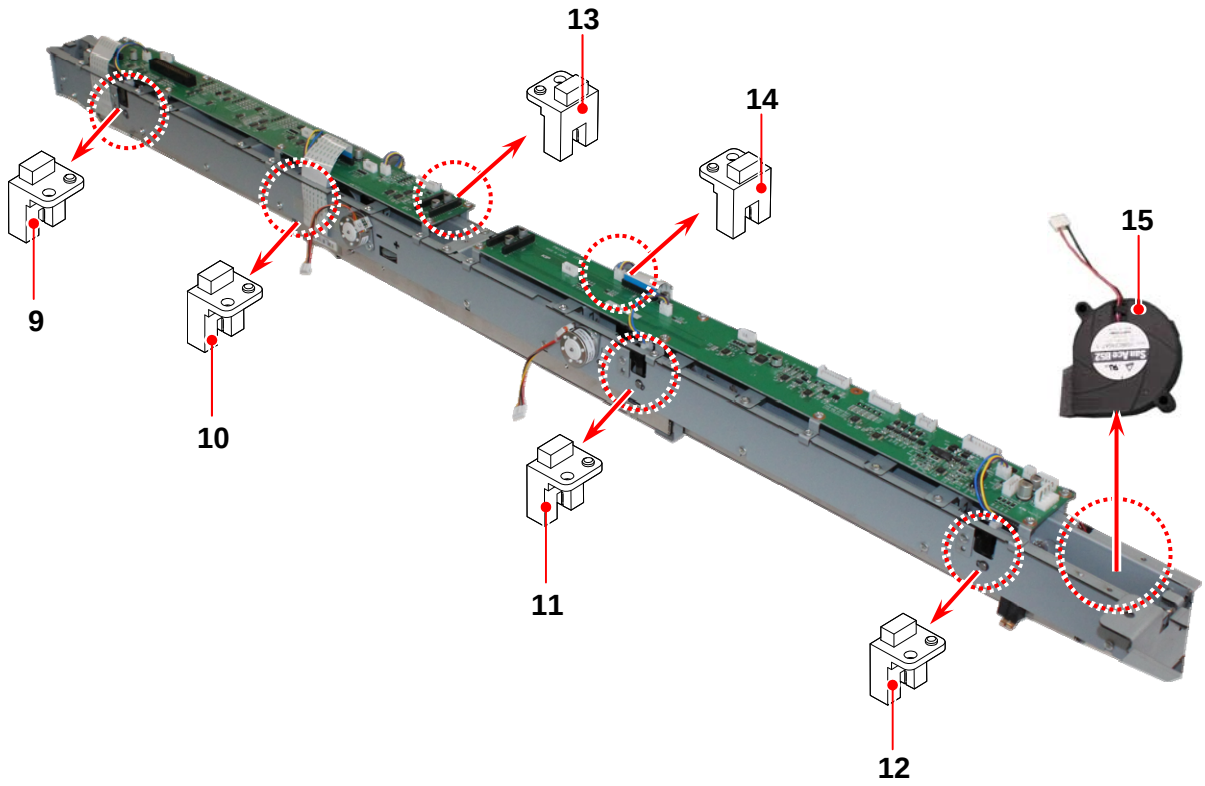
Item	Symbol	Signal name	Name	Type	Function
1	PH101		Density Sensor	GP2Y40010K0F	Detects the density of calibration patterns printed on the Belt.
2	PH100		Density Sensor	GP2Y40010K0F	Detects the density of calibration patterns printed on the Belt.
3	PH99		Density Sensor	GP2Y40010K0F	Detects the density of calibration patterns printed on the Belt.
4	PH98		Density Sensor	GP2Y40010K0F	Detects the density of calibration patterns printed on the Belt.
5	PH97		Density Sensor	GP2Y40010K0F	Detects the density of calibration patterns printed on the Belt.

Item	Symbol	Signal name	Name	Type	Function
6	M6		Stepping Motor	103H5210-5248	Drives the Belt Unit.
7	PH58		Photo Sensor	KI1306-AALF	Detects skewing of Transfer Belt.
8	PH57		Photo Sensor	KI1306-AALF	Detects skewing of Transfer Belt.
9	M7-1		Motor Actuator	MA-D04-004	Drives the Primary Transfer Roller (K).
10	M7-2		Motor Actuator	MA-D04-004	Drives the Primary Transfer Roller (C).
11	M7-3		Motor Actuator	MA-D04-004	Drives the Primary Transfer Roller (M).
12	M7-4		Motor Actuator	MA-D04-004	Drives the Primary Transfer Roller (Y).
13	PH59		Photo Interrupter	LG248NL1	Detects the home position of Primary Transfer Roller (K).
14	PH60		Photo Interrupter	LG248NL1	Detects the home position of Primary Transfer Roller (C).
15	PH85		Photo Interrupter	LG248NL1	Detects the home position of Primary Transfer Roller (M).
16	PH86		Photo Interrupter	LG248NL1	Detects the home position of Primary Transfer Roller (Y).

4. 2. 8 LED Head

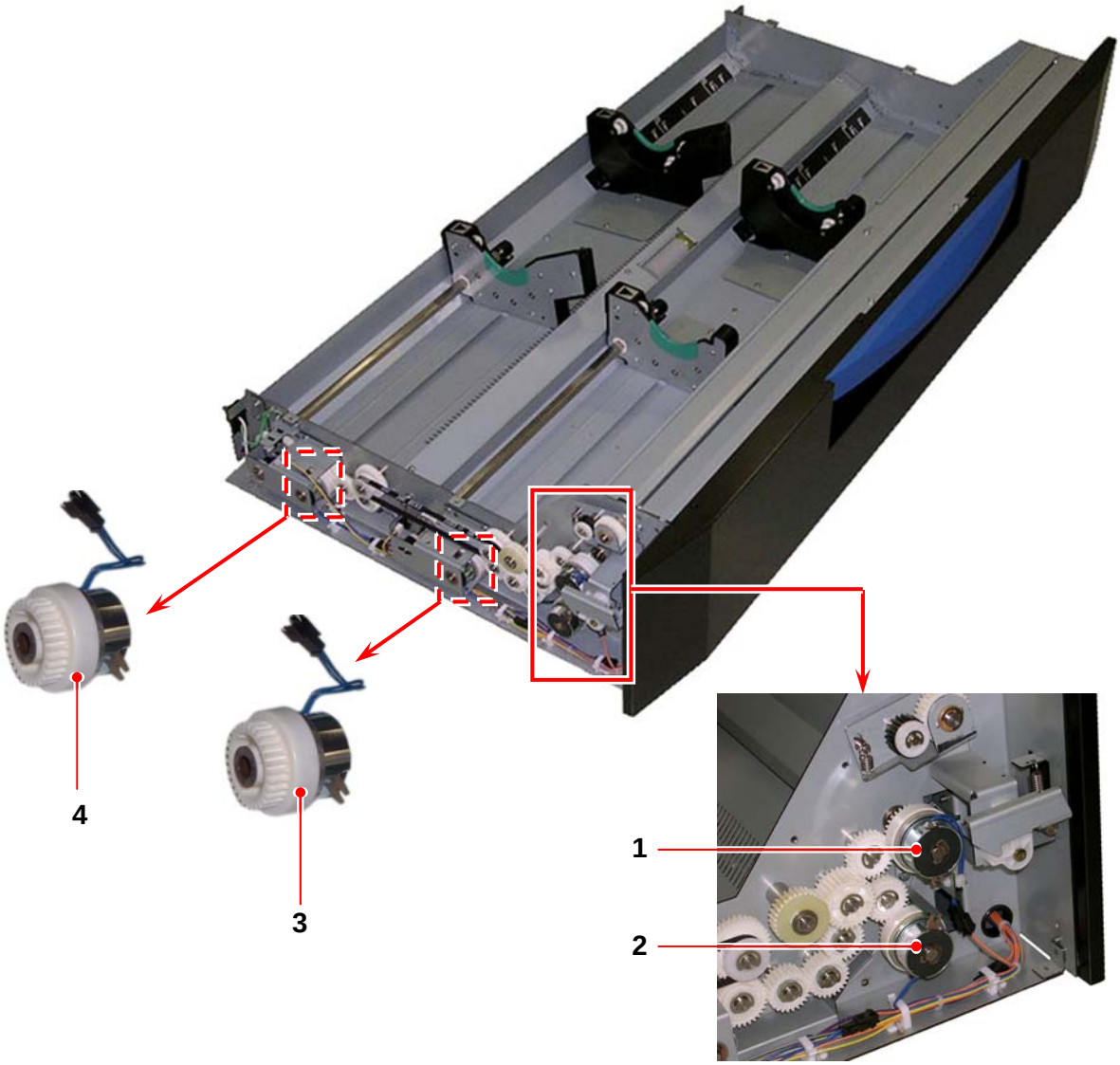


Item	Symbol	Signal name	Name	Type	Function
1	M15-1-6 M15-2-6 M15-3-6 M15-4-6		Stepping Motor	PM25S-048-JBB4	Adjusts the focus of LED Head component. M15-1-6(K) M15-2-6(C) M15-3-6(M) M15-4-6(Y)
2	M15-1-5 M15-2-5 M15-3-5 M15-4-5		Stepping Motor	PM25S-048-JBB4	Adjusts the focus of LED Head component. M15-1-5(K) M15-2-5(C) M15-3-5(M) M15-4-5(Y)
3	M15-1-2 M15-2-2 M15-3-2 M15-4-2		Stepping Motor	PM25S-048-JBB4	Adjusts the focus of LED Head component. M15-1-2(K) M15-2-2(C) M15-3-2(M) M15-4-2(Y)
4	M15-1-1 M15-2-1 M15-3-1 M15-4-1		Stepping Motor	PM25S-048-JBB4	Adjusts the focus of LED Head component. M15-1-1(K) M15-2-1(C) M15-3-1(M) M15-4-1(Y)
5	M15-1-4 M15-2-4 M15-3-4 M15-4-4		Stepping Motor	PM25S-048-JBB4	Adjusts the focus of LED Head component. M15-1-4(K) M15-2-4(C) M15-3-4(M) M15-4-4(Y)
6	M15-1-3 M15-2-3 M15-3-3 M15-4-3		Stepping Motor	PM25S-048-JBB4	Adjusts the focus of LED Head component. M15-1-3(K) M15-2-3(C) M15-3-3(M) M15-4-3(Y)
7	PW13522		LED Head Terminal PCB A	PW13522-02	Terminal PCB of LED Head
8	PW13523		LED Head Terminal PCB B	PW13523-01	Terminal PCB of LED Head

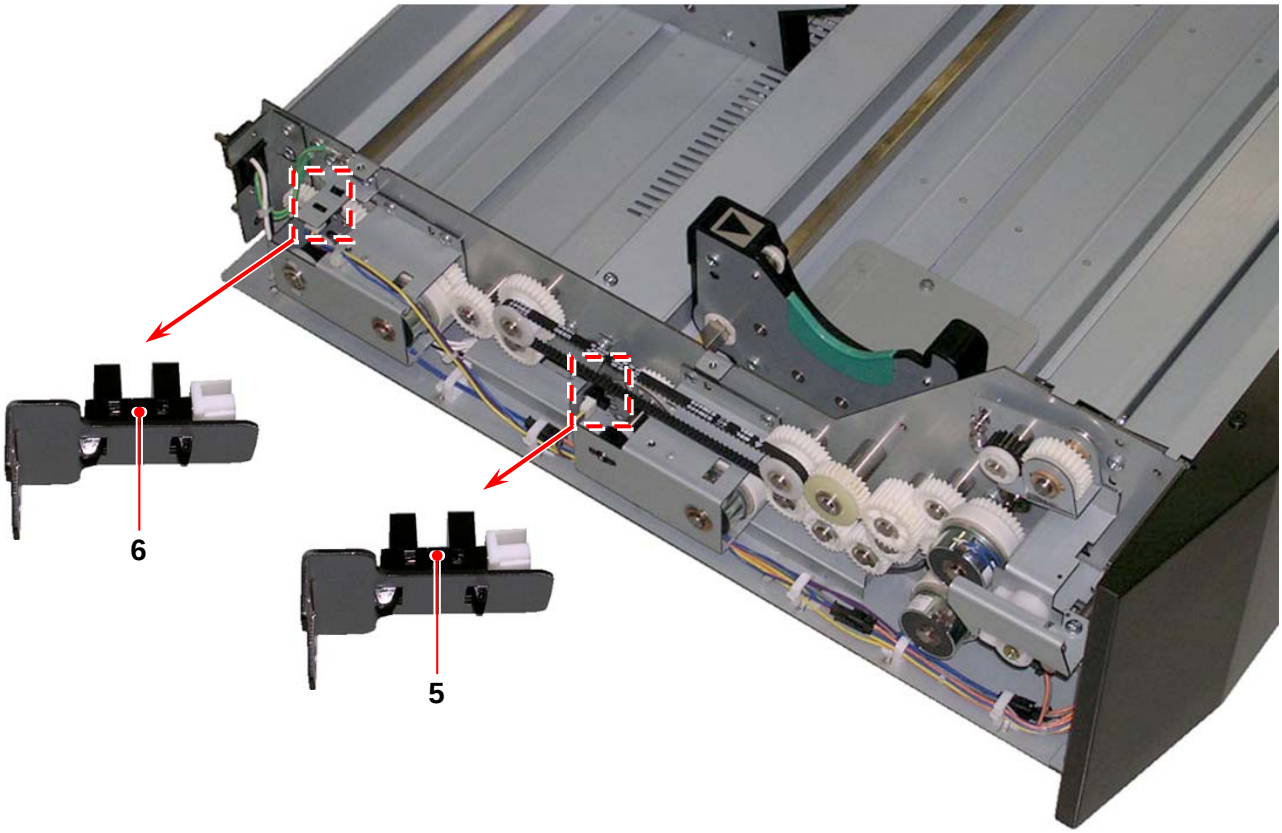


Item	Symbol	Signal name	Name	Type	Function
9	PH17 PH27 PH37 PH47		Photo Sensor	KI1232-AA02LF	Detects the home position of LED Head. PH17(K) PH27(C) PH37(M) PH47(Y)
10	PH18 PH28 PH38 PH48		Photo Sensor	KI1232-AA02LF	Detects the home position of LED Head. PH18(K) PH28(C) PH38(M) PH48(Y)
11	PH21 PH31 PH41 PH51		Photo Sensor	KI1232-AA02LF	Detects the home position of LED Head. PH21(K) PH31(C) PH41(M) PH51(Y)
12	PH22 PH32 PH42 PH52		Photo Sensor	KI1232-AA02LF	Detects the home position of LED Head. PH22(K) PH32(C) PH42(M) PH52(Y)
13	PH19 PH29 PH39 PH49		Photo Sensor	KI1232-AA02LF	Detects the home position of LED Head. PH19(K) PH29(C) PH39(M) PH49(Y)
14	PH20 PH30 PH40 PH50		Photo Sensor	KI1232-AA02LF	Detects the home position of LED Head. PH20(K) PH30(C) PH40(M) PH50(Y)
15	FM6-1 FM6-2 FM6-3 FM6-4		DC Blower	109BC24GA7-21	For exhausting the ozone

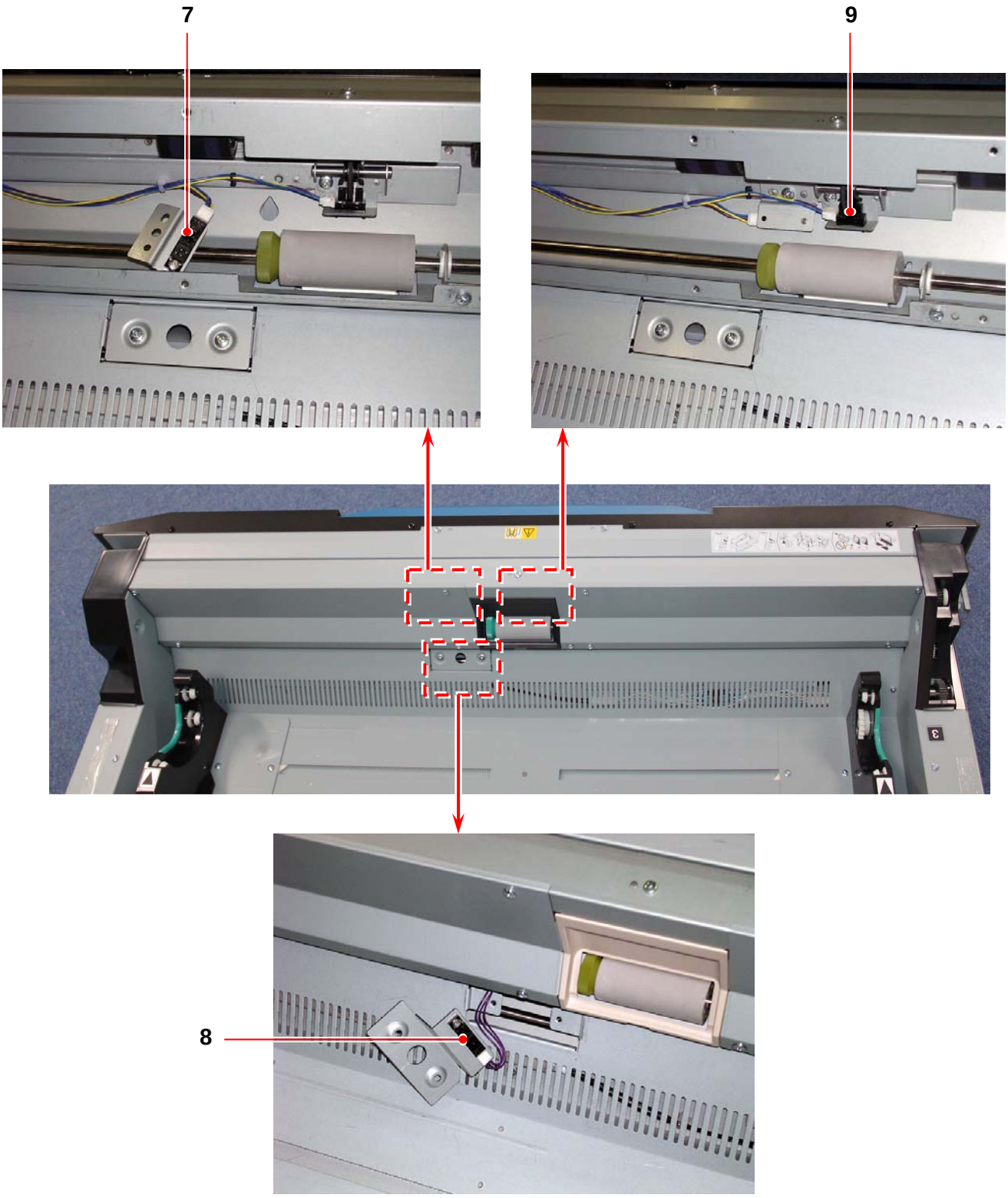
4. 2. 9 Roll Deck



Item	Symbol	Signal name	Name	Type	Function
1	CL2-1 CL2-3		Clutch	BJ-3.5-E07A	Transports the media of Roll 1/3 forward.
2	CL2-2 CL2-4		Clutch	BJ-3.5-E07A	Transports the media of Roll 2/4 forward.
3	CL3-1 CL3-3		Clutch	BJ-3.5-166A	Transports the media of Roll 1/3 backward.
4	CL3-2 CL3-4		Clutch	BJ-3.5-166A	Transports the media of Roll 2/4 backward.

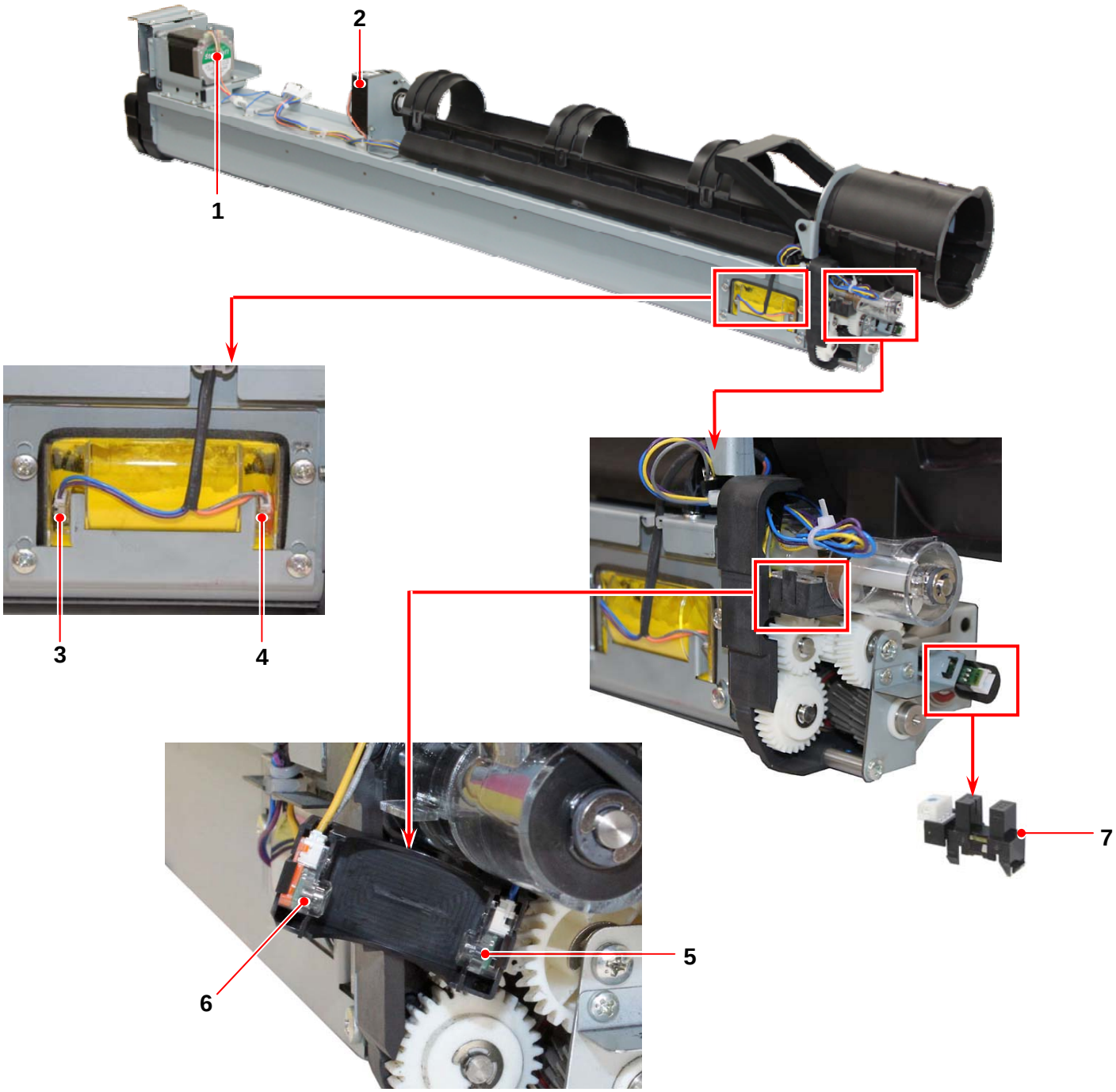


Item	Symbol	Signal name	Name	Type	Function
5	PH76 PH82		Photo Interrupter	GP1A73AJ000F	Detects the remaining volume of Roll 1/3. PH76 (Roll 1) PH82 (Roll 33)
6	PH77 PH83		Photo Interrupter	GP1A73AJ000F	Detects the remaining volume of Roll 2/4. PH77 (Roll 2) PH83 (Roll 4)



Item	Symbol	Signal name	Name	Type	Function
7	PH74 PH80		Photo Interrupter	GP2A25J0000F	Detects the leading edge of Roll 1/3 media. PH74 (Roll 1) PH80 (Roll 3)
8	PH75 PH81		Photo Interrupter	GP2A25J0000F	Detects the leading edge of Roll 2/4 media. PH75 (Roll 2) PH81 (Roll 4)
9	PH73 PH79		Photo Interrupter	GP1A173LCS2F	Detects the length of the media transported. PH73 (Roll 1/3) PH79 (Roll 2/4)

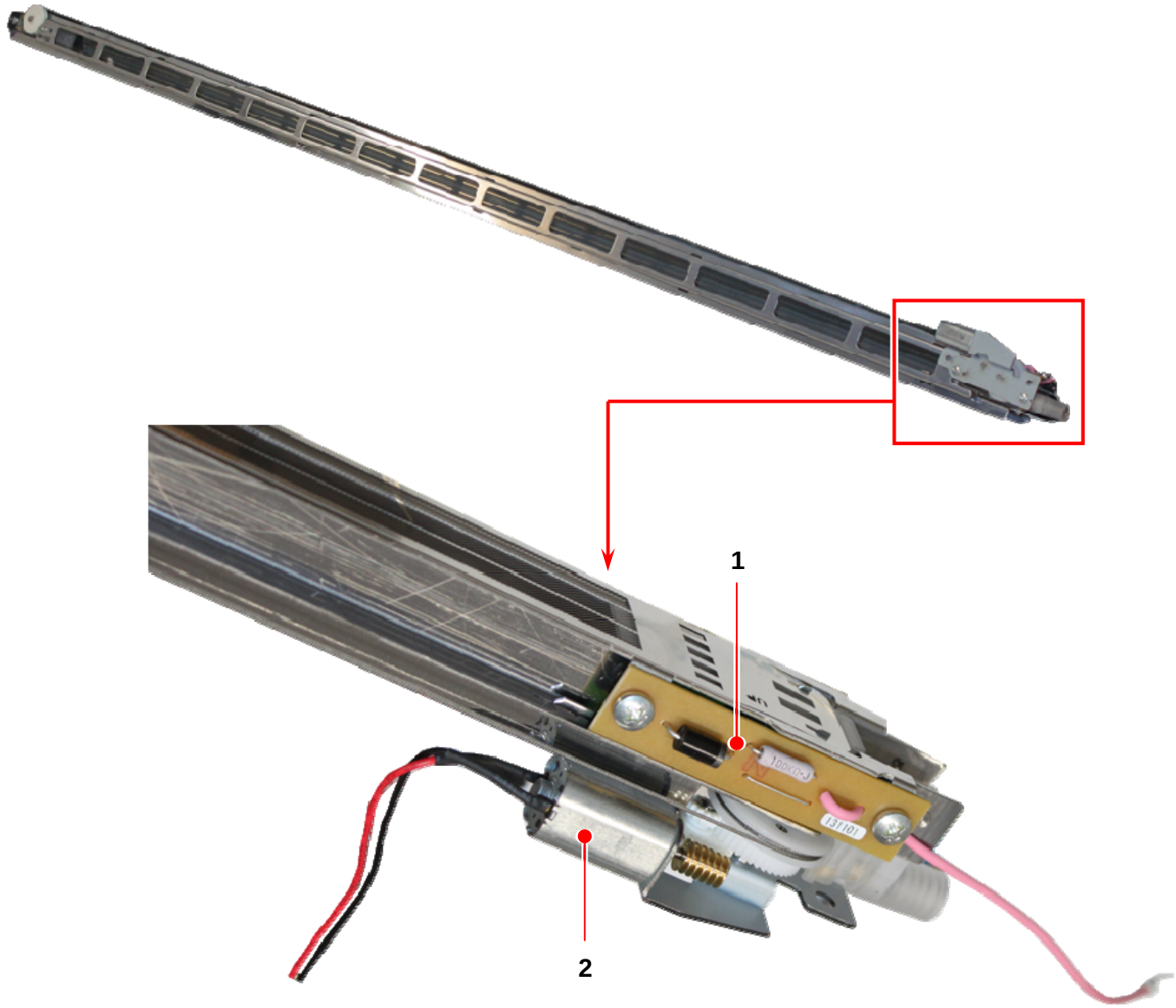
4. 2. 10 Developer Unit



Item	Symbol	Signal name	Name	Type	Function
1	M9-1 M9-2 M9-3 M9-4		Stepping Motor	103H7126-5846	Drives the Developer Unit. M9-1(K) M9-2(C) M9-3(M) M9-4(Y)
2	M11-1 M11-2 M11-3 M11-4		Motor Actuator	MA-D04-003	Drives the Toner Cartridge. M11-1(K) M11-2(C) M11-3(M) M11-4(Y)
3	PH24 PH34 PH44 PH54		Separated Sensor (Receiving light)	KB1780-AA22LF	Detects the existence of toner in the Developer Unit. PH24(K) PH34(C) PH44(M) PH54(Y)

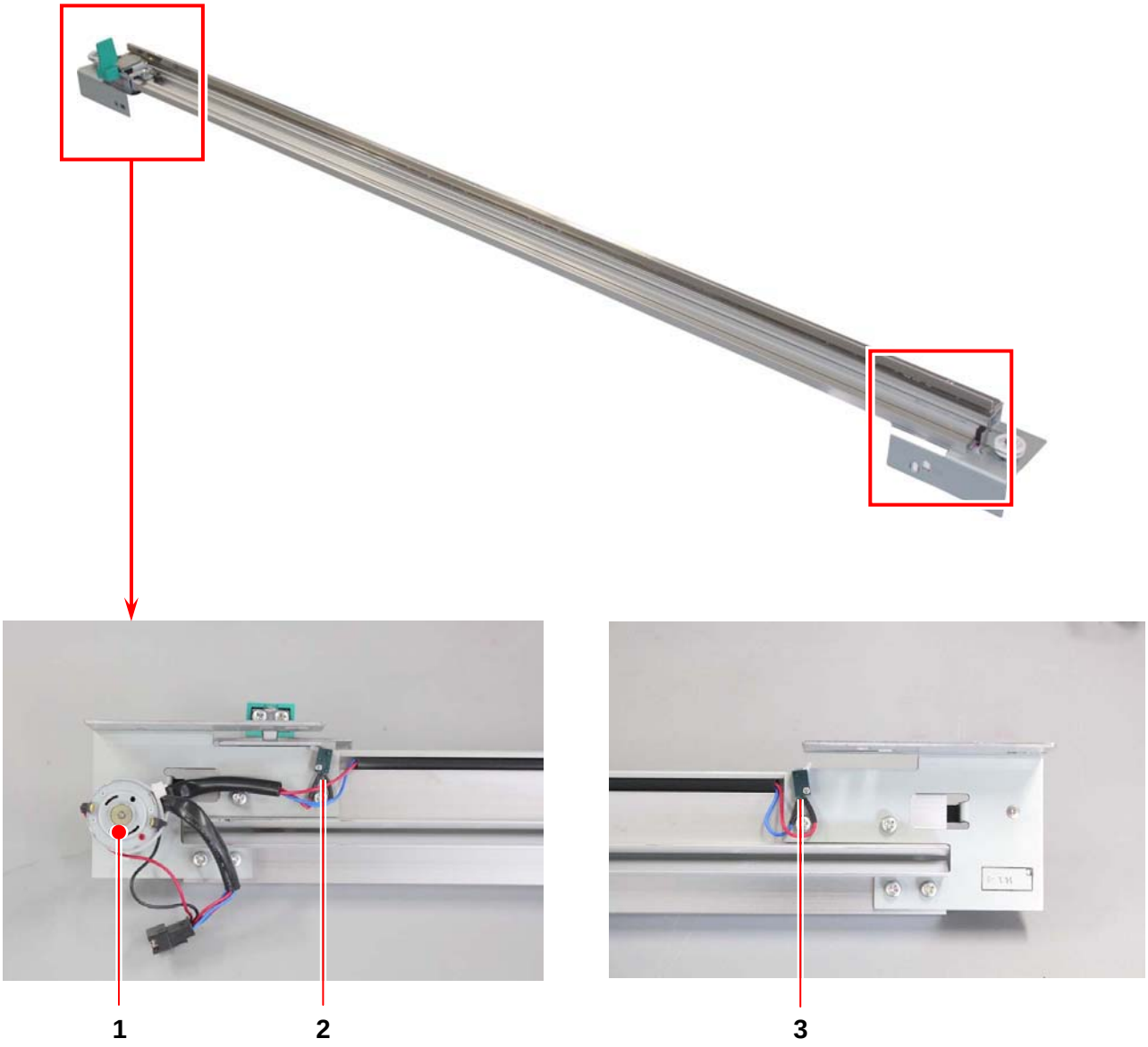
Item	Symbol	Signal name	Name	Type	Function
4	PH23 PH33 PH43 PH53		Separated Sensor (Generating light)	KB1780-AA12LF	Detects the existence of toner in the Developer Unit. PH23(K) PH33(C) PH43(M) PH53(Y)
5	PH26 PH36 PH46 PH56		Separated Sensor (Receiving light)	KB1780-AA22LF	Detects supplying of toner from cartridge as well as remaining volume. PH26(K) PH36(C) PH46(M) PH56(Y)
6	PH25 PH35 PH45 PH55		Separated Sensor (Generating light)	KB1780-AA12LF	Detects supplying of toner from cartridge as well as remaining volume. PH25(K) PH35(C) PH45(M) PH55(Y)
7	PH93 PH94 PH95 PH96		Photo Interrupter	LG248NL1	Detects the home position of Developer Roller. (Not used currently) PH93(K) PH94(C) PH95(M) PH96(Y)

4. 2. 11 Image Corona Assy



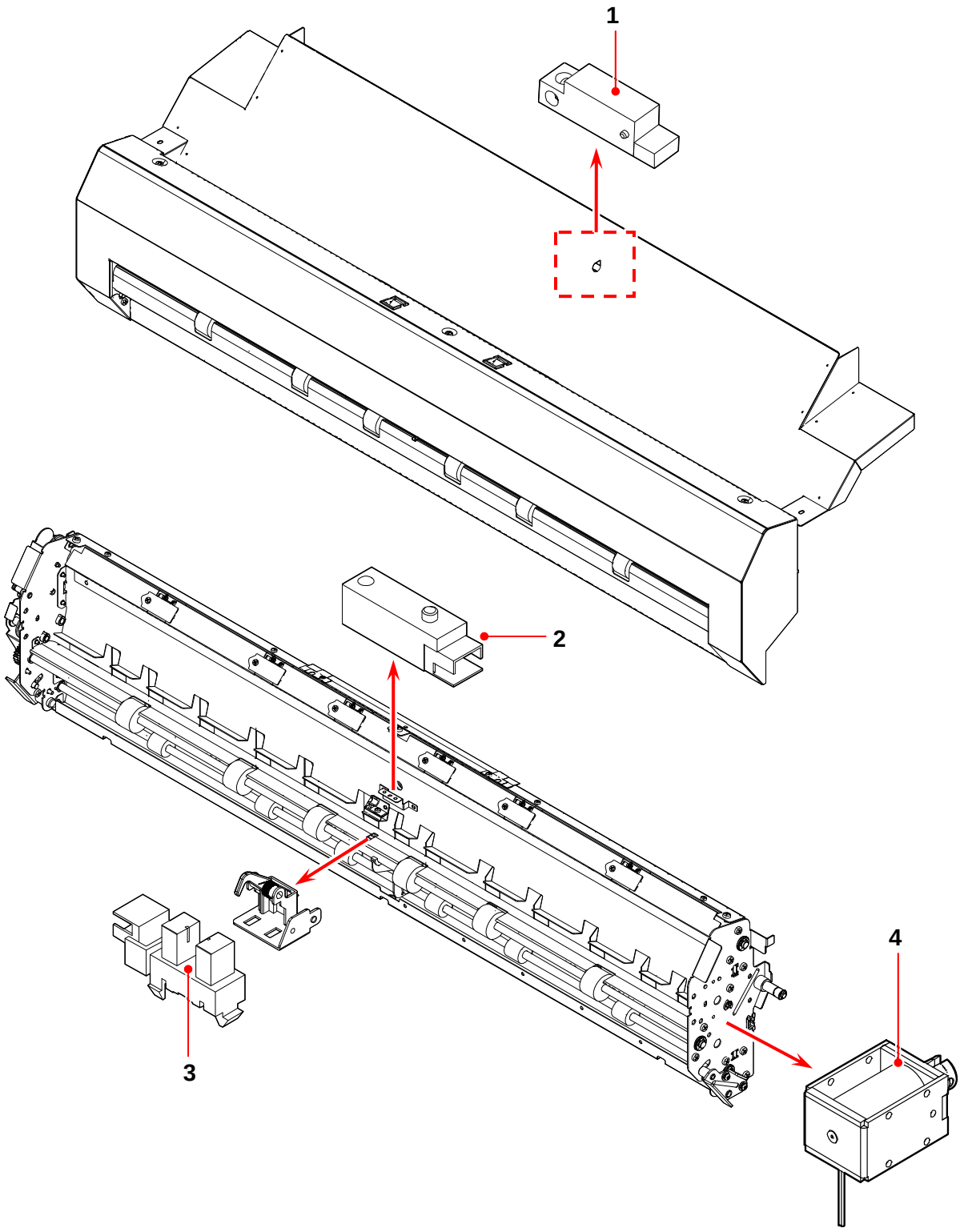
Item	Symbol	Signal name	Name	Type	Function
1	PW6693		Zener PCB Assy	PW6693	Keeps the Grid Voltage constant to correctly control the surface potential of Drum. PW6693(Y) PW6693(M) PW6693(C) PW6693(K)
2	M18-1 M18-2 M18-3 M18-4		DC Motor	SE15K0TTMM	Drives the Wire Cleaning Pads. M18-1(K) M18-2(C) M18-3(M) M18-4(Y)

4. 2. 12 Cutter Unit

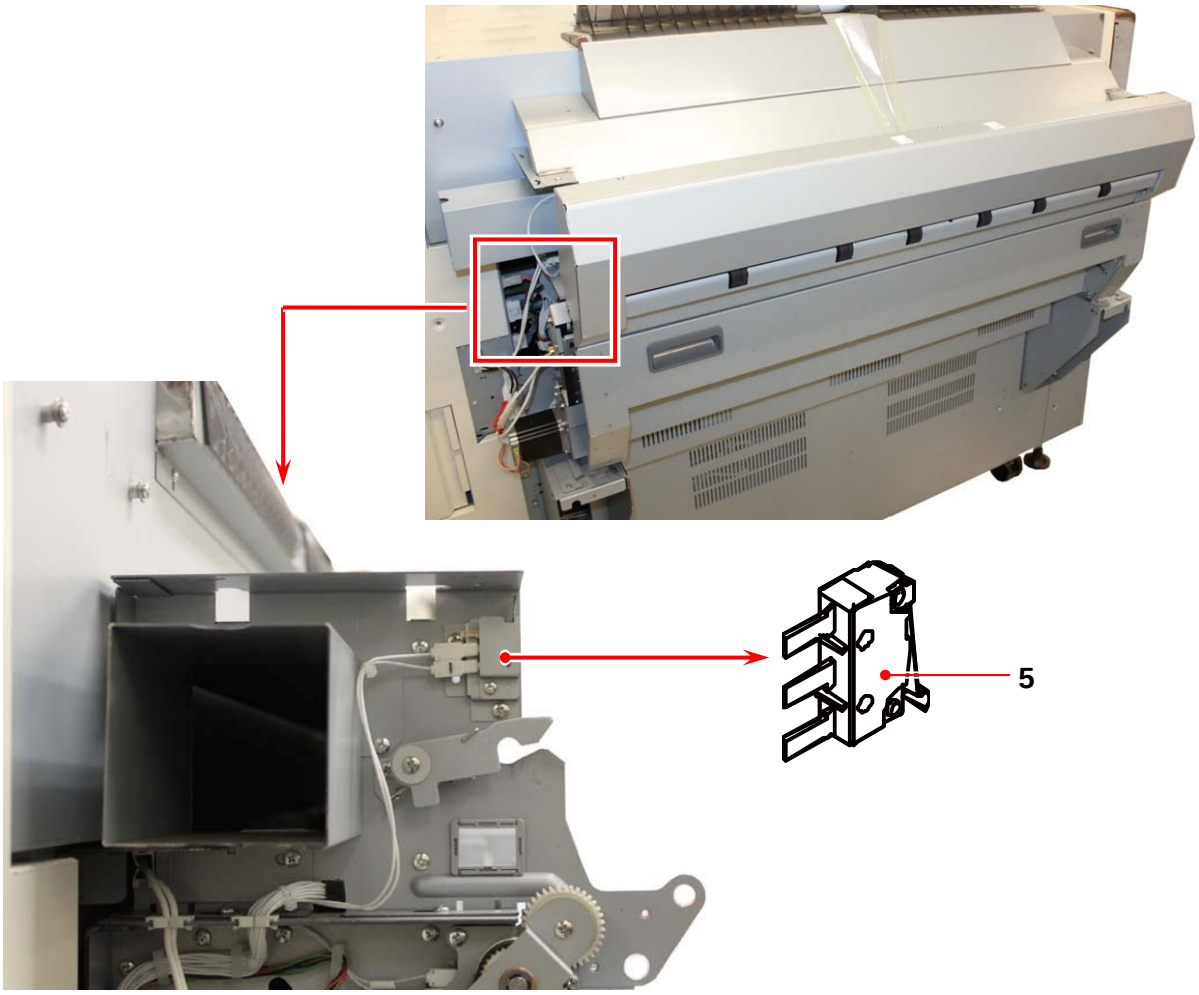


Item	Symbol	Signal name	Name	Type	Function
1	M13		Cutter Motor	RS-380SH-12300	Drives the Cutter.
2	MS2		Micro Switch	MLS1-AVS	Detects the home position of Cutter.
3	MS1		Micro Switch	MLS1-AVS	Detects the home position of Cutter.

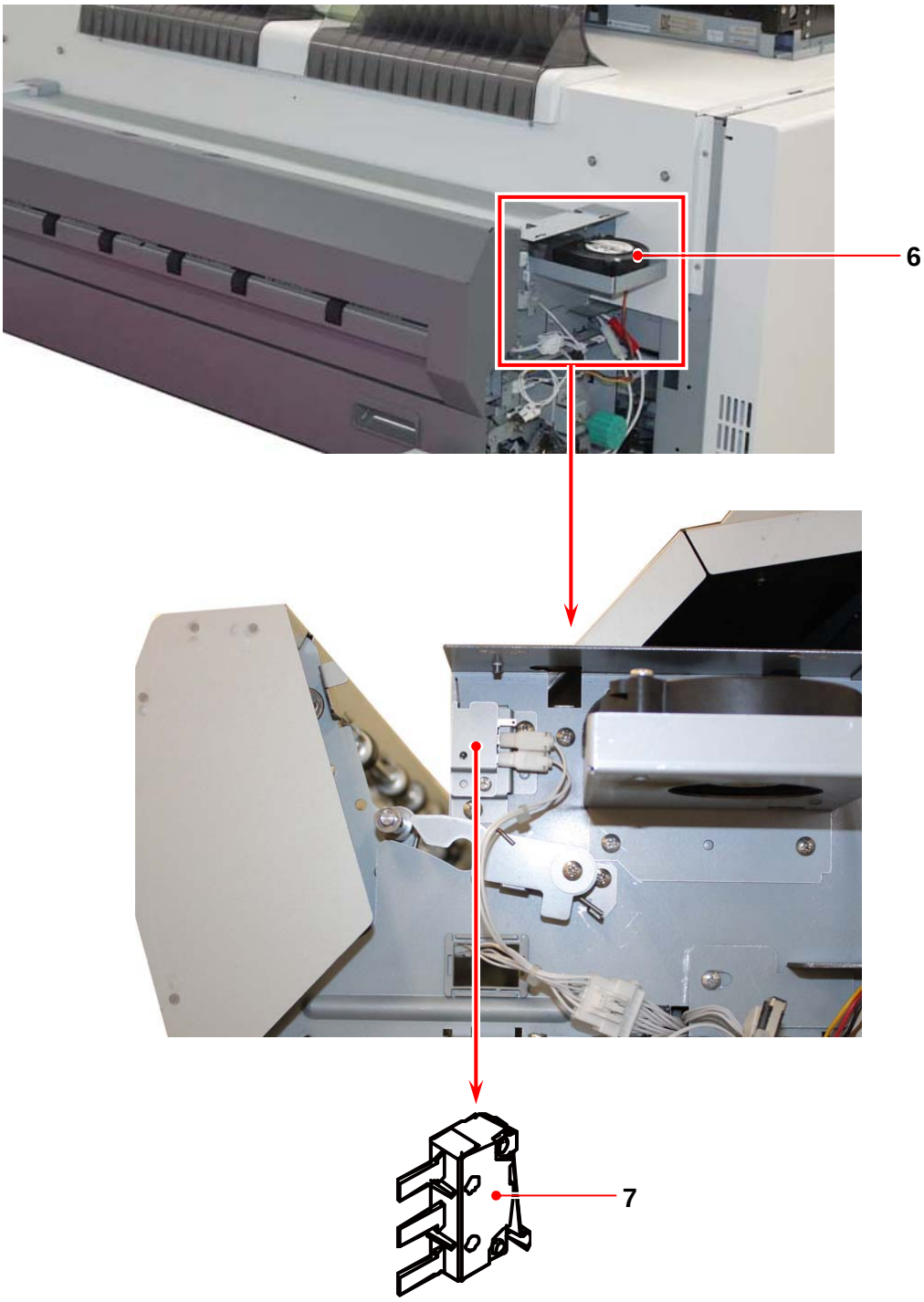
4. 2. 13 Front Stacking Unit



Item	Symbol	Signal name	Name	Type	Function
1	PH103		Reflection Sensor	KR3320-AALF	Detects a media which is fed to the Upper Tray.
2	PH89		Reflection Sensor	PS117ED1	Detects a paper jam.
3	PH91		Photo Interrupter	LG248NL1	Detects a media which is fed to the Rear Ejection (High).
4	SL3		Solenoid	STC-SN12D	Switches the direction of ejection between "top stacking" and "rear ejection".

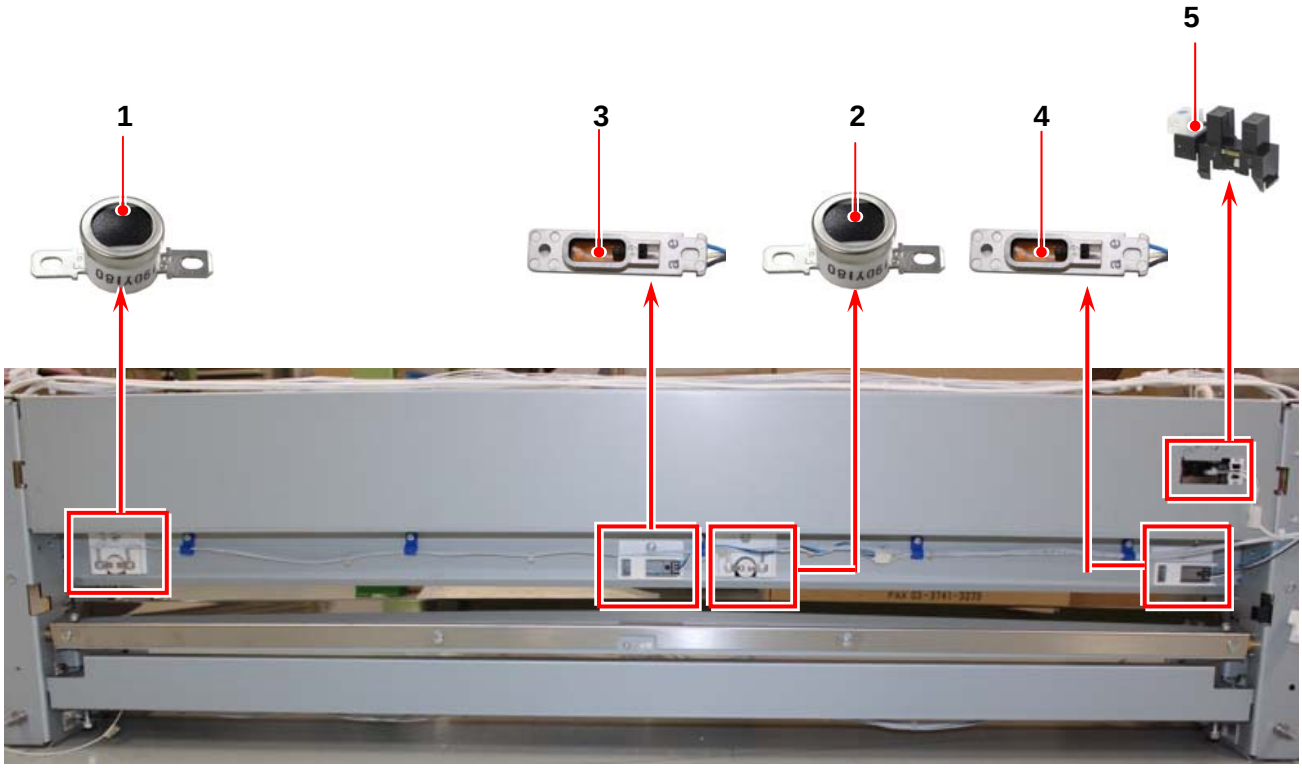


Item	Symbol	Signal name	Name	Type	Function
5	S8		Micro Switch	D2SW-P2L3T(S)	Detects open/close of Upper Ejection Unit.

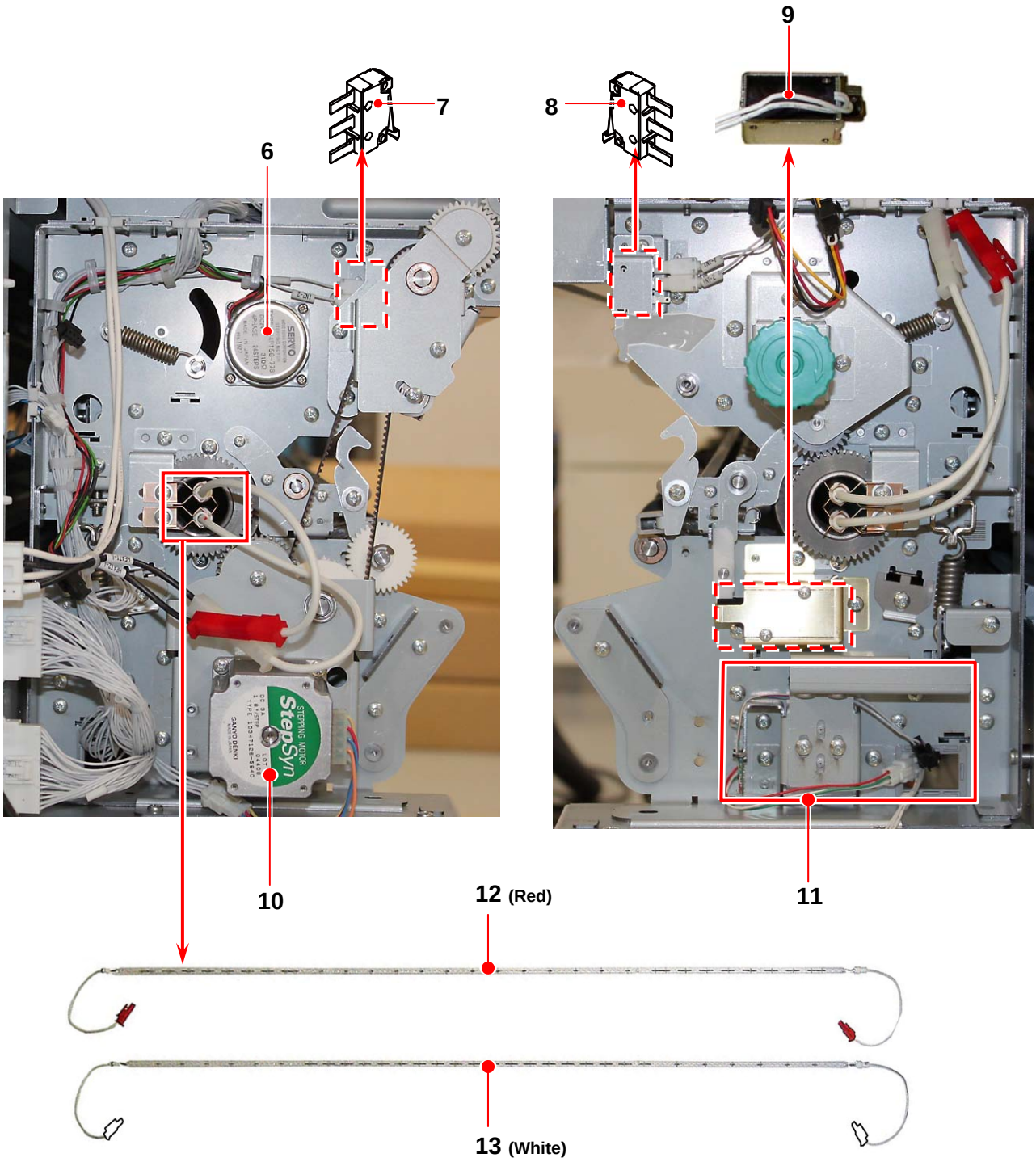


Item	Symbol	Signal name	Name	Type	Function
6	FM1		DC Blower	9BMB24P2G04	Exhaust the hot air in Fuser.
7	S7		Micro Switch	D2SW-P2L3T(S)	Detects open/close of Upper Ejection Unit.

4. 2. 14 Fuser Unit

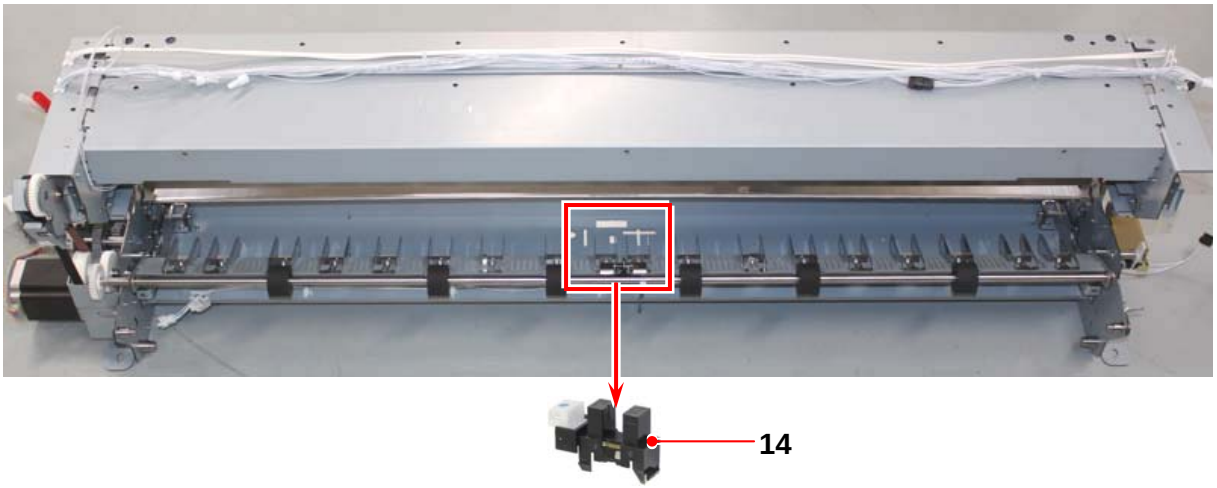


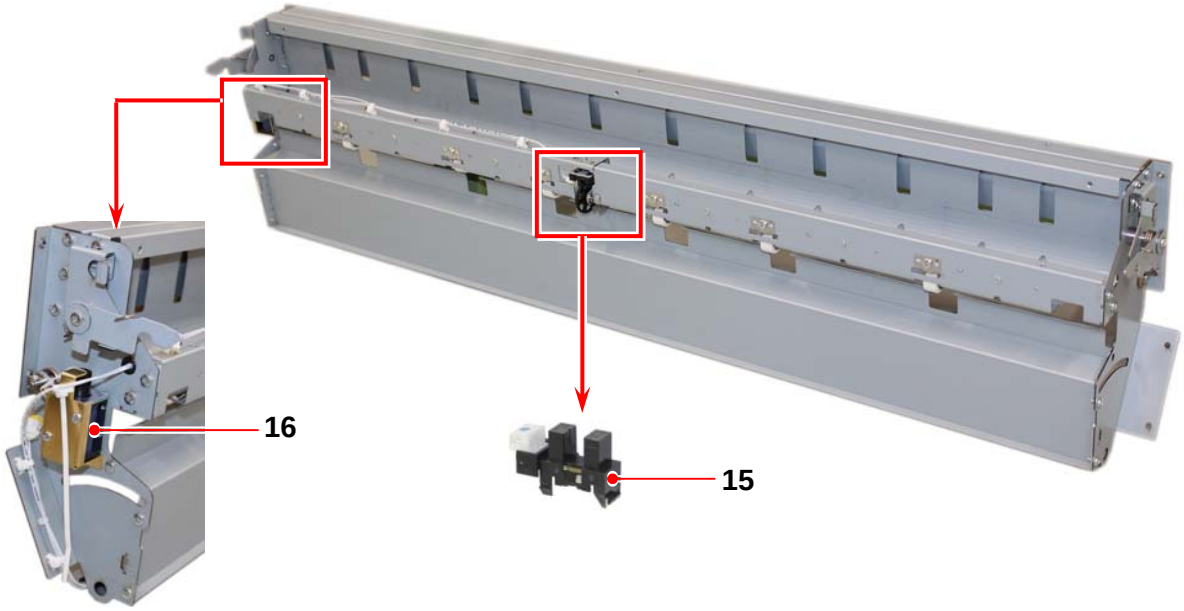
Item	Symbol	Signal name	Name	Type	Function
1	TS1		Thermostat	CH-152-35	Protects the fuser from overheating.
2	TS2		Thermostat	CH-152-35	Protects the fuser from overheating.
3	TH1		Non-contacting Thermistor (Temperature sensor of Fuser Roller)	NC-F10	Detects and the controls the temperature of the centre of fuser roller.
4	TH2		Non-contacting Thermistor (Temperature sensor of Fuser Roller)	NC-F10	Detects and the controls the temperature of the sides of fuser roller.
5	PH68		Photo Interrupter (Web sensor)	LG248NL1	Detects "near empty" of web.



Item	Symbol	Signal name	Name	Type	Function
6	M14		Stepping Motor	KP4P15G-778	Drives the web.
7	S3		Micro Switch	D2SW-P2L3T(S)	Detects open/close of Exit Cover.
8	S2		Micro Switch	D2SW-P2L3T(S)	Detects open/close of Exit Cover.
9	SL1		Solenoid	STC-SN12D	Brings up and down the Fuser Stripper Fingers.
10	M3		Stepping Motor	103H7126-5846	Drives the Fuser.

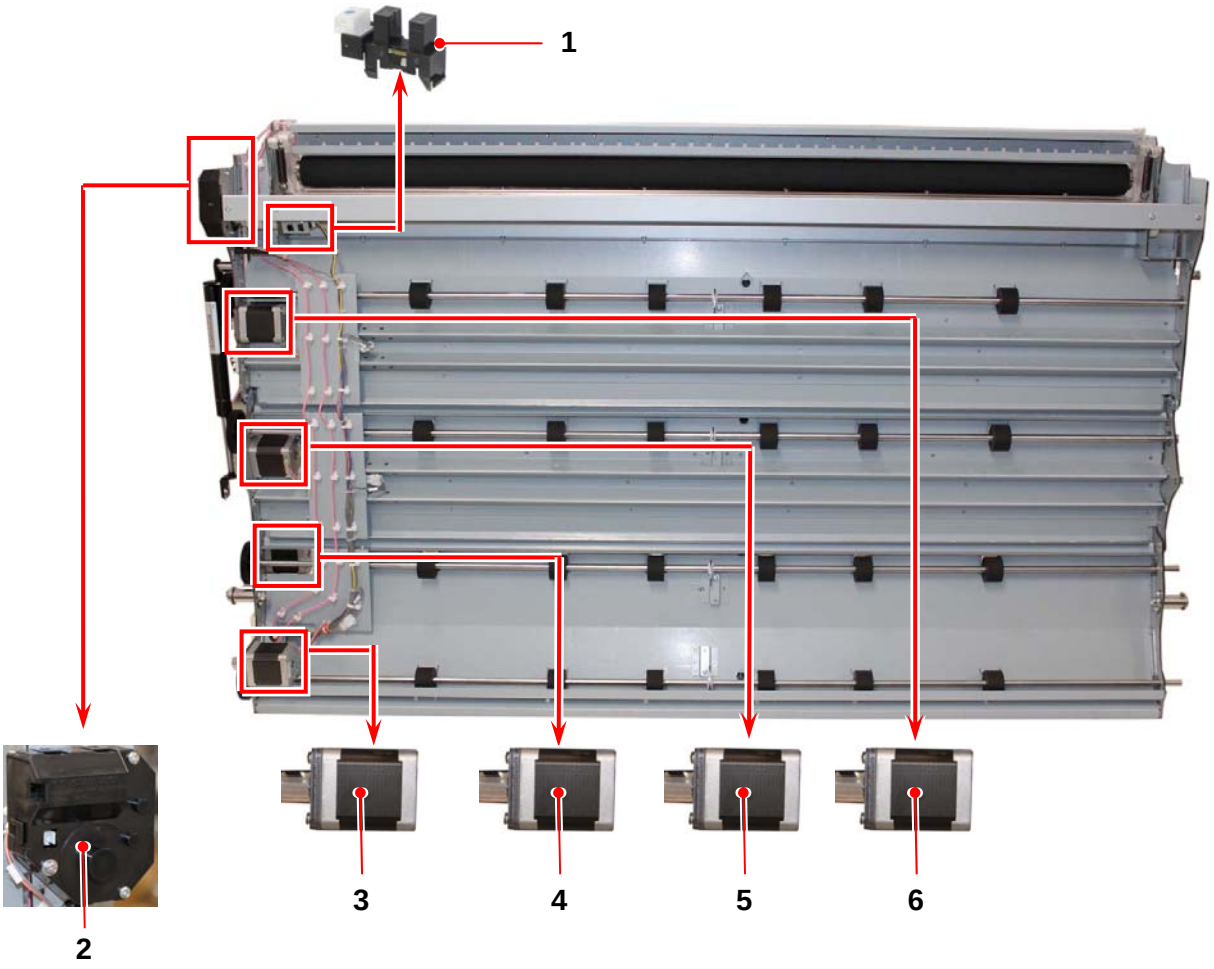
Item	Symbol	Signal name	Name	Type	Function
11			Load Cell	IS-1K-0030 HN	Detects the tension of media in fuser to control the speed of Fuser Motor.
12	H2		IR Lamp	(1350W) QIR-230-1400 KITM-P	Heats the sides of Fuser Roller. (Red connector)
13	H1		IR Lamp	(1400W) QIR-230-1350-KITM-P	Heats the centre of Fuser Roller. (White connector)



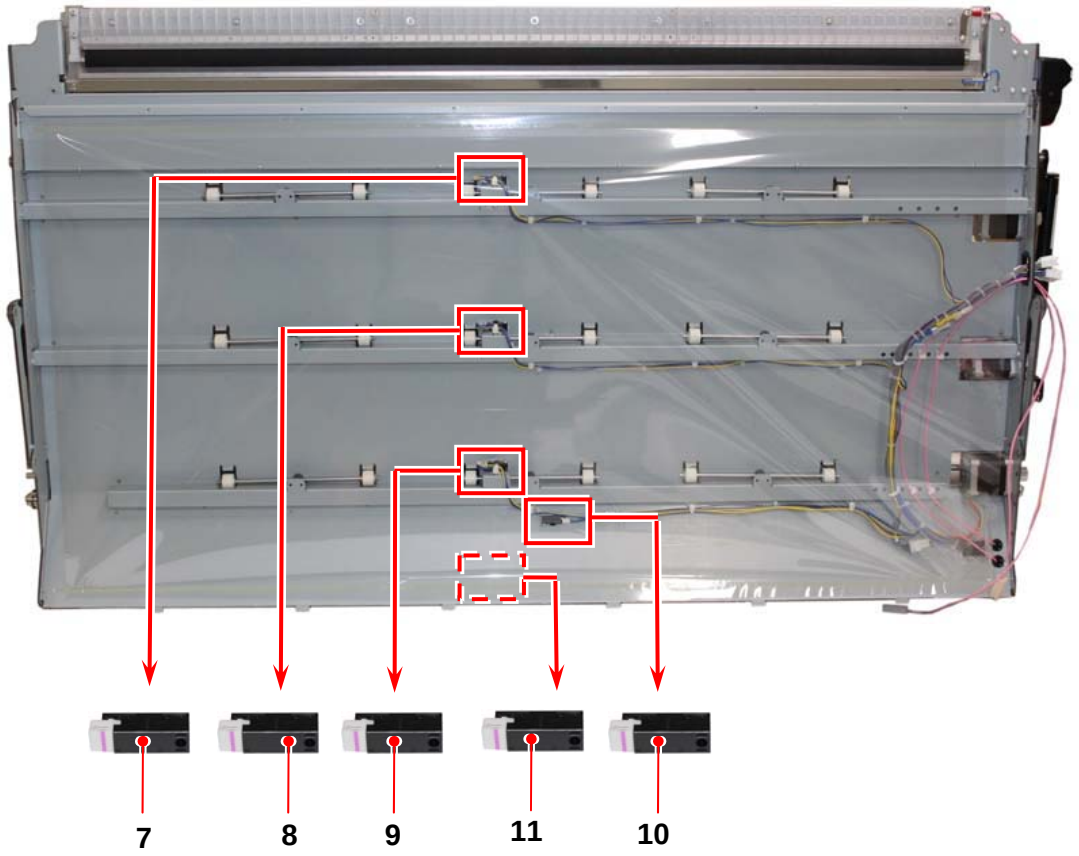


Item	Symbol	Signal name	Name	Type	Function
14	PH67		Photo Interrupter	LG248NL1	Detects a paper jam in lower rear ejection.
15	PH88		Photo Interrupter	LG248NL1	Detects a paper jam. (Checks whether or not the media is correctly transported even after detected by the PH67.)
16	SL2		Solenoid	STC-SN12D	Switches the way of ejection between "Top Stacking" and "Upper rear ejection".

4. 2. 15 Feeder Unit

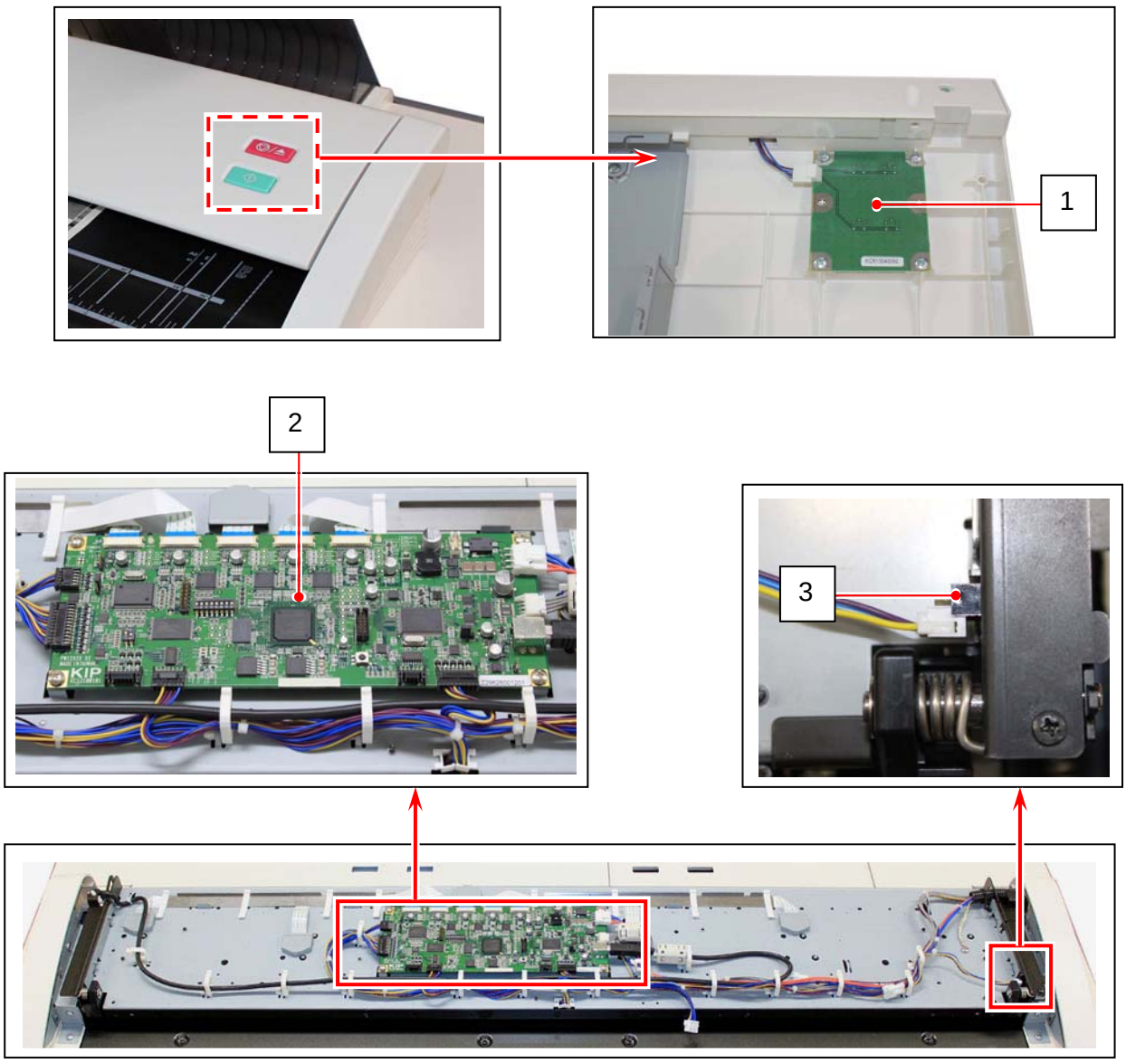


Item	Symbol	Signal name	Name	Type	Function
1	PH61		Photo Interrupter	LG248NL1	Detects the home position of Secondary Transfer Roller.
2	M5		Motor Actuator	MA-D04-004	Drives the Secondary Transfer Roller.
3	M4-4		Stepping Motor	103H5210-5248	Transports a media.
4	M4-1		Stepping Motor	103H5210-5248	Transports a media.
5	M4-2		Stepping Motor	103H5210-5248	Transports a media.
6	M4-3		Stepping Motor	103H5210-5248	Transports a media.

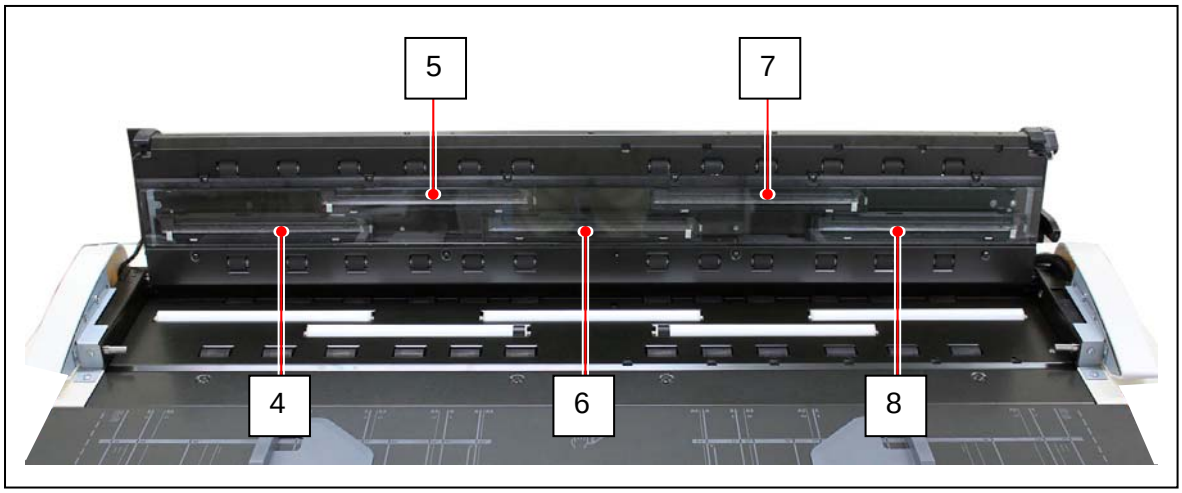


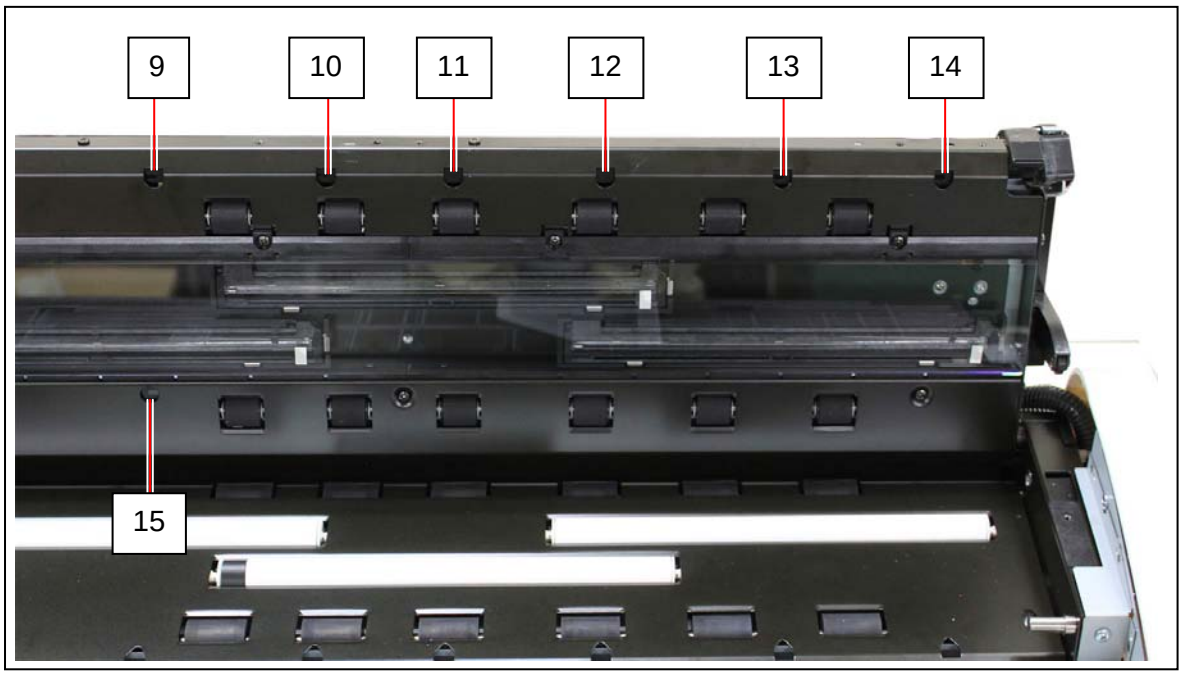
Item	Symbol	Signal name	Name	Type	Function
7	PH65		Photo Interrupter	PS117ED1	Detect the transportation of media.
8	PH64		Photo Interrupter	PS117ED1	Detect the transportation of media.
9	PH63		Photo Interrupter	PS117ED1	Detect the transportation of media.
10	PH62		Photo Interrupter	PS117ED1	Detect the transportation of cut sheet media.
11	PH66		Photo Interrupter	PS117ED1	Detect the transportation of cut sheet media.

4. 2. 16 Scanner Unit (KIP 860 only)

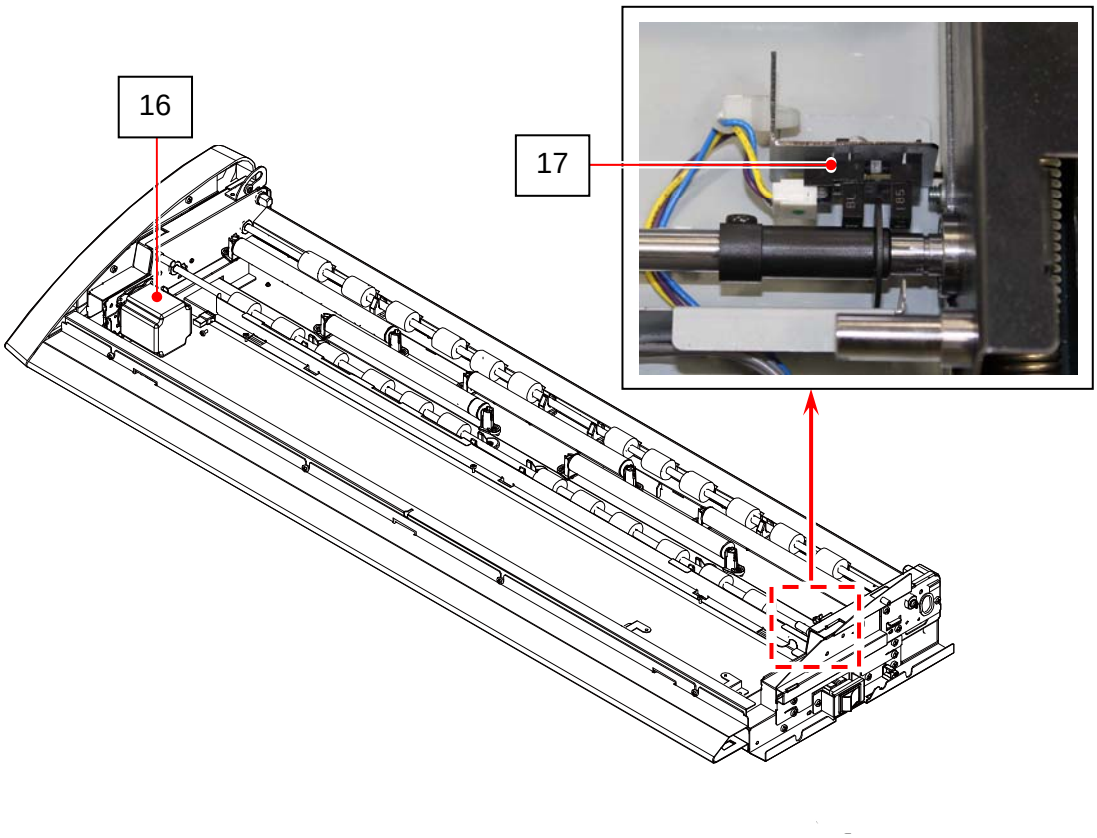


Item	Symbol	Signal name	Name	Type	Function
1	PW12975		SW CONTROL BOARD ASSY	PW12975 01	Has 2 switches for user Intervention “Stop/Eject” and “Start”.
2	PW12920		D CON (Data Controller PCB)	PW12920-02	Makes image processes to the digital data sent from CIS, and then sends the processed image data to Printer. Converts the analog data read by the CIS to the digital data
3	S_PH8		Sensor	LG248BL1	Detects whether Upper Unit is opened.





Item	Symbol	Signal name	Name	Type	Function
4	CIS 1		CIS Sensor	FL06G-W07	Reads the image of original, and then send the analog data to D CON (Data Controller PCB).
5	CIS 2				
6	CIS 3				
7	CIS 4				
8	CIS 5				
9	S_PH1		Sensor	PS122GD4-A	Detects the original to be inserted. Detects original width A4 (Portrait)
10	S_PH2		Sensor	PS122GD4-A	Detects original widths A4 (Landscape), A3, 11” and 12”.
11	S_PH3		Sensor	PS122GD4-A	Detects original widths A2, 17” and 18”.
12	S_PH4		Sensor	PS122GD4-A	Detects original widths A1, 22” and 24”.
13	S_PH5		Sensor	PS122GD4-A	Detects original widths A0, 30”, 34”.
14	S_PH6		Sensor	PS122GD4-A	Detects original widths 36”.
15	S_PH7		Sensor	PS122GD4-A	Detects the original mis-feed.



Item	Symbol	Signal name	Name	Type	Function
16	M19		Motor	103H7123-5746	Transports the original.
17	S_PH9		Sensor	LG248BL1	Detects rotations of FEED ROLLER

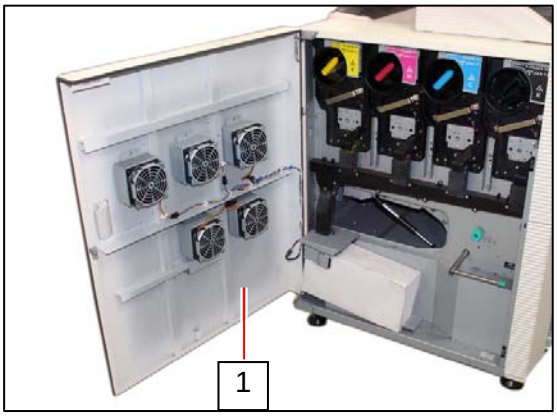
Chapter 5

Mechanical

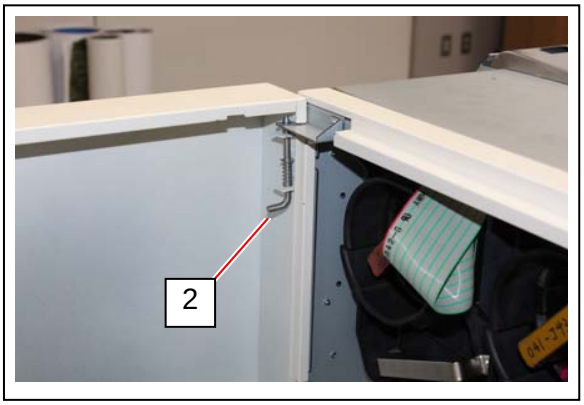
5. 1 Process Unit

5. 1. 1 Drawing out of Process Unit

1. Open the Left Door (1).



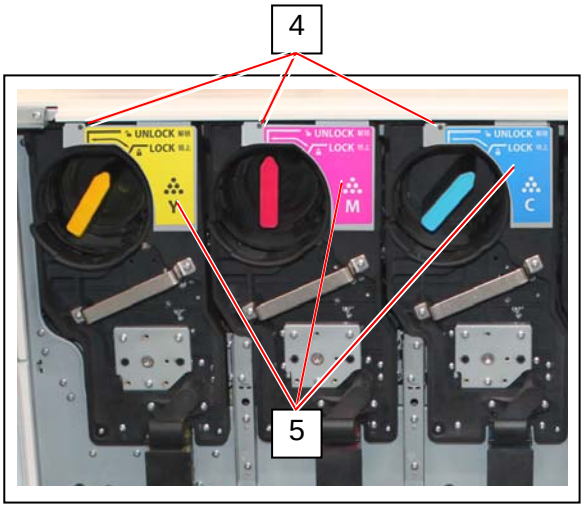
2. Pull down the lock pin (2) to unlock the Left Side Door (3). Then a little tilt the Left Side Cover by moving its upper side and then bring it up to remove from the machine.



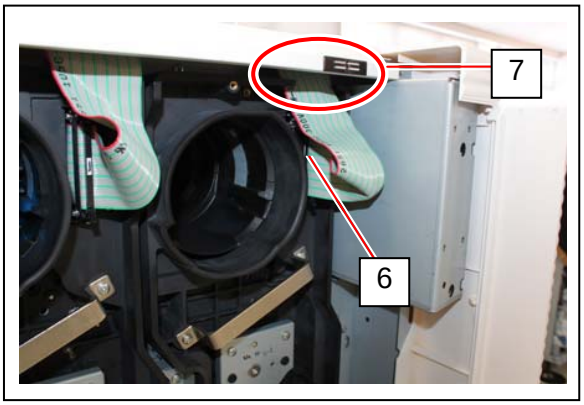
NOTE

Necessarily remove the Left Side Door (3) before drawing out any Process Unit. Otherwise you would not have enough work space for later operation.

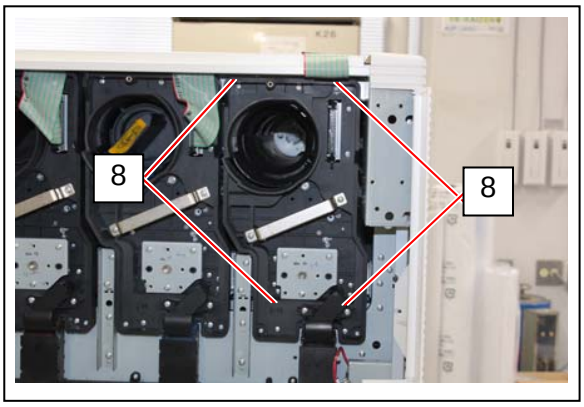
3. Remove 1 screw (4) to remove the Flat Cable Cover (5) of requested color.



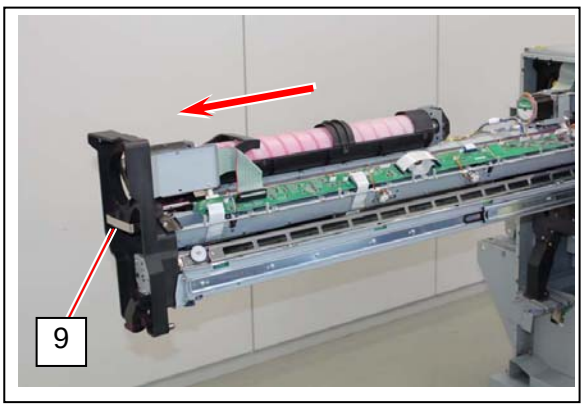
3. Plug out a flat cable (6) and remove it from the holder (7), and fix the flat cable to the top plate with a tape and etc.



4. Remove 4 M4x8 screws (8).



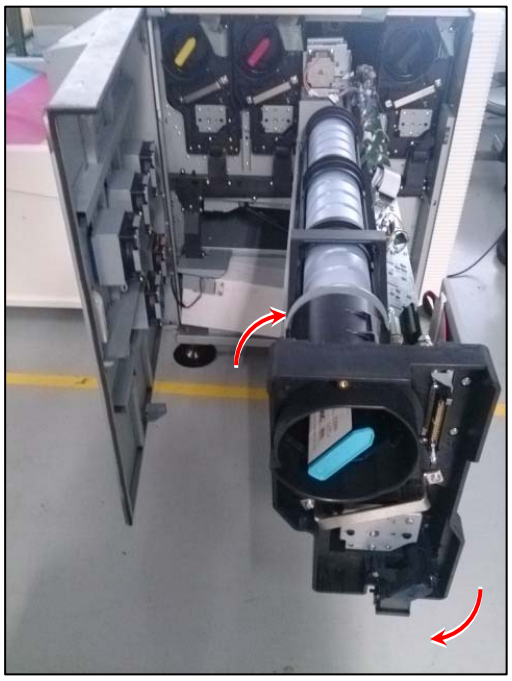
5. Catch the handle (9) firmly and draw out the Process Unit slowly and carefully.

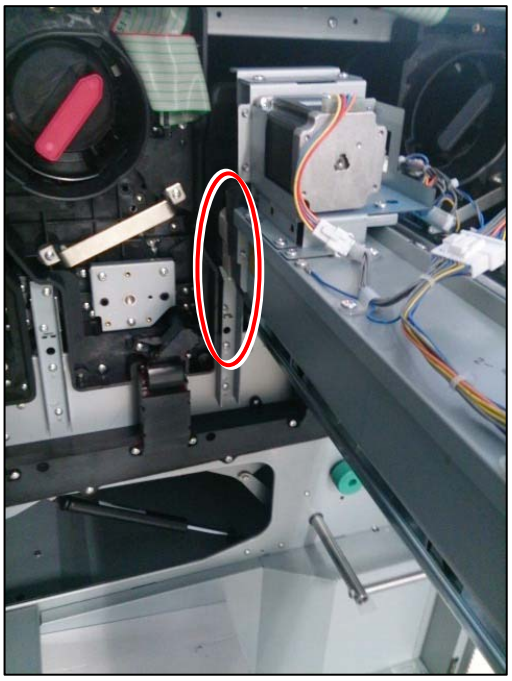


NOTE

(1) Do not draw out 2 or more units simultaneously. Only 1 unit must be drawn out at a time.
(2) Please draw out the Process Unit as gently as possible, so as not to damage the DC harnesses on the side.

6. When closing the Process Unit back into the machine, slightly twist the entire unit in the direction of arrows and then push it into the machine, which is to prevent the side of process unit (circled part) to touch the next Process Unit.

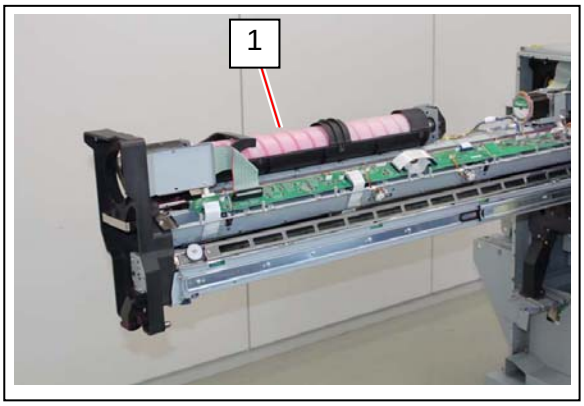




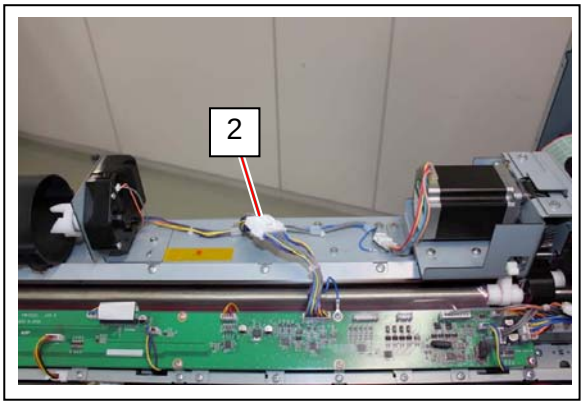
5. 1. 2 Removal of Developer Unit

1. Draw out the concerning Process Unit referring to [5.2.1 Drawing out of Process Unit].

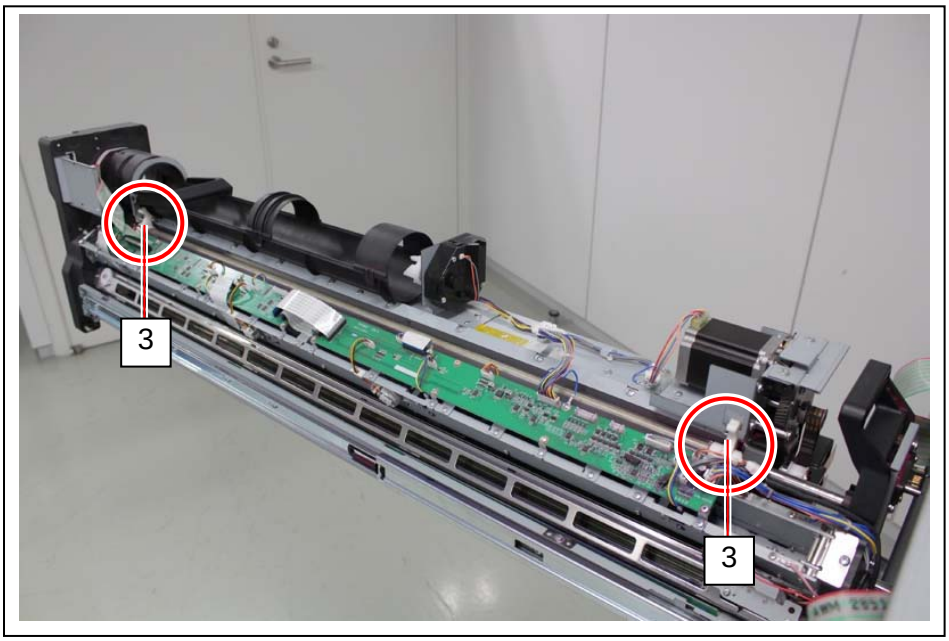
2. Remove the Toner Cartridge (1).

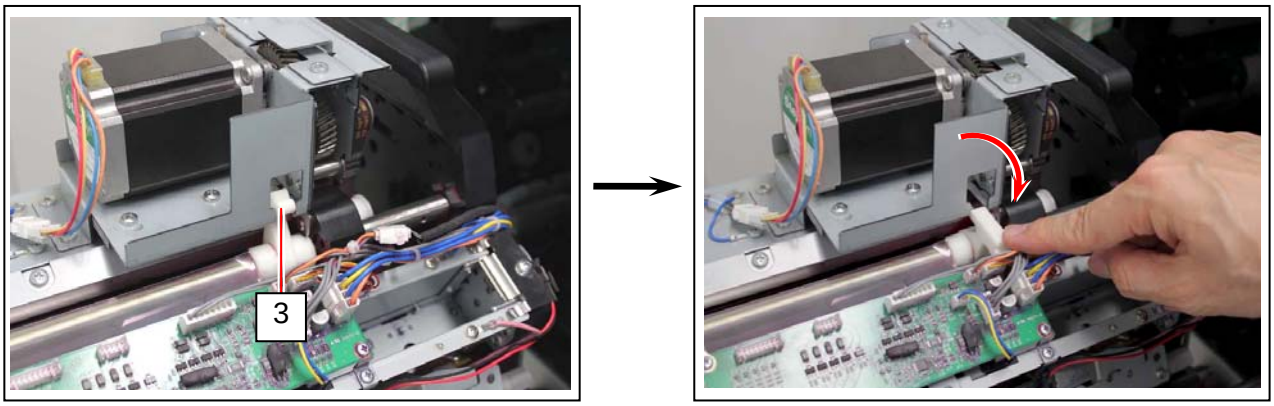


3. Disconnect the connector (2).

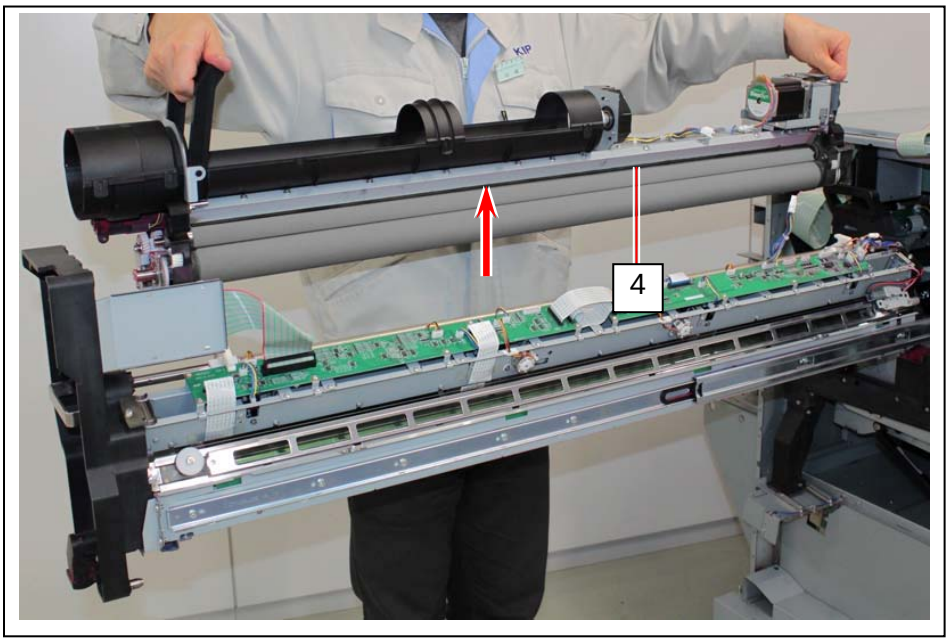


4. Move both developer lock levers (3) to unlocking positions.





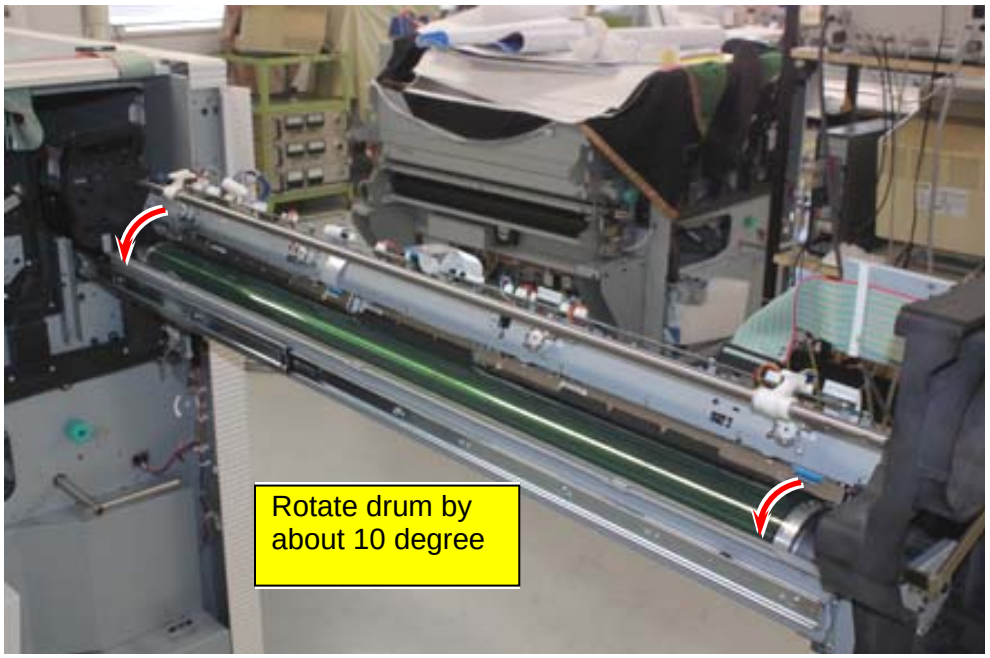
5. Catch both handles and then bring up and remove the Developer Unit from Process Unit.



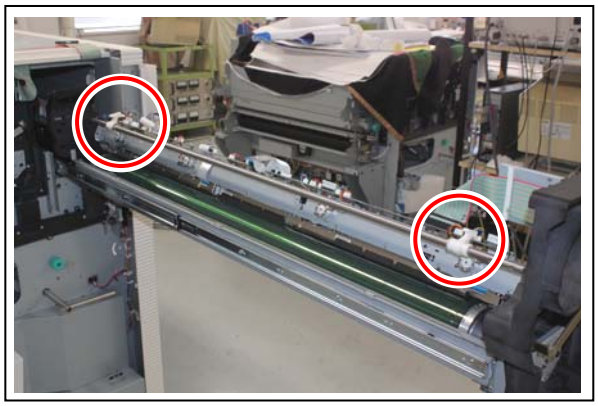
NOTE : When returning the Developer Unit

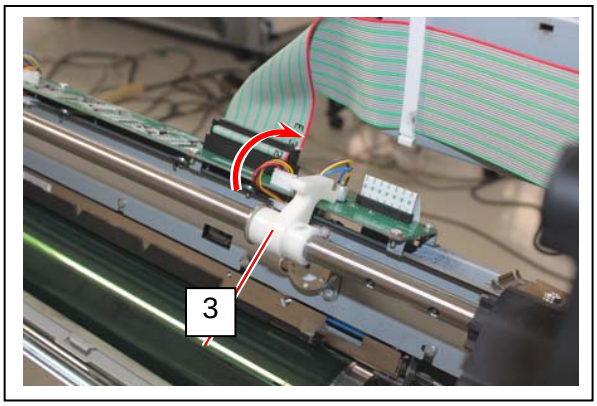
IMPORTANT!

1. Before returning the Developer Unit back in, rotate the Drum in the direction of arrows by about 10 degrees with holding the silver edges on both sides. This movement is very important to keep well-adjusted Drum Phase position. If you do not do this, sometimes the Drum Phase position changes and it may affect vertical color registration.

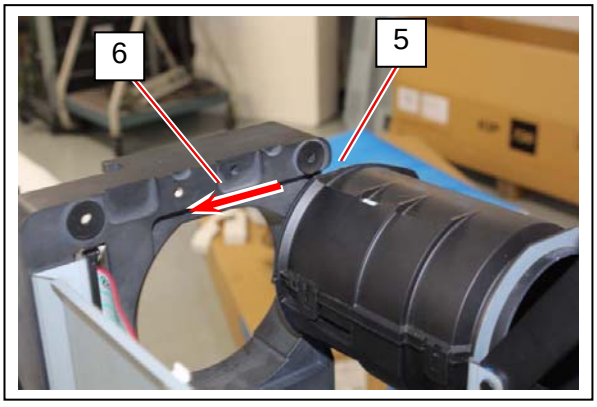


2. Confirm that both Developer Lock Levers (3) are set to unlocking positions.

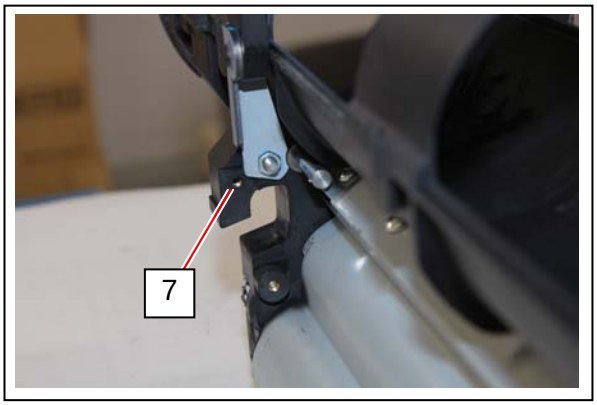


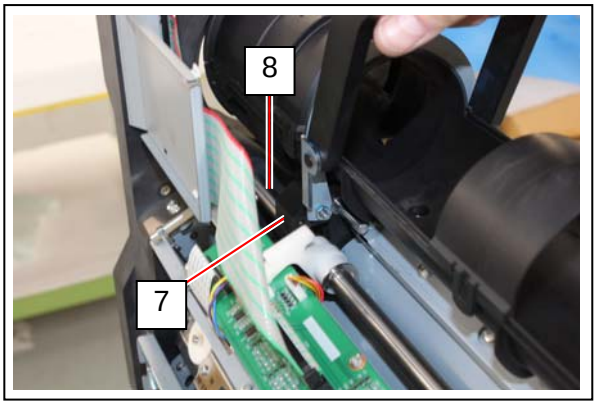


3. Move the Developer Unit forward so that the edge of toner cartridge case (5) runs right under the step (6) of the Process Frame.

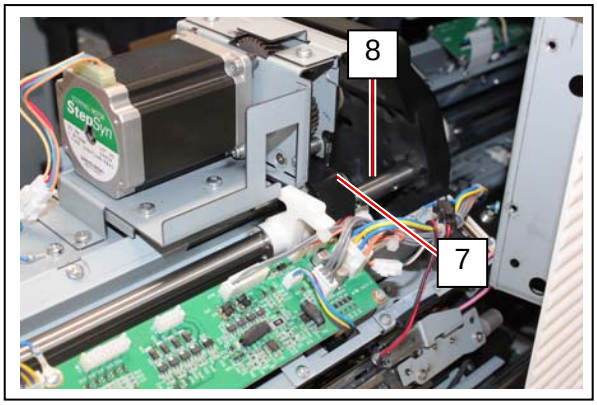


4. Fit the hooks (7) on both sides to the correct positions on the shaft (8).



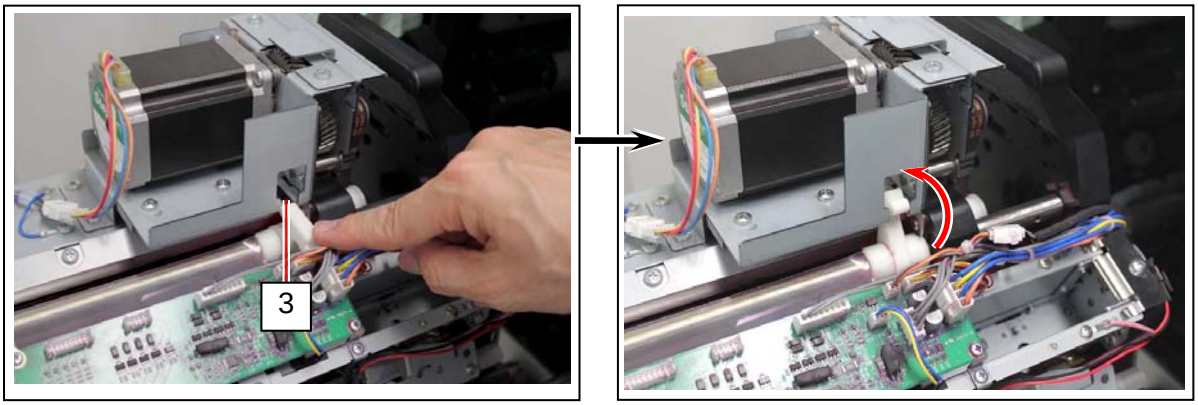


(Toner Cartridge side)



(Driving side)

5. Turn the Developer Lock Levers (3) in the direction of arrow to firmly lock the Developer Unit.



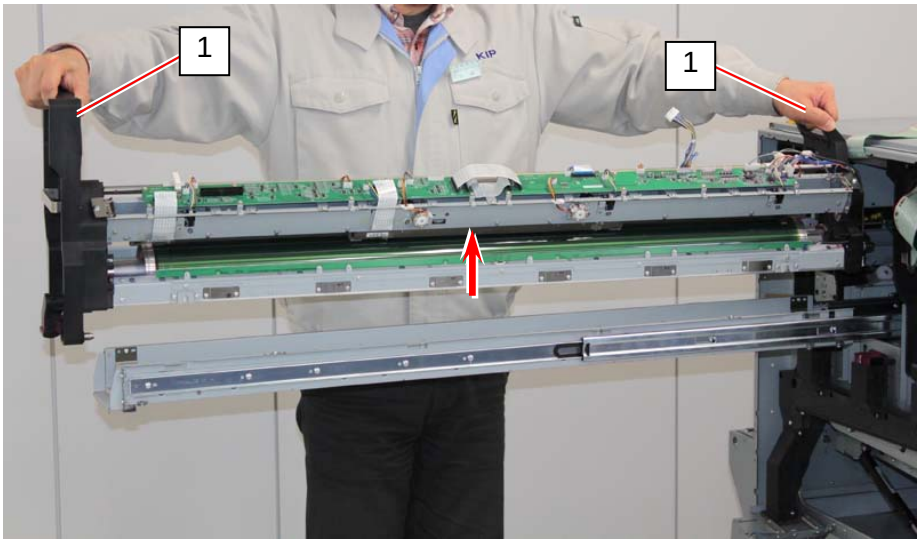
5. 1. 3 Removal of Process Unit

NOTE

Prepare enough space and a flat table with a sheet on top of it for putting the removed Process Unit.

1. Remove the Process Unit from the Process Frame referring to [5.2.2 Removal of Developer Unit].

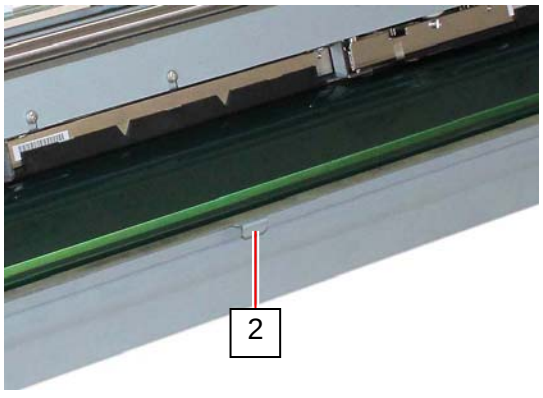
2. Catch both handles (1) firmly and bring up and remove the Process Unit.

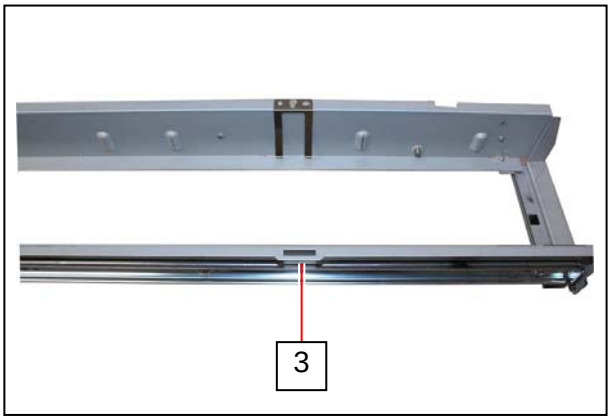


3. After confirm that there is nothing on the area that may touch the bottom of Process Unit (Drum), put the Process unit on a flat place such as on the table.

NOTE

(1) There is naked Drum surface on the bottom of the Process unit. Be careful not to hit it to anywhere or scratch it accidentally while returning the Process Unit back in the rail.
(2) Fit 3 positioning plates (2) on the Process Frame into 3 positioning slits (3) on the rail.





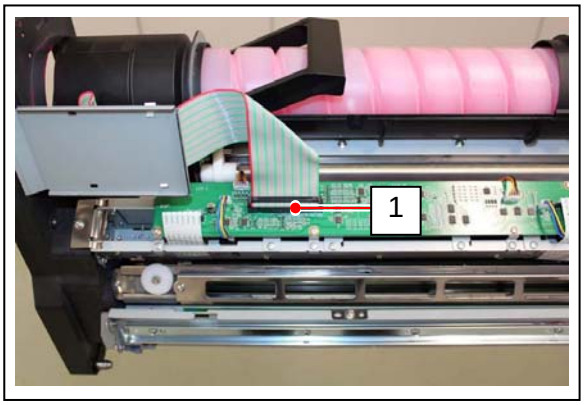
5. 1. 4 Removal of LED Head

NOTE

LED Head is classified into some levels according to its characteristics of components. 4 LED used on one machine must belong to the same level for achieving expected print quality. Please check the level of LED Head before replacement and make sure to replace with the one that belongs to the same level.

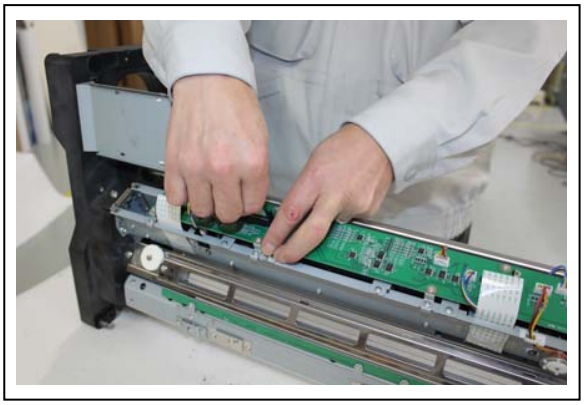
1. Draw out the Process Unit referring to [5.2.1 Drawing out of Process Unit].

2. Plug out a connector (1) of flat cable from LED PCB.

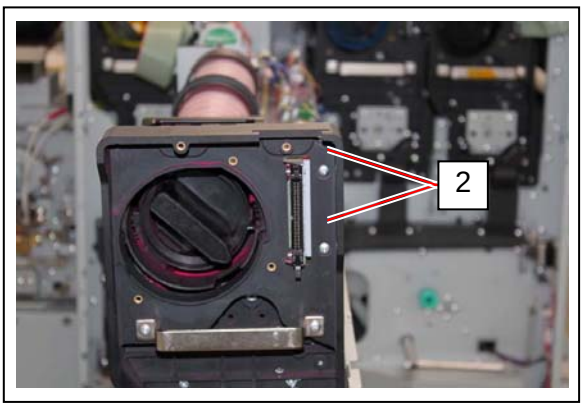


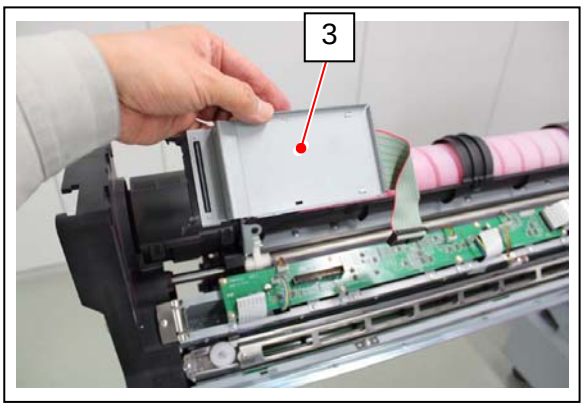
NOTE

Plug out the flat cable connector with holding the LED PCB by another hand so that it should not be deformed much.

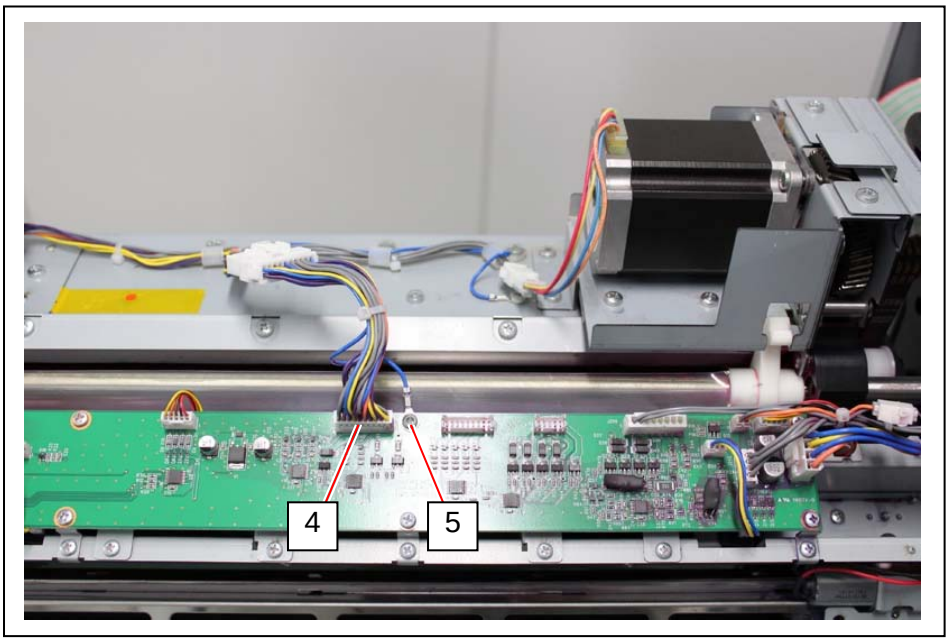


3. Remove 2 M4x6 screws (2) to remove the Bracket (3) with flat cable.

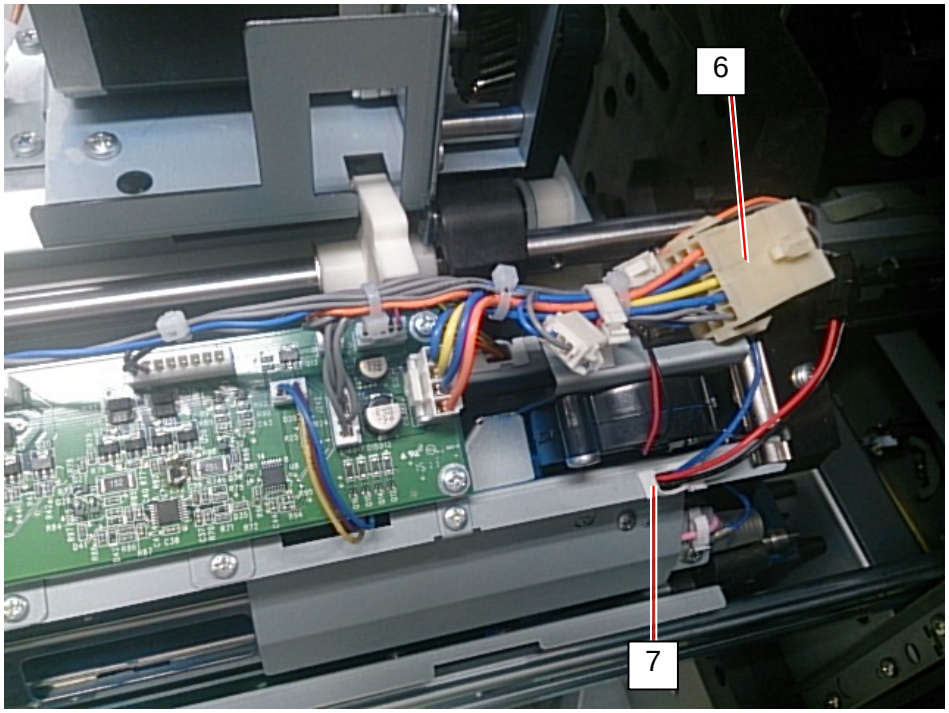




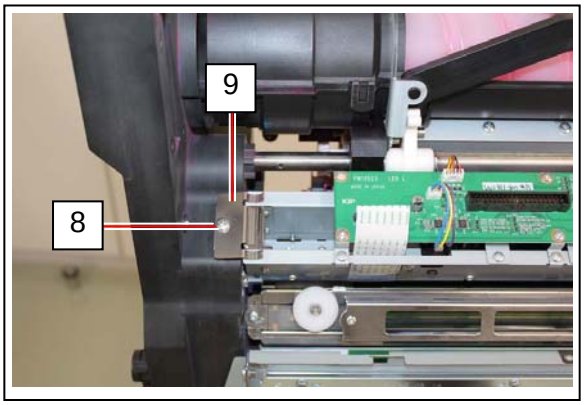
4. Plug out a connector (4) from the LEDPCB, and remove the M3x5 screw (5) to release the grounding cable.

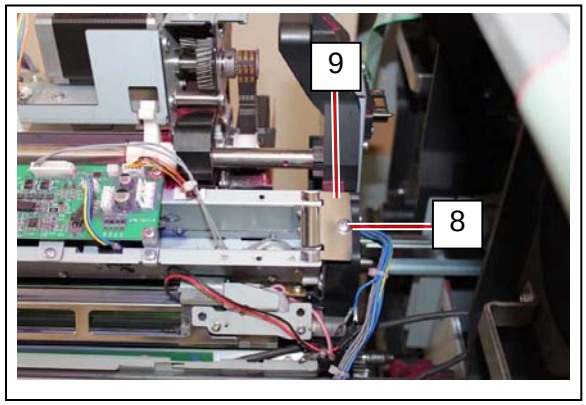


5. Plug out the connector (6), and open the edge saddle (7) to remove the harnesses.



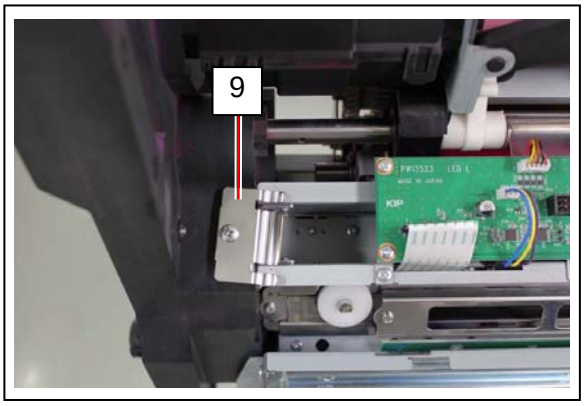
6. Remove 1 each screws (8) to remove 1 each Holder Brackets (9) on both sides.



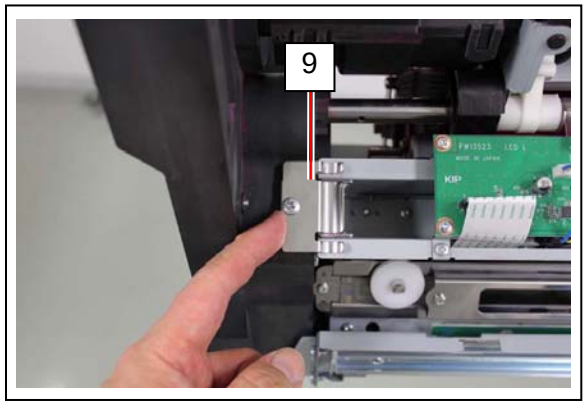


NOTE

When returning the Holder Brackets (9) to both sides, press and hold them inside and then tighten the screws (8).

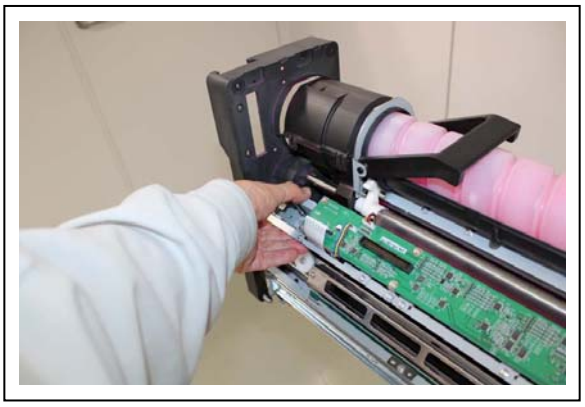


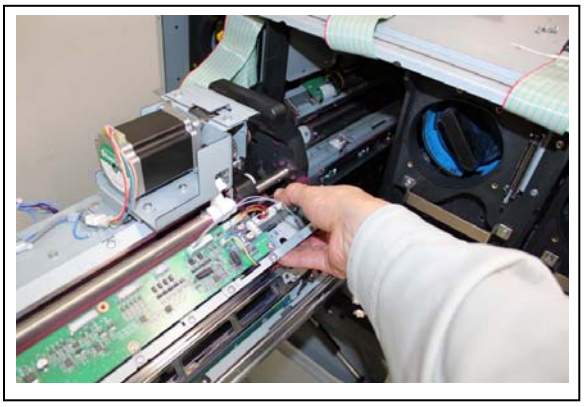
NG

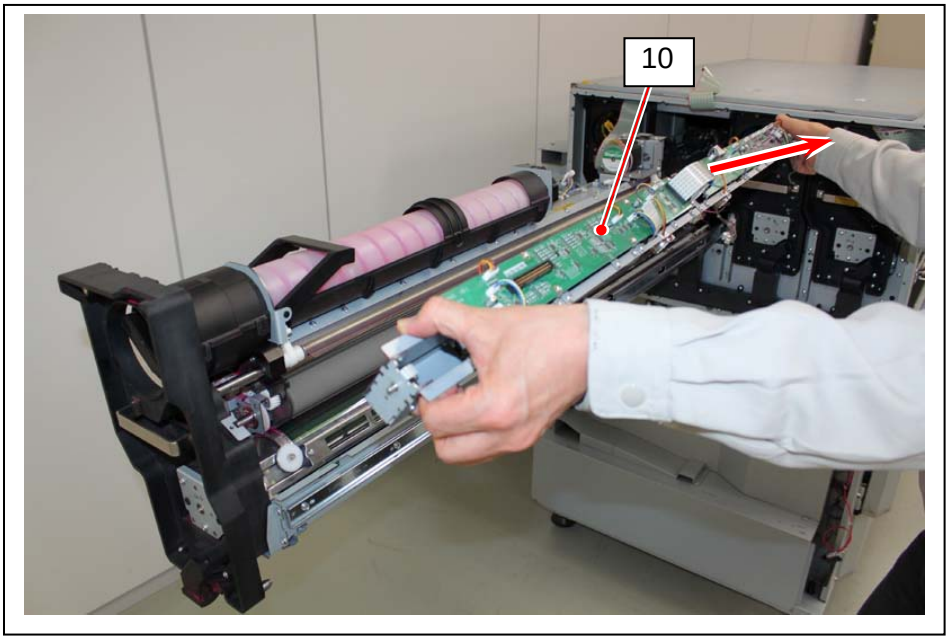


OK

7. Catching both sides, bring up and remove the whole LED Head (10).



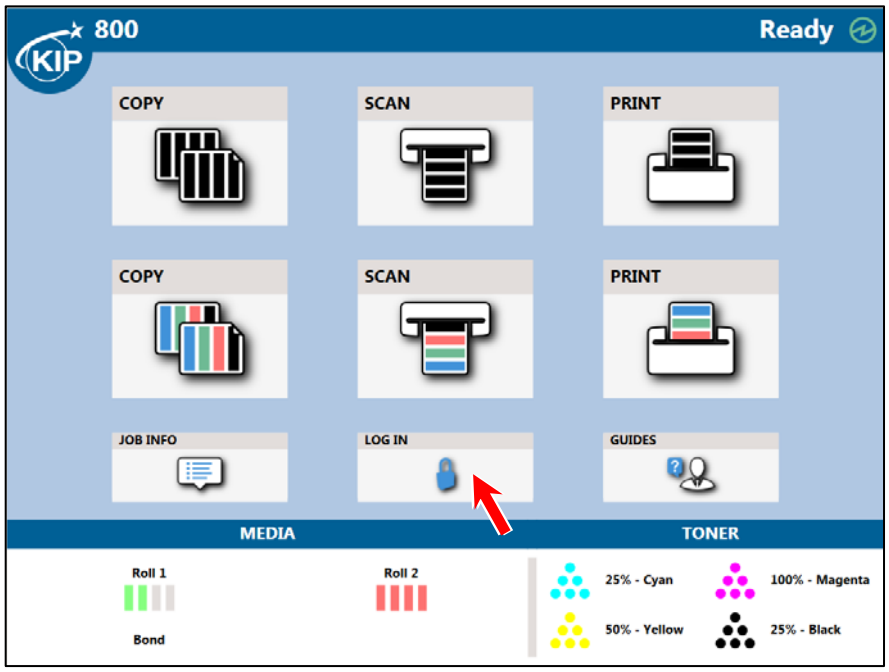




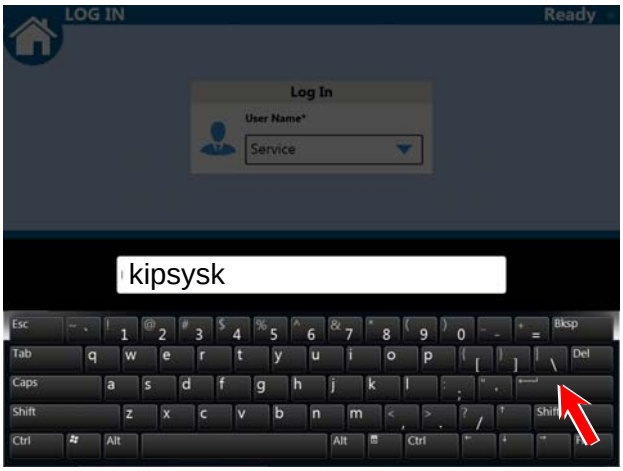
8. Prepare the new LED Head for replacement. At this time be sure to use the one that belongs to the same level to which the original LED Head belonged to.

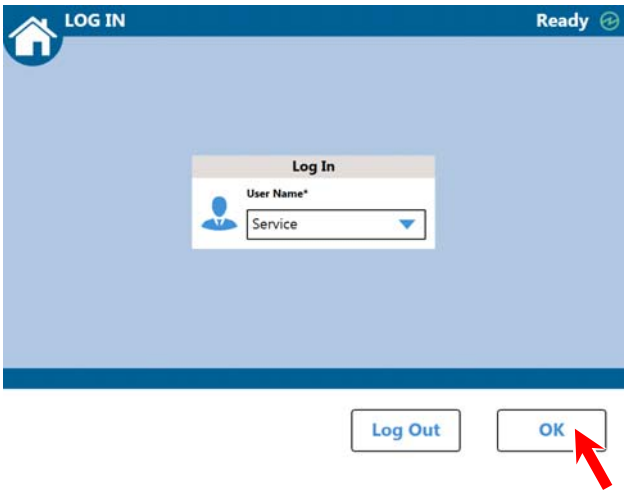
9. Calibration is needed after installing the new LED Head. Turn on the printer.

10. Press **LOG IN** in the HOME screen of Touch Panel.

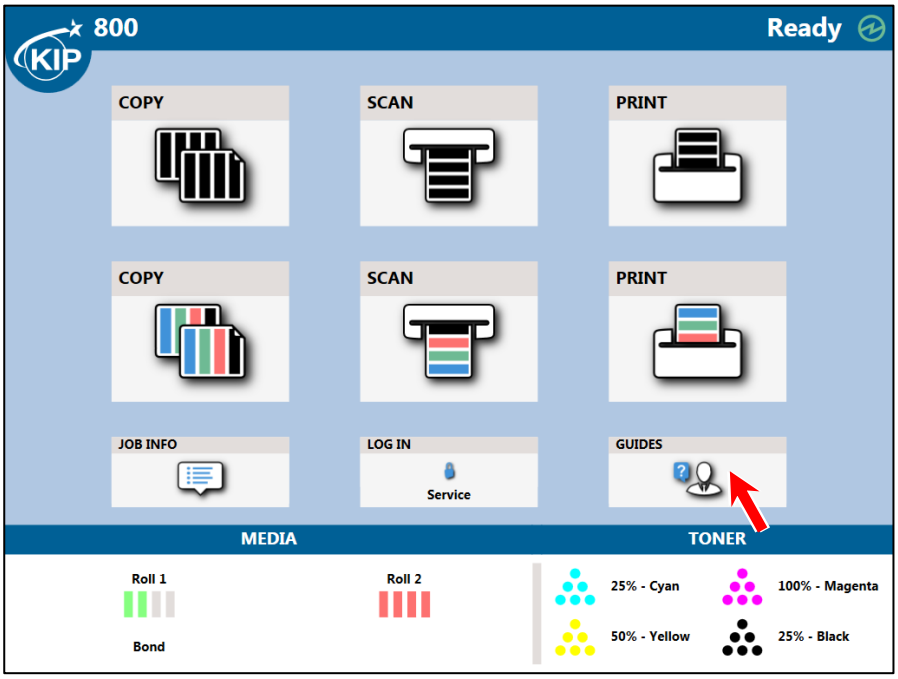


11. Touch the entry field of "User Name", and then select "Service" from the pull-down menu. Enter "kipsysk" in the password field, press the ENTER key, and then press [OK] in the LOG IN screen to log in with the administrative right.

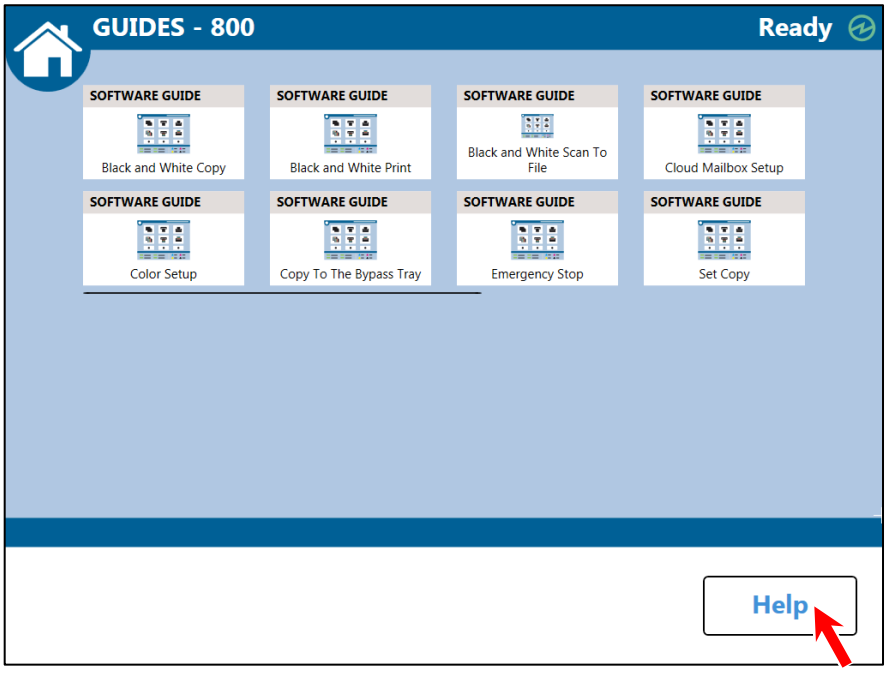




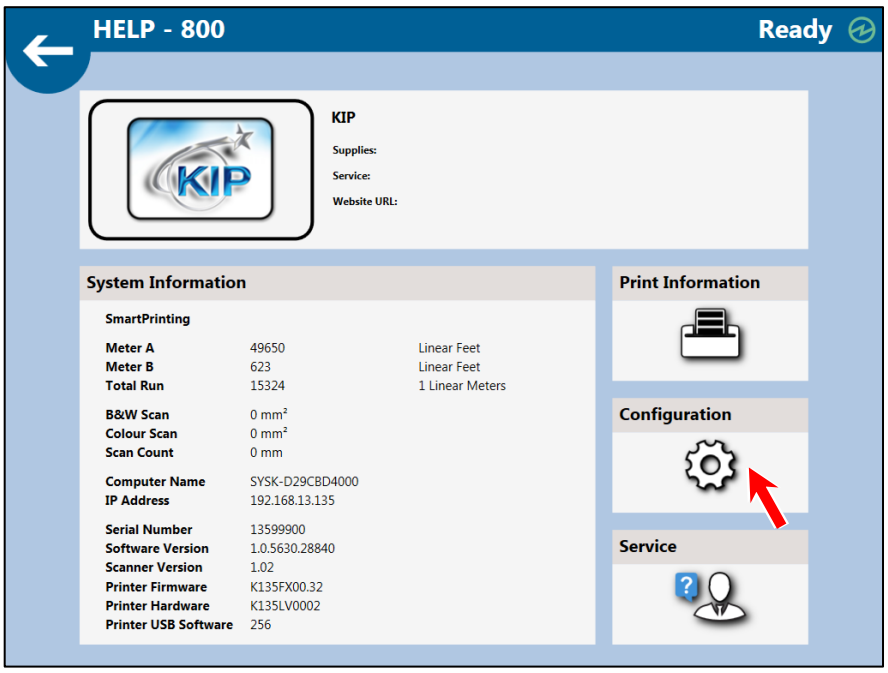
12. Press **GUIDES**.



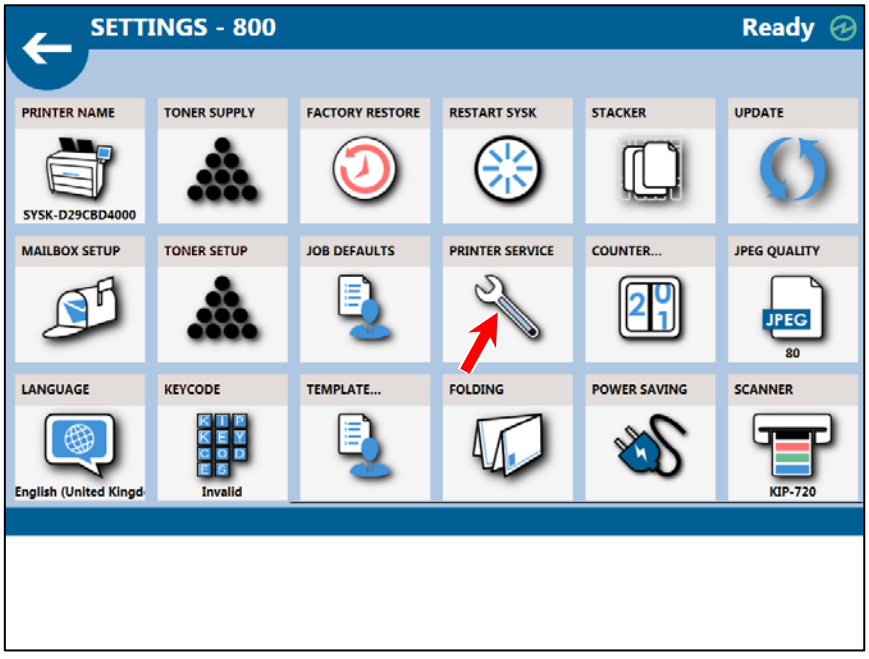
13. Press **Help**.



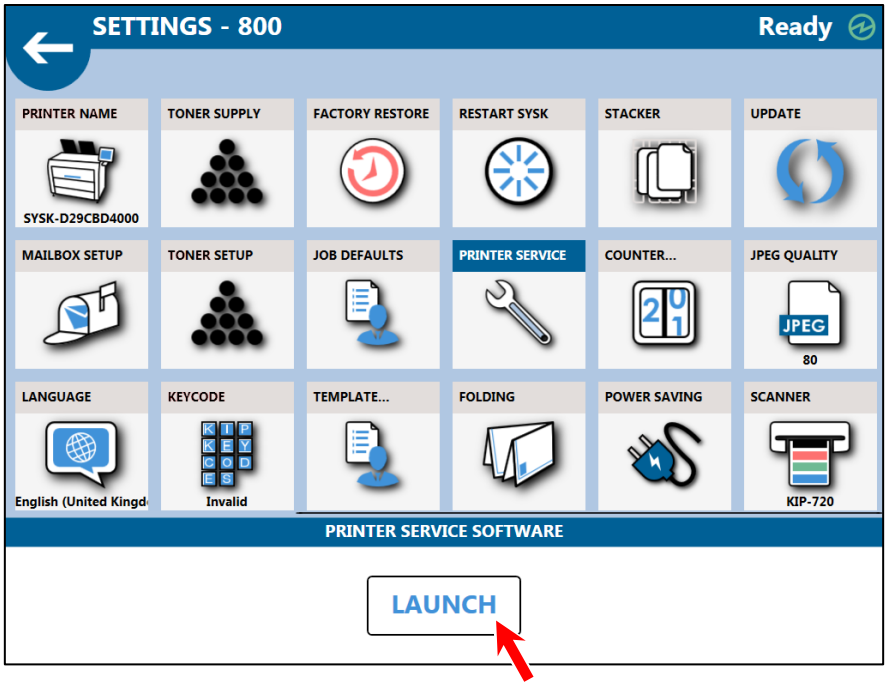
14. Press **Configuration** to indicate SETTINGS page.



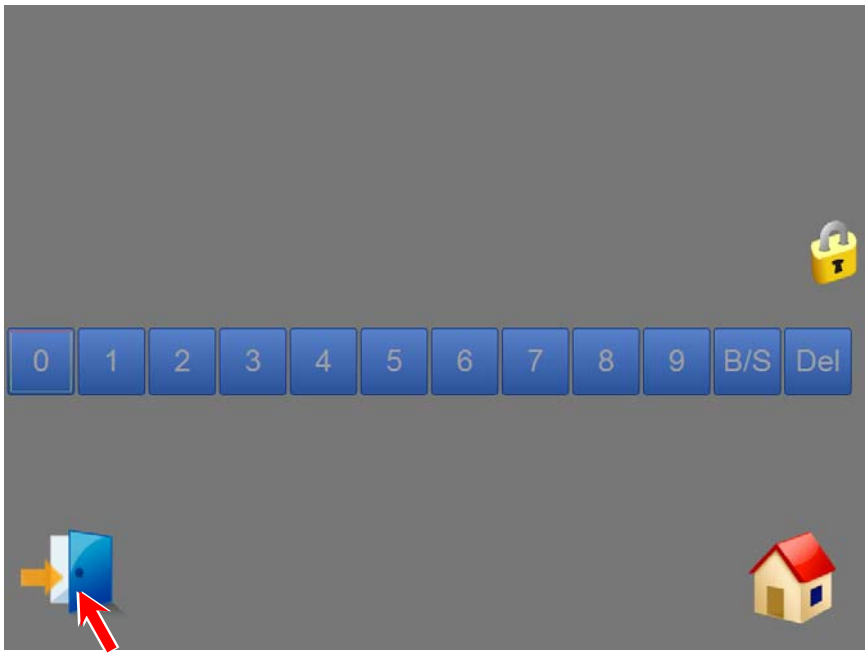
15. In SETTINGS page, flick or swipe on the touch panel to scroll the page rightward. Find **PRINTER SERVICE** and press it.



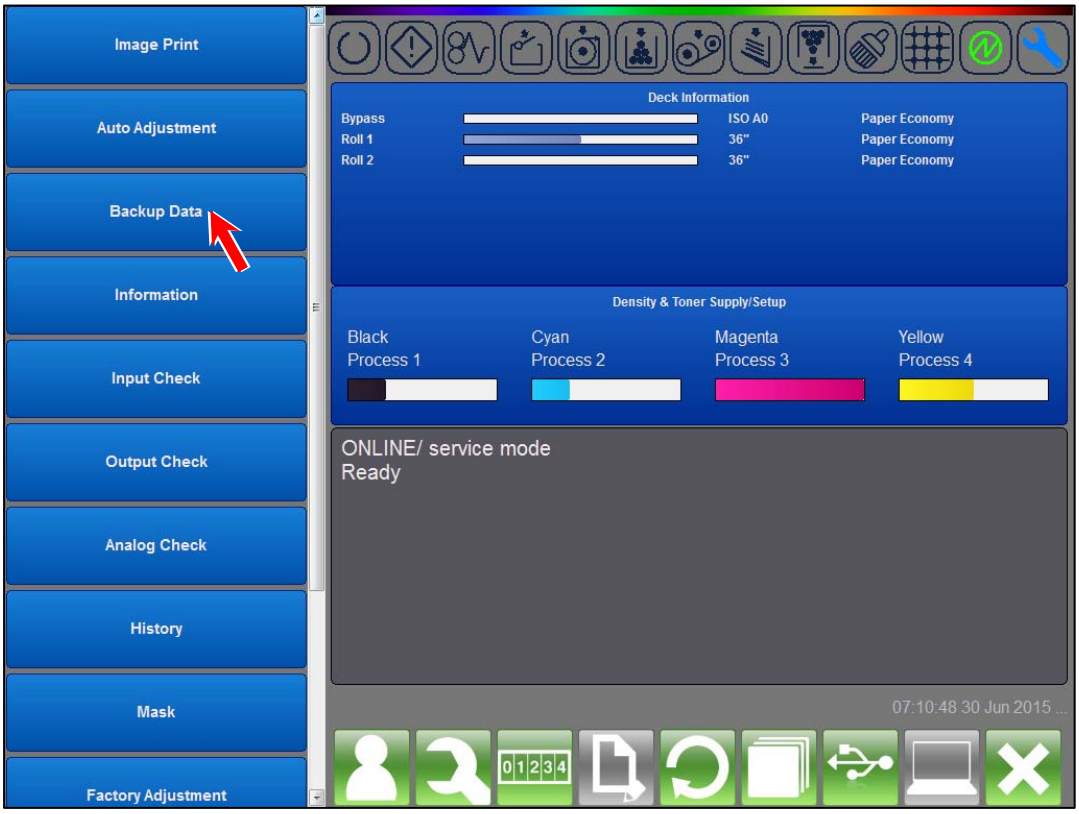
16. Press **LAUNCH**.



17. Press the door icon on the bottom-left to run the Maintenance GUI.



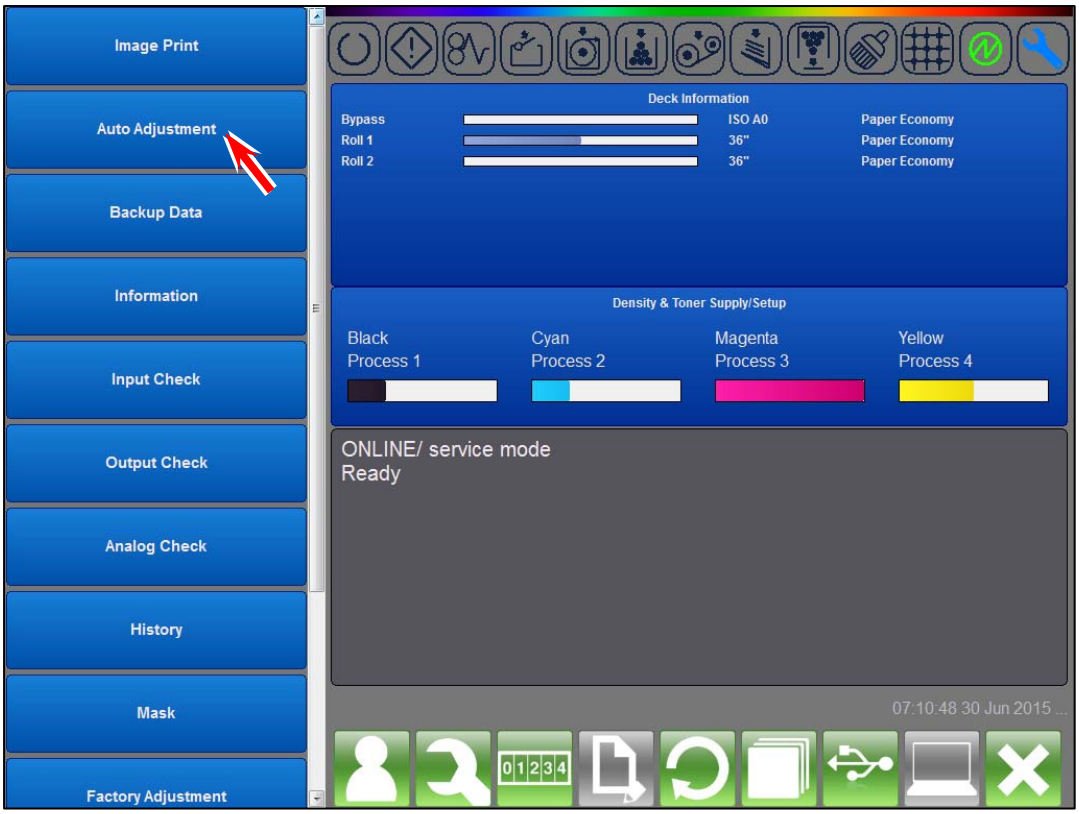
18. Select Backup Data.



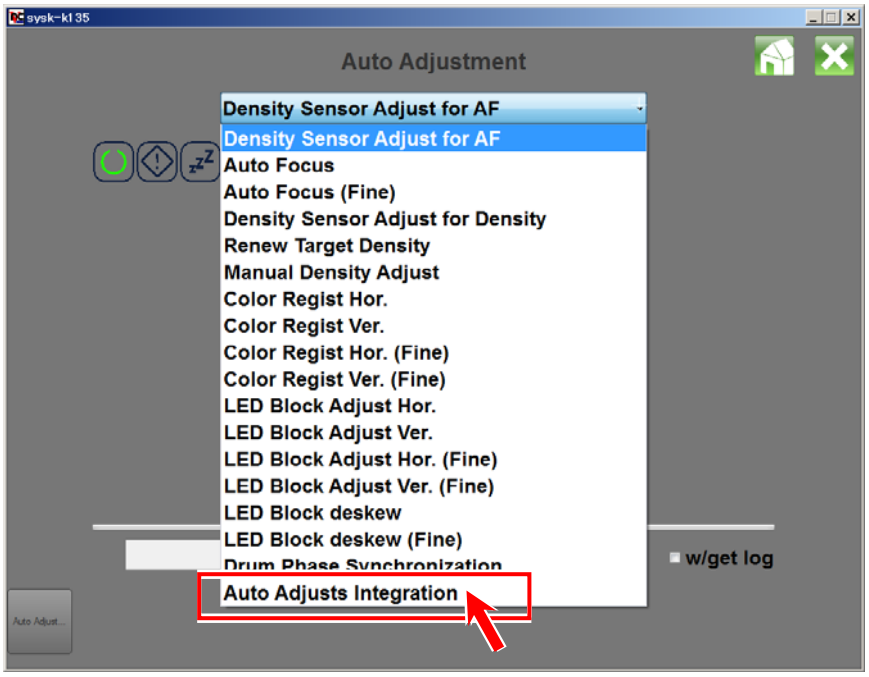
19. Set the following Backup Data to the requested values before calibration.

BUD No.	Item name	Requested value	Remarks : Related mode
1265	Focus Adjust On/Off	1	Auto Focus
1708	Drum Correct Phase K	0	Drum Phase Synchronization
1709	Drum Correct Phase C	0	Drum Phase Synchronization
1710	Drum Correct Phase M	0	Drum Phase Synchronization
1711	Drum Correct Phase Y	0	Drum Phase Synchronization
1712	Drum Correct Amp K	0	Drum Phase Synchronization
1713	Drum Correct Amp C	0	Drum Phase Synchronization
1714	Drum Correct Amp M	0	Drum Phase Synchronization
1715	Drum Correct Amp Y	0	Drum Phase Synchronization

20. Select **Auto Adjustment**.

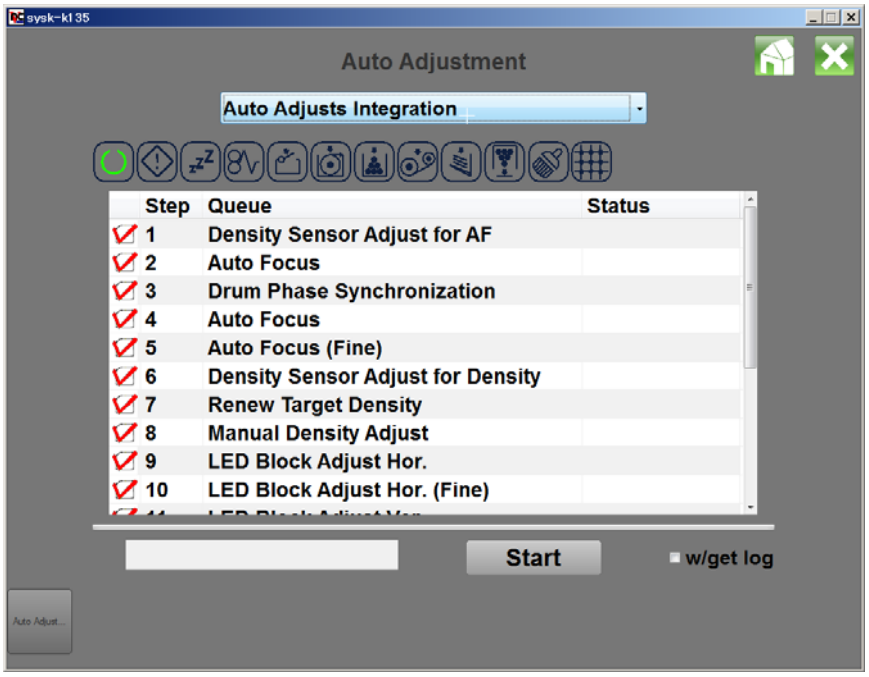


21. Select **Auto Adjusts Integration**.



22. The following list allows for selecting the necessary calibration items. Checked items are the ones selected. Select the following items in the selection menu.

Density Sensor Adjust for AF
Auto Focus
Auto Focus (Fine)
LED Block Adjust Hor.
LED Block Adjust Hor. (Fine)
LED Block Adjust Ver.
LED Block Adjust Ver.
LED Block Adjust Ver. (Fine)
LED Block deskew
LED Block deskew (Fine)
Color Regist Hor.
Color Regist Hor. (Fine)
Color Regist Ver.
Color Regist Ver. (Fine)



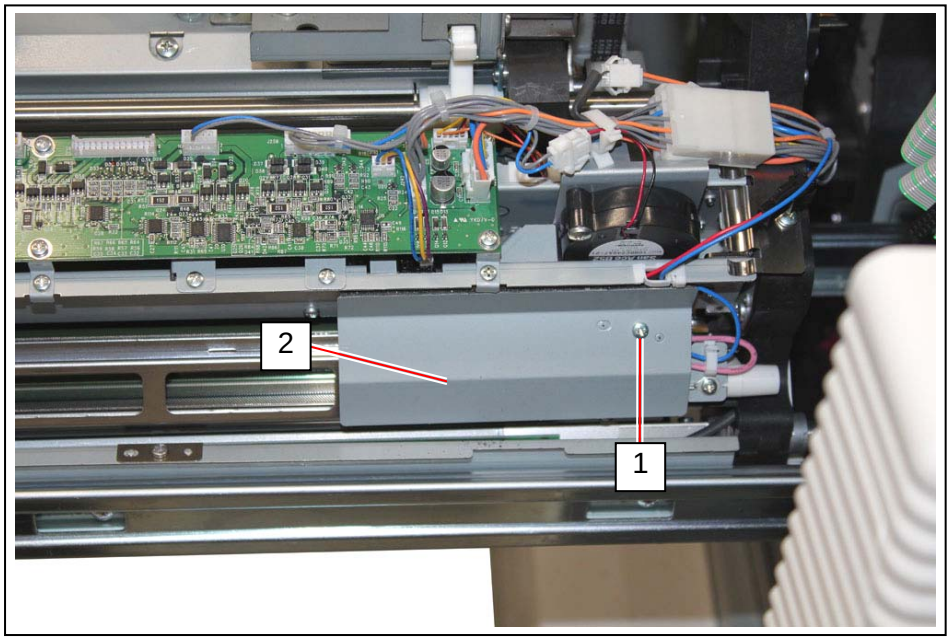
23. Press **Start**. The selected calibrations are performed automatically in correct order. Wait until the calibrations finish.

24. Set all Backup Data back to their original values finally.

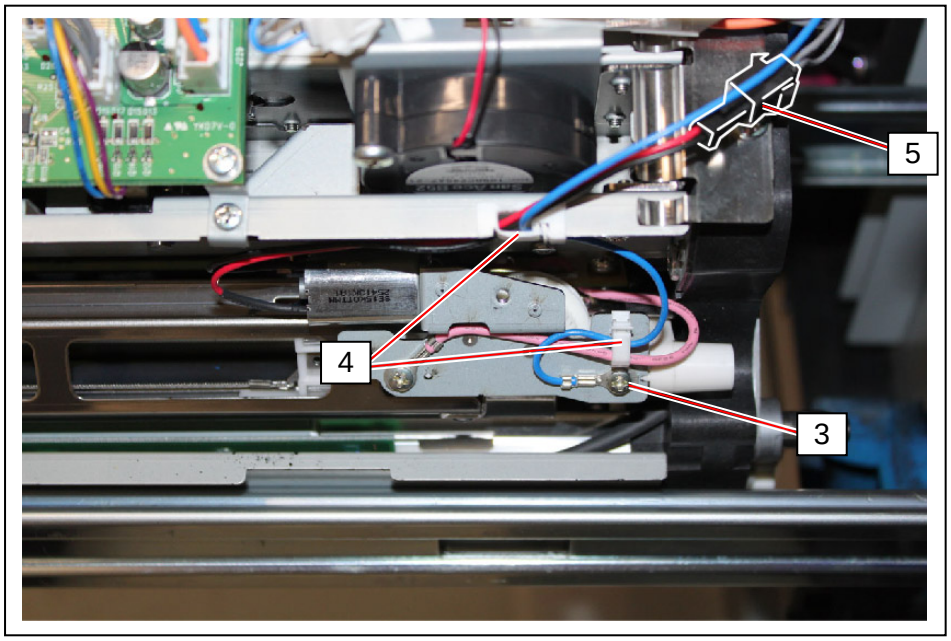
5. 1. 5 Removal of Image Corona

1. Draw out the Process Unit referring to [5.2.1 Drawing out of Process Unit].

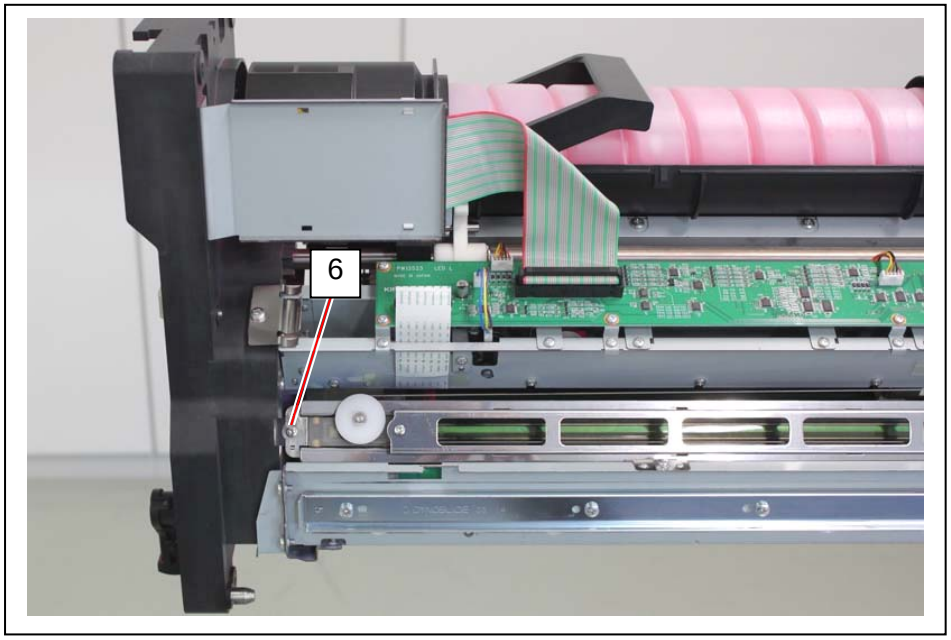
2. Remove 1 screw (M3x5) (1) to remove Wire Cover (2).



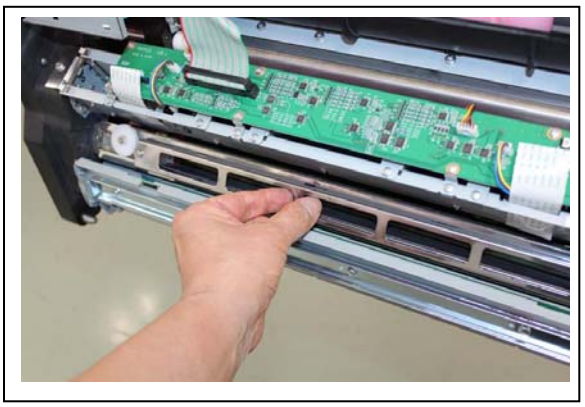
3. Remove 1 Screw (M3x5) (3). Unlock the Locking Wire Saddles (4).
   Plug out 1 connector (5).

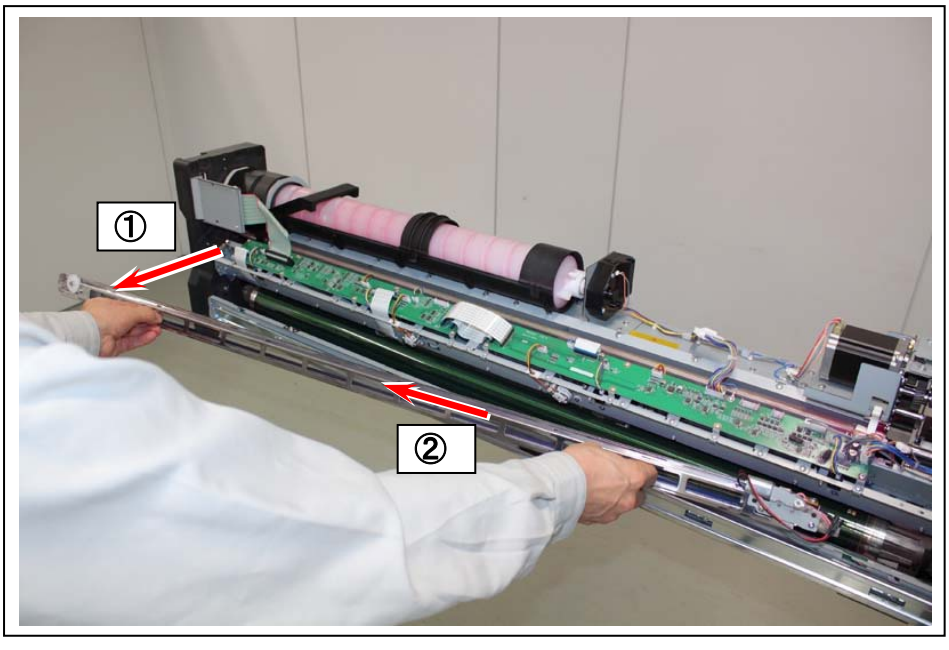


4. Remove a M4x6 screw (6) on one side.



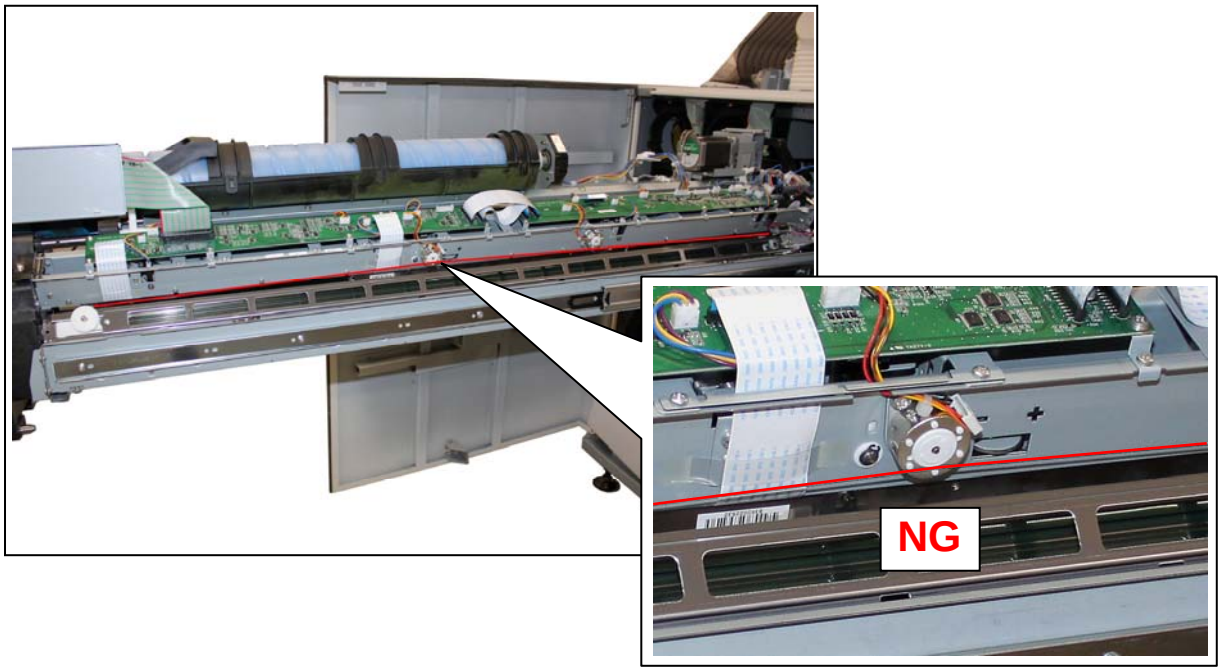
5. Hold both sides of Image Corona. At first remove its “toner cartridge side” from the Process Frame by moving in the direction of arrow.



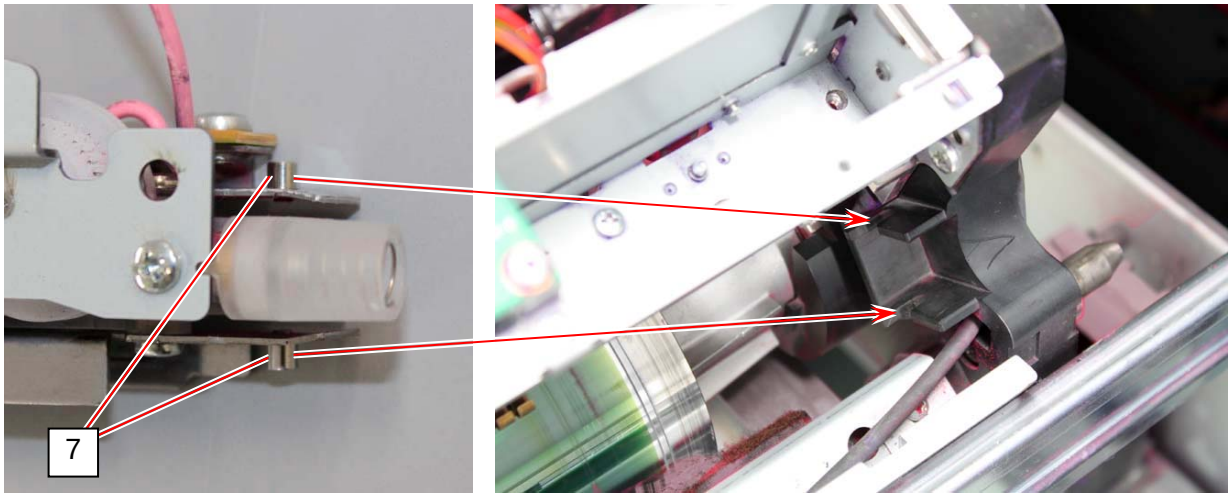


NOTE

1. When installing the Image Corona, be careful not to be caught the cleaning wire of the image corona on the motor of LED Head.



2. When returning the unit, fit 2 pins (7) on one side of the Image Corona into the notches on the Process Frame.



5. 1. 6 Removal of Drum

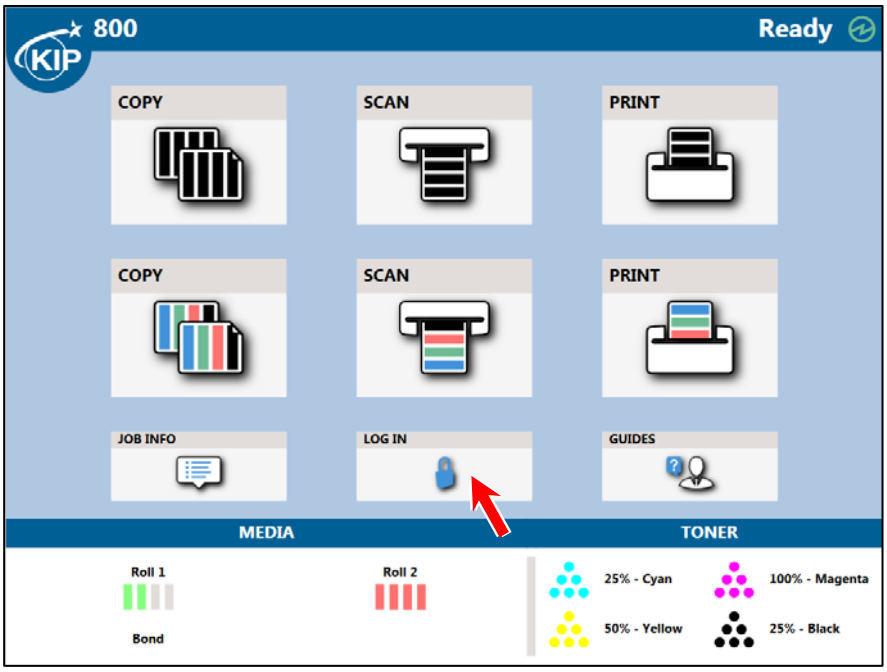
NOTE

Drum Phase of 4 Drum must be synchronized with each other for achieving correct color registration in vertical direction. When removing the Drum, therefore, it is very important to keep the current Drum Phase even after reinstallation. This is achieved by performing correct operation as instructed in this section.

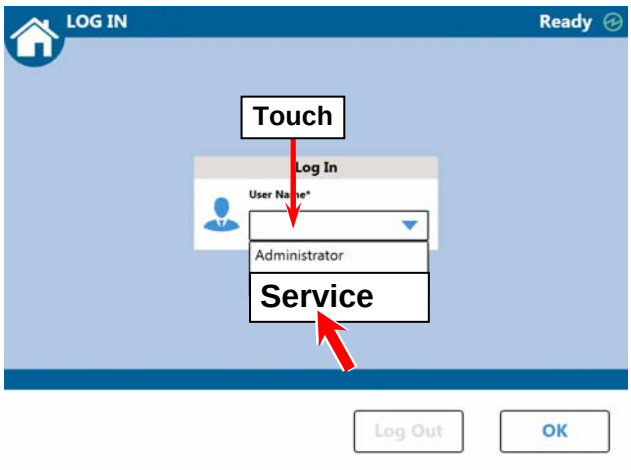
5. 1. 6. 1 Stopping Drum at Home Position before removal

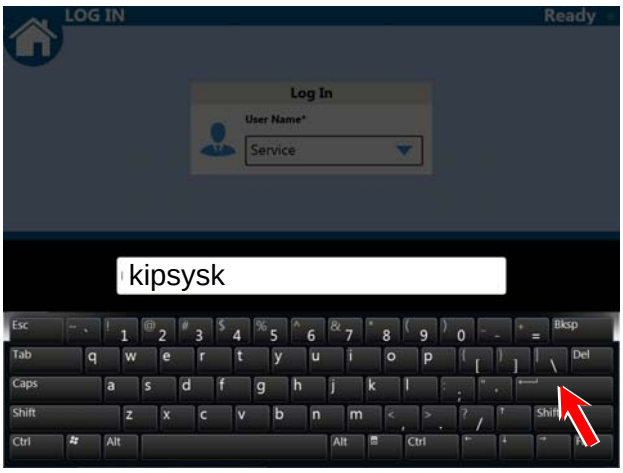
Please stop the Drum at its Home Position before Removal using the **Drum Home** function in Maintenance GUI. This will help recovering the current well-adjusted Drum Phase easily when reinstalling the Drum.

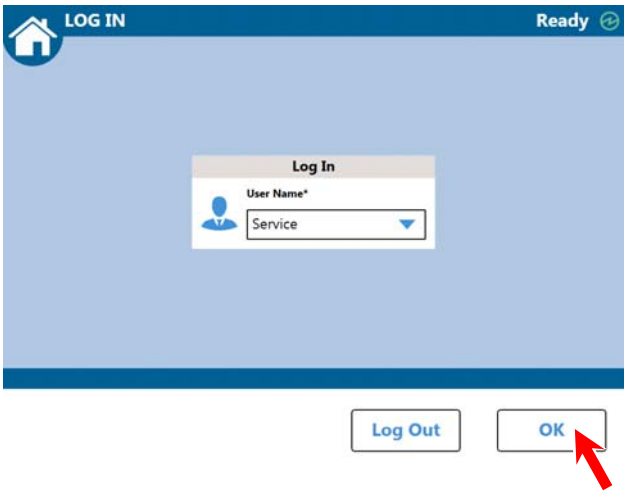
1. Press **LOG IN** in the HOME screen of Touch Panel.



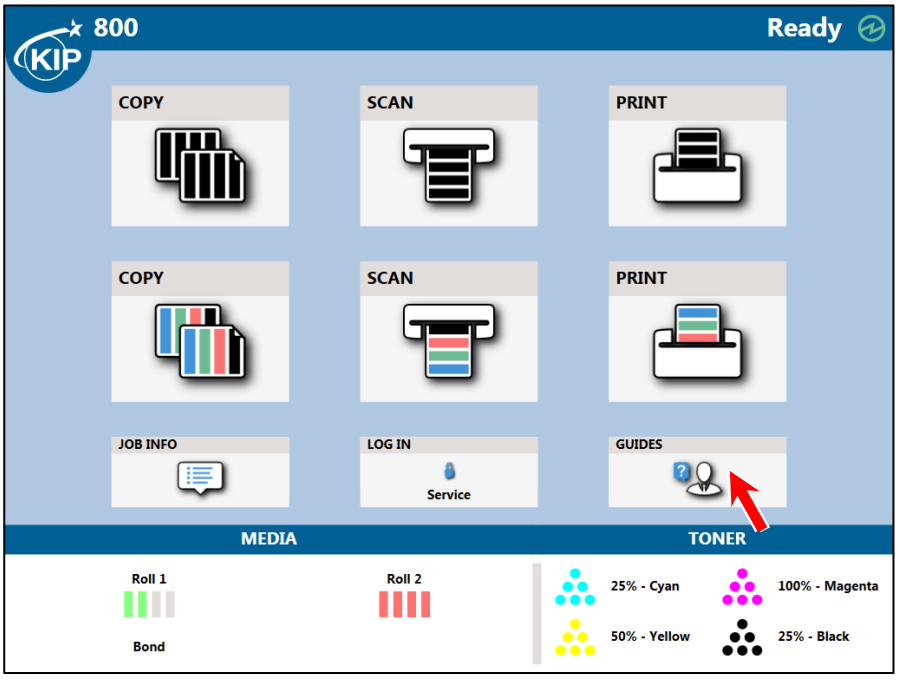
2. Touch the entry field of "User Name", and then select "Service" from the pull-down menu. Enter "kipsysk" in the password field, press the ENTER key, and then press [OK] in the LOG IN screen to log in with the administrative right.



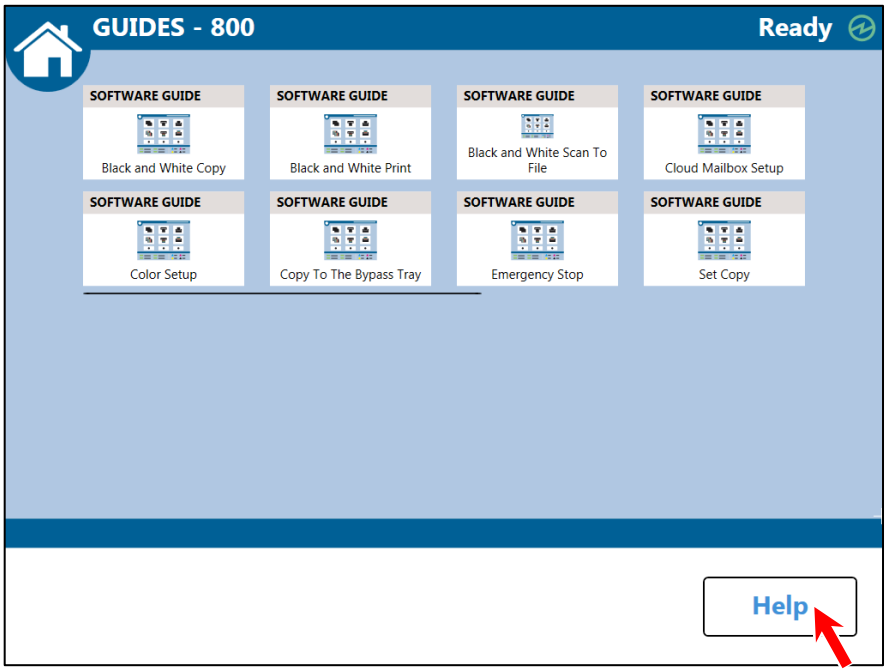




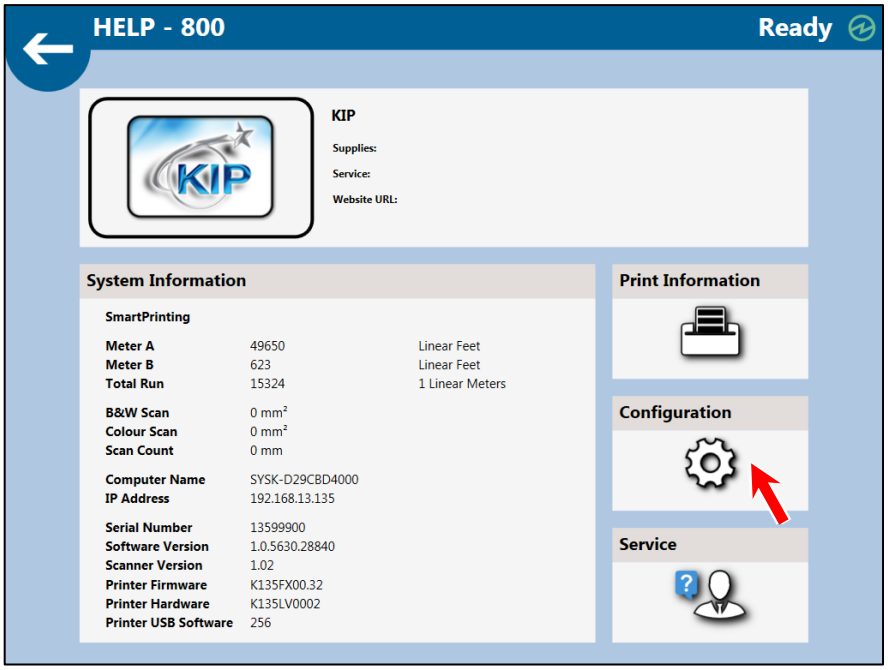
3. Press **GUIDES**.



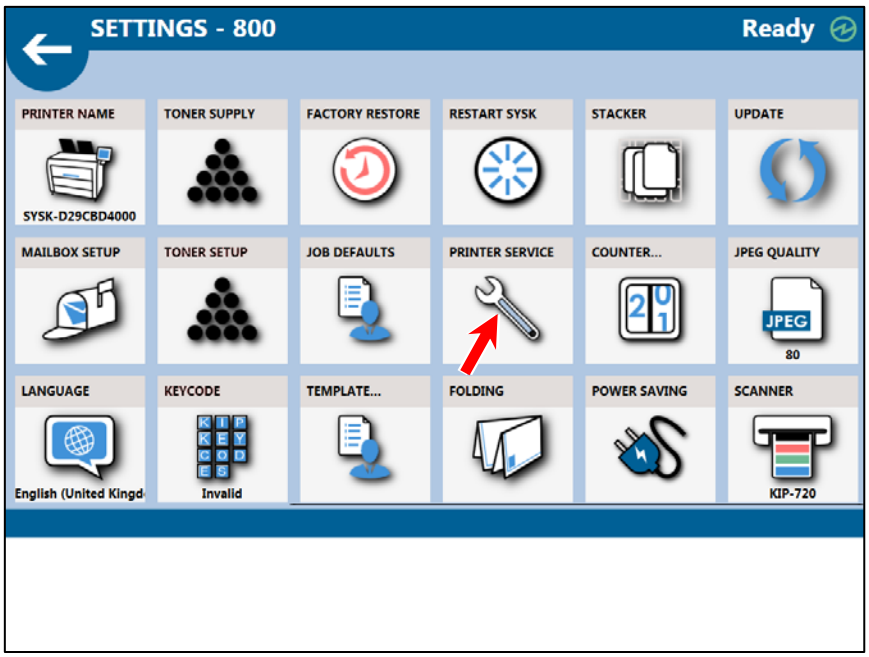
4. Press **Help**.



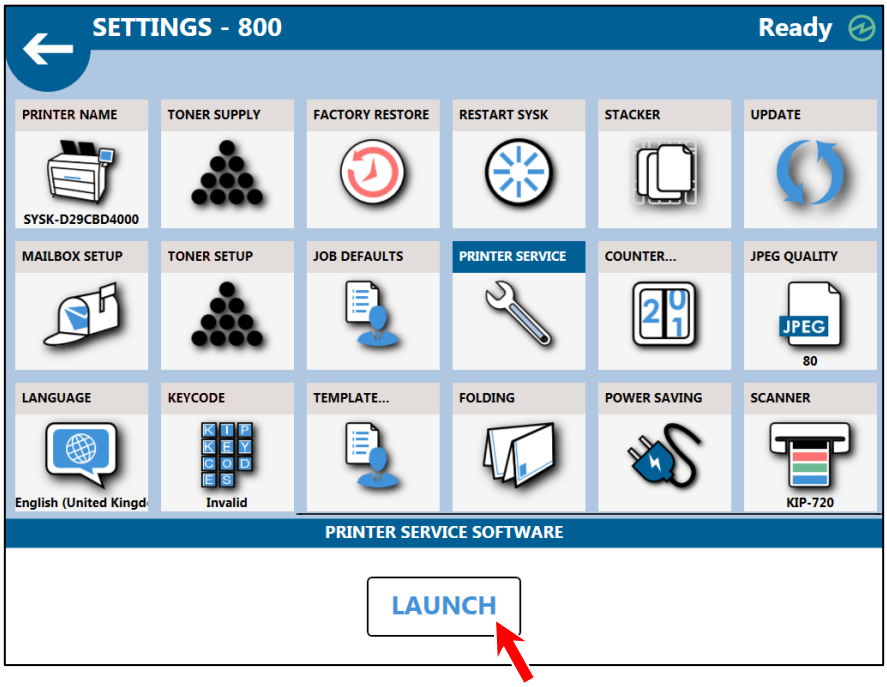
5. Press **Configuration** to indicate SETTINGS page.



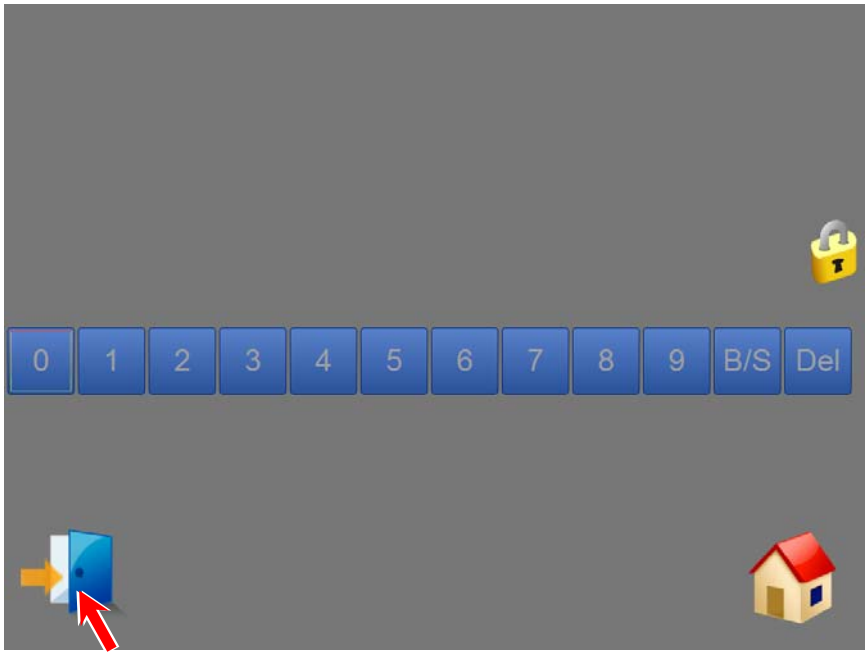
6. In SETTINGS page, flick or swipe on the touch panel to scroll the page rightward. Find **PRINTER SERVICE** and press it.



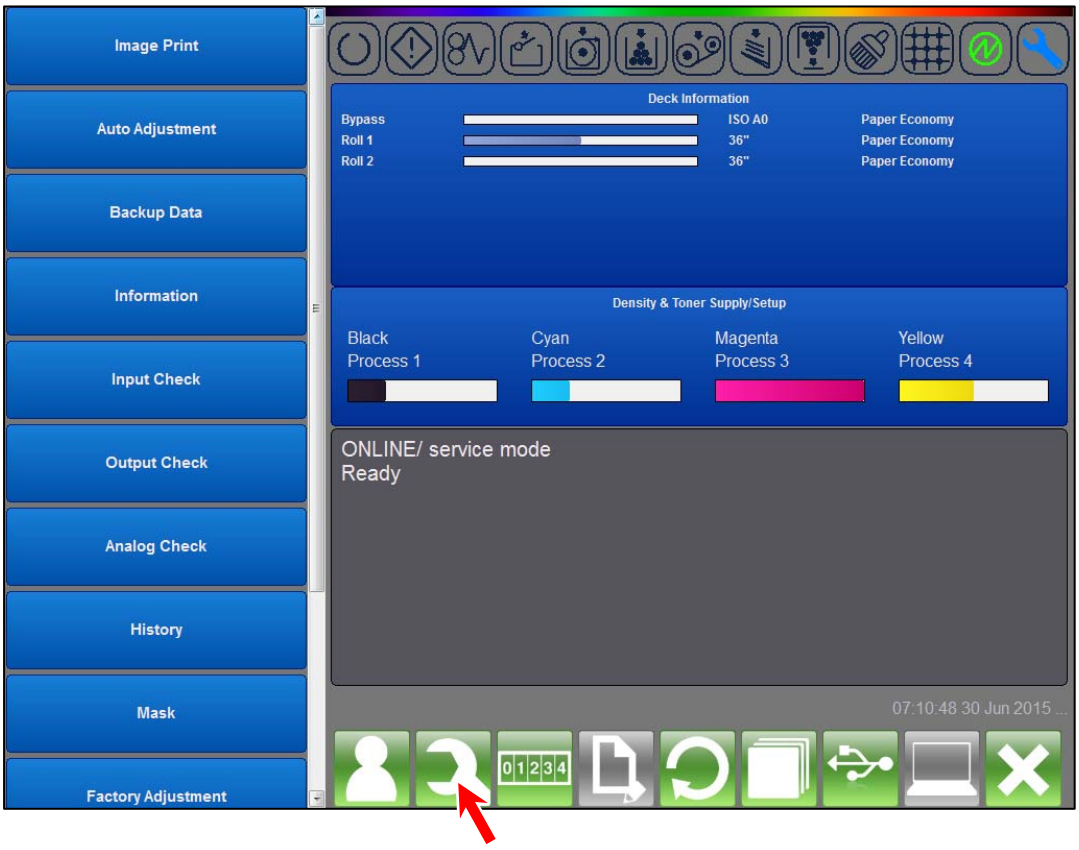
7. Press **LAUNCH**.



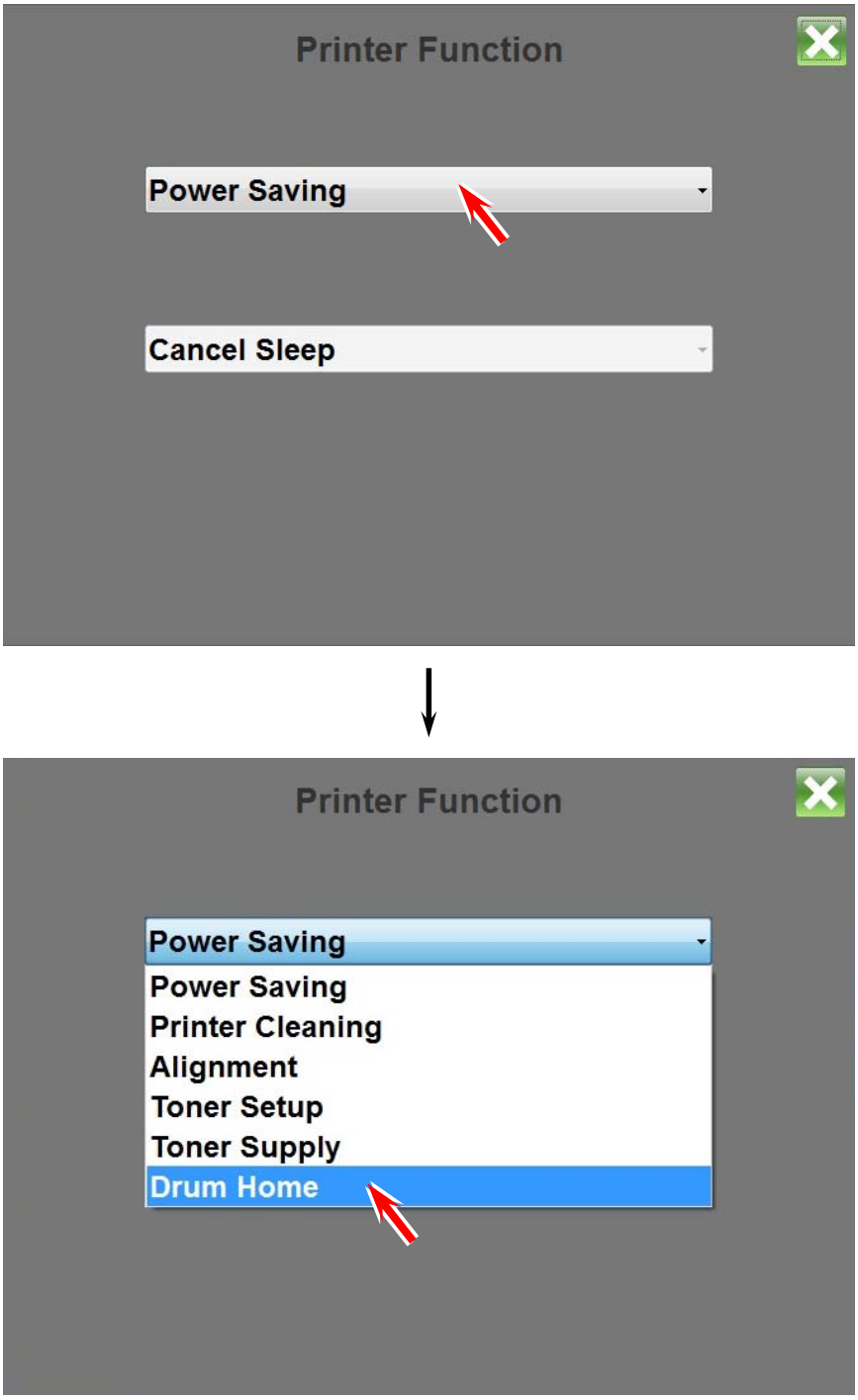
8. Press the door icon on the bottom-left to run the Maintenance GUI.



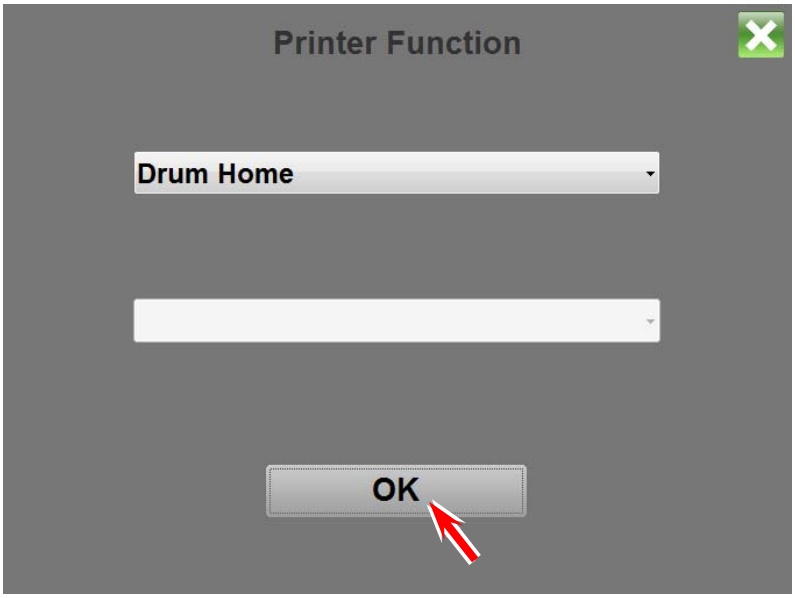
9. Select the Wrench icon.



10. Select **Drum Home** in the upper selection menu.

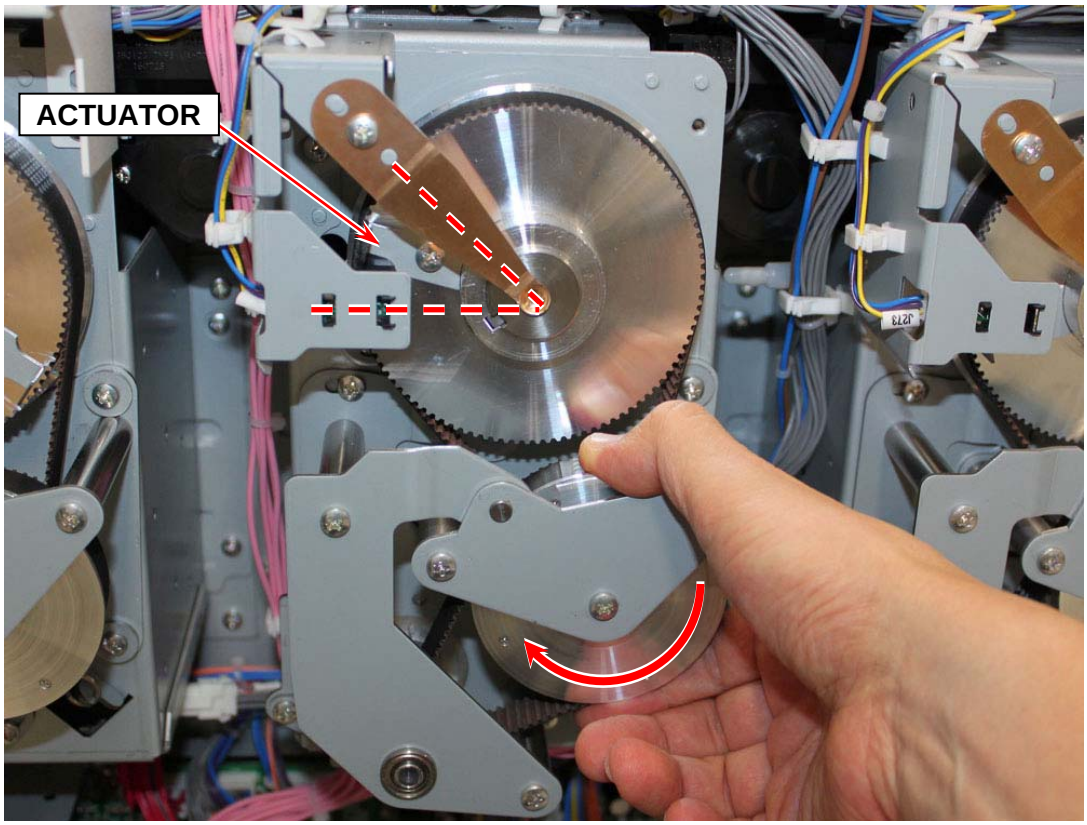


11. Press **OK**. Drum is rotated and stayed at its Home Position.



Reference

In case you removed without performing Drum Phase, rotate the Pulley in the direction of arrow by hand to place the actuator of Drum Home Position sensor in the range between the following 2 dotted lines. Then after confirming the Drum is set in the Process Unit by correct orientation, return the Process Unit back in the printer. This operation achieves the same result as performing Drum Home before Drum removal.



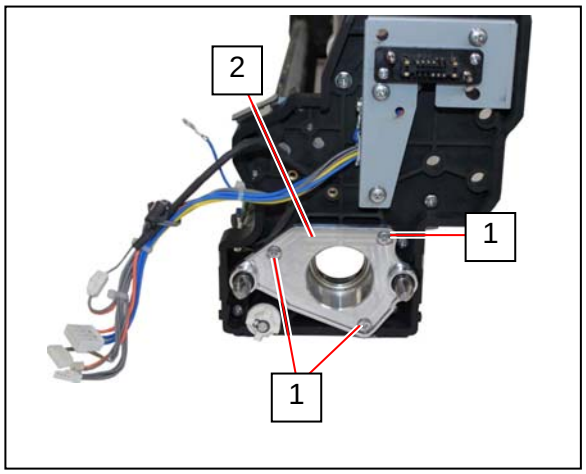
12. Go to the next section for removing the Drum.

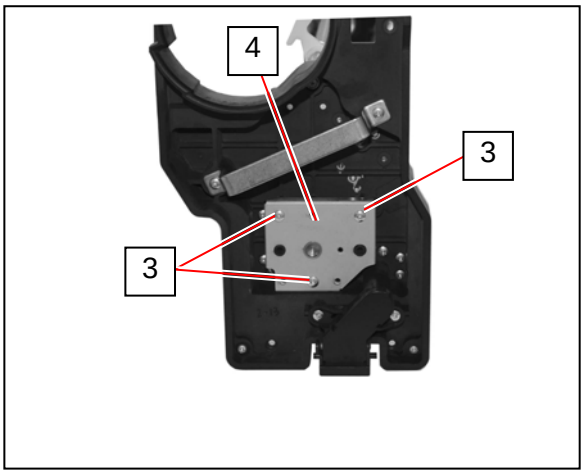
5. 1. 6. 2 Removal of drum

1. Remove both Developer Unit and Process Unit in advance.

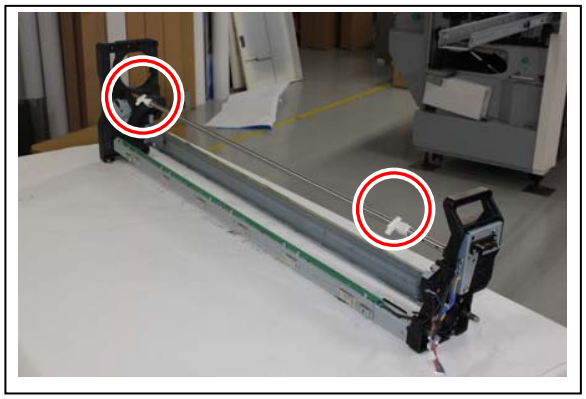
2. Remove both LED Head and Image Corona in advance.

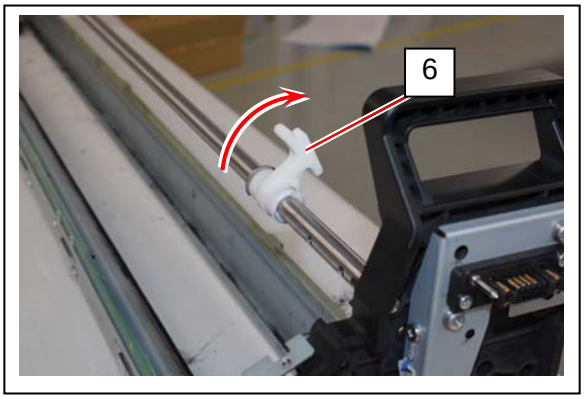
3. Remove 3 screws (1) to remove the Drum Bracket (2) on the driving side. Also remove 3 screws (3) to remove the Drum Bracket (4) on the toner cartridge side.



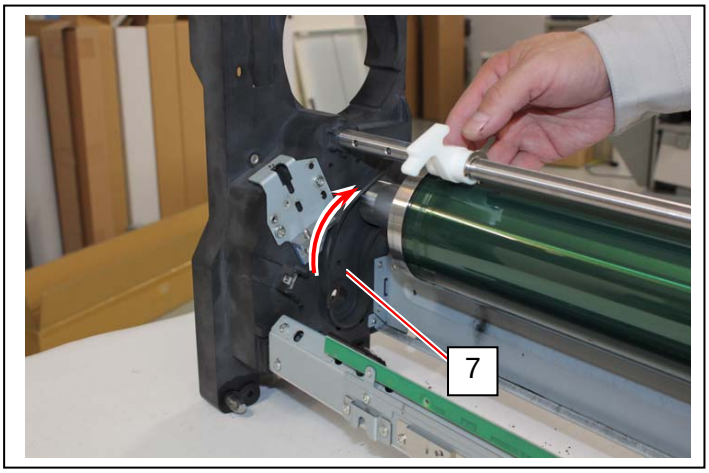


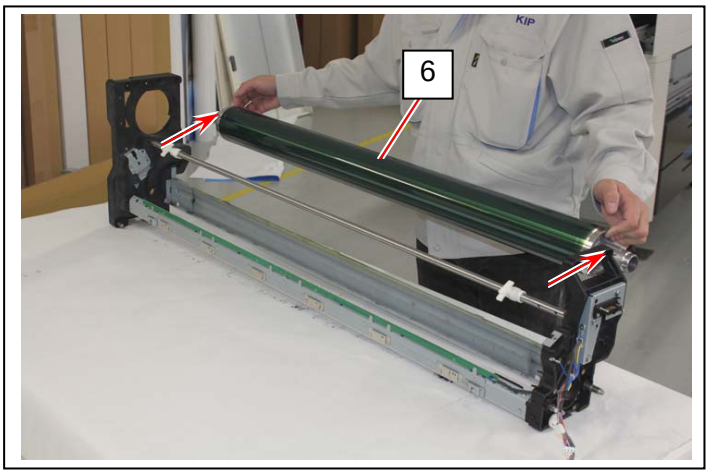
4. Bring up both Developer Lock Levers (6) if they are brought down.





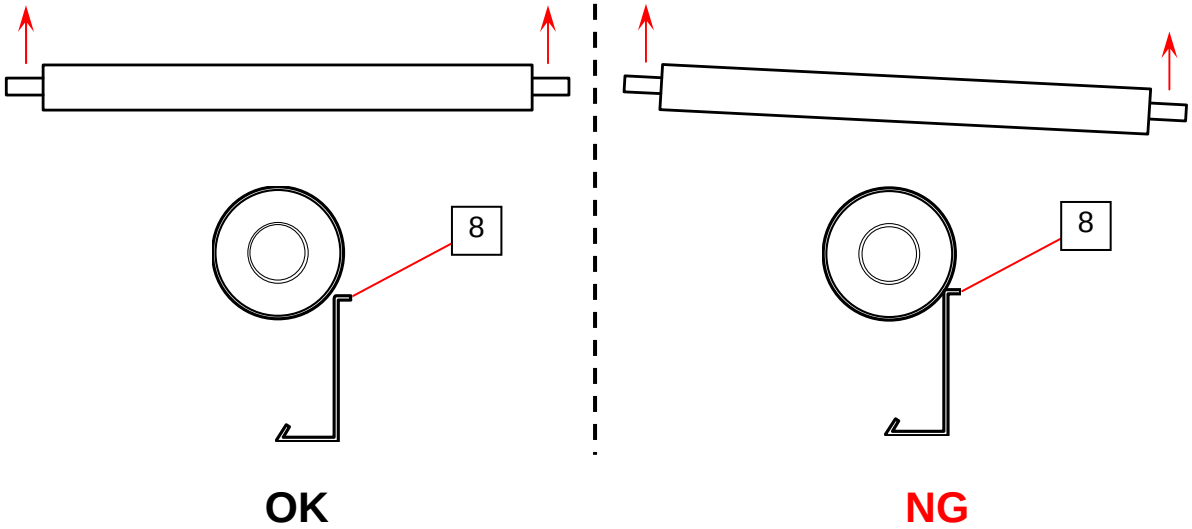
5. With holding the silver edges on both sides, bring up and move the Drum (6) along the guides (7) with keeping it horizontal, and remove it from the Process unit.





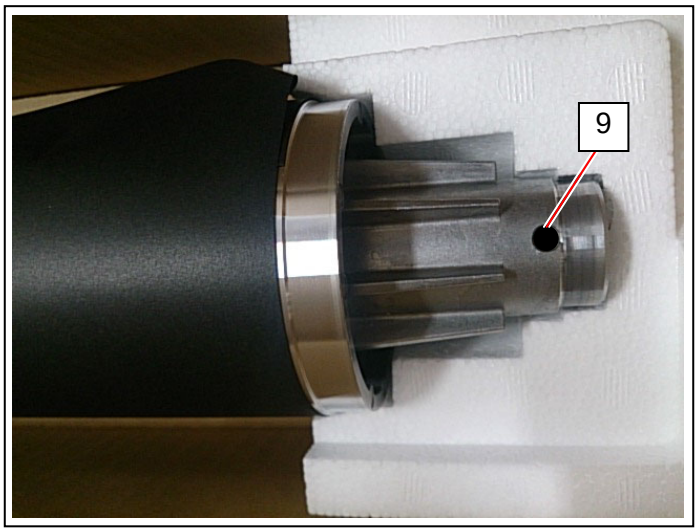
NOTE

1. Do not have an angle but keep it horizontal when removing the Drum. If you have an angle, the Drum surface may touch the Beam (8).

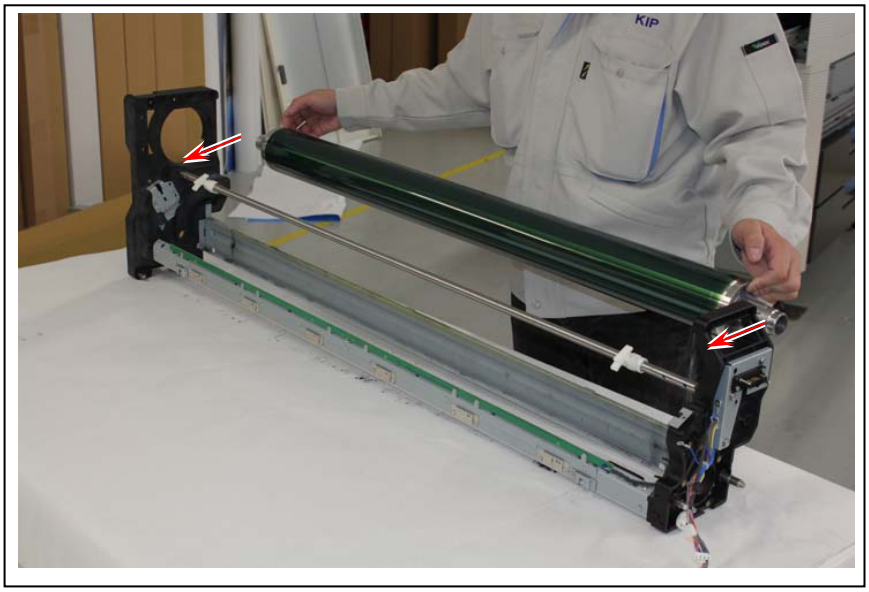


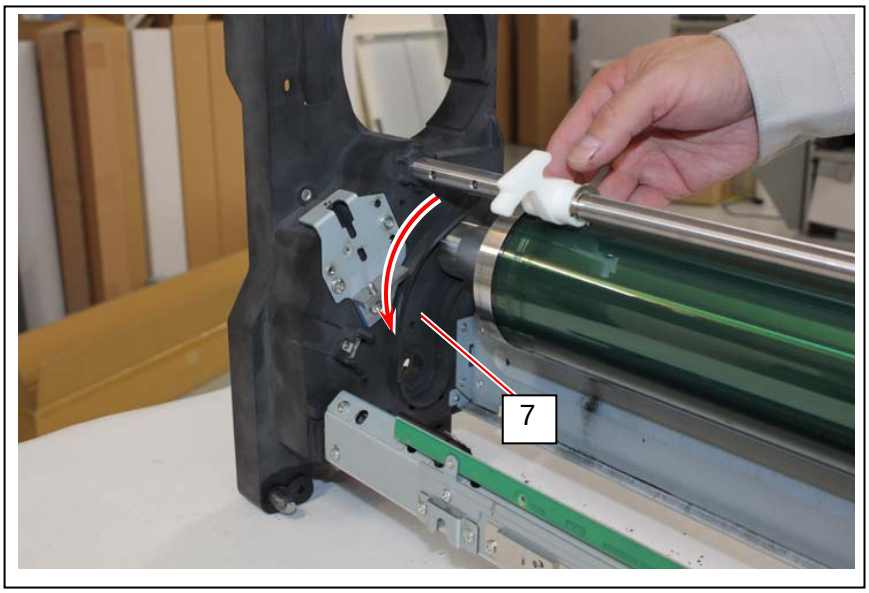
2. Put the Drum in the Drum Box so as not to expose it to the light for long time.

6. Confirm the location of Home Position mark (9) on the Drum Shaft before reinstallation of Drum. It is a black circular mark on one side of the Drum Shaft.



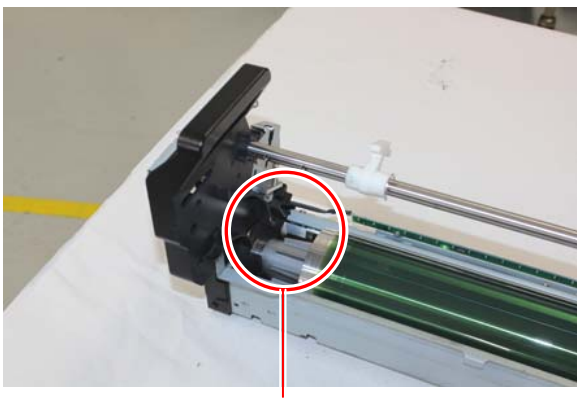
7. With holding the silver edges on both sides of Drum, fit both shafts into the guides (7) and then bring them down to the bottom with keeping it horizontal. (Do not have an angle.)



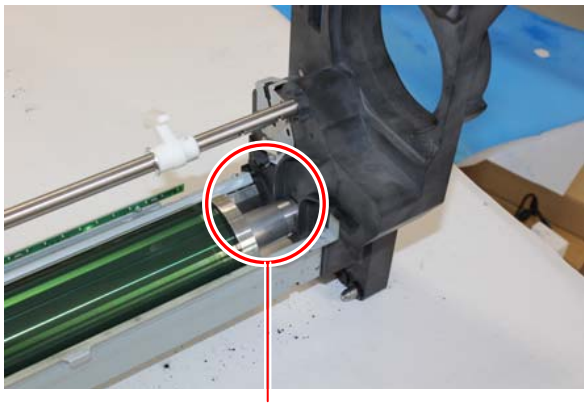


NOTE

Drum must be installed to the Process Unit by correct orientation. One of 2 shafts on both sides has some plates whole the other one does not. The one with many plates is placed on the driving side.

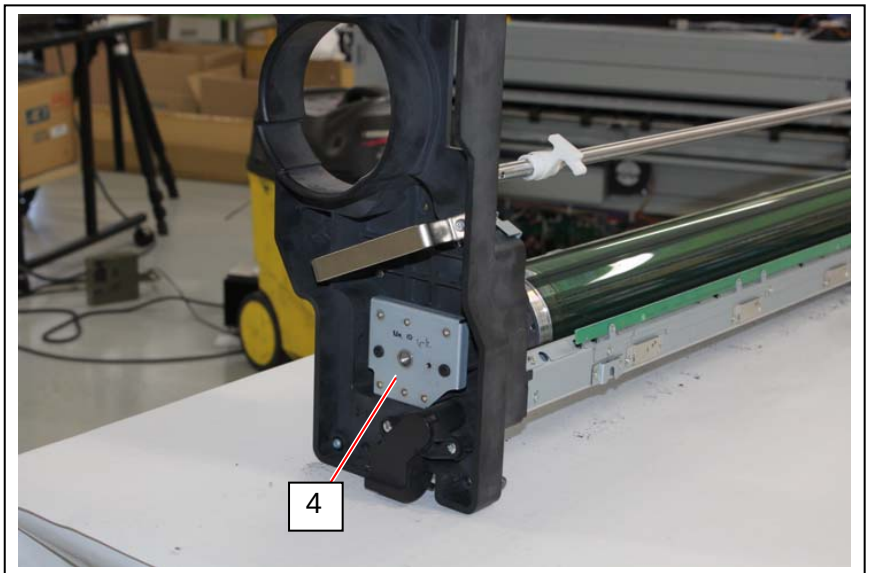


Shaft with plates(Driving side)



Shaft without plate (Toner cartridge side)

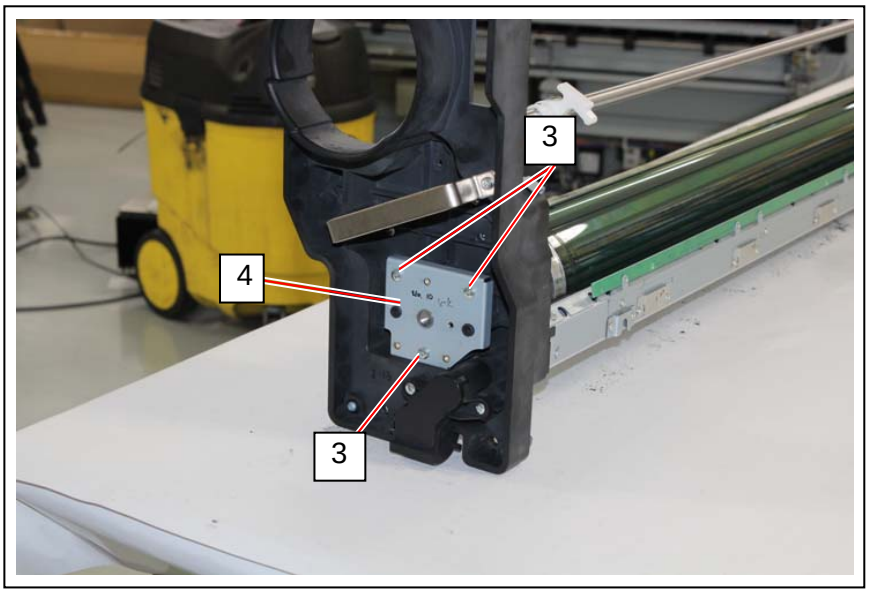
8. On the toner cartridge side, fit the Drum Bracket (4) back in its original position with pressing the Drum toward the Cleaner Blade.



NOTE

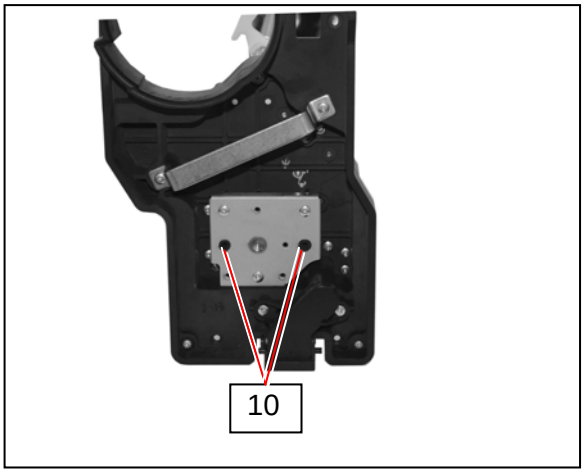
It is better fixing the Drum Shaft on the toner cartridge side first and then on the driving side next. If you change the order of fixation, it may be more difficult.

9. Fix the Drum Bracket (4) on the toner cartridge side with 3 screws (3).

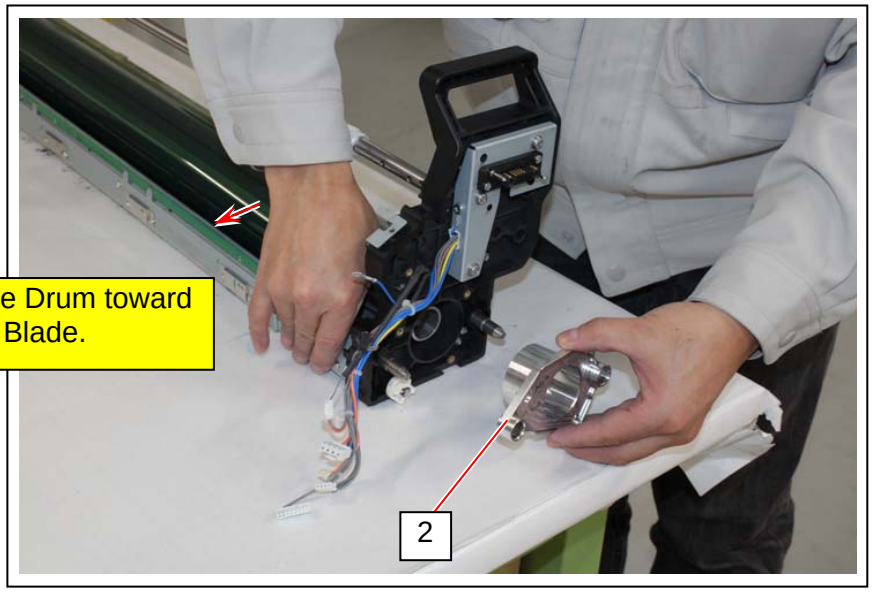


NOTE

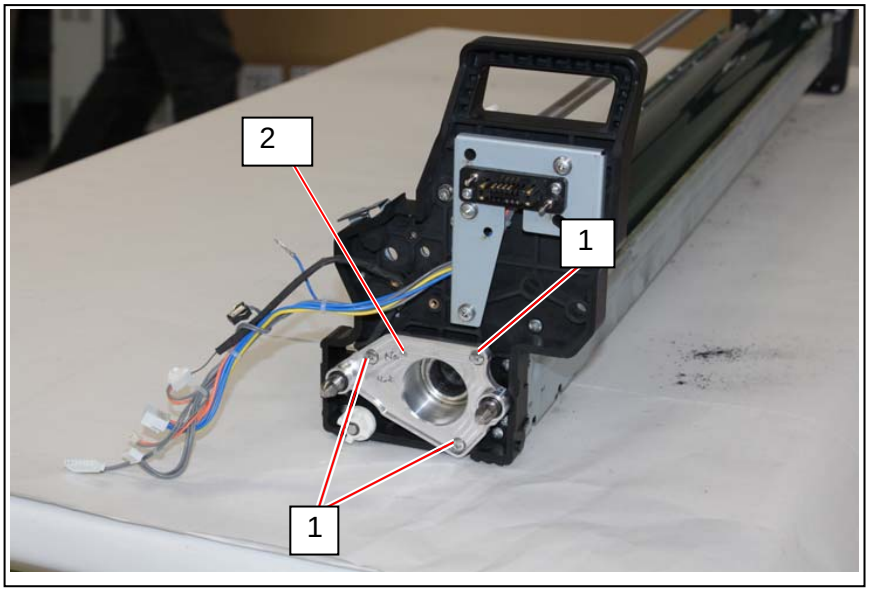
When returning the Drum Bracket (4) back in, confirm that the plastic positioning bosses (10) are correctly fitted into the holes and then tighten the screws (3). If you tighten the screws (3) without correctly fitting the positioning bosses into the holes, you will break the screw hole part as the inner screw nut will come out..



10. On the toner cartridge side, fit the Drum Bracket (2) back in its original position with pressing the Drum toward the Cleaner Blade.

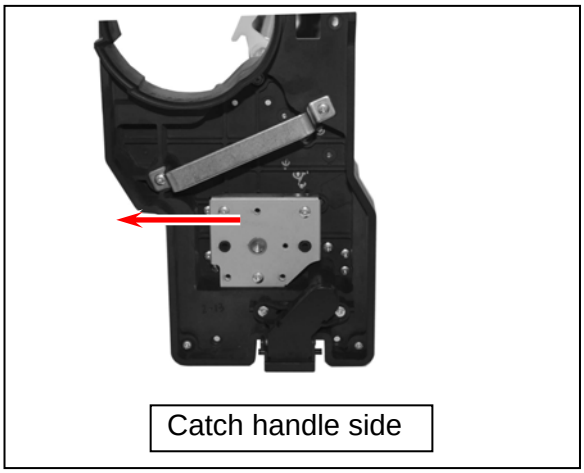


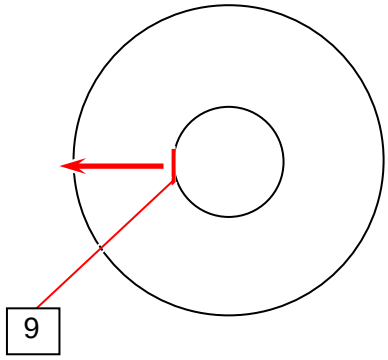
11. Fix the Drum Bracket (2) on the driving side with 3 screws (1).

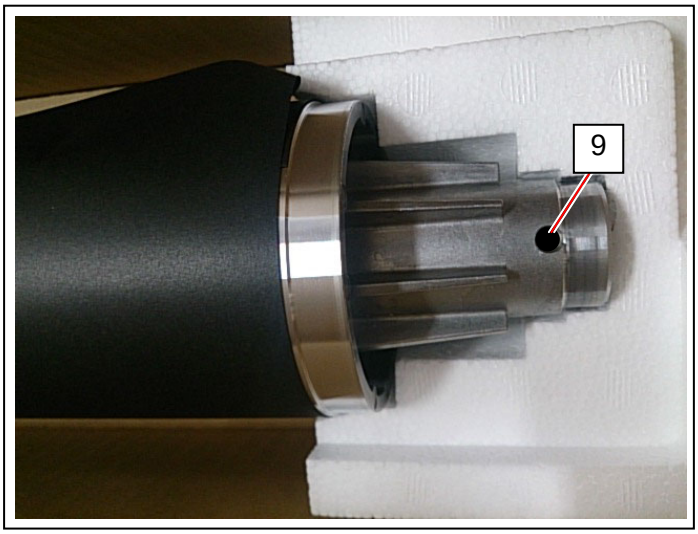


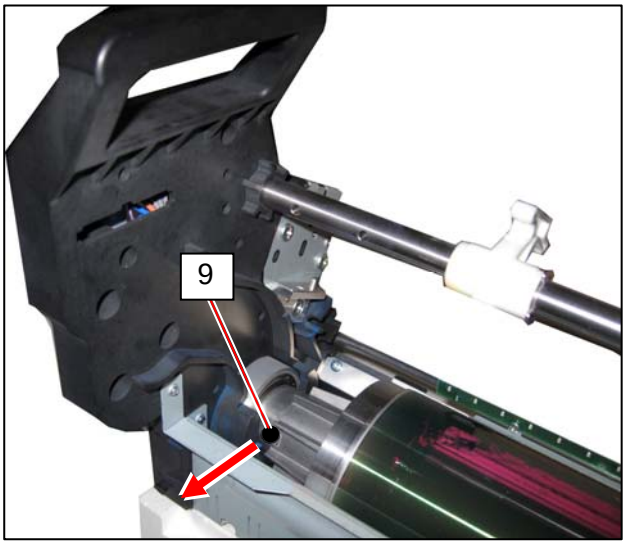
IMPORTANT!

12. Direct the Home Position mark (9) on the Drum Shaft in the direction of arrow. When seen from the catch handle side of Process Unit, it is the direction of 9 o'clock. This will help recovering the original correct Drum Phase position.









13. Return all other removed parts back on their original positions.

5. 2 Image Corona Unit

5. 2. 1 Replacement of periodical replacement part

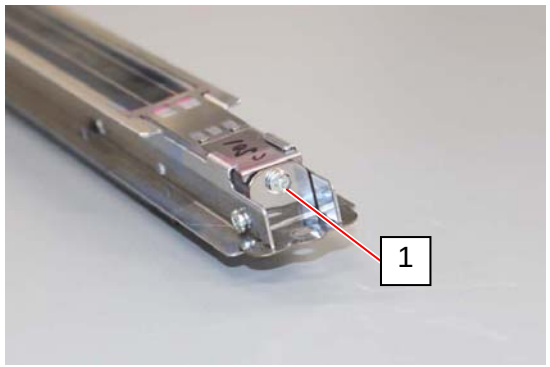
NOTE

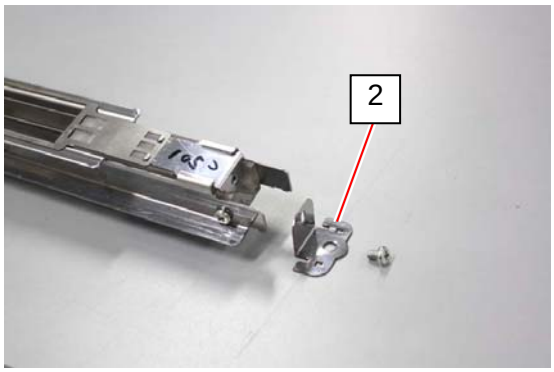
Image Corona has the following Periodical Replacement Parts.

Part name	Quantity	Remarks
HV1 WIRE	1	These are included in an exclusive kit "CORONA WIRE KIT".
CLEANING PAD ASSY	2	

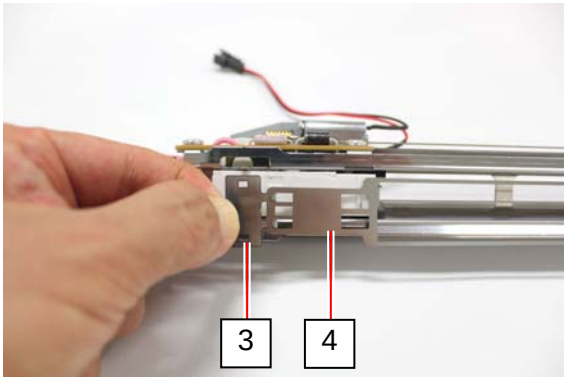
1. Remove the Image Corona from the machine referring to [5.1.5 Removal of Image Corona].

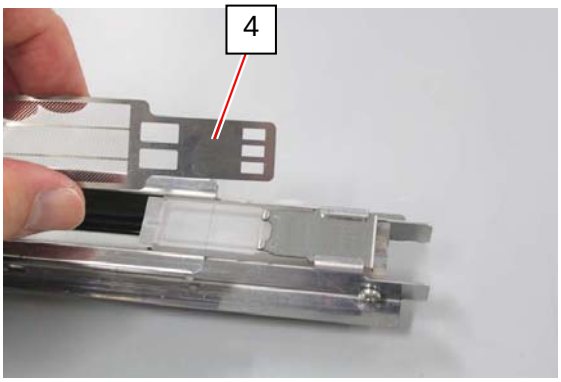
2. Remove a M3x5 screw (1) on one side of the Image Corona Unit to remove the Bracket (2).





3. Remove the Bracket (3) together with the Grid Plate (4) on the motor side, and then remove the Grid Plate (4).



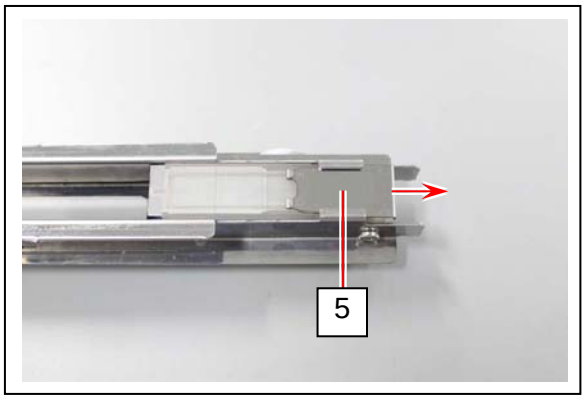


NOTE

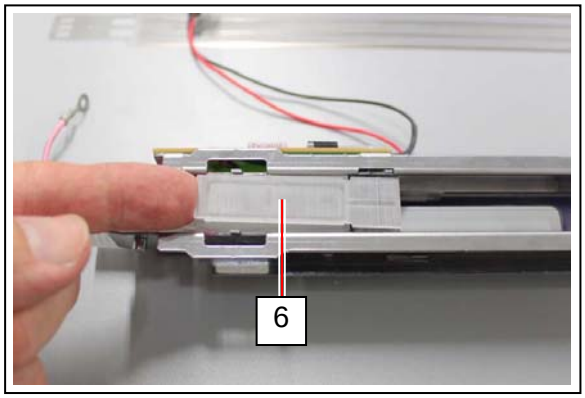
1. It does not matter to install the Grid Plate by any orientation.

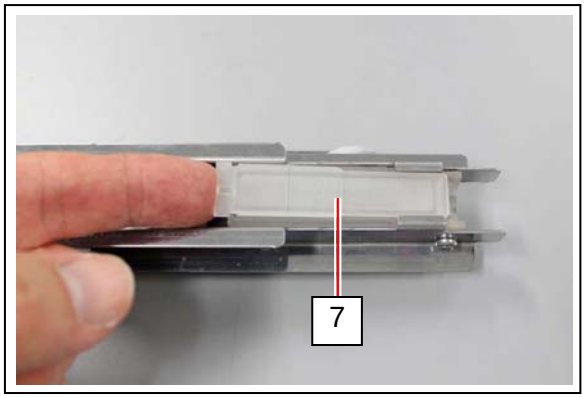
2. Wash the Grid Plate by water if necessary. And for drying, just leave the Grid Plate until it dries. Do not use anything like cloth or cleaning paper for drying as use of such items will leave fibers and may result in HV leakage.

4. Remove Tension Brackets (5).

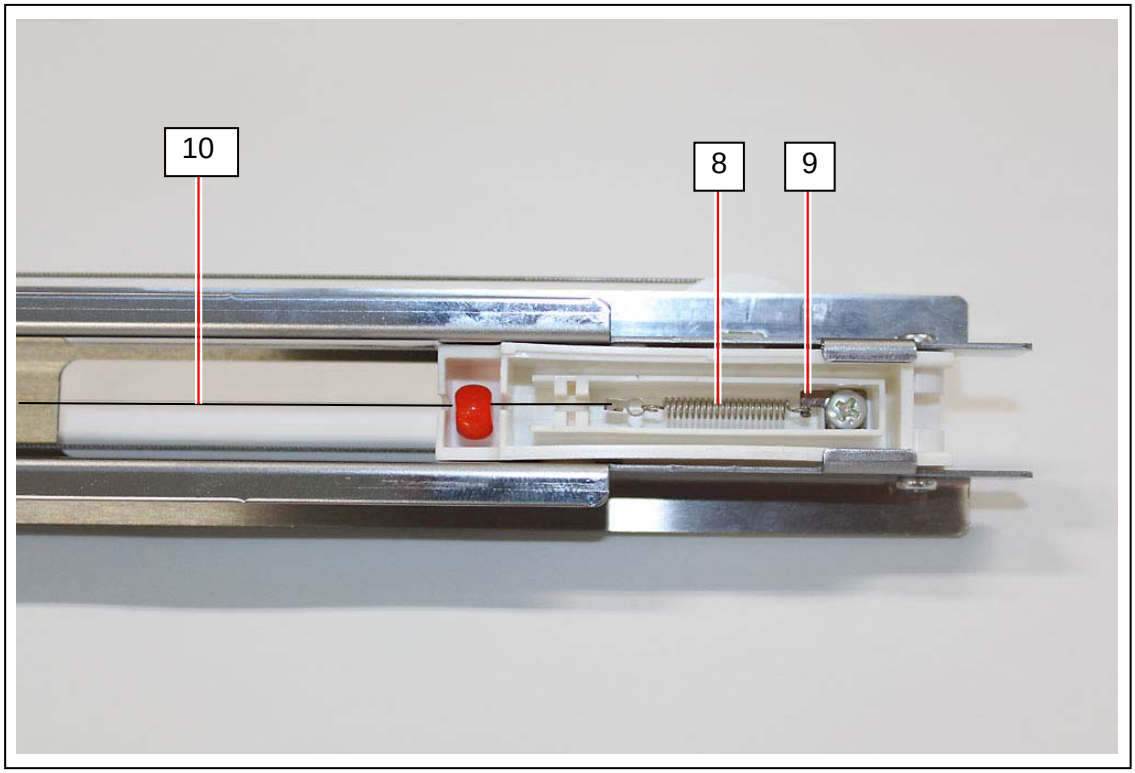


5. Remove Covers (6) and (7) on both sides.



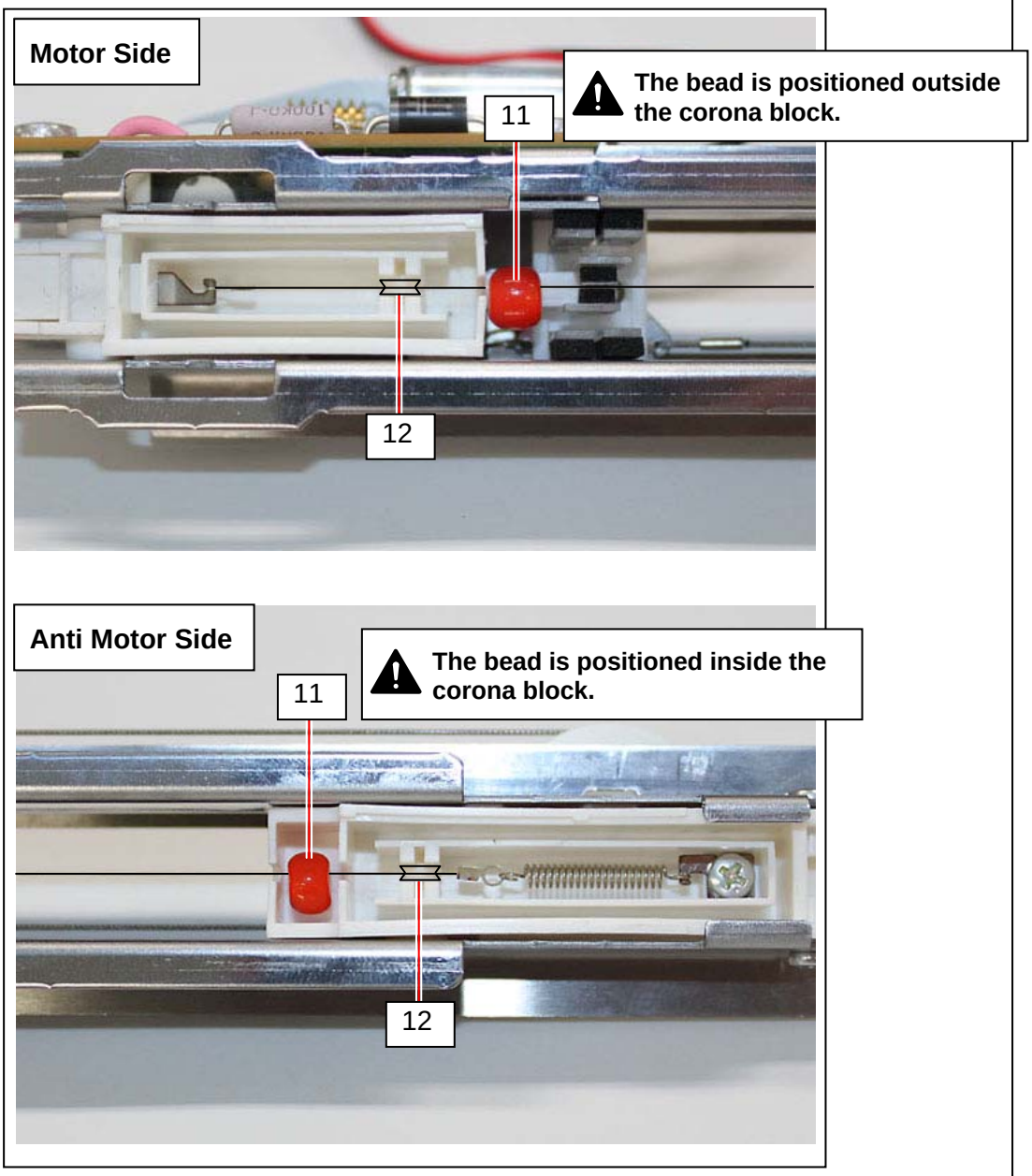


6. Remove the Spring (8) on one side from the hook (9), which removes the old HV1 Wire (10). After removing the old one, strain the new one referring to the NOTE on next page.

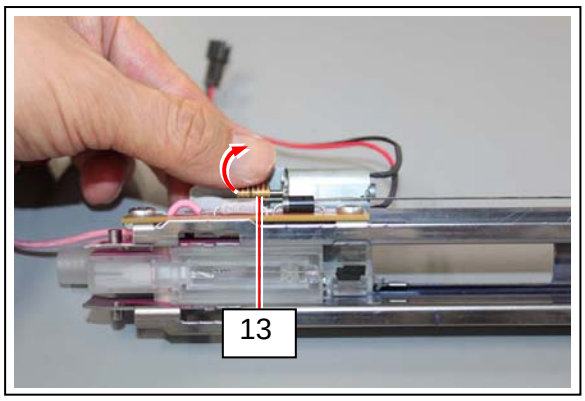


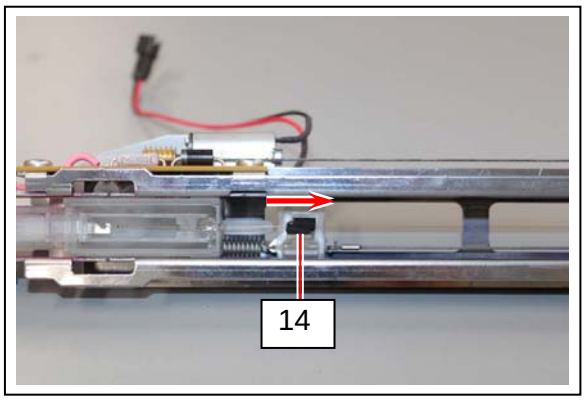
NOTE

When straining the new HV1 Wire, be sure that;
(1) Anti-vibration beads (11) are correctly fitted into their positions and
(2) HV1 Wire is deep in the V-shape groove of the Pulleys (12).

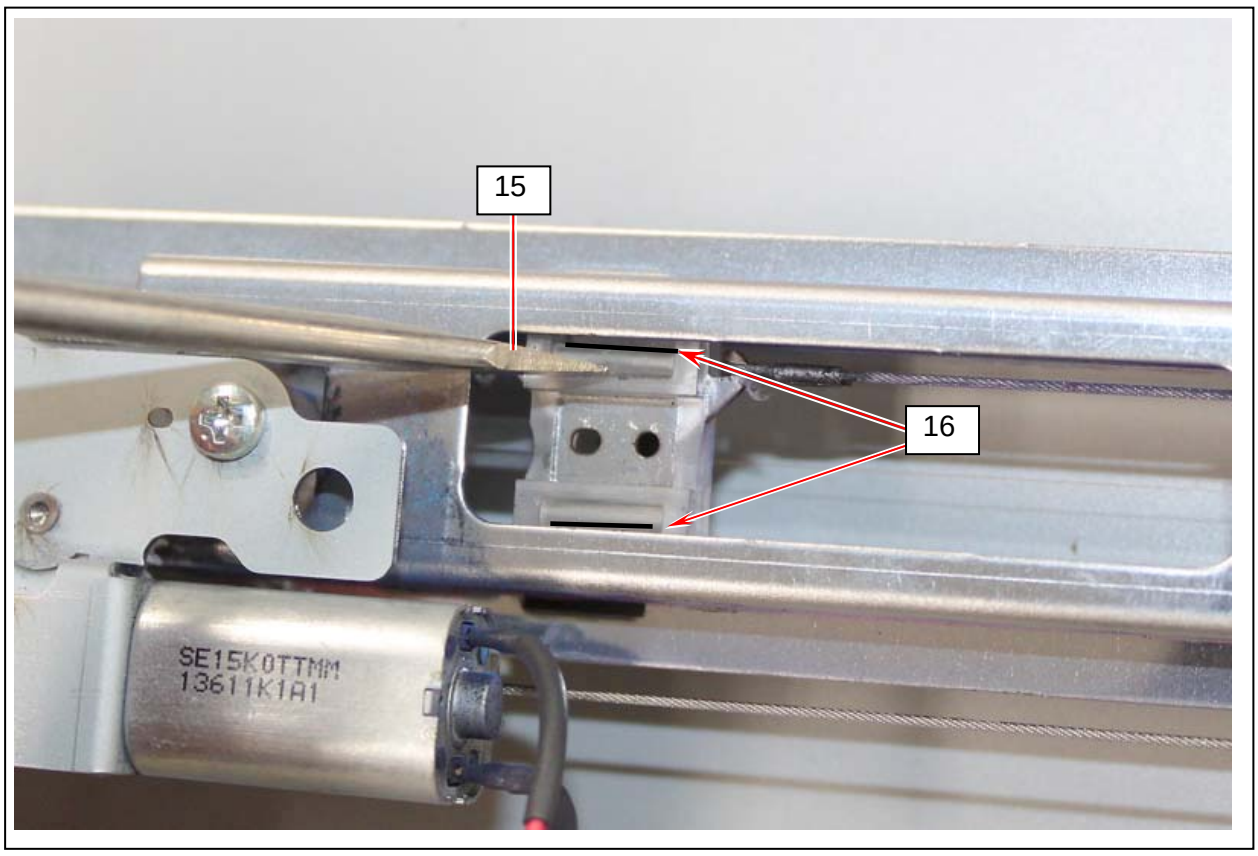


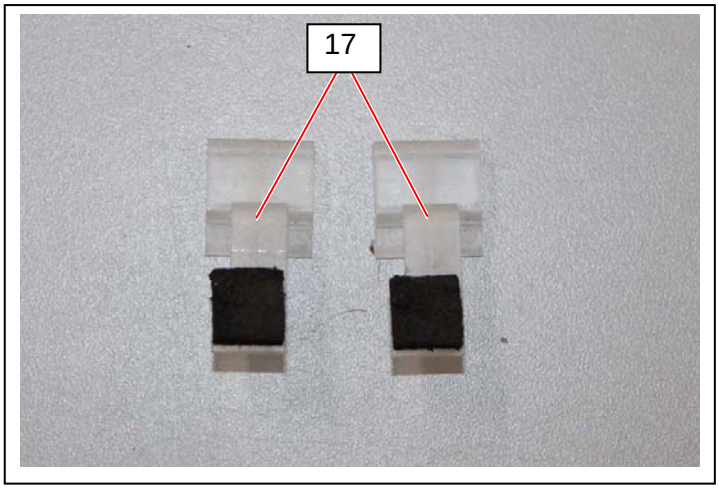
7. Manually rotate the screw (13) to bring the slider (14) a little inside for better accessibility.





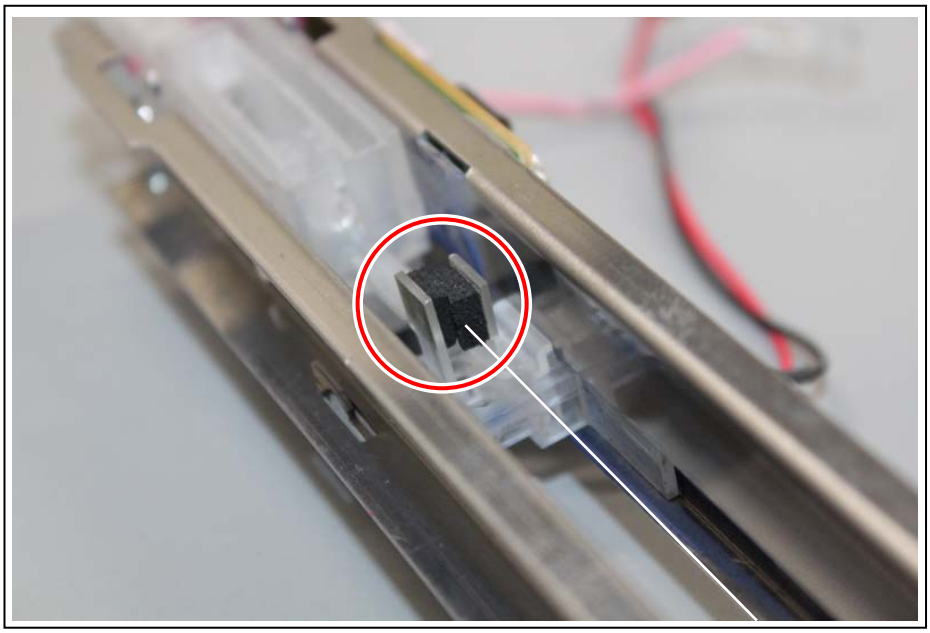
8. Insert a minus screwdriver (15) into each small spaces (16), move the screwdriver to release the stopper, and remove each old Cleaning Pad Assys (17). Then put the new Cleaning Pad Assy back in the same places with referring to the NOTE on next page.





NOTE

After putting new Cleaning Pad Assy back in, check whether or not the HV1 Wire is in between 2 cleaning pads. The height of HV1 Wire is incorrect when it is not in between 2 cleaning pads correctly, which will badly affect the image quality.



5. 3 Drum and Cleaner Section

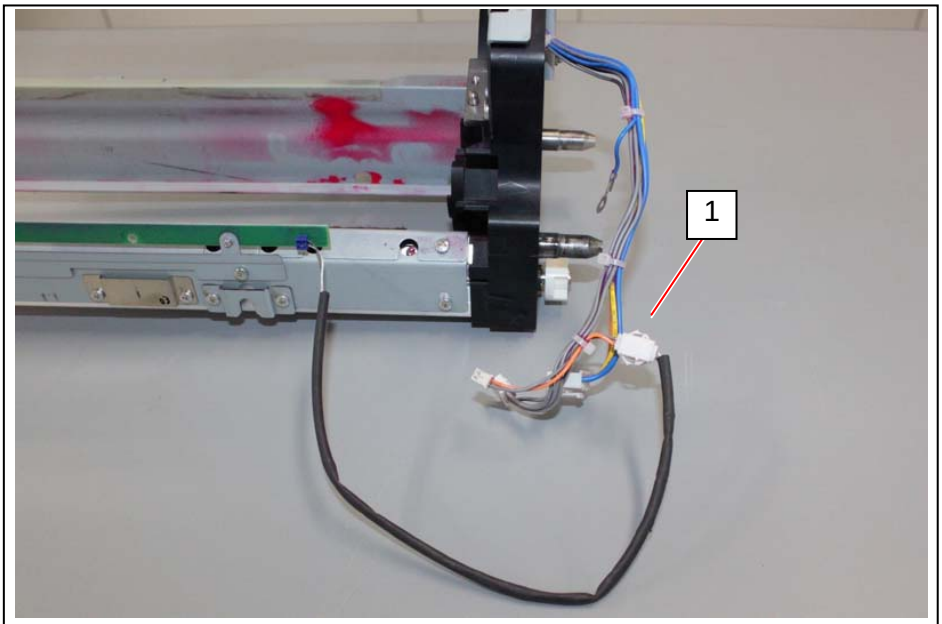
5. 3. 1 Replacement of periodical replacement part

The followings are the periodical replacement parts that are used in Drum and Cleaner section.

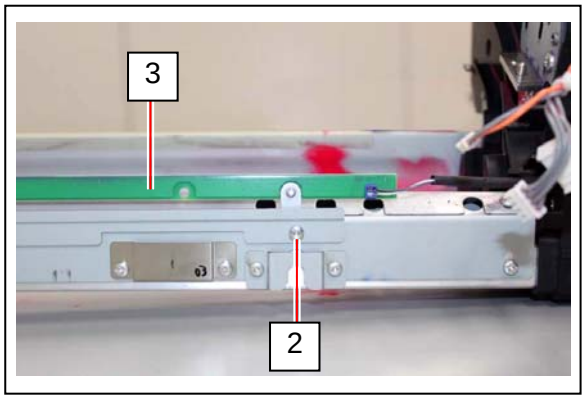
Part name	Quantity	Remarks
Photoconductive Drum	1	1 set of these parts are included in an exclusive kit "Drum Kit".
Blade Assy	1	
Seal Assy	1	
Seal 2 Assy	1	

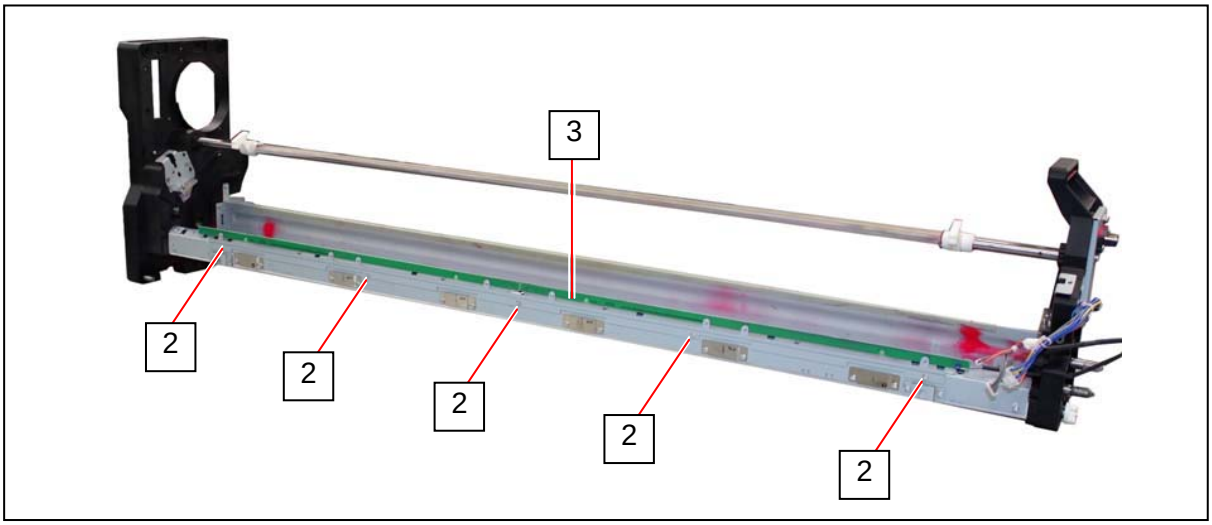
1. Remove the Drum with referring to [5.2.6 Removal of Drum].

2. Plug out a connector (1) of Eraser Lamp that is on one side of the Process Unit.

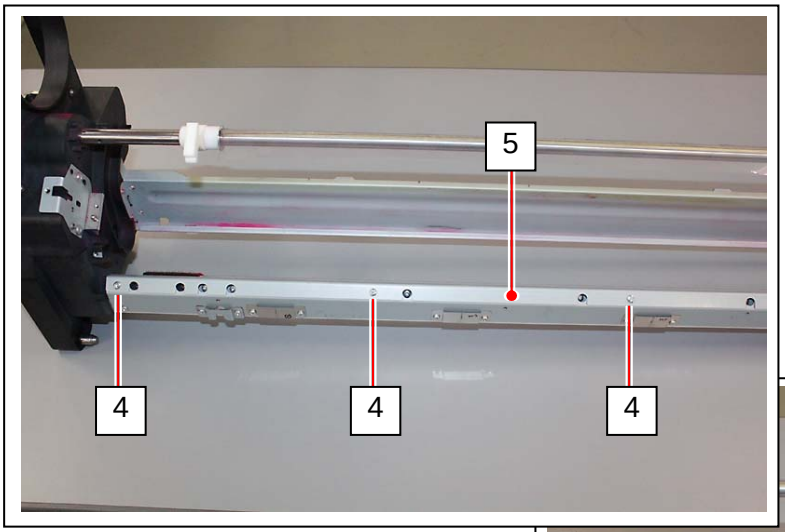


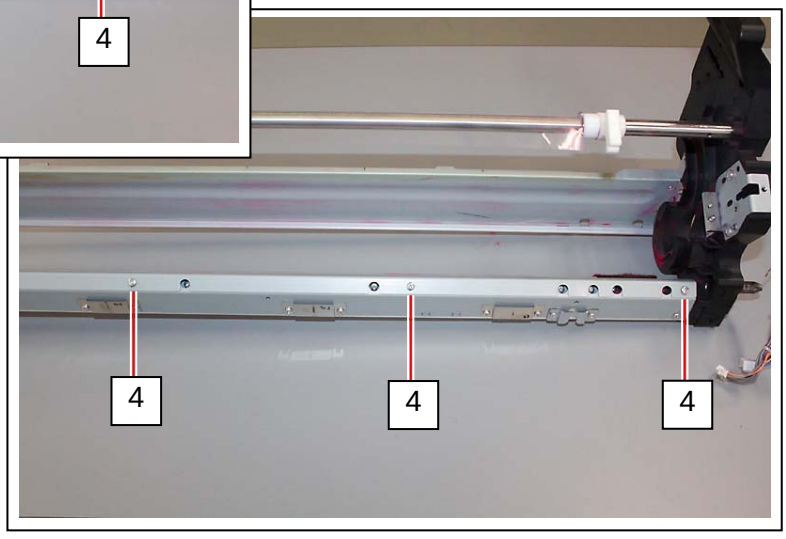
3. Remove 5 M3x5 screws (2) to remove the Eraser Lamp (3).



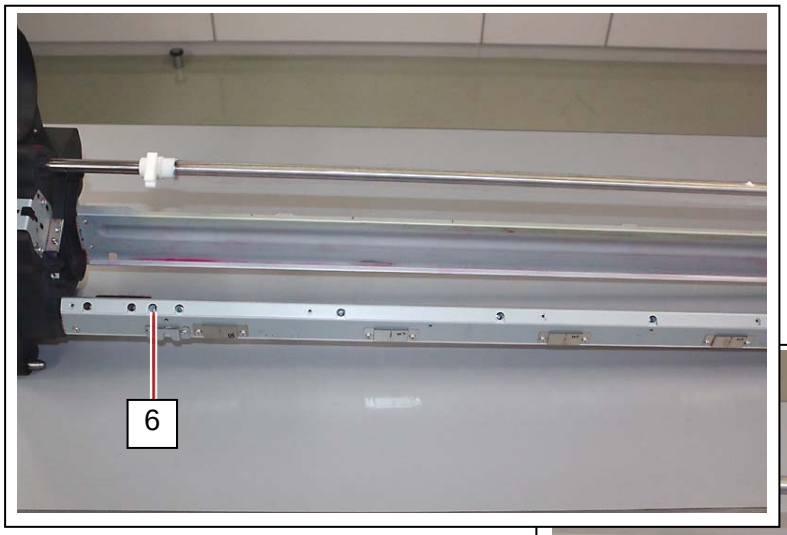


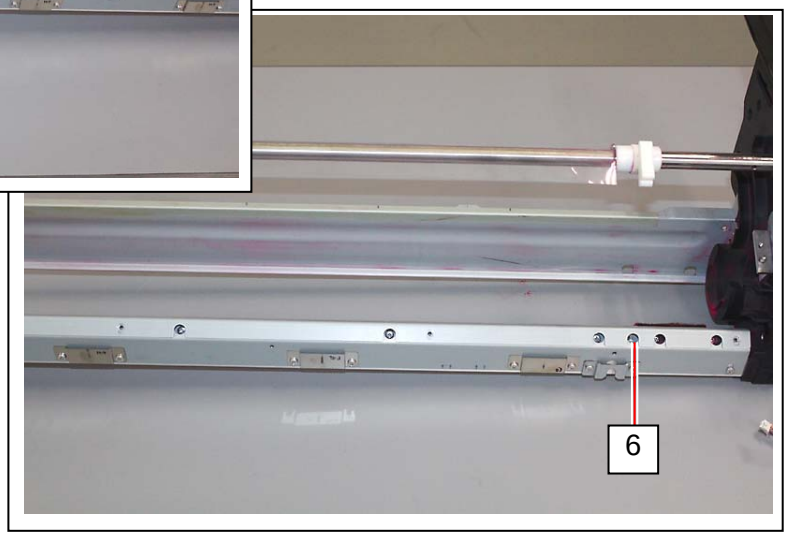
4. Remove 6 M3x5 screws that are fixing the Bracket (5). (Bracket (5) is not removed at this moment.)



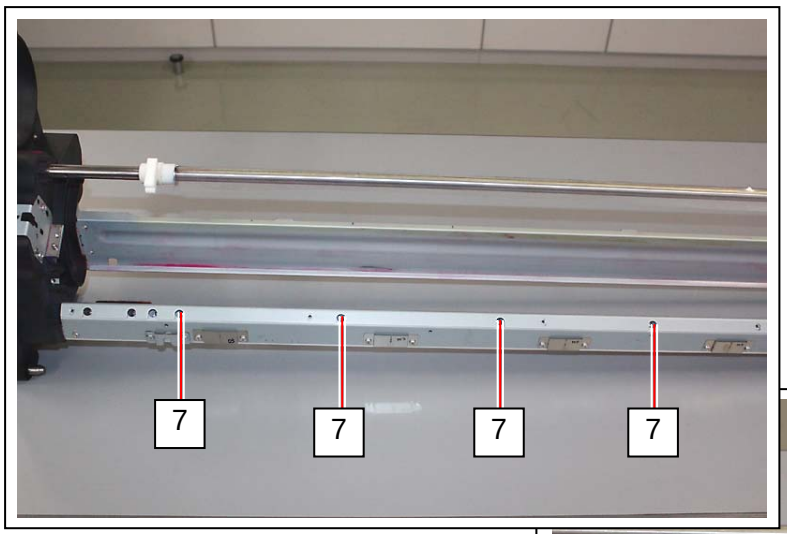


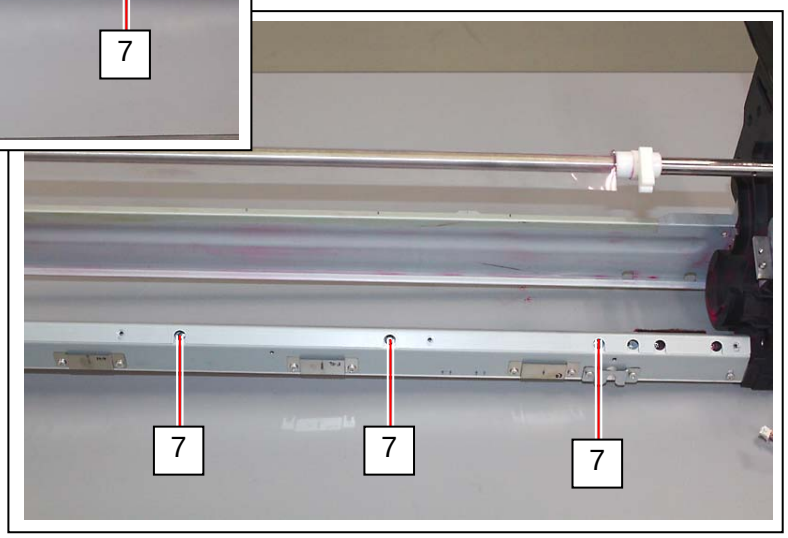
5. Remove the M3x5 screws (6) on both sides, which are in the 3rd screw holes from the sides.



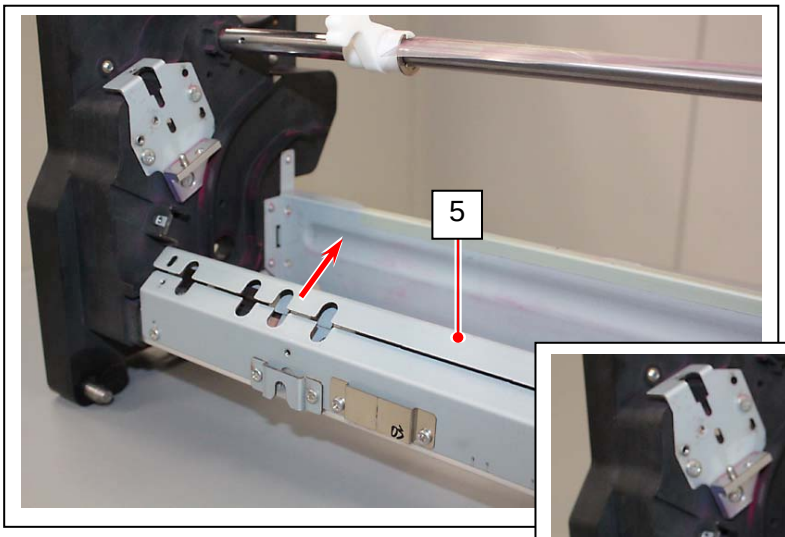


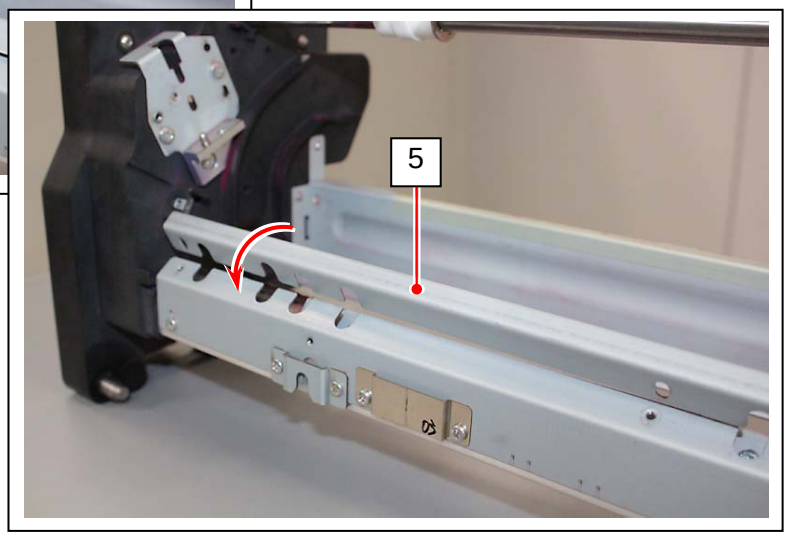
6. Loose 7 screws (7) a little.



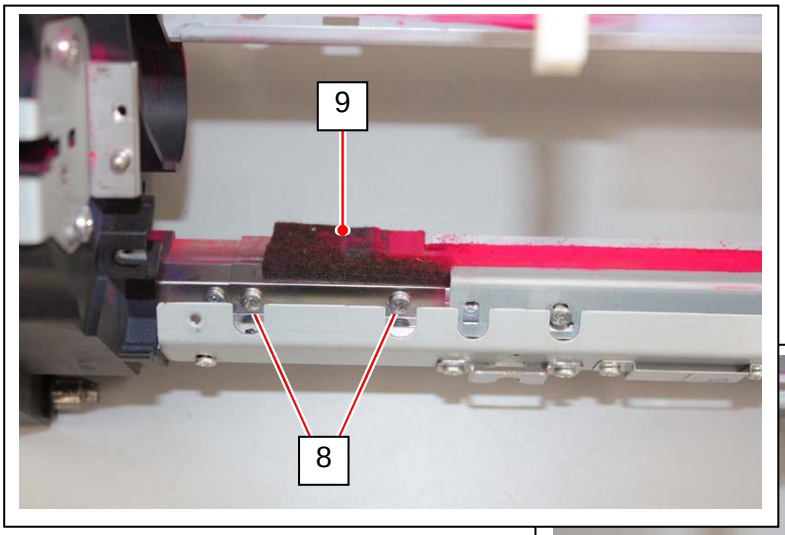


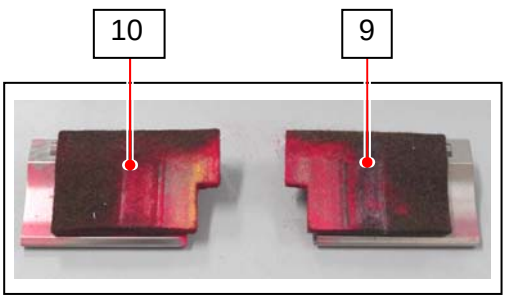
7. Remove the Bracket (5) by bringing it up first and then twisting.

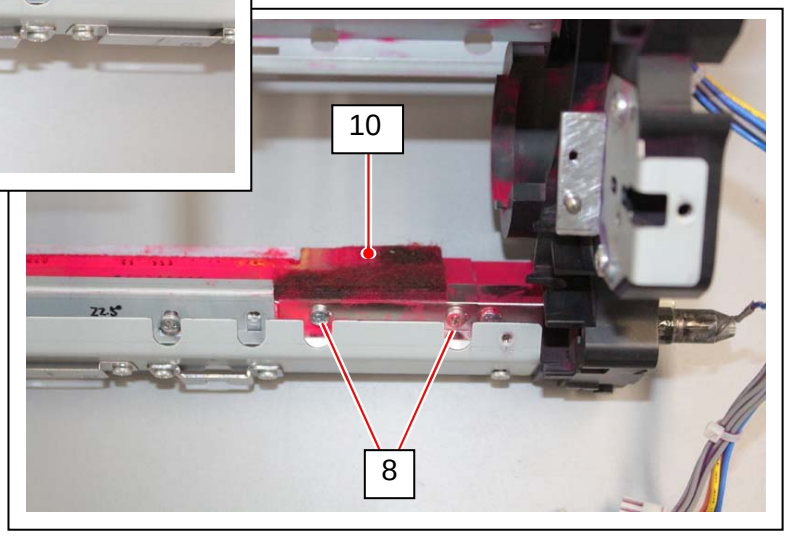




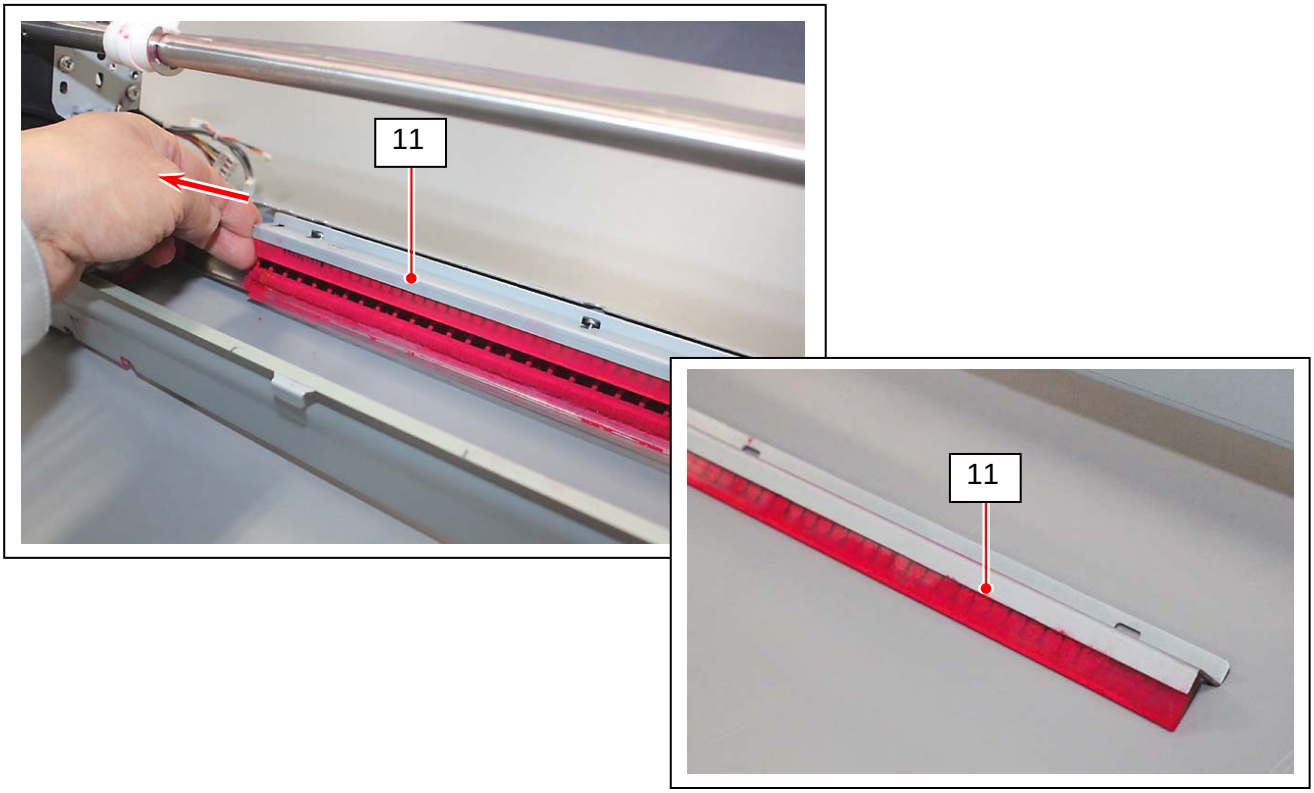
8. Remove 2 each (M3x5) screw (8) to remove each Seal Assy (9) and Seal 2 Assy (10). Dispose these old seals (9) and (10).



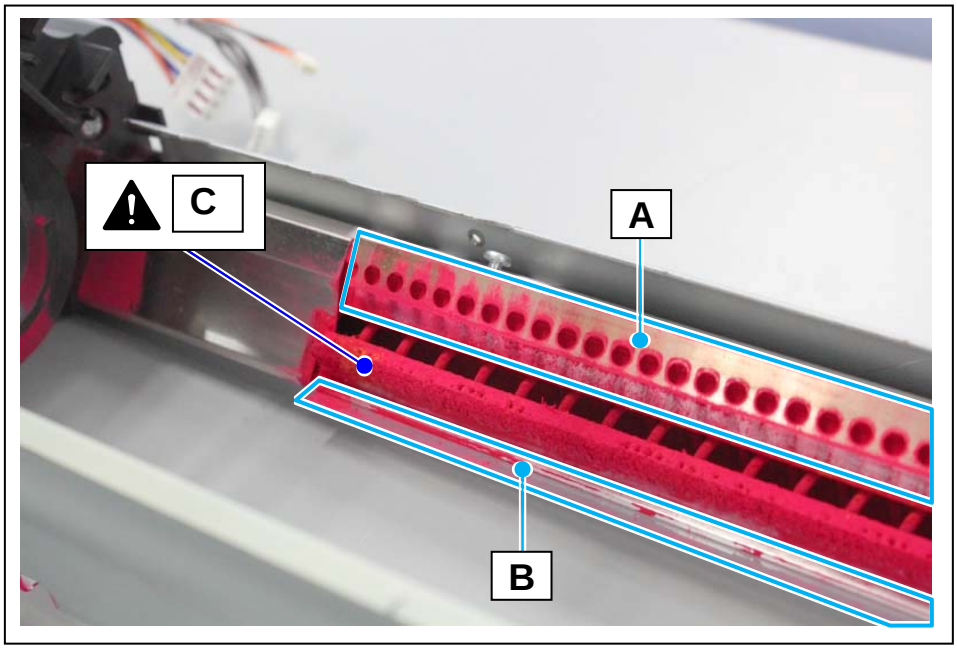




9. Remove the Blade Assy (11) by pulling in the direction of arrow. Dispose the old blade.

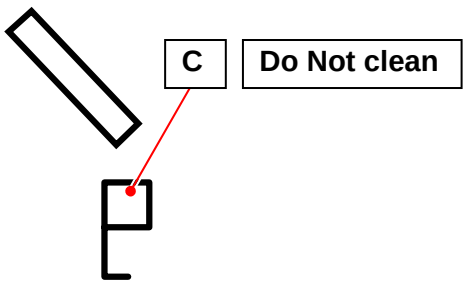


10. Easily clean the following places A and B by wiping just to remove the toner.

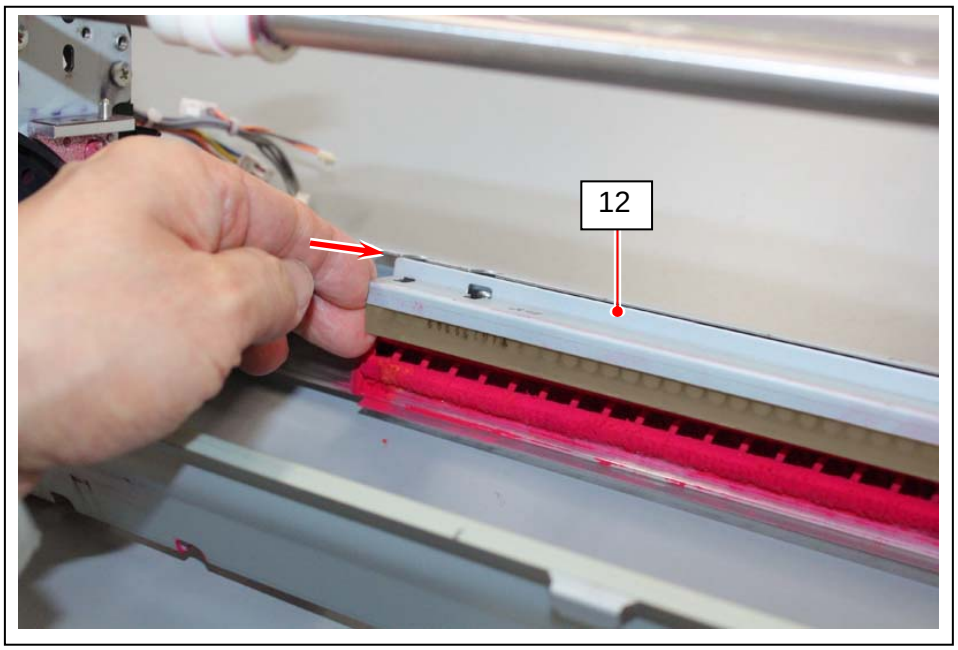


NOTE

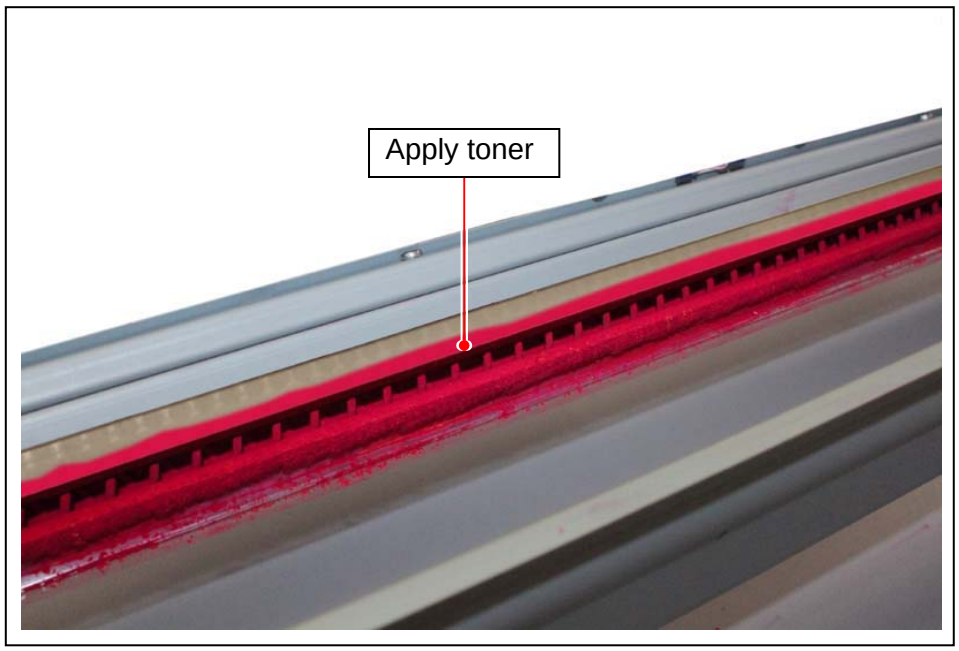
DO NOT clean the felt part C as this part NEEDS to be applied with enough toner for removing friction with Drum.

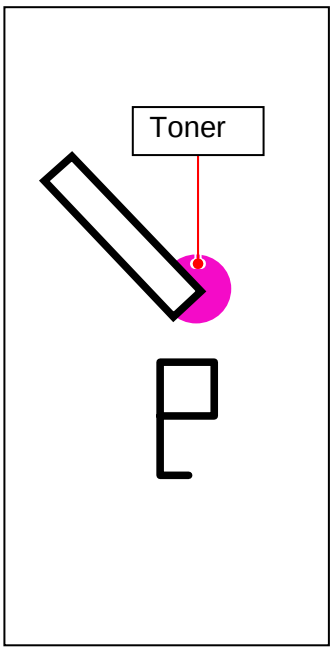


11. Place the new Blade Assy (12) onto its original position.



12. Apply enough amount of toner (of original color) to the edge of new rubber blade that contacts the Drum surface.



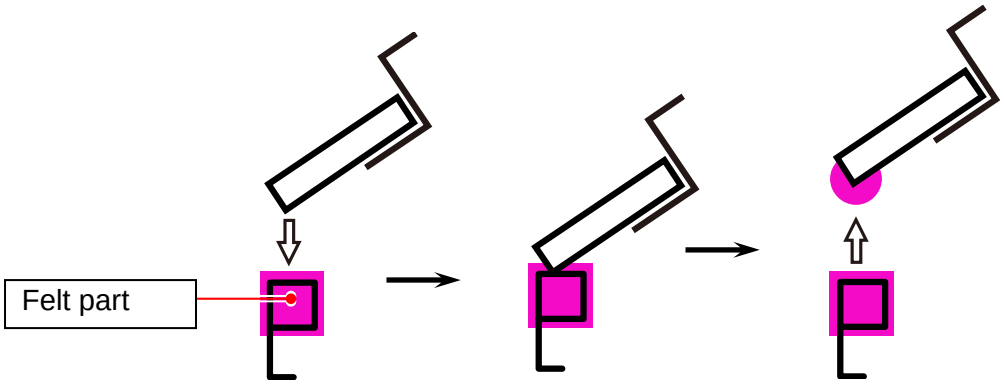


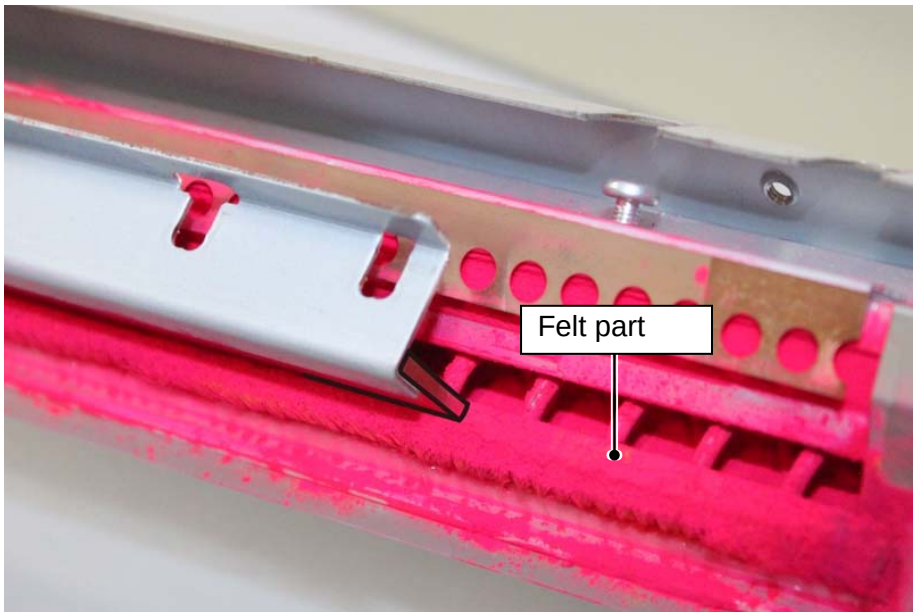
NOTE

1. Apply enough toner to the edge of the new blade. Otherwise the blade may turn over due to friction with the Drum, which will damage the blade or Drum.
2. As for the toner applied to the blade, get it from the Toner Cartridge. (Or another method is shown in Reference on the next page.)
3. Color of toner applied must be the same as the original color.

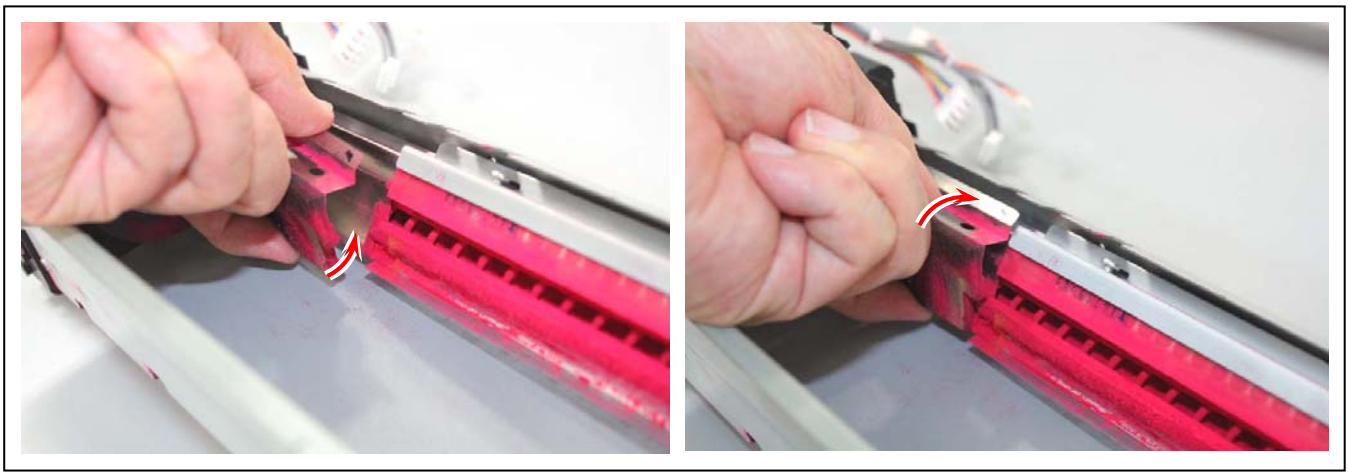
REFERENCE

Another method to apply toner to the new blade is to contact its edge to the felt part under the blade.

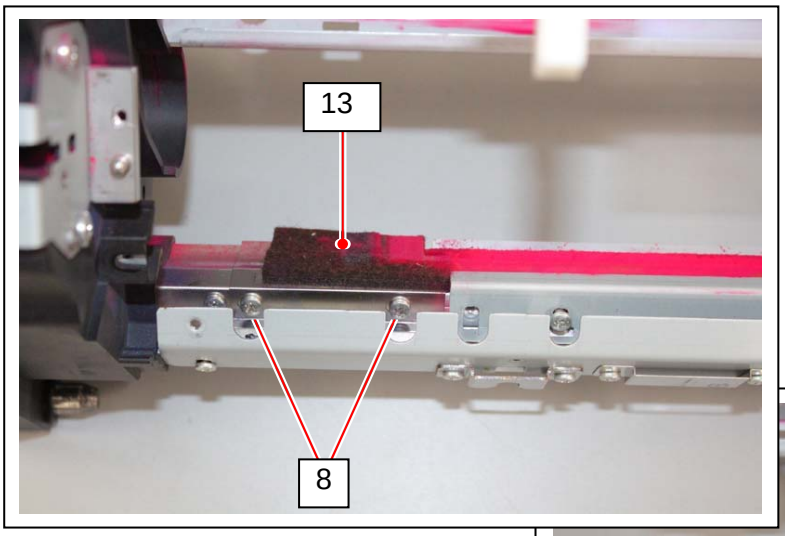


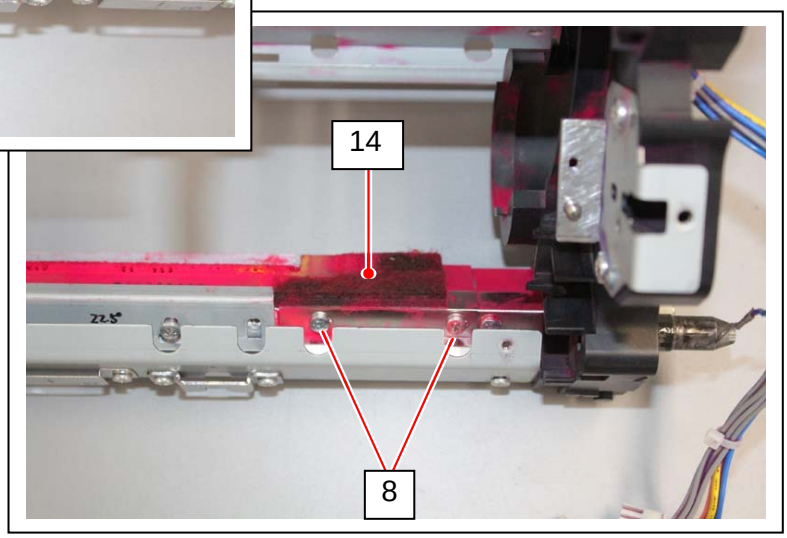


13. Put both the new Seal Assy and Seal 2 Assy to their original positions on both sides of the Blade Assy. At this time, please fit in the bottom side first then the upper side.



14. Fix both Seal Assy (13) and Seal 2 Assy (14) with 2 each original M3x5 screws (8).

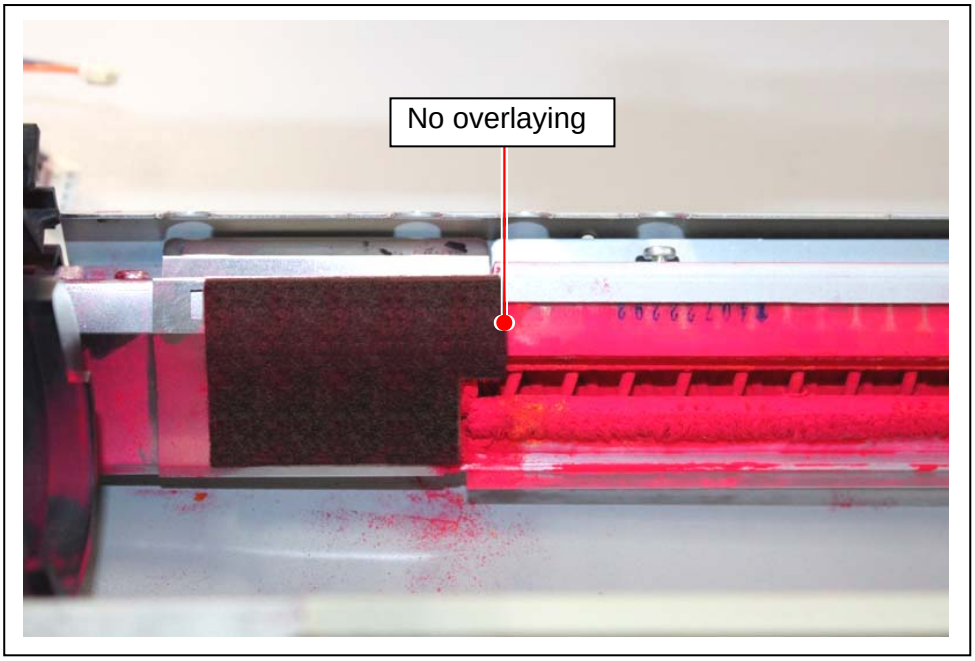




NOTE

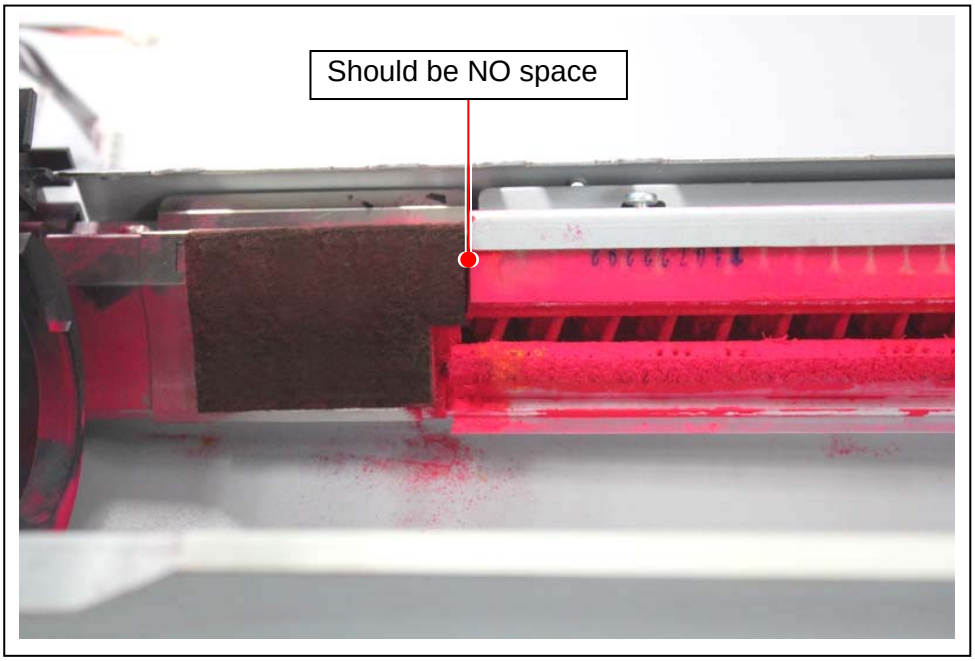
Note the following points when installing the new Seal Assy (13) and Seal 2 Assy (14).

1. Make sure that the seal does not overlay the blade. When overlaying, blade is deformed to separate from the Drum, which causes defective cleaning.

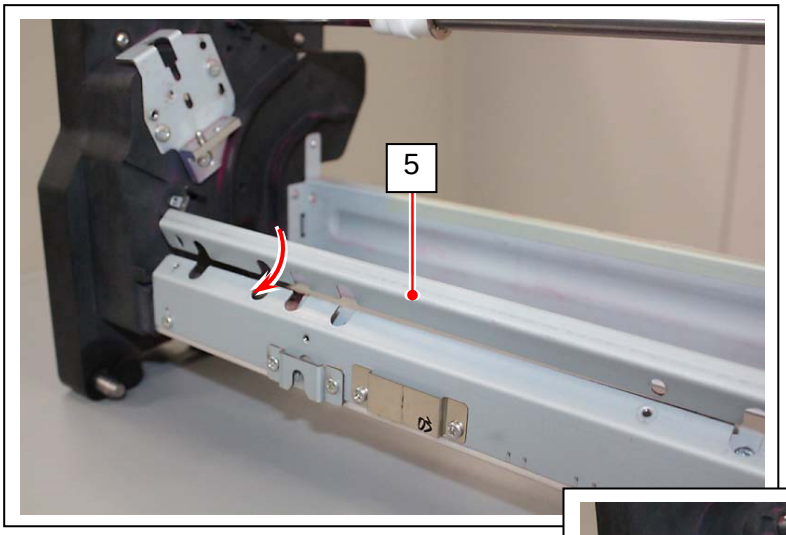


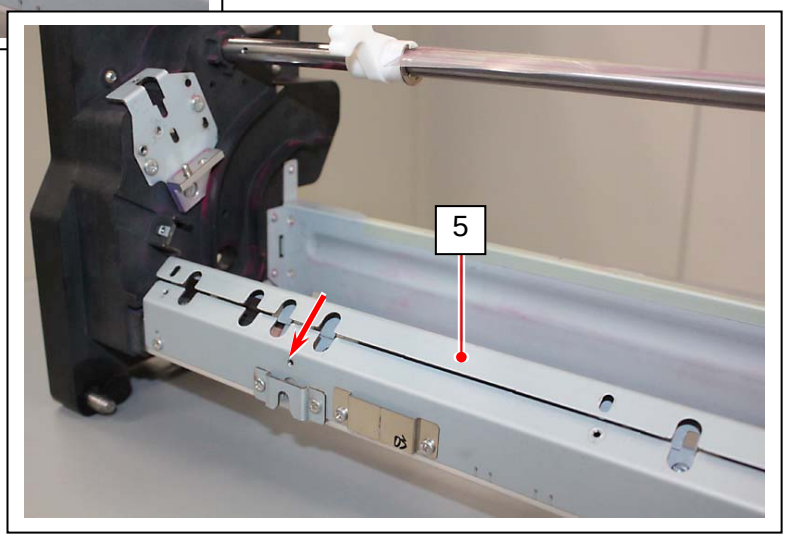
NOTE

2. There should be NO space between blade and seal.

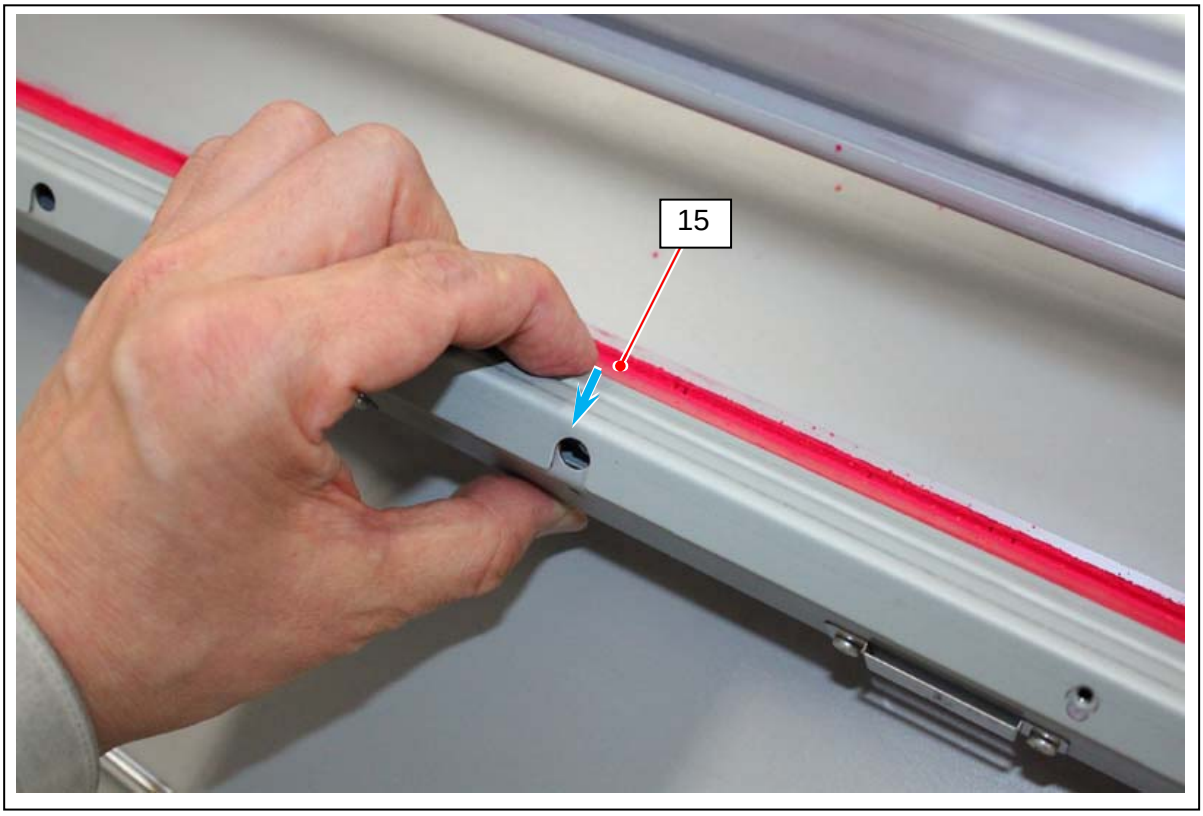


15. Return the Bracket (5) to its original position.

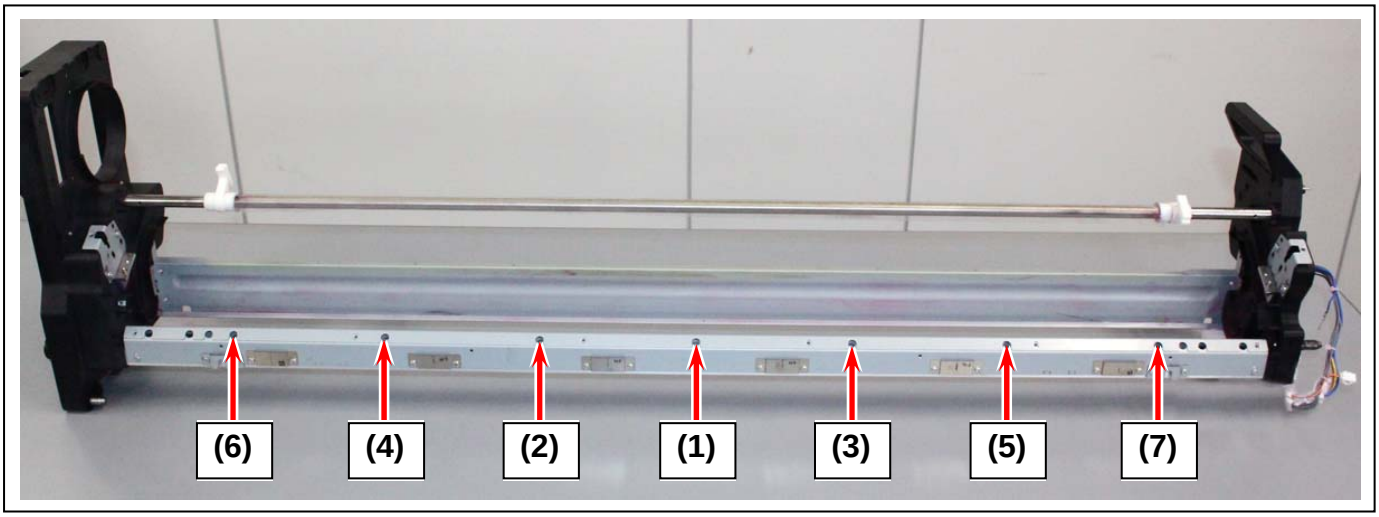




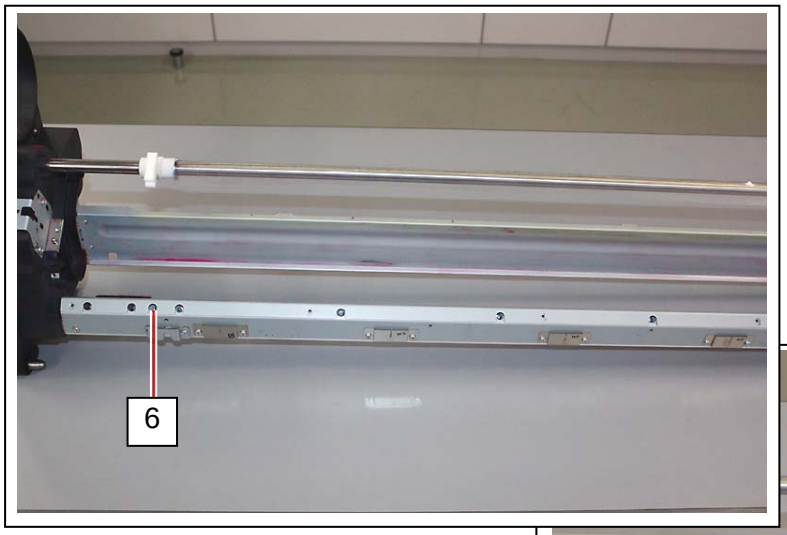
16. Lightly pressing down the metal part (15) of Blade Assy, tighten the screws orderly from center to sides.

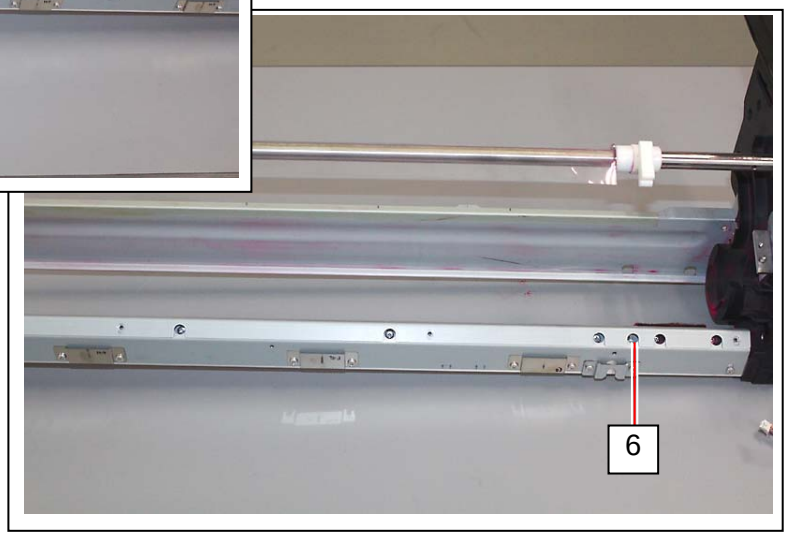


(Order of tightening the screws)

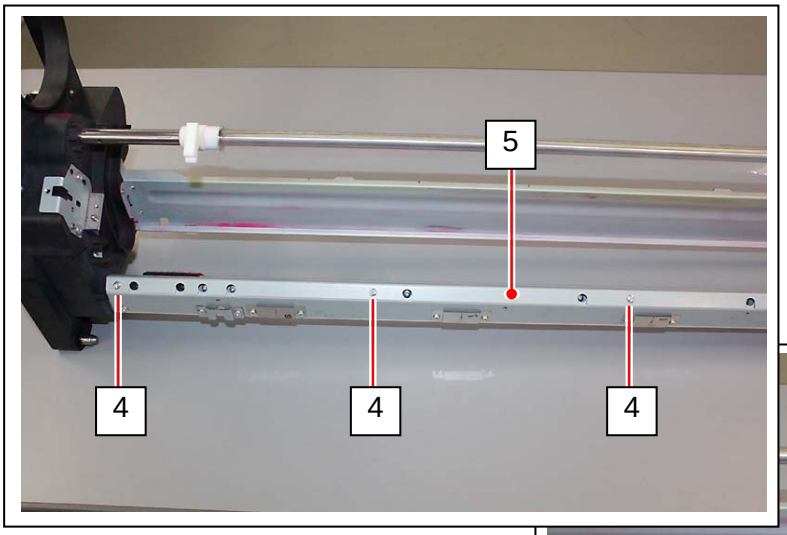


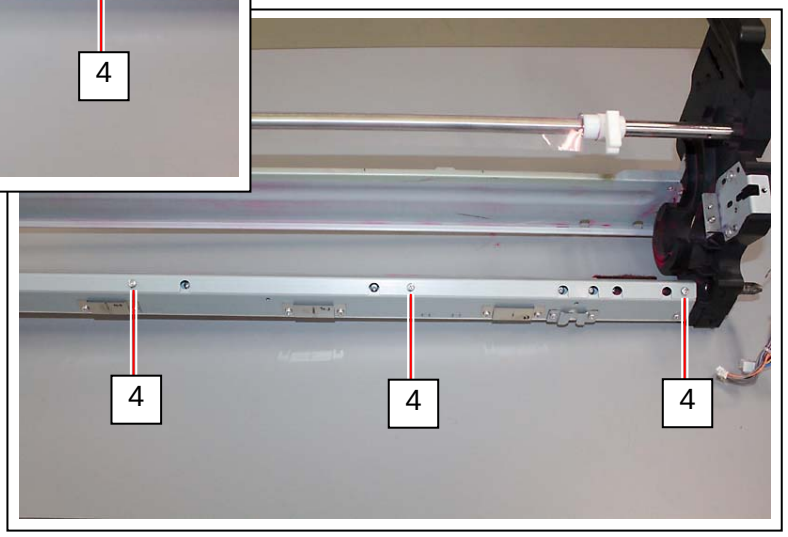
17. Put back 2 M3x5 screws (6) back in their original screw holes and tighten them.



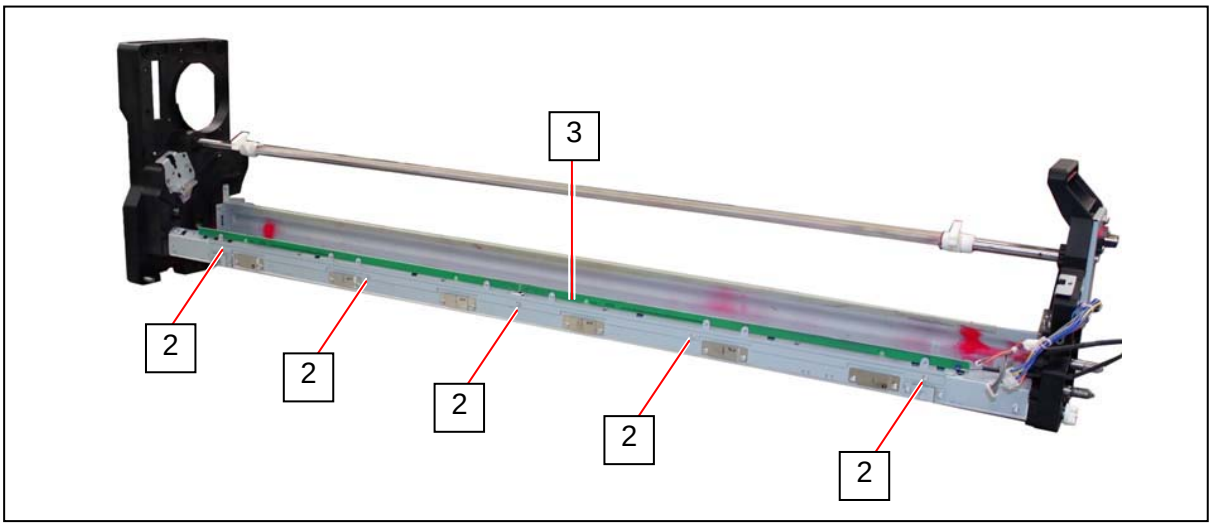


18. Put back 6 M3x5 screws (6) back in their original screw holes and tighten them to securely fix the Bracket (5).

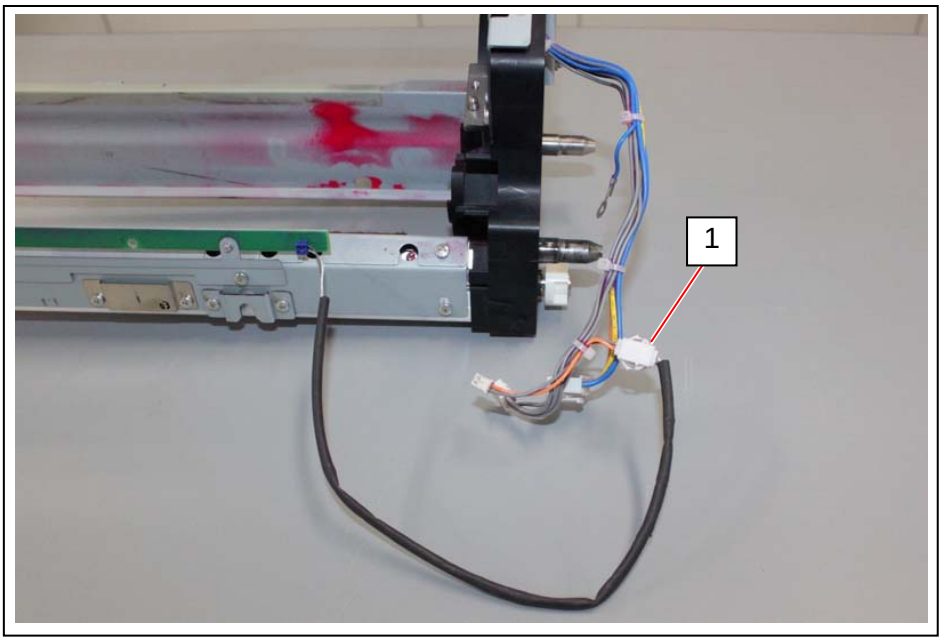




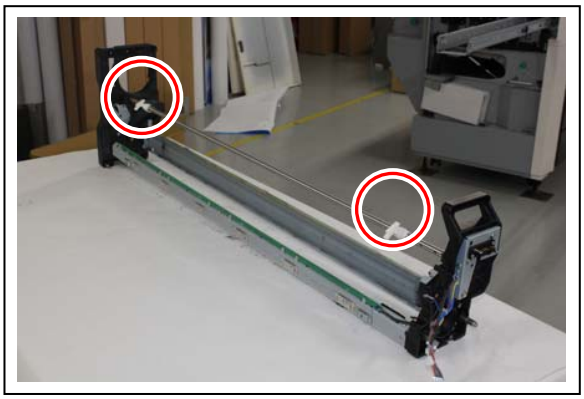
19. Put back the Eraser Lamp (3) to its original position and fix it with 5 original M3x5 screws (2).

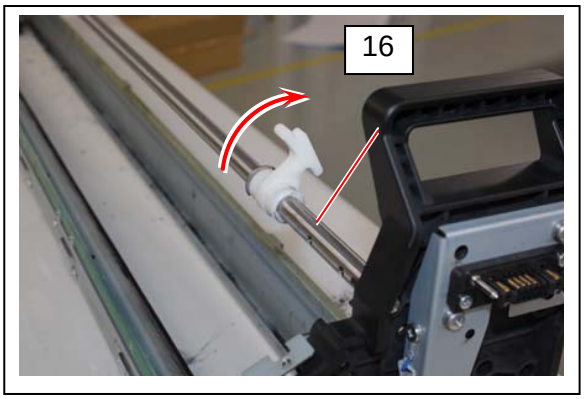


20. Plug in the connector (1) of Eraser Lamp.

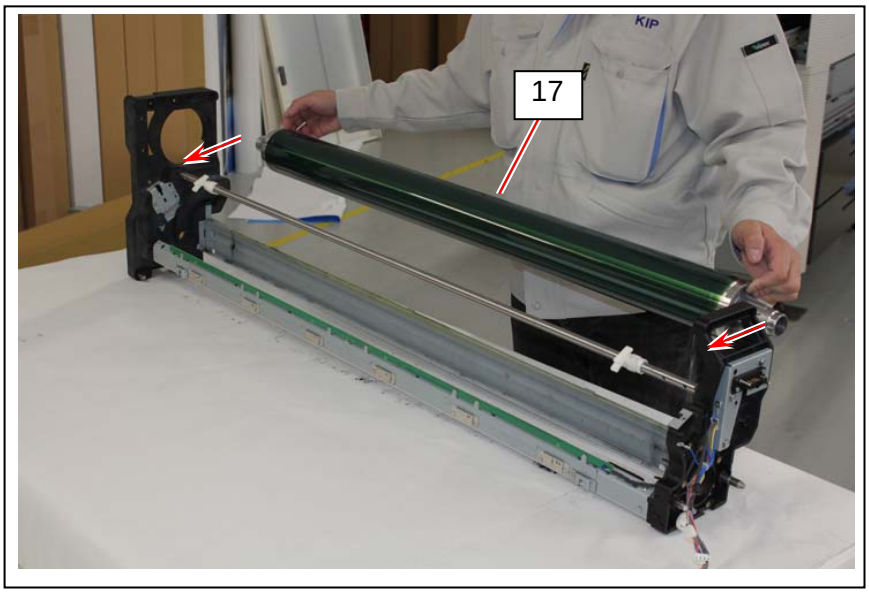


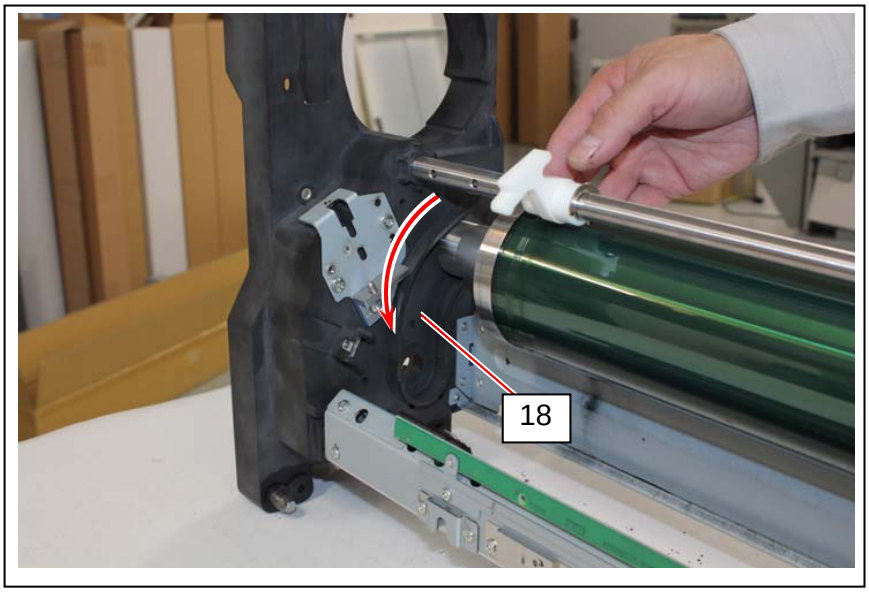
21. Bring up both Developer Lock Levers (16) if they are brought down.





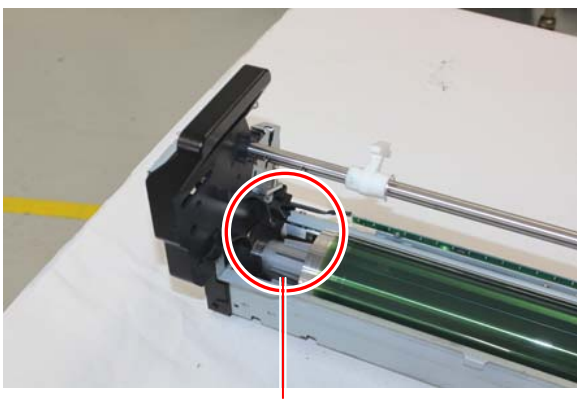
22. Prepare a new Drum (17). With holding the silver edges on both sides, fit both shafts into the entrances of both guides (18) and then bring them down to the bottom with placing horizontally.



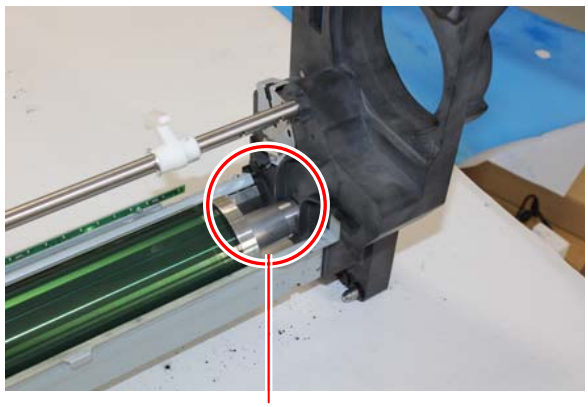


NOTE

Drum must be installed to the Process Unit by correct orientation. One of 2 shafts on both sides has some plates whole the other one does not. The one with many plates is placed on the driving side.

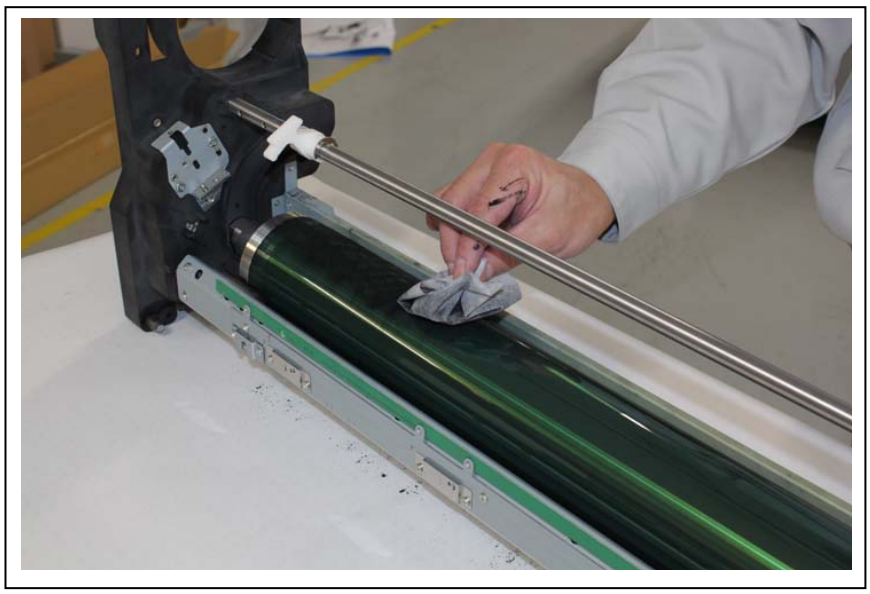


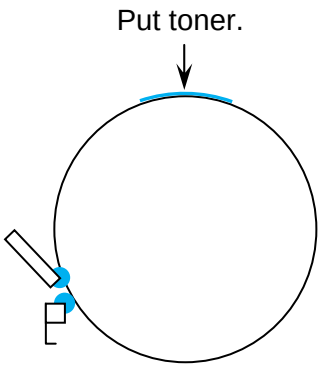
Shaft with plates(Driving side)



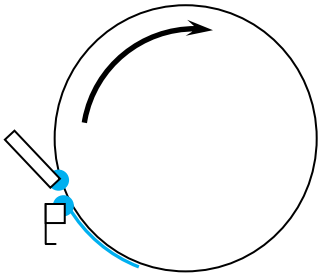
Shaft without plate (Toner cartridge side)

23. Using a soft cloth that does has no risk to damage the Drum surface, put some toner (of same color with Process color) on the entire upper face of Drum. This toner will be supplied to the contact point of Drum and Cleaner Blade at the next step, to decrease the friction between them.

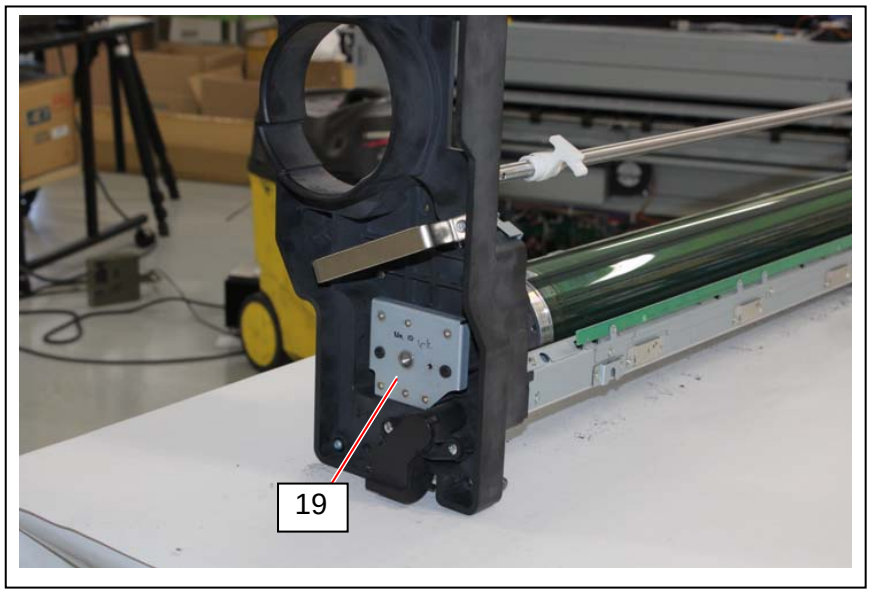




24. With catching the silver edge parts on both sides, rotate the Drum in the direction of normal rotation until all the toner is collected by the Cleaner Blade. This makes the toner to adapt to the Cleaner Blade.



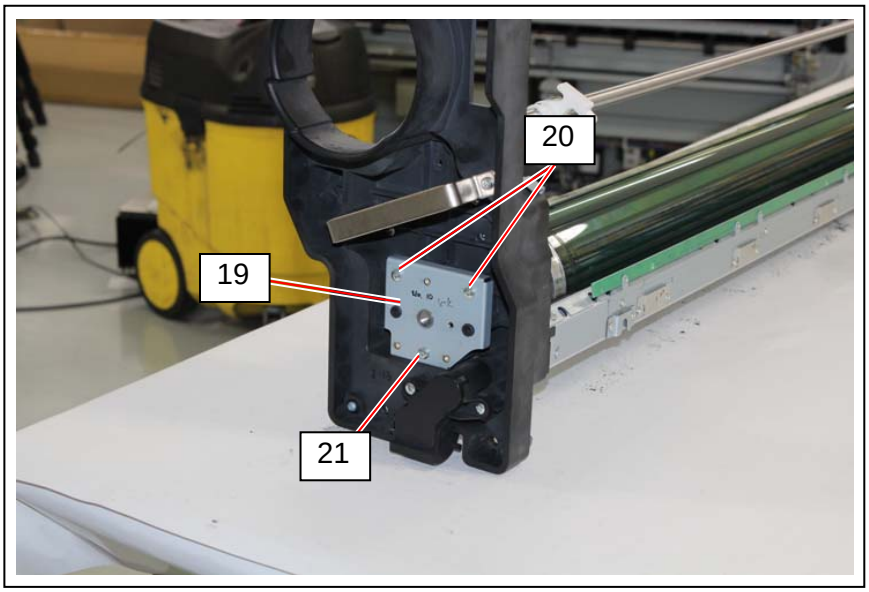
26. On the toner cartridge side, fit the Drum Bracket (19) back in its original position to fix the Drum Shaft, with pressing the Drum toward the Cleaner Blade.



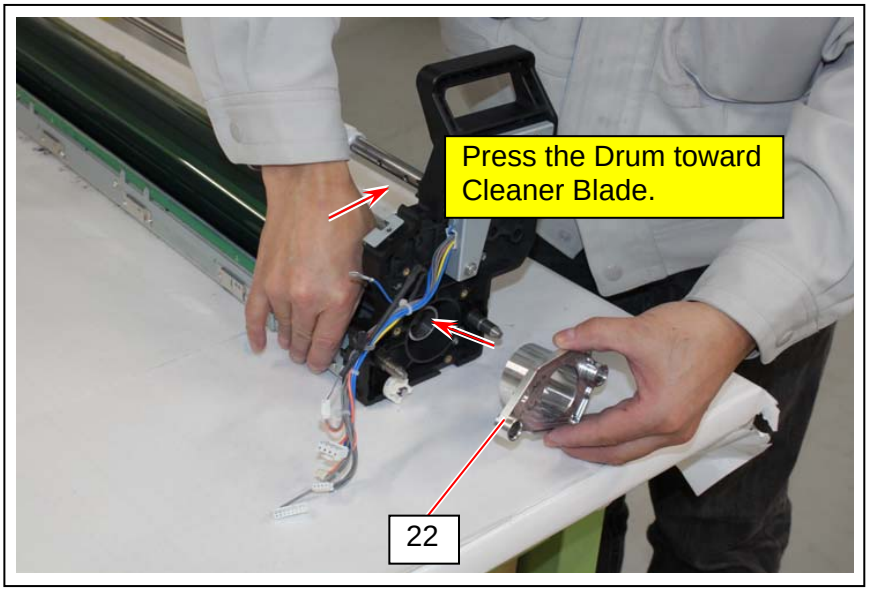
NOTE

It is better fixing the Drum Shaft on the toner cartridge side first and then on the driving side next. If you change the order of fixation, it may be more difficult.

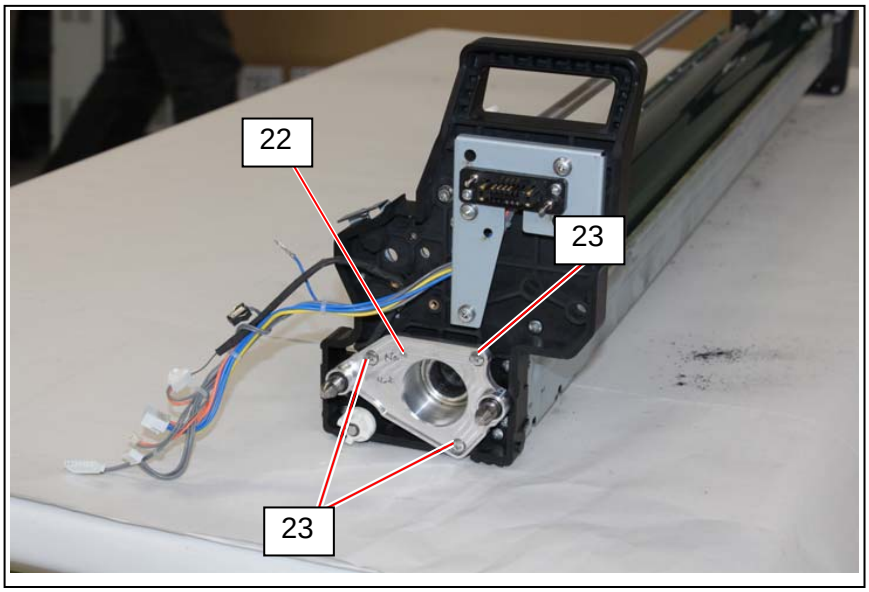
27. Fix the Drum Bracket (19) on the toner cartridge side with 3 screws (20).



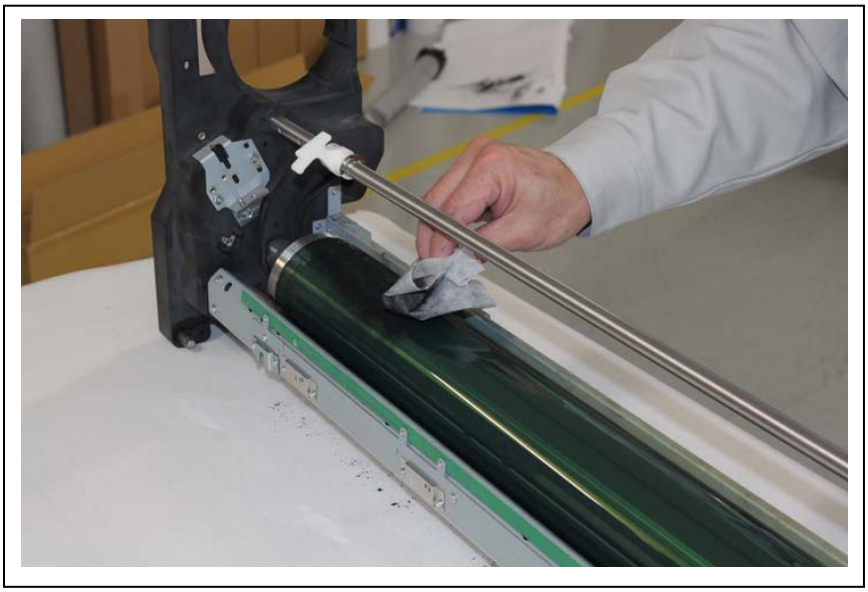
28. On the driving side, fit the Drum Bracket (22) back in its original position to fix the Drum Shaft, with pressing the Drum toward the Cleaner Blade.

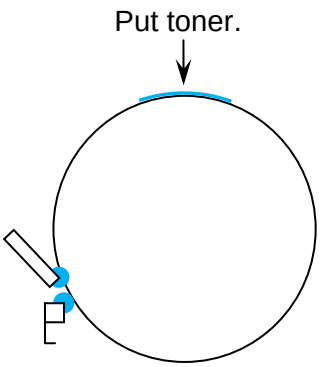


29. Fix the Drum Bracket (22) on the driving side with 3 screws (23).

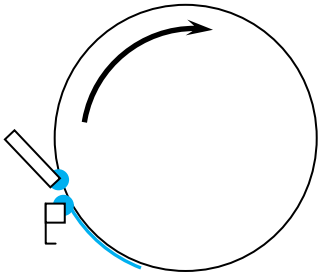


30. Using a soft cloth that has no risk to damage the Drum surface, put some toner (of same color with Process color) on the entire upper face of Drum as previously done at the step 23.





31. With catching the silver edge parts on both sides, rotate the Drum in the direction of normal rotation, which brings and supplies the toner to the contact point of Drum and Cleaner Blade



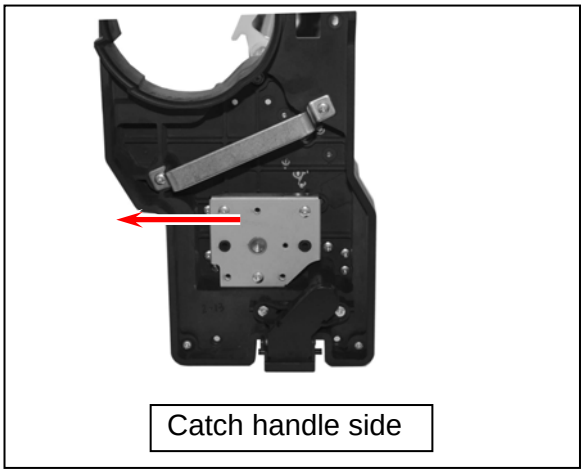
32. Repeat the steps 30 and 31 a few times to fully supply the toner to the Cleaner Blade.

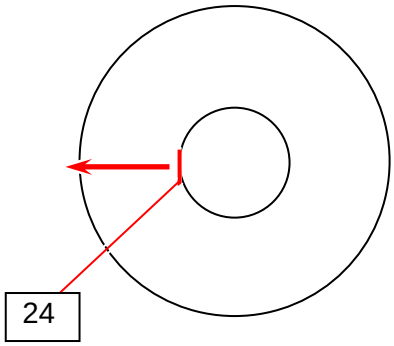
NOTE

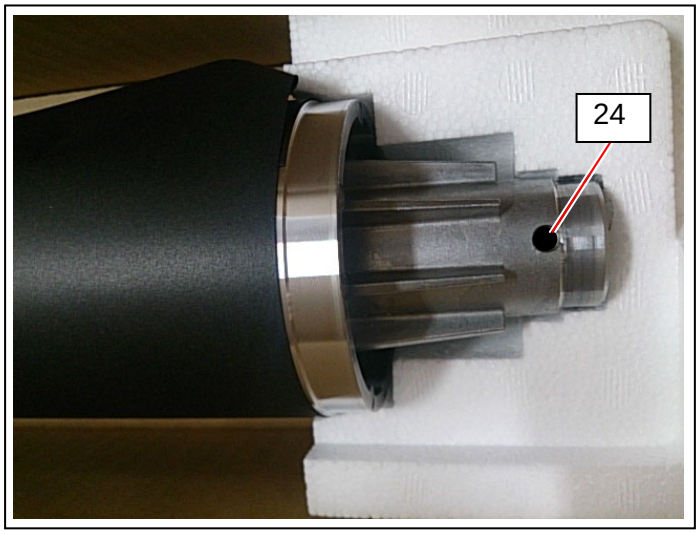
You feel very heavy when rotating the Drum if the Cleaner Blade is not supplied with enough toner.

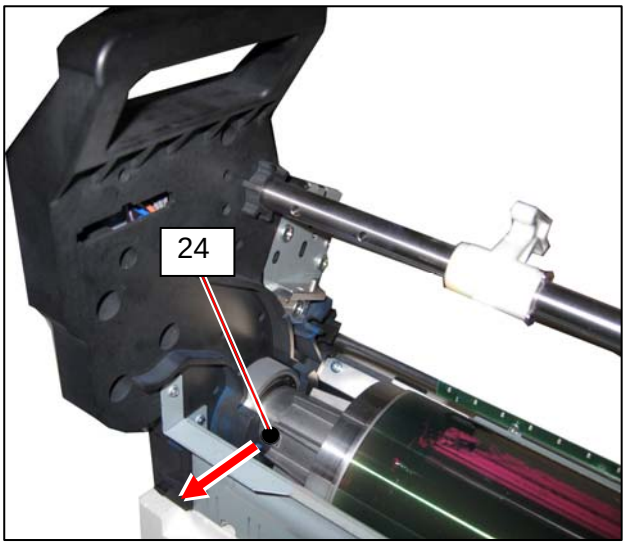
IMPORTANT!

33. Direct the Home Position mark (24) on the Drum Shaft in the direction of arrow. When seen from the catch handle side of Process Unit, it is the direction of 9 o'clock. This will help recovering the original correct Drum Phase position.





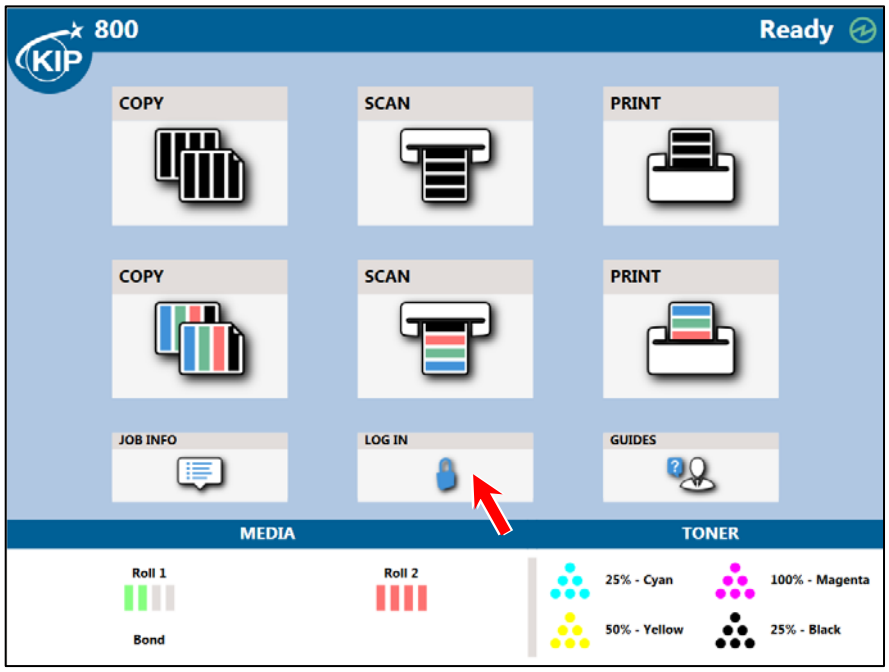




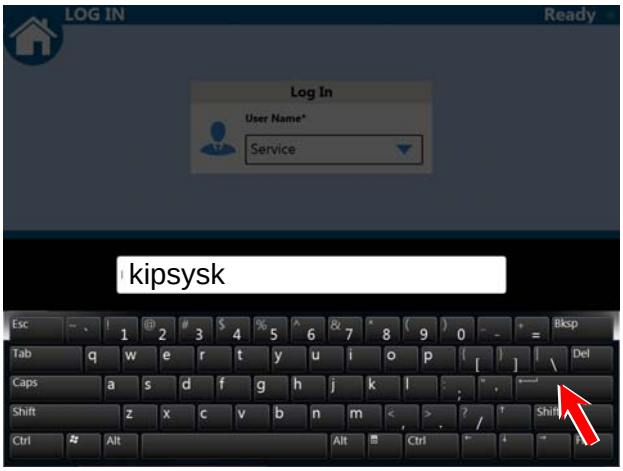
34. Return the Process Unit back onto the rail of printer, and also return the Image Corona, LED Head, and Developer Unit back in to the original positions.

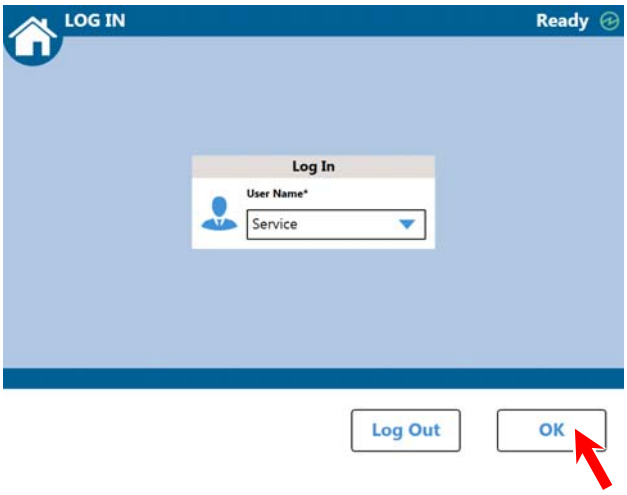
35. Calibration is required after replacing the Drum. Turn on the printer.

36. Press **LOG IN** in the HOME screen of Touch Panel.

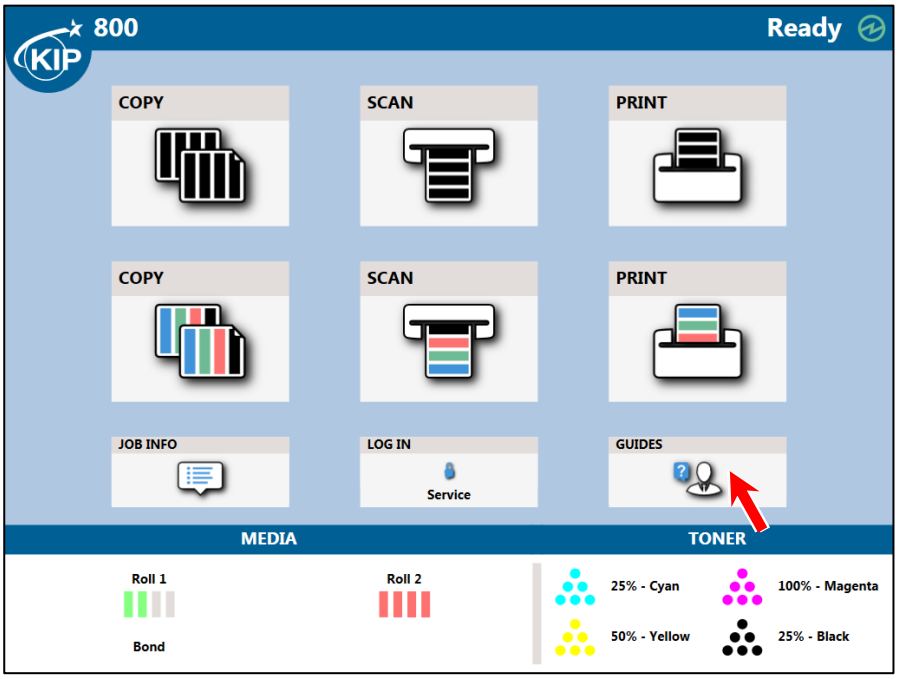


37. Touch the entry field of "User Name", and then select "Service" from the pull-down menu. Enter "kipsysk" in the password field, press the ENTER key, and then press [OK] in the LOG IN screen to log in with the administrative right.

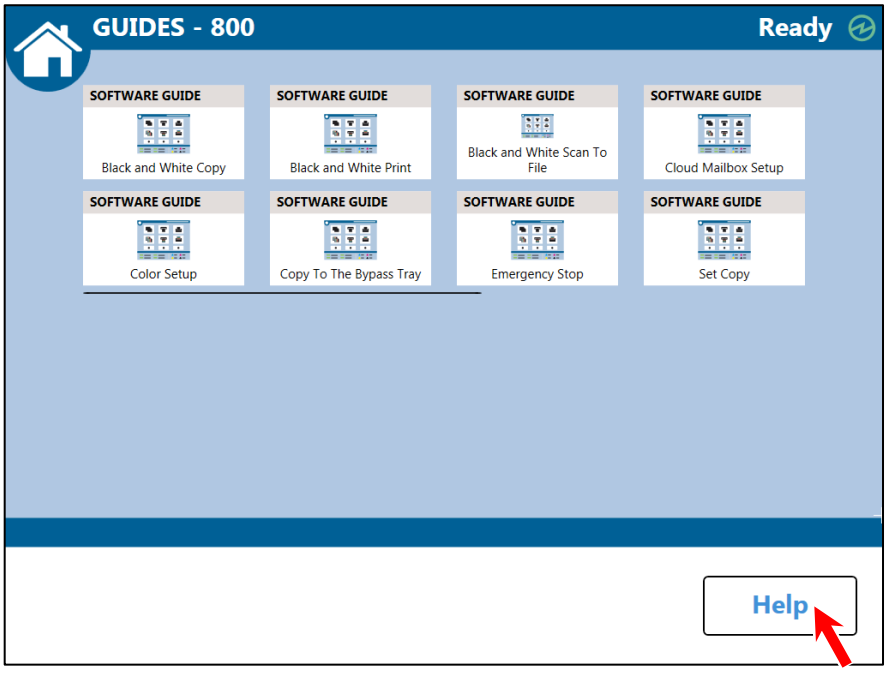




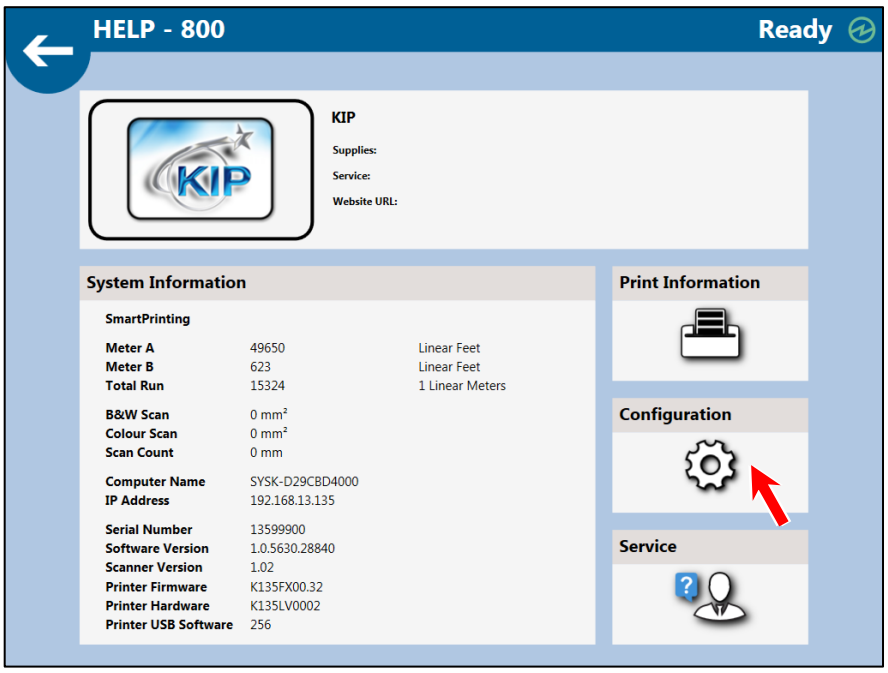
38. Press **GUIDES**.



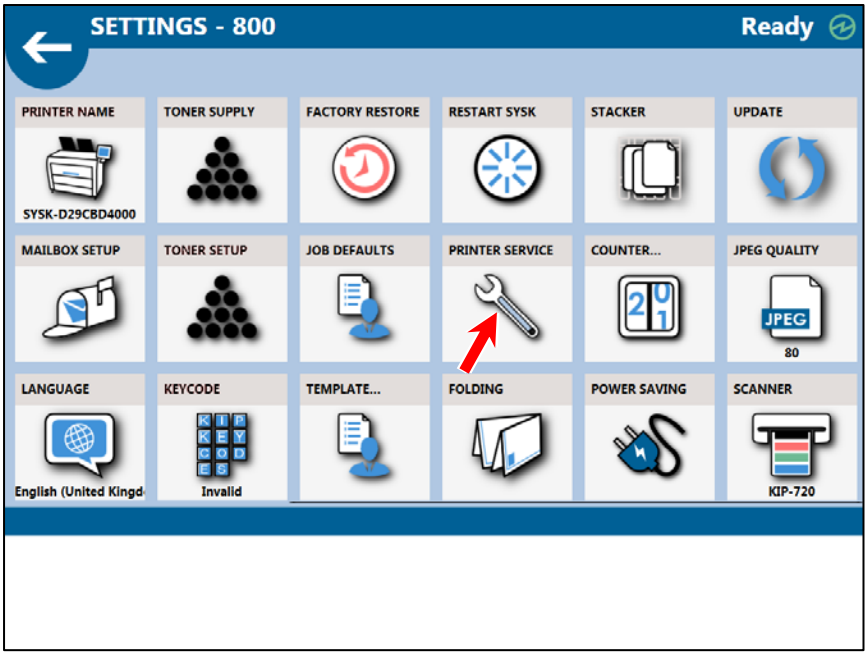
39. Press **Help**.



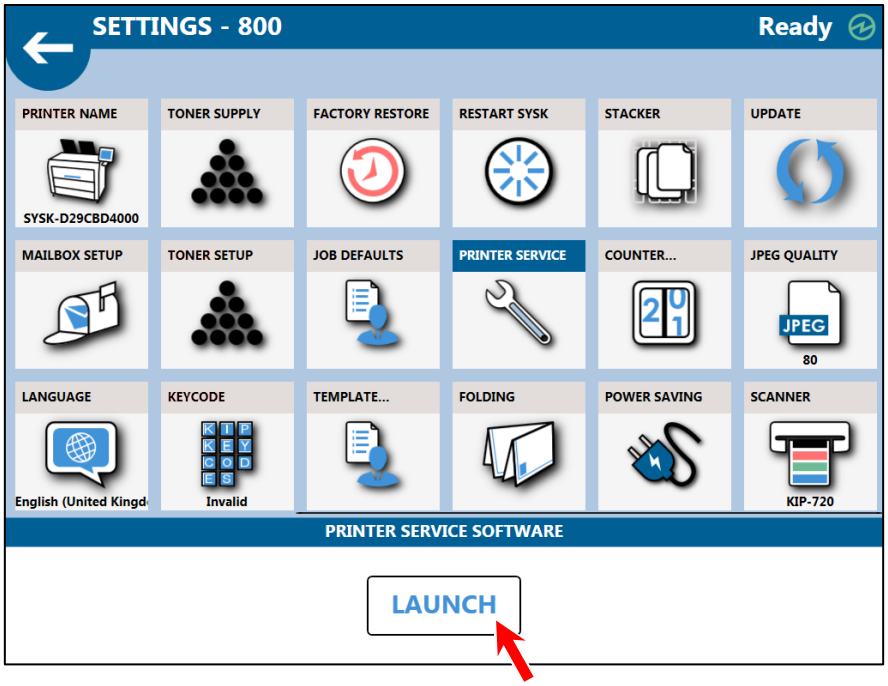
40. Press **Configuration** to indicate SETTINGS page.



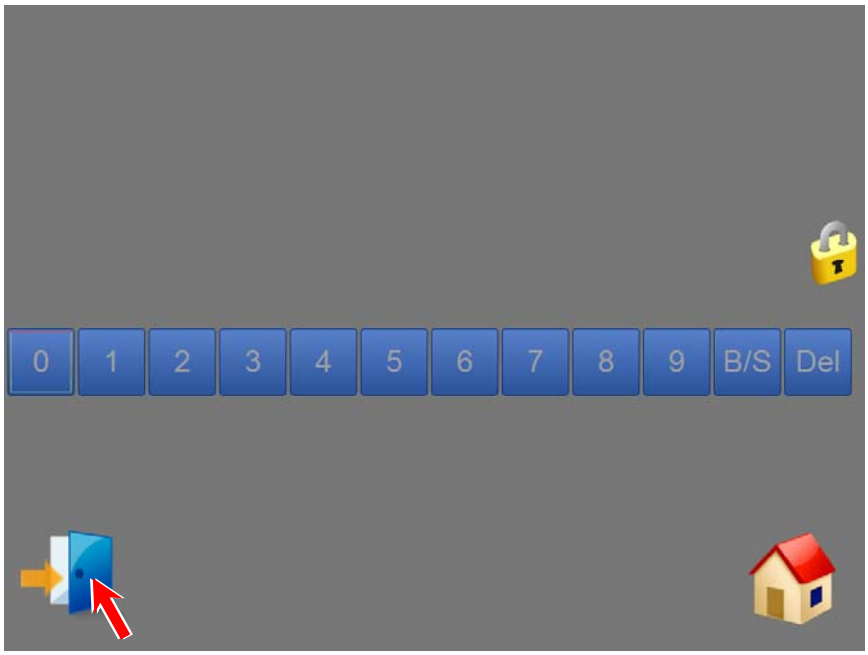
41. In SETTINGS page, flick or swipe on the touch panel to scroll the page rightward. Find **PRINTER SERVICE** and press it.



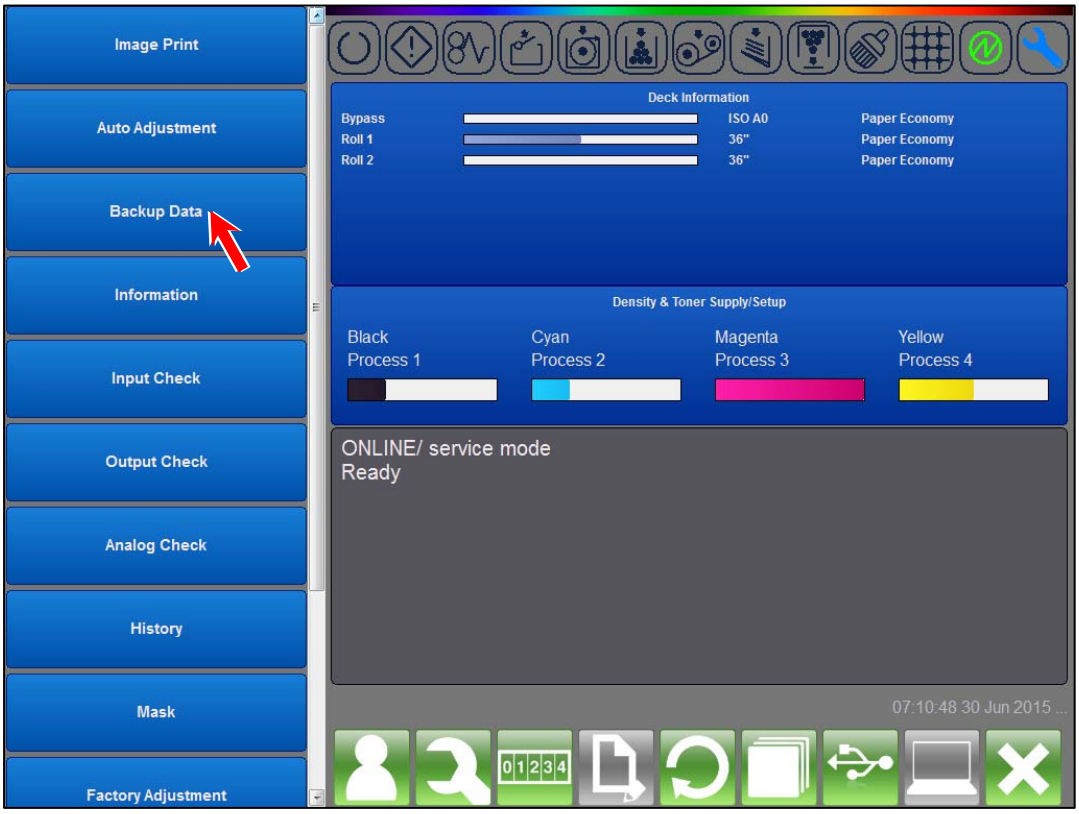
42. Press **LAUNCH**.



43. Press the door icon on the bottom-left to run the Maintenance GUI.



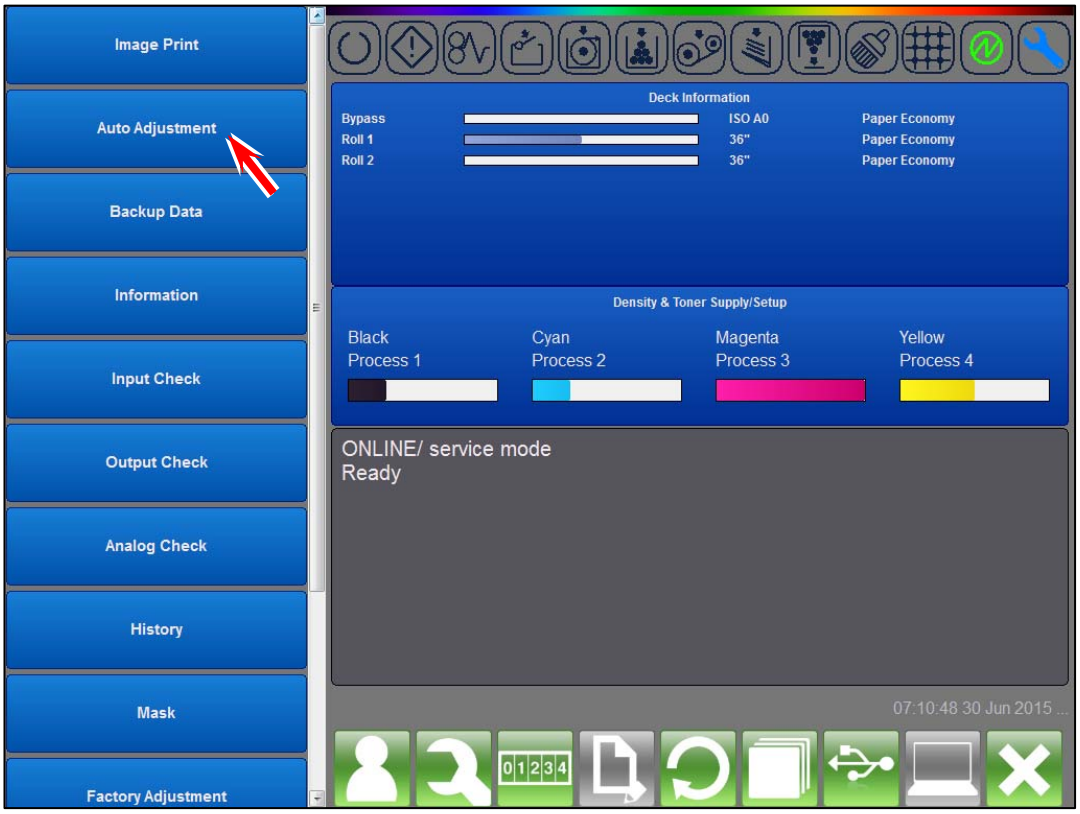
44. Select Backup Data.



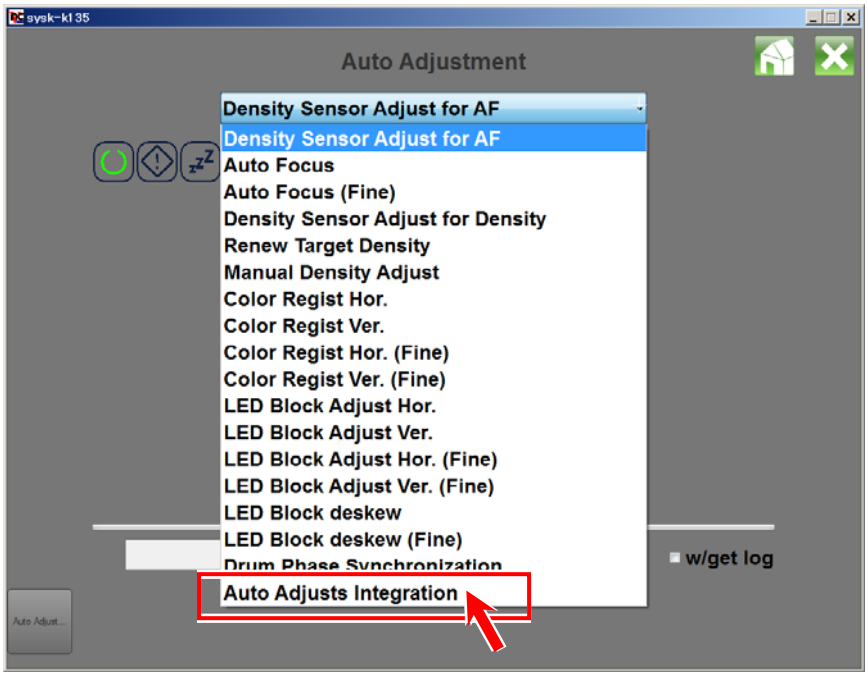
45. Set the following Backup Data to the requested values before calibration.

BUD No.	Item name	Requested value	Remarks : Related mode
1265	Focus Adjust True / False	1	Auto Focus
1708	Drum Correct Phase K	0	Drum Phase Synchronization
1709	Drum Correct Phase C	0	Drum Phase Synchronization
1710	Drum Correct Phase M	0	Drum Phase Synchronization
1711	Drum Correct Phase Y	0	Drum Phase Synchronization
1712	Drum Correct Amp K	0	Drum Phase Synchronization
1713	Drum Correct Amp C	0	Drum Phase Synchronization
1714	Drum Correct Amp M	0	Drum Phase Synchronization
1715	Drum Correct Amp Y	0	Drum Phase Synchronization

46. Select **Auto Adjustment**.

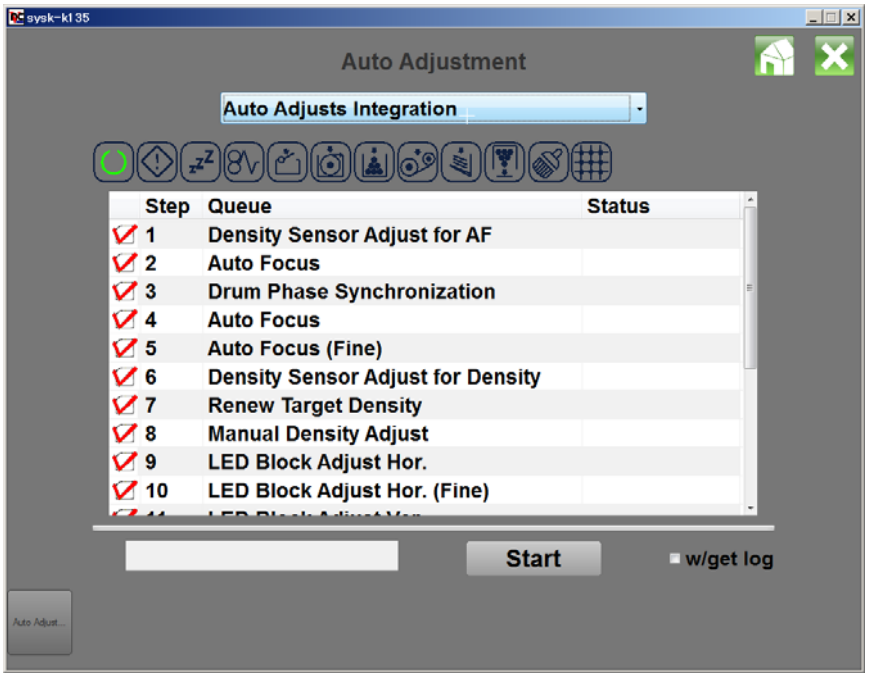


47. Select **Auto Adjusts Integration**.



48. The following list allows for selecting the necessary calibration items. Checked items are the ones selected. In case all 4 Drums are replaced by periodical replacement, select the following items in the selection menu.

Density Sensor Adjust for AF
Drum Phase Synchronization
Auto Focus (Fine)
Color Regist Hor. (Fine)
Color Regist Ver. (Fine)



NOTE

If only one Drum is replaced by some reason, it is not possible to use **Auto Adjusts Integration** for calibration. Please choose the following items in the menu of **Auto Adjustment** one by one from top to bottom without changing the order.

In case K Drum is replaced

(1) Density Sensor Adjust for AF
(2) Auto Focus (Fine) **(Select K only)**
(3) Drum Phase Synchronization **(Select KCMY)**
(4) Color Regist Hor. (Fine) **(Select CMY)**
(5) Color Regist Ver. (Fine) **(Select CMY)**

In case any of CMY Drum is replaced

(1) Density Sensor Adjust for AF
(2) Auto Focus (Fine) **(Select the replaced color only)**
(3) Drum Phase Synchronization **(Select the replaced color only)**
(4) Color Regist Hor. (Fine) **(Select the replaced color only)**
(5) Color Regist Ver. (Fine) **(Select the replaced color only)**

49. Press **Start**. The selected calibrations are performed automatically in correct order. Wait until the calibrations finish.

50. Set the Backup Data No.1265 (Focus Adjust True / False) back to its original value.

5. 4 Developer Unit

5. 4. 1 Replacement of Periodic Replacement Part

1. It is recommended to periodically replace the following parts (PM parts) of Developer Unit. This section instructs a series of procedure for replacing these pats.

Part name	Quantity	Remarks
Roller Developer	1	All these are included in DEVELOPER ROLLER KIT.
Scraper	1	
Side Seal L Assy	1	
Side Seal R Assy	1	
Sheet 3	2	
Seal 20	2	
Side Plate G Assy	1	
Side Plate H Assy	1	

2. Remove all the toner from the Developer Unit when replacing these PM parts.

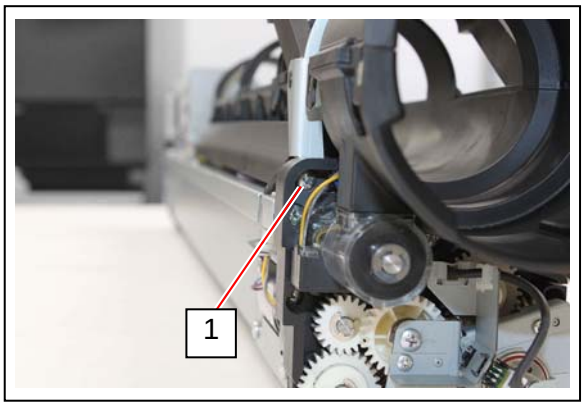
3. If possible, prepare a L-shaped hexagon wrench of which shorter bar (A) is very short as the following one, which will ease the operation when you remove/return the 30T Helical Gears on both sides of the Regulation Roller.

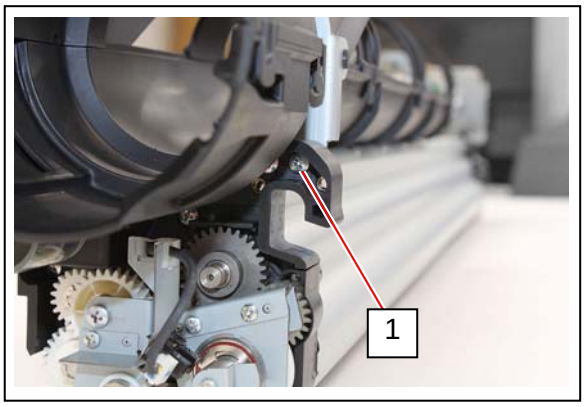
If (A) is shorter, it is better

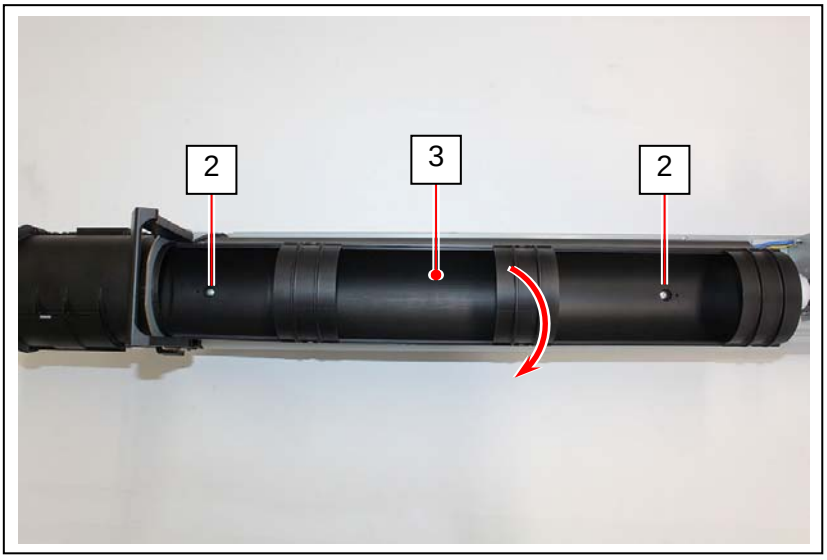
4. Prepare both “Developer Handle” and 2 each “Supply Roller Fixer Jig” prior to the replacement.

1. Remove the whole Developer Unit from the printer referring to [5.2.2 Removal of Developer Unit].

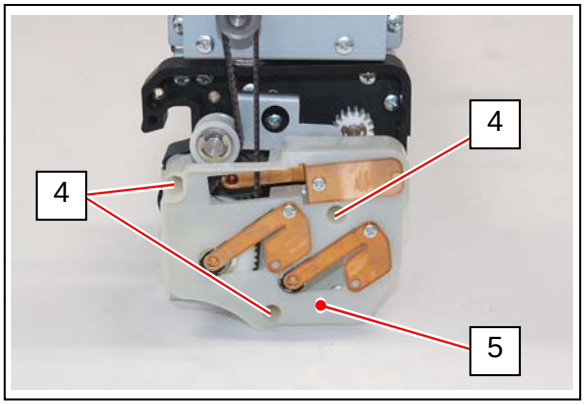
2. Remove 2 M4x8 screws (1) and 2 M4x6 screws (2). Then remove the Cartridge Guide (3) twisting in the arrow direction.





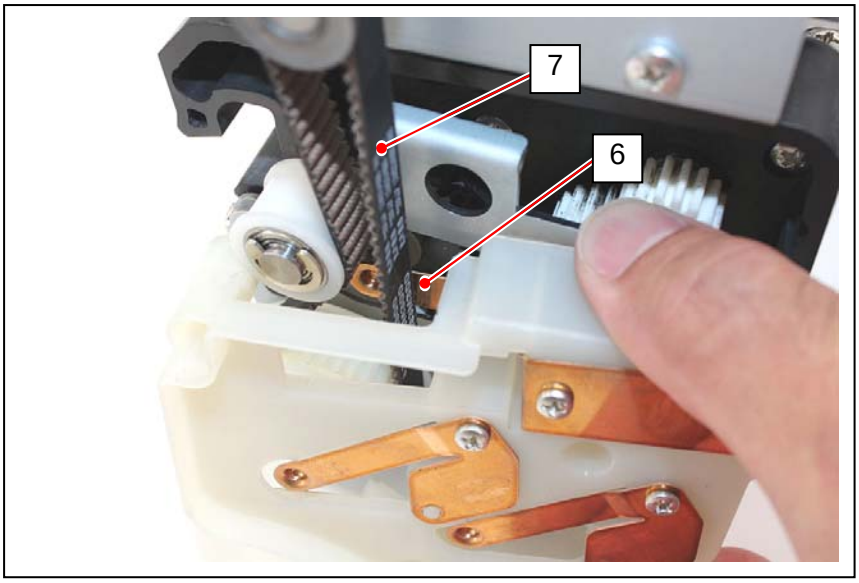


3. Remove 3 M3x8 screws (4) on the motor side, and remove the Copper Plate Holder (5).

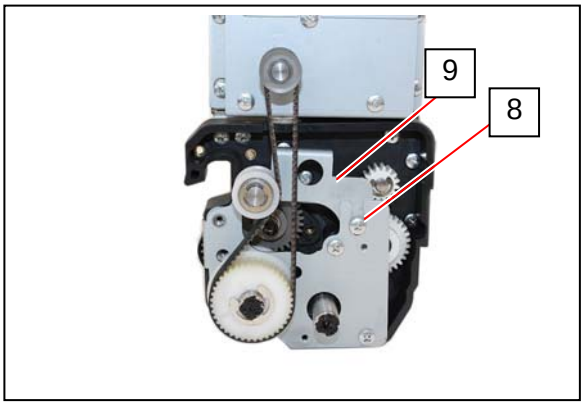


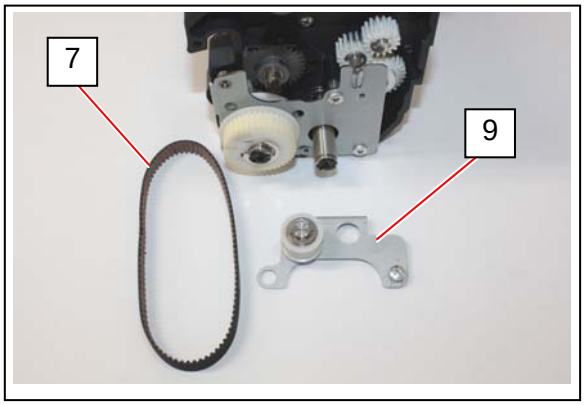
NOTE

It is difficult to remove the Copper Plate Holder (5) as the upper Copper Plate (6) is on the backside of the Timing Belt (7). Carefully remove the Copper Plate Holder so as not to bend or deform the upper Copper Plate.

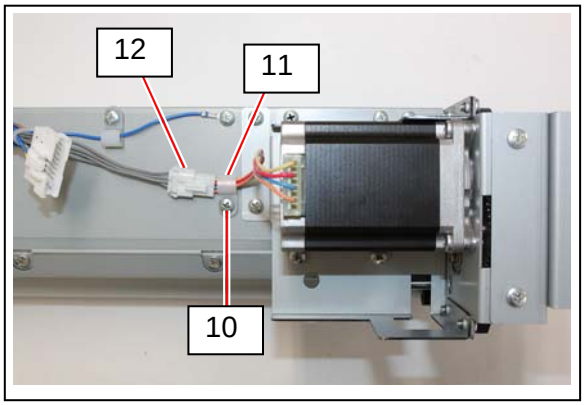


4. Loosen 1 M4x6screw (8), and remove the Tension Bracket Assy (9) and Timing Belt (7).

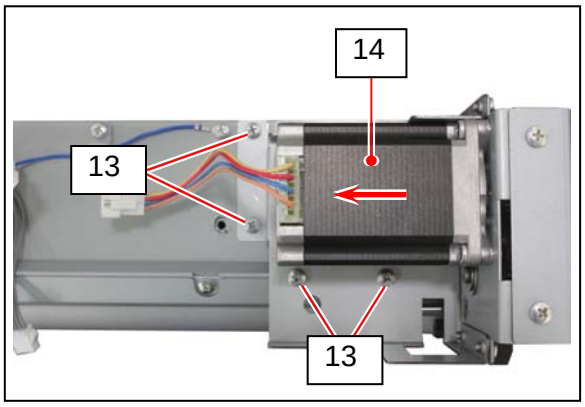




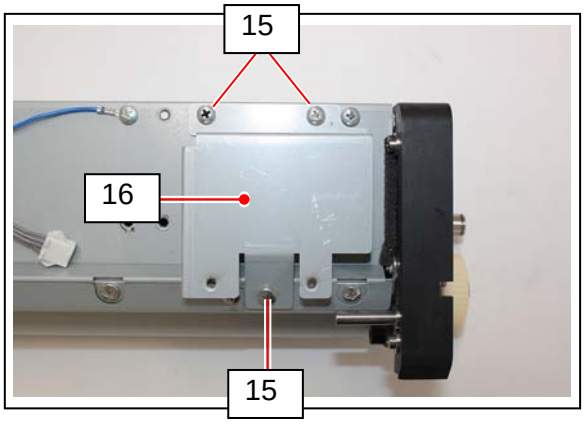
5. Remove the M4x6 screw (10) to remove the Wire Clamp (11) beside motor, and unplug the connector (12) of motor harness.



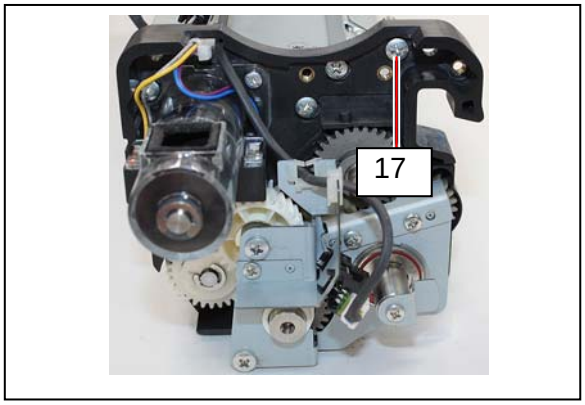
6. Remove 4 M4x6 screws (13). Slide the motor (14) in the direction of arrow to release from the pins, and remove it from the unit.

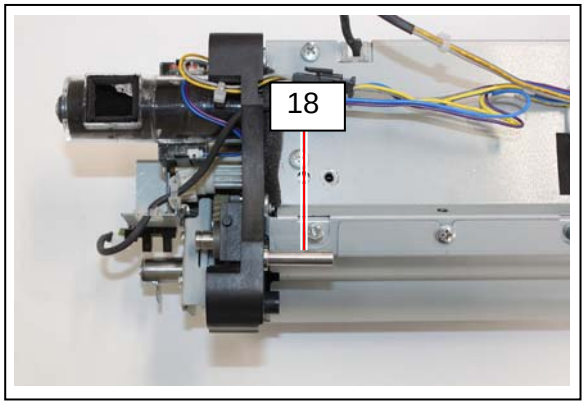


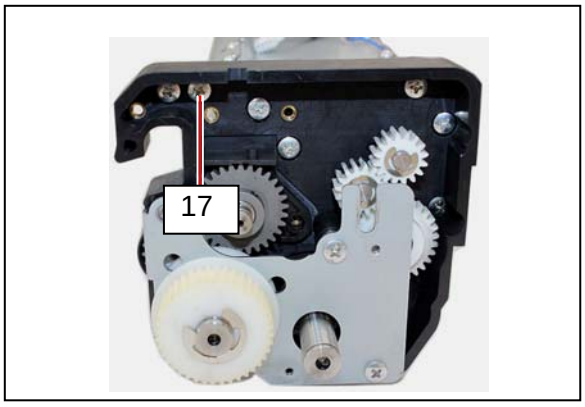
7. Remove 3 M4x6 screws (15) to remove the motor bracket (16).

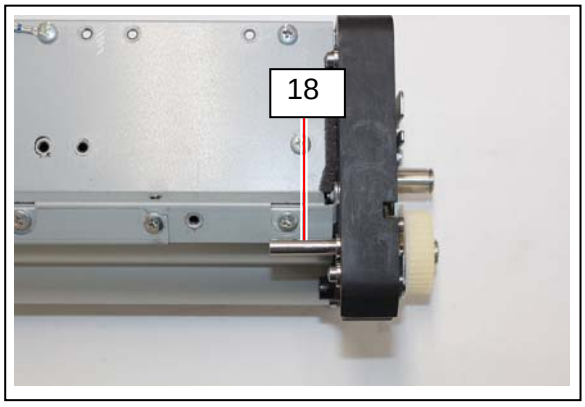


8. Remove each Pin (18) on both sides removing each M4x6 screw (17).

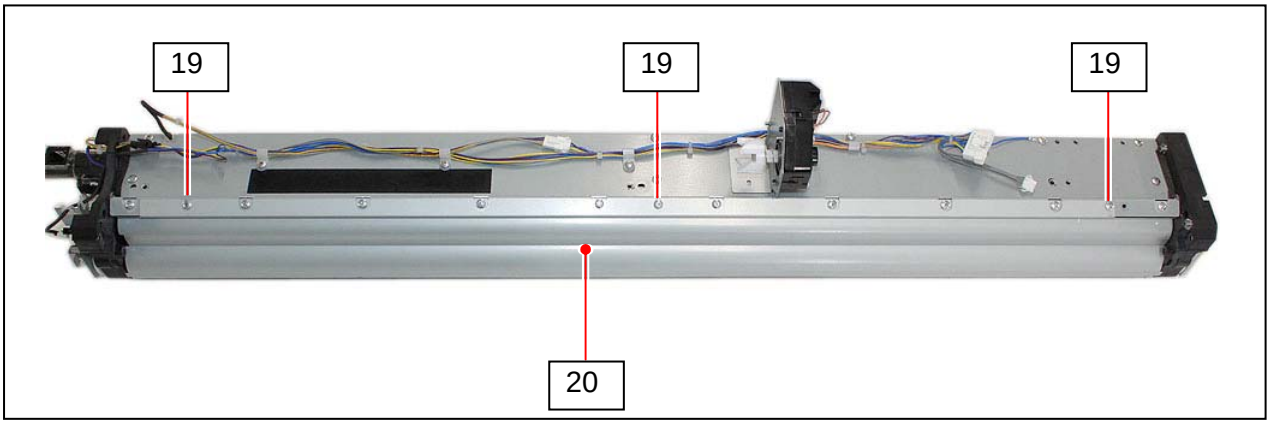






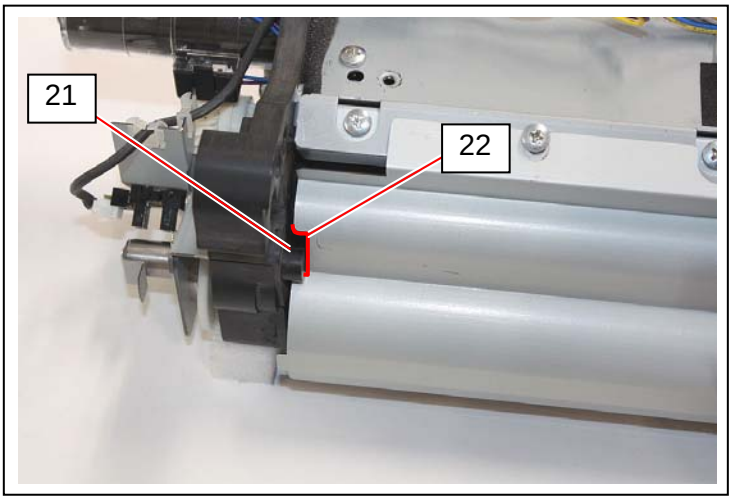


9. Remove 3 M4x6 screws (19), and remove the cover (20).

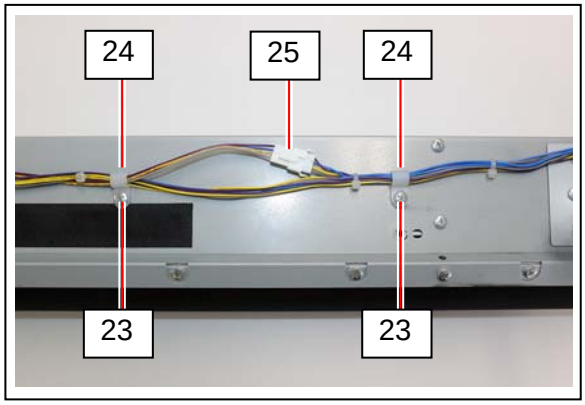


Reference

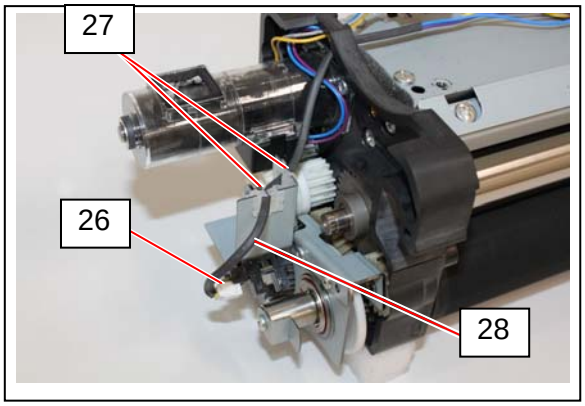
As the projection part (21) blocks when removing the cover (20), use the notch (22) on the toner supplying side so as not to be blocked.

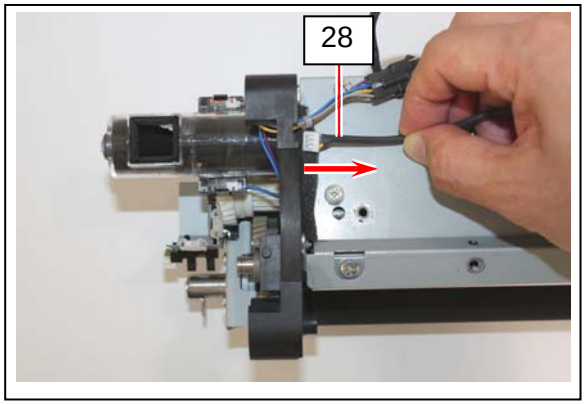


10. Remove 2 M4x6 screws (23) and wire clamps (24). Plug out the connector (25).

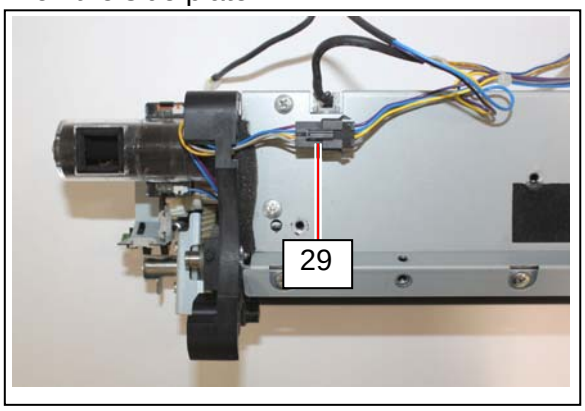


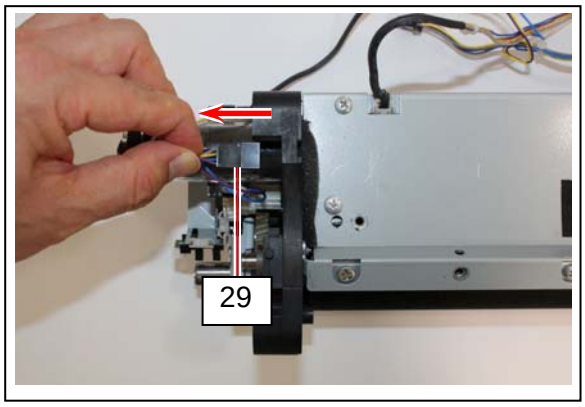
11. On the toner supplying side, plug out the connector (26) and remove the harness (28) from 2 wire saddles (27). Pull out the harness (28) in the direction of arrow through a square hole on the side plate.





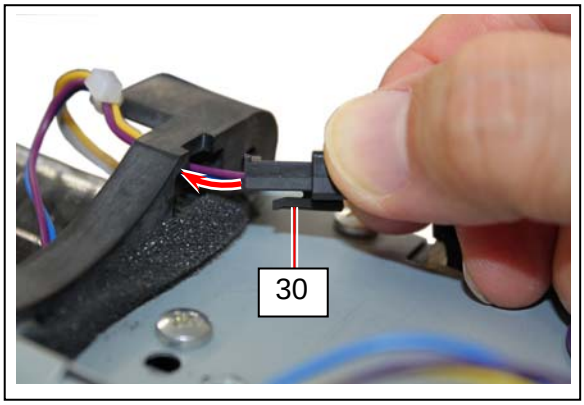
12. Plug out the connector (29) and pull out this harness in the direction of arrow through a square hole on the side plate.



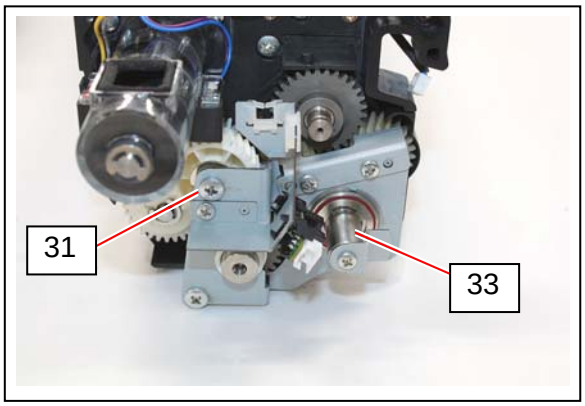


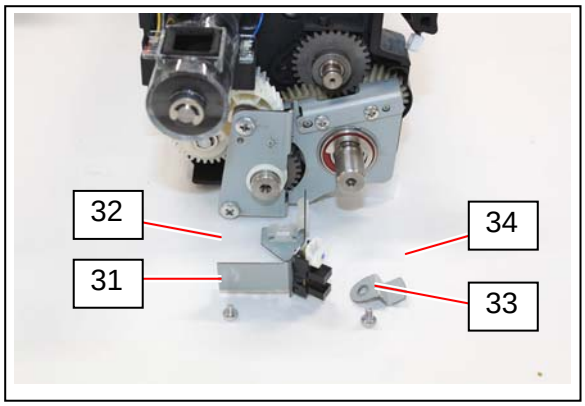
NOTE

Direct the connector stopper (30) downward when pulling out the harness.

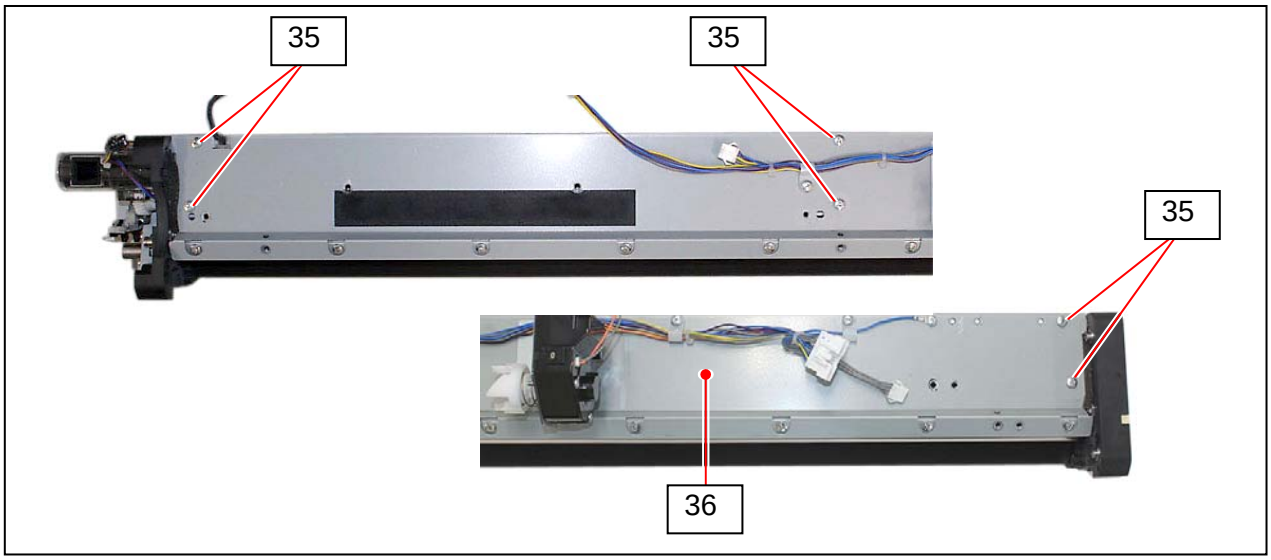


13. On the toner supplying side, remove the M3x4 screw (31) to remove the Sensor Bracket (32). And remove the M3x8 screw (33) to remove the Slit Plate (34).

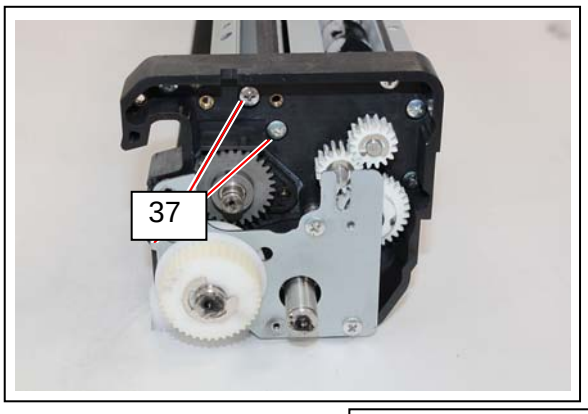


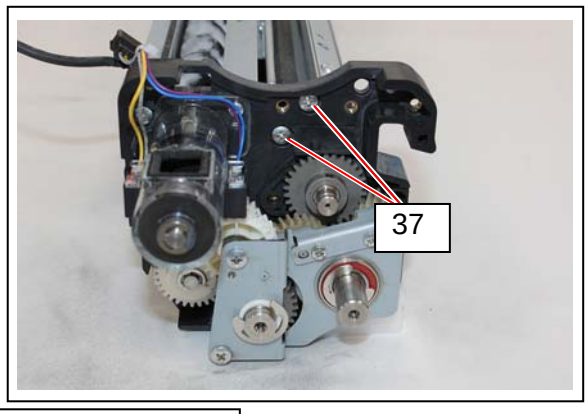


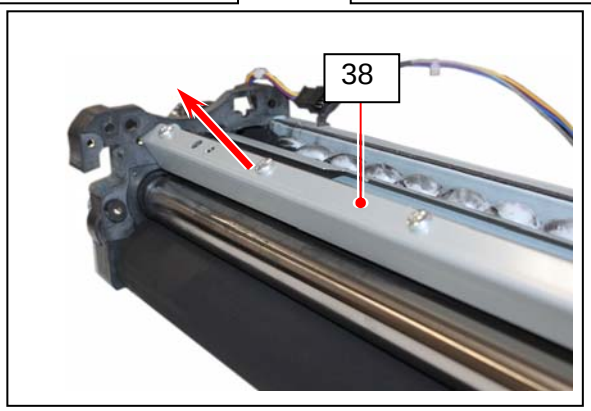
14. Remove 6 M4x6 screws (35) and remove the Toner Cover (36).



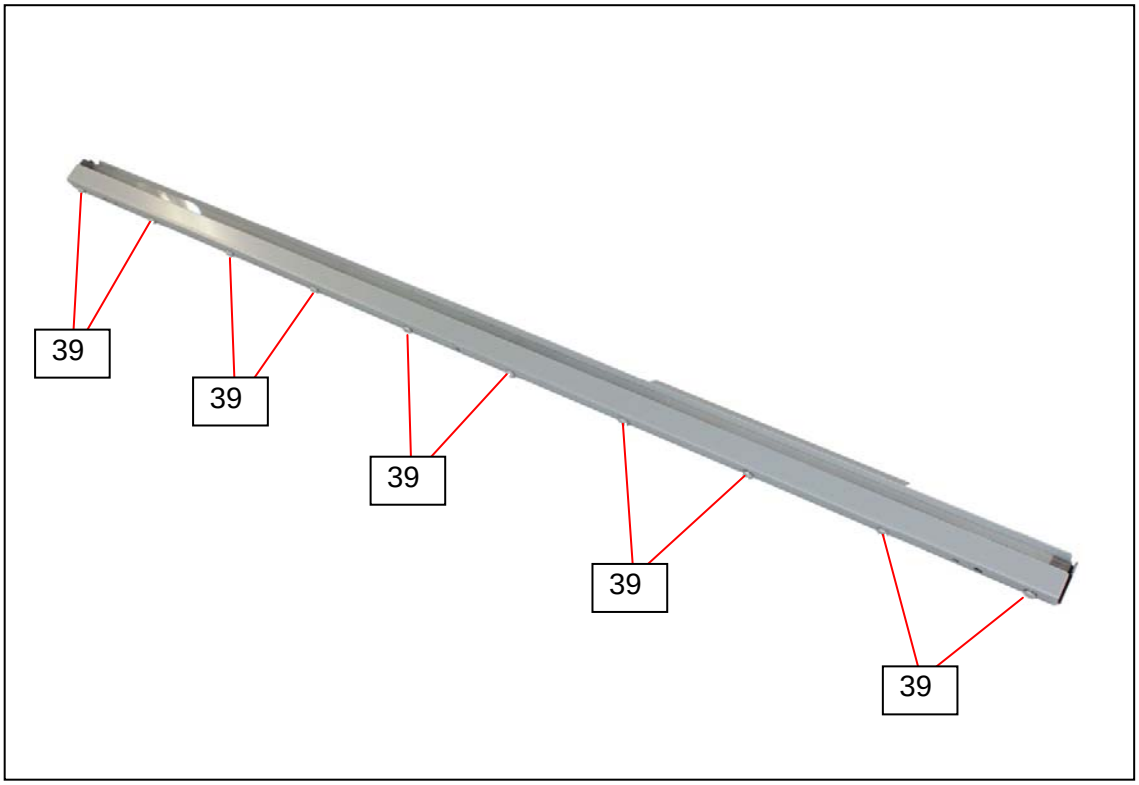
15. Remove 4 M4x6 screws (37) on both sides. Slide the Scraper Assy (38) in the direction of arrow and remove it from the unit.

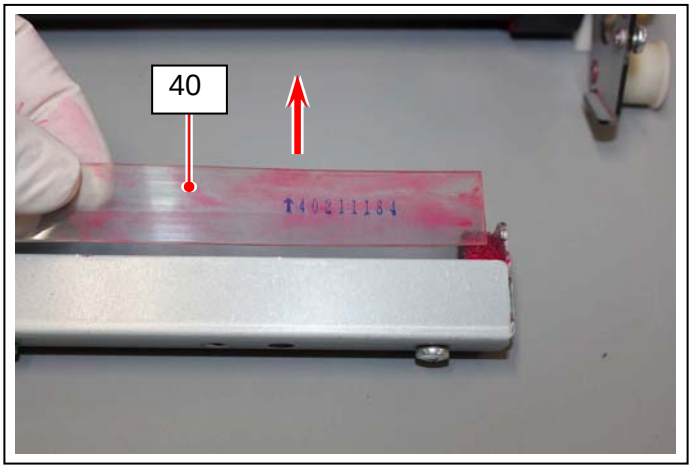




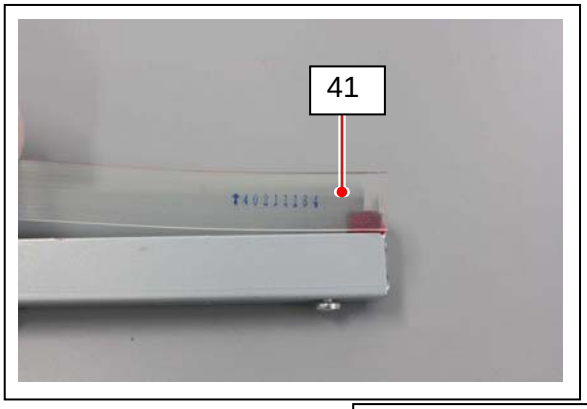


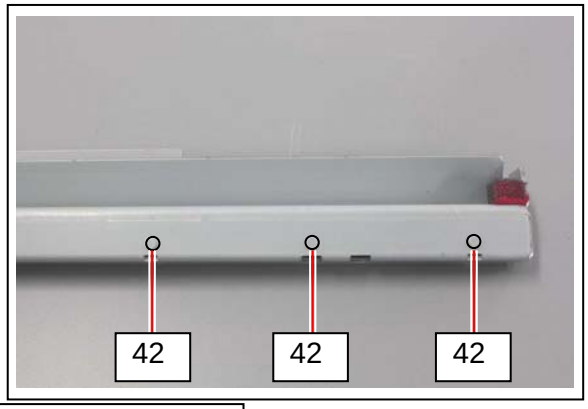
16. Loosen 10 screws (39) to remove the old Scraper (40) from the assembly. Please dispose the old scraper.

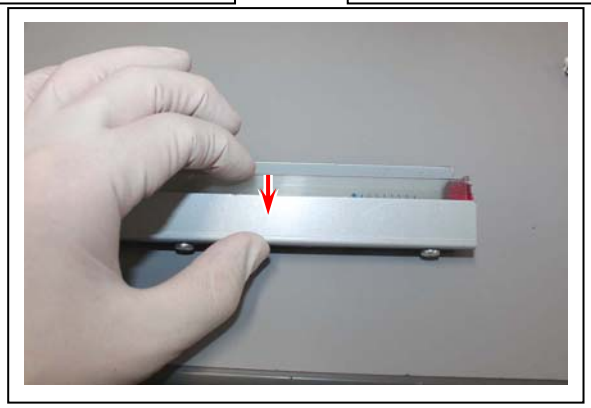




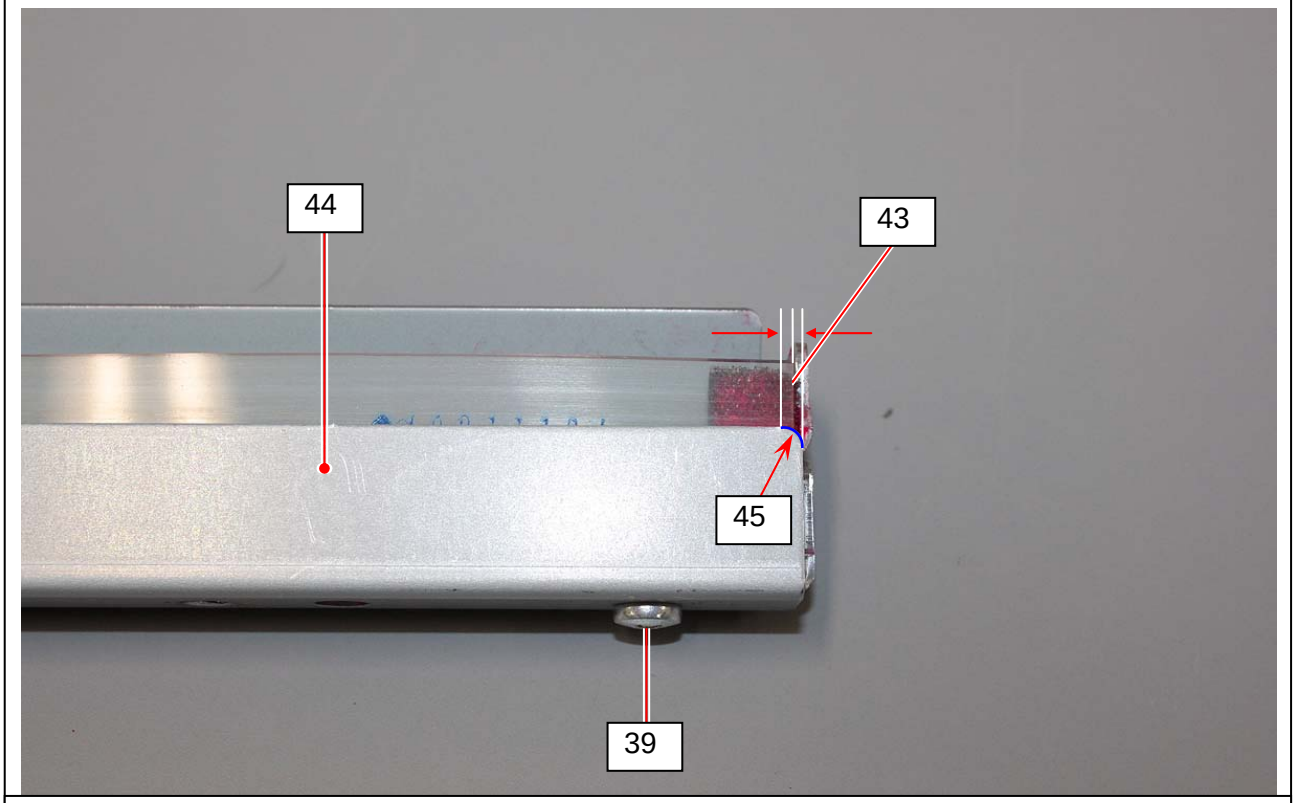
17. Prepare a new Scraper (41), and fit it into the original position in the scraper assy with orienting the numbers to the “readable” position, which allows one edge of the scraper shown by an arrow contacts the Drum surface. And gently press the scraper in the direction of arrow at each position on the long edge so that the bottom edge surely contacts the inner bosses (42).

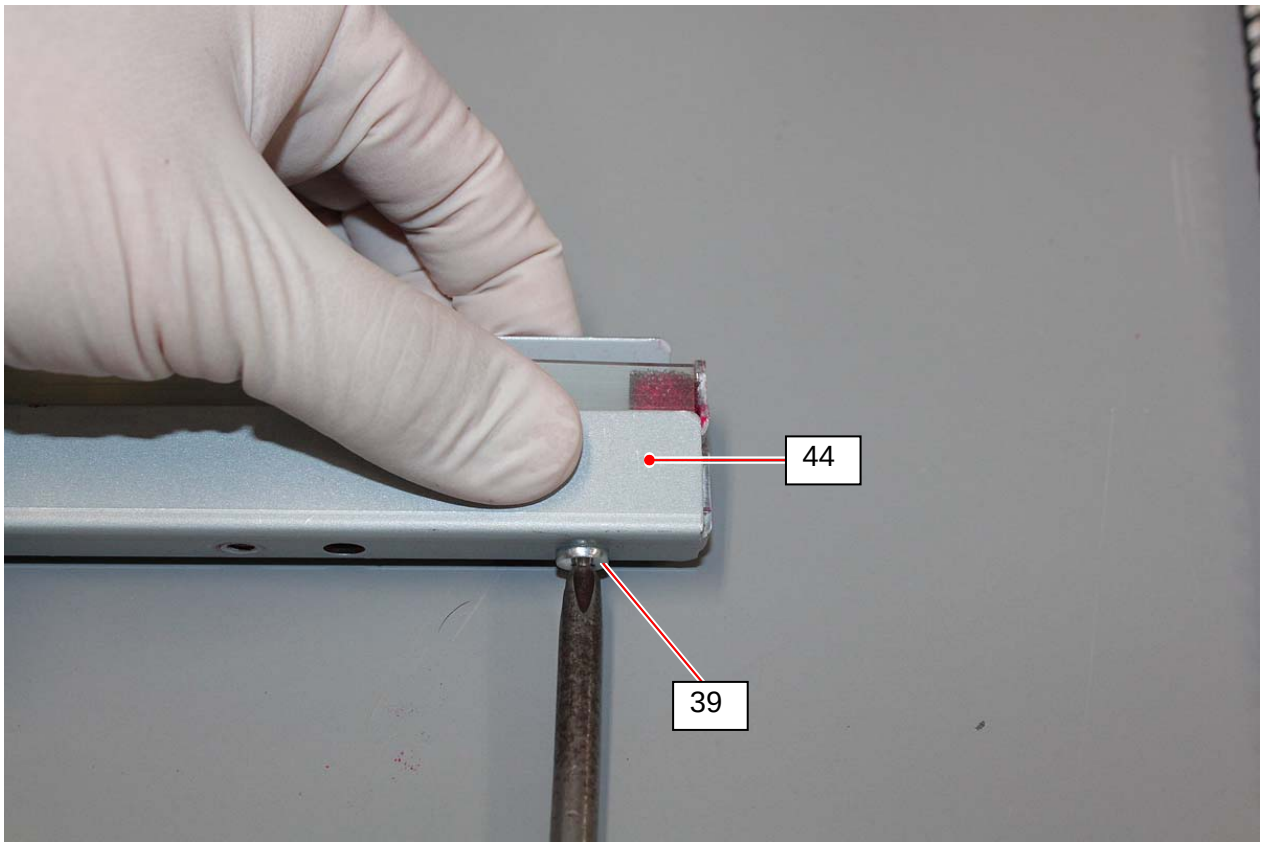






18. The Bracket (44) has “round edges” (45) on both sides. At first align the right side edge (43) of Scraper to the “center” of round edge (45), and tighten the most outside screw (39) with surely pinching the scraper with the Bracket (44).

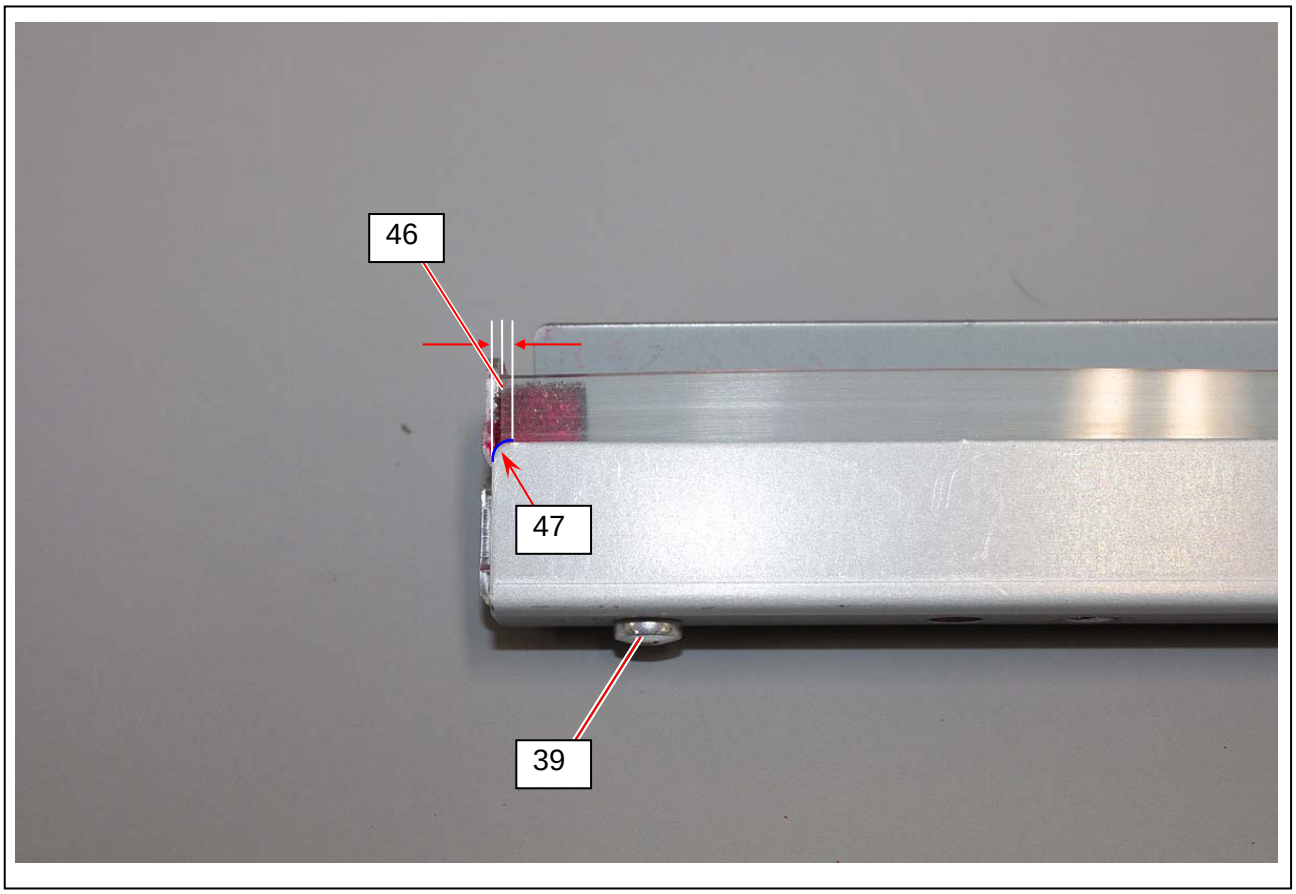


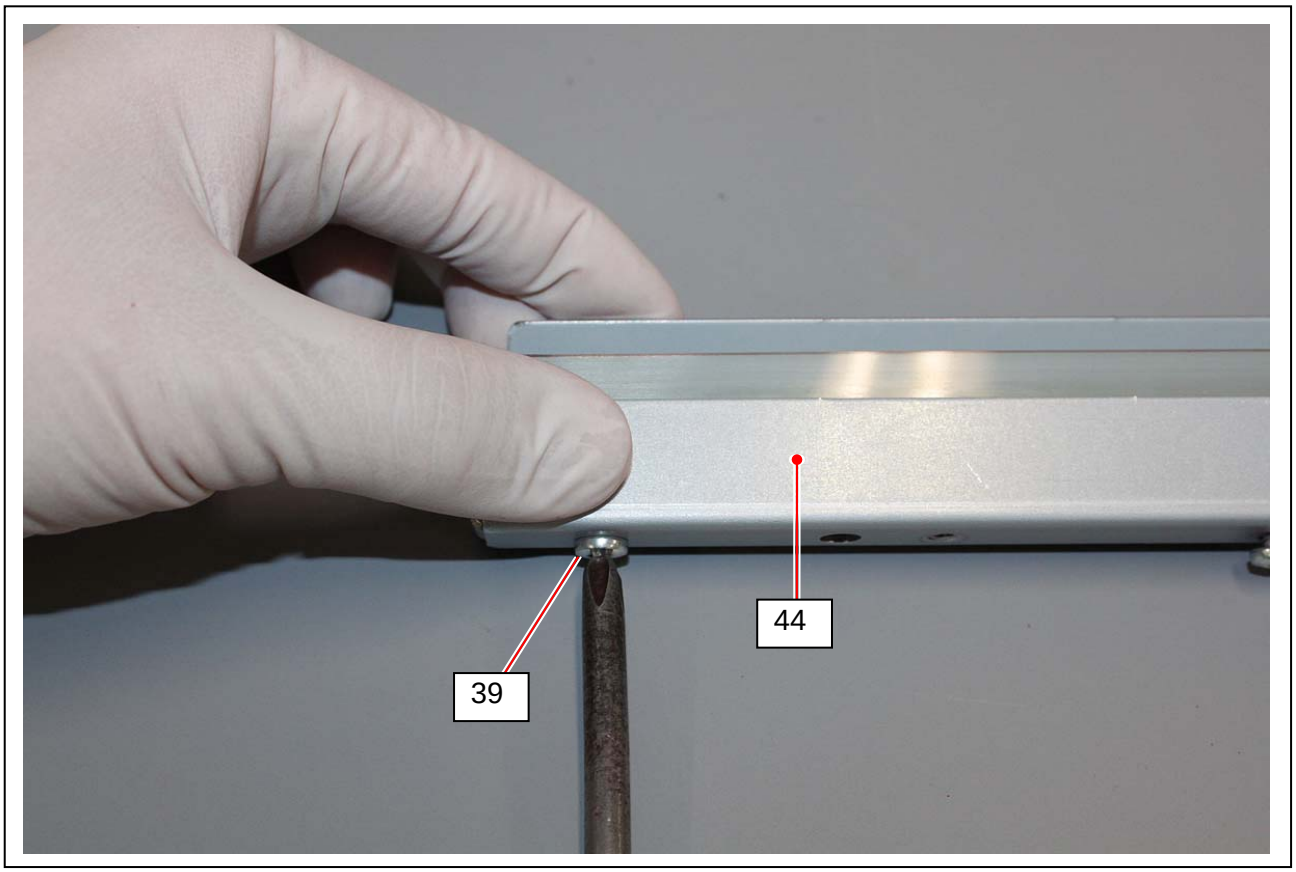


NOTE

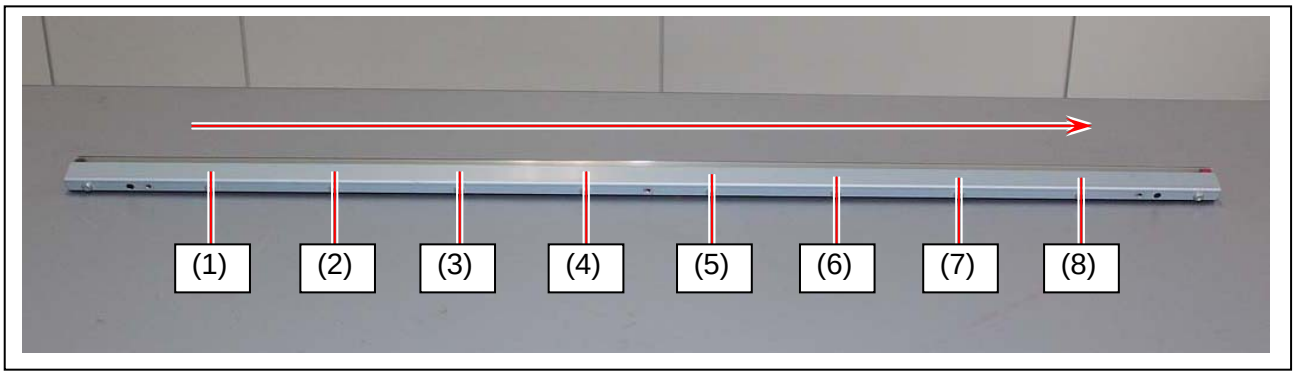
If the right side edge of Scraper is placed inward it can cause toner leakage.

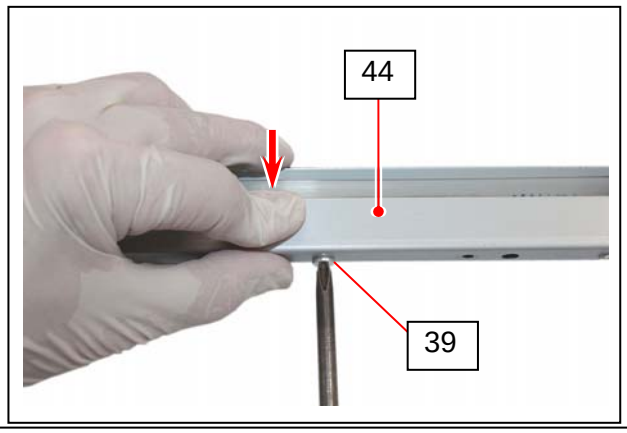
19. Similarly, align the left side edge (46) to the center of round edge (47), and tighten the most outside screw (39) with surely pinching the Scraper with the Bracket (44)





20. With surely pinching the Scraper with the Bracket (44), tighten the rest of 8 screws (39) in the following order.

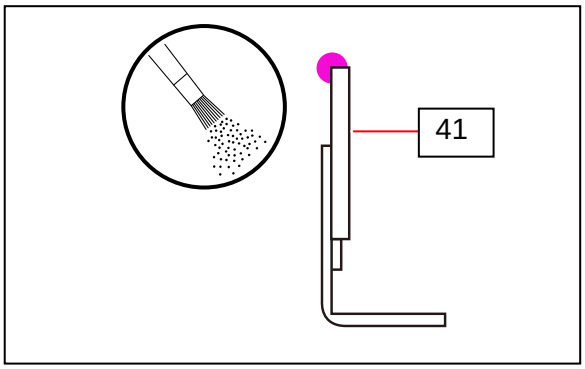




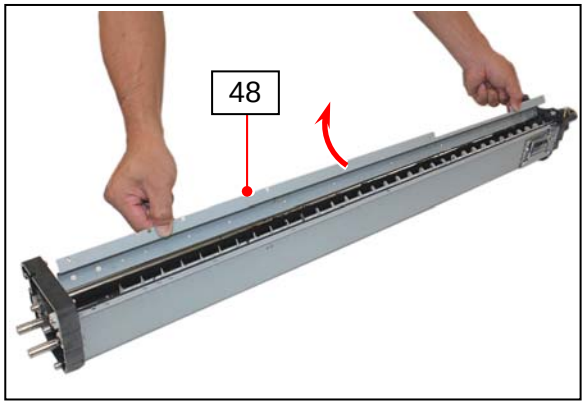
NOTE

Be sure that the edge of scraper does not look wavy, and also that the Scraper is not removed from the assembly even if you pull it.

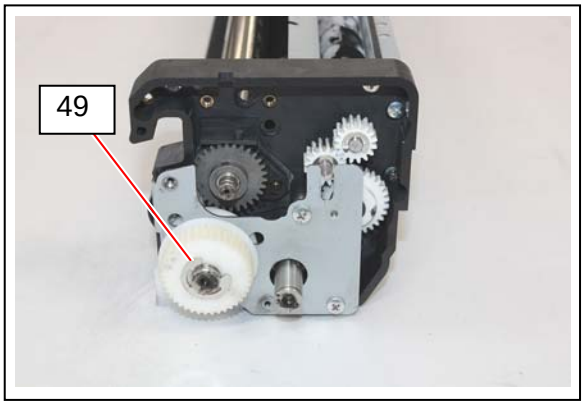
21. Apply the toner of originally used color to the edge of scraper (41).

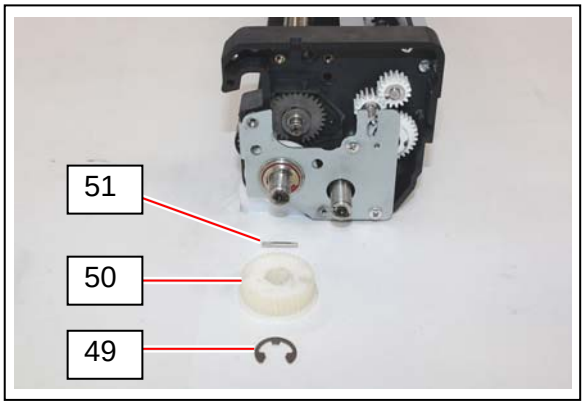


22. Remove the Frame (48) from the Developer Unit.

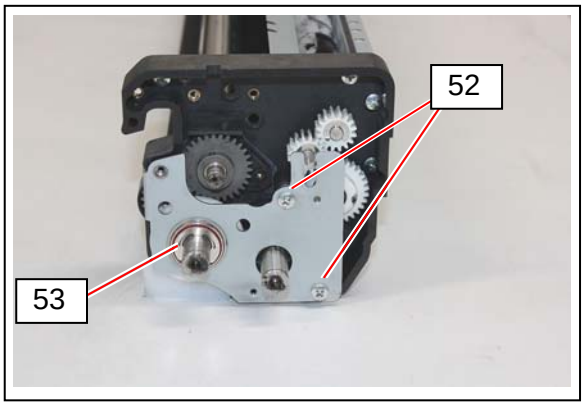


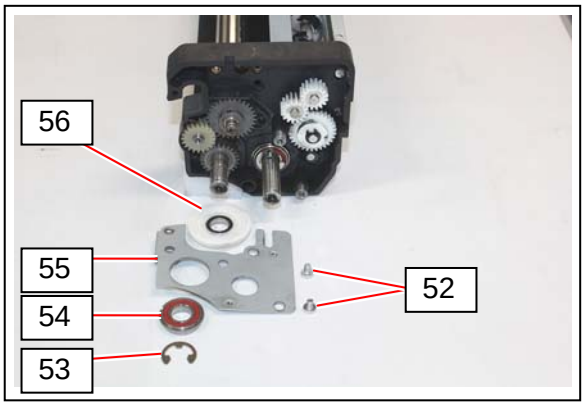
23. On the motor side, remove an E Ring (E10)(49), 40T Pulley (50) and Parallel Pin (3x20)(51).



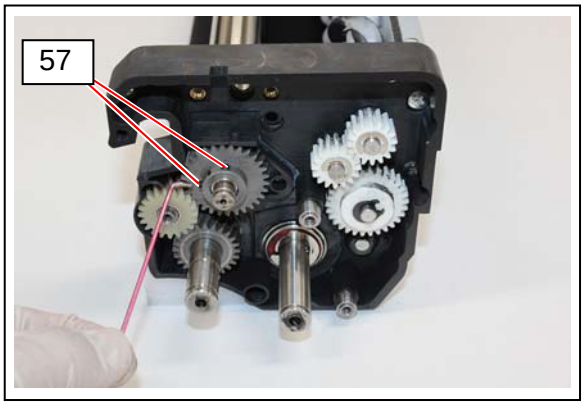


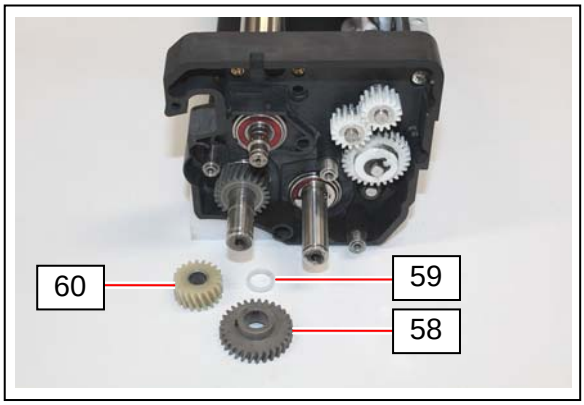
24. On the motor side, remove 2 M4x6 screws (52) and an E Ring (E10)(53). Then remove Ball Bearing (54), Gear Bracket Assy (55) and Counter Roller (56).





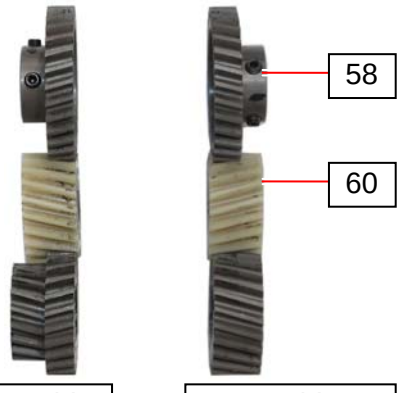
25. On the motor side, loosen 2 set screws (57) and remove 30T Helical Gear 5 (58), Collar (59), 20T Helical Gear 4 (60). When loosening the set screws it is recommended to use a L-shaped hexagon wrench that has short tip.



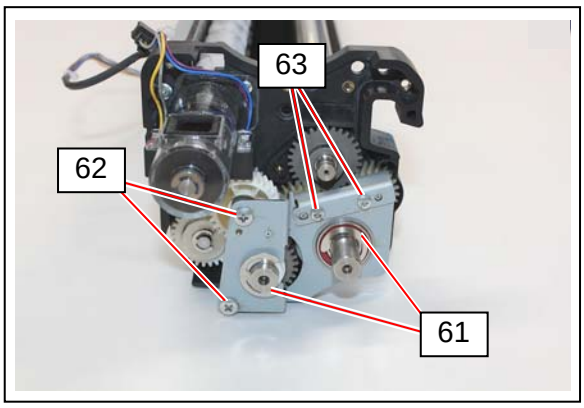


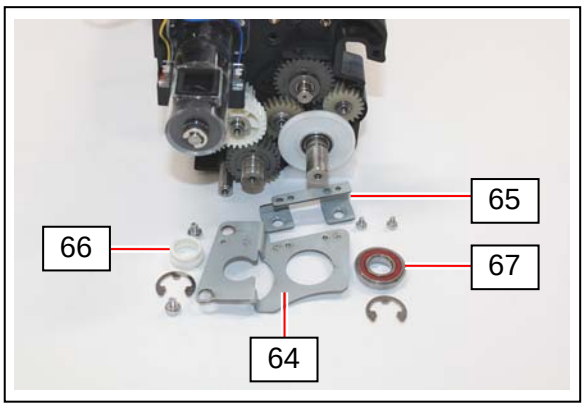
NOTE

After removing 30T Helical Gear 5 (58) and 20T Helical Gear 4 (60), please correctly keep them so that you easily can recognize that these gears are for “motor side”.
The toner supplying side has very similar gears that look the same but have different tooth angle If these gears are mixed, it will be hard to clarify which one is for which side.

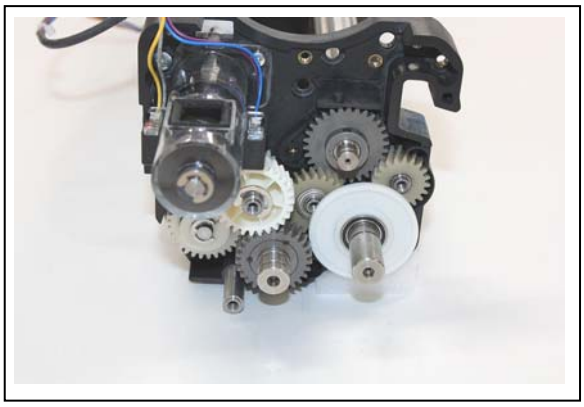


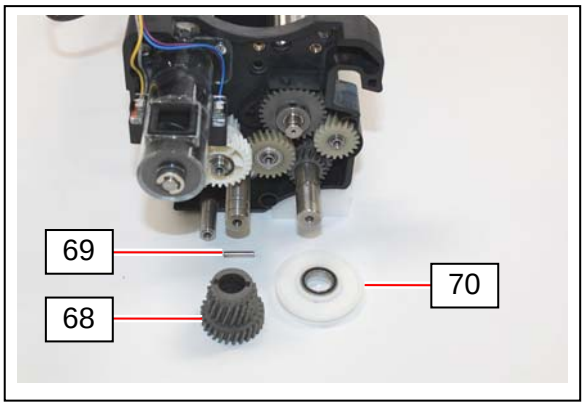
26. On the toner supplying side, remove 2 E Rings (E10)(61), 2 M4x6 screws (62) and 2 M3x5 screws (63). Then remove Gear Bracket 2 (64), Gear Bracket 3 (65), Collar (66) and Ball Baring (67).



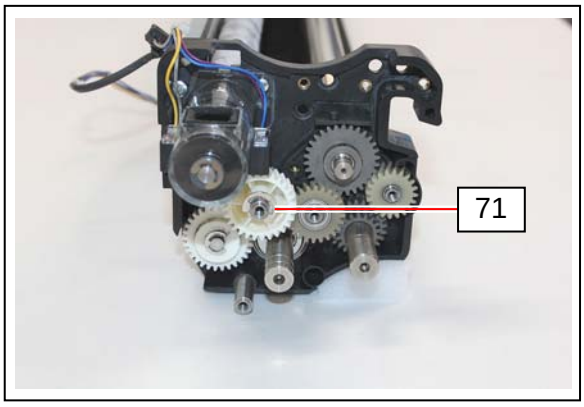


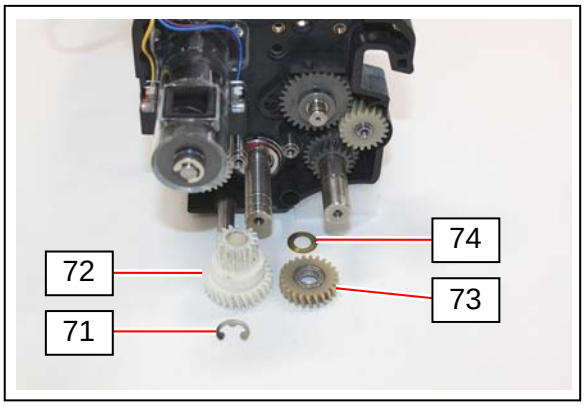
27. On the toner supplying side, remove 19-27 Helical Gear (68), Parallel Pin (3x16)(69) and Counter Roller 2 (70).



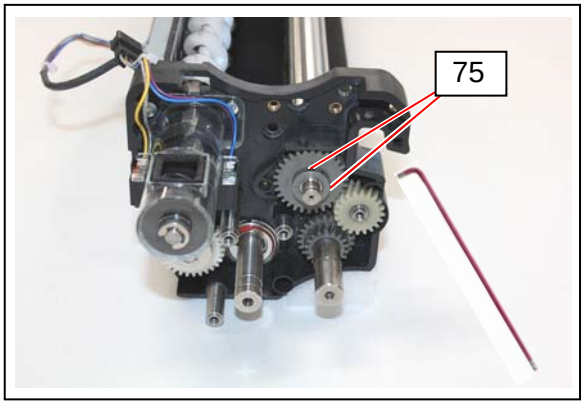


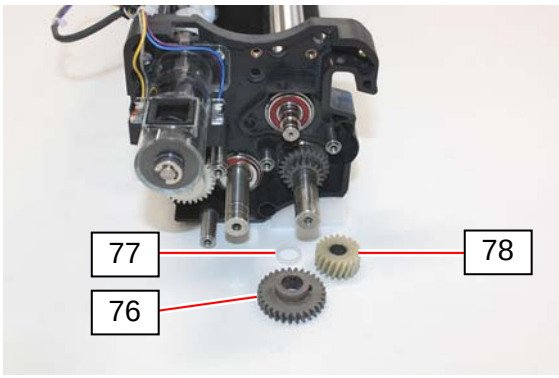
28. Remove an E Ring (E7)(71), 16-28T Gear (72), 24T Helical Gear (73) an Thrust Washer (74).





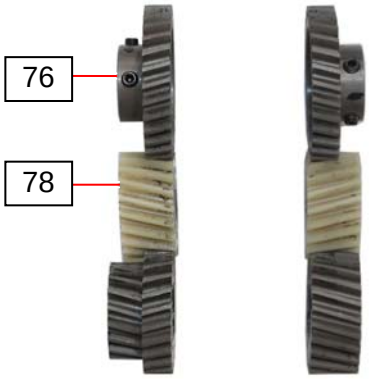
29. On the toner supplying side, loosen 2 set screws (75) and remove 30T Helical Gear 4 (76), Collar (77), 20T Helical Gear (78). When loosening the set screws it is recommended to use a L-shaped hexagon wrench that has short tip.





NOTE

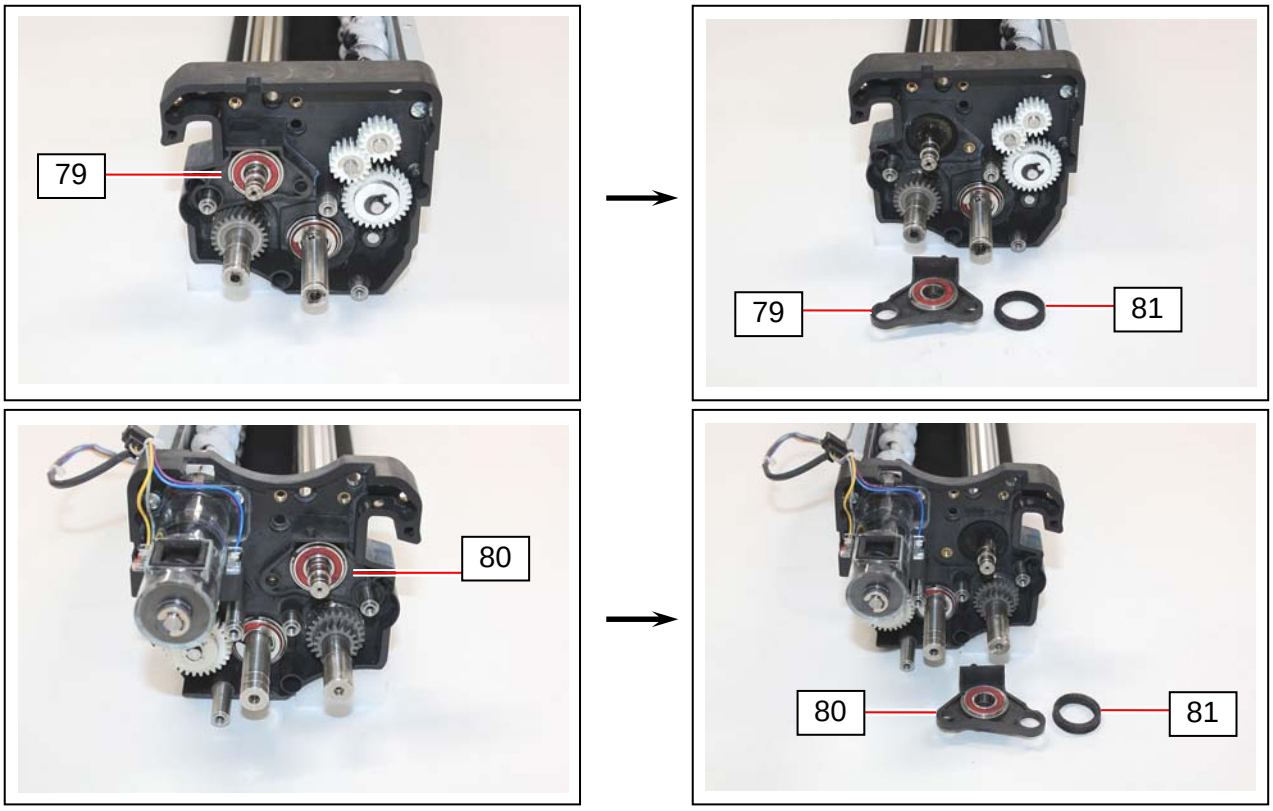
After removing 30T Helical Gear 4 (76) and 20T Helical Gear 4 (78), please correctly keep them so that you easily can recognize that these gears are for “motor side”. The motor side has very similar gears that look the same but have different tooth angle If these gears are mixed, it will be hard to clarify which one is for which side.



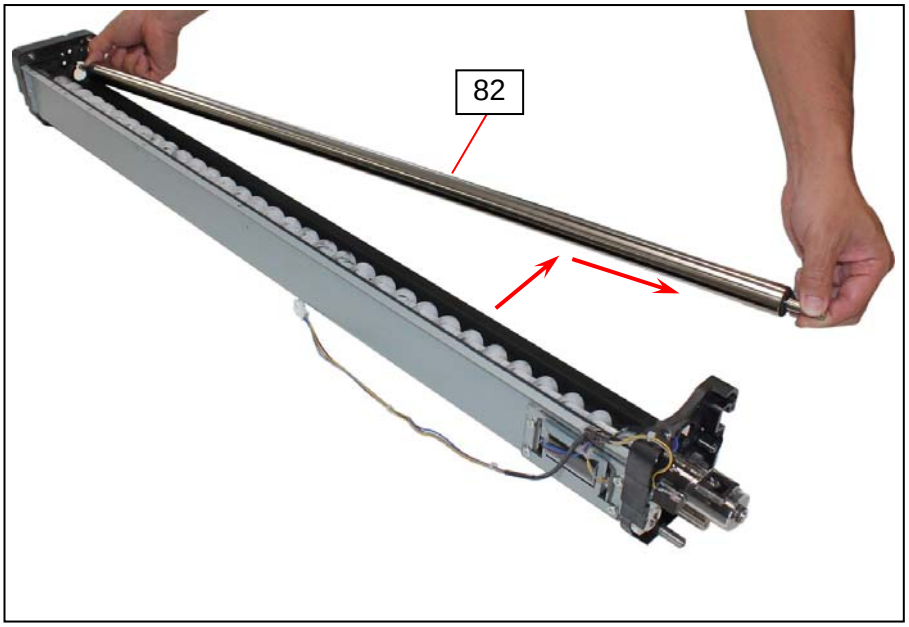
Toner supplying side

Motor side

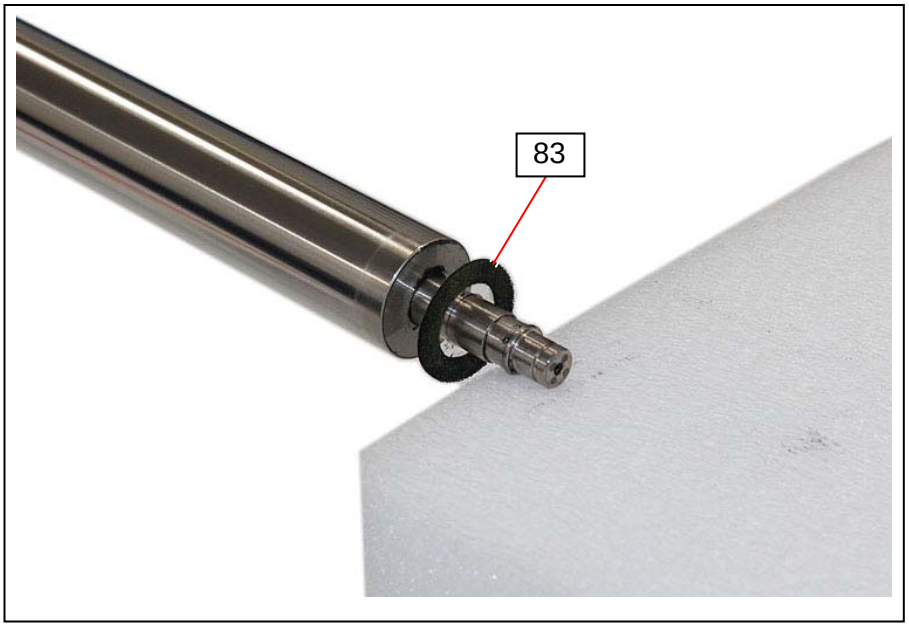
30. On both sides, remove Brackets A1 (79), Brackets A2 (80) and Seals 16 (81) from the Regulation Roller shafts. Do NOT dispose the Seals 16 (81) as they are reused.



31. Remove the Regulation Roller (82) moving as the arrows.

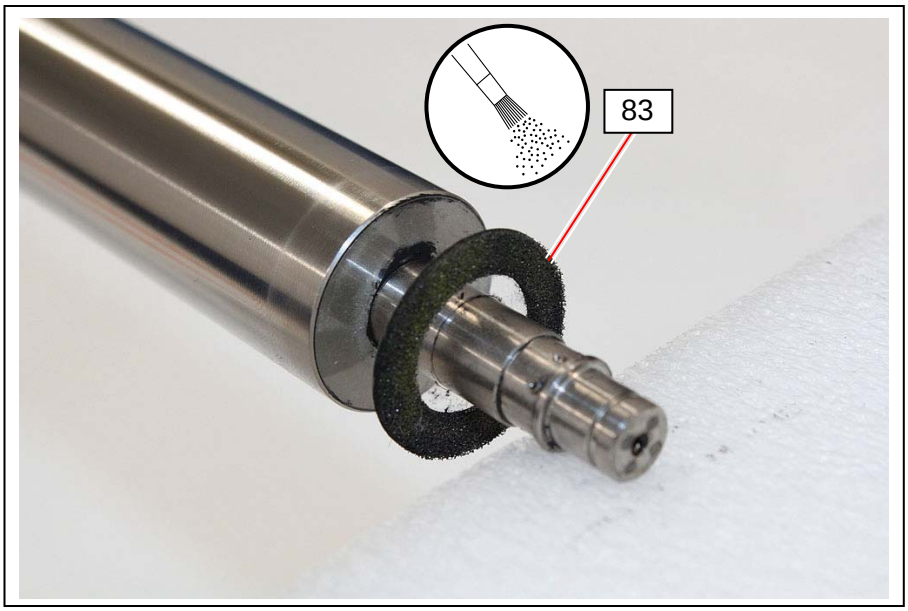


32. Replace both the old Seals 20 (83) with the new ones.

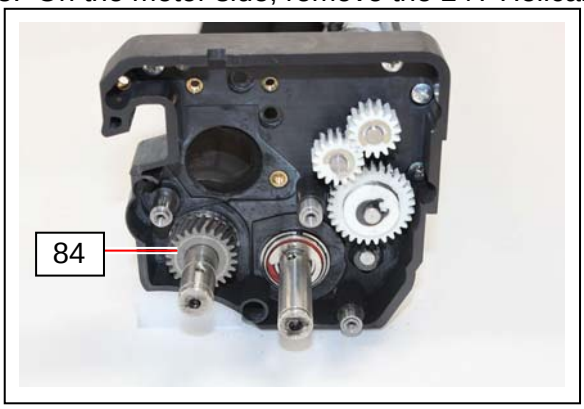


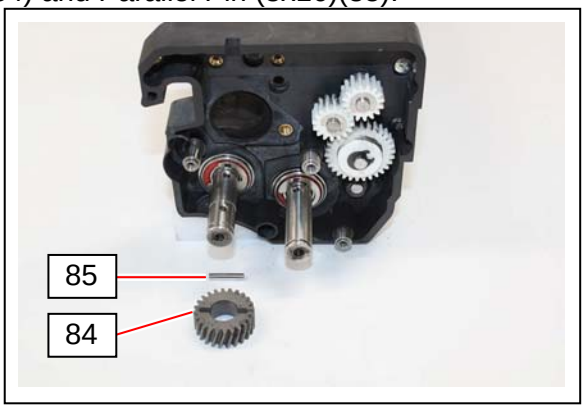
NOTE

Please apply the toner of original color on **both sides** of Seals 20 (83) before putting them back on the Regulation Roller.

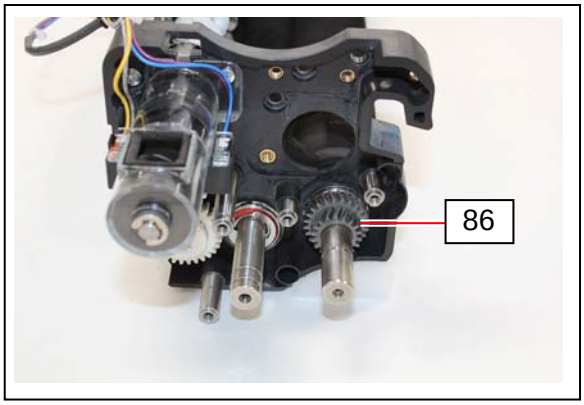


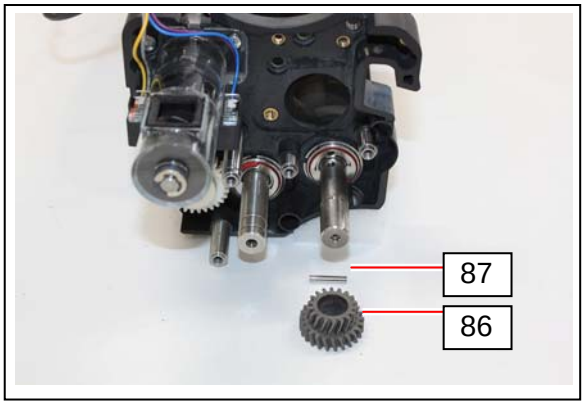
33. On the motor side, remove the 24T Helical Gear (84) and Parallel Pin (3x16)(85).



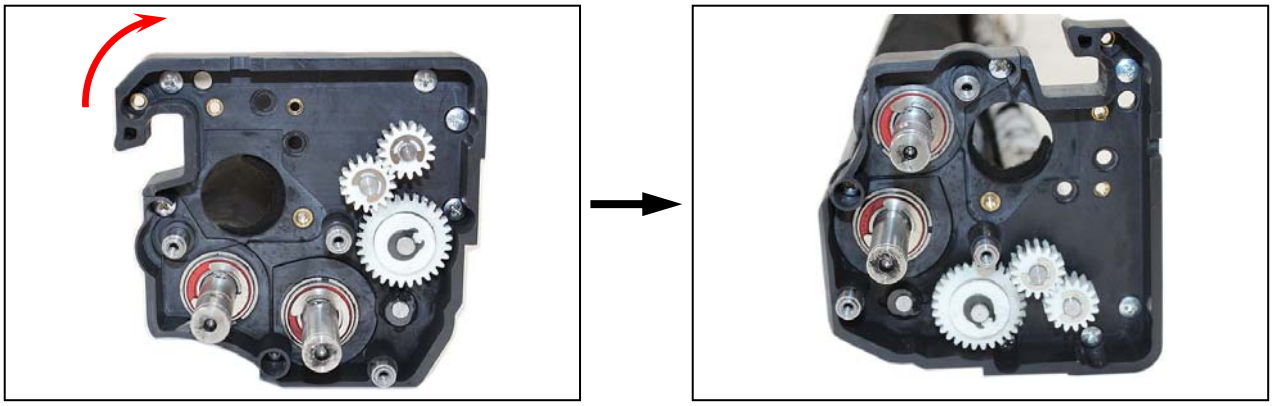


34. On the toner supplying side, remove the 18-24 Helical Gear (86) and Parallel Pin (3x16)(87).

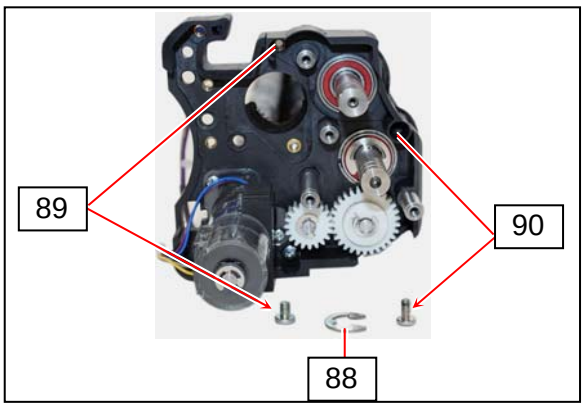


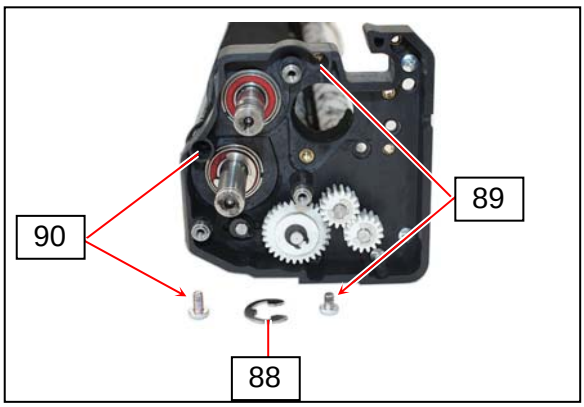


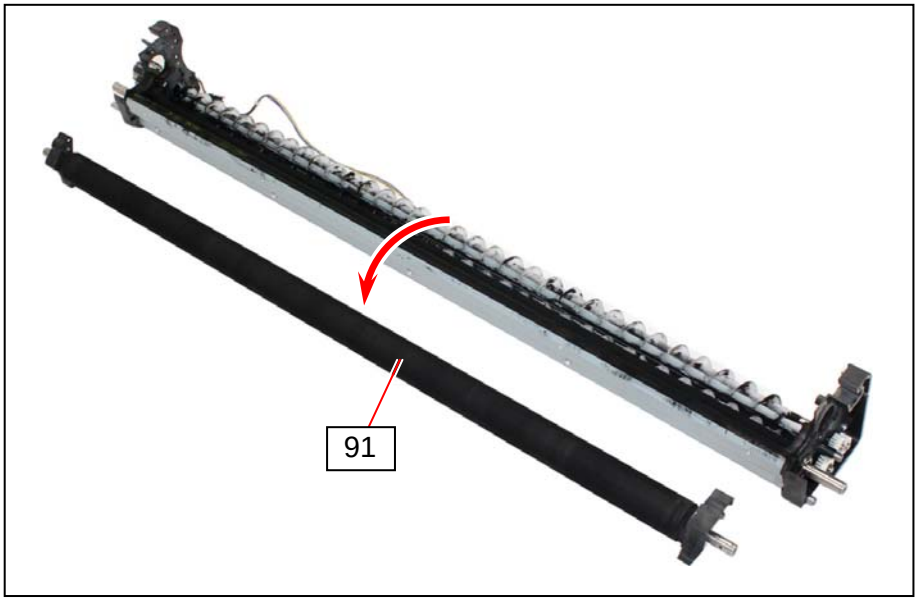
35. Rotate the whole Developer Unit by 90 degrees in the direction of arrow. The Developer Roller comes on top.



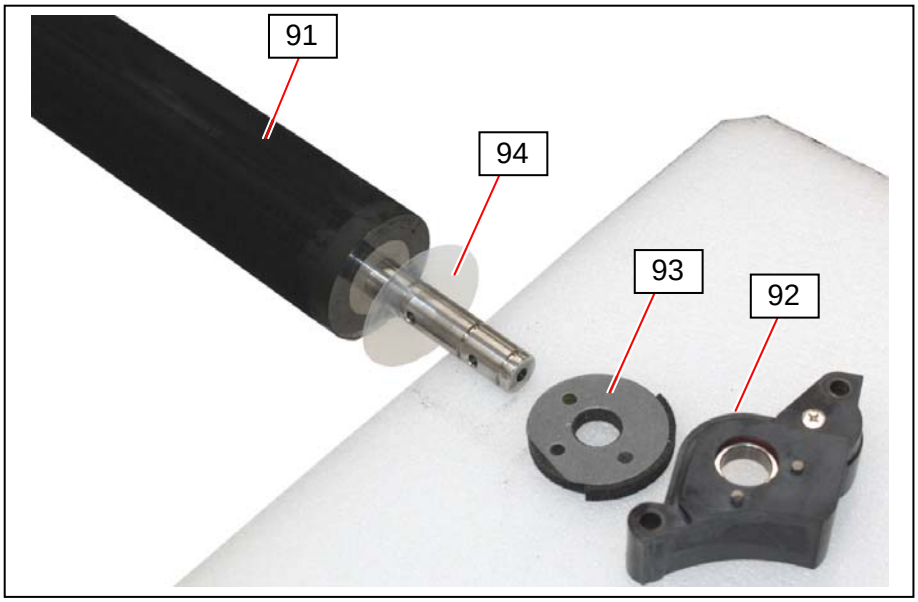
36. On both sides, remove E Rings (E10)(88) and 4 M4x8 screws (89)(90). Then hold both Developer Roller Side Plates and remove the Developer Roller (91) from the unit.



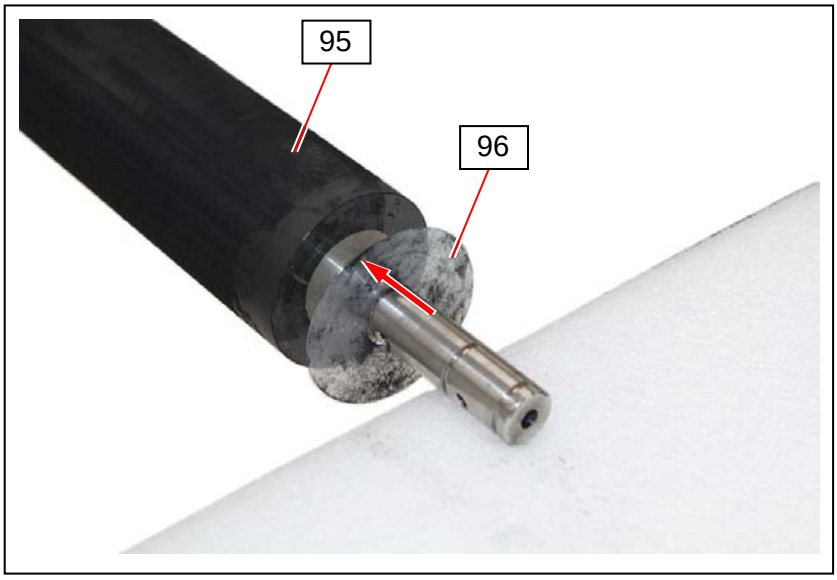




37. From each side of Developer Roller (91) remove Developer Roller Side Plate Assy (92), Side Seal Assy(93) and Sheet 3 (94). Then dispose each Developer Toller (91), Side Seal Assys (93) and Sheet 3 (94) as these are replaced with the new ones,.



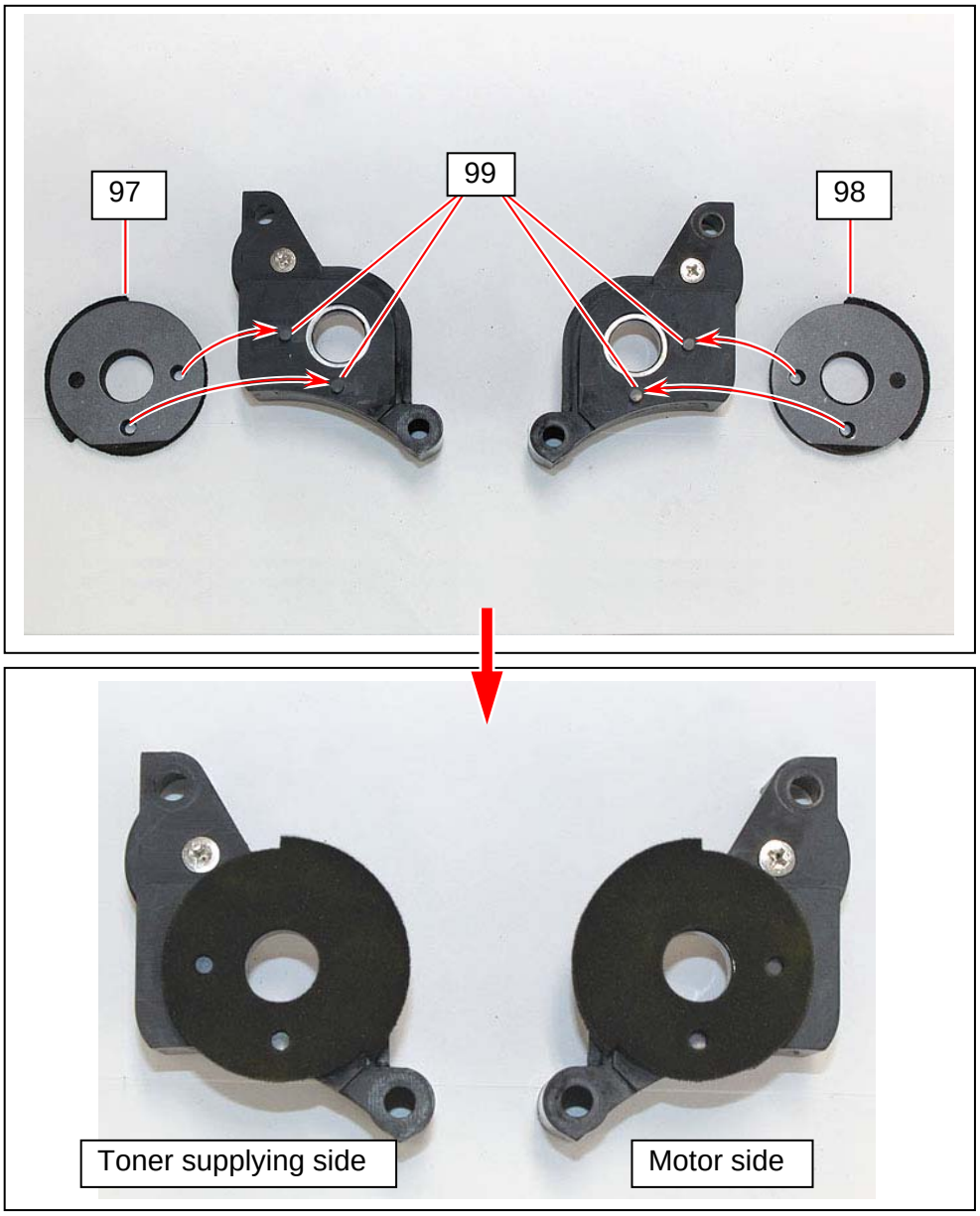
38. Prepare a new Developer Roller (95) and fit new Sheet 3 (96) onto both shafts.



NOTE

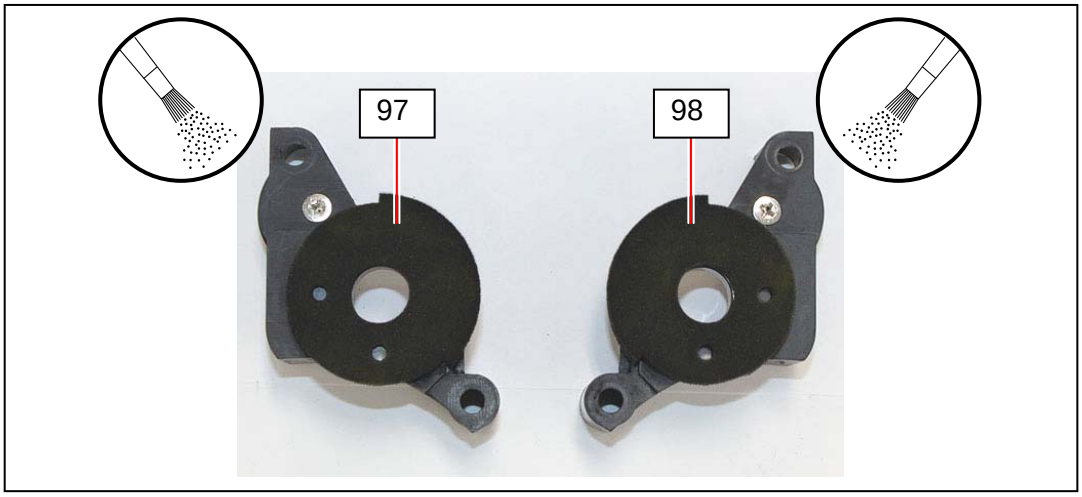
Apply toner of the original color to both sides of new Sheet 3 (96).

39. Prepare new Side Seal L Assy (97) and Side Seal R Assy (98), and mount them correctly onto the Developer Roller Side Plates with fitting their holes to the bosses (99).

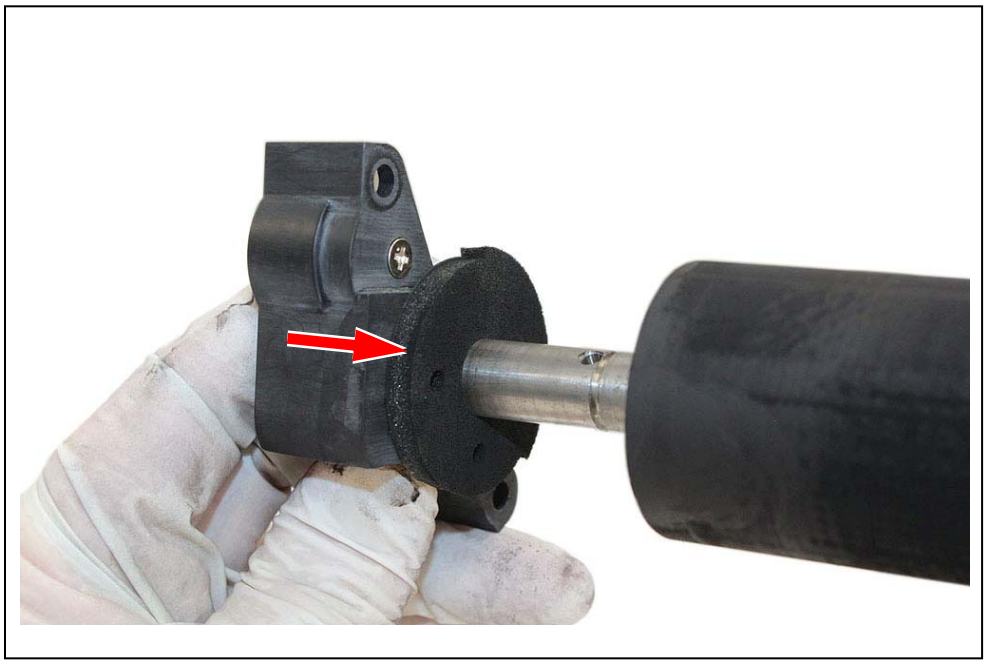


NOTE

Apply the toner of original color to the felt side of Side Seal L Assy (97) and Side Seal R Assy (98).

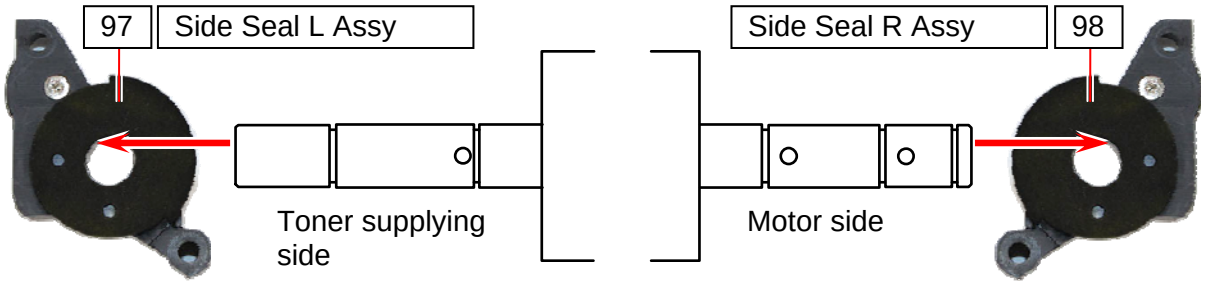


40. Fit both Developer Roller Side Plates to both shafts of Developer Roller.

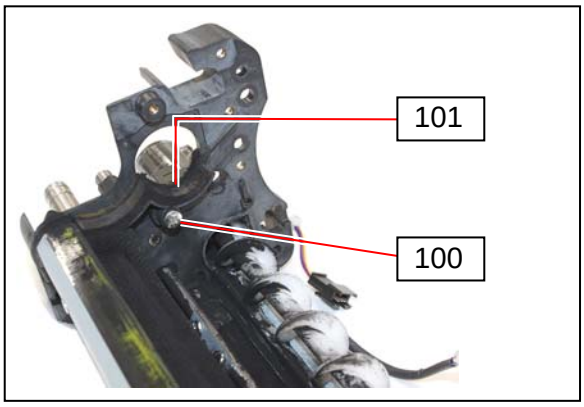


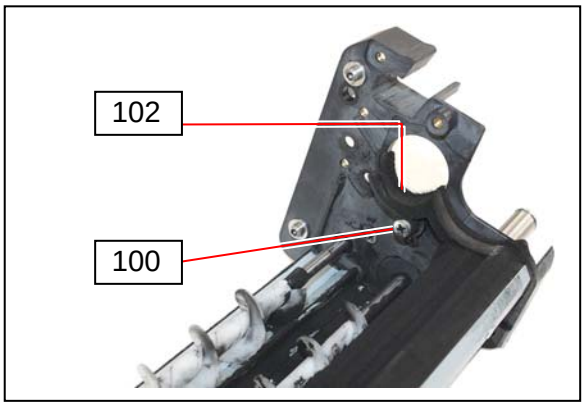
NOTE

Developer Roller has different shafts between left and right. Pay attention to fit the correct Developer Roller Side Plate to these shafts.



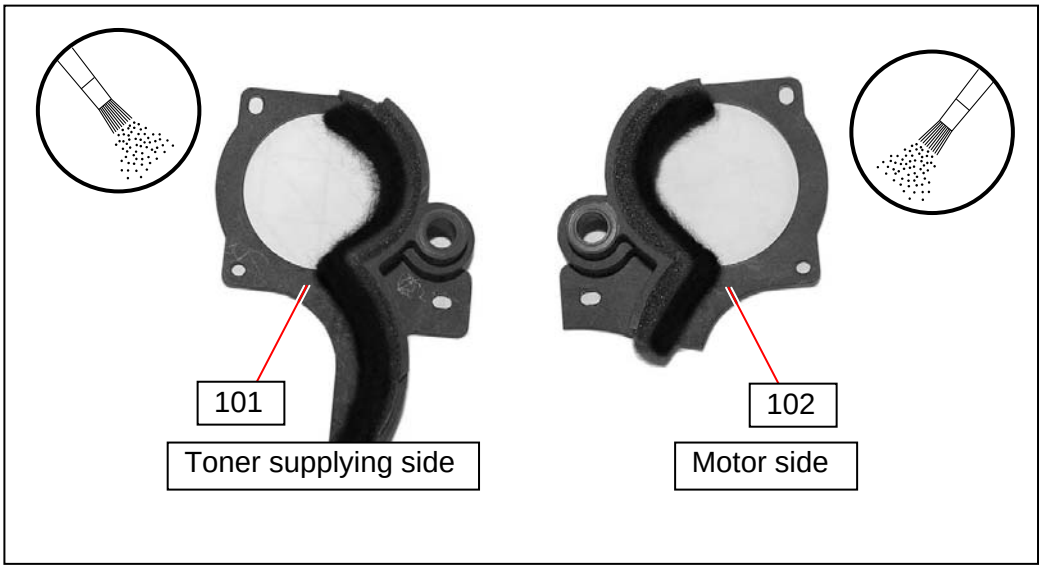
41. Remove 1 each M4x6 screw (100) that is inside of each Developer Side Plates. Remove each Side Plate G Assy(101) and Side Plate H Assy (102), and replace both of them with the new ones.



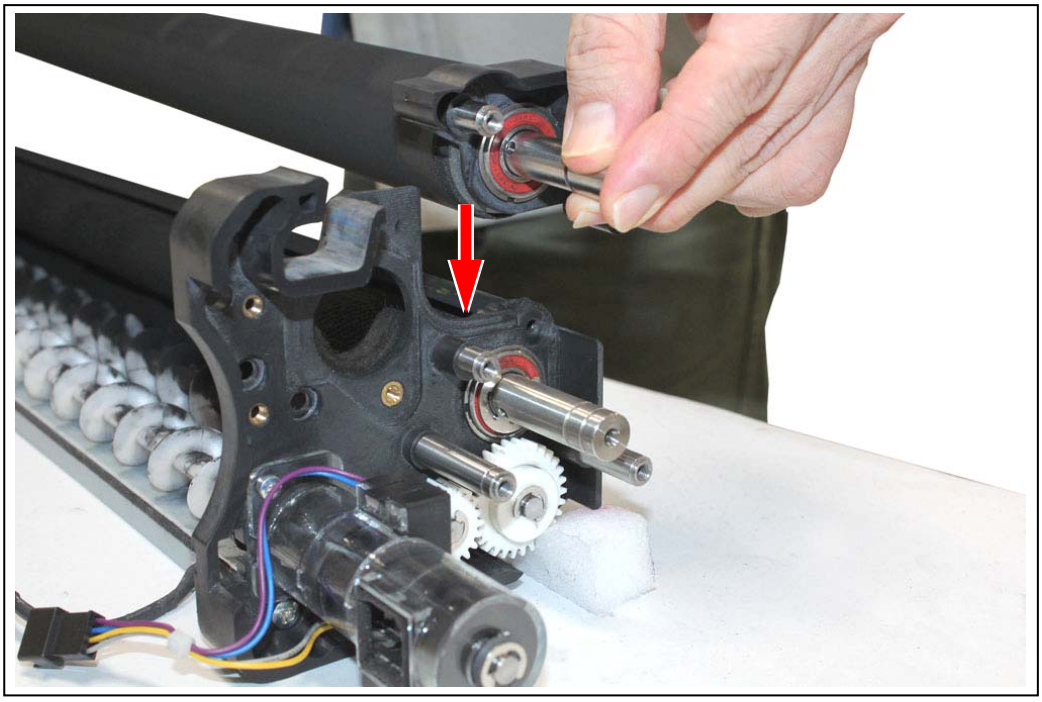


NOTE

Apply the toner of original color to the sealing side of Side Plate G Assy(101) and Side Plate H Assy (102).

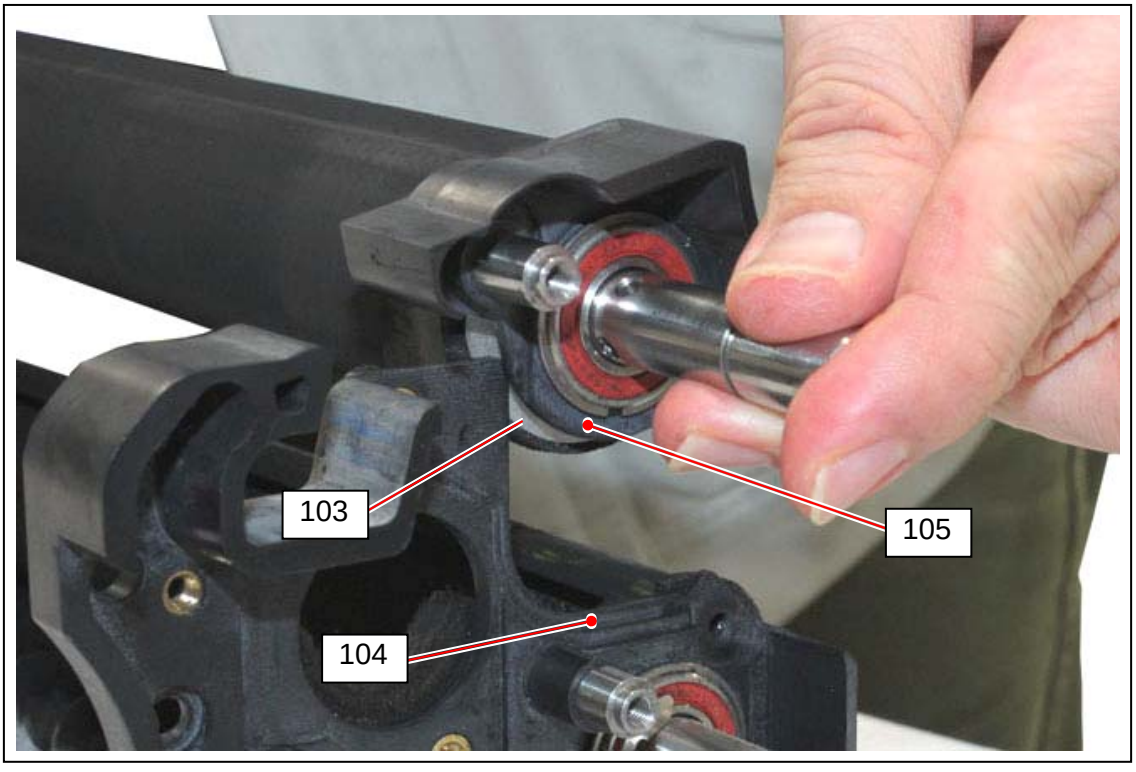


42. Carefully put Developer Roller back in the developer unit with paying attention to the following notes.

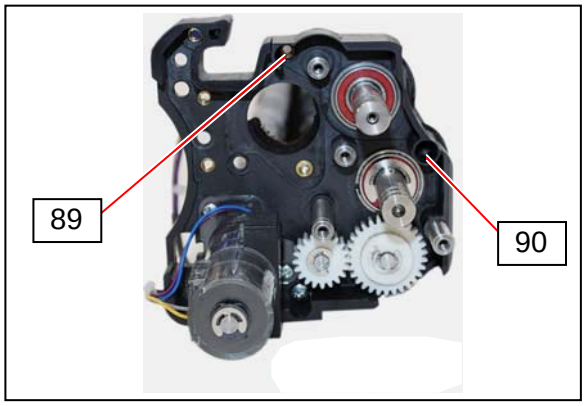


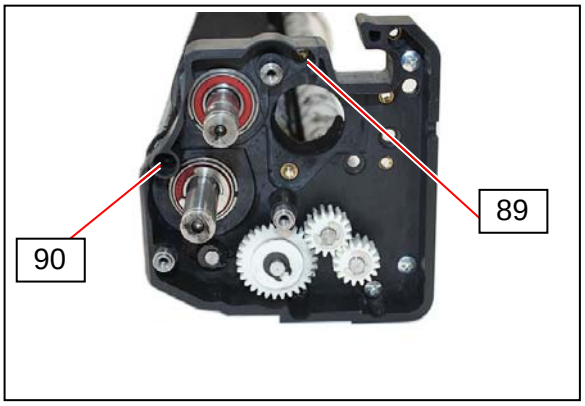
NOTE

1. Developer Roller must be fitted into the unit from the upper side as the photo. Therefore the developer unit must be rotated by 90 degrees.
2. Hold surely both shafts, and fit one side first and then another side with paying attention to the positions of Side Seal L/R Assys and Developer Side Plates.
3. Place the plastic sheet (103) of Side Seal L/R Assys inside of the Developer Side Plates (104).
4. Pay great attention not to bend the plastic sheet (103) of Side Seal L/R Assys by catching it between Developer Side Plates (104) and Developer Roller Side Plates (105). If it is caught, Developer Side Plate (104) and Developer Roller Side Plate (105) do not correctly engage with each other. In this case separate them once and the try again.



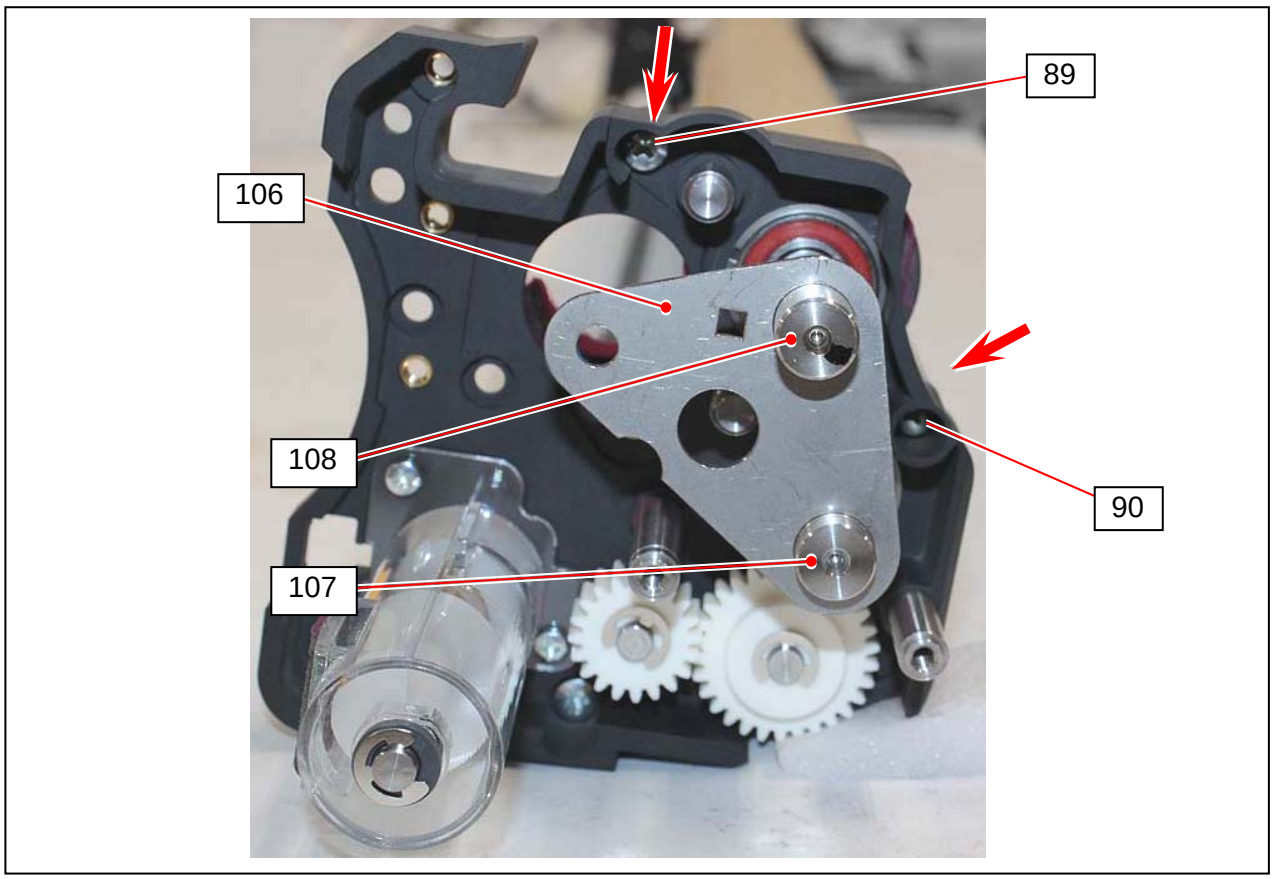
43. Put 4 M4x8 screws (89)(90) back to their original screw holes and turn a little just to temporarily hold both Developer Roller Side Plates.





44. Fit both “Supply Roller Fixer Jigs” (106) to the supply roller shaft (107) and developer roller shaft (108) on both sides. With pressing the Developer Roller Side Plates in the direction of arrows, find a position of Developer Roller Side Plate where you can slide the Supply Roller Fixer Jig (106) smoothly back and forth on the shafts. If you find the “good” position then tighten the screws (89)(90). After tightening the screws (89)(90) verify again that you can smoothly move the jig back and forth on the shaft. If not smoothly moved, reposition the Developer Roller Side Plates.

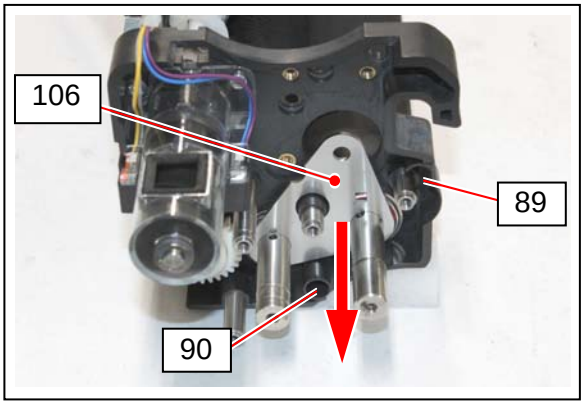
<u>Please take this operation on both sides together.</u>

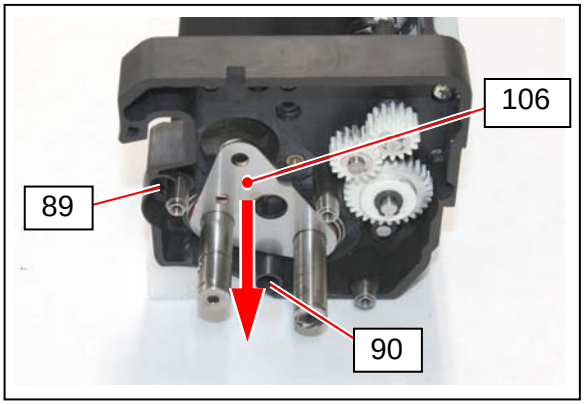


NOTE

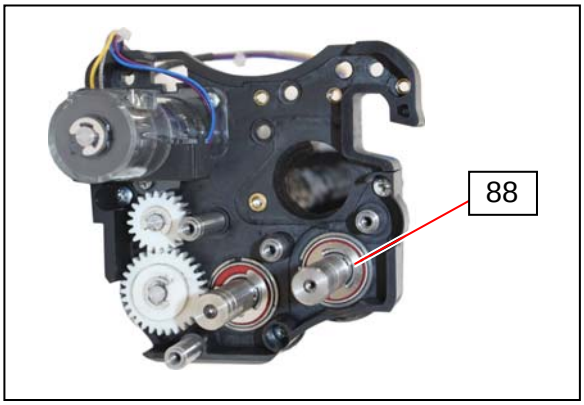
If you are unable to slide the Supply Roller Fixer Jig (104) smoothly, the Side Seal L/R Assy (106) may be caught between Developer Roller Side Plate and Developer Roller Side Plate. In this case remove the Developer Roller Side Seal and check the condition of Side Seal L/R Assy, especially the plastic sheet part. If it is damaged or bent, replace the Side Seal L/R Assy with the new one.

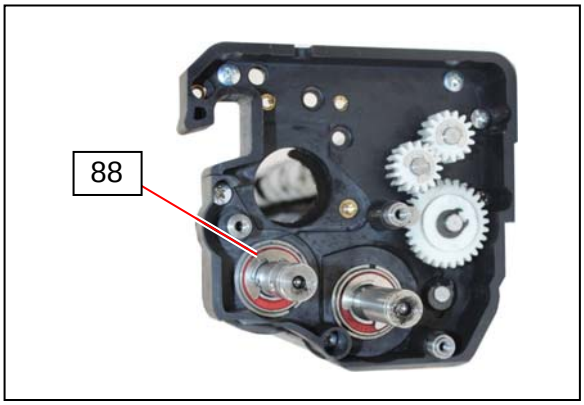
45. Rotate the whole Developer Unit by 90 degrees to place it back to the normal orientation. Remove both Supply Roller Fixer Jigs with additionally verifying that then can be slid smoothly on the shafts. If they do not slide smoothly, rotate the developer unit by 90 degrees to the other side again as former step 44, and reposition the Developer Roller Side plate correctly.



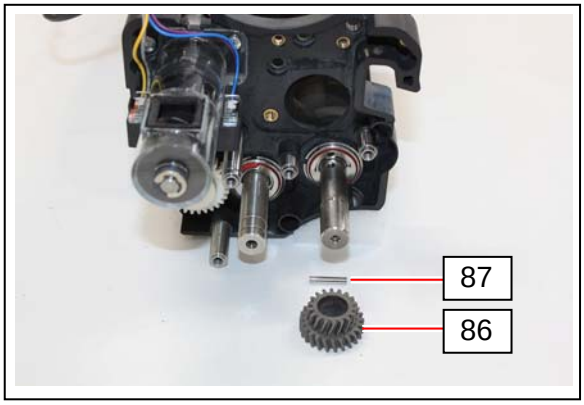


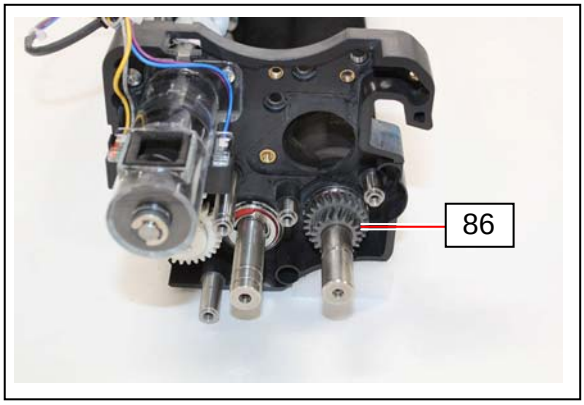
46. On both sides, put E Rings (E10)(88) back on their original positions on the Developer Roller shafts





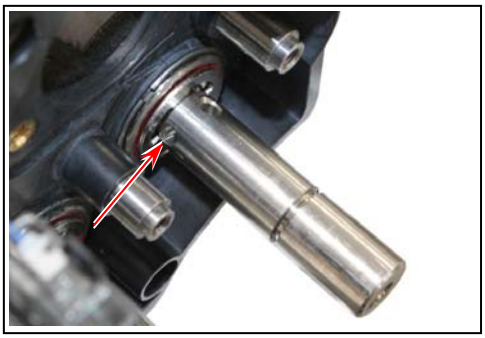
47. On the toner supplying side, put Parallel Pin (3x16)(87) and 18-24 Helical Gear (86) back on their original positions on the Developer Roller shaft.

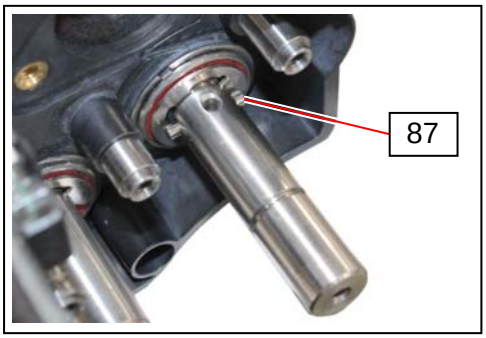




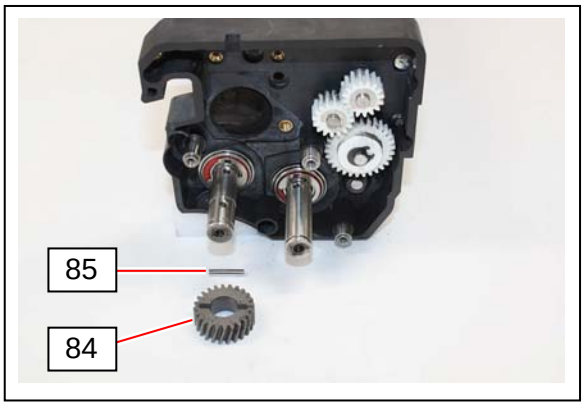
NOTE

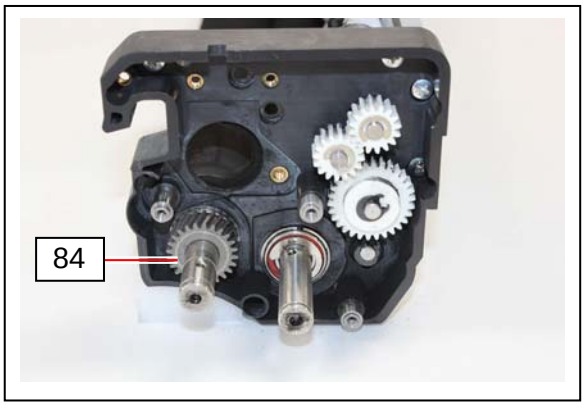
If the Developer Roller Shaft has 2 different positions for Parallel Pin (87), use one of them that is **closer to the Ball Bearing**.



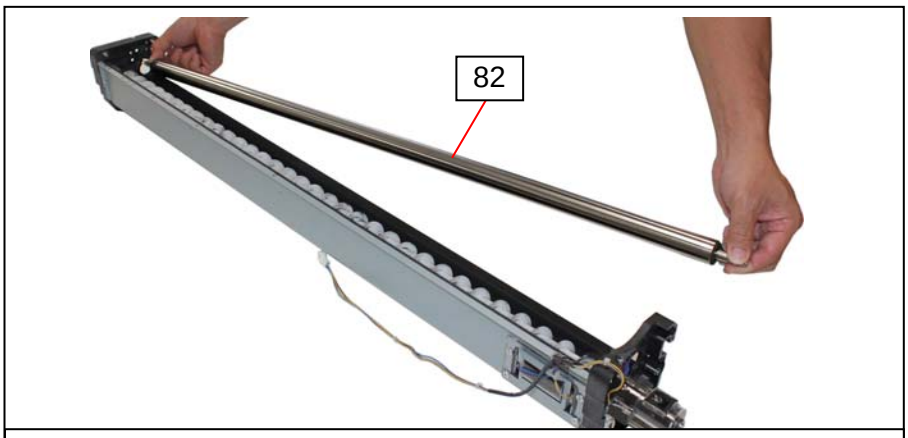


48. On the motor side, put Parallel Pin (3x16)(85) and 24T Helical Gear (84) back on their original positions on the Developer Roller shaft.



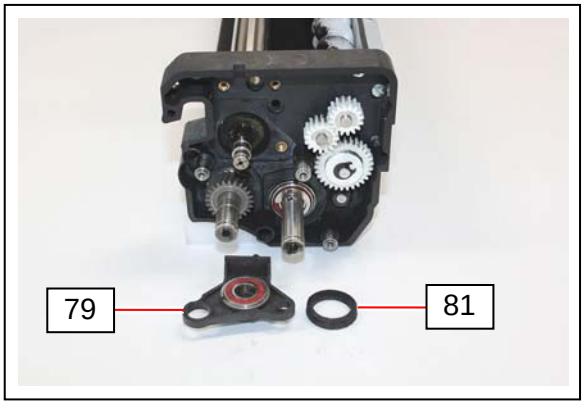


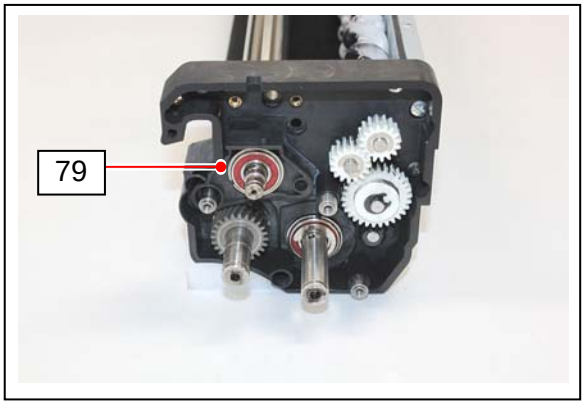
49. Put the Regulation Roller (82) back in the Developer Unit. (please complete replacement of Seals (20) before putting back in)

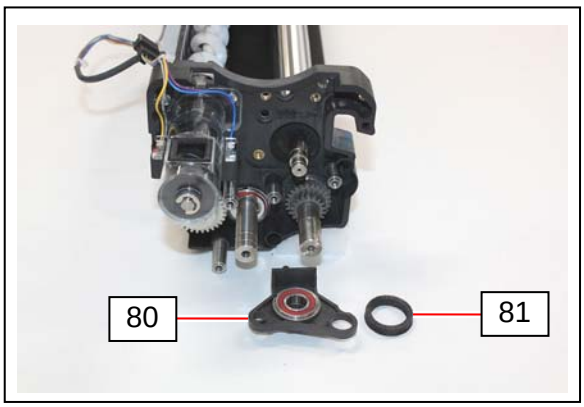


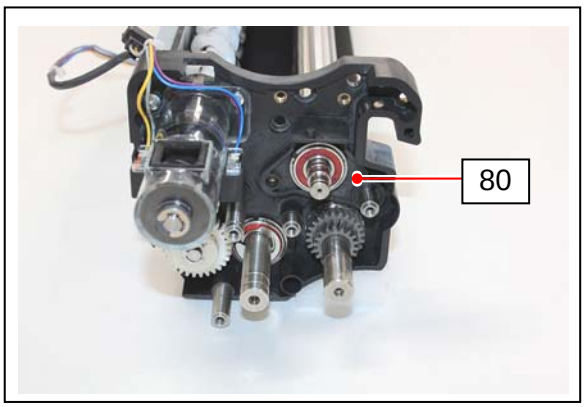
You do not have to pay attention to the orientation of roller as it is symmetric.

50. On both sides, put Bracket A1 (79) and Bracket A2 (80) as well as Seals 16 (81) back on their original positions on the side plates.

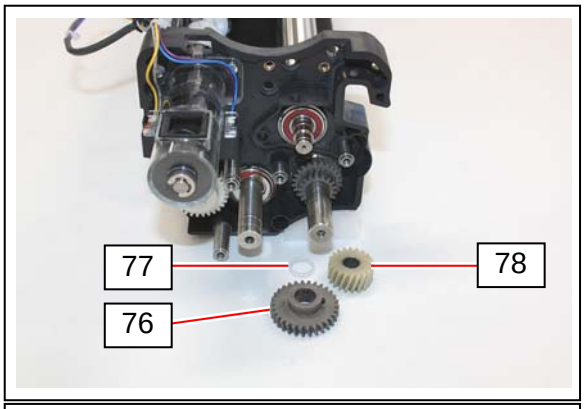


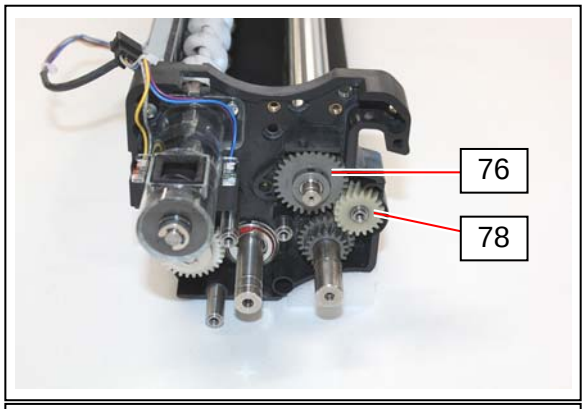


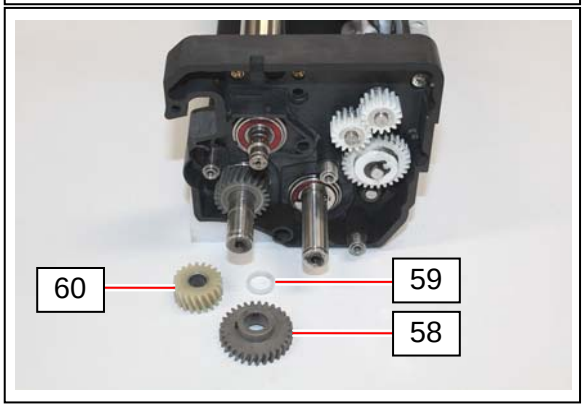


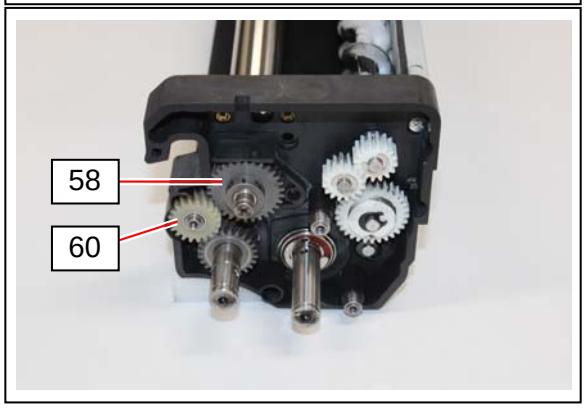


51. On the toner supplying side, put Collar (77), 30T Helical Gear 4 (76) and 20T Helical Gear (78) back on their original positions on the Regulation Roller shaft.
And on the motor side, similarly put Collar (59), 30T Helical Gear 5 (58) and 20T Helical Gear 4 (60) back on their original positions on the Regulation Roller shaft. **Do not tighten yet the set screws of 30T Helical Gears 4/5 (76)(58) at this moment.**



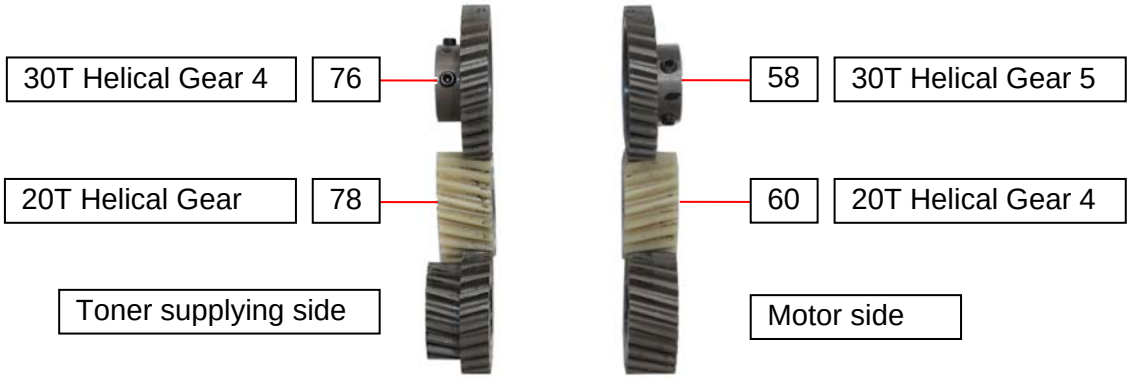




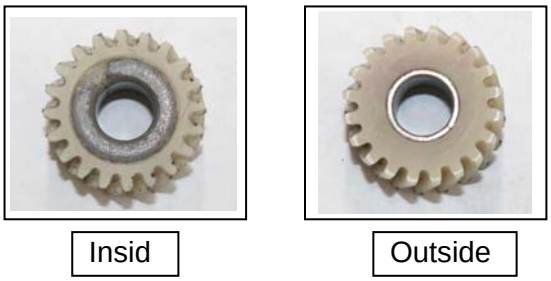


NOTE

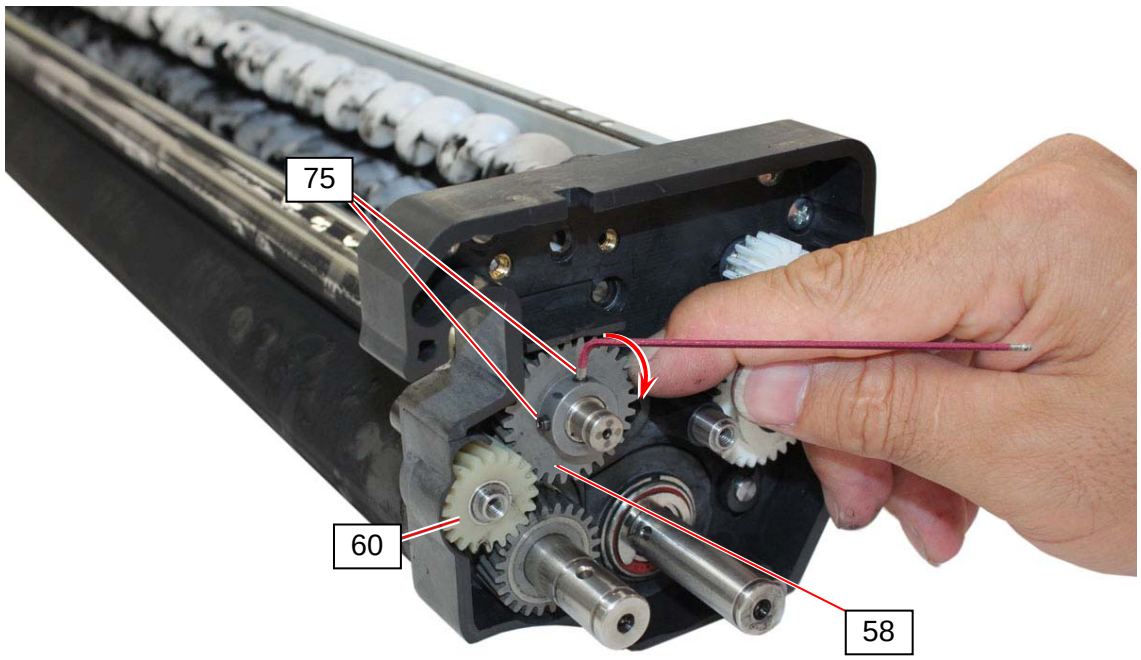
1. Gear angles of 30T Helical Gears (76)(58) and 20T Helical Gears (78)(60) are different between left and right of the developer unit. Please pay attention not to install these gears onto wrong side.

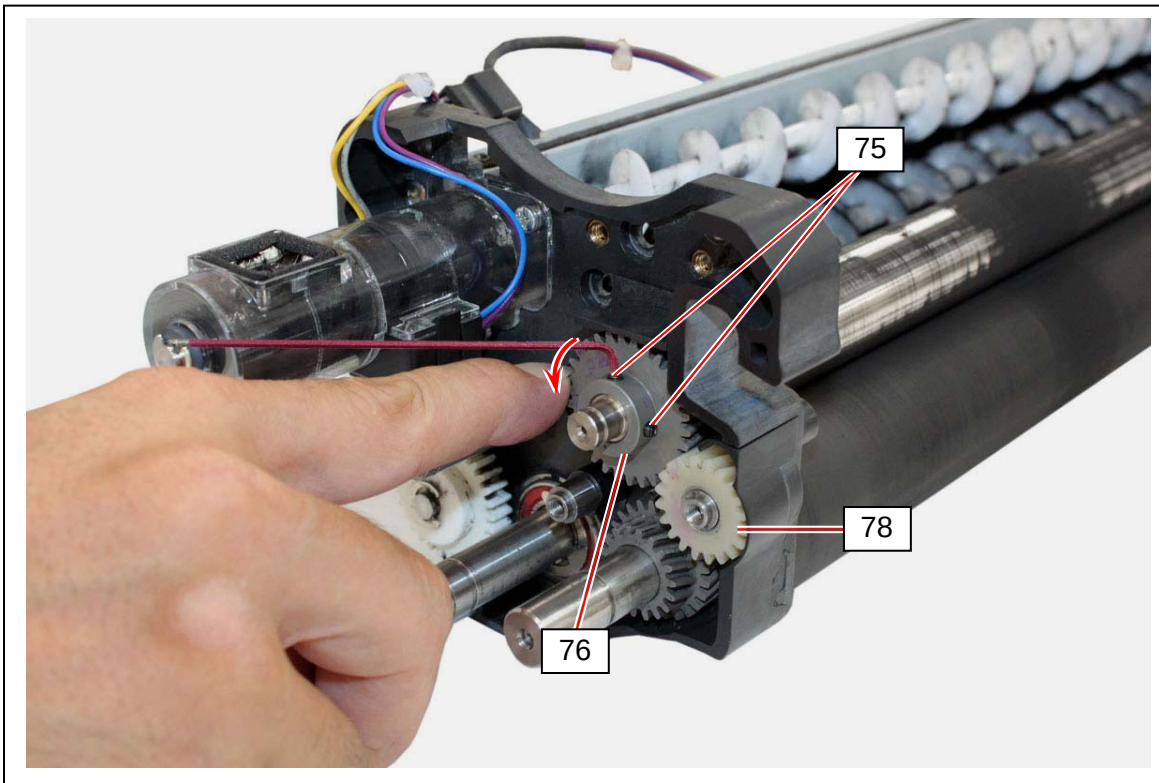


2. Please refer to the following photos for the orientation of 20T Helical Gears.



52. With rotating each 30T Helical Gear 5(58) and 30T Helical Gear 4 (76) I the direction of arrow **so as not to have any mechanical play at all** between the neighboring 20T Gear (60)(78), fix it there by tightening the set screws (75). When tightening 2 each set screws (75), tighten them gradually and alternately by several steps.



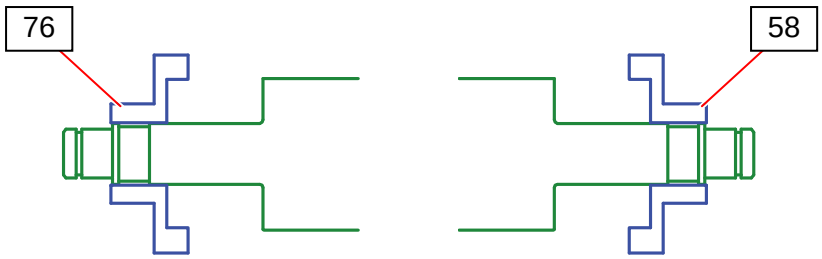


IMPORTANT!

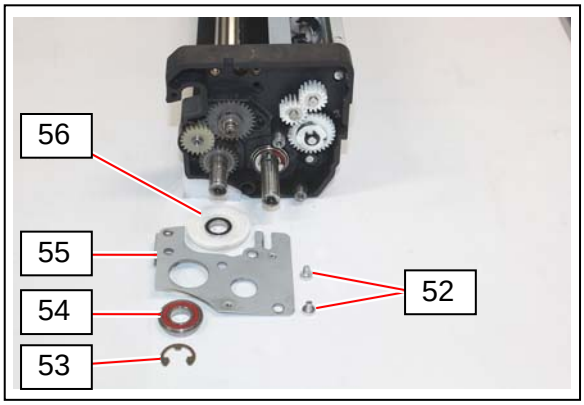
1. **Keep in mind that it is very important for having an even toner layer on the Developer Roller to fix the 30T Helical Gears (58)(76) without having any mechanical play at all between the 20T Helical Gears (60)(78).**

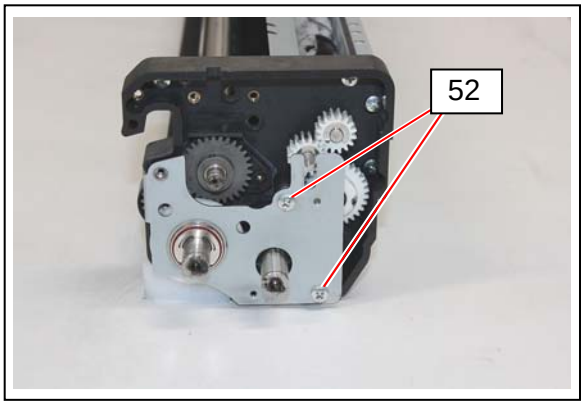
IMPORTNT!

2. Fix both 30T Helical Gears (76)(58) with aligning its outside faces to the steps on roller shaft as follows.



53. On the motor side, put Counter Roller (56), Gear Bracket Assy (55), Ball Bearing (54), E Ring (E10)(53), 2 M4x6 screws (52) back on their original positions.

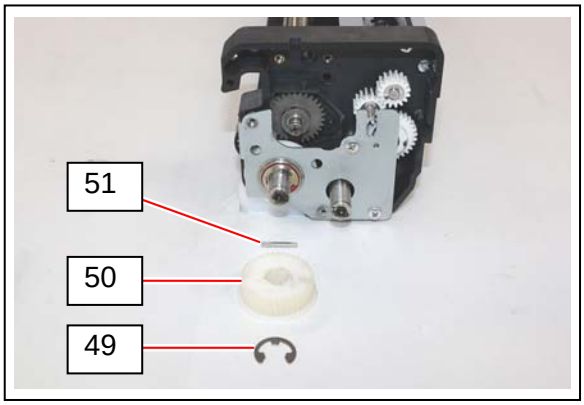




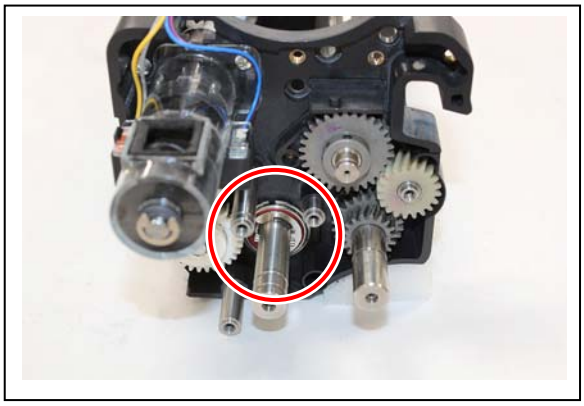
NOTE

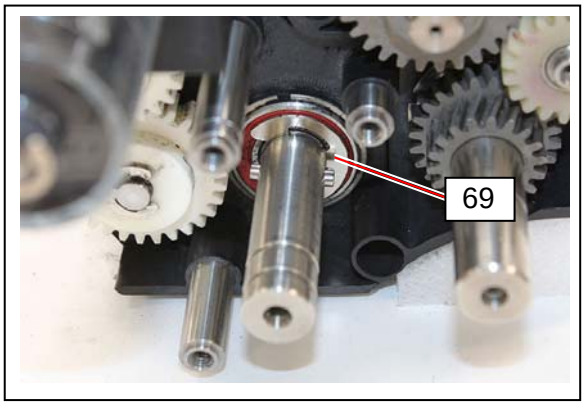
The following side of Counter Roller (56) must be directed inside.

54. On the motor side, put Parallel Pin (3x20)(51), 40T Pulley (50) and E Ring (E10)(49) back on their original positions.

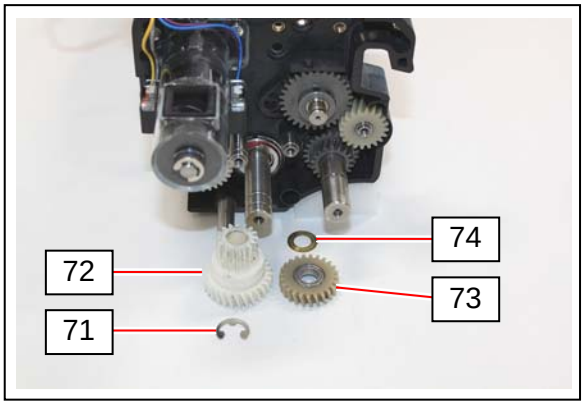


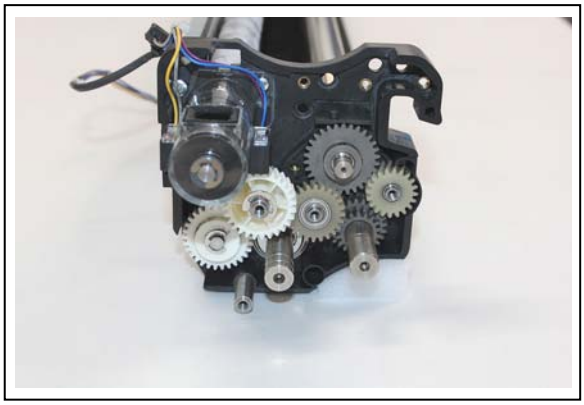
55. On the toner supplying side, fit the Parallel Pin (3x16)(69) into its hole on the Supply Roller shaft in advance.



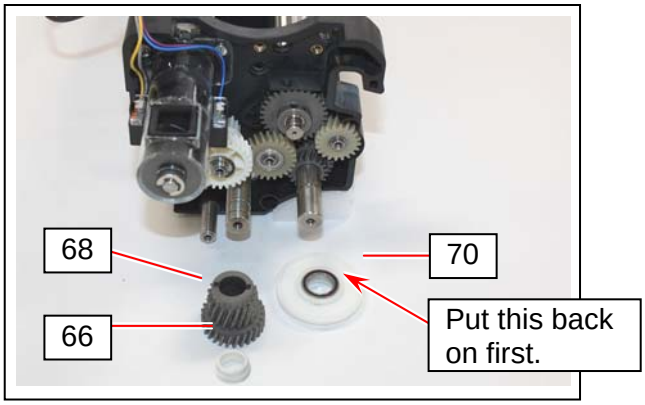


56. On the toner supplying side, put Thrust Washer (74) and 24T Helical Gear (73) back on the Developer Roller shaft. Then put 16-28T Gear (72) back on the Supply Roller shaft and fix it with the E Ring (E7)(71).



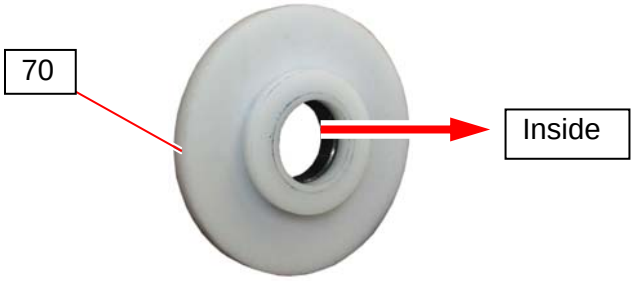


57. On the toner supplying side, put Counter Roller 2 (70) back on the Developer Roller shaft. Then put 19-27 Helical Gear (68) and Collar (66) back on Supply Roller shaft.

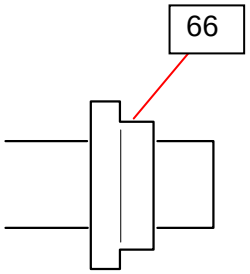


NOTE

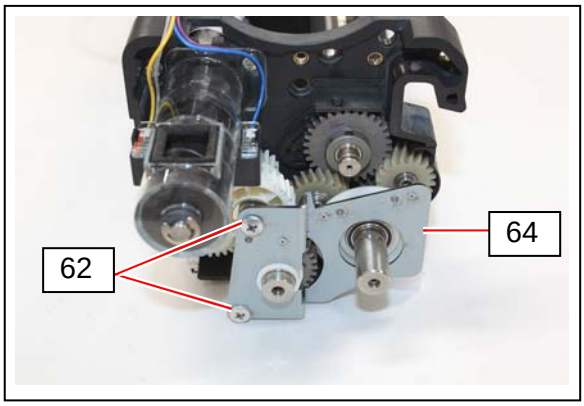
1. The following side of Counter Roller 2 (70) must be directed inside.



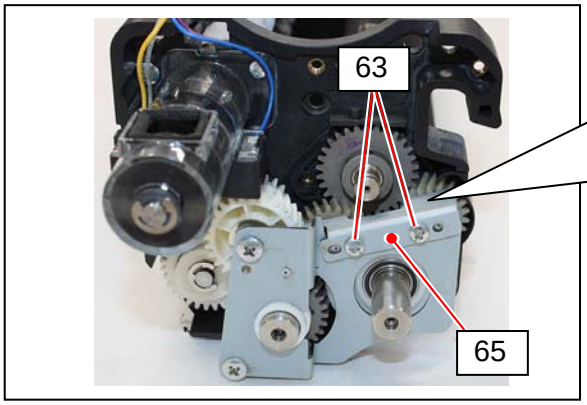
2. Collar (66) must be installed by the following orientation.

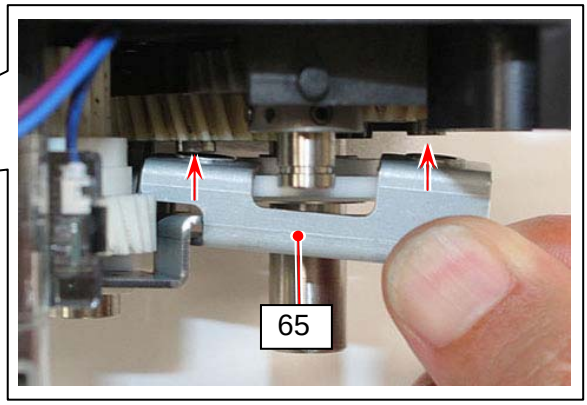


58. On the toner supplying side, put Gear Bracket 2 (64) back in its original position and temporarily fix it with 2 M4x6 screws (62). (Do not tighten screws yet.)

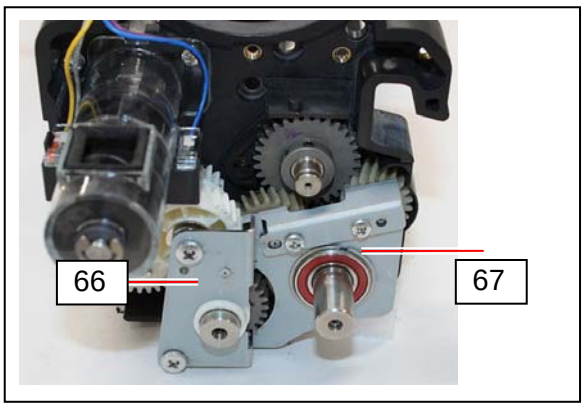


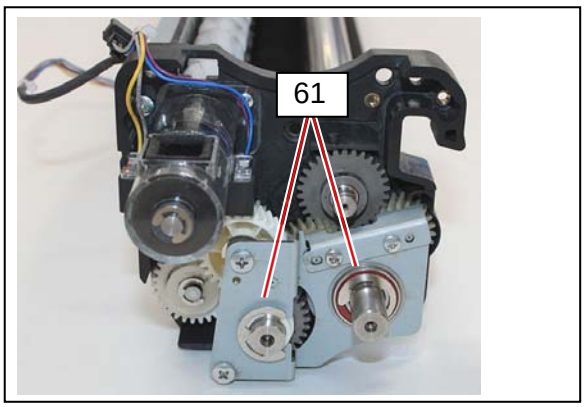
59. Similarly put Gear Bracket 3 (65) back in its original position on the toner supplying side and temporarily fix it with 2 M3x5 screws (63). (Do not tighten screws yet.)



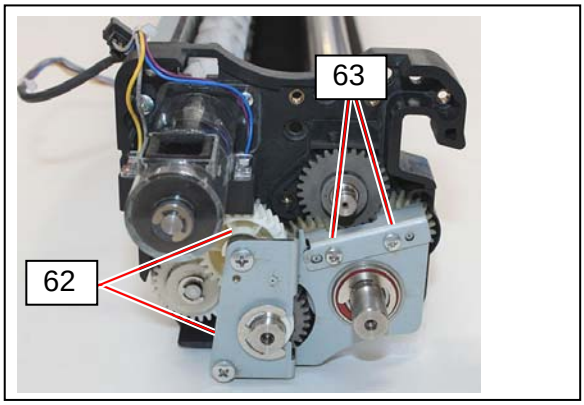


60. On the toner supplying side, fit the Ball Bearing back on the Developer Roller shaft an fix it with the E Ring (E10)(61). Fit the Collar (66) back on the Supply Roller shaft and fix it with the E Ring (E10)(61).

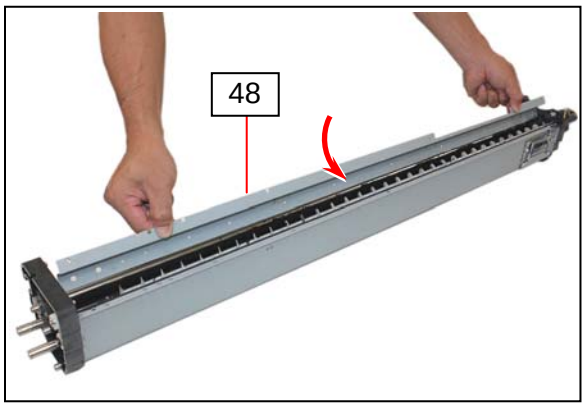


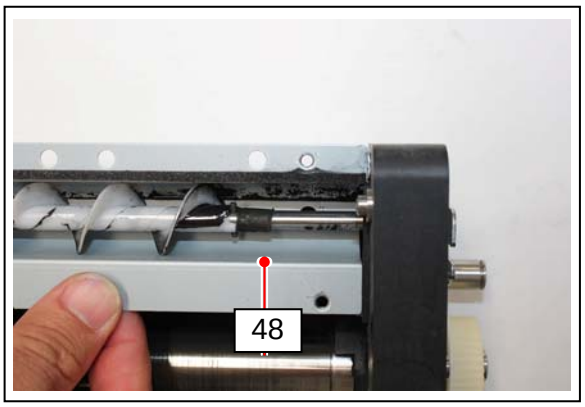


61. Fully tighten 4 screws (62) (63).



62. Put Frame (4() back in the Developer Unit.

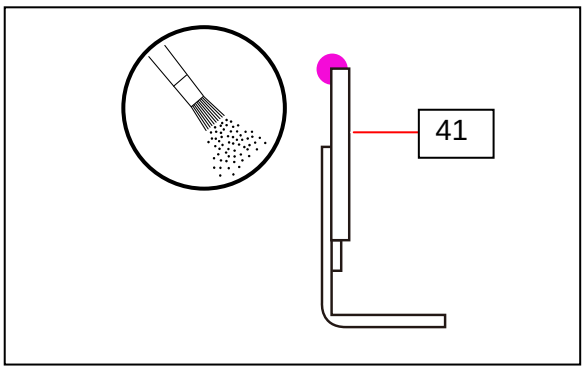




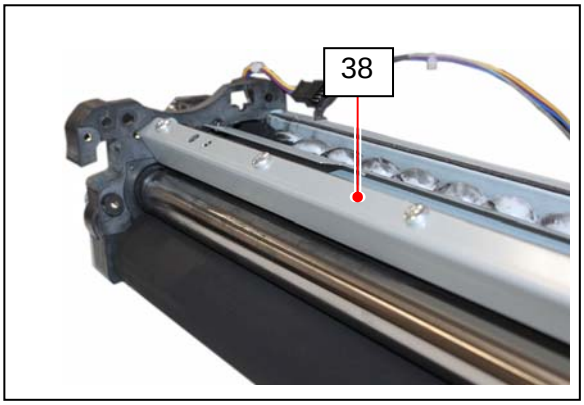
63. Before putting the Scraper Assy back in, please take the following confirmations and preparations in advance.

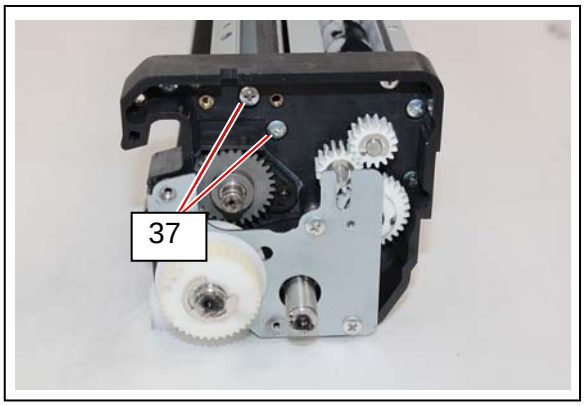
63-1. Apply a little toner of the original color to the Regulation Roller.

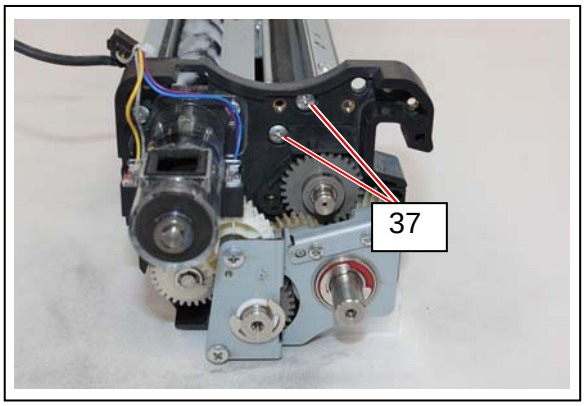
63-2. Be sure that the contact edge of Scraper (41) is applied with the toner of original color.



64. Fit the Scraper Assy (38) back in its original position in the Developer Unit, and fix it with 4 M4x6 screws (37) from both sides.

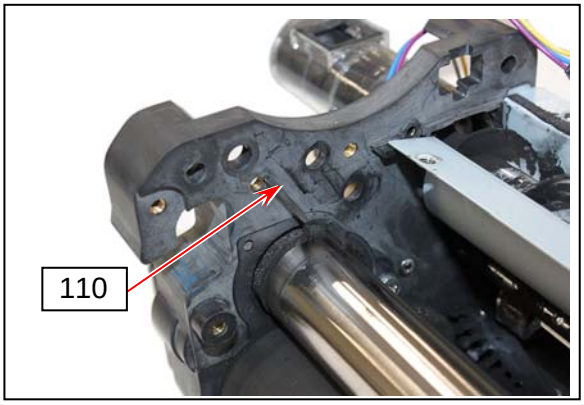


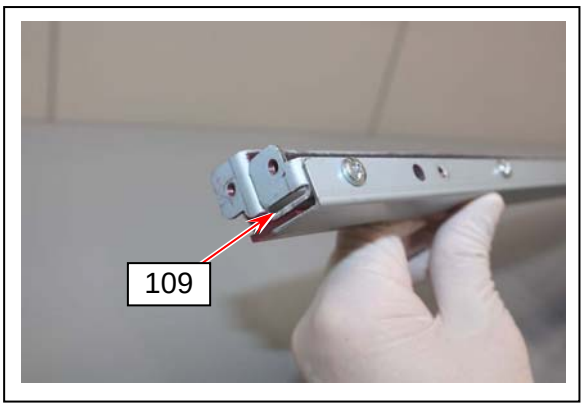




NOTE

1. As there are positioning alits (109) on both sides of the Scraper Assy, fit the positioning guides (110) of Developer Side Plates into these sits.

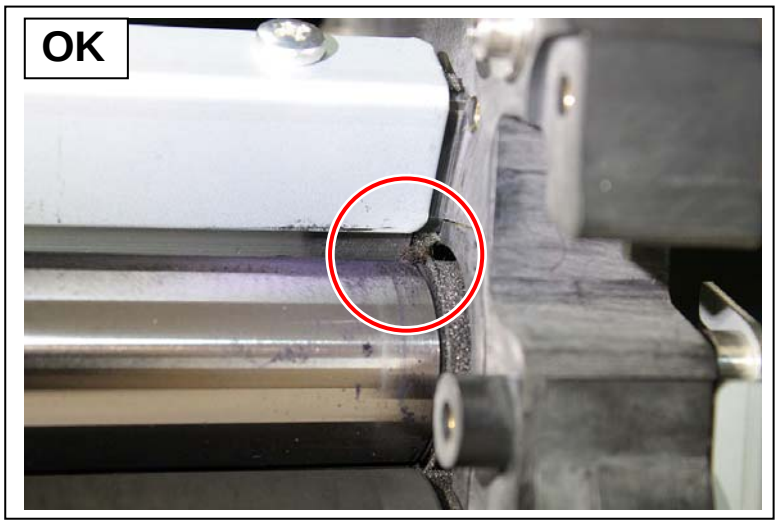


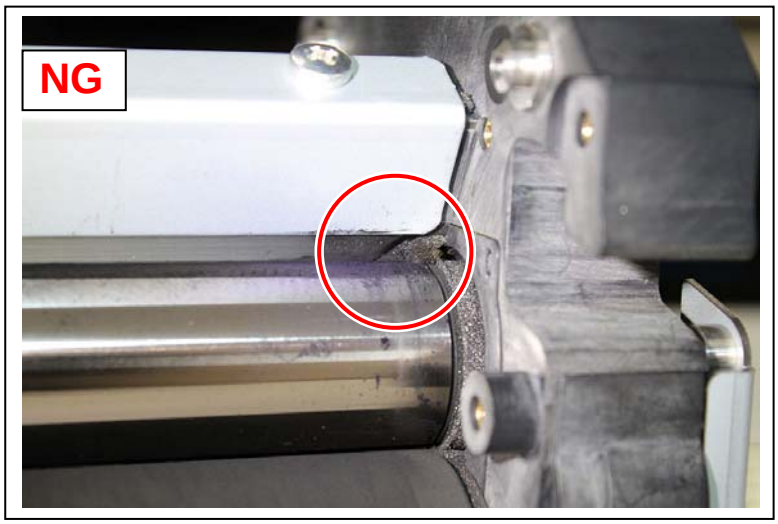


2. Vacuum unnecessary toner on the Regulation Roller.

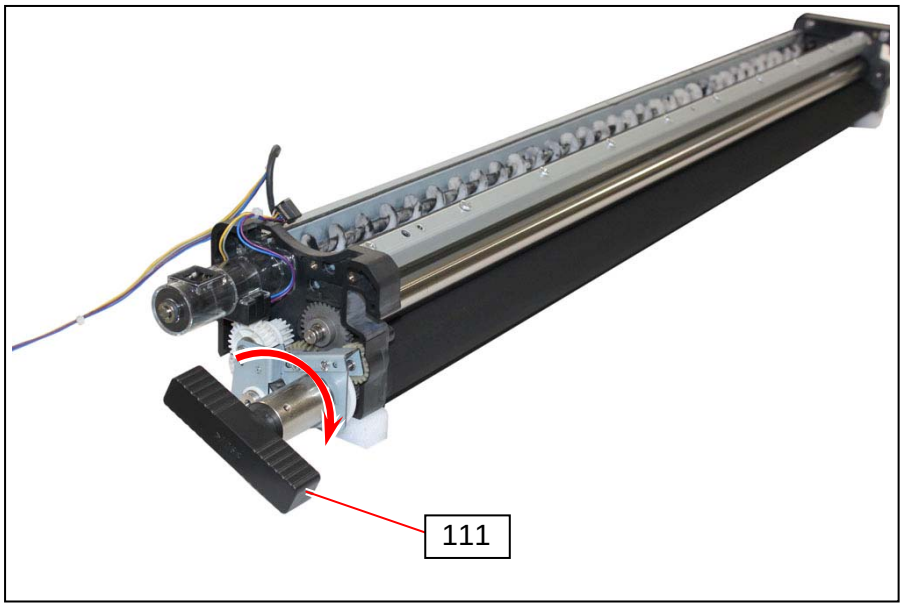
NOTE

3. Verify that there is no “turning over” of Scraper, especially on both ends.

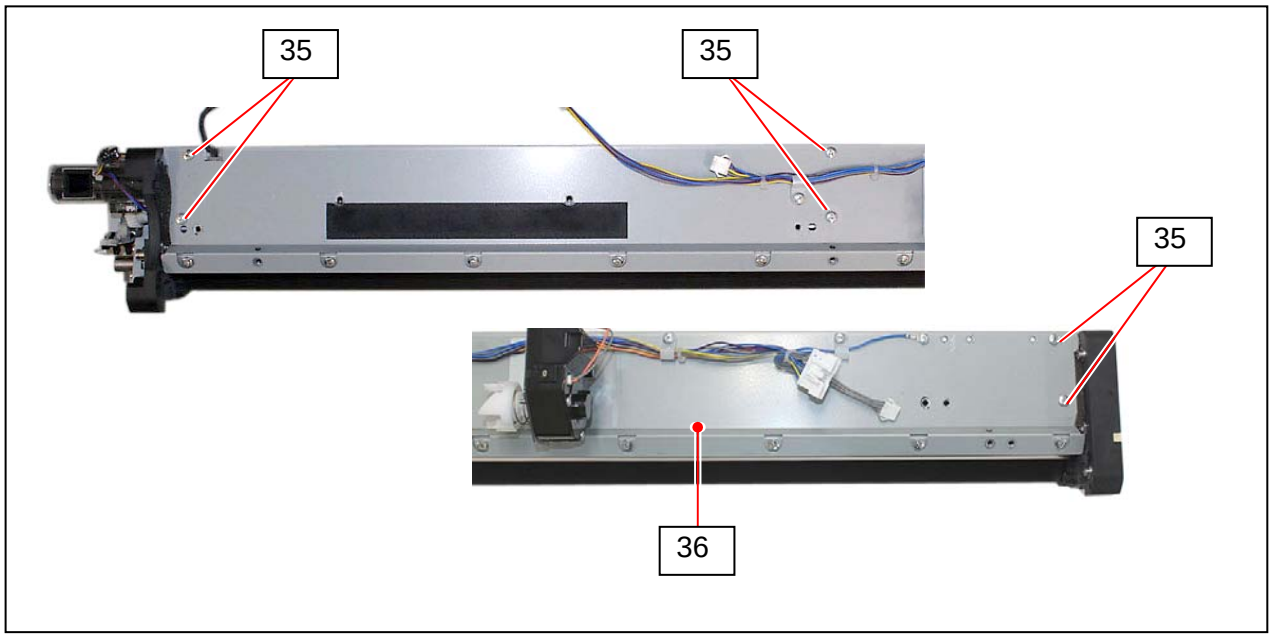




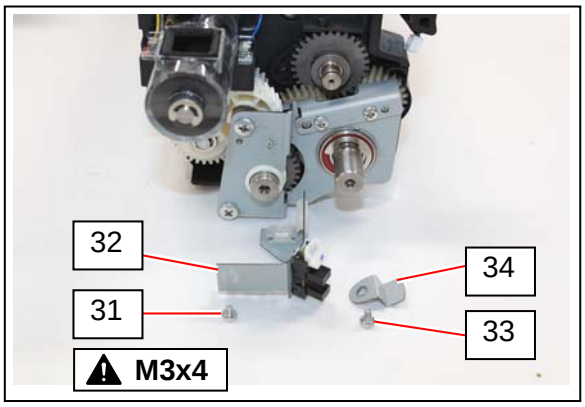
64. Fit the Developer Handle (111) to the Developer Roller shaft on the toner supplying side. With rotating the handle in the direction of arrow, verify that the Scraper is not turned over and also there is no vertical line of toner on the Regulation Roller, which runs in the direction of rotation. If such is seen, reinstall the Scraper Assy.

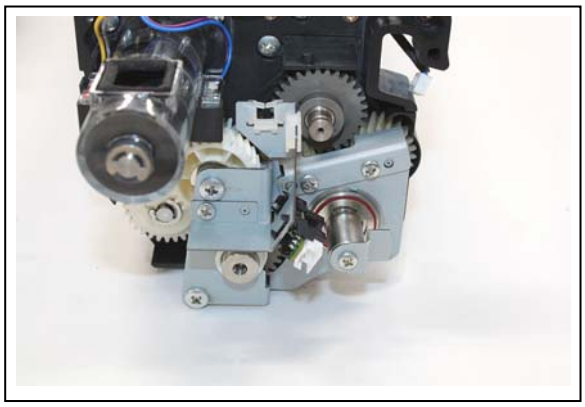


65. Put Toner Cover (36) back on and fix it with 6 M4x6 screws (35).



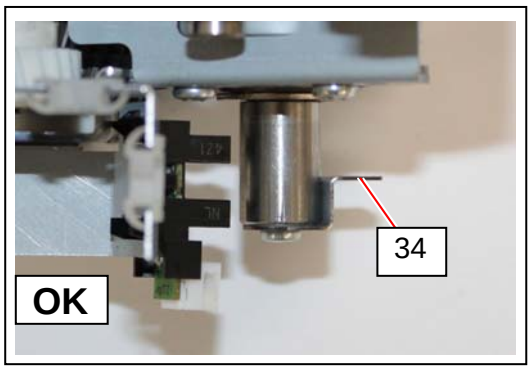
66. On the toner supplying side, fix the Sensor Bracket to its original position with 1 M3x4 screw (31). Also fix the Slit Plate (34) to the original position on the shaft with 1 M3x8 screw (33).

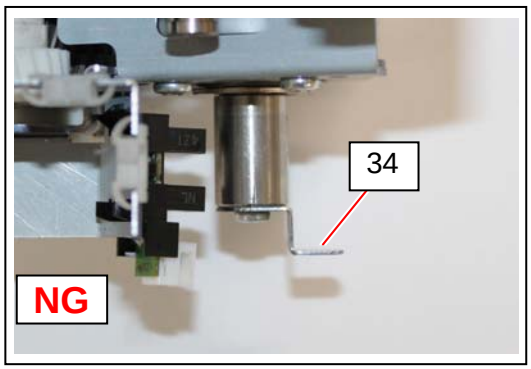




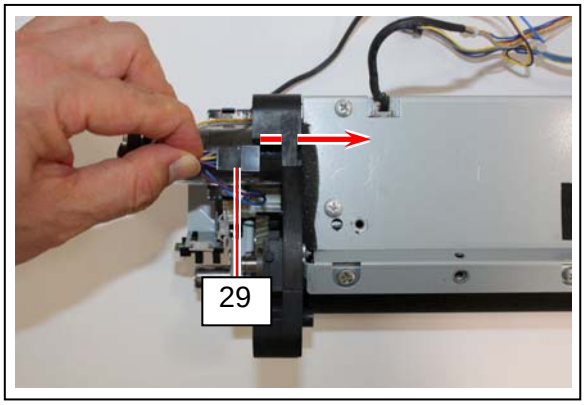
NOTE

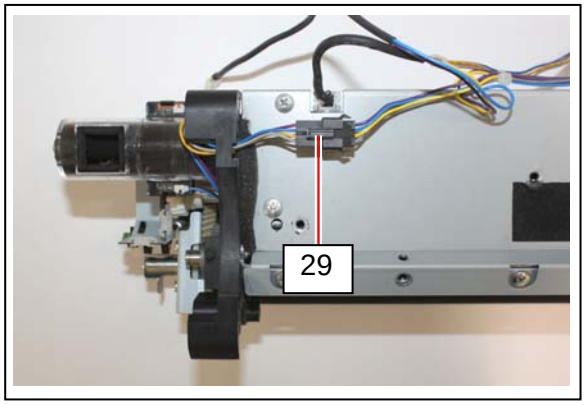
Be careful not to fix the Slit Plate (34) by wrong orientation.



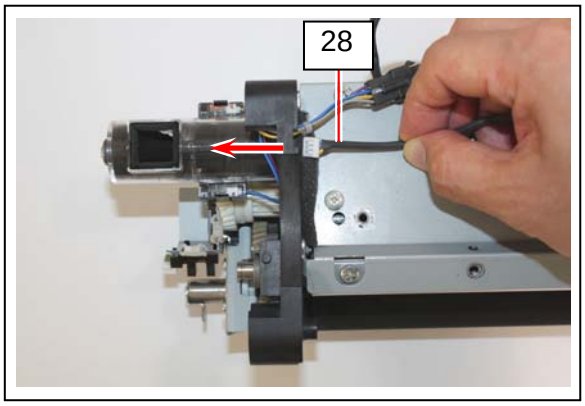


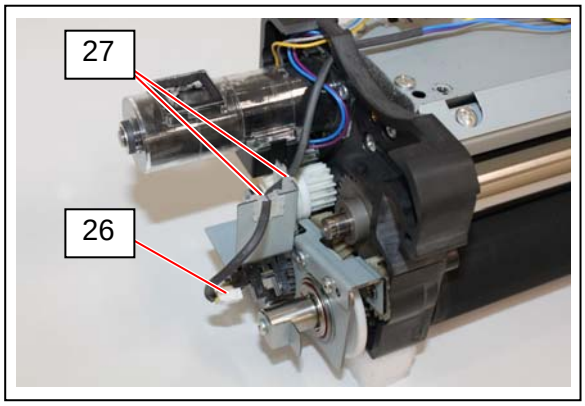
67. Insert the connector (29) into the square hole on the side plate and then plug it in.



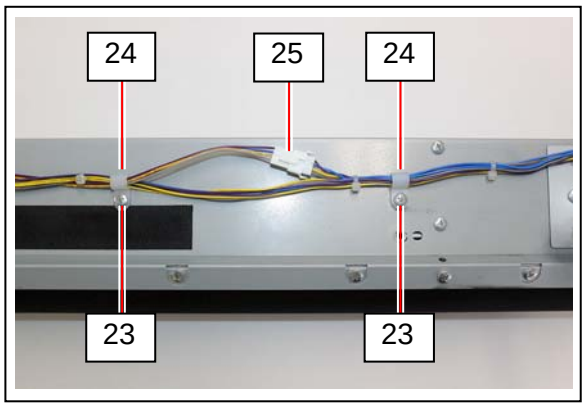


68. Insert the harness (28) into the square hole on the side plate. Plug in the connector (26), and hold the harness (28) with the Wire Saddles (27).

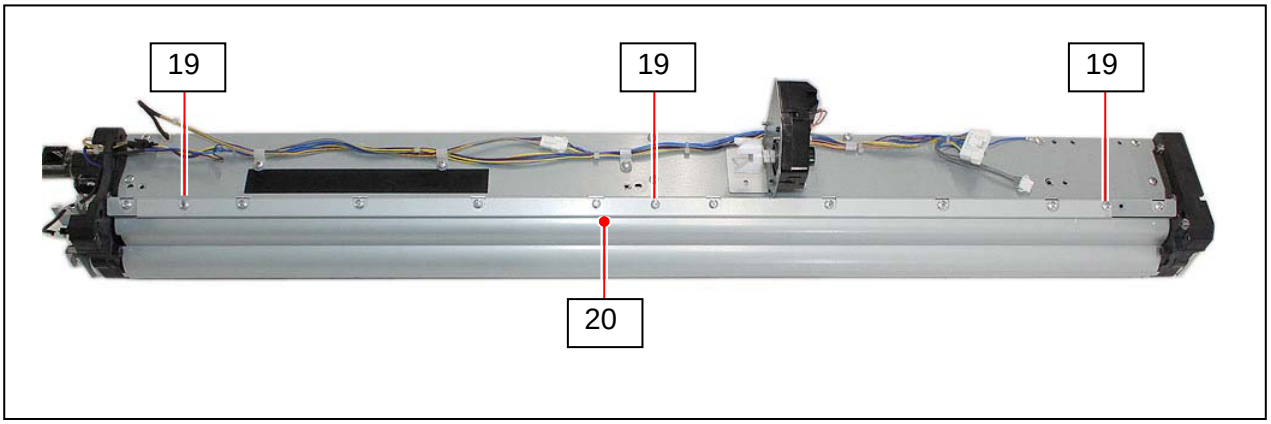




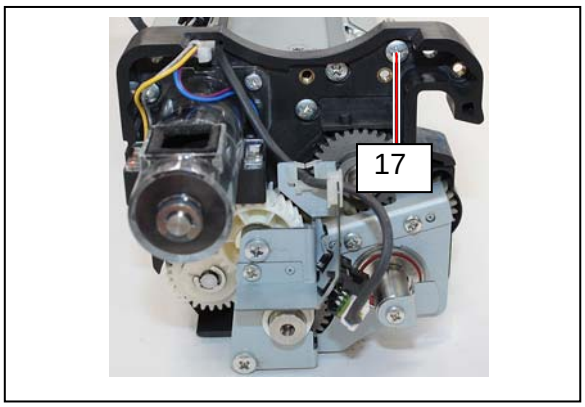
69. Plug in the connector (25). Fix the wire clamps (24) by the M4x6 screws (23) with holding the harness.

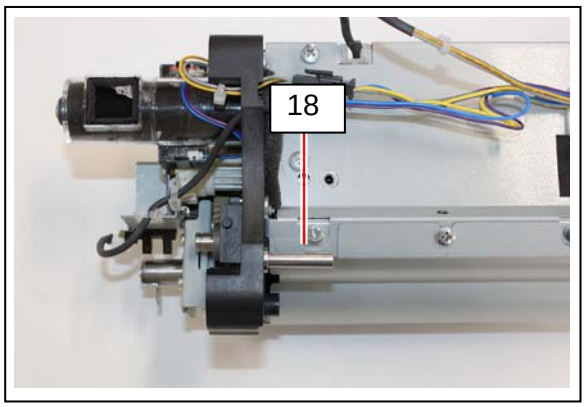


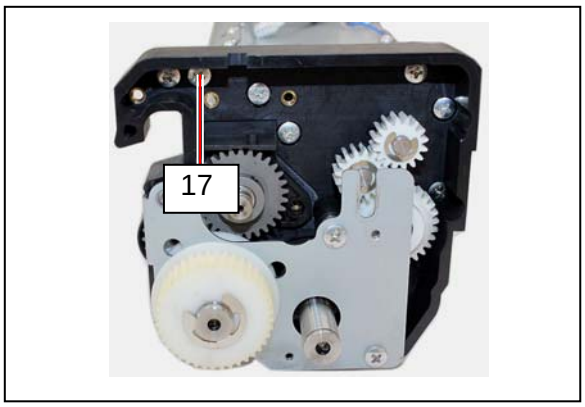
70. Fix the cover (20) with 3 M4x6 screws (19).

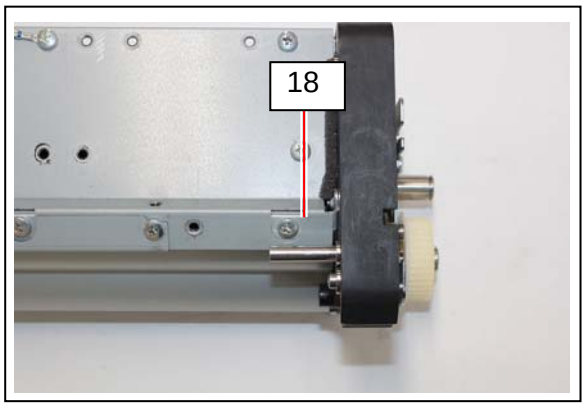


71. Fix the Pins (18) on both sides with the M4x6 screws (17).

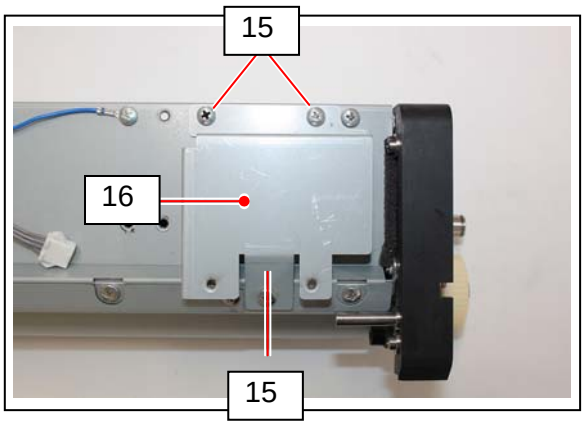




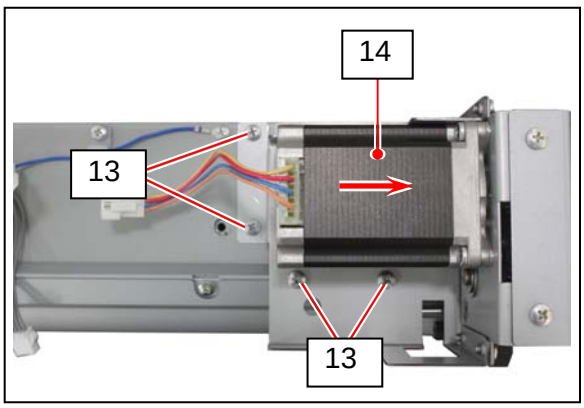


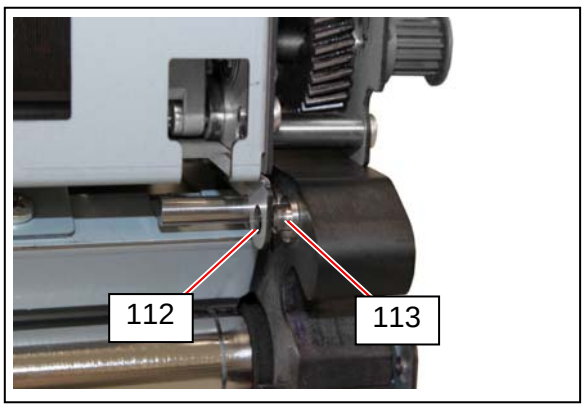


72. Fix the Motor Bracket (16) with 3 M4x6 screws (15).

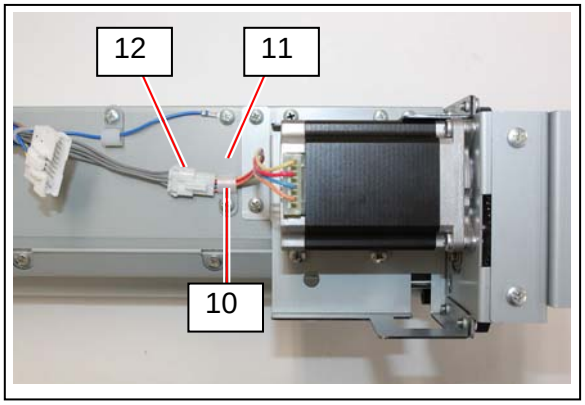


73. Put the Motor (14) back on its original position. At this time fit the pins (113) of developer unknit to the holes (112) of motor bracket. Then fix the motor with 4 M4x6 screws (13).

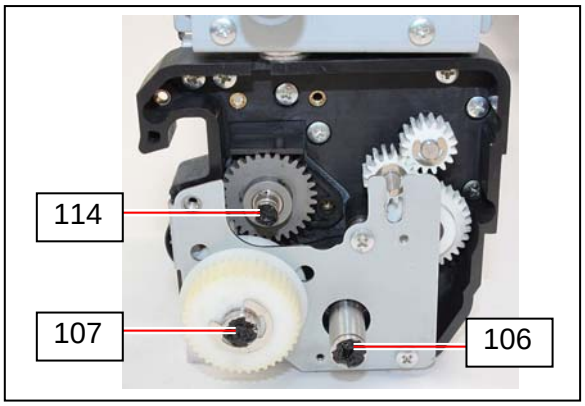




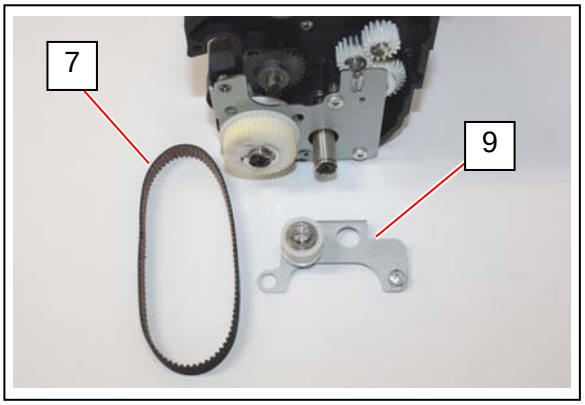
74. Plug in the connector (12). Fix the Wire Clamp (11) by the M4x6 screw (10) with holding the harness.

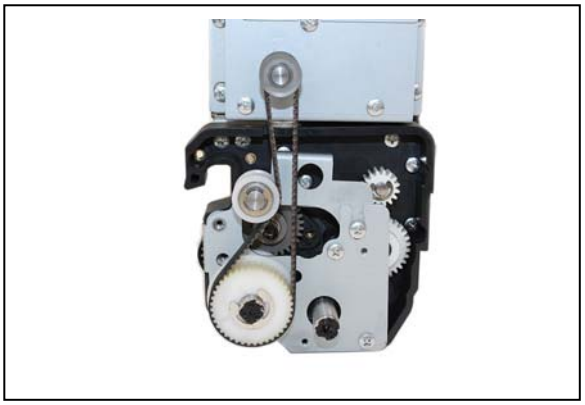


75. Apply electric conductive grease to the side face of each Regulation Roller shaft (114), Developer Roller shaft (107) and Supply Roller shaft (106).

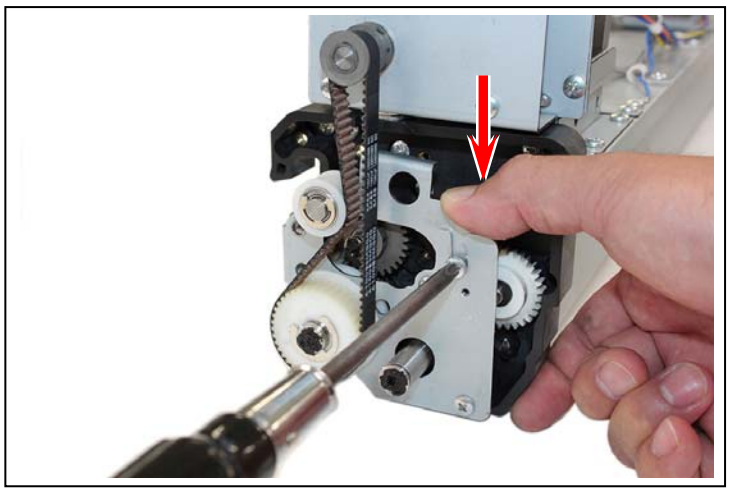


76. Put Timing Belt (7) and Tension Bracket Assy (9) back on their original positions.

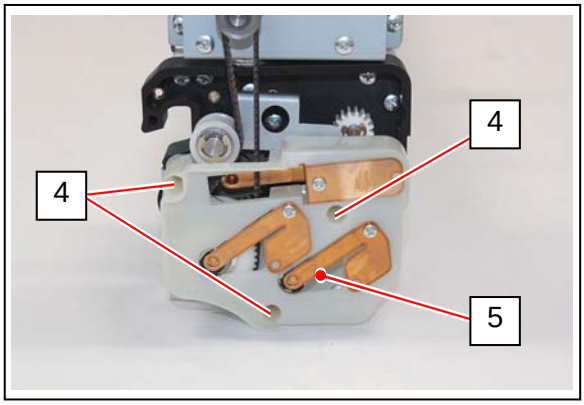




77. Fully press down the Tension Bracket Assy (9) in the direction of arrow to strain the Timing Belt, and tighten the screw.

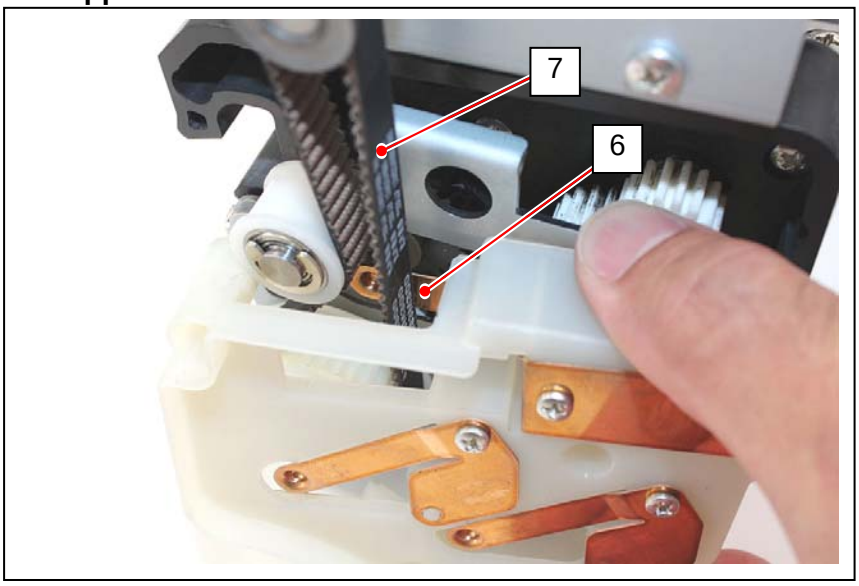


78. Put Copper Plate Holder (5) back on its original position and fix it with 3 M3x8 screws (4).

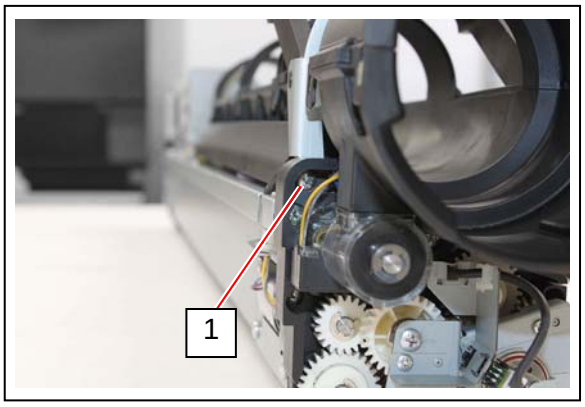


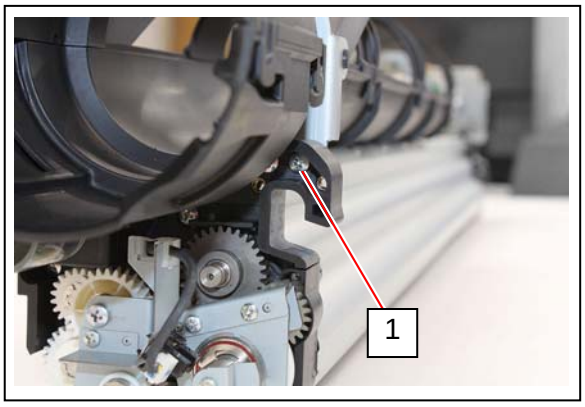
NOTE

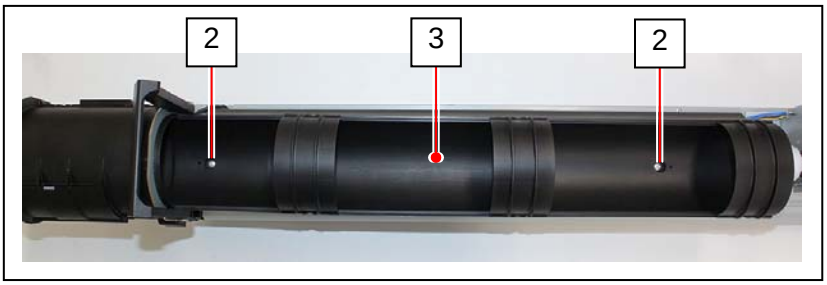
It is difficult to return the Copper Plate Holder (5) as the upper Copper Plate (6) should be placed on the backside of the Timing Belt (7). Carefully return it so as not to bend or deform the upper Copper Plate.



80. Finally put Cartridge Guide (3) back on and fix it with 2 M4x8 screws (1) and 2 (M4x6 screws (2).

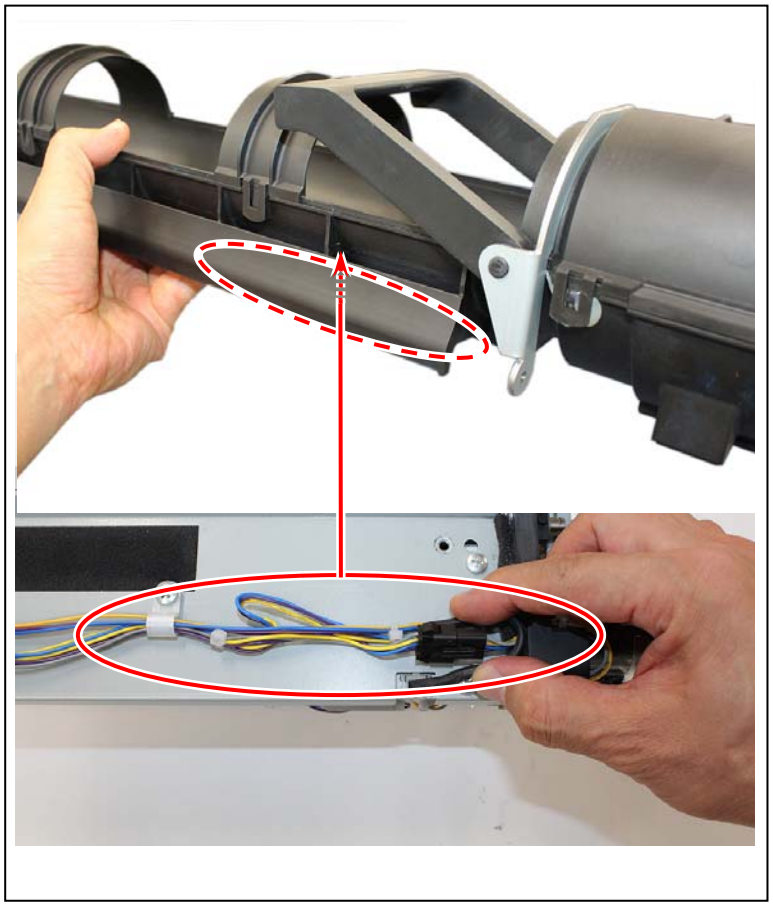






Reference

Place the harness in the space under the Cartridge Guide.



5. 5 Fuser Unit

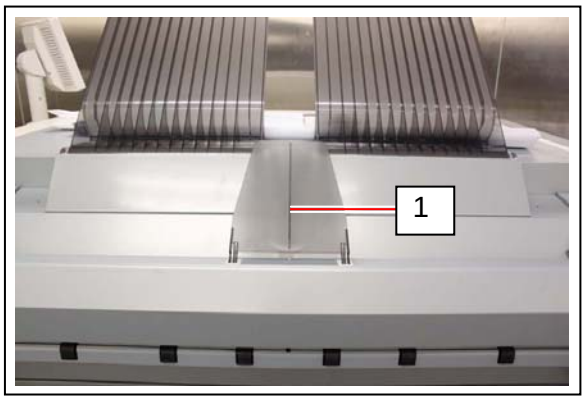
5. 5. 1 Replacement of Periodical Maintenance Part

NOTE

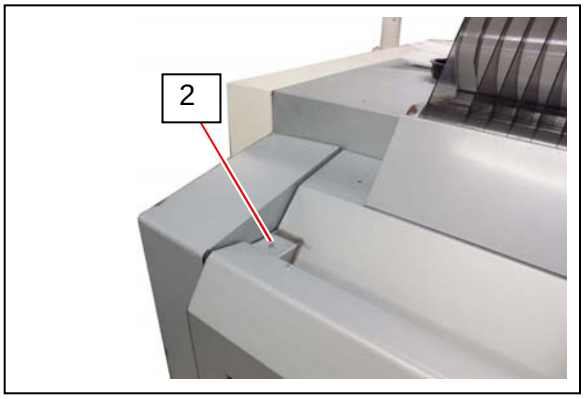
The following parts of Fuser Unit are replaced periodically.

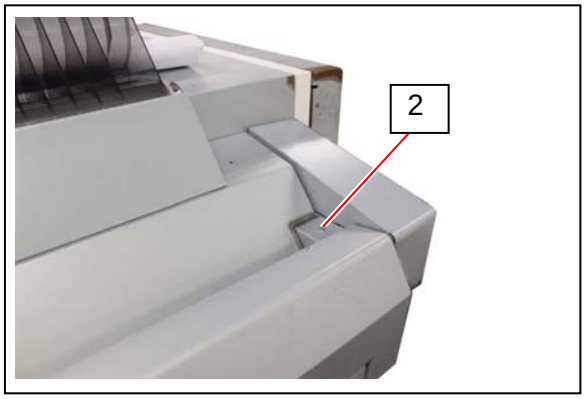
Part name	Quantity	Remarks
HEAT ROLL	1	All these parts are included in "FUSER KIT".
ROLLER PRESSURE	1	
COLLAR (E)	1	
ISOLATE BUSHING	2	

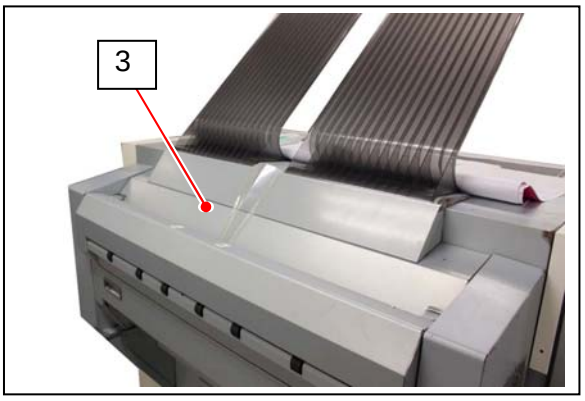
1. Remove Exit Tray 2 (1).



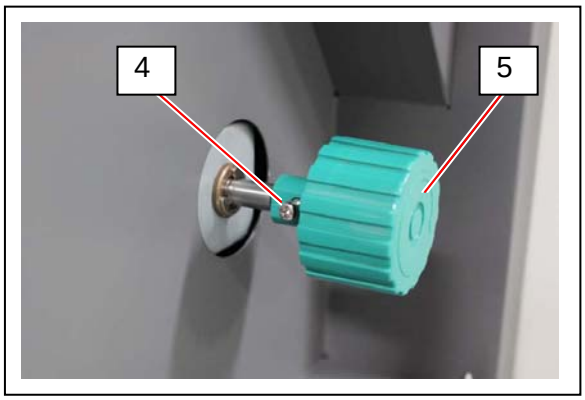
2. Remove 2 M4x6 screws (2) to remove the Upper Cover (3).



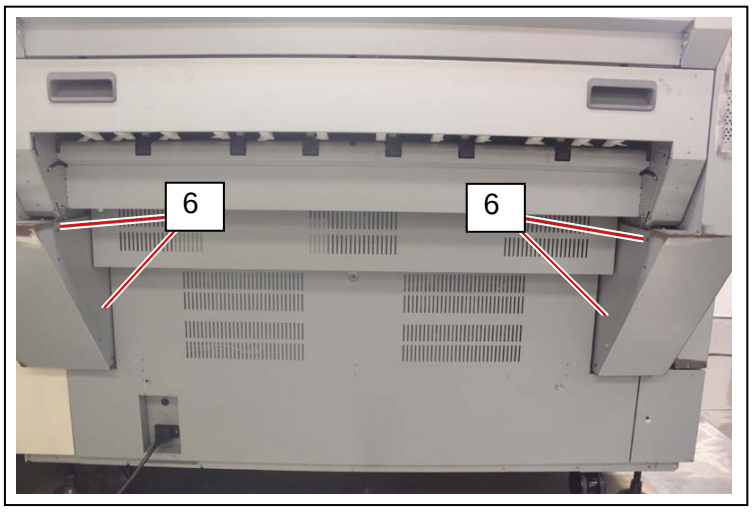


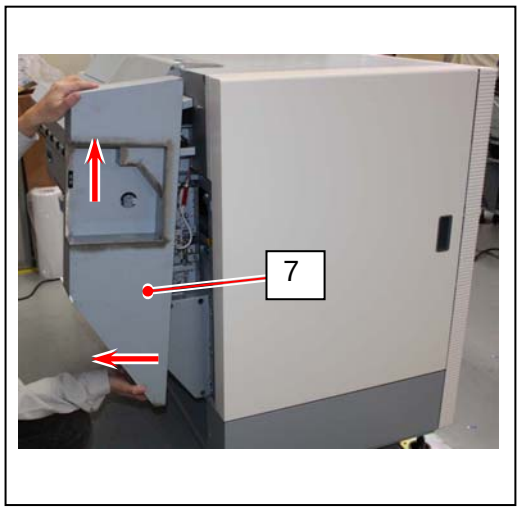


3. Remove a M3x6 screw (4) to remove the Fuser Knob (5).



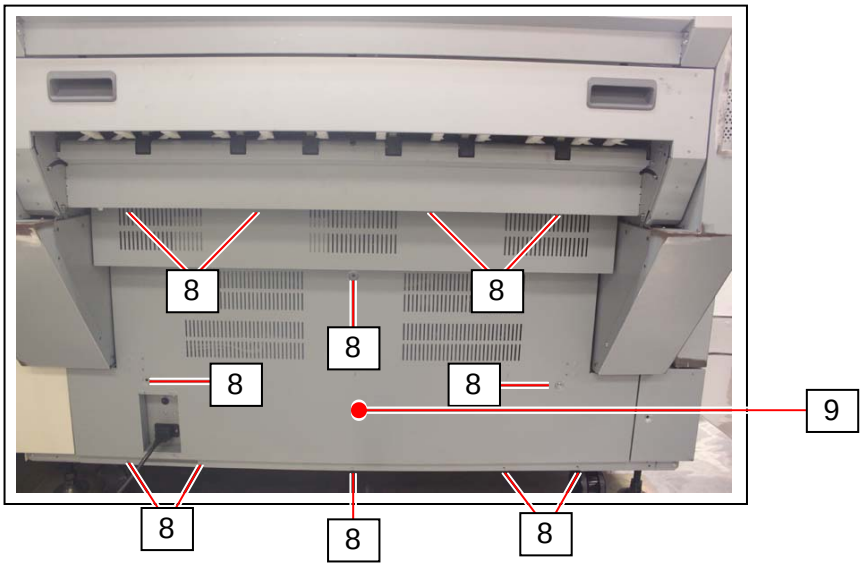
4. Remove 2 each M4x6 screws (6) to remove both left and right Fuser Side Covers (7).



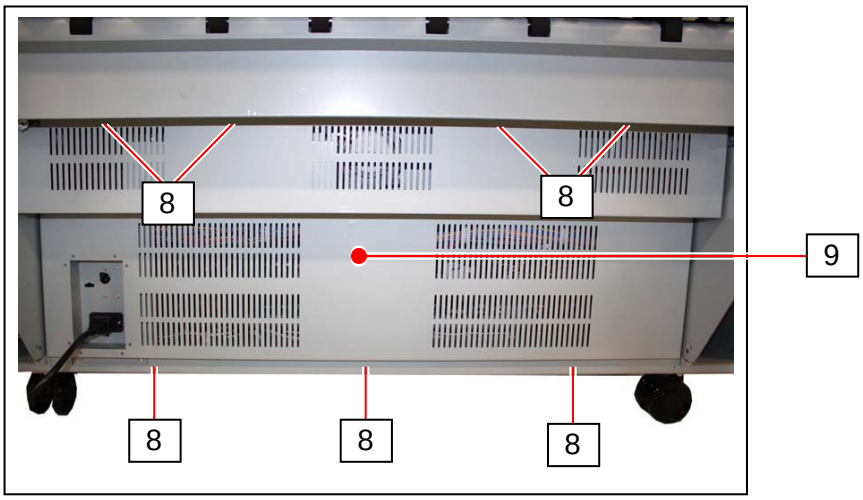


5. In case of 4 rolls model, remove 12 M4x6 screws (8) to remove the Rear Cover (9).
In case of 2 rolls model, remove 7 M4x6 screw (8) to remove the Rear Cover (9).

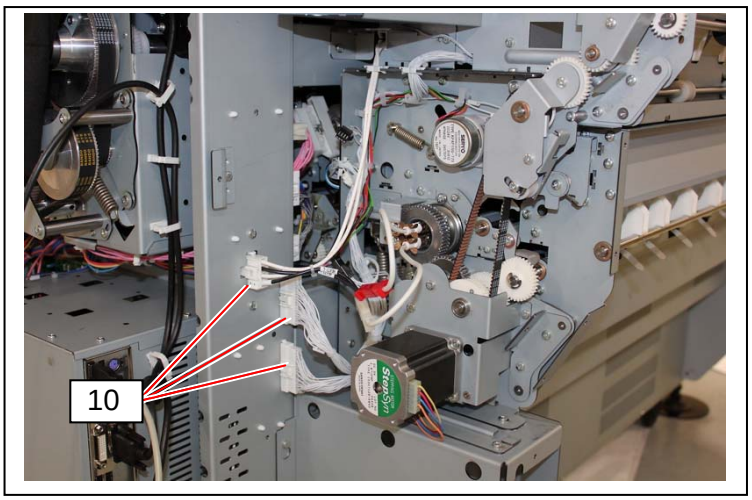
4 rolls



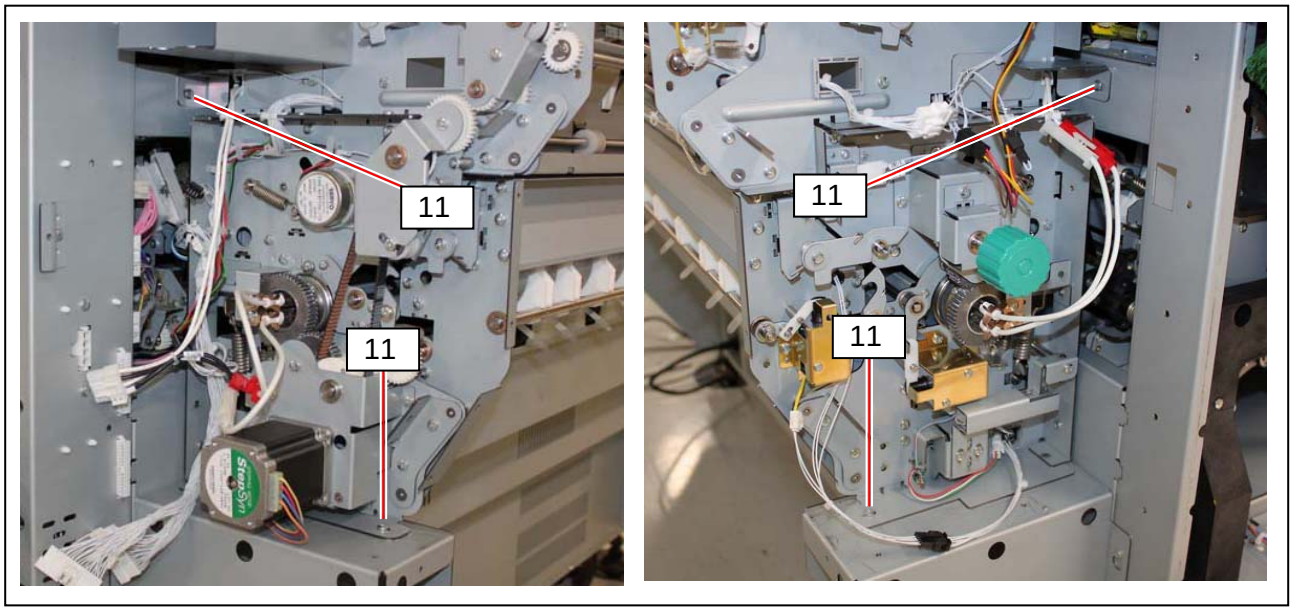
2 rolls



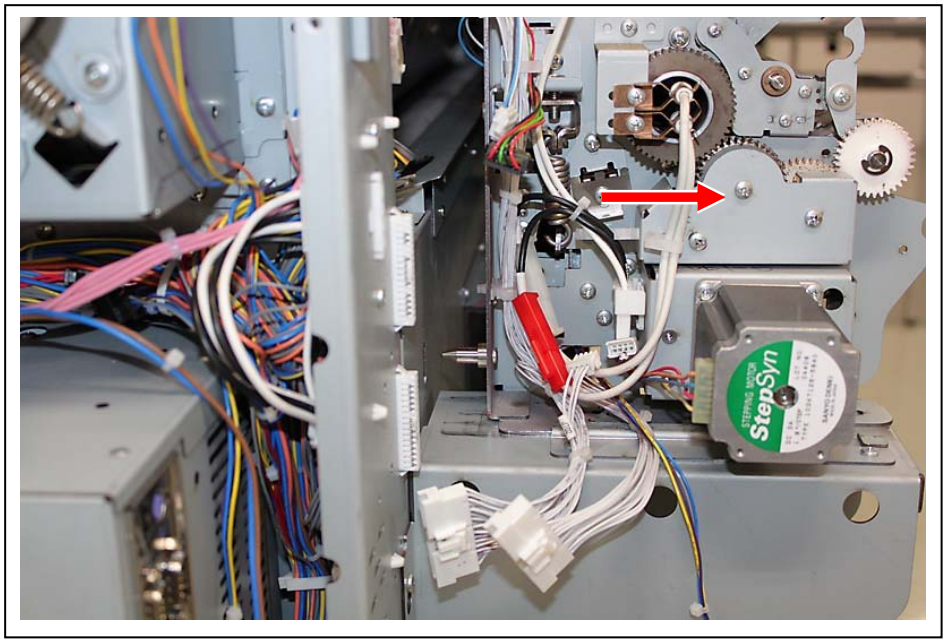
6. Plug out 3 connectors (10).



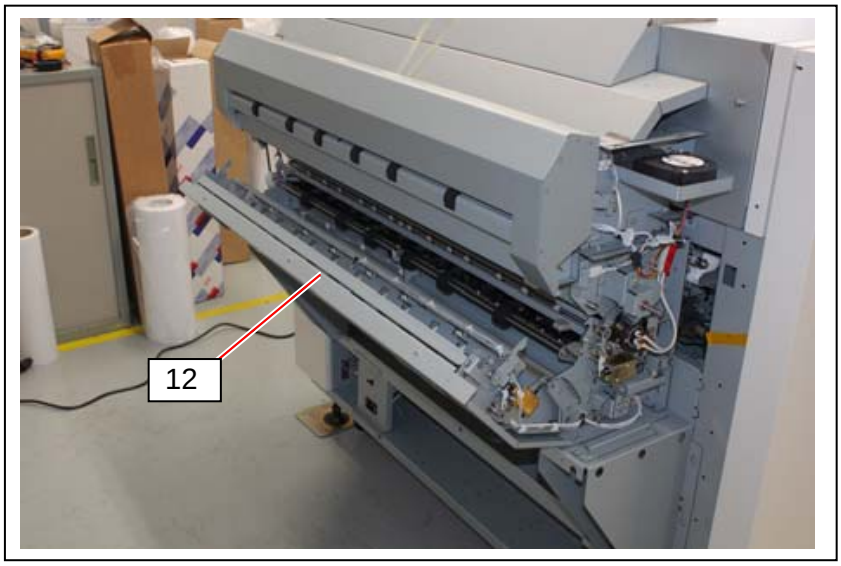
7. Remove 4 M4x6 screws (11) on both sides.

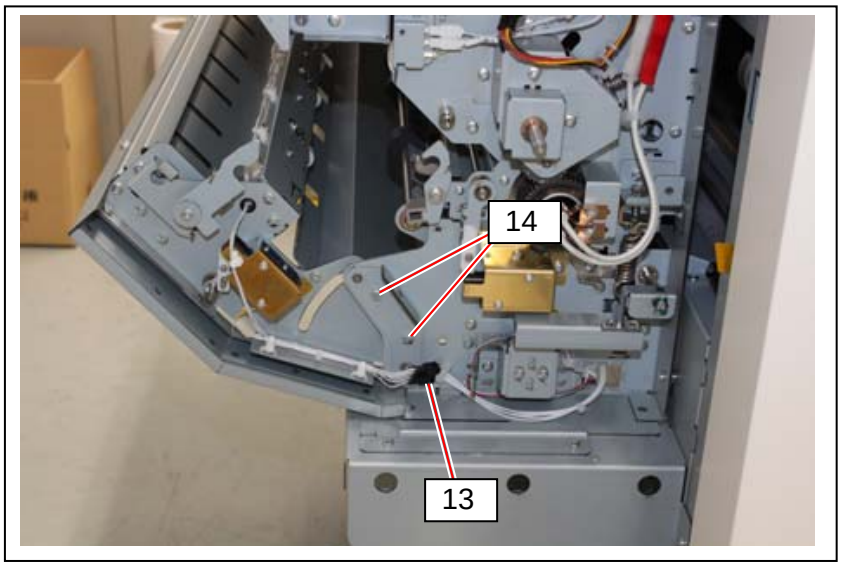


8. Slowly slide the entire Fuser Unit until it is stopped by the stoppers.

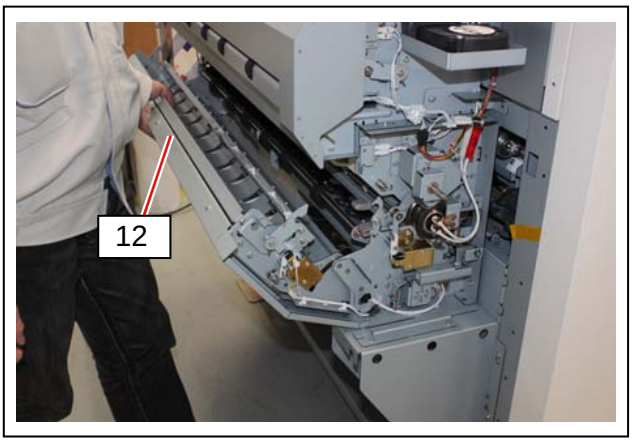


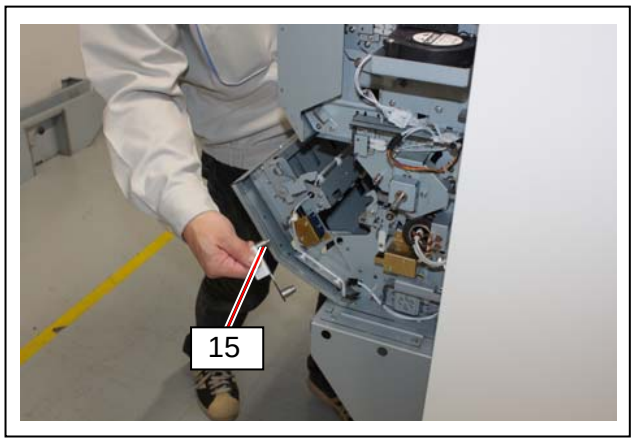
9. Open the Exit Cover (12).
On the left side, plug out a connector (13), and remove 2 M4x6 screws (14) that fix the Hinge Bracket.

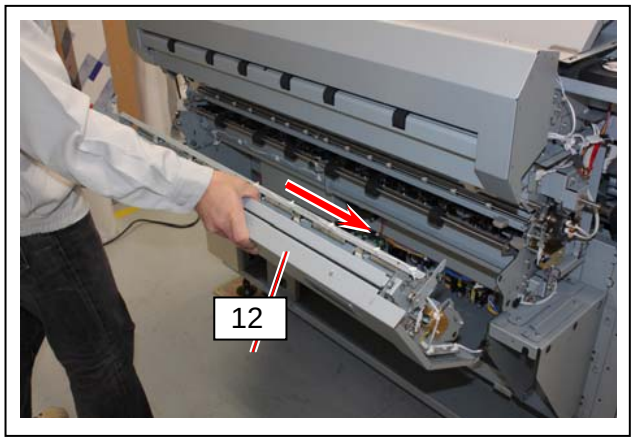




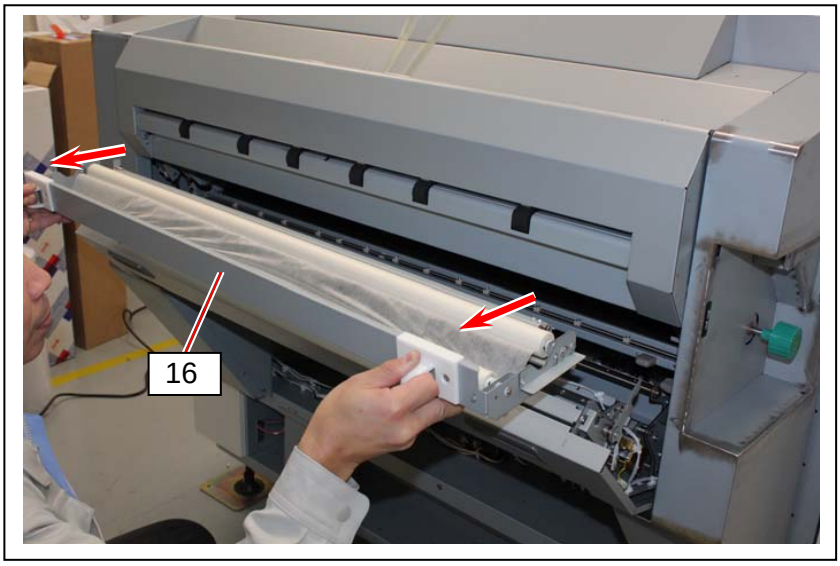
10. Remove the Hinge Bracket (15) with supporting the Exit Cover (12). Then remove the entire Exit Cover by sliding in the direction of arrow.



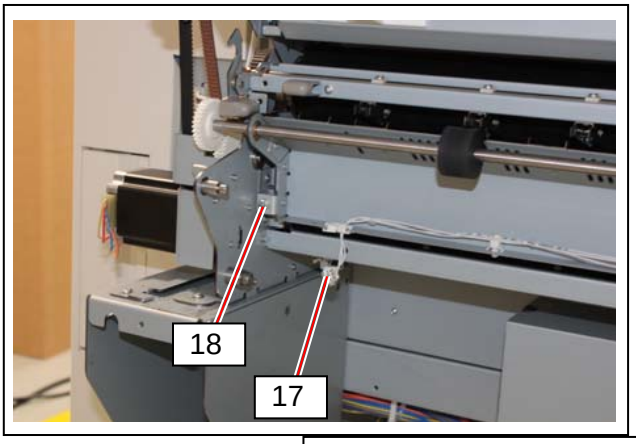


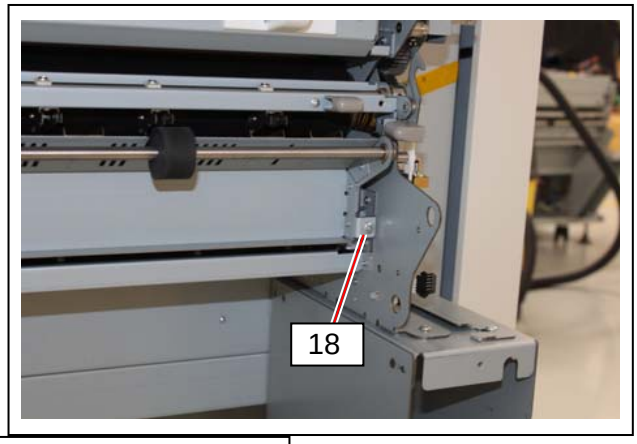


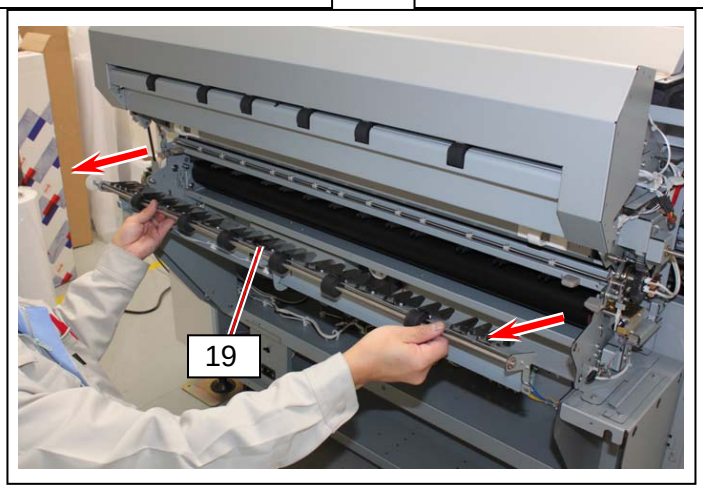
11. Remove the Web Feed Unit (16).



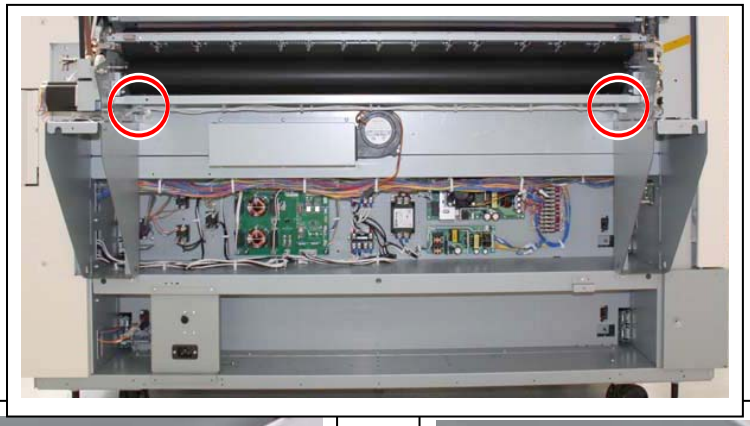
12. Plug out a connector (17). Remove 2 screws (18) on both sides to remove the Exit Transportation Unit (19).

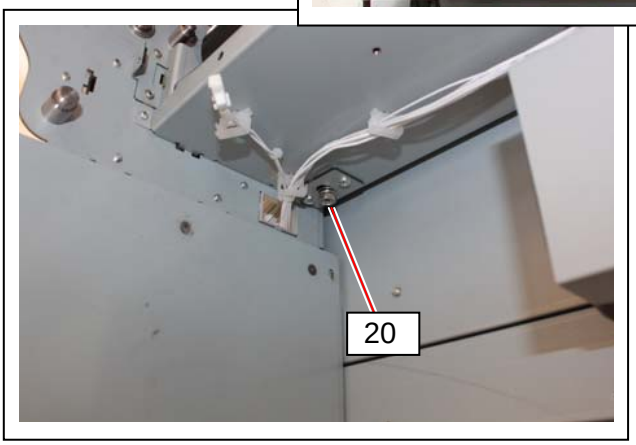


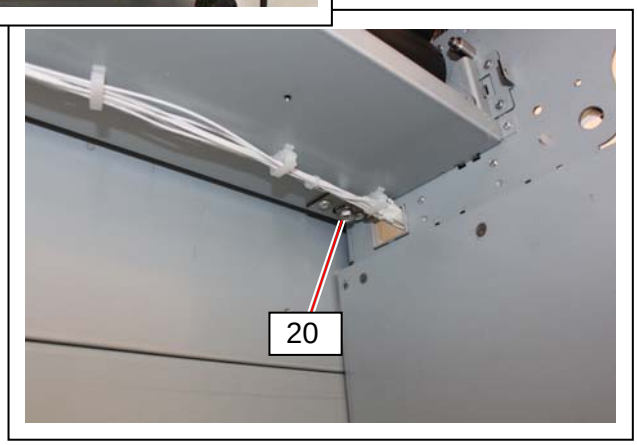




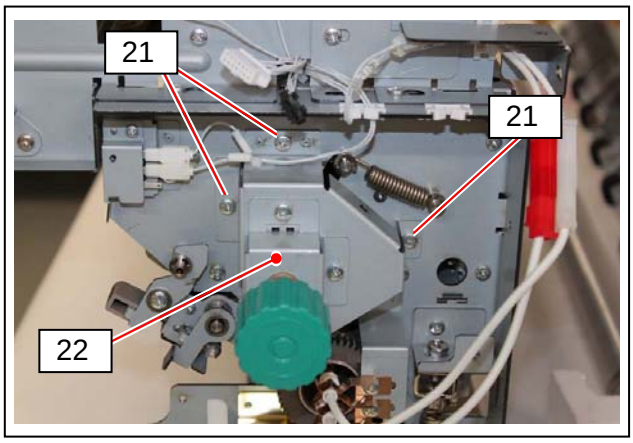
13. There are 2 hexagon bolts (20) on the bottom of Fuser, which were loosened in machine installation. Tighten these bolts to remove fuser tension.

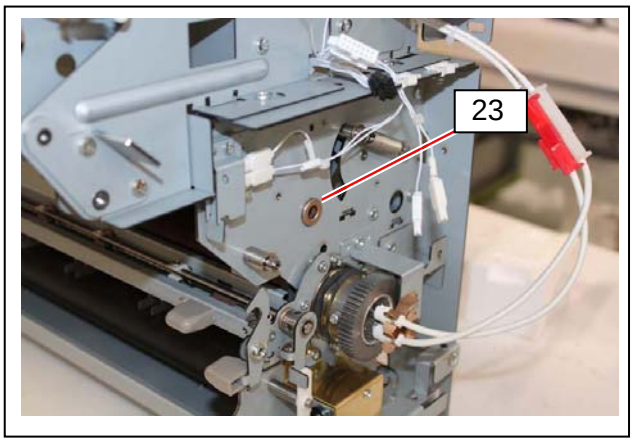




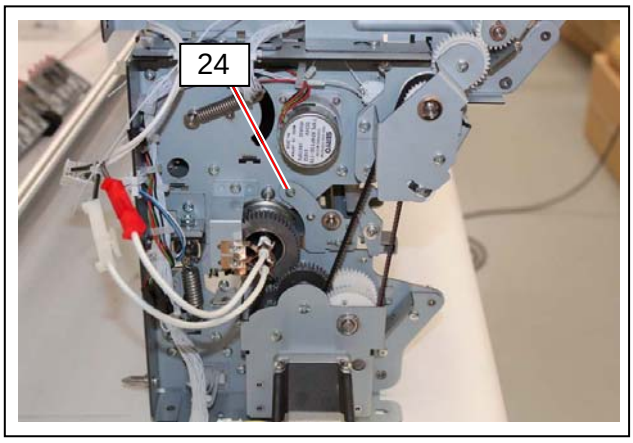


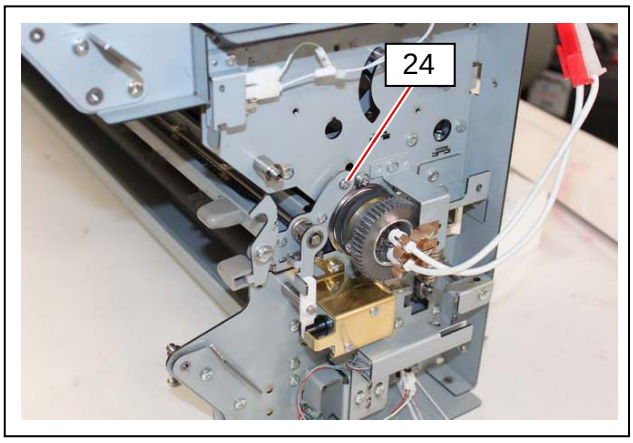
14. Remove 3 M4x6 screws (21) to remove the Fuser Handle Assy (22) and Oilless Bearing (23).

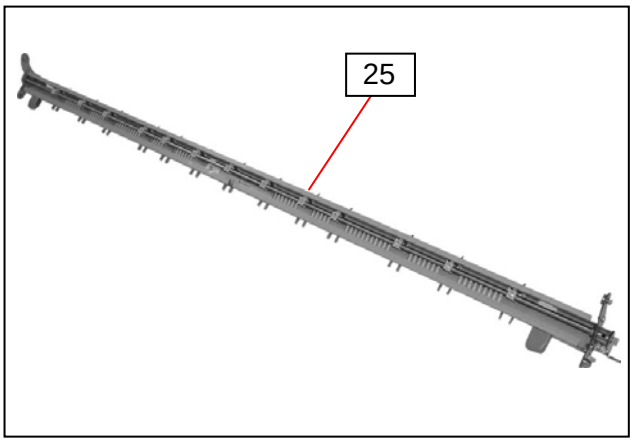




15. Loosen 2 screws (24) on both sides with catching the Stripper Finger Unit (25) so as not to drop it. remove the Stripper Finger Unit (25).

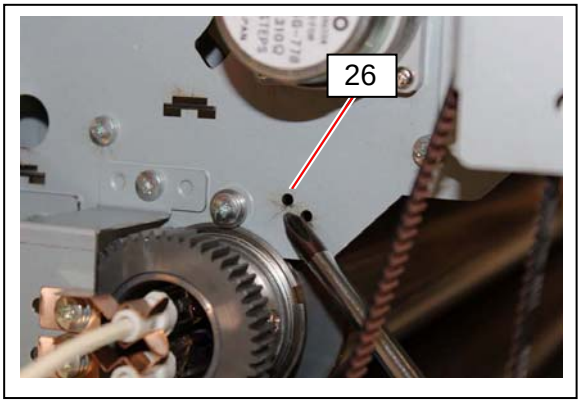




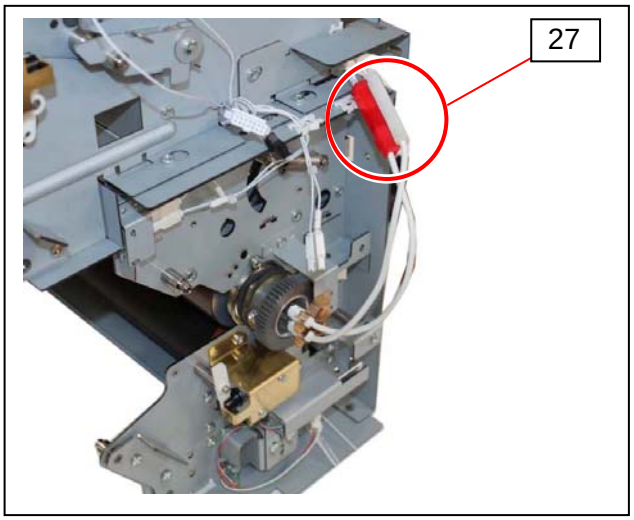


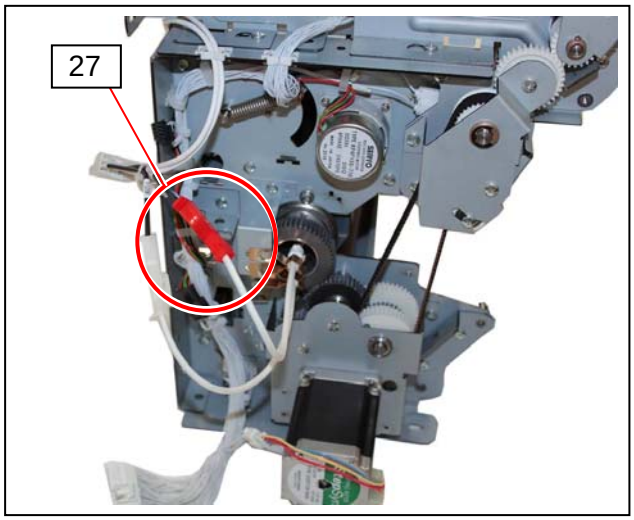
NOTE

When fixing the Stripper Finger Unit (25), put the screws (24) to the upper screw holes (26). (Do not use the lower screw hole.)

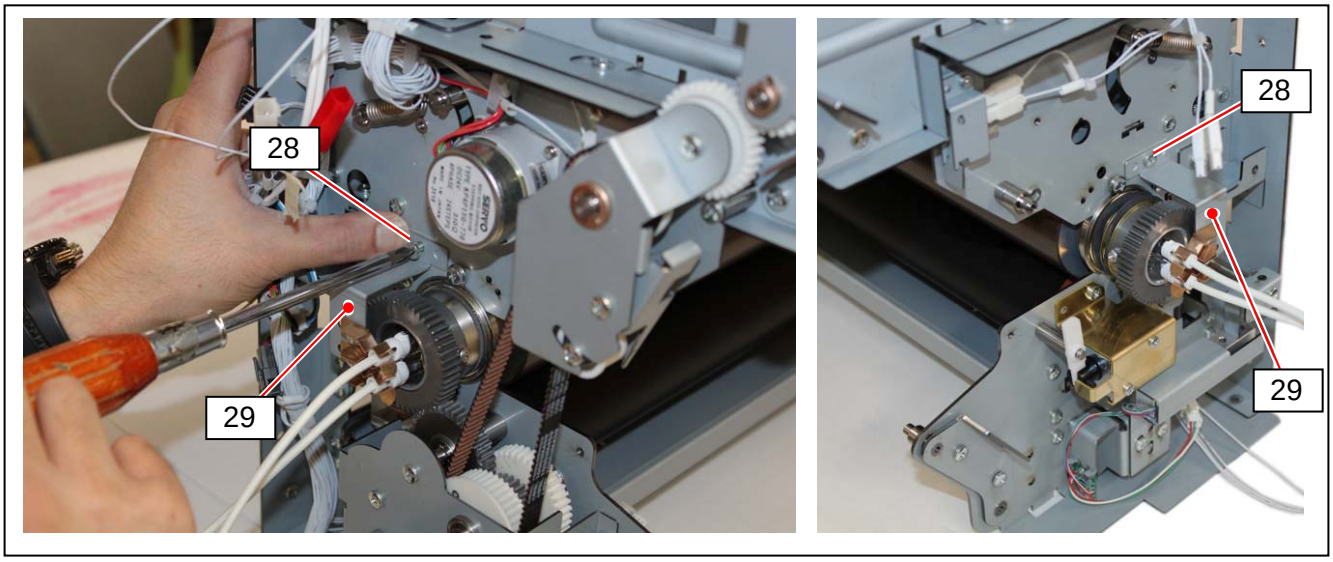


16. Plug out red and white connectors (27) of the IR Lamps.

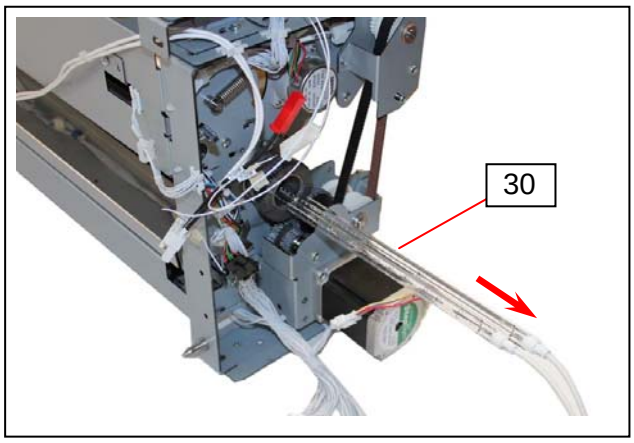




17. Remove 1 each M4x6 screw (28) on both sides to remove each IR Lamp Bracket (29).



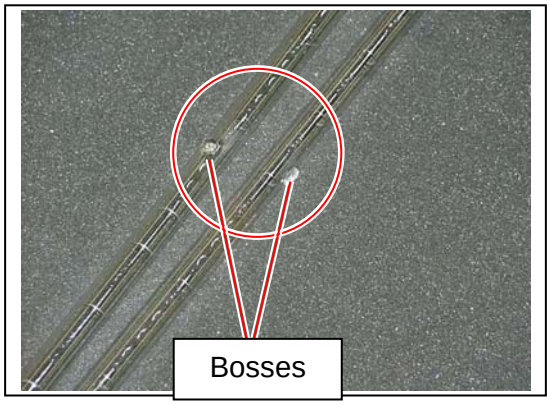
18.Remove the IR Lamps (30).

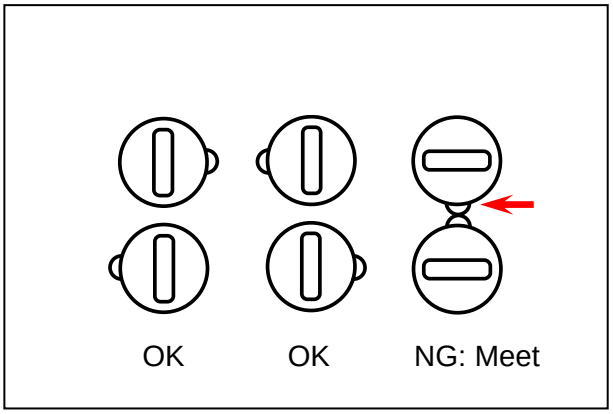


NOTE

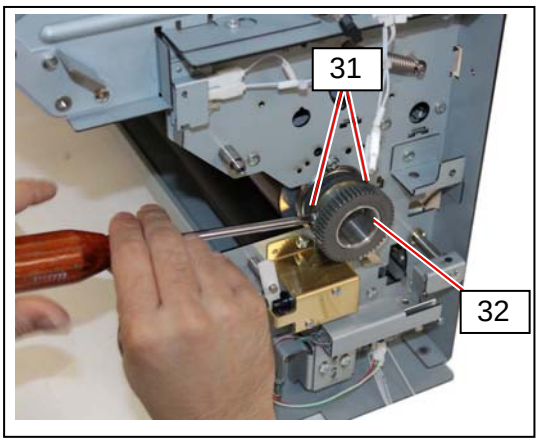
1. Do not touch any glass surface of IR Lamp with bare hand.

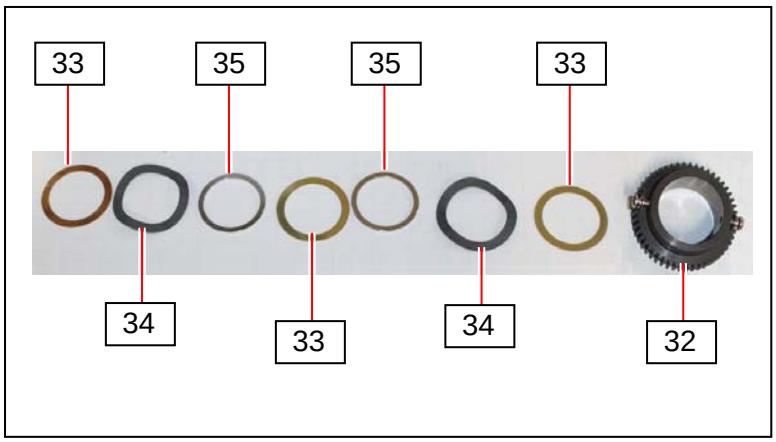
2. There is a boss on center of the IR Lamp. When installing the IR Lamps adjust the angle of lamps so that bosses of 2 lamps should not meet with each other. If they meet with each other the lamps may break during use.



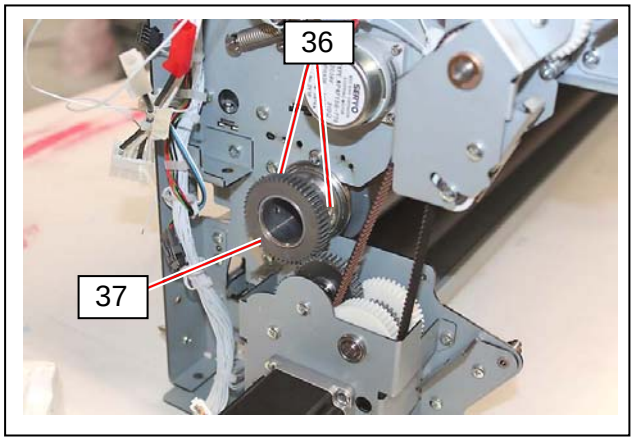


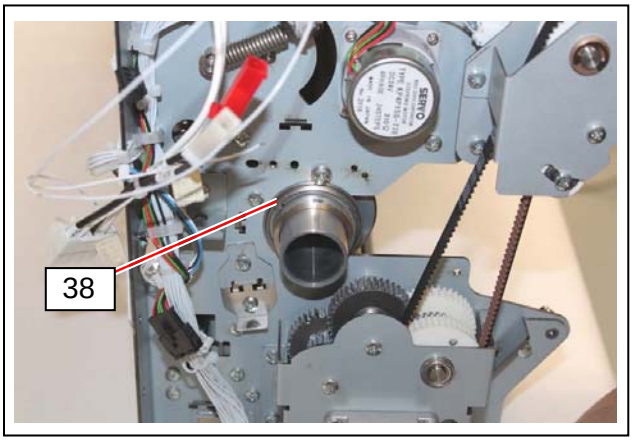
19. On the driven side, remove 2 M4x6 pan head screws (31) to remove the 50T Gear (32). Then remove 3 Spacers (33), 2 Wave Washers (34), and Collar (35) from the shaft of Fuser Roller.



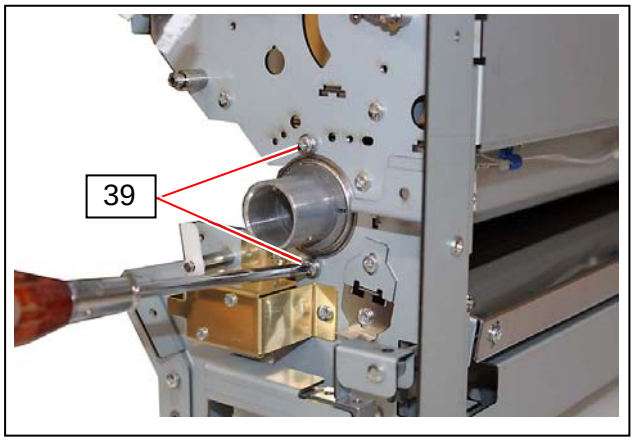


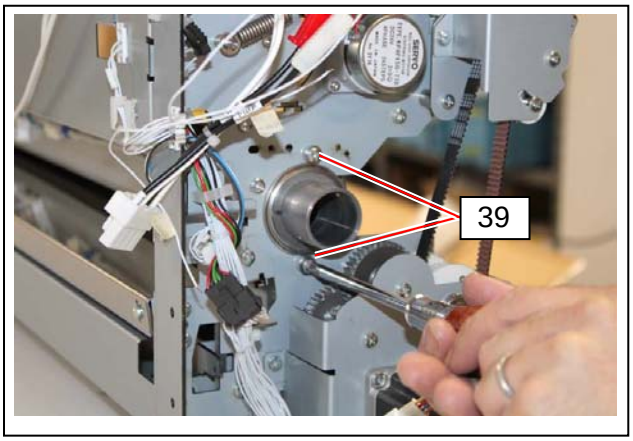
20. On the driving side, remove 2 M4x6 pan head screws (36) to remove the 50T Gear (37) and Collar (38).

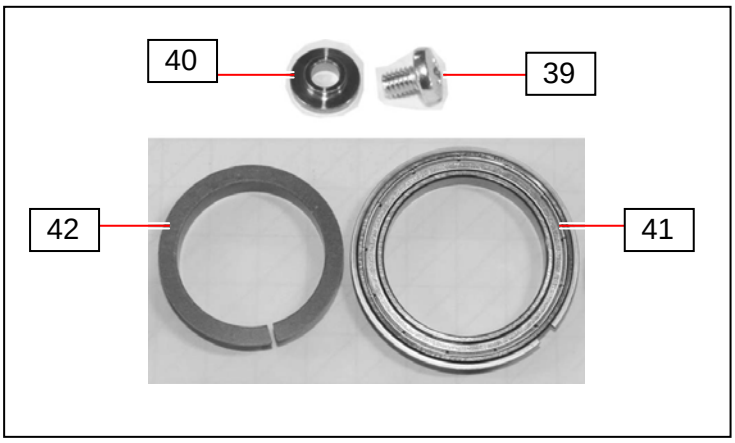




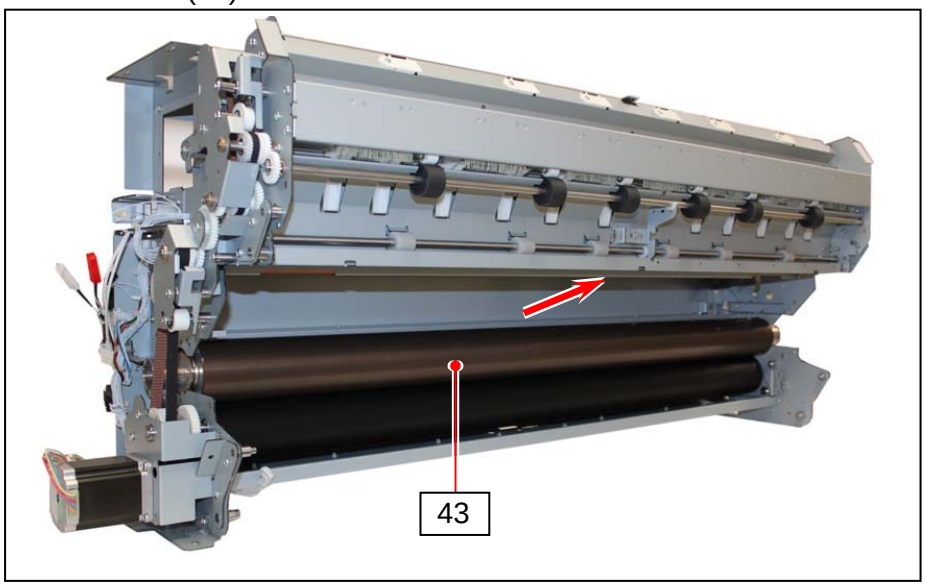
21. On each side, remove 2 screws (39) to remove Collar (40), Ball Bearing (41) and Isolate Bushing (42). Replace Isolate Bushings (42) with the new ones.



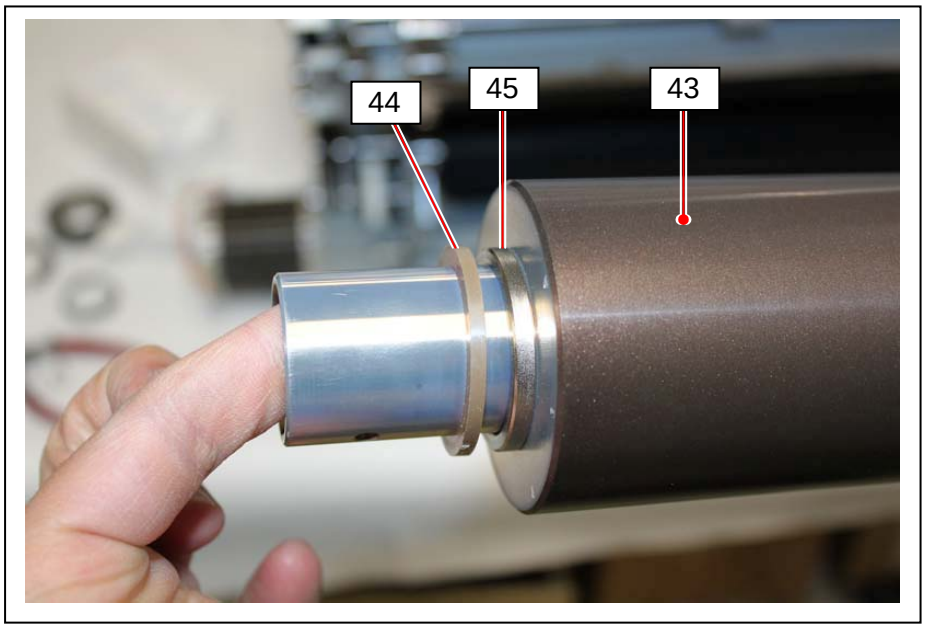




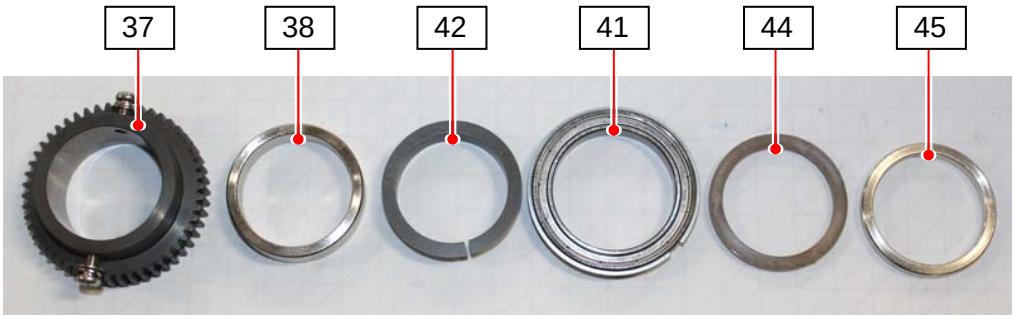
22. Remove the Fuser Roller (43).



23. There are Collar E (44) and Collar 4 (45) on one shaft of old Fuser Roller (43). Remove both of them. Then prepare new Fuser Roller and put the new Collar E (44) and original Collar 4 (45) back to the original positions on the shaft.



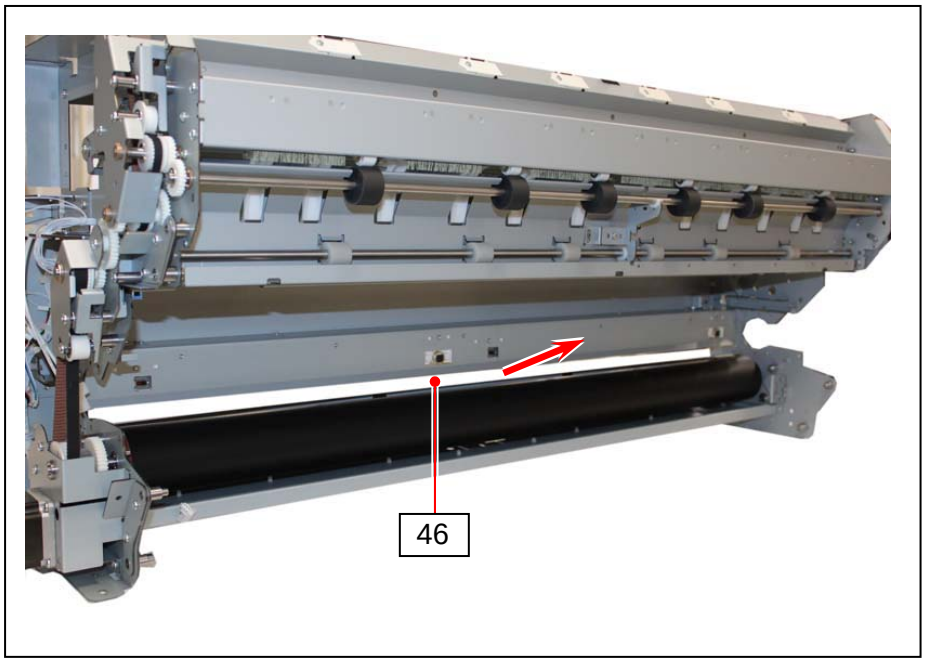
The followings are the parts used on the driving side.



NOTE

It does not matter to install the new Fuser Roller by ay orientation. However, the side you put the Collar E (44) and Collar 4 (45) must be on driving side.

24. Remove the Pressure Roller (46).



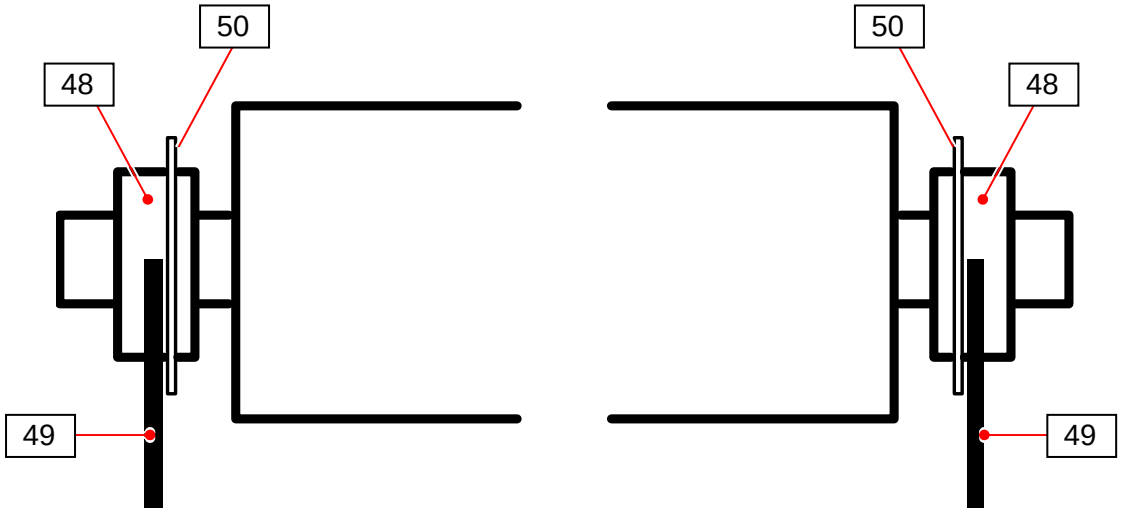
25. Remove C Rings (47) and Bearings (48) from both sides, and replace the Pressure Roller with the new one. (Use these original C Rings (47) and Bearings (48) for the new roller).

NOTE

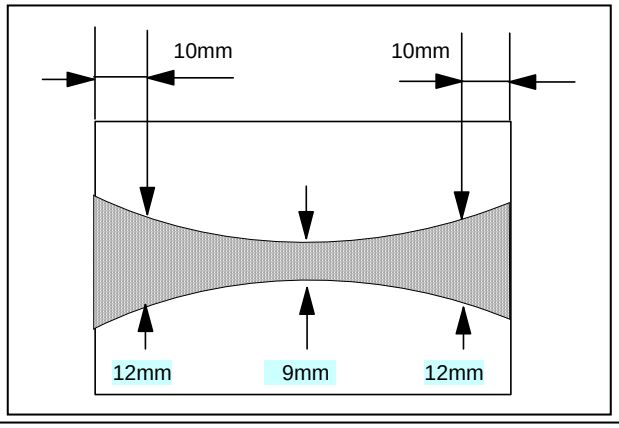
1. Do not touch the roller surface of Pressure Roller by bear hand.

2. It is possible to install the Pressure Roller by any orientation.

3. When returning the Pressure Roller, be sure that the Bearings (48) on both side of the roller are correctly placed on the bearing holders (49) with the rim (50) of the Bearing are placed inside of Bearing Holders (49)

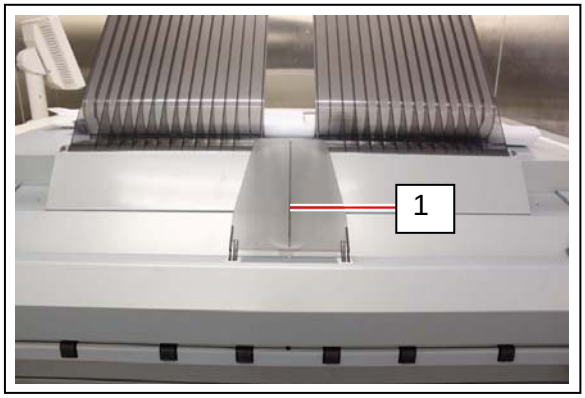


4. Adjust the fuser pressure by achieving the requested widths of "nip" as shown.

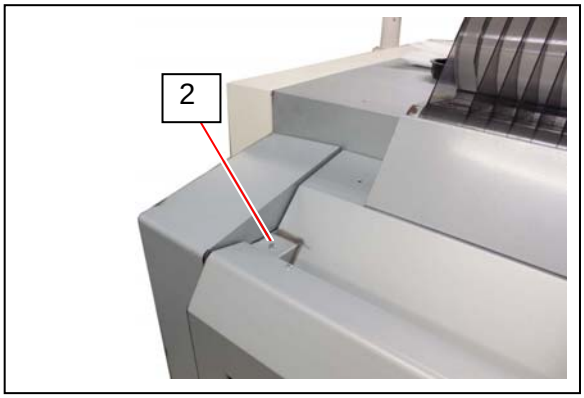


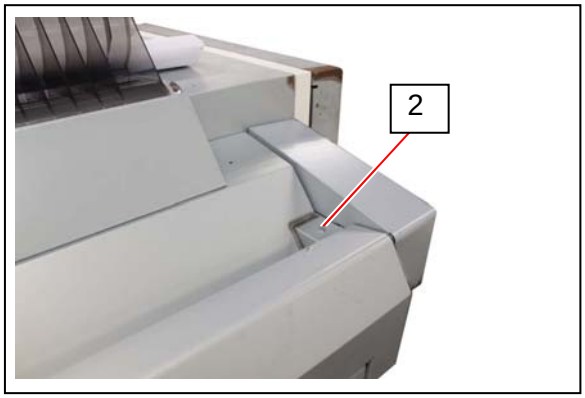
5. 5. 2 Removal of the Fuser Unit

1. Remove Exit Tray 2 (1).

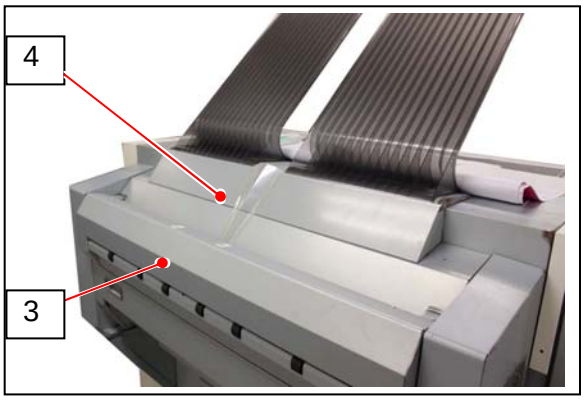


2. Remove 2 M4x6 screws (2).

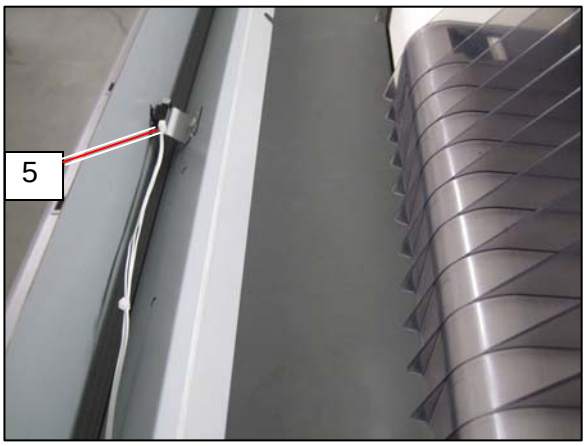




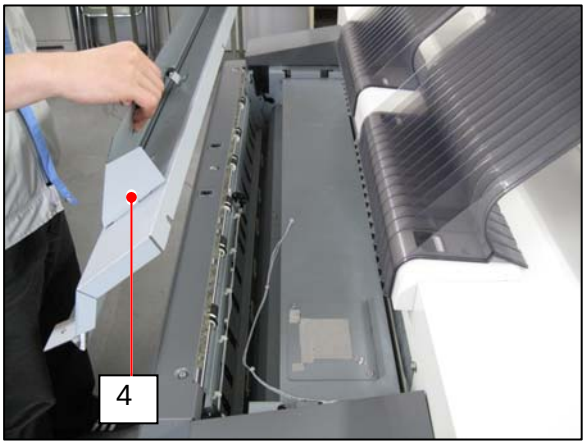
3. Open the Upper Exit Unit (3), and raise one side of Upper Cover (4) as the arrow mark..



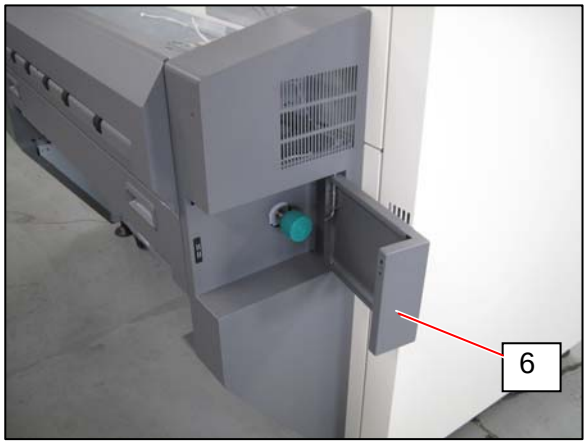
4. Plug out the connector (5).

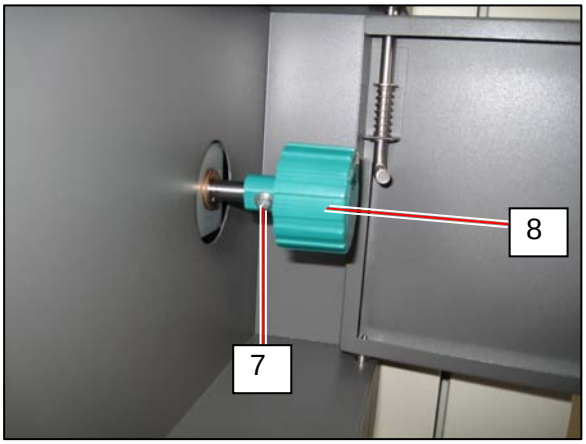


5. Remove the Upper Cover (4).

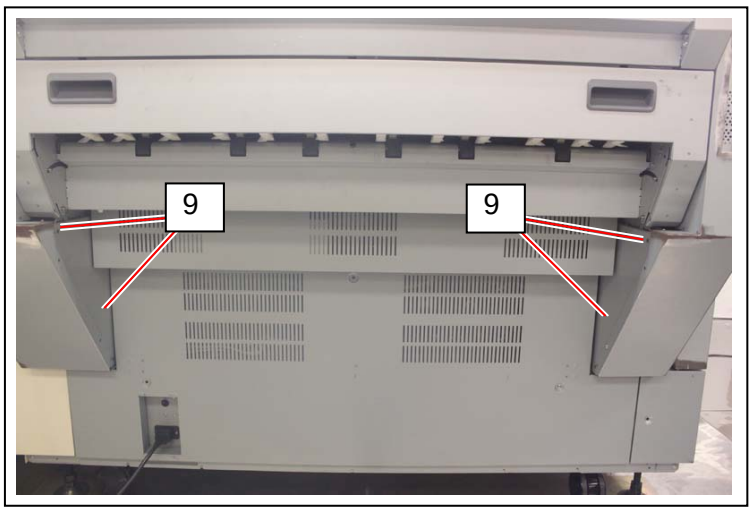


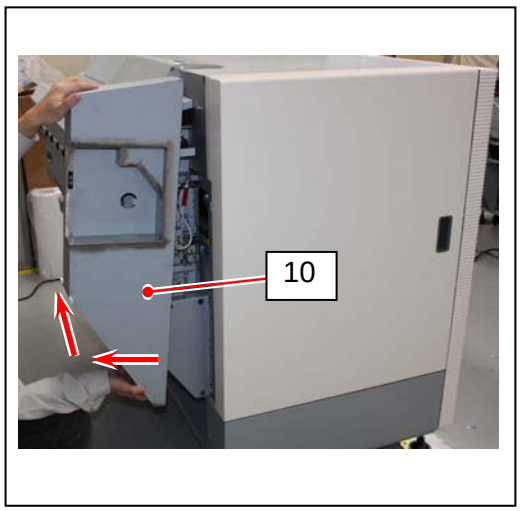
6. Open the hatch (6) on the right. Remove a M3x6 screw (7) to remove the Fuser Knob (8).





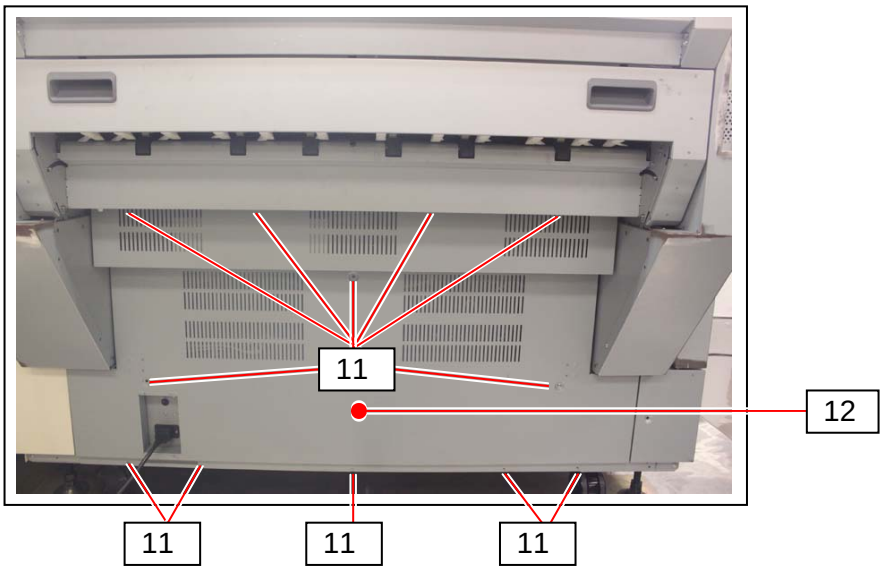
7. Remove 2 each M4x6 screws (9). Pull the bottom part of each left and right Fuser Side Covers (10) first and then bring it up for removal.



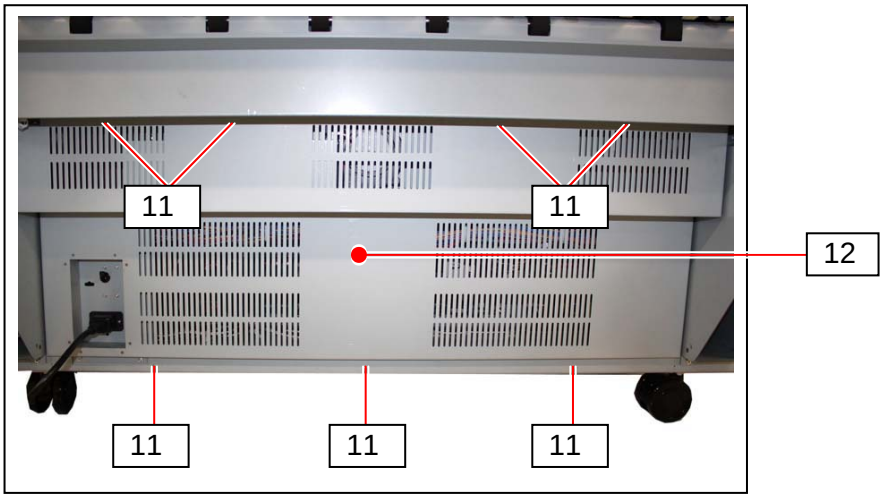


8. In case of 4 rolls model, remove 12 M4x6 screws (11) and then remove the Rear Cover (12).
In case of 2 rolls model, remove 7 M4x6 screws (11) and then remove the Rear Cover (12).

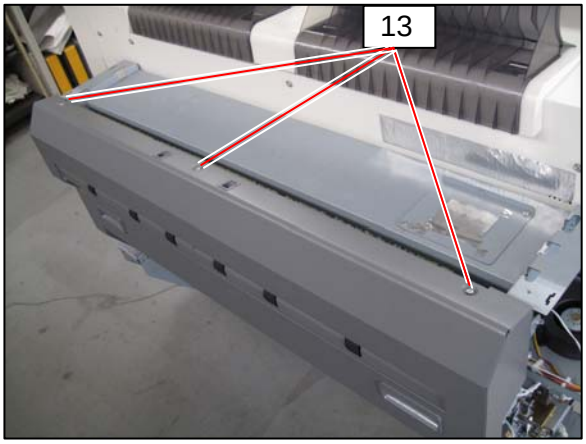
4 rolls machine

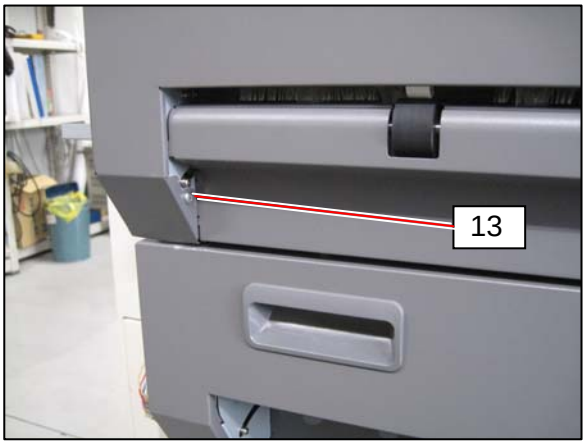


2 rolls machine

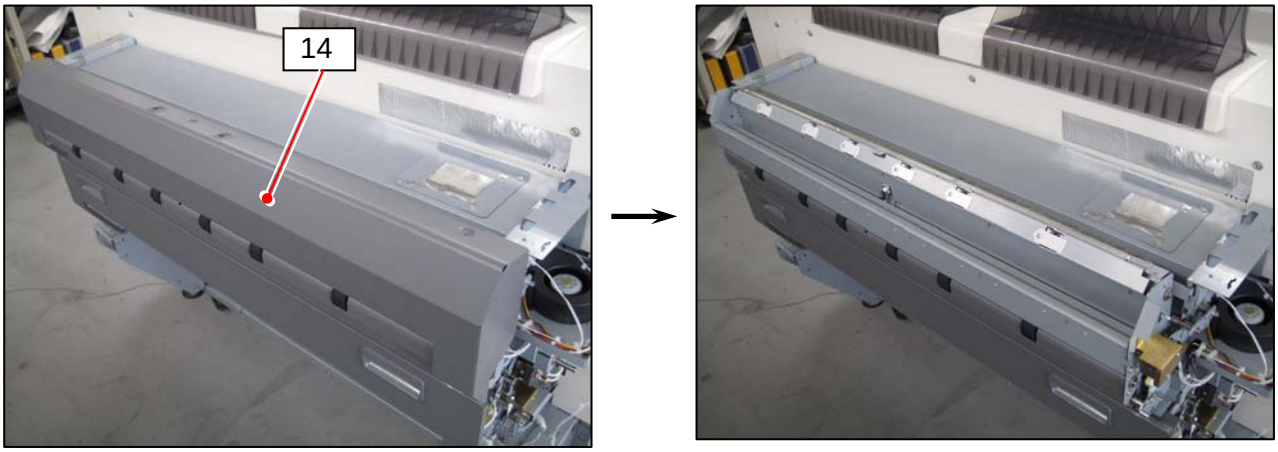


9. Remove 5 screws (13).



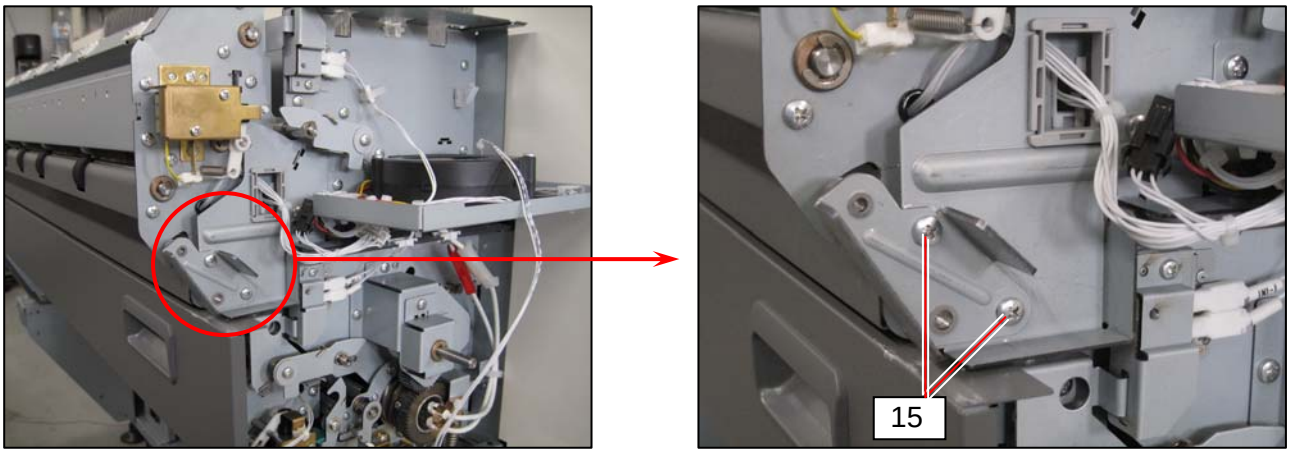


10. Remove the Cover (14) of Upper Exit Unit.

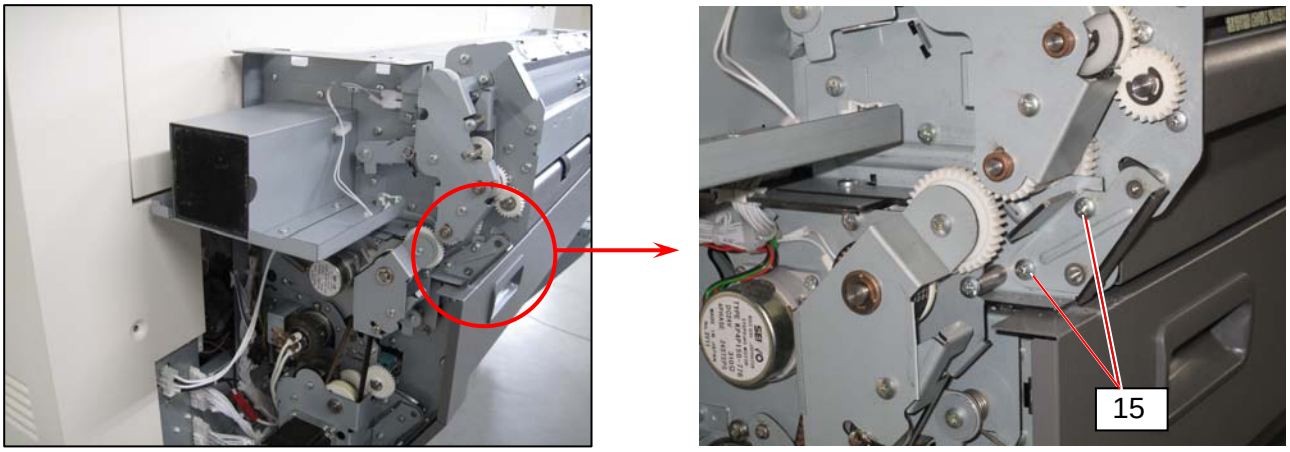


11. Remove 2 each screws (15) to remove the Upper Shaft Assys (16).

(Left side)

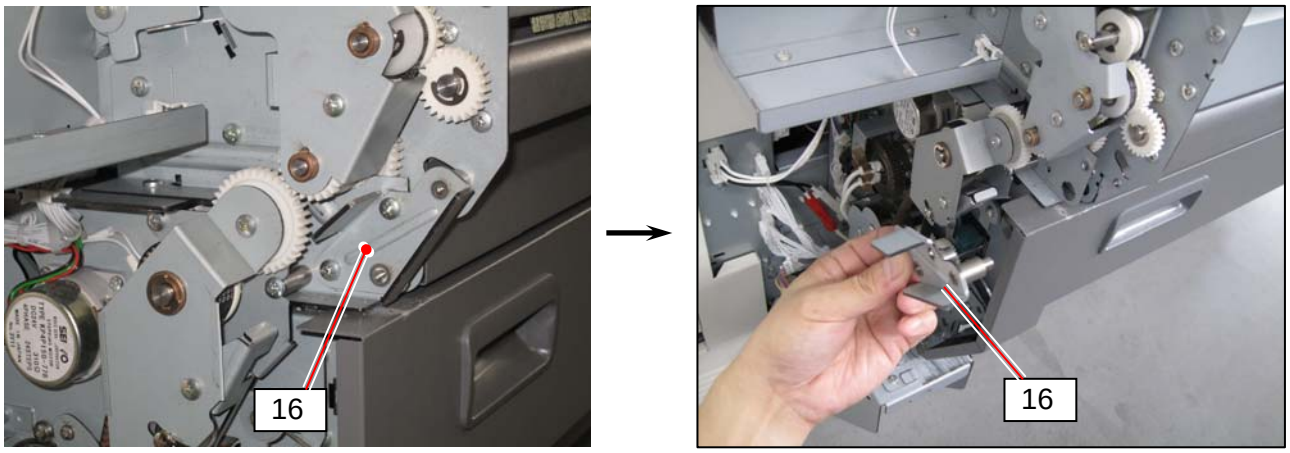


(Right side)

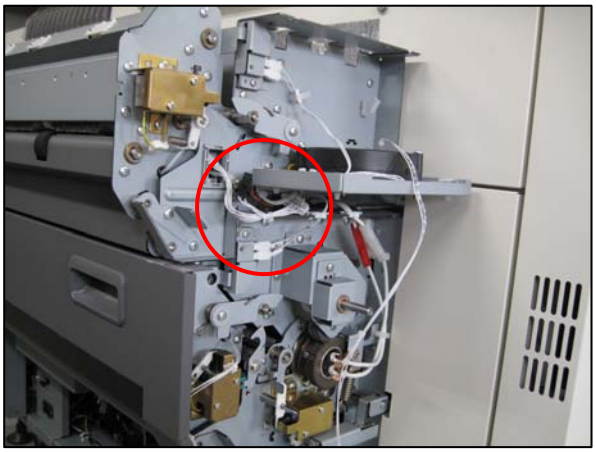


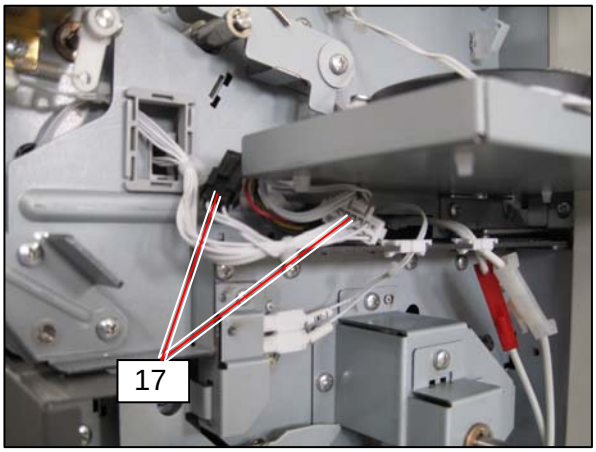
12. With supporting the Upper Exit Unit by hand so that it should not drop, remove the Shaft Assys (16) on both sides.

(Right side)

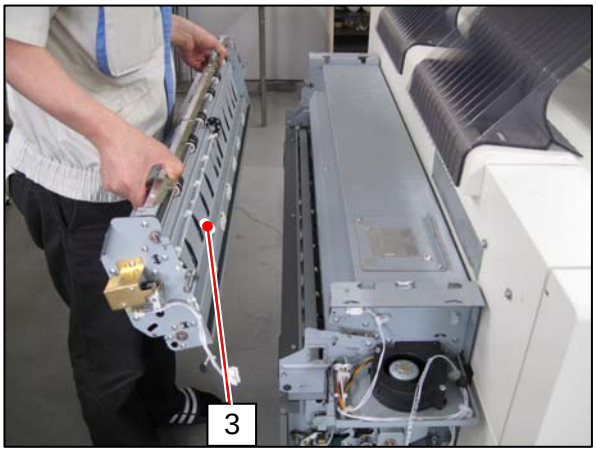


13. Plug out 2 connectors (17))

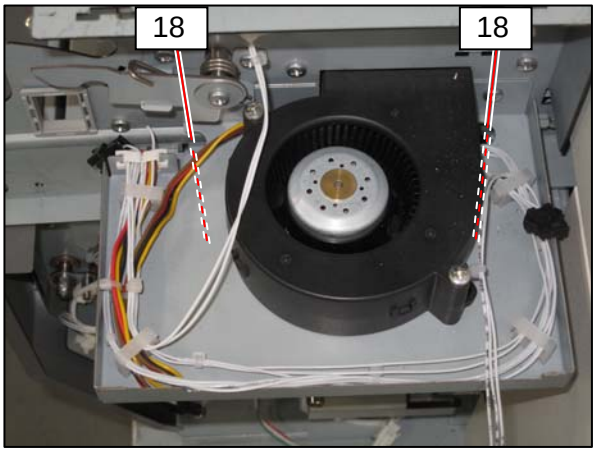




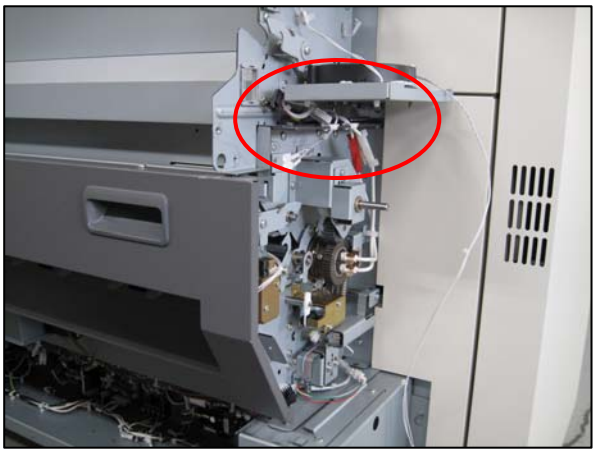
14. Remove the Upper Exit Unit (3).

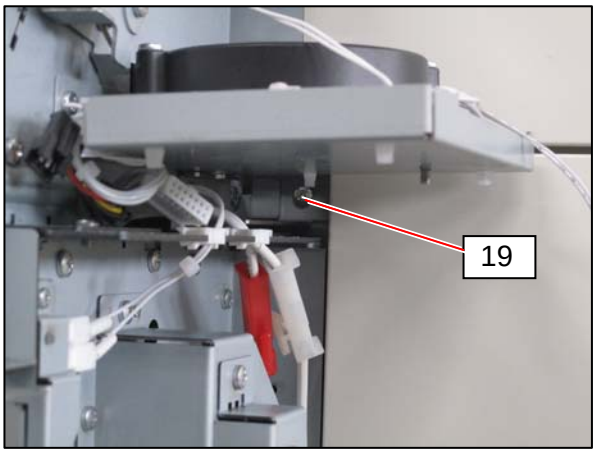


15. Remove 2 screws (18) on the left with inserting a long screw driver.

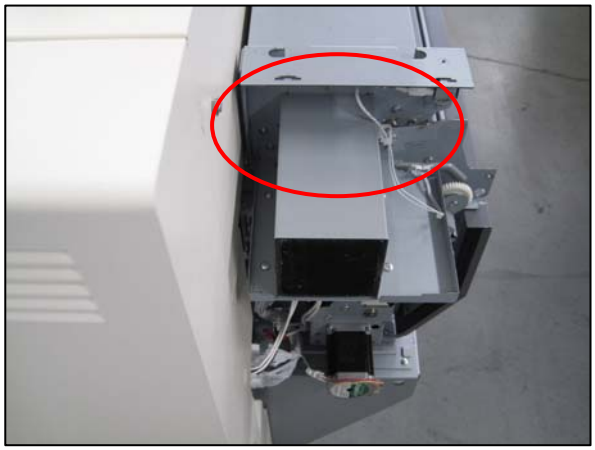


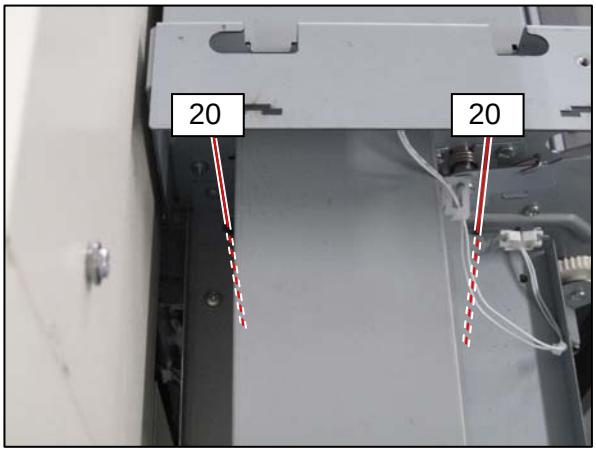
16. Remove 1 screw (19) on the left.



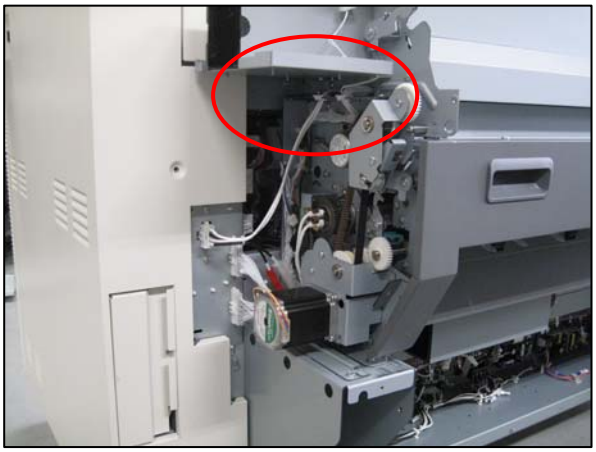


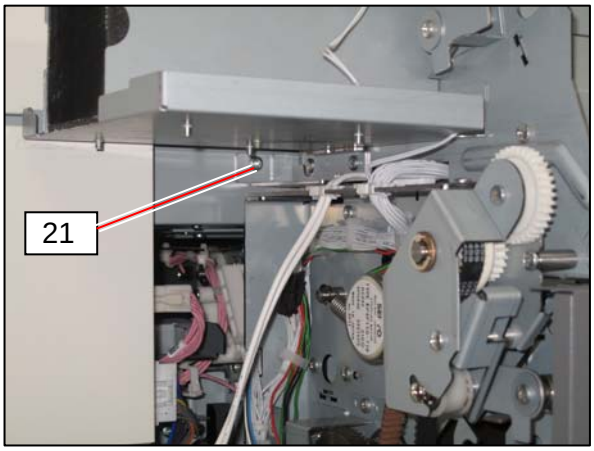
17. Remove 2 screws (20) on the right with inserting a long screw driver.



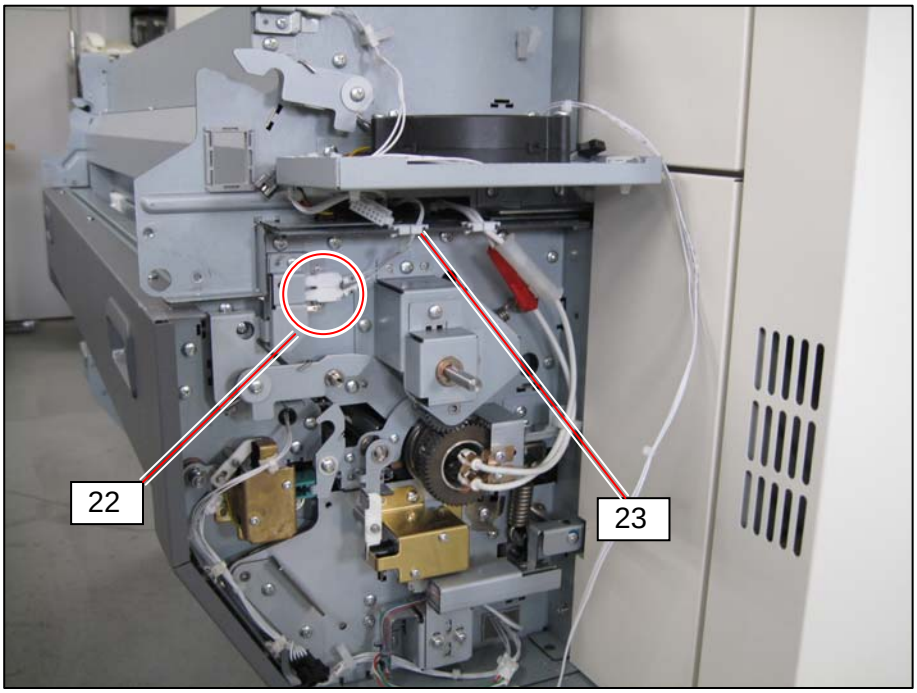


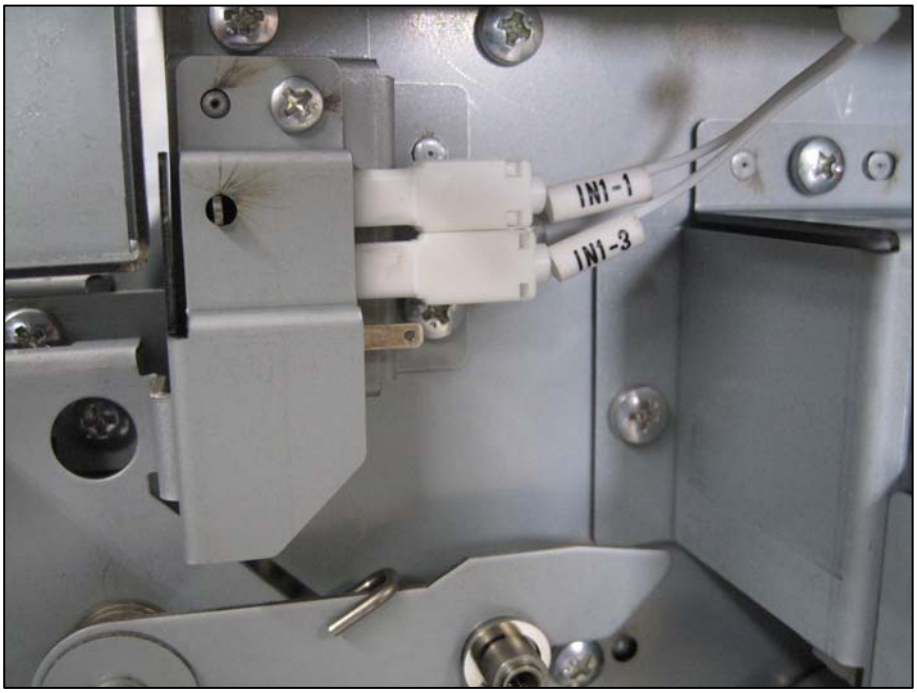
18. Remove 1 screw (21) on the right.



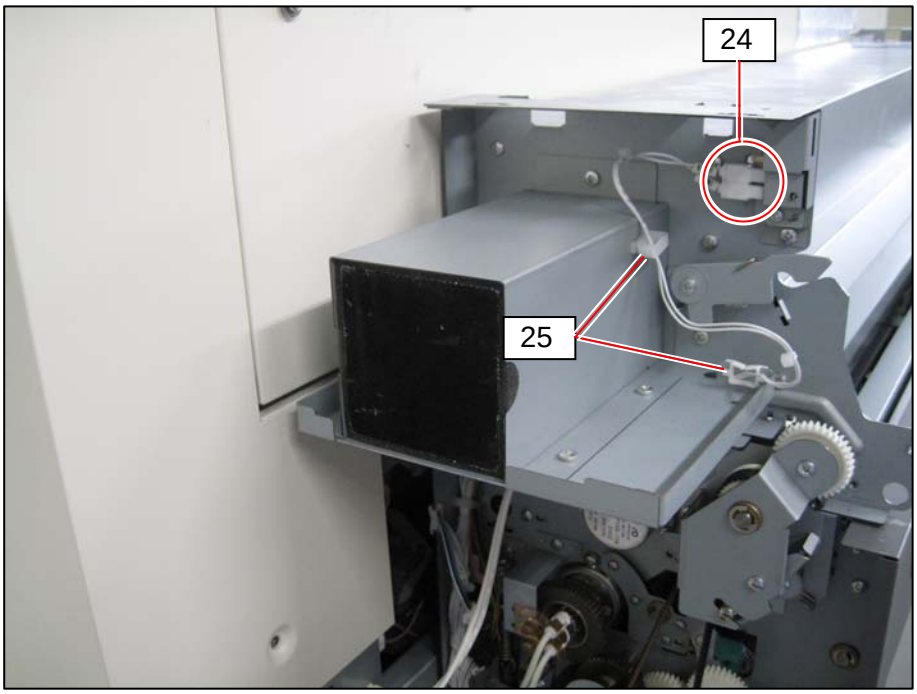


19. Plug out 2 connectors (22) on the left and release the harness from the edge saddle (23).

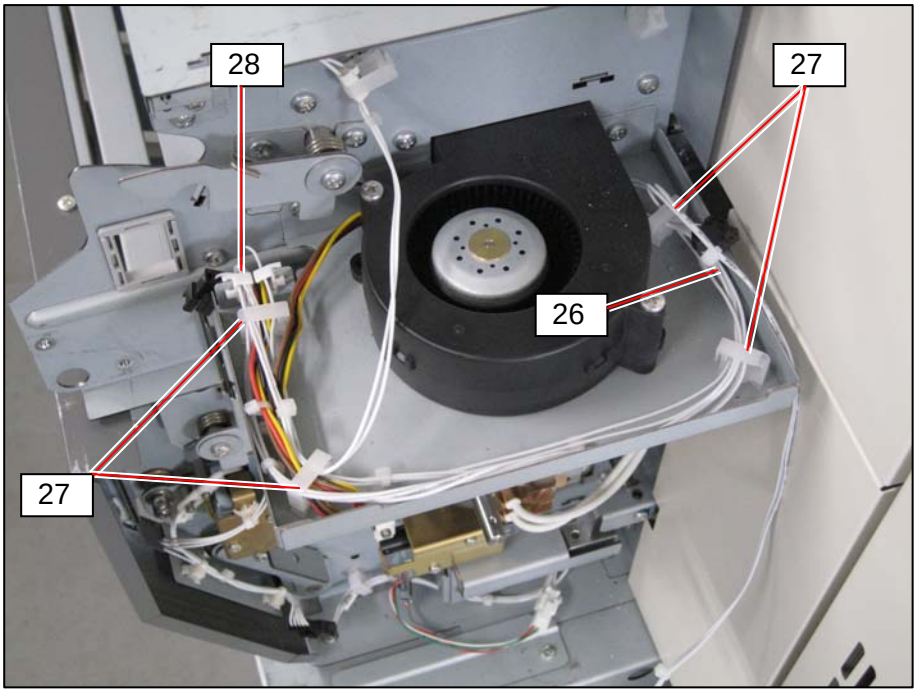




20. Plug out 2 connectors (24) on the right and release the harness from the wire saddles (25).



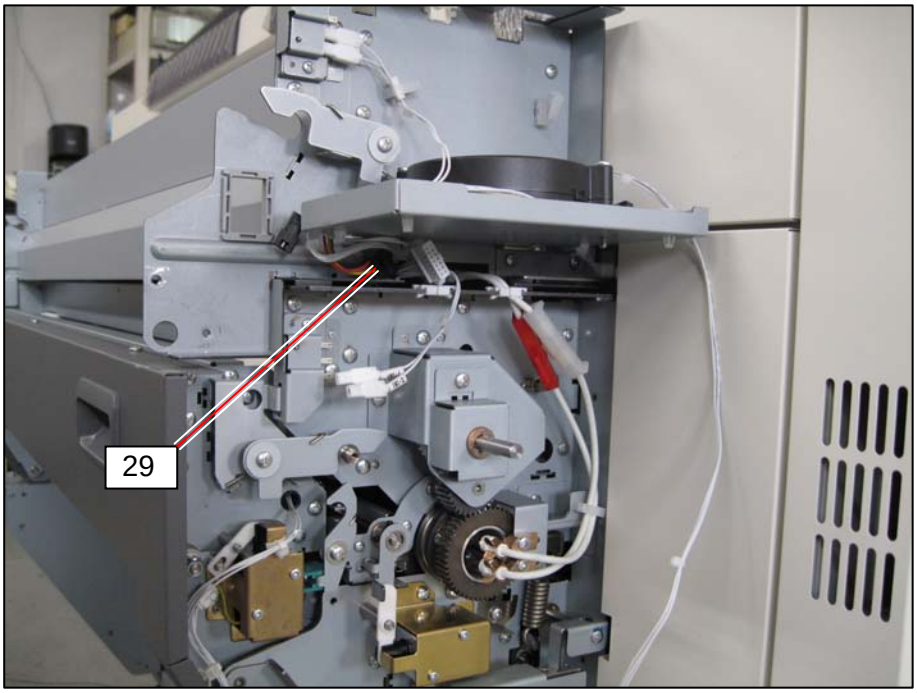
21. On the left of machine, release the harness (26) from the wire saddles (27) and edge saddle (28)



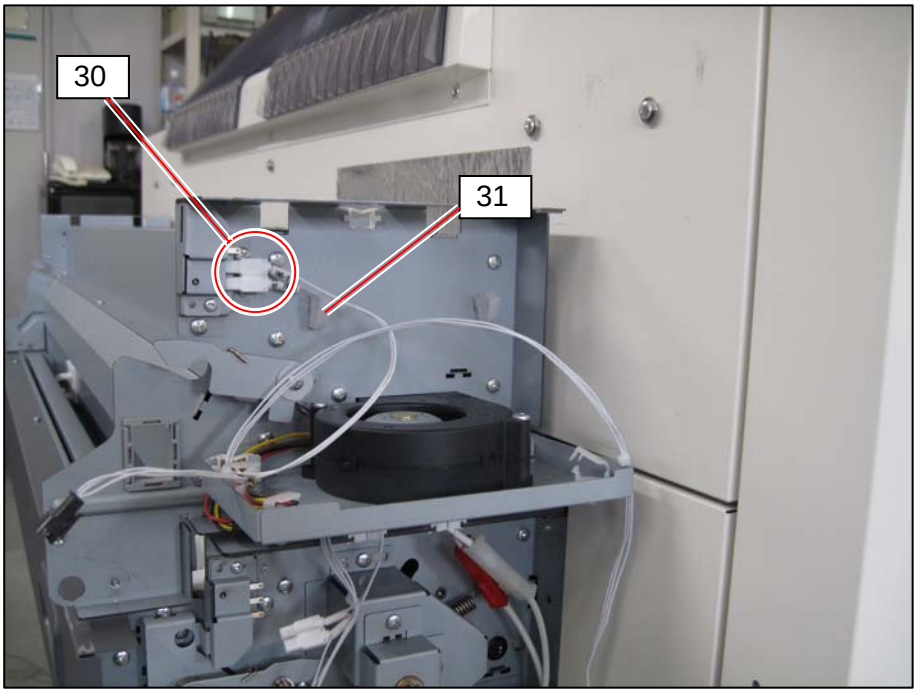
NOTE

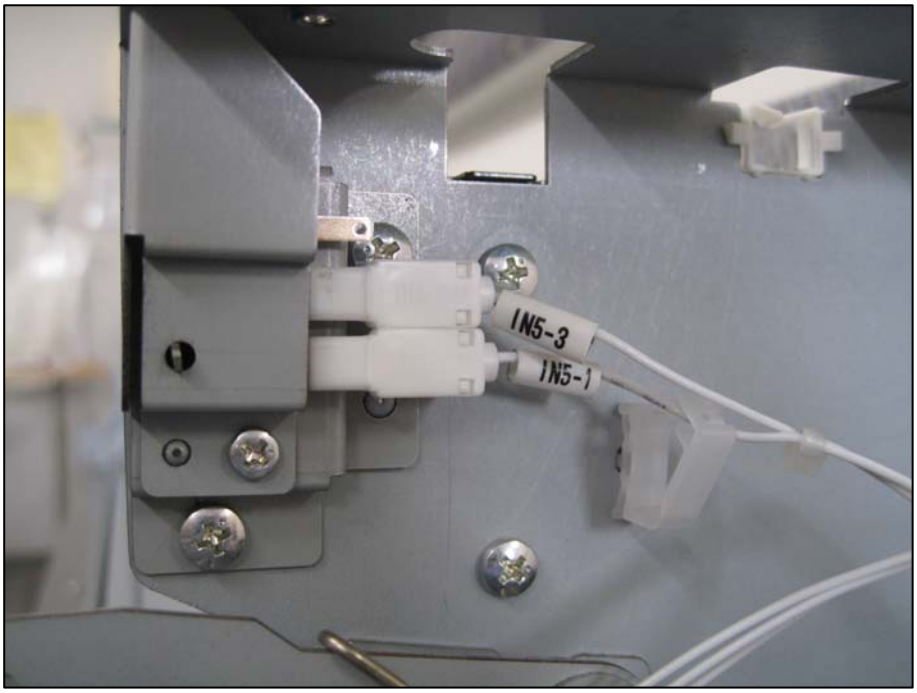
Nothing is connected to this harness (26).

22. On the left of machine, plug out the connector (29) under the blower.

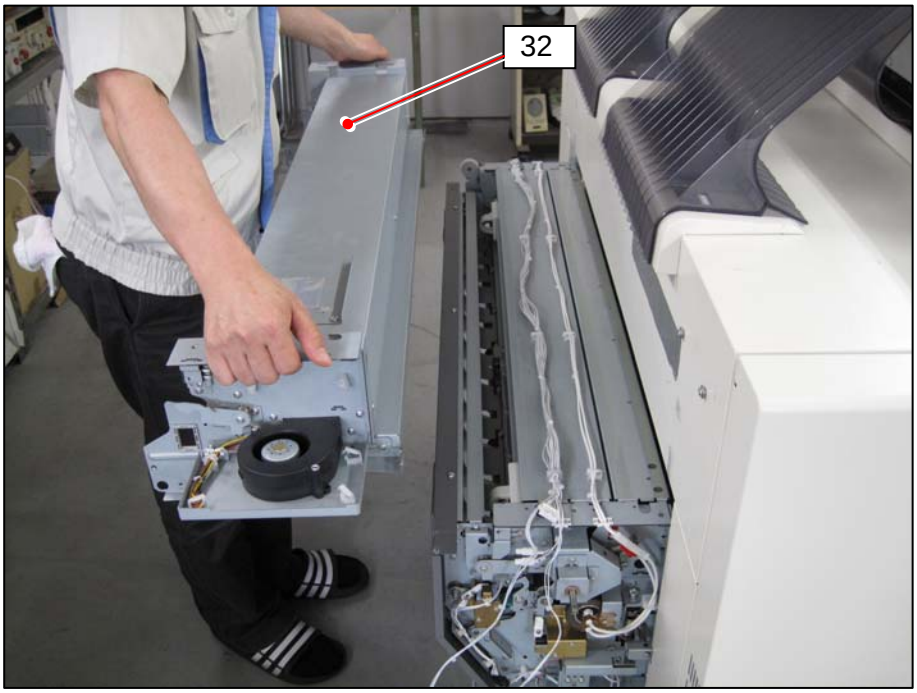


23. Plug out 2 connectors (30) on the left and remove the harness from the edge saddle (31).

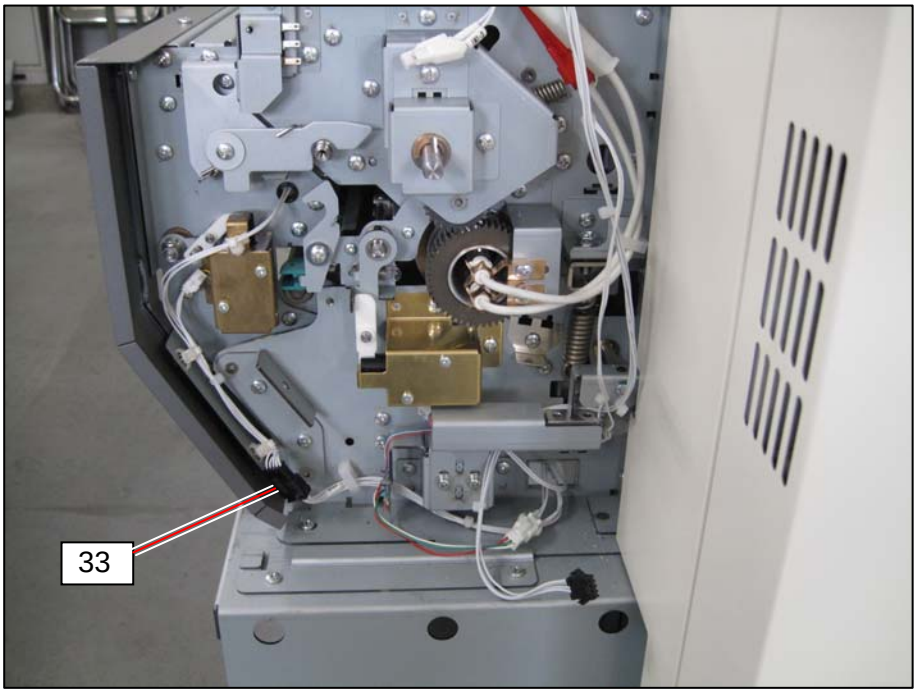




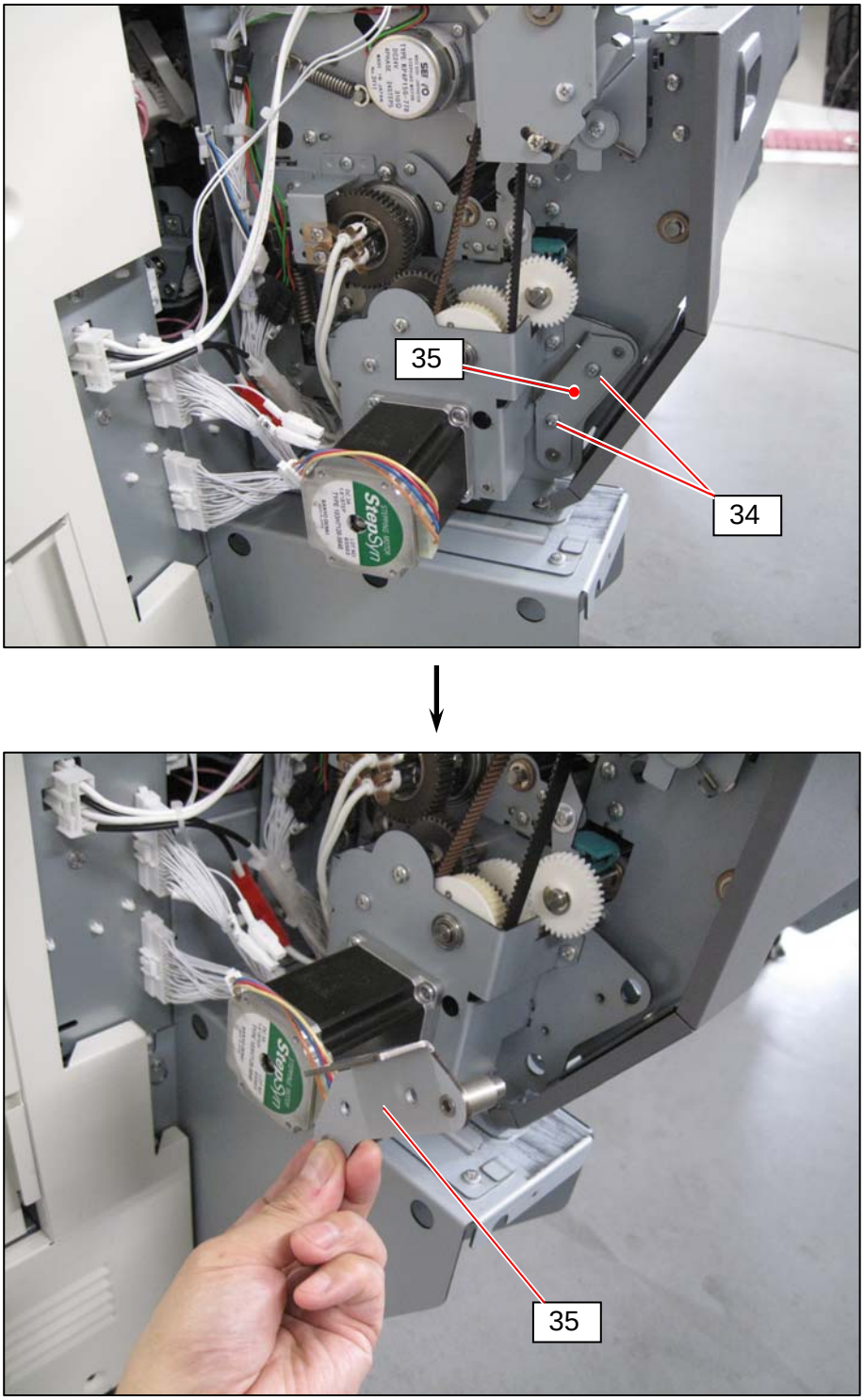
24. Remove the Fuser Upper Unit (32).



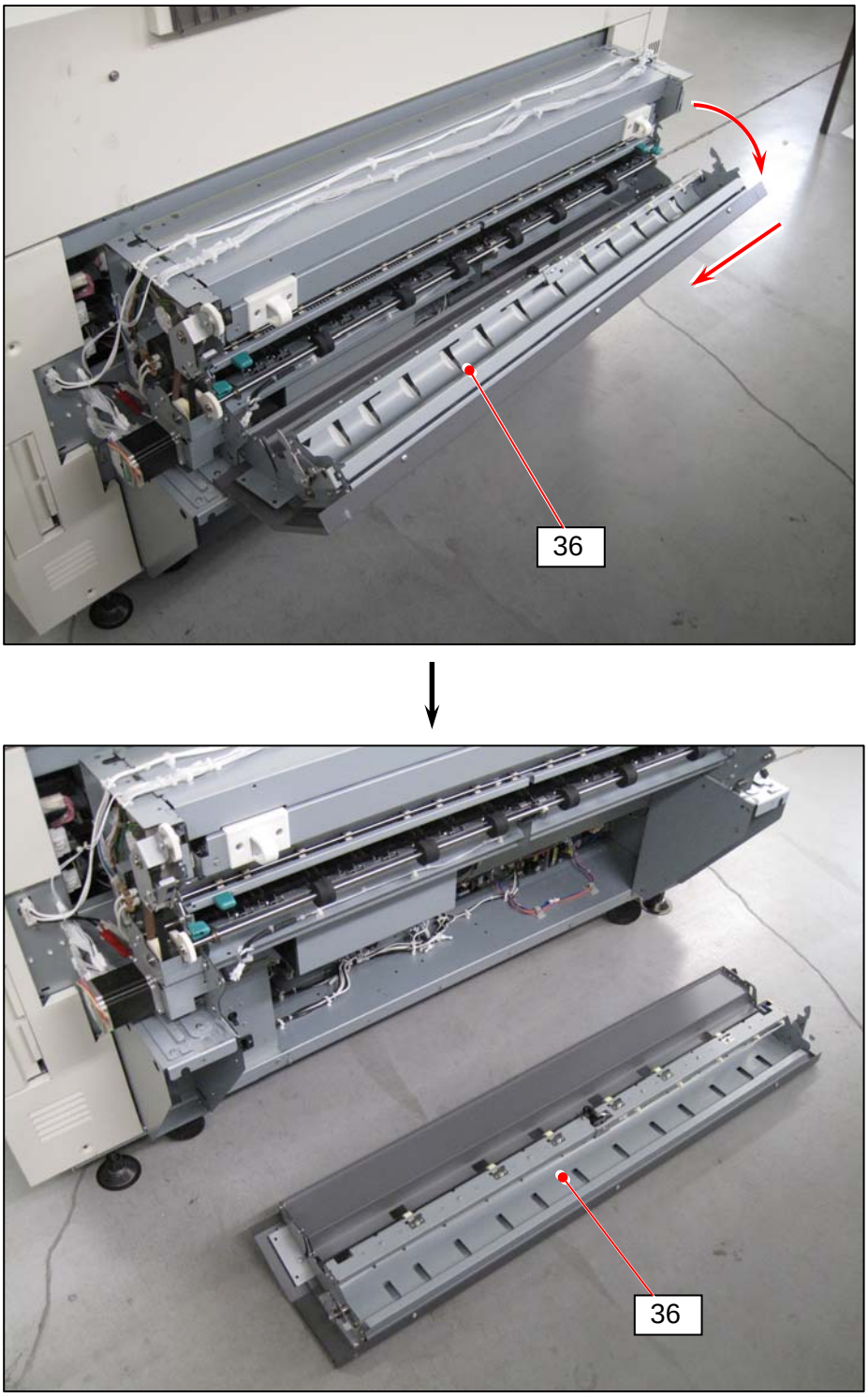
25. Plug out the connector (33) on the left of machine.



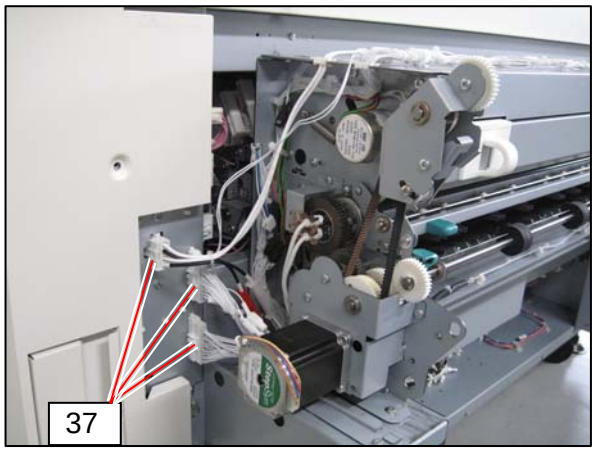
26. On the right of the machine, remove 2 screws (34) and then remove the Lower Shaft Assy (35).



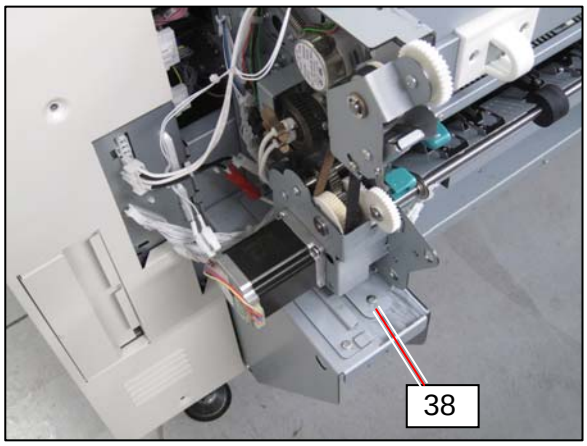
27. Open the Lower Exit Unit (36), and slide it rightward (in the direction of arrow) to remove it from the printer.

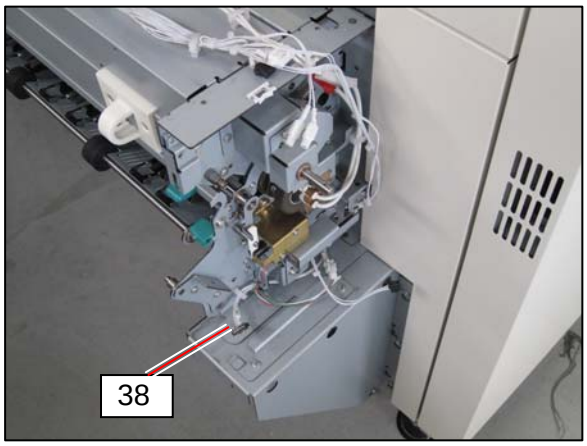


28. Plug out 3 connectors (37).

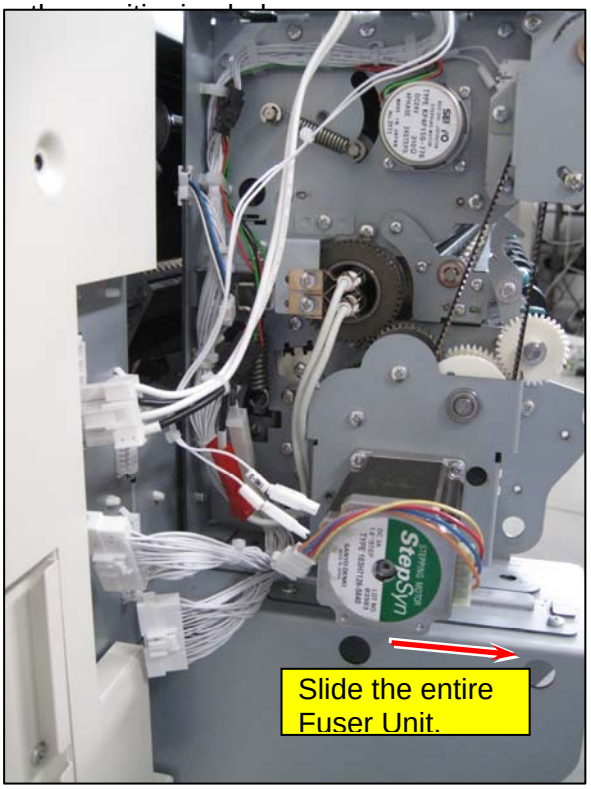


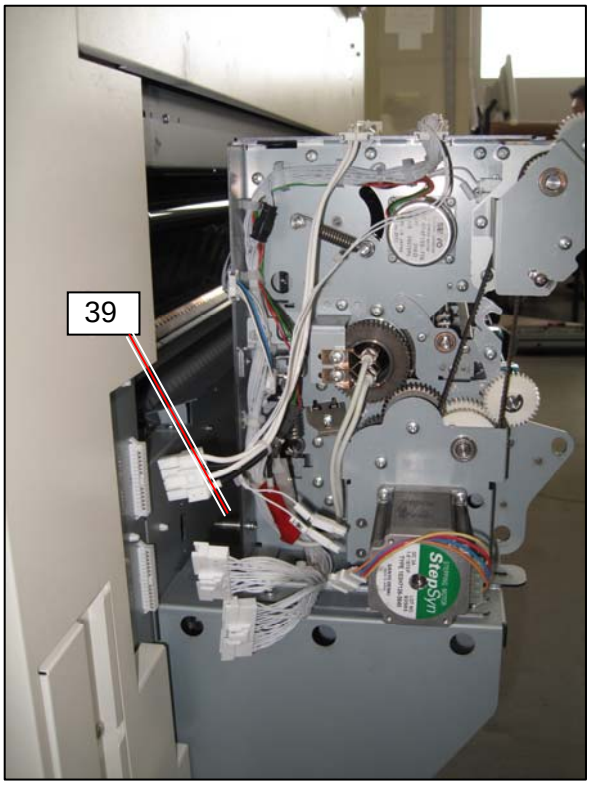
29. Remove screws (38) on both sides.



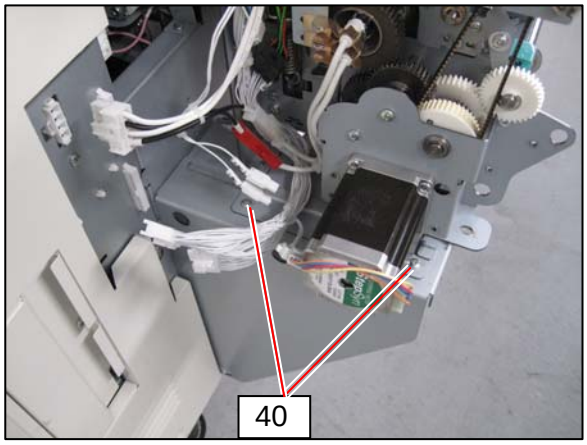


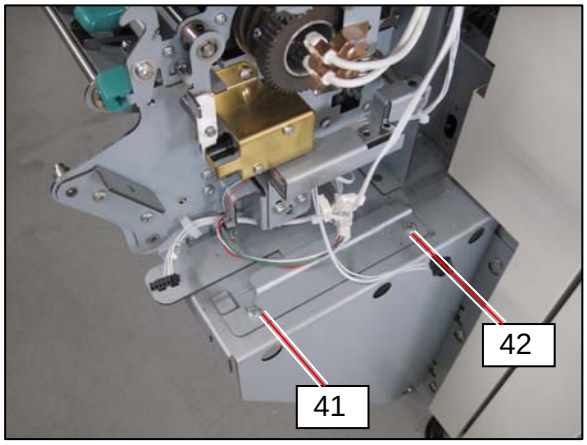
30. Slide the entire Fuser Unit a little in the direction of arrow until the positioning pins (39) are out of



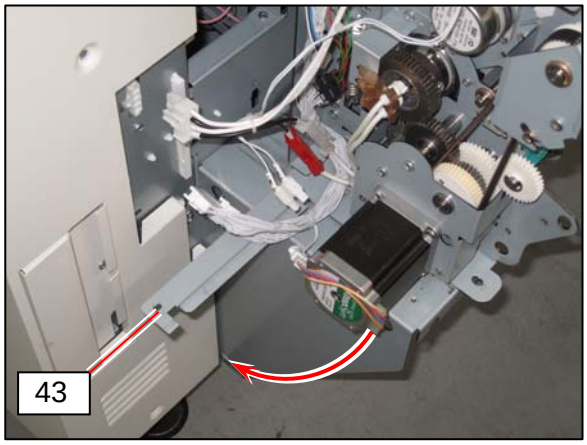


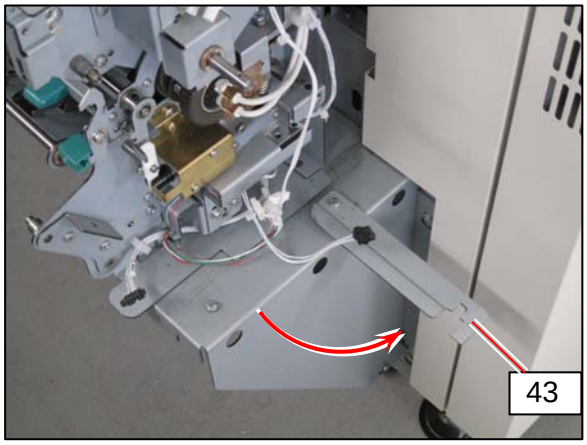
31. Loosen 2 screws (40) on the right.
    Loosen 1 screw (41) and remove 1 screw (42) on the left.



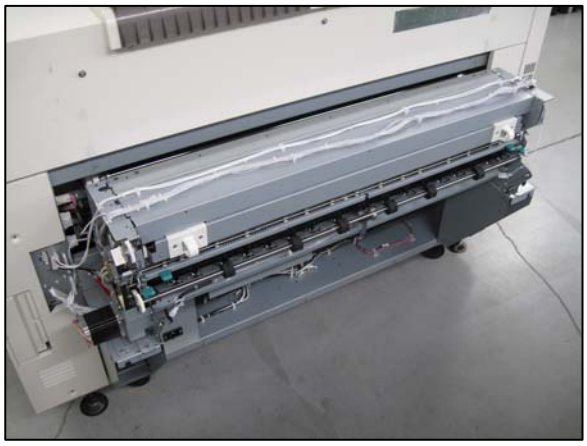


32. Turn the Stopper Brackets (43) on both sides outward.





33. With firmly catching the upper parts of side plates, remove the entire Fuser Unit (44) from the printer.



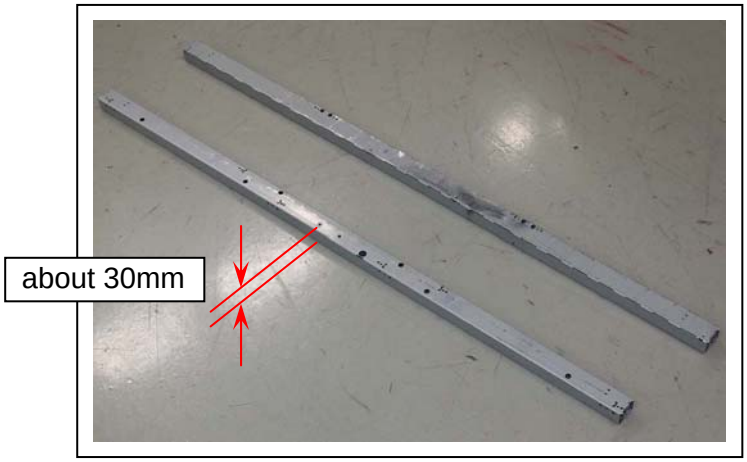
5. 6 Belt Unit

5. 6. 1 Removal of Belt Unit

NOTE

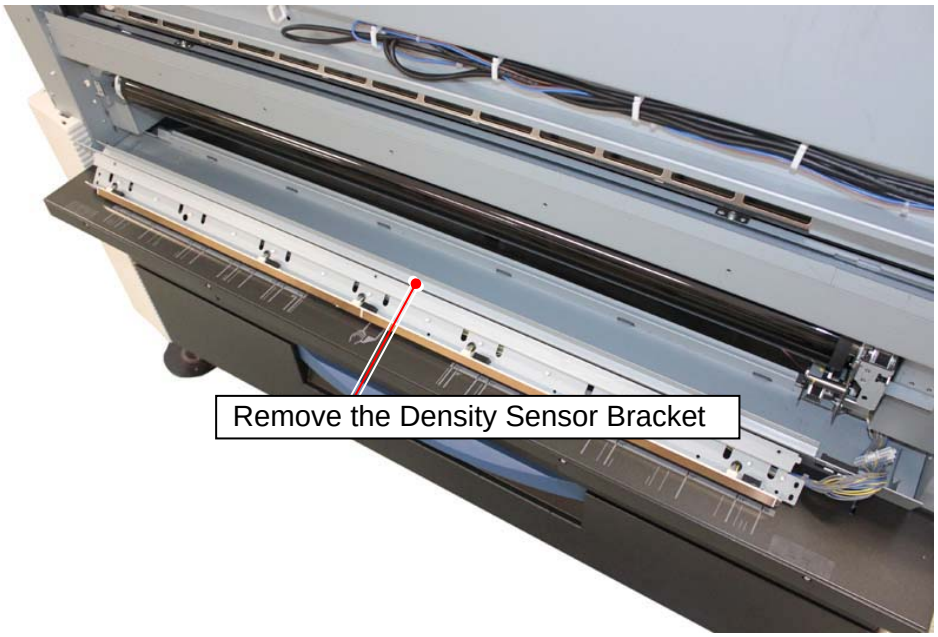
(1) Removal of Belt Unit from the machine must be done by 2 people.

(2) Belt Unit after removal must be vertically placed so as not to damage the Transfer Belt. At this time, Belt Unit must be put on the spacers of about 30mm thick like the ones in the following picture so that the guide rollers of the unit should not touch the floor and breaks.



1. Remove the whole Fuser Unit from the machine with referring to [5.5.2 Removal of Fuser Unit].

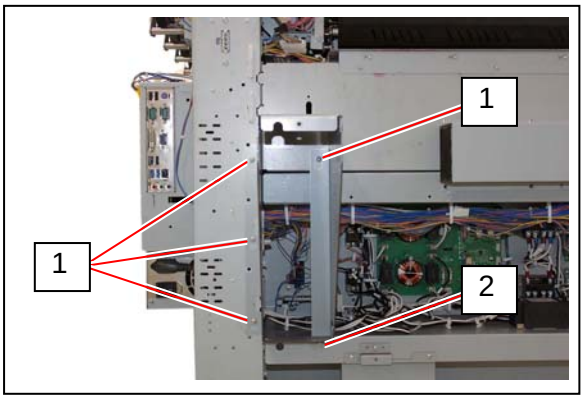
2. Remove the Density Sensor Bracket with referring to [5.10.1 Replacement of Density Sensor].

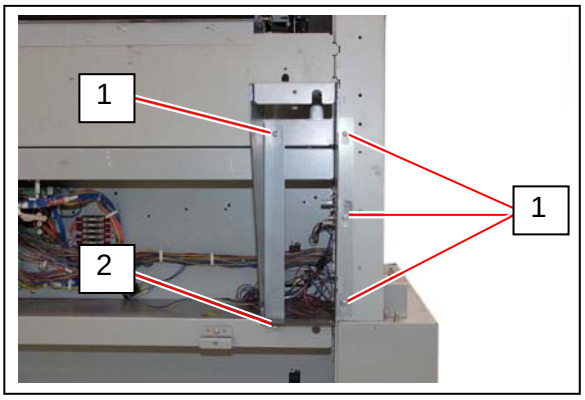


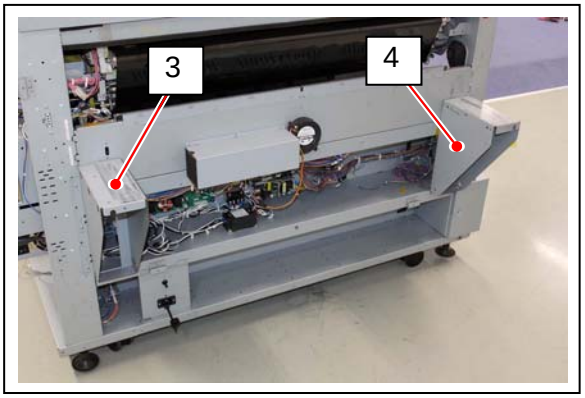
NOTE

Drums will be damaged if you draw out the Belt Unit without removing the Density Sensor Bracket.

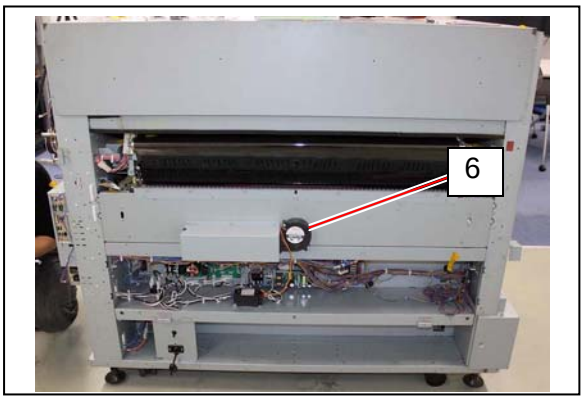
3. Remove 4 each M4x6 screws (1), loose 1 each screw (2), and remove the Fuser Base Brackets R (3) and Fuser Base Bracket L (4).

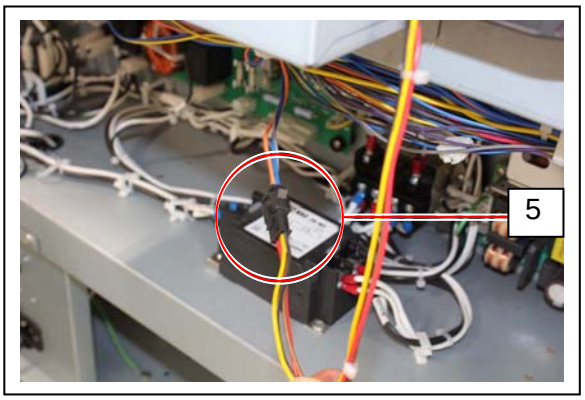




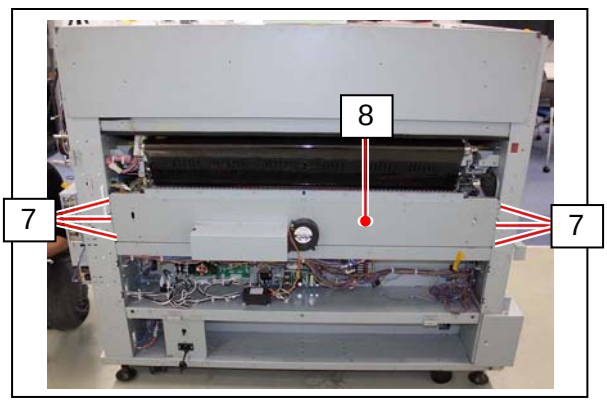


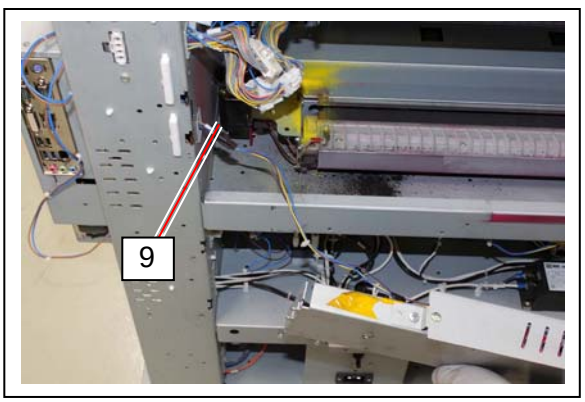
4. Plug out a connector (5) of the Fan (6).



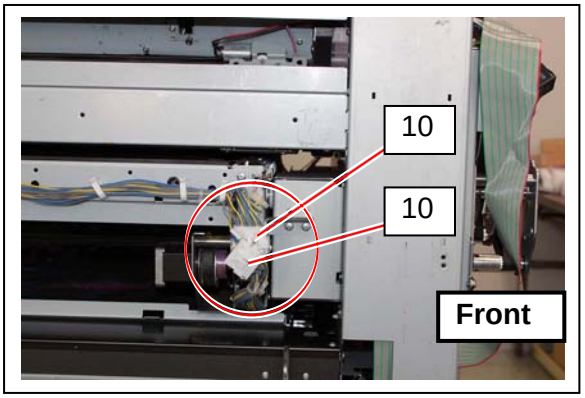


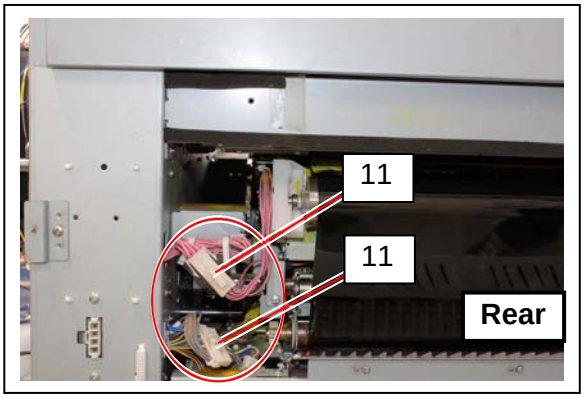
5. Remove 6 M4x6 screws (7) to remove the Rear Beam (8). Plug out the connector (9) also.



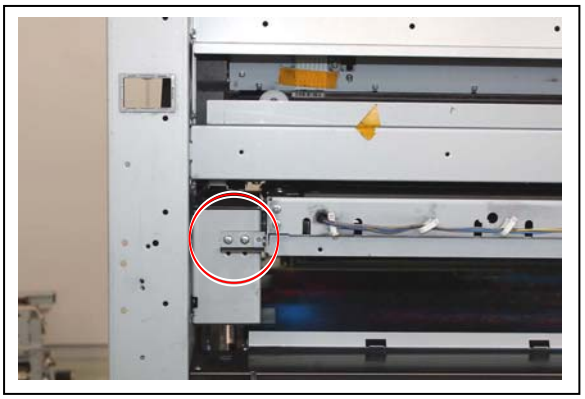


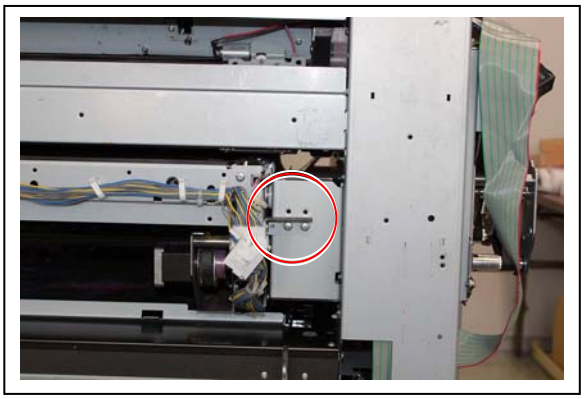
6. Plug out 2 connectors (10) on the front of the machine. Also plug out 2 more connectors (11) on the rear side. (These connectors are on the cables from the Belt Unit.)

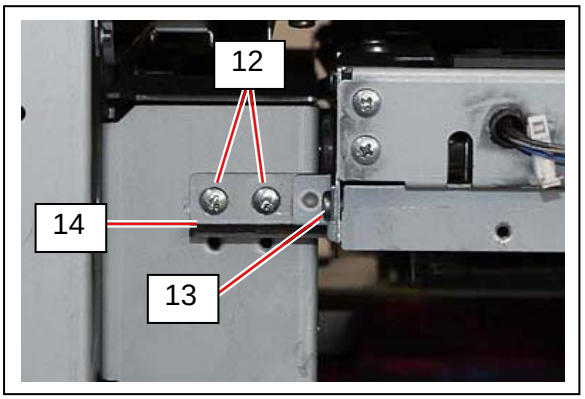


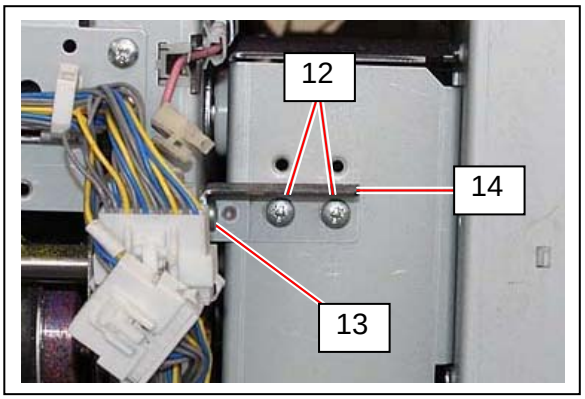


7. On the front side of the machine, loosen 2 each screws (12) and also remove 1 each M4x6 screw (13) that are fixing both Front Belt Unit Stoppers (14) on both sides. This unfix the Belt Unit on the front side of machine.

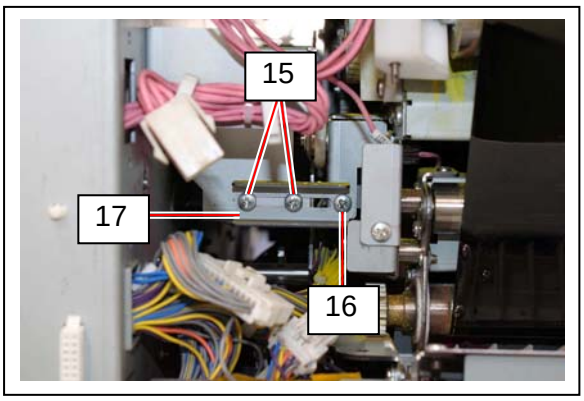


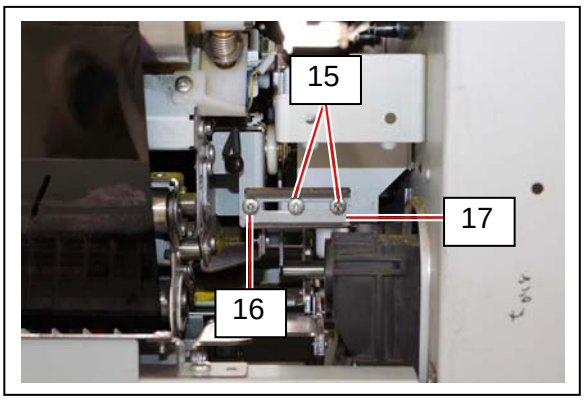




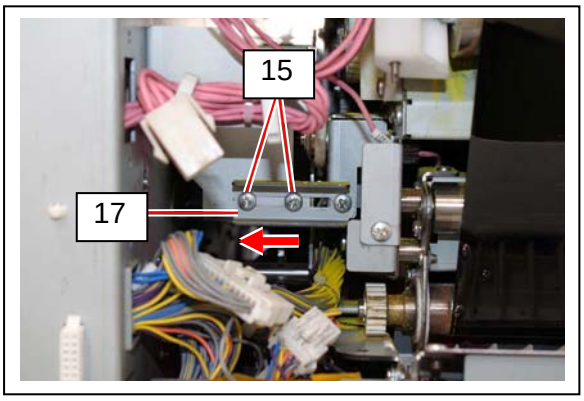


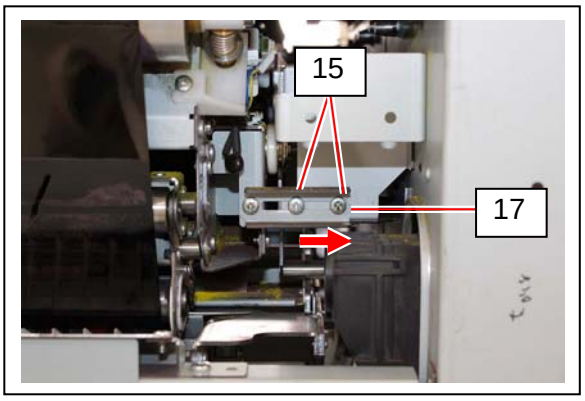
8. On the rear side of the machine, loosen 2 each screws (15) and also remove 1 each M4x6 screw to unfix the Rear Belt Unit Stoppers (17). This unfix the Belt Unit on the rear side of machine.





9. Slide both Rear Belt Unit Stoppers (17) fully outside and then fix them there by tightening 2 each screws (15).





9. Gently slide out the whole Belt Unit rearward by 2 people, keeping horizontal as much as possible and also without having an angle against the direction of drawing out. After removing from the machine, vertically put the Belt Unit on the spacers of about 30mm thick as the photo, with placing its motor side to the bottom side.

Photo to be prepared

NOTE

(1) This operation to remove the Belt Unit must be done by 2 people.

(2) Put on rubber gloves when handling the Belt Unit or Belt so as not to touch the Belt by bear hand. Putting finger marks or dirt will badly affect the image quality.

(3) Do not put the Belt Unit horizontally (on the table for example) as it will stress some limited points of the Belt and result in damage.

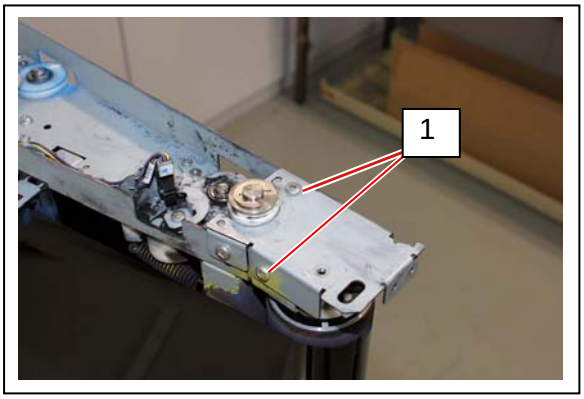
(4) Pay attention for the Belt Unit on the spacers so that it should not fell down.

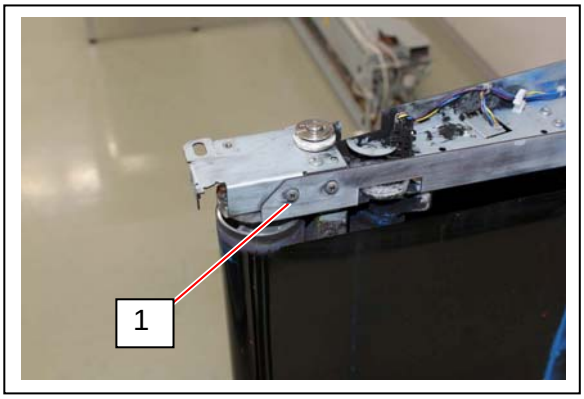
5. 6. 2 Replacement of Belt

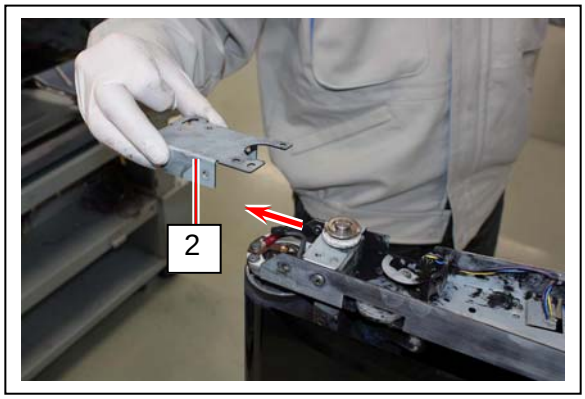
> **NOTE**
>
> Put on rubber gloves when handling the Belt Unit or Belt so as not to touch the Belt by bear hand. Putting finger marks or dirt will badly affect the image quality.

1. Remove the whole Belt Unit from the machine referring to [5.6.1 Removal of Belt Unit].

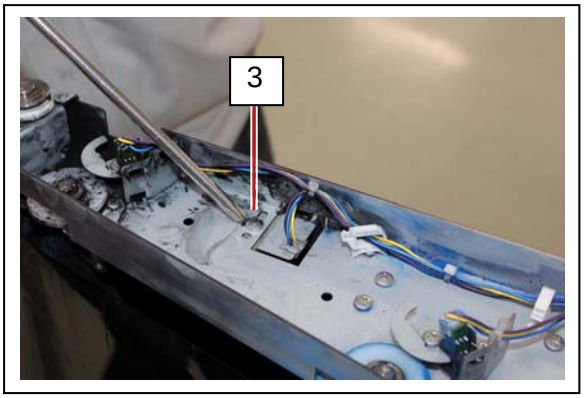
2. On the upper side of vertically stood Belt Unit, remove 3 M4x6 screws (1) to remove the Bracket (2).

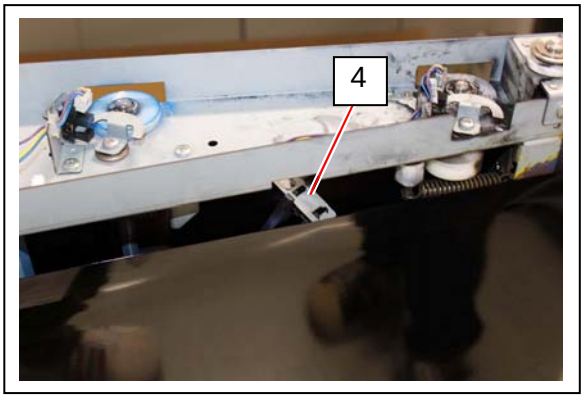




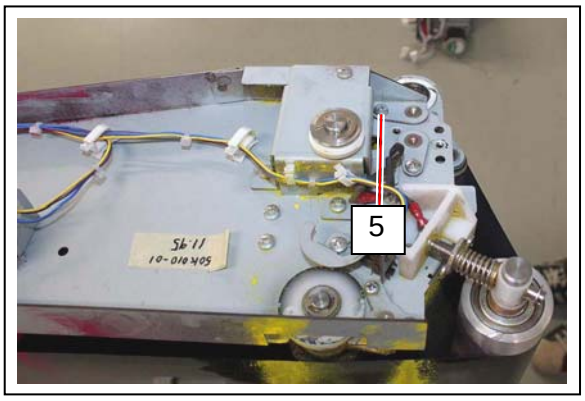


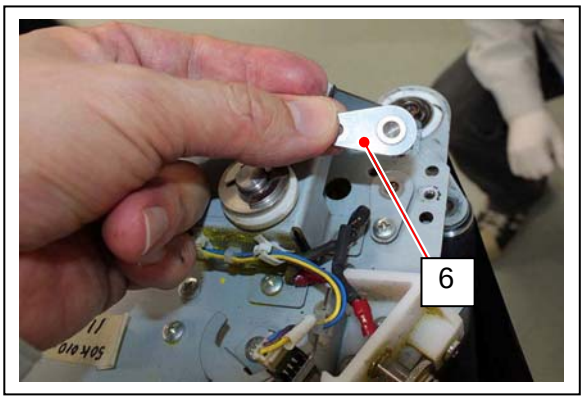
3. Remove a M4x6 screw (3), and remove the Sensor Bracket (4) of Belt Skew Sensor so that the edge of the Belt is out of the sensor.





4. Remove a M4x6 screw (5) to remove the Hinge Bracket (6).





5. On the bottom (motor side) of vertically stood unit, remove a M4x6 screw (7) to remove the Bracket (8).

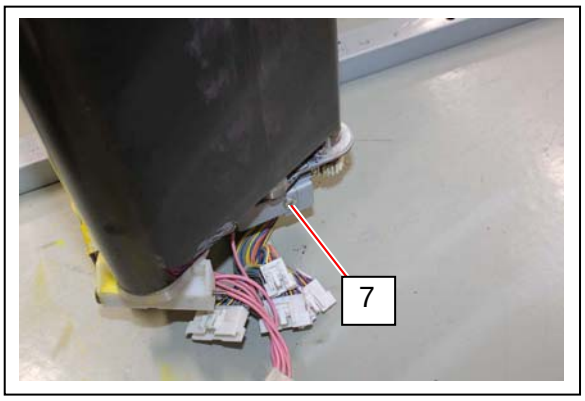
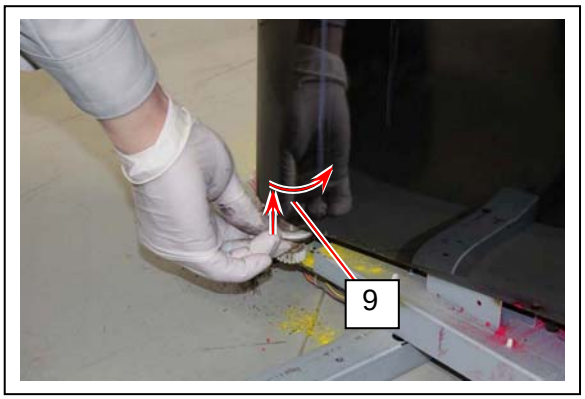
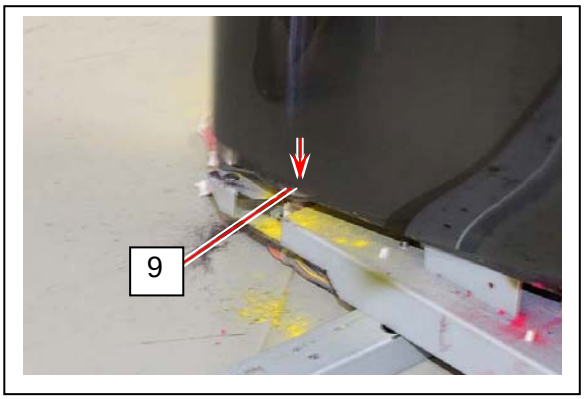


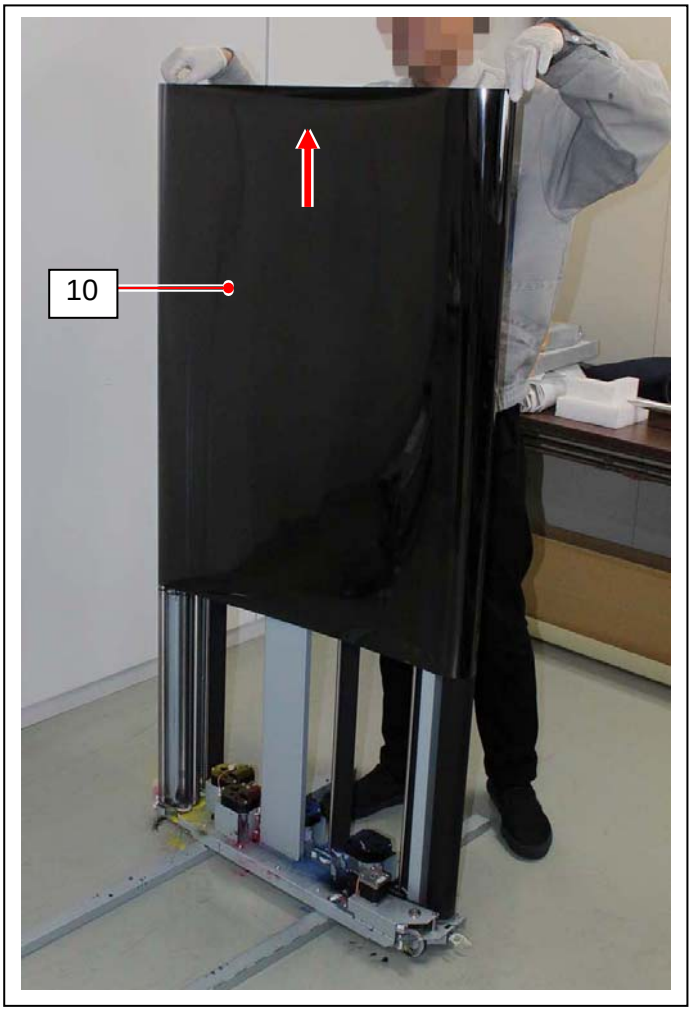
Photo to be prepared

6. With pulling up the Tension Roller (9) a little, move it in the direction of arrow to hide it into a space that is inside of the Belt edge.





7. Catch the edge of the Belt (10) and slowly bring it up to remove from the unit. Then install the new belt referring to the Notes on next page.

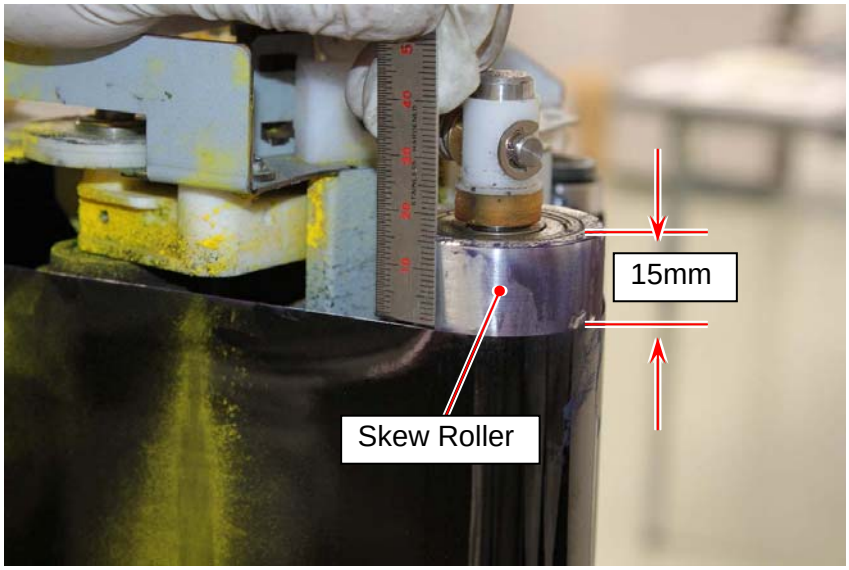


CAUTION

1. Put on rubber gloves when handling the new Belt so as not to put a finger print or other dirt on its surface.

2. When returning the new Belt back to the Belt Unit, do this by 2 people. One person brings down the Belt slowly, and the other person "moves away" the edge of Belt from such as motor or other parts so that the edge should not be damaged by hitting.

3. When tensioning the Belt with Skew Roller, correctly adjust the position of Belt so that the edge is at about 15mm from the end of Skew Roller.



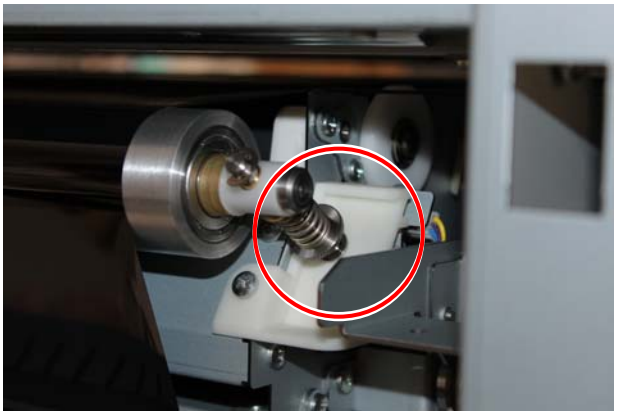
4. After tensioning the belt with Skew Roller, fit the Sensor Bracket (4) at its original position with screw (3). And be sure that the Belt edge is running inside of both Belt Skew Sensor. If not, please correct it by hand.

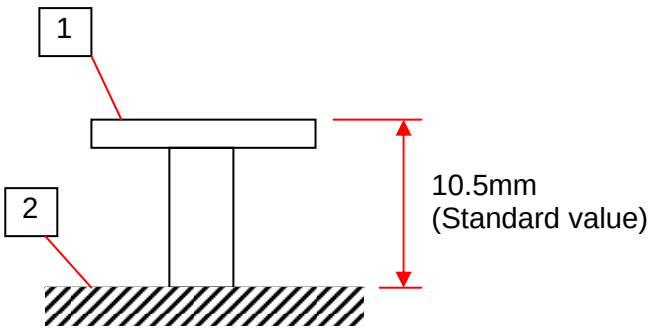
Photo to be prepared.

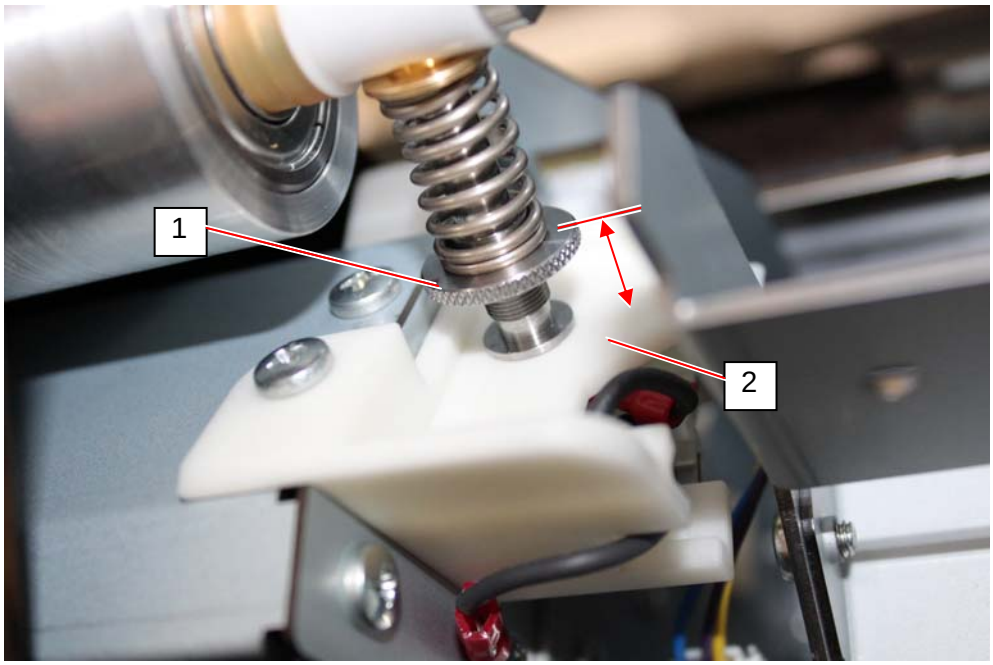
Photo to be prepared.

5. 6. 3 Adjustment of Belt Tension

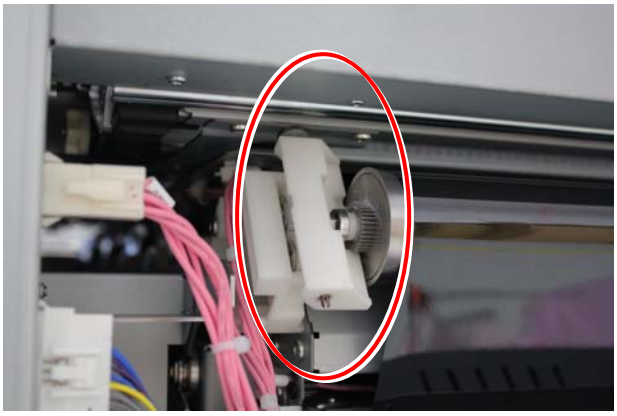
1. On the left of the machine, be sure that the distance between the upper face of Tension Adjust Disc L (1) and the surface of white plastic base (2) is 10.5mm (standard value). If it is not 10.5mm, rotate the Tension Adjust Disc L (1) clockwise of counter-clockwise.

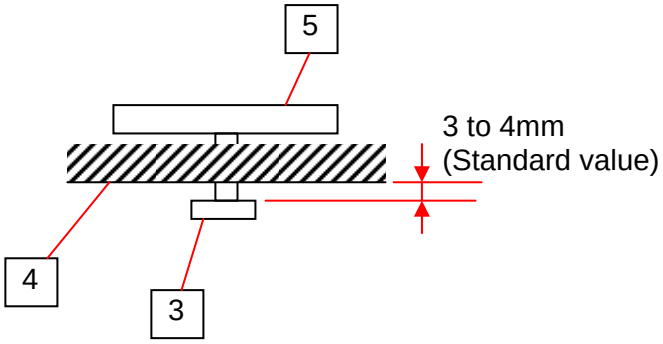


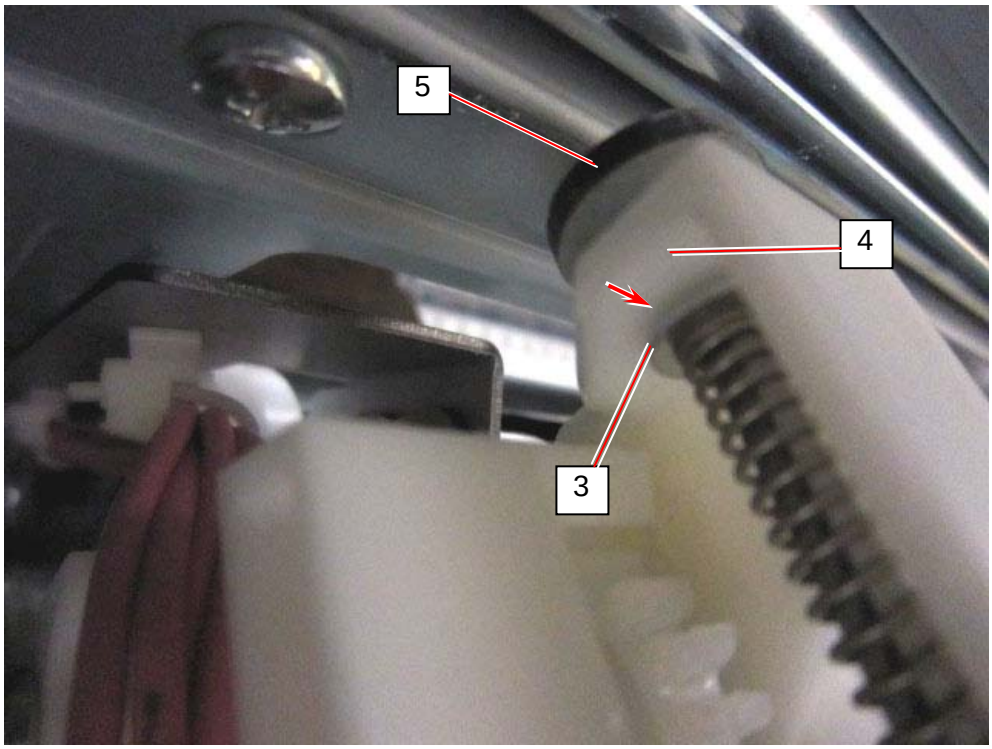




2. On the left of the machine, be sure that the distance between the spacer (3) and the surface of white plastic base (4) is 3 to 4mm (standard value). If it is not 3 to 4mm, rotate the Tension Adjust Disc R (5) clockwise of counter-clockwise.



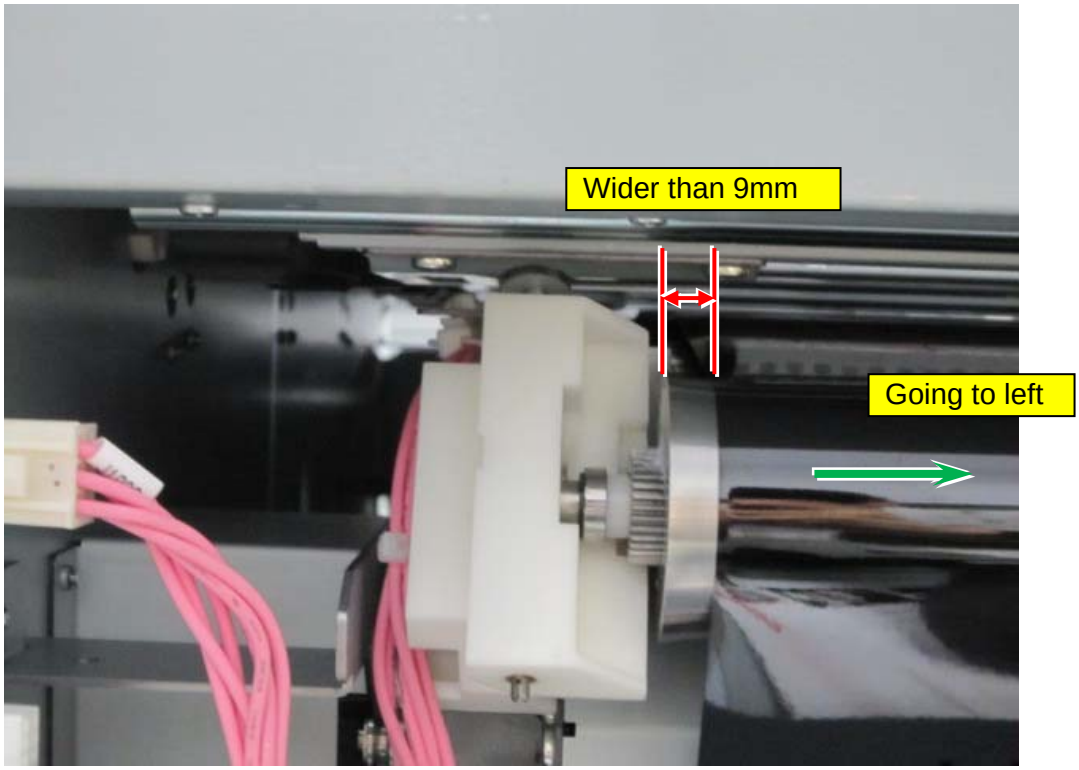




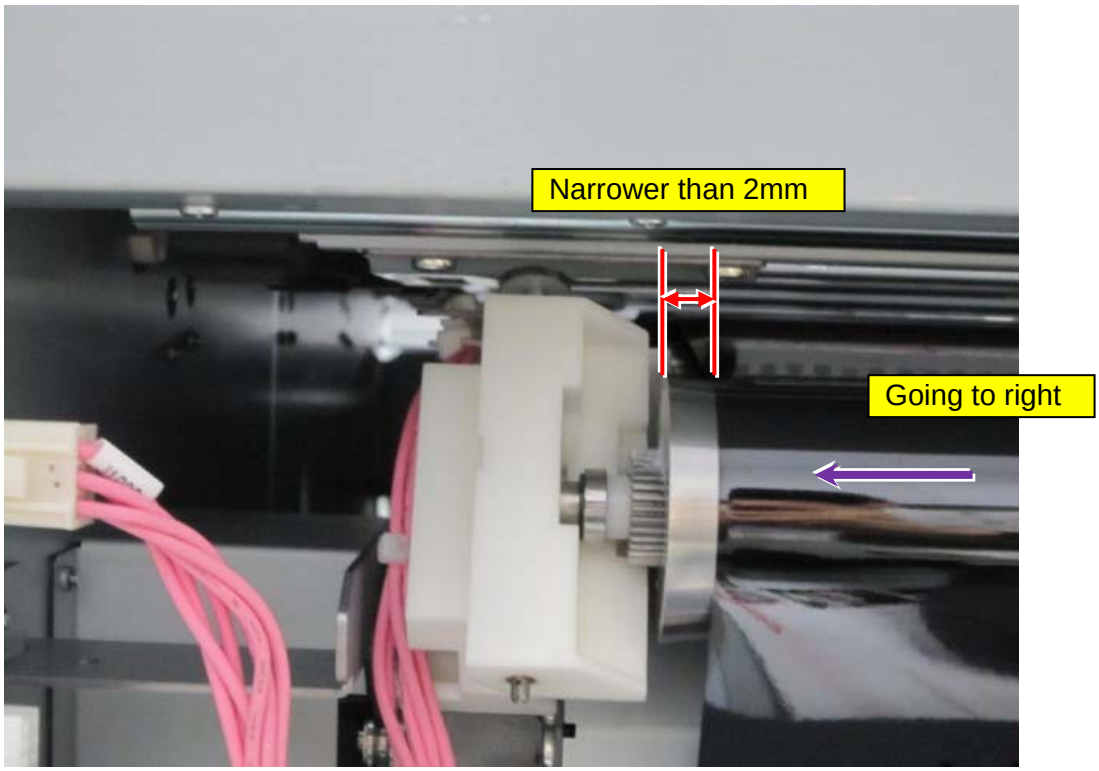
3. Print **30 pages of 36x24** landscape.

4. Check the conditions of Belt and the shaft of Skew Roller during printing.

- If the belt goes to the **left** side of machine and the distance between the right end of the Skew Roller and belt edge gets **wider than 9mm**, go to the step 5.

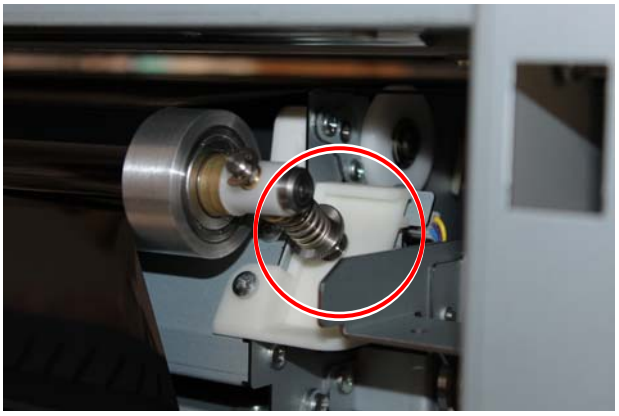


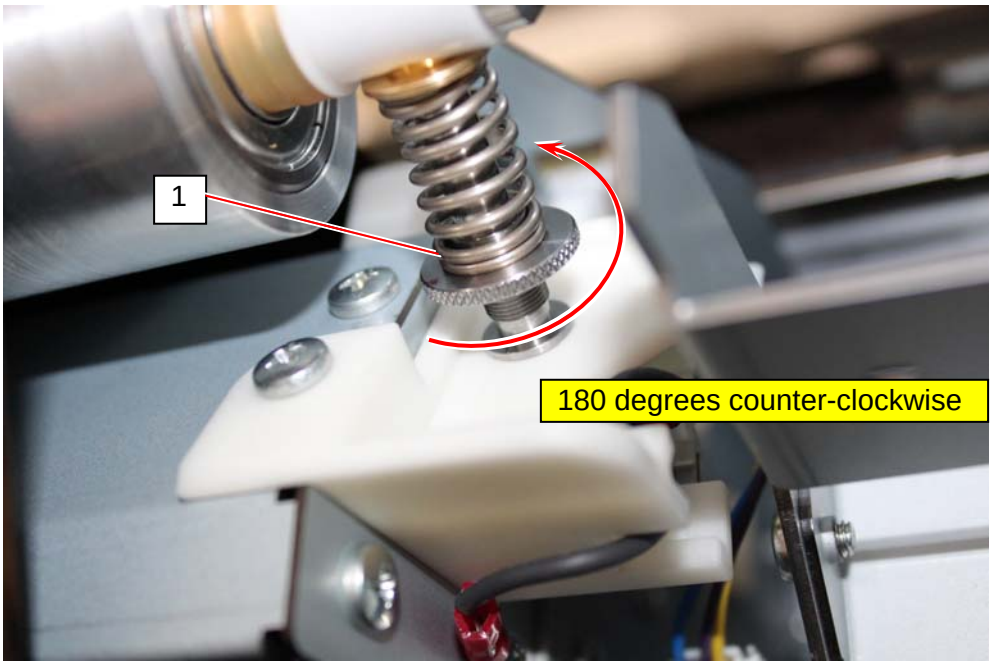
- If the belt goes to the **right** side of machine and the distance between the right end of the Skew Roller and belt edge gets **narrower than 2mm**, go to the step 6.



5. If the belt goes to the **left** side of machine and the distance between the right end of the Skew Roller and belt edge gets **wider than 9mm**, It means the left side has weaker tension. Rotate the Tension Adjust Disc L (1) on the left of machine **180 degrees counter-clockwise** to increase the tension.

   After that, go back to the step 3 and check the Belt condition again.

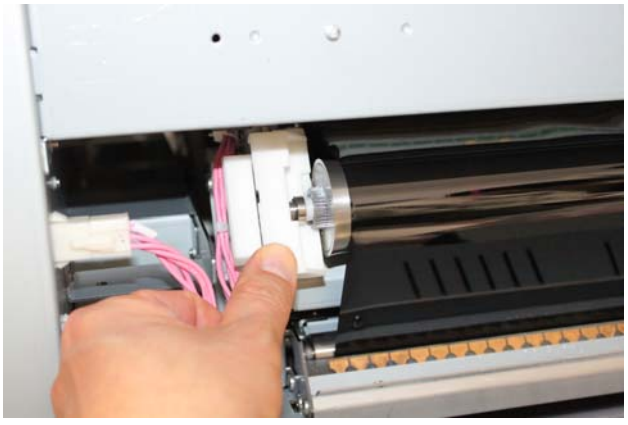




Reference

If you will return the belt to center, which has already shifted to left, do as follows.

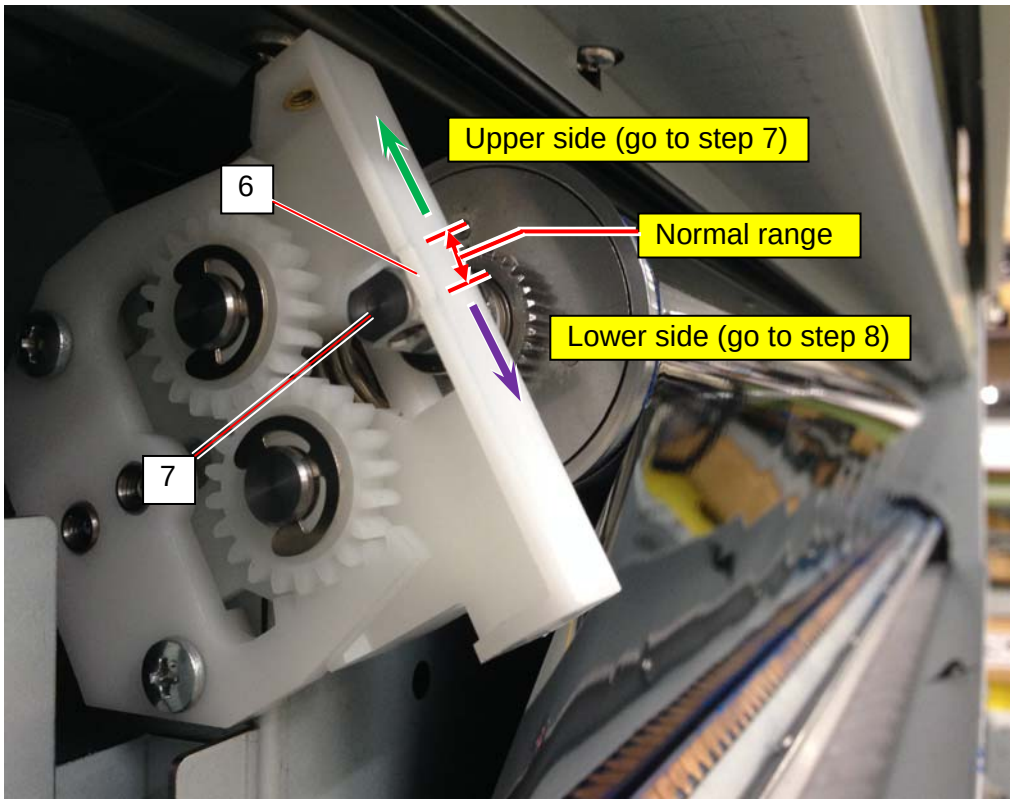
(1) In the Maintenance GUI, select Output Check.
(2) Select No.506 Belt Motor and run it.
(3) Push down the white plastic part to increase the tension on the right. Belt will move to the right.
(4) When the Belt comes back to center then stop running it.



6. If the belt goes to the **right** side of machine and the distance between the right end of the Skew Roller and belt edge gets **narrower than 2mm**, also check the position of the shaft of Skew Roller during printing.

   There is a "cut" (6) on the edge of white plastic base. This cut corresponds to the "normal range" in which the right shaft (7) of Skew Roller should be during printing.

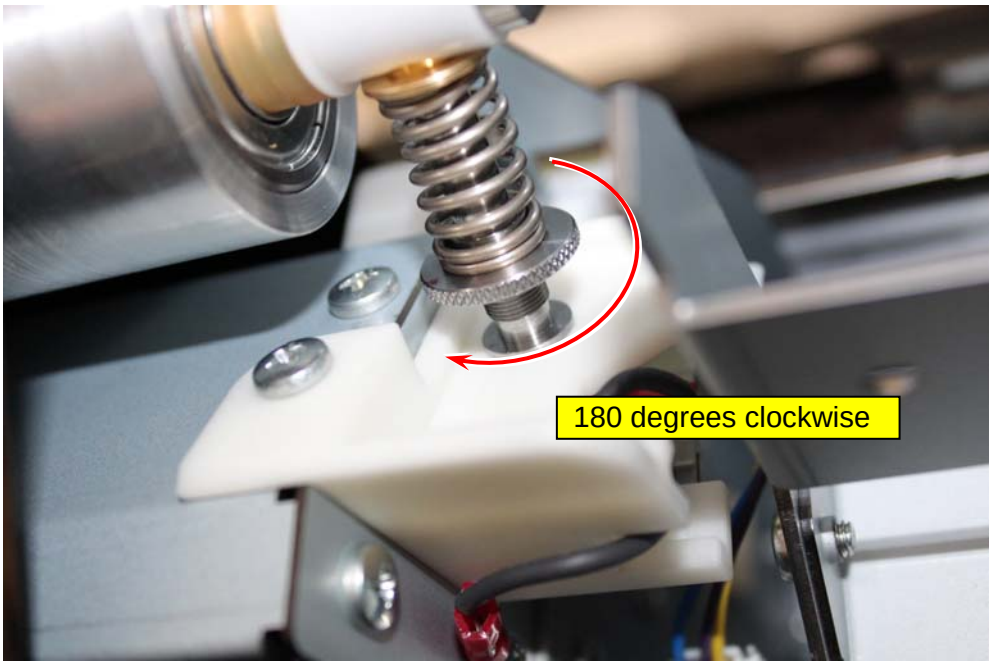
   - If the right shaft is on **upper side** from the normal range during printing, go to the step 7.
   - If the right shaft is on **lower side** from the normal range during printing, go to the step 8.



7. In case that (a) the distance between right end of the Skew Roller and belt edge gets **narrower than 2mm** and also (b) the right shaft is on **upper side**, take additional print (30 A1L) to check more.

   If the belt still goes to right so distance between right end of the Skew Roller and belt edge gets narrower, rotate the Tension Adjust Disc L (1) on the left of machine **180 degrees clockwise** to decrease the tension.

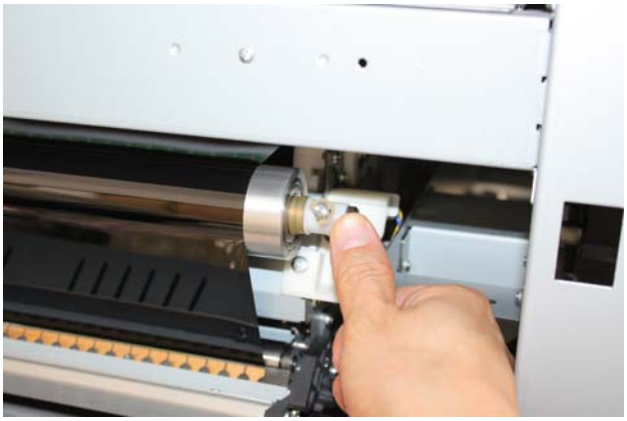
   After that, go back to the step 3 and check the Belt condition again.



Reference

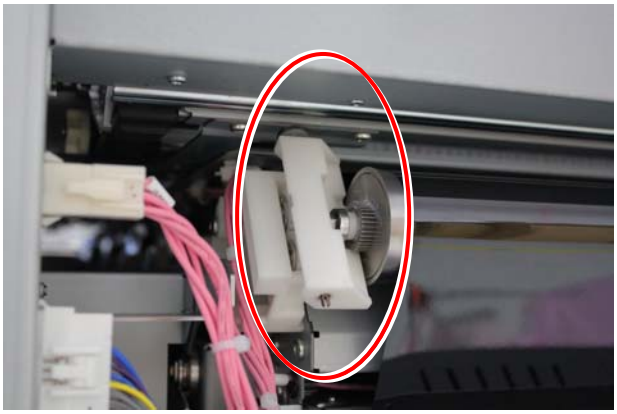
If you will return the belt to center, which has already shifted to right, do as follows.

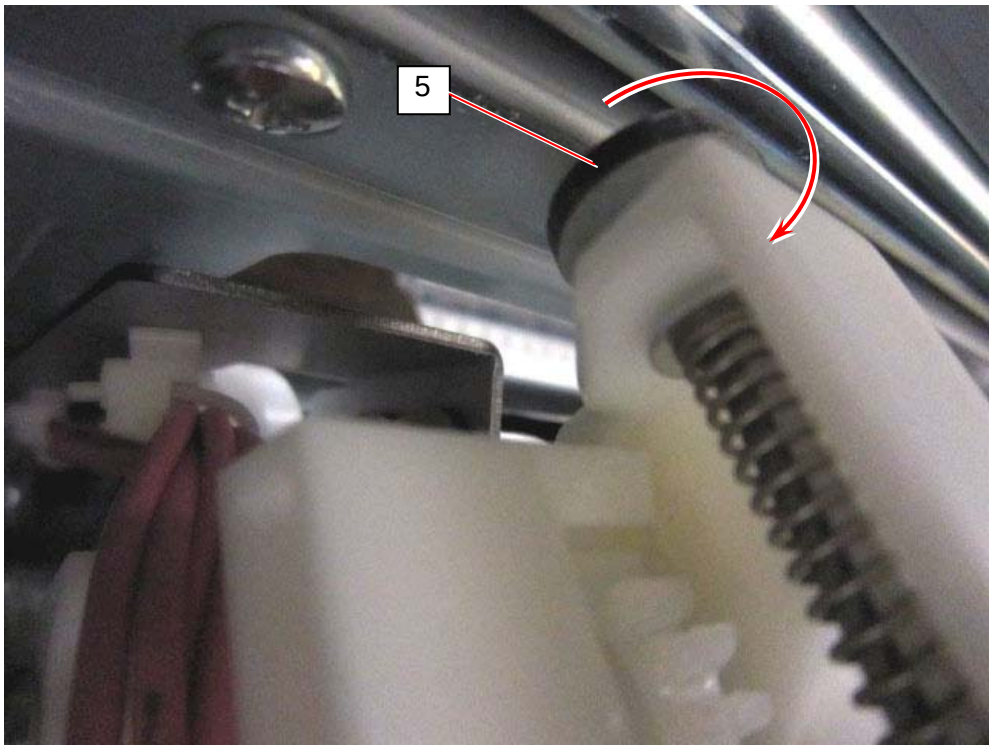
(1) In the Maintenance GUI, select Output Check.
(2) Select No.506 Belt Motor and run it.
(3) Push down the left shaft of Skew Roller to increase the tension on the left. Belt will move to the left.
(4) When the Belt comes back to center then stop running it.



8. In case that (a) the distance between right end of the Skew Roller and belt edge gets **narrower than 2mm** and also (b) the right shaft is on **lower side**, rotate the Tension Adjust Disc R (1) on the right of machine **180 degrees in the direction of arrow** to decrease the tension.

After that, go back to the step 3 and check the Belt condition again.

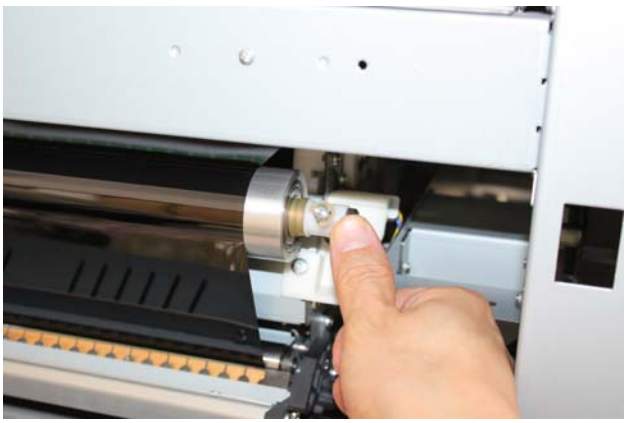




Reference

If you will return the belt to center, which has already shifted to right, do as follows.

(1) In the Maintenance GUI, select Output Check.
(2) Select No.506 Belt Motor and run it.
(3) Push down the left shaft of Skew Roller to increase the tension on the left. Belt will move to the left.
(4) When the Belt comes back to center then stop running it.

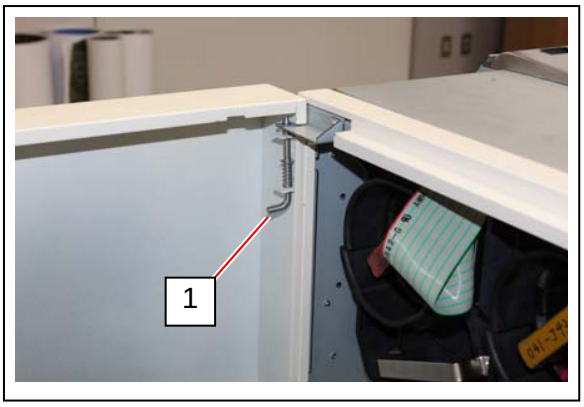


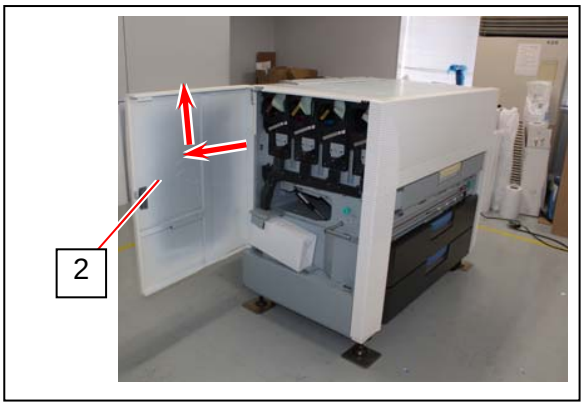
5. 7 Belt Cleaner

5. 7. 1 Removal of Belt Cleaner

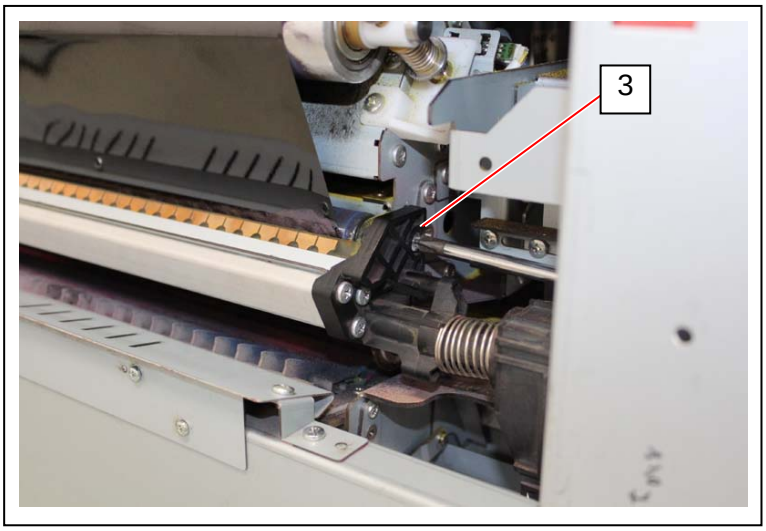
1. Remove the whole Fuser Unit from the machine referring to [5.5.2 Removal of Fuser Unit].

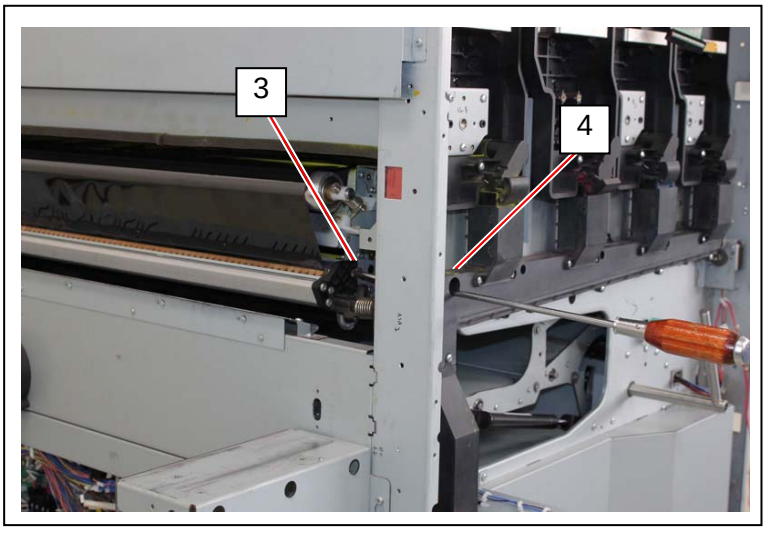
2. Open the Left Side Door. Pull down the lock pin (1) to unlock the Left Side Door (2). The a little tilt the Left Side Cover by moving its upper side and then bring it up to remove from the machine.



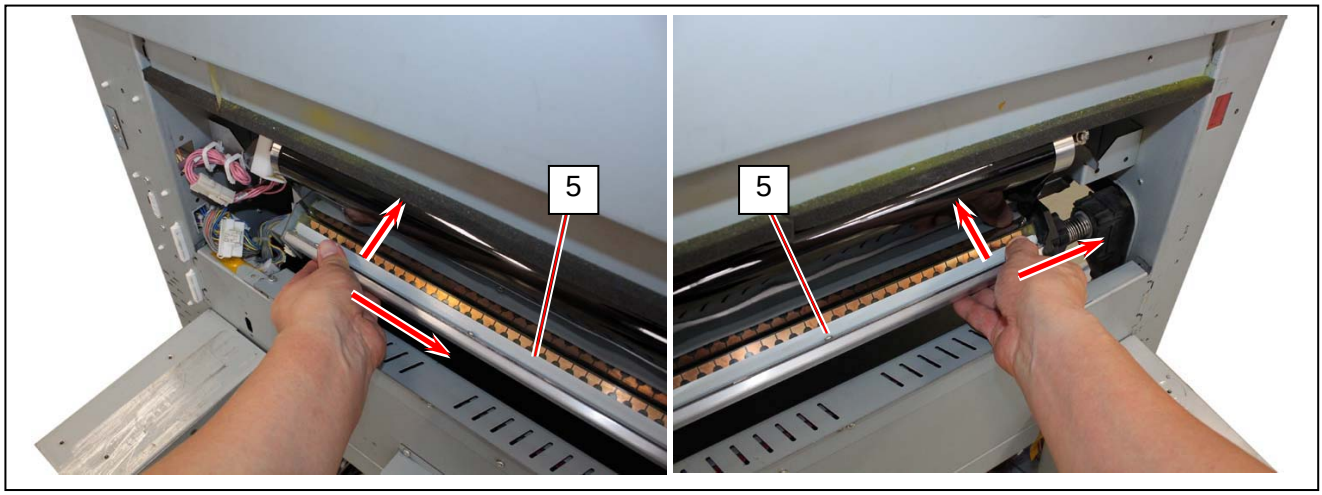


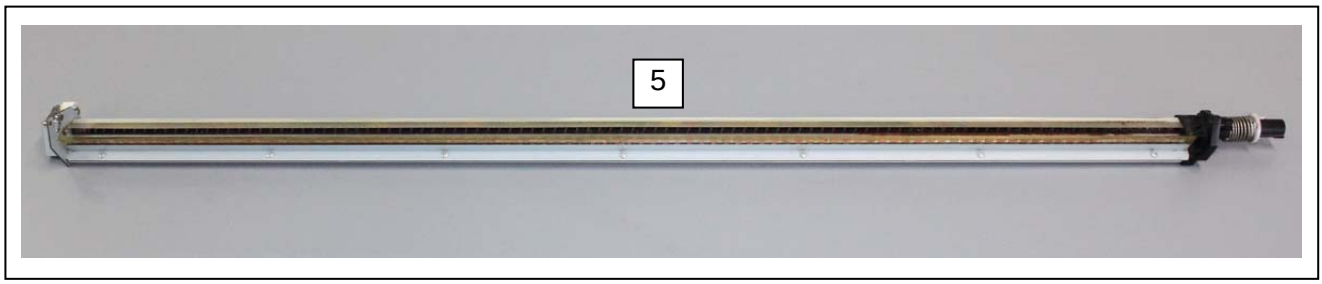
3. Remove a M4x8 screw (3) on the left of machine to unfix the Belt Cleaner Unit. Use an access hole (4) for accessing the screw (3) with screwdriver.





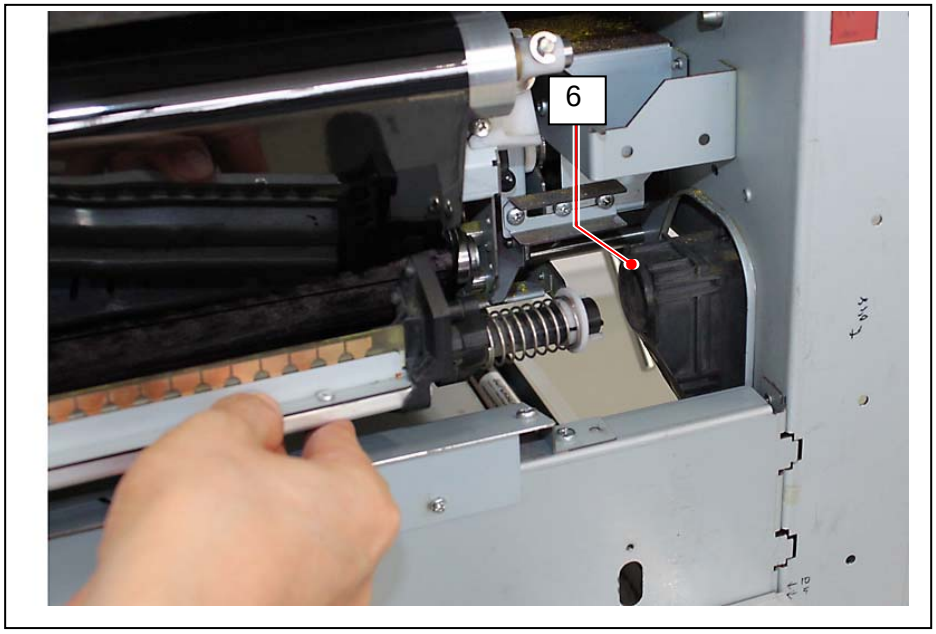
4. Catch both sides of the Belt Cleaner Unit (5). With pushing the entire unit toward the Belt, slide it to right (left when seen from machine front). Belt Cleaner Unit will be removed.

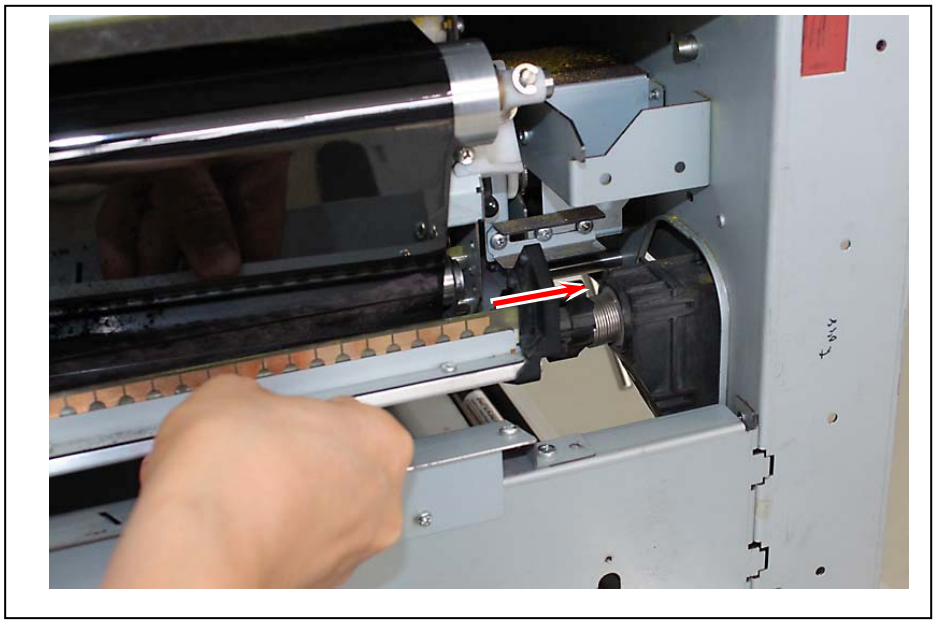




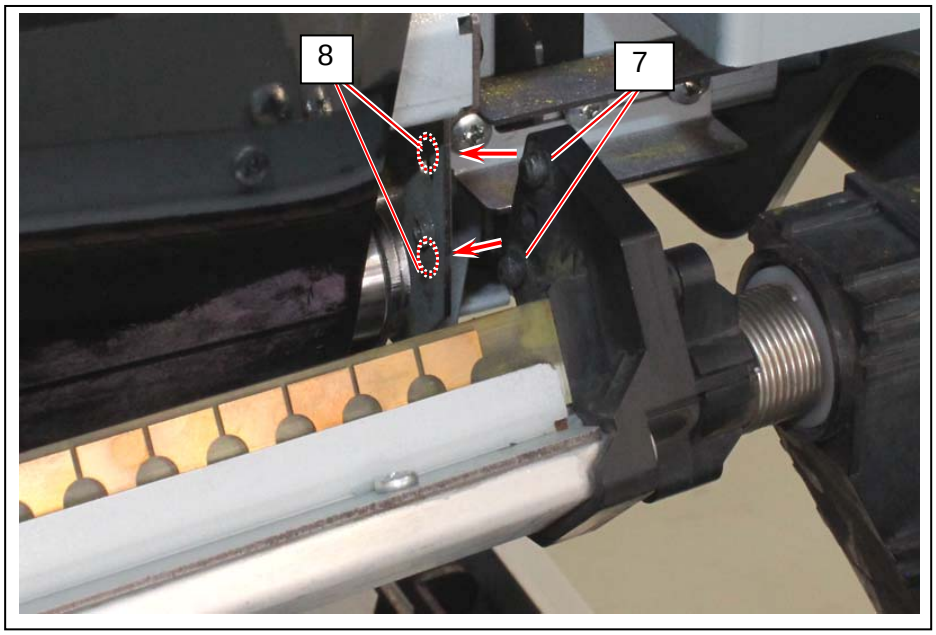
You may feel tight when sliding the Belt Unit as the cleaning blade is strongly pressed to the Belt.

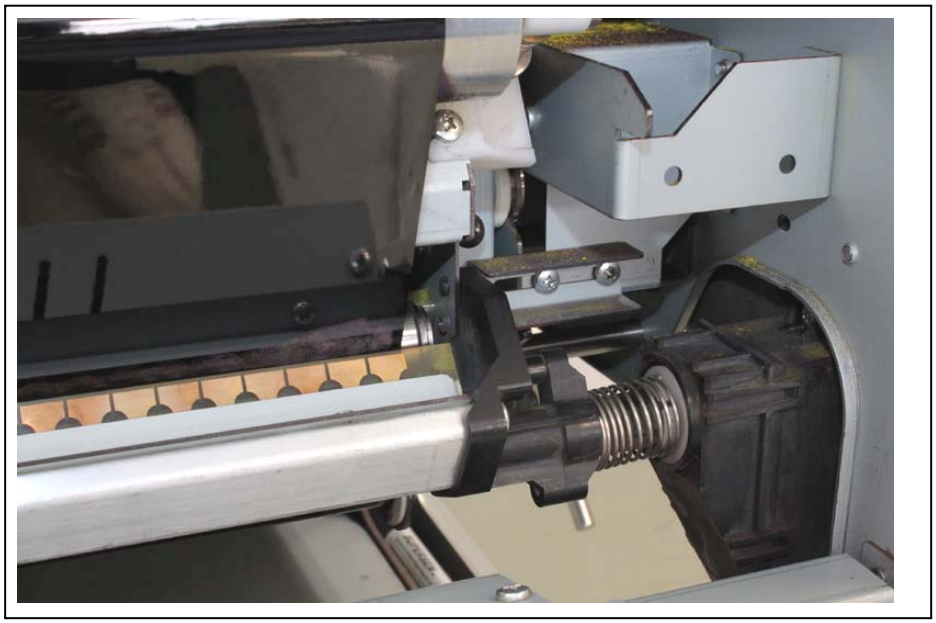
5. When returning the Belt Cleaner Unit back in the machine, at first fully insert the pipe of the unit into the waste toner duct (6).



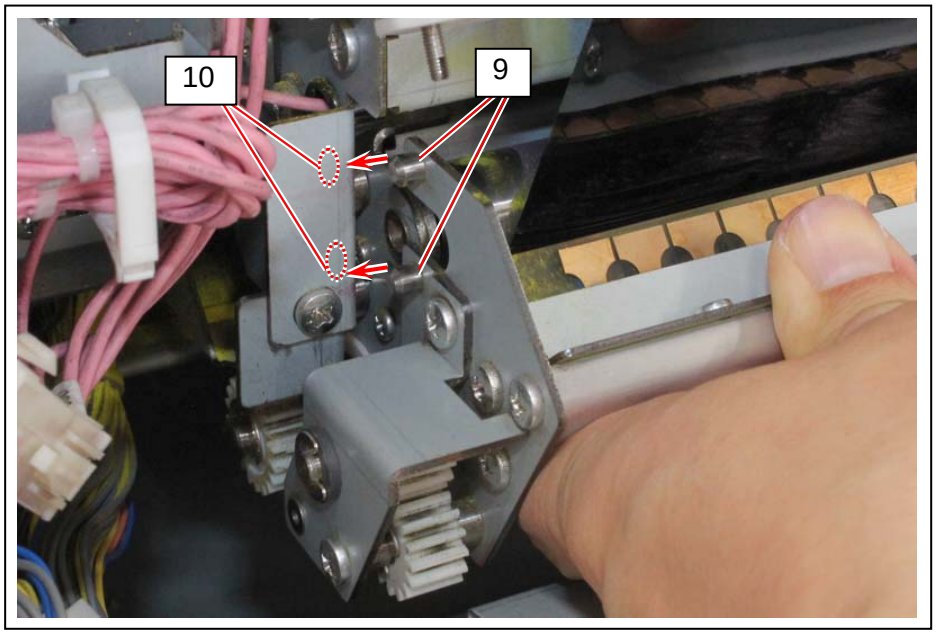


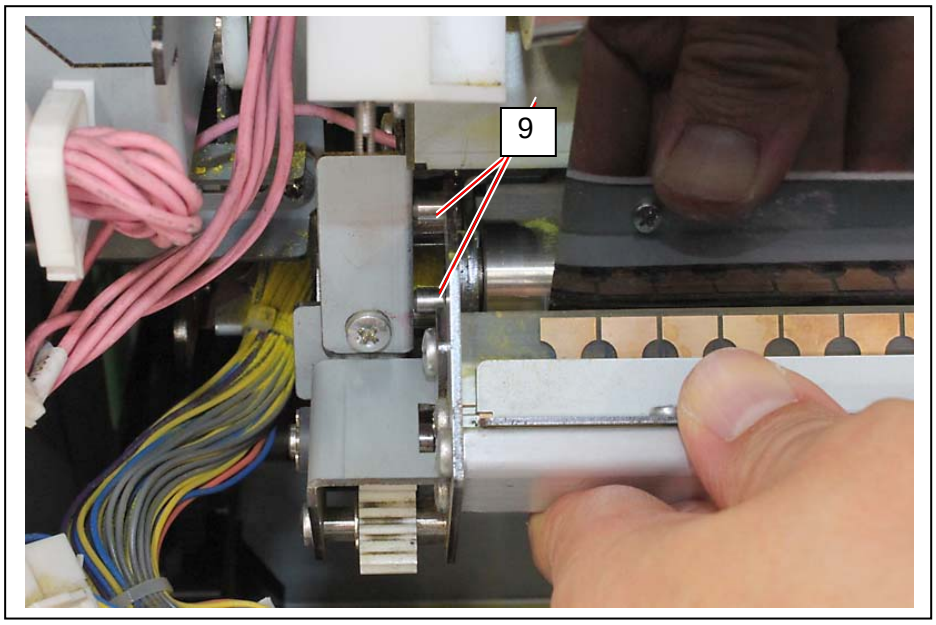
6. As there are 2 bosses (7) on the right (left when seen from machine front), fit them into the positioning holes (8).



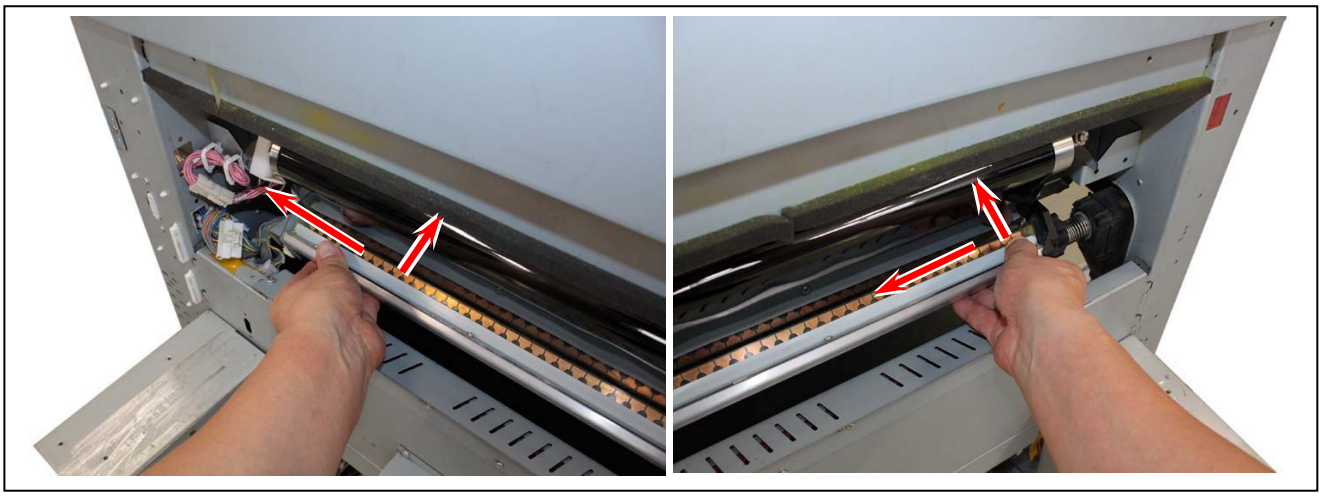


7. As there are 2 metal positioning pins (9) on the left (right when seen from machine front), fit them into the positioning holes (10).



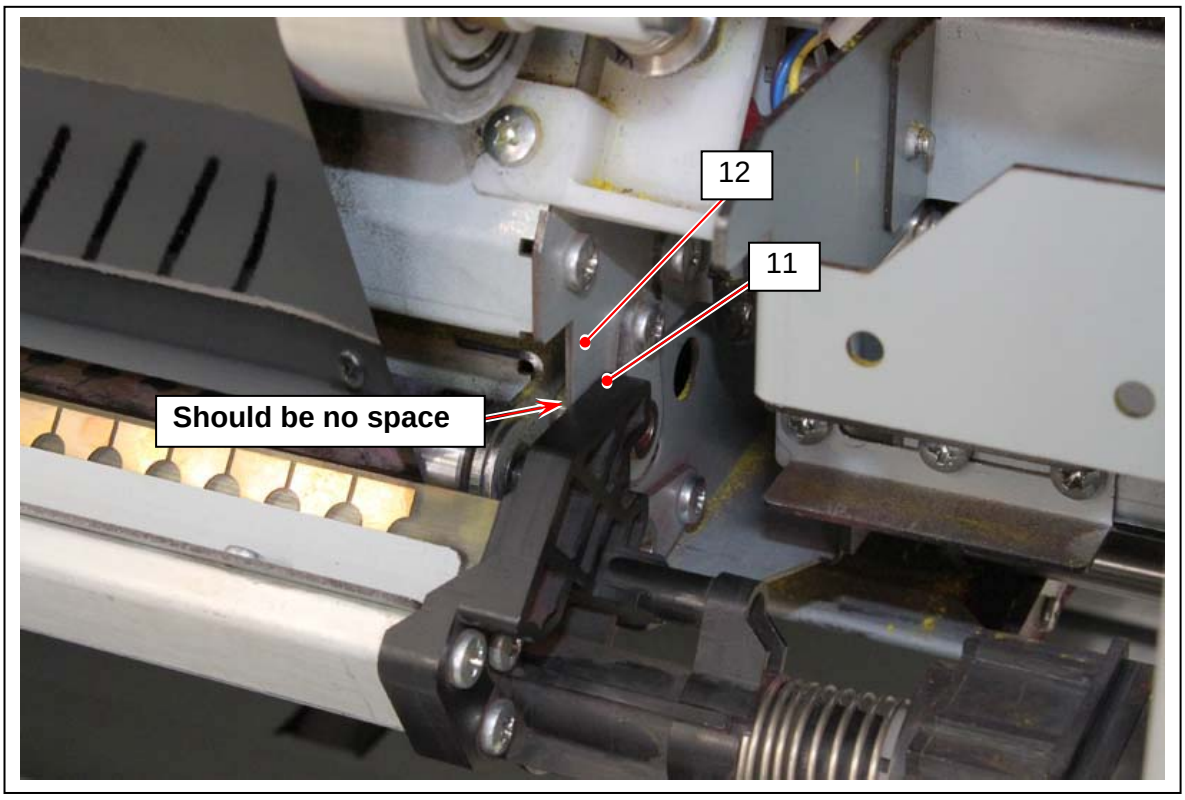


8. With pressing the whole Belt Cleaner strongly toward the Belt, slide it to the left (right when seen from machine front) to set it to the operation position.

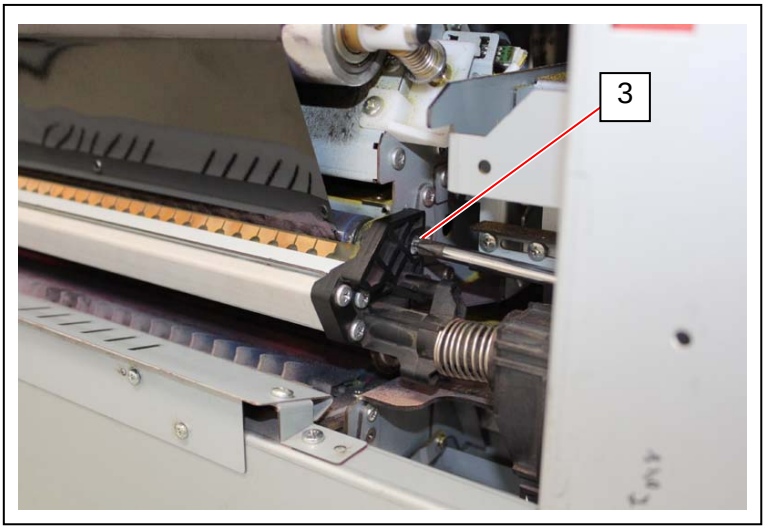


Confirmation

Belt Cleaner Unit is correctly in position if there is no space between plastic Side Plate (11) of Belt Cleaner Unit and metal plate (12). If there is space, the whole unit is not fully slid to the left or positioning bosses/pins are not fully fitted in.



9. Fix the Belt Cleaner Unit with the original M4x8 screw (3).



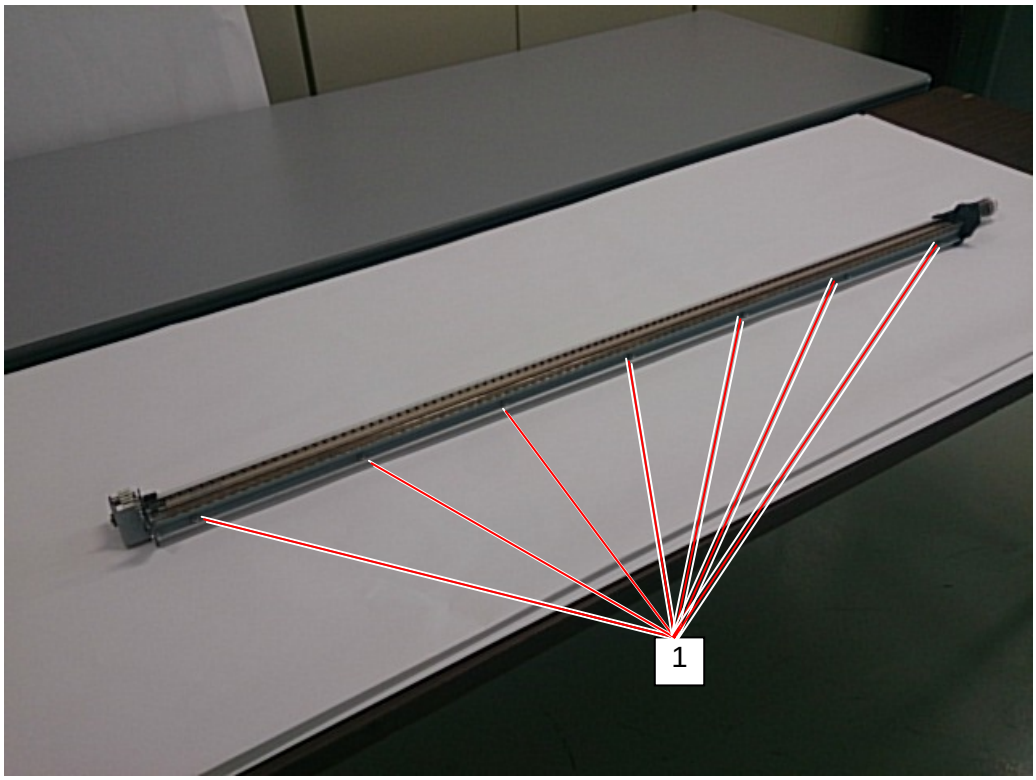
5. 7. 2 Replacement of Blade Assy

NOTE

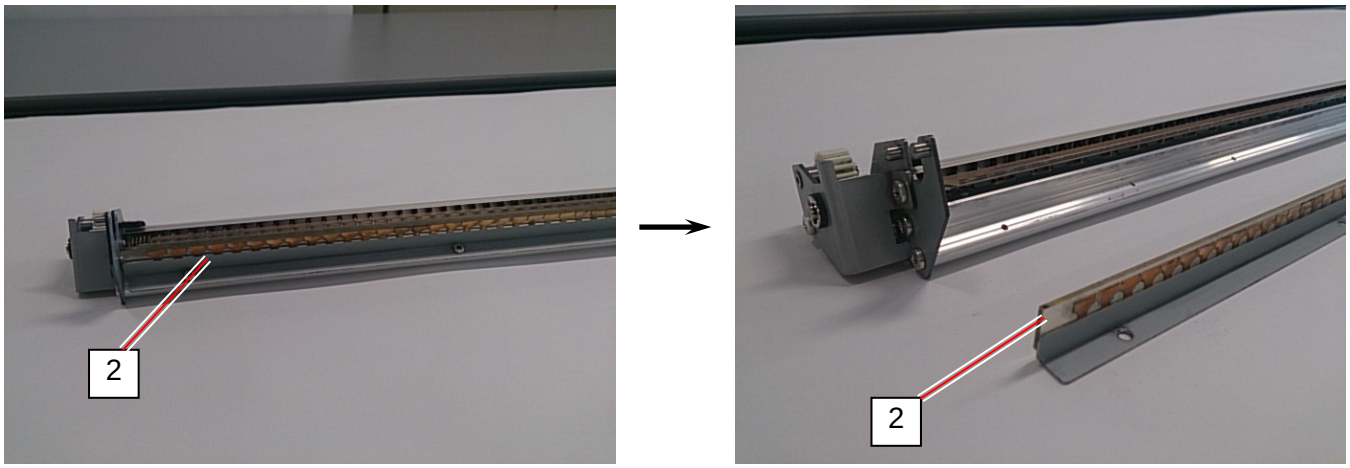
Belt Cleaner has the following Periodical Replacement Parts.

Part name	Quantity
BC BLADE ASSY	1
BC BLADE ASSY 2	1

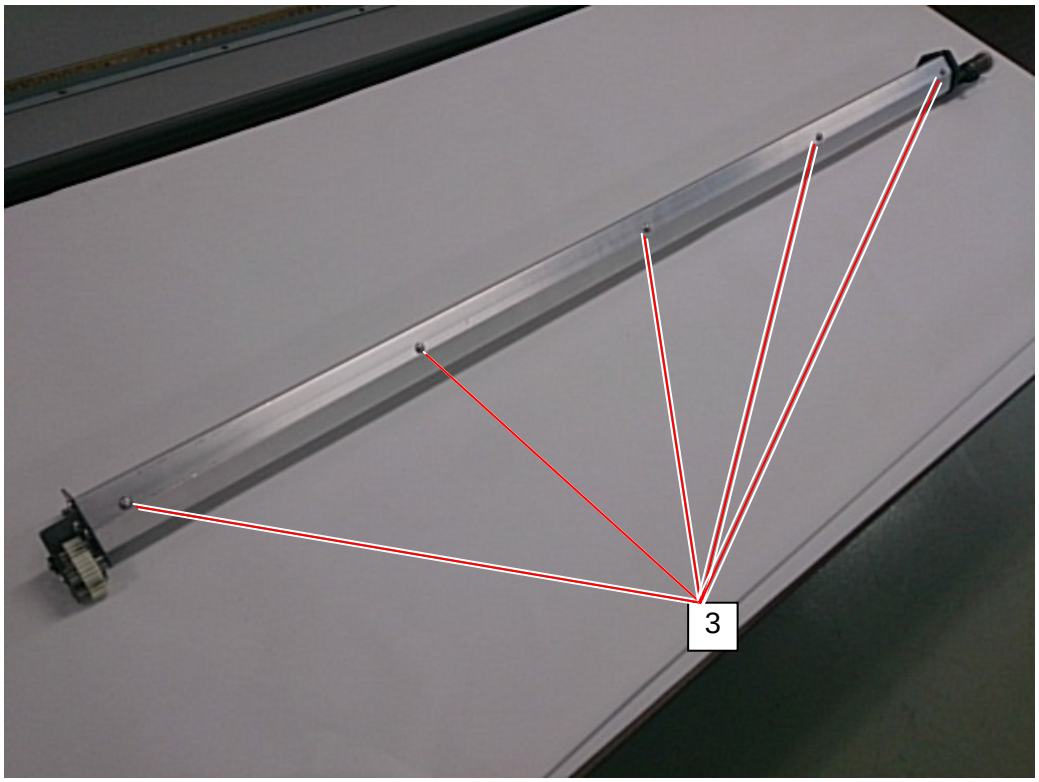
1. Remove the whole Fuser Unit from the machine referring to [5.5.2 Removal of Fuser Unit].
2. Remove the whole Belt Cleaner Unit referring to [5.7.1 Removal of Belt Cleaner].
3. Remove 7 M3x6 screws (1).



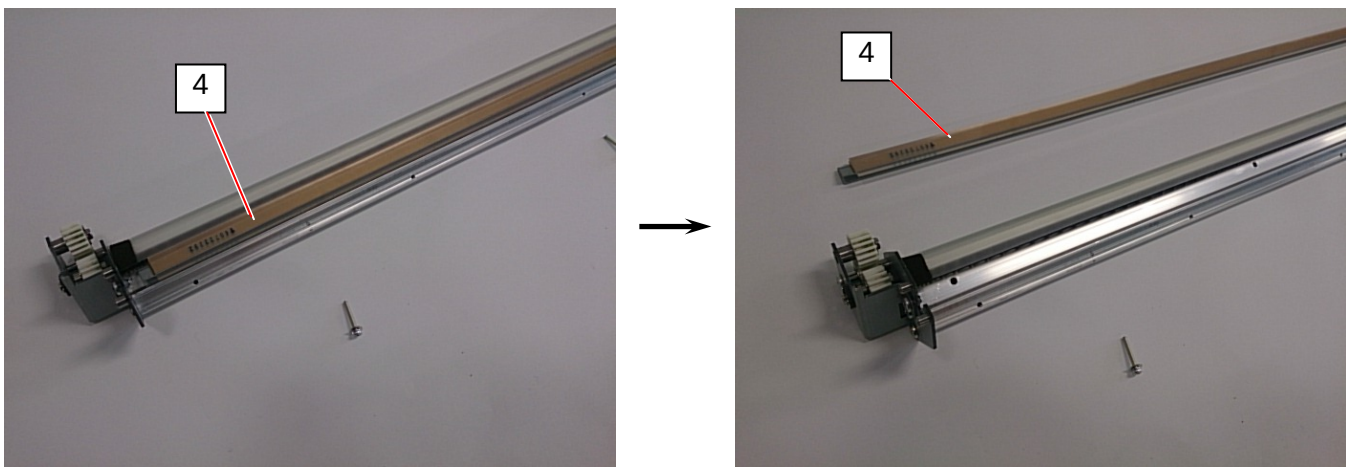
4. Remove the BC Blade Assy (2) and dispose it.



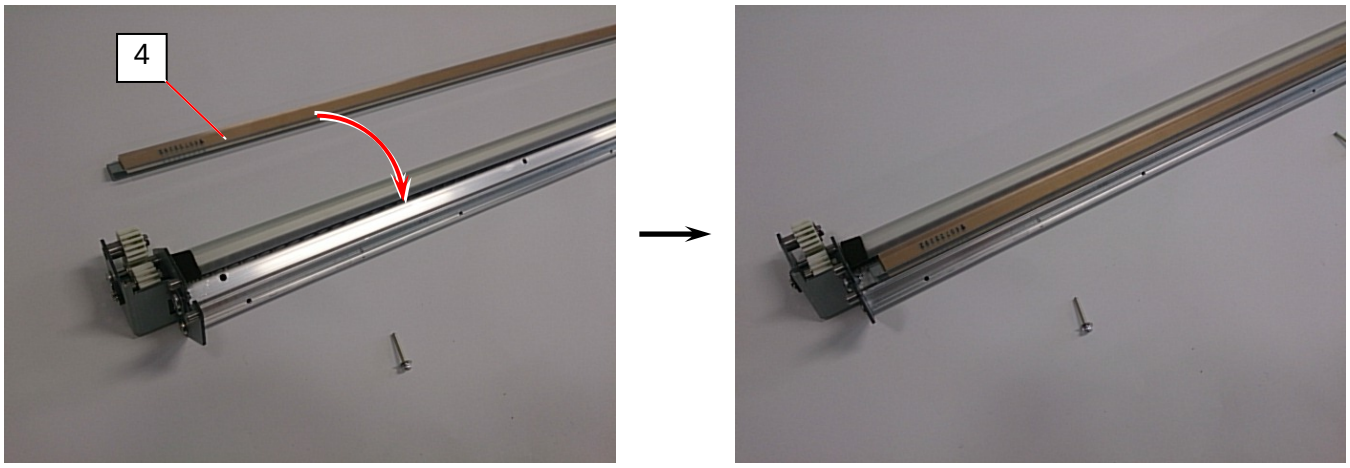
5. Remove 5 screws (3) on the bottom of the unit.



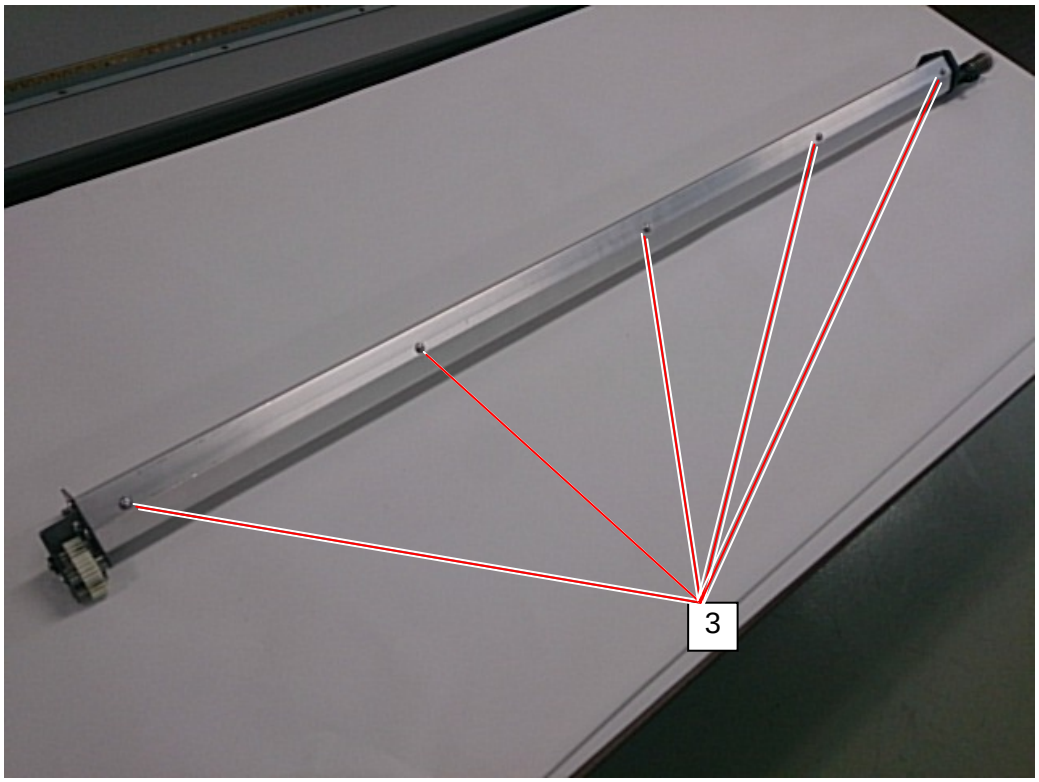
6. Remove the BC Blade Assy 2 (4) and dispose it.



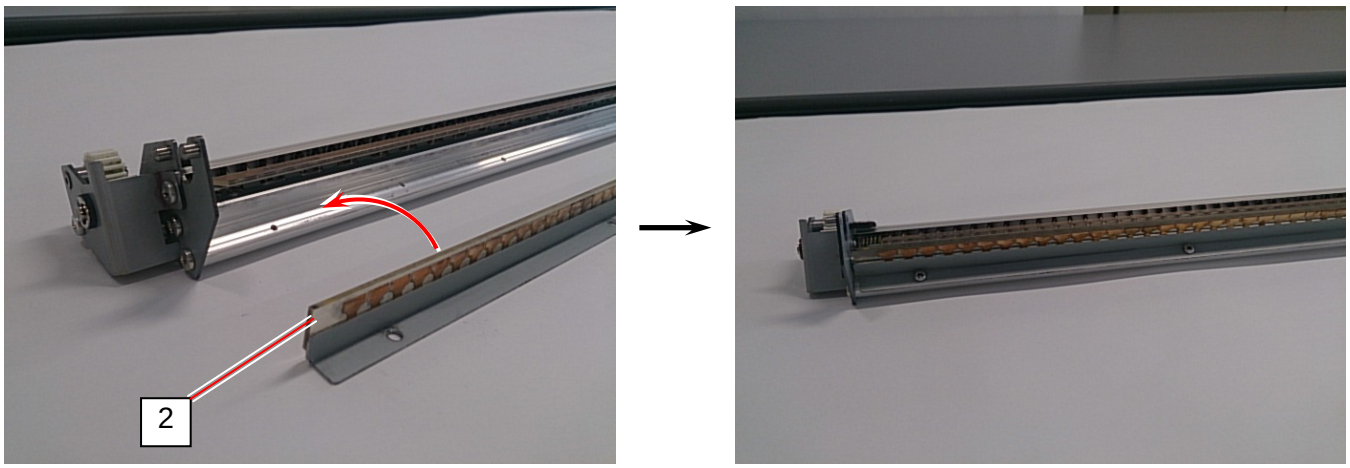
7. Prepare the new BC Blade Assy 2 (4) and then mount it to its correct position.



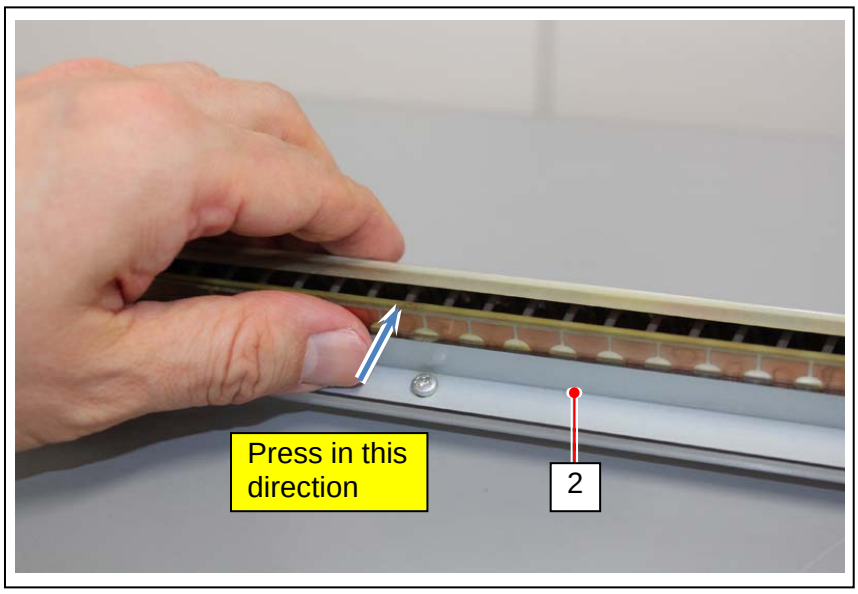
6. Put 5 screws (3) back on and turn them to fix the BC Blade Assy 2 (4).

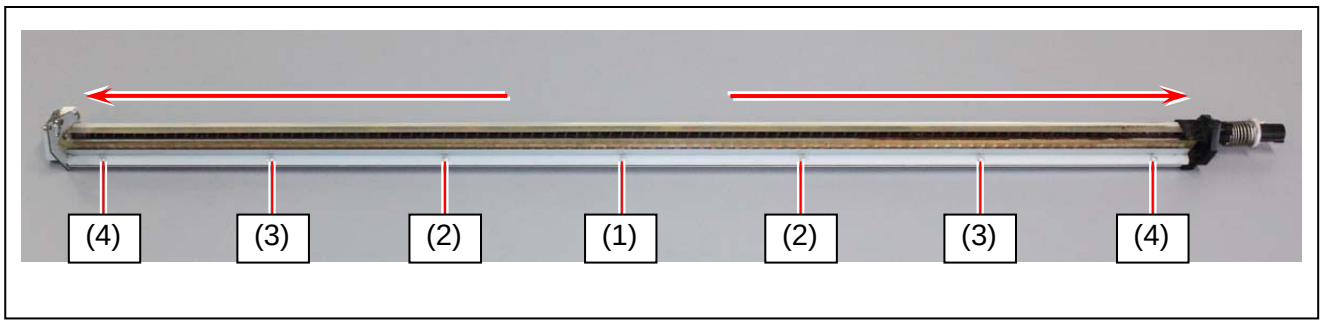


7. Prepare the new BC Blade Assy (2) and then mount it to its correct position..

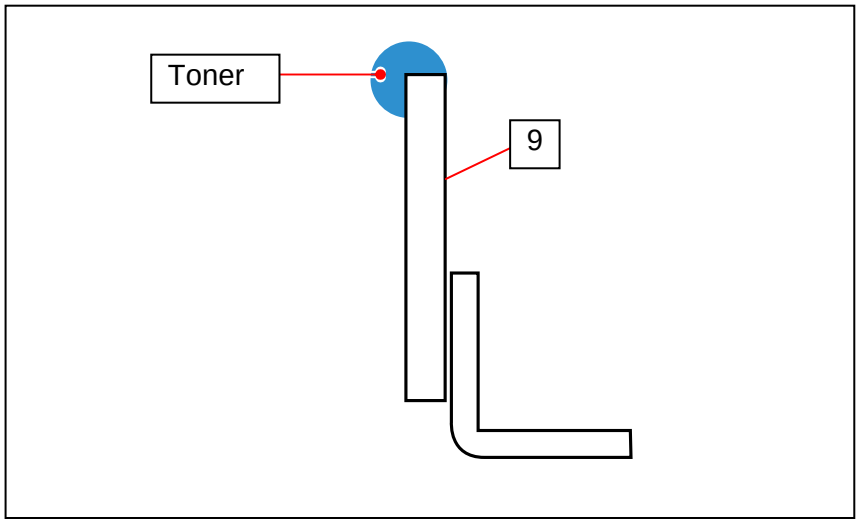


8. Fix the BC Blade Assy (8) with 7 pieces of original M3x6 screws. At this time tighten 7 screws orderly from center to sides, and also tighten them with pressing the BC Blade Assy (2) in the direction of blue arrow.





9. Apply toner of any color to the edges of BC Blade Assy (2) and BC Blade Assy 2 (4).



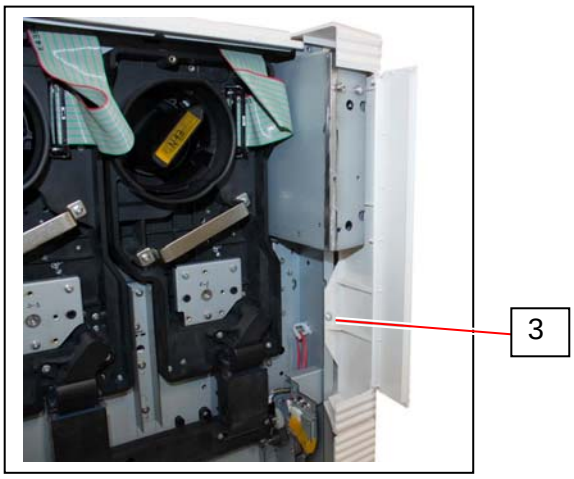
8. Put Belt Cleaner Unit back in the printer referring to [5.7.1 Removal of Belt Cleaner].

9. Put Fuser Unit back on the printer referring to [5.5.2 Removal of Fuser Unit].

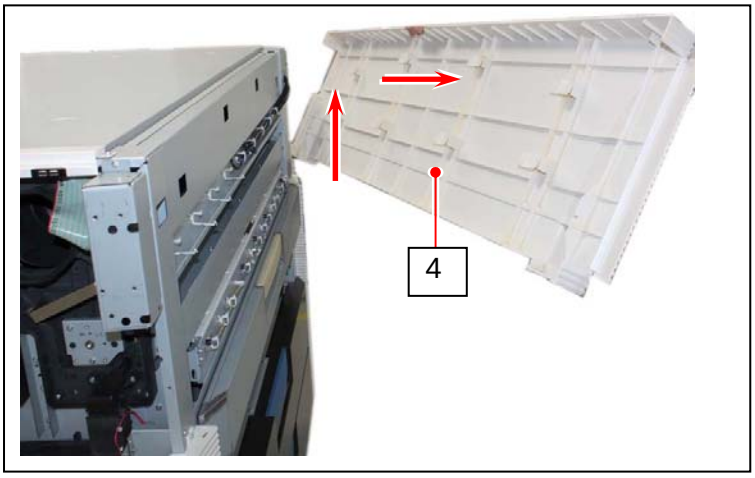
5. 8 Density Sensor

5. 8. 1 Replacement of Density Sensor

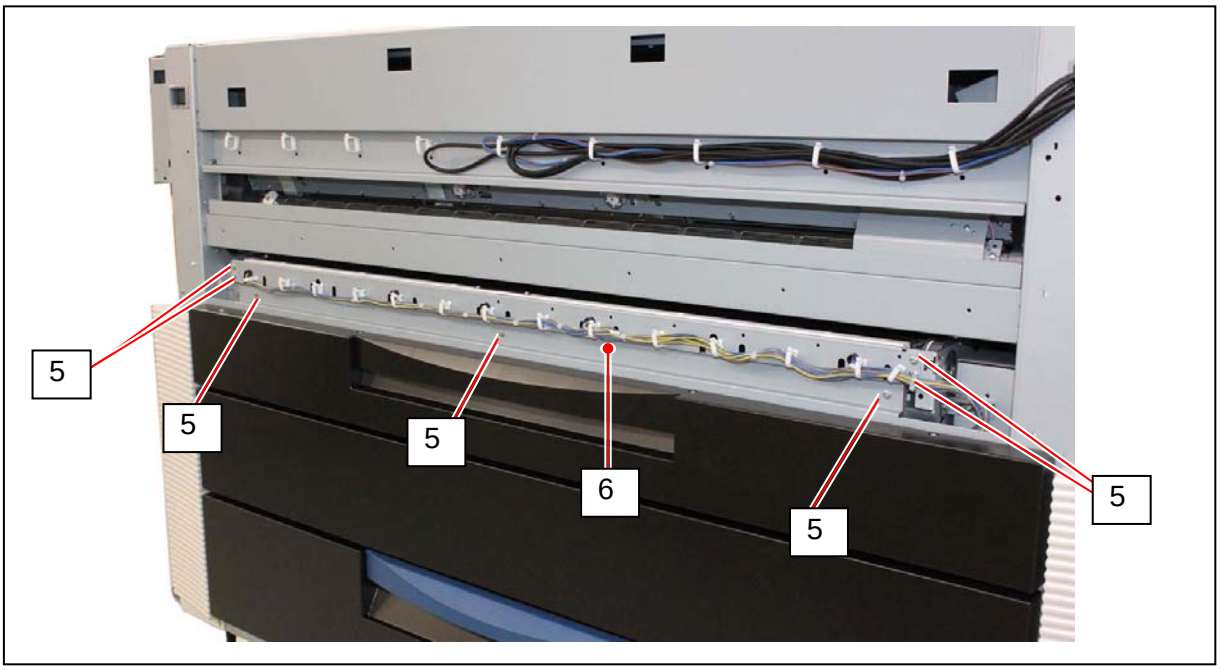
1. Open both Cover 4L (1) and Cover 4R (2), and remove M4x6 screws (3) on both sides.



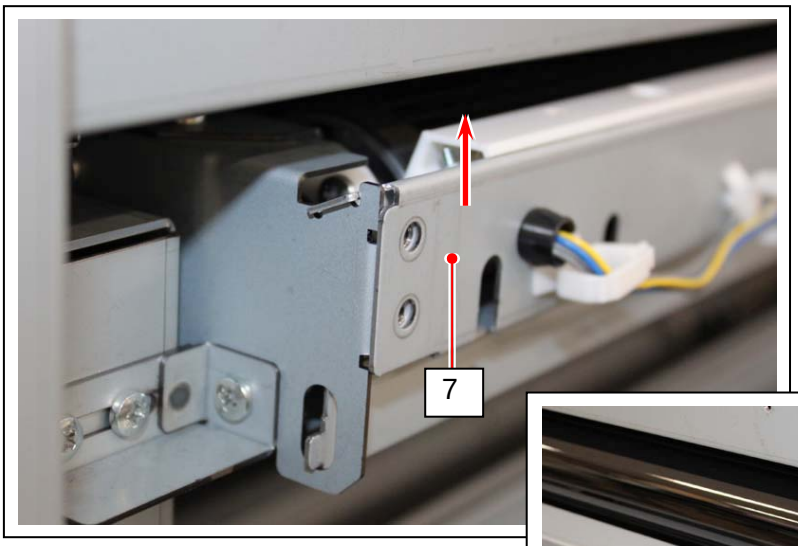
2. Bring up and remove the Front Cover (4).

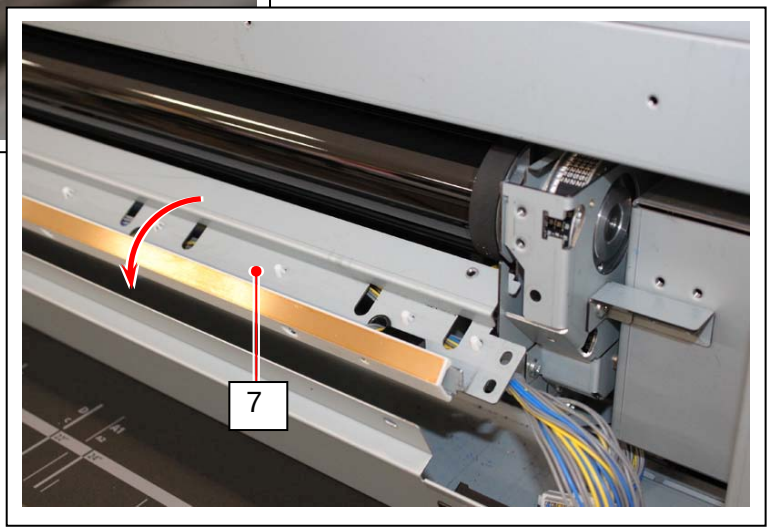


3.Remove 7 M4x6 screws (5), which removes the Cover (6) as well.



4. Bring up the Density Sensor Bracket (7) a little and turn it over as the photo. (Density Sensor Bracket is not removed but still held on both sides.)

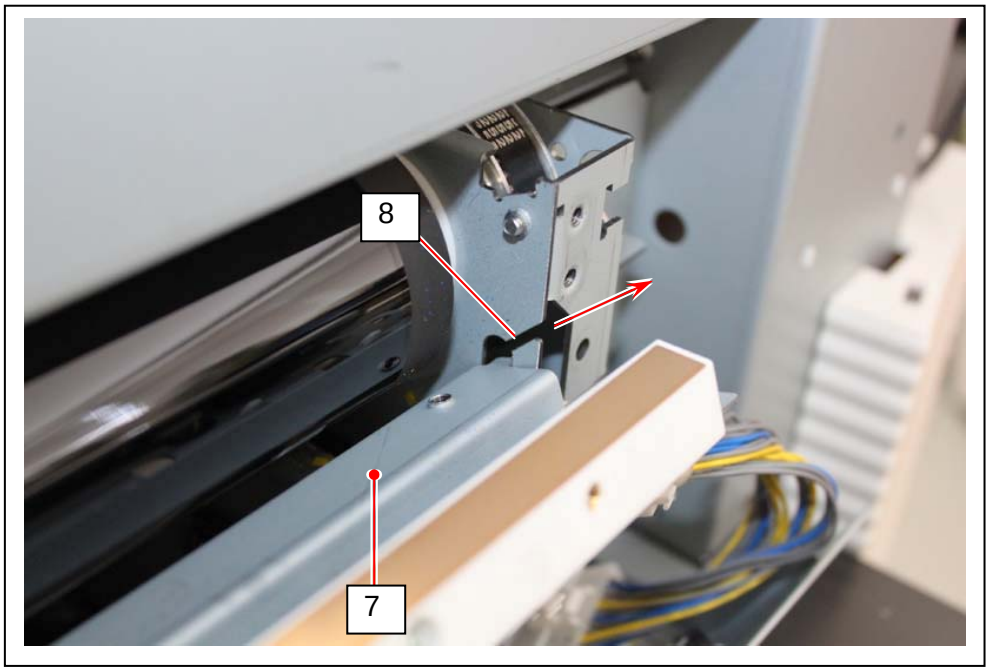




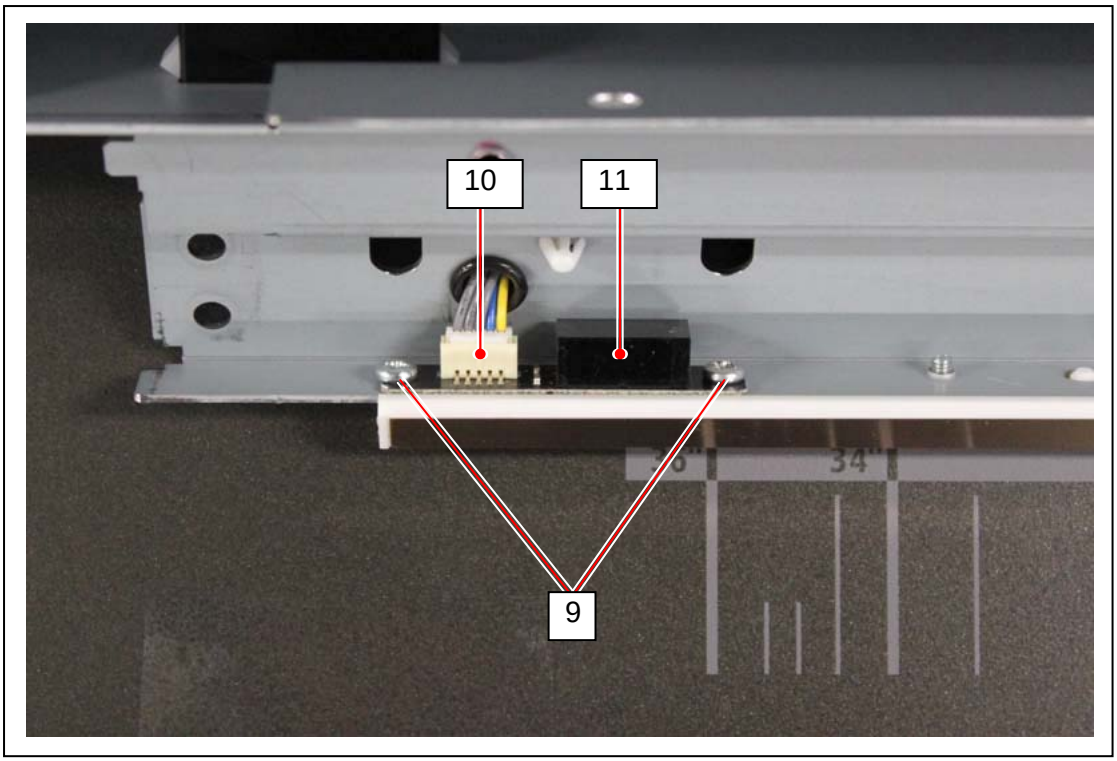
Reference

This state allows you to clean the Density Sensors.

5. Remove the Density Sensor Bracket (7) by releasing the right side using the slit (8).



6. For replacing each Density Sensor (11), remove 2 M3x5 screws (9) and plug out a connector (10).

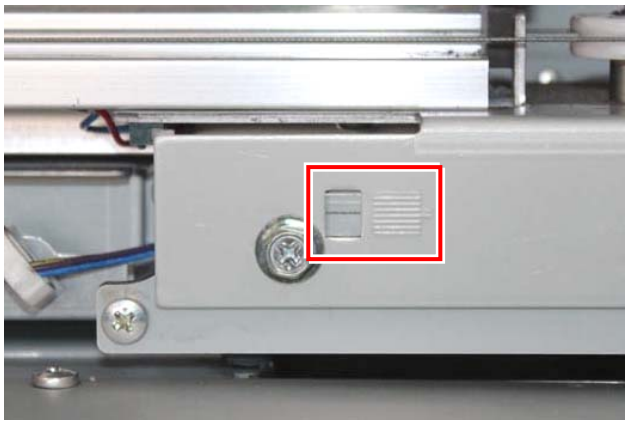


5. 9 Cutter Unit

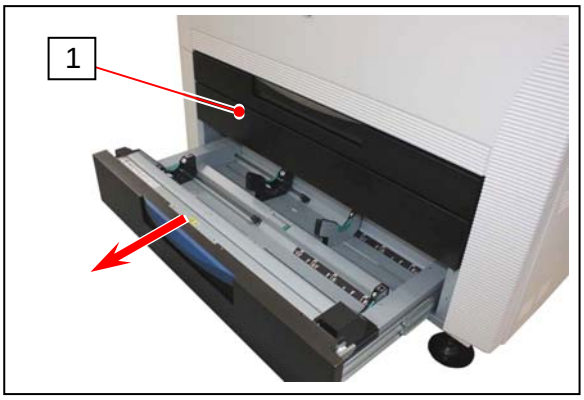
5. 9. 1 Replacement of Cutter Unit

NOTE

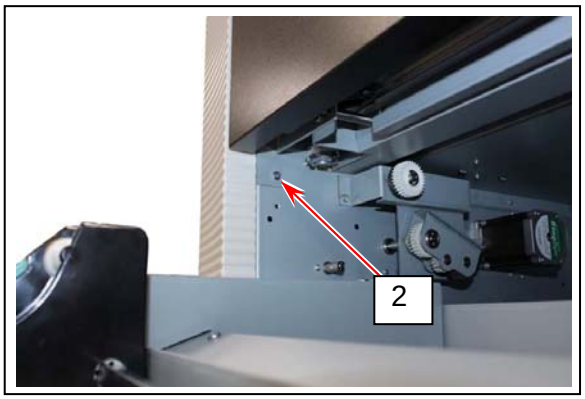
Be sure to remember the original height of the cutter by checking the height gauge on the right before removing the Cutter Unit, as it is necessary to set the new cutter to the same height later.

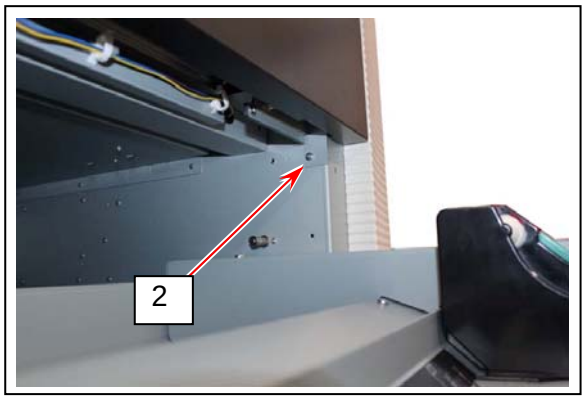


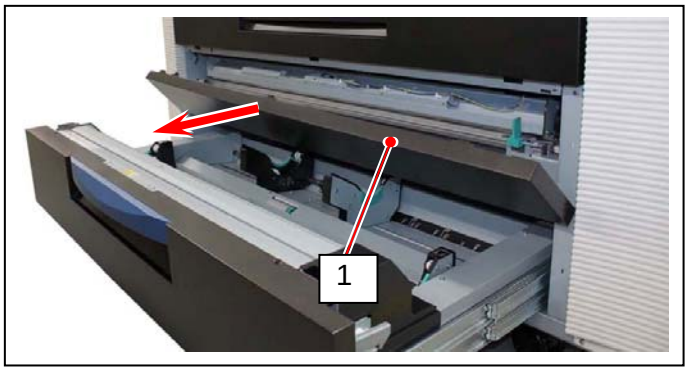
1. Open the Deck 1 that is below the Cutter Cover (1).



2. Remove 2 screws (2) to remove the Cutter Cover (1).

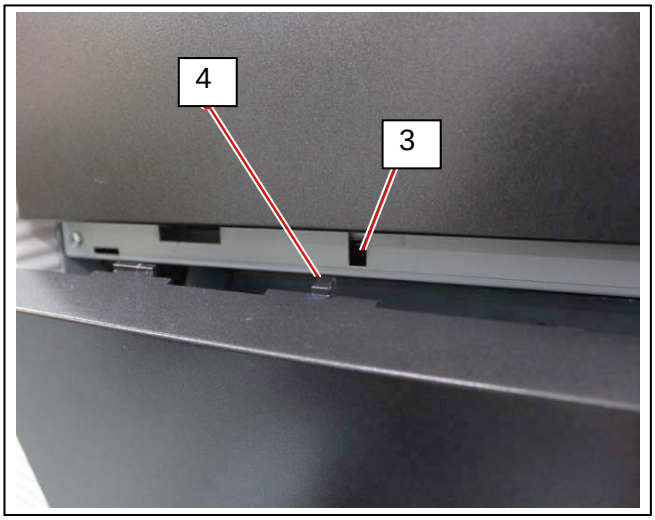




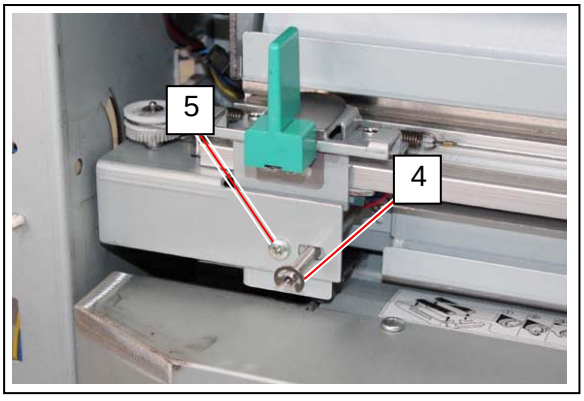


NOTE

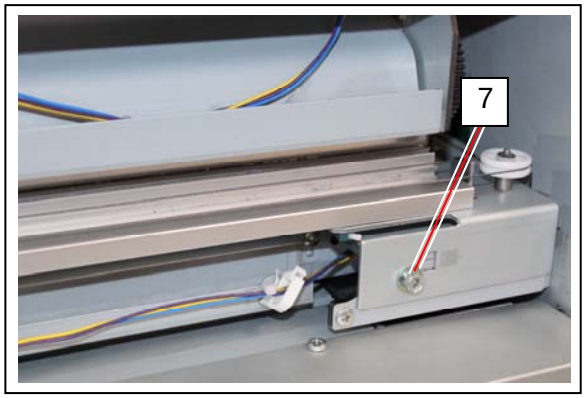
There is an Interlock Switch (3) that detects the Cutter Cover. When putting back the Cutter Cover, be sure to fit the actuator (4) into the sensor hold so that it surely pushes the switch.

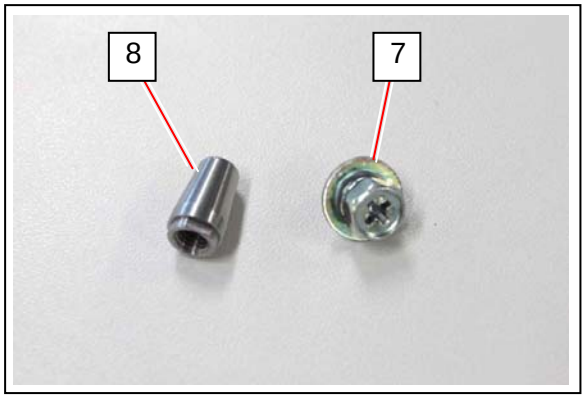


3. Remove an E Ring (E5) (5) and a M4x6 screw (6) on the left.

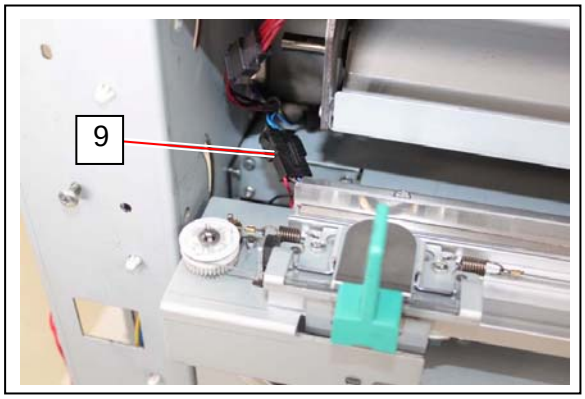


4. Remove a hexagon bolt (7) to remove a Cutter Positioning Pin (8) on the right. Be careful not to drop the pin into the machine.





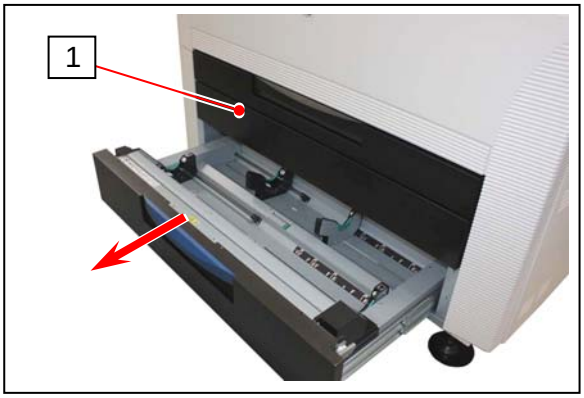
5. Plug out a connector (9) on the left.



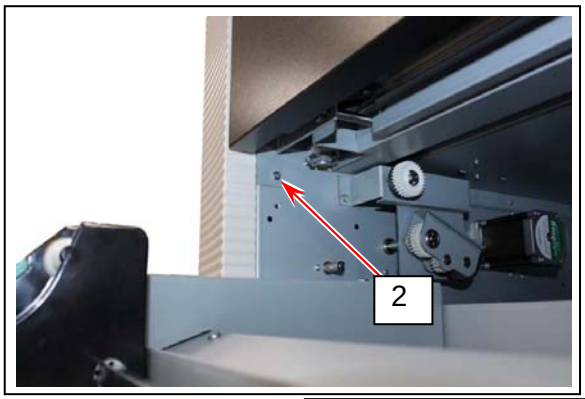
6. Gently slide out the Cutter Unit to the front and remove it from the machine. Install a new cutter back in the machine by the reversed order.

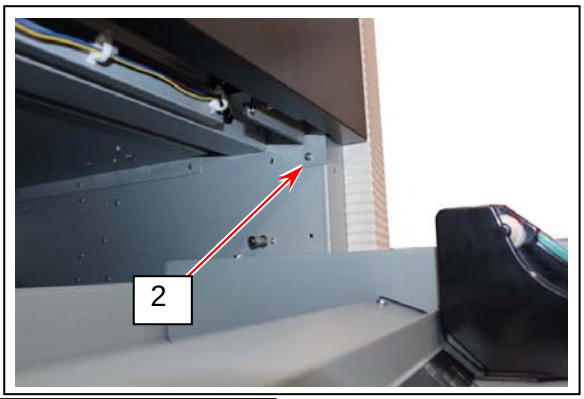
5. 9. 2 Cleaning of the Cutter unit

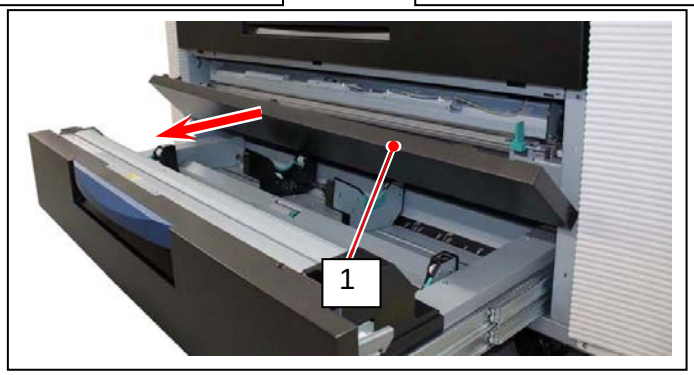
1. Open the Deck 1 that is below the Cutter Cover (1).



2. Remove 2 screws (2) to remove the Cutter Cover (1).

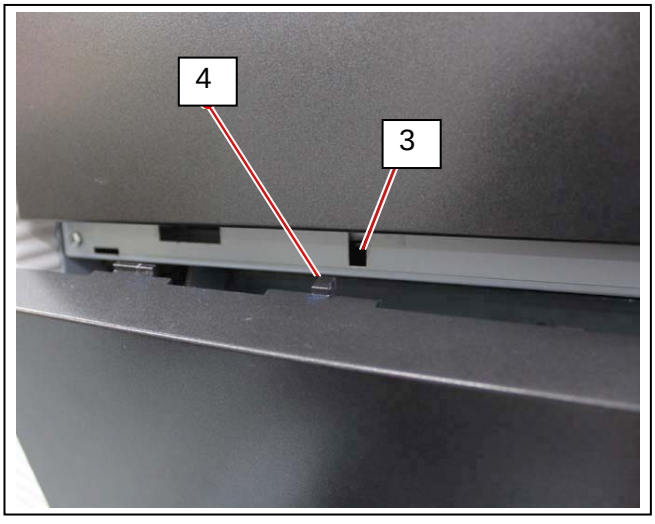




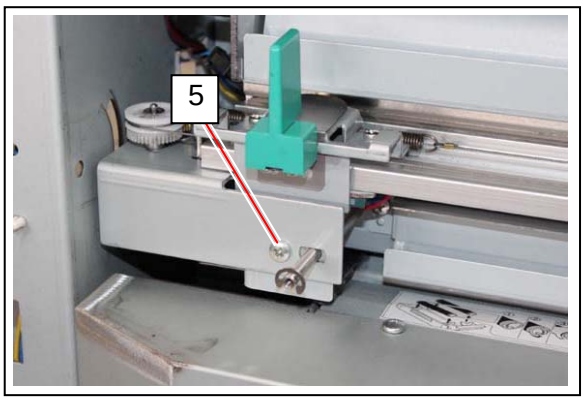


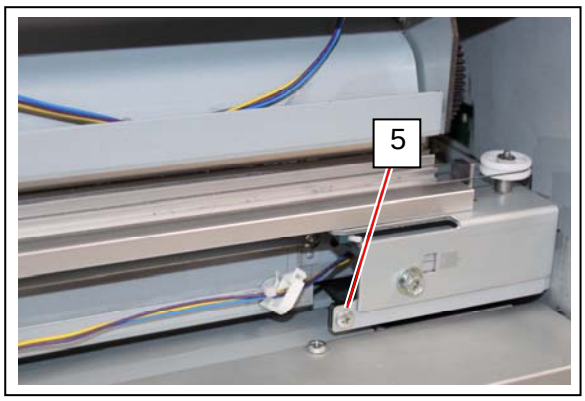
NOTE

There is an Interlock Switch (3) that detects the Cutter Cover. When putting back the Cutter Cover, be sure to fit the actuator (4) into the sensor hold so that it surely pushes the switch.

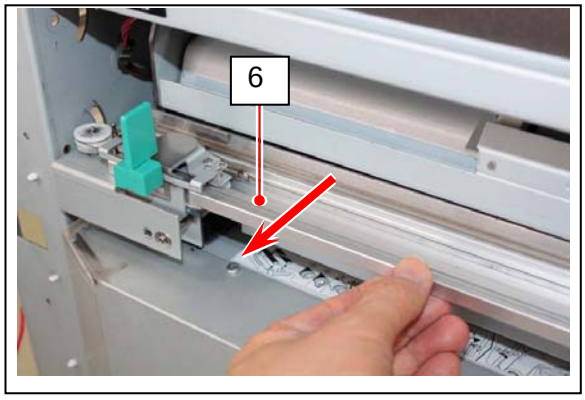


3. Remove 2 M4x6 screws (5) on both sides.

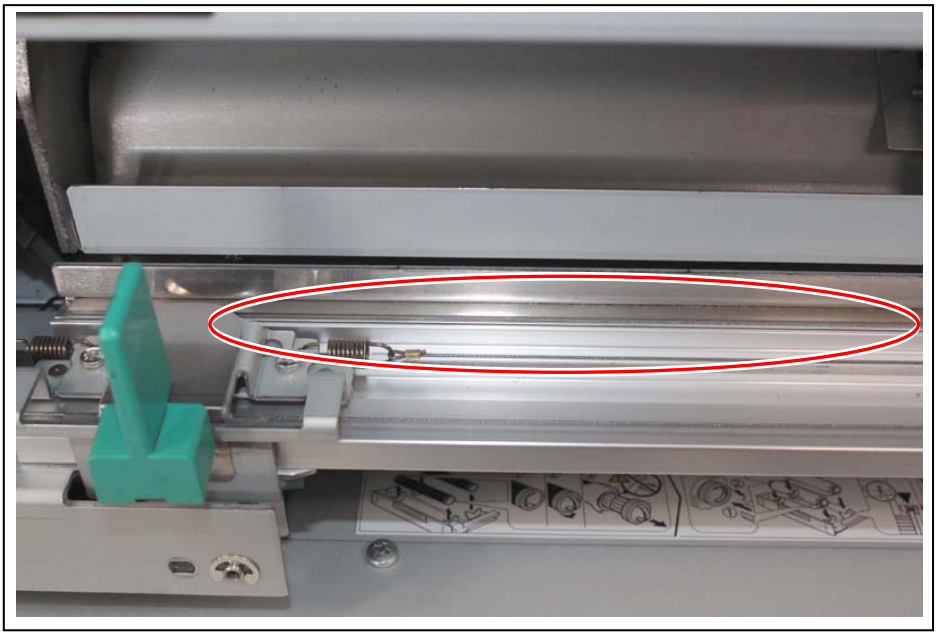




4. Slide out the Cutter Unit (6) fully to the front until it stops.



5. Clean the Cutter Blade and other parts.



⚠ WARNING

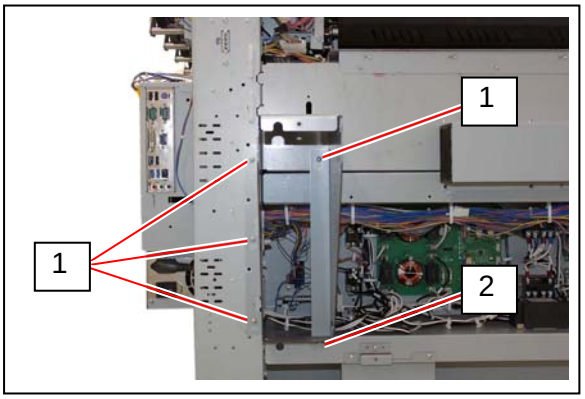
Cutter Blade is very sharp. Be careful not to be harmed when cleaning the Cutter.

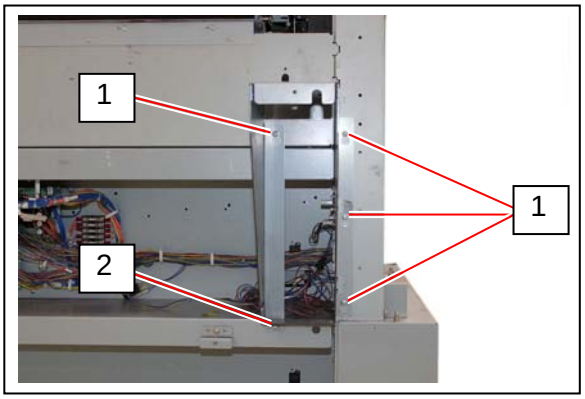
5. 10 Secondary Transfer Roller

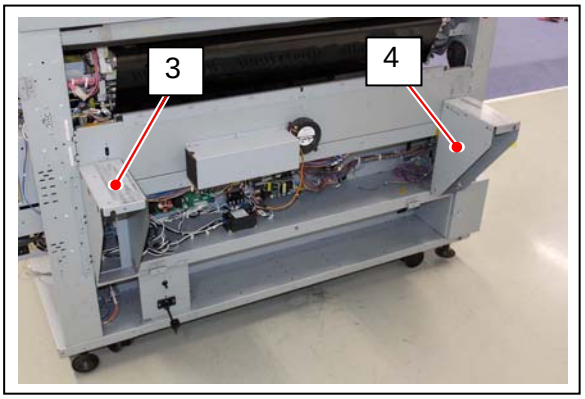
5. 10. 1 Replacement of Secondary Transfer Roller

1. Remove the whole Fuser Unit from the machine referring to [Removal of Fuser Unit].

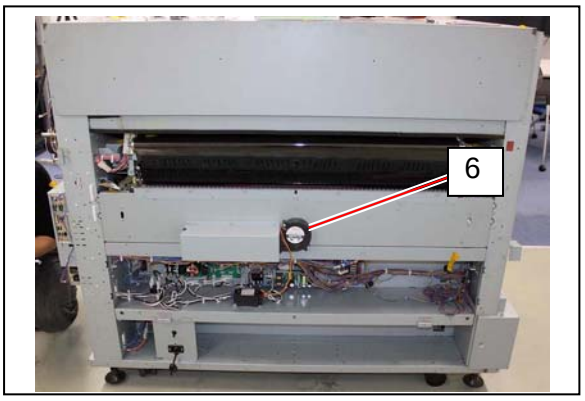
2. Remove 4 each M4x6 screws (1), loose 1 each screw (2), and remove the Fuser Base Brackets R (3) and Fuser Base Bracket L (4).

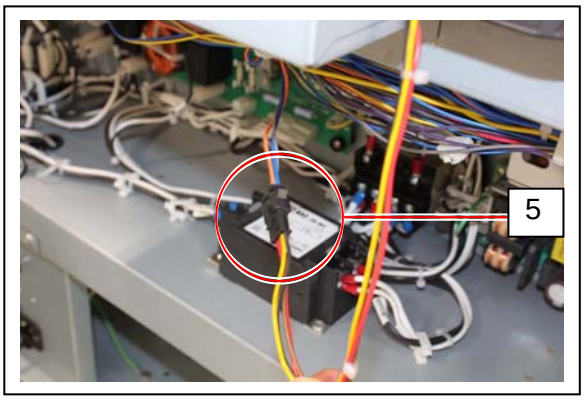




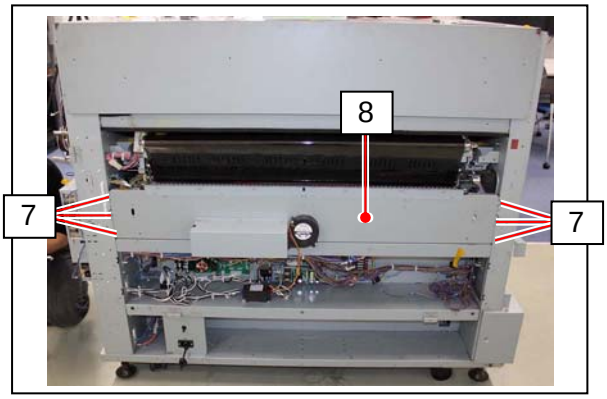


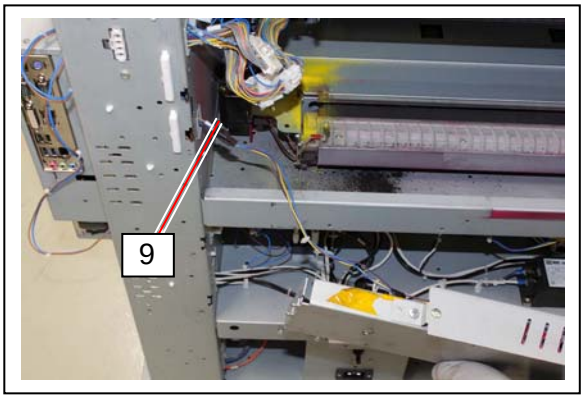
4. Plug out a connector (5) of the Fan (6).



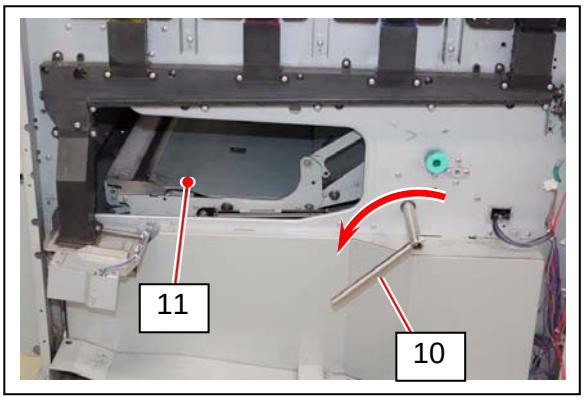


5. Remove 6 M4x6 screws (7) to remove the Rear Beam (8). Plug out the connector (9) also.

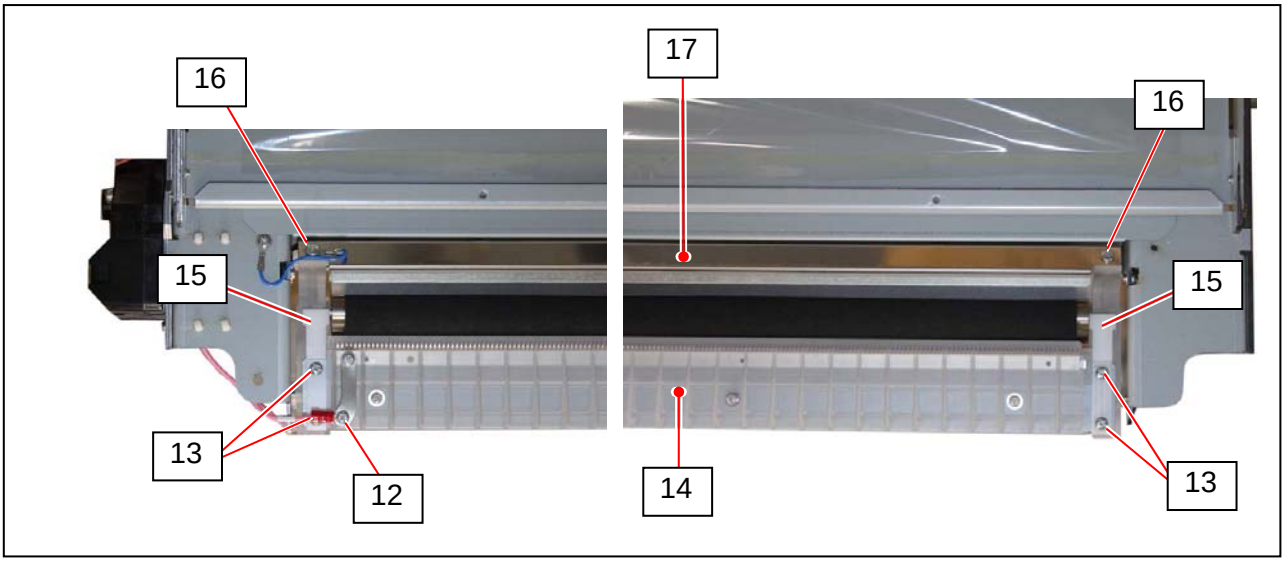




5. Turn the Lever (10) to the left to bring down the Inner Feeder Unit (11).

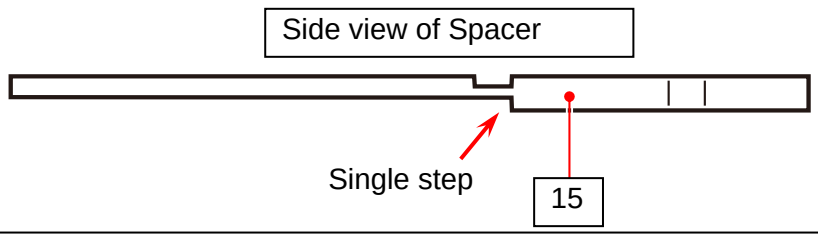


6. Remove one M3x6 screws (12) to release the grounding wire. Remove 4 M3x6 screw (13) to remove the Discharge Needles (14) and spacers (15). Remove 2 M3x6 screws (16) to remove the Guide Plate (17).

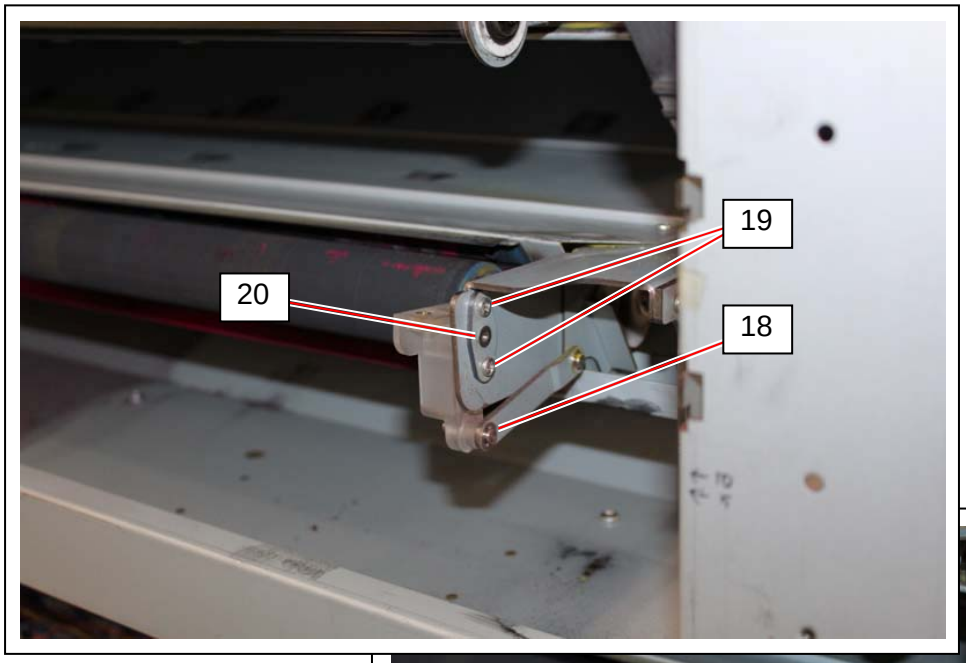


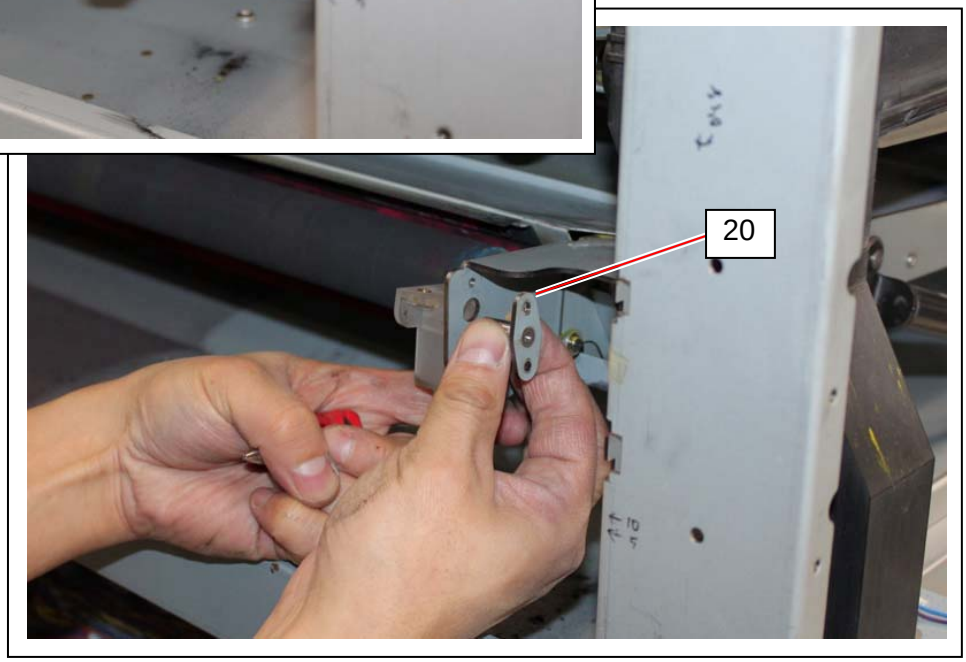
NOTE

When returning the Spacers (15), place its single step side to the bottom.

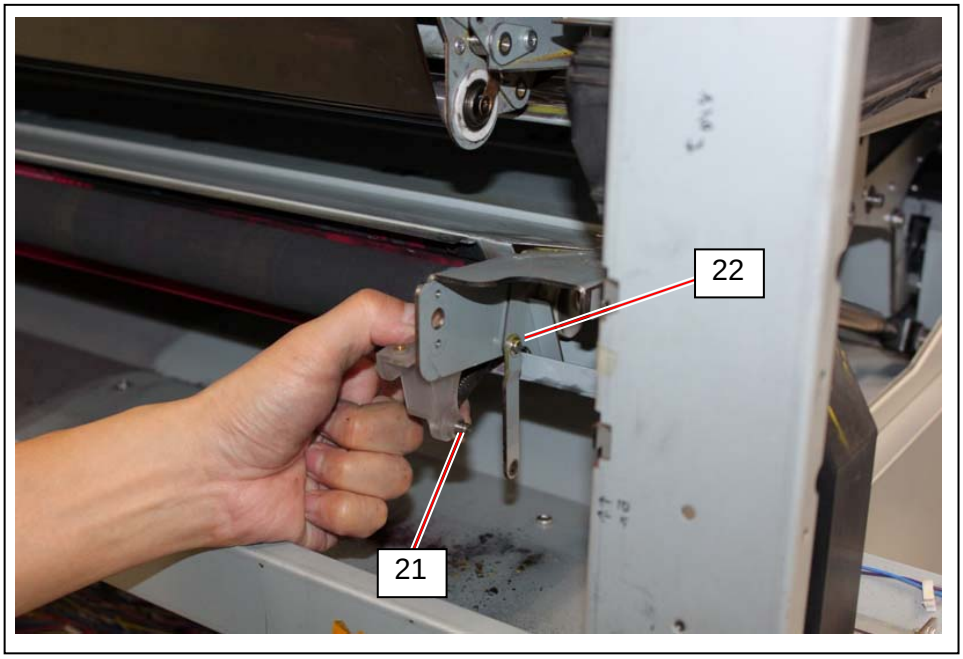


7. Remove an E Ring (E4) (18) on the left of the machine. Remove 2 M3x4 screws (19) to remove the Bracket (20).

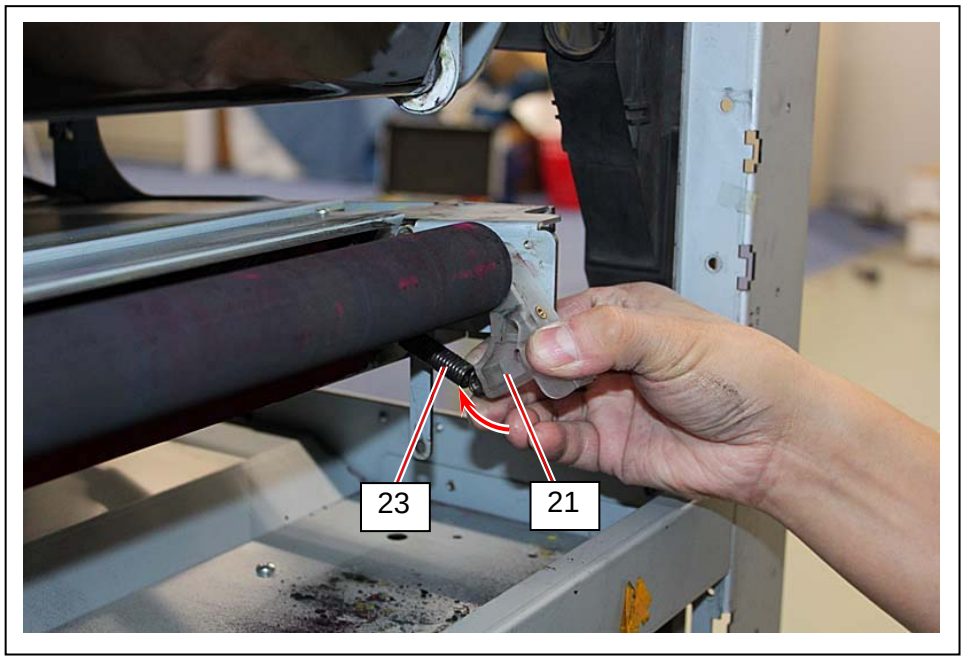




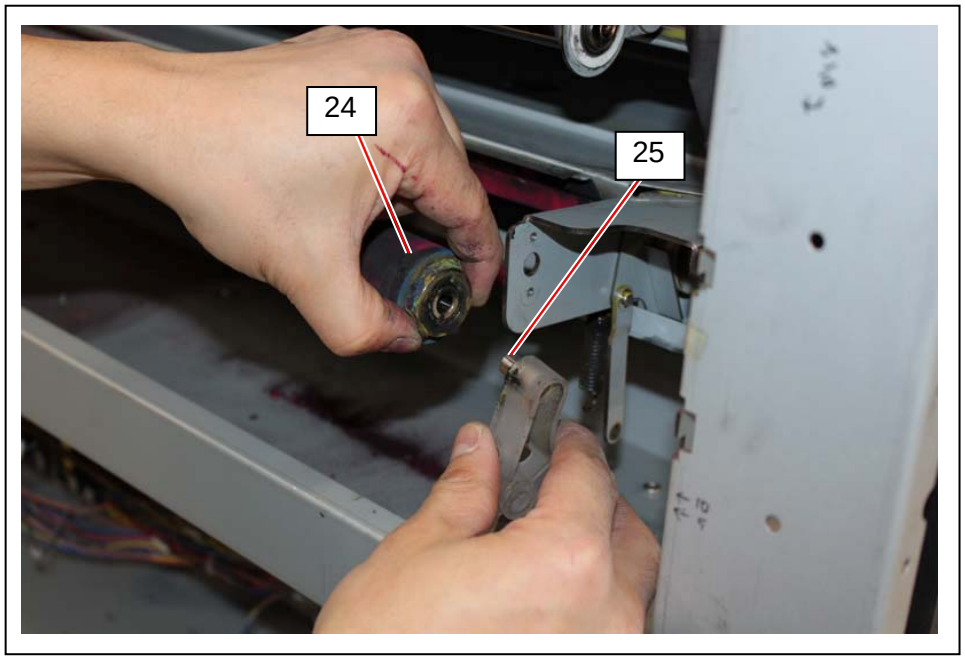
8. Disconnect the Link (22) from the shaft of TR2 Arm F (21). (This may be tight.)
Please keep holding the TR2 Arm F (21) as it is no longer held when Link (22) is disconnected.



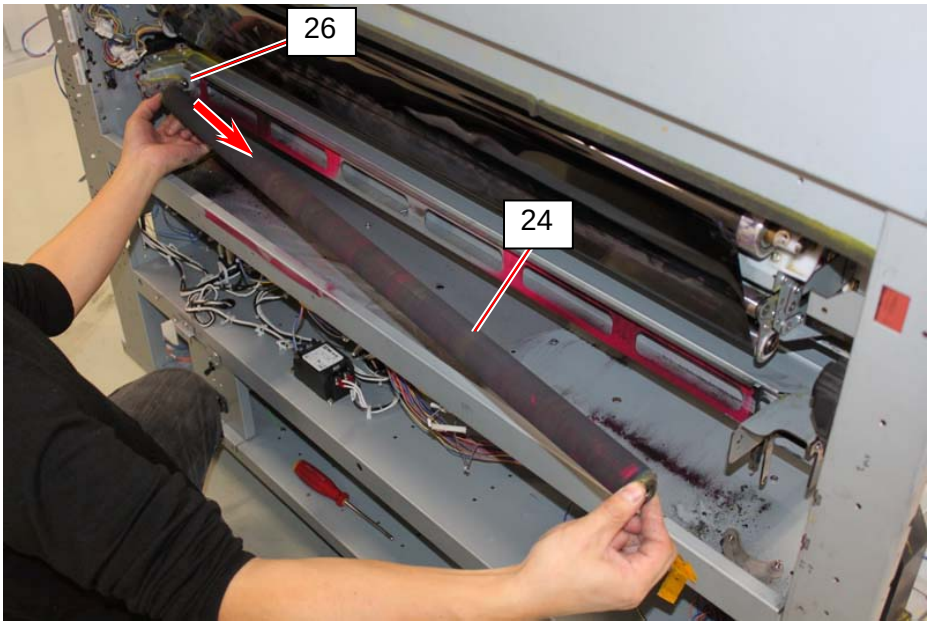
9. Move the TR2 Arm F (21) in the direction of arrow, and remove the Spring (23).



10. Remove the left side of Secondary Transfer Roller (24) from the shaft (25) of TR2 Arm.

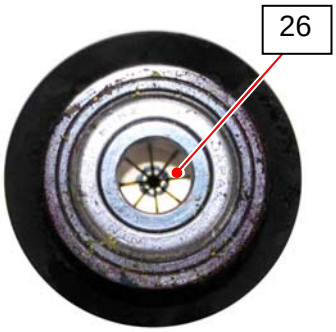


11. Slide the whole Secondary Transfer Roller (24) in the direction of arrow to pull it out from the shaft (26) on the other side. Replace the Secondary Transfer Roller with the new one.

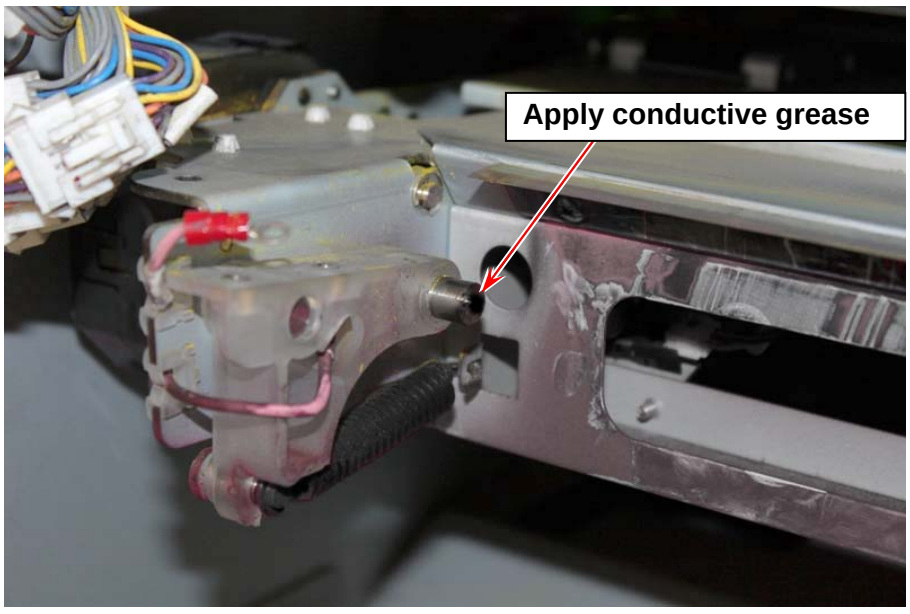


NOTE

1. Secondary Transfer Roller has Copper Bias Plate on one side. This Copper Bias Plate side must be on the right side (seen from the front) of the machine.



2. Apply conductive grease on the tip of the shaft where the Copper Bias Plate of the Secondary Transfer Roller contacts.



5. 5 Fuser Unit

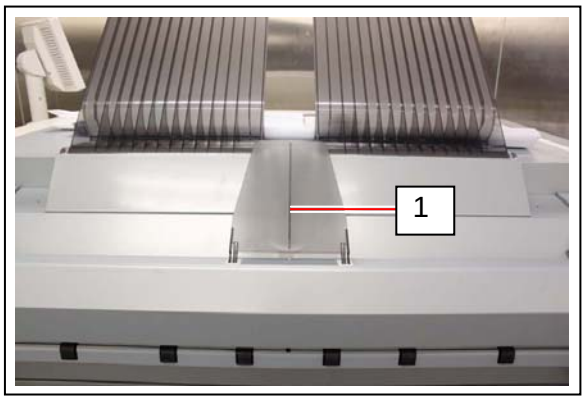
5. 5. 1 Replacement of Periodical Maintenance Part

NOTE

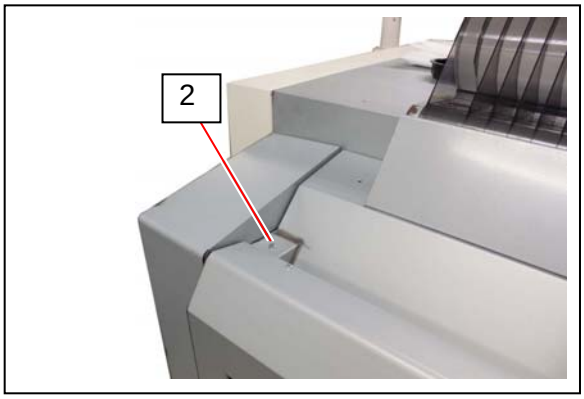
The following parts of Fuser Unit are replaced periodically.

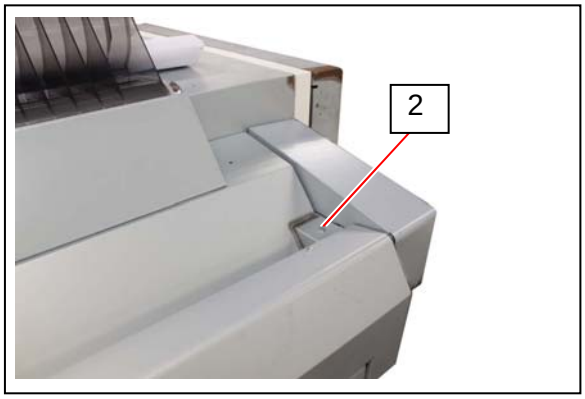
Part name	Quantity	Remarks
HEAT ROLL	1	All these parts are included in "FUSER KIT".
ROLLER PRESSURE	1	
COLLAR (E)	1	
ISOLATE BUSHING	2	

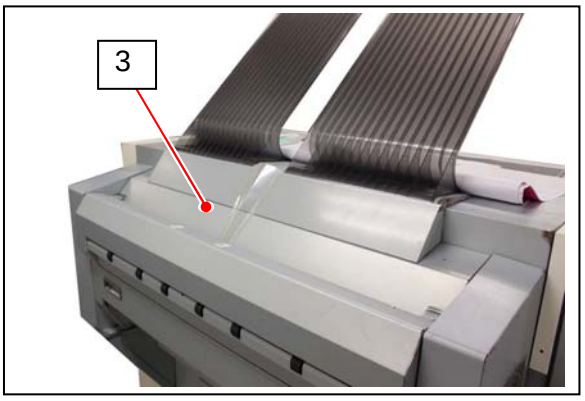
1. Remove Exit Tray 2 (1).



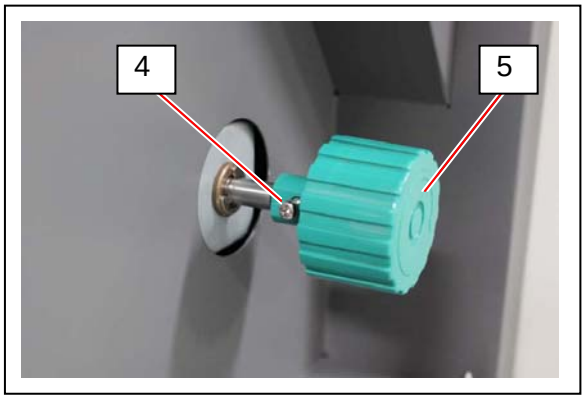
2. Remove 2 M4x6 screws (2) to remove the Upper Cover (3).



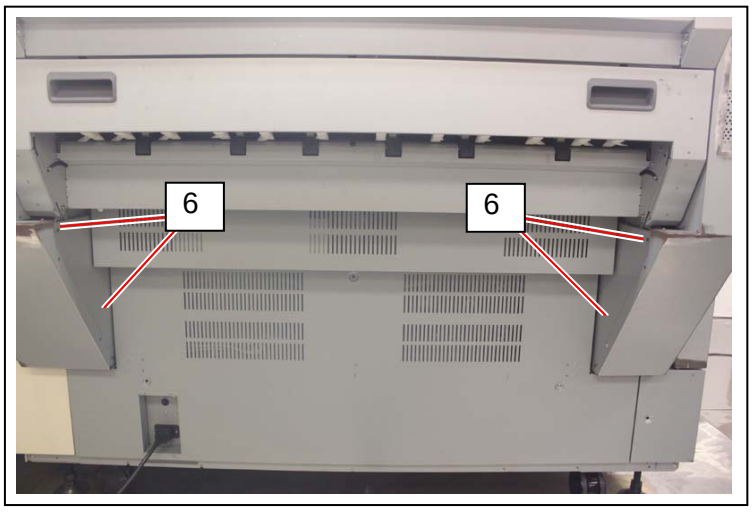


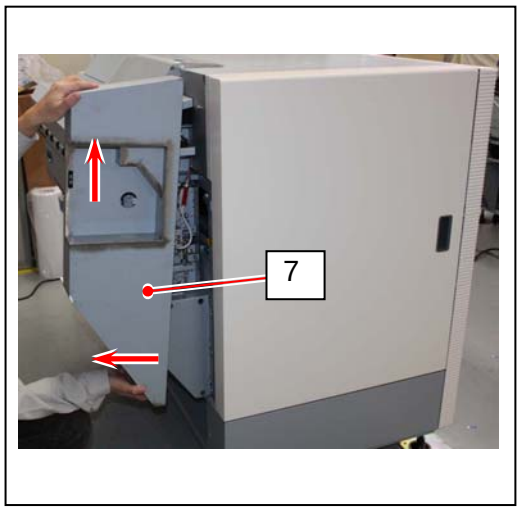


3. Remove a M3x6 screw (4) to remove the Fuser Knob (5).



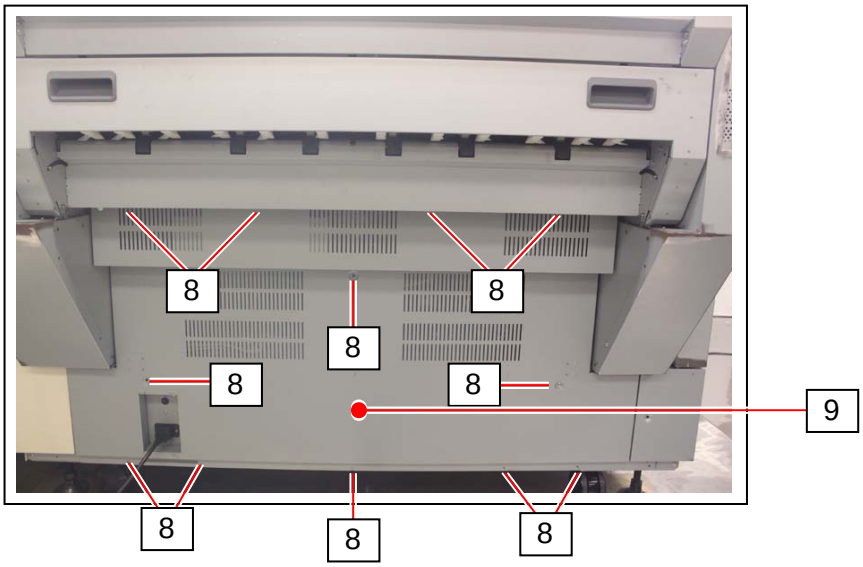
4. Remove 2 each M4x6 screws (6) to remove both left and right Fuser Side Covers (7).



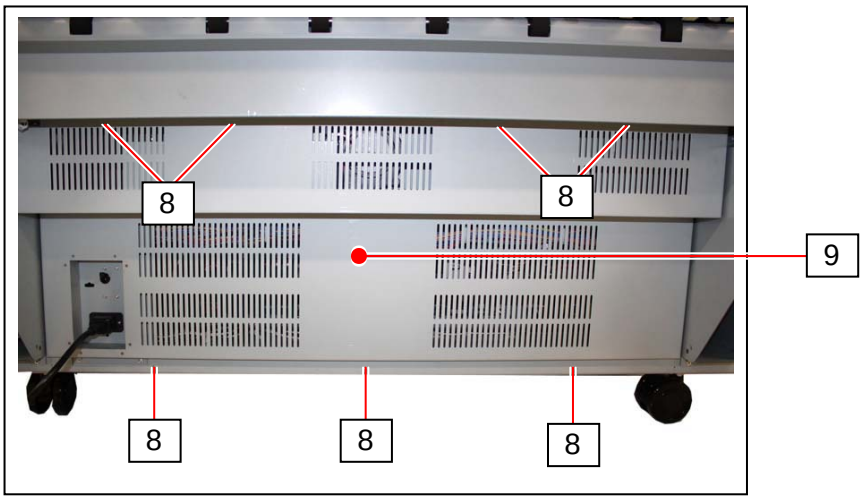


5. In case of 4 rolls model, remove 12 M4x6 screws (8) to remove the Rear Cover (9).
In case of 2 rolls model, remove 7 M4x6 screw (8) to remove the Rear Cover (9).

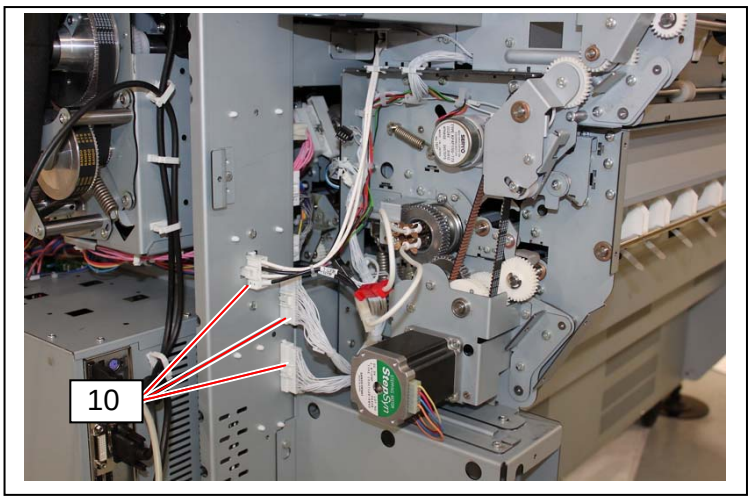
4 rolls



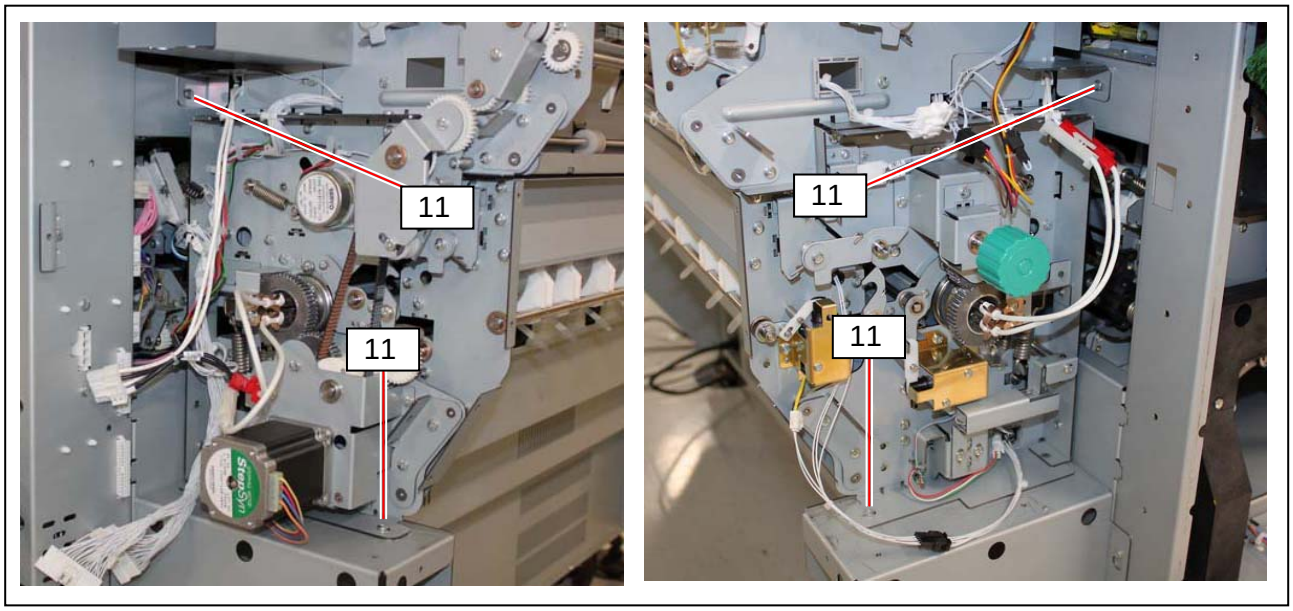
2 rolls



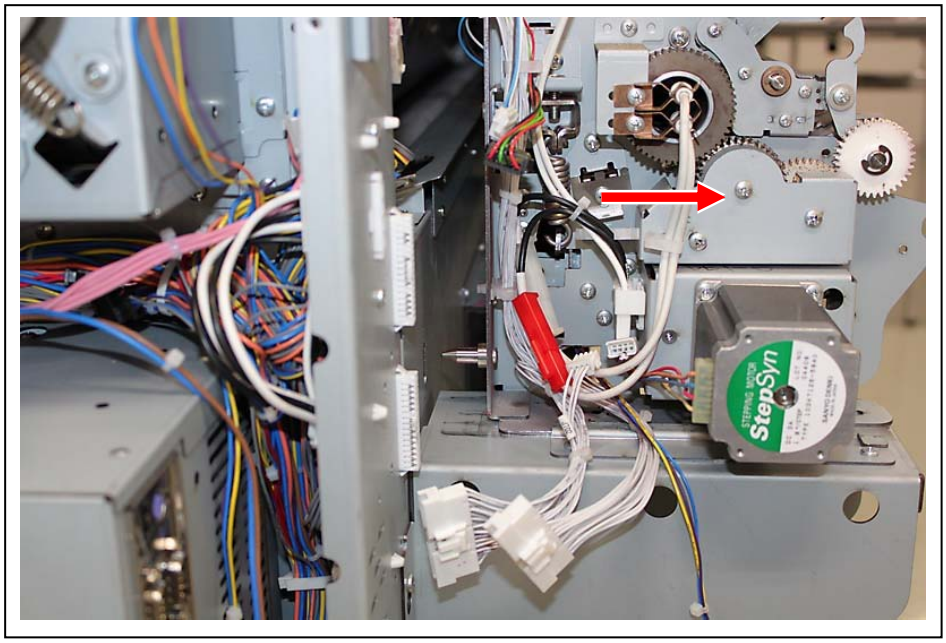
6. Plug out 3 connectors (10).



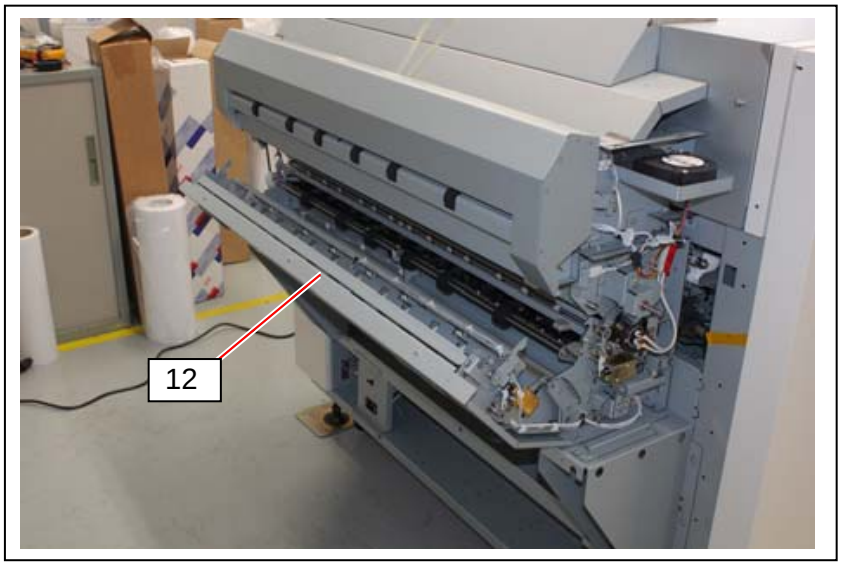
7. Remove 4 M4x6 screws (11) on both sides.

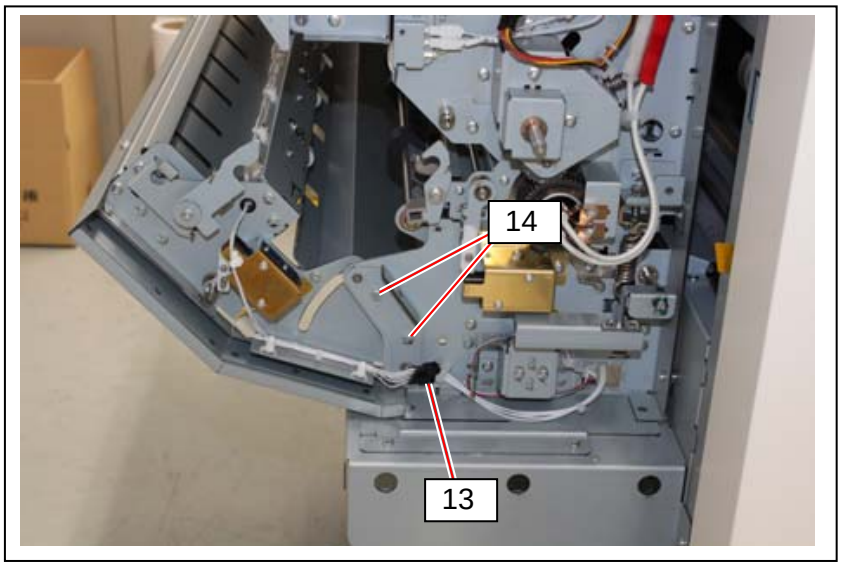


8. Slowly slide the entire Fuser Unit until it is stopped by the stoppers.

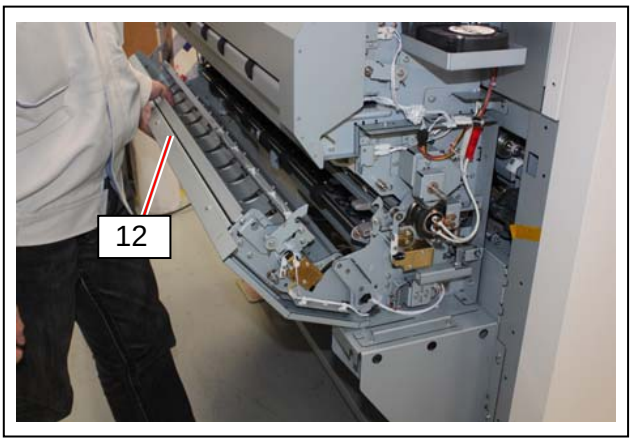


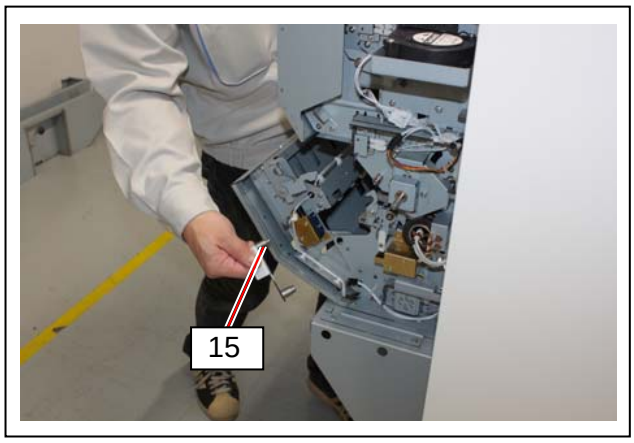
9. Open the Exit Cover (12).
On the left side, plug out a connector (13), and remove 2 M4x6 screws (14) that fix the Hinge Bracket.

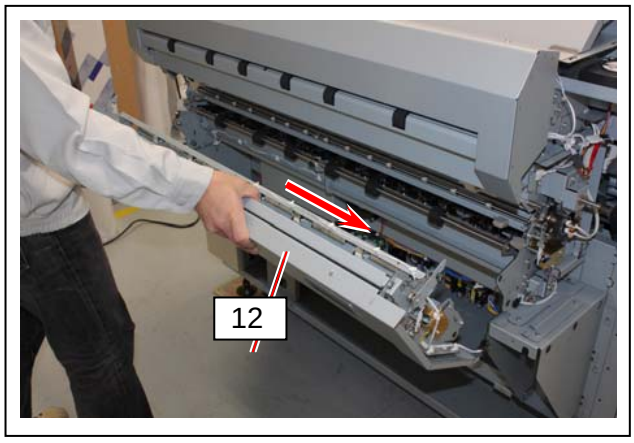




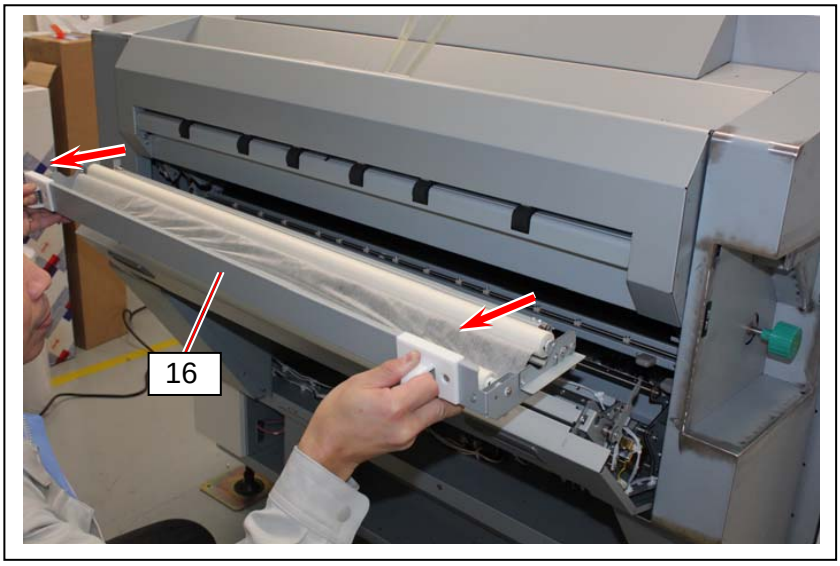
10. Remove the Hinge Bracket (15) with supporting the Exit Cover (12). Then remove the entire Exit Cover by sliding in the direction of arrow.



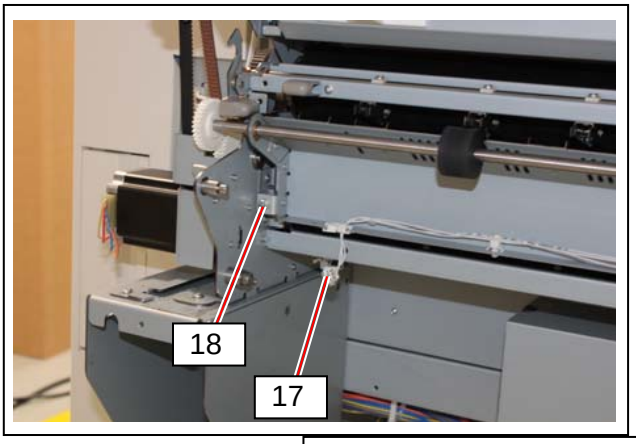


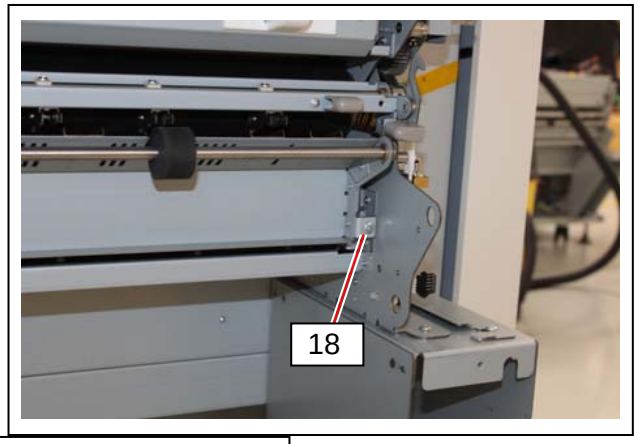


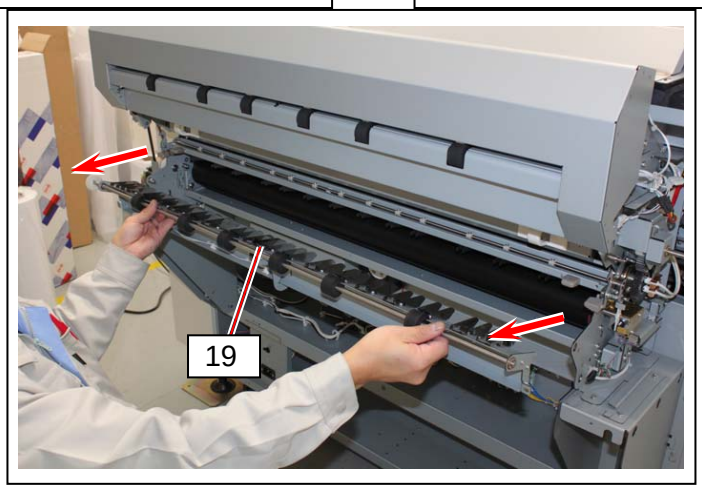
11. Remove the Web Feed Unit (16).



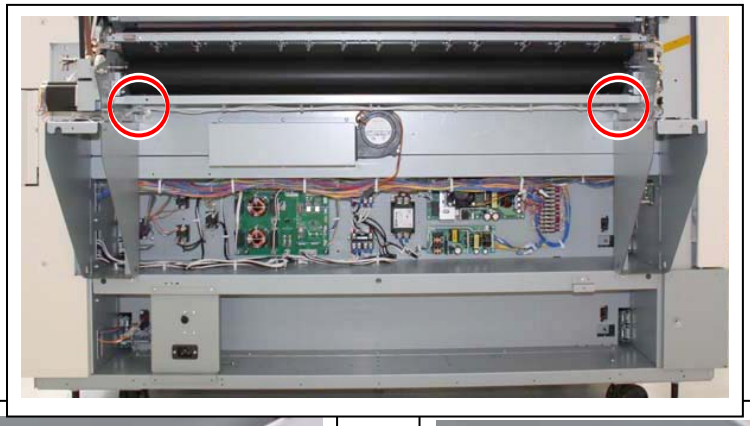
12. Plug out a connector (17). Remove 2 screws (18) on both sides to remove the Exit Transportation Unit (19).

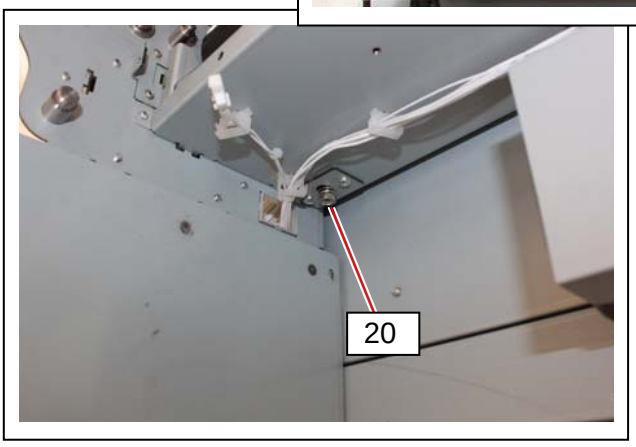


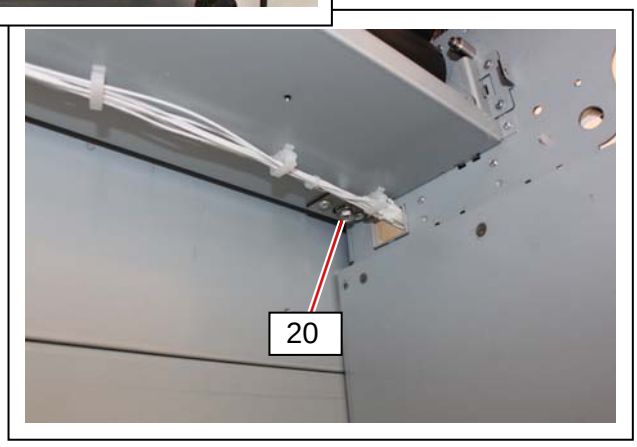




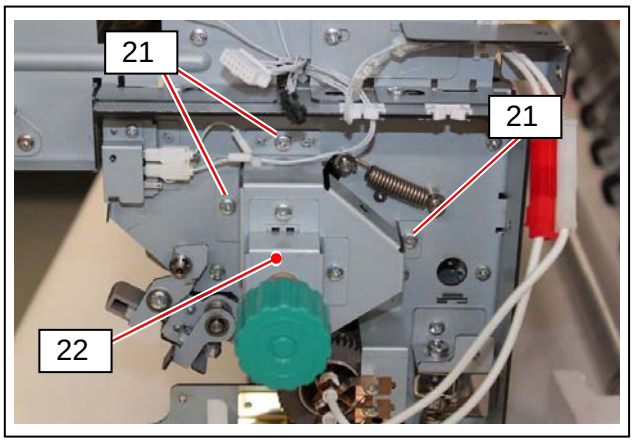
13. There are 2 hexagon bolts (20) on the bottom of Fuser, which were loosened in machine installation. Tighten these bolts to remove fuser tension.

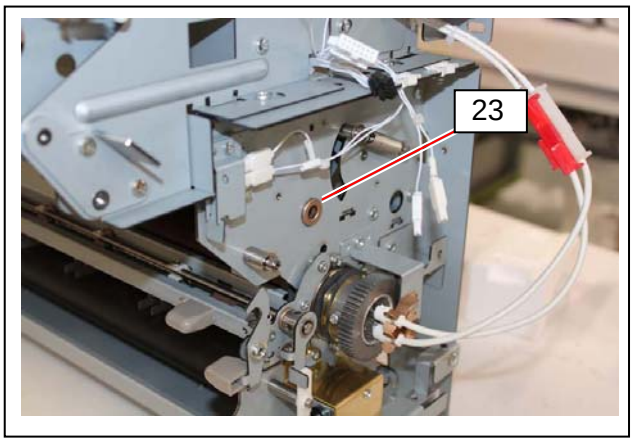




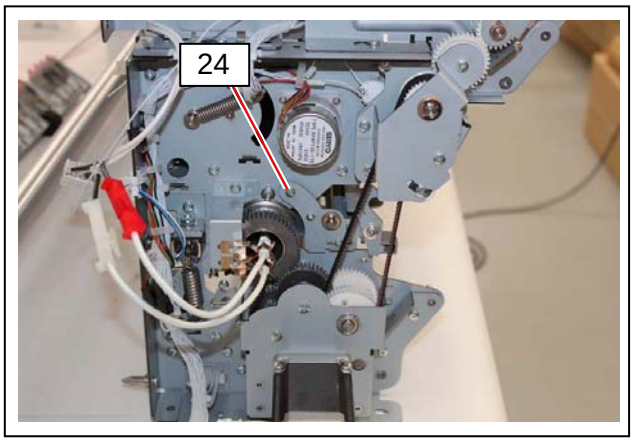


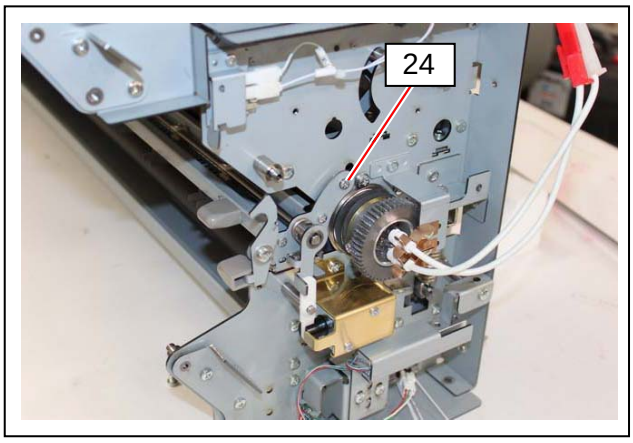
14. Remove 3 M4x6 screws (21) to remove the Fuser Handle Assy (22) and Oilless Bearing (23).

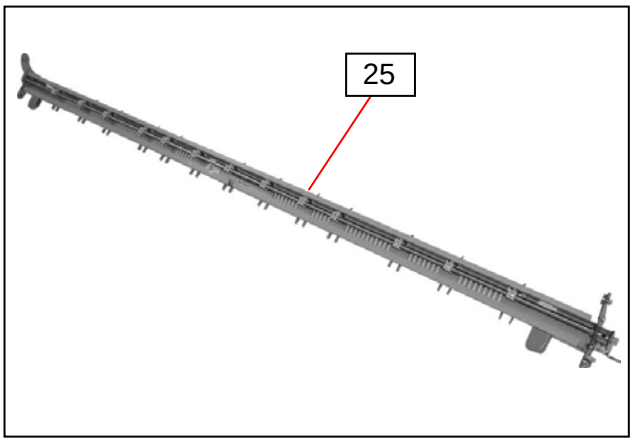




15. Loosen 2 screws (24) on both sides with catching the Stripper Finger Unit (25) so as not to drop it. remove the Stripper Finger Unit (25).

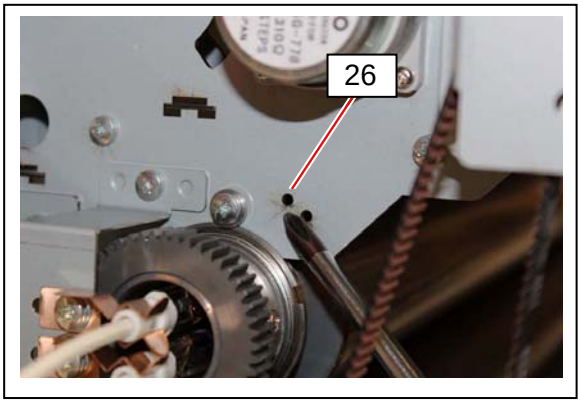




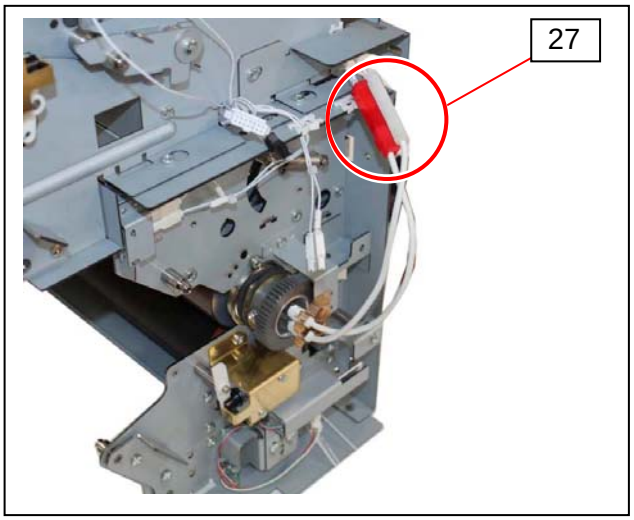


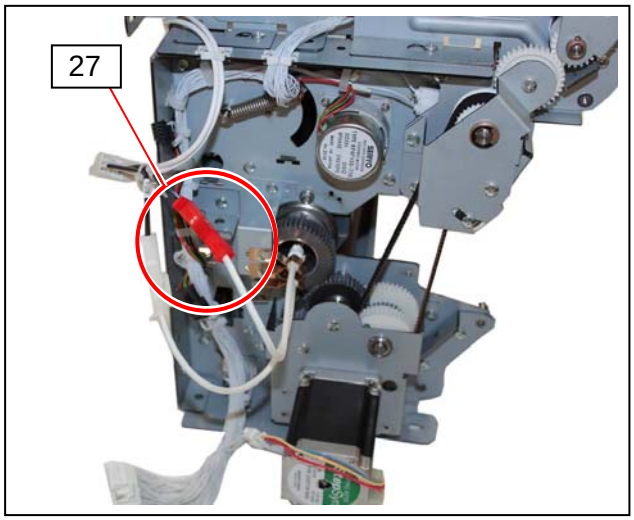
NOTE

When fixing the Stripper Finger Unit (25), put the screws (24) to the upper screw holes (26). (Do not use the lower screw hole.)

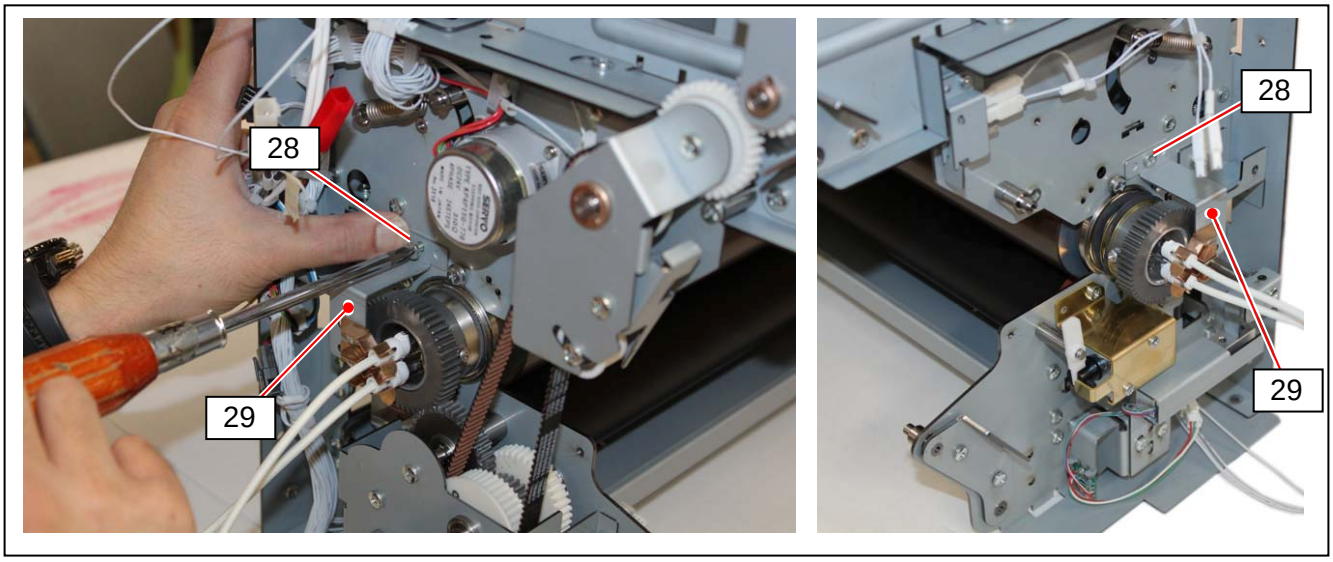


16. Plug out red and white connectors (27) of the IR Lamps.

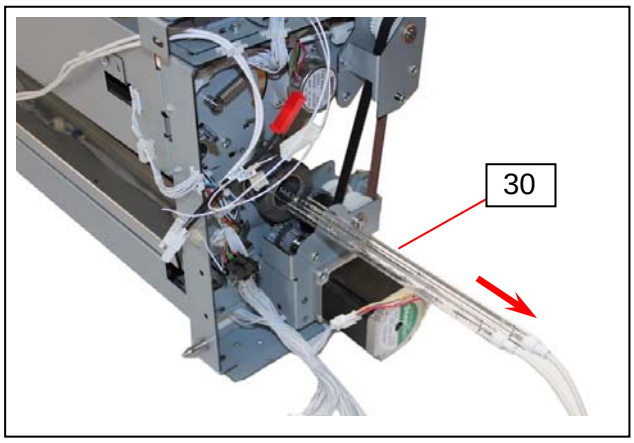




17. Remove 1 each M4x6 screw (28) on both sides to remove each IR Lamp Bracket (29).



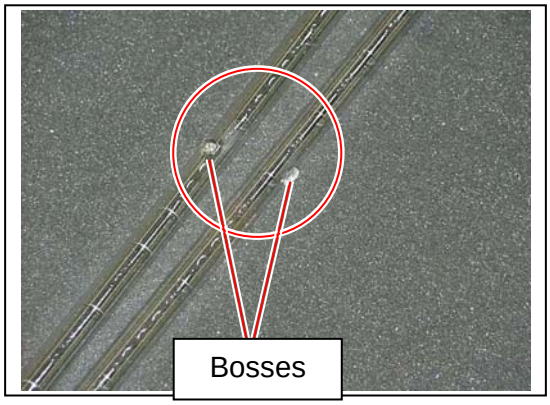
18.Remove the IR Lamps (30).

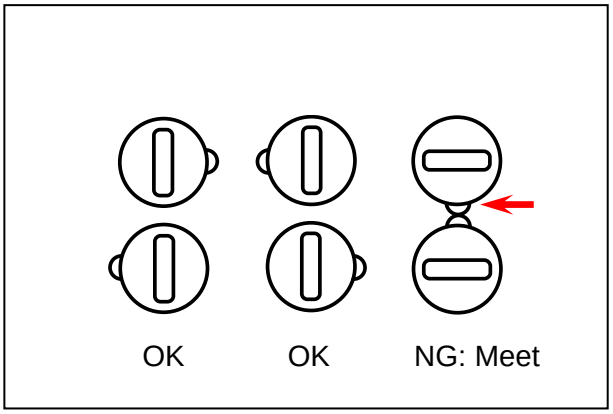


NOTE

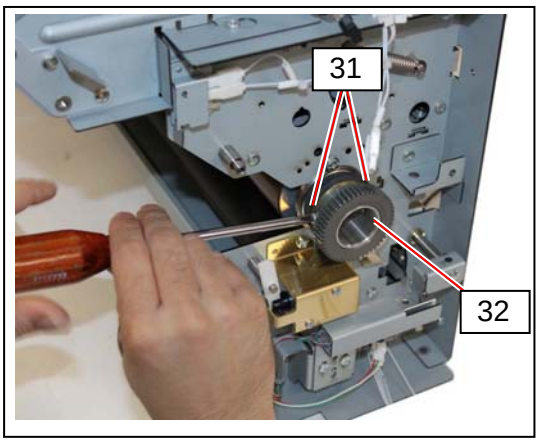
1. Do not touch any glass surface of IR Lamp with bare hand.

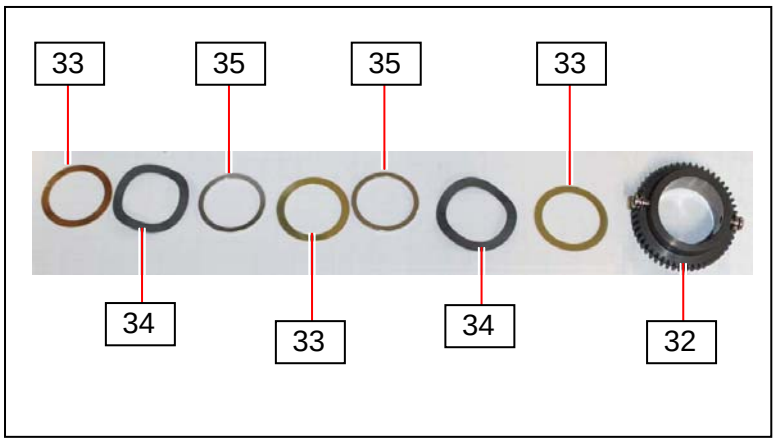
2. There is a boss on center of the IR Lamp. When installing the IR Lamps adjust the angle of lamps so that bosses of 2 lamps should not meet with each other. If they meet with each other the lamps may break during use.



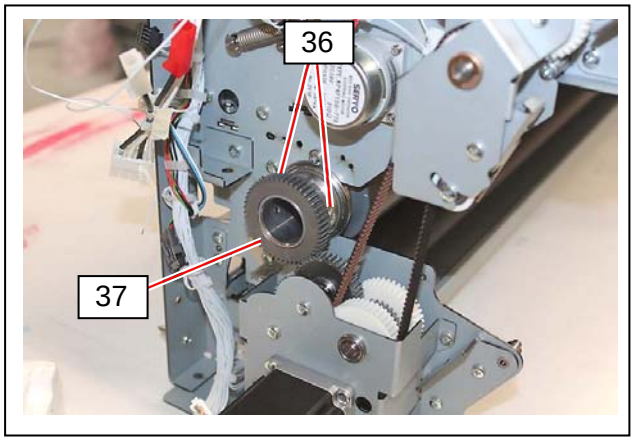


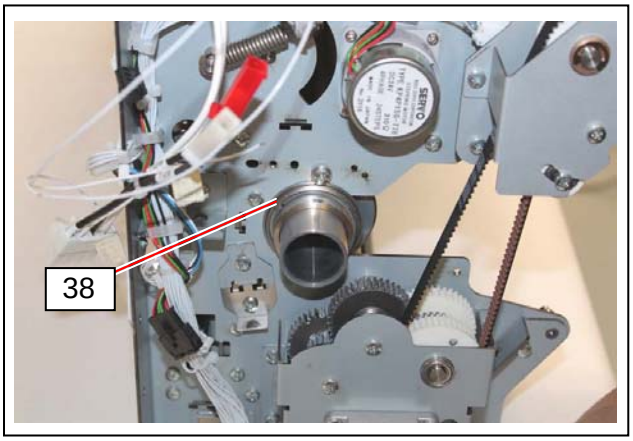
19. On the driven side, remove 2 M4x6 pan head screws (31) to remove the 50T Gear (32). Then remove 3 Spacers (33), 2 Wave Washers (34), and Collar (35) from the shaft of Fuser Roller.



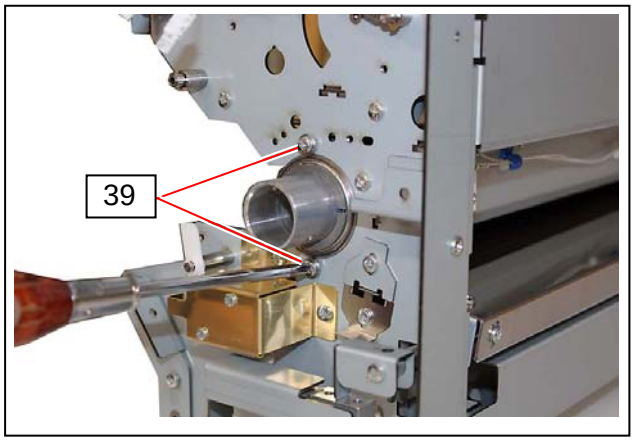


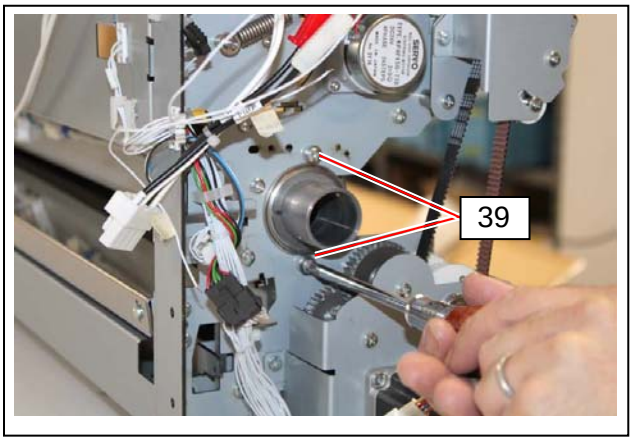
20. On the driving side, remove 2 M4x6 pan head screws (36) to remove the 50T Gear (37) and Collar (38).

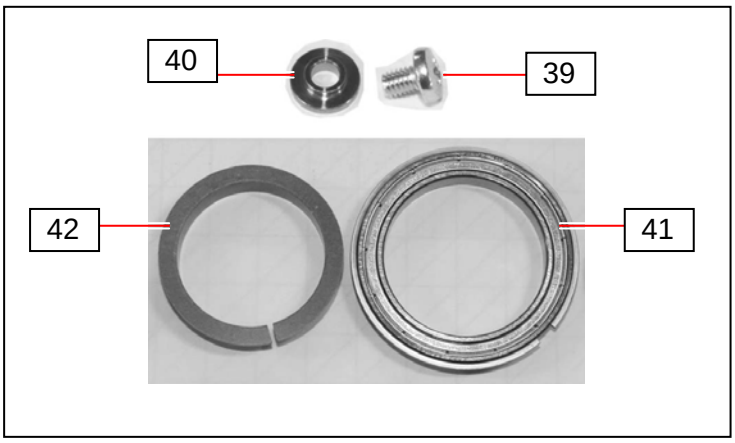




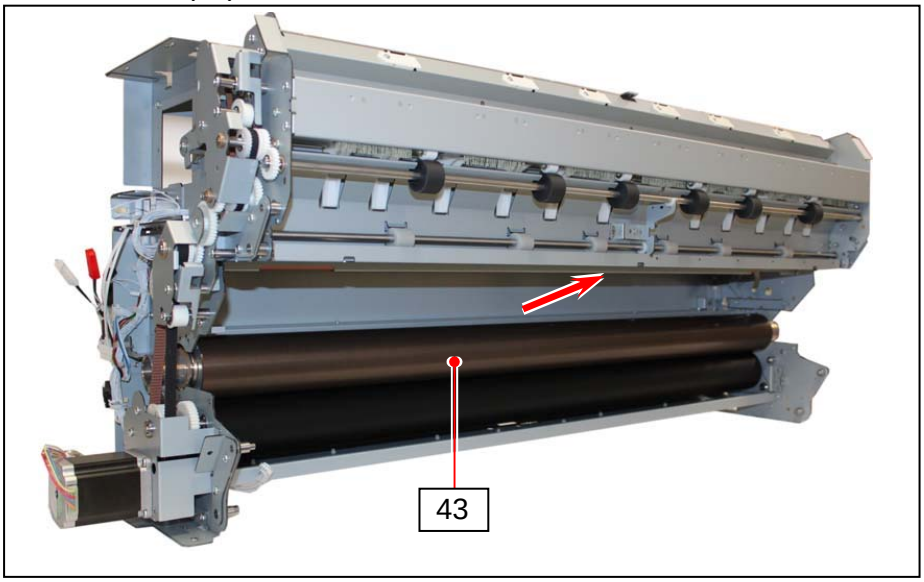
21. On each side, remove 2 screws (39) to remove Collar (40), Ball Bearing (41) and Isolate Bushing (42). Replace Isolate Bushings (42) with the new ones.



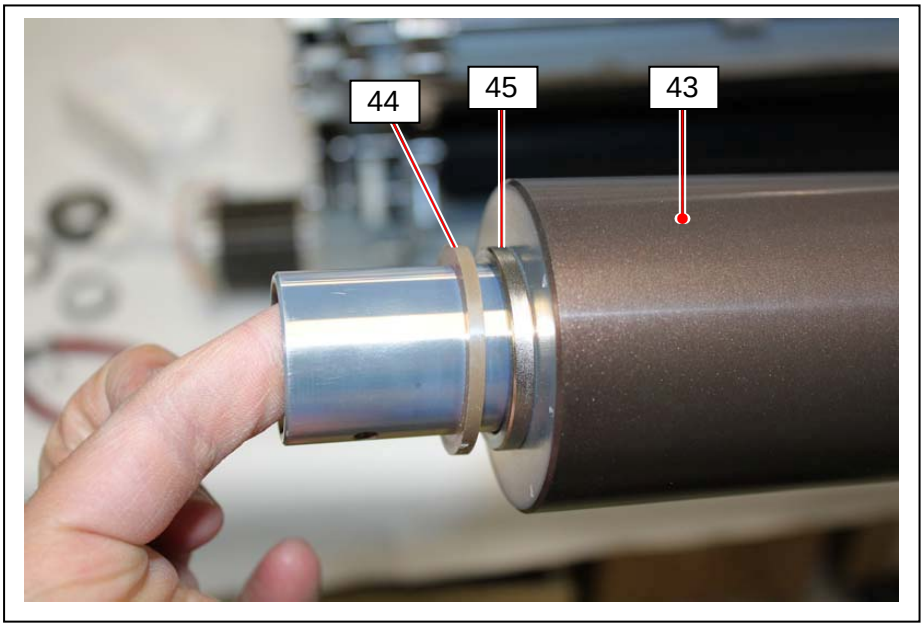




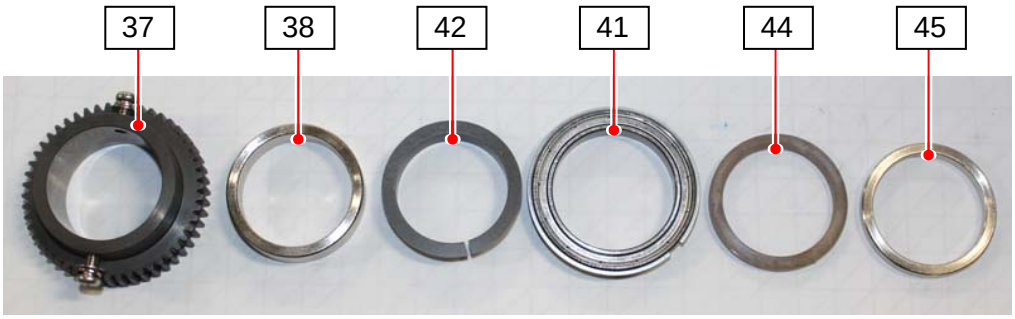
22. Remove the Fuser Roller (43).



23. There are Collar E (44) and Collar 4 (45) on one shaft of old Fuser Roller (43). Remove both of them. Then prepare new Fuser Roller and put the new Collar E (44) and original Collar 4 (45) back to the original positions on the shaft.



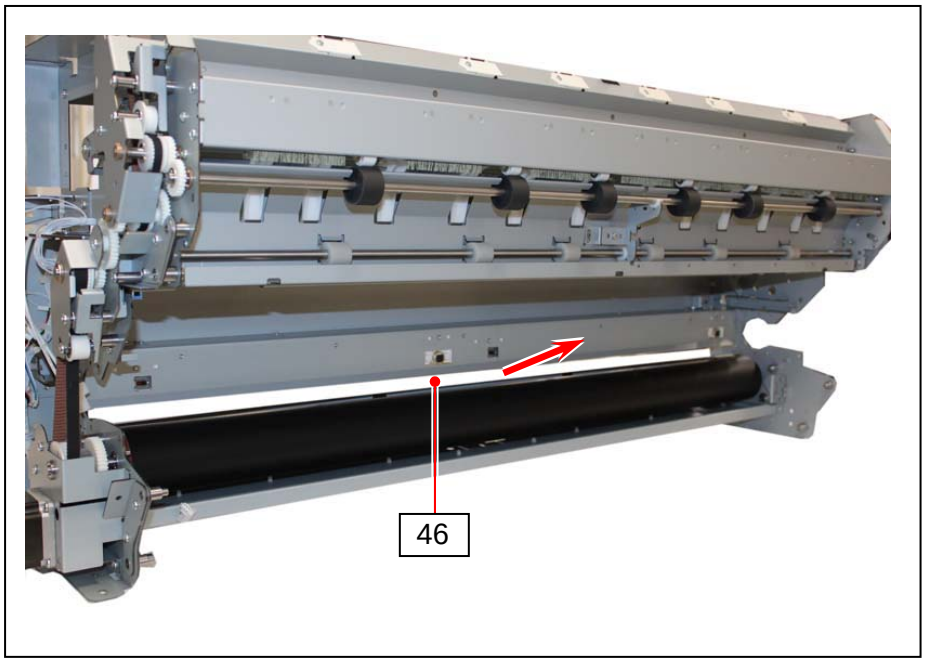
The followings are the parts used on the driving side.



NOTE

It does not matter to install the new Fuser Roller by ay orientation. However, the side you put the Collar E (44) and Collar 4 (45) must be on driving side.

24. Remove the Pressure Roller (46).



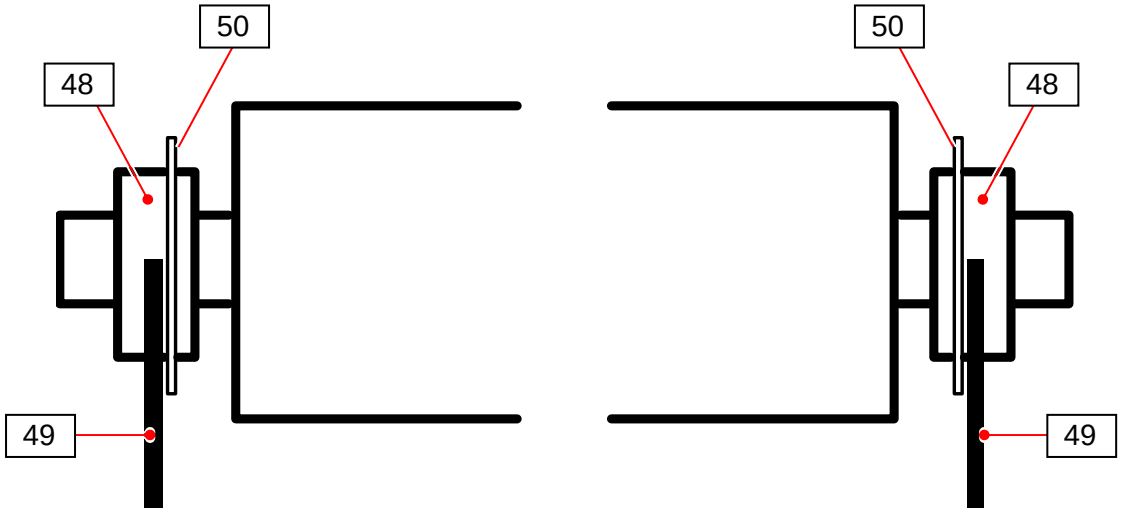
25. Remove C Rings (47) and Bearings (48) from both sides, and replace the Pressure Roller with the new one. (Use these original C Rings (47) and Bearings (48) for the new roller).

NOTE

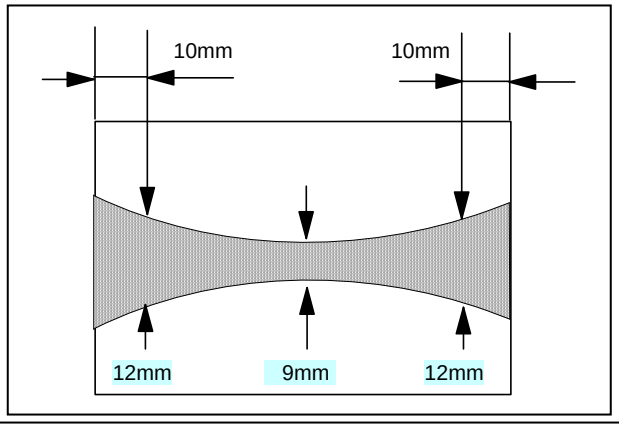
1. Do not touch the roller surface of Pressure Roller by bear hand.

2. It is possible to install the Pressure Roller by any orientation.

3. When returning the Pressure Roller, be sure that the Bearings (48) on both side of the roller are correctly placed on the bearing holders (49) with the rim (50) of the Bearing are placed inside of Bearing Holders (49)

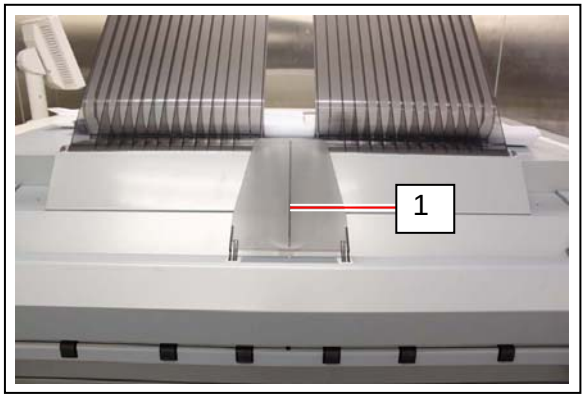


4. Adjust the fuser pressure by achieving the requested widths of "nip" as shown.

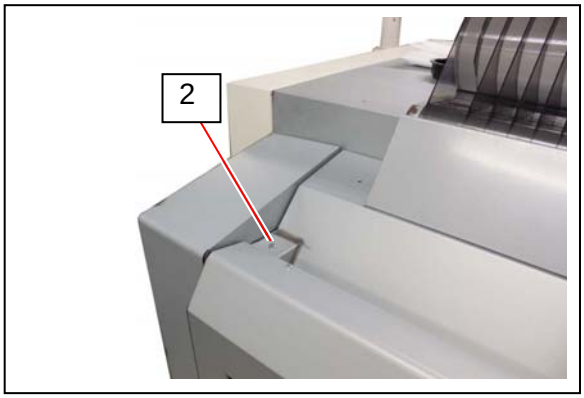


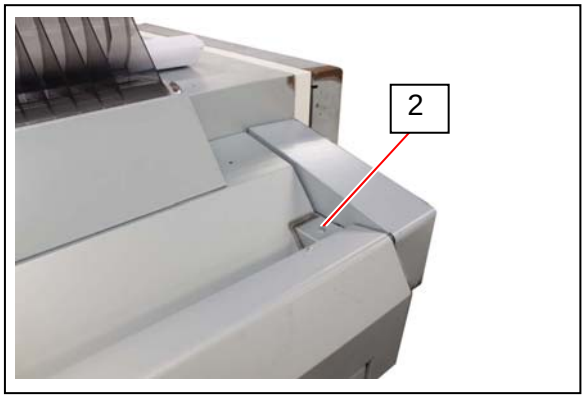
5. 5. 2 Removal of the Fuser Unit

1. Remove Exit Tray 2 (1).

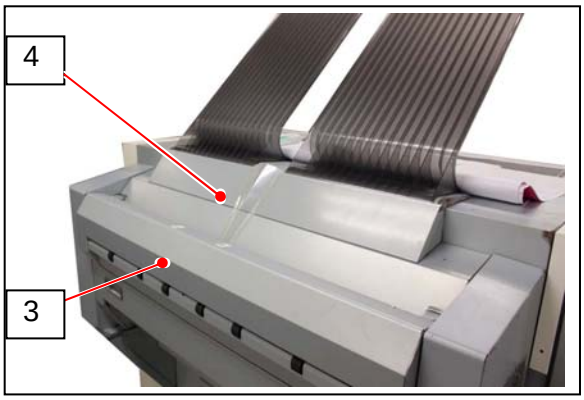


2. Remove 2 M4x6 screws (2).

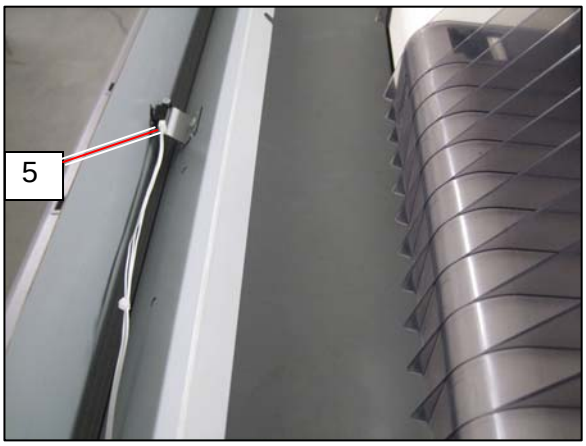




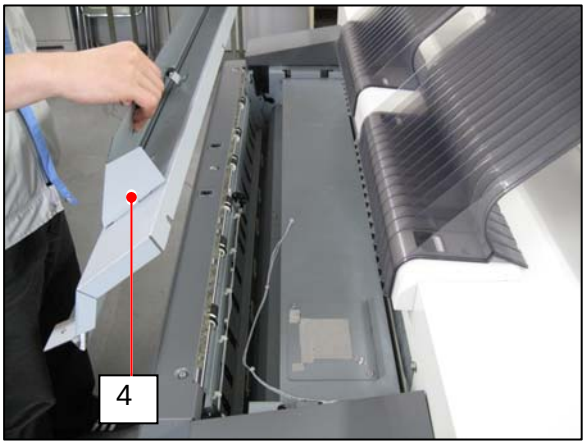
3. Open the Upper Exit Unit (3), and raise one side of Upper Cover (4) as the arrow mark..



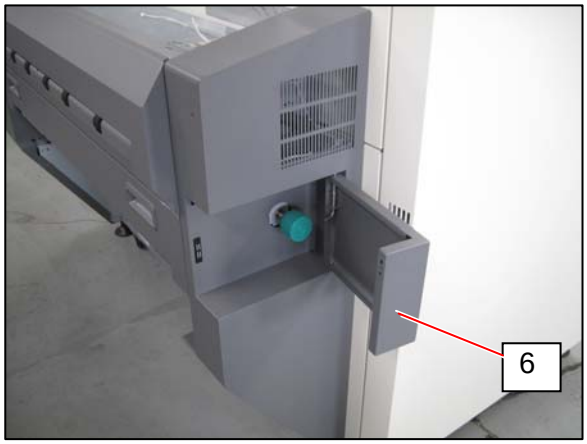
4. Plug out the connector (5).

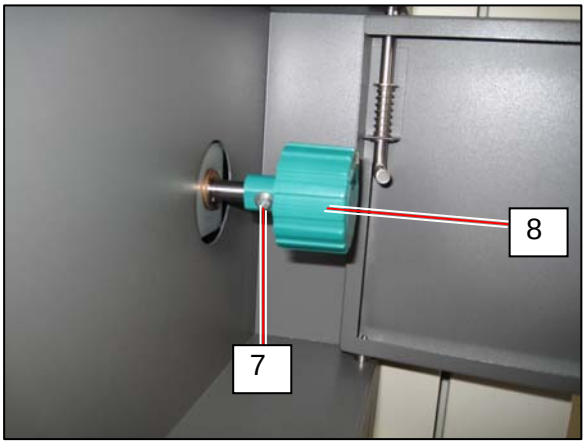


5. Remove the Upper Cover (4).

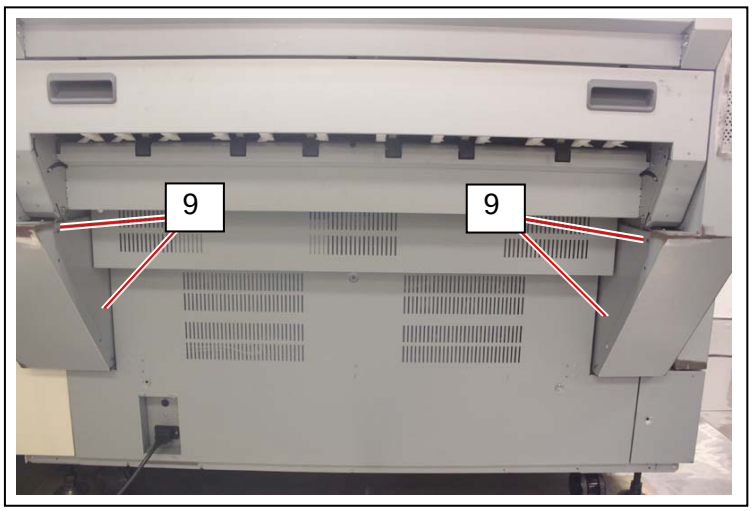


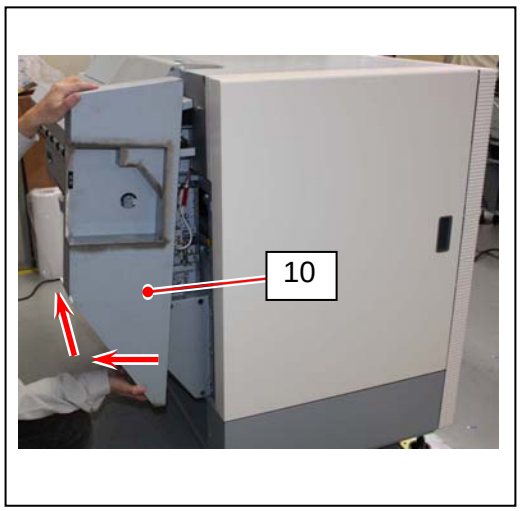
6. Open the hatch (6) on the right. Remove a M3x6 screw (7) to remove the Fuser Knob (8).





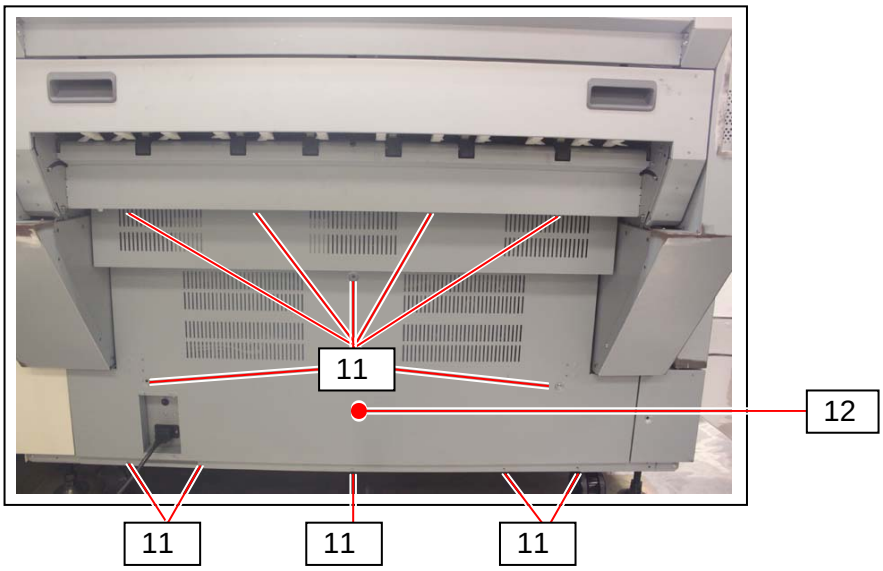
7. Remove 2 each M4x6 screws (9). Pull the bottom part of each left and right Fuser Side Covers (10) first and then bring it up for removal.



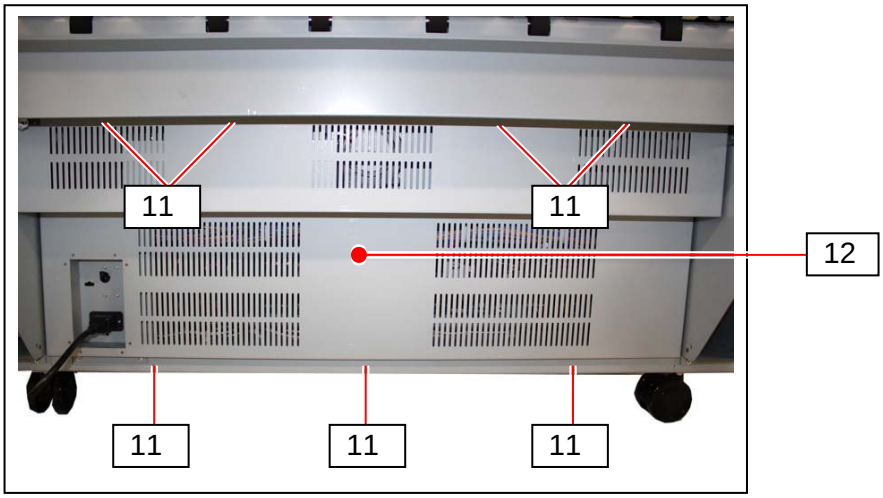


8. In case of 4 rolls model, remove 12 M4x6 screws (11) and then remove the Rear Cover (12).
In case of 2 rolls model, remove 7 M4x6 screws (11) and then remove the Rear Cover (12).

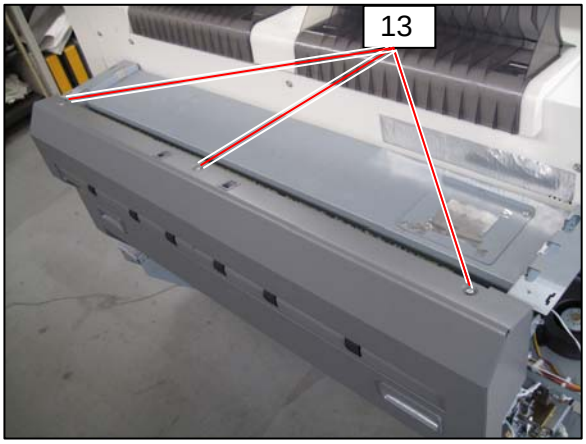
4 rolls machine

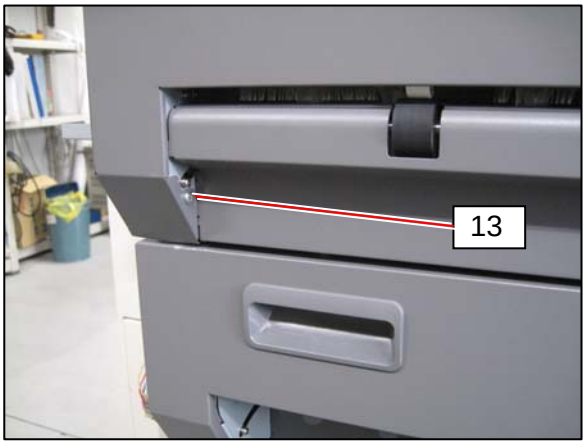


2 rolls machine

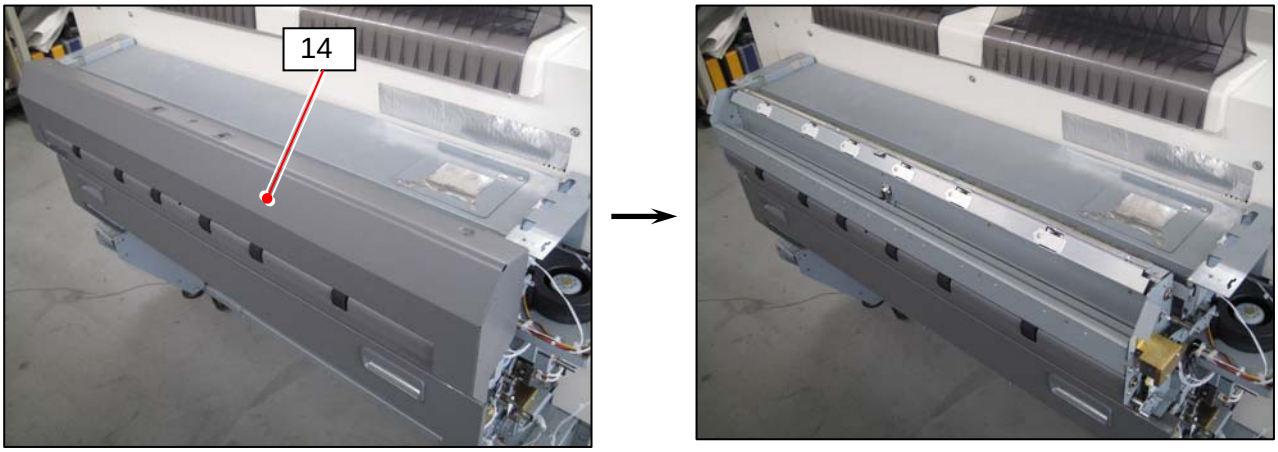


9. Remove 5 screws (13).



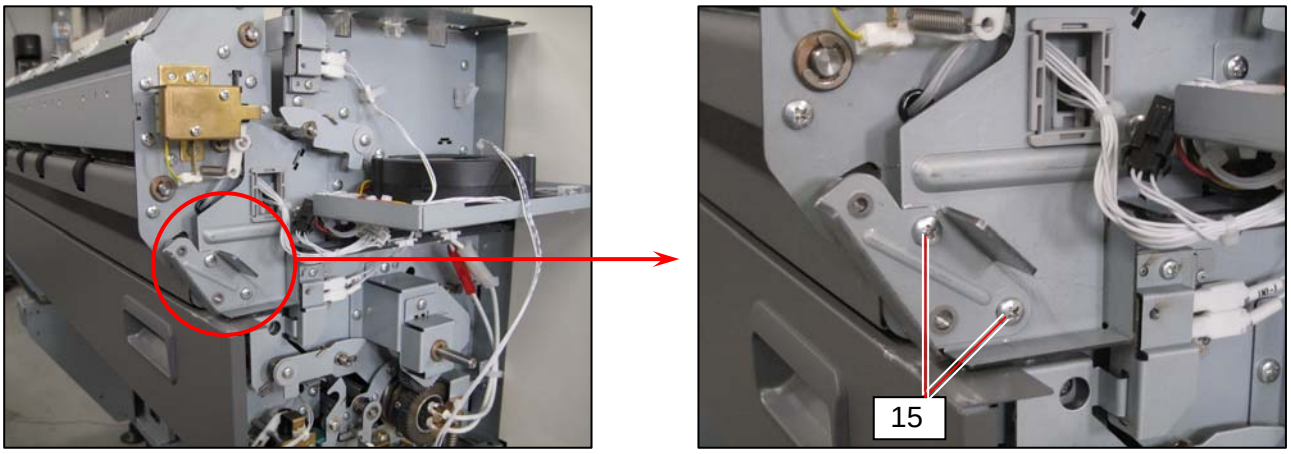


10. Remove the Cover (14) of Upper Exit Unit.

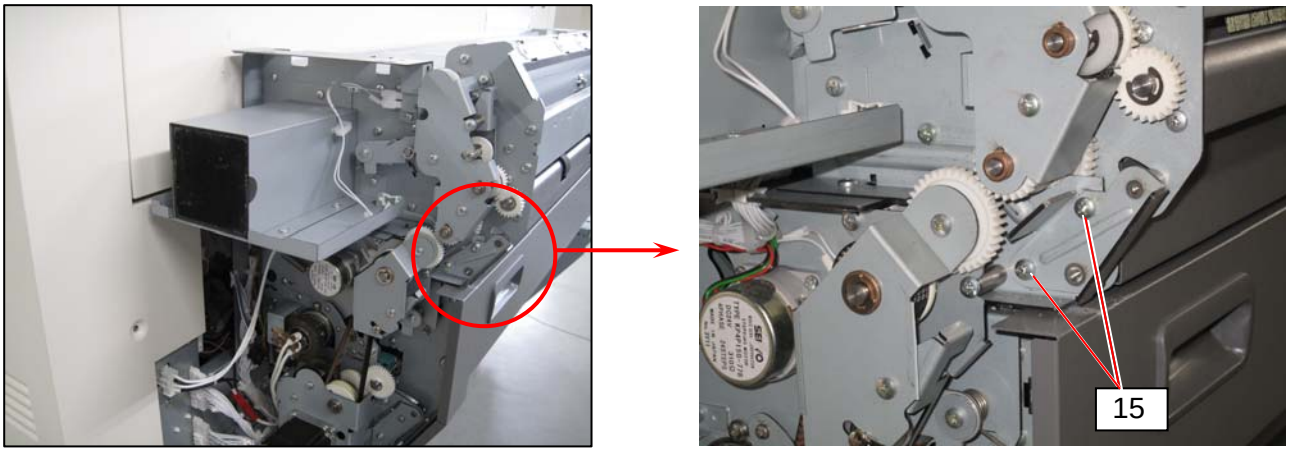


11. Remove 2 each screws (15) to remove the Upper Shaft Assys (16).

(Left side)

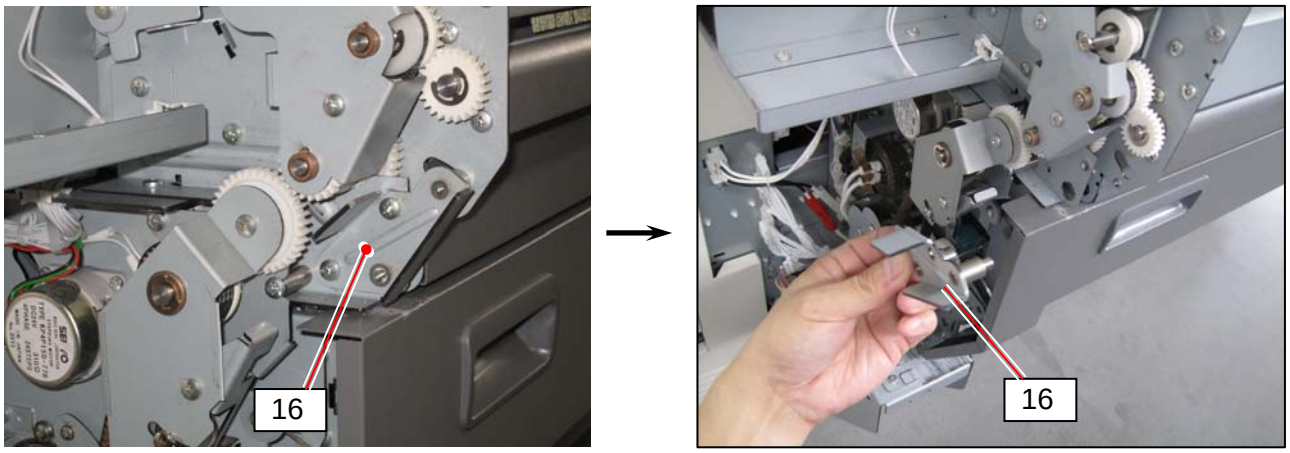


(Right side)

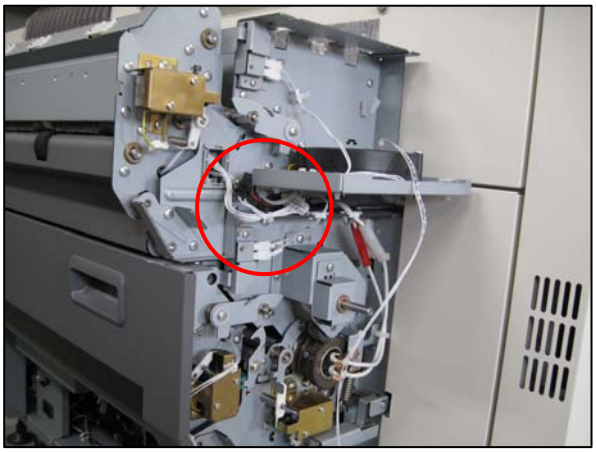


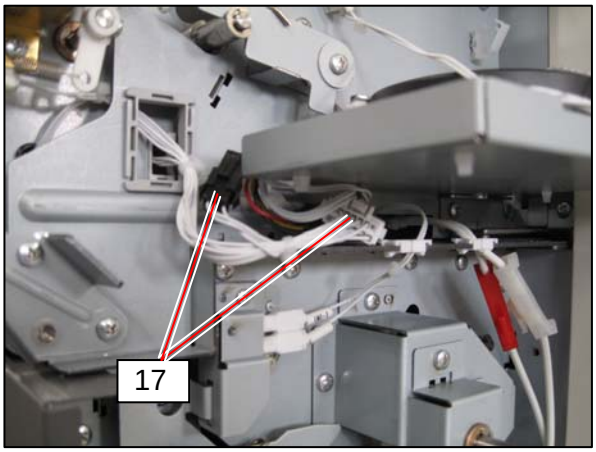
12. With supporting the Upper Exit Unit by hand so that it should not drop, remove the Shaft Assys (16) on both sides.

(Right side)

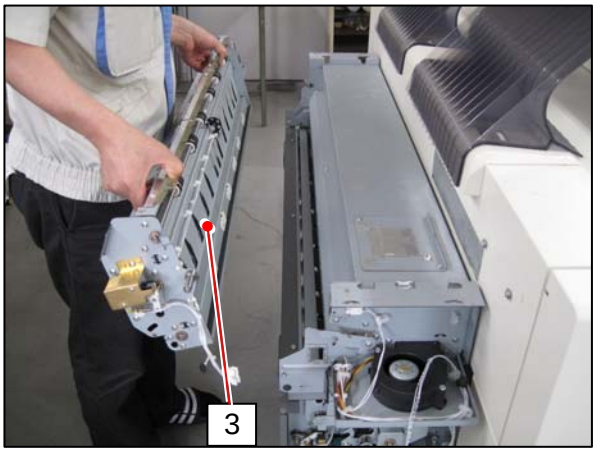


13. Plug out 2 connectors (17))

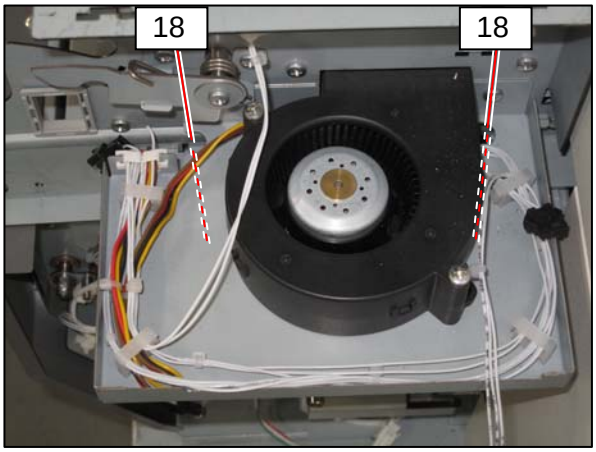




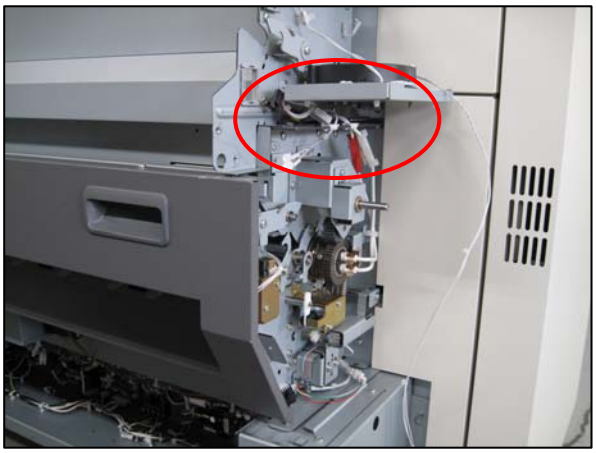
14. Remove the Upper Exit Unit (3).

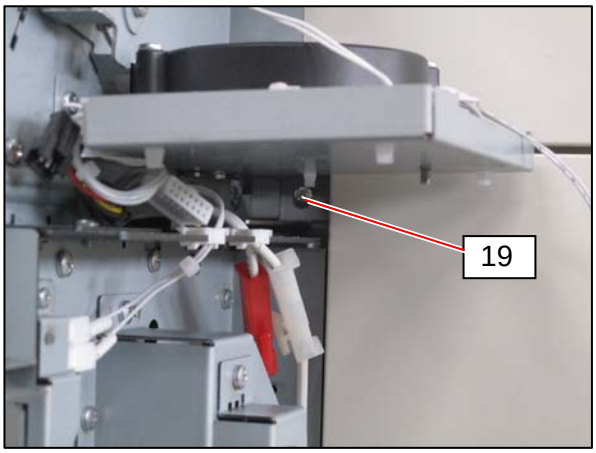


15. Remove 2 screws (18) on the left with inserting a long screw driver.

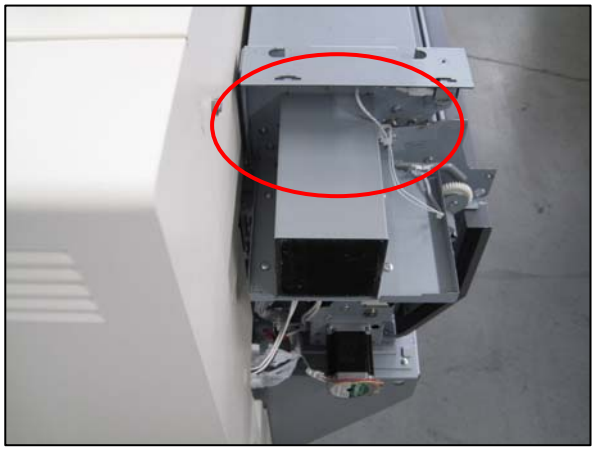


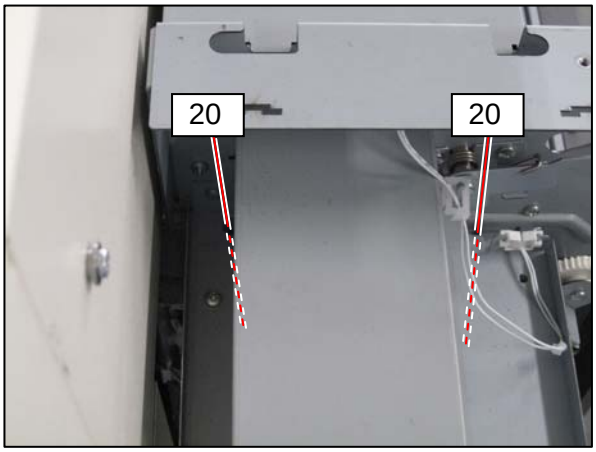
16. Remove 1 screw (19) on the left.



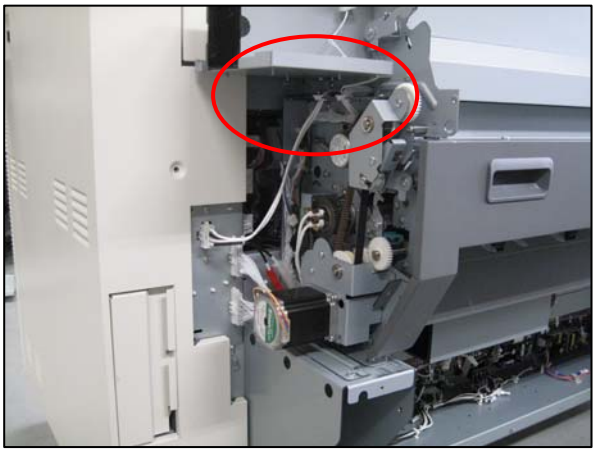


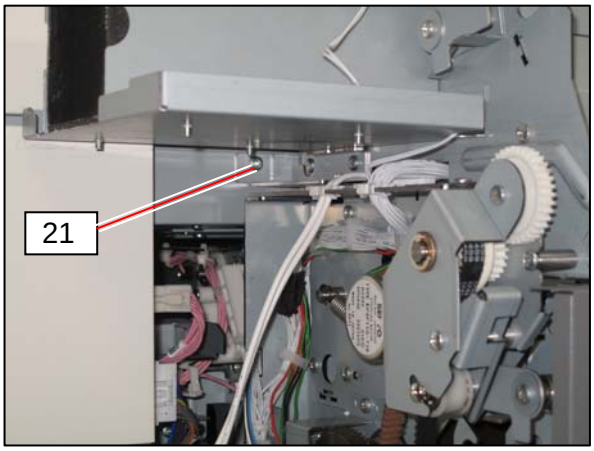
17. Remove 2 screws (20) on the right with inserting a long screw driver.



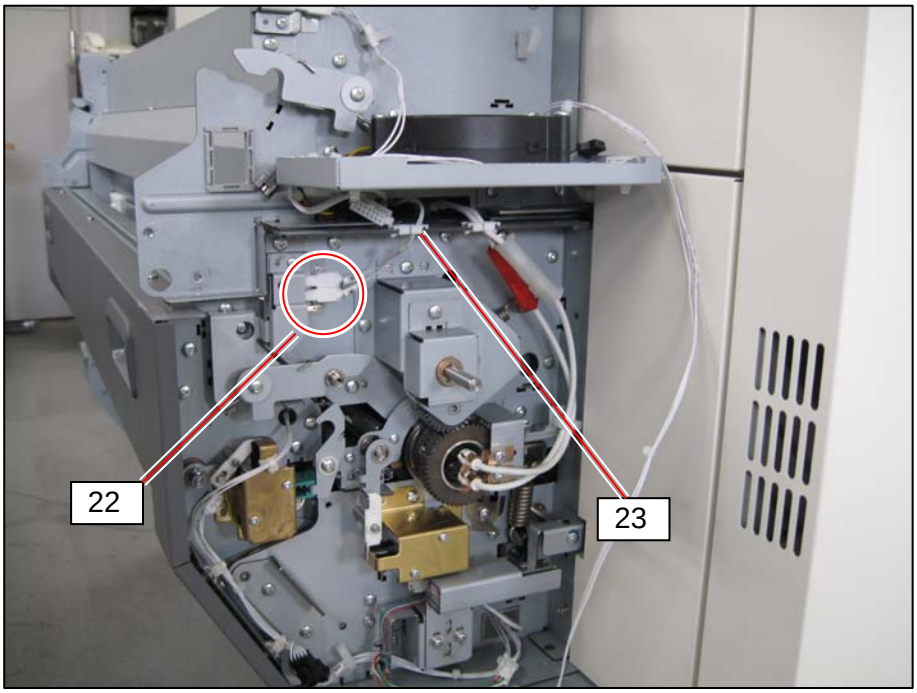


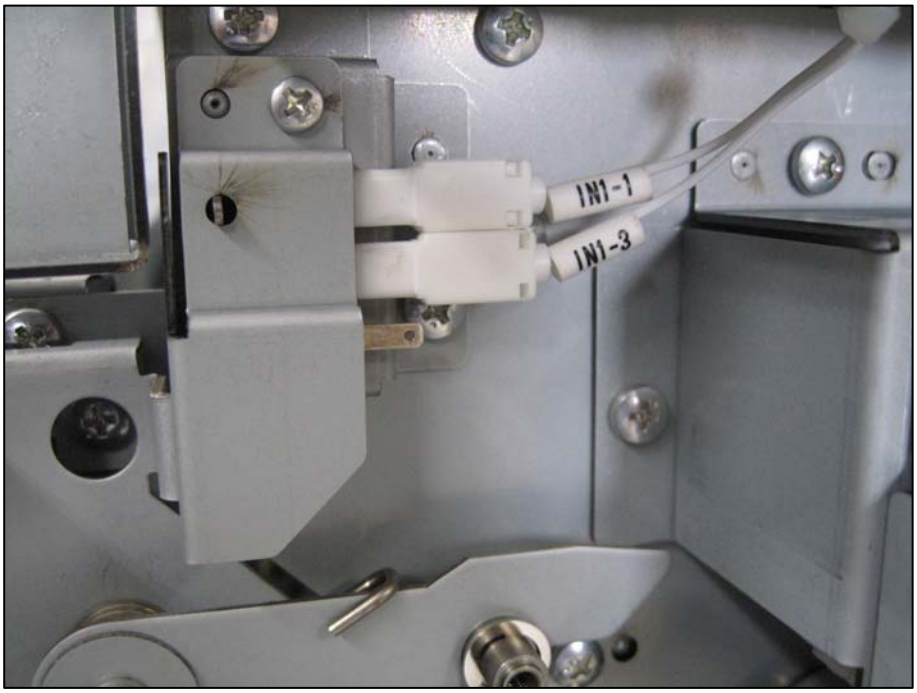
18. Remove 1 screw (21) on the right.



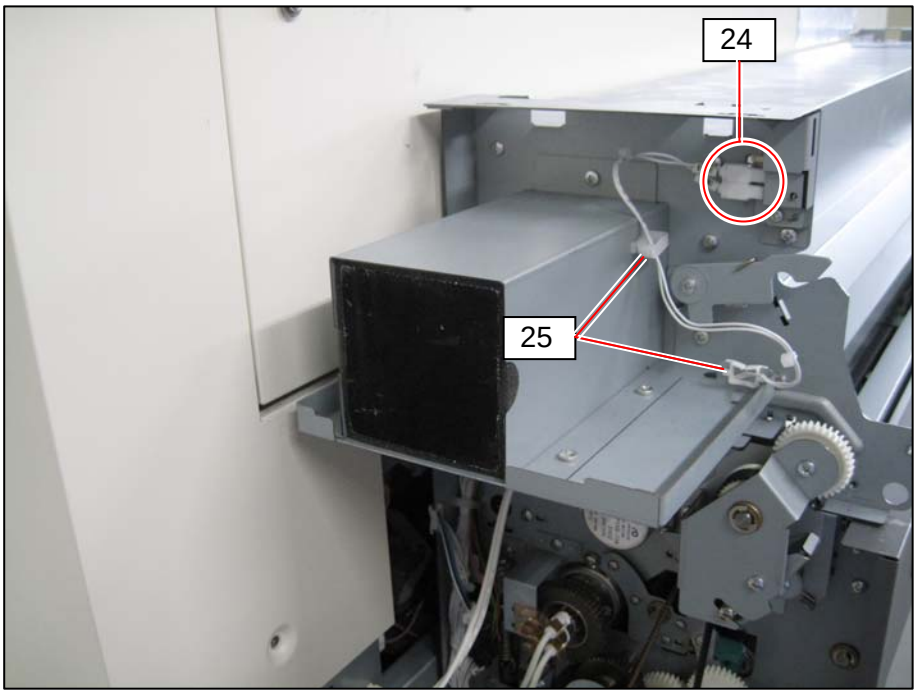


19. Plug out 2 connectors (22) on the left and release the harness from the edge saddle (23).

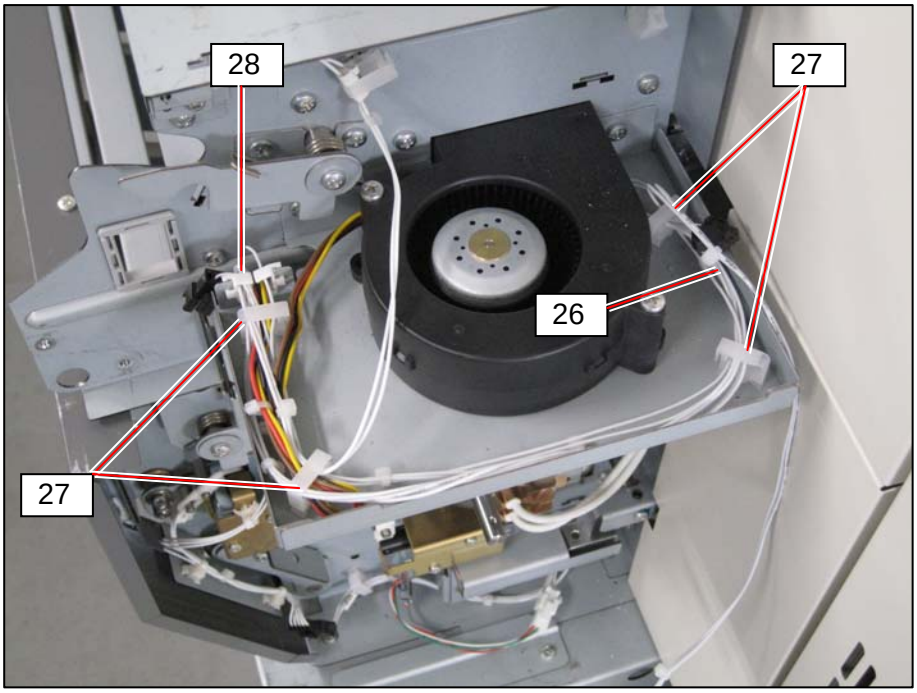




20. Plug out 2 connectors (24) on the right and release the harness from the wire saddles (25).



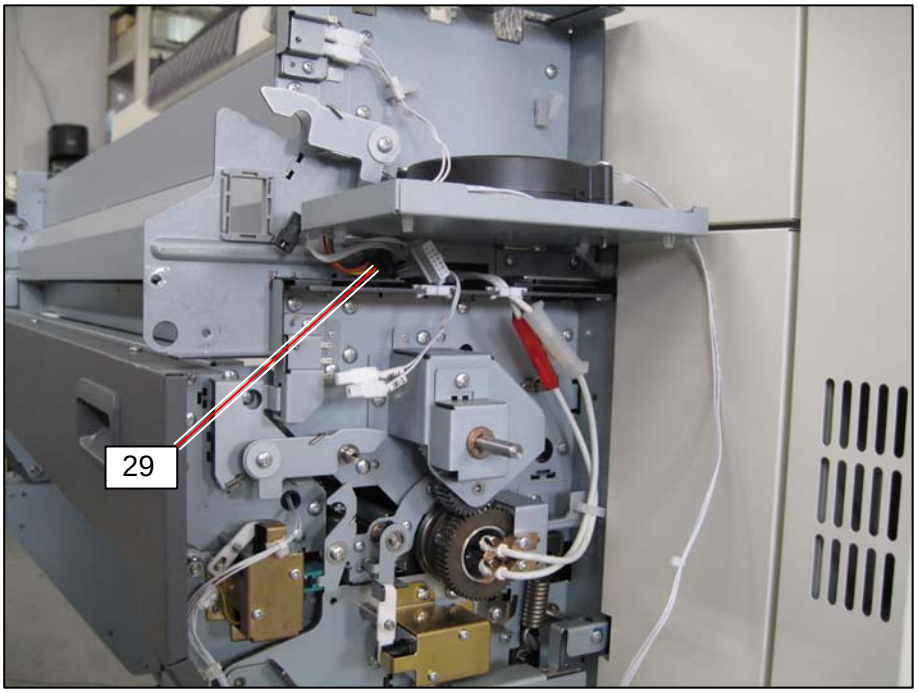
21. On the left of machine, release the harness (26) from the wire saddles (27) and edge saddle (28)



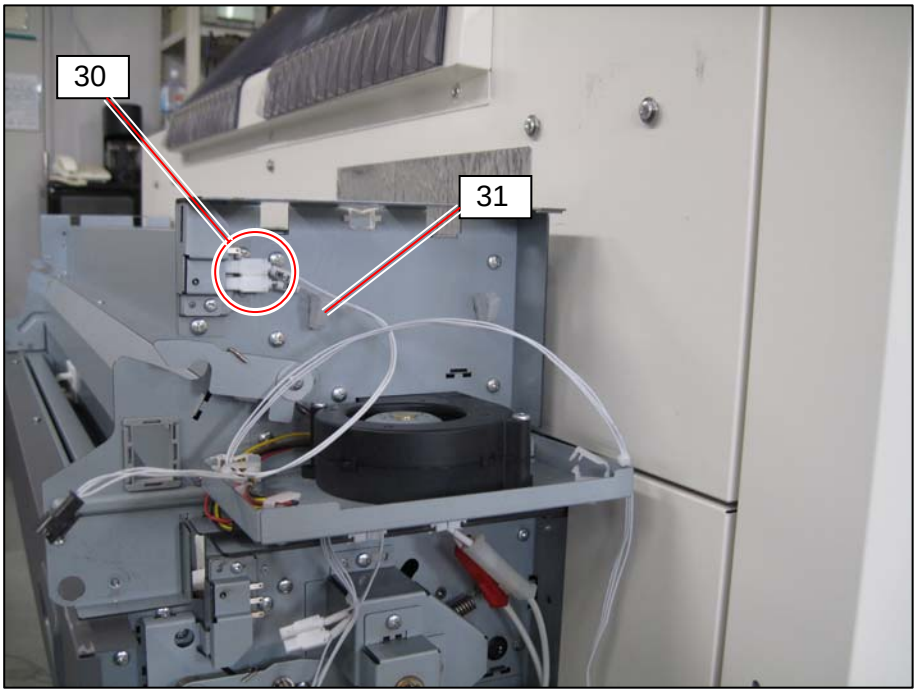
NOTE

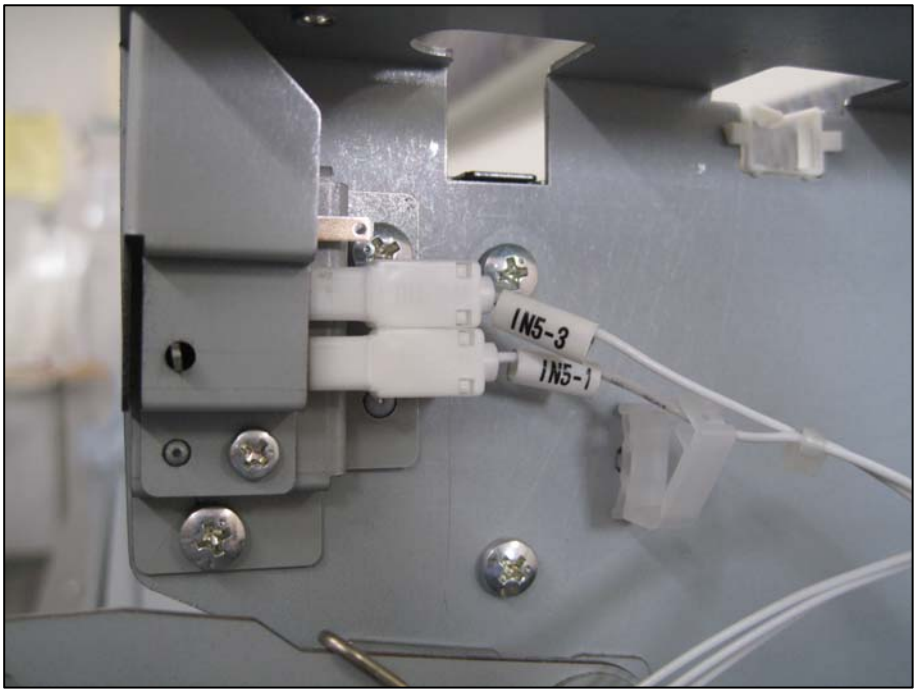
Nothing is connected to this harness (26).

22. On the left of machine, plug out the connector (29) under the blower.

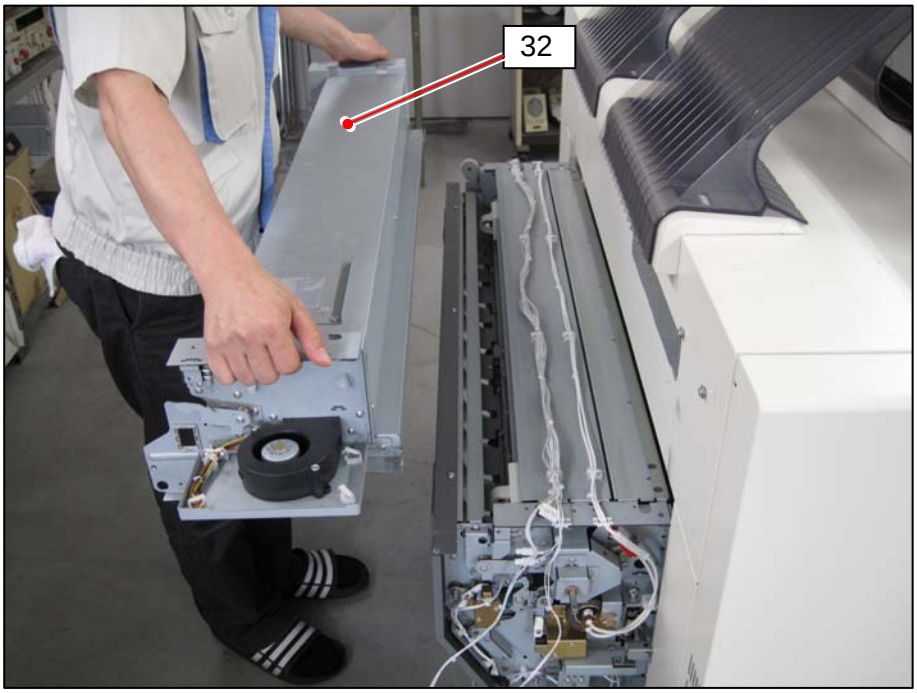


23. Plug out 2 connectors (30) on the left and remove the harness from the edge saddle (31).

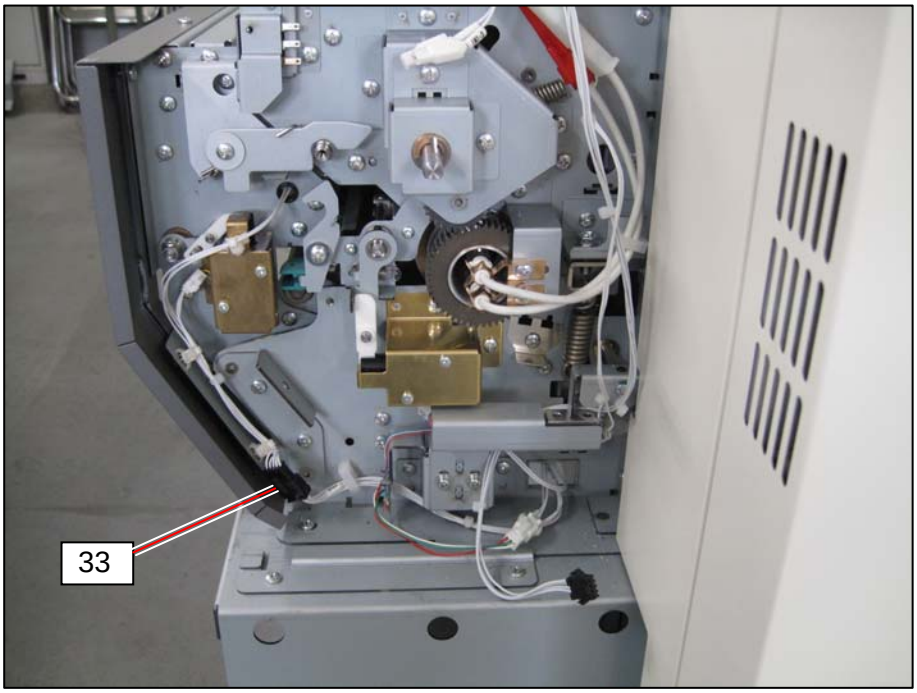




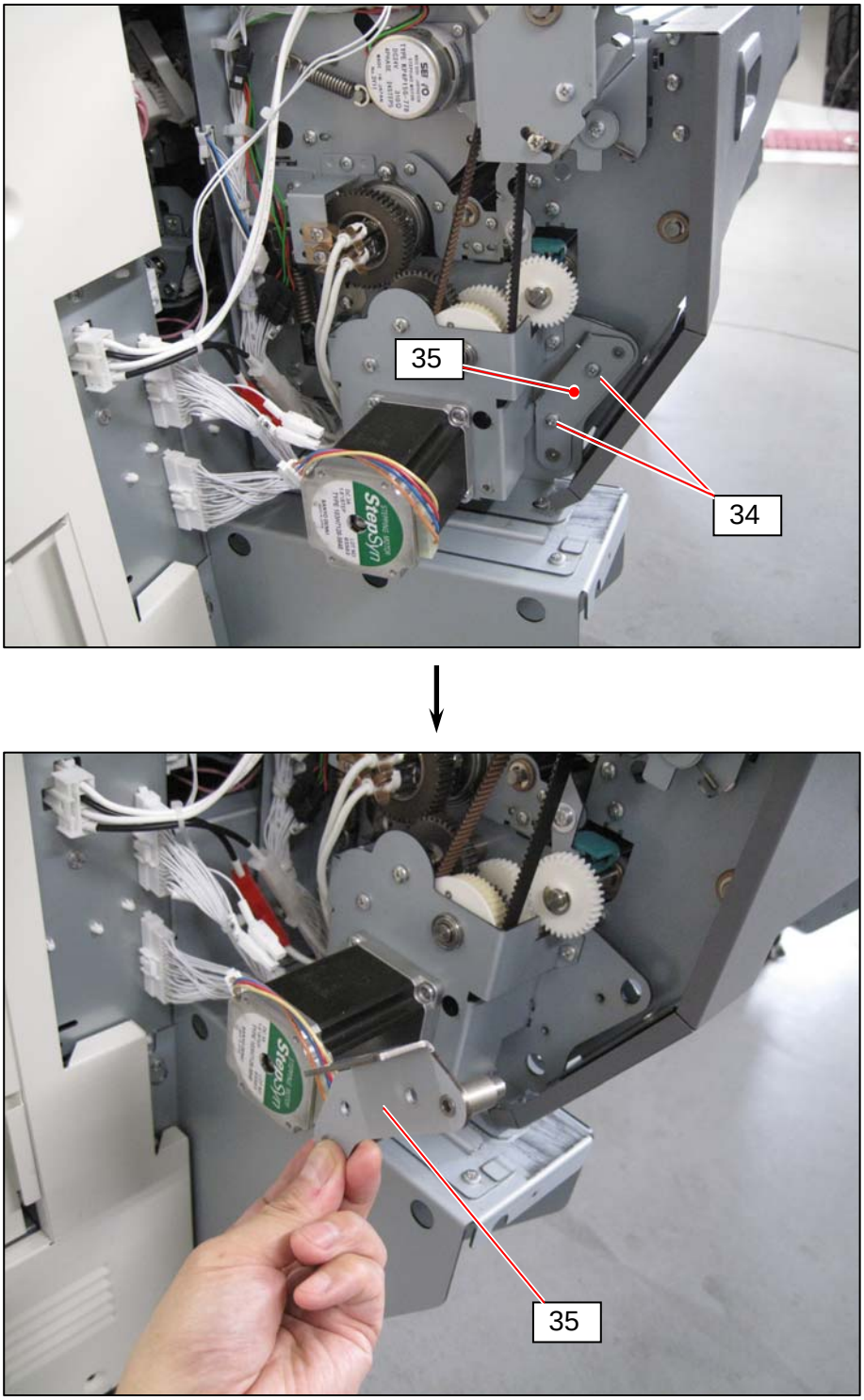
24. Remove the Fuser Upper Unit (32).



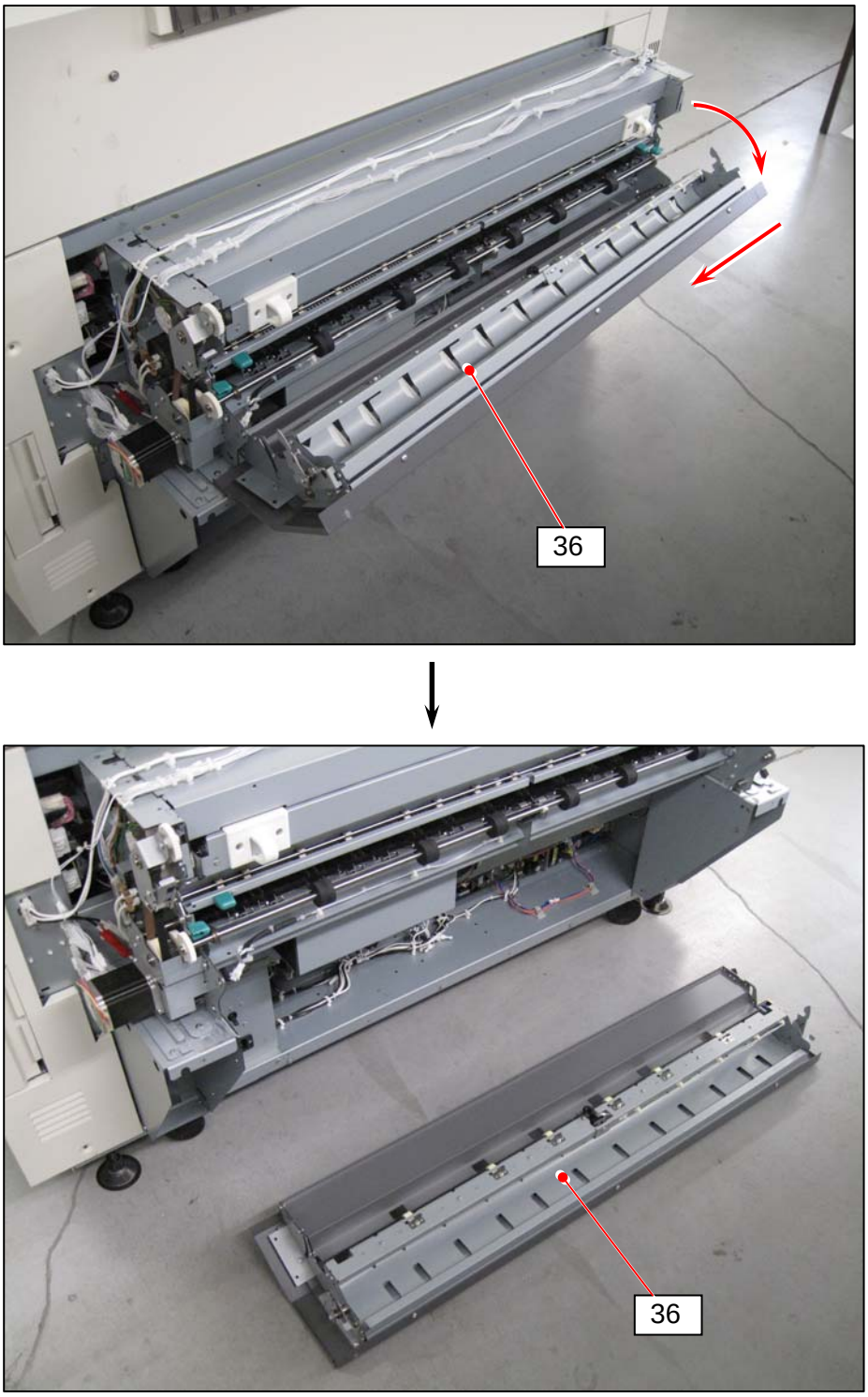
25. Plug out the connector (33) on the left of machine.



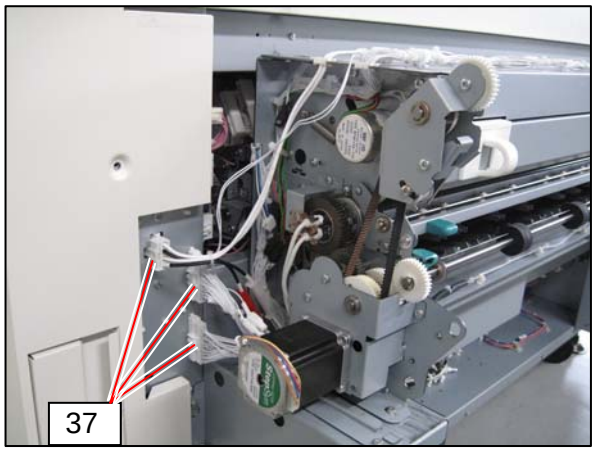
26. On the right of the machine, remove 2 screws (34) and then remove the Lower Shaft Assy (35).



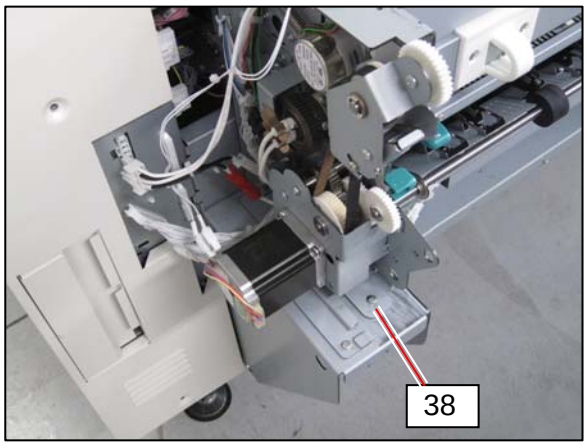
27. Open the Lower Exit Unit (36), and slide it rightward (in the direction of arrow) to remove it from the printer.

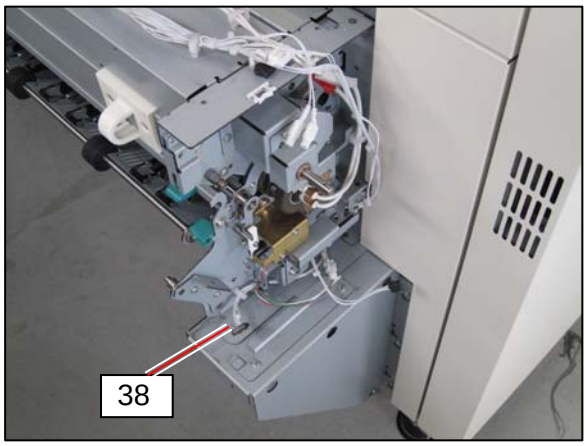


28. Plug out 3 connectors (37).

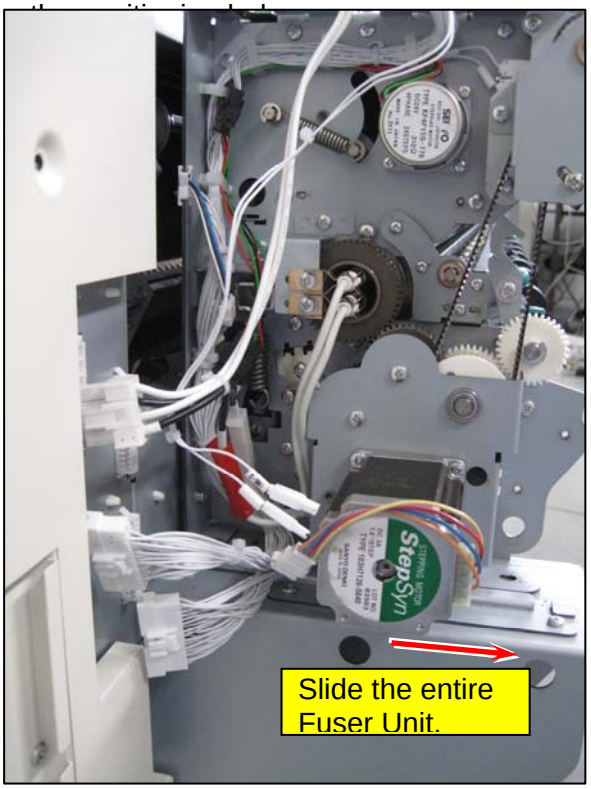


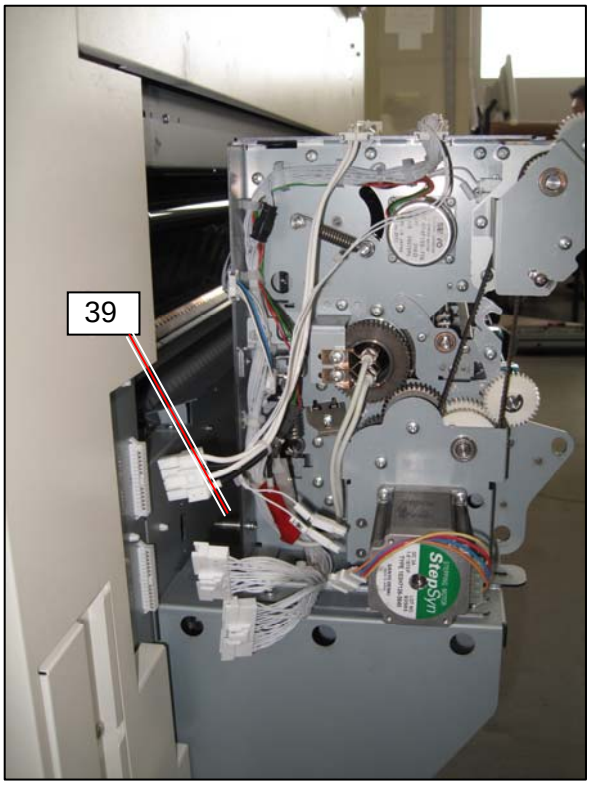
29. Remove screws (38) on both sides.



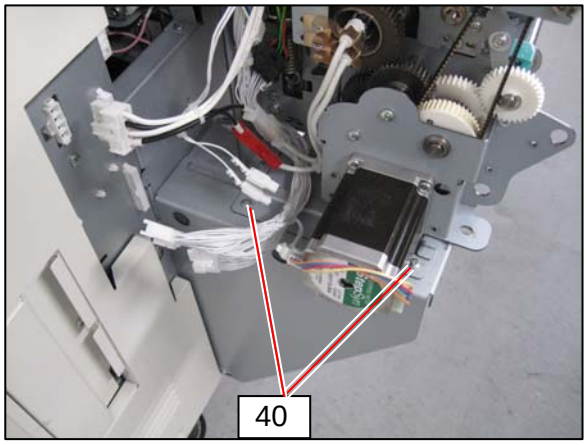


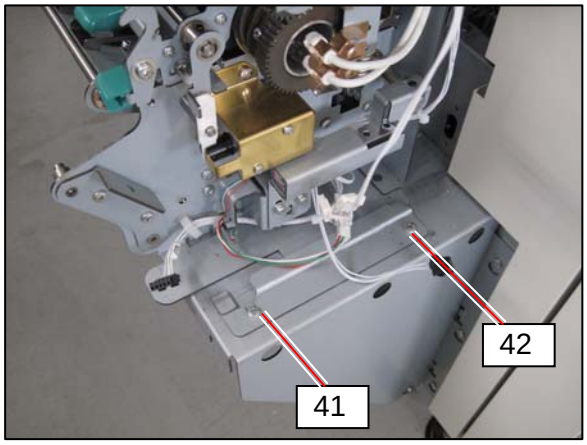
30. Slide the entire Fuser Unit a little in the direction of arrow until the positioning pins (39) are out of



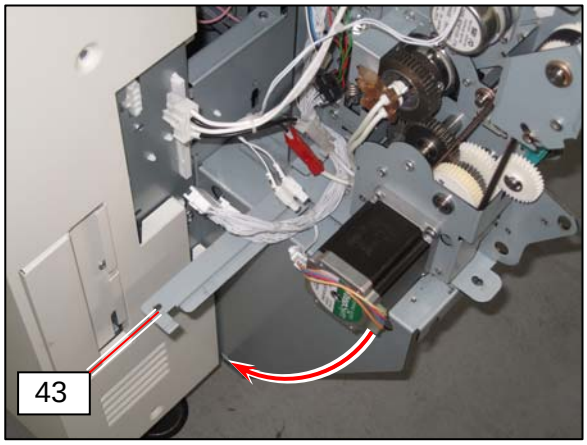


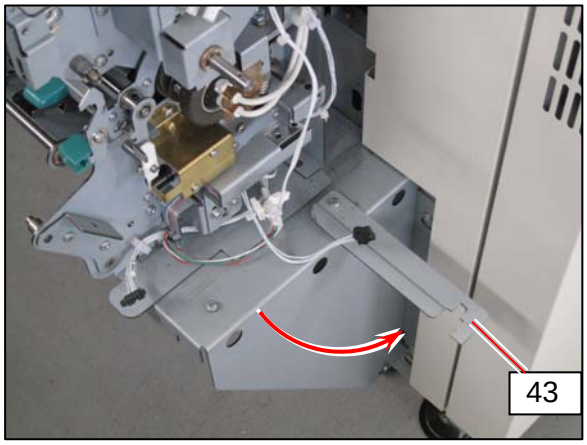
31. Loosen 2 screws (40) on the right.
    Loosen 1 screw (41) and remove 1 screw (42) on the left.



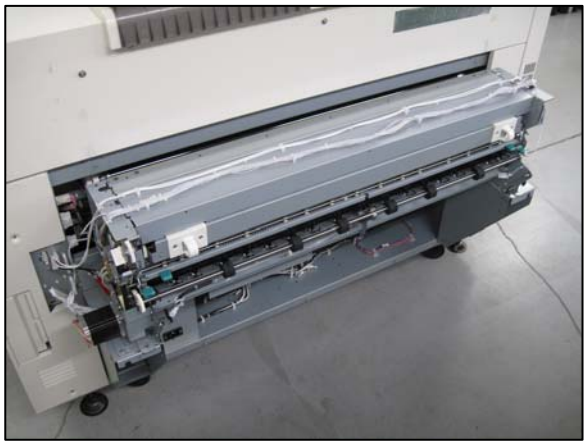


32. Turn the Stopper Brackets (43) on both sides outward.





33. With firmly catching the upper parts of side plates, remove the entire Fuser Unit (44) from the printer.



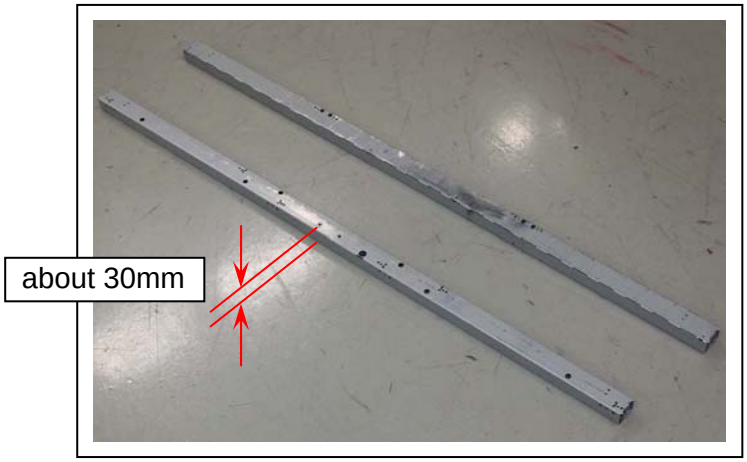
5. 6 Belt Unit

5. 6. 1 Removal of Belt Unit

NOTE

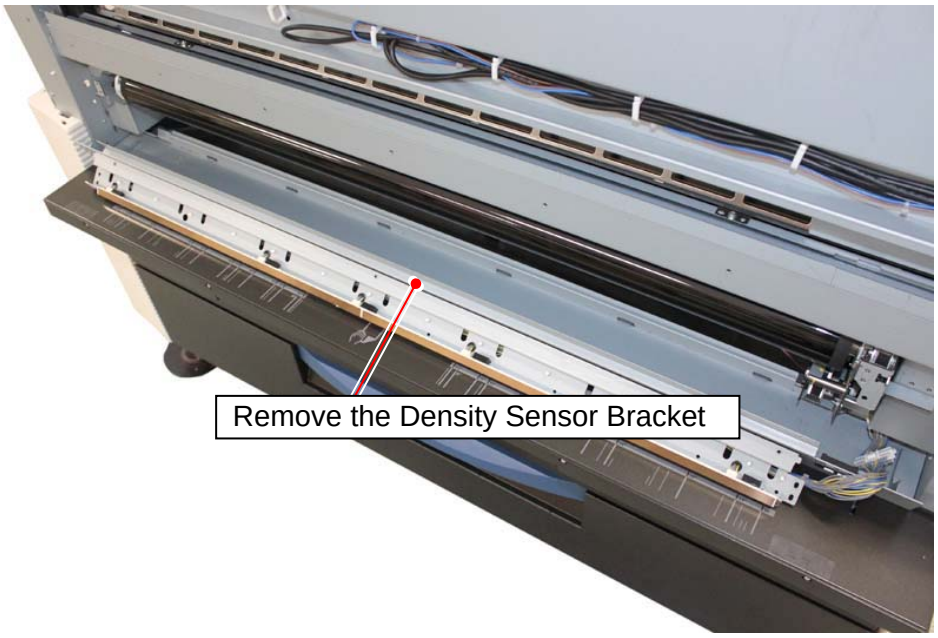
(1) Removal of Belt Unit from the machine must be done by 2 people.

(2) Belt Unit after removal must be vertically placed so as not to damage the Transfer Belt. At this time, Belt Unit must be put on the spacers of about 30mm thick like the ones in the following picture so that the guide rollers of the unit should not touch the floor and breaks.



1. Remove the whole Fuser Unit from the machine with referring to [5.5.2 Removal of Fuser Unit].

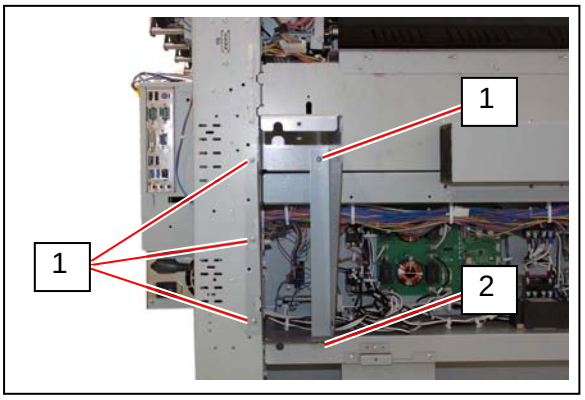
2. Remove the Density Sensor Bracket with referring to [5.10.1 Replacement of Density Sensor].

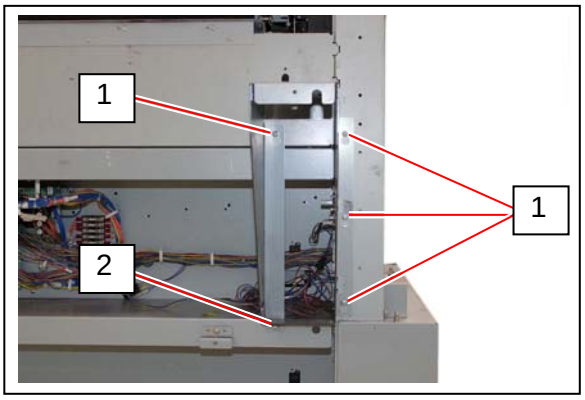


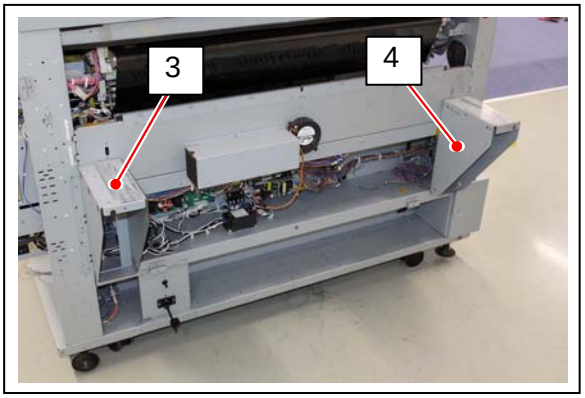
NOTE

Drums will be damaged if you draw out the Belt Unit without removing the Density Sensor Bracket.

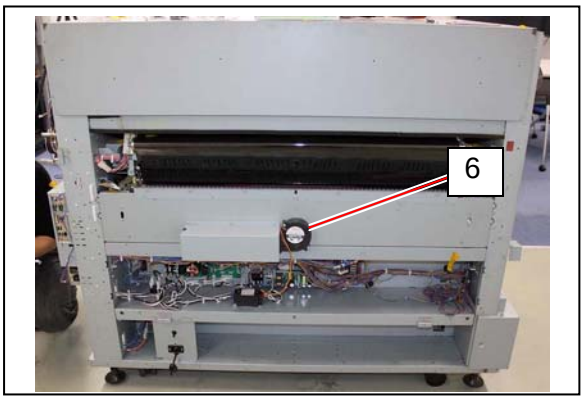
3. Remove 4 each M4x6 screws (1), loose 1 each screw (2), and remove the Fuser Base Brackets R (3) and Fuser Base Bracket L (4).

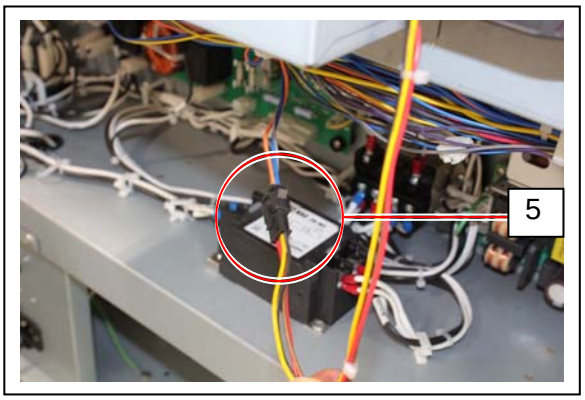




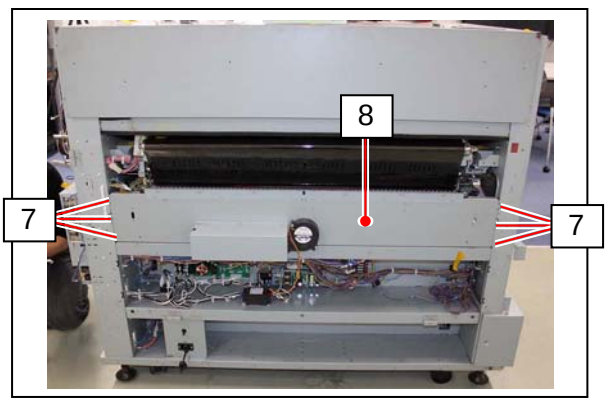


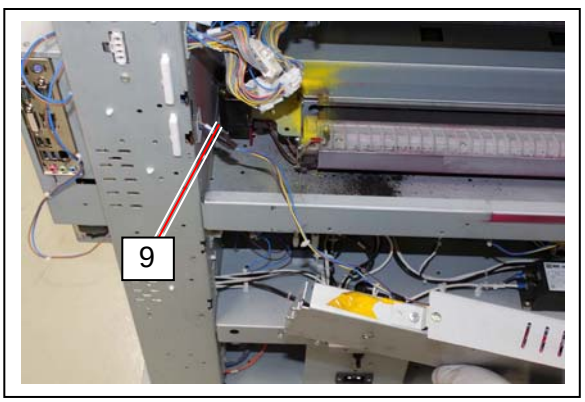
4. Plug out a connector (5) of the Fan (6).



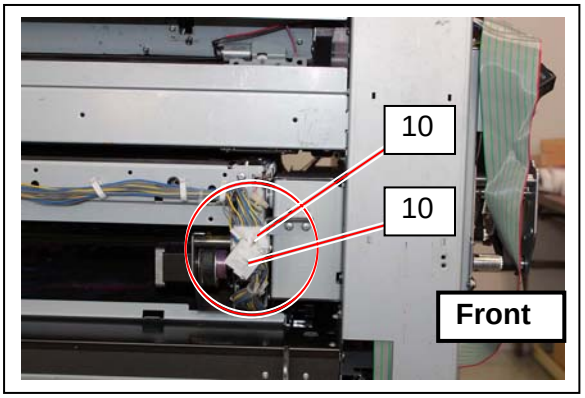


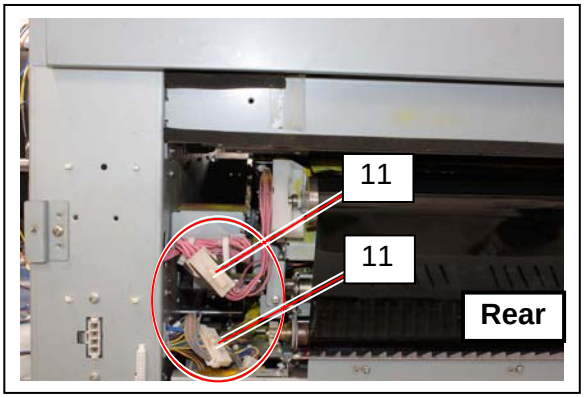
5. Remove 6 M4x6 screws (7) to remove the Rear Beam (8). Plug out the connector (9) also.



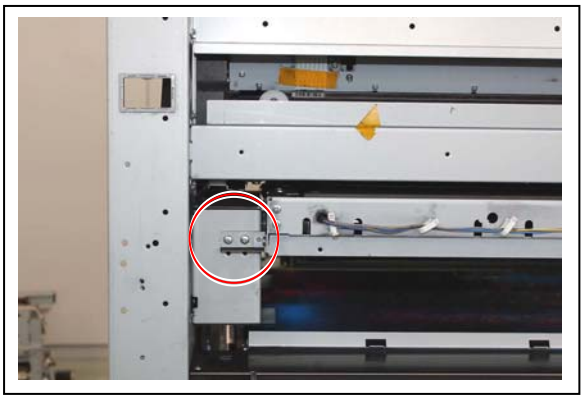


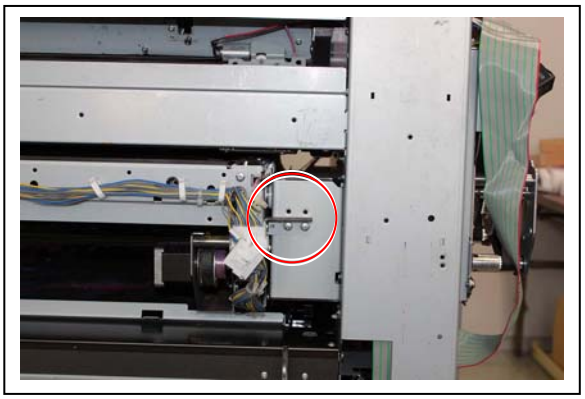
6. Plug out 2 connectors (10) on the front of the machine. Also plug out 2 more connectors (11) on the rear side. (These connectors are on the cables from the Belt Unit.)

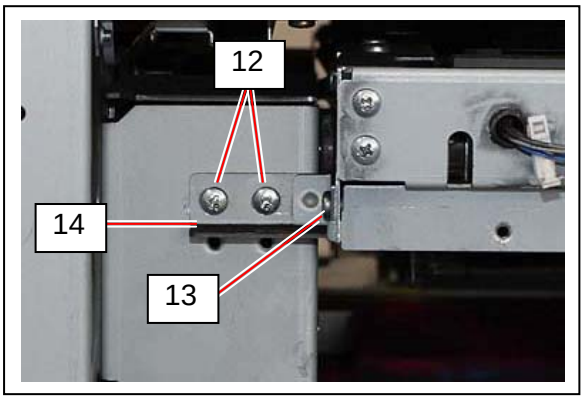


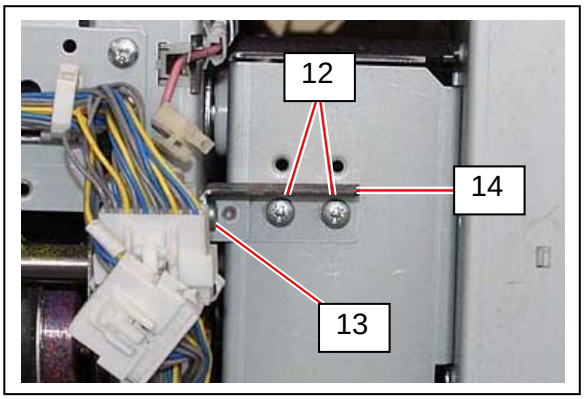


7. On the front side of the machine, loosen 2 each screws (12) and also remove 1 each M4x6 screw (13) that are fixing both Front Belt Unit Stoppers (14) on both sides. This unfix the Belt Unit on the front side of machine.

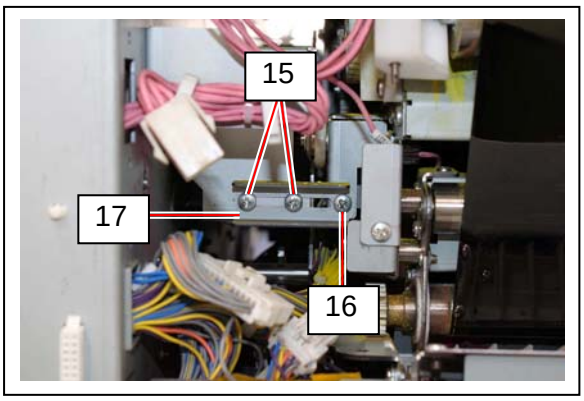


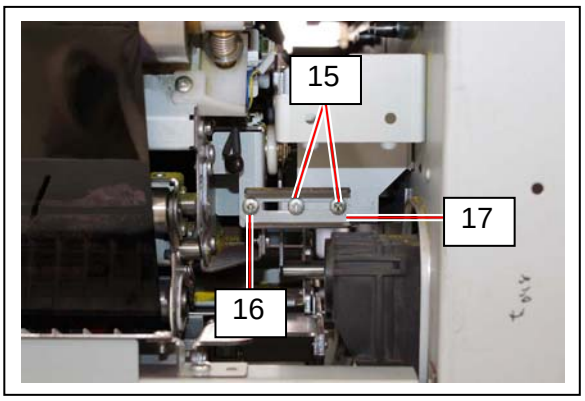




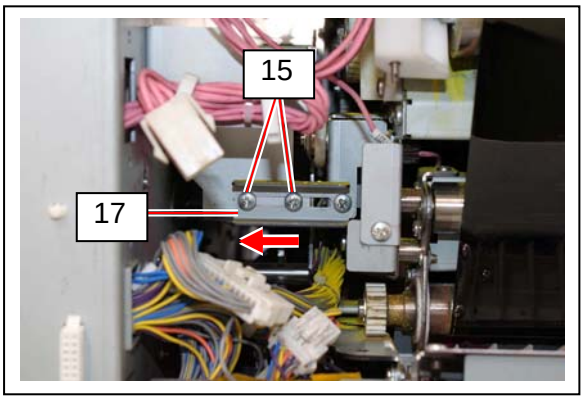


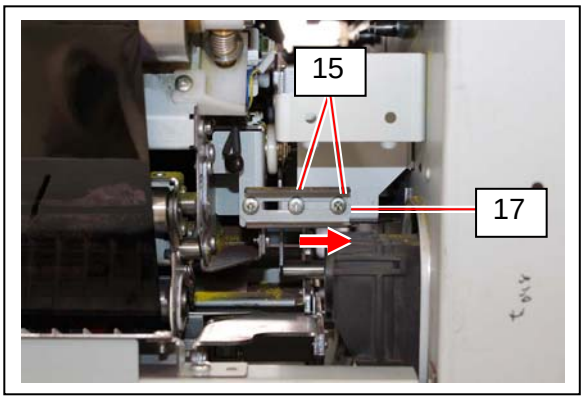
8. On the rear side of the machine, loosen 2 each screws (15) and also remove 1 each M4x6 screw to unfix the Rear Belt Unit Stoppers (17). This unfix the Belt Unit on the rear side of machine.





9. Slide both Rear Belt Unit Stoppers (17) fully outside and then fix them there by tightening 2 each screws (15).





9. Gently slide out the whole Belt Unit rearward by 2 people, keeping horizontal as much as possible and also without having an angle against the direction of drawing out. After removing from the machine, vertically put the Belt Unit on the spacers of about 30mm thick as the photo, with placing its motor side to the bottom side.

Photo to be prepared

NOTE

(1) This operation to remove the Belt Unit must be done by 2 people.

(2) Put on rubber gloves when handling the Belt Unit or Belt so as not to touch the Belt by bear hand. Putting finger marks or dirt will badly affect the image quality.

(3) Do not put the Belt Unit horizontally (on the table for example) as it will stress some limited points of the Belt and result in damage.

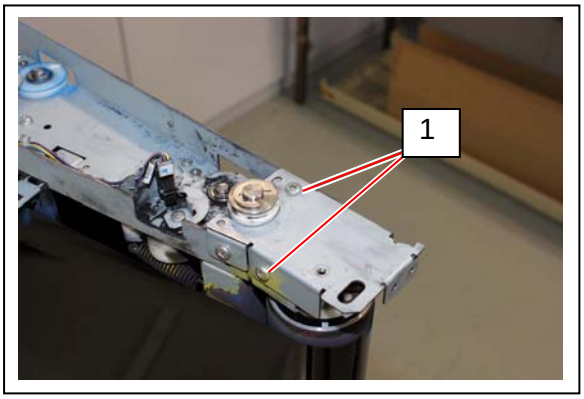
(4) Pay attention for the Belt Unit on the spacers so that it should not fell down.

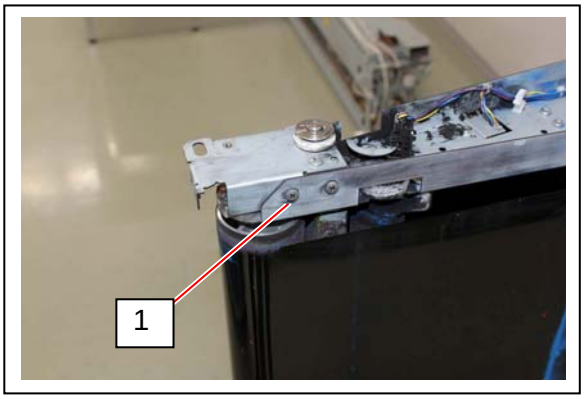
5. 6. 2 Replacement of Belt

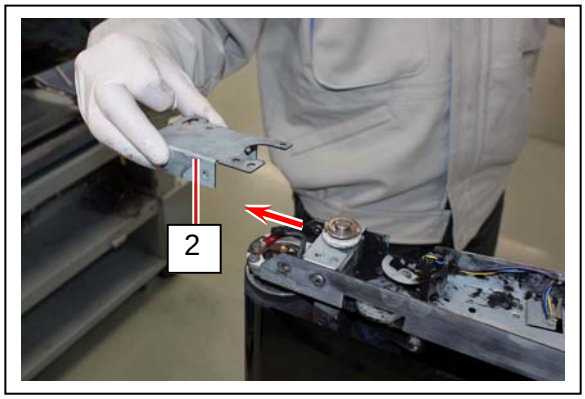
> **NOTE**
>
> Put on rubber gloves when handling the Belt Unit or Belt so as not to touch the Belt by bear hand. Putting finger marks or dirt will badly affect the image quality.

1. Remove the whole Belt Unit from the machine referring to [5.6.1 Removal of Belt Unit].

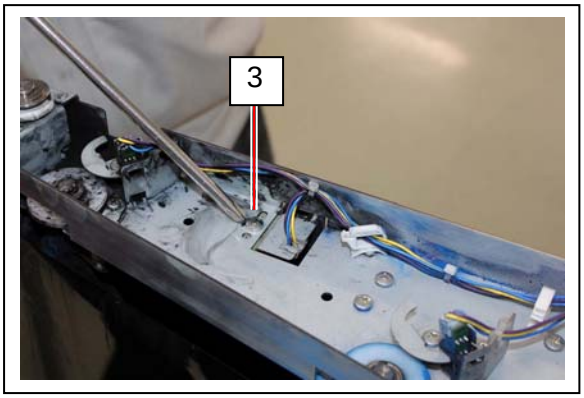
2. On the upper side of vertically stood Belt Unit, remove 3 M4x6 screws (1) to remove the Bracket (2).

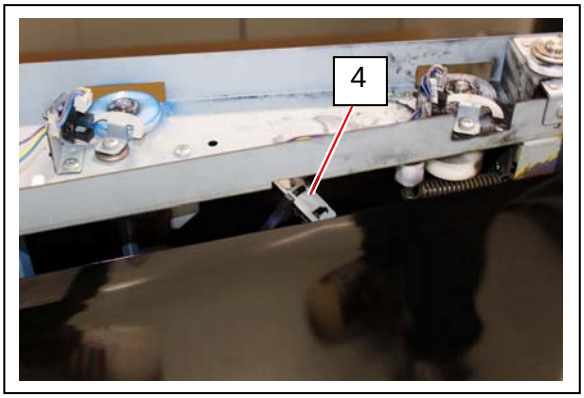




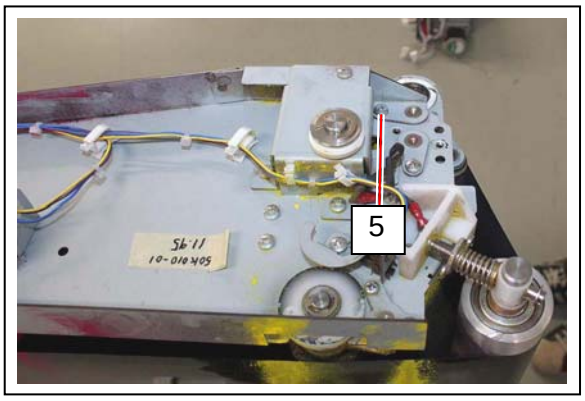


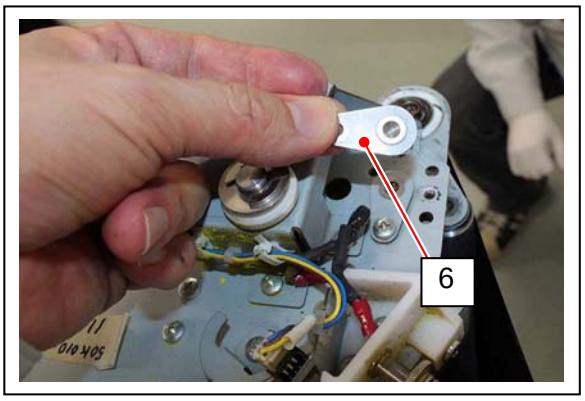
3. Remove a M4x6 screw (3), and remove the Sensor Bracket (4) of Belt Skew Sensor so that the edge of the Belt is out of the sensor.





4. Remove a M4x6 screw (5) to remove the Hinge Bracket (6).





5. On the bottom (motor side) of vertically stood unit, remove a M4x6 screw (7) to remove the Bracket (8).

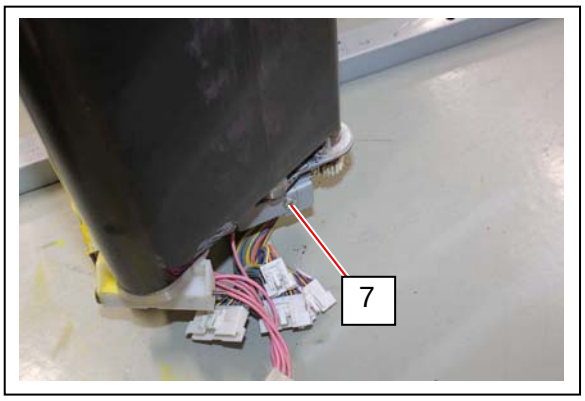
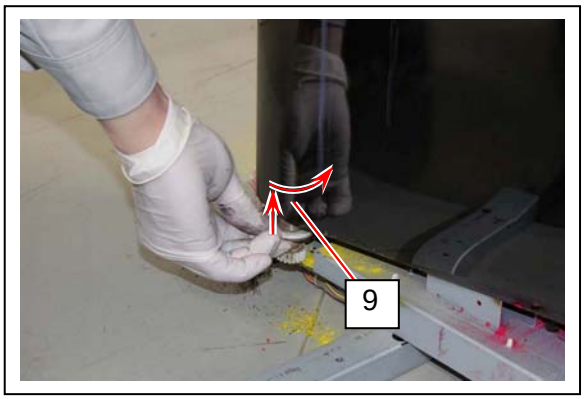
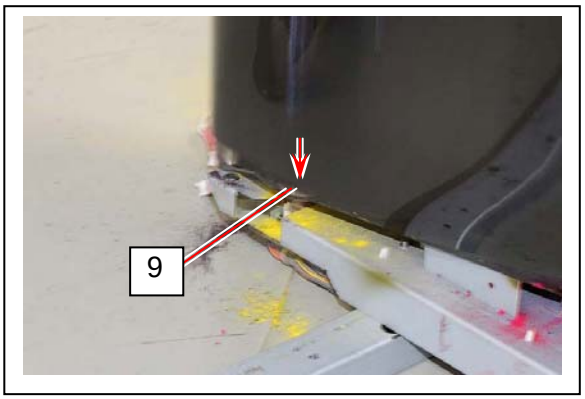


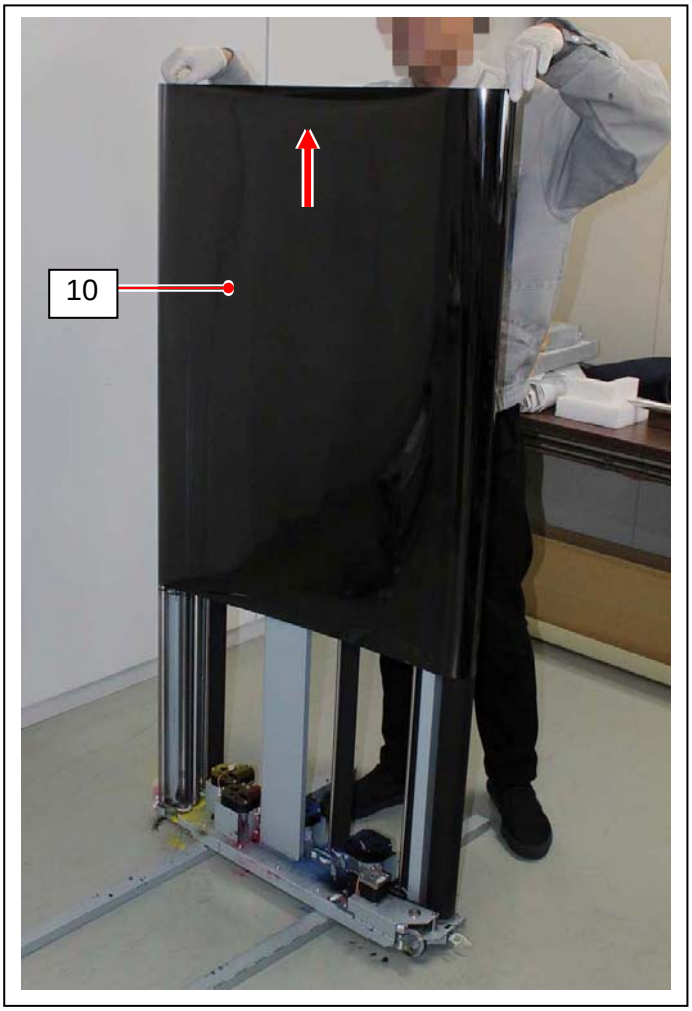
Photo to be prepared

6. With pulling up the Tension Roller (9) a little, move it in the direction of arrow to hide it into a space that is inside of the Belt edge.





7. Catch the edge of the Belt (10) and slowly bring it up to remove from the unit. Then install the new belt referring to the Notes on next page.

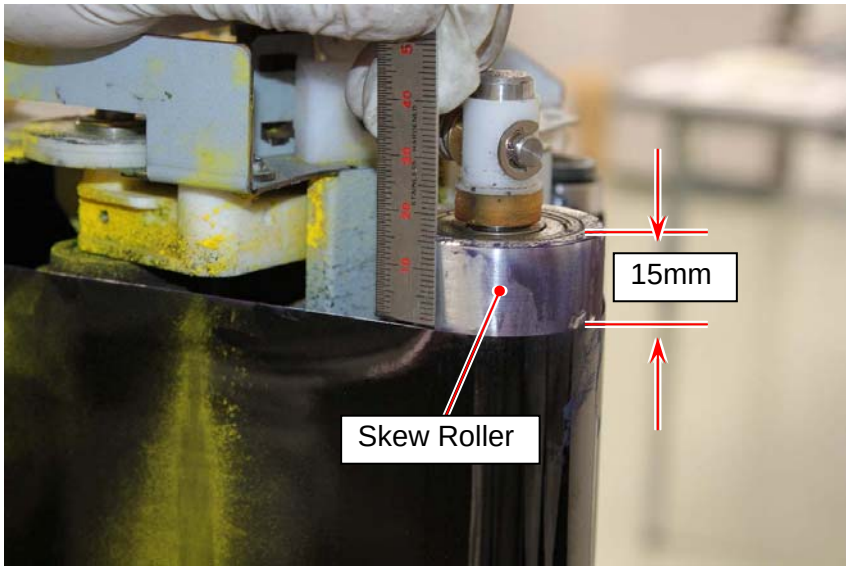


CAUTION

1. Put on rubber gloves when handling the new Belt so as not to put a finger print or other dirt on its surface.

2. When returning the new Belt back to the Belt Unit, do this by 2 people. One person brings down the Belt slowly, and the other person "moves away" the edge of Belt from such as motor or other parts so that the edge should not be damaged by hitting.

3. When tensioning the Belt with Skew Roller, correctly adjust the position of Belt so that the edge is at about 15mm from the end of Skew Roller.



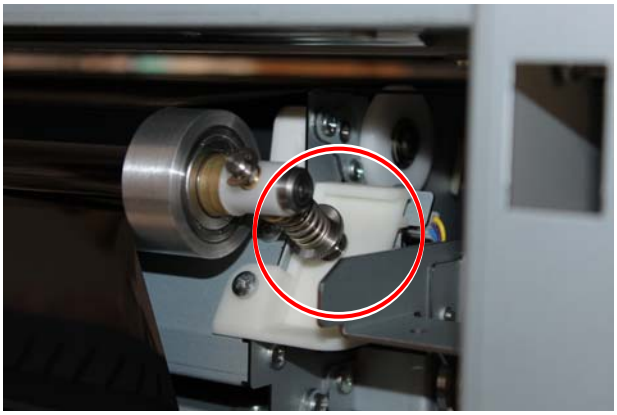
4. After tensioning the belt with Skew Roller, fit the Sensor Bracket (4) at its original position with screw (3). And be sure that the Belt edge is running inside of both Belt Skew Sensor. If not, please correct it by hand.

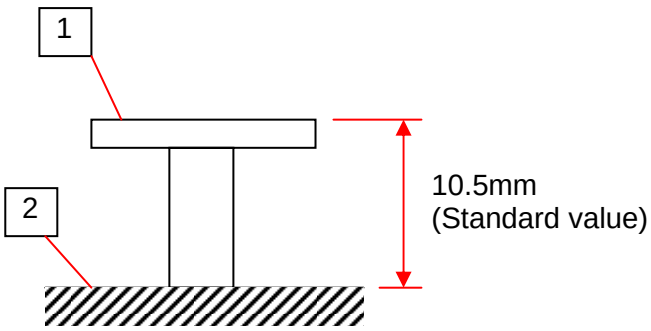
Photo to be prepared.

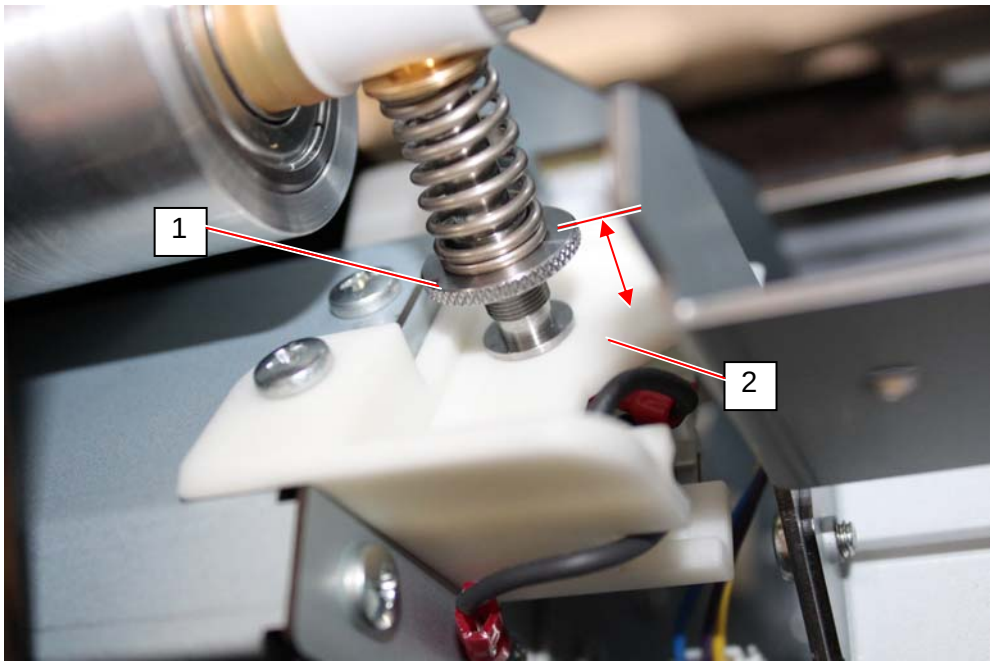
Photo to be prepared.

5. 6. 3 Adjustment of Belt Tension

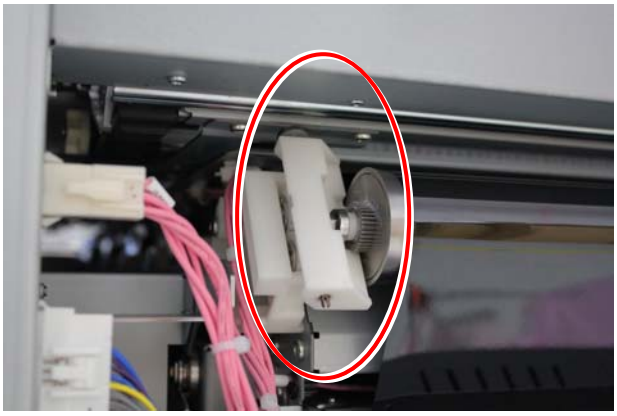
1. On the left of the machine, be sure that the distance between the upper face of Tension Adjust Disc L (1) and the surface of white plastic base (2) is 10.5mm (standard value). If it is not 10.5mm, rotate the Tension Adjust Disc L (1) clockwise of counter-clockwise.

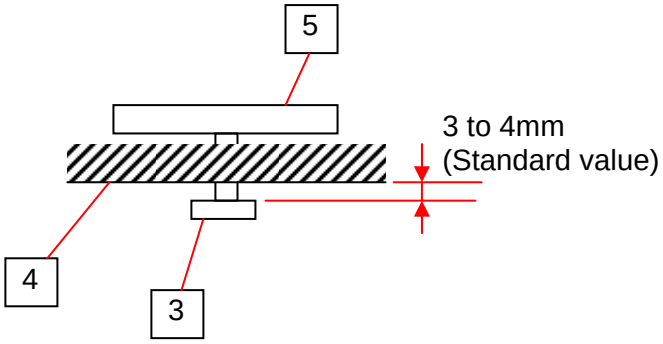


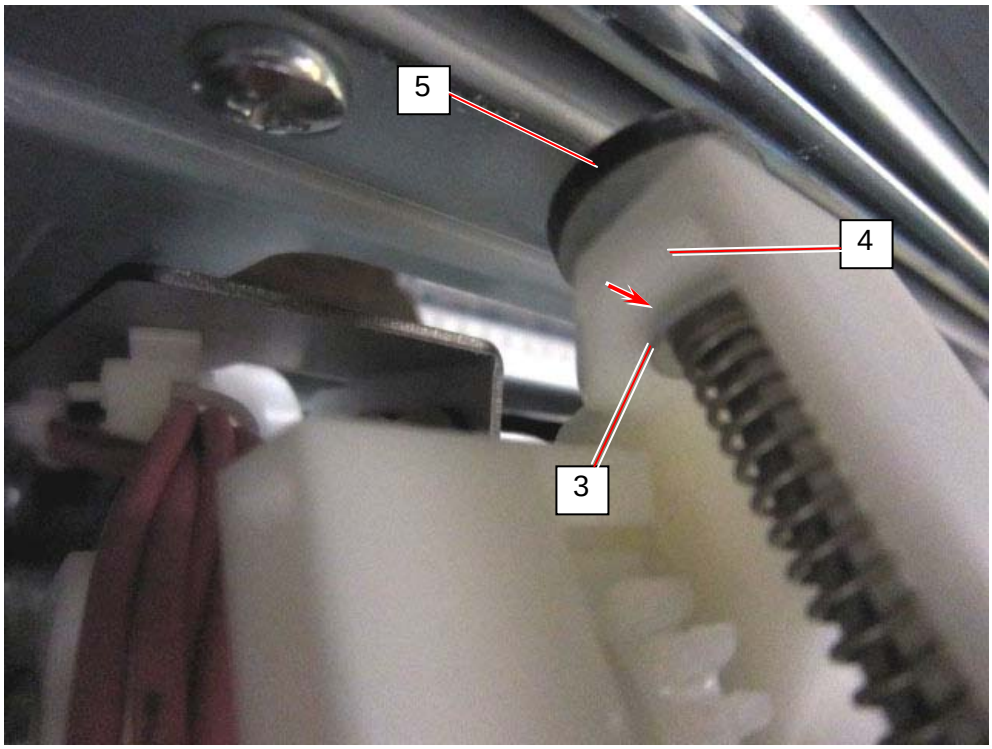




2. On the left of the machine, be sure that the distance between the spacer (3) and the surface of white plastic base (4) is 3 to 4mm (standard value). If it is not 3 to 4mm, rotate the Tension Adjust Disc R (5) clockwise of counter-clockwise.



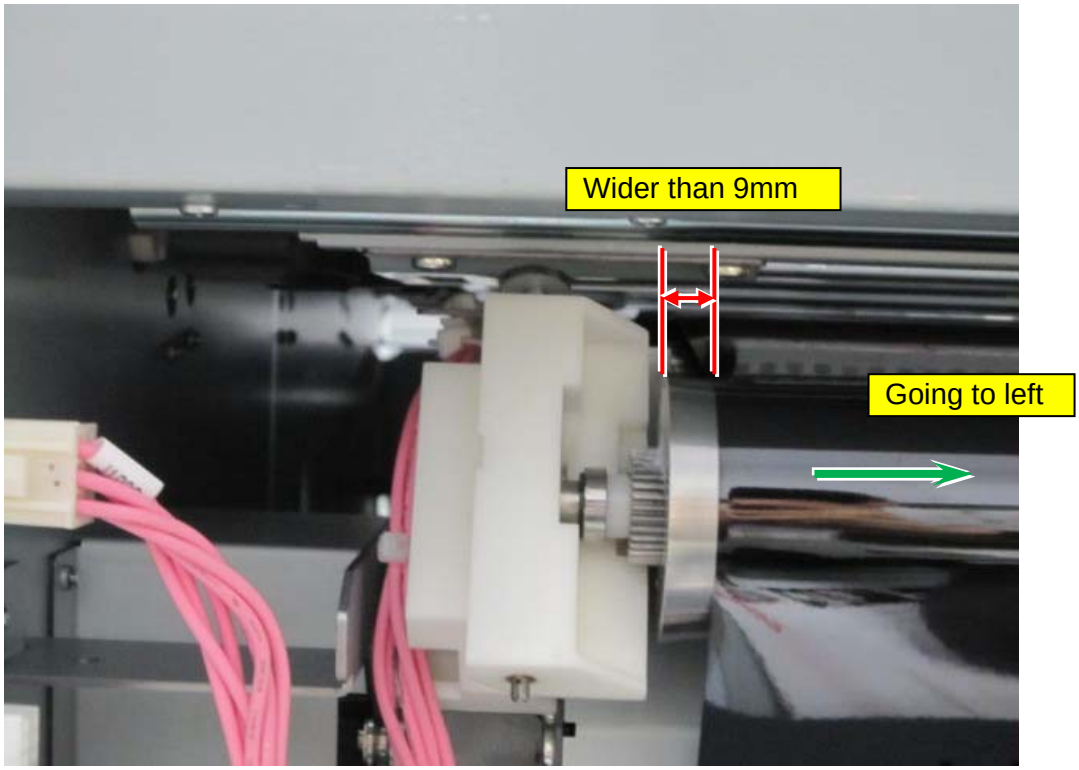




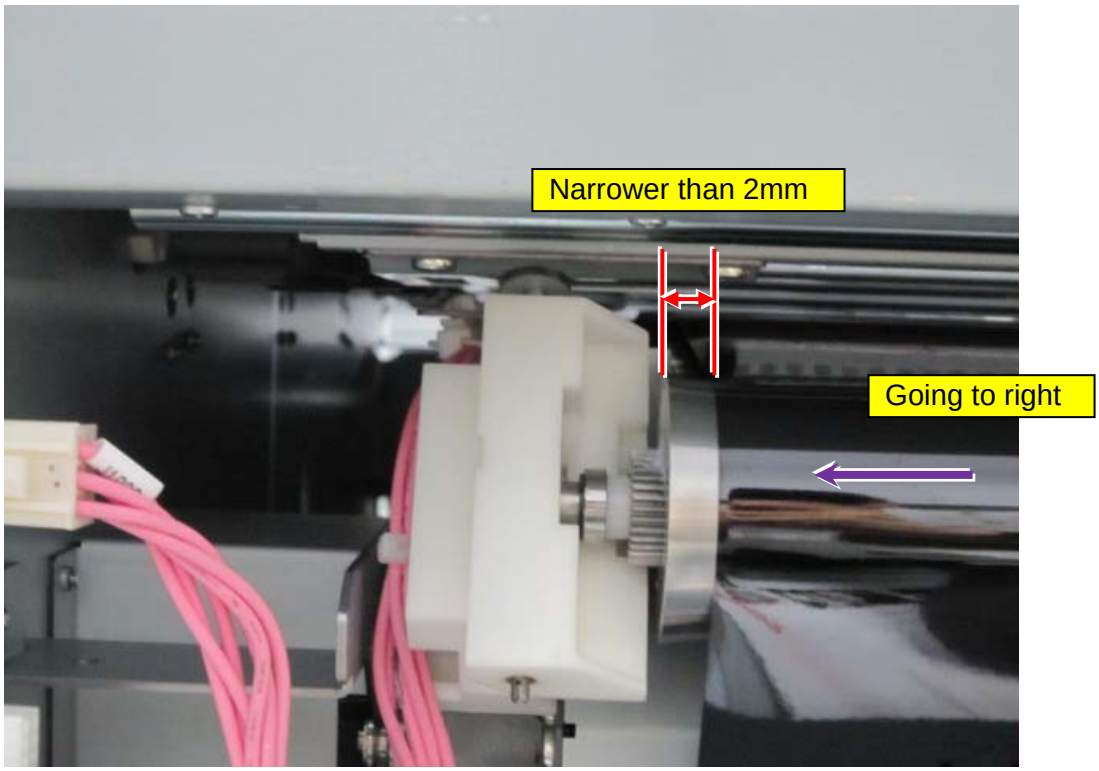
3. Print **30 pages of 36x24** landscape.

4. Check the conditions of Belt and the shaft of Skew Roller during printing.

- If the belt goes to the **left** side of machine and the distance between the right end of the Skew Roller and belt edge gets **wider than 9mm**, go to the step 5.

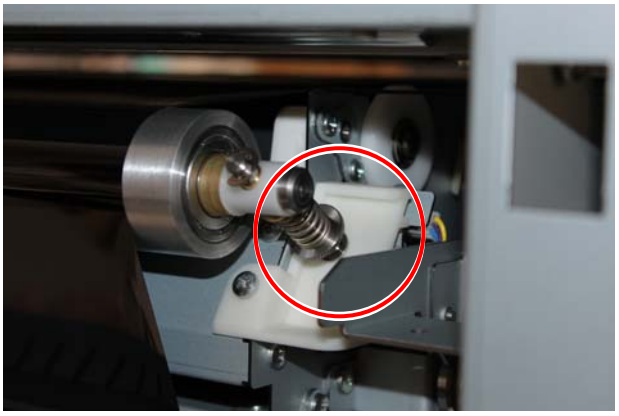


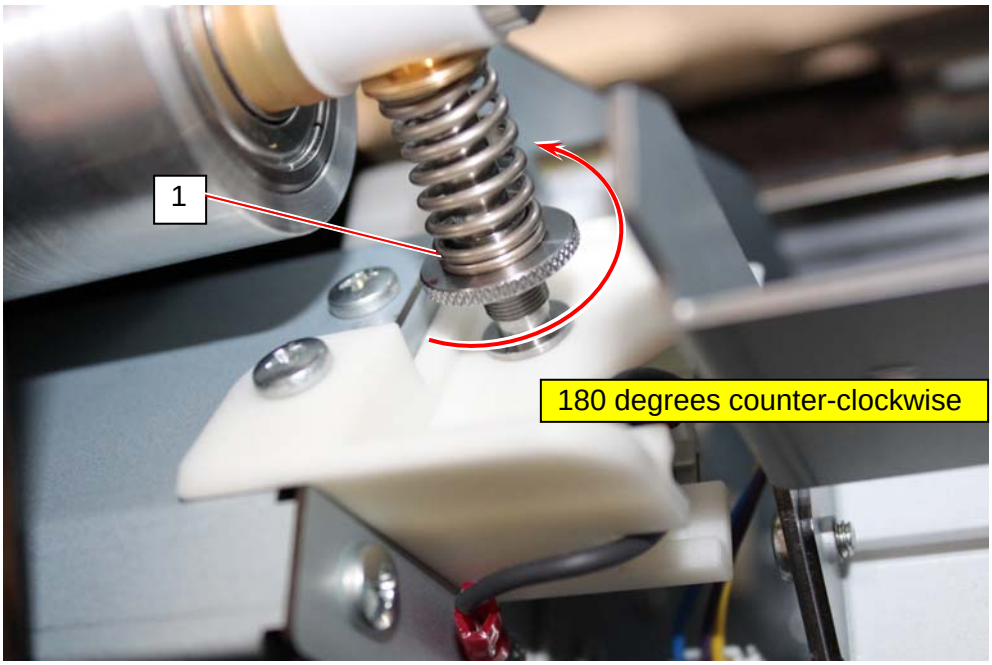
- If the belt goes to the **right** side of machine and the distance between the right end of the Skew Roller and belt edge gets **narrower than 2mm**, go to the step 6.



5. If the belt goes to the **left** side of machine and the distance between the right end of the Skew Roller and belt edge gets **wider than 9mm**, It means the left side has weaker tension. Rotate the Tension Adjust Disc L (1) on the left of machine **180 degrees counter-clockwise** to increase the tension.

   After that, go back to the step 3 and check the Belt condition again.

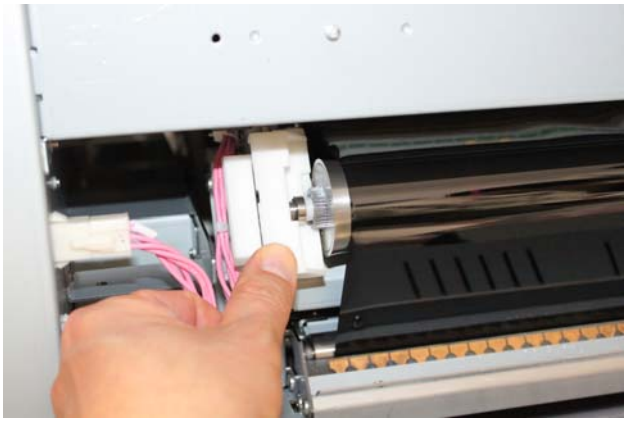




Reference

If you will return the belt to center, which has already shifted to left, do as follows.

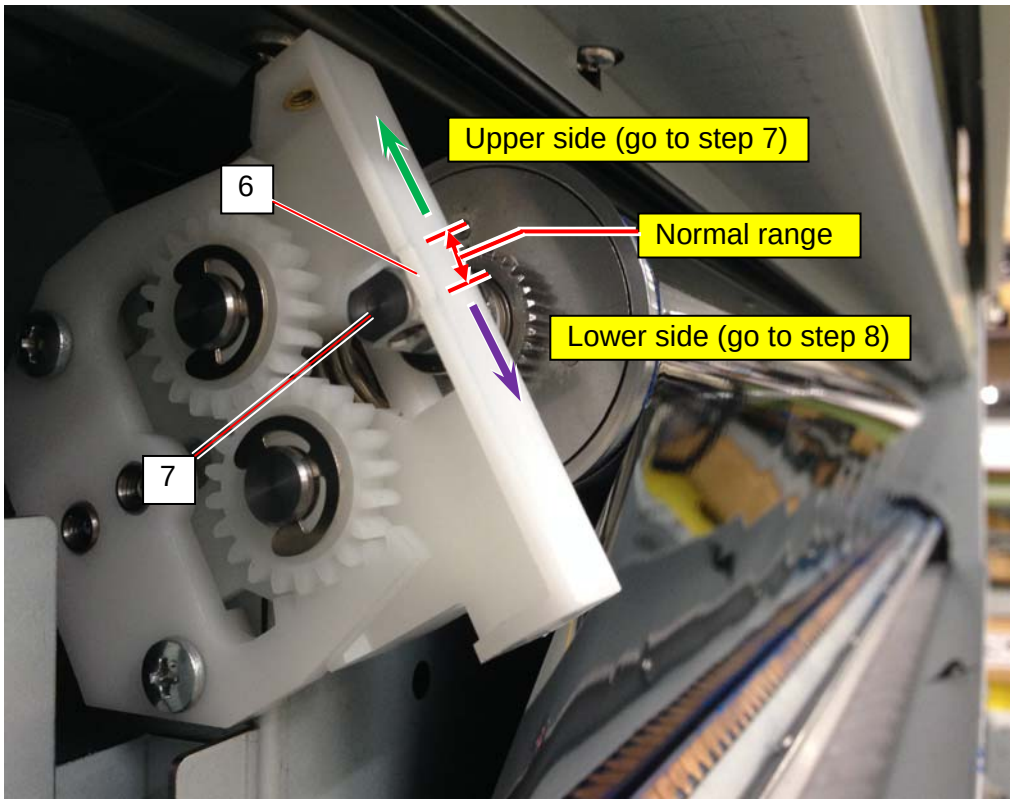
(1) In the Maintenance GUI, select Output Check.
(2) Select No.506 Belt Motor and run it.
(3) Push down the white plastic part to increase the tension on the right. Belt will move to the right.
(4) When the Belt comes back to center then stop running it.



6. If the belt goes to the **right** side of machine and the distance between the right end of the Skew Roller and belt edge gets **narrower than 2mm**, also check the position of the shaft of Skew Roller during printing.

   There is a "cut" (6) on the edge of white plastic base. This cut corresponds to the "normal range" in which the right shaft (7) of Skew Roller should be during printing.

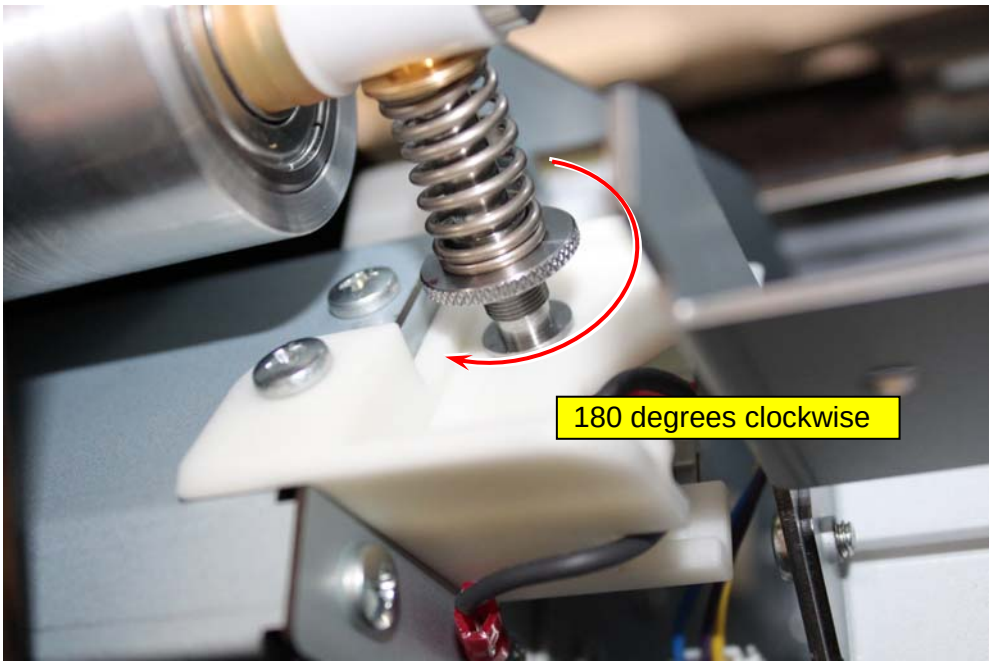
   - If the right shaft is on **upper side** from the normal range during printing, go to the step 7.
   - If the right shaft is on **lower side** from the normal range during printing, go to the step 8.



7. In case that (a) the distance between right end of the Skew Roller and belt edge gets **narrower than 2mm** and also (b) the right shaft is on **upper side**, take additional print (30 A1L) to check more.

   If the belt still goes to right so distance between right end of the Skew Roller and belt edge gets narrower, rotate the Tension Adjust Disc L (1) on the left of machine **180 degrees clockwise** to decrease the tension.

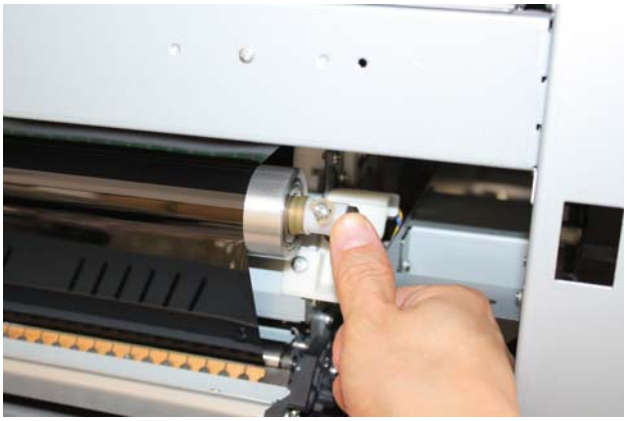
   After that, go back to the step 3 and check the Belt condition again.



Reference

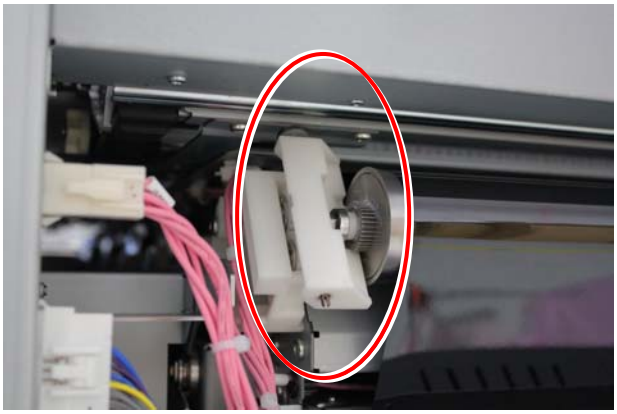
If you will return the belt to center, which has already shifted to right, do as follows.

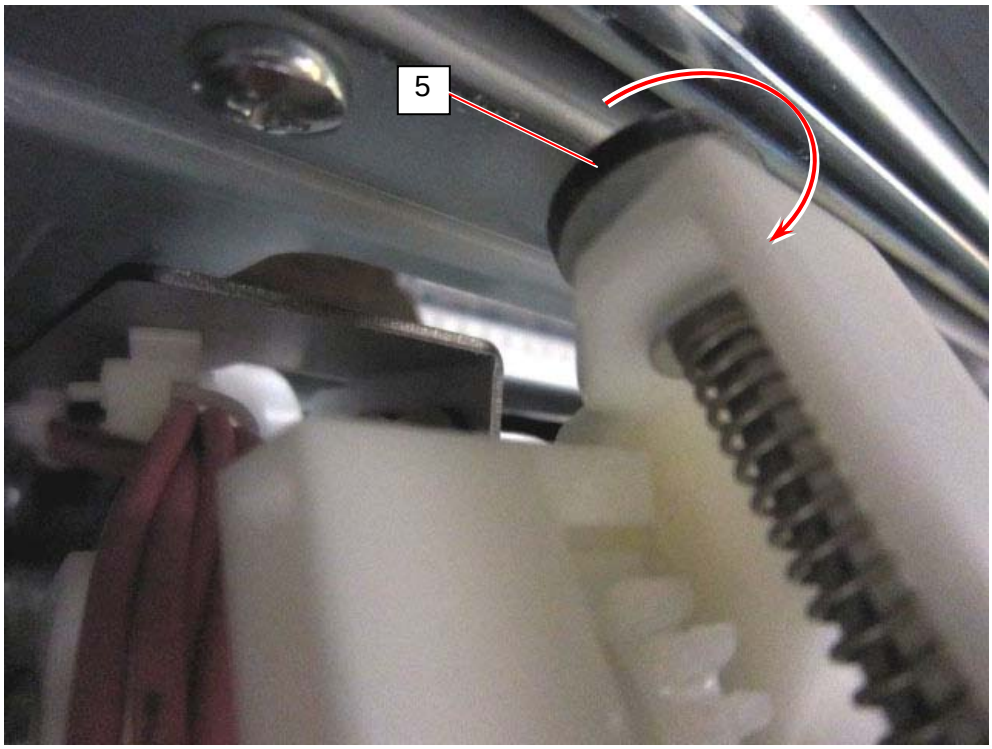
(1) In the Maintenance GUI, select Output Check.
(2) Select No.506 Belt Motor and run it.
(3) Push down the left shaft of Skew Roller to increase the tension on the left. Belt will move to the left.
(4) When the Belt comes back to center then stop running it.



8. In case that (a) the distance between right end of the Skew Roller and belt edge gets **narrower than 2mm** and also (b) the right shaft is on **lower side**, rotate the Tension Adjust Disc R (1) on the right of machine **180 degrees in the direction of arrow** to decrease the tension.

After that, go back to the step 3 and check the Belt condition again.

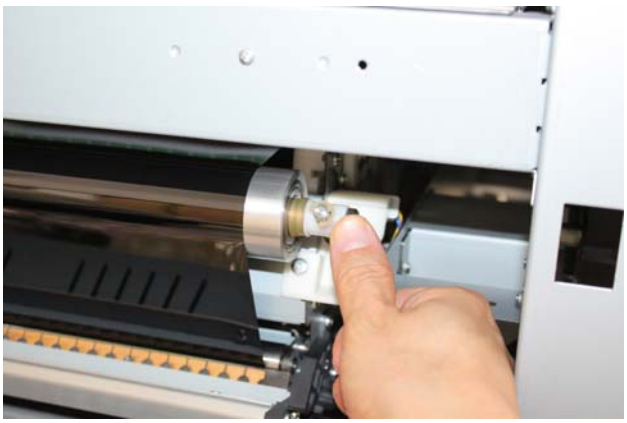




Reference

If you will return the belt to center, which has already shifted to right, do as follows.

(1) In the Maintenance GUI, select Output Check.
(2) Select No.506 Belt Motor and run it.
(3) Push down the left shaft of Skew Roller to increase the tension on the left. Belt will move to the left.
(4) When the Belt comes back to center then stop running it.

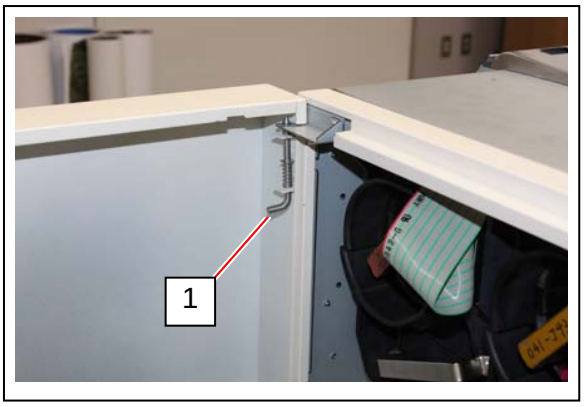


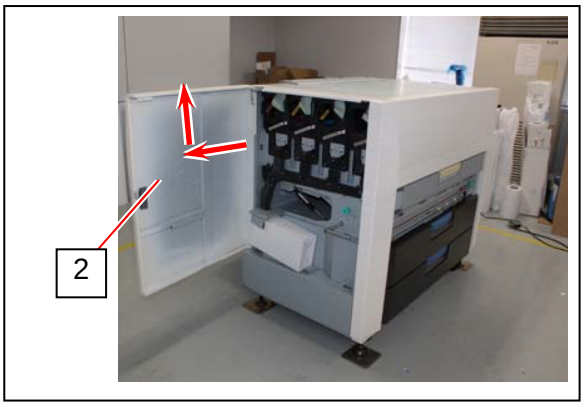
5. 7 Belt Cleaner

5. 7. 1 Removal of Belt Cleaner

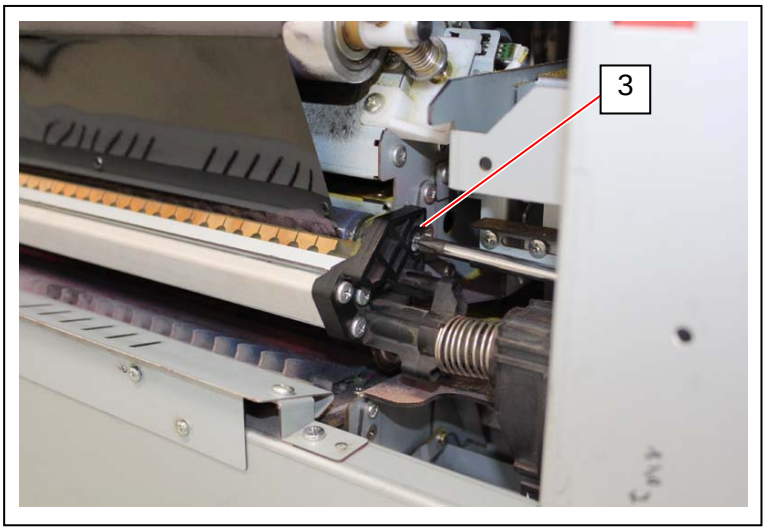
1. Remove the whole Fuser Unit from the machine referring to [5.5.2 Removal of Fuser Unit].

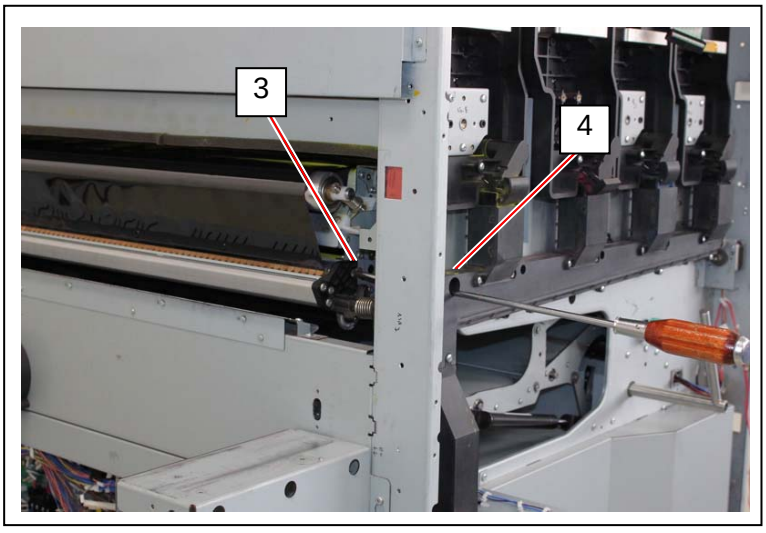
2. Open the Left Side Door. Pull down the lock pin (1) to unlock the Left Side Door (2). The a little tilt the Left Side Cover by moving its upper side and then bring it up to remove from the machine.



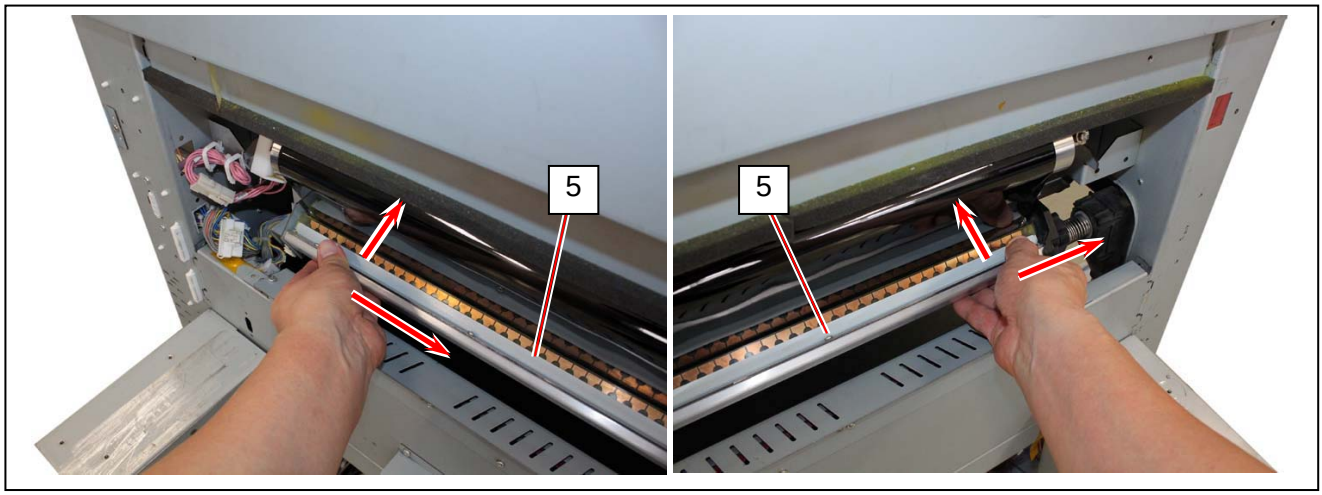


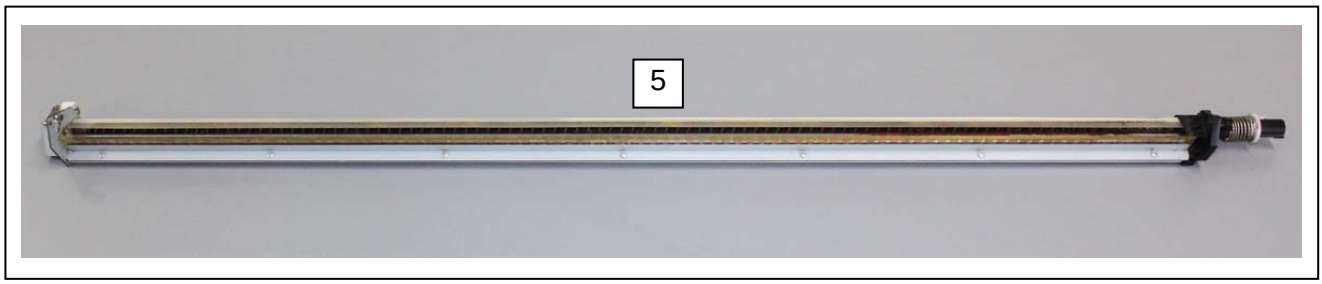
3. Remove a M4x8 screw (3) on the left of machine to unfix the Belt Cleaner Unit. Use an access hole (4) for accessing the screw (3) with screwdriver.





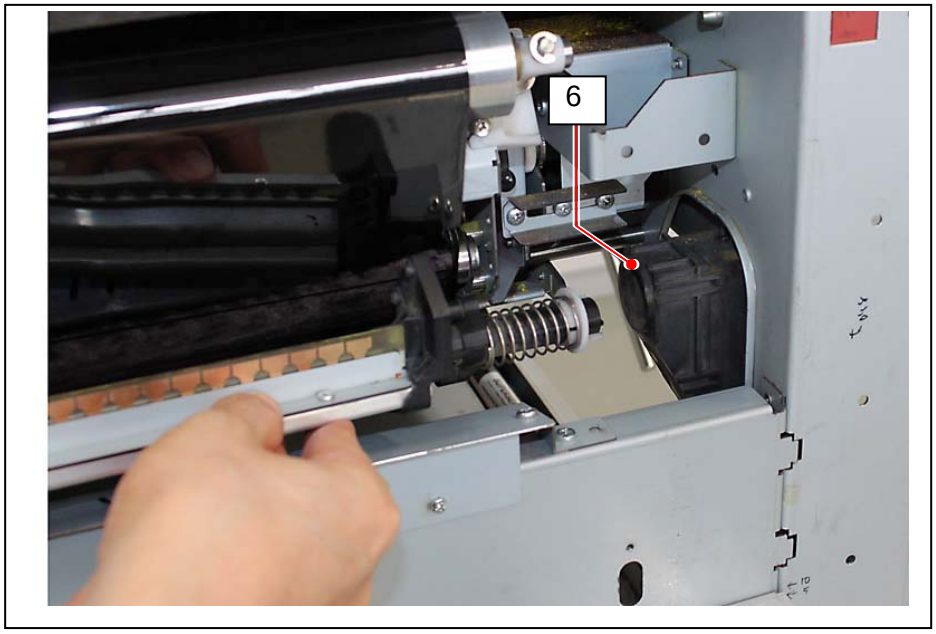
4. Catch both sides of the Belt Cleaner Unit (5). With pushing the entire unit toward the Belt, slide it to right (left when seen from machine front). Belt Cleaner Unit will be removed.

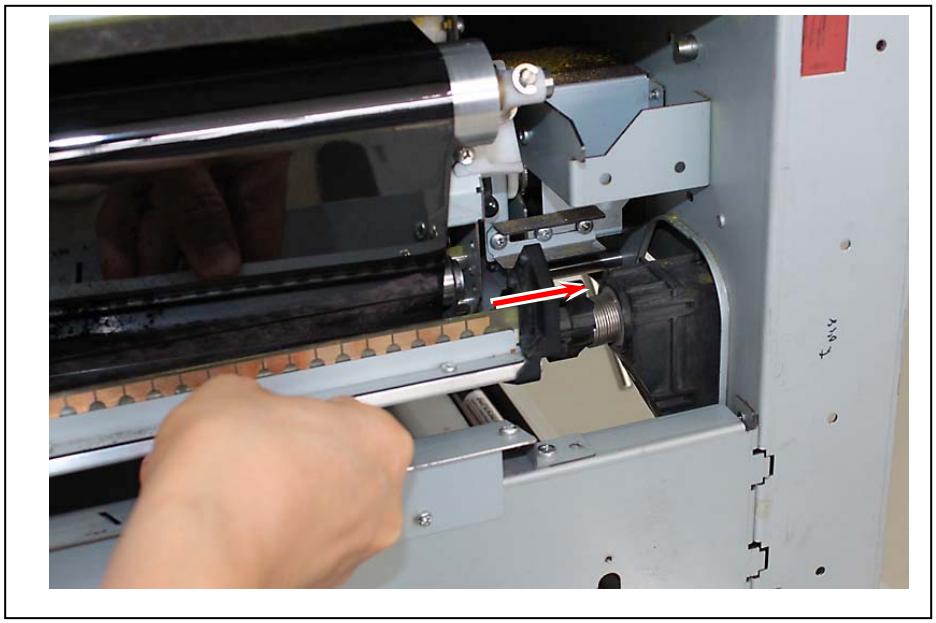




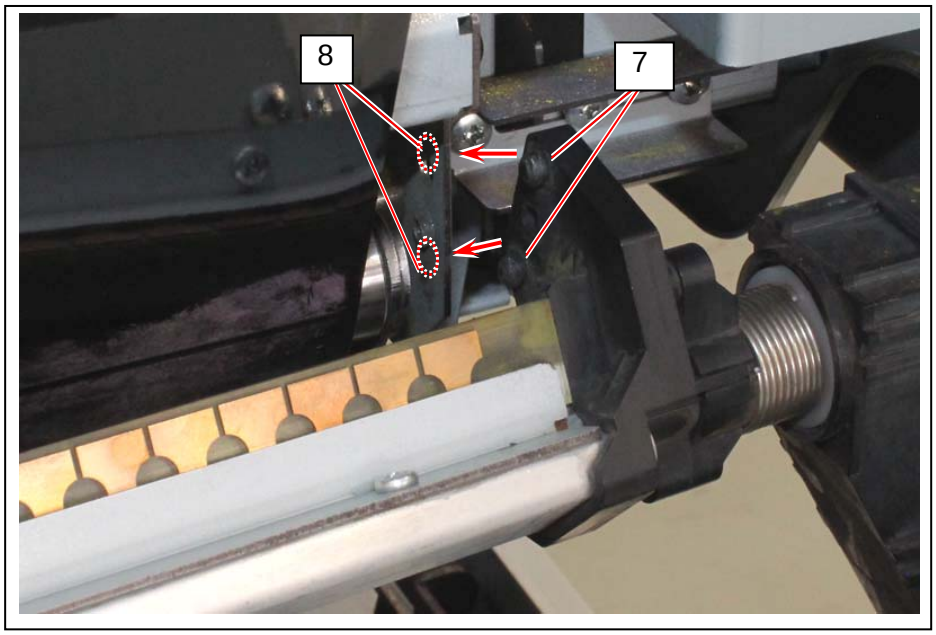
You may feel tight when sliding the Belt Unit as the cleaning blade is strongly pressed to the Belt.

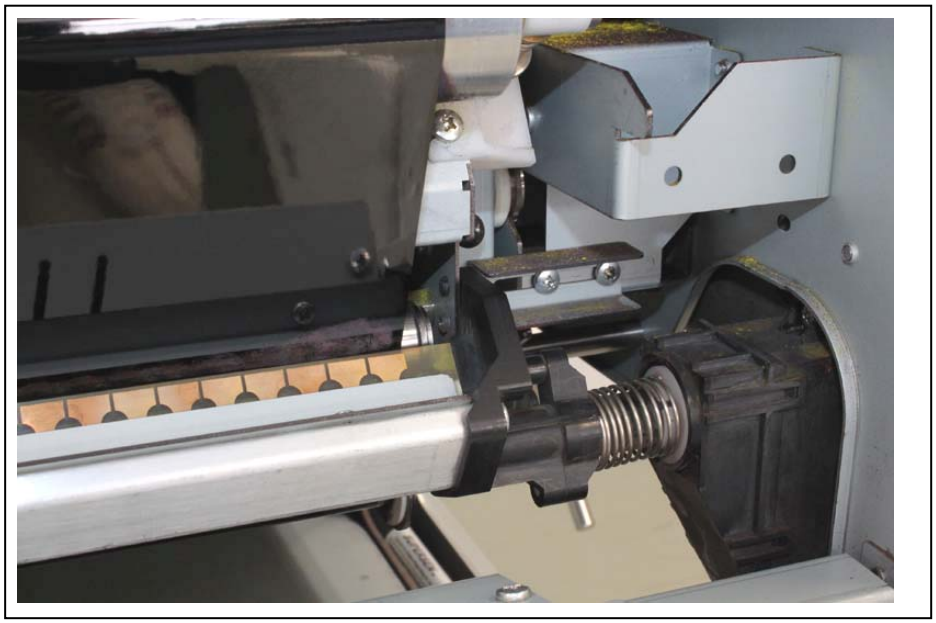
5. When returning the Belt Cleaner Unit back in the machine, at first fully insert the pipe of the unit into the waste toner duct (6).



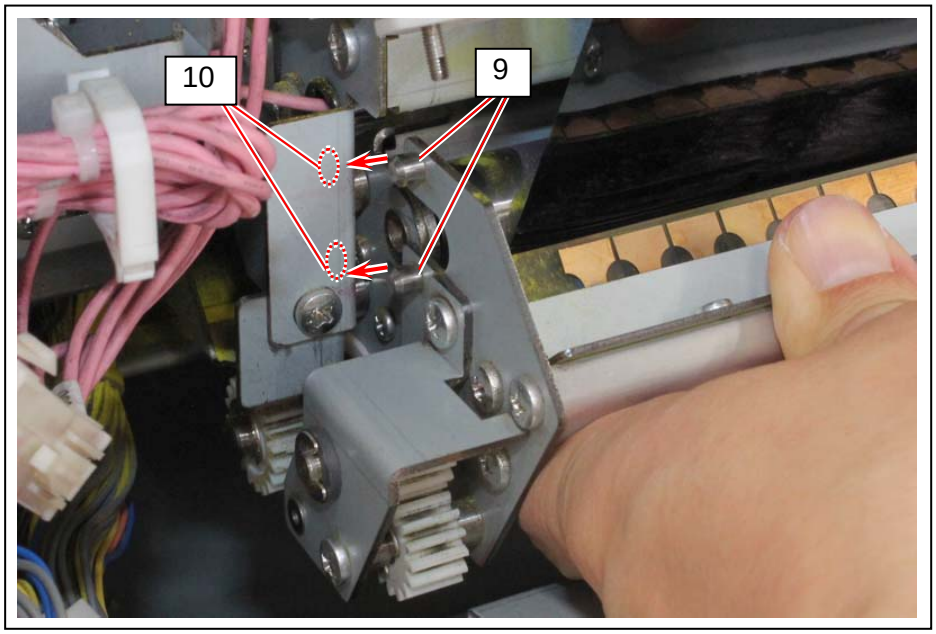


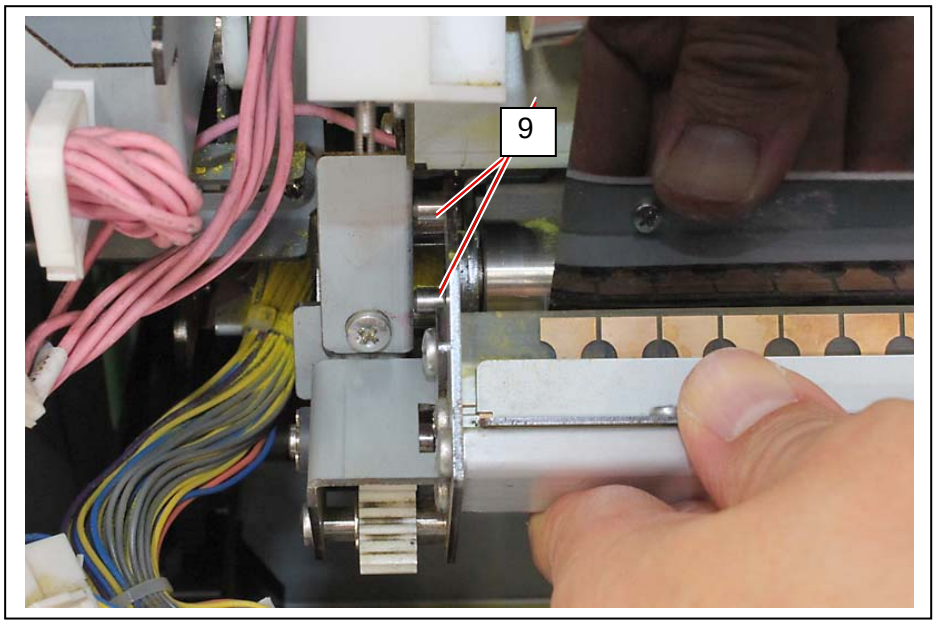
6. As there are 2 bosses (7) on the right (left when seen from machine front), fit them into the positioning holes (8).



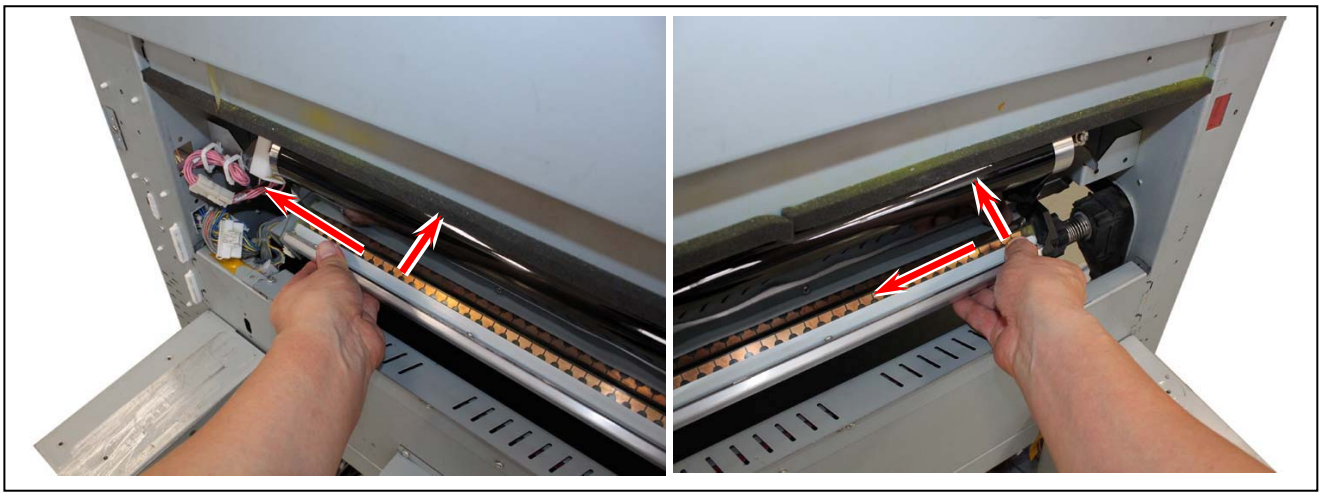


7. As there are 2 metal positioning pins (9) on the left (right when seen from machine front), fit them into the positioning holes (10).



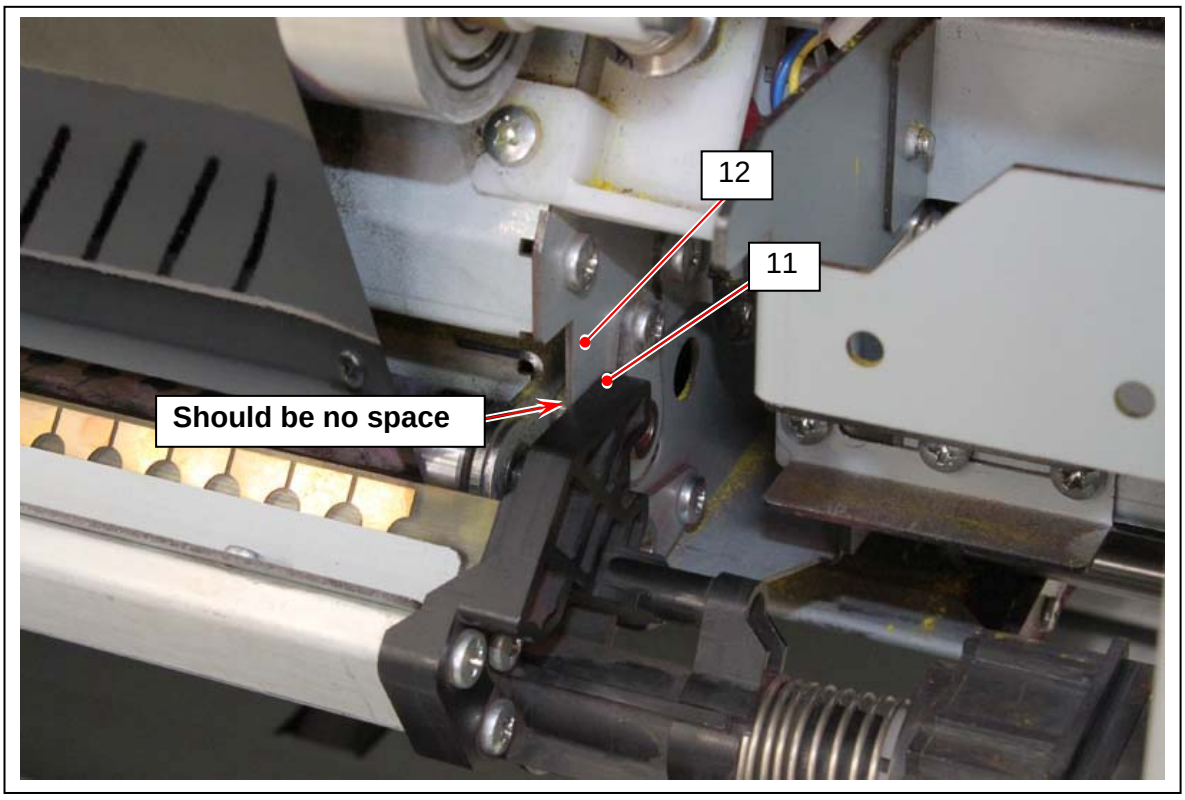


8. With pressing the whole Belt Cleaner strongly toward the Belt, slide it to the left (right when seen from machine front) to set it to the operation position.

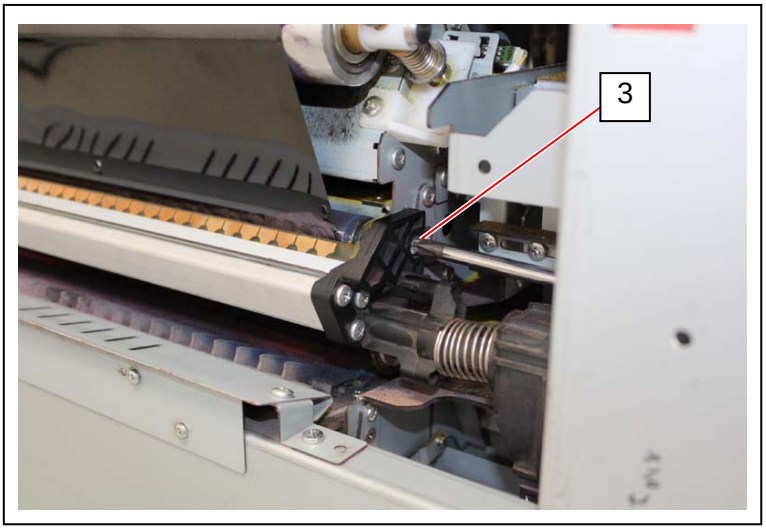


Confirmation

Belt Cleaner Unit is correctly in position if there is no space between plastic Side Plate (11) of Belt Cleaner Unit and metal plate (12). If there is space, the whole unit is not fully slid to the left or positioning bosses/pins are not fully fitted in.



9. Fix the Belt Cleaner Unit with the original M4x8 screw (3).



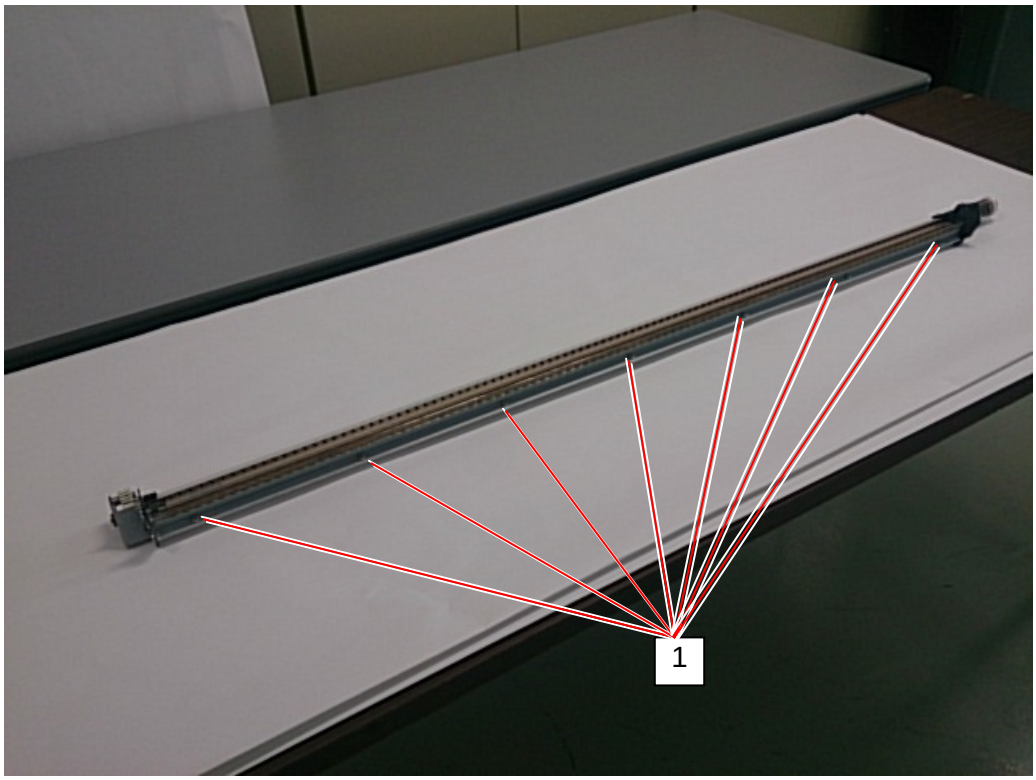
5. 7. 2 Replacement of Blade Assy

NOTE

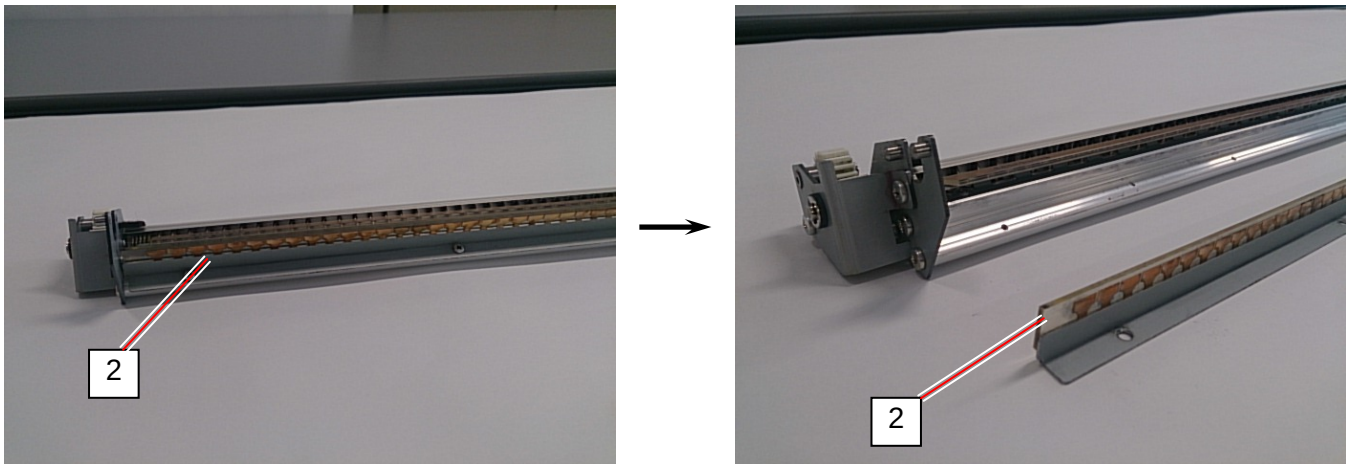
Belt Cleaner has the following Periodical Replacement Parts.

Part name	Quantity
BC BLADE ASSY	1
BC BLADE ASSY 2	1

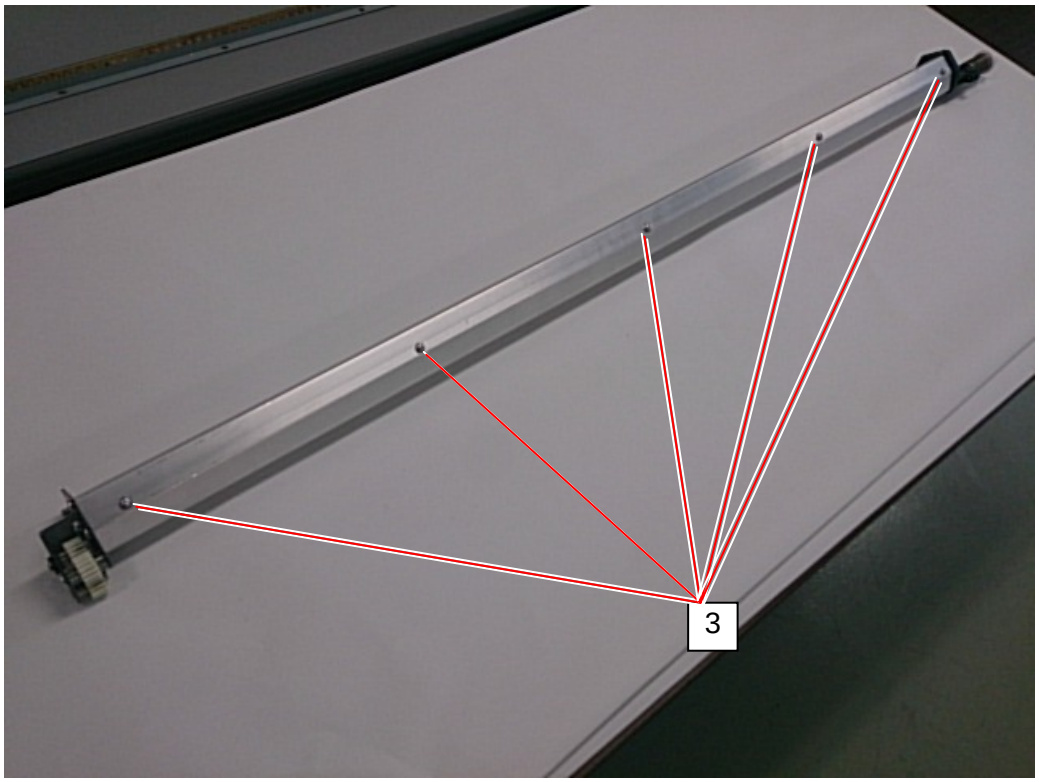
1. Remove the whole Fuser Unit from the machine referring to [5.5.2 Removal of Fuser Unit].
2. Remove the whole Belt Cleaner Unit referring to [5.7.1 Removal of Belt Cleaner].
3. Remove 7 M3x6 screws (1).



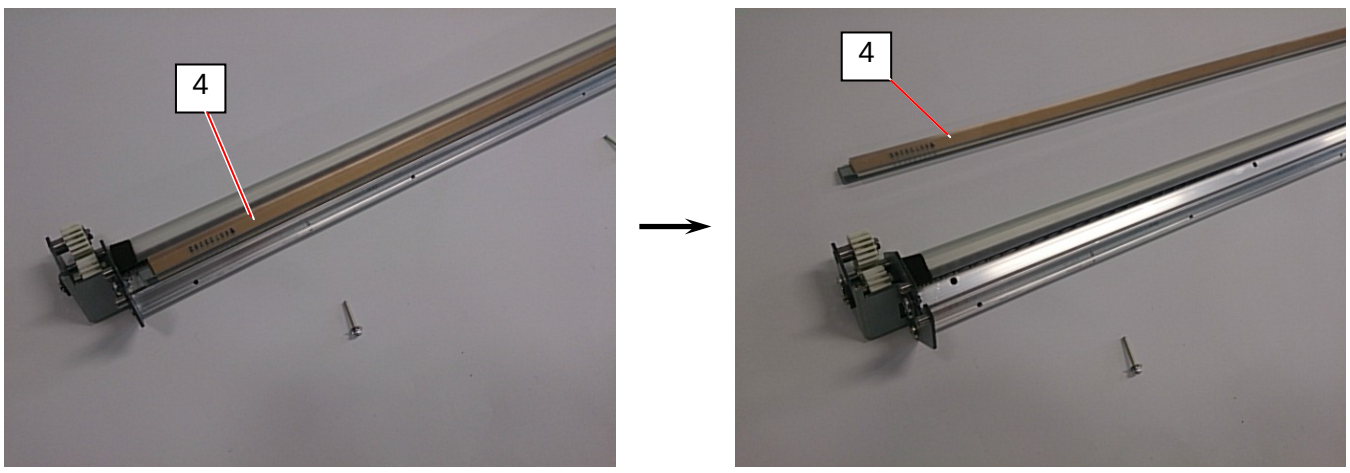
4. Remove the BC Blade Assy (2) and dispose it.



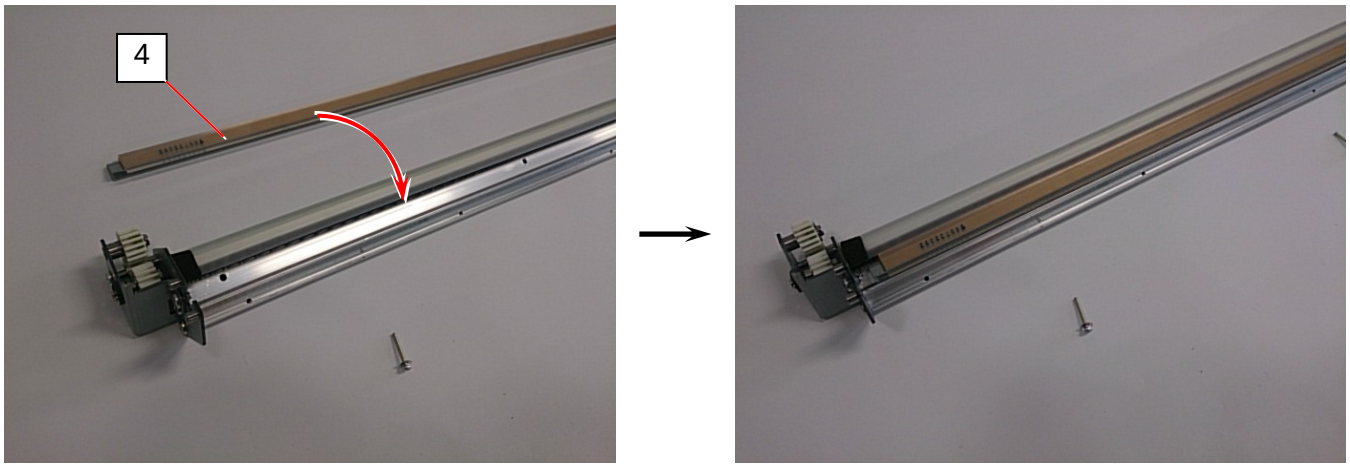
5. Remove 5 screws (3) on the bottom of the unit.



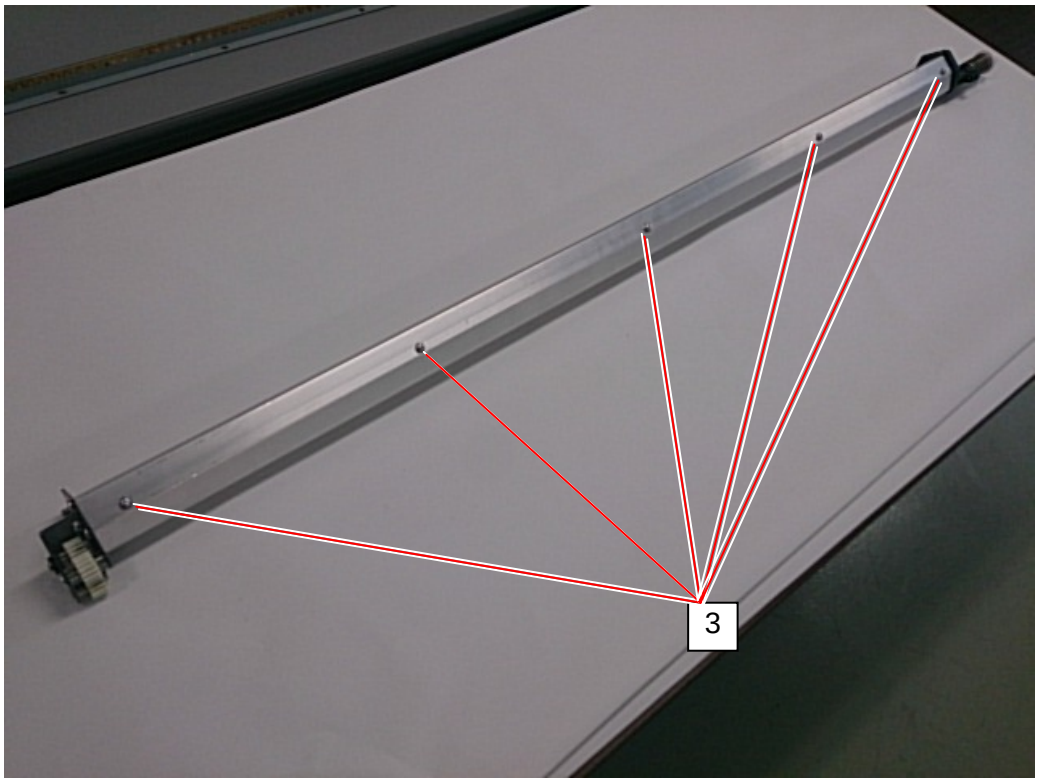
6. Remove the BC Blade Assy 2 (4) and dispose it.



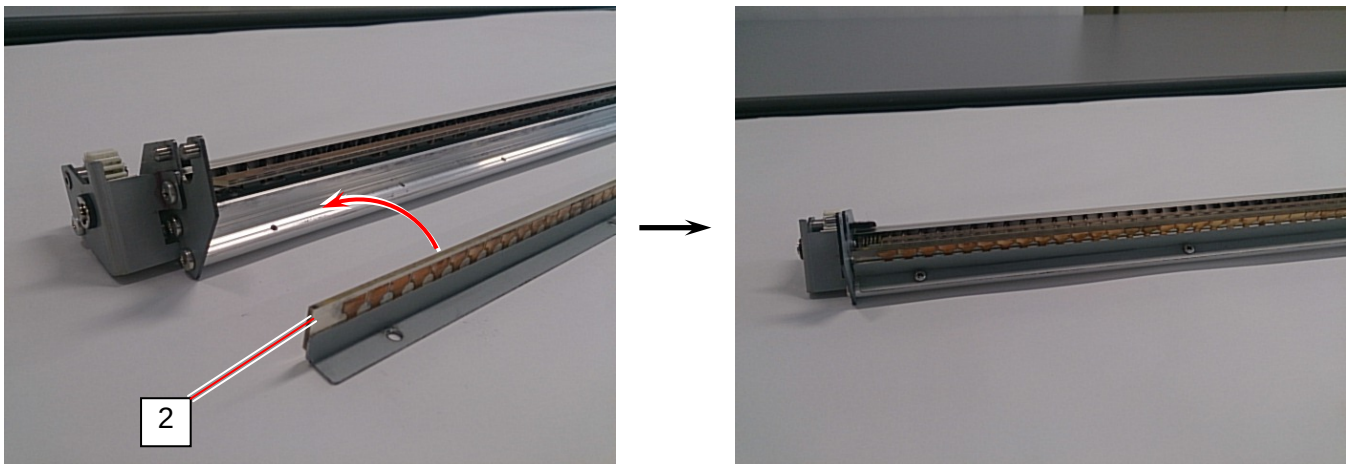
7. Prepare the new BC Blade Assy 2 (4) and then mount it to its correct position.



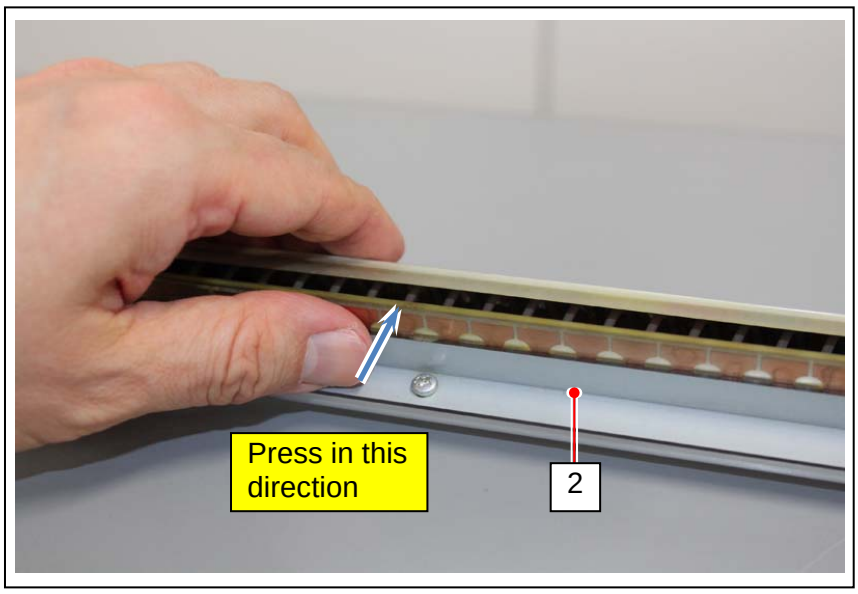
6. Put 5 screws (3) back on and turn them to fix the BC Blade Assy 2 (4).

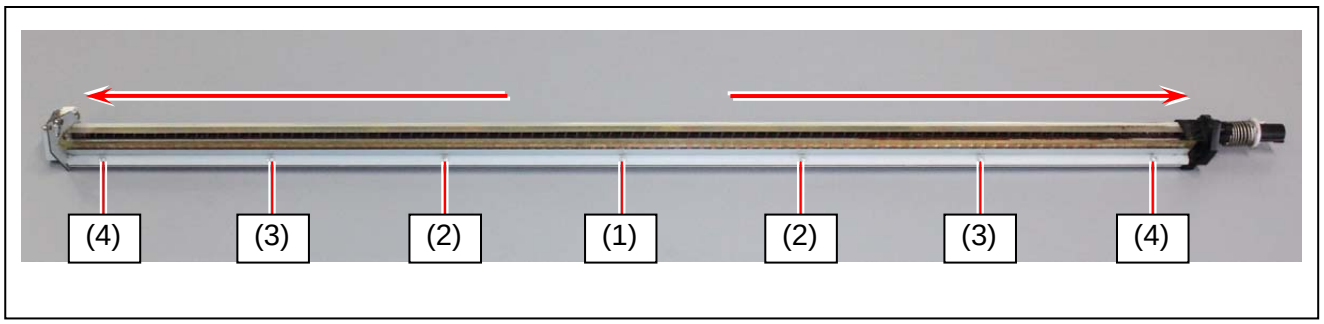


7. Prepare the new BC Blade Assy (2) and then mount it to its correct position..

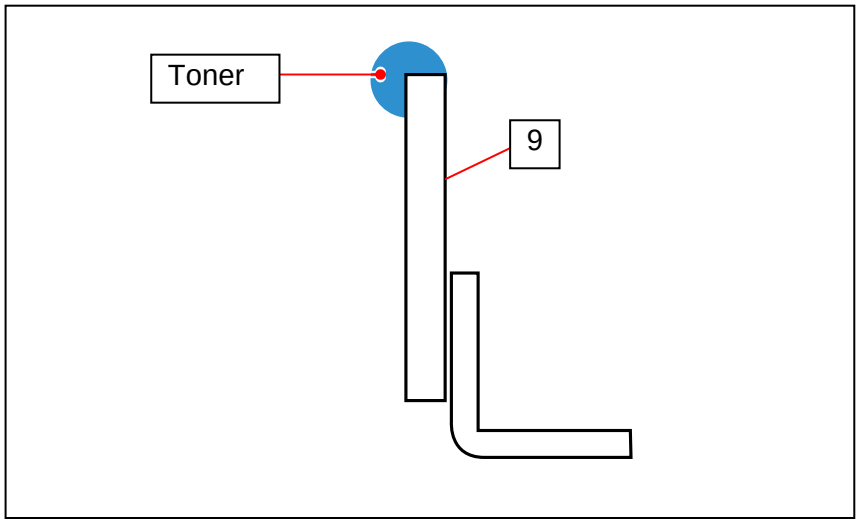


8. Fix the BC Blade Assy (8) with 7 pieces of original M3x6 screws. At this time tighten 7 screws orderly from center to sides, and also tighten them with pressing the BC Blade Assy (2) in the direction of blue arrow.





9. Apply toner of any color to the edges of BC Blade Assy (2) and BC Blade Assy 2 (4).



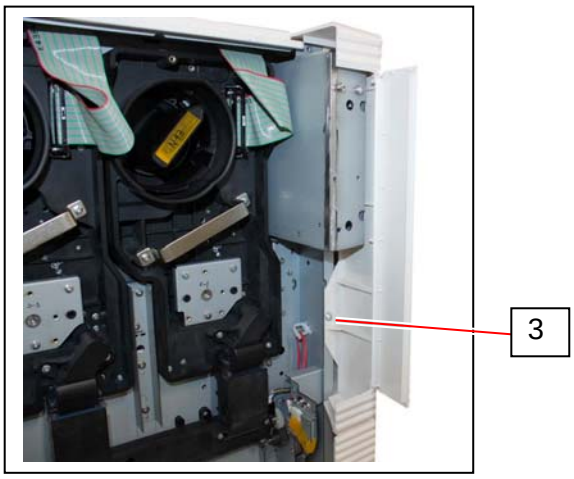
8. Put Belt Cleaner Unit back in the printer referring to [5.7.1 Removal of Belt Cleaner].

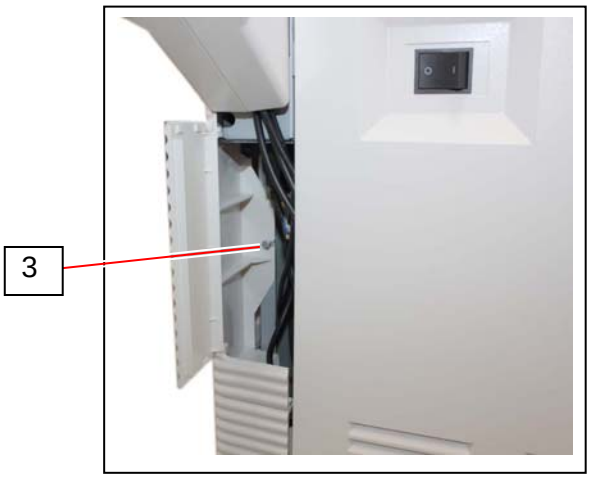
9. Put Fuser Unit back on the printer referring to [5.5.2 Removal of Fuser Unit].

5. 8 Density Sensor

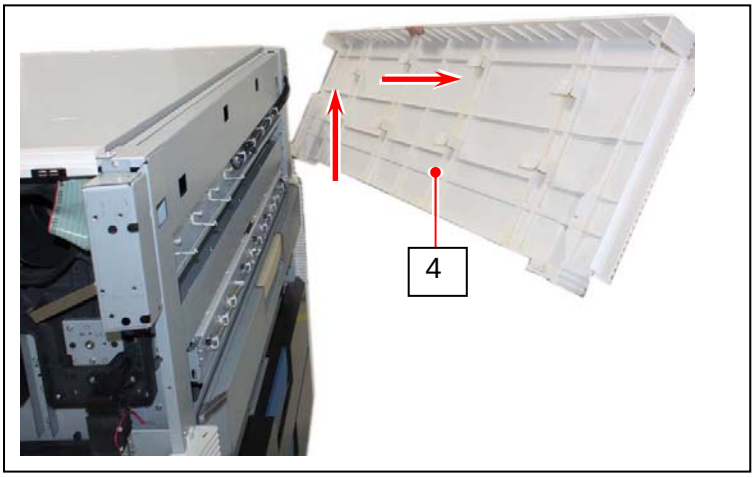
5. 8. 1 Replacement of Density Sensor

1. Open both Cover 4L (1) and Cover 4R (2), and remove M4x6 screws (3) on both sides.

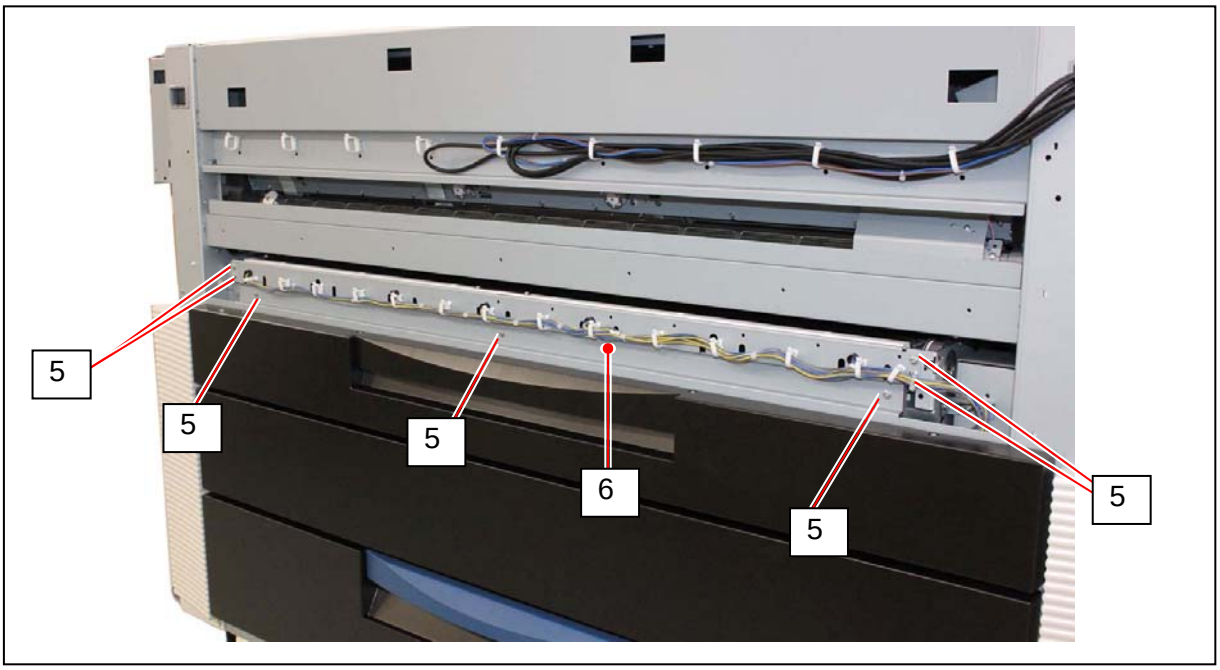




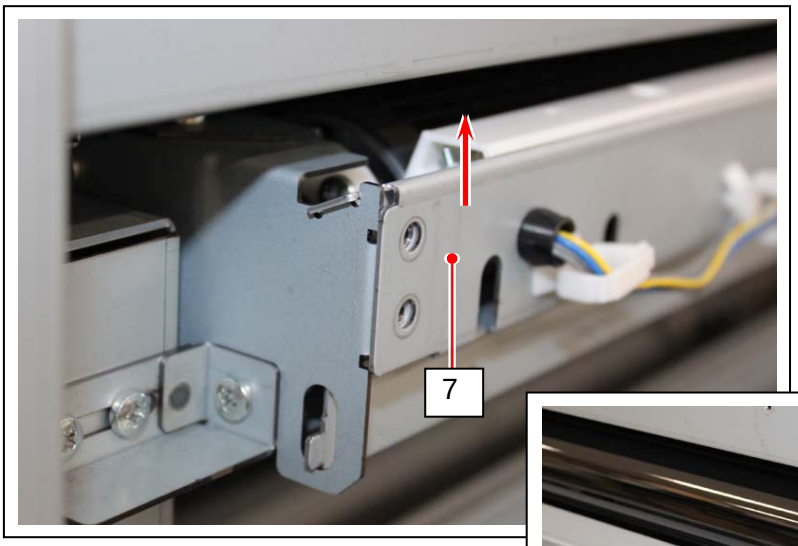
2. Bring up and remove the Front Cover (4).

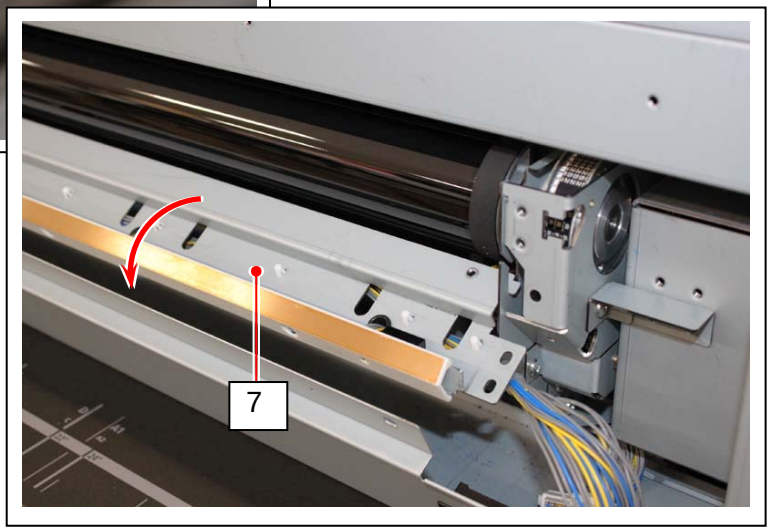


3.Remove 7 M4x6 screws (5), which removes the Cover (6) as well.



4. Bring up the Density Sensor Bracket (7) a little and turn it over as the photo. (Density Sensor Bracket is not removed but still held on both sides.)

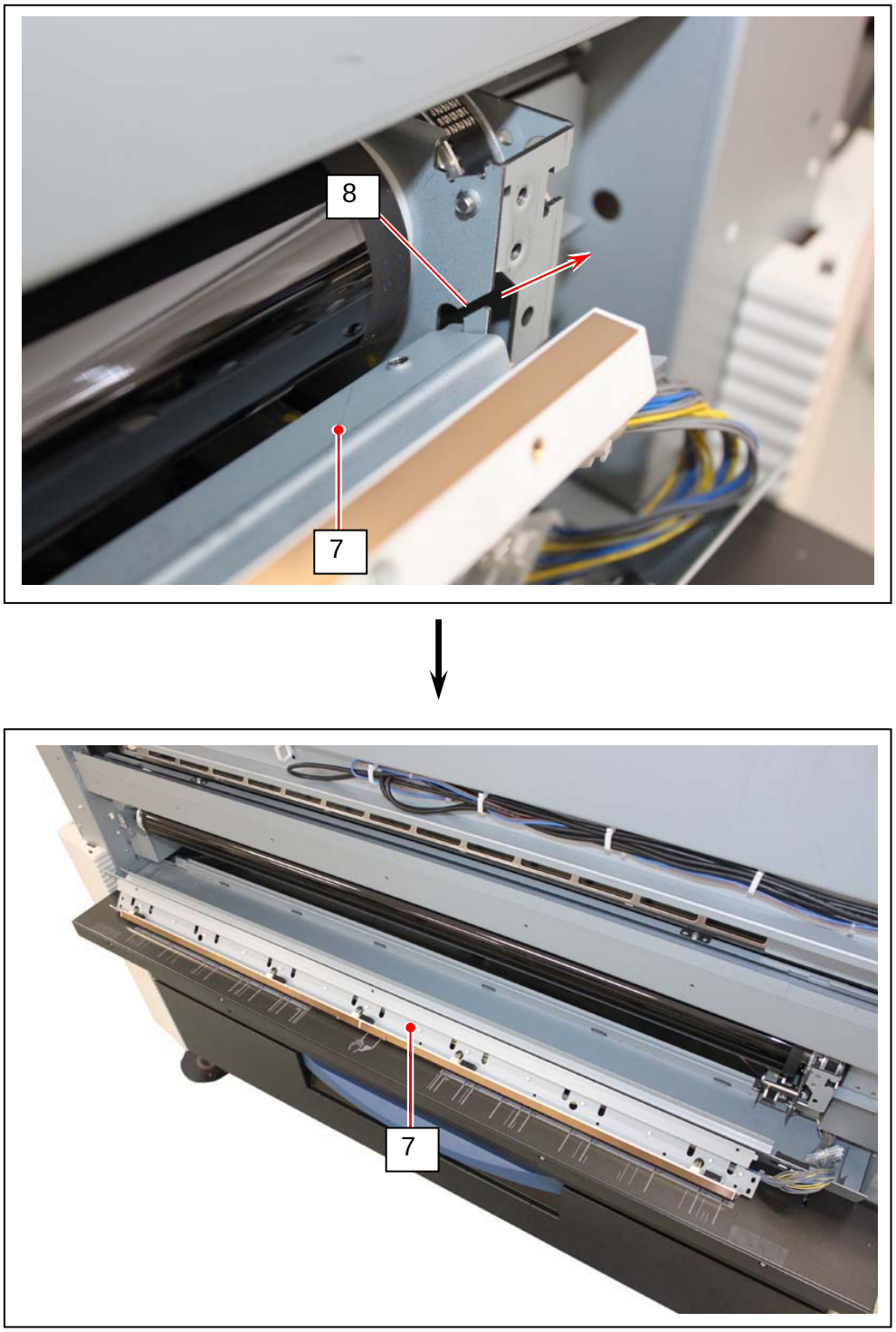




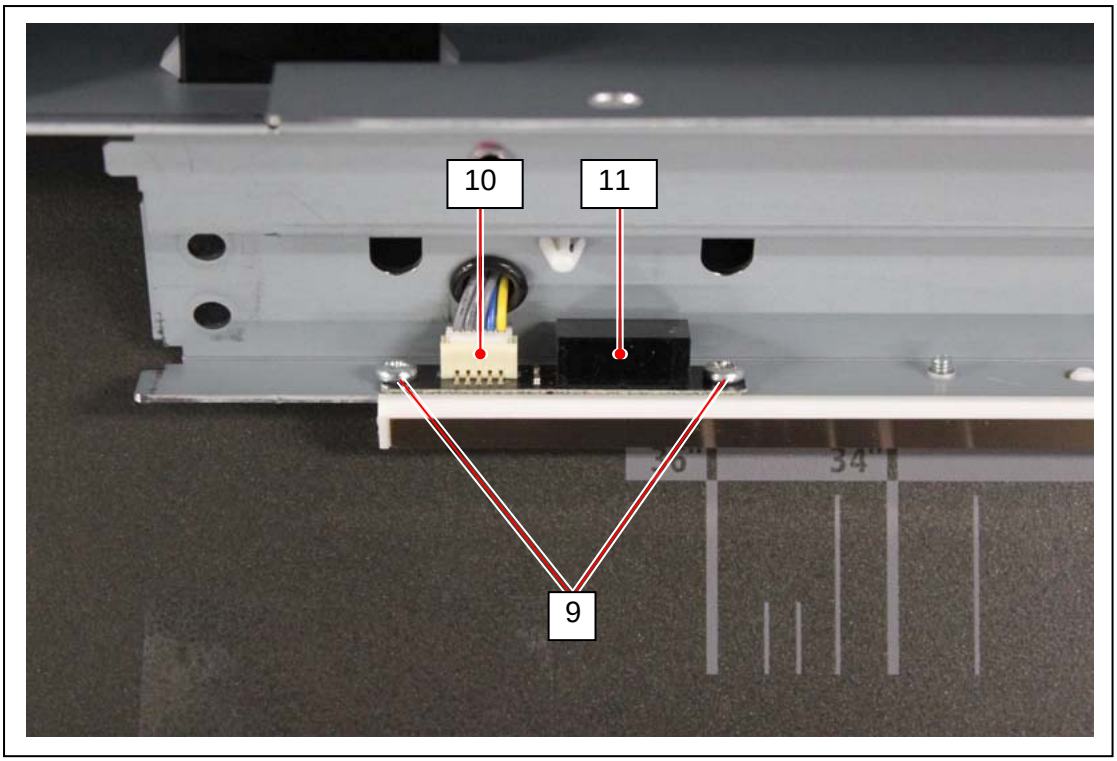
Reference

This state allows you to clean the Density Sensors.

5. Remove the Density Sensor Bracket (7) by releasing the right side using the slit (8).



6. For replacing each Density Sensor (11), remove 2 M3x5 screws (9) and plug out a connector (10).

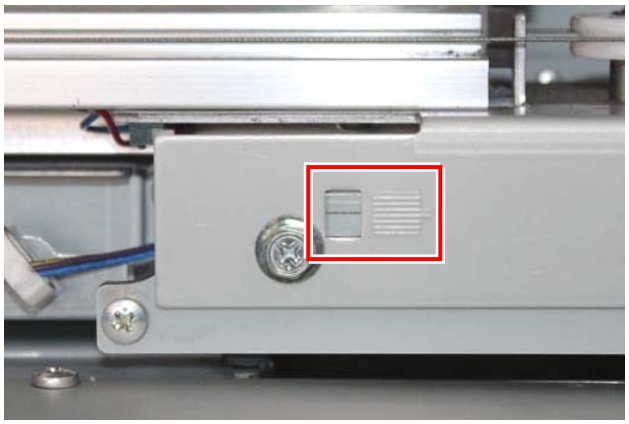


5. 9 Cutter Unit

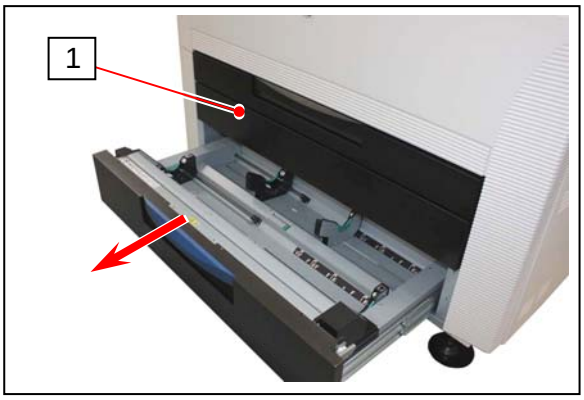
5. 9. 1 Replacement of Cutter Unit

NOTE

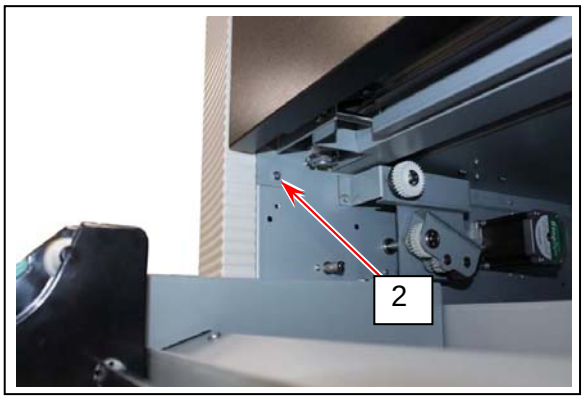
Be sure to remember the original height of the cutter by checking the height gauge on the right before removing the Cutter Unit, as it is necessary to set the new cutter to the same height later.

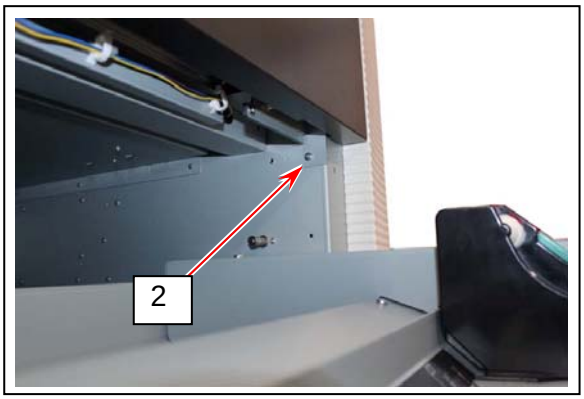


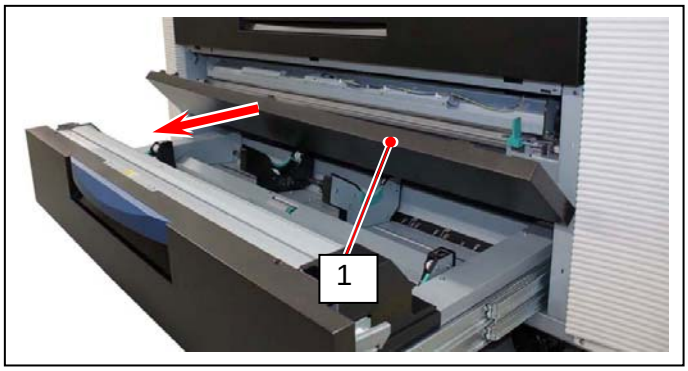
1. Open the Deck 1 that is below the Cutter Cover (1).



2. Remove 2 screws (2) to remove the Cutter Cover (1).

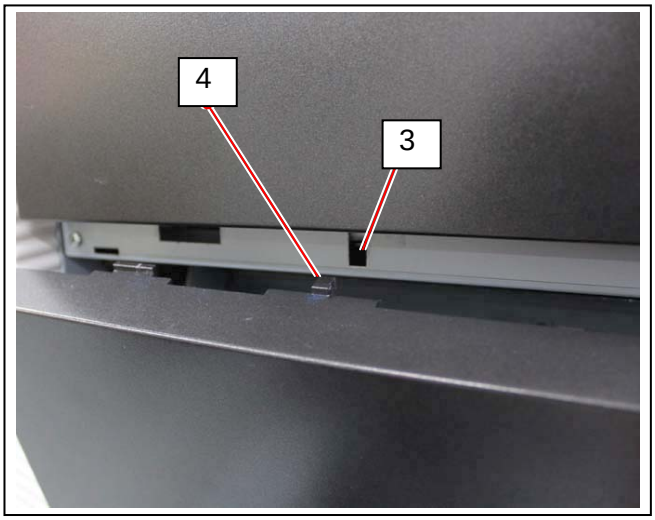




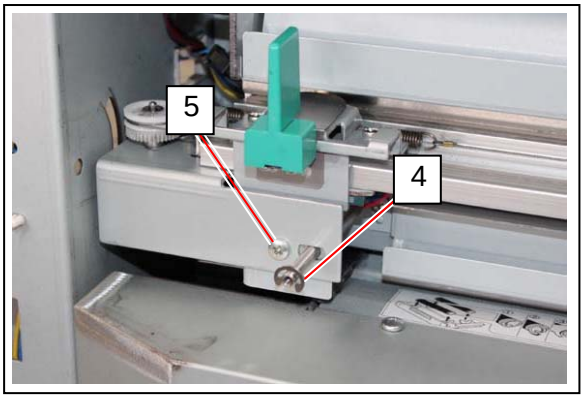


NOTE

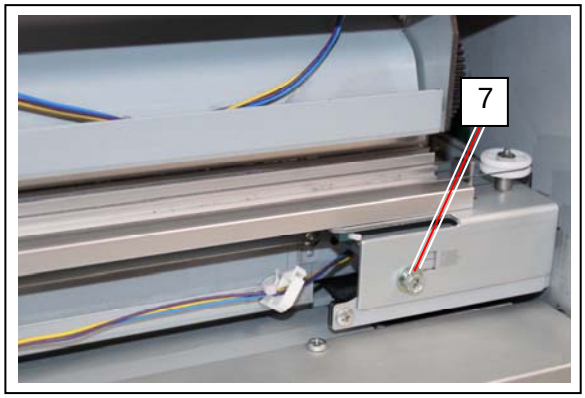
There is an Interlock Switch (3) that detects the Cutter Cover. When putting back the Cutter Cover, be sure to fit the actuator (4) into the sensor hold so that it surely pushes the switch.

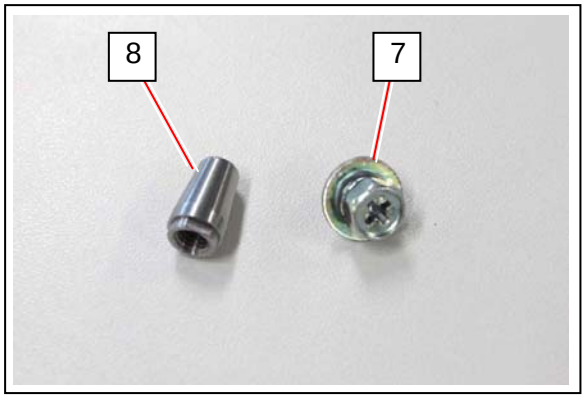


3. Remove an E Ring (E5) (5) and a M4x6 screw (6) on the left.

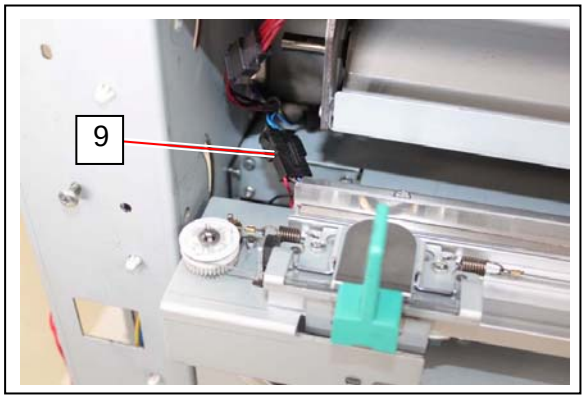


4. Remove a hexagon bolt (7) to remove a Cutter Positioning Pin (8) on the right. Be careful not to drop the pin into the machine.





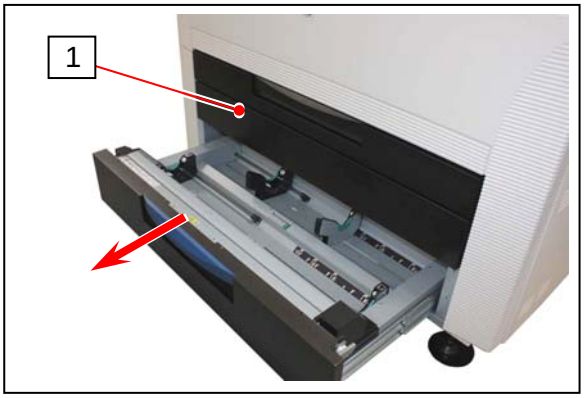
5. Plug out a connector (9) on the left.



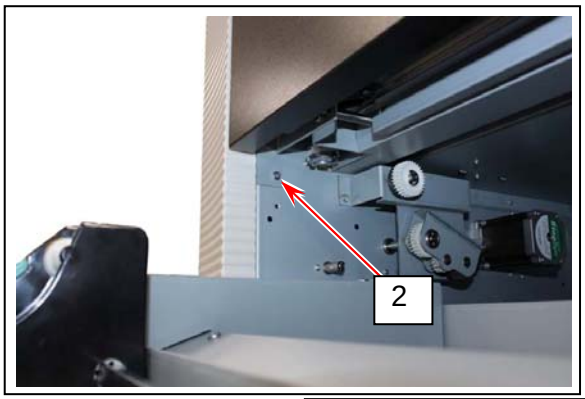
6. Gently slide out the Cutter Unit to the front and remove it from the machine. Install a new cutter back in the machine by the reversed order.

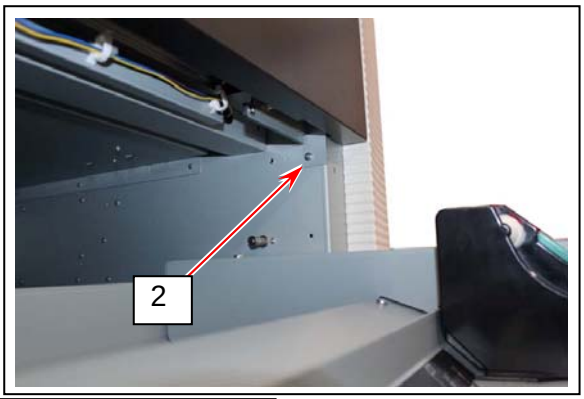
5. 9. 2 Cleaning of the Cutter unit

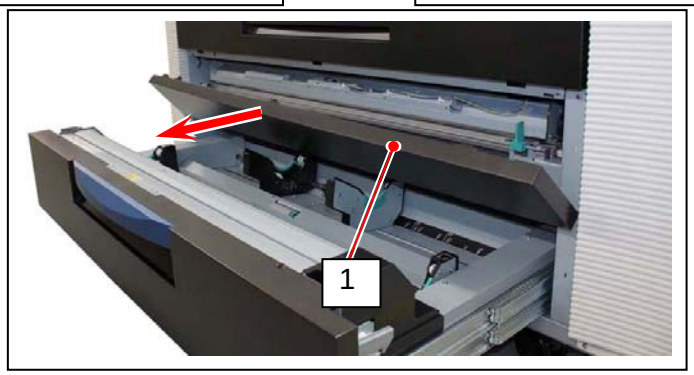
1. Open the Deck 1 that is below the Cutter Cover (1).



2. Remove 2 screws (2) to remove the Cutter Cover (1).

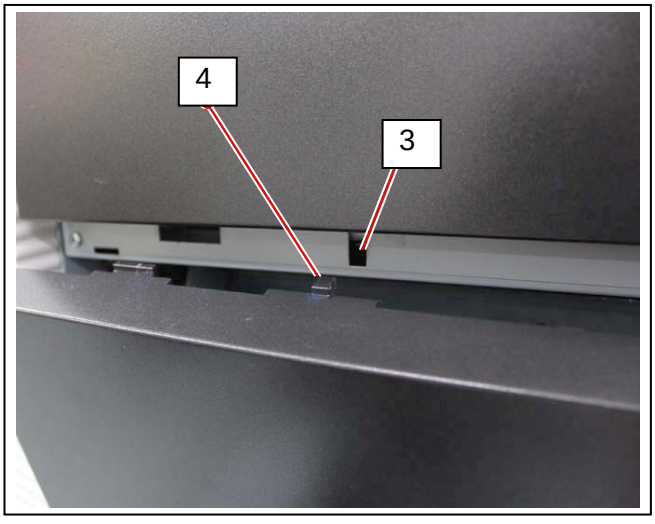




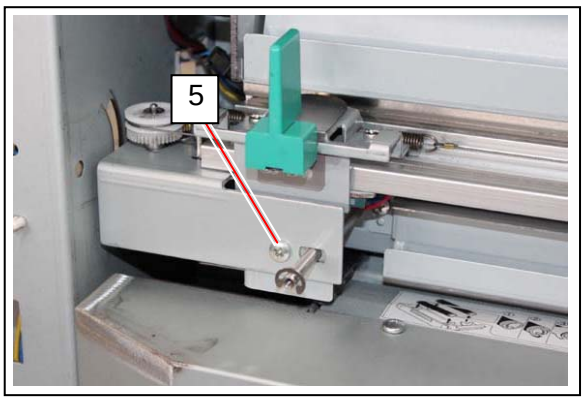


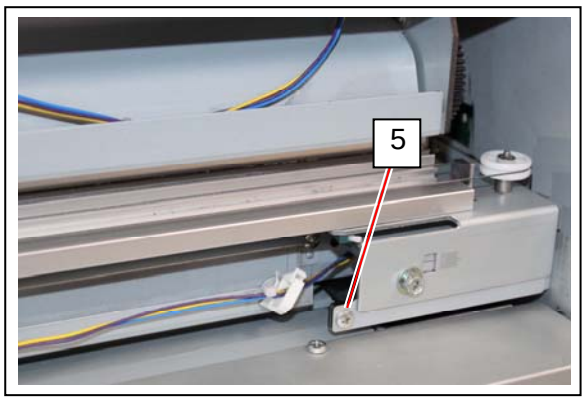
NOTE

There is an Interlock Switch (3) that detects the Cutter Cover. When putting back the Cutter Cover, be sure to fit the actuator (4) into the sensor hold so that it surely pushes the switch.

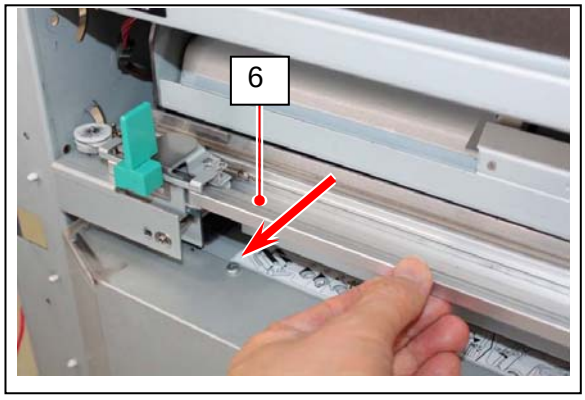


3. Remove 2 M4x6 screws (5) on both sides.

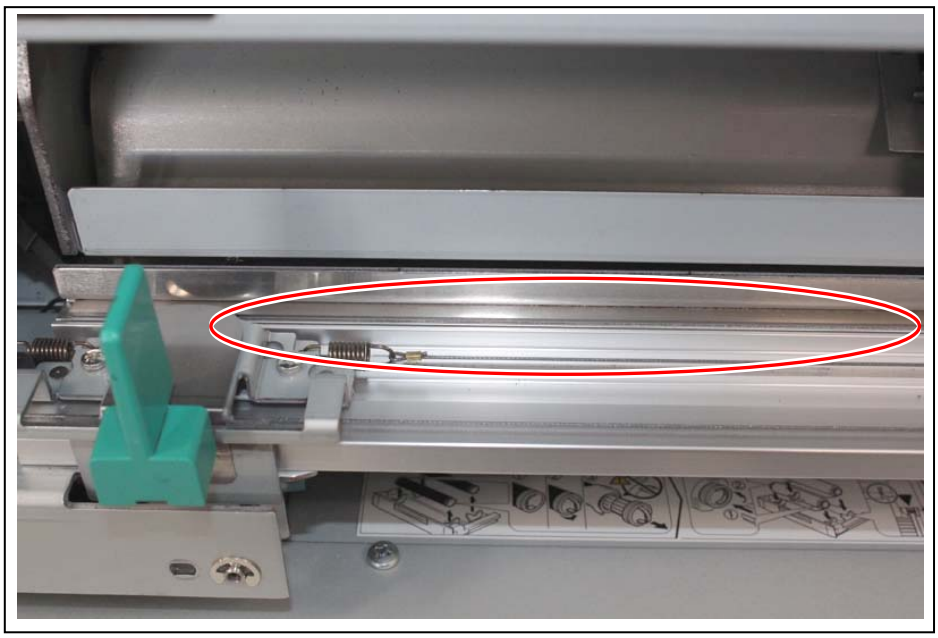




4. Slide out the Cutter Unit (6) fully to the front until it stops.



5. Clean the Cutter Blade and other parts.



⚠ WARNING

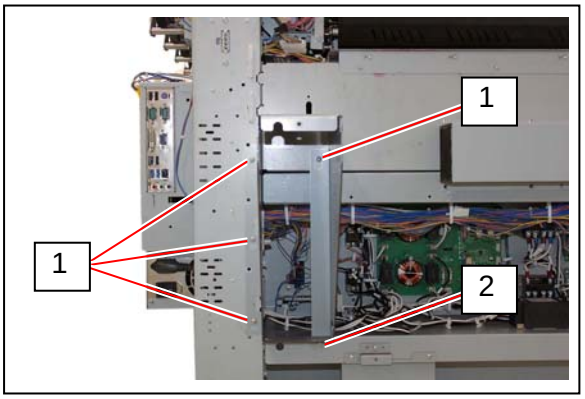
Cutter Blade is very sharp. Be careful not to be harmed when cleaning the Cutter.

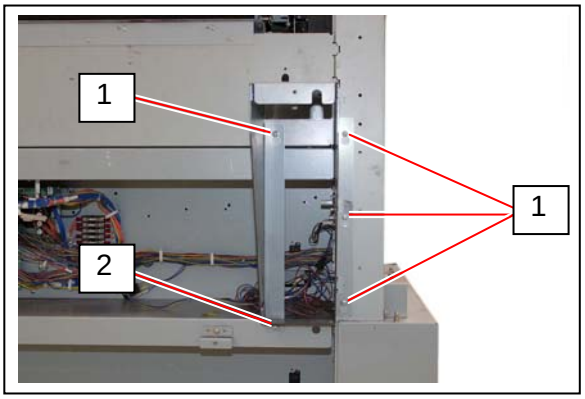
5. 10 Secondary Transfer Roller

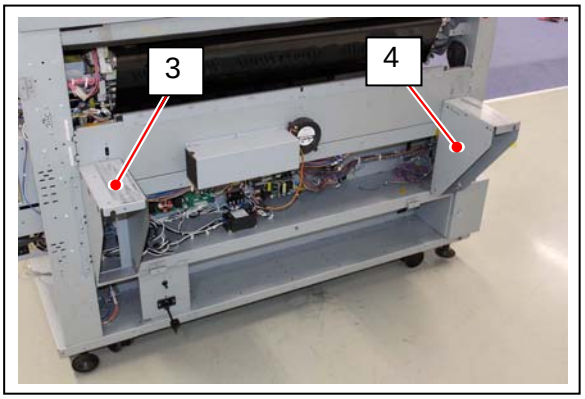
5. 10. 1 Replacement of Secondary Transfer Roller

1. Remove the whole Fuser Unit from the machine referring to [Removal of Fuser Unit].

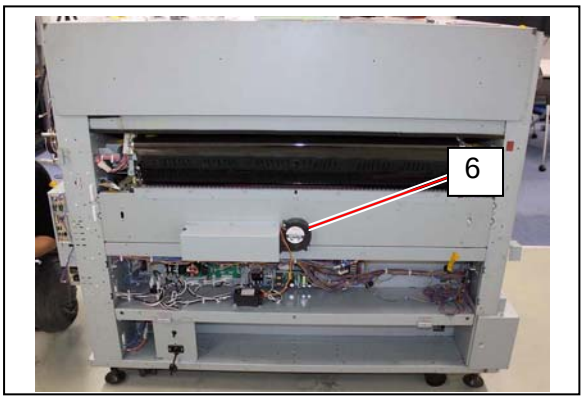
2. Remove 4 each M4x6 screws (1), loose 1 each screw (2), and remove the Fuser Base Brackets R (3) and Fuser Base Bracket L (4).

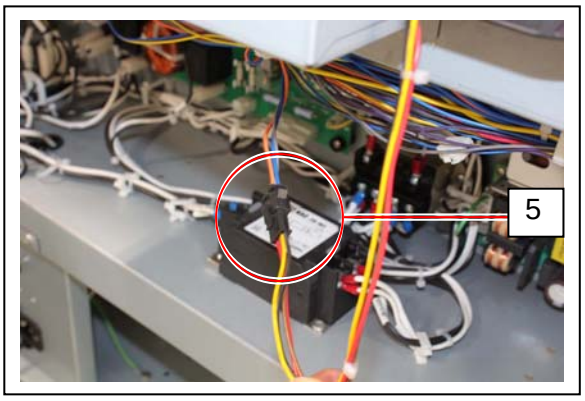




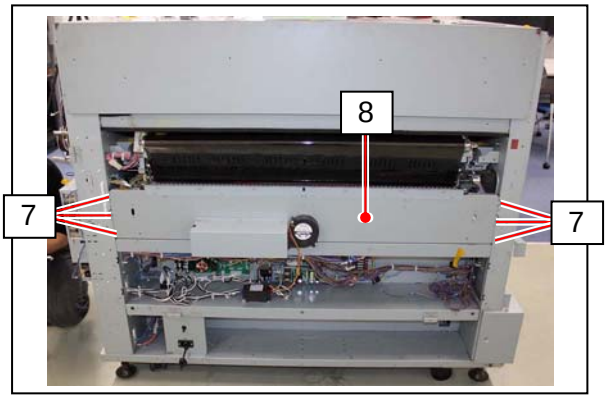


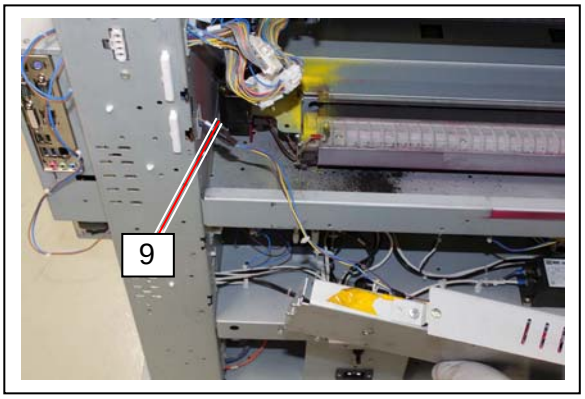
4. Plug out a connector (5) of the Fan (6).



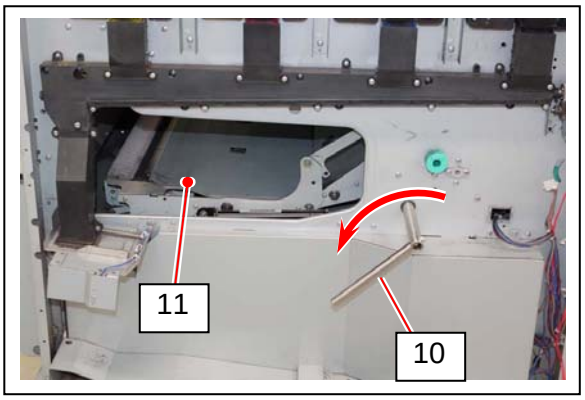


5. Remove 6 M4x6 screws (7) to remove the Rear Beam (8). Plug out the connector (9) also.

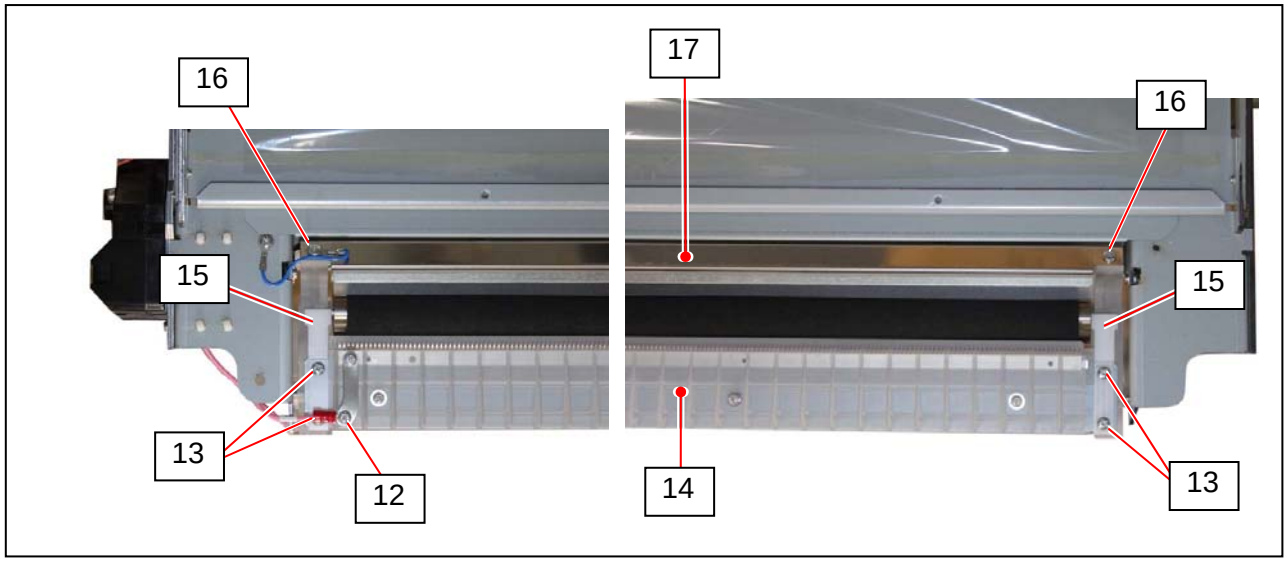




5. Turn the Lever (10) to the left to bring down the Inner Feeder Unit (11).

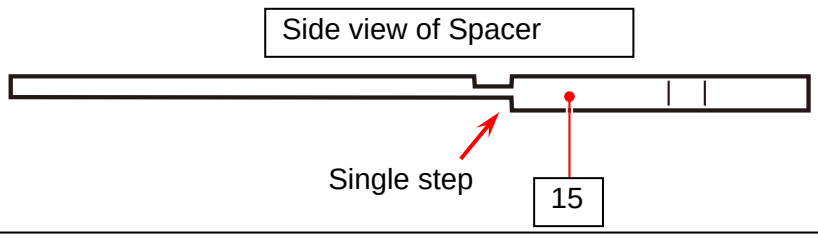


6. Remove one M3x6 screws (12) to release the grounding wire. Remove 4 M3x6 screw (13) to remove the Discharge Needles (14) and spacers (15). Remove 2 M3x6 screws (16) to remove the Guide Plate (17).

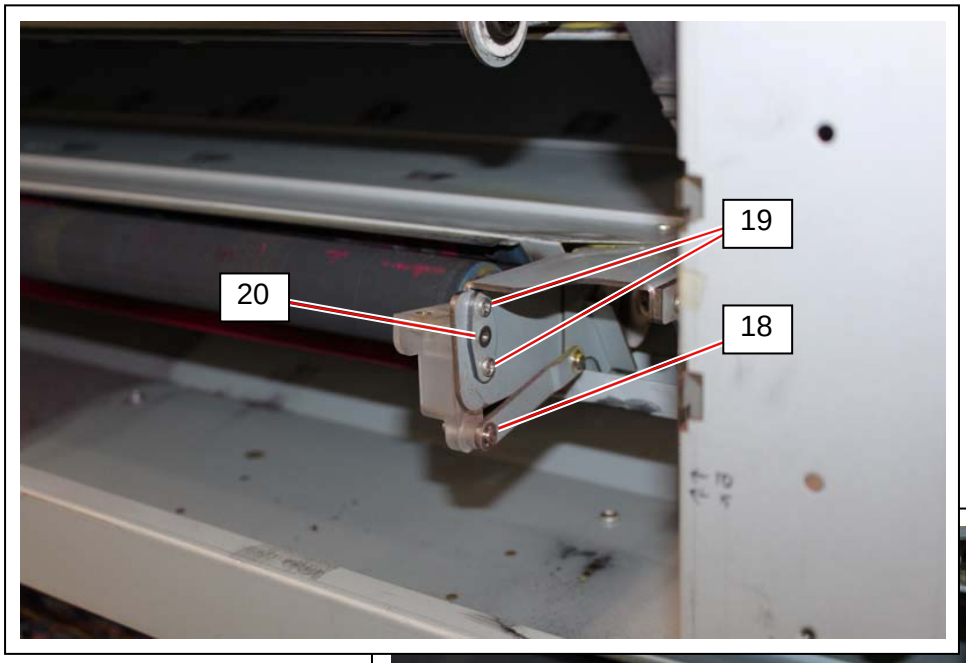


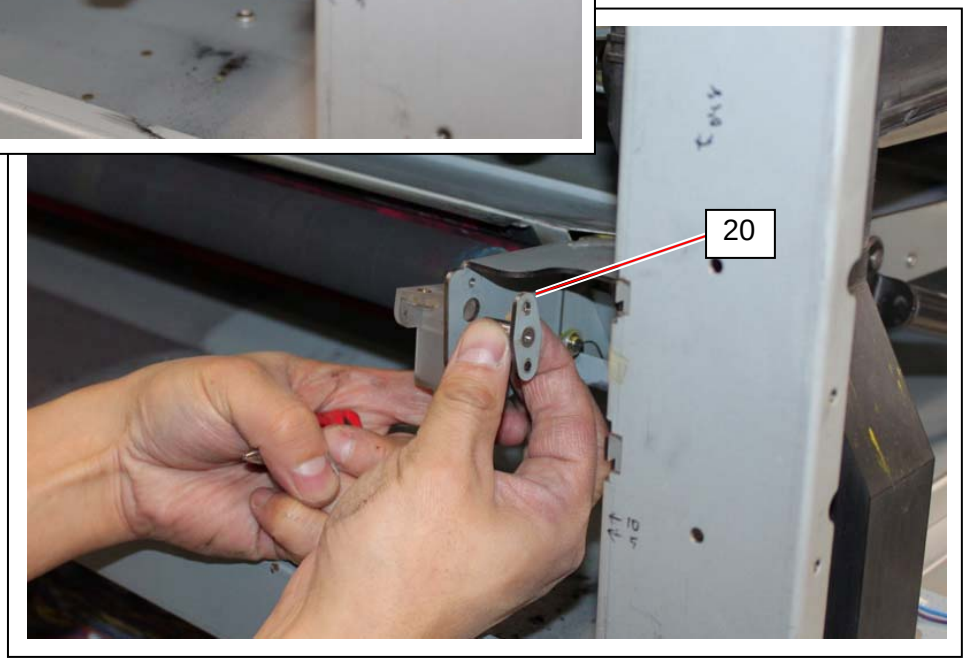
NOTE

When returning the Spacers (15), place its single step side to the bottom.

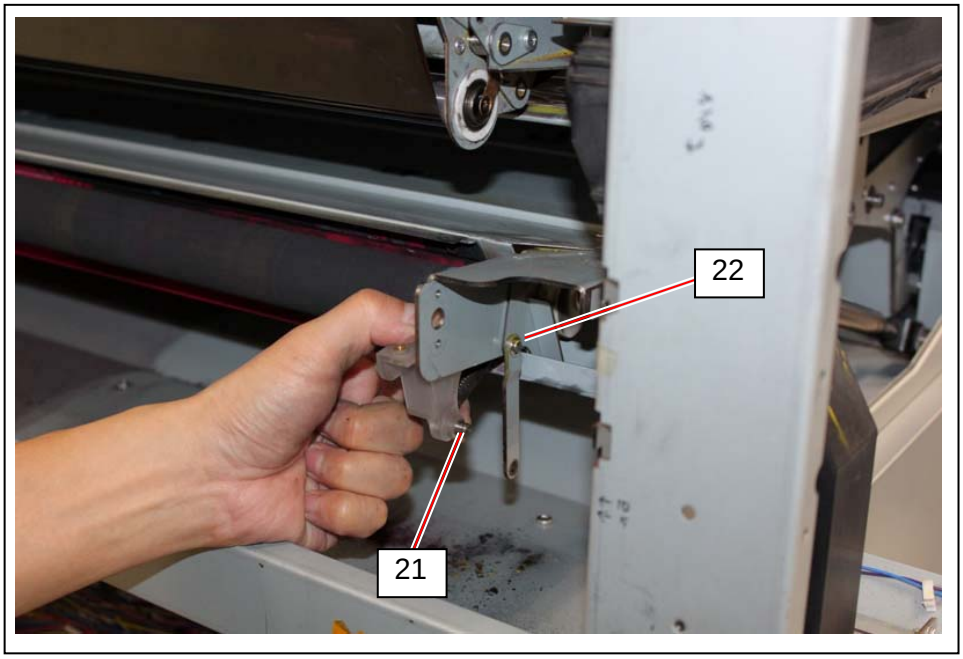


7. Remove an E Ring (E4) (18) on the left of the machine. Remove 2 M3x4 screws (19) to remove the Bracket (20).

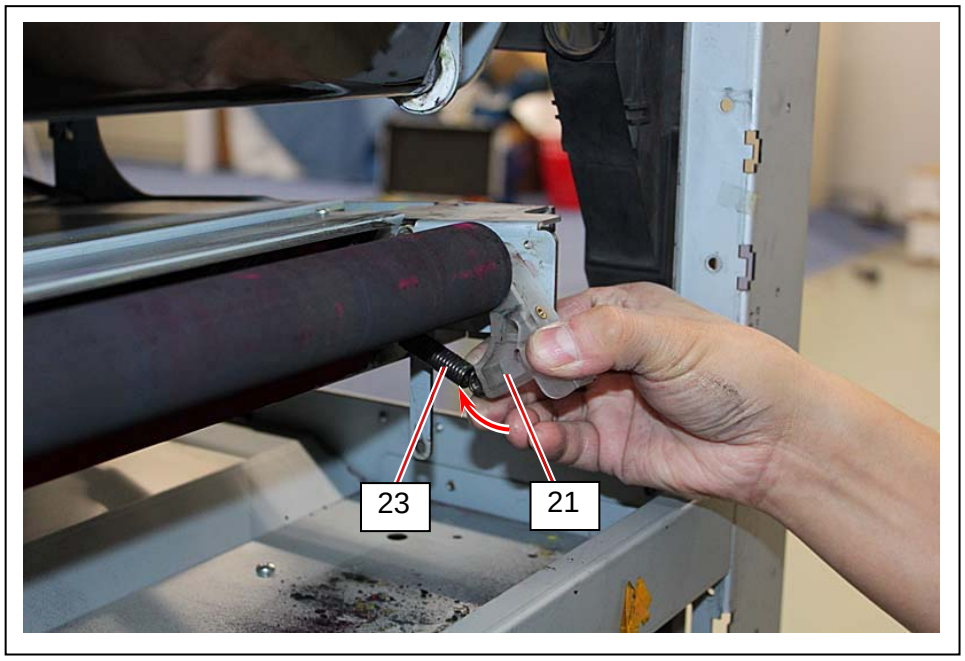




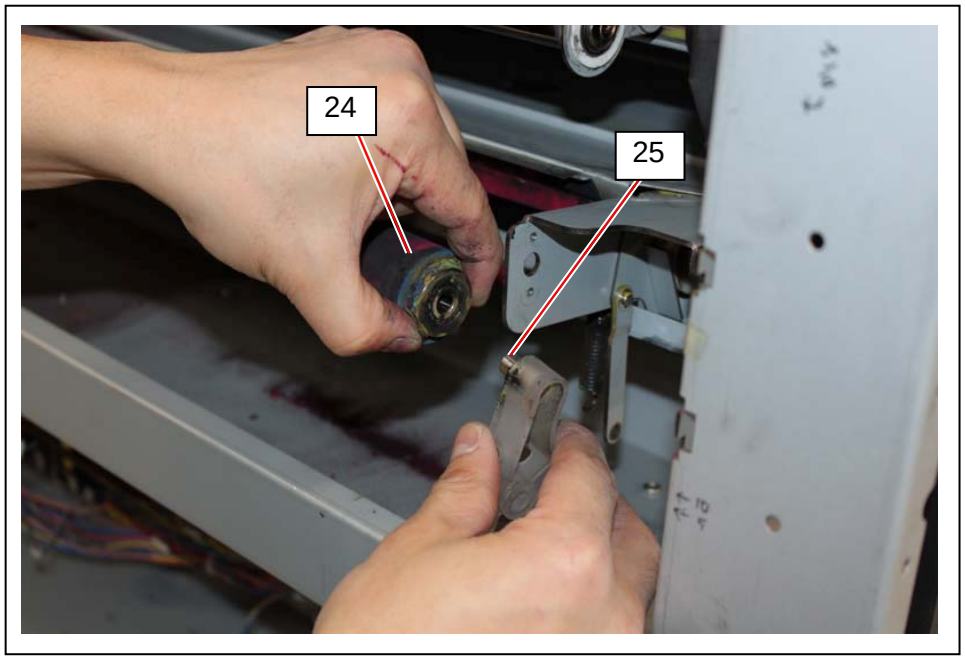
8. Disconnect the Link (22) from the shaft of TR2 Arm F (21). (This may be tight.)
Please keep holding the TR2 Arm F (21) as it is no longer held when Link (22) is disconnected.



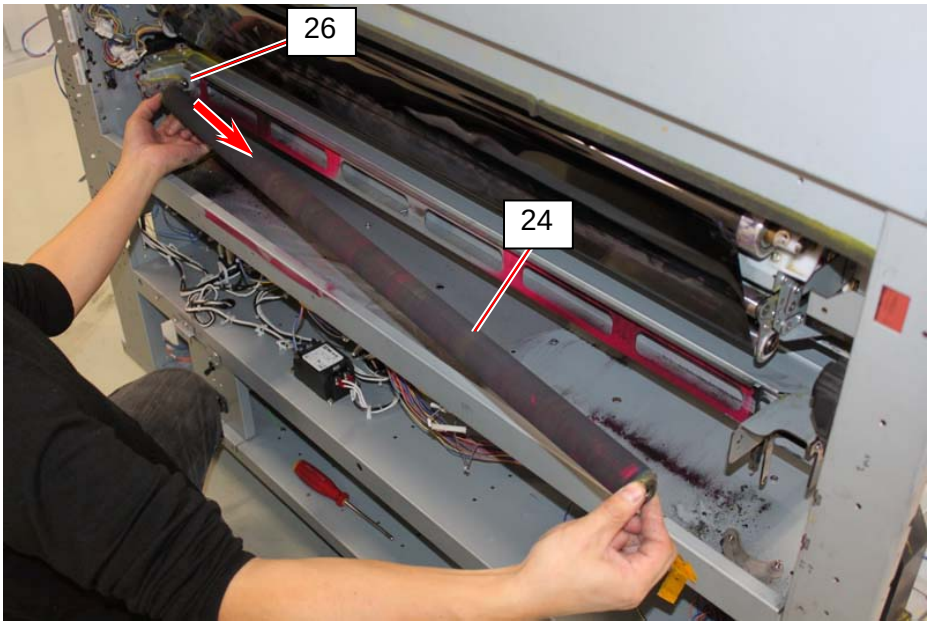
9. Move the TR2 Arm F (21) in the direction of arrow, and remove the Spring (23).



10. Remove the left side of Secondary Transfer Roller (24) from the shaft (25) of TR2 Arm.

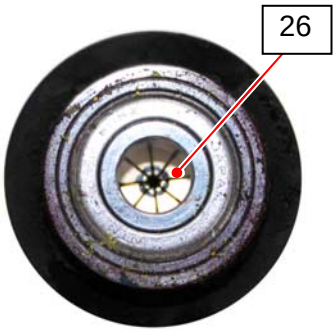


11. Slide the whole Secondary Transfer Roller (24) in the direction of arrow to pull it out from the shaft (26) on the other side. Replace the Secondary Transfer Roller with the new one.

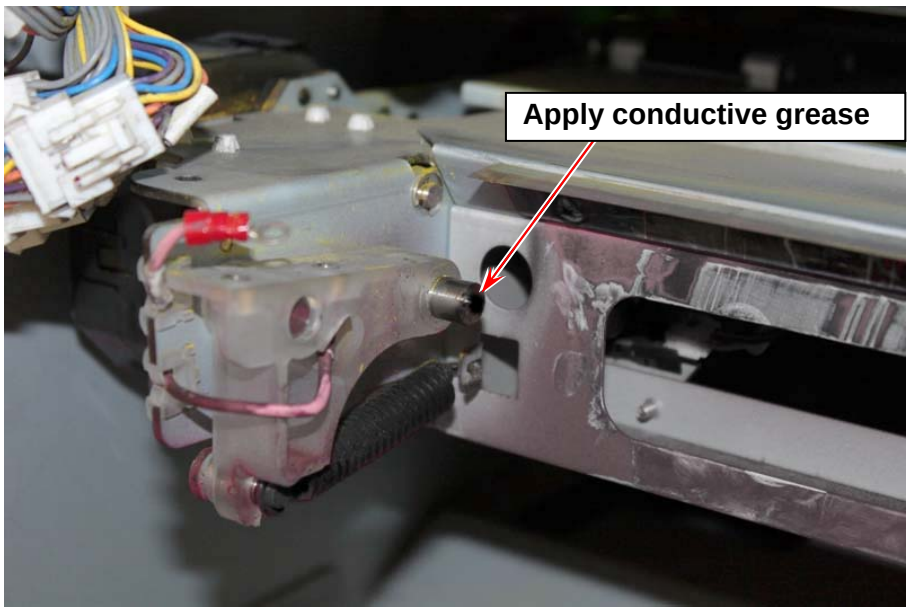


NOTE

1. Secondary Transfer Roller has Copper Bias Plate on one side. This Copper Bias Plate side must be on the right side (seen from the front) of the machine.



2. Apply conductive grease on the tip of the shaft where the Copper Bias Plate of the Secondary Transfer Roller contacts.



Chapter 6

Maintenance

KIP 800 PM Schedule

SF

Printer Serial Number : _____ r4

- Please keep this form with the KIP 800 and perform required actions as noted
- As actions are performed, please indicate.

Tech Support : _____
Phone Number : _____
Installation Date : _____

Part / Description	Number	Qty		Square Feet x 1000																	
CMY Engines - Meter A				**100**		**200**		**300**		**400**		**500**		**600**		**700**		**800**		**900**	
Corona Wires **(CMY)**	Z358080010	3	◆	C		R		C		R		C		R		C		R		C	
Drum Kit **(CMY)**	Z358080030	3																R			
Developer (Rebuild Kit) **(CMY)**	Z358080020	3	●											R							
K Engine - Meter A + B				**100**		**200**		**300**		**400**		**500**		**600**		**700**		**800**		**900**	
Corona Wires **(K)**	Z358080010	1	◆	C		R		C		R		C		R		C		R		C	
Drum Kit **(K)**	Z358080030	1																R			
Developer (Rebuild Kit) **(K)**	Z358080020	1	●											R							
All Other - Meter A + B				**100**		**200**		**300**		**400**		**500**		**600**		**700**		**800**		**900**	
Belt Cleaner Kit	Z358080070	1								R								R			
Fuser Web	Z354402170	1								R								R			
Transfer Roller (Secondary)	Z355560010	1												R							
Fuser Kit (rollers, stripper fingers, etc)	Z358080050	1	◆			C				C				C				C			
Filters	Z358080060	1	●	annually																	
Main Charge Grid Screen			◆	C		C		C		C		C		C		C		C		C	
Cleaner Unit Side Seals			●	C		C		C		C		C		C		C		C		C	
LED Heads			◆	C		C		C		C		C		C		C		C		C	
Roll Decks and Media path			●	C		C		C		C		C		C		C		C		C	
Density / Registration / Color Sensors			◆	C		C		C		C		C		C		C		C		C	
Media Decks drive gears																		L			
Vacuum (clean) Interior			●	C		C		C		C		C		C		C		C		C	
Fuser Gears						L				L				L				L			
Waste Toner Box				I		I		I		I		I		I		I		I		I	
Exterior Covers			◆	C		C		C		C		C		C		C		C		C	

◆ = Clean with cloth
● = Clean with vacuum, carefully

C = Clean
I = Inspect

R = Replace
A = Adjust

L = Lubricate

Part numbers subject to change. Replacement intervals may change with user requirements / installation location. Square units based only on 36" media widths.

KIP 800 PM Schedule

SF

Printer Serial Number : _____ r4

- Please keep this form with the KIP 940 and perform required actions as noted
- As actions are performed, please indicate.

Tech Support : _____
Phone Number : _____
Installation Date : _____

Part / Description	Number	Qty		Square Feet x 1000																	
CMY Engines - Meter A				**1000**		**1100**		**1200**		**1300**		**1400**		**1500**		**1600**		**1700**		**1800**	
Corona Wires **(CMY)**	Z358080010	3	◆	R		C		R		C		R		C		R		C		R	
Drum Kit **(CMY)**	Z358080030	3														R					
Developer (Rebuild Kit) **(CMY)**	Z358080020	3	●					R												R	
K Engine - Meter A + B				**1000**		**1100**		**1200**		**1300**		**1400**		**1500**		**1600**		**1700**		**1800**	
Corona Wires **(K)**	Z358080010	1	◆	R		C		R		C		R		C		R		C		R	
Drum Kit **(K)**	Z358080030	1														R					
Developer (Rebuild Kit) **(K)**	Z358080020	1	●					R												R	
All Other - Meter A + B				**1000**		**1100**		**1200**		**1300**		**1400**		**1500**		**1600**		**1700**		**1800**	
Belt Cleaner Kit	Z358080070	1						R								R					
Fuser Web	Z354402170	1						R								R					
Transfer Roller (Secondary)	Z355560010	1						R												R	
Fuser Kit (rollers, stripper fingers, etc)	Z358080050	1	◆	R				C				C				C				C	
Filters	Z358080060	1	●	annually																	
Main Charge Grid Screen			◆	C		C		C		C		C		C		C		C		C	
Cleaner Unit Side Seals			●	C		C		C		C		C		C		C		C		C	
LED Heads			◆	C		C		C		C		C		C		C		C		C	
Roll Decks and Media path			●	C		C		C		C		C		C		C		C		C	
Density / Registration / Color Sensors			◆	C		C		C		C		C		C		C		C		C	
Media Decks drive gears																L					
Vacuum (clean) Interior			●	C		C		C		C		C		C		C		C		C	
Fuser Gears				L				L				L				L				L	
Waste Toner Box				I		I		I		I		I		I		I		I		I	
Exterior Covers			◆	C		C		C		C		C		C		C		C		C	

◆ = Clean with cloth	C = Clean	R = Replace	L = Lubricate
● = Clean with vacuum, carefully	I = Inspect	A = Adjust	

Part numbers subject to change. Replacement intervals may change with user requirements / installation location. Square units based only on 36" media widths.

KIP 800 PM Schedule

Lm

r4

Printer Serial Number : _____

- Please keep this form with the KIP 800 and perform required actions as noted
- As actions are performed, please indicate.

Tech Support : _____
Phone Number : _____
Installation Date : _____

Part / Description	Number	Qty		Linear Meters x 1000																	
CMY Engines - Meter A				**10**		**20**		**30**		**40**		**50**		**60**		**70**		**80**		**90**	
Corona Wires **(CMY)**	Z358080010	3	◆	C		R		C		R		C		R		C		R		C	
Drum Kit **(CMY)**	Z358080030	3																R			
Developer (Rebuild Kit) **(CMY)**	Z358080020	3	●											R							
K Engine - Meter A + B				**10**		**20**		**30**		**40**		**50**		**60**		**70**		**80**		**90**	
Corona Wires **(K)**	Z358080010	1	◆	C		R		C		R		C		R		C		R		C	
Drum Kit **(K)**	Z358080030	1																R			
Developer (Rebuild Kit) **(K)**	Z358080020	1	●											R							
All Other - Meter A + B				**10**		**20**		**30**		**40**		**50**		**60**		**70**		**80**		**90**	
Belt Cleaner Kit	Z358080070	1								R								R			
Fuser Web	Z354402170	1								R								R			
Transfer Roller (Secondary)	Z355560010	1												R							
Fuser Kit (rollers, stripper fingers, etc)	Z358080050	1	◆			C				C				C				C			
Filters	Z358080060	1	●	annually																	
Main Charge Grid Screen			◆	C		C		C		C		C		C		C		C		C	
Cleaner Unit Side Seals			●	C		C		C		C		C		C		C		C		C	
LED Heads			◆	C		C		C		C		C		C		C		C		C	
Roll Decks and Media path			●	C		C		C		C		C		C		C		C		C	
Density / Registration / Color Sensors			◆	C		C		C		C		C		C		C		C		C	
Media Decks drive gears																		L			
Vacuum (clean) Interior			●	C		C		C		C		C		C		C		C		C	
Fuser Gears						L				L				L				L			
Waste Toner Box				I		I		I		I		I		I		I		I		I	
Exterior Covers			◆	C		C		C		C		C		C		C		C		C	

◆ = Clean with cloth	C = Clean	R = Replace	L = Lubricate
● = Clean with vacuum, carefully	I = Inspect	A = Adjust	

Part numbers subject to change. Replacement intervals may change with user requirements / installation location. Square units based only on 36" media widths.

KIP 800 PM Schedule

Lm

Printer Serial Number : _____ r4

- Please keep this form with the KIP 940 and perform required actions as noted
- As actions are performed, please indicate.

Tech Support : _____
Phone Number : _____
Installation Date : _____

Part / Description	Number	Qty		Linear Meters x 1000																	
CMY Engines - Meter A				**100**		**110**		**120**		**130**		**140**		**150**		**160**		**170**		**180**	
Corona Wires **(CMY)**	Z358080010	3	◆	R		C		R		C		R		C		R		C		R	
Drum Kit **(CMY)**	Z358080030	3														R					
Developer (Rebuild Kit) **(CMY)**	Z358080020	3	●					R												R	
K Engine - Meter A + B				**100**		**110**		**120**		**130**		**140**		**150**		**160**		**170**		**180**	
Corona Wires **(K)**	Z358080010	1	◆	R		C		R		C		R		C		R		C		R	
Drum Kit **(K)**	Z358080030	1														R					
Developer (Rebuild Kit) **(K)**	Z358080020	1	●					R												R	
All Other - Meter A + B				**100**		**110**		**120**		**130**		**140**		**150**		**160**		**170**		**180**	
Belt Cleaner Kit	Z358080070	1						R								R					
Fuser Web	Z354402170	1						R								R					
Transfer Roller (Secondary)	Z355560010	1						R												R	
Fuser Kit (rollers, stripper fingers, etc)	Z358080050	1	◆	R				C				C				C				C	
Filters	Z358080060	1	●	annually																	
Main Charge Grid Screen			◆	C		C		C		C		C		C		C		C		C	
Cleaner Unit Side Seals			●	C		C		C		C		C		C		C		C		C	
LED Heads			◆	C		C		C		C		C		C		C		C		C	
Roll Decks and Media path			●	C		C		C		C		C		C		C		C		C	
Density / Registration / Color Sensors			◆	C		C		C		C		C		C		C		C		C	
Media Decks drive gears																L					
Vacuum (clean) Interior			●	C		C		C		C		C		C		C		C		C	
Fuser Gears				L				L				L				L				L	
Waste Toner Box				I		I		I		I		I		I		I		I		I	
Exterior Covers			◆	C		C		C		C		C		C		C		C		C	

◆ = Clean with cloth	C = Clean	R = Replace	L = Lubricate
● = Clean with vacuum, carefully	I = Inspect	A = Adjust	

Part numbers subject to change. Replacement intervals may change with user requirements / installation location. Square units based only on 36" media widths.

SYSTEM SOFTWARE K

KIP 800 Series
Preventative Maintenance
Performed each 100,000 sq ft of:
Meter A
Meter A + B

Step #1 - Prepare

- ❑ Ask User about printer performance / image quality
- ❑ Print internal test prints and review quality
- ❑ Locate the "KIP 800 PM Schedule" form and check off each item completed. **Replace noted items as this procedure progresses.**

Step #2 - Corona Units x4

- ❑ Clean 1st Charge wires and cases (Glass cleaner)
- ❑ Clean Grid Screen (use Simple Green, then rinse with water) Let dry on paper towel /cloth.

Step #3 - Development Unit x4

- ❑ Vacuum toner dust from ends of developer unit and around toner hopper inlet.
- ❑ Inspect all Development Rollers (Clean if required)
- ❑ Clean and lube gears as needed. (G501 grease / Lithium grease)

Step #4 - Drum Cleaner Assembly x4

- ❑ Carefully vacuum the entire drum cleaner assembly including the side seals.
- ❑ Apply a light amount of toner powder on the blade as shown in the service manual

Step #5 - Paper Decks x2 / x4

- ❑ Vacuum paper dust.
- ❑ Inspected paper spools.
- ❑ Clean paper dust from each knife assembly.

Step #6 - Clean Interior of Printer

- ❑ Clean Transport belts with water and clean cloth and then wipe dry (do not use any solvents!)
- ❑ Transfer guide plates etc.

Step #7 - Fuser Section

- ❑ Clean upper Nails with a dry cloth.
- ❑ Clean lower Nails with a dry cloth.
- ❑ Clean and lubricate gears as needed with high temperature grease

Step #8 - L.E.D Print Head x4

- ❑ Clean LED lens. (Glass cleaner)
- ❑ Carefully dust the Density and Registration sensors (do this item last)

Step #9 - Density / Tests

- ❑ Print TP #31 and #18 - verify image quality
- ❑ Perform Optical Density Calibration

Step #10 Clean Exterior Panels

6. 4 Recommended Service Tools & Devices

The following tools and devices are (or may be) required for the KIP 800 Series field service.

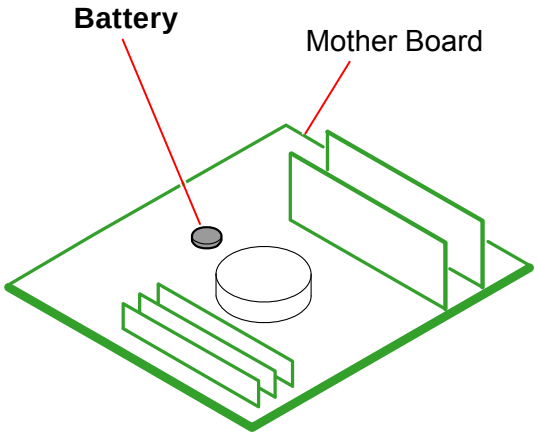
Name	Part number	Remarks
Developer Handle 		
Supply Roller Fixer Jig 		This helps to have the correct distance between the shaft of Supply Roller and that of Developer Roller evenly between left and right.
Setup Toner (with case and brush) 	-	This is used for applying the toner to; - Cleaner Blade of Cleaner Unit at installation - Both side faces of new Cleaner Blade - Scraper of Developer Unit NOTE (1) Please use the toner from the Toner Cartridge. (2) Prepare the case and cosmetic brush to each color respectively to avoid the mixture of different color toner.
Water Level (0.02mm/1m) 	-	This is used to level the printer to have correct Color Registration H. The specification is “0.02mm/1m”.
Densitometer 	-	This is used to readjust the Target Density for some reason.

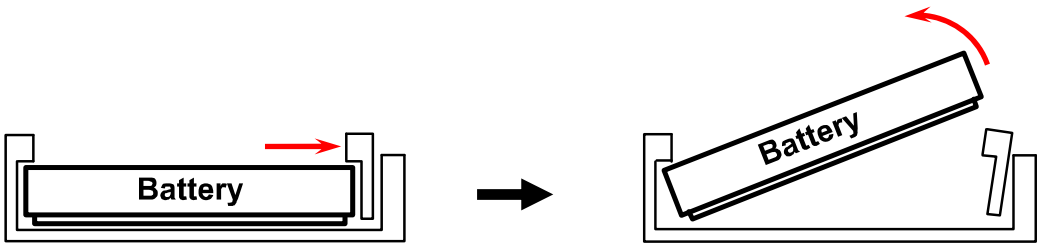
6. 5 Internal Battery in Embedded Controller

The embedded print controller has a Lithium battery on its motherboard. Remove the battery before you dispose of the machine according to the note column below.

NOTE

(1) Unplug the machine before removing the battery.
(2) Never use a metal tool such as tweezers to remove the battery.
(3) Replace the battery with the same or equivalent type / model.
(4) If you replace the battery with a new one, seat it in the holder with “+” facing up.





Press the tab.

Pick up one side.

6. 6 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)

Chapter 7

Troubleshooting

7. 1 Operator Call Error

7. 1. 1 Clearing Door Open Error

Maintenance GUI shows an Operator Call Error. Touch UI (user GUI) may use a different way of indication, but it can be converted to one in this section.

U-00000002 Deck 1 Open

Input Check Mode No. 00411 Deck1 Status ("H" = Open)

Items	Order	Checking matters	Result	Treatment
Status	1	Deck1 Status is detected correctly. "H" = Deck Open / "L" = Deck Closed	Yes	OK
Deck Switch Upper SW10-1	2	Voltage between SW10-1 Tub1 and Frame-GND is 5V DC when Deck is Opened. Voltage between SW10-1 Tub1 and Frame-GND is 0V DC when Deck is Closed. Voltage between SW10-1 Tub3 and Frame-GND is always 0V DC.	No	In Case Status detection is still incorrect replace SW10-1.
PW13555	3	Voltage between J565-25 and Frame-GND is 5V DC when Deck is Opened. Voltage between J565-25 and Frame-GND is 0V DC when Deck is Closed. Voltage between J565-26 and Frame-GND is always 0V DC.	Yes	In Case Status detection is still incorrect replace PW13555
PW13555	4	Replacing PW13555 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	5	Replacing PW13520 PCB recovers the error condition.	Yes	OK

U-00000004 Deck 2 Open

Input Check Mode No. 00412 Deck1 Status ("H" = Open)

Items	Order	Checking matters	Result	Treatment
Status	1	Deck2 Status is detected correctly. "H" = Deck Open / "L" = Deck Closed	Yes	OK
Deck Switch Upper SW10-2	2	Voltage between SW10-2 Tub1 and Frame-GND is 5V DC when Deck is Opened. Voltage between SW10-2 Tub1 and Frame-GND is 0V DC when Deck is Closed. Voltage between SW10-2 Tub3 and Frame-GND is always 0V DC.	No	In Case Status detection is still incorrect replace SW10-2.
PW13555	3	Voltage between J565-27 and Frame-GND is 5V DC when Deck is Opened. Voltage between J565-27 and Frame-GND is 0V DC when Deck is Closed. Voltage between J565-28 and Frame-GND is always 0V DC.	Yes	In Case Status detection is still incorrect replace PW13555
PW13555	4	Replacing PW13555 PCB recovers Door Status.	Yes	OK
Main Control PCB (PW13520)	5	Replacing PW13520 PCB recovers Door Status.	Yes	OK

U-00000400 Fuser Cover Open

Input Check Mode No. 00609 Fuser Cover STS-R ("H" = Open)
Input Check Mode No. 00612 Fuser Left Cover ("H" = Open)

Items	Order	Checking matters	Result	Treatment
Status	1	Fuser Cover Status is detected correctly. "H" = Cover Open / "L" = Cover Closed	Yes	OK
Fuser Exit Switch (L) SW2 Fuser Exit Switch (R) SW3	2	Replacing SW2 or SW3 recovers door status.	Yes	OK
PW13555	3	Replacing PW13555 recovers Door Status.	Yes	OK
Main Control PCB (PW13520)	4	Replacing PW13520 PCB recovers Door Status.	Yes	OK

U-00000800 Paper Exit Door Open

Input Check Mode No. 00610 Upper Exit Status1 ("H" = Open)
Input Check Mode No. 00611 Upper Exit Status2 ("H" = Open)

Items	Order	Checking matters	Result	Treatment
Status	1	Paper Exit Door Status is detected correctly. "H" = Door Open / "L" = Door Closed	Yes	OK
Upper Exit Switch (L) SW7 Upper Exit Switch (R) SW8	2	Replacing SW7 or SW8 recovers door status.	Yes	OK
PW13555	3	Replacing PW13555 recovers Door Status.	Yes	OK
Main Control PCB (PW13520)	4	Replacing PW13520 PCB recovers Door Status.	Yes	OK

U-00002000 Left Side Cover Open

Input Check Mode No. 00518 Left Cover Status ("H" = Open)

Items	Order	Checking matters	Result	Treatment
Status	1	Left Cover Status is detected correctly. "H" = Cover Open / "L" = Cover Closed	Yes	OK
Left Door Switch SW5	2	Replacing SW5 recovers door status.	Yes	OK
PW13555	3	Replacing PW13555 recovers Door Status.	Yes	OK
Main Control PCB (PW13520)	4	Replacing PW13520 PCB recovers Door Status.	Yes	OK

U-00020000 Cutter Cover Open

Input Check Mode No. 00516 Cutter Cover L ("H" = Open)

Items	Order	Checking matters	Result	Treatment
Status	1	Cutter Cover L Status is detected correctly. "H" = Cover Open / "L" = Cover Closed	Yes	OK
Cutter Cover SW6	2	Replacing SW6 recovers door status.	Yes	OK
PW13555	3	Replacing PW13555 recovers Door Status.	Yes	OK
Main Control PCB (PW13520)	4	Replacing PW13520 PCB recovers Door Status.	Yes	OK

U-01000000 Process Unit 1 Open
U-02000000 Process Unit 2 Open
U-04000000 Process Unit 3 Open
U-08000000 Process Unit 4 Open

Input Check Mode No. 00018 Process Unit Status:K ("H" = Open)
Input Check Mode No. 00118 Process Unit Status:C ("H" = Open)
Input Check Mode No. 00218 Process Unit Status:M ("H" = Open)
Input Check Mode No. 00318 Process Unit Status:Y ("H" = Open)

Items	Order	Checking matters	Result	Treatment
Process Unit Unlock	1	This Status is indicated when Process Unit is Unlocked (Process Unit is pulled out) while other conditions are normal. Closing and Locking Process unit by screws recovers Unit Open Status.	Yes	OK

<Note> When following Connectors were unplugged E-0310 Out of Process 1 Developer Error will be indicated. J286A, J230A, J240A, J320A.

E-0310 Out of Process 1 Developer Error (J286A, J230A, J240A, J320A)
E-0410 Out of Process 2 Developer Error (J286B, J230B, J240B, J320B)
E-0510 Out of Process 3 Developer Error (J286C, J230C, J240C, J320C)
E-0610 Out of Process 4 Developer Error (J286D, J230D, J240D, J320D)

7. 1. 2 Clearing Jam Error

Maintenance GUI shows Jam status as an Operator Call Error.

Following Jam Cord indicates Leading Edge Area of Remaining Top Sheet when machine stopped. There may be possibility to stop several sheets in the machine at a time while processing a multi-page job in a small size. Check for jammed sheet(s) in the whole media path.

J-00000002 Jam at Paper Deck 1
J-00000004 Jam at Paper Deck 2
J-00000008 Jam at Paper Deck 3
J-00000010 Jam at Paper Deck 4

Input Check Mode No. 00400 Roll1 Pickup Sensor ("H" = Detected)
Input Check Mode No. 00401 Roll2 Pickup Sensor ("H" = Detected)
Input Check Mode No. 00402 Roll3 Pickup Sensor ("H" = Detected)
Input Check Mode No. 00403 Roll4 Pickup Sensor ("H" = Detected)

Items	Order	Checking matters	Result	Treatment
	1	Have you removed all jammed sheets in the media path?	No	Clear the media path.
Status	2	Sensor status is detected correctly. "H" = Paper Detected "L" =Paper Absence	Yes	OK
Sensor	3	Replacing relevant sensor recovers Jam Status. Deck1 Roll1 Set Sensor (PH74) Deck1 Roll2 Set Sensor (PH75) Deck2 Roll1 Set Sensor (PH80) Deck2 Roll2 Set Sensor (PH81)	Yes	OK
PW13555	4	Replacing PW13555 recovers Jam Status.	Yes	OK
Main Control PCB (PW13520)	5	Replacing PW13520 PCB recovers Jam Status.	Yes	OK

J-00000200 Registration Part Jam

Input Check Mode No. 00503 Regist Sensor 1 ("H" = Detected)
Input Check Mode No. 00504 Regist Sensor 2 ("H" = Detected)
Input Check Mode No. 00505 Regist Sensor 3 ("H" = Detected)

Items	Order	Checking matters	Result	Treatment
	1	Have you removed all jammed sheets in the media path?	No	Clear the media path.
Status	2	Sensor status is detected correctly. "H" = Paper Detected "L" =Paper Absence	Yes	OK
Sensor	3	Replacing relevant sensor recovers Jam Status. Regist 1 Sensor (PH63) Regist 2 Sensor (PH64) Regist 3 Sensor (PH65)	Yes	OK
PW13555	4	Replacing PW13555 recovers Jam Status.	Yes	OK
Main Control PCB (PW13520)	5	Replacing PW13520 PCB recovers Jam Status.	Yes	OK

J-00000400 Separation Part (Unit) Jam

Input Check Mode No. 00506 Separation Sensor ("H" = Detected)

Items	Order	Checking matters	Result	Treatment
	1	Have you removed all jammed sheets in the media path?	No	Clear the media path.
Status	2	Sensor status is detected correctly. "H" = Paper Detected "L" =Paper Absence	Yes	OK
Sensor	3	Replacing relevant sensor recovers Jam Status. 2TR Sep Sensor (PH72)	Yes	OK
PW13555	4	Replacing PW13555 recovers Jam Status.	Yes	OK
Main Control PCB (PW13520)	5	Replacing PW13520 PCB recovers Jam Status.	Yes	OK

J-01000000 Fuser Unit Jam

Input Check Mode No. 00600 Exit Sensor 1 ("H" = Detected)

Items	Order	Checking matters	Result	Treatment
	1	Have you removed all jammed sheets in the media path?	No	Clear the media path.
Status	2	Sensor status is detected correctly. "H" = Paper Detected "L" =Paper Absence	Yes	OK
Sensor	3	Replacing relevant sensor recovers Jam Status. Exit Sensor (PH67)	Yes	OK
PW13555	4	Replacing PW13555 recovers Jam Status.	Yes	OK
Main Control PCB (PW13520)	5	Replacing PW13520 PCB recovers Jam Status.	Yes	OK

J-04000000 Exit Part (Top) Jam

Input Check Mode No. 00601 Exit Sensor 2 ("H" = Detected)
Input Check Mode No. 00603 Upper Exit Encoder ("H" = Detected)

Items	Order	Checking matters	Result	Treatment
	1	Have you removed all jammed sheets in the media path?	No	Clear the media path.
Status	2	Sensor status is detected correctly. "H" = Paper Detected "L" =Paper Absence	Yes	OK
Sensor	3	Replacing relevant sensor recovers Jam Status. Upper Exit Sensor (PH91) Upper Exit Pulse Sensor (PH89)	Yes	OK
PW13555	4	Replacing PW13555 recovers Jam Status.	Yes	OK
Main Control PCB (PW13520)	5	Replacing PW13520 PCB recovers Jam Status.	Yes	OK

7. 1. 3 Other Operator Call Error

Toner Empty

Input Check Mode No. 00008 Dev Toner Sensor:K ("H" = Detected "L" = No Toner)
Input Check Mode No. 00108 Dev Toner Sensor:C ("H" = Detected "L" = No Toner)
Input Check Mode No. 00208 Dev Toner Sensor:M ("H" = Detected "L" = No Toner)
Input Check Mode No. 00308 Dev Toner Sensor:Y ("H" = Detected "L" = No Toner)
Input Check Mode No. 00009 Bottle Toner Sensor:K ("H" = Detected "L" = No Toner)
Input Check Mode No. 00109 Bottle Toner Sensor:C ("H" = Detected "L" = No Toner)
Input Check Mode No. 00209 Bottle Toner Sensor:M ("H" = Detected "L" = No Toner)
Input Check Mode No. 00309 Bottle Toner Sensor:Y ("H" = Detected "L" = No Toner)

Items	Order	Checking matters	Result	Treatment
Toner Cartridge	1	Is the seal on the Toner Cartridge removed? Does the supply hole on the Toner Cartridge come downward?	No	Remove the seal. Turn the bottle down properly.
Main Control PCB (PW13520)	2	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

Roll Empty

Input Check Mode No. 00404 Roll1 Remain Sensor ("Pulse" = Disc is Moving)
Input Check Mode No. 00405 Roll2 Remain Sensor ("Pulse" = Disc is Moving)
Input Check Mode No. 00406 Roll3 Remain Sensor ("Pulse" = Disc is Moving)
Input Check Mode No. 00407 Roll4 Remain Sensor ("Pulse" = Disc is Moving)

Items	Order	Checking matters	Result	Treatment
Roll Media Spool	1	Is the roll media set on the spool correctly? Is the spool loaded to the machine correctly?	No	Set it correctly.
Main Control PCB (PW13520)	2	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

Waste Toner Full

Input Check Mode No. 00700 Waste Toner Full ("H" = Toner Full)

Items	Order	Checking matters	Result	Treatment
Waste Toner Box	1	Is the Waste Toner Box filled with the toner? Is it set correctly?	Yes	Replace Waste Toner Box. Reseat it.
Main Control PCB (PW13520)	2	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

7. 2 Service Call Error

Maintenance GUI shows service call error in Hexadecimal Number expression.
Touch UI (user GUI) may use a different way of indication (in Decimal number expression).
Those are the same value in the system and can be converted each other.
Both expressions are described as [Hexadecimal Number / Decimal Number] in this section.

Error codes will be recorded and can be seen in Maintenance GUI “Error History”.

7. 2. 1 Occurrence Condition of Service Call Error

Error Code expression in Hexadecimal Number / in Decimal Number

Error Code	Error Name	Error conditions
E-0001 /E-1	Paper Deck1 Paper Feed Motor Error	The signal from FPGA on PW13555 (00413: Deck 1 Motor Status) shows “H” for longer than 1 second. (“H”= abnormal condition is detected on motor driver IC).
E-0002 /E-2	Paper Deck2 Paper Feed Motor Error	The signal from FPGA on PW13555 (00414: Deck 2 Motor Status) shows “H” for longer than 1 second. (“H”= abnormal condition is detected on motor driver IC)
E-0101 /E-257	Cutter Error	While operating the Cutter Motor (00515: Cutter Motor) from the Output Check, CPU detects the error conditions as below. 1. Cutter Home Position Sensor Signal (00514: Cutter HP-L) or (00515: Cutter HP-R) stays “H” (“H”= Home Position) for longer than 0.1 Second since the Cutter Motor has been activated. 2. While operating the Cutter Motor, the opposite side Home Position Sensor dose not detect “H” (“H”= reached to Home Position) within 1 second since the original side Home Position Sensor has detected “L” (“L”= moved away from Home Position). <NOTE> While printing, FPGA in PW13555 controls the cut functions and detects the error conditions by itself.
E-0202 /E-514	Waste Toner Motor Error	1. The signal from FPGA on PW13555 (00701: W Toner Motor Status) does not change the status (no H/L Pulse) for longer than 4 seconds while activating the Waste Toner Motor (00700: Waste Toner Motor). 2. The signal from FPGA on PW13555 (Waste Toner Motor Status) shows "H" for longer than 1 second. (“H”= abnormal condition is detected on motor driver IC)
E-0300 /E-768	Process 1 Developer Motor Error	1. The signal from FPGA on PW13520 (00017: Dev Motor Status:K) shows "H" for longer than 1 second. (“H”= abnormal condition is detected on motor driver IC) 2. Failed to receive Done Status from FPGA on PW13520 within 5 seconds since the “Developer Motor Slow Mode” Reverse Direction Command have been sent to the FPGA.
E-0301 /E-769	Process 1 Developer Set Motor Error	The Developer Position Status that is detected by (00005: Dev HP Sensor1:K) and (00006: Dev HP Sensor2:K) sensors does not change to the opposite position status (Developing Position or Released Position) within 10.7 seconds since the Developer Press Motor (K) (00007: Dev Separate Motor K) has been activated. Sensor 1/2 - Separate :L/L - Press :L/H
E-0302 /E-770	Process 1 Drum Motor Error	1. The signal from FPGA on PW13520 (00016: Drum Motor Status (K)) shows "H" for longer than 1 second. (“H”= abnormal condition is detected on motor driver IC) 2. Failed to receive Done Status from FPGA on PW13520 within 5 seconds since the “Drum Motor Slow Mode” Reverse Direction Command have been sent to the FPGA. 3. Failed to receive Done Status from FPGA on PW13520 within 15 seconds since the “Drum Motor Slow Mode” Forward Direction Command have been sent to the FPGA.
E-0304 /E-772	Process 1 Transfer Roller Set Motor Error	The signal (00507: Tr1 RollerSet Sen:K) does not show set status (H to L) or released status (L to H) within 10 seconds since (00508: Tr1 SeparateMotor K) starts operating.

Error Code expression in Hexadecimal Number / in Decimal Number

Error Code	Error Name	Error conditions
E-0305 /E-773	Process 1 LED 1 Focus Adjustment Motor Error	1. Failed to receive Succeeded Status from FPGA on PW13520 for relevant Focus Motor within 8 seconds since the “LED Focus Motor” Search Home Position Command has been sent to the FPGA. 2. Failed to receive Done Status from FPGA on PW13520 for relevant Focus Motor within 8 seconds since the “LED Focus Motor” Step Function Command has been sent to the FPGA.
E-0306 /E-774	Process 1 LED 2 Focus Adjustment Motor Error	Same as above.
E-0307 /E-775	Process 1 LED 3 Focus Adjustment Motor Error	Same as above.
E-0310 /E-784	Out of Process 1 Developer Error	1. Developer Version Information from FPGA on PW13520 (Information 00003: Developer Ver K) shows “0” for longer than 1 second. 2. The signal from FPGA on PW13520 (00020: Dev Roller Status:K) does not change the status (no H/L Pulse) for longer than 3.24 seconds while activating the Developer Motor (00004: Dev Motor K).
E-0320 /E-800	Abnormal Output of Process 1 1st Charger	The signal (00000: 1st Output Detect: K) shows "H" for longer than 20msec while activating the 1st charger (image corona) (00000: 1st DC K).
E-0321 /E-801	Abnormal Output of Process 1 Transfer Charger	The signal from FPGA on PW13555 (00001: 1st Transfer Current Detect (K)) shows "H" for longer than 20msec while activating the 1st transfer (00001: TR1 K).
E-0322 /E-802	Abnormal Output of Process 1 Separation Charger	The signal from FPGA on PW13555 (00528: Separation Current Detect) which is made from (J573-24: SEP_DUTY) Signal shows "H" for longer than 20msec while activating the 2Tr Separation Charger (00514: Tr2 Sep AC).
E-0323 /E-803	Abnormal Output of Process 1 Developer Bias	The signal from FPGA on PW13555 (00002: DevBias Out Detect:K) shows "H" for longer than 20msec while activating the Developer Bias (00002: Dev Bias K).
E-0324 /E-804	Abnormal Output of Process 1 Supply Bias	The signal from FPGA on PW13555 (00003: SupBias Out Detect:K) shows "H" for longer than 20msec while activating the Developer Bias (00002: Dev Bias K).
E-0325 /E-805	Abnormal Output of Process 1 Blade Bias	The signal from FPGA on PW13555 (00004: RegBias Out Detect:K) shows "H" for longer than 20msec while activating the Developer Bias (00002: Dev Bias K).
E-0336 /E-822	Process 1 Density Compensation Error	The Density Adjustment failed to reach to the Target Density even when the density compensation is attempted 6 times.
E-0337 /E-823	Process 1 Standard Current Adjustment of 1st Transfer Error	Reference voltage for 1st Transfer Current detection is failed to adjust to target voltage on PW13555
E-0340 /E-832	Process 1 Wire Cleaning Error	The signal from PW13522 (00019: CleaningMotor Lock:K) does not show locked status “H” within 120 seconds since the Wire Cleaning Motor (00014: Wire Cleaning K) has been activated.
E-0350 /E-848	Process 1 Printhead 1 LED LC Data Checksum Error	The Checksum value on the Calibration Data read from “Process 1 LED Print Head 1” is mismatched. (Calibration Data is not loaded correctly.)
E-0351 /E-849	Process 1 Printhead 2 LED LC Data Checksum Error	The Checksum value on the Calibration Data read from “Process 1 LED Print Head 2” is mismatched. (Calibration Data is not loaded correctly.)
E-0352 /E-850	Process 1 Printhead 3 LED LC Data Checksum Error	The Checksum value on the Calibration Data read from “Process 1 LED Print Head 3” is mismatched. (Calibration Data is not loaded correctly.)
E-0353 /E-851	Process 1 Printhead 1 LED LC Data R/W Error	Failed to receive Completed Status from FPGA on PW13520 for “Process 1 LED Print Head 1” after Calibration Data Read or Write Command has been sent to the FPGA.
E-0354 /E-852	Process 1 Printhead 2 LED LC Data R/W Error	Failed to receive Completed Status from FPGA on PW13520 for “Process 1 LED Print Head 2” after Calibration Data Read or Write Command has been sent to the FPGA.
E-0355 /E-853	Process 1 Printhead 3 LED LC Data R/W Error	Failed to receive Completed Status from FPGA on PW13520 for “Process 1 LED Print Head 3” after Calibration Data Read or Write Command has been sent to the FPGA.

Error Code expression in Hexadecimal Number / in Decimal Number

Error Code	Error Name	Error conditions
E-0400 /E-1024	Process 2 Developer Motor Error	1. The signal from FPGA on PW13520 (00117: Dev Motor Status:C) shows "H" for longer than 1 second. ("H"= abnormal condition is detected on motor driver IC) 2. Failed to receive Done Status from FPGA on PW13520 within 5 seconds since the "Developer Motor Slow Mode" Reverse Direction Command have been sent to the FPGA.
E-0401 /E-1025	Process 2 Developer Set Motor Error	The Developer Position Status that is detected by (00105: Dev HP Sensor1:C) and (00106: Dev HP Sensor2:C) sensors does not change to the opposite position status (Developing Position or Released Position) within 10.7 seconds since the Developer Press Motor (C) (00107: Dev Separate Motor C) has been activated. Sensor 1/2 - Separate :L/L - Press :L/H
E-0402 /E-1026	Process 2 Drum Motor Error	1. The signal from FPGA on PW13520 (00116: Drum Motor Status (C)) shows "H" for longer than 1 second. ("H"= abnormal condition is detected on motor driver IC) 2. Failed to receive Done Status from FPGA on PW13520 within 5 seconds since the "Drum Motor Slow Mode" Reverse Direction Command have been sent to the FPGA. 3. Failed to receive Done Status from FPGA on PW13520 within 15 seconds since the "Drum Motor Slow Mode" Forward Direction Command have been sent to the FPGA.
E-0404 /E-1028	Process 2 Transfer Roller Set Motor Error	The signal (00508: Tr1 RollerSet Sen:C) does not show set status (H to L) or released status (L to H) within 10 seconds since (00509: Tr1 SeparateMotor C) starts operating.
E-0405 /E-1029	Process 2 LED 1 Focus Adjustment Motor Error	1. Failed to receive Succeeded Status from FPGA on PW13520 for relevant Focus Motor within 8 seconds since the "LED Focus Motor" Search Home Position Command has been sent to the FPGA. 2. Failed to receive Done Status from FPGA on PW13520 for relevant Focus Motor within 8 seconds since the "LED Focus Motor" Step Function Command has been sent to the FPGA.
E-0406 /E-1030	Process 2 LED 2 Focus Adjustment Motor Error	Same as above.
E-0407 /E-1031	Process 2 LED 3 Focus Adjustment Motor Error	Same as above.
E-0410 /E-1040	Out of Process 2 Developer Error	1. Developer Version Information from FPGA on PW13520 (Information 00103: Developer Ver C) shows "0" for longer than 1 second. 2. The signal from FPGA on PW13520 (00120: Dev Roller Status:C) does not change the status (no H/L Pulse) for longer than 3.24 seconds while activating the Developer Motor (00104: Dev Motor C).
E-0420 /E-1056	Abnormal Output of Process 2 1st Charger	The signal (00100: 1st Output Detect: C) shows "H" for longer than 20msec while activating the 1st charger (image corona) (00100: 1 st DC C).
E-0421 /E-1057	Abnormal Output of Process 2 Transfer Charger	The signal from FPGA on PW13555 (00101: 1st Transfer Current Detect (C)) shows "H" for longer than 20msec while activating the 1st transfer (00101: TR1 C).
E-0423 /E-1059	Abnormal Output of Process 2 Developer Bias	The signal from FPGA on PW13555 (00102: DevBias Out Detect:C) shows "H" for longer than 20msec while activating the Developer Bias (00102: Dev Bias C).
E-0424 /E-1060	Abnormal Output of Process 2 Supply Bias	The signal from FPGA on PW13555 (00103: SupBias Out Detect:C) shows "H" for longer than 20msec while activating the Developer Bias (00102: Dev Bias C).
E-0425 /E-1061	Abnormal Output of Process 2 Blade Bias	The signal from FPGA on PW13555 (00104: RegBias Out Detect:C) shows "H" for longer than 20msec while activating the Developer Bias (00102: Dev Bias C).
E-0436 /E-1078	Process 2 Density Compensation Error	The Density Adjustment failed to reach to the Target Density even when the density compensation is attempted 6 times.
E-0437 /E-1079	Process 2 Standard Current Adjustment of 1st Transfer Error	Reference voltage for 1st Transfer Current detection is failed to adjust to target voltage on PW13555
E-0440 /E-1088	Process 2 Wire Cleaning Error	The signal from PW13522 (00119: CleaningMotor Lock:C) does not show locked status "H" within 120 seconds since the Wire Cleaning Motor (00114: Wire Cleaning C) has been activated.

Error Code expression in Hexadecimal Number / in Decimal Number

Error Code	Error Name	Error conditions
E-0450 /E-1104	Process 2 Printhead 1 LED LC Data Checksum Error	The Checksum value on the Calibration Data read from “Process 2 LED Print Head 1” is mismatched. (Calibration Data is not loaded correctly.)
E-0451/E-1105	Process 2 Printhead 2 LED LC Data Checksum Error	The Checksum value on the Calibration Data read from “Process 2 LED Print Head 2” is mismatched. (Calibration Data is not loaded correctly.)
E-0452/E-1106	Process 2 Printhead 3 LED LC Data Checksum Error	The Checksum value on the Calibration Data read from “Process 2 LED Print Head 3” is mismatched. (Calibration Data is not loaded correctly.)
E-0453 /E-1107	Process 2 Printhead 1 LED LC Data R/W Error	Failed to receive Completed Status from FPGA on PW13520 for “Process 2 LED Print Head 1” after Calibration Data Read or Write Command has been sent to the FPGA.
E-0454 /E-1108	Process 2 Printhead 2 LED LC Data R/W Error	Failed to receive Completed Status from FPGA on PW13520 for “Process 2 LED Print Head 2” after Calibration Data Read or Write Command has been sent to the FPGA.
E-0455 /E-1109	Process 2 Printhead 3 LED LC Data R/W Error	Failed to receive Completed Status from FPGA on PW13520 for “Process 2 LED Print Head 3” after Calibration Data Read or Write Command has been sent to the FPGA.
E-0500 /E-1280	Process 3 Developer Motor Error	1. The signal from FPGA on PW13520 (00217: Dev Motor Status:M) shows "H" for longer than 1 second. (“H”= abnormal condition is detected on motor driver IC) 2. Failed to receive Done Status from FPGA on PW13520 within 5 seconds since the “Developer Motor Slow Mode” Reverse Direction Command have been sent to the FPGA.
E-0501 /E-1281	Process 3 Developer Set Motor Error	The Developer Position Status that is detected by (00205: Dev HP Sensor1:M) and (00206: Dev HP Sensor2:M) sensors does not change to the opposite position status (Developing Position or Released Position) within 10.7 seconds since the Developer Press Motor (M) (00207: Dev Separate Motor M) has been activated. Sensor 1/2 - Separate :L/L - Press :L/H
E-0502 /E-1282	Process 3 Drum Motor Error	1. The signal from FPGA on PW13520 (00216: Drum Motor Status (M)) shows "H" for longer than 1 second. (“H”= abnormal condition is detected on motor driver IC) 2. Failed to receive Done Status from FPGA on PW13520 within 5 seconds since the “Drum Motor Slow Mode” Reverse Direction Command have been sent to the FPGA. 3. Failed to receive Done Status from FPGA on PW13520 within 15 seconds since the “Drum Motor Slow Mode” Forward Direction Command have been sent to the FPGA.
E-0504 /E-1284	Process 3 Transfer Roller Set Motor Error	The signal (00509: Tr1 RollerSet Sen:M) does not show set status (H to L) or released status (L to H) within 10 seconds since (00510: Tr1 SeparateMotor M) starts operating.
E-0505 /E-1285	Process 3 LED 1 Focus Adjustment Motor Error	1. Failed to receive Succeeded Status from FPGA on PW13520 for relevant Focus Motor within 8 seconds since the “LED Focus Motor” Search Home Position Command has been sent to the FPGA. 2. Failed to receive Done Status from FPGA on PW13520 for relevant Focus Motor within 8 seconds since the “LED Focus Motor” Step Function Command has been sent to the FPGA.
E-0506 /E-1286	Process 3 LED 2 Focus Adjustment Motor Error	Same as above.
E-0507 /E-1287	Process 3 LED 3 Focus Adjustment Motor Error	Same as above.
E-0510 /E-1296	Out of Process 3 Developer Error	1. Developer Version Information from FPGA on PW13520 (Information 00203: Developer Ver M) shows “0” for longer than 1 second. 2. The signal from FPGA on PW13520 (00220: Dev Roller Status:M) does not change the status (no H/L Pulse) for longer than 3.24 seconds while activating the Developer Motor (00204: Dev Motor M).

Error Code expression in Hexadecimal Number / in Decimal Number

Error Code	Error Name	Error conditions
E-0520 /E-1312	Abnormal Output of Process 3 1st Charger	The signal (00200: 1st Output Detect: M) shows "H" for longer than 20msec while activating the 1st charger (image corona) (00200: 1 st DC M).
E-0521/E-1313	Abnormal Output of Process 3 Transfer Charger	The signal from FPGA on PW13555 (00201: 1st Transfer Current Detect (M)) shows "H" for longer than 20msec while activating the 1st transfer (00201: TR1 M).
E-0523 /E-1315	Abnormal Output of Process 3 Developer Bias	The signal from FPGA on PW13555 (00202: DevBias Out Detect:M) shows "H" for longer than 20msec while activating the Developer Bias (00202: Dev Bias M).
E-0524 /E-1316	Abnormal Output of Process 3 Supply Bias	The signal from FPGA on PW13555 (00103: SupBias Out Detect:C) shows "H" for longer than 20msec while activating the Developer Bias (00102: Dev Bias C).
E-0525 /E-1317	Abnormal Output of Process 3 Blade Bias	The signal from FPGA on PW13555 (00204: RegBias Out Detect:M) shows "H" for longer than 20msec while activating the Developer Bias (00202: Dev Bias M).
E-0536 /E-1334	Process 3 Density Compensation Error	The Density Adjustment failed to reach to the Target Density even when the density compensation is attempted 6 times.
E-0537 /E-1335	Process 3 Standard Current Adjustment of 1st Transfer Error	Reference voltage for 1st Transfer Current detection is failed to adjust to target voltage on PW13555
E-0540 /E-1344	Process 3 Wire Cleaning Error	The signal from PW13522 (00219: CleaningMotor Lock:M) does not show locked status “H” within 120 seconds since the Wire Cleaning Motor (00214: Wire Cleaning M) has been activated.
E-0550 /E-1360	Process 3 Printhead 1 LED LC Data Checksum Error	The Checksum value on the Calibration Data read from “Process 3 LED Print Head 1” is mismatched. (Calibration Data is not loaded correctly.)
E-0551 /E-1361	Process 3 Printhead 2 LED LC Data Checksum Error	The Checksum value on the Calibration Data read from “Process 3 LED Print Head 2” is mismatched. (Calibration Data is not loaded correctly.)
E-0552 /E-1362	Process 3 Printhead 3 LED LC Data Checksum Error	The Checksum value on the Calibration Data read from “Process 3 LED Print Head 3” is mismatched. (Calibration Data is not loaded correctly.)
E-0553 /E-1363	Process 3 Printhead 1 LED LC Data R/W Error	Failed to receive Completed Status from FPGA on PW13520 for “Process 3 LED Print Head 1” after Calibration Data Read or Write Command has been sent to the FPGA.
E-0554 /E-1364	Process 3 Printhead 2 LED LC Data R/W Error	Failed to receive Completed Status from FPGA on PW13520 for “Process 3 LED Print Head 2” after Calibration Data Read or Write Command has been sent to the FPGA.
E-0555 /E-1365	Process 3 Printhead 3 LED LC Data R/W Error	Failed to receive Completed Status from FPGA on PW13520 for “Process 3 LED Print Head 3” after Calibration Data Read or Write Command has been sent to the FPGA.
E-0600 /E-1536	Process 4 Developer Motor Error	1. The signal from FPGA on PW13520 (00317: Dev Motor Status:Y) shows "H" for longer than 1 second. (“H”= abnormal condition is detected on motor driver IC) 2. Failed to receive Done Status from FPGA on PW13520 within 5 seconds since the “Developer Motor Slow Mode” Reverse Direction Command have been sent to the FPGA.
E-0601 /E-1537	Process 4 Developer Set Motor Error	The Developer Position Status that is detected by (00305: Dev HP Sensor1:Y) and (00306: Dev HP Sensor2:Y) sensors does not change to the opposite position status (Developing Position or Released Position) within 10.7 seconds since the Developer Press Motor (Y) (00307: Dev Separate Motor Y) has been activated. Sensor 1/2 - Separate :L/L - Press :L/H
E-0602 /E-1538	Process 4 Developer Drum Motor Error	1. The signal from FPGA on PW13520 (00316: Drum Motor Status (Y)) shows "H" for longer than 1 second. (“H”= abnormal condition is detected on motor driver IC) 2. Failed to receive Done Status from FPGA on PW13520 within 5 seconds since the “Drum Motor Slow Mode” Reverse Direction Command have been sent to the FPGA. 3. Failed to receive Done Status from FPGA on PW13520 within 15 seconds since the “Drum Motor Slow Mode” Forward Direction Command have been sent to the FPGA.
E-0604 /E-1540	Process 4 Transfer Roller Set Motor Error	The signal (00510: Tr1 RollerSet Sen:Y) does not show set status (H to L) or released status (L to H) within 10 seconds since (00511: Tr1 SeparateMotor Y) starts operating.

Error Code expression in Hexadecimal Number / in Decimal Number

Error Code	Error Name	Error conditions
E-0605 /E-1541	Process 4 LED 1 Focus Adjustment Motor Error	1. Failed to receive Succeeded Status from FPGA on PW13520 for relevant Focus Motor within 8 seconds since the “LED Focus Motor” Search Home Position Command has been sent to the FPGA. 2. Failed to receive Done Status from FPGA on PW13520 for relevant Focus Motor within 8 seconds since the “LED Focus Motor” Step Function Command has been sent to the FPGA.
E-0606 /E-1542	Process 4 LED 2 Focus Adjustment Motor Error	Same as above.
E-0607/E-1543	Process 4 LED 3 Focus Adjustment Motor Error	Same as above.
E-0610 /E-1552	Out of Process 4 Developer Error	1. Developer Version Information from FPGA on PW13520 (Information 00303: Developer Ver Y) shows “0” for longer than 1 second. 2. The signal from FPGA on PW13520 (00320: Dev Roller Status:Y) does not change the status (no H/L Pulse) for longer than 3.24 seconds while activating the Developer Motor (00304: Dev Motor Y).
E-0620 /E-1568	Abnormal Output of Process 4 1st Charger	The signal (00300: 1st Output Detect: Y) shows "H" for longer than 20msec while activating the 1st charger (image corona) (00300: 1 st DC Y).
E-0621 /E-1569	Abnormal Output of Process 4 Transfer Charger	The signal from FPGA on PW13555 (00301: 1st Transfer Current Detect (Y)) shows "H" for longer than 20msec while activating the 1st transfer (00301: TR1 Y).
E-0623/E-1571	Abnormal Output of Process 4 Developer Bias	The signal from FPGA on PW13555 (00302: DevBias Out Detect:Y) shows "H" for longer than 20msec while activating the Developer Bias (00302: Dev Bias Y).
E-0624 /E-1572	Abnormal Output of Process 4 Supply Bias	The signal from FPGA on PW13555 (00303: SupBias Out Detect:Y) shows "H" for longer than 20msec while activating the Developer Bias (00302: Dev Bias Y).
E-0625 /E-1573	Abnormal Output of Process 4 Blade Bias	The signal from FPGA on PW13555 (00304: RegBias Out Detect:Y) shows "H" for longer than 20msec while activating the Developer Bias (00302: Dev Bias Y).
E-0636 /E-1590	Process 4 Density Compensation Error	The Density Adjustment failed to reach to the Target Density even when the density compensation is attempted 6 times.
E-0637 /E-1591	Process 4 Standard Current Adjustment of 1st Transfer Error	Reference voltage for 1st Transfer Current detection is failed to adjust to target voltage on PW13555
E-0640 /E-1600	Process 4 Wire Cleaning Error	The signal from PW13522 (00319: CleaningMotor Lock:Y) does not show locked status “H” within 120 seconds since the Wire Cleaning Motor (00314: Wire Cleaning Y) has been activated.
E-0650 /E-1616	Process 4 Printhead 1 LED LC Data Checksum Error	The Checksum value on the Calibration Data read from “Process 4 LED Print Head 1” is mismatched. (Calibration Data is not loaded correctly.)
E-0651 /E-1617	Process 4 Printhead 2 LED LC Data Checksum Error	The Checksum value on the Calibration Data read from “Process 4 LED Print Head 2” is mismatched. (Calibration Data is not loaded correctly.)
E-0652 /E-1618	Process 4 Printhead 3 LED LC Data Checksum Error	The Checksum value on the Calibration Data read from “Process 4 LED Print Head 3” is mismatched. (Calibration Data is not loaded correctly.)
E-0653 /E-1619	Process 4 Printhead 1 LED LC Data R/W Error	Failed to receive Completed Status from FPGA on PW13520 for “Process 4 LED Print Head 1” after Calibration Data Read or Write Command has been sent to the FPGA.
E-0654/E-1620	Process 4 Printhead 2 LED LC Data R/W Error	Failed to receive Completed Status from FPGA on PW13520 for “Process 4 LED Print Head 2” after Calibration Data Read or Write Command has been sent to the FPGA.
E-0655/E-1621	Process 4 Printhead 3 LED LC Data R/W Error	Failed to receive Completed Status from FPGA on PW13520 for “Process 4 LED Print Head 3” after Calibration Data Read or Write Command has been sent to the FPGA.
E-0700 /E-1792	Paper Feed Motor Error	The signal from FPGA on PW13555 (00519: Paper Feed Motor Status) shows "H" for longer than 1 second. (“H”= abnormal condition is detected on motor driver IC)
E-0702 /E-1794	Belt 1 Motor Error	The signal from FPGA on PW13555 (00523: Belt Motor Status) shows "H" for longer than 1 second. (“H”= abnormal condition is detected on motor driver IC)

Error Code expression in Hexadecimal Number / in Decimal Number

Error Code	Error Name	Error conditions
E-0705 /E-1797	Registration Motor 1 Error	The signal from FPGA on PW13555 (00520: Registration Motor1 Status) shows "H" for longer than 1 second. ("H"= abnormal condition is detected on motor driver IC)
E-0706 /E-1798	Registration Motor 2 Error	The signal from FPGA on PW13555 (00521: Registration Motor2 Status) shows "H" for longer than 1 second. ("H"= abnormal condition is detected on motor driver IC)
E-0707 /E-1799	Registration Motor 3 Error	The signal from FPGA on PW13555 (00522: Registration Motor3 Status) shows "H" for longer than 1 second. ("H"= abnormal condition is detected on motor driver IC)
E-0712 /E-1810	Transfer Roller set Motor 2 Error	The signal from PW13555 (00511: Tr2 RollerSet Sen) does not show Set Status (H to L) or Released Status (L to H) within 10 seconds since (00512: Tr2 SeparateMotor) starts operating.
E-0721 /E-1825	KTS Belt Skew Error (Left Side)	The signal from FPGA on PW13555 (00512: Belt Skew Sensor L) shows "H" for longer than 100msec.
E-0722 /E-1826	KTS Belt Skew Error (Right Side)	The signal from FPGA on PW13555 (00513: Belt Skew Sensor R) shows "H" for longer than 100msec.
E-0731 /E-1841	Abnormal Output of Separation Minus Charge at 2nd Transfer	The signal from FPGA on PW13555 (00524: 2Tr Separation St(-)) shows "H" for longer than 20msec.
E-0732 /E-1842	Abnormal Output of Separation Plus Charger at 2nd Transfer	The signal from FPGA on PW13555 (00525: 2Tr Separation St(+)) shows "H" for longer than 20msec.
E-0733 /E-1843	Standard Current Adjustment of 2nd Transfer Error	Reference voltage for 2nd Transfer Current detection is failed to adjust to target voltage on PW13555.
E-0900 /E-2304	Fuser Low-Temp Error	1. The fuser temperature failed to reach 50 deg C within 6 minutes in case the fuser temperature at power on was below 50 deg C. 2. The fuser temperature failed to reach Idling Temperature (Backup Data 02000: Idle Temp) within 6 minutes since it has passed 50 deg C. 3. The fuser temperatures (Fuser Temp 1 and Fuser Temp 2) failed to reach Ready Temperature (Backup Data 02001: Ready Temp 1 / 02002: Ready Temp 2 respectively) within 6 minutes since those have passed the Idling Temperature. 4. The fuser temperature failed to fall to Ready Temperature within 6 minutes in case the fuser temperature at power on was above the Ready Temperature. 5. The fuser temperature fell down below 100 deg C while printer status is Stand By. 6. The fuser temperature fell down below 70 deg C while printer status is Warm Sleep.
E-0902 /E-2306	Out of Web Error	1500 liner meter media is printed since Web Near End has been detected.
E-0904 /E-2308	Fuser Over-Temp at Thermistor 1 Error	1. Thermistor 1 detects that the Fuser Temperature is over 200 deg C. 2. The signal from FPGA on PW13555 (Fuser Thermistor 1 High-temperature Abnormality) shows "H" for longer than 1 second.
E-0905 /E-2309	Fuser Over-Temp at Thermistor 2 Error	1. Thermistor 2 detects that the Fuser Temperature is over 200 deg C. 2. The signal from FPGA on PW13555 (Fuser Thermistor 2 High-temperature Abnormality) shows "H" for longer than 1 second.
E-0906 /E-2310	Fuser Thermostat 1 Error	The signal from FPGA on PW13555 (00616: Thermostat 1 Status) shows "H" for longer than 1 second. (Thermostat 1 Open)
E-0907 /E-2311	Fuser Thermostat 2 Error	The signal from FPGA on PW13555 (00617: Thermostat 2 Status) shows "H" for longer than 1 second. (Thermostat 2 Open)
E-0920 /E-2336	Fuser Motor Error	The signal from FPGA on PW13555 (00613: Fuser Motor Status) shows "H" for longer than 1 second. ("H"= abnormal condition is detected on motor driver IC)
E-0930 /E-2352	Fuser Paper Feed Tension Error	The signal from FPGA on PW13555 (00618: Fuser Tension Error) shows "H" for longer than 1 second.

Error Code expression in Hexadecimal Number / in Decimal Number

Error Code	Error Name	Error conditions
E-0A03 /E-2563	Flash Memory Error	Failed to write a data to the flash memory on PW13520.
E-0A04 /E-2564	High Voltage Board 1 Communication Error	Failed to receive Completed Status from FPGA on PW13555 after “High Voltage Control Data” Read or Write Command has been sent to the “High Voltage Section on PW13555”.
E-0A05 /E-2565	High Voltage Board 2 Communication Error	Failed to receive Completed Status from FPGA on PW13555 after “High Voltage Control Data” Read or Write Command has been sent to “PW13556 High Voltage Board 2”.
E-0A41 /E-2625	KNC1 Error	KNC1 Error occurs.
E-0A42 /E-2626	KNC2 Error	KNC2 Error occurs.
E-0A43 /E-2627	KNC3 Error	KNC3 Error occurs.
E-0A44 /E-2628	KNC4 Error	KNC4 Error occurs.
E-0A51 /E-2641	High Voltage Board Error (Abnormal Transformer 1)	The signal from FPGA on PW13555 (00706: Transformer 1 on PW13555 Abnormal) shows "H" for longer than 20msec.
E-0A52 /E-2642	High Voltage Board Error (Abnormal Transformer 2)	The signal from FPGA on PW13555 (00707: Transformer 2 on PW13555 Abnormal) shows "H" for longer than 20msec.
E-0C01 /E-3073	Density Sensor 1 Adjustment Error	The Density Sensor Calibration for Focus detection or Density detection failed to reach to the Target Sensor Value even after Density Sensor Current adjustment is attempted 6 times.
E-0C02 /E-3074	Density Sensor 2 Adjustment Error	The Density Sensor Calibration for Focus detection or Density detection failed to reach to the Target Sensor Value even after Density Sensor Current adjustment is attempted 6 times.
E-0C03 /E-3075	Density Sensor 3 Adjustment Error	The Density Sensor Calibration for Focus detection or Density detection failed to reach to the Target Sensor Value even after Density Sensor Current adjustment is attempted 6 times.
E-0C04 /E-3076	Density Sensor 4 Adjustment Error	The Density Sensor Calibration for Focus detection or Density detection failed to reach to the Target Sensor Value even after Density Sensor Current adjustment is attempted 6 times.
E-0C05 /E-3077	Density Sensor 5 Adjustment Error	The Density Sensor Calibration for Focus detection or Density detection failed to reach to the Target Sensor Value even after Density Sensor Current adjustment is attempted 6 times.
E-0D01 /E-3329	Cooling Fan 1 Error	The signal from FPGA on PW13555 (00530: Cooling Fan1 Status) does not change the status (no H/L Pulse) for longer than 1second while activating the Left Door Cooling Fan (00517: Cooling Fan 1).
E-0D05 /E-3333	DCP Cooling Fan 1 Error	The signal from FPGA on PW13555 (DCP Cooling Fan Status) does not change the status (no H/L Pulse) for longer than 1second.
E-0D09 /E-3337	Fuser Blower 1 Error	The signal from FPGA onPW13555 (00614: Fuser Fan Status) does not change the status (no H/L Pulse) for longer than 1 second while activating the Fuser Cooling Fan (00606: Fuser Cooling Fan).
E-0D0B /E-3339	Paper Adsorption Fan Error	The signal from FPGA (00702: Adsorption Fan Status) does not change the status (no H/L Pulse) for longer than 1 second while activating the Paper Adsorption Fan (00516: Adsorption Fan).

7. 2. 2 Clearing Service Call Error

E-0001/E-1 Paper Deck1 Paper Feed Motor Error

Error Mask Mode No. 00400 Deck1 Motor Error
Output Check Mode No. 00400 Deck1 Motor
Check if “Paper Deck1 Paper Feed Motor” is possible to operate in Output Check Mode.

1. In case the Item is Inoperative.

Items	Order	Checking matters	Result	Treatment
	1	The operation “Main Switch Off/On on10 minutes later” recovers the error condition.	Yes	Go to Case 2
Wiring Harness	2	Unplugging J565 on PW13555 recovers the error condition.	Yes	Check the motor harness damage.
Motor (M1-1)	3	Replacing Deck1 Motor (M1-1) recovers the error condition.	Yes	OK
PW13555	4	Replacing PW13555 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	5	Replacing PW13520 PCB recovers the error condition.	Yes	OK

2. In case the Item is Operative.

Items	Order	Checking matters	Result	Treatment
	1	Several test prints reproduces the error again	No	OK
Motor (M1-1)	2	Replacing Deck1 Motor (M1-1) recovers the error condition.	Yes	OK
PW13555	3	Replacing PW13555 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	4	Replacing PW13520 PCB recovers the error condition.	Yes	OK

E-0002/E-2 Paper Deck2 Paper Feed Motor Error

Error Mask Mode No. 00401 Deck2 Motor Error
Output Check Mode No. 00401 Deck2 Motor
Check if “Paper Deck2 Paper Feed Motor” is possible to operate in Output Check Mode.

1. In case the Item is Inoperative.

Items	Order	Checking matters	Result	Treatment
	1	The operation “Main Switch Off/On on10 minutes later” recovers the error condition.	Yes	Go to Case 2
Wiring Harness	2	Unplugging J565 on PW13555 recovers the error condition.	Yes	Check the motor harness damage.
Motor (M1-2)	3	Replacing Deck2 Motor (M1-2) recovers the error condition.	Yes	OK
PW13555	4	Replacing PW13555 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	5	Replacing PW13520 PCB recovers the error condition.	Yes	OK

2. In case the Item is Operative.

Items	Order	Checking matters	Result	Treatment
	1	Several test prints reproduces the error again	No	OK
Motor (M1-2)	2	Replacing Deck2 Motor (M1-2) recovers the error condition.	Yes	OK
PW13555	3	Replacing PW13555 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	4	Replacing PW13520 PCB recovers the error condition.	Yes	OK

E-0101/E-257 Cutter Error

Error Mask Mode No. 00700 Cutter Error
Output Check Mode No. 00515 Cutter Motor
Input Check Mode No. 00514 Cutter HP-L, No. 00515 Cutter HP-R ("H" = Home Position)
Check if "Cutter Motor" is possible to operate in Output Check Mode.

1. In case the Item is Inoperative.

Items	Order	Checking matters	Result	Treatment
Wiring Harness	1	J565 on PW13555 or J405 in Cutter Unit is unplugged.	Yes	Plug the Connector.
Cutter Unit	2	Replacing Cutter Unit recovers the error condition.	Yes	OK
Flat Cable	3	Flat Cable between PW13520 (J214) and PW13555 (J567) is unplugged.	Yes	Plug the Flat Cable.
PW13555	4	Replacing PW13555 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	5	Replacing PW13520 PCB recovers the error condition.	Yes	OK

2. In case the Item is Operative.

Items	Order	Checking matters	Result	Treatment
Wiring Harness	1	J565 on PW13555 or J405 in Cutter Unit is surely connected.	No	Plug the Connector.
Cutter Unit	2	Cutter Home Position Sensor Signals are detected correctly.	No	Replace the Cutter Unit.
Flat Cable	3	Flat Cable between PW13520 (J214) and PW13555 (J567) is surely connected.	No	Plug the Flat Cable.
PW13555	4	Replacing PW13555 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	5	Replacing PW13520 PCB recovers the error condition.	Yes	OK

E-0202/E-514 Waste Toner Motor Error

Error Mask Mode No. 00717 Waste Toner Motor Error
Output Check Mode No. 00700 Waste Toner Motor
Input Check Mode No. 00701 W Toner Motor Status (“H/L Pulse” = Operating)
Check if “Waste Toner Motor” is possible to operate in Output Check Mode.

1. In case the Item is Inoperative.

Items	Order	Checking matters	Result	Treatment
Wiring Harness	1	J576 on PW13555 or J407 on Waste Toner Motor is unplugged.	Yes	Plug the Connector.
	2	The operation “Main Switch Off/On on10 minutes later” recovers the error condition.	Yes	Go to Case 2
Waste Toner Motor (M12)	3	Replacing Waste Toner Motor recovers the error condition.	Yes	OK
Flat Cable	4	Flat Cable between PW13520 (J214) and PW13555 (J567) is unplugged.	Yes	Plug the Flat Cable.
PW13555	5	Replacing PW13555 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	6	Replacing PW13520 PCB recovers the error condition.	Yes	OK

2. In case the Item is Operative.

Items	Order	Checking matters	Result	Treatment
Wiring Harness	1	J576 on PW13555 or J422 on Waste Toner Motor Sensor (PH87) is surely connected.	No	Plug the Connector.
Waste Toner Motor Sensor (PH87)	2	Waste Toner Motor Sensor (PH87) Signals are detected correctly.	No	Replace the Waste Toner Motor Sensor.
	3	Several test prints reproduces the error again	No	OK
Waste Toner Motor (M12)	4	Replacing Waste Toner Motor recovers the error condition.	Yes	OK
Flat Cable	5	Flat Cable between PW13520 (J214) and PW13555 (J567) is surely connected.	No	Plug the Flat Cable.
PW13555	6	Replacing PW13555 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	7	Replacing PW13520 PCB recovers the error condition.	Yes	OK

E-0300/E-768 Process 1 Developer Motor Error
E-0400/E-1024 Process 2 Developer Motor Error
E-0500/E-1280 Process 3 Developer Motor Error
E-0600/E-1536 Process 4 Developer Motor Error

Error Mask Mode No. 00000 Dev Motor Error K
Error Mask Mode No. 00100 Dev Motor Error C
Error Mask Mode No. 00200 Dev Motor Error M
Error Mask Mode No. 00300 Dev Motor Error Y
Output Check Mode No. 00004 Dev Motor K
Output Check Mode No. 00104 Dev Motor C
Output Check Mode No. 00204 Dev Motor M
Output Check Mode No. 00304 Dev Motor Y
Check if relevant "Dev Motor" is possible to operate in Output Check Mode.

1. In case the Item is Inoperative.

Items	Order	Checking matters	Result	Treatment
	1	The operation "Main Switch Off/On on10 minutes later" recovers the error condition.	Yes	Go to Case 2
Wiring Harness	2	Unplugging J209 on PW13520 recovers the error condition.	Yes	Check the motor harness damage.
DevMotor K (M9-1) DevMotor C (M9-2) DevMotor M (M9-3) DevMotor Y (M9-4)	3	Replacing Dev Motor (M9-x) recovers the error condition.	Yes	OK
PW13522	4	Replacing PW13522 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	5	Replacing PW13520 PCB recovers the error condition.	Yes	OK

2. In case the Item is Operative.

Items	Order	Checking matters	Result	Treatment
	1	Several test prints reproduces the error again	No	OK
Motor (M1-1)	2	Replacing Deck1 Motor (M1-1) recovers the error condition.	Yes	OK
PW13522	3	Replacing PW13522 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	4	Replacing PW13520 PCB recovers the error condition.	Yes	OK

<Note> See also "E-0310/E-784 Out of Process 1 Developer Error" for the absence of "Dev Roller Pulse Sensor" signal Error.

E-0301/E-769 Process 1 Developer Set Motor Error
E-0401/E-1025 Process 2 Developer Set Motor Error
E-0501/E-1281 Process 3 Developer Set Motor Error
E-0601/E-1537 Process 4 Developer Set Motor Error

Error Mask Mode No. 00001 Dev Set MT Error K
Error Mask Mode No. 00101 Dev Set MT Error C
Error Mask Mode No. 00201 Dev Set MT Error M
Error Mask Mode No. 00301 Dev Set MT Error Y
Output Check Mode No. 00007 Dev Separate Motor K
Output Check Mode No. 00107 Dev Separate Motor C
Output Check Mode No. 00207 Dev Separate Motor M
Output Check Mode No. 00307 Dev Separate Motor Y
Input Check Mode No. 00005 Dev HP Sensor 1: K, No. 00006 Dev HP Sensor 2: K
Input Check Mode No. 00105 Dev HP Sensor 1: C, No. 00106 Dev HP Sensor 2: C
Input Check Mode No. 00205 Dev HP Sensor 1: M, No. 00206 Dev HP Sensor 2: M
Input Check Mode No. 00305 Dev HP Sensor 1: Y, No. 00306 Dev HP Sensor 2: Y
Check if relevant "Developer Set Motor" is possible to operate in Output Check Mode.

1. In case the Item is Inoperative.

Items	Order	Checking matters	Result	Treatment
Wiring Harness for Motors	1	Any of following connectors is unplugged. J208 on PW13520, J281 on Set Motor K, J282 on Set Motor C, J283 on Set Motor M, J284 on Set Motor Y.	Yes	Plug the Connector.
SetMotor K (M10-1) SetMotor C (M10-2) SetMotor M (M10-3) SetMotor Y (M10-4)	2	Replacing relevant Developer Set Motor (M10-x) recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	3	Replacing PW13520 PCB recovers the error condition.	Yes	OK

2. In case the Item is Operative.

Items	Order	Checking matters	Result	Treatment
Wiring Harness for Sensors	1	All of the following connectors are surely connected. J202 on PW13520, Link-up Connectors J257 J260 J263 J266, J258 S1-K, J259-S2K, J261 S1-C, J262 S2-C, J264 S1-M, J265 S2-M, J267 S1-Y, J268 S2-Y	No	Plug the Connector.
Dev Set Sensors SEN1-K (PH1) SEN2-K (PH2) SEN1-C (PH3) SEN2-C (PH4) SEN1-M (PH5) SEN2-M (PH6) SEN1-Y (PH7) SEN2-Y (PH8)	2	Developer Set Sensor Signals are detected correctly. Sensor 1/2 Status - Separate :L/L - Press :L/H	No	Replace the relevant Developer Set Sensor.
Main Control PCB (PW13520)	3	Replacing PW13520 PCB recovers the error condition.	Yes	OK

E-0302/E770 Process 1 Drum Motor Error
E-0402/E1026 Process 2 Drum Motor Error
E-0502/E1282 Process 3 Drum Motor Error
E-0602/E1538 Process 4 Drum Motor Error

Error Mask Mode No. 00002 Drum Motor Error K
Error Mask Mode No. 00102 Drum Motor Error C
Error Mask Mode No. 00202 Drum Motor Error M
Error Mask Mode No. 00302 Drum Motor Error Y
Output Check Mode No. 00003 Drum Motor K
Output Check Mode No. 00103 Drum Motor C
Output Check Mode No. 00203 Drum Motor M
Output Check Mode No. 00303 Drum Motor Y
Check if relevant “Drum Motor” is possible to operate in Output Check Mode.

1. In case the Item is Inoperative.

Items	Order	Checking matters	Result	Treatment
	1	The operation “Main Switch Off/On on10 minutes later” recovers the error condition.	Yes	Go to Case 2
Wiring Harness	2	Unplugging J207 (Drum Motor-K) J206 (Drum Motor-C) J205 (Drum Motor-M) J204 (Drum Motor-Y) on PW13520 recovers the error condition.	Yes	Check the motor harness damage.
D Motor K (M2-1) D Motor C (M2-2) D Motor M (M2-3) D Motor Y (M2-4)	3	Replacing Drum Motor recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	4	Replacing PW13520 PCB recovers the error condition.	Yes	OK

2. In case the Item is Operative.

Items	Order	Checking matters	Result	Treatment
	1	Several test prints reproduces the error again	No	OK
D Motor K (M2-1) D Motor C (M2-2) D Motor M (M2-3) D Motor Y (M2-4)	2	Replacing Drum Motor recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	3	Replacing PW13520 PCB recovers the error condition.	Yes	OK

E-0304/E-772 Process 1 Transfer Roller Set Motor Error
E-0404/E-1028 Process 2 Transfer Roller Set Motor Error
E-0504/E-1284 Process 3 Transfer Roller Set Motor Error
E-0604/E-1540 Process 4 Transfer Roller Set Motor Error

Error Mask Mode No. 00010 Tr1 Set MT Error K
Error Mask Mode No. 00110 Tr1 Set MT Error C
Error Mask Mode No. 00210 Tr1 Set MT Error M
Error Mask Mode No. 00310 Tr1 Set MT Error Y
Output Check Mode No. 00508 Tr1 Separate Motor K
Output Check Mode No. 00509 Tr1 Separate Motor C
Output Check Mode No. 00510 Tr1 Separate Motor M
Output Check Mode No. 00511 Tr1 Separate Motor Y
Input Check Mode No. 00507 Tr1 RollerSet Sen:K
Input Check Mode No. 00508 Tr1 RollerSet Sen:C
Input Check Mode No. 00509 Tr1 RollerSet Sen:M
Input Check Mode No. 00510 Tr1 RollerSet Sen:Y
Check if relevant “Transfer Roller Set Motor” is possible to operate in Output Check Mode.

1. In case the Item is Inoperative.

Items	Order	Checking matters	Result	Treatment
Wiring Harness for Motors	1	Any of following connectors is unplugged. J568 on PW13555, J1009 on Belt Unit, J1011 on Set Motor K, J1012 on Set Motor C, J1017 on Set Motor M, J1018 on Set Motor Y.	Yes	Plug the Connector.
1Tr Set Motor SetMotor 1 (M7-1) SetMotor 2 (M7-2) SetMotor 3 (M7-3) SetMotor 4 (M7-4)	2	Replacing relevant Tr1 Set Motor (M7-x) recovers the error condition.	Yes	OK
PW13555	3	Replacing PW13555 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	4	Replacing PW13520 PCB recovers the error condition.	Yes	OK

2. In case the Item is Operative.

Items	Order	Checking matters	Result	Treatment
Wiring Harness for Sensors	1	All of the following connectors are surely connected. J568 on PW13555, J1009 on Belt Unit, J1015 (K), J1016 (C), J1019 (M), J1020 (Y)	No	Plug the Connector.
Transfer Roller Set Sensors Set Sen-K (PH59) Set Sen-C (PH60) Set Sen-M (PH85) Set Sen-Y (PH86)	2	Transfer Roller Set Sensor Signals are detected correctly. Sensor Status -Set status (H to L) -Released status (L to H)	No	Replace relevant Transfer Roller Set Sensor.
PW13555	3	Replacing PW13555 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	4	Replacing PW13520 PCB recovers the error condition.	Yes	OK

E-0305/E-773 Process 1 LED 1 Focus Adjustment Motor Error
E-0306/E-774 Process 1 LED 2 Focus Adjustment Motor Error
E-0307/E-775 Process 1 LED 3 Focus Adjustment Motor Error
E-0405/E-1029 Process 2 LED 1 Focus Adjustment Motor Error
E-0406/E-1030 Process 2 LED 2 Focus Adjustment Motor Error
E-0407/E-1031 Process 2 LED 3 Focus Adjustment Motor Error
E-0505/E-1285 Process 3 LED 1 Focus Adjustment Motor Error
E-0506/E-1286 Process 3 LED 2 Focus Adjustment Motor Error
E-0507/E-1287 Process 3 LED 3 Focus Adjustment Motor Error
E-0605/E-1541 Process 4 LED 1 Focus Adjustment Motor Error
E-0606/E-1542 Process 4 LED 2 Focus Adjustment Motor Error
E-0607/E-1543 Process 4 LED 3 Focus Adjustment Motor Error

Error Mask Mode No. 00011 LED FocusMT Err(K)L
Error Mask Mode No. 00012 LED FocusMT Err(K)C
Error Mask Mode No. 00013 LED FocusMT Err(K)R
Error Mask Mode No. 00111 LED FocusMT Err(C)L
Error Mask Mode No. 00112 LED FocusMT Err(C)C
Error Mask Mode No. 00113 LED FocusMT Err(C)R
Error Mask Mode No. 00211 LED FocusMT Err(M)L
Error Mask Mode No. 00212 LED FocusMT Err(M)C
Error Mask Mode No. 00213 LED FocusMT Err(M)R
Error Mask Mode No. 00311 LED FocusMT Err(Y)L
Error Mask Mode No. 00312 LED FocusMT Err(Y)C
Error Mask Mode No. 00313 LED FocusMT Err(Y)R
Analog Check Mode No. 00805 Focus Home Position
Output Check Mode No. 00008 to No. 00013 LED Motor (K) L/C/R – L/R
Output Check Mode No. 00108 to No. 00113 LED Motor (C) L/C/R – L/R
Output Check Mode No. 00208 to No. 00213 LED Motor (M) L/C/R – L/R
Output Check Mode No. 00308 to No. 00313 LED Motor (Y) L/C/R – L/R
Input Check Mode No. 00010 to No. 00015 LED-HP (K) L/C/R – L/R
Input Check Mode No. 00110 to No. 00115 LED-HP (C) L/C/R – L/R
Input Check Mode No. 00210 to No. 00215 LED-HP (M) L/C/R – L/R
Input Check Mode No. 00310 to No. 00315 LED-HP (Y) L/C/R – L/R
Backup Data Mode No. 01265 Focus Adjust On/Off

Items	Order	Checking matters	Result	Treatment
Reset by Machine Power Off/On	1	The operation “Main Switch Off/On” recovers the error condition.	Yes	OK
Home Position	2	The operation “No. 00805 Focus Home Position” in Analog Check Mode reproduces the Error condition.	No	OK To reset focus condition, operate “Main Switch Off/On”.
Wiring Harness for Sensors and Motors	3	Rerating Wiring Harnesses are surely connected.	No	Plug the Connector.
LED Motor	4	The relevant Home Position Slit is moved to different position after operating “Focus Home Position” in Analog Check Mode.	No	Replace relevant LED Motor.
Sensor Check	5	Turn Off Focus Adjust Mode temporally from Backup Data No. 01265. Try to face Relevant Home Position Slit to the Sensor detecting point manually then verify that the Sensor Status is showing “H =Home Position”.	No	Replace relevant HP Sensor.
PW13522 or PW13523	6	Replacing PW13522 or PW13523 recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	7	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

E-0310/E-784 Out of Process 1 Developer Error
E-0410/E-1040 Out of Process 2 Developer Error
E-0510/E-1296 Out of Process 3 Developer Error
E-0610/E-1552 Out of Process 4 Developer Error

Error Mask Mode No. 00003 Out Of Dev Error K
Error Mask Mode No. 00103 Out Of Dev Error C
Error Mask Mode No. 00203 Out Of Dev Error M
Error Mask Mode No. 00303 Out Of Dev Error Y
Output Check Mode No. 00004 Dev Motor K
Output Check Mode No. 00104 Dev Motor C
Output Check Mode No. 00204 Dev Motor M
Output Check Mode No. 00304 Dev Motor Y
Input Check Mode No. 00020 Dev Roller Status:K
Input Check Mode No. 00120 Dev Roller Status:C
Input Check Mode No. 00220 Dev Roller Status:M
Input Check Mode No. 00320 Dev Roller Status:Y
Check if relevant “Dev Motor” is possible to operate in Output Check Mode.

1. In case the Item is Inoperative.

Items	Order	Checking matters	Result	Treatment
Wiring Harness for Motors	1	Any of following connectors is unplugged. J209 on PW13520, J335 on LED HEAD UNIT, J240 on PW13522, J320 on Dev Unit, J322 on Dev Motor.	Yes	Plug the Connector.
Developer Motor DevMotor K (M9-1) DevMotor C (M9-2) DevMotor M (M9-3) DevMotor Y (M9-4)	2	Replacing relevant Dev Motor (M9-x) recovers the error condition.	Yes	OK
PW13522	3	Replacing PW13522 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	4	Replacing PW13520 PCB recovers the error condition.	Yes	OK

2. In case the Item is Operative.

Items	Order	Checking matters	Result	Treatment
Version Information	1	The Developer Ver Status in Information Mode shows “3”. Information Mode No. 00003 Developer Ver K No. 00004 Developer Ver C No. 00005 Developer Ver M No. 00006 Developer Ver Y	No	Check J286 on Process Unit.
Wiring Harness for Sensors	2	All of the following connectors are surely connected. J240 on PW13522, J320 on Dev Unit, J245/J246 between PW13522 and PW13523, J230 on PW13523, J286 on Process Unit, J211 on PW13520.	No	Plug the Connector.
Dev Roller Pulse Sensor DevRoll-K (PH93) DevRoll -C (PH94) DevRoll -M (PH95) DevRoll -Y (PH96)	3	Developer Roller Pulse Sensor detects pulse signals while Developer Motor is rotating.	No	Replace relevant Developer Roller Pulse Sensor.
PW13522	4	Replacing PW13522 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	5	Replacing PW13520 PCB recovers the error condition.	Yes	OK

E-0320/E-800 Abnormal Output of Process 1 1st Charger
E-0420/E-1056 Abnormal Output of Process 2 1st Charger
E-0520/E-1312 Abnormal Output of Process 3 1st Charger
E-0620/E-1568 Abnormal Output of Process 4 1st Charger

Error Mask Mode No. 00004 1st Charger Error K
Error Mask Mode No. 00104 1st Charger Error C
Error Mask Mode No. 00204 1st Charger Error M
Error Mask Mode No. 00304 1st Charger Error Y
<Note> Check 1st Charger functionality while Test Print as 1st Charger operation manually from Output Check Mode may create unrecoverable affect to image quality.

Items	Order	Checking matters	Result	Treatment
Corona Wire	1	Is Corona Wire cut?	Yes	Clean and replace the wire.
Corona Wire	2	Is Corona Wire Tension loosened?	Yes	Clean and replace the wire.
High Voltage Lead	3	Is high voltage lead damaged?	Yes	Replace.
HV Power Supply	4	Correct value is monitored on the HVPS Check Point. CP-11 to CP-12, CP-21 to CP-22.	No	Replace High Voltage Power Supply.
PW13555	5	Replacing PW13555 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	6	Replacing PW13520 PCB recovers the error condition.	Yes	OK

E-0321/E-801 Abnormal Output of Process 1 Transfer Charger
E-0421/E-1057 Abnormal Output of Process 2 Transfer Charger
E-0521/E-1313 Abnormal Output of Process 3 Transfer Charger
E-0621/E-1569 Abnormal Output of Process 4 Transfer Charger

Error Mask Mode No. 00005 Tr1 Charger Error K
Error Mask Mode No. 00105 Tr1 Charger Error C
Error Mask Mode No. 00206 Tr1 Charger Error M
Error Mask Mode No. 00306 Tr1 Charger Error Y
<Note> Check Tr1 Charger functionality while Test Print as Tr1 Charger operation manually from Output Check Mode may create unrecoverable affect to image quality.

Items	Order	Checking matters	Result	Treatment
Short-Circuit	1	Unplugging “TB 1Tr” Tub Connector recovers the Error condition.	Yes	Check Short-Circuit behind the Tub Connector. (Roller side)
PW13555	2	Replacing PW13555 recovers the Error.	Yes	OK
Main Control PCB (PW13520)	3	Replacing PW13520 PCB recovers the error condition.	Yes	OK

E-0322/E-802 Abnormal Output of Process 1 Separation Charger (Tr2 Separation)

Error Mask Mode No. 00702 Sep Charger Error
<Note> Check Separation Charger functionality while Test Print as Separation Charger operation manually from Output Check Mode may create unrecoverable affect to image quality.

Items	Order	Checking matters	Result	Treatment
Short-Circuit	1	Unplugging “TB SEP” Tub Connector recovers the Error condition.	Yes	Check Short-Circuit behind the Tub Connector. (Charger side)
PW13556	2	Replacing PW13556 recovers the Error.	Yes	OK
PW13556	3	Replacing PW13555 recovers the Error.	Yes	OK
Main Control PCB (PW13520)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

E-0323/E-803 Abnormal Output of Process 1 Developer Bias
E-0423/E-1059 Abnormal Output of Process 2 Developer Bias
E-0523/E-1315 Abnormal Output of Process 3 Developer Bias
E-0623/E-1571 Abnormal Output of Process 4 Developer Bias

Error Mask Mode No. 00006 Dev Bias Error K
Error Mask Mode No. 00106 Dev Bias Error C
Error Mask Mode No. 00206 Dev Bias Error M
Error Mask Mode No. 00306 Dev Bias Error Y
<Note> Check Developer Bias functionality while Test Print as Sequence of Print Process controls Developer Bias properly.

Items	Order	Checking matters	Result	Treatment
Short-Circuit	1	Unplugging “TB D” Tub Connector recovers the Error condition.	Yes	Check Short-Circuit behind the Tub Connector. (Roller side)
PW13555	2	Replacing PW13555 recovers the Error.	Yes	OK
Main Control PCB (PW13520)	3	Replacing PW13520 PCB recovers the error condition.	Yes	OK

E-0324/E-804 Abnormal Output of Process 1 Supply Bias
E-0424/E-1060 Abnormal Output of Process 2 Supply Bias
E-0524/E-1316 Abnormal Output of Process 3 Supply Bias
E-0624/E-1572 Abnormal Output of Process 4 Supply Bias

Error Mask Mode No. 00007 Sup Bias Error K
Error Mask Mode No. 00107 Sup Bias Error C
Error Mask Mode No. 00207 Sup Bias Error M
Error Mask Mode No. 00307 Sup Bias Error Y
<Note> Check Supply Bias functionality while Test Print as Sequence of Print Process controls Supply Bias properly.

Items	Order	Checking matters	Result	Treatment
Short-Circuit	1	Unplugging “TB S” Tub Connector recovers the Error condition.	Yes	Check Short-Circuit behind the Tub Connector. (Roller side)
PW13555	2	Replacing PW13555 recovers the Error.	Yes	OK
Main Control PCB (PW13520)	3	Replacing PW13520 PCB recovers the error condition.	Yes	OK

E-0325/E-805 Abnormal Output of Process 1 Blade Bias
E-0425/E-1061 Abnormal Output of Process 2 Blade Bias
E-0525/E-1317 Abnormal Output of Process 3 Blade Bias
E-0625/E-1573 Abnormal Output of Process 4 Blade Bias

Error Mask Mode No. 00008 Reg Bias Error K
Error Mask Mode No. 00108 Reg Bias Error C
Error Mask Mode No. 00208 Reg Bias Error M
Error Mask Mode No. 00308 Reg Bias Error Y
<Note> Check Blade (Registration) Bias functionality while Test Print as Sequence of Print Process controls Blade (Registration) Bias properly.

Items	Order	Checking matters	Result	Treatment
Short-Circuit	1	Unplugging “TB B” Tub Connector recovers the Error condition.	Yes	Check Short-Circuit behind the Tub Connector. (Roller side)
PW13555	2	Replacing PW13555 recovers the Error.	Yes	OK
Main Control PCB (PW13520)	3	Replacing PW13520 PCB recovers the error condition.	Yes	OK

E-0336/E-822 Process 1 Density Compensation Error
E-0436/E-1078 Process 2 Density Compensation Error
E-0536/E-1334 Process 3 Density Compensation Error
E-0636/E-1590 Process 4 Density Compensation Error

Automatic Density Control
Backup Data Mode No. 00720 Density Adjustment
No. 01785 Auto Density Adjust
"Disabled" Setting No. 00720 "0", No. 01785 "0"
"Enabled" Setting No. 00720 "1", No. 01785 "0"
Density Compensation is performed only when "Manual Density Adjust" in Auto Adjustment Mode is executed.
"Enabled" Setting No. 00720 "1", No. 01785 "1"
Density Compensation is performed automatically and when "Manual Density Adjust" is executed.
There is no corresponding item in Error Mask Mode. It is possible to disable Density Compensation by changing Backup Data.

Items	Order	Checking matters	Result	Treatment
Density Sensors	1	Cleaning density sensors recovers the error condition.	Yes	OK
LED Print Head	2	Cleaning LED Print Head recovers the error condition.	Yes	OK
Wiring Harness for Sensors	3	All of the following connectors are surely connected. J570 on PW13555, J1000 on Belt Unit, J1021 for hookup, J1001 J1002 J1003 J1004 J1006 for sensors.	No	Plug the Connector.
Density Sensors	4	Replacing density sensor recovers the error condition.	Yes	OK
PW13555	5	Replacing PW13555 recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	6	Replacing PW13520 PCB recovers the error condition.	Yes	OK

E-0337/E-823 Process 1 Standard Current Adjustment of 1st Transfer Error
E-0437/E-1079 Process 2 Standard Current Adjustment of 1st Transfer Error
E-0537/E-1335 Process 3 Standard Current Adjustment of 1st Transfer Error
E-0637/E-1591 Process 4 Standard Current Adjustment of 1st Transfer Error

Error Mask Mode No. 00009 Tr1 Adjust Error K
Error Mask Mode No. 00109 Tr1 Adjust Error C
Error Mask Mode No. 00209 Tr1 Adjust Error M
Error Mask Mode No. 00309 Tr1 Adjust Error Y
Backup Data Mode No. 00717 Tr1 Auto Adjustment

Items	Order	Checking matters	Result	Treatment
PW13555	1	Replacing PW13555 recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	2	Replacing PW13520 PCB recovers the error condition.	Yes	OK

E-0340/E-832 Process 1 Wire Cleaning Error
E-0440/E-1088 Process 2 Wire Cleaning Error
E-0540/E-1344 Process 3 Wire Cleaning Error
E-0640/E-1600 Process 4 Wire Cleaning Error

Error Mask Mode No. 00020 Wire Cleaning Err K
Error Mask Mode No. 00120 Wire Cleaning Err C
Error Mask Mode No. 00220 Wire Cleaning Err M
Error Mask Mode No. 00320 Wire Cleaning Err Y
Output Check Mode No. 00014 Wire Cleaning K
Output Check Mode No. 00114 Wire Cleaning C
Output Check Mode No. 00214 Wire Cleaning M
Output Check Mode No. 00314 Wire Cleaning Y
Input Check Mode No. 00019 Cleaning Motor Lock: K
Input Check Mode No. 00119 Cleaning Motor Lock: C
Input Check Mode No. 00219 Cleaning Motor Lock: M
Input Check Mode No. 00319 Cleaning Motor Lock: Y
Check if relevant "Wire Cleaning Motor" is possible to operate in Output Check Mode.

1. In case the Item is Inoperative (Not Rotating).

Items	Order	Checking matters	Result	Treatment
Motor rotation	1	It is hard to check the motor rotation by functioning sound for this WC Motor. Turn Off the machine in several seconds after activating the motor from Output Check Mode and check if cleaning pad position is moved from Home Position. Cleaning pad position is moved.	Yes	Go to Case 2
Wiring Harness for Motors	2	All of the following connectors are surely connected. J256 on PW13522, J335 for hookup to 1st Corona, J332 on Cleaning Motor C, J245/J246 between PW13522 and PW13523, J230 on PW13523, J286 on Process Unit, J211 on PW13520.	No	Plug the Connector.
WCMotor K(M18-1) WCMotor C(M18-2) WCMotor M(M18-3) WCMotor Y(M18-4)	3	Replacing relevant Wire Cleaning Motor (M18-x) recovers the error condition.	Yes	OK
PW13522	4	Replacing PW13522 recovers the error condition.	Yes	OK
PW13523	5	Replacing PW13523 recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	6	Replacing PW13520 PCB recovers the error condition.	Yes	OK

2. In case the Item is Operative.

Items	Order	Checking matters	Result	Treatment
Pad Cable	1	When Cleaning Pad is ended up to Home Position, increasing Motor current is detected as Motor Lock Signal. Cleaning Pad Cable tension is tight enough to lock the motor.(Not Slipping)	No	Replace Pad Cable.
Wiring Harness		All of the following connectors are surely connected. J256 on PW13522, J335 for hookup to 1st Corona, J332 on Cleaning Motor C, J245/J246 between PW13522 and PW13523, J230 on PW13523, J286 on Process Unit, J211 on PW13520.	No	Plug the Connector.
WCMotor K(M18-1) WCMotor C(M18-2) WCMotor M(M18-3) WCMotor Y(M18-4)	3	Replacing relevant Wire Cleaning Motor (M18-x) recovers the error condition.	Yes	OK
PW13522 or PW13523	4	Replacing PW13522 or PW13523recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	3	Replacing PW13520 PCB recovers the error condition.	Yes	OK

E-0350/E-848 Process 1 Printhead 1 LED LC Data Checksum Error
E-0351/E-849 Process 1 Printhead 2 LED LC Data Checksum Error
E-0352/E-850 Process 1 Printhead 3 LED LC Data Checksum Error
E-0450/E-1104 Process 2 Printhead 1 LED LC Data Checksum Error
E-0451/E-1105 Process 2 Printhead 2 LED LC Data Checksum Error
E-0452/E-1106 Process 2 Printhead 3 LED LC Data Checksum Error
E-0550/E-1360 Process 3 Printhead 1 LED LC Data Checksum Error
E-0551/E-1361 Process 3 Printhead 2 LED LC Data Checksum Error
E-0552/E-1362 Process 3 Printhead 3 LED LC Data Checksum Error
E-0650/E-1616 Process 4 Printhead 1 LED LC Data Checksum Error
E-0651/E-1617 Process 4 Printhead 2 LED LC Data Checksum Error
E-0652/E-1618 Process 4 Printhead 3 LED LC Data Checksum Error

Error Mask Mode No. 00014 LED CheckSum Err(K)L
Error Mask Mode No. 00015 LED CheckSum Err(K)C
Error Mask Mode No. 00016 LED CheckSum Err(K)R
Error Mask Mode No. 00114 LED CheckSum Err(C)L
Error Mask Mode No. 00115 LED CheckSum Err(C)C
Error Mask Mode No. 00116 LED CheckSum Err(C)R
Error Mask Mode No. 00214 LED CheckSum Err(M)L
Error Mask Mode No. 00215 LED CheckSum Err(M)C
Error Mask Mode No. 00216 LED CheckSum Err(M)R
Error Mask Mode No. 00314 LED CheckSum Err(Y)L
Error Mask Mode No. 00315 LED CheckSum Err(Y)C
Error Mask Mode No. 00316 LED CheckSum Err(Y)R

Items	Order	Checking matters	Result	Treatment
Wiring Harness	1	All of the following connectors are surely connected. J231 on PW13522, J232 J233 on PW13523, J245/J246 between PW13522 and PW13523, J230 on PW13523, J286 on Process Unit, J211 on PW13520.	No	Plug the Connector.
LED Printhead LED K-1 K-2 K-3 LED C-1 C-2 C-3 LED M-1 M-2 M-3 LED Y-1 Y-2 Y-3	2	Replacing relevant LED Printhead recovers the error condition.	Yes	OK
PW13522	3	Replacing PW13522 recovers the error condition.	Yes	OK
PW13523	4	Replacing PW13523 recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

E-0353/E-851 Process 1 Printhead 1 LED LC Data R/W Error
E-0354/E-852 Process 1 Printhead 2 LED LC Data R/W Error
E-0355/E-853 Process 1 Printhead 3 LED LC Data R/W Error
E-0453/E-1107 Process 2 Printhead 1 LED LC Data R/W Error
E-0454/E-1108 Process 2 Printhead 2 LED LC Data R/W Error
E-0455/E-1109 Process 2 Printhead 3 LED LC Data R/W Error
E-0553/E-1363 Process 3 Printhead 1 LED LC Data R/W Error
E-0554/E-1364 Process 3 Printhead 2 LED LC Data R/W Error
E-0555/E-1365 Process 3 Printhead 3 LED LC Data R/W Error
E-0653/E-1619 Process 4 Printhead 1 LED LC Data R/W Error
E-0654/E-1620 Process 4 Printhead 2 LED LC Data R/W Error
E-0655/E-1621 Process 4 Printhead 3 LED LC Data R/W Error

Error Mask Mode No. 00017 LED R/W Err(K)L
Error Mask Mode No. 00018 LED R/W Err(K)C
Error Mask Mode No. 00019 LED R/W Err(K)R
Error Mask Mode No. 00117 LED R/W Err(C)L
Error Mask Mode No. 00118 LED R/W Err(C)C
Error Mask Mode No. 00119 LED R/W Err(C)R
Error Mask Mode No. 00217 LED R/W Err(M)L
Error Mask Mode No. 00218 LED R/W Err(M)C
Error Mask Mode No. 00219 LED R/W Err(M)R
Error Mask Mode No. 00317 LED R/W Err(Y)L
Error Mask Mode No. 00318 LED R/W Err(Y)C
Error Mask Mode No. 00319 LED R/W Err(Y)R

Items	Order	Checking matters	Result	Treatment
Wiring Harness	1	All of the following connectors are surely connected. J231 on PW13522, J232 J233 on PW13523, J245/J246 between PW13522 and PW13523, J230 on PW13523, J286 on Process Unit, J211 on PW13520.	No	Plug the Connector.
LED Printhead LED K-1 K-2 K-3 LED C-1 C-2 C-3 LED M-1 M-2 M-3 LED Y-1 Y-2 Y-3	2	Replacing relevant LED Printhead recovers the error condition.	Yes	OK
PW13522	3	Replacing PW13522 recovers the error condition.	Yes	OK
PW13523	4	Replacing PW13523 recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	5	Can the problem be fixed by replacing the Main Control PCB?	Yes	OK

E-0700/E-1792 Paper Feed Motor Error

Error Mask Mode No. 00504 Feed Motor Error
Output Check Mode No. 00507 Feed Motor
Check if “Paper Feed Motor” is possible to operate in Output Check Mode.

1. In case the Item is Inoperative.

Items	Order	Checking matters	Result	Treatment
	1	The operation “Main Switch Off/On on10 minutes later” recovers the error condition.	Yes	Go to Case 2
Wiring Harness	2	Unplugging J575 on PW13555 recovers the error condition.	Yes	Check the motor harness damage.
PF4 Motor (M4-4)	3	Replacing PF4 Motor (M4-4) recovers the error condition.	Yes	OK
PW13555	4	Replacing PW13555 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	5	Replacing PW13520 PCB recovers the error condition.	Yes	OK

2. In case the Item is Operative.

Items	Order	Checking matters	Result	Treatment
	1	Several test prints reproduces the error again	No	OK
PF4 Motor (M4-4)	2	Replacing PF4 Motor (M4-4) recovers the error condition.	Yes	OK
PW13555	3	Replacing PW13555 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	4	Replacing PW13520 PCB recovers the error condition.	Yes	OK

E-0702/E-1794 Belt 1 Motor Error

Error Mask Mode No. 00503 Belt Motor Error
Output Check Mode No. 00506 Belt Motor
Check if “Belt Motor” is possible to operate in Output Check Mode.

1. In case the Item is Inoperative.

Items	Order	Checking matters	Result	Treatment
	1	The operation “Main Switch Off/On on10 minutes later” recovers the error condition.	Yes	Go to Case 2
Wiring Harness	2	Unplugging J568 on PW13555 recovers the error condition.	Yes	Check the motor harness damage.
Belt Motor (M6)	3	Replacing Belt Motor (M6) recovers the error condition.	Yes	OK
PW13555	4	Replacing PW13555 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	5	Replacing PW13520 PCB recovers the error condition.	Yes	OK

2. In case the Item is Operative.

Items	Order	Checking matters	Result	Treatment
	1	Several test prints reproduces the error again	No	OK
Belt Motor (M6)	2	Replacing Belt Motor (M6) recovers the error condition.	Yes	OK
PW13555	3	Replacing PW13555 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	4	Replacing PW13520 PCB recovers the error condition.	Yes	OK

E-0705/E-1797 Registration Motor 1 Error
E-0706/E-1798 Registration Motor 2 Error
E-0707/E-1799 Registration Motor 3 Error

Error Mask Mode No. 00500 Regist Motor1 Error
Error Mask Mode No. 00501 Regist Motor2 Error
Error Mask Mode No. 00502 Regist Motor3 Error
Output Check Mode No. 00500 Regist Motor1
Output Check Mode No. 00501 Regist Motor2
Output Check Mode No. 00502 Regist Motor3
Check if “Regist Motor” is possible to operate in Output Check Mode.

1. In case the Item is Inoperative.

Items	Order	Checking matters	Result	Treatment
	1	The operation “Main Switch Off/On on10 minutes later” recovers the error condition.	Yes	Go to Case 2
Wiring Harness	2	Unplugging J563 on PW13555 recovers the error condition.	Yes	Check the motor harness damage.
Regist Motor PF1 MTR (M4-1) PF2 MTR (M4-2) PF3 MTR (M4-3)	3	Replacing Regist Motor (M4-x) recovers the error condition.	Yes	OK
PW13555	4	Replacing PW13555 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	5	Replacing PW13520 PCB recovers the error condition.	Yes	OK

2. In case the Item is Operative.

Items	Order	Checking matters	Result	Treatment
	1	Several test prints reproduces the error again	No	OK
Regist Motor PF1 MTR (M4-1) PF2 MTR (M4-2) PF3 MTR (M4-3)	2	Replacing Regist Motor (M4-x) recovers the error condition.	Yes	OK
PW13555	3	Replacing PW13555 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	4	Replacing PW13520 PCB recovers the error condition.	Yes	OK

E-0712/E-1810 Transfer Roller Set Motor 2 Error

Error Mask Mode No. 00505 Tr2 Set MT Error
Output Check Mode No. 00512 Tr2 Separate Motor
Input Check Mode No. 00511 Tr2 RollerSet Sen
Check if relevant “Transfer Roller Set Motor” is possible to operate in Output Check Mode.

1. In case the Item is Inoperative.

Items	Order	Checking matters	Result	Treatment
Wiring Harness for Motors	1	Any of following connectors is unplugged. J563 on PW13555, J1900 on Paper Feed Unit, J901 on 2TR SET MOTOR.	Yes	Plug the Connector.
2Tr Set Motor (M5)	2	Replacing Tr2 Set Motor (M5) recovers the error condition.	Yes	OK
PW13555	3	Replacing PW13555 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	4	Replacing PW13520 PCB recovers the error condition.	Yes	OK

2. In case the Item is Operative.

Items	Order	Checking matters	Result	Treatment
Wiring Harness for Sensors	1	All of the following connectors are surely connected. J563 on PW13555, J1900 on Paper Feed Unit, J902 on 2TR SET SENSOR	No	Plug the Connector.
Tr2 Roller Set Sensor (PH61)	2	Transfer Roller Set Sensor Signals are detected correctly. Sensor Status -Set status (H to L) -Released status (L to H)	No	Replace relevant Tr2 Roller Set Sensor.
PW13555	3	Replacing PW13555 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	4	Replacing PW13520 PCB recovers the error condition.	Yes	OK

E-0721/E-1825 KTS Belt Skew Error (Left Side)
E-0722/E-1826 KTS Belt Skew Error (Right Side)

Error Mask Mode No. 00706 Belt Skew Error (L)
Error Mask Mode No. 00707 Belt Skew Error (R)
Input Check Mode No. 00512 Belt Skew Sensor L
Input Check Mode No. 00513 Belt Skew Sensor R

1. In case the Sensor works correctly.

Items	Order	Checking matters	Result	Treatment
Belt Position	1	Relevant Sensor is detecting side edge of KTS Belt.	Yes No	Fix the Belt Position. Go to Case 2.
Skew Adjustment	2	Several test prints reproduces the error condition again.	Yes No	Need mechanical Skew Adjustment. OK

2. In case the Sensor works incorrectly.

Items	Order	Checking matters	Result	Treatment
Sensor malfunction	1	Cleaning sensor detecting point recovers the error condition.	Yes	OK
Wiring Harness for Sensors	2	All of the following connectors are surely connected. J568 on PW13555, J1009 on Belt Unit, J1013 J1014 on Belt Skew Sensors.	No	Plug the Connector.
KTS Belt Skew Sensor (PH57 PH58)	3	KTS Belt Skew Sensor detects correct status. "H" = Abnormal.	No	Replace Skew Sensor.
PW13555	4	Replacing PW13555 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	5	Replacing PW13520 PCB recovers the error condition.	Yes	OK

E-0731/E-1841 Abnormal Output of Separation Minus Charge at 2nd Transfer
E-0732/E-1842 Abnormal Output of Separation Plus Charge at 2nd Transfer

Error Mask Mode No. 00703 Tr2 Sep Minus Error
Error Mask Mode No. 00704 Tr2 Sep Plus Error

Items	Order	Checking matters	Result	Treatment
PW13556	1	Replacing PW13556 recovers the error condition.	Yes	OK
PW13555	2	Replacing PW13555 recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	3	Replacing PW13520 PCB recovers the error condition.	Yes	OK

E-0733/E-1843 Standard Current Adjustment of 2nd Transfer Error

Error Mask Mode No. 00705 Tr2 Adjust Error
Backup Data Mode No. 00718 Tr2 Auto Adjustment

Items	Order	Checking matters	Result	Treatment
PW13556	1	Replacing PW13556 recovers the error condition.	Yes	OK
PW13555	2	Replacing PW13555 recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	3	Replacing PW13520 PCB recovers the error condition.	Yes	OK

E-0900/E2304 Fuser Low-Temp Error

> **⚠ NOTE**
>
> Temperature will rise as high as IR Lamp operates, and this would damage Fuser Unit due to overheat.
> Do not try to light IR Lamp for a long period from Output Check Mode. As there is no temperature control by the system while activating IR Lamp from Output Check Mode.

Output Check Mode No. 00600 SSR1 (H1: Center)
Output Check Mode No. 00601 SSR2 (H2: Side)
Information Mode No. 00013 Detection Temp1
Information Mode No. 00014 Detection Temp2
Check if relevant "IR Lamp" is possible to operate in Output Check Mode.

1. In case the Item is Inoperative.

Items	Order	Checking matters	Result	Treatment
Wiring Harness	1	Any of following connectors is unplugged. J224 on PW13520, TB1 to TB4 on SSR1/SSR2, TB101 to TB108 on AC Terminal PW14210, TB0 to TB8 on RY2.	Yes	Plug the Connector.
Inter Lock Circuit	2	Voltage between RY2-0 and RY2-1 is 10 to 12V DC. (RY2-0 and Frame GND is 10 to 12V DC, RY2-1 and Frame GND is 0V DC)	No	Check Output of each DC Power Supply is OK. Check Inter Lock circuit is OK or replace PW13555
RY2	3	Voltage between RY2-4 and RY2-8 is 200V AC.	No	Replace RY2
IR Lamp (H1 H2)	4	Unplug the machine. Unplug IR Lamp. Read resistance between IR Lamp side by side connectors. There is readable resistance read by Multi Meter.	No	Replace IR Lamp.
SSR1	5	Run Output Check No. 00600 SSR1. IR Lamp (H1: Center) is lighting while voltage between SSR1-3 and SSR1-4 is 24V DC. (SSR1-3 and F-GND is 24V DC, SSR1-4 and F-GND is 0V DC)	No	In Case SSR1-3 and SSR1-4 is 24V DC, replace SSR1. In Case SSR1-3 and F-GND is not 24V DC check DCP. In Case SSR1-4 and F-GND is not 0V DC replace PW13520.
SSR2	6	Run Output Check No. 00601 SSR2. IR Lamp (H2: Side) is lighting while voltage between SSR2-3 and SSR2-4 is 24V DC. (SSR2-3 and F-GND is 24V DC, SSR2-4 and F-GND is 0V DC)	No	In Case SSR2-3 and SSR2-4 is 24V DC, replace SSR2. In Case SSR2-3 and F-GND is not 24V DC check DCP. In Case SSR2-4 and F-GND is not 0V DC replace PW13520.
PW13555	7	Replacing PW13555 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	8	Replacing PW13520 PCB recovers the error condition.	Yes	OK

2. In case the Item is Operative.

Items	Order	Checking matters	Result	Treatment
Wiring Harness	1	All of the following connectors are surely connected. J559 on PW13555, J700 on Fuser Unit, J707 J708 on Thermistor	No	Plug the Connector.
Thermistor (TH1 TH2)	2	Check the detecting temperature from Information Mode No. 00013 and No. 00014. It is possible to observe the temperature rise up while IR Lamp light.	No	Check Thermistor mounting conditions. Or replace relevant Thermistor.
PW13555	3	Replacing PW13555 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	4	Replacing PW13520 PCB recovers the error condition.	Yes	OK

E-0902/E-2306 Out of Web Error
(also Trouble Shoot for Not detecting Out of Web Error)

Information Mode No. 00607 Web End Sensor ("H" = Web End)

Items	Order	Checking matters	Result	Treatment
Sensor Detection	1	Web End Sensor is detecting "H" = Web End condition.	Yes	To make Web End Sensor detecting Web Remaining condition (status "L") change and remount a new Web correctly.
Sensor Actuator	2	Sensor is still detecting "H"	Yes	Verify the actuator for Web End Sensor is cutting Web End Sensor when assembling Web Unit correctly. (should be detecting "L" with correctly assembling condition)
Wiring Harness	3	Verify Web End Sensor detects "H" while disassembling Web Unit.	No	Check J558 on PW13555, J700 on Fuser Unit and J709 on Web End Sensor are surely connected.
Web End Sensor (PH68)	4	Sensor is still detecting "L" while disassembling Web Unit.	Yes	Replace Web End Sensor. (should be detecting "H" with disassembling condition)
Clear / Reset	5	Clearing No. 0003 Clear Web Info in Clear/Reset Mode recovers the Error condition.	Yes	OK
PW13555	6	Replacing PW13555 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	7	Replacing PW13520 PCB recovers the error condition.	Yes	OK

E-0904/E-2308 Fuser Over-Temp at Thermistor 1 Error
E-0905/E-2304 Fuser Over-Temp at Thermistor 2 Error

⚠ NOTE

Temperature will rise as high as IR Lamp operates, and this would damage Fuser Unit due to overheat.
Do not try to light IR Lamp for a long period from Output Check Mode. As there is no temperature control by the system while activating IR Lamp from Output Check Mode.

Output Check Mode No. 00600 SSR1 (H1: Center)
Output Check Mode No. 00601 SSR2 (H2: Side)
Information Mode No. 00013 Detection Temp1
Information Mode No. 00014 Detection Temp2
Check if relevant "IR Lamp" is possible to operate in Output Check Mode.

1. In case the Item is Inoperative. (IR Lamp lights but not turn OFF)

Items	Order	Checking matters	Result	Treatment
Wiring Harness	1	Following connectors and wires are OK. J224 on PW13520, TB1 to TB4 on SSR1/SSR2, TB101 to TB108 on AC Terminal PW14210, TB0 to TB8 on RY2.	No	Correct
SSR1	2	If IR Lamp (H1: Center) is lighting while Output Check No. 00600 SSR1 status is "Inactive". Please check voltage between SSR1-3 and SSR1-4. (Also between SSR1-4 and F-GND.)	Yes	In Case SSR1-3 and SSR1-4 is 0V DC, replace SSR1. In Case SSR1-4 and F-GND is 0V DC replace PW13520 or check the wiring.
SSR2	3	If IR Lamp (H2: Center) is lighting while Output Check No. 00601 SSR2 status is "Inactive". Please check voltage between SSR2-3 and SSR2-4. (Also between SSR2-4 and F-GND.)	No	In Case SSR2-3 and SSR2-4 is 0V DC, replace SSR2. In Case SSR2-4 and F-GND is 0V DC replace PW13520 or check the wiring.
PW13555	4	Replacing PW13555 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	5	Replacing PW13520 PCB recovers the error condition.	Yes	OK

2. In case the Item is Operative.

Items	Order	Checking matters	Result	Treatment
Wiring Harness	1	All of the following connectors are surely connected. J559 on PW13555, J700 on Fuser Unit, J707 J708 on Thermistor	No	Plug the Connector.
Thermistor (TH1 TH2)	2	Check the detecting temperature from Information Mode No. 00013 and No. 00014. It is possible to observe the temperature rise up while IR Lamp light.	No	Check Thermistor mounting conditions. Or replace relevant Thermistor.
PW13555	3	Replacing PW13555 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	4	Replacing PW13520 PCB recovers the error condition.	Yes	OK

E-0906/E-2310 Fuser Thermostat 1 Error
E-0907/E-2311 Fuser Thermostat 2 Error

Input Check Mode No. 00616 Thermostat Status-L ("H" = Open)
Input Check Mode No. 00617 Thermostat Status-L ("H" = Open)
First remove any cause(s) for Overheat **(E-0904/E-2308 / E-0905/E-2304)**

Items	Order	Checking matters	Result	Treatment
Wiring Harness	1	All of the following connectors are surely connected. J552 on PW13555, J700 on Fuser Unit, TBs to Thermostats.	No	Plug the Connector.
Thermostat1 (TS1) Thermostat2 (TS2)	2	Continuity of Thermostat is OK.	No	Replace Thermostat.
F550 on PW13555	3	J552-1 and J552-4 on PW13555 is 10 to 12V DC.	No	Check continuity of F555 on PW13555.
PW13555	4	Replacing PW13555 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	5	Replacing PW13520 PCB recovers the error condition.	Yes	OK

E-0920/E-2336 Fuser Motor Error

Error Mask Mode No. 00602 Fuser Motor Error
Output Check Mode No. 00602 Fuser Motor
Check if "Fuser Motor" is possible to operate in Output Check Mode.

1. In case the Item is Inoperative.

Items	Order	Checking matters	Result	Treatment
	1	The operation "Main Switch Off/On on10 minutes later" recovers the error condition.	Yes	Go to Case 2
Wiring Harness	2	Unplugging J557 on PW13555 recovers the error condition.	Yes	Check the motor harness damage.
Fuser Motor (M3)	3	Replacing Fuser Motor (M3) recovers the error condition.	Yes	OK
PW13555	4	Replacing PW13555 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	5	Replacing PW13520 PCB recovers the error condition.	Yes	OK

2. In case the Item is Operative.

Items	Order	Checking matters	Result	Treatment
	1	Several test prints reproduces the error again	No	OK
Fuser Motor (M3)	2	Replacing Fuser Motor (M3) recovers the error condition.	Yes	OK
PW13555	3	Replacing PW13555 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	4	Replacing PW13520 PCB recovers the error condition.	Yes	OK

E-0930/E-2352 Fuser Paper Feed Tension Error

Error Mask Mode No. 00604 Tension Error
Input Check Mode No. 00618 Tension Error Status

Items	Order	Checking matters	Result	Treatment
Wiring Harness	1	All of the following connectors are surely connected. J559 on PW13555, J700 on Fuser Unit, J704 on Load Cell.	No	Plug the Connector.
Load Cell	2	Replacing PW13555 PCB recovers the error condition.	Yes	OK
PW13555	3	Replacing PW13555 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	4	Replacing PW13520 PCB recovers the error condition.	Yes	OK

E-0A03/E-2563 Flash Memory Error

Error Mask Mode No. 00701 Flash Memory Error

Items	Order	Checking matters	Result	Treatment
Main Control PCB (PW13520)	1	Replacing PW13520 PCB recovers the error condition.	Yes	OK

E-0A04/E-2564 High Voltage Board 1 Communication Error

Error Mask Mode No. 00706 HV Bord1 Error

Items	Order	Checking matters	Result	Treatment
Wiring Harness	1	Following connectors are surely connected. J214 on PW13520 and J567 on PW13555	No	Plug the Connector.
PW13555	2	Replacing PW13555 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	3	Replacing PW13520 PCB recovers the error condition.	Yes	OK

E-0A05/E-2565 High Voltage Board 2 Communication Error

Error Mask Mode No. 00707 HV Bord2 Error

Items	Order	Checking matters	Result	Treatment
Wiring Harness	1	Following connectors are surely connected. J573 on PW13555, J561 on PW13556, J214 on PW13520 and J567 on PW13555	No	Plug the Connector.
PW13556	2	Replacing PW13556 PCB recovers the error condition.	Yes	OK
PW13555	3	Replacing PW13555 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	4	Replacing PW13520 PCB recovers the error condition.	Yes	OK

E-0A41/E-2625 KNC1 Error
E-0A42/E-2626 KNC2 Error
E-0A43/E-2627 KNC3 Error
E-0A44/E-2628 KNC4 Error

Items	Order	Checking matters	Result	Treatment
Wiring Harness	1	Following connectors are surely connected. J267 on PW13551 and J215 on PW13520	No	Plug the Connector.
PW13551	2	Replacing PW13551 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	3	Replacing PW13520 PCB recovers the error condition.	Yes	OK

E-0A51/E-2641 High Voltage Board Error (Abnormal Transe1)
E-0A52/E-2042 High Voltage Board Error (Abnormal Transe2)

Error Mask Mode No. 00708 Tranceformer1 Error
Error Mask Mode No. 00709 Tranceformer2 Error

Items	Order	Checking matters	Result	Treatment
Wiring Harness	1	Following connectors are surely connected. J214 on PW13520 and J567 on PW13555	No	Plug the Connector.
PW13555	2	Replacing PW13555 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	3	Replacing PW13520 PCB recovers the error condition.	Yes	OK

E-0C01/E-3073 Density Sensor 1 Adjustment Error
E-0C02/E-3074 Density Sensor 2 Adjustment Error
E-0C03/E-3075 Density Sensor 3 Adjustment Error
E-0C04/E-3076 Density Sensor 4 Adjustment Error
E-0C05/E-3077 Density Sensor 5 Adjustment Error

Error Mask Mode No. 00710 DensitySensor1 Error
Error Mask Mode No. 00711 DensitySensor2 Error
Error Mask Mode No. 00712 DensitySensor3 Error
Error Mask Mode No. 00713 DensitySensor4 Error
Error Mask Mode No. 00714 DensitySensor5 Error

Items	Order	Checking matters	Result	Treatment
Density Sensors	1	Cleaning density sensors recovers the error condition.	Yes	OK
Wiring Harness for Sensors	2	All of the following connectors are surely connected. J570 on PW13555, J1000 on Belt Unit, J1021 for hookup, J1001 J1002 J1003 J1004 J1006 for sensors.	No	Plug the Connector.
Density Sensors	3	Replacing density sensor recovers the error condition.	Yes	OK
PW13555	4	Replacing PW13555 recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	5	Replacing PW13520 PCB recovers the error condition.	Yes	OK

E-0D01/E-3329 Cooling Fan 1 Error

Error Mask Mode No. 00509 Cooling Fan 1 Error
Output Check Mode No. 00517 Cooling Fan 1
Input Check Mode No. 00530 Cooling Fan 1 Status (“H/L Pulse” = Operating)
Check if “Cooling Fan 1” is possible to operate in Output Check Mode.

1. In case the Item is Inoperative.

Items	Order	Checking matters	Result	Treatment
Wiring Harness	1	Following connectors are surely connected. J576 on PW13555, J492 J428 on Left Door FAN8 FAN9 FAN10 FAN11 FAN12 to Left Door FAN.	No	Plug the Connector.
Left Door FAN (FM8-1 FM8-2 FM8-3 FM8-4 FM8-5)	2	Replacing Left Door FAN recovers the error condition.	Yes	OK
Flat Cable	3	Flat Cable between PW13520 (J214) and PW13555 (J567) is unplugged.	Yes	Plug the Flat Cable.
PW13555	4	Replacing PW13555 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	5	Replacing PW13520 PCB recovers the error condition.	Yes	OK

2. In case the Item is Operative.

Items	Order	Checking matters	Result	Treatment
Wiring Harness	1	Following connectors are surely connected. J576 on PW13555, J492 J428 on Left Door FAN8 FAN9 FAN10 FAN11 FAN12 to Left Door FAN.	No	Plug the Connector.
Left Door FAN (FM8-1 FM8-2 FM8-3 FM8-4 FM8-5)	2	Replacing Left Door FAN recovers the error condition.	Yes	OK
Flat Cable	3	Flat Cable between PW13520 (J214) and PW13555 (J567) is surely connected.	No	Plug the Flat Cable.
PW13555	4	Replacing PW13555 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	5	Replacing PW13520 PCB recovers the error condition.	Yes	OK

E-0D05/E-3333 DCP Cooling Fan 1 Error

Error Mask Mode No. 00718 DCP Cooling Fan Error

Items	Order	Checking matters	Result	Treatment
Wiring Harness	1	Following connectors are surely connected. J578 on PW13555, J421 J420 on DCP Cooling FAN.	No	Plug the Connector.
DCP Cooling FAN (FM5)	2	Replacing DCP Cooling FAN recovers the error condition.	Yes	OK
Flat Cable	3	Flat Cable between PW13520 (J214) and PW13555 (J567) is unplugged.	Yes	Plug the Flat Cable.
PW13555	4	Replacing PW13555 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	5	Replacing PW13520 PCB recovers the error condition.	Yes	OK

E-0D09/E-3337 Fuser Blower 1 Error

Error Mask Mode No. 00603 Fuser Fan Error1
Output Check Mode No. 00606 Fuser Cooling Fan
Input Check Mode No. 00614 Fuser Fan Status (“H/L Pulse” = Operating)

Items	Order	Checking matters	Result	Treatment
Wiring Harness	1	Following connectors are surely connected. J557 on PW13555, J701 on Fuser Unit J711 on Fuser Fan 1	No	Plug the Connector.
Fuser Fan 1 (FM1)	2	Replacing Fuser Fan 1 recovers the error condition.	Yes	OK
Flat Cable	3	Flat Cable between PW13520 (J214) and PW13555 (J567) is unplugged.	Yes	Plug the Flat Cable.
PW13555	4	Replacing PW13555 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	5	Replacing PW13520 PCB recovers the error condition.	Yes	OK

E-0D0B/E-3339 Paper Adsorption Fan Error

Error Mask Mode No. 00715 Adsorption Fan Error
Output Check Mode No. 00516 Adsorption Fan
Input Check Mode No. 00702 Adsorption Fan Status (“H/L Pulse” = Operating)

Items	Order	Checking matters	Result	Treatment
Wiring Harness	1	Following connectors are surely connected. J556 on PW13555, FAN5 on 2TR FAN	No	Plug the Connector.
2TR FAN (FM3)	2	Replacing 2TR FAN recovers the error condition.	Yes	OK
Flat Cable	3	Flat Cable between PW13520 (J214) and PW13555 (J567) is unplugged.	Yes	Plug the Flat Cable.
PW13555	4	Replacing PW13555 PCB recovers the error condition.	Yes	OK
Main Control PCB (PW13520)	5	Replacing PW13520 PCB recovers the error condition.	Yes	OK

7. 3 Troubleshooting - Image Quality

7. 3. 1 Basic Image Adjustment

The followings are the standard settings of image creation components.
When a defective image is printed out, please check if these settings are correct.

Component	Check Point	Designated voltage	Way of adjustment	Remarks
Image Corona	K & M : CP-11 (+) CP-12 (-) C & Y : CP-21 (+) CP-22 (-)	80mm/s: 1.4Vdc 50mm/s: 1.4Vdc	Setting No. 0400 to 0403 0404 to 0407	● Adjuste the correct Setting No. according to the print speed and process color. ● There are 2 HV Power Supplies. Upper one is for M & Y and lower one is for K and C. ● Multimeter shows a 1/1000 value against the value of each Setting No..
Grid Boas				● Not available to adjust. ● Refernce - Zener PCB : 440V + 100kΩ - Grid Bias : -570V
Transfer Roller Primaly	Primary TR PW13555 K : TB_TR-1 C : TB_TR-2 M : TB_TR-3 Y : TB_TR-4	Primary TR 80mm/s: 25μA 50mm/s: 15μA	Setting No. Primary TR 0436 to 0439 0725 to 0728	● Target Value Settings for the “Self-Stabilizing Current Controll”
Transfer Roller Secondary	Secondary TR PW13556 TB_TR2	Secondary TR - All media except film 900 to 2100V - Film 2600V	Setting No. Secondary TR 0520 to 0619	● Adjuste the correct Setting No. according to the media type and the volumetric humidity conditions. ● In case the media type is Film, same values for all volumetric humidity conditions. ● Same Values are applied for both 80mm/s and 50mm/s
Developer Bias (-)	PW13555 K : TB_D-1 C : TB_D-2 M : TB_D-3 Y : TB_D-4	K : -200V C : -180V M : -180V Y : -180V	Setting No. D- Ctrl : OFF 0460 to 0463 D-Ctrl: ON 0476 to 0479	● Adjuste the correct Setting No. according to the print process color. ● Same Values are applied for both 80mm/s and 50mm/s
Supply Bias	PW13555 K : TB_S-1 C : TB_S-2 M : TB_S-3 Y : TB_S-4	K: Δ+100V/ Δ-350V C: Δ+100V/ Δ-350V M: Δ+100V/ Δ-350V Y: Δ+100V/ Δ-350V	Setting No. D- Ctrl : OFF 0464 to 0471 D- Ctrl : ON 0480 to 0487	● Adjuste the correct Setting No. according to the print process color. ● Same Values are applied for both 80mm/s and 50mm/s
Regulation Bias	PW13555 K : TB_B-1 C : TB_B-2 M : TB_B-3 Y : TB_B-4	K : Δ-80V C : Δ-80V M : Δ-80V Y : Δ-80V	Setting No. D- Ctrl : OFF 0472 to 0475 D- Ctrl : ON 0488 to 0491	● Adjuste the correct Setting No. according to the print process color. ● Same Values are applied for both 80mm/s and 50mm/s
Discharge Needles Bias	PW13556 TB_SEP	80mm/s: 5.0kVpp 50mm/s: 5.0kVpp	Setting No. 80mm/s : 0453 50mm/s : 0454	

7. 3. 2 Cause of Frequent Image Problem

If a defective image appears on the print frequently with keeping a constant interval, please check the length of interval to quickly find the suspicious part.

Interval	Suspicious part
130mm	Developer Roller
201mm	Fuser Roller
170mm	Belt Feed Roller
137mm	Supply Roller
251mm	Drum
162mm	Regulation Roller
1565mm	Belt
110mm	Primary Secondary Transfer Roller

7. 3. 3 Countermeasures - Image Quality

7. 3. 3. 1 Halftone is light (or dark)

Cause	Checking order	Checking	Result	Treatment
LED Head	1	Is the lens array of LED Head dirty?	Yes	Clean it.
Printing media	2	Is the problem fixed by the use of brand-new printing media?	Yes	1. As the printing media is humidified, advise the user for correct way of storage. 2. Advise the user that image quality issues happen if non-recommended media is used.
Image Corona	3	Is the Image Corona dirty?	Yes	Clean the wire, grid plate and housing. Or replace the wire if it is too dirty.
	4	Is the wire placed "out of position", which causes its abnormal height?	Yes	Correct it.
	5	Is correct electric current inputted to the Image Corona? See [7.3.1 Basic Image Adjustment] for correct current.	No	Adjust the current in the concerning BUD.
Image Enhancement setting	6	Is proper Image Enhancement level selected? (If the image is not enhanced enough due to incorrect selection, the halftone image may look light.)	No	Select a proper level.
Auto Density Control	7	Is the Density Control set to "auto std"? Srtting No. 0720 :1, 1785 :1	No	Set it to "auto std".
	8	Is the Density Sensor dirty?	Yes	Clean it.
	9	Disable Auto Density Control, adjust both the Developer Bias and the LED Head properly, and then pritnt the halftone. Does the halftone have enough density if Auto Density Control is disabled? Setting No. 0720 : 0, 1785 : 0	Yes	Renew Target Density.
Eraser Lamp	10	Does the Eraser Lamp lights correctly?	No	1. Check the harness connected to the Eraser Lamp. 2. Check or replace the Eraser Lamp.
Transfer Roller (Primary & Secondary)	11	Check the toner image on the Transfer Belt that is before the arrival to the Secondary Transfer area. Is the image normal?	Yes	Go to check 12.
			No	Go to check 18
	12	In the output check mode of Maintenance GUI, operate the Secondary Transfer Press Motor by executing the following item No. No.0512: Secondary Transfer Press Motor Does the Secondary Transfer Roller moves to its setting position smoothly?	No	Check both Secondary Transfer Roller and its press motor.
	13	Does a high voltage leakage happen in Secondary Transfer section?	Yes	Check the concerning harness.
	14	Is a high voltage lead correctly connected between HV Power Supply and Secondary Transfer Roller?	Yes	Improve the connection, or replace the lead wire.
	15	In Backup Data of Maintenance GUI, is the following item set to 1 ? No.718 : Tr2 Auto Adjustment	No	Set it to 1 to enable auto adjust ment.

(See next page)

Cause	Checking order	Checking	Result	Treatment
	16	In Backup Data of Maintenance GUI, is each if the following item set to proper value as shown in below? No. 520-619 : Tr2 Auto Vol Type00A-24D All media other than "Type 02" (Film) Type xxA : 2100 Type xxB : 1400 Type xxC : 900 Type xxD : 900 Type 02 (Film) Type xxA : 2600 Type xxB : 2600 Type xxC : 2600 Type xxD : 2600	No	Set it to proper value.
	17	Replacing PW13556 recovers the image quality.	Yes	OK
	18	In the output check mode of Maintenance GUI, operate each Primary Transfer Press Motor by executing the following item No. No.0508: Primary Transfer Press Motor (K) No.0509: Primary Transfer Press Motor (C) No.0510: Primary Transfer Press Motor (M) No.0511: Primary Transfer Press Motor (Y) Does each Primary Transfer Roller moves to its setting position smoothly?	No	Check both Primary Transfer Roller and its press motor.. NOTE: Do not open/close the Process Unit with pressing the Primary Transfer Roller to the Belt.
	19	Does a high voltage leakage happen in Primary Transfer section?	Yes	Check the harness.
	20	Is a high voltage lead correctly connected between HV Power Supply and Primary Transfer Roller?	Yes	Improve the connection, or replace the lead wire.
	21	In Backup Data of Maintenance GUI, is the following item set to 2? No.717 : Tr1 Auto Adjustment	No	Set it to 2 to enable auto adjust ment.
	22	In Backup Data of Maintenance GUI, is each if the following item set to proper value as shown in below? Tr1 Target Current 80mm/s) No.0436 : 25 No.0437 : 25 No.0438 : 25 No.0439 : 25 Tr1 Target Current 50mm/s) No.0725 : 15 No.0726 : 15 No.0727 : 15 No.0728 : 15	No	Set it to proper value.
	23	Replacing PW13555 recovers the image quality.	Yes	OK
Supply of Develper Bias (Contact point)	24	Does each copper bias plate on the Developer Unit surely contact the Bias Pin on printer side?	No	Check the injstallation condition of Developer Unit. Be sure that copper plate surely touches the Bias pin.
	25	Is there an electric continuity between each copper bias plate to each concerning rollers in the Developer Unit?	No	Surely contact the copper bias plate to the shaft of each roller. If necessary apply conductive greace to the contact point.

(See next page)

Cause	Checking order	Checking	Result	Treatment
Installation condition of Developer Unit	26	Doet the eccentric cam correctly puches the Developer Unit to the Drum?	No	Check the developer pressurize mechanism, such as cam, driving mechanism and motor.
Developer Unit	27	Is the Developer Roller evenly covered with the toner?	No	Disassemble the Developer Unit to find the cause.
HV Unit	28	Is correct Bias supplied to each roller in the Developer Unit?	No	Adjust "incorrect" bias properly.
PW13520 PCB	29	Does the problem disappear when you replace the PW13520 or PW13555?	Yes	OK
Drum	30	Does the problem disappear when you replace the Drum?	Yes	OK

7. 3. 3. 2 Halftone and solid images are too light

Cause	Checking order	Checking	Result	Treatment
Printing media	1	Is the problem fixed by the use of brand-new printing media?	Yes	1. As the printing media is humidified, advise the user for correct way of storage. 2. Advise the user that image quality issues happen if non-recommended media is used.
Auto Density Control	2	Is the Density Control set to "auto std"? Srtting No. 0720 :1, 1785 :1	No	Set it to "auto std".
	3	Is the Density Sensor dirty?	Yes	Clean it.
	4	Disable Auto Density Control, adjust both the Developer Bias and the LED Head properly, and then pritnt the halftone. Does the halftone have enough density if Auto Density Control is disabled? Setting No. 0720 : 0, 1785 : 0	Yes	Renew Target Density.
Toner image on the Transfer Belt	5	Check the toner image on the Transfer Belt that is before the arrival to the Secondary Transfer area. Is the image normal?	Yes	Go to check 6.
			No	Go to check 12.
Secondary Transfer	6	In the output check mode of Maintenance GUI, operate the Secondary Transfer Press Motor by executing the following item No. No.0512: Secondary Transfer Press Motor Does the Secondary Transfer Roller moves to its setting position smoothly?	No	Check both Secondary Transfer Roller and its press motor.
	7	Does a high voltage leakage happen in Secondary Transfer section?	Yes	Check the concerning harness.
	8	Is a high voltage lead correctly connected between HV Power Supply and Secondary Transfer Roller?	Yes	Improve the connection, or replace the lead wire.
	9	In Backup Data of Maintenance GUI, is the following item set to 1 (TRUE)? No.718 : Tr2 Auto Adjustment	No	Set it to 1 to enable auto adjust ment.
	10	In Backup Data of Maintenance GUI, is each if the following item set to proper value as shown in below? No. 520-619 : Tr2 Auto Vol Type00A-24D All media other than "Type 02" (Film) Type xxA : 2100 Type xxB : 1400 Type xxC : 900 Type xxD : 900 Type 02 (Film) Type xxA : 2600 Type xxB : 2600 Type xxC : 2600 Type xxD : 2600	No	Set it to proper value.
	11	Replacing PW13556 recovers the image quality.	Yes	OK
Developer Unit	12	Is the Developer Roller evenly covered with the toner?	Yes	Go to check 19
			No	Go to check 13.

(See next page)

Cause	Checking order	Checking	Result	Treatment
	13	Does each copper bias plate on the Developer Unit surely contact the Bias Pin on printer side?	No	Check the injstallation condition of Developer Unit. Be sure that copper plate surely touches the Bias pin.
	14	Is there an electric continuity between each copper bias plate to each concerning rollers in the Developer Unit?	No	Surely contact the copper bias plate to the shaft of each roller. If necessary apply conductive greace to the contact point.
	15	Does the eccentric cam correctly push the Developer Unit to the Drum?	No	Check the developer pressurize mechanism, such as cam, driving mechanism and motor.
	16	Does the Developer Unit have enough toner in it?	No	Check each Toner sensor, Hopper Toner Sensor and concerning harness.
	17	Is correct Bias supplied to each roller in the Developer Unit?	No	Adjust "incorrect" bias properly.
	18	Replacing PW13555 recovers the image quality.	Yes	OK
Primary Transfer	19	In the output check mode of Maintenance GUI, operate each Primary Transfer Press Motor by executing the following item No. No.0508: Primary Transfer Press Motor (K) No.0509: Primary Transfer Press Motor (C) No.0510: Primary Transfer Press Motor (M) No.0511: Primary Transfer Press Motor (Y) Does each Primary Transfer Roller moves to its setting position smoothly?	No	Check both Primary Transfer Roller and its press motor.. NOTE: Do not open/close the Process Unit with pressing the Primary Transfer Roller to the Belt.
	20	Does a high voltage leakage happen in Primary Transfer section?	Yes	Check the harness.
	21	Is a high voltage lead correctly connected between HV Power Supply and Primary Transfer Roller?	Yes	Improve the connection, or replace the lead wire.
	22	In Backup Data of Maintenance GUI, is the following item set to 2? No.717 : Tr1 Auto Adjustment	No	Set it to 2 to enable auto adjust ment.
	23	In Backup Data of Maintenance GUI, is each if the following item set to proper value as shown in below? <u>Tr1 Target Current 80mm/s)</u> No.436 : 25 No.437 : 25 No.438 : 25 No.439 : 25 <u>Tr1 Target Current 50mm/s)</u> No.0725 : 15 No.0726 : 15 No.0727 : 15 No.0728 : 15	No	Set it to proper value.
	24	Replacing PW13555 recovers the image quality.	Yes	OK
Drum	25	Does the problem disappear when you replace the Drum?	Yes	OK

7. 3. 3. 3 Density is uneven

Cause	Checking order	Checking	Result	Treatment
Image Corona	1	Is the Image Corona dirty?	Yes	Clean the wire, grid plate and housing. Or replace the wire if it is too dirty.
	2	Is the wire placed "out of position", which causes its abnormal height?	Yes	Correct it.
Developer Unit	3	Does uneven density periodically appear on the print by every about 130mm?	Yes	Check the Developer Roller. 1. Clean weth a dry cloth when dirty. 2. Replace the Developer Roller when damaged.
	4	Does uneven density periodically appear on the print by every about 162mm?	Yes	Check the Regulation Roller. 1. Clean weth a dry cloth when dirty. 2. Replace the Regulation Roller when damaged.
	5	Is the Developer Roller evenly covered with the toner?	No	Clean the Regulation Roller.
	6	Is the thickness of toner in the Developer even between left and right?	No	Check if the machine is levelled or not.
	7	Pressurize the Regulation Roller by correctl procedure. Does the problem disappear?	Yes	OK
Dirt of LED Head	8	Is the lens array of LED Head dirty?	Yes	Clean it.
Eraser Lamp	9	Do all lamps of Eraser light correctly?	No	1. Check the harness connected to Eraser Lamp. 2.Check or replace the Eraser Lamp.
Toner image on the Transfer Belt	10	Check the toner image on the Transfer Belt that is before the arrival to the Secondary Transfer area. Is the image normal?	Yes	Go to check 11.
			No	Go to check 16.
Transfer Roller (Primary & Secondary)	11	In the output check mode of Maintenance GUI, operate the Secondary Transfer Press Motor by executing the following item No. No.0512: Secondary Transfer Press Motor Does the Secondary Transfer Roller moves to its setting position smoothly?	No	Check both Secondary Transfer Roller and its press motor.
	12	In Backup Data of Maintenance GUI, is the following item set to 1 (TRUE)? No.718 : Tr2 Auto Adjustment	No	Set it to 1 to enable auto adjust ment.
	13	In Backup Data of Maintenance GUI, is each if the following item set to proper value as shown in below? No. 520-619 : Tr2 Auto Vol Type00A-24D All media other than "Type 02" (Film) Type xxA : 2100 Type xxB : 1400 Type xxC : 900 Type xxD : 900 Type 02 (Film) Type xxA : 2600 Type xxB : 2600 Type xxC : 2600 Type xxD : 2600	No	Set it to proper value.

(See next page)

Cause	Checking order	Checking	Result	Treatment
	14	Is a high voltage lead correctly connected between HV Power Supply and Secondary Transfer Roller?	Yes	Improve the connection, or replace the lead wire.
	15	Replacing PW13556 recovers the image quality.	Yes	OK
	16	In the output check mode of Maintenance GUI, operate each Primary Transfer Press Motor by executing the following item No. No.0508: Primary Transfer Press Motor (K) No.0509: Primary Transfer Press Motor (C) No.0510: Primary Transfer Press Motor (M) No.0511: Primary Transfer Press Motor (Y) Does each Primary Transfer Roller moves to its setting position smoothly?	No	Check both Primary Transfer Roller and its press motor.. NOTE: Do not open/close the Process Unit with pressing the Primary Transfer Roller to the Belt.
	17	Does a high voltage leakage happen in Primary Transfer section?	Yes	Check the harness.
	18	Is a high voltage lead correctly connected between HV Power Supply and Primary Transfer Roller?	Yes	Improve the connection, or replace the lead wire.
	19	In Backup Data of Maintenance GUI, is the following item set to 2? No.717 : Tr1 Auto Adjustment	No	Set it to 2 to enable auto adjust ment.
	20	In Backup Data of Maintenance GUI, is each if the following item set to proper value as shown in below? <u>Tr1 Target Current 80mm/s)</u> No.436 : 25 No.437 : 25 No.438 : 25 No.439 : 25 <u>Tr1 Target Current 50mm/s)</u> No.0725 : 15 No.0726 : 15 No.0727 : 15 No.0728 : 15	No	Set it to proper value.
	21	Replacing PW13555 recovers the image quality.	Yes	OK
PW13520 PCB	22	Does the problem disappear when you replace the PW13520 or PW13555?	Yes	OK
LED Head	23	Does the problem disappear when you replace the LED Head?	Yes	OK

7. 3. 3. 4 Totally appeared foggy image

Cause	Checking order	Checking	Result	Treatment
Auto Density Control	1	Does the foggy background improved if printed with setting Auto Density Control to OFF? Setting No. 0720 : 0, 1785 : 0	Yes	Renew Target Density corectly.
	2	Disable Auto Density Control and set the Developer Bias to -180V. Does this improve the problem?	Yes	Adjust both Developer Bias and Led Head properly, and renew Target Density.
Developer Unit	3	Pressurize the Regulation Roller again by correct procedure. Does this solve the problem?	Yes	OK
	4	Is correct bias supplied to each roller in the Developer Unit?	No	Adjust "incorrect" bias properly.
	5	Is each high voltage lead properly connnected?	No	Connect it properly.
	6	Is there an electric continuity between each copper bias plate to each concerning rollers in the Developer Unit?	No	Surely contact the copper bias plate to the shaft of each roller. If necessary apply conductive greace to the contact point.
	7	Is the quantity of toner in the Developer Unit correct?	No	Check each Toner Sensor, Hopper Toner Sensor and harness.
Drum	8	Does the problem disappear when you replace the Drum?	Yes	OK

7. 3. 3. 5 Vertical unclear thick line

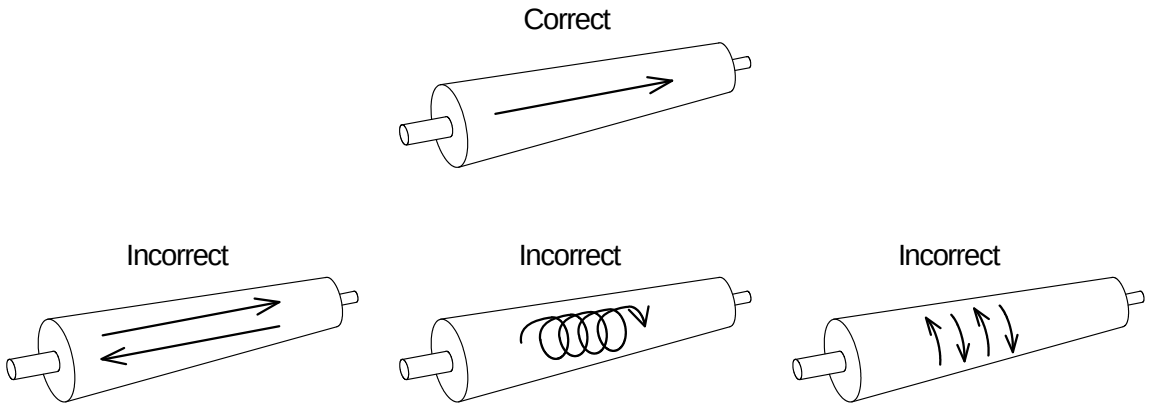
Cause	Checking order	Checking	Result	Treatment
Image Corona	1	Is the Image Corona dirty?	Yes	Clean the wire, grid plate and housing. Or replace the wire if it is too dirty.
	2	Is the cleaning pad placed at its home position correctly?	No	Check the driving mechanism of wire cleaner, such as breakage of motor or deformation of shaft..
	3	Does the wire cleaning behavior completes in 120 seconds?	No	Check the driving mechanism of wire cleaner, such as breakage of motor or deformation of shaft..
Developer Unit	4	Is the Developer Roller evenly covered with the toner?	No	Disassemble the Developer Unit to find a cause.
	5	Is there a dirt on the Regulation Roller?	Yes	Reinstall the Blade correctly.
Drum Cleaner	6	Is there a dirt on the Drum?	Yes	Clean or rplace the Drum Cleaning Blade, or reinstall the Drum Cleaning Blade.
LED Head	7	Is there a dirt on the LED Head?	Yes	Lean it.
Belt Cleaner	8	Is there dirt on the Transfer Belt?	Yes	Clean or rplace the Belt Cleaning Blade, or reinstall the Belt Cleaning Blade.

7. 3. 3. 6 Vertical clear thin line

Cause	Checking order	Checking	Result	Treatment
Image Corona	1	Is there anything like filament on the Grid Plate? And is it contacted to the Drum?	Yes	Remove it.
		Is the Image Corona dirty?	Yes	Clean each Corona Wire, Grid Plate and Corona Housing. Replace the Corona Wire or Grid Plate if it is too dirty.
Foreign substance	2	Is there any foreign substance on the units around the Drum? And is it contacted to the Drum? (Check the Corona Units, LED Head or some other parts which is very close to the Drum.)	Yes	Remove it.
Drum	3	Is there any line or damage on the Drum, which is located corresponding with the position of vertical line on the print?	Yes	1. In case of the line on the Drum, wipe it off with a soft dry cloth. (Be careful of the direction for wiping. See the following picture.) 2. Replace the Drum in case of the damage. (Be sure to find the cause of the damage before the replacement. Check some parts that are very close to the Drum, such as Corona Units, Transfer Guide or some other.)
LED Head	4	Is there dirt on the LED Head?	Yes	Clean it.
	5	Does the problem disappear when you replace the LED Head?	Yes	OK

NOTE

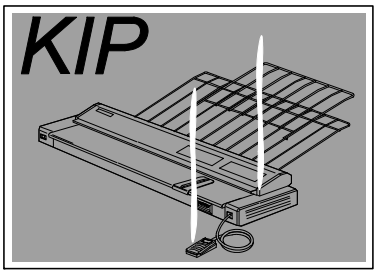
Wipe the surface always from one end to another (left to right, or right to left). Other way will damage the Drum.



7. 3. 3. 7 Vertical white line

Cause	Checking order	Checking	Result	Treatment
Image Corona	1	Is there anything like filament on the Grid Plate? And is it contacted to the Drum?	Yes	Remove it.
LED Head	2	Is the lens array od LED HeadLED dirty? Or is there any fiber-like foreign material on the lens array?	Yes	Clean it with a dry cloth (maybe with lens cleaner).
Secondary Transfer section	3	Is there a dirt or foreign substance on the Secondary Transfer Roller or the entrance guide section of Secondary Transfer?	Yes	Remove it.
Foreign substance		Check the toner image on the Belt that is before arriving at the Secondary Transfer section. Does the toner image already have white line?	Yes	Check if there is any foreign substance anywhere betweeneach process and Secondary Transfer section.
Entrance of Fuser Unit	4	Is there any foreign substance or dirt around the entrance area of the Fuser Unit? And is it touching on unfused image side of the media?	Yes	Clean it off
Drum	5	Is there any damage on the Drum, which is located corresponding with the position of white line on the print?	Yes	Find the cause for the damage, remove the cause, and replace the Drum. (Please check some parts that are very close to the Drum, such as Corona Units, Transfer Guide or some other.)
LED Head	6	Can the problem be fixed by replacing the LED Head?	Yes	OK

7. 3. 3. 8 Void of image

Cause	Checking order	Checking	Result	Treatment
Printing media	1	Does "Initial Cut" help the situation?	Yes	Instruct the user to have an initial cut, especially just before a long print.
	2	Can the problem be fixed by using a newly unpacked media?	Yes	Instruct the user of the correct way of storing the media.
Developer Unit	3	Does the void of image appear on the print constantly Keeping about 130mm of interval?	Yes	Check the Developer Roller and Counter Rollers on both sides. 1. If it is dirty, wipe it off with a dry cloth. 2. Replace it if damaged
		Does the void of image appear on the print constantly Keeping about 162mm of interval?	Yes	Clean the Regulation Roller. Or replace it if damaged.
		Does void of image appear on either left or right part of the print?	Yes	1. Check if the Developer pressure mechanism is functioning correctly. 2. Check if the Developer Lock Levers are set to correct position.
		Does the void of image randomly run vertically as the following picture? 	Yes	Check if there is enough toner in the Developer Unit. If the toner quantity is abnormally small, check if the Toner Sensor is broken.
Drum	4	Does the void of image appear on the print constantly Keeping about 251mm of interval?	Yes	Check the Drum. 1. In case of the line on the Drum, wipe it off with a soft dry cloth. (Be careful of the direction for wiping.) 2. In case there is foreign material on the contact area of drum frange and counter rollers, wipe it off with a soft dry cloth. 3. Replace the Drum in case of the damage. (Be sure to find the cause of the damage before the replacement. Check some parts that are very close to the Drum, such as LED Printhead, Corona Units, Transfer Guide or some other.)
Media path	5	Is the void created by a winkle?	Yes	Check for any obstacle on the media path between Roll Deck and Registration area.
Toner image on the Transfer Belt	6	Check the toner image on the Transfer Belt that is before the arrival to the Secondary Transfer area. Is the image normal?	Yes	Go to check 7.
			No	Go to check 12.

(See next page)

Cause	Checking order	Checking	Result	Treatment
Transfer Roller (Primary & Secondary)	7	In the output check mode of Maintenance GUI, operate the Secondary Transfer Press Motor by executing the following item No. No.0512: Secondary Transfer Press Motor Does the Secondary Transfer Roller moves to its setting position smoothly?	No	Check both Secondary Transfer Roller and its press motor.
	8	In Backup Data of Maintenance GUI, is the following item set to 1 (TRUE)? No.718 : Tr2 Auto Adjustment	No	Set it to 1 to enable auto adjust ment.
	9	In Backup Data of Maintenance GUI, is each if the following item set to proper value as shown in below? No. 520-619 : Tr2 Auto Vol Type00A-24D All media other than "Type 02" (Film) Type xxA : 2100 Type xxB : 1400 Type xxC : 900 Type xxD : 900 Type 02 (Film) Type xxA : 2600 Type xxB : 2600 Type xxC : 2600 Type xxD : 2600	No	Set it to proper value.
	10	Is a high voltage lead correctly connected between HV Power Supply and Secondary Transfer Roller?	Yes	Improve the connection, or replace the lead wire.
	11	Replacing PW13556 recovers the image quality.	Yes	OK
	12	In the output check mode of Maintenance GUI, operate each Primary Transfer Press Motor by executing the following item No. No.0508: Primary Transfer Press Motor (K) No.0509: Primary Transfer Press Motor (C) No.0510: Primary Transfer Press Motor (M) No.0511: Primary Transfer Press Motor (Y) Does each Primary Transfer Roller moves to its setting position smoothly?	No	Check both Primary Transfer Roller and its press motor.. NOTE: Do not open/close the Process Unit with pressing the Primary Transfer Roller to the Belt.
	13	Does a high voltage leakage happen in Primary Transfer section?	Yes	Check the harness.
	14	Is a high voltage lead correctly connected between HV Power Supply and Primary Transfer Roller?	Yes	Improve the connection, or replace the lead wire.
	15	In Backup Data of Maintenance GUI, is the following item set to 2? No.717 : Tr1 Auto Adjustment	No	Set it to 2 to enable auto adjust ment.

(See next page)

Cause	Checking order	Checking	Result	Treatment
	16	In Backup Data of Maintenance GUI, is each if the following item set to proper value as shown in below? Tr1 Target Current 80mm/s) No.436 : 25 No.437 : 25 No.438 : 25 No.439 : 25 Tr1 Target Current 50mm/s) No.0725 : 15 No.0726 : 15 No.0727 : 15 No.0728 : 15	No	Set it to proper value.
	17	Replacing PW13555 recovers the image quality.	Yes	OK

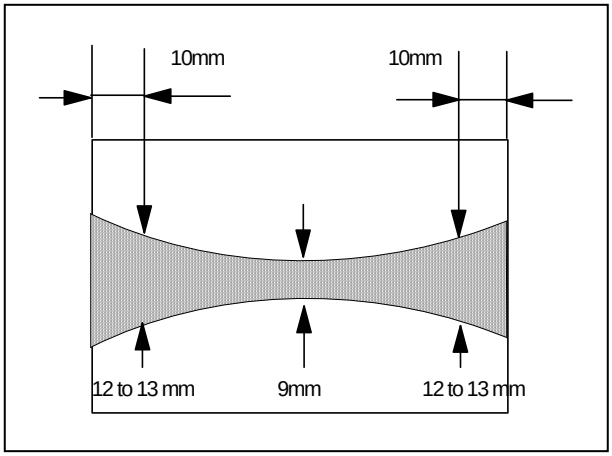
7. 3. 3. 9 Dirt on the back of the print

Cause	Checking order	Checking	Result	Treatment
Media feeding area	1	Is there any suspicious dirt in the Roll Deck or Bypass Feeder?	Yes	Clean it, and also find the cause of this dirt.
Inner Feeder section	2	Is there any suspicious dirt in the Inner Feeder?	Yes	Clean it, and also find the cause of this dirt.
Secondary Transfer section	3	Is there any suspicious dirt at the entrance or exit of Secondary Transfer section?	Yes	Clean it, and also find the cause of this dirt.
	4	Is proper cleaning Bias is supplied to the Secondary Transfer Roller? (When there is no paper running in the Secondary Transfer Section, the roller is altenatively supplied with positive and negative voltages.)	No	Check the outputs from the HV power supply, and also check the HV lead connection.
Fuser Unit	4	Is the Fuser Entrance Guide dirty?	Yes	Clean it.
	5	Is there a melt toner around the fuser exit, such as Fuser Roller, Pressure Roller, fingers and other parts?	Yes	Clean it off.
	6	IS the Web Cleaner correctly set?	No	Reseat it.

7. 3. 3. 10 Poor fusing

Cause	Checking order	Checking	Result	Treatment
Paper	1	Is the selection of media type on the Media Selector and the actual media type correctly matched with each other?	No	Instruct the user to set the Media Selector correctly.
	2	Can the problem be fixed by using a newly unpacked paper?	Yes	1. Instruct the user of the correct way of storing the media. 2. If the media is not a recommended one, explain the user that some image problem may occur in that case.
Fuser temperature	3	In "Information" of Maintenance GUI, check the actual temperatures that the Thermistors detect. No.00013 Detection Temp1 No.00014 Detection Temp2 Are the detected temperatures normal?	No	See the troubleshooting page of fuser temperature error and follow the instruction.
	4	In Backup Data of Maintenance GUI, check if correct temperature is set for each media type. Is correct temperature set to each media type?	No	Set it correctly.
	5	Is the pressure provided by the Pressure Roller correct?	No	Adjust it correctly. See the figure below.

Nip values for fuser roller



7. 3. 3. 11 Complete white (No image)

Cause	Checking order	Checking	Result	Treatment
Toner image on the Transfer Belt	1	Check the toner image on the Transfer Belt that is before the arrival to the Secondary Transfer area. Is the image normal?	Yes	Go to check 2.
			No	Go to check 10
Secondary Transfer Roller and HV Power Supply PCB	2	When you check the voltage beetween "J560-1 orange cable pin on PW13556" and GND with multimeter in ready condition, is it 24V?	No	Check the electric continuity to Power Suply.
	3	In the output check mode of Maintenance GUI, operate the Secondary Transfer Press Motor by executing the following item No. No.0512: Secondary Transfer Press Motor Does the Secondary Transfer Roller moves to its setting position smoothly?	No	Check both Secondary Transfer Roller and its press motor.
	4	In Backup Data of Maintenance GUI, is the following item set to 1 (TRUE)? No.718 : Tr2 Auto Adjustment	No	Set it to 1 to enable auto adjust ment.
	5	In Backup Data of Maintenance GUI, is each if the following item set to proper value as shown in below? No. 520-619 : Tr2 Auto Vol Type00A-24D All media other than "Type 02" (Film) Type xxA : 2100 Type xxB : 1400 Type xxC : 900 Type xxD : 900 Type 02 (Film) Type xxA : 2600 Type xxB : 2600 Type xxC : 2600 Type xxD : 2600	No	Set it to proper value.
	6	Is a high voltage lead correctly connected between HV Power Supply and Secondary Transfer Roller?	Yes	Improve the connection, or replace the lead wire.
	7	Is the high voltage lead correctly connected?	No	Connect it correctly
	8	Is the high voltage lead broken?	Yes	Replace it.
	9	Replacing PW13556 recovers the image quality.	Yes	OK
LED Head	10	On the PW13520 PCB, interchange the connections of correct LED Head and suspected one. Does the problem now happen on another color?	Yes	Replace the PW13520 PCB.
			No	Replace the causing LED Head.
Developer Unit	11	Does the eccentric cam correctly push the Developer Unit to the Drum?	No	Check the developer pressurize mechanism, such as cam, driving mechanism and motor.
	12	Is the Developer Roller covered with enough toner?	No	Check the bias contact (copper plate), conductive grease and etc.
	13	Is correct bias supplied to each roller in the Developer Unit?	No	Adjust "incorrect" bias properly.

(See next page)

Cause	Checking order	Checking	Result	Treatment
Developer Unit	15	Is the high voltage lead broken?	Yes	Replace it.
	16	In the output check mode of Maintenance GUI, operate each Primary Transfer Press Motor by executing the following item No. No.0508: Primary Transfer Press Motor (K) No.0509: Primary Transfer Press Motor (C) No.0510: Primary Transfer Press Motor (M) No.0511: Primary Transfer Press Motor (Y) Does each Primary Transfer Roller moves to its setting position smoothly?	No	Check both Primary Transfer Roller and its press motor.. NOTE: Do not open/close the Process Unit with pressing the Primary Transfer Roller to the Belt.
Primary Transfer Roller	17	Does a high voltage leakage happen in Primary Transfer section?	Yes	Check the harness.
	18	Is a high voltage lead correctly connected between HV Power Supply and Primary Transfer Roller?	Yes	Improve the connection, or replace the lead wire.
	19	In Backup Data of Maintenance GUI, is the following item set to 2? No.717 : Tr1 Auto Adjustment	No	Set it to 2 to enable auto adjust ment.
	20	In Backup Data of Maintenance GUI, is each if the following item set to proper value as shown in below? Tr1 Target Current 80mm/s) No.436 : 25 No.437 : 25 No.438 : 25 No.439 : 25 Tr1 Target Current 50mm/s) No.0725 : 15 No.0726 : 15 No.0727 : 15 No.0728 : 15	No	Set it to proper value.
	21	Replacing PW13556 recovers the image quality.	Yes	OK

7. 3. 3. 12 Blur on dark image

Cause	Checking order	Checking	Result	Treatment
Media	1	Does the media type selection match the actual media?	No	Set it accordingly.
	2	Can the problem be fixed by using a newly unpacked paper?	Yes	1. Instruct the user of the correct way of storing the media. 2. If the media is not a recommended one, explain the user that some image problem may occur in that case.
Tension Control	3	Is correct tension given to the media?	No	Adjust it correctly.
Fuser Temperature	4	Is the fuser temperature setting set correctly according to the selected media?	No	Set it accordingly.

7. 3. 3. 13 Complete solid image like “all black”

Cause	Checking order	Checking	Result	Treatment
	1	Is the print provided with side margin?	Yes	Go to step 2
			No	No margin, go to step 3
LED Head or PW13520 PCB	2	On the PW13520 PCB, interchange the connections of correct LED Head and suspected one. Does the problem now happen on another color?	Yes	Replace the PW13520 PCB.
			No	Replace the causing LED Head.
Image Corona or HV Power Supply	3	When you check the voltage beetween "J560-1 orange cable pin on PW13556" and GND with multimeter in ready condition, is it 24V?	No	Check the electric continuity to Power Suply.
	4	Is the input current to the Image Corona correct? (See 7.3.1)	No	If 0V, replace HVP. Readjust it with Service Software “setting”.
	5	Is the Corona Wire dirty?	Yes	Clean it. Replace if too dirty.
	6	Is the tension of Corona Wire proper?	No	Give a proper tension.
	7	Is the high voltage lead line connected?	No	Connect it.
	8	Is the high voltage lead broken?	Yes	Replace it.
	9	Measure the resistance between the Corona Rail and the ground. Is it 0 ohm? (Normally it is overload)	Yes	Leak is occurred on the Corona House. 1. Check if there is any foreign substance on the Corona house. 2. Check if any harness is broken.

Chapter 8

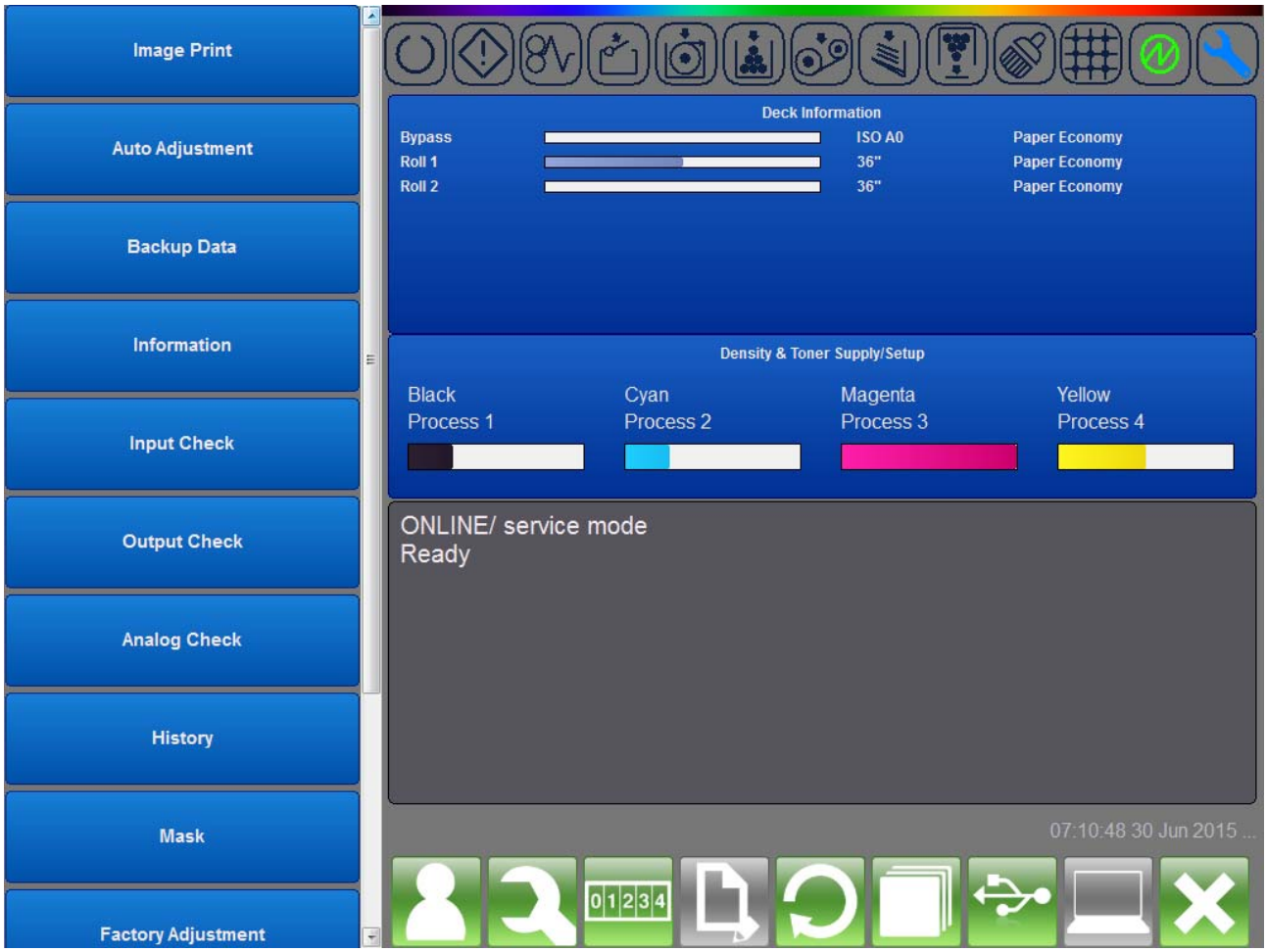
Maintenance GUI

The KIP 800 series provides an efficient, smart and intuitive touch control interface for service / maintenance. This chapter describes the dedicated GUI for service / maintenance relating to the print engine and its firmware.

> **NOTE**
>
> In this chapter, screenshot images of the user operation UI / Maintenance GUI screen / any other may vary by KIP Printer model / your choice of optional features / firmware version. They are shown with available options.

8. 1 Maintenance GUI Overview

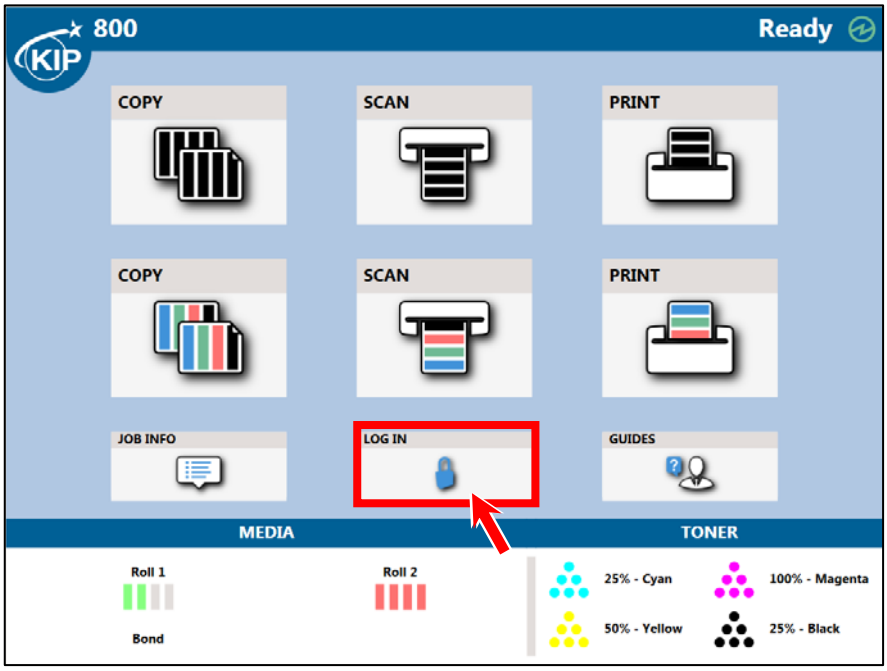
“Maintenance GUI” is a software application that allows overall technical service operations for the KIP 800 Series printer by easy touch panel operation, which is pre-installed in the control software. A service technician is able to use this software for status monitor, operation check, configuration of parameters and etc.



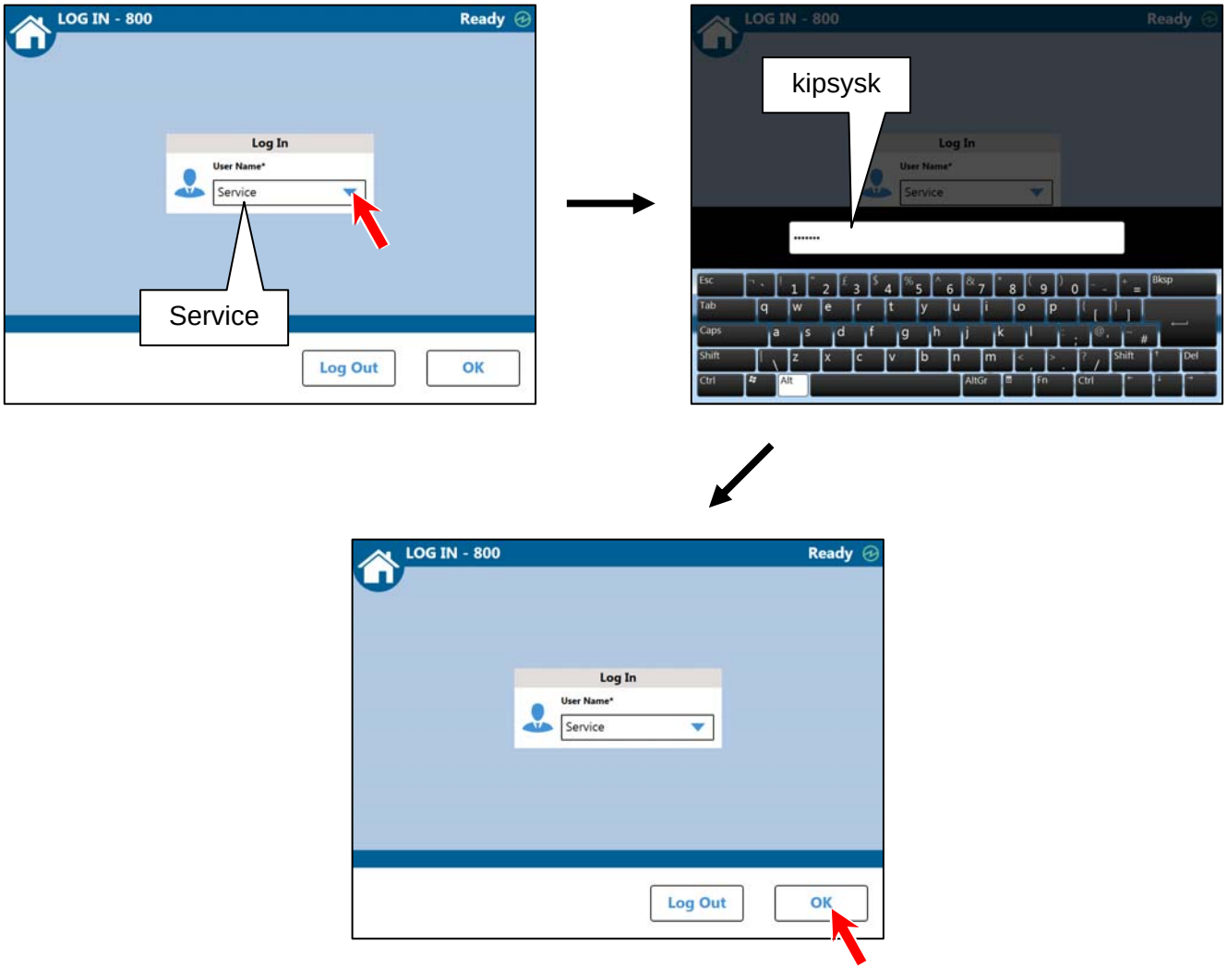
> **Reference**
>
> In this chapter, a red arrow ↗ stands for “Press here.”
> A blue arrow → stands for “the screen changes / pops up.”

8. 1. 1 Launching Maintenance GUI

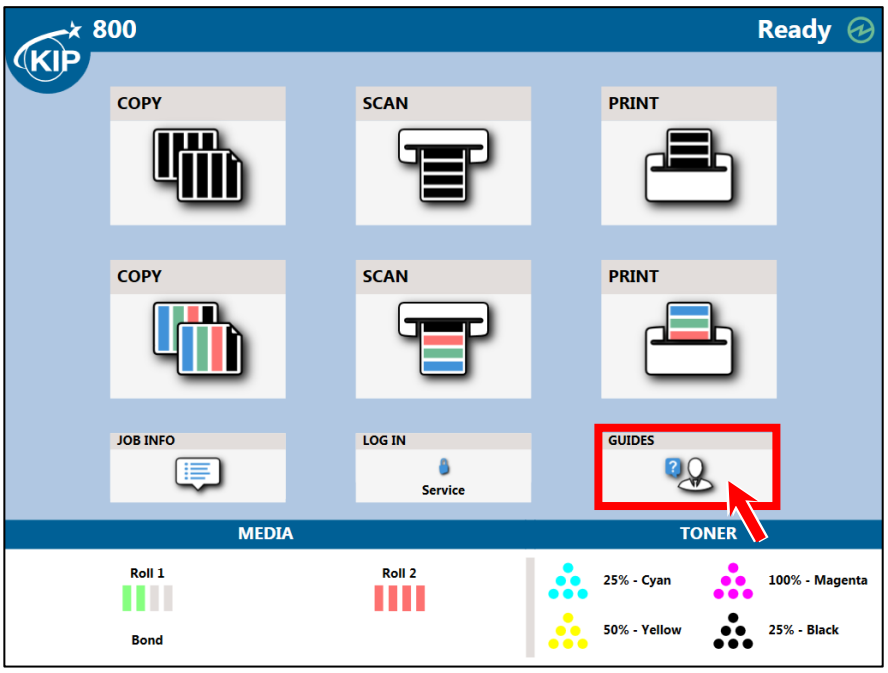
1. Press **LOG IN** in the HOME screen of the user operation UI.



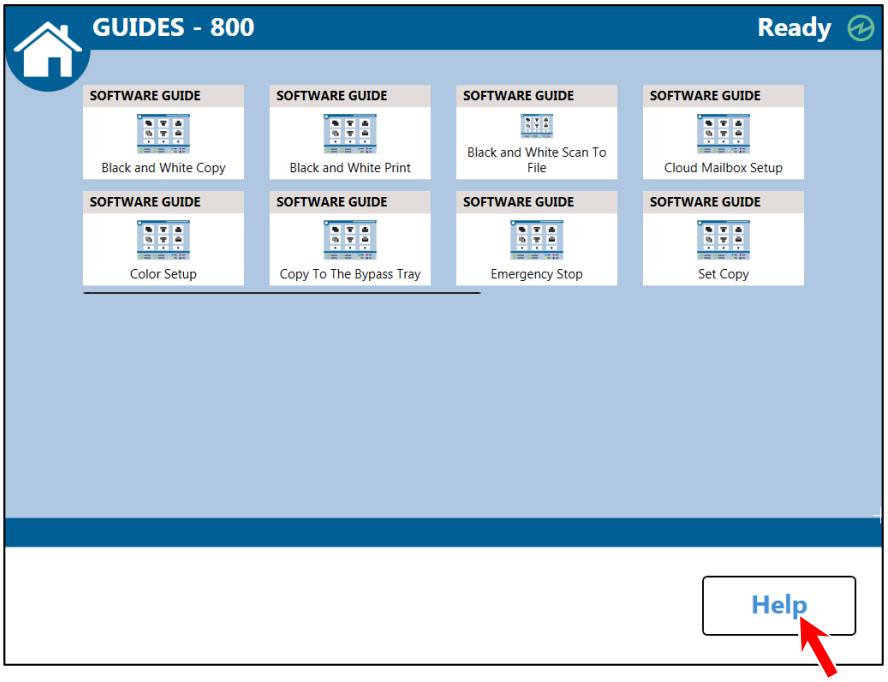
2. Enter a User Name and Password, and then press **OK** to log in as a service operator.



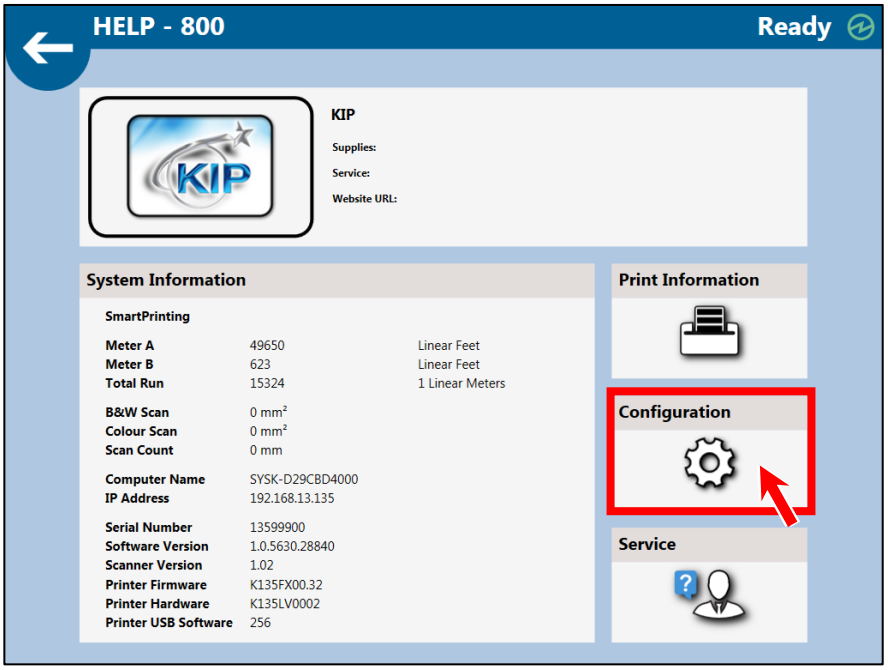
3. The screen comes back to the Home of user operation UI. Press **GUIDES**.



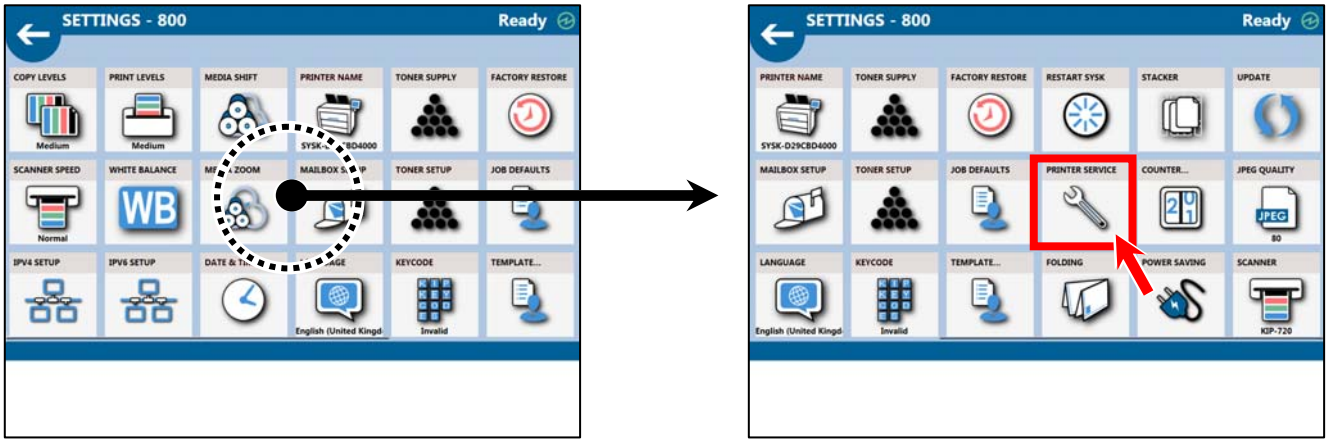
4. Press **Help** in the lower pain.



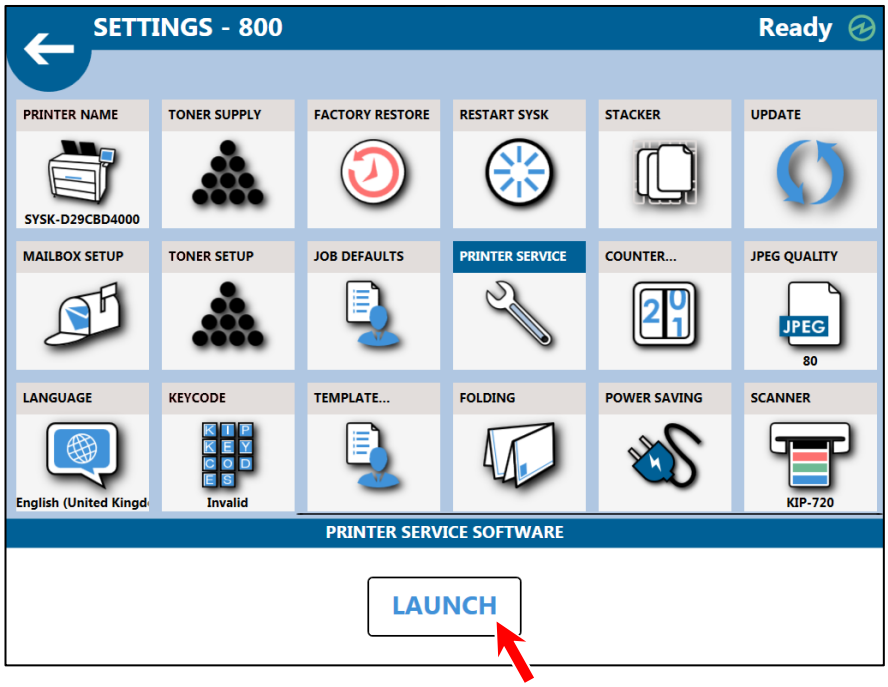
5. Press **Configuration**.



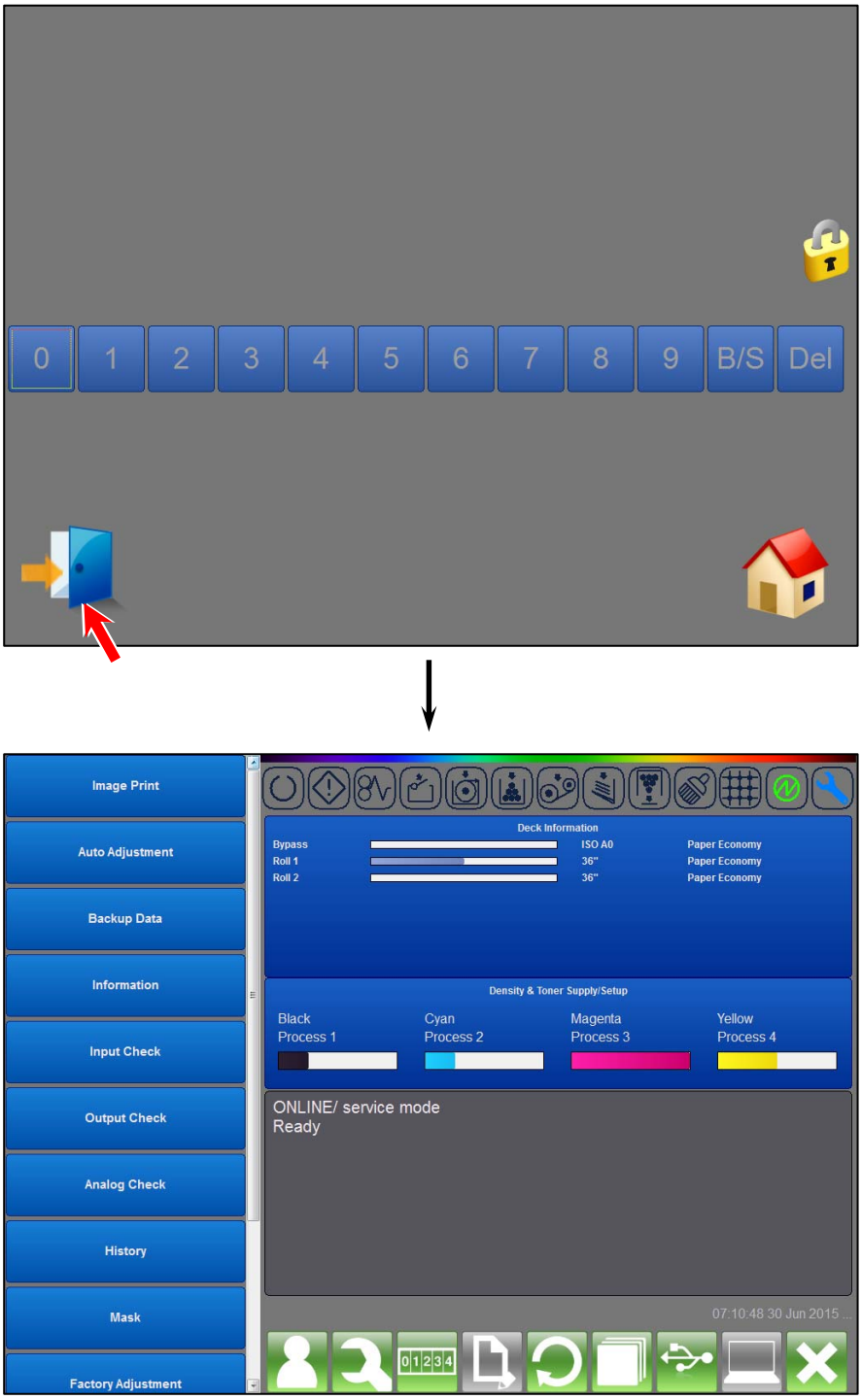
6. In Configuration page, flick or swipe left in the middle pane (or drag the black scroll bar in the bottom of the middle pane to the right), and then press **PRINTER SERVICE**.



7. Press **LAUNCH** in the lower pain.



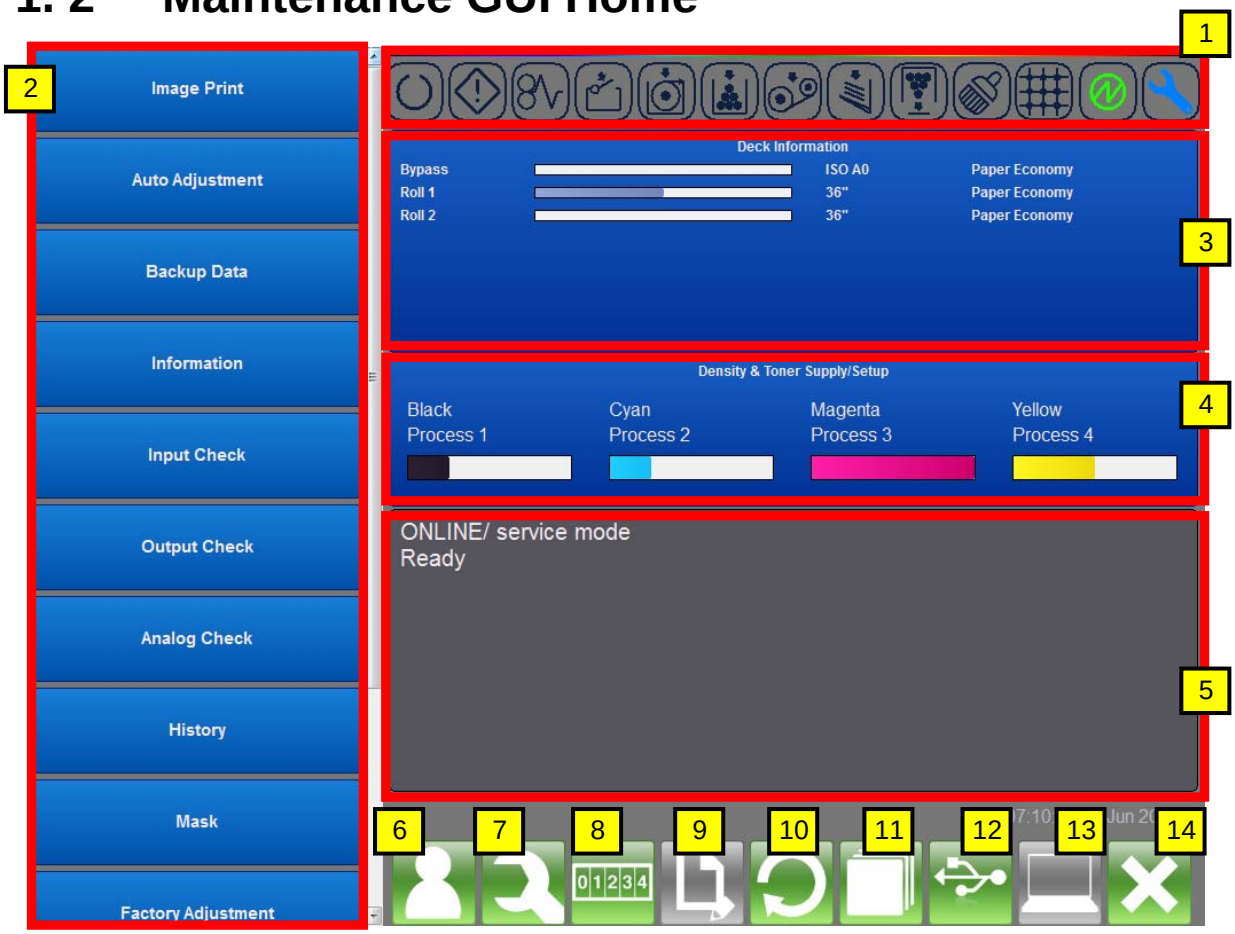
8. Press the **door icon** on the bottom left to run the Maintenance GUI.



Maintenance GUI Home screen

Shown with available options, may vary from the actual one

8. 1. 2 Maintenance GUI Home



1	Status Indicator	

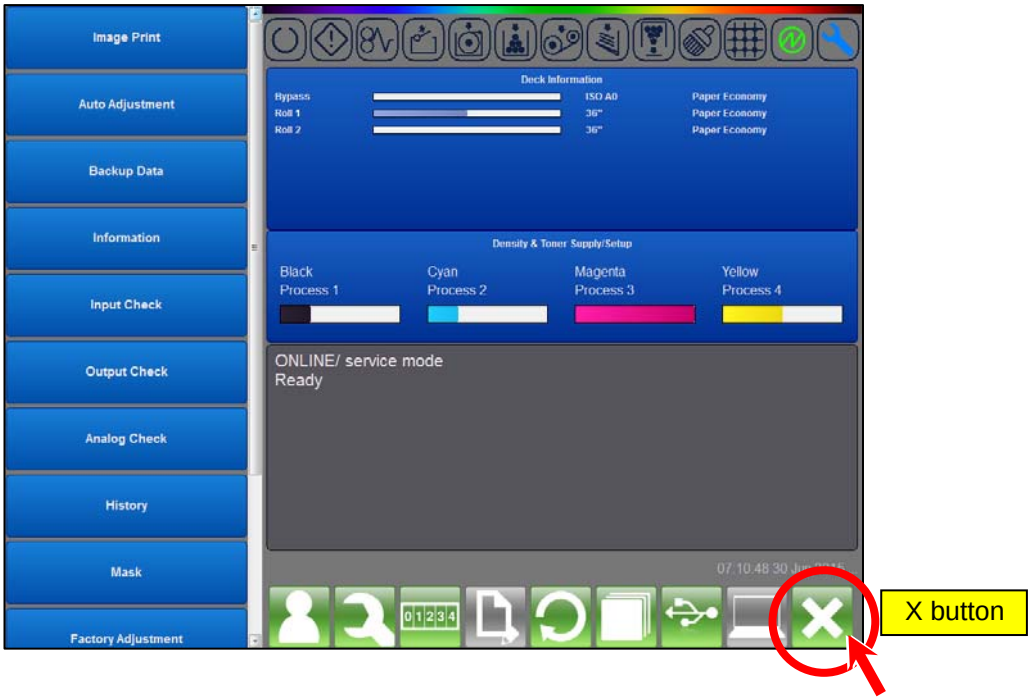
Power	**Lights :** communication established between KCS and Printer
Ready	**Lights:** Printer Ready **Flashes:** Warming up
Error	**Lights:** An error occurred on Printer
Jam	**Lights:** A media jam occurred on Printer
Door Open	**Lights:** Any Door is open
Roll Status	**Lights:** Roll Empty
Toner Status	**Lights:** Toner Empty **Flashes:** Toner Nearly Empty
Web Cleaner Status	**Lights:** Web Cleaner End **Flashes:** Web Cleaner Nearly End
Stack Full	**Lights:** Top Front Stacker (Upper Bin) is full
Waste Toner Status	**Lights:** Waste Toner Full **Flashes:** Waste Toner Nearly Full
Wire Cleaning	**Lights:** in operation
Auto Adjustment	**Lights:** in operation
Service Mode	**Lights:** “Service Mode” is active

<table>
<tr><th></th><th>Region / Button</th><th>Function</th></tr>
<tr><td>2</td><td>Maintenance
Mode Selector</td><td>
<table>
<tr><td>Image Print</td><td>Test pattern plot command</td></tr>
<tr><td>Auto Adjustment</td><td>Essential Adjustments in simple operation</td></tr>
<tr><td>Backup Data</td><td>Printer settings</td></tr>
<tr><td>Information</td><td>Analog data status monitor</td></tr>
<tr><td>Input Check</td><td>Input signal monitor</td></tr>
<tr><td>Output Check</td><td>Output signal monitor
Electric device check</td></tr>
<tr><td>Analog Check</td><td>not used in the field</td></tr>
<tr><td>History</td><td>View Error / Jam Codes history</td></tr>
<tr><td>Mask</td><td>Disables jam/error detection</td></tr>
<tr><td>Factory Adjustment</td><td>not used in the field</td></tr>
<tr><td>Clear / Reset</td><td>Clears history, error status
Changes counter value</td></tr>
<tr><td>Program Update</td><td>Sends firmware program to printer</td></tr>
<tr><td>Version Info</td><td>View firmware version</td></tr>
</table>
</td></tr>
<tr><td>3</td><td>Media Information</td><td>View media width / type / remaining level
Press here to set media width / type, execute Trim Cut
Bypass (Manual Feeder) has no information about amount of load.</td></tr>
<tr><td>4</td><td>Toner Information</td><td>View toner remaining level
Press here to show Density slider and Toner Supply command button</td></tr>
<tr><td>5</td><td>Printer Status</td><td>Shows the printer status and Error Codes</td></tr>
<tr><td>6</td><td>---</td><td>Not used</td></tr>
<tr><td>7</td><td>Printer Function</td><td>Supplemental printer modes</td></tr>
<tr><td>8</td><td>Counter Info</td><td>View Counter Information of Total Count, Count for mono, for color</td></tr>
<tr><td>9</td><td>---</td><td>Not used</td></tr>
<tr><td>10</td><td>Communication Reset</td><td>Re-establishes communication between the controller and the print engine</td></tr>
<tr><td>11</td><td>Active Modes</td><td>Press here to view multitasking Maintenance Modes</td></tr>
<tr><td>12</td><td>USB Eject</td><td>Press here before you remove a USB storage device from the printer</td></tr>
<tr><td>13</td><td>---</td><td>Not used</td></tr>
<tr><td>14</td><td>Exit</td><td>Quits the Maintenance GUI to go back to user operation UI</td></tr>
</table>

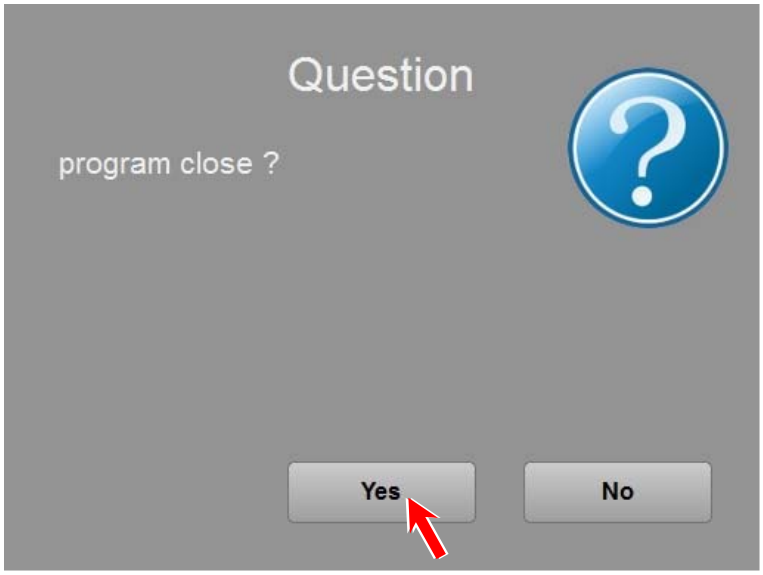
8. 1. 3 Closing Maintenance GUI

1. Press the **X** button on any pages in the Maintenance GUI to go back to HOME. 

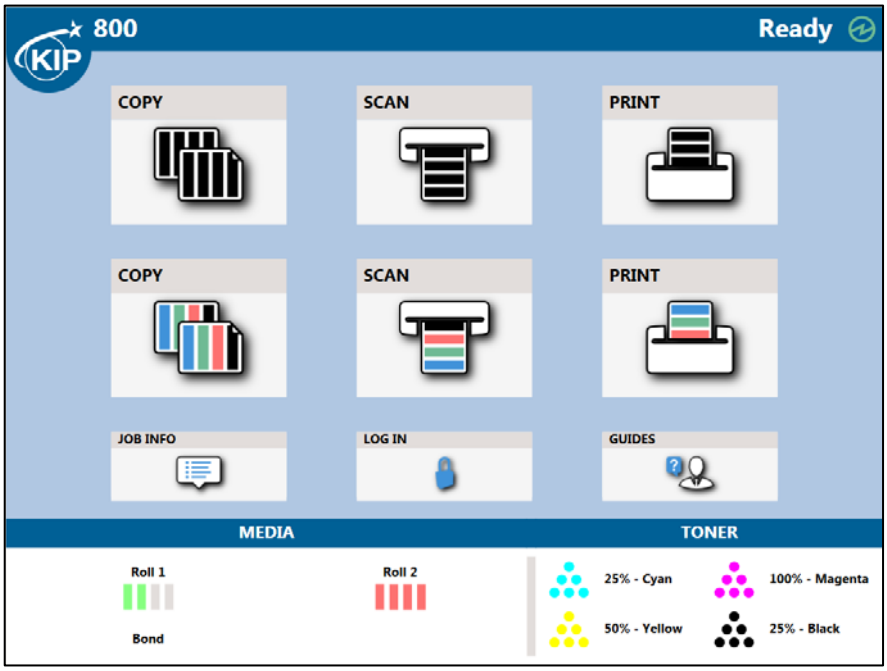
2. Press **X** button on the bottom right.



3. Press **Yes**.



4. The Maintenance GUI closes and the screen will switch to the HOME screen of user operation UI.



8. 1. 4 Updating Maintenance GUI

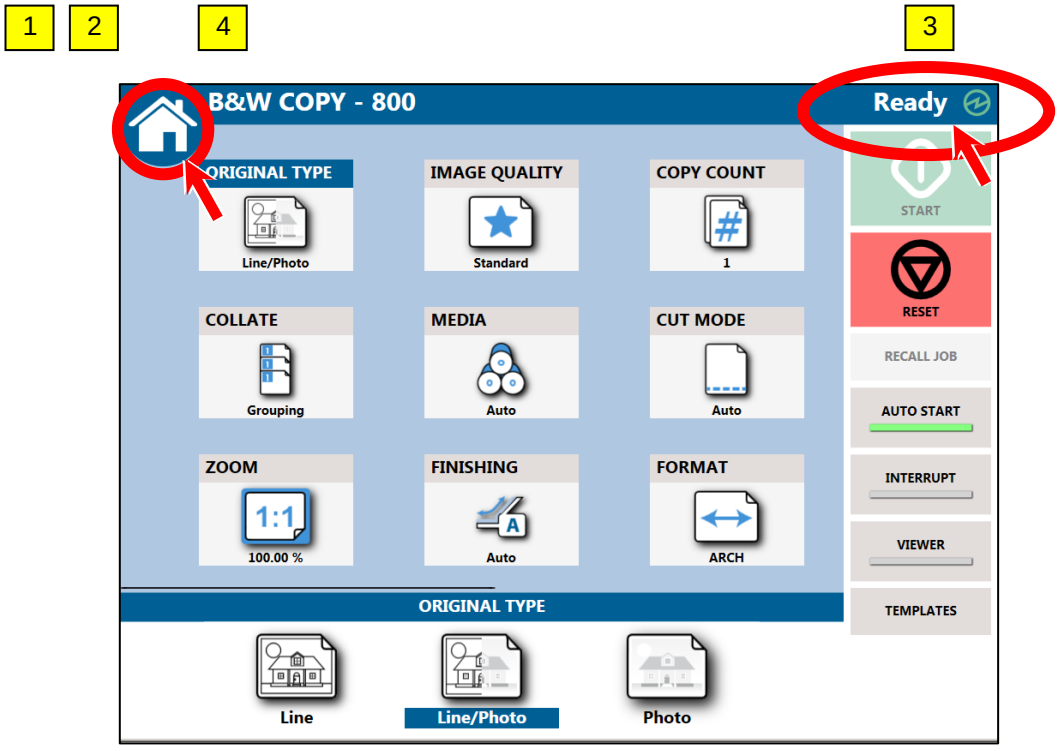
It is sometimes required to update the Maintenance GUI application when the printer control programs such as Firmware and FPGA are updated. See the following procedure for updating.

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

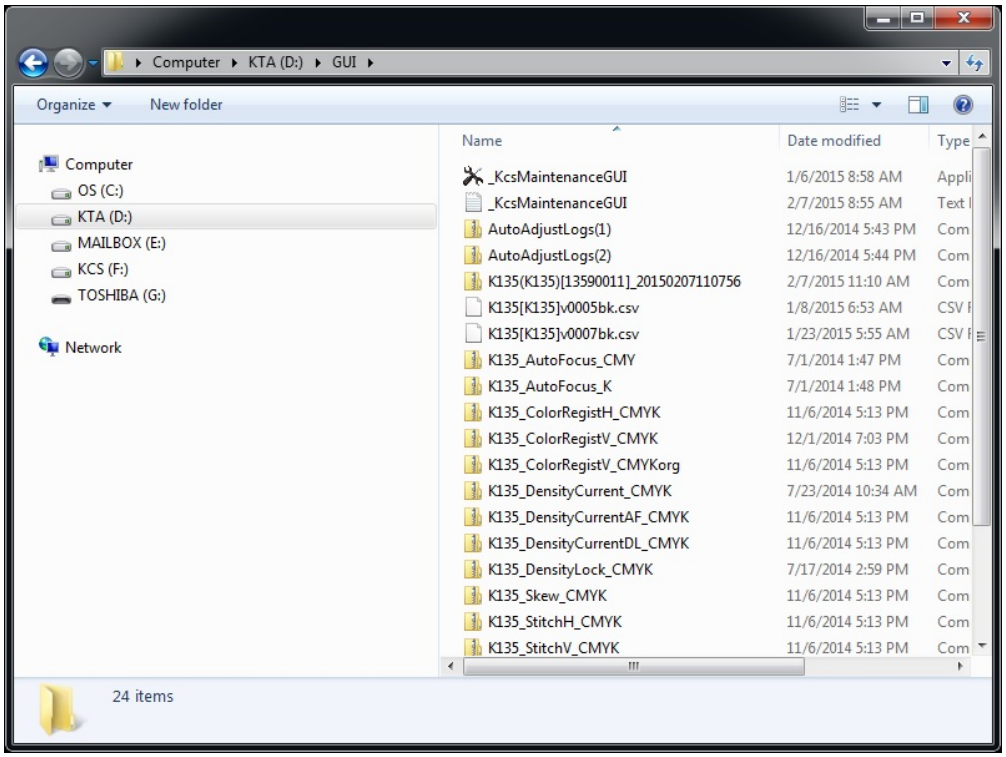
   Save all of them in a transportable device such as USB memory stick.

2. Close the user operation UI and show the controller's desktop by quickly :
   (1) Tap HOME icon (or KIP logo) on the top left.
   (2) Again tap HOME icon (KIP logo) on the top left.
   (3) Tap any part of Indication Area (model name and status).
   (4) Again tap HOME icon (KIP logo) on the top left.



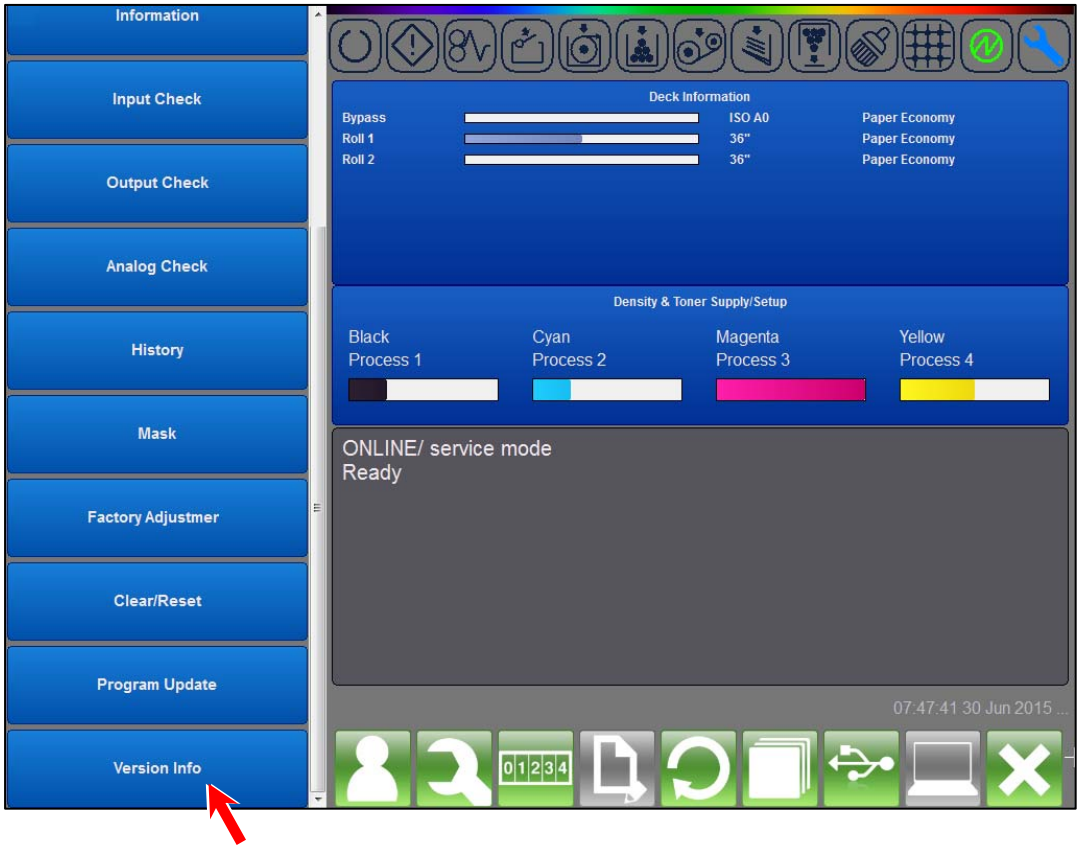
3. Browse to **D\:GUI** by such as Windows Explorer, and copy and paste the following 4 files which you retrieved at the former step 1. This will update the Maintenance GUI application.

   - KcsMaintenanceGUI.exe
   - KcsUpdate.dll.
   - OpenApi.dll
   - KcsCode.xml

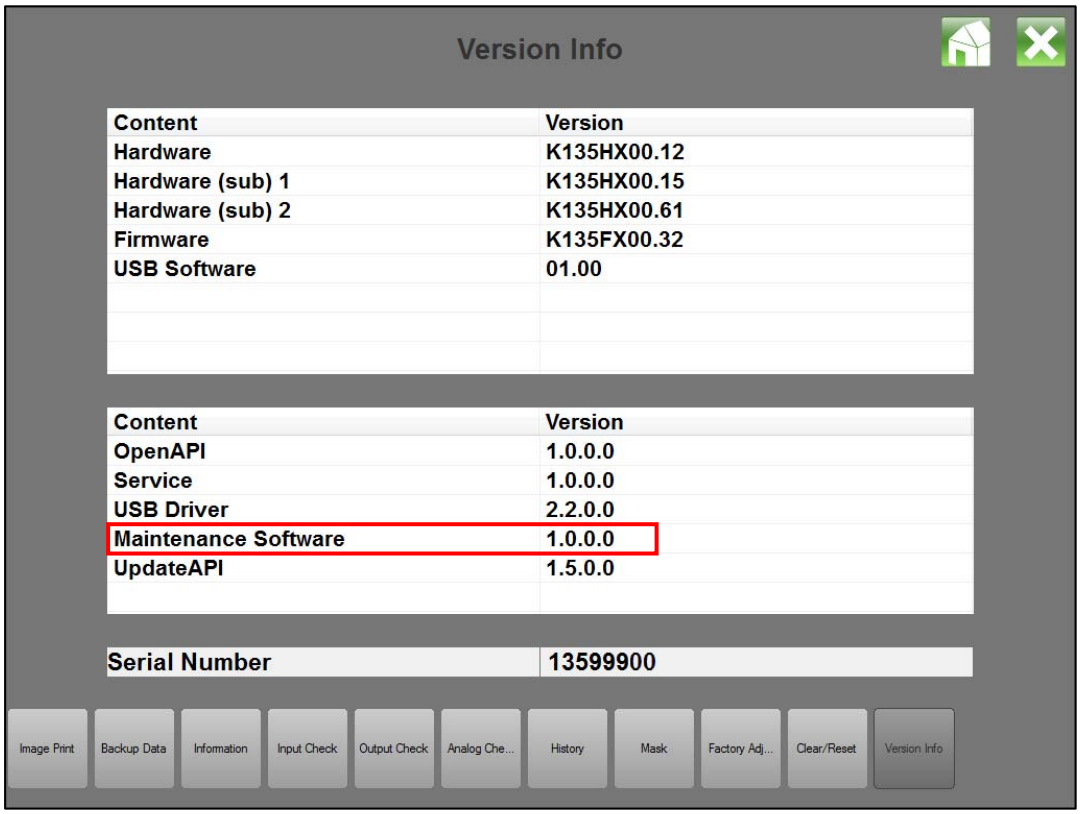


Reference

The current version of Maintenance GUI can be seen in **Version Info**.

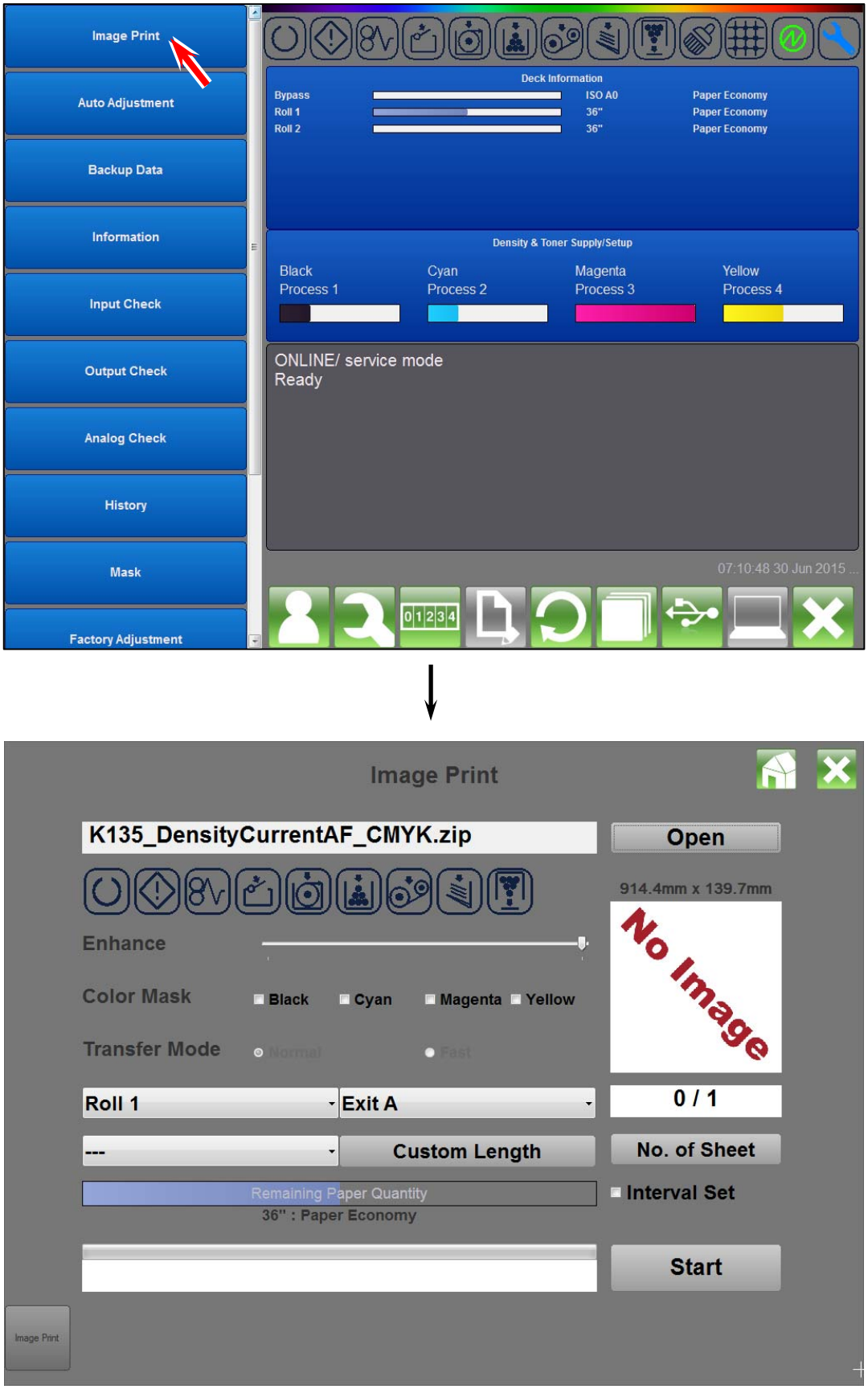


Version Info is located at the bottom end of the left pane.



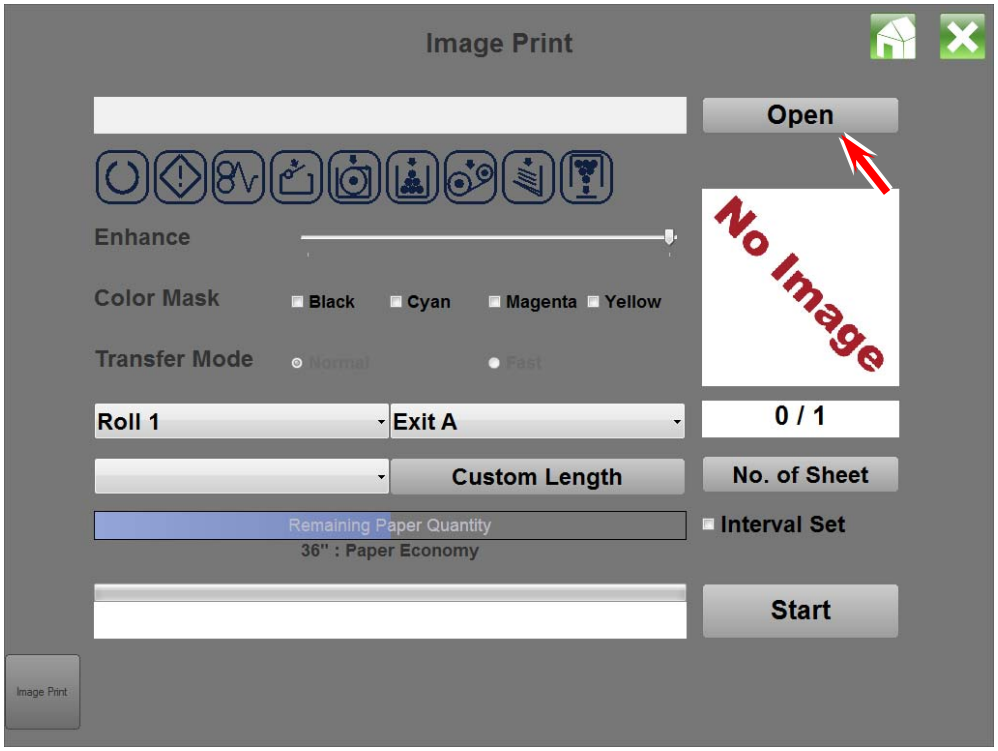
8. 2 Image Print

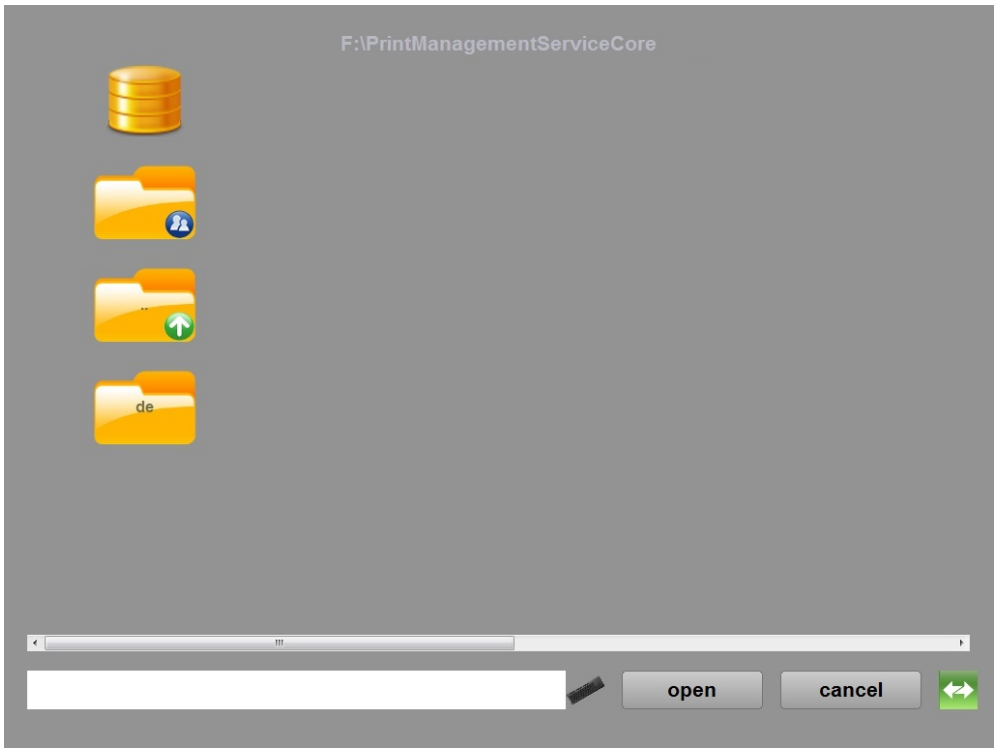
Image Print allows an operator to print some internal test patterns for such purposes as operation check, performance check, troubleshooting and etc.



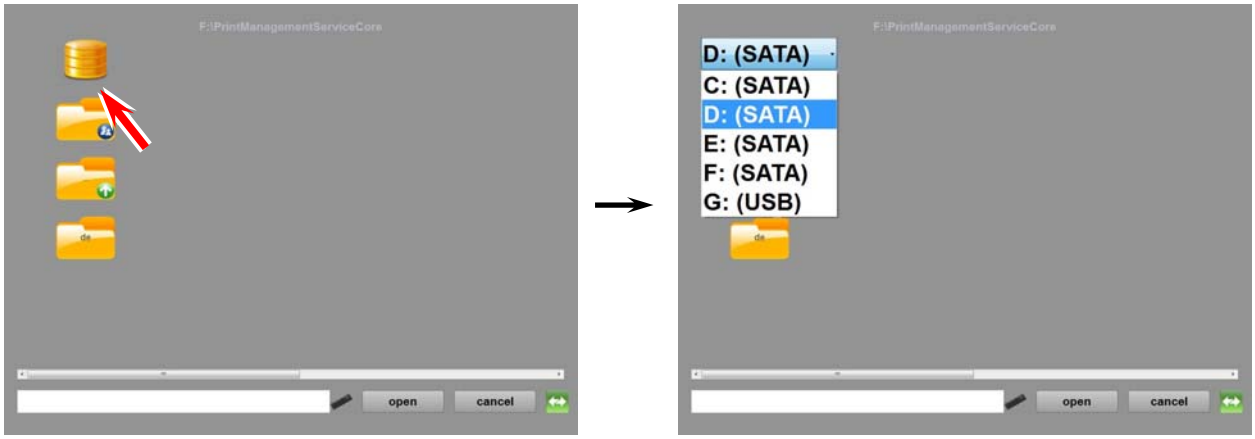
8. 2. 1 Operation procedure of test printing

1. Press **Open** in the Image Print page. A file selection page is indicated.



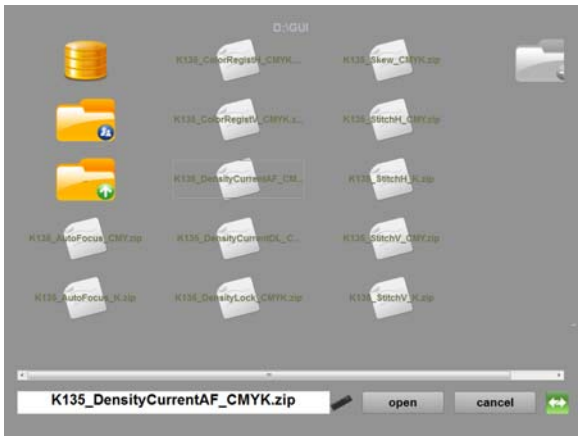


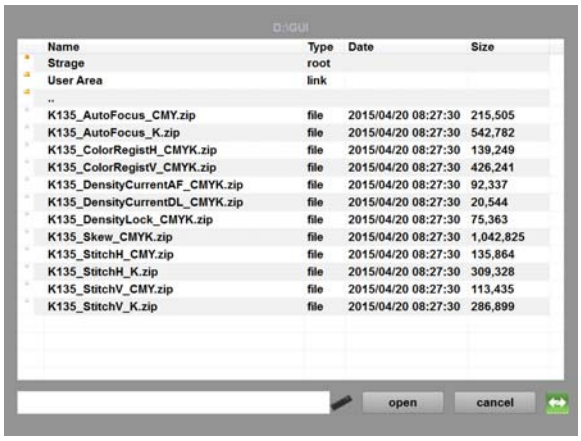
2. The top section of the page shows the path of currently selected folder. If you will select another drive, press an icon on top-right and then select the necessary folder in the list.



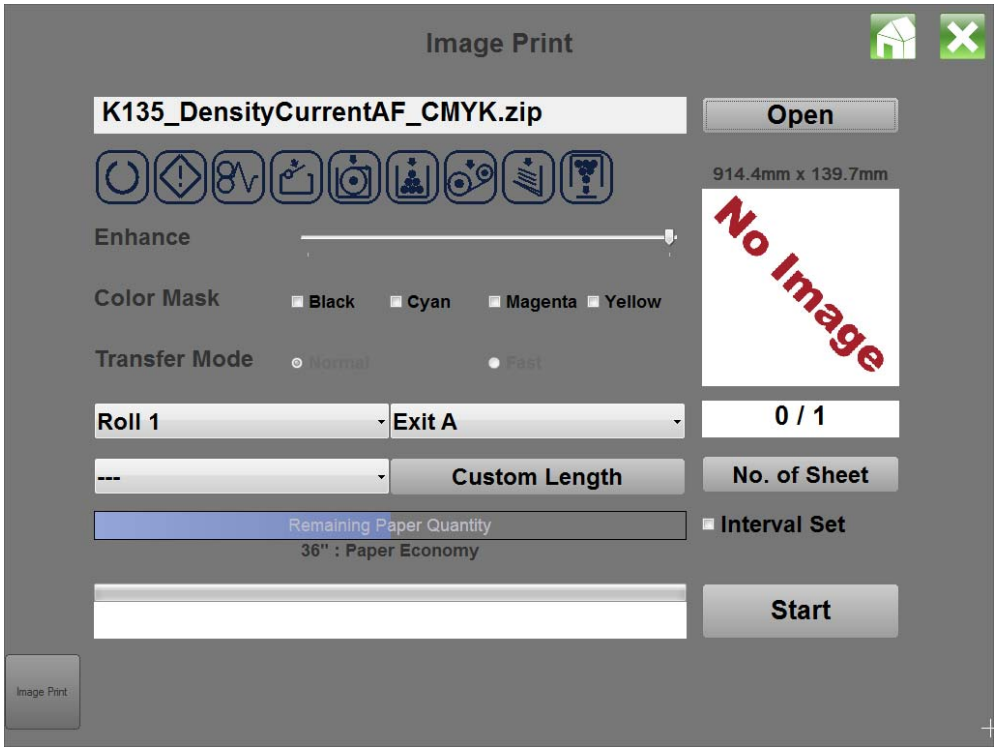
Reference

Whenever  on bottom-right is pressed, the file selection page switches between “icon indication” and “detailed text indication”.

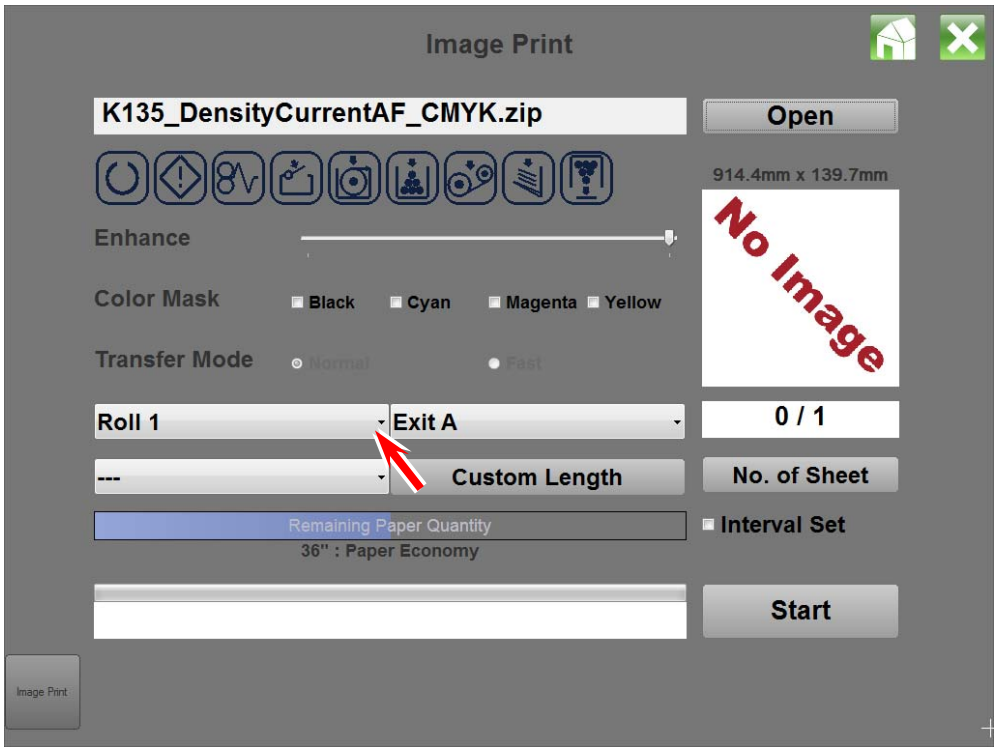


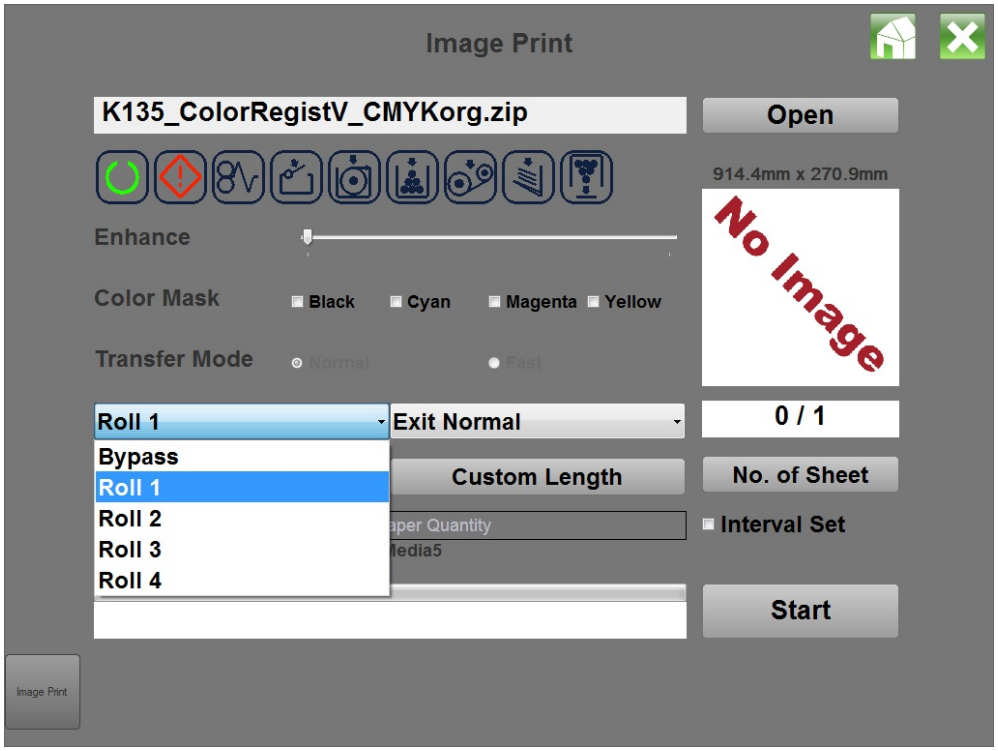


3. Internal test patterns are saved in the controller by zip file format. Select any zip file to print and then press **open**.



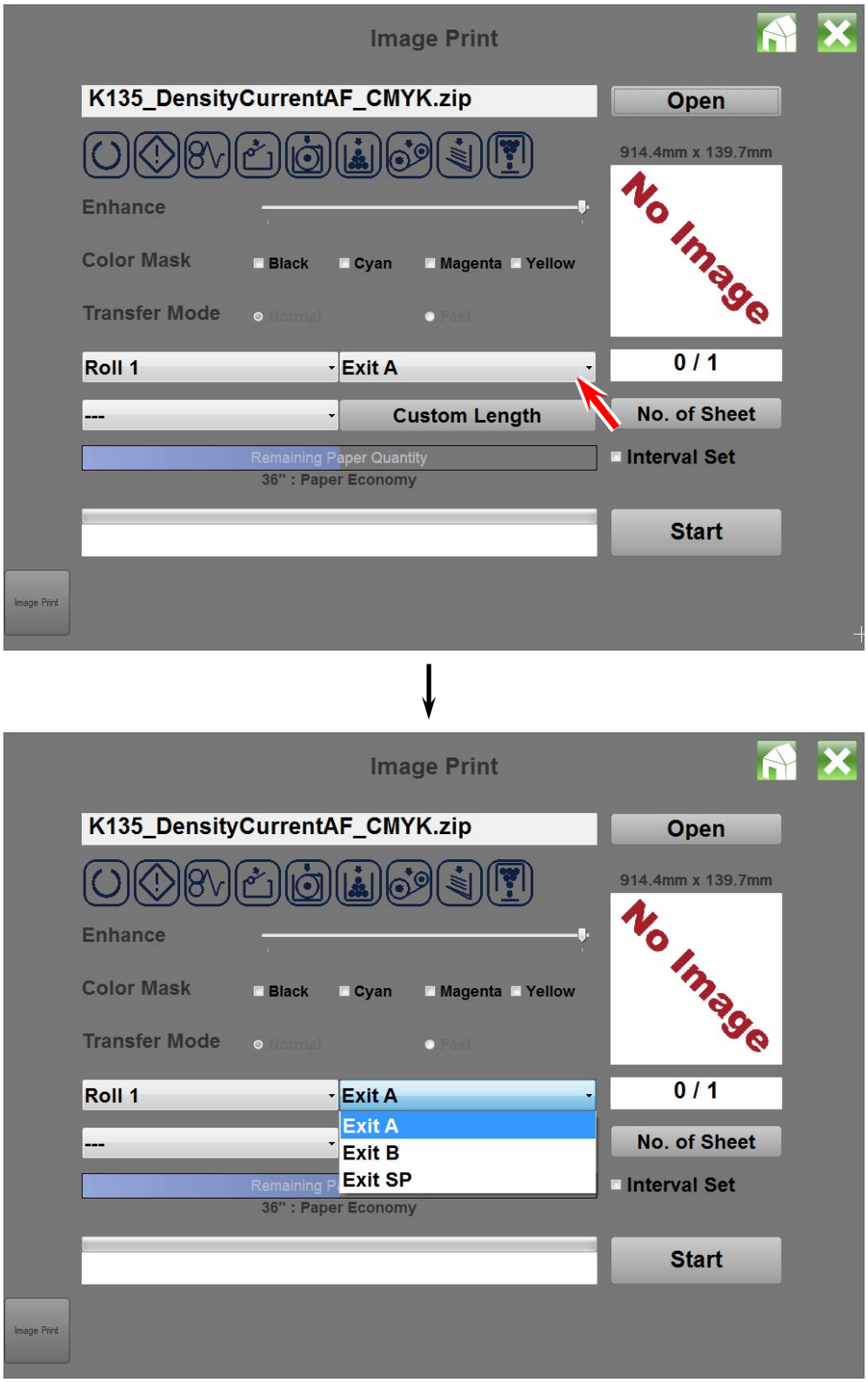
4. Press the drop down menu of media source and select a source of printing media used for test printing. Selectable items are rolls 1 to 4 and Bypass.



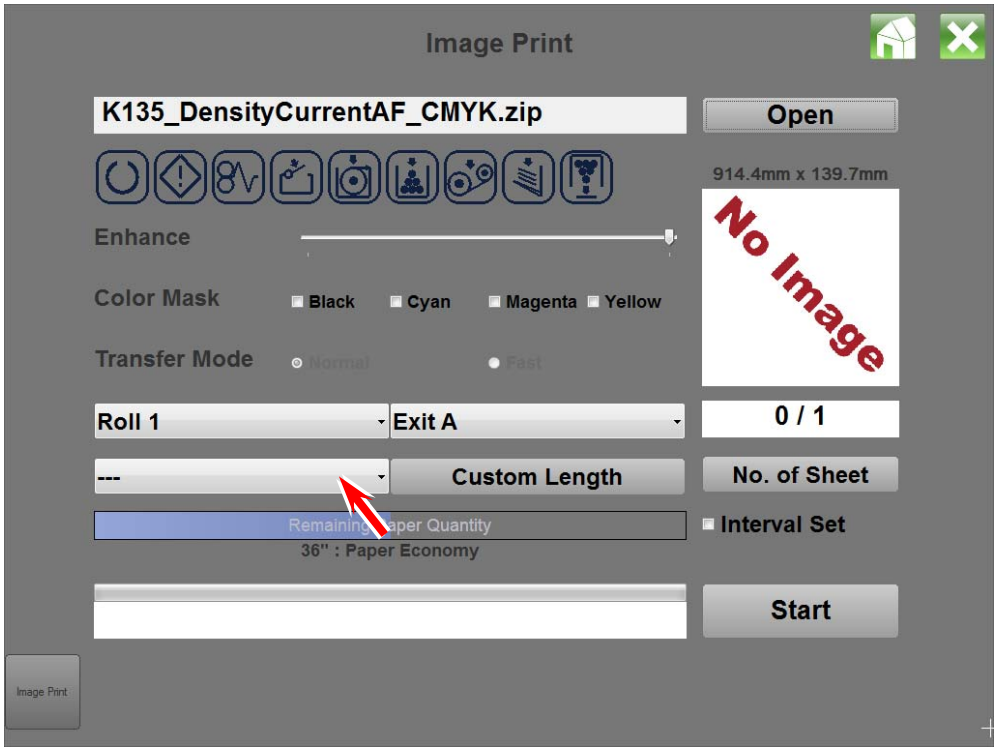


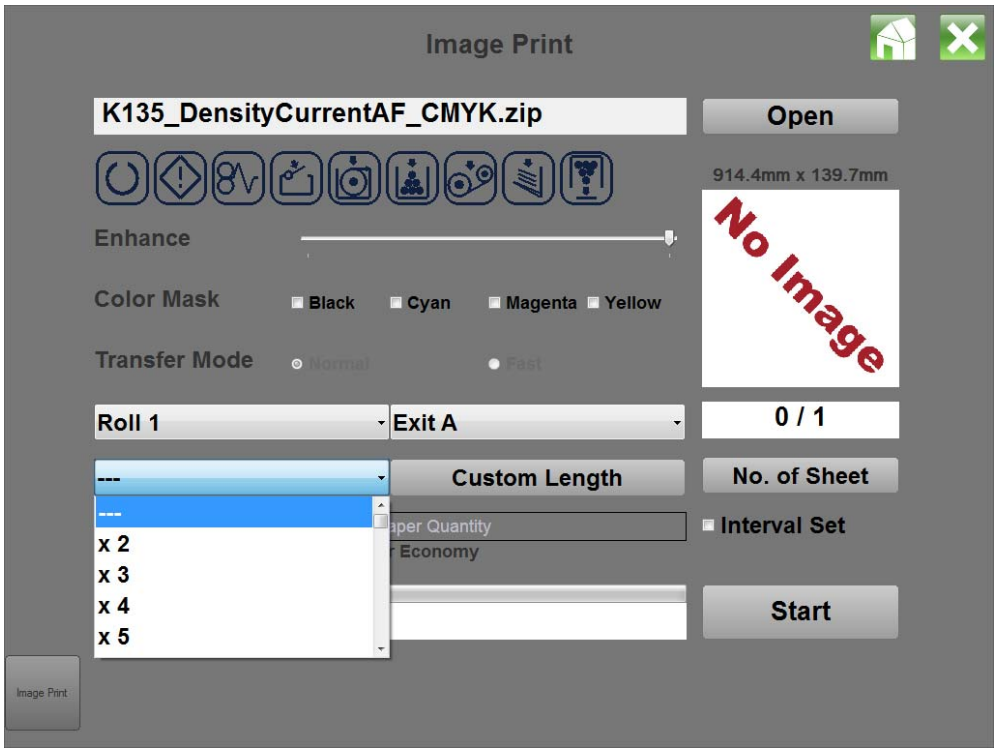
5. Select the type of print ejection if necessary.

- Exit A: Rear Lower Exit
- Exit B: Top Front Exit
- Exit SP: Rear Upper Exit

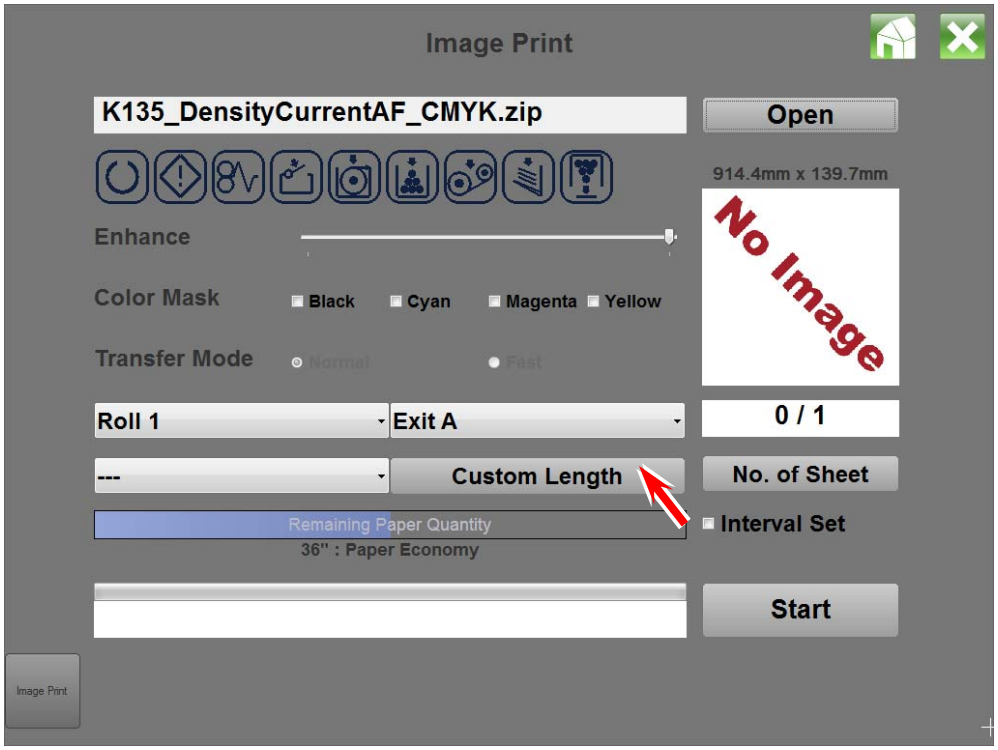


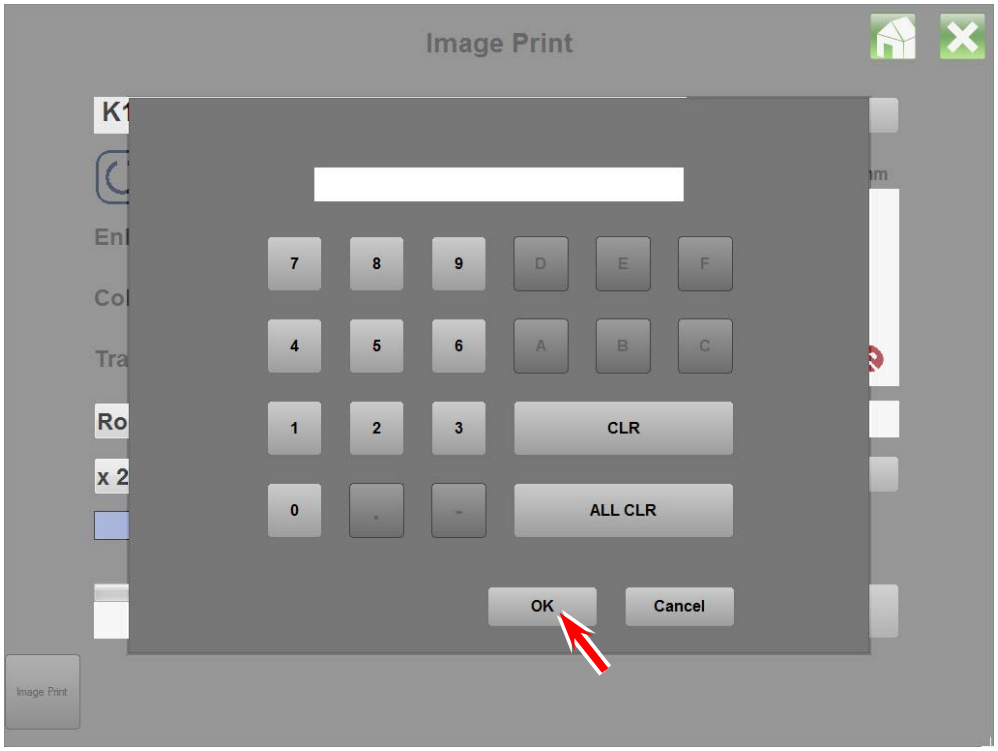
6. If necessary specify “repeat setting” that specifies how many times the selected image is printed on the same sheet of media. If you select [x2] for example, the selected image is printed twice on the same media.



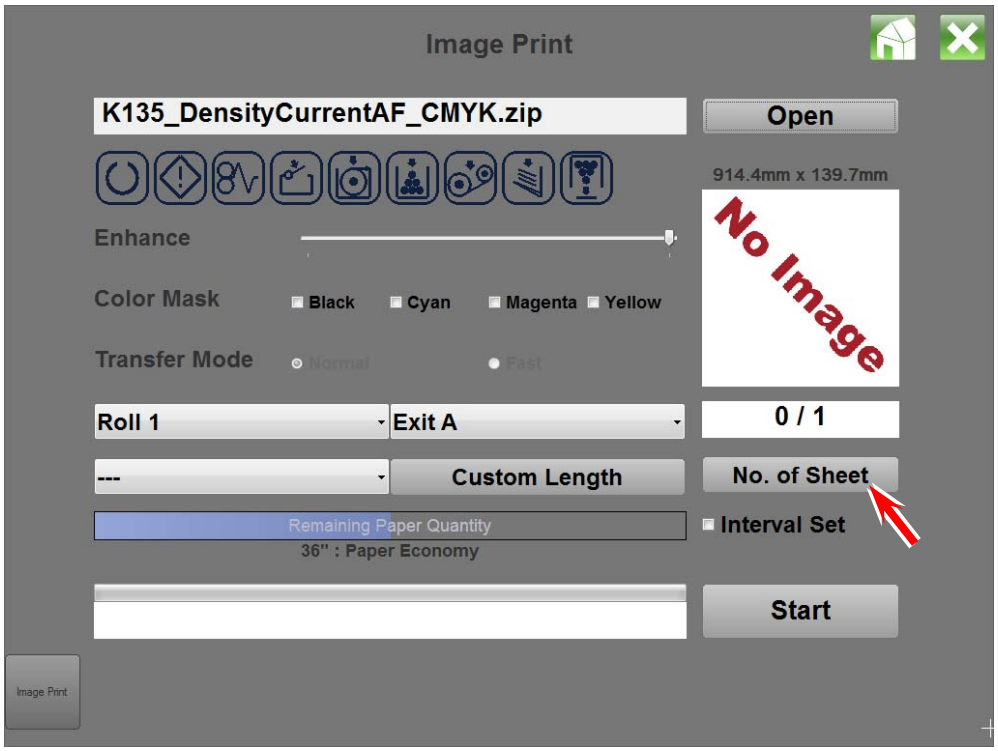


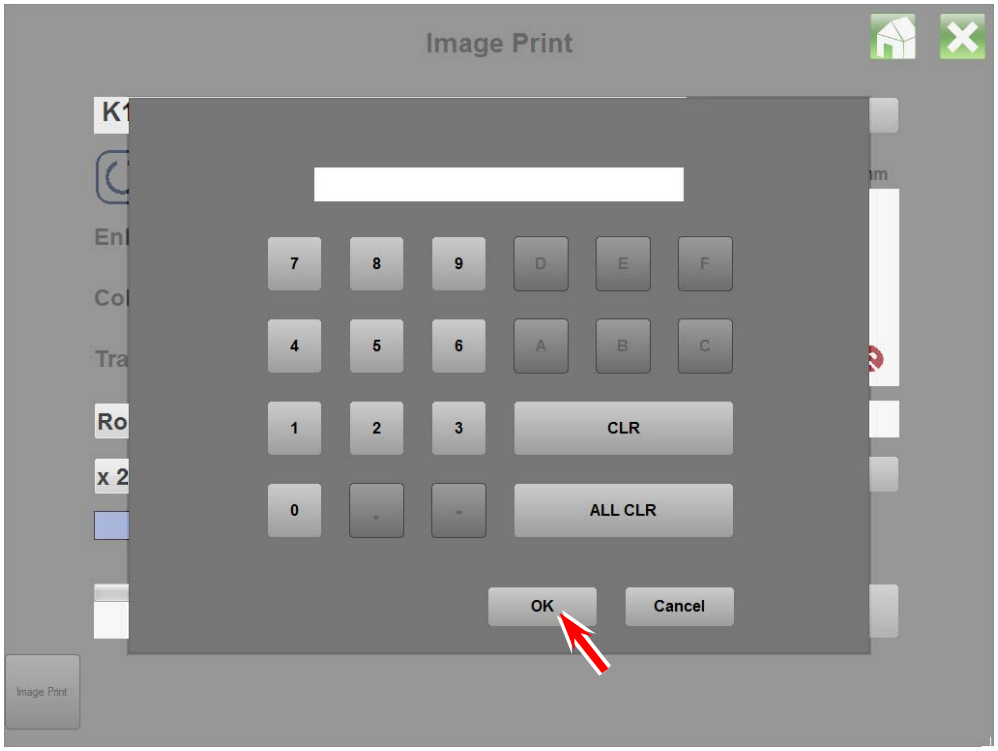
7. If necessary specify the length to cut the print media with the numeric keypad sub window. Available length is from 210mm to 100000mm by 1mm increment. Press OK after entering the value.



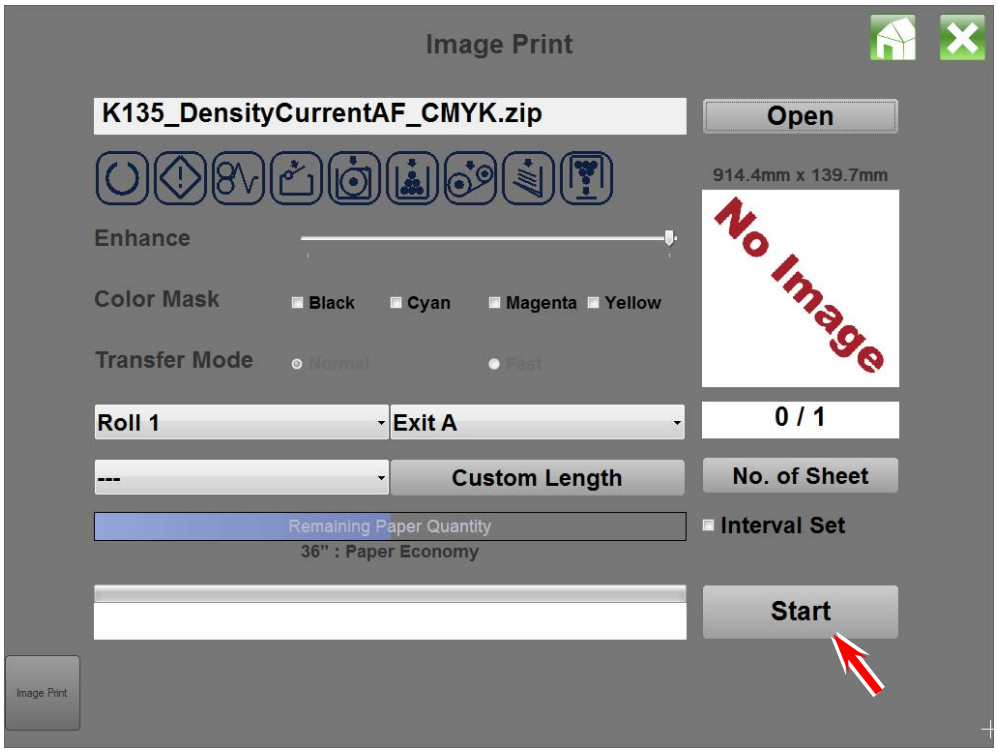


8. Press **No. of Sheet** button to indicate the numeric keypad sub window, enter the number of sheets to print, and then press **OK**.

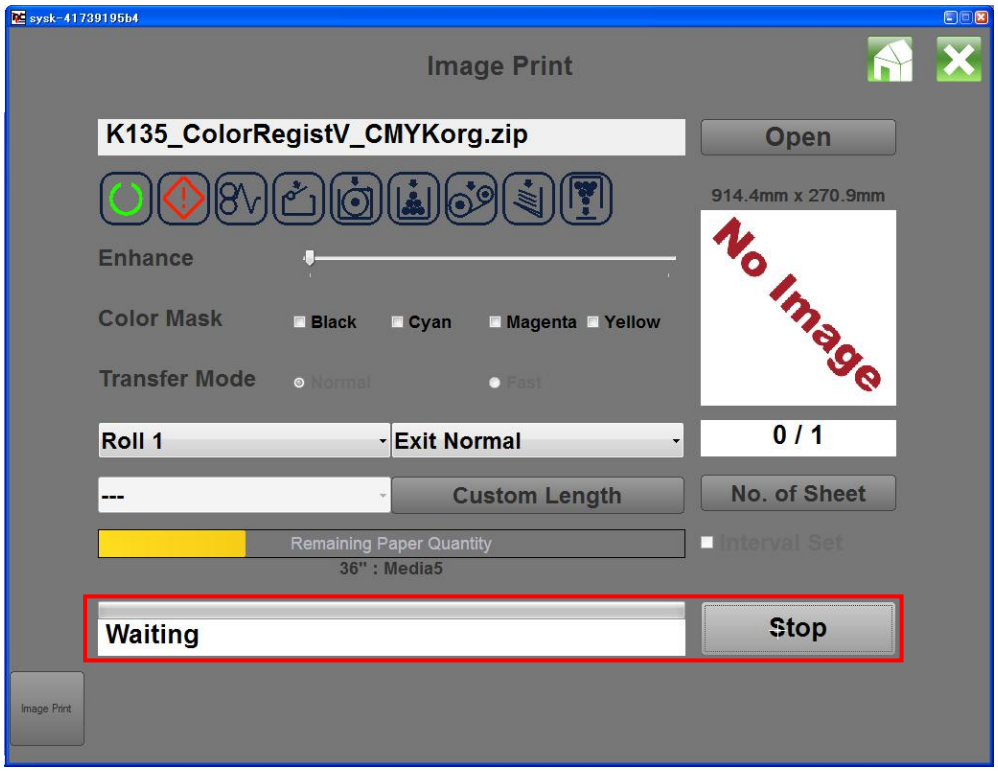




9. Press **Start** to start printing.

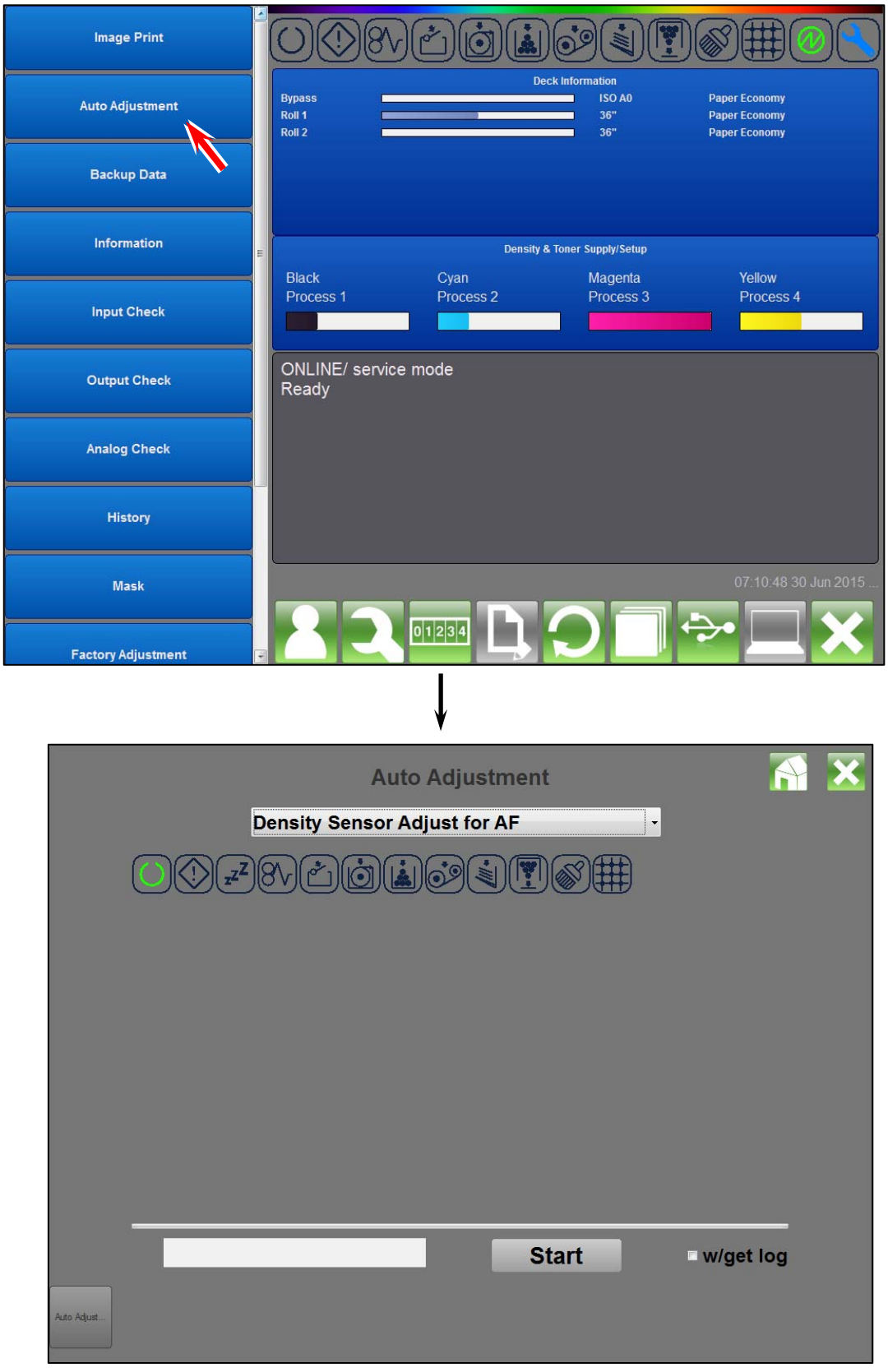


The status indication part on the bottom of the page shows the current status in real time. Press **Stop** to stop printing in the middle.

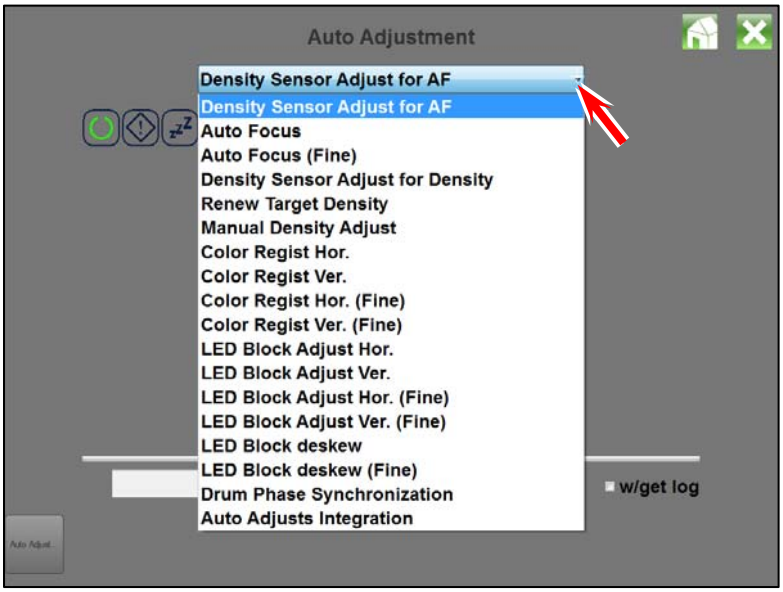


8. 3 Auto Adjustment

This category offers several automatic calibration modes that automatically and appropriately adjust several image quality parameters by easy operation.



There are some different types of automatic calibration modes in Auto Adjustment, which are explained one by one on later pages.



	Mode Name		Description	when needed
1	Density Sensor Adjust for AF	Auto Focus matters	Sensor check before “Auto Focus” below	after replacing LED Head
2	Auto Focus		Adjusts physical distance between LED Head and Drum	after replacing LED Head
3	Auto Focus (Fine)		Adjusts physical distance between LED Head and Drum	after replacing LED Head after replacing Drum as needed
4	Density Sensor Adjust for Density	Density matters	Sensor check before “Renew Target Density”	as needed
5	Renew Target Density		Sets the current density as “Target Density” (reference)	as needed
6	Manual Density Adjustment		Adjusts parameters regarding density to obtain Target Density	as needed
7	Color Regist Hor.	Alignment - Registration matters	Adjusts horizontal color registration	after replacing LED Head
8	Color Regist Hor. (Fine)		Adjusts horizontal color registration	after replacing LED Head after replacing Drum as needed
9	Color Regist Ver.		Adjusts vertical color registration	after replacing LED Head
10	Drum Phase Synchronization		Optimizes Drum driving control for color registration (vertical)	after replacing Drum
11	Color Regist Ver. (Fine)		Adjusts vertical color registration	after replacing LED Head after replacing Drum as needed
12	LED Block Adjust Hor.	Alignment - LED Block matters	Adjusts placement of image by each LED Head Block horizontally	after replacing LED Head
13	LED Block Adjust Hor. (Fine)		Adjusts placement of image by each LED Head Block horizontally	after replacing LED Head as needed
14	LED Block Adjust Ver.		Adjusts placement of image by each LED Head Block vertically	after replacing LED Head
15	LED Block Adjust Ver. (Fine)		Adjusts placement of image by each LED Head Block vertically	after replacing LED Head as needed
16	LED Head Deskew		Corrects skewed placement of image by each LED Head Block	after replacing LED Head
17	LED Head Deskew (Fine)		Corrects skewed placement of image by each LED Head Block	after replacing LED Head as needed
18	Auto Adjust Integration	misc	Executes multiple Auto Adjustment menus at once	as needed

8. 3. 1 Density Sensor Adjustment for AF

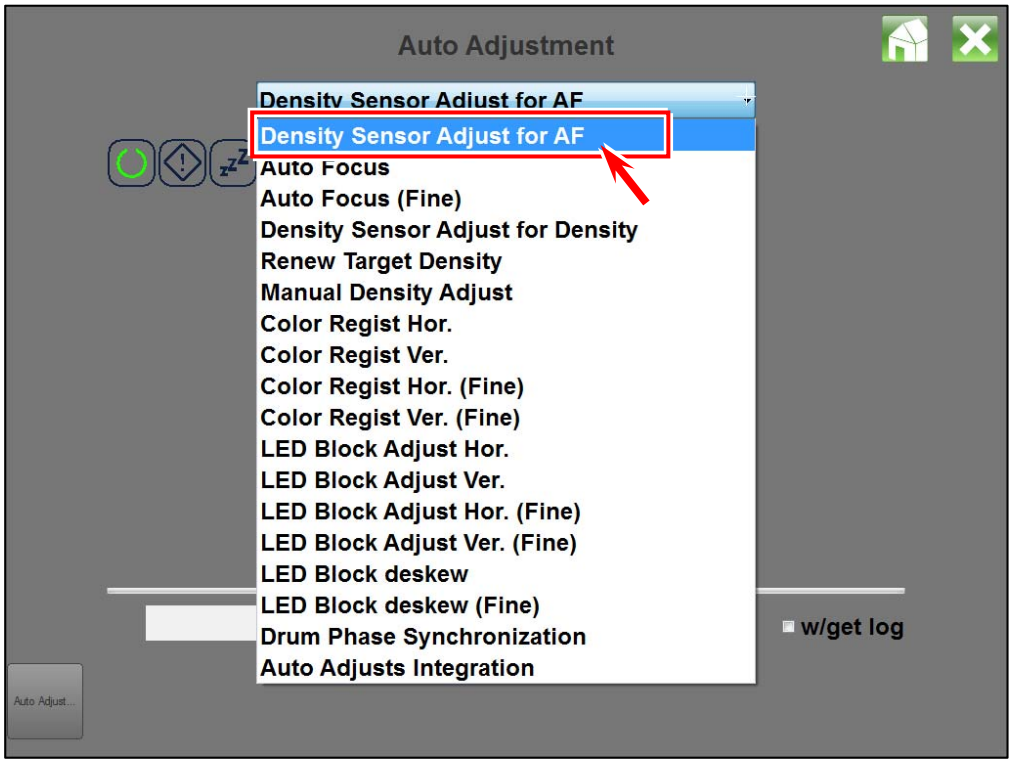
This is an automatic calibration mode that appropriately adjusts the Density Sensors for Auto Focus calibration. The sensor output is adjusted to requested level for Auto Focus calibration automatically.

Reference

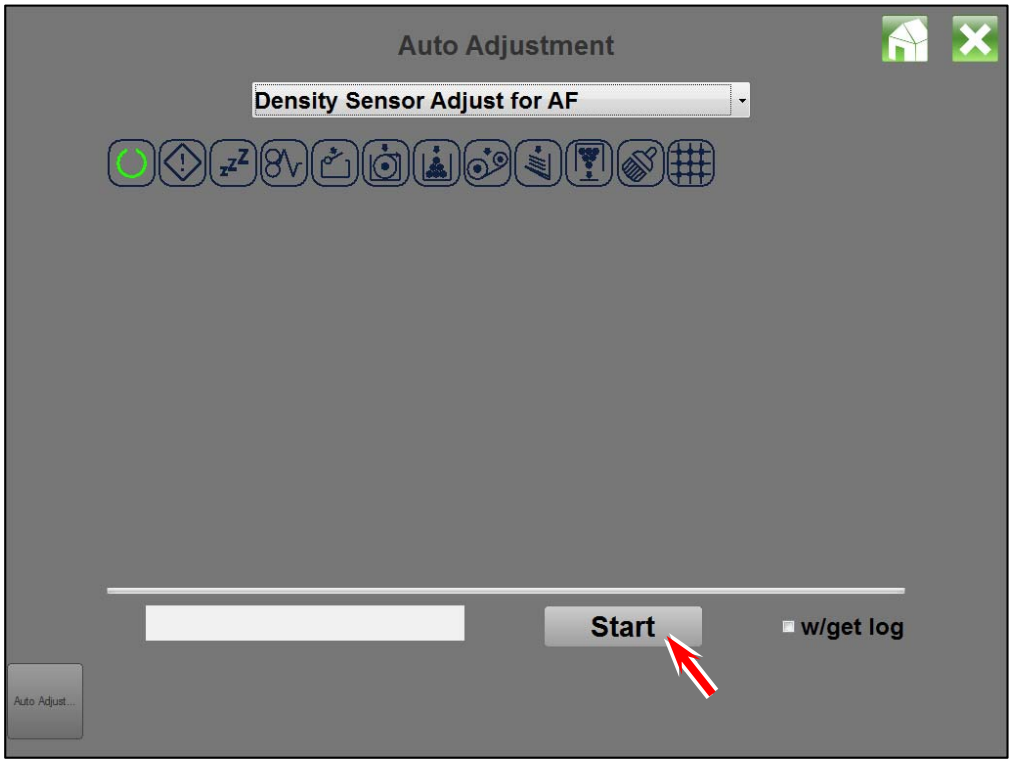
It is recommended to execute this mode immediately before taking **Auto Focus**.

See the following operation procedure for use.

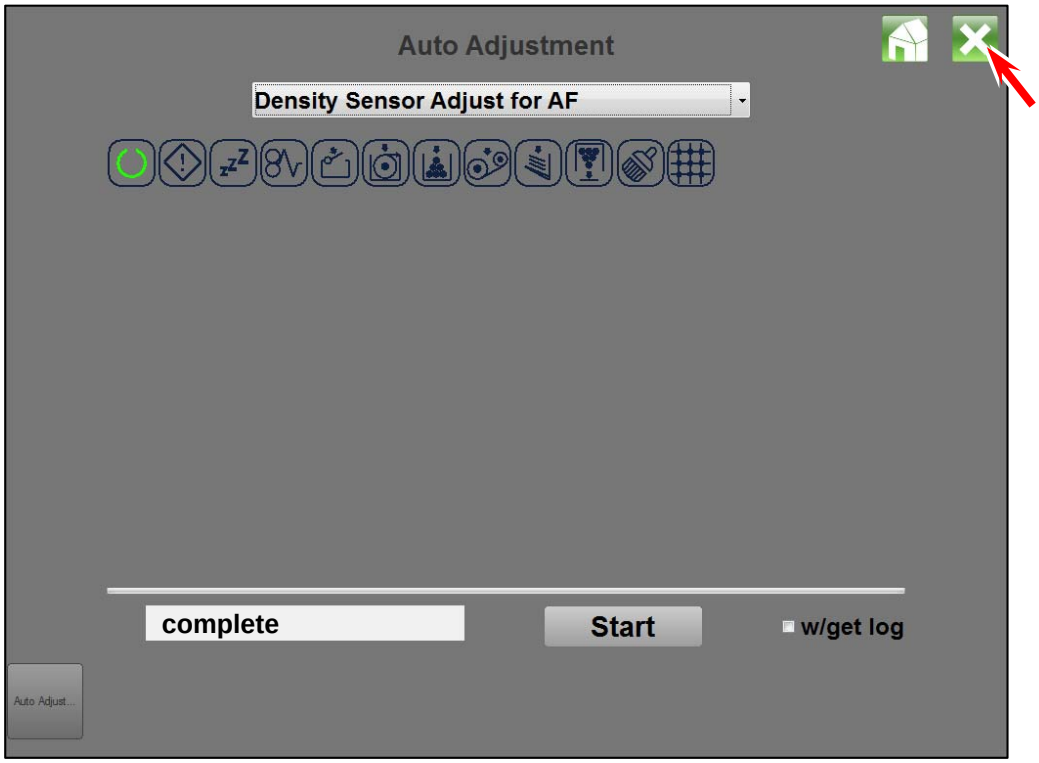
1. Select **Density Sensor Adjustment for AF** in the menu of Auto Adjustment.



2. Press **Start** to start the automatic calibration. Wait until it finishes.
   This will set correct values in BUDs 00502-00506 D-Sensor Current1.



3. The status indication part indicates “complete” when the calibration finishes. Close the page by pressing the **X** button.



8. 3. 2 Auto Focus

This is an automatic calibration mode that automatically and appropriately adjusts the focus of each LED Block component by easy operation.

Reference

This mode is used mainly after replacing the LED Head for calibrating all LED Block components. And it may be used also for correcting the focus of single or multiple LED Block component(s) when the necessity for readjustment occurs during use by some reason.

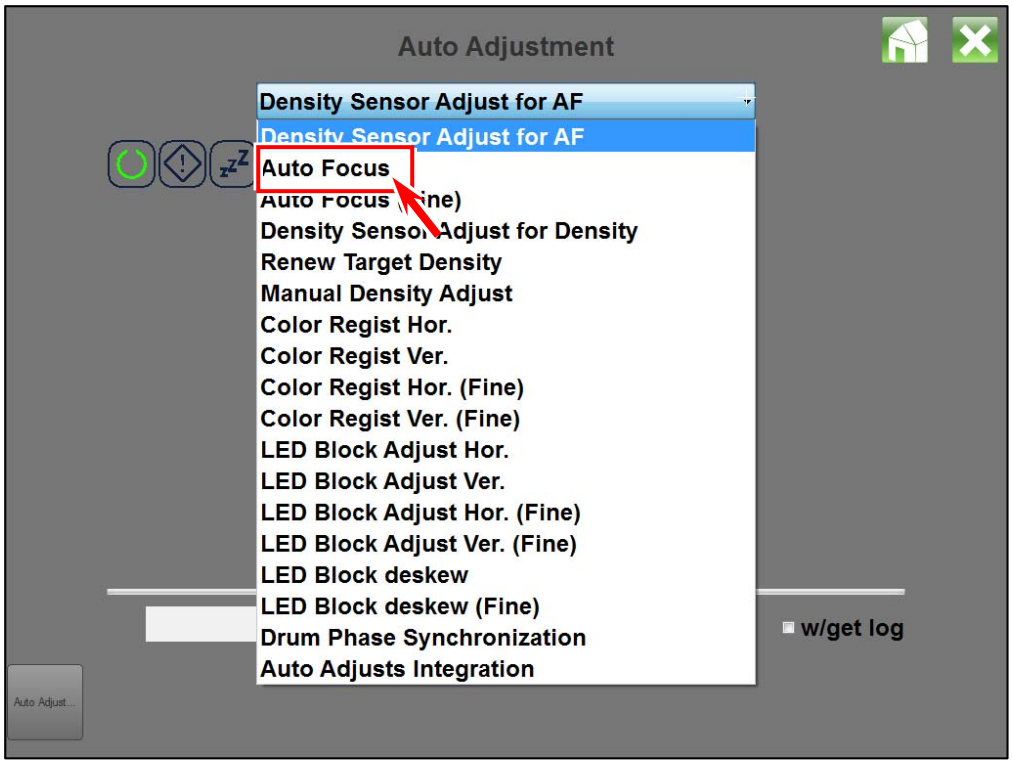
It is recommended to execute **Density Sensor Adjustment for AF** immediately before taking **Auto Focus**.

NOTE

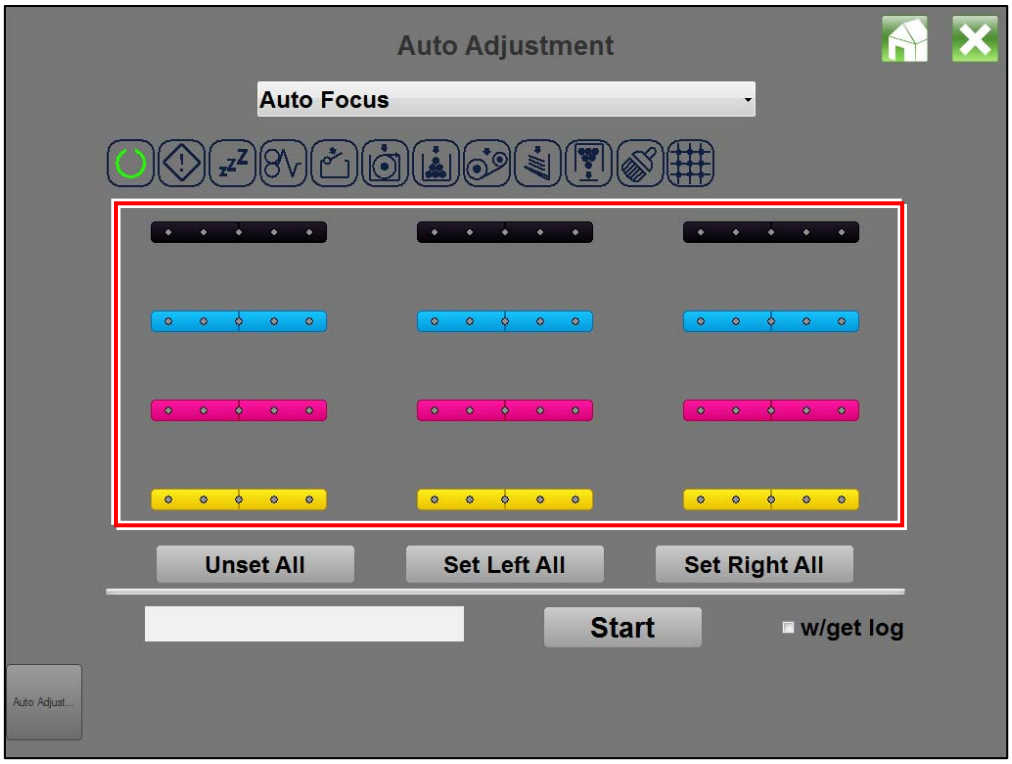
Before proceeding, be sure that BUD 01265 Focus Adjust On/Off is set to “1”. If not, set it to “1” and then turn off and on the power.

BUD	BUD Name	Set here to...
01265	Focus Adjust On/Off	1

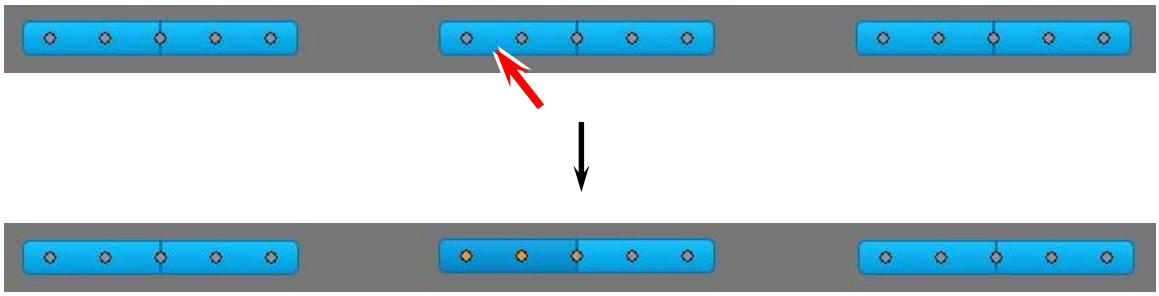
1. Select **Auto Focus** in the menu of Auto Adjustment.



2. The setting page shows the images of 12 CMYK LED Blocks. Focus adjustment is done to either left or right of each LED Block at a time. (It is not possible to adjust both left and right of the same LED block) By touching on the touch panel, select either left or right of LED Block(s) that is (are) to be adjusted.



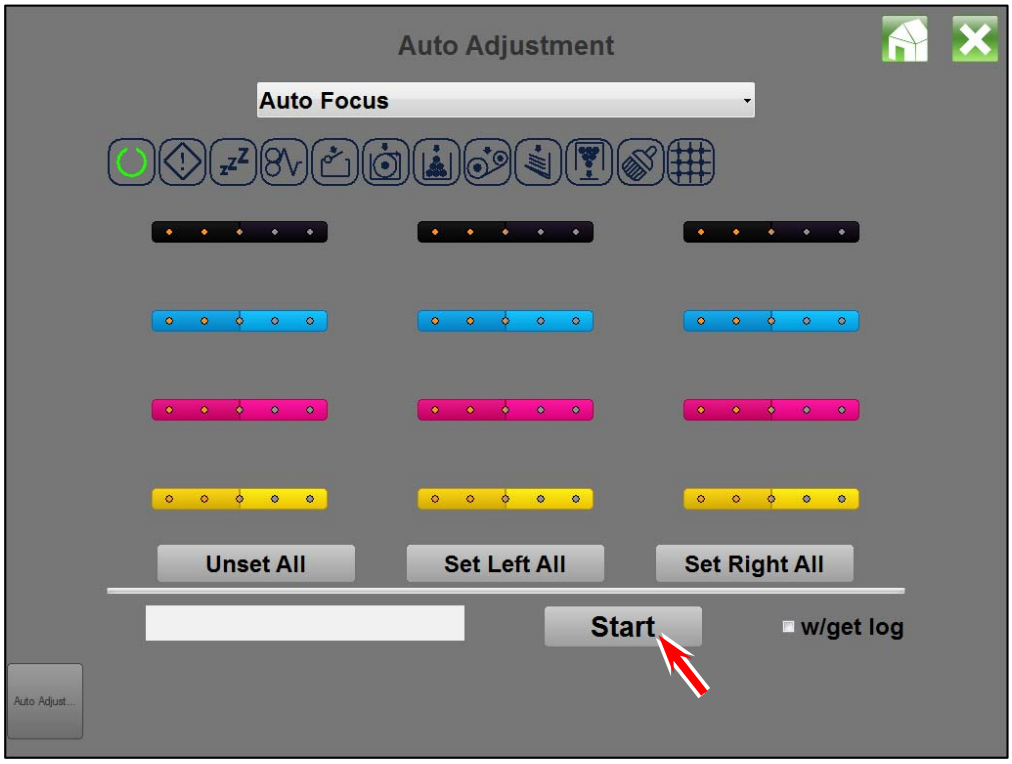
When you will adjust the left of the Cyan-Central LED Block for example, touch the following point on the touch panel. The circular indicator lamps of the selected position are shown by orange color meaning that the concerning side of LED Block is to be adjusted.



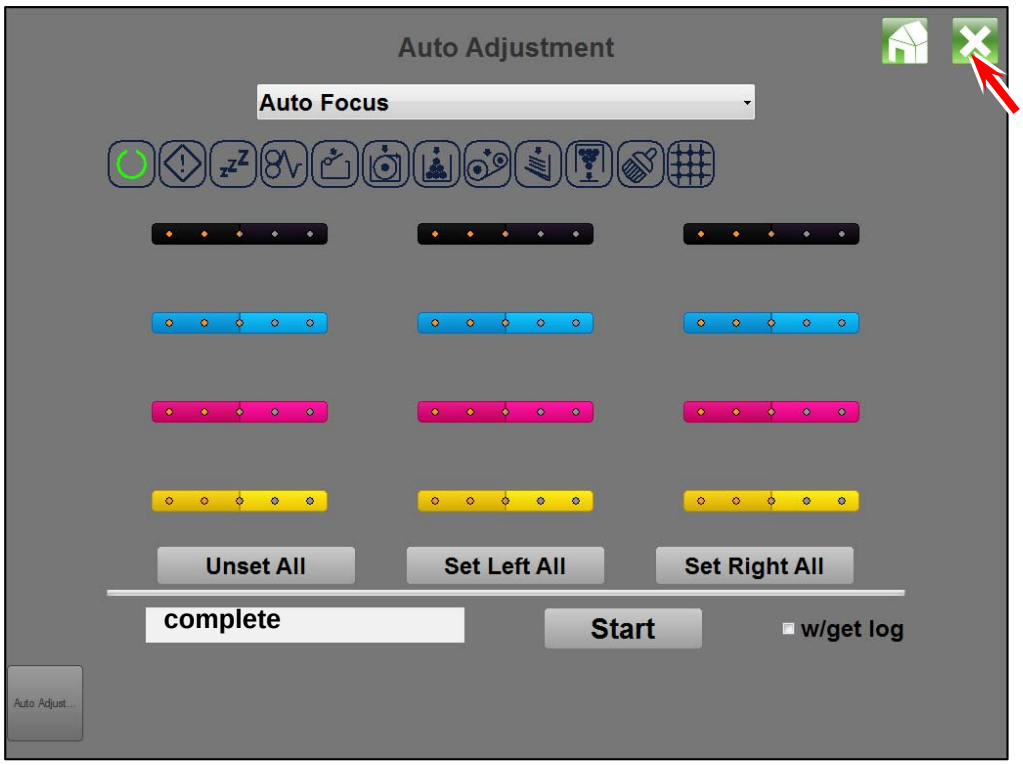
NOTE

It is possible to select multiple points and adjust all of them by one operation. However, note that there is one restriction for the selection of multiple points. If 2 or 3 LED Blocks of one color are to be adjusted together, it is possible to select only one side, which means left only or right only, for all those LED Blocks. In the following example, “right” is selected for all 3 LED Blocks of black and “left” is selected for all 3 blocks of cyan. This selection is acceptable. But it is not possible to mix the selection of left and right in the same color.

4. Press **Start** to start the automatic calibration. Wait until it finishes. (For example, left block for every color are selected)
   This will set correct values in BUDs 01241-01264 Focus Step that correspond to the selected color(s) / block (s).



5. The status indication part indicates “complete” when the calibration finishes. Close the page by pressing the **X** button.



8. 3. 3 Auto Focus (Fine)

This is an automatic calibration mode that automatically and appropriately adjusts the focus of each LED Block component by easy operation.
Fine mode is a fine control used for a LED Head that already had **Auto Focus** done.

Reference

This mode is used mainly after replacing the LED Head for calibrating all LED Block components. And it may be used also for correcting the focus of single or multiple LED Block component(s) when the necessity for readjustment occurs during use by some reason.

It is recommended to execute **Density Sensor Adjustment for AF** and **Auto Focus** immediately before taking **Auto Focus (Fine)**.

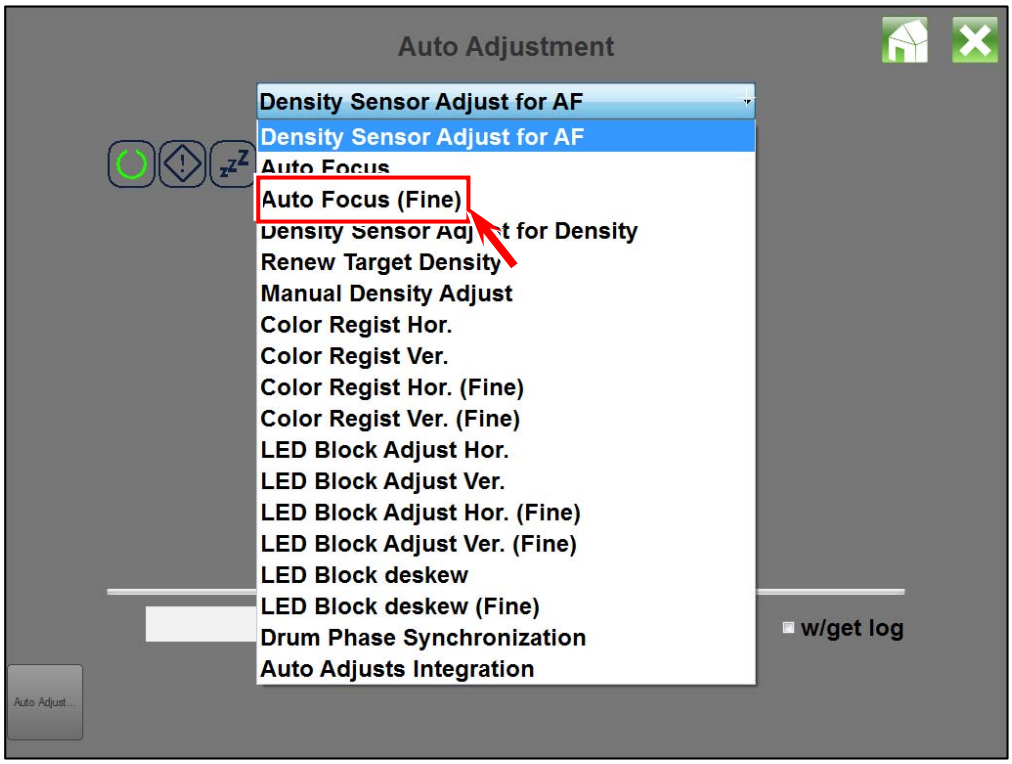
It may be also required to readjust it occasionally during use of machine as needed.

NOTE

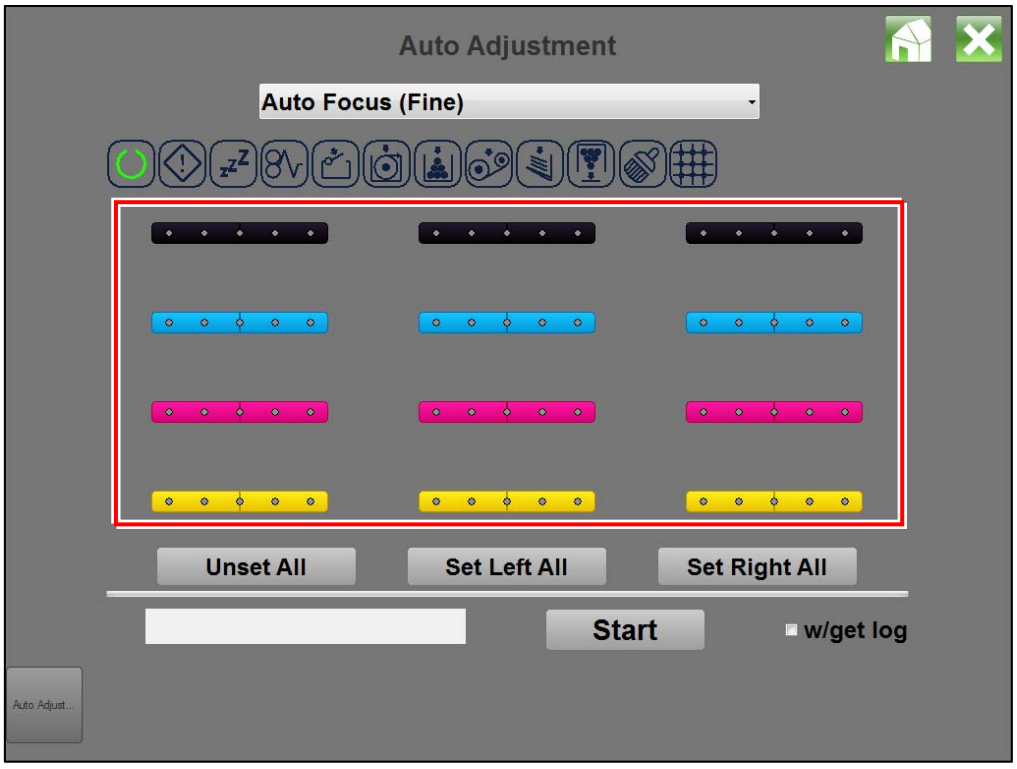
Before proceeding, be sure that BUD 01265 Focus Adjust On/Off is set to “1”. If not, set it to “1” and then turn off and on the power.

BUD	BUD Name	Set here to...
01265	Focus Adjust On/Off	1

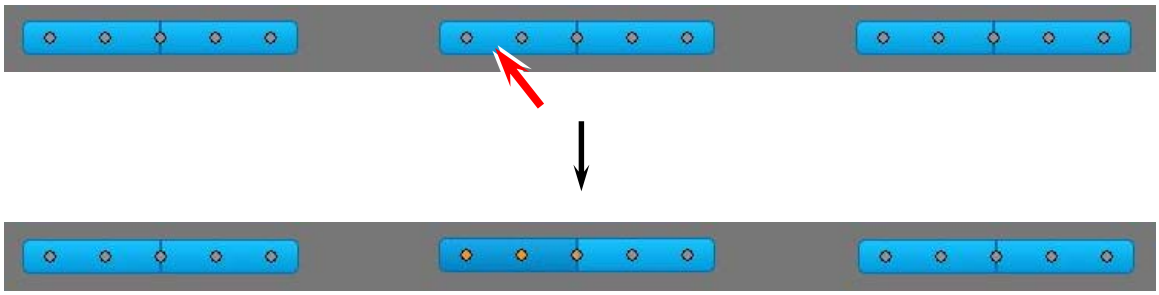
1. Select **Auto Focus (Fine)** in the menu of Auto Adjustment.



2. The setting page shows the images of 12 CMYK LED Blocks. Focus adjustment is done to either left or right of each LED Block at a time. (It is not possible to adjust both left and right of the same LED block) By touching on the touch panel, select either left or right of LED Block(s) that is (are) to be adjusted.



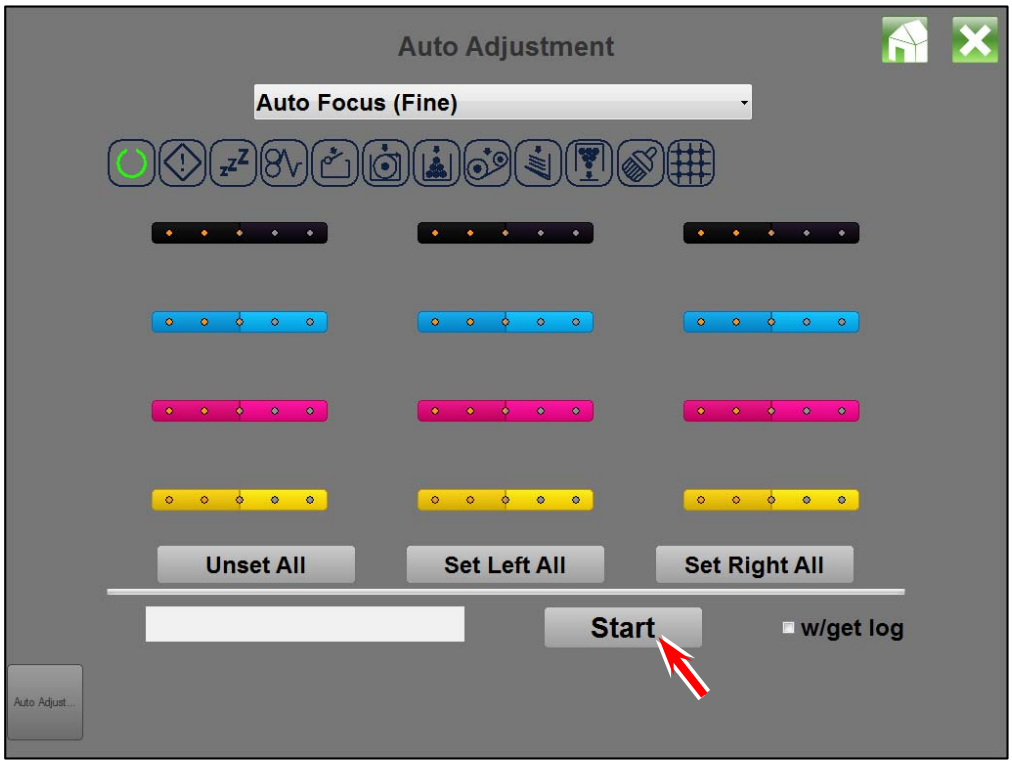
When you will adjust the left of the Cyan-Central LED Block for example, touch the following point on the touch panel. The circular indicator lamps of the selected position are shown by orange color meaning that the concerning side of LED Block is to be adjusted.



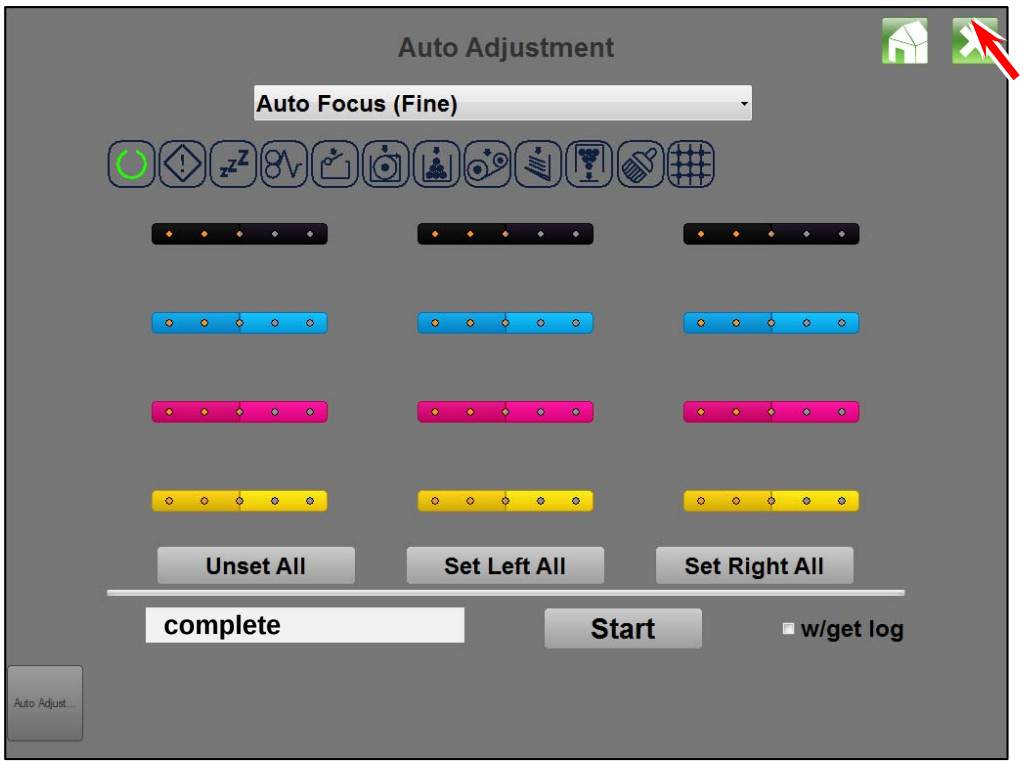
NOTE

It is possible to select multiple points and adjust all of them by one operation. However, note that there is one restriction for the selection of multiple points. If 2 or 3 LED Blocks of one color are to be adjusted together, it is possible to select only one side, which means left only or right only, for all those LED Blocks. In the following example, “right” is selected for all 3 LED Blocks of black and “left” is selected for all 3 blocks of cyan. This selection is acceptable. But it is not possible to mix the selection of left and right in the same color.

3. Press **Start** to start the automatic calibration. Wait until it finishes. (For example, left block for every color are selected)
   This will set correct values in BUDs 01241-01264 Focus Step that correspond to the selected color(s) / block (s).



4. The status indication part indicates “complete” when the calibration finishes. Close the page by pressing the **X** button.



For further fine touch-up, please see chapter 9 by entering setting values manually.

> **⚠ NOTE**
>
> When finished, set the BUD 01265 Focus Adjust On/Off is set to “0”.

8. 3. 4 Density Sensor Adjustment for Density

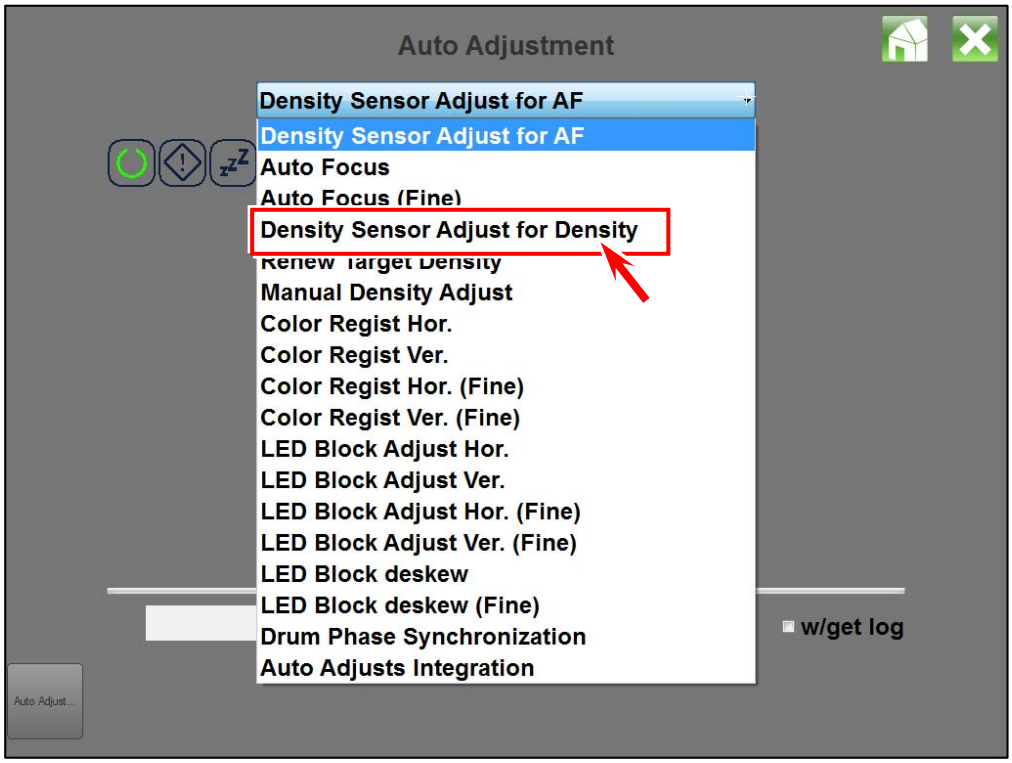
This is an automatic calibration mode that appropriately adjusts the Density Sensors for Renew Target Density calibration. The sensor output is adjusted to requested level for Renew Target Density calibration automatically.

Reference

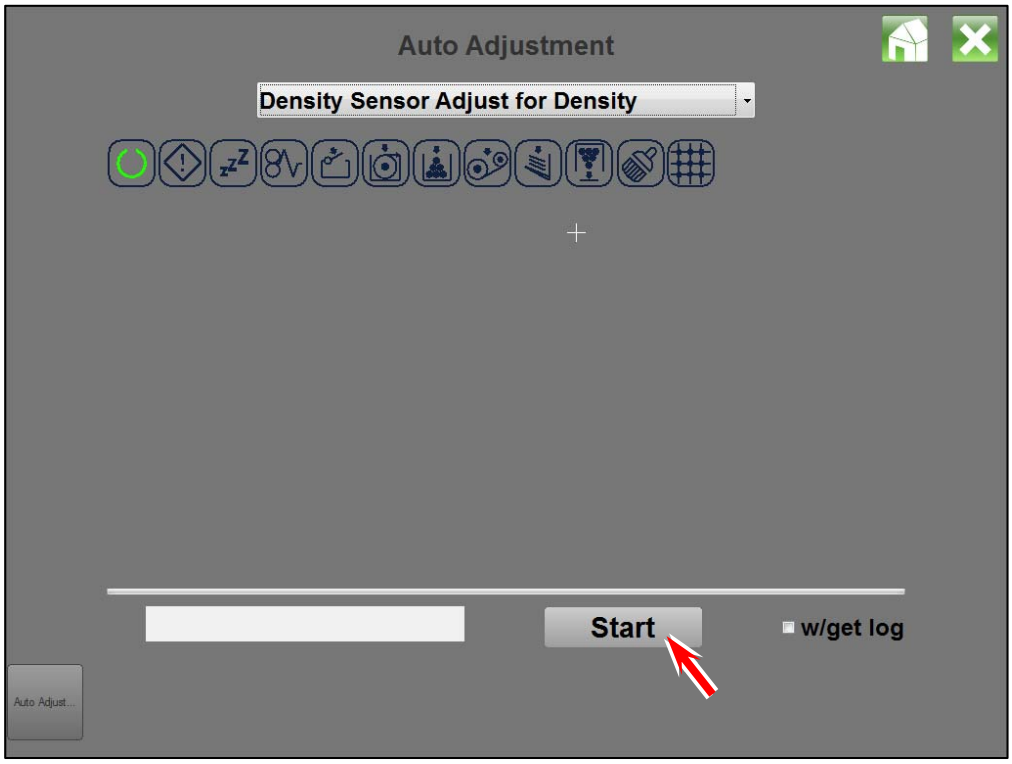
It is recommended to execute this mode immediately before taking **Renew Target Density**.

See the following operation procedure for use.

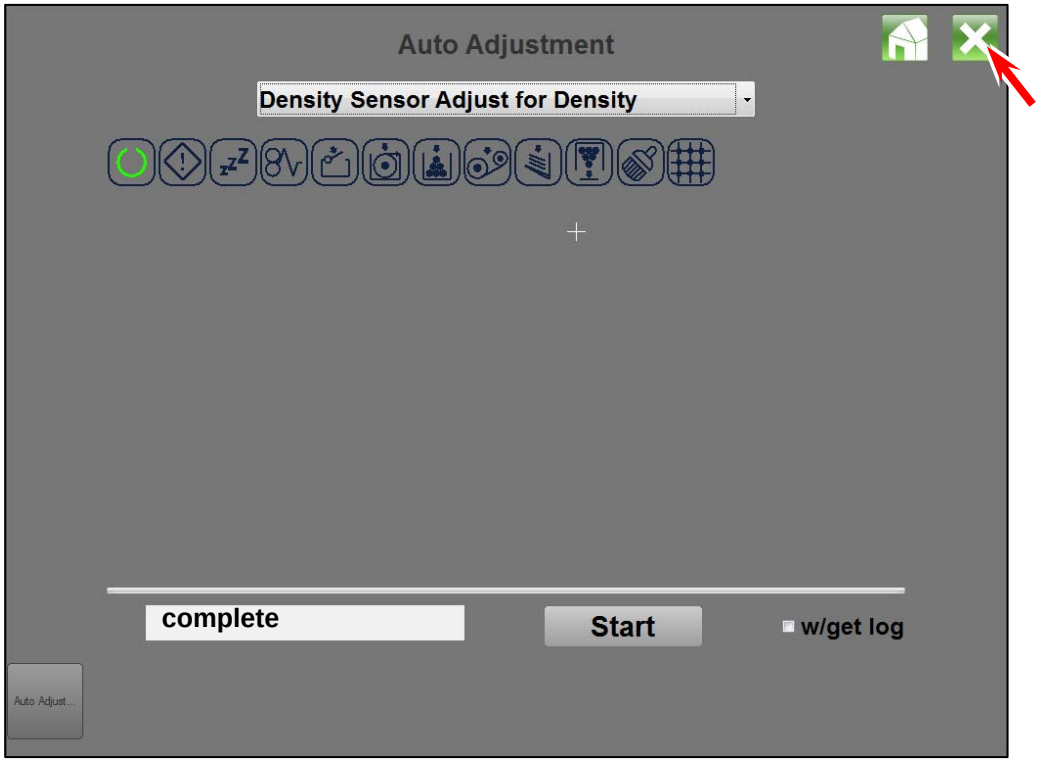
1. Select **Density Sensor Adjustment for Density** in the menu of Auto Adjustment.



2. Press **Start** to start the automatic calibration. Wait until it finishes.



3. The status indication part indicates “complete” when the calibration finishes. Close the page by pressing the **X** button.



8. 3. 5 Renew Target Density

This is an automatic mode that detects and saves correctly adjusted CMYK densities as “Target Density”.

Reference

It is recommended to execute **Density Sensor Adjustment for Density** immediately before taking **Renew Target Density**.

NOTE

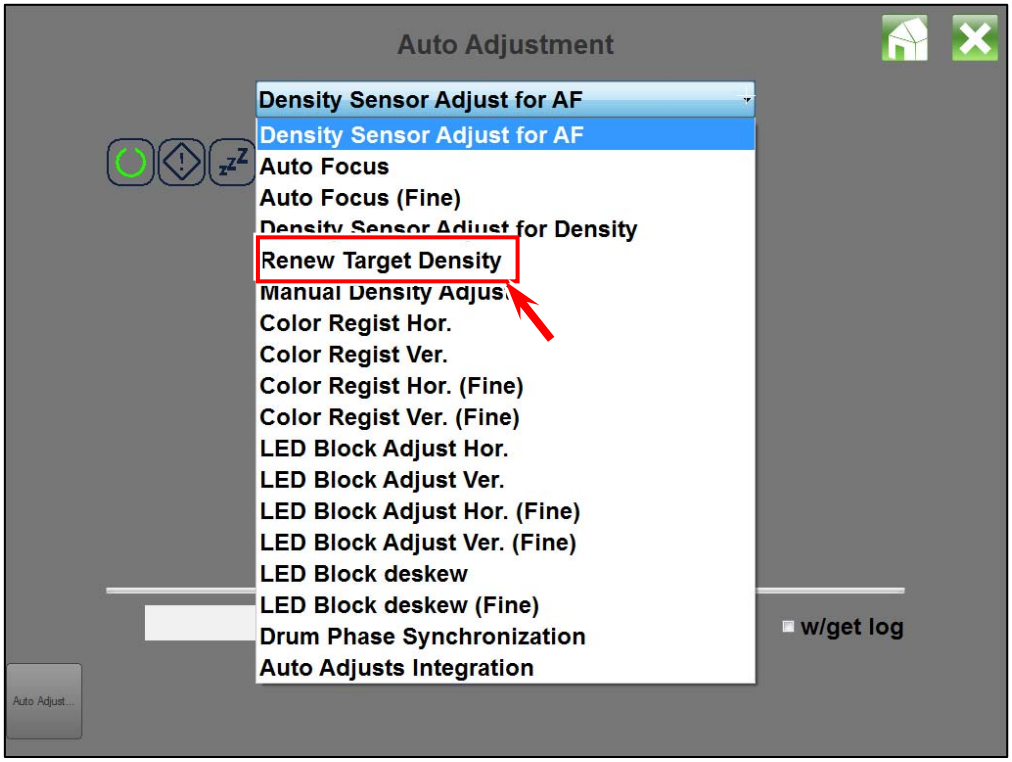
Adjustment to correct CMYK densities must be separately done. See **[9.1 Adjustment of Optical Density]** for this adjustment.

NOTE

Before proceeding, be sure that both BUDs are set to “0”. If not, set them to “0” and then turn off and on the power.

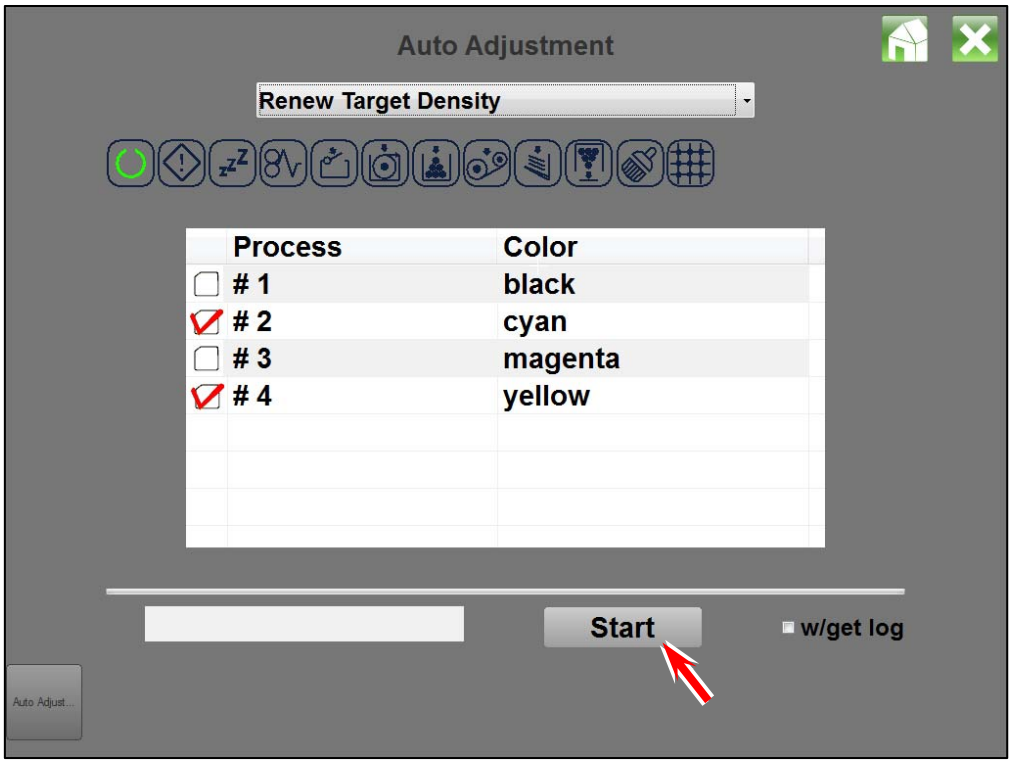
BUD	BUD Name	Set here to...
00720	Density Adjustment On/Off	0
01785	Auto Density Adjustment	0

1. Select **Renew Target Density** in the menu of Auto Adjustment.

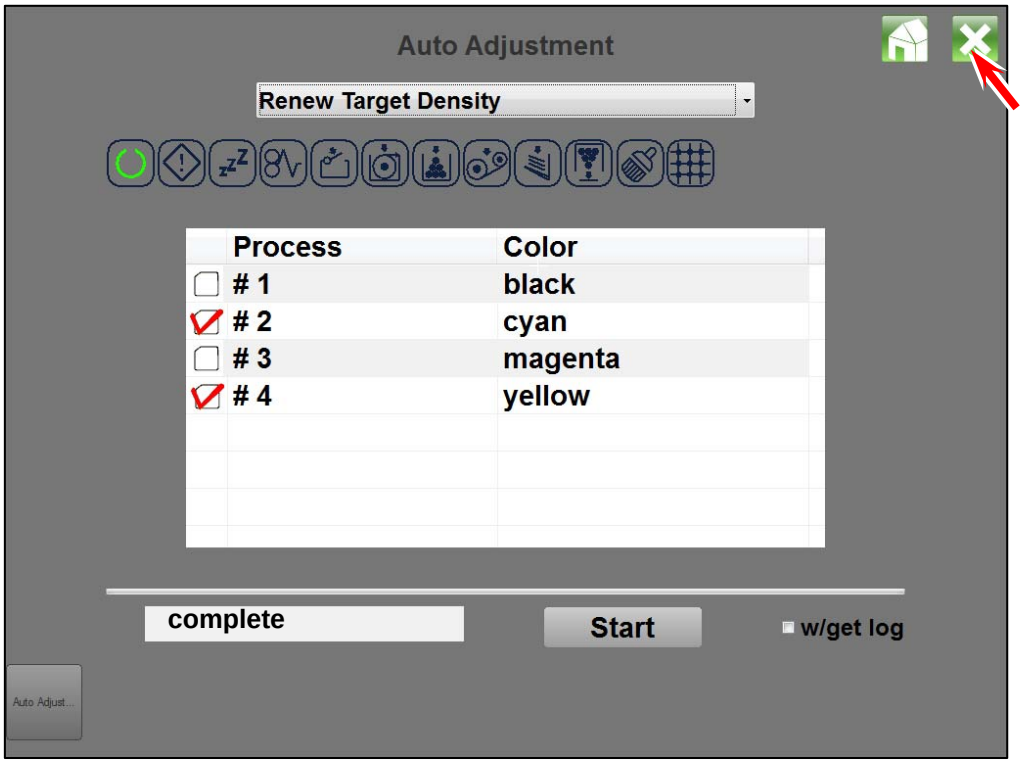


2. Select the color to let the machine detect its density and save the detection result as Target Density. The selected color is checked.

3. Press **Start**. The machine detects the density of the sampling data of selected color, and save the detection result as Target Density.
   This will set correct values in BUDs 00512-00515 Belt Density and 00516-00519 Density Target that correspond to the selected color(s) / block (s) respectively.



4. The status indication part indicates “complete” when saving of Target Density finishes. Close the page by pressing the **X** button.



5. Go to the next page for Manual Density Adjust (immediately execute parameter adjustments to satisfy the Target Density).

8. 3. 6 Manual Density Adjust

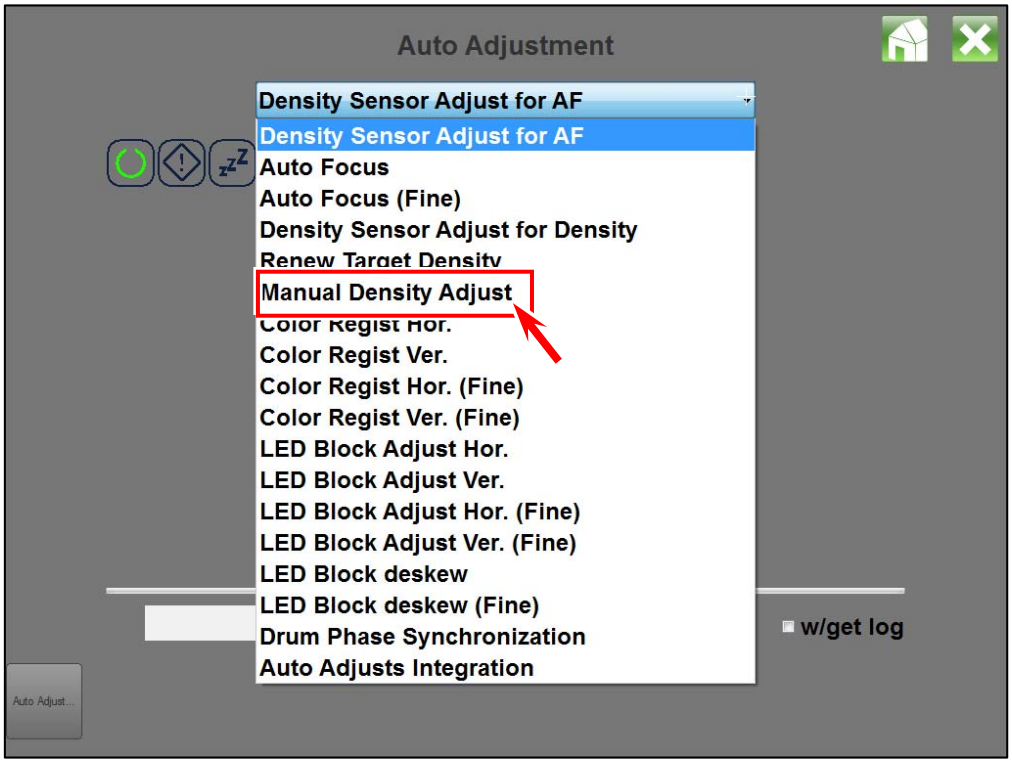
This is an automatic calibration mode that adjusts each CMYK densities to be same as the Target Density. It will be executed immediately color(s) to be adjusted to meet the Target Density when they are selected.

NOTE

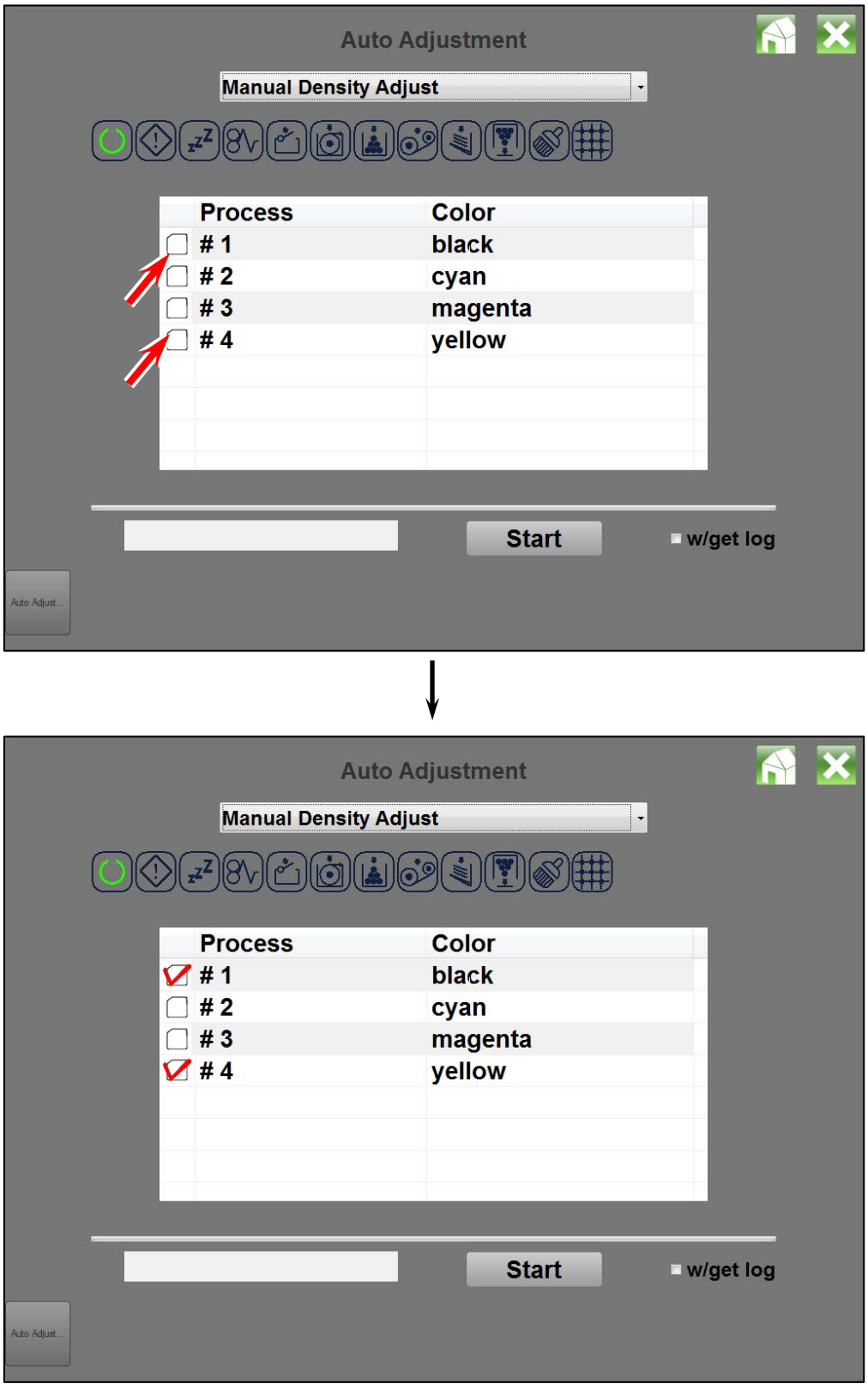
Before proceeding, be sure that both BUDs are set to “0”. If not, set them to “0” and then turn off and on the power.

BUD	BUD Name	Set here to...
00720	Density Adjustment On/Off	0
01785	Auto Density Adjustment	0

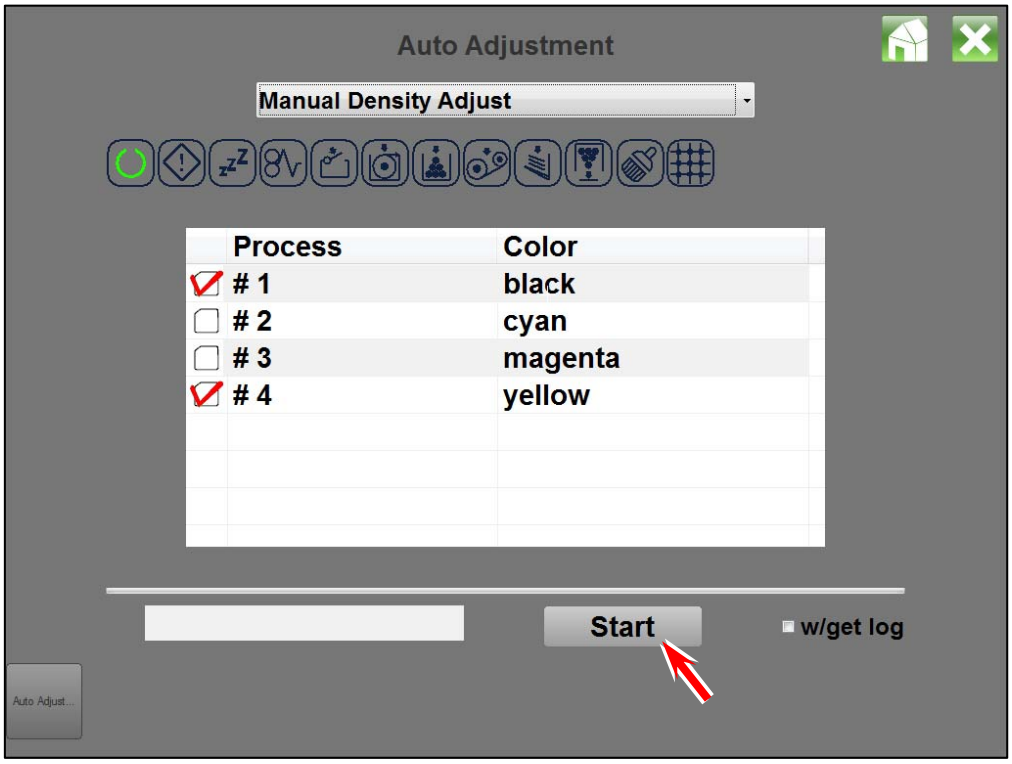
1. Select **Manual Density Adjust** in the menu of Auto Adjustment.



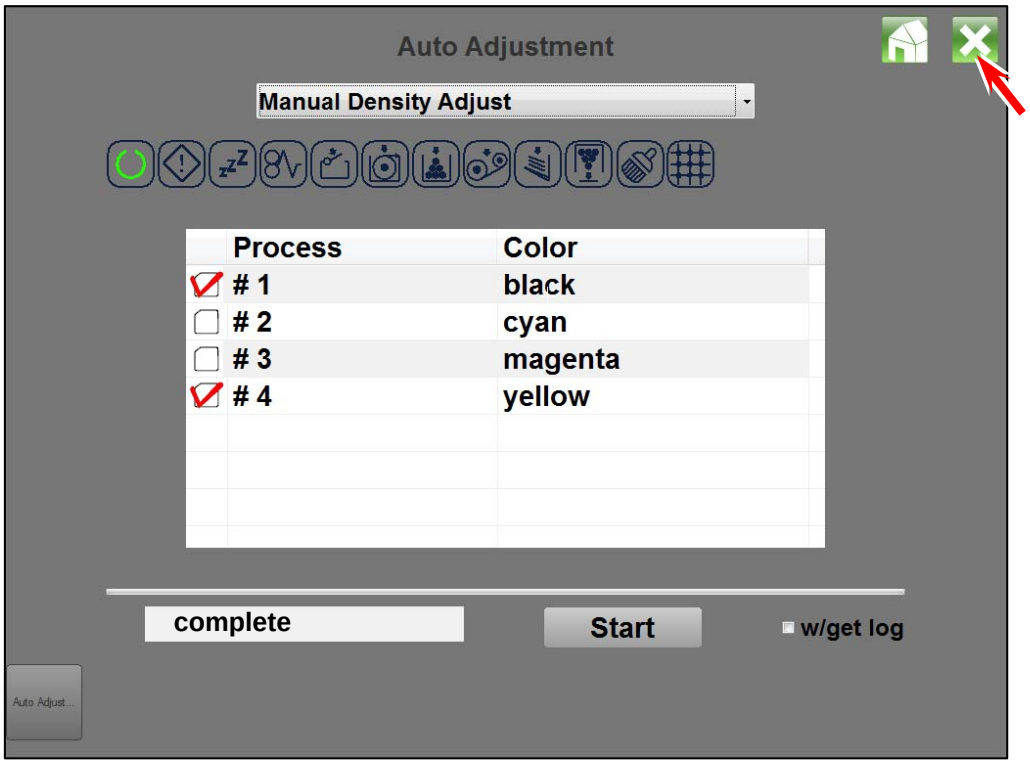
2. Select the color of which density is to be adjusted to the Target Density. The selected color is checked.



3. Press **Start**. The machine automatically compares the current density, compares it with the Target Density and increase or decreased the current density so that it matches the Target Density. Wait until it finishes.
   This will set correct values in BUDs 01616-01619 Light Gain DCtrl and 00476-00479 Dev Bias DCtrl ON that correspond to the selected color(s) / block (s) respectively.



4. The status indication part indicates “complete” when the calibration finishes. Close the page by pressing the **X** button.



NOTE

When finished, set both of BUD 00720 Density Adjustment On/Off and 01785 Auto Density Adjustment to “1”.

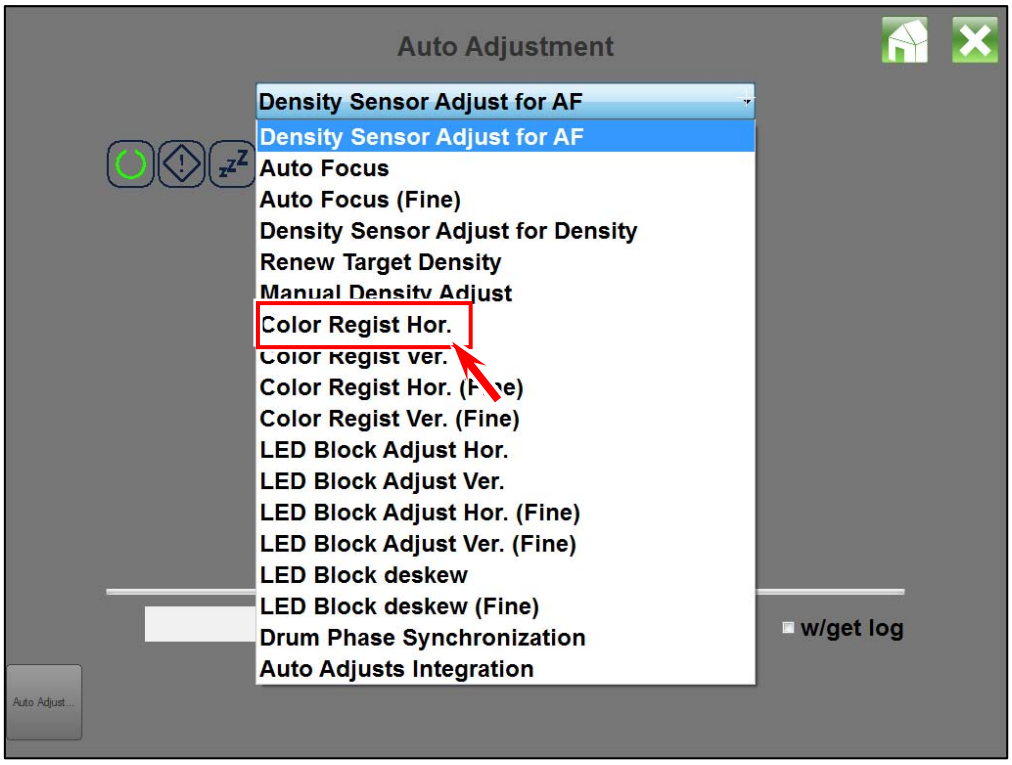
8. 3. 7 Color Regist Hor.

This is an automatic calibration mode that appropriately adjusts horizontal color registration of each CMYK color image.

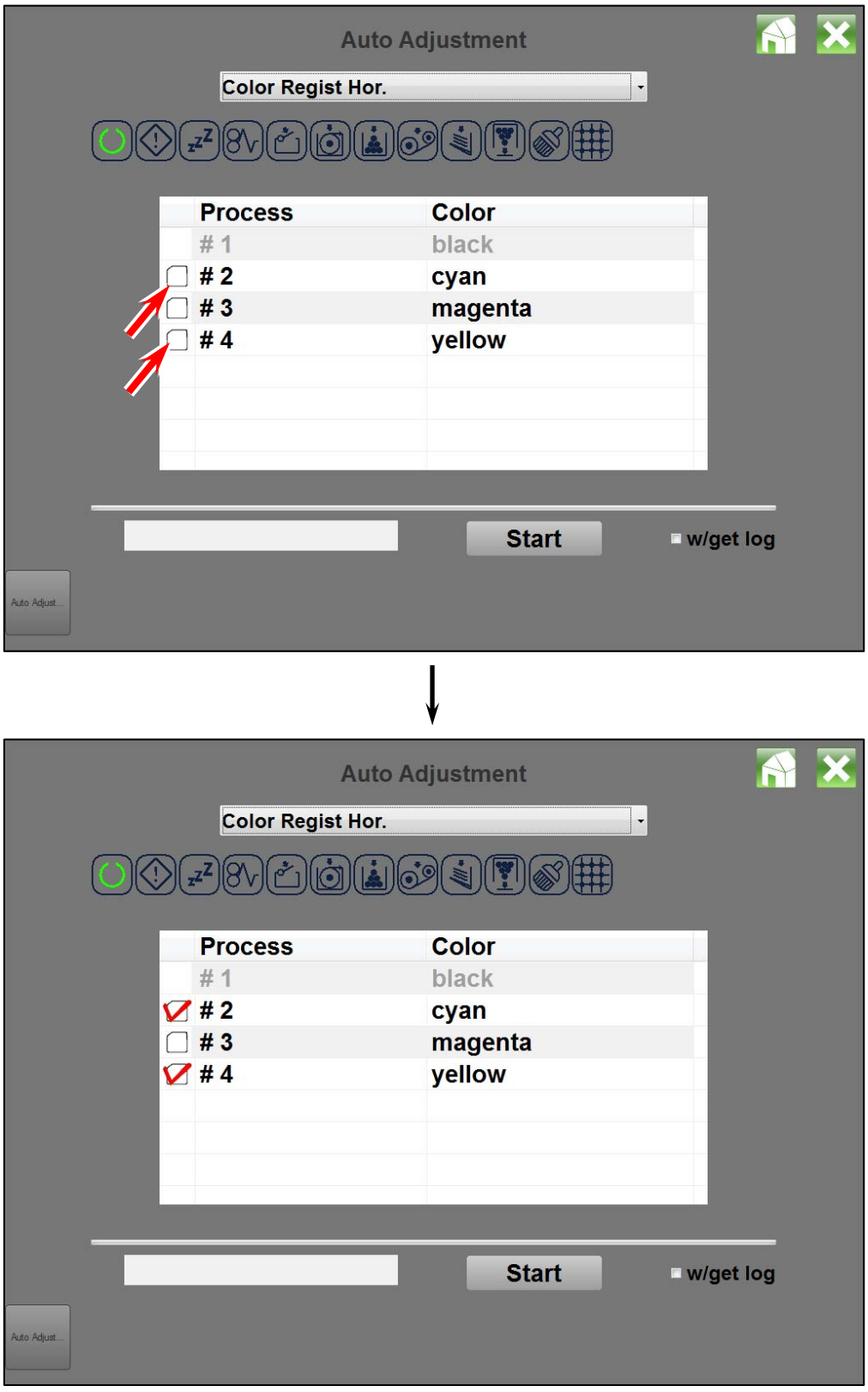
Reference

Please readjust **Color Regist Hor.** and **Color Regist Hor. (Fine)** after replacing the LED Head. It may be also required to readjust it occasionally during use of machine as needed.

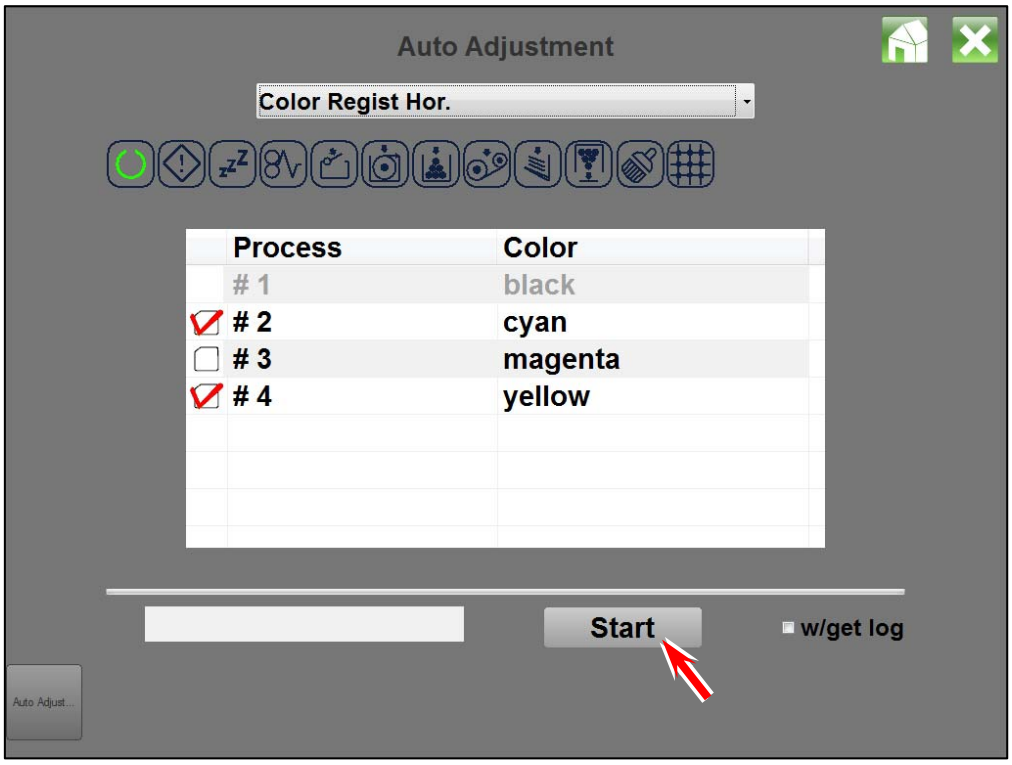
1. Select **Color Regist Hor.** in the menu of Auto Adjustment.



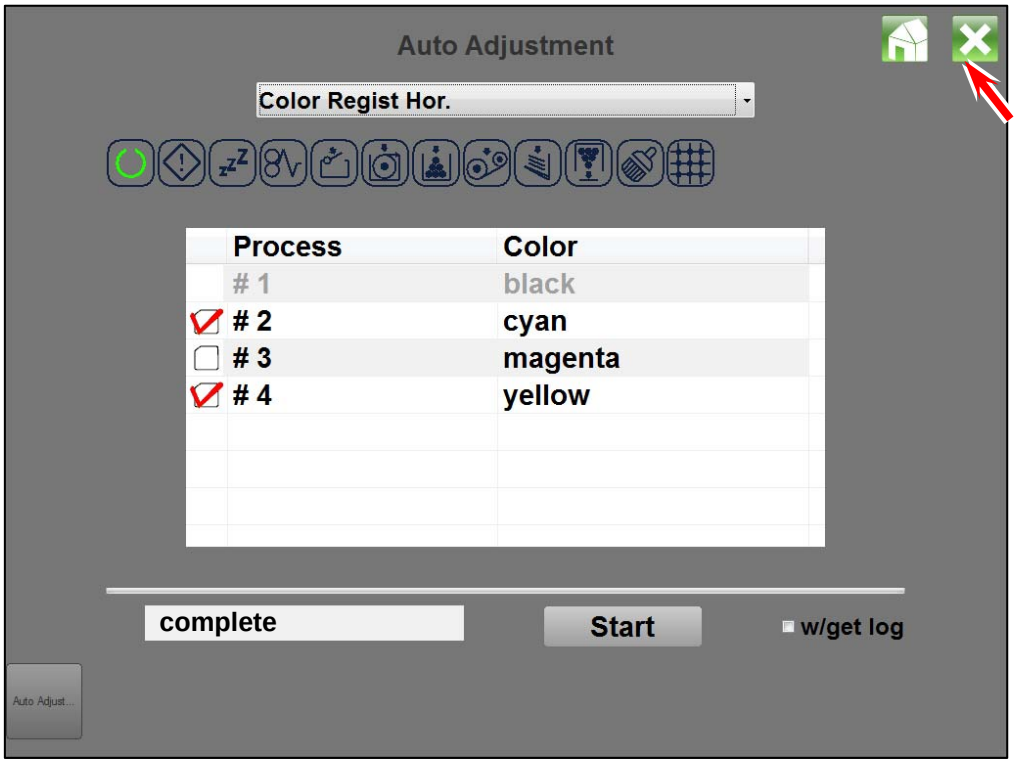
2. Select the color to which the horizontal color registration is adjusted. The selected color is checked. (As K is the reference, #1 Black cannot be checked)



3. Press **Start** to start the automatic calibration. Wait until it finishes.
   This will set correct values in BUDs 01203-01205 Color Regist H for CMY that correspond to the selected color(s).



4. The status indication part indicates “complete” when the calibration finishes. Close the page by pressing the **X** button.

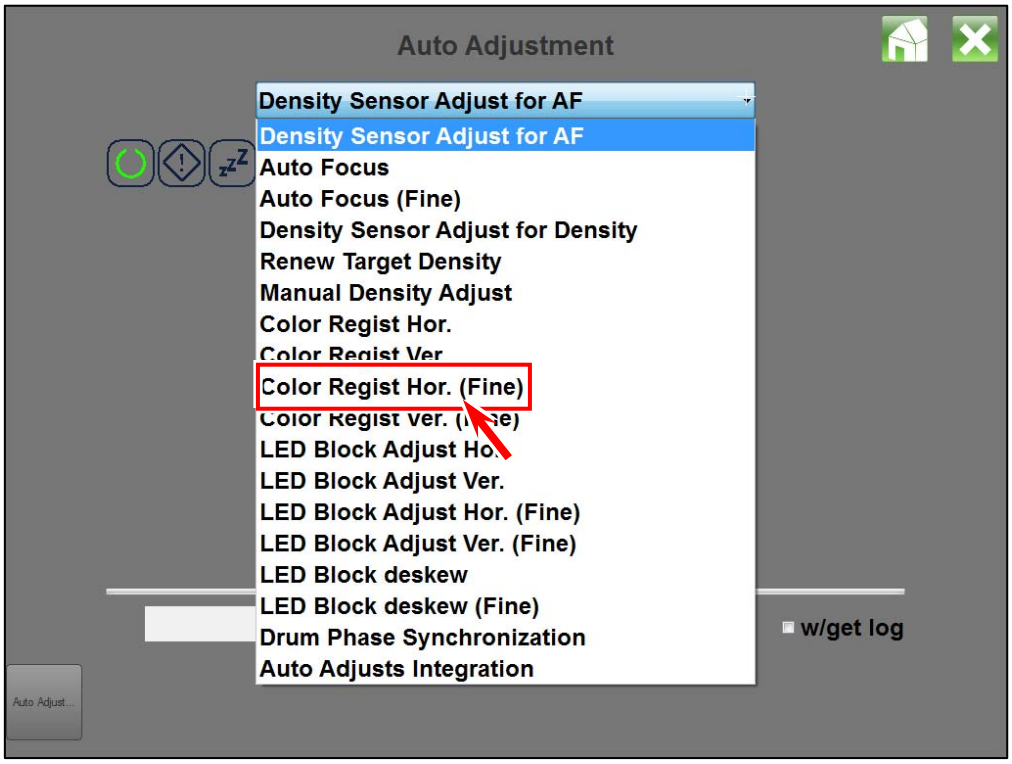


8. 3. 8 Color Regist Hor. (Fine)

This is an automatic calibration mode that appropriately adjusts horizontal color registration of each CMYK color image.
Fine mode is a fine control used for a LED Head that already had **Color Regist Hor.** done.

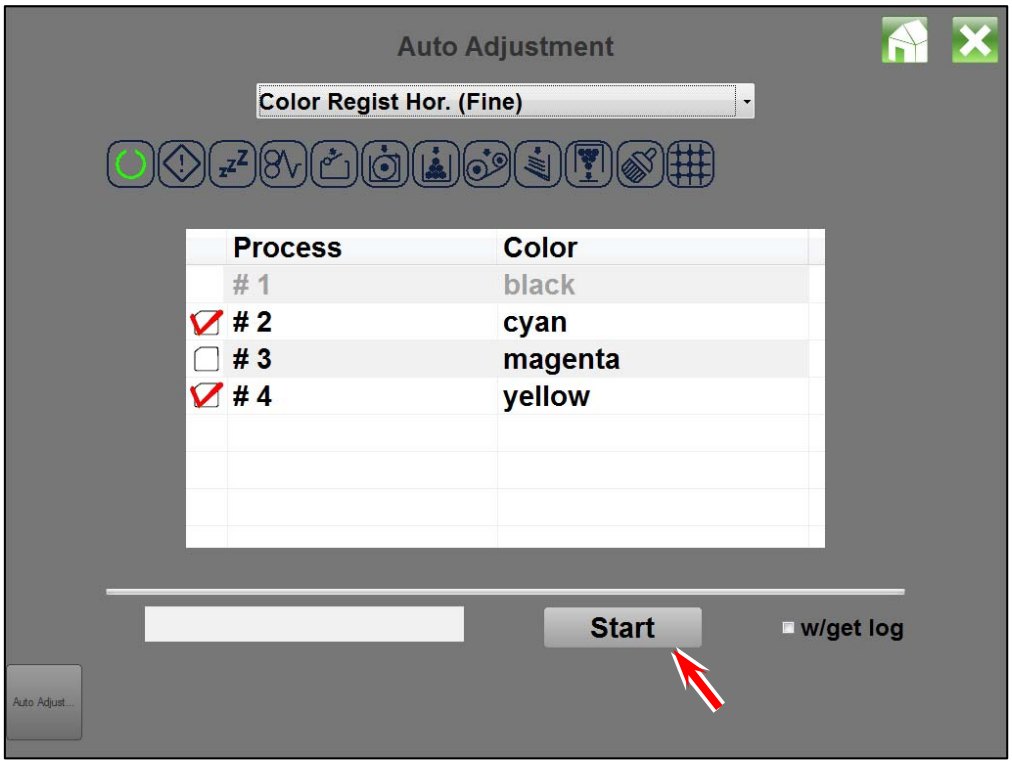
> **Reference**
>
> Please readjust **Color Regist Hor.** and **Color Regist Hor. (Fine)** after replacing the LED Head. It may be also required to readjust it occasionally during use of machine as needed.

1. Select **Color Regist Hor. (Fine)** in the menu of Auto Adjustment.

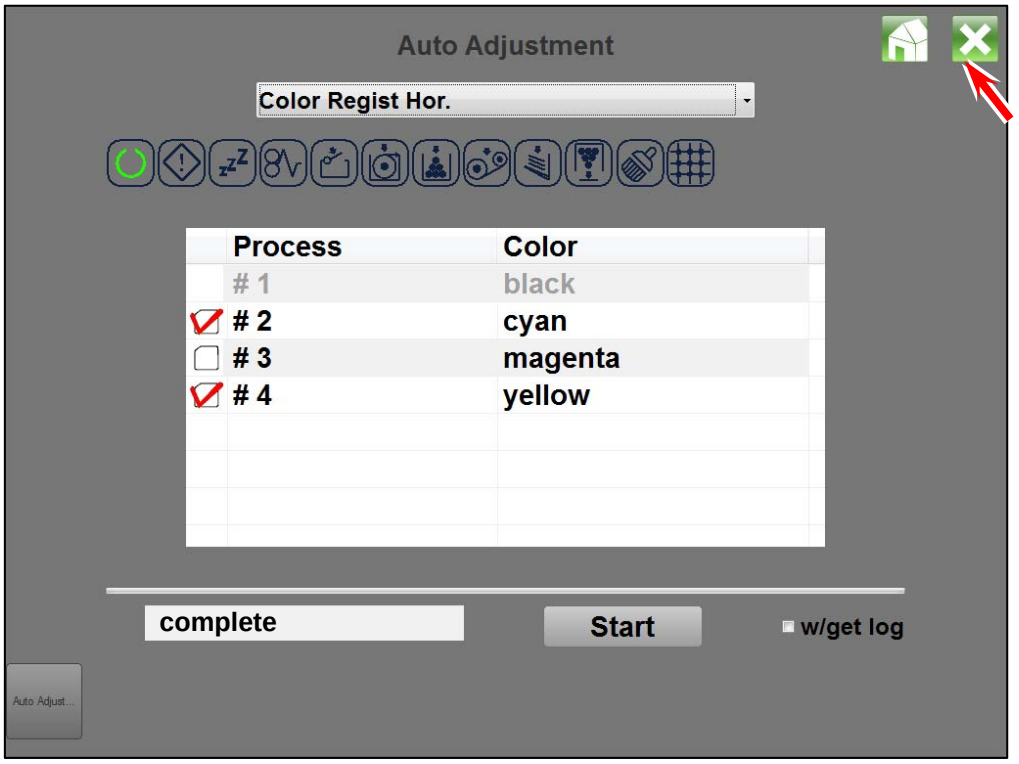


2. Select the color to which the horizontal color registration is adjusted. The selected color is checked. (As K is the reference, #1 Black cannot be checked)

3. Press **Start** to start the automatic calibration. Wait until it finishes.
   This will set correct values in BUDs 01203-01205 Color Regist H for CMY that correspond to the selected color(s).



4. The status indication part indicates “complete” when the calibration finishes. Close the page by pressing the **X** button.



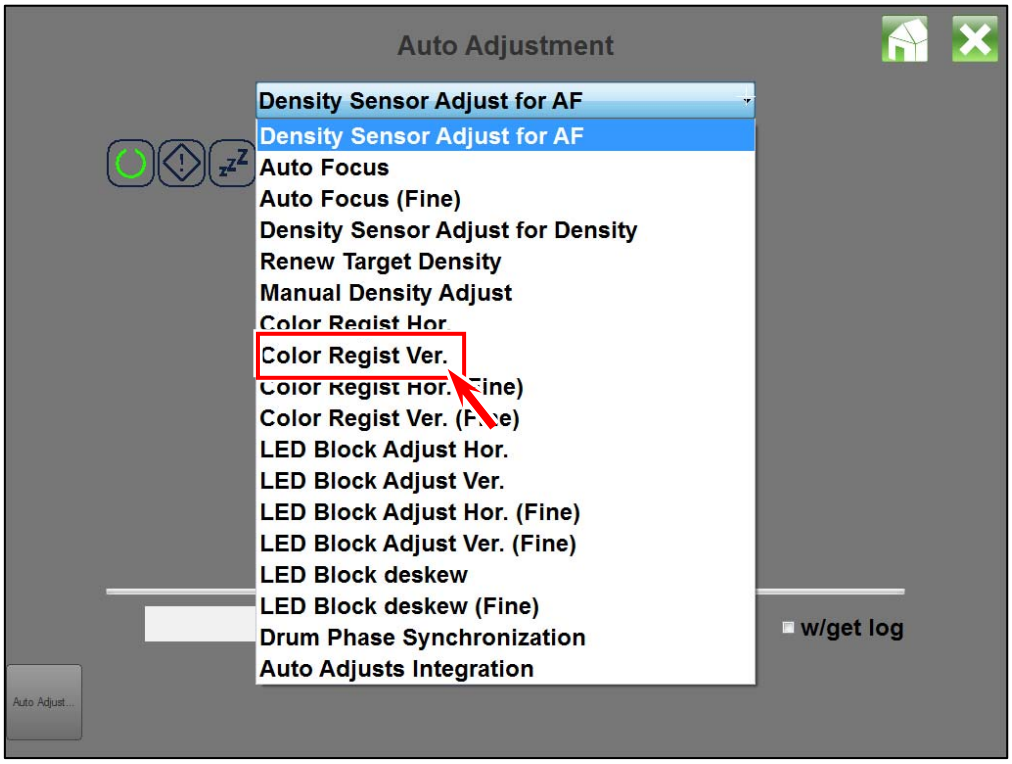
8. 3. 9 Color Regist Ver.

This is an automatic calibration mode that appropriately adjusts vertical color registration of each CMYK color image.

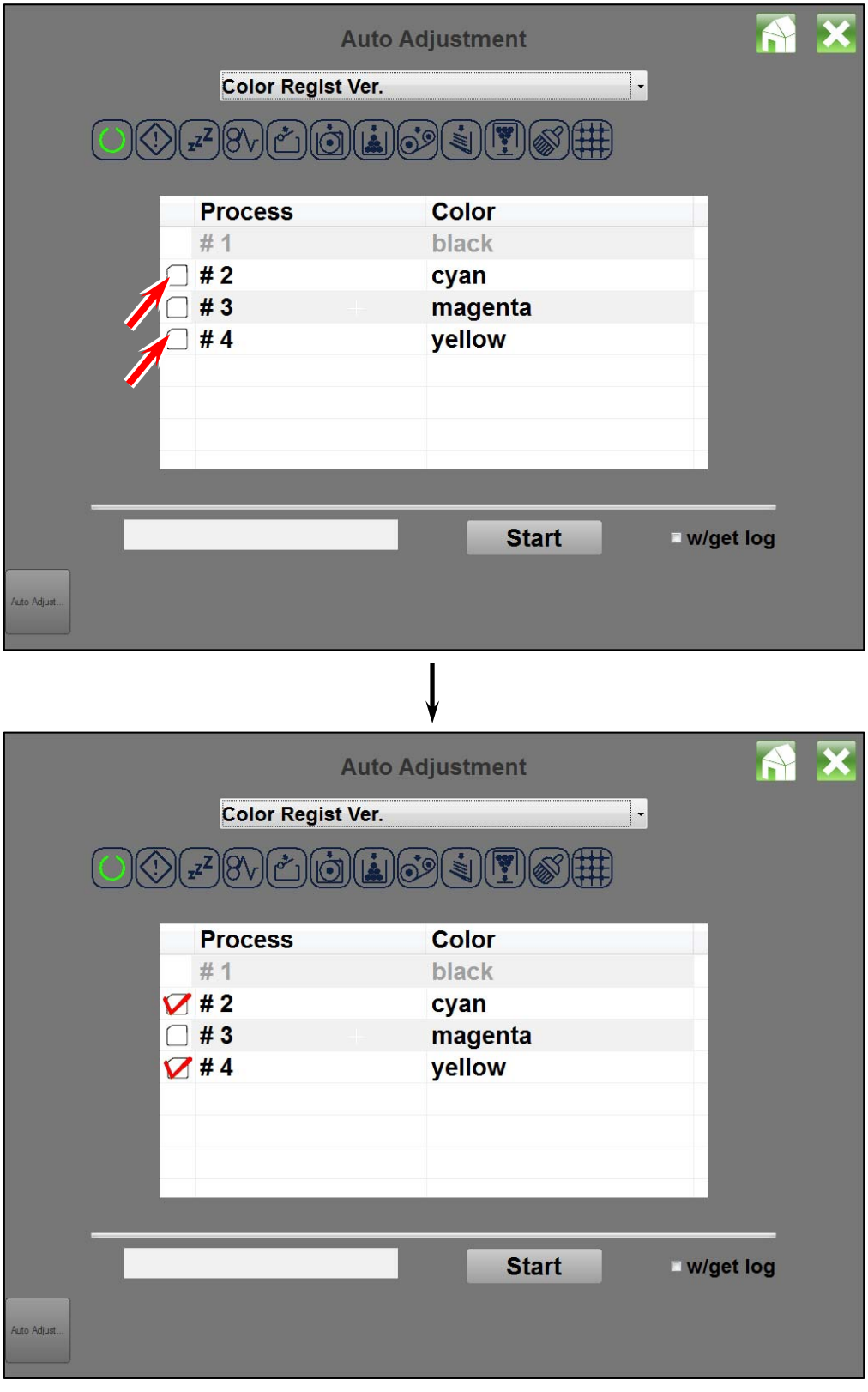
Reference

Please readjust **Color Regist Ver.** and **Color Regist Ver. (Fine)** after replacing the LED Head. It may be also required to readjust it occasionally during use of machine as needed.

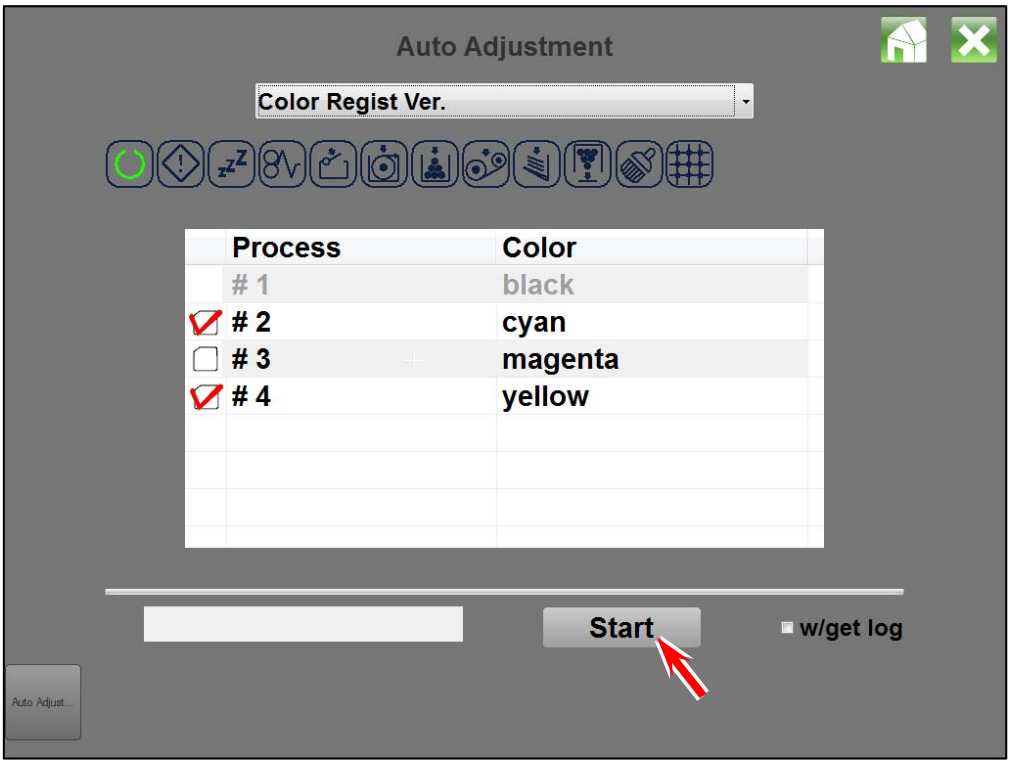
1. Select **Color Regist Ver.** in the menu of Auto Adjustment.



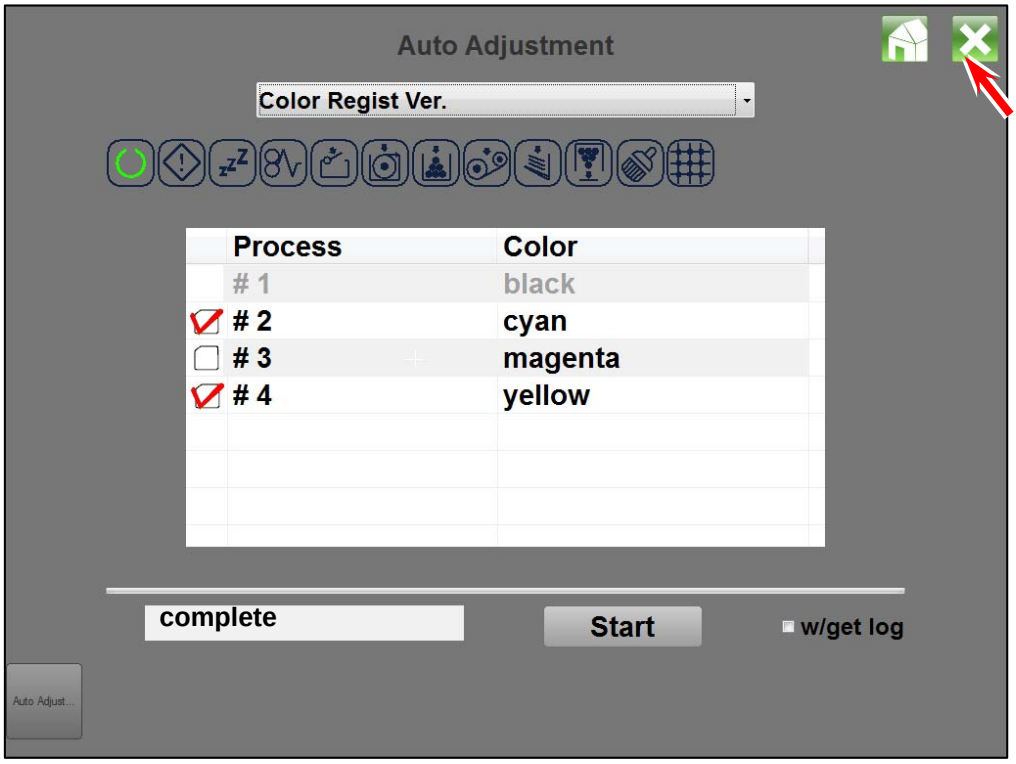
2. Select the color to which the vertical color registration is adjusted. The selected color is checked. (As K is the reference, #1 Black cannot be checked)



3. Press **Start** to start the automatic calibration. Wait until it finishes.
   This will set correct values in BUDs 01207-01209 Color Regist V for CMY that correspond to the selected color(s).



4. The status indication part indicates “complete” when the calibration finishes. Close the page by pressing the **X** button.



8. 3. 10 Drum Phase Synchronization

This is an automatic calibration mode that appropriately synchronizes the rotation of a drum to other drums so as to enhance the quality of vertical color registration.

Reference

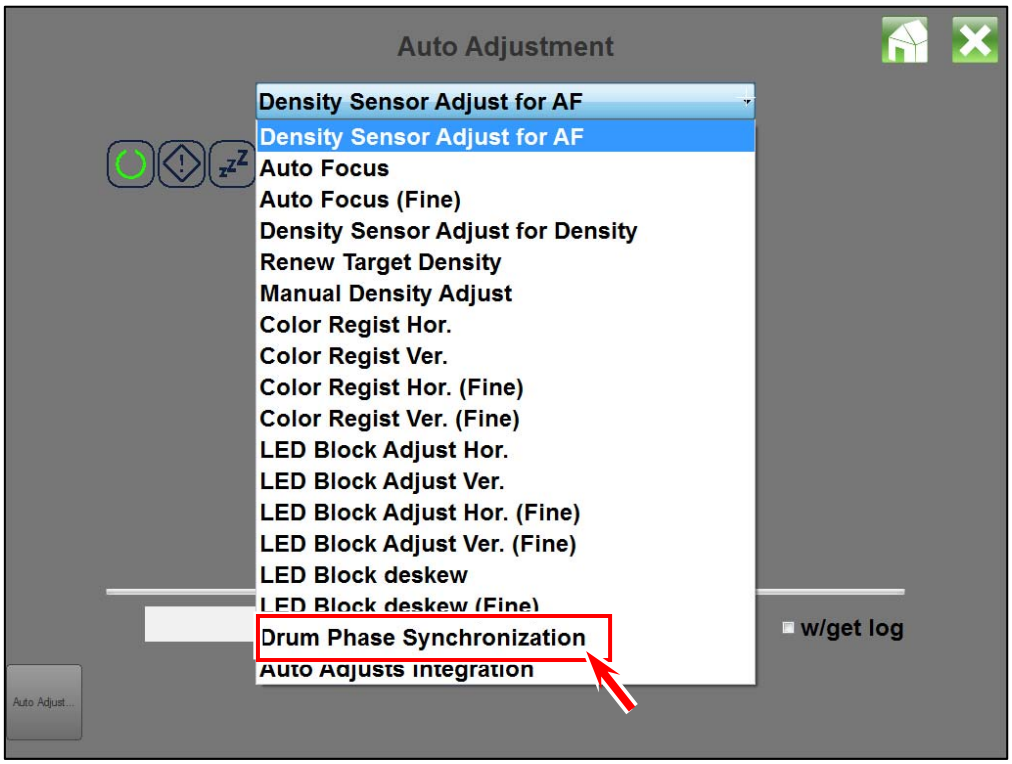
Execute **Drum Phase Sycnchronization** after replacing or reinstalling the Drum.

NOTE

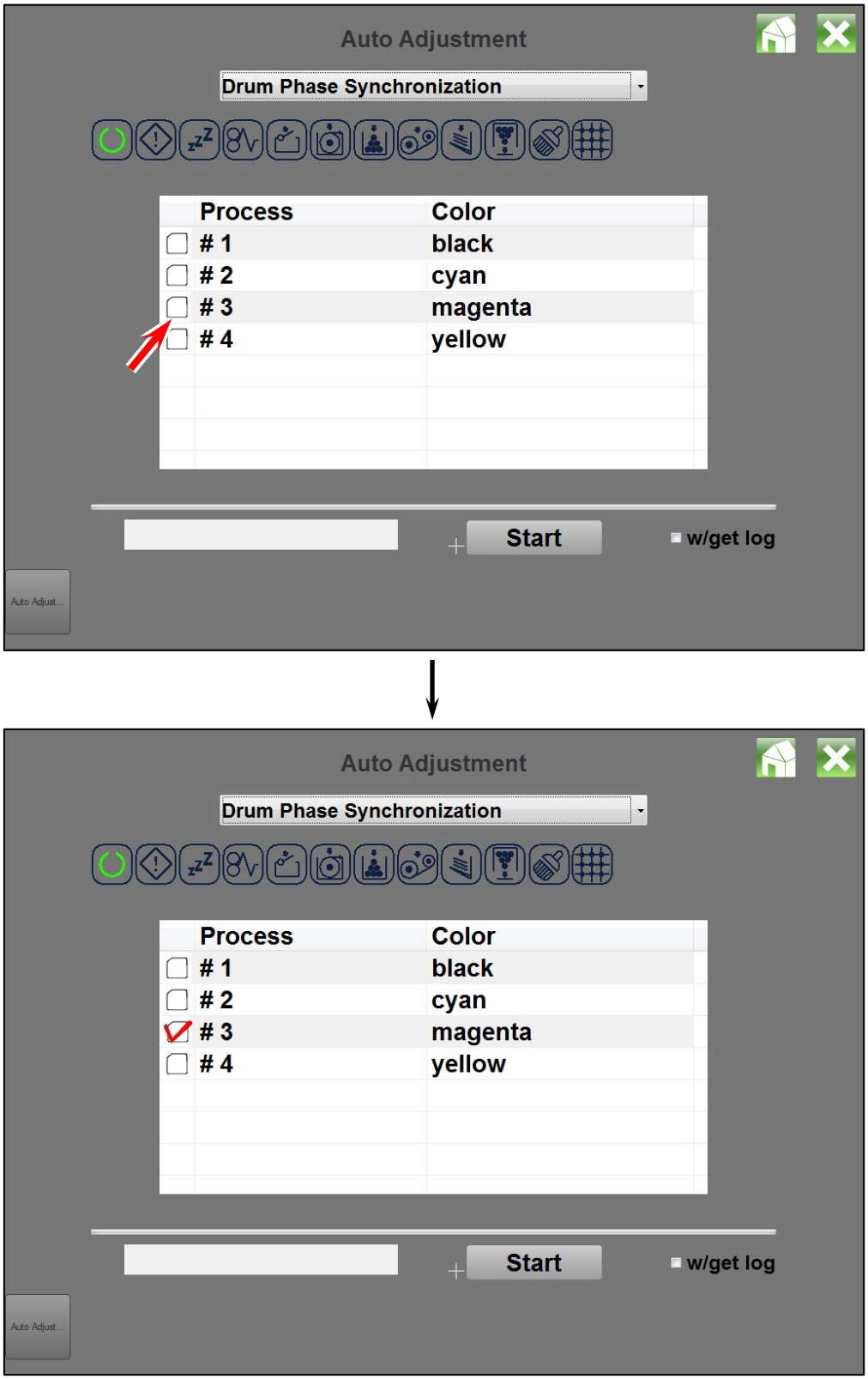
Before proceeding, be sure that BUDs (listed below) corresponding to the color(s) you are going to adjust, are set to “0”. If not, set them to “0” and then turn off and on the power.

BUD	BUD Name	Set here to...
01708	Drum Correct Phase K	0
01709	Drum Correct Phase C	0
01710	Drum Correct Phase M	0
01711	Drum Correct Phase Y	0
01712	Drum Correct Gain K	0
01713	Drum Correct Gain C	0
01714	Drum Correct Gain M	0
01715	Drum Correct Gain Y	0

1. Select **Drum Phase Synchronization** in the menu of Auto Adjustment.



2. Select the color to calibrate. The selected color is checked.

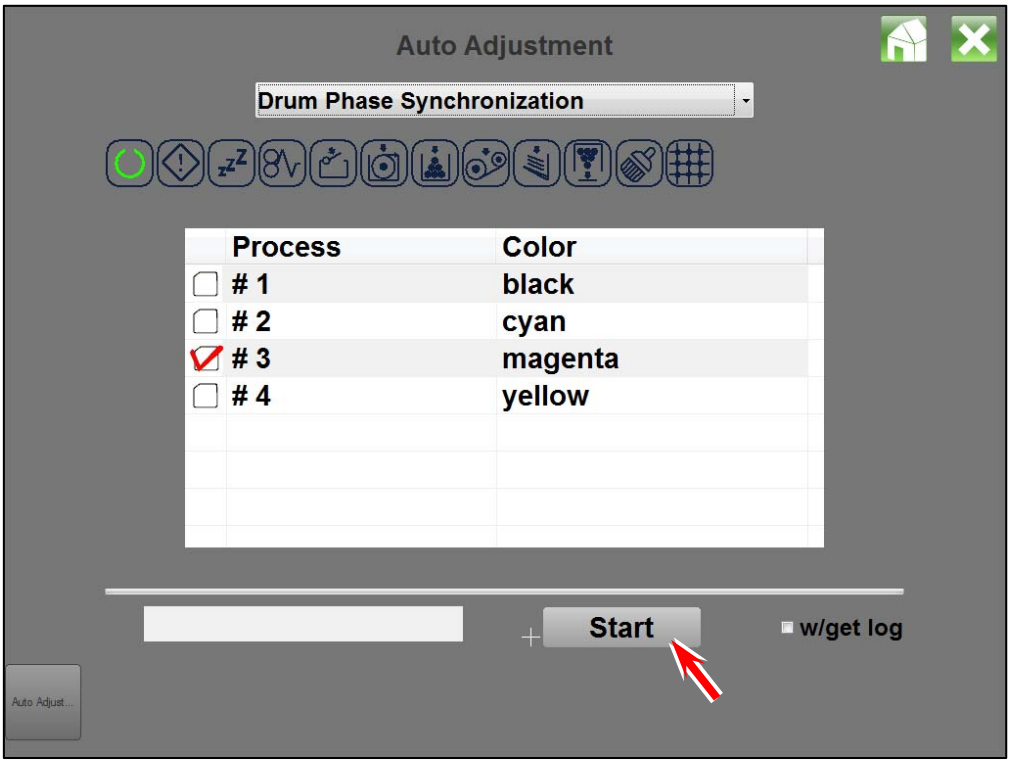


Reference

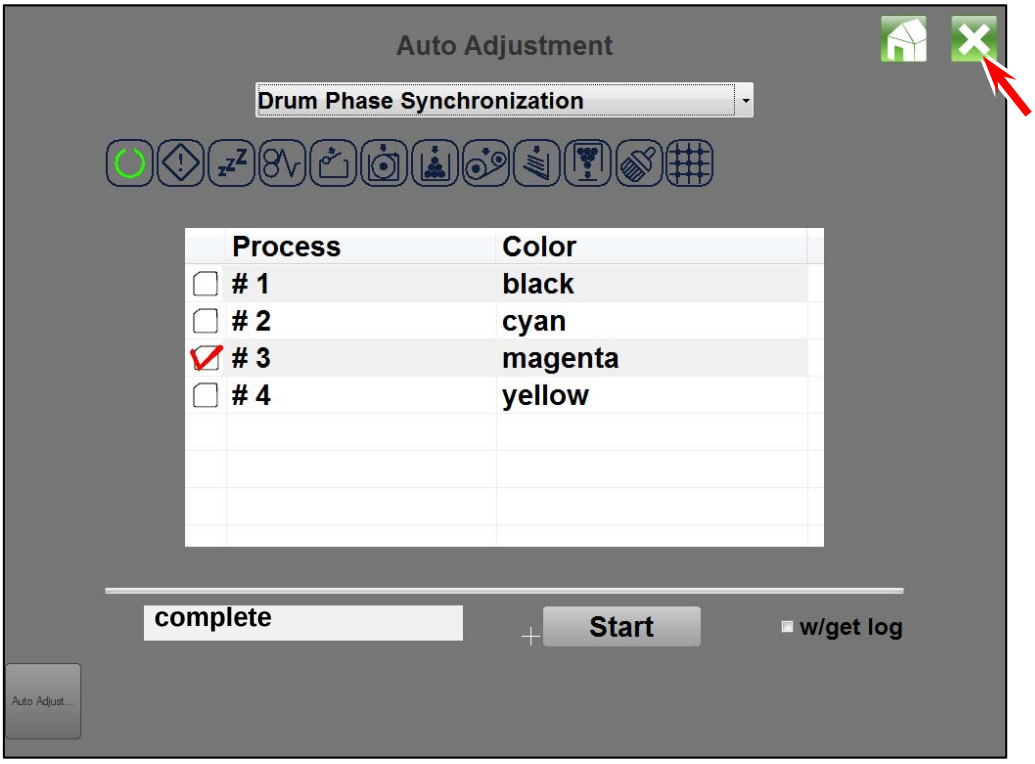
Basically, K is the reference. If either of the Drum C/M/Y is replaced, synchronization between K and the replaced color(s) should be optimized.

Once the Drum K (or K and the other color(s) at a time) is replaced, be sure to include K being checked. This can check the Drum K's physical status and set correct values in BUDs accordingly. The new Drum K will become the new reference.

3. Press **Start** to start the automatic calibration. Wait until it finishes.



4. The status indication part indicates “complete” when the calibration finishes. Close the page by pressing the **X** button.

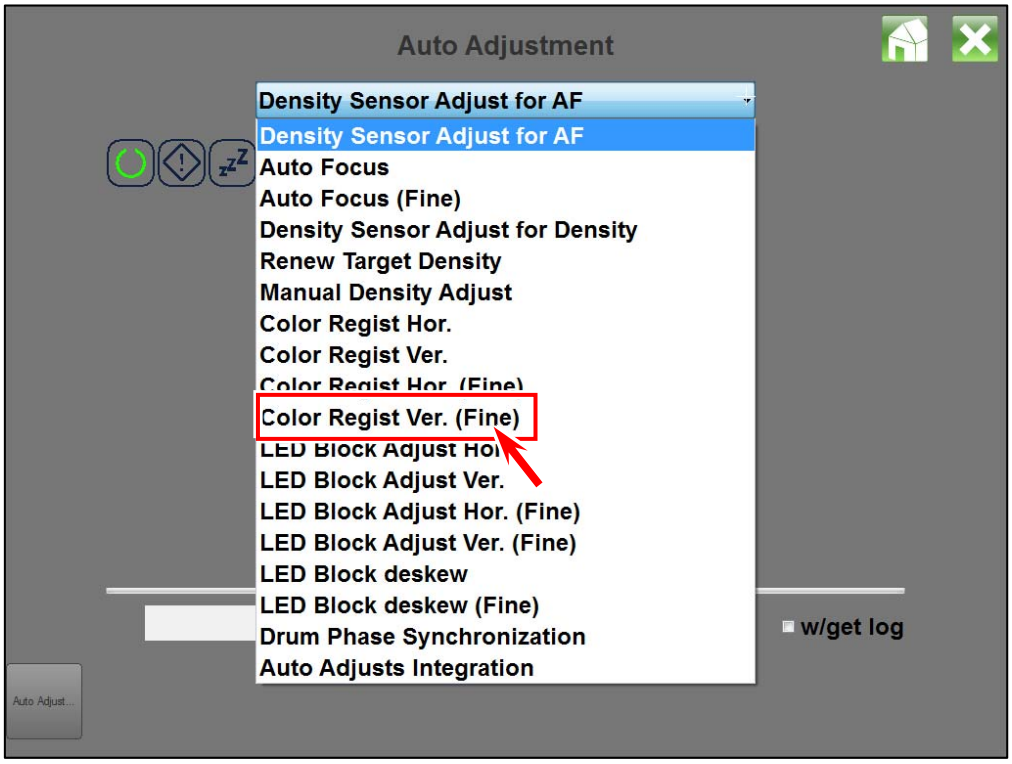


8. 3. 11 Color Regist Ver. (Fine)

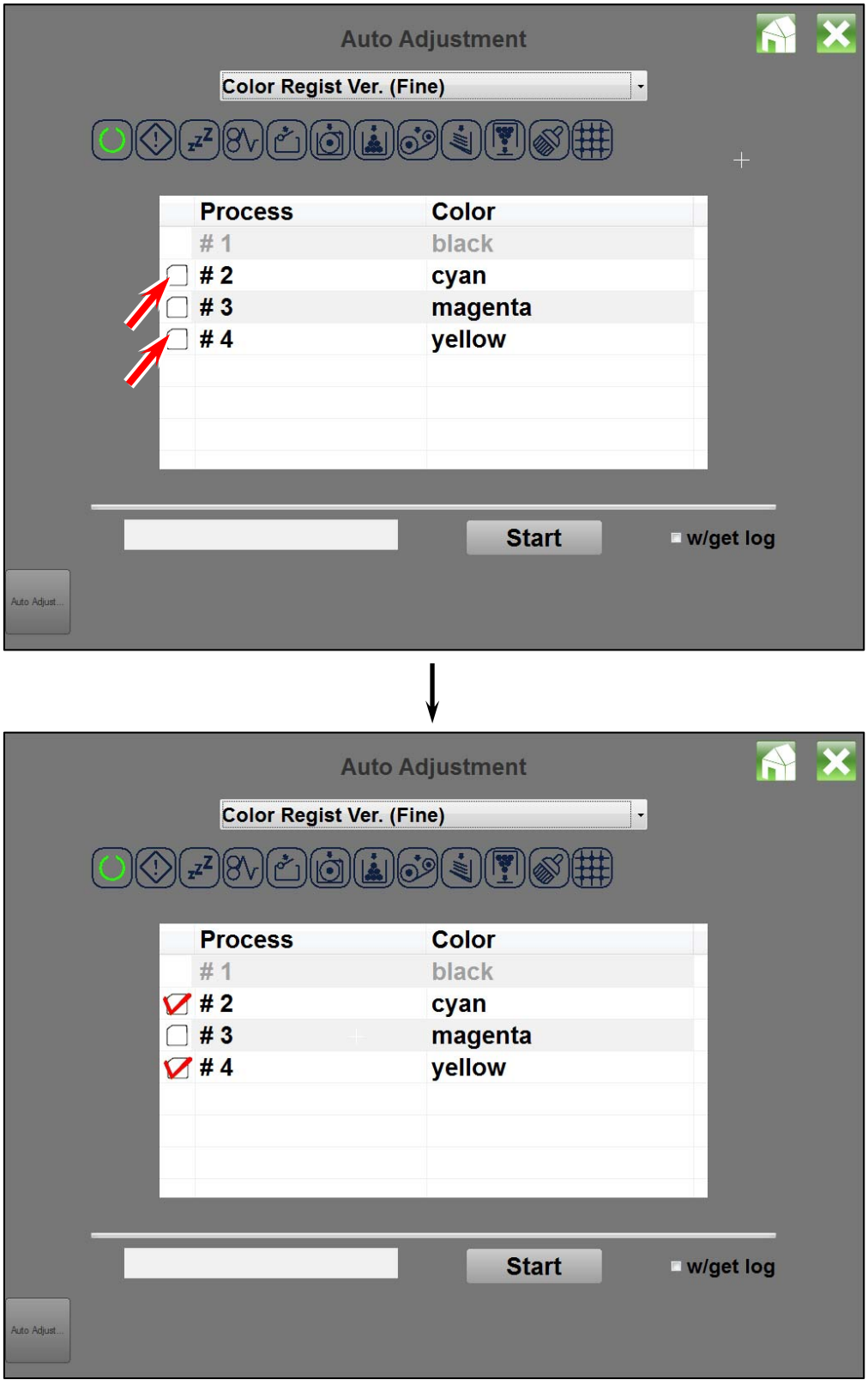
This is an automatic calibration mode that appropriately adjusts vertical color registration of each CMYK color image.
Fine mode is a fine control used for a LED Head that already had **Color Regist Ver.** done.

> **Reference**
>
> Please readjust **Color Regist Ver.** and **Color Regist Ver. (Fine)** after replacing the LED Head. It may be also required to readjust it occasionally during use of machine as needed.

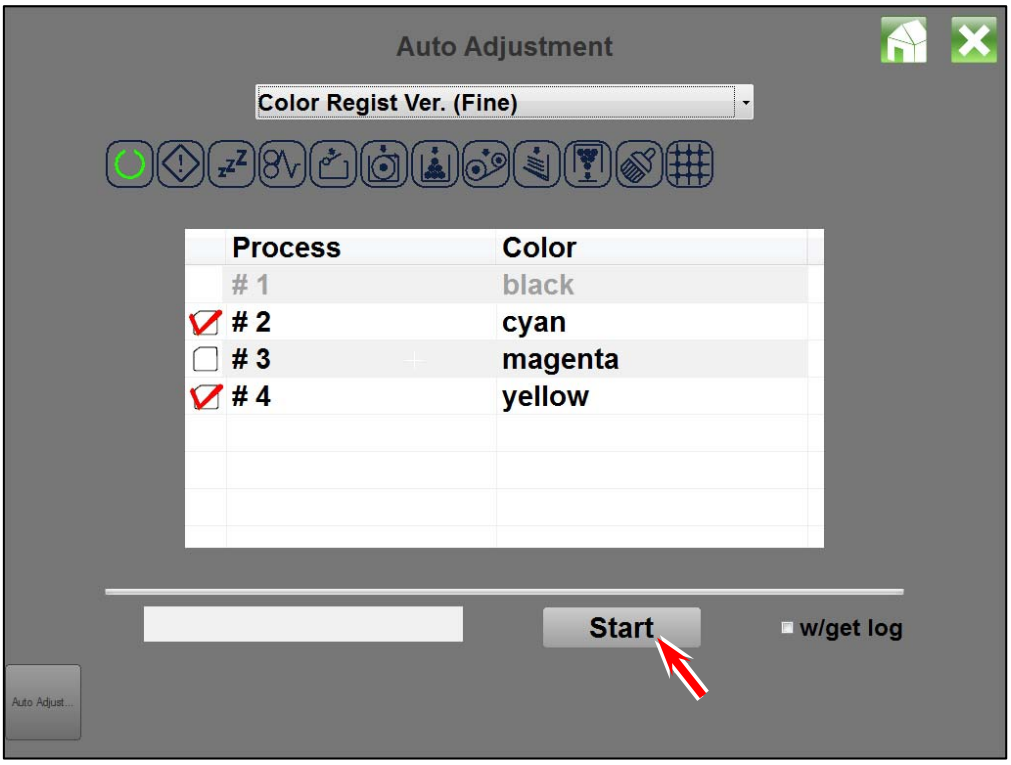
1. Select **Color Regist Ver.** in the menu of Auto Adjustment.



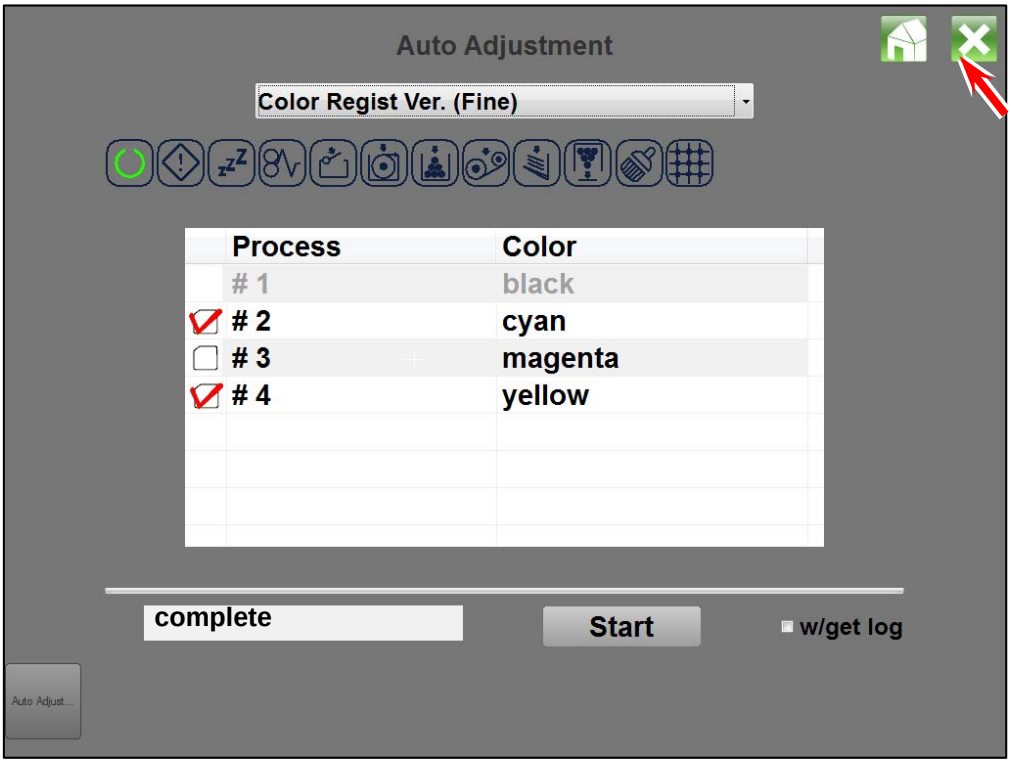
2. Select the color to which the vertical color registration is adjusted. The selected color is checked. (As K is the reference, #1 Black cannot be checked)



3. Press **Start** to start the automatic calibration. Wait until it finishes.
   This will set correct values in BUDs 01207-01209 Color Regist V for CMY that correspond to the selected color(s).



4. The status indication part indicates “complete” when the calibration finishes. Close the page by pressing the **X** button.

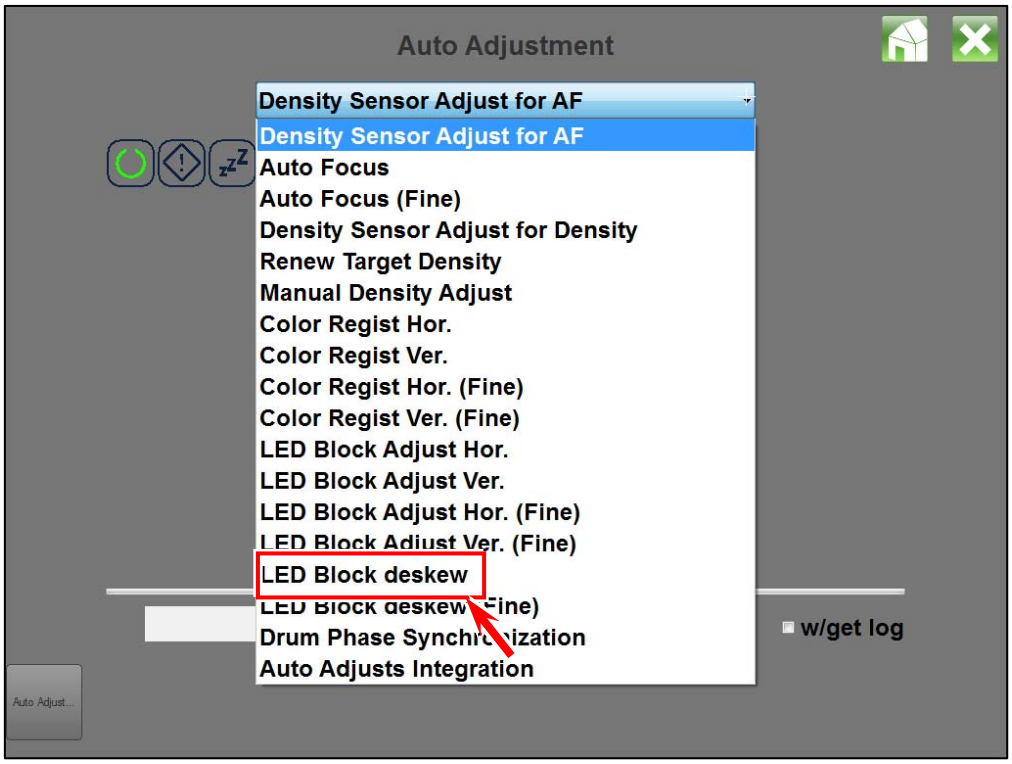


8. 3. 12 LED Block Deskew

The mechanical installation of LED Block component, such as vertical and horizontal positioning as well as the angle, very slightly differs unit to unit. Such slight difference of mechanical installation is corrected by software. **LED Block Deskew** is an automatic calibration mode that appropriately corrects the angle of each LED Block component.

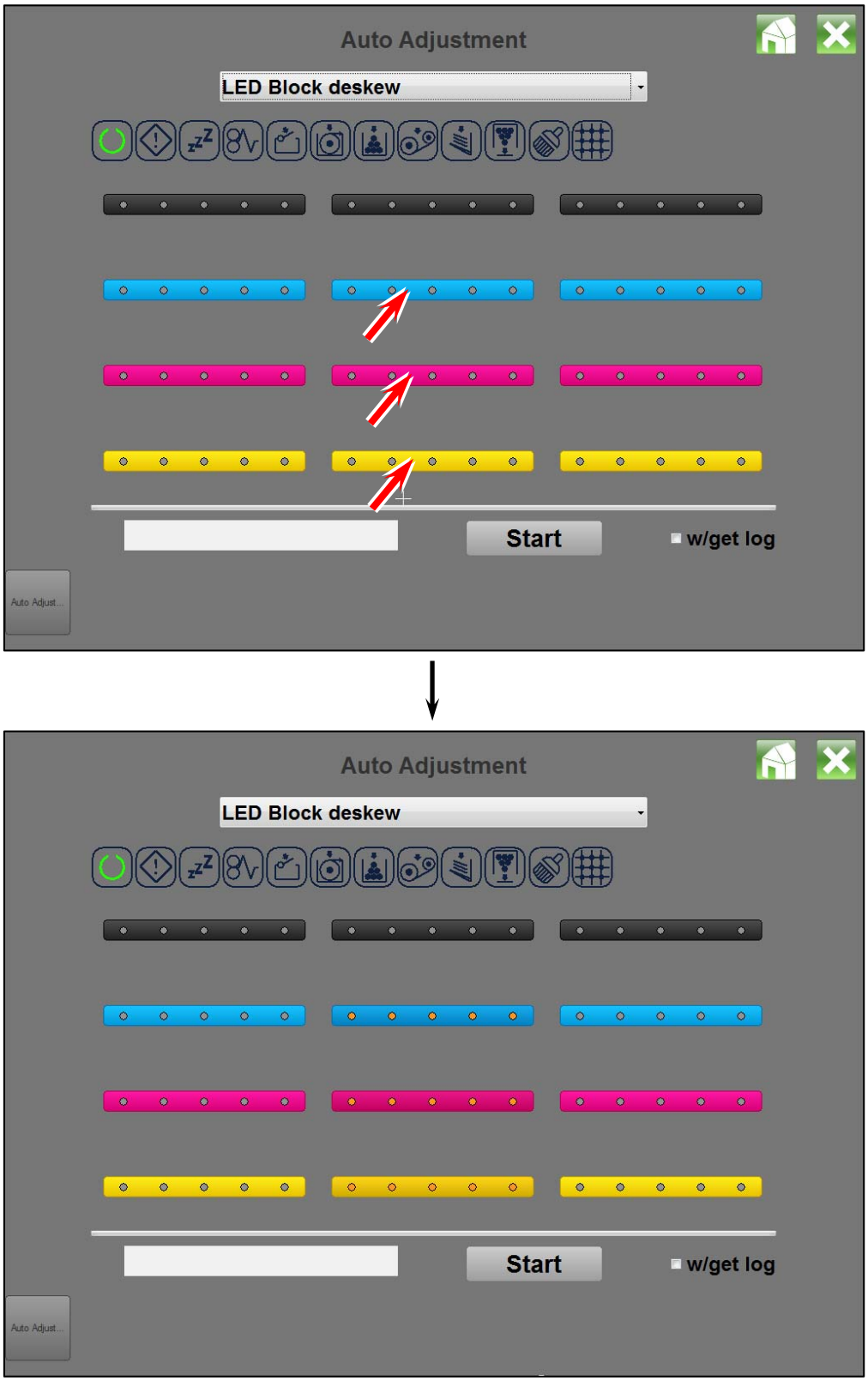
> **Reference**
>
> Please execute **LED Block Deskew** and **LED Head Deskew (Fine)** after replacing the LED Head. It may be required to execute it occasionally during use of machine as needed.

1. Select **LED Block Deskew** in the menu of Auto Adjustment.

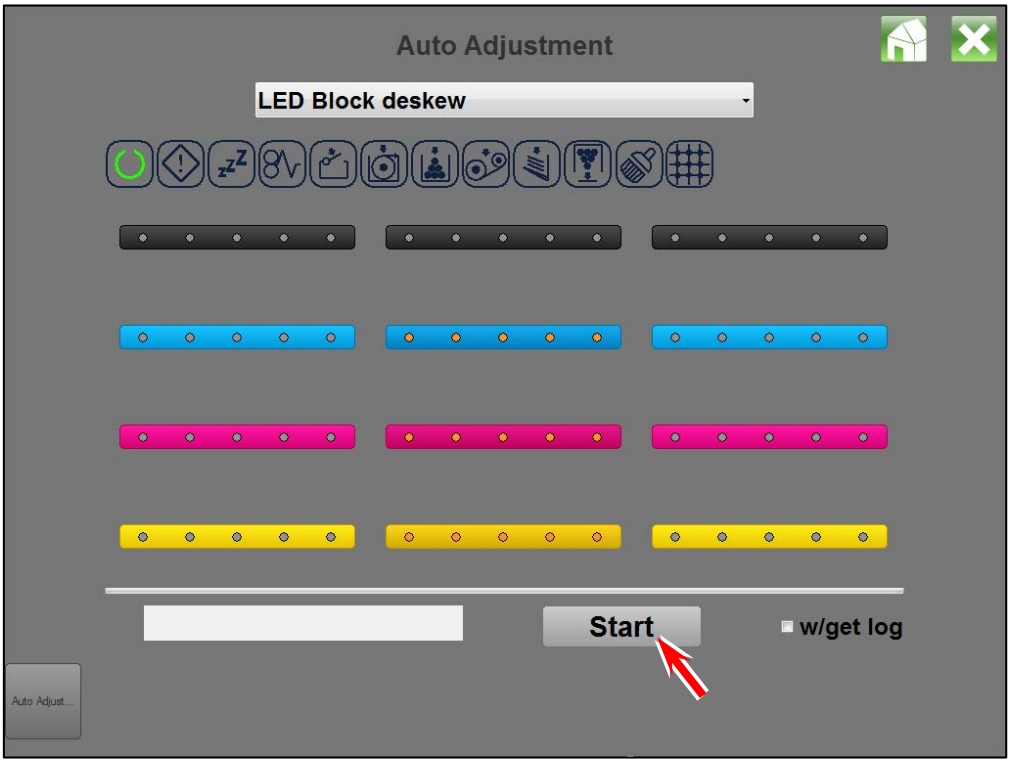


2. The setting page shows the images of 12 CMYK LED Blocks. By touching on the touch panel, select the LED Block of which angle is corrected by the automatic calibration mode.

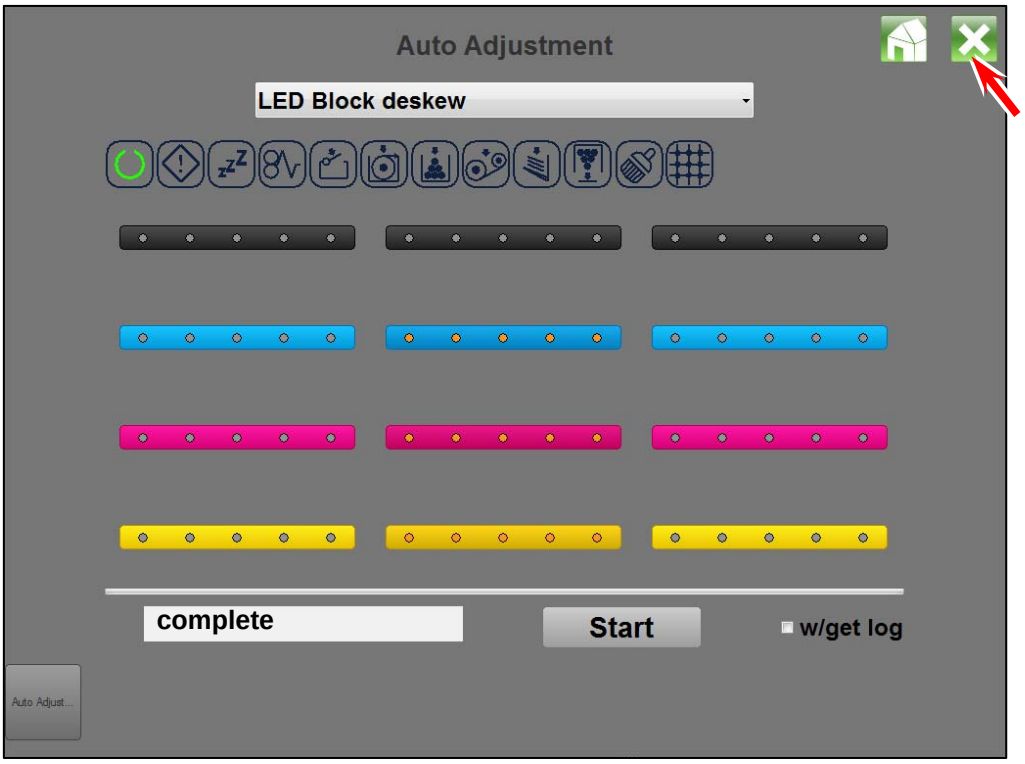
   The circular indicator lamps of the selected position are shown by orange color meaning that the concerning LED Block is to be calibrated.



3. Press **Start** to start the automatic calibration. Wait until it finishes.
   This will set correct values in BUDs 01229-01240 LED Skew that correspond to the selected color(s) / Block(s).



4. The status indication part indicates “complete” when the calibration finishes. Close the page by pressing the **X** button.

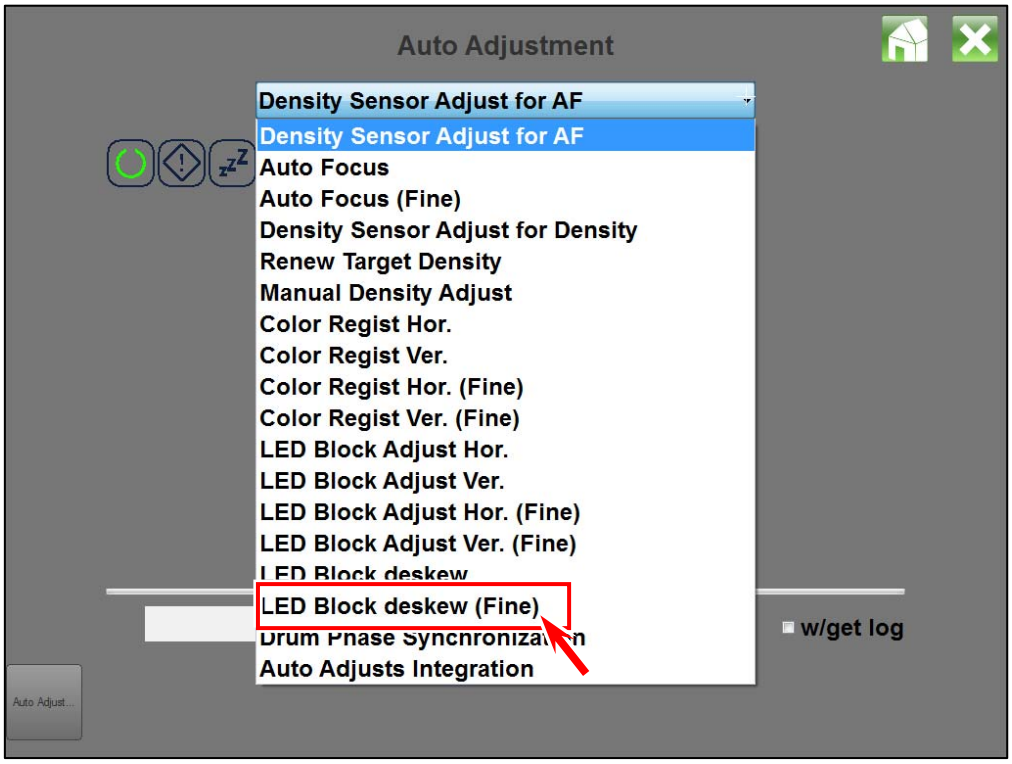


8. 3. 13 LED Block Deskew (Fine)

The mechanical installation of LED Block component, such as vertical and horizontal positioning as well as the angle, very slightly differs unit to unit. Such slight difference of mechanical installation is corrected by software. **LED Block Deskew** is an automatic calibration mode that appropriately corrects the angle of each LED Block component.
Fine mode is a fine control used for a LED Head that already had **LED Block Deskew** done.

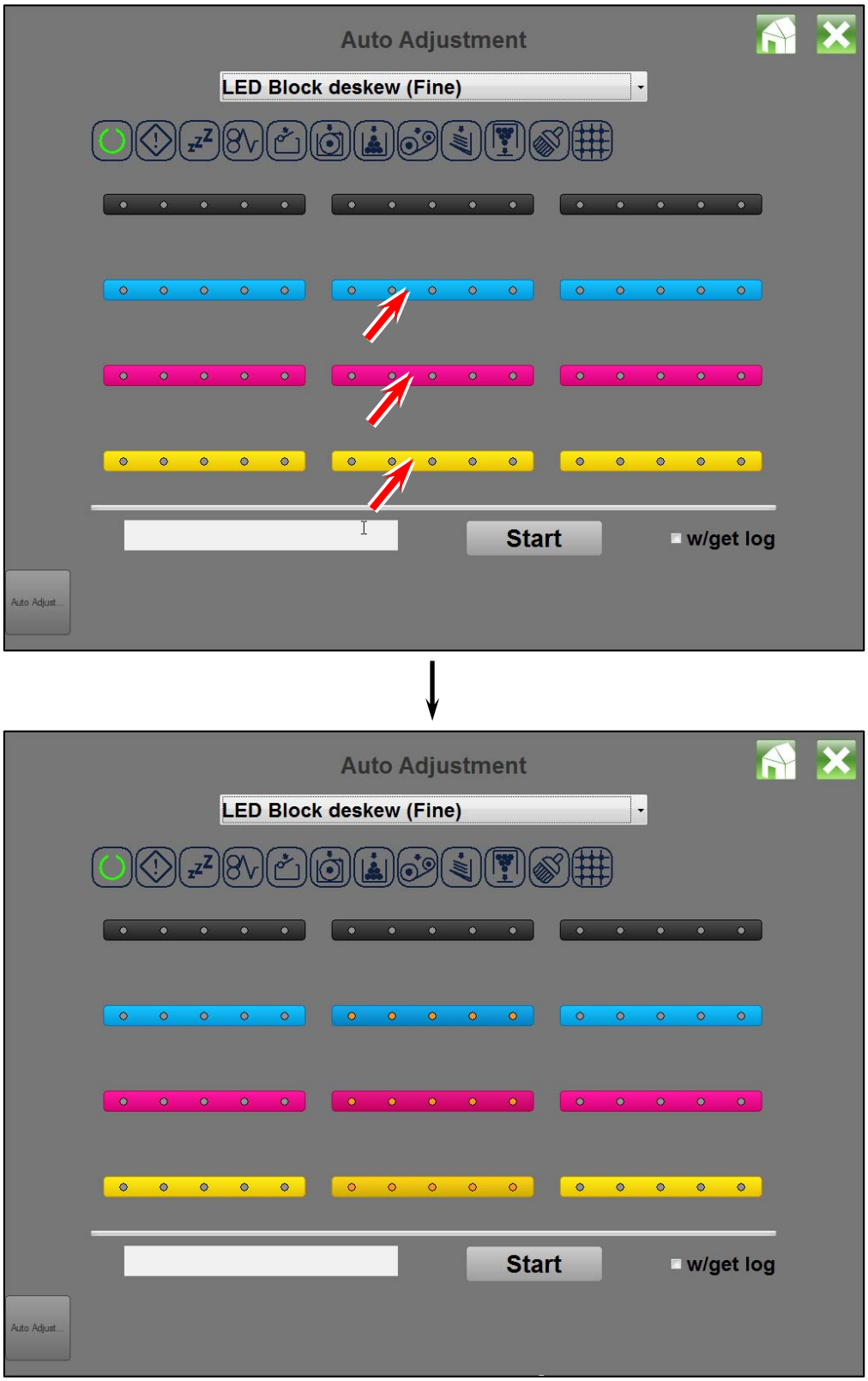
> **Reference**
>
> Please execute **LED Block Deskew** and **LED Head Deskew (Fine)** after replacing the LED Head. It may be required to execute it occasionally during use of machine as needed.

1. Select **LED Block Deskew (Fine)** in the menu of Auto Adjustment.

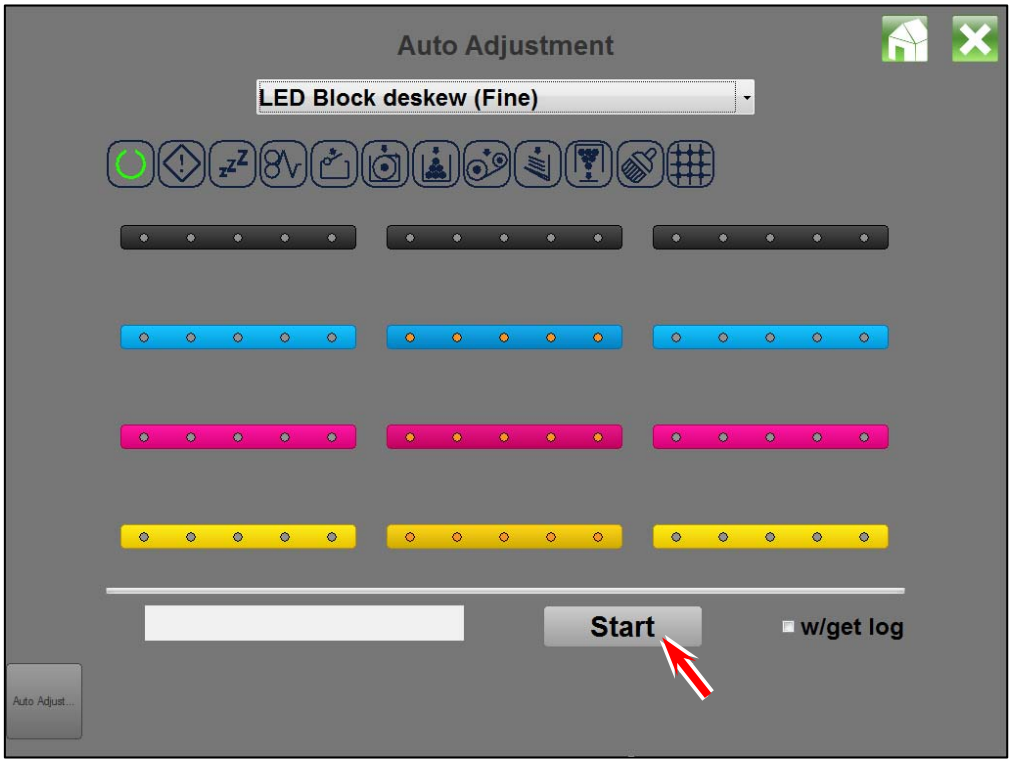


2. The setting page shows the images of 12 CMYK LED Blocks. By touching on the touch panel, select the LED Block of which angle is corrected by the automatic calibration mode.

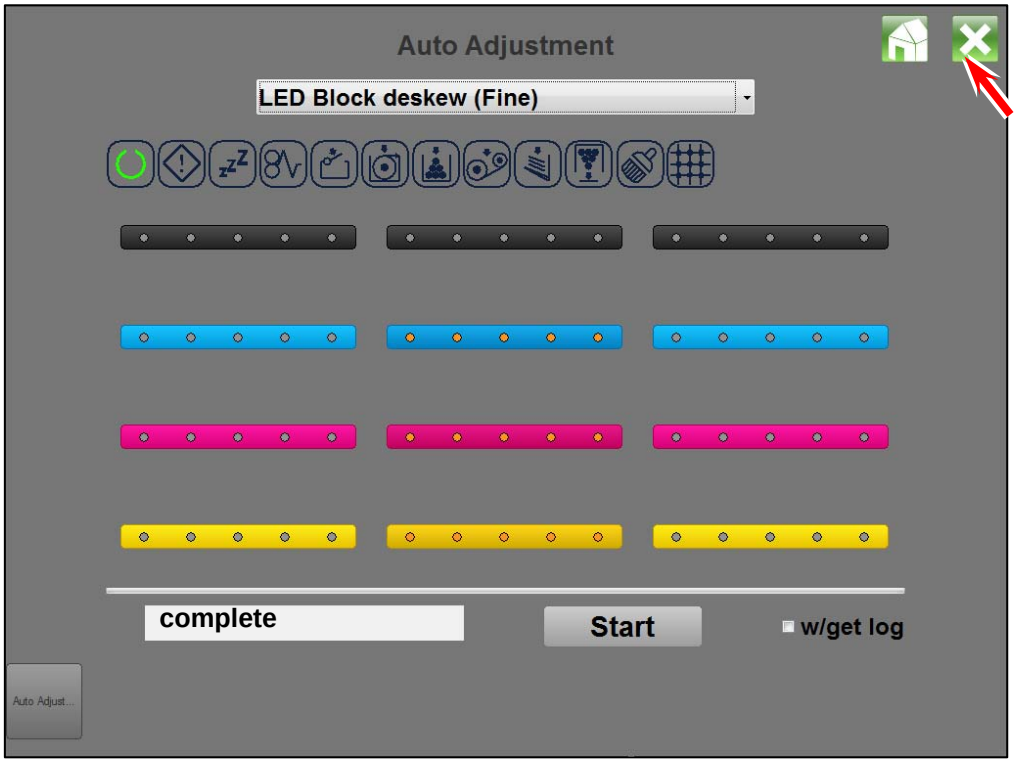
   The circular indicator lamps of the selected position are shown by orange color meaning that the concerning LED Block is to be calibrated.



3. Press **Start** to start the automatic calibration. Wait until it finishes.
   This will set correct values in BUDs 01229-01240 LED Skew that correspond to the selected color(s) / Block(s).



4. The status indication part indicates “complete” when the calibration finishes. Close the page by pressing the **X** button.



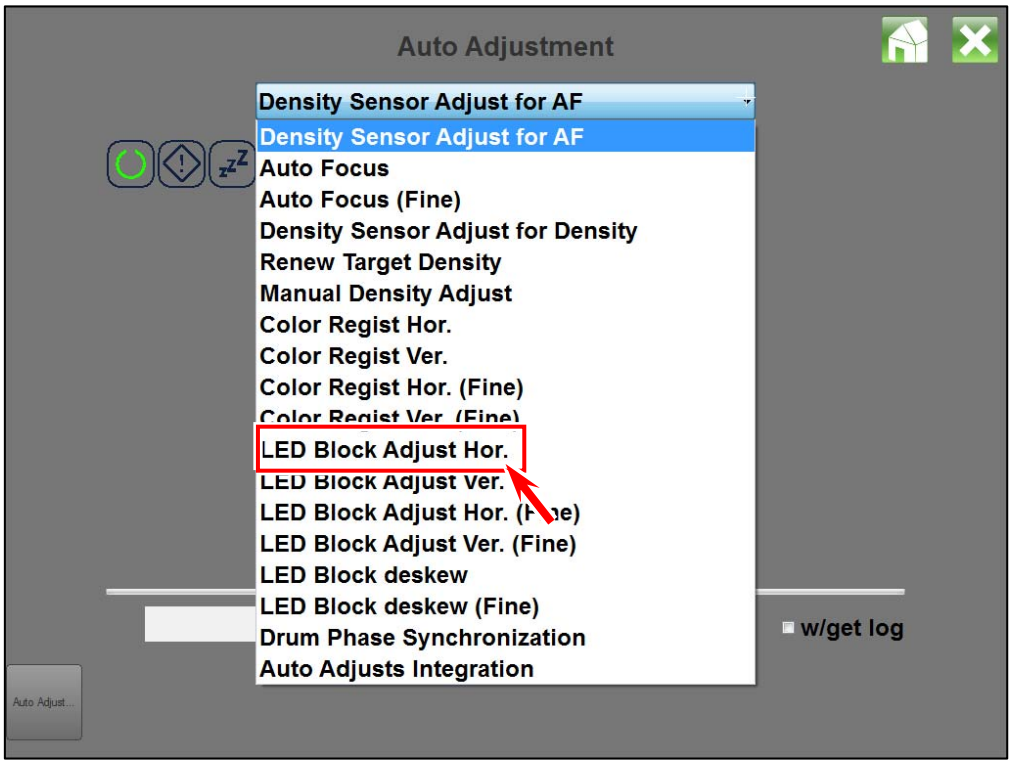
8. 3. 14 LED Block Adjust Hor.

The mechanical installation of LED Block component, such as vertical and horizontal positioning as well as the angle, very slightly differs unit to unit. Such slight difference of mechanical installation is corrected by software. **LED Block Adjust Hor.** is an automatic calibration mode that appropriately corrects the horizontal position of each LED Block component.

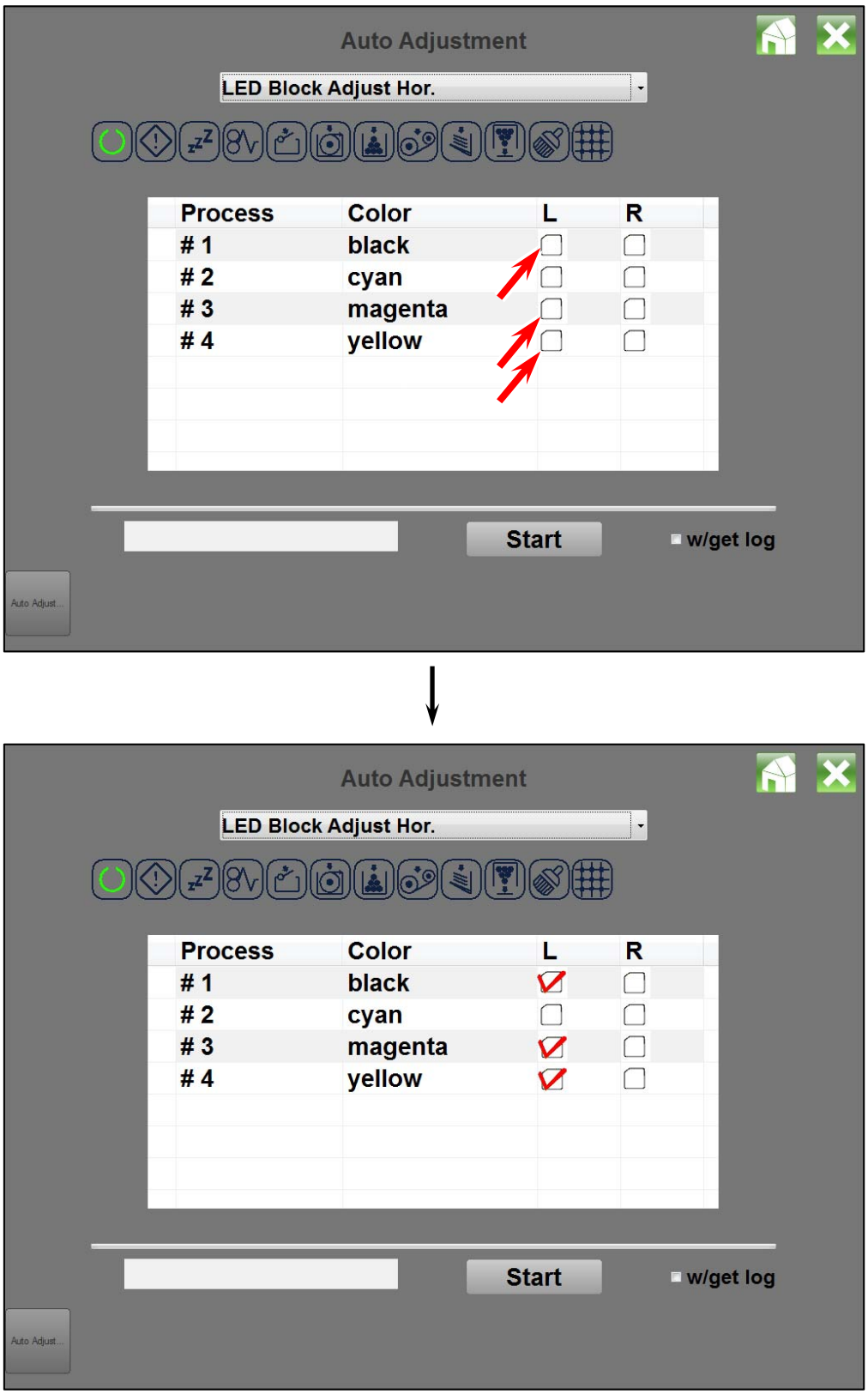
Reference

Execute the **LED Block Adjust Hor.** and **LED Head Adjust Hor. (Fine)** after replacing the LED Head. It may be also required to execute it to correct the horizontal placement of each LED Block occasionally during use of machine as needed.

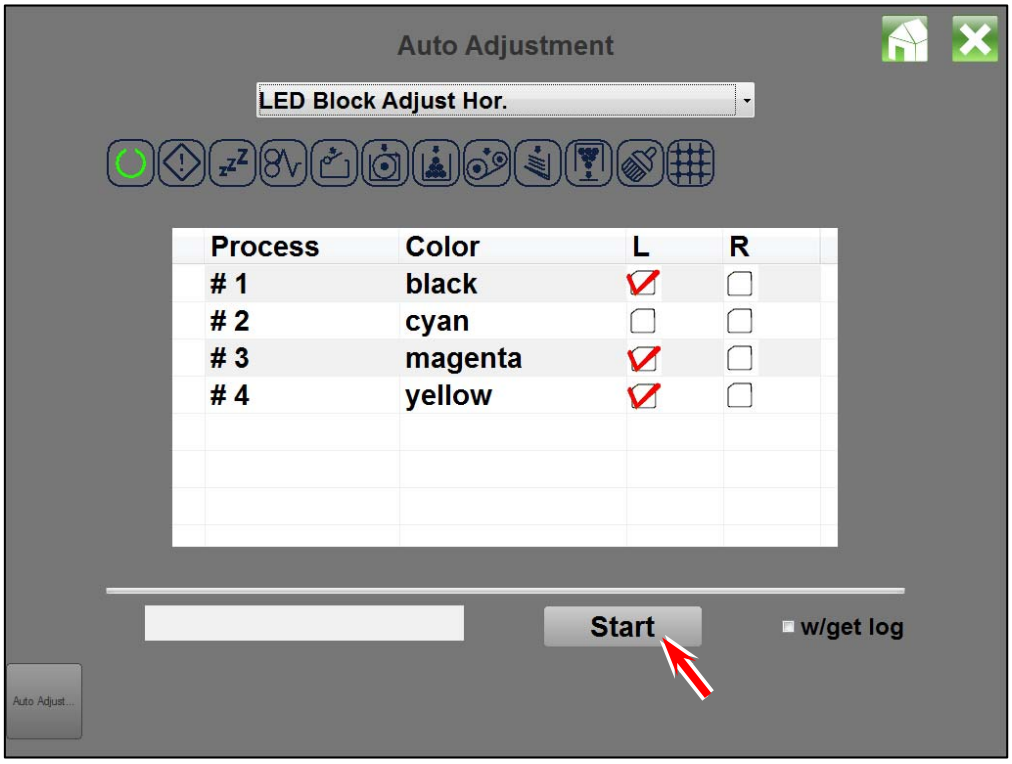
1. Select **LED Block Adjust Hor.** in the menu of Auto Adjustment.



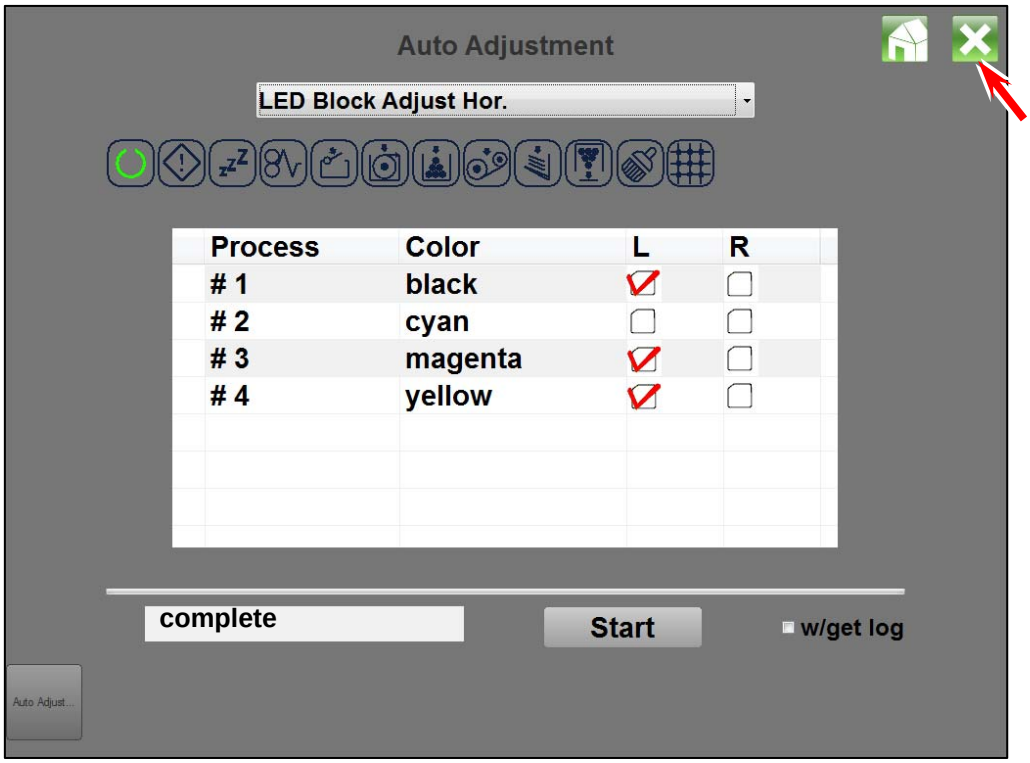
2. Select the color to which image placement of the LED Block horizontally is adjusted. The selected color is checked. (As center Blocks are the reference, “C for Center” cannot be seen)



3. Press **Start** to start the automatic calibration. Wait until it finishes.
   This will set correct values in BUDs 01210-01217 LED Joint H that correspond to the selected color(s) / Block(s).



4. The status indication part indicates “complete” when the calibration finishes. Close the page by pressing the **X** button.

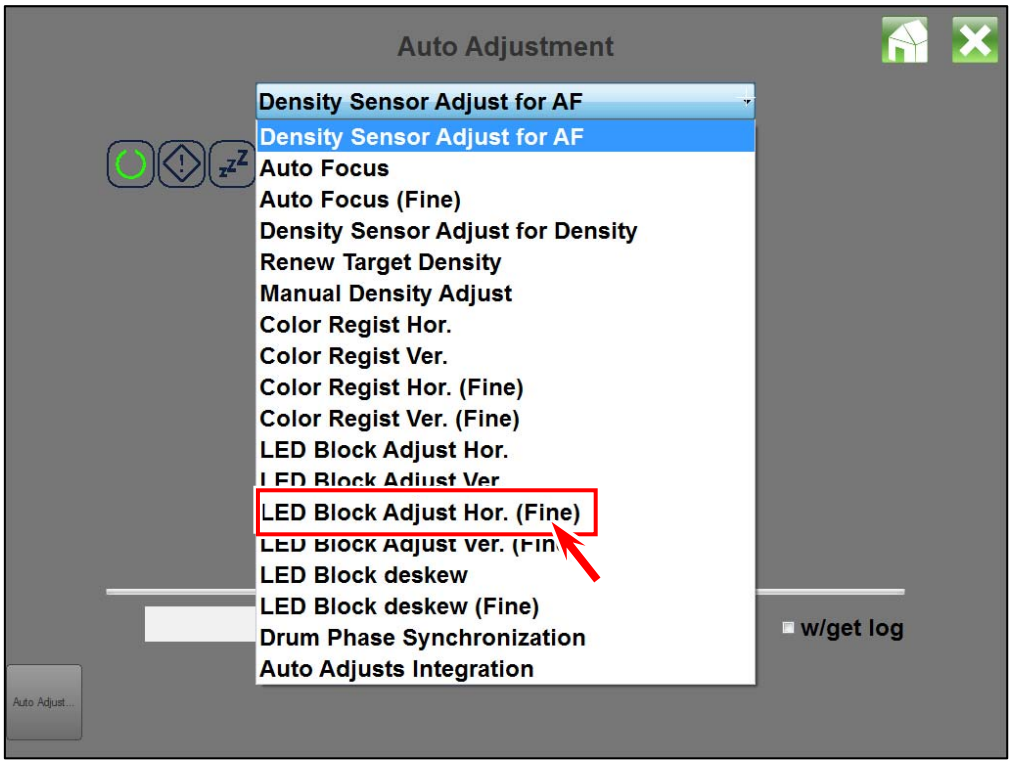


8. 3. 15 LED Block Adjust Hor. (Fine)

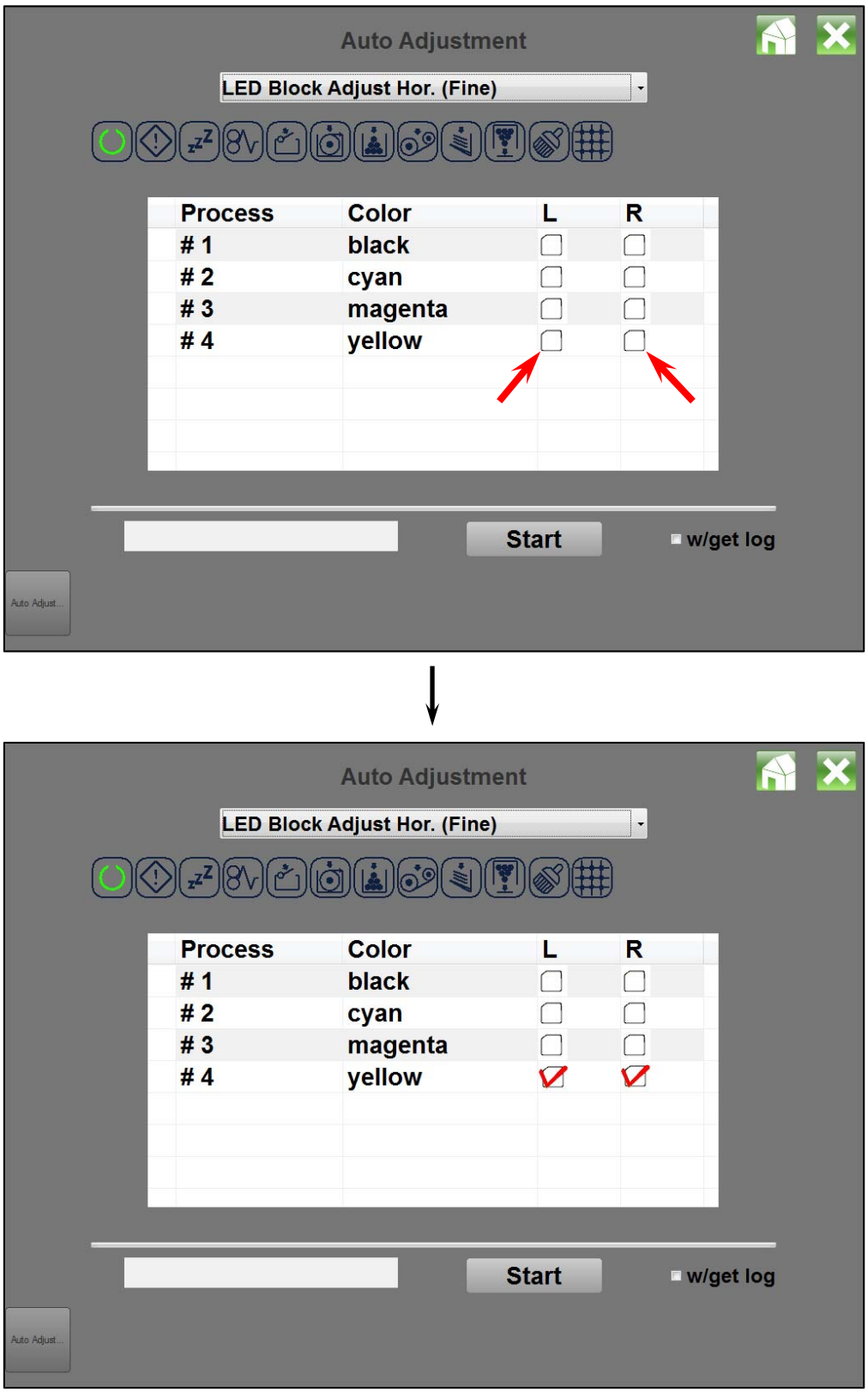
The mechanical installation of LED Block component, such as vertical and horizontal positioning as well as the angle, very slightly differs unit to unit. Such slight difference of mechanical installation is corrected by software. **LED Block Adjust Hor.** is an automatic calibration mode that appropriately corrects the horizontal position of each LED Block component.
Fine mode is a fine control used for a LED Head that already had **LED Block Adjust Hor.** done.

> **Reference**
>
> Execute the **LED Block Adjust Hor.** and **LED Head Adjust Hor. (Fine)** after replacing the LED Head. It may be also required to execute it to correct the horizontal placement of each LED Block occasionally during use of machine as needed.

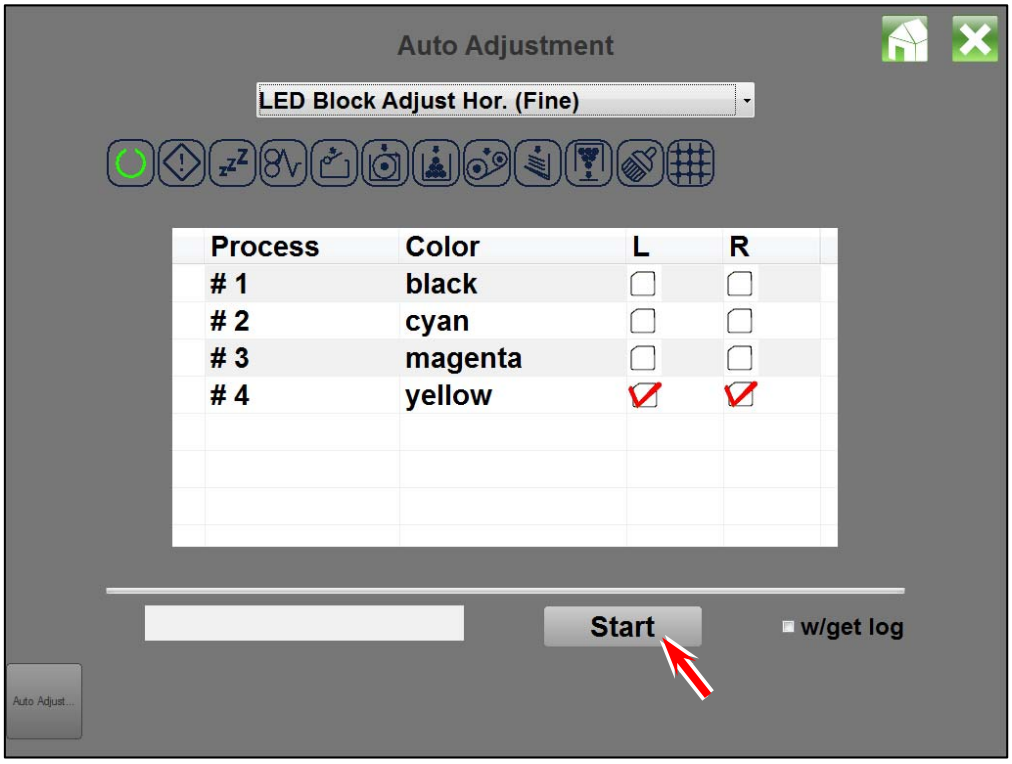
1. Select **LED Block Adjust Hor. (Fine).** in the menu of Auto Adjustment.



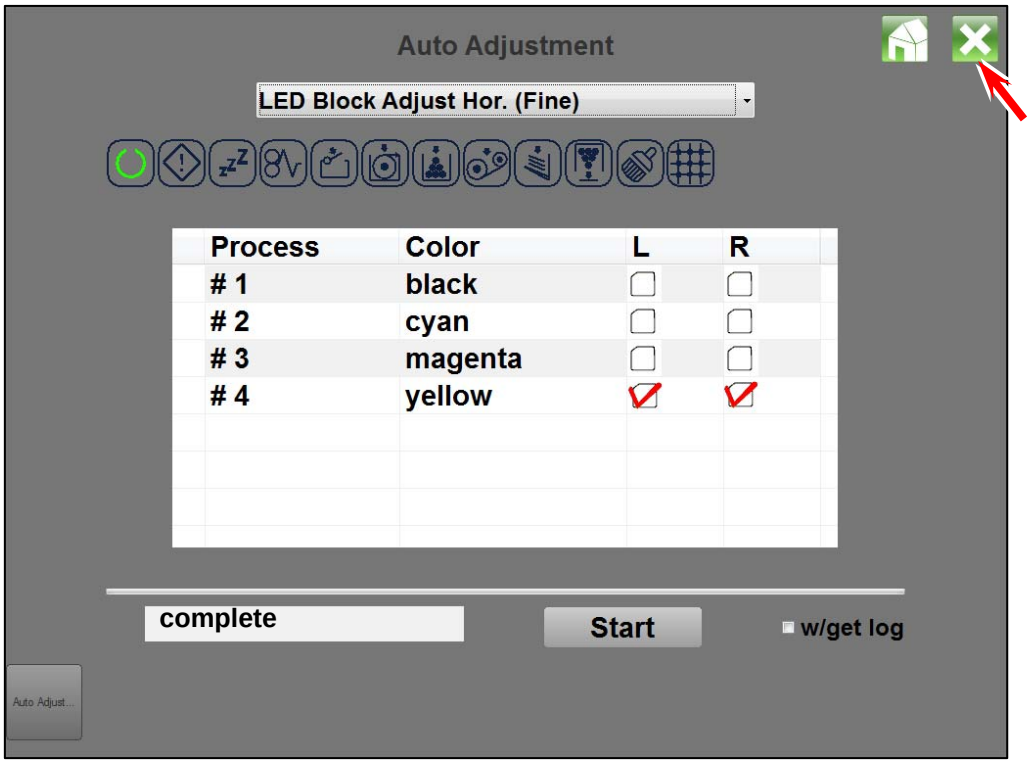
2. Select the color to which image placement of the LED Block horizontally is adjusted. The selected color is checked. (As center Blocks are the reference, “C for Center” cannot be seen)



3. Press **Start** to start the automatic calibration. Wait until it finishes.
   This will set correct values in BUDs 01210-01217 LED Joint H that correspond to the selected color(s) / Block(s).



4. The status indication part indicates “complete” when the calibration finishes. Close the page by pressing the **X** button.



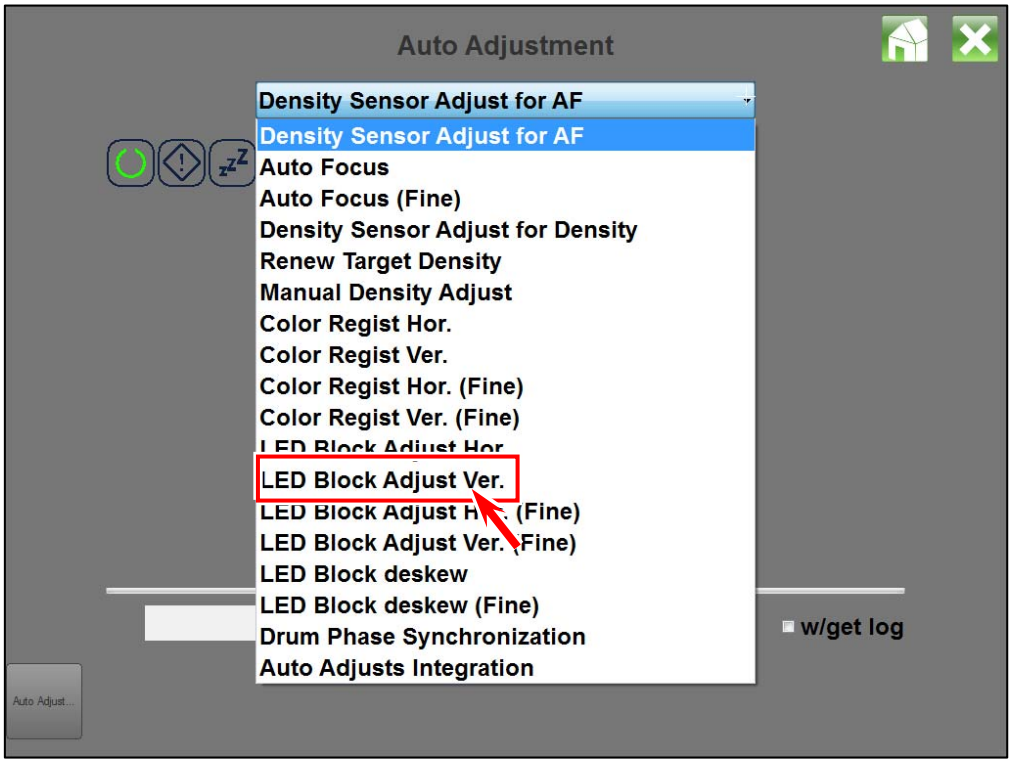
8. 3. 16 LED Block Adjust Ver.

The mechanical installation of LED Block component, such as vertical and horizontal positioning as well as the angle, very slightly differs unit to unit. Such slight difference of mechanical installation is corrected by software. **LED Block Adjust Ver.** is an automatic calibration mode that appropriately corrects the vertical position of each LED Block component.

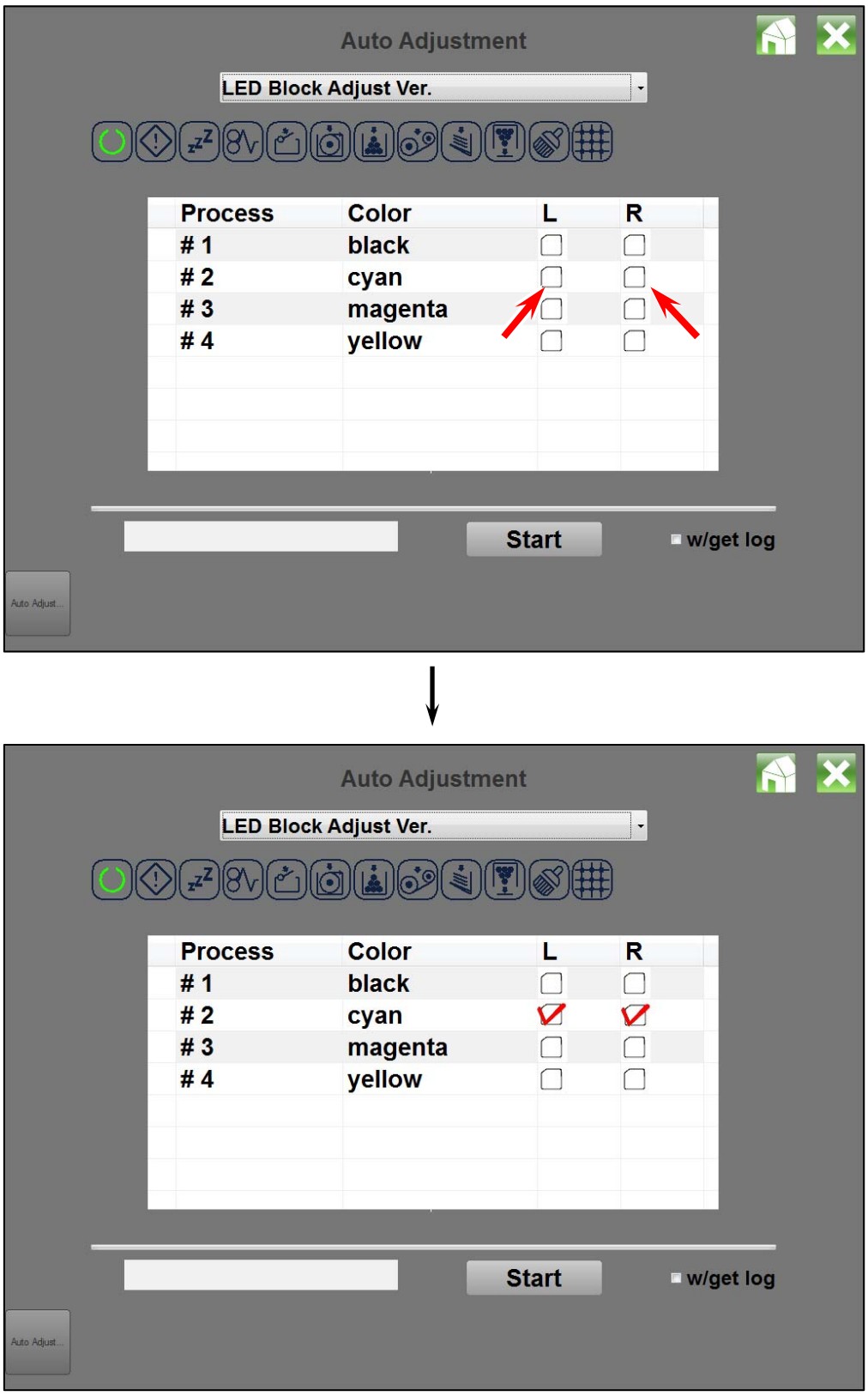
Reference

Execute the **LED Block Adjust Ver.** and **LED Head Adjust Ver. (Fine)** after replacing the LED Head. It may be also required to execute it to correct the vertical placement of each LED Block occasionally during use of machine as needed.

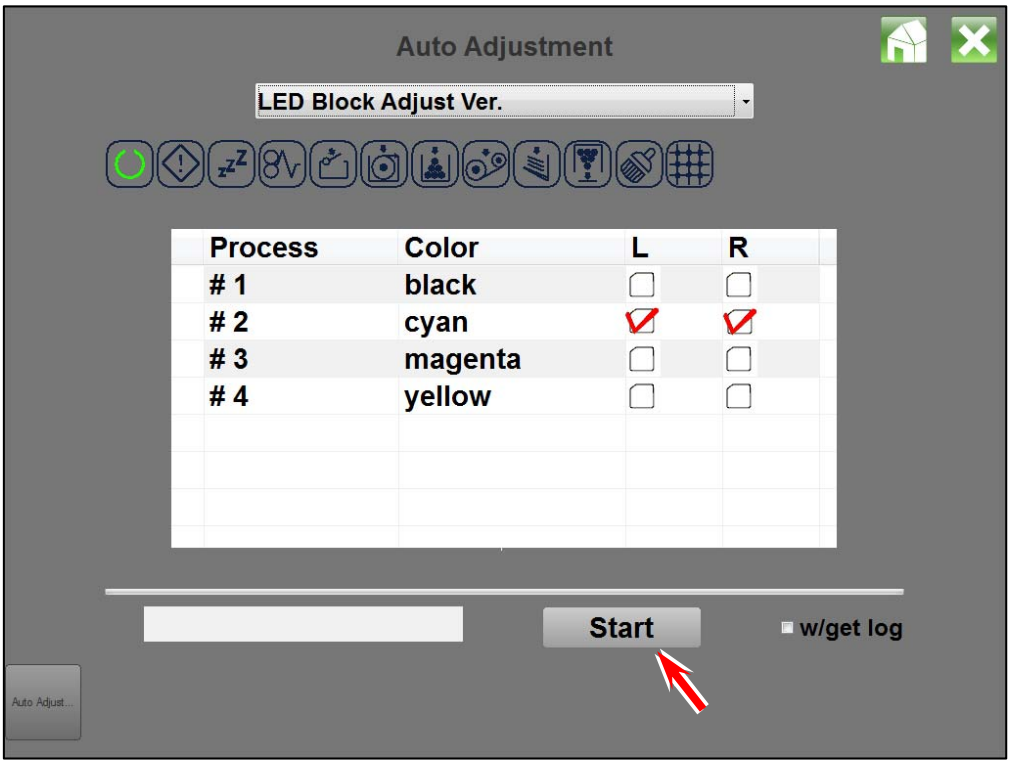
1. Select **LED Block Adjust Ver.** in the menu of Auto Adjustment.



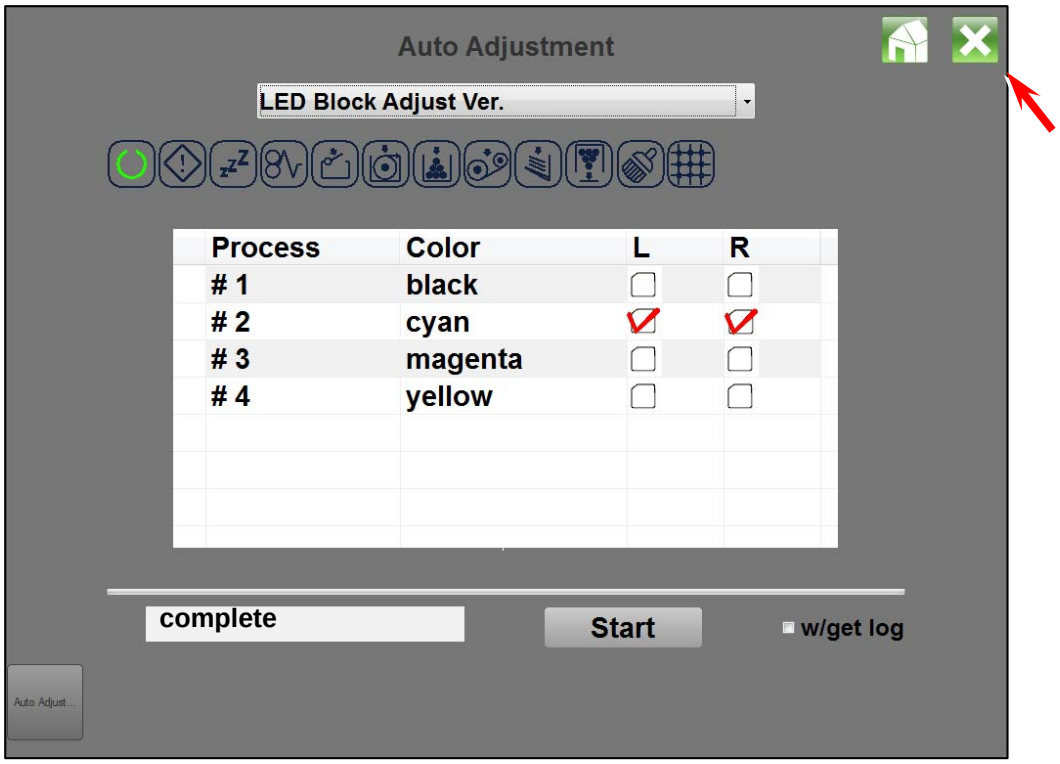
2. Select the color to which image placement of the LED Block vertically is adjusted. The selected color is checked. (As center Blocks are the reference, “C” cannot be seen)



3. Press **Start** to start the automatic calibration. Wait until it finishes.
   This will set correct values in BUDs 01218-01225 LED Joint V that correspond to the selected color(s) / Block(s).



4. The status indication part indicates “complete” when the calibration finishes. Close the page by pressing the **X** button.

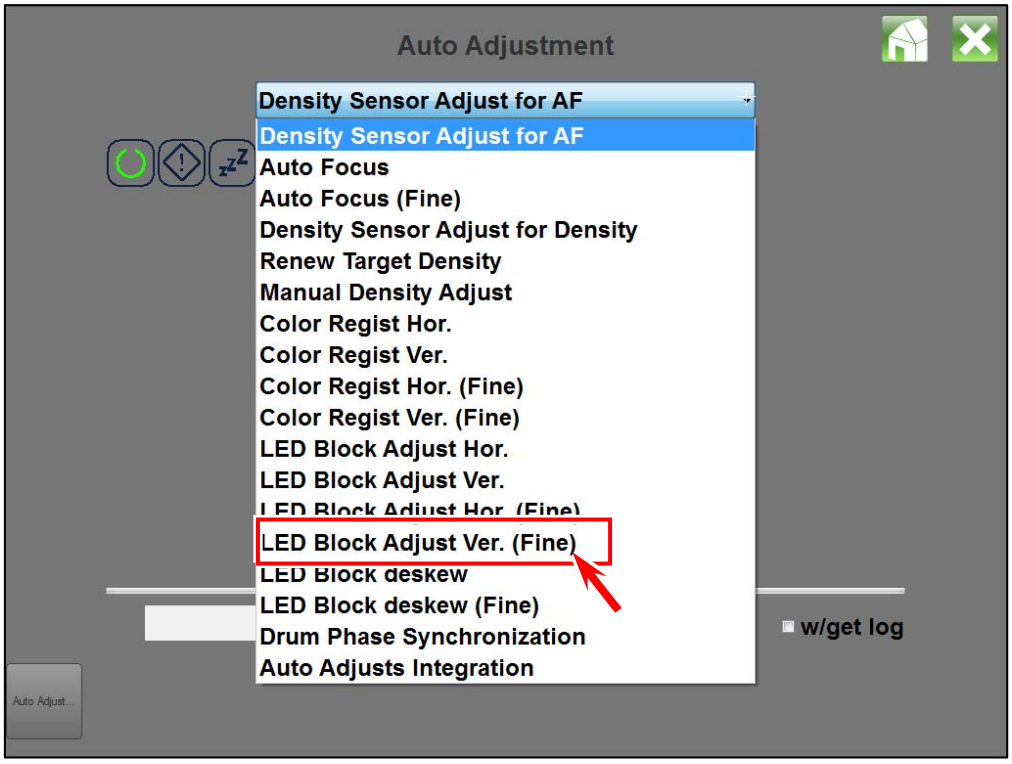


8. 3. 17 LED Block Adjust Ver. (Fine)

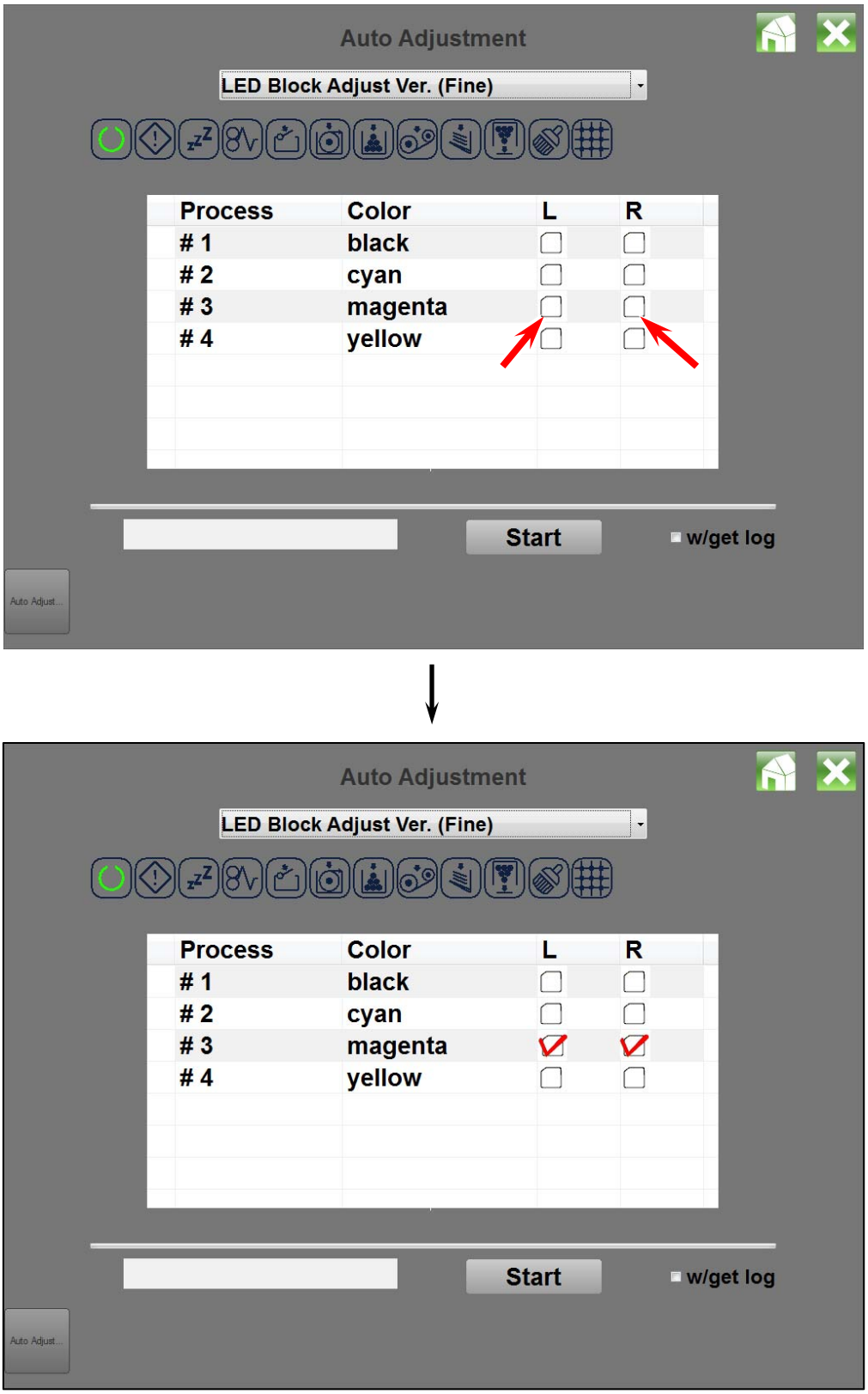
The mechanical installation of LED Block component, such as vertical and horizontal positioning as well as the angle, very slightly differs unit to unit. Such slight difference of mechanical installation is corrected by software. **LED Block Adjust Ver.** is an automatic calibration mode that appropriately corrects the vertical position of each LED Block component.
Fine mode is a fine control used for a LED Head that already had **LED Block Adjust Ver.** done.

> **Reference**
>
> Execute the **LED Block Adjust Ver.** and **LED Head Adjust Ver. (Fine)** after replacing the LED Head. It may be also required to execute it to correct the vertical placement of each LED Block occasionally during use of machine as needed.

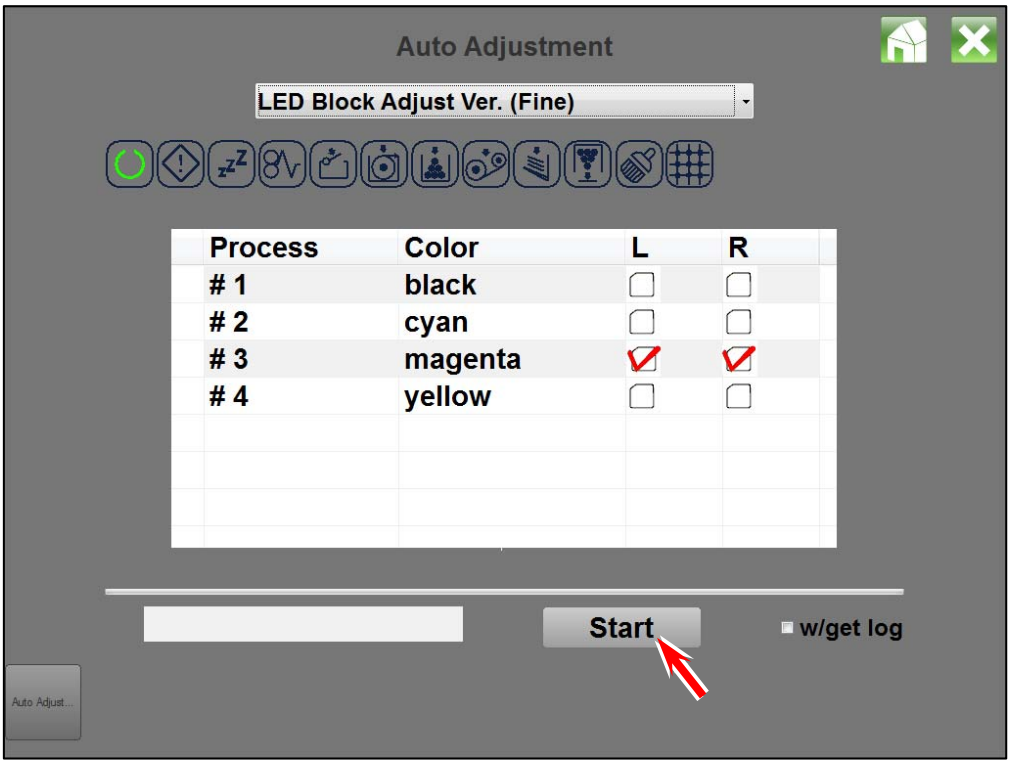
1. Select **LED Block Adjust Ver. (Fine)** in the menu of Auto Adjustment.



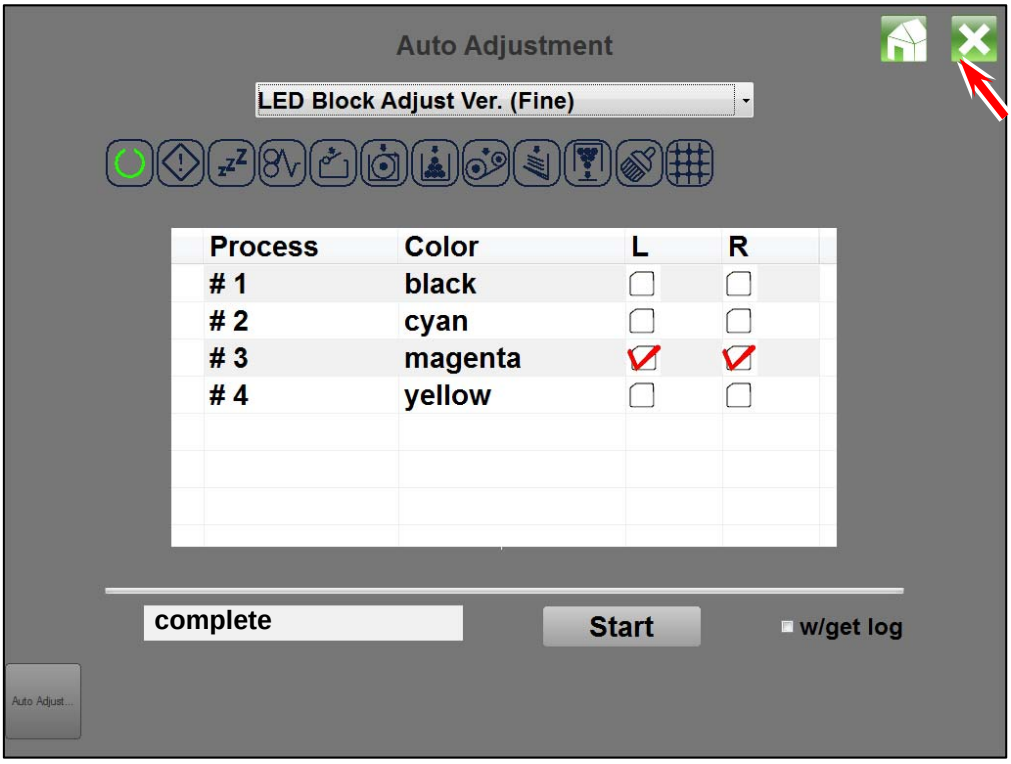
2. Select the color to which image placement of the LED Block vertically is adjusted. The selected color is checked. (As center Blocks are the reference, “C” cannot be seen)



3. Press **Start** to start the automatic calibration. Wait until it finishes.
   This will set correct values in BUDs 01218-01225 LED Joint V that correspond to the selected color(s) / Block(s).



4. The status indication part indicates “complete” when the calibration finishes. Close the page by pressing the **X** button.

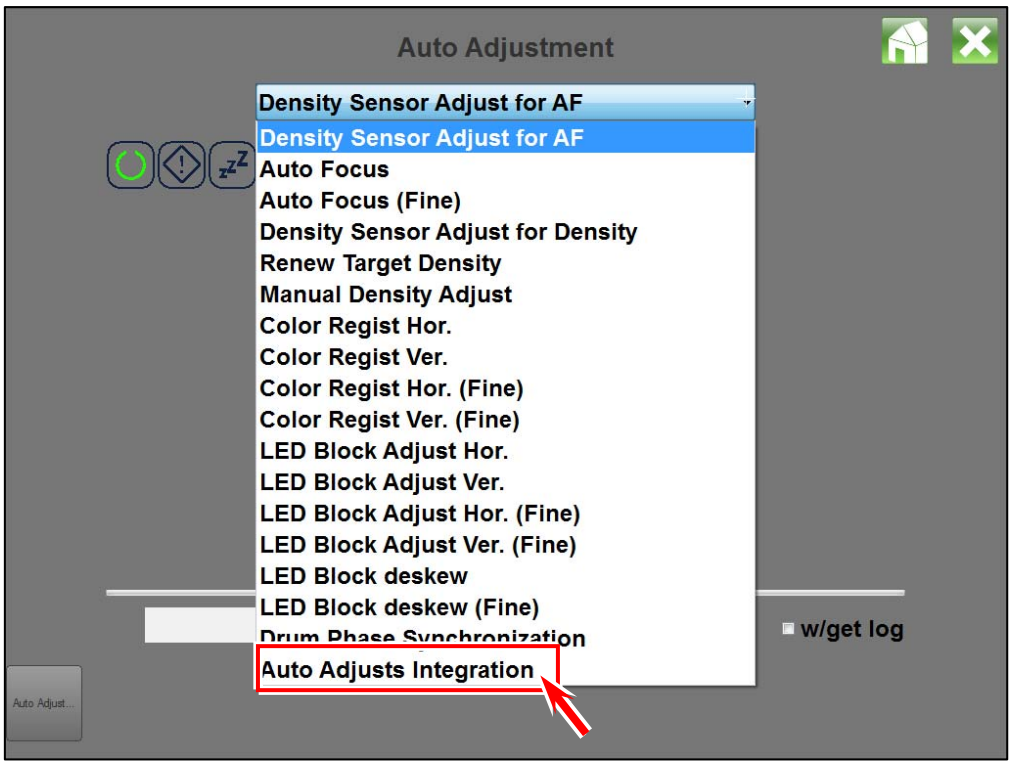


8. 3. 18 Auto Adjust Integration

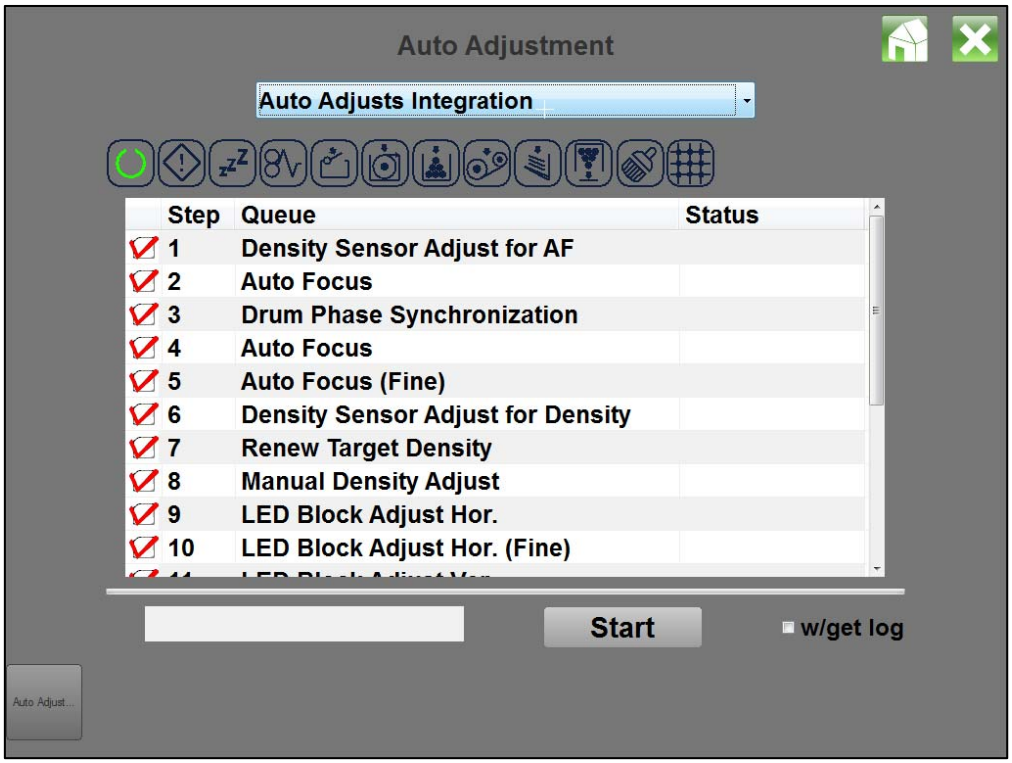
Auto Adjust Integration is used as a batch execution of multiple Auto Adjustment Menus. Please see each Auto Adjustment item to be used for further detailed instruction prior to using **Auto Adjust Integration**.
The printer executes selected items according to a preprogrammed internal priority.
Changing the order of execution and execution in plural times are not available.

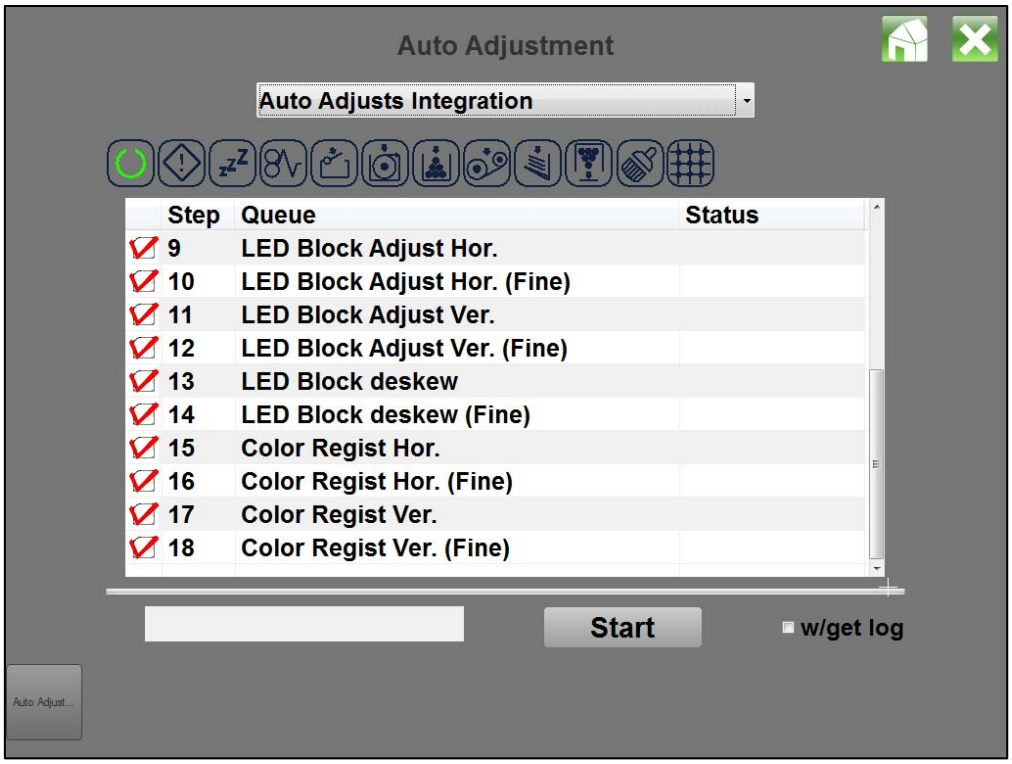
Priority	Auto Adjustment Menu	See also related section	BUD that should be checked
1	Density Sensor Adjust for AF	8.3.1 - 8.3.3 (Auto Focus matters)	01265 Focus Adjust On/Off
2	Auto Focus		
3	Auto Focus (Fine)		
4	Color Regist Hor.	8.3.7 - 8.3.11 (Alignment - Registration matters)	
5	Color Regist Hor. (Fine)		
6	Color Regist Ver.		
7	Drum Phase Synchronization		01708-01711 Drum Correct Phase 01712-01715 Drum Correct Gain
8	Color Regist Ver. (Fine)		
9	LED Head Deskew	8.3.12 - 8.3.17 (Alignment - LED Block matters)	
10	LED Head Deskew (Fine)		
11	LED Block Adjust Hor.		
12	LED Block Adjust Hor. (Fine)		
13	LED Block Adjust Ver.		
14	LED Block Adjust Ver. (Fine)		
15	Density Sensor Adjust for Density	8.3.4 - 8.3.6 (Density matters)	00720 Density Adjustment On/Off 01785 Auto Density Adjustment
16	Renew Target Density		
17	Manual Density Adjustment		

1. Select **Auto Adjust Integration** in the menu of Auto Adjustment.



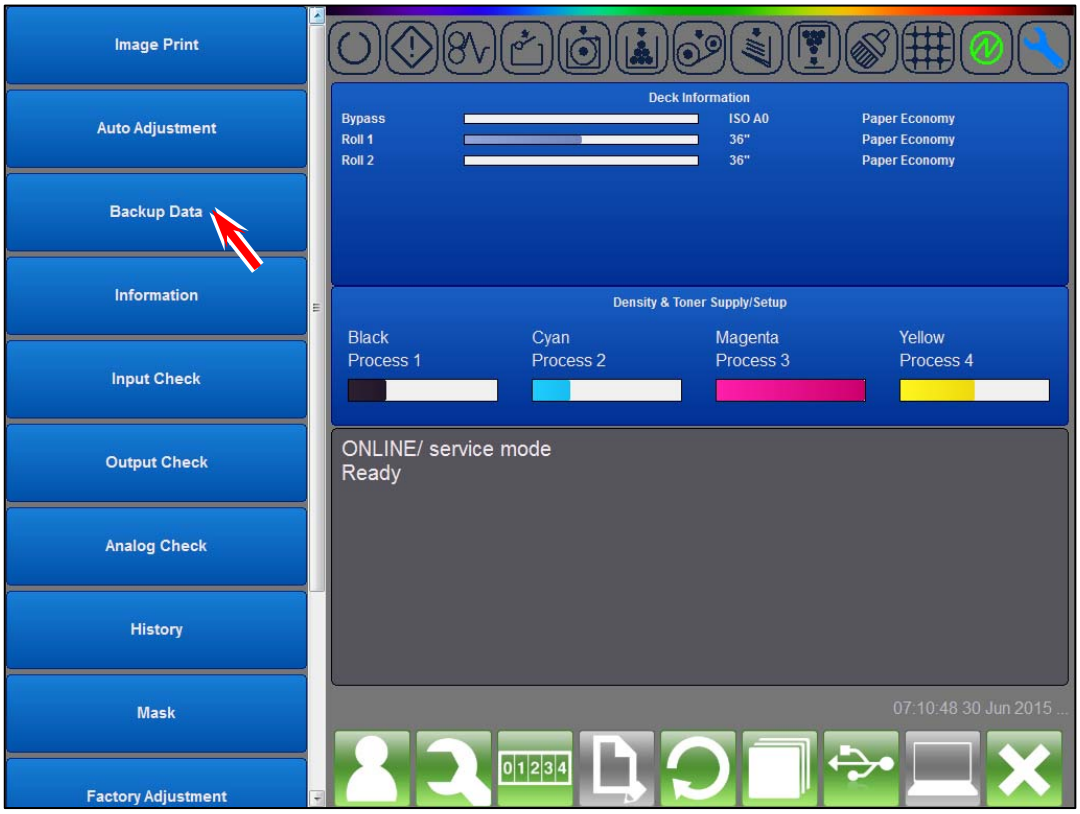
2. Select Auto Adjust menus. The selected menus are to be executed once **Start** is pressed. Advanced selection of individual Color / LED Block is not available.

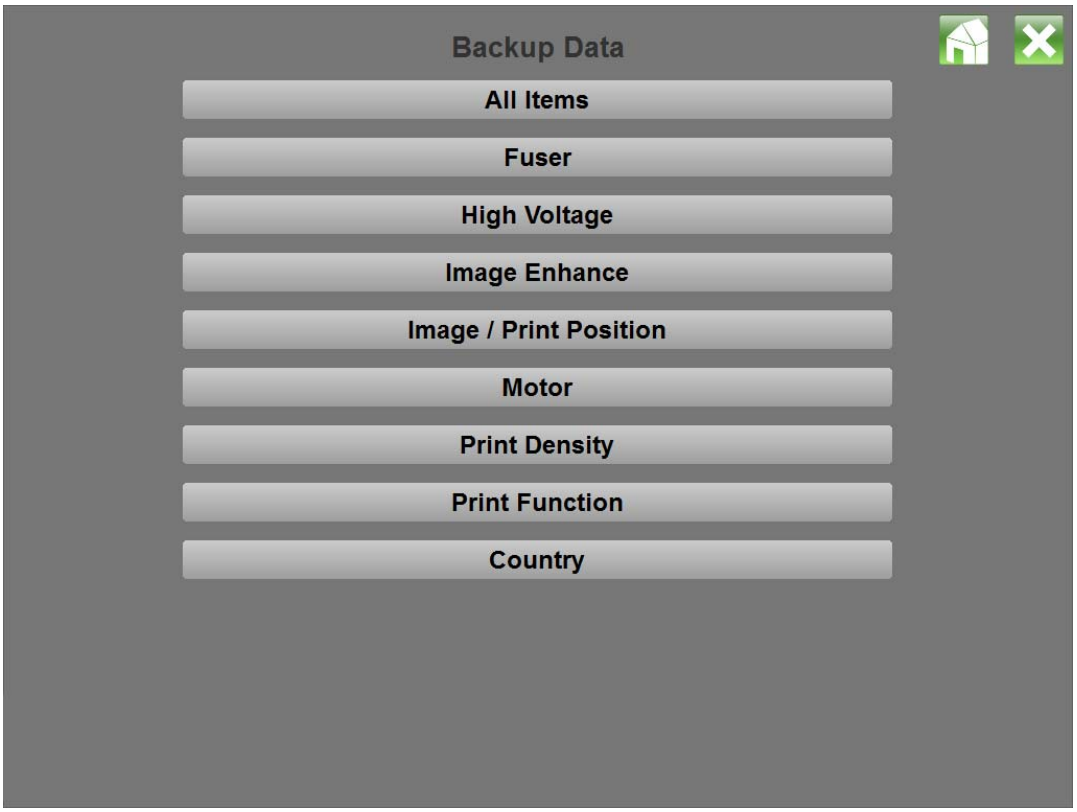




8. 4 Backup Data

Backup Data (also called as BUD) 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.

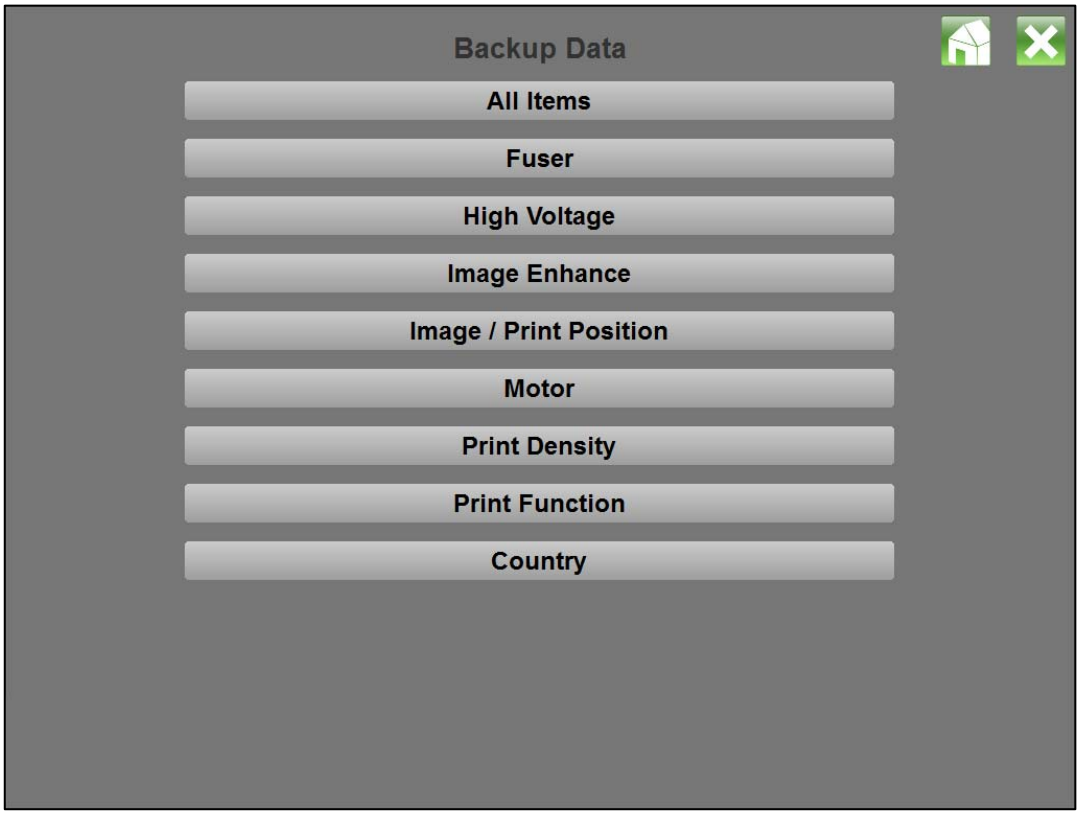




8. 4. 1 Operations in Backup Data

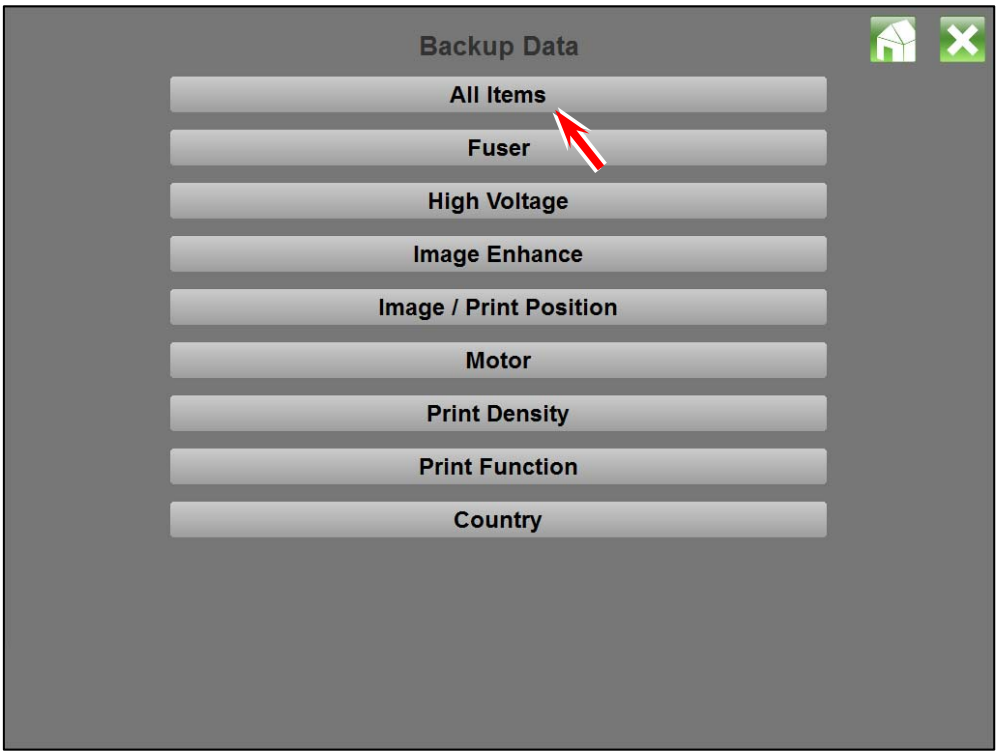
8. 4. 1. 1 Change and save of the setting values

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.

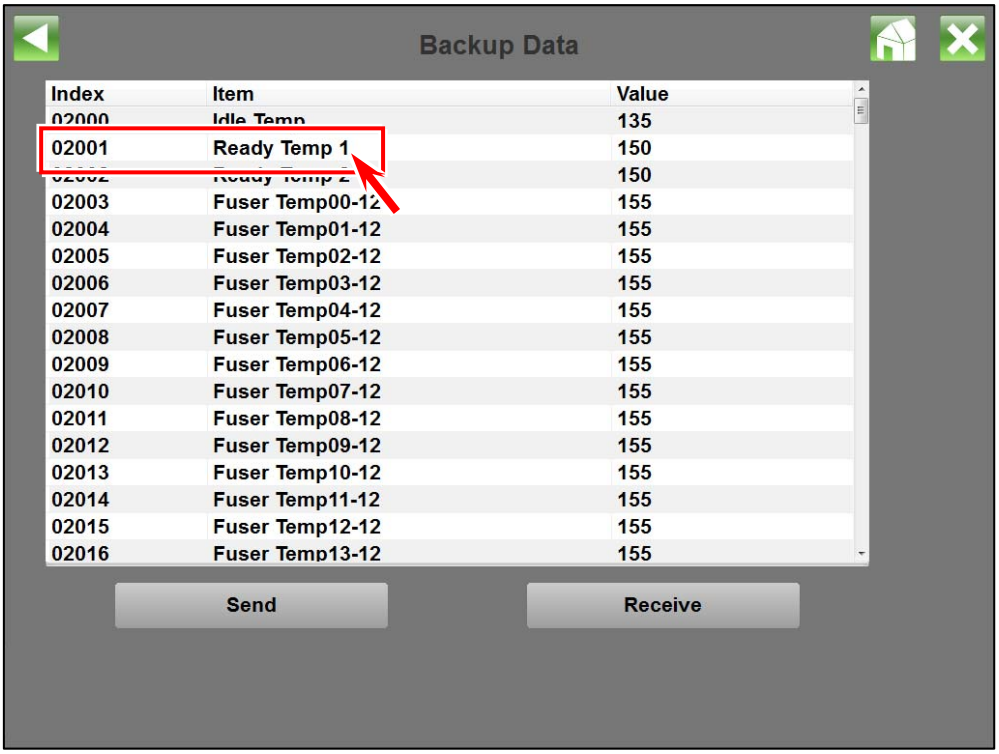
   Example: **All Items** is selected.



Reference

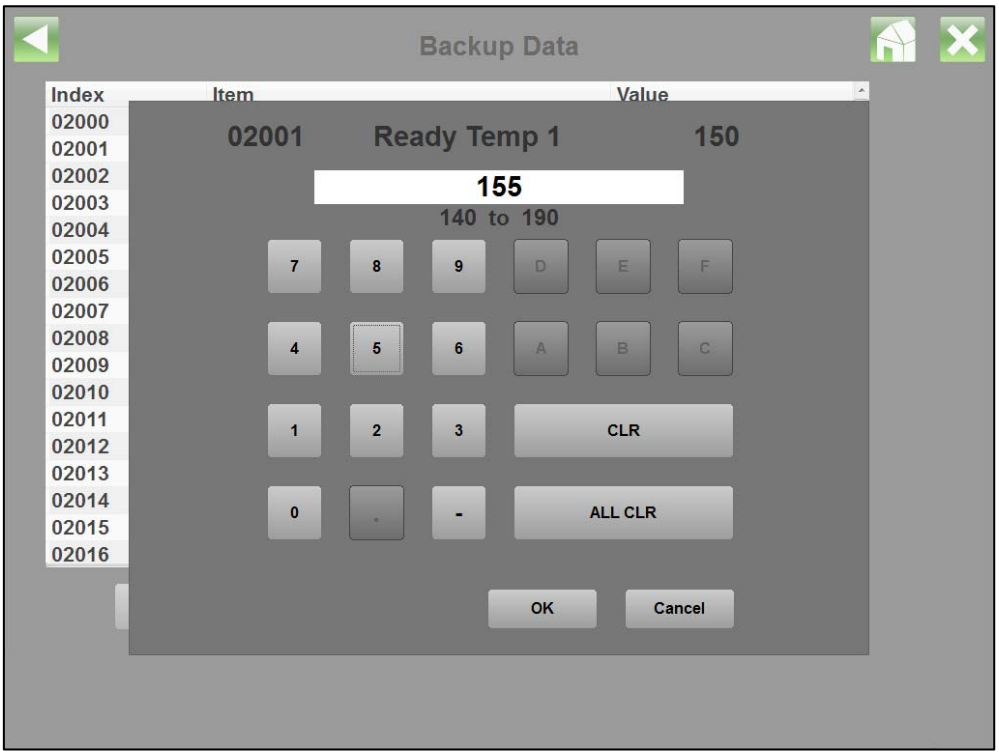
There are plenty numbers of items in Backup Data parameters. You can find a setting item by **All Items button** on the top, or any category buttons that can list only related items by the category name.

3. Select the item of which setting value you will change. (Example : 02001: Ready Temp 1)

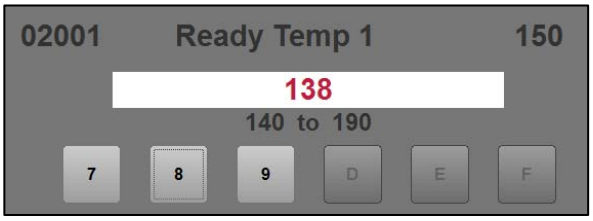


4. A numeric keypad sub window pops up with showing the selected number (02001), item name (Ready Temp 1) and “current setting value” (150) on the top line.
   Enter a new setting value to the field beneath the item name with the numeric keypad, or the dropdown menu.

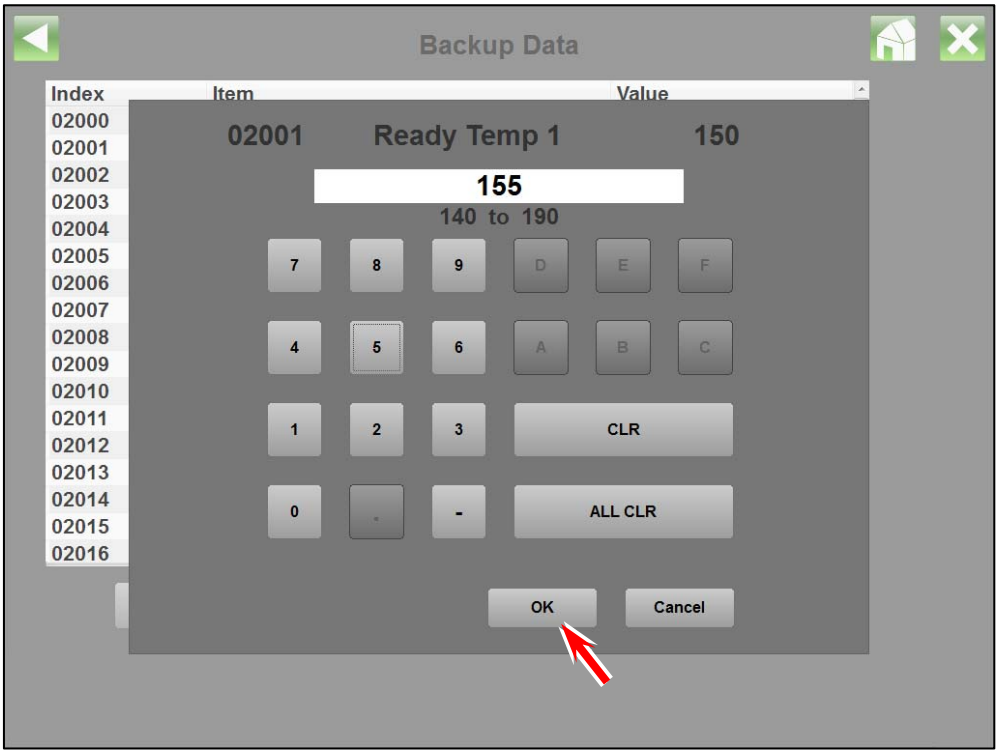
(Example : Change the value from 150 to 155)



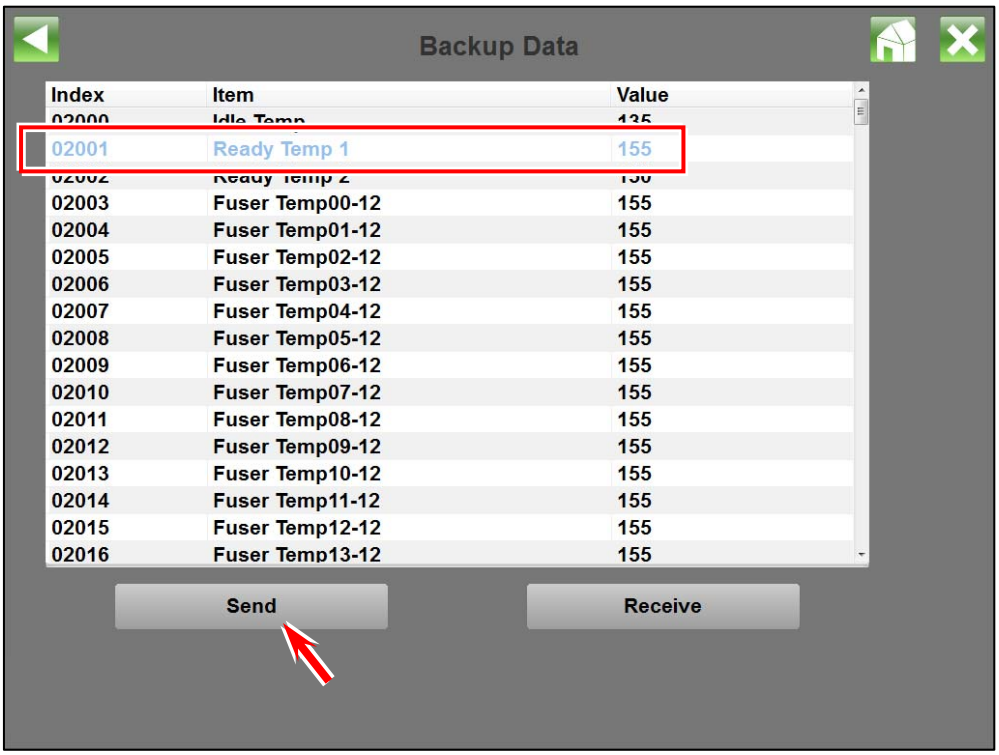
If an invalid value is entered, the value turns red. Enter the correct value.



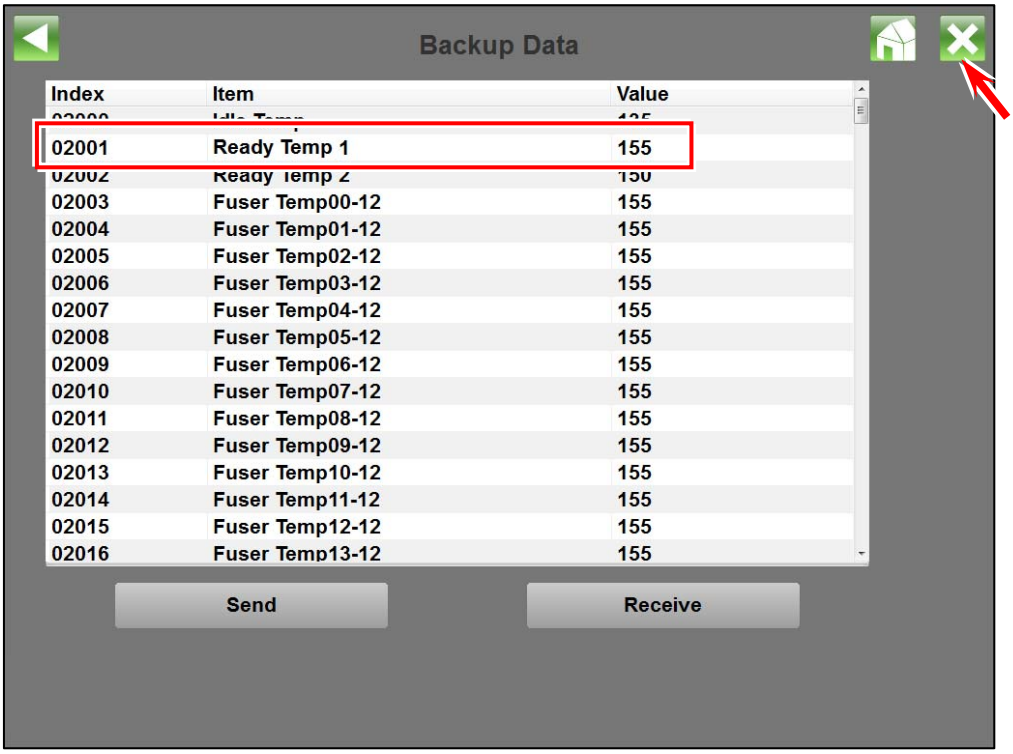
5. Press **OK** to close the numeric keypad sub window. The new setting value is not yet valid at this moment.



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.

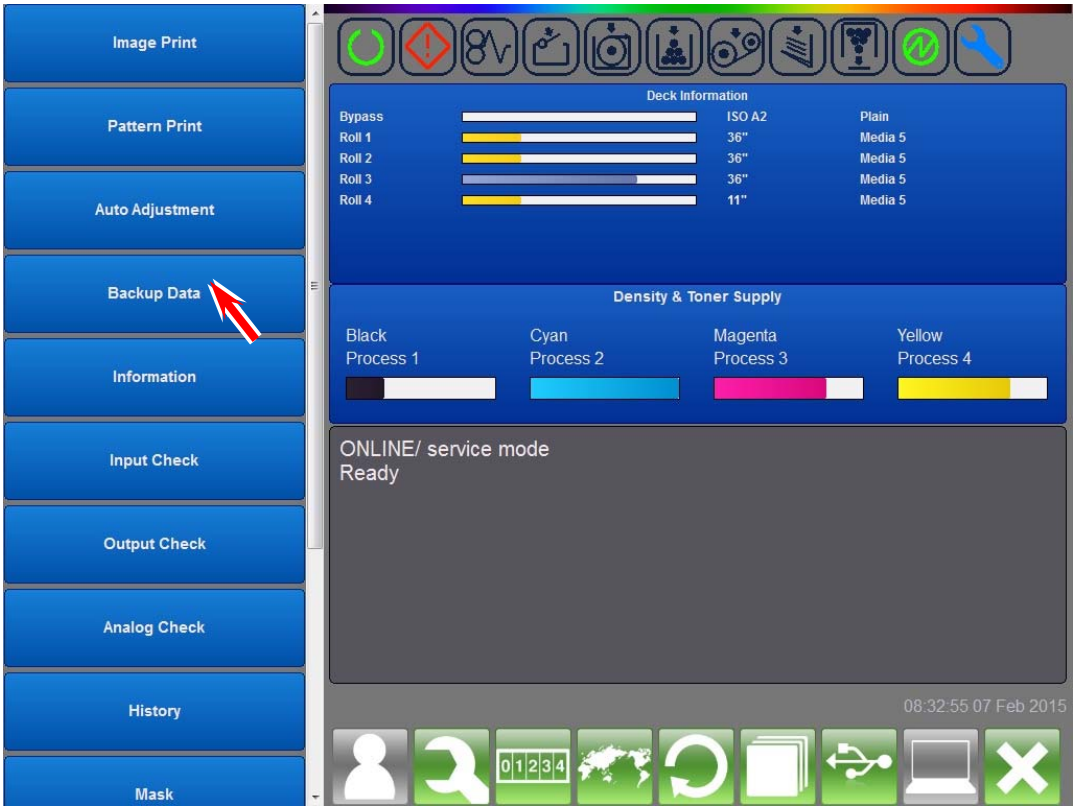
8. 4. 1. 2 Saving all parameter values into a zip file for backing up (Export)

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.

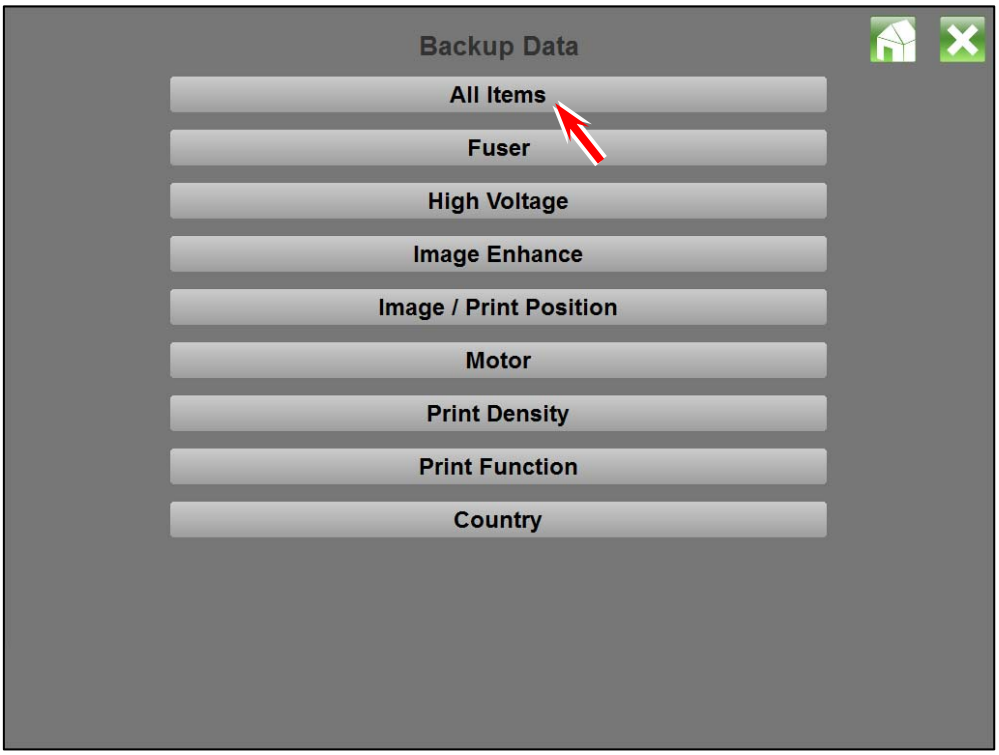
Reference

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)

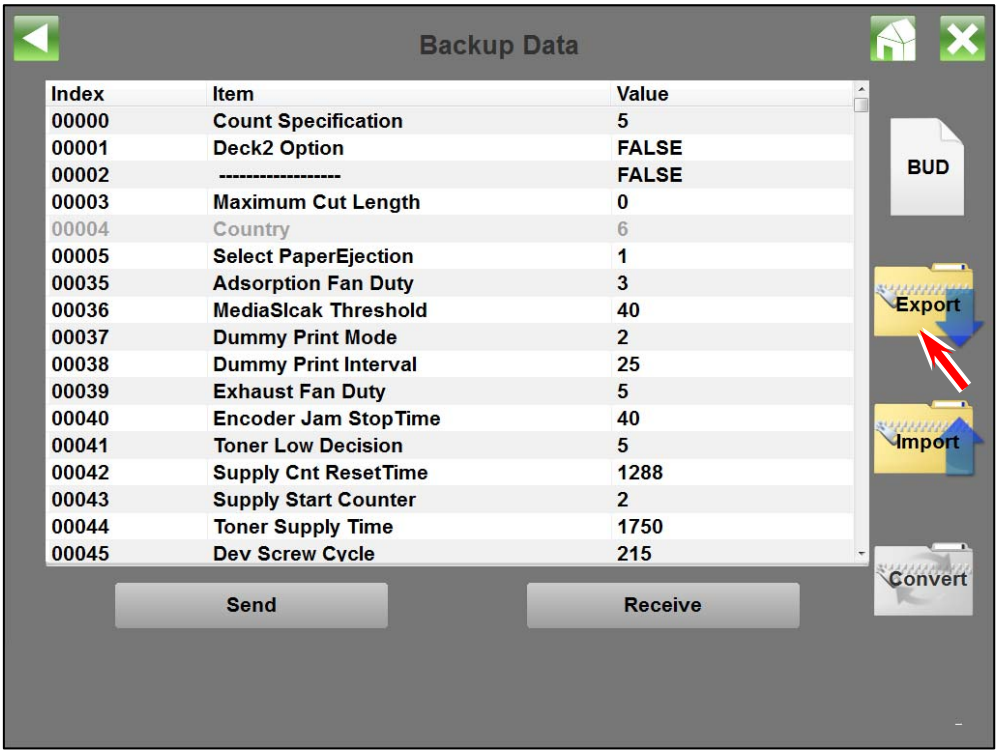
1. Select Backup Data in the HOME of Maintenance GUI.



2. Press **All Items**.



3. Press **Export**.

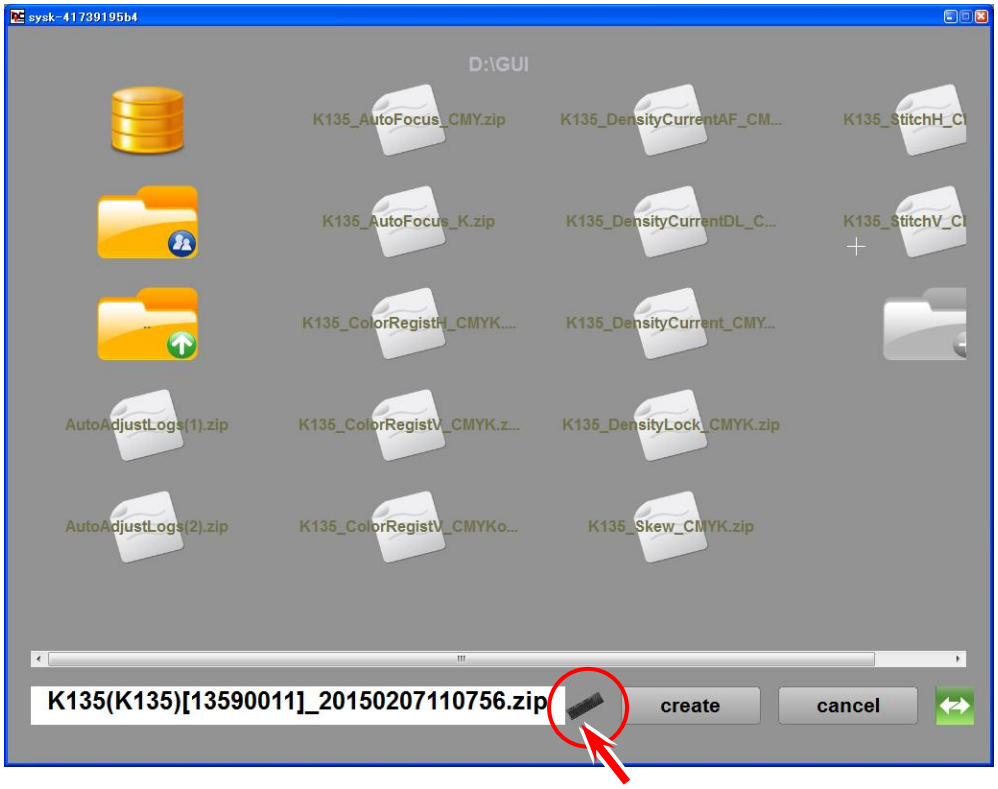


If you choose other than **All Items**, the category specific list does not show **Export** button.

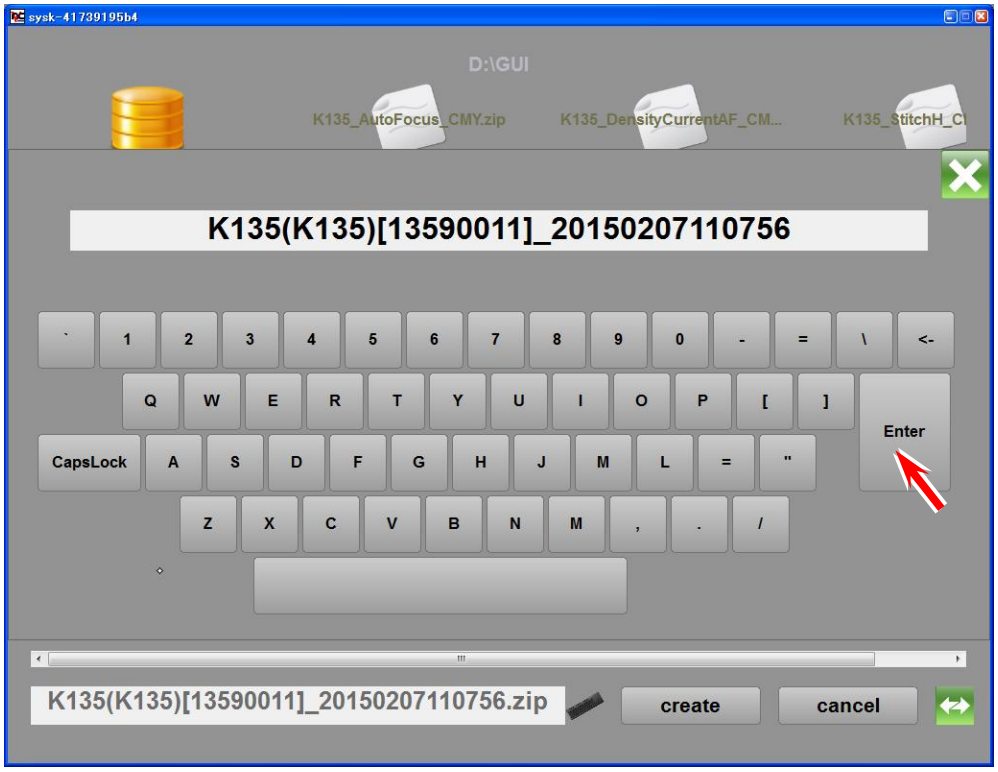
4. It is possible in the next screen to select the save location as well as changing the file name. The file name is automatically given according to the serial number and date and time as;

   [K135 (K135) (serial number)_(year)(month)(day)(hour)(minute)(second).zip]

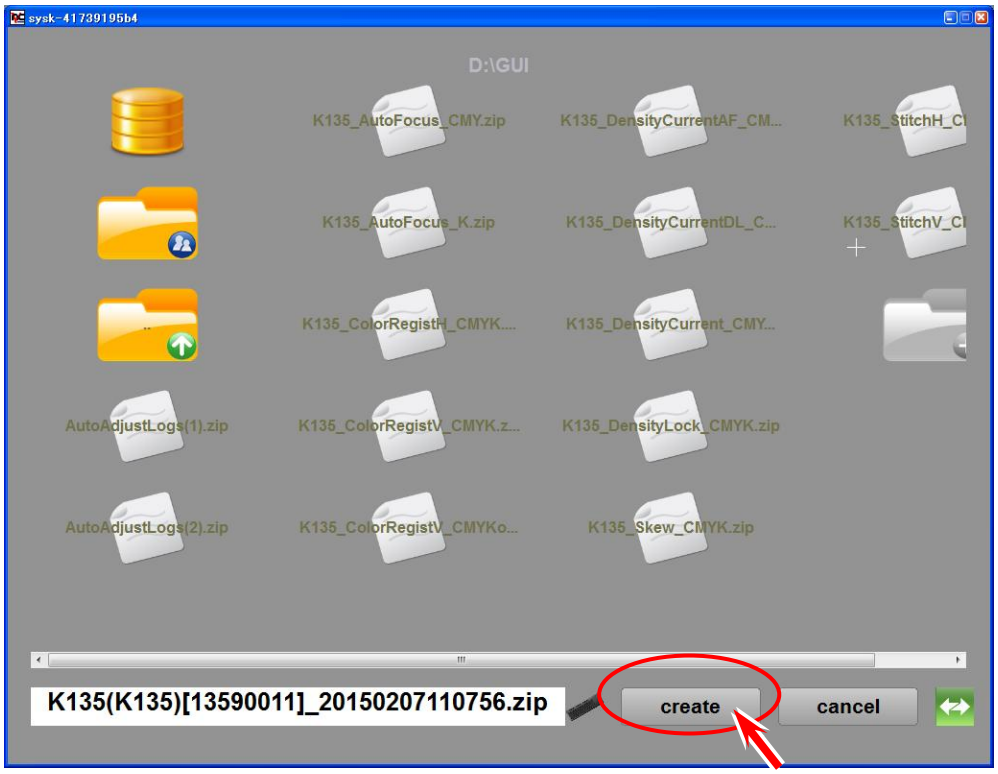
   If you will like to change the file name, press the Key Board icon on the bottom to indicate the software keyboard.



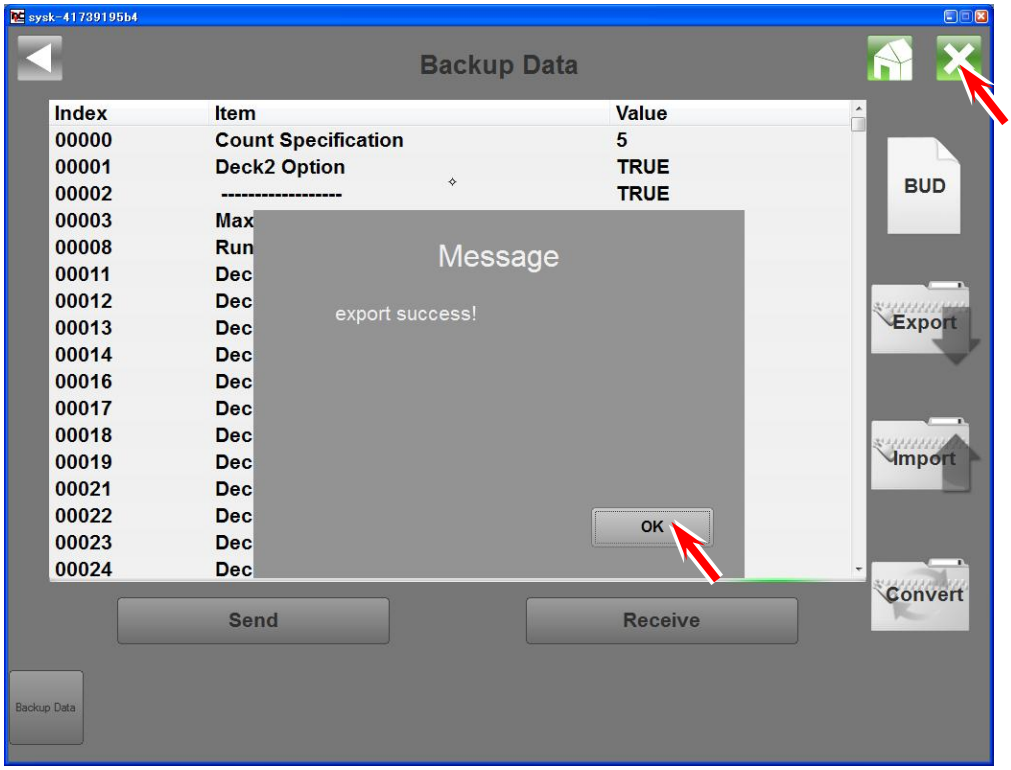
5. Enter your preferable name in the software keyboard and then press **Enter**.



6. Press **create** to save.



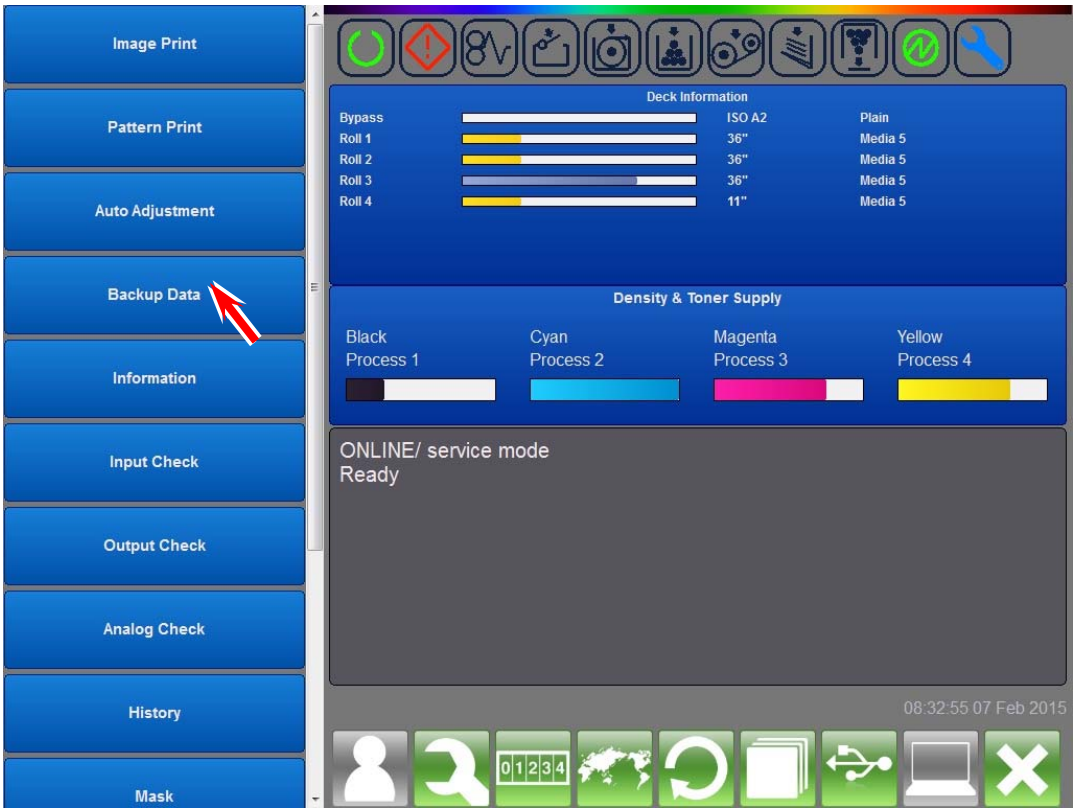
7. A dialog box notifies the completion of file saving. Press **OK** in the dialog box and then **X** on upper right.



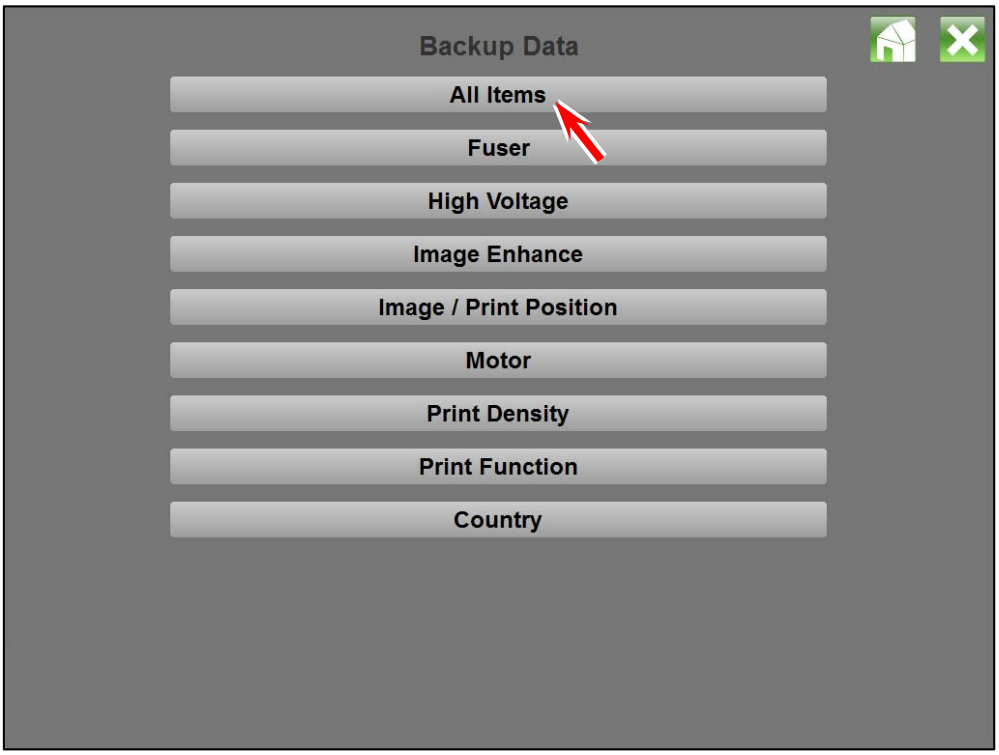
8. 4. 1. 3 Plot BUD List

It is possible to plot the current printer settings with the printer.

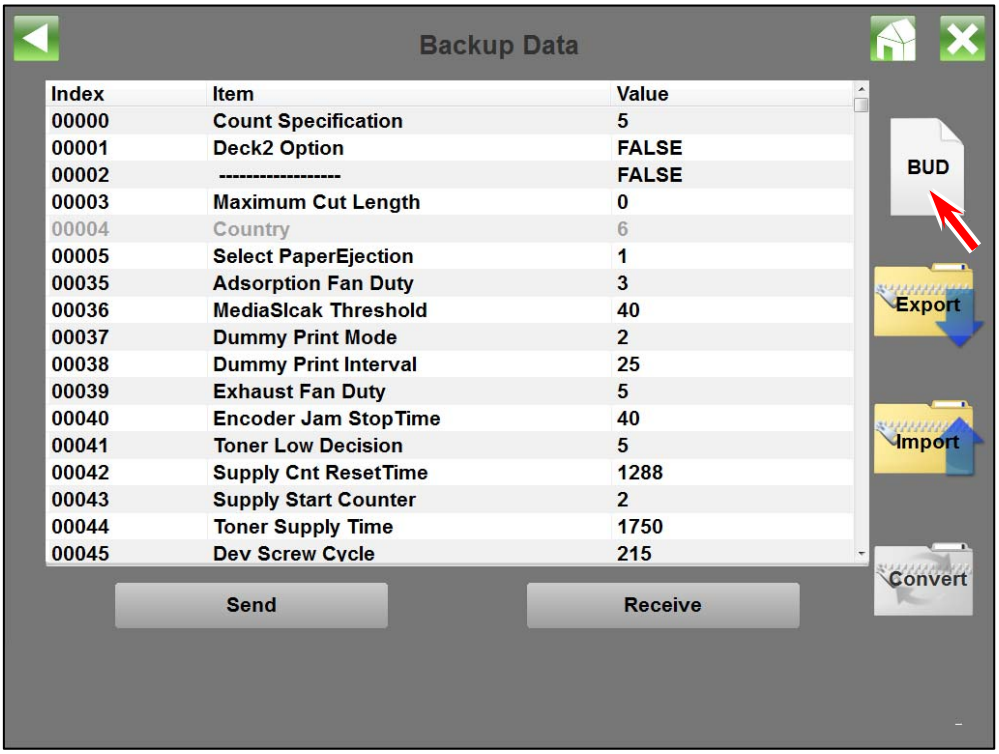
1. Select Backup Data in the HOME of Maintenance GUI.



2. Press **All Items**.

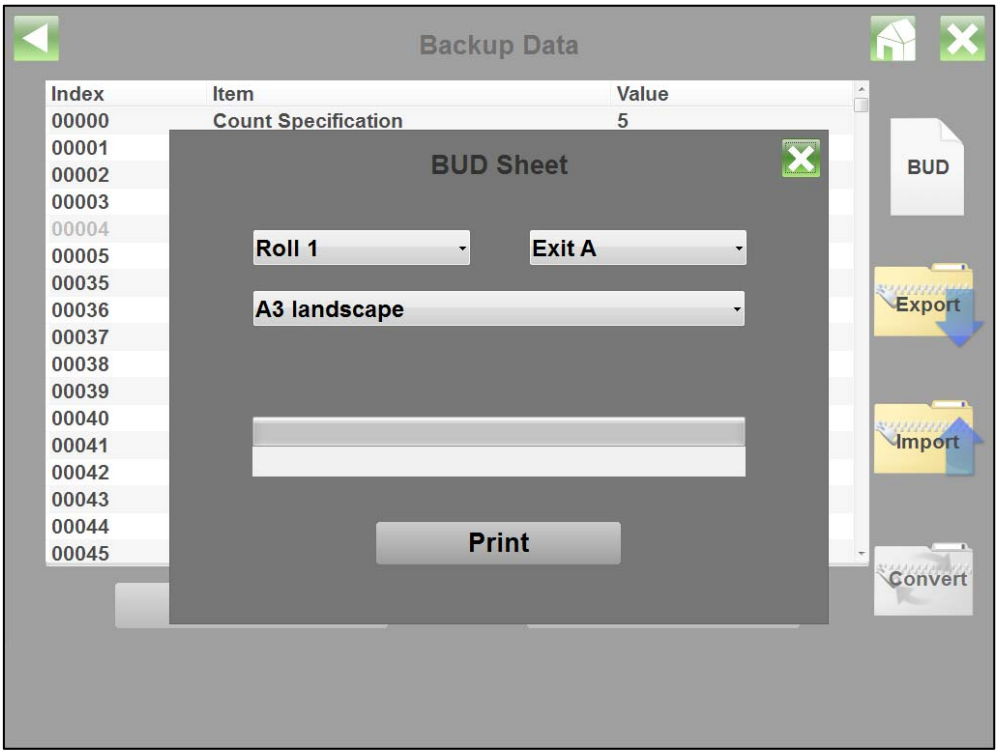


3. Press **BUD**.



If you choose other than **All Items**, the category specific list does not show **BUD** button.

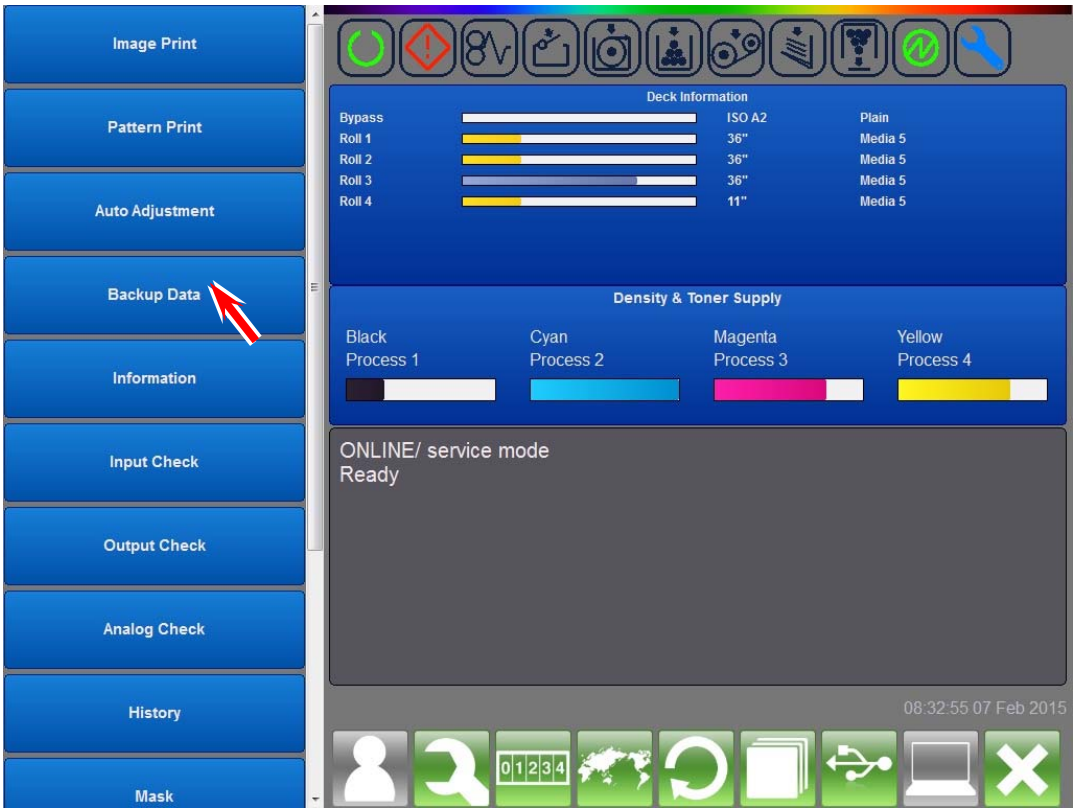
4. Select the media source, print ejection, print size, and then press **Print**.



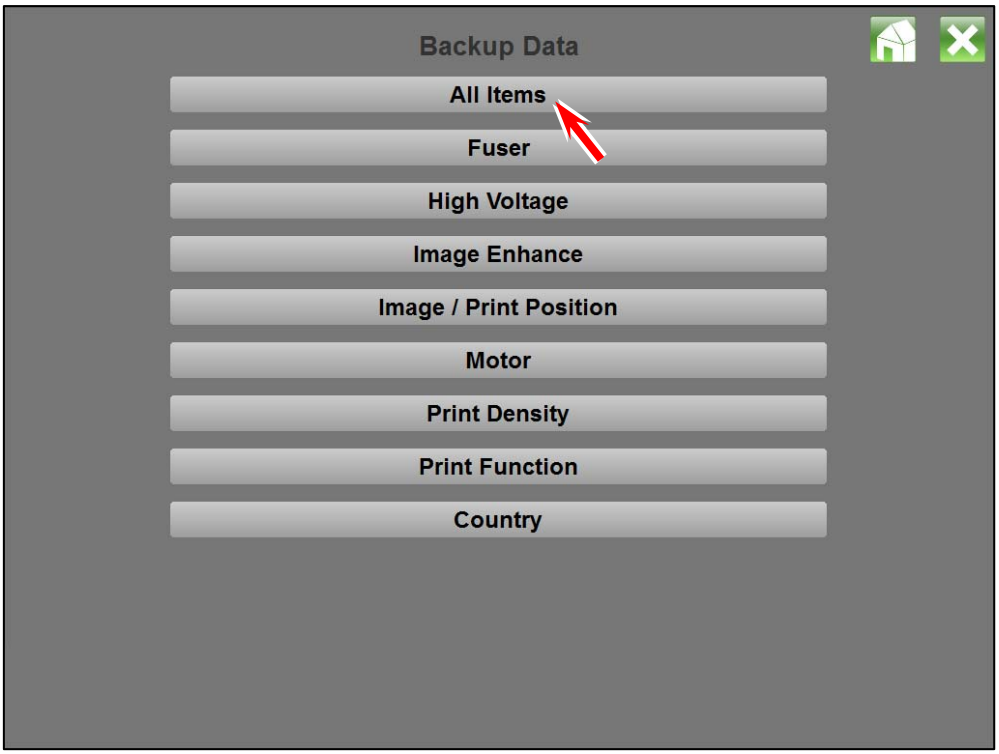
8. 4. 1. 4 Loading the backed up zip file to printer (Import)

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.

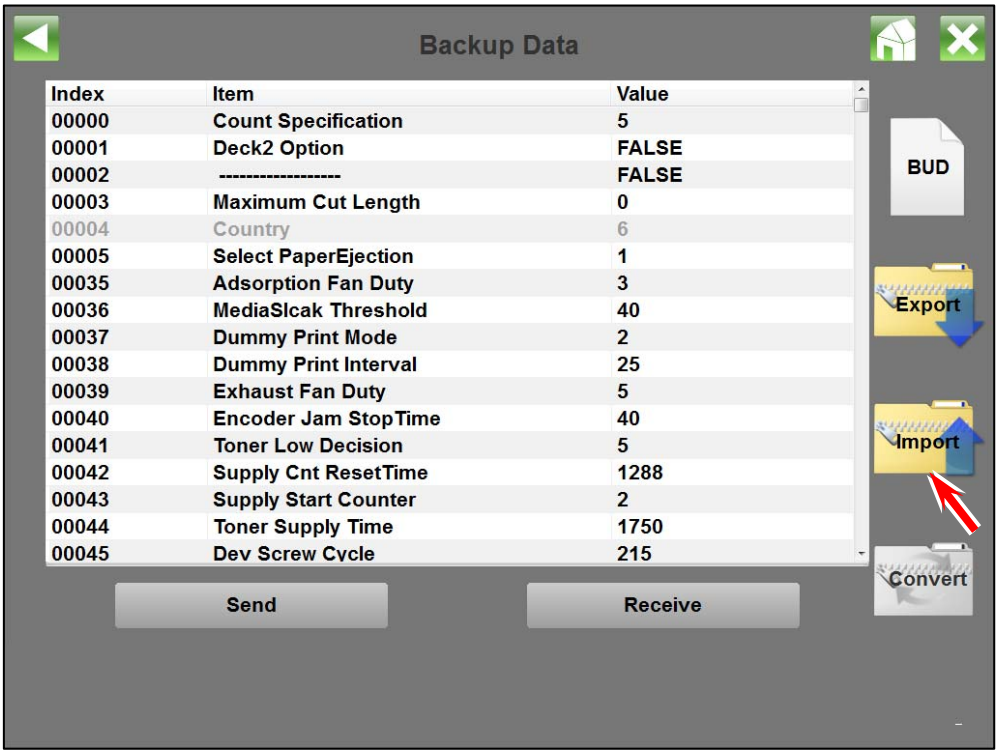
1. Select Backup Data in the HOME of Maintenance GUI.



2. Press **All Items**.

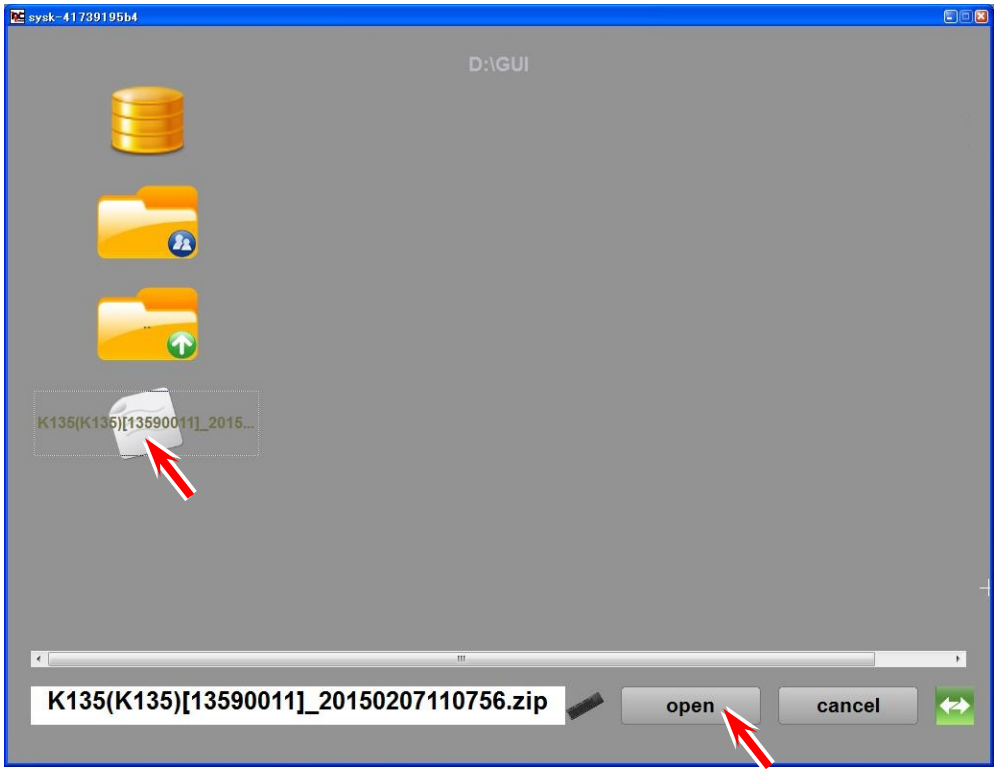


3. Press **Import**.

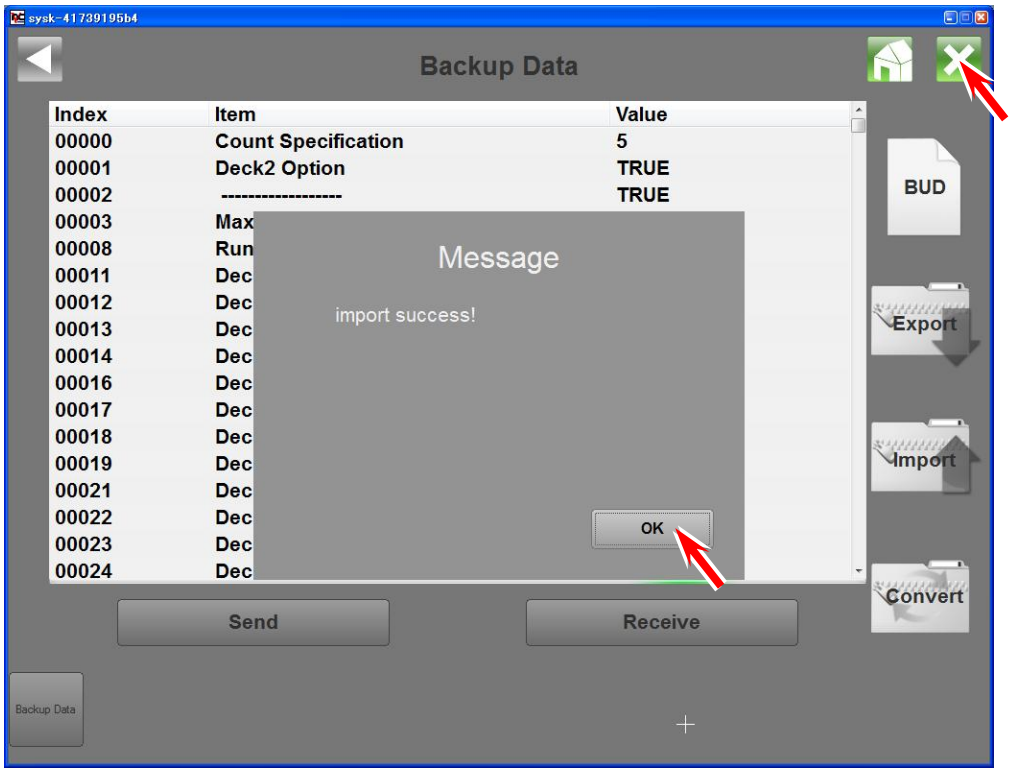


If you choose other than **All Items**, the category specific list does not show **Import** button.

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.

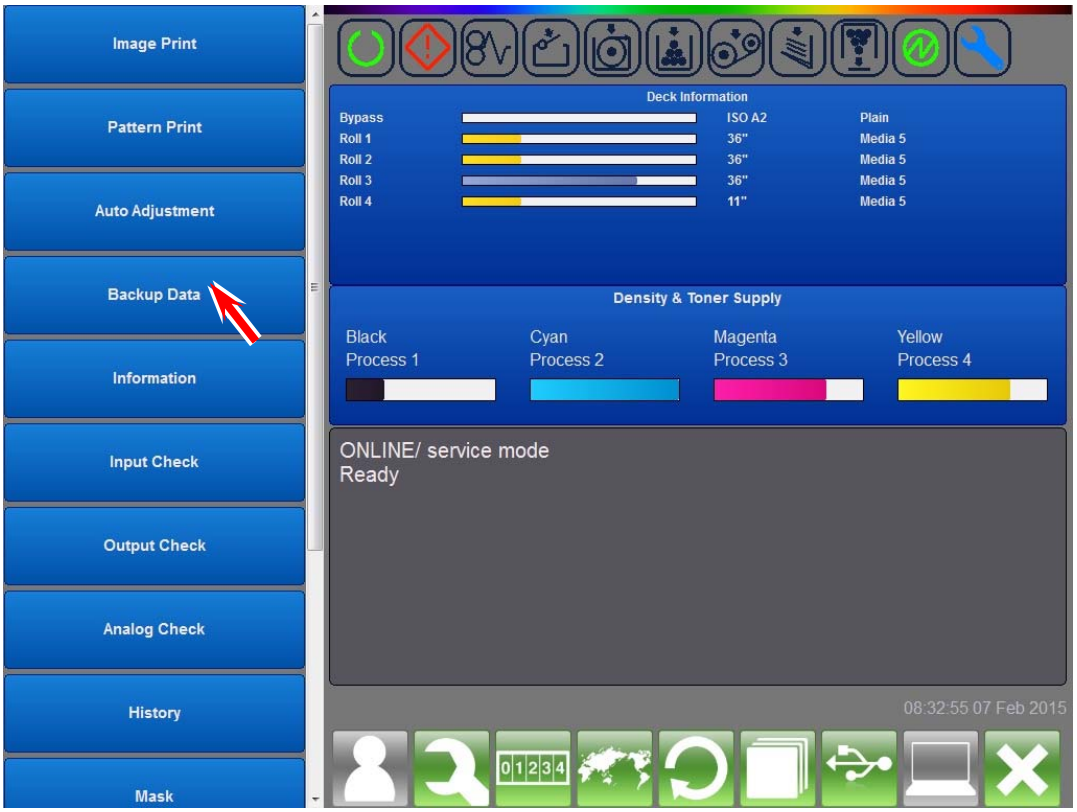


6. Turn off the printer and turn it on again, which finally validates all the loaded items.

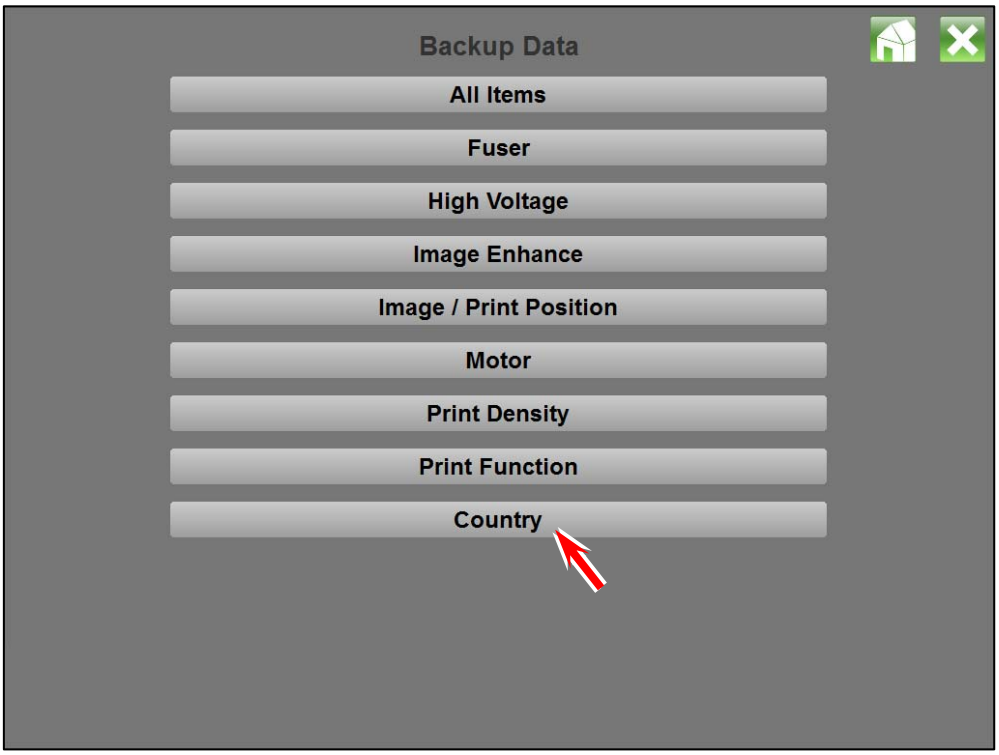
8. 4. 1. 5 Country Select (Region setting)

Select the region where the printer is installed to load several internal parameters according to your region.

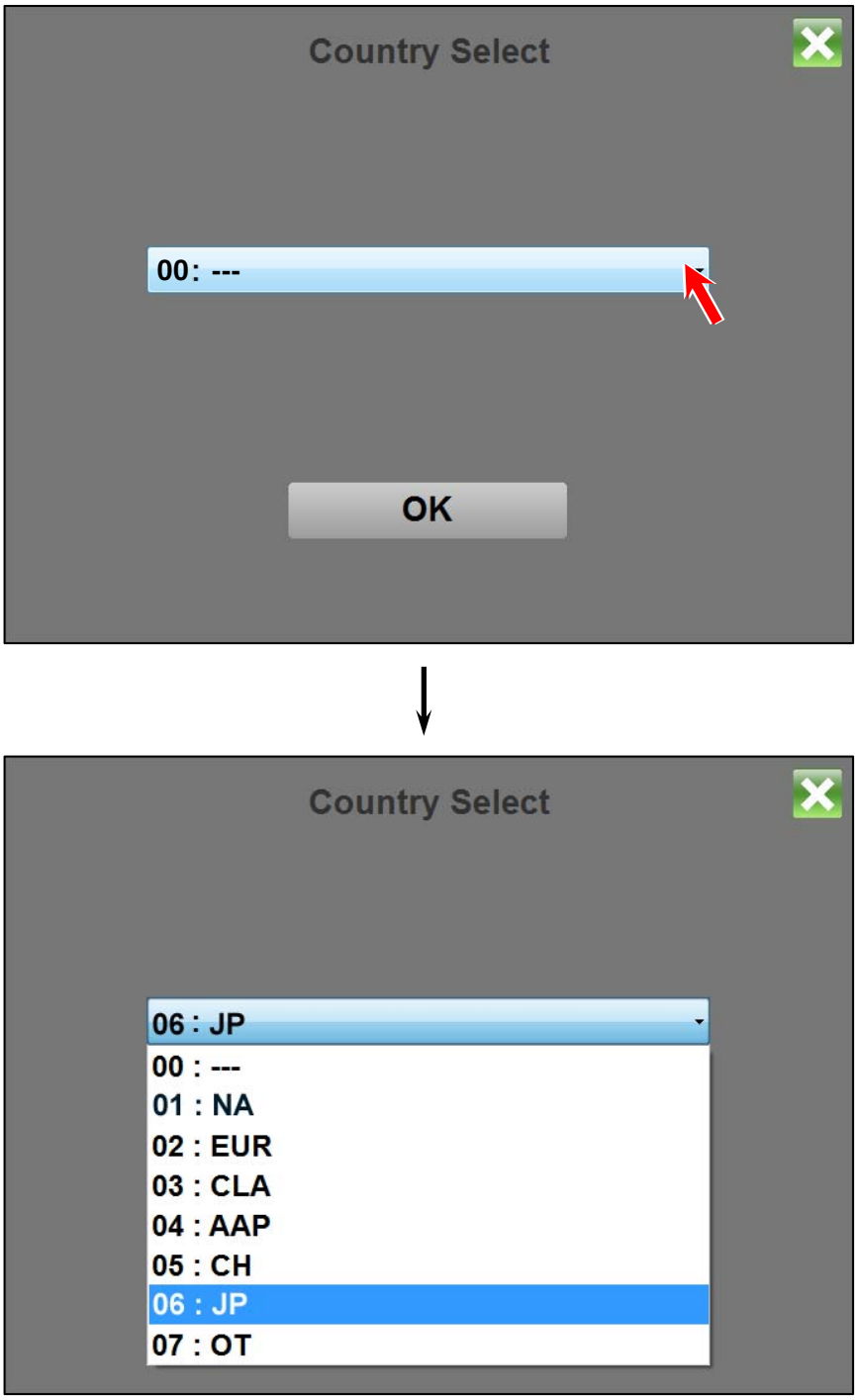
1. Select Backup Data in the HOME of Maintenance GUI.



2. Press **Country**.

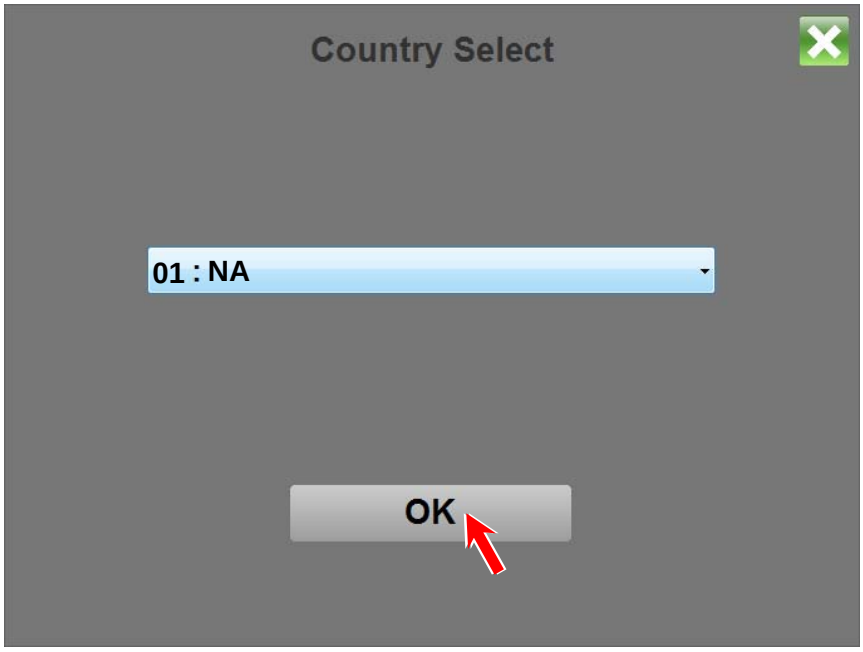


3. Choose the correct setting from the dropdown menu.

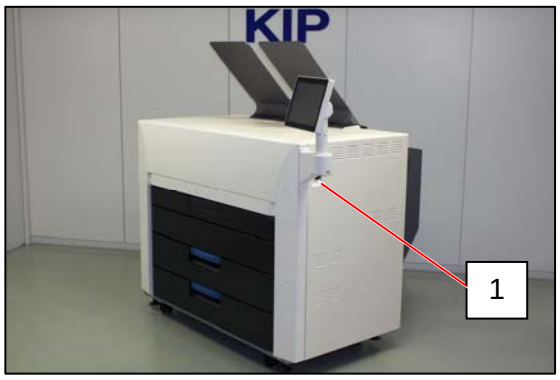


Region of installation	Setting value
--- (used in factory, never select here)	00
North America & Canada	01 : NA
Europe & Russia	02 : EUR
Central & South America	03 : CLA
Asia (except China), Middle East, Africa & Oceania	04 : AAP
China (including Hong Kong)	05 : CN
Japan	06 : JP
All other region	07 : OT

4. Press **OK**.



5. As it is necessary to enable the new Country Select, turn off the printer by pressing the Main Switch (1), wait for about few seconds when the printer completely switches off, and then turn it on again. This enables the new Country Select effective.



NOTE

Selecting 00 in the Country Select prevents the printer from being ready.

8. 4. 2 Backup Data Items List

The following list shows the item No., item name, default value, maximum and minimum values and setting unit per item.

No.	Item Name in Maintenance BUI	Min.	Max.	Default	Unit	Category
00000	Count Specification	0	6	**5**	Mode Selector	Printer Function
00001	Deck2 Option	0	1	vary by model	Mode Selector	Printer Function
00003	Maximum Cut Length	0	1	**0**	Mode Selector	Printer Function
00004	Country	0	7	**0**	Mode Selector	Printer Function
00005	Select PaperEjection	0	1	**0**	Mode Selector	Printer Function
00035	Adsorption Fan Duty	0	5	**3**	Mode Selector	Printer Function
00036	MediaSlcak Threshold	0	255	**40**	---	Printer Function
00037	Dummy Print Mode	0	2	**0**	Mode Selector	Printer Function
00038	Dummy Print Interval	0	150	**25**	---	Printer Function
00039	Exhaust Fan Duty	0	5	**5**	Mode Selector	Printer Function
00040	Encoder Jam StopTime	30	80	**40**	100ms	Printer Function
00041	Toner Low Decision	5	1000	**5**	10ms	Printer Function
00042	Supply Cnt ResetTime	100	5000	**1288**	10ms	Printer Function
00043	Supply Start Counter	1	10	**2**	# of trials	Printer Function
00044	Toner Supply Time	50	2000	**1750**	1ms	Printer Function
00045	Dev Screw Cycle	50	1000	**215**	10ms	Printer Function
00046	Hopper Screw Cycle	50	1000	**115**	1ms	Printer Function
00047	T-Empty Clear Count	1	10	**3**	# of trials	Printer Function
00048	Toner Recovery Time	100	300	**150**	second	Printer Function
00049	Toner Empty Counter	1	10	**6**	# of trials	Printer Function
00051	Toner Empty Timer	50	1000	**50**	10ms	Printer Function
00053	Init T Supply Number	1	50	**20**	# of trials	Printer Function
00054	Toner Stirring Time	60	300	**120**	second	Printer Function
00055	Dummy Print Min Leng	1	10	**1**	---	Printer Function
00056	Dummy Print Delay	0	65535	**3519**	---	Printer Function
00057	Dummy Print Separate	0	65535	**590**	---	Printer Function
00058	WireCleaning On/Off	0	1	**1**	Mode Selector	Printer Function
00059	WireCleaningAfter(m)	50	1000	**100**	---	Printer Function
00060	WireCleaning Time	0	120	**0**	1sec	Printer Function
00061	Cleaning MT1 Lock Cur	0	1023	**330**	---	Printer Function
00062	Cleaning MT2 Lock Cur	0	1023	**330**	---	Printer Function
00063	Cleaning MT3 Lock Cur	0	1023	**330**	---	Printer Function
00064	Cleaning MT4 Lock Cur	0	1023	**330**	---	Printer Function
00065	Tr1 Encoder Type	0	2	**---**	Mode Selector	Printer Function
00070	Auto Cut Length 1	3919	6281	**5100**	1 line	Printer Function
00071	Auto Cut Length 2	27619	29981	**28800**	1 line	Printer Function
00072	CutLength Correct 00	-100	100	**0**	0.1mm	Printer Function
00073	CutLength Correct 01	-100	100	**0**	0.1mm	Printer Function
00074	CutLength Correct 02	-100	100	**0**	0.1mm	Printer Function
00075	CutLength Correct 03	-100	100	**0**	0.1mm	Printer Function
00076	CutLength Correct 04	-100	100	**0**	0.1mm	Printer Function
00077	CutLength Correct 05	-100	100	**0**	0.1mm	Printer Function
00078	CutLength Correct 06	-100	100	**0**	0.1mm	Printer Function
00079	CutLength Correct 07	-100	100	**0**	0.1mm	Printer Function
00080	CutLength Correct 08	-100	100	**0**	0.1mm	Printer Function
00081	CutLength Correct 09	-100	100	**0**	0.1mm	Printer Function
00082	CutLength Correct 10	-100	100	**0**	0.1mm	Printer Function

00083	CutLength Correct 11	-100	100	**0**	0.1mm	Printer Function
00084	CutLength Correct 12	-100	100	**0**	0.1mm	Printer Function
00085	CutLength Correct 13	-100	100	**0**	0.1mm	Printer Function
00086	CutLength Correct 14	-100	100	**0**	0.1mm	Printer Function
00087	CutLength Correct 15	-100	100	**0**	0.1mm	Printer Function
00088	CutLength Correct 16	-100	100	**0**	0.1mm	Printer Function
00089	CutLength Correct 17	-100	100	**0**	0.1mm	Printer Function
00090	CutLength Correct 18	-100	100	**0**	0.1mm	Printer Function
00091	CutLength Correct 19	-100	100	**0**	0.1mm	Printer Function
00092	CutLength Correct 20	-100	100	**0**	0.1mm	Printer Function
00093	CutLength Correct 21	-100	100	**0**	0.1mm	Printer Function
00094	CutLength Correct 22	-100	100	**0**	0.1mm	Printer Function
00095	CutLength Correct 23	-100	100	**0**	0.1mm	Printer Function
00096	CutLength Correct 24	-100	100	**0**	0.1mm	Printer Function
00097	Set Drum1 Slow Mode	0	1	**1**	Mode Selector	Printer Function
00098	Set Drum2 Slow Mode	0	1	**1**	Mode Selector	Printer Function
00099	Set Drum3 Slow Mode	0	1	**1**	Mode Selector	Printer Function
00100	Set Drum4 Slow Mode	0	1	**1**	Mode Selector	Printer Function
00129	ExitEncoder Jam Time	100	3000	**300**	1ms	Printer Function
00131	Media00 MaximumStack	1	100	**50**	sheets	Printer Function
00132	Media01 MaximumStack	1	100	**50**	sheets	Printer Function
00133	Media02 MaximumStack	1	100	**50**	sheets	Printer Function
00134	Media03 MaximumStack	1	100	**50**	sheets	Printer Function
00135	Media04 MaximumStack	1	100	**50**	sheets	Printer Function
00136	Media05 MaximumStack	1	100	**50**	sheets	Printer Function
00137	Media06 MaximumStack	1	100	**50**	sheets	Printer Function
00138	Media07 MaximumStack	1	100	**50**	sheets	Printer Function
00139	Media08 MaximumStack	1	100	**50**	sheets	Printer Function
00140	Media09 MaximumStack	1	100	**50**	sheets	Printer Function
00141	Media10 MaximumStack	1	100	**50**	sheets	Printer Function
00142	Media11 MaximumStack	1	100	**50**	sheets	Printer Function
00143	Media12 MaximumStack	1	100	**50**	sheets	Printer Function
00144	Media13 MaximumStack	1	100	**50**	sheets	Printer Function
00145	Media14 MaximumStack	1	100	**50**	sheets	Printer Function
00146	Media15 MaximumStack	1	100	**50**	sheets	Printer Function
00147	Media16 MaximumStack	1	100	**50**	sheets	Printer Function
00148	Media17 MaximumStack	1	100	**50**	sheets	Printer Function
00149	Media18 MaximumStack	1	100	**50**	sheets	Printer Function
00150	Media19 MaximumStack	1	100	**50**	sheets	Printer Function
00151	Media20 MaximumStack	1	100	**50**	sheets	Printer Function
00152	Media21 MaximumStack	1	100	**50**	sheets	Printer Function
00153	Media22 MaximumStack	1	100	**50**	sheets	Printer Function
00154	Media23 MaximumStack	1	100	**50**	sheets	Printer Function
00155	Media24 MaximumStack	1	100	**50**	sheets	Printer Function
00156	Media00 Type	0	4	**0**	Mode Selector	Printer Function
00157	Media01 Type	0	4	**1**	Mode Selector	Printer Function
00158	Media02 Type	0	4	**2**	Mode Selector	Printer Function
00159	Media03 Type	0	4	**3**	Mode Selector	Printer Function
00160	Media04 Type	0	4	**0**	Mode Selector	Printer Function
00161	Media05 Type	0	4	**0**	Mode Selector	Printer Function
00162	Media06 Type	0	4	**0**	Mode Selector	Printer Function
00163	Media07 Type	0	4	**0**	Mode Selector	Printer Function
00164	Media08 Type	0	4	**0**	Mode Selector	Printer Function
00165	Media09 Type	0	4	**0**	Mode Selector	Printer Function

00166	Media10 Type	0	4	**0**	Mode Selector	Printer Function
00167	Media11 Type	0	4	**0**	Mode Selector	Printer Function
00168	Media12 Type	0	4	**0**	Mode Selector	Printer Function
00169	Media13 Type	0	4	**0**	Mode Selector	Printer Function
00170	Media14 Type	0	4	**0**	Mode Selector	Printer Function
00171	Media15 Type	0	4	**0**	Mode Selector	Printer Function
00172	Media16 Type	0	4	**0**	Mode Selector	Printer Function
00173	Media17 Type	0	4	**0**	Mode Selector	Printer Function
00174	Media18 Type	0	4	**0**	Mode Selector	Printer Function
00175	Media19 Type	0	4	**0**	Mode Selector	Printer Function
00176	Media20 Type	0	4	**0**	Mode Selector	Printer Function
00177	Media21 Type	0	4	**0**	Mode Selector	Printer Function
00178	Media22 Type	0	4	**0**	Mode Selector	Printer Function
00179	Media23 Type	0	4	**0**	Mode Selector	Printer Function
00180	Media24 Type	0	4	**0**	Mode Selector	Printer Function
00181	Stacker Full Min Leng	210	600	**350**	1mm	Printer Function
00400	1st Current K 080	-1700	-700	**-1500**	1 μ A	High Voltage
00401	1st Current C 080	-1700	-700	**-1500**	1 μ A	High Voltage
00402	1st Current M 080	-1700	-700	**-1500**	1 μ A	High Voltage
00403	1st Current Y 080	-1700	-700	**-1500**	1 μ A	High Voltage
00404	1st Current K 050	-1700	-700	**-1500**	1 μ A	High Voltage
00405	1st Current C 050	-1700	-700	**-1500**	1 μ A	High Voltage
00406	1st Current M 050	-1700	-700	**-1500**	1 μ A	High Voltage
00407	1st Current Y 050	-1700	-700	**-1500**	1 μ A	High Voltage
00416	Tr1 Voltage K 080	0	2000	**450**	1V	High Voltage
00417	Tr1 Voltage C 080	0	2000	**400**	1V	High Voltage
00418	Tr1 Voltage M 080	0	2000	**350**	1V	High Voltage
00419	Tr1 Voltage Y 080	0	2000	**300**	1V	High Voltage
00420	Tr1 Voltage K 050	0	2000	**450**	1V	High Voltage
00421	Tr1 Voltage C 050	0	2000	**400**	1V	High Voltage
00422	Tr1 Voltage M 050	0	2000	**350**	1V	High Voltage
00423	Tr1 Voltage Y 050	0	2000	**300**	1V	High Voltage
00436	Tr1TargetCurrentK080	0	60	**25**	1 μ A	High Voltage
00437	Tr1TargetCurrentC080	0	60	**25**	1 μ A	High Voltage
00438	Tr1TargetCurrentM080	0	60	**25**	1 μ A	High Voltage
00439	Tr1TargetCurrentY080	0	60	**25**	1 μ A	High Voltage
00440	Tr2(+) Voltage (080)	0	3000	**1600**	1V	High Voltage
00441	Tr2(+) Voltage (050)	0	3000	**1600**	1V	High Voltage
00444	Tr2(-) Voltage (080)	-3000	0	**-1600**	1V	High Voltage
00445	Tr2(-) Voltage (050)	-3000	0	**-1600**	1V	High Voltage
00450	Tr2 On Timing(Step)	-10	10	**0**	1mm	High Voltage
00451	Tr2 OffTiming(Step)	-10	10	**0**	1mm	High Voltage
00460	Dev Bias K DCtrl:OFF	-600	0	**-200**	1V	High Voltage
00461	Dev Bias C DCtrl:OFF	-600	0	**-180**	1V	High Voltage
00462	Dev Bias M DCtrl:OFF	-600	0	**-180**	1V	High Voltage
00463	Dev Bias Y DCtrl:OFF	-600	0	**-180**	1V	High Voltage
00464	SupBias+ K DCtrl:OFF	-600	600	**100**	1V	High Voltage
00465	SupBias+ C DCtrl:OFF	-600	600	**100**	1V	High Voltage
00466	SupBias+ M DCtrl:OFF	-600	600	**100**	1V	High Voltage
00467	SupBias+ Y DCtrl:OFF	-600	600	**100**	1V	High Voltage
00468	SupBias- K DCtrl:OFF	-600	600	**-350**	1V	High Voltage
00469	SupBias- C DCtrl:OFF	-600	600	**-350**	1V	High Voltage
00470	SupBias- M DCtrl:OFF	-600	600	**-350**	1V	High Voltage
00471	SupBias- Y DCtrl:OFF	-600	600	**-350**	1V	High Voltage

00472	Reg Bias K DCtrl:OFF	-600	600	**-80**	1V	High Voltage
00473	Reg Bias C DCtrl:OFF	-600	600	**-80**	1V	High Voltage
00474	Reg Bias M DCtrl:OFF	-600	600	**-80**	1V	High Voltage
00475	Reg Bias Y DCtrl:OFF	-600	600	**-80**	1V	High Voltage
00476	Dev Bias K DCtrl:ON	-600	0	**-200**	1V	High Voltage
00477	Dev Bias C DCtrl:ON	-600	0	**-180**	1V	High Voltage
00478	Dev Bias M DCtrl:ON	-600	0	**-180**	1V	High Voltage
00479	Dev Bias Y DCtrl:ON	-600	0	**-180**	1V	High Voltage
00480	SupBias+ K DCtrl:ON	-600	600	**100**	1V	High Voltage
00481	SupBias+ C DCtrl:ON	-600	600	**100**	1V	High Voltage
00482	SupBias+ M DCtrl:ON	-600	600	**100**	1V	High Voltage
00483	SupBias+ Y DCtrl:ON	-600	600	**100**	1V	High Voltage
00484	SupBias- K DCtrl:ON	-600	600	**-350**	1V	High Voltage
00485	SupBias- C DCtrl:ON	-600	600	**-350**	1V	High Voltage
00486	SupBias- M DCtrl:ON	-600	600	**-350**	1V	High Voltage
00487	SupBias- Y DCtrl:ON	-600	600	**-350**	1V	High Voltage
00488	Reg Bias K DCtrl:ON	-600	0	**-80**	1V	High Voltage
00489	Reg Bias C DCtrl:ON	-600	0	**-80**	1V	High Voltage
00490	Reg Bias M DCtrl:ON	-600	0	**-80**	1V	High Voltage
00491	Reg Bias Y DCtrl:ON	-600	0	**-80**	1V	High Voltage
00498	Transformer1 Ref Vol	0	1023	**410**	1V	High Voltage
00499	Transformer2 Ref Vol	0	1023	**410**	1V	High Voltage
00500	Transformer3 Ref Vol	0	1023	**410**	1V	High Voltage
00501	Transformer4 Ref Vol	0	1023	**410**	1V	High Voltage
00502	D-Sensor1 Current1	0	1023	**500**	1V	Print Density
00503	D-Sensor2 Current1	0	1023	**500**	1V	Print Density
00504	D-Sensor3 Current1	0	1023	**500**	1V	Print Density
00505	D-Sensor4 Current1	0	1023	**500**	1V	Print Density
00506	D-Sensor5 Current1	0	1023	**500**	1V	Print Density
00507	D-Sensor1 Current2	0	1023	**0**	1V	Print Density
00508	D-Sensor2 Current2	0	1023	**0**	1V	Print Density
00509	D-Sensor3 Current2	0	1023	**0**	1V	Print Density
00510	D-Sensor4 Current2	0	1023	**0**	1V	Print Density
00511	D-Sensor5 Current2	0	1023	**0**	1V	Print Density
00512	Belt Density K	0	4095	**0**	---	Print Density
00513	Belt Density C	0	4095	**0**	--	Print Density
00514	Belt Density M	0	4095	**0**	---	Print Density
00515	Belt Density Y	0	4095	**0**	---	Print Density
00516	Density Target (K)	0	4095	**0**	---	Print Density
00517	Density Target (C)	0	4095	**0**	---	Print Density
00518	Density Target (M)	0	4095	**0**	---	Print Density
00519	Density Target (Y)	0	4095	**0**	---	Print Density
00520	Tr2 Auto Vol Type00A	0	3000	**2400**	1V	High Voltage
00521	Tr2 Auto Vol Type00B	0	3000	**1600**	1V	High Voltage
00522	Tr2 Auto Vol Type00C	0	3000	**900**	1V	High Voltage
00523	Tr2 Auto Vol Type00D	0	3000	**900**	1V	High Voltage
00524	Tr2 Auto Vol Type01A	0	3000	**2400**	1V	High Voltage
00525	Tr2 Auto Vol Type01B	0	3000	**1600**	1V	High Voltage
00526	Tr2 Auto Vol Type01C	0	3000	**900**	1V	High Voltage
00527	Tr2 Auto Vol Type01D	0	3000	**900**	1V	High Voltage
00528	Tr2 Auto Vol Type02A	0	3000	**2400**	1V	High Voltage
00529	Tr2 Auto Vol Type02B	0	3000	**1600**	1V	High Voltage
00530	Tr2 Auto Vol Type02C	0	3000	**900**	1V	High Voltage
00531	Tr2 Auto Vol Type02D	0	3000	**900**	1V	High Voltage

00532	Tr2 Auto Vol Type03A	0	3000	**2400**	1V	High Voltage
00533	Tr2 Auto Vol Type03B	0	3000	**1600**	1V	High Voltage
00534	Tr2 Auto Vol Type03C	0	3000	**900**	1V	High Voltage
00535	Tr2 Auto Vol Type03D	0	3000	**900**	1V	High Voltage
00536	Tr2 Auto Vol Type04A	0	3000	**2400**	1V	High Voltage
00537	Tr2 Auto Vol Type04B	0	3000	**1600**	1V	High Voltage
00538	Tr2 Auto Vol Type04C	0	3000	**900**	1V	High Voltage
00539	Tr2 Auto Vol Type04D	0	3000	**900**	1V	High Voltage
00540	Tr2 Auto Vol Type05A	0	3000	**2400**	1V	High Voltage
00541	Tr2 Auto Vol Type05B	0	3000	**1600**	1V	High Voltage
00542	Tr2 Auto Vol Type05C	0	3000	**900**	1V	High Voltage
00543	Tr2 Auto Vol Type05D	0	3000	**900**	1V	High Voltage
00544	Tr2 Auto Vol Type06A	0	3000	**2400**	1V	High Voltage
00545	Tr2 Auto Vol Type06B	0	3000	**1600**	1V	High Voltage
00546	Tr2 Auto Vol Type06C	0	3000	**900**	1V	High Voltage
00547	Tr2 Auto Vol Type06D	0	3000	**900**	1V	High Voltage
00548	Tr2 Auto Vol Type07A	0	3000	**2400**	1V	High Voltage
00549	Tr2 Auto Vol Type07B	0	3000	**1600**	1V	High Voltage
00550	Tr2 Auto Vol Type07C	0	3000	**900**	1V	High Voltage
00551	Tr2 Auto Vol Type07D	0	3000	**900**	1V	High Voltage
00552	Tr2 Auto Vol Type08A	0	3000	**2400**	1V	High Voltage
00553	Tr2 Auto Vol Type08B	0	3000	**1600**	1V	High Voltage
00554	Tr2 Auto Vol Type08C	0	3000	**900**	1V	High Voltage
00555	Tr2 Auto Vol Type08D	0	3000	**900**	1V	High Voltage
00556	Tr2 Auto Vol Type09A	0	3000	**2400**	1V	High Voltage
00557	Tr2 Auto Vol Type09B	0	3000	**1600**	1V	High Voltage
00558	Tr2 Auto Vol Type09C	0	3000	**900**	1V	High Voltage
00559	Tr2 Auto Vol Type09D	0	3000	**900**	1V	High Voltage
00560	Tr2 Auto Vol Type10A	0	3000	**2400**	1V	High Voltage
00561	Tr2 Auto Vol Type10B	0	3000	**1600**	1V	High Voltage
00562	Tr2 Auto Vol Type10C	0	3000	**900**	1V	High Voltage
00563	Tr2 Auto Vol Type10D	0	3000	**900**	1V	High Voltage
00564	Tr2 Auto Vol Type11A	0	3000	**2400**	1V	High Voltage
00565	Tr2 Auto Vol Type11B	0	3000	**1600**	1V	High Voltage
00566	Tr2 Auto Vol Type11C	0	3000	**900**	1V	High Voltage
00567	Tr2 Auto Vol Type11D	0	3000	**900**	1V	High Voltage
00568	Tr2 Auto Vol Type12A	0	3000	**2400**	1V	High Voltage
00569	Tr2 Auto Vol Type12B	0	3000	**1600**	1V	High Voltage
00570	Tr2 Auto Vol Type12C	0	3000	**900**	1V	High Voltage
00571	Tr2 Auto Vol Type12D	0	3000	**900**	1V	High Voltage
00572	Tr2 Auto Vol Type13A	0	3000	**2400**	1V	High Voltage
00573	Tr2 Auto Vol Type13B	0	3000	**1600**	1V	High Voltage
00574	Tr2 Auto Vol Type13C	0	3000	**900**	1V	High Voltage
00575	Tr2 Auto Vol Type13D	0	3000	**900**	1V	High Voltage
00576	Tr2 Auto Vol Type14A	0	3000	**2400**	1V	High Voltage
00577	Tr2 Auto Vol Type14B	0	3000	**1600**	1V	High Voltage
00578	Tr2 Auto Vol Type14C	0	3000	**900**	1V	High Voltage
00579	Tr2 Auto Vol Type14D	0	3000	**900**	1V	High Voltage
00580	Tr2 Auto Vol Type15A	0	3000	**2400**	1V	High Voltage
00581	Tr2 Auto Vol Type15B	0	3000	**1600**	1V	High Voltage
00582	Tr2 Auto Vol Type15C	0	3000	**900**	1V	High Voltage
00583	Tr2 Auto Vol Type15D	0	3000	**900**	1V	High Voltage
00584	Tr2 Auto Vol Type16A	0	3000	**2400**	1V	High Voltage
00585	Tr2 Auto Vol Type16B	0	3000	**1600**	1V	High Voltage

00586	Tr2 Auto Vol Type16C	0	3000	**900**	1V	High Voltage
00587	Tr2 Auto Vol Type16D	0	3000	**900**	1V	High Voltage
00588	Tr2 Auto Vol Type17A	0	3000	**2400**	1V	High Voltage
00589	Tr2 Auto Vol Type17B	0	3000	**1600**	1V	High Voltage
00590	Tr2 Auto Vol Type17C	0	3000	**900**	1V	High Voltage
00591	Tr2 Auto Vol Type17D	0	3000	**900**	1V	High Voltage
00592	Tr2 Auto Vol Type18A	0	3000	**2400**	1V	High Voltage
00593	Tr2 Auto Vol Type18B	0	3000	**1600**	1V	High Voltage
00594	Tr2 Auto Vol Type18C	0	3000	**900**	1V	High Voltage
00595	Tr2 Auto Vol Type18D	0	3000	**900**	1V	High Voltage
00596	Tr2 Auto Vol Type19A	0	3000	**2400**	1V	High Voltage
00597	Tr2 Auto Vol Type19B	0	3000	**1600**	1V	High Voltage
00598	Tr2 Auto Vol Type19C	0	3000	**900**	1V	High Voltage
00599	Tr2 Auto Vol Type19D	0	3000	**900**	1V	High Voltage
00600	Tr2 Auto Vol Type20A	0	3000	**2400**	1V	High Voltage
00601	Tr2 Auto Vol Type20B	0	3000	**1600**	1V	High Voltage
00602	Tr2 Auto Vol Type20C	0	3000	**900**	1V	High Voltage
00603	Tr2 Auto Vol Type20D	0	3000	**900**	1V	High Voltage
00604	Tr2 Auto Vol Type21A	0	3000	**2400**	1V	High Voltage
00605	Tr2 Auto Vol Type21B	0	3000	**1600**	1V	High Voltage
00606	Tr2 Auto Vol Type21C	0	3000	**900**	1V	High Voltage
00607	Tr2 Auto Vol Type21D	0	3000	**900**	1V	High Voltage
00608	Tr2 Auto Vol Type22A	0	3000	**2400**	1V	High Voltage
00609	Tr2 Auto Vol Type22B	0	3000	**1600**	1V	High Voltage
00610	Tr2 Auto Vol Type22C	0	3000	**900**	1V	High Voltage
00611	Tr2 Auto Vol Type22D	0	3000	**900**	1V	High Voltage
00612	Tr2 Auto Vol Type23A	0	3000	**2400**	1V	High Voltage
00613	Tr2 Auto Vol Type23B	0	3000	**1600**	1V	High Voltage
00614	Tr2 Auto Vol Type23C	0	3000	**900**	1V	High Voltage
00615	Tr2 Auto Vol Type23D	0	3000	**900**	V	High Voltage
00616	Tr2 Auto Vol Type24A	0	3000	**2400**	V	High Voltage
00617	Tr2 Auto Vol Type24B	0	3000	**1600**	V	High Voltage
00618	Tr2 Auto Vol Type24C	0	3000	**900**	V	High Voltage
00619	Tr2 Auto Vol Type24D	0	3000	**900**	V	High Voltage
00717	Tr1 Auto Adjustment	0	2	**2**	Mode Selector	High Voltage
00718	Tr2 Auto Adjustment	0	2	**1**	Mode Selector	High Voltage
00719	Neutral.Auto Adjust	0	1	**1**	Mode Selector	High Voltage
00720	Density Adjustment	0	1	**1**	Mode Selector	Print Density
00725	Tr1TargetCurrentK050	0	60	**15**	1 μ A	High Voltage
00726	Tr1TargetCurrentC050	0	60	**15**	1 μ A	High Voltage
00727	Tr1TargetCurrentM050	0	60	**15**	1 μ A	High Voltage
00728	Tr1TargetCurrentY050	0	60	**15**	1 μ A	High Voltage
00738	Tr2 Width Slope 210	0	1023	**614**	---	High Voltage
00739	Tr2 Width Slope 230	0	1023	**579**	---	High Voltage
00740	Tr2 Width Slope 250	0	1023	**546**	---	High Voltage
00741	Tr2 Width Slope 270	0	1023	**515**	---	High Voltage
00742	Tr2 Width Slope 290	0	1023	**486**	---	High Voltage
00743	Tr2 Width Slope 310	0	1023	**458**	---	High Voltage
00744	Tr2 Width Slope 330	0	1023	**432**	---	High Voltage
00745	Tr2 Width Slope 350	0	1023	**407**	---	High Voltage
00746	Tr2 Width Slope 370	0	1023	**384**	---	High Voltage
00747	Tr2 Width Slope 390	0	1023	**362**	---	High Voltage
00748	Tr2 Width Slope 410	0	1023	**342**	---	High Voltage
00749	Tr2 Width Slope 430	0	1023	**322**	---	High Voltage

00750	Tr2 Width Slope 450	0	1023	**304**	---	High Voltage
00751	Tr2 Width Slope 470	0	1023	**287**	---	High Voltage
00752	Tr2 Width Slope 490	0	1023	**270**	---	High Voltage
00753	Tr2 Width Slope 510	0	1023	**255**	---	High Voltage
00754	Tr2 Width Slope 530	0	1023	**240**	---	High Voltage
00755	Tr2 Width Slope 550	0	1023	**226**	---	High Voltage
00756	Tr2 Width Slope 570	0	1023	**213**	---	High Voltage
00757	Tr2 Width Slope 590	0	1023	**200**	---	High Voltage
00758	Tr2 Width Slope 610	0	1023	**188**	---	High Voltage
00759	Tr2 Width Slope 630	0	1023	**176**	---	High Voltage
00760	Tr2 Width Slope 650	0	1023	**164**	---	High Voltage
00761	Tr2 Width Slope 670	0	1023	**153**	---	High Voltage
00762	Tr2 Width Slope 690	0	1023	**141**	---	High Voltage
00763	Tr2 Width Slope 710	0	1023	**130**	---	High Voltage
00764	Tr2 Width Slope 730	0	1023	**119**	---	High Voltage
00765	Tr2 Width Slope 750	0	1023	**107**	---	High Voltage
00766	Tr2 Width Slope 770	0	1023	**96**	---	High Voltage
00767	Tr2 Width Slope 790	0	1023	**84**	---	High Voltage
00768	Tr2 Width Slope 810	0	1023	**72**	---	High Voltage
00769	Tr2 Width Slope 830	0	1023	**59**	---	High Voltage
00770	Tr2 Width Slope 850	0	1023	**46**	---	High Voltage
00771	Tr2 Width Slope 870	0	1023	**33**	---	High Voltage
00772	Tr2 Width Slope 890	0	1023	**18**	---	High Voltage
00773	Tr2 Width Slope 910	0	1023	**3**	---	High Voltage
00800	Dev Motor K 080	0	65535	**19629**	---	Motor
00801	Dev Motor C 080	0	65535	**19629**	---	Motor
00802	Dev Motor M 080	0	65535	**19629**	---	Motor
00803	Dev Motor Y 080	0	65535	**19629**	---	Motor
00804	Dev Motor K 050	0	65535	**31391**	---	Motor
00805	Dev Motor C 050	0	65535	**31391**	---	Motor
00806	Dev Motor M 050	0	65535	**31391**	---	Motor
00807	Dev Motor Y 050	0	65535	**31391**	---	Motor
00816	Drum Motor K 080	0	65535	**7852**	---	Motor
00817	Drum Motor C 080	0	65535	**7852**	---	Motor
00818	Drum Motor M 080	0	65535	**7852**	---	Motor
00819	Drum Motor Y 080	0	65535	**7852**	---	Motor
00820	Drum Motor K 050	0	65535	**12556**	---	Motor
00821	Drum Motor C 050	0	65535	**12556**	---	Motor
00822	Drum Motor M 050	0	65535	**12556**	---	Motor
00823	Drum Motor Y 050	0	65535	**12556**	---	Motor
00832	Belt Motor 080	0	65535	**8851**	---	Motor
00833	Belt Motor 050	0	65535	**14155**	---	Motor
00836	Fuser Motor 080	0	65535	**6252**	---	Motor
00837	Fuser Motor 050	0	65535	**9998**	---	Motor
00840	Fuser Motor(Idle)	0	65535	**6252**	---	Motor
00841	Deck1 Motor 080	0	65535	**8245**	---	Motor
00842	Deck1 Motor 050	0	65535	**13186**	---	Motor
00845	Deck2 Motor 080	0	65535	**8245**	---	Motor
00846	Deck2 Motor 050	0	65535	**13186**	---	Motor
00849	Regist Motor1 080	0	65535	**8245**	---	Motor
00850	Regist Motor2 080	0	65535	**8245**	---	Motor
00851	Regist Motor3 080	0	65535	**8245**	---	Motor
00852	Regist Motor1 050	0	65535	**13186**	---	Motor
00853	Regist Motor2 050	0	65535	**13186**	---	Motor

00854	Regist Motor3 050	0	65535	**13186**	---	Motor
00861	Feed Motor 080	0	65535	**8245**	---	Motor
00862	Feed Motor 050	0	65535	**13186**	---	Motor
00865	Web Motor 080	0	4095	**533**	---	Motor
00866	Web Motor 050	0	4095	**533**	---	Motor
00869	W Toner Motor 080	0	63	**45**	---	Motor
00870	W Toner Motor 050	0	63	**45**	---	Motor
00873	Tension Target 080	0	255	**15**	---	Printer Function
00874	Tension Target 050	0	255	**15**	---	Printer Function
00877	Tension Gain	0	1023	**10**	---	Printer Function
00878	TensionSamplingCycle	1	255	**4**	---	Printer Function
00879	Tension Start Pos	0	65535	**16969**	---	Printer Function
00880	Tension Stop Pos	0	65535	**12121**	---	Printer Function
00881	Tension Speed (Max)	0	255	**188**	---	Printer Function
00882	Tension Speed (Min)	0	255	**188**	---	Printer Function
00883	Dev Motor Current K	100	1023	**600**	---	Motor
00884	Dev Motor Current C	100	1023	**600**	---	Motor
00885	Dev Motor Current M	100	1023	**600**	---	Motor
00886	Dev Motor Current Y	100	1023	**600**	---	Motor
00887	Drum Motor Cur K	100	1023	**630**	---	Motor
00888	Drum Motor Cur C	100	1023	**630**	---	Motor
00889	Drum Motor Cur M	100	1023	**630**	---	Motor
00890	Drum Motor Cur Y	100	1023	**630**	---	Motor
00891	Belt Motor Current	100	1023	**310**	---	Motor
00892	Fuser MT Cur(Idle)	100	1023	**438**	---	Motor
00893	Fuser MT Cur(Print)	100	1023	**438**	---	Motor
00894	Fuser MT Cur(Ready)	100	1023	**438**	---	Motor
00895	Deck1 Motor Current	100	1023	**438**	---	Motor
00896	Deck2 Motor Current	100	1023	**438**	---	Motor
00897	Regist Motor1 Cur	100	1023	**310**	---	Motor
00898	Regist Motor2 Cur	100	1023	**310**	---	Motor
00899	Regist Motor3 Cur	100	1023	**310**	---	Motor
00900	Feed Motor Cur	100	1023	**310**	---	Motor
00901	WasteToner Motor Cur	100	1023	**228**	---	Motor
00902	Motor Holding Cur	100	1023	**200**	---	Motor
00903	MT Slow up Current 1	100	1023	**838**	---	Motor
00904	MT Slow up Current 2	100	1023	**364**	---	Motor
00905	MT Slow up Current 3	100	1023	**145**	---	Motor
00906	MT Slow up Current 4	100	1023	**438**	---	Motor
00947	Drum Slow Mode Step1	0	511	**0**	---	Motor
00949	Dev Slow Mode Step	0	511	**5**	---	Motor
00950	Dev MT Speed Ratio	50	200	**97**	1%	Motor
00951	Tension Control	0	1	**1**	Mode Selector	Printer Function
00952	IntegralCompensation	0	1	**0**	Mode Selector	Printer Function
00953	Drum Stop Position K	0	32000	**0**	---	Motor
00954	Drum Stop Position C	0	32000	**21656**	---	Motor
00955	Drum Stop Position M	0	32000	**11312**	---	Motor
00956	Drum Stop Position Y	0	32000	**986**	---	Motor
00957	Reference Speed 080	0	65535	**8245**	---	Motor
00958	Reference Speed 050	0	65535	**13186**	---	Motor
00961	Motor Max Speed 080	0	65535	**3299**	---	Motor
00962	Motor Max Speed 050	0	65535	**3299**	---	Motor
00965	AccelerationSpeed080	0	65535	**7324**	---	Motor
00966	AccelerationSpeed050	0	65535	**11933**	---	Motor

00969	DecelerationSpeed080	0	65535	**9421**	---	Motor
00970	DecelerationSpeed050	0	65535	**14749**	---	Motor
00973	Media00 Print Speed	0	1	**0**	Mode Selector	Motor
00974	Media01 Print Speed	0	1	**0**	Mode Selector	Motor
00975	Media02 Print Speed	0	1	**0**	Mode Selector	Motor
00976	Media03 Print Speed	0	1	**0**	Mode Selector	Motor
00977	Media04 Print Speed	0	1	**0**	Mode Selector	Motor
00978	Media05 Print Speed	0	1	**0**	Mode Selector	Motor
00979	Media06 Print Speed	0	1	**0**	Mode Selector	Motor
00980	Media07 Print Speed	0	1	**0**	Mode Selector	Motor
00981	Media08 Print Speed	0	1	**0**	Mode Selector	Motor
00982	Media09 Print Speed	0	1	**0**	Mode Selector	Motor
00983	Media10 Print Speed	0	1	**0**	Mode Selector	Motor
00984	Media11 Print Speed	0	1	**0**	Mode Selector	Motor
00985	Media12 Print Speed	0	1	**0**	Mode Selector	Motor
00986	Media13 Print Speed	0	1	**0**	Mode Selector	Motor
00987	Media14 Print Speed	0	1	**0**	Mode Selector	Motor
00988	Media15 Print Speed	0	1	**0**	Mode Selector	Motor
00989	Media16 Print Speed	0	1	**0**	Mode Selector	Motor
00990	Media17 Print Speed	0	1	**0**	Mode Selector	Motor
00991	Media18 Print Speed	0	1	**0**	Mode Selector	Motor
00992	Media19 Print Speed	0	1	**0**	Mode Selector	Motor
00993	Media20 Print Speed	0	1	**0**	Mode Selector	Motor
00994	Media21 Print Speed	0	1	**0**	Mode Selector	Motor
00995	Media22 Print Speed	0	1	**0**	Mode Selector	Motor
00996	Media23 Print Speed	0	1	**0**	Mode Selector	Motor
00997	Media24 Print Speed	0	1	**0**	Mode Selector	Motor
00998	Drum SlowModeStep R1	0	511	**511**	---	Motor
00999	Drum SlowModeStep R2	0	511	**511**	---	Motor
01000	DrumSlowModeInterval	1	300	**1**	10ms	Motor
01001	Drum Slow Mode 2 On K	0	1	**0**	Mode Selector	Motor
01002	Drum Slow Mode 2 On C	0	1	**0**	Mode Selector	Motor
01003	Drum Slow Mode 2 On M	0	1	**0**	Mode Selector	Motor
01004	Drum Slow Mode 2 On Y	0	1	**0**	Mode Selector	Motor
01005	Fuser Start Speed	0	65535	**25000**	---	Motor
01006	Fuser Start Step	0	65535	**600**	---	Motor
01007	Fuser Slowup Step	0	3	**1**	Mode Selector	Motor
01008	TensionTarget Pos 1A	0	255	**9**	---	Print Function
01009	TensionTarget Pos 2A	0	255	**6**	---	Print Function
01010	TensionTarget Pos 3A	0	255	**3**	---	Print Function
01011	TensionTarget Pos 4A	0	255	**3**	---	Print Function
01012	TensionTarget Pos 1B	0	255	**45**	---	Print Function
01013	TensionTarget Pos 2B	0	255	**40**	---	Print Function
01014	TensionTarget Pos 3B	0	255	**25**	---	Print Function
01015	TensionTarget Pos 4B	0	255	**15**	---	Print Function
01016	Tension Up StartTime	100	2000	**600**	---	Print Function
01017	Tension Up CycleTime	100	2000	**850**	---	Print Function
01018	Tension Long Length	1000	5000	**1640**	---	Print Function
01019	Tension Speed Timing	0	24250	**9288**	---	Print Function
01020	Tension Speed1 080	0	65535	**8328**	---	Motor
01021	Tension Speed1 050	0	65535	**13319**	---	Motor
01024	Tension Speed2 080	0	65535	**8287**	---	Motor
01025	Tension Speed2 050	0	65535	**13252**	---	Motor
01028	Tension Speed3 080	0	65535	**8245**	---	Motor

01029	Tension Speed3 050	0	65535	**13186**	---	Motor
01200	ColorRegist H Origin	-144	144	**0**	1 pixel	Image / Printer Position
01201	ColorRegist V Origin	-288	288	**0**	1 pixel	Image / Printer Position
01202	Color Regist H (K)	-60	60	**0**	1 pixel	Image / Printer Position
01203	Color Regist H (C)	-60	60	**0**	1 pixel	Image / Printer Position
01204	Color Regist H (M)	-60	60	**0**	1 pixel	Image / Printer Position
01205	Color Regist H (Y)	-60	60	**0**	1 pixel	Image / Printer Position
01206	Color Regist V (K)	-120	120	**0**	1 pixel	Image / Printer Position
01207	Color Regist V (C)	-120	120	**0**	1 pixel	Image / Printer Position
01208	Color Regist V (M)	-120	120	**0**	1 pixel	Image / Printer Position
01209	Color Regist V (Y)	-120	120	**0**	1 pixel	Image / Printer Position
01210	LED Joint H (K) L_C	-44	44	**0**	1 pixel	Image / Printer Position
01211	LED Joint H (C) L_C	-44	44	**0**	1 pixel	Image / Printer Position
01212	LED Joint H (M) L_C	-44	44	**0**	1 pixel	Image / Printer Position
01213	LED Joint H (Y) L_C	-44	44	**0**	1 pixel	Image / Printer Position
01214	LED Joint H (K) C_R	-44	44	**0**	1 pixel	Image / Printer Position
01215	LED Joint H (C) C_R	-44	44	**0**	1 pixel	Image / Printer Position
01216	LED Joint H (M) C_R	-44	44	**0**	1 pixel	Image / Printer Position
01217	LED Joint H (Y) C_R	-44	44	**0**	1 pixel	Image / Printer Position
01218	LED Joint V (K) L_C	-120	120	**0**	1 pixel	Image / Printer Position
01219	LED Joint V (C) L_C	-120	120	**0**	1 pixel	Image / Printer Position
01220	LED Joint V (M) L_C	-120	120	**0**	1 pixel	Image / Printer Position
01221	LED Joint V (Y) L_C	-120	120	**0**	1 pixel	Image / Printer Position
01222	LED Joint V (K) C_R	-120	120	**0**	1 pixel	Image / Printer Position
01223	LED Joint V (C) C_R	-120	120	**0**	1 pixel	Image / Printer Position
01224	LED Joint V (M) C_R	-120	120	**0**	1 pixel	Image / Printer Position
01225	LED Joint V (Y) C_R	-120	120	**0**	1 pixel	Image / Printer Position
01226	Lead Margin	0	255	**70**	1 line	Image / Printer Position
01227	Trailing Edge Margin	-510	510	**-118**	1 line	Image / Printer Position
01228	Side Margin	0	100	**30**	0.1mm	Image / Printer Position
01229	LED Skew(K) Left	-50	50	**0**	---	Image / Printer Position
01230	LED Skew(K) Center	-50	50	**0**	---	Image / Printer Position
01231	LED Skew(K) Right	-50	50	**0**	---	Image / Printer Position
01232	LED Skew(C) Left	-50	50	**0**	---	Image / Printer Position
01233	LED Skew(C) Center	-50	50	**0**	---	Image / Printer Position
01234	LED Skew(C) Right	-50	50	**0**	---	Image / Printer Position
01235	LED Skew(M) Left	-50	50	**0**	---	Image / Printer Position
01236	LED Skew(M) Center	-50	50	**0**	---	Image / Printer Position
01237	LED Skew(M) Right	-50	50	**0**	---	Image / Printer Position
01238	LED Skew(Y) Left	-50	50	**0**	---	Image / Printer Position
01239	LED Skew(Y) Center	-50	50	**0**	---	Image / Printer Position
01240	LED Skew(Y) Right	-50	50	**0**	---	Image / Printer Position
01241	Focus Step(K) L-LE	-110	110	**0**	---	Image / Printer Position
01242	Focus Step(K) L-RE	-110	110	**0**	---	Image / Printer Position
01243	Focus Step(K) C-LE	-110	110	**0**	---	Image / Printer Position
01244	Focus Step(K) C-RE	-110	110	**0**	---	Image / Printer Position
01245	Focus Step(K) R-LE	-110	110	**0**	---	Image / Printer Position
01246	Focus Step(K) R-RE	-110	110	**0**	---	Image / Printer Position
01247	Focus Step(C) L-LE	-110	110	**0**	---	Image / Printer Position
01248	Focus Step(C) L-RE	-110	110	**0**	---	Image / Printer Position
01249	Focus Step(C) C-LE	-110	110	**0**	---	Image / Printer Position
01250	Focus Step(C) C-RE	-110	110	**0**	---	Image / Printer Position
01251	Focus Step(C) R-LE	-110	110	**0**	---	Image / Printer Position
01252	Focus Step(C) R-RE	-110	110	**0**	---	Image / Printer Position

01253	Focus Step(M) L-LE	-110	110	**0**	---	Image / Printer Position
01254	Focus Step(M) L-RE	-110	110	**0**	---	Image / Printer Position
01255	Focus Step(M) C-LE	-110	110	**0**	---	Image / Printer Position
01256	Focus Step(M) C-RE	-110	110	**0**	---	Image / Printer Position
01257	Focus Step(M) R-LE	-110	110	**0**	---	Image / Printer Position
01258	Focus Step(M) R-RE	-110	110	**0**	---	Image / Printer Position
01259	Focus Step(Y) L-LE	-110	110	**0**	---	Image / Printer Position
01260	Focus Step(Y) L-RE	-110	110	**0**	---	Image / Printer Position
01261	Focus Step(Y) C-LE	-110	110	**0**	---	Image / Printer Position
01262	Focus Step(Y) C-RE	-110	110	**0**	---	Image / Printer Position
01263	Focus Step(Y) R-LE	-110	110	**0**	---	Image / Printer Position
01264	Focus Step(Y) R-RE	-110	110	**0**	---	Image / Printer Position
01265	Focus Adjust On/Off	0	1	**0**	Mode Selector	Printer Function
01600	LightIntensity (K) L	0	200	**120**	1/100 μ J / cm2	Print Density
01601	LightIntensity (K) C	0	200	**120**	1/100 μ J / cm2	Print Density
01602	LightIntensity (K) R	0	200	**120**	1/100 μ J / cm2	Print Density
01603	LightIntensity (C) L	0	200	**120**	1/100 μ J / cm2	Print Density
01604	LightIntensity (C) C	0	200	**120**	1/100 μ J / cm2	Print Density
01605	LightIntensity (C) R	0	200	**120**	1/100 μ J / cm2	Print Density
01606	LightIntensity (M) L	0	200	**120**	1/100 μ J / cm2	Print Density
01607	LightIntensity (M) C	0	200	**120**	1/100 μ J / cm2	Print Density
01608	LightIntensity (M) R	0	200	**120**	1/100 μ J / cm2	Print Density
01609	LightIntensity (Y) L	0	200	**120**	1/100 μ J / cm2	Print Density
01610	LightIntensity (Y) C	0	200	**120**	1/100 μ J / cm2	Print Density
01611	LightIntensity (Y) R	0	200	**120**	1/100 μ J / cm2	Print Density
01612	LightGain-K DCtrlOFF	70	130	**100**	1%	Print Density
01613	LightGain-C DCtrlOFF	70	130	**100**	1%	Print Density
01614	LightGain-M DCtrlOFF	70	130	**100**	1%	Print Density
01615	LightGain-Y DCtrlOFF	70	130	**100**	1%	Print Density
01616	LightGain-K DCtrl:ON	70	130	**100**	1%	Print Density
01617	LightGain-C DCtrl:ON	70	130	**100**	1%	Print Density
01618	LightGain-M DCtrl:ON	70	130	**100**	1%	Print Density
01619	LightGain-Y DCtrl:ON	70	130	**100**	1%	Print Density
01620	ImgCorrectStrobe1K_L	0	1000	**0**	---	Print Density
01621	ImgCorrectStrobe1K_C	0	1000	**0**	---	Print Density
01622	ImgCorrectStrobe1K_R	0	1000	**0**	---	Print Density
01623	ImgCorrectStrobe1C_L	0	1000	**0**	---	Print Density
01624	ImgCorrectStrobe1C_C	0	1000	**0**	---	Print Density
01625	ImgCorrectStrobe1C_R	0	1000	**0**	---	Print Density
01626	ImgCorrectStrobe1M_L	0	1000	**0**	---	Print Density
01627	ImgCorrectStrobe1M_C	0	1000	**0**	---	Print Density
01628	ImgCorrectStrobe1M_R	0	1000	**0**	---	Print Density
01629	ImgCorrectStrobe1Y_L	0	1000	**0**	---	Print Density
01630	ImgCorrectStrobe1Y_C	0	1000	**0**	---	Print Density
01631	ImgCorrectStrobe1Y_R	0	1000	**0**	---	Print Density
01632	Img Correct Pos	0	65535	**3123**	1 line	Print Density
01633	Image Polarity1 K	0	1	**0**	ModeSelector	Print Density
01634	Image Polarity1 C	0	1	**0**	ModeSelector	Print Density
01635	Image Polarity1 M	0	1	**0**	ModeSelector	Print Density
01636	Image Polarity1 Y	0	1	**0**	ModeSelector	Print Density
01638	Image Enhance1 A0	0	15	**4**	---	Image Enhance
01639	Image Enhance2 A0	0	15	**4**	---	Image Enhance
01640	Image Enhance3 A0	0	15	**4**	---	Image Enhance
01641	Image Enhance4 A0	0	15	**4**	---	Image Enhance

01642	Image Enhance5 A0	0	15	4	---	Image Enhance
01643	Image Enhance1 B0	0	15	4	---	Image Enhance
01644	Image Enhance2 B0	0	15	4	---	Image Enhance
01645	Image Enhance3 B0	0	15	4	---	Image Enhance
01646	Image Enhance4 B0	0	15	4	---	Image Enhance
01647	Image Enhance5 B0	0	15	4	---	Image Enhance
01648	Image Enhance1 A1	0	15	4	---	Image Enhance
01649	Image Enhance2 A1	0	15	3	---	Image Enhance
01650	Image Enhance3 A1	0	15	3	---	Image Enhance
01651	Image Enhance4 A1	0	15	3	---	Image Enhance
01652	Image Enhance5 A1	0	15	3	---	Image Enhance
01653	Image Enhance1 B1	0	15	2	---	Image Enhance
01654	Image Enhance2 B1	0	15	4	---	Image Enhance
01655	Image Enhance3 B1	0	15	4	---	Image Enhance
01656	Image Enhance4 B1	0	15	4	---	Image Enhance
01657	Image Enhance5 B1	0	15	4	---	Image Enhance
01658	Image Enhance1 A2	0	15	4	---	Image Enhance
01659	Image Enhance2 A2	0	15	3	---	Image Enhance
01660	Image Enhance3 A2	0	15	5	---	Image Enhance
01661	Image Enhance4 A2	0	15	6	---	Image Enhance
01662	Image Enhance5 A2	0	15	7	---	Image Enhance
01663	Image Enhance1 B2	0	15	2	---	Image Enhance
01664	Image Enhance2 B2	0	15	4	---	Image Enhance
01665	Image Enhance3 B2	0	15	3	---	Image Enhance
01666	Image Enhance4 B2	0	15	5	---	Image Enhance
01667	Image Enhance5 B2	0	15	6	---	Image Enhance
01708	Drum Correct Phase K	0	15	**0**	---	Image / Printer Position
01709	Drum Correct Phase C	0	15	**0**	---	Image / Printer Position
01710	Drum Correct Phase M	0	15	**0**	---	Image / Printer Position
01711	Drum Correct Phase Y	0	15	**0**	---	Image / Printer Position
01712	Drum Correct Gain K	0	127	**0**	---	Image / Printer Position
01713	Drum Correct Gain C	0	127	**0**	---	Image / Printer Position
01714	Drum Correct Gain M	0	127	**0**	---	Image / Printer Position
01715	Drum Correct Gain Y	0	127	**0**	---	Image / Printer Position
01736	ImgCorrectStrobe2K_L	0	1000	0	---	Print Density
01737	ImgCorrectStrobe2K_C	0	1000	0	---	Print Density
01738	ImgCorrectStrobe2K_R	0	1000	0	---	Print Density
01739	ImgCorrectStrobe2C_L	0	1000	0	---	Print Density
01740	ImgCorrectStrobe2C_C	0	1000	0	---	Print Density
01741	ImgCorrectStrobe2C_R	0	1000	0	---	Print Density
01742	ImgCorrectStrobe2M_L	0	1000	0	---	Print Density
01743	ImgCorrectStrobe2M_C	0	1000	0	---	Print Density
01744	ImgCorrectStrobe2M_R	0	1000	0	---	Print Density
01745	ImgCorrectStrobe2Y_L	0	1000	0	---	Print Density
01746	ImgCorrectStrobe2Y_C	0	1000	0	---	Print Density
01747	ImgCorrectStrobe2Y_R	0	1000	0	---	Print Density
01748	ImgCorrectStrobe3K_L	0	1000	0	---	Print Density
01749	ImgCorrectStrobe3K_C	0	1000	0	---	Print Density
01750	ImgCorrectStrobe3K_R	0	1000	0	---	Print Density
01751	ImgCorrectStrobe3C_L	0	1000	0	---	Print Density
01752	ImgCorrectStrobe3C_C	0	1000	0	---	Print Density
01753	ImgCorrectStrobe3C_R	0	1000	0	---	Print Density
01754	ImgCorrectStrobe3M_L	0	1000	0	---	Print Density
01755	ImgCorrectStrobe3M_C	0	1000	0	---	Print Density

01756	ImgCorrectStrobe3M_R	0	1000	**0**	---	Print Density
01757	ImgCorrectStrobe3Y_L	0	1000	**0**	---	Print Density
01758	ImgCorrectStrobe3Y_C	0	1000	**0**	---	Print Density
01759	ImgCorrectStrobe3Y_R	0	1000	**0**	---	Print Density
01760	ImgCorrectStrobe4K_L	0	1000	**0**	---	Print Density
01761	ImgCorrectStrobe4K_C	0	1000	**0**	---	Print Density
01762	ImgCorrectStrobe4K_R	0	1000	**0**	---	Print Density
01763	ImgCorrectStrobe4C_L	0	1000	**0**	---	Print Density
01764	ImgCorrectStrobe4C_C	0	1000	**0**	---	Print Density
01765	ImgCorrectStrobe4C_R	0	1000	**0**	---	Print Density
01766	ImgCorrectStrobe4M_L	0	1000	**0**	---	Print Density
01767	ImgCorrectStrobe4M_C	0	1000	**0**	---	Print Density
01768	ImgCorrectStrobe4M_R	0	1000	**0**	---	Print Density
01769	ImgCorrectStrobe4Y_L	0	1000	**0**	---	Print Density
01770	ImgCorrectStrobe4Y_C	0	1000	**0**	---	Print Density
01771	ImgCorrectStrobe4Y_R	0	1000	**0**	---	Print Density
01772	Image Polarity2 K	0	1	**0**	Mode Selector	Print Density
01773	Image Polarity2 C	0	1	**0**	Mode Selector	Print Density
01774	Image Polarity2 M	0	1	**0**	Mode Selector	Print Density
01775	Image Polarity2 Y	0	1	**0**	Mode Selector	Print Density
01776	Image Polarity3 K	0	1	**0**	Mode Selector	Print Density
01777	Image Polarity3 C	0	1	**0**	Mode Selector	Print Density
01778	Image Polarity3 M	0	1	**0**	Mode Selector	Print Density
01779	Image Polarity3 Y	0	1	**0**	Mode Selector	Print Density
01780	Image Polarity4 K	0	1	**0**	Mode Selector	Print Density
01781	Image Polarity4 C	0	1	**0**	Mode Selector	Print Density
01782	Image Polarity4 M	0	1	**0**	Mode Selector	Print Density
01783	Image Polarity4 Y	0	1	**0**	Mode Selector	Print Density
01784	Density Adjust Mode	0	1	**1**	Mode Selector	Print Density
01785	Auto Density Adjust	0	1	**0**	Mode Selector	Print Density
01786	LEDJointDerkness K-L	0	5	**2**	Mode Selector	Print Density
01787	LEDJointDerkness K-R	0	5	**2**	Mode Selector	Print Density
01788	LEDJointDerkness C-L	0	5	**2**	Mode Selector	Print Density
01789	LEDJointDerkness C-R	0	5	**2**	Mode Selector	Print Density
01790	LEDJointDerkness M-L	0	5	**2**	Mode Selector	Print Density
01791	LEDJointDerkness M-R	0	5	**2**	Mode Selector	Print Density
01792	LEDJointDerkness Y-L	0	5	**2**	Mode Selector	Print Density
01793	LEDJointDerkness Y-R	0	5	**2**	Mode Selector	Print Density
02000	Idle Temp	100	135	**135**	1°C	Fuser
02001	Ready Temp 1	140	190	**150**	1°C	Fuser
02002	Ready Temp 2	140	190	**150**	1°C	Fuser
02003	Fuser Temp00-12	140	190	**155**	1°C	Fuser
02004	Fuser Temp01-12	140	190	**155**	1°C	Fuser
02005	Fuser Temp02-12	140	190	**155**	1°C	Fuser
02006	Fuser Temp03-12	140	190	**155**	1°C	Fuser
02007	Fuser Temp04-12	140	190	**155**	1°C	Fuser
02008	Fuser Temp05-12	140	190	**155**	1°C	Fuser
02009	Fuser Temp06-12	140	190	**155**	1°C	Fuser
02010	Fuser Temp07-12	140	190	**155**	1°C	Fuser
02011	Fuser Temp08-12	140	190	**155**	1°C	Fuser
02012	Fuser Temp09-12	140	190	**155**	1°C	Fuser
02013	Fuser Temp10-12	140	190	**155**	1°C	Fuser
02014	Fuser Temp11-12	140	190	**155**	1°C	Fuser
02015	Fuser Temp12-12	140	190	**155**	1°C	Fuser

02016	Fuser Temp13-12	140	190	**155**	1°C	Fuser
02017	Fuser Temp14-12	140	190	**155**	1°C	Fuser
02018	Fuser Temp15-12	140	190	**155**	1°C	Fuser
02019	Fuser Temp16-12	140	190	**155**	1°C	Fuser
02020	Fuser Temp17-12	140	190	**155**	1°C	Fuser
02021	Fuser Temp18-12	140	190	**155**	1°C	Fuser
02022	Fuser Temp19-12	140	190	**155**	1°C	Fuser
02023	Fuser Temp20-12	140	190	**155**	1°C	Fuser
02024	Fuser Temp21-12	140	190	**155**	1°C	Fuser
02025	Fuser Temp22-12	140	190	**155**	1°C	Fuser
02026	Fuser Temp23-12	140	190	**155**	1°C	Fuser
02027	Fuser Temp24-12	140	190	**155**	1°C	Fuser
02028	Fuser Temp00-18	140	190	**155**	1°C	Fuser
02029	Fuser Temp01-18	140	190	**155**	1°C	Fuser
02030	Fuser Temp02-18	140	190	**155**	1°C	Fuser
02031	Fuser Temp03-18	140	190	**155**	1°C	Fuser
02032	Fuser Temp04-18	140	190	**155**	1°C	Fuser
02033	Fuser Temp05-18	140	190	**155**	1°C	Fuser
02034	Fuser Temp06-18	140	190	**155**	1°C	Fuser
02035	Fuser Temp07-18	140	190	**155**	1°C	Fuser
02036	Fuser Temp08-18	140	190	**155**	1°C	Fuser
02037	Fuser Temp09-18	140	190	**155**	1°C	Fuser
02038	Fuser Temp10-18	140	190	**155**	1°C	Fuser
02039	Fuser Temp11-18	140	190	**155**	1°C	Fuser
02040	Fuser Temp12-18	140	190	**155**	1°C	Fuser
02041	Fuser Temp13-18	140	190	**155**	1°C	Fuser
02042	Fuser Temp14-18	140	190	**155**	1°C	Fuser
02043	Fuser Temp15-18	140	190	**155**	1°C	Fuser
02044	Fuser Temp16-18	140	190	**155**	1°C	Fuser
02045	Fuser Temp17-18	140	190	**155**	1°C	Fuser
02046	Fuser Temp18-18	140	190	**155**	1°C	Fuser
02047	Fuser Temp19-18	140	190	**155**	1°C	Fuser
02048	Fuser Temp20-18	140	190	**155**	1°C	Fuser
02049	Fuser Temp21-18	140	190	**155**	1°C	Fuser
02050	Fuser Temp22-18	140	190	**155**	1°C	Fuser
02051	Fuser Temp23-18	140	190	**155**	1°C	Fuser
02052	Fuser Temp24-18	140	190	**155**	1°C	Fuser
02053	Fuser Temp00-24	140	190	**155**	1°C	Fuser
02054	Fuser Temp01-24	140	190	**155**	1°C	Fuser
02055	Fuser Temp02-24	140	190	**155**	1°C	Fuser
02056	Fuser Temp03-24	140	190	**155**	1°C	Fuser
02057	Fuser Temp04-24	140	190	**155**	1°C	Fuser
02058	Fuser Temp05-24	140	190	**155**	1°C	Fuser
02059	Fuser Temp06-24	140	190	**155**	1°C	Fuser
02060	Fuser Temp07-24	140	190	**155**	1°C	Fuser
02061	Fuser Temp08-24	140	190	**155**	1°C	Fuser
02062	Fuser Temp09-24	140	190	**155**	1°C	Fuser
02063	Fuser Temp10-24	140	190	**155**	1°C	Fuser
02064	Fuser Temp11-24	140	190	**155**	1°C	Fuser
02065	Fuser Temp12-24	140	190	**155**	1°C	Fuser
02066	Fuser Temp13-24	140	190	**155**	1°C	Fuser
02067	Fuser Temp14-24	140	190	**155**	1°C	Fuser
02068	Fuser Temp15-24	140	190	**155**	1°C	Fuser
02069	Fuser Temp16-24	140	190	**155**	1°C	Fuser

02070	Fuser Temp17-24	140	190	**155**	1°C	Fuser
02071	Fuser Temp18-24	140	190	**155**	1°C	Fuser
02072	Fuser Temp19-24	140	190	**155**	1°C	Fuser
02073	Fuser Temp20-24	140	190	**155**	1°C	Fuser
02074	Fuser Temp21-24	140	190	**155**	1°C	Fuser
02075	Fuser Temp22-24	140	190	**155**	1°C	Fuser
02076	Fuser Temp23-24	140	190	**155**	1°C	Fuser
02077	Fuser Temp24-24	140	190	**155**	1°C	Fuser
02078	Fuser Temp00-30	140	190	**155**	1°C	Fuser
02079	Fuser Temp01-30	140	190	**155**	1°C	Fuser
02080	Fuser Temp02-30	140	190	**155**	1°C	Fuser
02081	Fuser Temp03-30	140	190	**155**	1°C	Fuser
02082	Fuser Temp04-30	140	190	**155**	1°C	Fuser
02083	Fuser Temp05-30	140	190	**155**	1°C	Fuser
02084	Fuser Temp06-30	140	190	**155**	1°C	Fuser
02085	Fuser Temp07-30	140	190	**155**	1°C	Fuser
02086	Fuser Temp08-30	140	190	**155**	1°C	Fuser
02087	Fuser Temp09-30	140	190	**155**	1°C	Fuser
02088	Fuser Temp10-30	140	190	**155**	1°C	Fuser
02089	Fuser Temp11-30	140	190	**155**	1°C	Fuser
02090	Fuser Temp12-30	140	190	**155**	1°C	Fuser
02091	Fuser Temp13-30	140	190	**155**	1°C	Fuser
02092	Fuser Temp14-30	140	190	**155**	1°C	Fuser
02093	Fuser Temp15-30	140	190	**155**	1°C	Fuser
02094	Fuser Temp16-30	140	190	**155**	1°C	Fuser
02095	Fuser Temp17-30	140	190	**155**	1°C	Fuser
02096	Fuser Temp18-30	140	190	**155**	1°C	Fuser
02097	Fuser Temp19-30	140	190	**155**	1°C	Fuser
02098	Fuser Temp20-30	140	190	**155**	1°C	Fuser
02099	Fuser Temp21-30	140	190	**155**	1°C	Fuser
02100	Fuser Temp22-30	140	190	**155**	1°C	Fuser
02101	Fuser Temp23-30	140	190	**155**	1°C	Fuser
02102	Fuser Temp24-30	140	190	**155**	1°C	Fuser
02103	Fuser Temp00-36	140	190	**155**	1°C	Fuser
02104	Fuser Temp01-36	140	190	**155**	1°C	Fuser
02105	Fuser Temp02-36	140	190	**155**	1°C	Fuser
02106	Fuser Temp03-36	140	190	**155**	1°C	Fuser
02107	Fuser Temp04-36	140	190	**155**	1°C	Fuser
02108	Fuser Temp05-36	140	190	**155**	1°C	Fuser
02109	Fuser Temp06-36	140	190	**155**	1°C	Fuser
02110	Fuser Temp07-36	140	190	**155**	1°C	Fuser
02111	Fuser Temp08-36	140	190	**155**	1°C	Fuser
02112	Fuser Temp09-36	140	190	**155**	1°C	Fuser
02113	Fuser Temp10-36	140	190	**155**	1°C	Fuser
02114	Fuser Temp11-36	140	190	**155**	1°C	Fuser
02115	Fuser Temp12-36	140	190	**155**	1°C	Fuser
02116	Fuser Temp13-36	140	190	**155**	1°C	Fuser
02117	Fuser Temp14-36	140	190	**155**	1°C	Fuser
02118	Fuser Temp15-36	140	190	**155**	1°C	Fuser
02119	Fuser Temp16-36	140	190	**155**	1°C	Fuser
02120	Fuser Temp17-36	140	190	**155**	1°C	Fuser
02121	Fuser Temp18-36	140	190	**155**	1°C	Fuser
02122	Fuser Temp19-36	140	190	**155**	1°C	Fuser
02123	Fuser Temp20-36	140	190	**155**	1°C	Fuser

02124	Fuser Temp21-36	140	190	**155**	1°C	Fuser
02125	Fuser Temp22-36	140	190	**155**	1°C	Fuser
02126	Fuser Temp23-36	140	190	**155**	1°C	Fuser
02127	Fuser Temp24-36	140	190	**155**	1°C	Fuser
02128	Fuser Temp2 00-12	140	190	**155**	1°C	Fuser
02129	Fuser Temp2 01-12	140	190	**155**	1°C	Fuser
02130	Fuser Temp2 02-12	140	190	**155**	1°C	Fuser
02131	Fuser Temp2 03-12	140	190	**155**	1°C	Fuser
02132	Fuser Temp2 04-12	140	190	**155**	1°C	Fuser
02133	Fuser Temp2 05-12	140	190	**155**	1°C	Fuser
02134	Fuser Temp2 06-12	140	190	**155**	1°C	Fuser
02135	Fuser Temp2 07-12	140	190	**155**	1°C	Fuser
02136	Fuser Temp2 08-12	140	190	**155**	1°C	Fuser
02137	Fuser Temp2 09-12	140	190	**155**	1°C	Fuser
02138	Fuser Temp2 10-12	140	190	**155**	1°C	Fuser
02139	Fuser Temp2 11-12	140	190	**155**	1°C	Fuser
02140	Fuser Temp2 12-12	140	190	**155**	1°C	Fuser
02141	Fuser Temp2 13-12	140	190	**155**	1°C	Fuser
02142	Fuser Temp2 14-12	140	190	**155**	1°C	Fuser
02143	Fuser Temp2 15-12	140	190	**155**	1°C	Fuser
02144	Fuser Temp2 16-12	140	190	**155**	1°C	Fuser
02145	Fuser Temp2 17-12	140	190	**155**	1°C	Fuser
02146	Fuser Temp2 18-12	140	190	**155**	1°C	Fuser
02147	Fuser Temp2 19-12	140	190	**155**	1°C	Fuser
02148	Fuser Temp2 20-12	140	190	**155**	1°C	Fuser
02149	Fuser Temp2 21-12	140	190	**155**	1°C	Fuser
02150	Fuser Temp2 22-12	140	190	**155**	1°C	Fuser
02151	Fuser Temp2 23-12	140	190	**155**	1°C	Fuser
02152	Fuser Temp2 24-12	140	190	**155**	1°C	Fuser
02153	Fuser Temp2 00-18	140	190	**155**	1°C	Fuser
02154	Fuser Temp2 01-18	140	190	**155**	1°C	Fuser
02155	Fuser Temp2 02-18	140	190	**155**	1°C	Fuser
02156	Fuser Temp2 03-18	140	190	**155**	1°C	Fuser
02157	Fuser Temp2 04-18	140	190	**155**	1°C	Fuser
02158	Fuser Temp2 05-18	140	190	**155**	1°C	Fuser
02159	Fuser Temp2 06-18	140	190	**155**	1°C	Fuser
02160	Fuser Temp2 07-18	140	190	**155**	1°C	Fuser
02161	Fuser Temp2 08-18	140	190	**155**	1°C	Fuser
02162	Fuser Temp2 09-18	140	190	**155**	1°C	Fuser
02163	Fuser Temp2 10-18	140	190	**155**	1°C	Fuser
02164	Fuser Temp2 11-18	140	190	**155**	1°C	Fuser
02165	Fuser Temp2 12-18	140	190	**155**	1°C	Fuser
02166	Fuser Temp2 13-18	140	190	**155**	1°C	Fuser
02167	Fuser Temp2 14-18	140	190	**155**	1°C	Fuser
02168	Fuser Temp2 15-18	140	190	**155**	1°C	Fuser
02169	Fuser Temp2 16-18	140	190	**155**	1°C	Fuser
02170	Fuser Temp2 17-18	140	190	**155**	1°C	Fuser
02171	Fuser Temp2 18-18	140	190	**155**	1°C	Fuser
02172	Fuser Temp2 19-18	140	190	**155**	1°C	Fuser
02173	Fuser Temp2 20-18	140	190	**155**	1°C	Fuser
02174	Fuser Temp2 21-18	140	190	**155**	1°C	Fuser
02175	Fuser Temp2 22-18	140	190	**155**	1°C	Fuser
02176	Fuser Temp2 23-18	140	190	**155**	1°C	Fuser
02177	Fuser Temp2 24-18	140	190	**155**	1°C	Fuser

02178	Fuser Temp2 00-24	140	190	**155**	1°C	Fuser
02179	Fuser Temp2 01-24	140	190	**155**	1°C	Fuser
02180	Fuser Temp2 02-24	140	190	**155**	1°C	Fuser
02181	Fuser Temp2 03-24	140	190	**155**	1°C	Fuser
02182	Fuser Temp2 04-24	140	190	**155**	1°C	Fuser
02183	Fuser Temp2 05-24	140	190	**155**	1°C	Fuser
02184	Fuser Temp2 06-24	140	190	**155**	1°C	Fuser
02185	Fuser Temp2 07-24	140	190	**155**	1°C	Fuser
02186	Fuser Temp2 08-24	140	190	**155**	1°C	Fuser
02187	Fuser Temp2 09-24	140	190	**155**	1°C	Fuser
02188	Fuser Temp2 10-24	140	190	**155**	1°C	Fuser
02189	Fuser Temp2 11-24	140	190	**155**	1°C	Fuser
02190	Fuser Temp2 12-24	140	190	**155**	1°C	Fuser
02191	Fuser Temp2 13-24	140	190	**155**	1°C	Fuser
02192	Fuser Temp2 14-24	140	190	**155**	1°C	Fuser
02193	Fuser Temp2 15-24	140	190	**155**	1°C	Fuser
02194	Fuser Temp2 16-24	140	190	**155**	1°C	Fuser
02195	Fuser Temp2 17-24	140	190	**155**	1°C	Fuser
02196	Fuser Temp2 18-24	140	190	**155**	1°C	Fuser
02197	Fuser Temp2 19-24	140	190	**155**	1°C	Fuser
02198	Fuser Temp2 20-24	140	190	**155**	1°C	Fuser
02199	Fuser Temp2 21-24	140	190	**155**	1°C	Fuser
02200	Fuser Temp2 22-24	140	190	**155**	1°C	Fuser
02201	Fuser Temp2 23-24	140	190	**155**	1°C	Fuser
02202	Fuser Temp2 24-24	140	190	**155**	1°C	Fuser
02203	Fuser Temp2 00-30	140	190	**170**	1°C	Fuser
02204	Fuser Temp2 01-30	140	190	**170**	1°C	Fuser
02205	Fuser Temp2 02-30	140	190	**170**	1°C	Fuser
02206	Fuser Temp2 03-30	140	190	**170**	1°C	Fuser
02207	Fuser Temp2 04-30	140	190	**170**	1°C	Fuser
02208	Fuser Temp2 05-30	140	190	**170**	1°C	Fuser
02209	Fuser Temp2 06-30	140	190	**170**	1°C	Fuser
02210	Fuser Temp2 07-30	140	190	**170**	1°C	Fuser
02211	Fuser Temp2 08-30	140	190	**170**	1°C	Fuser
02212	Fuser Temp2 09-30	140	190	**170**	1°C	Fuser
02213	Fuser Temp2 10-30	140	190	**170**	1°C	Fuser
02214	Fuser Temp2 11-30	140	190	**170**	1°C	Fuser
02215	Fuser Temp2 12-30	140	190	**170**	1°C	Fuser
02216	Fuser Temp2 13-30	140	190	**170**	1°C	Fuser
02217	Fuser Temp2 14-30	140	190	**170**	1°C	Fuser
02218	Fuser Temp2 15-30	140	190	**170**	1°C	Fuser
02219	Fuser Temp2 16-30	140	190	**170**	1°C	Fuser
02220	Fuser Temp2 17-30	140	190	**170**	1°C	Fuser
02221	Fuser Temp2 18-30	140	190	**170**	1°C	Fuser
02222	Fuser Temp2 19-30	140	190	**170**	1°C	Fuser
02223	Fuser Temp2 20-30	140	190	**170**	1°C	Fuser
02224	Fuser Temp2 21-30	140	190	**170**	1°C	Fuser
02225	Fuser Temp2 22-30	140	190	**170**	1°C	Fuser
02226	Fuser Temp2 23-30	140	190	**170**	1°C	Fuser
02227	Fuser Temp2 24-30	140	190	**170**	1°C	Fuser
02228	Fuser Temp2 00-36	140	190	**160**	1°C	Fuser
02229	Fuser Temp2 01-36	140	190	**160**	1°C	Fuser
02230	Fuser Temp2 02-36	140	190	**160**	1°C	Fuser
02231	Fuser Temp2 03-36	140	190	**160**	1°C	Fuser

02232	Fuser Temp2 04-36	140	190	**160**	1°C	Fuser
02233	Fuser Temp2 05-36	140	190	**160**	1°C	Fuser
02234	Fuser Temp2 06-36	140	190	**160**	1°C	Fuser
02235	Fuser Temp2 07-36	140	190	**160**	1°C	Fuser
02236	Fuser Temp2 08-36	140	190	**160**	1°C	Fuser
02237	Fuser Temp2 09-36	140	190	**160**	1°C	Fuser
02238	Fuser Temp2 10-36	140	190	**160**	1°C	Fuser
02239	Fuser Temp2 11-36	140	190	**160**	1°C	Fuser
02240	Fuser Temp2 12-36	140	190	**160**	1°C	Fuser
02241	Fuser Temp2 13-36	140	190	**160**	1°C	Fuser
02242	Fuser Temp2 14-36	140	190	**160**	1°C	Fuser
02243	Fuser Temp2 15-36	140	190	**160**	1°C	Fuser
02244	Fuser Temp2 16-36	140	190	**160**	1°C	Fuser
02245	Fuser Temp2 17-36	140	190	**160**	1°C	Fuser
02246	Fuser Temp2 18-36	140	190	**160**	1°C	Fuser
02247	Fuser Temp2 19-36	140	190	**160**	1°C	Fuser
02248	Fuser Temp2 20-36	140	190	**160**	1°C	Fuser
02249	Fuser Temp2 21-36	140	190	**160**	1°C	Fuser
02250	Fuser Temp2 22-36	140	190	**160**	1°C	Fuser
02251	Fuser Temp2 23-36	140	190	**160**	1°C	Fuser
02252	Fuser Temp2 24-36	140	190	**160**	1°C	Fuser
02255	F-TempCorrect Center	50	150	**94**	%	Fuser
02256	F-TempCorrect Side	50	150	**94**	%	Fuser
02257	Tension Error Time	100	500	**200**	---	Fuser
02260	Web in Print 00	1	10	**1**	---	Fuser
02261	Web in Print 01	1	10	**1**	---	Fuser
02262	Web in Print 02	1	10	**1**	---	Fuser
02263	Web in Print 03	1	10	**1**	---	Fuser
02264	Web in Print 04	1	10	**1**	---	Fuser
02265	Web in Print 05	1	10	**1**	---	Fuser
02266	Web in Print 06	1	10	**1**	---	Fuser
02267	Web in Print 07	1	10	**1**	---	Fuser
02268	Web in Print 08	1	10	**1**	---	Fuser
02269	Web in Print 09	1	10	**1**	---	Fuser
02270	Web in Print 10	1	10	**1**	---	Fuser
02271	Web in Print 11	1	10	**1**	---	Fuser
02272	Web in Print 12	1	10	**1**	---	Fuser
02273	Web in Print 13	1	10	**1**	---	Fuser
02274	Web in Print 14	1	10	**1**	---	Fuser
02275	Web in Print 15	1	10	**1**	---	Fuser
02276	Web in Print 16	1	10	**1**	---	Fuser
02277	Web in Print 17	1	10	**1**	---	Fuser
02278	Web in Print 18	1	10	**1**	---	Fuser
02279	Web in Print 19	1	10	**1**	---	Fuser
02280	Web in Print 20	1	10	**1**	---	Fuser
02281	Web in Print 21	1	10	**1**	---	Fuser
02282	Web in Print 22	1	10	**1**	---	Fuser
02283	Web in Print 23	1	10	**1**	---	Fuser
02284	Web in Print 24	1	10	**1**	---	Fuser
02285	Web Print End 00	0	1	**0**	Mode Selector	Fuser
02286	Web Print End 01	0	1	**0**	Mode Selector	Fuser
02287	Web Print End 02	0	1	**0**	Mode Selector	Fuser
02288	Web Print End 03	0	1	**0**	Mode Selector	Fuser
02289	Web Print End 04	0	1	**0**	Mode Selector	Fuser

02290	Web Print End 05	0	1	**0**	Mode Selector	Fuser
02291	Web Print End 06	0	1	**0**	Mode Selector	Fuser
02292	Web Print End 07	0	1	**0**	Mode Selector	Fuser
02293	Web Print End 08	0	1	**0**	Mode Selector	Fuser
02294	Web Print End 09	0	1	**0**	Mode Selector	Fuser
02295	Web Print End 10	0	1	**0**	Mode Selector	Fuser
02296	Web Print End 11	0	1	**0**	Mode Selector	Fuser
02297	Web Print End 12	0	1	**0**	Mode Selector	Fuser
02298	Web Print End 13	0	1	**0**	Mode Selector	Fuser
02299	Web Print End 14	0	1	**0**	Mode Selector	Fuser
02300	Web Print End 15	0	1	**0**	Mode Selector	Fuser
02301	Web Print End 16	0	1	**0**	Mode Selector	Fuser
02302	Web Print End 17	0	1	**0**	Mode Selector	Fuser
02303	Web Print End 18	0	1	**0**	Mode Selector	Fuser
02304	Web Print End 19	0	1	**0**	Mode Selector	Fuser
02305	Web Print End 20	0	1	**0**	Mode Selector	Fuser
02306	Web Print End 21	0	1	**0**	Mode Selector	Fuser
02307	Web Print End 22	0	1	**0**	Mode Selector	Fuser
02308	Web Print End 23	0	1	**0**	Mode Selector	Fuser
02309	Web Print End 24	0	1	**0**	Mode Selector	Fuser
02400	Tr2 Current Slope 00	80	120	**100**	%	High Voltage
02401	Tr2 Current Slope 01	80	120	**100**	%	High Voltage
02402	Tr2 Current Slope 02	80	120	**100**	%	High Voltage
02403	Tr2 Current Slope 03	80	120	**100**	%	High Voltage
02404	Tr2 Current Slope 04	80	120	**100**	%	High Voltage
02405	Tr2 Current Slope 05	80	120	**100**	%	High Voltage
02406	Tr2 Current Slope 06	80	120	**100**	%	High Voltage
02407	Tr2 Current Slope 07	80	120	**100**	%	High Voltage
02408	Tr2 Current Slope 08	80	120	**100**	%	High Voltage
02409	Tr2 Current Slope 09	80	120	**100**	%	High Voltage
02410	Tr2 Current Slope 10	80	120	**100**	%	High Voltage
02411	Tr2 Current Slope 11	80	120	**100**	%	High Voltage
02412	Tr2 Current Slope 12	80	120	**100**	%	High Voltage
02413	Tr2 Current Slope 13	80	120	**100**	%	High Voltage
02414	Tr2 Current Slope 14	80	120	**100**	%	High Voltage
02415	Tr2 Current Slope 15	80	120	**100**	%	High Voltage
02416	Tr2 Current Slope 16	80	120	**100**	%	High Voltage
02417	Tr2 Current Slope 17	80	120	**100**	%	High Voltage
02418	Tr2 Current Slope 18	80	120	**100**	%	High Voltage
02419	Tr2 Current Slope 19	80	120	**100**	%	High Voltage
02420	Tr2 Current Slope 20	80	120	**100**	%	High Voltage
02421	Tr2 Current Slope 21	80	120	**100**	%	High Voltage
02422	Tr2 Current Slope 22	80	120	**100**	%	High Voltage
02423	Tr2 Current Slope 23	80	120	**100**	%	High Voltage
02424	Tr2 Current Slope 24	80	120	**100**	%	High Voltage
02425	Tr2 Current Offset 00	80	120	**100**	%	High Voltage
02426	Tr2 Current Offset 01	80	120	**100**	%	High Voltage
02427	Tr2 Current Offset 02	80	120	**100**	%	High Voltage
02428	Tr2 Current Offset 03	80	120	**100**	%	High Voltage
02429	Tr2 Current Offset 04	80	120	**100**	%	High Voltage
02430	Tr2 Current Offset 05	80	120	**100**	%	High Voltage
02431	Tr2 Current Offset 06	80	120	**100**	%	High Voltage
02432	Tr2 Current Offset 07	80	120	**100**	%	High Voltage
02433	Tr2 Current Offset 08	80	120	**100**	%	High Voltage

02434	Tr2 Current Offset 09	80	120	**100**	%	High Voltage
02435	Tr2 Current Offset 10	80	120	**100**	%	High Voltage
02436	Tr2 Current Offset 11	80	120	**100**	%	High Voltage
02437	Tr2 Current Offset 12	80	120	**100**	%	High Voltage
02438	Tr2 Current Offset 13	80	120	**100**	%	High Voltage
02439	Tr2 Current Offset 14	80	120	**100**	%	High Voltage
02440	Tr2 Current Offset 15	80	120	**100**	%	High Voltage
02441	Tr2 Current Offset 16	80	120	**100**	%	High Voltage
02442	Tr2 Current Offset 17	80	120	**100**	%	High Voltage
02443	Tr2 Current Offset 18	80	120	**100**	%	High Voltage
02444	Tr2 Current Offset 19	80	120	**100**	%	High Voltage
02445	Tr2 Current Offset 20	80	120	**100**	%	High Voltage
02446	Tr2 Current Offset 21	80	120	**100**	%	High Voltage
02447	Tr2 Current Offset 22	80	120	**100**	%	High Voltage
02448	Tr2 Current Offset 23	80	120	**100**	%	High Voltage
02449	Tr2 Current Offset 24	80	120	**100**	%	High Voltage
02450	Tr2 Offset Vol Type	0	1	**0**	Mode Selector	High Voltage
02451	Dev Bias(K)Threshold	-600	0	**-200**	1V	High Voltage
02452	Dev Bias(C)Threshold	-600	0	**-180**	1V	High Voltage
02453	Dev Bias(M)Threshold	-600	0	**-180**	1V	High Voltage
02454	Dev Bias(Y)Threshold	-600	0	**-180**	1V	High Voltage

8. 4. 3 Description of each Backup Data item

This section describes details about each Backup Data (BUD) item.

> **⚠ NOTE**
>
> (1) It is strongly requested to save all current Backup Data values into a zip file by using **Export** function before changing any value for security purpose. See [8.4.1.2 Saving all parameter values into a zip file for backing up (Export)] for detail about the Export function.
>
> (2) Some Backup Data items were set to particular values that were uniquely and originally set for that particular machine when shipped. It is possible to know these original values by referring to the backed up zip file which you have saved at installation.

* For improvement of search efficiency of BUD Numbers, notation of five-digit code for BUD items is used in this section.

00000 Count Specification

This allows for changing the counting unit of Counter A (color) and Counter B (monochrome) as needed.

Setting value	Contents Counted value 1 means;
0	1m
1	0.1m
2	1 square meter
3	0.1 square meter
4	Size count (See another list on the right)
5 (Default)	1 foot
6	1 square foot

For Setting Value “4”	
Printer size	Counter value
A4/A3	1
A2	2
A1	3
B1/A0/36"	5

00001 Deck 2 Option

This specifies the number of roll deck on printer. It is not necessary to change this as it is set correctly in factory.

Setting value	Contents
0	1 Roll Deck: Select this in case of KIP 850 / 860.
1 (Default)	2 Rolls Decks: Select this in case of KIP 870.

00003 Maximum Cut Length

This specifies the limitation of the maximum print length.

Setting value	Contents
0 (Default)	Maximum print length is limited to 6m.
1	Maximum print length is limited to 64m.

⚠ NOTE

(1) This is a setting to specify the availability for maximum print length. Note that it has nothing to do with the maximum length to guarantee the print quality. Regardless of the setting of BUD No.3, the maximum print lengths that KIP guarantees the print quality are specified as follows, which differ per media width and media type.
- A0 or 36" plain paper ..... : 6.0m
- Plain paper of other widths .... : x5 of standard portrait length of each media width
- Tracing paper..... : x2 of standard portrait length of each media width
- Film ..... : Standard portrait length of each media width

(2) It is not necessarily possible to printing up to 6m or 64m, because the maximum print length is also limited by such as the printer controller, submission software application, data format and etc.

00005 Select Paper Ejection

There are 2 rear exits and only eather of 1 is available depending on the model, as set in the factory.

Setting value	Contents
0	Lower Rear Used for KIP 870 (2 roll media drawers)
1	Upper Rear Used for KIP 850 / 860 (1 roll media drawer)

00035 Adsorption Fan Duty

This specifies the Duty (fan ON) of Adsorption Fan. Increment of the value by 1 increases the Duty by 20%, which increases the rotation of fan.

Setting value	Contents
0	Duty is 0%
1	Duty is 20%
2	Duty is 40%
3 (Default)	Duty is 60%
4	Duty is 80%
5	Duty is 100%

00036 MediaSlack Threshold

When the roll media is remaining enough, KIP 800 series printer creates a slack of media immediately before cutting. When the remaining volume of roll media becomes smaller than particular volume, on the contrary, printer creates a slack soon after it starts feeding and keeps it until cutter action takes place. 00036 specifies this particular volume. The default value 40 specifies the particular volume to 92.9mm (diameter), which is about 15%. So the printer comes to create media slack soon after the start of feeding when the remaining volume reaches 15%. Increment of the value lets printer to come to create media slack when more volume of roll media remains.

Unit	Min.	Max.	Default
-	0	255	40

00037 Dummy Print Mode

This is to set the operation mode of Dummy Print.

Setting value	Contents
0 (Default)	Operation Mode A
1	Operation Mode B
2	Operation Mode A+B

⚠ NOTE

Do not change the default value.

00038 Dummy Print Interval

This is a parameter for Dummy Print interval.

Min.	Max.	Default
0	150	25

⚠ NOTE

Do not change the default value.

00039 Exhaust Fan Duty

This specifies the Duty (fan ON) of Exhaust Fan. Increment of the value by 1 increases the Duty by 20%, which increases the rotation of fan. This is normally not changed in the market.

Setting value	Contents
0	Duty is 0%
1	Duty is 20%
2	Duty is 40%
3	Duty is 60%
4	Duty is 80%
5 (Default)	Duty is 100%

00040 Encoder Jam StopTime

00040 specifies the timing to let Fuser Encoder Sensor stop monitoring fuser jam. This sensor starts monitoring when the Exit Sensor detects the leading edge of print, and stops when 4000ms has passed since the trailing edge passed the Registration Sensor when set to the default value (40). Stop timing is delayed by additional 100ms when the value is increased by 1.

Unit	Min.	Max.	Default
100ms	30	80	40

00041 Toner Low Decision

00041 specifies the definition time for toner low judgment. When the Developer Toner Sensor detects “toner low status” for longer time than this definition time while the toner stirring screw rotates by 1 revolution, the printer increases the Toner Low Count by 1. This is not changed in the market normally.

Unit	Min.	Max.	Default
10ms	5	1000	5

00042 Supply Cnt ResetTime

00042 specifies the condition to reset the Toner Low Counter to “0”. If the next “toner low status” is not detected within the time specified in 00042 since the last occurrence of “toner empty”, printer judges that toner is enough so the Toner Low Counter is reset. This is not changed in the market normally.

Unit	Min.	Max.	Default
10ms	100 (=1sec)	5000 (=50sec)	1288 (=12.88sec)

00043 Supply Start Counter

When the Toner Low Counter counts “toner low status” some particular times, printer takes toner supplying action. 00043 specifies the number of times to count “toner low status” to trigger toner supplying action. This is not changed in the market normally.

Unit	Min.	Max.	Default
times	1	10	2

00044 Toner Supply Time

00044 specifies the total time to rotate the toner bottle motor in each occasion of toner supplying action. This is not changed in the market normally.

Unit	Min.	Max.	Default
1ms	50	2000	1750

00045 Dev Screw Cycle

00045 specifies the time required that the toner stirring screw in the developer tank rotates by 1 revolution under 80mm/sec. This is not changed in the market normally.

Unit	Min.	Max.	Default
10ms	50	1000	215

00046 Hopper Screw Cycle

00046 specifies the time required that the toner sender screw in the toner hopper rotates by 1 revolution under 80mm/sec. This is not changed in the market normally.

Unit	Min.	Max.	Default
1ms	50	1000	115

00047 T-Empty Clear Count

00047 specifies the condition to cancel Toner Empty. When in the process to cancel Toner Empty, printer clears the Toner Empty error when the printer detects “toner high status” for the time specified in 00047. This is not changed in the market normally.

Unit	Min.	Max.	Default
time	1	10	3

00048 Toner Recovery Time

When in the process to cancel Toner Empty, printer does not clear the Toner Empty error when the printer does not detect “toner high status” for the time specified in 00048. This is not changed in the market normally.

Unit	Min.	Max.	Default
1sec	100	300	260

00049 Toner Empty Counter

Hopper Toner Sensor judges whether or not toner exists or not after completing each toner supplying action. If “toner low status” is detected some particular times as specified in 00049, printer shows Toner Empty error. This is not changed in the market normally.

Unit	Min.	Max.	Default
times	1	10	6

0051 Toner Empty Timer

00051 specifies the definition time for toner low judgment. When the Hopper Toner Sensor detects “toner low status” for longer time than this definition time while the toner sender screw in Toner Hopper rotates by 1 revolution, the printer detects there is no toner in Toner Hopper. This is not changed in the market normally.

Unit	Min.	Max.	Default
10ms	50	1000	50

00053 Init T Supply Number

00053 specifies how many times “toner supply cycles” are repeated in Toner Setup Mode. One cycle consists of 2 steps such as “waiting” for 5 seconds and “toner supplying” for 10 seconds. Toner Setup Mode repeats this cycle some particular times as specified in 00053 or until toner full is detected. This is not changed in the market normally.

Unit	Min.	Max.	Default
times	1	50	20

00054 Toner Stirring Time

When Toner Setup Mode is executed, at first the cartridge supplies the toner into the developer tank and then the stirring screw stirs the toner for particular time. 00054 specifies this particular time. Increment of the value lengthens the stirring time. This is not changed in the market normally.

Unit	Min.	Max.	Default
seconds	60	300	120

00055 Dummy Print Min Leng

This is a parameter for working distance of Dummy Print execution in Operation Mode A.

Min.	Max.	Default
1	10	1

NOTE

Do not change the default value.

00056 Dummy Print Delay

This is a parameter for primary tranfer of Dummy Print execution in Operation Mode B.

Min.	Max.	Default
0	65535	3519

NOTE

Do not change the default value.

00057 Dummy Print Separate

This is a parameter for interval of Dummy Print execution in Operation Mode B.

Min.	Max.	Default
0	65535	590

NOTE

Do not change the default value.

00058 WireCleaning On/Off

This is to set Auto Corona Wire Cleaning ON/OFF. Auto Corona Wire Cleaning is an operation to run wire cleaning at turning on the printer and after completion of a certain amount of prints.

Setting value	Contents
0	Disabled
1 (Default)	Enabled

00059 WireCleaningAfter(m)

This is the execution condition setting for Auto Corona Wire Cleaning. This is normally not changed in the market.

Unit	Min.	Max.	Default
meter	50	1000	100

00060 Wire Cleaning Time

After wire cleaning, very small portions generated by the cleaning may remain on the corona wire. Such small portions are burnt when the Image Corona takes discharging for some period, and as a result expected image quality is achieved. No.00060 specifies how long period the Image Corona takes discharging after cleaning. Drum is rotated at the same time when the Corona is discharging. When this is set to 0 Image Corona does not take discharging.

Unit	Min.	Max.	Default*
1sec	0	120	0

00061-00064 Cleaning MT Lock Cur 1-4

These modes specify the electric current values that denotes the arrival of wire cleaning pad at the terminals. This is not changed in the field.

Unit	Min.	Max.	Default
----	0	1023	330

⚠ NOTE

Do not change this setting in the field. Just keep the default value.

00065 Tr1 Encoder Type

This is used only in the factory and not changed in the field..

Setting value	Contents
0	Encoder Type 0
1	Encoder Type 1
2	Encoder Type 2

⚠ NOTE

Do not change the setting value in the field.

00070 Auto Cut Length 1

This is one of 2 parameters that compensates the cut length. 00070 is used to enter the average length of actual 5 prints of 8.5” long that is used as a reference value for automatic correction of cut length. Use this when the cut length slightly differs from the expected

Unit	Min.	Max.	Default
line	3919	6281	5100

00071 Auto Cut Length 2

This is one of 2 parameters that compensates the cut length. 00071 is used to enter the average length of actual 5 prints of 48” long that is used as a reference value for automatic correction of cut length. Use this when the cut length slightly differs from the expected

Unit	Min.	Max.	Default
line	27619	29981	28800

Reference

Do se follows for compensating the cut length by using BUDs No.70 and 71.

(1) Print 5 pages of each 8.5” long and measure the exact length of each page. Get the average length of these 5 pages.
(2) Enter the average length of 5 pages of 8.5” in BUD No.70.
(3) Print 5 pages of each 48” long and measure the exact length of each page. Get the average length of these 5 pages.
(4) Enter the average length of 5 pages of 48” in BUD No.71.

The printer automatically compensates the cut length taking the above reference values into consideration.

LINE = Average (mm) / 25.4 * 600
LINE = Average (inch) * 600

00072-00096 CutLength Correct 00-24

It is possible to independently compensate the cut length for each of 25 media types 00 to 24. If the cut length of only a particular media type does not become correct due to such factor as the ratio of shrink, please compensate it in the concerning BUD. Increment of the value lengthens the cut length by 1mm.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00072	CutLength Correct 00	0.1mm	-100	100	0
00073	CutLength Correct 01				
00074	CutLength Correct 02				
00075	CutLength Correct03				
00076	CutLength Correct04				
00077	CutLength Correct05				
00078	CutLength Correct06				
00079	CutLength Correct07				
00080	CutLength Correct08				
00081	CutLength Correct09				
00082	CutLength Correct10				
00083	CutLength Correct11				
00084	CutLength Correct12				
00085	CutLength Correct13				
00086	CutLength Correct14				
00087	CutLength Correct15				
00088	CutLength Correct16				
00089	CutLength Correct17				
00090	CutLength Correct18				
00091	CutLength Correct19				
00092	CutLength Correct20				
00093	CutLength Correct21				
00094	CutLength Correct22				
00095	CutLength Correct23				
00096	CutLength Correct24				

00097-00100 Set Drum 1-4 Slow Mode

When the Drum stops normal rotation, printer then rotates the Drum to the opposite direction in slow speed to reduce excess pressure between Cleaner Blade and Drum surface. 00097-00100 enables or disables this function per color. It is set properly in the factory and normally not required to change..

	Item Name
00097	Set Drum K Slow Mode
00098	Set Drum C Slow Mode
00099	Set Drum M Slow Mode
00100	Set Drum Y Slow Mode

Setting value	Contents
0	Drum Slow Mode is disabled.
1 (Default)	Drum Slow Mode is enabled.

00129 ExitEncoder Jam Time

000129 defines the judgment time that is used when the Fuser Encoder Sensor judges the occurrence of fuser jam. When the encoder stops for longer time than the time defined by No.129, printer judges paper is jamming in fuser. Increment of the value by 1 lengthens the judgment time by 1ms.

Unit	Min.	Max.	Default
ms	100	3000	300

00131-00155 Media MaximumStack

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 specify how many prints can be stacked on the Upper Print Tray before interrupting printing. Setting is available per media.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00131	Media00 Maximum Stack	sheet	1	100	50
00132	Media01 Maximum Stack				
00133	Media02 Maximum Stack				
00134	Media03 Maximum Stack				
00135	Media04 Maximum Stack				
00136	Media05 Maximum Stack				
00137	Media06 Maximum Stack				
00138	Media07 Maximum Stack				
00139	Media08 Maximum Stack				
00140	Media09 Maximum Stack				
00141	Media10 Maximum Stack				
00142	Media11 Maximum Stack				
00143	Media12 Maximum Stack				
00144	Media13 Maximum Stack				
00145	Media14 Maximum Stack				
00146	Media15 Maximum Stack				
00147	Media16 Maximum Stack				
00148	Media17 Maximum Stack				
00149	Media18 Maximum Stack				
00150	Media19 Maximum Stack				
00151	Media20 Maximum Stack				
00152	Media21 Maximum Stack				
00153	Media22 Maximum Stack				
00154	Media23 Maximum Stack				
00155	Media24 Maximum Stack				

00156-00180 Media Type 00-24

These are modes that specify "media type" for each of 25 kinds of media.

> **NOTE**
> These modes do not work when the firmware version is K135FX0040 or older.

	Item Name
00156	Media00 Type
00157	Media01 Type
00158	Media02 Type
00159	Media03 Type
00160	Media04 Type
00161	Media05 Type
00162	Media06 Type
00163	Media07 Type
00164	Media08 Type
00165	Media09 Type
00166	Media10 Type
00167	Media11 Type
00168	Media12 Type
00169	Media13 Type
00170	Media14 Type
00171	Media15 Type
00172	Media16 Type
00173	Media17 Type
00174	Media18 Type
00175	Media19 Type
00176	Media20 Type
00177	Media21 Type
00178	Media22 Type
00179	Media23 Type
00180	Media24 Type

Setting value	Contents
0	Plane Paper
1	Tracing Paper
2	Film
3	Heavy
4	Gross

00181 StackerFull Min Leng

This is a mode that works for detecting "Stacker full".

> **NOTE**
> This mode does not work when the firmware version is K135FX0040 or older.

Unit	Min.	Max.	Default
1mm	210	600	350

00400-00403 1st Current KCMY 080

These can adjust the electric current supplied to the Image Corona Units when printing by 80mm/s. Normally these are not changed in the market.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00400	1st Current K 080	µA	-1700	-700	-1500
00401	1st Current C 080				
00402	1st Current M 080				
00403	1st Current Y 080				

00404-00407 1st Current KCMY 050

These can adjust the electric current supplied to the Image Corona Units when printing by 50mm/s. Normally these are not changed in the market.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00404	1st Current K 050	µA	-1700	-700	-1500
00405	1st Current C 050				
00406	1st Current M 050				
00407	1st Current Y 050				

00416-00419 Tr1 Voltage KCMY 080

These can adjust the voltage supplied to the Primary Transfer Rollers when printing by 80mm/s. Normally these are not changed in the market.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00416	Tr1 Voltage K 080	V	0	2000	450
00417	Tr1 Voltage C 080				400
00418	Tr1 Voltage M 080				350
00419	Tr1 Voltage Y 080				300

00420-00423 Tr1 Voltage KCMY 050

These can adjust the voltage supplied to the Primary Transfer Rollers when printing by 50mm/s. Normally these are not changed in the market.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00420	Tr1 Voltage K 050	V	0	2000	450
00421	Tr1 Voltage C 050				400
00422	Tr1 Voltage M 050				350
00423	Tr1 Voltage Y 050				300

00436-00439 Tr1 Target Current KCMY

00436 to 00439 specify the Target Current per color, which is used by the Auto Primary Transfer Current Adjustment to adjust the voltage for Primary Transfer Rollers to achieve the same current value as Target Current. This is to be used for 80mm/s printing.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00436	Tr1 Target Current K	μA	0	60	25
00437	Tr1 Target Current C				
00438	Tr1 Target Current M				
00439	Tr1 Target Current Y				

00440-00441 Tr2(+) Voltage (080/050)

00440 specifies the positive voltage supplied to the Secondary Transfer Roller when printing by 80mm/s. 00441 is the same setting for printing by 50mm/s. Normally these are not changed in the market.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00440	Tr2(+) Voltage (080)	V	0	3000	1600
00441	Tr2(+) Voltage (050)				

00444-00445 Tr2(-) Voltage (080/050)

00444 specifies the negative voltage supplied to the Secondary Transfer Roller when printing by 80mm/s. 00445 is the same setting for printing by 50mm/s. Normally these are not changed in the market.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00444	Tr2(-) Voltage (080)	V	-3000	0	-1600
00445	Tr2(-) Voltage (050)				

00450 Tr2 On Timing(Step)

00450 specifies the place to start supplying voltage to the Secondary Transfer Roller. It is at about 118.2mm from the Registration Sensor 3 under the default setting (0). Increment of the value delays the timing.

Unit	Min.	Max.	Default
mm	-10	10	0

00451 Tr2 OffTiming(Step)

000451 specifies the place to stop supplying voltage to the Secondary Transfer Roller. It is at about 128.2mm from the Registration Sensor 3 under the default setting (0). Increment of the value delays the timing.

Unit	Min.	Max.	Default
mm	-10	10	0

00460-00463 Dev Bias KCMY DCtrl:OFF

00460 to 00463 specify the output voltage to the Developer Roller per color. These voltages are supplied to the Developer Rollers in printing when the Density Control is set to OFF. Increment of the value increases the density of concerning color.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00460	Dev Bias K DCtrl:OFF	V	-600	0	-200
00461	Dev Bias C DCtrl:OFF				-180
00462	Dev Bias M DCtrl:OFF				-180
00463	Dev Bias Y DCtrl:OFF				-180

Reference

Density Control is set to ON in normal usage of KIP 800 series printer. These may be used only in limited condition to run the machine with setting it to OFF for some reason.

00464-00467 SupBias+ KCMY DCtrl:OFF

00464 to 00467 specify the positive bias voltage to the Supply Roller per color. Setting value means the differential value against the voltage of Developer Roller. These voltages are supplied to the Supply Rollers in printing when the Density Control is set to OFF. Increment of the value allows the Supply Roller to remove more toner from the Developer Roller.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00464	SupBias+ K DCtrl:OFF	V	-600	600	100
00465	SupBias+ C DCtrl:OFF				
00466	SupBias+ M DCtrl:OFF				
00467	SupBias+ Y DCtrl:OFF				

Reference

Density Control is set to ON in normal usage of KIP 800 series printer. These may be used only in limited condition to run the machine with setting it to OFF for some reason.

00468-00471 SupBias- KCMY DCtrl:OFF

00468 to 00471 specify the negative bias voltage to the Supply Roller per color. Setting value means the differential value against the voltage of Developer Roller. These voltages are supplied to the Supply Rollers in printing when the Density Control is set to OFF. Increment of the value allows the Supply Roller to supply more toner to the Developer Roller.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00468	SupBias+ K DCtrl:OFF	V	-600	600	-350
00469	SupBias+ C DCtrl:OFF				
00470	SupBias+ M DCtrl:OFF				
00471	SupBias+ Y DCtrl:OFF				

Reference

Density Control is set to ON in normal usage of KIP 800 series printer. These may be used only in limited condition to run the machine with setting it to OFF for some reason.

00472-00475 RegBias KCMY DCtrl:OFF

000472 to 475 specify the voltage to the Regulation Roller per color. Setting value means the differential value against the voltage of Developer Roller. These voltages are supplied to the Regulation Rollers in printing when the Density Control is set to OFF. Increment of the value allows the Regulation Roller to remove more toner from the Developer Roller.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00472	RegBias K DCtrl:OFF	V	-600	600	-80
00473	RegBias C DCtrl:OFF				
00474	RegBias M DCtrl:OFF				
00475	RegBias Y DCtrl:OFF				

Reference

Density Control is set to ON in normal usage of KIP 800 series printer. These may be used only in limited condition to run the machine with setting it to OFF for some reason.

00476-00479 Dev Bias KCMY DCtrl:ON

00476 to 00479 specify the output voltage to the Developer Roller per color. These voltages are supplied to the Developer Rollers in printing when the Density Control is set to ON. Increment of the value increases the density of concerning color.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00476	Dev Bias K DCtrl:ON	V	-600	0	-200
00477	Dev Bias C DCtrl:ON				-180
00478	Dev Bias M DCtrl:ON				-180
00479	Dev Bias Y DCtrl:ON				-180

00480-00483 SupBias+ KCMY DCtrl:ON

00480 to 00483 specify the positive bias voltage to the Supply Roller per color. Setting value means the differential value against the voltage of Developer Roller. These voltages are supplied to the Supply Rollers in printing when the Density Control is set to ON. Increment of the value allows the Supply Roller to remove more toner from the Developer Roller.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00480	SupBias+ K DCtrl:ON	V	-600	600	100
00481	SupBias+ C DCtrl:ON				
00482	SupBias+ M DCtrl:ON				
00483	SupBias+ Y DCtrl:ON				

00484-00487 SupBias- KCMY DCtrl:ON

00484 to 00487 specify the negative bias voltage to the Supply Roller per color. Setting value means the differential value against the voltage of Developer Roller. These voltages are supplied to the Supply Rollers in printing when the Density Control is set to ON. Increment of the value allows the Supply Roller to supply more toner to the Developer Roller.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00484	SupBias- K DCtrl:ON	V	-600	600	-350
00485	SupBias- C DCtrl:ON				
00486	SupBias- M DCtrl:ON				
00487	SupBias- Y DCtrl:ON				

00488-00491 RegBias KCMY DCtrl:ON

00488 to 00491 specify the voltage to the Regulation Roller per color. Setting value means the differential value against the voltage of Developer Roller. These voltages are supplied to the Regulation Rollers in printing when the Density Control is set to ON. Increment of the value allows the Regulation Roller to remove more toner from the Developer Roller.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00488	RegBias K DCtrl:ON	V	-600	600	-80
00489	RegBias C DCtrl:ON				
00490	RegBias M DCtrl:ON				
00491	RegBias Y DCtrl:ON				

00498-00501 Transformer1-4 Ref Vol

00498 to 00501 specify the standard voltage of Transformers 1 to 4.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00498	Transformer1 Ref Vol	V	0	1023	410
00499	Transformer2 Ref Vol				
00500	Transformer3 Ref Vol				
00501	Transformer4 Ref Vol				

⚠ NOTE

Do not change the default value.

00502-00506 D-Sensor1-5 Current1

00502 to 00506 save the output from Density Sensors (Auto Focus). When **Density Sensor Adjustment for AF** is executed to calibrate the Density Sensors for Auto Focus adjustment, correct values are automatically written and saved. It is unnecessary to manually adjust these BUDs.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00502	D-Sensor1 Current1	V	0	1023	500
00503	D-Sensor2 Current1				
00504	D-Sensor3 Current1				
00505	D-Sensor4 Current1				
00506	D-Sensor5 Current1				

00507-00511 D-Sensor1-5 Current2

00502 to 00506 save the output from Density Sensors (Density Lock). When **Renew Target Density** is executed to calibrate the Density Sensors for Density Lock, correct values are automatically written and saved. It is unnecessary to manually adjust these BUDs.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00507	D-Sensor1 Current2	V	0	1023	0
00508	D-Sensor2 Current2				
00509	D-Sensor3 Current2				
00510	D-Sensor4 Current2				
00511	D-Sensor5 Current2				

00512-00515 Belt Density KCMY

This BUD automatically saves the density of Transfer Belt that is captured when **Renew Target Density** is executed. This density data is compared with the density data captured whenever Density Control is executed, and sensor is then appropriately calibrated if there is difference.

Unit	Min.	Max.	Default
-	0	4095	0

⚠ NOTE

As Renew Target Density automatically writes a correct value automatically in this BUD, do not change this setting manually.

00516-00519 Density Target (KCMY)

00516 to 00519 save the CMYK Target Densities that are used whenever Density Control is executed automatically or manually. Target Densities are automatically saved in these BUDs if only you perform **Renew Target Density**. It is unnecessary to manually change these values.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00516	Density Target K	-	0	4095	0
00517	Density Target C				
00518	Density Target M				
00519	Density Target Y				

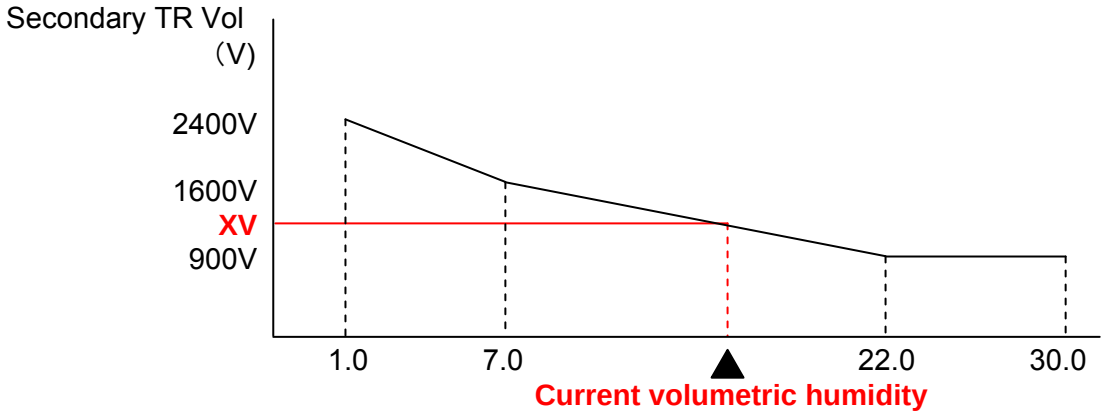
00520-00619 Tr2 Auto Vol Type00A-24D

It is possible to specify Secondary Transfer Voltage for 4 volumetric humidity conditions respectively. When the “Auto Secondary Transfer Current Adjustment” is set to ON in 00718, these settings are utilized for calculating out an optimum Secondary Transfer Voltage for the current usage condition.

Settings per media type is available.

Reference

Printer detect the current temperature and humidity whenever it starts printing, and calculates the current volumetric humidity. Then it calculates an optimum Secondary Transfer Voltage (XV) for the current volumetric humidity based on the slope of graph that is formed by the Secondary Transfer Voltages specified to 4 standard points.



	Item Name	Setting value			
		Unit	Min.	Max.	Default
00520	Tr2 Auto Vol Type00A	V	0	3000	2400
00521	Tr2 Auto Vol Type00B				1600
00522	Tr2 Auto Vol Type00C				900
00523	Tr2 Auto Vol Type00D				900

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00524	Tr2 Auto Vol Type01A	V	0	3000	2400
00525	Tr2 Auto Vol Type01B				1600
00526	Tr2 Auto Vol Type01C				900
00527	Tr2 Auto Vol Type01D				900

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00528	Tr2 Auto Vol Type02A	V	0	3000	2400
00529	Tr2 Auto Vol Type02B				1600
00530	Tr2 Auto Vol Type02C				900
00531	Tr2 Auto Vol Type02D				900

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00532	Tr2 Auto Vol Type03A	V	0	3000	2400
00533	Tr2 Auto Vol Type03B				1600
00534	Tr2 Auto Vol Type03C				900
00535	Tr2 Auto Vol Type03D				900

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00536	Tr2 Auto Vol Type04A	V	0	3000	2400
00537	Tr2 Auto Vol Type04B				1600
00538	Tr2 Auto Vol Type04C				900
00539	Tr2 Auto Vol Type04D				900

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00540	Tr2 Auto Vol Type05A	V	0	3000	2400
00541	Tr2 Auto Vol Type05B				1600
00542	Tr2 Auto Vol Type05C				900
00543	Tr2 Auto Vol Type05D				900

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00544	Tr2 Auto Vol Type06A	V	0	3000	2400
00545	Tr2 Auto Vol Type06B				1600
00546	Tr2 Auto Vol Type06C				900
00547	Tr2 Auto Vol Type06D				900

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00548	Tr2 Auto Vol Type07A	V	0	3000	2400
00549	Tr2 Auto Vol Type07B				1600
00550	Tr2 Auto Vol Type07C				900
00551	Tr2 Auto Vol Type07D				900

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00552	Tr2 Auto Vol Type08A	V	0	3000	2400
00553	Tr2 Auto Vol Type08B				1600
00554	Tr2 Auto Vol Type08C				900
00555	Tr2 Auto Vol Type08D				900

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00556	Tr2 Auto Vol Type09A	V	0	3000	2400
00557	Tr2 Auto Vol Type09B				1600
00558	Tr2 Auto Vol Type09C				900
00559	Tr2 Auto Vol Type09D				900

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00560	Tr2 Auto Vol Type10A	V	0	3000	2400
00561	Tr2 Auto Vol Type10B				1600
00562	Tr2 Auto Vol Type10C				900
00563	Tr2 Auto Vol Type10D				900

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00564	Tr2 Auto Vol Type11A	V	0	3000	2400
00565	Tr2 Auto Vol Type11B				1600
00566	Tr2 Auto Vol Type11C				900
00567	Tr2 Auto Vol Type11D				900

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00568	Tr2 Auto Vol Type12A	V	0	3000	2400
00569	Tr2 Auto Vol Type12B				1600
00570	Tr2 Auto Vol Type12C				900
00571	Tr2 Auto Vol Type12D				900

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00572	Tr2 Auto Vol Type13A	V	0	3000	2400
00573	Tr2 Auto Vol Type13B				1600
00574	Tr2 Auto Vol Type13C				900
00575	Tr2 Auto Vol Type13D				900

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00576	Tr2 Auto Vol Type14A	V	0	3000	2400
00577	Tr2 Auto Vol Type14B				1600
00578	Tr2 Auto Vol Type14C				900
00579	Tr2 Auto Vol Type14D				900

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00580	Tr2 Auto Vol Type15A	V	0	3000	2400
00581	Tr2 Auto Vol Type15B				1600
00582	Tr2 Auto Vol Type15C				900
00583	Tr2 Auto Vol Type15D				900

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00584	Tr2 Auto Vol Type16A	V	0	3000	2400
00585	Tr2 Auto Vol Type16B				1600
00586	Tr2 Auto Vol Type16C				900
00587	Tr2 Auto Vol Type16D				900

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00588	Tr2 Auto Vol Type17A	V	0	3000	2400
00589	Tr2 Auto Vol Type17B				1600
00590	Tr2 Auto Vol Type17C				900
00591	Tr2 Auto Vol Type17D				900

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00592	Tr2 Auto Vol Type18A	V	0	3000	2400
00593	Tr2 Auto Vol Type18B				1600
00594	Tr2 Auto Vol Type18C				900
00595	Tr2 Auto Vol Type18D				900

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00596	Tr2 Auto Vol Type19A	V	0	3000	2400
00597	Tr2 Auto Vol Type19B				1600
00598	Tr2 Auto Vol Type19C				900
00599	Tr2 Auto Vol Type19D				900

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00600	Tr2 Auto Vol Type20A	V	0	3000	2400
00601	Tr2 Auto Vol Type20B				1600
00602	Tr2 Auto Vol Type20C				900
00603	Tr2 Auto Vol Type20D				900

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00604	Tr2 Auto Vol Type21A	V	0	3000	2400
00605	Tr2 Auto Vol Type21B				1600
00606	Tr2 Auto Vol Type21C				900
00607	Tr2 Auto Vol Type21D				900

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00608	Tr2 Auto Vol Type22A	V	0	3000	2400
00609	Tr2 Auto Vol Type22B				1600
00610	Tr2 Auto Vol Type22C				900
00611	Tr2 Auto Vol Type22D				900

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00612	Tr2 Auto Vol Type23A	V	0	3000	2400
00613	Tr2 Auto Vol Type23B				1600
00614	Tr2 Auto Vol Type23C				900
00615	Tr2 Auto Vol Type23D				900

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00616	Tr2 Auto Vol Type24A	V	0	3000	2400
00617	Tr2 Auto Vol Type24B				1600
00618	Tr2 Auto Vol Type24C				900
00619	Tr2 Auto Vol Type24D				900

00717 Tr1 Auto Adjustment

00717 enables or disables the Auto Primary Transfer Current Adjustment.

Setting value	Contents
0	Auto Primary Transfer Current Adjustment is disabled.
1	Auto Primary Transfer Current Adjustment is enabled. Adjustment takes place whe printer is turned on and when printing is to start.
2 (Default)	Auto Primary Transfer Current Adjustment is enabled. Adjustment takes place when printer is turned on.

00718 Tr2 Auto Adjustment

00718 enables or disables the Auto Secondary Transfer Current Adjustment.

Setting value	Contents
0	Auto Secondary Transfer Current Adjustment does not work.
1	Auto Secondary Transfer Current Adjustment does not work. Printer monitors the water vapor contents and then calculates out an optimum current for Secondary Transfer.
2 (Default)	Auto Secondary Transfer Current Adjustment does not work. Printer monitors the current that flows on the printing media and belt, and then calculates out an optimum current for Secondary Transfer.

00719 Neutral.Auto Adjust

00719 enables or disables the Auto Voltage Adjustment for Discharge Needles.

Setting value	Contents
0	Auto Voltage Adjustment for Discharge Needles is disabled.
1 (Default)	Auto Voltage Adjustment for Discharge Needles is enabled.

00720 Density Adjustment

00720 enables or disables the Auto Density Control.

Setting value	Contents
0	Auto Density Control is disabled in case 01785 is set to 0.
1 (Default)	Auto Density Control is enabled.

⚠ NOTE

To set Auto Density Control disabled, set both of 00720 and 01785 to “0”.

00725-00728 Tr1TargetCurrent050

00725 to 00728 specify the Target Current per color, which is used by the Auto Primary Transfer Current Adjustment to adjust the voltage for Primary Transfer Rollers to achieve the same current value as Target Current. This is to be used for 50mm/s printing.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00725	Tr1 Target Current K050	μA	0	60	15
00726	Tr1 Target Current C050				
00727	Tr1 Target Current M050				
00728	Tr1 Target Current Y050				

00738-00773 Tr2 Width Slope

These are a parameter for Secondary Transfer Error detection.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00738	Tr2 Width Slope 210	-	0	1023	614
00739	Tr2 Width Slope 230				579
00740	Tr2 Width Slope 250				546
00741	Tr2 Width Slope 270				515
00742	Tr2 Width Slope 290				486
00743	Tr2 Width Slope 310				458
00744	Tr2 Width Slope 330				432
00745	Tr2 Width Slope 350				407
00746	Tr2 Width Slope 370				384
00747	Tr2 Width Slope 390				362
00748	Tr2 Width Slope 410				342
00749	Tr2 Width Slope 430				322
00750	Tr2 Width Slope 450				304
00751	Tr2 Width Slope 470				287
00752	Tr2 Width Slope 490				270
00753	Tr2 Width Slope 510				255
00754	Tr2 Width Slope 530				240
00755	Tr2 Width Slope 550				226
00756	Tr2 Width Slope 570				213
00757	Tr2 Width Slope 590				200
00758	Tr2 Width Slope 610				188
00759	Tr2 Width Slope 630				176
00760	Tr2 Width Slope 650				164
00761	Tr2 Width Slope 670				153
00762	Tr2 Width Slope 690				141
00763	Tr2 Width Slope 710				130
00764	Tr2 Width Slope 730				119
00765	Tr2 Width Slope 750				107
00766	Tr2 Width Slope 770				96
00767	Tr2 Width Slope 790				84
00768	Tr2 Width Slope 810				72
00769	Tr2 Width Slope 830				59
00770	Tr2 Width Slope 850				46
00771	Tr2 Width Slope 870				33
00772	Tr2 Width Slope 890				18
00773	Tr2 Width Slope 910				3

⚠ NOTE

Do not change the default value.

00800-00803 Dev Motor KCMY 080

00800 to 00803 specify the number of rotation of the Developer Motor per color. These are applied when printing under 80mm/sec. Decrement of the value increases the rotation of motor. Setting change in the field is not expected as this would affect wide range of control.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00800	Dev Motor K 080	-	0	65535	19629
00801	Dev Motor C 080				
00802	Dev Motor M 080				
00803	Dev Motor Y 080				

00804-00807 Dev Motor KCMY 050

00804 to 00807 specify the number of rotation of the Developer Motor per color. These are applied when printing under 50mm/sec. Decrement of the value increases the rotation of motor. Setting change in the field is not expected as this would affect wide range of control.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00804	Dev Motor K 050	-	0	65535	31391
00805	Dev Motor C 050				
00806	Dev Motor M 050				
00807	Dev Motor Y 050				

00816-00819 Drum Motor KCMY 080

00816 to 00819 specify the number of rotation of the Drum Motor per color. These are applied when printing under 80mm/sec. Decrement of the value increases the rotation of motor. Setting change in the field is not expected as this would affect wide range of control.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00816	Drum Motor K 080	-	0	65535	7852
00817	Drum Motor C 080				
00818	Drum Motor M 080				
00819	Drum Motor Y 080				

00820-00823 Drum Motor KCMY 050

00820 to 00823 specify the number of rotation of the Drum Motor per color. These are applied when printing under 50mm/sec. Decrement of the value increases the rotation of motor. Setting change in the field is not expected as this would affect wide range of control.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00820	Drum Motor K 050	-	0	65535	12556
00821	Drum Motor C 050				
00822	Drum Motor M 050				
00823	Drum Motor Y 050				

00832 Belt Motor 080

00832 specifies the number of rotation of the Belt Motor. This is applied when printing under 80mm/sec. Decrement of the value increases the rotation of motor. Setting change in the field is not expected as this would affect wide range of control.

Unit	Min.	Max.	Default
-	0	65535	8851

00833 Belt Motor 050

00833 specifies the number of rotation of the Belt Motor. This is applied when printing under 50mm/sec. Decrement of the value increases the rotation of motor. Setting change in the field is not expected as this would affect wide range of control.

Unit	Min.	Max.	Default
-	0	65535	14155

00836 Fuser Motor 080

00836 specifies the number of rotation of the Fuser Motor. This is applied when printing under 80mm/sec. Decrement of the value increases the rotation of motor.

Unit	Min.	Max.	Default
-	0	65535	6252

00837 Fuser Motor 050

00837 specifies the number of rotation of the Fuser Motor. This is applied when printing under 50mm/sec. Decrement of the value increases the rotation of motor.

Unit	Min.	Max.	Default
-	0	65535	9998

00840 Fuser Motor(Idle)

00840 specifies the number of rotation of the Fuser Motor in warming up. Decrement of the value increases the rotation of motor. Setting change in the field is not expected as this would affect wide range of control.

Unit	Min.	Max.	Default
-	0	65535	6252

00841 Deck1 Motor 080

00841 specifies the number of rotation of the Deck 1 Motor. This is applied when printing under 80mm/sec. Decrement of the value increases the rotation of motor. Setting change in the field is not expected as this would affect wide range of control.

Unit	Min.	Max.	Default
-	0	65535	8245

00842 Deck1 Motor 050

00842 specifies the number of rotation of the Deck 1 Feed Motor. This is applied when printing under 50mm/sec. Decrement of the value increases the rotation of motor. Setting change in the field is not expected as this would affect wide range of control.

Unit	Min.	Max.	Default
-	0	65535	13186

00845 Deck2 Motor 080

00845 specifies the number of rotation of the Deck 2 Feed Motor. This is applied when printing under 80mm/sec. Decrement of the value increases the rotation of motor. Setting change in the field is not expected as this would affect wide range of control.

Unit	Min.	Max.	Default
-	0	65535	8245

00846 Deck2 Motor 050

00846 specifies the number of rotation of the Deck 2 Feed Motor. This is applied when printing under 50mm/sec. Decrement of the value increases the rotation of motor. Setting change in the field is not expected as this would affect wide range of control.

Unit	Min.	Max.	Default
-	0	65535	13186

00849-00851 Regist Motor1-3 080

00849 to 00851 specify the number of rotation of the Registration Motor 1, 2 and 3. These are applied when printing under 80mm/sec. Decrement of the value increases the rotation of motor. Setting change in the field is not expected as this would affect wide range of control.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00849	Regist Motor1 080	-	0	65535	8245
00850	Regist Motor2 080				
00851	Regist Motor3 080				

00852-00854 Regist Motor1-3 050

00852 to 00854 specify the number of rotation of the Registration Motor 1, 2 and 3. These are applied when printing under 50mm/sec. Decrement of the value increases the rotation of motor. Setting change in the field is not expected as this would affect wide range of control.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00852	Regist Motor1 050	-	0	65535	13186
00853	Regist Motor2 050				
00854	Regist Motor3 050				

00861 Feed Motor 080

00861 specifies the number of rotation of the Feed Motor. This is applied when printing under 80mm/sec. Decrement of the value increases the rotation of motor. Setting change in the field is not expected as this would affect wide range of control.

Unit	Min.	Max.	Default
-	0	65535	8245

00862 Feed Motor 050

00862 specifies the number of rotation of the Feed Motor. This is applied when printing under 50mm/sec. Decrement of the value increases the rotation of motor. Setting change in the field is not expected as this would affect wide range of control.

Unit	Min.	Max.	Default
-	0	65535	13186

00865-00866 Web Motor 080/050

00865 and 00866 specify the number of rotation of Web Motor respectively for 80mm/sec and 50mm/sec. Decrement of the value increases the rotation of motor. Setting change in the field is not expected as this would affect wide range of control.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00865	Web Motor 080	-	0	4095	533
00866	Web Motor 050				

00869-00870 W Toner Motor 080/050

00869 and 00870 specify the number of rotation of Waste Toner Motor respectively for 80mm/sec and 50mm/sec. Decrement of the value increases the rotation of motor. Setting change in the field is not expected as this would affect wide range of control.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00869	W Toner Motor 080	-	0	63	45
00870	W Toner Motor 050				

00873-00874 Tension Target 080/050

00873 and 00874 specify the Target Tension respectively for 80mm/sec and 50mm/sec. Increment of the value gives more tension to the printing media.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
873	Tension Target 080	-	0	255	15
874	Tension Target 050				

00877 Tension Gain

00877 adjusts the degree of response of Fuser Motor against the change of tension in tension control. Increment of the value lets Fuser Motor have more response.

Unit	Min.	Max.	Default
-	0	1023	10

00878 TensionSamplingCycle

00878 also adjusts the degree of response of Fuser Motor against the change of tension in tension control, being combined with 00877. This is normally not changed in the market.

Unit	Min.	Max.	Default
-	1	255	4

00879 Tension Start Pos

00879 specifies where to start Tension Control. Under the default, it is started when the leading edge passes over the Registration Sensor 3 by 280mm. Increment of the value delays to start Tension Control.

Unit	Min.	Max.	Default
1=0.0165mm	0	65535	16969

00880 Tension Stop Pos

00880 specifies where to stop Tension Control. Under the default, it is stopped when the trailing edge passes over the Registration Sensor 3 by 200mm. Increment of the value delays to stop Tension Control.

Unit	Min.	Max.	Default
1=0.0165mm	0	65535	12121

00881-00882 Tension Speed (Max/Min)

When the Tension Control adjusts the media tension, it alternately increases and decreases the rotation of Fuser Motor to maintain even tension as much as possible. 00881 and 00882 are parameters to specify maximum rotation and minimum rotation. When these are set to default values (188), the variation range of motor rotation (max and min) is limited to about +/- 3%.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00881	Tension Speed (Max)	-	0	255	188
00882	Tension Speed (Min)				

00883-00886 Dev Motor Current KCMY

00883 to 00886 specify the electric current of Developer Motor per color. Increment of the value increases the current. Setting change in the field is not expected as this would affect wide range of control.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00883	Dev Motor Current K	-	100	1023	600
00884	Dev Motor Current C				
00885	Dev Motor Current M				
00886	Dev Motor Current Y				

00887-00890 Drum Motor Cur KCMY

00887 to 00890 specify the electric current of Drum Motor per color. Increment of the value increases the current. Setting change in the field is not expected as this would affect wide range of control.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00887	Drum Motor Current K	-	100	1023	630
00888	Drum Motor Current C				
00889	Drum Motor Current M				
00890	Drum Motor Current Y				

00891 Belt Motor Current

00891 specifies the electric current of Belt Motor. Increment of the value increases the current. Setting change in the field is not expected as this would affect wide range of control.

Unit	Min.	Max.	Default
-	100	1023	310

00892-00894 Fuser MT Cur(Idle/Print/Ready)

00892 to 00894 specify the electric current of Belt Motor in each condition such as warming up, printing and ready. Increment of the value increases the current. Setting change in the field is not expected as this would affect wide range of control.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00892	Fuser MT Cur(Idle)	-	100	1023	438
00893	Fuser MT Cur(Print)				
00894	Fuser MT Cur(Ready)				

00895-00896 Deck1/2 Motor Current

00895 and 00896 specify the electric current of Deck 1 and 2 Feed Motors. Increment of the value increases the current. Setting change in the field is not expected as this would affect wide range of control.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00895	Deck1 Motor Current	-	100	1023	438
00896	Deck2 Motor Current				

00897-00899 Regist Motor1-3 Cur

00897 to 00899 specify the electric current of Registration Motors 1, 2 and 3. Increment of the value increases the current. Setting change in the field is not expected as this would affect wide range of control.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00897	Regist Motor1 Cur	-	100	1023	310
00898	Regist Motor2 Cur				
00899	Regist Motor3 Cur				

00900 Feed Motor Cur

00900 specifies the electric current of Feed Motor. Increment of the value increases the current. Setting change in the field is not expected as this would affect wide range of control.

Unit	Min.	Max.	Default
-	100	1023	310

00901 Waste Toner Motor Cur

00901 specifies the electric current of Waste Toner Motor. Increment of the value increases the current. Setting change in the field is not expected as this would affect wide range of control.

Unit	Min.	Max.	Default
-	100	1023	228

00902 Motor Holding Cur

00902 specifies the electric current of all motors, which are supplied when these motors are not rotating. Increment of the value increases the current. Setting change in the field is not expected as this would affect wide range of control.

Unit	Min.	Max.	Default
-	100	1023	200

00903-00906 MT Slow up current 1-4

00903 to 00906 specifies the electric current of several feeding motors which are supplied when in particular conditions. Increment of the value increases the current. Setting change in the field is not expected as this would affect wide range of control.

	Item Name	Setting value		
		Min.	Max.	Default
00903	MT Slow up Current 1 (Slow up/down of Deck Feed Motor)	100	1023	838
00904	MT Slow up Current 2 (Slow up/down of Feed Motor, Registration motor 1/2/3)			364
00905	MT Slow up Current 3 (Feed Motor, Registration motor 1/2/3 in roll end)			145
00906	MT Slow up Current 4 (Not used)			438

00947 Drum Slow Mode Step1

When the printer is turned on, or when the Process Unit is opened then closed, Drum is additionally rotated in the normal direction by slower speed than normal for a while for securely transmitting the driving force. 00947 specifies how long time slow speed rotation continues.

Unit	Min.	Max.	Default
-	0	511	0

Reference

Rotation by slow speed for certain period of time is required after returning the Process Unit back in the machine, because the driving force may not be transmitted immediately if soon rotated by normal speed.

NOTE

Do not change the default value.

00949 Dev Slow Mode Step

When the normal rotation of Developer Motor stops then it is rotated in the other direction by slower speed for a while. 00949 specifies how long time slow speed rotation continues.

Unit	Min.	Max.	Default
-	0	511	5

Reference

Rotation by slow speed in the other direction is required when the Developer Motor is to stop normal rotation, because it decreases the pressure to the Developer Roller.

NOTE

Do not change the default value.

00950 Dev MT Speed Ratio

00950 specifies the ratio of speed difference between Drum Motor and Developer Motor for enhancing the image quality. Increment of the value makes the speed of Developer Motor slower against that of Drum Motor.

Unit	Min.	Max.	Default
%	50	200	97

Reference

The speed of Developer Motor immediately after the start of printing is just as specified in 00800 to 00807 (Dev Motor KCMY 080/050), which is as fast as that of Drum Motor. It is then compensated by 00950 when image printing starts. The speed differences between 2 motors are 3% (100-97=3) when 00950 is set to the default value 97.
(It is almost corresponding to 77.6mm/sec under 80mm/sec)

00951 Tension Control

00951 enables or disables the Tension Control function. This is normally set to enable, and not to be changed when in use.

Setting value	Contents
0	Tension Control function is disabled.
1 (Default)	Tension Control function is enabled.

00952 IntegralCompensation

00952 is a parameter for Tension Control that is not changed in the market. Keep this setting to the default.

Setting value	Contents
0 (Default)	Integral Compensation is enabled.
1	Integral Compensation is disabled.

00953-00956 Drum Stop Position KCMY

00953 to 00956 specify the stop position of each Drum from the standard positions for stabilizing the image quality. K is the reference, and other colors are adjusted to K. These are normally not changed in the market.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00953	Drum Stop Position K	-	0	32000	0
00954	Drum Stop Position C				21656
00955	Drum Stop Position M				11312
00956	Drum Stop Position Y				986

⚠ NOTE

Do not change the default value.

00957-00958 Reference Speed 080/050

00957 and 00958 are the parameters for adjusting the timing that the print image and the printing media meet with each other at the Secondary Transfer section. Deck 1/2 Motor, Feed Motor and Registration Motors 1/2/3 are related. These are not changed in the market normally.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00957	Reference Speed 080	-	0	65535	8245
00958	Reference Speed 050				13186

00961-00962 Motor Max Speed 080/050

00961 and 00962 are also the parameters for adjusting the timing that the print image and the printing media meet with each other at the Secondary Transfer Section. The printing media tends to be delayed as it is stopped in cutting, so these parameters functions to compensate such delay by increasing the media feeding speed. Deck 1/2 Motor, Feed Motor and Registration Motors 1/2/3 are related. These are not changed in the market normally.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00961	Motor Max Speed 080	-	0	65535	3299
00962	Motor Max Speed 050				3299

00965-00966 AccelarationSpeed 080/050

00965 and 00966 are also the parameters for adjusting the timing that the print image and the printing media meet with each other at the Secondary Transfer Section. They finely adjust the feeding speed to compensate very slight difference of meeting timing. The Registration Sensor 3 detects the leading edge and judges either the printing media “arrives too early” or “delayed for arrival”. And when judged as “delayed for arrival” then 00965 and 00966 increase the feeding speed to correctly adjust the meeting timing. These are not changed in the market normally.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00965	AccelerationSpeed080	-	0	65535	7324
00966	AccelerationSpeed050				11933

00969-00970 DecelarationSpeed 080/050

00969 and 00970 are also the parameters for adjusting the timing that the print image and the printing media meet with each other at the Secondary Transfer Section. They finely adjust the feeding speed to compensate very slight difference of meeting timing. The Registration Sensor 3 detects the leading edge and judges either the printing media “arrives too early” or “delayed for arrival”. And when judged as “arrives too early” then 00969 and 00970 decrease the feeding speed to correctly adjust the meeting timing. These are not changed in the market normally.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00969	DecelerationSpeed080	-	0	65535	7324
00970	DecelerationSpeed050				14749

00973-00997 Media00-24 Print Speed

00973 to 00997 specify the standard print speed per media type. Either 80mm/sec or 50mm/sec is specified.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
00973	Media00 Print Speed	-	0	1	0
00974	Media01 Print Speed				0
00975	Media02 Print Speed				0
00976	Media03 Print Speed				0
00977	Media04 Print Speed				0
00978	Media05 Print Speed				0
00979	Media06 Print Speed				0
00980	Media07 Print Speed				0
00981	Media08 Print Speed				0
00982	Media09 Print Speed				0
00983	Media10 Print Speed				0
00984	Media11 Print Speed				0
00985	Media12 Print Speed				0
00986	Media13 Print Speed				0
00987	Media14 Print Speed				0
00988	Media15 Print Speed				0
00989	Media16 Print Speed				0
00990	Media17 Print Speed				0
00991	Media18 Print Speed				0
00992	Media19 Print Speed				0
00993	Media20 Print Speed				0
00994	Media21 Print Speed				0
00995	Media22 Print Speed				0
00996	Media23 Print Speed				0
00997	Media24 Print Speed				0

Setting value	Contents
0	Print speed is 80mm/sec for the selected media type.
1	Print speed is 50mm/sec for the selected media type.

00998-00999 Drum Slow Mode Step

When the Drum stops normal rotation, printer then rotates the Drum to the opposite direction in slow speed to reduce excess pressure between Cleaner Blade and Drum surface. This is to set reverse operation time. It is set properly in the factory and normally not required to change.

Unit	Min.	Max.	Default
-	0	511	511

01000 Drum Slow Mode Interval

When the Drum stops normal rotation, printer then rotates the Drum to the opposite direction in slow speed to reduce excess pressure between Cleaner Blade and Drum surface. This is to set pause period to start reverse operation time. It is set properly in the factory and normally not required to change.

Unit	Min.	Max.	Default
10mm/s	1	300	1

01001-01004 Drum Slow Mode 2 On

When the Drum stops normal rotation, printer then rotates the Drum to the opposite direction in slow speed to reduce excess pressure between Cleaner Blade and Drum surface. This is to set the reverse operation enabled or disabled. It is set properly in the factory and normally not required to change.

Setting value	Contents
0 (Default)	Reverse operation is disabled.
1	Reverse operation is enabled.

01005 Fuser Start Speed

To ensure stabilized the Fuser Roller rotation, every time the Fuser Roller starts rotation at a designated low speed within a specified period, and then increases to normal speed.
This is to set the low speed. The default value (25000) is approximately equal to 20mm/s.
It is set properly in the factory and normally not required to change.

Unit	Min.	Max.	Default
-	0	65535	25000

01006 Fuser Start Step

To ensure stabilized the Fuser Roller rotation, every time the Fuser Roller starts rotation at a designated low speed within a specified period, and then increases to normal speed.
This is to set the period for low speed.
It is set properly in the factory and normally not required to change.

Unit	Min.	Max.	Default
-	0	65535	600

01007 Fuser Slowup Step

To ensure stabilized the Fuser Roller rotation, every time the Fuser Roller starts rotation at a designated low speed within a specified period, and then increases to normal speed.
This is to set the acceleration speed rate.
It is set properly in the factory and normally not required to change.

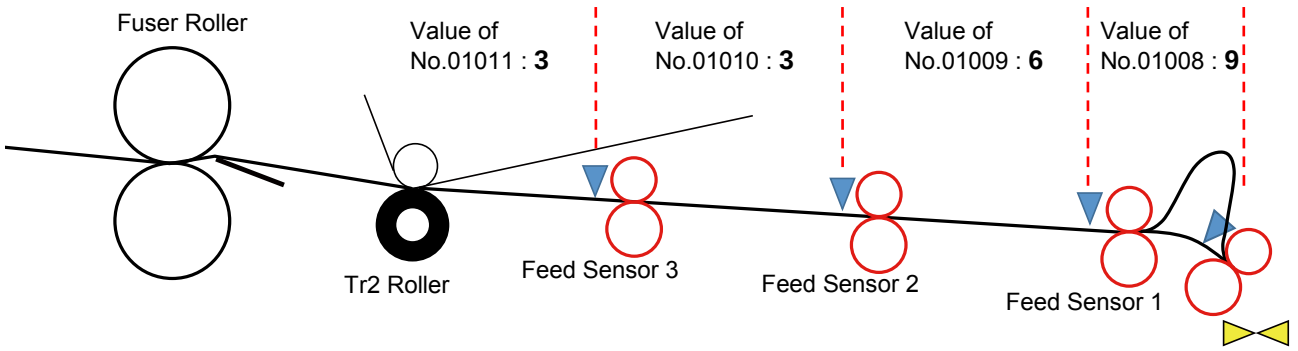
Min.	Max.	Default
0	3	1

01008-01011 Tension Target Pos1A-4A

These modes are used for gradually decreasing the media tension during transportation from the target tension set by No.00873, which is effective to reduce the variation of vertical scale on the trailing edge section. Smaller value decreases the tension more. These modes are applied when the print is shorter than the print length set by No.01018.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
01008	TensionTarget Pos 1A	---	0	255	9
01009	TensionTarget Pos 2A	---	0	255	6
01010	TensionTarget Pos 3A	---	0	255	3
01011	TensionTarget Pos 4A	---	0	255	3

Tension changes whenever the trailing edge passes the concerning sensor.

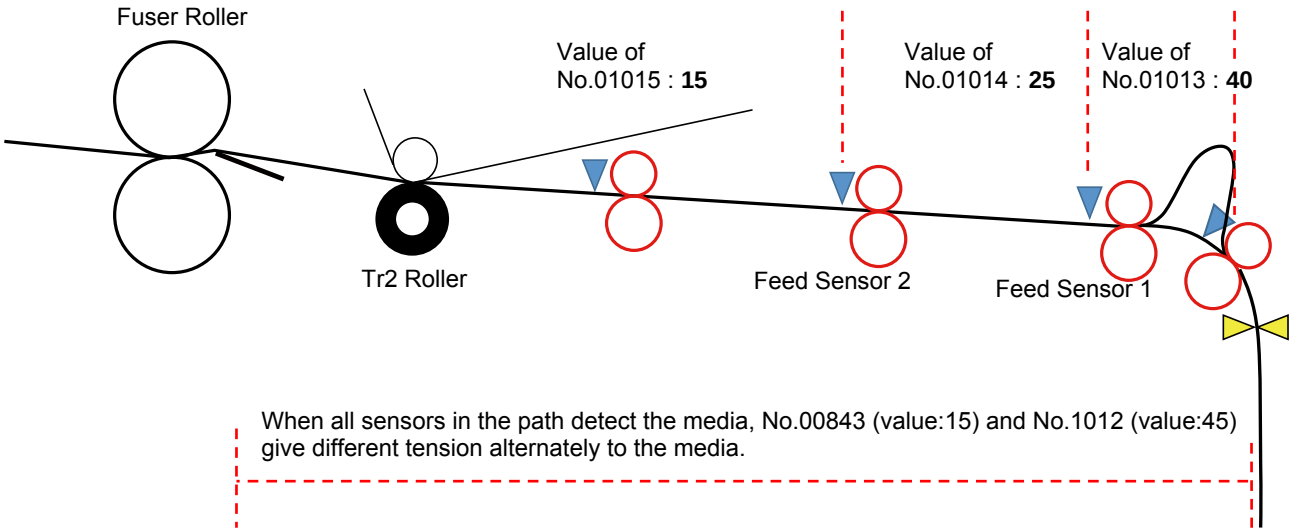


01012-01015 Tension Target Pos1B-4B

These modes specify "long print target densities" that are alternately applpied in long printing. When printing a long page (with all sensors in the path detecting the media), the media gets a tension determined by the No.00873 (Tension Taeget 080) for some period, and then it gets another tension determined by the No.1012 (Tension Target Pos 1B) for some period. Thus, 2 different tensions are alternately given to the media to correctly adjust the balance of media feeding in long printing. Bigger value gives more tension to the media.
These modes are used when the print is longe than the length defined in the No.01018.

Whenever the trailing edge passes the concerning sensor, the Target Tensions of No.1013 to 1015 are used for alternate switching instead of No.1012.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
01012	TensionTarget Pos 1B	---	0	255	45
01013	TensionTarget Pos 2B	---	0	255	40
01014	TensionTarget Pos 3B	---	0	255	25
01015	TensionTarget Pos 4B	---	0	255	15



Reference

As fior the switching period of tension, see descroptions of No.01016 (Tension Up Start Time) and No.01017 (Tension Up Cycle Time)

01016 Tension Up Start Time

In long printing, the media alternately gets different tensions determined by both No.873 and No.1012 for better transportation. No.1016 specifies the period to switch the tension of No.873 to the one of No.1012.
Default setting is 600, which keeps the tension of No.873 for 6 seconds and then switches to the one of No.1012.

Unit	Min.	Max.	Default
1 (0.01sec)	100 (1sec)	2000 (20sec)	600 (6sec)

01017 Tension Up Cycle Time

In long printing, the media alternately gets different tensions determined by both No.873 and No.1012 for better transportation. No.1017 specifies the period to switch the tension of No.1012 to the one of No.873.
Default setting is 850, which keeps the tension of No.1012 for 8.5 seconds and then switches to the one of No.873.

Unit	Min.	Max.	Default
1 (0.01sec)	100 (1sec)	2000 (20sec)	850 (8.5sec)

01018 Tension Long Length

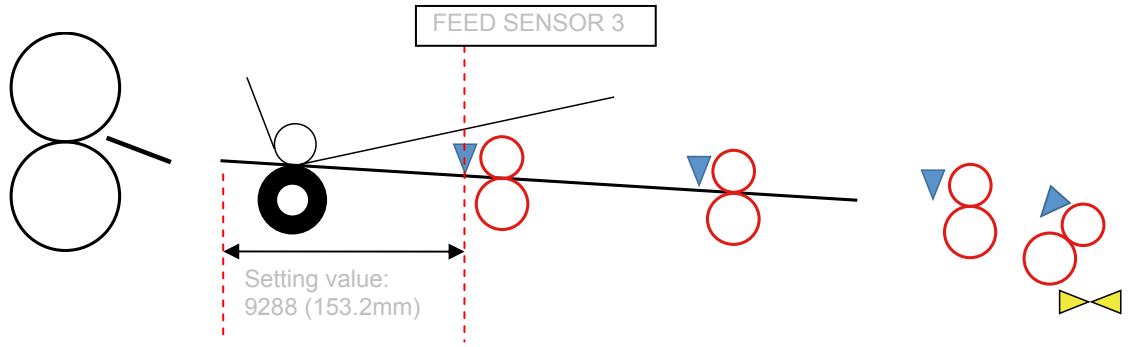
This defines the print length to perform long print tention control, which gives 2 different tensions alternately to the media. If a print is shorter than the value of No.1018, switching of tention is not done so the tension is controlled by the values of No.1008 to 1011. If the print is longet than the value of No.1018, switching of tentions (between No.873 and No.1012-1015) takes place.

Unit	Min.	Max.	Default
1mm	1000	5000	1640

01019 Tension Speed Timing

No.1019 defines the travel distance of the leading edge from Sensor 3, which decides the timing to switch the media transportation speed from one to another. When the leading edge go forward and arrives at a distant point from the Sensor 3, which is defined by No.1019 and 153.2mm by default, the transportation speed switches to each "Transportation Speed 1/2/3" defiened by No.1020 to 1029. Increment of the value delays the switch timing.

Min.	Max.	Default
0	24250	9288 (153.2mm)



NOTE

This mode is basically used only in the factory. Do not use this in the field.

01020-01021 Tension Speed 1 080/050

These modes are to adjust the vertical size of print media (page length), which are used when the print length is shorter 599mm or shorter. Under the default setting, the transportation speed gets slower by 1.0% when the travel distance of leading edge from the Seosor 3 gets 153.2mm.

	Item Name	Setting value				
		Unit	Min.	Max.	Default	
01020	Tension Speed 1 080	---	0	65535	8328	-1.00%
01021	Tension Speed 1 050	---	0	65535	13319	

NOTE

This mode is basically used only in the factory. Do not use this in the field.

01024-01025 Tension Speed 2 080/050

These modes are to adjust the vertical size of print media (page length), which are used when the print length is between 600mm abd 849mm. Under the default setting, the transportation speed gets slower by 0.5% when the travel distance of leading edge from the Seosor 3 gets 153.2mm.

	Item Name	Setting value				
		Unit	Min.	Max.	Default	
01024	Tension Speed 2 080	---	0	65535	8287	-0.50%
01025	Tension Speed 2 050	---	0	65535	13252	

NOTE

This mode is basically used only in the factory. Do not use this in the field.

01028-01029 Tension Speed 3 080/050

These modes are to adjust the vertical size of print media (page length), which are used when the print length is 850mm or longer. Under the default setting, the transportation speed gets slower by 0.4% when the travel distance of leading edge from the Seosor 3 gets 153.2mm.

	Item Name	Setting value				
		Unit	Min.	Max.	Default	
01028	Tension Speed 3 080	---	0	65535	8278	-0.40%
01029	Tension Speed 3 050	---	0	65535	13239	

NOTE

This mode is basically used only in the factory. Do not use this in the field.

01200 ColorRegist H Origin

001200 adjusts the standard position for the Horizontal Color Registration. Increment of the value shifts all 4 color images to the right side edge.

Unit	Min.	Max.	Default
Pixel	-144	144	0

01201 ColorRegist V Origin

001201 adjusts the standard position for the Vertical Color Registration. Increment of the value shifts all 4 color images to the trailing edge.

Unit	Min.	Max.	Default
Pixel	-288	288	0

01202-01205 Color Rigist H (KCMY)

01202 to 01205 adjusts the Horizontal Color Registration per color. Increment of the value shifts the concerning color image to the right side edge. This will be set by Auto Adjustment **Color Regist Hor**.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
01202	Color Regist H (K)	Pixel	-60	60	0
01203	Color Regist H (C)				
01204	Color Regist H (M)				
01205	Color Regist H (Y)				

01206-01209 Color Rigist V (KCMY)

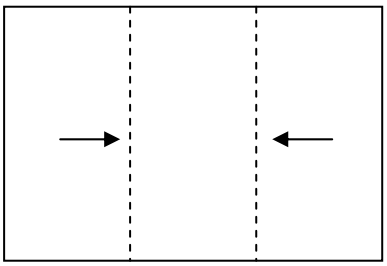
01206 to 01209 adjusts the Vertical Color Registration per color. Increment of the value shifts the concerning color image to the trailing edge. This will be set by Auto Adjustment **Color Regist Ver**.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
01206	Color Regist V (K)	Pixel	-120	120	0
01207	Color Regist V (C)				
01208	Color Regist V (M)				
01209	Color Regist V (Y)				

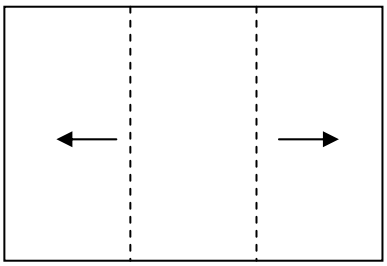
01210-01217 LED Joint H

01210 to 01217 adjust the horizontal alignment among 3 LED blocks per color.
The central block (C) is the reference for the adjustment. Adjustment is available for between left and center block (L-C) and also between center and right (C-R). Increment of the value shifts both left and right LED blocks inward, and decrement does outward. This will be set by Auto Adjustment **LED Block Adjust Hor**.

Increment



Decrement

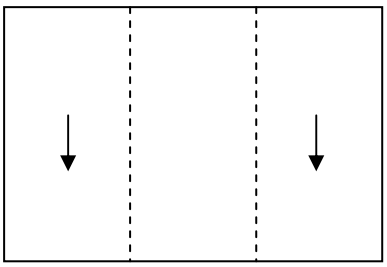


	Item Name	Setting value			
		Unit	Min.	Max.	Default
01210	LED Joint H (K) L_C	Pixel	-44	44	0
01211	LED Joint H (C) L_C				
01212	LED Joint H (M) L_C				
01213	LED Joint H (Y) L_C				
01214	LED Joint H (K) C_R				
01215	LED Joint H (C) C_R				
01216	LED Joint H (M) C_R				
01217	LED Joint H (Y) C_R				

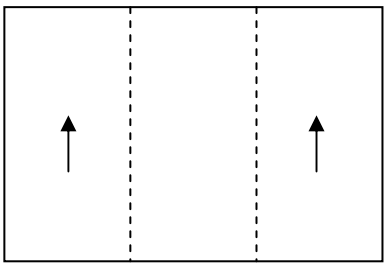
01218-01225 LED Joint V

01218 to 01225 adjust the vertical alignment among 3 LED blocks per color.
The central block (C) is the reference for the adjustment. Adjustment is available for between left and center block (L-C) and also between center and right (C-R). Increment of the value shifts both left and right LED blocks to the trailing edge, and decrement does to the leading edge. This will be set by Auto Adjustment **LED Block Adjust Ver**.

Increment



Decrement



	Item Name	Setting value			
		Unit	Min.	Max.	Default
01218	LED Joint V (K) L_C	Pixel	-120	120	0
01219	LED Joint V (C) L_C				
01220	LED Joint V (M) L_C				
01221	LED Joint V (Y) L_C				
01222	LED Joint V (K) C_R				
01223	LED Joint V (C) C_R				
01224	LED Joint V (M) C_R				
01225	LED Joint V (Y) C_R				

01226 Lead Margin

01226 adjusts the leading margin on print. Increment of the value converts more data to “white”, which as a result increases the leading margin. The default value (70) is corresponding to apploximately 3mm.

Unit	Min.	Max.	Default
Line	0 (No margin)	255	70

⚠ NOTE

Printing without having enough leading (about 3mm) is NOT guaranteed as it will cause;
(1) Heavy jam in fuser section
(2) Image quality defect such as unnecessary dirt
(3) And etc

To avoid the above troubles that are NOT guaranteed, correctly configure the leading margin setting on the controller or your submission tools to let print have enough leading margin.

01227 Trailing Edge Margin

01227 adjusts the trailing margin on print. Increment of the value decreases the trailing margin. The default value (-118) is corresponding to apploximately 5mm.

Unit	Min.	Max.	Default
Line	-510	510	-118

01228 Side Margin

01228 adjusts the margin on both left and right on print. Increment of the value increases the side margins by 0.1mm.

Unit	Min.	Max.	Default
0.1mm	0	100	30

01229-01240 LED Skew

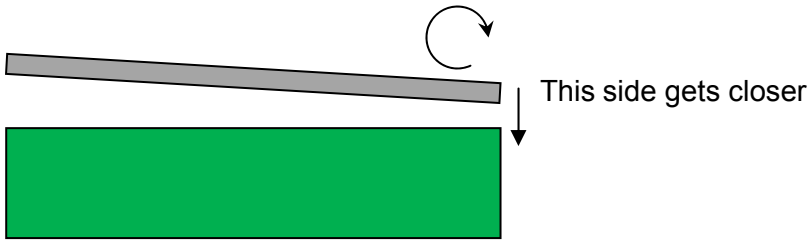
01229 to 01240 correct the tilt of 3 LED blocks per color. Increment of the value rotates the concerning block clockwise, and decrement does counter-clockwise. This will be set by Auto Adjustment **LED Block Deskew**.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
01229	LED Skew(K) Left	-	-50	50	0
01230	LED Skew(K) Center				
01231	LED Skew(K) Right				
01232	LED Skew(C) Left				
01233	LED Skew(C) Center				
01234	LED Skew(C) Right				
01235	LED Skew(M) Left				
01236	LED Skew(M) Center				
01237	LED Skew(M) Right				
01238	LED Skew(Y) Left				
01239	LED Skew(Y) Center				
01240	LED Skew(Y) Right				

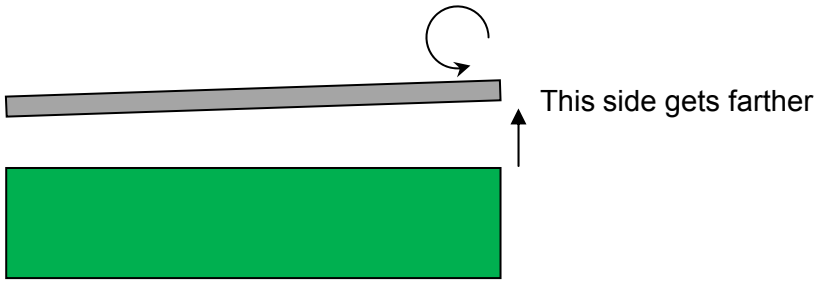
01241-01264 Focus Step

01241 to 01264 adjust how many steps the Focus Motor of each color is rotated from the Home Position. This will be set by Auto Adjustment **Auto Focus**.

- Increment of the value let's Focus motor rotate more in clockwise direction and stops, which moves the concerning section of LED block closer to the Drum.



- Decrement of the value let's Focus motor rotates more in counter-clockwise direction and stops, which moves the concerning section of LED block farther from the Drum.



	Item Name	Setting value			
		Unit	Min.	Max.	Default
01241	Focus Step(K) L-LE	-	-110	110	0
01242	Focus Step(K) L-RE				
01243	Focus Step(K) C-LE				
01244	Focus Step(K) C-RE				
01245	Focus Step(K) R-LE				
01246	Focus Step(K) R-RE				
01247	Focus Step(C) L-LE				
01248	Focus Step(C) L-RE				
01249	Focus Step(C) C-LE				
01250	Focus Step(C) C-RE				
01251	Focus Step(C) R-LE				
01252	Focus Step(C) R-RE				
01253	Focus Step(M) L-LE				
01254	Focus Step(M) L-RE				
01255	Focus Step(M) C-LE				
01256	Focus Step(M) C-RE				
01257	Focus Step(M) R-LE				
01258	Focus Step(M) R-RE				
01259	Focus Step(Y) L-LE				
01260	Focus Step(Y) L-RE				
01261	Focus Step(Y) C-LE				
01262	Focus Step(Y) C-RE				
01263	Focus Step(Y) R-LE				
01264	Focus Step(Y) R-RE				

01265 Focus Adjust On/Off

01265 allows for a selection whether or not step counting of Focus Motor is automatically done whenever printer is turned on. When the printer is turned on with setting 01265 to ON, the printer returns all Focus Motors to their home positions and then takes motor step count again according to 01241 to 01264.

Setting value	Contents
0 (Default)	OFF : Nothing is done for Focus Motor when turning on.
1	ON : Printer returns Focus Motor to HP and takes motor step count whenever it is turned on.

01600-01611 LightIntensity

01600 to 10611 adjust the light intensity for each LED Block component. These are used for correcting slight difference of density between neighbouring blocks. Increment of the value makes the concerning block image darker.

	Item Name	Setting value			
		Unit *	Min.	Max.	Default
01600	LightIntensity (K) L	1/100µJ / cm2	0	200	120
01601	LightIntensity (K) C				
01602	LightIntensity (K) R				
01603	LightIntensity (C) L				
01604	LightIntensity (C) C				
01605	LightIntensity (C) R				
01606	LightIntensity (M) L				
01607	LightIntensity (M) C				
01608	LightIntensity (M) R				
01609	LightIntensity (Y) L				
01610	LightIntensity (Y) C				
01611	LightIntensity (Y) R				

*1/100µJ / cm2

01612-01615 LightGain-KCMY DCtrlOFF

01612 to 01615 adjust the Light Gain per color that are applied when the Density Control is disabled. Increment of the value makes the concerning color image darker.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
01612	LightGain-K DCtrlOFF	%	70	130	100
01613	LightGain-C DCtrlOFF				
01614	LightGain-M DCtrlOFF				
01615	LightGain-Y DCtrlOFF				

01616-01619 LightGain-KCMY DCtrlON

01616 to 01619 adjust the Light Gain per color that are applied when the Density Control is enabled. Increment of the value makes the concerning color image darker. These settings are automatically set to proper values when Density Control is executed, so it is unnecessary to manually change the values.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
01616	LightGain-K DCtrlON	%	70	130	100
01617	LightGain-C DCtrlON				
01618	LightGain-M DCtrlON				
01619	LightGain-Y DCtrlON				

01620-01631 ImgCorrectStrobe

01620 to 01631 are one of the parameters that enhance the image quality of such as poster image. Settings are assigned to each LED blocks. Increment of the value increases the strobe time of the concerning LED block for the concerning image pattern.
01620 to 01631 are to be referred in a certain temperature (Temp range A).

Temp Range A	Temp Range B	Temp Range C	Temp Range D
01620-01631	01736-01747	01748-01759	01760-01771

As these parameters are automatically adjusted by the firmware, it is unnecessary to change the values manually.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
01620	ImgCorrectStrobe K_L	-	0	1000	0
01621	ImgCorrectStrobe K_C				
01622	ImgCorrectStrobe K_R				
01623	ImgCorrectStrobe C_L				
01624	ImgCorrectStrobe C_C				
01625	ImgCorrectStrobe C_R				
01626	ImgCorrectStrobe M_L				
01627	ImgCorrectStrobe M_C				
01628	ImgCorrectStrobe M_R				
01629	ImgCorrectStrobe Y_L				
01630	ImgCorrectStrobe Y_C				
01631	ImgCorrectStrobe Y_R				

01632 Img Correct pos

01632 is also a parameter that enhances the image quality of such as poster image. This specifies how many lines of image pattern is enhanced. Increment of the value increased the enhanced line by 1 line.

Unit	Min.	Max.	Default
Line	0	65535	3123

01633-01636 Image Polarity KCMY

01633 to 01636 are also parameters that enhance the image quality of such as poster image. The setting value means negative or positive. Setting value "0" enhances negative type image and "1" does positive type image.
01633 to 01636 are to be referred in a certain temperature (Temp range A).

Temp Range A	Temp Range B	Temp Range C	Temp Range D
01633-01636	01772-01775	01776-01779	01780-01783

It is unnecessary to manually adjust these BUDs.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
01633	Image Polarity K	-	0 (Negative)	1 (Positive)	0
01634	Image Polarity C				
01635	Image Polarity M				
01636	Image Polarity Y				

01638-01667 Image Enhance

01638 to 01707 are parameters for image enhancement.

NOTE

Do not change the default value.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
01638	Image Enhance1 A0	-	0	15	4
01639	Image Enhance2 A0				
01640	Image Enhance3 A0				
01641	Image Enhance4 A0				
01642	Image Enhance5 A0				

	Item Name	Setting value			
		Unit	Min.	Max.	Default
01643	Image Enhance1 B0	-	0	15	4
01644	Image Enhance2 B0				
01645	Image Enhance3 B0				
01646	Image Enhance4 B0				
01647	Image Enhance5 B0				

	Item Name	Setting value			
		Unit	Min.	Max.	Default
01648	Image Enhance1 A1	-	0	15	4
01649	Image Enhance2 A1				3
01650	Image Enhance3 A1				3
01651	Image Enhance4 A1				3
01652	Image Enhance5 A1				3

	Item Name	Setting value			
		Unit	Min.	Max.	Default
01653	Image Enhance1 B1	-	0	15	2
01654	Image Enhance2 B1				4
01655	Image Enhance3 B1				4
01656	Image Enhance4 B1				4
01657	Image Enhance5 B1				4

	Item Name	Setting value			
		Unit	Min.	Max.	Default
01658	Image Enhance1 A2	-	0	15	4
01659	Image Enhance2 A2				3
01660	Image Enhance3 A2				5
01661	Image Enhance4 A2				6
01662	Image Enhance5 A2				7

	Item Name	Setting value			
		Unit	Min.	Max.	Default
01663	Image Enhance1 B2	-	0	15	2
01664	Image Enhance2 B2				4
01665	Image Enhance3 B2				3
01666	Image Enhance4 B2				5
01667	Image Enhance5 B2				6

01708-01711 Drum Correct Phase KCMY

Drum Phase Synchronization is an automatic calibration mode that compensates very fine unevenness of vertical scale periodically appears in vertical direction of print. 01708 to 01711 are the parameters related with this automatic calibration mode. As the **Drum Phase Synchronization** automatically sets proper values in these BUD, it is unnecessary to change the values for manual adjustment. (Replacing Drum requires reset the concerning value to 0)

	Item Name	Setting value			
		Unit	Min.	Max.	Default
01708	Drum Correct Phase K	-	0	15	0
01709	Drum Correct Phase C				
01710	Drum Correct Phase M				
01711	Drum Correct Phase Y				

01712-01715 Drum Correct Amp KCMY

Drum Phase Synchronization is an automatic calibration mode that compensates very fine unevenness of vertical scale periodically appears in vertical direction of print. 01712 to 01715 are the parameters related with this automatic calibration mode. As the **Drum Phase Synchronization** automatically sets proper values in these BUD, it is unnecessary to change the values for manual adjustment. (Replacing Drum requires reset the concerning value to 0)

	Item Name	Setting value			
		Unit	Min.	Max.	Default
01712	Drum Correct Amp K	-	0	127	0
01713	Drum Correct Amp C				
01714	Drum Correct Amp M				
01715	Drum Correct Amp Y				

01736-01747 ImgCorrectStrobe2

01736 to 01747 are one of the parameters that enhance the image quality of such as poster image. Settings are assigned to each LED blocks. Increment of the value increases the strobe time of the concerning LED block for the concerning image pattern.
01736-01747 are to be referred in a certain temperature (Temp range B).

Temp Range A	Temp Range B	Temp Range C	Temp Range D
01620-01631	01736-01747	01748-01759	01760-01771

As these parameters are automatically adjusted by the firmware, it is unnecessary to change the values manually.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
01736	ImgCorrectStrobe 2K_L	-	0	1000	0
01737	ImgCorrectStrobe 2K_C				
01738	ImgCorrectStrobe 2K_R				
01739	ImgCorrectStrobe 2C_L				
01740	ImgCorrectStrobe 2C_C				
01741	ImgCorrectStrobe 2C_R				
01742	ImgCorrectStrobe 2M_L				
01743	ImgCorrectStrobe 2M_C				
01744	ImgCorrectStrobe 2M_R				
01745	ImgCorrectStrobe 2Y_L				
01746	ImgCorrectStrobe 2Y_C				
01747	ImgCorrectStrobe 2Y_R				

01748-01759 ImgCorrectStrobe3

01748-01759 are one of the parameters that enhance the image quality of such as poster image. Settings are assigned to each LED blocks. Increment of the value increases the strobe time of the concerning LED block for the concerning image pattern.
01748-01759 are to be referred in a certain temperature (Temp range C).

Temp Range A	Temp Range B	Temp Range C	Temp Range D
01620-01631	01736-01747	01748-01759	01760-01771

As these parameters are automatically adjusted by the firmware, it is unnecessary to change the values manually.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
01748	ImgCorrectStrobe 3K_L	-	0	1000	0
01749	ImgCorrectStrobe 3K_C				
01750	ImgCorrectStrobe 3K_R				
01751	ImgCorrectStrobe 3C_L				
01752	ImgCorrectStrobe 3C_C				
01753	ImgCorrectStrobe 3C_R				
01754	ImgCorrectStrobe 3M_L				
01755	ImgCorrectStrobe 3M_C				
01756	ImgCorrectStrobe 3M_R				
01757	ImgCorrectStrobe 3Y_L				
01758	ImgCorrectStrobe 3Y_C				
01759	ImgCorrectStrobe 3Y_R				

01760-01771 ImgCorrectStrobe4

01760-01771 are one of the parameters that enhance the image quality of such as poster image. Settings are assigned to each LED blocks. Increment of the value increases the strobe time of the concerning LED block for the concerning image pattern.
01760-01771 are to be referred in a certain temperature (Temp range D).

Temp Range A	Temp Range B	Temp Range C	Temp Range D
01620-01631	01736-01747	01748-01759	01760-01771

As these parameters are automatically adjusted by the firmware, it is unnecessary to change the values manually.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
01760	ImgCorrectStrobe 3K_L	-	0	1000	0
01761	ImgCorrectStrobe 3K_C				
01762	ImgCorrectStrobe 3K_R				
01763	ImgCorrectStrobe 3C_L				
01764	ImgCorrectStrobe 3C_C				
01765	ImgCorrectStrobe 3C_R				
01766	ImgCorrectStrobe 3M_L				
01767	ImgCorrectStrobe 3M_C				
01768	ImgCorrectStrobe 3M_R				
01769	ImgCorrectStrobe 3Y_L				
01770	ImgCorrectStrobe 3Y_C				
01771	ImgCorrectStrobe 3Y_R				

01772-01775 Image Polarity2 KCMY

01772-01775 are also parameters that enhance the image quality of such as poster image. The setting value means negative or positive. Setting value "0" enhances negative type image and "1" does positive type image.
01772-01775 are to be referred in a certain temperature (Temp range B).

Temp Range A	Temp Range B	Temp Range C	Temp Range D
01633-01636	01772-01775	01776-01779	01780-01783

It is unnecessary to manually adjust these BUDs.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
01772	Image Polarity2 K	-	0 (Negative)	1 (Positive)	0
01773	Image Polarity2 C				
01774	Image Polarity2 M				
01775	Image Polarity2 Y				

01776-01779 Image Polarity3 KCMY

01776-01779 are also parameters that enhance the image quality of such as poster image. The setting value means negative or positive. Setting value "0" enhances negative type image and "1" does positive type image.
01776-01779 are to be referred in a certain temperature (Temp range C).

Temp Range A	Temp Range B	Temp Range C	Temp Range D
01633-01636	01772-01775	01776-01779	01780-01783

It is unnecessary to manually adjust these BUDs.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
01776	Image Polarity3 K	-	0 (Negative)	1 (Positive)	0
01777	Image Polarity3 C				
01778	Image Polarity3 M				
01779	Image Polarity3 Y				

01780-01783 Image Polarity4 KCMY

01780-01783 are also parameters that enhance the image quality of such as poster image. The setting value means negative or positive. Setting value "0" enhances negative type image and "1" does positive type image.
01780-01783 are to be referred in a certain temperature (Temp range D).

Temp Range A	Temp Range B	Temp Range C	Temp Range D
01633-01636	01772-01775	01776-01779	01780-01783

It is unnecessary to manually adjust these BUDs.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
01780	Image Polarity4 K	-	0 (Negative)	1 (Positive)	0
01781	Image Polarity4 C				
01782	Image Polarity4 M				
01783	Image Polarity4 Y				

01784 Density Adjust Mode

Density Adjustment is a functionality to automatically check whether or not there is a bigger difference than decided between actually detected density and preregistered "target density". It also adjust the density automatically if the difference is bigger than decided by appropriately adjusting parameters regarding Density (such as LED Head and Developer Unit) so that the difference should be reduced to meet the requirement. This is to set the accuracy level.

Setting value	Contents
0	Density Adjustment runs with more precise accuracy in special / troubleshooting conditions.
1 (Default)	Density Adjustment runs with normal accuracy in usual usage conditions.

01785 Auto Density Adjust

Density Adjust can run at any time manually. Furthermore, 01785 can set “Run Density Adjust automatically”.

Setting value	Contents
0 (Default)	Density Adjust runs only when manually executed.
1	Density Adjust runs at power on and preprogrammed (fix) conditions before printing.

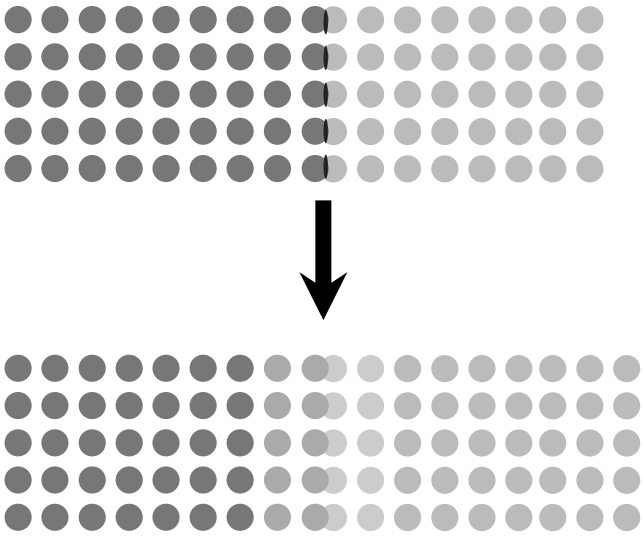
⚠ NOTE

To set Auto Density Control disabled, set both of 00720 and 01785 to “0”.

01786-01793 LEDJointDerkness

01780-01783 can weaken the dot light level data for the border pixels.
Increase the value to weaken an unexpected visible line due to pixel overlap.

Adjusting the dot light level will apply depending on the image type at the border areas. For example, this adjustment will not apply to an isolated 1 dot line at the border area.



	Item Name	Setting value			
		Unit	Min.	Max.	Default
01786	LEDJointDerkness K-L	-	0	5	2
01787	LEDJointDerkness K-R				
01788	LEDJointDerkness C-L				
01789	LEDJointDerkness C-R				
01790	LEDJointDerkness M-L				
01791	LEDJointDerkness M-R				
01792	LEDJointDerkness Y-L				
01793	LEDJointDerkness Y-R				

02000 Idle Temp

02000 specifies the temperature to start idling of fuser.

Unit	Min.	Max.	Default
°C	100	135	135

02001-02002 Ready Temp 1-2

02001 and 02002 specify the temperature that are maintained when the printer is in ready condition. 02001 is for the Fuser Lamp 1 (center) and 02002 for Fuser Lamp 2 (sides).

	Item Name	Setting value			
		Unit	Min.	Max.	Default
02001	Ready Temp 1	°C	140	190	150
02002	Ready Temp 2	°C	140	190	150

Reference

Fuser Temperature Setting Matrix

	Target Size	Center	Sides
Ready	All	02001	02002
Fusing	A4 / 12”	02003-02027	02128-02152
	A3 / 18”	02028-02052	02153-02177
	A2 / 24”	02053-02077	02178-02202
	A1 / 30”	02078-02102	02203-02227
	A0 / 36”	02103-02127	02228-02252

02003-02027 Fuser Temp

02003 to 02027 specify the control temperature for the Fuser Lamp 1 that heats the central area of the Fuser Roller. Specification of the temperature is available individually for 25 media types. All these settings are for the print width 12" or narrower.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
02003	Fuser Temp00-12				
02004	Fuser Temp01-12				
02005	Fuser Temp02-12				
02006	Fuser Temp03-12				
02007	Fuser Temp04-12				
02008	Fuser Temp05-12				
02009	Fuser Temp06-12				
02010	Fuser Temp07-12				
02011	Fuser Temp08-12				
02012	Fuser Temp09-12				
02013	Fuser Temp10-12				
02014	Fuser Temp11-12				
02015	Fuser Temp12-12	°C	140	190	155
02016	Fuser Temp13-12				
02017	Fuser Temp14-12				
02018	Fuser Temp15-12				
02019	Fuser Temp16-12				
02020	Fuser Temp17-12				
02021	Fuser Temp18-12				
02022	Fuser Temp19-12				
02023	Fuser Temp20-12				
02024	Fuser Temp21-12				
02025	Fuser Temp22-12				
02026	Fuser Temp23-12				
02027	Fuser Temp24-12				

02028-02052 Fuser Temp

02028 to 02052 specify the control temperature for the Fuser Lamp 1 that heats the central area of the Fuser Roller. Specification of the temperature is available individually for 25 media types. All these settings are for the print width between 12" and 18".

	Item Name	Setting value			
		Unit	Min.	Max.	Default
02028	Fuser Temp00-18				
02029	Fuser Temp01-18				
02030	Fuser Temp02-18				
02031	Fuser Temp03-18				
02032	Fuser Temp04-18				
02033	Fuser Temp05-18				
02034	Fuser Temp06-18				
02035	Fuser Temp07-18				
02036	Fuser Temp08-18				
02037	Fuser Temp09-18				
02038	Fuser Temp10-18				
02039	Fuser Temp11-18				
02040	Fuser Temp12-18	°C	140	190	155
02041	Fuser Temp13-18				
02042	Fuser Temp14-18				
02043	Fuser Temp15-18				
02044	Fuser Temp16-18				
02045	Fuser Temp17-18				
02046	Fuser Temp18-18				
02047	Fuser Temp19-18				
02048	Fuser Temp20-18				
02049	Fuser Temp21-18				
02050	Fuser Temp22-18				
02051	Fuser Temp23-18				
02052	Fuser Temp24-18				

02053-02077 Fuser Temp

02053 to 02077 specify the control temperature for the Fuser Lamp 1 that heats the central area of the Fuser Roller. Specification of the temperature is available individually for 25 media types. All these settings are for the print width between 18" and 24".

	Item Name	Setting value			
		Unit	Min.	Max.	Default
02053	Fuser Temp00-24				
02054	Fuser Temp01-24				
02055	Fuser Temp02-24				
02056	Fuser Temp03-24				
02057	Fuser Temp04-24				
02058	Fuser Temp05-24				
02059	Fuser Temp06-24				
02060	Fuser Temp07-24				
02061	Fuser Temp08-24				
02062	Fuser Temp09-24				
02063	Fuser Temp10-24				
02064	Fuser Temp11-24				
02065	Fuser Temp12-24	°C	140	190	155
02066	Fuser Temp13-24				
02067	Fuser Temp14-24				
02068	Fuser Temp15-24				
02069	Fuser Temp16-24				
02070	Fuser Temp17-24				
02071	Fuser Temp18-24				
02072	Fuser Temp19-24				
02073	Fuser Temp20-24				
02074	Fuser Temp21-24				
02075	Fuser Temp22-24				
02076	Fuser Temp23-24				
02077	Fuser Temp24-24				

02078-02102 Fuser Temp

02078 to 02102 specify the control temperature for the Fuser Lamp 1 that heats the central area of the Fuser Roller. Specification of the temperature is available individually for 25 media types. All these settings are for the print width between 24" and 30".

	Item Name	Setting value			
		Unit	Min.	Max.	Default
02078	Fuser Temp00-30				
02079	Fuser Temp01-30				
02080	Fuser Temp02-30				
02081	Fuser Temp03-30				
02082	Fuser Temp04-30				
02083	Fuser Temp05-30				
02084	Fuser Temp06-30				
02085	Fuser Temp07-30				
02086	Fuser Temp08-30				
02087	Fuser Temp09-30				
02088	Fuser Temp10-30				
02089	Fuser Temp11-30				
02090	Fuser Temp12-30	°C	140	190	155
02091	Fuser Temp13-30				
02092	Fuser Temp14-30				
02093	Fuser Temp15-30				
02094	Fuser Temp16-30				
02095	Fuser Temp17-30				
02096	Fuser Temp18-30				
02097	Fuser Temp19-30				
02098	Fuser Temp20-30				
02099	Fuser Temp21-30				
02100	Fuser Temp22-30				
02101	Fuser Temp23-30				
02102	Fuser Temp24-30				

02103-02127 Fuser Temp

02103 to 02127 specify the control temperature for the Fuser Lamp 1 that heats the central area of the Fuser Roller. Specification of the temperature is available individually for 25 media types. All these settings are for the print wider than 30".

	Item Name	Setting value			
		Unit	Min.	Max.	Default
02103	Fuser Temp00-36				
02104	Fuser Temp01-36				
02105	Fuser Temp02-36				
02106	Fuser Temp03-36				
02107	Fuser Temp04-36				
02108	Fuser Temp05-36				
02109	Fuser Temp06-36				
02110	Fuser Temp07-36				
02111	Fuser Temp08-36				
02112	Fuser Temp09-36				
02113	Fuser Temp10-36				
02114	Fuser Temp11-36				
02115	Fuser Temp12-36	°C	140	190	155
02116	Fuser Temp13-36				
02117	Fuser Temp14-36				
02118	Fuser Temp15-36				
02119	Fuser Temp16-36				
02120	Fuser Temp17-36				
02121	Fuser Temp18-36				
02122	Fuser Temp19-36				
02123	Fuser Temp20-36				
02124	Fuser Temp21-36				
02125	Fuser Temp22-36				
02126	Fuser Temp23-36				
02127	Fuser Temp24-36				

02128-02152 Fuser Temp2

02003 to 02027 specify the control temperature for the Fuser Lamp 2 that heats the both side areas of the Fuser Roller. Specification of the temperature is available individually for 25 media types. All these settings are for the print width 12" or narrower.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
02128	Fuser Temp2 00-12				
02129	Fuser Temp2 01-12				
02130	Fuser Temp2 02-12				
02131	Fuser Temp2 03-12				
02132	Fuser Temp2 04-12				
02133	Fuser Temp2 05-12				
02134	Fuser Temp2 06-12				
02135	Fuser Temp2 07-12				
02136	Fuser Temp2 08-12				
02137	Fuser Temp2 09-12				
02138	Fuser Temp2 10-12				
02139	Fuser Temp2 11-12				
02140	Fuser Temp2 12-12	°C	140	190	155
02141	Fuser Temp2 13-12				
02142	Fuser Temp2 14-12				
02143	Fuser Temp2 15-12				
02144	Fuser Temp2 16-12				
02145	Fuser Temp2 17-12				
02146	Fuser Temp2 18-12				
02147	Fuser Temp2 19-12				
02148	Fuser Temp2 20-12				
02149	Fuser Temp2 21-12				
02150	Fuser Temp2 22-12				
02151	Fuser Temp2 23-12				
02152	Fuser Temp2 24-12				

02153-02177 Fuser Temp2

02153 to 02177 specify the control temperature for the Fuser Lamp 2 that heats the both side areas of the Fuser Roller. Specification of the temperature is available individually for 25 media types. All these settings are print width between 12" and 18".

	Item Name	Setting value			
		Unit	Min.	Max.	Default
02153	Fuser Temp2 00-18	°C	140	190	155
02154	Fuser Temp2 01-18				
02155	Fuser Temp2 02-18				
02156	Fuser Temp2 03-18				
02157	Fuser Temp2 04-18				
02158	Fuser Temp2 05-18				
02159	Fuser Temp2 06-18				
02160	Fuser Temp2 07-18				
02161	Fuser Temp2 08-18				
02162	Fuser Temp2 09-18				
02163	Fuser Temp2 10-18				
02164	Fuser Temp2 11-18				
02165	Fuser Temp2 12-18				
02166	Fuser Temp2 13-18				
02167	Fuser Temp2 14-18				
02168	Fuser Temp2 15-18				
02169	Fuser Temp2 16-18				
02170	Fuser Temp2 17-18				
02171	Fuser Temp2 18-18				
02172	Fuser Temp2 19-18				
02173	Fuser Temp2 20-18				
02174	Fuser Temp2 21-18				
02175	Fuser Temp2 22-18				
02176	Fuser Temp2 23-18				
02177	Fuser Temp2 24-18				

02178-02202 Fuser Temp2

02178 to 02202 specify the control temperature for the Fuser Lamp 2 that heats the both side areas of the Fuser Roller. Specification of the temperature is available individually for 25 media types. All these settings are print width between 18" and 24".

	Item Name	Setting value			
		Unit	Min.	Max.	Default
02178	Fuser Temp2 00-24				
02179	Fuser Temp2 01-24				
02180	Fuser Temp2 02-24				
02181	Fuser Temp2 03-24				
02182	Fuser Temp2 04-24				
02183	Fuser Temp2 05-24				
02184	Fuser Temp2 06-24				
02185	Fuser Temp2 07-24				
02186	Fuser Temp2 08-24				
02187	Fuser Temp2 09-24				
02188	Fuser Temp2 10-24				
02189	Fuser Temp2 11-24				
02190	Fuser Temp2 12-24	°C	140	190	155
02191	Fuser Temp2 13-24				
02192	Fuser Temp2 14-24				
02193	Fuser Temp2 15-24				
02194	Fuser Temp2 16-24				
02195	Fuser Temp2 17-24				
02196	Fuser Temp2 18-24				
02197	Fuser Temp2 19-24				
02198	Fuser Temp2 20-24				
02199	Fuser Temp2 21-24				
02200	Fuser Temp2 22-24				
02201	Fuser Temp2 23-24				
02202	Fuser Temp2 24-24				

02203-02227 Fuser Temp2

02203 to 02227 specify the control temperature for the Fuser Lamp 2 that heats the both side areas of the Fuser Roller. Specification of the temperature is available individually for 25 media types. All these settings are print width between 24" and 30".

	Item Name	Setting value			
		Unit	Min.	Max.	Default
02203	Fuser Temp2 00-30	°C	140	190	170
02204	Fuser Temp2 01-30				
02205	Fuser Temp2 02-30				
02206	Fuser Temp2 03-30				
02207	Fuser Temp2 04-30				
02208	Fuser Temp2 05-30				
02209	Fuser Temp2 06-30				
02210	Fuser Temp2 07-30				
02211	Fuser Temp2 08-30				
02212	Fuser Temp2 09-30				
02213	Fuser Temp2 10-30				
02214	Fuser Temp2 11-30				
02215	Fuser Temp2 12-30				
02216	Fuser Temp2 13-30				
02217	Fuser Temp2 14-30				
02218	Fuser Temp2 15-30				
02219	Fuser Temp2 16-30				
02220	Fuser Temp2 17-30				
02221	Fuser Temp2 18-30				
02222	Fuser Temp2 19-30				
02223	Fuser Temp2 20-30				
02224	Fuser Temp2 21-30				
02225	Fuser Temp2 22-30				
02226	Fuser Temp2 23-30				
02227	Fuser Temp2 24-30				

02228-02252 Fuser Temp2

02228 to 02252 specify the control temperature for the Fuser Lamp 2 that heats the both side areas of the Fuser Roller. Specification of the temperature is available individually for 25 media types. All these settings are print wider than 30".

	Item Name	Setting value			
		Unit	Min.	Max.	Default
02228	Fuser Temp2 00-36	°C	140	190	160
02229	Fuser Temp2 01-36				
02230	Fuser Temp2 02-36				
02231	Fuser Temp2 03-36				
02232	Fuser Temp2 04-36				
02233	Fuser Temp2 05-36				
02234	Fuser Temp2 06-36				
02235	Fuser Temp2 07-36				
02236	Fuser Temp2 08-36				
02237	Fuser Temp2 09-36				
02238	Fuser Temp2 10-36				
02239	Fuser Temp2 11-36				
02240	Fuser Temp2 12-36				
02241	Fuser Temp2 13-36				
02242	Fuser Temp2 14-36				
02243	Fuser Temp2 15-36				
02244	Fuser Temp2 16-36				
02245	Fuser Temp2 17-36				
02246	Fuser Temp2 18-36				
02247	Fuser Temp2 19-36				
02248	Fuser Temp2 20-36				
02249	Fuser Temp2 21-36				
02250	Fuser Temp2 22-36				
02251	Fuser Temp2 23-36				
02252	Fuser Temp2 24-36				

02255-02256 F-TempCorrect Center/Side

02255 and 02256 are used only in factory for adjustment and not used in the market. They compensate the reading value of the fuser temperature and the actual temperature.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
02255	F-TempCorrect Center	%	50	150	94
02256	F-TempCorrect Side				

⚠ NOTE

Do not change the default value.

02257 Tension Error Time

When the printer does not detect tension of media during the term decided in this BUD, it stops printing.

Unit	Min.	Max.	Default
-	100	500	200

NOTE

Do not change the default value.

02260-02284 Web in Print

This specifies the volume of web feeding in printing.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
02260	Web in Print 00	X times: (x0.15mm per 500mm printing)	1	10	1
02261	Web in Print 01				
02262	Web in Print 02				
02263	Web in Print 03				
02264	Web in Print 04				
02265	Web in Print 05				
02266	Web in Print 06				
02267	Web in Print 07				
02268	Web in Print 08				
02269	Web in Print 09				
02270	Web in Print 10				
02271	Web in Print 11				
02272	Web in Print 12				
02273	Web in Print 13				
02274	Web in Print 14				
02275	Web in Print 15				
02276	Web in Print 16				
02277	Web in Print 17				
02278	Web in Print 18				
02279	Web in Print 19				
02280	Web in Print 20				
02281	Web in Print 21				
02282	Web in Print 22				
02283	Web in Print 23				
02284	Web in Print 24				

Reference

When this is set to 1 (x1), 0.15mm of web is fed for each 500mm print.
When set to 2 (x2), 0.3mm (0.15x2) of web is fed for the same condition.

02285-02309 Web Print End

It is possible to enable Web Cleaner to be forwarded in 3mm every after completion of printing, for extra cleaning performance. The default setting (0) is disabled.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
02285	Web Print End 00	-	0 Disalbed	1 Enabled	0
02286	Web Print End 01				
02287	Web Print End 02				
02288	Web Print End 03				
02289	Web Print End 04				
02290	Web Print End 05				
02291	Web Print End 06				
02292	Web Print End 07				
02293	Web Print End 08				
02294	Web Print End 09				
02295	Web Print End 10				
02296	Web Print End 11				
02297	Web Print End 12				
02298	Web Print End 13				
02299	Web Print End 14				
02300	Web Print End 15				
02301	Web Print End 16				
02302	Web Print End 17				
02303	Web Print End 18				
02304	Web Print End 19				
02305	Web Print End 20				
02306	Web Print End 21				
02307	Web Print End 22				
02308	Web Print End 23				
02309	Web Print End 24				

02400-02424 Tr2 Current Slope 00-24

These are parameters to automatically adjust the Secondary Transfer.

> **NOTE**
>
> These modes do not work when the firmware version is K135FX0040 or older.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
02400	Tr2 Current Slope 00	%	80	120	100
02401	Tr2 Current Slope 01				
02402	Tr2 Current Slope 02				
02403	Tr2 Current Slope 03				
02404	Tr2 Current Slope 04				
02405	Tr2 Current Slope 05				
02406	Tr2 Current Slope 06				
02407	Tr2 Current Slope 07				
02408	Tr2 Current Slope 08				
02409	Tr2 Current Slope 09				
02410	Tr2 Current Slope 10				
02411	Tr2 Current Slope 11				
02412	Tr2 Current Slope 12				
02413	Tr2 Current Slope 13				
02414	Tr2 Current Slope 14				
02415	Tr2 Current Slope 15				
02416	Tr2 Current Slope 16				
02417	Tr2 Current Slope 17				
02418	Tr2 Current Slope 18				
02419	Tr2 Current Slope 19				
02420	Tr2 Current Slope 20				
02421	Tr2 Current Slope 21				
02422	Tr2 Current Slope 22				
02423	Tr2 Current Slope 23				
02424	Tr2 Current Slope 12				

02425-02449 Tr2 Current Offset 00-24

These are parameters to automatically adjust the Secondary Transfer.

NOTE

These modes do not work when the firmware version is K135FX0040 or older.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
02425	Tr2 Current Offset 00	%	80	120	100
02426	Tr2 Current Offset 01				
02427	Tr2 Current Offset 02				
02428	Tr2 Current Offset 03				
02429	Tr2 Current Offset 04				
02430	Tr2 Current Offset 05				
02431	Tr2 Current Offset 06				
02432	Tr2 Current Offset 07				
02433	Tr2 Current Offset 08				
02434	Tr2 Current Offset 09				
02435	Tr2 Current Offset 10				
02436	Tr2 Current Offset 11				
02437	Tr2 Current Offset 12				
02438	Tr2 Current Offset 13				
02439	Tr2 Current Offset 14				
02440	Tr2 Current Offset 15				
02441	Tr2 Current Offset 16				
02442	Tr2 Current Offset 17				
02443	Tr2 Current Offset 18				
02444	Tr2 Current Offset 19				
02445	Tr2 Current Offset 20				
02446	Tr2 Current Offset 21				
02447	Tr2 Current Offset 22				
02448	Tr2 Current Offset 23				
02449	Tr2 Current Offset 24				

02450 Tr2 Offset Vol Type

These are parameters to automatically adjust the Secondary Transfer.

NOTE

These modes do not work when the firmware version is K135FX0040 or older.

Min.	Max.	Default
0 (50V)	1 (100V)	0 (50V)

02451-02454 Dev Bias Threshold (K) (C) (M) (Y)

These modes automatically reset the Developer Bias in Auto Density Control under some particular condition.
Basically the Auto Density Control changes the value of Light Gain first. When the value of Light Gain is adjusted to either maximum or minimum value and then the Developer Bias value is adjusted next. If Auto Density is repeated several times under some particular condition, there are some cases that the Auto Density COntrol starts to change the Developer Bias value whil the Light Gain value has not yet reached the maximum or minimum. In that case No.2451 to 2454 "reset" the Developer Bias to return them to the standard values.

	Item Name	Setting value			
		Unit	Min.	Max.	Default
02451	Dev Bias(K)Threshold	V	-600	0	-200
02452	Dev Bias(C)Threshold				-180
02453	Dev Bias(M)Threshold				-180
02454	Dev Bias(Y)Threshold				-180

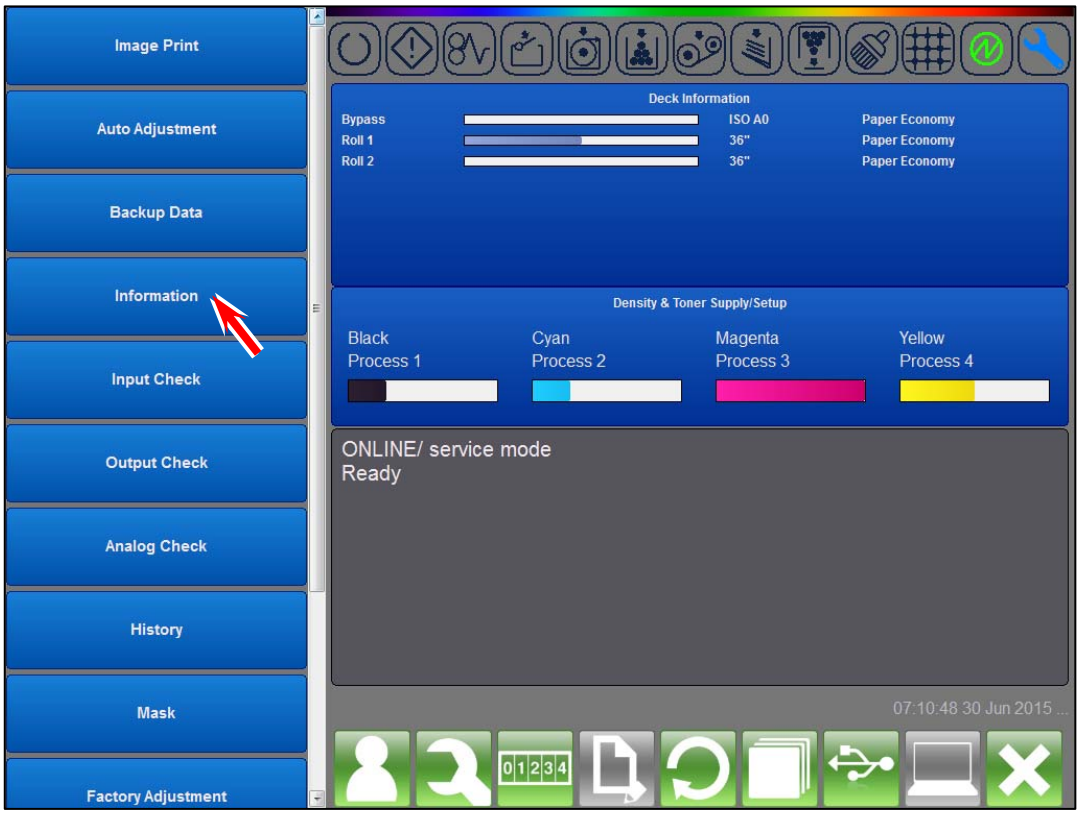
NOTE

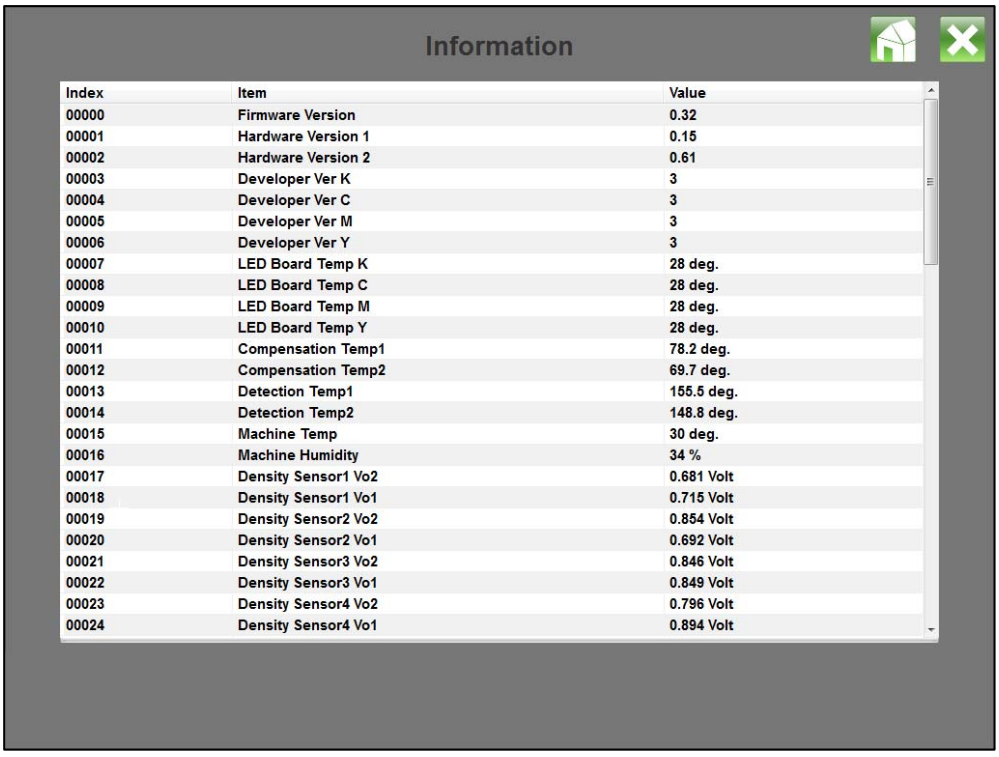
It is unecessary to change these values in the field.

8. 5 Information

Information is a monitoring list sent from the various components in the printer. IT is used for example to check the fuser temperature.

Press **Information** in the left pain of the Home screen of Maintenance GUI.

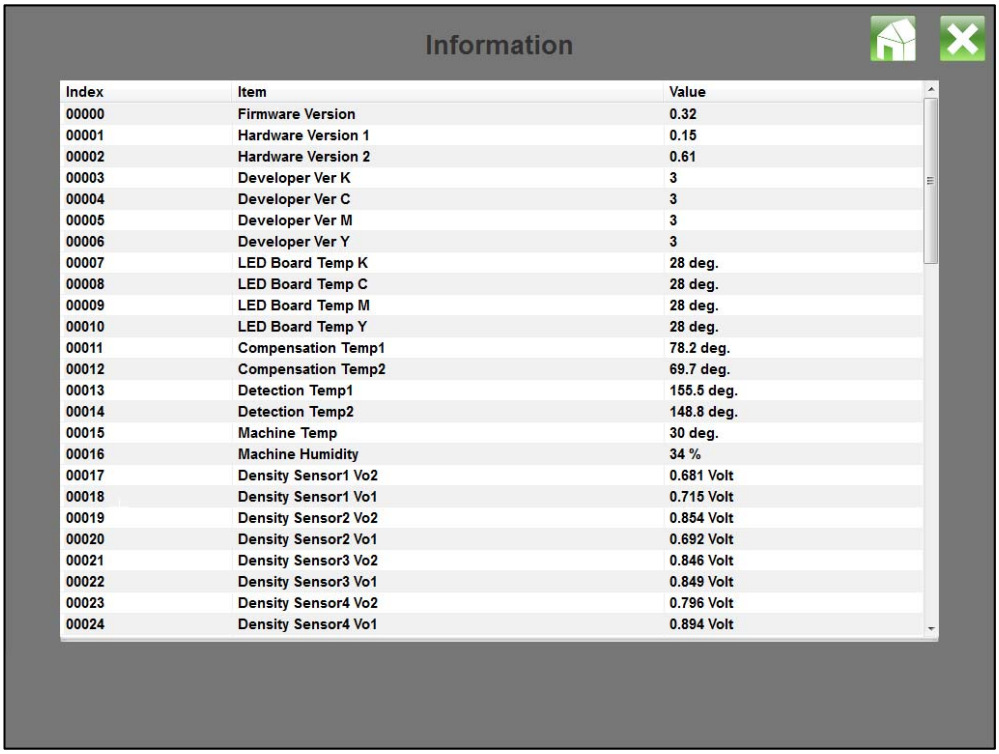




Index	Item	Value
00000	Firmware Version	0.32
00001	Hardware Version 1	0.15
00002	Hardware Version 2	0.61
00003	Developer Ver K	3
00004	Developer Ver C	3
00005	Developer Ver M	3
00006	Developer Ver Y	3
00007	LED Board Temp K	28 deg.
00008	LED Board Temp C	28 deg.
00009	LED Board Temp M	28 deg.
00010	LED Board Temp Y	28 deg.
00011	Compensation Temp1	78.2 deg.
00012	Compensation Temp2	69.7 deg.
00013	Detection Temp1	155.5 deg.
00014	Detection Temp2	148.8 deg.
00015	Machine Temp	30 deg.
00016	Machine Humidity	34 %
00017	Density Sensor1 Vo2	0.681 Volt
00018	Density Sensor1 Vo1	0.715 Volt
00019	Density Sensor2 Vo2	0.854 Volt
00020	Density Sensor2 Vo1	0.692 Volt
00021	Density Sensor3 Vo2	0.846 Volt
00022	Density Sensor3 Vo1	0.849 Volt
00023	Density Sensor4 Vo2	0.796 Volt
00024	Density Sensor4 Vo1	0.894 Volt

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].



Index	Item	Value
00000	Firmware Version	0.32
00001	Hardware Version 1	0.15
00002	Hardware Version 2	0.61
00003	Developer Ver K	3
00004	Developer Ver C	3
00005	Developer Ver M	3
00006	Developer Ver Y	3
00007	LED Board Temp K	28 deg.
00008	LED Board Temp C	28 deg.
00009	LED Board Temp M	28 deg.
00010	LED Board Temp Y	28 deg.
00011	Compensation Temp1	78.2 deg.
00012	Compensation Temp2	69.7 deg.
00013	Detection Temp1	155.5 deg.
00014	Detection Temp2	148.8 deg.
00015	Machine Temp	30 deg.
00016	Machine Humidity	34 %
00017	Density Sensor1 Vo2	0.681 Volt
00018	Density Sensor1 Vo1	0.715 Volt
00019	Density Sensor2 Vo2	0.854 Volt
00020	Density Sensor2 Vo1	0.692 Volt
00021	Density Sensor3 Vo2	0.846 Volt
00022	Density Sensor3 Vo1	0.849 Volt
00023	Density Sensor4 Vo2	0.796 Volt
00024	Density Sensor4 Vo1	0.894 Volt

For details about [Item] and [Detail], see the next page.

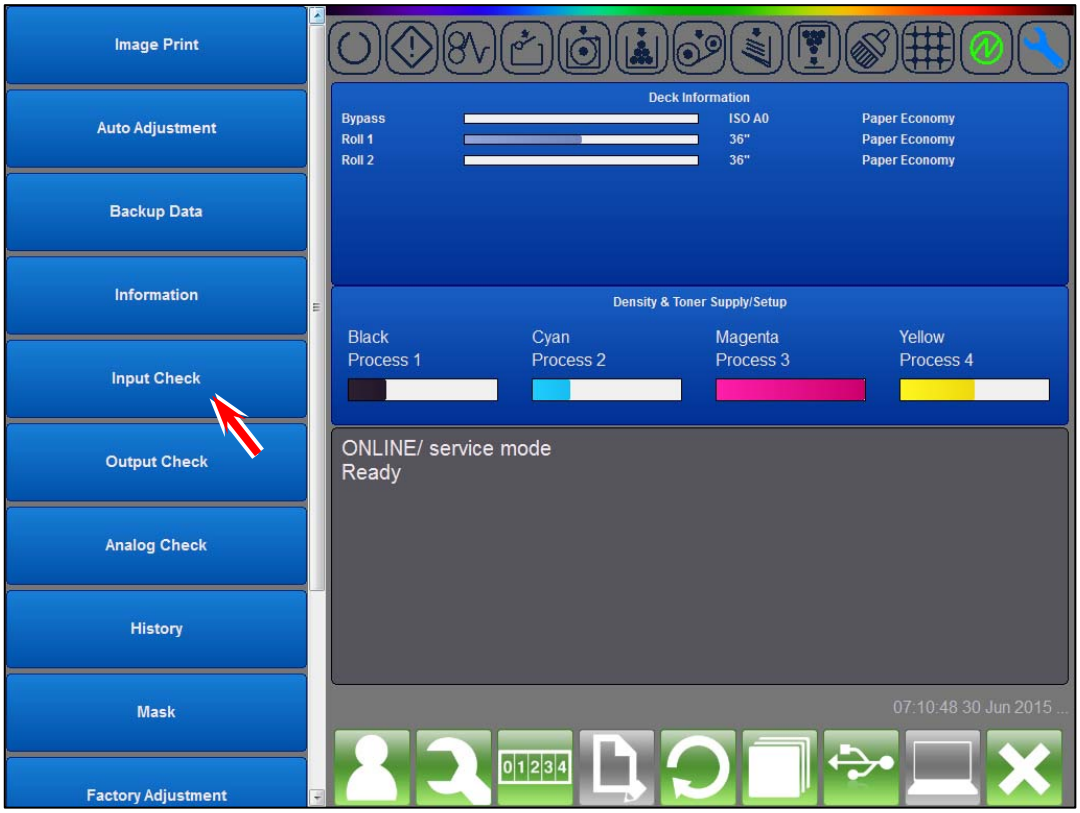
8. 5. 2 Details about the indications in Information

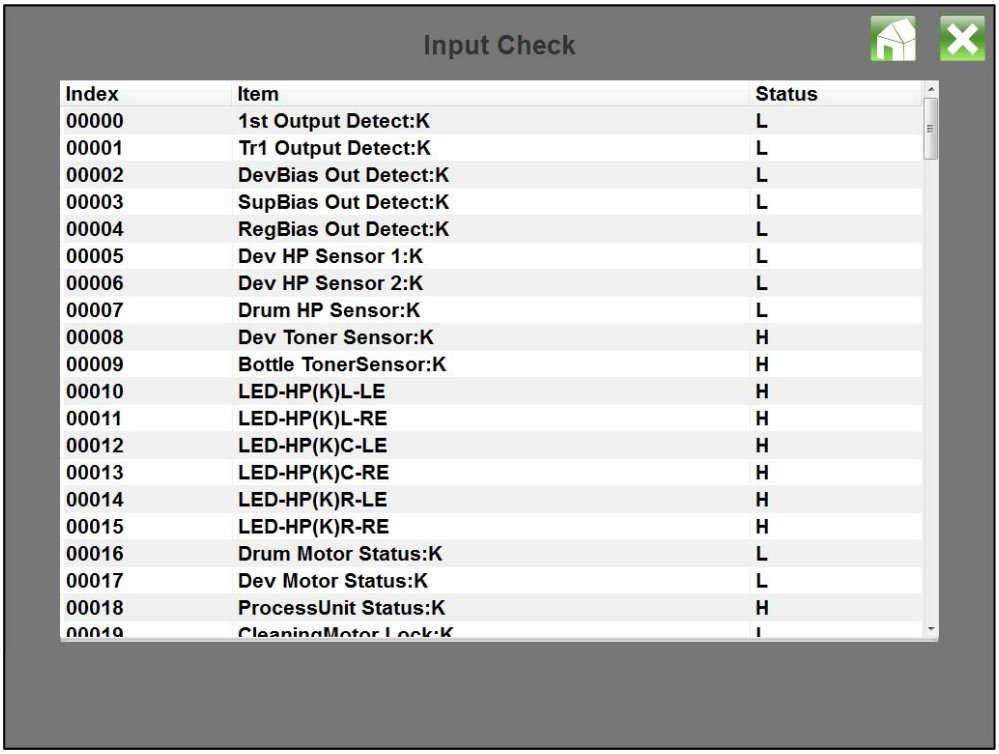
No.	Item	Meaning of Value	Description
00000	Firmware Version	Version Number	Version of Firmware for overall print engine control)
00001	Hardware Version 1	Version Number	Version of FPGA for drive control
00002	Hardware Version 2	Version Number	Version of FPGA for image process control
00003	Developer Version K	Version Number	Version of Developer (K)
00004	Developer Version C	Version Number	Version of Developer (C)
00005	Developer Version M	Version Number	Version of Developer (M)
00006	Developer Version Y	Version Number	Version of Developer (Y)
00007	LED Board Temp K	Temperature (^{o}C)	Temperature of LED PCB (K)
00008	LED Board Temp C	Temperature (^{o}C)	Temperature of LED PCB (C)
00009	LED Board Temp M	Temperature (^{o}C)	Temperature of LED PCB (M)
00010	LED Board Temp Y	Temperature (^{o}C)	Temperature of LED PCB (KY
00011	Compensation Temp1	Temperature (^{o}C)	Compensation Temperature for Fuser (Center)
00012	Compensation Temp2	Temperature (^{o}C)	Compensation Temperature for Fuser (Side)
00013	Detection Temp1	Temperature (^{o}C)	Actual Temperature for Fuser (Center)
00014	Detection Temp2	Temperature (^{o}C)	Actual Temperature for Fuser (Side)
00015	Machine Temp	Temperature (^{o}C)	Temperature of the inside of machine
00016	Machine Humidity	Humidity (%)	Humidity of the inside of machine
00017	Density Sensor 1 Vo2	Voltage (V)	Output voltage of Density Sensor 1
00018	Density Sensor 1 Vo1	Voltage (V)	Output voltage of Density Sensor 1
00019	Density Sensor 2 Vo2	Voltage (V)	Output voltage of Density Sensor 2
00020	Density Sensor 2 Vo1	Voltage (V)	Output voltage of Density Sensor 2
00021	Density Sensor 3 Vo2	Voltage (V)	Output voltage of Density Sensor 3
00022	Density Sensor 3 Vo1	Voltage (V)	Output voltage of Density Sensor 3
00023	Density Sensor 4 Vo2	Voltage (V)	Output voltage of Density Sensor 4
00024	Density Sensor 4 Vo1	Voltage (V)	Output voltage of Density Sensor 4
00025	Density Sensor 5 Vo2	Voltage (V)	Output voltage of Density Sensor 5
00026	Density Sensor 5 Vo1	Voltage (V)	Output voltage of Density Sensor 5
00027	Load Cell Output	Voltage (V)	Output voltage of Fuser Tension Sensor
00028	Tr1 Output Voltage K	Voltage (V)	Voltage to Primary Transfer Roller (K)
00029	Tr1 Output Voltage C	Voltage (V)	Voltage to Primary Transfer Roller (C)
00030	Tr1 Output Voltage M	Voltage (V)	Voltage to Primary Transfer Roller (M)
00031	Tr1 Output Voltage Y	Voltage (V)	Voltage to Primary Transfer Roller (KY
00032	Tr1 Current Voltage K	Current (micro A)	Current to Primary Transfer Roller (K)
00033	Tr1 Current Voltage C	Current (micro A)	Current to Primary Transfer Roller (C)
00034	Tr1 Current Voltage M	Current (micro A)	Current to Primary Transfer Roller (M)
00035	Tr1 Current Voltage Y	Current (micro A)	Current to Primary Transfer Roller (KY
00036	Tr2 Current	Current (micro A)	Current to Secondary Transfer Roller
00037	Sep HV Current Min	Current (micro A)	Current to Discharge Needles (Min.)
00038	Sep HV Current Max	Current (micro A)	Current to Discharge Needles (Max.)
00039	Skew Roller Current	Current (micro A)	Current to Skew Roller
00040	LED Correct Data(K)L		Correction data for LED Head (K) Left block
00041	LED Correct Data(K)C		Correction data for LED Head (K) Center block
00042	LED Correct Data(K)R		Correction data for LED Head (K) Right block
00043	LED Correct Data(C)L		Correction data for LED Head (C) Left block
00044	LED Correct Data(C)C		Correction data for LED Head (C) Center block
00045	LED Correct Data(C)R		Correction data for LED Head (C) Right block
00046	LED Correct Data(M)L		Correction data for LED Head (M) Left block
00047	LED Correct Data(M)C		Correction data for LED Head (M) Center block
00048	LED Correct Data(M)R		Correction data for LED Head (M) Right block
00049	LED Correct Data(Y)L		Correction data for LED Head (Y) Left block
00050	LED Correct Data(Y)C		Correction data for LED Head (Y) Center block
00051	LED Correct Data(Y)R		Correction data for LED Head (Y) Right block
00052	TR2 Offset Voltage R1	Voltage (V)	Offset Voltage to Secondary Transfer R1
00053	TR2 Offset Voltage R2	Voltage (V)	Offset Voltage to Secondary Transfer R2
00054	TR2 Offset Voltage R3	Voltage (V)	Offset Voltage to Secondary Transfer R3
00055	TR2 Offset Voltage R4	Voltage (V)	Offset Voltage to Secondary Transfer R4
00056	TR2 Belt Current R1		Current to Belt for Secondary Transfer R1
00057	TR2 Belt Current R2		Current to Belt for Secondary Transfer R2
00058	TR2 Belt Current R3		Current to Belt for Secondary Transfer R3
00059	TR2 Belt Current R4		Current to Belt for Secondary Transfer R4
00060	TR2 Paper Current R1	Current (micro A)	Current to Media R1
00061	TR2 Paper Current R2	Current (micro A)	Current to Media R2
00062	TR2 Paper Current R3	Current (micro A)	Current to Media R3
00063	TR2 Paper Current R4	Current (micro A)	Current to Media R4
00064	TR2 Current (-)	Current (micro A)	Current to Secondary Transfer (negative)
00065	LED Length Data (K) L		LED Array Characteristics (Used in factory)

No.	Item	Meaning of Value	Description
00066	LED Length Data (K) C		LED Array Characteristics (Used in factory)
00067	LED Length Data (K) R		LED Array Characteristics (Used in factory)
00068	LED Length Data (C) L		LED Array Characteristics (Used in factory)
00069	LED Length Data (C) C		LED Array Characteristics (Used in factory)
00070	LED Length Data (C) R		LED Array Characteristics (Used in factory)
00071	LED Length Data (M) L		LED Array Characteristics (Used in factory)
00072	LED Length Data (M) C		LED Array Characteristics (Used in factory)
00073	LED Length Data (M) R		LED Array Characteristics (Used in factory)
00074	LED Length Data (Y) L		LED Array Characteristics (Used in factory)
00075	LED Length Data (Y) C		LED Array Characteristics (Used in factory)
00076	LED Length Data (Y) R		LED Array Characteristics (Used in factory)
00077	TR Voltage	Voltage (V)	Voltage to Secondary Transfer Control

8. 6 Input Check

A service technician can check whether or not the status of input signal from each electric component is normal.

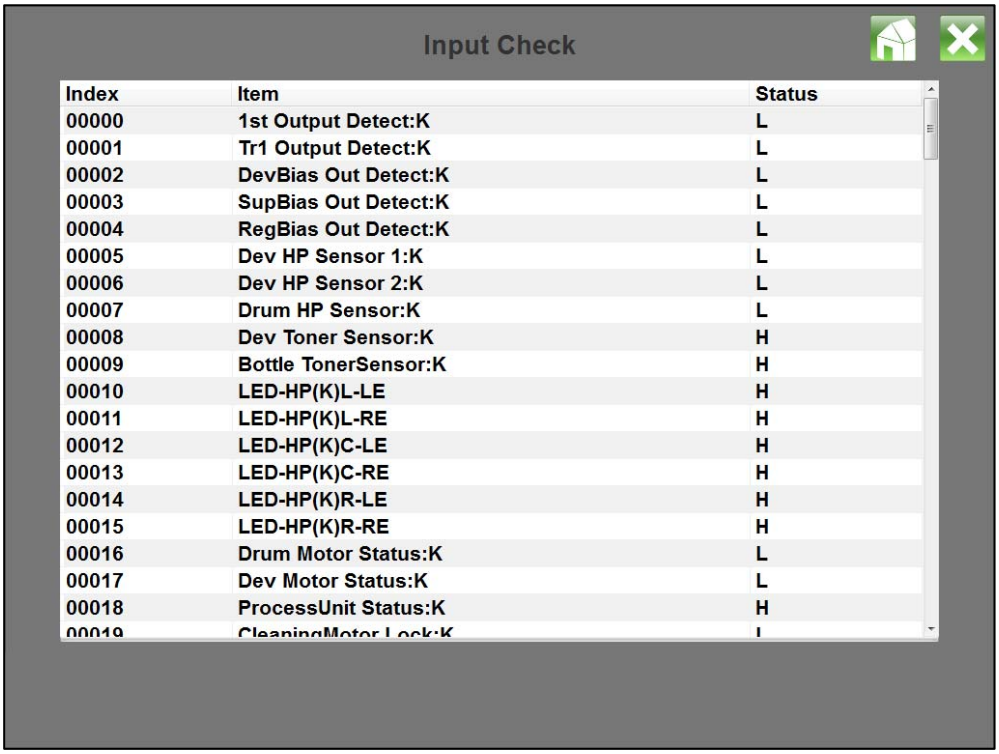




Index	Item	Status
00000	1st Output Detect:K	L
00001	Tr1 Output Detect:K	L
00002	DevBias Out Detect:K	L
00003	SupBias Out Detect:K	L
00004	RegBias Out Detect:K	L
00005	Dev HP Sensor 1:K	L
00006	Dev HP Sensor 2:K	L
00007	Drum HP Sensor:K	L
00008	Dev Toner Sensor:K	H
00009	Bottle TonerSensor:K	H
00010	LED-HP(K)L-LE	H
00011	LED-HP(K)L-RE	H
00012	LED-HP(K)C-LE	H
00013	LED-HP(K)C-RE	H
00014	LED-HP(K)R-LE	H
00015	LED-HP(K)R-RE	H
00016	Drum Motor Status:K	L
00017	Dev Motor Status:K	L
00018	ProcessUnit Status:K	H
00019	CleaningMotor Lock:K	L

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.



Index	Item	Status
00000	1st Output Detect:K	L
00001	Tr1 Output Detect:K	L
00002	DevBias Out Detect:K	L
00003	SupBias Out Detect:K	L
00004	RegBias Out Detect:K	L
00005	Dev HP Sensor 1:K	L
00006	Dev HP Sensor 2:K	L
00007	Drum HP Sensor:K	L
00008	Dev Toner Sensor:K	H
00009	Bottle TonerSensor:K	H
00010	LED-HP(K)L-LE	H
00011	LED-HP(K)L-RE	H
00012	LED-HP(K)C-LE	H
00013	LED-HP(K)C-RE	H
00014	LED-HP(K)R-LE	H
00015	LED-HP(K)R-RE	H
00016	Drum Motor Status:K	L
00017	Dev Motor Status:K	L
00018	ProcessUnit Status:K	H
00019	CleaningMotor Lock:K	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 Signal List

No.	Item name	Concerning signal symbol	Connector Pin	Signal name	Status
0	1st Output Detect:K	1ST_ERR1	J577-9	1st output (K)	H:Short circuit
1	Tr1 Output Detect:K			Primary transfer current (K)	H:Short circuit
2	DevBias Out Detect:K			Developer Bias output (K)	H:Short circuit
3	SupBias Out Detect:K			Supply Bias output (K)	H:Short circuit
4	RegBias Out Detect:K			Regulation Bias output (K)	H:Short circuit
5	Dev HP Sensor 1:K	DEV_SEN_1_P1	J202-2	Developer sensor 1	Sensor 1/2 - Separate :L/L - Press :L/H
6	Dev HP Sensor 2:K	DEV_SEN_2_P1	J202-14	Developer sensor 2	
7	Drum HP Sensor:K	DRM_HP_SEN_1_P1	J203-2	Drum HP sensor (K)	H:HP
8	Dev Toner Sensor:K	TNR_SEN	J320A-1	Developer toner sensor (K)	L: No toner
9	Bottle TonerSensor:K	BTL_TNR_SEN	J320A-11	Bottle toner sensor (K)	L: No toner
10	LED-HP(K)L-LE	LEDA_HP_L	J235A-1	LED Head A focus HP_L(K)	H:HP
11	LED-HP(K)L-RE	LEDA_HP_R	J237A-1	LED Head A focus HP_R(K)	H:HP
12	LED-HP(K)C-LE	LEDB_HP_L	J248A-1	LED Head B focus HP_L(K)	H:HP
13	LED-HP(K)C-RE	LEDB_HP_R	J239A-1	LED Head B focus HP_R(K)	H:HP
14	LED-HP(K)R-LE	LEDC_HP_L	J250A-1	LED Head C focus HP_L(K)	H:HP
15	LED-HP(K)R-RE	LEDC_HP_R	J252A-1	LED Head C focus HP_R(K)	H:HP
16	Drum Motor Status:K			Drum motor status (K)	H: Abnormal
17	Dev motor Status:K			Developer motor status (K)	H: Abnormal
18	ProcessUnit Status:K	P1_UNIT_ST_IN	J229-1	Process unit status (K)	H: Unit is set
19	CleaningMotor Lock:K			Wire cleaning motor lock detection (K)	H: Locked
20	Dev Roller Status:K	P1_DEV_ROLLERS_PULS	J320A-19	Developer Roller status (K)	Pulse: Rotating
100	1st Output Detect:C	1ST_ERR2	J577-10	1st output (C)	H:Short circuit
101	Tr1 Output Detect:C			Primary transfer current (C)	H:Short circuit
102	DevBias Out Detect:C			Developer Bias output (C)	H:Short circuit
103	SupBias Out Detect:C			Supply Bias output (C)	H:Short circuit
104	RegBias Out Detect:C			Regulation Bias output (C)	H:Short circuit
105	Dev HP Sensor 1:C	DEV_SEN_1_P2	J260-2	Developer sensor 1	Sensor 1/2 - Separate :L/L - Press :L/H
106	Dev HP Sensor 2:C	DEV_SEN_2_P2	J260-5	Developer sensor 2	
107	Drum HP Sensor:C	DRM_HP_SEN_1_P2	J203-5	Drum HP sensor (C)	H:HP
108	Dev Toner Sensor:C	TNR_SEN	J240B-3	Developer toner sensor (C)	L: No toner
109	Bottle TonerSensor:C	BTL_TNR_SEN	J240B-7	Bottle toner sensor (C)	L: No toner
110	LED-HP(C)L-LE	LEDA_HP_L	J234B-1	LED Head A focus HP_L(C)	H:HP
111	LED-HP(C)L-RE	LEDA_HP_R	J236B-1	LED Head A focus HP_R(C)	H:HP
112	LED-HP(C)C-LE	LEDB_HP_L	J248B-1	LED Head B focus HP_L(C)	H:HP
113	LED-HP(C)C-RE	LEDB_HP_R	J238B-1	LED Head B focus HP_R(C)	H:HP
114	LED-HP(C)R-LE	LEDC_HP_L	J250B-1	LED Head C focus HP_L(C)	H:HP
115	LED-HP(C)R-RE	LDC_C_HP_R	J252B-1	LED Head C focus HP_R(C)	H:HP
116	Drum Motor Status:C			Drum motor status (C)	H: Abnormal
117	Dev motor Status:C			Developer motor status (C)	H: Abnormal

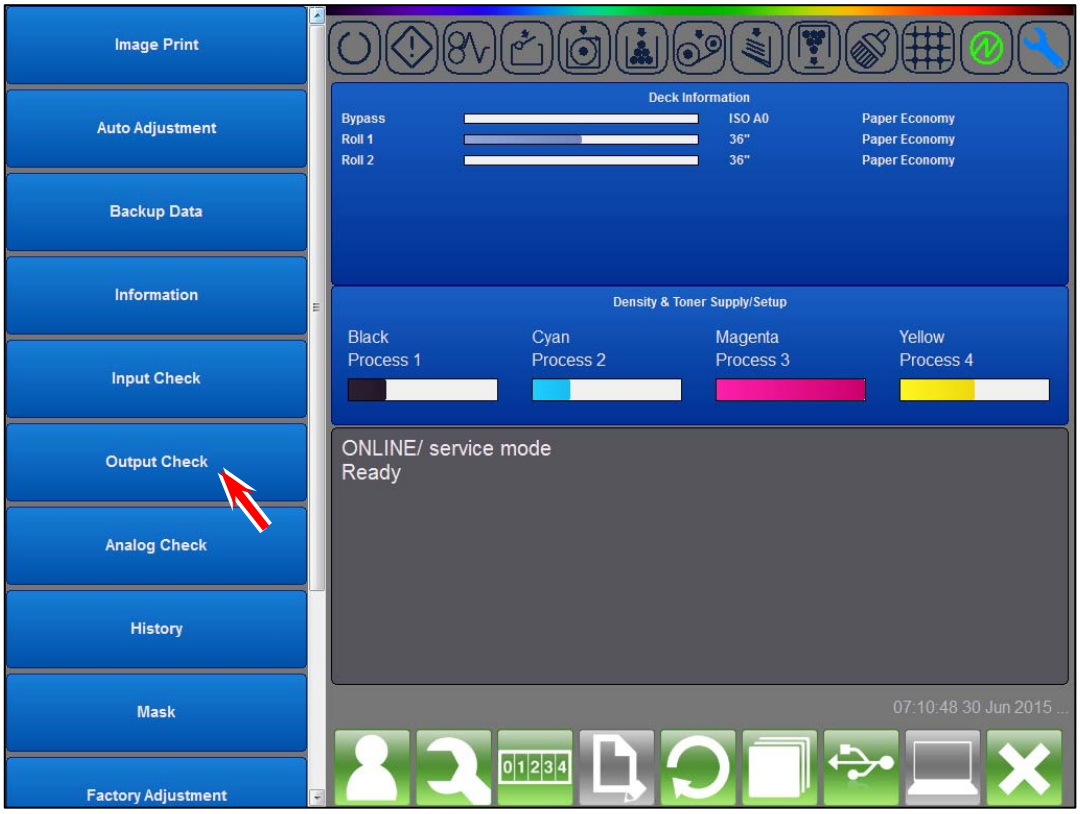
No.	Item name	Concerning signal symbol	Connector Pin	Signal name	Status
118	ProcessUnit Status:C	P2_UNIT_ST_IN	J229-3	Process unit status (C)	H: Unit is set
119	CleaningMotor Lock:C			Wire cleaning motor lock (C)	H: Locked
120	Dev Roller Status:C	P2_DEV_ROLLER_PULS	J320B-19	Developer Roller status (M)	Pulse: Rotating
200	1st Output Detect:M	1ST_ERR3	J577-11	1st output (M)	H:Short circuit
201	Tr1 Output Detect:M			Primary transfer current (M)	H:Short circuit
202	DevBias Out Detect:M			Developer Bias output (M)	H:Short circuit
203	SupBias Out Detect:M			Supply Bias output (M)	H:Short circuit
204	RegBias Out Detect:M			Regulation Bias output (M)	H:Short circuit
205	Dev HP Sensor 1:M	DEV_SEN_1_P3	J263-2	Developer sensor 1	Sensor 1/2 - Separate :L/L - Press :L/H
206	Dev HP Sensor 2:M	DEV_SEN_2_P3	J263-5	Developer sensor 2	
207	Drum HP Sensor:M	DRM_HP_SEN_1_P3	J203-8	Drum HP sensor (M)	H:HP
208	Dev Toner Sensor:M	TNR_SEN	J240C-3	Developer toner sensor (M)	L: No toner
209	Bottle TonerSensor:M	BTL_TNR_SEN	J240C-7	Bottle toner sensor (M)	L: No toner
210	LED-HP(M)L-LE	LEDA_HP_L	J234C-1	LED Head A focus HP_L(M)	H:HP
211	LED-HP(M)L-RE	LEDA_HP_R	J236C-1	LED Head A focus HP_R(M)	H:HP
212	LED-HP(M)C-LE	LEDB_HP_L	J248C-1	LED Head B focus HP_L(M)	H:HP
213	LED-HP(M)C-RE	LEDB_HP_R	J238C-1	LED Head B focus HP_R(M)	H:HP
214	LED-HP(M)R-LE	LEDC_HP_L	J250C-1	LED Head C focus HP_L(M)	H:HP
215	LED-HP(M)R-RE	LDC_C_HP_R	J252C-1	LED Head C focus HP_R(M)	H:HP
216	Drum Motor Status:M			Drum motor status (M)	H: Abnormal
217	Dev motor Status:M			Developer motor status (M)	H: Abnormal
218	ProcessUnit Status:M	P3_UNIT_ST_IN	J229-5	Process unit status (M)	H: Unit is set
219	CleaningMotor Lock:M			Wire cleaning motor lock (M)	H: Locked
220	Dev Roller Status:M	P3_DEV_ROLLER_PULS	J320C-19	Developer Roller status (C)	Pulse: Rotating
300	1st Output Detect:Y	1ST_ERR4	J577-12	1st output (Y)	H:Short circuit
301	Tr1 Output Detect:Y			Primary transfer current (Y)	H:Short circuit
302	DevBias Out Detect:Y			Developer Bias output (Y)	H:Short circuit
303	SupBias Out Detect:Y			Supply Bias output (Y)	H:Short circuit
304	RegBias Out Detect:Y			Regulation Bias output (Y)	H:Short circuit
305	Dev HP Sensor 1:Y	DEV_SEN_1_P4	J266-2	Developer sensor 1	Sensor 1/2 - Separate :L/L - Press :L/H
306	Dev HP Sensor 2:Y	DEV_SEN_2_P4	J266-5	Developer sensor 2	
307	Drum HP Sensor:Y	DRM_HP_SEN_1_P4	J203-11	Drum HP sensor (Y)	H:HP
308	Dev Toner Sensor:Y	TNR_SEN	J240D-3	Developer toner sensor (Y)	L: No toner
309	Bottle TonerSensor:Y	BTL_TNR_SEN	J240D-7	Bottle toner sensor (Y)	L: No toner
310	LED-HP(Y)L-LE	LEDA_HP_L	J234D-1	LED Head A focus HP_L(Y)	H:HP
311	LED-HP(Y)L-RE	LEDA_HP_R	J236D-1	LED Head A focus HP_R(Y)	H:HP
312	LED-HP(Y)C-LE	LEDB_HP_L	J248D-1	LED Head B focus HP_L(Y)	H:HP
313	LED-HP(Y)C-RE	LEDB_HP_R	J238D-1	LED Head B focus HP_R(Y)	H:HP
314	LED-HP(Y)R-LE	LEDC_HP_L	J250D-1	LED Head C focus HP_L(Y)	H:HP
315	LED-HP(Y)R-RE	LDC_C_HP_R	J252D-1	LED Head C focus HP_R(Y)	H:HP
316	Drum Motor Status:Y			Drum motor status (Y)	H: Abnormal

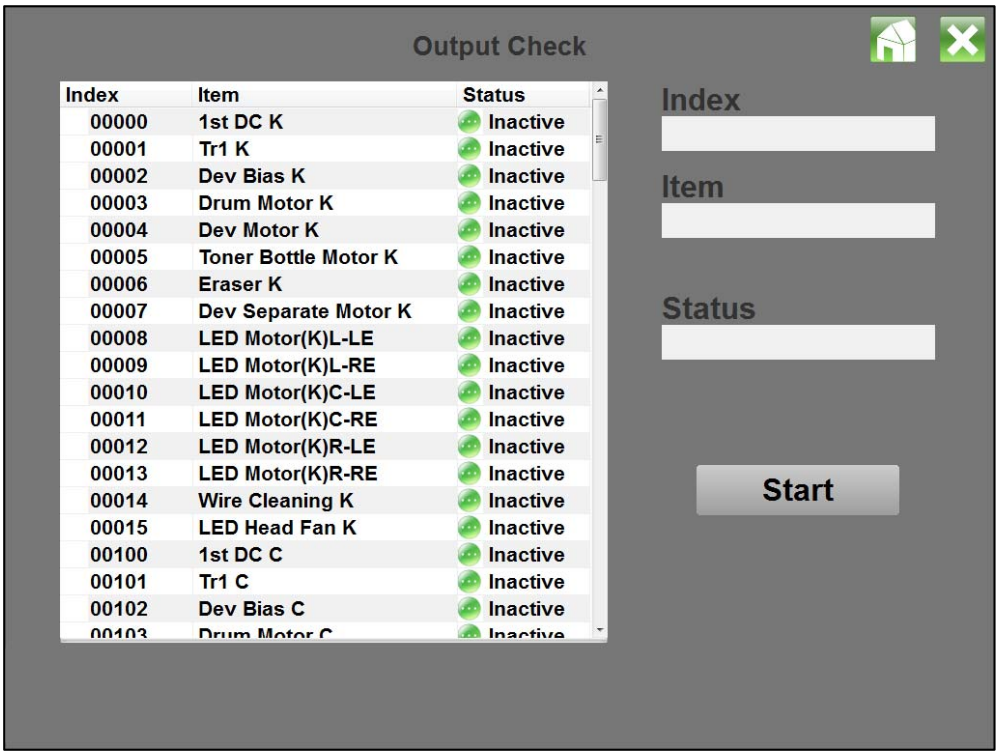
No.	Item name	Concerning signal symbol	Connector Pin	Signal name	Status
317	Dev motor Status:Y			Developer motor status (Y)	H: Abnormal
318	ProcessUnit Status:Y	P4_UNIT_ST_IN	J229-7	Process unit status (Y)	H: Unit is set
319	CleaningMotor Lock:Y			Wire cleaning motor lock (Y)	H: Locked
320	Dev Roller Status:Y	P4_DEV_ROLLER_PULS	J320D-19	Developer Roller status (Y)	Pulse: Rotating
400	Roll1 Pickup Sensor	DECK1_ROLL1_SET_SEN	J561A-16	Roll 1 set sensor	H: Media is set
401	Roll2 Pickup Sensor	DECK1_ROLL2_SET_SEN	J561A-19	Roll 2 set sensor	H: Media is set
402	Roll3 Pickup Sensor	DECK2_ROLL1_SET_SEN	J562A-16	Roll 3 set sensor	H: Media is set
403	Roll4 Pickup Sensor	DECK2_ROLL2_SET_SEN	J562A-19	Roll 4 set sensor	H: Media is set
404	Roll1 Remain Sensor	DECK1_ROLL1_PULSE_SEN	J561A-10	Roll 1 remaining level encoder	Pulse: Disc is moving
405	Roll2 Remain Sensor	DECK1_ROLL2_PULSE_SEN	J561A-13	Roll 2 remaining level encoder	Pulse: Disc is moving
406	Roll3 Remain Sensor	DECK2_ROLL1_PULSE_SEN	J562A-10	Roll 3 remaining level encoder	Pulse: Disc is moving
407	Roll4 Remain Sensor	DECK2_ROLL2_PULSE_SEN	J562A-13	Roll 4 remaining level encoder	Pulse: Disc is moving
408	Length Sensor Deck1	DECK1_FEED_PULSE_SEN	J561A-22	Deck 1 media length encoder	Pulse: Disc is moving
409	Length Sensor Deck2	DECK2_FEED_PULSE_SEN	J565-17	Deck 2 media length encoder	Pulse: Disc is moving
410	Deck2 Pos Sensor	DECK2_POSITION_SEN	J561A-25	Deck 2 position sensor	H:Paper detected
411	Deck1 Status	DECK1_ST	J565-25	Deck 1 status	H:Open
412	Deck2 Status	DECK2_ST	J565-27	Deck 2 status	H:Open
413	Deck1 Motor Status			Deck 1 motor status	H:Abnormal
414	Deck2 Motor Status			Deck 2 motor status	H:Abnormal
500	Position Sensor	P_POSI_CUT	J565-19	Paper position sensor	H:Paper detected
501	Manual Set Sensor	MANUAL_FEED_SENSOR	J563-19	Manual feed sensor	H:Paper detected
502	T Edge Sensor	PAPER_REAR_SENSOR	J563-16	Trailing edge sensor	H:Paper detected
503	Regist Sensor 1	REGIST1_SEN	J906-2	Registration 1 sensor	H:Paper detected
504	Regist Sensor 2	REGIST2_SEN	J906-5	Registration 2 sensor	H:Paper detected
505	Regist Sensor 3	REGIST3_SEN	J906-8	Registration 3 sensor	H:Paper detected
506	Separation Sensor	2TR_SEP_SEN	J560-8	Separation sensor	H:Paper detected
507	Tr1 RollerSet Sen:K	1TR_SET_SENSOR K	J568-20	Primary transfer set sensor (K)	L to H:Separate H to L:Press
508	Tr1 RollerSet Sen:C	1TR_SET_SENSOR C	J568-23	Primary transfer set sensor (C)	L to H:Separate H to L:Press
509	Tr1 RollerSet Sen:M	1TR_SET_SENSOR M	J568-26	Primary transfer set sensor (M)	L to H:Separate H to L:Press
510	Tr1 RollerSet Sen:Y	1TR_SET_SENSOR Y	J568-29	Primary transfer set sensor (Y)	L to H:Separate H to L:Press
511	Tr2 RollerSet Sen	2TR_SET_SENSOR	J563-31	Secondary transfer set sensor	L to H:Separate H to L:Press
512	Belt Skew Sensor L	BELT_SKEW_SEN1	J568-14	Belt skew sensor (L)	H:Abnormal
513	Belt Skew Sensor R	BELT_SKEW_SEN2	J568-17	Belt skew sensor (R)	H:Abnormal
514	Cutter HP-L	CUT_HP_SEN1	J563-13	Cutter HP switch 1	H:HP
515	Cutter HP-R	CUT_HP_SEN2	J565-15	Cutter HP switch 2	H:HP
516	Cutter Cover-L	CUT_1	J574-10	Cutter cover open 1	H:Open
517	Cutter Cover-R	CUT_2	J574-13	Cutter cover open 2	H:Open
518	Left Cover Status	LEFT	J574-7	Left door status	H:Open
519	Feed Motor Status			Paper feed motor status	H:Abnormal
520	Regist Motor1 Status			Registration motor 1 status	H:Abnormal
521	Regist Motor2 Status			Registration motor 2 status	H:Abnormal
522	Regist Motor3 Status			Registration motor 3 status	H:Abnormal

No.	Item name	Concerning signal symbol	Connector Pin	Signal name	Status
523	Belt Motor Status			Belt motor status	H:Abnormal
524	Tr2 Separation St(-)	2TR_SEP_ERR-	J573-19	Secondary Transfer (cleaning) negative polarity abnormality	H:Abnormal
525	Tr2 Separation St(+)	2TR_SEP_ERR+	J573-20	Secondary Transfer (cleaning) positive polarity abnormality	H:Abnormal
526	Tr2 CurrentDetect(-)			Secondary transfer current (-)	H:Short circuit
527	Tr2 CurrentDetect(+)			Secondary transfer current (+)	H:Short circuit
528	Sep Current Detect	SEP_HV_CUR_ERR	J573-22	Discharge needles current	H:Abnormal
529	Skew Current Detect			Belt Skew Roller Current	H:Abnormal
530	Cooling Fan Status 1	LEFT_DOOR_FAN_ERR	J578-19	Left Door Fan operation status	Pulse: Operating
600	Exit Sensor 1	EXIT_SENSOR	J558-2	Exit Sensor	H:Paper detected
601	Exit Sensor 2			Exit Sensor 2 (Not used)	
602	Stack Sensor	UP_EXIT_LADAGE	J555-9	Stack sensor	H:Paper detected
603	Upper Exit Encoder	UP_EXIT_SENSOR	J555-6	Upper Exit Encoder	
604	Upper Unit Connect			Upper Exit Unit connection (Not used)	
605	Stacker Connection			Stacker connection (Not used)	
606	Stacker Sensor			Stacker jam sensor (Not used)	
607	Web End Sensor	WEB_END_SENSOR	J558-8	Web End Sensor	H:Web end
608	Fuser Cover STS-L	FU_1	J552-7 J552-9	Exit Cover Status 1	H:Open
609	Fuser Cover STS-R	FU_2	J552-10 J552-12	Exit Cover Status 2	H:Open
610	Upper Exit Status1	UPPER_1	J579-4	Upper Exit Unit Status 1	H:Open
611	Upper Exit Status2	UPPER_2	J579-7	Upper Exit Unit Status 2	H:Open
612	Fuser Left Cover	FU_3	J574-4	Fuser Left Cover	H:Open
613	Fuser Motor Status			Fuser Motor Status	H:Abnormal
614	Fuser Fan Status	FU_FAN1_SEN	J557-15	User Cooling Fan Rotation Signal	Pulse:Operating
615	Stacker Fan Status			Stacker Fan Rotation	
616	Thermostat Status-L	TS_1	J552-3	Thermostat Status 1	H:Broken
617	Thermostat Status-R	TS_2	J552-6	Thermostat Status 2	H:Broken
618	Tension Error Status			Tension Error	H:Error
700	Waste Toner Full	WASTE_TNR_SENSOR	J560-5	Waste Toner Full	H:Toner full
701	W Toner Motor Status			Waste Toner Motor Rotation	Pulse:Operating
702	AdsorptionFan Status			Adsorption Fan Rotation	H:Abnormal
703	KCS Fan Status1			KCS Cooling Fan 1 (Not used)	
704	KCS Fan Status2			KCS Cooling Fan 2 (Not used)	
705	AC Status			AC Status	H:AC ON
706	Transformer1 Status			Transformer 1 Abnormality	H:Abnormal
707	Transformer2 Status			Transformer 2 Abnormality	H:Abnormal

8. 7 Output Check

It is possible to let each single electric component function by sending an operation signal.

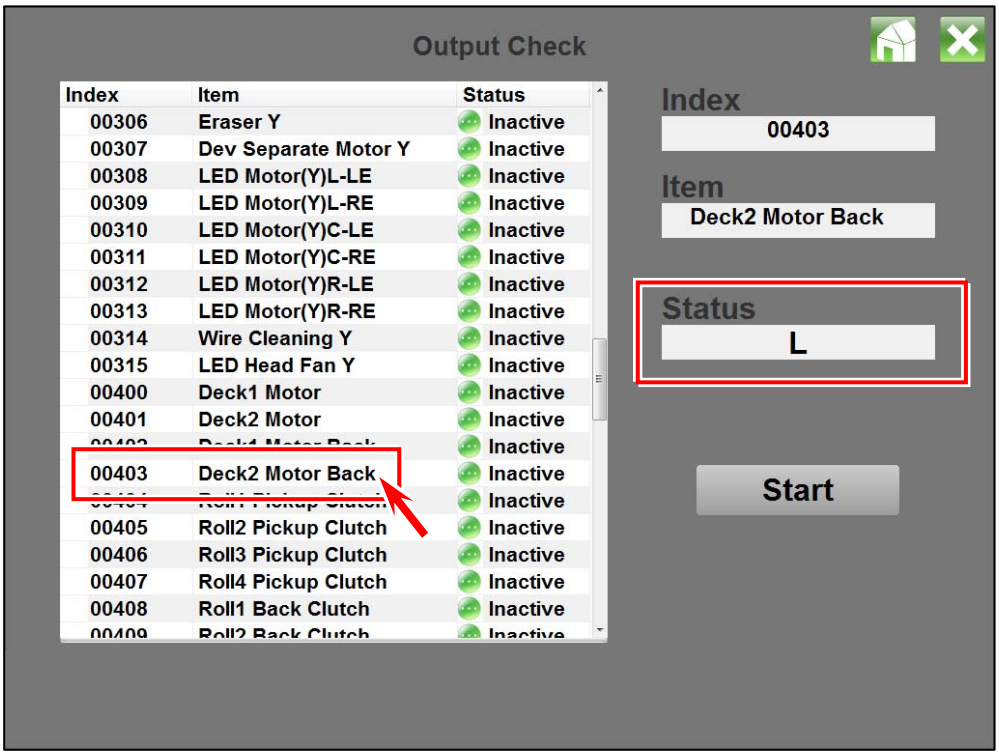




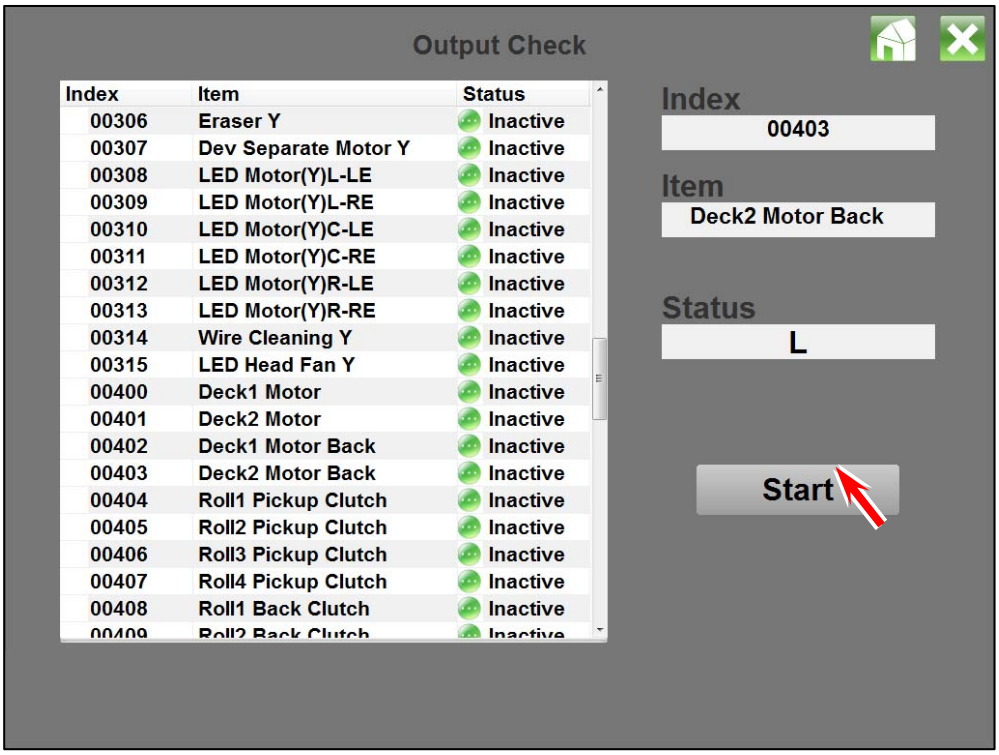
8. 7. 1 Operation in Output Check

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.

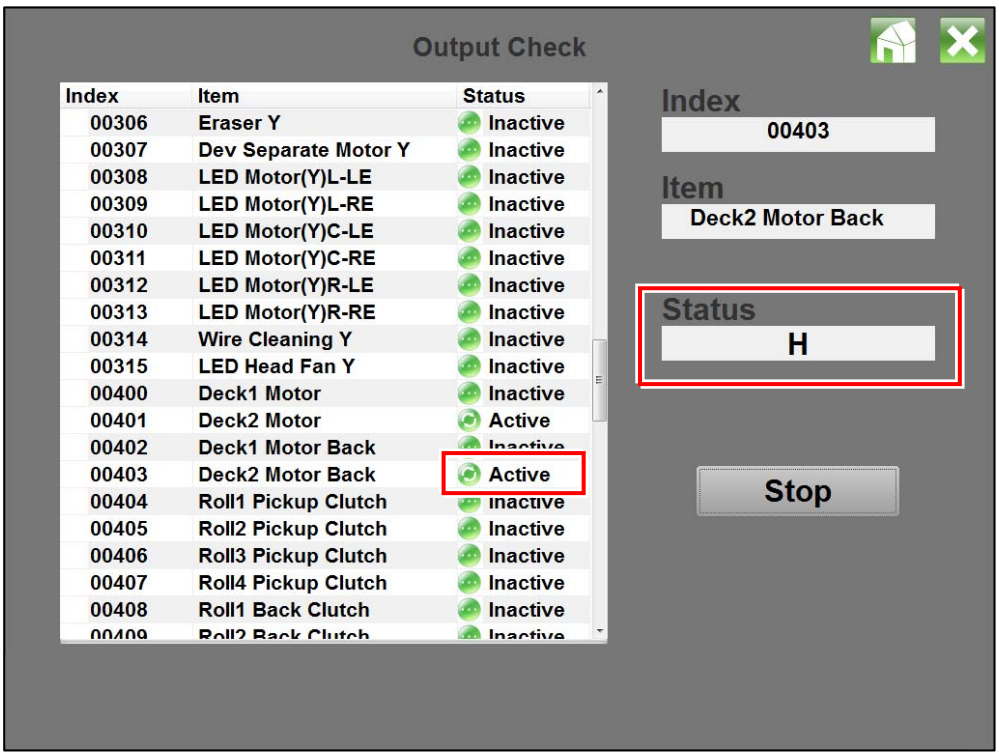
   (Example : [00403 Deck2 Motor Back] is selected. Signal status is L now.)



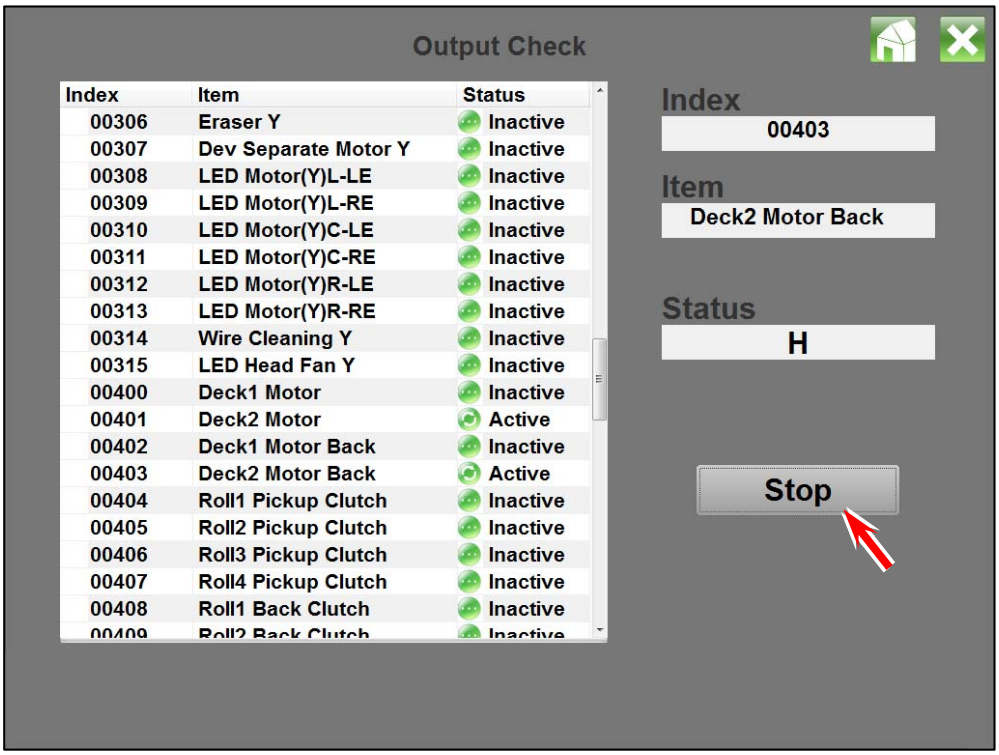
2. Press **Start** to output an operation signal.



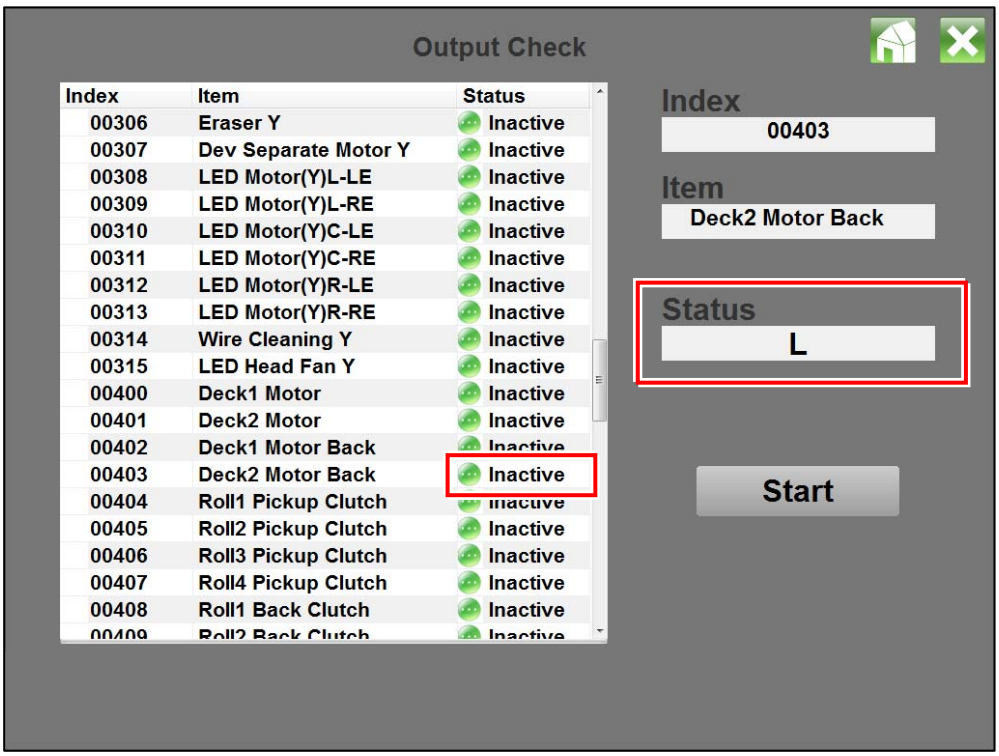
3. When the operation signal is output the signal status in **Status** area changes and the concerning electric component operates. "Active" is shown for the selected item in the list while the electric component is operating.



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

No.	Item name	Concerning signal symbol	Connector Pin	Signal name	Status
0	1st DC K	1st_REM_1	J577-1	1st DC (K)	H:Apply
1	Tr1 K			Primary Transfer (K)	H:Apply
2	Dev Bias K			Developer Bias (K)	H:Apply
3	Drum Motor K	P1_DRM_MTR_AOUT1,2 P1_DRM_MTR_BOUT1,2	J207-1 to J207-4	Drum Motor (K)	H:Rotate
4	Dev Motor K	P1_DEV_MTR_AOUT1,2 P1_DEV_MTR_BOUT1,2	J240A-16 to J240A-19	Developer Motor (K)	H:Rotate
5	Toner Bottle Motor K	DEV_BTL_MTR	J240A-10	Toner Bottle Motor (K)	H:Rotate
6	Eraser K	ERS_RMT	J243A-2	Eraser (K)	H:ON
7	Dev Separate Motor K	DEV_RETRACT_CW_P1 DEV_RETRACT_CCW_P1	J208-1 to J208-2	Developer Press Motor (K)	H:Operate
8	LED Motor(K)L-LE	LEDA_L_MTR_A, A/ LEDA_L_MTR_B, B/	J236A-2 to J236A-5	LED1 (Left block) Focus Motor L	H:Operate
9	LED Motor(K)L-RE	LEDA_R_MTR_A, A/ LEDA_R_MTR_B, B/	J234A-2 to J234A-5	LED1 (Left block) Focus Motor R	H:Operate
10	LED Motor(K)C-LE	LEDB_L_MTR_A, A/ LEDB_L_MTR_B, B/	J247A-2 to J247A-5	LED2 (Central block) Focus Motor L	H:Operate
11	LED Motor(K)C-RE	LEDB_R_MTR_A, A/ LEDB_R_MTR_B, B/	J238A-2 to J238A-5	LED2 (Central block) Focus Motor R	H:Operate
12	LED Motor(K)R-LE	LEDC_L_MTR_A, A/ LEDC_L_MTR_B, B/	J249A-2 to J249A-5	LED3 (Right block) Focus Motor L	H:Operate
13	LED Motor(K)R-RE	LEDC_R_MTR_A, A/ LEDC_R_MTR_B, B/	J251A-2 to J251A-5	LED3 (Right block) Focus Motor R	H:Operate
14	Wire Cleaning K			Wire Cleaning Motor (K)	H:Operate
15	LED Head Fan K	P1_LED_FAN	J254A-7	LED Head Fan (K)	H: Operate
100	1st DC C	1st_REM_2	J577-2	1st DC (C)	H:Apply
101	Tr1 C			Primary Transfer (C)	H:Apply
102	Dev Bias C			Developer Bias (C)	H:Apply
103	Drum Motor C	P2_DRM_MTR_AOUT1,2 P2_DRM_MTR_BOUT1,2	J206-1 to J206-4	Drum Motor (K)	H:Rotate
104	Dev motor C	P2_DEV_MTR_AOUT1,2 P2_DEV_MTR_BOUT1,2	J240B-16 to J240B-19	Developer Motor (C)	H:Rotate
105	Toner Bottle Motor C	DEV_BTL_MTR	J240B-10	Toner Bottle Motor (C)	H:Rotate
106	Eraser C	ERS_RMT	J243B-2	Eraser (C)	H:ON
107	Dev Separate Motor C	DEV_RETRACT_CW_P2 DEV_RETRACT_CCW_P2	J208-3 to J208-4	Developer Press Motor (C)	H:Operate
108	LED Motor(C)L-LE	LEDA_L_MTR_A, A/ LEDA_L_MTR_B, B/	J234B-2 to J234B-5	LED1 (Left block) Focus Motor L	H:Operate
109	LED Motor(C)L-RE	LEDA_R_MTR_A, A/ LEDA_R_MTR_B, B/	J236B-2 to J236B-5	LED1 (Left block) Focus Motor R	H:Operate
110	LED Motor(C)C-LE	LEDB_L_MTR_A, A/ LEDB_L_MTR_B, B/	J247B-2 to J247B-5	LED2 (Central block) Focus Motor L	H:Operate H:Operate
111	LED Motor(C)C-RE	LEDB_R_MTR_A, A/ LEDB_R_MTR_B, B/	J238B-2 to J238B-5	LED2 (Central block) Focus Motor R	
112	LED Motor(C)R-LE	LEDC_L_MTR_A, A/ LEDC_L_MTR_B, B/	J249B-2 to J246B-5	LED3 (Right block) Focus Motor L	H:Operate
113	LED Motor(C)R-RE	LEDC_R_MTR_A, A/ LEDC_R_MTR_B, B/	J251B-2 to J251B-5	LED3 (Right block) Focus Motor R	H:Operate
114	Wire Cleaning C			Wire Cleaning Motor (C)	H:Operate
115	LED Head Fan C	P2_LED_FAN	J254B-7	LED Head Fan (C)	H: Operate
200	1st DC M	1st_REM_3	J577-3	1st DC (M)	H:Apply
201	Tr1 M			Primary Transfer (M)	H:Apply
202	Dev Bias M			Developer Bias (M)	H:Apply
203	Drum Motor M	P3_DRM_MTR_AOUT1,2 P3_DRM_MTR_BOUT1,2	J205-1 to J205-4	Drum Motor (M)	H:Rotate
204	Dev motor M	P3_DEV_MTR_AOUT1,2 P3_DEV_MTR_BOUT1,2	J240C-16 to J240C-19	Developer Motor (M)	H:Rotate
205	Toner Bottle Motor M	DEV_BTL_MTR	J240C-10	Toner Bottle Motor (M)	H:Rotate
206	Eraser M	ERS_RMT	J243C-2	Eraser (M)	H:ON
207	Dev Separate Motor M	DEV_RETRACT_CW_P3 DEV_RETRACT_CCW_P3	J208-5 to J208-6	Developer Press Motor (M)	H:Operate

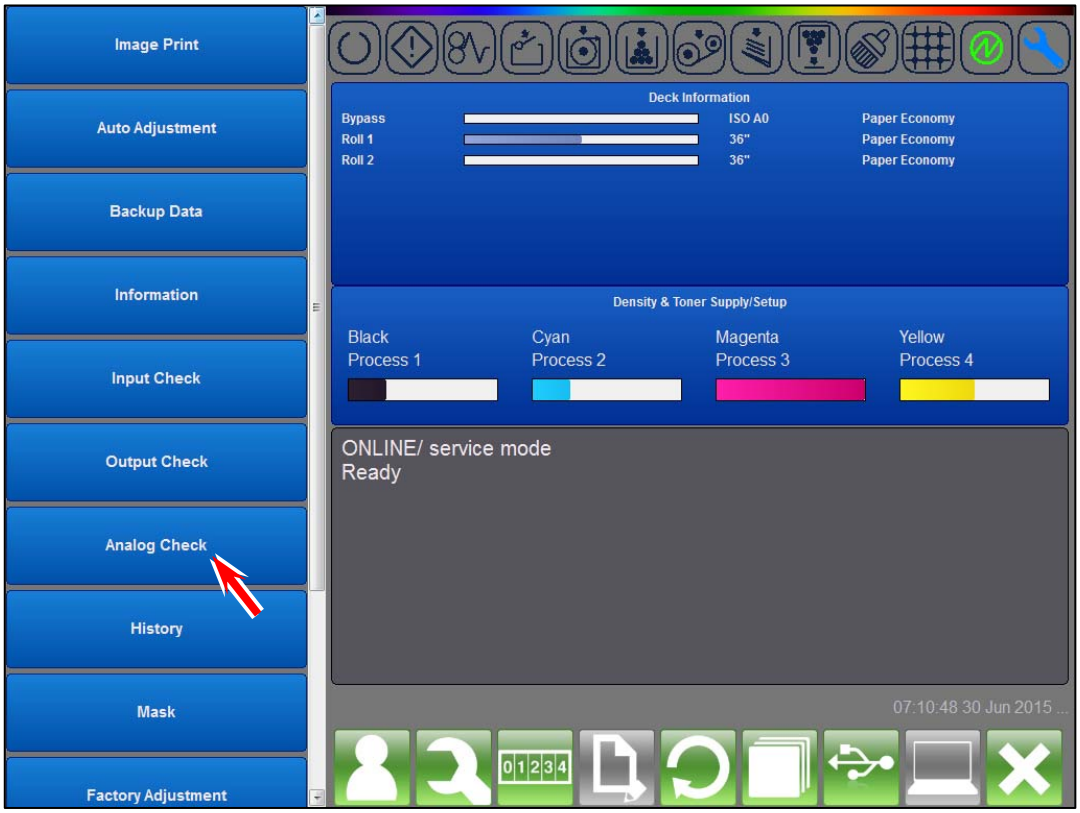
No.	Item name	Concerning signal symbol	Connector Pin	Signal name	Status
208	LED Motor(M)L-LE	LEDA_L_MTR_A, A/ LEDA_L_MTR_B, B/	J236C-2 to J236C-5	LED1 (Left block) Focus Motor L	H:Operate
209	LED Motor(M)L-RE	LEDA_R_MTR_A, A/ LEDA_R_MTR_B, B/	J234C-2 to J234C-5	LED1 (Left block) Focus Motor R	H:Operate
210	LED Motor(M)C-LE	LEDB_L_MTR_A, A/ LEDB_L_MTR_B, B/	J247C-2 to J247C-5	LED2 (Central block) Focus Motor L	H:Operate
211	LED Motor(M)C-RE	LEDB_R_MTR_A, A/ LEDB_R_MTR_B, B/	J238C-2 to J238C-5	LED2 (Central block) Focus Motor R	H:Operate
212	LED Motor(M)R-LE	LEDC_L_MTR_A, A/ LEDC_L_MTR_B, B/	J249C-2 to J249C-5	LED3 (Right block) Focus Motor L	H:Operate
213	LED Motor(M)R-RE	LEDC_R_MTR_A, A/ LEDC_R_MTR_B, B/	J251C-2 to J251C-5	LED3 (Right block) Focus Motor R	H:Operate
214	Wire Cleaning M			Wire Cleaning Motor (M)	H:Operate
215	LED Head Fan M	P3_LED_FAN	J254C-7	LED Head Fan (M)	H: Operate
300	1st DC Y	1st_REM_4	J577-4	1st DC (Y)	H:Apply
301	Tr1 Y			Primary Transfer (Y)	H:Apply
302	Dev Bias Y			Developer Bias (Y)	H:Apply
303	Drum Motor Y	P4_DRM_MTR_AOUT1,2 P4_DRM_MTR_BOUT1,2	J204-1 to J204-4	Drum Motor (Y)	H:Rotate
304	Dev motor Y	P4_DEV_MTR_AOUT1,2 P4_DEV_MTR_BOUT1,2	J240D-16 to J240D-19	Developer Motor (Y)	H:Rotate
305	Toner Bottle Motor Y	DEV_BTL_MTR	J240D-10	Toner Bottle Motor (Y)	H:Rotate
306	Eraser Y	ERS_RMT	J243D-2	Eraser (Y)	H:ON
307	Dev Separate Motor Y	DEV_RETRACT_CW_P4 DEV_RETRACT_CCW_P4	J208-7 to J208-8	Developer Press Motor (Y)	H:Operate
308	LED Motor(Y)L-LE	LEDA_L_MTR_A, A/ LEDA_L_MTR_B, B/	J236D-2 to J236D-5	LED1 (Left block) Focus Motor L	H:Operate
309	LED Motor(Y)L-RE	LEDA_R_MTR_A, A/ LEDA_R_MTR_B, B/	J234D-2 to J234D-5	LED1 (Left block) Focus Motor R	H:Operate
310	LED Motor(Y)C-LE	LEDB_L_MTR_A, A/ LEDB_L_MTR_B, B/	J247D-2 to J247D-5	LED2 (Central block) Focus Motor L	H:Operate
311	LED Motor(Y)C-RE	LEDB_R_MTR_A, A/ LEDB_R_MTR_B, B/	J238D-2 to J238D-5	LED2 (Central block) Focus Motor R	H:Operate
312	LED Motor(Y)R-LE	LEDC_L_MTR_A, A/ LEDC_L_MTR_B, B/	J249D-2 to J249D-5	LED3 (Right block) Focus Motor L	H:Operate
313	LED Motor(Y)R-RE	LEDC_R_MTR_A, A/ LEDC_R_MTR_B, B/	J251D-2 to J251D-5	LED3 (Right block) Focus Motor R	H:Operate
314	Wire Cleaning Y			Wire Cleaning Motor (Y)	H:Operate
315	LED Head Fan Y	P4_LED_FAN	J254D-7	LED Head Fan (Y)	H: Operate
400	Deck1 Motor	DECK1_MTR_A_OUT1,2 DECK1_MTR_B_OUT1,2	J565-1 to J565-4	Deck 1 Motor	
401	Deck2 Motor	DECK2_MTR_A_OUT1,2 DECK2_MTR_B_OUT1,2	J565-5 to J565-8	Deck 2 Motor	
402	Deck1 Motor Back			Deck 1 Motor Reverse	
403	Deck2 Motor Back			Deck 2 Motor Reverse	
404	Roll1 Pickup Clutch	DECK1_ROLL1_FEED_CL	J561A-2	Pick Up Clutch 1	H:ON
405	Roll2 Pickup Clutch	DECK1_ROLL2_FEED_CL	J561A-6	Pick Up Clutch 2	H:ON
406	Roll3 Pickup Clutch	DECK2_ROLL2_FEED_CL	J562A-2	Pick Up Clutch 3	H:ON
407	Roll4 Pickup Clutch	DECK2_ROLL2_FEED_CL	J562A-6	Pick Up Clutch 4	H:ON
408	Roll1 Back Clutch	DECK1_ROLL1_BACK_CL	J561A-4	Back Clutch 1	H:ON
409	Roll2 Back Clutch	DECK1_ROLL2_BACK_CL	J561A-8	Back Clutch 2	H:ON
410	Roll3 Back Clutch	DECK2_ROLL1_BACK_CL	J562A-4	Back Clutch 3	H:ON
411	Roll4 Back Clutch	DECK2_ROLL2_BACK_CL	J562A-8	Back Clutch 4	H:ON
412	Deck1 Middle Clutch	DECK1_CL	J565-10	Deck 1 Middle Clutch	H:ON
413	Deck2 Middle Clutch	DECK2_CL	J566-2	Deck 2 Middle Clutch	H:ON
500	Regist Motor1			Registration Motor 1	H:Rotate
501	Regist Motor2			Registration Motor 2	H:Rotate
502	Regist Motor3			Registration Motor 3	H:Rotate
503	Regist Motor1 Back			Registration Motor 1 Reverse	H:Rotate
504	Regist Motor2 Back			Registration Motor 2 Reverse	H:Rotate
505	Regist Motor3 Back			Registration Motor 3 Reverse	H:Rotate

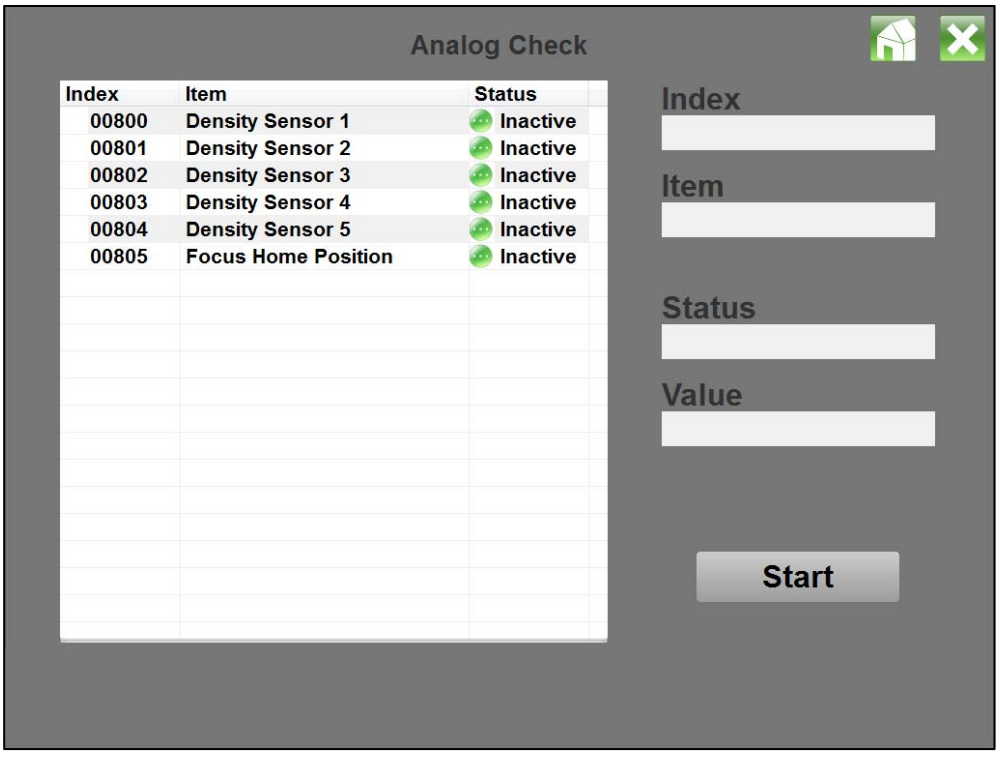
No.	Item name	Concerning signal symbol	Connector Pin	Signal name	Status
506	Belt Motor	BELT_MTR_A_OUT1,2 BELT_MTR_B_OUT1,2	J568-1 to J568-4	Belt Motor	H:Rotate
507	Feed Motor			Feed Motor	H:Rotate
508	Tr1 SeparateMotorK	1TR_SET_MOTOR1	J568-6	Primary Transfer Roller Set Motor 1	H:Operate
509	Tr1 SeparateMotorC	1TR_SET_MOTOR2	J568-8	Primary Transfer Roller Set Motor 2	H:Operate
510	Tr1 SeparateMotorM	1TR_SET_MOTOR3	J568-10	Primary Transfer Roller Set Motor 3	H:Operate
511	Tr1 SeparateMotorY	1TR_SET_MOTOR4	J568-12	Primary Transfer Roller Set Motor 4	H:Operate
512	Tr2 SeparateMotor	2TR_SET_MOTOR	J563-14	Secondary Transfer Roller Set Motor	H:Operate
513	Tr2			Secondary Transfer	H:Apply
514	Tr2 Sep AC			Discharge Needles AC	H:AC
515	Cutter Motor	CUT_MTR_OUT1 CUT_MTR_OUT2	J565-11 to J565-12	Cutter Motor	H:Operate
516	Adsorption Fan			Adsorption Fan	H:Rotate
517	Cooling Fan 1	LEFT_DOOR_FAN_PWM	J576-15	Left Door Fan	H: Rotate
600	SSR1	SSR_RMT1	J224-2	SSR1	H:ON
601	SSR2	SSR_RMT2	J224-4	SSR2	H:ON
602	Fuser Motor	FU_MTR_A_OUT1,2 FU_MTR_B_OUT1,2	J557-1 to J557-4	Fuser Motor	H:Rotate
603	Web Motor	WEB_MTR_A1,2 WEB_MTR_B1,2	J557-5,7,8,10	Web Motor	H:Rotate
604	Stacker Motor			Stacker Motor (Not used)	
605	Stacker Fan	STACKER_FAN_PWM	J557-22	Stacker Fan (Not used)	
606	Fuser Cooling Fan	FU_FAN1_PWM	J557-14	Fuser Cooling Fan	H:Rotate
607	Paper Exit SL	UP_EXCHANGE_SL	J557-26	Paper Exit Solenoid	H:ON
608	Paper Exit SL 2				H:ON
609	Fuser Separate SL	FU_SEP_SOLENOID	J557-12	Fuser Finger Solenoid	H:ON
610	Stacker 24V		J578-8	Power Supply to Stacker	H: Supply
700	Waste Toner Motor	WAST_TNR_MTR_A_OUT1,2 WAST_TNR_MTR_B_OUT1,2		Waste Toner Motor	H:Rotate
701	Waste-T Sensor LED			Waste Toner Sensor LED	H:ON
702	Tr1,AC(K_C)			1st Charging (AC : Roller), and Primary Transfer Remote 1	H:ON
703	Tr1,AC(M_Y)			1st Charging (AC : Roller), and Primary Transfer Remote 2	H:ON
704	1st-DC,Dev-Bias			1st Charging (DC : Corona),and Developer Bias Remote	H:ON
705	Tr2,Sep(-)	2TR_SEP_REM-	J573-4	Secondary Transfer negative	H:ON
706	Tr2,Sep(+)	2TR_SEP_REM+	J573-5	Secondary Transfer Positive	H:ON
707	Transformer12 24V			Transformer 1, 2	H:ON
708	Transformer 34 24V			Transformer 3, 4	H:ON
709	Exhaust Fan	2TR_FAN_2	J576-7	Exhaust Fan	H:Rotate
710	Front Fan	EXHAUST_FAN_REM1 EXHAUST_FAN_REM2	J578-2 J576-5	Front Fans	H: Rotate

8. 8 Analog Check

It is possible to check the analog data of sensors.

> **NOTE**
>
> This function is not used in the market.

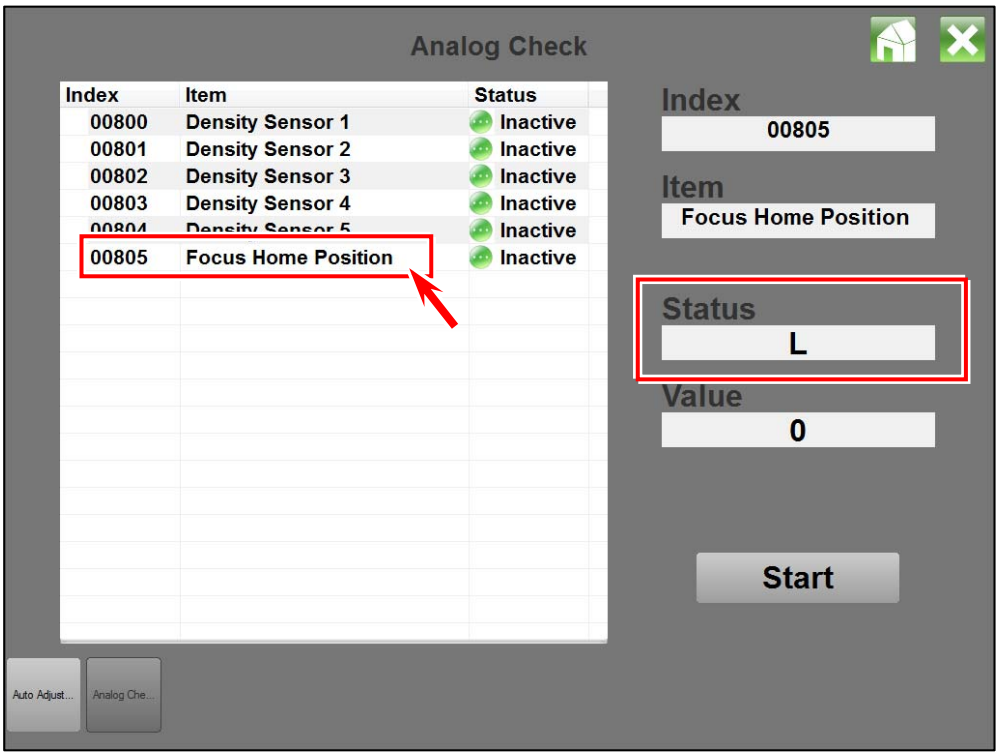




8. 8. 1 Operation in Analog Check

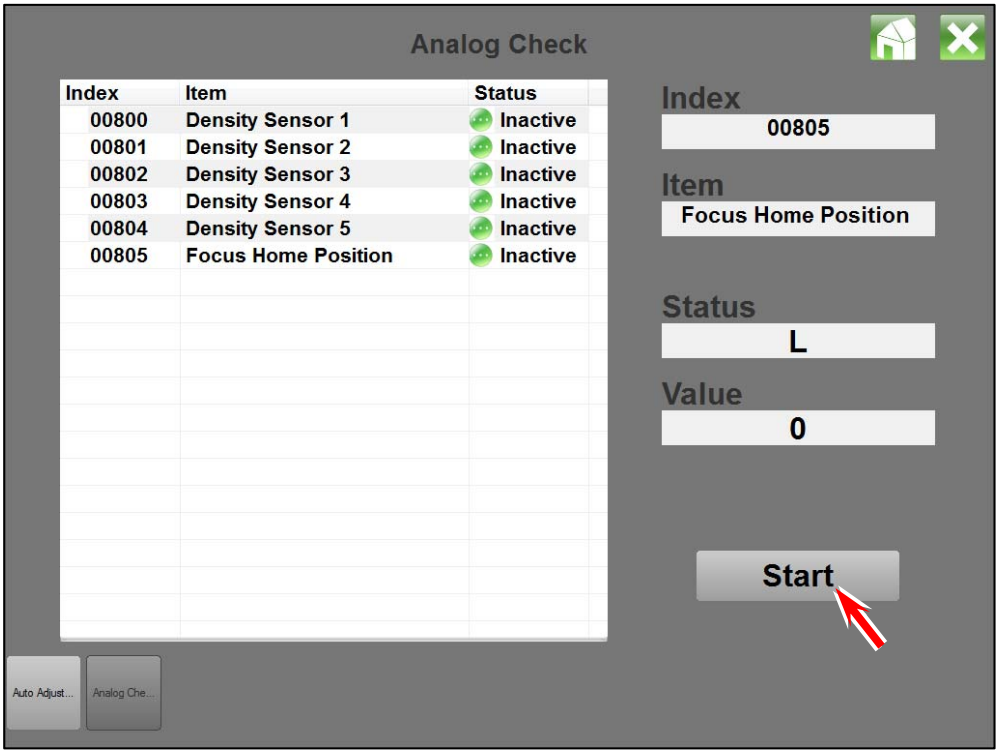
1. Find the requested item under [Item] in the list and select it by touching on the touch panel. The **Status** area shows the current signal status of the selected item.

   (Example : [805 Focus Home Position] is selected. Signal status is L now.)

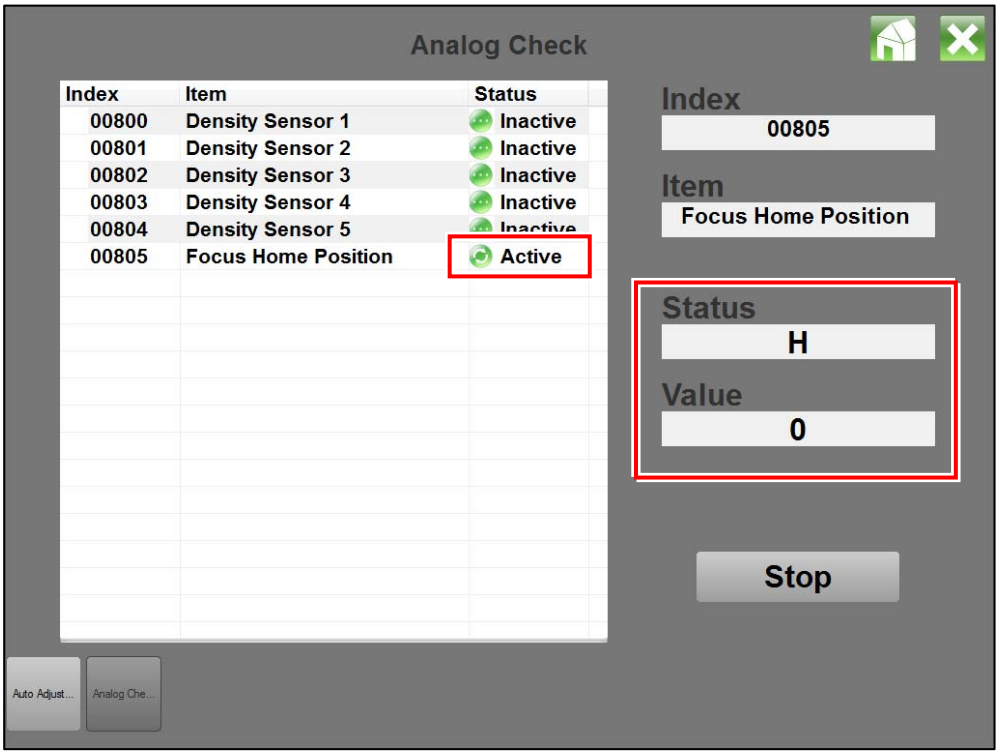


Index	Item	Checking item
800	Density Sensor 1	Analog data of Density Sensor 1
801	Density Sensor 2	Analog data of Density Sensor 2
802	Density Sensor 3	Analog data of Density Sensor 3
803	Density Sensor 4	Analog data of Density Sensor 4
804	Density Sensor 5	Analog data of Density Sensor 5
805	Focus Home Position	Focus Home Position

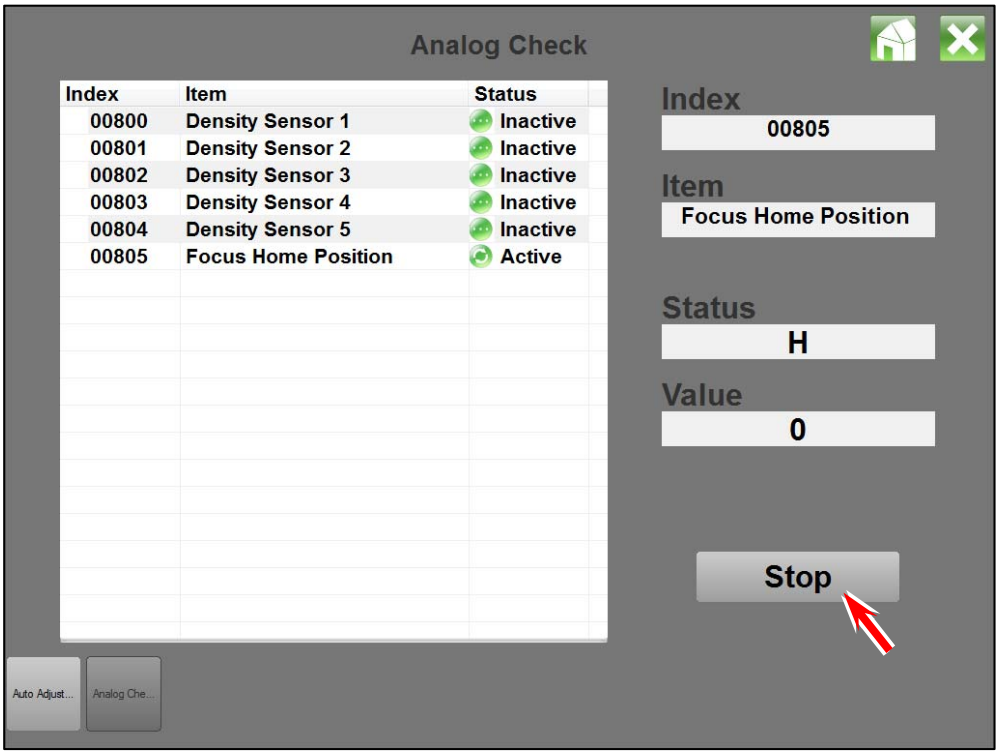
2. Press **Start** to output an operation signal.



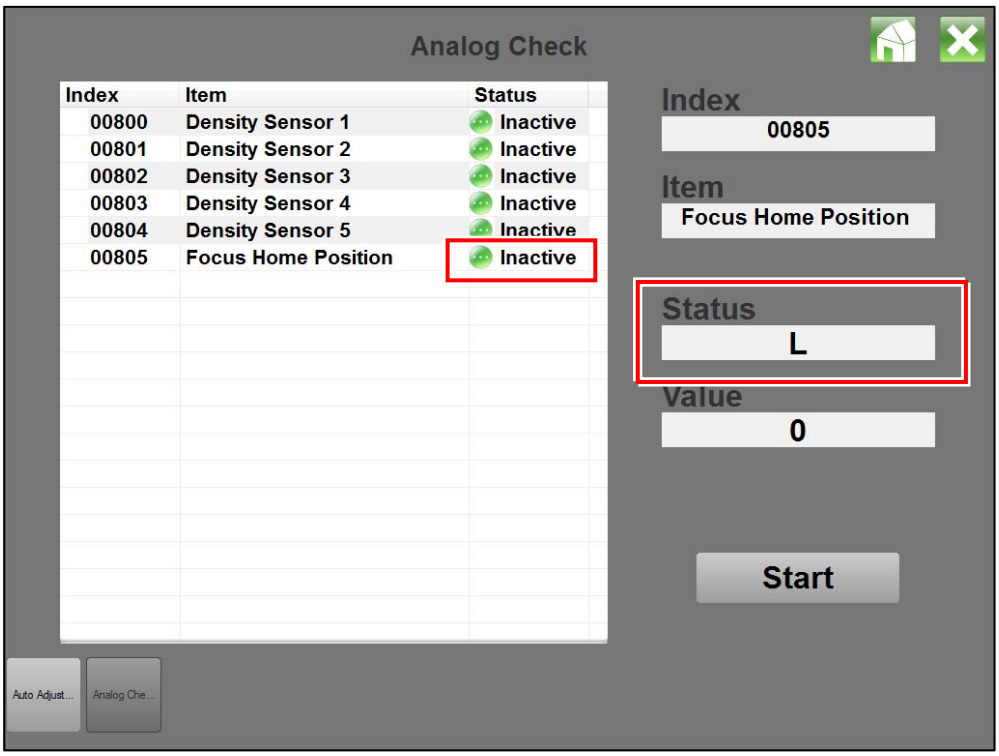
3. When the operation signal is output the signal status in **Status** area changes and the concerning item operates. "Active" is shown for the selected item in the list while the electric component is operating. **Value** area shows the analog data of the selected item.



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.

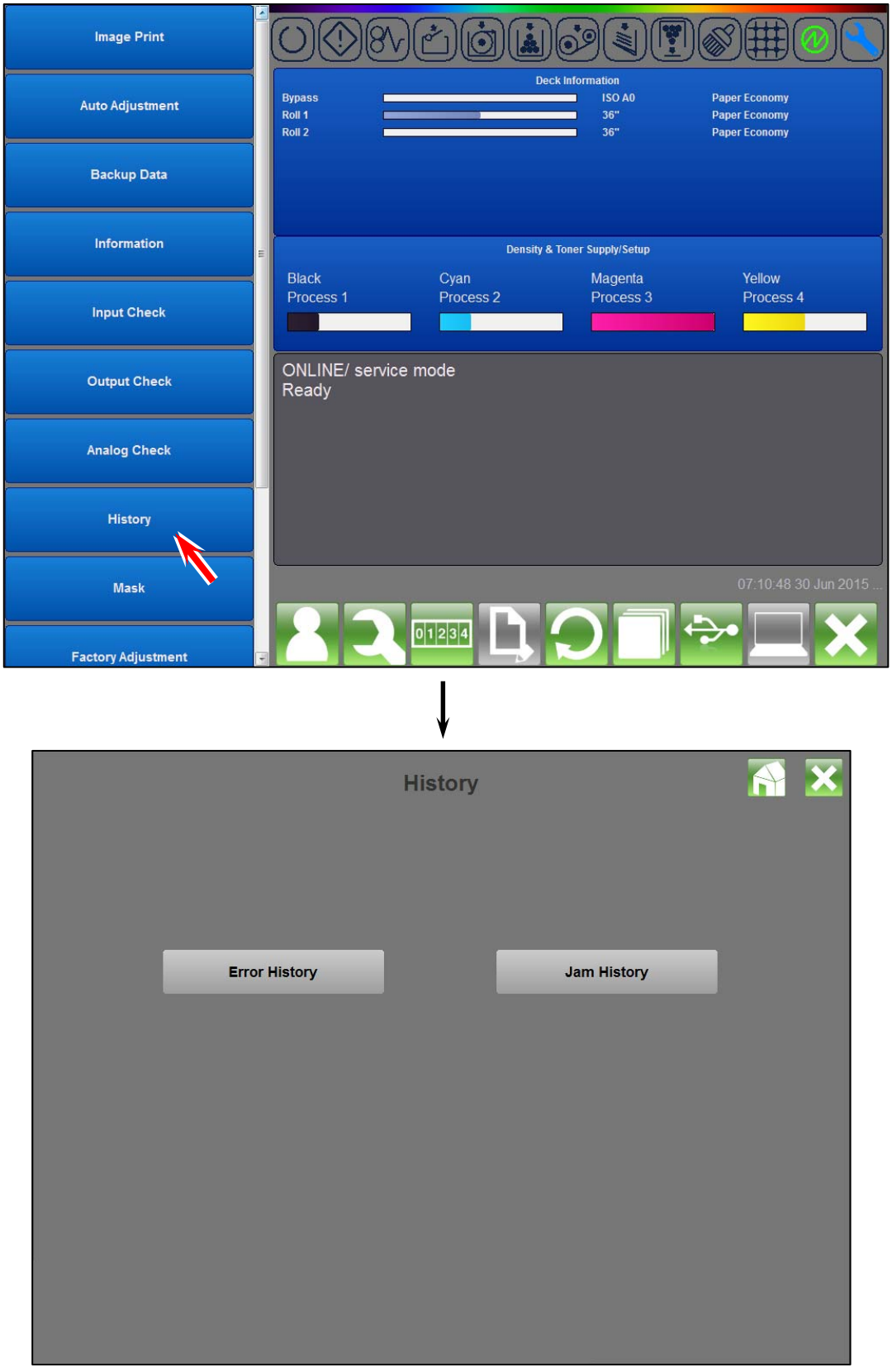


5. When the electric component stops operating the signal status in **Status** area changes. "Inactive" is shown for the selected item in the list also.



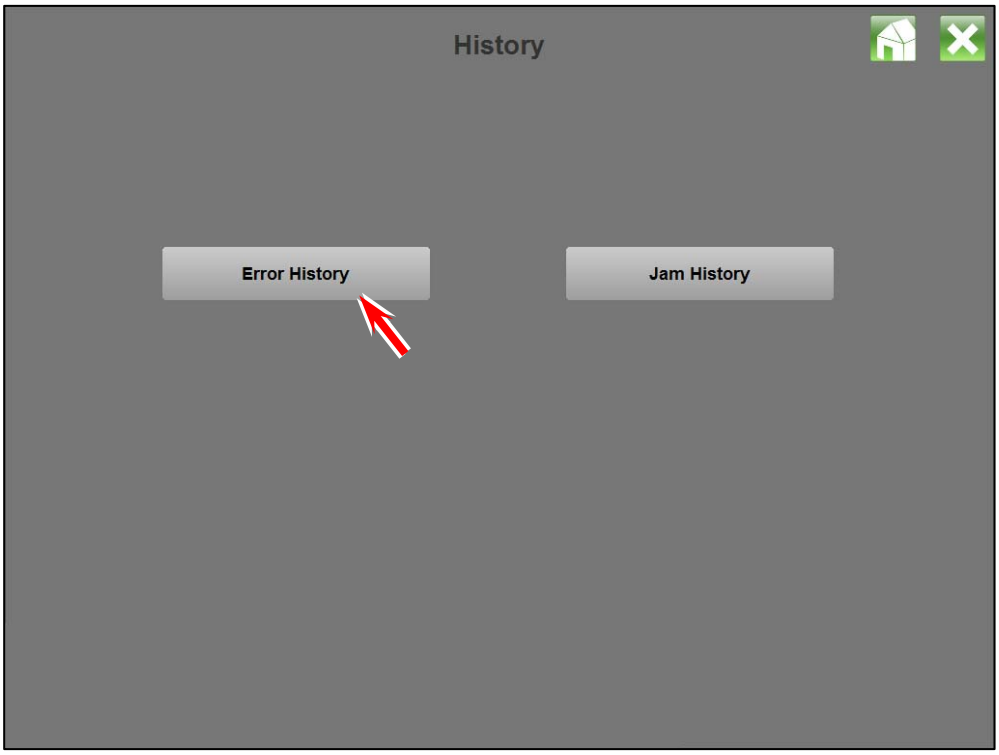
8. 9 History

History shows the histories of service call errors and paper jams orderly from old to new, with the counter value of the occurrence time.



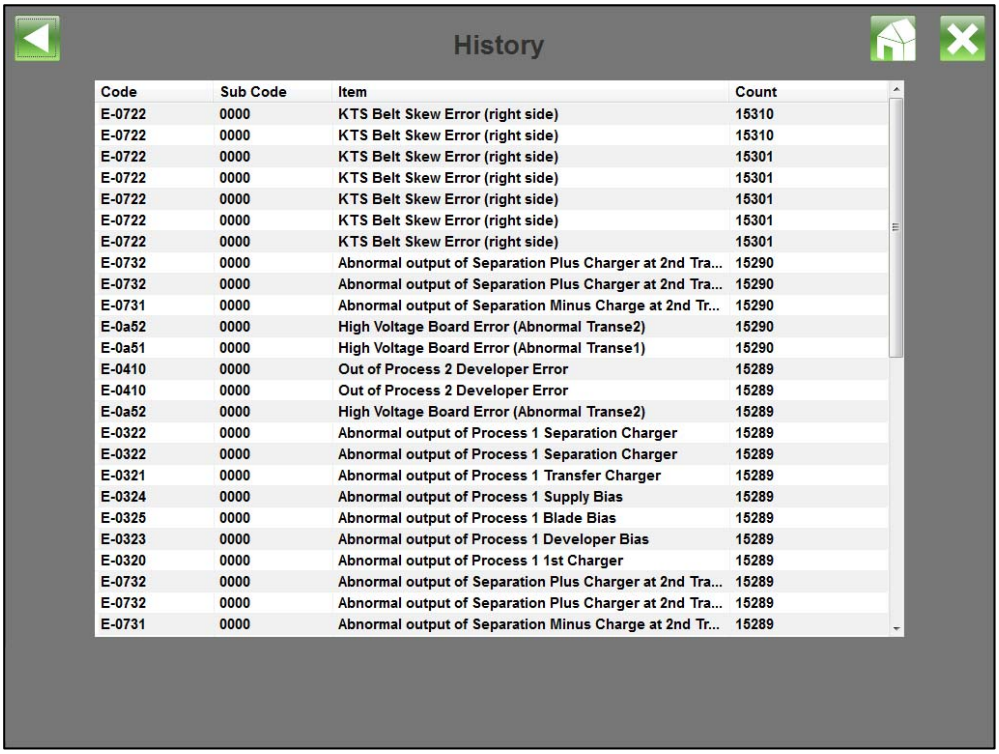
8. 9. 1 Operation in History

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.

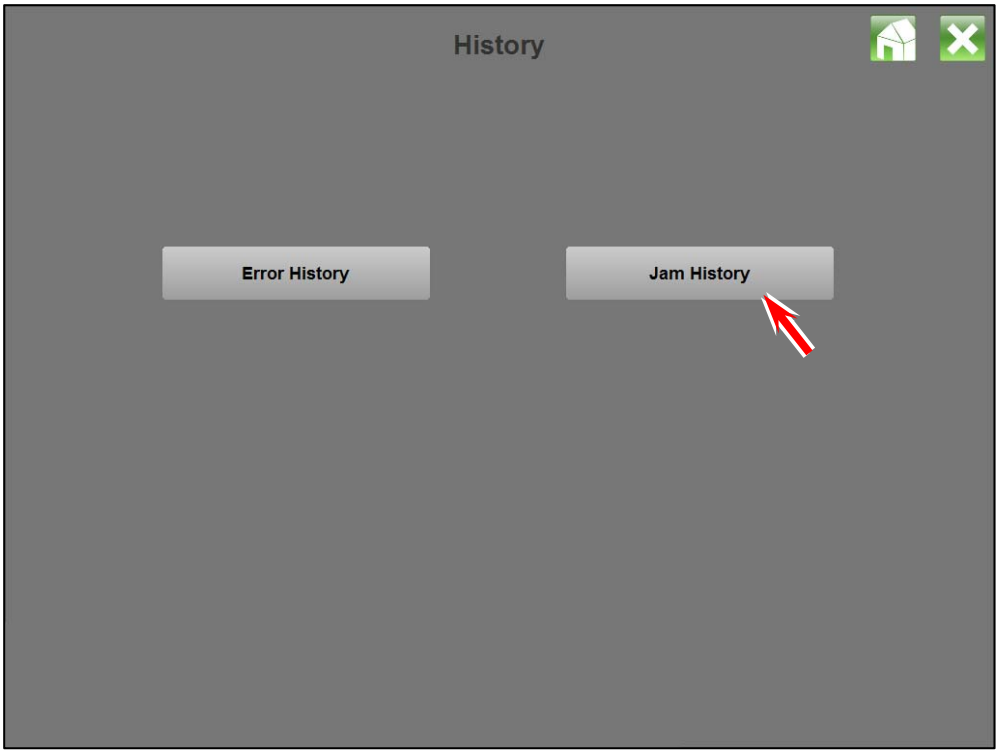
Code	Unique error code for the error
Sub Code	Not used
Item	Name of error
Count	Counter value at the time of occurrence



Code	Sub Code	Item	Count
E-0722	0000	KTS Belt Skew Error (right side)	15310
E-0722	0000	KTS Belt Skew Error (right side)	15310
E-0722	0000	KTS Belt Skew Error (right side)	15301
E-0722	0000	KTS Belt Skew Error (right side)	15301
E-0722	0000	KTS Belt Skew Error (right side)	15301
E-0722	0000	KTS Belt Skew Error (right side)	15301
E-0722	0000	KTS Belt Skew Error (right side)	15301
E-0732	0000	Abnormal output of Separation Plus Charger at 2nd Tra...	15290
E-0732	0000	Abnormal output of Separation Plus Charger at 2nd Tra...	15290
E-0731	0000	Abnormal output of Separation Minus Charge at 2nd Tr...	15290
E-0a52	0000	High Voltage Board Error (Abnormal Transe2)	15290
E-0a51	0000	High Voltage Board Error (Abnormal Transe1)	15290
E-0410	0000	Out of Process 2 Developer Error	15289
E-0410	0000	Out of Process 2 Developer Error	15289
E-0a52	0000	High Voltage Board Error (Abnormal Transe2)	15289
E-0322	0000	Abnormal output of Process 1 Separation Charger	15289
E-0322	0000	Abnormal output of Process 1 Separation Charger	15289
E-0321	0000	Abnormal output of Process 1 Transfer Charger	15289
E-0324	0000	Abnormal output of Process 1 Supply Bias	15289
E-0325	0000	Abnormal output of Process 1 Blade Bias	15289
E-0323	0000	Abnormal output of Process 1 Developer Bias	15289
E-0320	0000	Abnormal output of Process 1 1st Charger	15289
E-0732	0000	Abnormal output of Separation Plus Charger at 2nd Tra...	15289
E-0732	0000	Abnormal output of Separation Plus Charger at 2nd Tra...	15289
E-0731	0000	Abnormal output of Separation Minus Charge at 2nd Tr...	15289

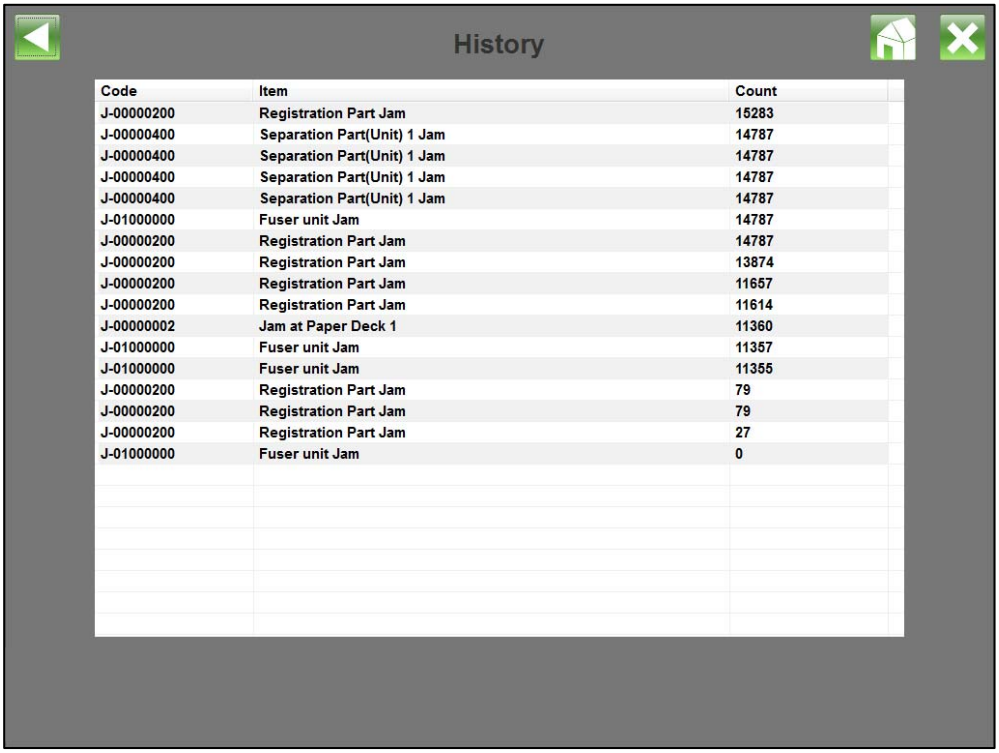
See also Chapter 7 for further detailed error code information.

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

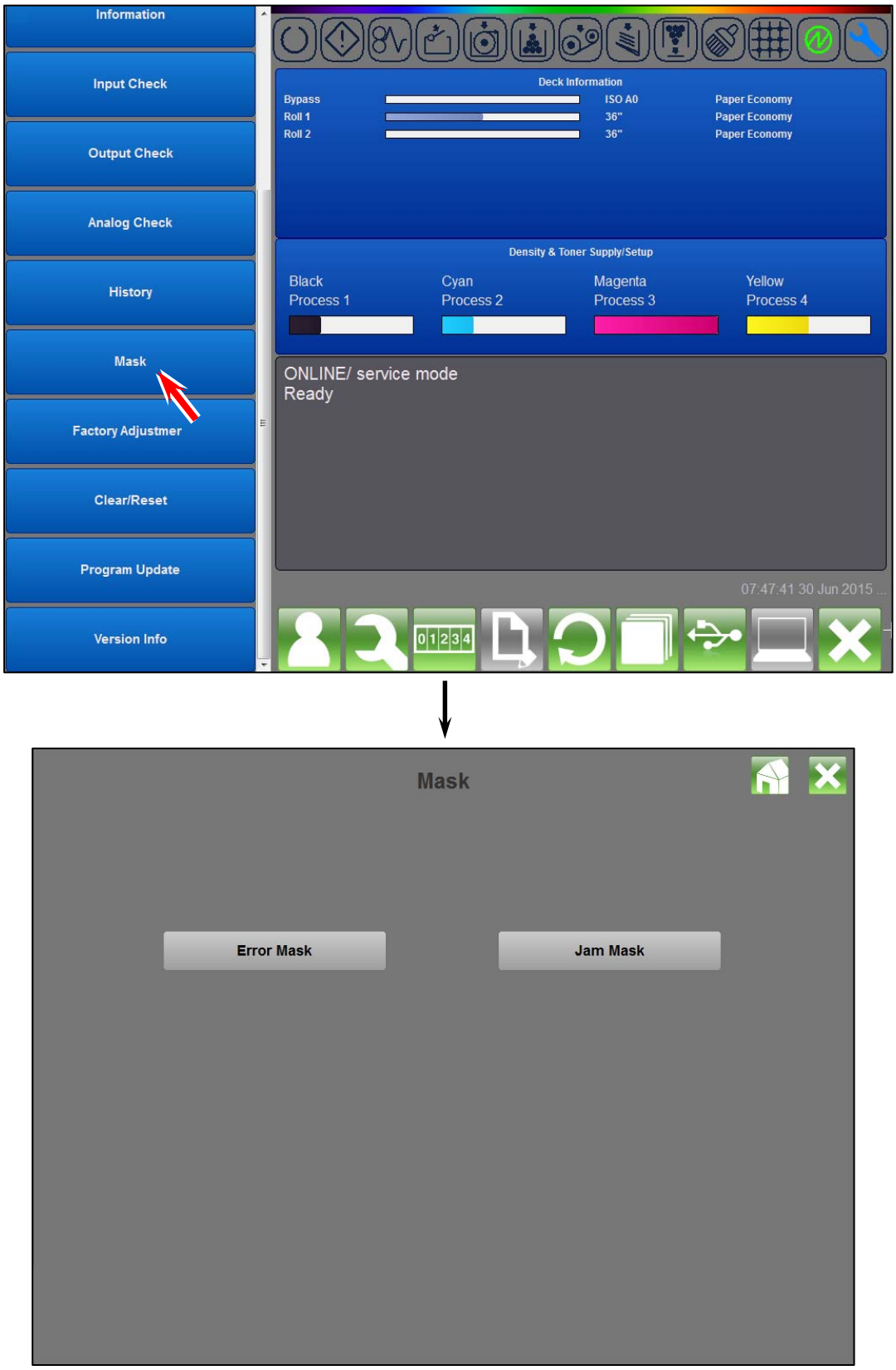


Code	Item	Count
J-00000200	Registration Part Jam	15283
J-00000400	Separation Part(Unit) 1 Jam	14787
J-00000400	Separation Part(Unit) 1 Jam	14787
J-00000400	Separation Part(Unit) 1 Jam	14787
J-00000400	Separation Part(Unit) 1 Jam	14787
J-01000000	Fuser unit Jam	14787
J-00000200	Registration Part Jam	14787
J-00000200	Registration Part Jam	13874
J-00000200	Registration Part Jam	11657
J-00000200	Registration Part Jam	11614
J-00000002	Jam at Paper Deck 1	11360
J-01000000	Fuser unit Jam	11357
J-01000000	Fuser unit Jam	11355
J-00000200	Registration Part Jam	79
J-00000200	Registration Part Jam	79
J-00000200	Registration Part Jam	27
J-01000000	Fuser unit Jam	0

See also Chapter 7 for further detailed jam code information.

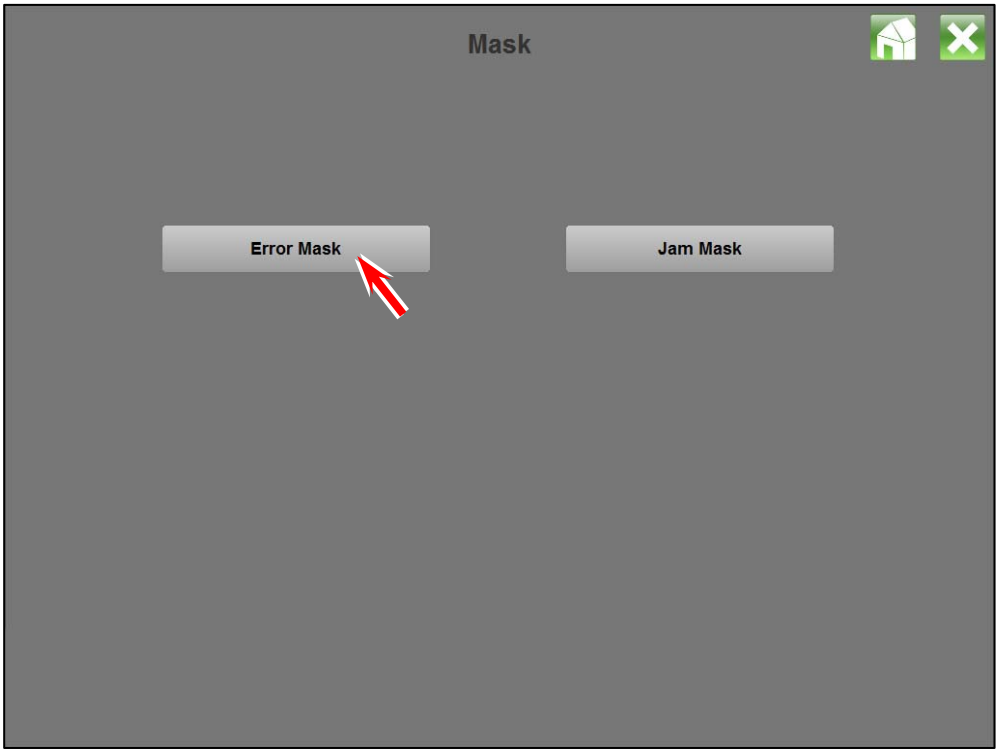
8. 10 Mask

It is possible to disable detection of particular error or jam and run the machine without solving such error or jam if there is any particular reason to do so for such as troubleshooting.

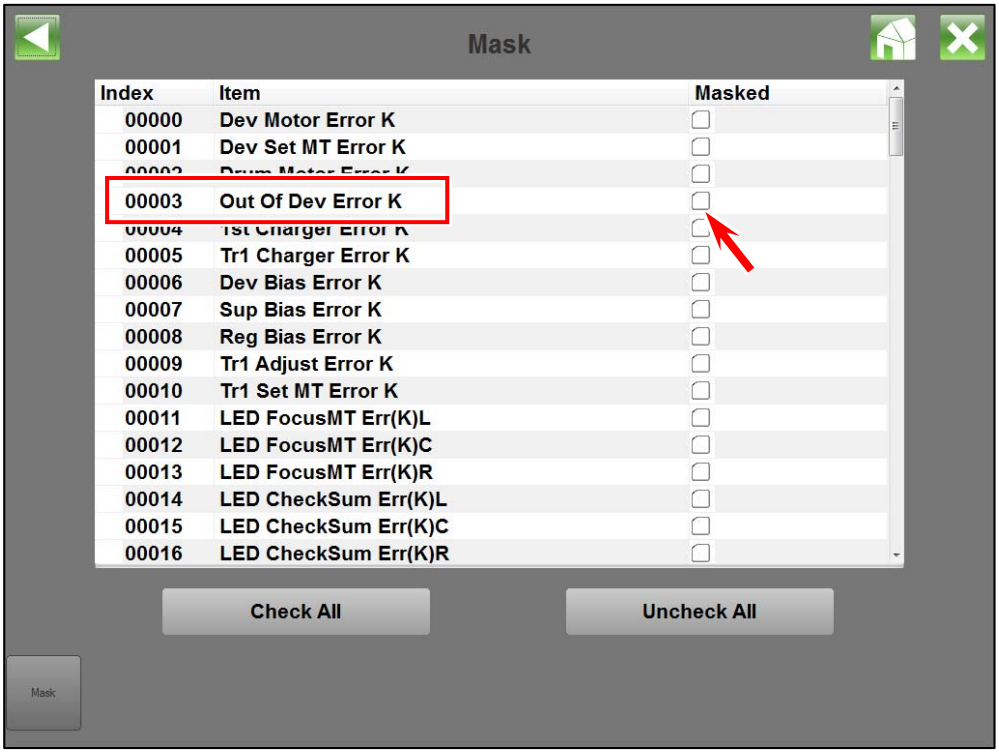


8. 10. 1 Operation in Mask

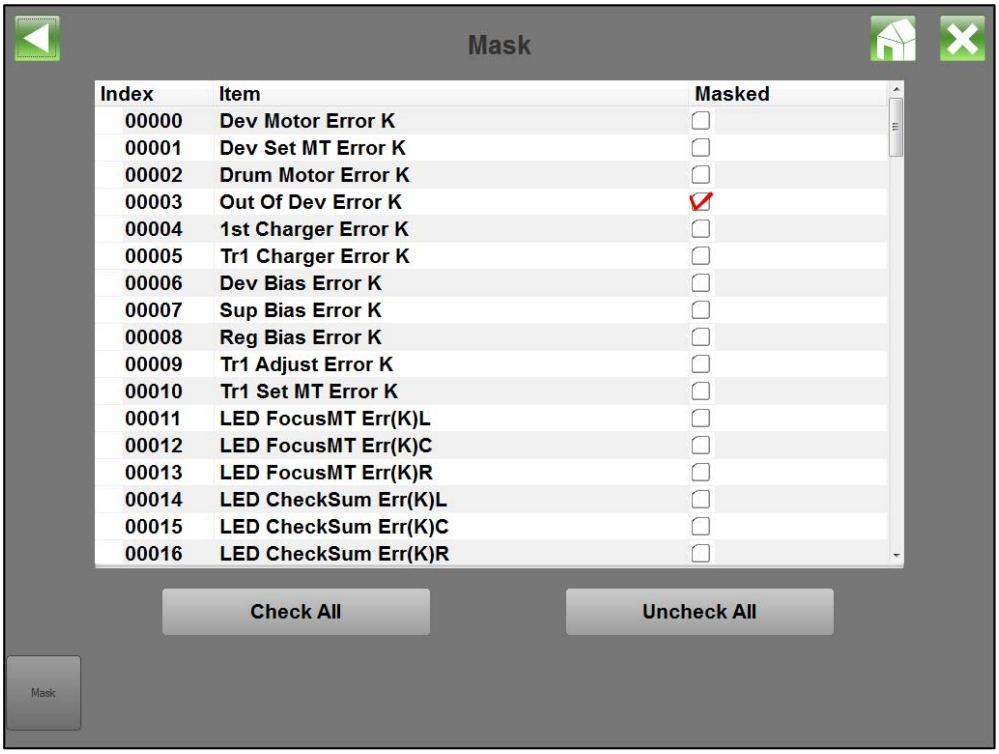
1. When you will disable detection of any service call error, press **Error Mask**.



2. The name of service call errors are listed. Press an error name to disable detection of it. **Check All** selects all items.
(For example: Mask “00003 Out of Dev Error K”)



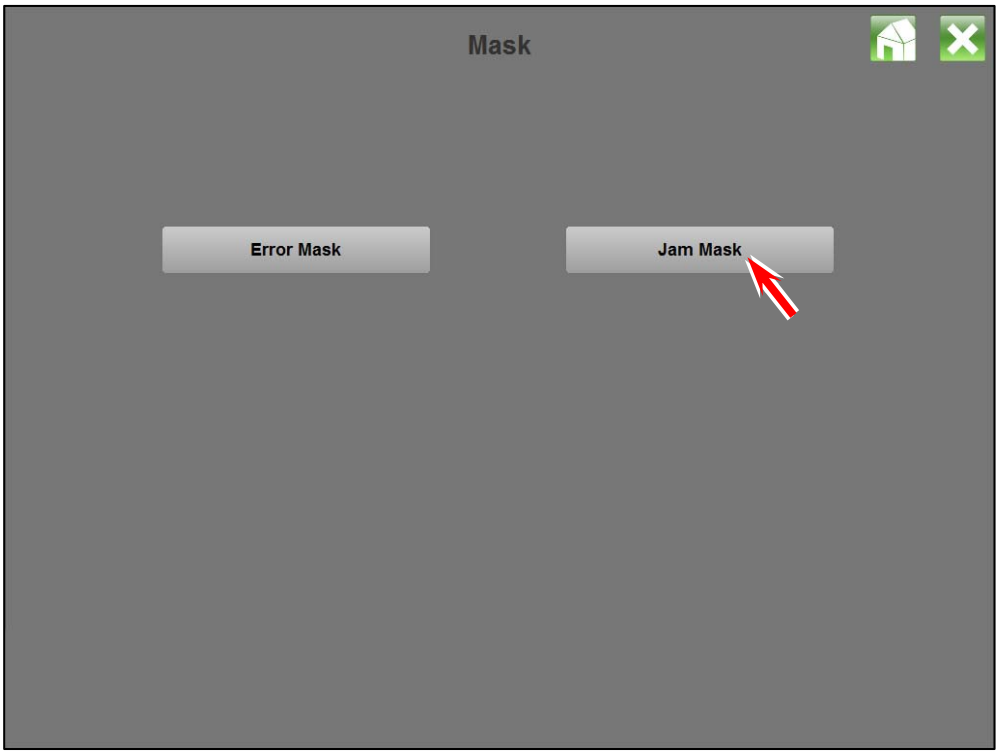
3. Selected error name is checked. It is unchecked when pressed again. **Uncheck All** unchecks all errors.



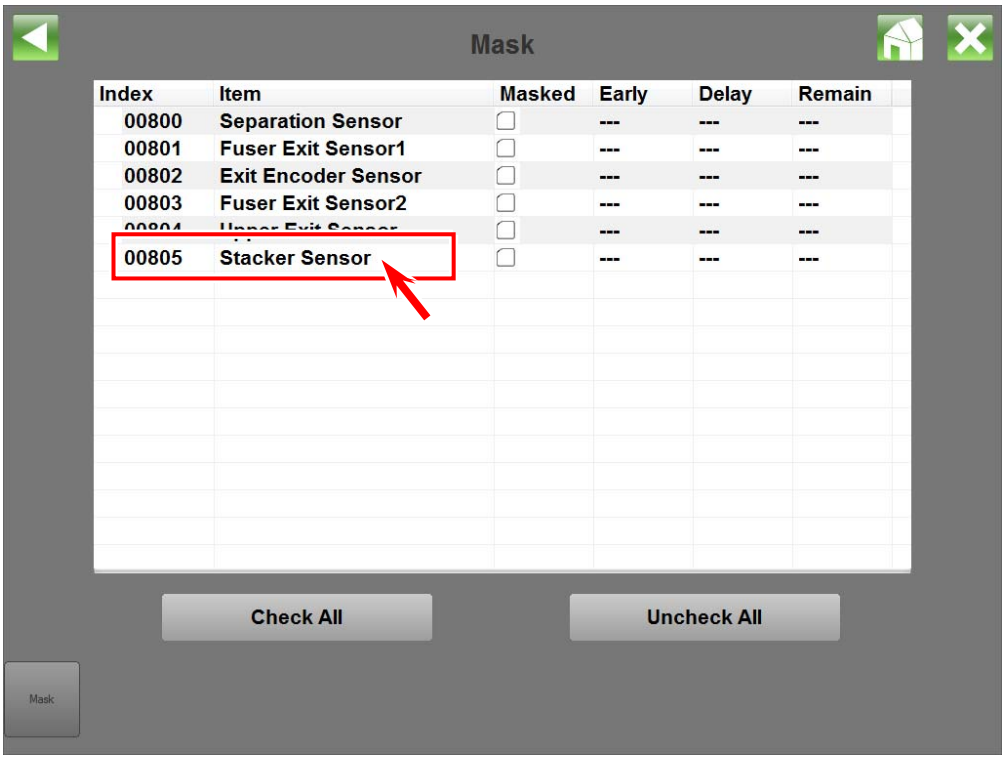
NOTE

Restart of the printer also recovers normal error detection.

4. When you disable detection of any media jam error, press **Jam Mask**.

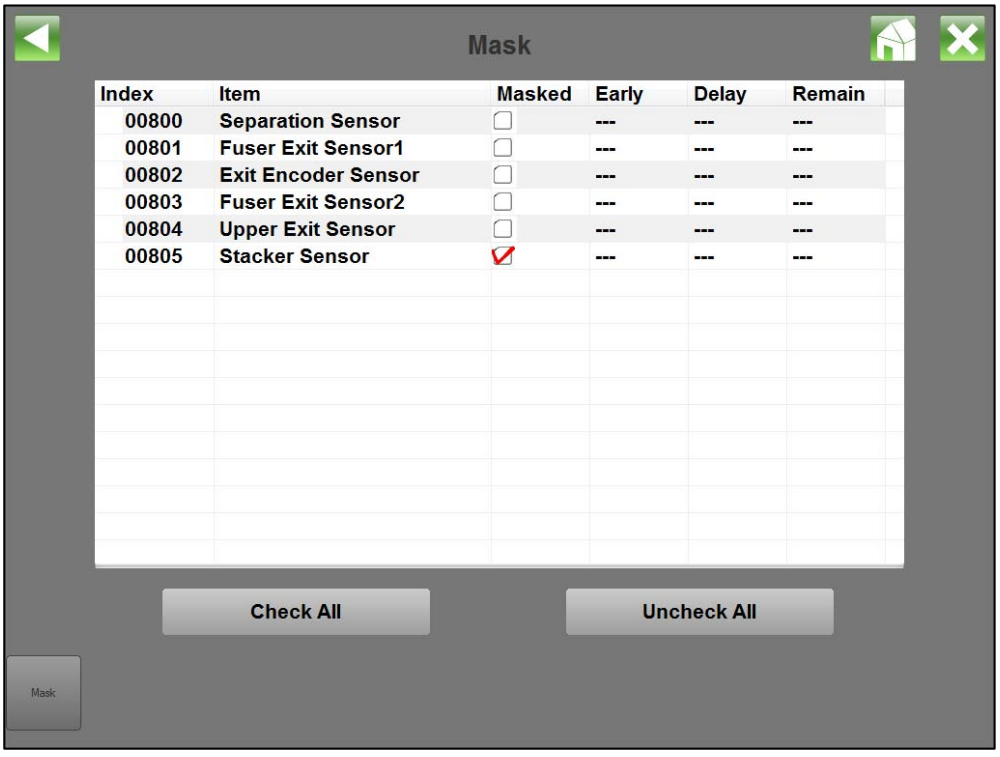


5. Some jam names are listed. Press the jam name to disable detection of it. **Check All** selects all items.
   (For example: Mask “00805 Stacker Sensor”)

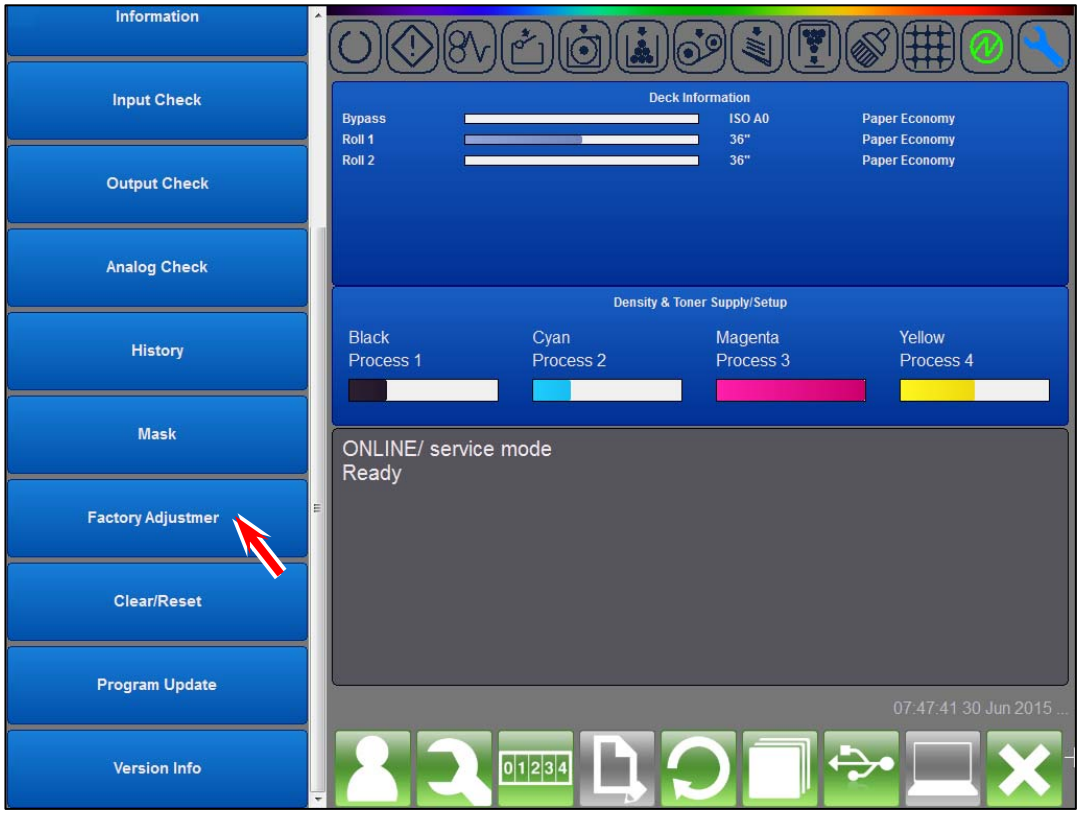


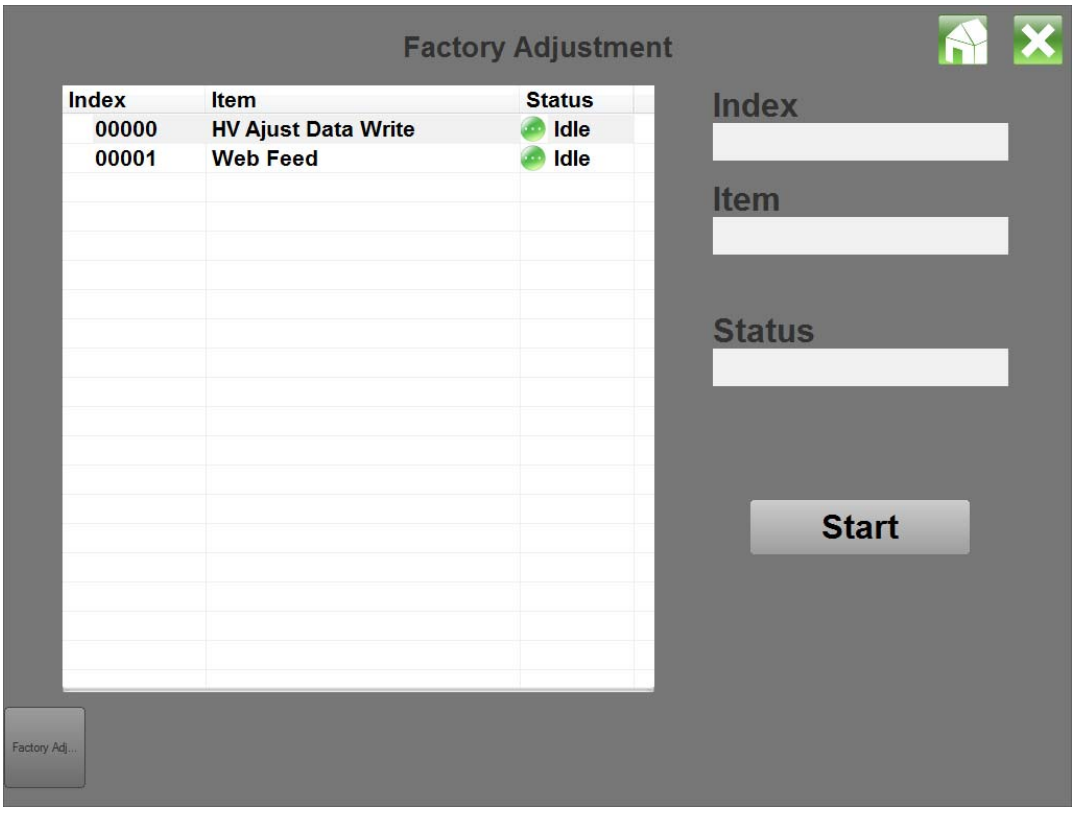
6. Selected jam name is checked. It is unchecked when pressed again. **Uncheck All** unchecks all jams.

> **NOTE**
>
> Restart of the printer also recovers normal error detection.



8. 11 Factory Adjustment

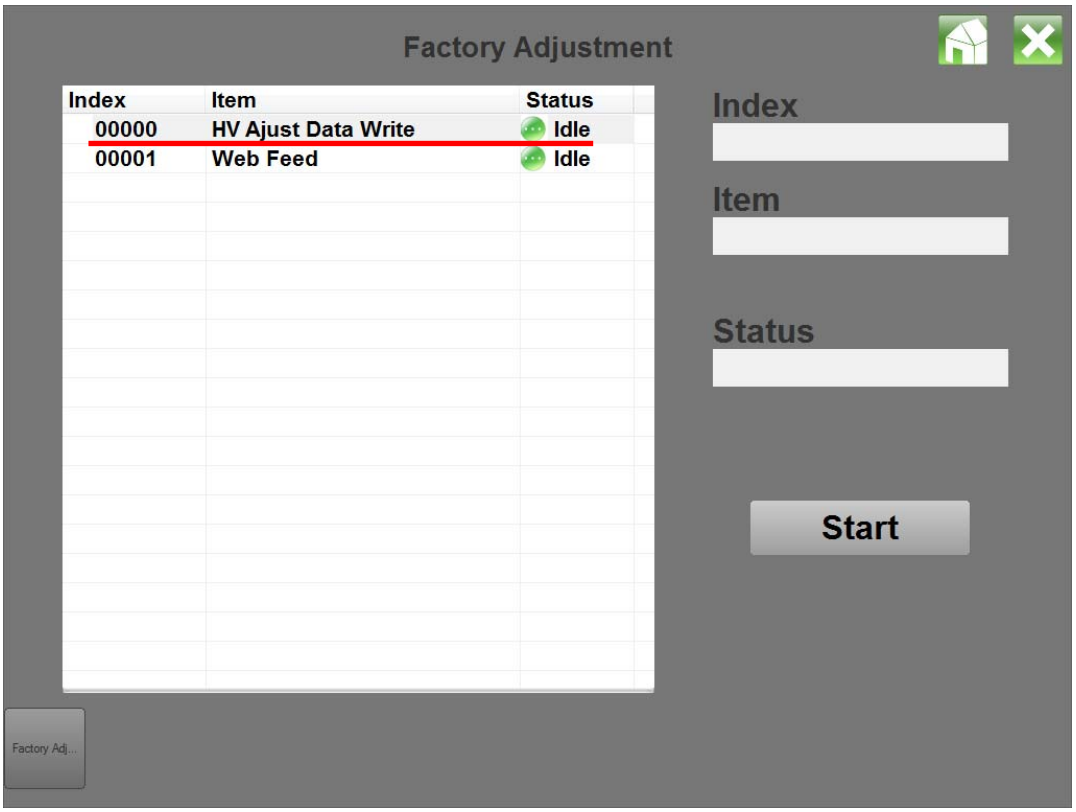




8. 11. 1 HV Adjust Data Write

This is used only in factory for inspection before shipment.

> **NOTE**
>
> This function is not used in the market.

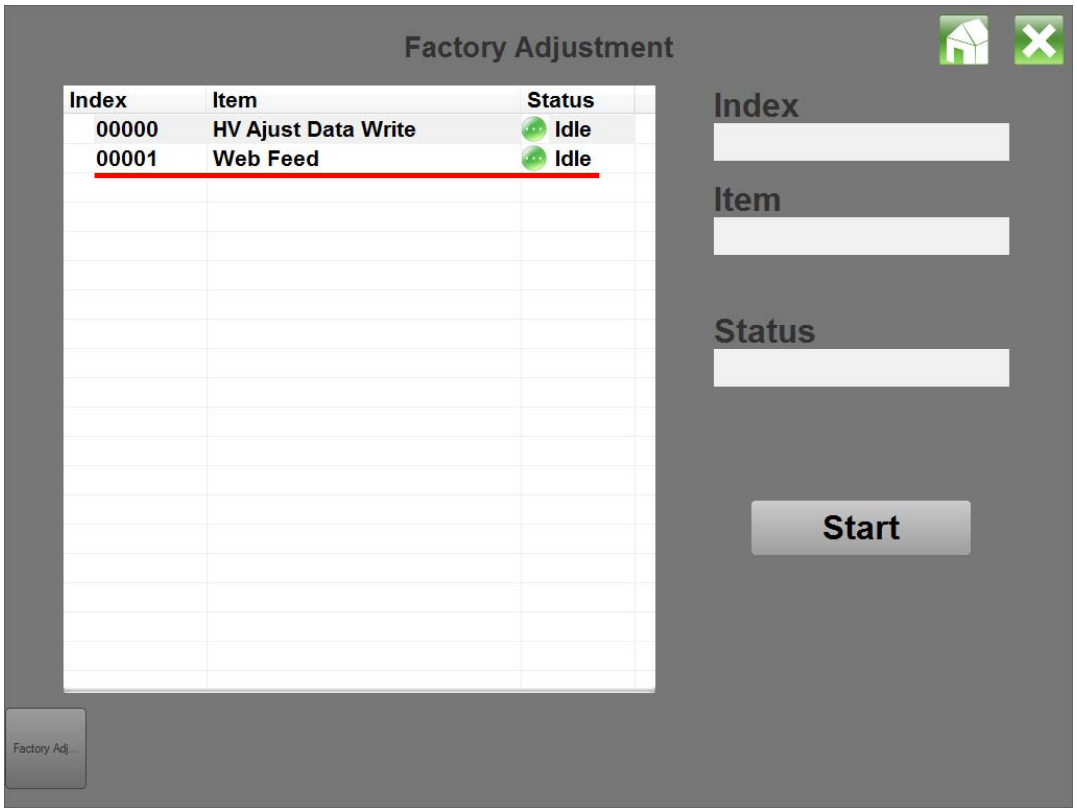


8. 11. 2 Web Feed

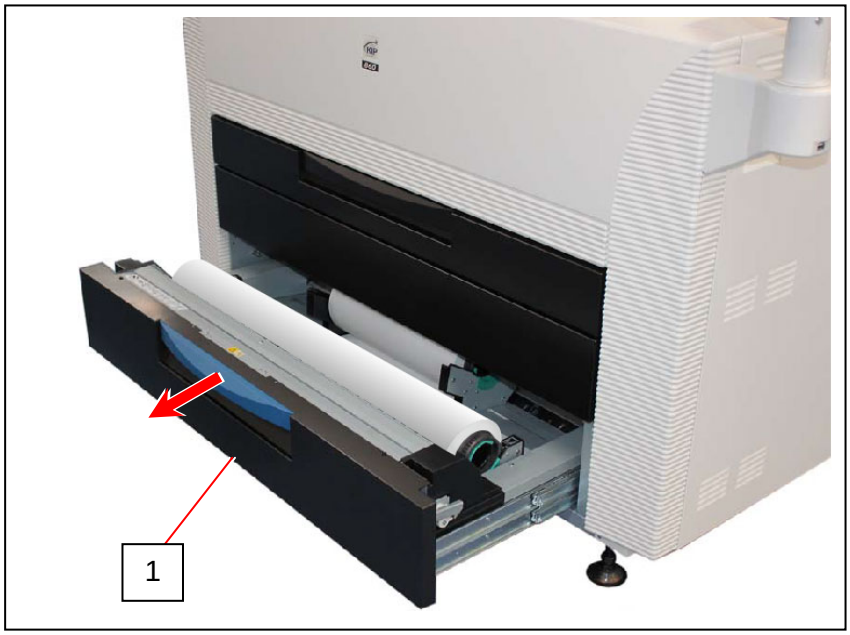
Web ユニットにセットされた Web の弛みを除去するモードです。

NOTE

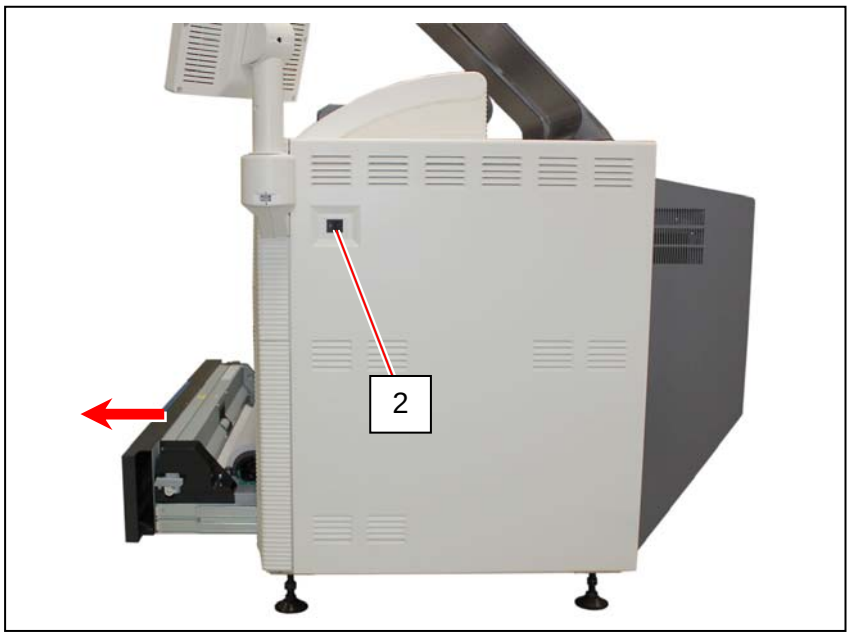
If the Web is slackened, Fuser Roller may catch and roll up the slack when you turn on the printer. For avoiding this, please execute Web Feed in Factory Adjustment of Maintenance GUI to remove the slack in advance.
Be sure to open the Roll Deck before starting the Web Feed, as it will prevent the Fuser Roller from rotating.



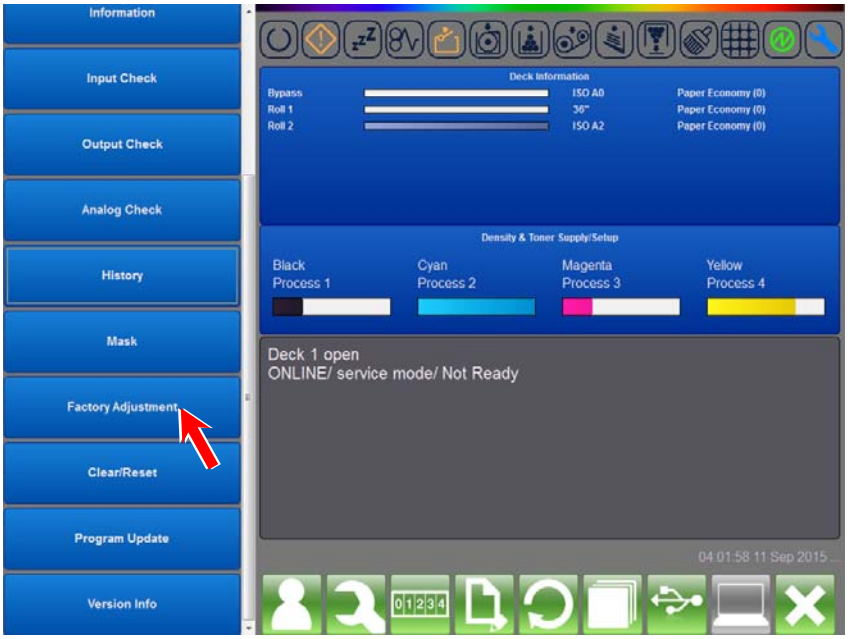
1. Open Roll Deck (1). This will prevent the Fuser Roller from rotating undesirably.



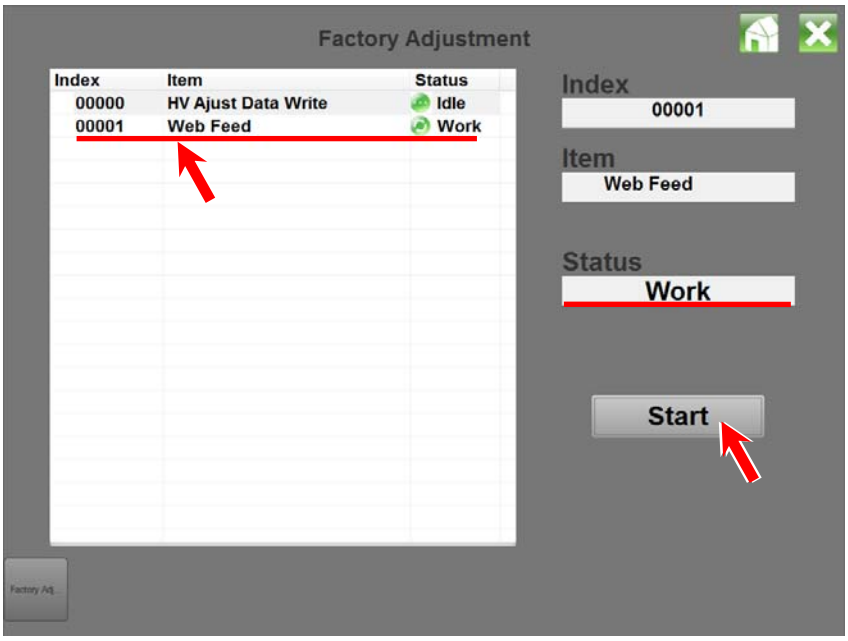
2. Turn on the KIP 800 Series by pressing the " I " side of Power Switch (2).



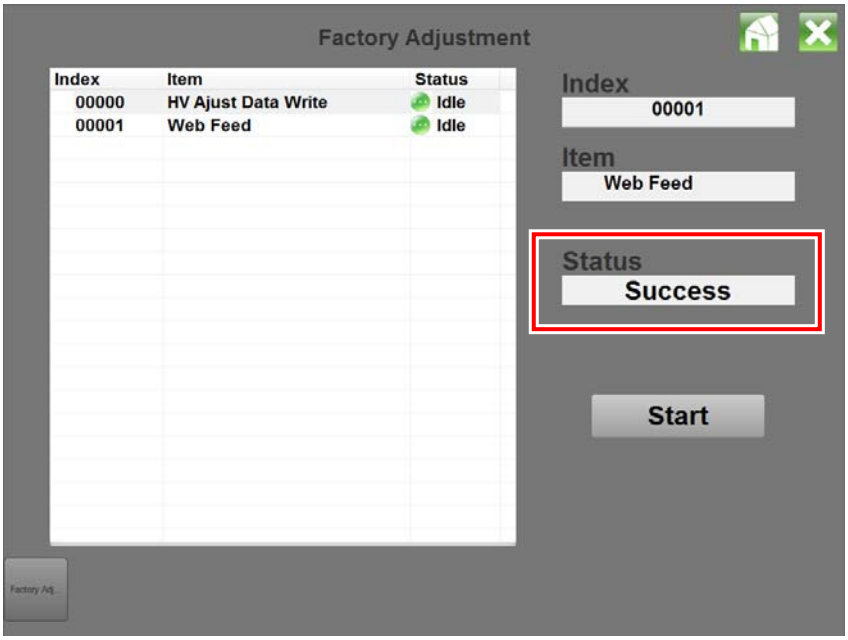
3. Log in Maintenance GUI. Press [Factory Adjustment].



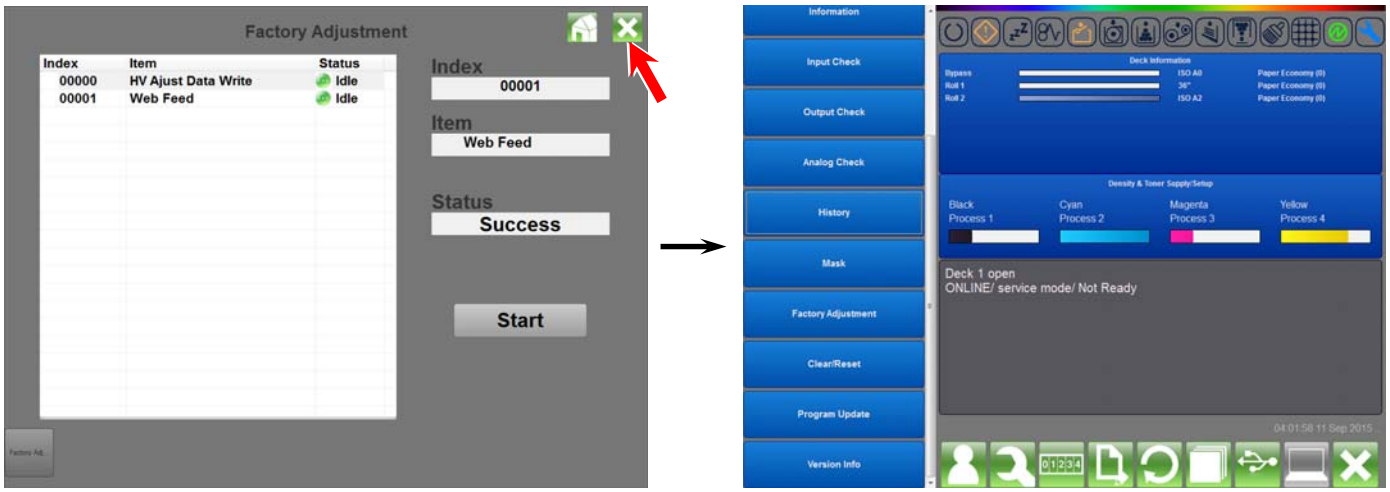
4. Select [00001 Web Feed] and then click [Start] to start Web Feed.
Printer winds the web to give tension. “Status” shows “Work” during the operation.
The total amount of winding of Web is about 15mm.



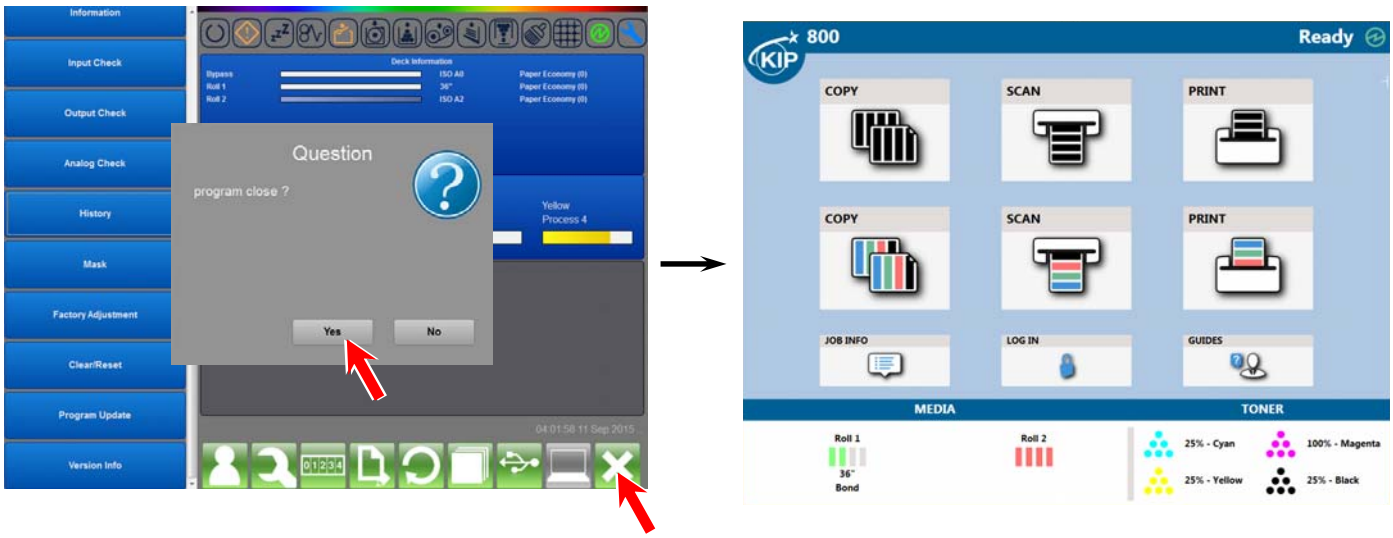
5. Winding of Web completes about 1 minute later, and “Status” shows “Success”.



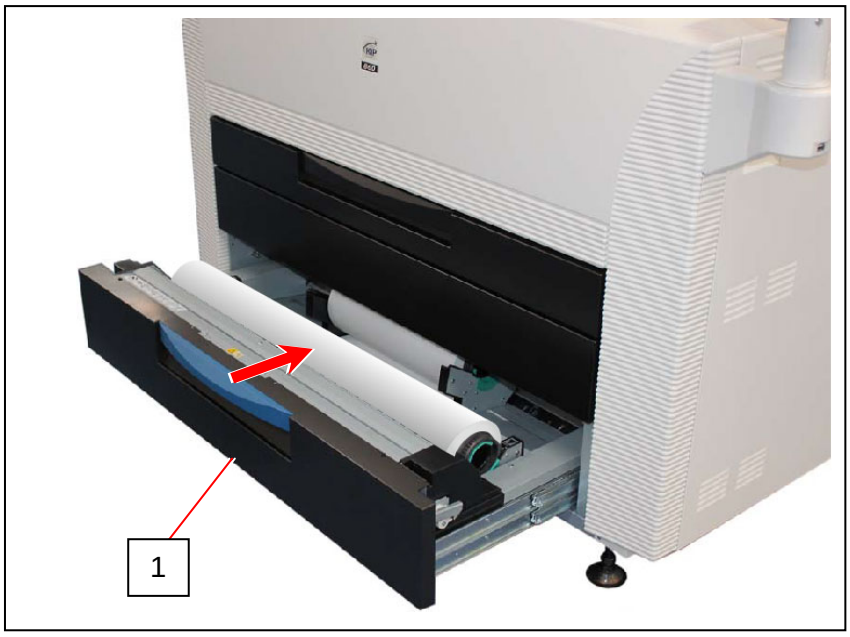
6. Press “X” on upper right go back to the main page of Maintenance GUI.



7. Press “ X “ button. Confirmation screen appears. Press [Yes].
UI screen will display Home screen in a short time.

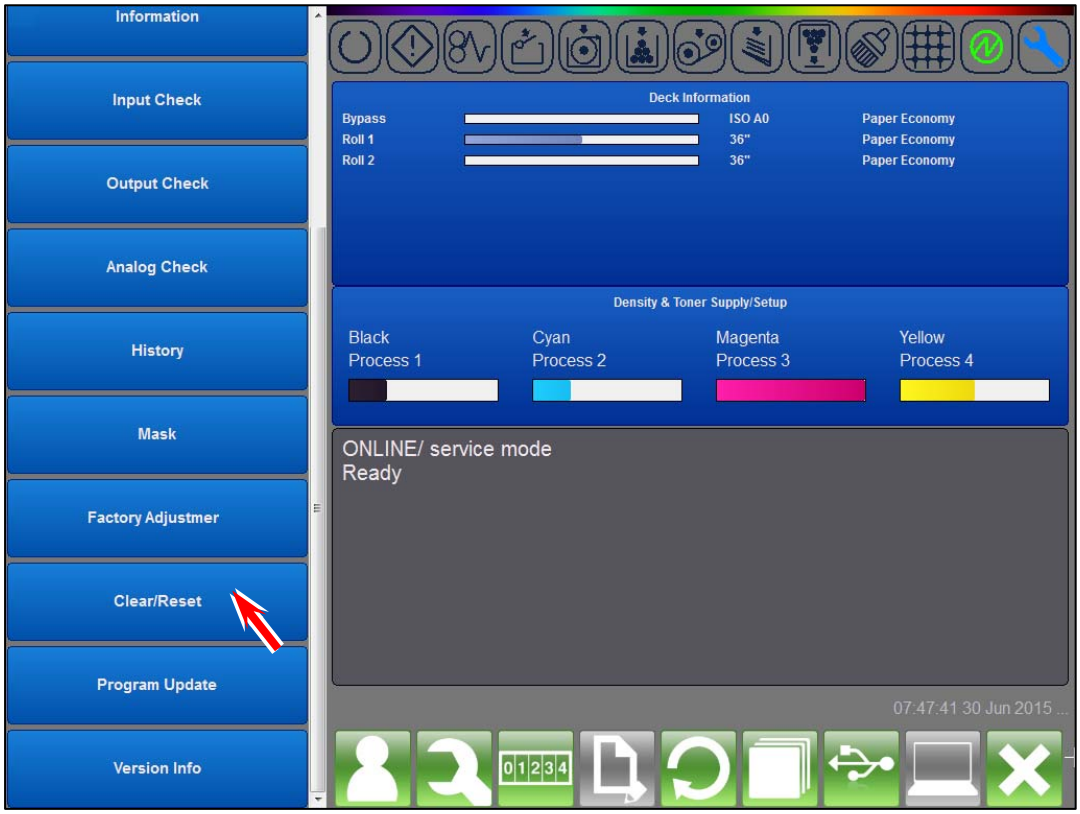


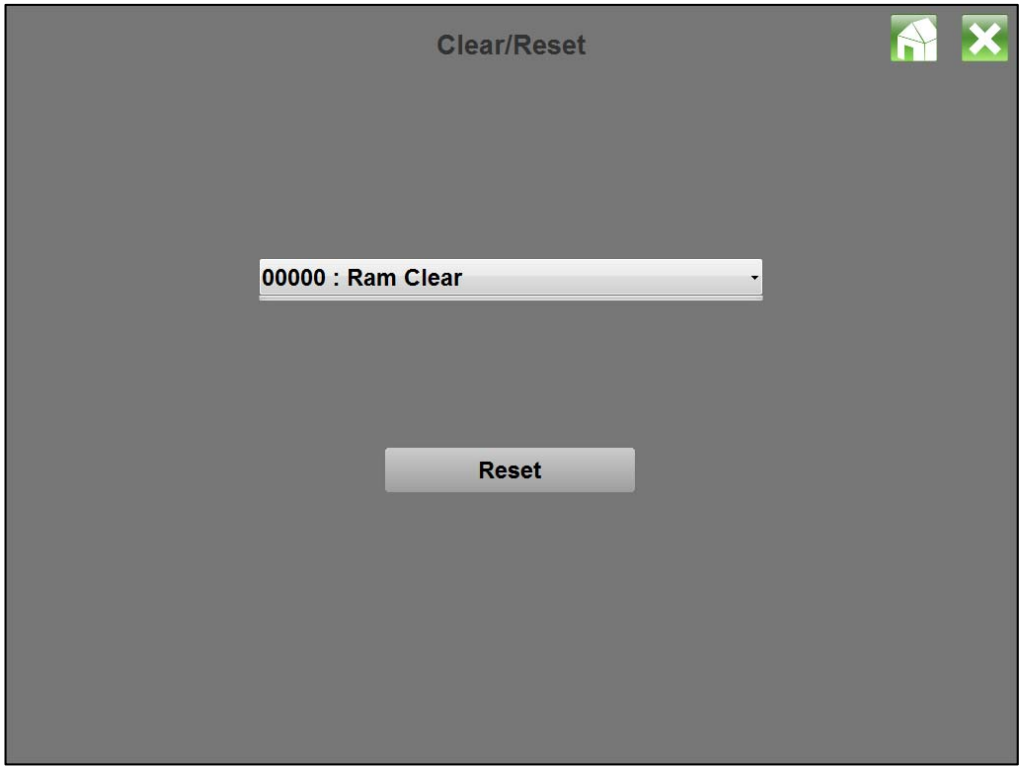
8. Close the Roll Deck (1).



8. 12 Clear/Reset

This mode clears or resets several important information or data. **Please pay great attention for any operation in this mode.**





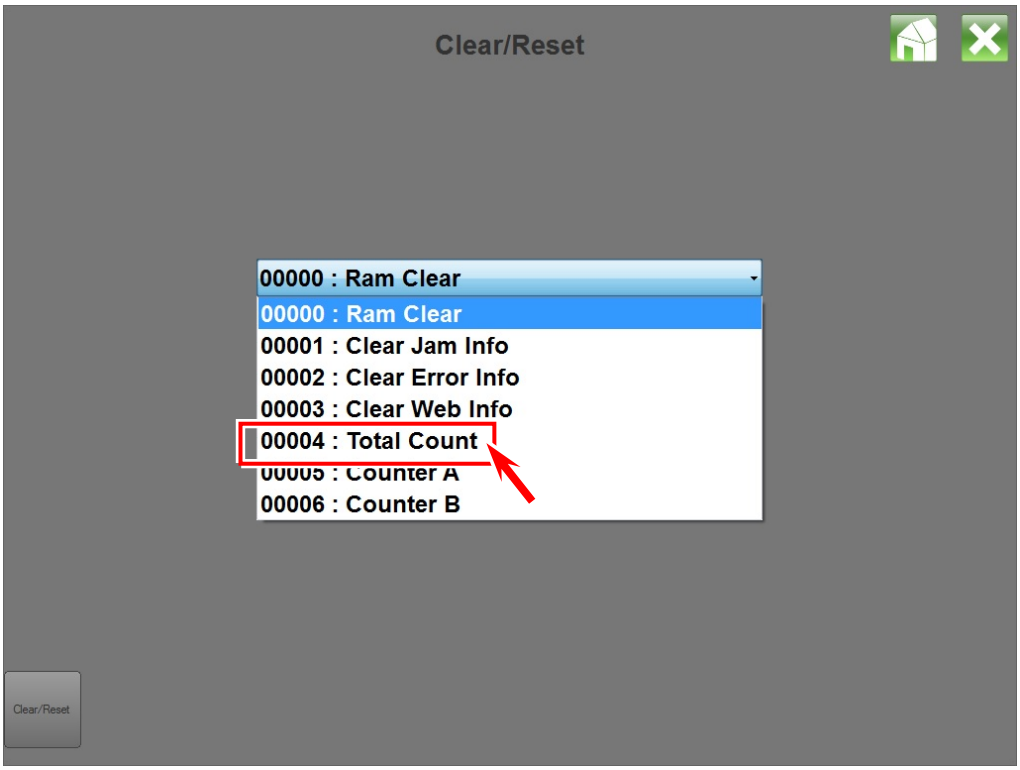
8. 12. 1 Operation in Clear/Reset

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.**

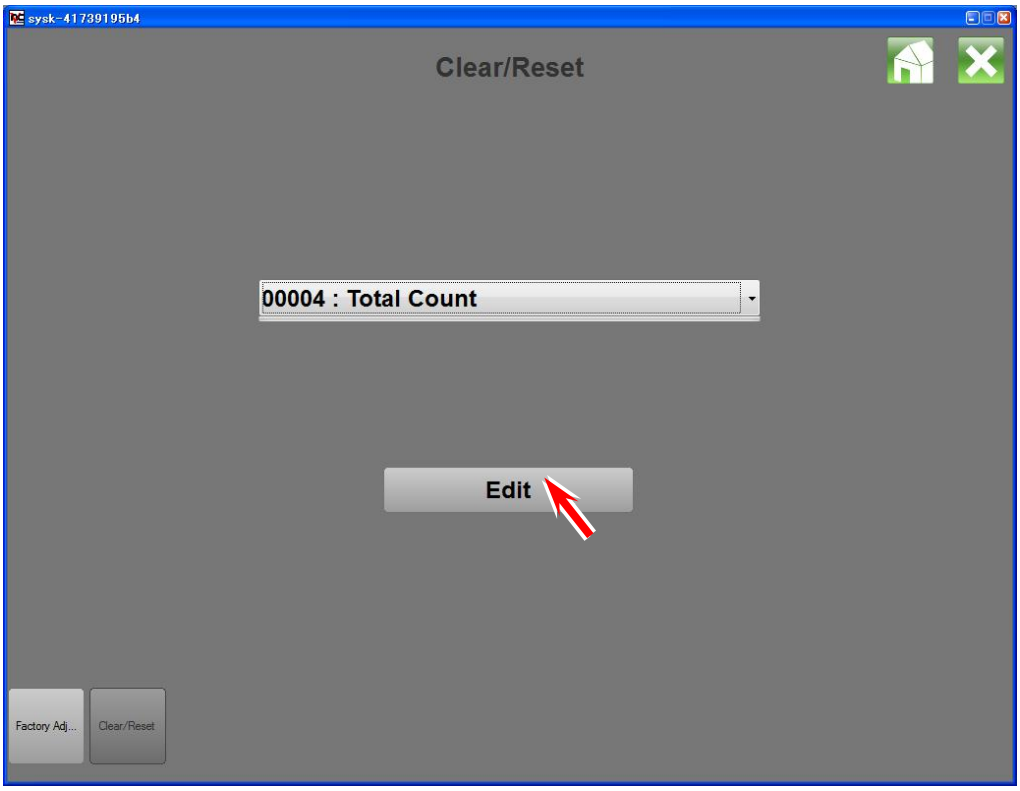
No.	Name in GUI	Available operation
00000	Ram Clear	All parameter values saved in the Main PCB are defaulted.
00001	Clear Jam Info	Deletes history of all past jams.
00002	Clear Error Info	Deletes history of all past service call errors.
00003	Clear Web Info	Web count is cleared. This is needed after replacing the Web.
00004	Total Count	Available to change the counted value of Total Counter.
00005	Counter A	Available to change the counted value of Counter A.
00006	Counter B	Available to change the counted value of Counter B.
00007	TR2 Offset Voltage	Not used

The following is an example of operation to change the counted value of Total Counter. Operation of the other items is same or similar.

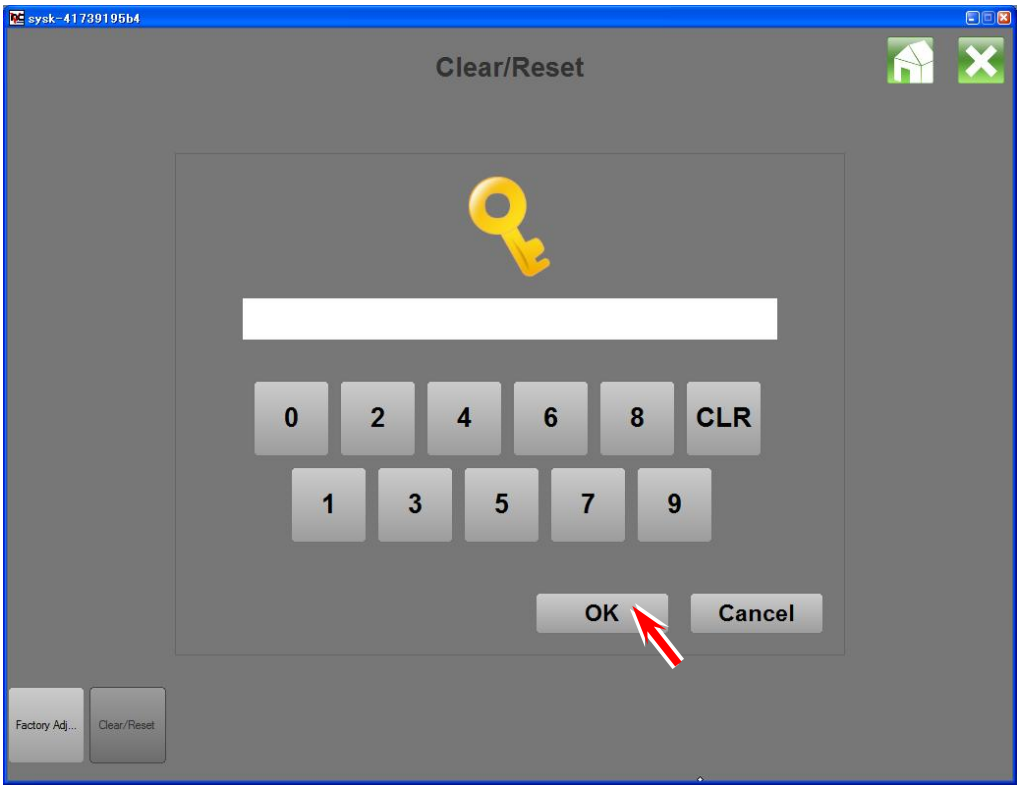
1. Press **Total Counter**.



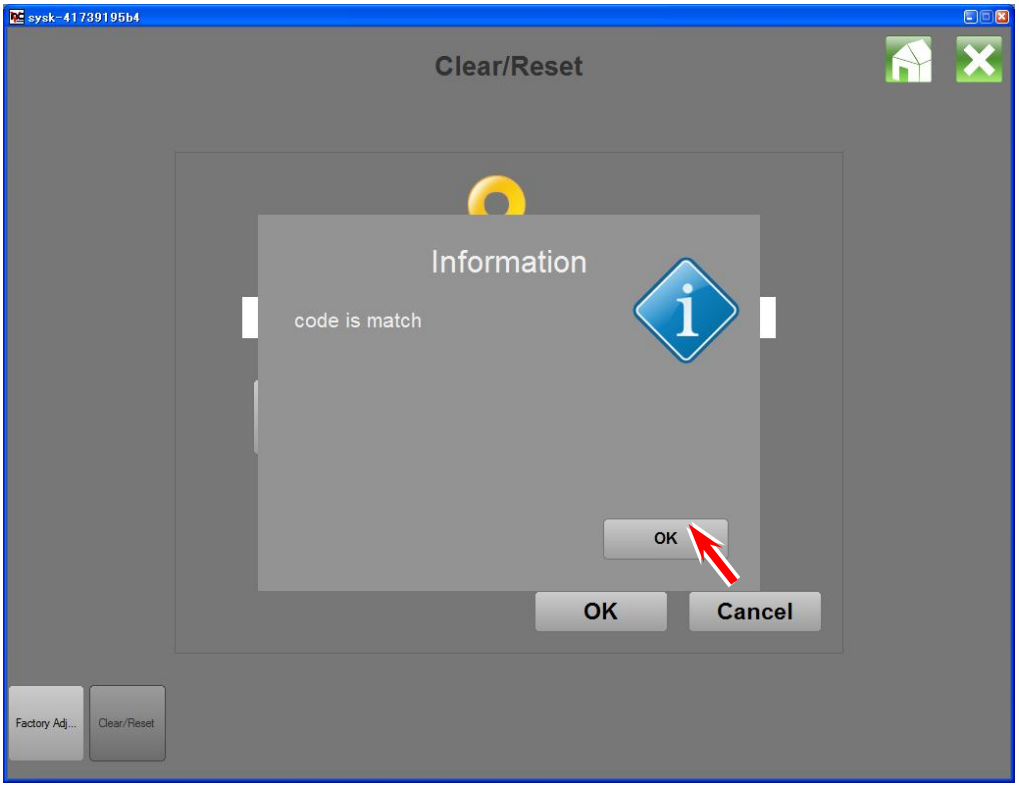
2. Press **Edit**.



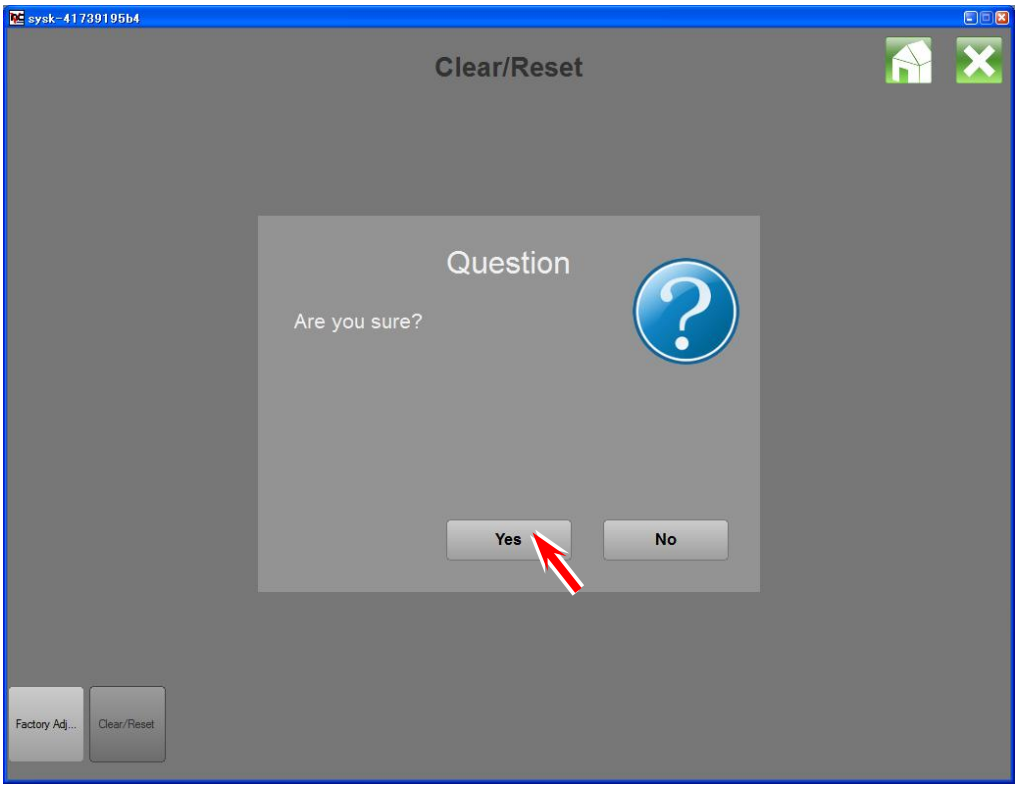
3. Enter an exclusive entry code for Clear/Reset and then press **OK**.



4. The following message pops up when correct code is entered. Press **OK**.



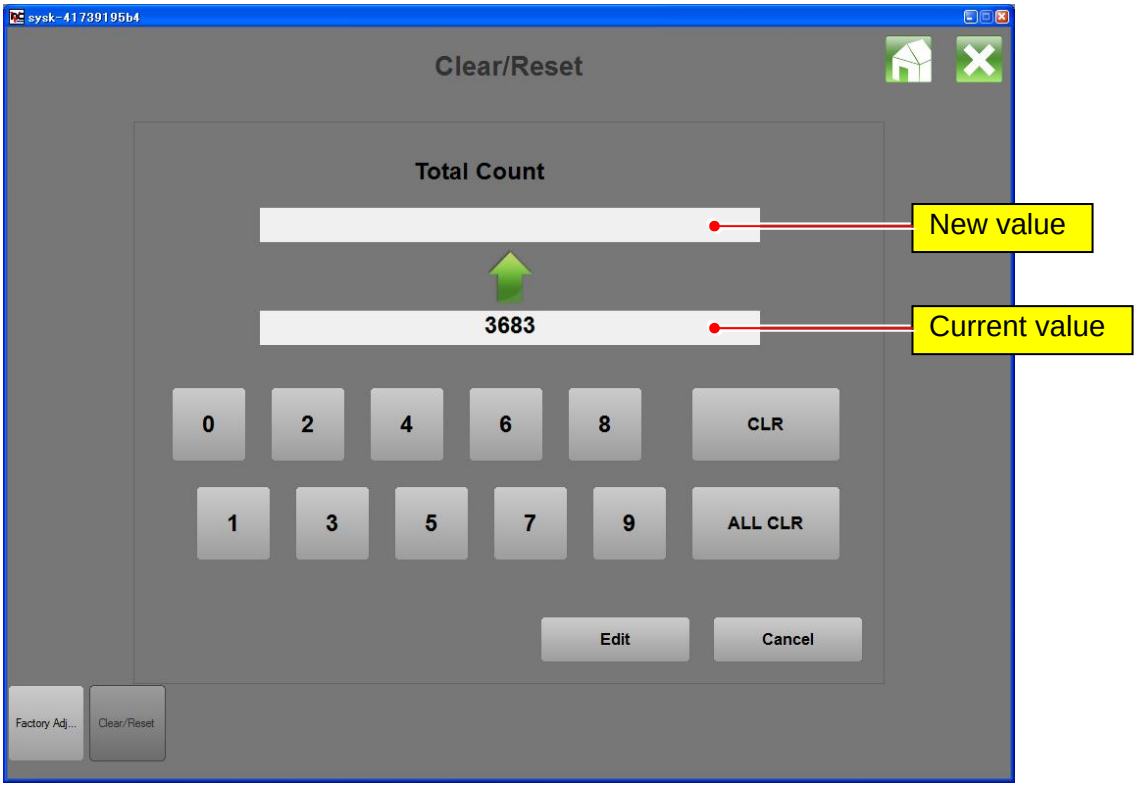
5. You are prompted if you will really clear or reset the information/data. Press **Yes** if you will do.



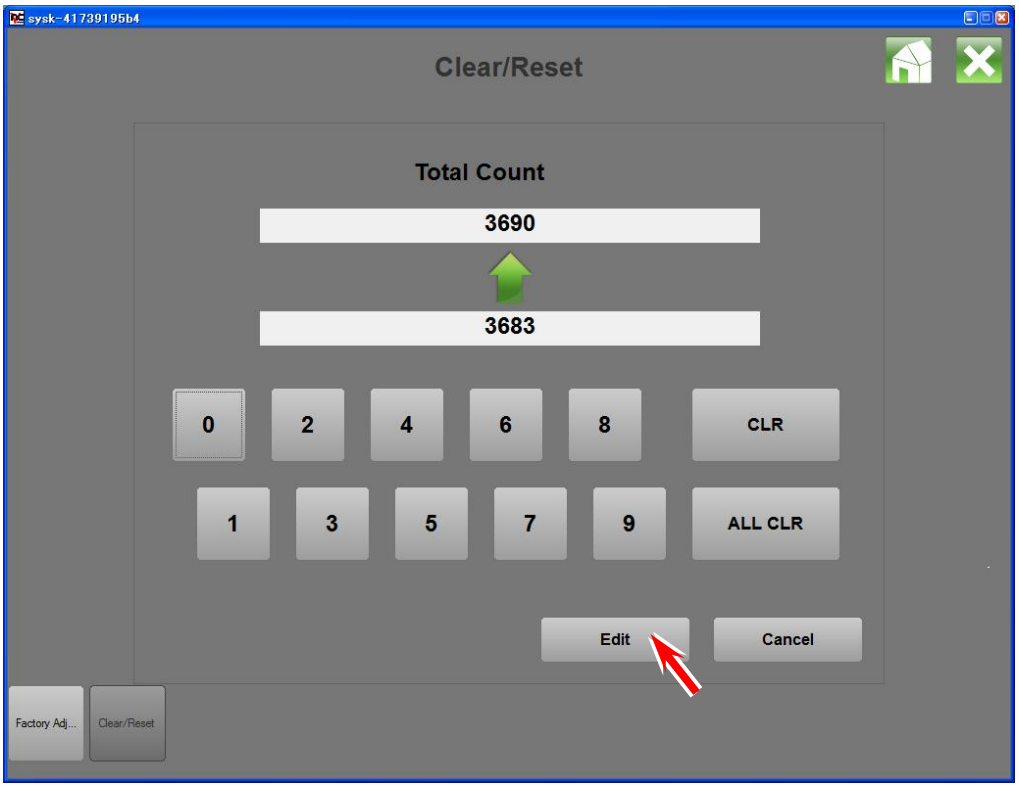
⚠ NOTE

In case of such item as Ram Clear or Web Clear Info, this is the final message before clearing the information/data. Press of **Yes** will execute data clear/reset. Please pay great attention for this operation. And it is recommended to backup the current information in advance.

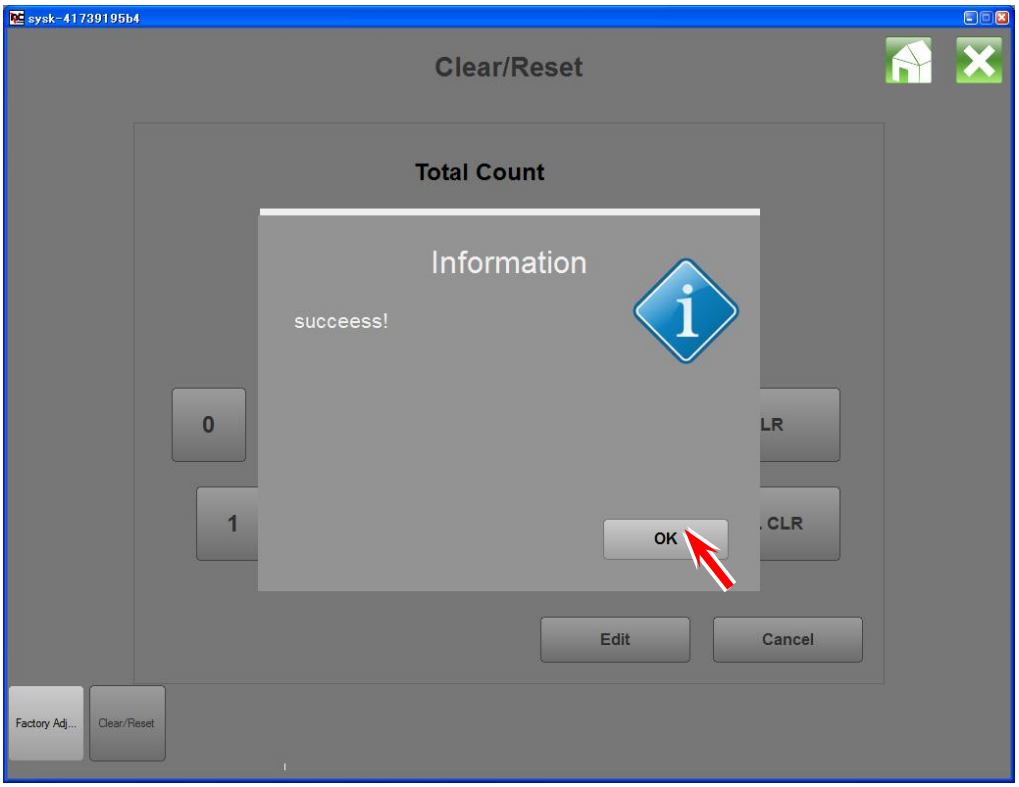
6. The lower field with some value shows the current counted value of Total Counter. Enter new value in the upper vacant field with the numeric keypad sub window.



7. Press **Edit** to enable new value.

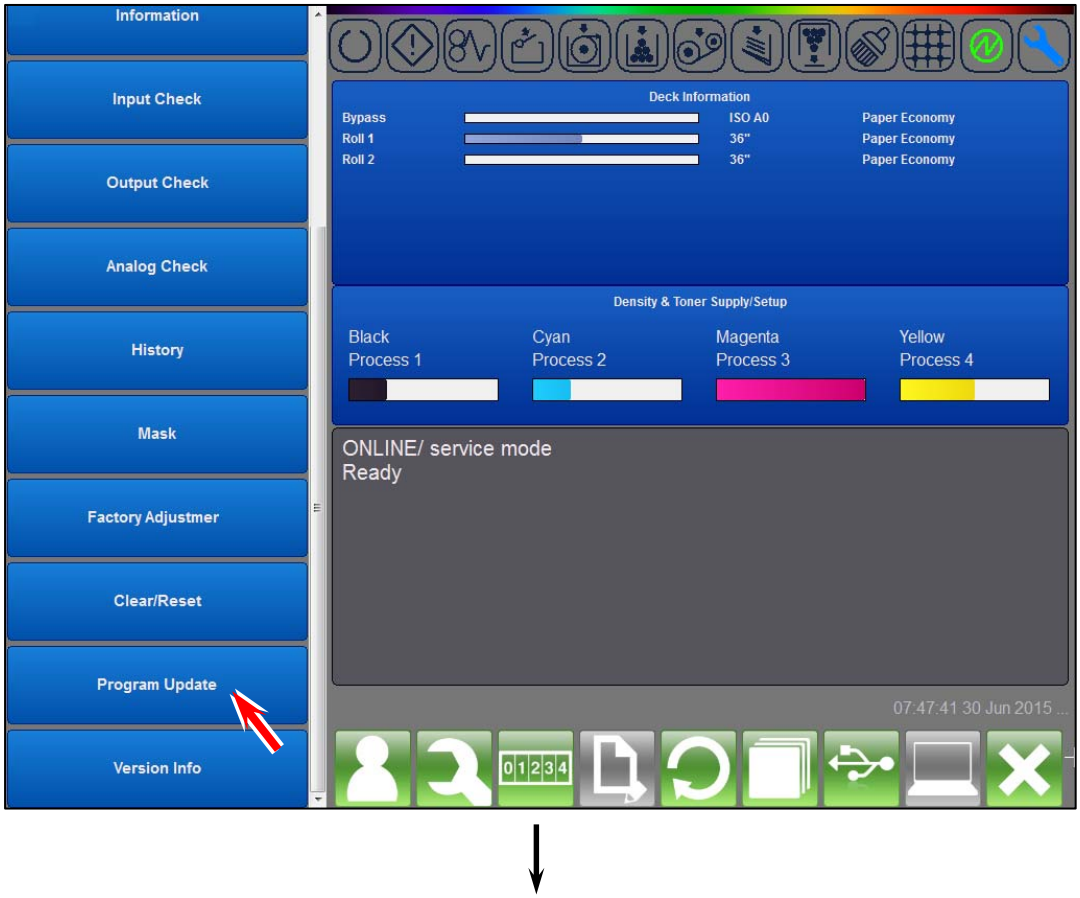


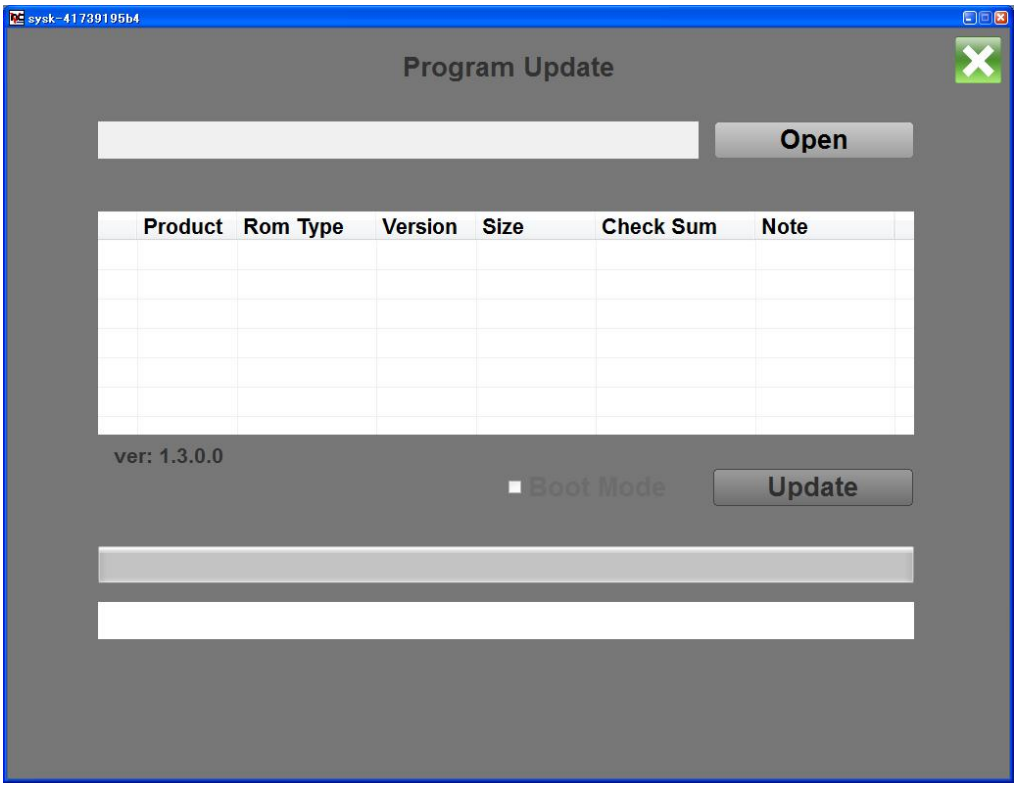
8. Close the following message pressing **OK**.



8. 13 Program Update

Printer control programs such as firmware and FPGA (hardware) are updated.



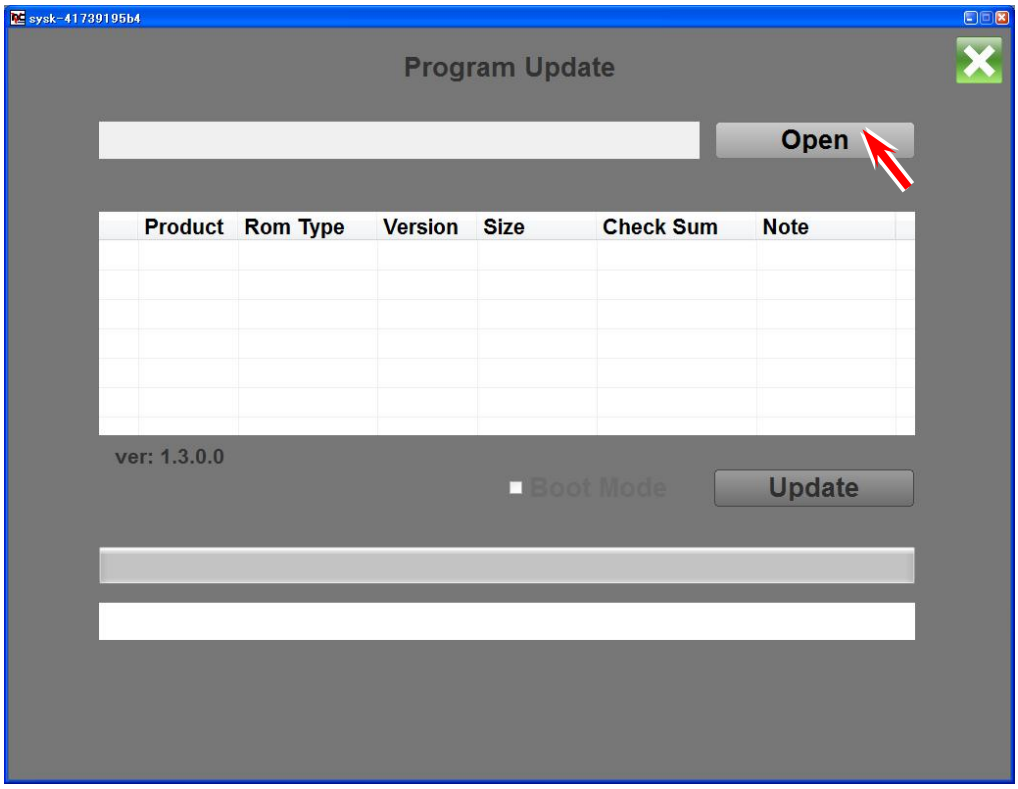


8. 13. 1 Operation in Program Update

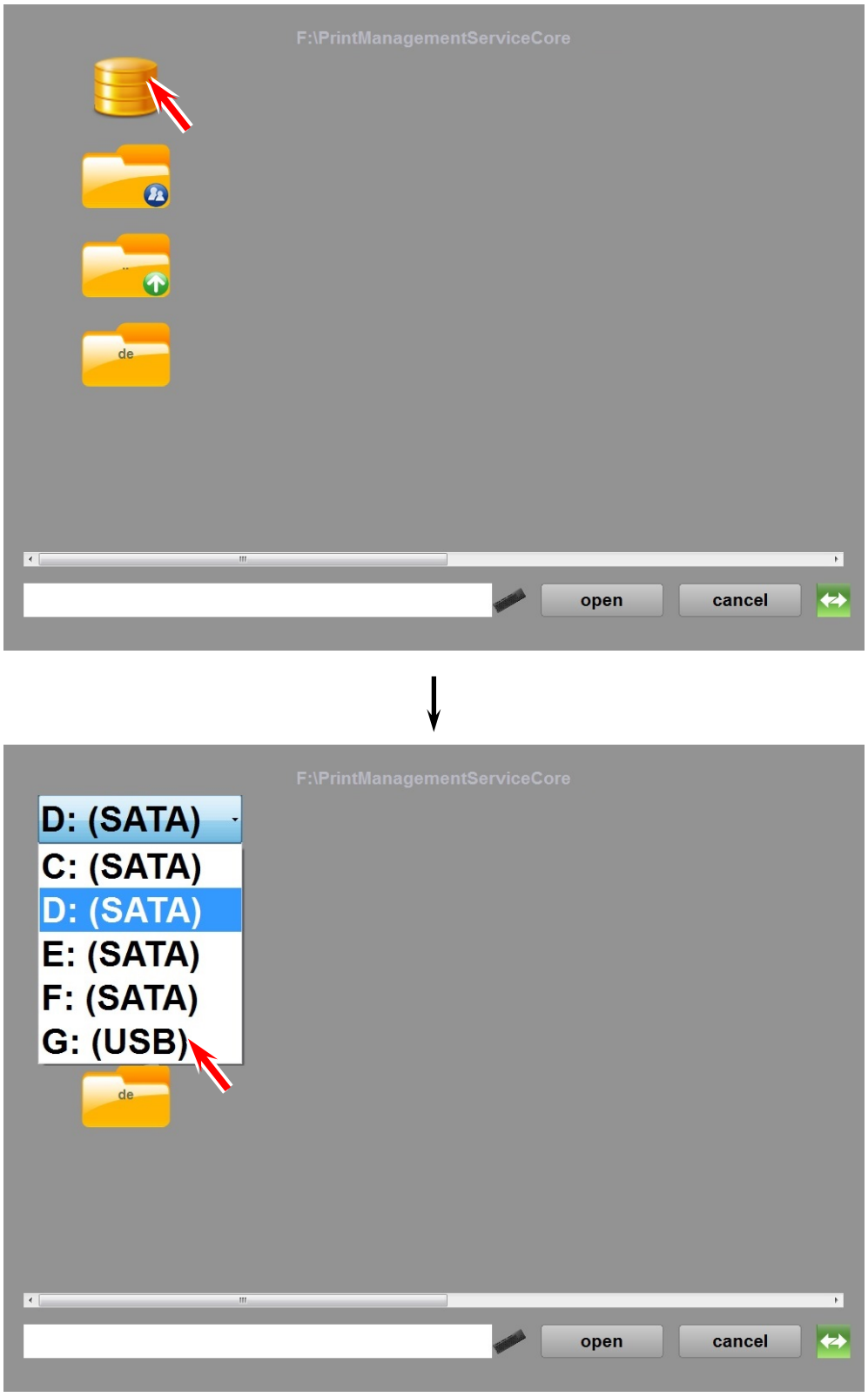
1. Prepare a zip file for update, which includes printer firmware and FPGA. Copy it to any removable device as USB memory stick, and plug it into the printer.

> **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.

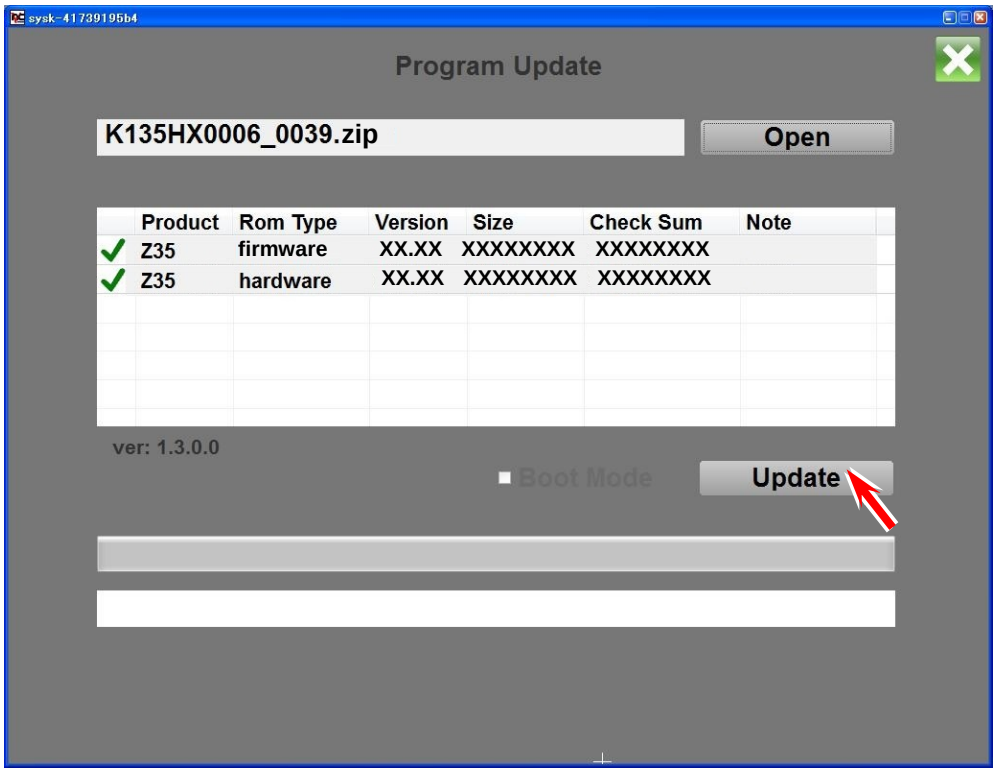


3. The path to the current folder is indicated on the top of the page. Click the drive selection icon on top-left and then choose the correct drive in the list.



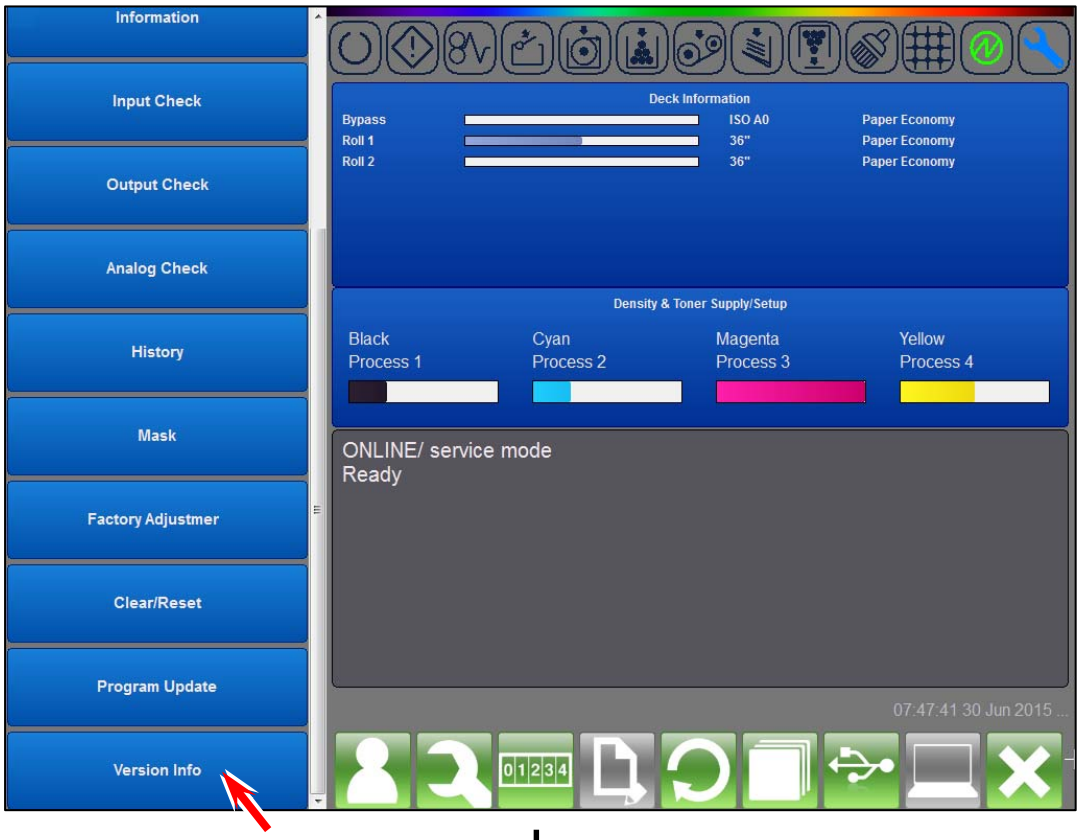
4. Select the update zip file and then press **open**.

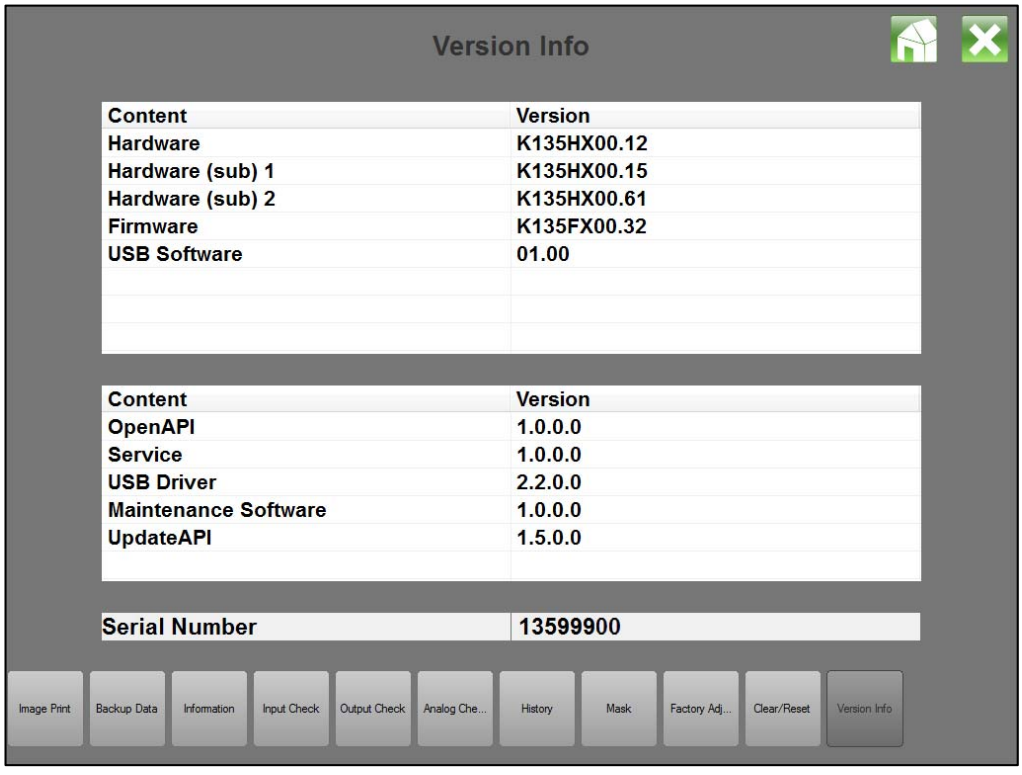
5. The firmware and FPGA in the zip file is read. Confirm that both programs are checked and then press **Update**. Wait for a while until updating completes.



8. 14 Version Info

Version Info indicates the versions of printer control programs.



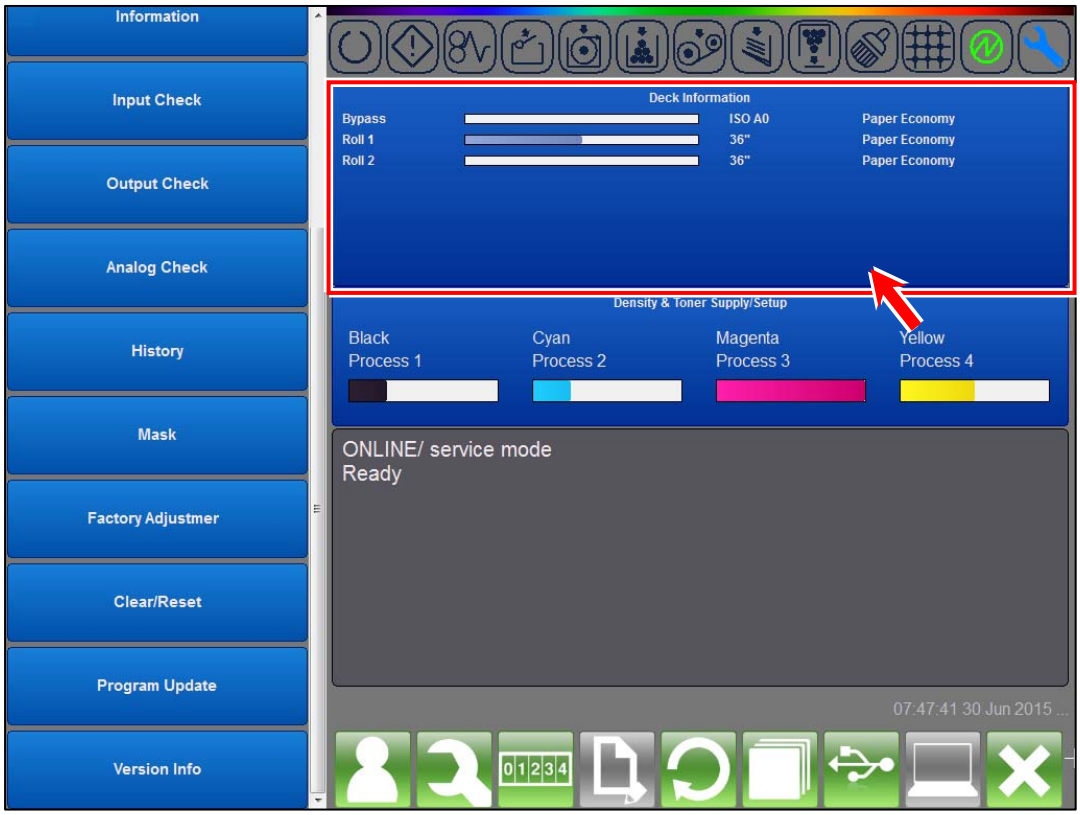


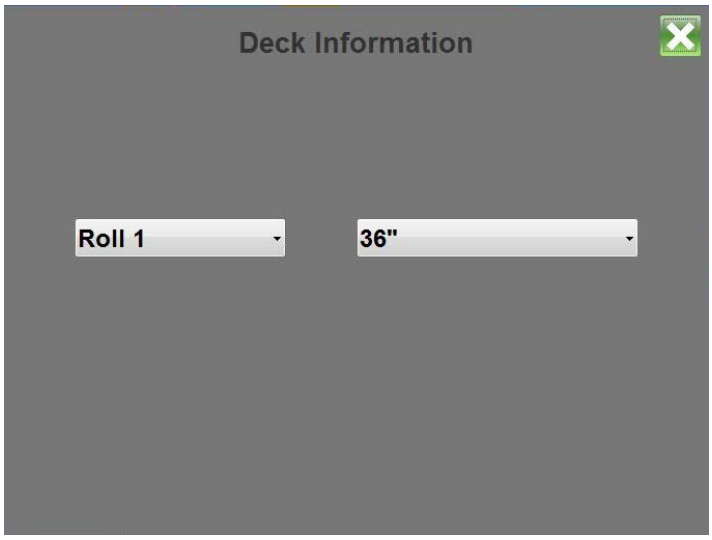
8. 14. 1 Indication in Version Info

Hardware	Version of FPGA that takes high voltage control
Hardware (sub) 1	Version of FPGA1 that motor and media feed controls
Hardware (sub) 2	Version of FPGA1 that controls image engine (such as process and LED Head)
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. 15 Deck Information

Press of Deck Information region on the home of Maintenance GUI opens a dialog for media setting.

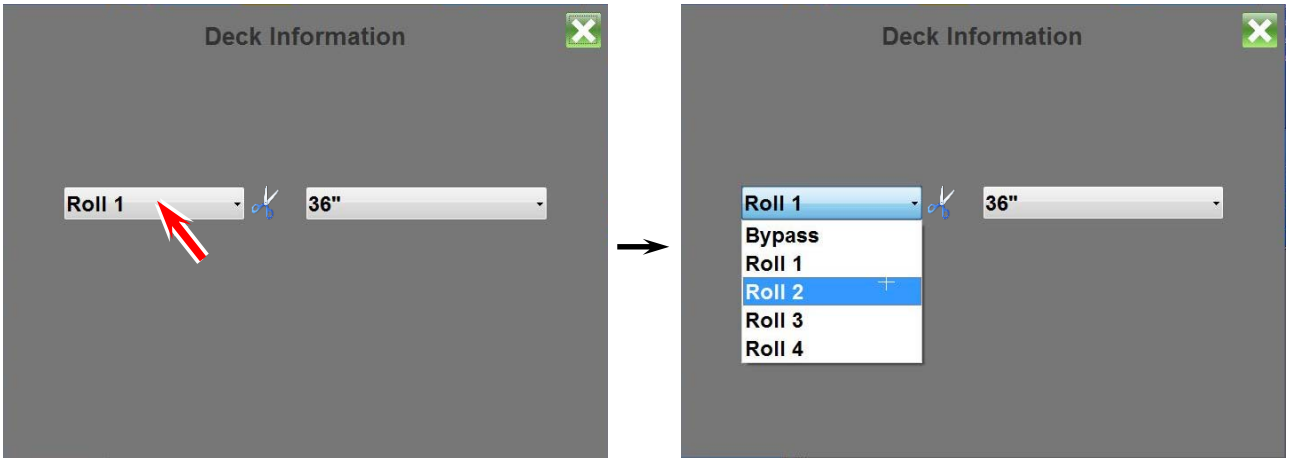




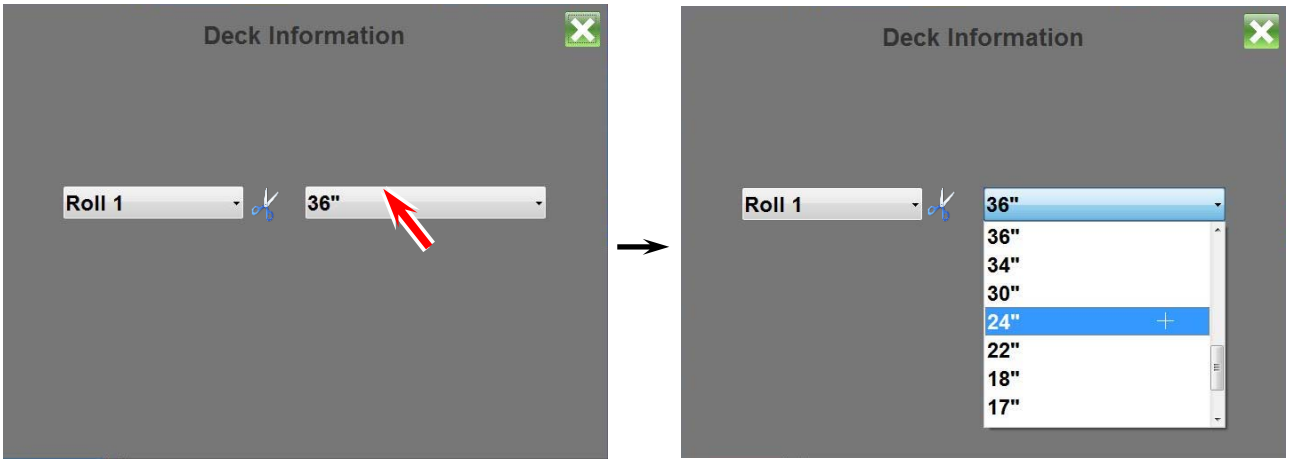
8. 15. 1 Operation in Deck Information

Deck Information dialog allows for entering the width of media.

1. First, select the media source in the left list.

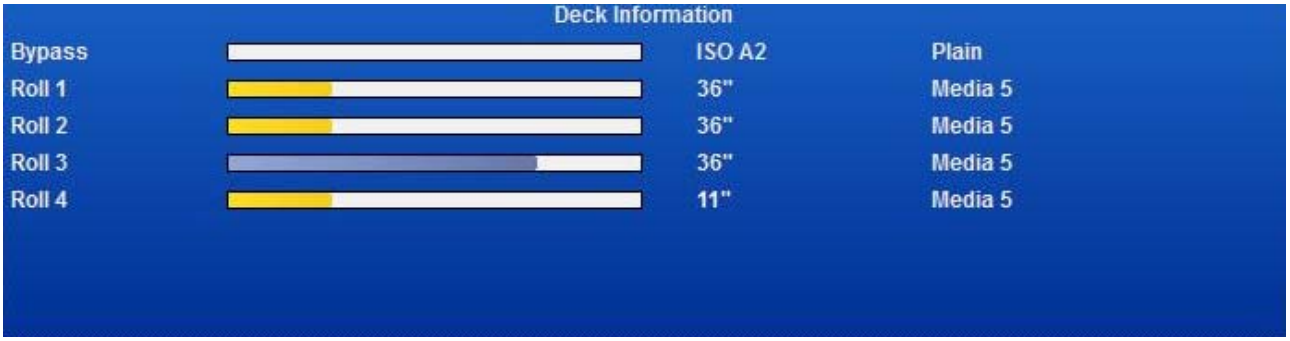


2. Then select the width of media in the right list.



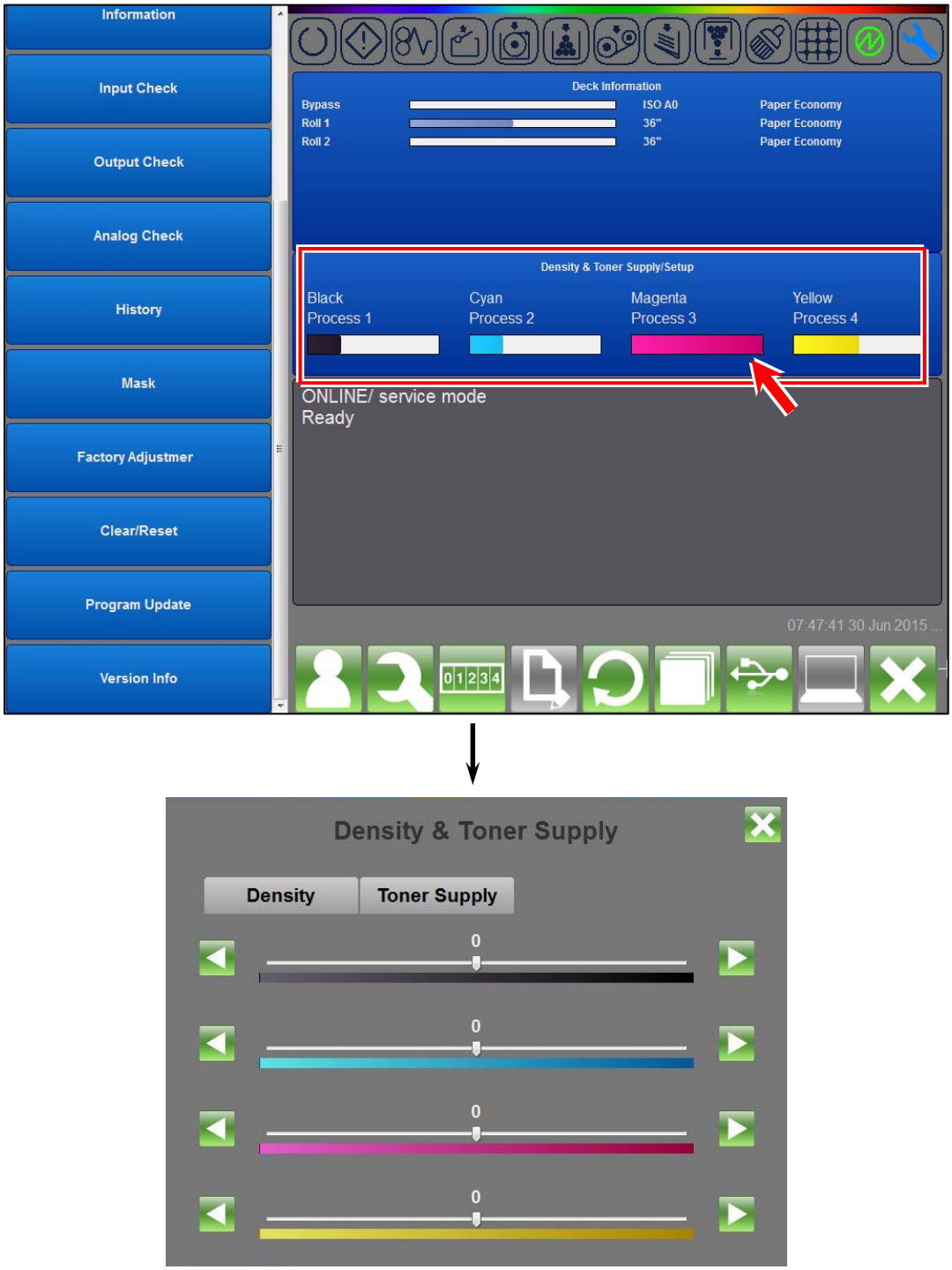
3. Scissors Button can make a trim cut. 

4. Selected media width is shown on the home of Maintenance GUI with the information of remaining volume of roll.



8. 16 Density & Toner Supply

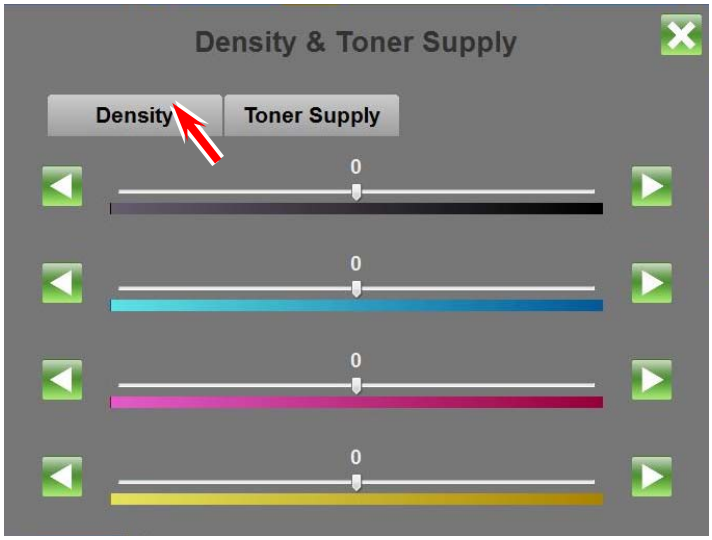
Press of Density & Toner Supply region on the home of Maintenance GUI opens a dialog for density setting and toner supply operation.



8. 16. 1 Operation in Density & Toner Supply

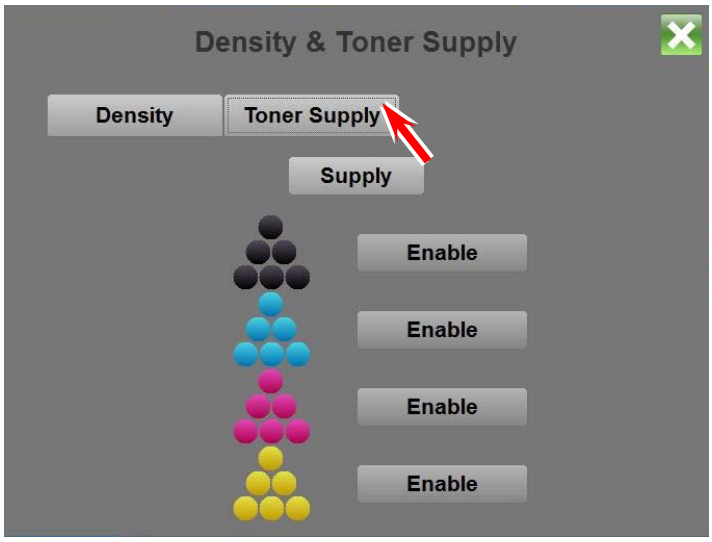
It is possible to increase or decrease the density of particular color. It is also possible to supply additional toner of particular color to the developer unit optionally.

1. For changing the density of particular color, press **Density**.

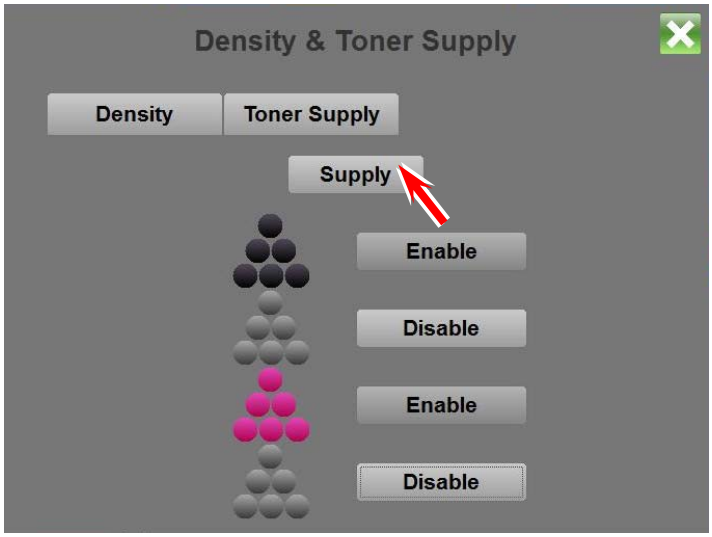


2. Change the density level of particular color by drag the color slider or pressing the triangle icons. Density is standard level when set to 0, and increment and decrement by up to +/-2 is available.

3. Press **Toner Supply** for supplying additional toner to the developer unit.



4. Switch between enable and disable by touching the icon. "Enable" will supply additional toner whole "Disable" does not. Press Supply, and the toner of the color set to "Enable" is supplied to the developer unit for certain time.

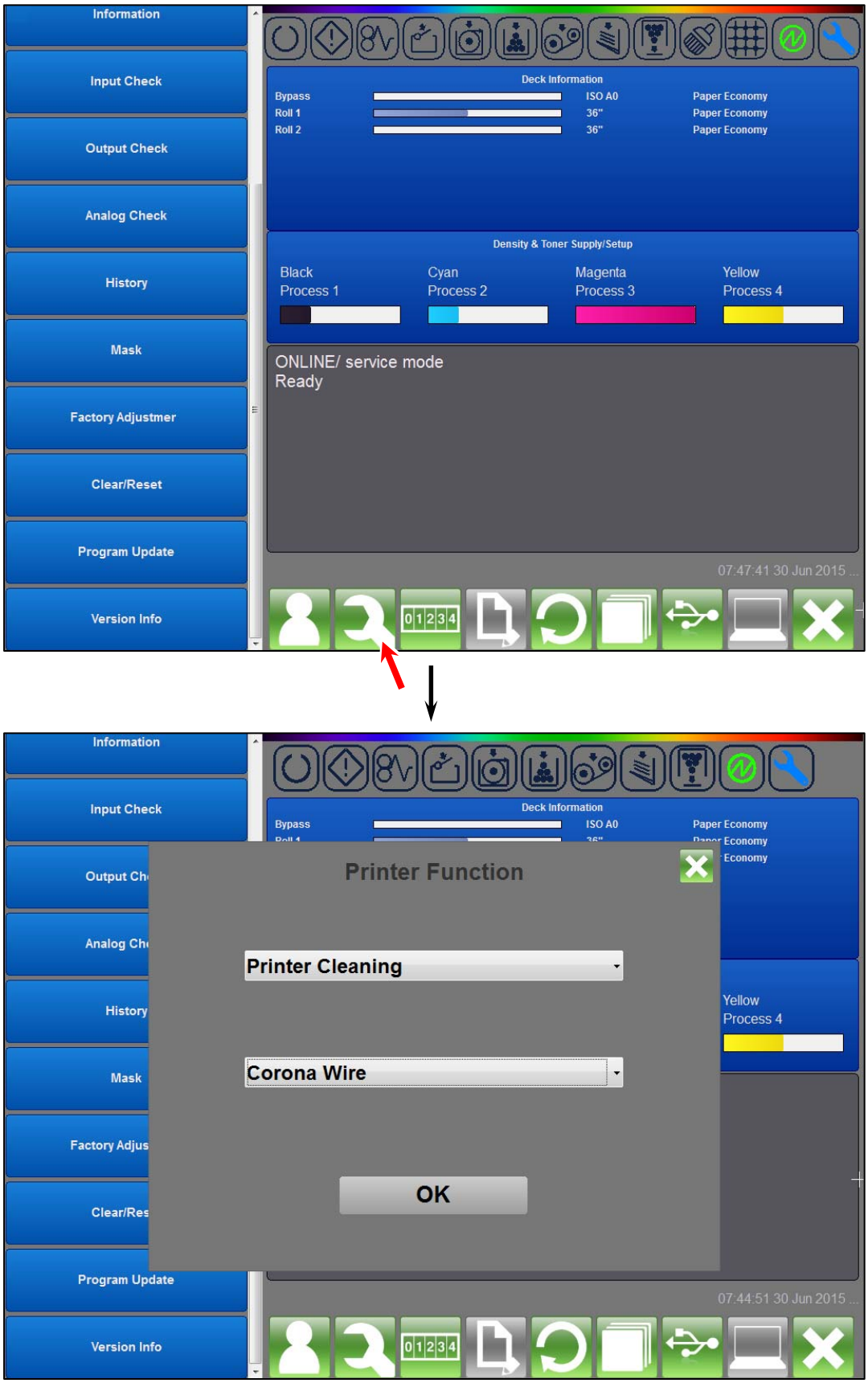


⚠ NOTE

Toner Supply should be used only when it is obviously seen the toner amounts in a process color you are going to supply being not adequate.
The supply operation cannot be interrupted by any measures.

8. 17 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.

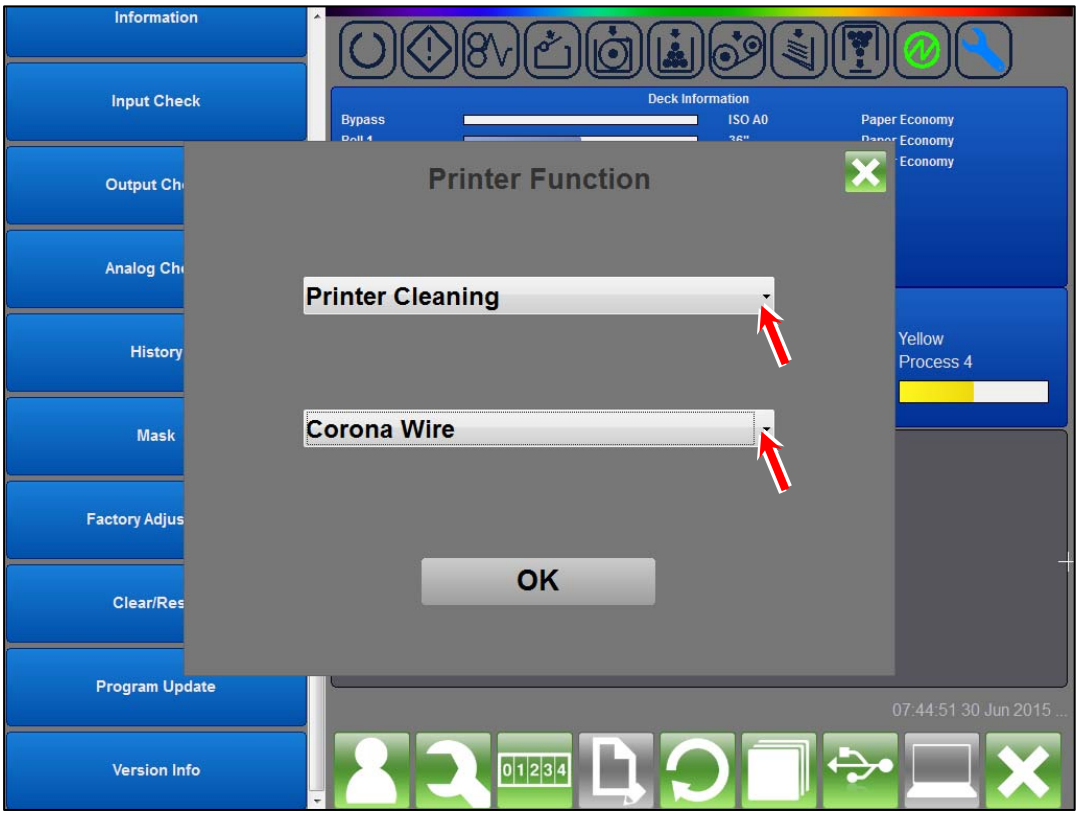


8. 17. 1 Operation in Printer Function

At first select required function category in the upper list and then select the required function in the lower list.

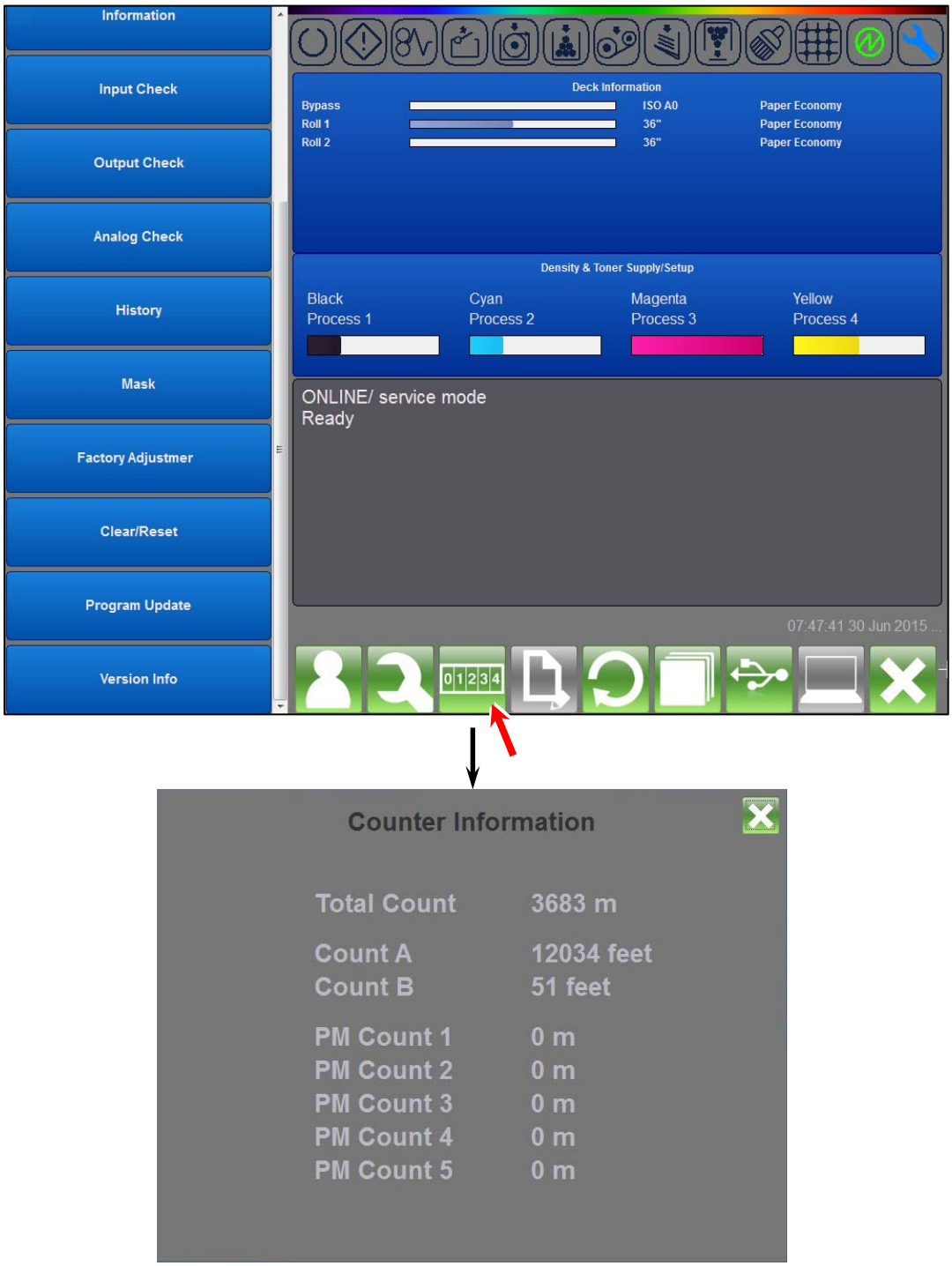
Function category	Function	Executed operation
Power Saving	Cancel Sleep	(Not used)
	Warm Sleep	(Not used)
	Cold Sleep	(Not used)
	Power Off	(Not used)
Printer Cleaning	Corona Wire	Corona Wire is cleaned.
	LED Head	(Not used)
Alignment	Density Adjust	Density Control function adjusts the density. See also ***
	LED Head Joint Adjust	Alignment of LED blocks is executed See also ***
Toner Setup	Toner Setup	Toner Setup for initial toner supply is executed.
Toner Supply	Toner Supply	Optionally additional toner is supplied.

Select a function in the dropdown menu, and then press OK to start.



8. 18 Counter Info

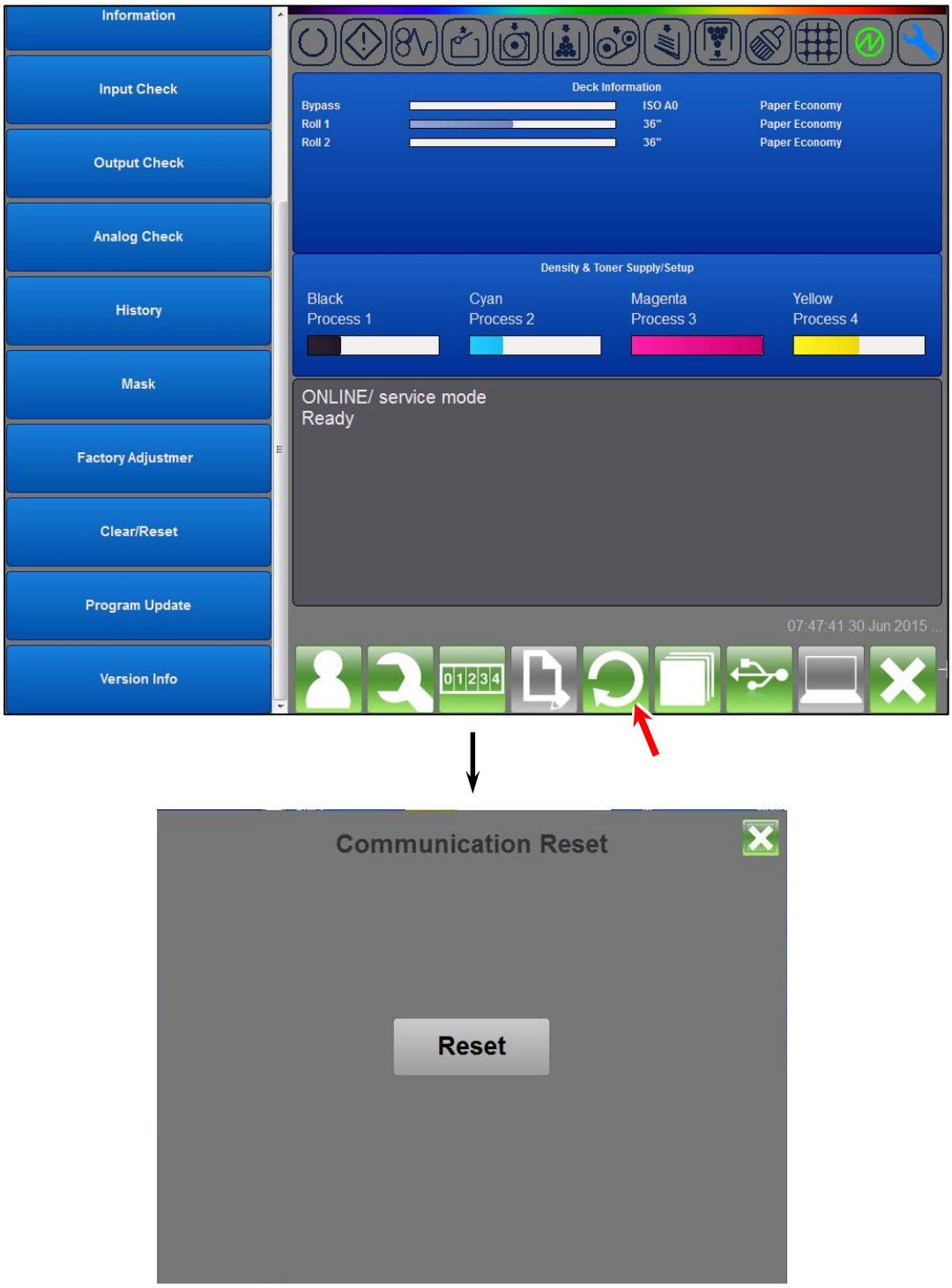
Press of the Counter icon on the bottom of Maintenance GUI opens a Counter Information dialog that allows for checking the counter values.



Name of counter	Counted target
Total Count	Sum of the color print and monochrome print. Counting unit is always linear meter.
Count A	Counter of color print.
Count B	Counter of monochrome print.
PM Count 1	(Not used)
PM Count 2	(Not used)
PM Count 3	(Not used)
PM Count 4	(Not used)
PM Count 5	(Not used)

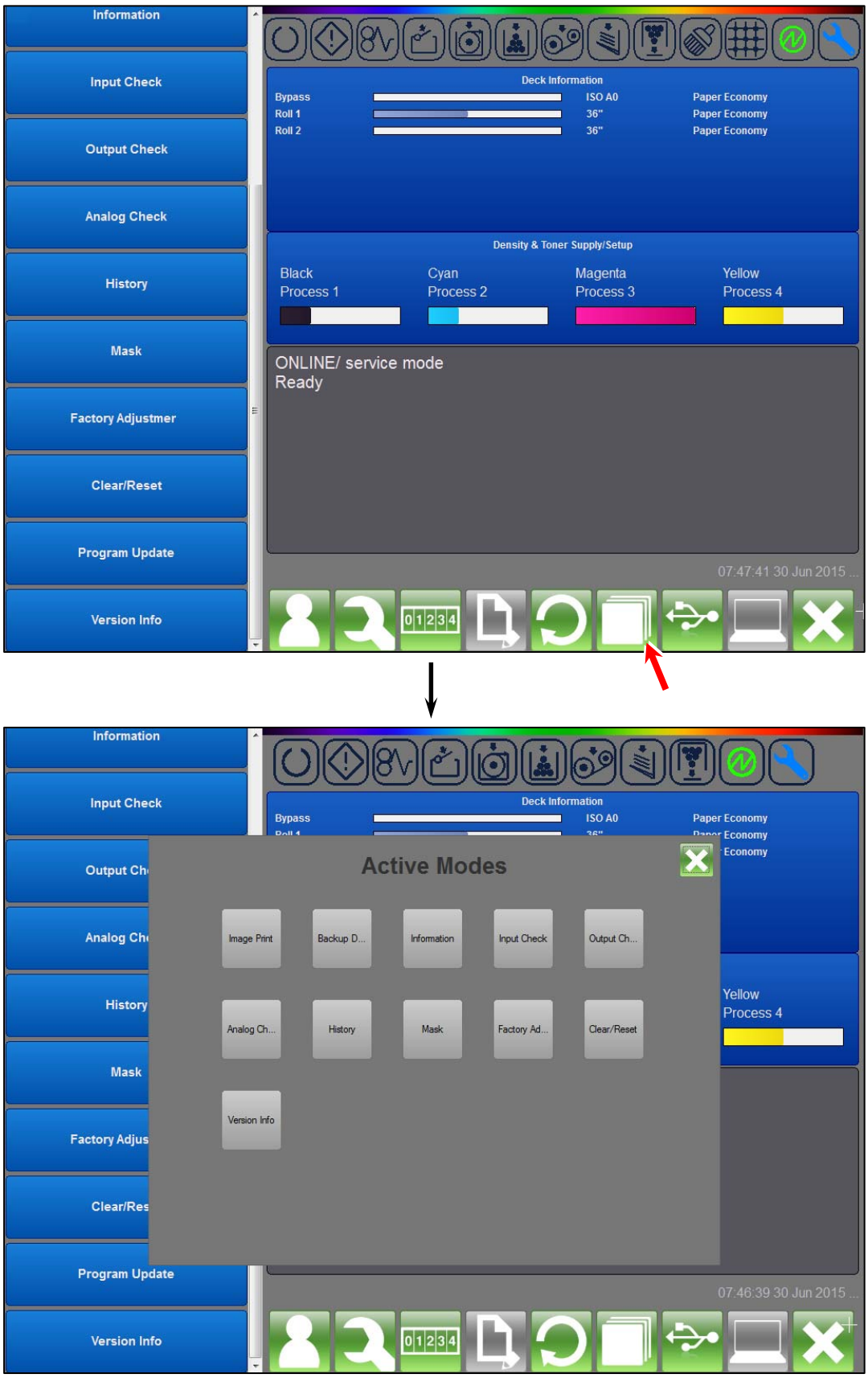
8. 19 Communication Reset

Press Communication Reset button to re-establish communication between the controller (KCS) and the print engine (PW13520 PCB).



8. 20 Active Modes

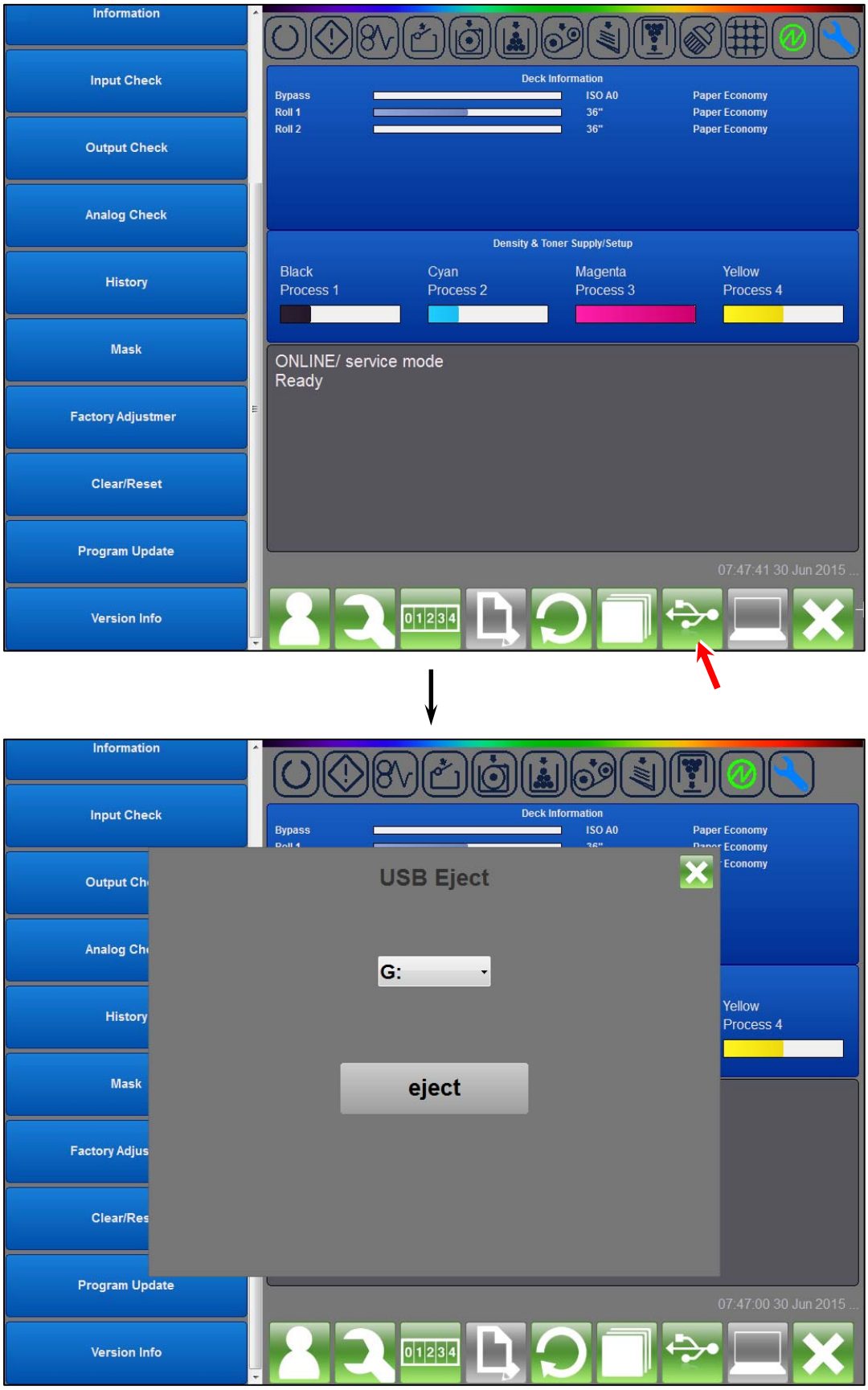
The Maintenance GUI can activate multiple menu functions at the same time, such as Backup Data, Input Check and etc. Active Modes allows for confirming what items are currently active, and also it allows for closing unnecessary item.



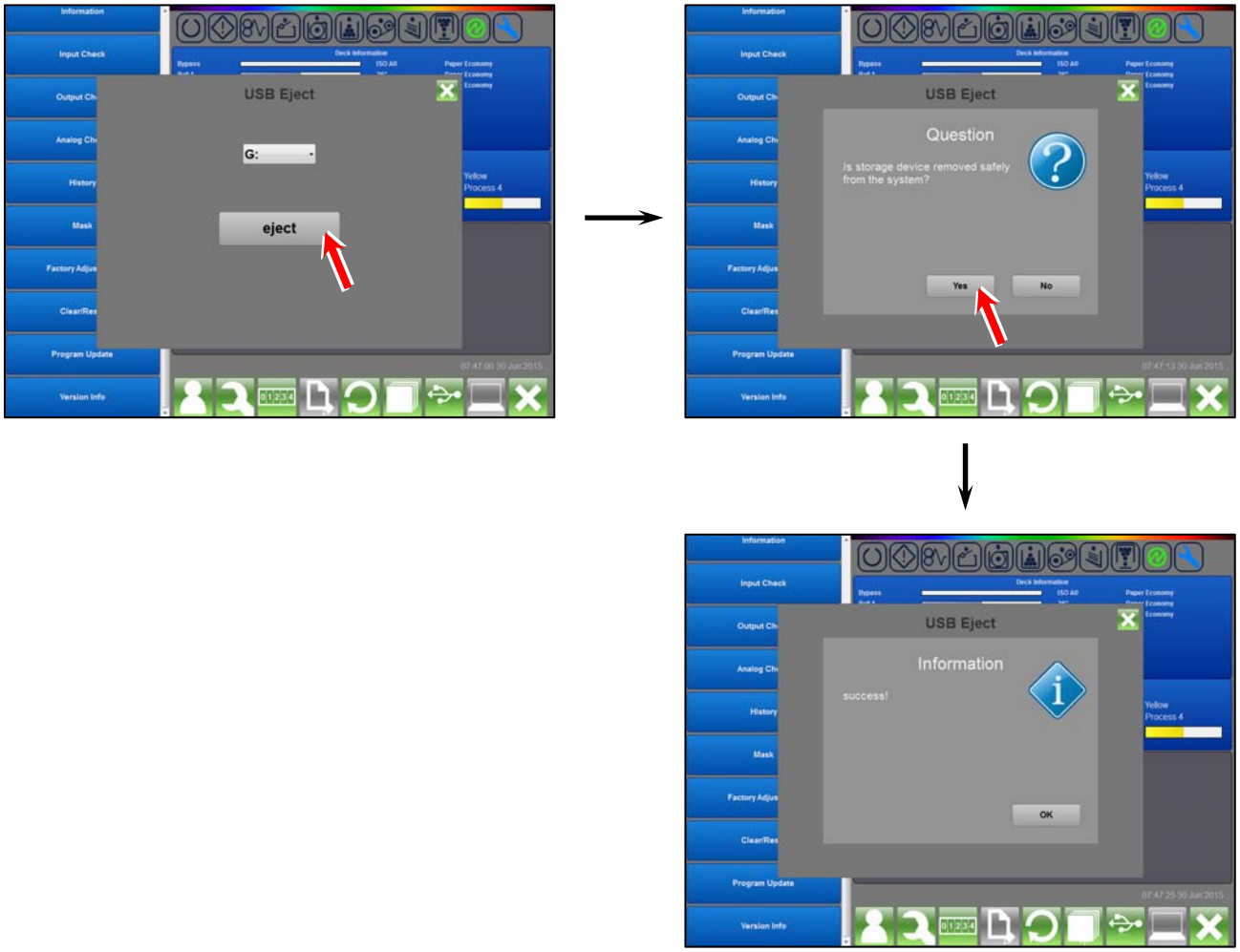
This is an example to show multitasking windows with many modes opened at a time.

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.



Press eject and press Yes to safely remove your storage from the printer.



Chapter 9

Adjustments

9. 1 Adjusting Optical Density

Step 1 : Confirm LED Focus and Registration calibrations are completed.

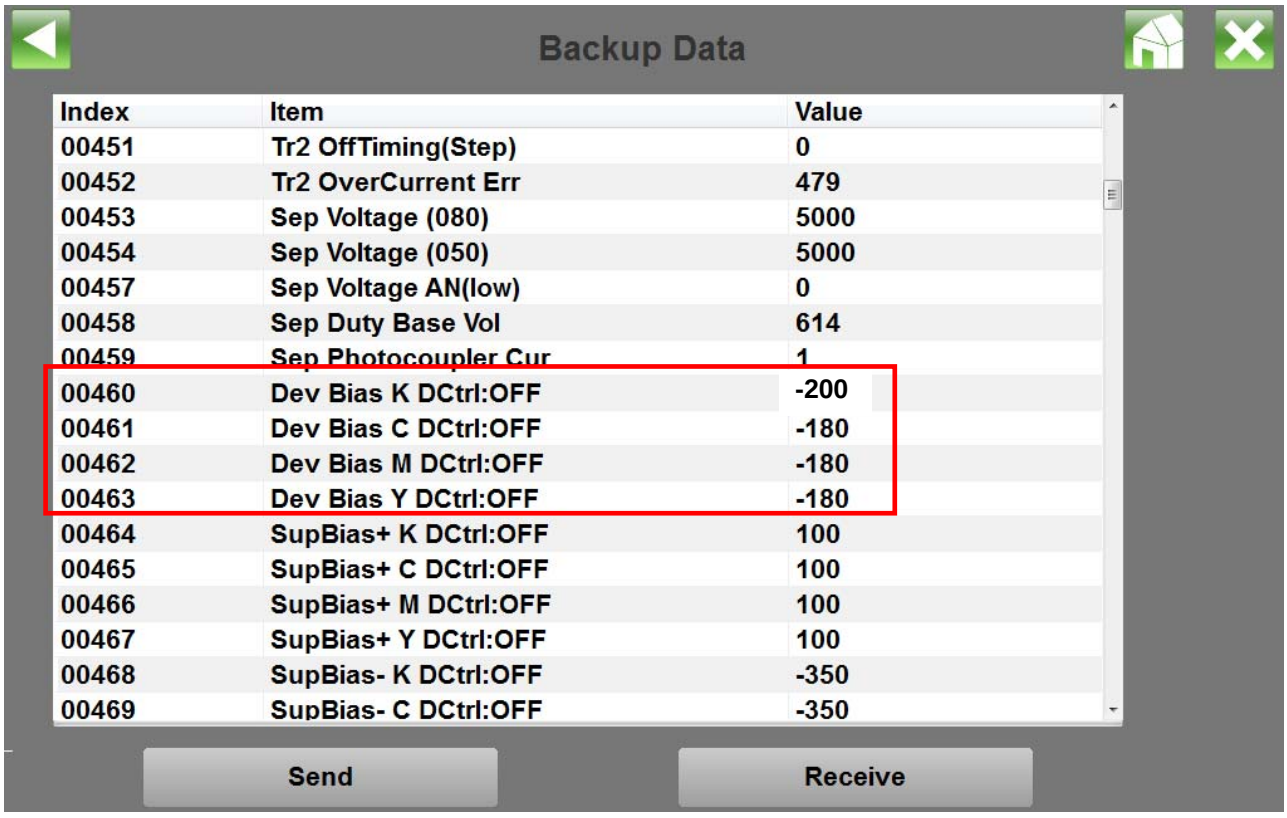
Step 2 : Disable "Density Adjustment".

(1) Enter Service Software, choose **Service** and login using these credentials.
User Name : Service
Password : kipsysk.
Select **Settings**, **Printer Service** then **Launch** to enter the service module.
Select the open door on the lower left corner of the screen.
(2) Choose **Backup Data** from the menu.
(3) Choose **All Items**.
(4) Set **BUD No.720 (Density Adjustment.)** to 0, which disables Density Adjustment.
(5) Also set **BUD No.1785 (Auto Density Adjustment.)** to 0, which prevents the Auto Density Adjustment mode to function automatically under decided conditions.

Step 2 : Set Develop Bias (BUD 460 - 463) to the following standard values

(1) From the Service Software menu, choose **Backup Data** from the menu.
(2) Choose **High Voltage**.
(3) Check the values of **Backup Data No. 460 to 463 (developer roller bias)**, and confirm that they are set to the following starting values. (If not, please set to the following values manually.)

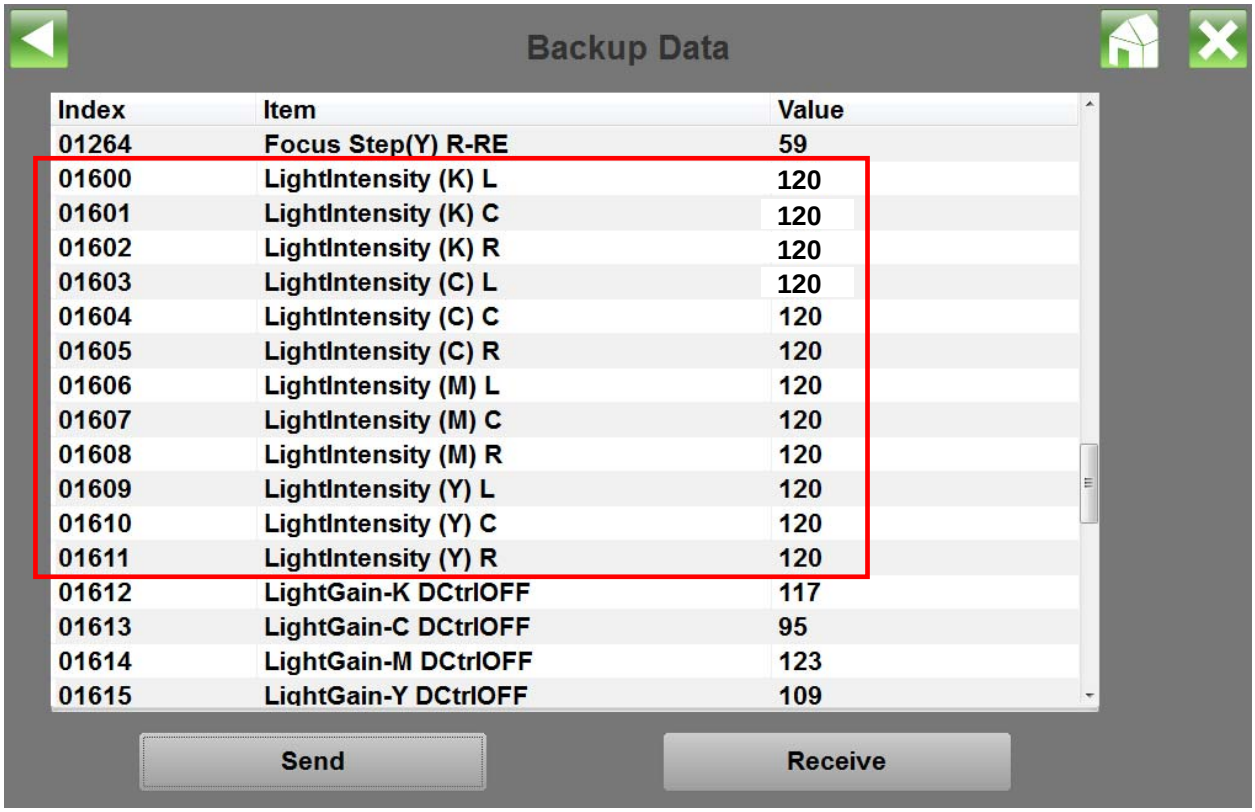
		BUD No.	Standard
K	Dev Bias K DCtrl:OFF	00460	-200
C	Dev Bias C DCtrl:OFF	00461	-180
M	Dev Bias M DCtrl:OFF	00462	-180
Y	Dev Bias Y DCtrl:OFF	00463	-180



Step 3 : Set all Backup Data No.1600 to 1611 (Light intensity) to standard values

(1) From the Service Software menu, choose **[Backup Data] - [Image / Print Position]**.
(2) Manually set all **Backup Data No.1600 to 1611 (Light Intensity)** to the following:

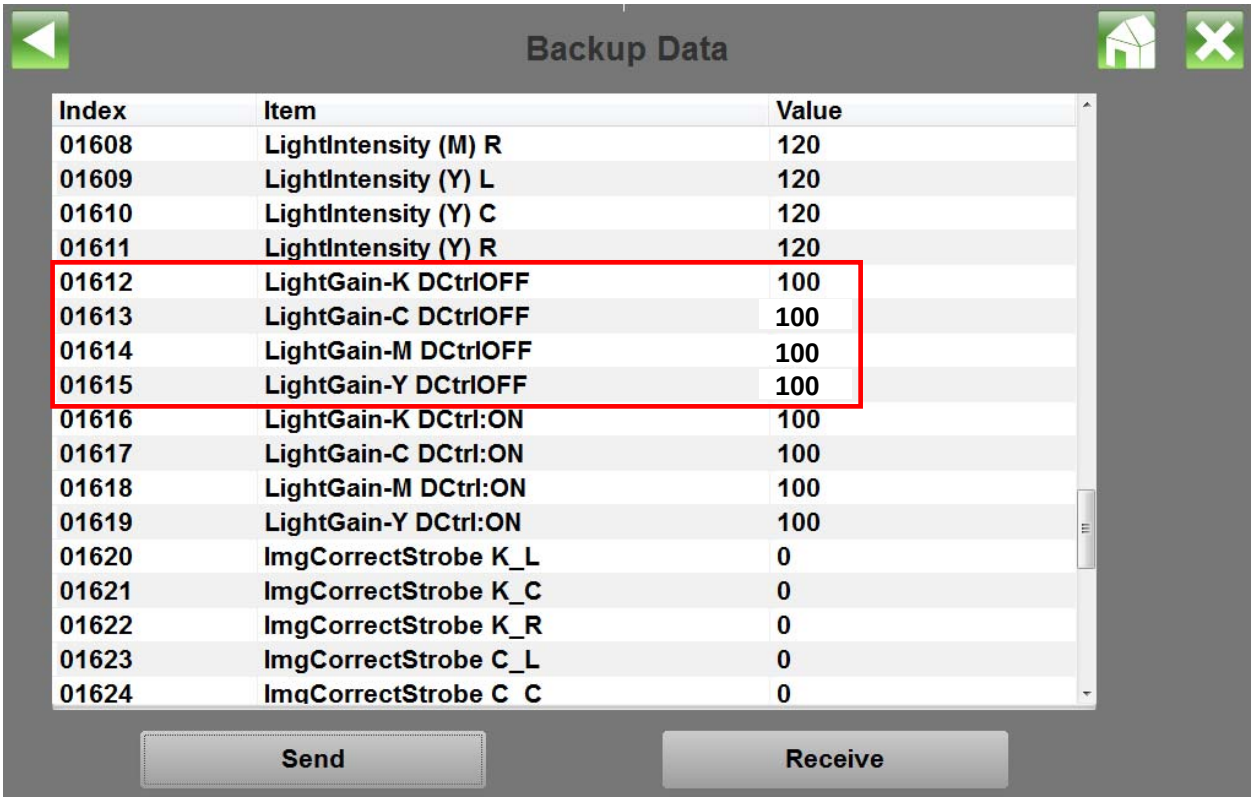
		BUD No.	Standard
K	LightIntensity (K) L	01600	120
K	LightIntensity (K) C	01601	120
K	LightIntensity (K) R	01602	120
C	LightIntensity (C) L	01603	120
C	LightIntensity (C) C	01604	120
C	LightIntensity (C) R	01605	120
M	LightIntensity (M) L	01606	120
M	LightIntensity (M) C	01607	120
M	LightIntensity (M) R	01608	120
Y	LightIntensity (Y) L	01609	120
Y	LightIntensity (Y) C	01610	120
Y	LightIntensity (Y) R	01611	120



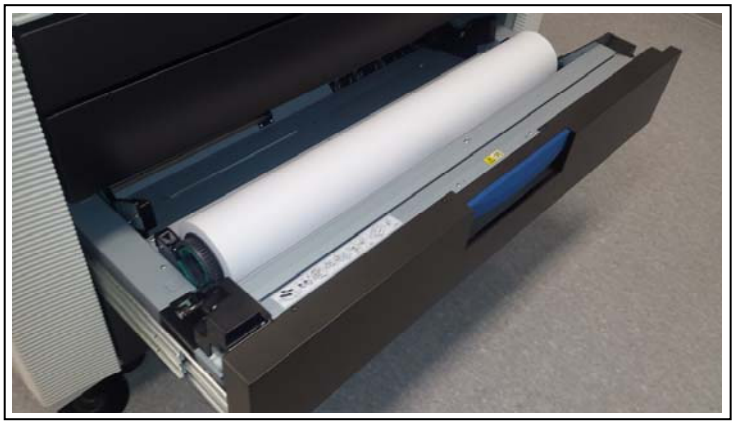
Step 4 : Set Light Gain (BUD 1612 - 1615) to the following standard values.

(1) From the Service Software menu, choose **[Backup Data] - [Image / Print Position]**.
(2) Check the values of **Backup Data No.1612 to 1615 (light gain)**, and confirm that they are set to the following starting values. (If not, please set to the following values manually.)

		BUD No.	Standard
K	LightGain-K DCtrlOFF	01612	100
C	LightGain-C DCtrlOFF	01613	100
M	LightGain-M DCtrlOFF	01614	100
Y	LightGain-Y DCtrlOFF	01615	100

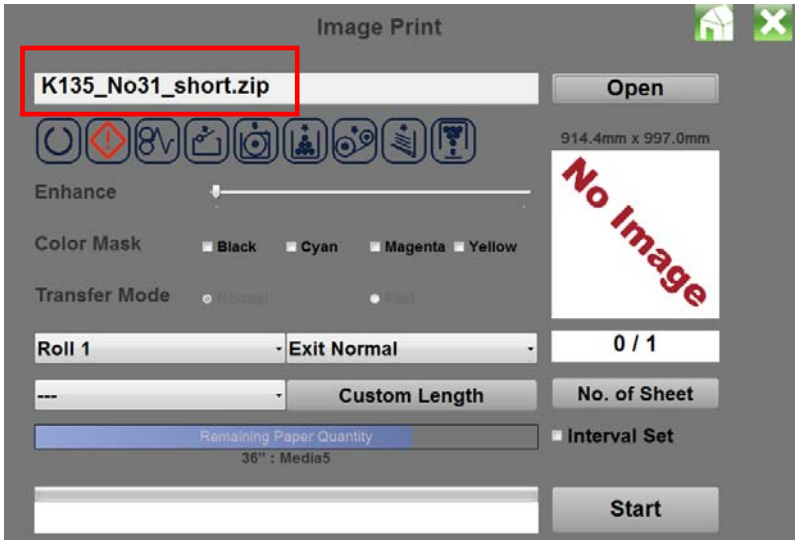


Step 5 : Set a 36” wide roll media (bond or plain paper) to the printer.

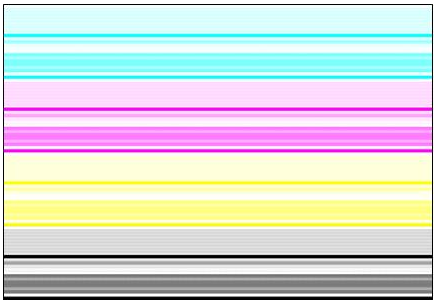


Step 6 : Using K135 Test Pattern No.31, balance the density of the three LED blocks for each color

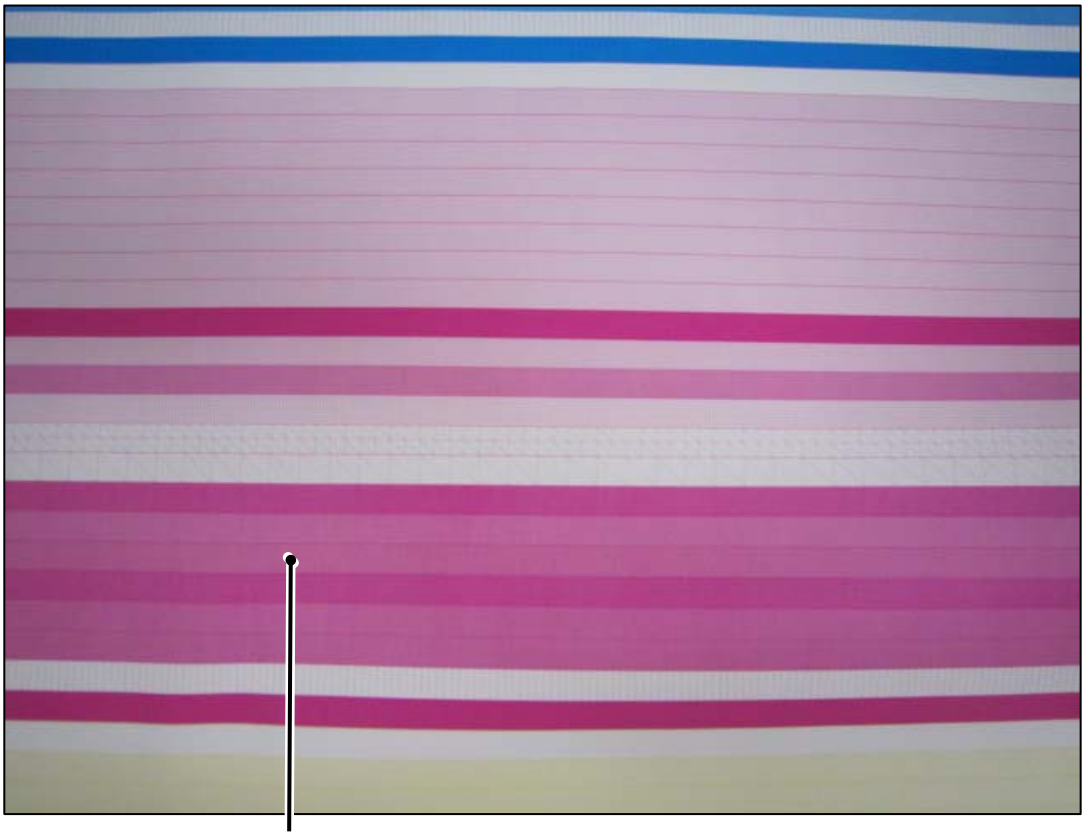
(1) From the Service Software menu, choose **Image Print**.
(2) Press **Open** and select **K135_No31_short.zip** in the list.
(3) Print this pattern with bond or plain paper by pressing Start.



Test pattern No.31

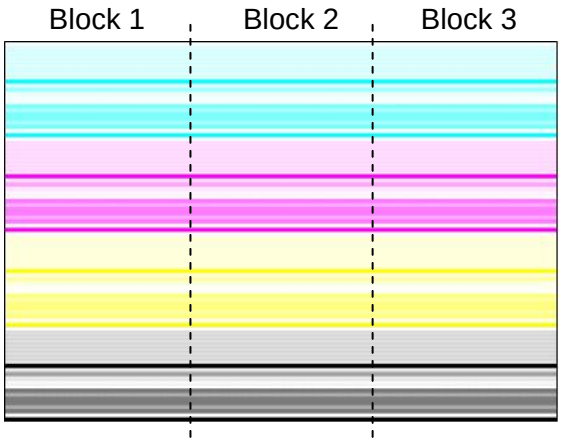


(4) Each color consists of 23 different types of images. Please find the **18th image from the top** in each color, which is to be used to balance the densities among 3 image blocks.

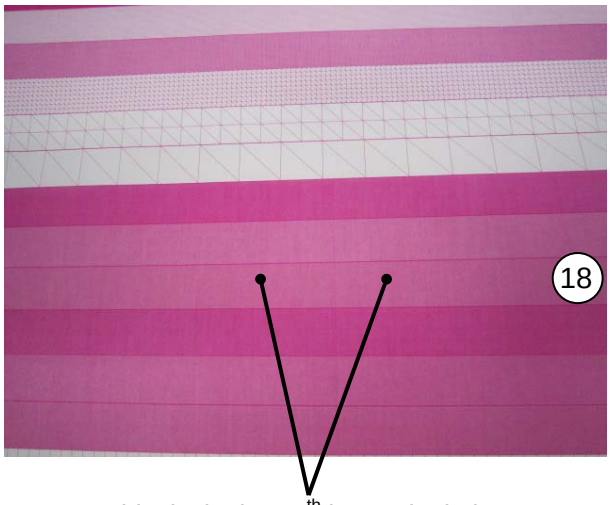


18th image (used for balancing the densities among 3 blocks)

(5) Check if the densities among 3 image block look same or different for each color. **Use only the 18th image from the top for checking.** Even if densities look different in other images than 18th one, please ignore that.

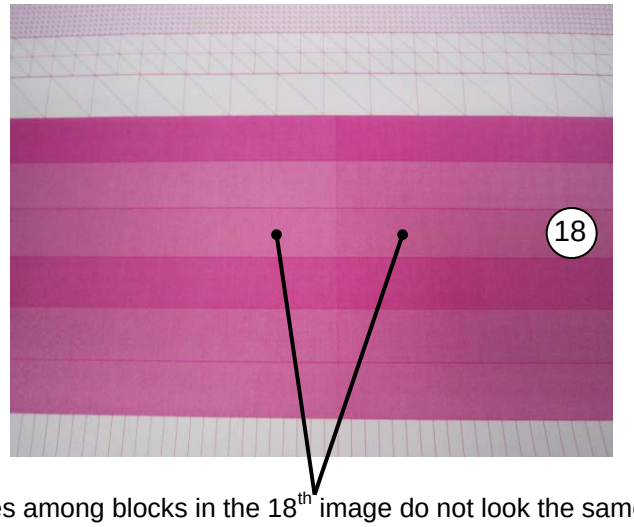


- If densities look the same among 3 image blocks, density balance is acceptable. Please skip (6) through (8) and go to **Step 7**.



Densities among blocks in the 18th image look the same.

- If densities look different, density balance is not acceptable so readjustment is required. **Please perform (6) through (8).**

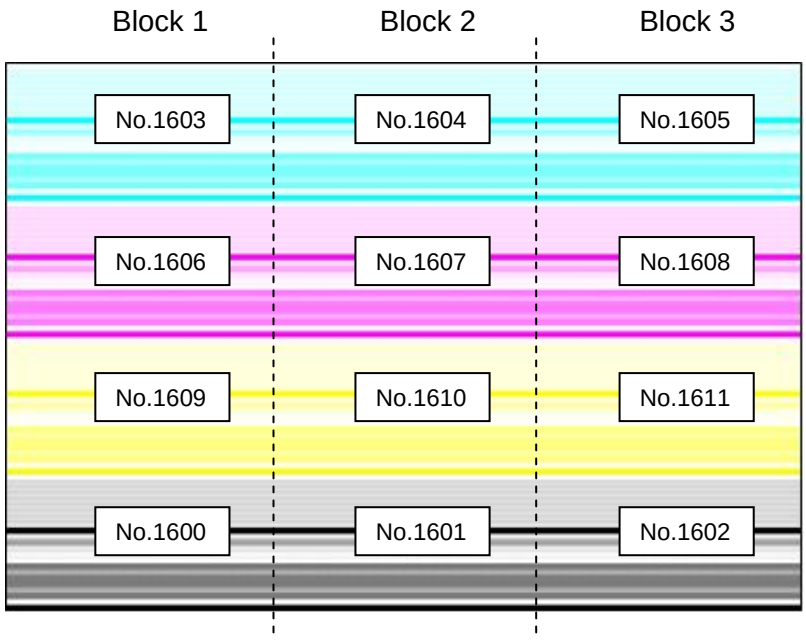


Densities among blocks in the 18th image do not look the same.

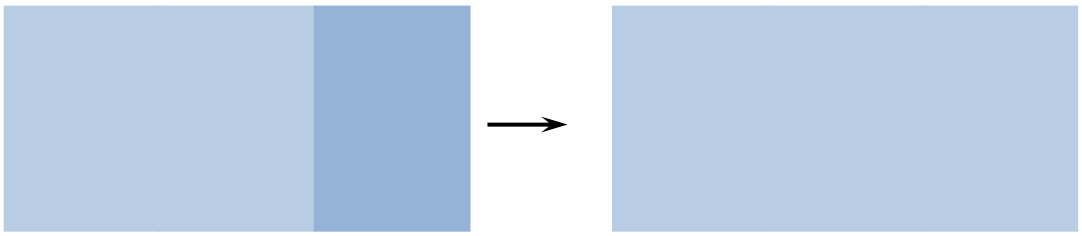
(6) To change the density of any image block, choose **[Backup Data] - [Image / Print Position]**.

(7) If you will change the density of any image block, choose the correct Backup Data Number referring to the following list and image.

		BUD No.
K	LightIntensity (K) L	01600
K	LightIntensity (K) C	01601
K	LightIntensity (K) R	01602
C	LightIntensity (C) L	01603
C	LightIntensity (C) C	01604
C	LightIntensity (C) R	01605
M	LightIntensity (M) L	01606
M	LightIntensity (M) C	01607
M	LightIntensity (M) R	01608
Y	LightIntensity (Y) L	01609
Y	LightIntensity (Y) C	01610
Y	LightIntensity (Y) R	01611

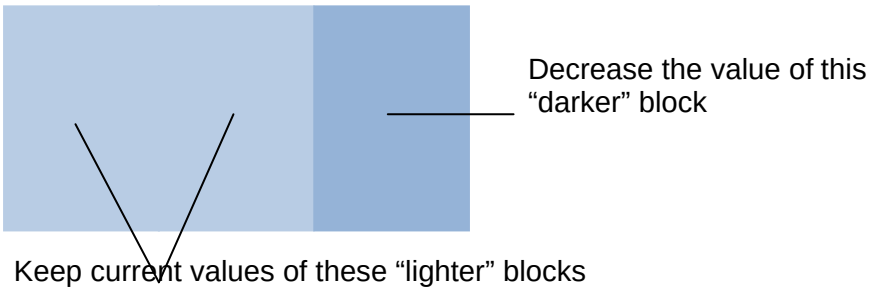


(8) Increase the setting value if you will make the image of concerning image block darker, and decrease if you will make it lighter.



NOTE

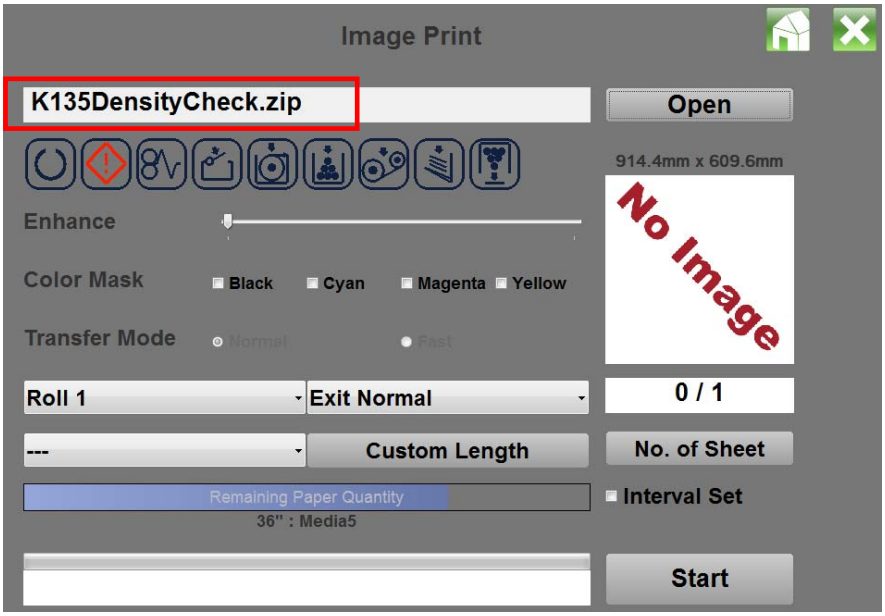
1. Please select best value in this range as required.
2. Decrease the setting value of darker image block, while not changing that of lighter block.



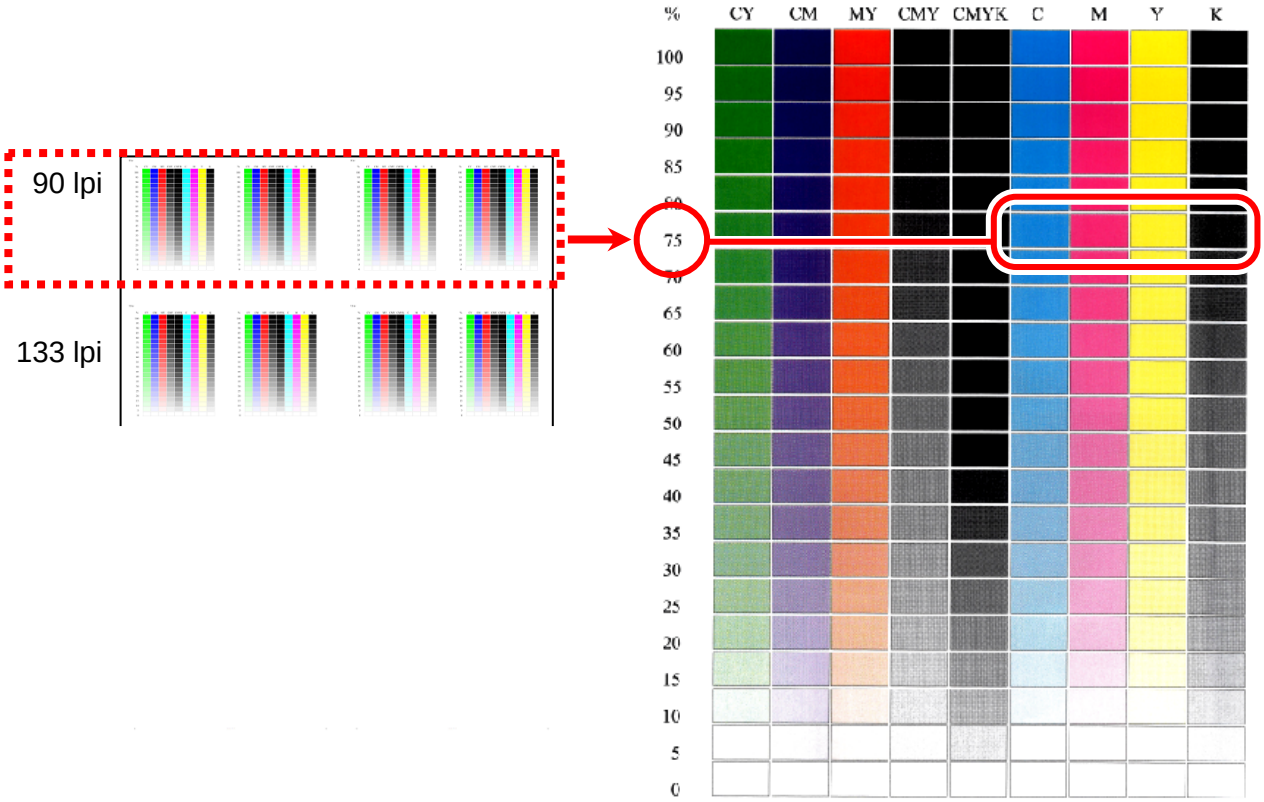
3. Setting values of all 3 blocks must be as close to the standard value as possible. (Minimum variation from standard value is preferable.)

Step 7 : Print K135DensityCheck.zip and measure density.

(1) On the Service Software, choose **Image Print**.
(2) Press **Open** and select **K135DensityCheck.zip** in the list.
(3) Print this pattern with bond or plain paper.



(4) Using X-Rite Densitometer or EyeOne Spectrophotometer (+ Density Checker), measure the density patches at 75% (4 x CMYK) on the 90LPI series and get the average density of each color.



(5) Compare the measurement result with the following density requirements.

	Bond (Example : 20lb Bond)		Plain paper (Asia) (Example : SHNK)	
	Target density	tolerance	Target density	tolerance
K	**0.93**	**+/- 0.03**	**0.93**	**+/- 0.03**
C	**0.93**	**+/- 0.03**	**0.93**	**+/- 0.03**
M	**0.83**	**+/- 0.03**	**0.83**	**+/- 0.03**
Y	**0.68**	**+/- 0.03**	**0.68**	**+/- 0.03**

- If density is within range, go to **(10)**.
- If density is too high, go to **(6)**.
- If density is too low, go to **(8)**.

Following (6) & (7) are adjustments in case density is <u>too high</u>.

(6) If the density is too high, decrease the value of **Light Gain (BUD 1612 - 1615)** gradually. Note that the minimum is 70 to achieve requested density.

		BUD No.	Minimum
K	LightGain-K DCtrlOFF	01612	70
C	LightGain-C DCtrlOFF	01613	70
M	LightGain-M DCtrlOFF	01614	70
Y	LightGain-Y DCtrlOFF	01615	70

Measure the density again and go to **(7)** if it is still too high.

(7) If density is still too high after (6), gradually decrease the value of **developer bias (BUD 460 - 463)** until density achieved. Please note the minimum values. Go to **(10)** after density is achieved.

		BUD No.	Minimum (The standard value less 30)
K	Dev Bias K DCtrl:OFF	00460	-150
C	Dev Bias C DCtrl:OFF	00461	-150
M	Dev Bias M DCtrl:OFF	00462	-150
Y	Dev Bias Y DCtrl:OFF	00463	-150

Following (8) & (9) are adjustments in case density is too low.

(8) If the density is still too low, increase the value of **light gain (BUD 1612 - 1615)** gradually. Note that the maximum is 130 to achieve requested density.

		BUD No.	Maximum
K	LightGain-K DCtrlOFF	01612	130
C	LightGain-C DCtrlOFF	01613	130
M	LightGain-M DCtrlOFF	01614	130
Y	LightGain-Y DCtrlOFF	01615	130

Measure the density again and go to **step (9)** if it is still too low.

(9) If the density is still too low after the step (8), gradually increase the value of **developer bias (BUD 460 - 463)**. The maximum values are noted. Go to **(10)** when correct density is achieved.

		BUD No.	**Maximum** (Standard value +50)
K	Dev Bias K DCtrl:OFF	00460	-230
C	Dev Bias C DCtrl:OFF	00461	-230
M	Dev Bias M DCtrl:OFF	00462	-230
Y	Dev Bias Y DCtrl:OFF	00463	-230

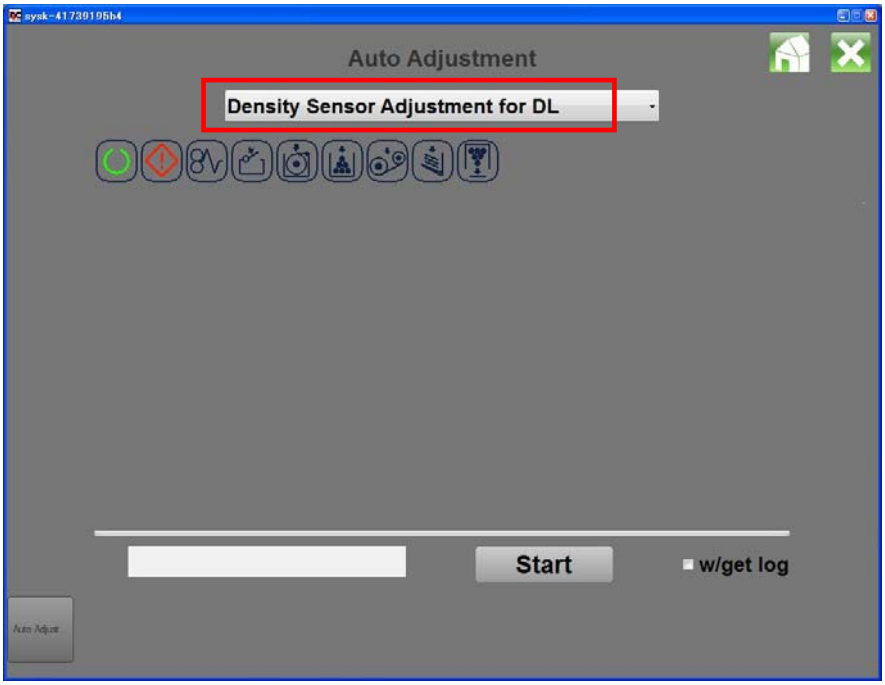
(10) Manual optical density calibration is complete!

Step 8 : Confirm the setting of BUD No.720 again.

(1) From the Service Software menu, choose **Backup Data** from the menu.
(2) Choose **All Items**.
(3) Confirm that **BUD No.720 (Density Adjustment.)** is set to to 0, which disables Density Adjustment. (Set it to 0 if not.)

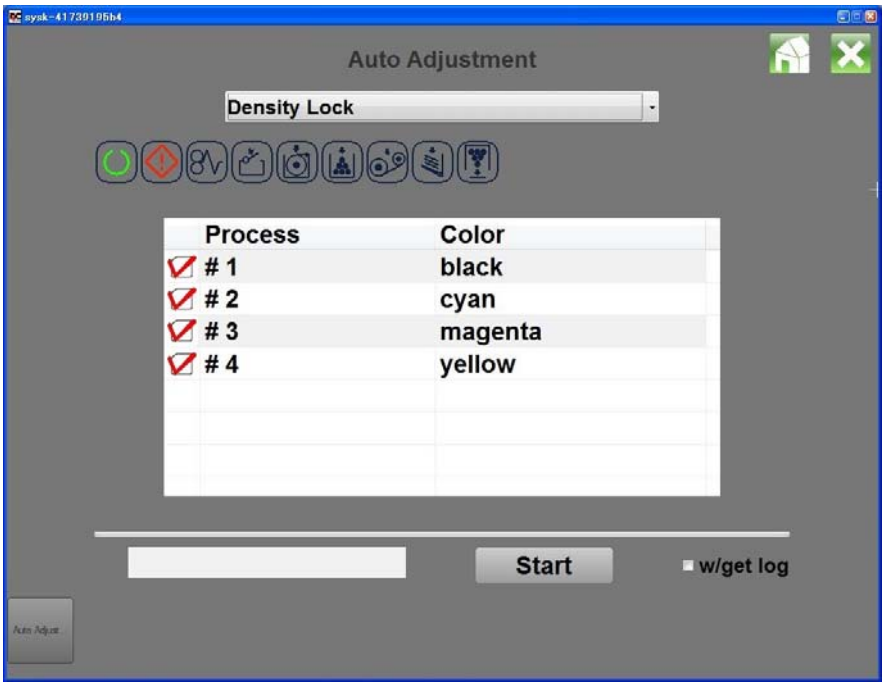
Step 9 : Density Sensor calibration prior to Renew Target Density

(1) From the Service Software menu, choose **Auto Adjustment** from the menu.
(2) Choose **Density Sensor Adjustment for Density**.
(3) Press **Start** to start calibration. Wait for a while until the calibration completes.



Step 10 : Renew Target Density

(1) From the Service Software menu, choose **Auto Adjustment** from the menu.
(2) Choose **Renew Target Density**.
(3) Check the boxes of the colors to be density sampled and saved.
(4) Press **Start** to start calibration. Wait for a while until the sampling completes.

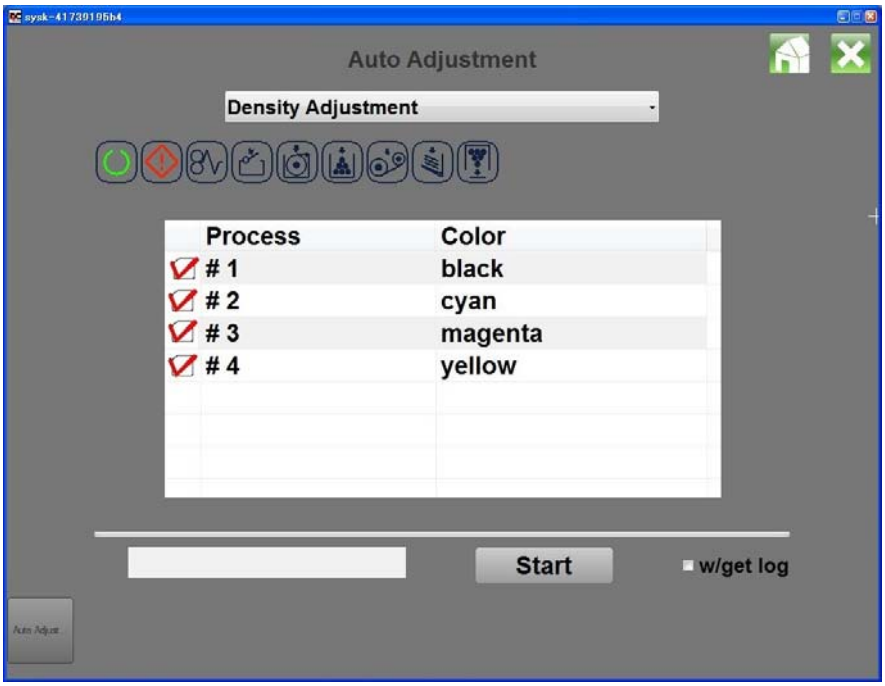


Step 11 : Manual Density Adjustment

(1) From the Service Software menu, choose **Backup Data** from the menu.
(2) Choose **All Items**.
(3) Set **BUD No.720 (Density Adjustment.)** to 1, which enables Density Adjustment.
(4) Also set **BUD No.1785 (Auto Density Adjustment.)** to 1, which enables Auto Density Adjustment mode.

Step 12 : Manual Density Adjustment

(1) From the Service Software menu, choose **Auto Adjustment** from the menu.
(2) Choose **Density Adjustment**.
(3) Check the boxes of the colors to be adjusted.
(4) Press **Start** to start density adjustment for the selected color. Wait for a while until the adjustment completes.



9. 2 LED Head Focus Adjustment

9. 2. 1 Automatic adjustment (Auto Focus)

This operation is required after replacing the LED Head.

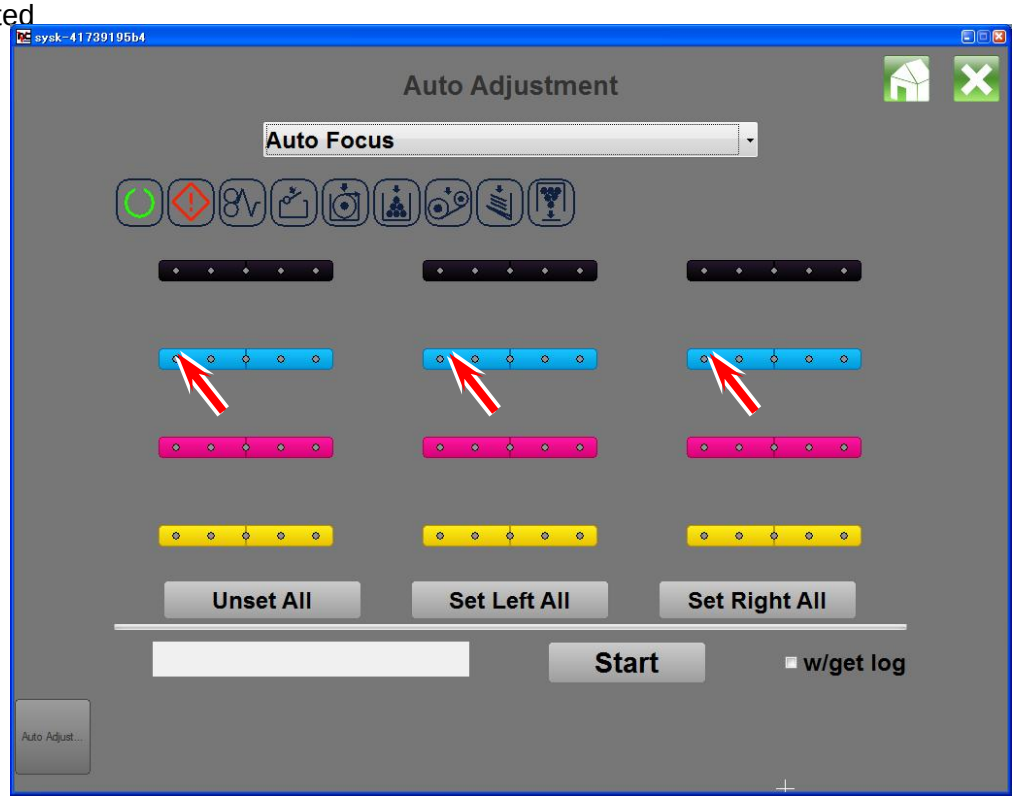
1. Set the width of Roll 1 to 36".

> **⚠ NOTE**
>
> Please make sure to set the width of Roll 1 to 36" for correctly print the calibration patterns under Density Sensors. If it is set to other width, calibration patterns are not printed under the Density Sensors, which will result in incorrect adjustment result. (Focus gets very much incorrect.)

2. In the home of Maintenance GUI, select **Backup Data**.
3. Select **Print Function**.
4. Set **No.1265 (Focus Adjust ON/OFF)** to **TRUE**.
5. Restart the printer. Printer returns all Focus Motors back to their home positions and then takes determined motor step count again, which are determined in BUDs No.1241 to 1264.
6. In the home of Maintenance GUI, select **Auto Adjustment**.
7. Select **Density Sensor Adjustment for AF** in the menu of Auto Adjustment.
8. Press **Start** to start the automatic calibration of Density Sensor. Wait until it finishes.
9. When the calibration of Density Sensor completes then select **Auto Focus** in the menu of Auto Adjustment.

10. The setting page shows the images of 12 CMYK LED Blocks. Focus adjustment is done to either left or right of each LED Block at a time. (It is not possible to adjust both left and right of the same LED block)

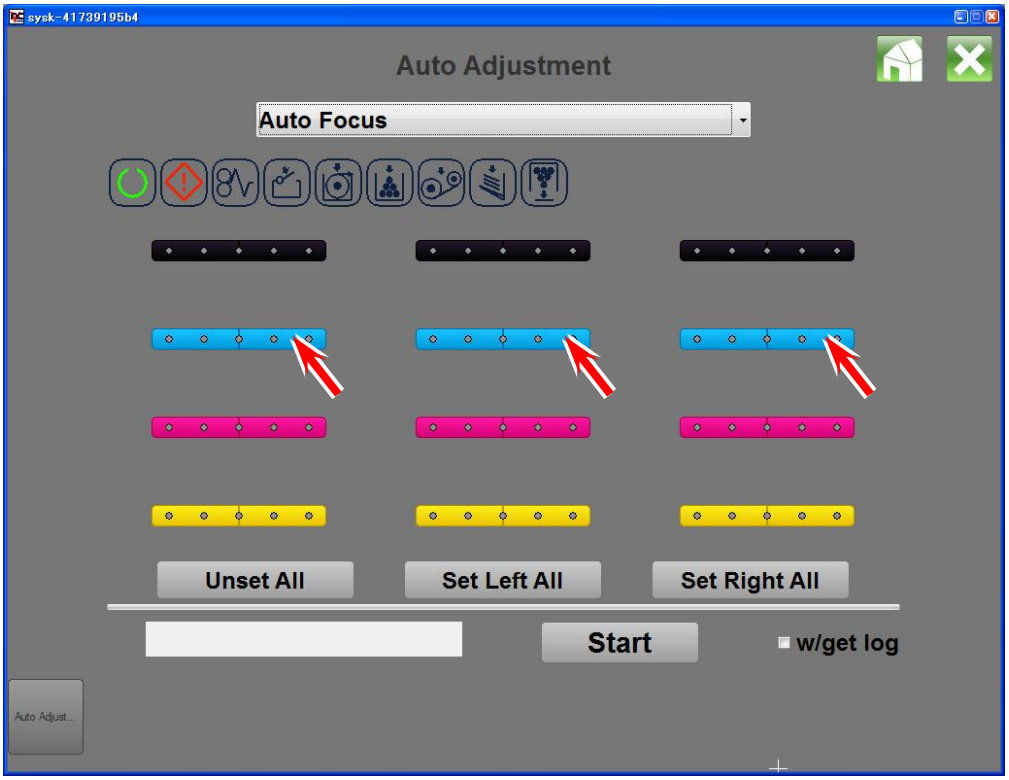
    Press the left side of all 3 blocks of one LED. The circular indicator lamps of the selected position are shown by orange color meaning that the concerning side of LED Block is to be adjusted



11. Press **Start** to start automatic focus adjustment. Wait until it finishes.

12. The status indication part indicates “complete” when the calibration finishes.

13. Press the right side of all 3 blocks of one LED.



12. Press **Start** to start automatic focus adjustment. Wait until it finishes.

13. The status indication part indicates “complete” when the calibration finishes.

9. 2. 2 Manual adjustment

If you will like to touch-up the adjustment result by Auto Focus, adjust it manually by the following method.

1. Set the width of Roll 1 to 36".

> **⚠ NOTE**
>
> Please make sure to set the width of Roll 1 to 36" for correctly print the calibration patterns under Density Sensors. If it is set to other width, calibration patterns are not printed under the Density Sensors, which will result in incorrect adjustment result. (Focus gets very much incorrect.)

2. In the home of Maintenance GUI, select **Backup Data**.

3. Select **Print Function**.

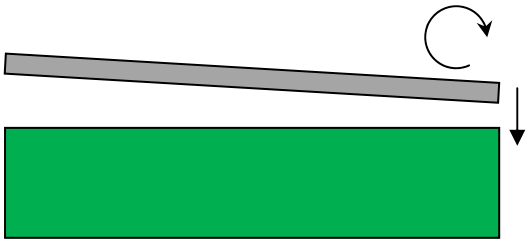
4. Set **No.1265 (Focus Adjust ON/OFF)** to **TRUE**.

5. **BUD No.1241 to 1264** are the setting items to adjust the focus of each block per side (left or right). Find the target item and select it.

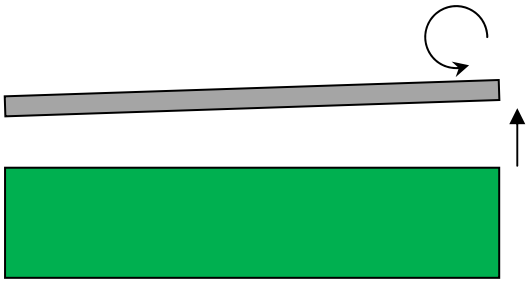
BUD NO.	Item Name	Setting value			
		Unit	Min.	Max.	Default
1241	Focus Step(K) L-LE	step	-110	110	0
1242	Focus Step(K) L-RE				
1243	Focus Step(K) C-LE				
1244	Focus Step(K) C-RE				
1245	Focus Step(K) R-LE				
1246	Focus Step(K) R-RE				
1247	Focus Step(C) L-LE				
1248	Focus Step(C) L-RE				
1249	Focus Step(C) C-LE				
1250	Focus Step(C) C-RE				
1251	Focus Step(C) R-LE				
1252	Focus Step(C) R-RE				
1253	Focus Step(M) L-LE				
1254	Focus Step(M) L-RE				
1255	Focus Step(M) C-LE				
1256	Focus Step(M) C-RE				
1257	Focus Step(M) R-LE				
1258	Focus Step(M) R-RE				
1259	Focus Step(Y) L-LE				
1260	Focus Step(Y) L-RE				
1261	Focus Step(Y) C-LE				
1262	Focus Step(Y) C-RE				
1263	Focus Step(Y) R-LE				
1264	Focus Step(Y) R-RE				

6. Increase or decrease the value to find the best focus position.

- Increment of the value let's Focus motor rotate more in clockwise direction and stops, which moves the concerning section of LED block closer to the Drum.



- Decrement of the value let's Focus motor rotates more in counter-clockwise direction and stops, which moves the concerning section of LED block farther from the Drum.



NOTE

There is only 1 position (distance between Drum and LED) that achieves the best focus. Nearer or farther than this position produce the same out-of-focus result, so it is impossible at the first stage of adjustment to know which rotation of motor is better. Therefore, please try both directions and find one direction that "improves" the focus.

7. Save the new value by pressing [Send]. (Even though the new value was saved, the Focus Motor is still at the previous position. It is moved to the new position after the next step.)

8. In the home of Maintenance GUI, select **Output Check**.

9. Select the concerning item and operate it. Now the Focus Motor moves to the new position.

No.	Item name	Concerning signal symbol	Signal name
00008	LED Motor(K)L-LE	LEDA_L_MTR_A, A/ LEDA_L_MTR_B, B/	LED1 (Left block) Focus Motor L
00009	LED Motor(K)L-RE	LEDA_R_MTR_A, A/ LEDA_R_MTR_B, B/	LED1 (Left block) Focus Motor R
00010	LED Motor(K)C-LE	LEDB_L_MTR_A, A/ LEDB_L_MTR_B, B/	LED2 (Central block) Focus Motor L
00011	LED Motor(K)C-RE	LEDB_R_MTR_A, A/ LEDB_R_MTR_B, B/	LED2 (Central block) Focus Motor R
00012	LED Motor(K)R-LE	LEDC_L_MTR_A, A/ LEDC_L_MTR_B, B/	LED3 (Right block) Focus Motor L
00013	LED Motor(K)R-RE	LEDC_R_MTR_A, A/ LEDC_R_MTR_B, B/	LED3 (Right block) Focus Motor R

10. Check the result of adjustment by test pattern No.31. (Check the gray image that is the 18th one from top.)

11. Adjust more if necessary.

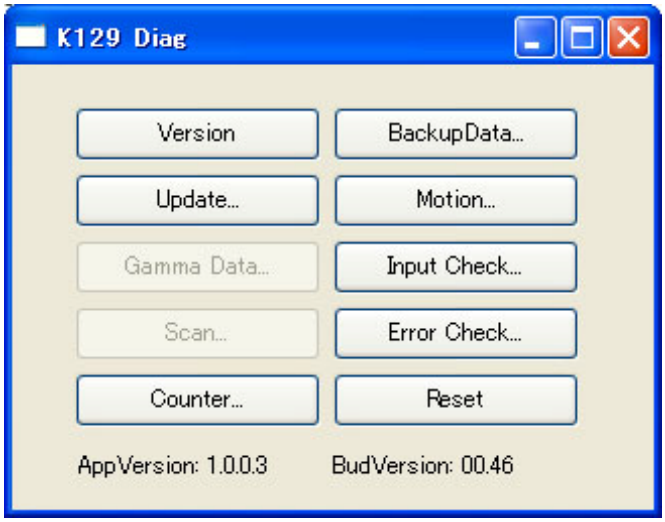
Chapter 10

Scanner Utility (KIP 860 only)

Page

10. 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...

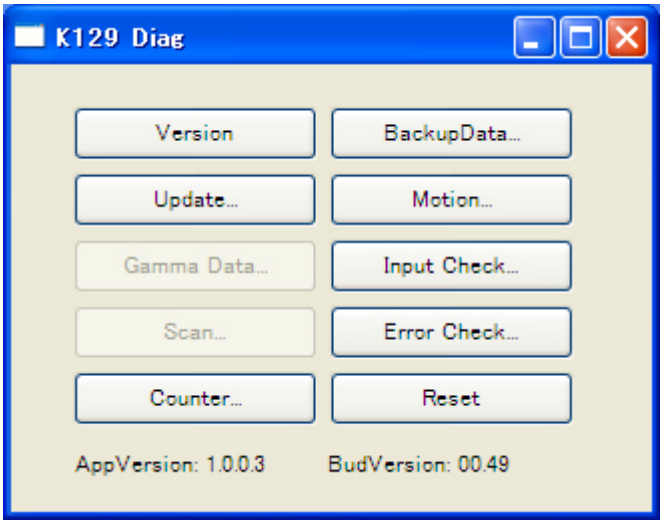
K129 Diag Tree Diagram of Screen Hierarchy

- **Home**
  - **Version:** view software version of CPU / FPGA / USB firmware
  - **Backup Data:**
    - Save / Restore Backup Data
    - Edit Backup Data
    - Save / Restore Shading Data
  - **Update:**
    - Send CPU firmware
    - Send FPGA firmware
    - Send USB communication firmware
  - **Motion:**
    - Adjustment
      - Shading
      - Stitching
      - White Level Correct
      - LE Registration
      - Remove density difference between CIS blocks in B/W
    - Operation Check: LED, CIS, motor
  - **Input Check:** document sensor, switch
  - **Error Check:** get the internal error status
  - **Counter:** view the scanner's operation count
  - **Reset:** re-establish the USB communication
  - (Gamma Data): not supported
  - (Scan): not supported

10. 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.

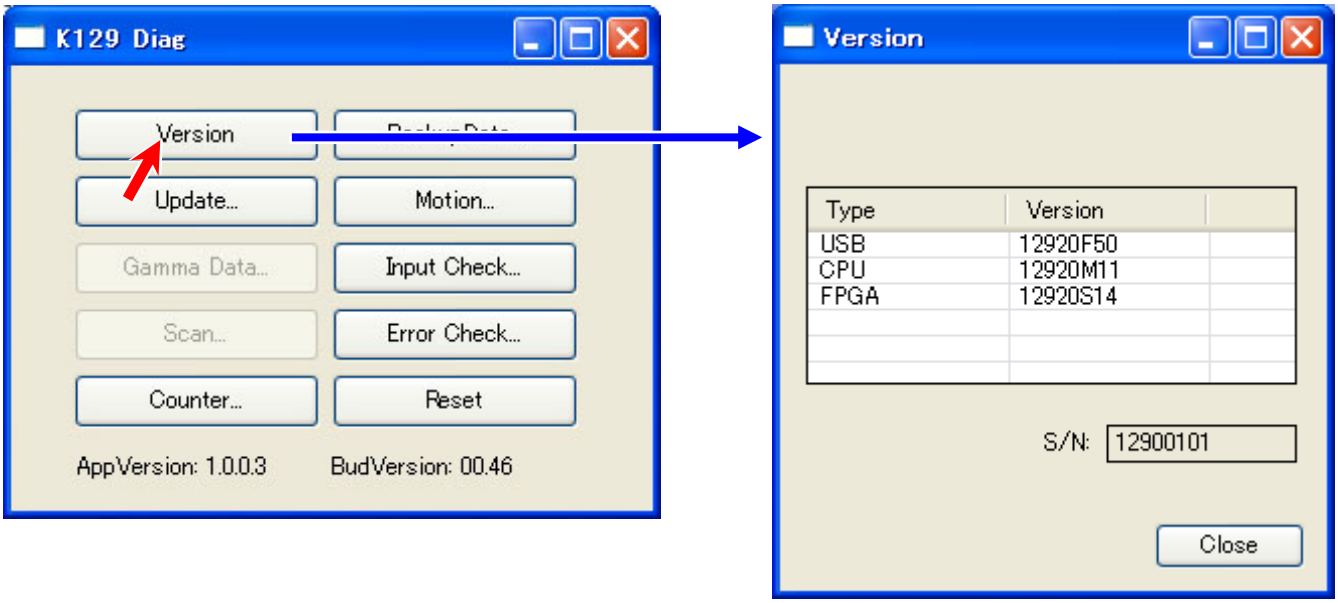
Just run K129Diag.exe.



K129 Diag Home (version 1.0.0.3.49)

10. 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.

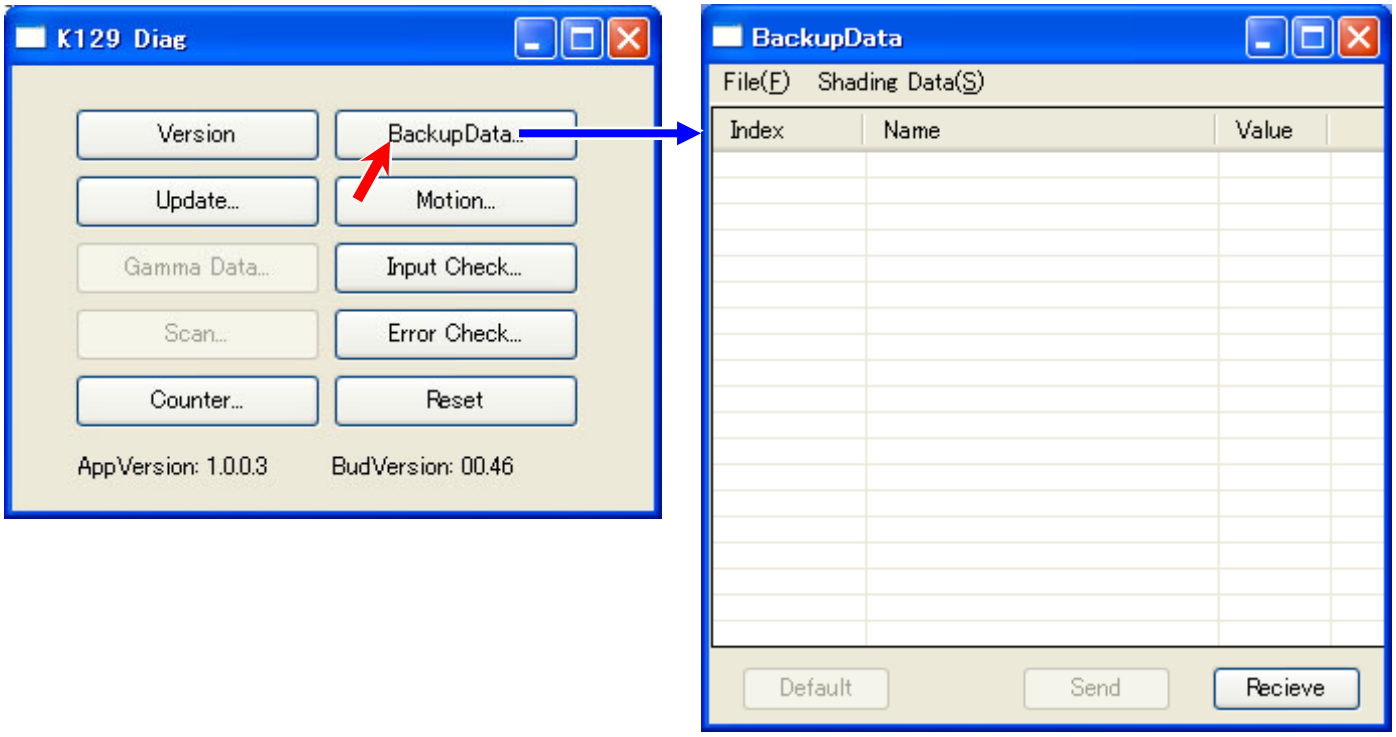
10. 4 Backup Data

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).

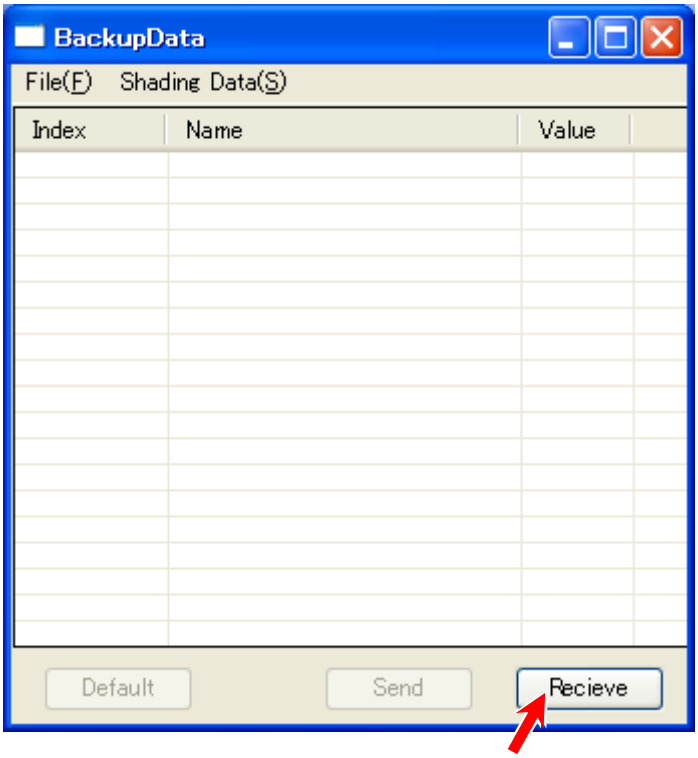
10. 4. 1 Changing Backup Data

> **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].

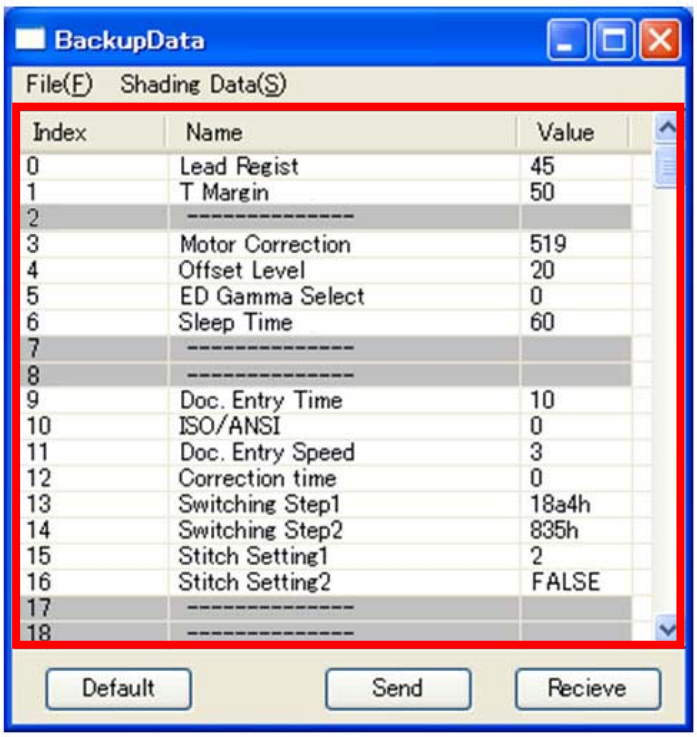
1. Click [BackupData] to recall “Backup Data” sub window.



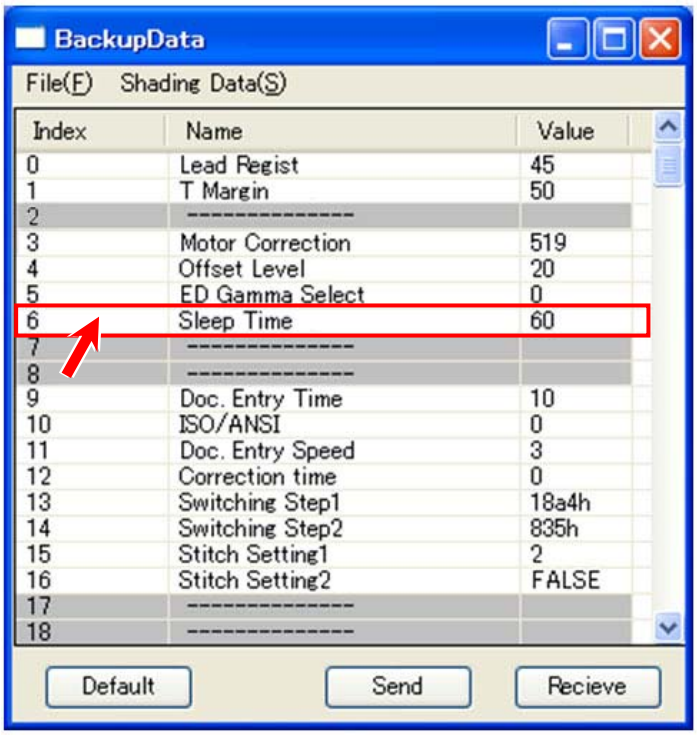
2. Click [Receive]



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

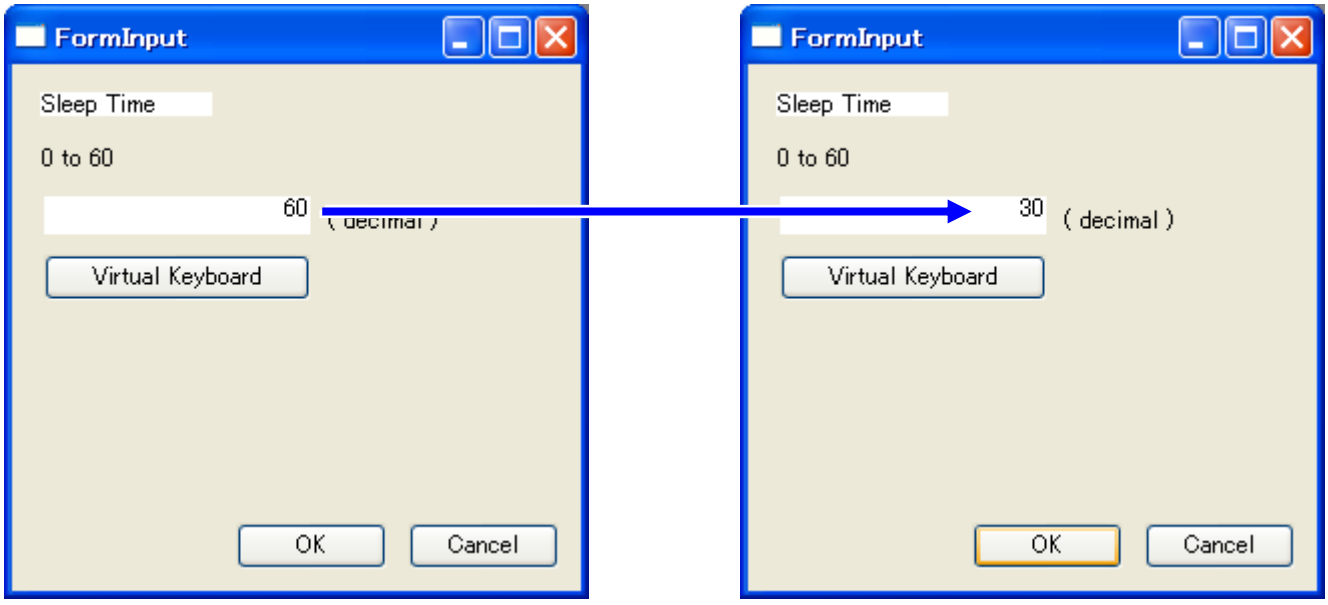


4. Double click on the row you want to change the setting value.
   This section uses “6 Sleep Time 60” for example.

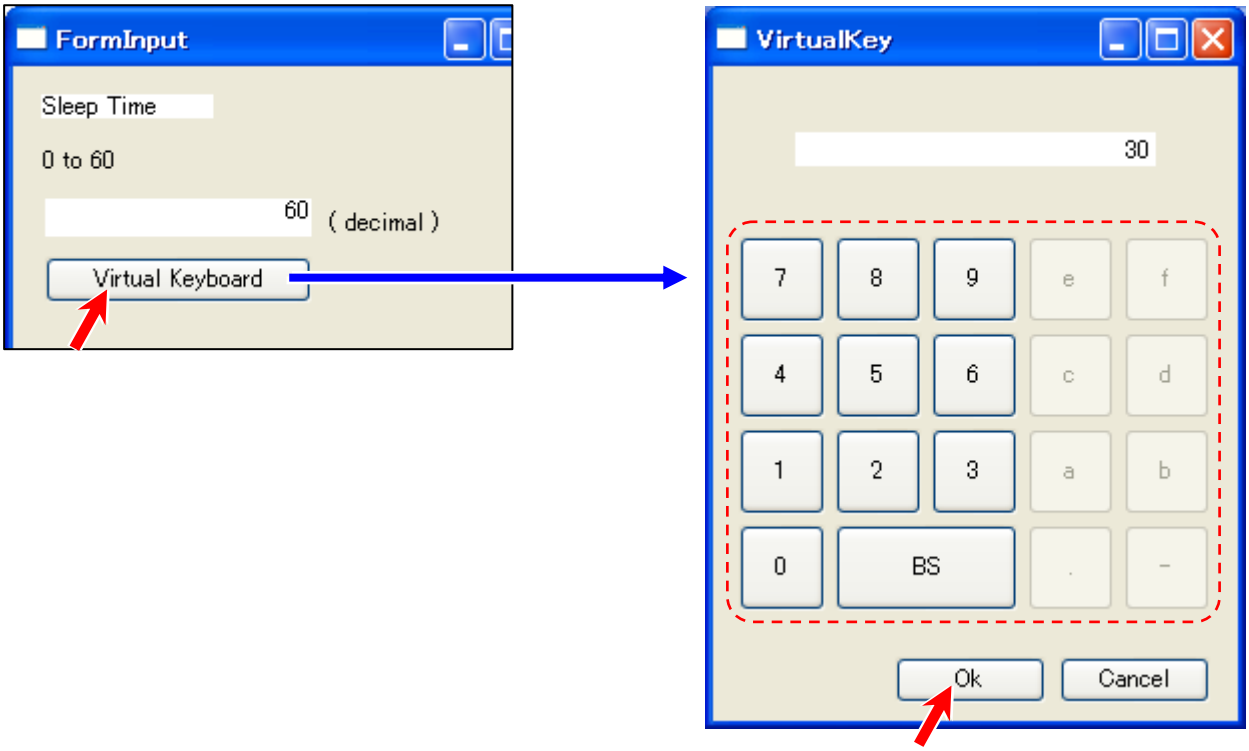


5. “Input” pad pops up. Directly type a value with your keyboard.
Clicking the field is not available. There is no caret functionality. (flashing “ | “ cursor)

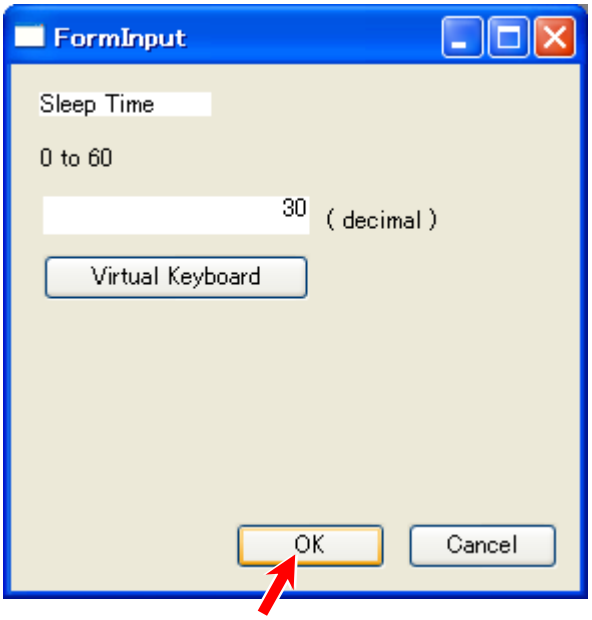
> **NOTE**
>
> Clicking the field displays a caret (flashing “ | ” cursor), but while the caret is flashing, a key entry with your keyboard device is **NOT** accepted.



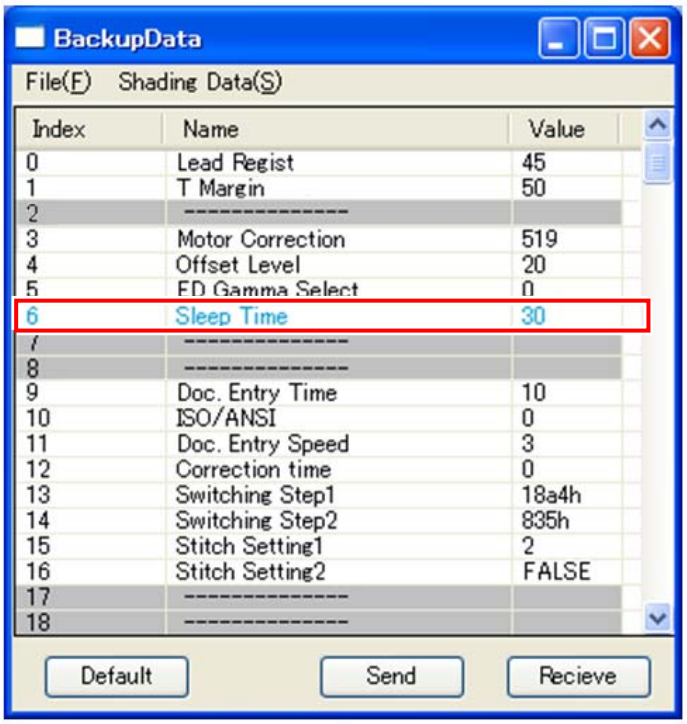
The on-screen keypad is available. Press a number you want to input on the touchscreen.
To finalize the input, press [OK] on the bottom.



6. Click [OK] on the bottom.



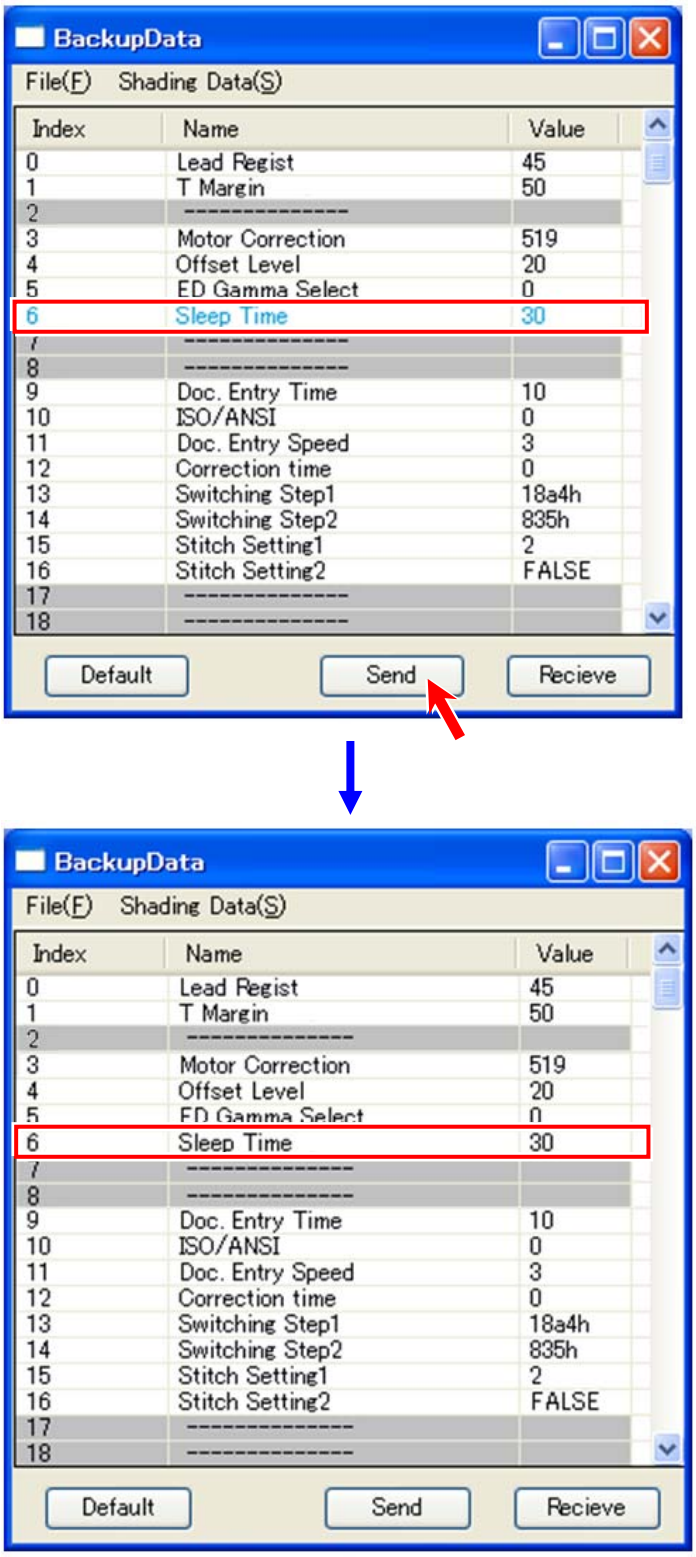
7. The setting change you have made is reflected to the list. It will turn blue.



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).

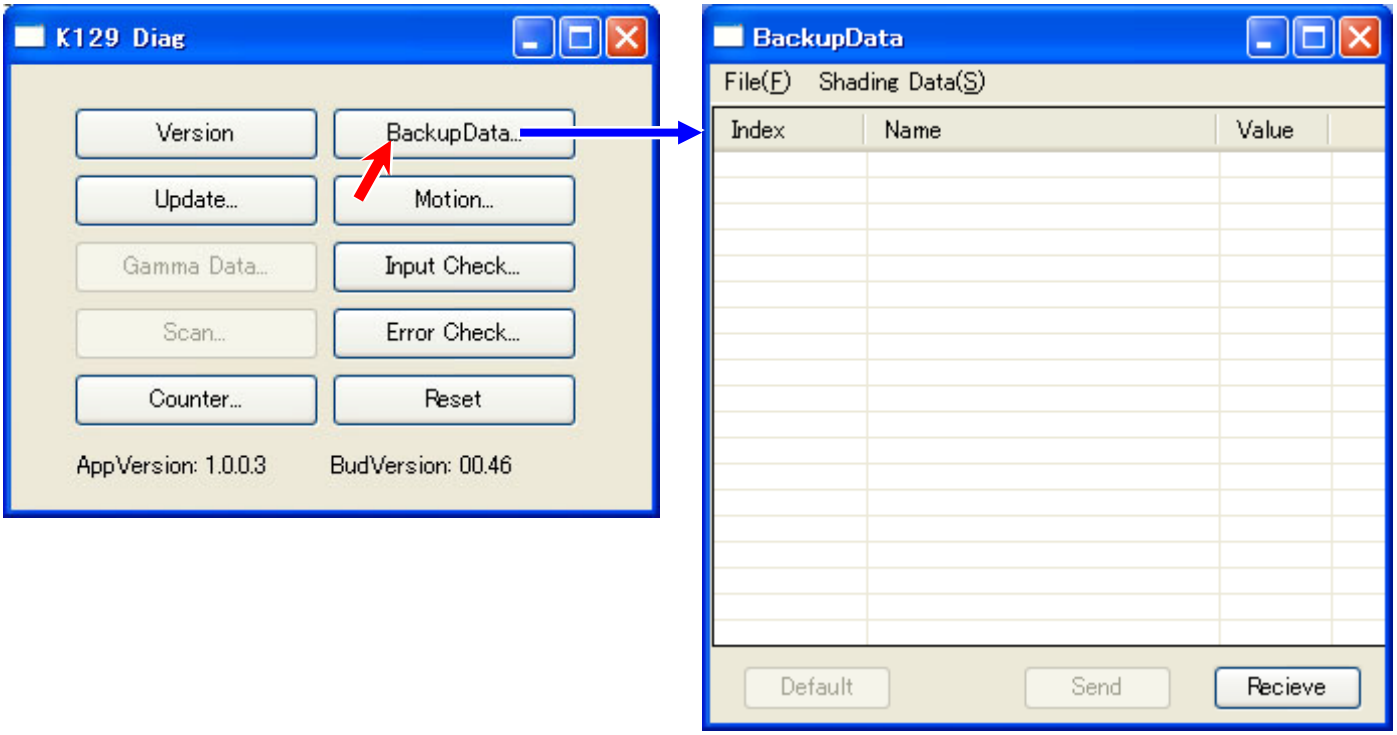


9. To close “BackupData” sub window, click the X button at the upper right corner.

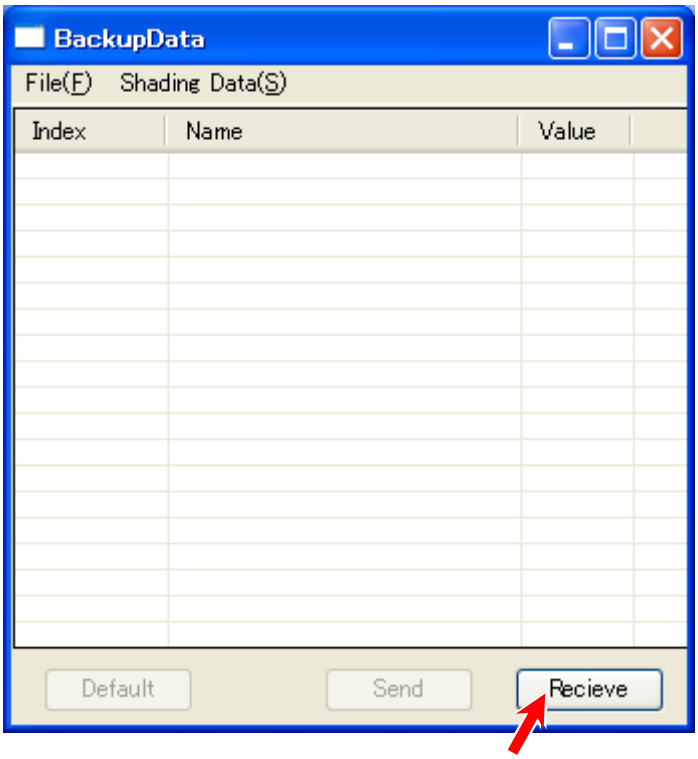
10. 4. 2 Saving the Current Backup Data

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).

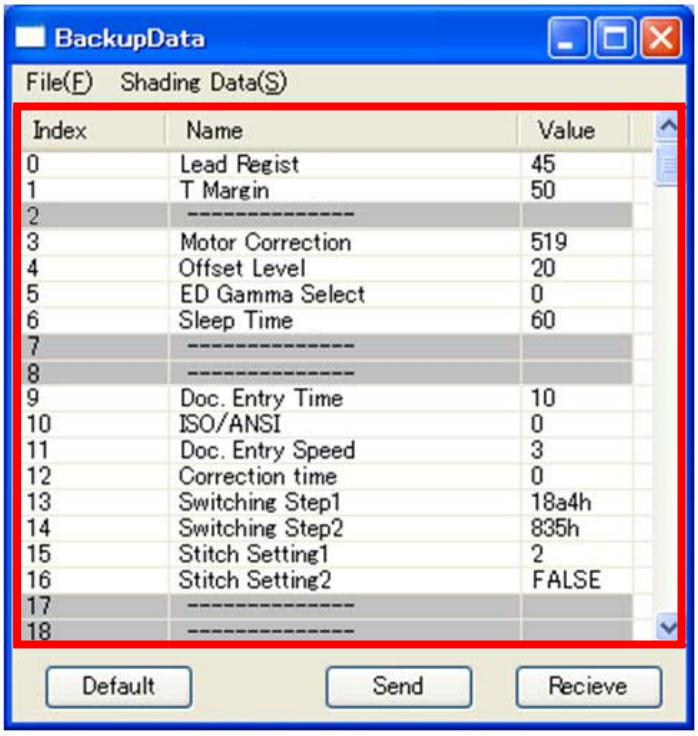
1. Click [BackupData] to recall “Backup Data” sub window.



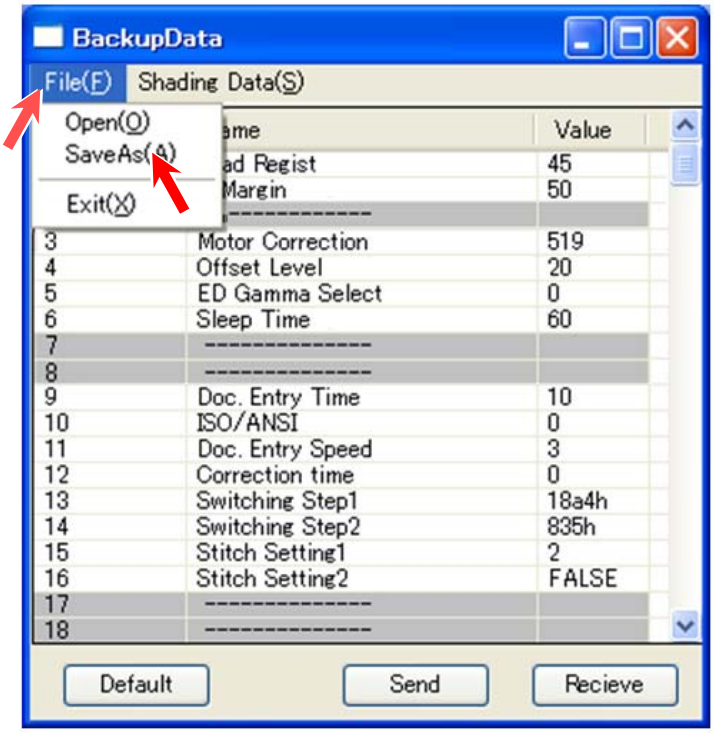
2. Click [Receive]



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



4. Select [File] menu, and then click [Save As].



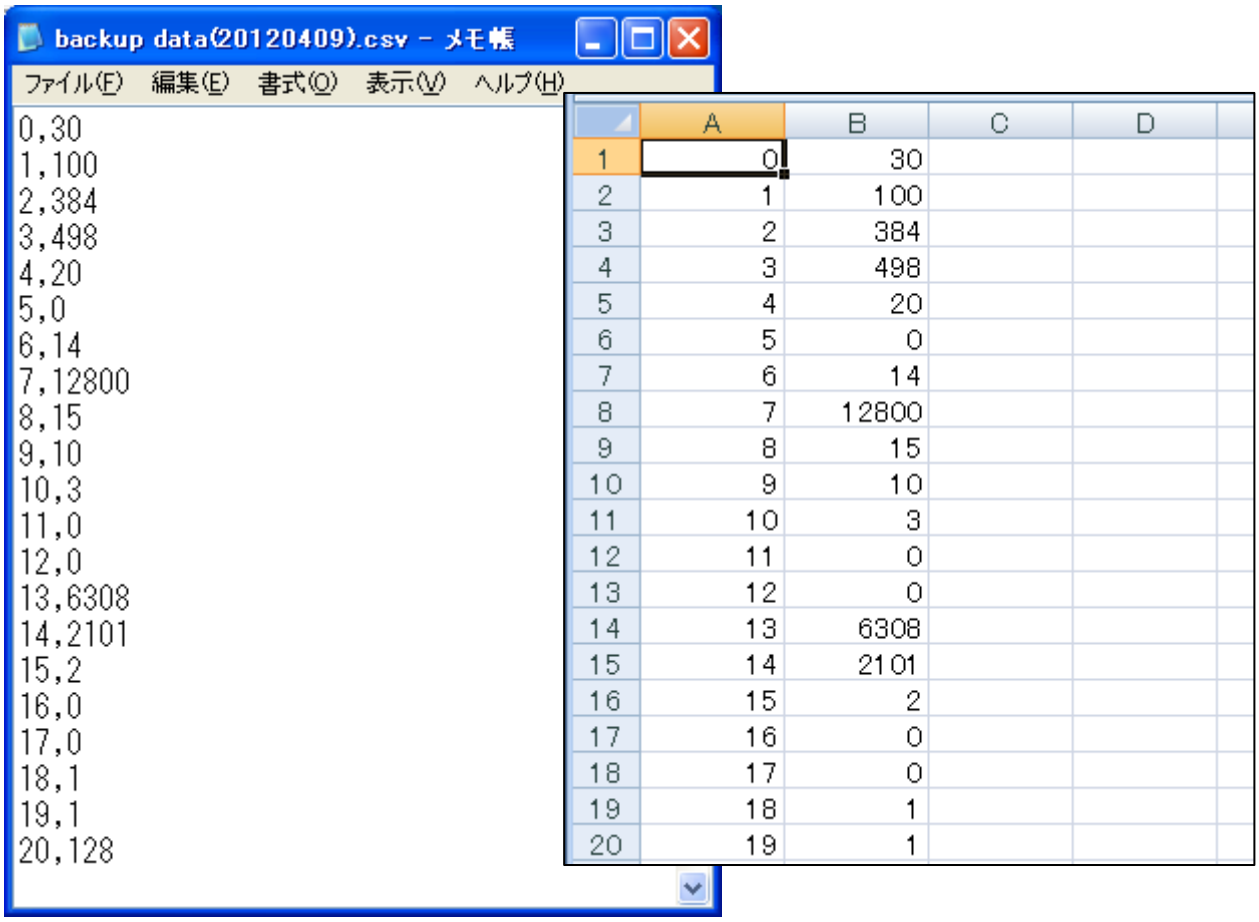
5. Specify a location to save the backup data file. (*.csv)
   You can supply a file name for the csv.

10. 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”.



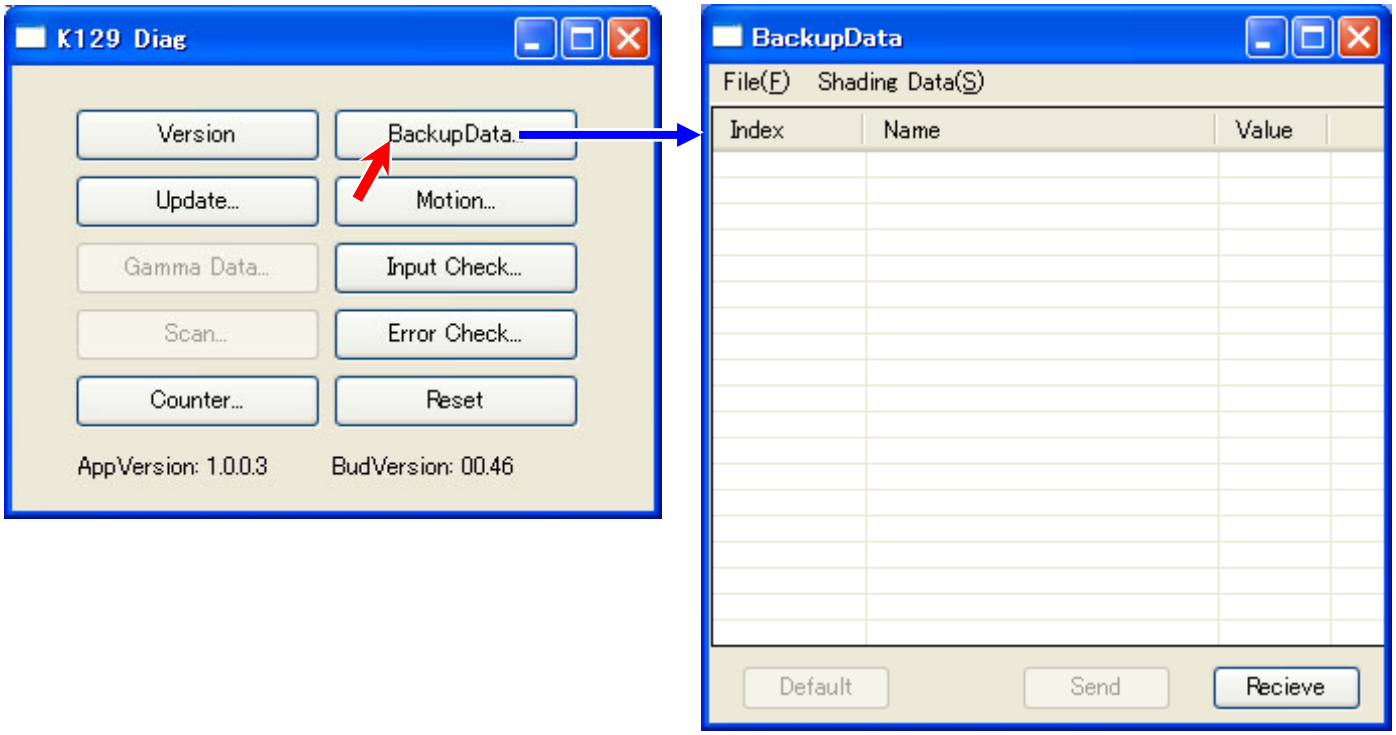
3. Save the file.

4. You can use the file for restoring / setting change purpose.
   Do not delete unchanged lines.

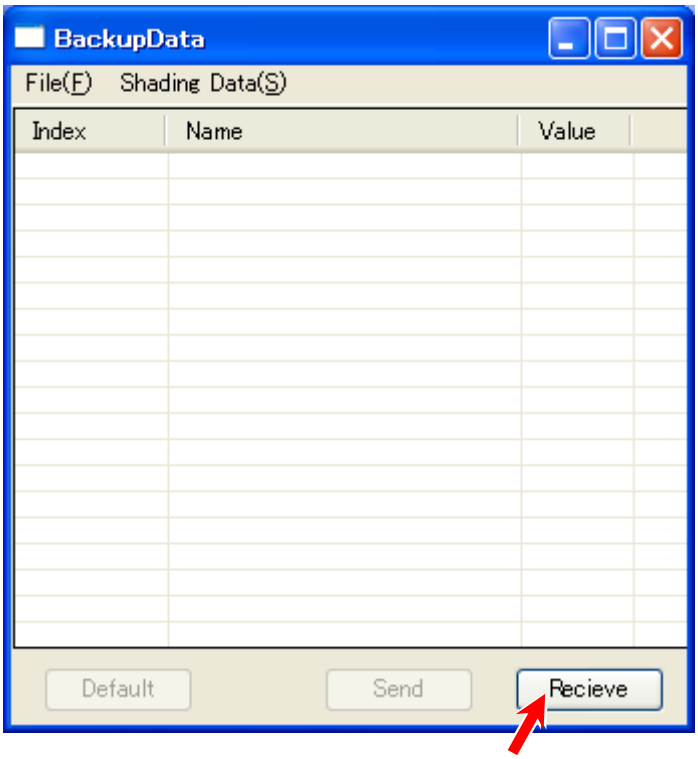
10. 4. 4 Restoring Backup Data

Importing an existing backup data file (*.csv) also requires retrieving the current parameters.

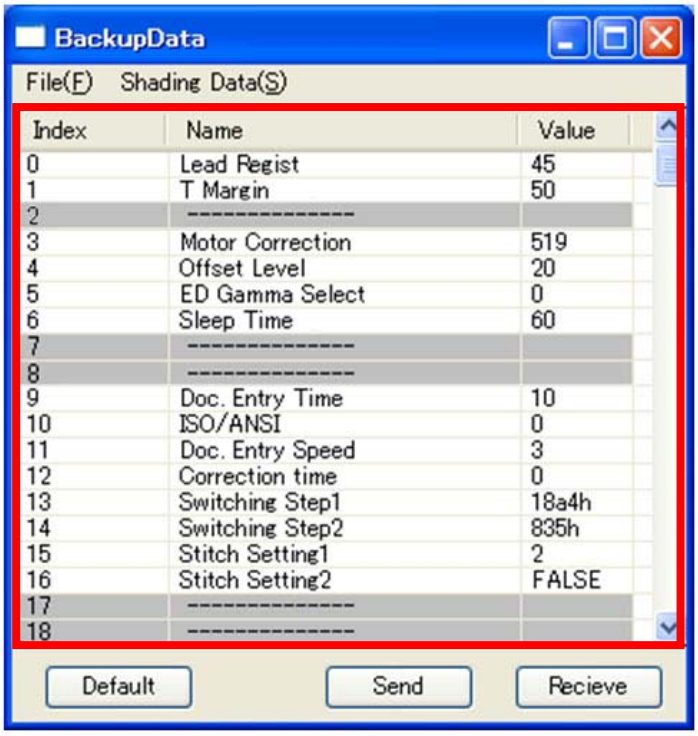
1. Click [BackupData] to recall “Backup Data” sub window.



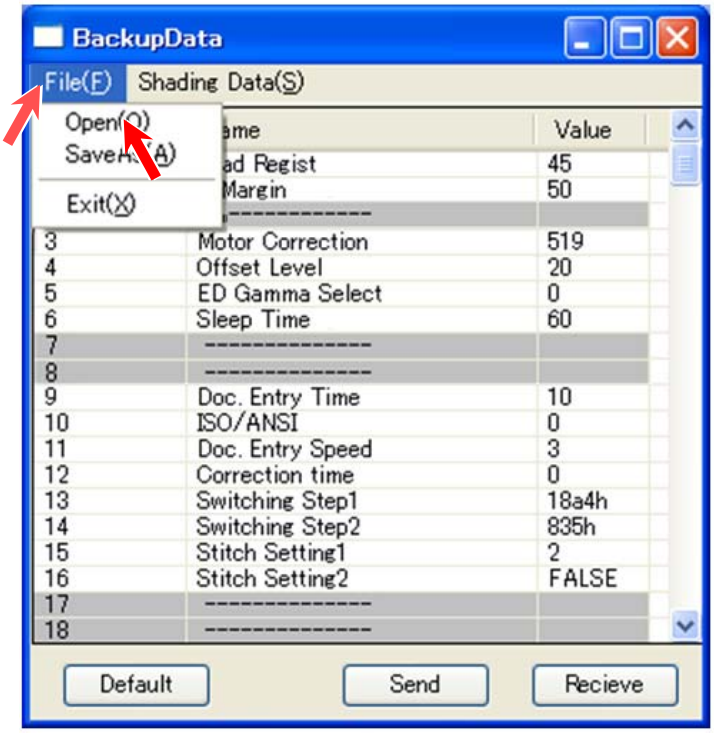
2. Click [Receive]



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

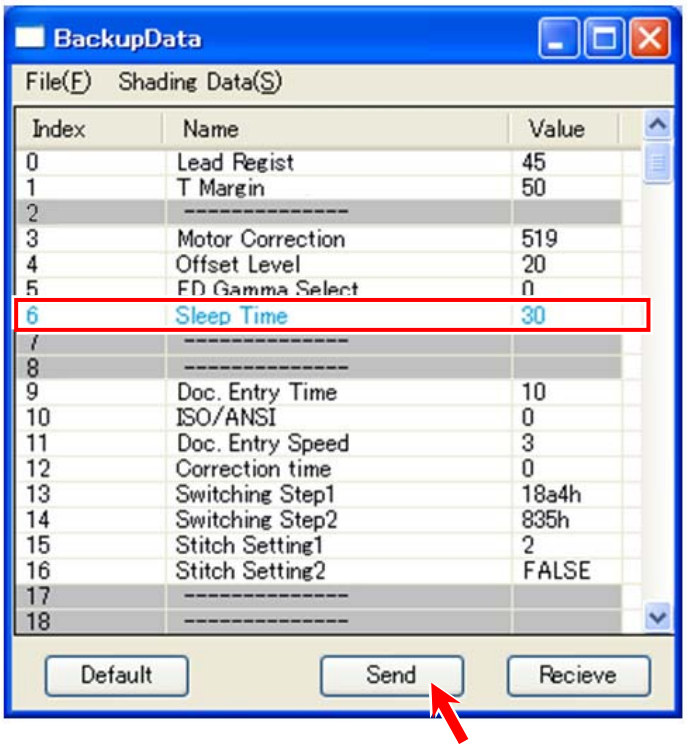


4. Select [File] menu, and then click [Open].



5. Specify a backup data file (*.csv) you want to import.

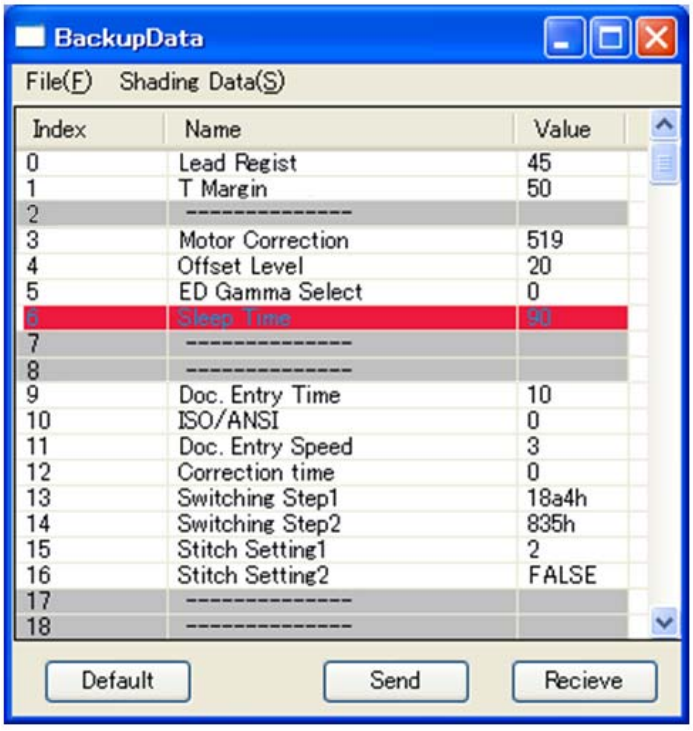
6. Once the backup data file is selected, setting difference(s) (between the current setting value and one from the backup data file) turns blue.
   Click [Send] on the bottom. The setting value(s) from the backup data file turns black.
   Now it is sent to the Main Board.



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.

10. 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 Jun., 2015

10. 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 800 connects to a PC
2	KIP 800 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

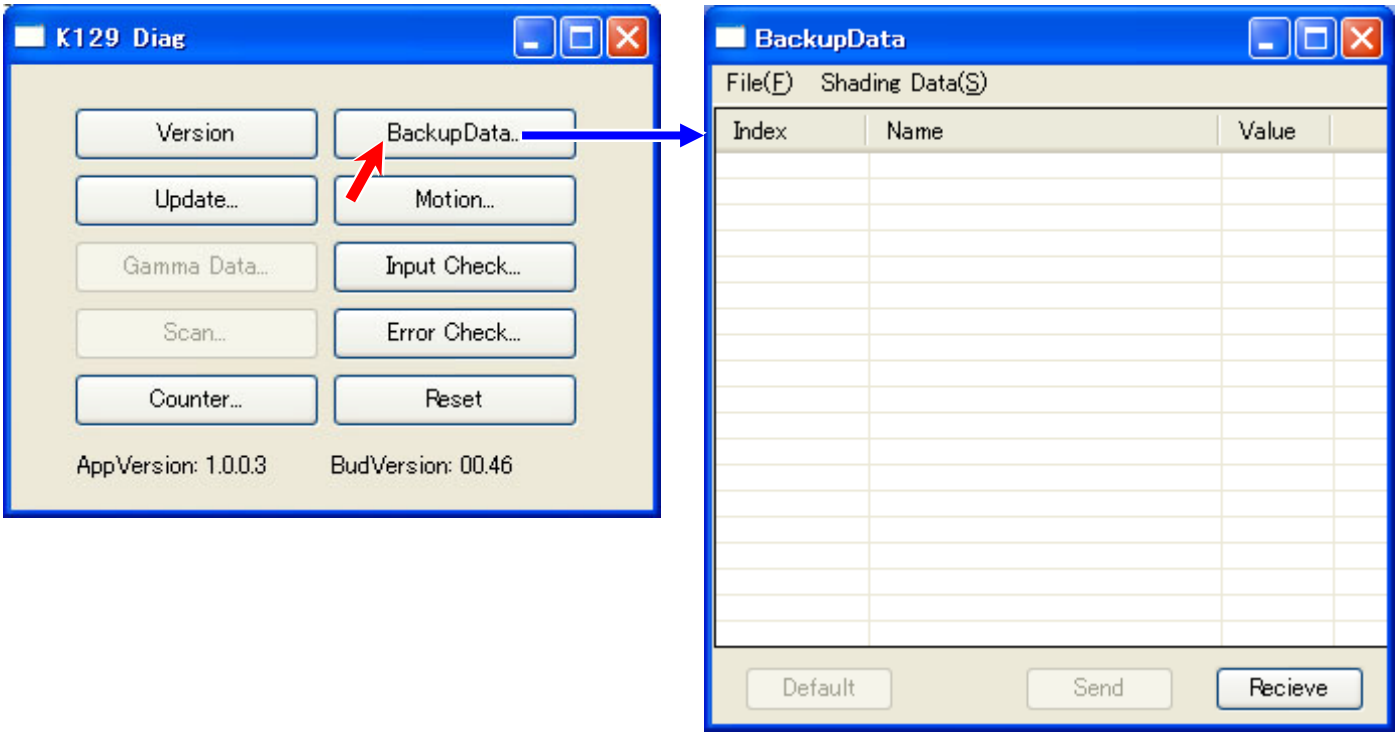
> **NOTE**
>
> Reserved. Keep the value unchanged.

BUD No.209 is a reserved parameter for “white level compensation”.

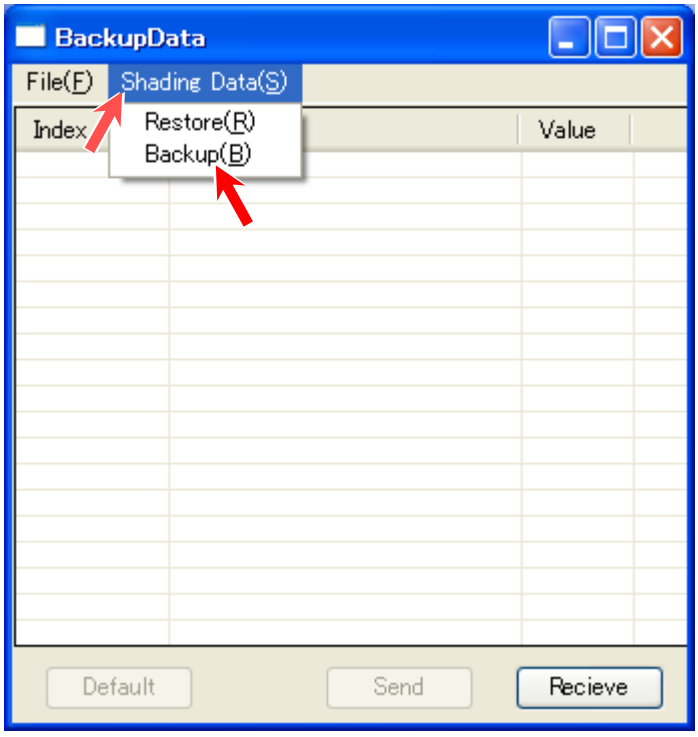
10. 4. 7 Saving Shading Data

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.

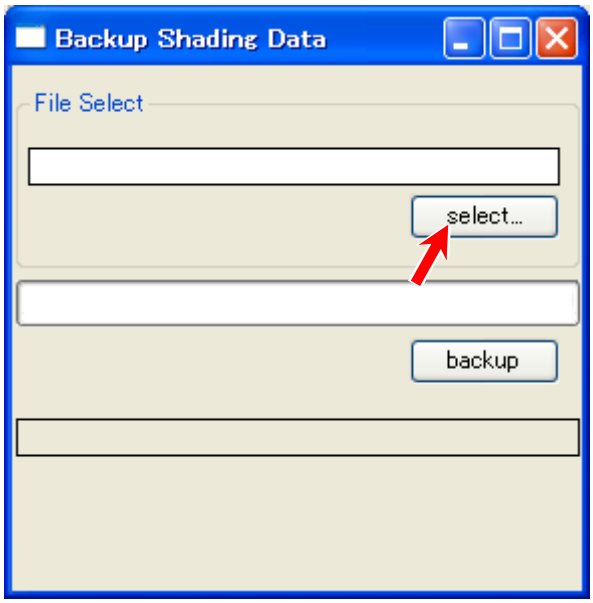
1. Click [BackupData] to recall “Backup Data” sub window.



2. Select [Shading Data] menu, and then click [Backup] to recall “Backup Shading Data” sub window.

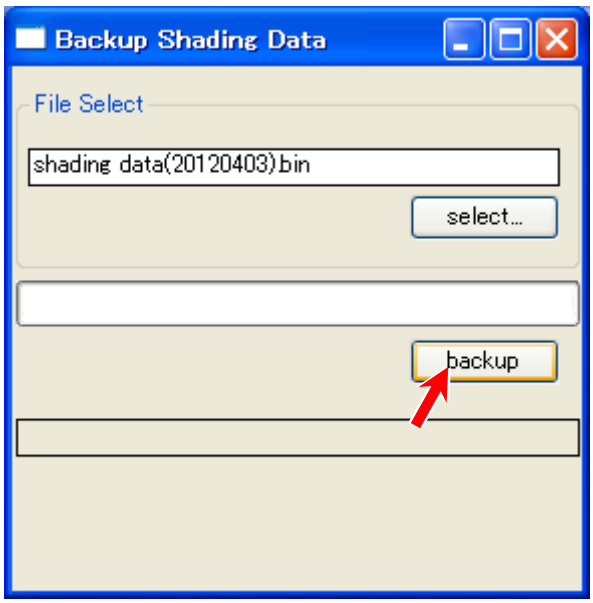


3. Click [select].



4. Specify a location to save the shading data file. (*.bin)
   You can supply its file name.

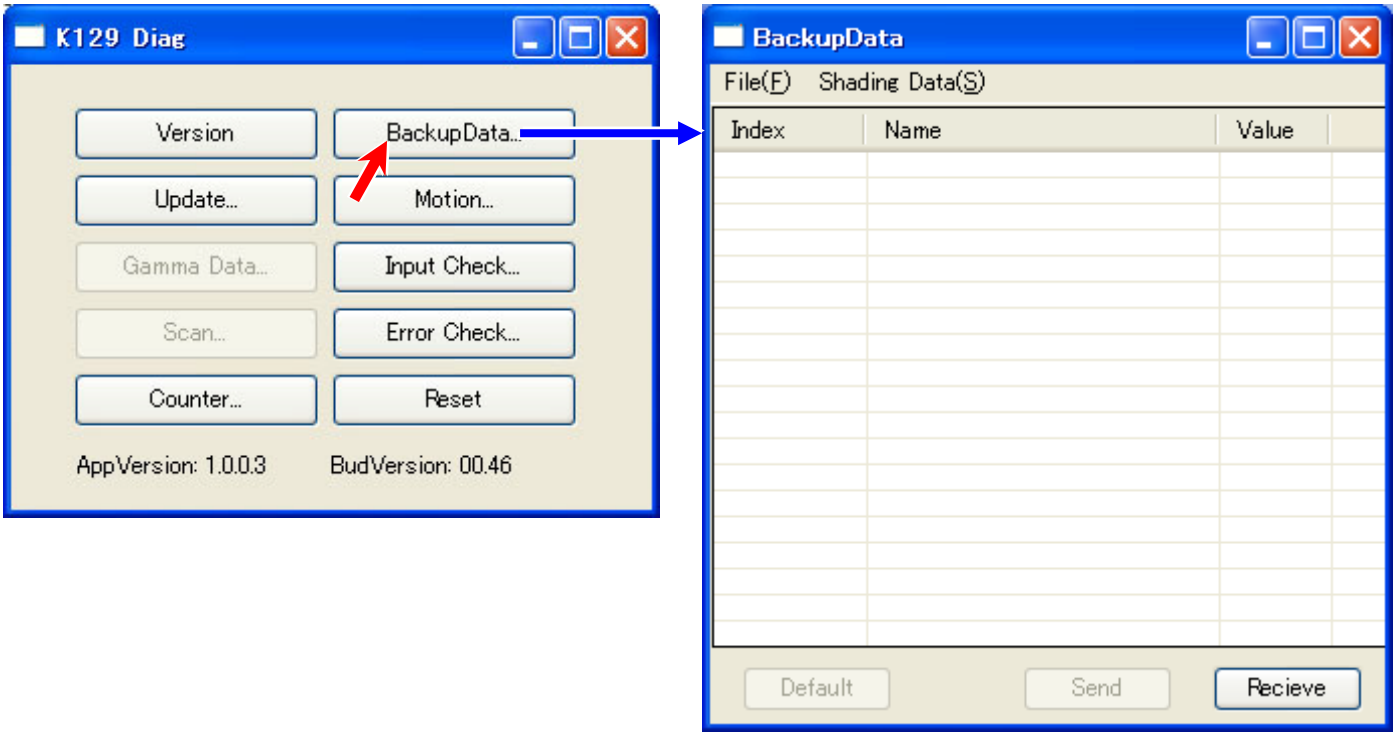
5. The given file name appears in the upper field. Click [backup].



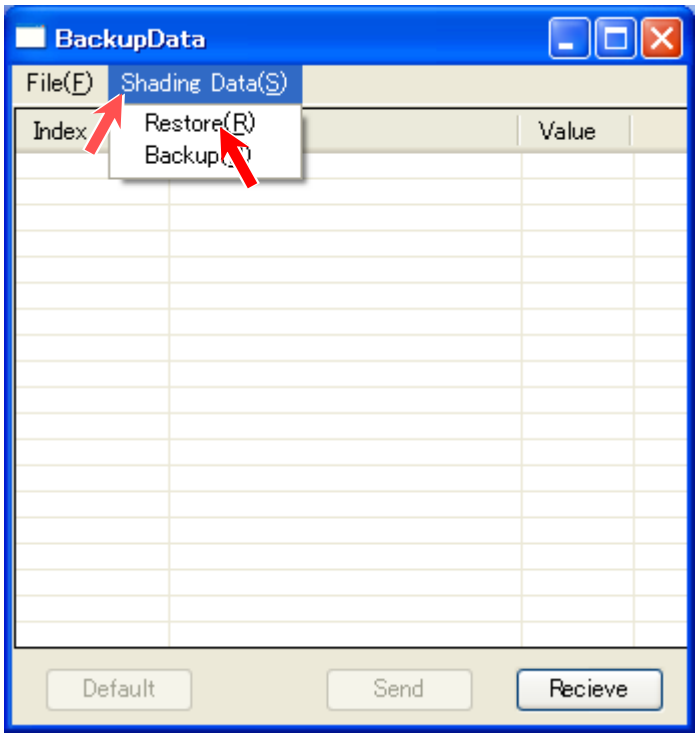
6. When “done” is displayed, saving the file is completed
   Click the X button at the upper right corner to close “Backup Shading Data” sub window.

10. 4. 8 Restoring Shading Data

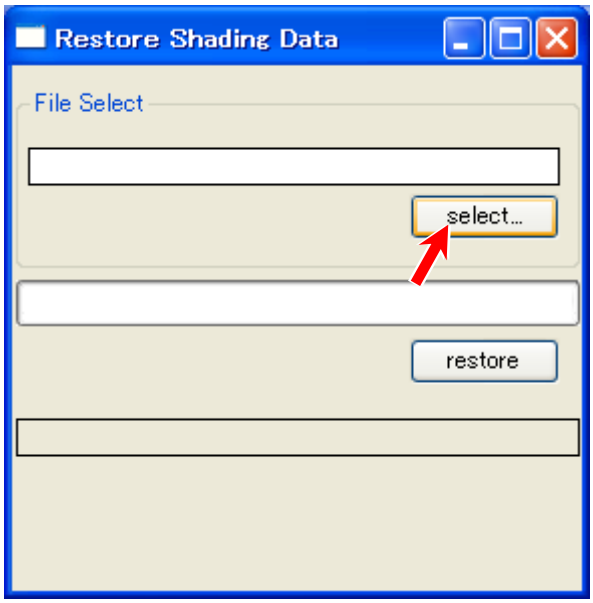
1. Click [BackupData] to recall “Backup Data” sub window.



2. Select [Shading Data] menu, and then click [Restore] to recall “Backup Shading Data” sub window.

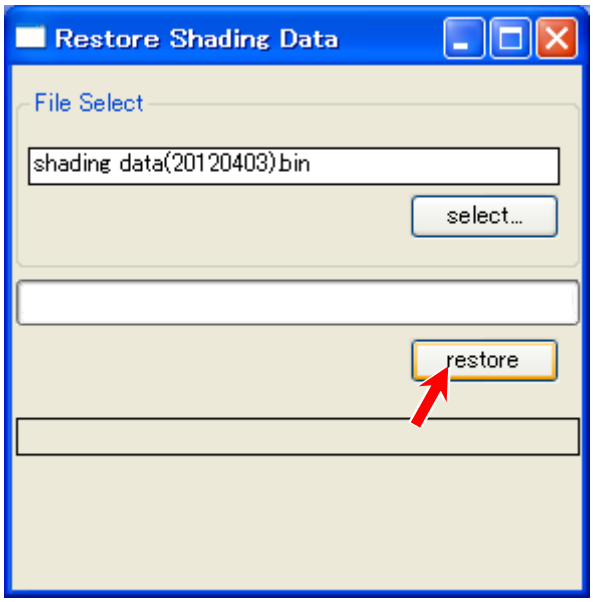


3. Click [select].



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.

10. 5 Update

“Update” is a functionality to send a firmware file of “CPU” “FPGA” “USB” to the D CON (Scanner Main Board).

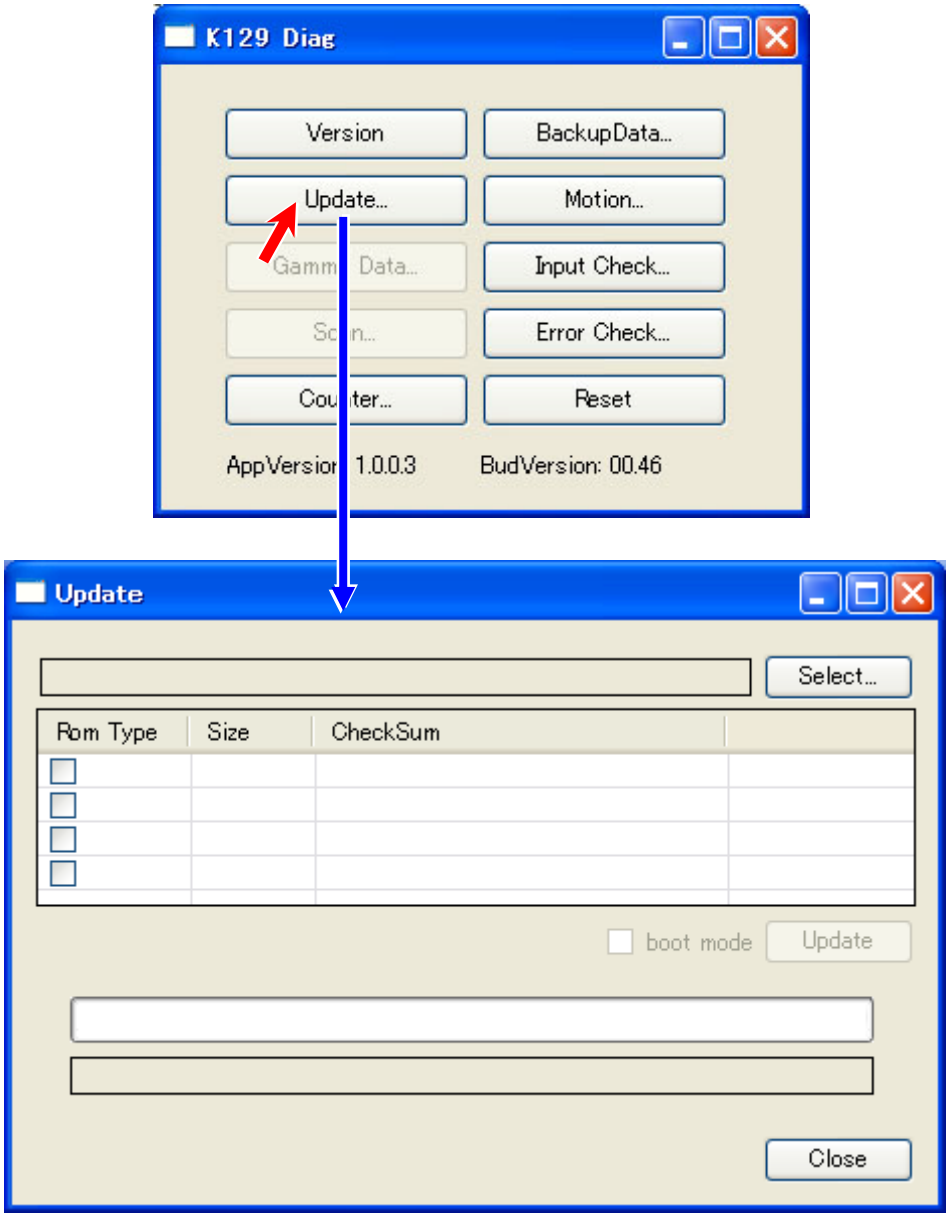
> **NOTE**
>
> Updating “CPU” “FPGA” “USB” does not change the current parameters for “backup data”. This is applied even if an interruption occurs while updating.

10. 5. 1 Sending Firmware to Scanner

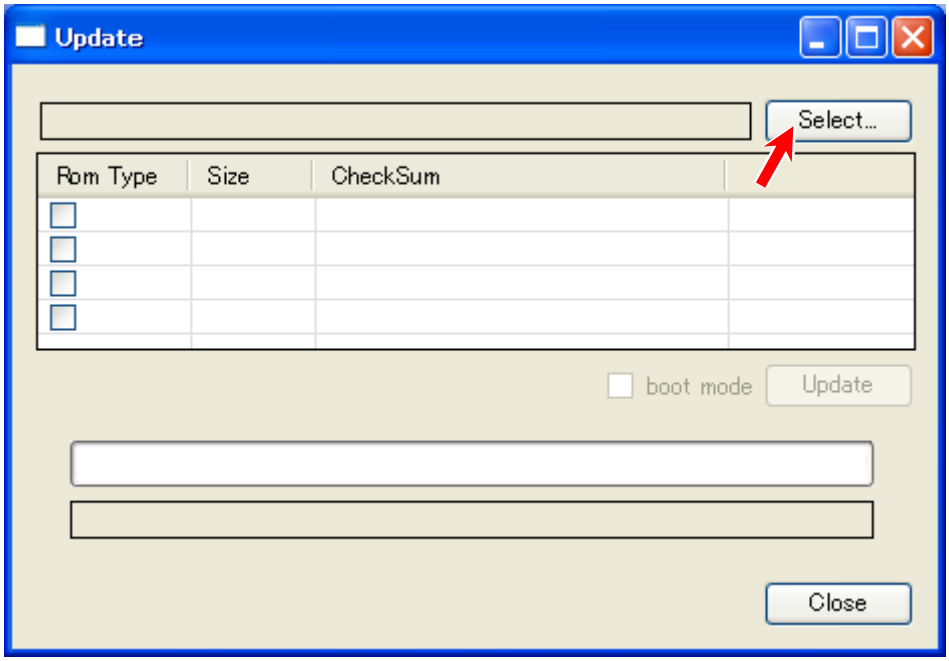
1. Save a delivered firmware file to any available storage on the PC / removable storage.

Type	contents	Firmware File Extension
USB	USB communication firmware	12920F**.iic
CPU	hardware control software	12920M**.mot
FPGA	image processing software	12920S**.bin

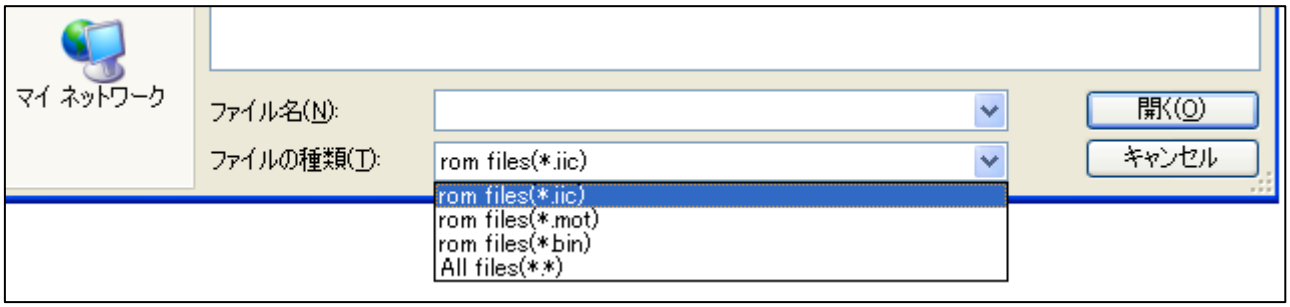
2. Run K129 Diag, and click [Update].



3. Click [Select].

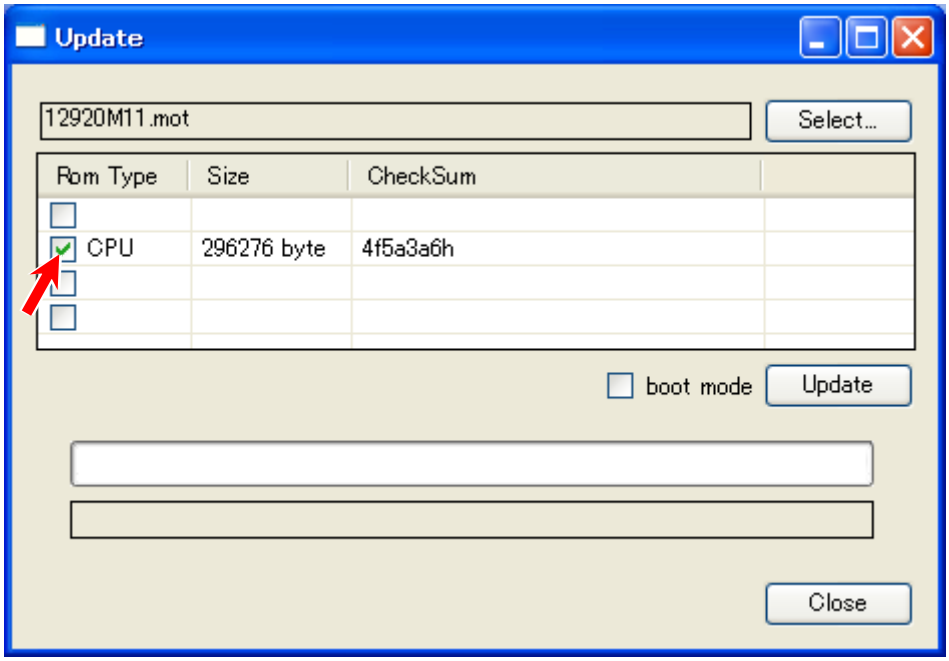


4. Specify a firmware file you want to apply.

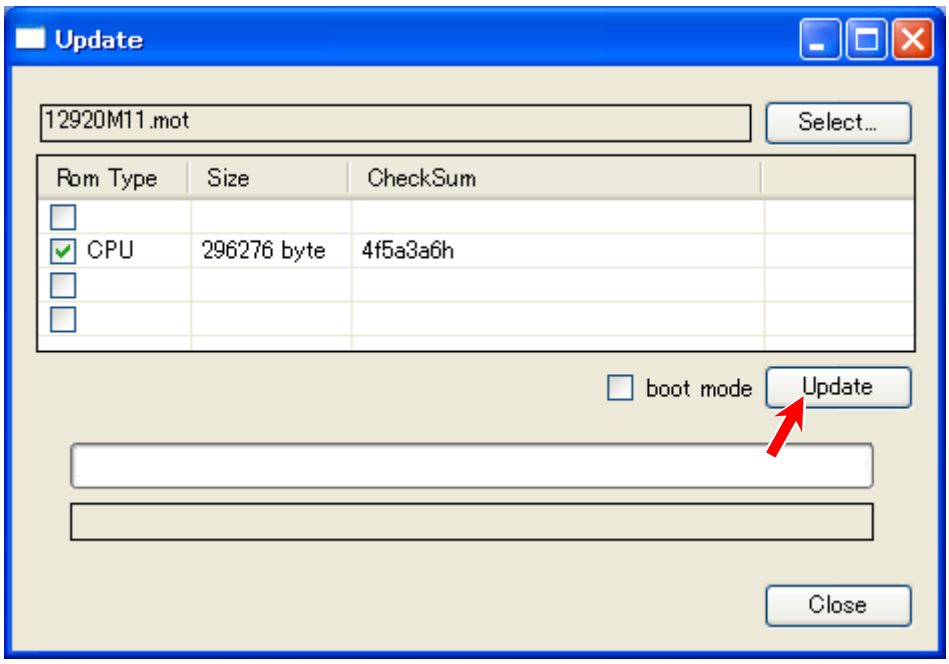


Type	contents	Firmware File Extension
USB	USB communication firmware	12920F** **.iic**
CPU	hardware control software	12920M** **.mot**
FPGA	image processing software	12920S** **.bin**

5. The selected file name is displayed in the list. Put a check in the checkbox beside the file.

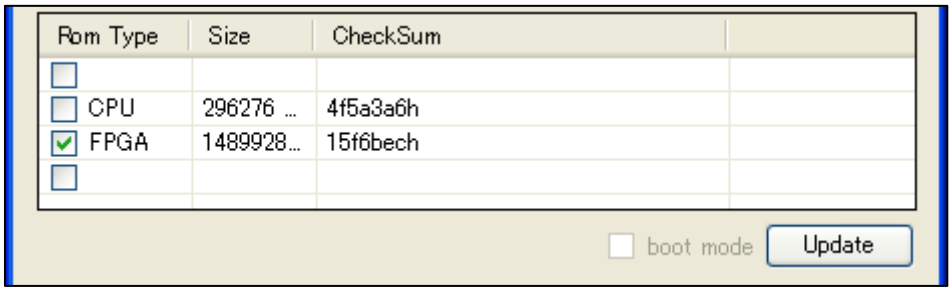


6. [Upload] button in the middle-right is now activated. Click it to send the firmware file to the Main Board.



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.

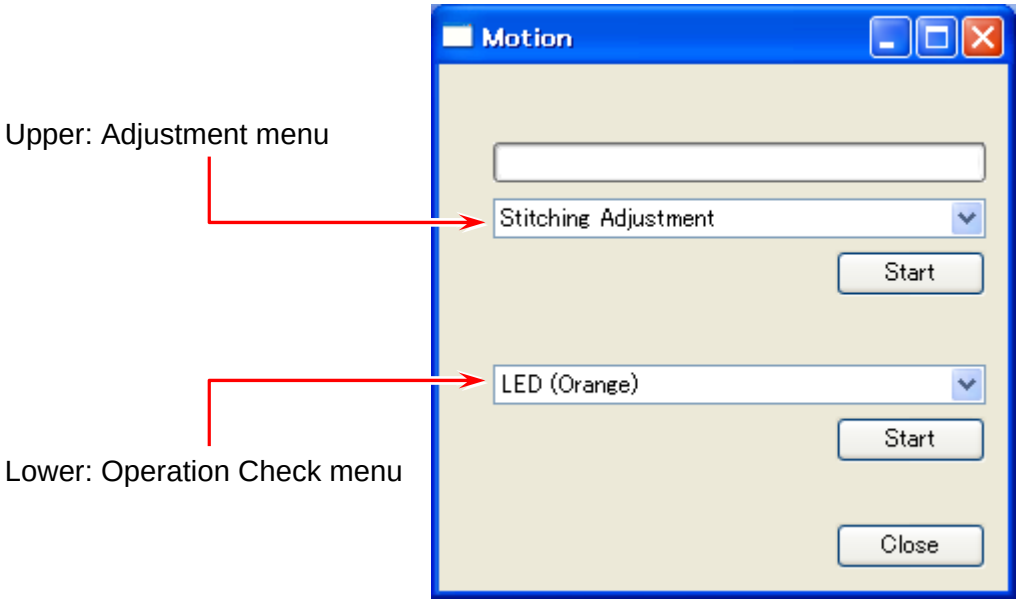
8. Turn off the scanner. Wait 3 seconds and then turn it on.
Now the selected shading data file is validated.

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.

10. 6 Motion

“Motion” contains 2 major categories, Adjustment and Operation Check.



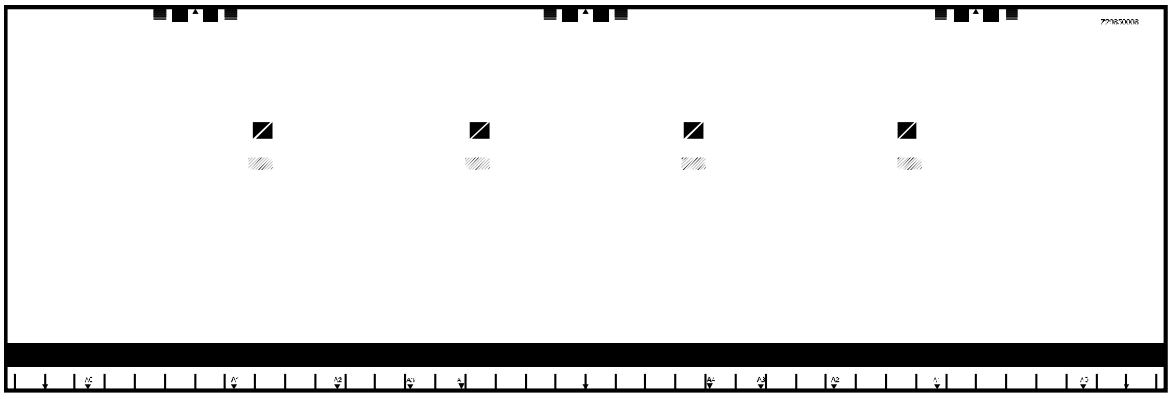
Adjustment menu:

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 [10. 6. 5 Operation Check].

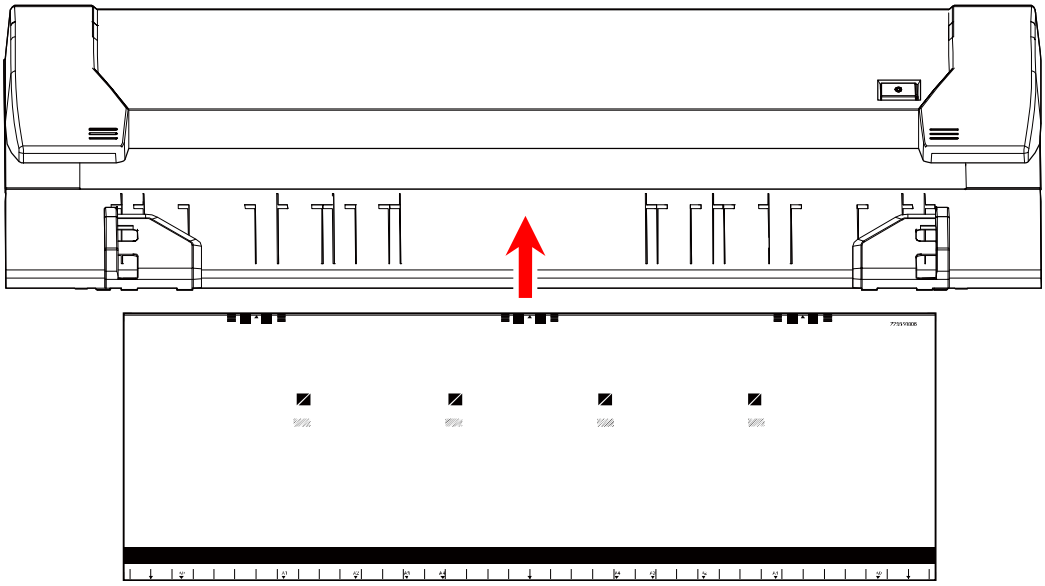
10. 6. 1 Shading

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.

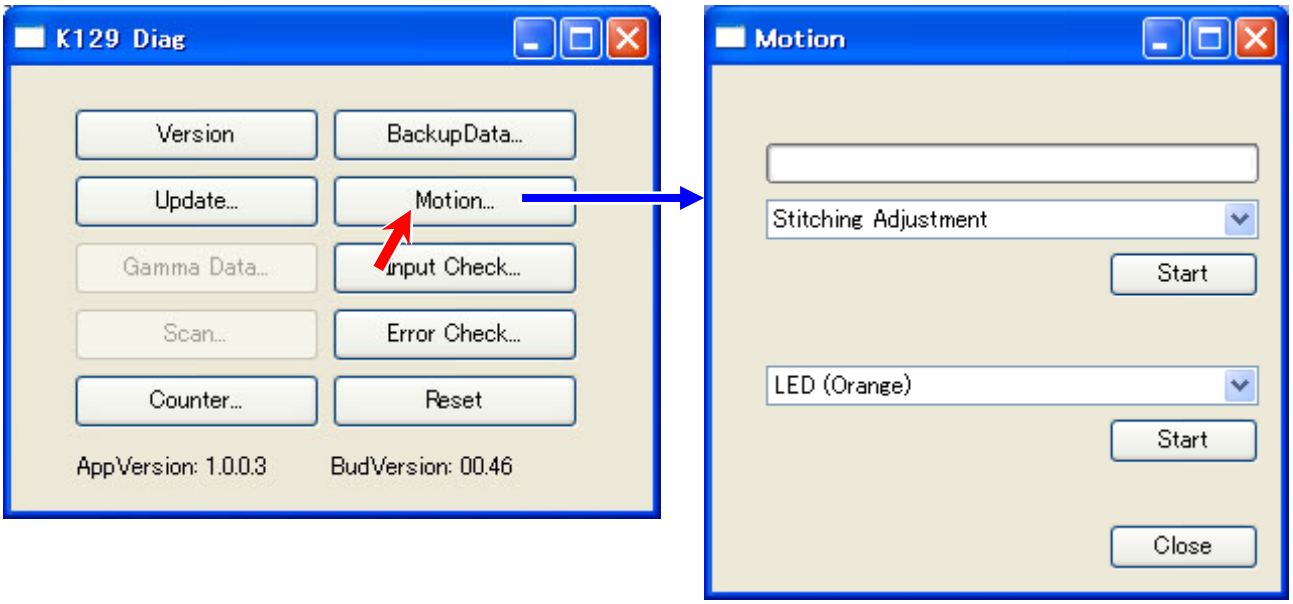
2. Turn on the printer, and set the Shading Sheet to the scanner noting the arrow direction.



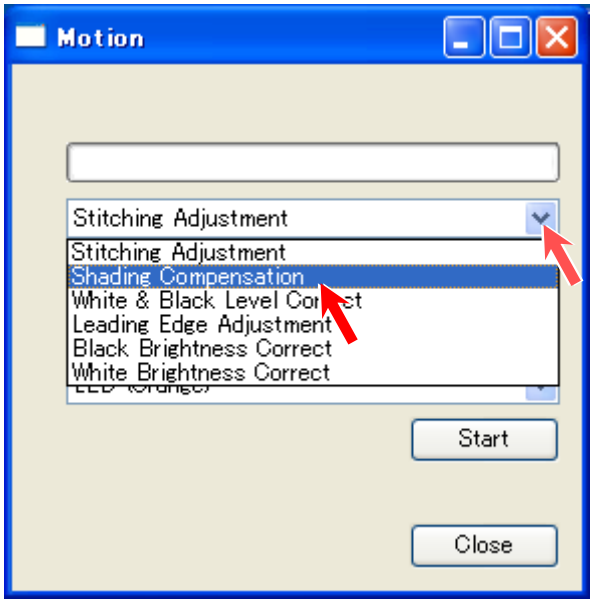
NOTE

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

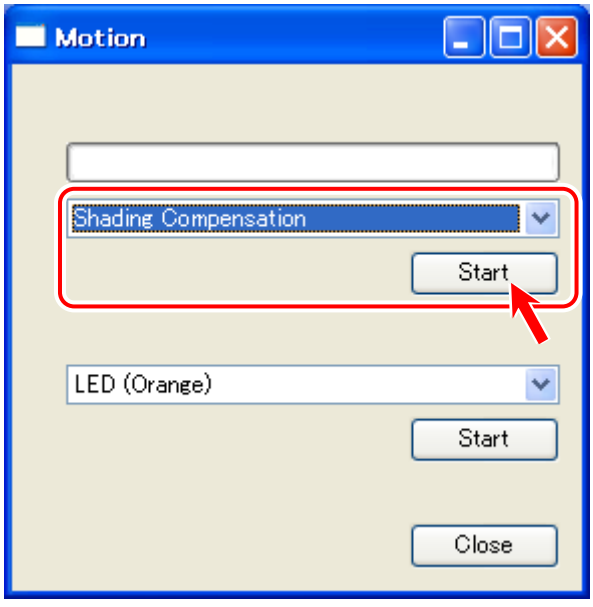
3. Click [Motion] to recall “Motion” sub window.



4. Select “Shading Compensation” in the upper drop-down menu.



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



NOTE

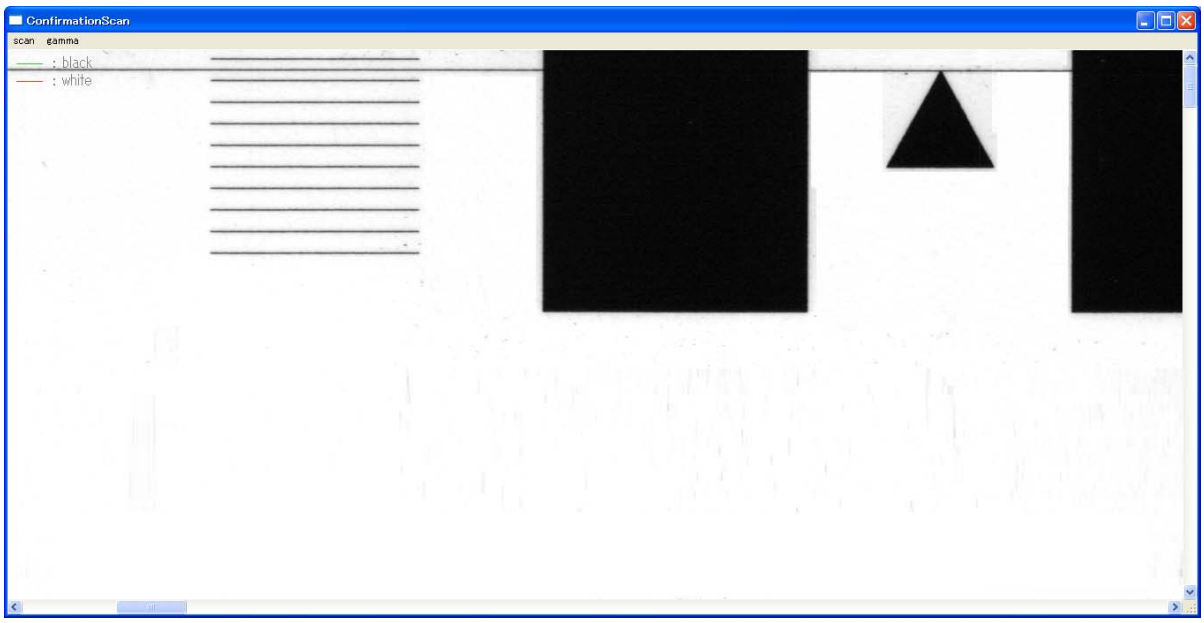
(1) It takes about 6 minutes to complete.

(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.

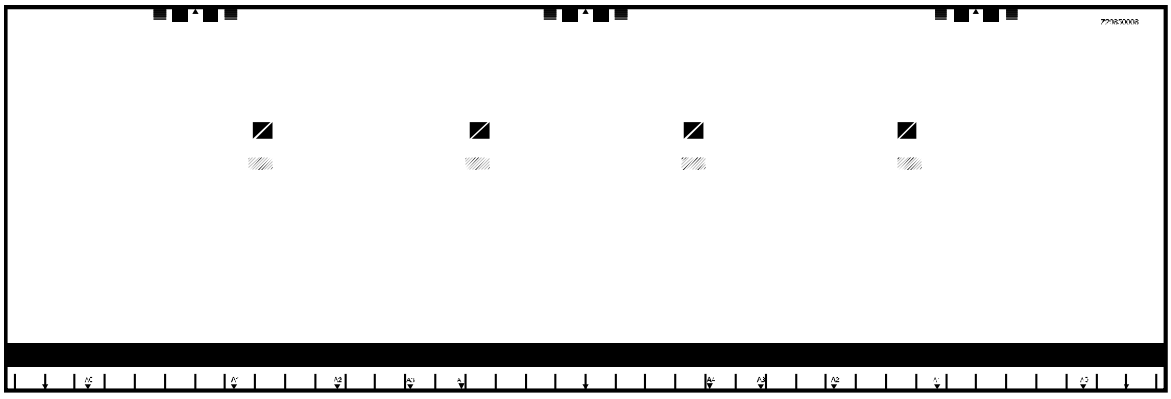
Reference

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.



10. 6. 2 Stitching

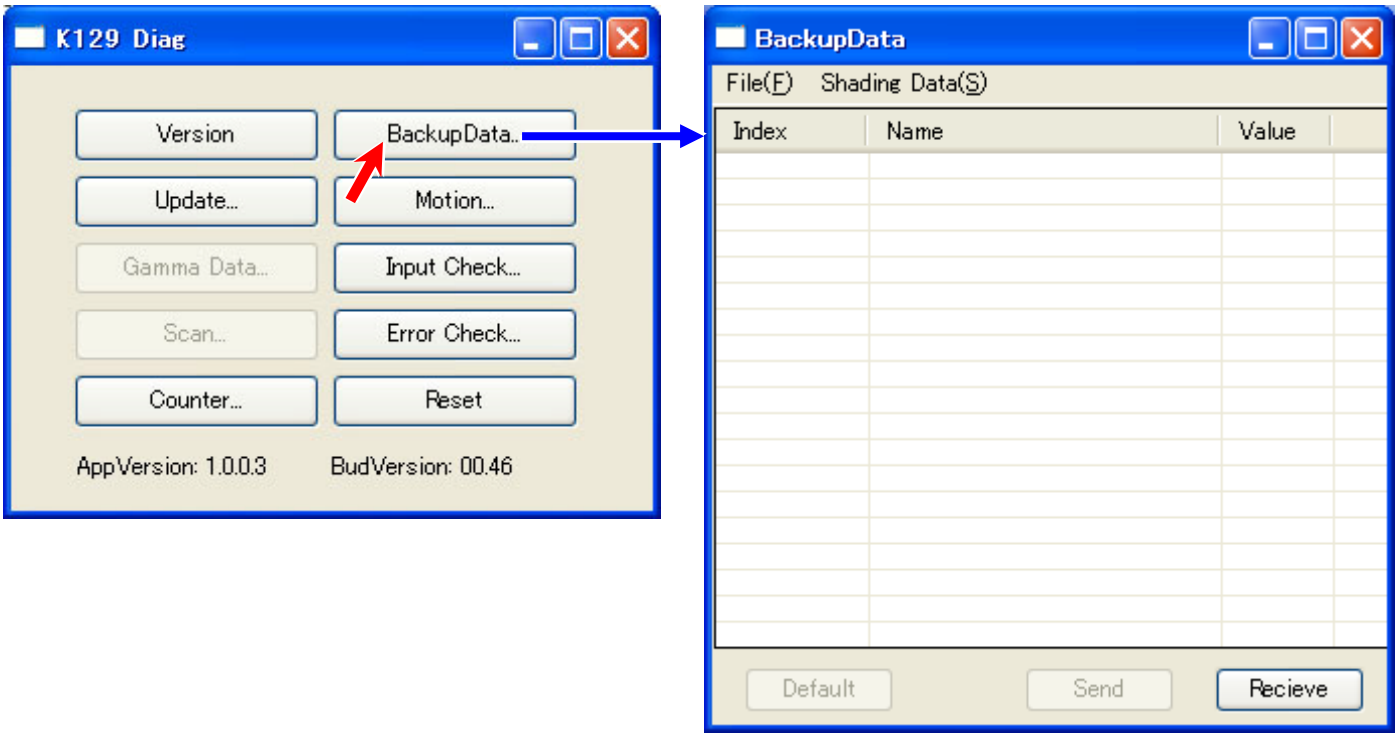
Stitching Adjustment is to set the target black / white level based on a designated calibration chart “Shading Sheet”.
One sheet of This Shading Sheet is included in the accessory box.



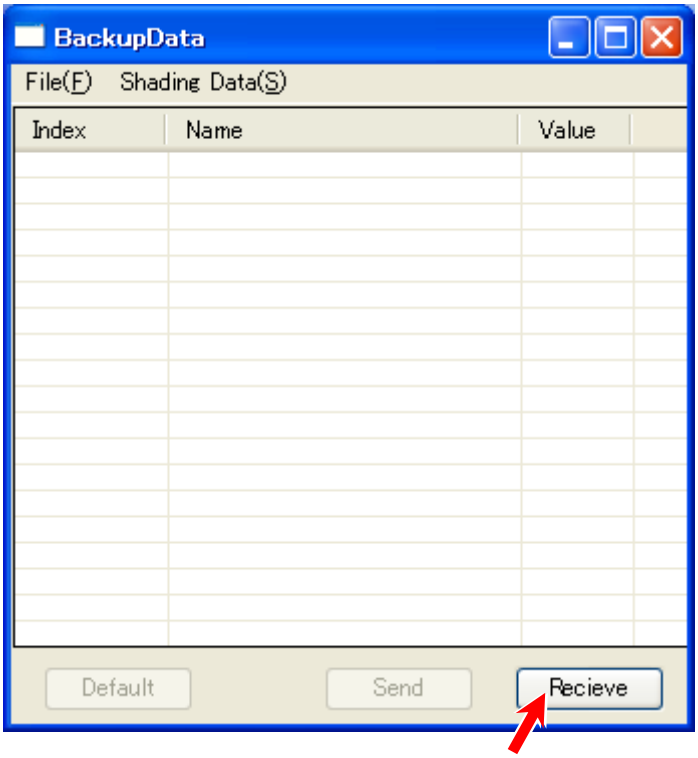
NOTE

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

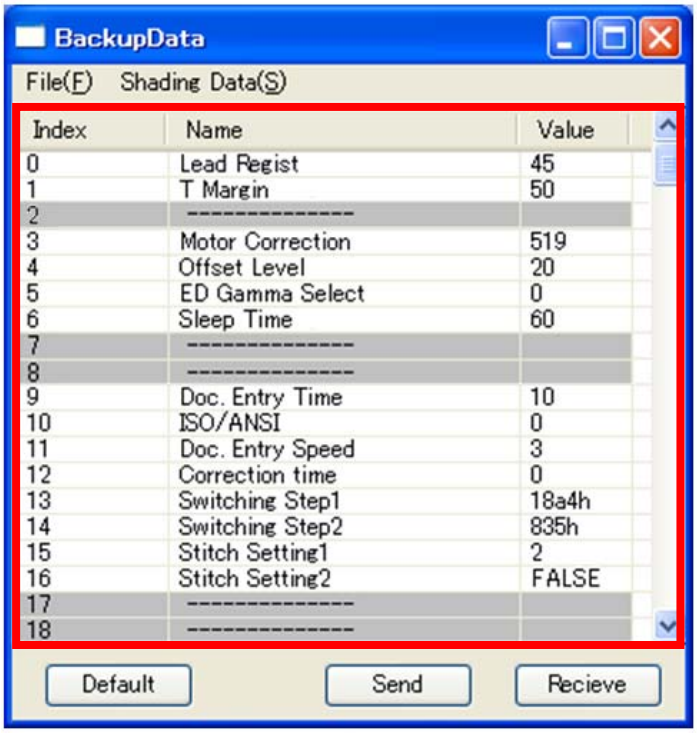
1. Run K129 Diag. Click [BackupData] to recall “Backup Data” sub window.



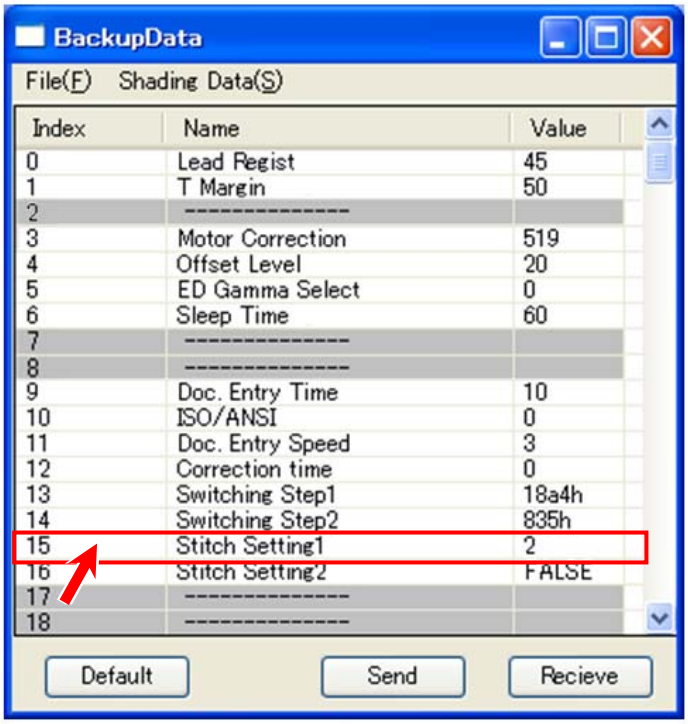
2. Click [Receive]



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

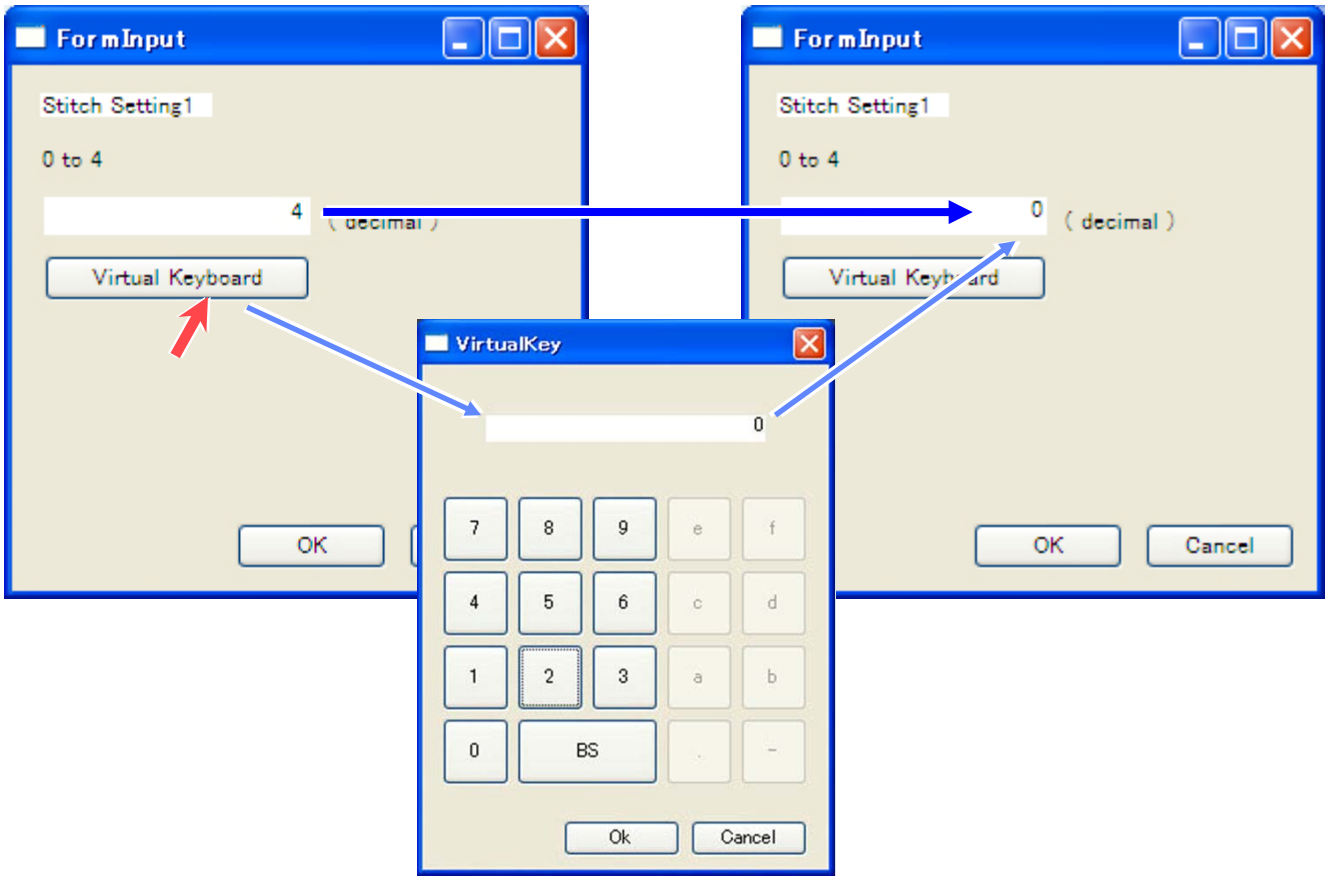


4. Double click on the row No.15 “Stitch Setting 1”.

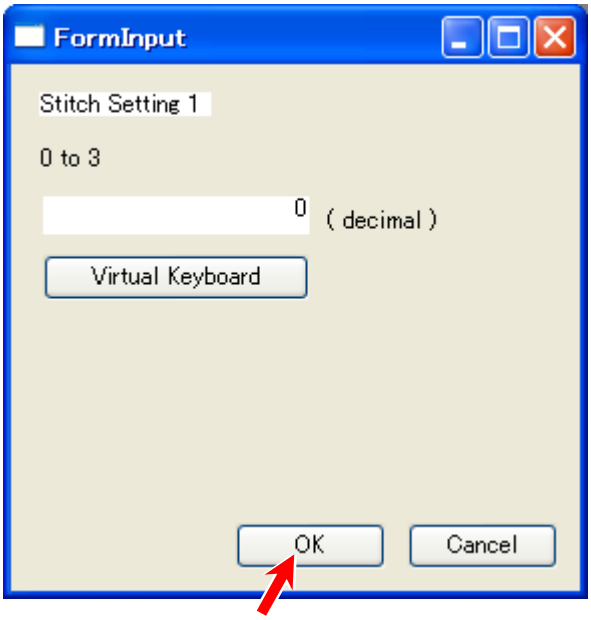


5. “Input” pad pops up. Directly type “0” with your keyboard.
Clicking the field is not available. There is no caret functionality. (flashing “ | “ cursor)

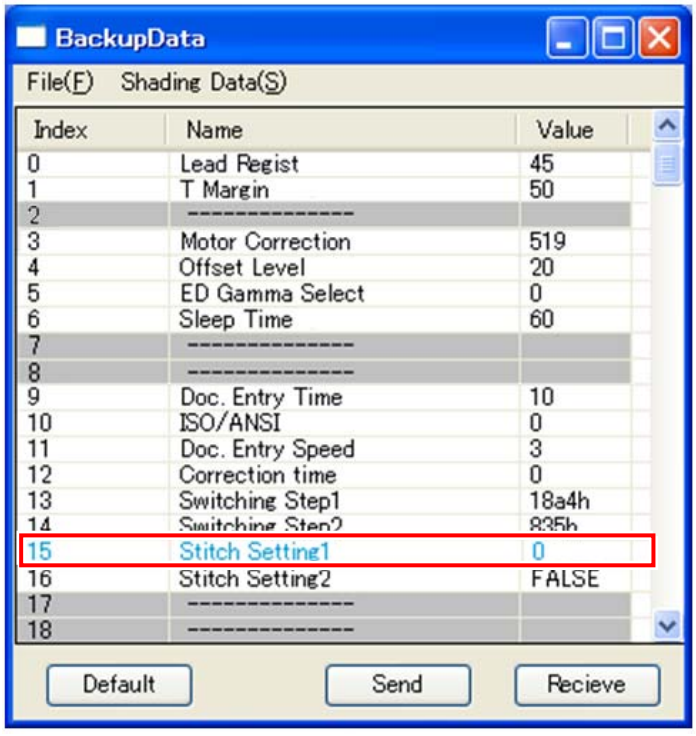
> **NOTE**
> Clicking the field displays a caret (flashing “ | ” cursor), but while the caret is flashing, a key entry with your keyboard device is **NOT** accepted.



6. Click [OK] on the bottom.



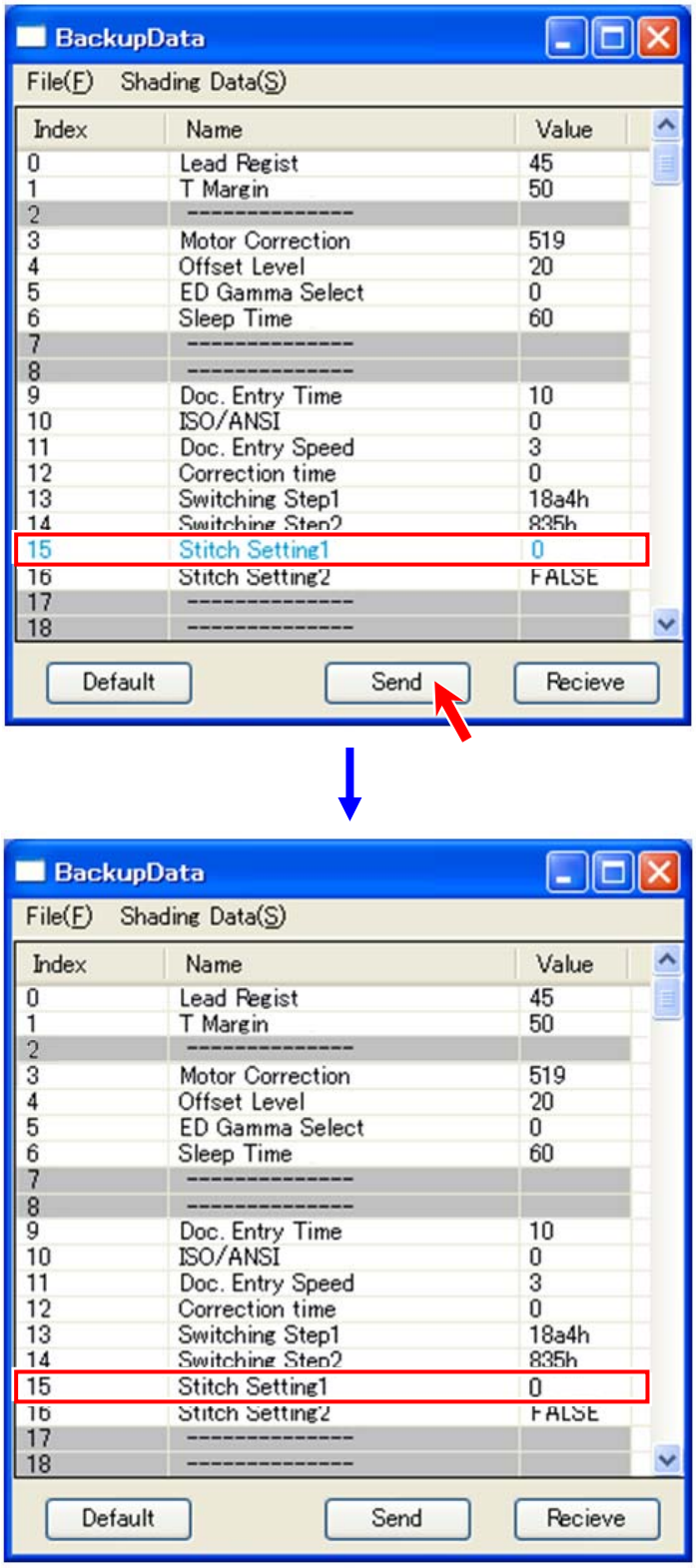
7. The setting change you have made is reflected to the list. It will turn blue.



NOTE

At this moment the new value has not yet become valid.

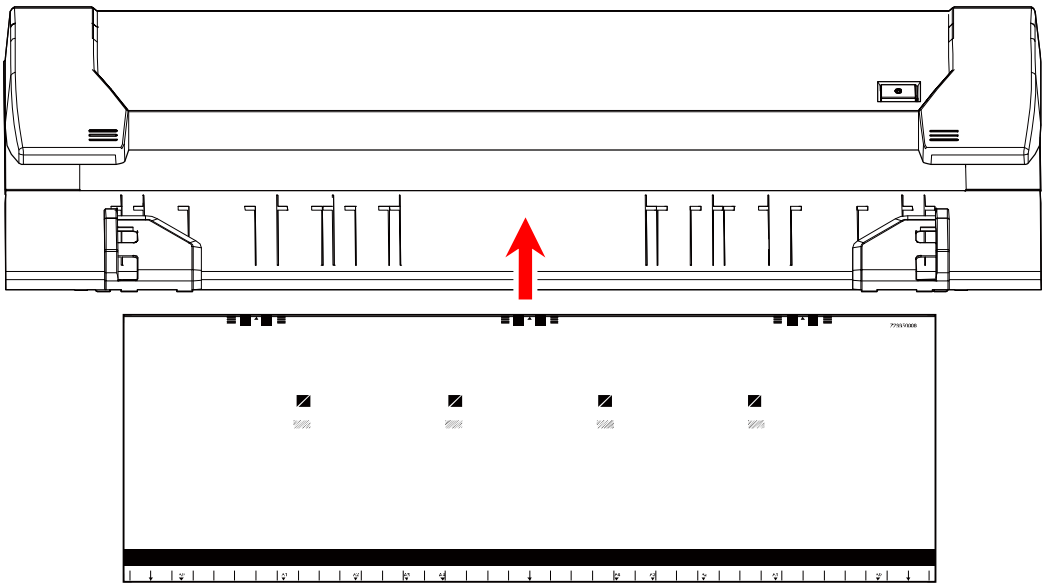
8. Click [Send] on the bottom. The setting change turns black.
   Now it is sent to the D CON.



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

10. Clean Glass DCMNT with a soft cloth.

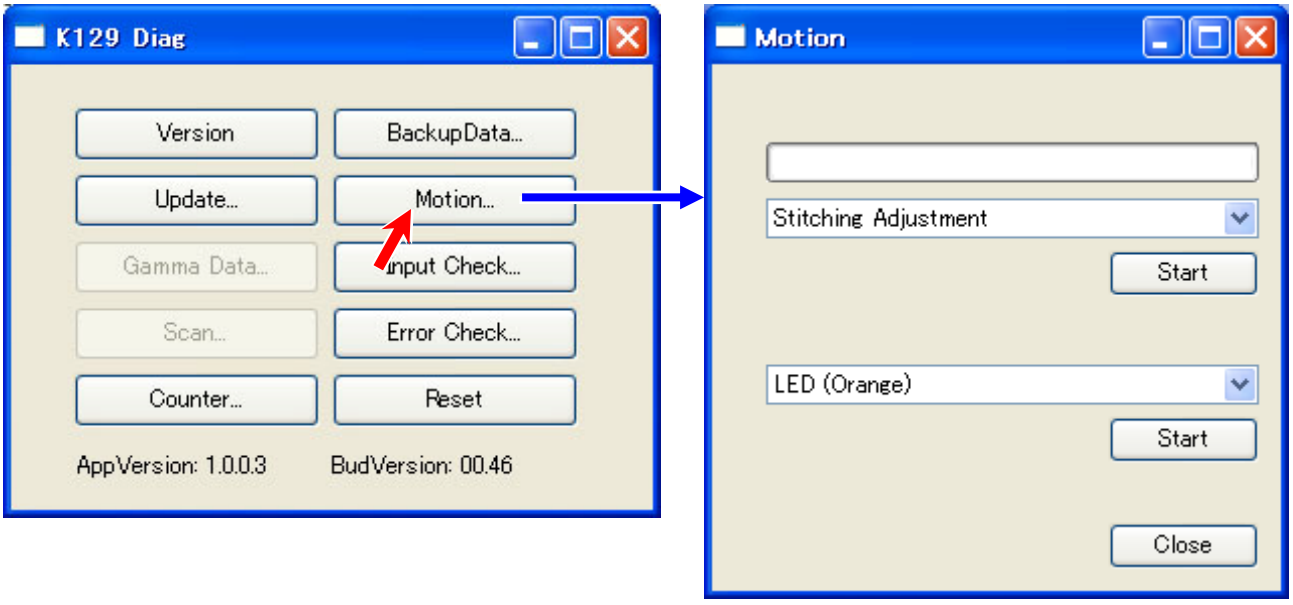
11. Set the Shading Sheet to the scanner noting the arrow direction.



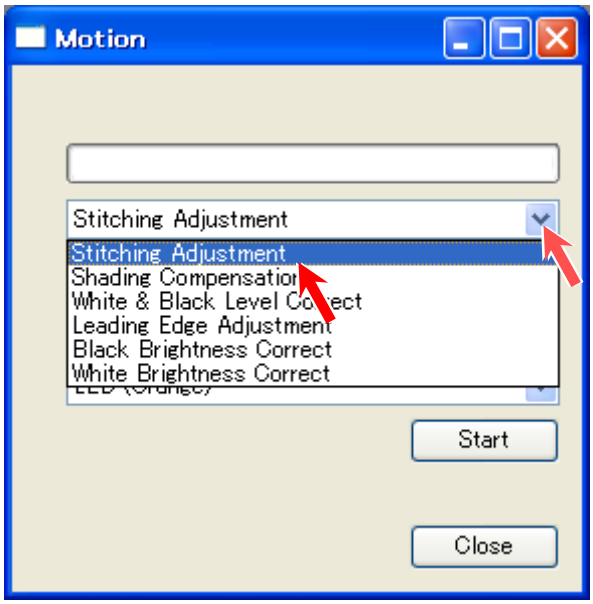
NOTE

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

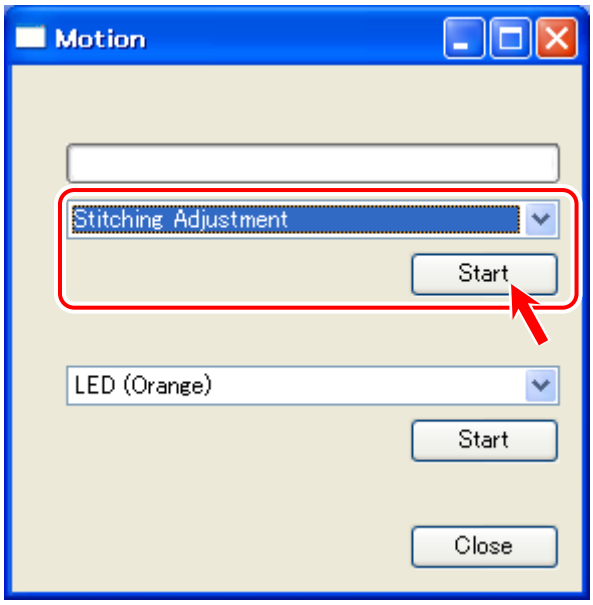
12. Click [Motion] to recall “Motion” sub window.



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



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

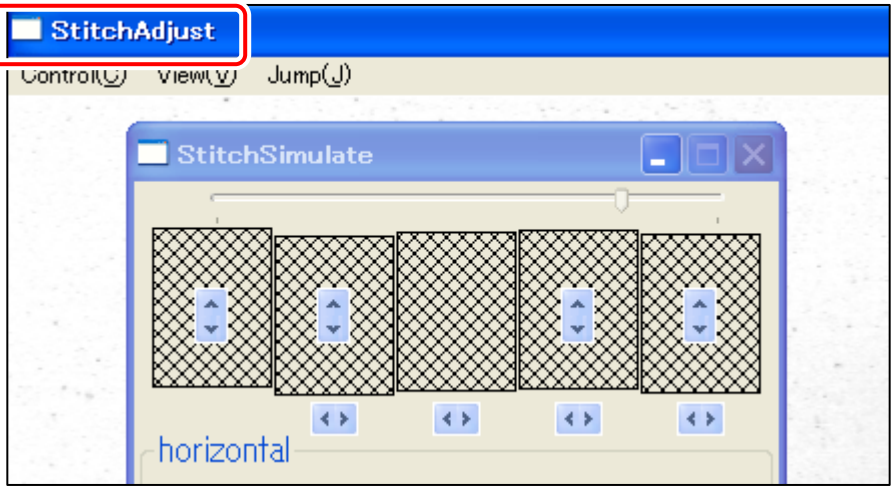


NOTE

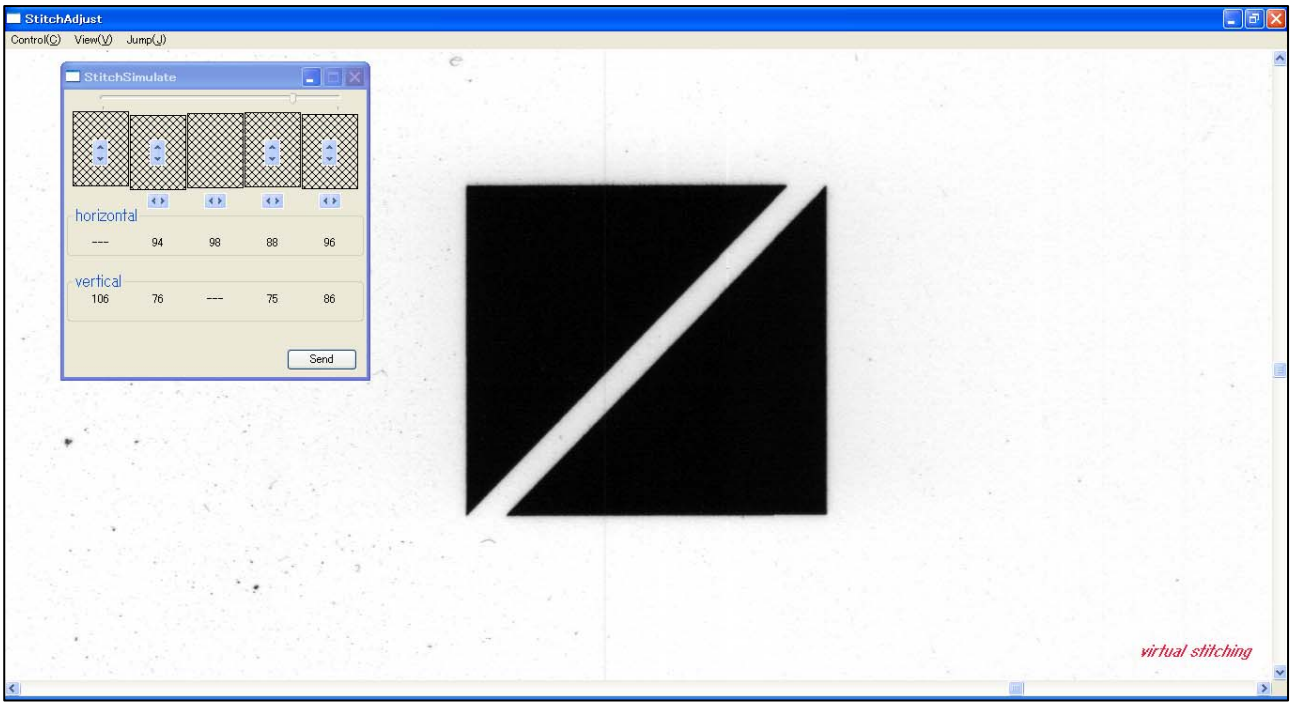
If an error message occurs;

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

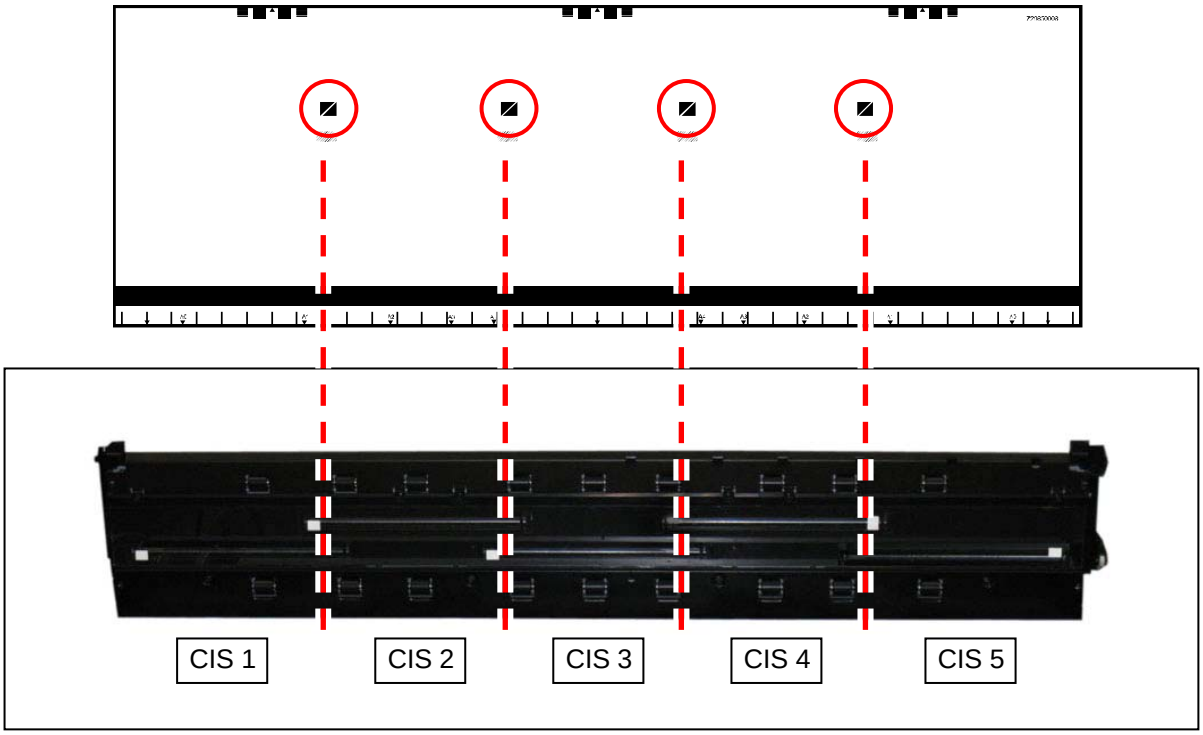
15. When the scanning is finished, two sub windows “Stitch Simulate” and “Stitch Adjust” appear. Enlarge “StitchAdjust” window.



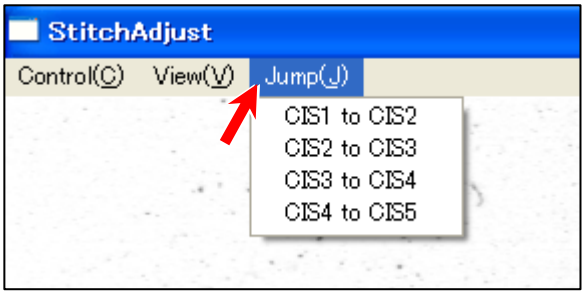
Enlarge “Stitch Adjust” window.

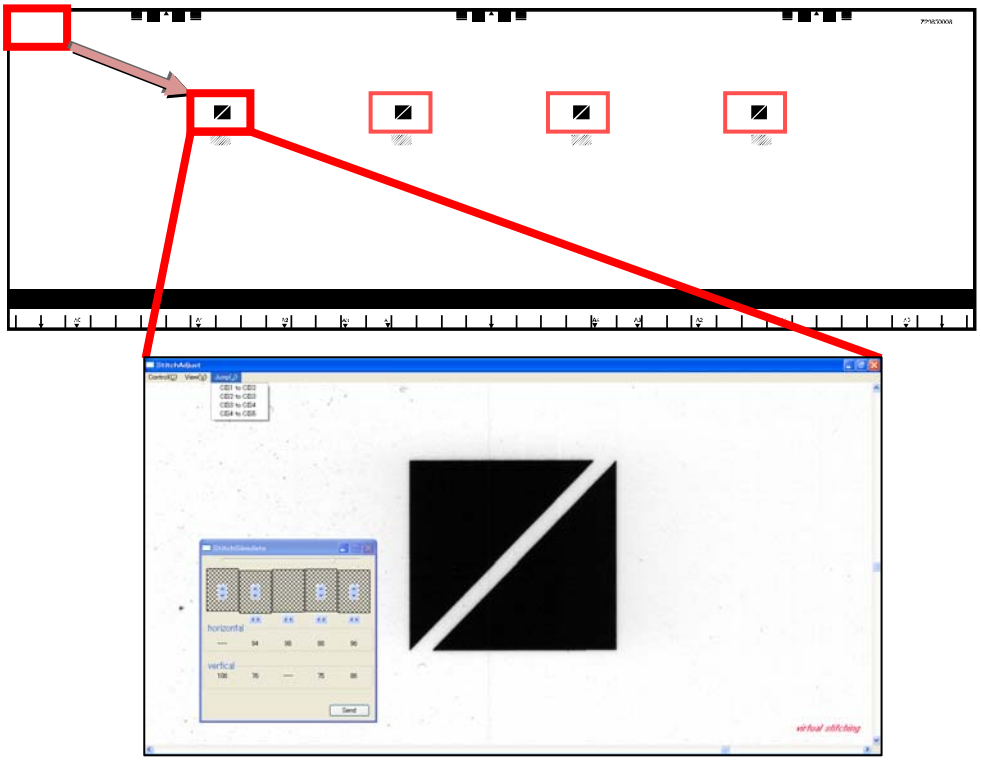


16. There are 4 target signs at every border between the CIS.



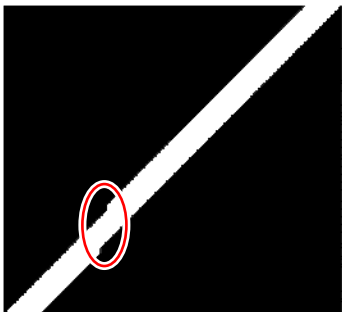
In “Stitch Adjustment” window, Select [Jump] menu, and then click [CIS1 to CIS2]. The display area will jump to the corresponding area on the scanned image.
If “Jump” does not move to the target exactly, manually scroll the image to catch the target in the window.



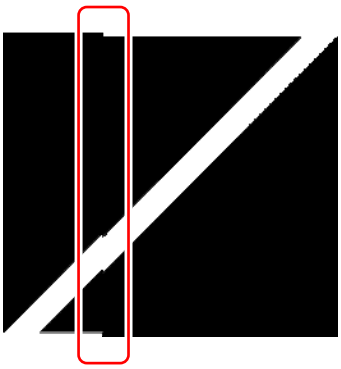


17. Confirm the Stitching Adjustment results.

no misalignment



horizontal misalignment



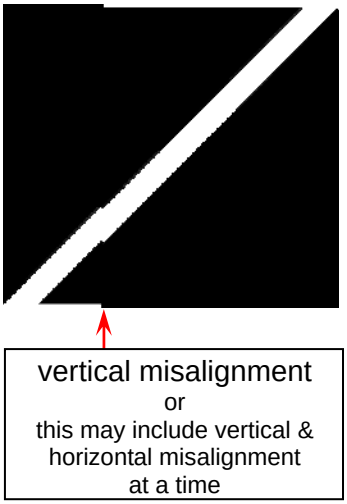
vertical misalignment

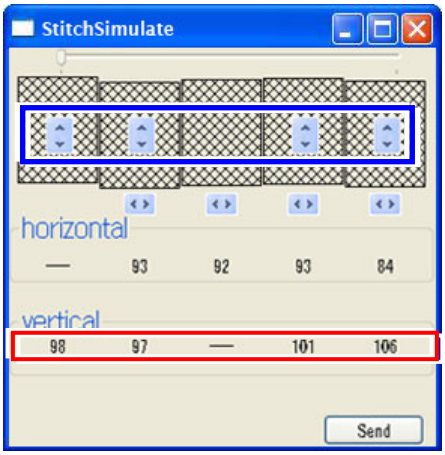
18. Select [Jump] menu, and then click the other CIS borders to confirm the results.
    If all of the 4 targets have no misalignment, go to step 25.
    If any of the targets has an misalignment, go to step 19 and after for manual correction.

    - 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.



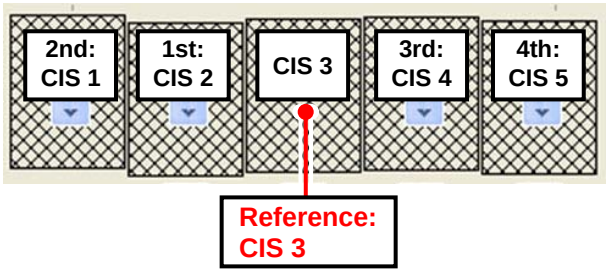


Do the same way for all the 4 targets at the borders.

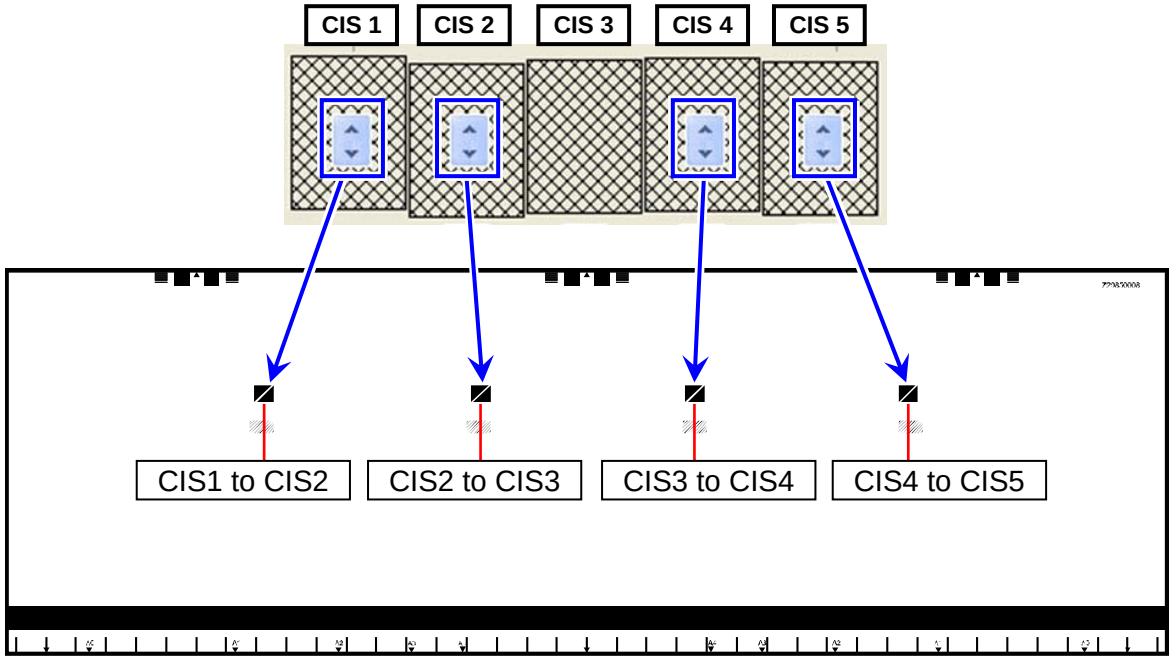
Setting values will turn red by setting changes. Setting value 1 step = 1 pixel to trailing edge

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.
<u>First finalize the shift for CIS 2, and next CIS 1, CIS 4, CIS 5.</u>



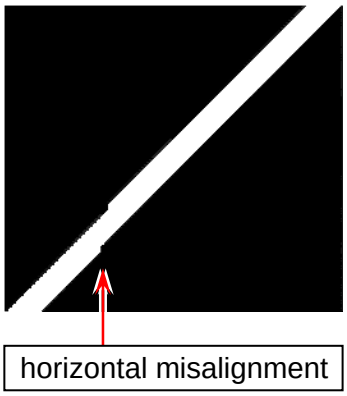
(2) The increase/decrease buttons correspond to the CIS border as follows.

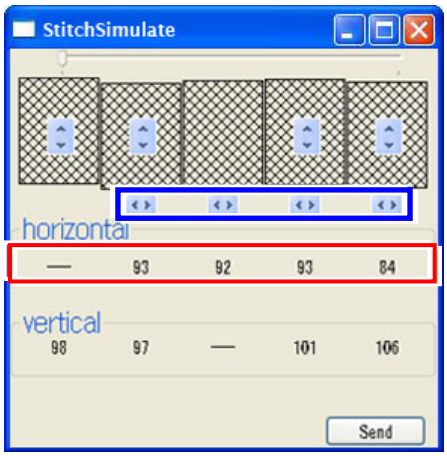


19-2. Image shifting (setting value in red) is not finalized yet. Click [Send].
Once the change is sent to the D CON (Scanner Main Board), setting values turn black.

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.

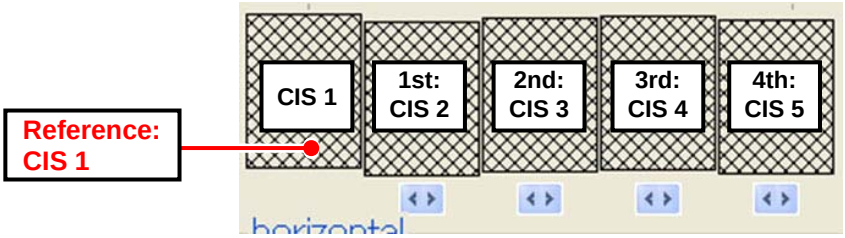




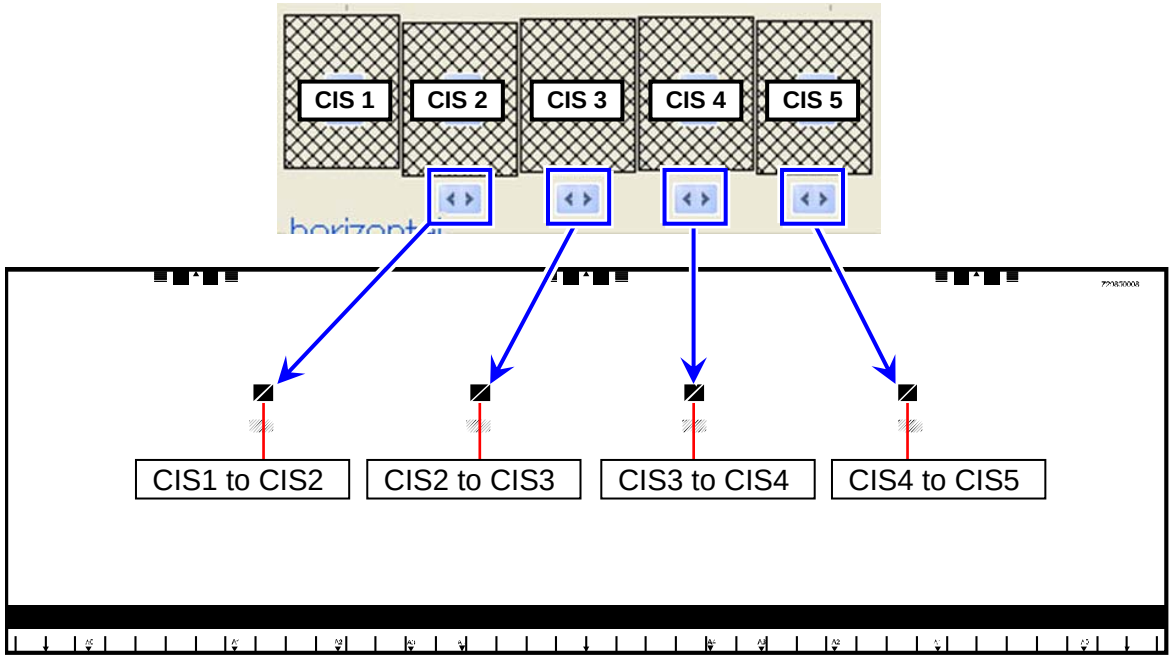
Do the same way for all the 4 targets at the CIS borders if needed.
Setting values will turn red by setting changes. Setting value 1 step = 1 pixel to right

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.

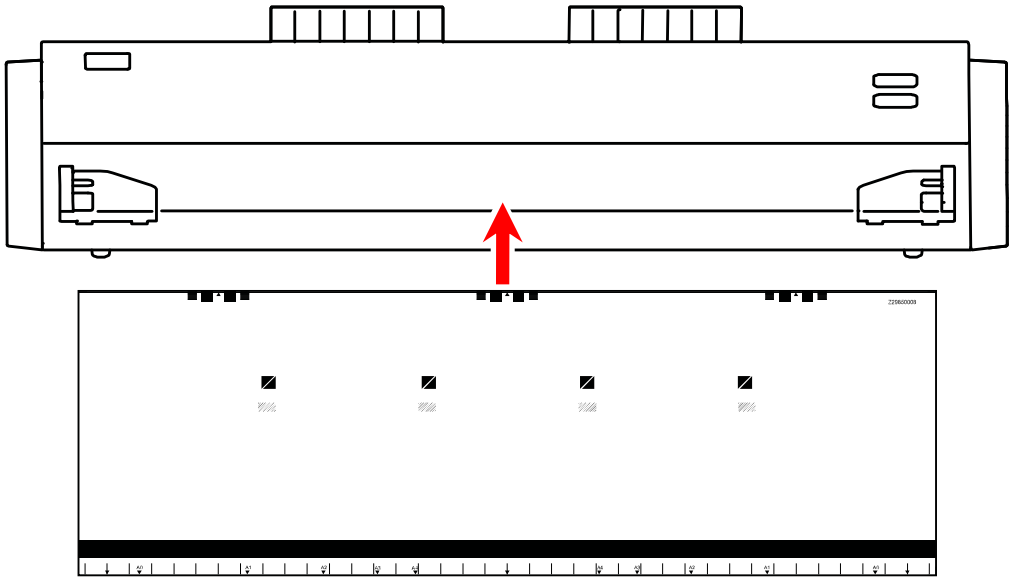
21. The manual correction is reflected to “StitchAdjust” window directly.
    Reconfirm the manual correction result on the 4 targets.
    If there is still misalignment, go back to step 19 and 20 to remove it.

no misalignment

NOTE

Be sure to reconfirm the manual correction result.

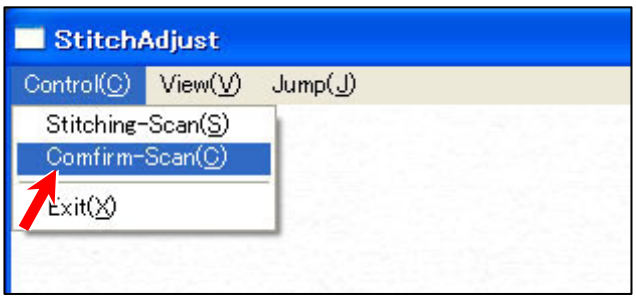
22. Set the Shading Sheet to the scanner noting the arrow direction.



NOTE

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

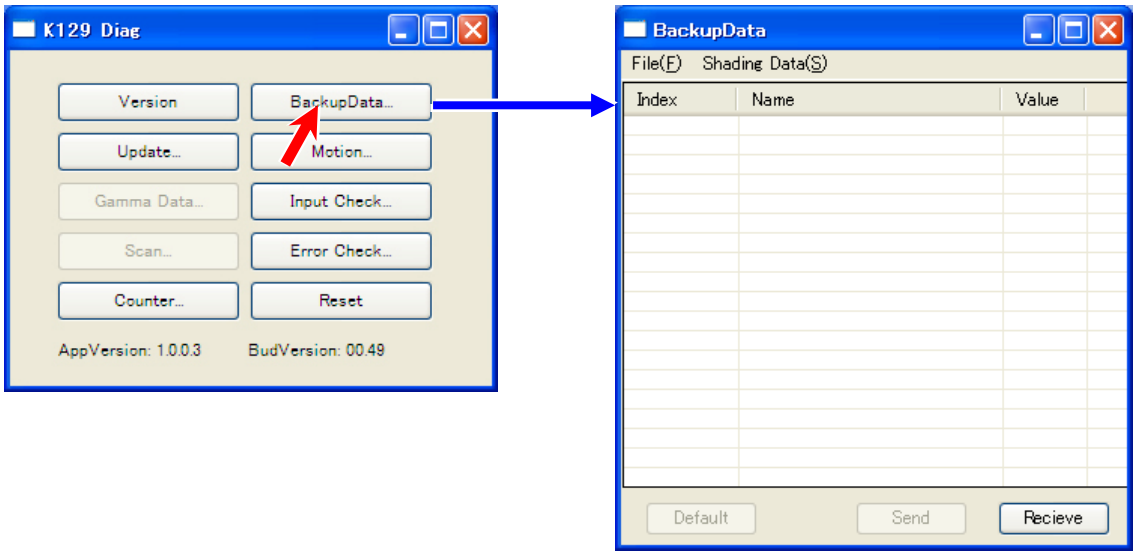
23. In “StitchAdjust” window, select [Control] menu, and then click [Confirm-Scan] to make another scan.



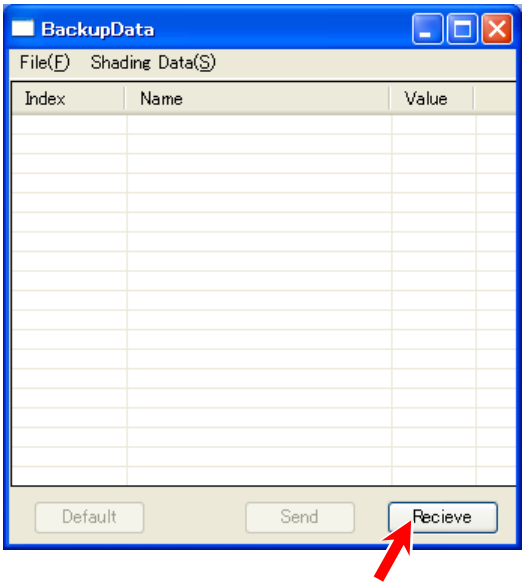
24. The rescan result can be checked in “StitchAdjust” window.

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

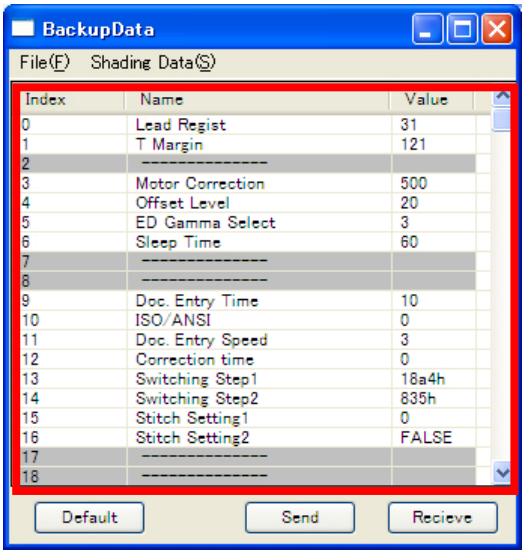
26. Go back to the Home. Click [BackupData] to recall “Backup Data” list sub window.



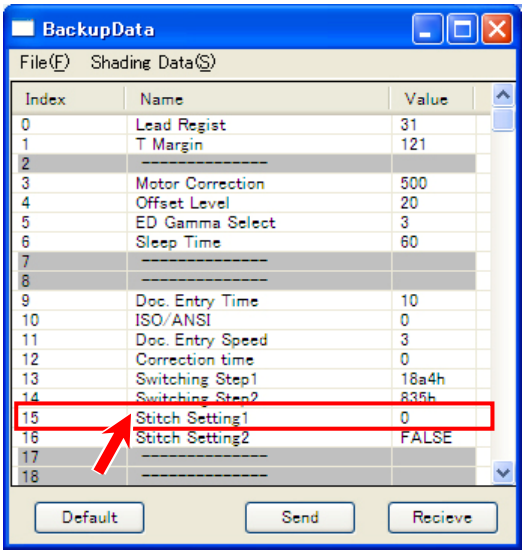
27. Click [Receive]



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

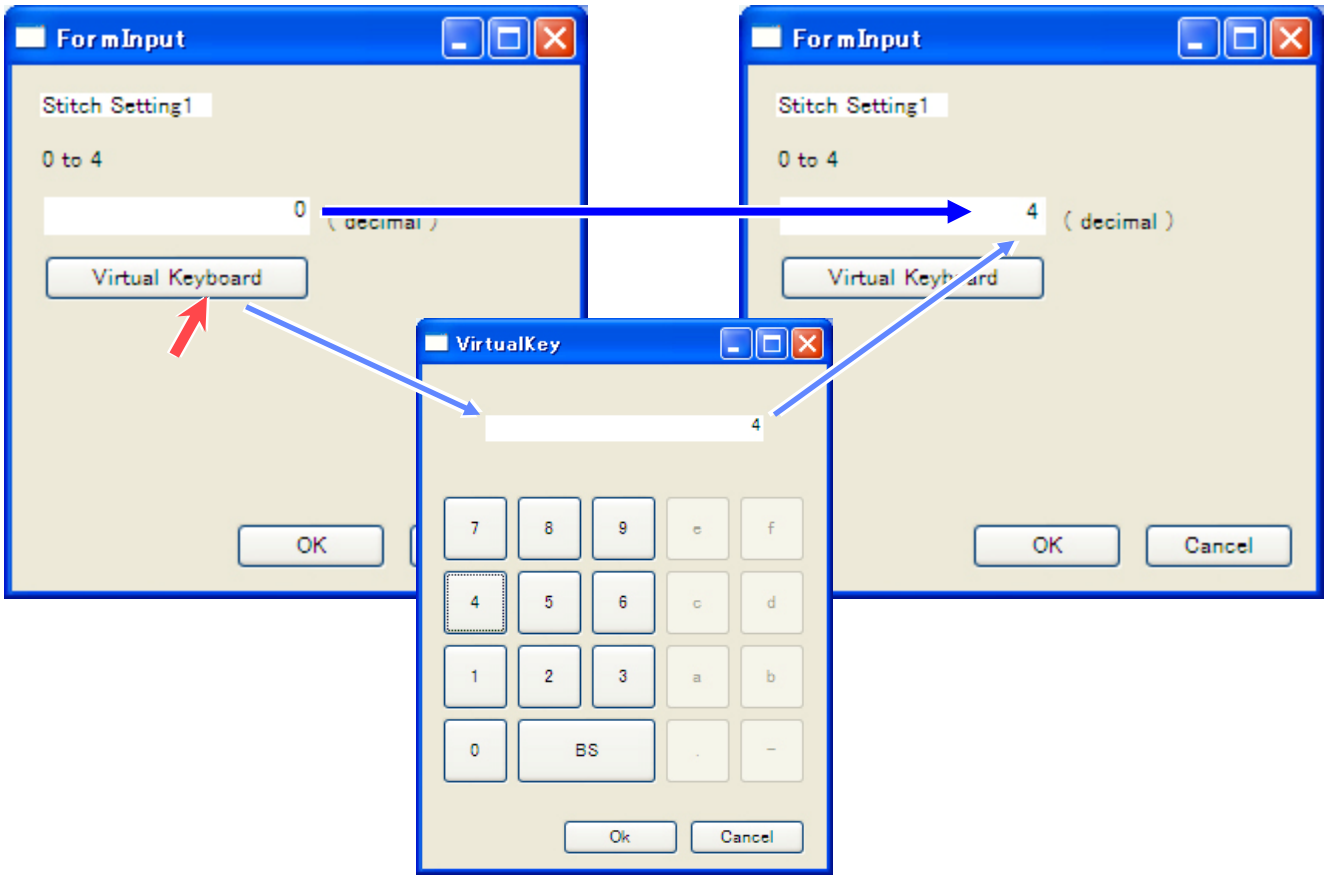


29. Double click on the row No.15 “Stitch Setting 1”.

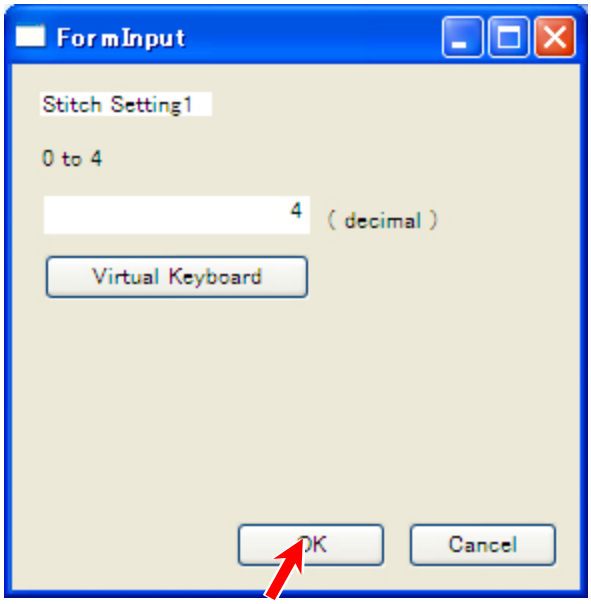


30. “Input” pad pops up. Directly type the number of the original setting (2 or 4) value with your keyboard.

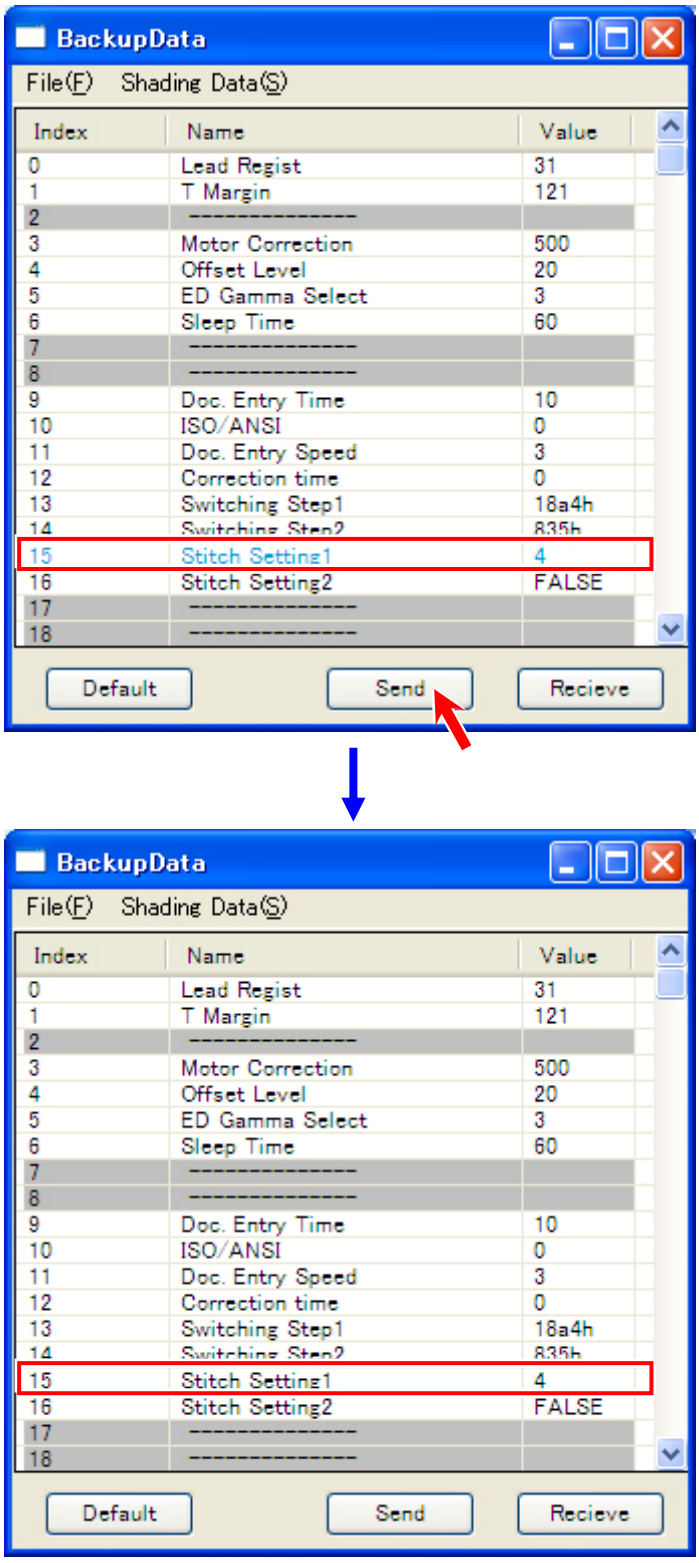
> **NOTE**
>
> Clicking the field displays a caret (flashing “ | ” cursor), but while the caret is flashing, a key entry with your keyboard device is **NOT** accepted.



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.

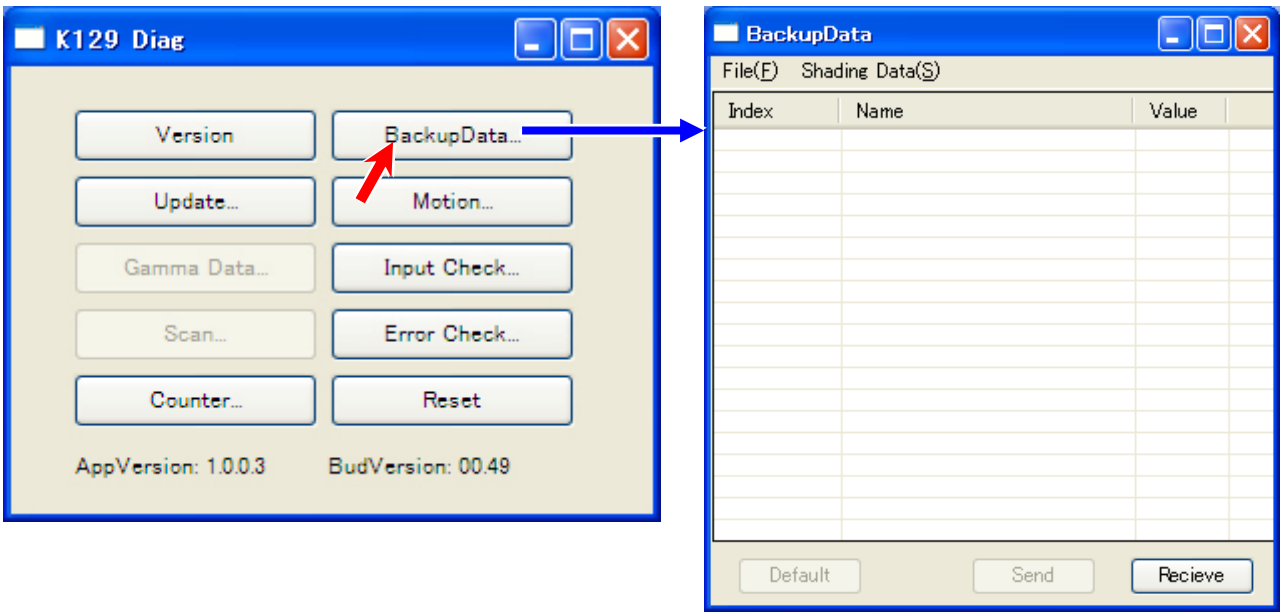


10. 6. 3 Black Brightness Correct

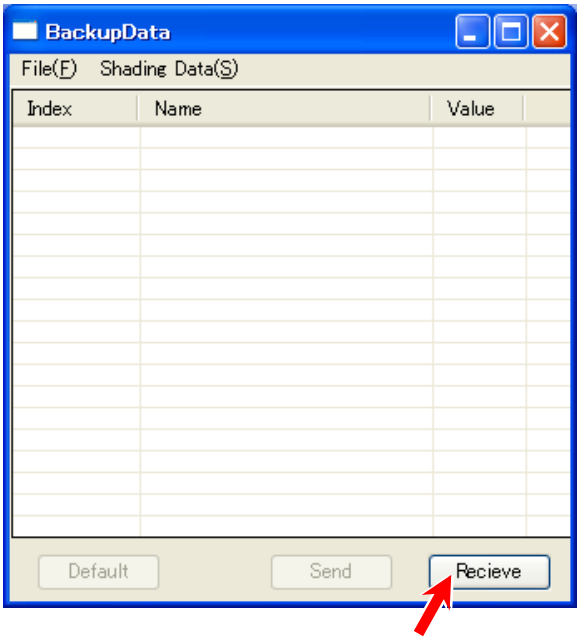
Black Brightness Correct is to define the black level in order to remove density difference between the neighboring CIS image blocks, with using “Black Brightness Correction Chart”.

> **NOTE**
>
> Black Brightness Correct should be done only in the case of having a heavy density difference between CIS in the scanner.

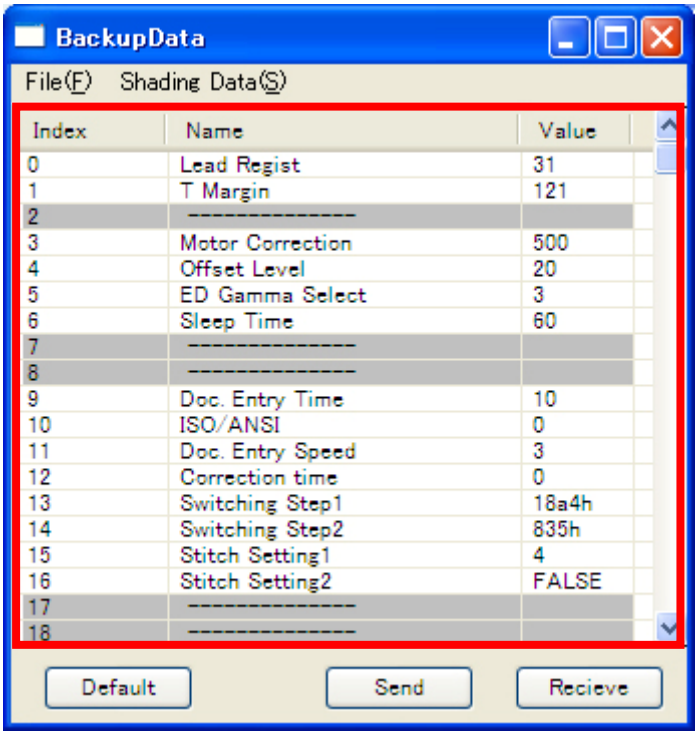
1. Run K129 Diag. Click [BackupData] to recall “Backup Data” list sub window.



2. Click [Receive]



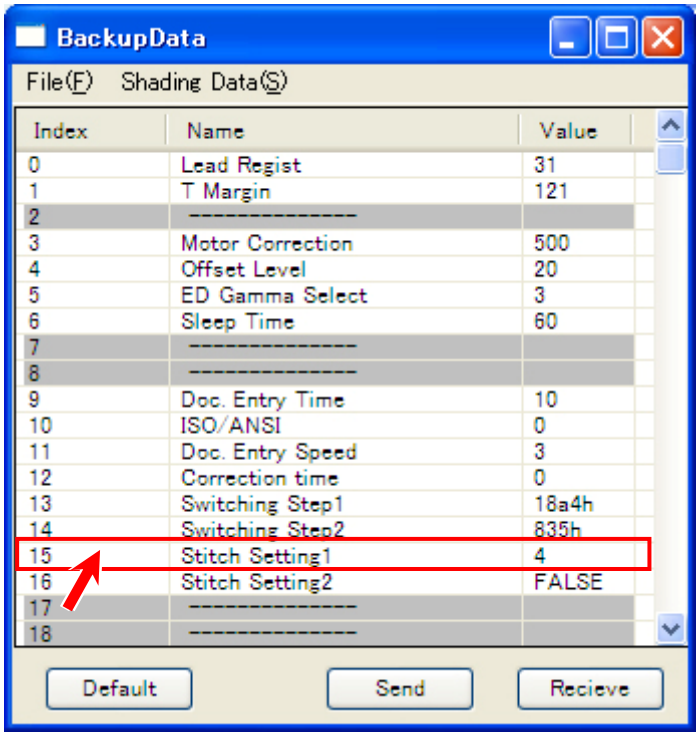
3. The current parameters are retrieved and displayed in the list.



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.

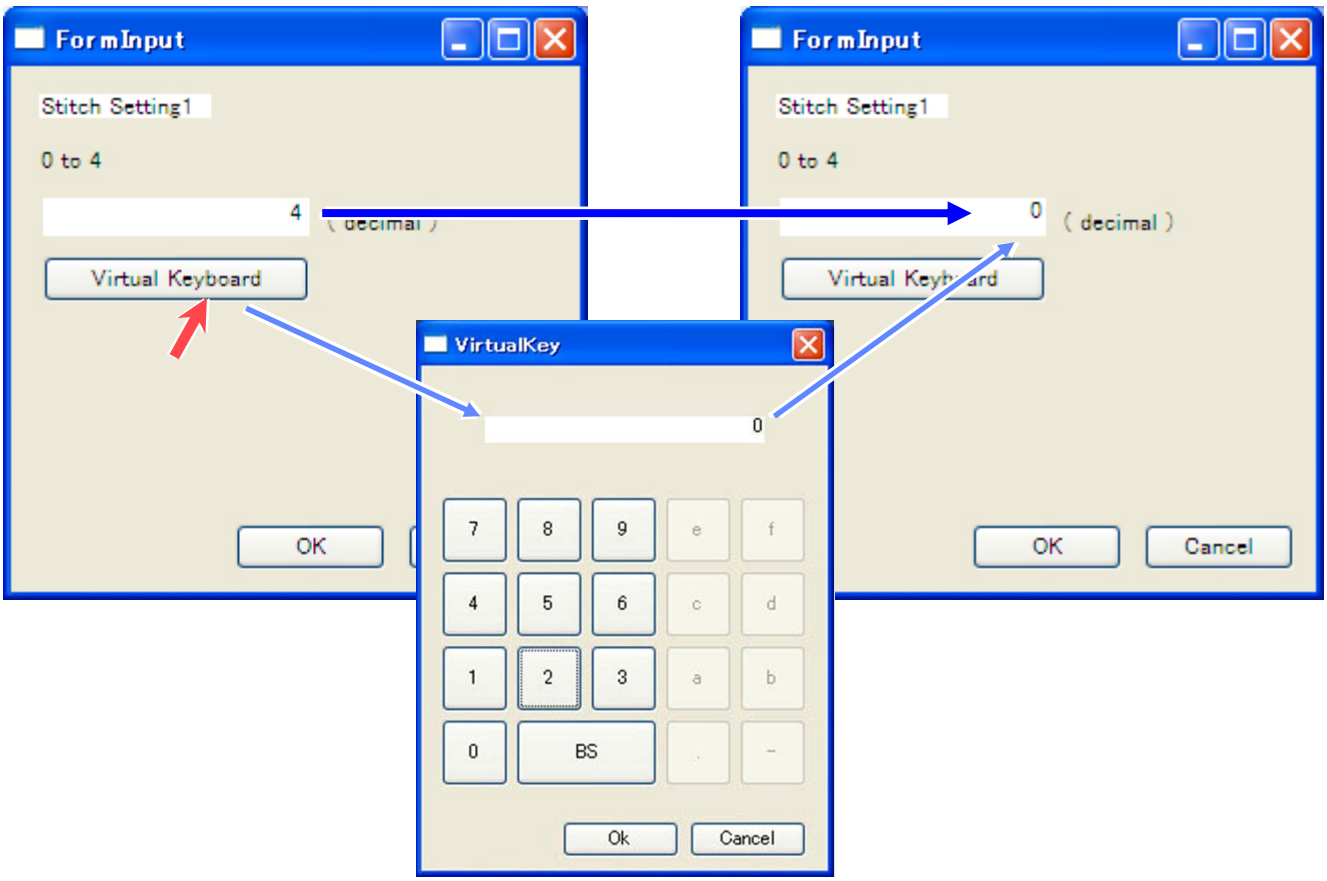
Index	Name	value
15	Stitch Setting1	0
60	Digital gain	0
62	cis1 Detail	0
63	cis2 Detail	0
64	cis4 Detail	0
65	cis5 Detail	0
271	Correction Block	0

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.

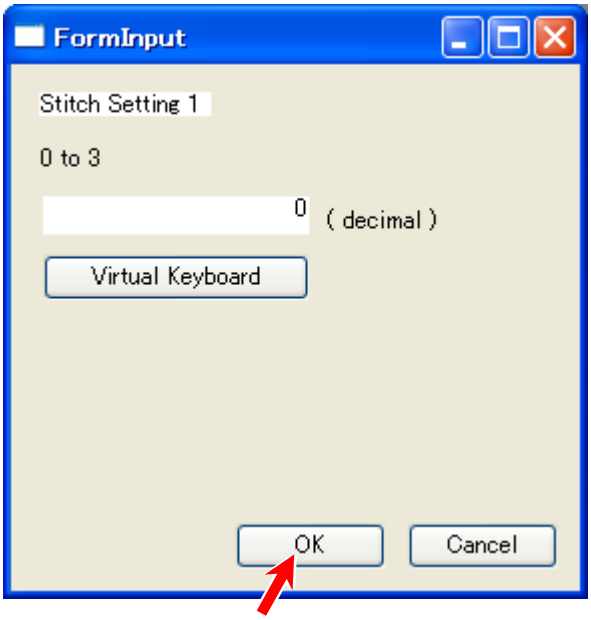


5. “Input” pad pops up. Directly type “0” with your keyboard.

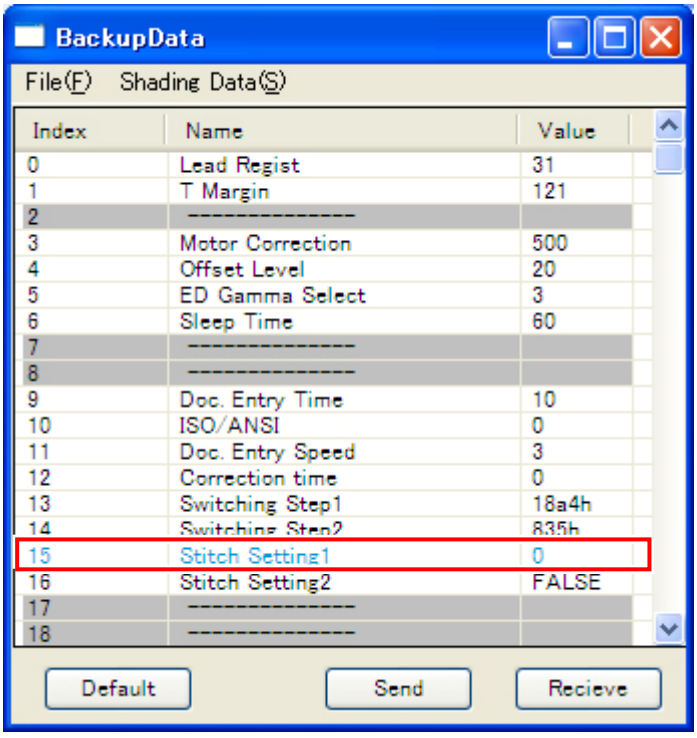
> **NOTE**
>
> Clicking the field displays a caret (flashing “ | ” cursor), but while the caret is flashing, a key entry with your keyboard device is **NOT** accepted.



6. Click [OK] on the bottom.



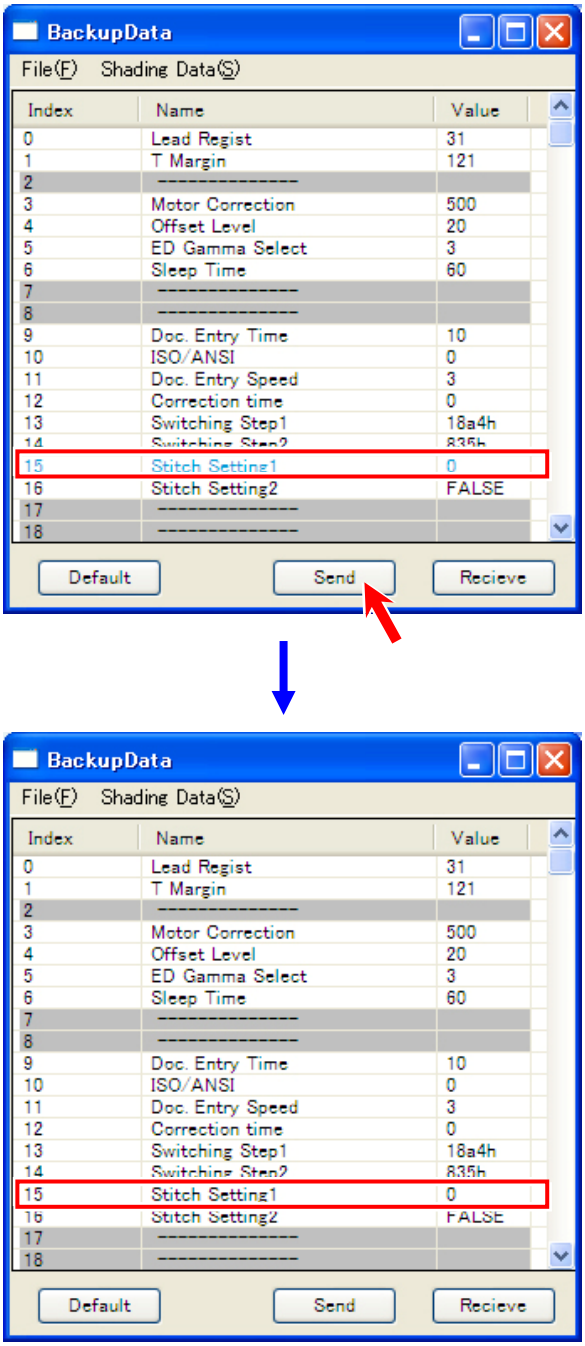
7. The setting change you have made is reflected to the list. It will turn blue.



NOTE

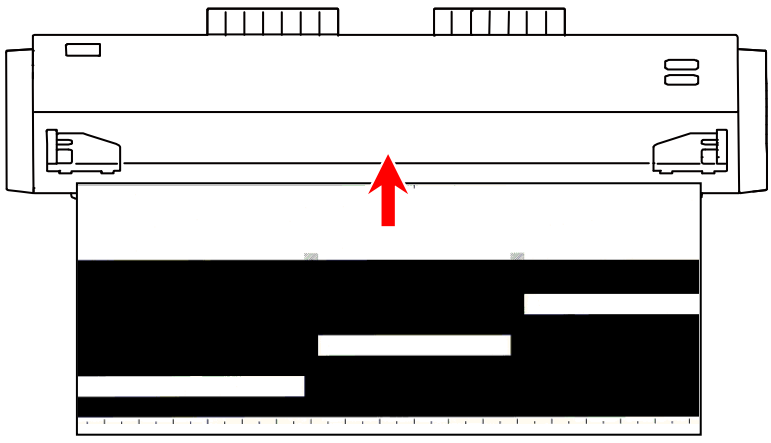
At this moment the new value has not yet become valid.

8. Click [Send] on the bottom. The setting change turns black.
   Now it is sent to the scanner's Main Board.

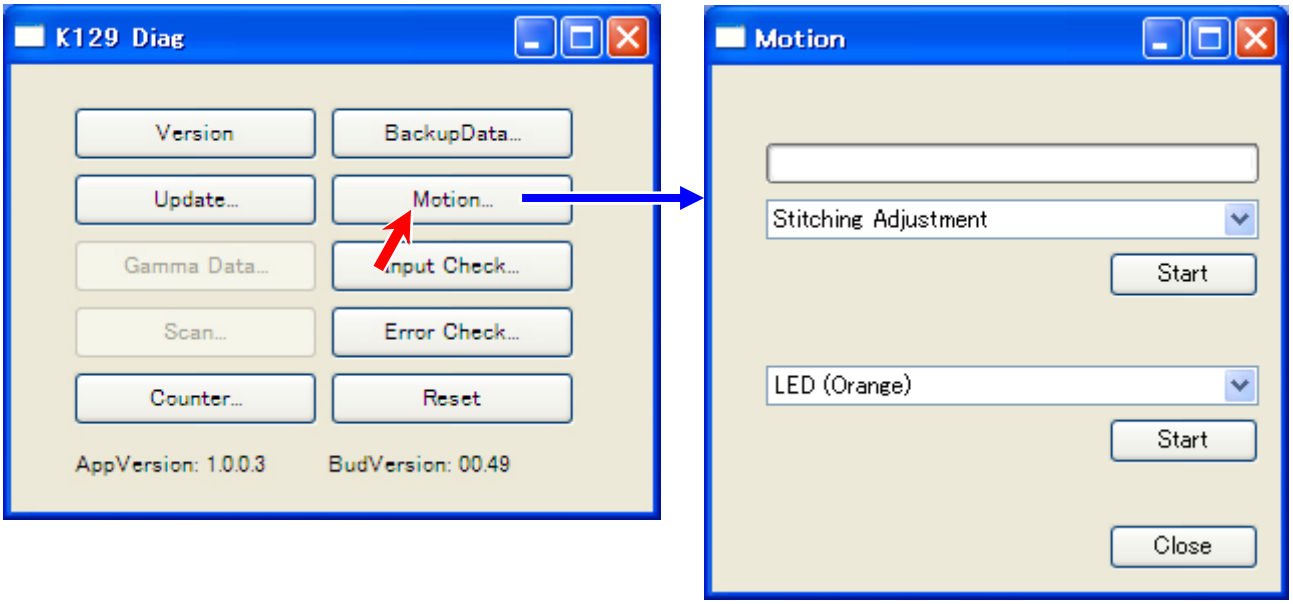


9. To close "BackupData" sub window, click the X button at the top right corner.

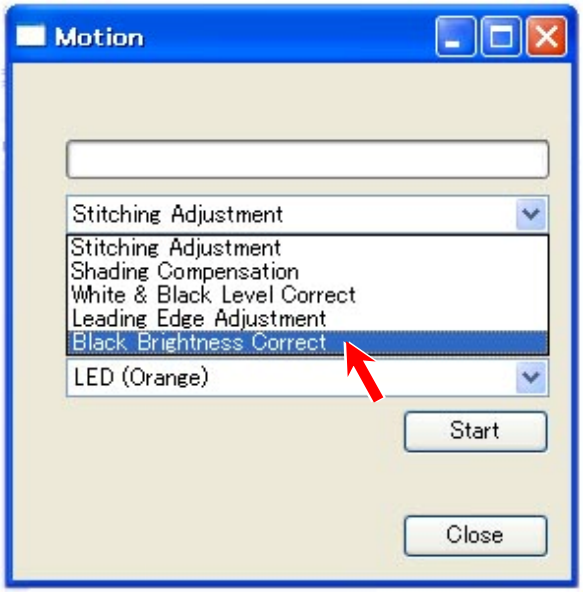
10. Set the Black Brightness Correction Chart to the scanner noting the arrow direction.



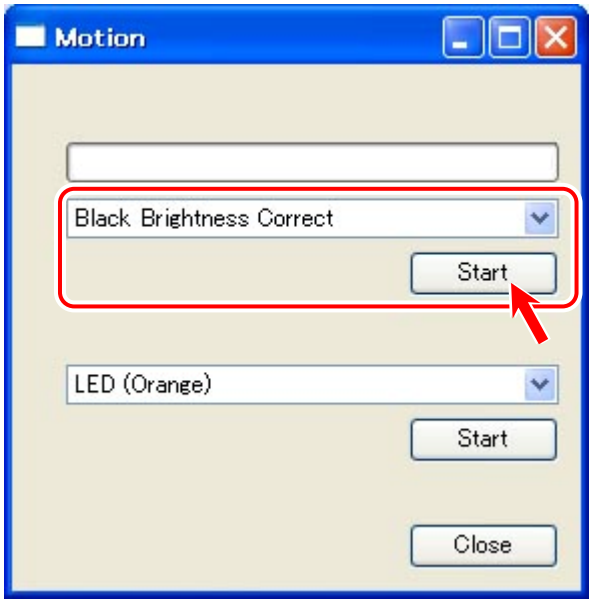
11. Click [Motion] to recall “Motion” sub window.



12. Select “Black Brightness Correct” in the upper drop-down menu.

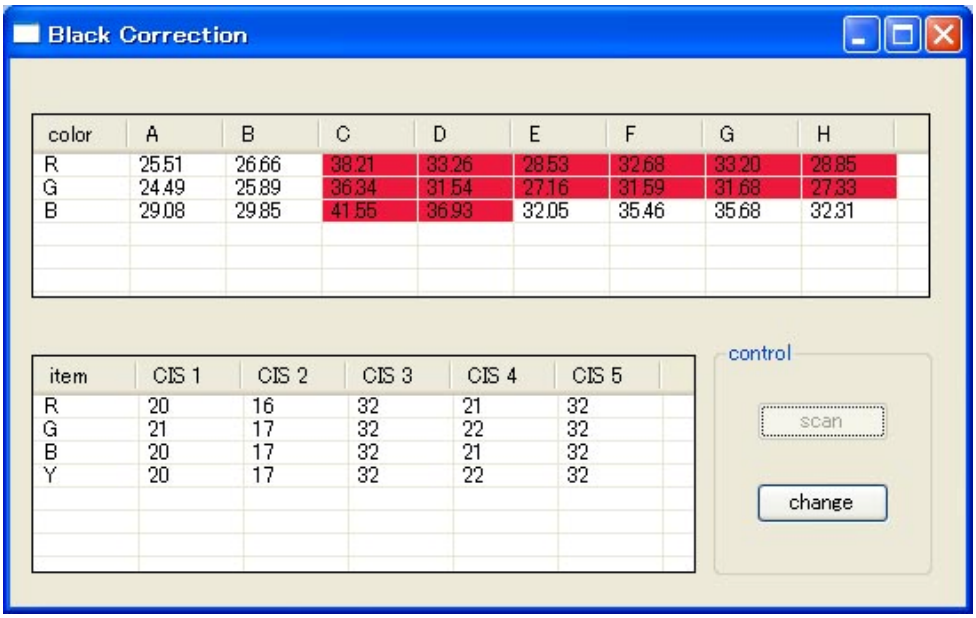


13. Click [Start] beside the upper drop-down menu.



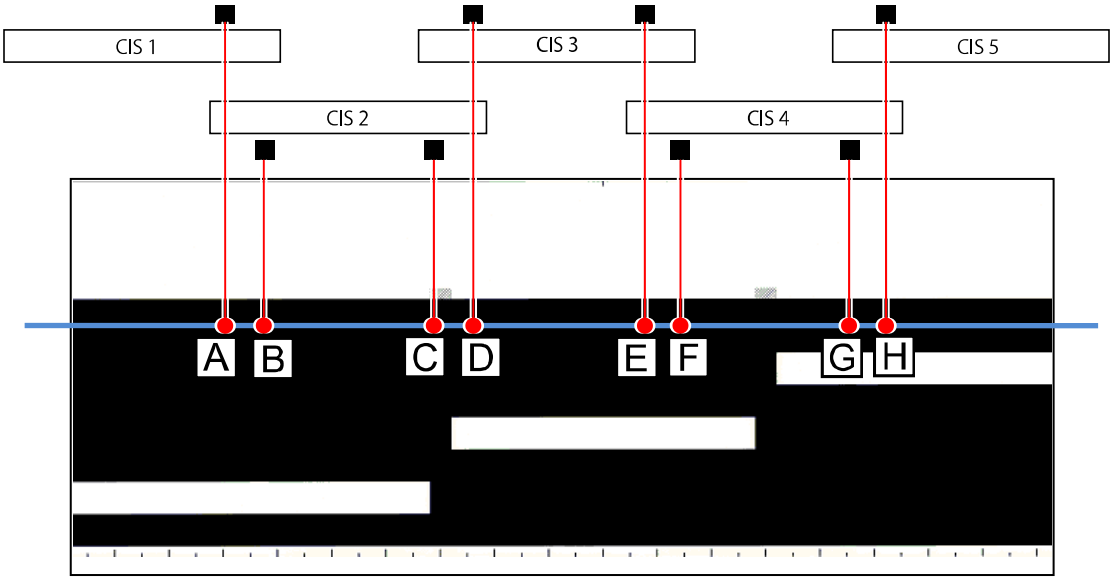
14. After the completion of the scan, “Black Correction” sub window appears.
    The upper table shows the measured density at the border areas of each CIS.
    At this time, if the values between the neighboring CIS reaches 4.00+, the concerning cell(s) will turn red.

    Follow the step 15 until the red cell disappears.
    When all the cells turn white, go to step 16.

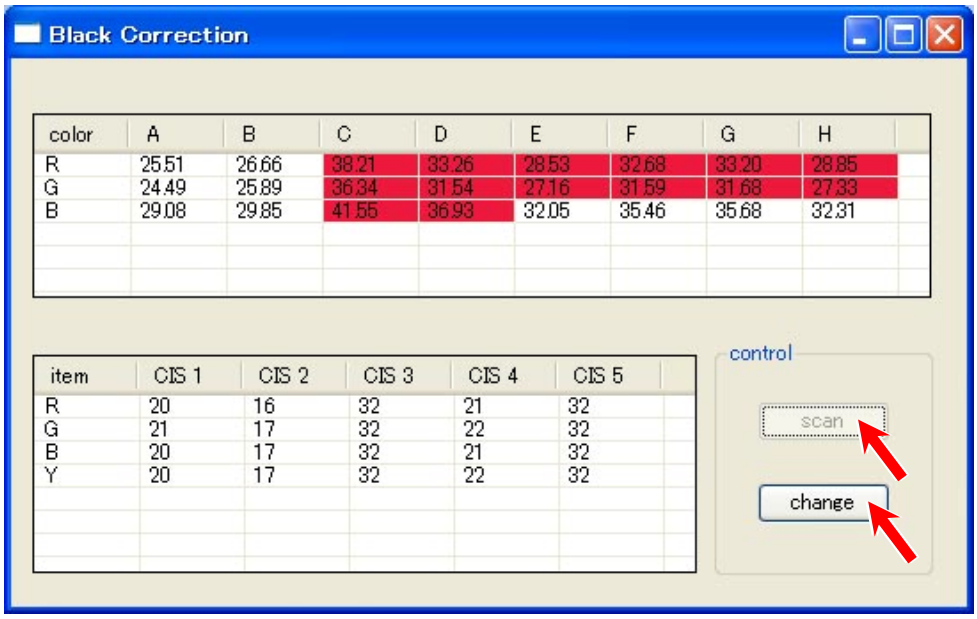


Reference

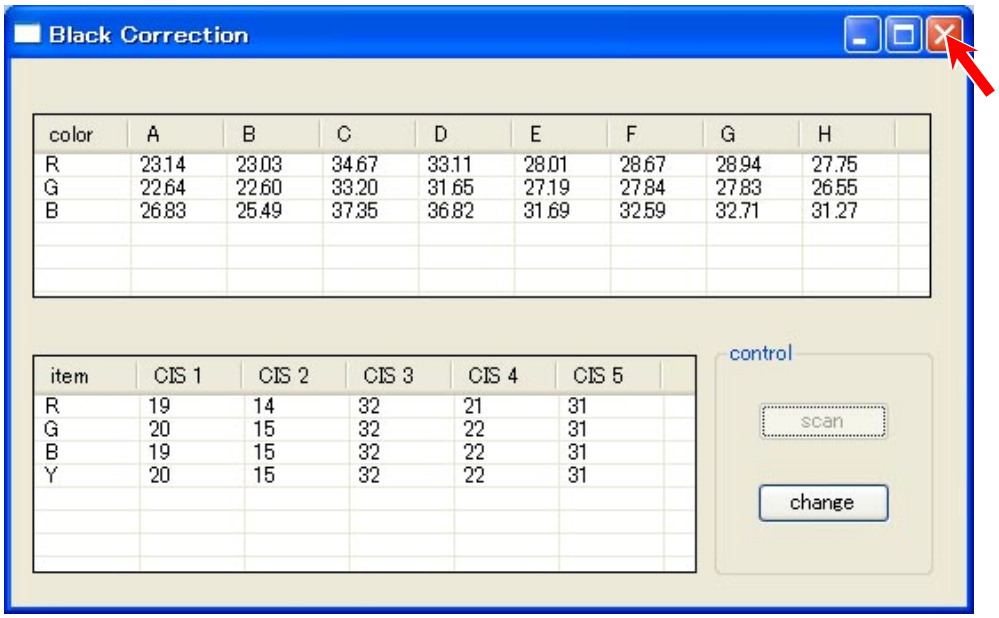
The columns A to H in the upper table correspond to the joint regions as follows.



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.

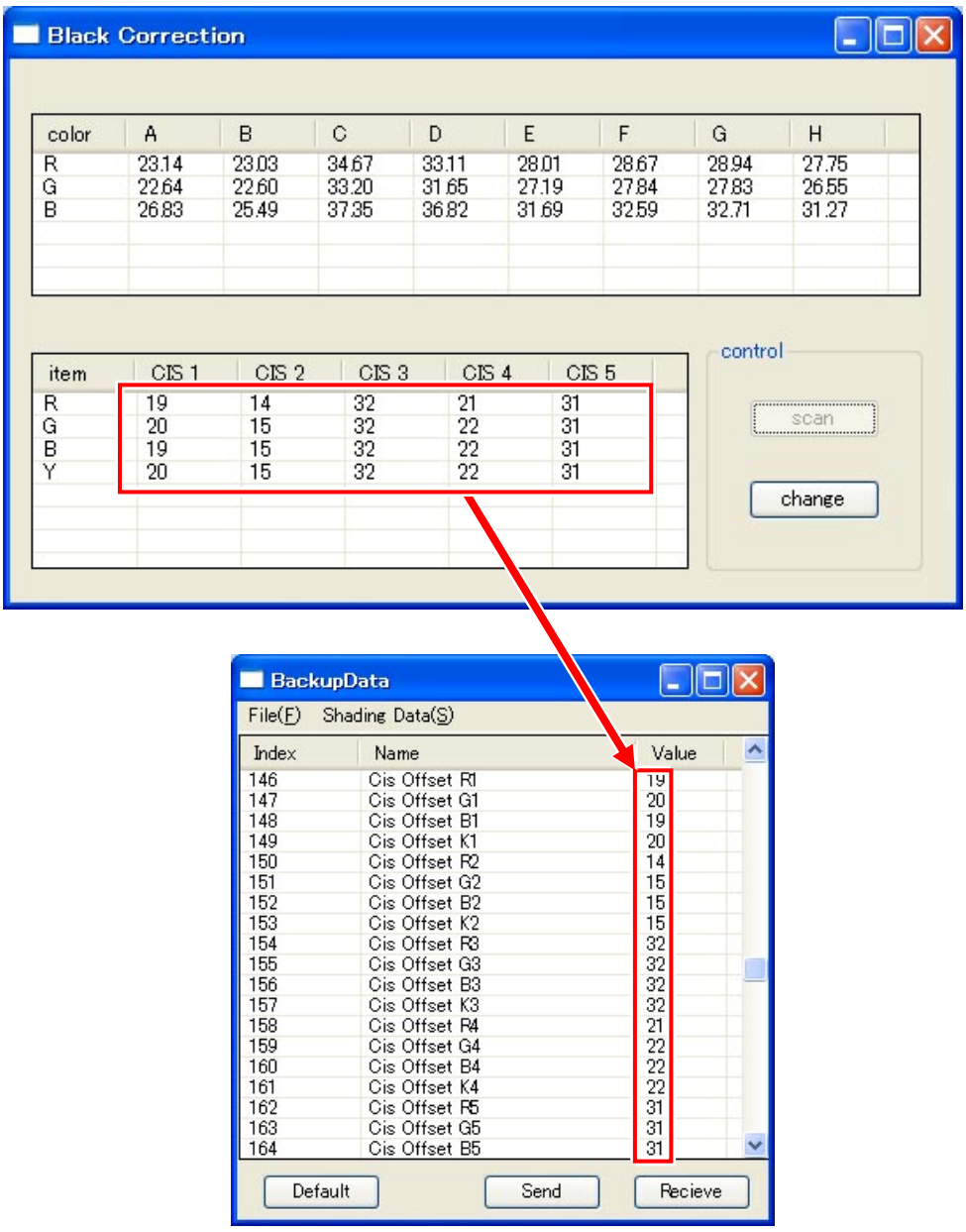


16. When all the cells turn white, click the X button at the top right corner to close “Black Correction” window.



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.

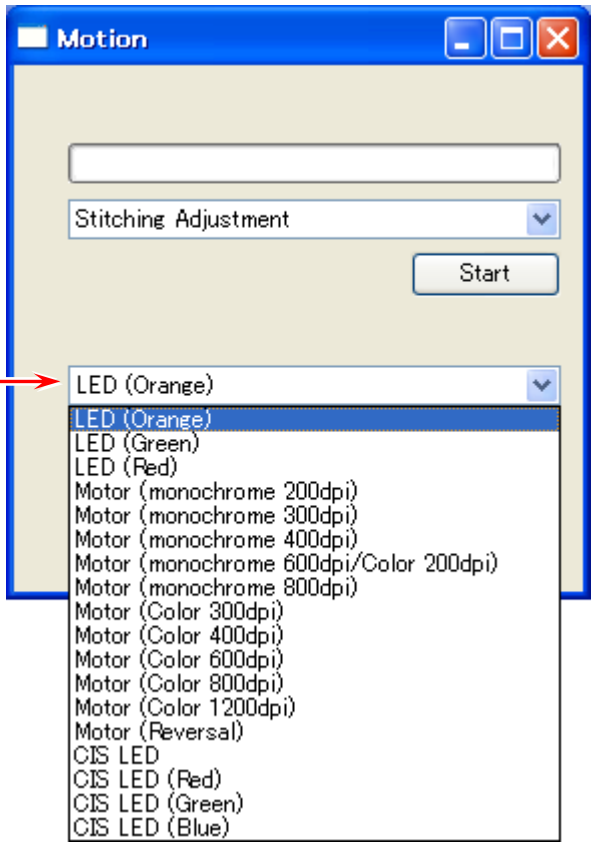
Index	Name	value
15	Stitch Setting1	**4**
271	Correction Block	**1**

18. Create a backup. See [8.22.4.2 Saving the Current Backup Data].

10. 6. 4 Other menu on Adjustment

Do not use the other options in the upper dropdown menu (for adjustment)

10. 6. 5 Operation Check

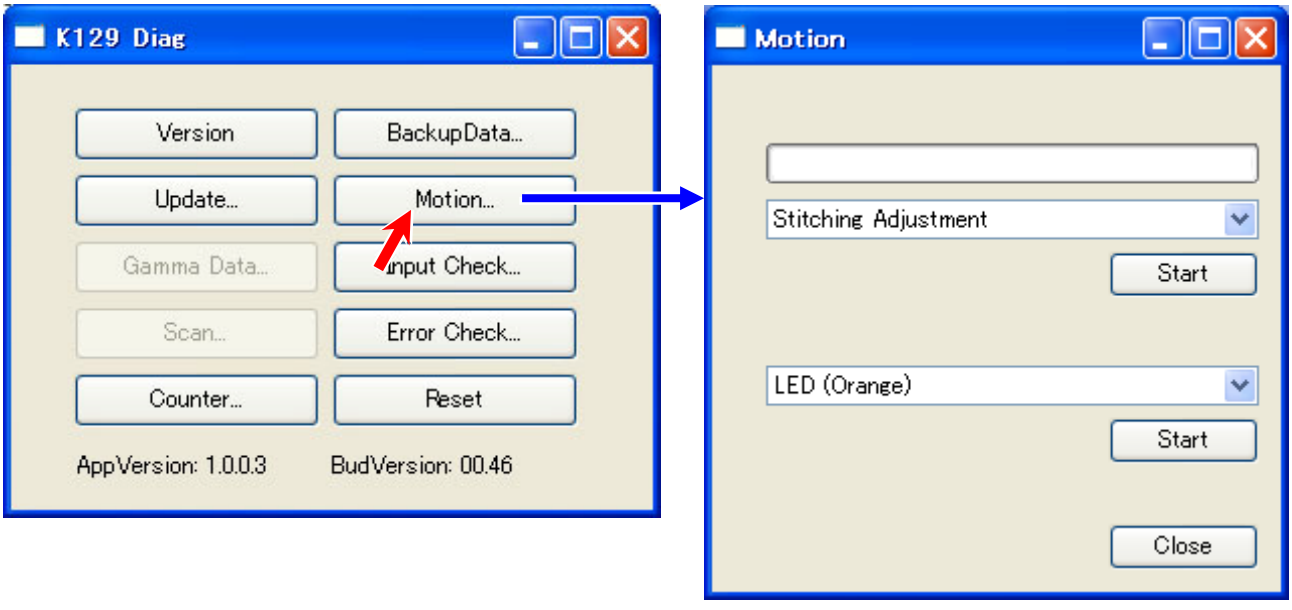


Lower: Operation Check menu

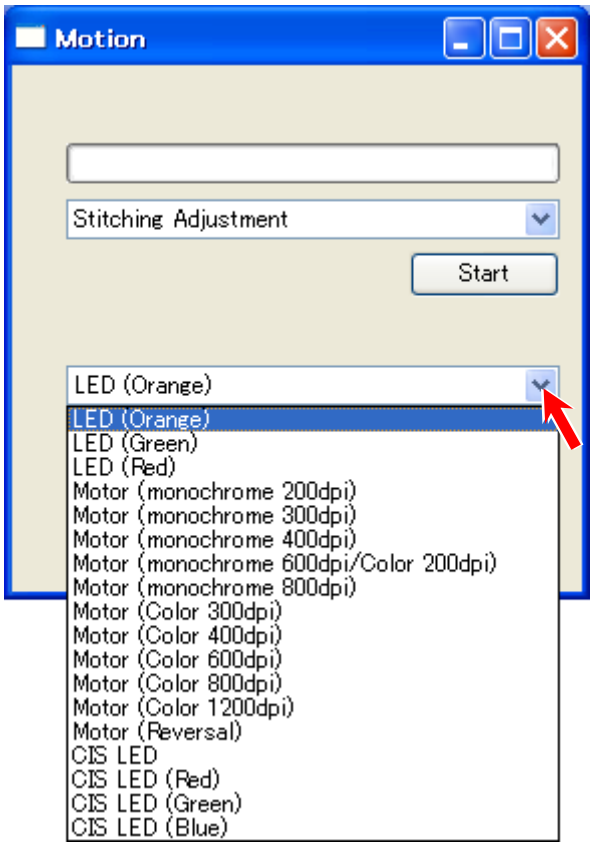
Operation Check menu:

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

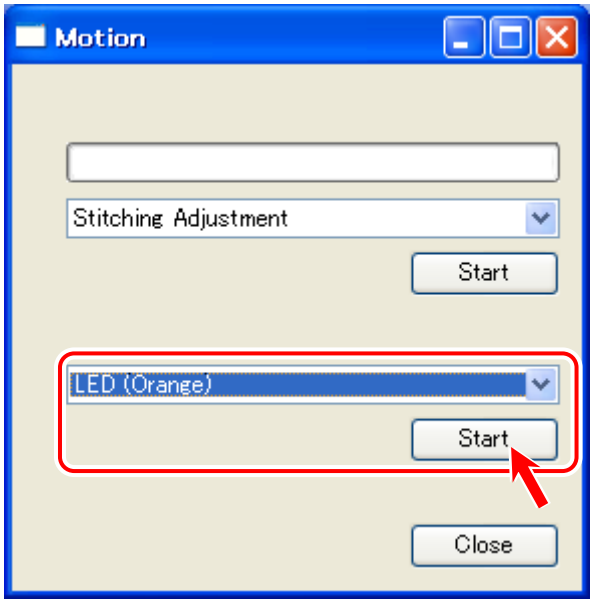
1. Click [Motion] to recall “Motion” sub window.



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.



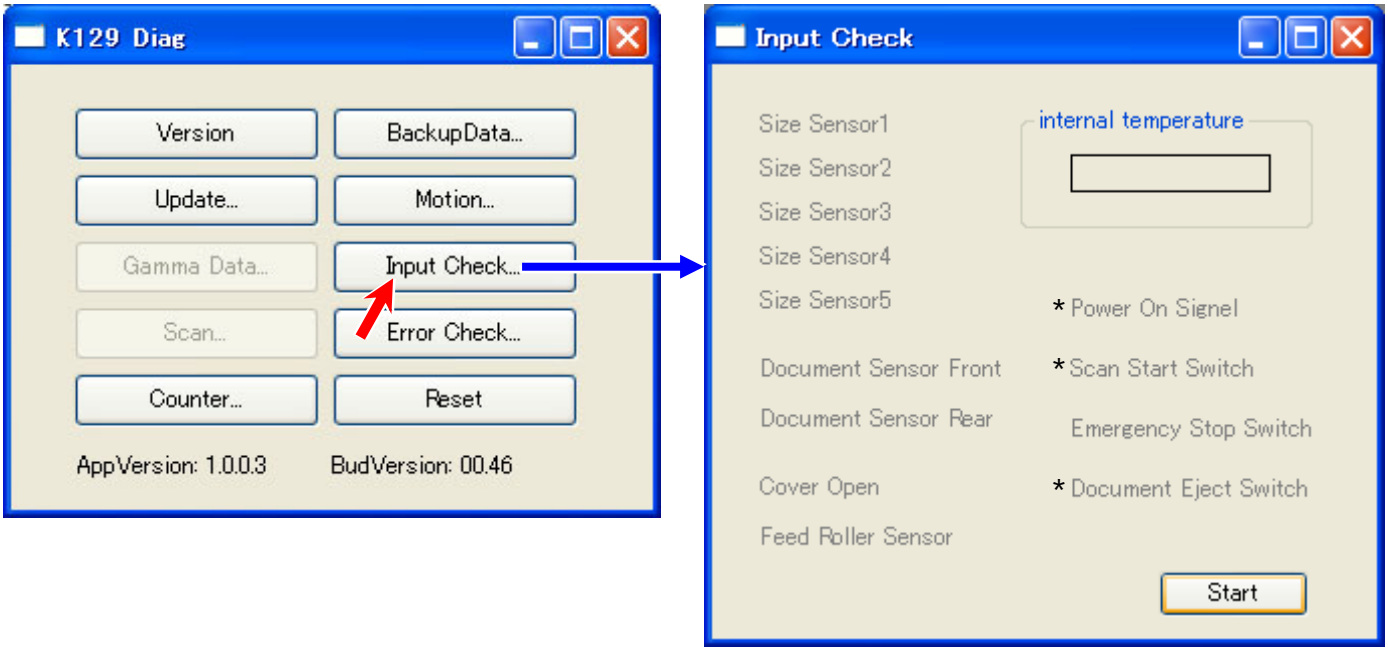
6. To close “Motion” sub window, click the X button at the upper-right corner.

10. 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.

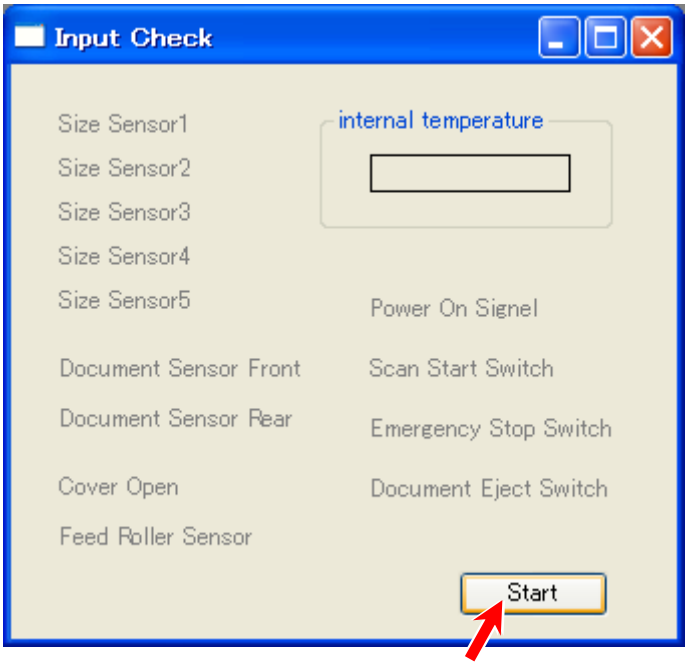
10. 7. 1 Getting Input Signal

1. Click [Input Check] to recall “Input Check” sub window.

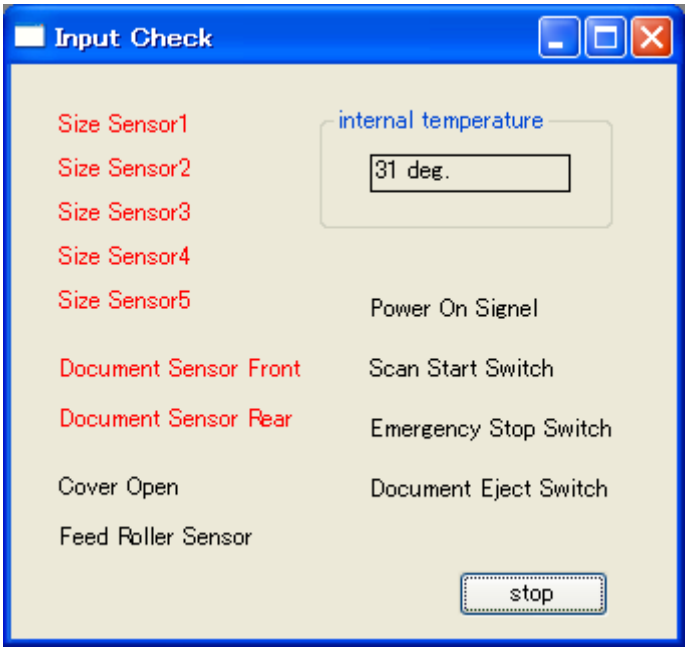


* Not available in KIP7100.

2. The names of the components are grayed at this time. Click [Start].

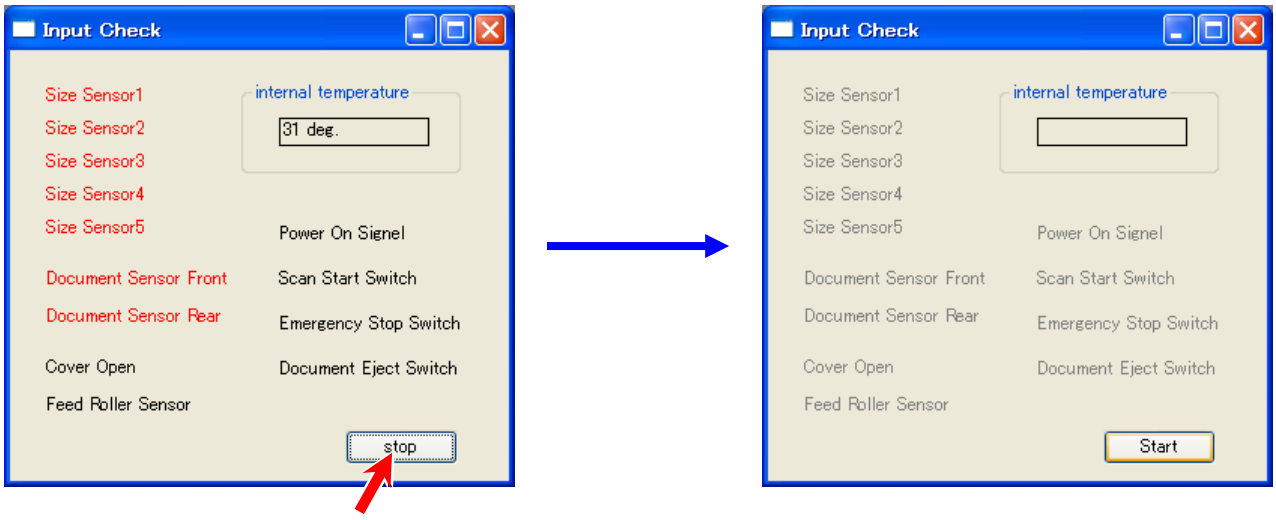


3. Now the names are active. When the status changes on a given component, the name will change the color.



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.

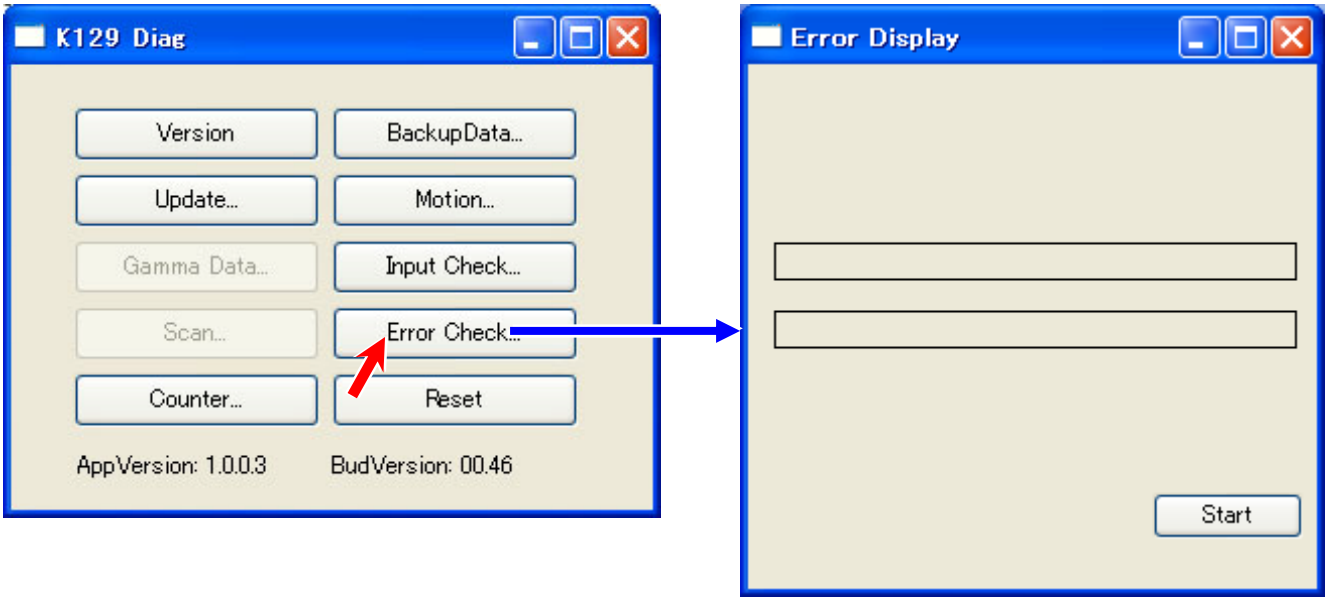
10. 7. 2 Signal List

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	

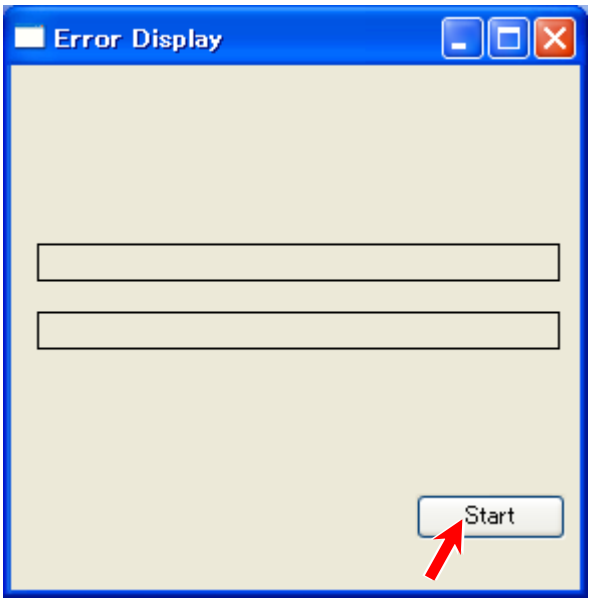
10. 8 Error Check

10. 8. 1 Getting Error Status

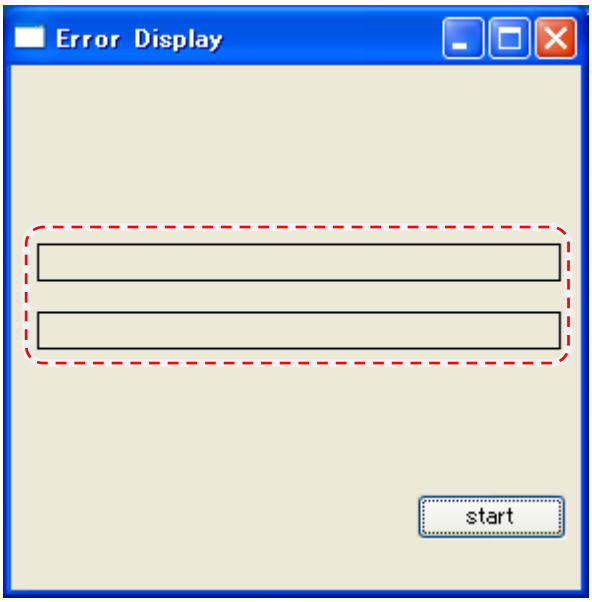
1. Click [Error Check] to recall “Error Check” sub window.



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.

10. 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.

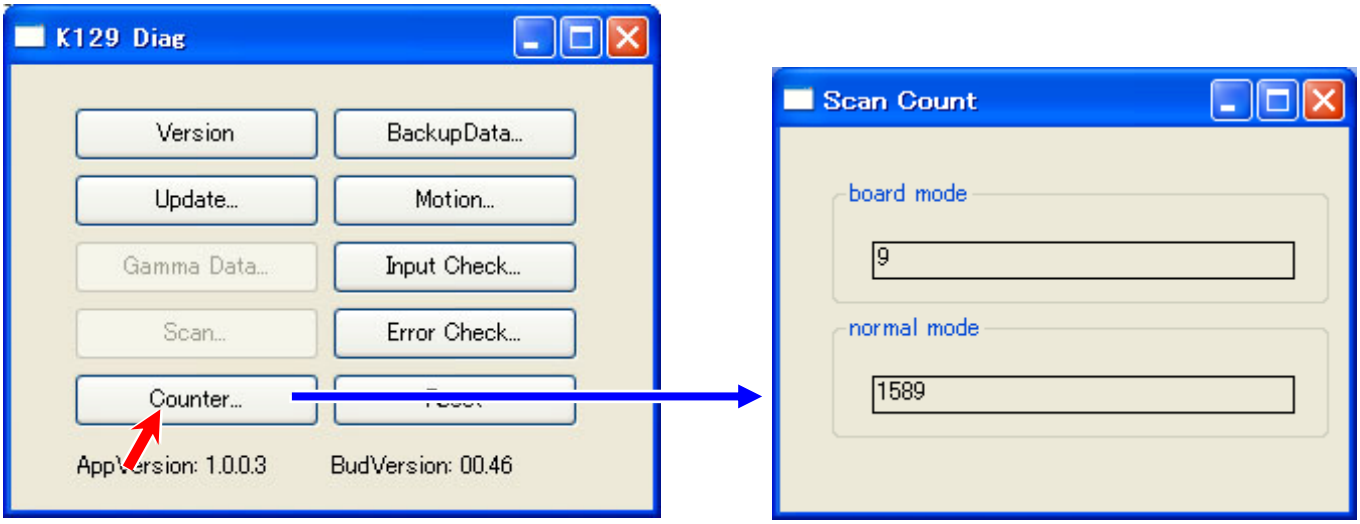
sequence error:

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.

10. 9 Counter

Pressing [Counter] recalls “Scan Count” sub window.

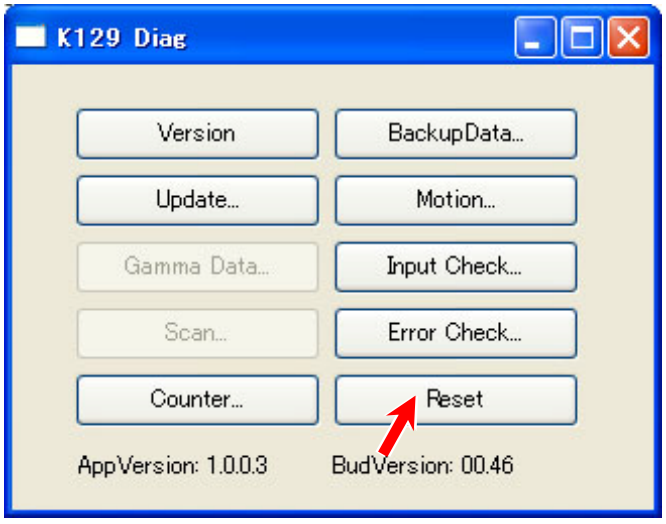


board	scan count for “slow mode” scans
normal	scan count for normal speed

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

10.10 Reset

Pressing [Reset] recalls a dialog. If you click [Yes], the communication will be re-established as another session.



Chapter 11

Appendix

860 2 ROLL MFP ONLY

PRIMARY

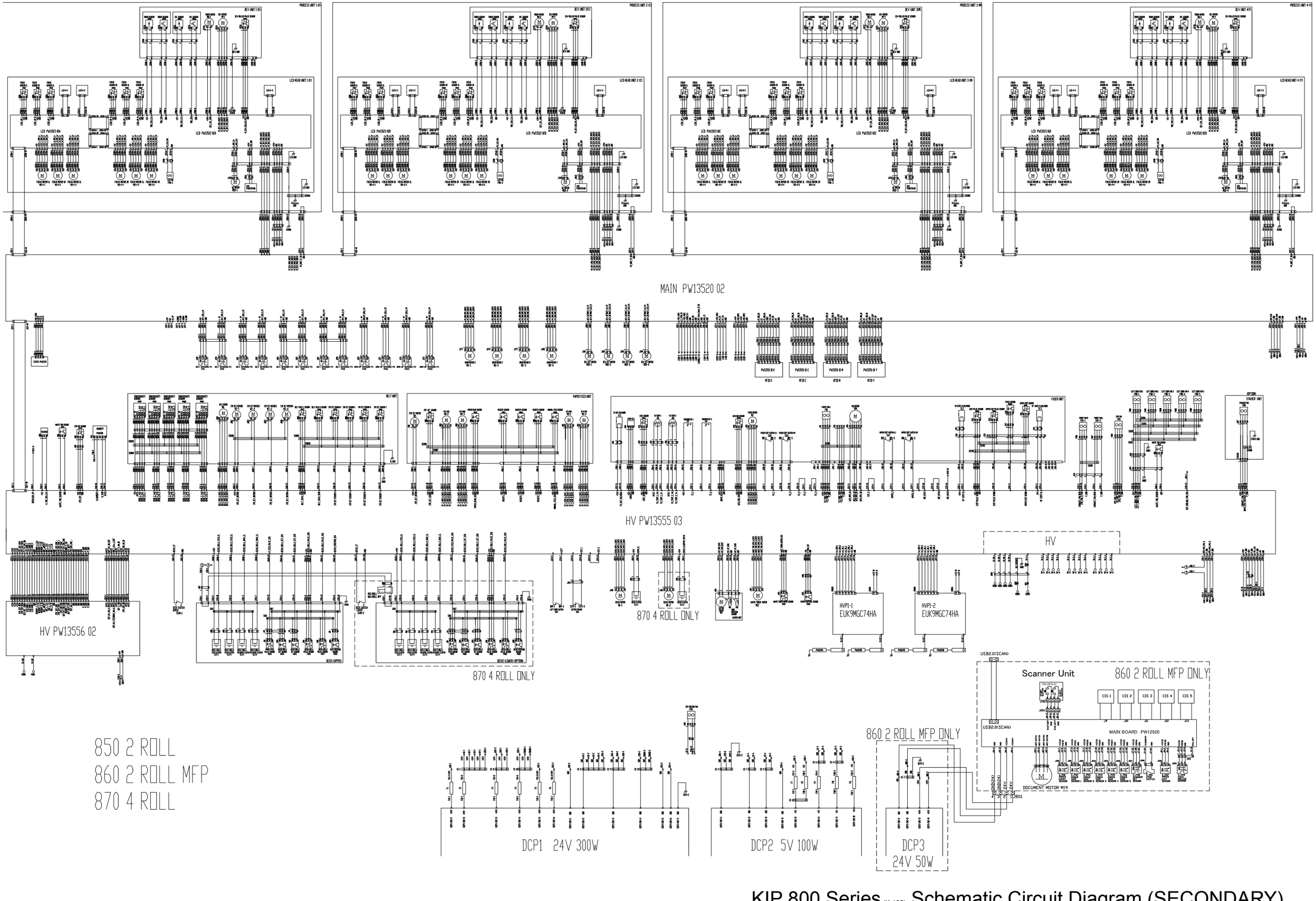
SECONDARY

AC_TERMINAL PW14210

MAIN PW13520 02

850 2 ROLL
860 2 ROLL MFP
870 4 ROLL

KIP 800 Series (K-135) Schematic Circuit Diagram (PRIMARY)



KIP 800 Series (K-135) Schematic Circuit Diagram (SECONDARY)