KYOCERA

TASKalfa 4820w

SERVICE MANUAL

Published in February 2014
845JZ15
5JZSM065
Rev. 5

CAUTION

RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

It may be illegal to dispose of this battery into the municipal waste stream. Check with your local solid waste officials for details in your area for proper disposal.

ATTENTION

IL Y A UN RISQUE D'EXPLOSION SI LA BATTERIE EST REMPLACEE PAR UN MODELE DE TYPE INCORRECT. METTRE AU REBUT LES BATTERIES UTILISEES SELON LES INSTRUCTIONS DONNEES.

Il peut être illégal de jeter les batteries dans des eaux d'égout municipales. Vérifiez avec les fonctionnaires municipaux de votre région pour les détails concernant des déchets solides et une mise au rebut appropriée.

Revision history

Revision	Date	Replaced pages	Remarks
1	June 6,2011	Chapter10	-
2	February 8,2012	1-3 Power consumption(Maximum) 1,440W→1,500W (US model) Acoustic noise Idling Max. 60db→50db Printing Max. 65db→57db	-
3	September 7,2012	Add Description for the new scanner 1. 2. 3 Scanner part 1. 3. 1 Original Standards 1. 5 Specifications for Scan Original 2. 2. 2 Unpacking (for New Scanner) 2. 2. 3 Confirmation of Accessories 2. 8 Stitching Adjustment (For New Scanner) 2. 8. 1 Launching K129 Diag 2. 8. 2 Stitching Adjustment 2. 8. 3 Creating Backup Data 3. 2. 2 Data flow in scan and copy (for New Scanner) 3. 2. 3 Positioning process of Image Block 4. 2. 12 Scanner Unit (New Scanner) 5. 13 Scanner Unit (New Scanner) 6. 4 Service Tool List 7. 5 Internal Counter Error 8. 14 K129 Diag (For New Scanner) 9. 3 Overall Diagram (for New Scanner)	-
4	January 22,2013	Add Description for the replacement of the scanner PWB 8. 13. 5 Updating Scanner Firmware 8. 13. 6 Registering S/N to Scanner Main Board 8. 13. 7 Scanner Assembly Sleep 8. 14.11 Serial Manager Change of the chapter setting 8. 14. 6 Motion 8. 14. 6. 1 Shading 8. 14. 6. 2 Stitching 8. 14. 6. 3 Black Brightness Correct 8. 14. 6. 5 Operation Check	-
5	February 12,2014	Add Description for setting the Shading Sheet page 2-31, 2-39, 8-203, 8-266, 8-274, 8-281	-

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Safety precautions

This booklet provides safety warnings and precautions for our service personnel to ensure the safety of their customers, their machines as well as themselves during maintenance activities. Service personnel are advised to read this booklet carefully to familiarize themselves with the warnings and precautions described here before engaging in maintenance activities.

Safety warnings and precautions

Various symbols are used to protect our service personnel and customers from physical danger and to prevent damage to their property. These symbols are described below:

⚠**DANGER:** High risk of serious bodily injury or death may result from insufficient attention to or incorrect compliance with warning messages using this symbol.

⚠**WARNING:** Serious bodily injury or death may result from insufficient attention to or incorrect compliance with warning messages using this symbol.

⚠**CAUTION:** Bodily injury or damage to property may result from insufficient attention to or incorrect compliance with warning messages using this symbol.

Symbols

The triangle (△) symbol indicates a warning including danger and caution. The specific point of attention is shown inside the symbol.

 General warning.  Warning of risk of electric shock.

 Warning of high temperature.

⃠ indicates a prohibited action. The specific prohibition is shown inside the symbol.

 General prohibited action.  Disassembly prohibited.

● indicates that action is required. The specific action required is shown inside the symbol.

 General action required.  Remove the power plug from the wall outlet.

 Always ground the copier.

1. Installation Precautions

WARNING

- Do not use a power supply with a voltage other than that specified. Avoid multiple connections to one outlet: they may cause fire or electric shock. When using an extension cable, always check that it is adequate for the rated current. .....
- Connect the ground wire to a suitable grounding point. Not grounding the copier may cause fire or electric shock. Connecting the earth wire to an object not approved for the purpose may cause explosion or electric shock. Never connect the ground cable to any of the following: gas pipes, lightning rods, ground cables for telephone lines and water pipes or faucets not approved by the proper authorities. .....

CAUTION:

- Do not place the copier on an infirm or angled surface: the copier may tip over, causing injury. .....
- Do not install the copier in a humid or dusty place. This may cause fire or electric shock. .....
- Do not install the copier near a radiator, heater, other heat source or near flammable material. This may cause fire. .....
- Allow sufficient space around the copier to allow the ventilation grills to keep the machine as cool as possible. Insufficient ventilation may cause heat buildup and poor copying performance. .....
- Always handle the machine by the correct locations when moving it. .....
- Always use anti-toppling and locking devices on copiers so equipped. Failure to do this may cause the copier to move unexpectedly or topple, leading to injury. .....
- Avoid inhaling toner or developer excessively. Protect the eyes. If toner or developer is accidentally ingested, drink a lot of water to dilute it in the stomach and obtain medical attention immediately. If it gets into the eyes, rinse immediately with copious amounts of water and obtain medical attention. .....
- Advice customers that they must always follow the safety warnings and precautions in the copier's instruction handbook. .....

2. Precautions for Maintenance

WARNING

- Always remove the power plug from the wall outlet before starting machine disassembly. .....
- Always follow the procedures for maintenance described in the service manual and other related brochures. .....
- Under no circumstances attempt to bypass or disable safety features including safety mechanisms and protective circuits. .....
- Always use parts having the correct specifications. .....
- Always use the thermostat or thermal fuse specified in the service manual or other related brochure when replacing them. Using a piece of wire, for example, could lead to fire or other serious accident. .....
- When the service manual or other serious brochure specifies a distance or gap for installation of a part, always use the correct scale and measure carefully. .....
- Always check that the copier is correctly connected to an outlet with a ground connection. .....
- Check that the power cable covering is free of damage. Check that the power plug is dust-free. If it is dirty, clean it to remove the risk of fire or electric shock. .....
- Never attempt to disassemble the optical unit in machines using lasers. Leaking laser light may damage eyesight. .....
- Handle the charger sections with care. They are charged to high potentials and may cause electric shock if handled improperly. .....

CAUTION

- Wear safe clothing. If wearing loose clothing or accessories such as ties, make sure they are safely secured so they will not be caught in rotating sections. .....
- Use utmost caution when working on a powered machine. Keep away from chains and belts. .....
- Handle the fixing section with care to avoid burns as it can be extremely hot. .....
- Check that the fixing unit thermistor, heat and press rollers are clean. Dirt on them can cause abnormally high temperatures. .....

- Do not remove the ozone filter, if any, from the copier except for routine replacement. .....
- Do not pull on the AC power cord or connector wires on high-voltage components when removing them; always hold the plug itself. .....
- Do not route the power cable where it may be stood on or trapped. If necessary, protect it with a cable cover or other appropriate item. .....
- Treat the ends of the wire carefully when installing a new charger wire to avoid electric leaks. .....
- Remove toner completely from electronic components. .....
- Run wire harnesses carefully so that wires will not be trapped or damaged. .....
- After maintenance, always check that all the parts, screws, connectors and wires that were removed, have been refitted correctly. Special attention should be paid to any forgotten connector, trapped wire and missing screws. .....
- Check that all the caution labels that should be present on the machine according to the instruction handbook are clean and not peeling. Replace with new ones if necessary. .....
- Handle greases and solvents with care by following the instructions below: .....
  · Use only a small amount of solvent at a time, being careful not to spill. Wipe spills off completely.
  · Ventilate the room well while using grease or solvents.
  · Allow applied solvents to evaporate completely before refitting the covers or turning the power switch on.
  · Always wash hands afterwards.
- Never dispose of toner or toner bottles in fire. Toner may cause sparks when exposed directly to fire in a furnace, etc. .....
- Should smoke be seen coming from the copier, remove the power plug from the wall outlet immediately. .....

3. Miscellaneous

WARNING

- Never attempt to heat the drum or expose it to any organic solvents such as alcohol, other than the specified refiner; it may generate toxic gas. .....
- Keep the machine away from flammable liquids, gases, and aerosols. A fire or an electric shock might occur. .....

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This service manual includes the basic information about TASKalfa 4820w Multi-Function Printer, which is required when you during field service to maintain the product's quality and reliability.

Some of the information included in this manual may be changed by product upgrades. Such information will be informed to you through Technical Bulletins etc.

Chapter 1

Introduction

1. 1 Features

(1) TASKalfa 4820w is a single footprint Multi-Function Printer which can copy, scan and print. Advanced drivers and comprehensive print utilities make TASKalfa 4820w an advanced, easy to use system. (some functions may be optional)

(2) HDP(High Definition Print) technology generates no waste toner.

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

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

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

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

(7) 2-way print ejection (top / rear) suits the preference of the user’s print handling.

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

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

(10) User-friendly touch screen control panel with tilt / swivel

1. 2 Specifications

1. 2. 1 General

Subject	Specification
Configuration	Console
Power consumption (Maximum)	1,500W (US model) 1,680W (EU / Asia model) (scanner / controller included)
Power consumption (Low power mode)	30W or less
Acoustic noise	Idling ..... Max. 50db Printing ..... Max. 57db (impulse sound excluded) EN ISO 7779
Ozone	Max. 0.05ppm (Measurement method under UL Standard)
Dimensions	1346mm (Width) x 704mm (Depth) x 1105mm (Height) (UI, Tray excluded)
Weight	About 244kg (538lb)
Environmental condition for usage	(Temperature) 10 to 32 degrees Centigrade / 50 to 89.6 F (Humidity) 15 to 85% RH
Interface	Network Interface (10 BASE-T / 100 BASE-TX / 1000 BASE-T)
Rating Input Power	In the US : 120V plus/minus 10%, 50/60Hz, 12A In Europe : 220-240V plus 6% or minus 10%, 50/60Hz, 7A

NOTE

The above specifications are subject to change without notice.

1. 2. 2. Printer part

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

Minimum ..... 210mm / 8.5”

NOTE
If the print is longer than 6,000mm, its image quality or the reliability of paper feeding is not guaranteed.</td></tr>
<tr><td>Print size
(Paper Tray, option)</td><td>ISO (mm)

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

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

Subject	Specification
Media source	2 Roll Decks Manual Feeder (single cut sheet) Paper Tray (multiple cut sheet, option)
Media	(Recommended Media) US model: Bond 64g/m^2 to 80g/m^2, US Bond (PB-20) Vellum US Vellum (XV-20) Film 4MIL (PF-4DDME) Europe/Asia model: Plain Paper 64g/m^2 to 80g/m^2, Oce Red Label (75g/m^2) Tracing Paper Oce Transparent Paper (80g/m^2) Film Oce 3.5MIL
Storage of consumables	(Toner cartridge) Store the cartridge within the temperature range from 0 to 35 degrees Centigrade and within the humidity range from 35 to 85% RH.

NOTE

The above specifications are subject to change without notice.

1. 2. 3 Scanner part

Subject	Specification
Scanning method	Contact Image Sensor (CIS) (5 pieces of A4 sized CIS)
Light source	LED (R/G/B)
Setting of original	Face up
Starting point of scan	Center
Scan width	Max: 914.4mm Min : 210mm
Scan length	Max: 6,000mm (Including the margin area) Min : 210mm (Including the margin area)
Margin area	3mm from leading, trailing and both side edges
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 (for Old Scanner)** If the original is thicker than 0.6mm, its image quality is not guaranteed. **NOTE (for New Scanner)** Image quality for an original with 0.25mm or thicker is guaranteed only in a standard size even the scanner physically accepts it.
Scanning speed	65 mm per second (mono, 600dpi)

NOTE

The above specifications are subject to change without notice.

1. 3 Specifications for Originals

1. 3. 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 25,000mm
(3) The thickness of original must range from 0.05mm to 0.65mm. (Old Scanner)
(3) The thickness of original must range from 0.05mm to 0.25mm. (New Scanner)
(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. 3. 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. 3. 3 “Do Not Scan” Originals

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

(1) Metal originals (The Scan Glass may damage)
(2) Slippery originals which is difficult to transport
(3) Irregularly shaped originals (Not square in shape)
(4) Extremely curled originals (Diameter of curl is less than 50mm)
(5) Extremely creased originals
(6) Torn originals

1. 4 Appearance

1. 4. 1 Front

No.	Name	Function
1	Main Switch	You can turn on/off the TASKalfa 4820w.
2	Original Guides	Feed the original under the Scanner Unit along the Original Guides.
3	User Interface	This is a Touch Screen, and many kinds of user operation are available. **PLEASE DO NOT** push the LCD area too strong.
4	Emergent Stop Button	Press this button when you would like to stop copying or scanning emergently.
5	Scanner Unit	Read the original with this unit when you make scan or copy.
6	Toner Hatch (Original Table)	Open the Toner Hatch when you replace the Toner Cartridge. Also put the original here and then feed it into the Scanner Unit when you make scan or copy.
7	Engine Unit Open Lever	Pull up these levers when you open the Engine Unit.
8	Bypass Feeder	Feed a cut sheet paper from the Bypass Feeder.
9	Roll Deck	Roll media can be loaded here.
10	Print Tray	These trays catch ejected prints.
11	Stylus	Use this to press buttons on the touch screen. **PLEASE DO NOT** use any other pointed object to tap on the UI.
12	USB Port	Your USB flash memory storage can be installed here. 5VDC max.

1. 4. 2 Rear

No.	Name	Function
1	Exit Cover	Open the Exit Cover when you remove the paper misfed inside the Fuser Unit.
2	LAN Port	Connect the LAN Cable to connect the TASKalfa 4820w to the network. (Do not connect a telephone line)
3	Dehumidify Heater Switch (Optional in the US)	Turn on the Dehumidify Heater with this switch when you would like to dry the paper in the humid season.
4	Breaker	It is possible to shut off supplying the AC power.
5	Inlet Socket	Connect the Power Cord here.
6	COM Port (Optional)	For an optional device (D-Sub Connector 9 pins: 12VDC max.)
7	USB Port	For an optional device Service Use. 5VDC max.

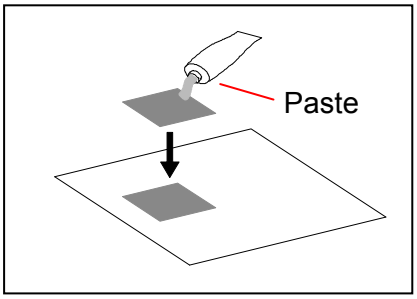
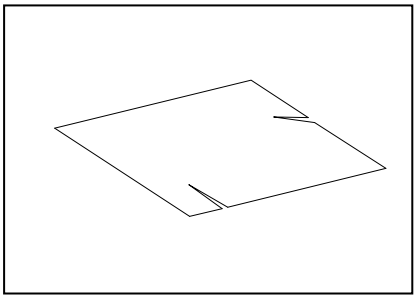
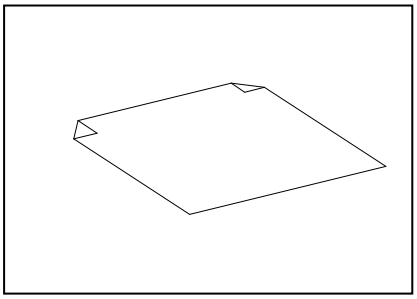
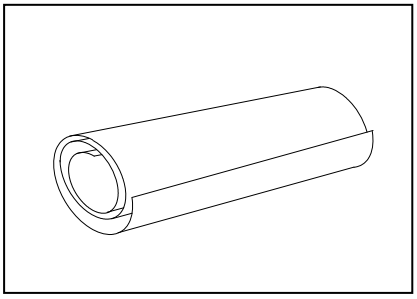
1. 5 Specifications for Scan Original

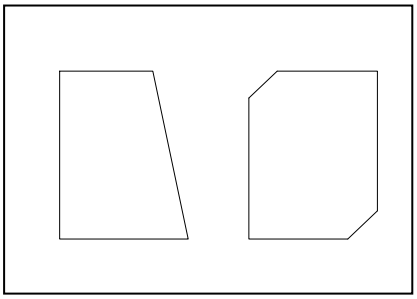
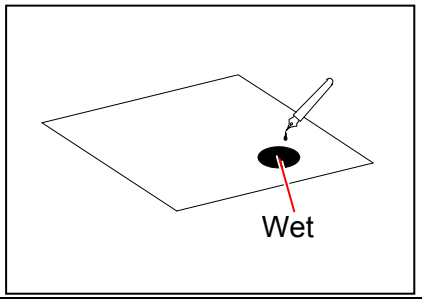
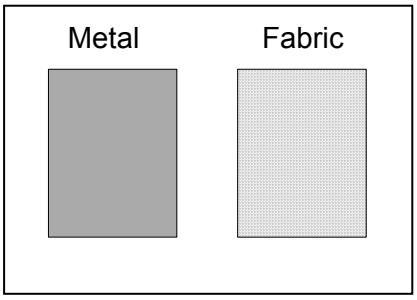
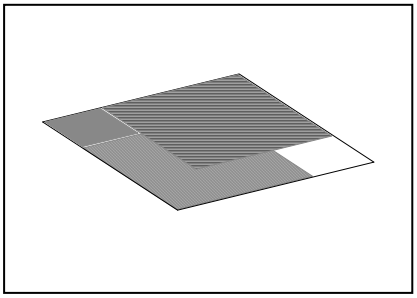
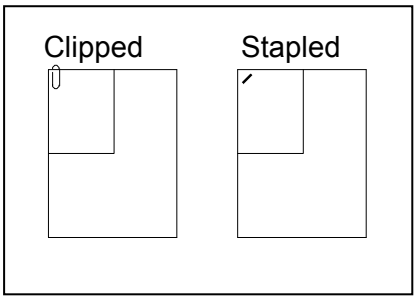
A scan original must satisfy the following specifications.

Thickness (Old Scanner)	0.05mm to 0.6mm *1
Thickness (New Scanner)	0.05mm to 0.25mm *2
Width	210mm to 914.4mm
Length	210mm to 6,000mm

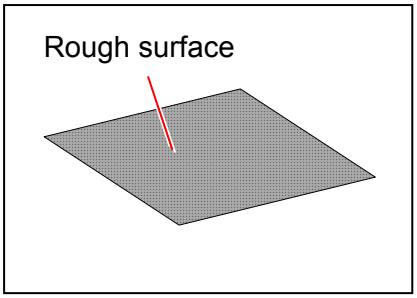
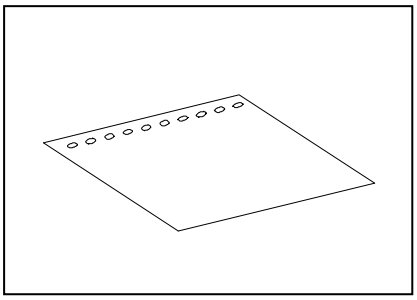
*1 : If an original is thicker than 0.6mm, its image quality is not guaranteed even it is transported.
*2. Image quality for an original with 0.25mm or thicker is guaranteed only in a standard size even the scanner physically accepts it.
*3. Image quality for an original over 6,000mm in length is not guaranteed.

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	
Patched	
Clipped or stapled	

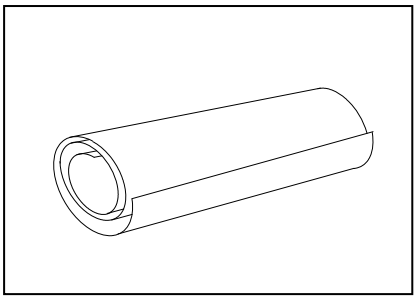
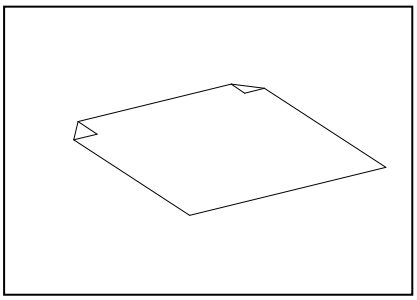
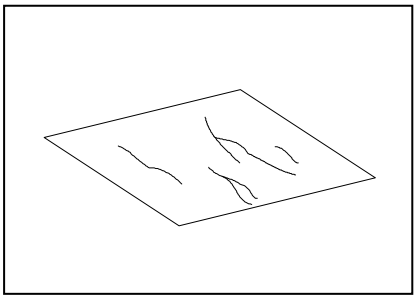
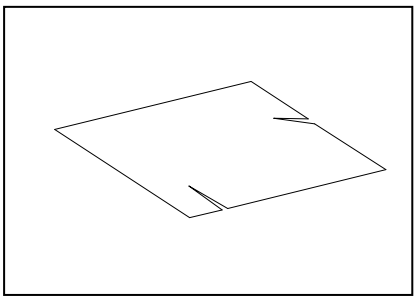
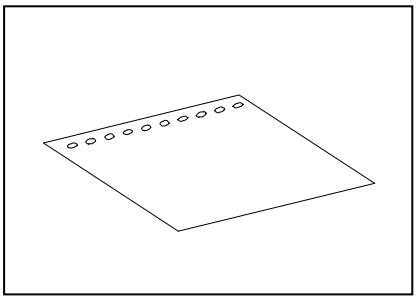
The following kinds of originals can be read with using a carrier sheet.
Image quality or the reliability of paper feeding for them is not guaranteed.

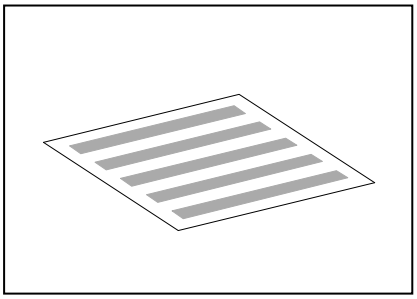
Rough surface (Carbon paper for example)	
Punched	

1. 6 Specifications for Printing Media

1. 6. 1 Papers not available to use

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

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

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

⚠ CAUTION

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

⚠ NOTE

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

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

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

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

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

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

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

1. 6. 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. 6. 3 Treatment against environmental condition

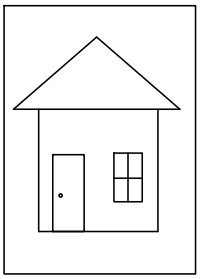
Humidity(%)	Possible problem	Necessary treatment
Low ↑	"Void of image", "crease of paper" and other problems occurs when you print with plain paper and tracing paper.	1. Install the humidifier in the room, and humidify the room air. 2. Remove the paper from the machine right after the completion of print,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

NOTE

(1) TASKalfa 4820w is equipped with the Dehumidify Heater (option.)
Using it in high humidity environment (65% or higher) is recommended.

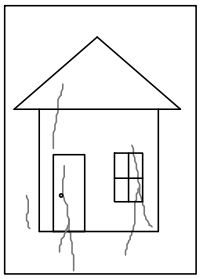
(2) "Void of image" and "crease of paper" will occur in case of extremely high or low humidity.

Normal Print



If the media is humidified; →

Crease of paper



Normal Print

If the media is humidified; →

Void of image

Chapter 2

Installation

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

2. 1 Installation Requirements

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

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

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

Site Environmental Conditions

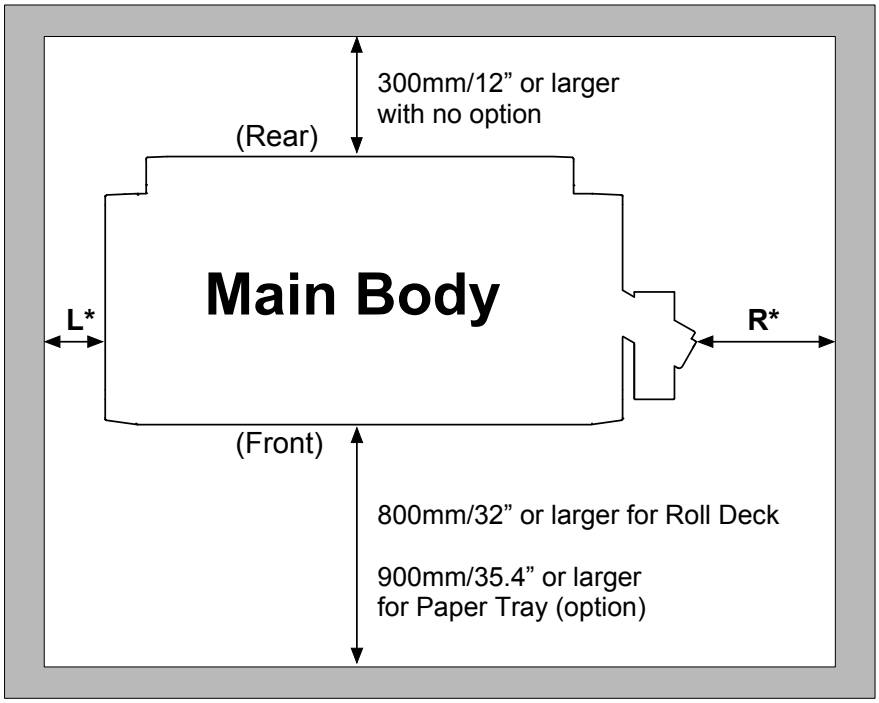
Temperature Range
10 C to 32 C
50 F to 89.6 F
Humidity Range
15% to 85% RH. (NON CONDENSING)

Keep the printer away from water sources, boilers, humidifiers or refrigerators.

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

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

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



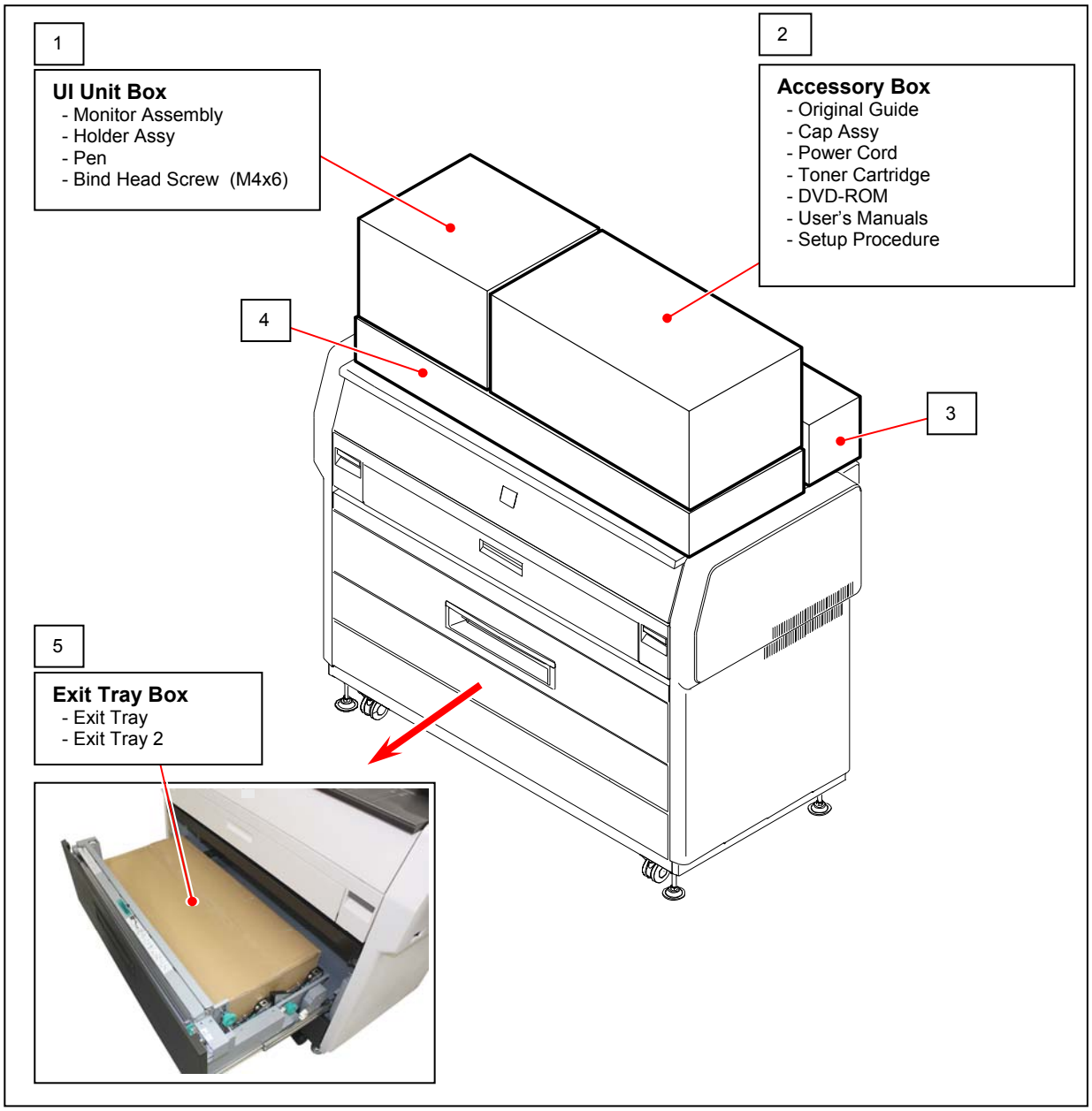
*L+R=350mm/14” or larger
(R must be larger than L)
(L=50mm/2” or larger recommended)

2. 2 Unpacking

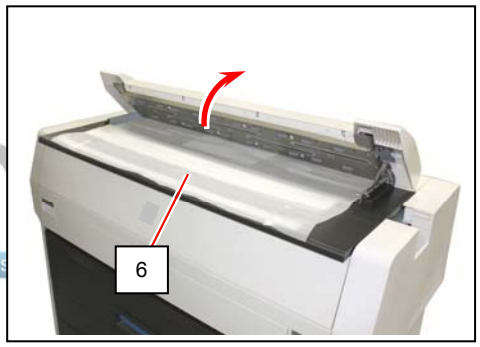
2. 2. 1 Unpacking(for Old Scanner)

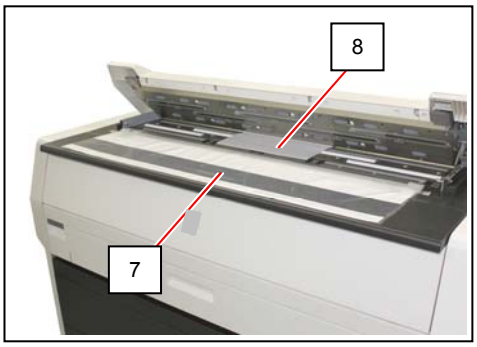
1. Unwrap the machine. Put aside the following cardboard boxes.

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



2. Open the Scanner Unit. Remove the protection mat (6). Put aside Shading Sheet (7) for the scanner adjustment.
DO NOT DISCARD THE SHEET. HANDLE WITH GREAT CARE.
KEEP THE SHEET IN SAFE COSTODY FOR AVOIDING DAMAGE.
Remove the protection sheet (8) on the top rear of the machine. Close the Scanner Unit.

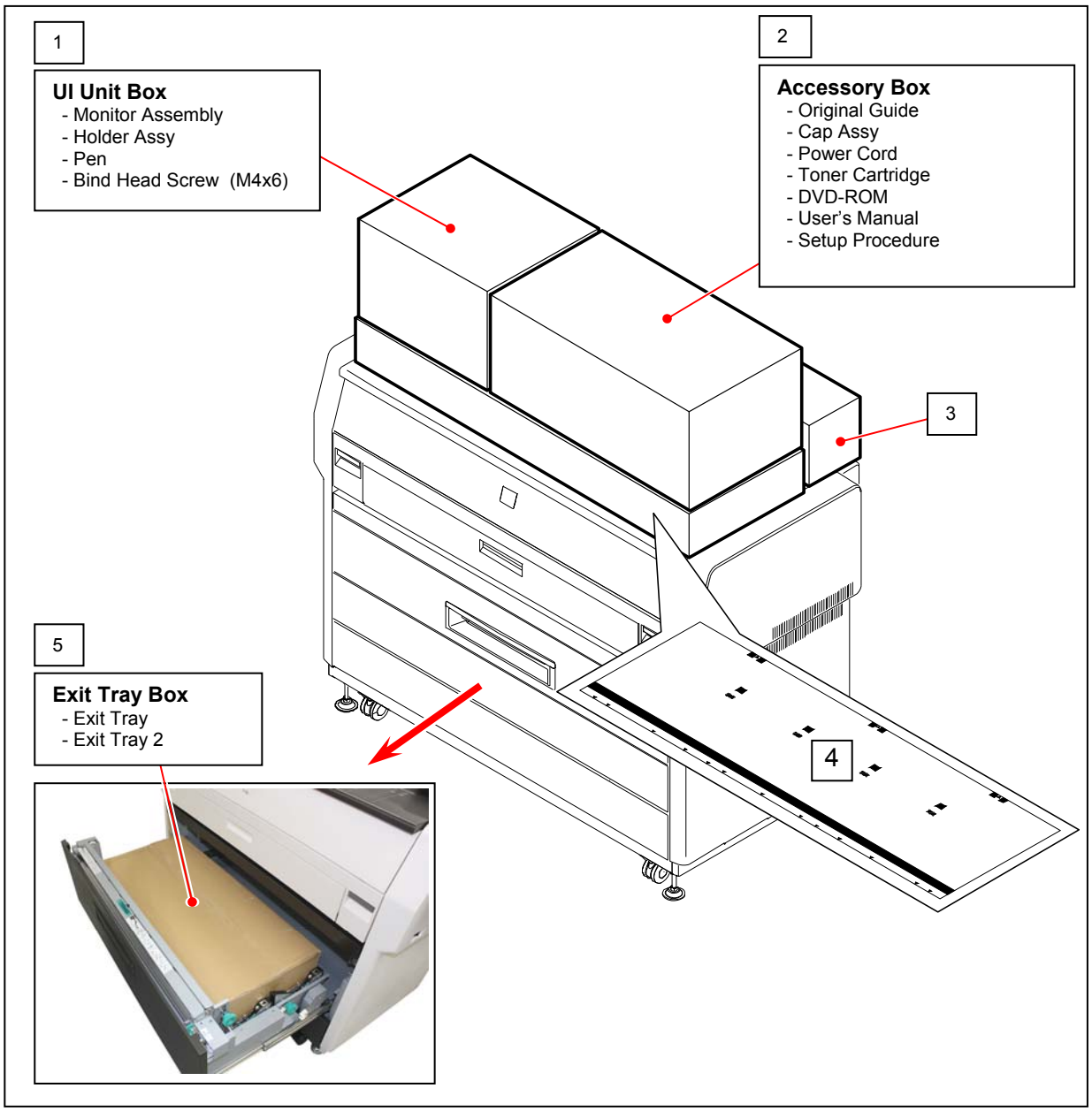




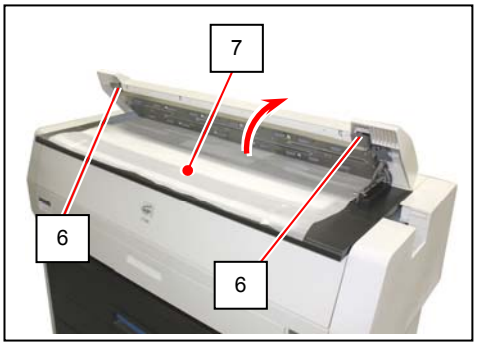
2. 2. 2 Unpacking (for New Scanner)

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

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



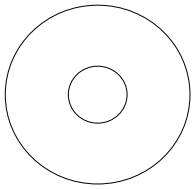
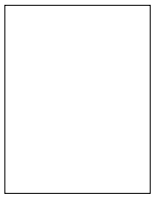
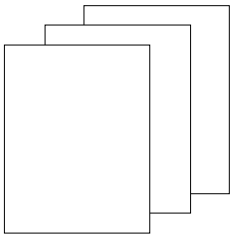
2. Lift up both sides (6) of the Scanner Unit, and then remove the protection mat (7).
   Gently press Scanner Unit down and firmly close it.



2. 2. 3 Confirmation of Accessories

Confirm the following parts are attached to the product.

Accessory Box

Item name	Picture	Number of article	Item name	Picture	Number of article
Original Guide 1 & 2		1 each	Cap Assy		4
Toner Cartridge (500g)		1	Power Cord		1
DVD Rom	Product Library 	1	Setup Procedure		1
User's Manual		1 set			

UI Unit Box

Item name	Picture	Number of article	Item name	Picture	Number of article
Monitor Assembly		1	Holder Assy		1
Pen		1	Bind Head Screw (M4x6)		4

Exit Tray Box

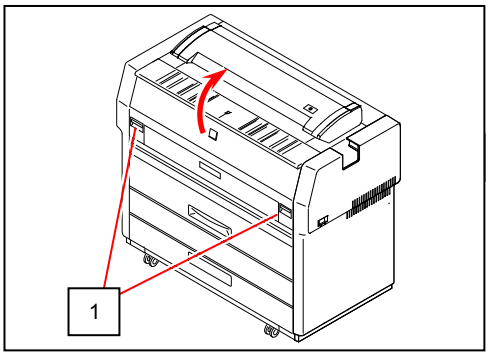
Item name	Picture	Number of article	Item name	Picture	Number of article
Exit Tray		2	Exit Tray 2		1

Others

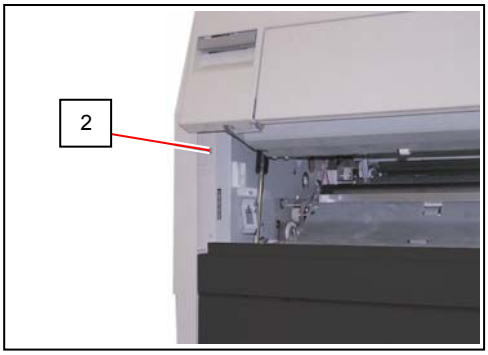
Item name	Picture	Number of article	Item name	Picture	Number of article
Shading Sheet	for old type Scanner	1	Drum Box (empty)		1
	for new type Scanner				

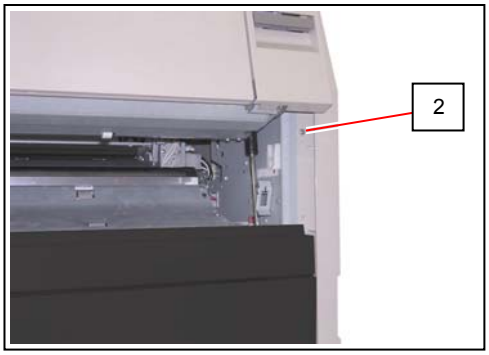
2. 3 Leveling

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

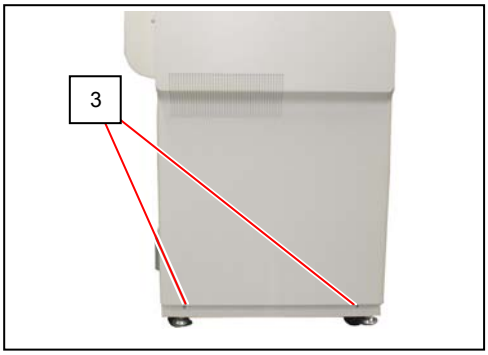


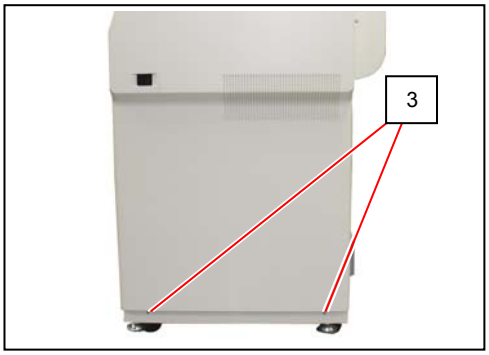
2. Remove the screws (2) at both sides.



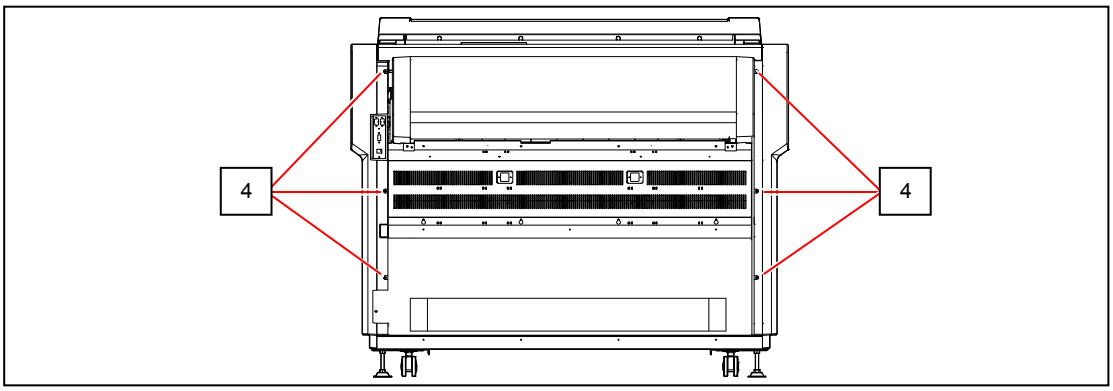


3. Remove 4 screws (3) at the bottom of both sides.

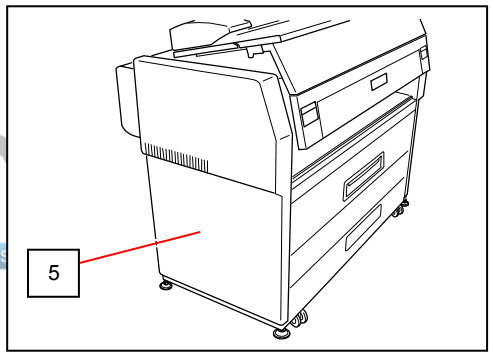


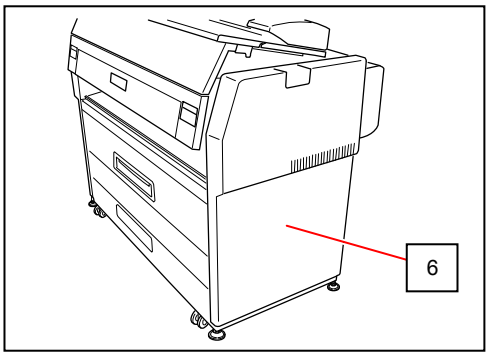


4. Remove 6 screws (4) at the back on both sides.

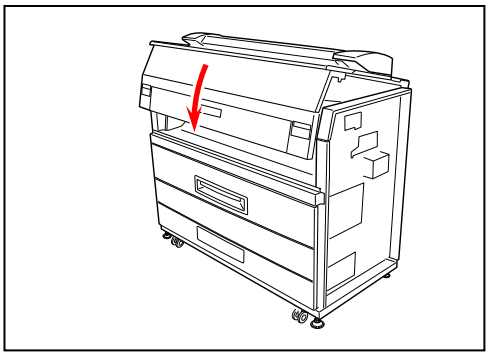


5. Remove the Cover 2 (5) and the Cover 3 (6).

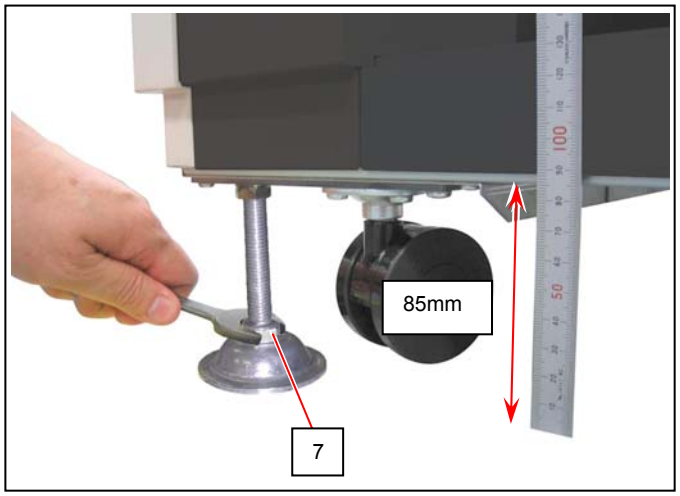




6. Close the Engine Unit.



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

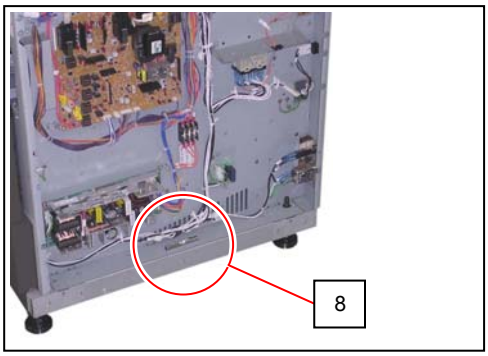


NOTE

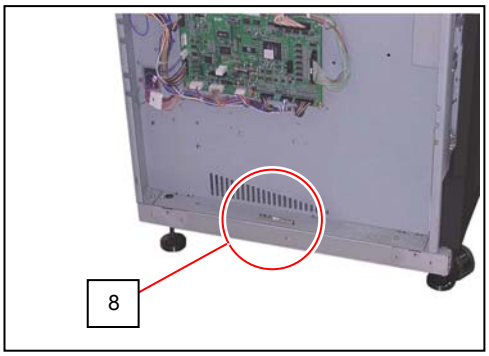
Do not rotate the Levelling Bolts too much.
If the distance between the bottom plate and the floor becomes wider than 95mm, the Adjuster Bolt may be removed.

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

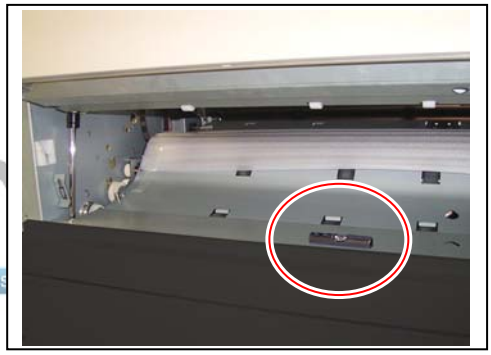
Right

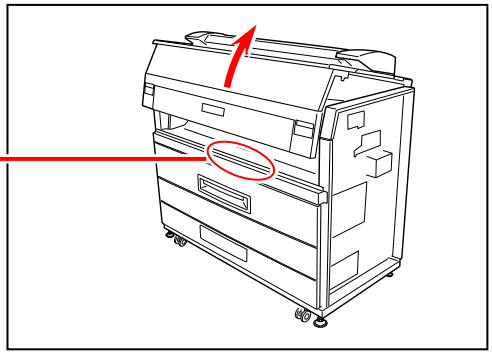


Left



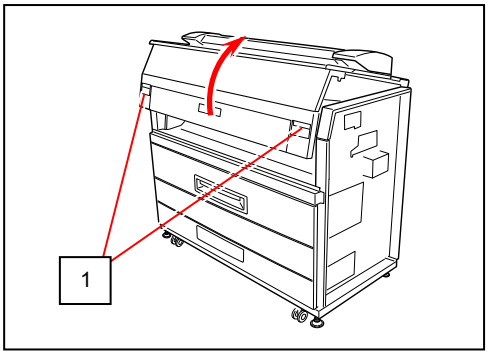
Front



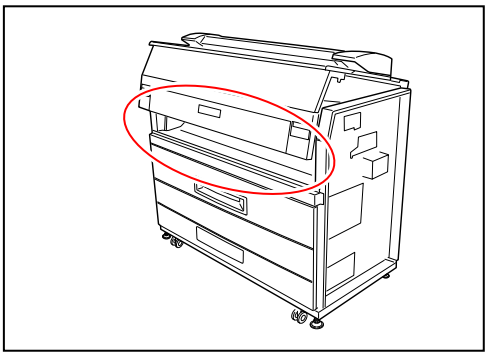


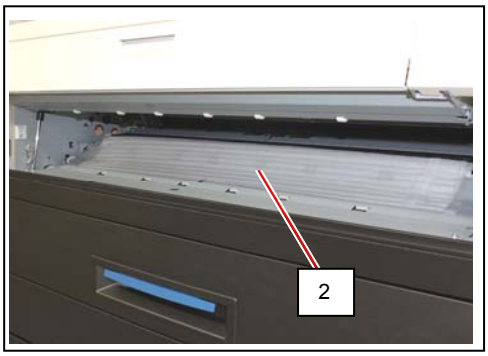
2. 4 Setup of the Machine

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

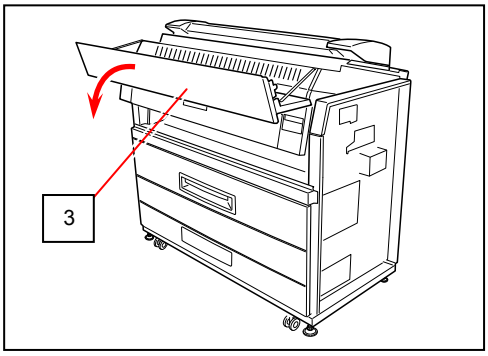


2. Carefully remove the protection mat (2) under the Drum.

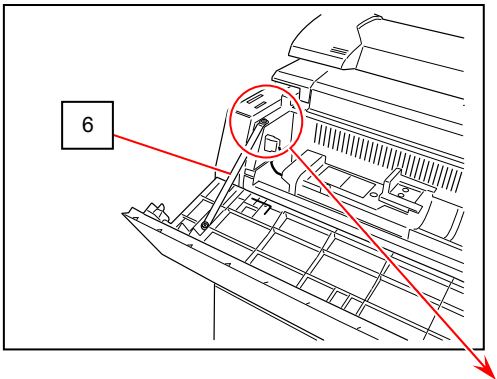


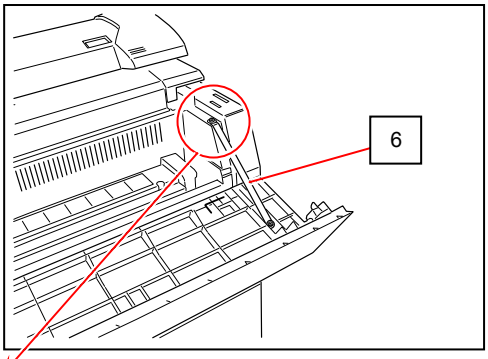


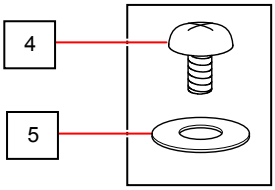
3. Open the Cover 4 (3).



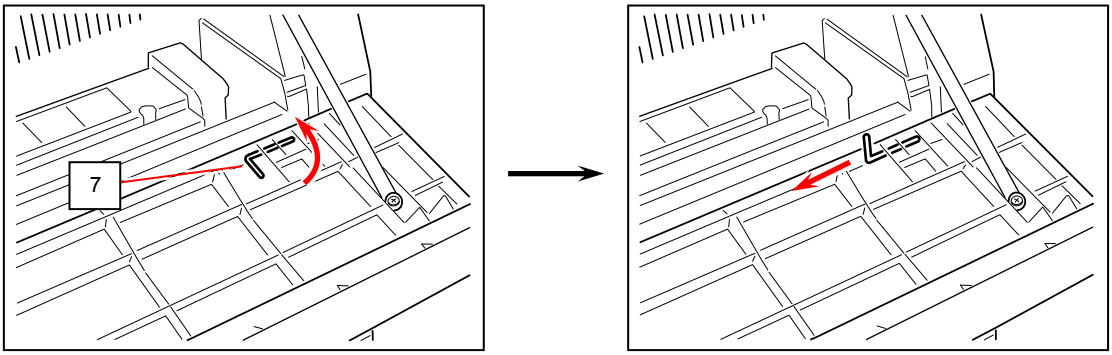
4. Remove the screws (4) and flat washers (5) to release the Bands (6) at both sides.

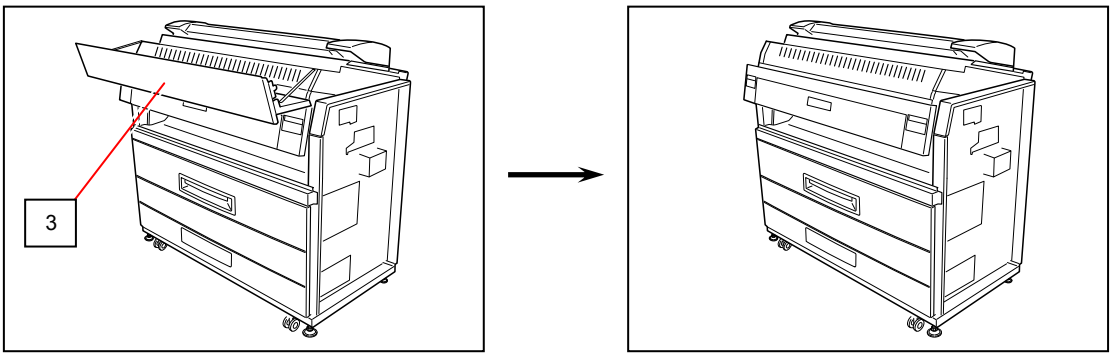




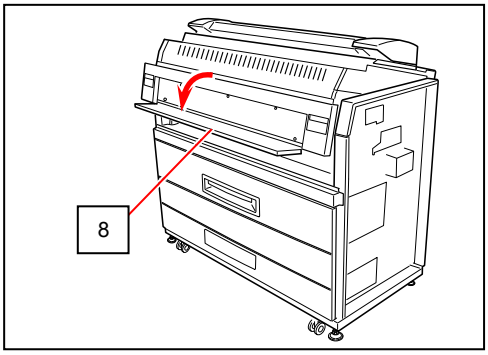


5. Rotate up the Pins (7) and move them to the inside to pull them out from the holes.
   Remove the Cover 4 (3).

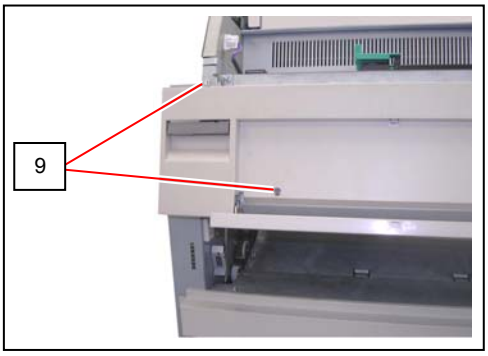


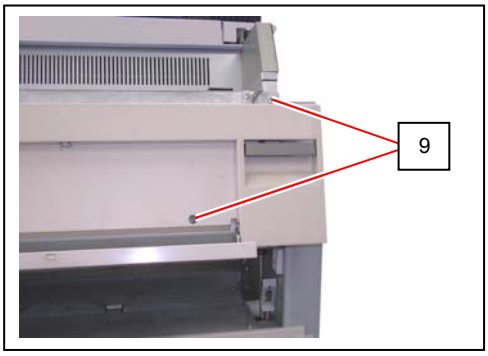


6. Open the Bypass Feeder (8).

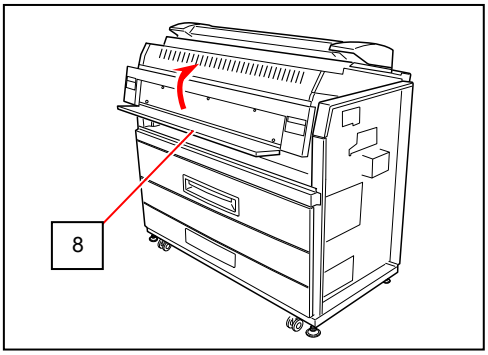


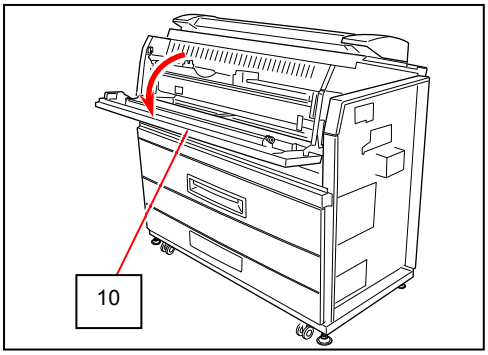
7. Remove 4 pieces of screw (9).



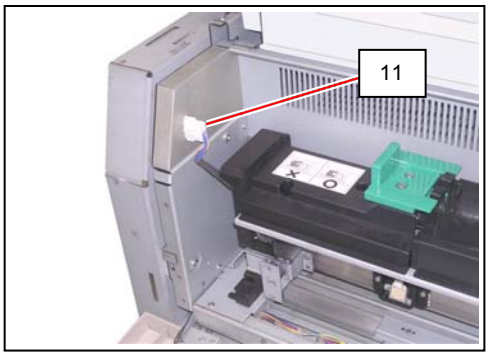


8. Close the Bypass Feeder (8). Open the Developer Press Unit (10).

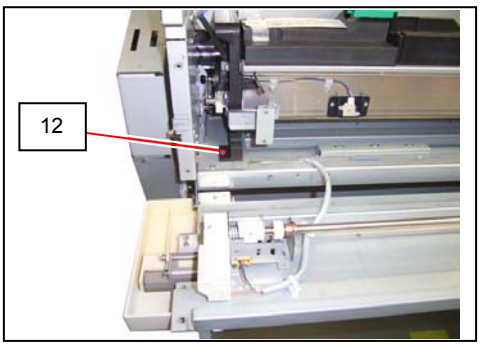


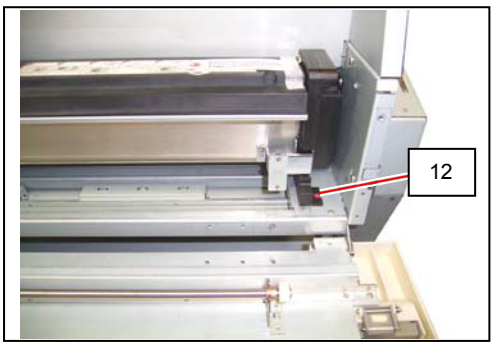


9. Disconnect the connector (11).

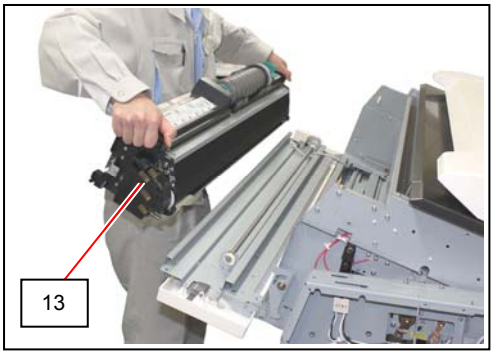


10. Remove 2 pieces of red screw (12) at both sides of the Developer Unit, which protect the Developer Unit from vibration during transportation. (They are no longer required.)

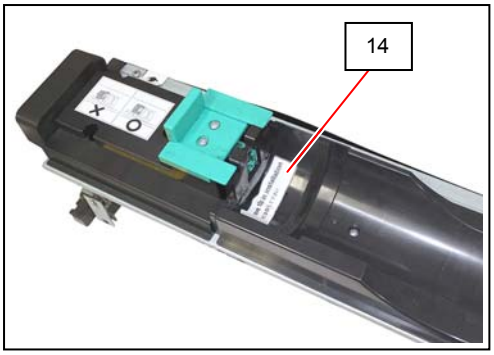




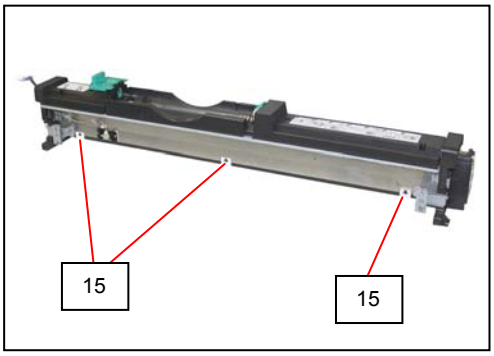
11. Holding both side plates firmly, slide the Developer Unit (13) out of the machine.

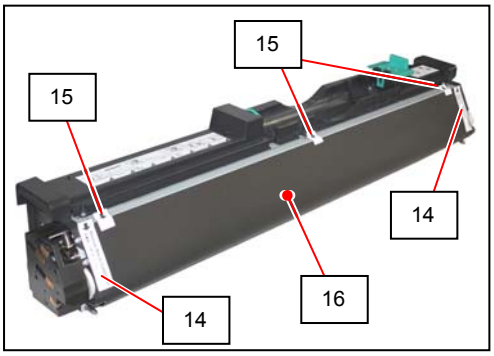


12. Remove 1 label (14) on the toner supply hole of Toner Hopper.

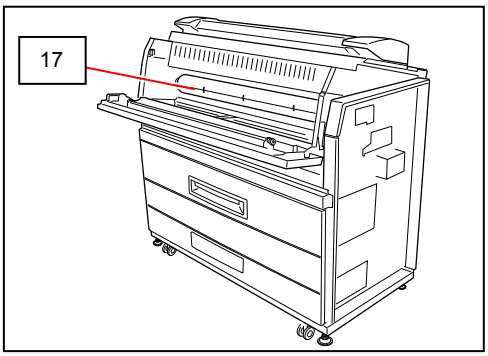


13. Remove 8 labels (14)(15) to remove wrapping sheet (16).

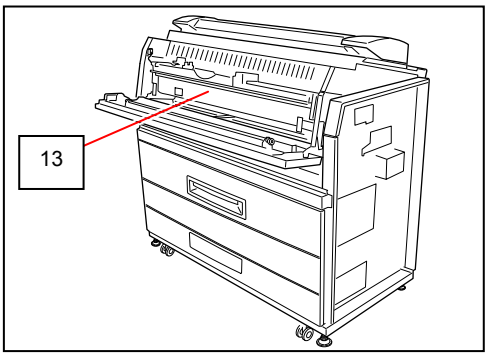


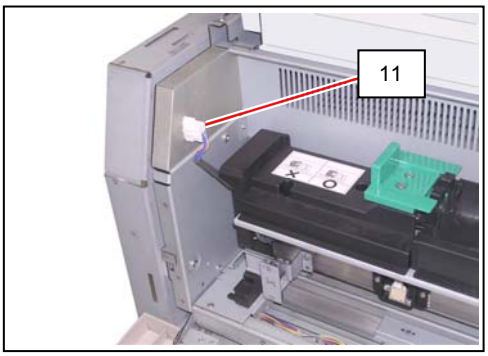


14. The process unit and toner cover should be open. The Photoconductive Drum is covered with a black sheet (21). **Gently** remove it pulling from the front.



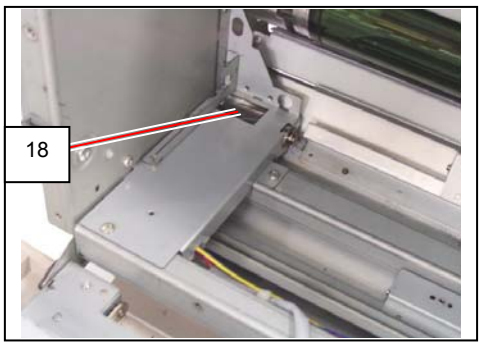
15. Install the Developer Unit (13) to the machine. Connect the connector (11).

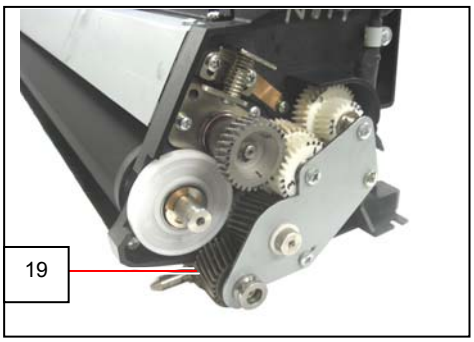




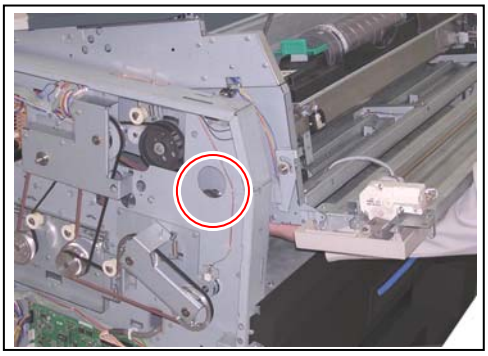
NOTE

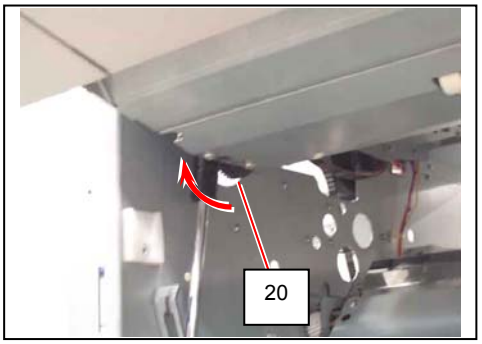
Both the Gear Helical 20T (18) on machine side and the Gear Helical 28T (19) on Developer Unit side must be in gear firmly with each other, but they may not be in gear with each other by just installing the Developer Unit to the machine.



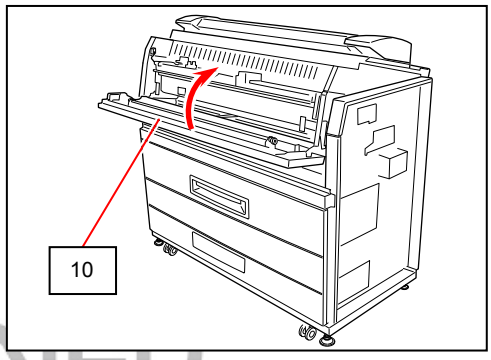


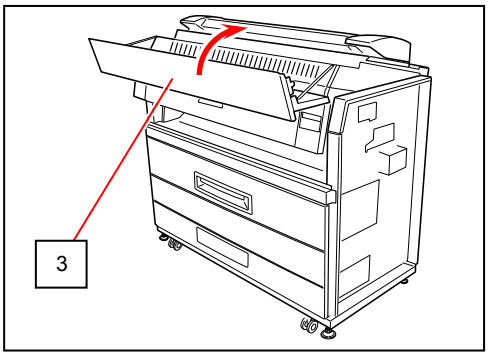
After installing the Developer Unit to the machine, rotate Gear Helical 34T (20: instead of Gear Helical 20T) by hand from under the Engine Unit.
Both gears will be in gear by this way.



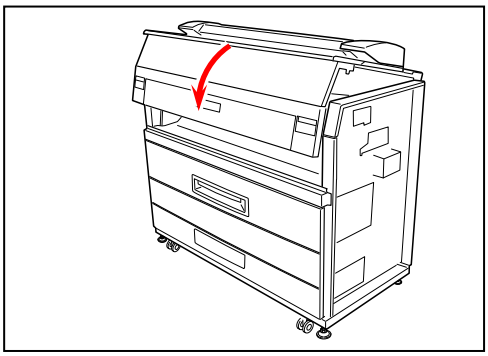


16. Close and fix the Developer Press Unit (10), and put back the Cover 4 (3).



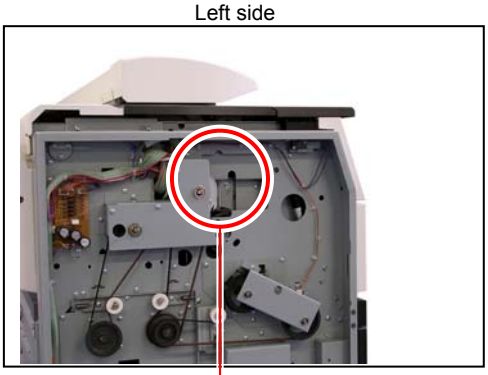


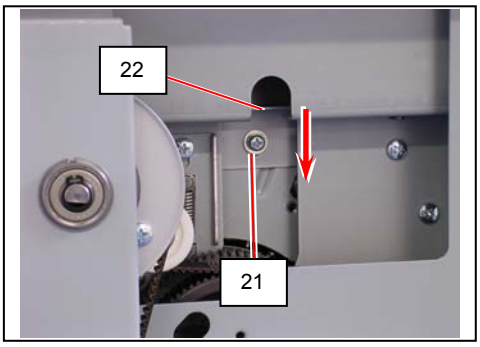
17. Close the Engine Unit.



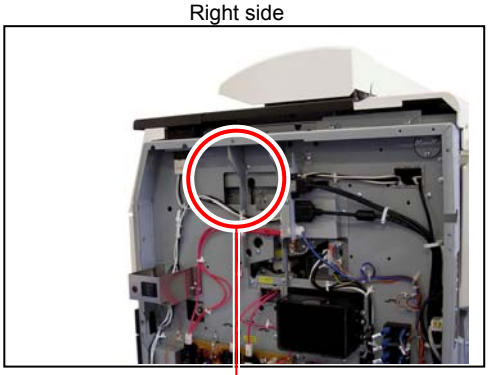
18. Both the LED Head and the Image Corona are locked with the screws (21) being separated from the Drum, not to be damaged during the transportation. Loosen the screws (21) to unlock the Fixing Brackets (22) at both sides. Pressing down the Fixing Brackets (22) firmly, tighten the screws (21).

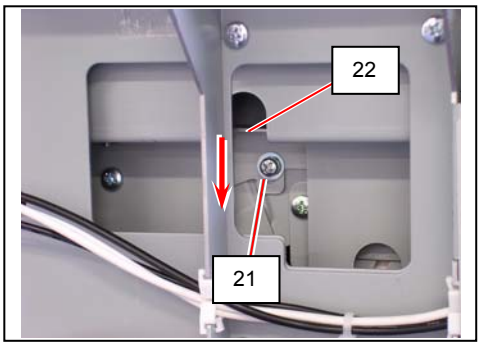
Left side





Right side



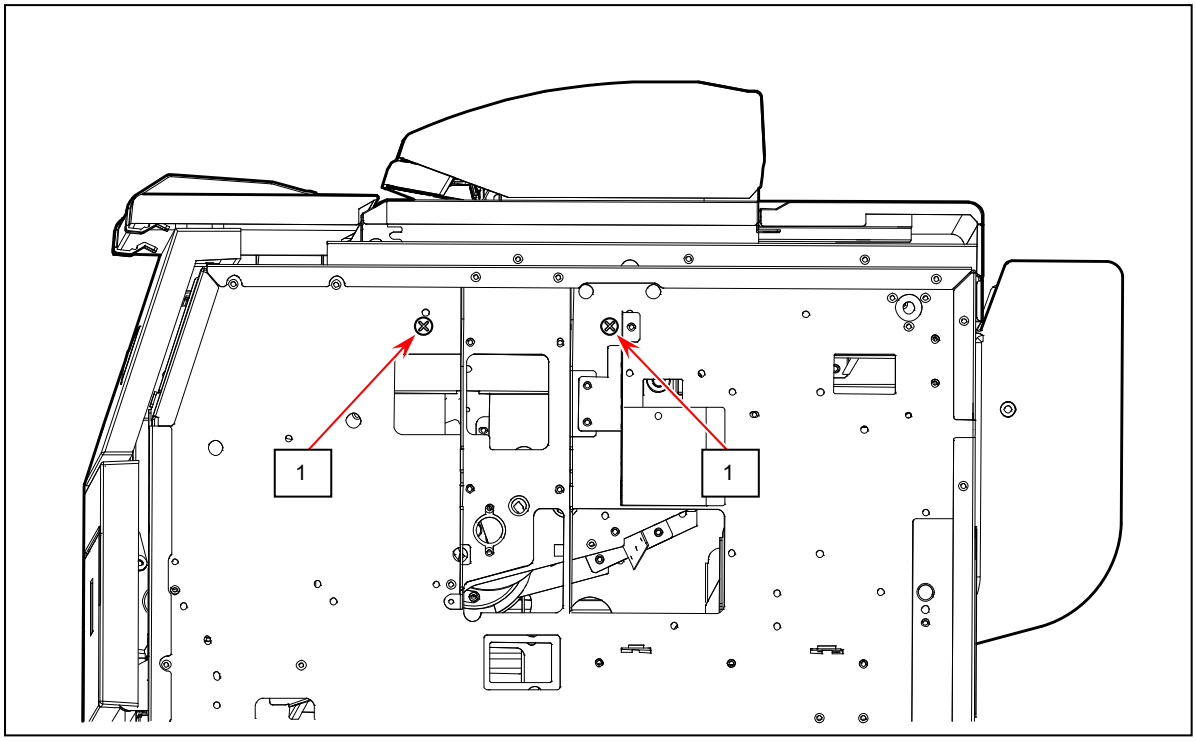


NOTE

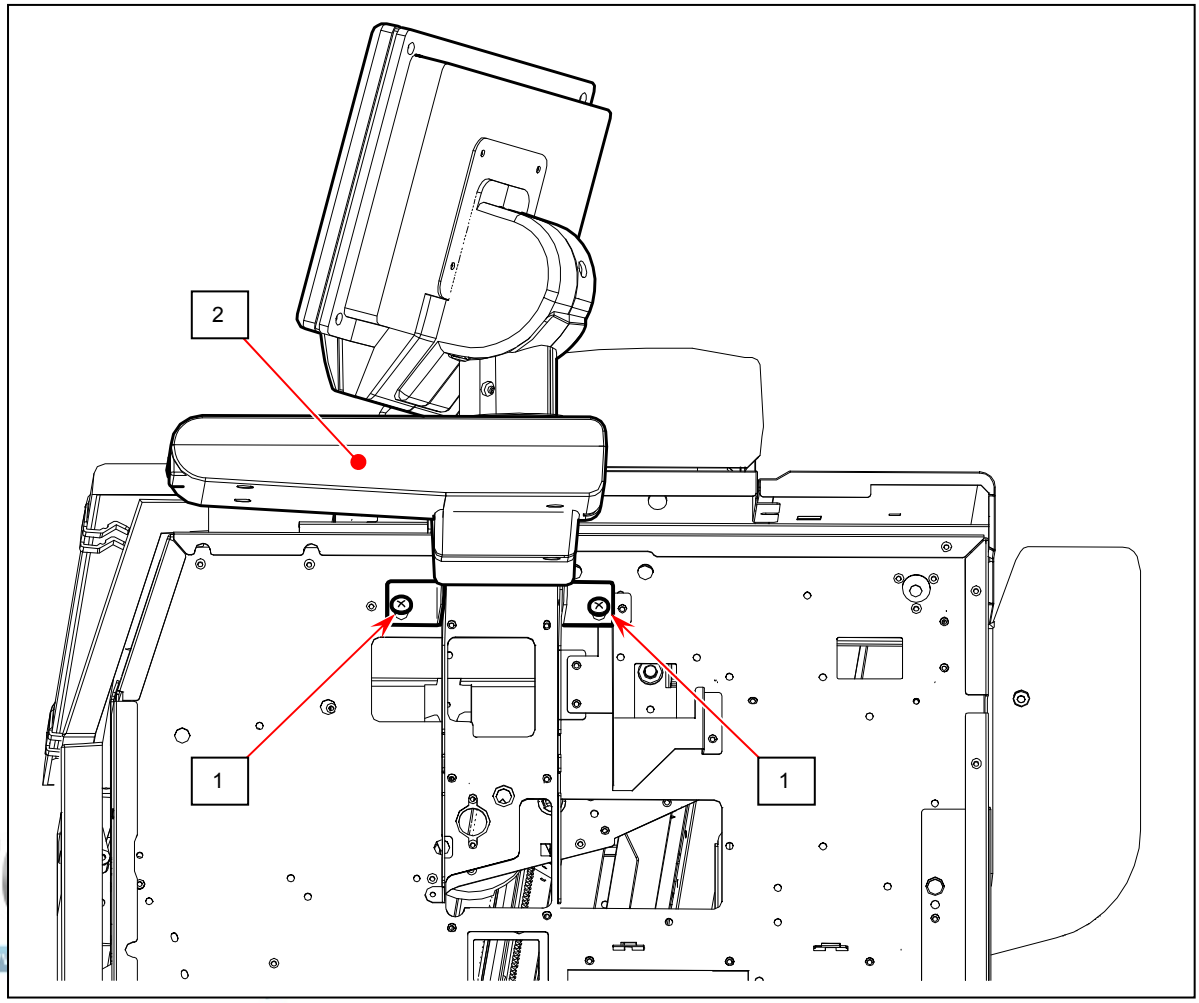
Please satisfy the following requirements before performing Step 18.
(1) The black sheet has been removed from the Drum. (See the former procedure 14.)
(2) The Engine Unit is closed firmly. (See the former procedure 17.)
Otherwise a proper distance can not be kept between LED Head and Drum.

2. 5 Installing Monitor

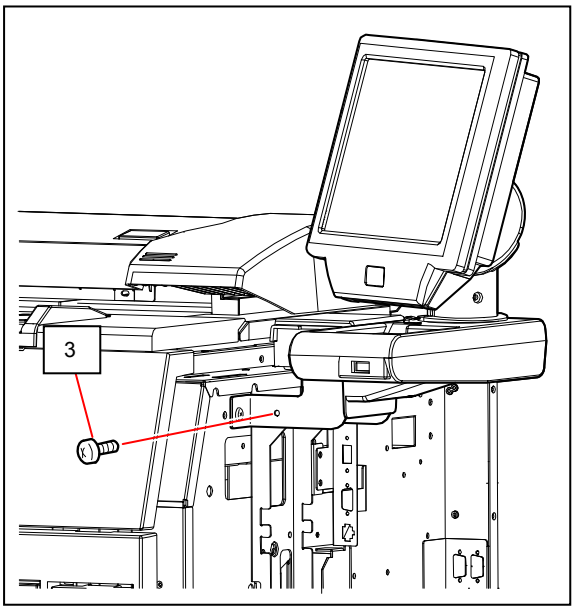
1. Insert the screws (M4x6) (1) into the screw hole on the right side frame of the machine.

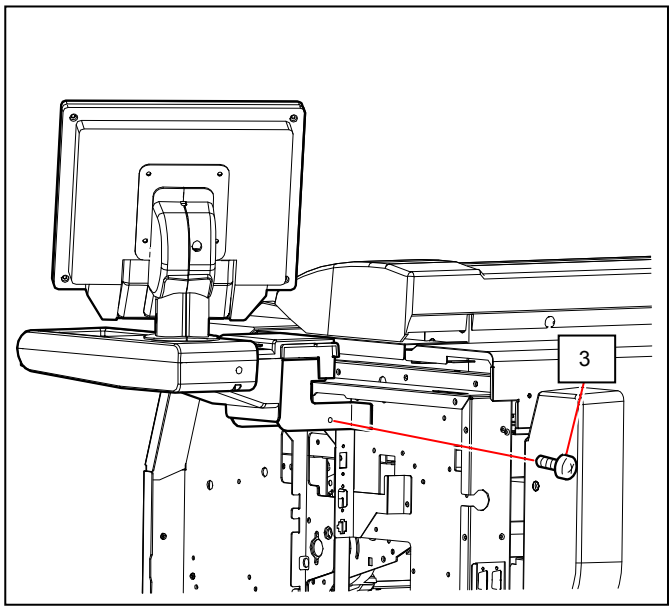


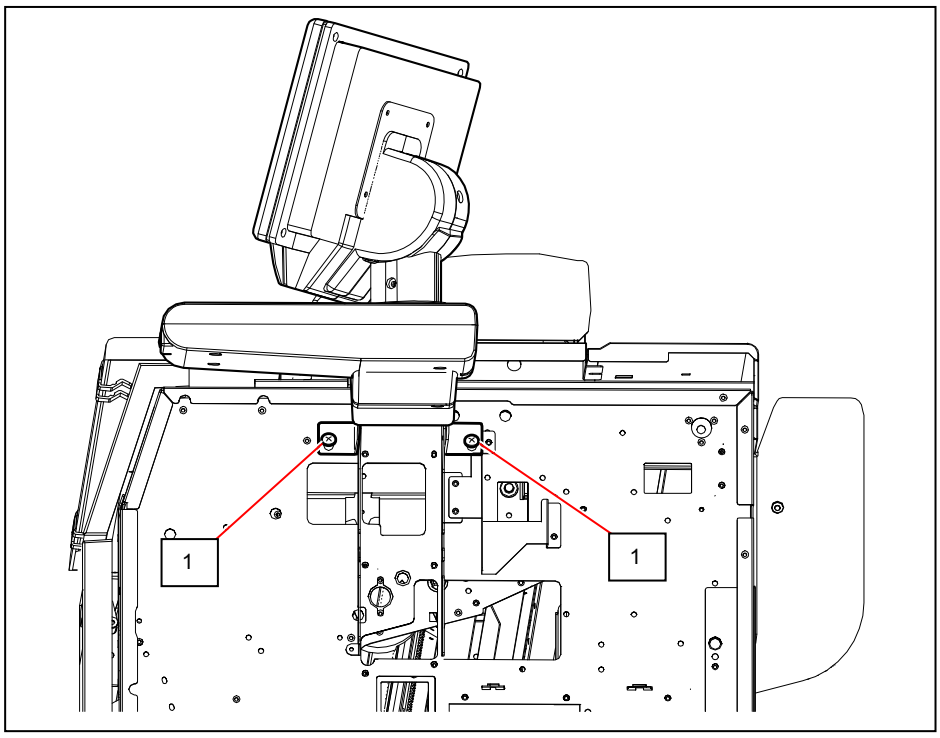
2. Hook Monitor Assy (2) on the screws (1).



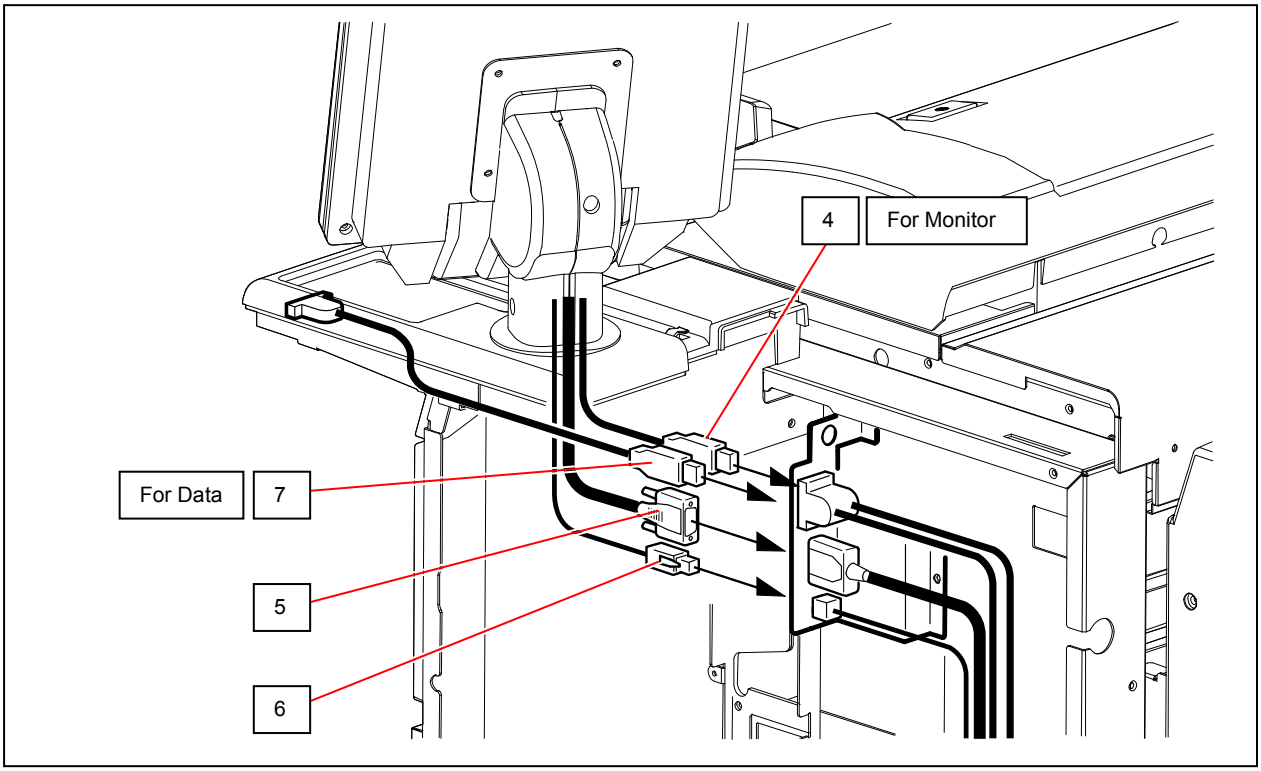
3. Fix Monitor Assy with 2 screws (M4x6) (3), and then tighten 2 screws (1).







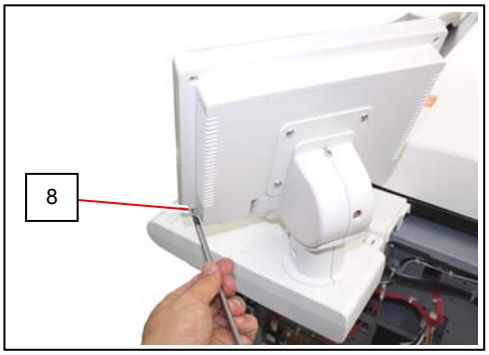
4. Connect USB Cable (4, for Monitor), VGA Cable (5) and Power Supply cable (6) to the concerning connectors of the machine frame. Then connect one more USB Cable (7, for external USB device).

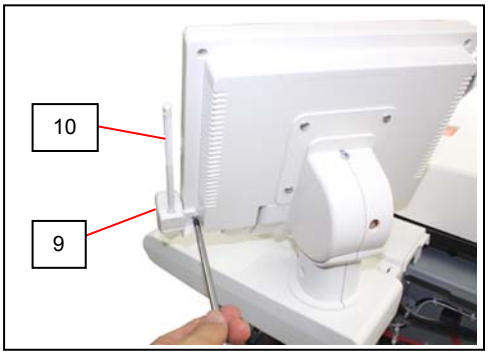


NOTE

Be sure to insert the USB plug of the USB Cables (4) (7) to the correct receptacles.
First connect the monitor USB Cable (4) to the back of the 2 connectors on the machine. (left as viewed from front)
Then connect the external USB Cable (7) to the rest (front) connector. (right from front).

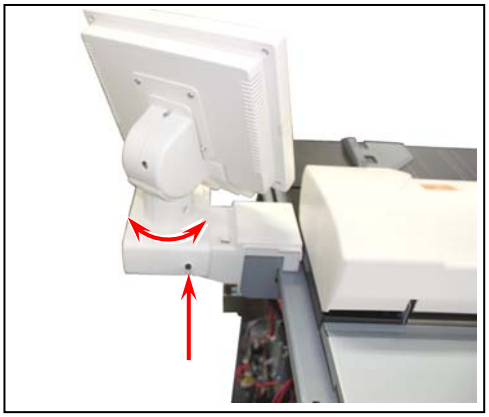
5. Remove the bottom left screw (8) on the back of Monitor Assy. Attach Holder Assy (9) and fix them together with the screw (8). (Put Pen (10) in either hole of Holder Assy)

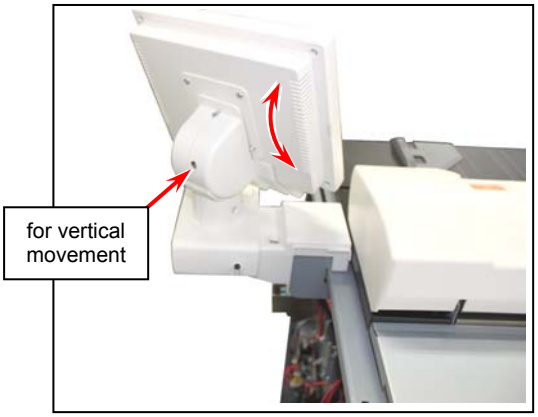




Reference

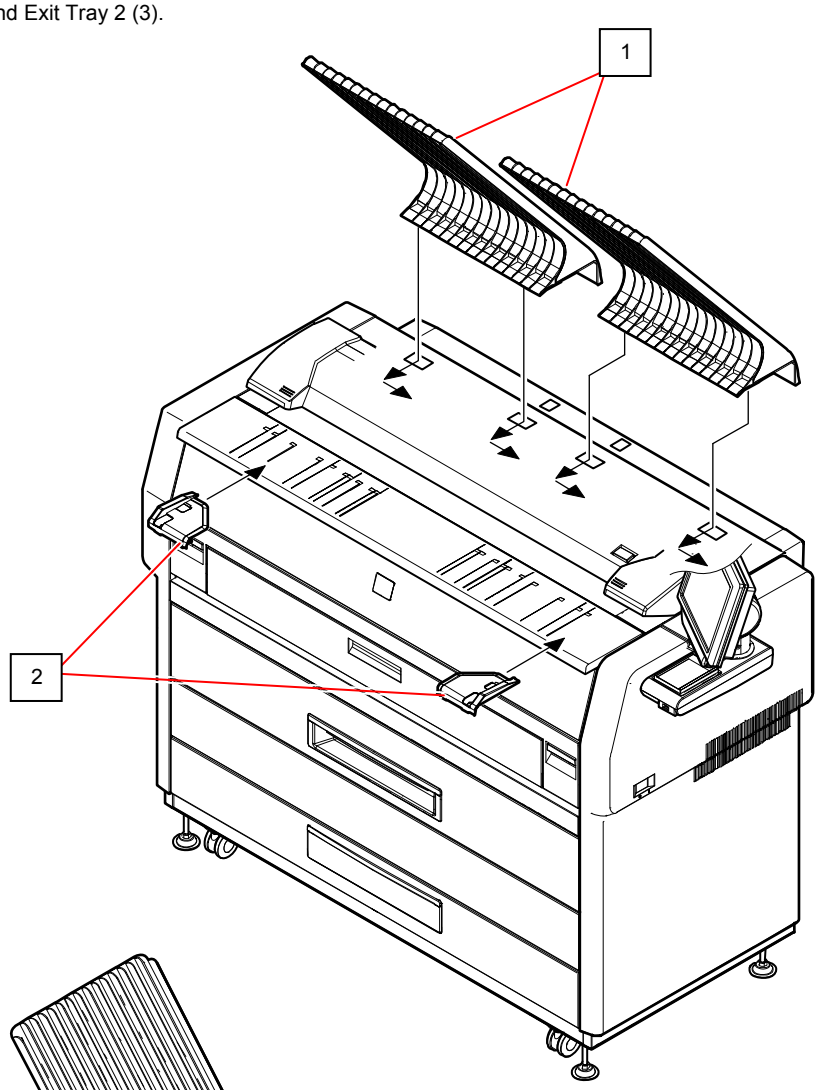
Monitor Assy can be turned up/down and right/left. Adjust the movement by the concerning screw.

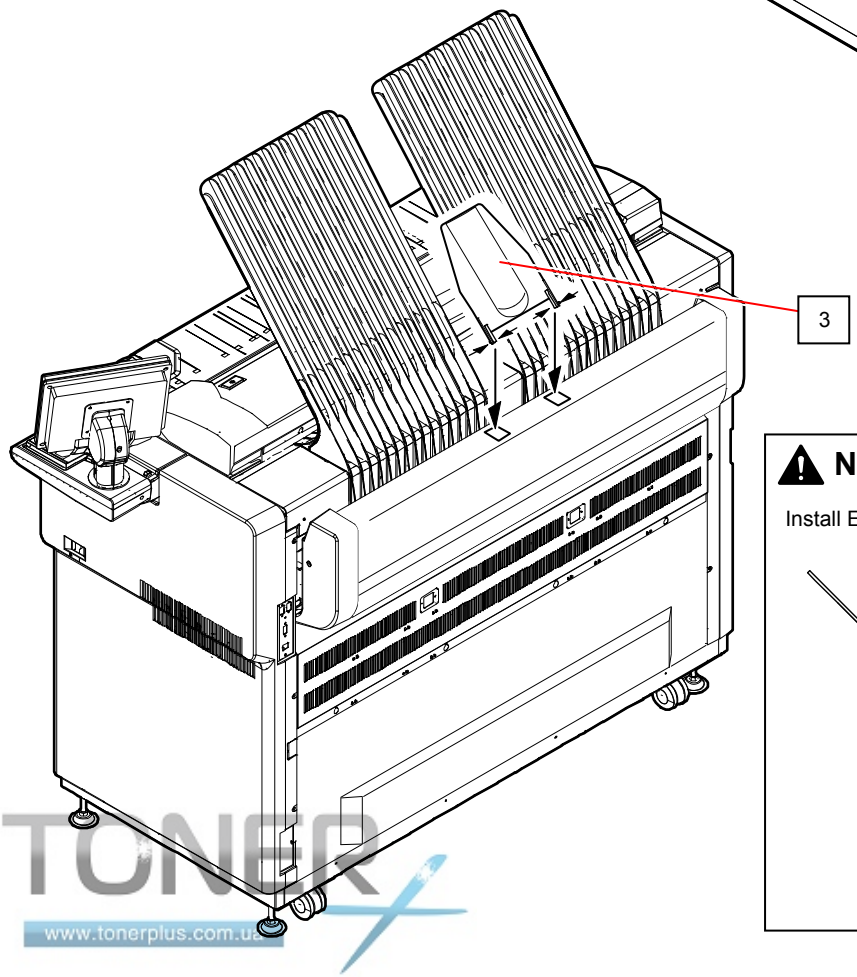




2. 6 Installing Accessories

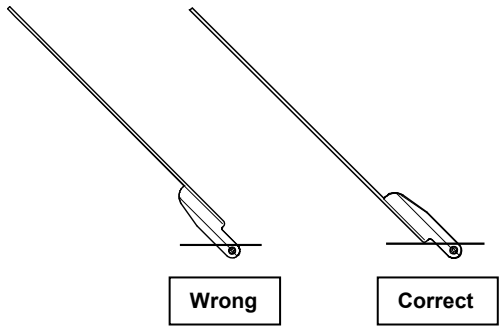
1. Exit Tray (1), Original Guide (2) and Exit Tray 2 (3).



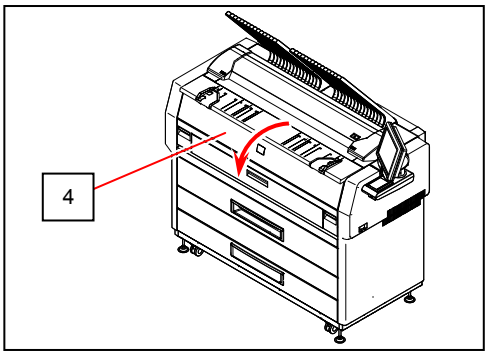


NOTE

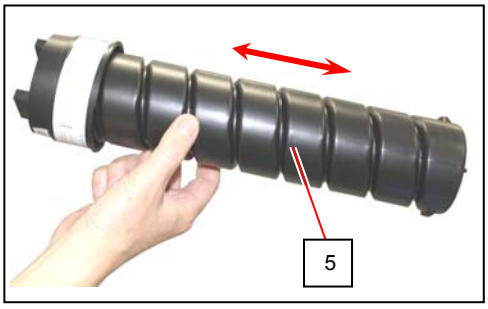
Install Exit Tray 2 (3) in the correct direction.



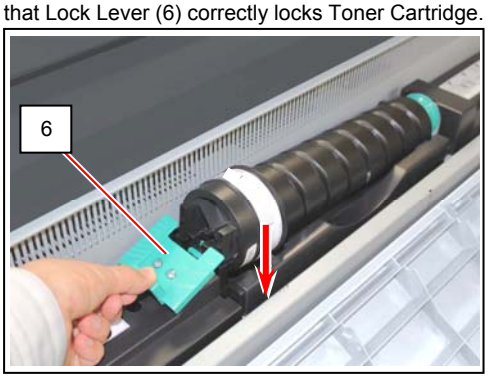
2. Open Cover 4 (4).

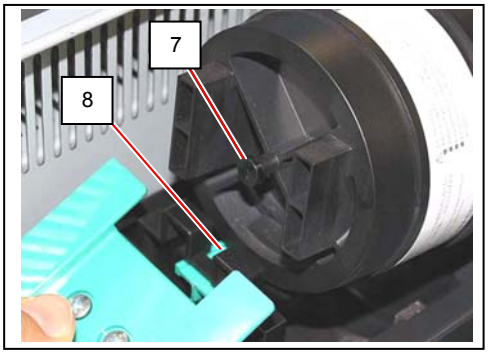


3. Shake Toner Cartridge (5) several times.

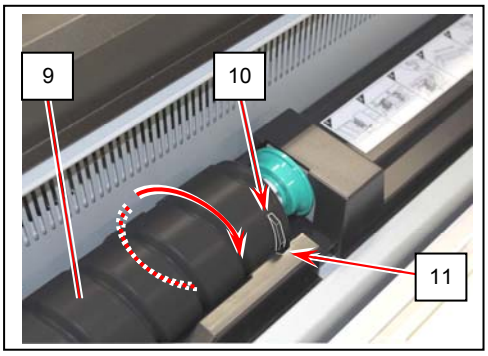


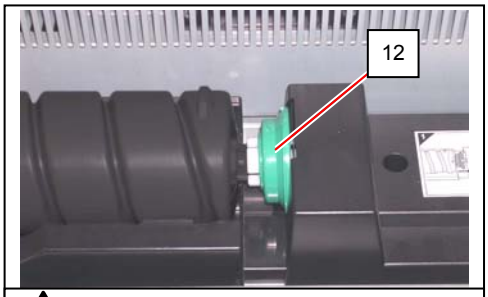
4. Pressing Lock Lever (6), locate the pin (7) on top of Toner Cartridge to the groove (8).
Make sure that Lock Lever (6) correctly locks Toner Cartridge.





5. Turn Toner Cartridge body (9) in one revolution to the arrow direction to open the toner supply hole so that the tab (10) goes into the notch (11).

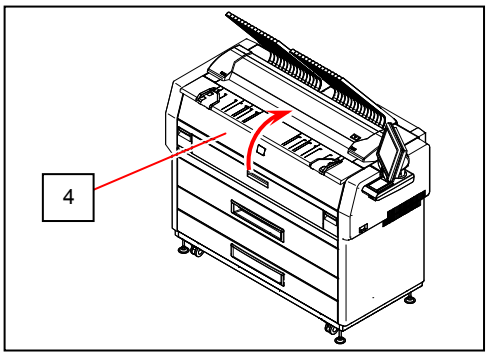




NOTE

It is not necessary for the cartridge bottom to be locked by the lever (12).
That will be done at the machine's power on.

6. Close Cover 4 (4).



2. 7 IPS Installation Wizard

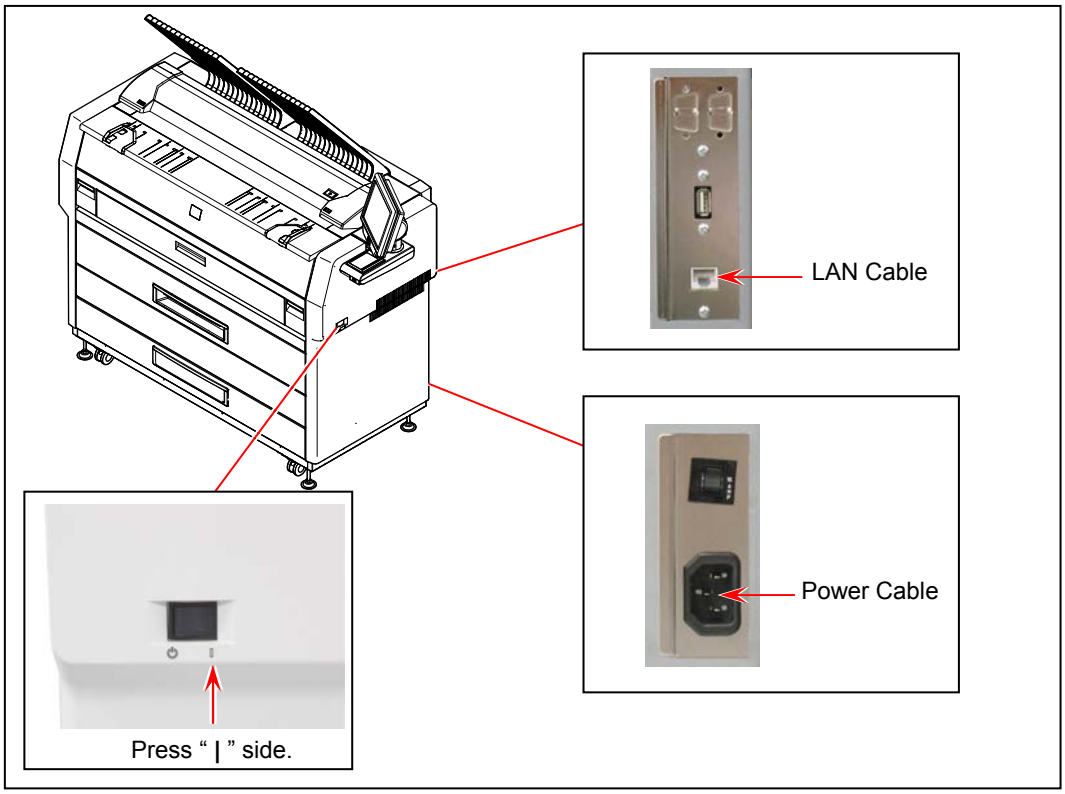
On the initial power on, the UI screen shows “IPS Installation” wizard. Follow the wizard to complete the machine setup.

NOTE

IPS Installation Wizard appears on the initial power on till the completion of the wizard.

1. Check that Toner Cartridge is set correctly.

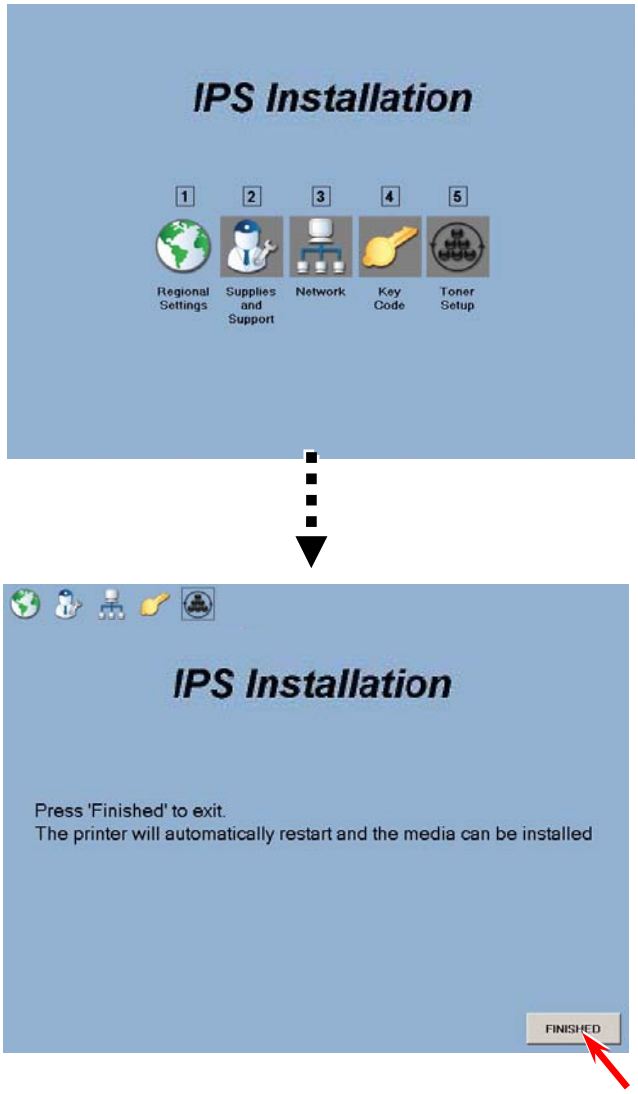
2. Connect Power Cable and LAN Cable with the printer.
   Press “ **|** ” side to turn on the printer.



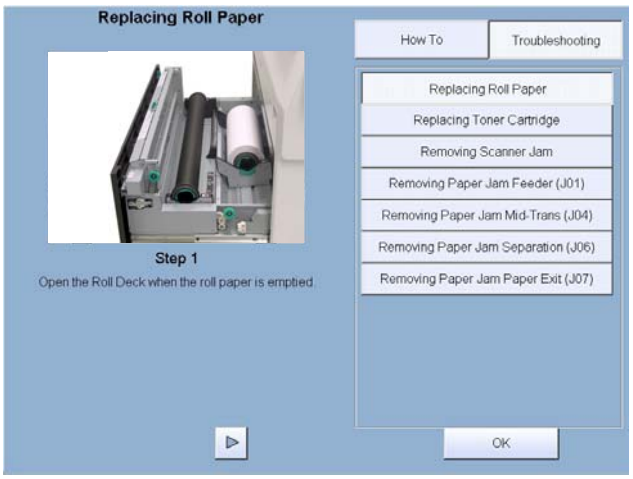
WARNING

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

3. “IPS Installation wizard” appears. It will prompt you to enter several settings.
   Follow the wizard for the rest of the setup, and press the [FINISHED] at the end.
   The printer will restart automatically. Please wait.

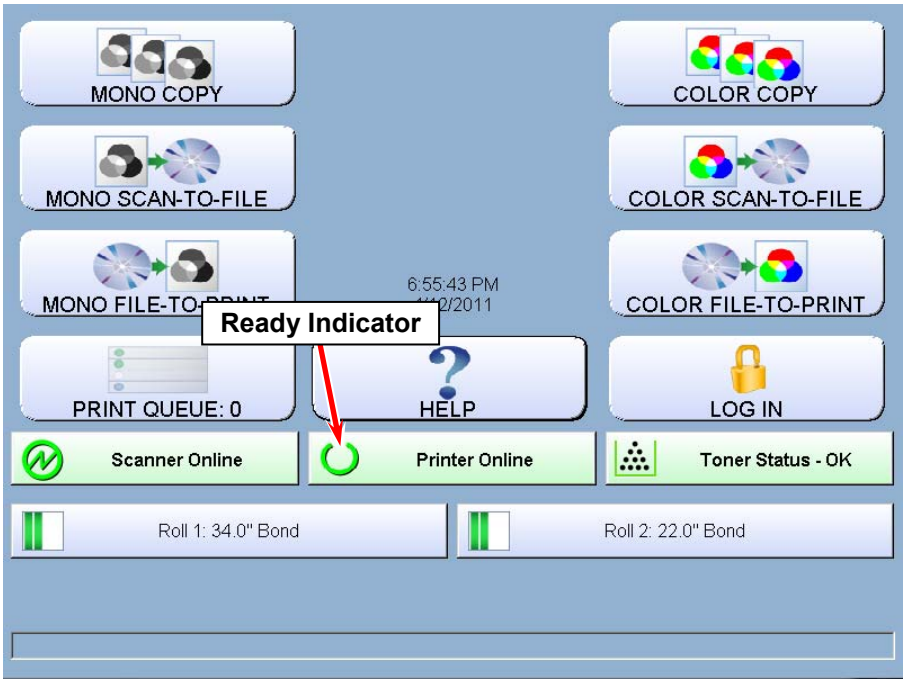


4. The UI screen shows the procedure of replacing roll media. Follow the instruction to load a roll media.



5. The wizard is completed.

   The User Interface (UI) starts operating, and displays the following Copy Mode Screen in one minute.
   The Ready Indicator on Copy Mode Screen will flash during warming up.



The UI screen may vary depending on your system configuration.
(Shown with available options)

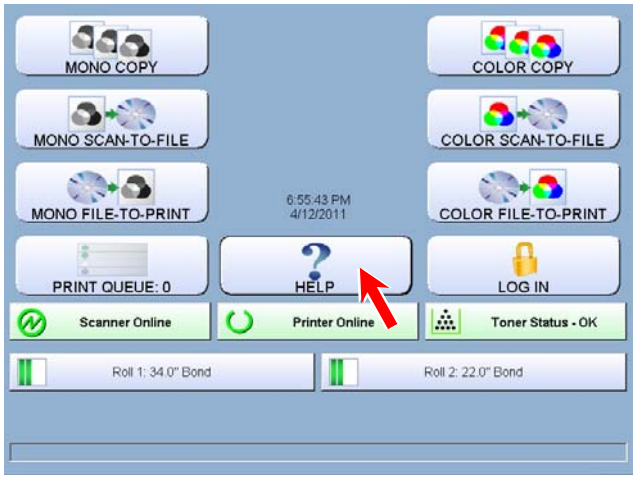
Following step is for new scanner

The later pages show the Stitching Adjustment for the reading sensors on the scanner unit to enhance the scanning quality. (recommended)

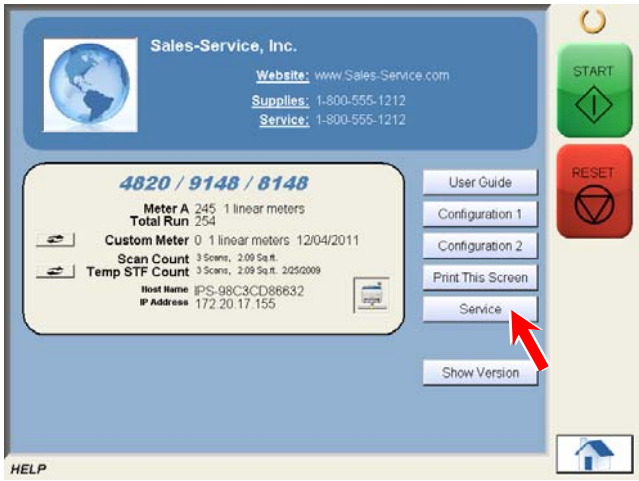
2. 8 Stitching Adjustment (for New Scanner)

2. 8. 1 Launching K129 Diag

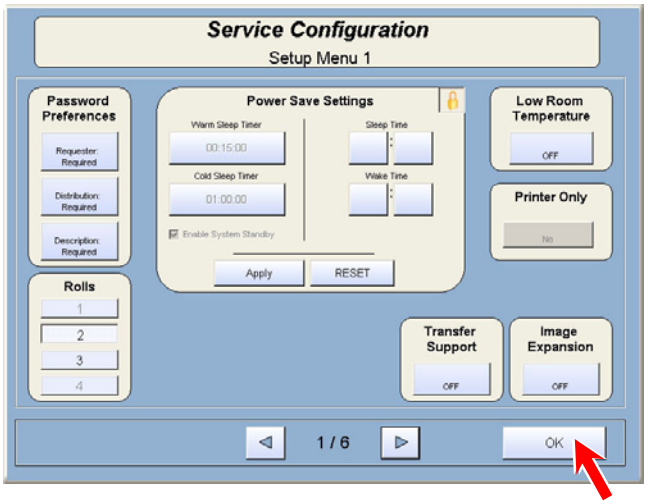
1. Press [? HELP] on the Home screen.



2. Press [Service]. Input “8495107” and press [Enter].

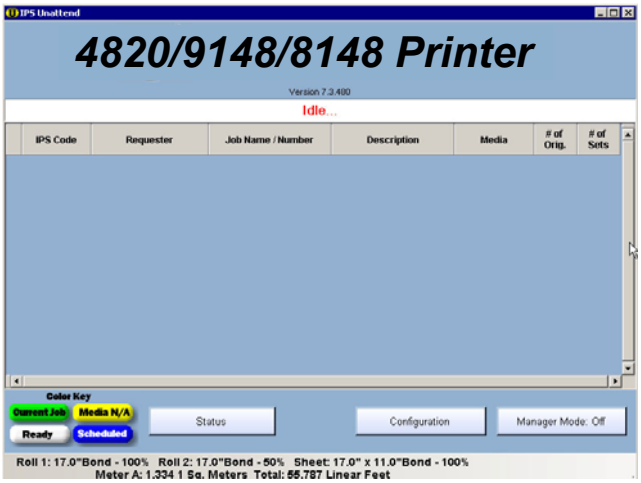


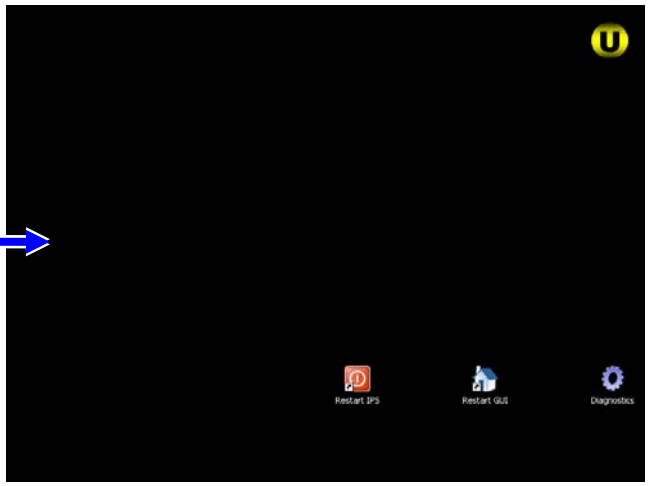
3. Service Configuration screen will appear. On “Setup Menu 1”, press [OK].



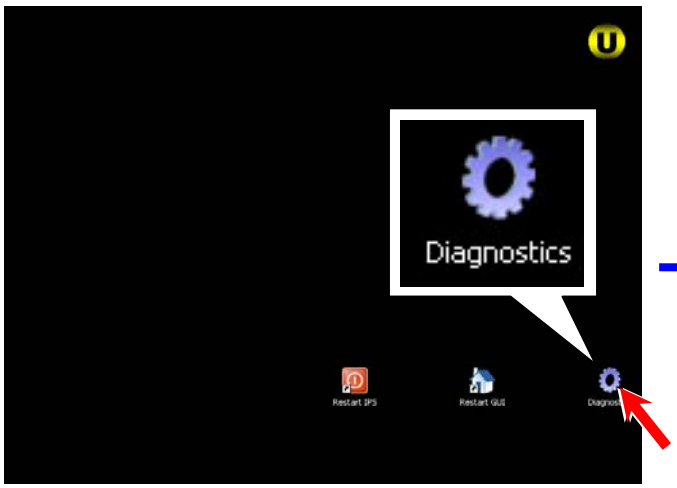
4. Press [Reset].

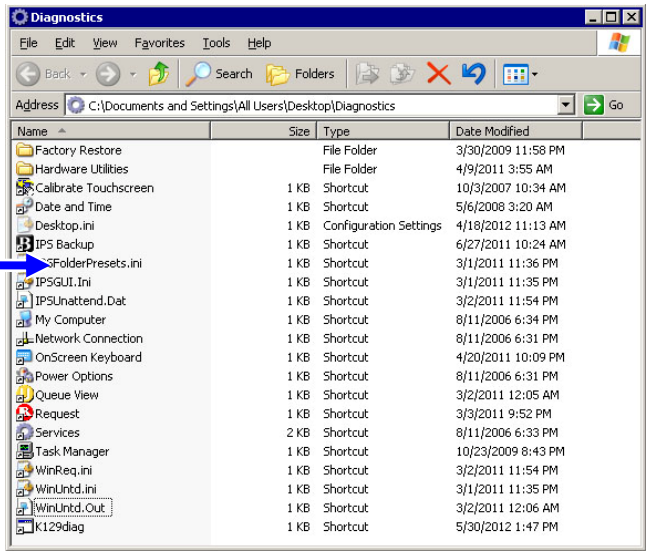
5. Minimize the “IPS Unattend” window.



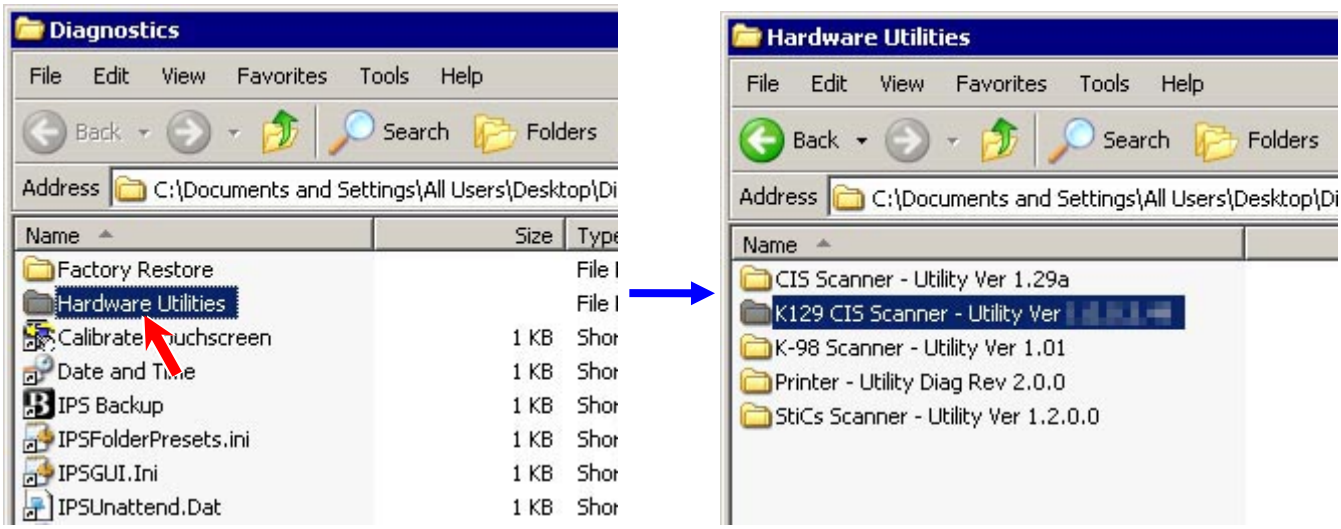


6. Open “Diagnostics” folder (gear icon) in the lower right of the screen.

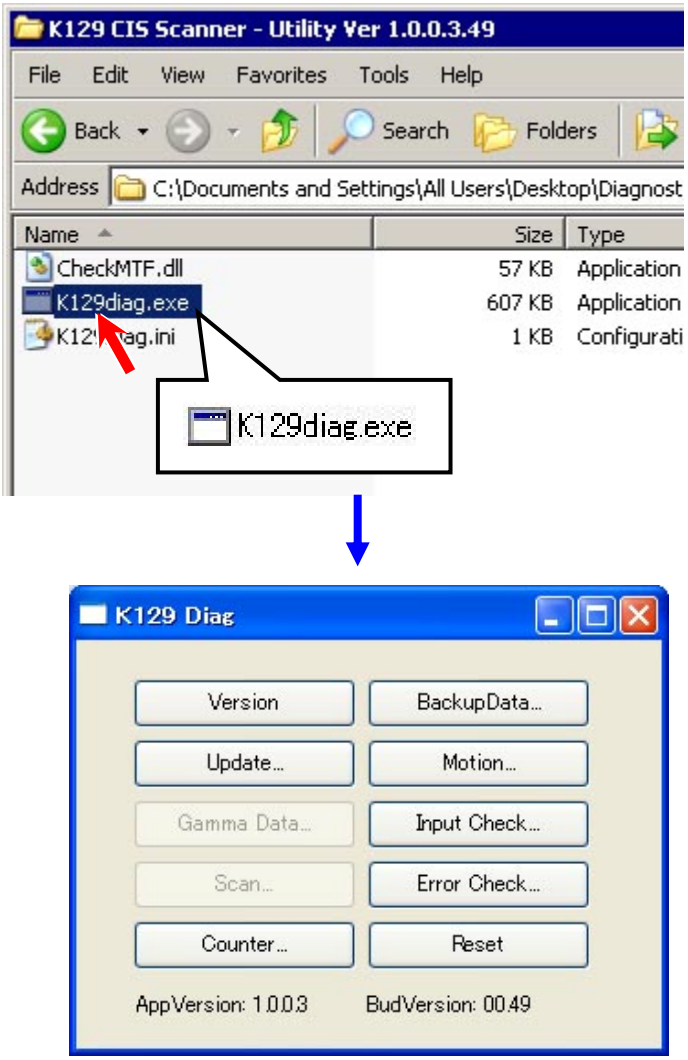




7. Double click [Hardware Utilities] and [K129 CIS Scanner – Utility Ver.X.X.X.X.XX].



8. Run “K129 Diag”.



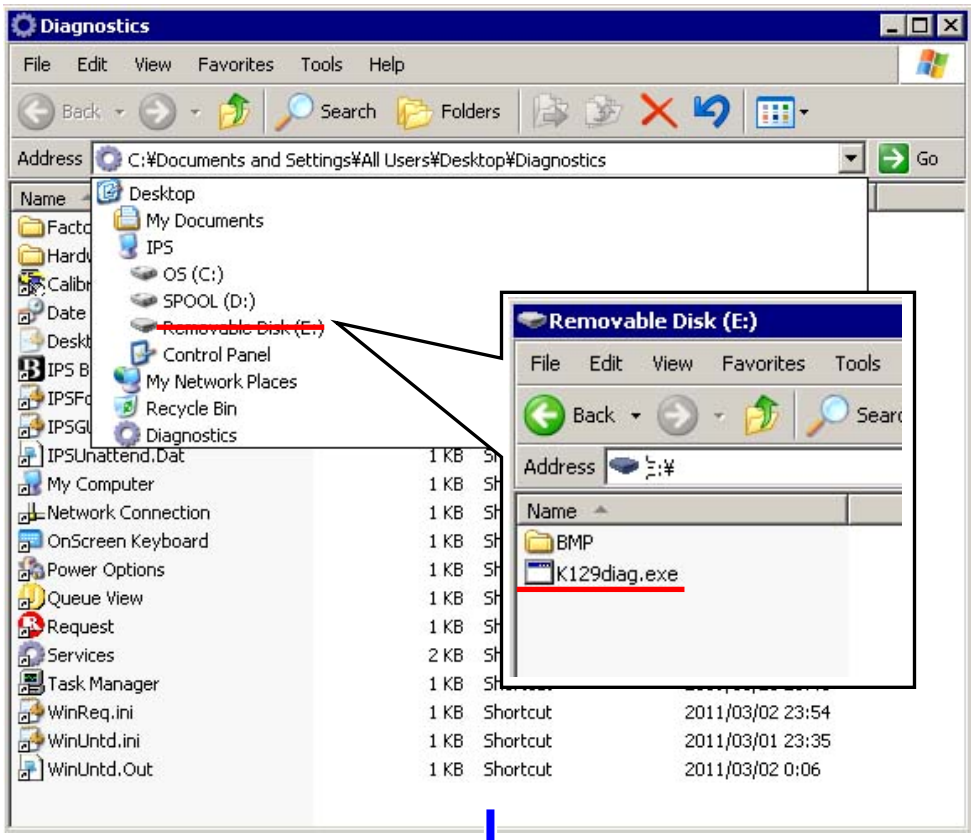
Reference

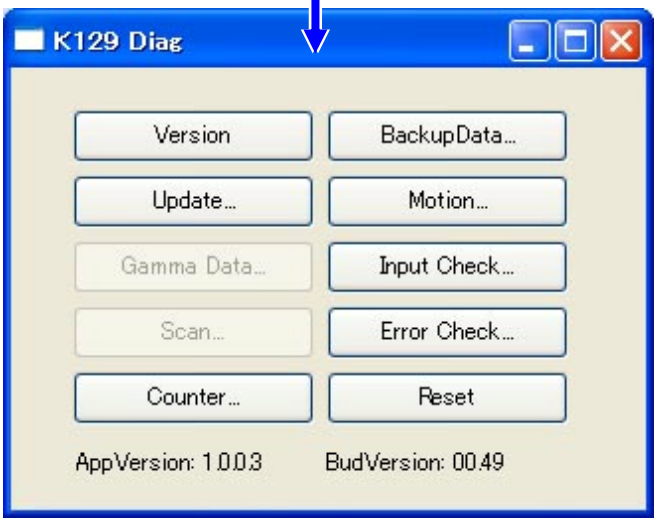
Other ways to run the "K129 Diag" are described on the next page.

Reference

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

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



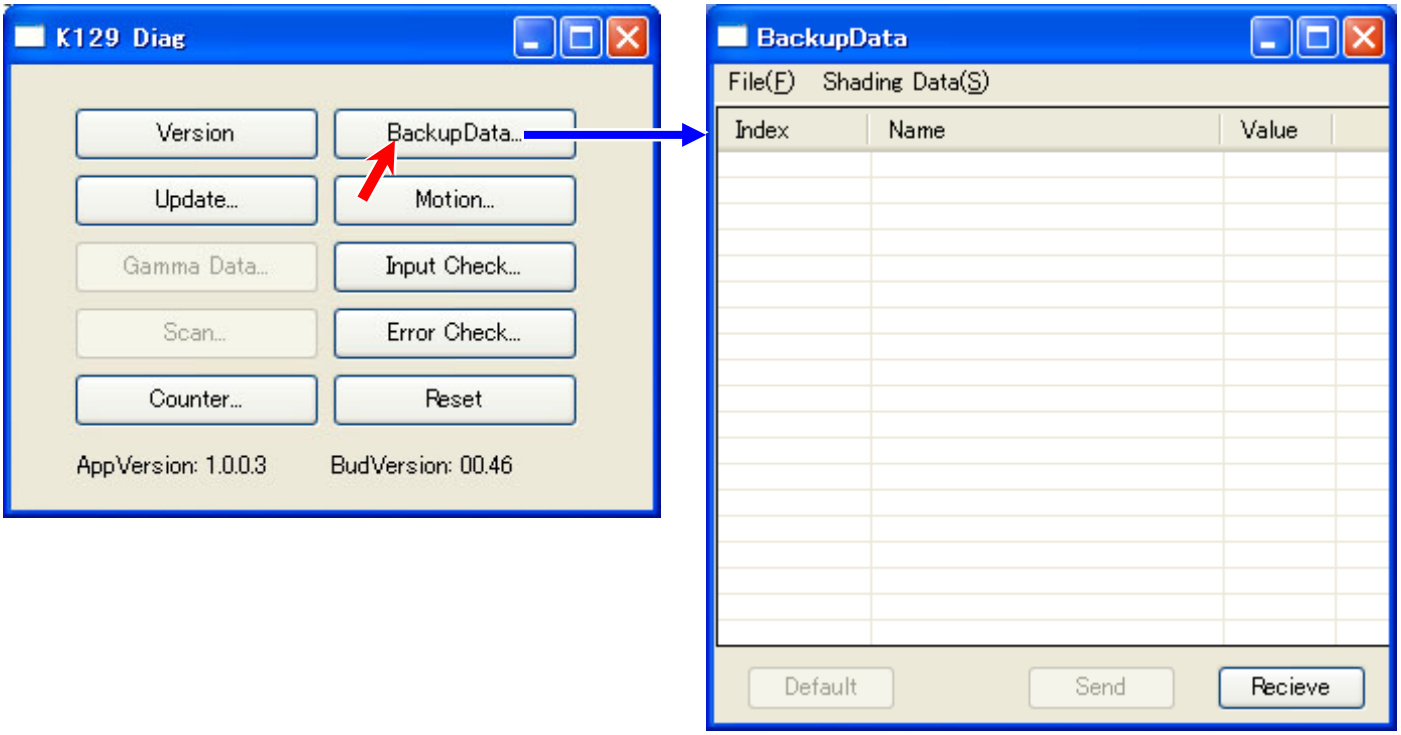


2. 8. 2 Stitching Adjustment

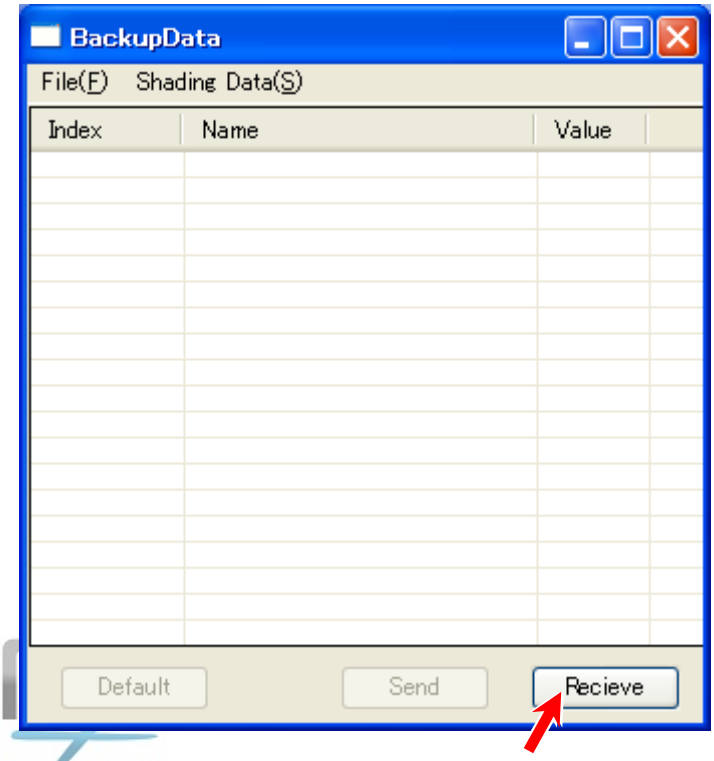
NOTE

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

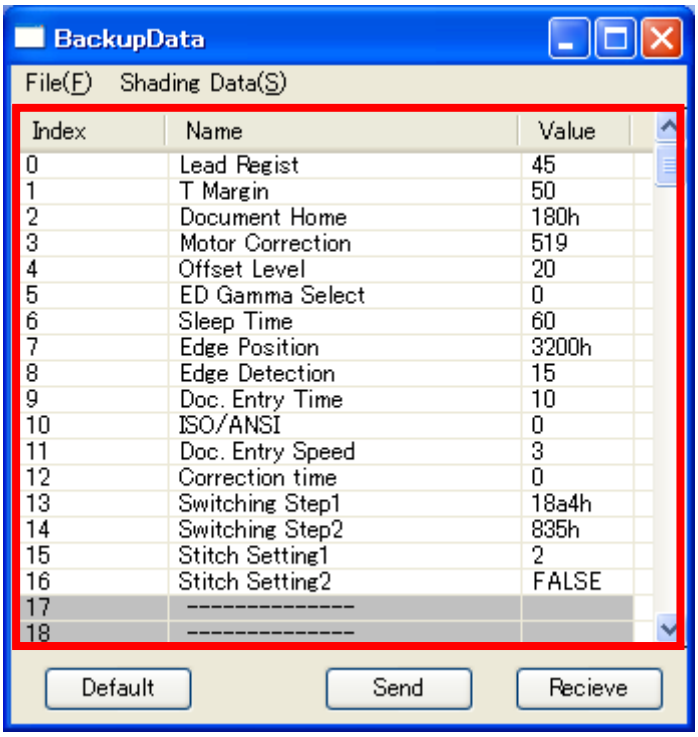
1. Run K129 Diag. Click [BackupData] to recall “Backup Data” sub window.



2. Click [Receive]

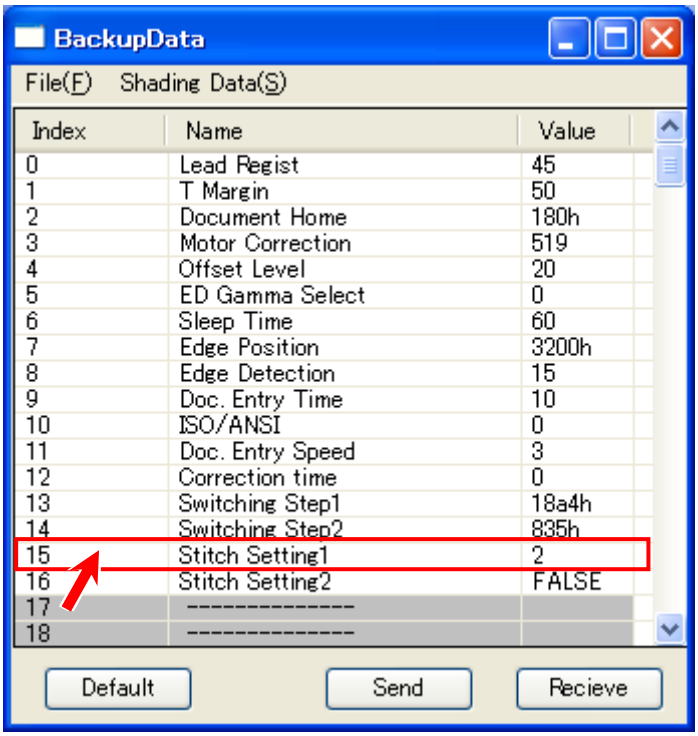


3. The current parameters are retrieved and displayed in the list.



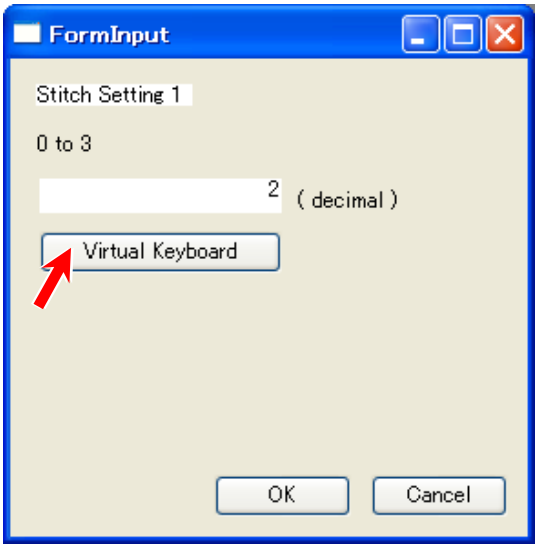
Index	Name	Value
0	Lead Regist	45
1	T Margin	50
2	Document Home	180h
3	Motor Correction	519
4	Offset Level	20
5	ED Gamma Select	0
6	Sleep Time	60
7	Edge Position	3200h
8	Edge Detection	15
9	Doc. Entry Time	10
10	ISO/ANSI	0
11	Doc. Entry Speed	3
12	Correction time	0
13	Switching Step1	18a4h
14	Switching Step2	835h
15	Stitch Setting1	2
16	Stitch Setting2	FALSE
17	----------	
18	----------	

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

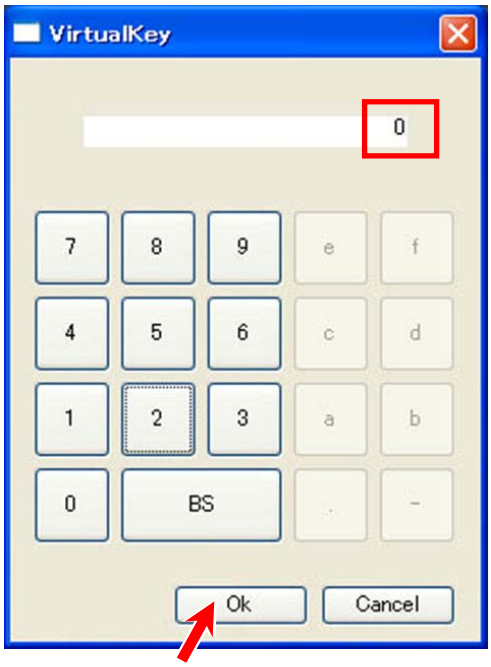


Index	Name	Value
0	Lead Regist	45
1	T Margin	50
2	Document Home	180h
3	Motor Correction	519
4	Offset Level	20
5	ED Gamma Select	0
6	Sleep Time	60
7	Edge Position	3200h
8	Edge Detection	15
9	Doc. Entry Time	10
10	ISO/ANSI	0
11	Doc. Entry Speed	3
12	Correction time	0
13	Switching Step1	18a4h
14	Switching Step2	835h
15	Stitch Setting1	2
16	Stitch Setting2	FALSE
17	----------	
18	----------	

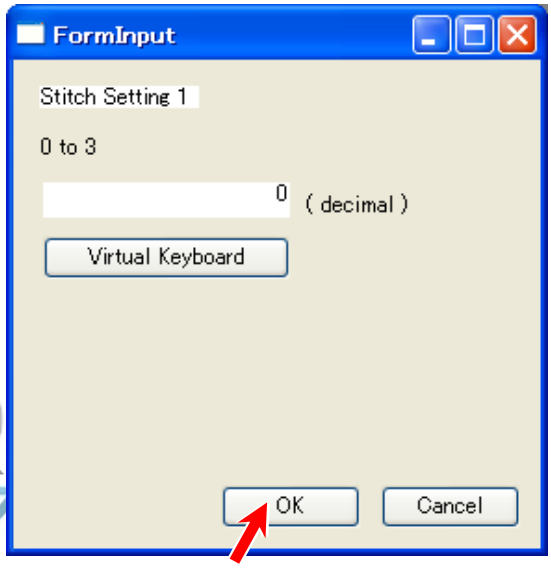
5. In “FormInput” screen, Click [Virtual Keyboard] to display the screen keypad.



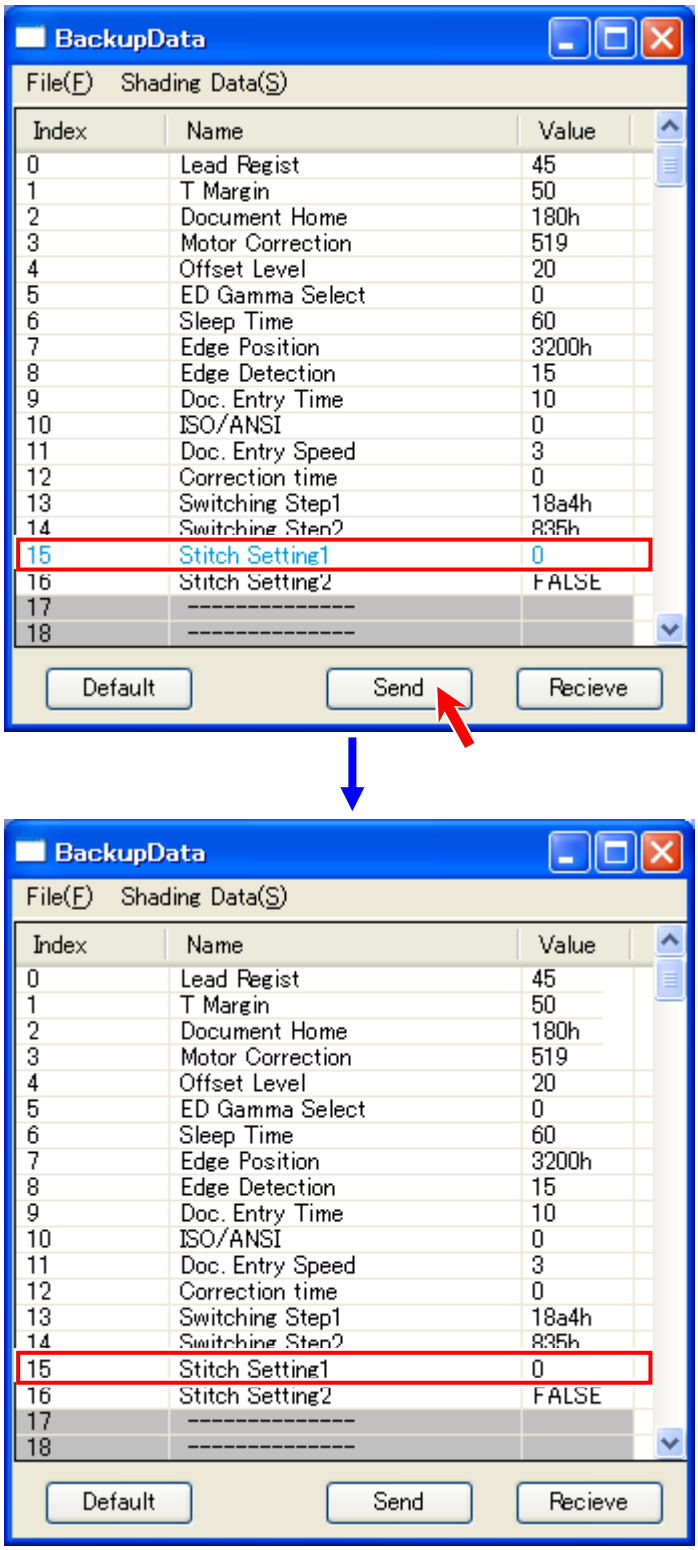
6. Type “0” with keypad, and then click [OK] on the bottom.



7. Click [OK] on the bottom.



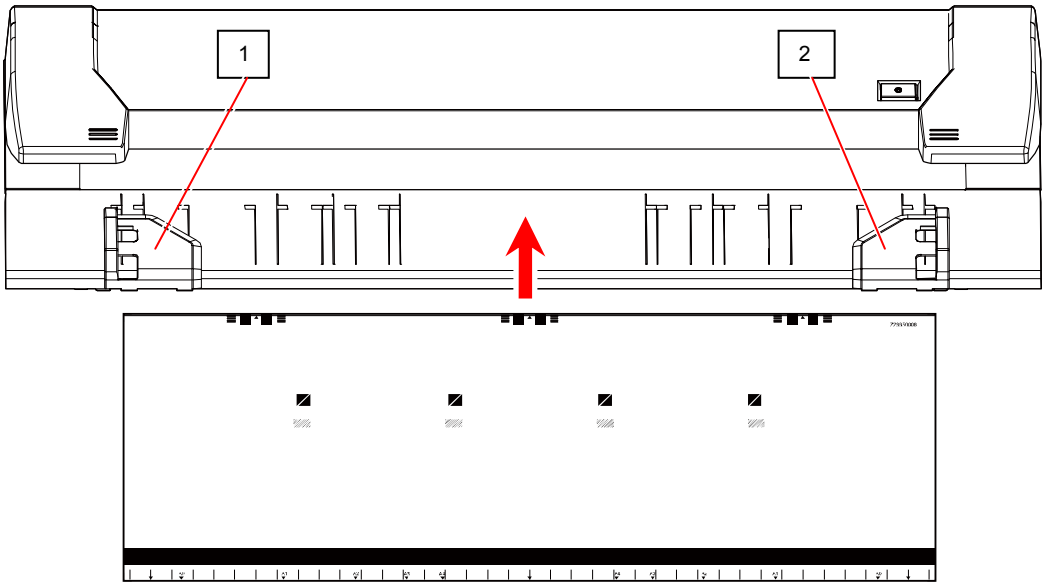
8. The setting change you have made is reflected to the list. It will turn blue.
   Click [Send] on the bottom. The setting change turns black. Now it is sent to the Main Board.



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

10. Clean Glass DCMNT with a soft cloth.

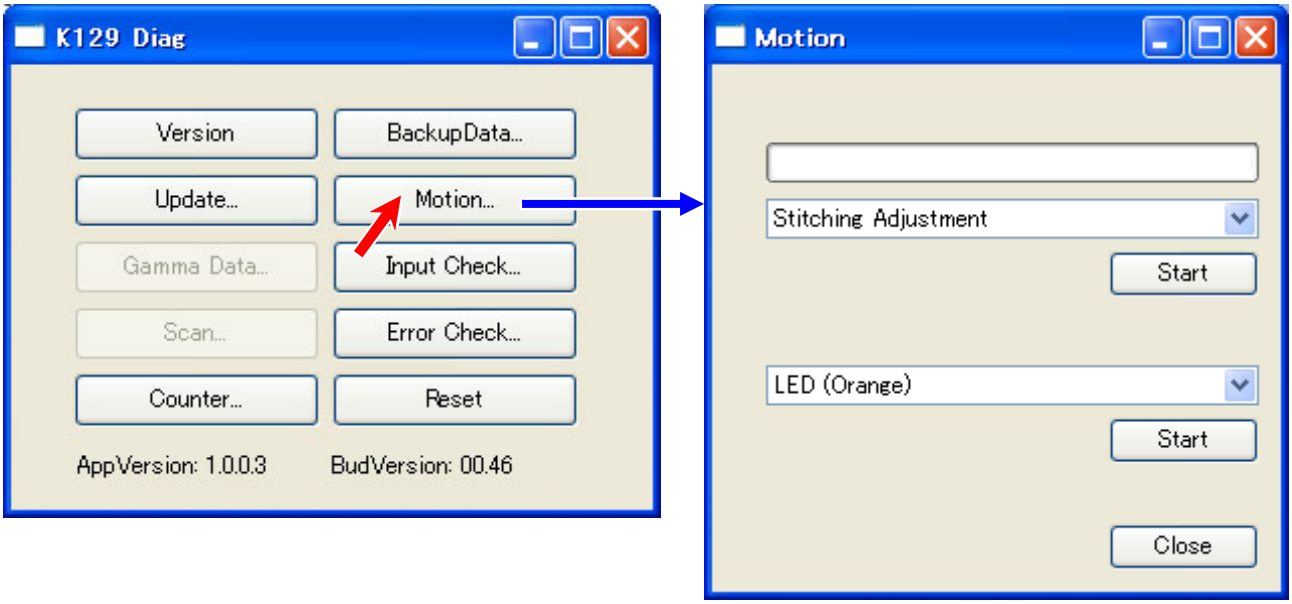
11. Remove the Original Guide (1) and (2). Set the Shading Sheet to the scanner noting the arrow direction.



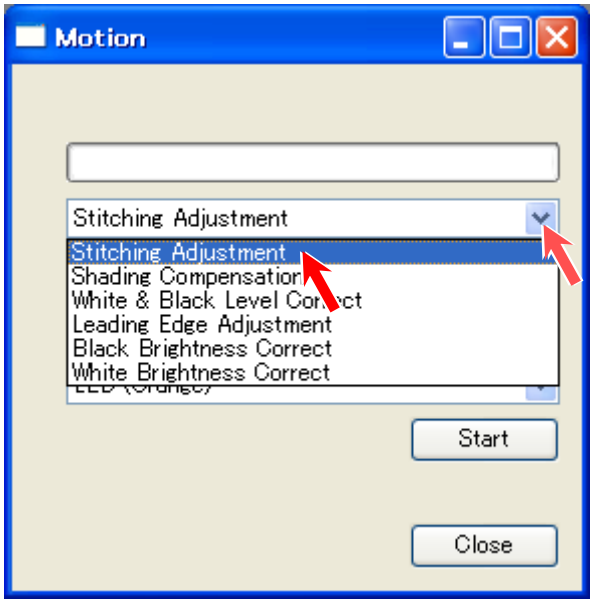
NOTE

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

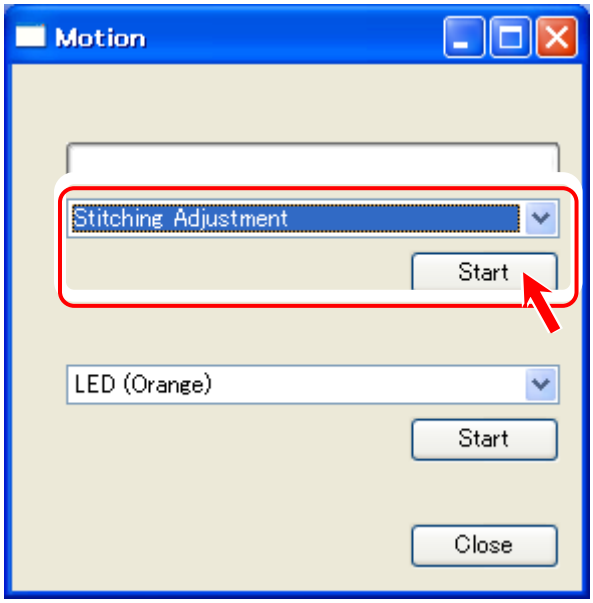
12. Click [Motion] to recall “Motion” sub window.



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



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

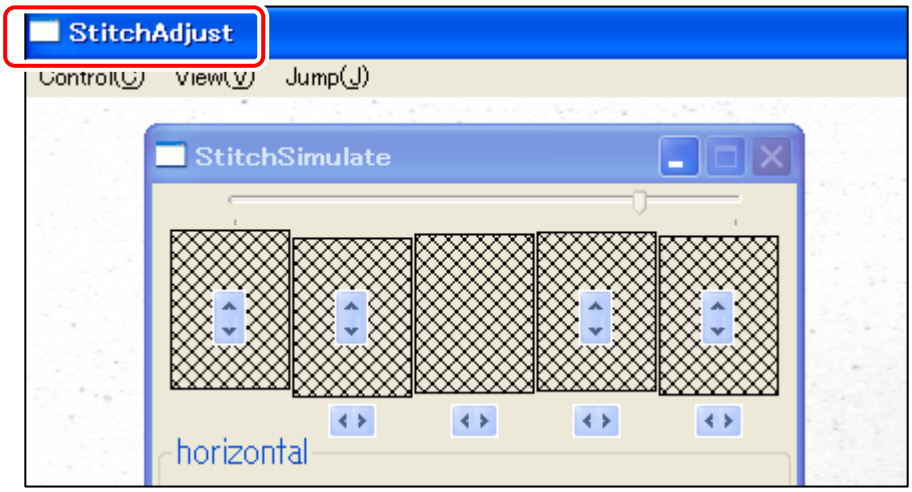


NOTE

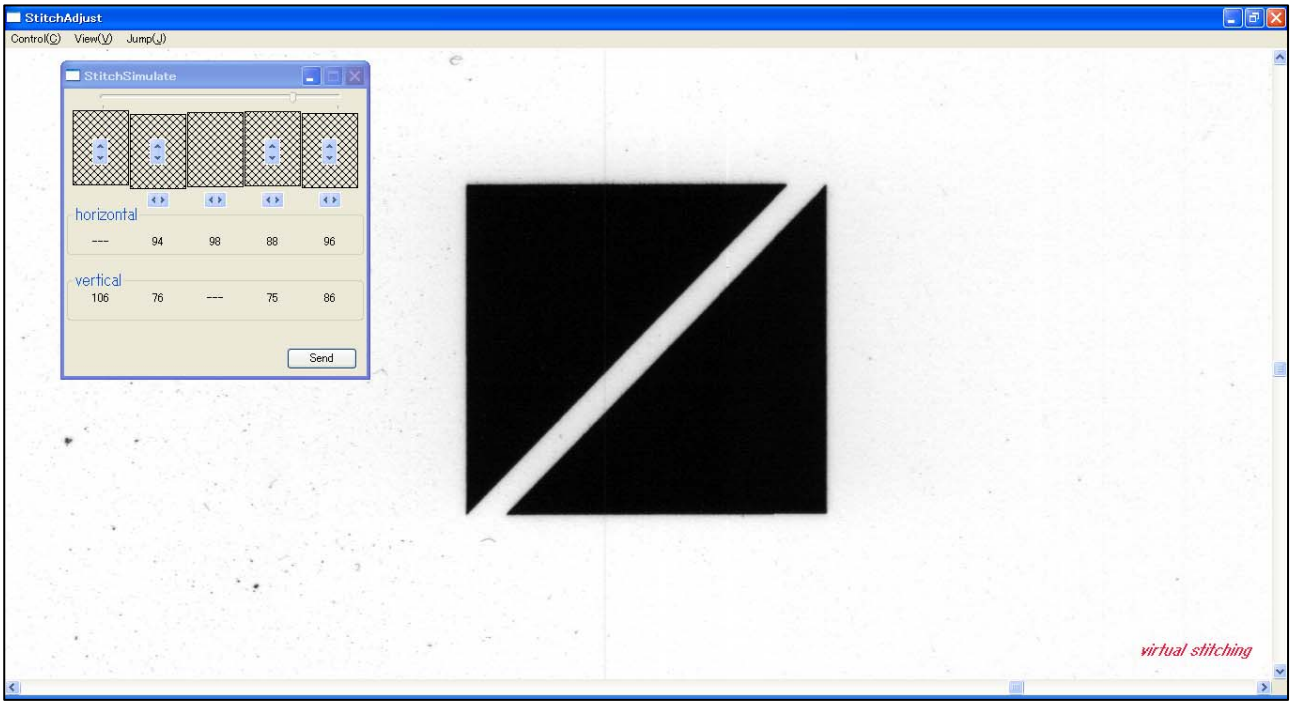
If an error message occurs;

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

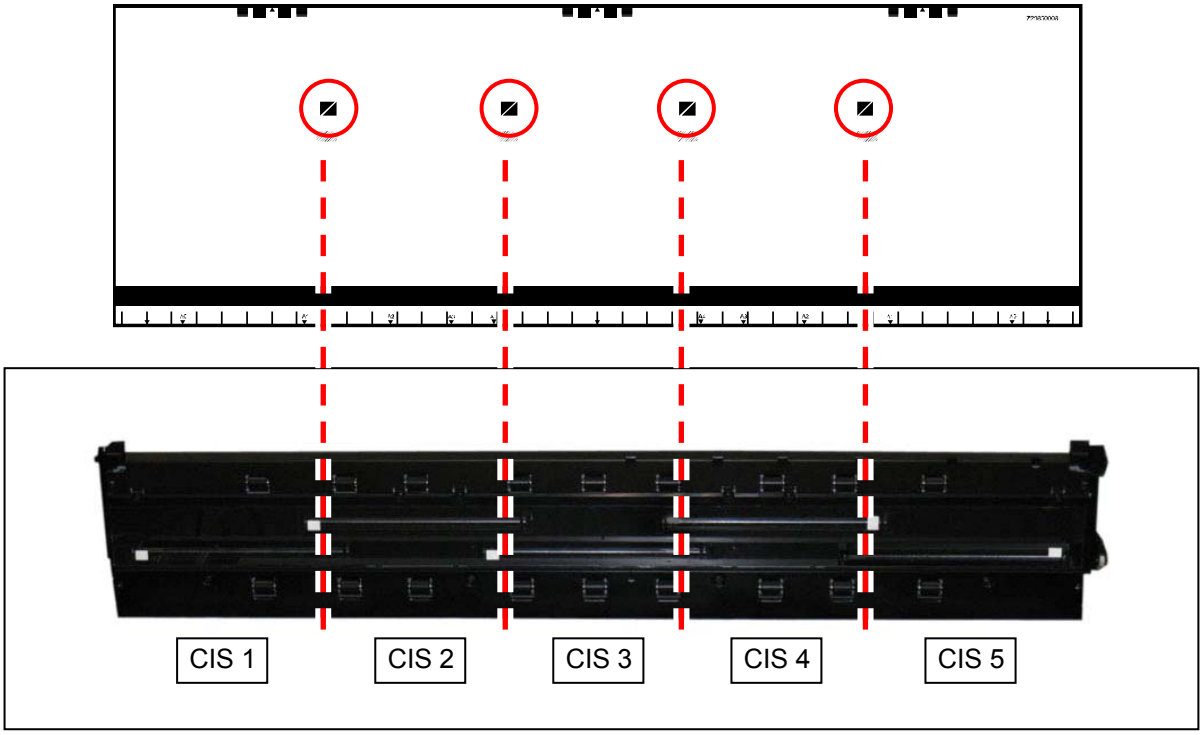
15. When the scanning is finished, two sub windows “Stitch Simulate” and “Stitch Adjust” appear.
Enlarge “StitchAdjust” window.



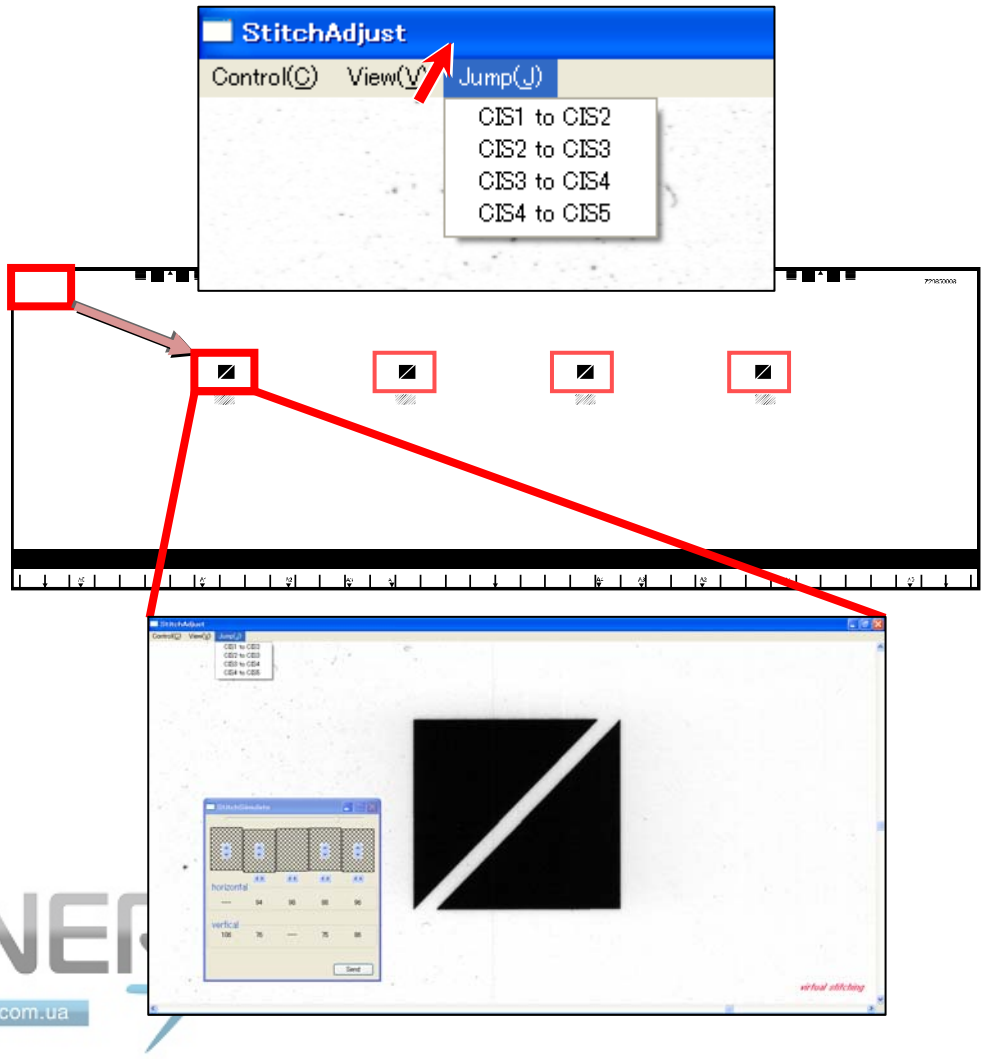
Enlarge “Stitch Adjust” window.



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

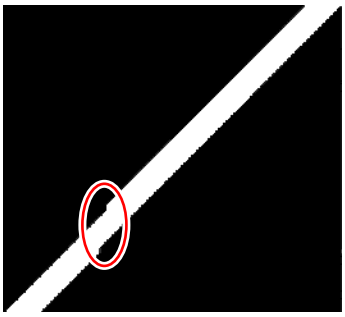


In “Stitch Adjustment” window, Select [Jump] menu, and then click [CIS1 to CIS2]. The display area will jump to the corresponding area on the scanned image.
If “Jump” does not move to the target exactly, manually scroll the image to catch the target in the window.

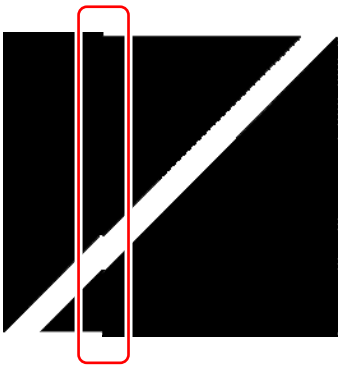


17. Confirm the Stitching Adjustment results.

no misalignment



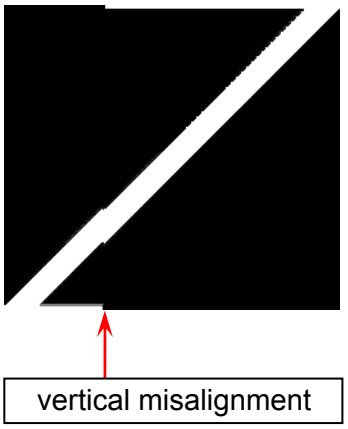
horizontal misalignment

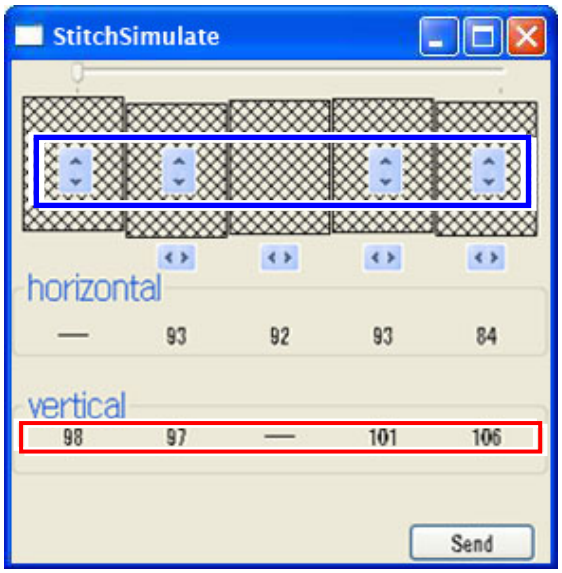


vertical misalignment

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 misalignment, go to step 19 and after for manual correction.

19. First, correct vertical misalignment as follows.
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.

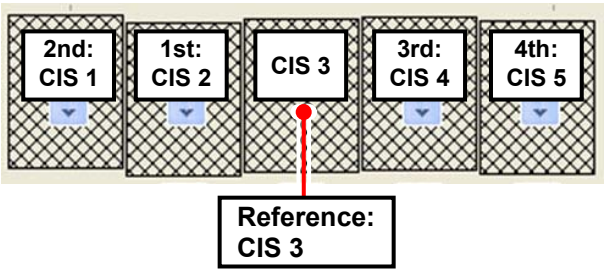




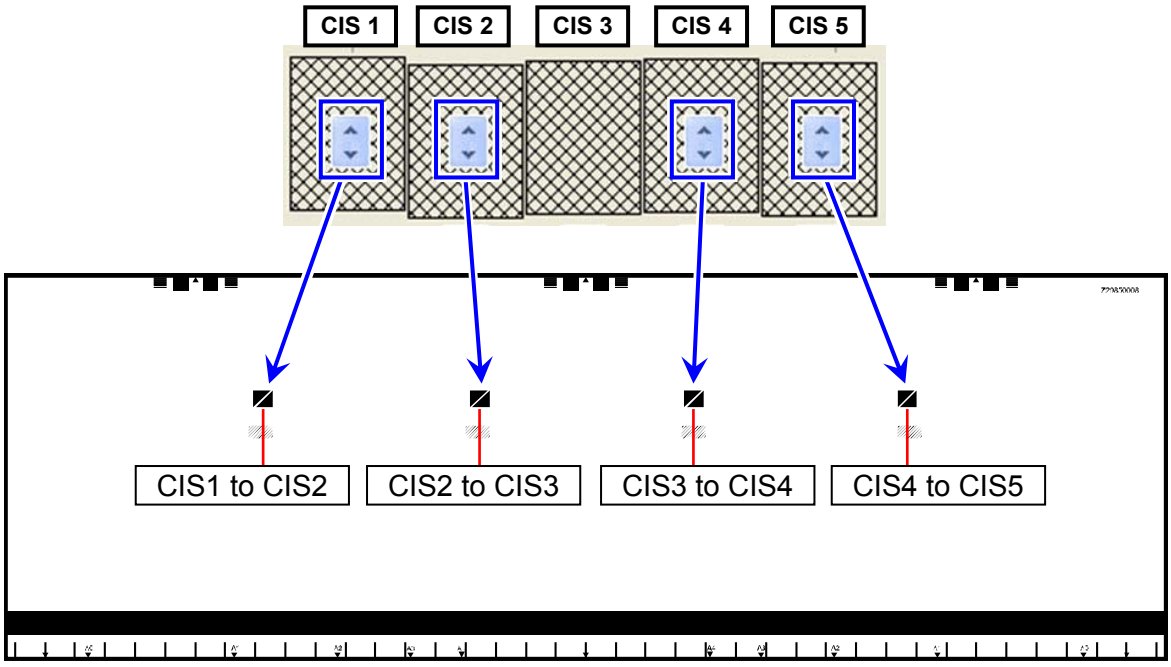
Do the same way for all the 4 targets at the borders.
Setting values will turn red by setting changes. Setting value 1 step = 1 pixel to trailing edge

NOTE

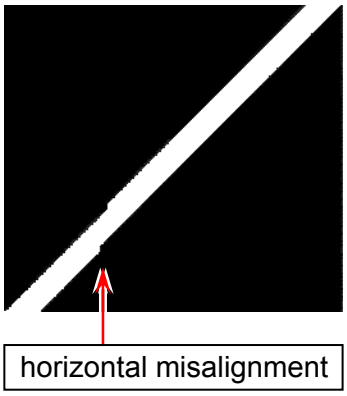
(1) For vertical correction, CIS 3 is the reference. You are asked to set the distance of shift for CIS 1/2/4/5 against CIS 3.
<u>First finalize the shift for CIS 2, and next CIS 1, CIS 4, CIS 5.</u>

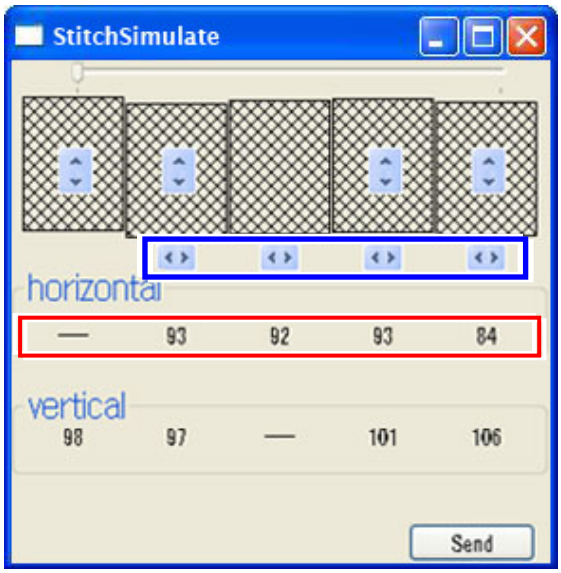


(2) The increase/decrease buttons correspond to the CIS border as follows.



20. Second, correct horizontal misalignment as follows.
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.

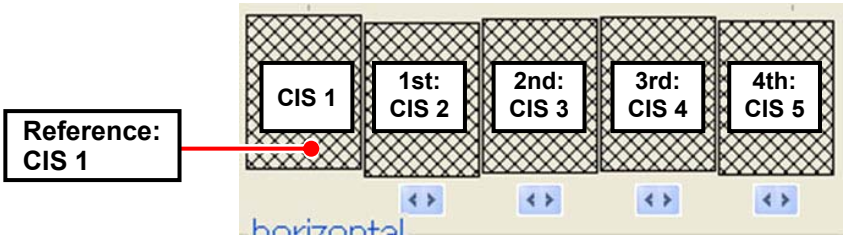




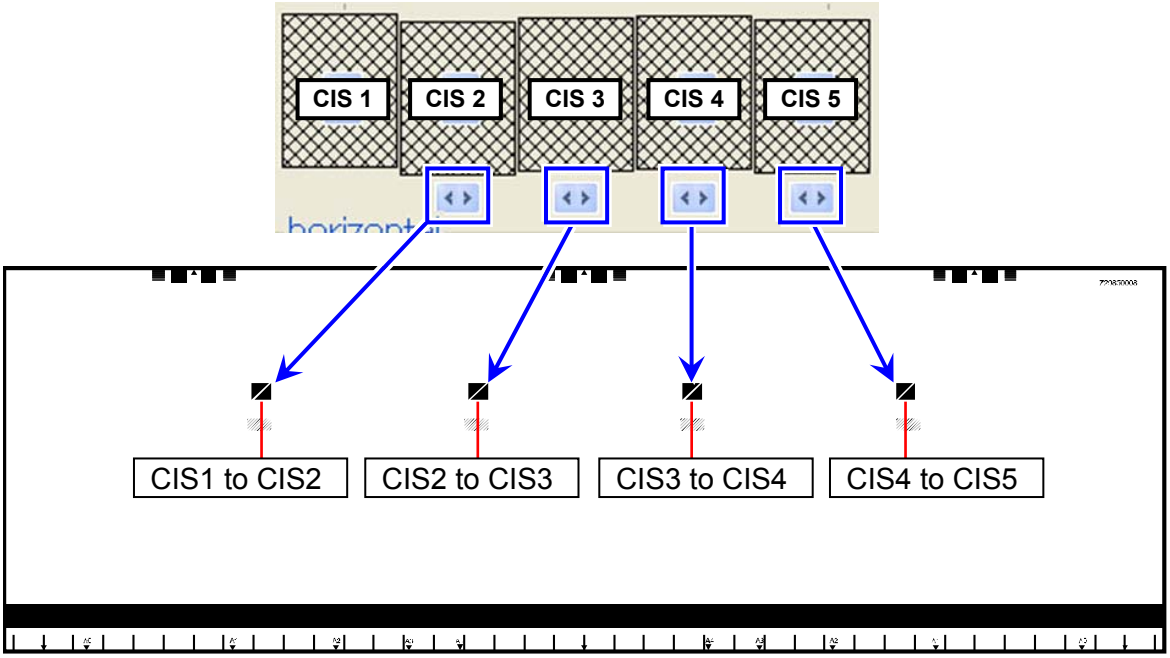
Do the same way for all the 4 targets at the CIS borders if needed.
Setting values will turn red by setting changes. Setting value 1 step = 1 pixel to right

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.



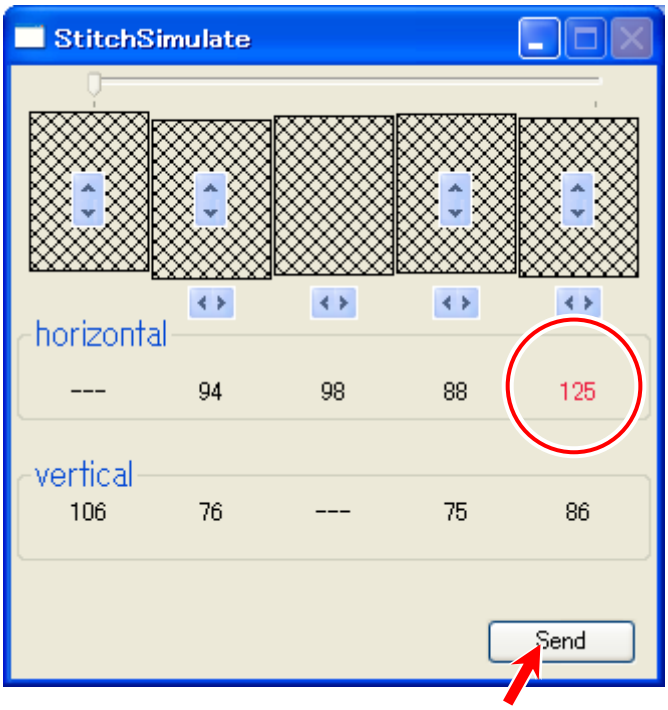
21. The manual correction is reflected to “StitchAdjust” window directly.
Reconfirm the manual correction result on the 4 targets.
If there is still misalignment, go back to step 19 and 20 to remove it.

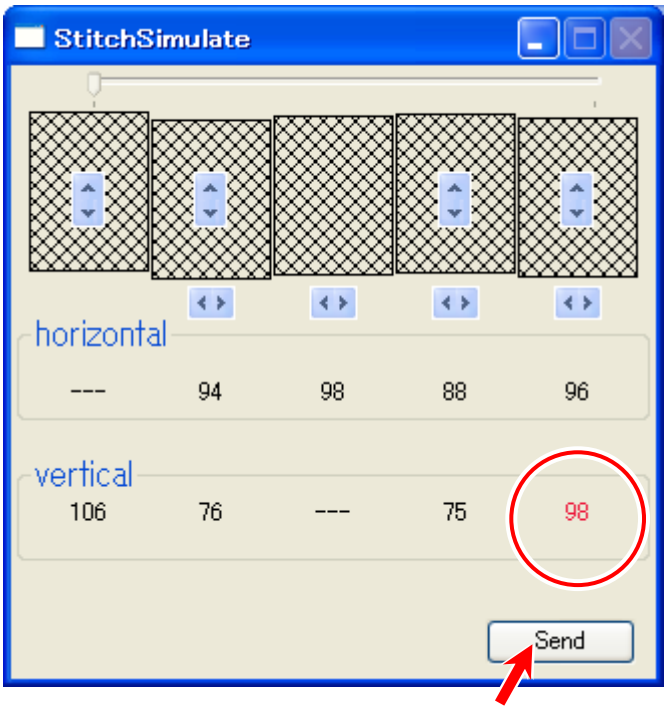
no misalignment

NOTE

Be sure to reconfirm the manual correction result.

22. In “StitchSimulate” window, setting values in red are not finalized yet.
Click [Send].

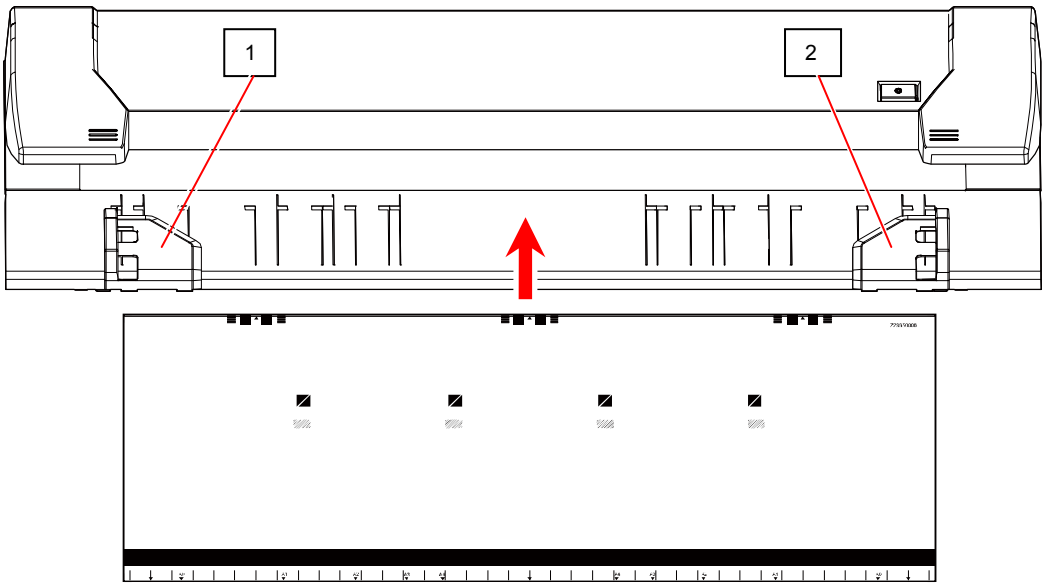




23. Click [OK].

24. Once the change is sent to the Main Board, setting values turn black.

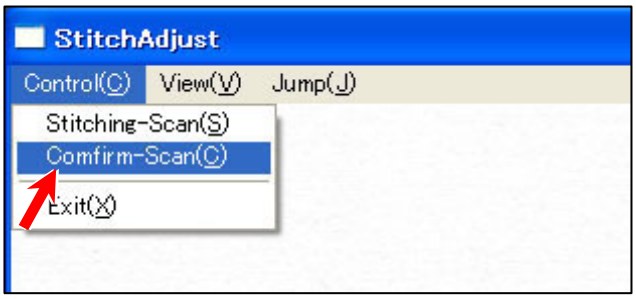
25. Remove the Original Guide (1) and (2). Set the Shading Sheet to the scanner noting the arrow direction.



NOTE

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

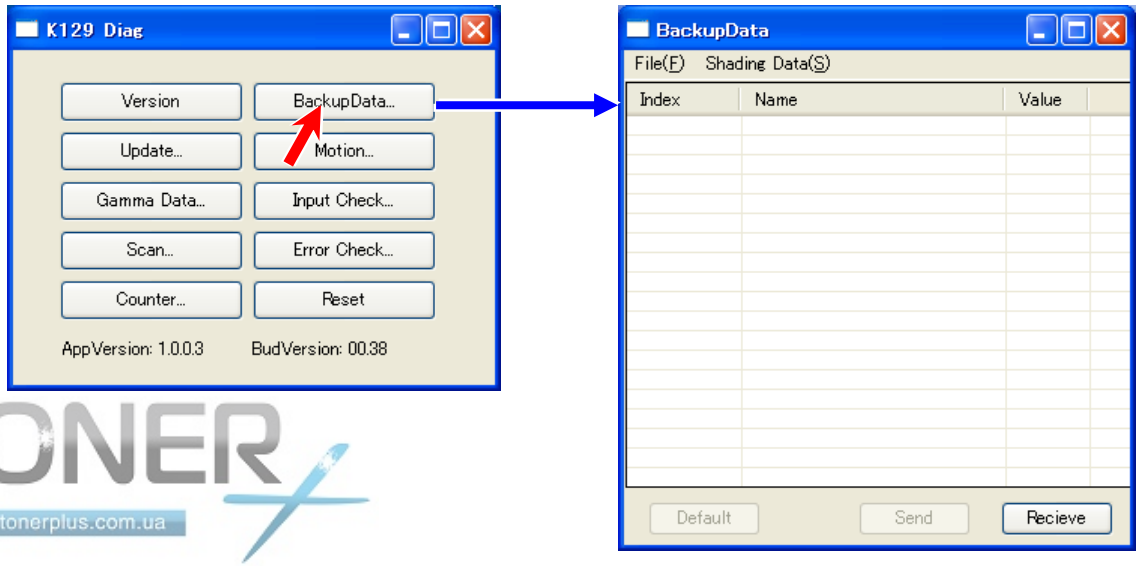
26. In “StitchAdjust” window, select [Control] menu, and then click [Confirm-Scan] to make another scan.



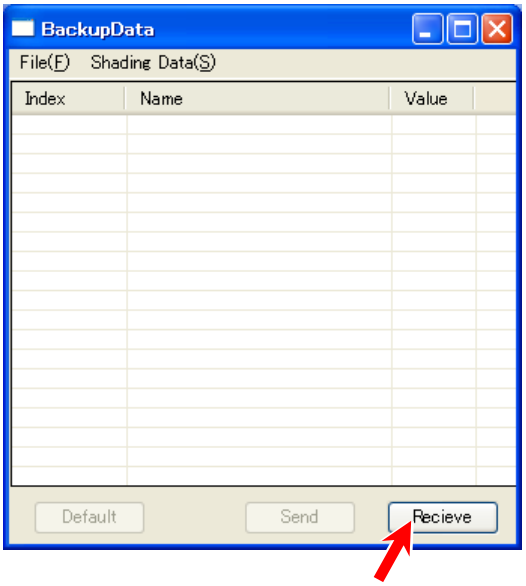
27. The rescan result can be checked in “StitchAdjust” window.

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

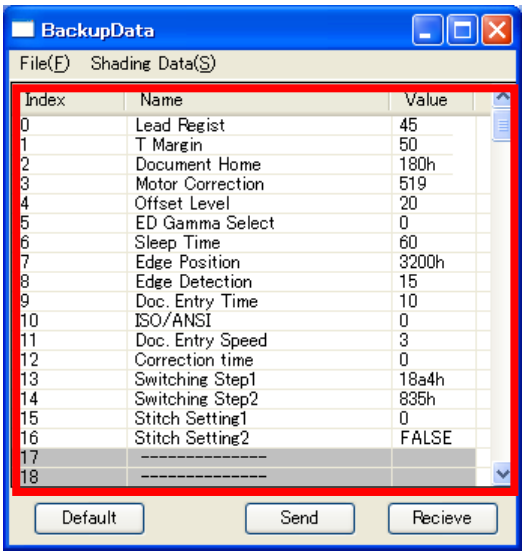
29. Run K129 Diag. Click [BackupData] to recall “Backup Data” sub window.



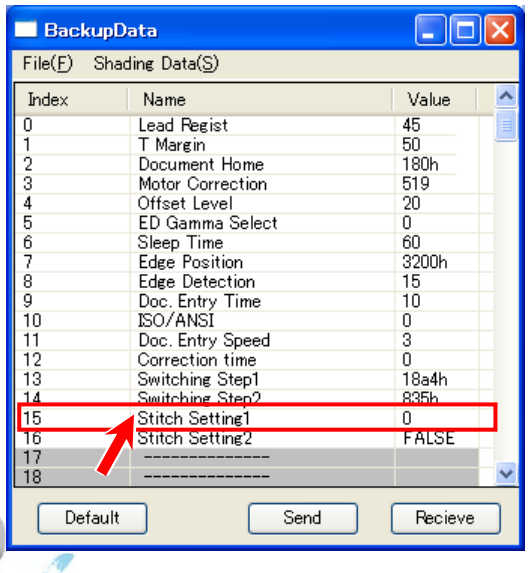
30. Click [Receive]



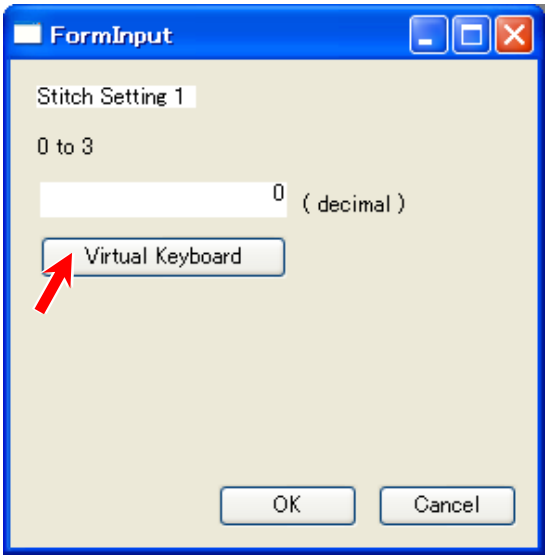
31. The current parameters are retrieved and displayed in the list.



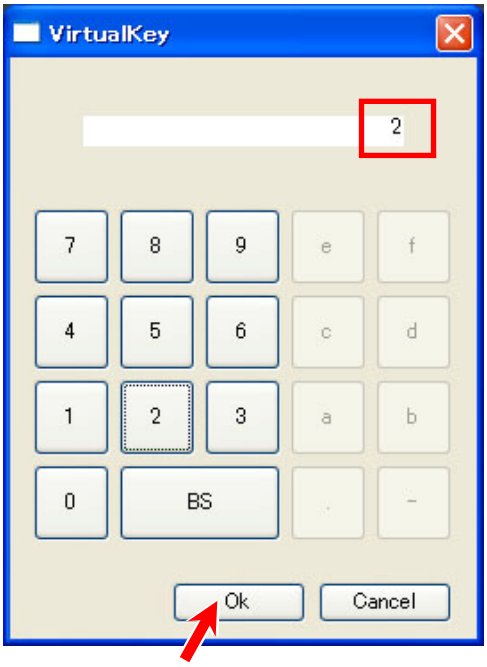
32. Double click on the row No.15 “Stitch Setting 1”.



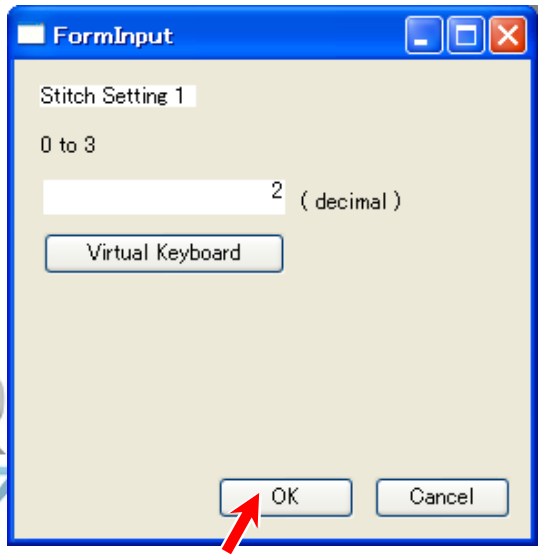
33. In “FormInput” screen, Click [Virtual Keyboard] to display the screen keypad.



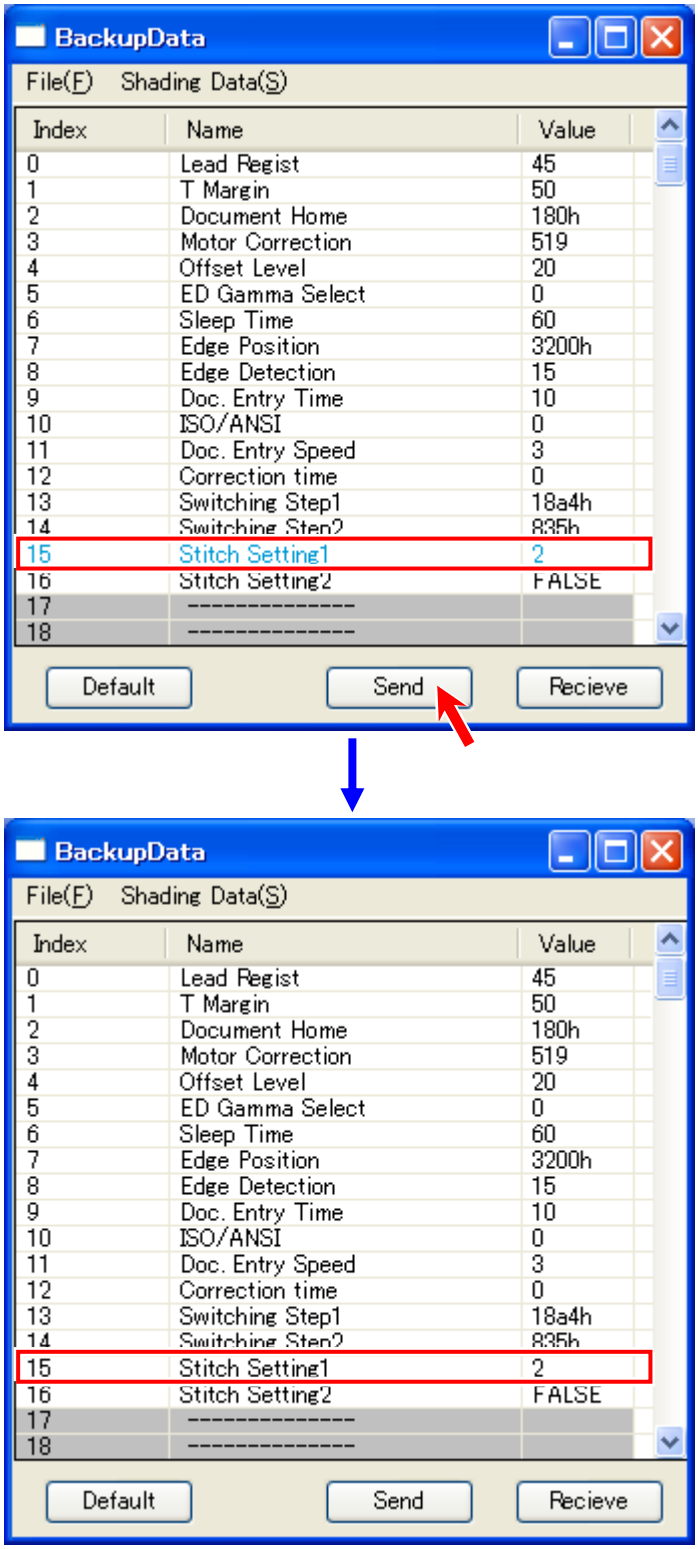
34. Type “2” with keypad, and then click [OK] on the bottom.



35. Click [OK] on the bottom.



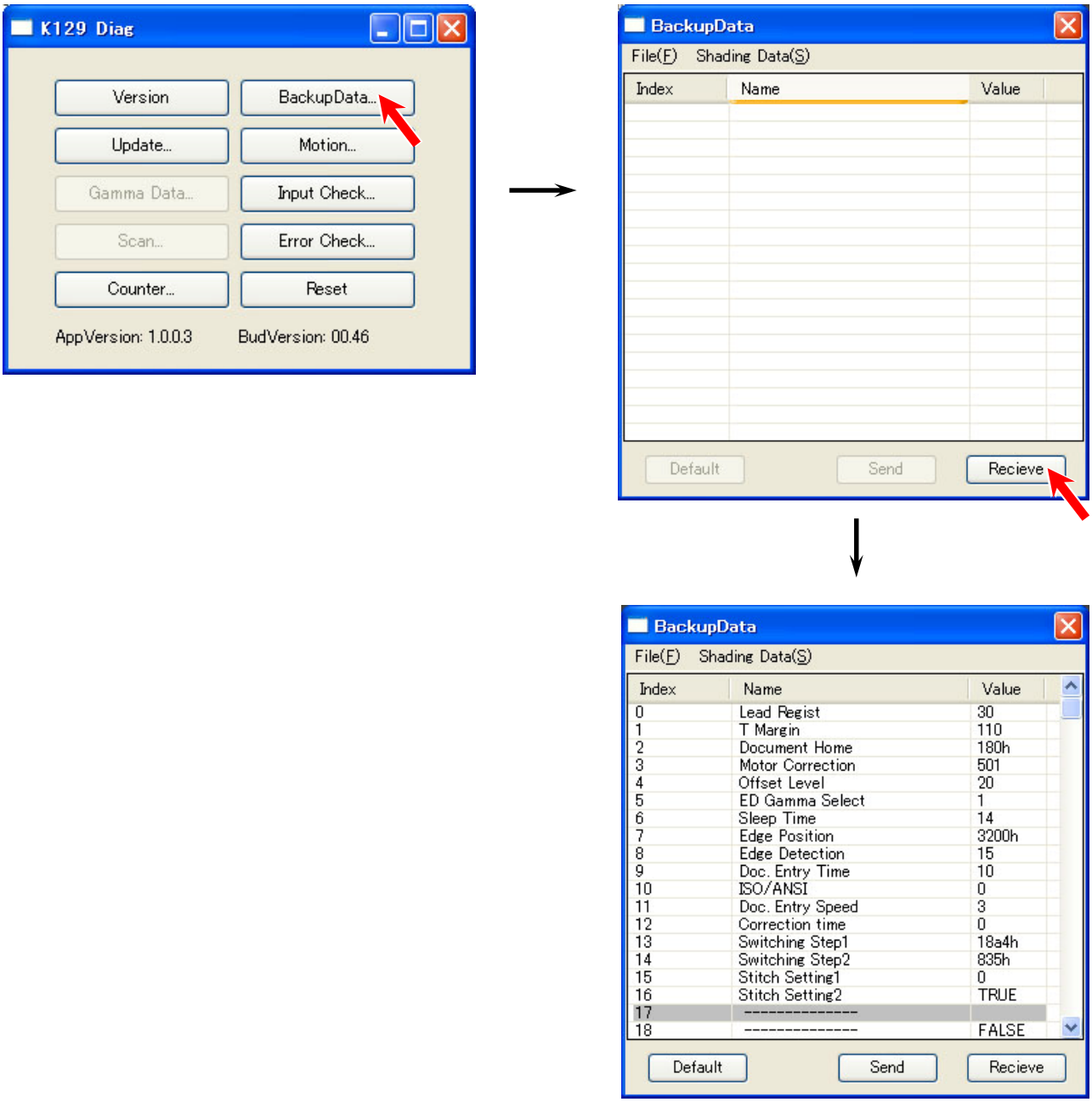
36. The setting change you have made is reflected to the list. It will turn blue.
Click [Send] on the bottom. The setting change turns black. Now it is sent to the Main Board.



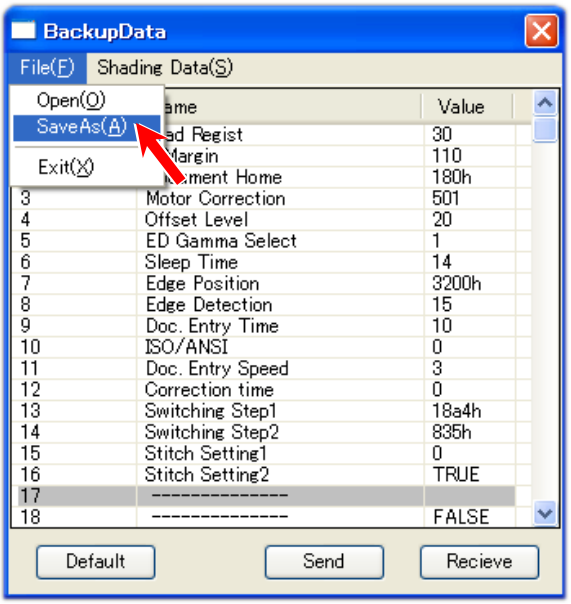
2. 8. 3 Creating Backup Data

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

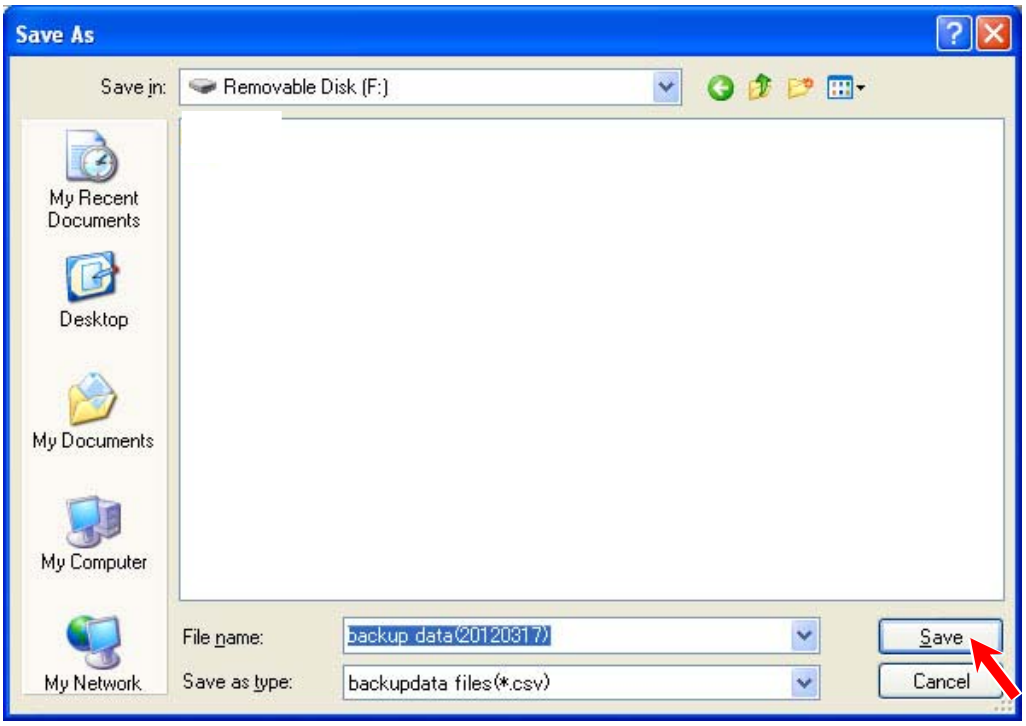
If you have quitted Backup Data window in the previous section, click [Backup Data] in the home screen, click [Receive]



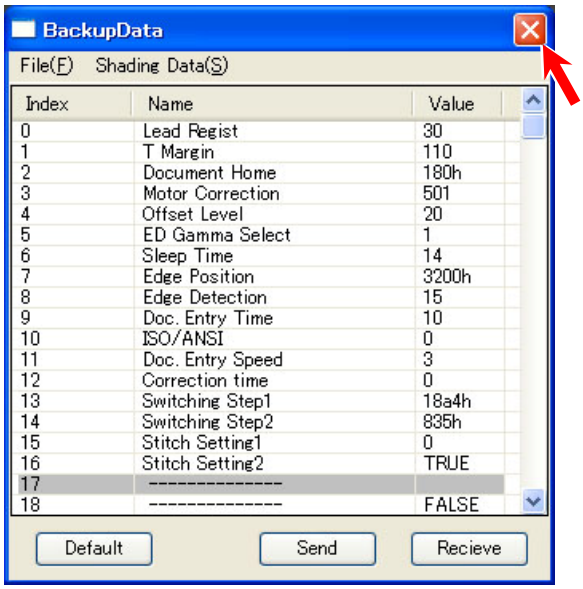
1. Select “File” menu, and click “Save As.”

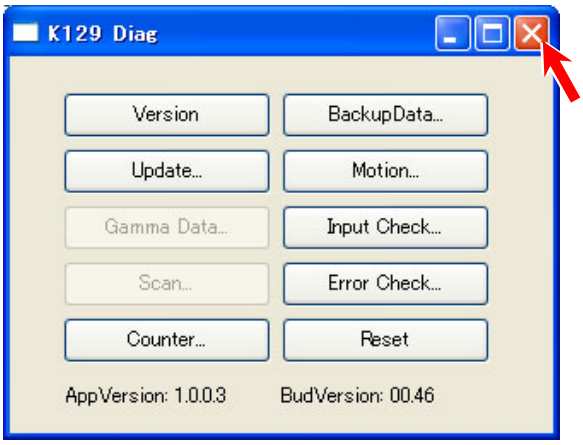


2. Specify the location to create a backup (csv), and then click [Save].

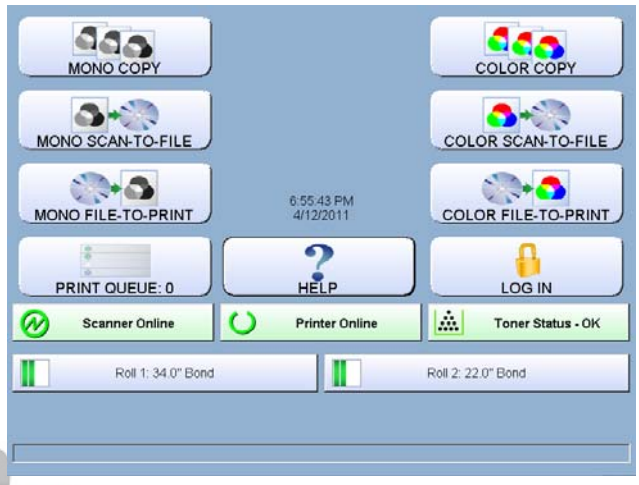


3. Click the X button to quit “BackupData” sub window and K129 Diag.





4. Run “Restart GUI” and the user’s GUI reappears.



5. completed.

Chapter 3

Print / Scan Process

3. 1 Print Process

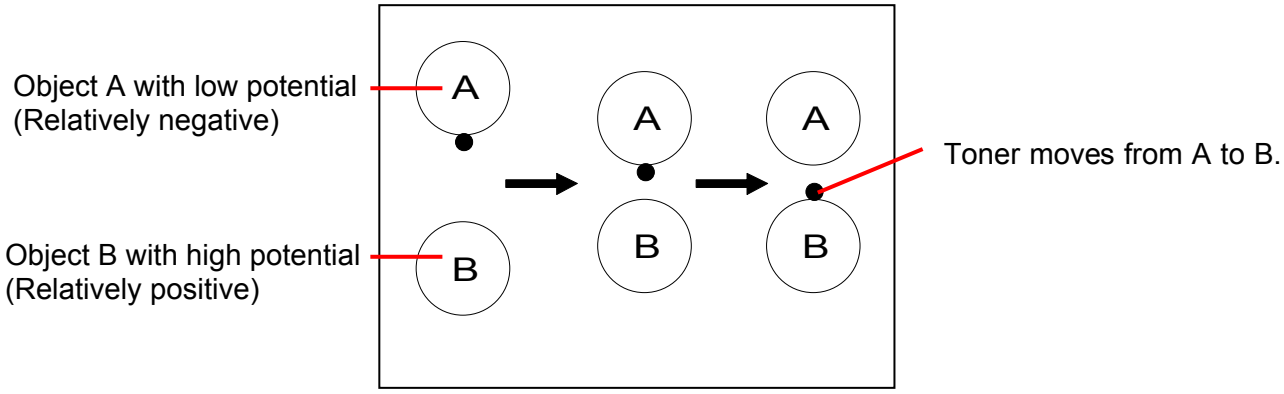
3. 1. 1 Characteristic of toner

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

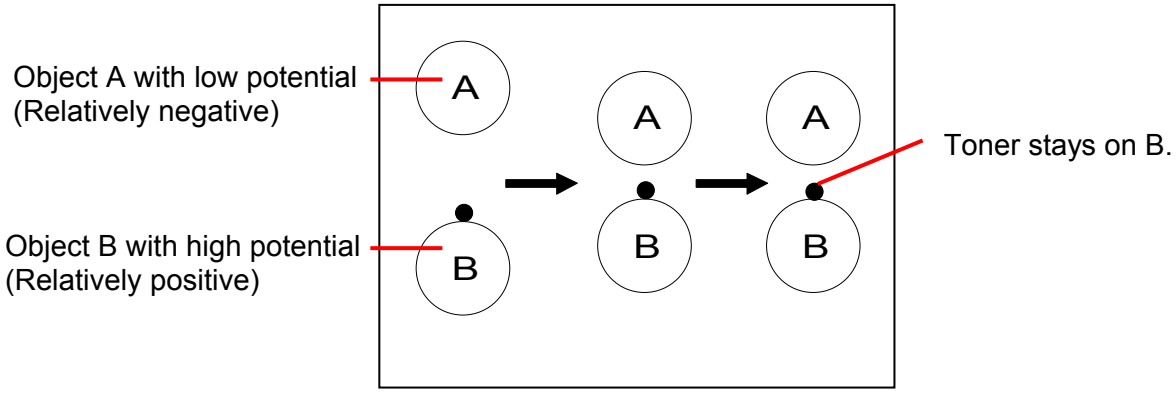
Suppose that there are objects A and B, and the situation is as follows.

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

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



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

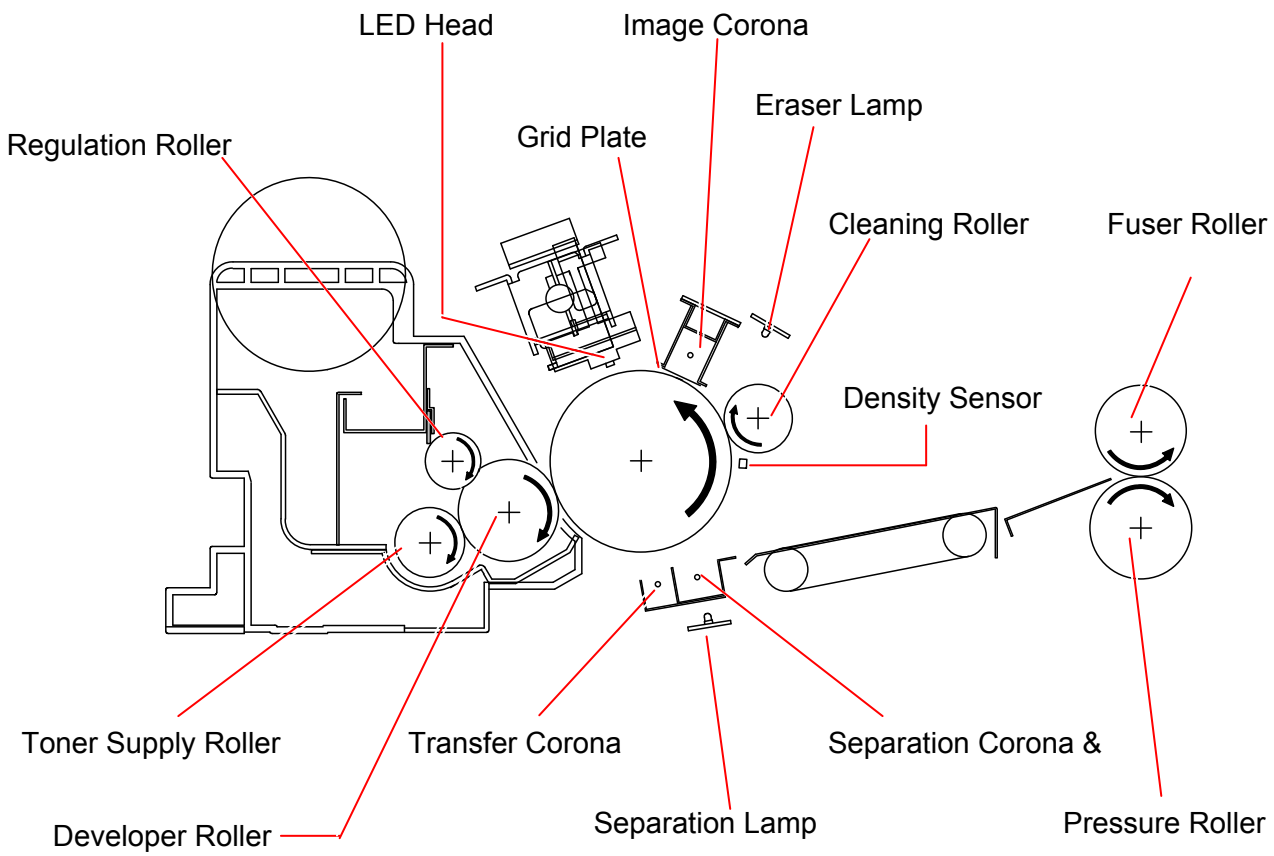


Thus, the toner has a characteristic to move from one place with a lower potential to another place with a higher potential.
If we control the electric potentials, it is possible to move the toner from one place to another as we intend, or it is also possible to remove the toner from an unwanted place.
TASKalfa 4820w controls the electric potentials properly working each part as Drum, Corona Units, Lamps, Developer Unit and Cleaning Roller.
The movement of toner is controlled correctly and several processes as Development, Toner Transfer, Drum Cleaning and etc. are performed.

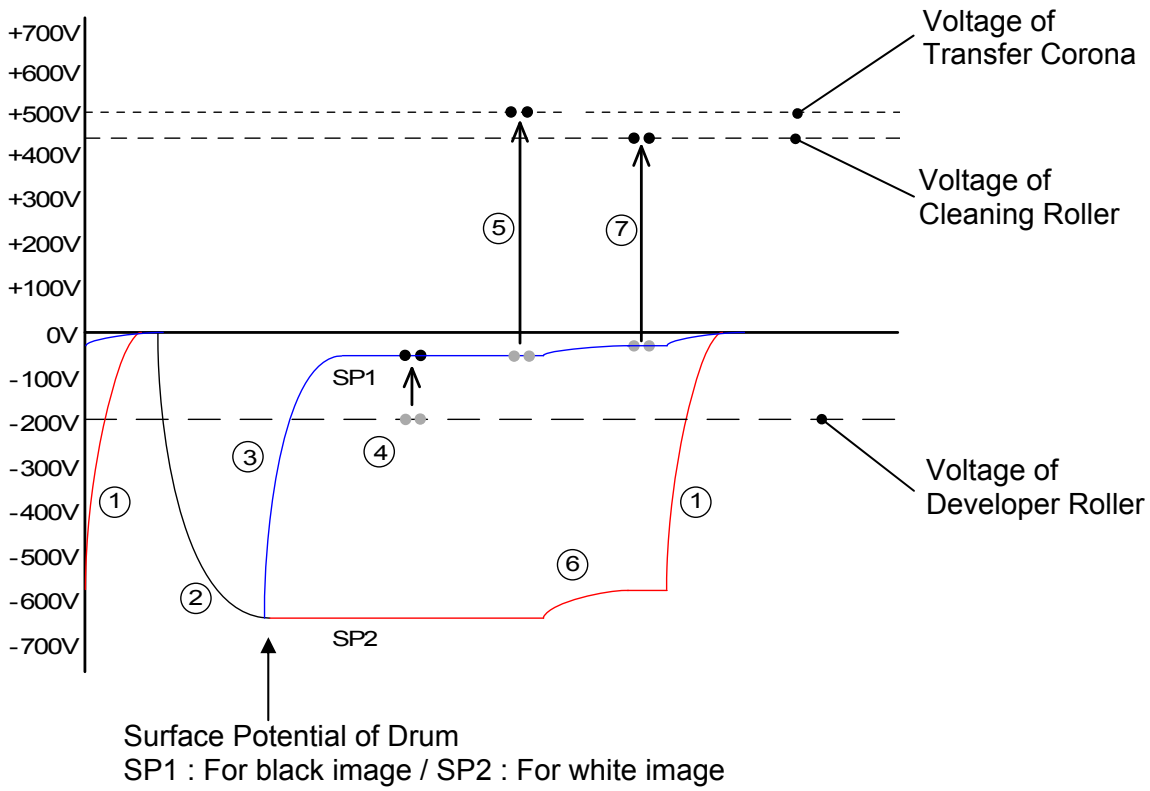
3. 1. 2 Each step of print process

One cycle of print consists of the following 8 processes.

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



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



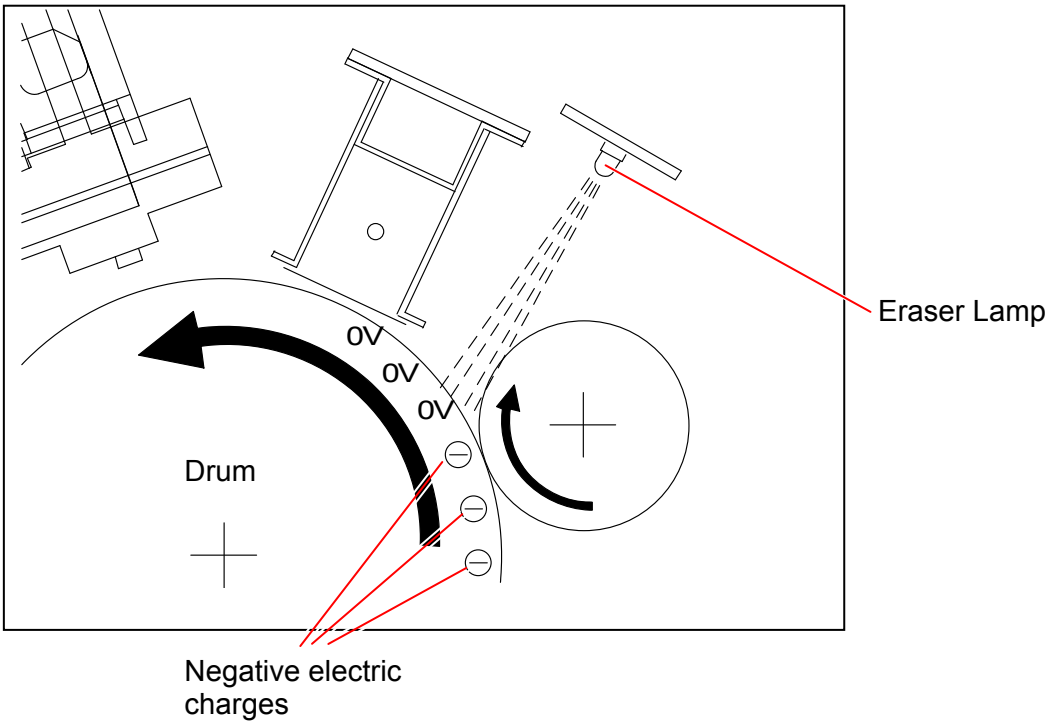
Name of part	Voltage (Current) during Print Cycle	Voltage during Toner Collection Process
Image Corona Wire	-1.3mA +/-0.05mA	-
Grid Plate	-620V +/-30V	-
Developer Roller	-180V +/-5V	+350V +/-5V
Regulation Roller (Center)	-80V +/-5V against the Developer Roller Bias	-80V +/-5V against the Developer Roller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

Reference

When the printer is going to stop after printing, or when the used Roll Deck is changed with other one, TASKalfa 4820w will take the “Toner Collection Process” to remove the remained toner and place back into the Developer Unit.
Refer to [3.1.4 Toner Collection Process] for the detail.

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

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

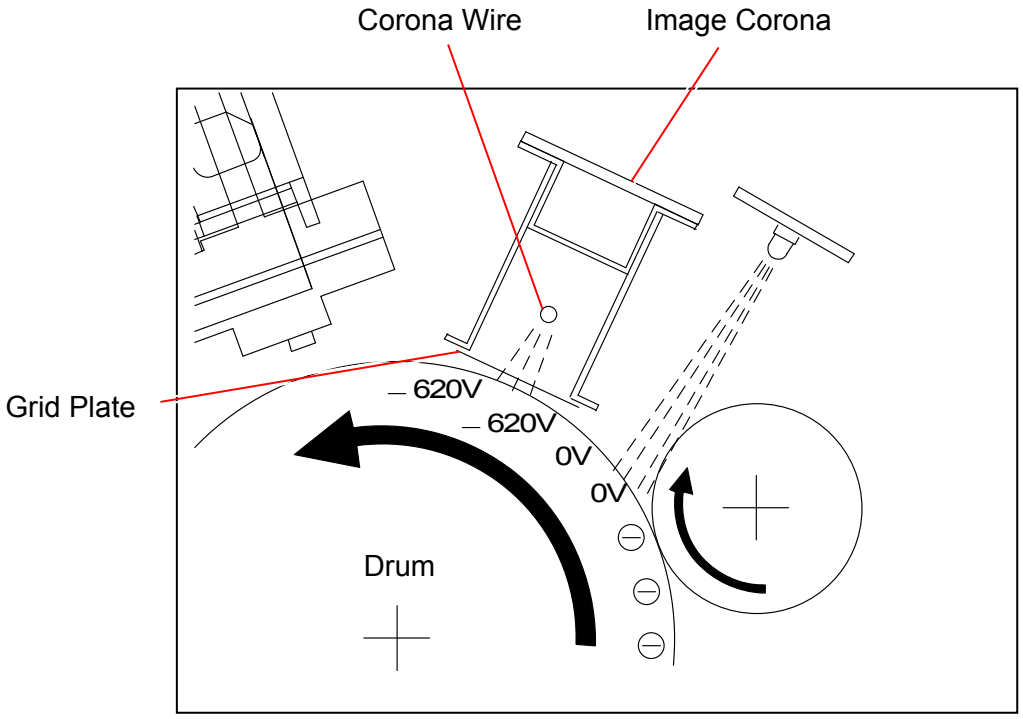


3. 1. 2 .2 Charge of Drum

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

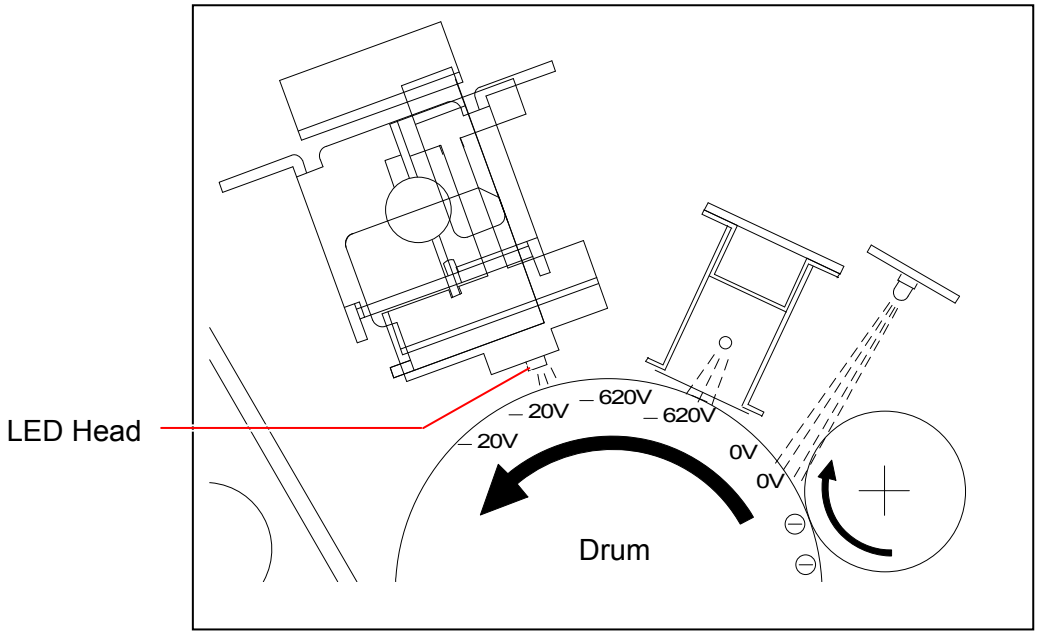
Current and Voltage supplied to the Image Corona Wire is as follows.

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

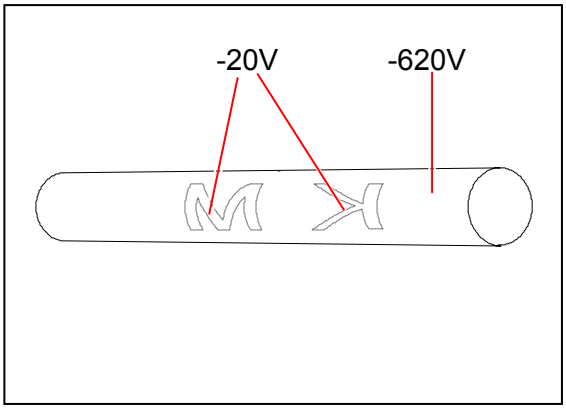


3. 1. 2. 3 Exposure

According to the printed image pattern, the LED Head throws the light (740nm) onto some part of Drum which corresponds to the black area of printed image pattern.
As the Drum has a characteristic to lose the negative electric charges if it is exposed to the light, this part of Drum surface loses the charges and its potential becomes about -20V. (This potential is not constant but is variable by the environment.)
The other part of Drum surface, which was not exposed to the light from the LED Head, keeps -620V of potential which the Image Corona has given.
An invisible electric image pattern that consists of -620V area and the -20V area is formed on the surface of Drum as a result. (This is called “Electrostatic Latent Image”.)



(Distribution of electric potentials after the Exposure)



Reference

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

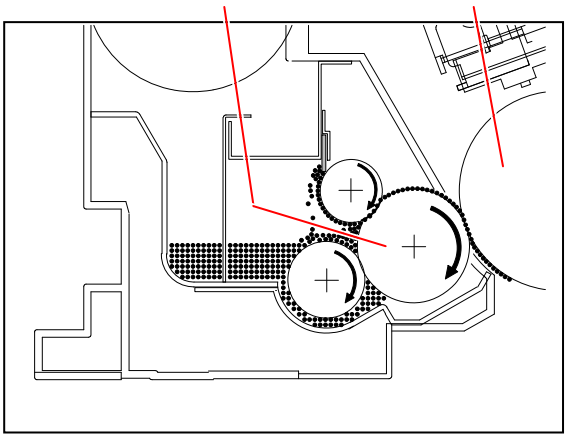
3. 1. 2. 4 Development

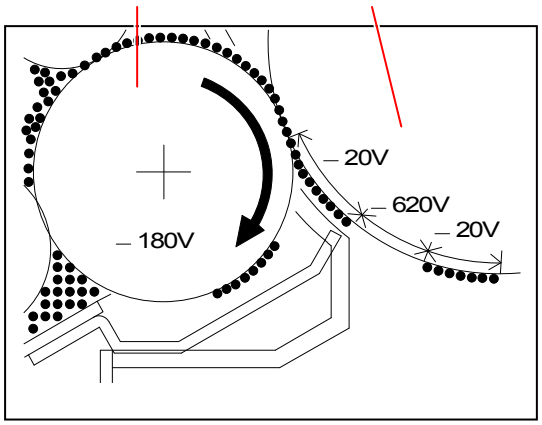
The Developer Roller, which is evenly covered with the toner, is contacted to the Drum because the Developer Unit is pressed to the Drum. (The width of contact point is about 5mm.)
The Developer Roller is supplied with -180V (+/-5V) during the print cycle.
And both -620V area and -20V area exist on the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

Seen from the voltage of Developer Roller Bias (-180V), the -20V area on the Drum is relatively "positive". So the toner moves from the Developer Roller to the -20V area of Drum.

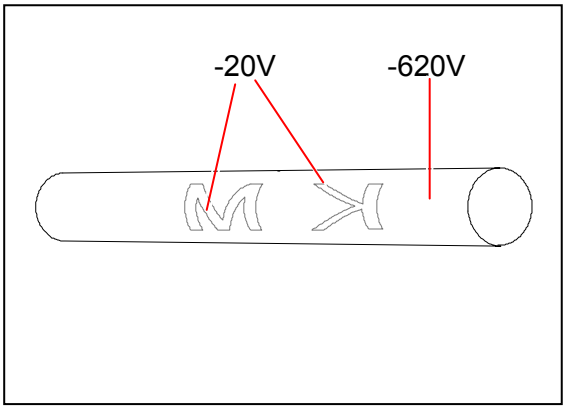
On the other hand, the -620V area is relatively "negative" seen from the Developer Roller.
So the toner does not move to the -620V area but stays on the Developer Roller.

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



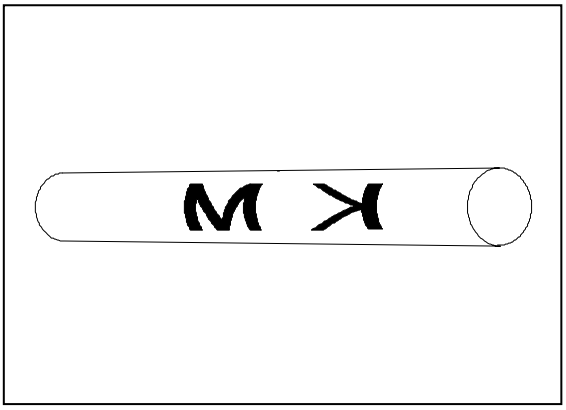


Before Development



(Invisible Electrostatic Latent Image)

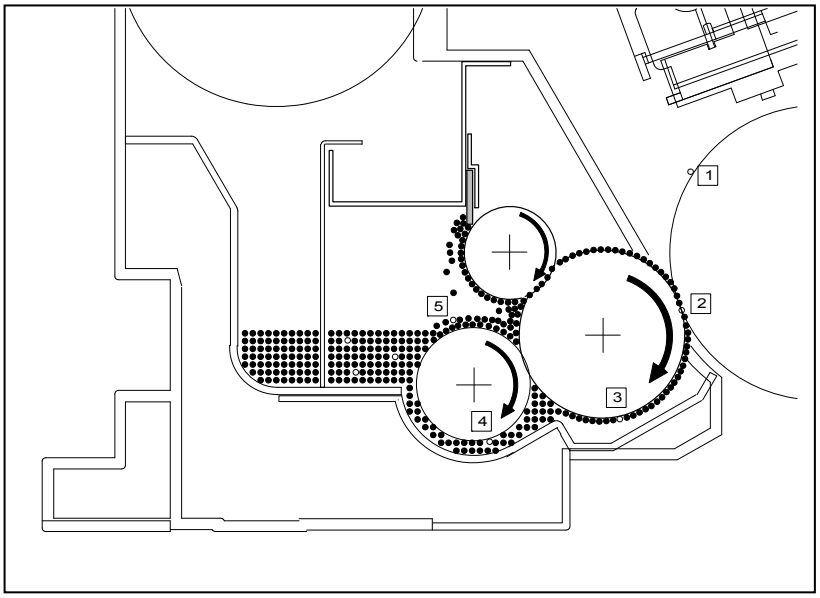
After Development : Toner moves only to -20V area.



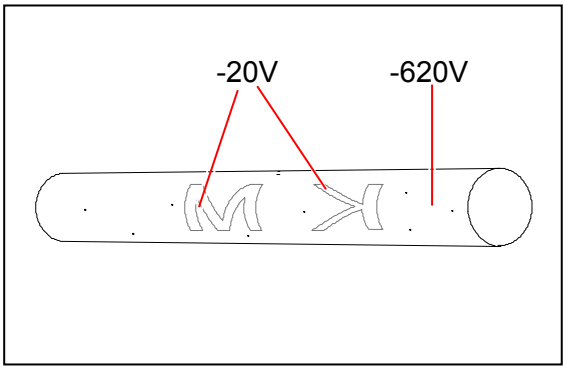
(Visible toner image)

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

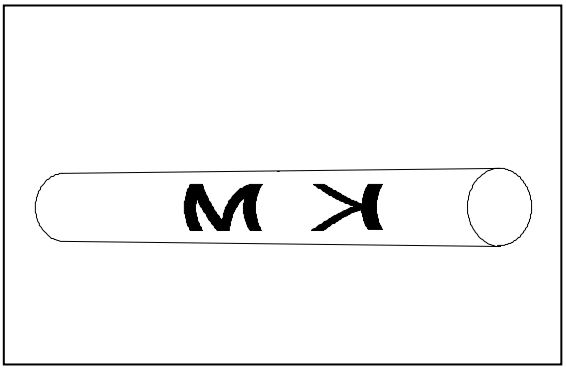
1. Toner remained on the Drum
2. Toner moves from the Drum to the Developer Roller.
3. Developer Roller carries the toner toward the Toner Supply Roller
4. Toner is shifted to the inside of the Developer Unit by the revolution of Toner Supply Roller.
5. Toner is reused.



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



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



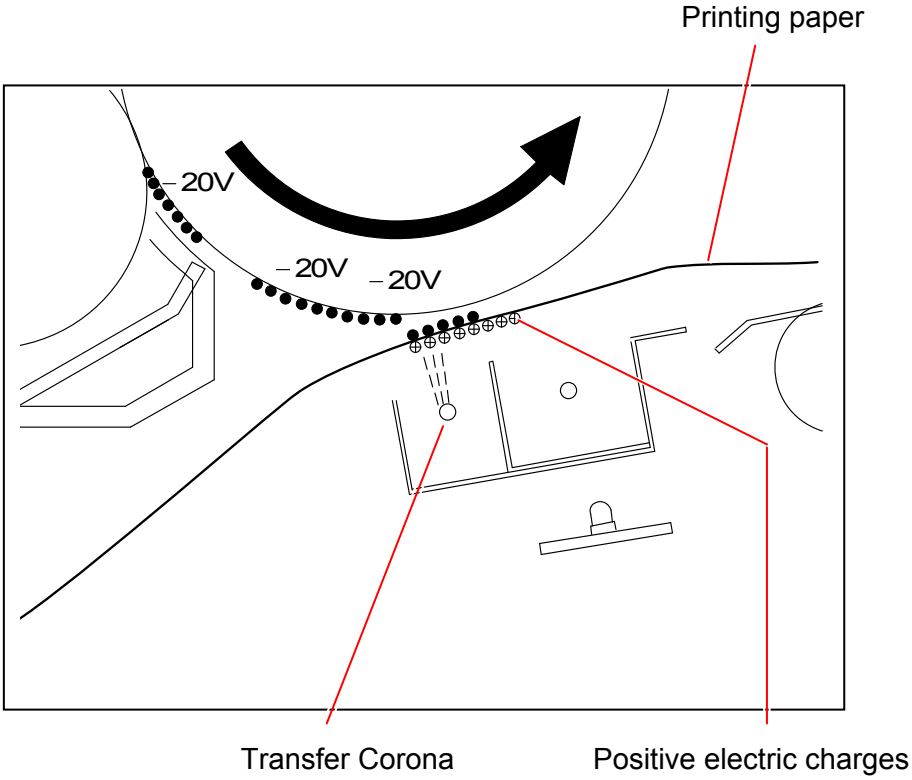
Reference

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

3. 1. 2. 5 Transfer

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

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

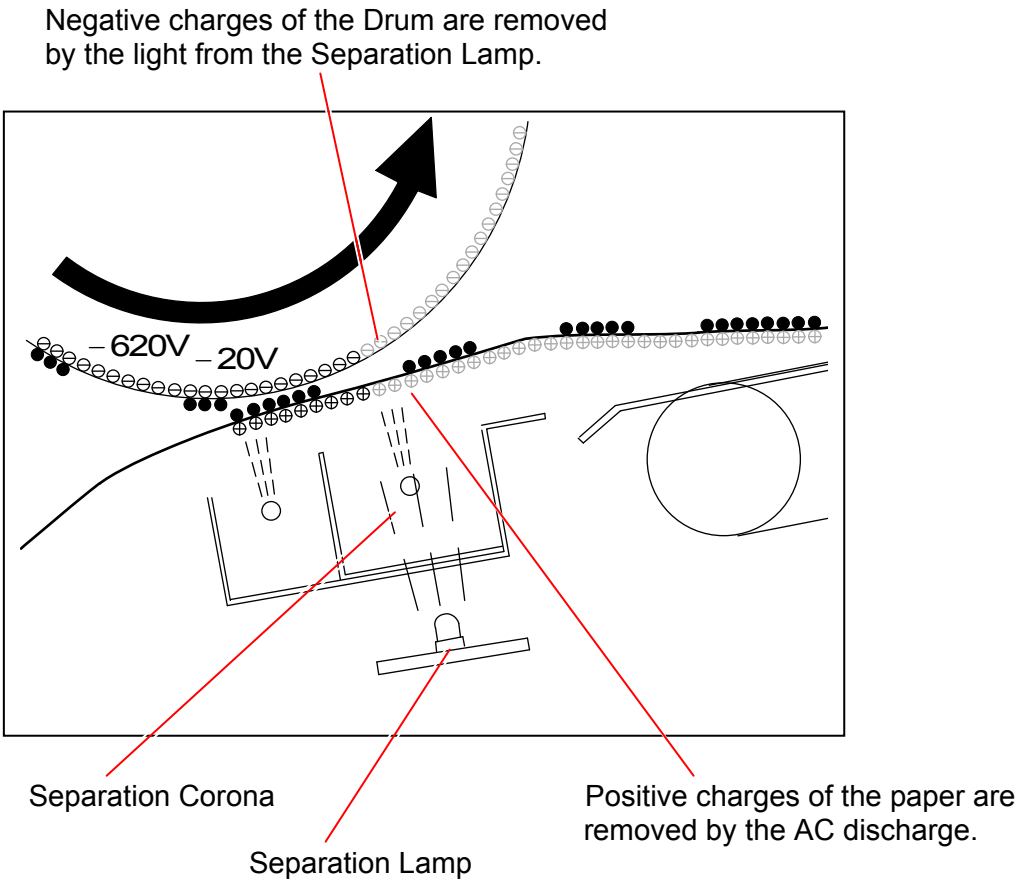


3. 1. 2. 6 Separation

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

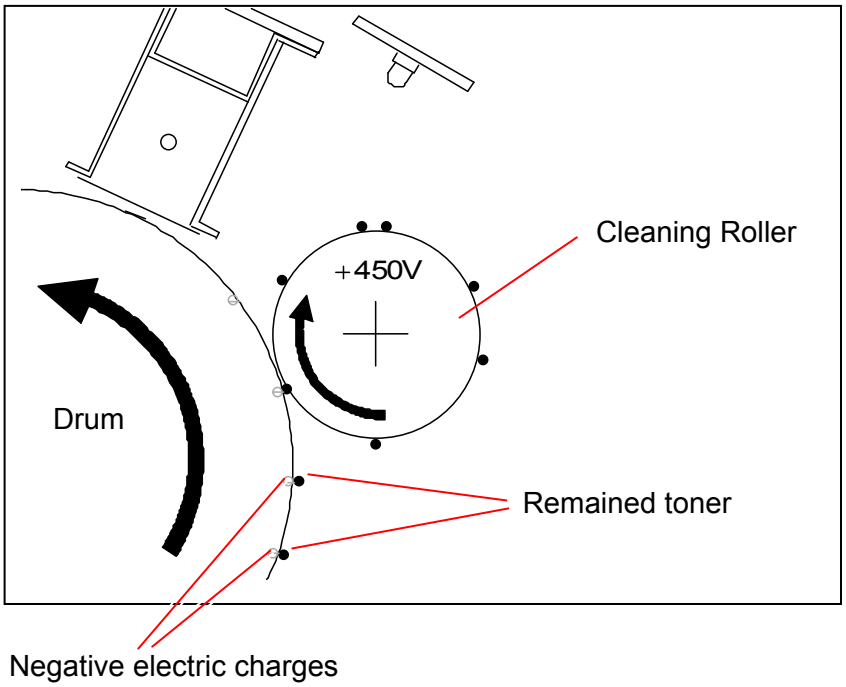
AC voltage : 5.0KV
DC voltage : -250V

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



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

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

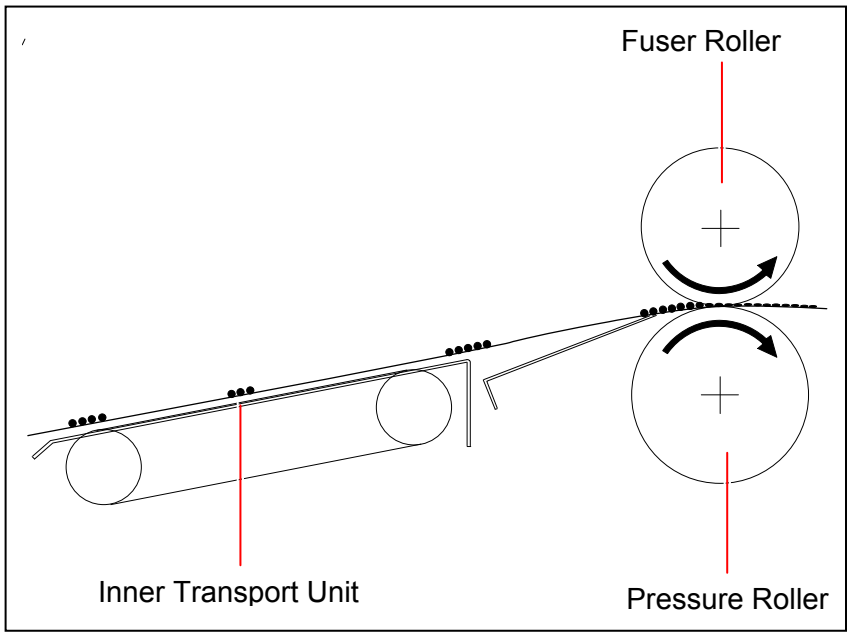


NOTE

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

3. 1. 2. 8 Fusing

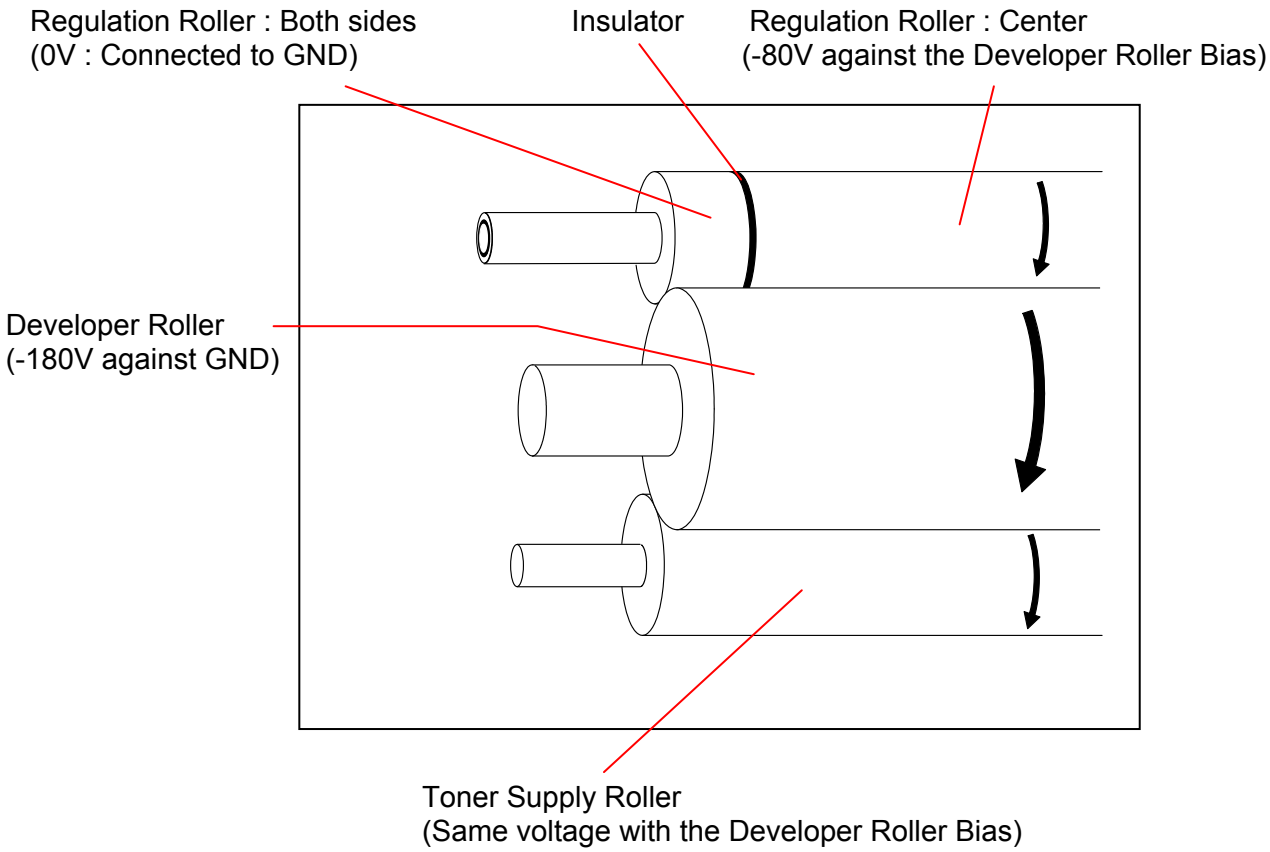
After Transfer / Separation Processes, the printing paper is transported to the Fuser Unit by the Inner Transport Unit.
The Fuser Unit mainly consists of the Fuser Roller and the Pressure Roller.
The Fuser Roller is very hot, and the Pressure Roller is strongly pressed to the Fuser Roller by the spring.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



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

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

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



NOTE

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

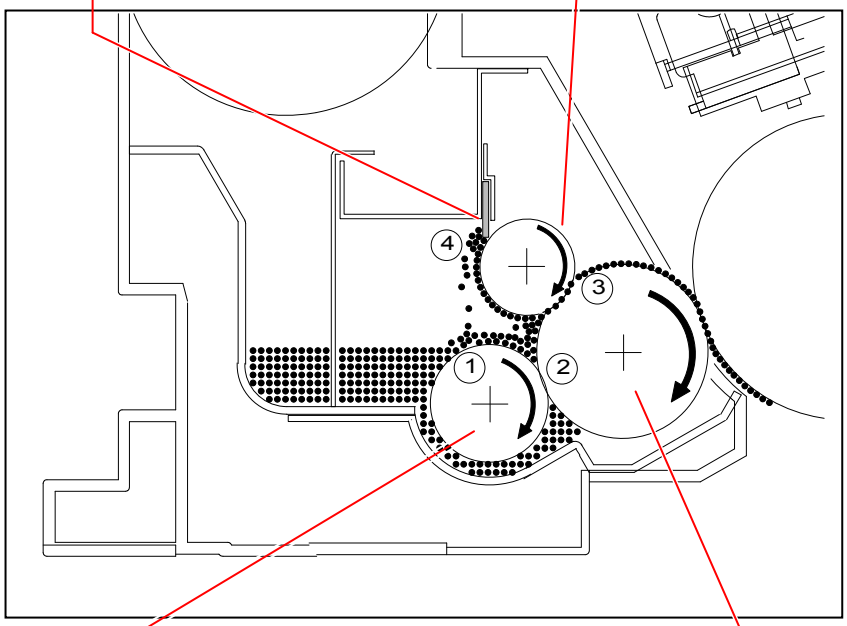
Taking advantage of the difference of potentials among these rollers, the movement of toner is controlled in the Developer Unit as follows.

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

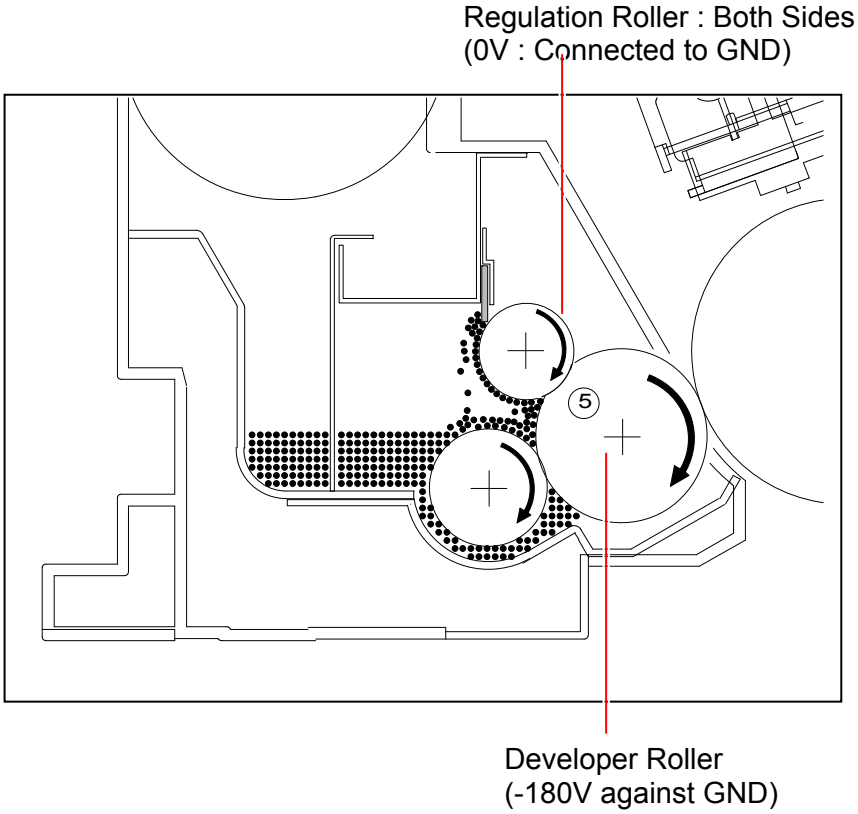
2. When the toner reaches the contact point of these rollers, therefore, it moves onto the Developer Roller.
   Then the Developer Roller carries the toner toward the Regulation Roller.

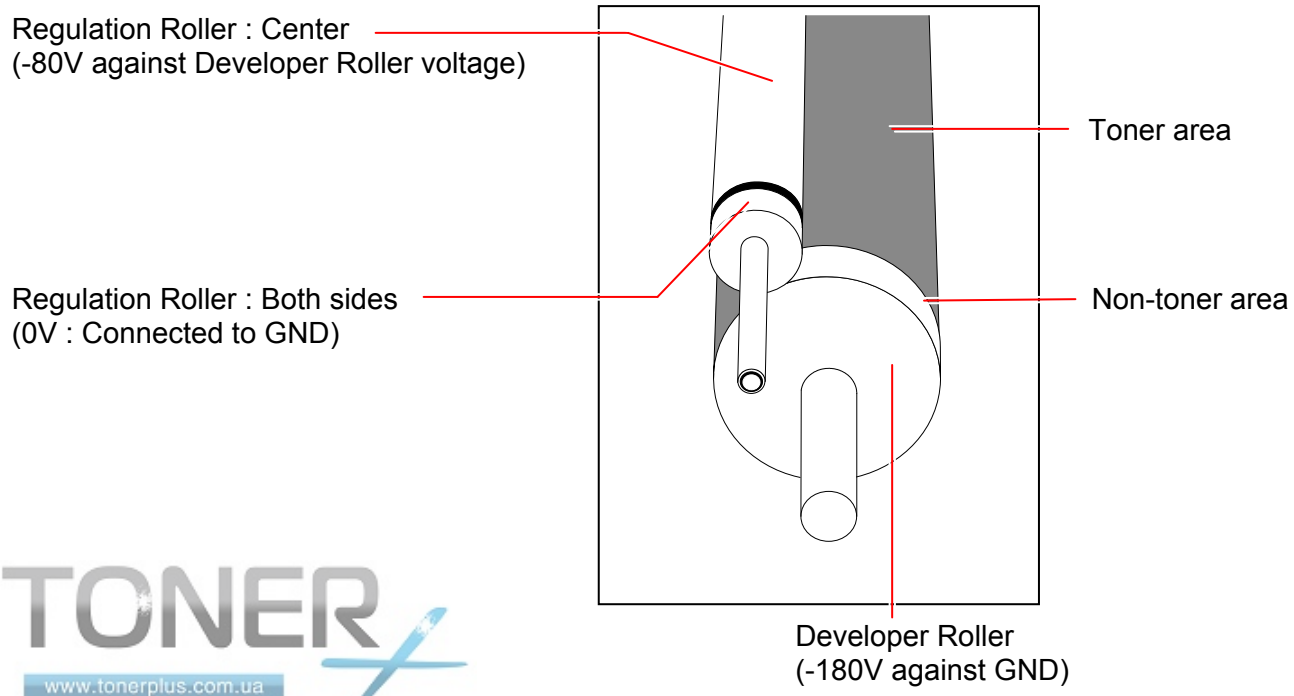
3. The Regulation Roller is strongly pressed to the Developer Roller by the spring, and these 2 rollers move to the opposite direction each other at the contact point.
   Even if the Developer Roller carries more toner than required, the Regulation Roller limits the amount of toner that can pass through between 2 rollers. So very small amount of toner can pass through between rollers and the rest is returned back to the inside.
   As the voltage of Developer Roller is 80V higher than that of Regulation Roller (Center), the toner which has passed through between rollers is firmly attracted to the Developer Roller.
   Very thin layer of toner is evenly formed on the surface of Developer Roller as a result.

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



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





3. 1. 4 Toner Collection Process

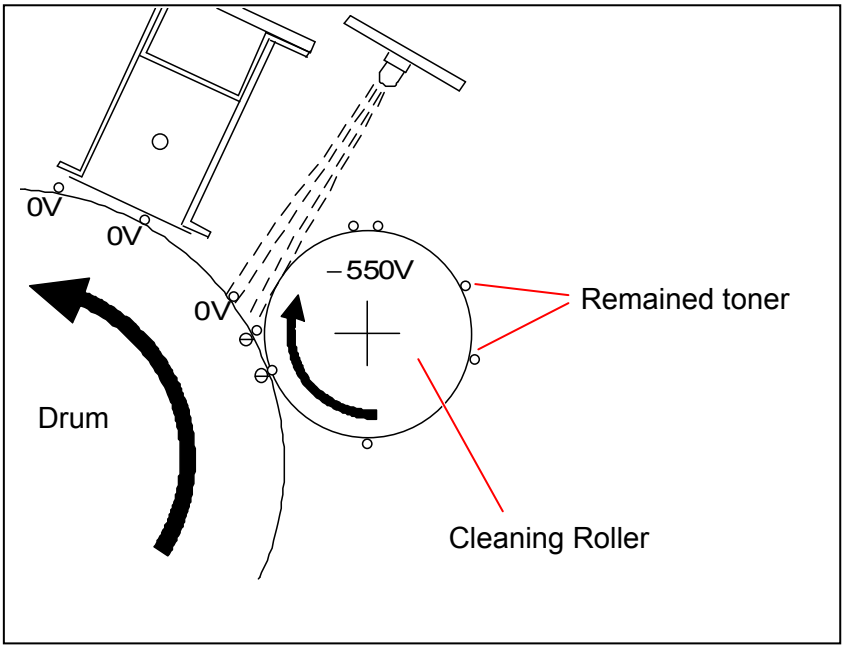
As explained in [3.1.2.7 Drum Cleaning], the Cleaning Roller is supplied with +450V to remove the remained toner from the Drum during the print cycle.
This toner gathered by the Cleaning Roller is returned to the Developer Unit in the following 3 cases.

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

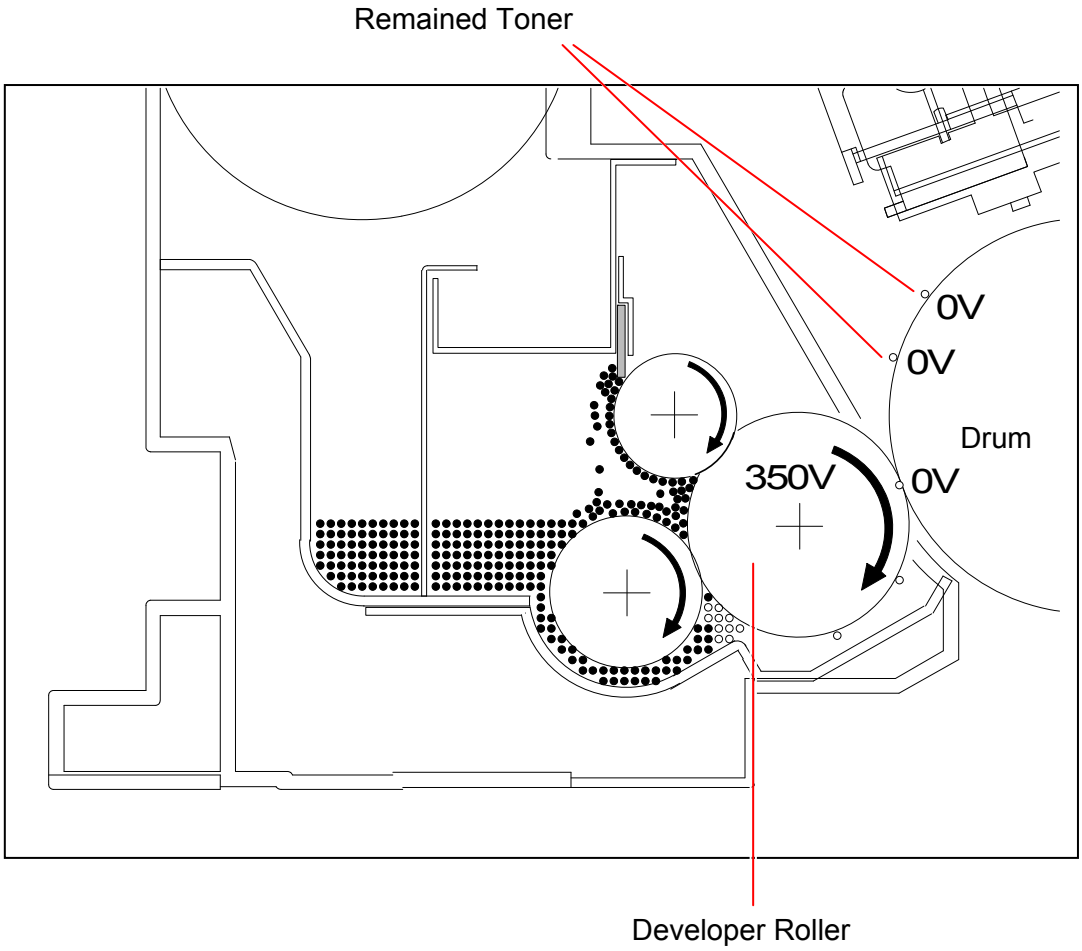
This process to return the toner is called “Toner Collection Process”.
When the trailing edge of the last sheet passes over the Separation Area, the printer will take the Toner Collection Process as follows rotating the Drum for 2 revolutions.

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

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



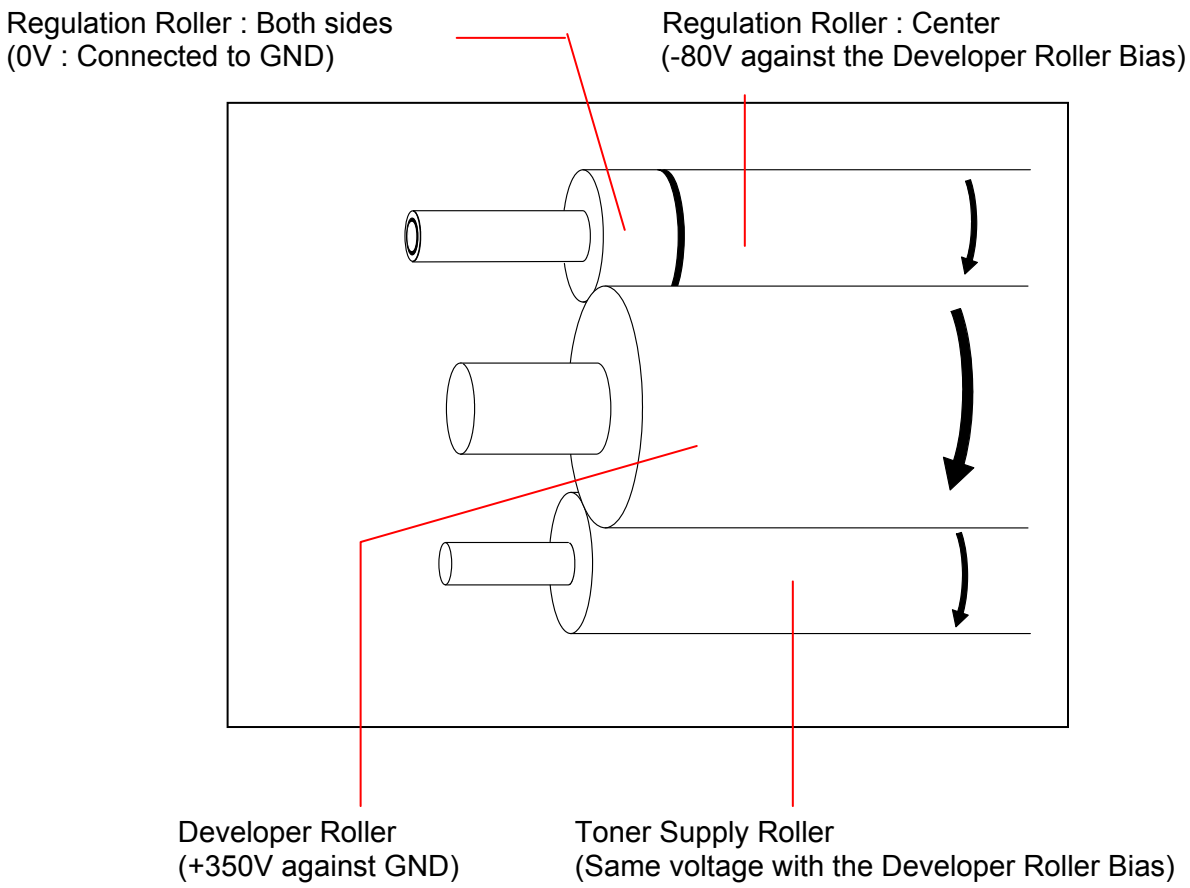
3. The voltage supplied to the Developer Roller is also changed to +350V (+/-5V) in the Toner Collection Process.
   As the potential of Developer Roller becomes higher than that of Drum, toner on the Drum moves onto the Developer Roller.
   Then the toner is carried into the Developer Unit by both the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



Reference

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

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



3. 1. 5 Density Compensation Process

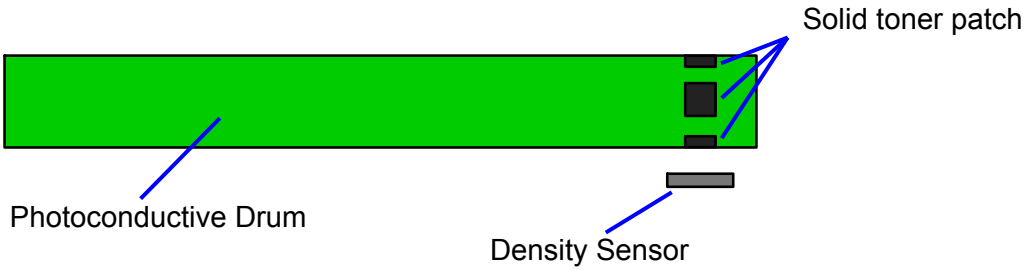
On rare occasion, loss of image density may occur under a special usage. TASKalfa 4820w has the ability to reduce such loss of image density and this enables to maintain a satisfactory image quality regardless of the machine usage.

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

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

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

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



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

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

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

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

NOTE

An applied Adjustment Level should be reset after replacing Developer / Regulation Roller. For further information, see [8.11 Special Operation Mode].

3. 2 Scan Process

3. 2. 1 Data flow in scan and copy (for Old Scanner)

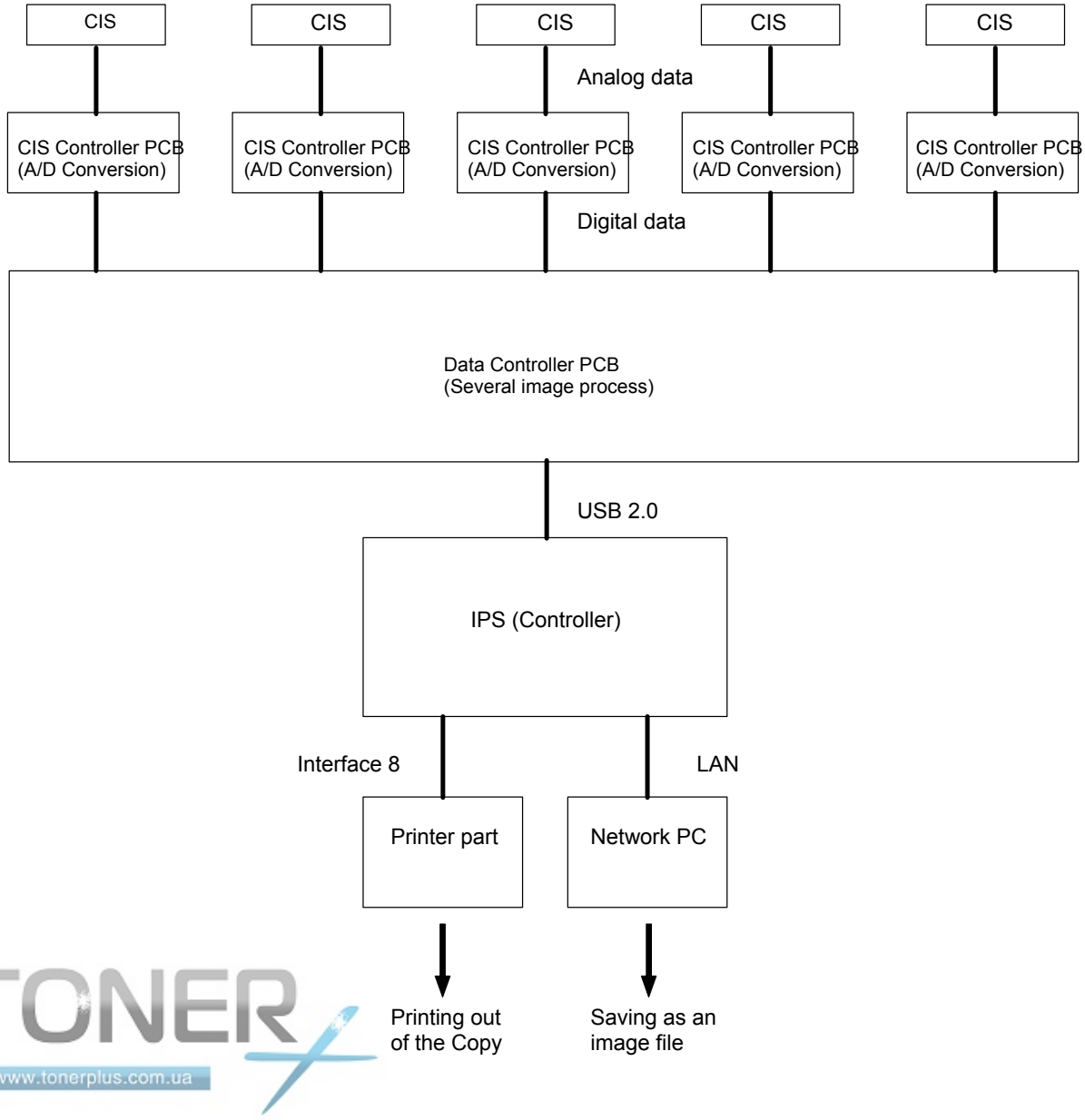
There are CIS Units, CIS Controller PCB (SVC CIS BD) and Data Controller PCB (SVC Main BD K) in the scanner unit, which take image reading and processes the data.

1. The CIS Units read the image pattern of original, and then send the analog data to the CIS Controller PCB.

2. The CIS Controller Boards converts the analog data into digital data, and then send to the Data Controller PCB.

3. The Data Controller PCB takes the correct image process according to the UI setting. Then it outputs the image data to the IPS through the USB 2.0.

4. The IPS output the image data to the printer part of TASKalfa 4820w through the Interface 8 in case of “copy”, or it outputs to the Network PC through the LAN cable in case of “scan to file”.



3. 2. 2 Data flow in scan and copy (for New Scanner)

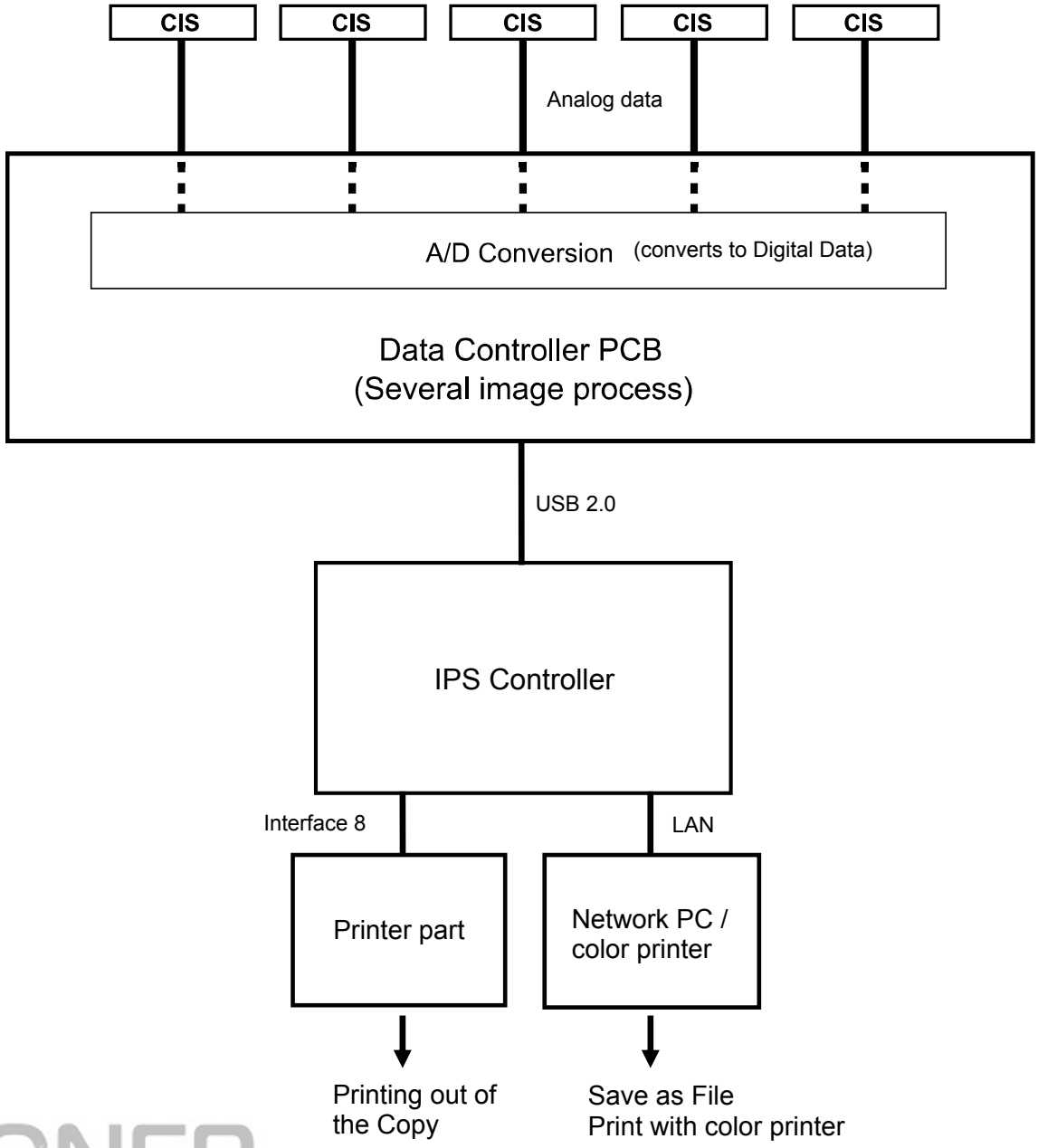
The scanner unit has 5 CIS devices and the Main Board (PW12920).

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 IPS or PC through the USB 2.0.

4. IPS outputs the image data to the printer through the Interface 8 on copy, or it outputs to the Network PC through the LAN cable on Scan to File.



3. 2. 3 Positioning process of Image Block

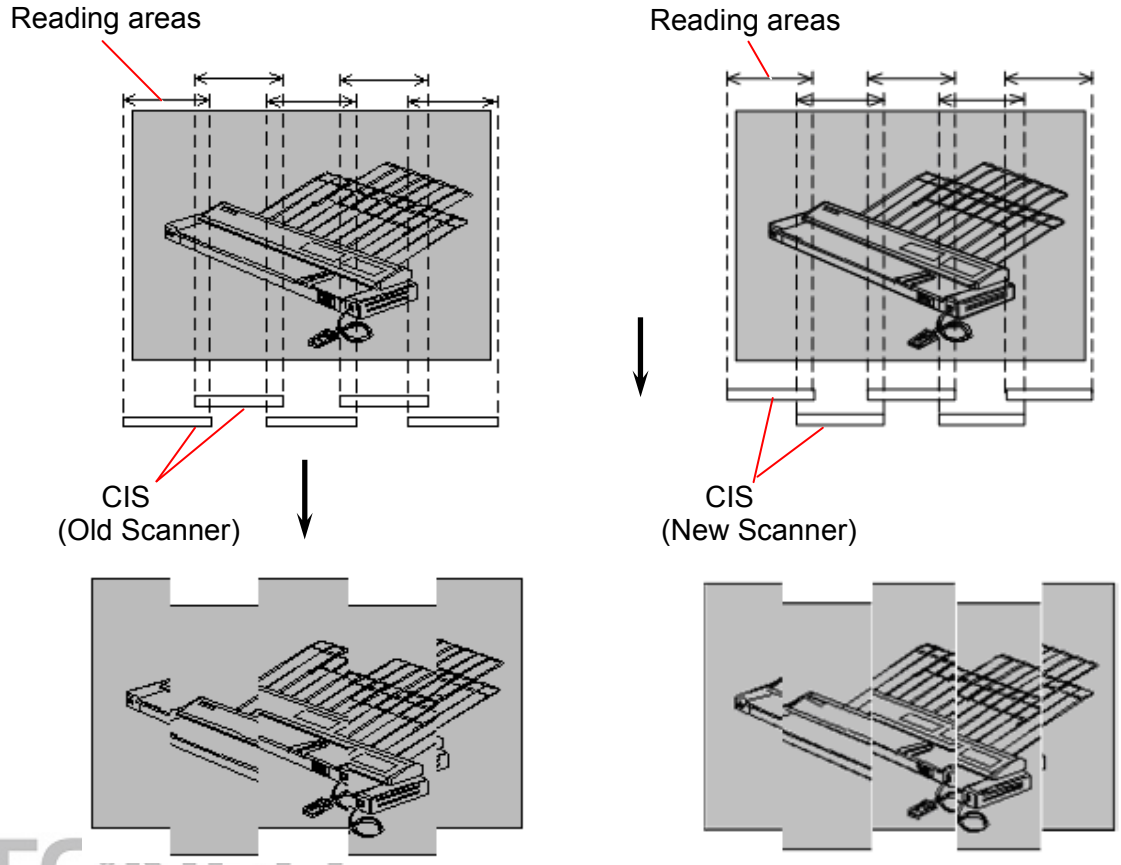
The scanner part of TASKalfa 4820w reads the image of original with 5 - CIS (Contact Image Sensor).
As these CIS are arranged in 2 rows, there occurs a vertical gap of image among the image blocks. So it is necessary to remove this gap by vertical positioning process (Y offset).
Also the reading area 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 Data Controller PCB performs these positioning processes.

> **NOTE**
>
> TASKalfa 4820w performs these positioning processes (X overlap & Y offset) according to the setting specified through Scanner Utility.
> Please refer to [8.13.4.3 Position] 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 Data Controller PCB is as follows.

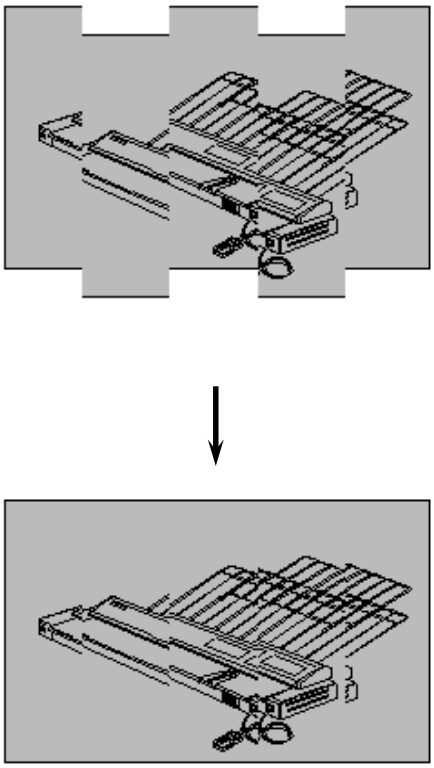
(1) There occurs a vertical gap of image among the image blocks.
(2) Some image pixels are commonly included (duplicating) in the neighboring two Image Blocks.



The image data before the positioning process

The Data Controller PCB removes the vertical gap among the Image Block according to the positioning setting (Y offset) specified through Scanner Utility.

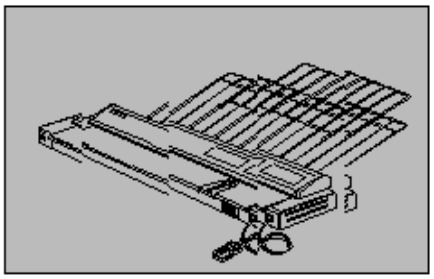
The image data before the positioning process

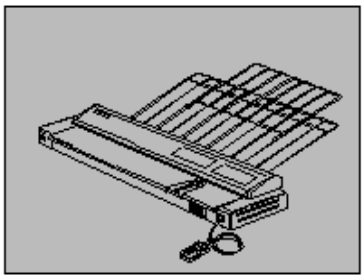


The image data after the positioning process (Y offset)

Also the Data Controller PCB removes the duplication of image pixels among the Image Blocks according to the positioning setting (X overlap) specified through Scanner Utility.

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.

Sensor → Micro Computer (CPU & ROM) → Driver → DC Load

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

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

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

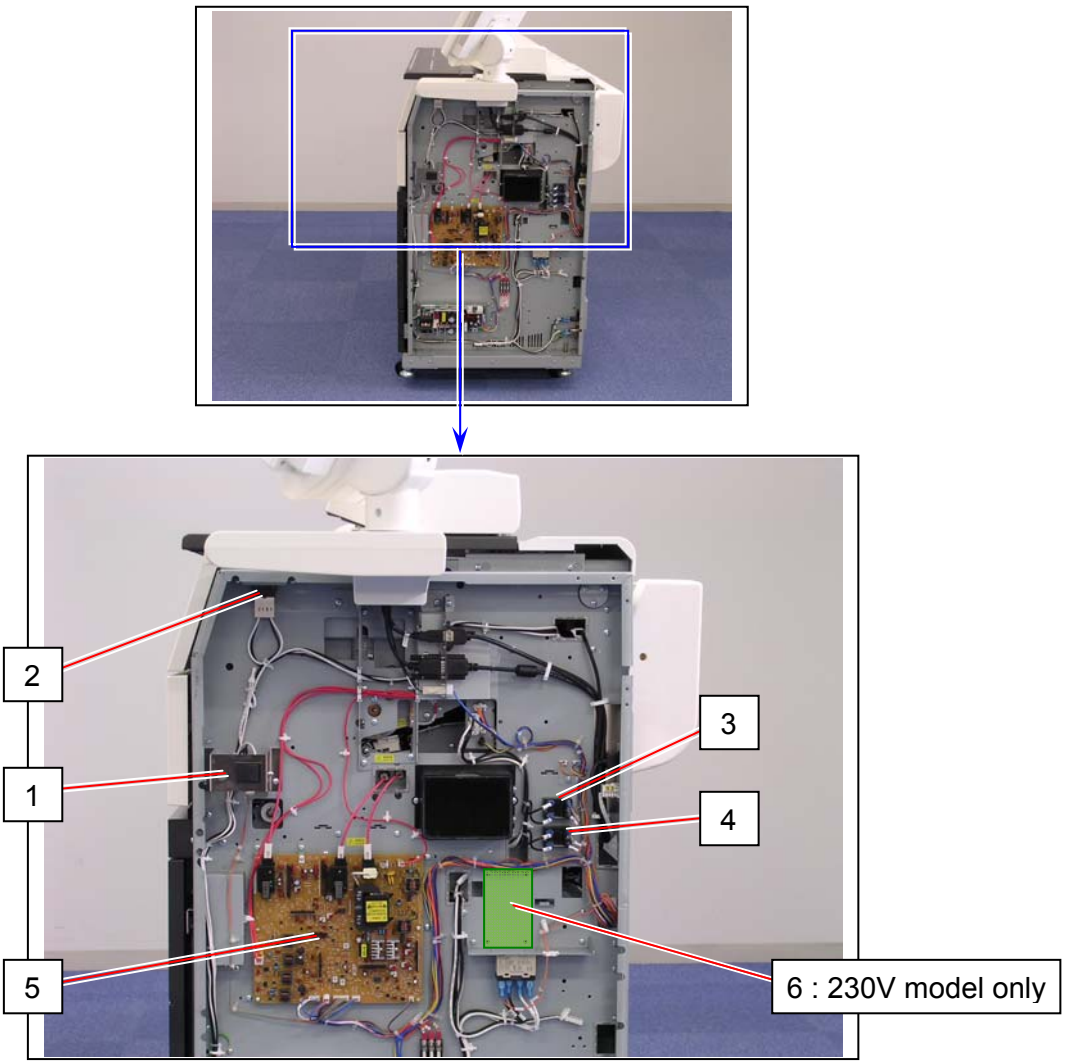
⚠ CAUTION

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

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

4. 2 Electrical Components Location

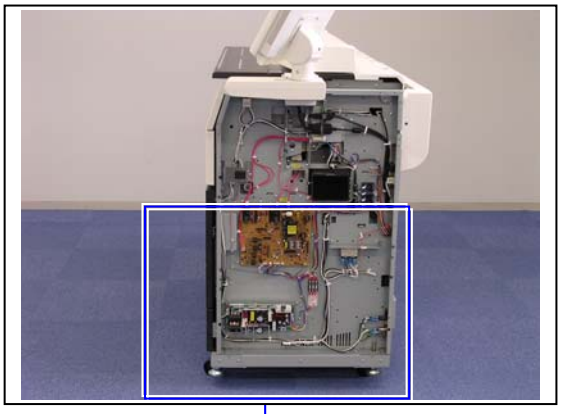
4. 2. 1 Right Side

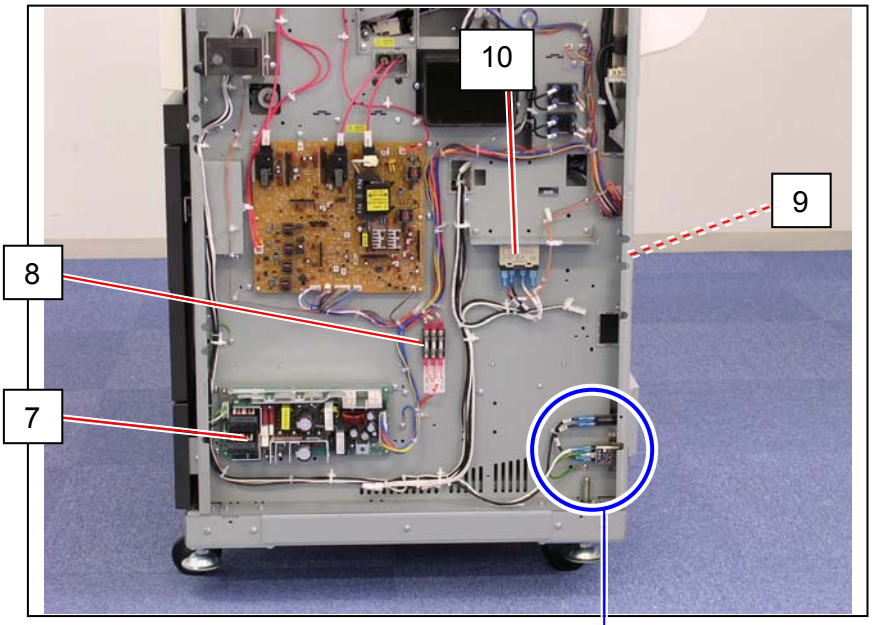


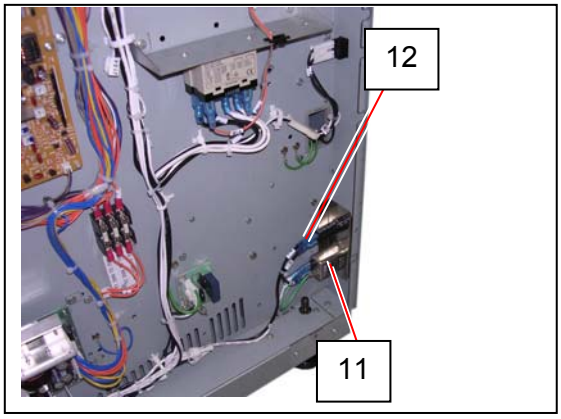
Item	Symbol	Signal name	Name	Type	Function
1	SW1	(POWER-OFF)	Switch	AJ8R2004BBCF	Turning on and off the machine
2	MS1		Switch	FA1L-AA22	Shuts off the AC power to the DCP1 when Toner Hatch or the right side of Engine Unit is opened
3	SSR1		Solid State Relay	AQJ416V (US) AQJ426V (EU)	ON / OFF control of the Fuser
4	SSR2		Solid State Relay	AQJ416V (US) AQJ426V (EU)	ON / OFF control of the Fuser
5	HV1 HV2 HV3 HVP4 OUTPUT2 OUTPUT3 OUTPUT5	HV_IM HV_TR HV_AC BIAS_TRG BIAS_SW	HV Power Supply	EUK1MGA60HA	Outputting the high voltage to each of the following components. (1) Image Corona (HV1) (2) Transfer Corona (HV2) (3) Separation Corona (HV3) (4) Developer Roller (OUTPUT2) (5) Regulation Roller (OUTPUT3) (6) Cleaning Roller (OUTPUT5)
6	PW5724B		Phase Control PCB	PW5724B	Flicker Reduction **Used on 230V model only**

NOTE

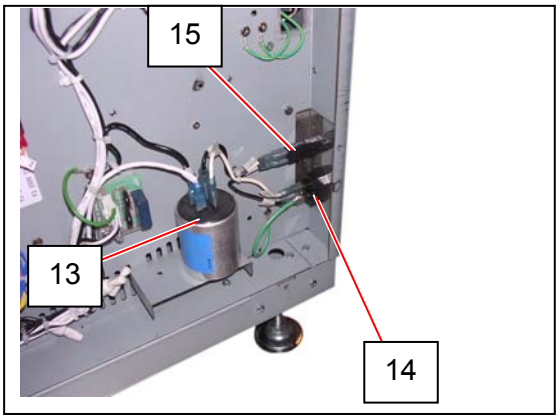
Developer Bias (OUTPUT 2, 3) is outputted (or stopped) by the signal “BIAS_TRG”.
The polarity of Bias is decided by the signal “BIAS_SW”







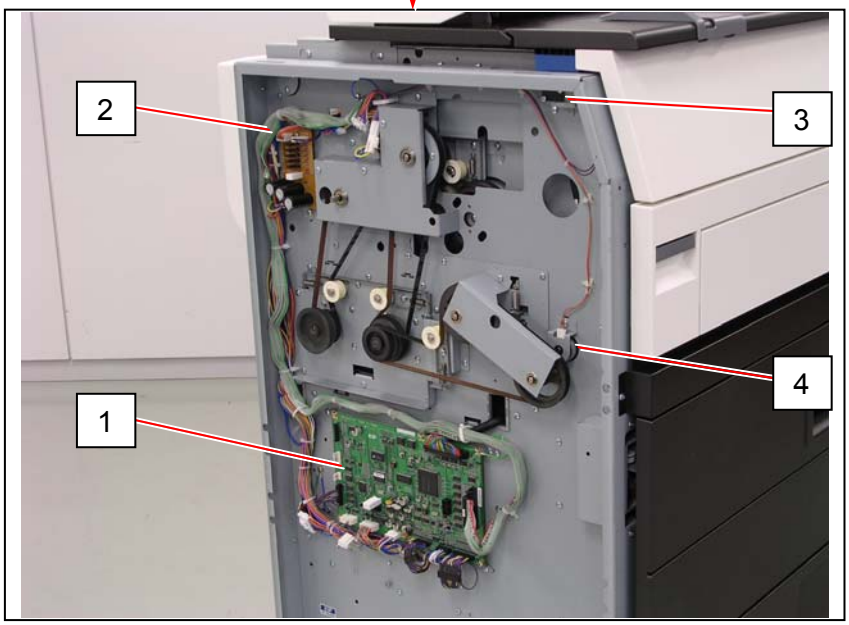
(120V model)



(230V model)

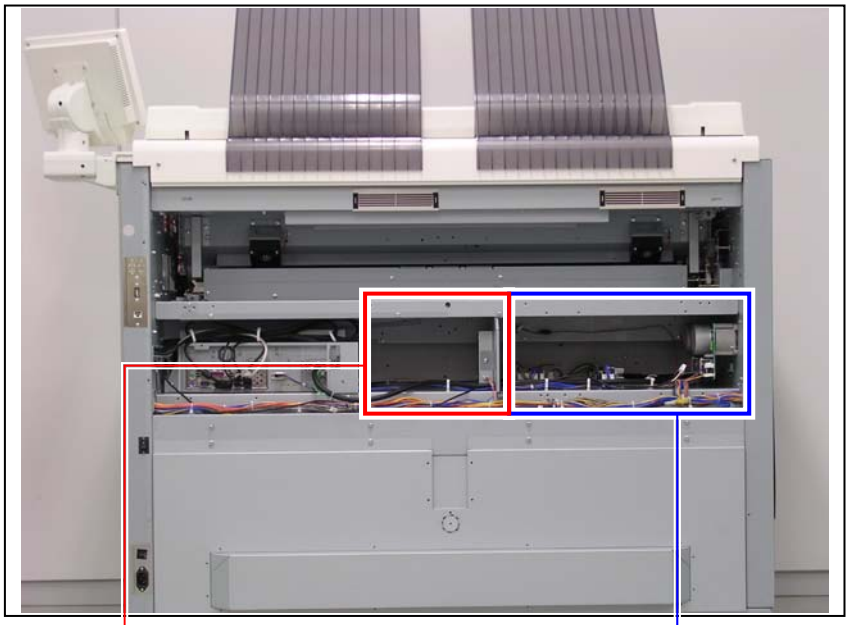
Item	Symbol	Signal name	Name	Type	Function
7	DCP1	-	DC Power Supply	LEB225F-0524-U	Outputting each 24VDC, 5VDC and 0VDC
8	F1 F2 F3	-	Fuse	Walter TSC3.15AH or LITTLE 0215 3.15MXP	Protecting the 24VDC from the over-current If you replace the fuses, make sure to use one listed left.
9	SW2	-	Switch (Option)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

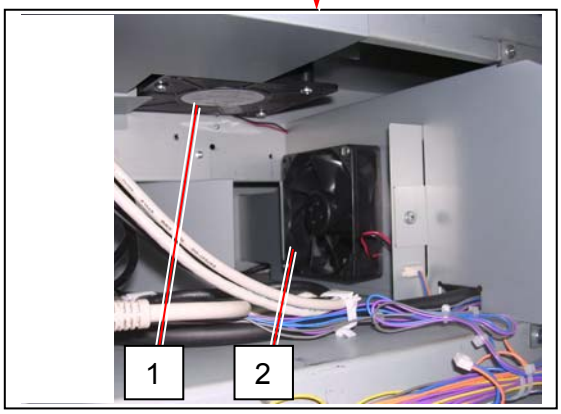
4. 2. 2 Left Side

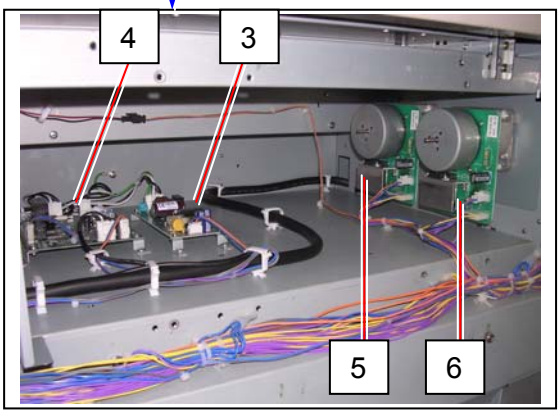


Item	Symbol	Signal name	Name	Type	Function
1	PW12420	-	PW12420 PCB Assy	PW12420	Overall sequence control
2	PW6654B	-	Driver PCB B	PW6654B	Driver for the motors, clutches and so on
3	MS4	-	Switch	V-162-1C25 10E	Detecting whether or not the Toner Hatch or the left side of Engine Unit is opened (The machine does not shut off the AC power even if the MS4 detects either of them is opened.)
4	CL1	REGIST_CL	Clutch	MIC5NE-45	Meeting the image head and leading edge of paper each other

4. 2. 3 Back Side

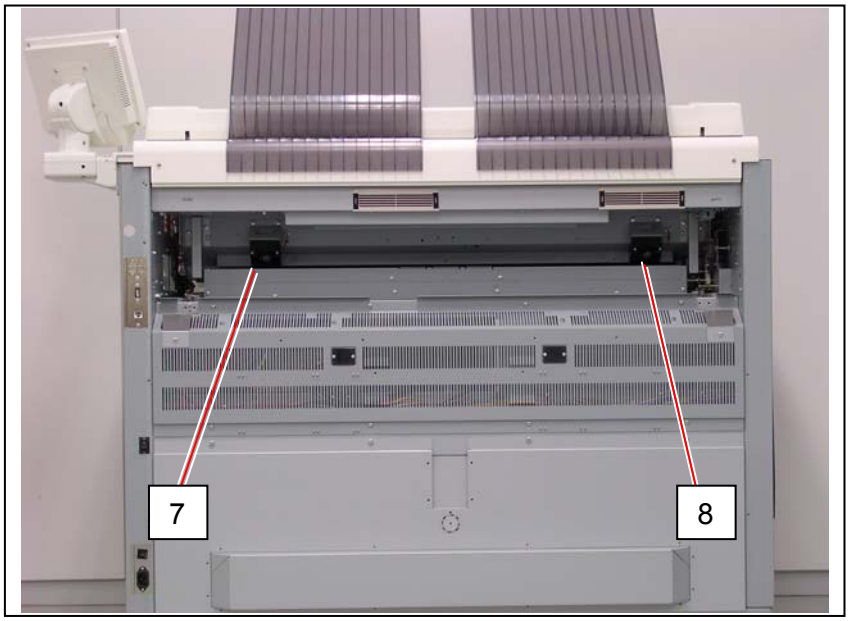




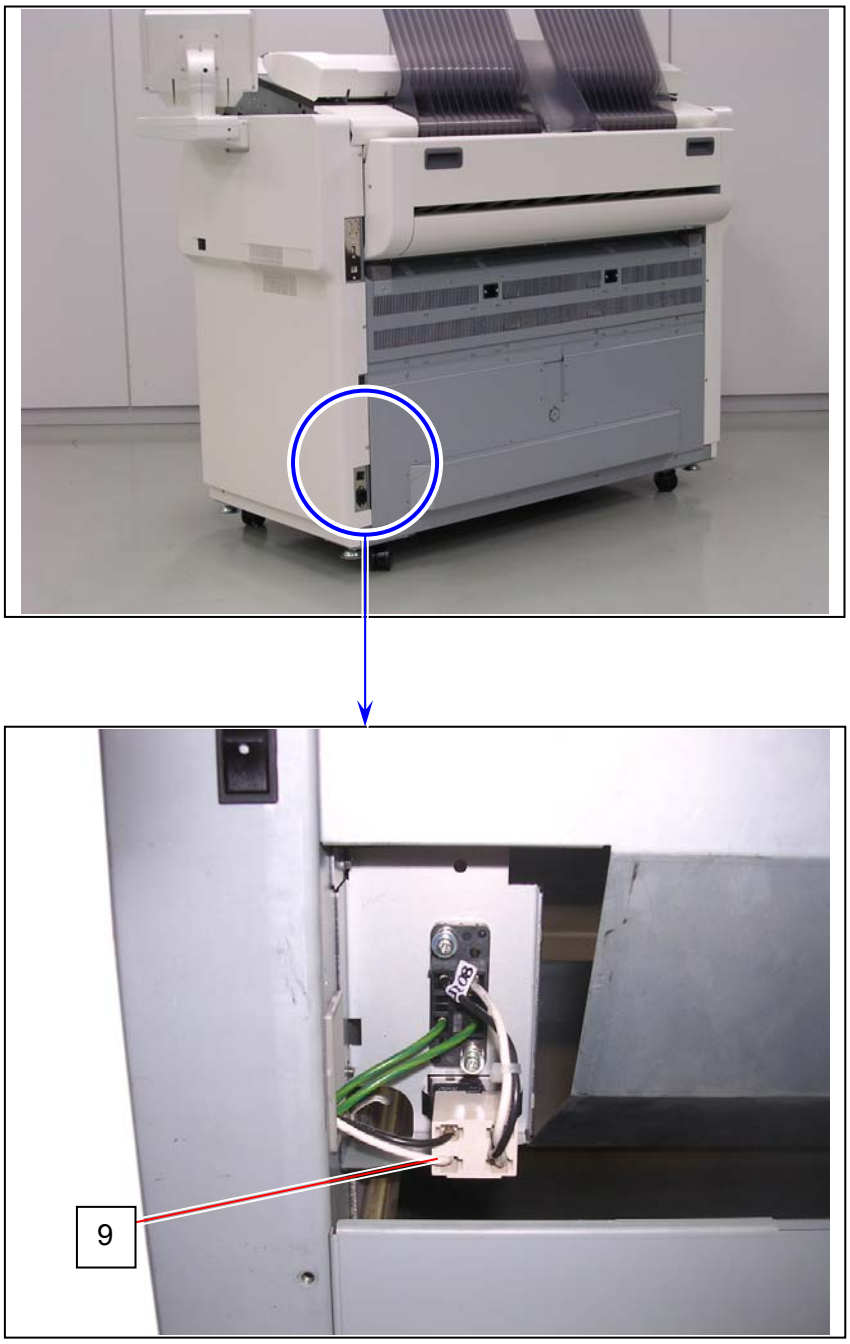


Item	Symbol	Signal name	Name	Type	Function
1	BL7	-	Blower	D12F-24BL 05	Assisting to transport the paper on the Inner Transport Unit
2	BL8	-	Fan	ASFN90372 □90	Cooling down the IPS Controller
3	DCP2	-	DC Power Supply	LDA15F-12	Supplying the DC power to both the UI and the PW10523
4	PW11723 (B)	-	PW11723 PCB ASSY	PW11723 (B)	- Lightning surge protector - Shutting down the controller
5	M1	MAMTR	DC Motor	DRG-6236-226	Driving the Drum, Developer Unit and paper feeding section
6	M2	HEAT_M	DC Motor	DRG-6236-226B	Driving the Fuser Unit

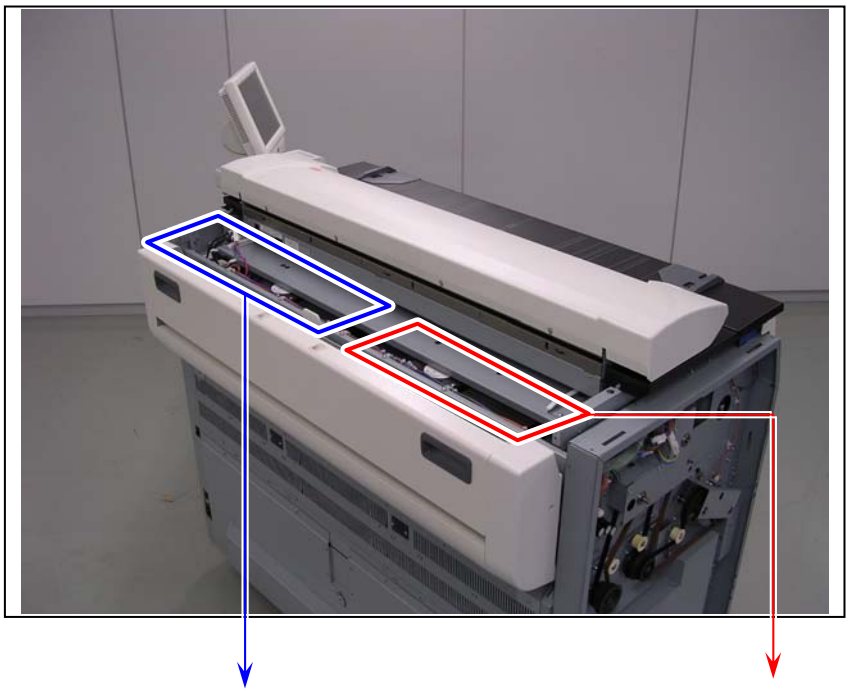
(Fuser Unit omitted)

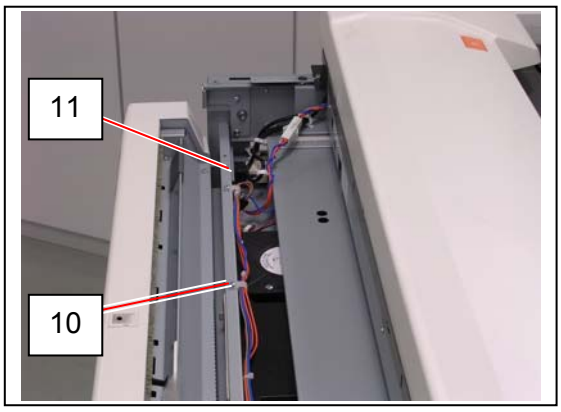


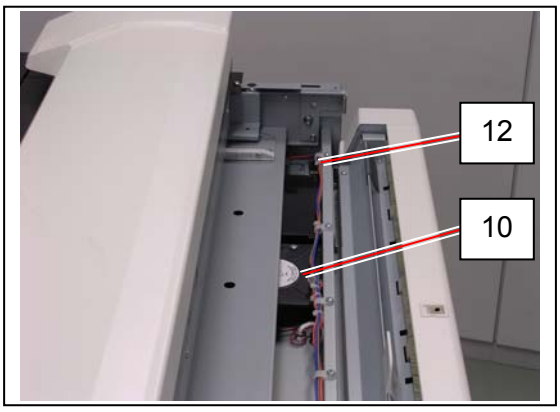
Item	Symbol	Signal name	Name	Type	Function
7	BL5		Fan	ASFN60372	Supporting media feeding approach
8	BL6		Fan	ASFN60372	Supporting media feeding approach



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

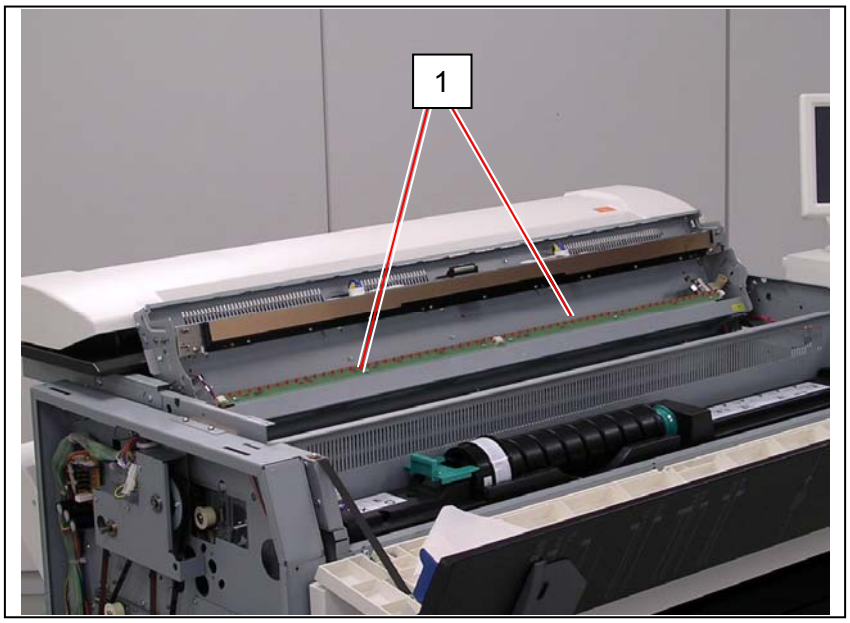




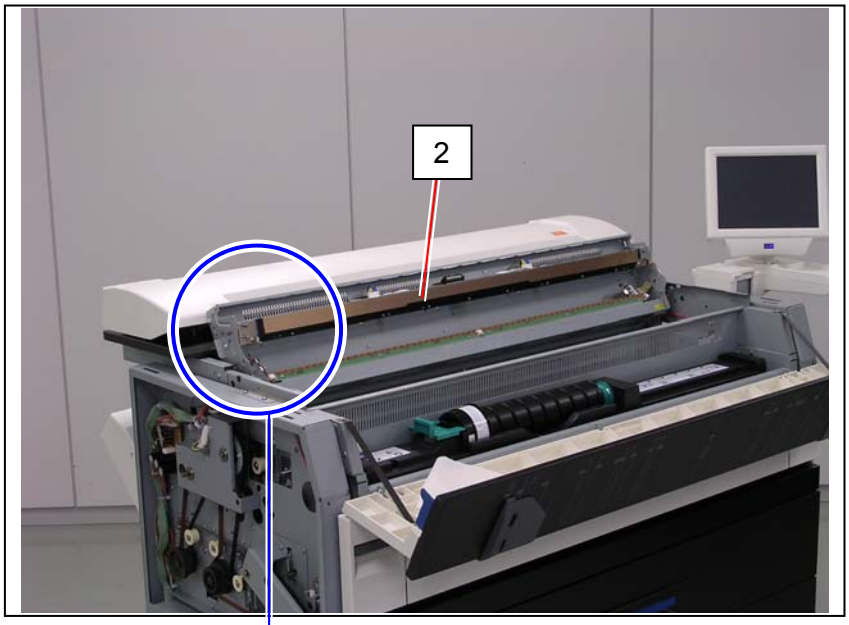


Item	Symbol	Signal name	Name	Type	Function
10	BL3 & BL4	HEAT_BL_L HEAT_BL_R	Blower	D12F-24BL 05	Exhausting the inside air. (They are equipped with the Ozone Filter.)
11	MS2		Switch	FA1L-AA22	Shuts off the AC power to the DCP1 when the right side of Heater Hatch is opened.
12	MS3		Switch	V-162-1C25 10E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

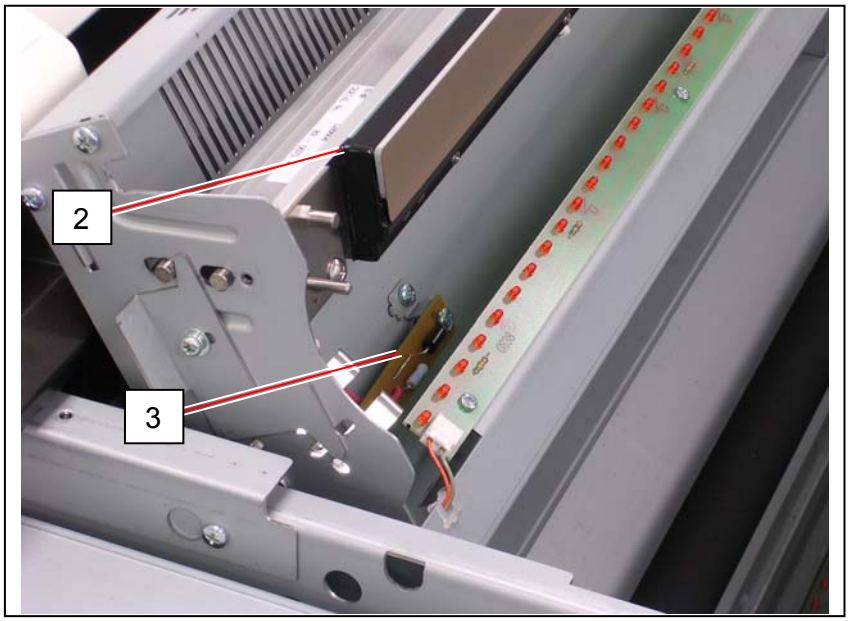
4. 2. 4 LED Head Frame



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



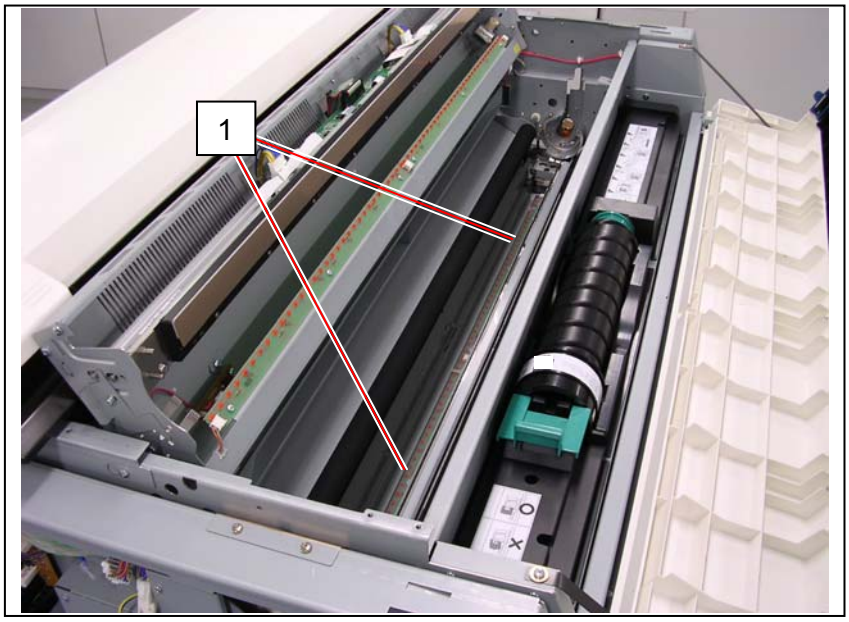
(Image Corona Unit removed)

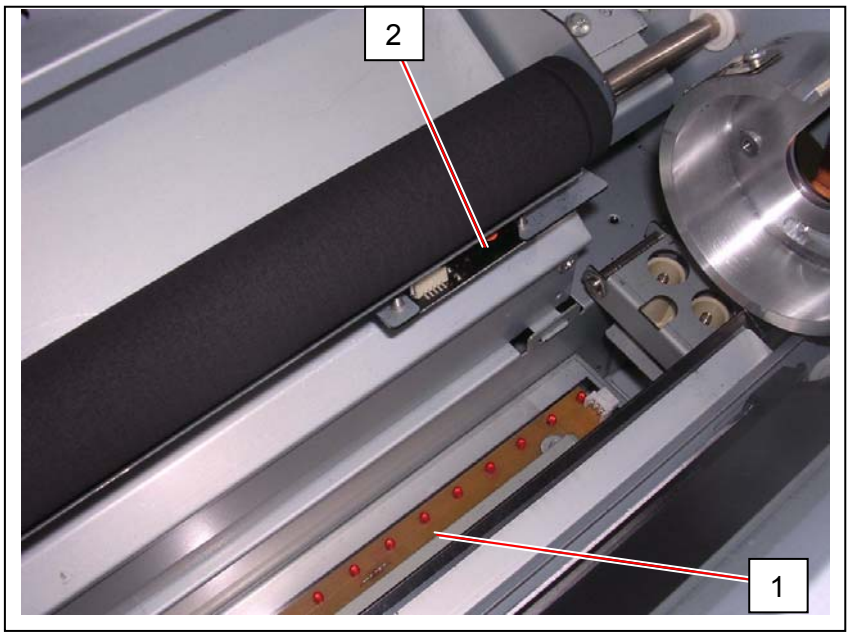


Item	Symbol	Signal name	Name	Type	Function
2	LED HEAD		LED Head	LH6604	Creating latent Images on Drum
3	PW6693		HV-ZD Assy	PW6693	Keeping the Grid Voltage constant (Control of the surface potential)

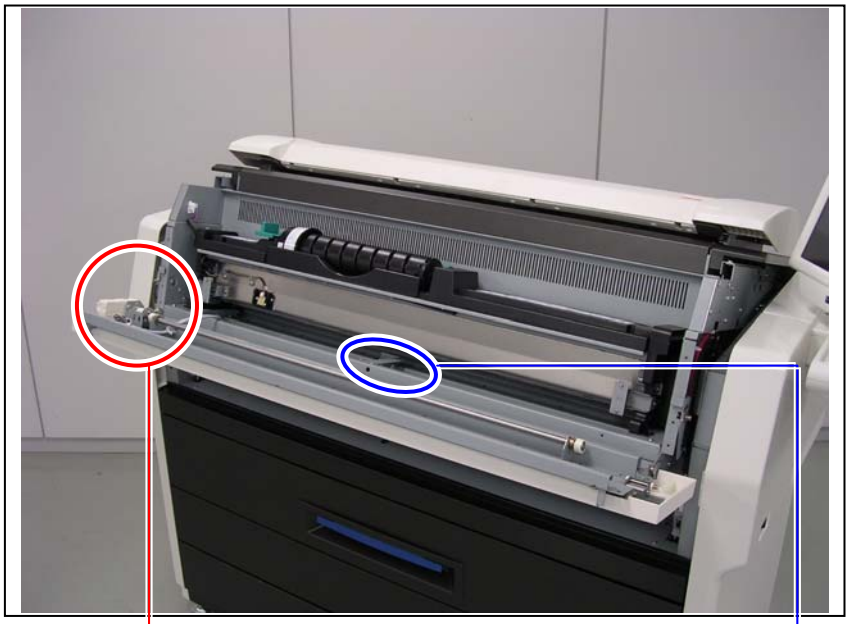
4. 2. 5 Main Frame

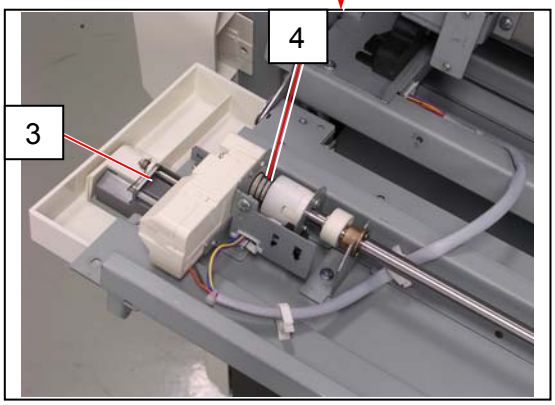
(Drum removed)

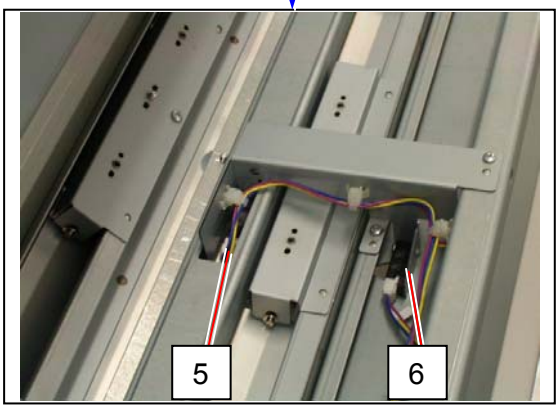




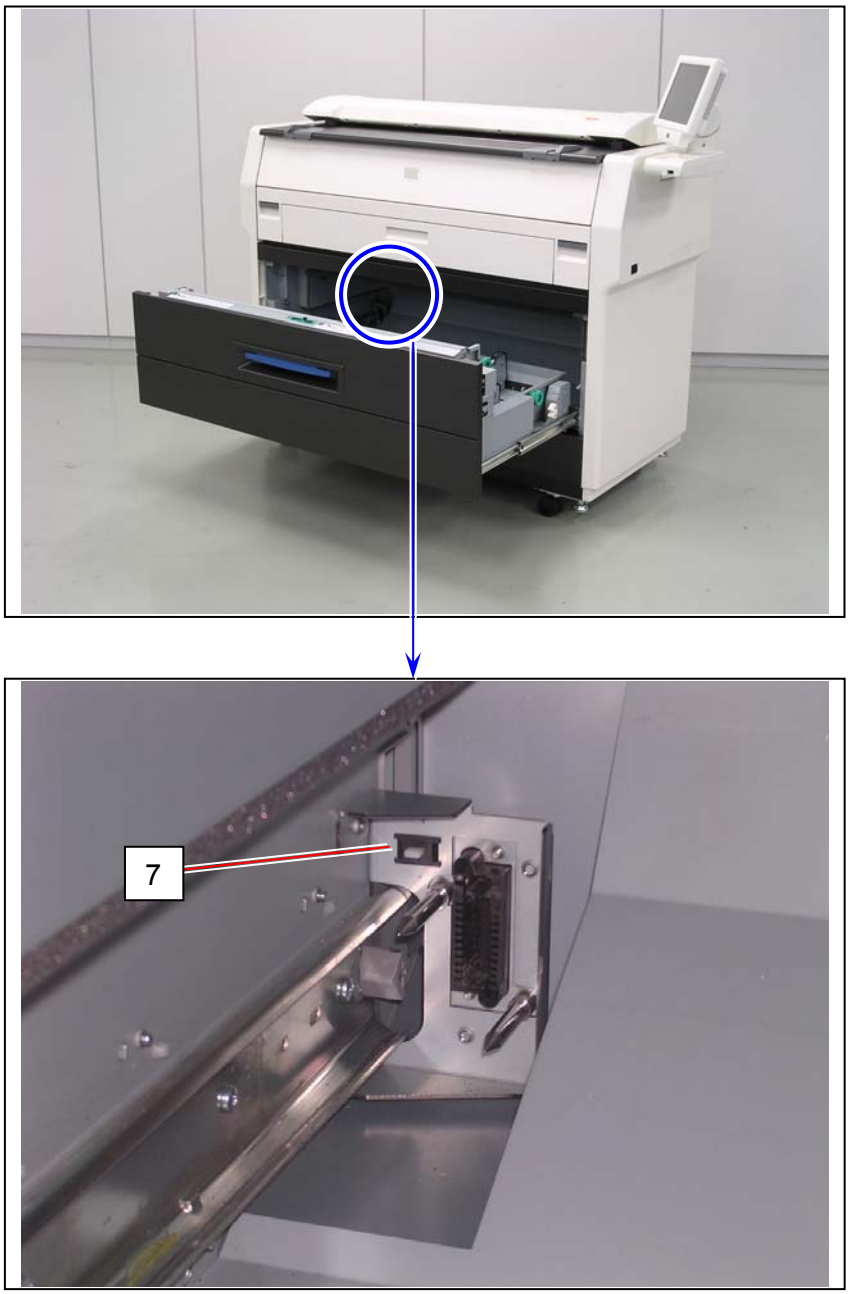
Item	Symbol	Signal name	Name	Type	Function
1	PW6631	ER2	Eraser PCB A	PW6631	Assisting the paper separation by removing the electric charges from the Drum at the time of Separation Process
2	DENS-S	PH11	Toner Density Sensor	GP2Y40010K0F	Detecting the toner density on the drum surface. Outputting analog voltage to PW12420





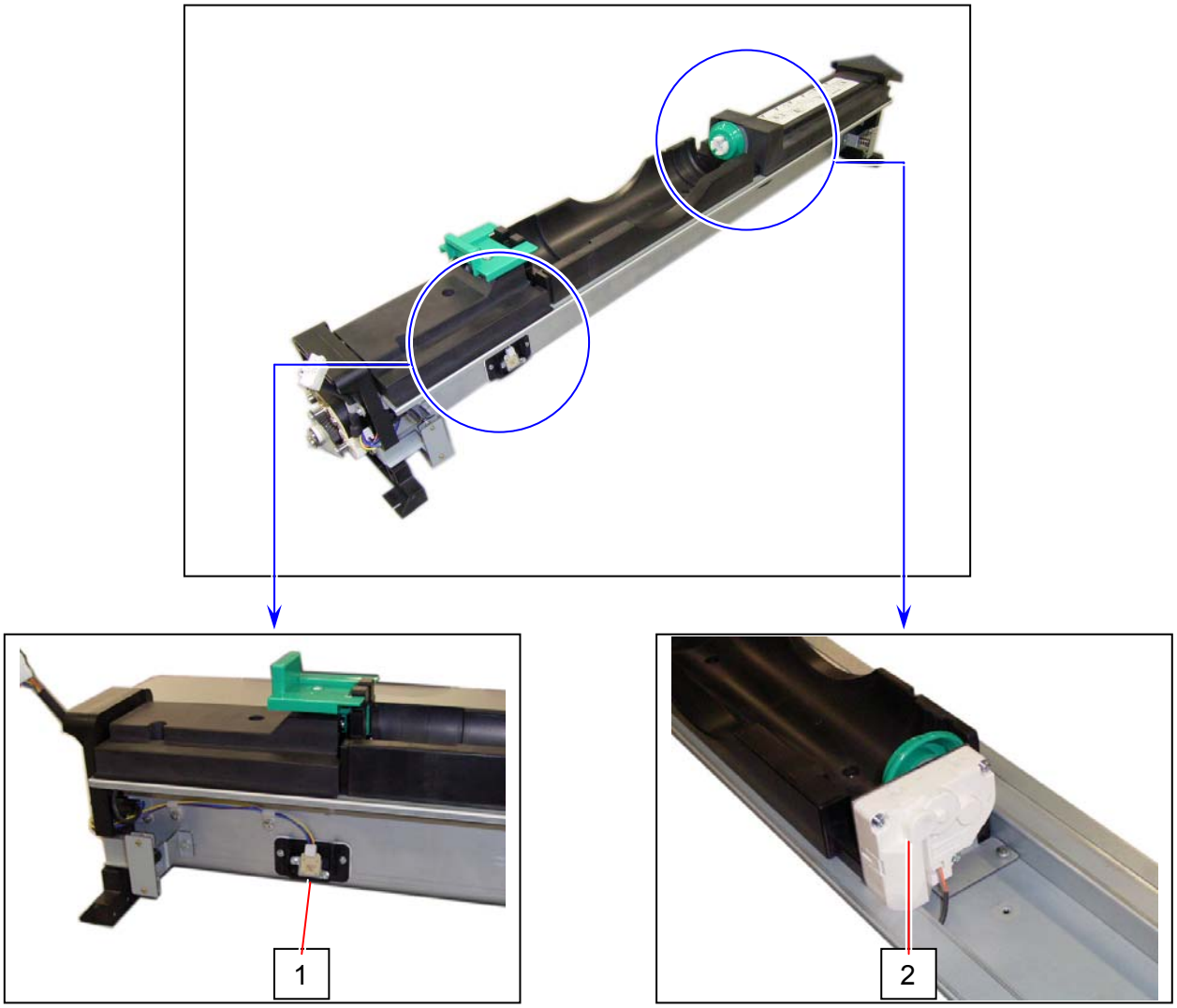


Item	Symbol	Signal name	Name	Type	Function
3	M4	PRESS_M	DC Motor	DU2422-1	Pressing the Developer Unit to the Drum (Or keeping the Developer Unit away from the Drum)
4	PH4	PRESS_S	Sensor	GP1A73A000J	Detecting the Developer Unit is pressed or kept away
5	PH1	REGIST_S	Sensor	PS117ED1	Detecting the paper at the Registration Area Detecting the paper length of cut sheets
6	PH5	MAN_IN	Sensor	PS117ED1	Detecting the set of cut sheet paper



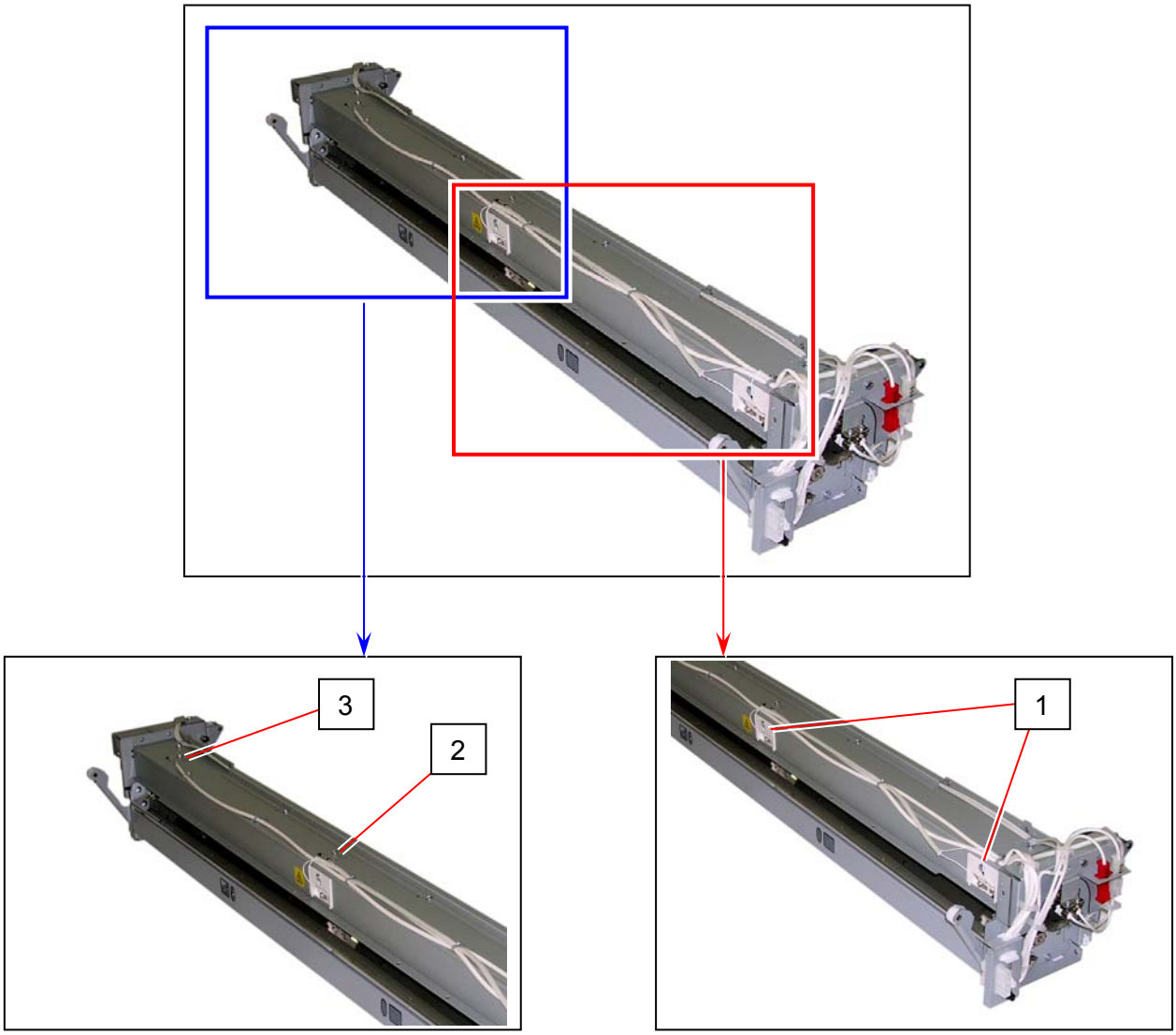
Item	Symbol	Signal name	Name	Type	Function
7	MS5	DOOR-OPEN	Switch	CS1A-B2CA	Detecting the Roll Deck Open Error

4. 2. 6 Developer Unit

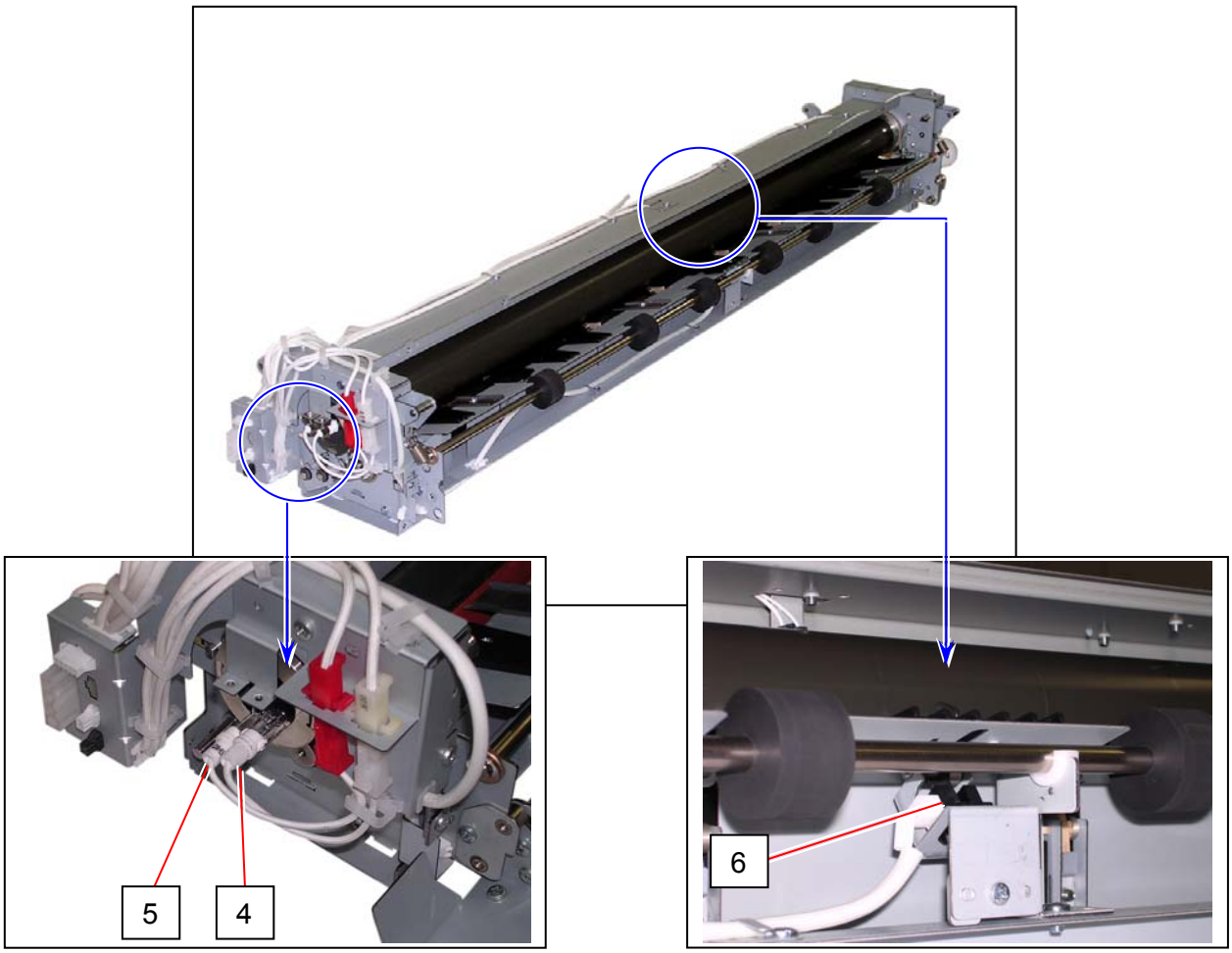


Item	Symbol	Signal name	Name	Type	Function
1	TLS1	TONER_S	Sensor	TSP15DA10C-01	Detecting whether or not the toner exists in the Developer Unit
2	M3	TONER_M	DC Motor	DU2431-2	Driving the Toner Hopper to supply the toner to the Developer Unit

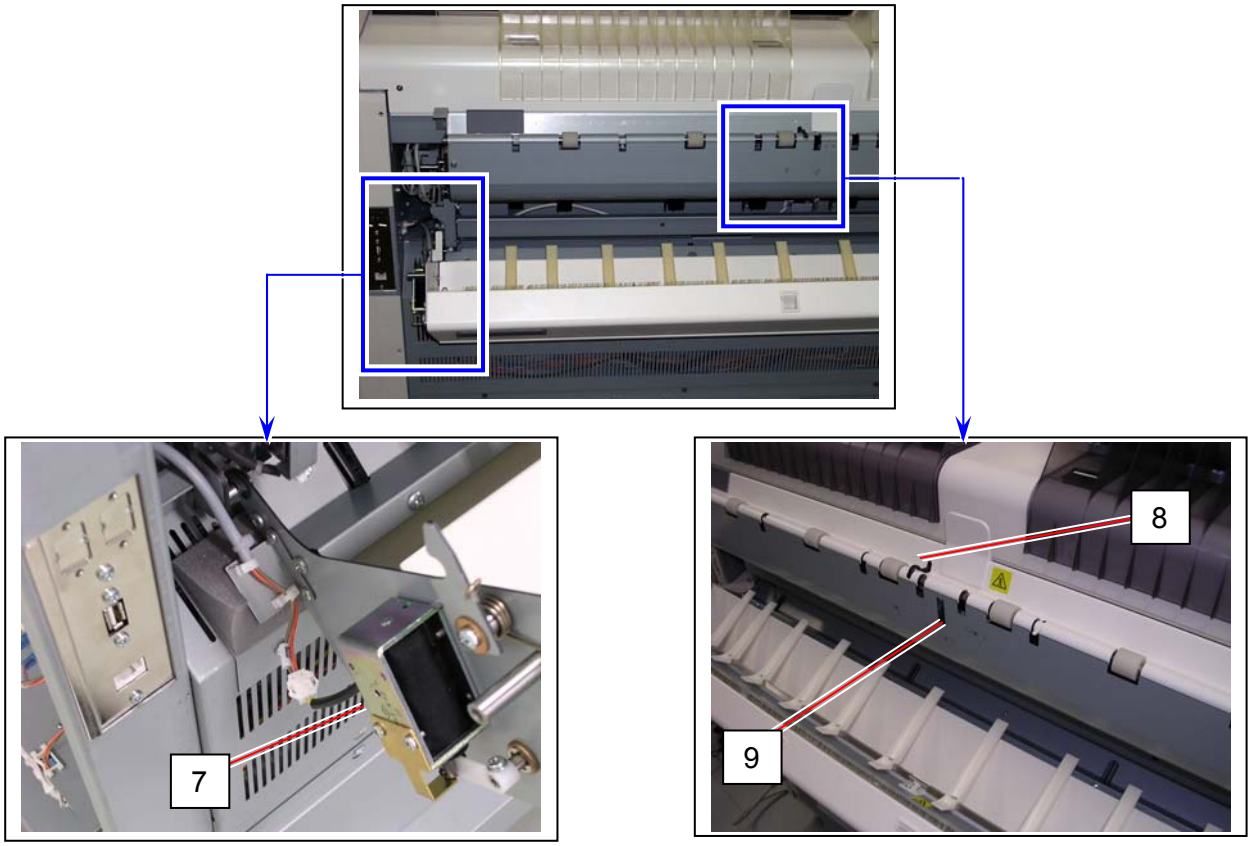
4. 2. 7 Fuser Unit



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

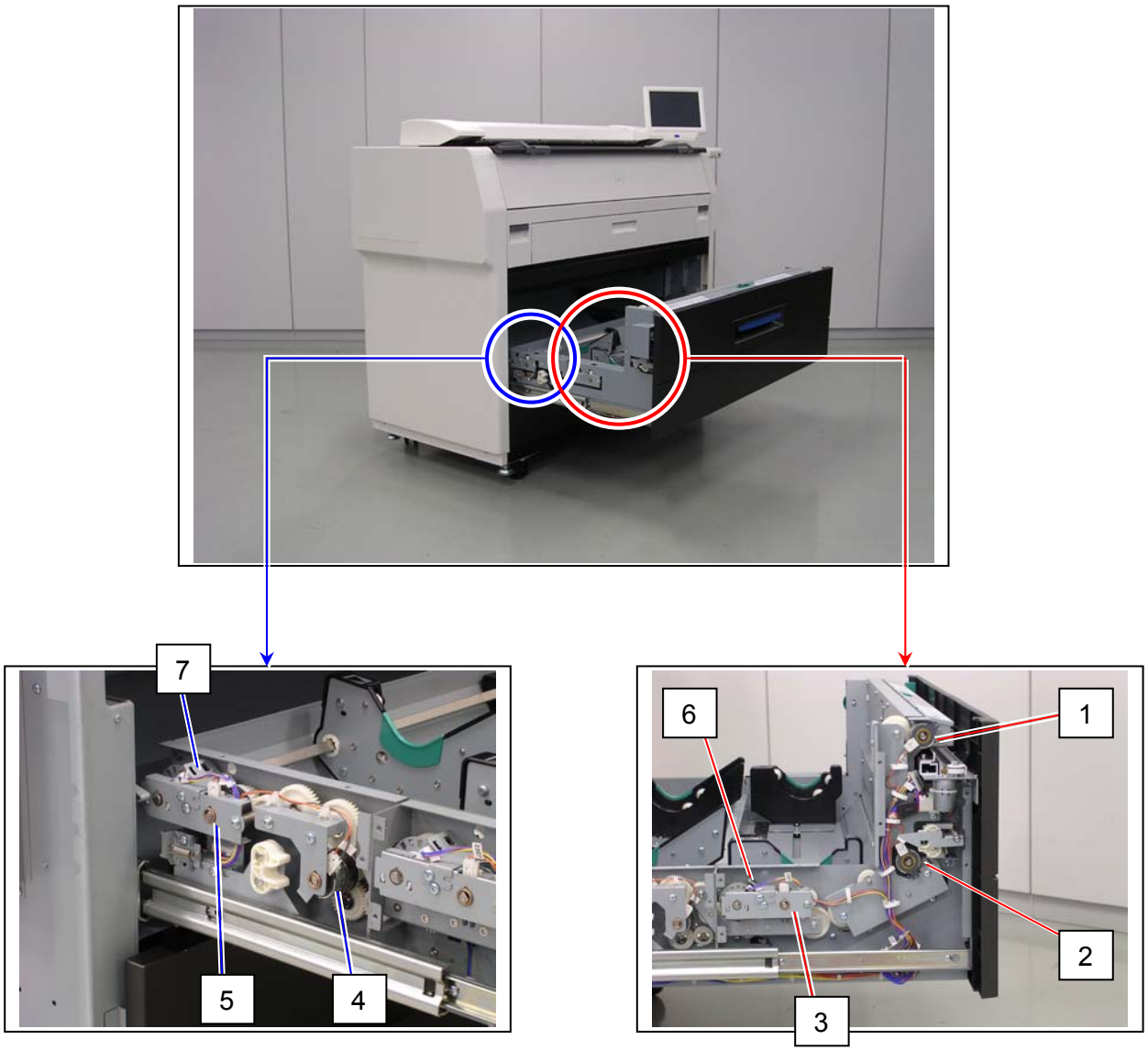


Item	Symbol	Signal name	Name	Type	Function
4	H1		Lamp 120V : 305JG73990 230V : 305JG75000		Heating up the central part of Fuser Roller
5	H2		Lamp 120V : 305JG74000 230V : 305JG74990		Heating up the right and the left part of Fuser Roller
6	PH3	HEAT_EXIT	Sensor	GP1A73A000J	Detecting the paper mis-feed at the exit area



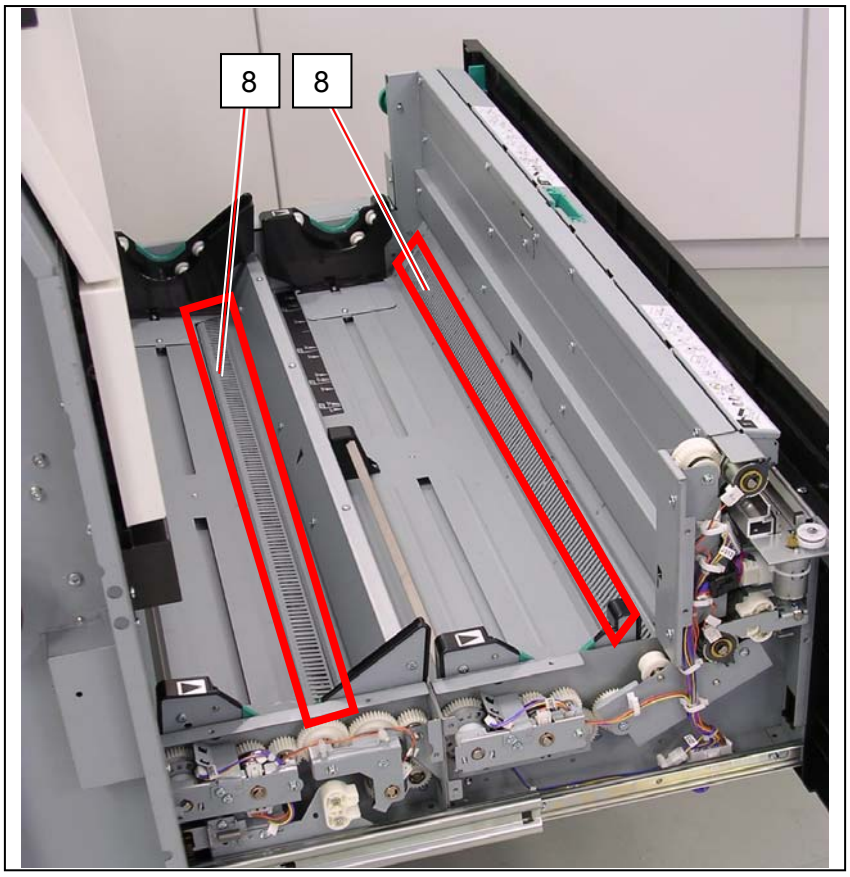
Item	Symbol	Signal name	Name	Type	Function
7	SL1	STACK_SL	Solenoid		Deciding print path to either top / rear
8	PH15	STACK_S	Sensor		Detecting stacked prints
9			Sensor		Detecting the paper mis-feed after Fuser Unit

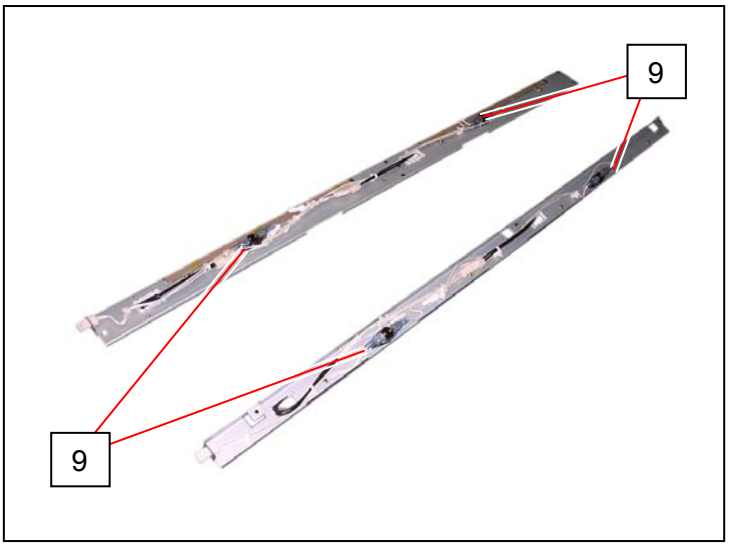
4. 2. 8 Roll Deck



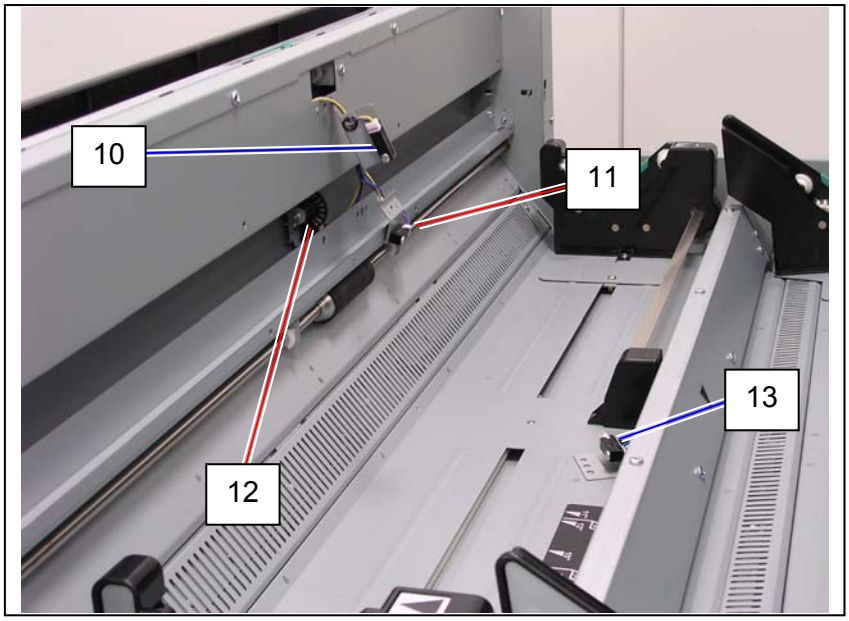
Item	Symbol	Signal name	Name	Type	Function
1	CL3	FEED_CL	Clutch	MIC5NE-45	Feeding the roll paper from both Roll 1 and Roll 2
2	CL4	R1FD_CL	Clutch	MIC8NE-23	Feeding the Roll 1 forward
3	CL5	R1BK_CL	Clutch	MIC8NE-09	Rewinding the Roll 1
4	CL6	R2FD_CL	Clutch	MIC8NE-23	Feeding the Roll 2 forward
5	CL7	R2BK_CL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

(Dehumidify Heater: option for US model)



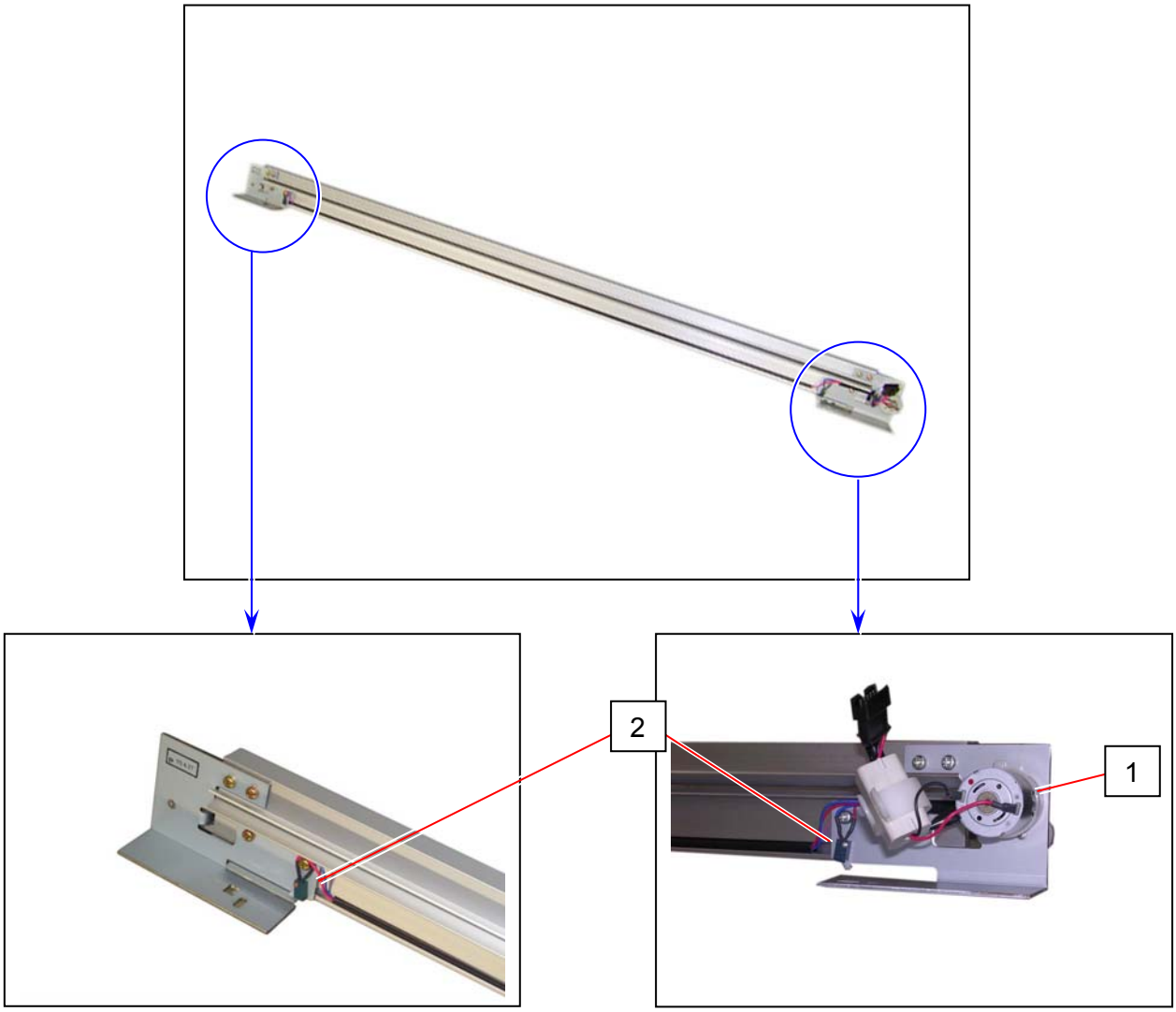


Item	Symbol	Signal name	Name	Type	Function
8	H3 H4 H5 H6		Resister	120V 1K 15W 230V 3.5K 15W	Dehumidifying the roll paper
9	TS3 TS4 TS5 TS6		Thermostat	2455RM-158-37	Controlling the temperature of Resister (The Resisters turn on when the Thermostat detects some decided temperature, and they turn off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



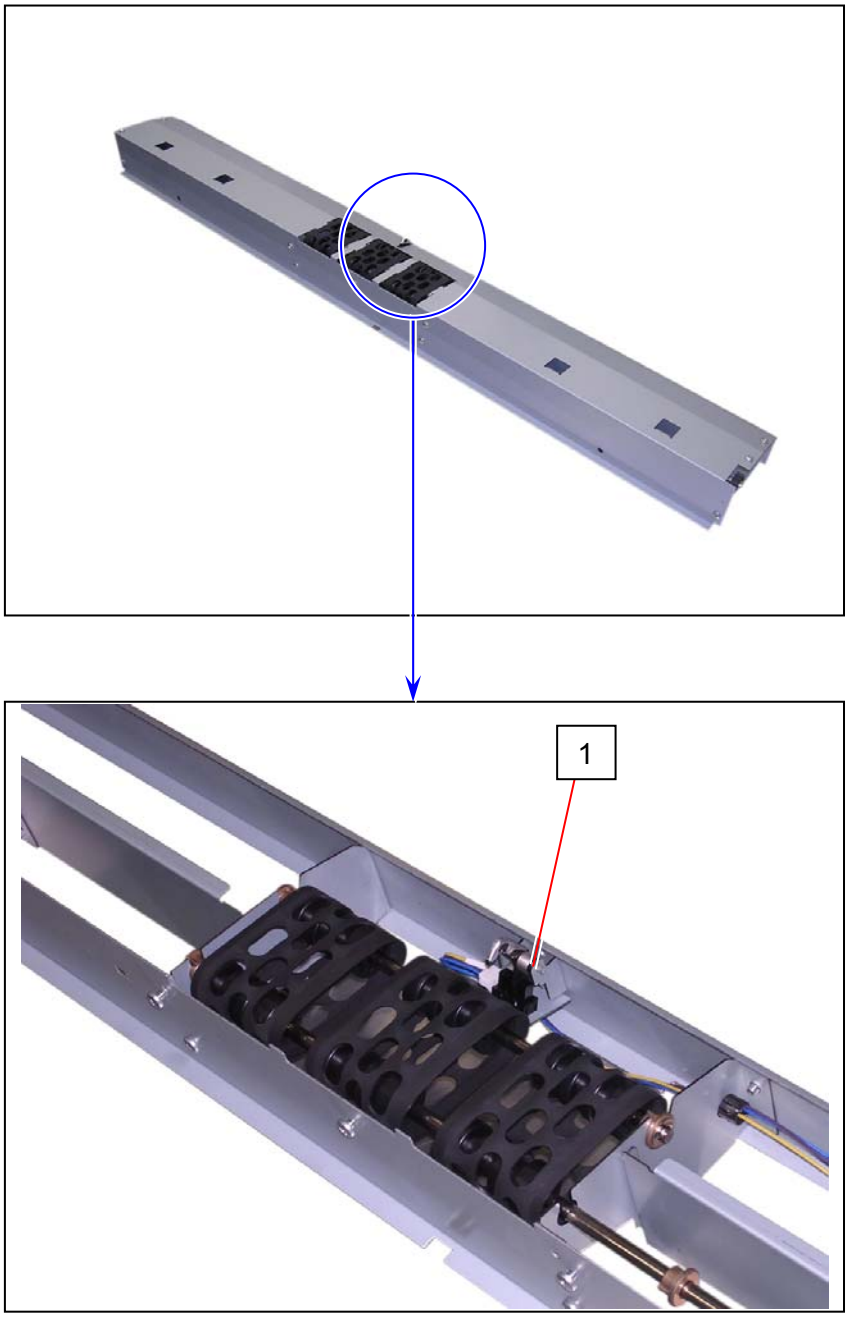
Item	Symbol	Signal name	Name	Type	Function
10	PH6	R_EDGE	Sensor	PS117ED1	Detecting the trailing edge of the roll paper
11	PH7	R1SET_S	Sensor	PS117ED1	Detecting the set of Roll 1
12	PH12	FEED_ENC	Sensor	GP1A73A000J	Detecting the length of the proceeding paper to be cut
13	PH9	R2SET_S	Sensor	PS117ED1	Detecting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

4. 2. 9 Cutter Unit



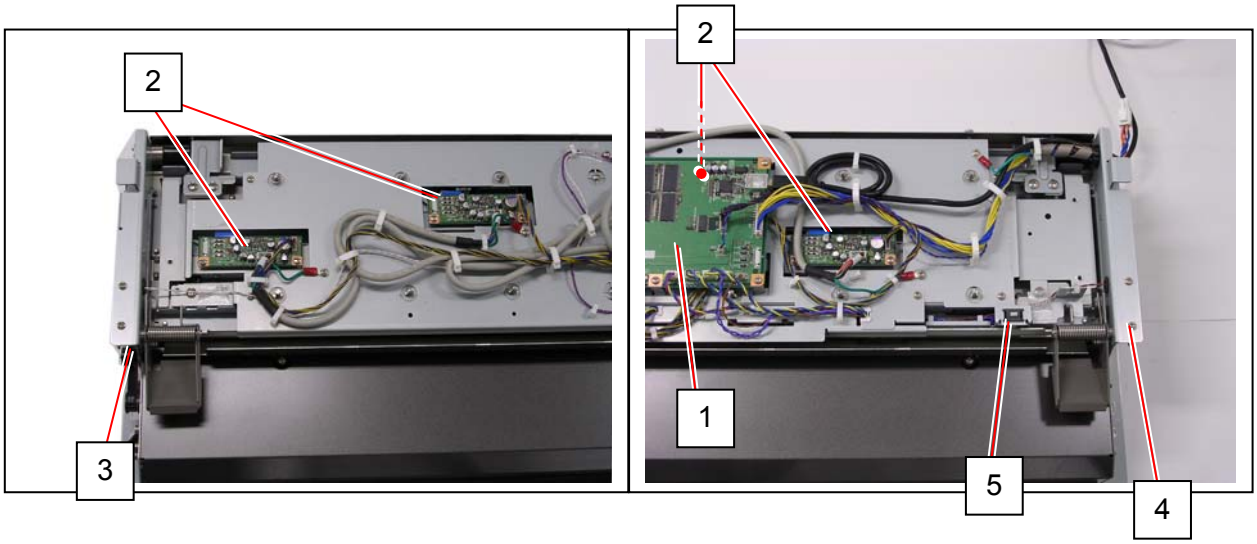
Item	Symbol	Signal name	Name	Type	Function
1	M5		Cutter Motor	-	Moving the Cutter Blade
2	MS6 MS7		Cutter Home Position Sensor	-	Detecting the Home Position of Cutter Blade.

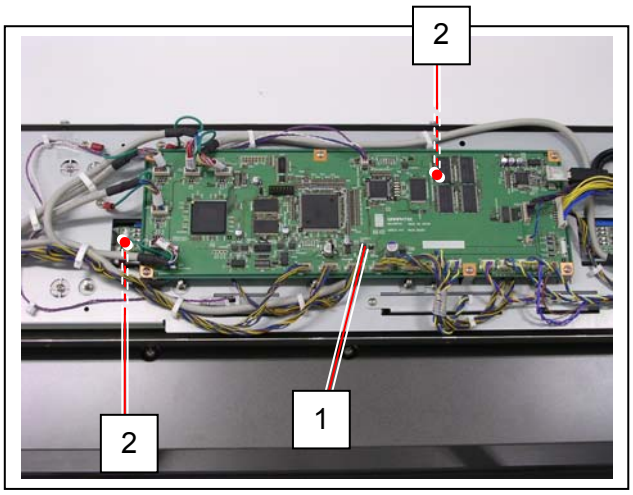
4. 2. 10 Inner Transport Unit

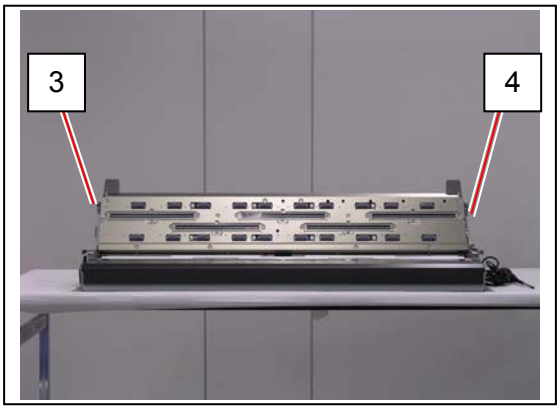


Item	Symbol	Signal name	Name	Type	Function
1	PH2	STRIP_S	Sensor	GP1A73A000J	Detecting the paper mis-feed at the Separation Area

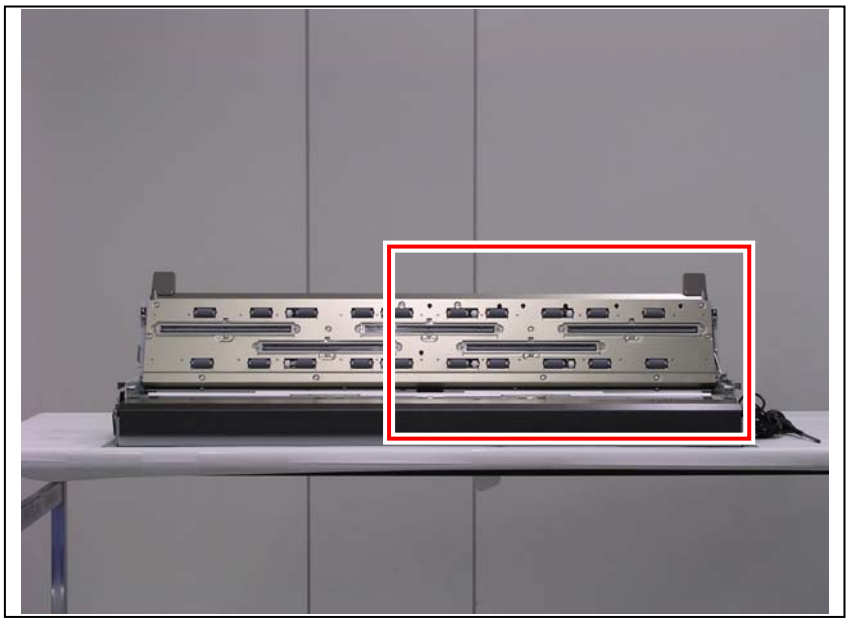
4. 2. 11 Scanner Unit (Old Scanner)

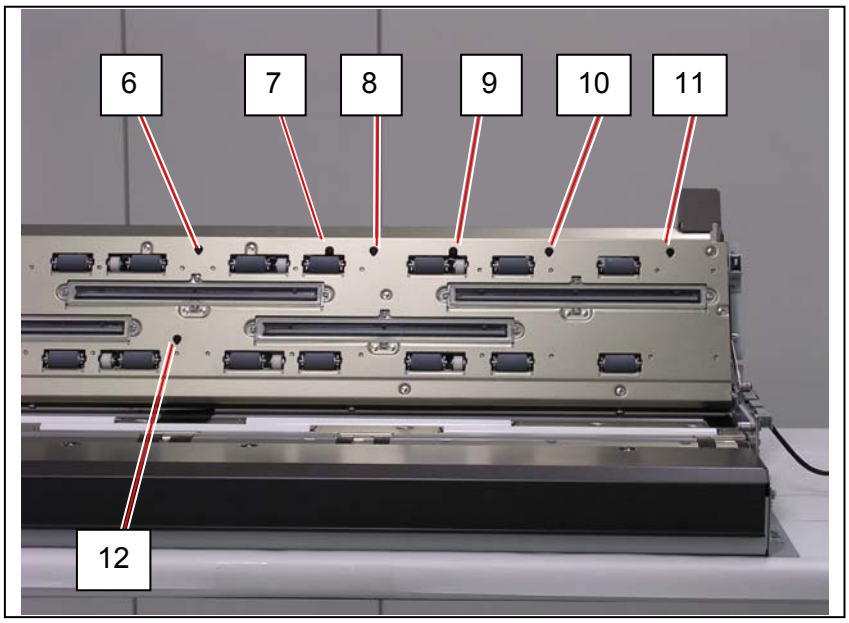




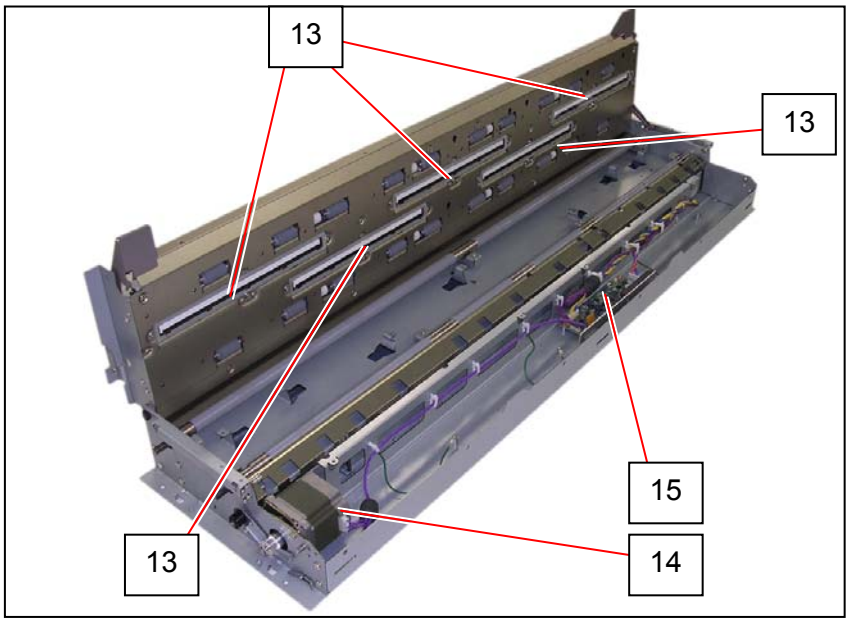


Item	Symbol	Signal name	Name	Type	Function
1			SVC Main BD K (Data Controller)		SVC Main BD K makes image processes to the digital data sent from SVC CIS BD. And then it sends the processed image data to the controller.
2			SVC CIS BD (CIS Controller)		Converting the analog data read by the CIS to the digital data
3			Sensor	TLP1201A	Detecting whether or not the Scanner Upper Unit is opened.
4			Sensor	TLP1201A	Detecting whether or not the Scanner Upper Unit is opened.
5			Switch	CS1A-B2CA	Emergent stop button



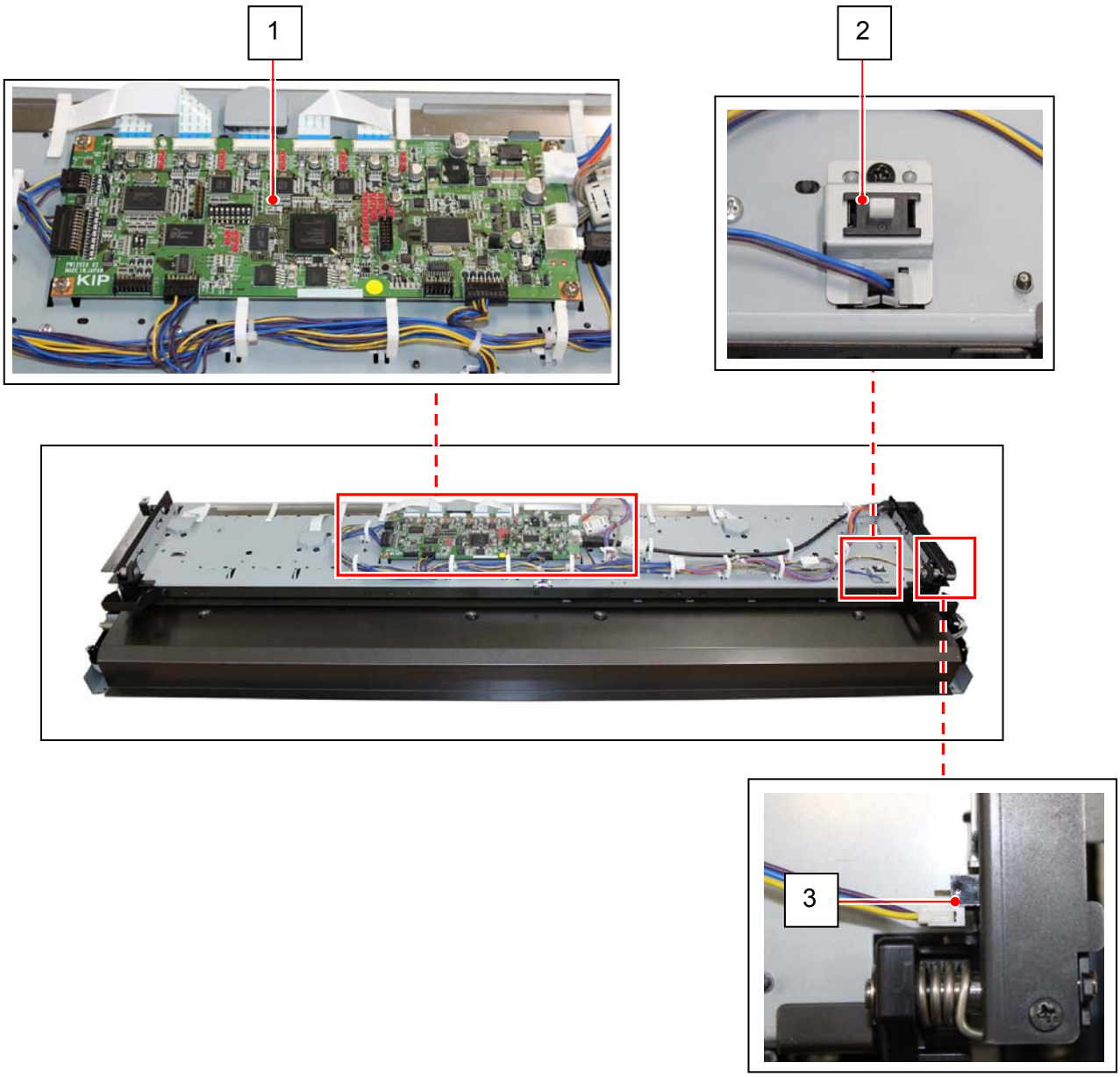


Item	Symbol	Signal name	Name	Type	Function
6			Sensor	PS117ED1	It detects the insertion of original.
7			Sensor	PS117ED1	It detects original widths A4 (Landscape), A3, 11” and 12”.
8			Sensor	PS117ED1	It detects original widths A2, 17” and 18”.
9			Sensor	PS117ED1	It detects original widths A1, 22” and 24”.
10			Sensor	PS117ED1	It detects original widths A0, and 30”.
11			Sensor	PS117ED1	It detects original widths 34” and 36”.
12			Sensor	PS117ED1	It detects the original mis-feed. It is also used to detect the leading edge when the original is returned.

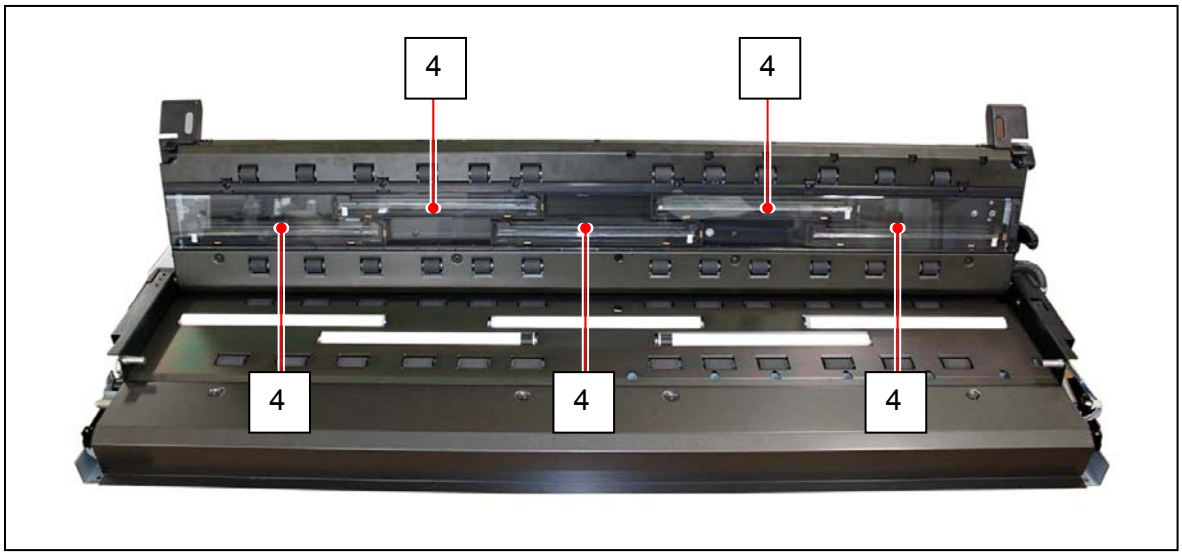


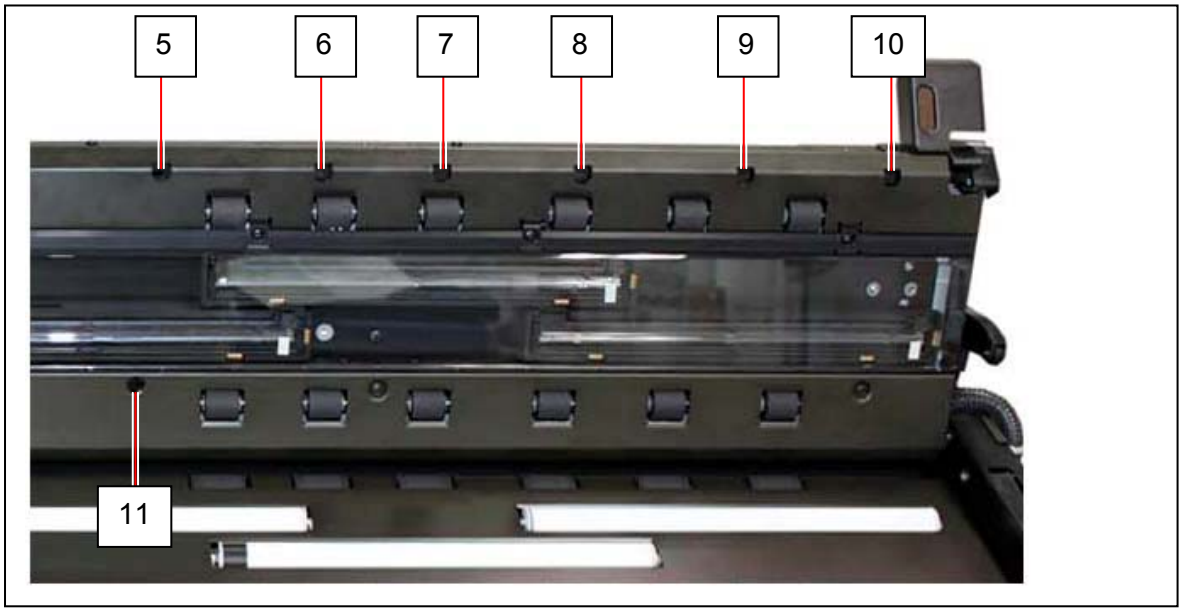
Item	Symbol	Signal name	Name	Type	Function
13			CIS Unit	CIPS218CF601	CIS Units read the image of original, and then send the analog data to the SVC CIS BD.
14			Motor Assembly		Transporting the original.
15			SVC PWR BD (Power Supply)		Converts the +24V to each +12V, +5V and +3.3V. Also it is the Driver Circuit of the Motor.

4. 2. 12 Scanner Unit (New Scanner)

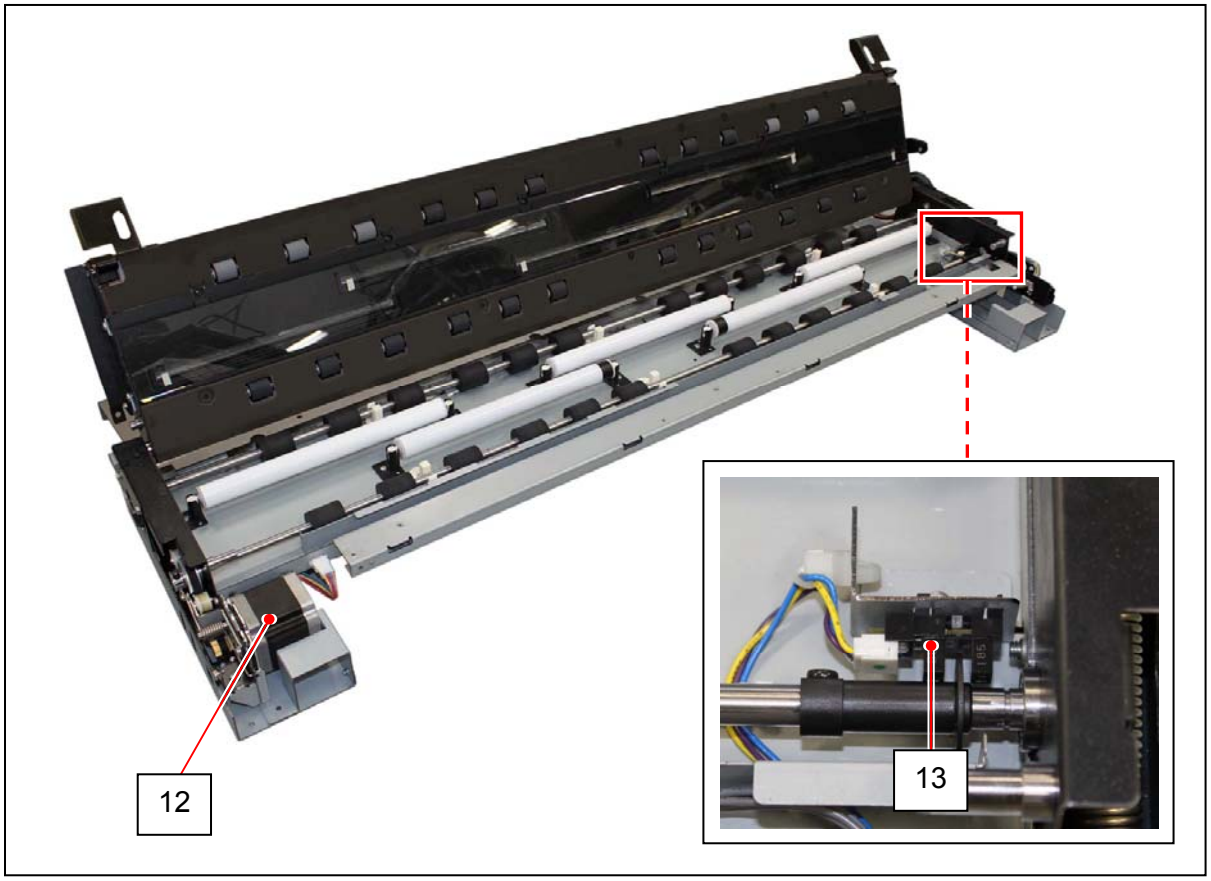


Item	Symbol	Signal name	Name	Type	Function
1			D CON (Data Controller PCB)	PW12920-02	Makes image processes to the digital data sent from CIS, and then sends the processed image data to the Printer. Converts the analog data read by the CIS to the digital data
2	S_MS1		Switch	CS1A-B2CA	Emergent stop button
3	S_PH8		Sensor	LG248BL1	Detects whether Upper Unit is opened.





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



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

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

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

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

PW12420 PCB (DC Controller)
HV Power Supply PCB (EUK1MGA60HA)

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

Check Item	Reference page
Analog Voltage to the Image Corona	4-33
Analog Voltage to the Transfer Corona	4-35
AC Component to the Separation Corona	4-37
DC Component to the Separation Corona	4-39
Negative Developer Bias to the Developer Roller	4-41
Positive Developer Bias to the Developer Roller	4-43
Bias gap between Developer Roller and Regulation Roller	4-45
Positive Cleaning Roller Bias (Print Cycle)	4-47
Negative Cleaning Roller Bias (Toner Collection Process)	4-49

Reference

Please try to replace the PW12420 PCB or HV Power Supply PCB if you have the following kinds of problem.

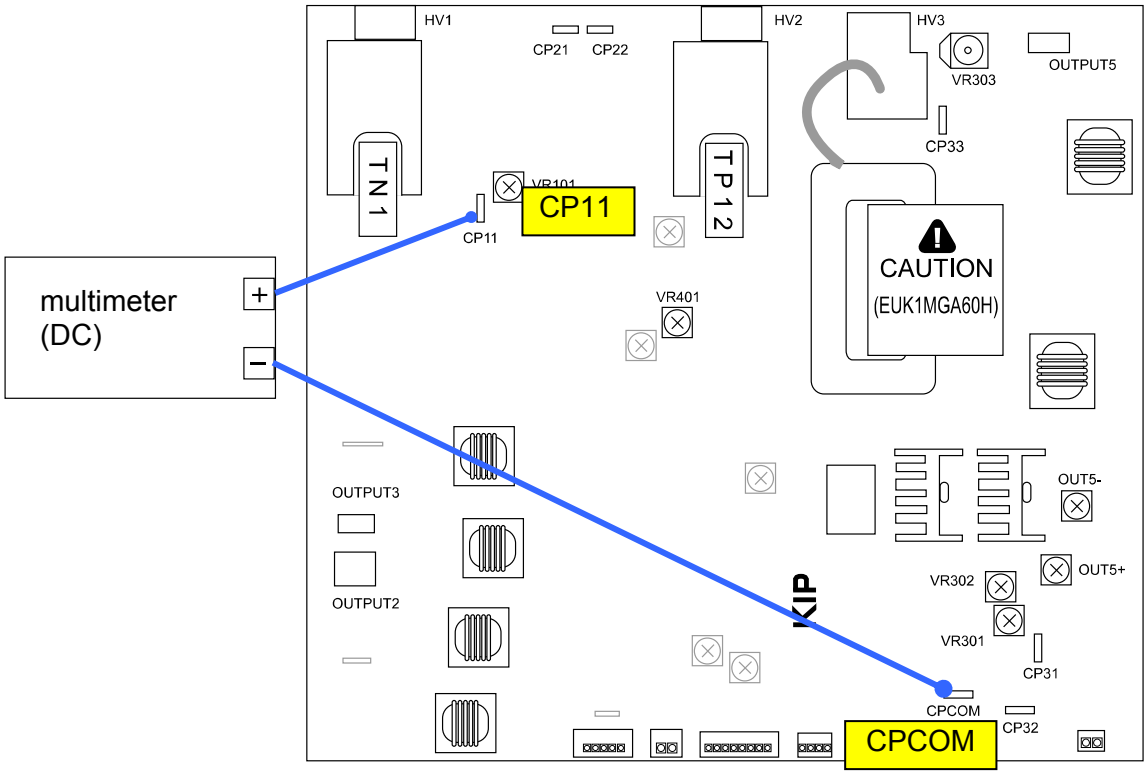
PW12420 PCB
(1) When the UI indicates abnormal indication although the UI has no problem.
(2) When the electric component such as motor or lamp does not work properly although such component has no problem.

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

4. 3. 2 Analog Voltage to Image Corona

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

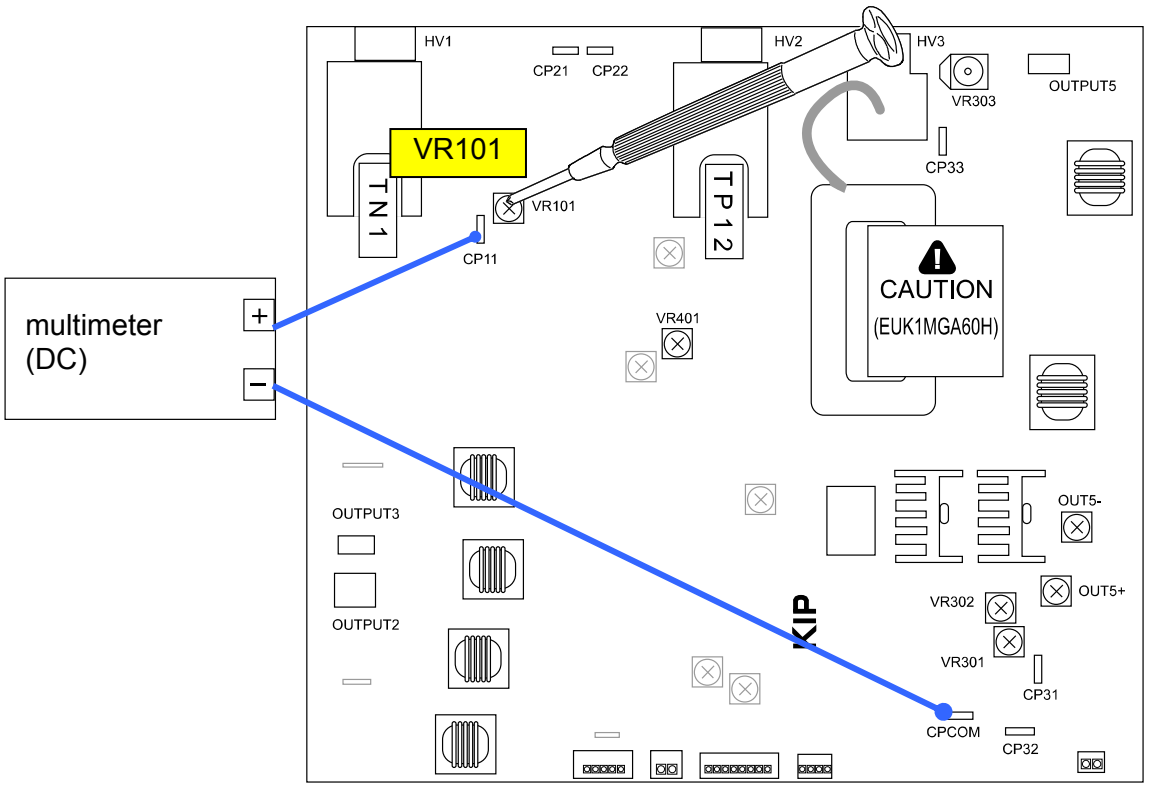
1. Connect the “+” cable of the multi-meter to the “CP11” pin on the HV Power Supply PCB (EUK1MGA60HA).
   Also connect the “-” one to the “CPCOM”.
   And then, select the DC volt range on the multi-meter.



2. Make a Test Print making reference to [8. 9 Test Print Mode] .
   As the high voltage is supplied to the Image Corona during the Test Print, check the voltage with the multi-meter.

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

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



4. 3. 3 Analog Voltage to Transfer Corona

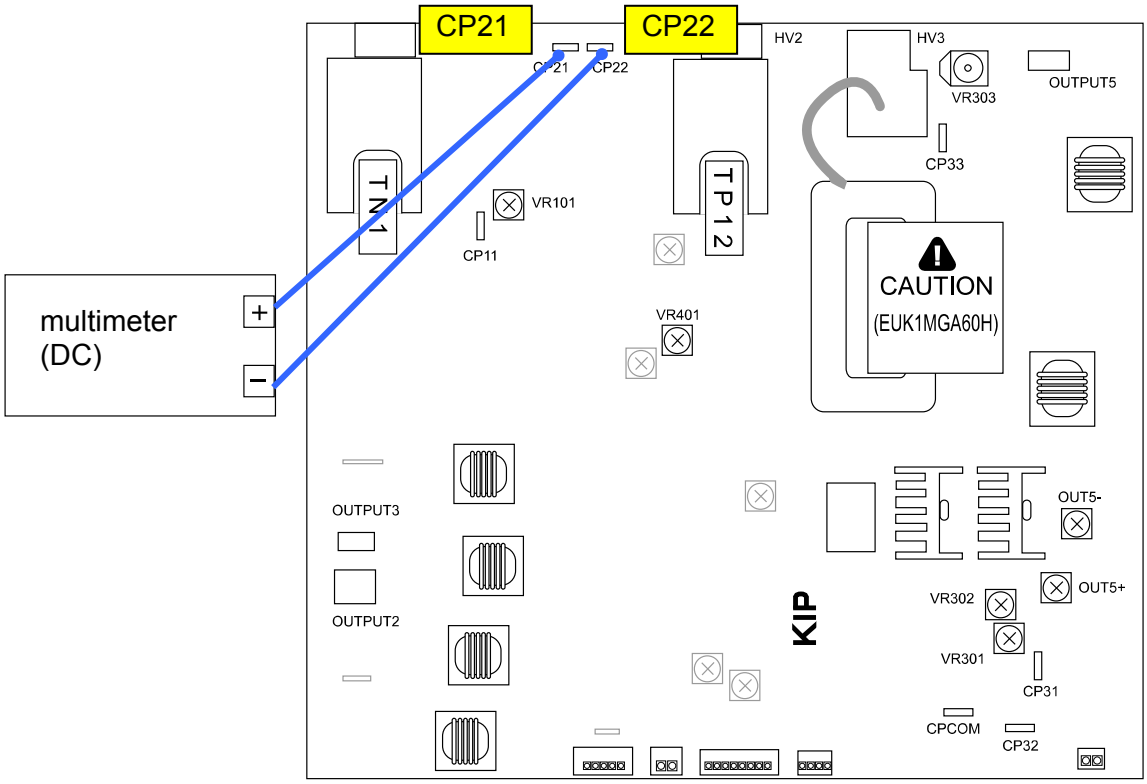
The standard value of the voltage outputted from the HV Power Supply PCB to the Transfer Corona is specified to each type of paper as follows.

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

Check and adjust the output current in the following way.

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

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



2. Select the Test Print Mode, and make a test print using each type of paper (plain paper, tracing paper & Film) making reference to [8. 9 Test Print Mode].

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

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

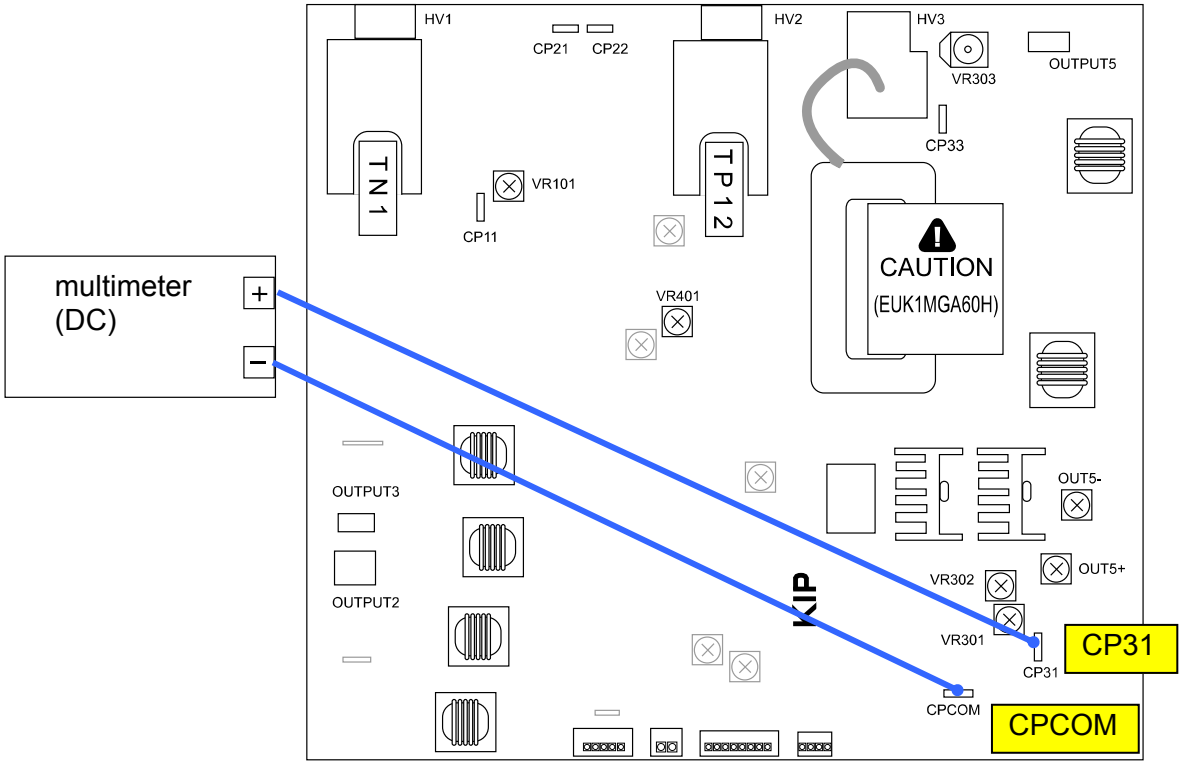
3. Adjust the output voltage if it does not satisfy the above specifications.
   Select the Adjustment Mode, select each of following Sub Mode Numbers, and change the setting value so that the output voltage satisfies the above specifications.
   Refer to [8.6.3.15 Transfer Voltage (No.029 to 034)] for the detail.

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

4. 3. 4 AC Component to Separation Corona

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

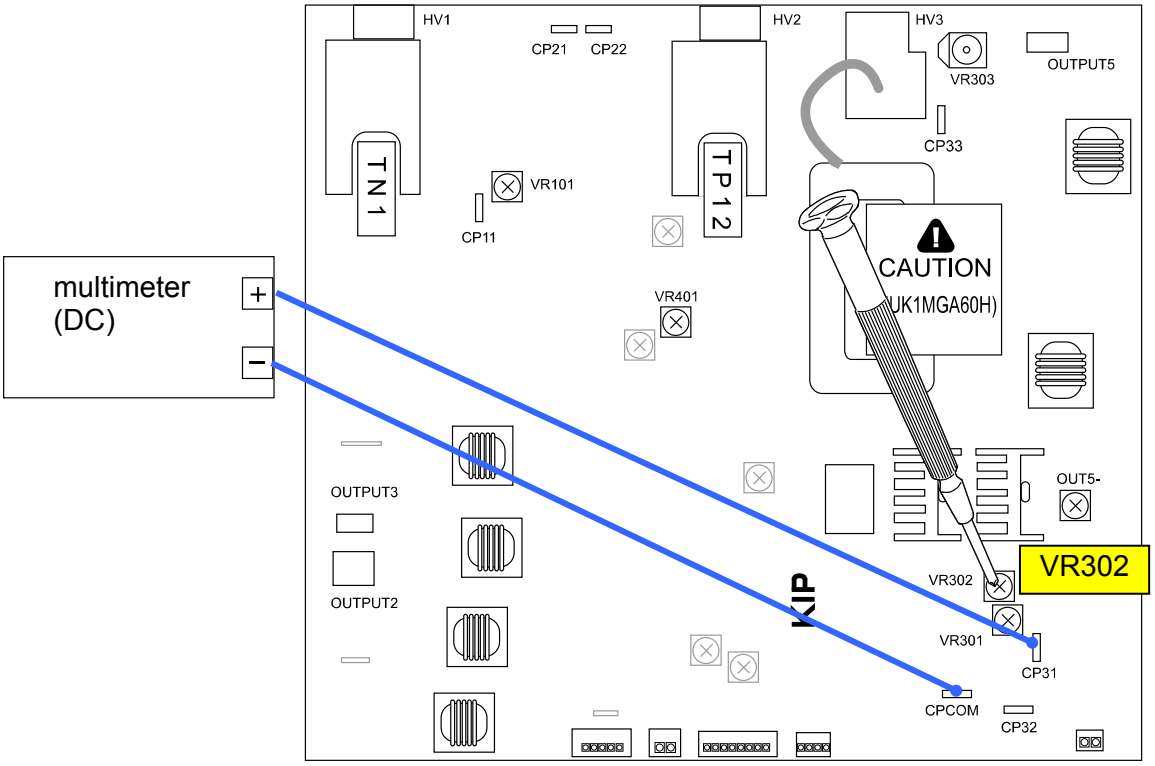
1. Connect the “+” cable of the multi-meter to the “CP31” pin on the HV Power Supply PCB (EUK1MGA60HA).
   Also connect the “-” one to the “CPCOM” pin.
   And then, select the DC volt range on the multi-meter.



2. Make a Test Print making reference to [8. 9 Test Print Mode].
   As the high voltage is supplied to the Image Corona during the Test Print, check the voltage with the multi-meter.

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

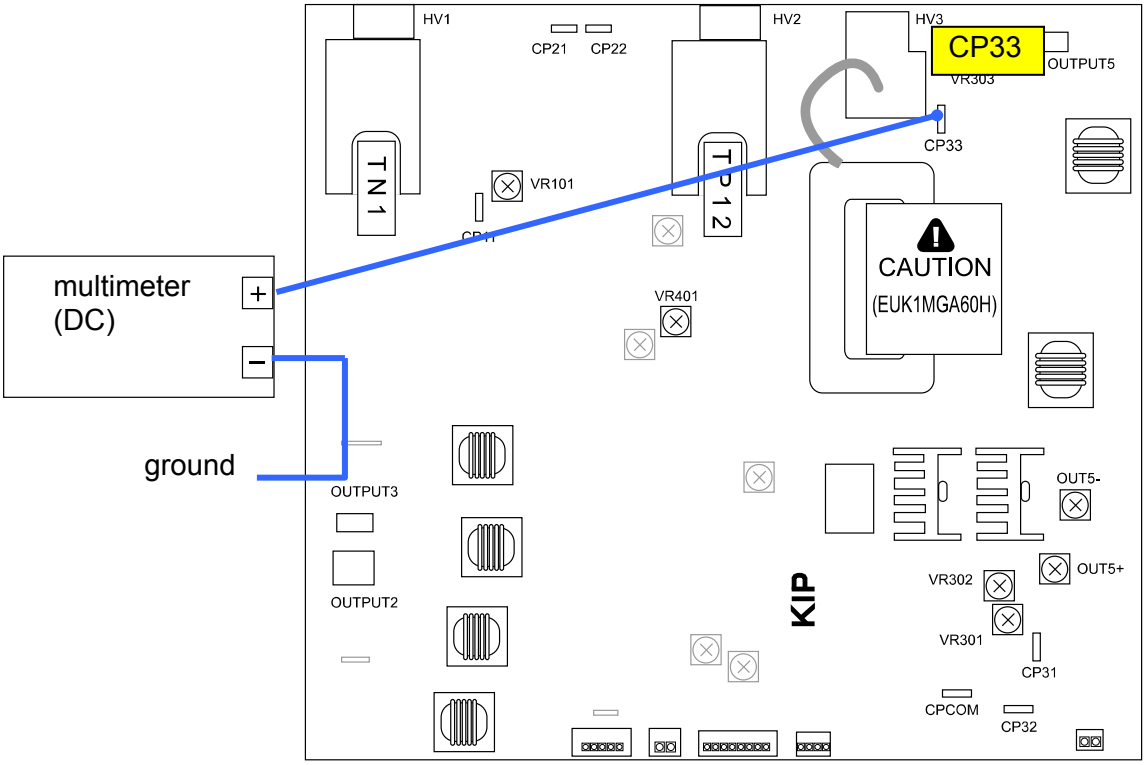
3. Adjust the AC Component if it does not satisfy **5.00 +/-0.05V**.
   To adjust it, rotate the VR302 with a screwdriver.



4. 3. 5 DC Component to Separation Corona

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

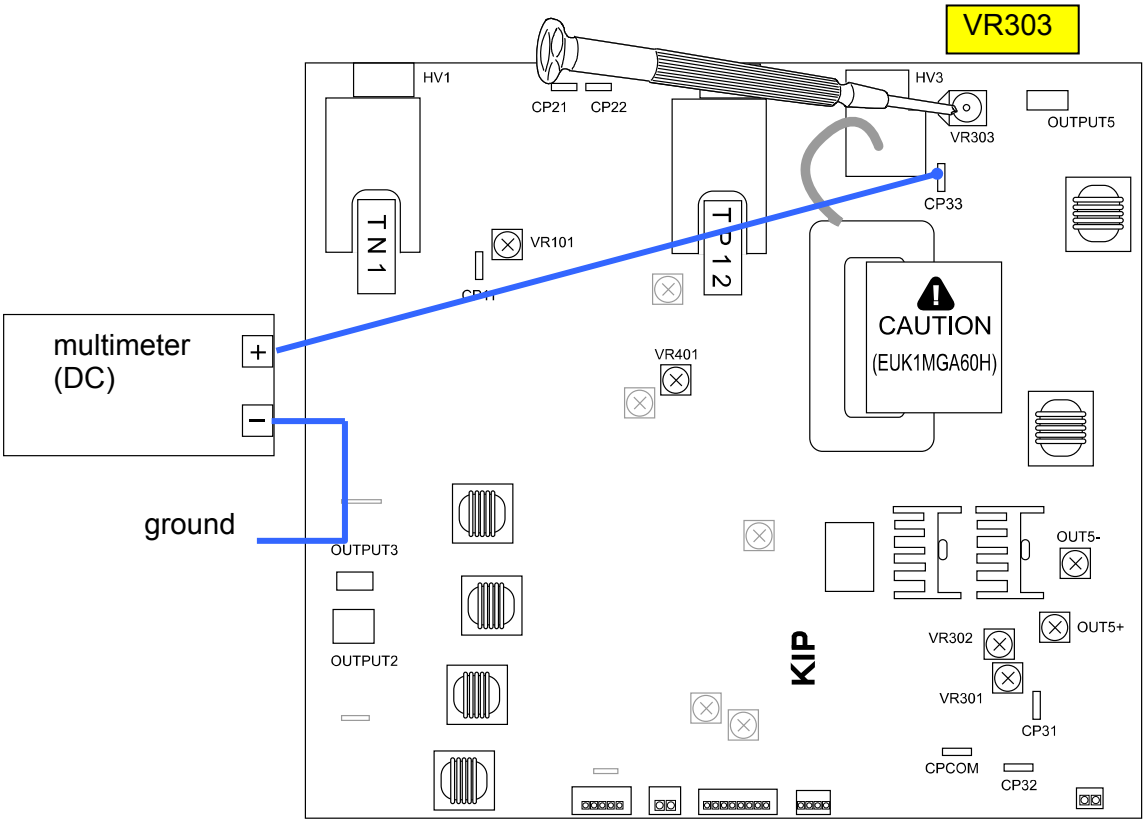
1. Connect the “+” cable of the multi-meter to the “CP33” pin on the HV Power Supply PCB (EUK1MGA60HA).
   Also connect the “-” one to the ground.
   And then, select the DC volt range on the multi-meter.



2. Make a Test Print making reference to [8. 9 Test Print Mode].
   As the high voltage is supplied to the Image Corona during the Test Print, check the voltage with the multi-meter.

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

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



4. 3. 6 Negative Developer Bias to Developer Roller

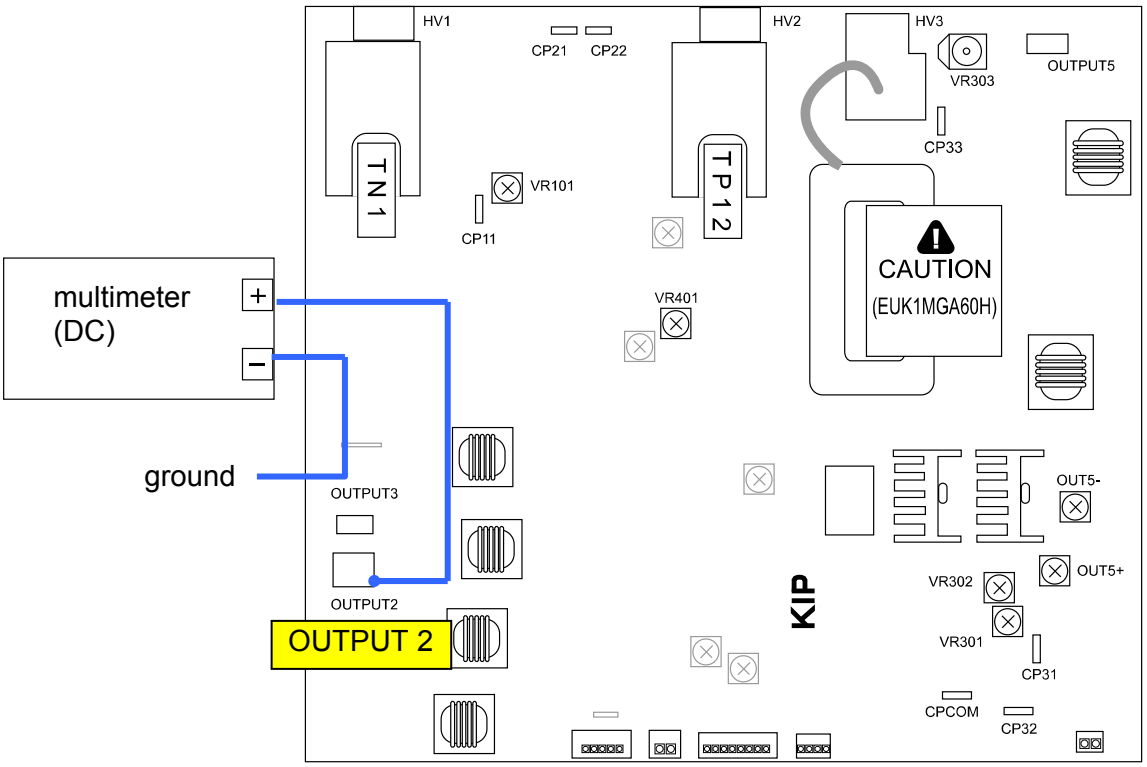
The Negative Developer Bias means the voltage supplied to the Developer Roller during the Print Cycle.
The standard value of the Negative Developer Bias is as follows for each type of paper.

Plain paper	**-180 +/-5V against the ground**
Tracing paper	**-180 +/-5V against the ground**
Film	**-180 +/-5V against the ground**

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

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

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



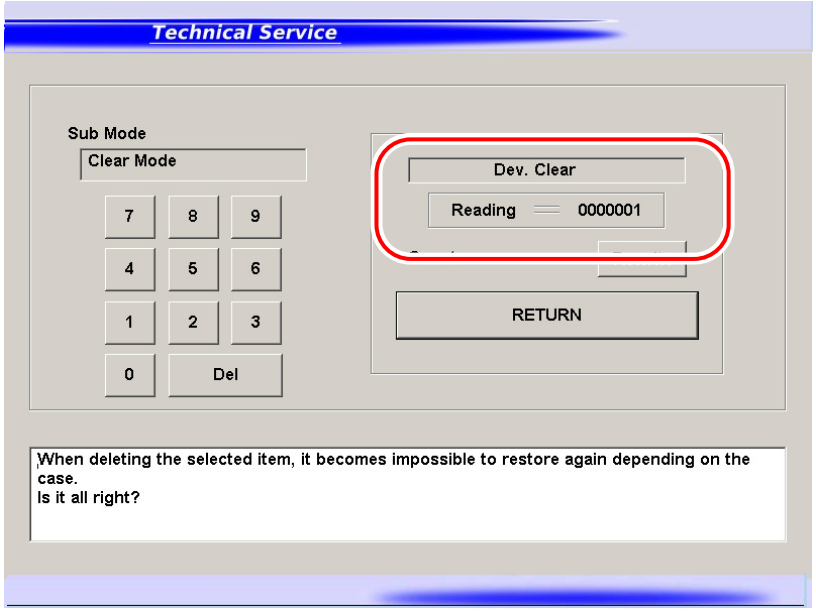
2. Make a Test Print making reference to [8. 9 Test Print Mode].
   As the Negative Developer Bias is supplied to the Developer Roller during the Test Print, check the voltage with the multi-meter.

   The standard value of the Negative Developer Bias for each type of media is:

   Plain paper ..... **-180 +/-5V against the ground**
   Tracing paper ..... **-180 +/-5V against the ground**
   Film ..... **-180 +/-5V against the ground**

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

3. If the value (voltage) is -230 +/- 5V, Developer Bias may be automatically adjusted by Density Compensation Process.
   Enter Special Operation Mode and then "0006 Bias3 Count".



   The voltage "-230V +/- 5V" is correct when the above 7-digit value shows "0000001" / "0000002" / "0000003".

7 digits (current Auto Adjustment Level)	Supposed Developer Bias
000000**0**	-180 +/-5V
000000**1** / 000000**2** / 000000**3**	-230 +/-5V

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

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

4. Select the Adjustment Mode, select each of following Sub Mode Numbers, and change the setting value so that the output voltage satisfies **-180 +/-5V against the ground**.
   Refer to [8.6.3.13 Developer Bias (No.022 to 027)] for the detail.

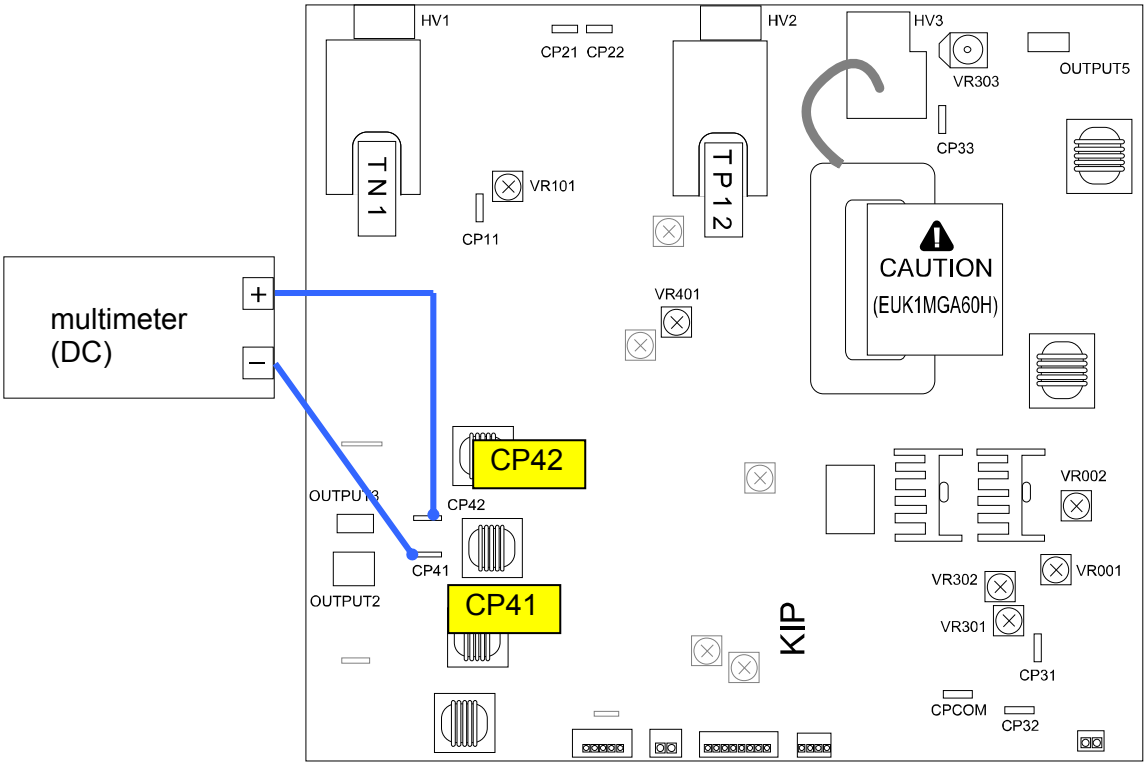
Sub Mode No.	Contents
022	Developer Bias (Plain paper)
023	Developer Bias (Tracing paper)
024	Developer Bias (Film)
025	Developer Bias (Plain paper : Special)
026	Developer Bias (Tracing paper : Special)
027	Developer Bias (Film : Special)

4. 3. 7 Positive Developer Bias to Developer Roller

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

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

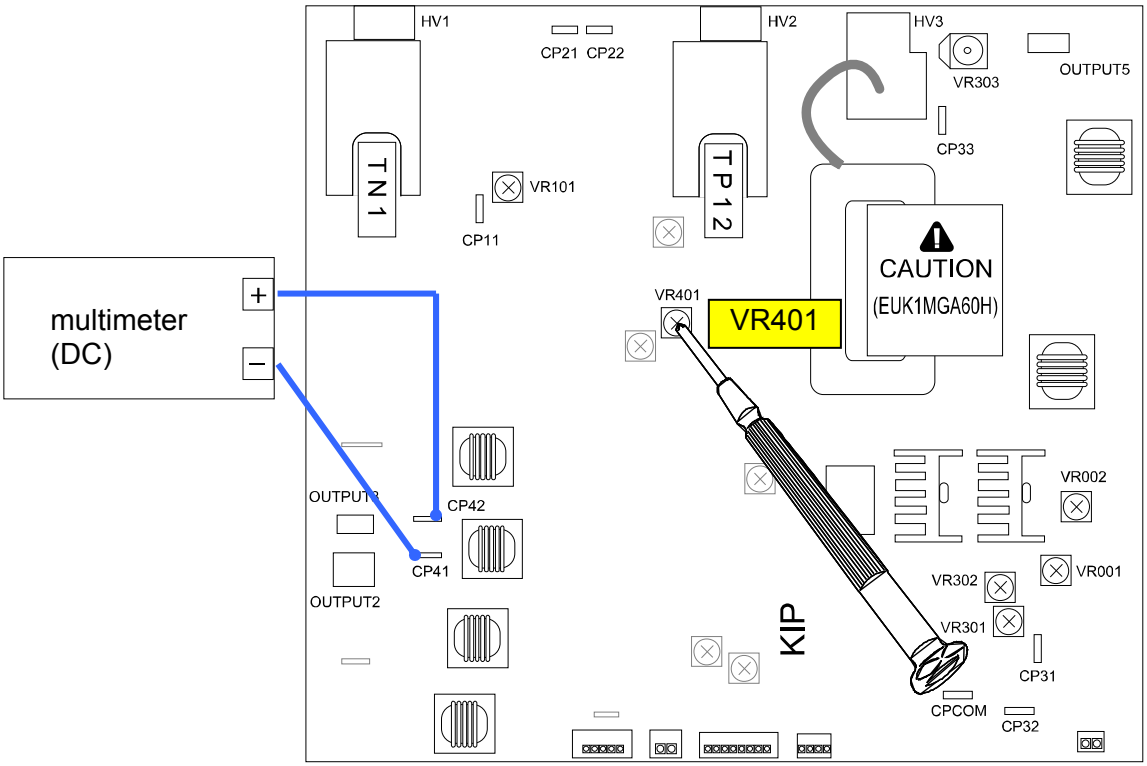
1. Connect the “+” cable of the multi-meter to “CP41” pin on the HV Power Supply PCB (EUK1MGA60HA).
   Also connect the “-” one to “CP42”.
   And then, select the DC volt range on the multi-meter.



2. Make a Test Print making reference to [8. 9 Test Print Mode].
   The Positive Developer Bias is supplied to the Developer Roller for some seconds after the printed paper has been ejected.
   Check the voltage with the multi-meter during that period.

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

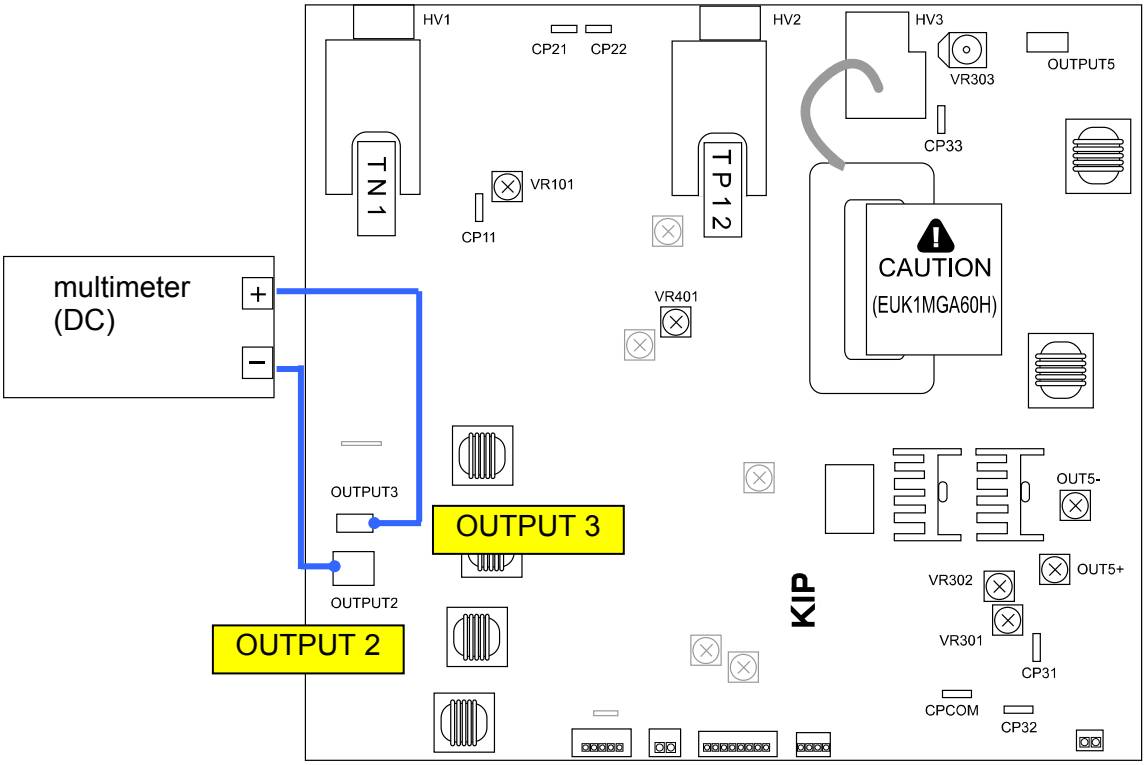
3. Adjust the Positive Developer Bias rotating the VR401, so that it should satisfy **0.350 +/-0.005V against the CP42**.



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

The standard value of the Bias gap between Developer Roller and Regulation Roller is **80 +/-5V**.
Check and adjust it in the following way.

1. Connect the “+” cable of the multi-meter to the “OUTPUT3” pin on the HV Power Supply PCB (EUK1MGA60HA).
   Also connect the “-” one to the “OUTPUT2” pin.
   And then, select the DC volt range on the multi-meter.

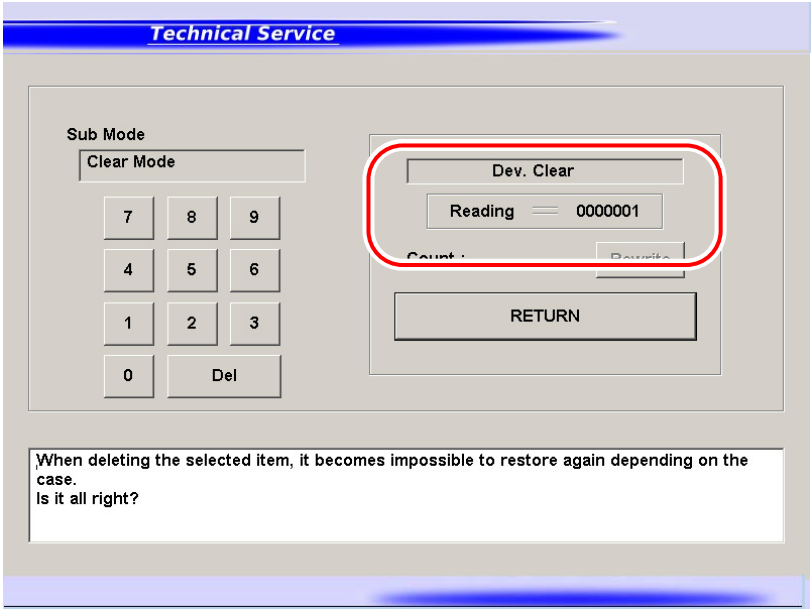


2. Make a Test Print making reference to [8. 9 Test Print Mode].
   As the Bias is supplied to both the Developer Roller and the Regulation Roller, check the Bias gap between them with the multi-meter.

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

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

3. If the value (voltage) is “120 +/-5V” or “160 +/- 5V”, Regulation Bias may be automatically adjusted by Density Compensation Process.
   Enter Special Operation Mode and then “0006 Bias3 Count”.



The voltage “120V +/- 5V” is correct when the above 7-digit value shows “0000002”.
The voltage “160V +/- 5V” is correct when the above 7-digit value shows “0000003”.

7 digits (current Auto Adjustment Level)	Supposed Bias Gap
000000**0** / 000000**1**	80 +/-5V
000000**2**	120 +/-5V
000000**3**	160 +/-5V

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

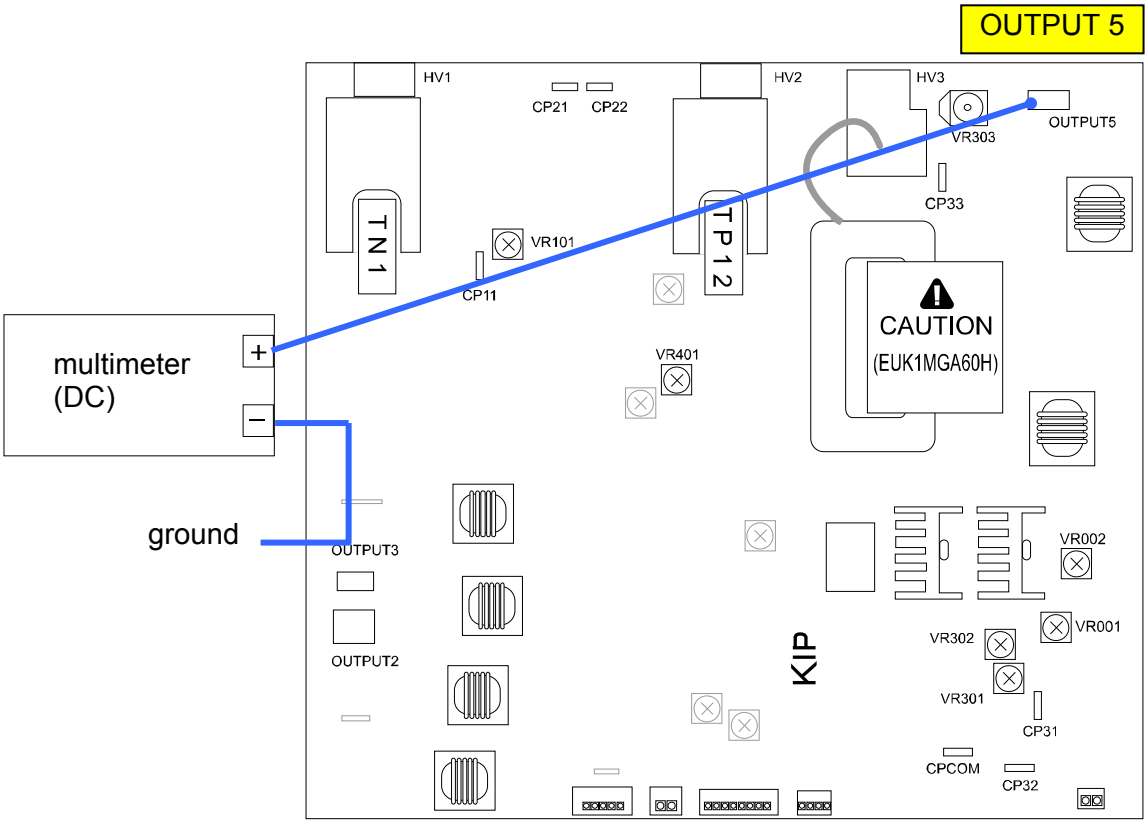
If not satisfied, go to the next step for manual Regulation Bias adjustment.

4. Select the Adjustment Mode, select Sub Mode No. 622, and change the value so that the output voltage satisfies **80 +/-5V**.
   Refer to [8.6.3.102 Regulation Bias (No.622)] for the detail.

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

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

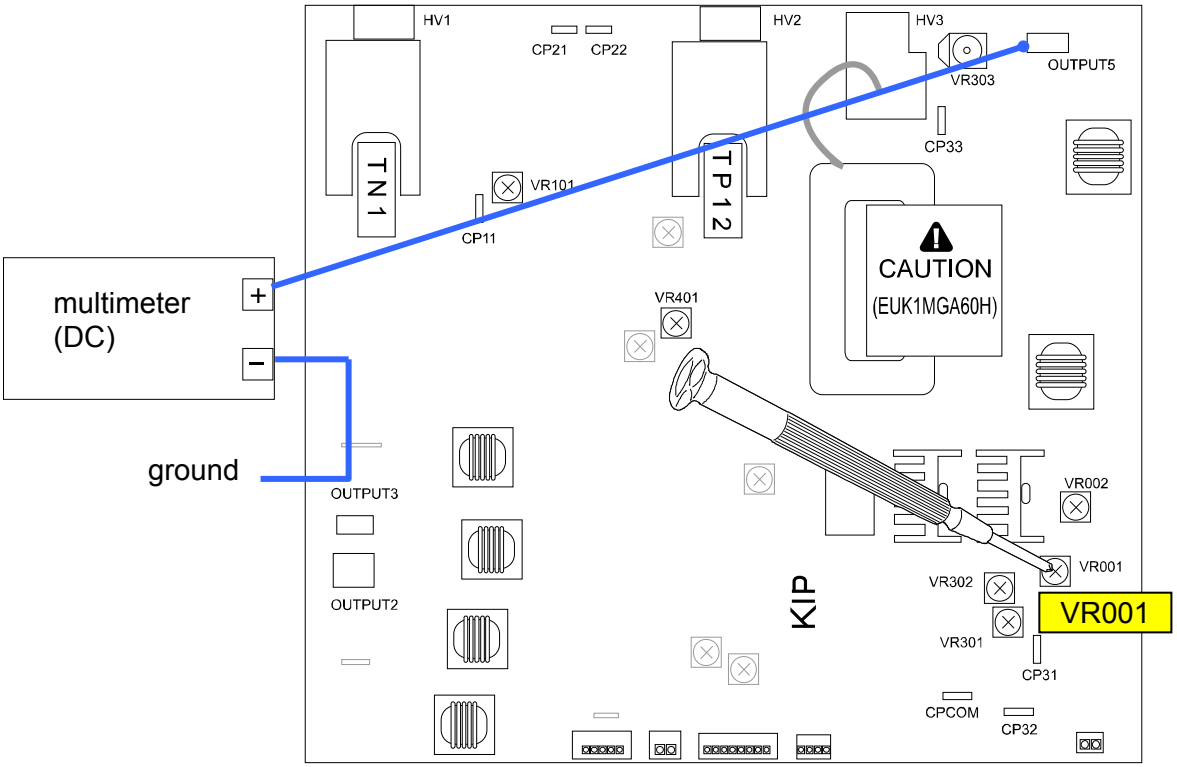
1. Connect the "+" cable of the multi-meter to the "OUTPUT 5" pin on the HV Power Supply PCB
   Also connect the "-" one to the ground.
   And then, select the DC volt range on the multi-meter.



2. Make a Test Print making reference to [8. 9 Test Print Mode].
   As the Positive Cleaning Roller Bias is supplied during the Test Print, check the voltage value with the multi-meter.

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

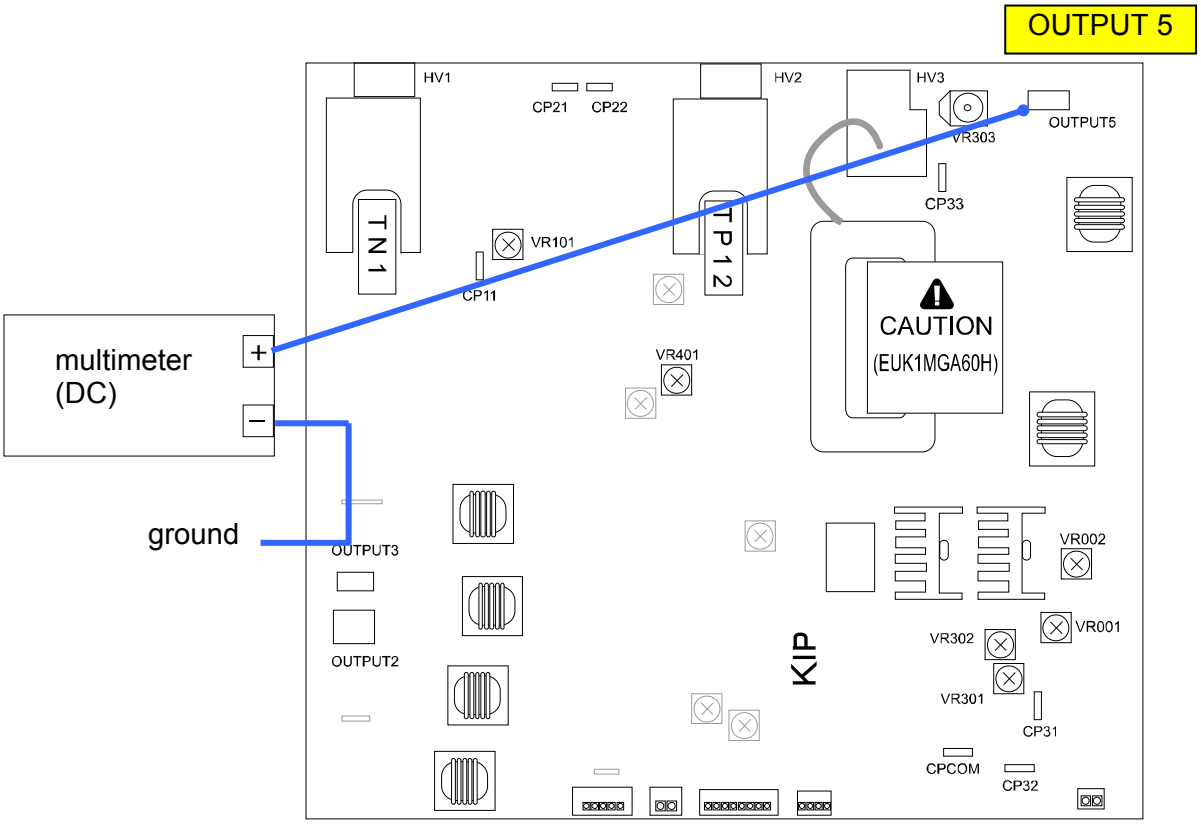
3. Adjust the Positive Cleaning Roller Bias if it does not satisfy **+450 +/-5V**.
   To adjust it, rotate the VR001 with a screwdriver.



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

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

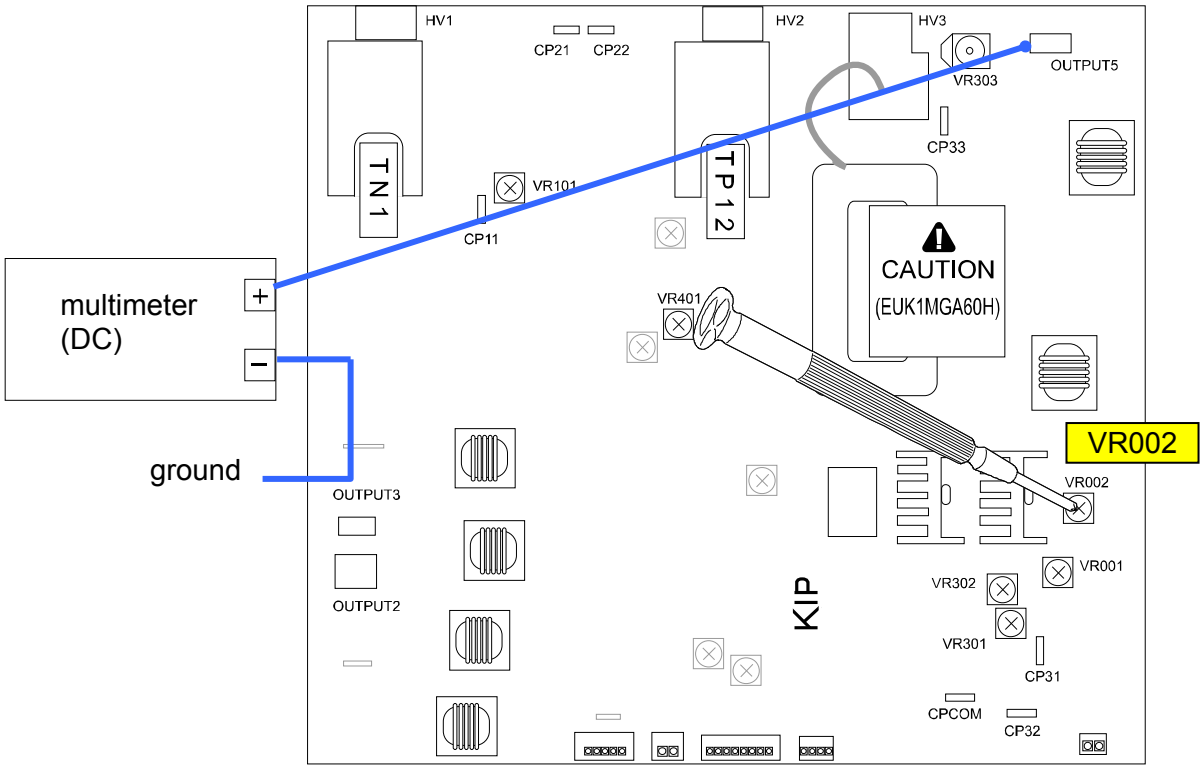
1. Connect the "+" cable of the multi-meter to the "OUTPUT 5" pin on the HV Power Supply PCB
   Also connect the "-" one to the ground.
   And then, select the DC volt range on the multi-meter.



2. Make a Test Print making reference to [8. 9 Test Print Mode].
   The Toner Collection Process works for some seconds after the printed paper has been ejected.
   Check the voltage value with the multi-meter during that period.

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

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



Chapter 5

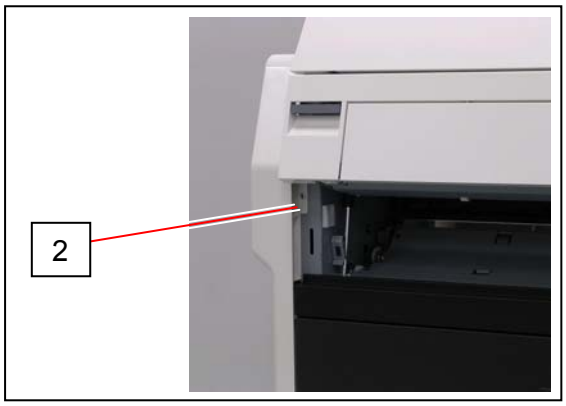
Mechanical

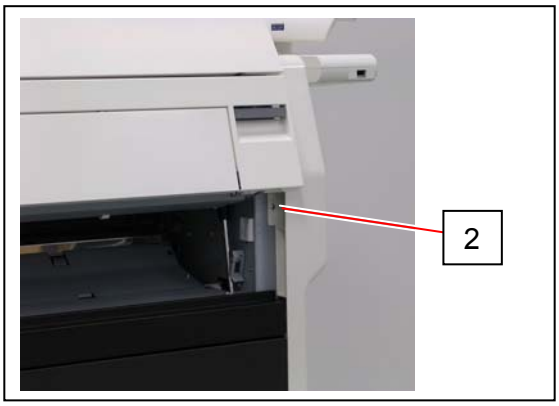
5. 1 Outer Covers

5. 1. 1 Removal of Side Covers

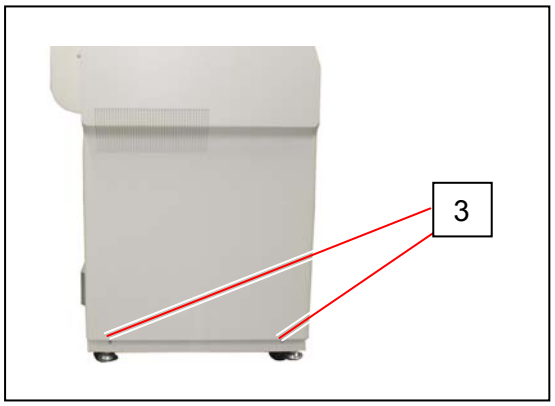
1. Pull up the Lever (1) to open the Engine Unit.

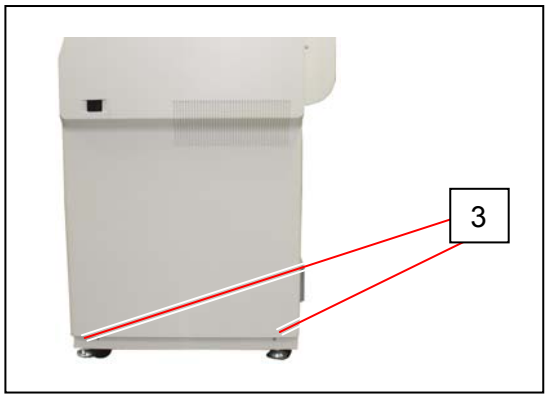
2. Remove the screws (2) at both sides.



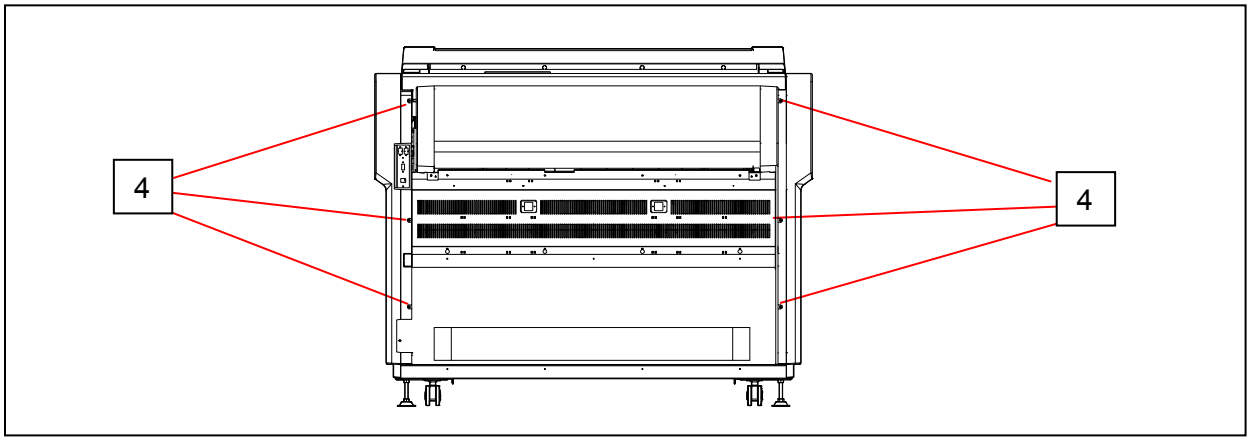


3. Remove 4 pieces of screw (3) at both sides.

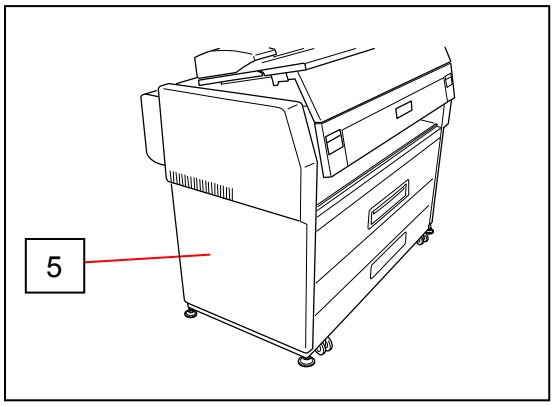


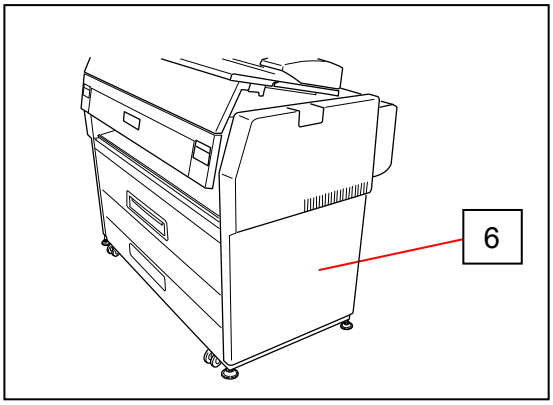


4. Remove 6 pieces of screw (4) at both sides.



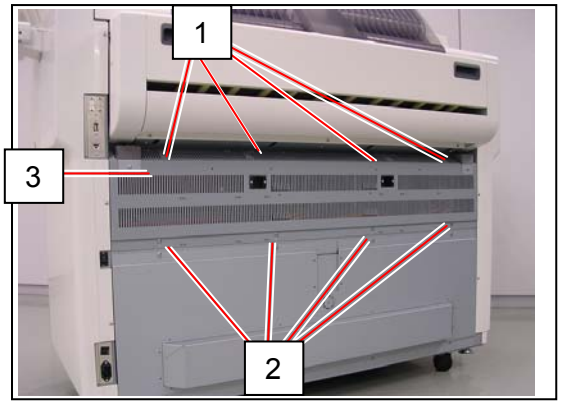
5. Remove both Cover (5) and Cover (6).





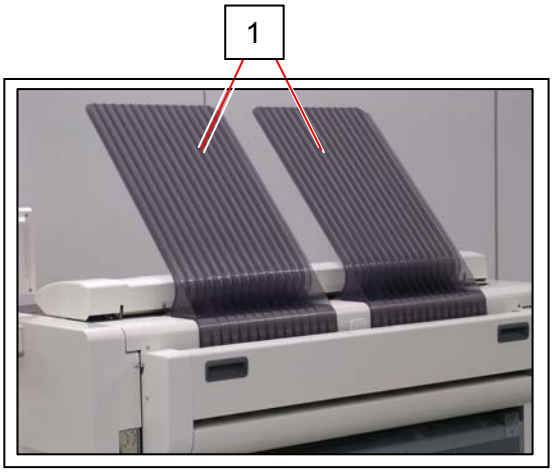
5. 1. 2 Removal of Back Cover

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

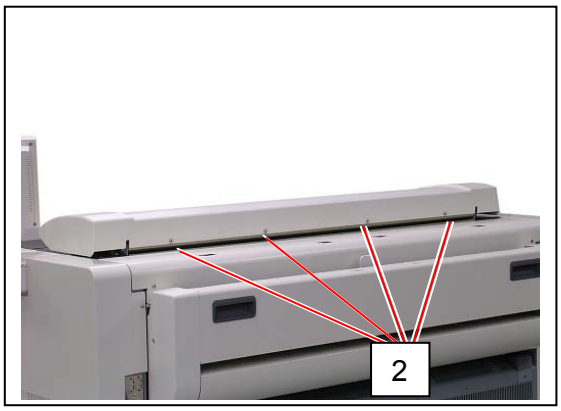


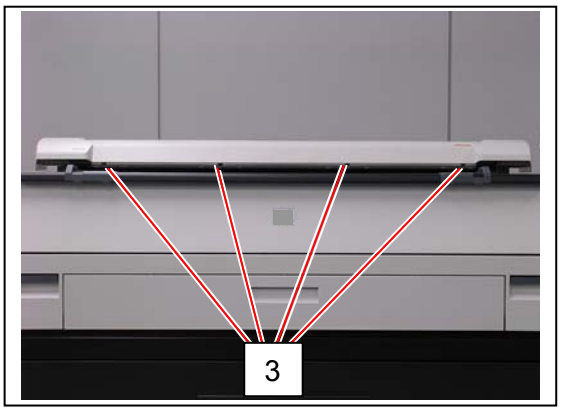
5. 1. 3 Removal of Scanner Cover

1. Remove 2 pieces of Tray (1).



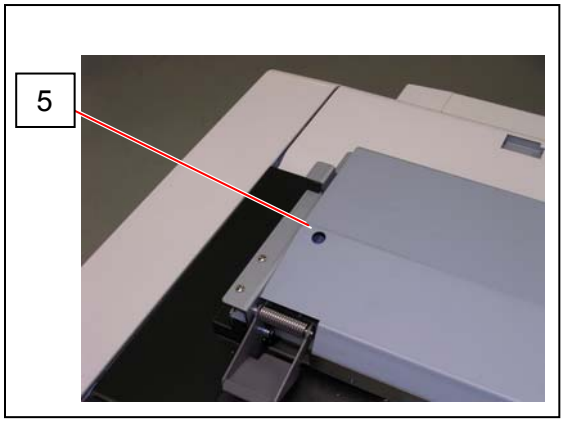
2. Loosen 4 pieces of screw (2) on the back, and remove 4 pieces of screw (3) on the front.

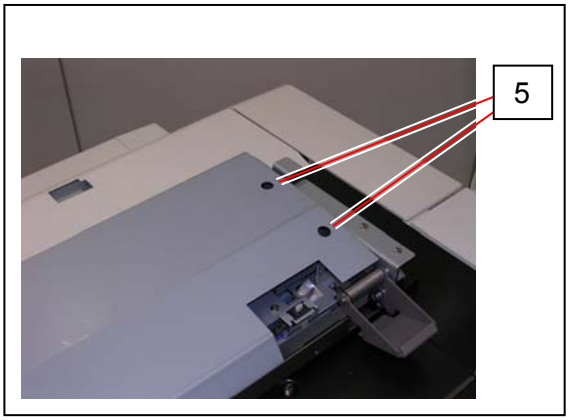




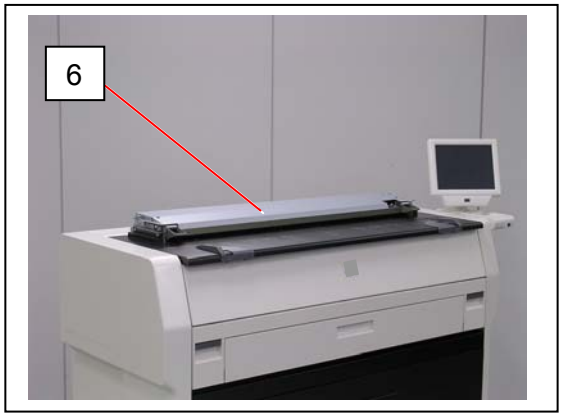
3. Remove Scanner Cover (4).

4. Remove 3 screws (5).





5. Remove Shield Cover (6).

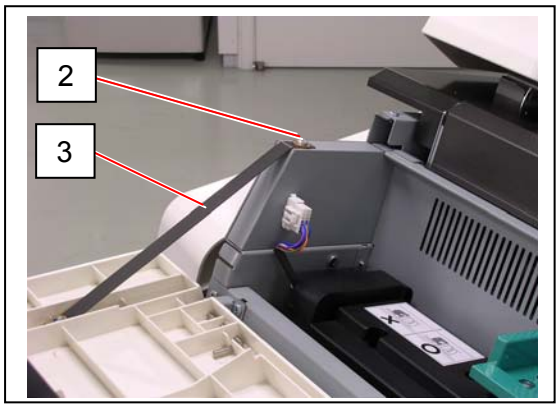


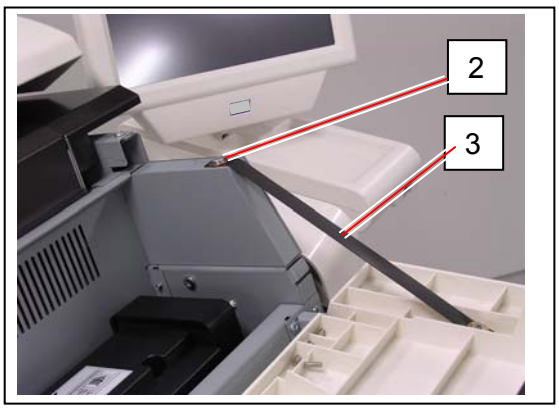
5. 2 Developer Unit

5. 2. 1 Removal of the Developer Unit

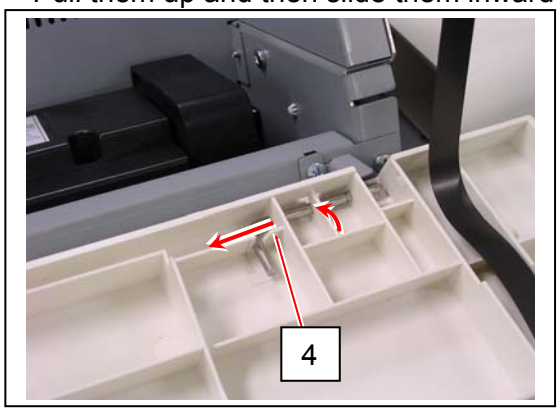
1. Open the Cover (1).

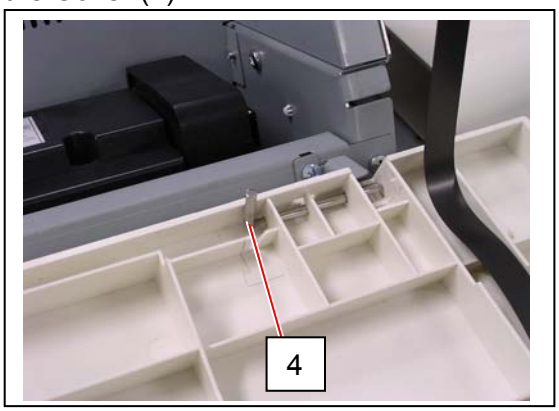
2. Remove the 4x6 screws and washers (2) at both sides to make the Bands (3) free.



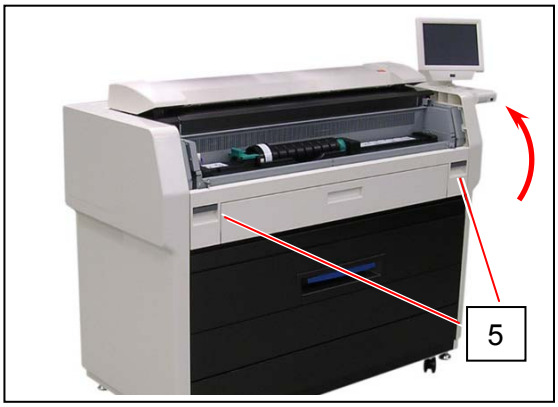


3. There are Pins (4) at both sides.
   Pull them up and then slide them inward to remove the Cover (1).





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

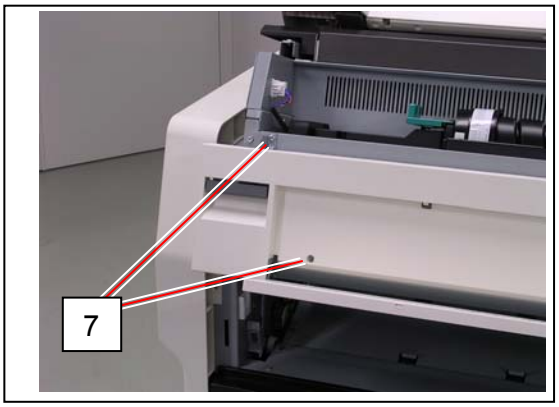


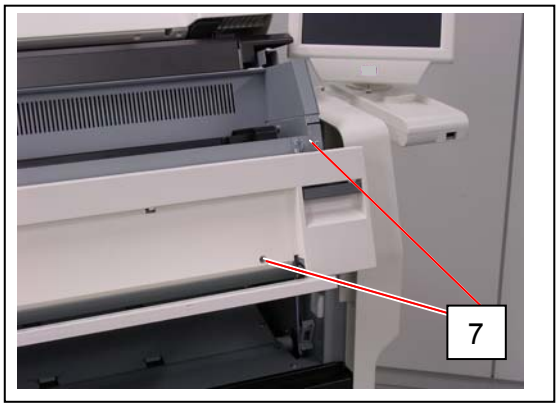
NOTE

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

5. Open the Bypass Feeder (6).

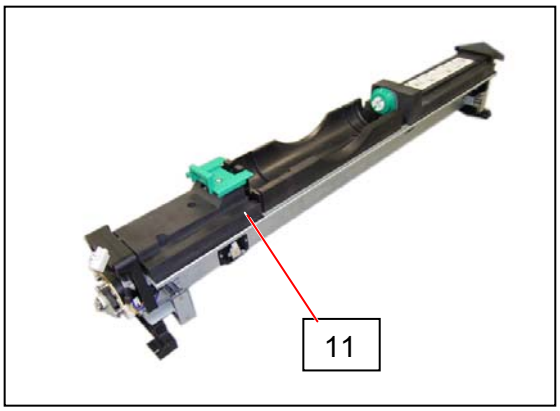
6. Remove 4 pieces of 4x8 screw (7).





7. Close the Bypass Feeder (6), and then open the Developer Press Unit (8).

8. Disconnect the connector (9). Holding both Side Plates (10), remove the Developer Unit (11) from the machine.



NOTE

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

5. 2. 2 Replacement of Recommended Periodic Replacement Parts

NOTE

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

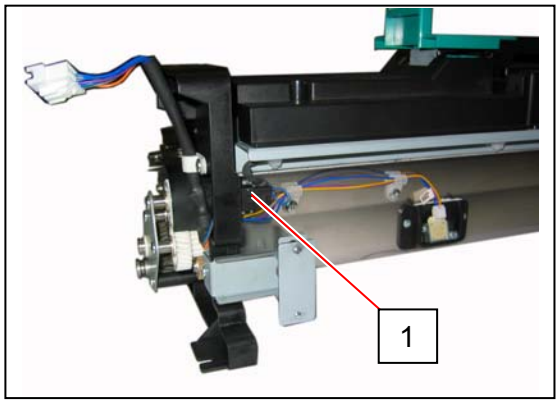
Item	Number of article	Remarks
Scraper	1	All of these parts are contained in “DV-960 Developer Maintenance Kit A” (305JG70010).
Sheet	2	
Sheet 2	2	
Roller Developer	1	
Sheet 3	2	
Sheet 4	2	
Blade Roller	1	
Seal R2 Assy	1	
Seal L2 Assy	1	
Seal 1	2	
Seal 23	2	
Seal 3	2	
Seal 4	2	

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

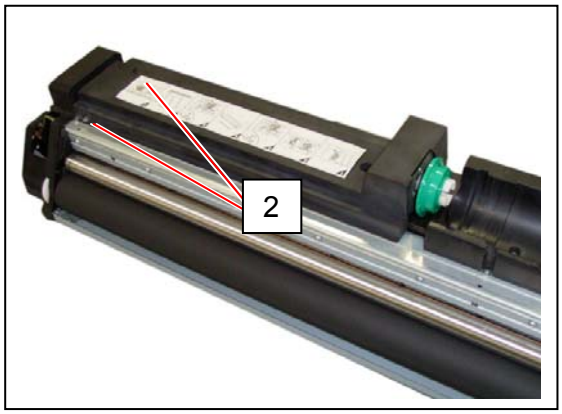
(3) After replacing Developer / Blade Rollers, an applied Bias Adjustment should be reset manually with using Service Mode - Clear Mode.

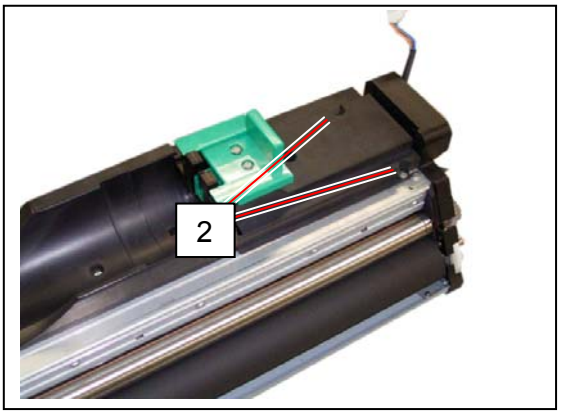
1. Remove the Developer Unit from the machine making reference to [5.2.1 Removal of the Developer Unit].

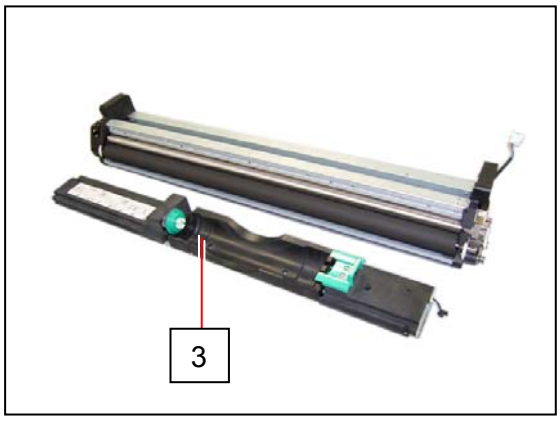
2. Disconnect the connector (1).



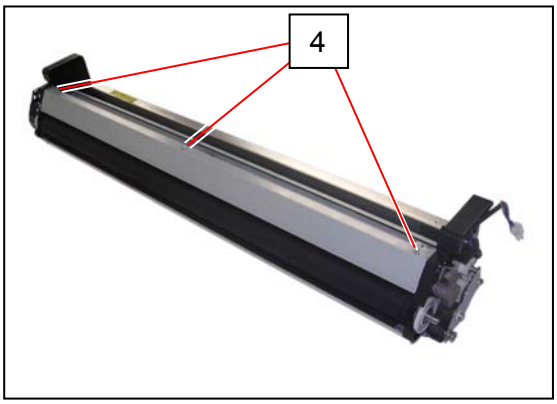
3. Remove 4 pieces of 4x6 screws (2) to remove the Hopper Assembly (3).

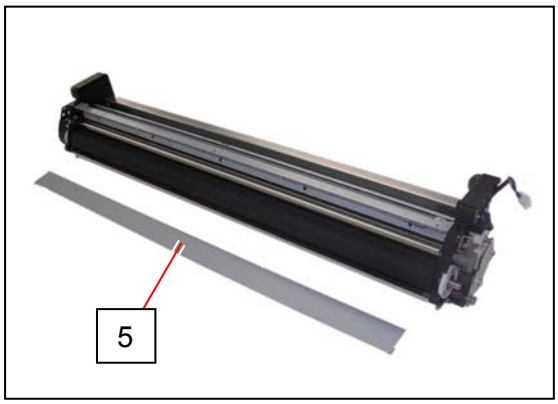




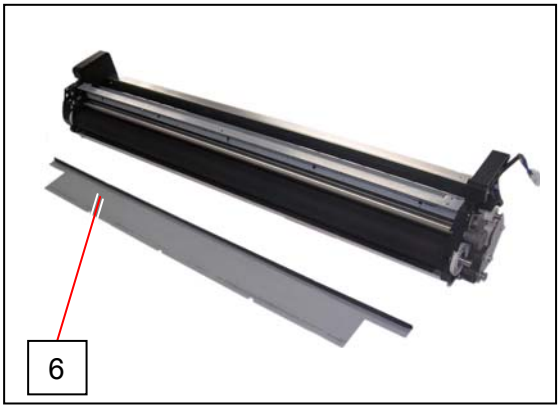


4. Remove 3 pieces of M4x6 screws (4) to remove Cover (5).

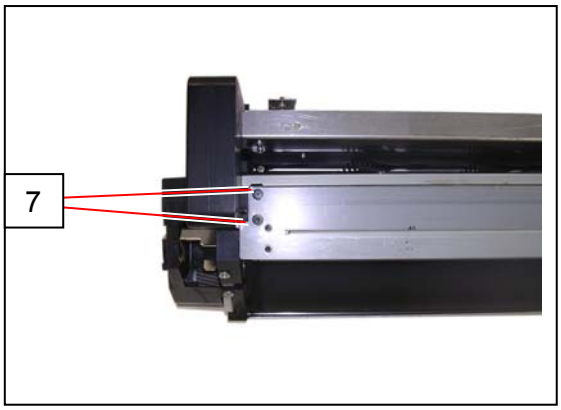


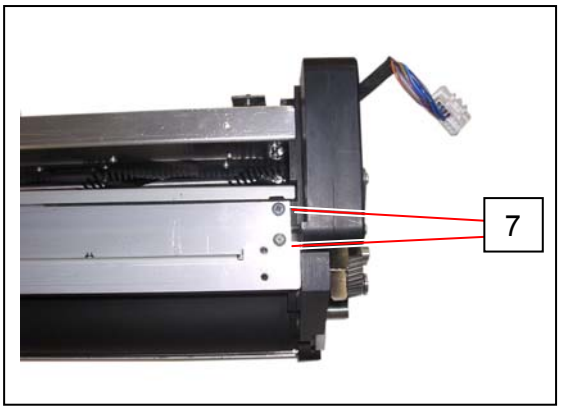


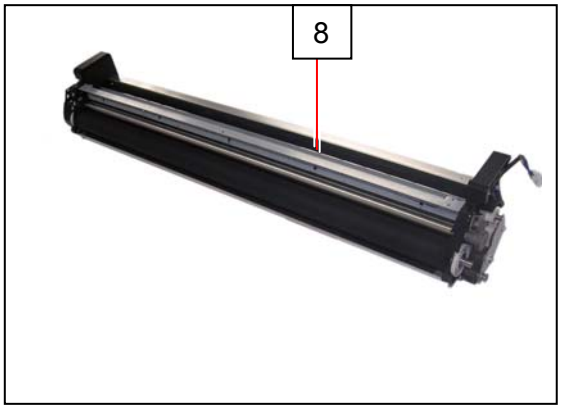
5. Remove Separator (6).

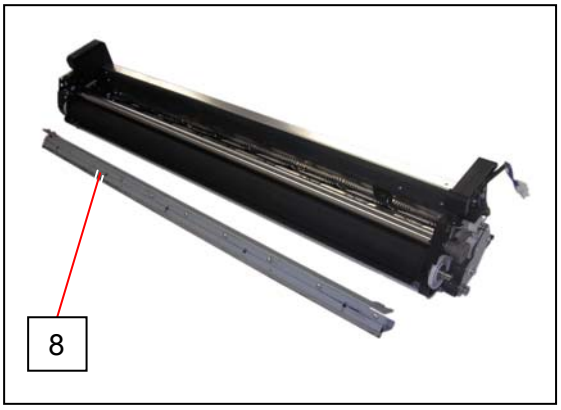


6. Remove 4 pieces of 4x6 screw (7) to remove Scraper Assembly (8).

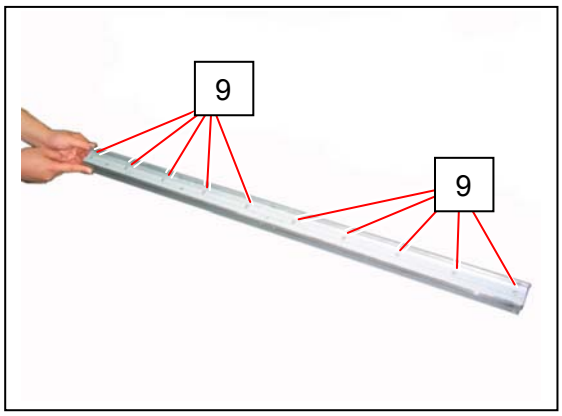


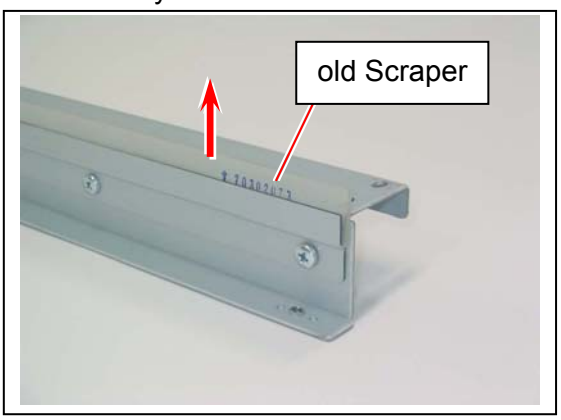






7. Loosen 10 screws (9) to remove Scraper from Scraper Assembly.

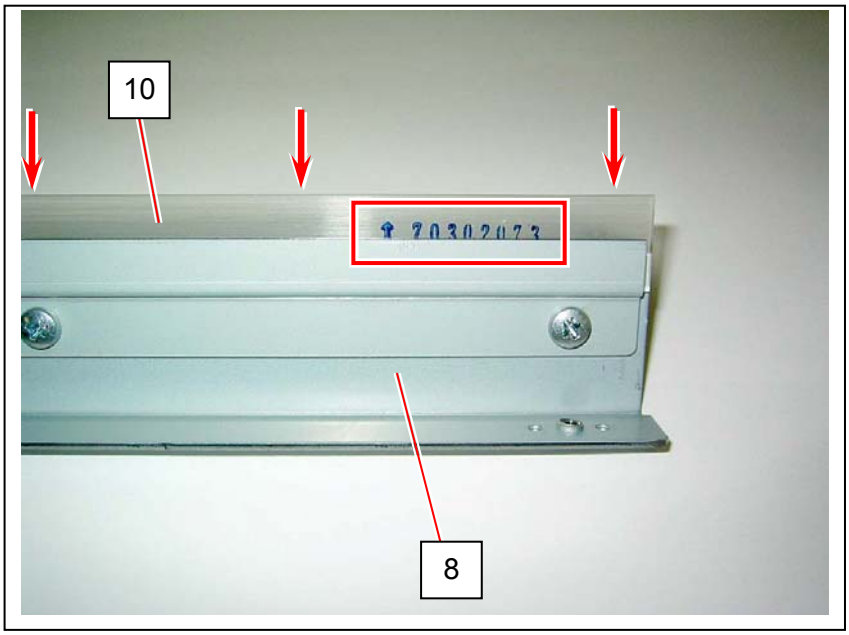




NOTE

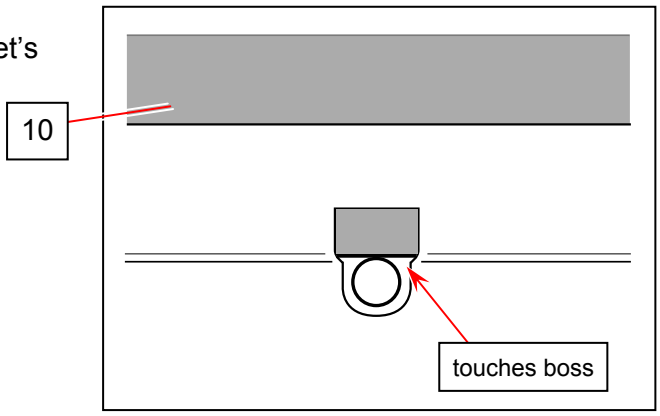
Just loosen the screws as little as possible to remove Scraper.
Doing so will reduce the new Scraper's wave.

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

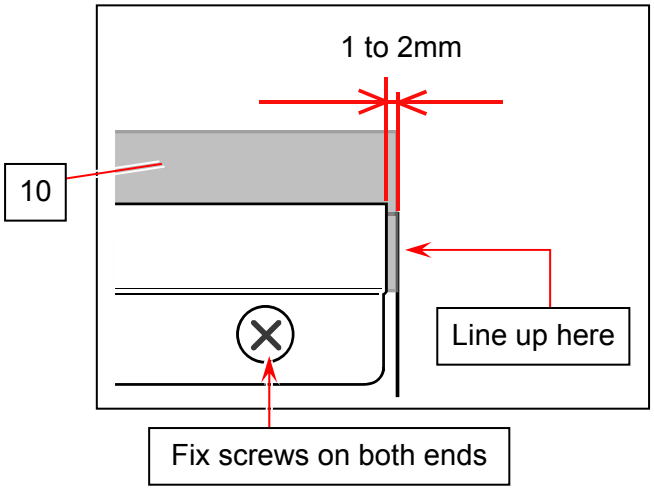


NOTE

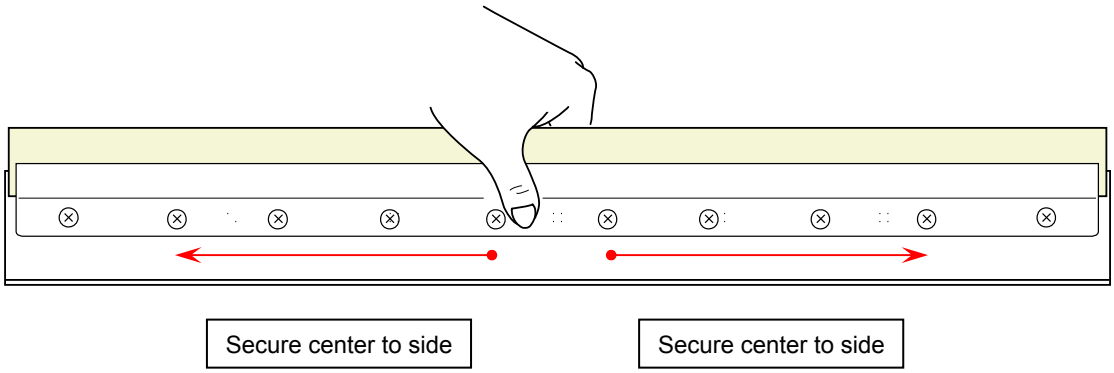
Visually check that Scraper's bottom edge touches the round boss through the bracket's opening.



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



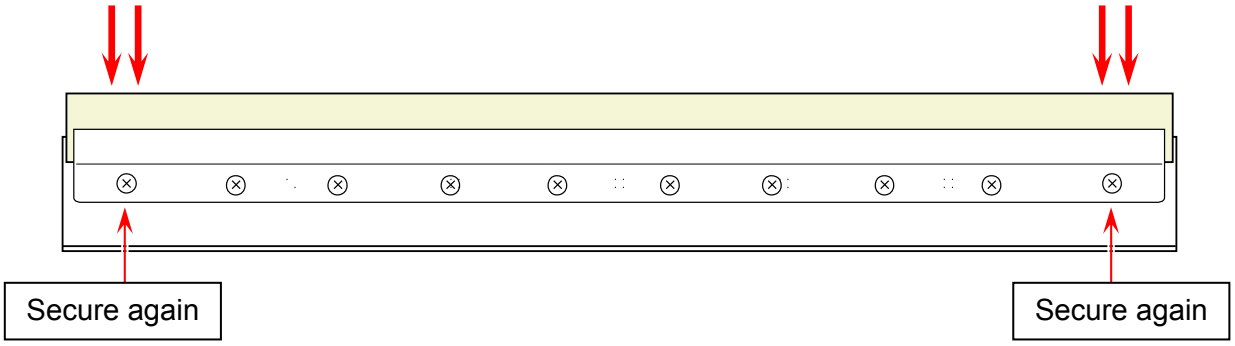
10. Tighten the screws from the center to the sides with holding around each screw on the bracket.



NOTE

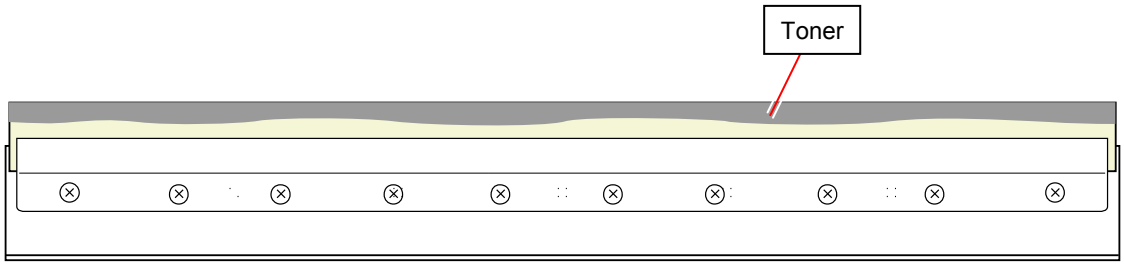
Be sure to check for wave on Scraper's edge. If there is, go back to step 7 to install Scraper again.

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



12. Hold both ends of Scraper Assembly and turn it upside down so that the Scraper's edge direct the floor. If Scraper falls or has a slip, apply Seal 5 (305JG75300) to the bracket's inside to reduce the gap.

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



NOTE

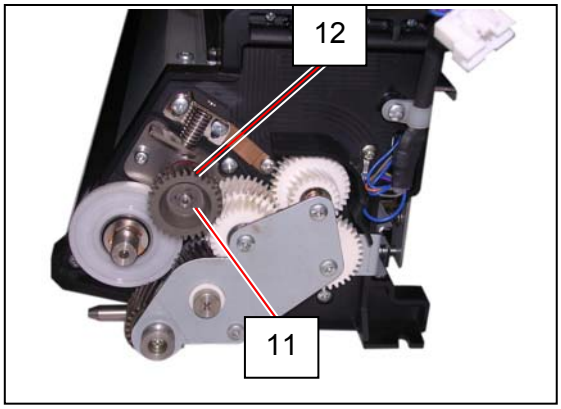
(1) Toner powders on the edge reduce friction between the edge and the Drum's surface. If there is no toner on the edge, Scraper may flip up or damage.

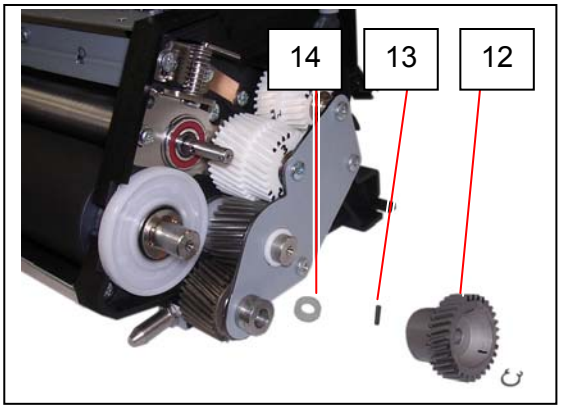
(2) The edge must be straight. Otherwise the toner will not be scraped off properly.

14. Remove all the toner from Developer Unit.

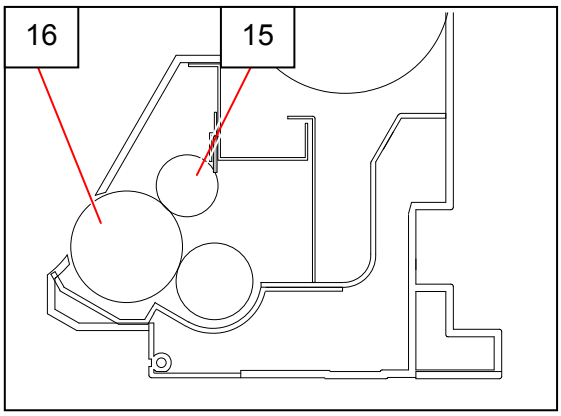
> **NOTE**
>
> Do not reuse the removed toner.

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

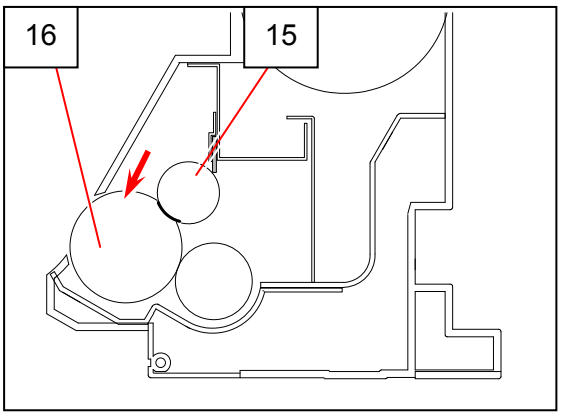




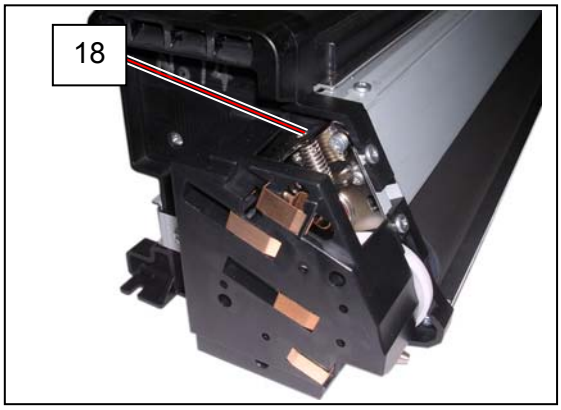
> **NOTE**
>
> Blade Roller (15) is pressed onto / released from Developer Roller (16) by Bracket 4 (17) (on the driving side) and Bracket 5 (18) (on the electrode plate side).
> When reassembling, Blade Roller (15) should be pressed onto Roller Developer (16).
> Pressurizing will be required prior to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

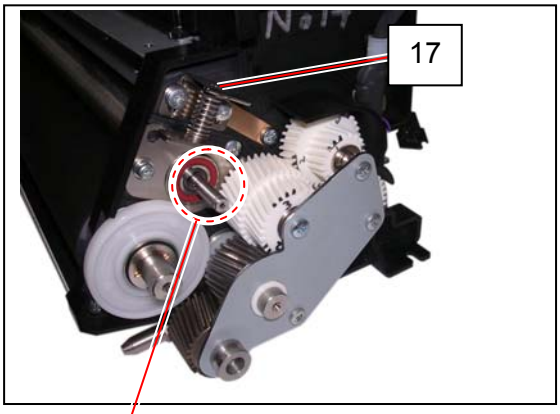


not pressurized



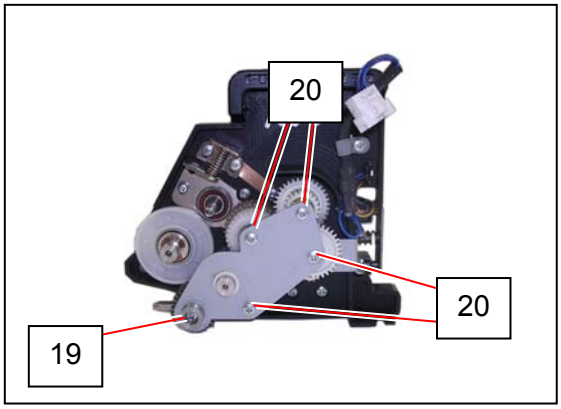
pressurized

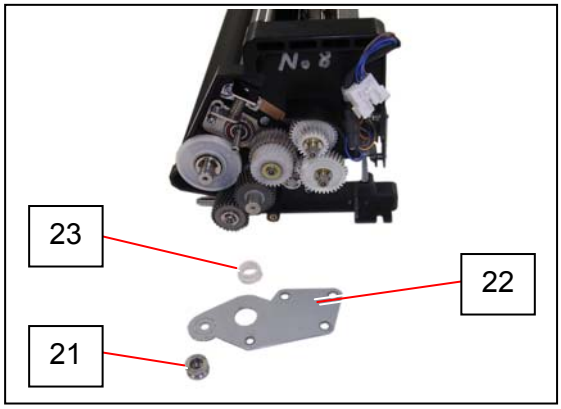


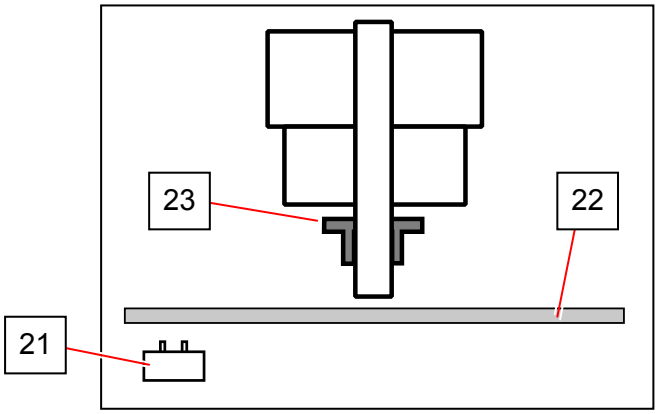


Pressurize without Gear Helical 30T (12)

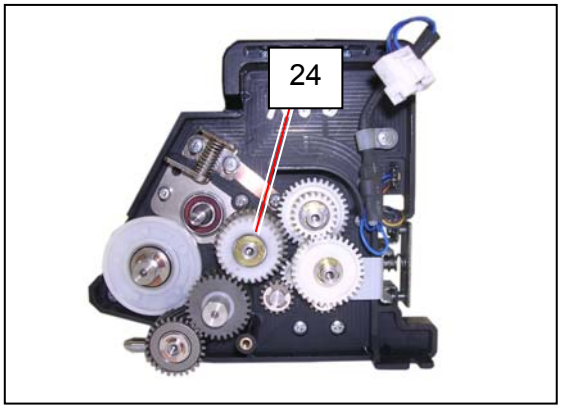
16. Remove 5 screws (19: M4x8) (20: M4x6) to remove Pin 4 (21), Plate 9 (22), Collar (23).

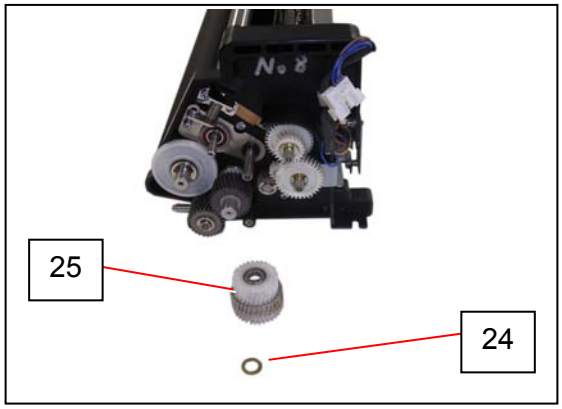




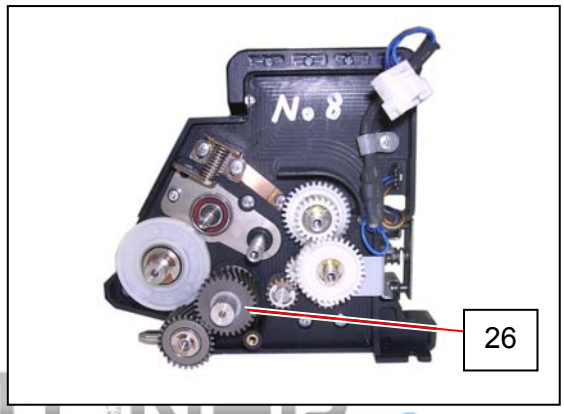


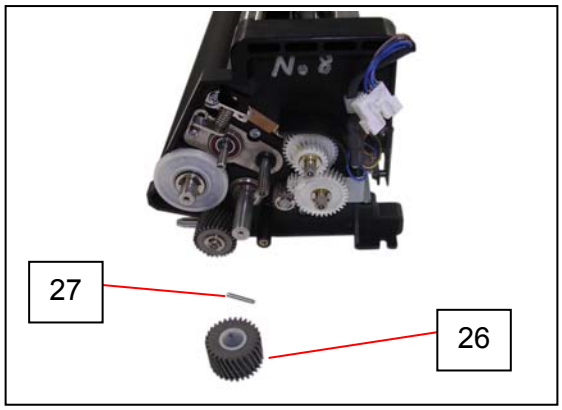
17. Remove Washer (24: 8.1x14x0.5t) and Gear 29T-34T Assy (25)



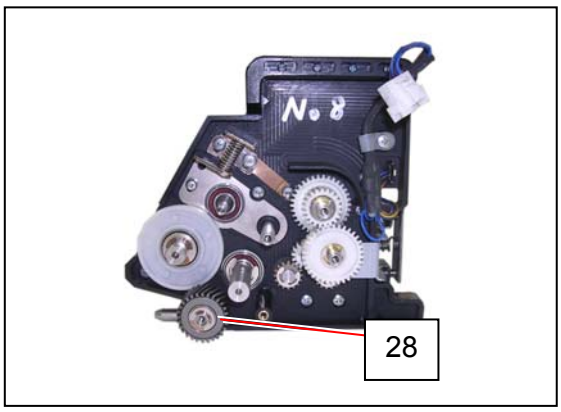


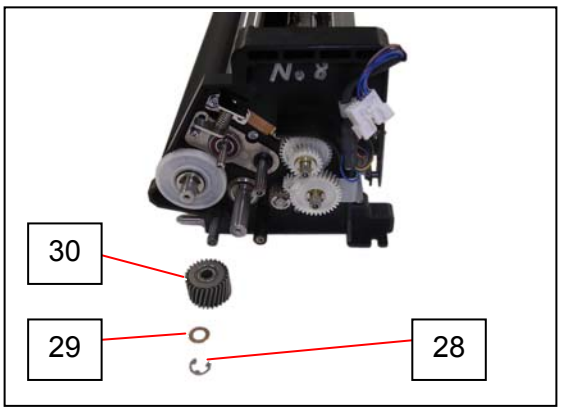
18. Remove Gear Helical 30T (26) and Parallel Pin (27: 3x20) from Toner Supply Roller shaft.
If you cannot remove Parallel Pin (27) at this time, remove it after the later step 15.



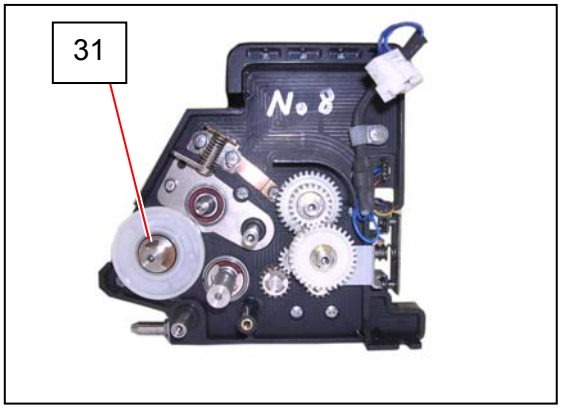


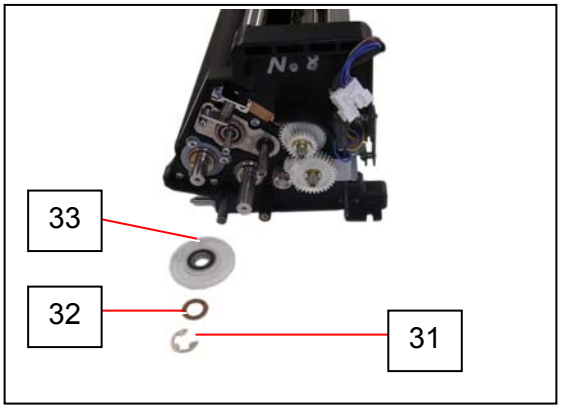
19. Remove Retaining Ring-E (28: E7) to remove Washer (29: 8.1x12x0.2t) and Gear Helical 28T Assy (30).



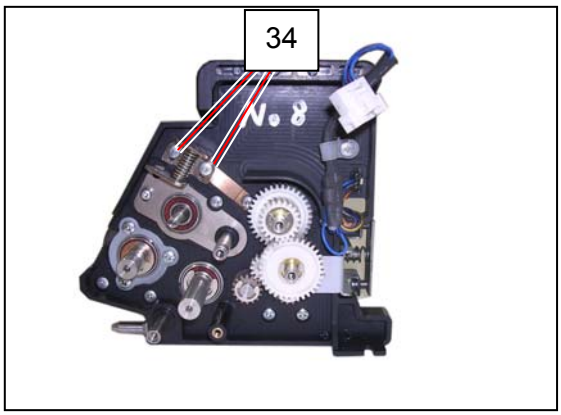


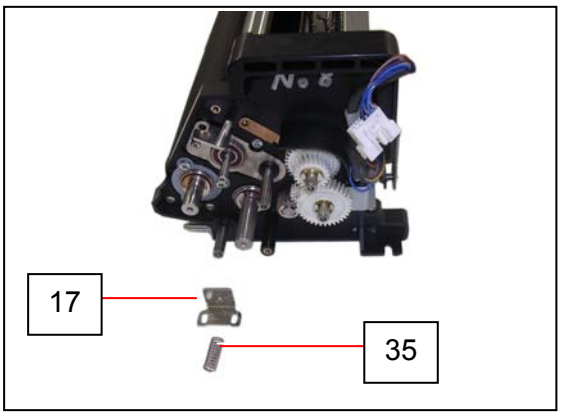
20. Remove Retaining Ring-E (31: E10) to remove Washer (32: 12.2x20x0.5t) and Counter Roller (33) from Developer Roller shaft.



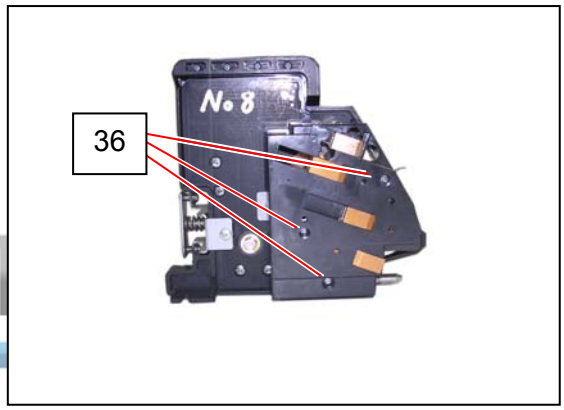


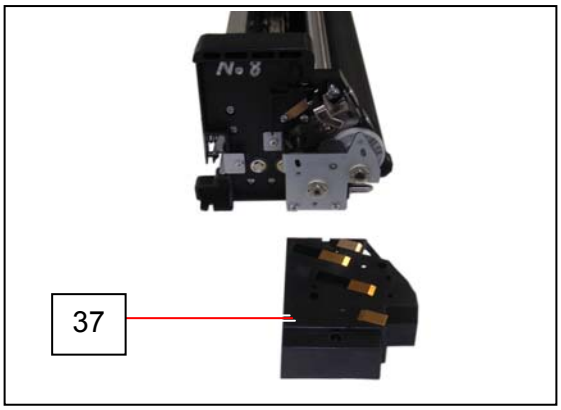
21. Remove 2 screws (34: M4x8) to remove Bracket 4 (17) and Spring (35).
At this time, Blade Roller on the driving side will be released from Roller Developer by unsecured Bracket 4 (17).



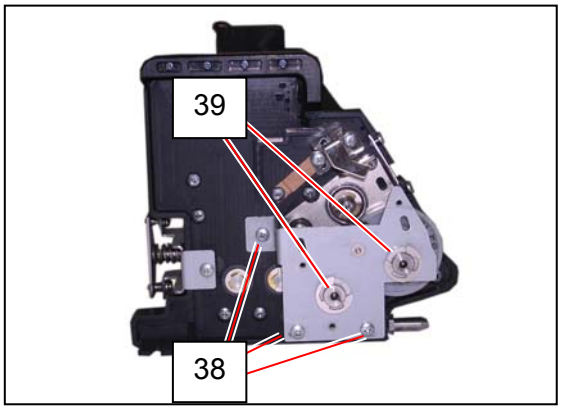


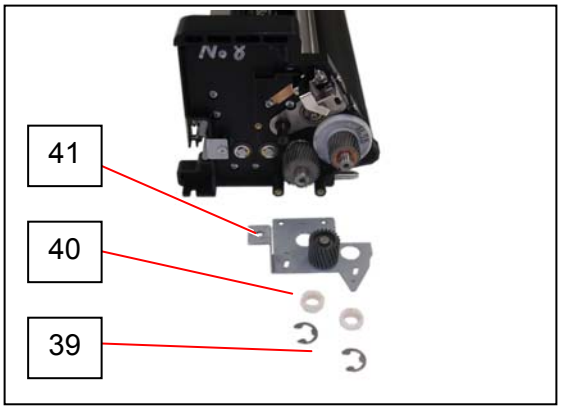
22. <u>On the electrode plate side</u>, remove 3 screws (36) to remove Holder 2 Assy (37).

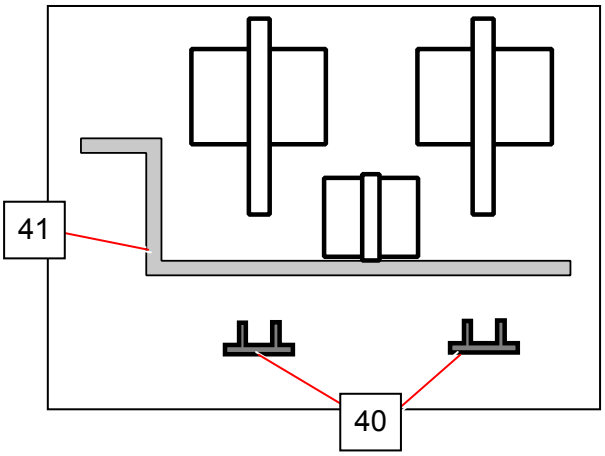




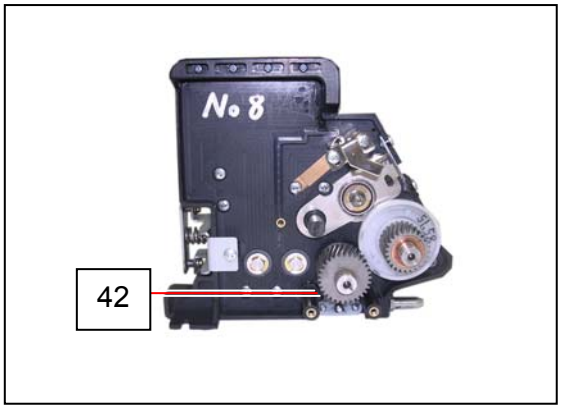
23. Remove 3 screws (38: M4x6) and 2 Retaining Ring-E (39: E10) to remove Collar (40) and Bracket 10 Assy (41).

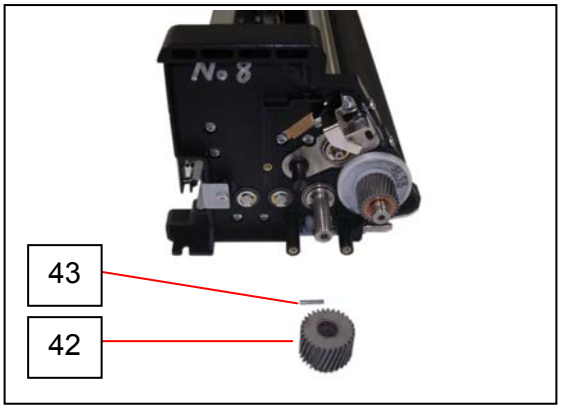




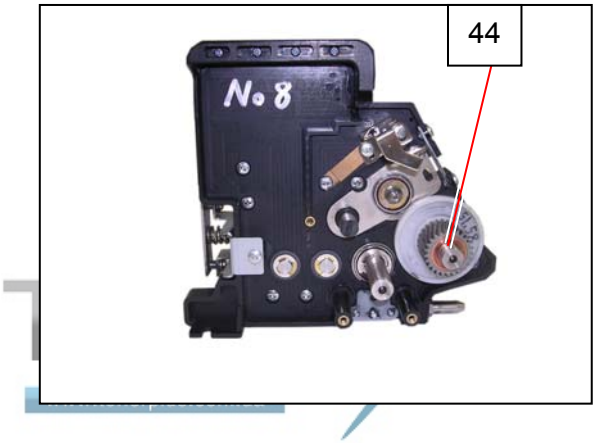


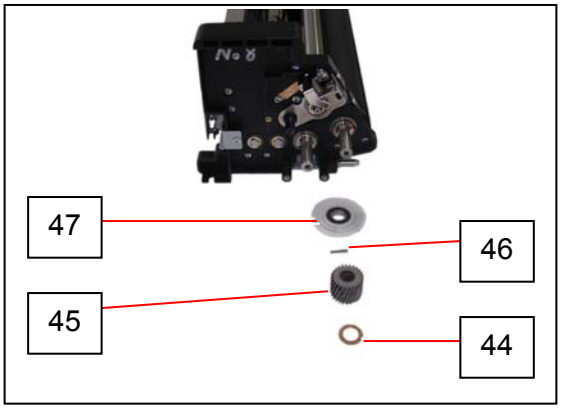
24. Remove Gear Helical 30T (42) and Parallel Pin (43: 3x16) from Toner Supply Roller shaft.



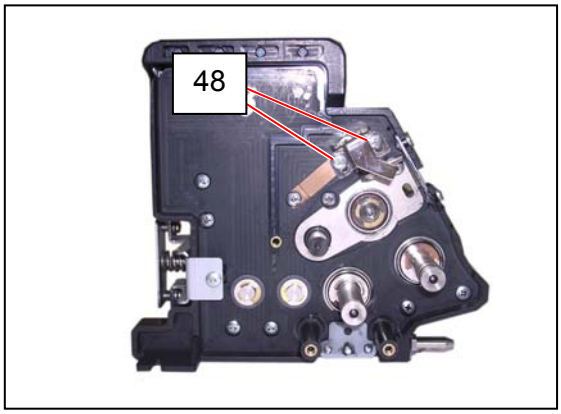


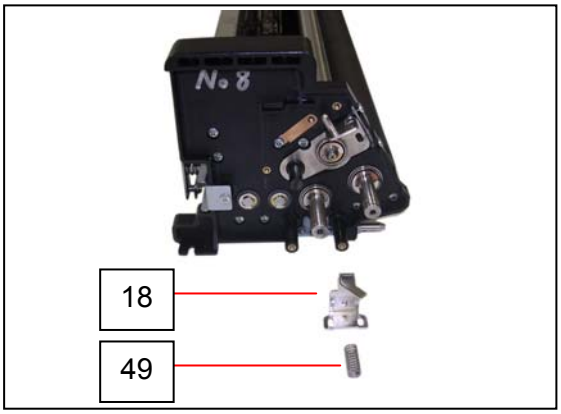
25. Remove Washer (44: 12.1x20x0.2t), Gear Helical 25T (45), Parallel Pin (46: 3x16), Counter Roller (47) from Roller Developer shaft.



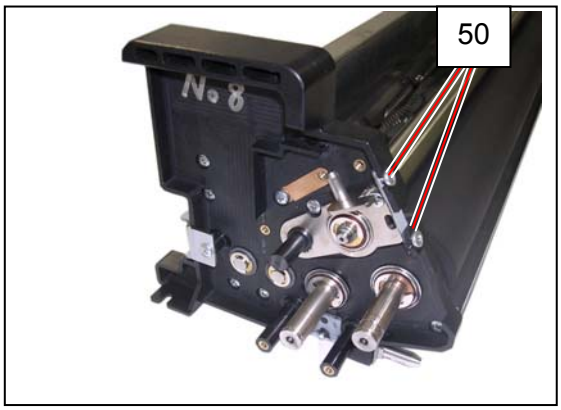


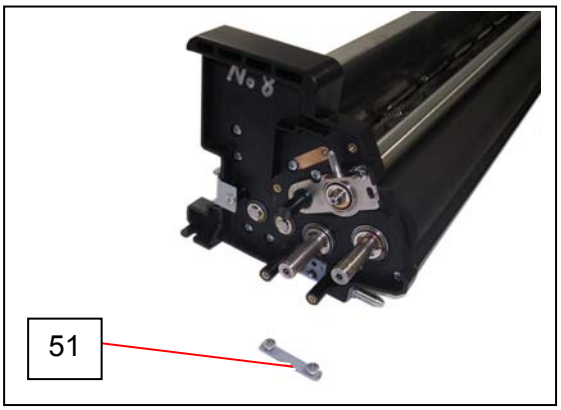
26. Remove 2 screws (48: M4x6) to remove Bracket 5 (18) and Spring (49).
At this time, Blade Roller on the electrode plate side will be released from Roller Developer by unsecured Bracket 5 (18).



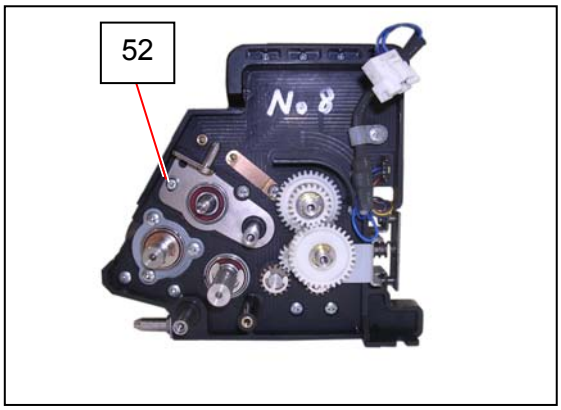


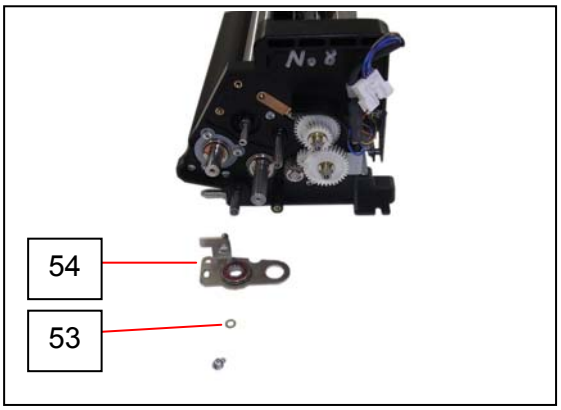
27. Loosen 2 screws (50) to remove Bracket 19 (51).



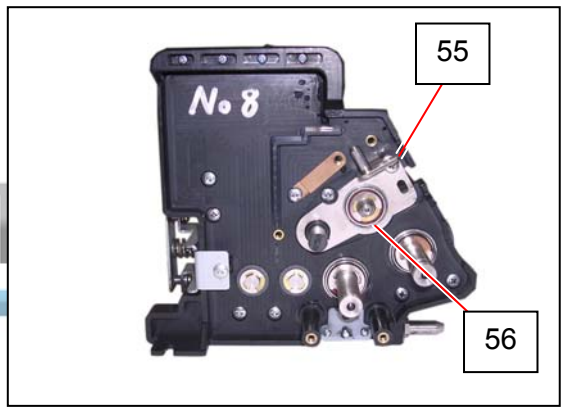


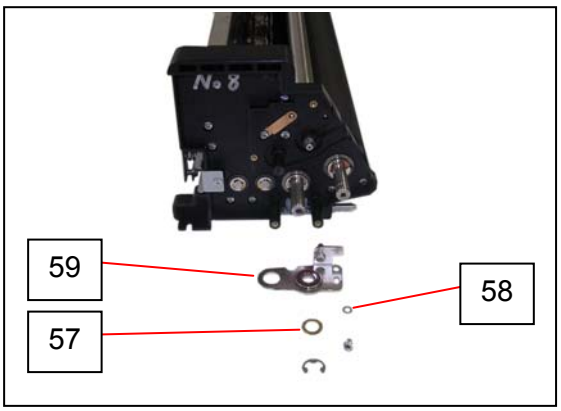
28. <u>On the driving side</u>, remove 1 pan head screw (52: M4x8 W/ SW FW) to remove 1 flat washer (53: M4) and Bracket 6 Assy (54).



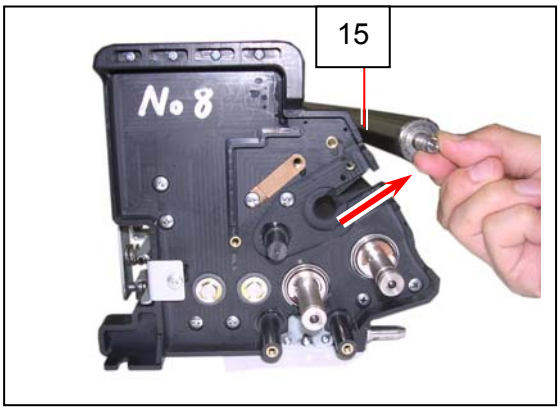


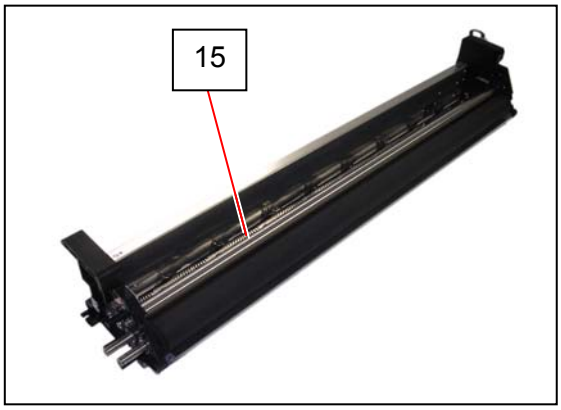
29. <u>On the electrode plate side</u>, remove 1 pan head screw (55: M4x8 W/ SW FW) and Retaining Ring-E (56: E8) to remove Washer (57: 10.1x16x0.5t), Flat Washer (58: M4), Bracket 7 Assy (59).

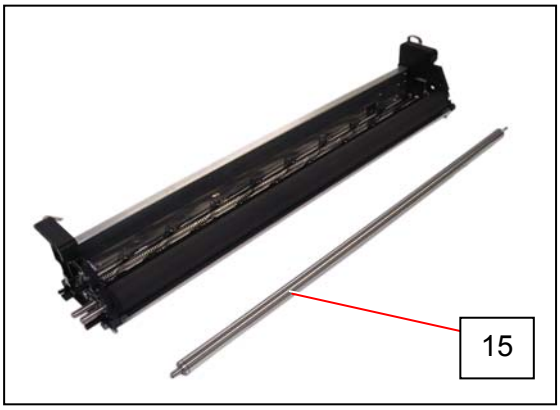




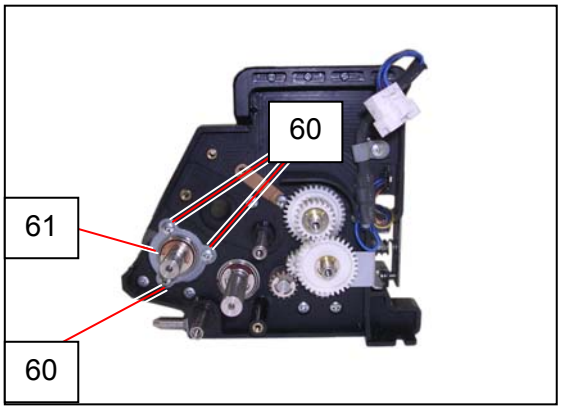
30. Remove Blade Roller (15) from Developer Unit.
Do not install the new Blade Roller at this time.

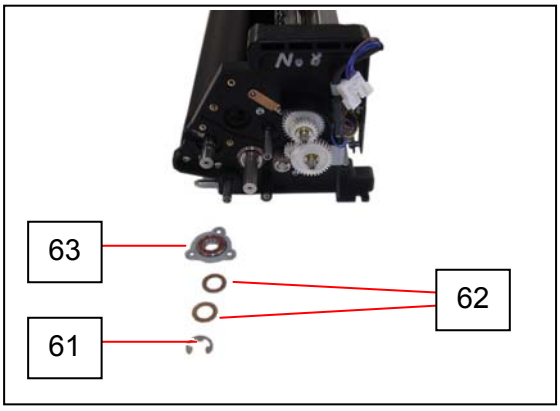




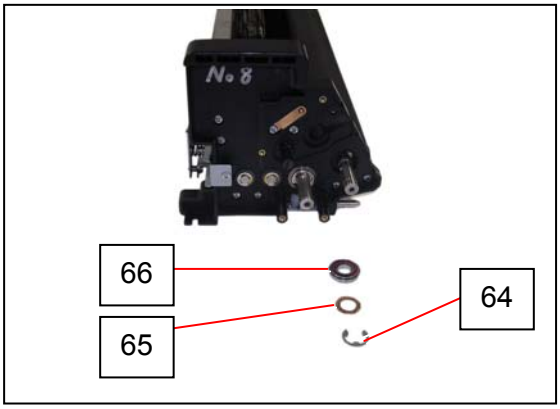


31. <u>On the driving side</u>, remove 3 screws (60: M4x6) and Retaining Ring-E (61: E10) to remove Washers (62: 12.2 x 20 x 0.5t), Bracket 8 Assy (63).

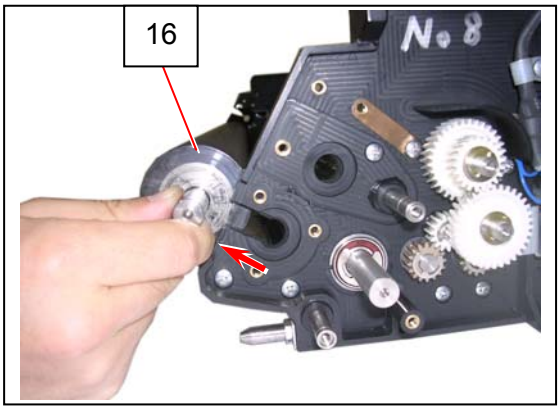


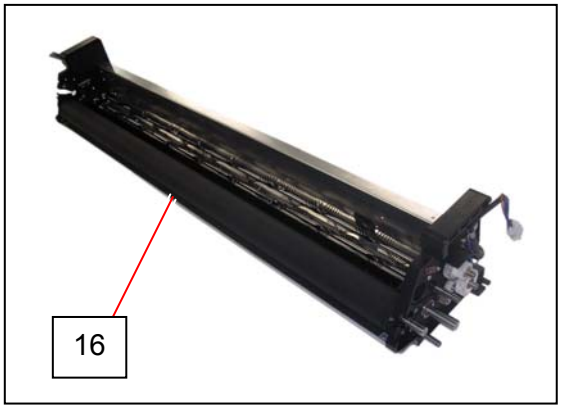


32. <u>On the electrode plate side</u>, remove Retaining Ring-E (64: E10) to remove Washer (65: 12.2x20x0.5t), Bearing (66).

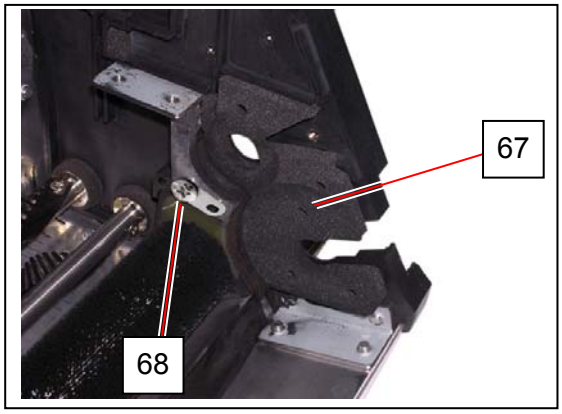


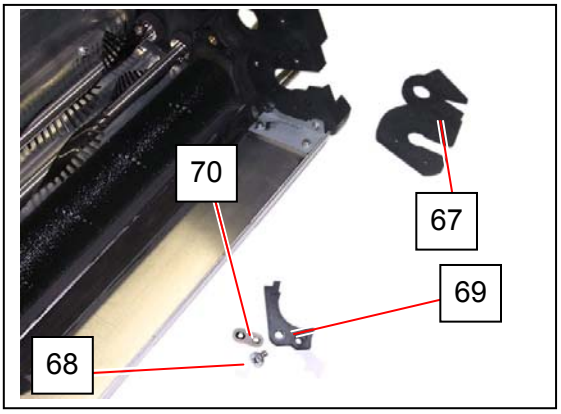
33. Remove Roller Developer (16).
Do not install the new Roller Developer at this time.



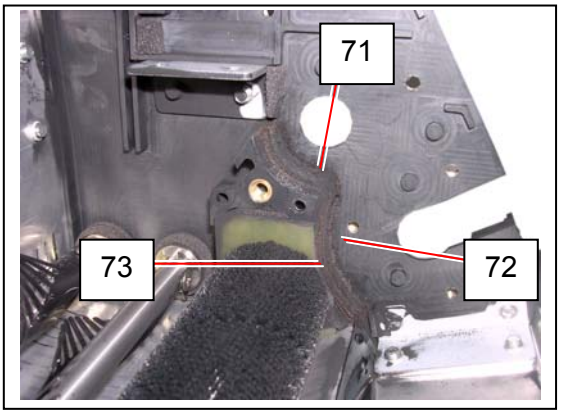


34. On each side, remove Seal 1 (67).
Remove 1 screw (68) to remove Seal R2 Assy / Seal L2 Assy (69) and Support Bracket(70).



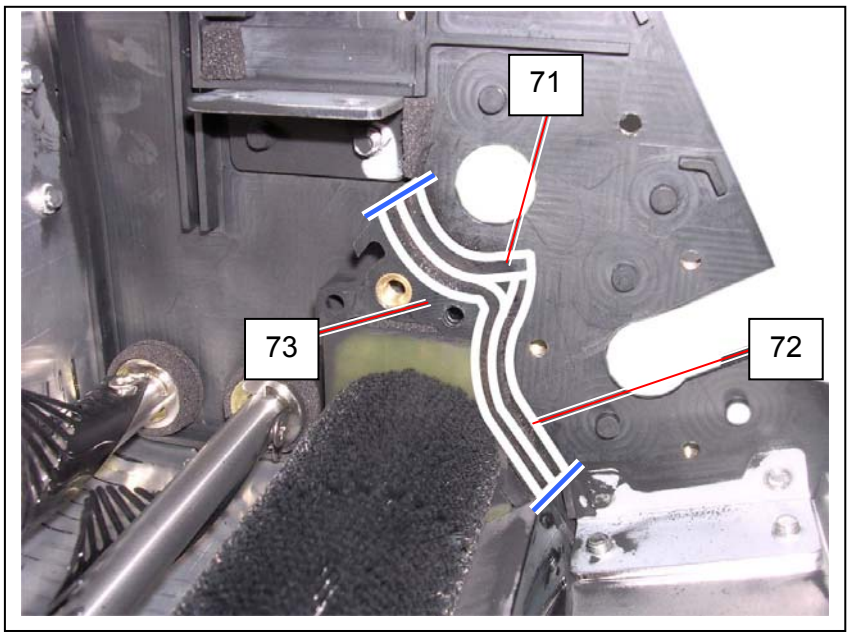


35. On each side, remove Seal 23 (71: upper), Seal 4 (72: lower), Seal 3 (73: under).
Replace **Seal 23**, **Seal 4** and **Seal 3** with new ones.

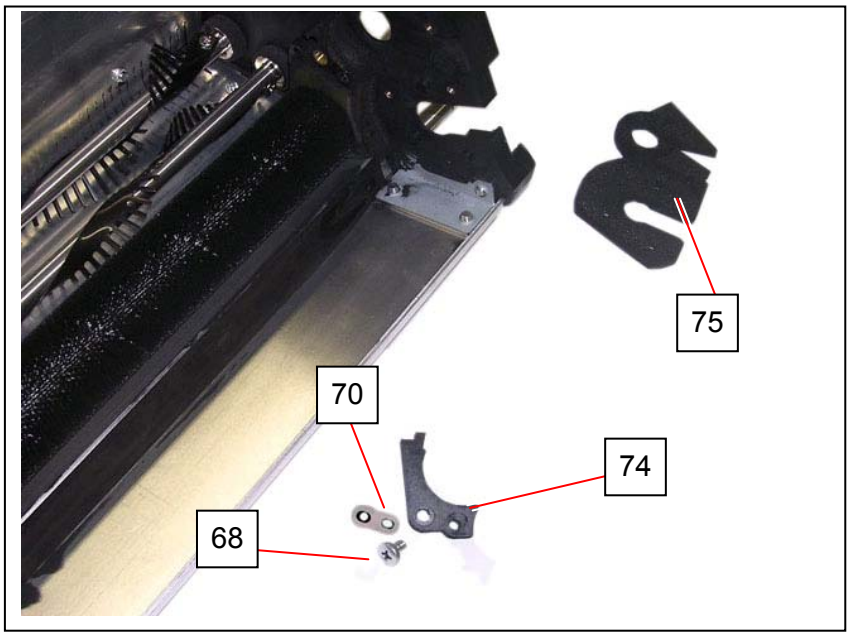


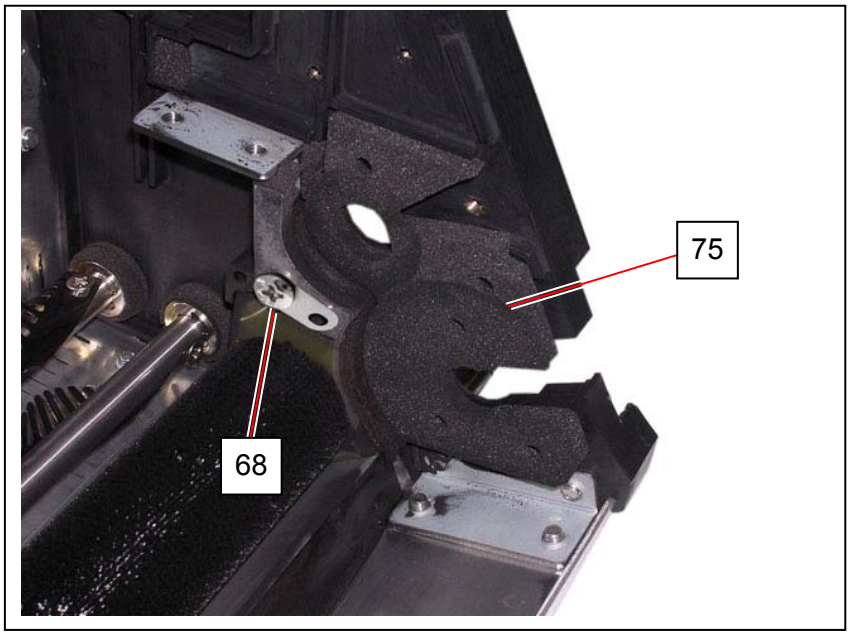
NOTE

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



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



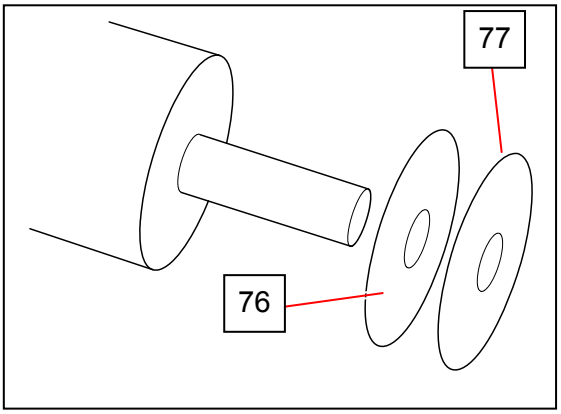


NOTE

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

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

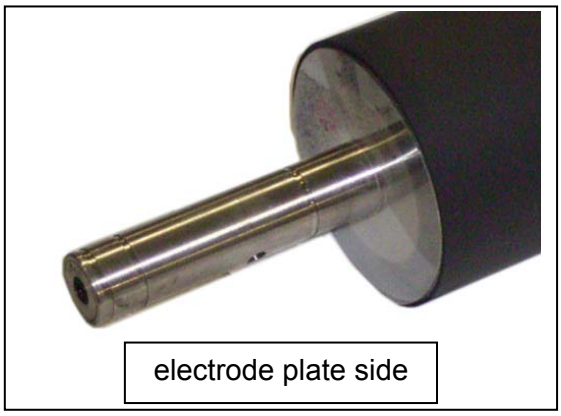
37. Apply the new **Sheet 3** (76), **Steet 4** (77) to both sides of the new Developer Roller. Keep water or grease away from between the sheets.



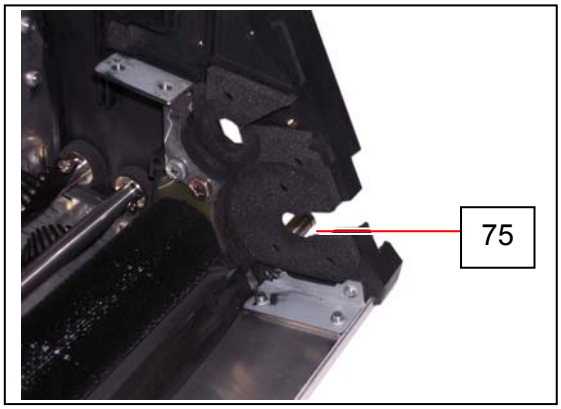
38. Install the new **Developer Roller** to Developer Unit and fix it with the bearings.

NOTE

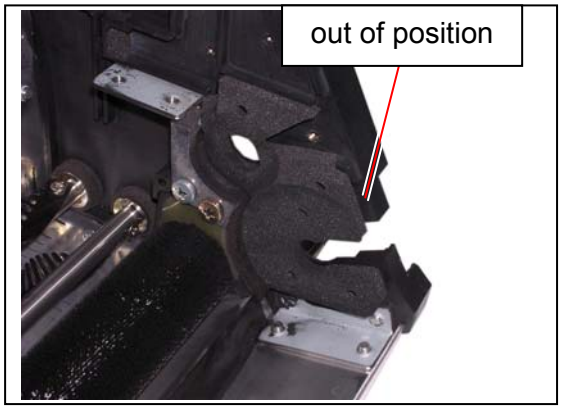
(1) Note the installation direction. The shorter shaft should be placed to the driving side.



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



Correct

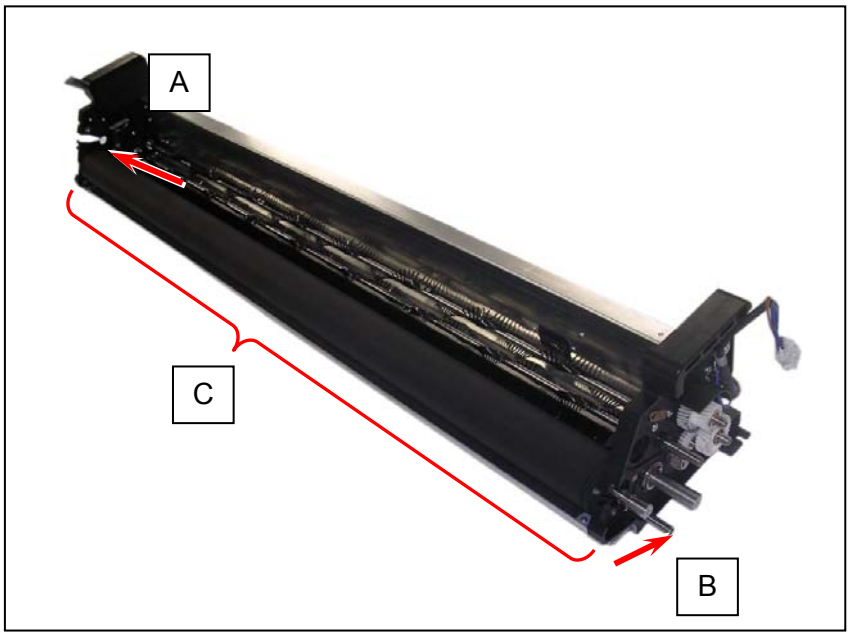


Wrong

(continued on the next page)

NOTE

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



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

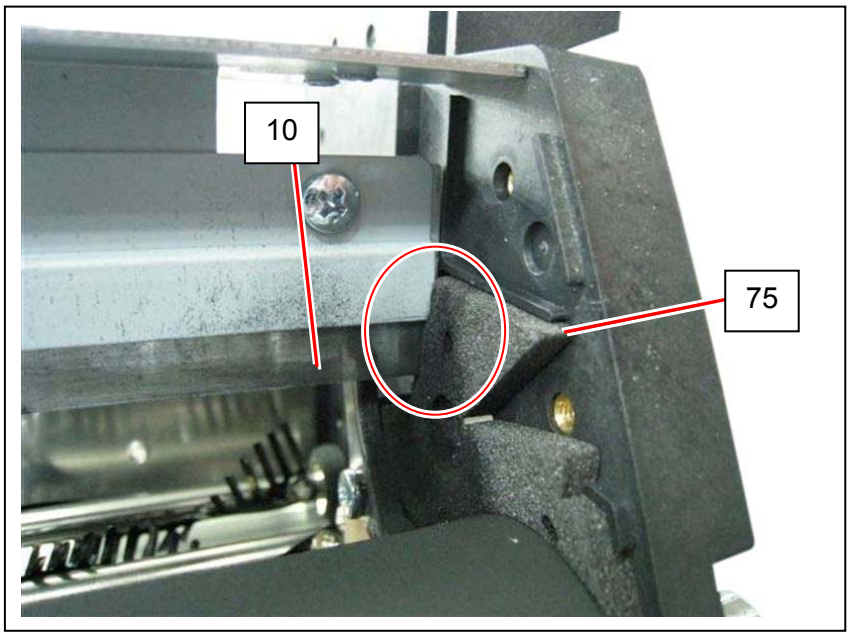
(5) Do not bump Roller Developer on the frame rim (C).

39. Reinstall Scraper Assembly.

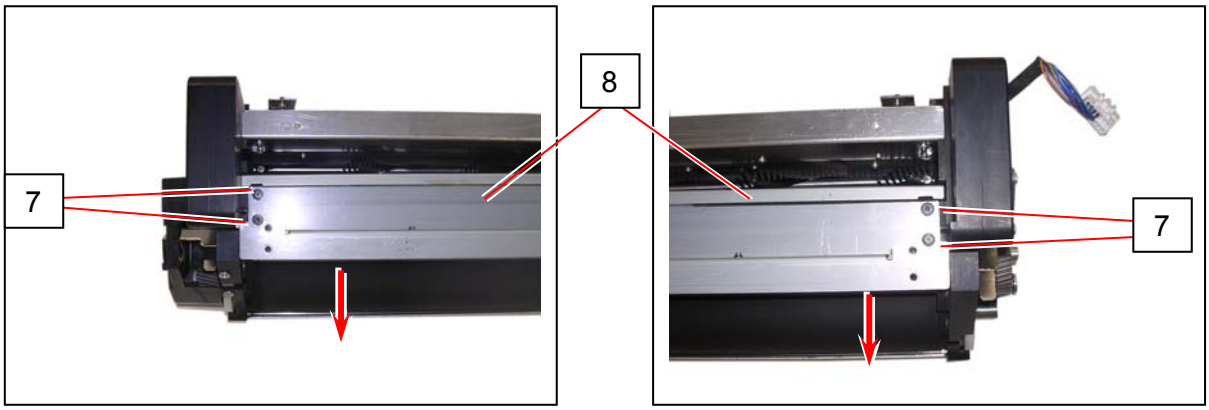
NOTE

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

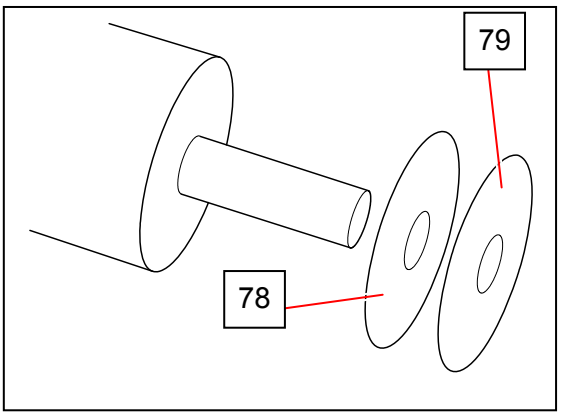
(2) After reinstalling Scraper Assembly, check that neither Scraper (10) nor Seal 1 (75) flips up on both sides.



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



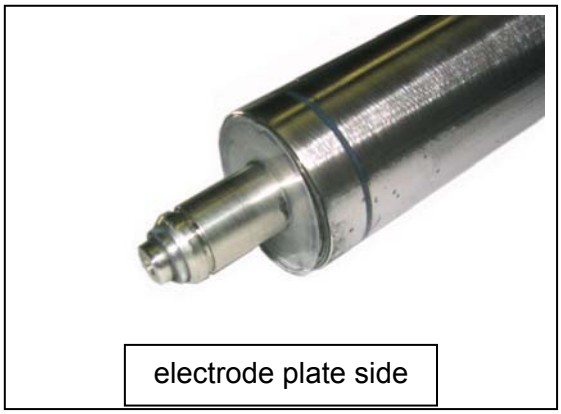
40. Apply the new **Sheet** (78), **Sheet 2** (79) to both sides of the new Blade Roller.
Keep water or grease away from between the sheets.

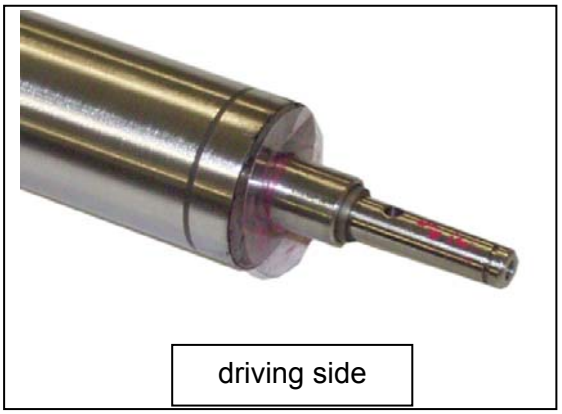


41. Install the new **Blade Roller** to Developer Unit and fix it with the brackets.

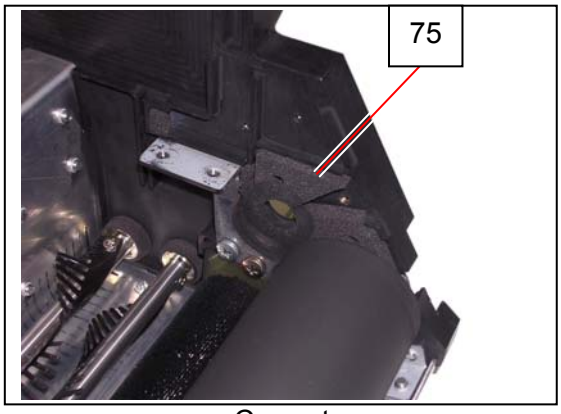
NOTE

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

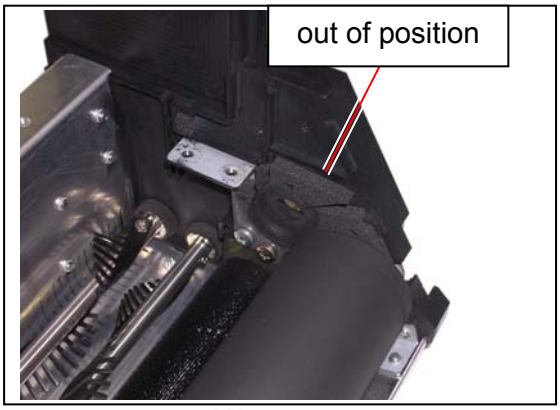




(2) Seal 1 (75) on each side should be seated in position along the bosses.

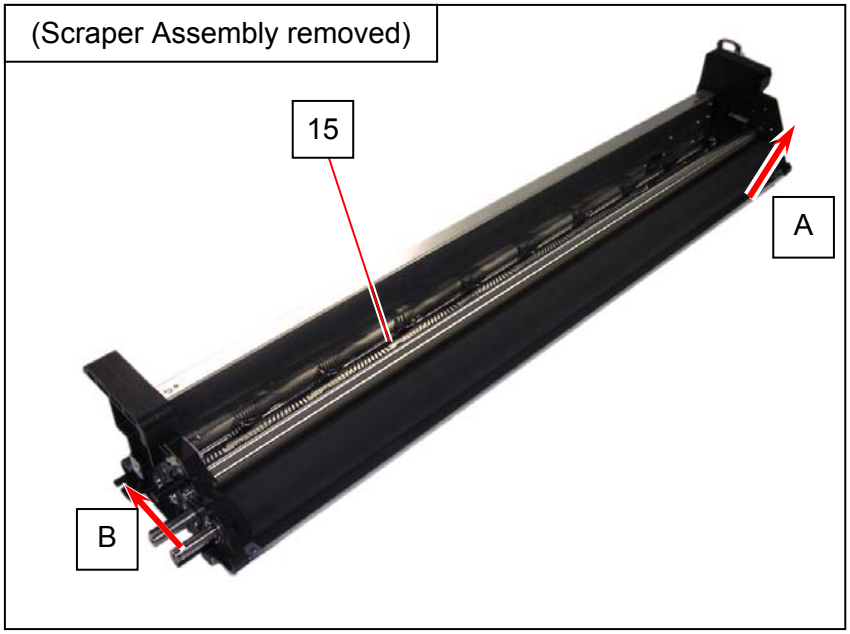


Correct



Wrong

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



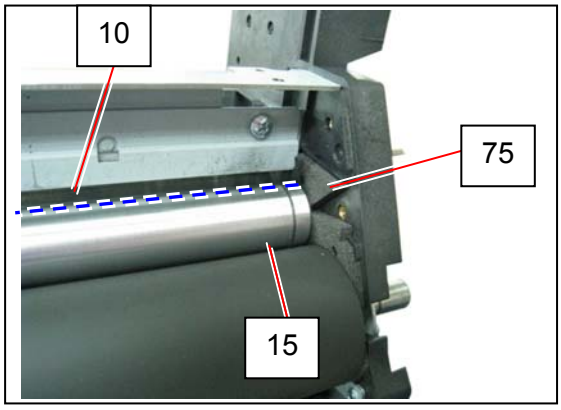
(4) During installing toward (A) then (B), be careful not to damage Sheet (78) and Sheet 2 (79) on Blade Roller shaft.

(continued on the next page)

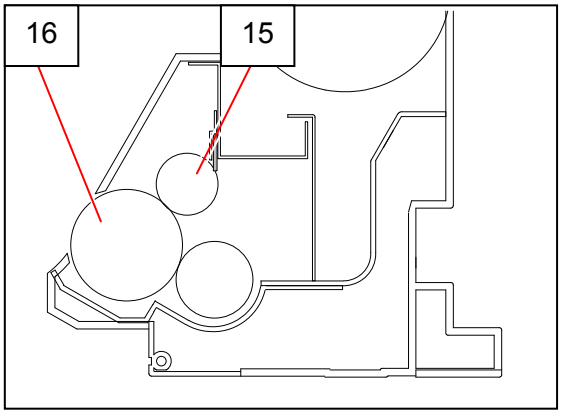
⚠ NOTE

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

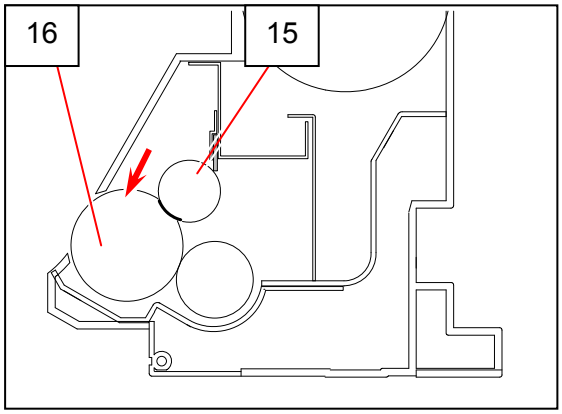
(6) After locating, check that Scraper (10) is not wavy.



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



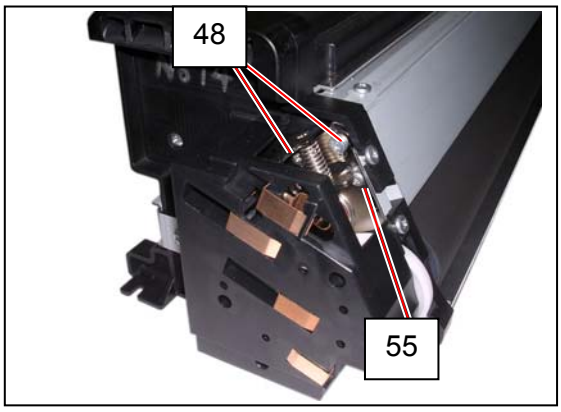
not pressurized

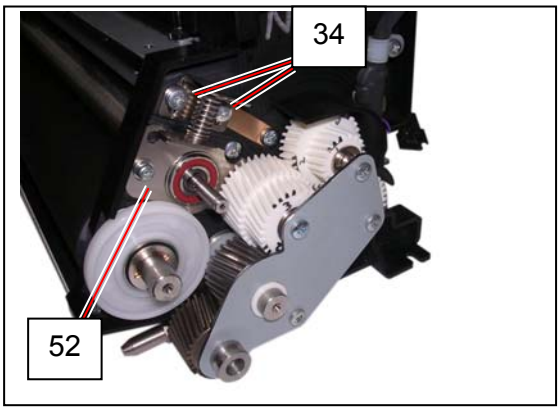


pressurized

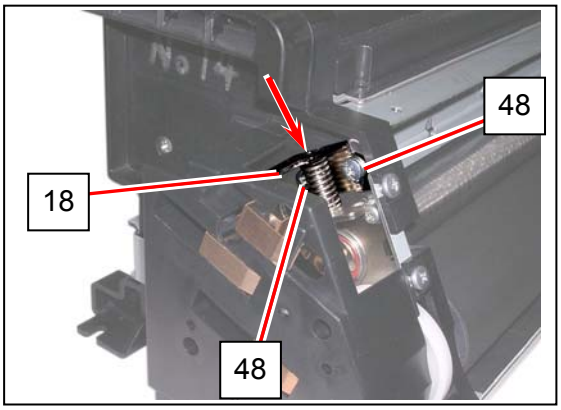
42. Replace all the components except Gear Helical 30T (12), Separator (4) and Hopper Assy (3) in position.

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

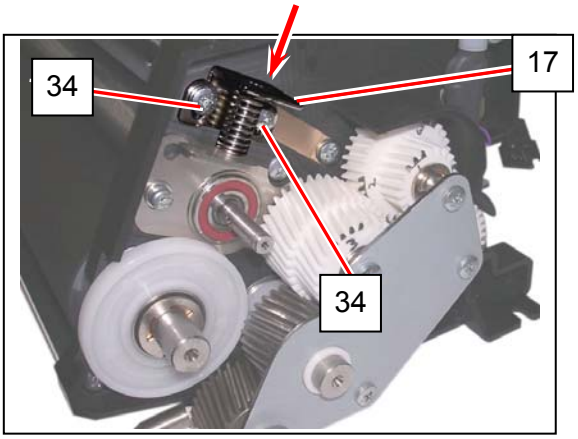




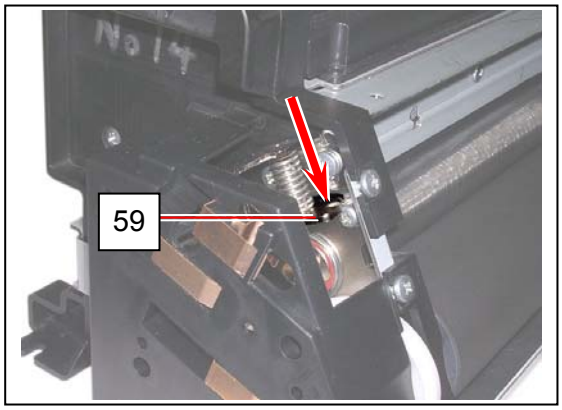
44. <u>On the electrode plate side</u>, fully press down the top of Bracket 5 (18). With pressing, tighten 2 screws (48) to secure Bracket 5 (18).

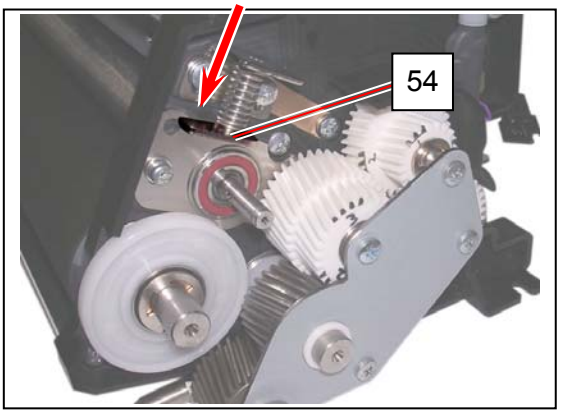


45. <u>On the driving side</u>, fully press down the top of Bracket 4 (17). With pressing, tighten 2 screws (34) to secure Bracket 4 (17).



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

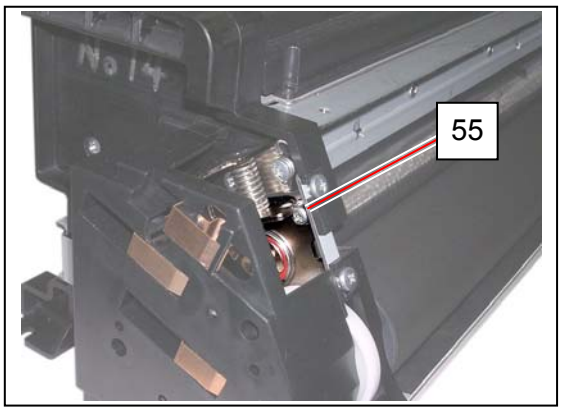


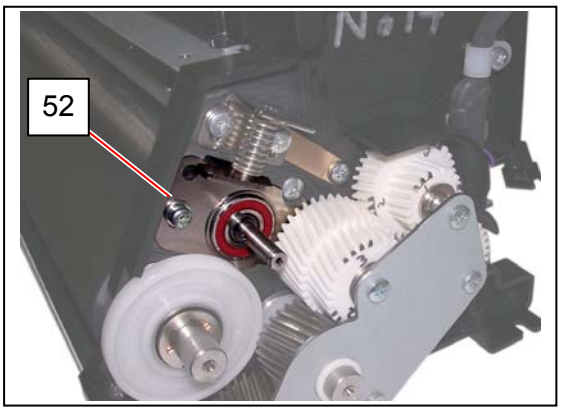


NOTE

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

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

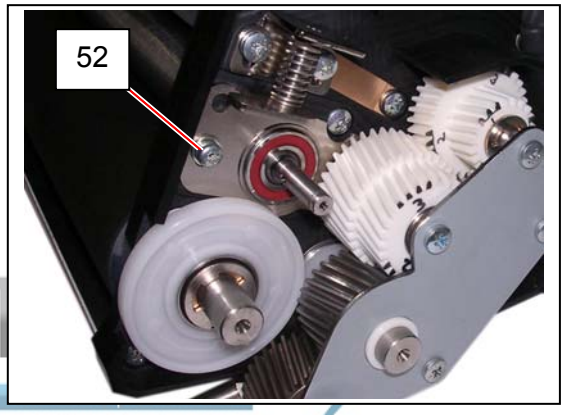


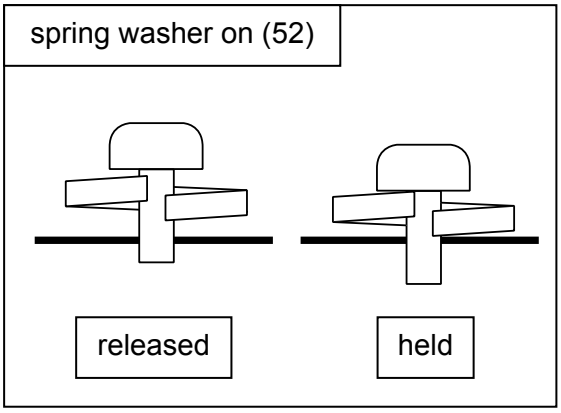


47. Turn the screw (52) in just enough revolution so that its spring washer is held in the gap.

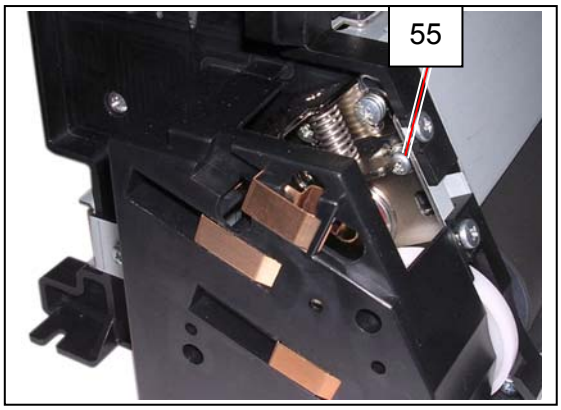
NOTE

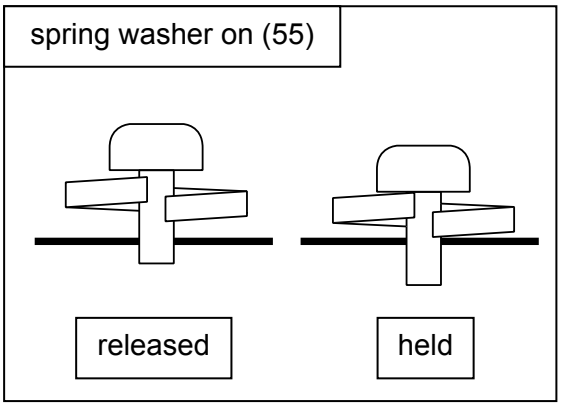
Do not tighten the screw (52) (55) firmly at this point of time. Otherwise proper and even pressurization of Blade Roller between left/right may fail, and this will make the toner layer on Roller Developer get thicker than required.



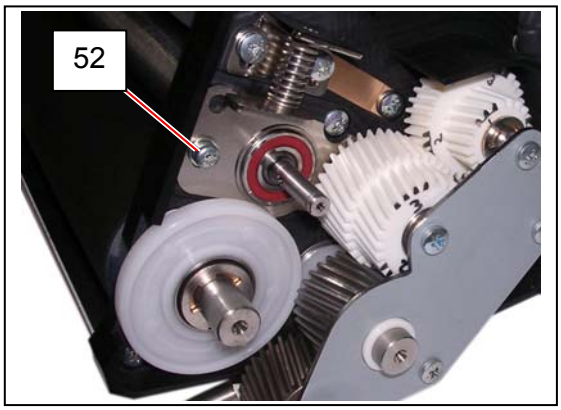


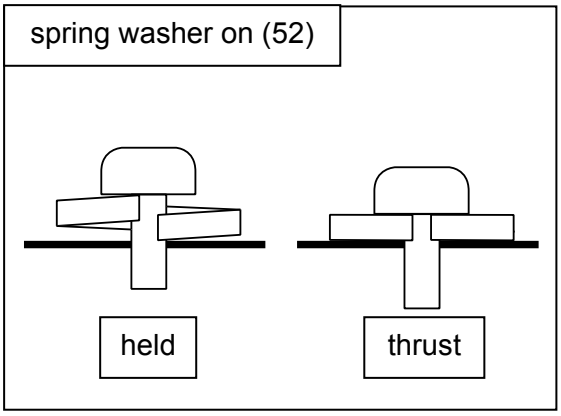
48. Turn the screw (55) in just enough revolution so that its spring washer is held in the gap.



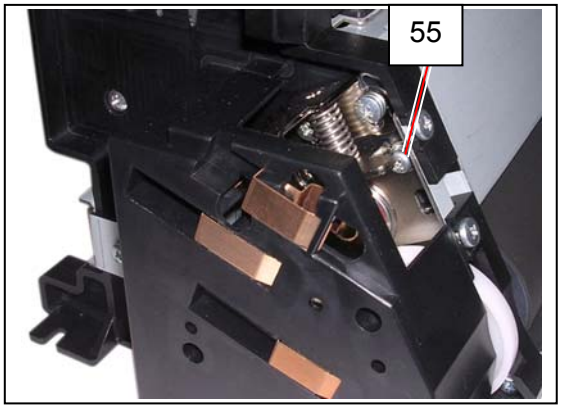


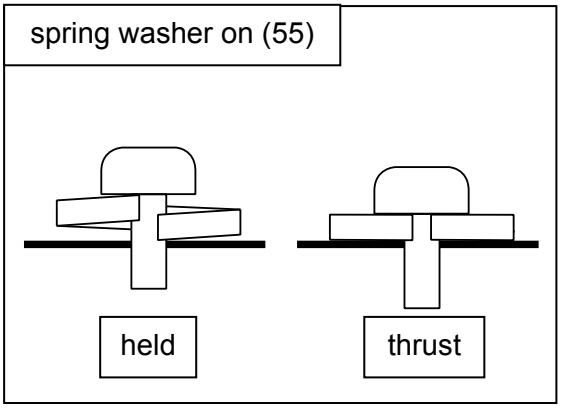
49. Turn the screw (52) in just enough revolution so that its spring washer is thrust in the gap. Do not turn it completely.



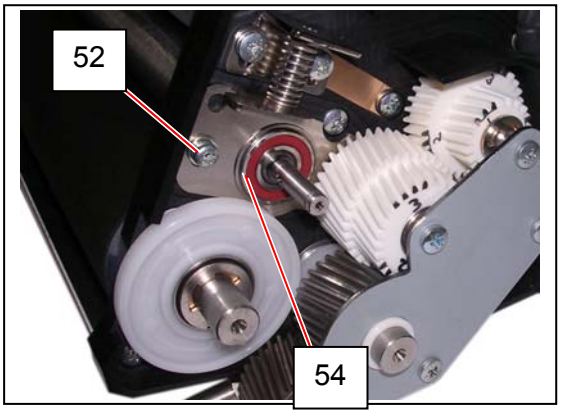


50. Turn the screw (55) in just enough revolution so that its spring washer is thrust in the gap. Do not turn it completely.





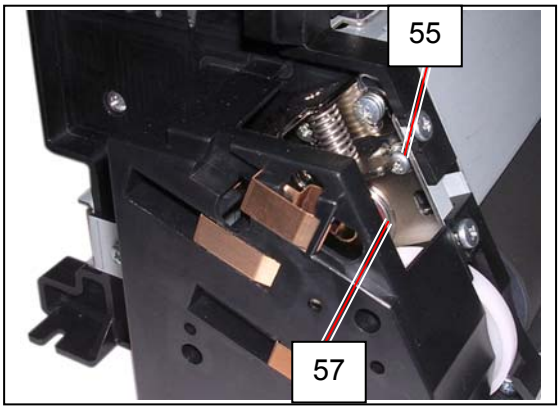
51. Slowly tighten the screw (52) to secure Bracket 6 Assy (54).



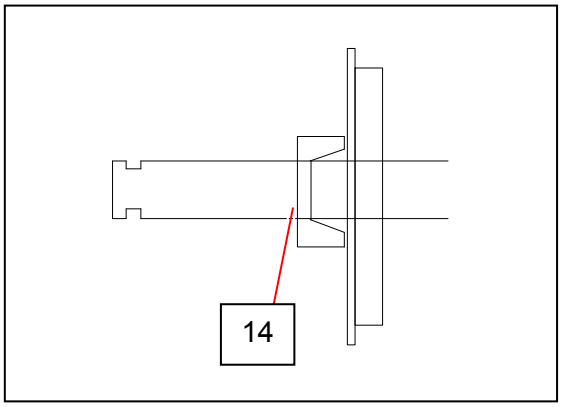
NOTE

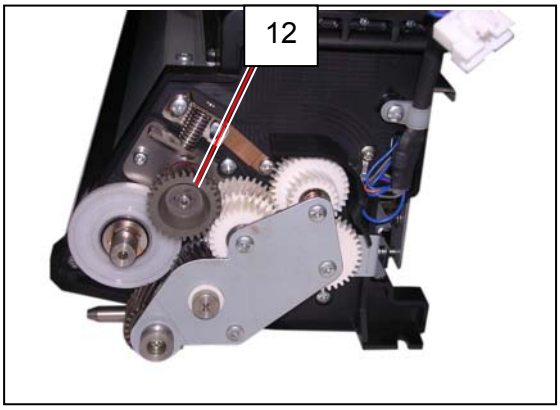
Do not tighten the screw (52) (55) quickly at this point of time. Otherwise proper and even pressurization of Blade Roller between left/right may fail, and this will make the toner layer on Roller Developer get thicker than required.

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

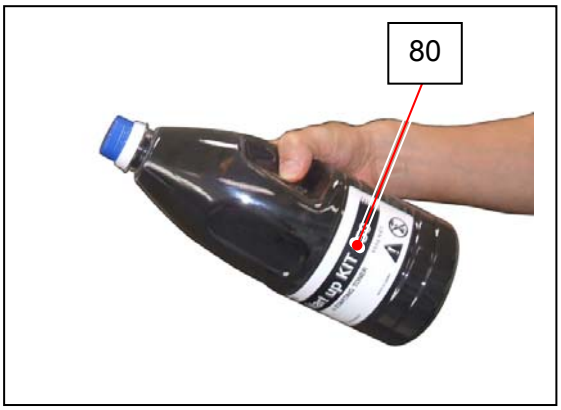


53. On the driving side, reinstall Collar 3 (14), Parallel Pin, Gear Helical 30T (12) and Retaining Ring-E to Blade Roller shaft.

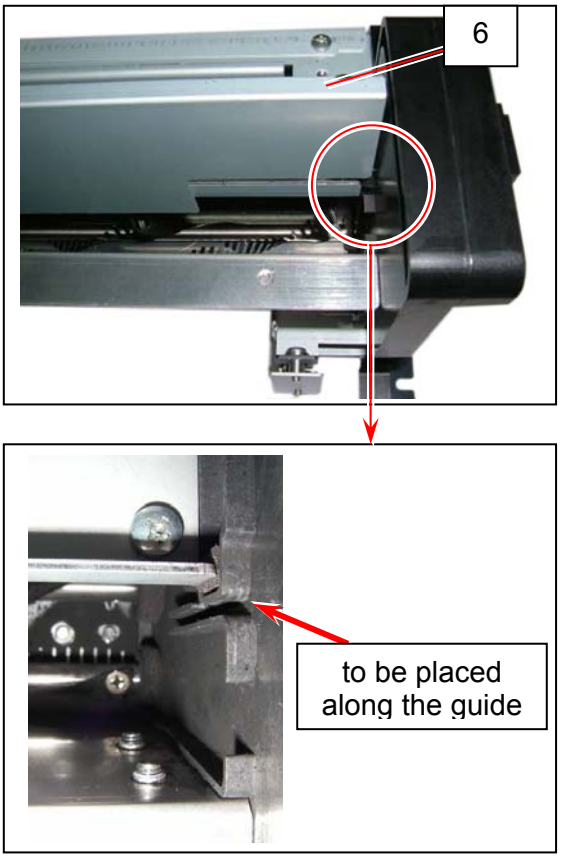




54. Shake the Starting Toner Bottle (80) well, and evenly add the toner to Developer Unit.

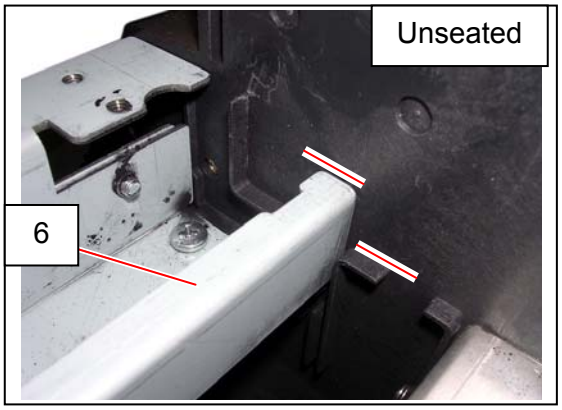


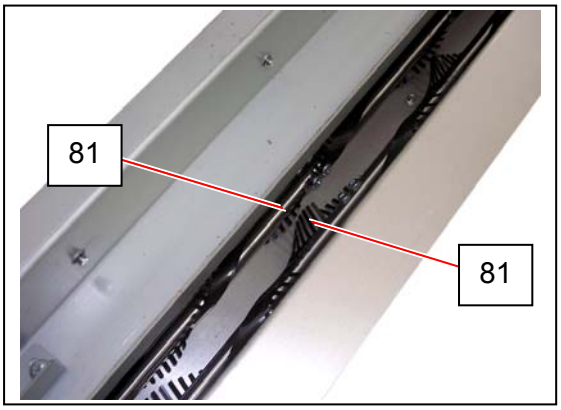
55. Along the guide on the side plates, gently place Separator (6) on the added toner.
Do not push it in.



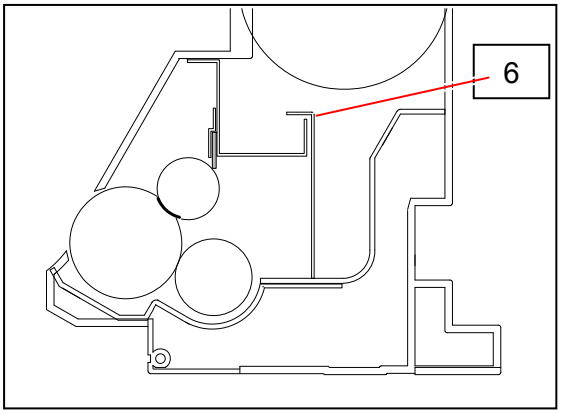
⚠ NOTE

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

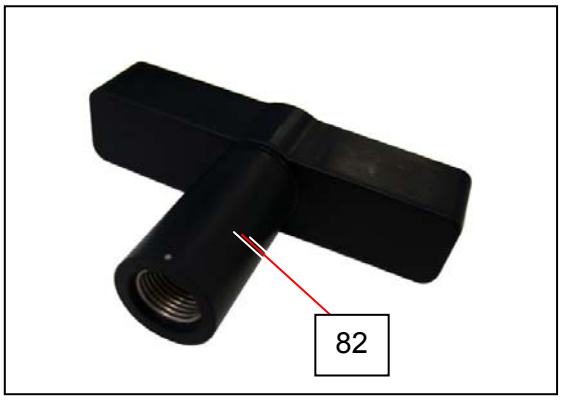


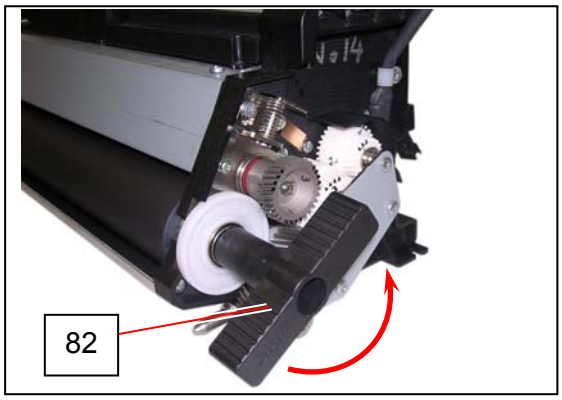


(2) Be careful of the direction of Separator (6).
Do not install it in the wrong direction.



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

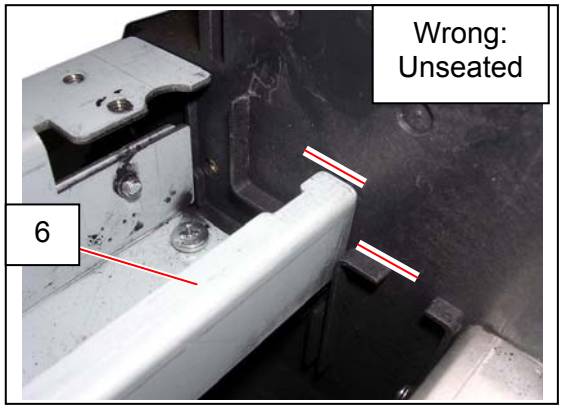


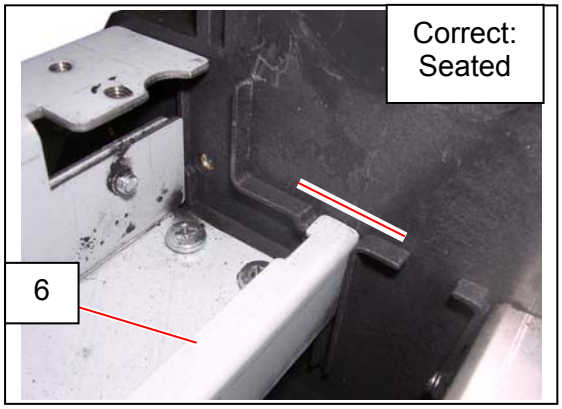


NOTE

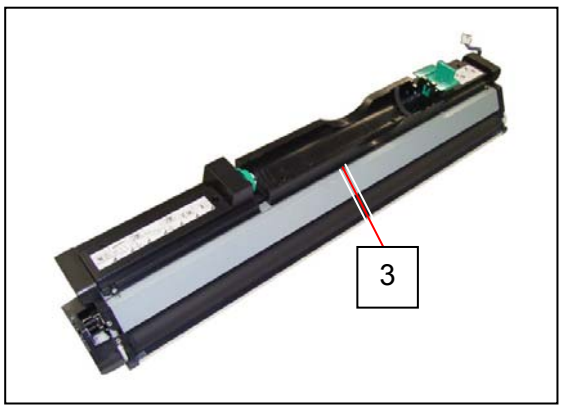
(1) Slowly turn Developer Handle. Otherwise the toner may spill out.

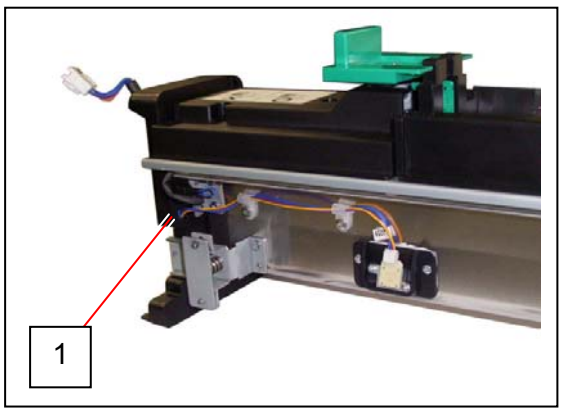
(2) Make sure that Separator (6) completely sinks in position by a 1/2 or more rotation of Developer Handle.
If not in position, the plastic screw mylars may be damaged at the next step.



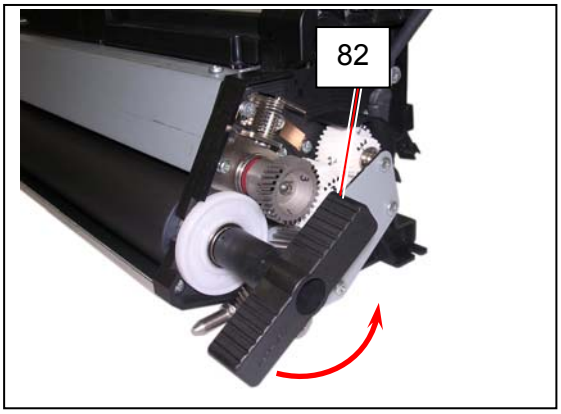


57. Replace the Hopper Assembly (3) and connect the connector (1).





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



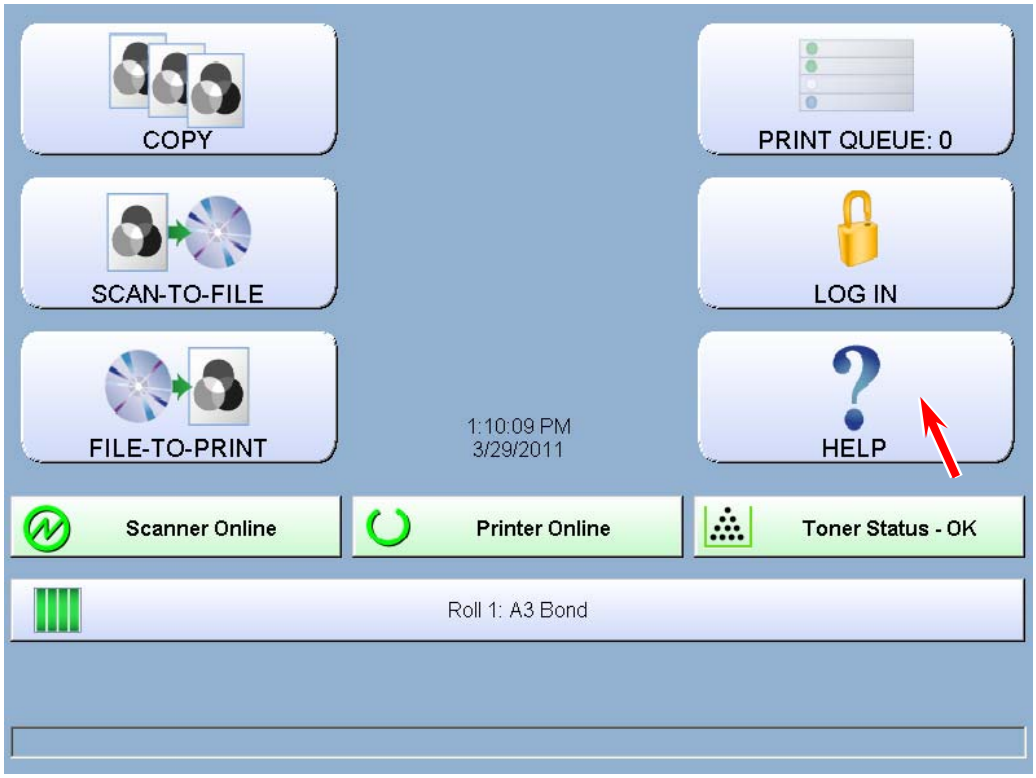
NOTE

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

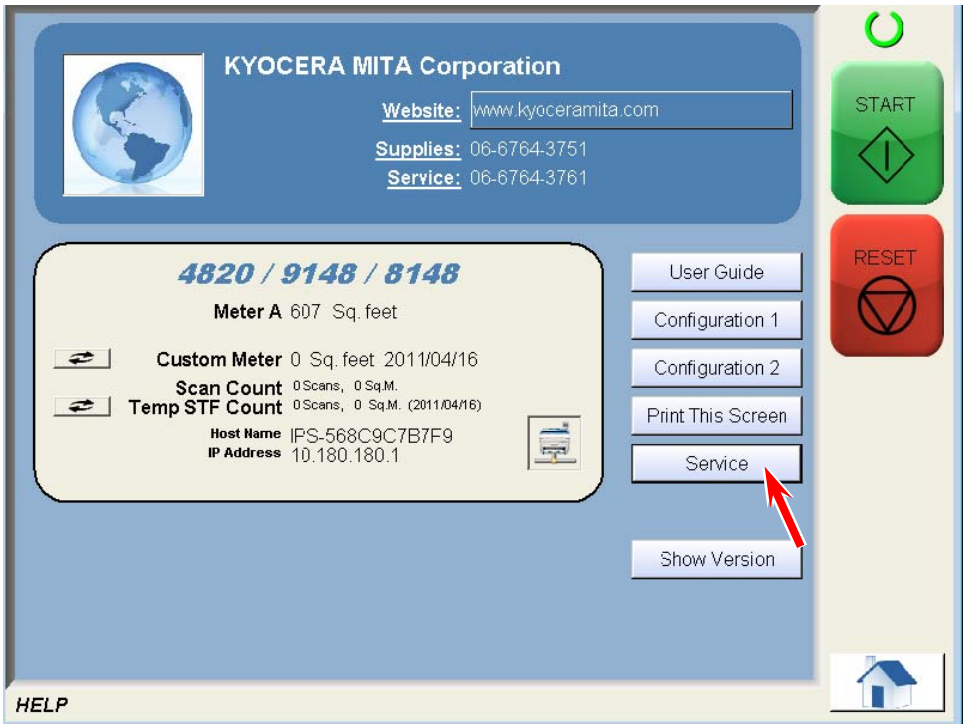
59. Reinstall Developer Unit to the machine.

60. Turn on the machine.

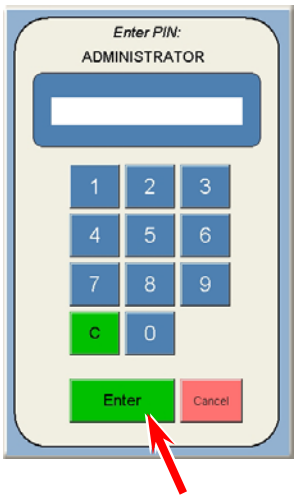
61. Press “? - Help” on Home screen.



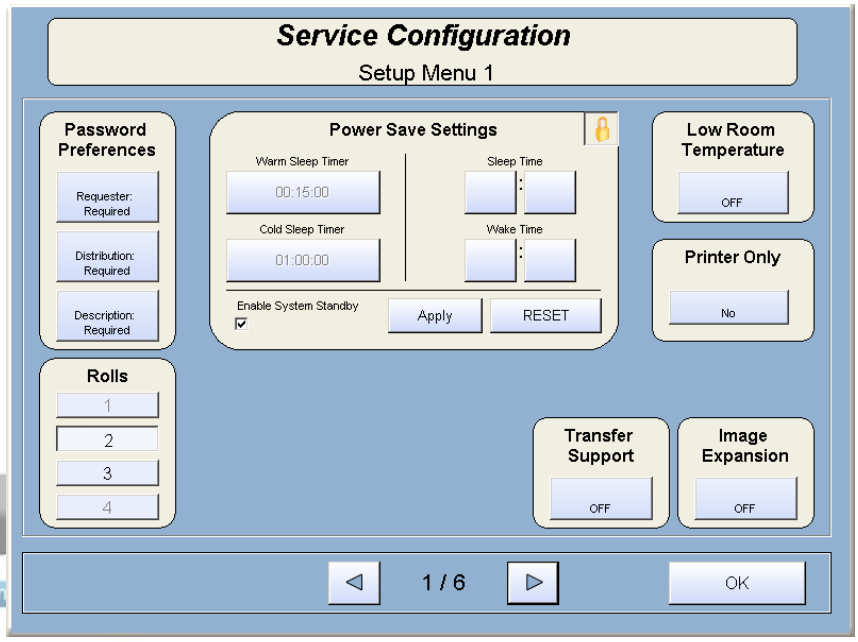
62. Press [Service].



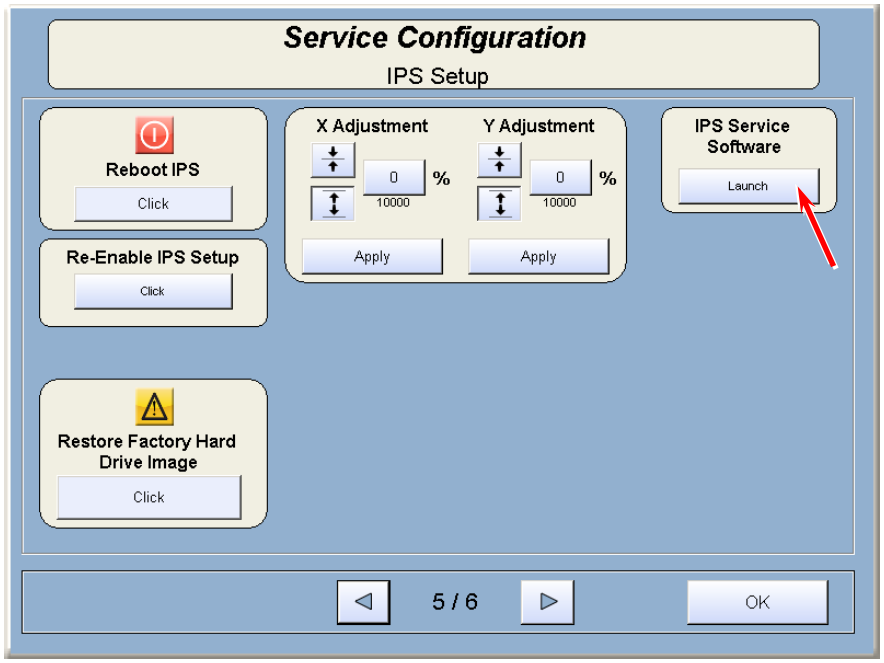
63. On-screen Keypad appears.
Input “8495107” and press [Enter].



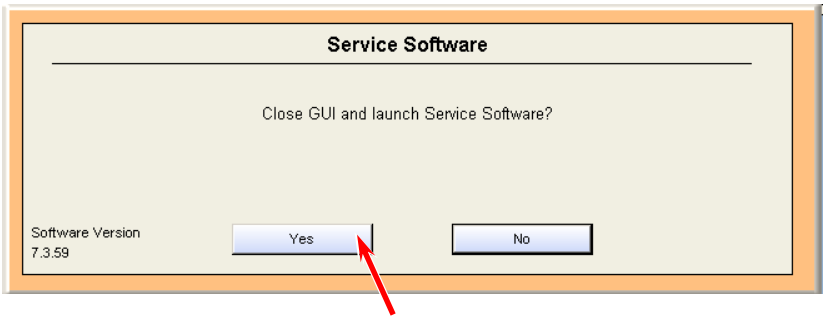
64. Service Configuration screen will appear.



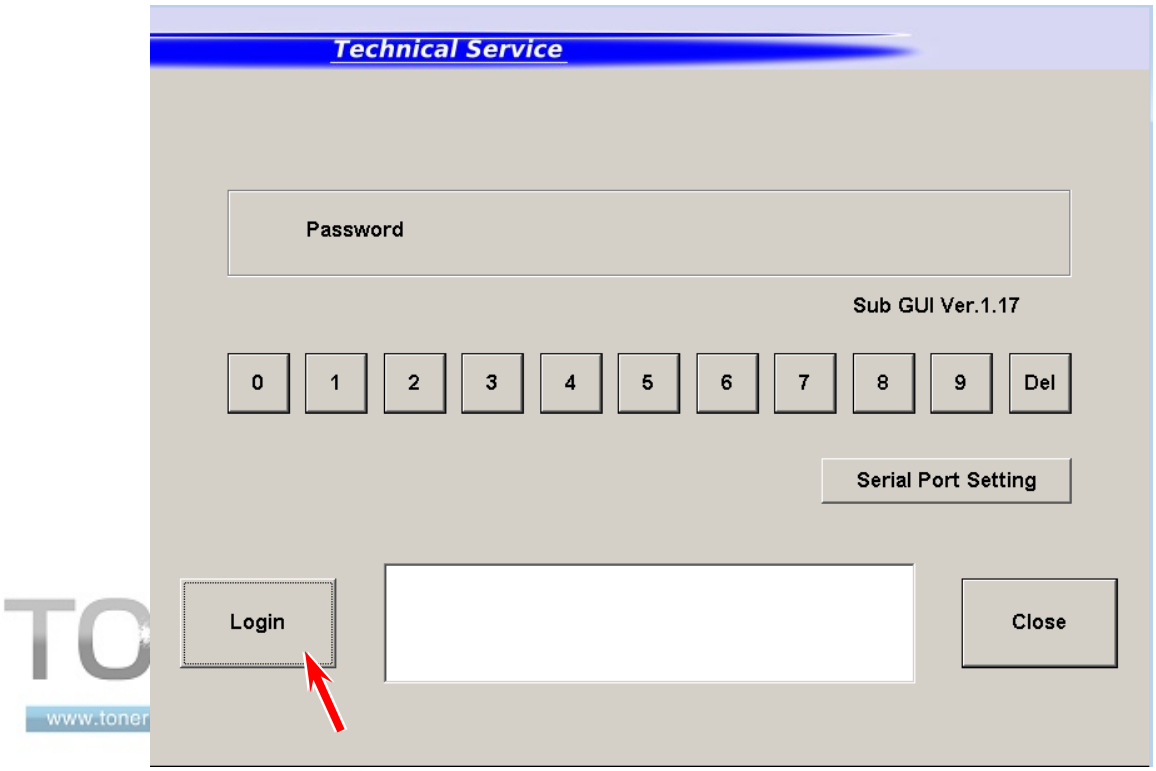
65. Use the arrow keys to open [5/6 IPS Setup]. Press [Launch] in “IPS Service Software”.



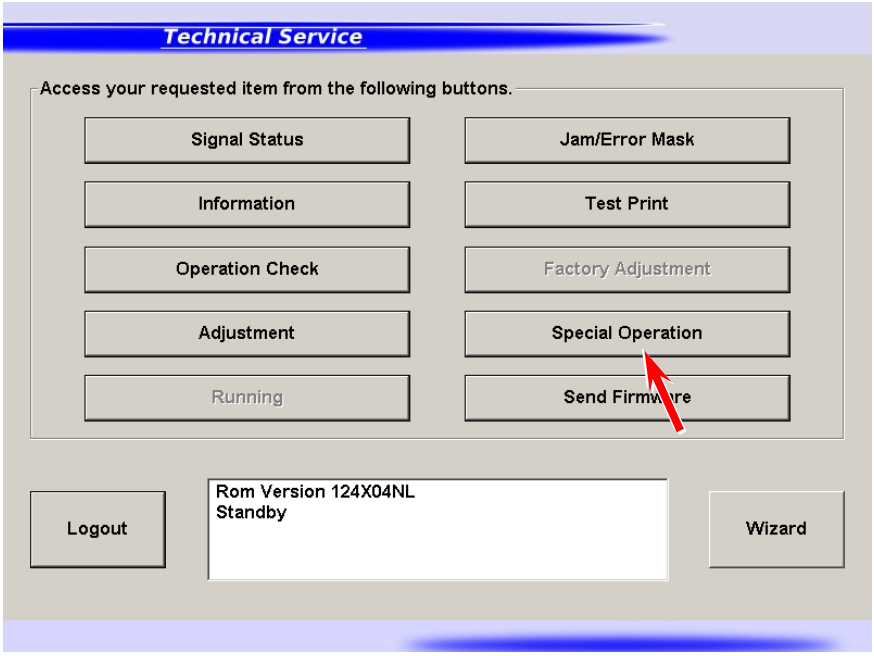
66. Press [Yes].

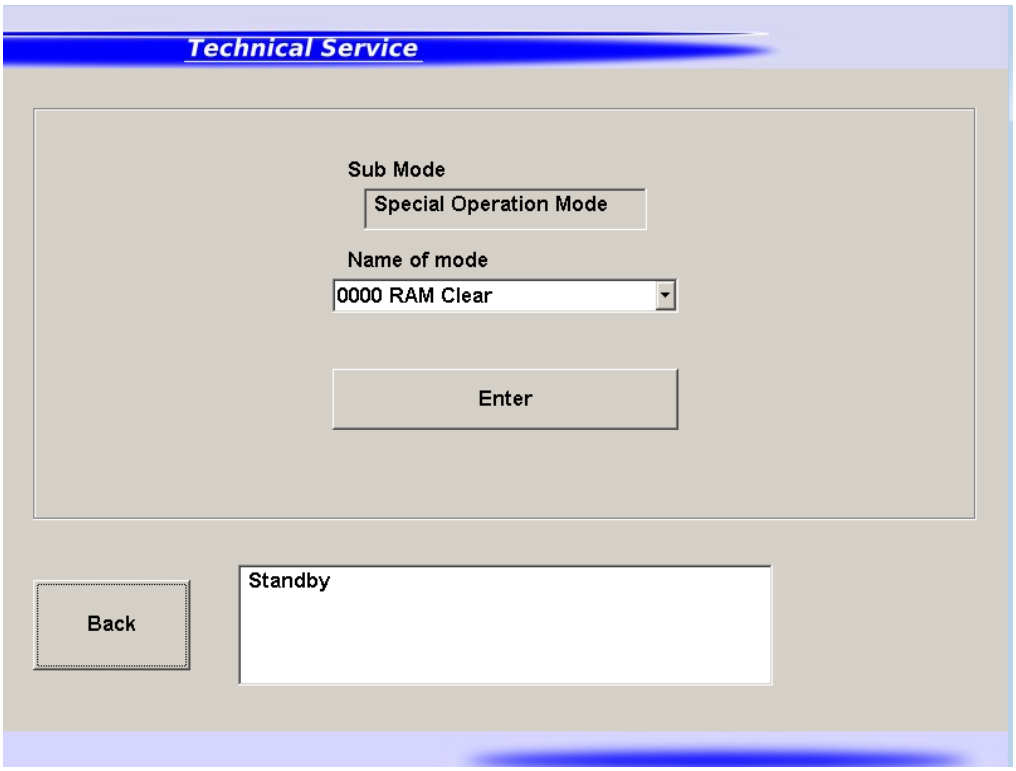


67. Press [Login] to log in Service Mode.

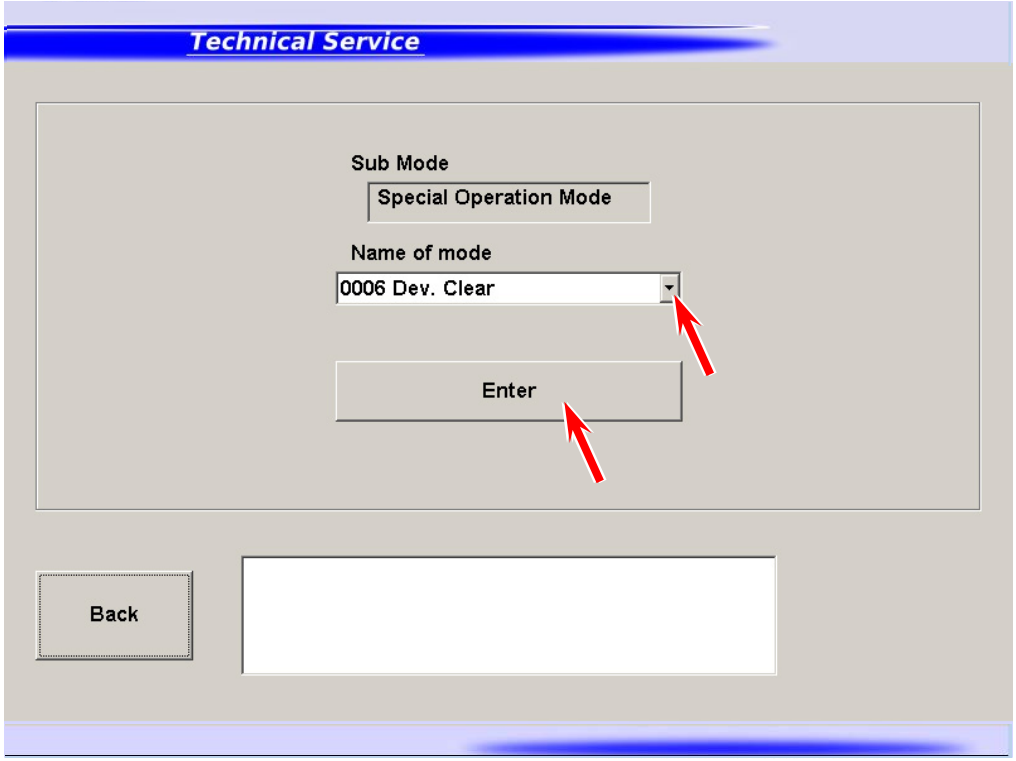


68. Press [Special Operation] in Service Mode Home.
Operation Target screen appears.



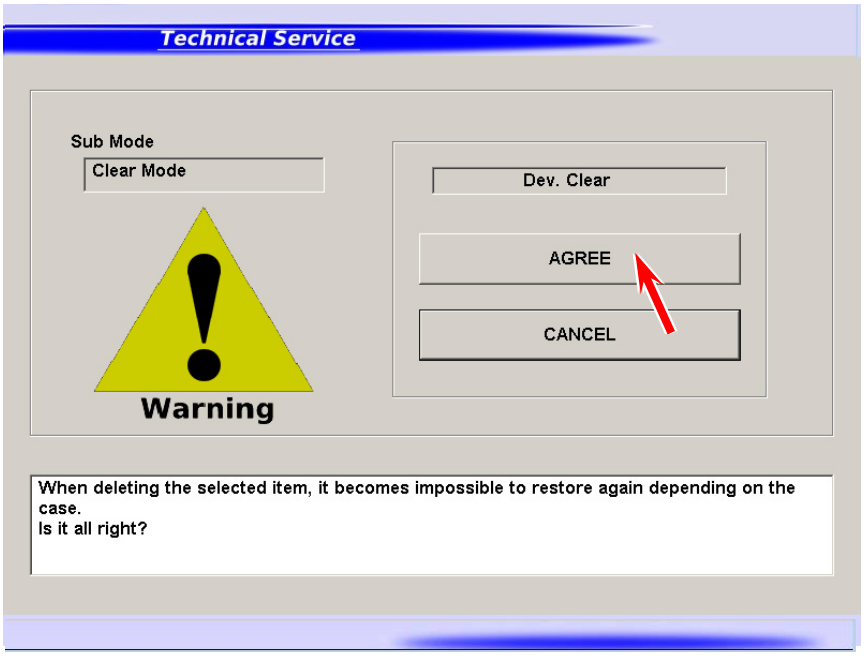


69. Select [0006 Bias3 Count] from Name of mode menu. Press [Enter].

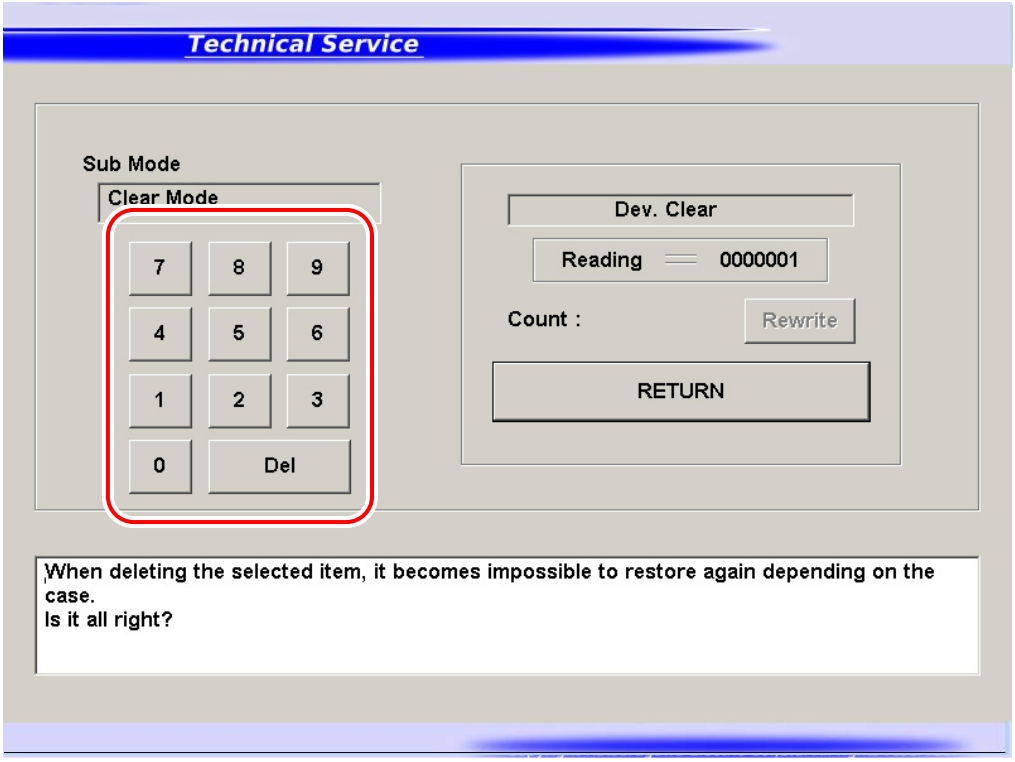


0006	Bias3 Count	Initializes Developer / Regulation Bias adjusted with Density Compensation Process

70. Confirmation screen appears.
Press [Agree] to reset Bias Adjustment by Density Compensation Process.
Then the system starts recalculation of the possible best Developer/Regulation Bias.
(This will take time.)



71. Input screen appears.
Input “0000000” with On-screen Keypad.



NOTE

The required value for the TASKalfa 4820w to reset Bias Adjustment by Density Compensation Process is “0000000”.

“000000**0**” to “000000**3**” correspond to the adjustment level in Density Compensation Process.
For example, if you interchange the Developer Unit with your spare unit, you can manually set a certain adjustment level that would be suitable for your spare unit.

72. The value is displayed in “Count” area.
Once you input a seven digit value, [Rewrite] will be activated.
Press [Rewrite] to apply the new value to the printer.
The value in “Reading” area will be changed to the new value.

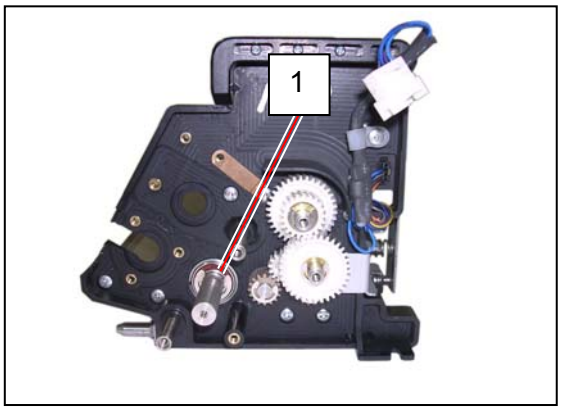
NOTE

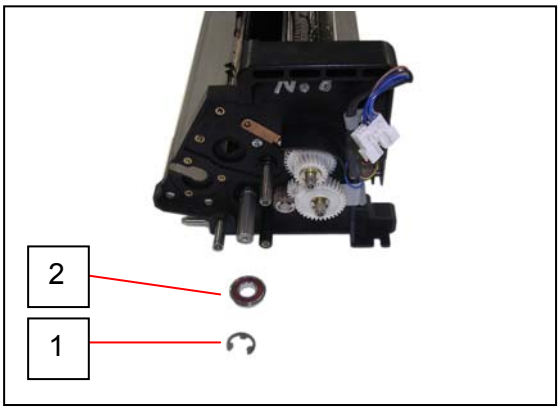
After replacing Developer Roller / toner refreshment, you must reset bias adjustment by Density Compensation Process.
Otherwise a darker image appears because the adjusted values are too high voltage for the refreshed Developer Unit.

5. 2. 3 Replacement of Roller Supply

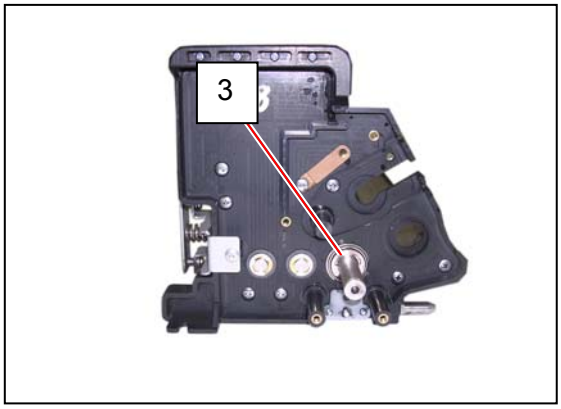
1. Remove Blade Roller and Roller Developer from Developer Unit making reference to [5. 2. 2 Replacement of Recommended Periodic Replacement Parts Replacement of Developer Unit Components] on the page 5-8.

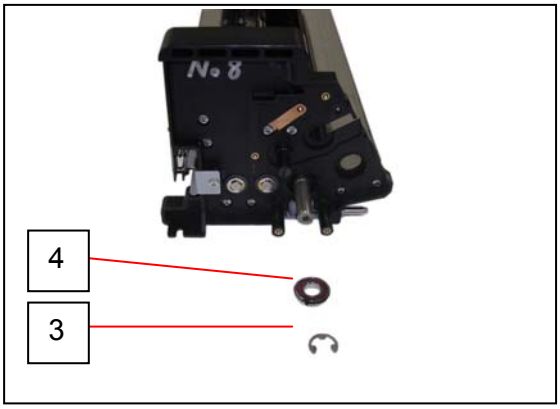
2. Remove Retaining Ring-E (1: E10) to remove Bearing (2).



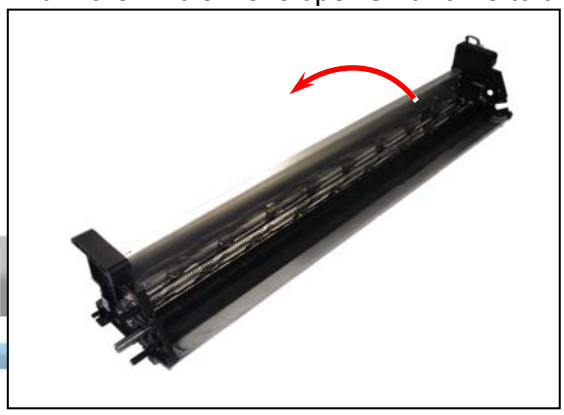


3. <u>On the electrode plate side</u>, remove Retaining Ring-E (3: E10) to remove Bearing (4).

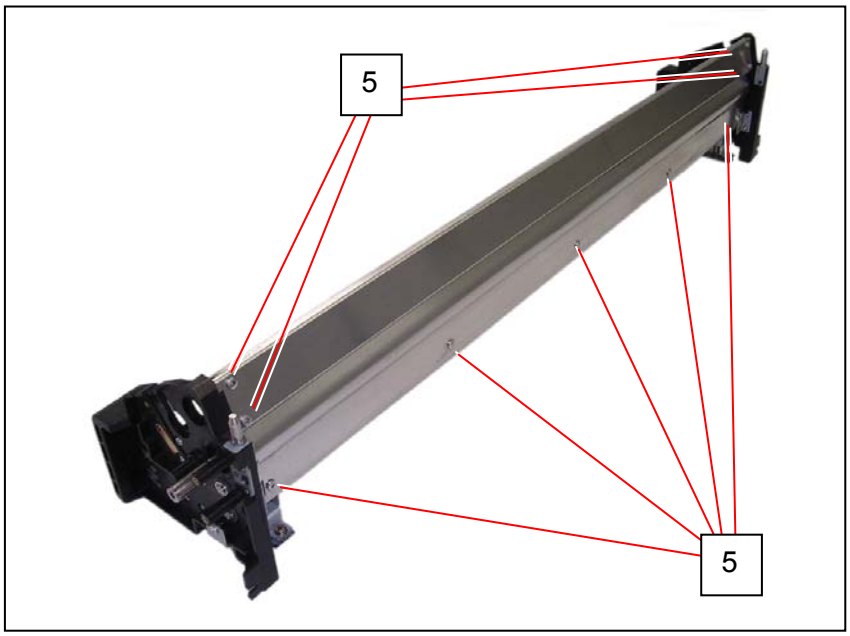


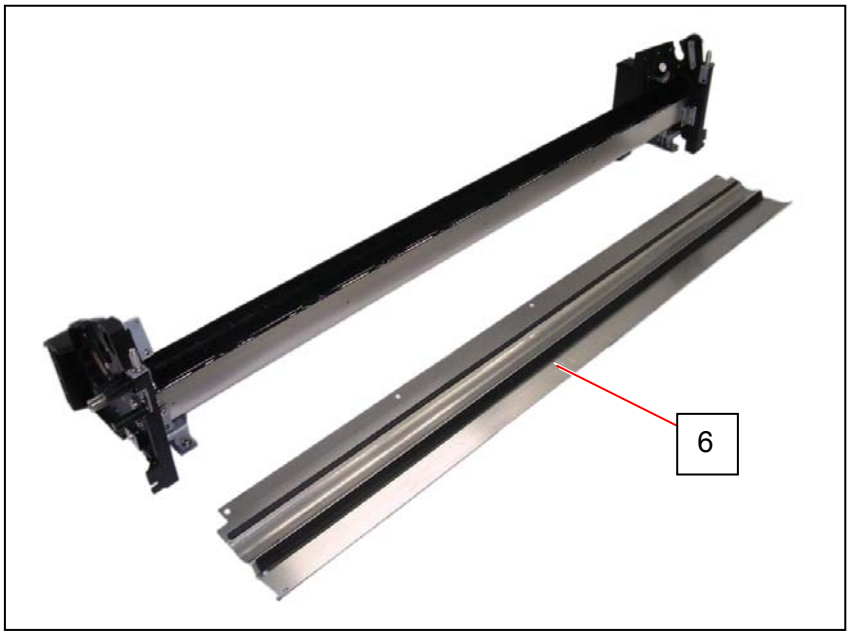


4. Turn the whole Developer Unit frame to the arrow direction to be laid down.

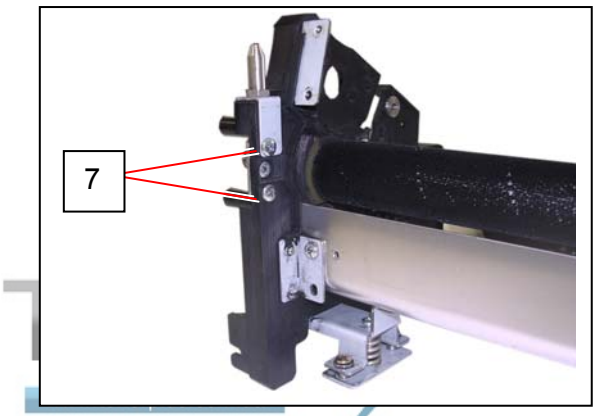


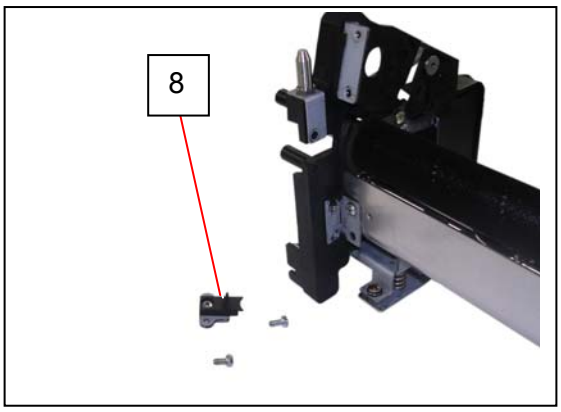
5. Remove 9 screws (5) to remove Frame 2 (6).



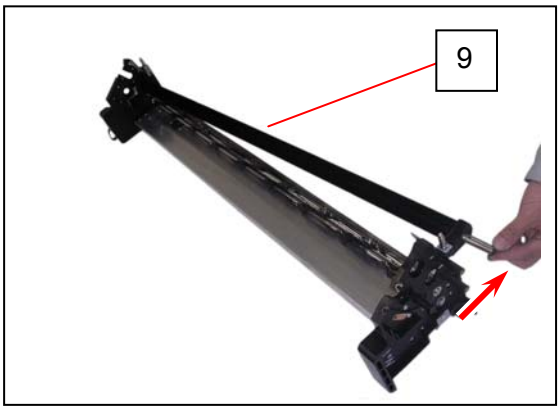


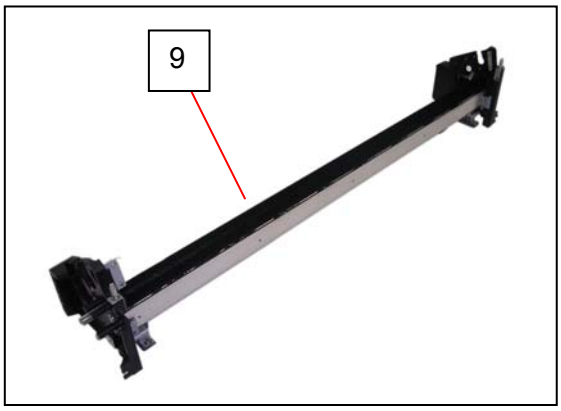
6. Remove 2 screws (7) to remove Bracket Assy (8).

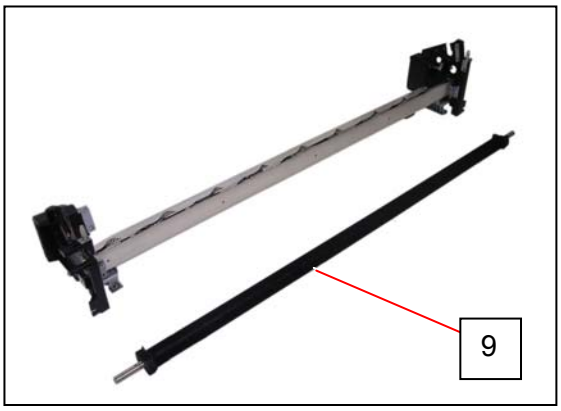




7. Remove Toner Supply Roller (9).





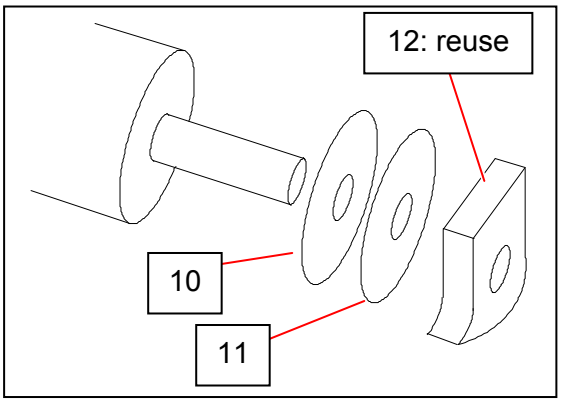


NOTE

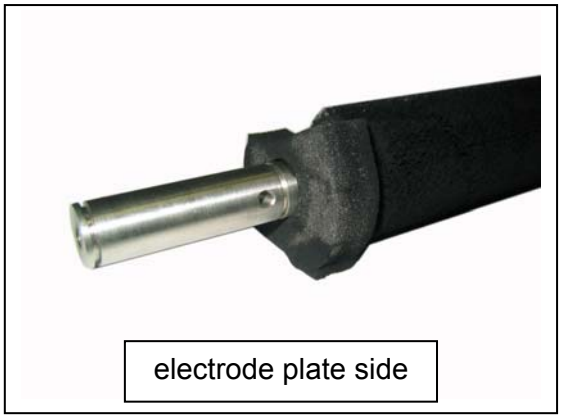
(1) Sheet 6 (10), Sheet 5 (11), Seal R Assy or Seal L Assy (12) are attached on each side shaft of Roller Supply.

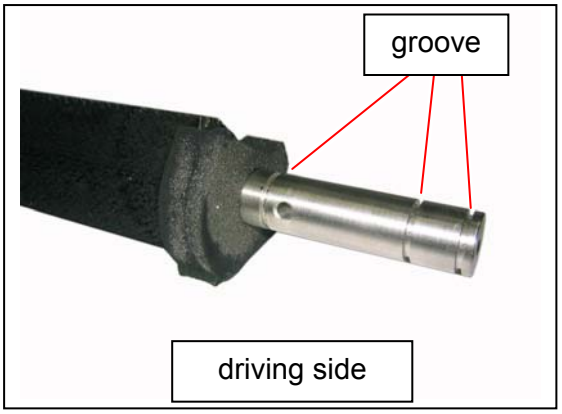
Remove them from the old Roller Supply and then install them to the new Roller Supply. (Be careful not to dispose them.)

Keep water or grease away from between the sheets.



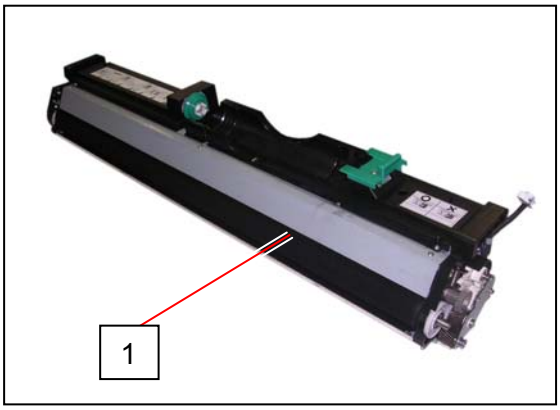
(2) Note the installation direction. The shaft with three grooves should be placed to the driving side.



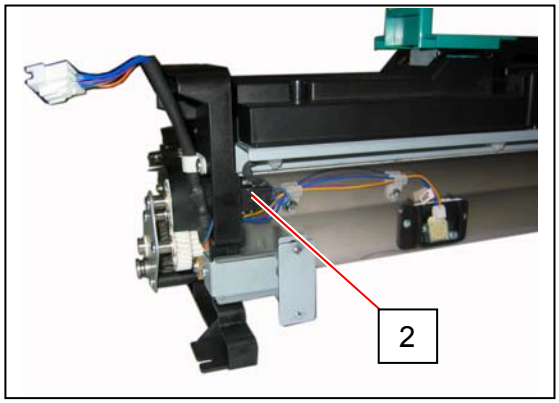


5. 2. 4 Replacement of Screw Assy

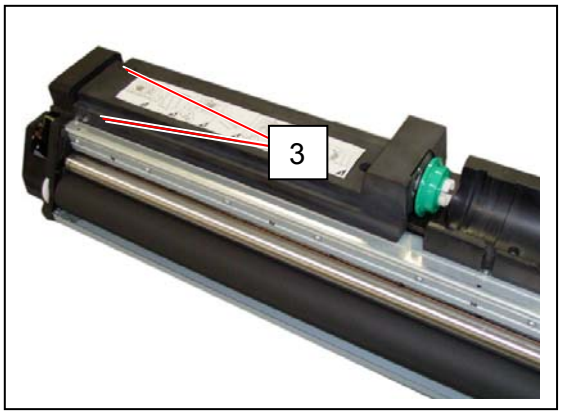
1. Remove the Developer Unit (1) from the machine making reference to [5. 2. 1 Removal of the Developer Unit] on the page 5-5.

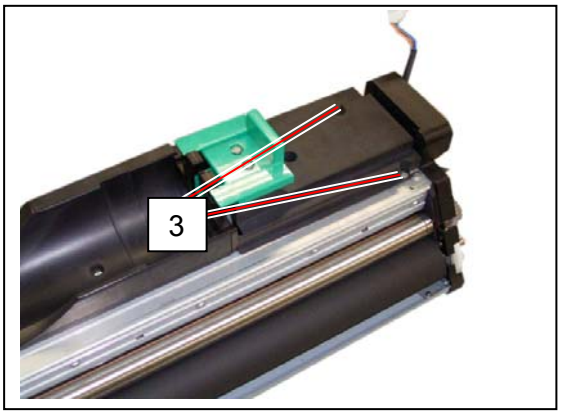


2. Disconnect the connector (2).

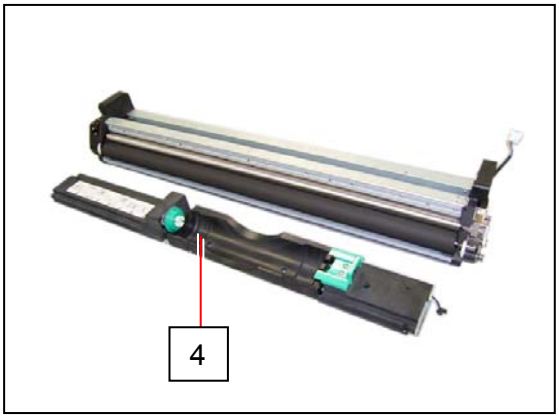


3. Remove 4 pieces of 4x6 screws (3) which fix the Hopper Assembly (4).

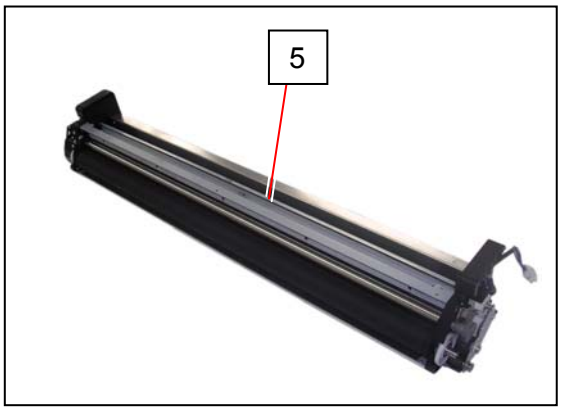


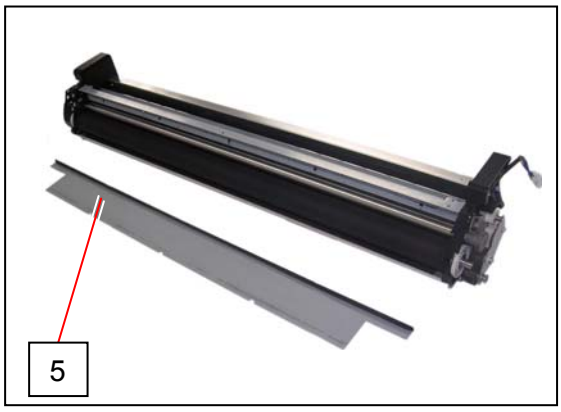


4. Remove the Hopper Assembly (4).



5. Remove Separator (5).



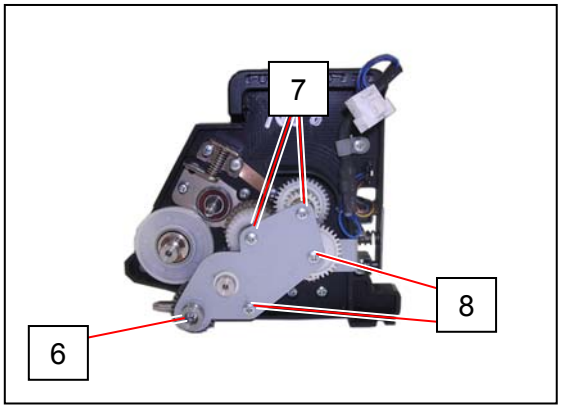


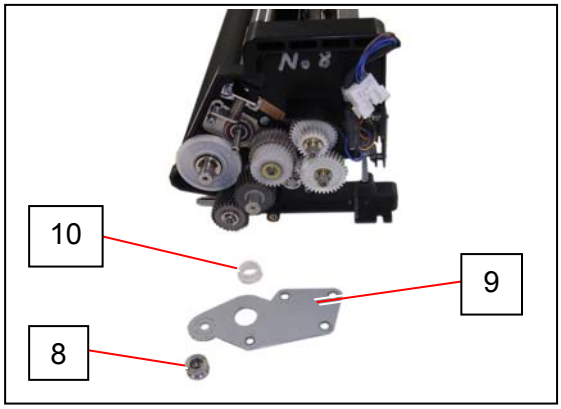
6. Remove all the toner from Developer Unit.

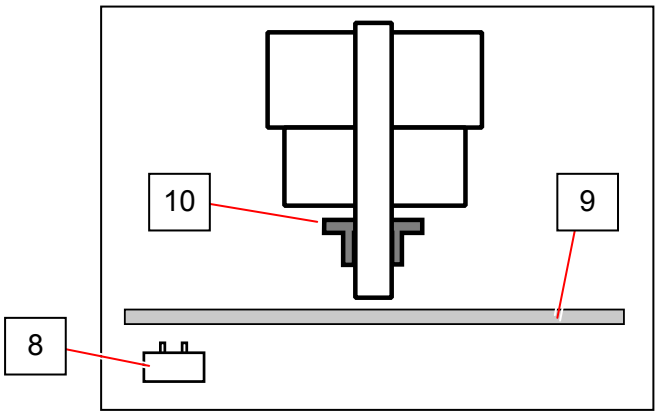
NOTE

Do not reuse the removed toner.

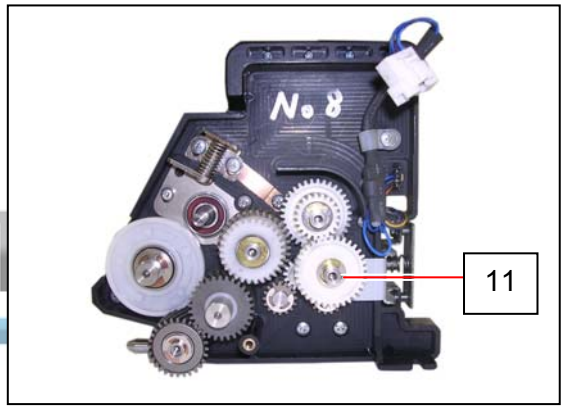
7. Remove 5 screws (6: M4x8) (7: M4x6) to remove Pin 4 (8), Plate (9), Collar (10).

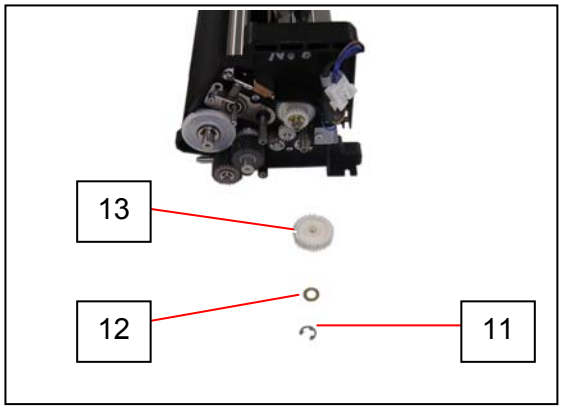




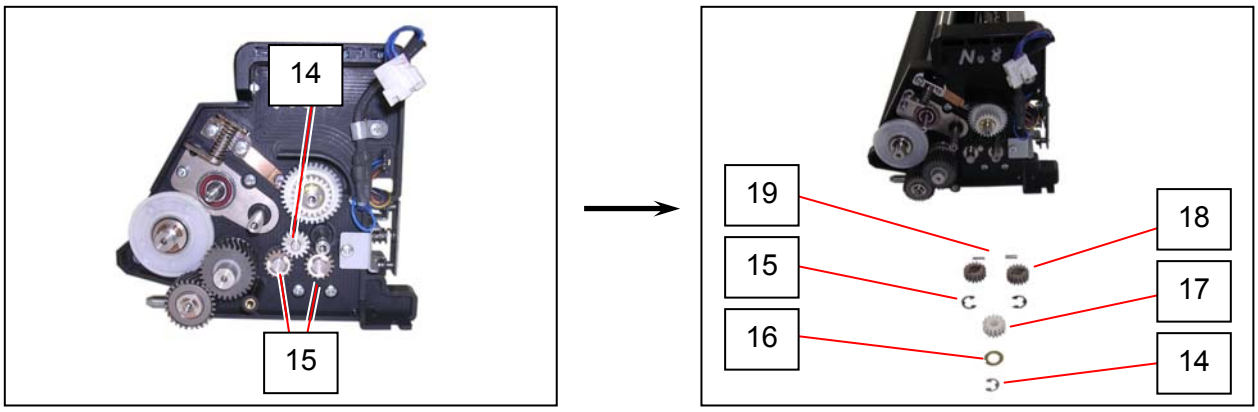


8. Remove Retaining Ring-E (11: E7) to remove Spacer (12), Gear 16T-34T (13).

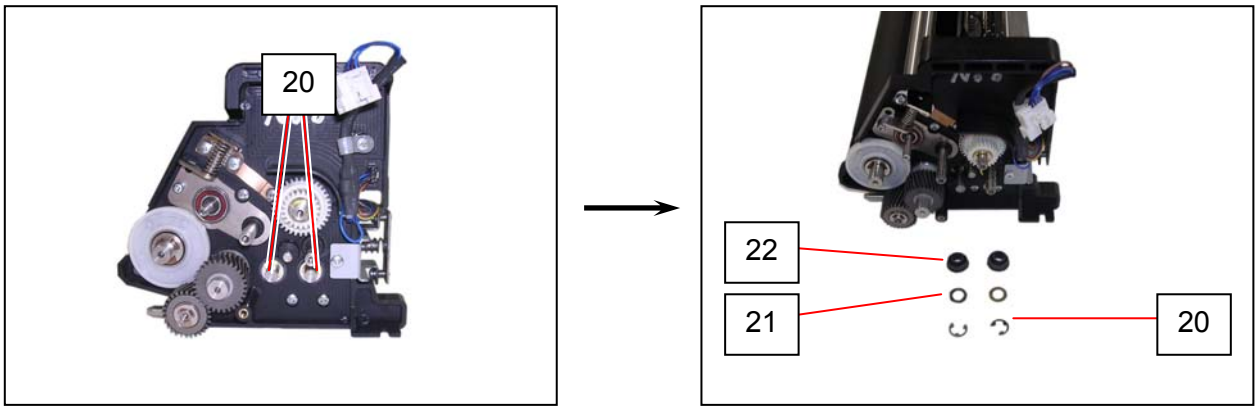




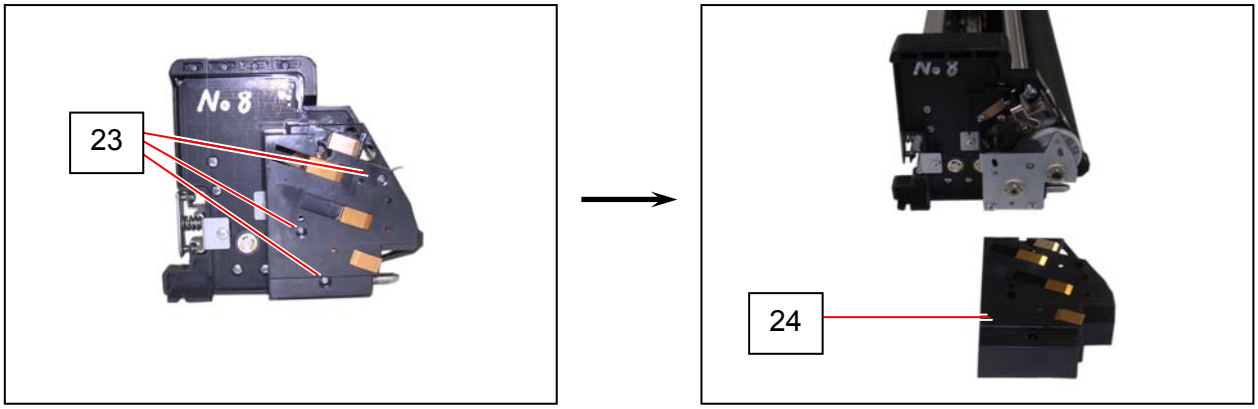
9. Remove Retaining Ring-E (14: E5) (15: E7) to remove Washer (16), Gear 15T (17), Gear 16T (18) and Parallel Pin (19).



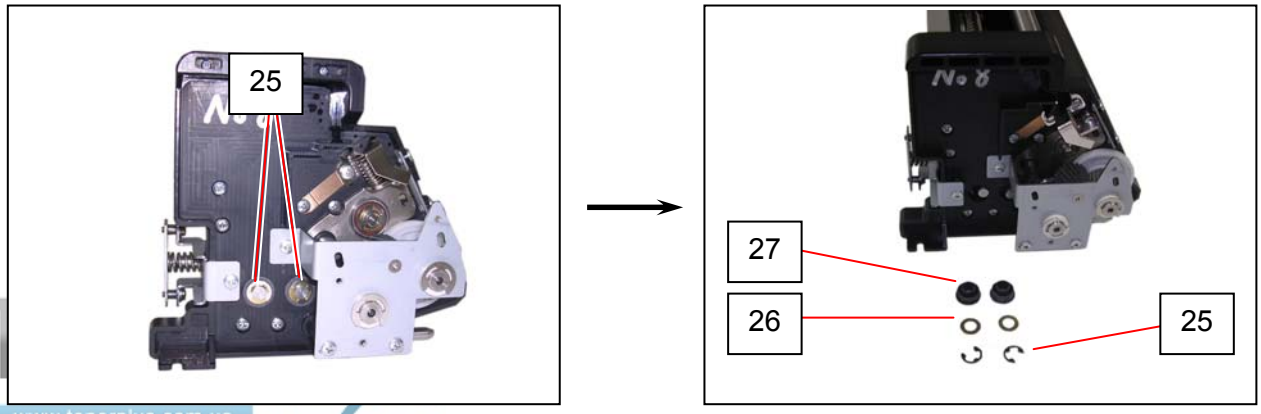
10. Remove Retaining Ring-E (20) to remove Washer (21) and Bush (22).



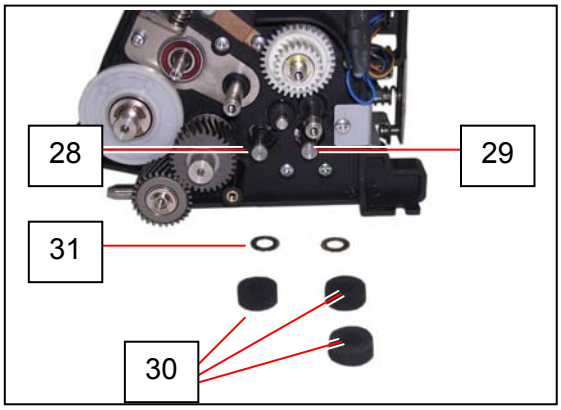
11. <u>On the electrode plate side</u>, remove 3 screws (23) to remove Holder 2 Assy (24).

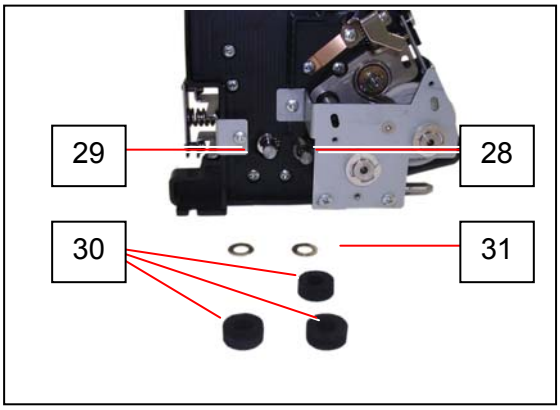


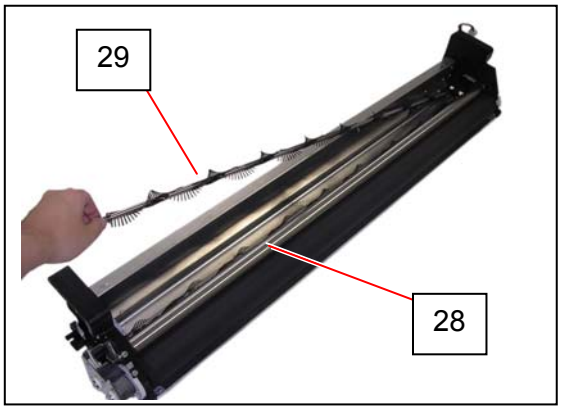
12. Remove Retaining Ring-E (25) to remove Washer (26) and Bush (27).

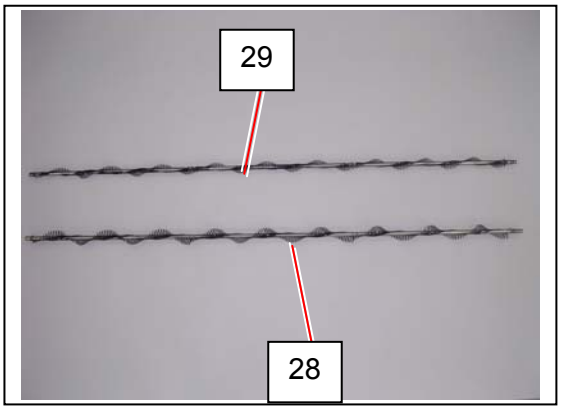


13. Remove Screw A Assy (28: near Roller Supply), Screw B Assy (29: far from Roller Supply). Remove Side Seal (30) and Washer (31) on both ends of Screw A Assy (28) and Screw B Assy (29).

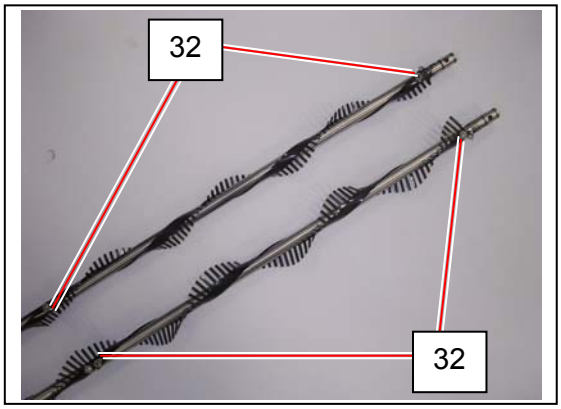


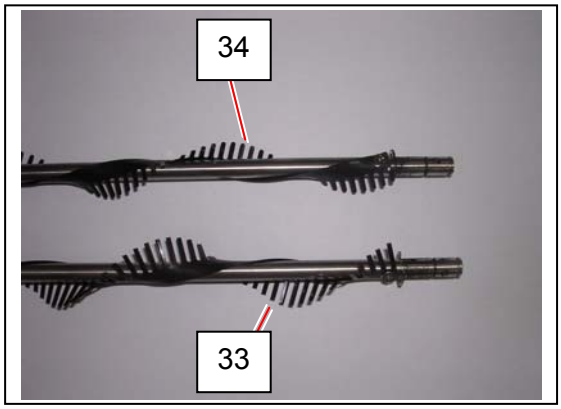






14. Remove each 2 screws (32: M3x5) to remove Screw A (33) / Screw B (34).



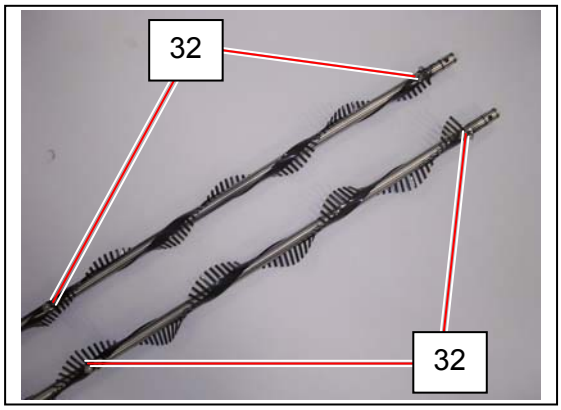


NOTE

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

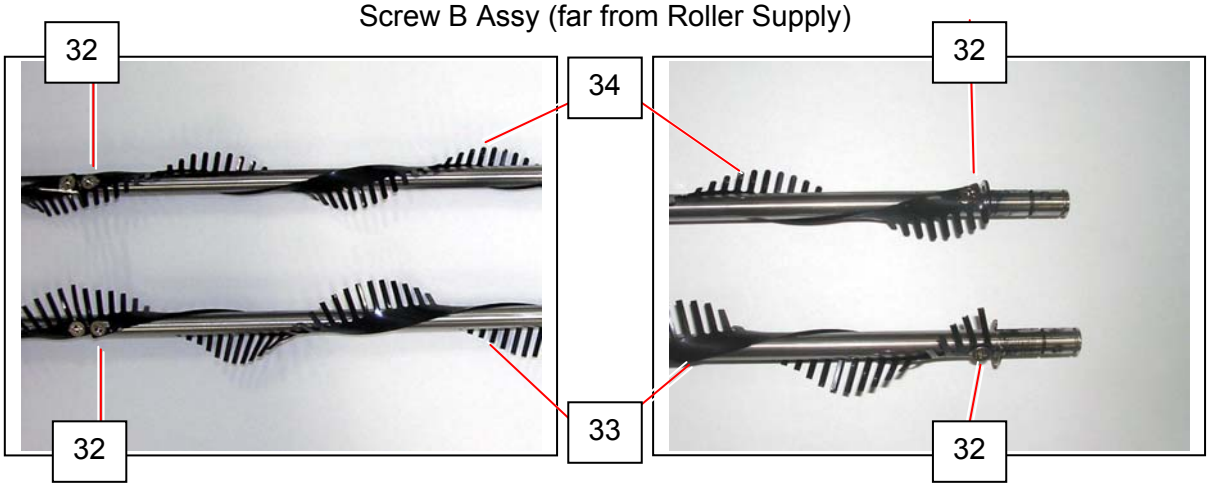
(1) Note the twisting direction around the shaft.

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



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

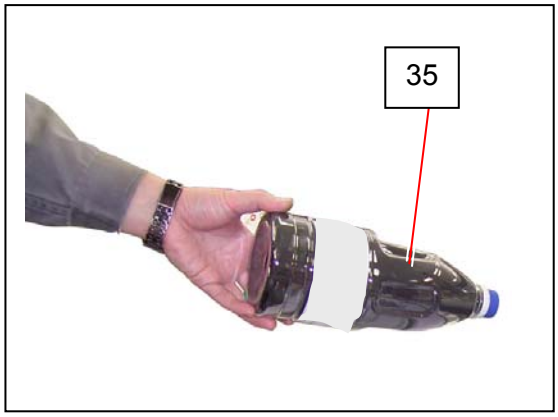
Screw B Assy (far from Roller Supply)



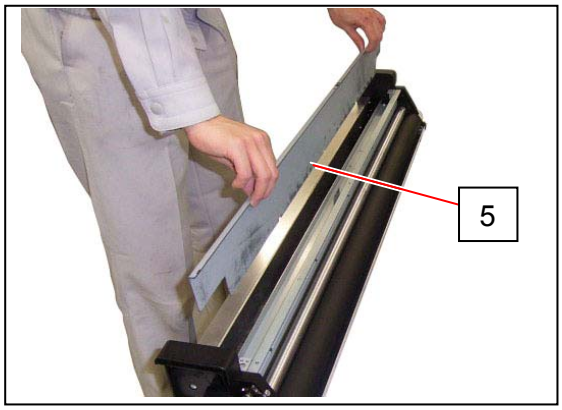
Screw A Assy (near Roller Supply)

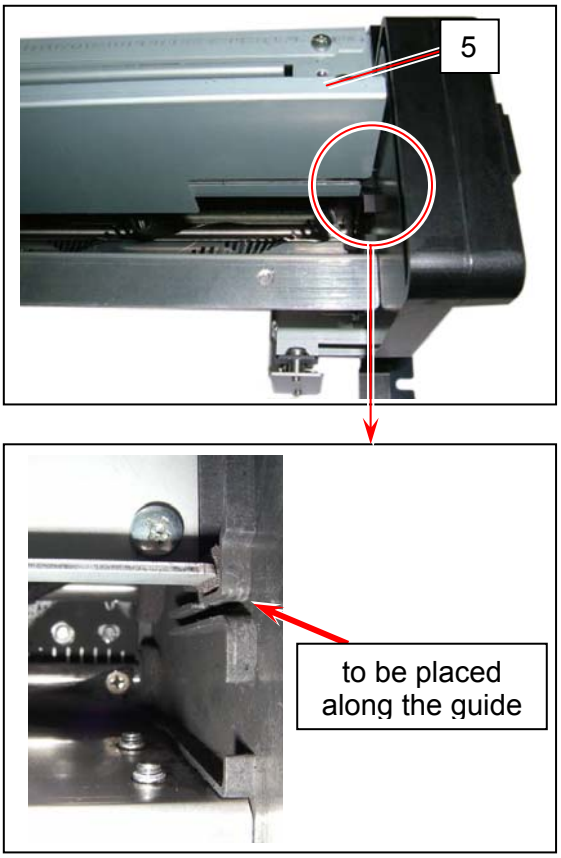
15. Replace all the components except Separator (5) and Hopper Assy (4) in position.

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



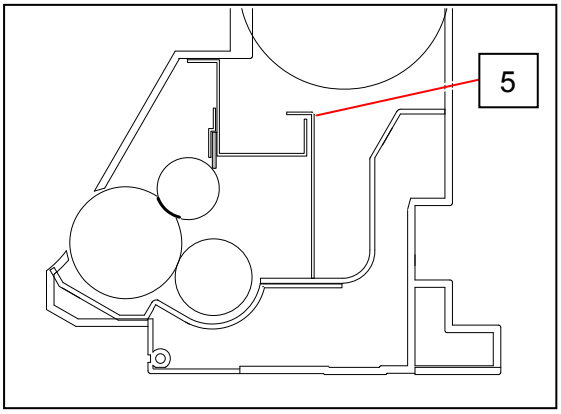
17. Along the guide on the side plates, gently place Separator (5) on the added toner.
Do not push it in.



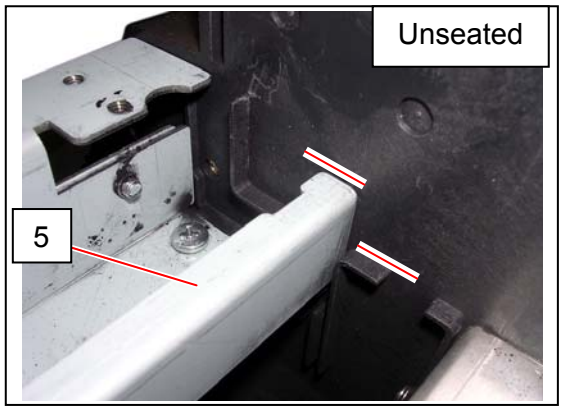


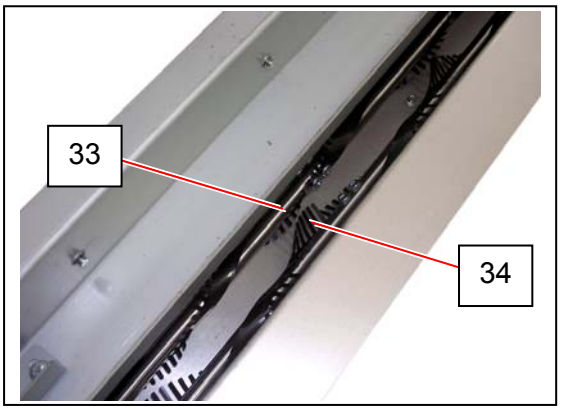
⚠ NOTE

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

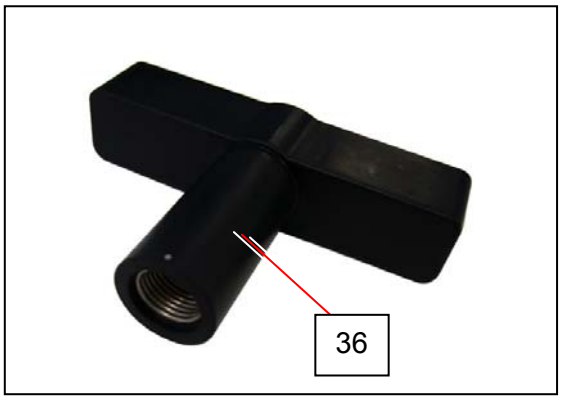


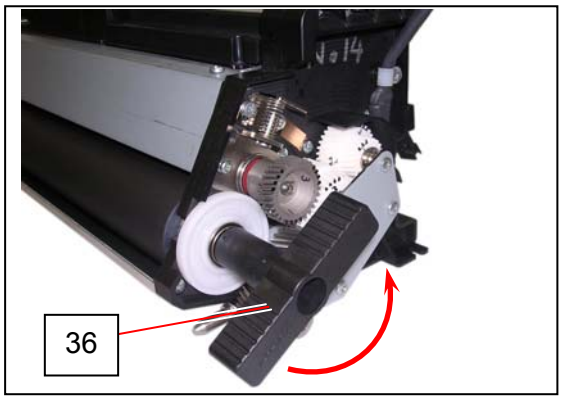
(2) Just put Separator (5) on the toner. It will be placed unseated. Do not push it completely at this time. Doing so may damage Screw A (33) and Screw B (34).





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

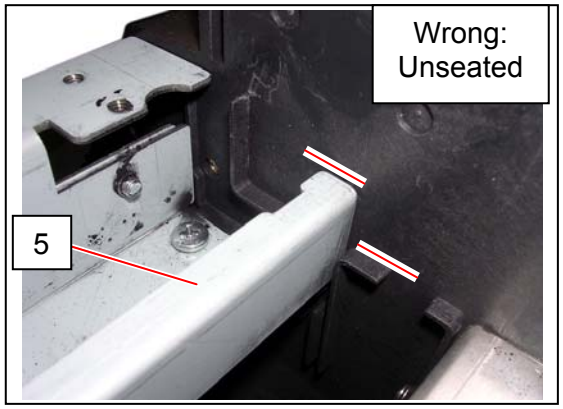


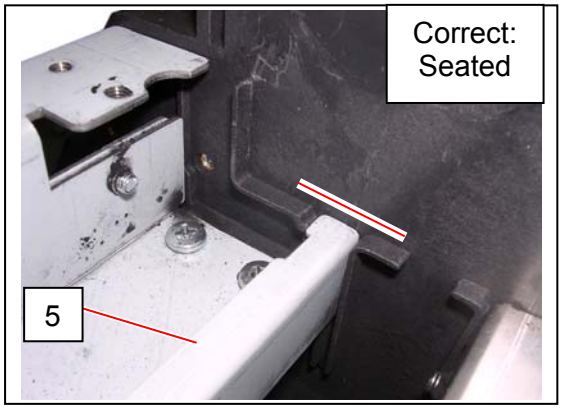


NOTE

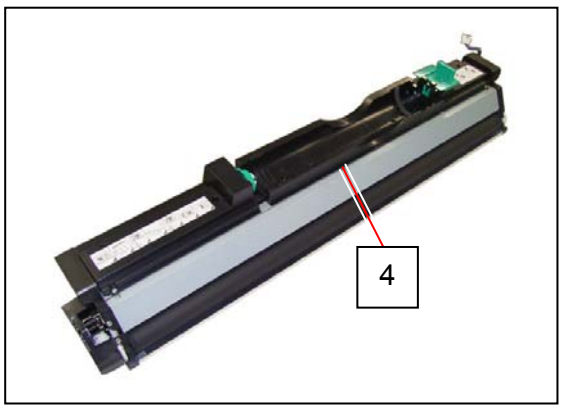
(1) Slowly turn Developer Handle. Otherwise the toner may spill out.

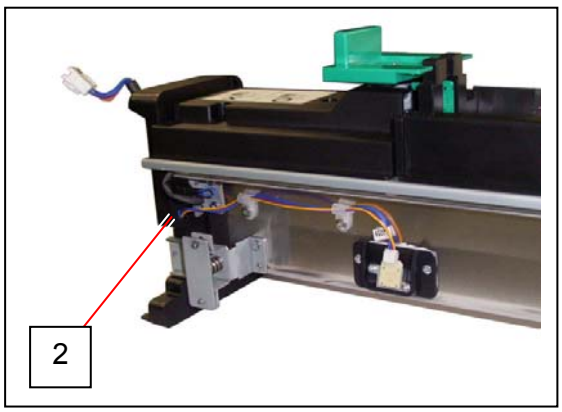
(2) Make sure that Separator (5) completely sinks in position by a 1/2 or more rotation of Developer Handle.
    If not in position, the plastic screwing sheets may be damaged at the next step.





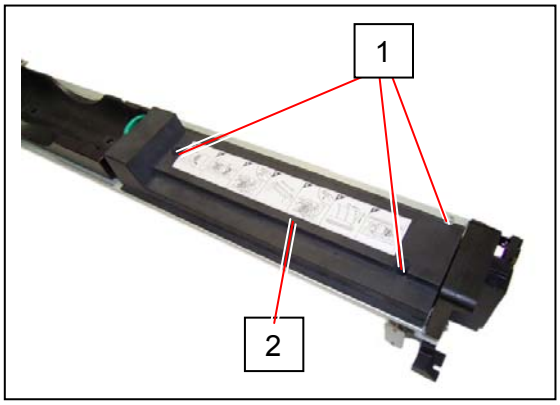
19. Replace the Hopper Assembly (4) and connect the connector (2).



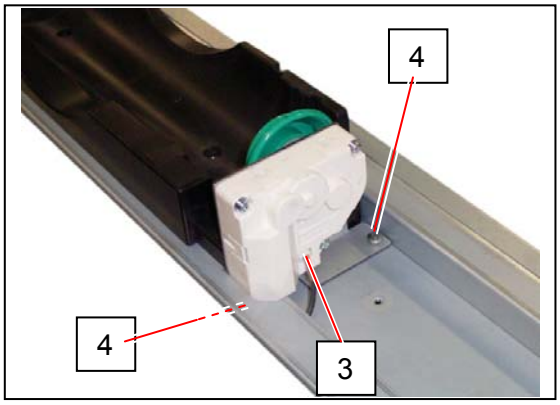


5. 2. 5 Replacement of DC Motor

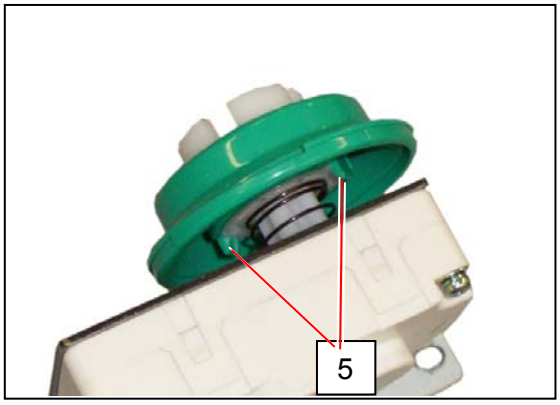
1. Remove 3 pieces of 4x6 screw (1) to remove the Cover 2 (2).

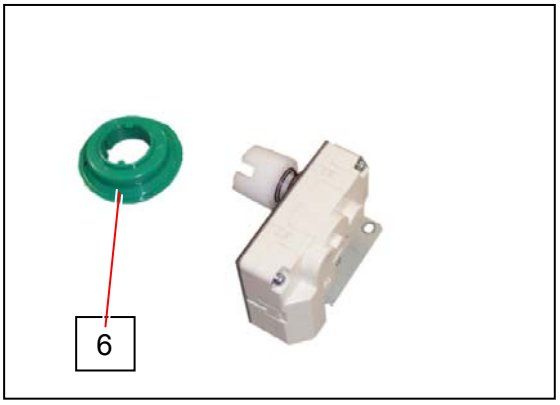


2. Disconnect the connector (3), remove 2 pieces of 4x6 screw (4), and then remove the motor assembly.

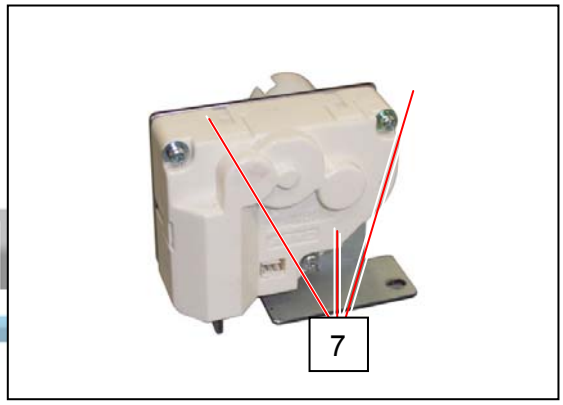


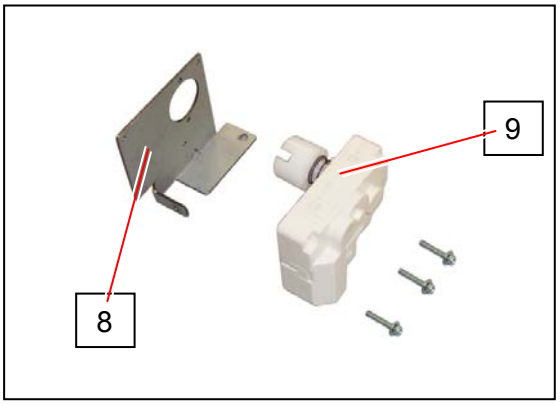
3. Pressing the stoppers (5) inside, remove the Joint R (6).





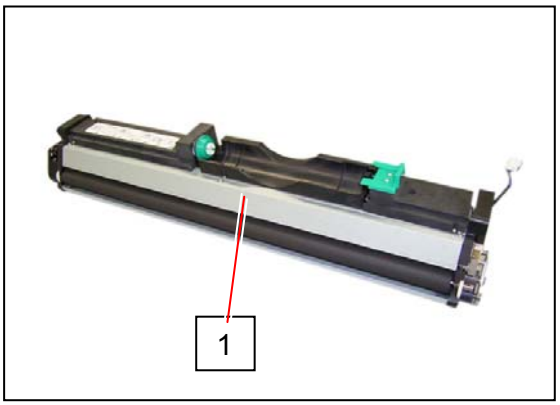
4. Remove 3 pieces of 3x20 screw (7) to remove the Bracket 19 (8).
   Replace the DC Motor (9) with the new one.



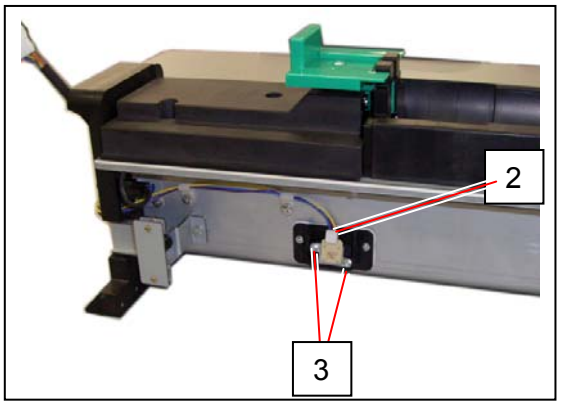


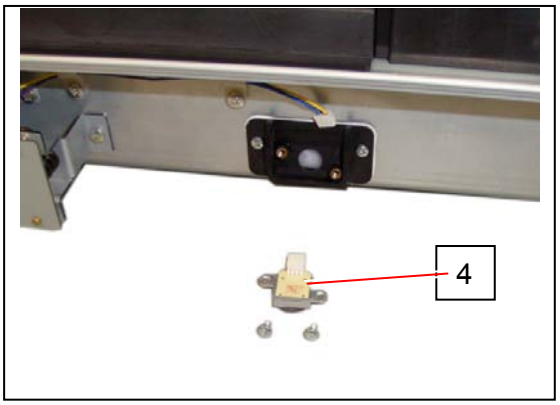
5. 2. 6 Replacement of Sensor (TLS1)

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



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



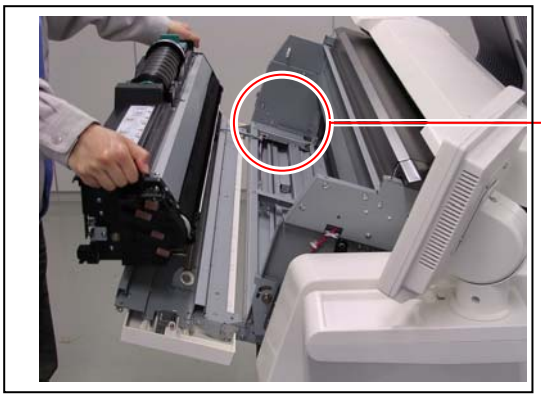


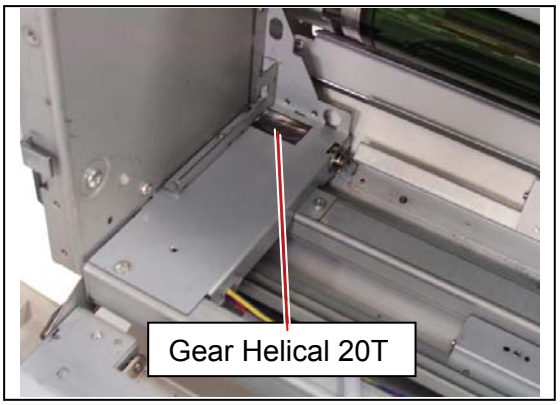
5. 2. 7 Adjustment of the space between gears (Necessary to adjust after replacing the Developer Unit)

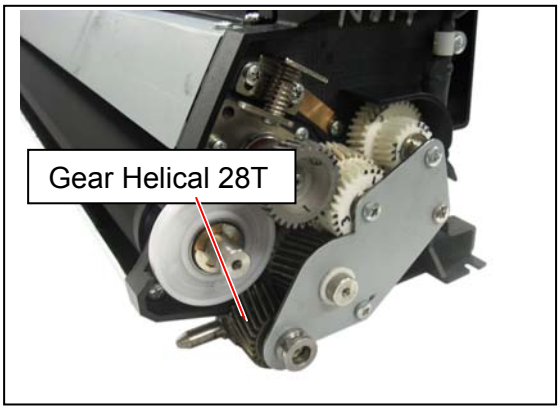
NOTE

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

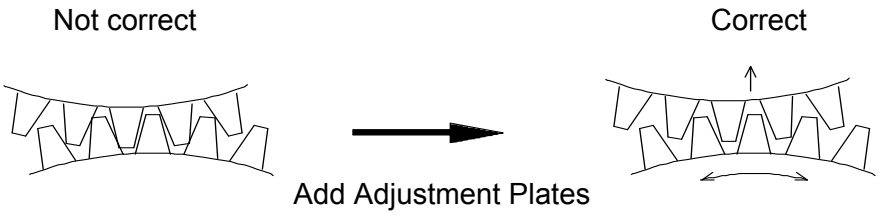
The Developer Unit is driven by the Gear Helical 20T on the machine and the Gear Helical 28T on the Developer Unit.
There must be a little mechanical play between these gears. (In another word there must be a little space between them.)





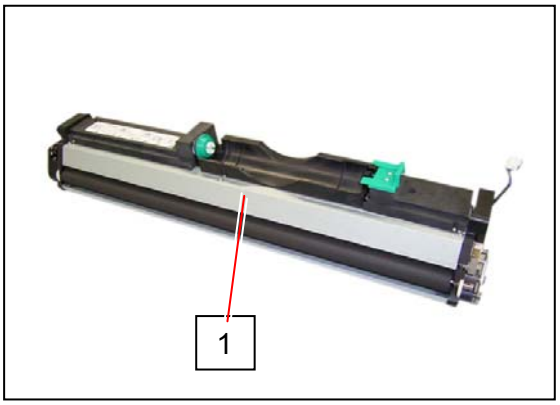


If there is no space between these gears, **the gear may be broken.**
In this case it is necessary to add Adjustment Plates to keep a space.

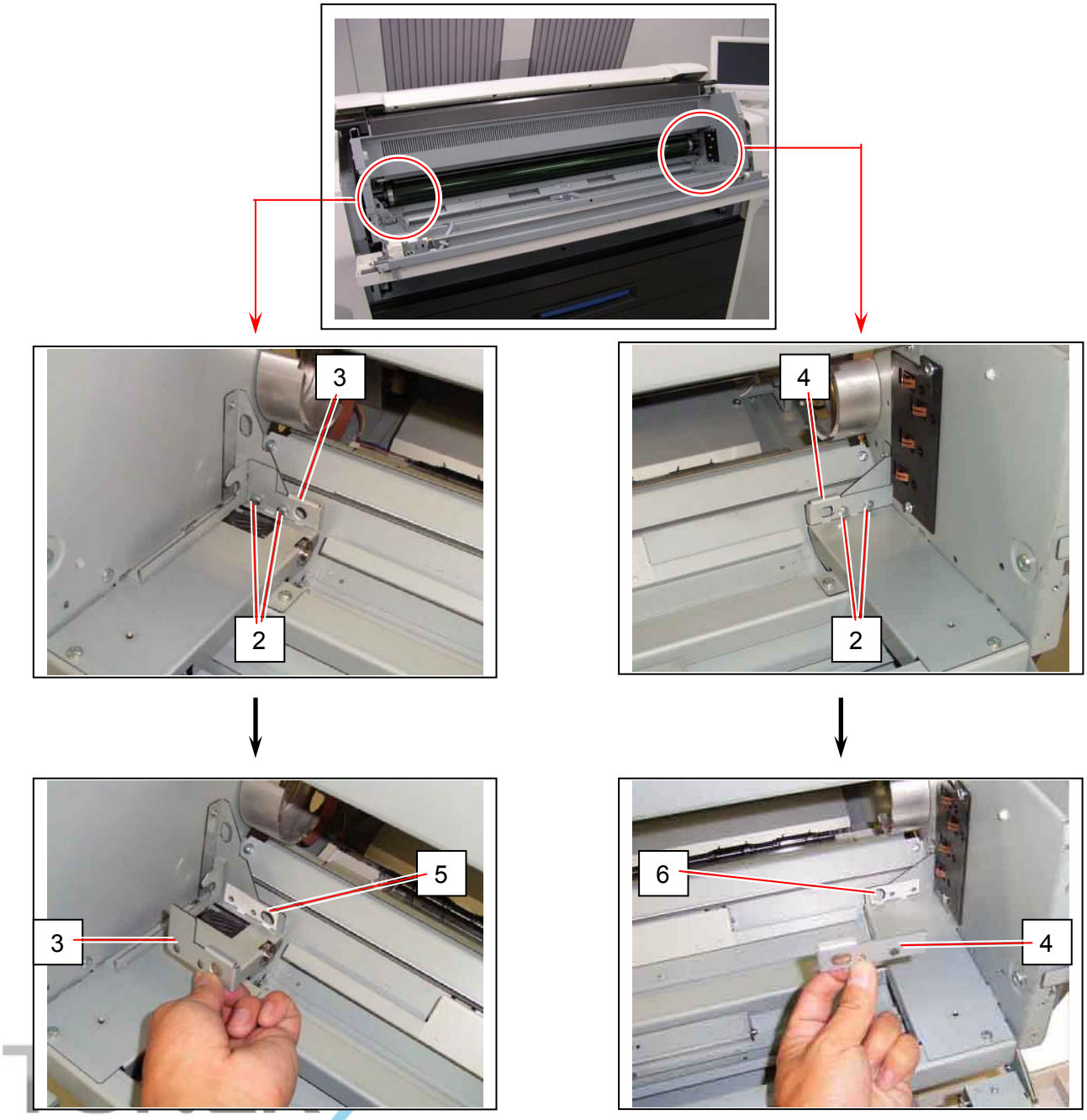


Refer to the next page how to add the Adjustment Plates.

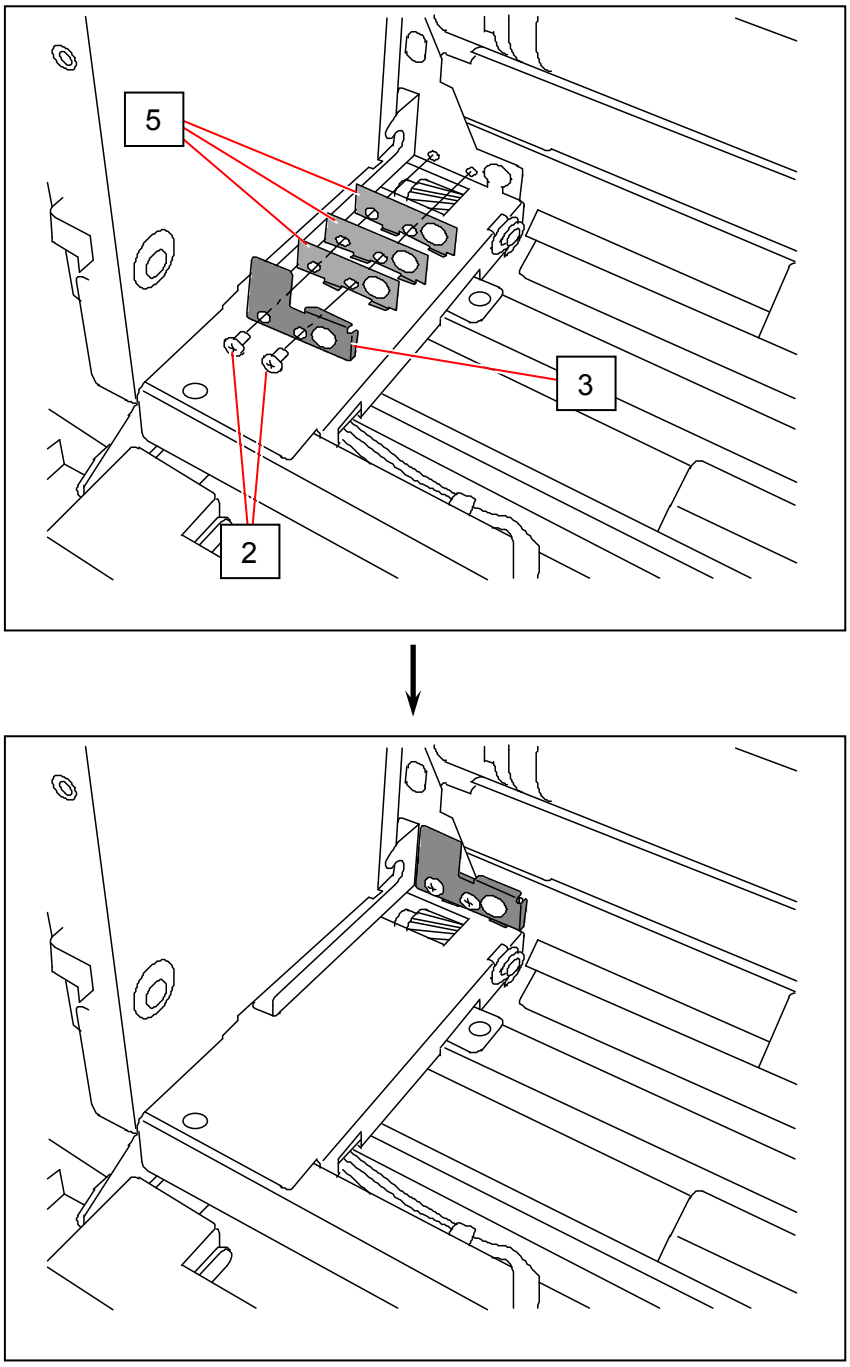
1. Remove the Developer Unit (1) from the machine making reference to [5. 2. 1 Removal of the Developer Unit] on the page 5-5.



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



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

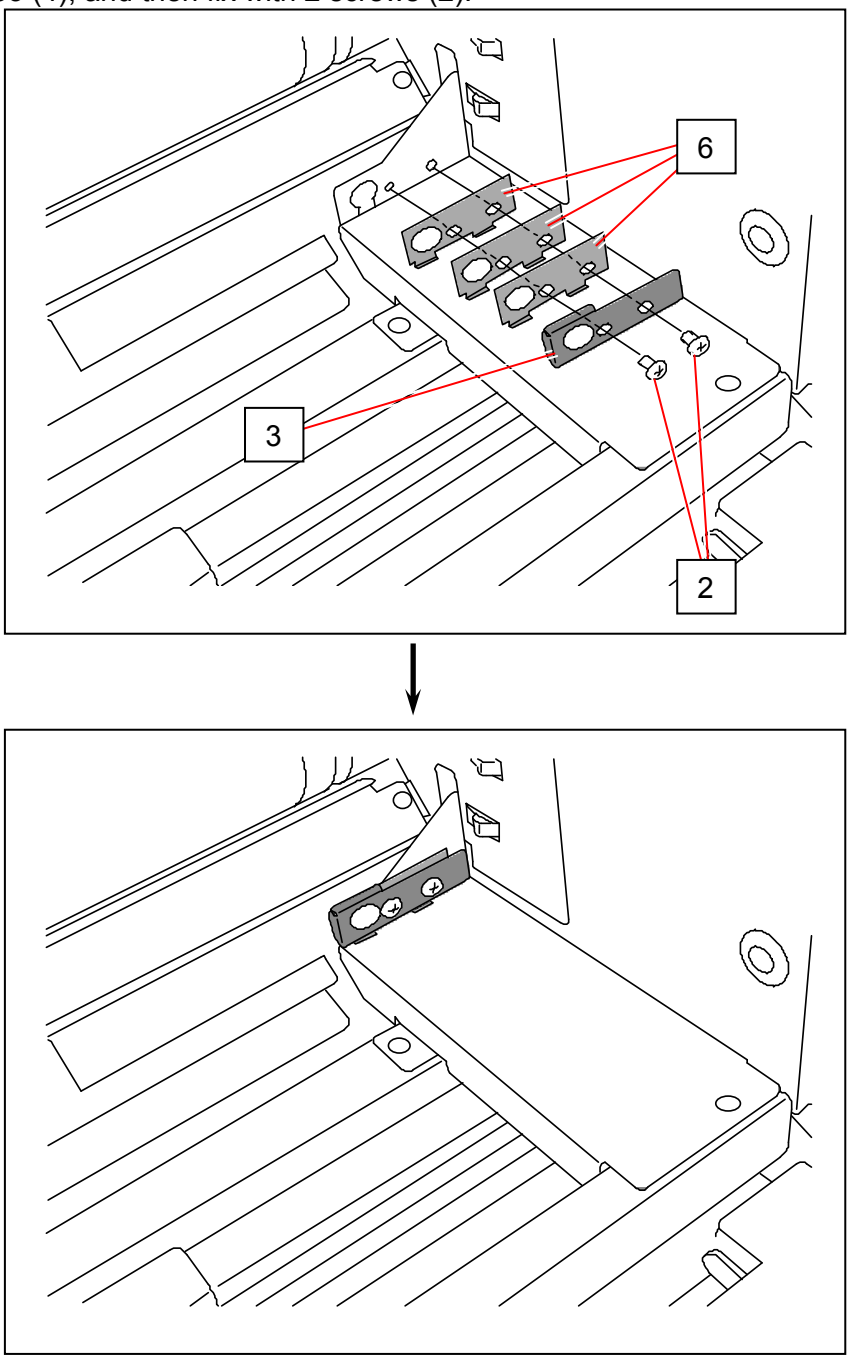


NOTE

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

Spacer	305H674460 (thickness is 0.05mm)
Spacer 5	305H680050 (0.1mm)
Spacer 3	305H680030 (0.2mm)

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

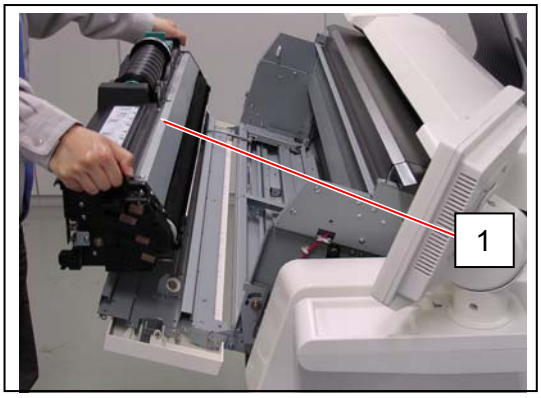


NOTE

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

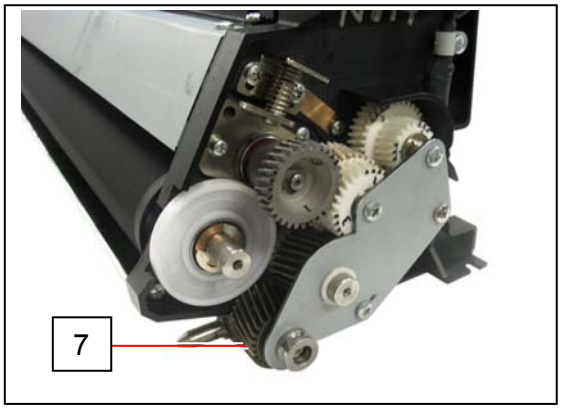
Spacer 2 ..... 305H674470 (thickness is 0.05mm)
Spacer 6 ..... 305H680060 (0.1mm)
Spacer 4 ..... 305H680040 (0.2mm)

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

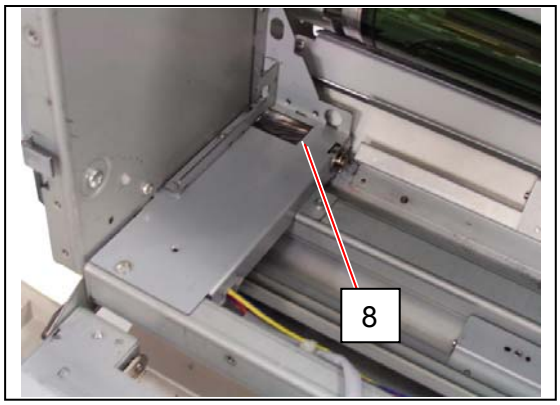


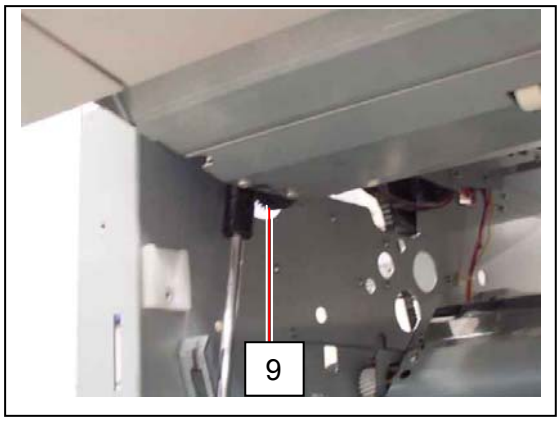
6. There is Gear Helical 28T (7) on Developer Unit side. There is Gear Helical 20T (8) on Engine Unit, and also there is Gear Helical 34T (9) on Engine Unit.

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



(Top of Engine Unit)



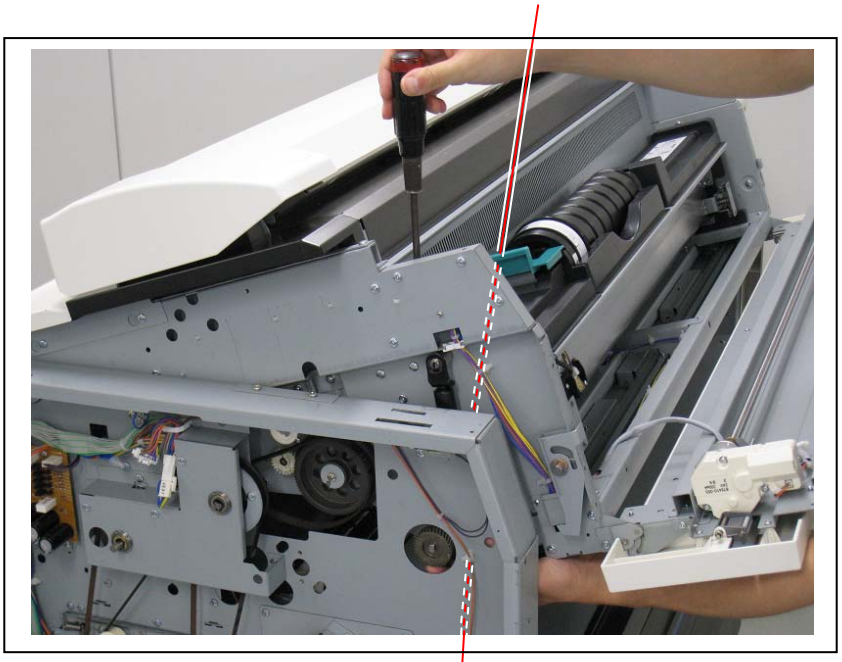


(Bottom of Engine Unit)

(continued on the next page)

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

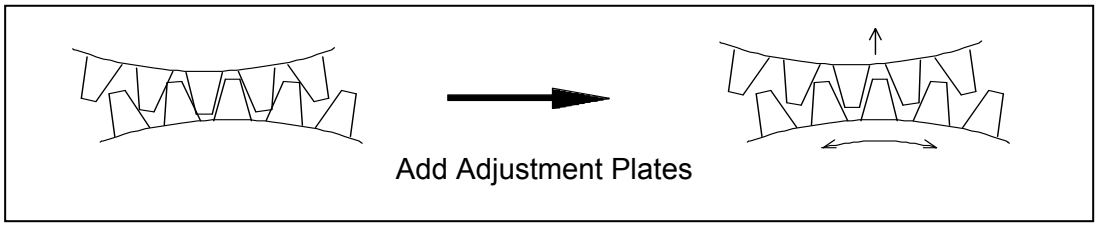
Hold the Gear Helical 28T with one hand.



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

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

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



There is not enough space between gears. (Gears are not movable)

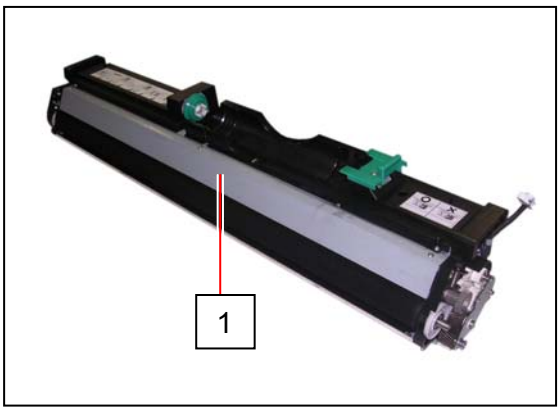
The space between gears becomes wider. (Gears become movable)

5. 2. 8 Readjustment of the Pressure of Regulation Roller

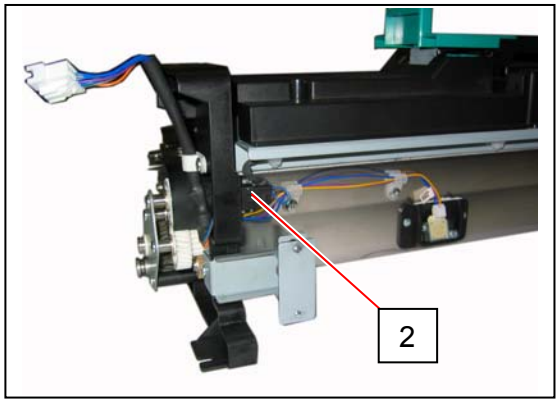
If the pressure of Blade Roller is weak, the toner layer on the Developer Unit will be much thicker than required when you rotate the Developer Roller.
Pressurize the Blade Roller in the correct way as shown below in this case.
(You will not be able to pressurize it successfully by the usual way of pressurization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

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

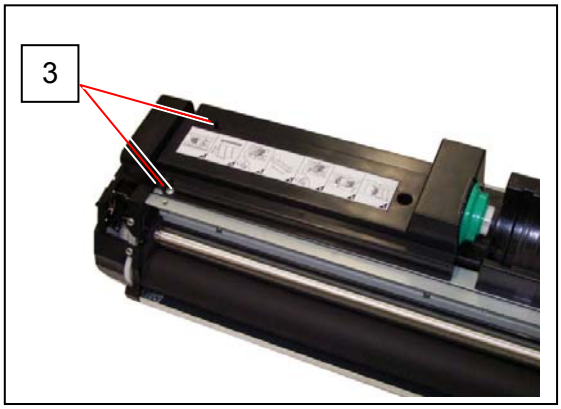
1. Remove the Developer Unit (1) from the machine making reference to [5. 2. 1 Removal of the Developer Unit] on the page 5-5.

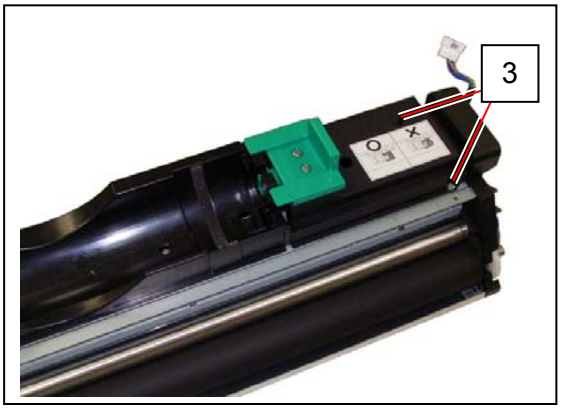


2. Disconnect the connector (2).

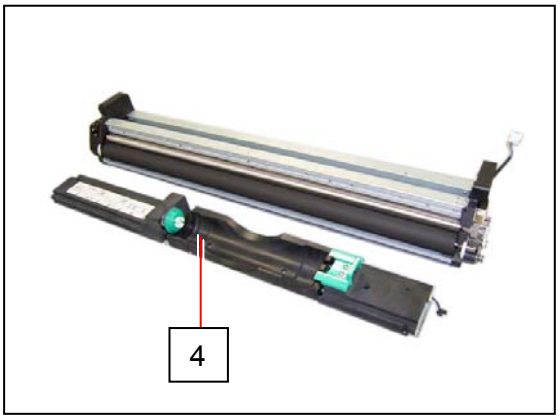


3. Remove 4 screws (3).

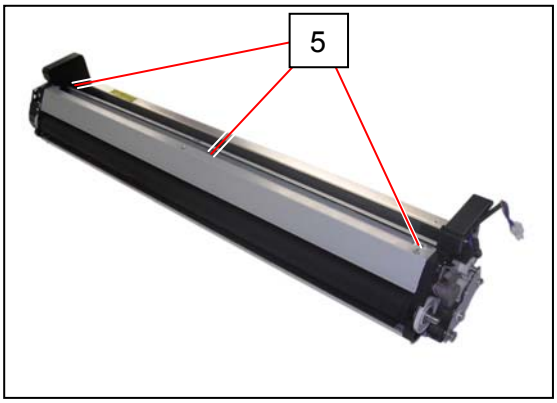


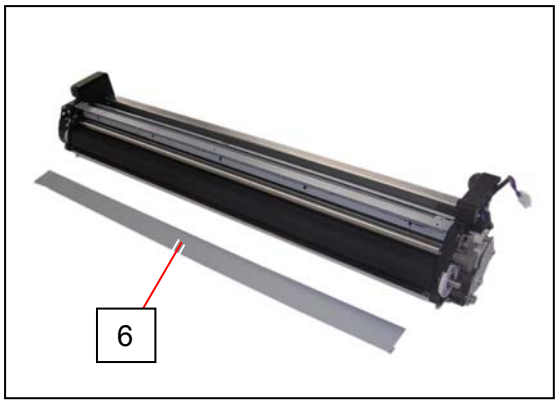


4. Remove the Hopper Assembly (4).

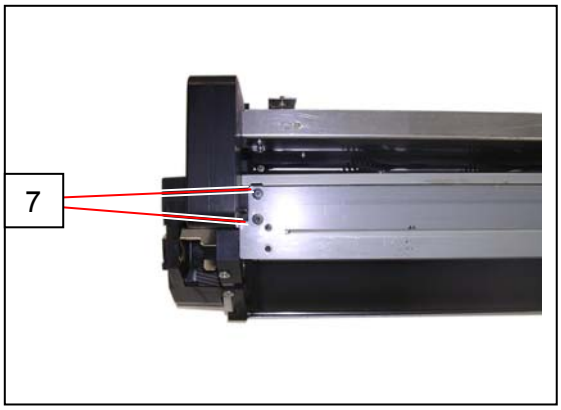


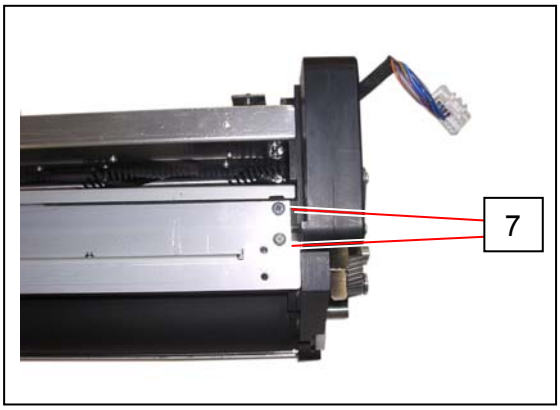
5. Remove 3 pieces of M4x6 screws (5) to remove Cover (6).

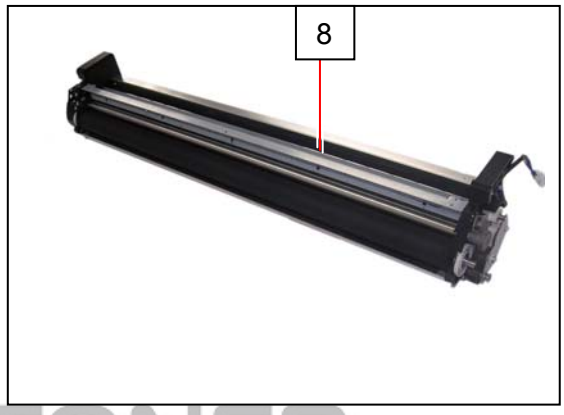


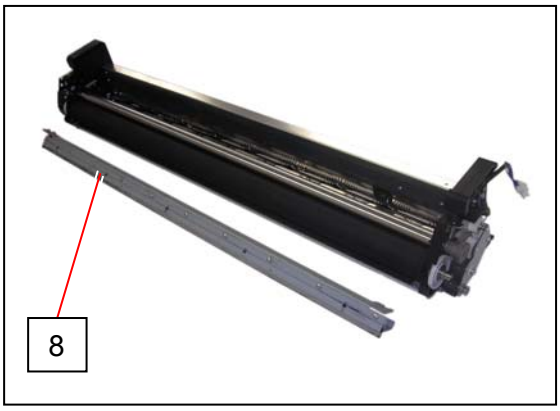


6. Remove 4 pieces of 4x6 screw (7) to remove Scraper Assembly (8).

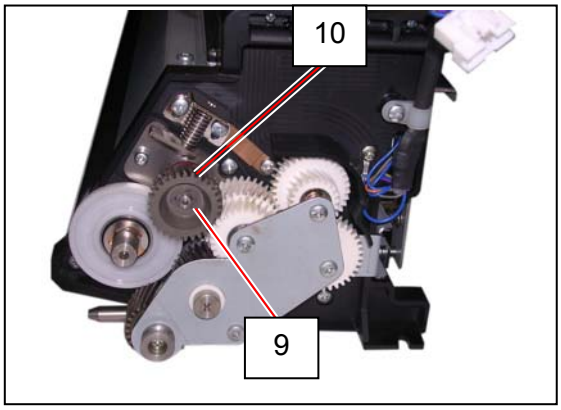


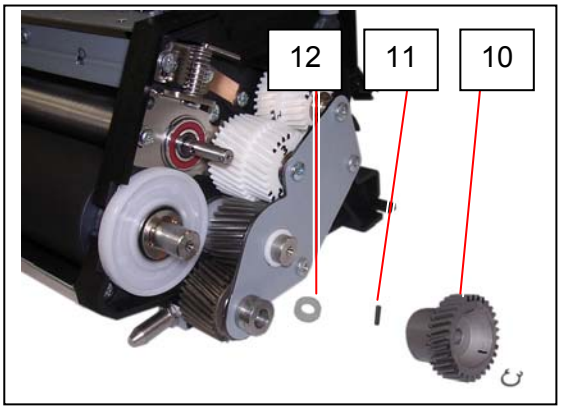






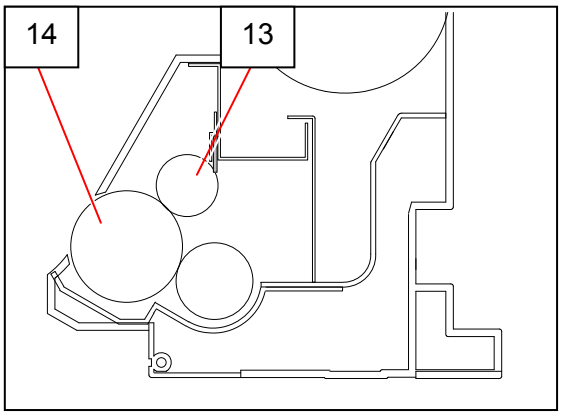
7. On the driving side, remove Retaining Ring-C (9: C6) to remove Gear Helical 30T (10), Parallel Pin (11: 2.5x10) and Collar 3 (12) from Blade Roller shaft.



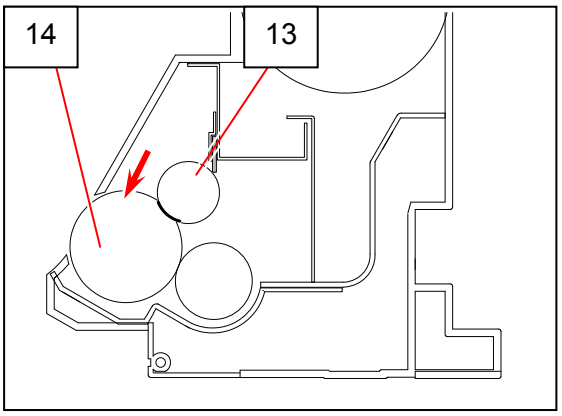


NOTE

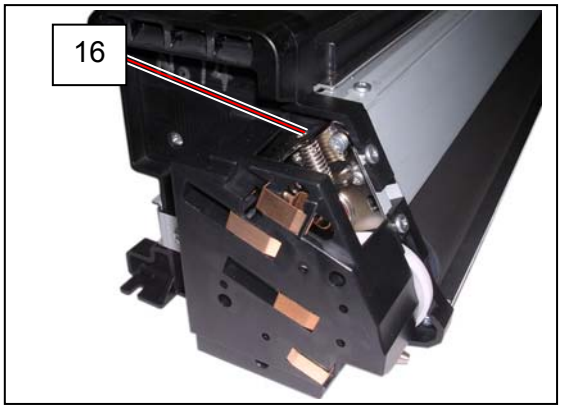
Blade Roller (13) is pressed onto / released from Developer Roller (14) by Bracket 4 (15) on the driving side, by Bracket 5 (16) on the electrode plate side. When reassembling, re-pressurization should be required prior to reinstallation of Gear Helical 30T (10).

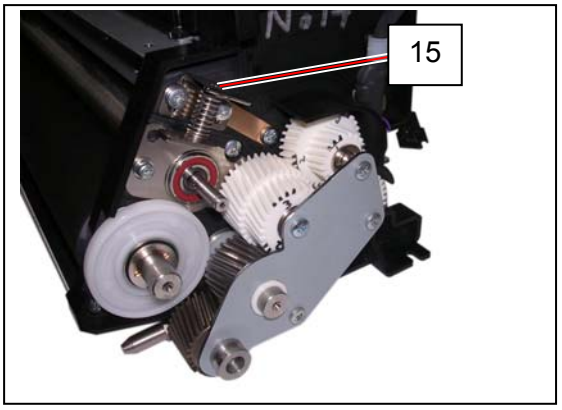


not pressurized

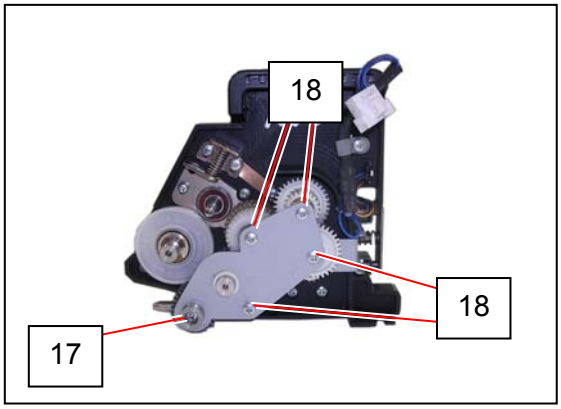


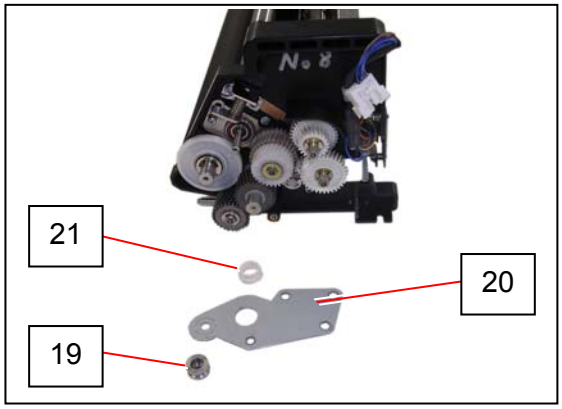
pressurized

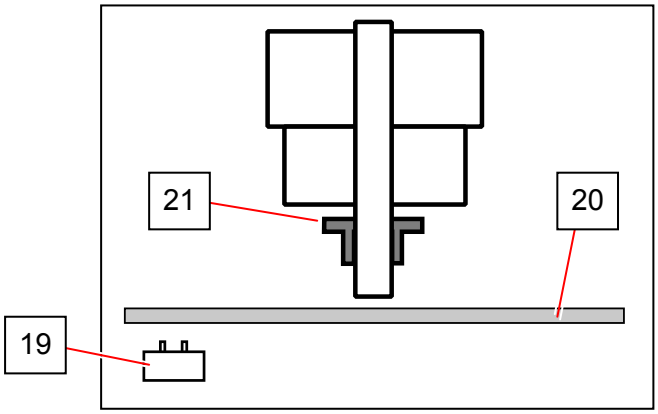




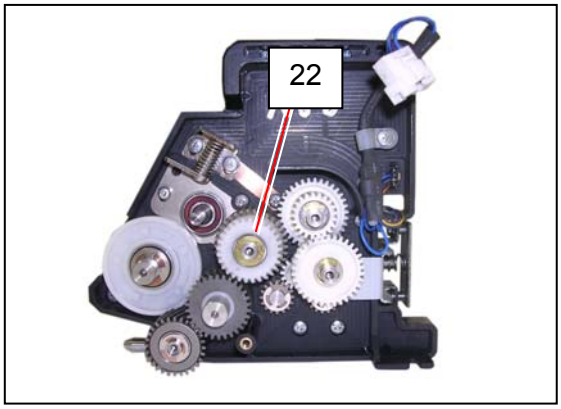
8. Remove 5 screws (17: M4x8) (18: M4x6) to remove Pin 4 (19), Plate 9 (20), Collar (21).

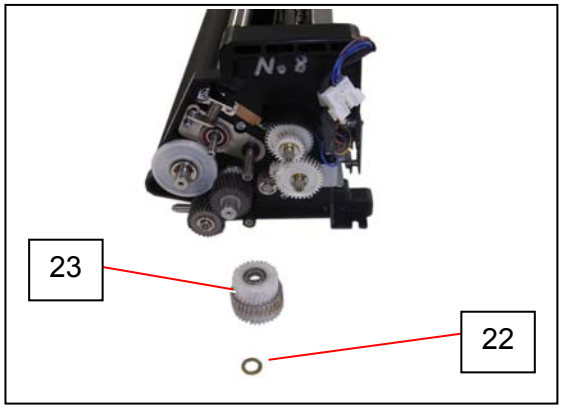




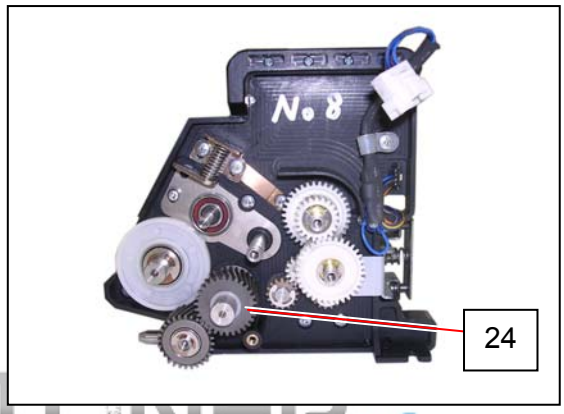


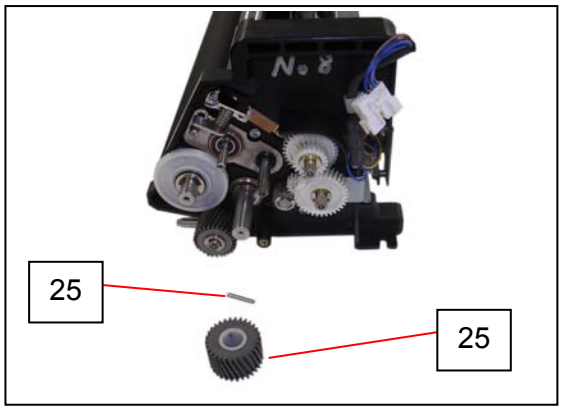
9. Remove Washer (22: 8.1x14x0.5t) and Gear 29T-34T Assy (23)



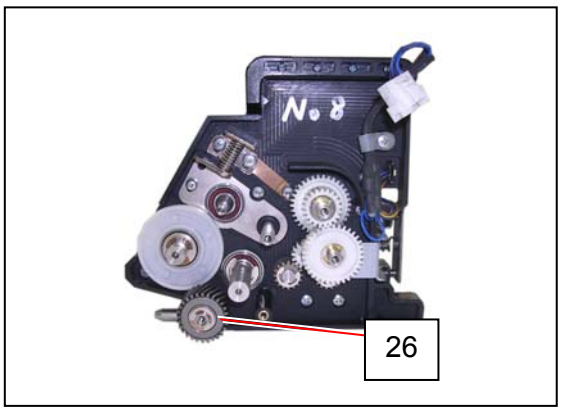


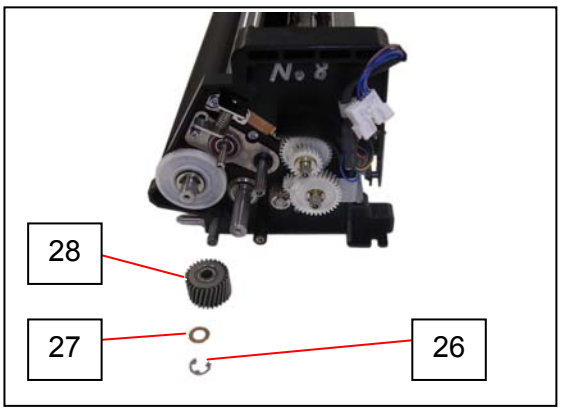
10. Remove Helical 30T (24) and Parallel Pin (25: 3x20) from Toner Supply Roller shaft.
If you cannot remove Parallel Pin (25) at this time, remove it after the later step 12.



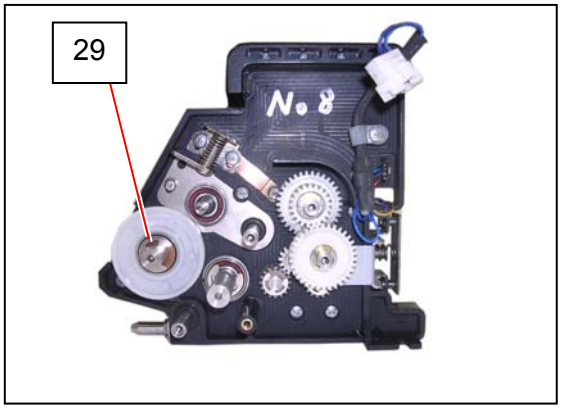


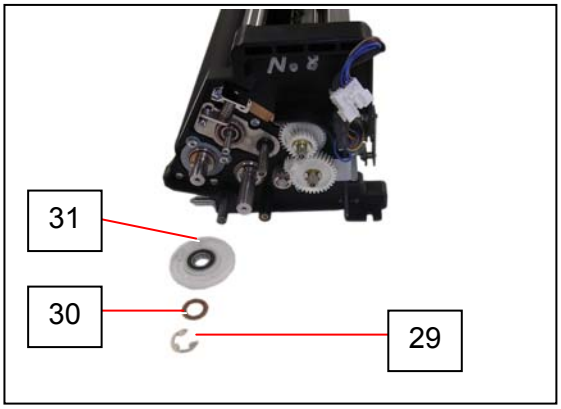
11. Remove Retaining Ring-E (26: E7) to remove Washer (27: 8.1x12x0.2t) and Gear Helical 28T Assy (28).



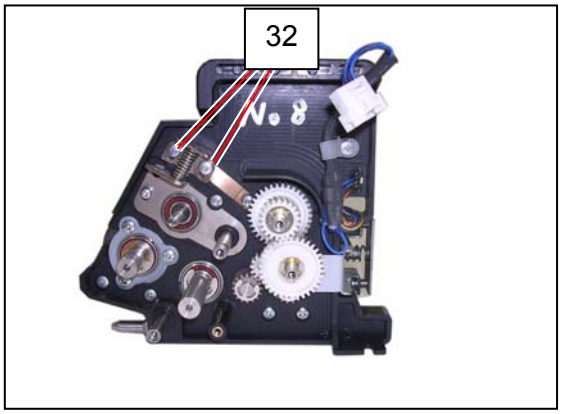


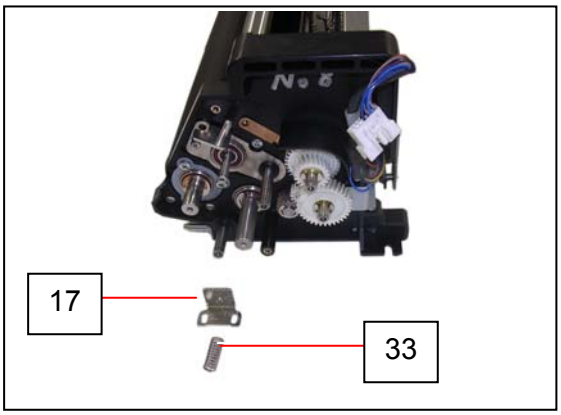
12. Remove Retaining Ring-E (29: E10) to remove Washer (30: 12.2x20x0.5t) and Counter Roller (31) from Developer Roller shaft.



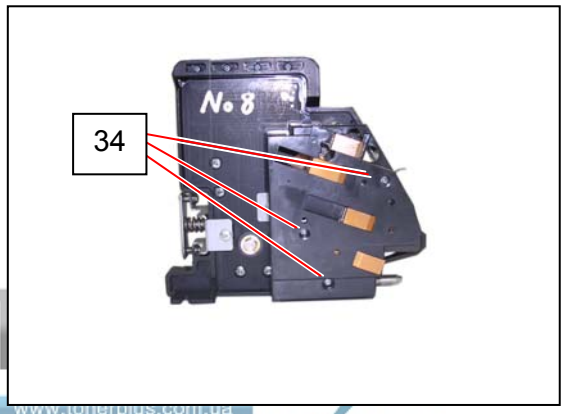


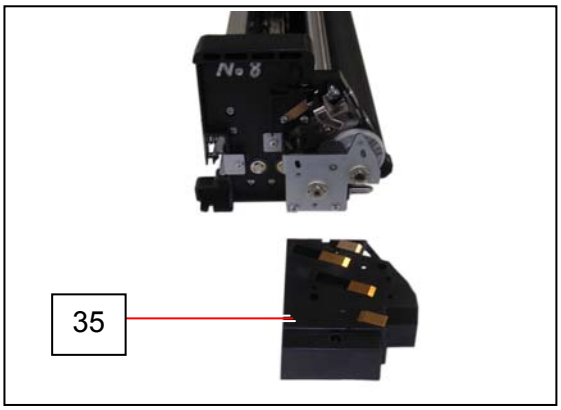
13. Remove 2 screws (32: M4x8) to remove Bracket 4 (15) and Spring (33).



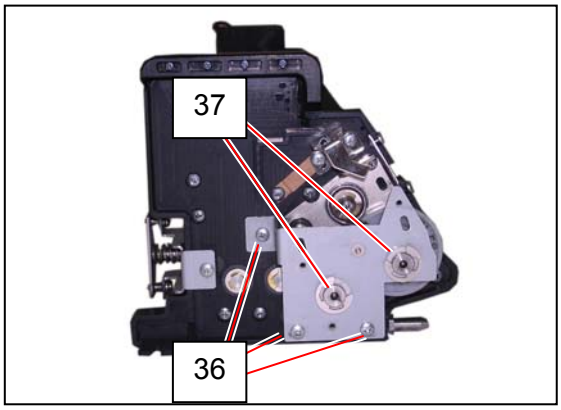


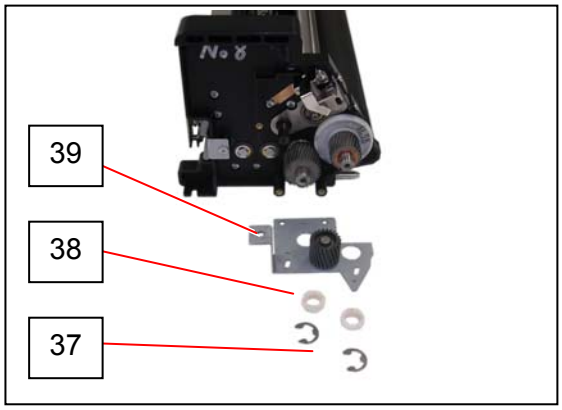
14. <u>On the electrode plate side</u>, remove 3 screws (34) to remove Holder 2 Assy (35).

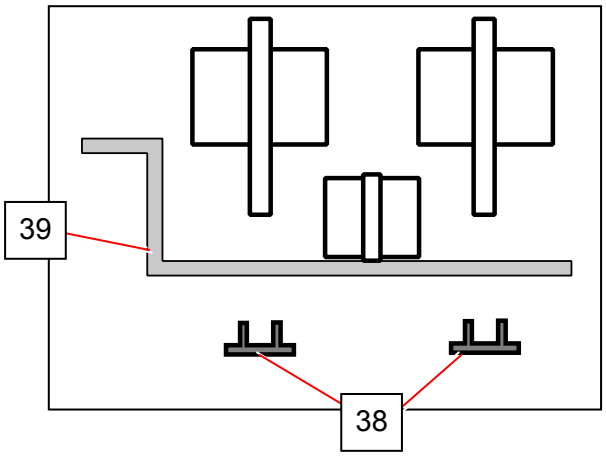




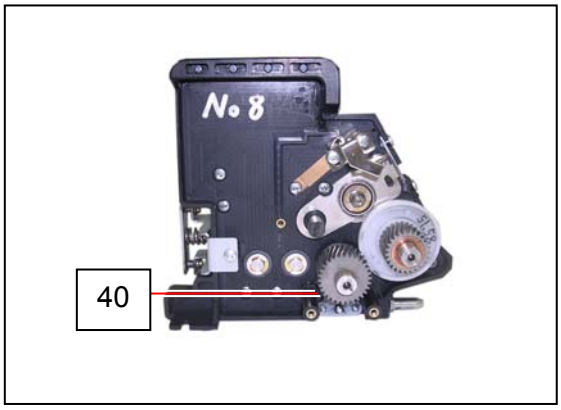
15. Remove 3 screws (36: M4x6) and 2 Retaining Ring-E (37: E10) to remove Collar (38) and Bracket 10 Assy (39).

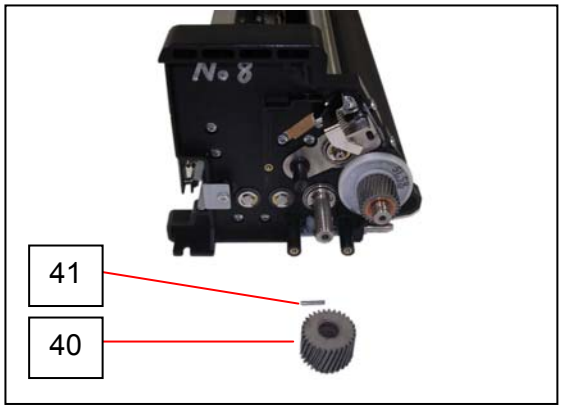




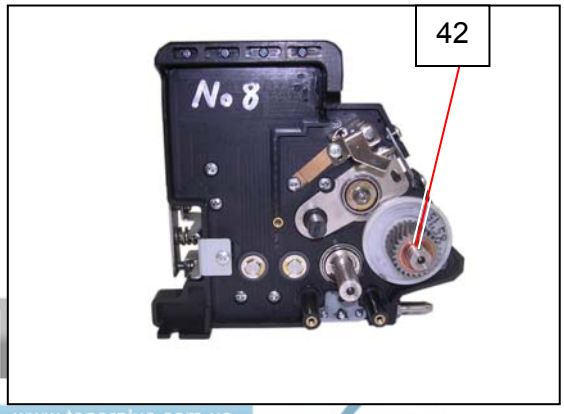


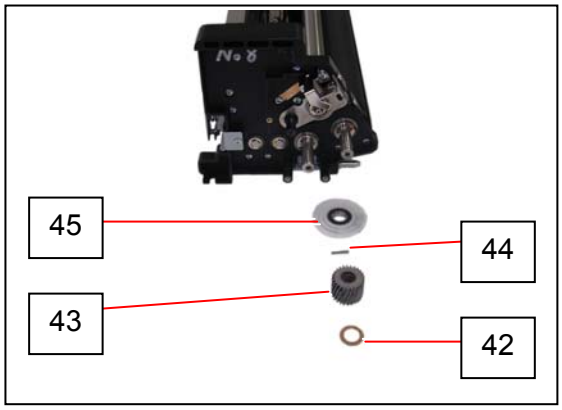
16. Remove Gear Helical 30T (40) and Parallel Pin (41: 3x16) from Toner Supply Roller shaft.



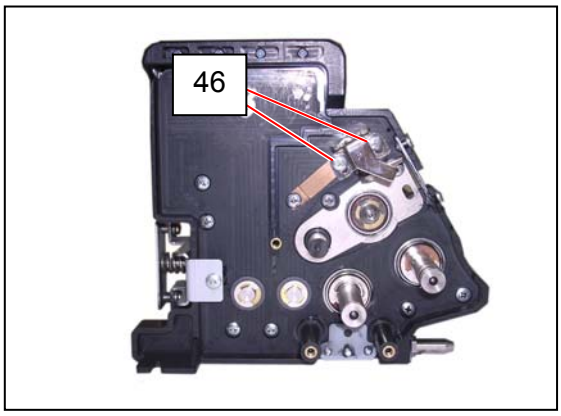


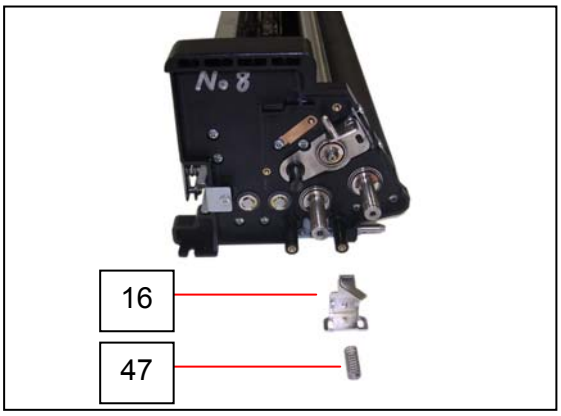
17. Remove Washer (42: 12.1x20x0.2t), Gear Helical 25T (43), Parallel Pin (44: 3x16), Counter Roller (45) from Developer Roller shaft.



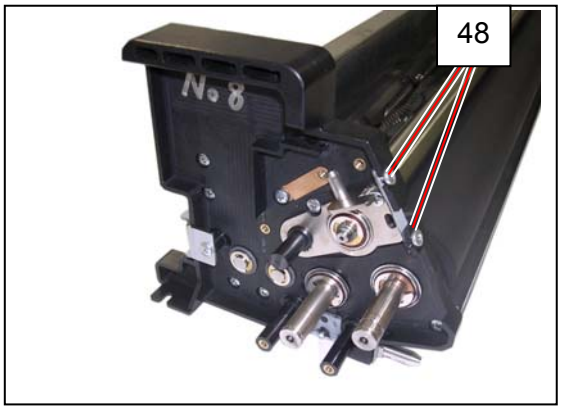


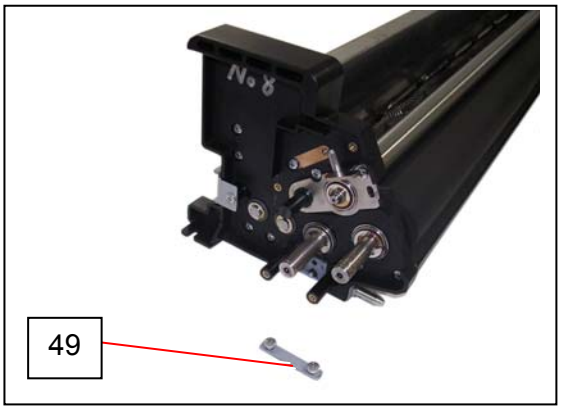
18. Remove 2 screws (46: M4x6) to remove Bracket 5 (16) and Spring (47).



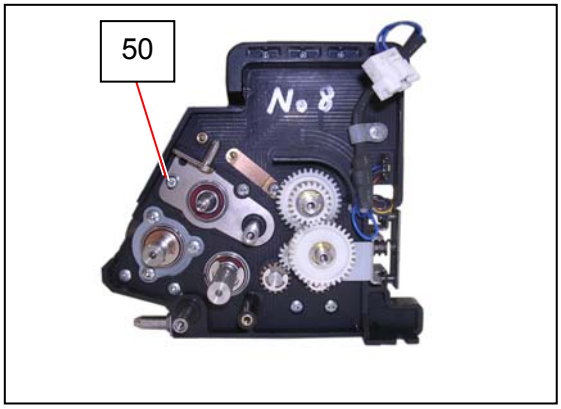


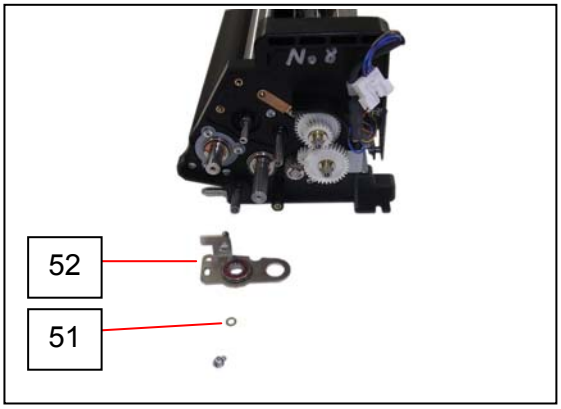
19. Loosen 2 screws (48) to remove Bracket 19 (49).



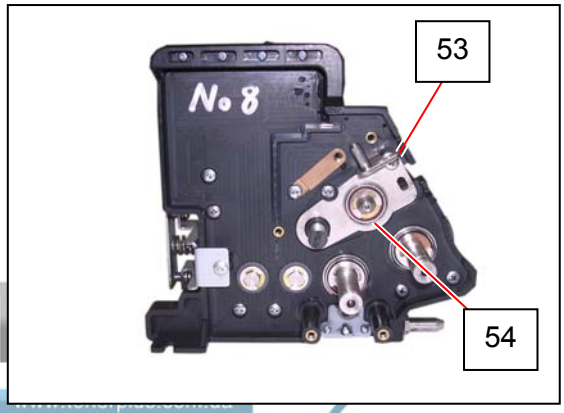


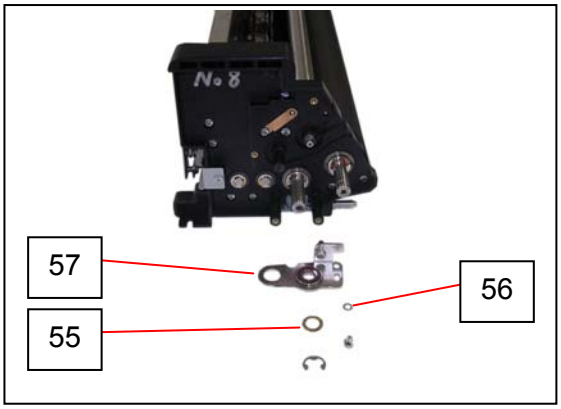
20. <u>On the driving side</u>, remove 1 pan head screw (50: M4x8 W/ SW FW) to remove 1 flat washer (51: M4) and Bracket 6 Assy (52).



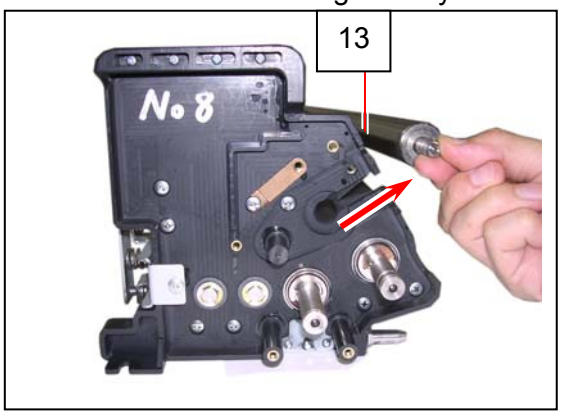


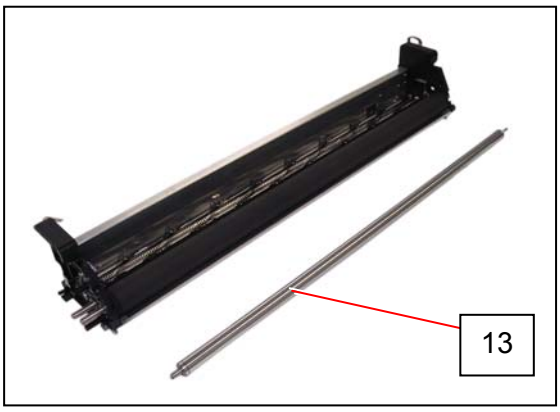
21. <u>On the electrode plate side</u>, remove 1 pan head screw (53: M4x8 W/ SW FW) and Retaining Ring-E (54: E8) to remove Washer (55: 10.1x16x0.5t), Flat Washer (56: M4), Bracket 7 Assy (59).





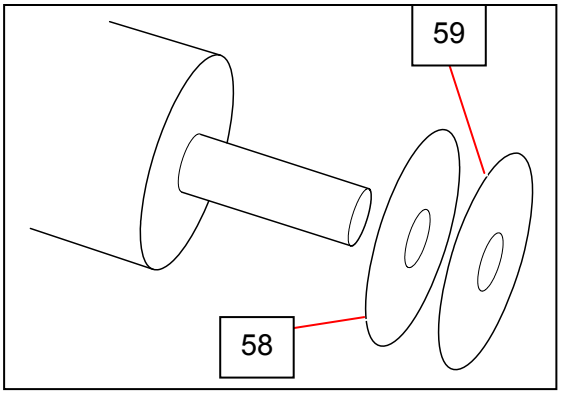
22. Remove Blade Roller (13) from Developer Unit.
Clean Blade Roller if it gets dirty.



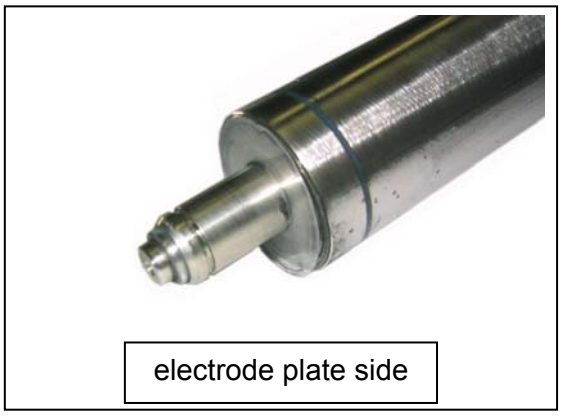


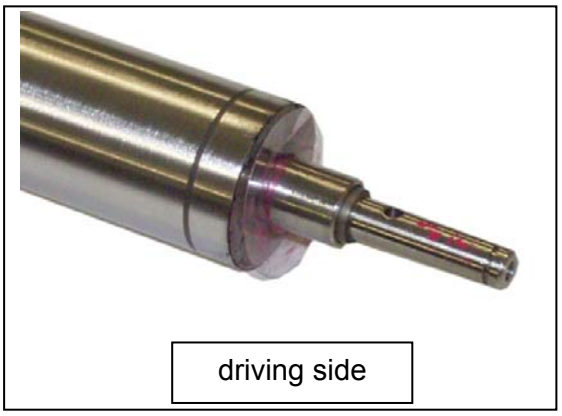
NOTE

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

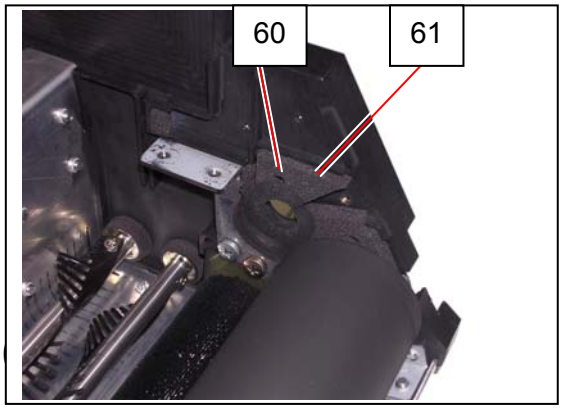


(2) Note the installation direction. The longer shaft should be placed to the driving side.

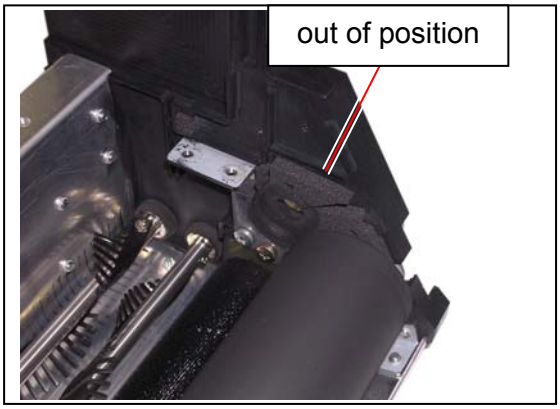




(3) Seal 1 (60) on each side should be seated in position along the boss (61).

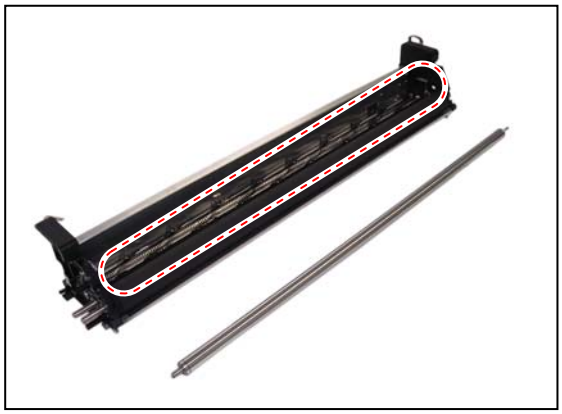


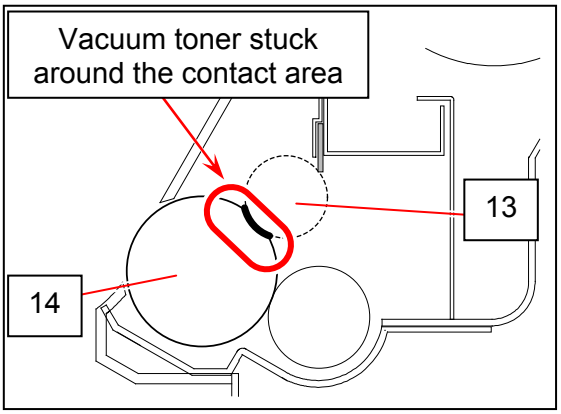
Correct



Wrong

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





NOTE

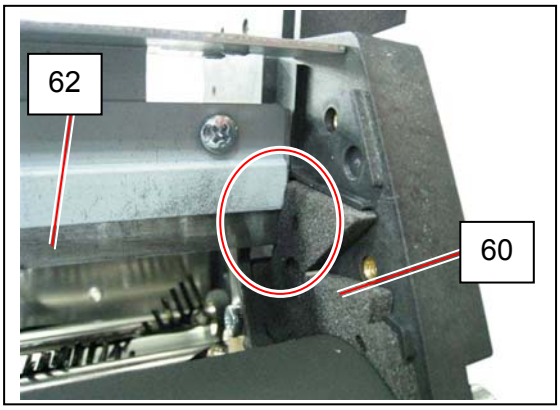
If some toner remains on the surface of Roller Developer, the toner will cushion the pressure by Blade Roller. This will prevent a proper pressurization.

24. Reinstall Scraper Assembly (8).

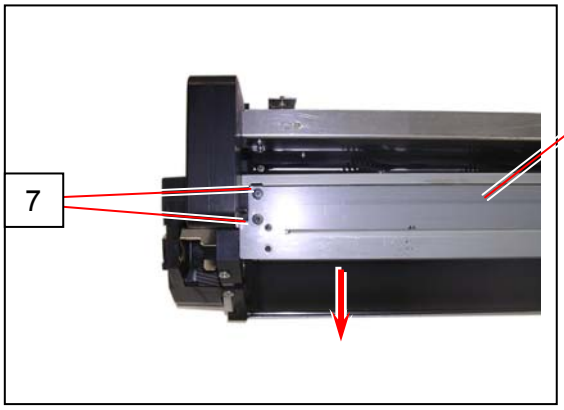
NOTE

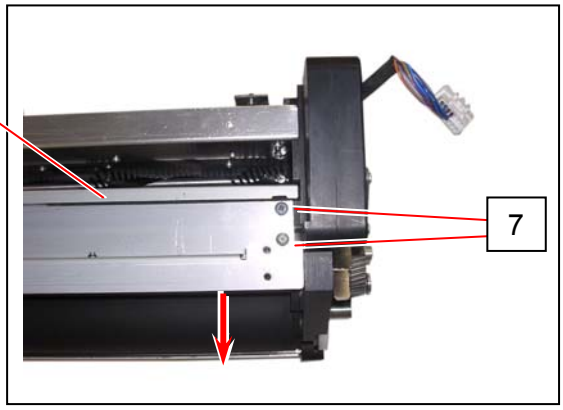
(1) For Scraper Assembly and Blade Roller, please reinstall Scraper Assembly first and then locate Blade Roller in position later. This will avoid making Scraper's edge waving.

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



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

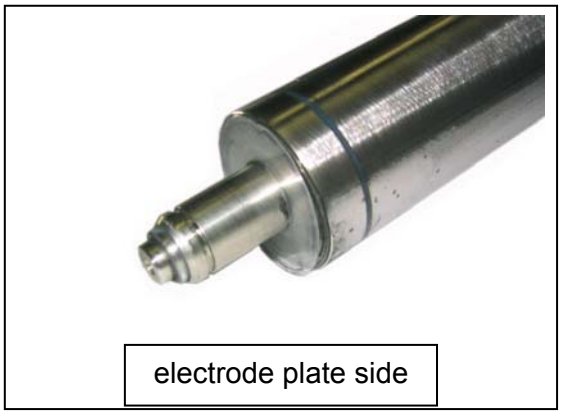


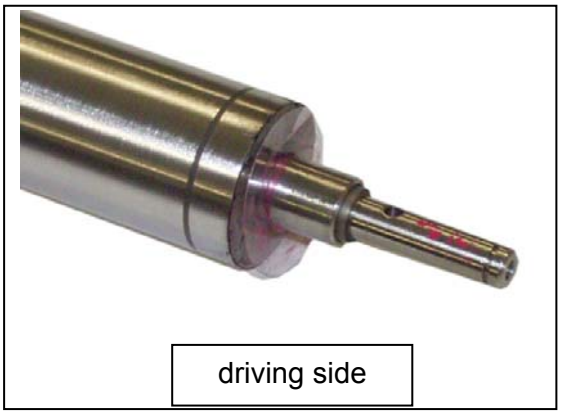


25. Reinstall Blade Roller (13).

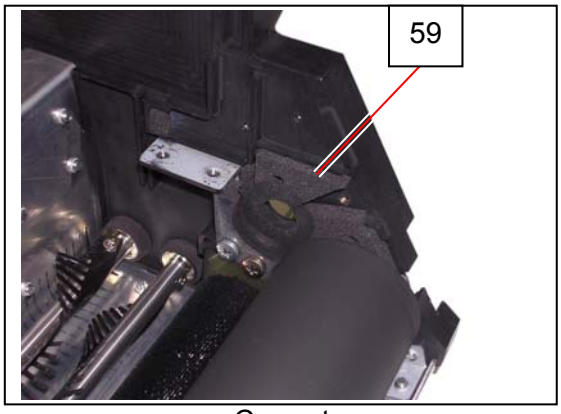
NOTE

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

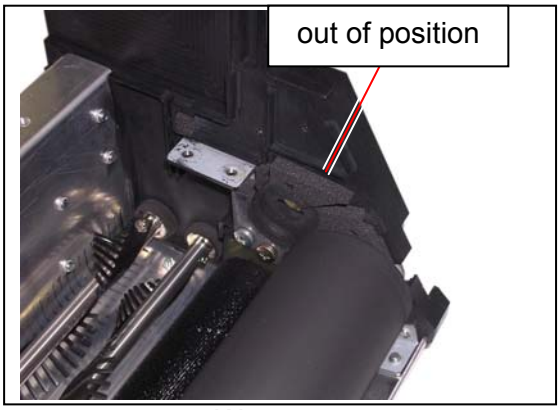




(2) Seal 1 (59) on each side should be seated in position along the bosses.

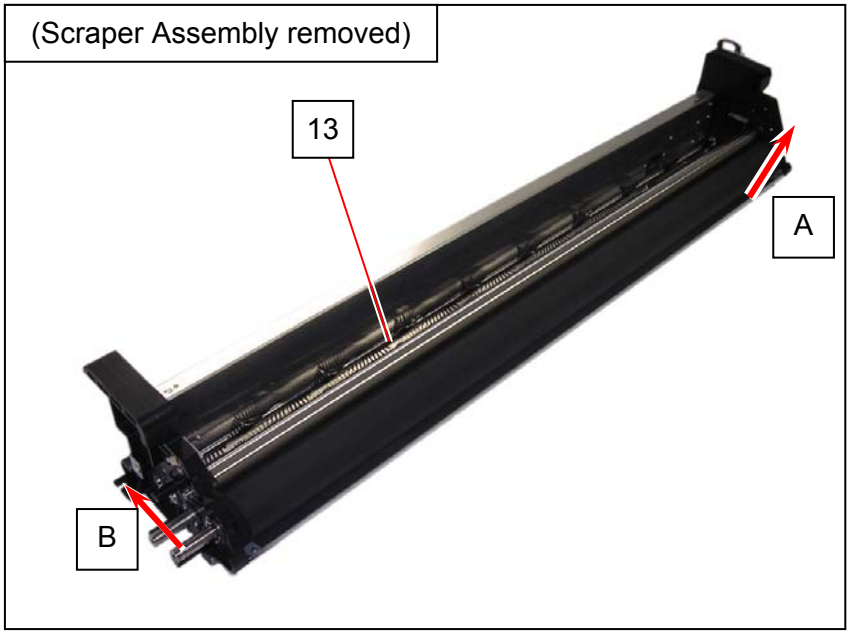


Correct



Wrong

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



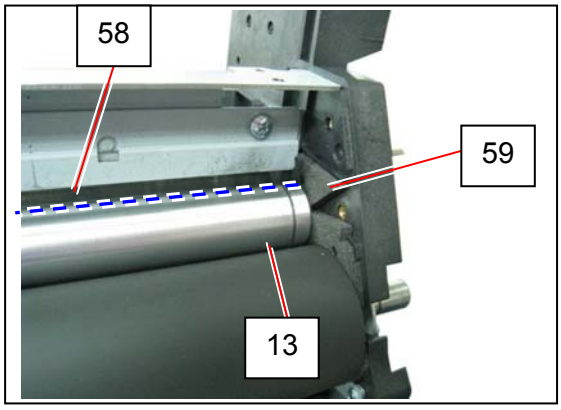
(4) During installing toward (A) then (B), be careful not to damage Sheet (78) and Sheet 2 (79) on Blade Roller shaft.

(continued on the next page)

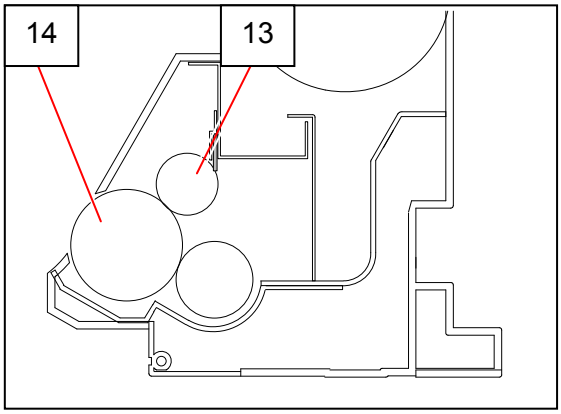
NOTE

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

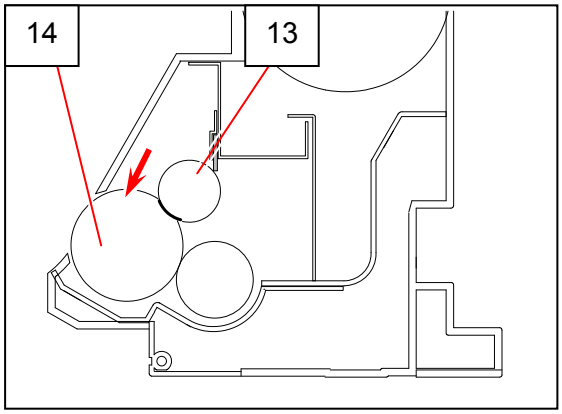
(6) After locating, check that Scraper (58) is not wavy.



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



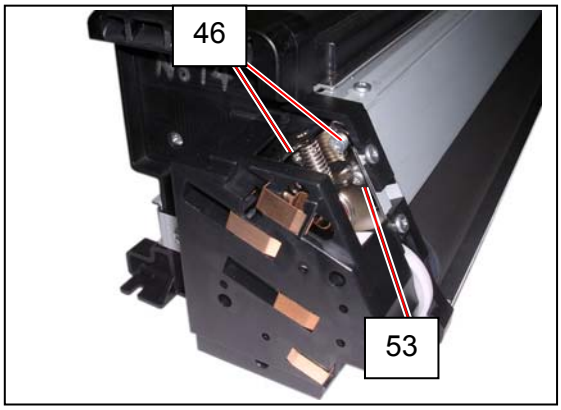
not pressurized

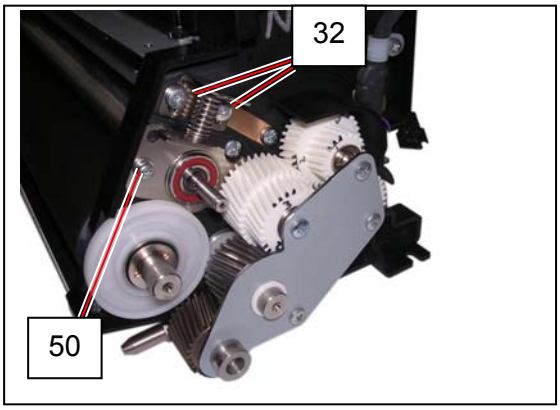


pressurized

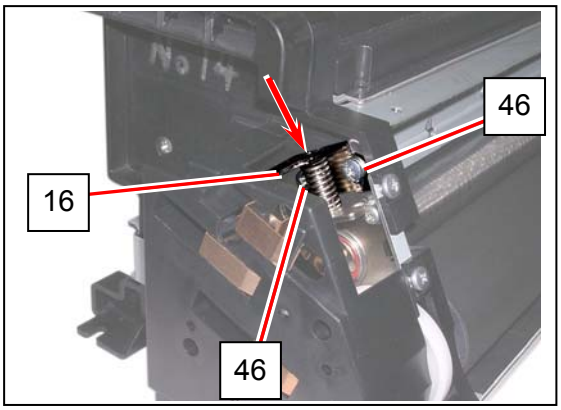
26. Replace all the components except Gear Helical 30T (10) and Hopper Assy (4) in position.

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

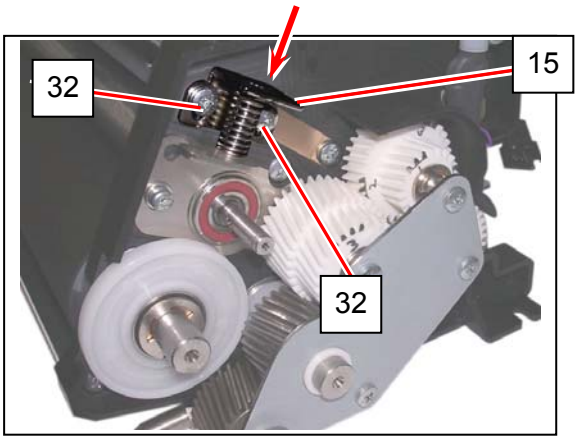




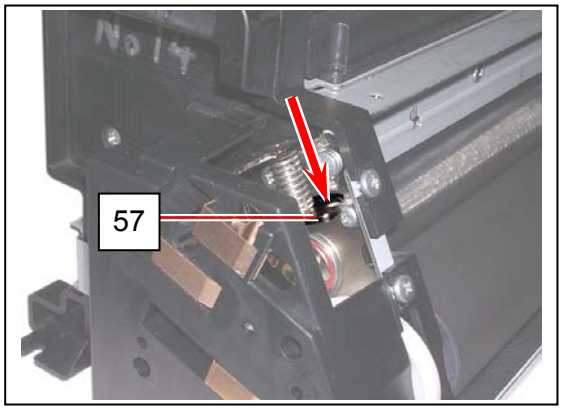
28. <u>On the electrode plate side</u>, fully press down the top of Bracket 5 (16). With pressing, tighten 2 screws (46) to secure Bracket 5 (16).

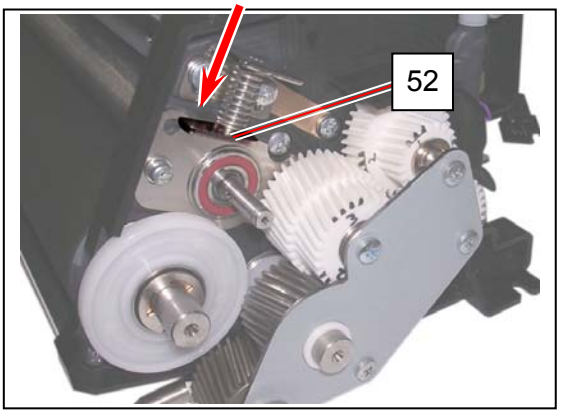


29. <u>On the driving side</u>, fully press down the top of Bracket 4 (15). With pressing, tighten 2 screws (32) to secure Bracket 4 (15).



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

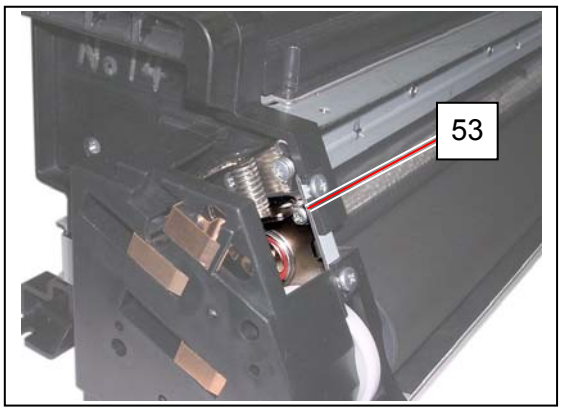


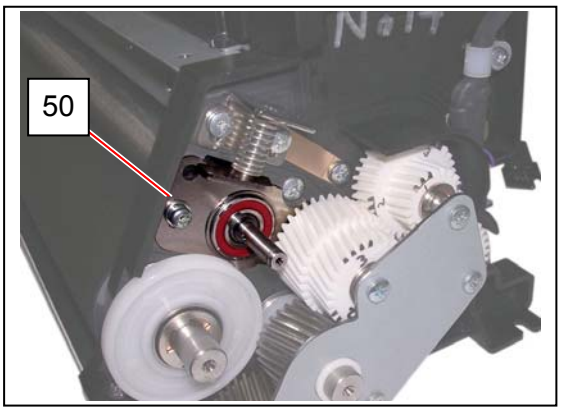


NOTE

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

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

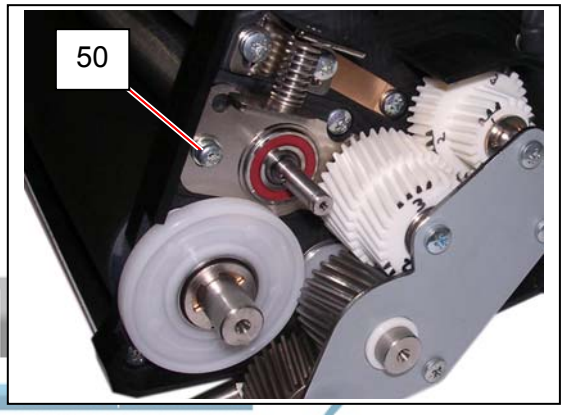


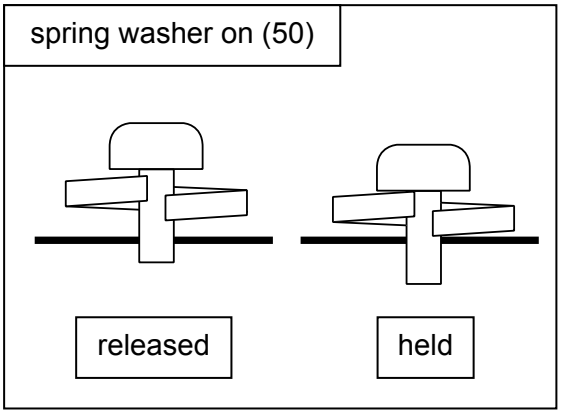


31. Turn the screw (50) in just enough revolution so that its spring washer is held in the gap.

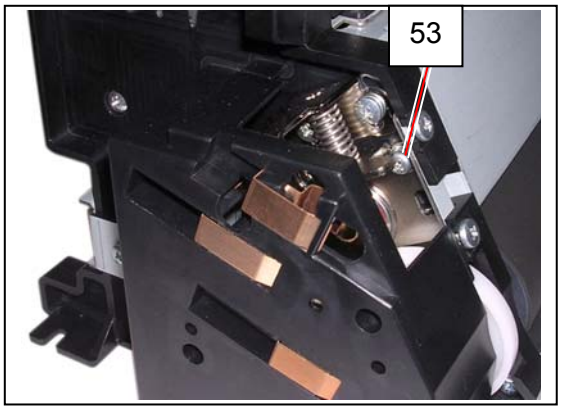
NOTE

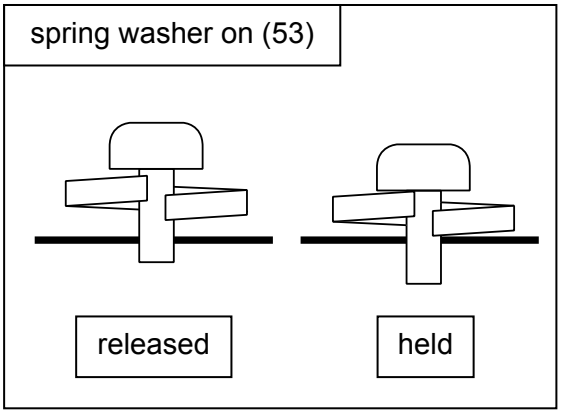
Do not tighten the screw (50) (53) firmly at this point of time. Otherwise proper and even pressurization of Blade Roller between left/right may fail, and this will make the toner layer on Roller Developer get thicker than required.



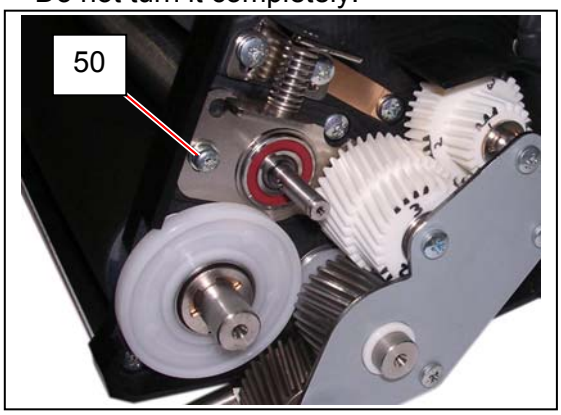


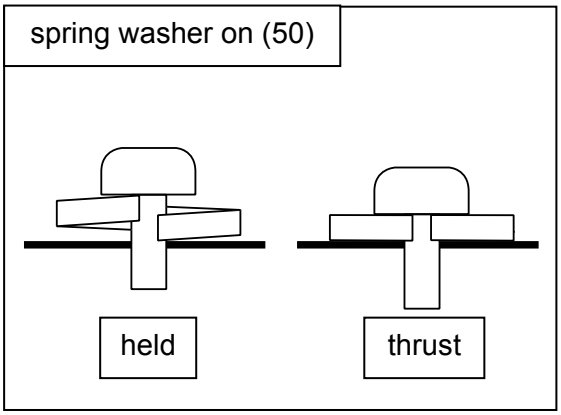
32. Turn the screw (53) in just enough revolution so that its spring washer is held in the gap.



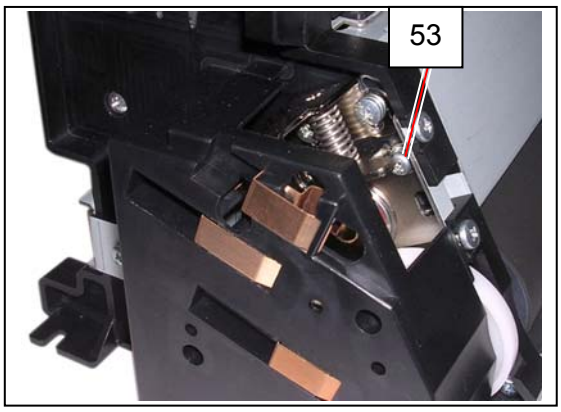


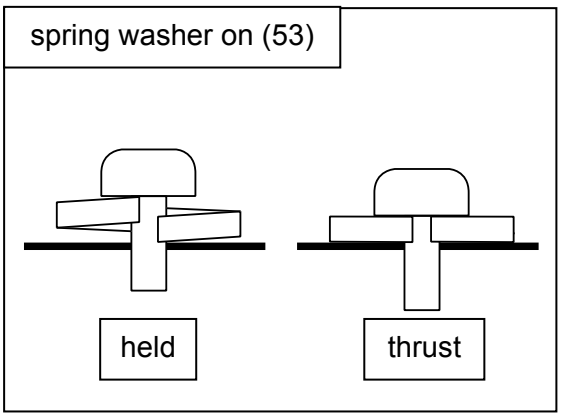
33. Turn the screw (50) in just enough revolution so that its spring washer is thrust in the gap.
Do not turn it completely.



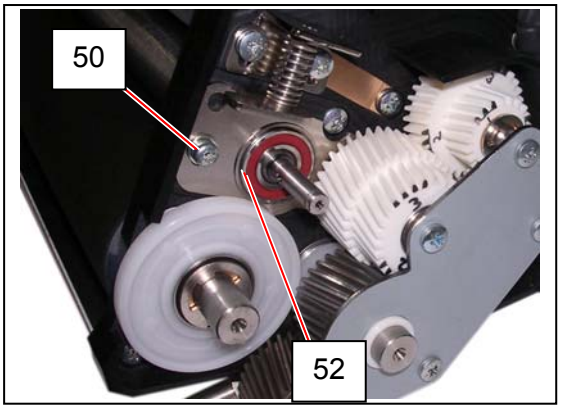


34. Turn the screw (53) in just enough revolution so that its spring washer is thrust in the gap.
Do not turn it completely.





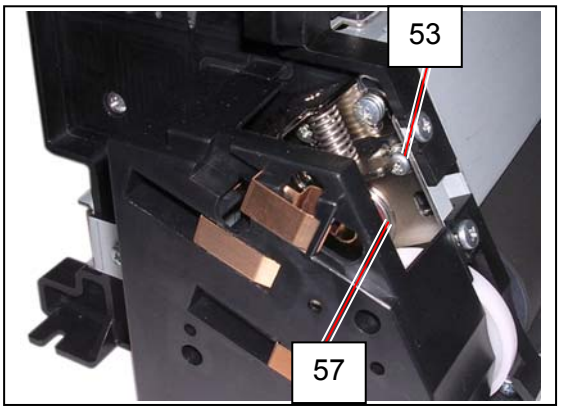
35. Slowly tighten the screw (50) to secure Bracket 6 Assy (52).



NOTE

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

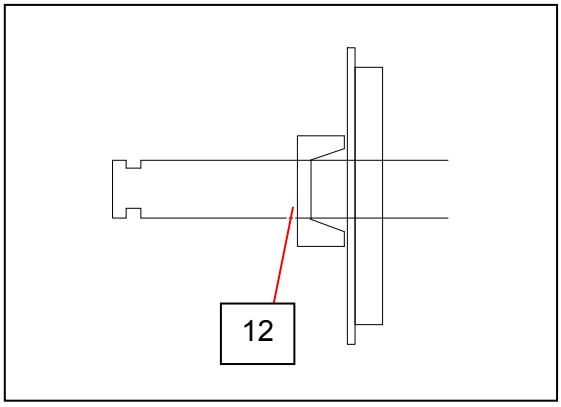
36. Slowly tighten the screw (53) to secure Bracket 7 Assy (57).

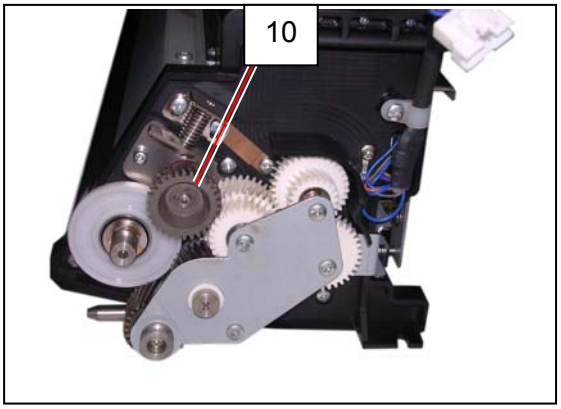


NOTE

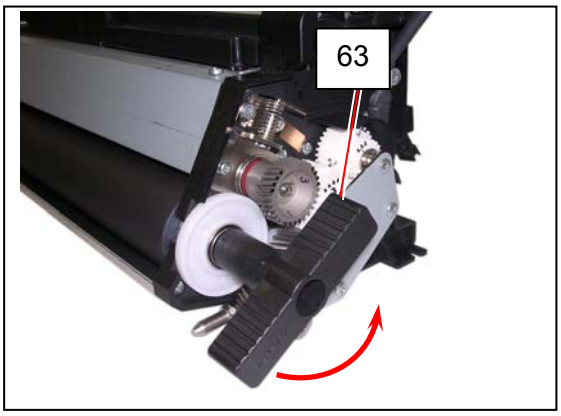
Do not tighten the screw (53) quickly at this time. Otherwise proper and even pressurization of Blade Roller between both the sides may be failed, and this will make the toner layer on Developer Roller get thicker than required.

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





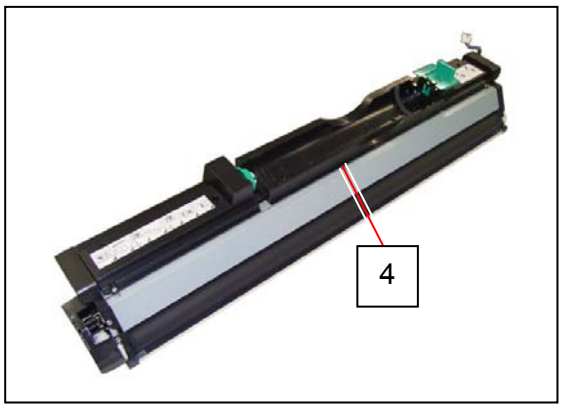
38. Install Developer Handle (63) to Developer Roller shaft. Rotate Developer Roller several times so that the roller surface is covered with the toner.

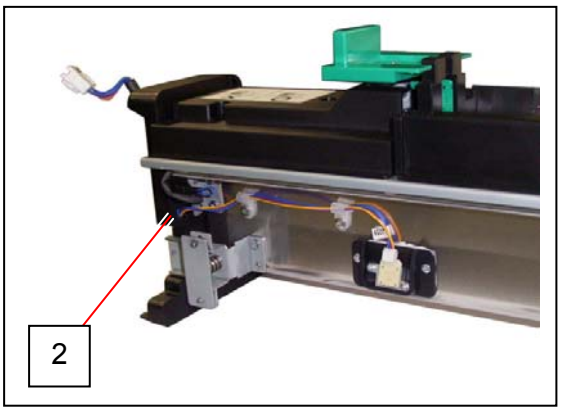


NOTE

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

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

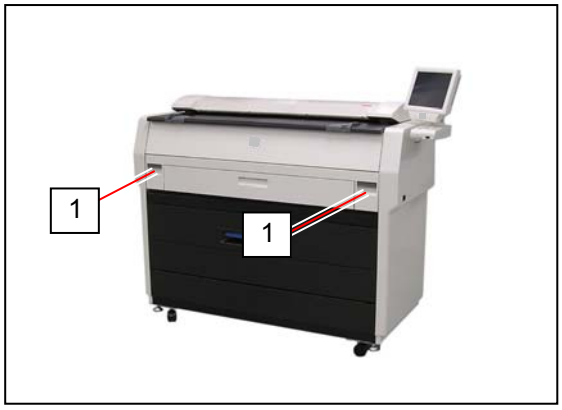




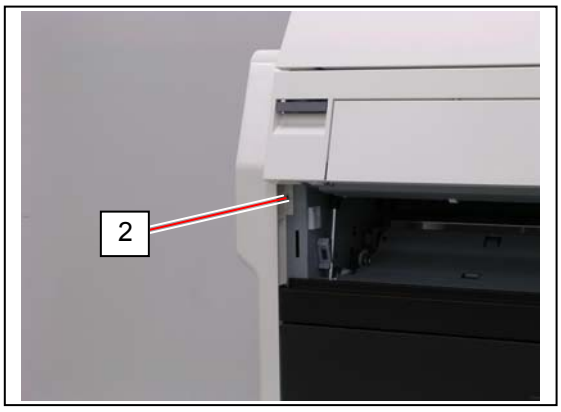
5. 3 Fuser Unit

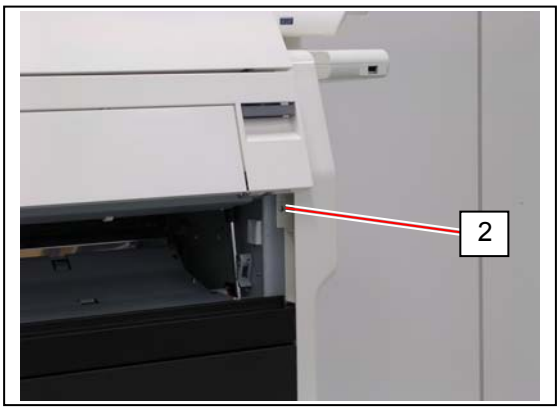
5. 3. 1 Removal of Fuser Unit

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

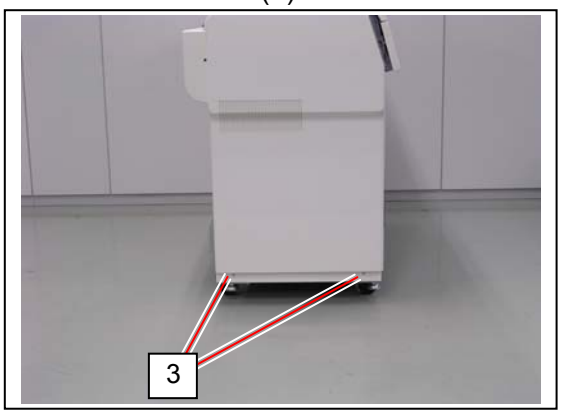


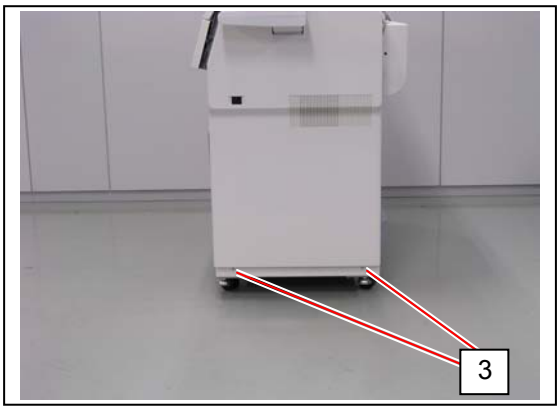
2. Remove 2 screws (2) on the front.



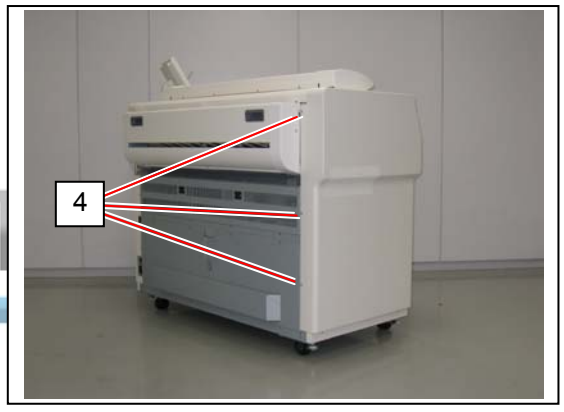


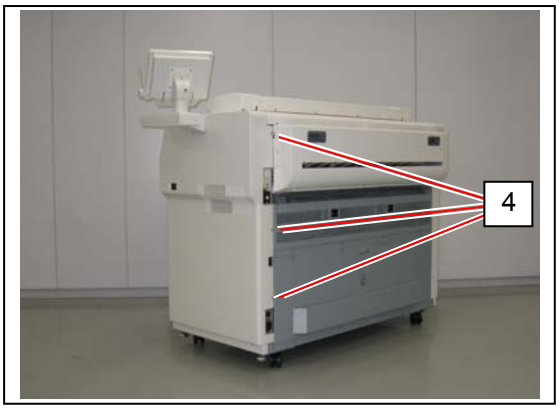
3. Remove 4 screws (3) on the side bottom.





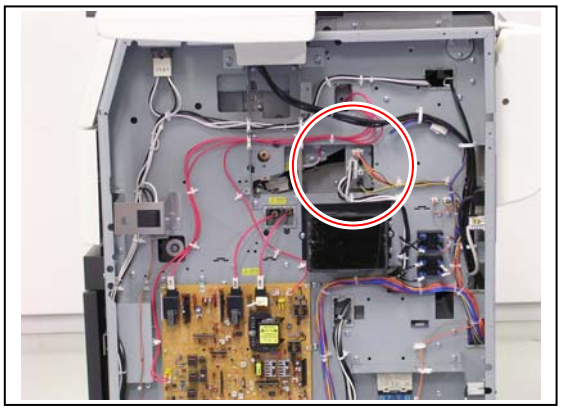
4. Remove 6 screws (4) on the rear.

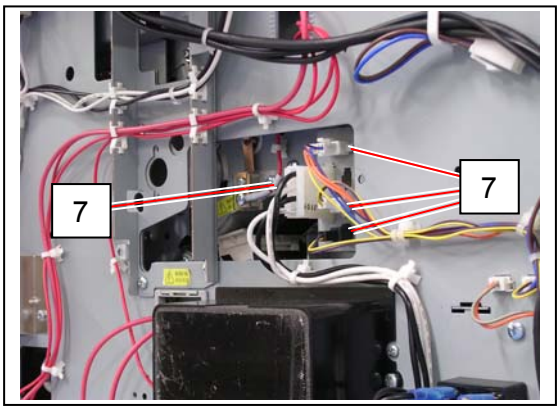




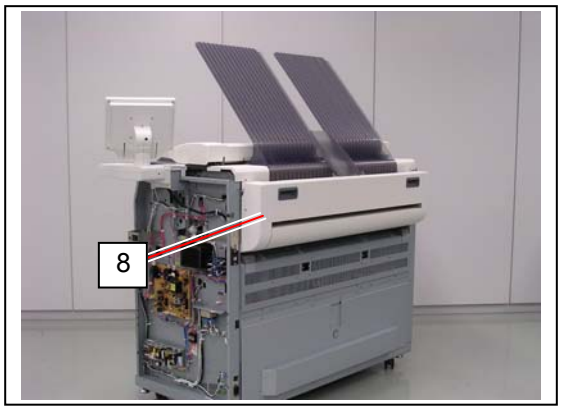
5. Remove Cover Side 2 (5) / Cover Side (6).

6. Disconnect 4 connectors (7).

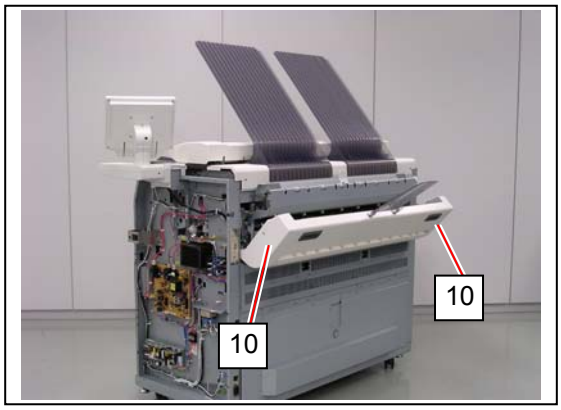


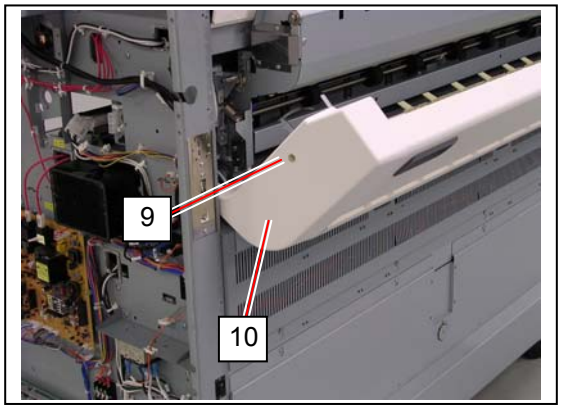


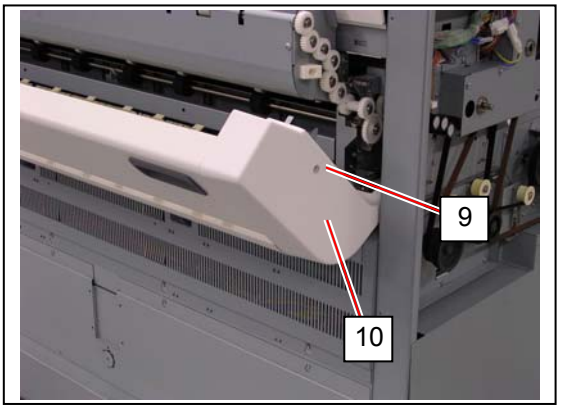
7. Open Exit Cover (8).



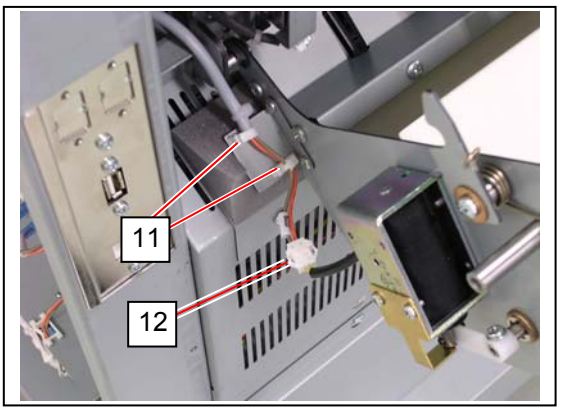
8. Remove 2 screws (9) to remove Exit Side Cover R / L (10).



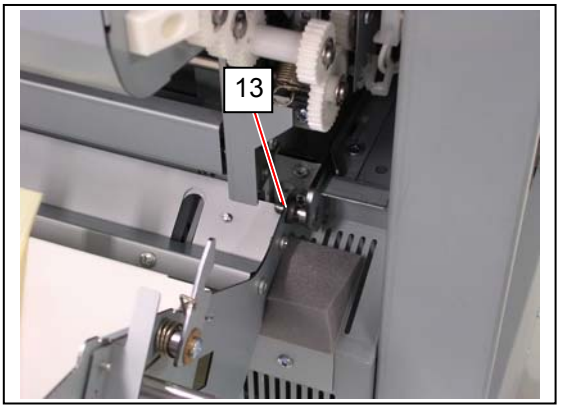




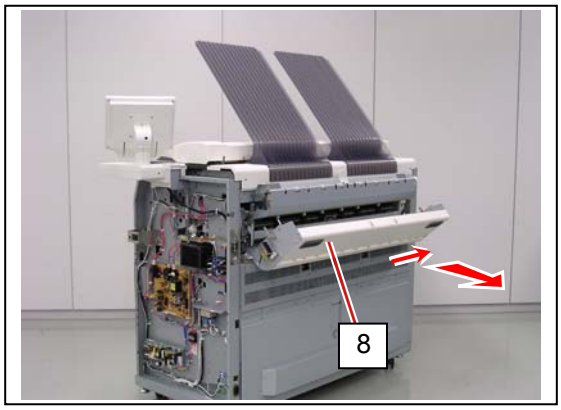
9. Open 2 clamps (11) and disconnect 1 connector (12).



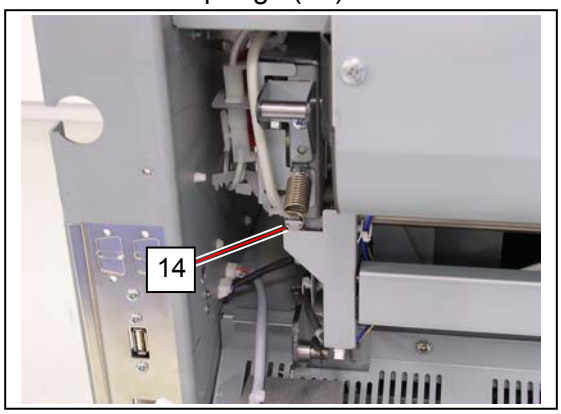
10. On the left side (your right hand), remove 1 piece of KL Clip (13).
<u>It is not necessary for your left hand side.</u>

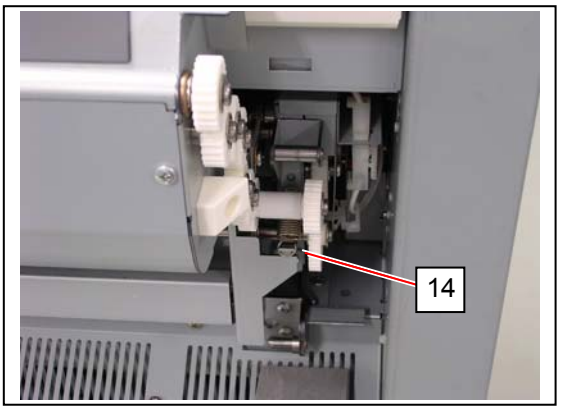


11. Slide Exit Cover (8) to the arrow direction (right hand side) to remove it from the machine.

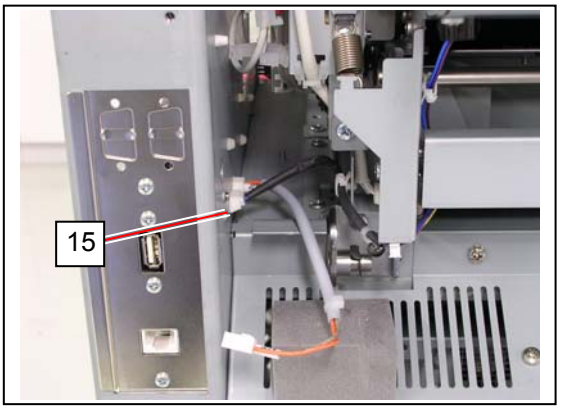


12. Release the springs (14) on both sides.

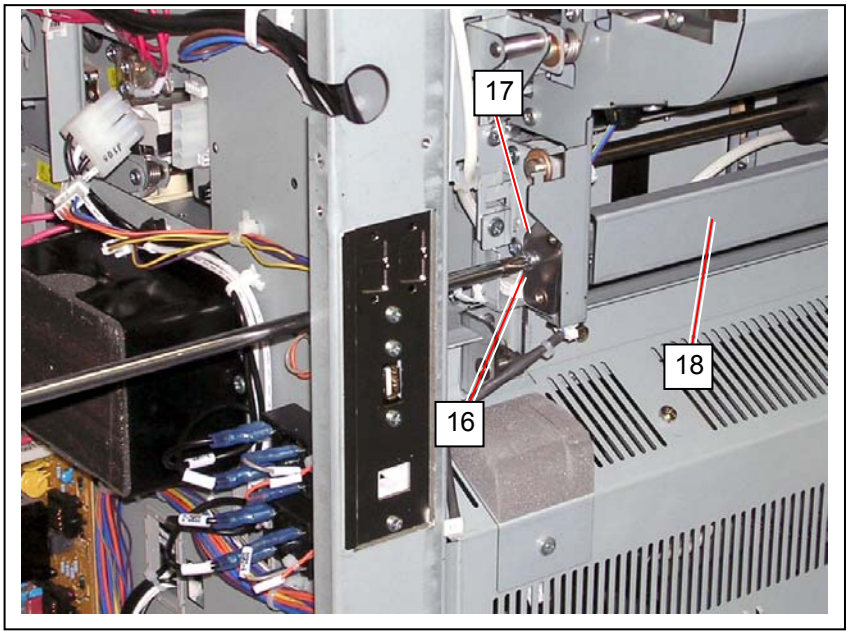




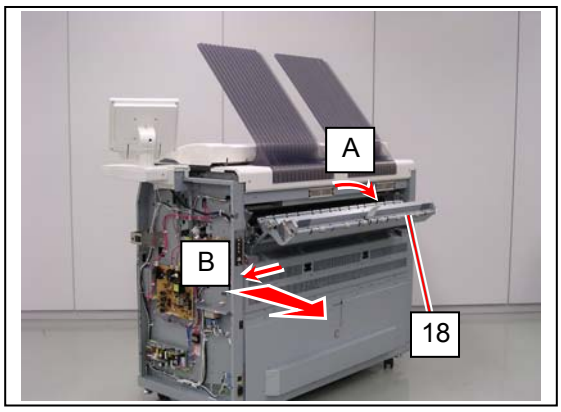
13. Remove 1 connector (15).



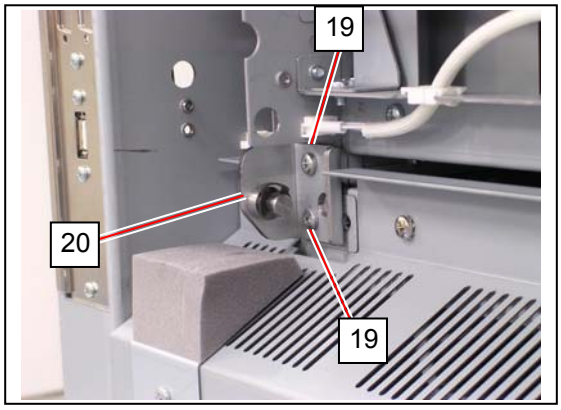
14. Remove 1 screw (16) to release the hinge bracket (17).

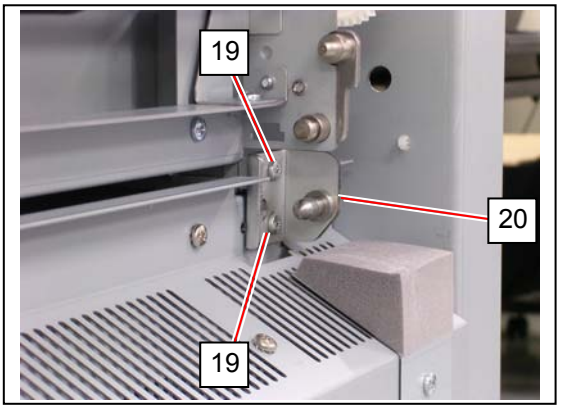


15. With holding Fuser Cover (18)by one hand, slightly open it (A) and remove the hinge bracket (17). Slide Fuser Cover (18) to the arrow direction (left hand side) (B) to remove it from the machine.



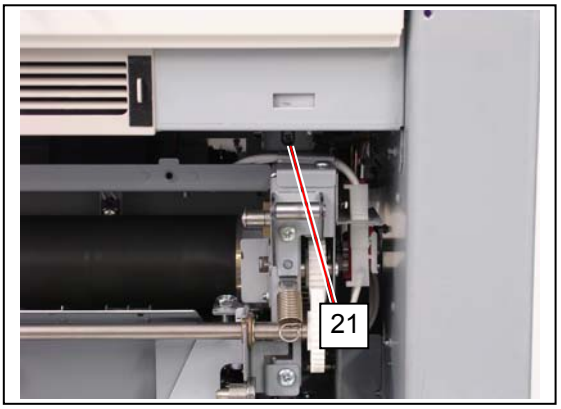
16. Remove 4 screws (19) to remove Bracket R / L (20).





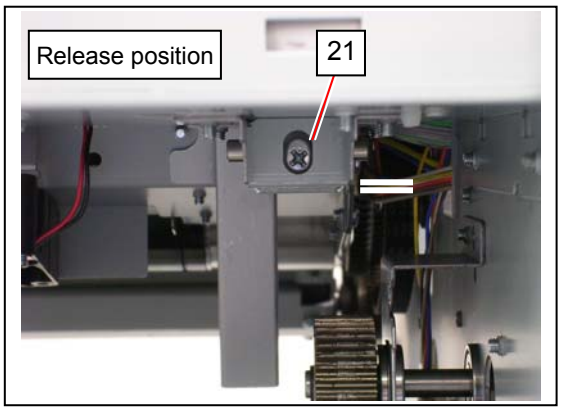
17. Open the Engine Unit.

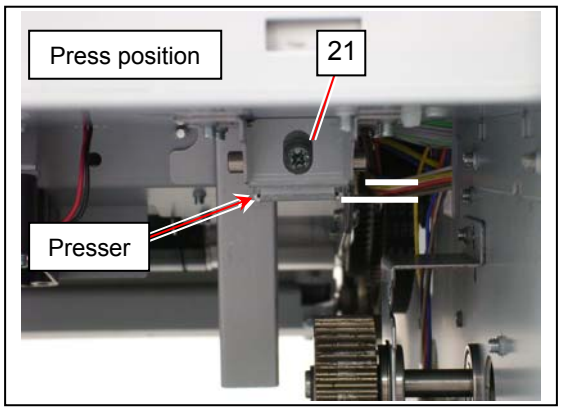
18. Loosen 1 screw (21) to release the drive side of Fuser Unit.



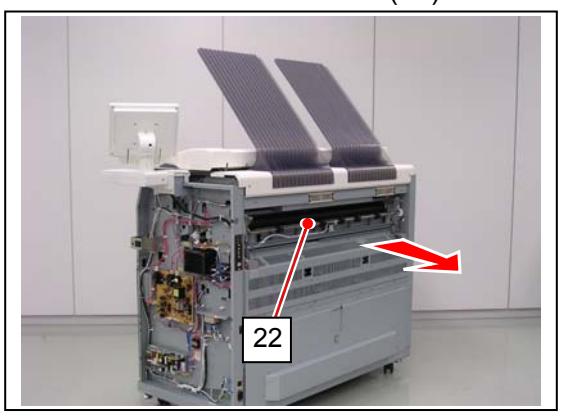
Reference

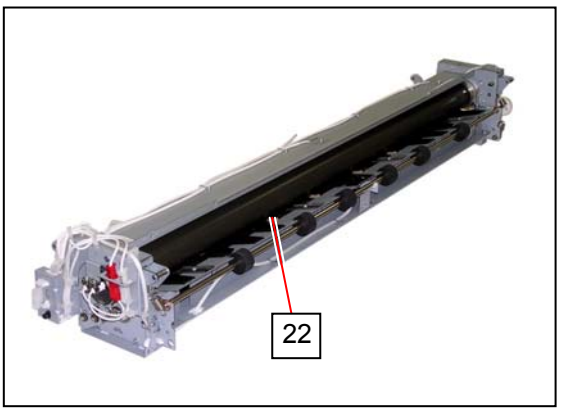
The screw (21) rises or lowers the presser plate to hold the drive side of Fuser Unit.





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



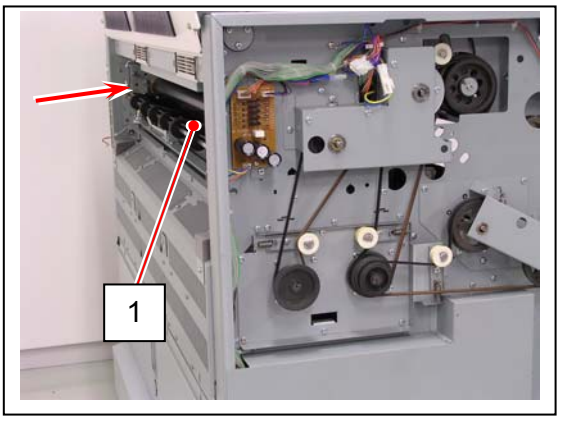


5. 3. 2 Reinstallation of Fuser Unit

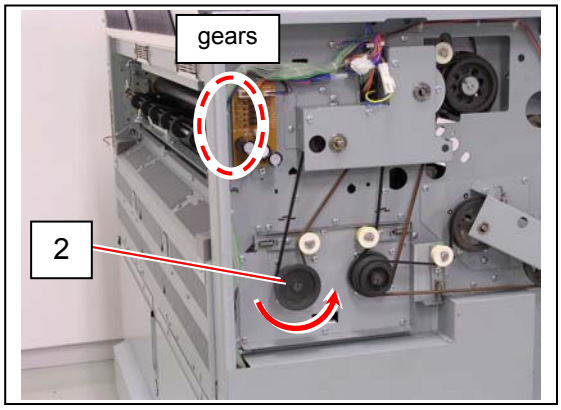
Reference

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

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



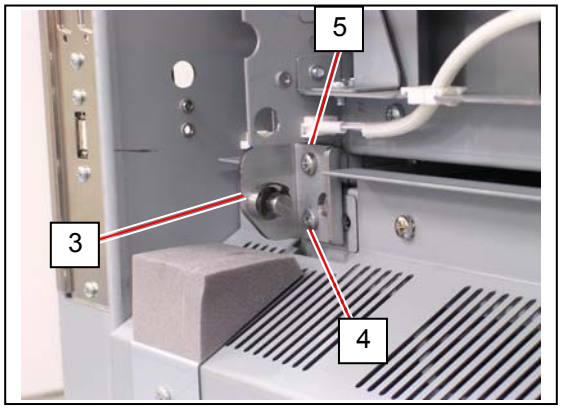
2. On the left side of the machine, rotate Pulley (2) counterclockwise to check the gear engagement between Fuser Unit and the machine.

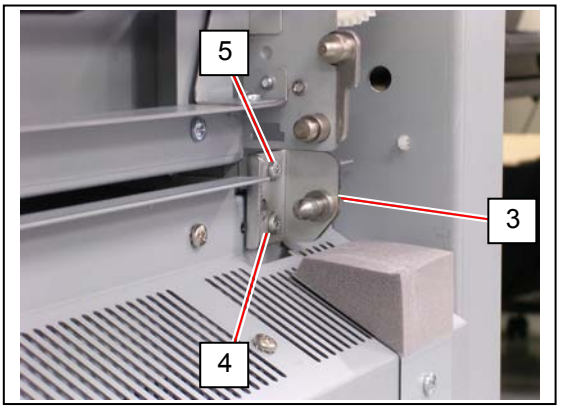


NOTE

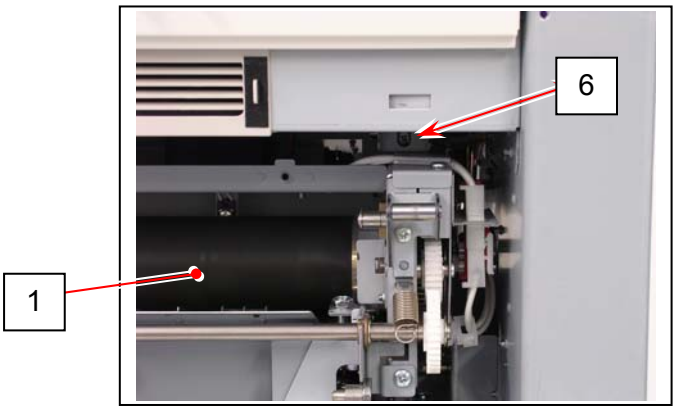
If the gears on Fuser Unit and Pulley (2) do not move together, the engagement may fail. With pushing Fuser Unit (1) to the machine inside, rotate Pulley (2) again to obtain the correct engagement.

3. Install the Bracket R / L (3) with the screws (4) (5).
   Tighten the lower one (4) and then the upper one (5).



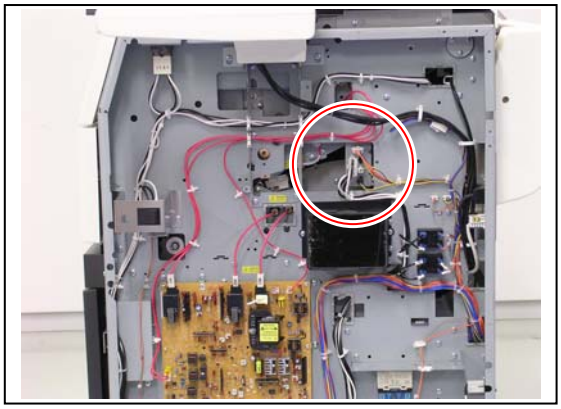


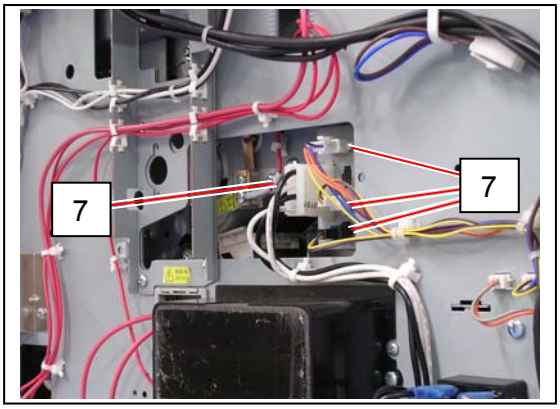
4. Tighten the screw (6) to fix Fuser Unit to the machine.



5. Close the Engine Unit.

6. Reconnect the connectors (7).





7. Reinstall Fuser Cover, Paper Exit Assy Cover Side 2 and Cover Side.

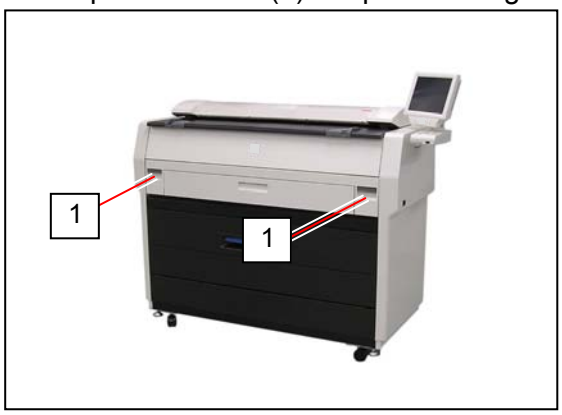
5. 3. 3 Replacement of Recommended Periodic Replacement Parts

NOTE

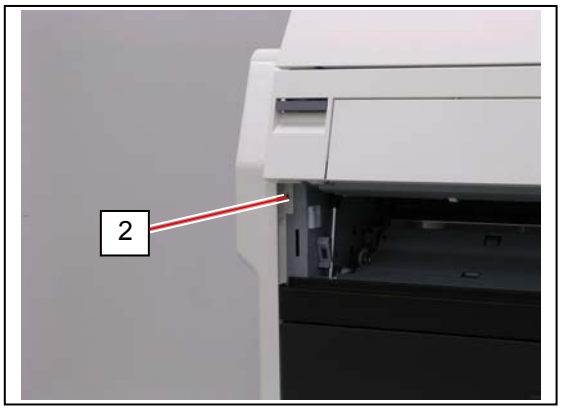
A periodic replacement for them is recommended.
This section shows how to replace all of them in one sequent operation.

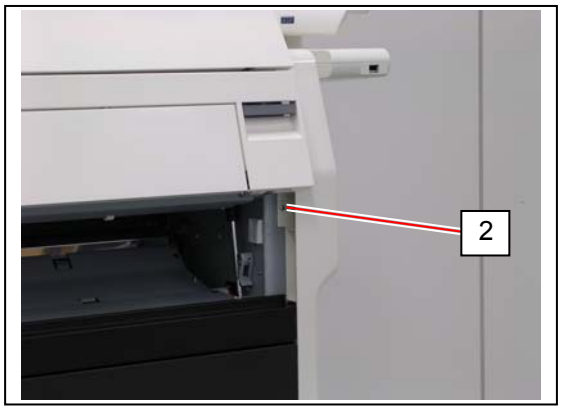
Item	Number of article	Remarks
Roller Fusing	1	All of these parts are contained in “Fuser Maintenance Kit” (305JG70020)
Bush	2	
Nail Stripping (Upper)	13	
Nail Lower	6	

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

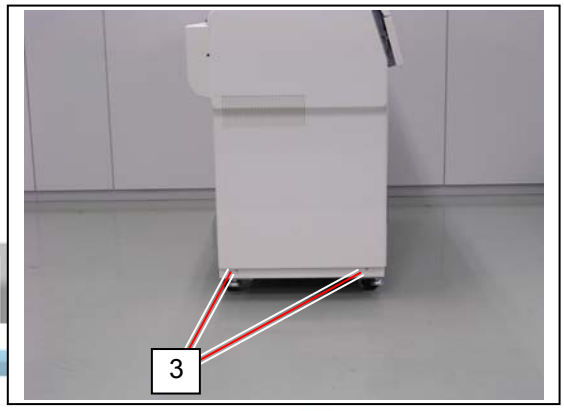


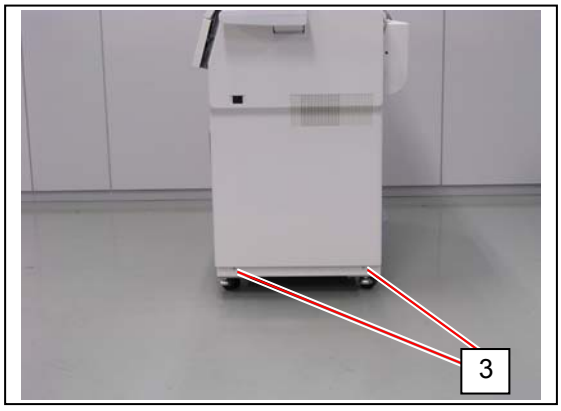
2. Remove 2 screws (2) on the front.



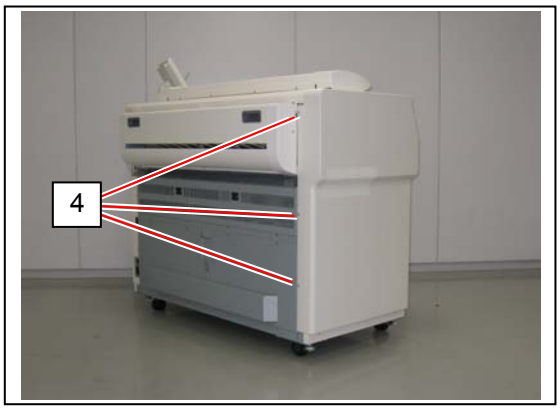


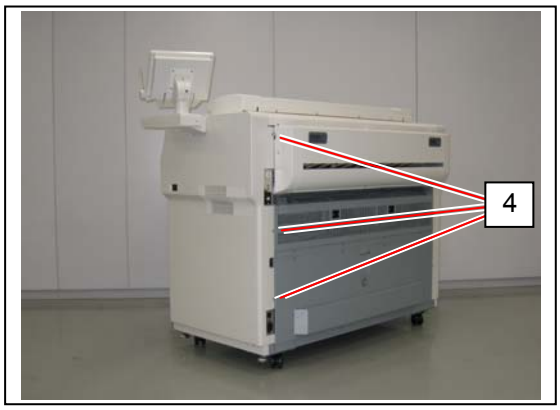
3. Remove 4 screws (3) on the side bottom.





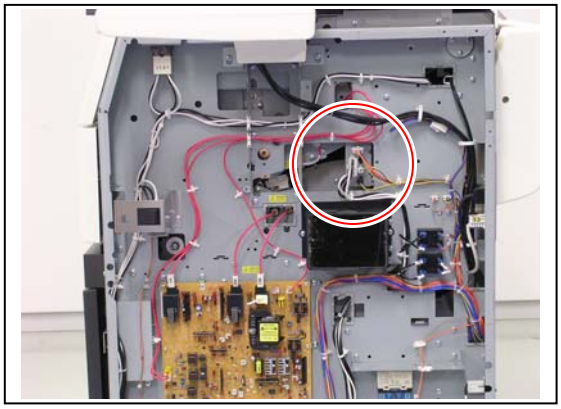
4. Remove 6 screws (4) on the rear.

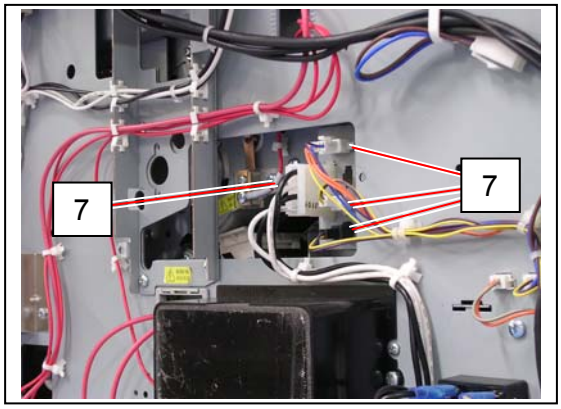




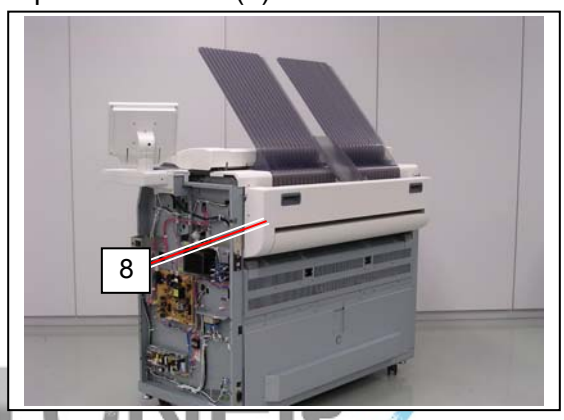
5. Remove Cover Side 2 (5) / Cover Side (6).

6. Disconnect 4 connectors (7).

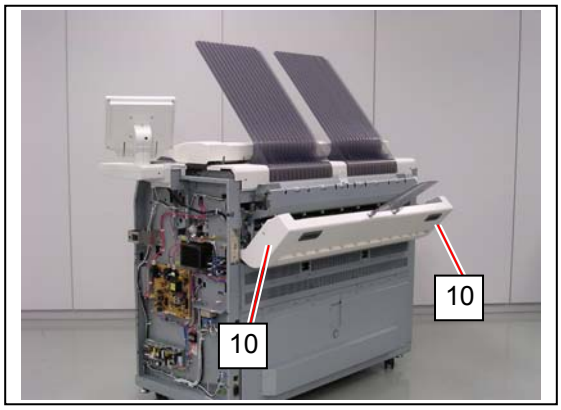


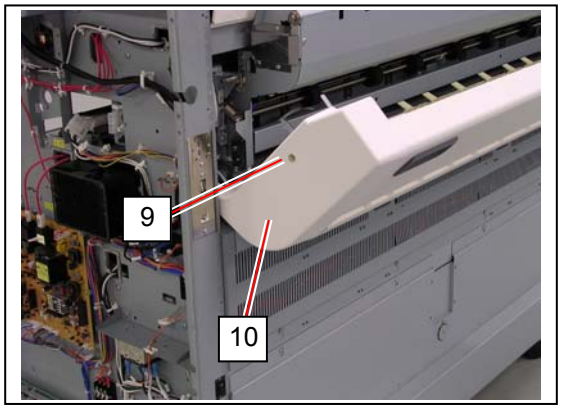


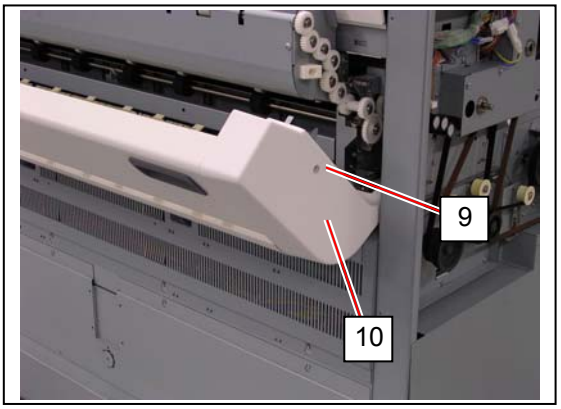
7. Open Exit Cover (8).



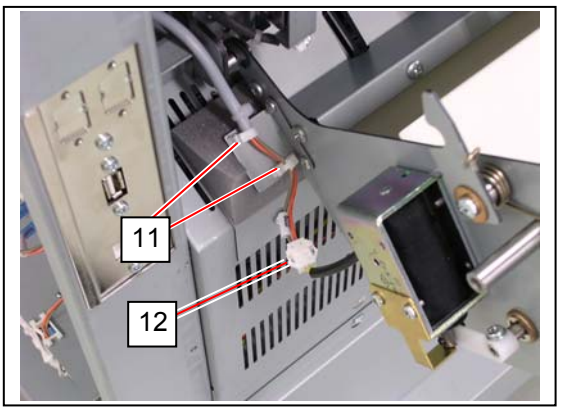
8. Remove 2 screws (9) to remove Exit Side Cover R / L (10).



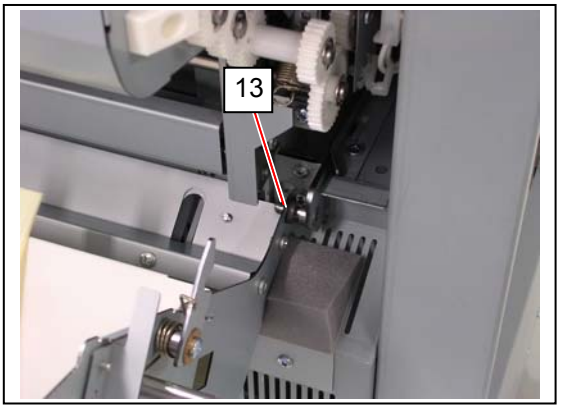




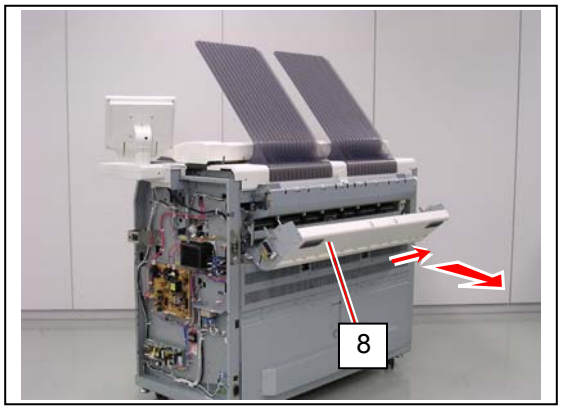
9. Open 2 clamps (11) and disconnect 1 connector (12).



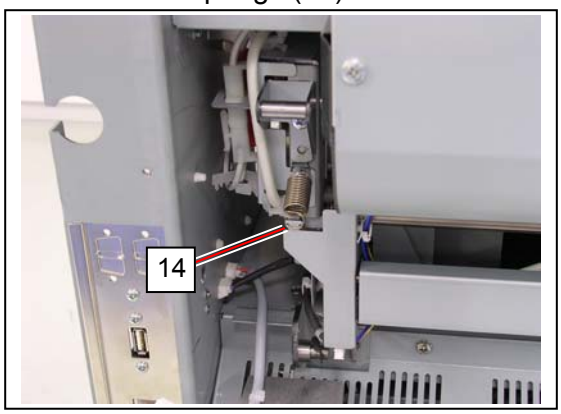
10. On the left side (your right hand), remove 1 piece of KL Clip (13).
<u>It is not necessary for your left hand side.</u>

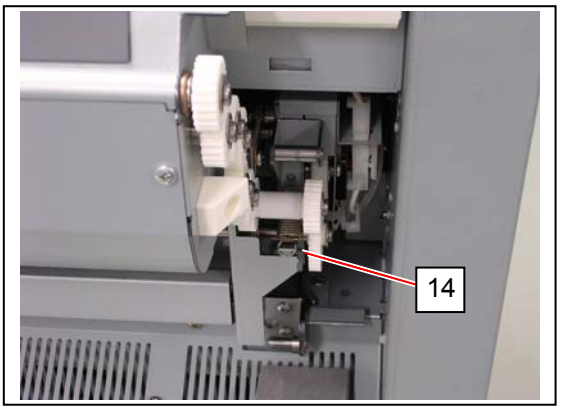


11. Slide Exit Cover (8) to the arrow direction (right hand side) to remove it from the machine.

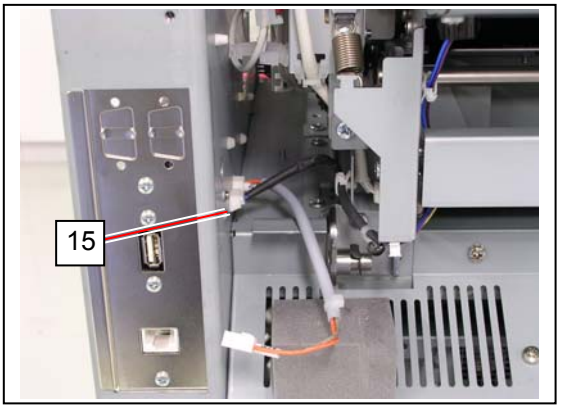


12. Release the springs (14) on both sides.

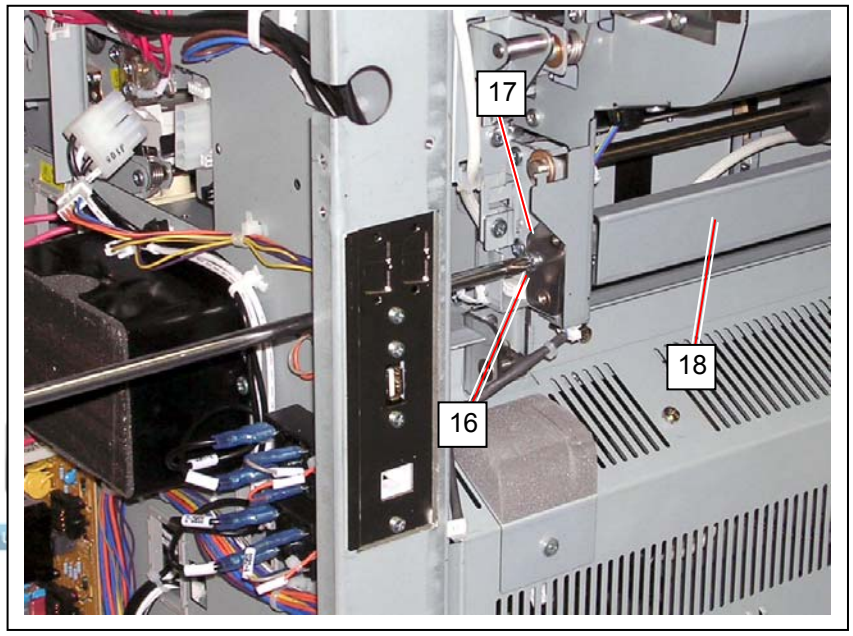




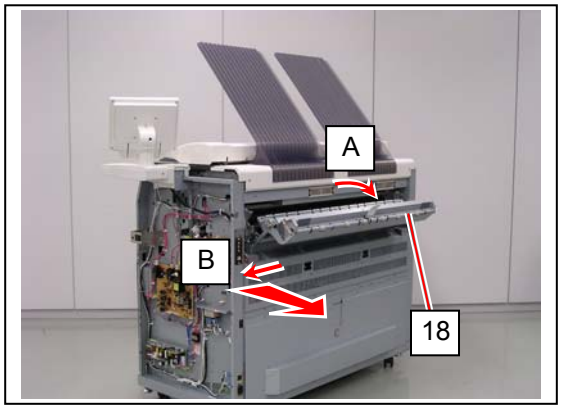
13. Remove 1 connector (15).



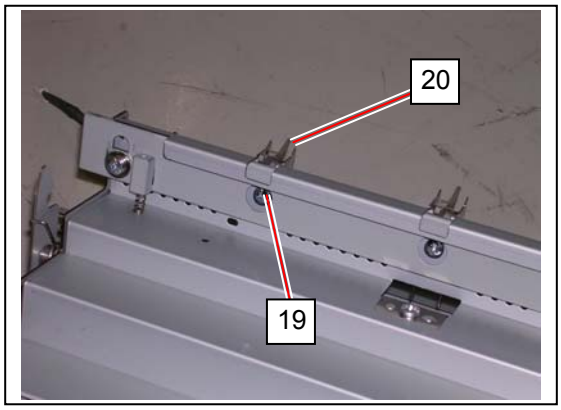
14. Remove 1 screw (16) to release the hinge bracket (17).

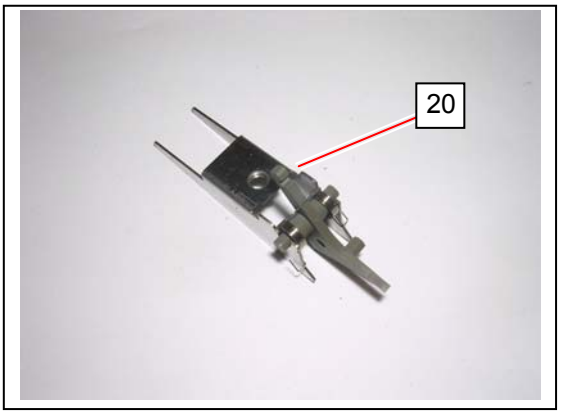


15. With holding Fuser Cover (18)by one hand, slightly open it (A) and remove the hinge bracket (17). Slide Fuser Cover (18) to the arrow direction (left hand side) (B) to remove it from the machine.



16. Remove the 4x6 screw (19) to remove each Nail Stripping Assembly (20).

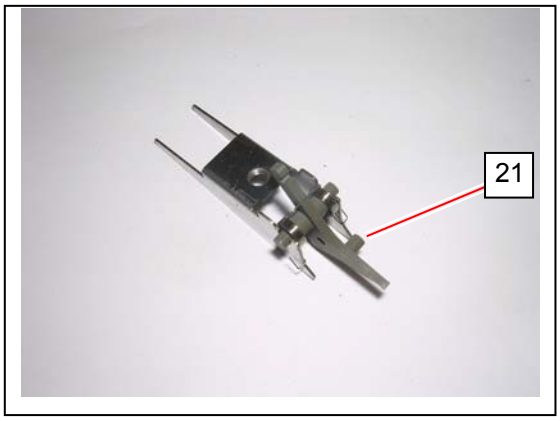


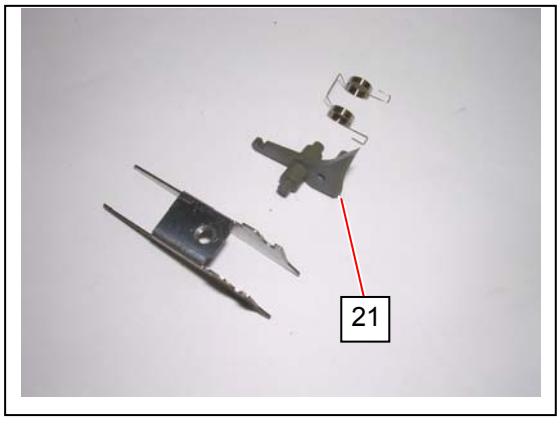


NOTE

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

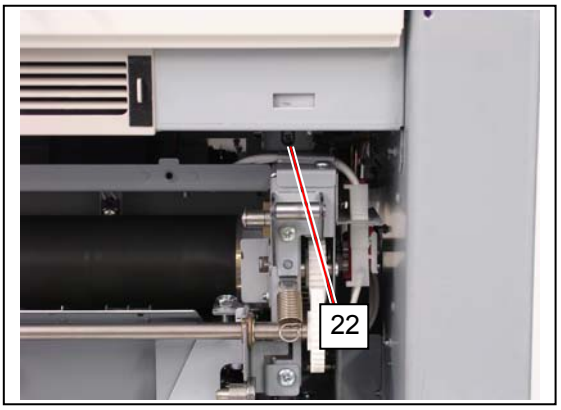
17. Disassemble the Nail Stripping Assembly as the following photo.
Replace the **Nail Stripping** (21) with the new one.





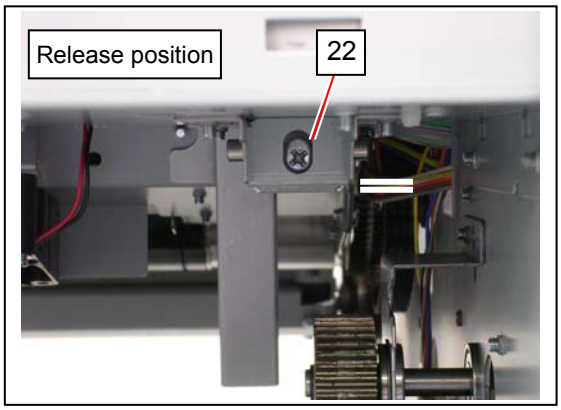
18. Open the Engine Unit.

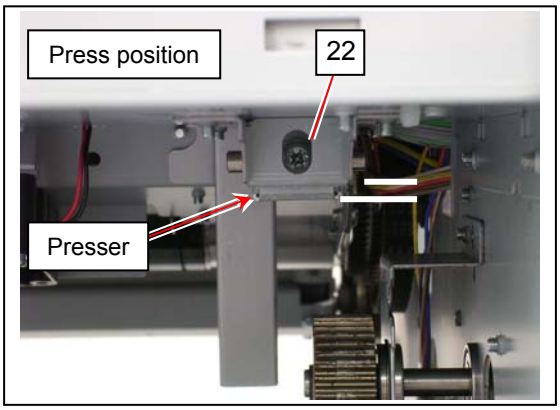
19. Loosen 1 screw (22) to release the drive side of Fuser Unit.



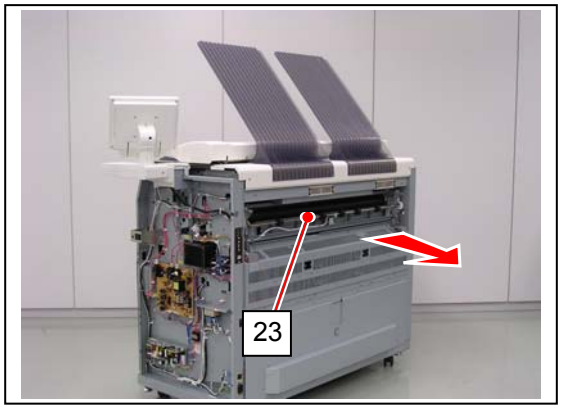
Reference

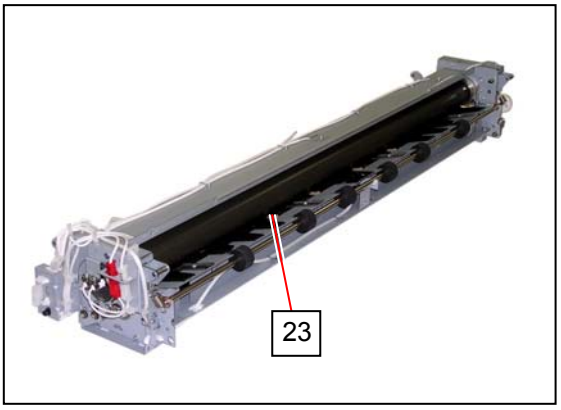
The screw (22) rises or lowers the presser plate to hold the drive side of Fuser Unit.



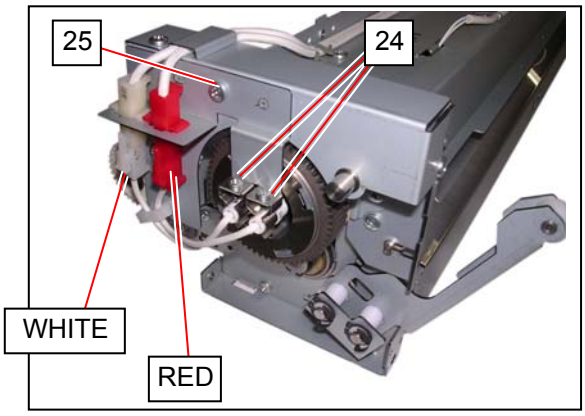


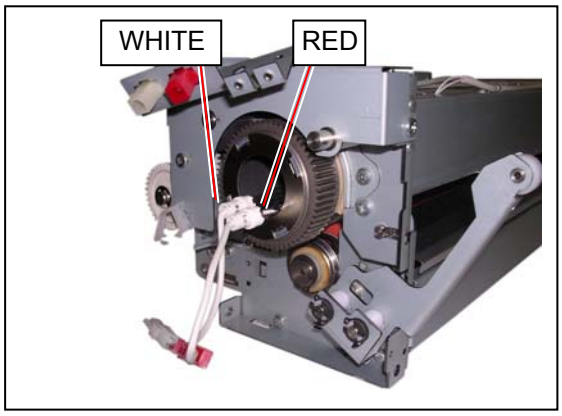
20. Pull and remove Fuser Unit (23) from the machine.

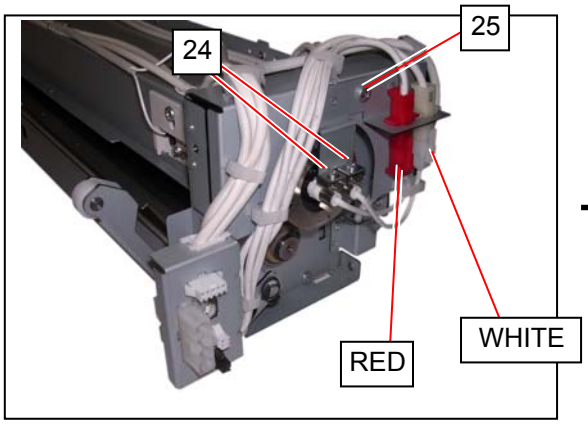


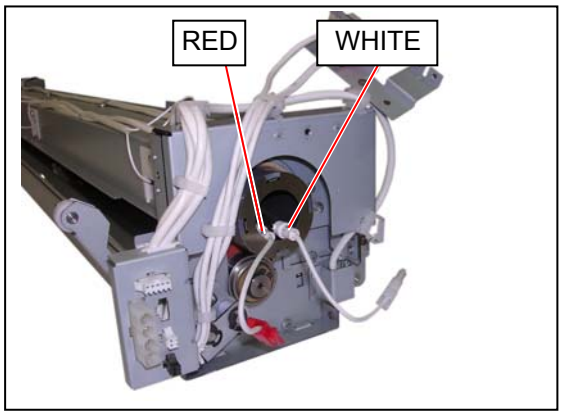


21. Disconnect the connectors (red) (white). Remove 4 screws (24) to release IR Lamps (red) (white).
Remove 2 screws (25) to release the connector brackets.

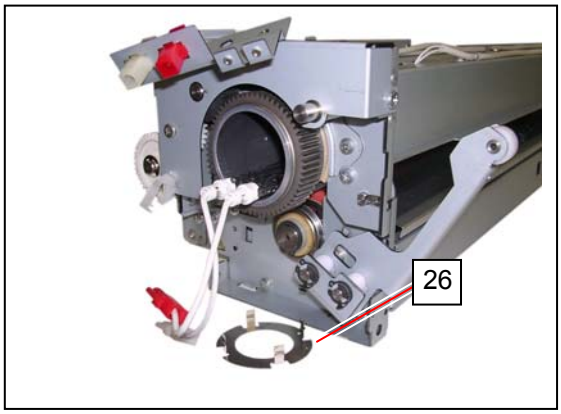


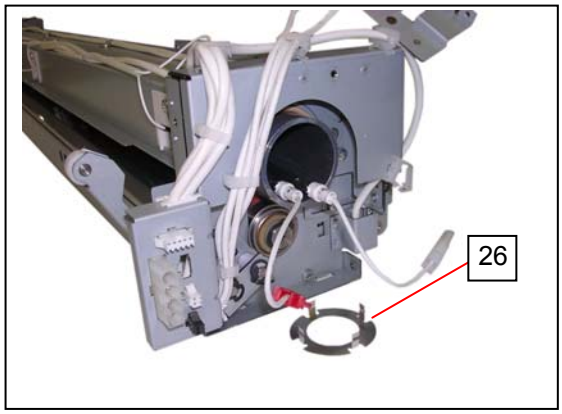


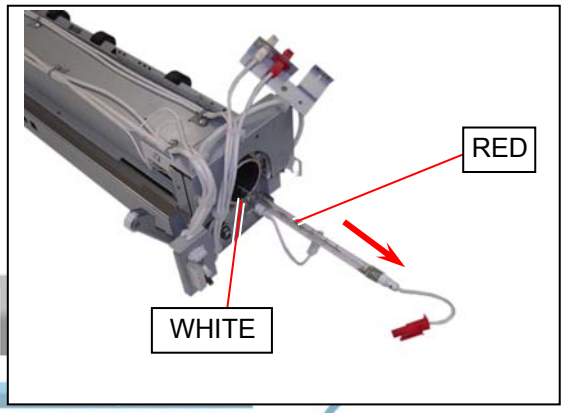


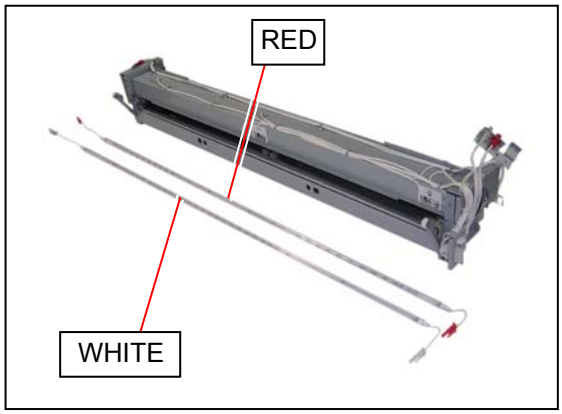


22. Remove Cover (26) on both sides of Roller Fusing.
Gently pull IR Lamps (red) (white) toward either way to remove them.





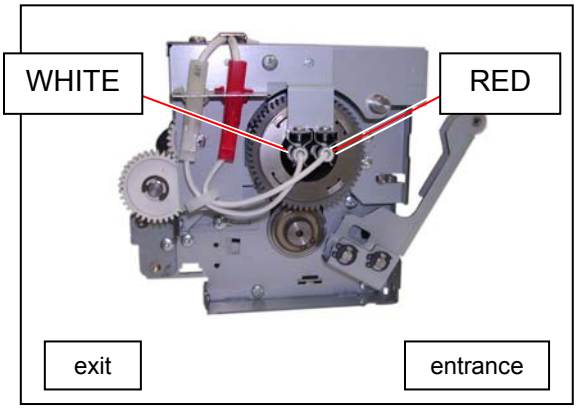


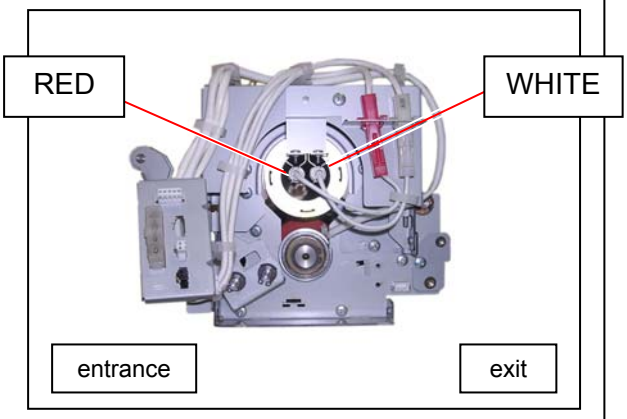


⚠ NOTE

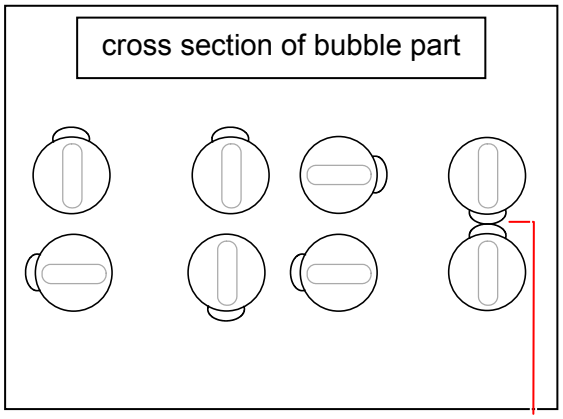
(1) Do not touch the glass part of the Lamp with a bare hand.

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





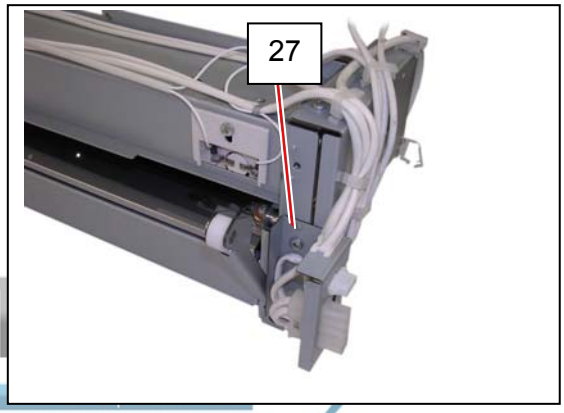
(3) There is a bubble (projection) on the glass part of IR Lamp.
If the bubbles of both IR Lamps touch each other, IR Lamps will be broken because of vibration or heat.
Make sure not to face the bubbles each other. Install the IR Lamps so that the bubbles will be located far from each other.

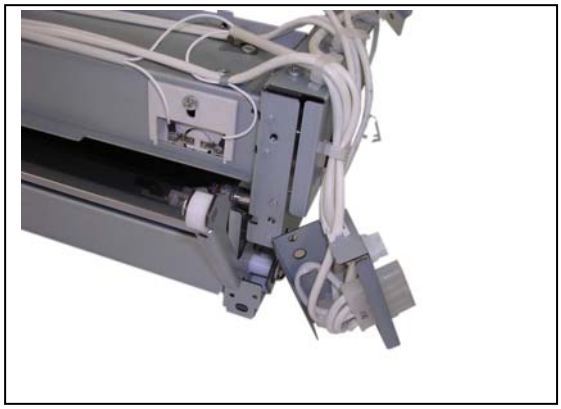


Correct Correct Wrong: touching

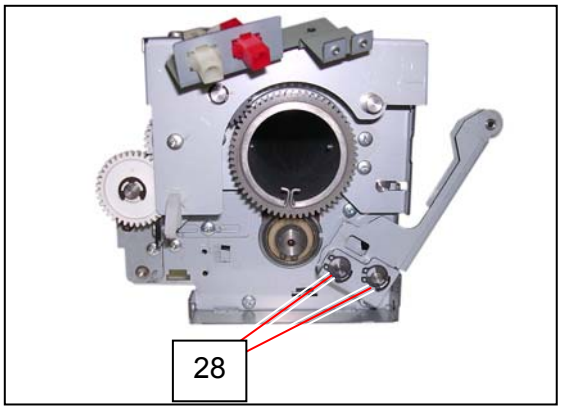
(4) IR Lamps can be installed to Fuser Unit in either way.

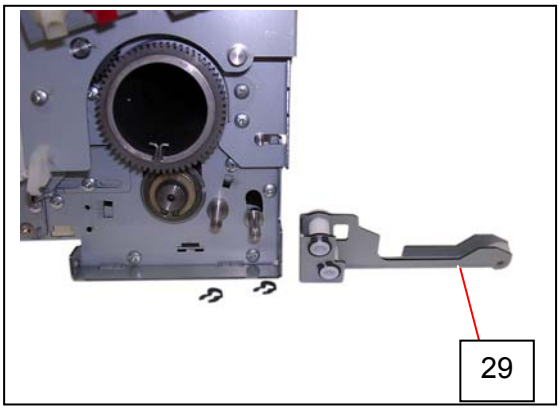
23. On the connector side, remove 1 screw (27) to release Bracket 10 Assy. (connector bracket)

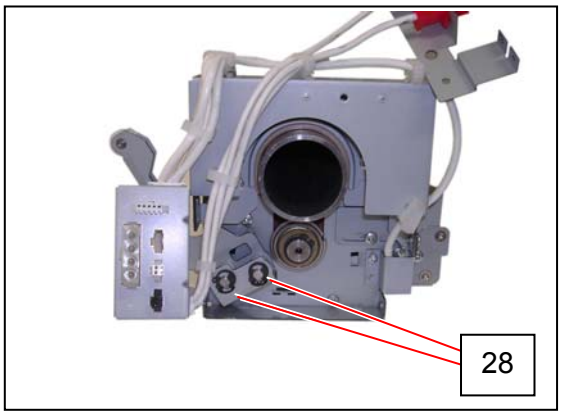


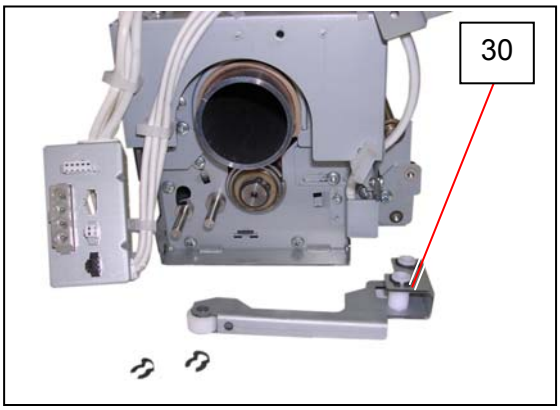


24. On both sides, remove 4 KL Clips (28) to remove Arm 4 (29) and Arm 3 (30).

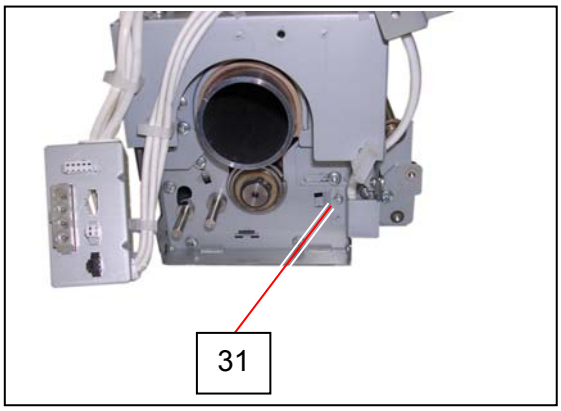


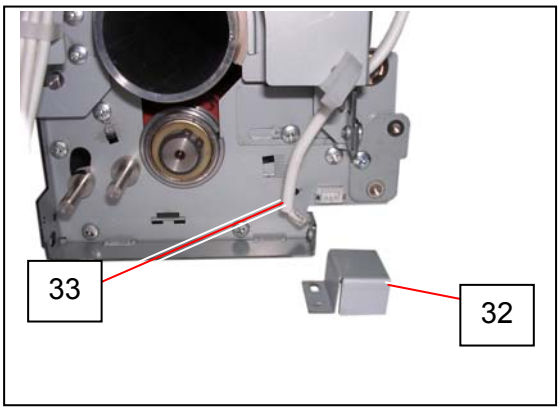




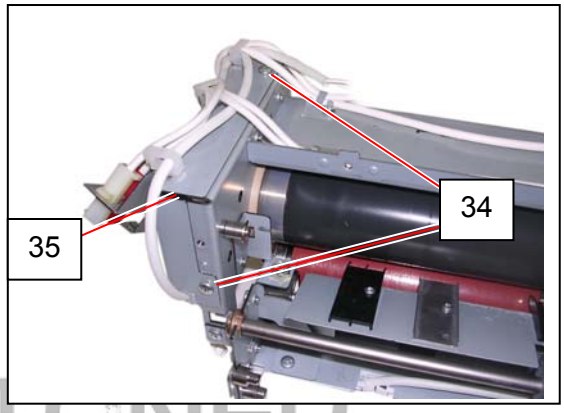


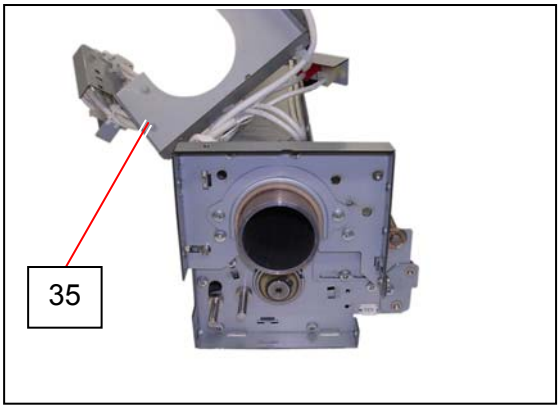
25. On the connector side, remove 1 screw (31) to remove Cover 2 (32). Disconnect the harness (33).



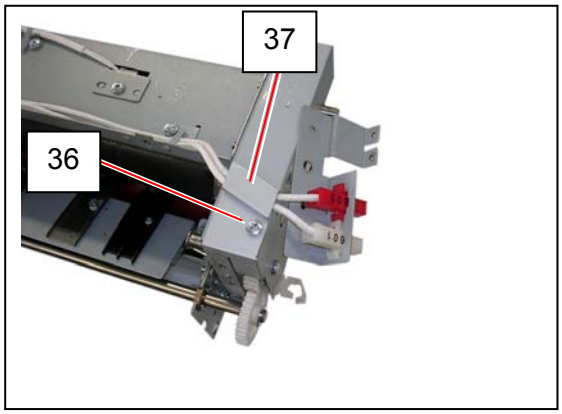


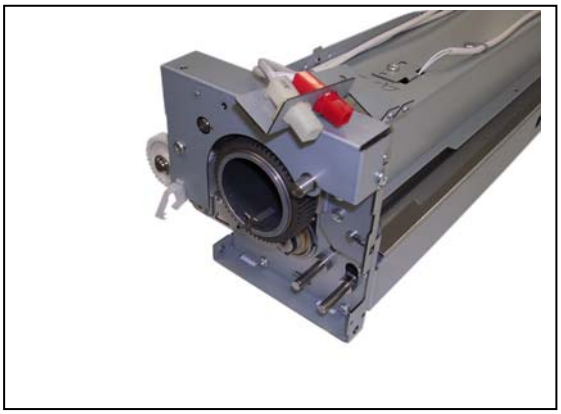
26. Remove 2 screws (34) to remove Bracket 6 Assy (35).



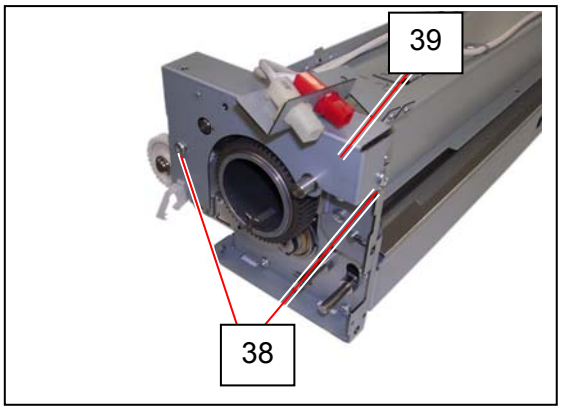


27. On the gear side, remove 1 screw (36) to remove Bracket 20 (37).

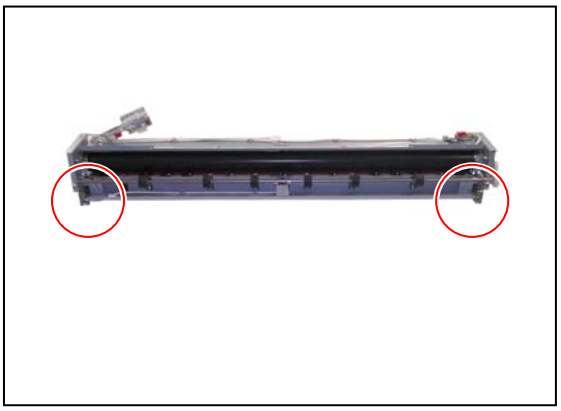


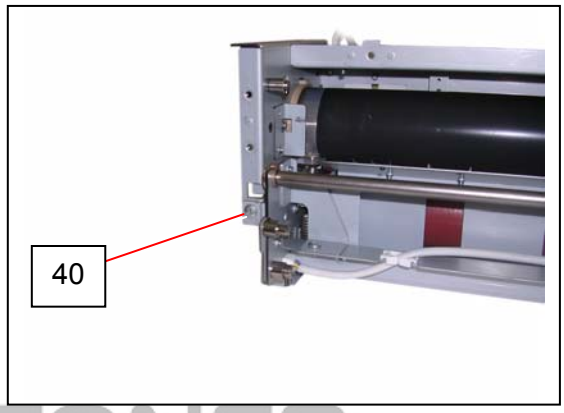


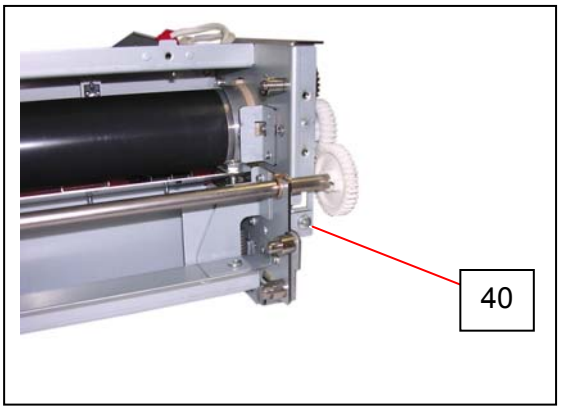
28. Remove 2 screws (38) to remove Bracket 7 Assy (39).



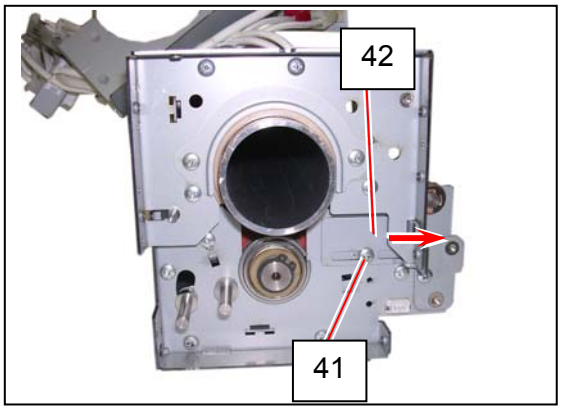
29. Remove 2 screws (40) on the media exit side.

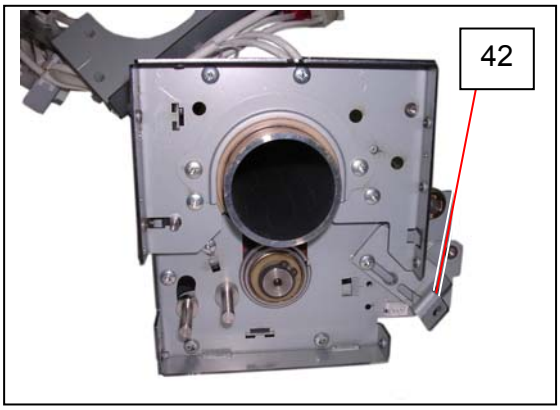




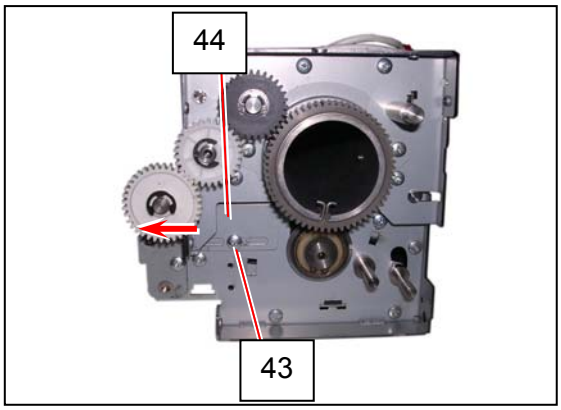


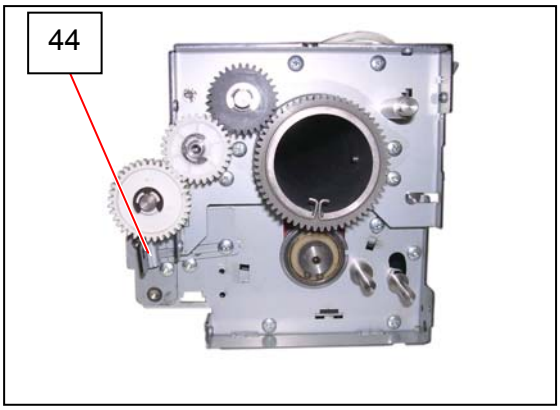
30. On the connector side, loosen 1 screw (41) to release Bracket 2 (42).





31. On the gear side, loosen 1 screw (43) to release Bracket 3 (44).



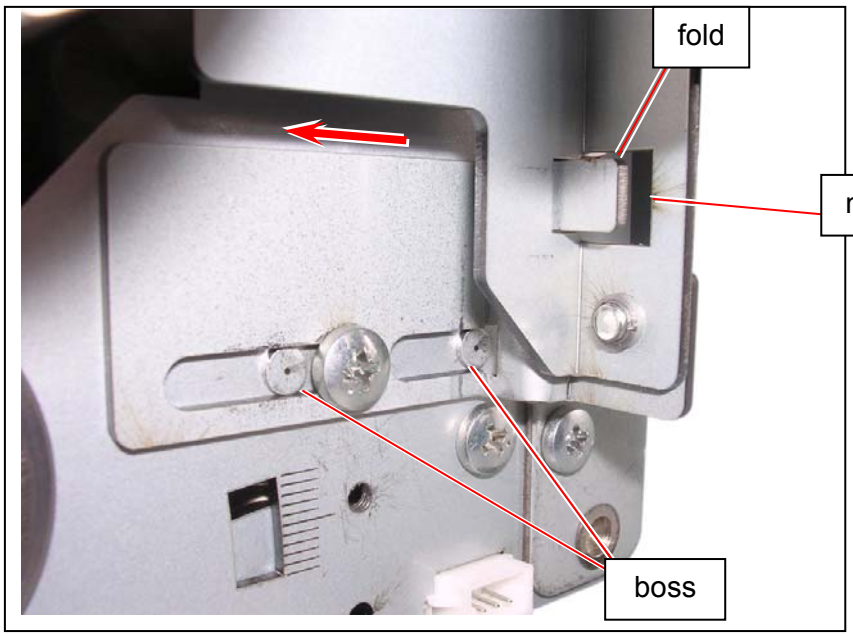


NOTE

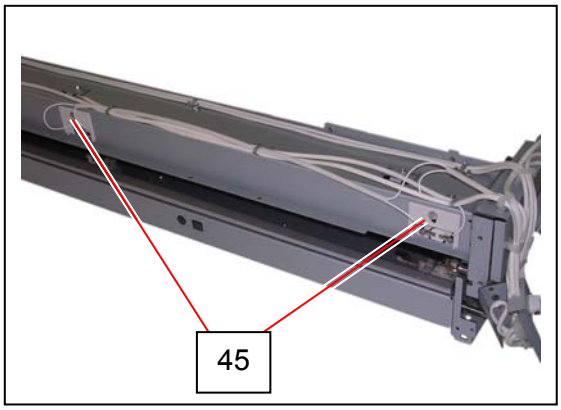
Reinstall Bracket 2 (42) and Bracket 3 (44) in the correct position.

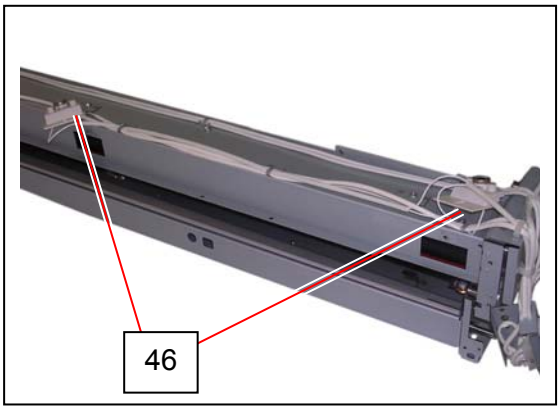
(1) Fully push to slide the bracket to the arrow direction so that the fold portion on the bracket will fit into the notch on Fuser Upper Unit.

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

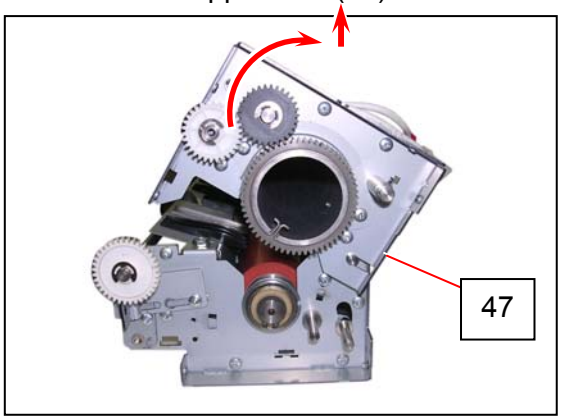


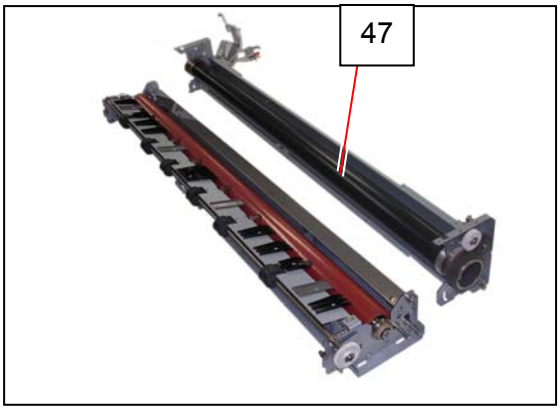
32. On the media entrance side, remove 2 screws (45) to release Thermostat Bracket (46).



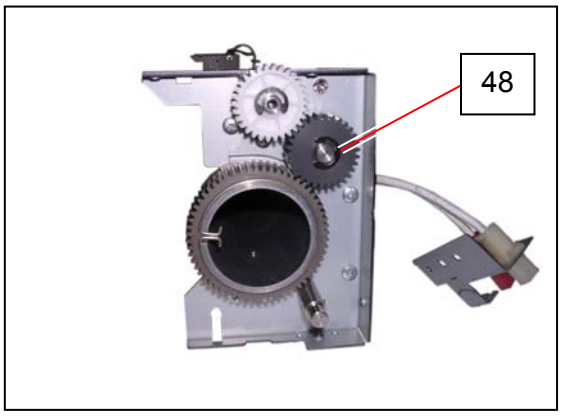


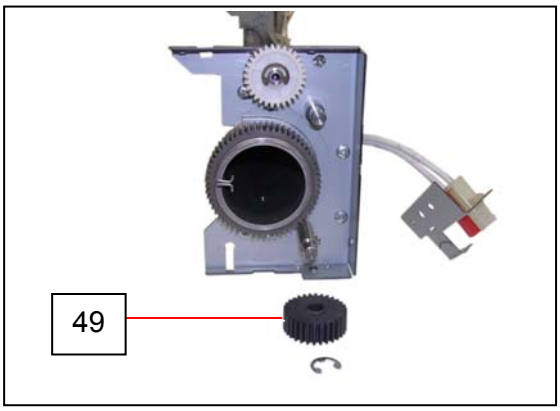
33. Turn Fuser Upper Unit (47) to the back. Lift Fuser Upper Unit (47) upward to remove it.



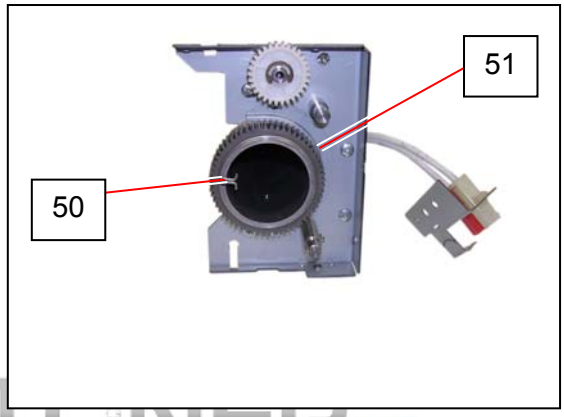


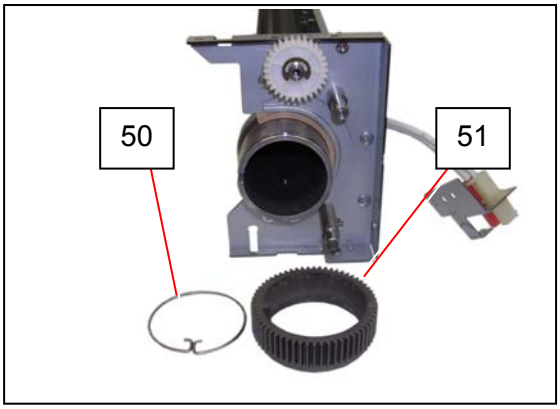
34. On the gear side of Fuser Upper Unit, remove Retaining Ring-E (48) to remove Gear 30T (49).



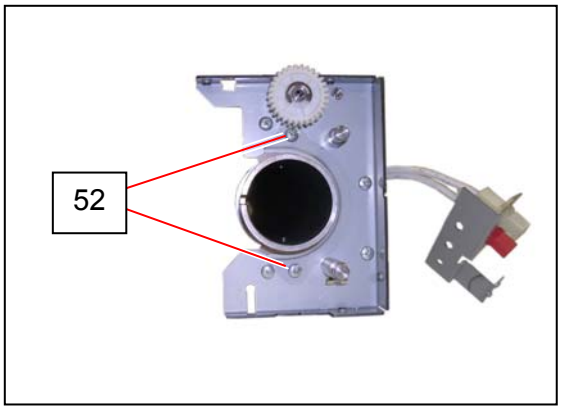


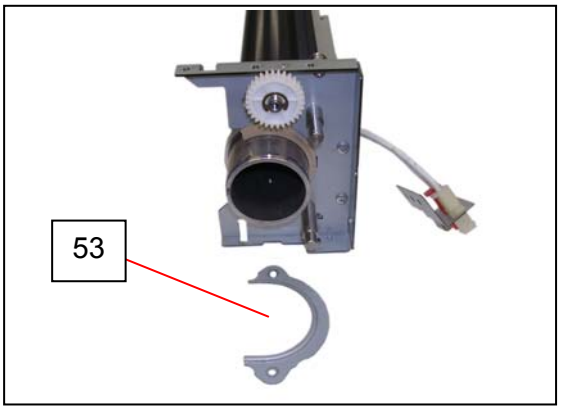
35. Remove Stopper (50) to remove Gear 60T (51).



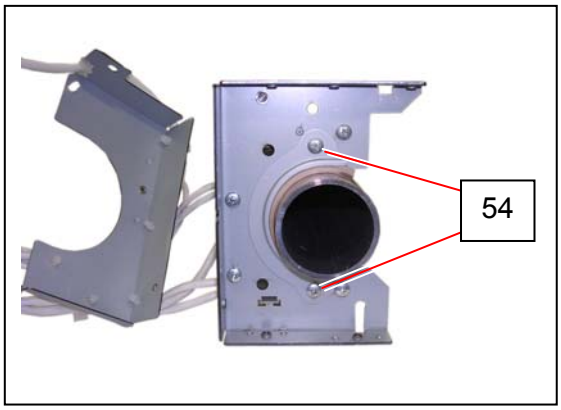


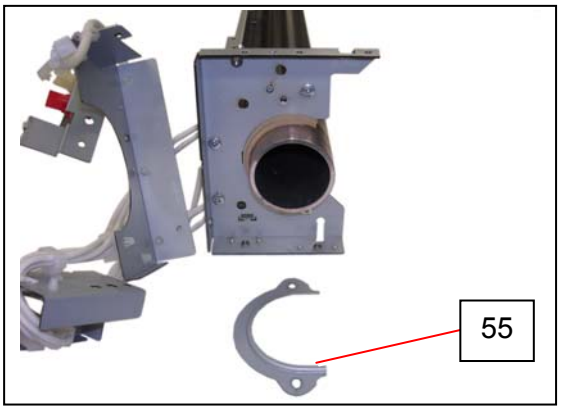
36. Remove 2 screws (52) to remove Bearing Holder (53).



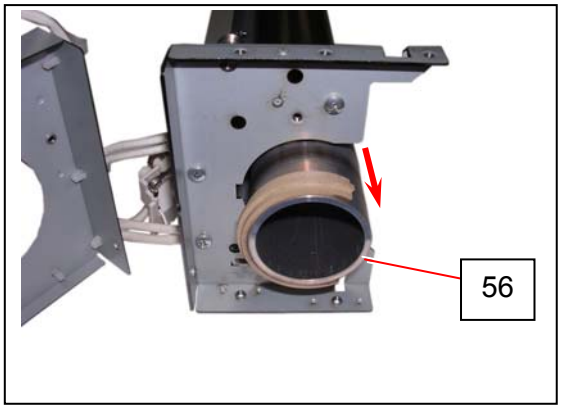


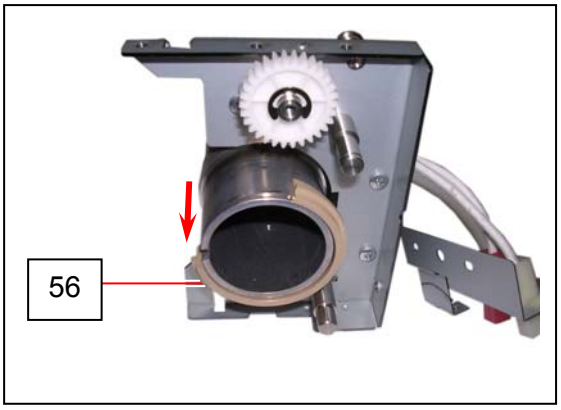
37. On the connector side of Fuser Upper Unit, remove 2 screws (54) to remove Bearing Holder (55).



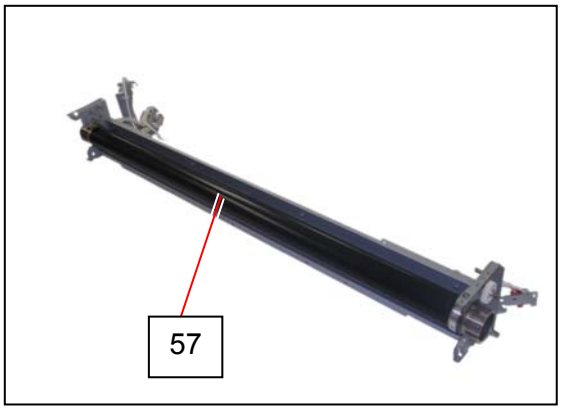


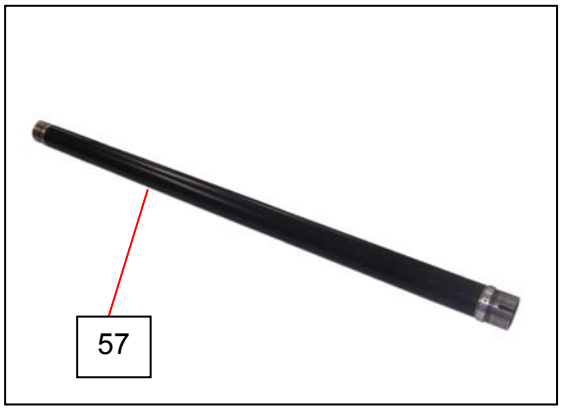
38. On both sides, remove Bush (56).
Replace **Bush** with new ones.





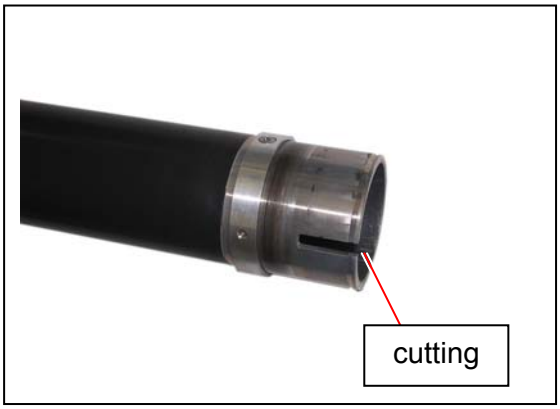
39. Remove Roller Fusing (57).



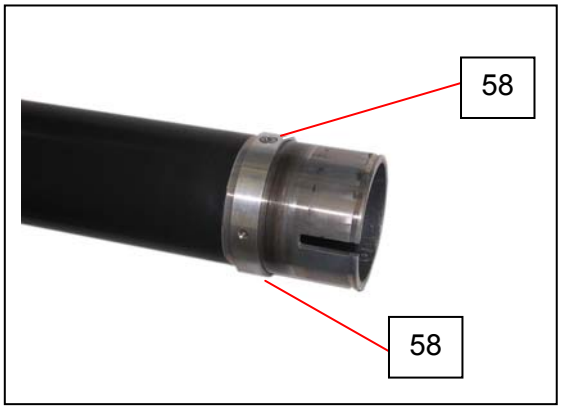


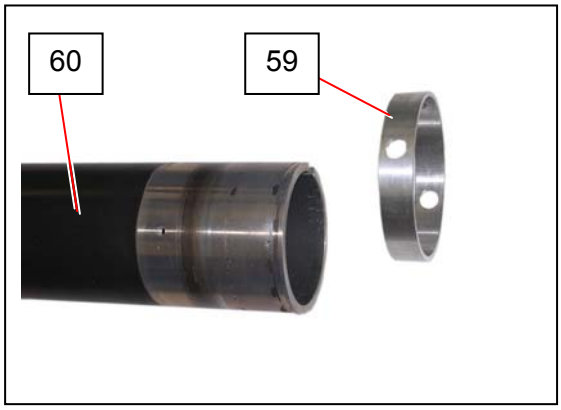
NOTE

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

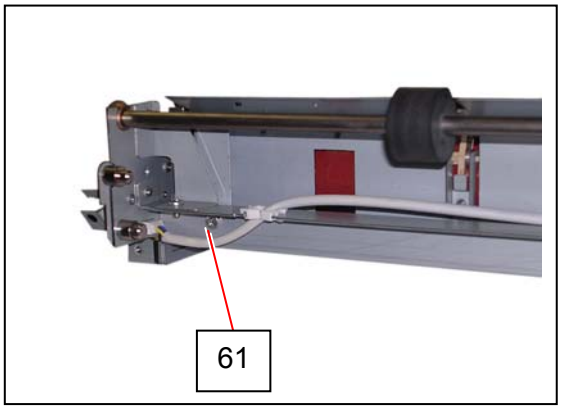


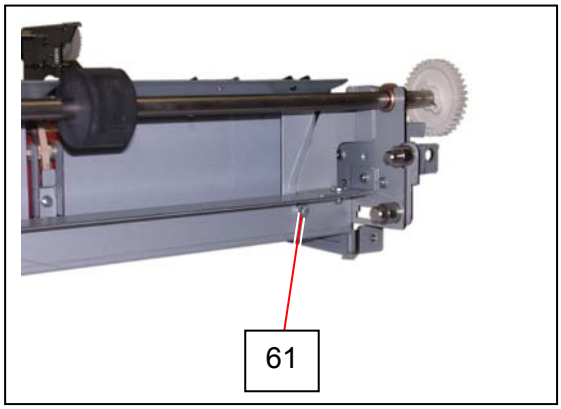
40. Remove 2 screws (58) to remove Collar (59) from Roller Fusing (60).
Replace **Roller Fusing** with a new one.

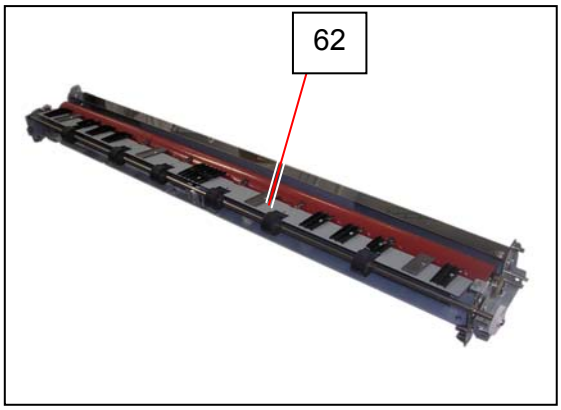


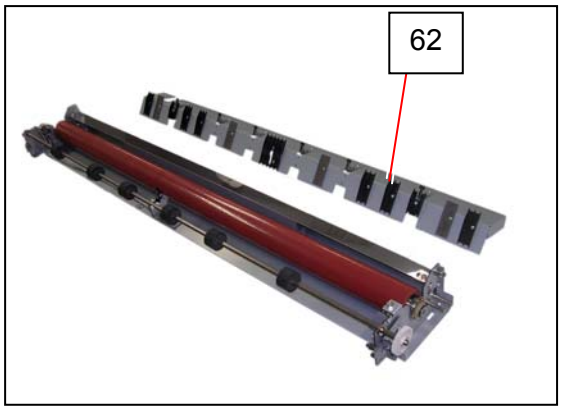


41. On the media exit side of Fuser Lower Unit, remove 2 screws (61) to remove Guide Plate 2 Assy (62).

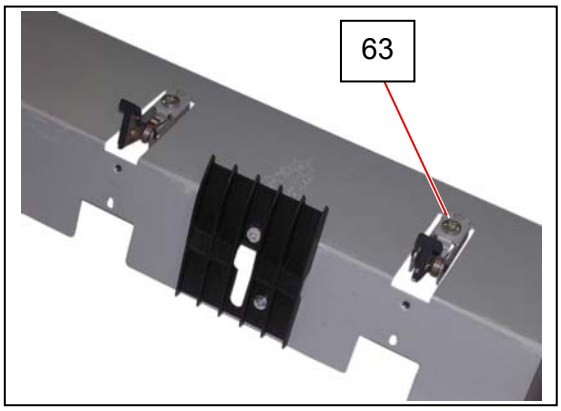


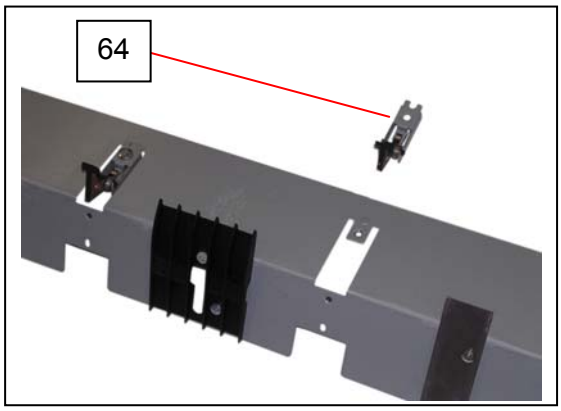




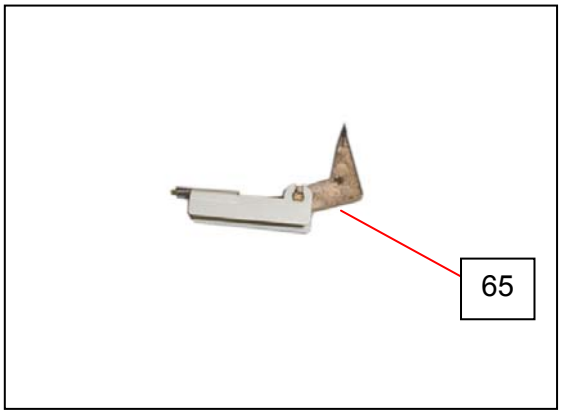


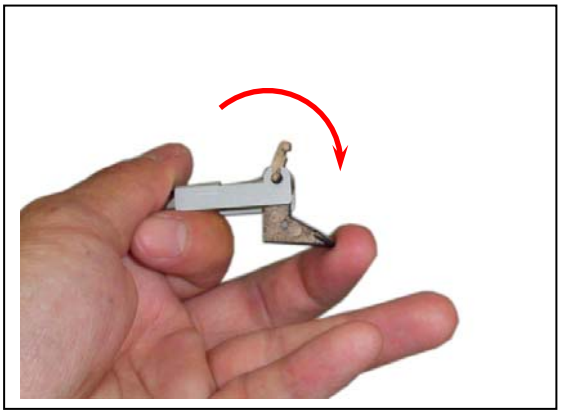
42. Remove 1 screw (63) to remove each Nail Lower Assy (64).

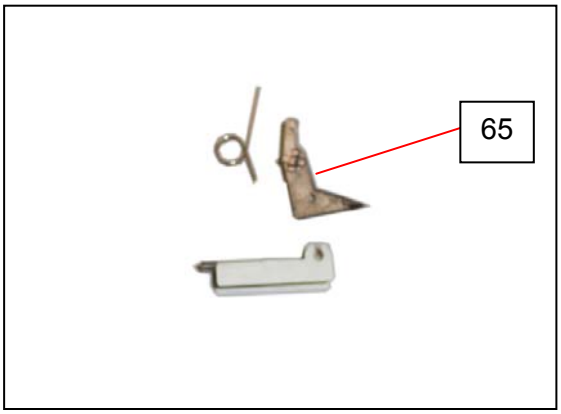




43. Turn Nail Lower (65) to remove it from the bracket.
Replace **Nail Lower** with a new one.

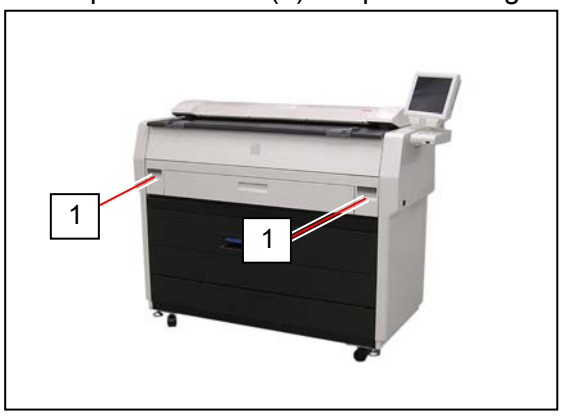




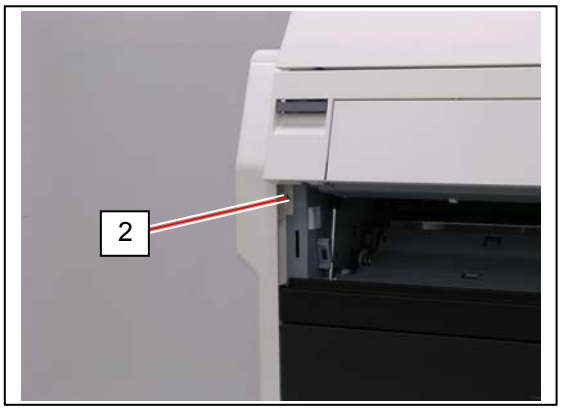


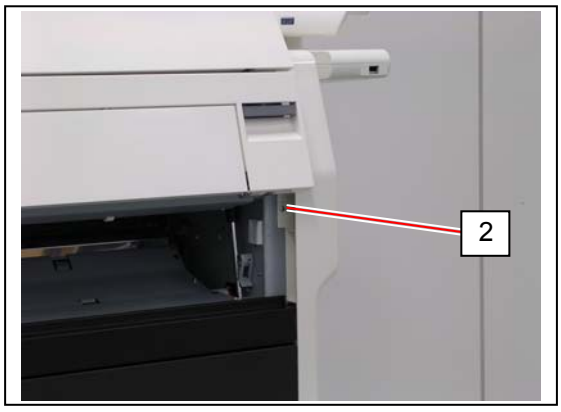
5. 3. 4 Replacement of Roller Pressure

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

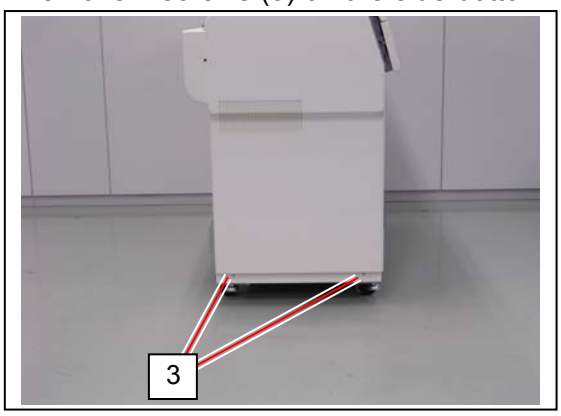


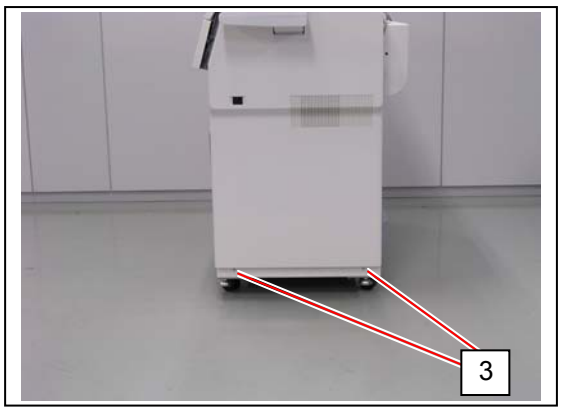
2. Remove 2 screws (2) on the front.



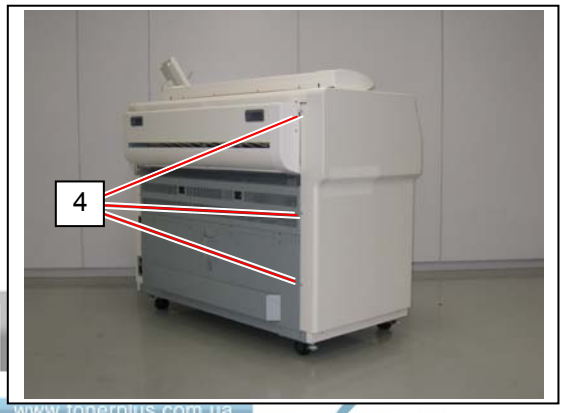


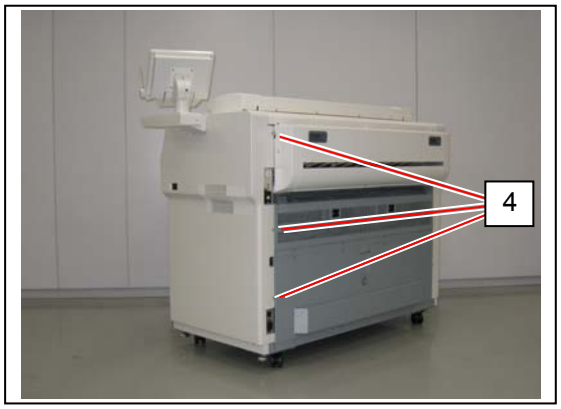
3. Remove 4 screws (3) on the side bottom.





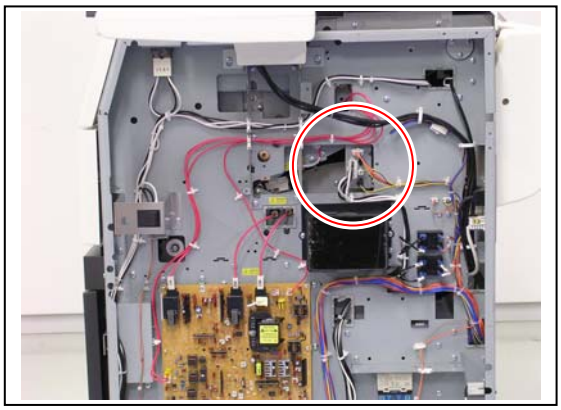
4. Remove 6 screws (4) on the rear.

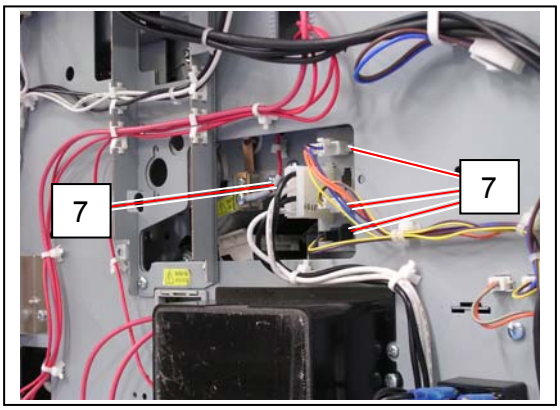




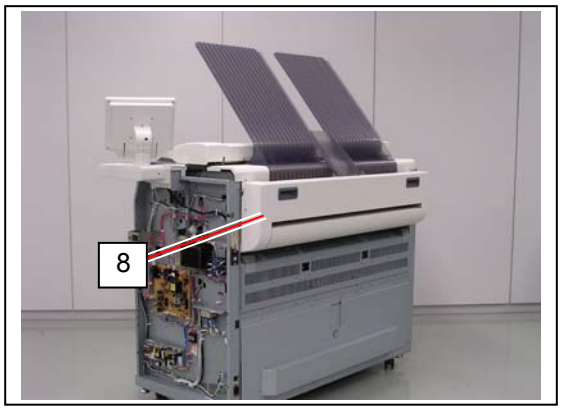
5. Remove Cover Side 2 (5) / Cover Side (6).

6. Disconnect 4 connectors (7).

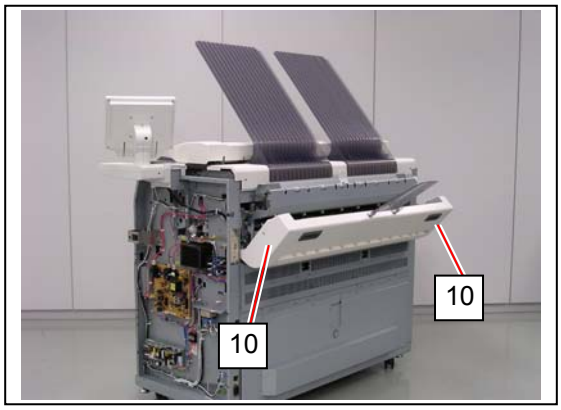


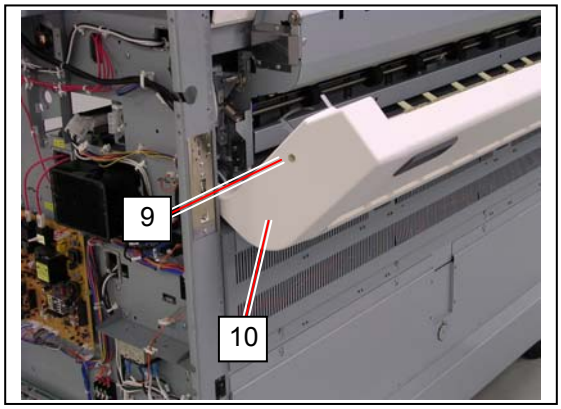


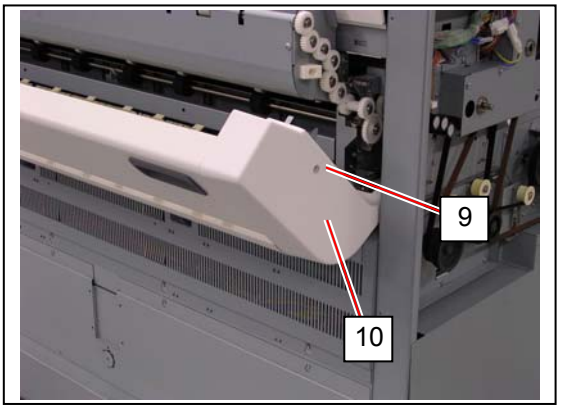
7. Open Exit Cover (8).



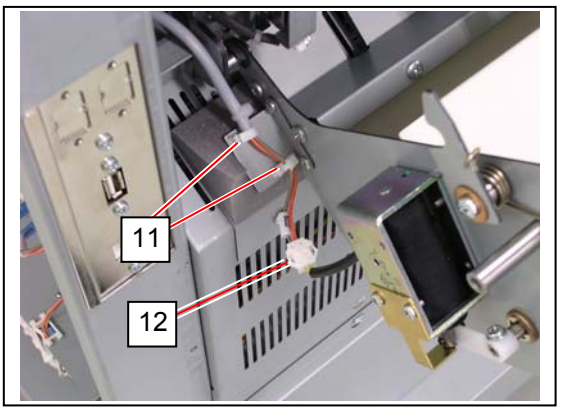
8. Remove 2 screws (9) to remove Exit Side Cover R / L (10).



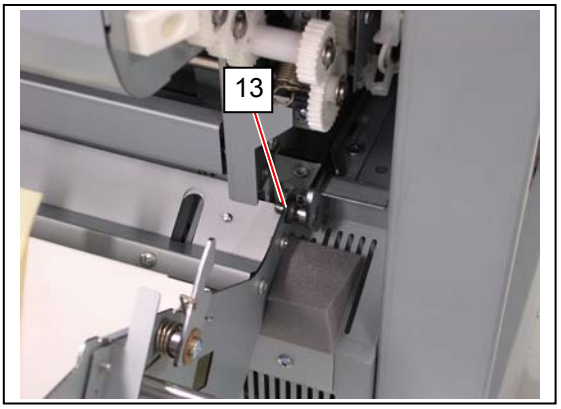




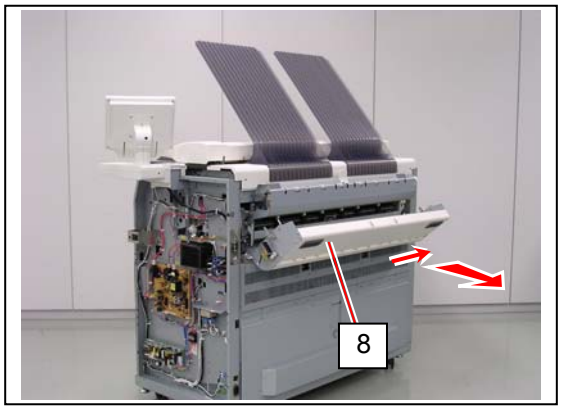
9. Open 2 clamps (11) and disconnect 1 connector (12).



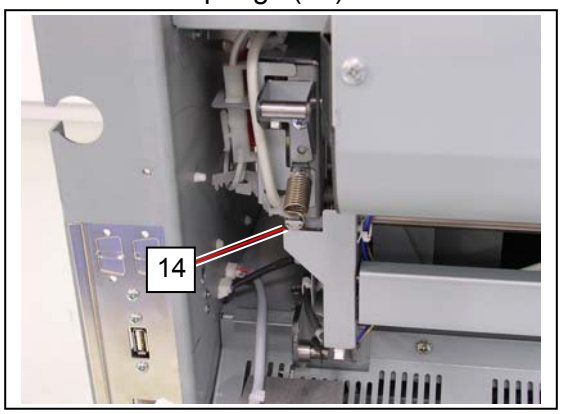
10. On the left side (your right hand), remove 1 piece of KL Clip (13).
<u>It is not necessary for your left hand side.</u>

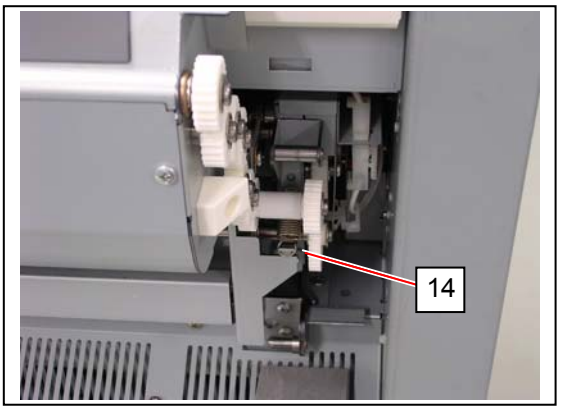


11. Slide Exit Cover (8) to the arrow direction (right hand side) to remove it from the machine.

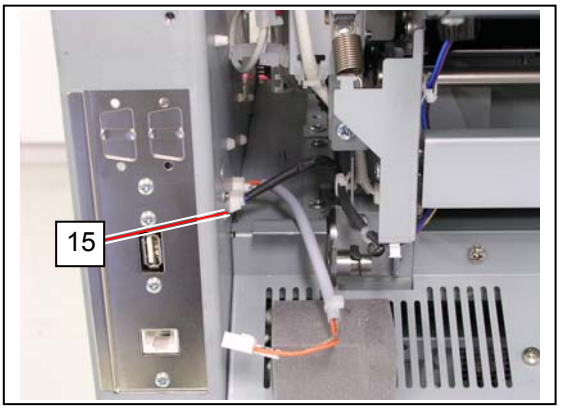


12. Release the springs (14) on both sides.

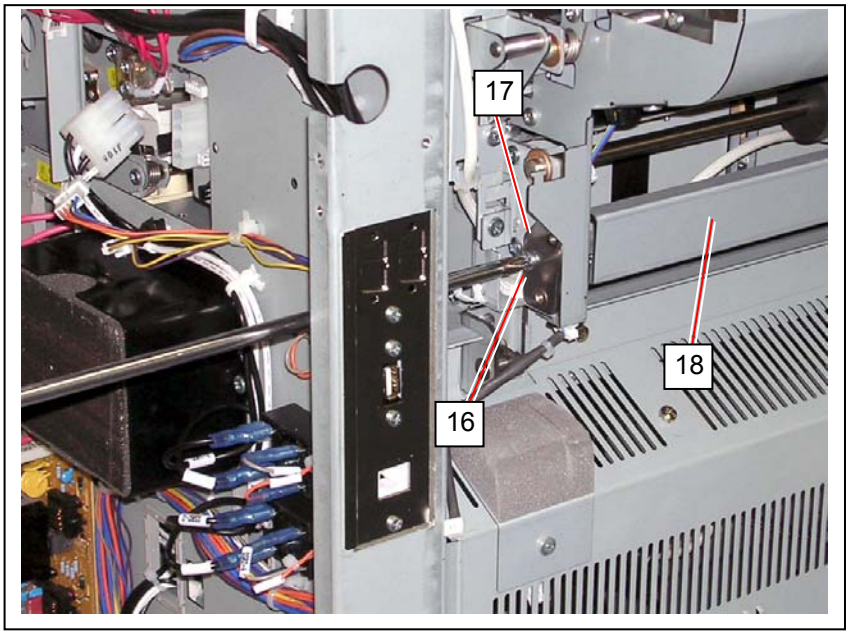




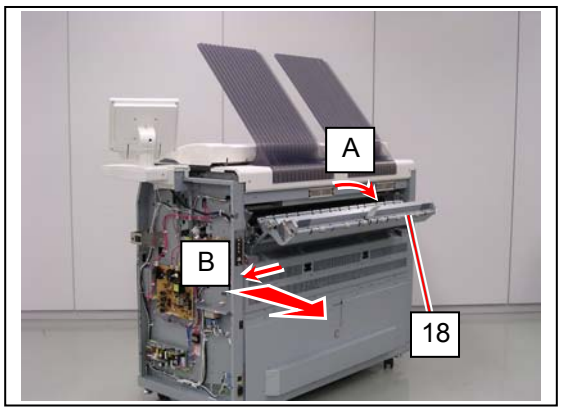
13. Remove 1 connector (15).



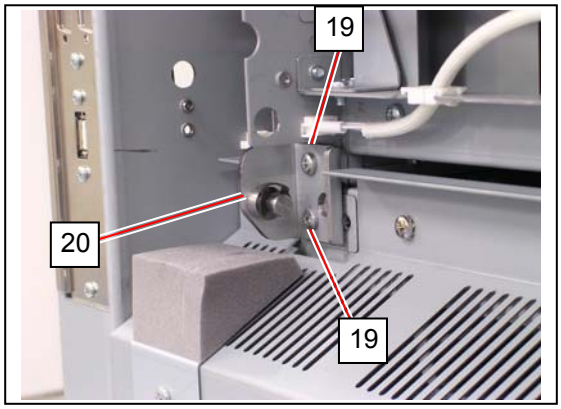
14. Remove 1 screw (16) to release the hinge bracket (17).

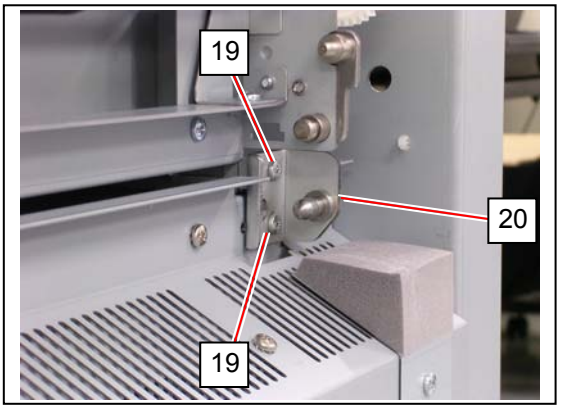


15. With holding Fuser Cover (18)by one hand, slightly open it (A) and remove the hinge bracket (17). Slide Fuser Cover (18) to the arrow direction (left hand side) (B) to remove it from the machine.



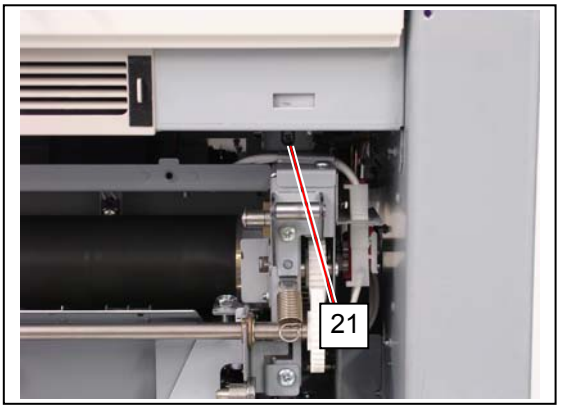
16. Remove 4 screws (19) to remove Bracket R / L (20).





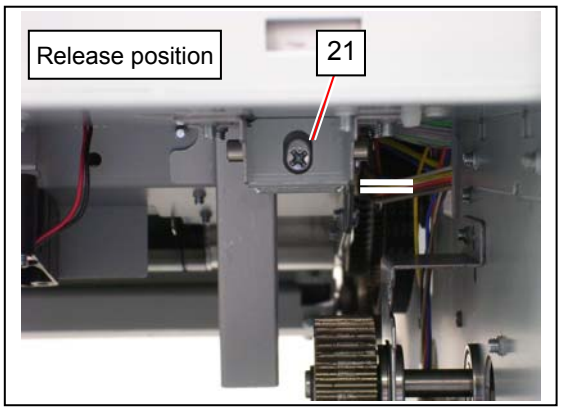
17. Open the Engine Unit.

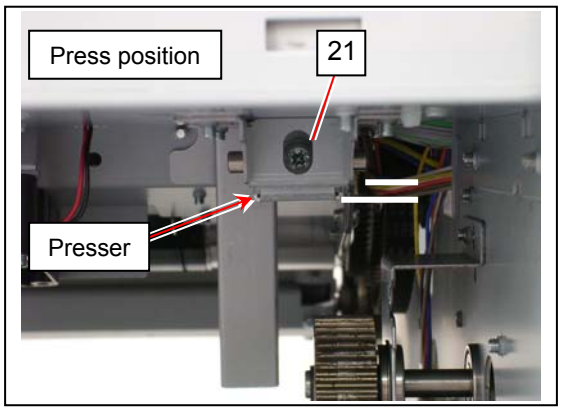
18. Loosen 1 screw (21) to release the drive side of Fuser Unit.



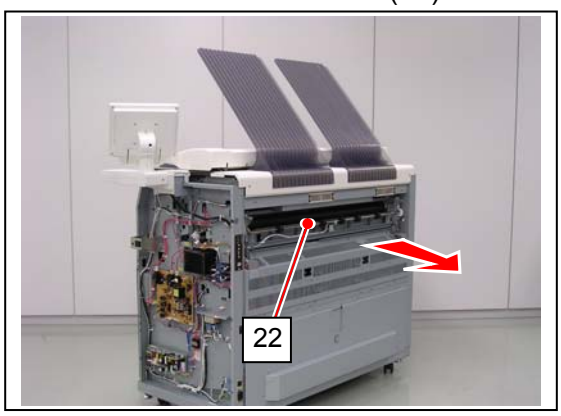
Reference

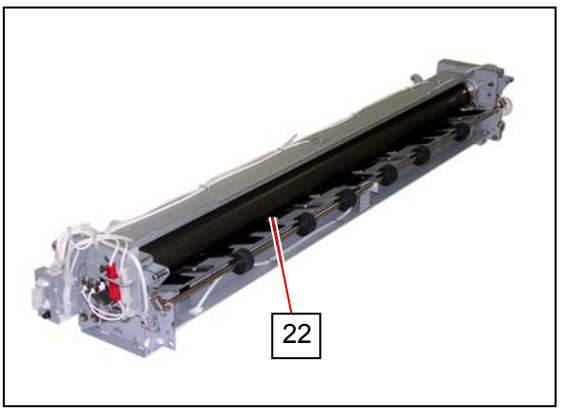
The screw (21) rises or lowers the presser plate to hold the drive side of Fuser Unit.



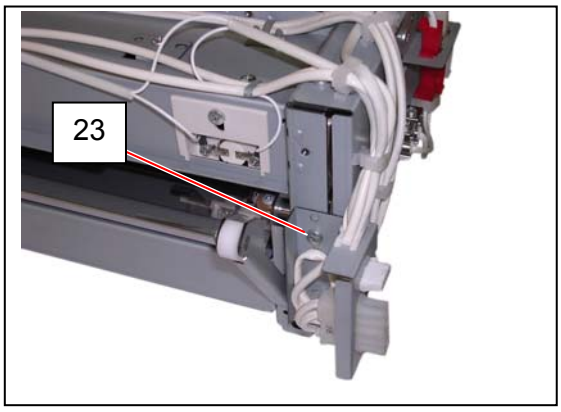


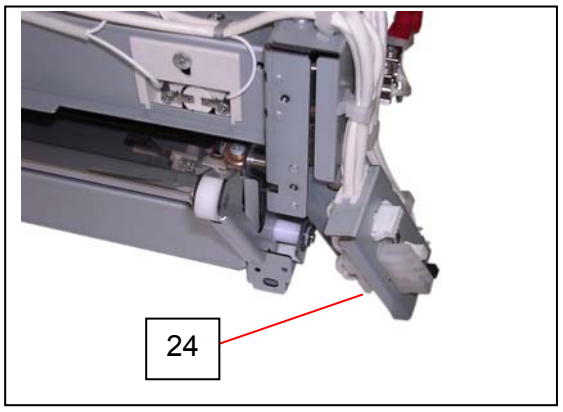
19. Pull and remove Fuser Unit (22) from the machine.



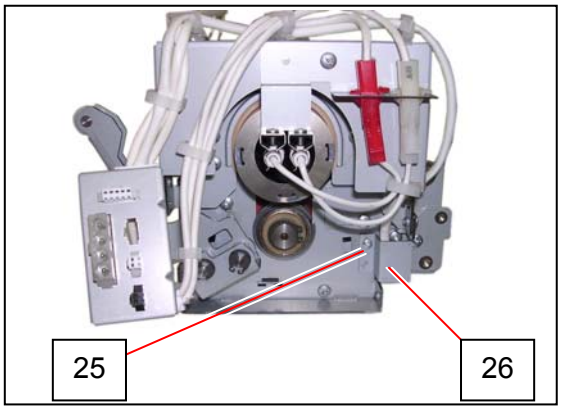


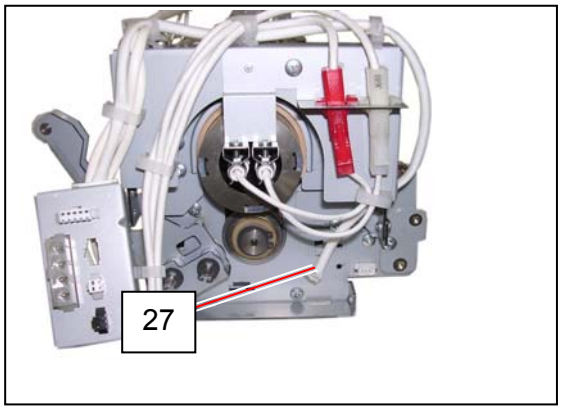
20. On the connector side, remove 1 screw (23) to release Bracket 10 Assy (24).



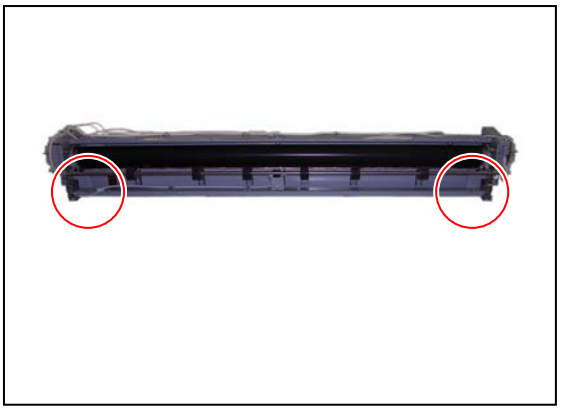


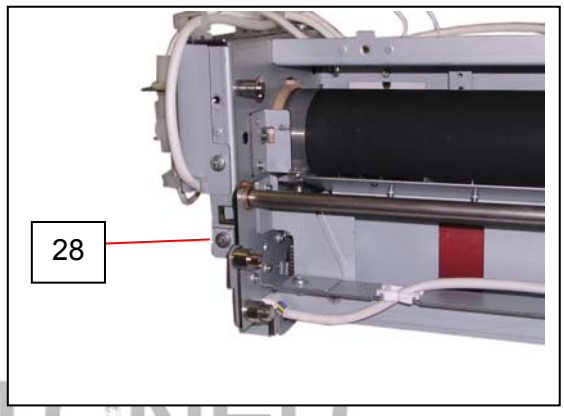
21. On the connector side, remove 1 screw (25) to remove Cover 2 (26). Disconnect the harness (27).

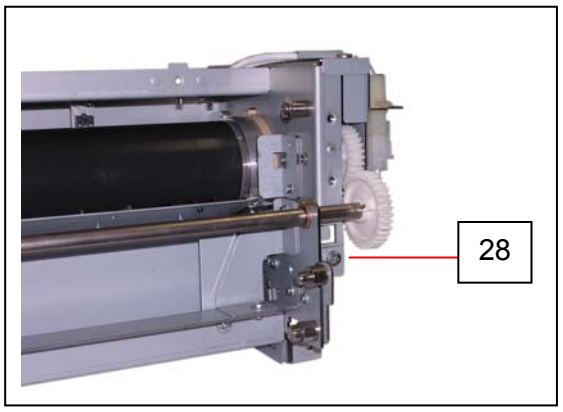




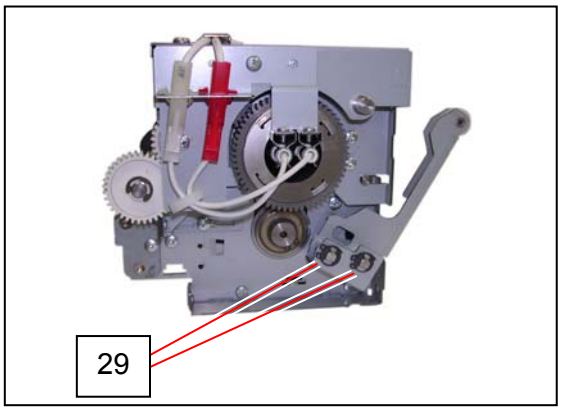
22. Remove 2 screws (28) on the media exit side.

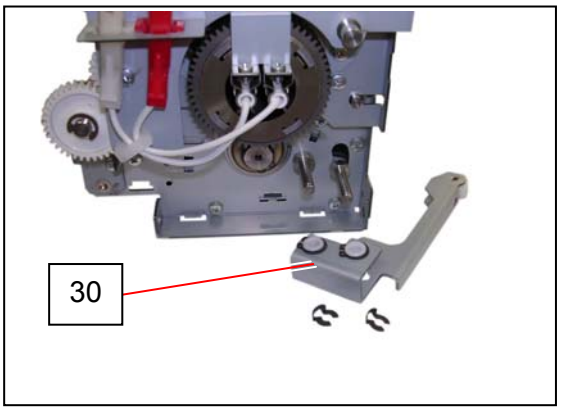


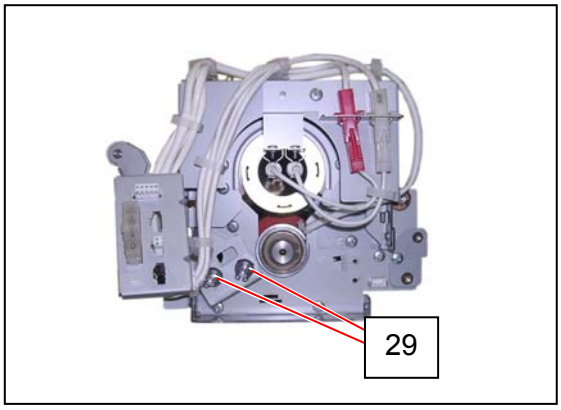


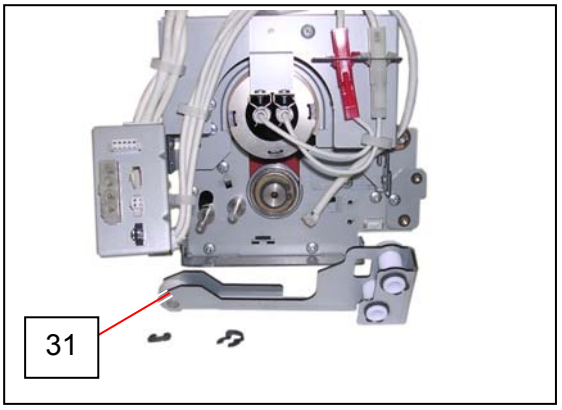


23. On both sides, remove 4 grip rings (29) to remove Arm 4 (30) and Arm 3 (31).

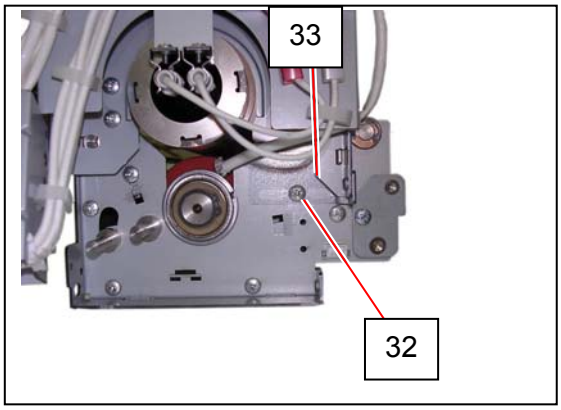


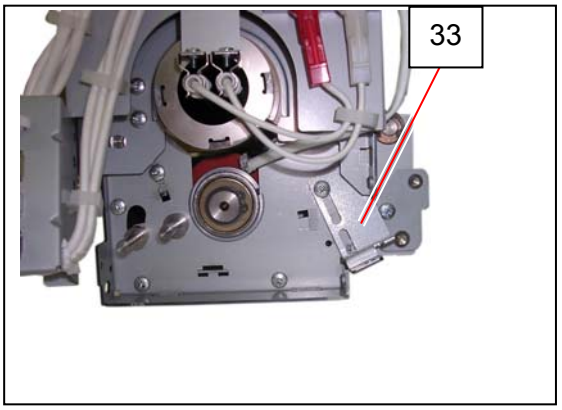




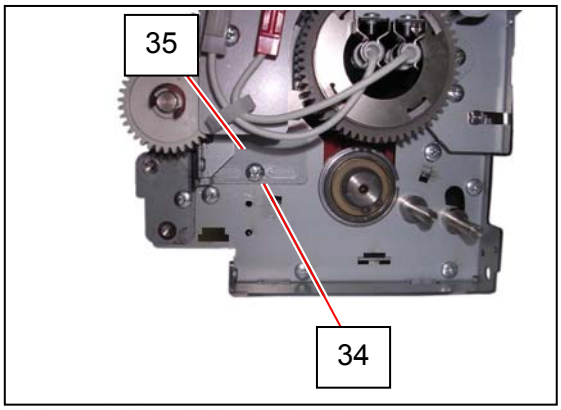


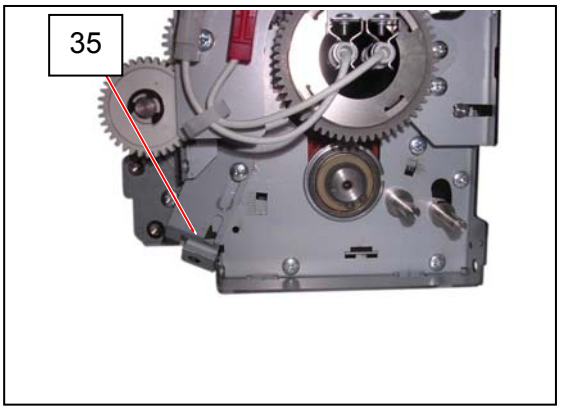
24. On the connector side, loosen 1 screw (32) to release Bracket 2 (33).





25. On the gear side, loosen 1 screw (34) to release Bracket 3 (35).



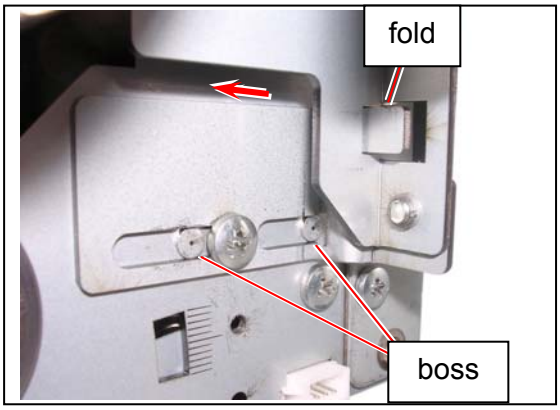


NOTE

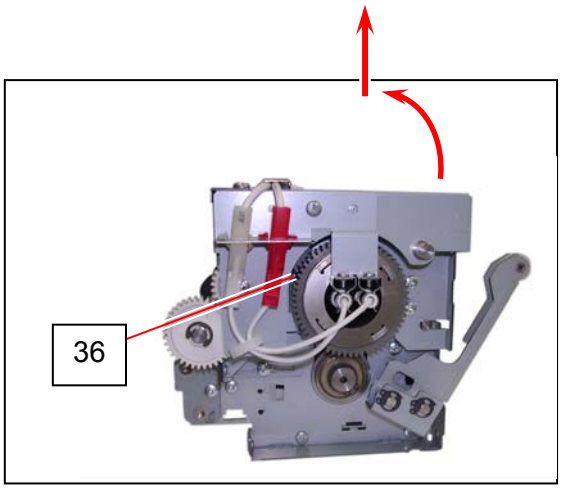
Reinstall Bracket 2 (33) and Bracket 3 (35) in the correct position.

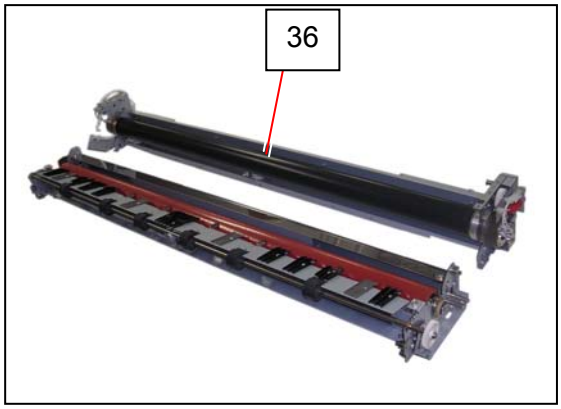
(1) Fully push the bracket to the arrow direction so that the fold portion on the bracket will fit into the notch on Fuser Upper Unit.

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

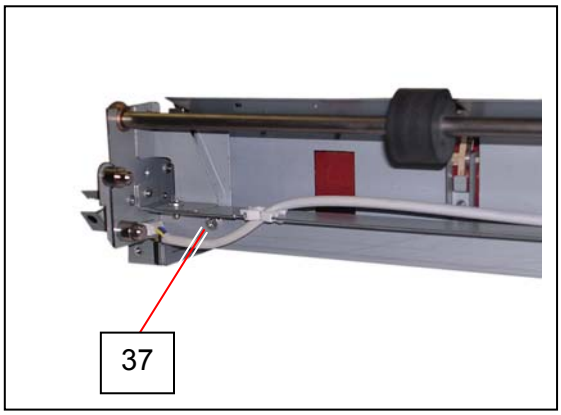


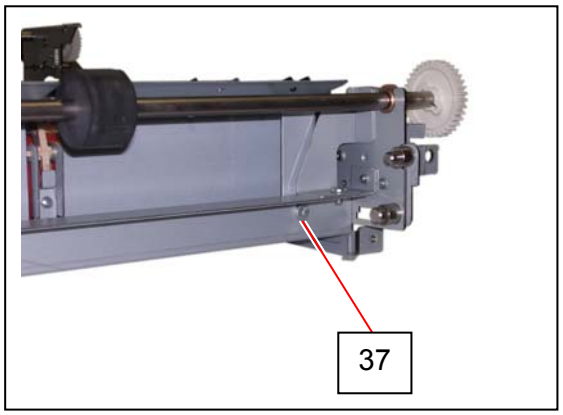
26. Turn Fuser Upper Unit (36) to the back. Lift Fuser Upper Unit upward to remove it.

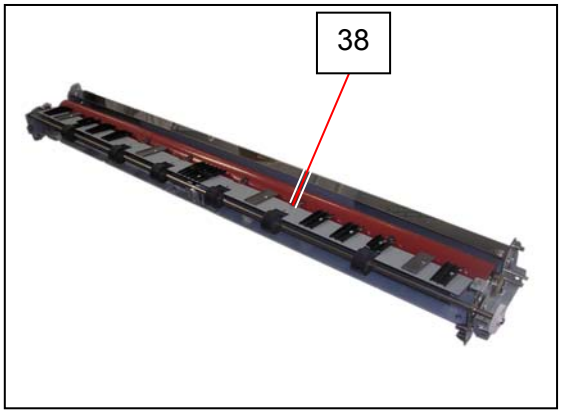


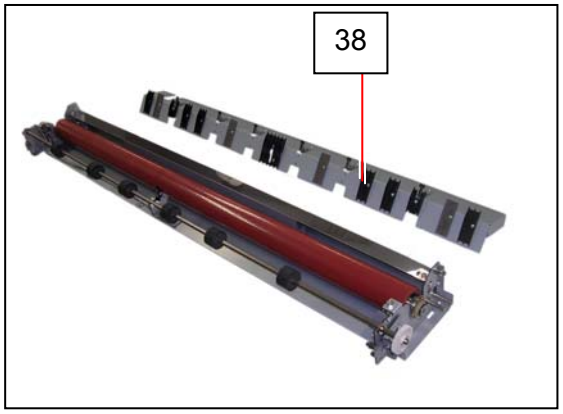


27. On the media exit side of Fuser Lower Unit, remove 2 screws (37) to remove Guide Plate 2 Assy (38).

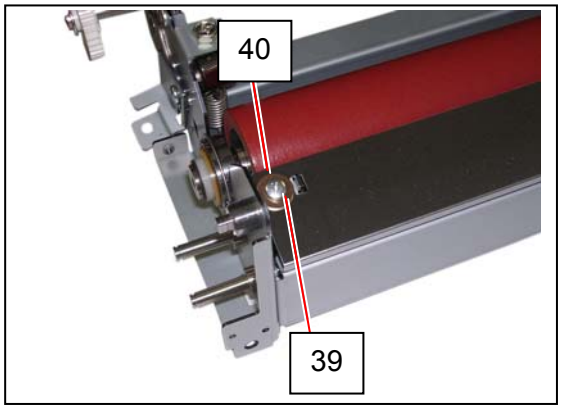


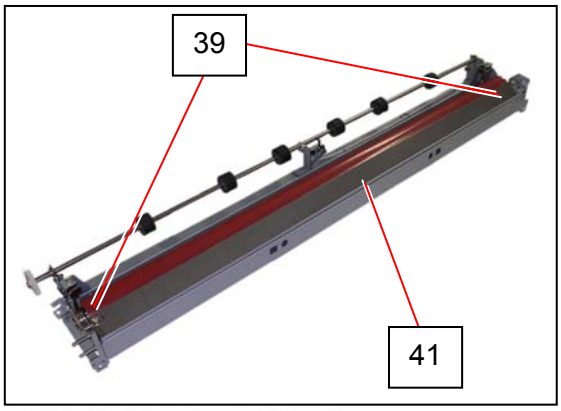






28. Remove 2 screws (39) to remove Washer Special (40) and Guide Plate (41).

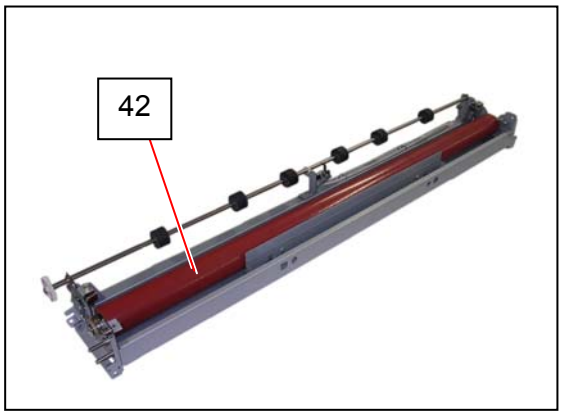




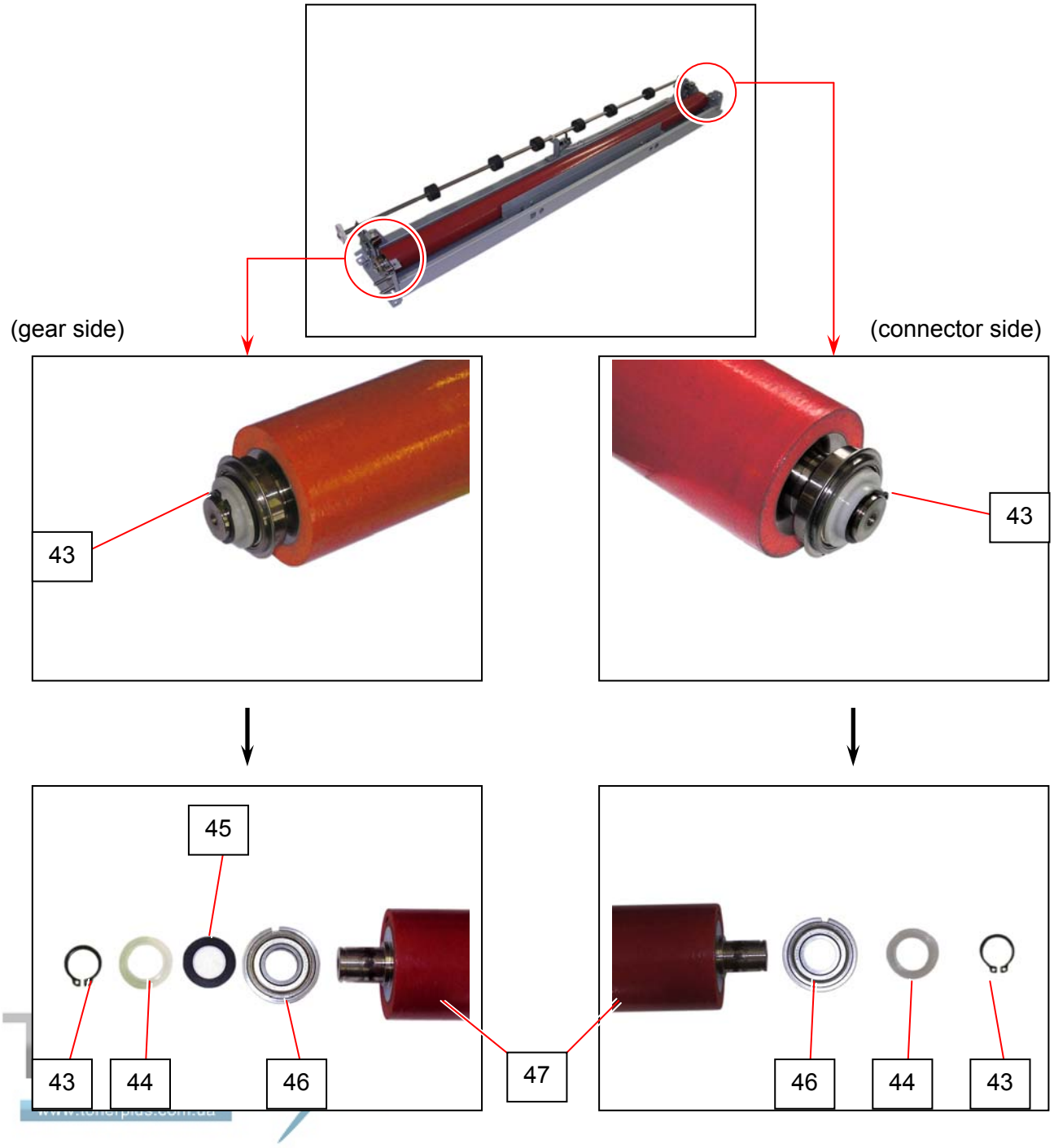
NOTE

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

29. Remove Pressure Roller (42) from the unit.



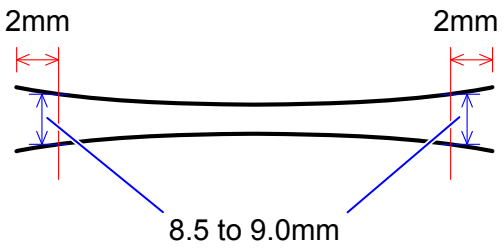
30. Remove Retaining Ring-C (43) to remove Collar (44) (45: only on the gear side), Bearing (46) from each shaft end of Roller Pressure (47).
Replace **Roller Pressure** with a new one.



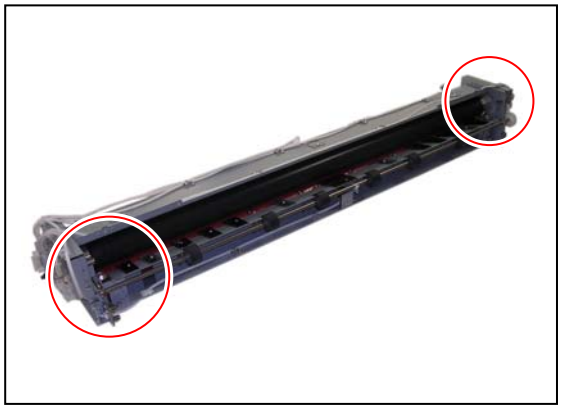
5. 3. 5 Fuser Pressure Adjustment (NIP width check)

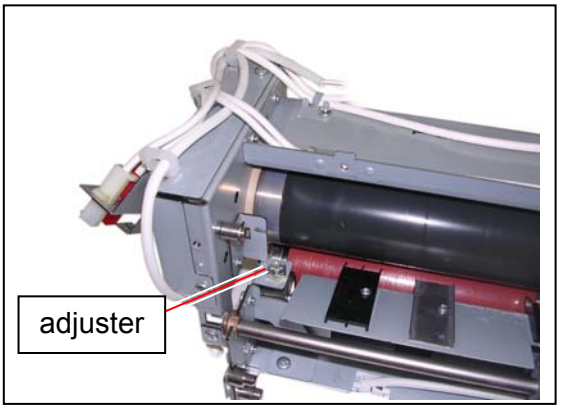
1. Load a tracing paper roll in 36”/A0 width into any available Roll Deck.
2. Make a test print in pattern No.2 S(0) with the roll in 297mm length.
3. When the test print’s leading edge appears within 50mm at the exit cover, stop the print process by opening any cover. At this point, the black area on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

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



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

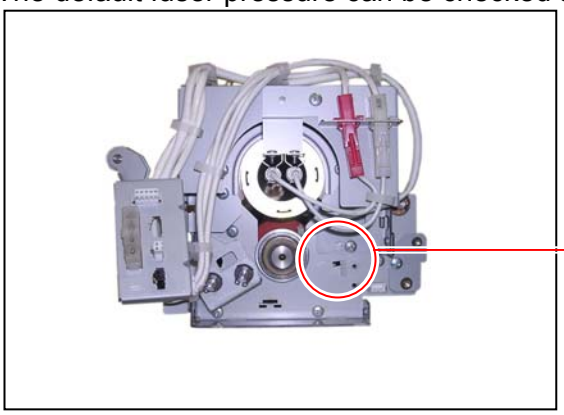




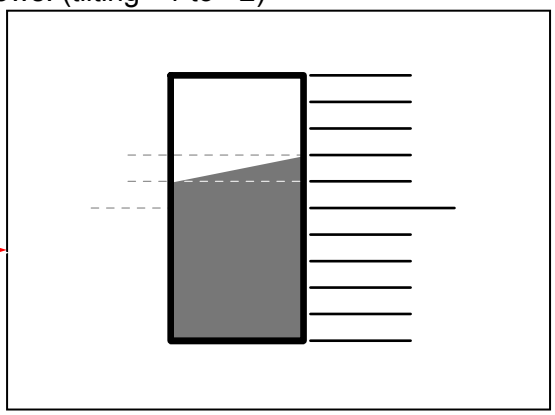
(ex. machine right side)

Reference

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



(ex. machine right side)

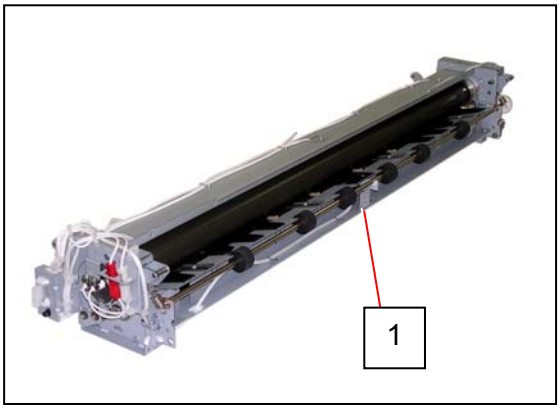


default

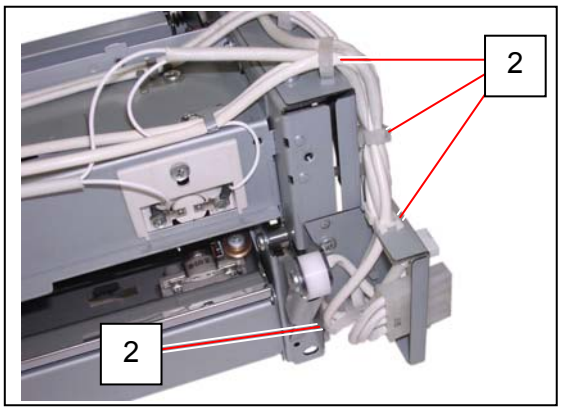
7. Make another test print and check the nip widths until they meet the specification.

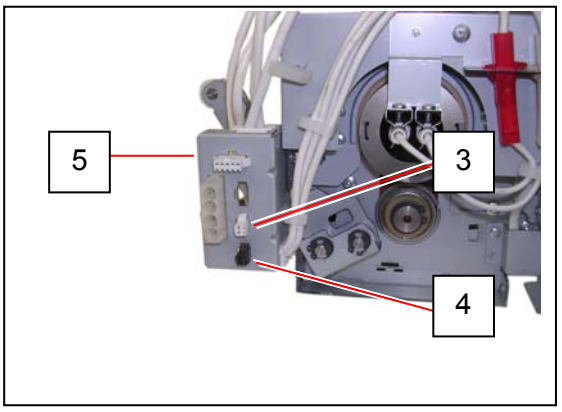
5. 3. 6 Replacement of Thermistor (TH1, TH2)

1. Remove the Fuser Unit (1) from the machine making reference to [5. 3. 1 Removal of the Fuser Unit] on the page 5-74.

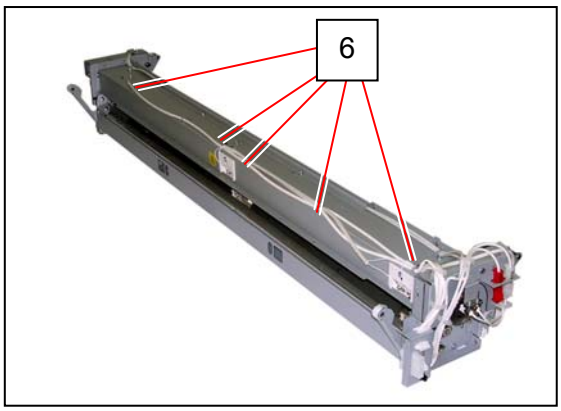


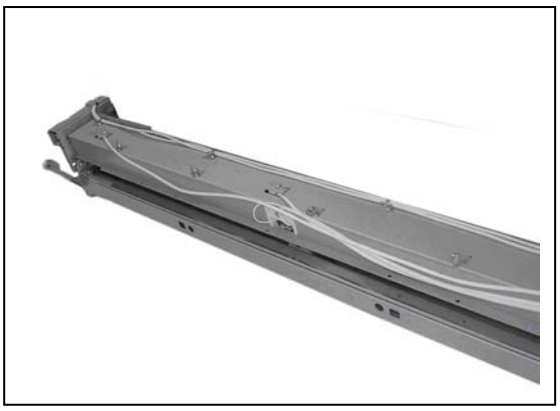
2. Release the harness from the clamps (2).
   Remove the connectors (3: TH1, white) (4: TH2, black) from Bracket 10 Assy (5).



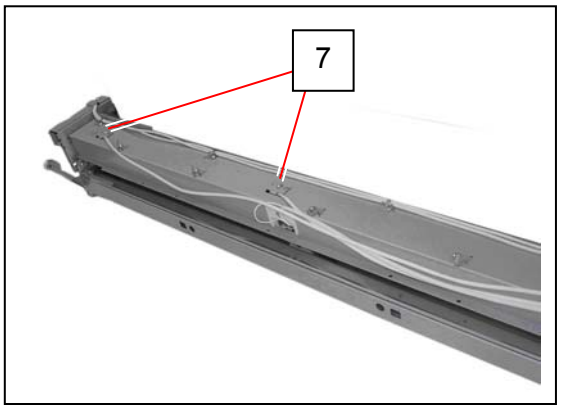


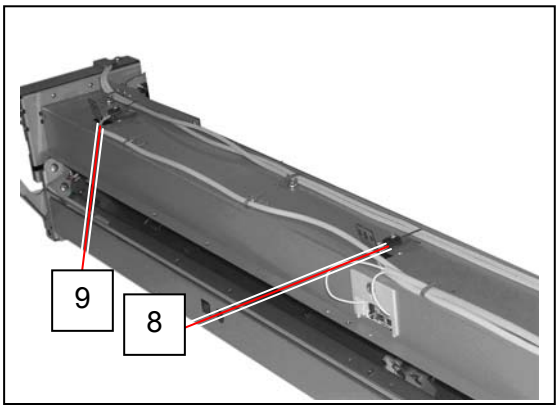
3. Release the harness from the clapms (6).



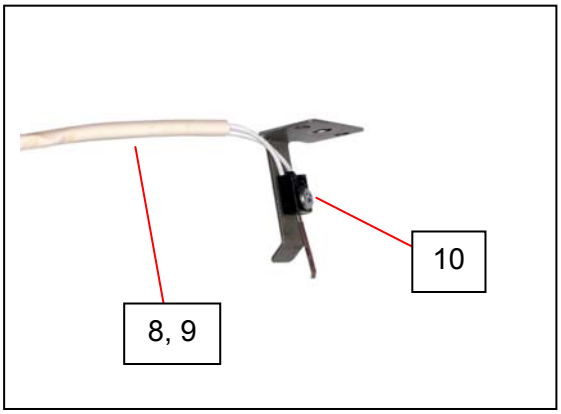


4. Remove each 1 screw (7) to release Thermistor Assy (8: TH1, short harness) and Thermistor 3 Assy (9: TH3, long harness).



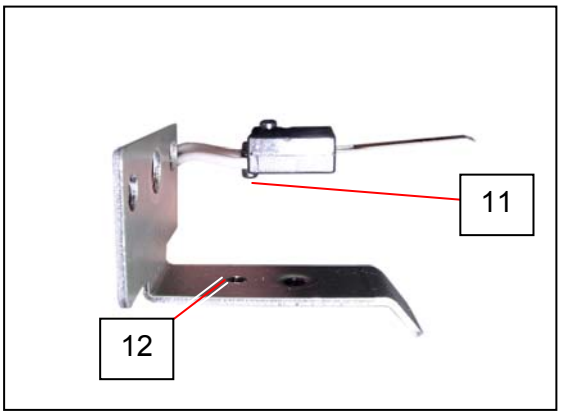


5. Remove 1 screw (10) to replace Thermistor (8: TH1) (9: TH2) with a new one.



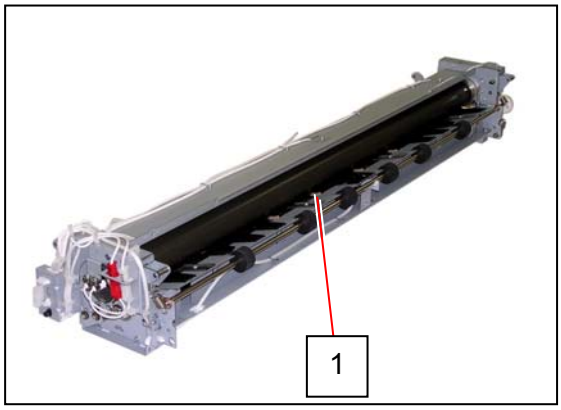
NOTE

Be careful of the direction of Thermistor when reassembling.
The projection (11) nearer to the harness should be inserted to the positioning hole (12).

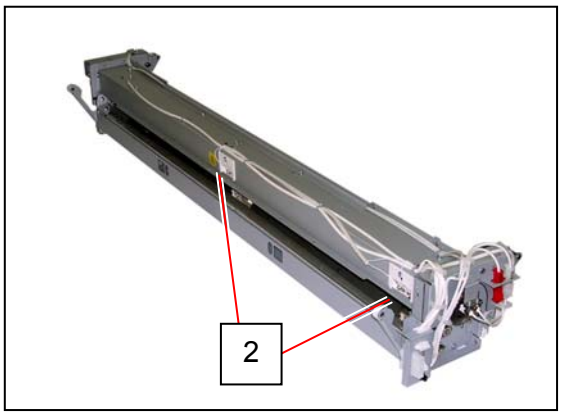


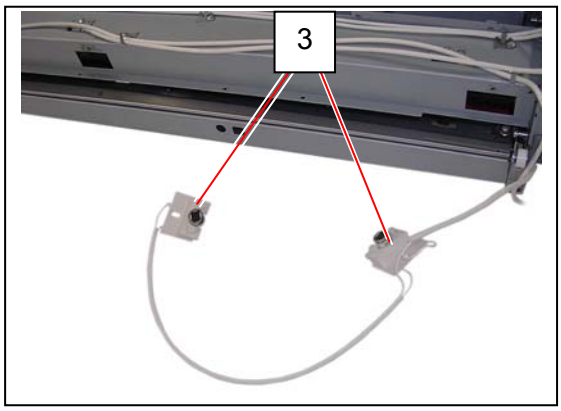
5. 3. 7 Replacement of Thermostat (TS1, TS2)

1. Remove the Fuser Unit (1) from the machine making reference to [5. 3. 1 Removal of the Fuser Unit] on the page 5-74.

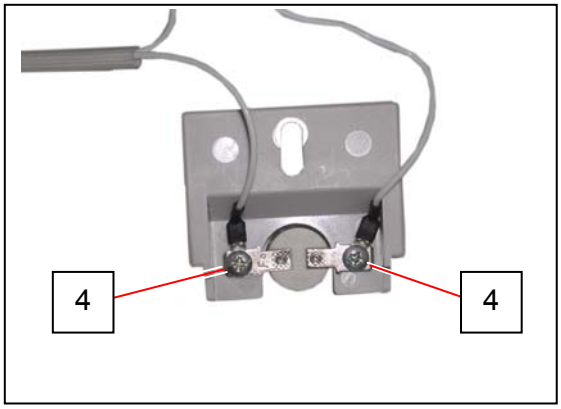


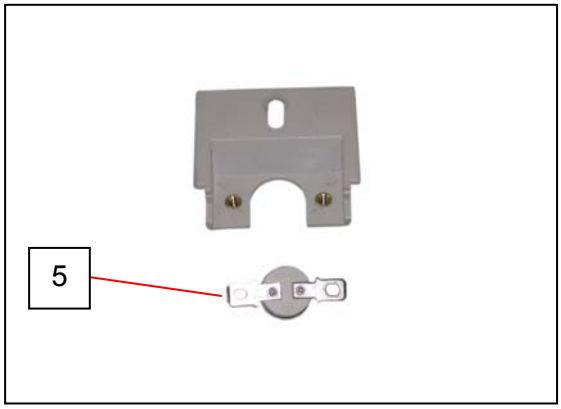
2. Remove 2 screws (2: M4x6) to remove Thermostat Assy (3).





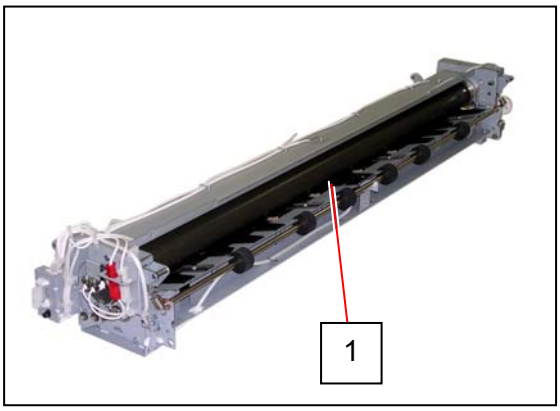
3. Remove 2 screws (4: M3x4) to remove the Thermostat (5).
   Replace the Thermostat (5) with the new one.



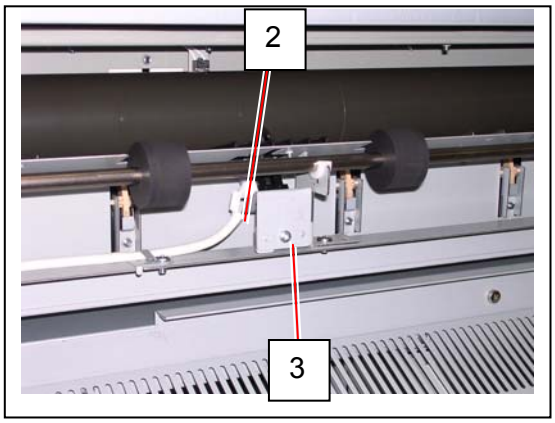


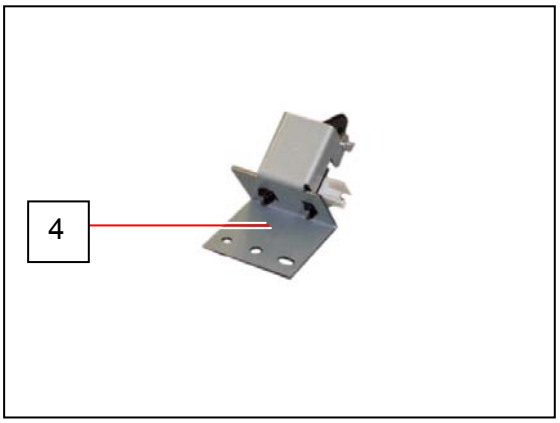
5. 3. 8 Replacement of Exit Sensor (PH3)

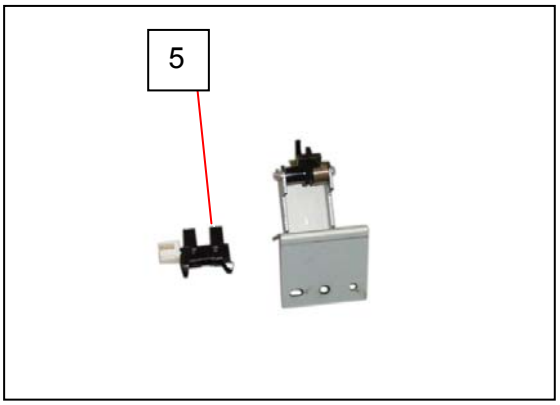
1. Remove the Fuser Unit (1) from the machine making reference to [5. 3. 1 Removal of the Fuser Unit] on the page 5-74.



2. Remove the harness (2) and remove the screw (3) to remove Exit Sensor Assy (4). Remove Exit Sensor (5) form Exit Sensor Assy (4). Replace Exit Sensor with a new one.





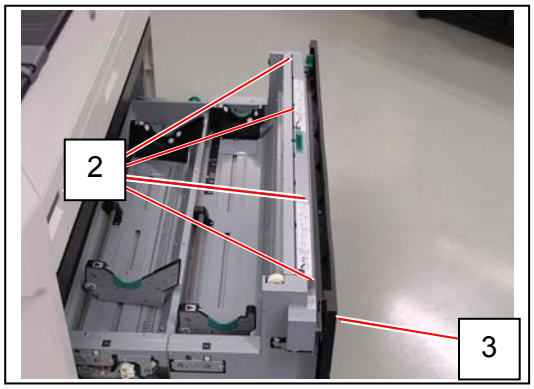


5. 4 Roll Deck

5. 4. 1 Replacement of Cutter Assembly

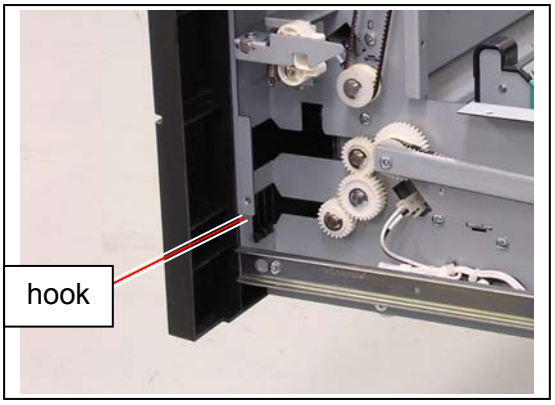
1. Draw out the Roll Deck (1).

2. Remove 4 screws (2) to remove Cover 1 (3).

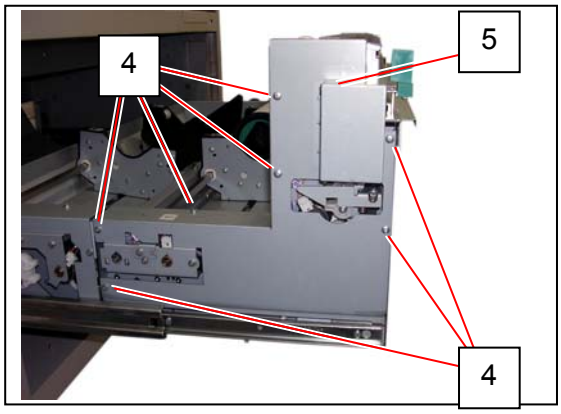


NOTE

Make sure to insert the hooking part to the slit as the following photo when you put back the Cover 1 (3).

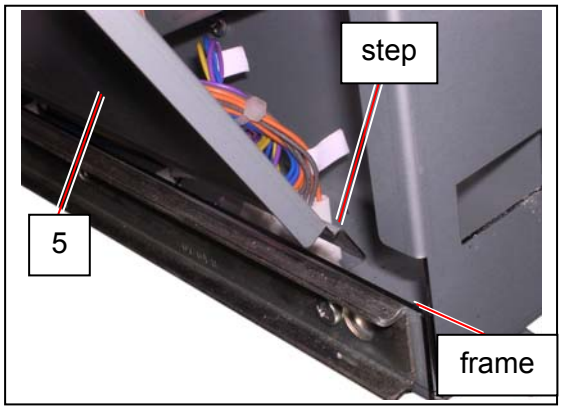


3. Remove 7 screws (4) to remove Cover 14 (5).

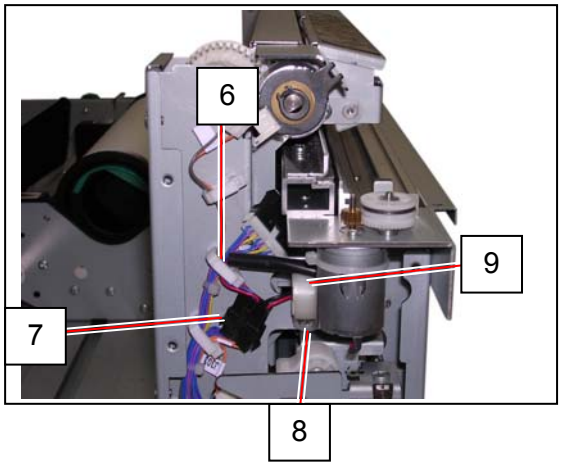


NOTE

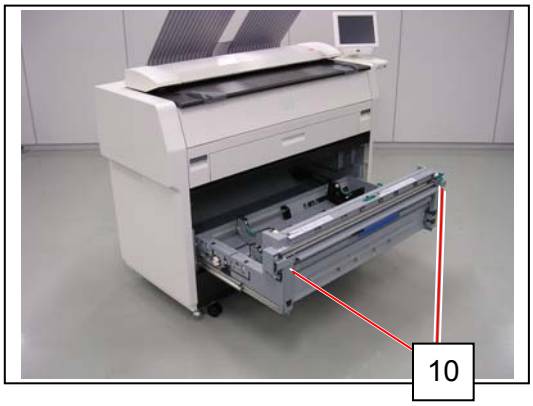
Make sure that the step part on the bottom side of Cover 14 (5) is inside the bottom frame.

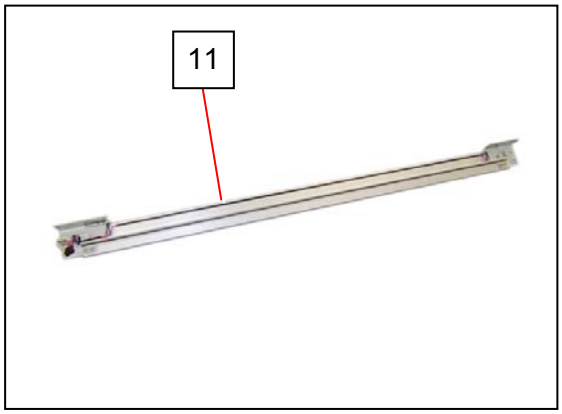


4. Open the wire saddle (6) and disconnect the connector (7) to release the harness.
   Remove 1 screw (8) and remove the clamp (9) to release the core.



5. Remove 2 screws on the front (10) to remove Cutter Assy (11).
   Replace the whole Cutter Assy with a new one.

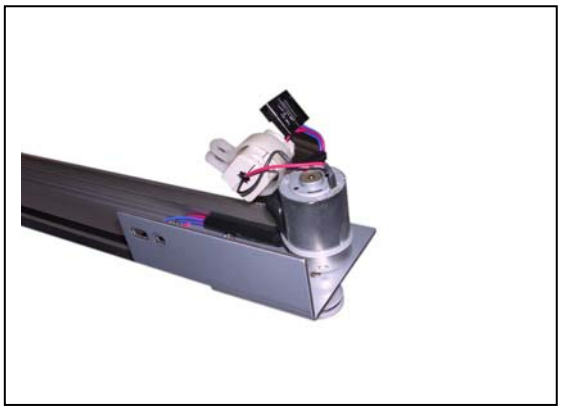




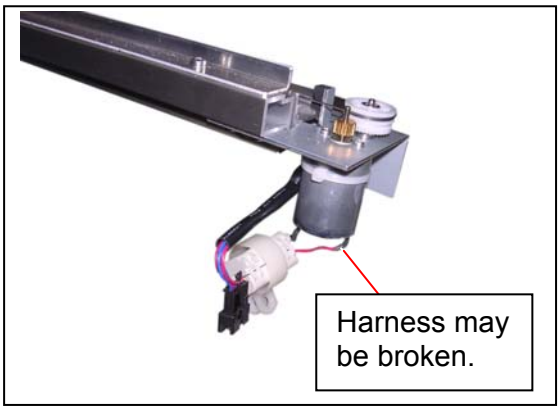
⚠ NOTE

(1) Reuse the clamp (9) and the core for a new Cutter Assembly.

(2) Put the Cutter Assembly with the Cutter Motor up.
   If you put it with the Cutter Motor down, you will break the Cutter Motor Harness.

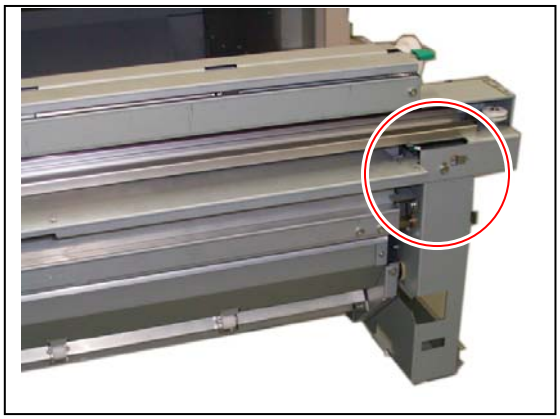


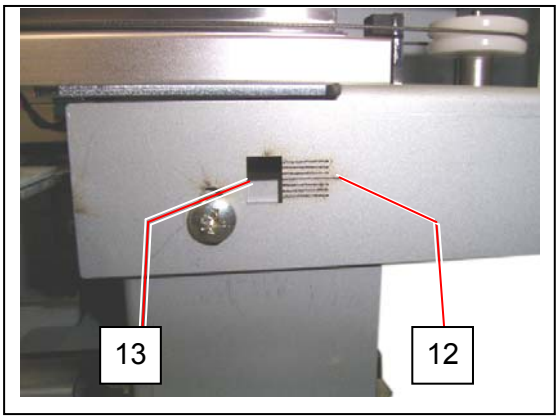
Good



No good

(3) There is the Height Guide (12) on the right side.
   Please fix the Cutter Assembly aligning the plate (13) and the central line of Height Guide (12) each other.

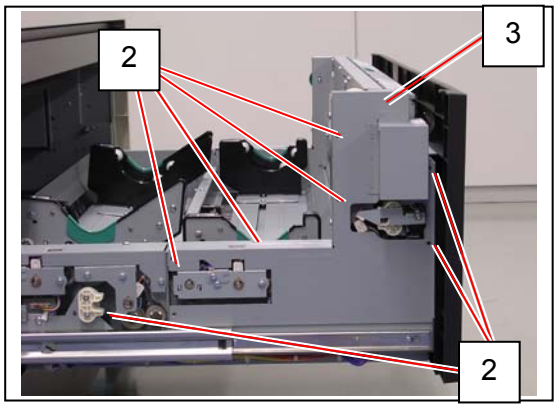


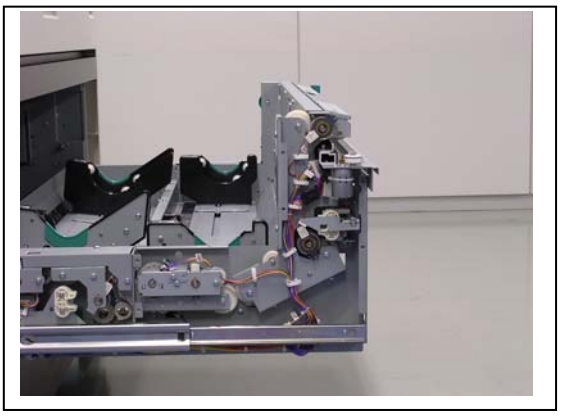


5. 4. 2 Replacement of Clutches (CL3, CL4, CL5) of Roll 1

1. Draw out the Roll Deck (1).

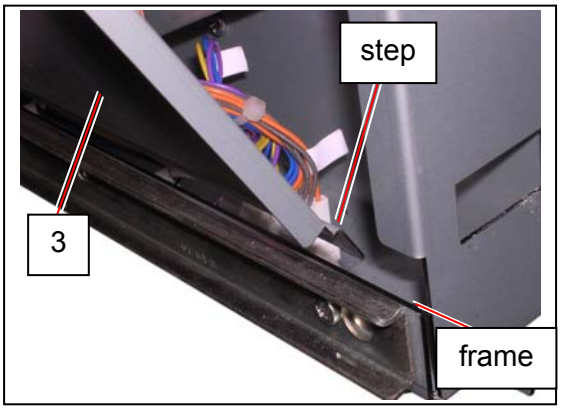
2. Remove 7 screws (2) to remove Cover 14 (3).



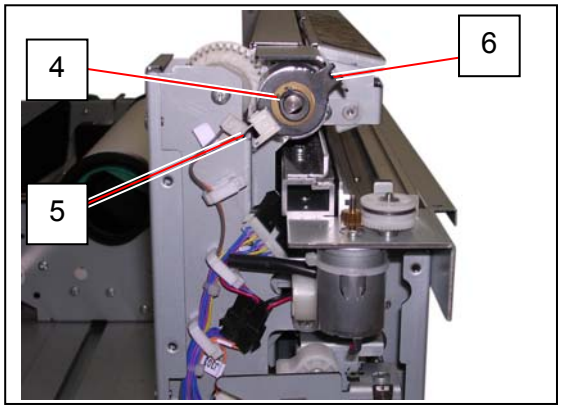


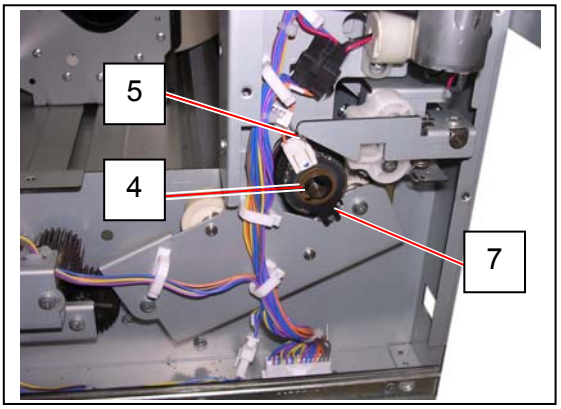
NOTE

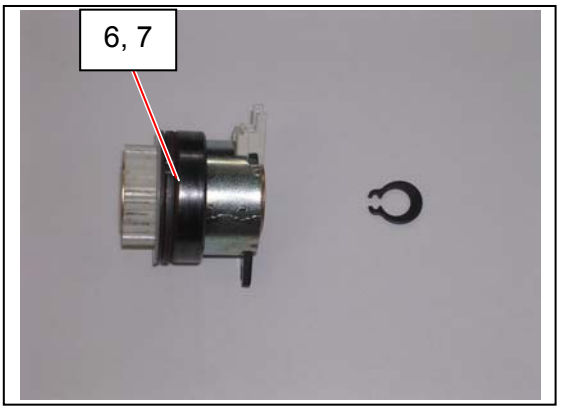
Make sure that the step part on the bottom side of Cover 14 (3) is inside the bottom frame.



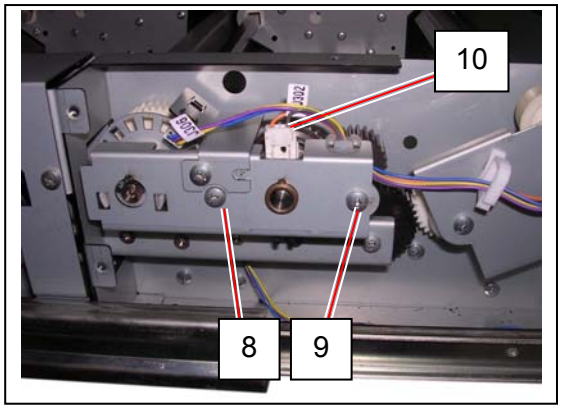
3. Remove Retaining Ring-C (4) and disconnect the harness (5) to remove each Clutch (6: CL3) or Clutch (7: CL4).
   Replace Clutch with a new one.

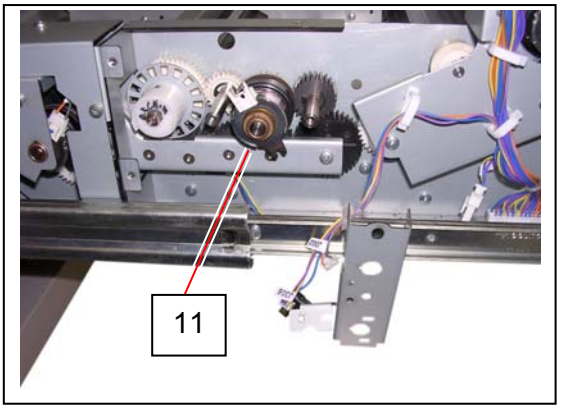


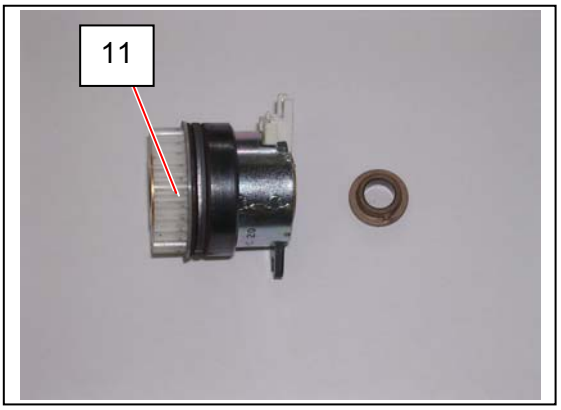




4. Remove 1 Bind Head Screw (8) and 1 Pan Head Screw (9), disconnect the harness (10) to remove Clutch (11: CL5). Replace Clutch with a new one.



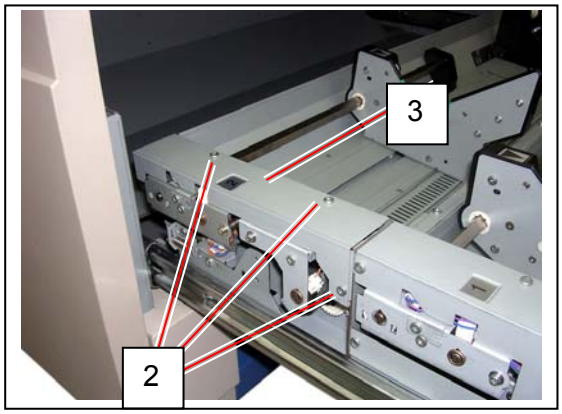


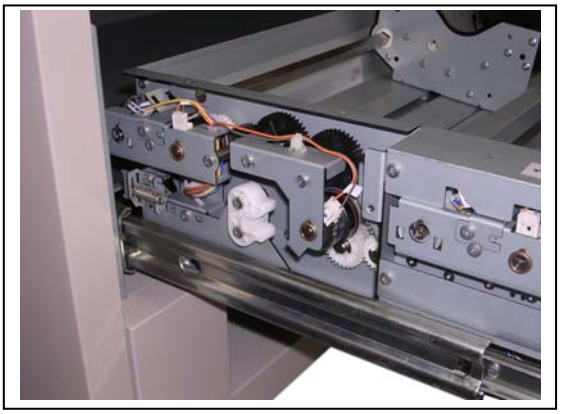


5. 4. 3 Replacement of Clutches (CL6, CL7) of Roll 2

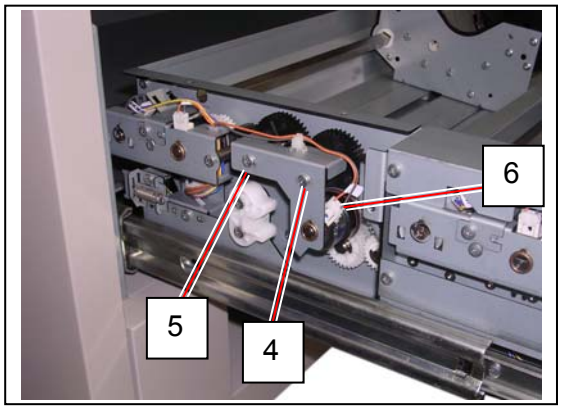
1. Draw out the Roll Deck (1).

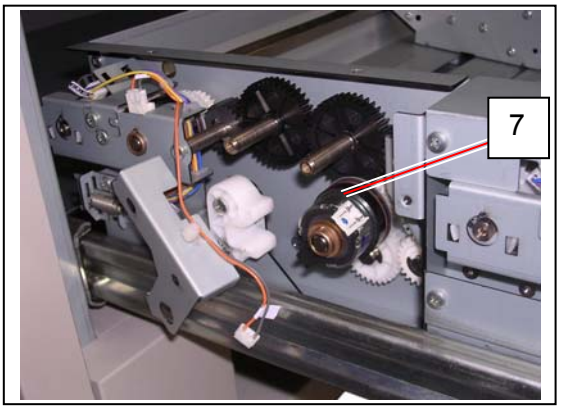
2. Remove 3 screws (2) to remove Cover 16 (3).

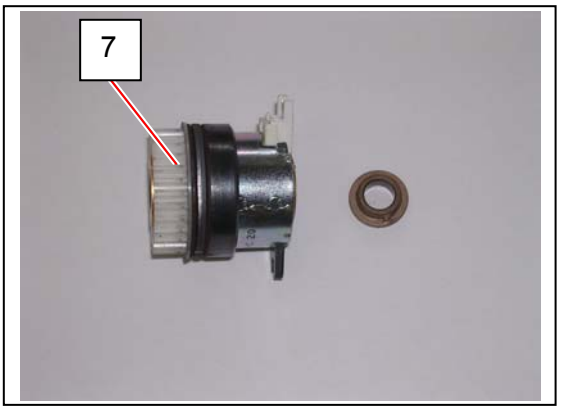




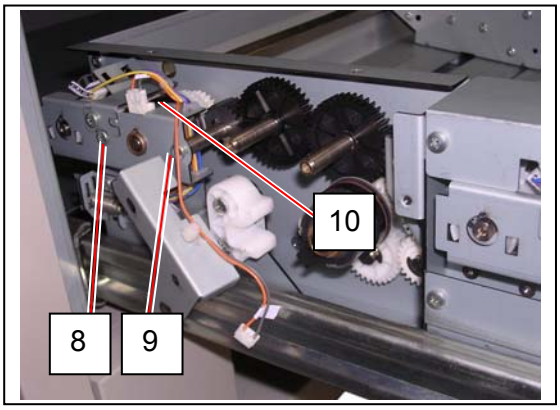
3. Remove 1 Bind Head Screw (4) and 1 Pan Head Screw (5), disconnect the harness (6) to remove Clutch (7: CL6). Replace Clutch with a new one.

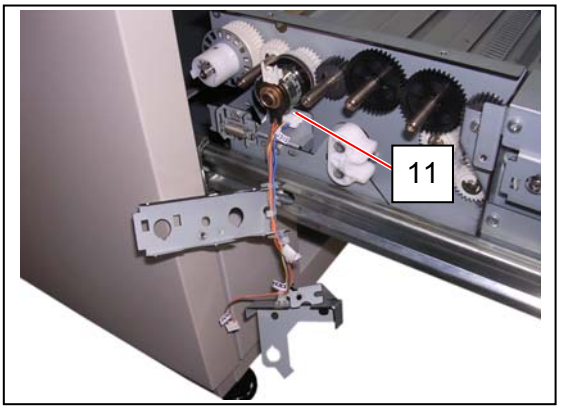






4. Remove 1 Bind Head Screw (8) and 1 Pan Head Screw (9), disconnect the harness (10) to remove Clutch (11: CL7). Replace Clutch with a new one.

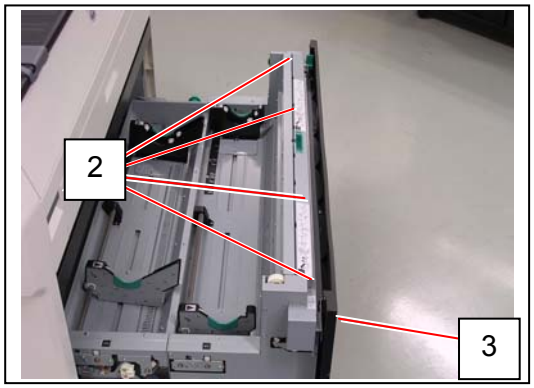




5. 4. 4 Replacement of Timing Belt 633

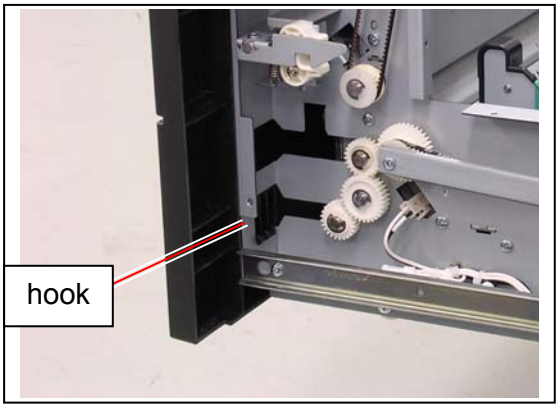
1. Draw out the Roll Deck (1).

2. Remove 4 screws (2) to remove Cover 1 (3).

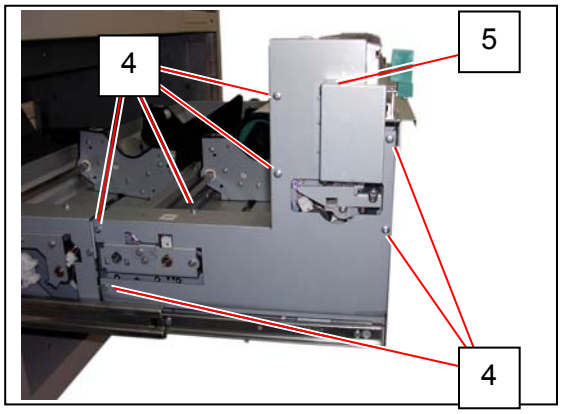


NOTE

Make sure to insert the hooking part to the slit as the following photo when you put back the Cover 1 (3).

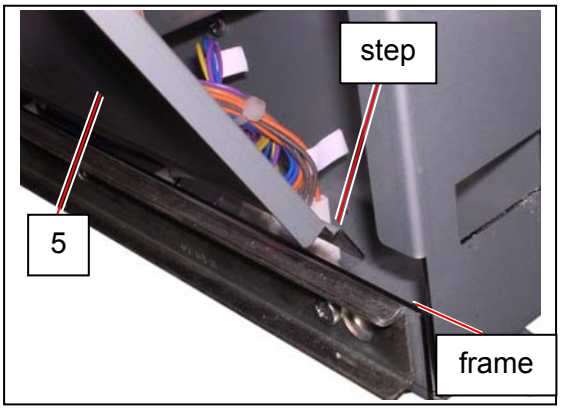


3. Remove 7 screws (4) to remove Cover 14 (5).

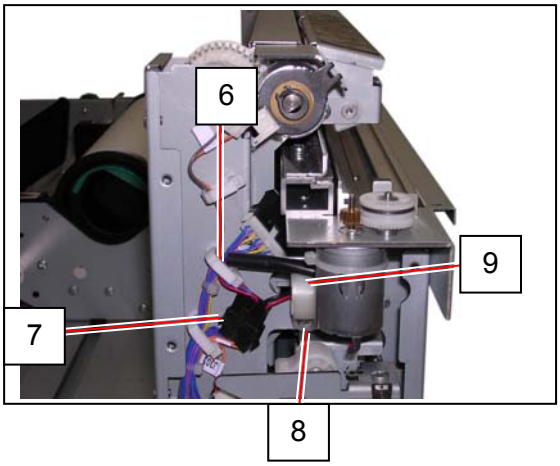


NOTE

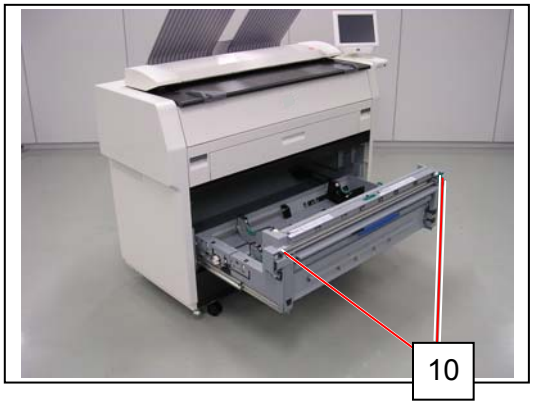
Make sure that the step part on the bottom side of Cover 14 (5) is inside the bottom frame.

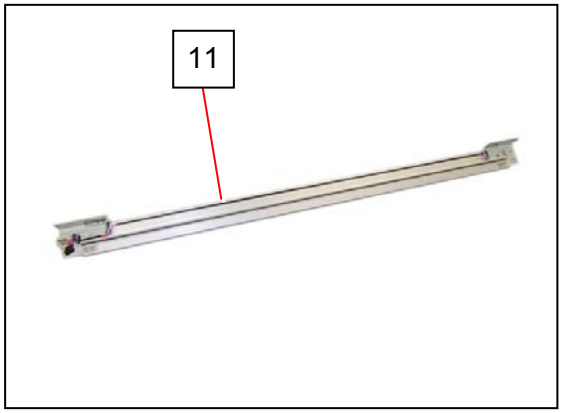


4. Open the wire saddle (6) and disconnect the connector (7) to release the harness.
   Remove 1 screw (8) and remove the clamp (9) to release the core.

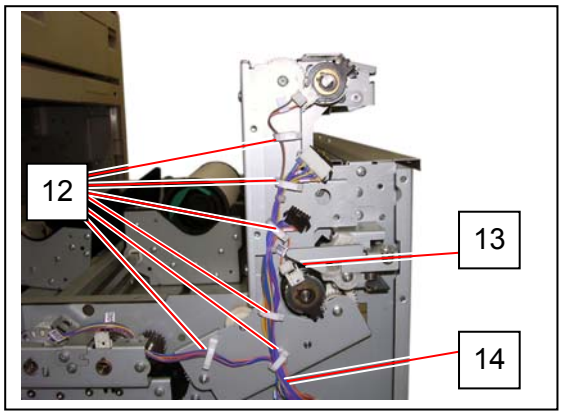


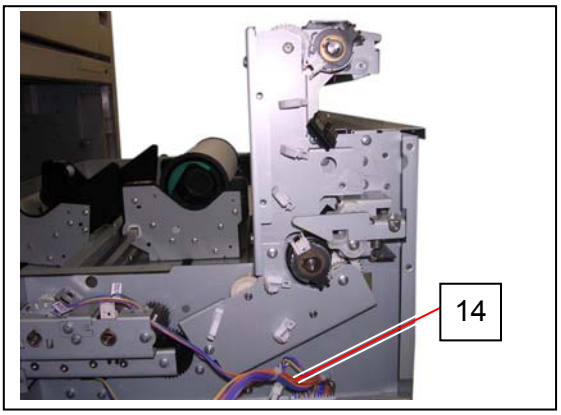
5. Remove 2 screws on the front (10) to remove Cutter Assy (11).



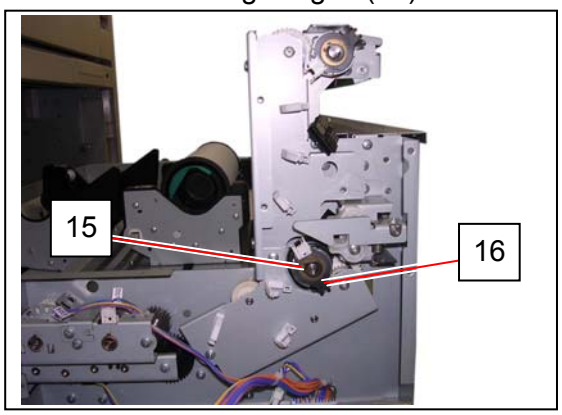


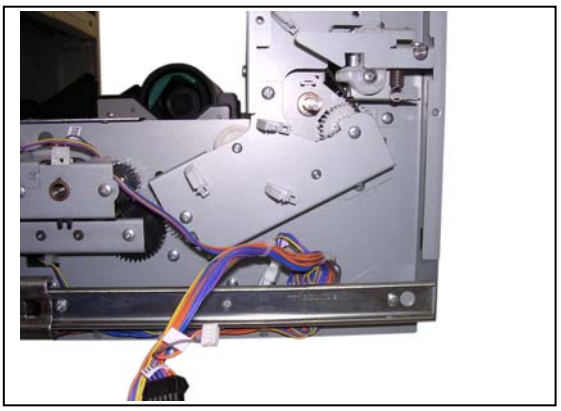
6. Open 6 wire saddles (12) and release 3 connectors (13) to release the harness (14).



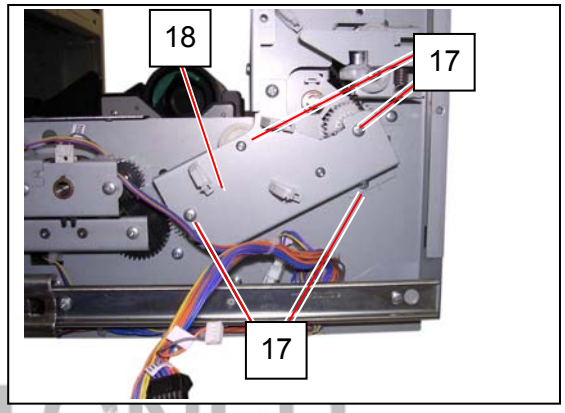


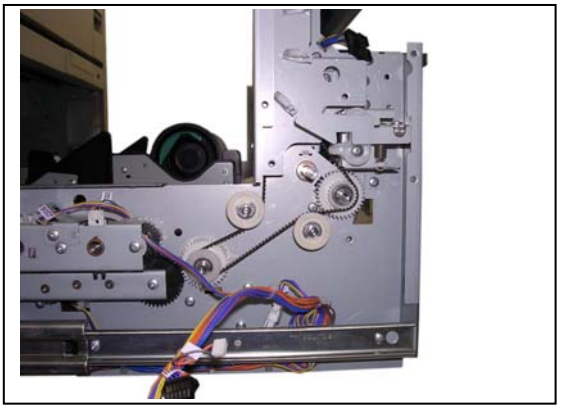
7. Remove Retaining Ring-C (15) to remove Clutch (16: CL4).



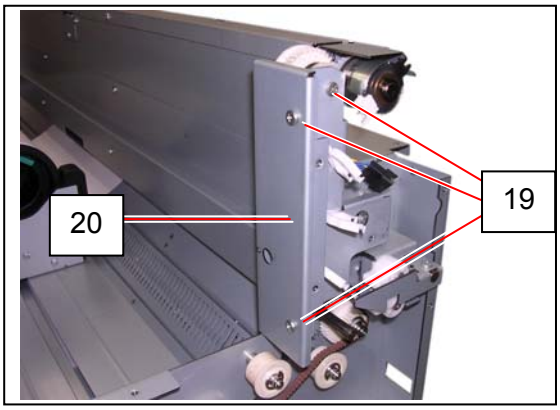


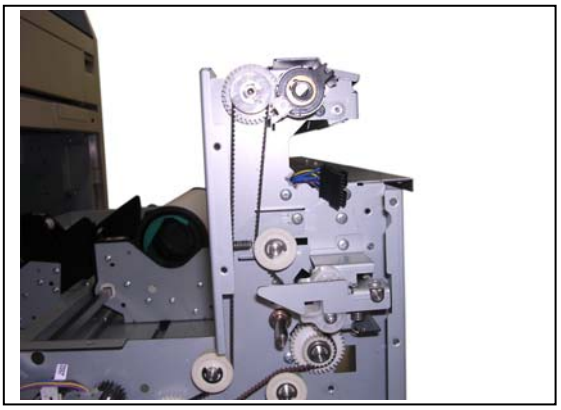
8. Remove 4 screws (17) to remove Bracket 33 (18).



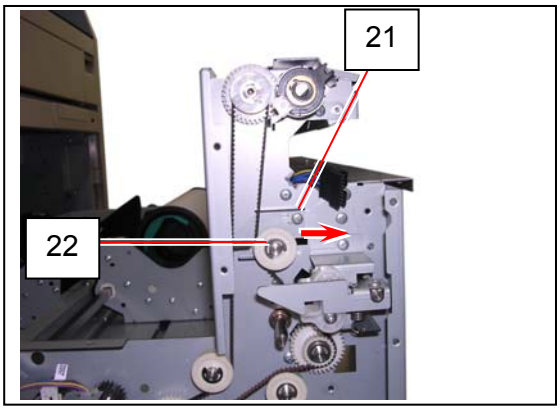


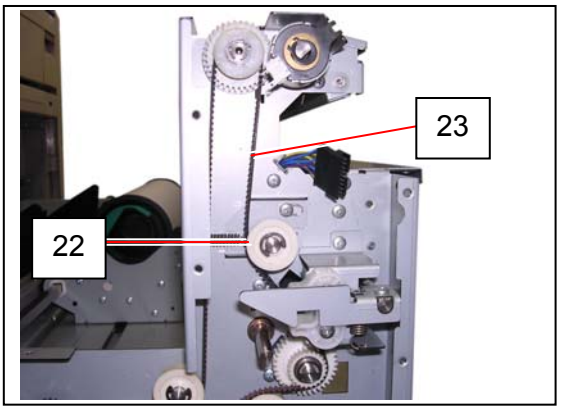
9. Remove 3 screws (19) to remove Bracket 32 (20).

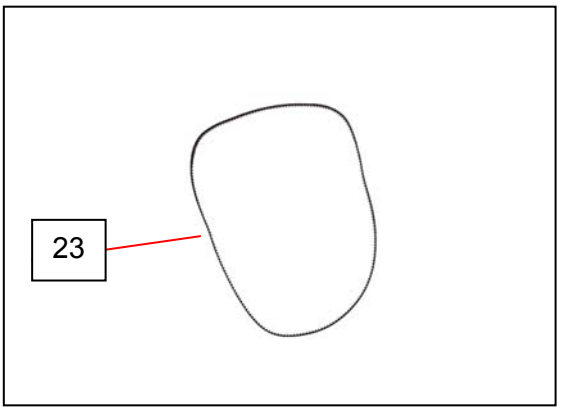




10. Loosen 1 screw (21) to release Pulley 3 (22). Push Pulley 3 (22) to the arrow direction and fix it. Replace Timing Belt 633 (23) with a new one.





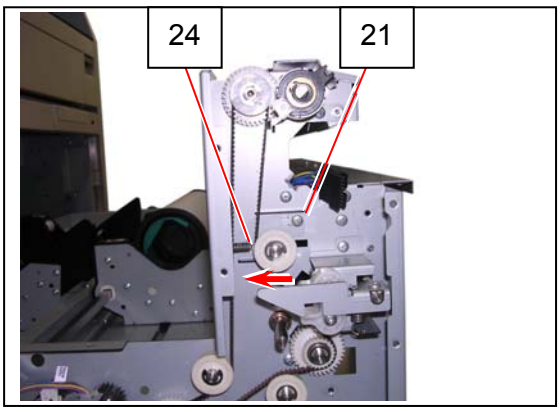


⚠ NOTE

You do not have to adjust the belt tension.

Replace Bracket 32 (20) first and then tighten the screw (21). The Spring Coil 12 (24) gives a proper tension to the Timing Belt.

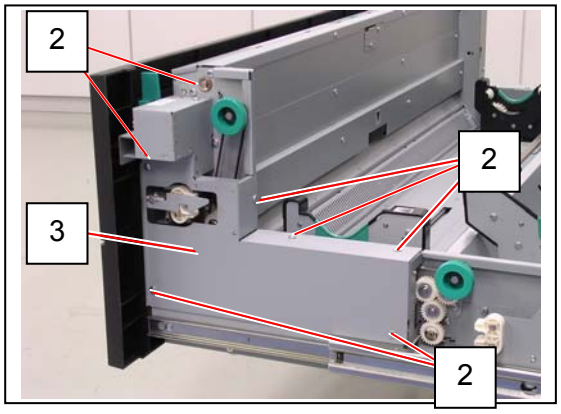
(Bracket 32 removed in the picture for easy understanding.)

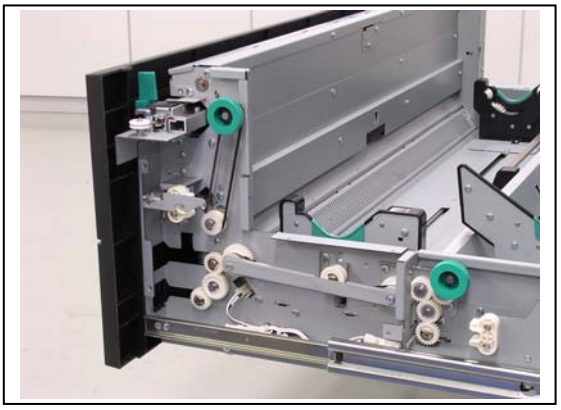


5. 4. 5 Replacement of Timing Belt 453

1. Draw out the Roll Deck (1).

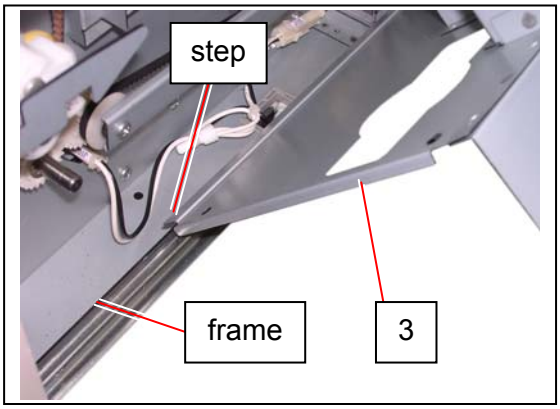
2. Remove 7 screws (2) to remove Cover 22 (3).



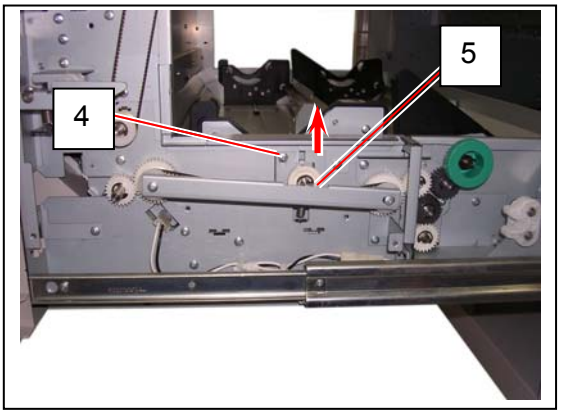


NOTE

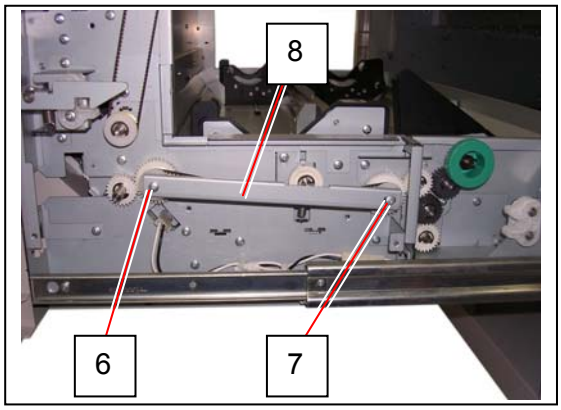
Make sure that the step part on the bottom side of Cover 22 (3) is inside the bottom frame.

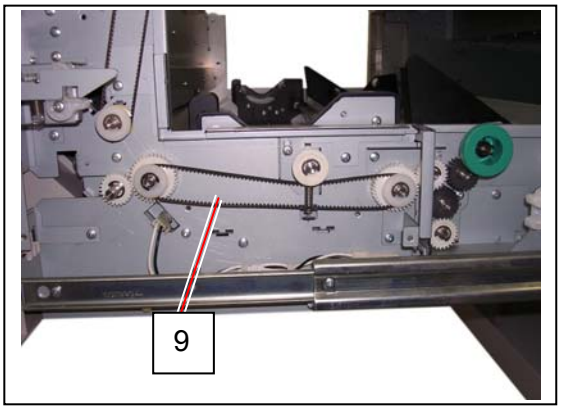


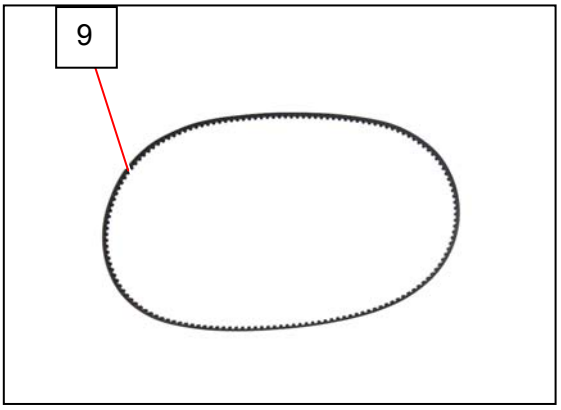
3. Loosen 1 screw (4) to release Pulley 3 (5). Move Pulley 3 (5) upward and fix it the screw (4) to release Timing Belt 453.



4. Remove 1 Bind Head Screw (6) and 1 Pan Head Screw (7) to remove Bracket 12 (8). Replace Timing Belt 453 (9) with a new one.



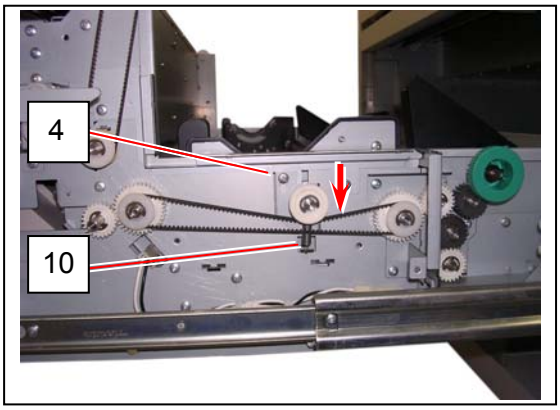




⚠ NOTE

You do not have to adjust the belt tension.

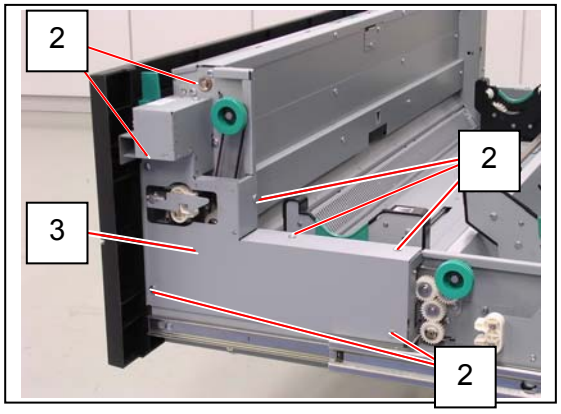
Replace Bracket 12 (8) and then tighten the screw (4) The Spring Coil 11 (10) gives a proper tension to the Timing Belt 480.

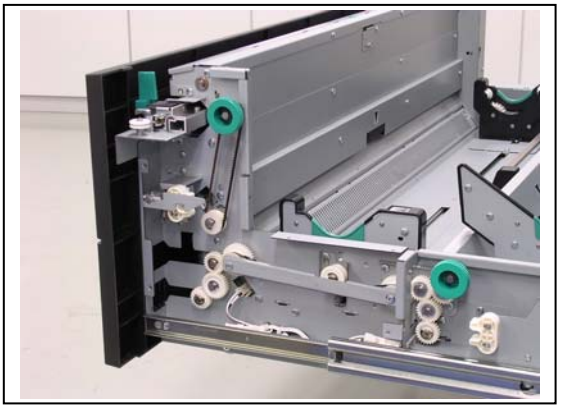


5. 4. 6 Replacement of Timing Belt 330

1. Draw out the Roll Deck (1).

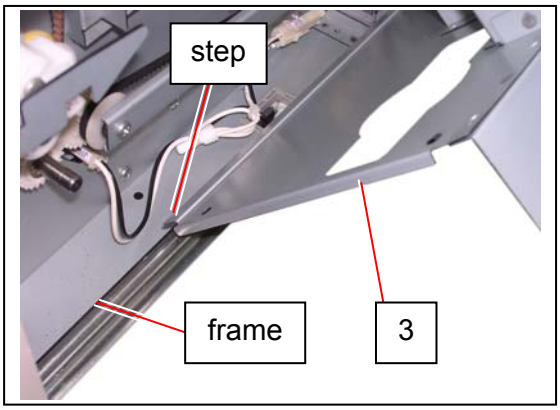
2. Remove 7 screws (2) to remove Cover 22 (3).



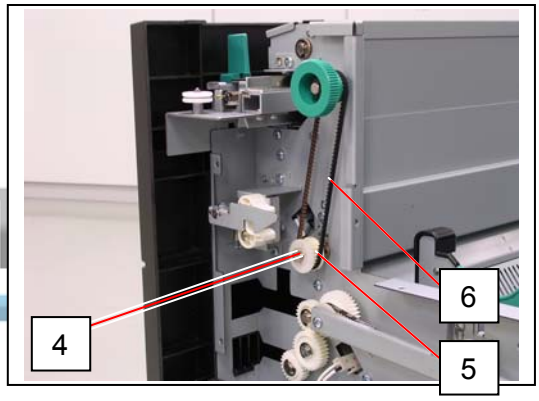


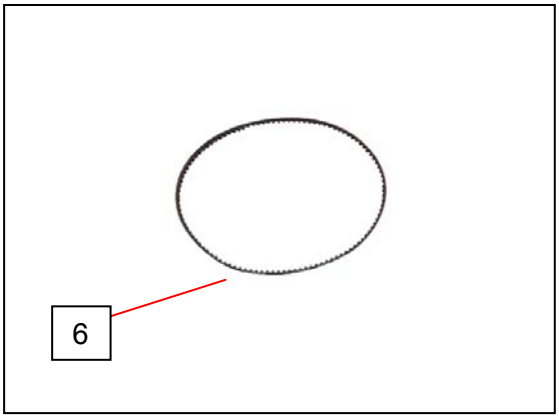
NOTE

Make sure that the step part on the bottom side of Cover 22 (3) is inside the bottom frame.



3. Remove Retaining Ring-E (4) to remove Collar (5).
   Replace Timing Belt (6) with a new one.

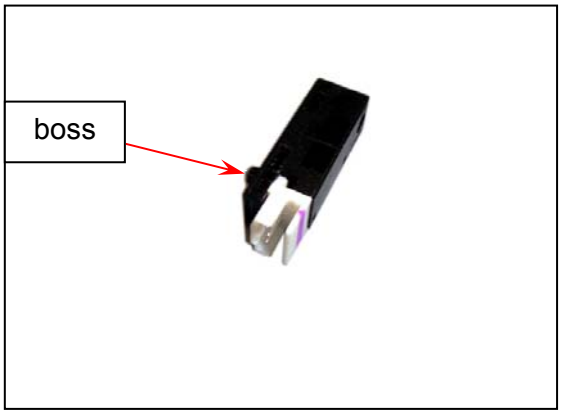


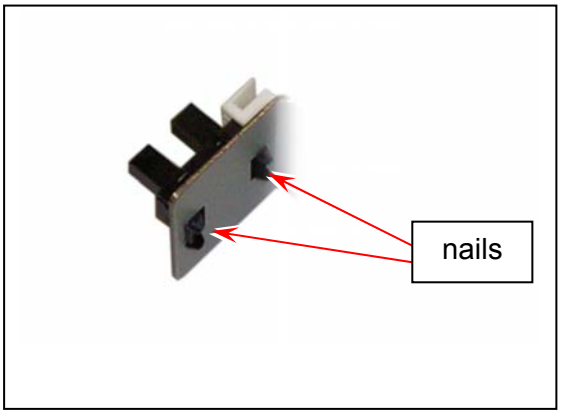


5. 4. 7 Replacement of Sensor (PH6, PH7, PH9, PH12)

NOTE

(1) When reassembling, fit a boss or nails on the sensor into holes on the sensor bracket.

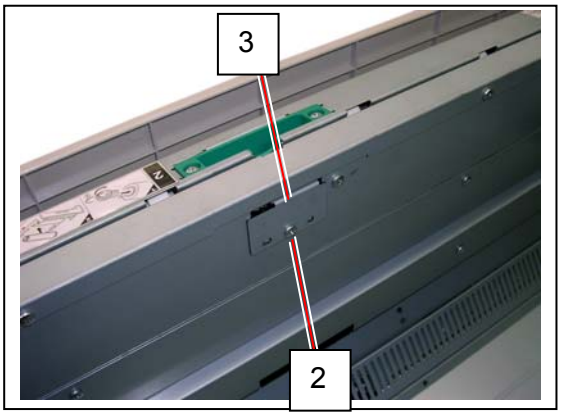


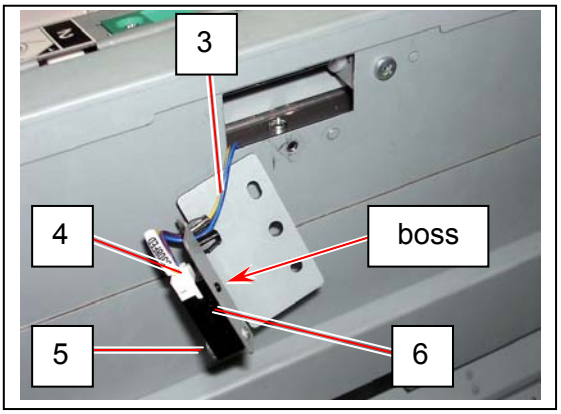


(2) When reassembling, fit positioning bosses on the frame (or the sensor bracket) into the corresponding holes.

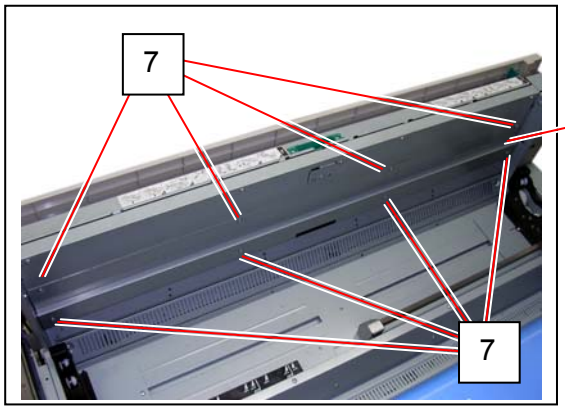
1. Draw out the Roll Deck (1).
   Remove a roll media if mounted.

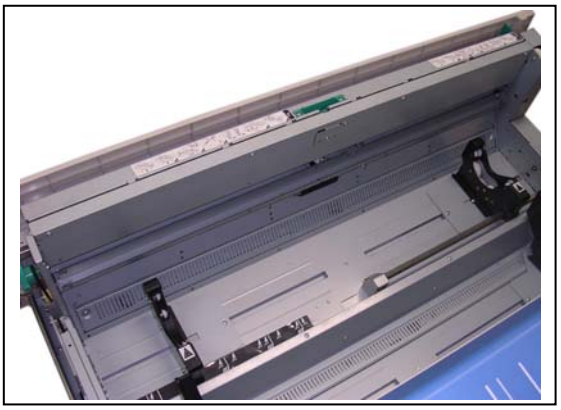
2. Remove 1 screw (2) to release the sensor bracket (3). Remove the connector (4) and 1 screw (5) to replace Sensor (3: PH6) with a new one.



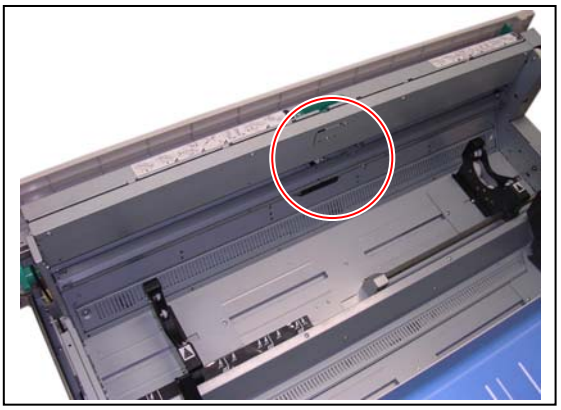


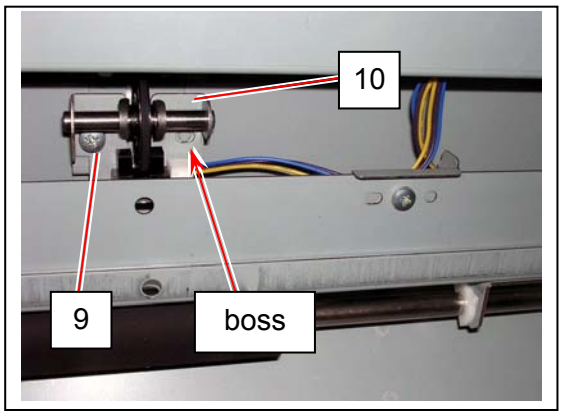
3. Remove 8 screws (7) to remove Plate (8).

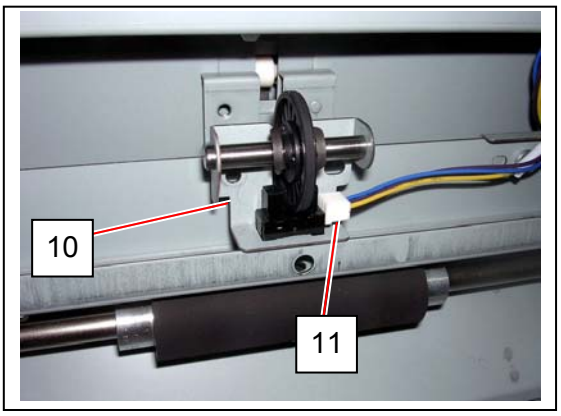




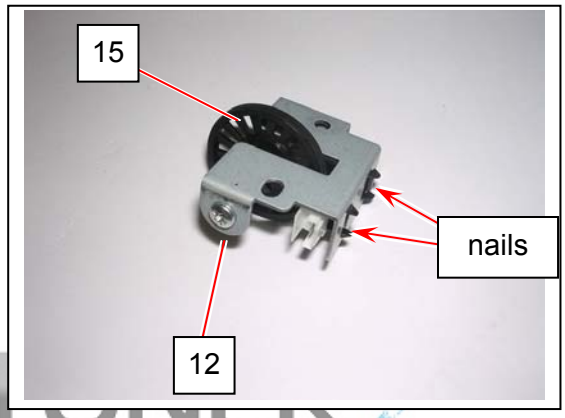
4. Remove 1 screw (9) to release the sensor bracket (10). Remove the connector (11) to remove the bracket (10).

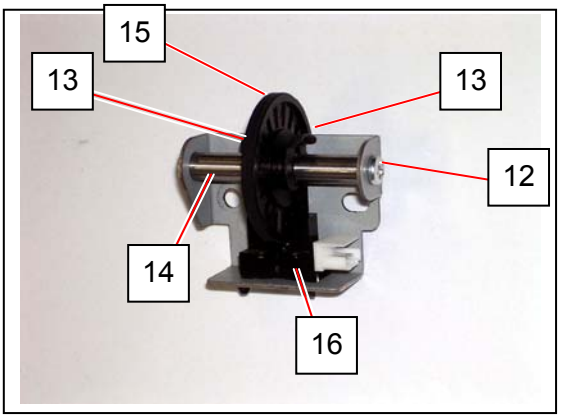




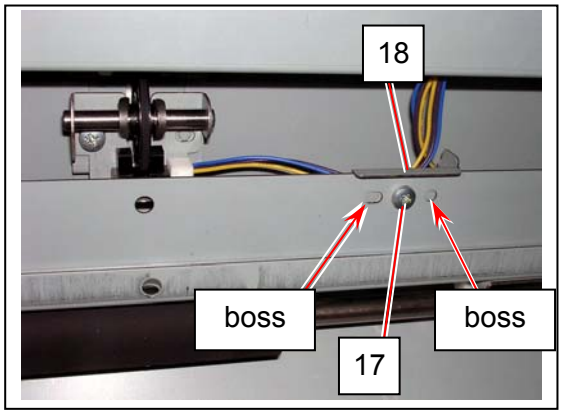


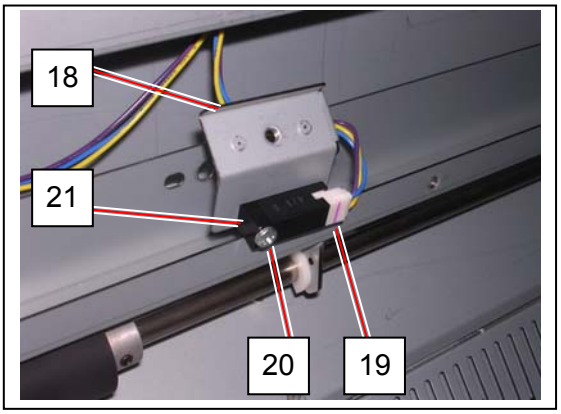
5. Remove 1 screw (12: M3x6) and 2 KL Clips (13) to remove Shaft 4 (14) and Encoder 2 Assy (15). Replace Sensor (16: PH12) with a new one.

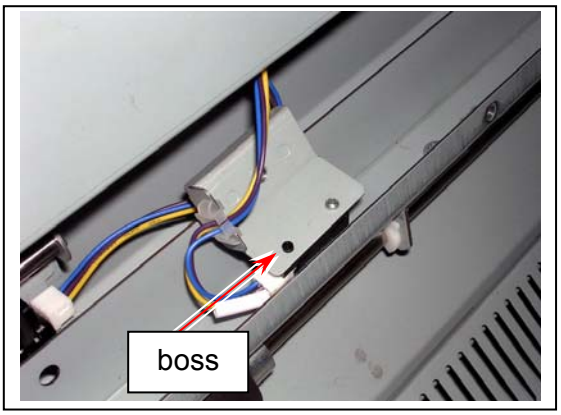




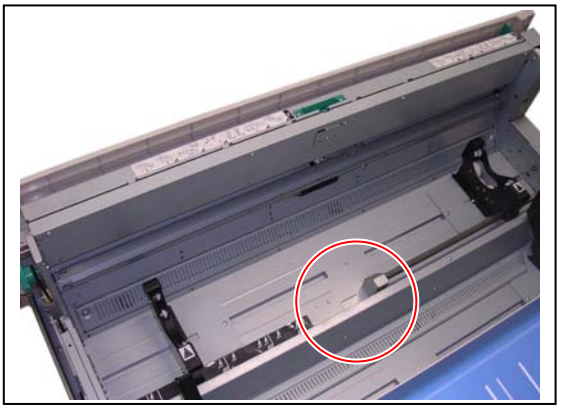
6. Remove 1 screw (17) to release the sensor bracket (18). Remove the connector (19) and 1 screw (20) to replace Sensor (21: PH7) with a new one.

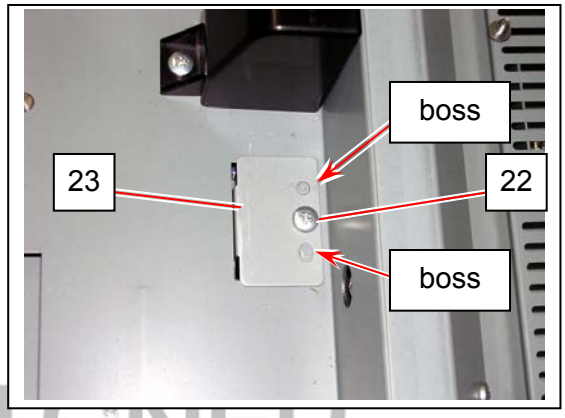


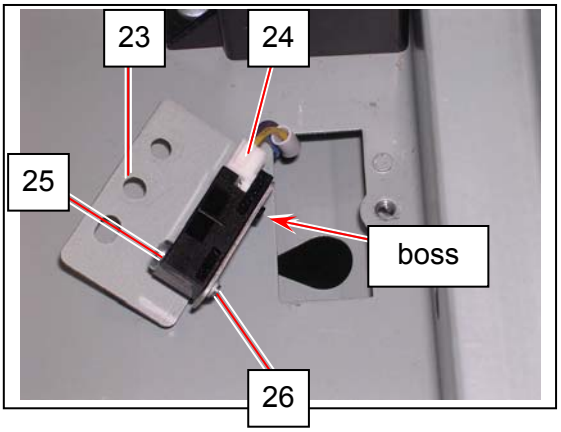




7. Remove 1 screw (22) to release the sensor bracket (23). Remove the connector (24) and t1 screw (25) to replace Sensor (26: PH9) with a new one.



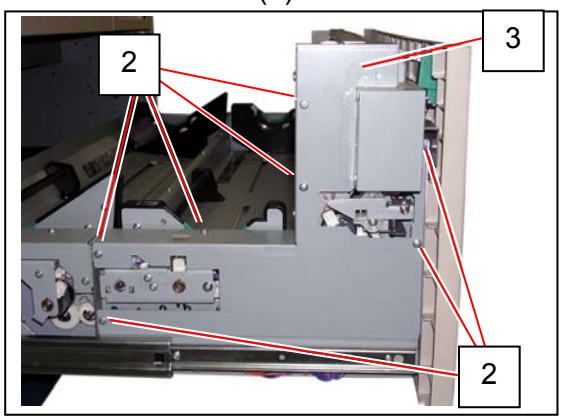


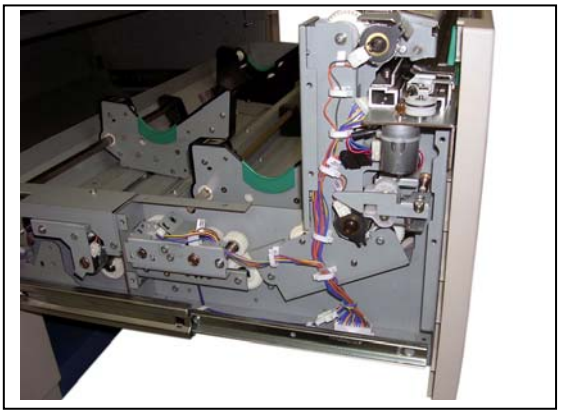


5. 4. 8 Replacement of Sensor (PH8)

1. Draw out the Roll Deck (1).

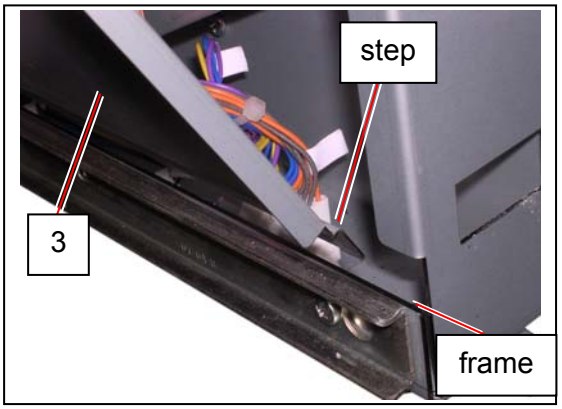
2. Remove 7 screws (2) to remove Cover 14 (3).



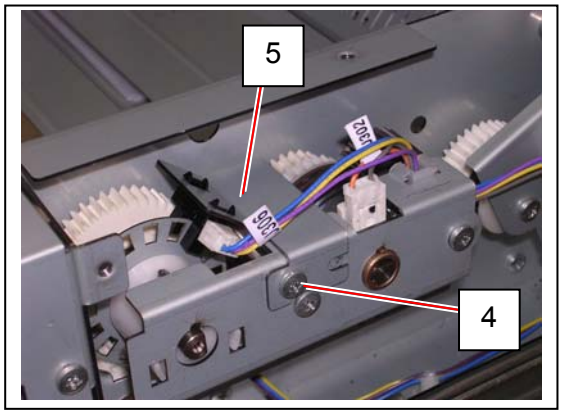


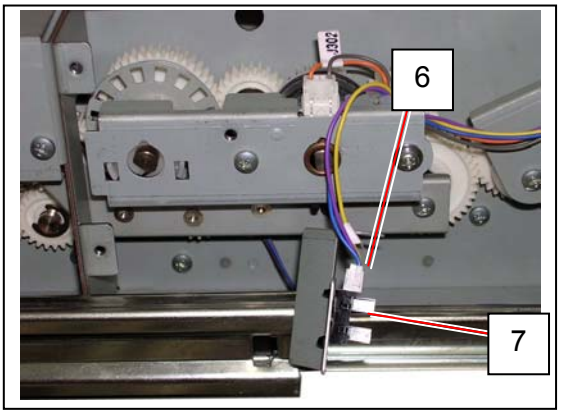
NOTE

Make sure that the step part on the bottom side of Cover 14 (3) is inside the bottom frame.



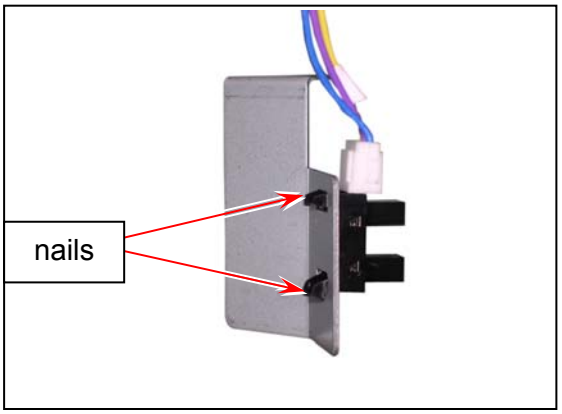
3. Remove 1 screw (4) to release the sensor bracket (5). Remove 1 connector (6) to replace Sensor (7: PH8) with a new one.



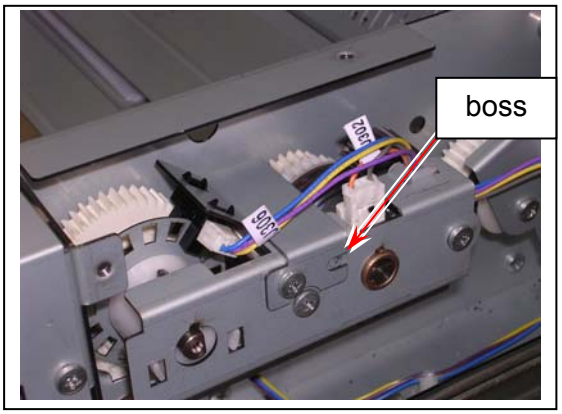


NOTE

(1) When reassembling, fit a boss or nails on the sensor into holes on the sensor bracket.



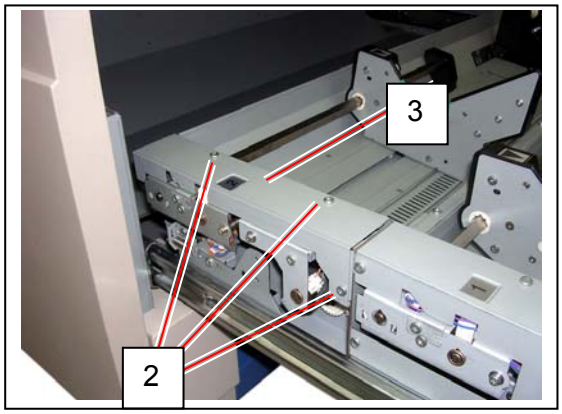
(2) When reassembling, fit the positioning boss on the frame into the notch on the bracket.

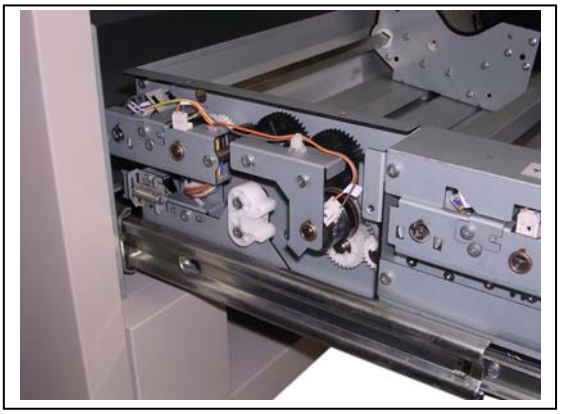


5. 4. 9 Replacement of Sensor (PH10)

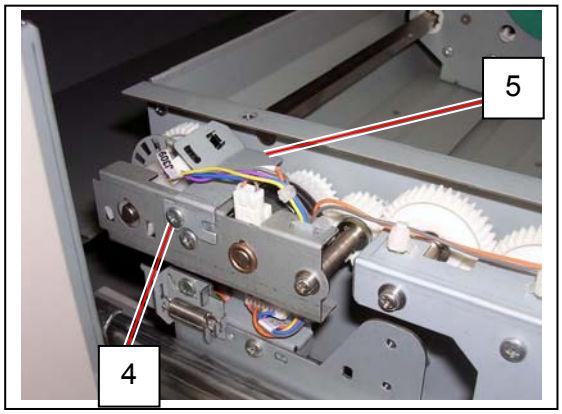
1. Draw out the Roll Deck (1).

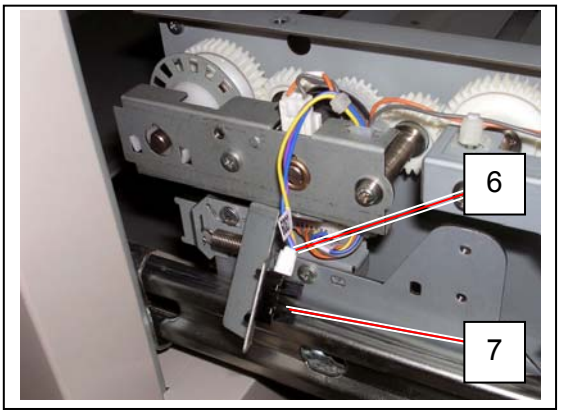
2. Remove 3 screws (2) to remove Cover (3).





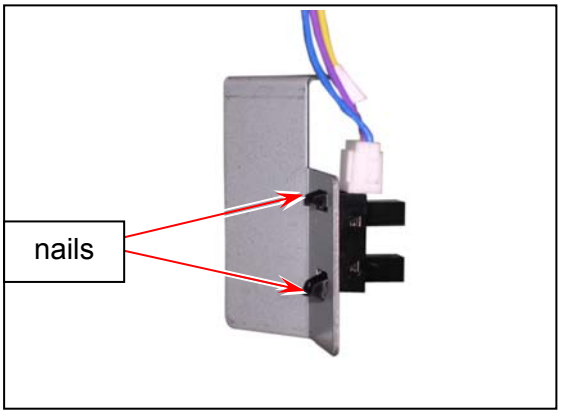
3. Remove 1 screw (4) to release the sensor bracket (5). Remove 1 connector (6) to replace Sensor (7: PH10) with a new one.



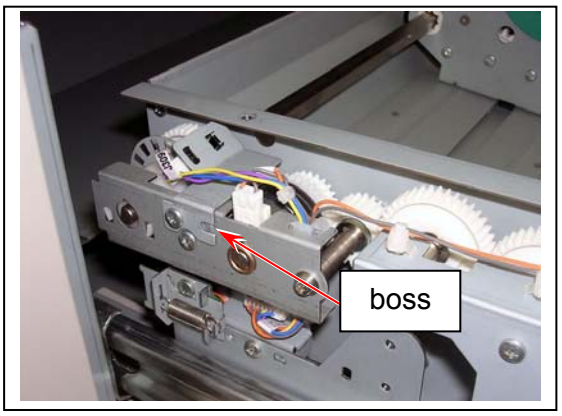


NOTE

(1) When reassembling, fit a boss or nails on the sensor into holes on the sensor bracket.



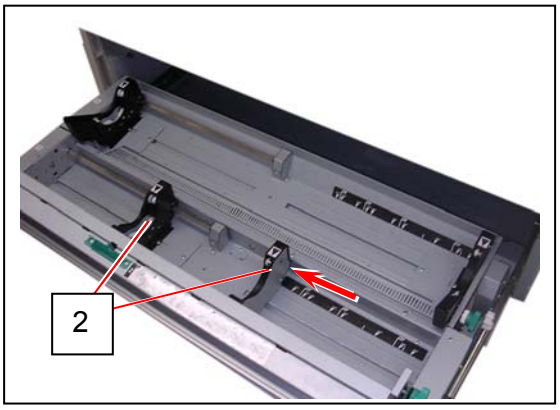
(2) When reassembling, fit the positioning boss on the frame into the notch on the bracket.



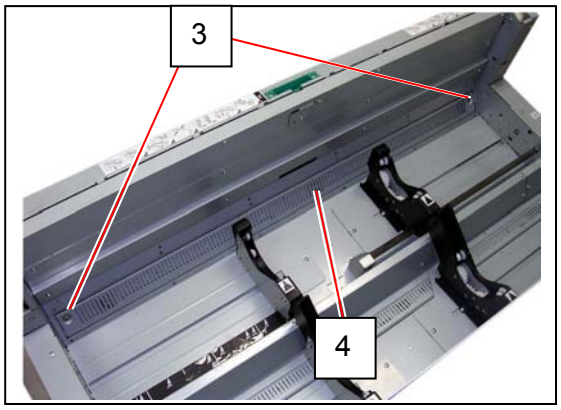
5. 4. 10 Replacement of Dehumidify Heater (Roll 1)

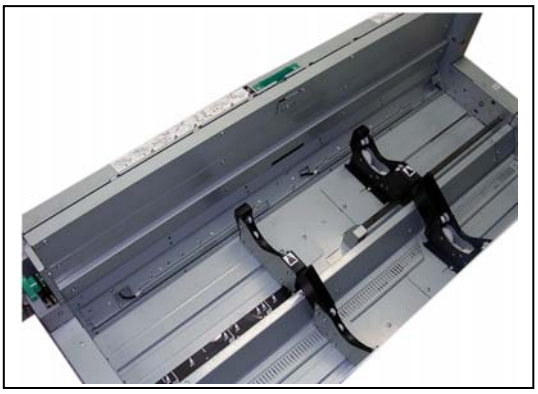
1. Draw out the Roll Deck (1).
   Remove a roll media if mounted.

2. Move Slide Guide (2) toward the middle.

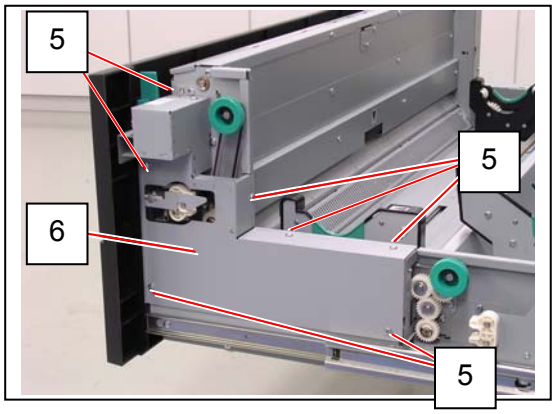


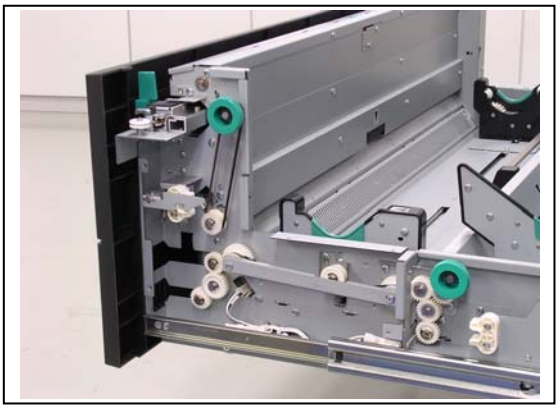
3. Remove 2 screws (3) to remove Cover 15 (4).





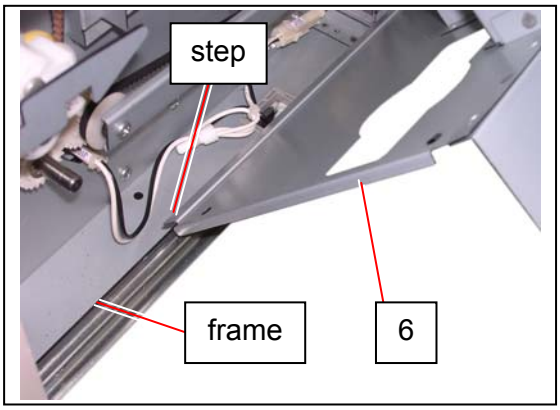
4. Remove 7 screws (5) to remove Cover 22 (6).



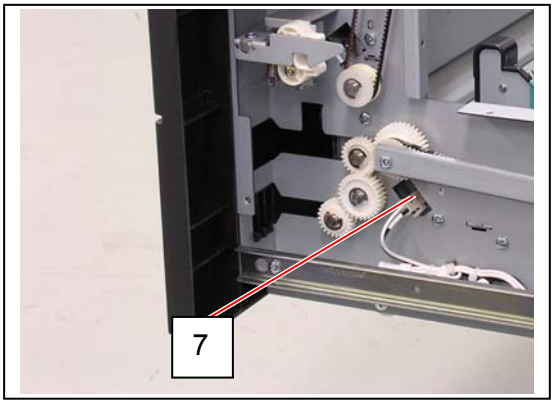


NOTE

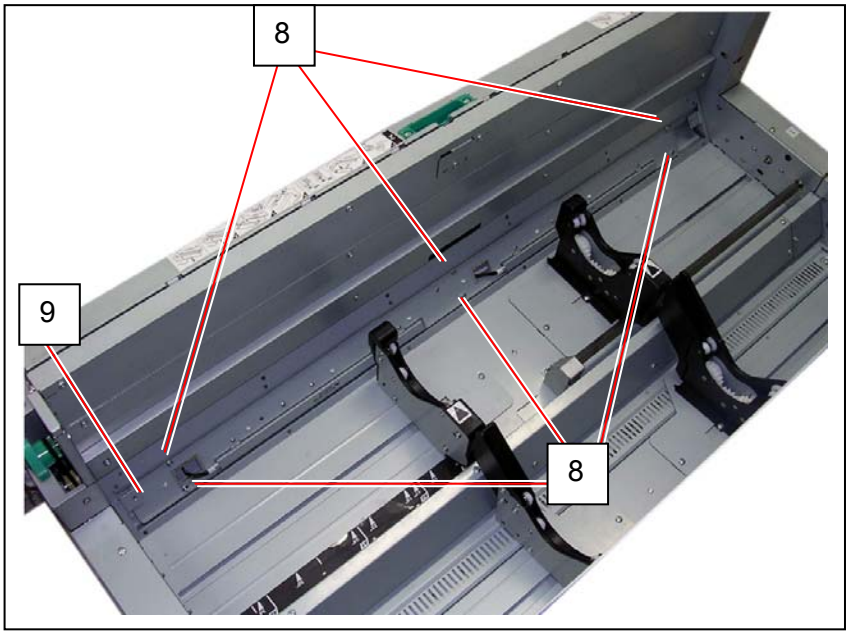
Make sure that the step part on the bottom side of Cover 22 (6) is inside the bottom frame.

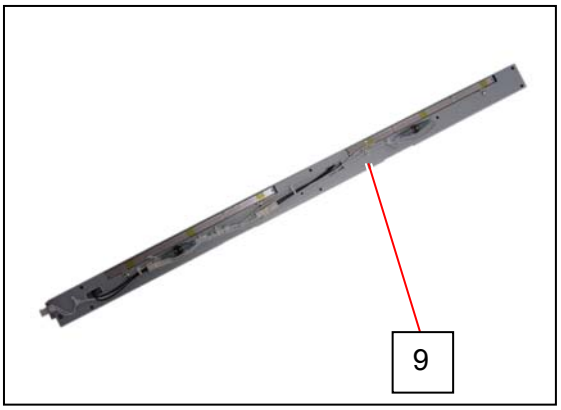


5. Disconnect 1 connector (7).

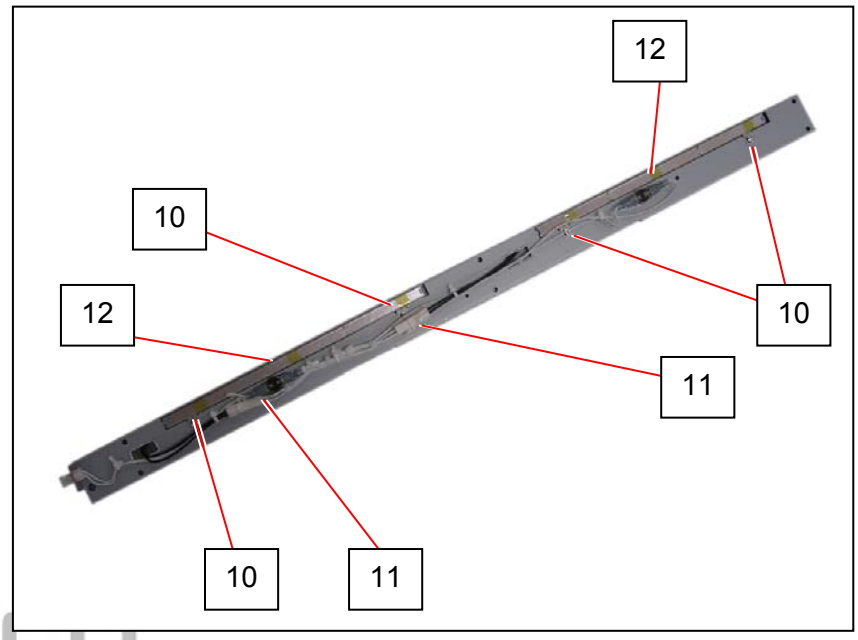


6. Remove 6 screws (8) to remove Roll 1 dehumidifier casing (9).





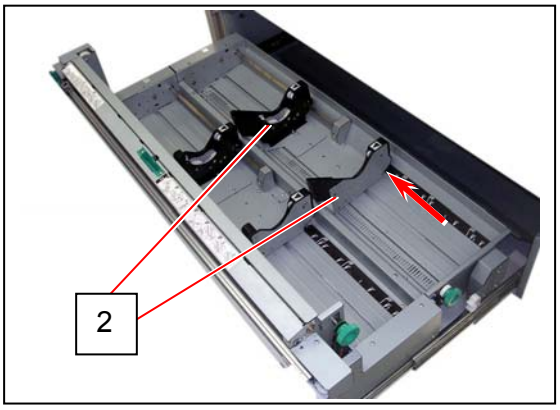
7. Remove 4 screws (10) and 1 connector (11) from each Resistor (12).
   Replace Resistor (square type) with a new one.



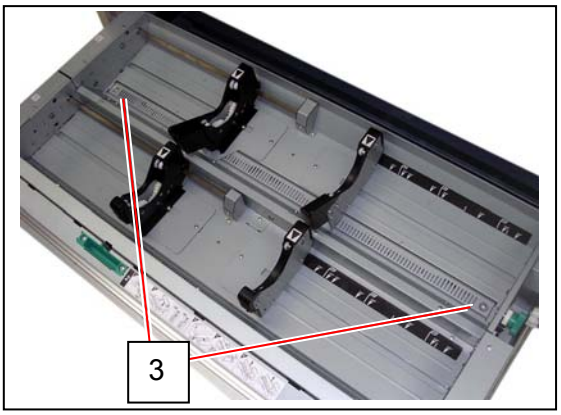
5. 4. 11 Replacement of Dehumidify Heater (Roll 2)

1. Draw out the Roll Deck (1).
   Remove a roll media if mounted.

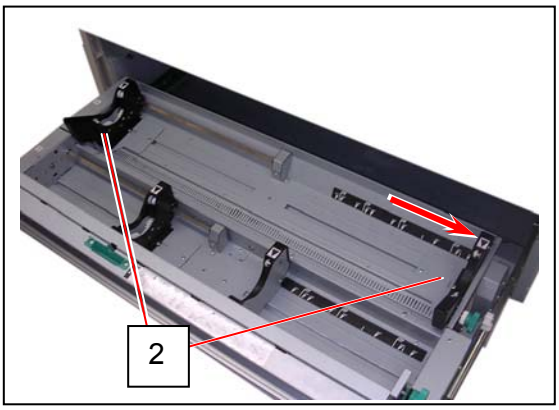
2. Move Slide Guide (2) toward the middle.



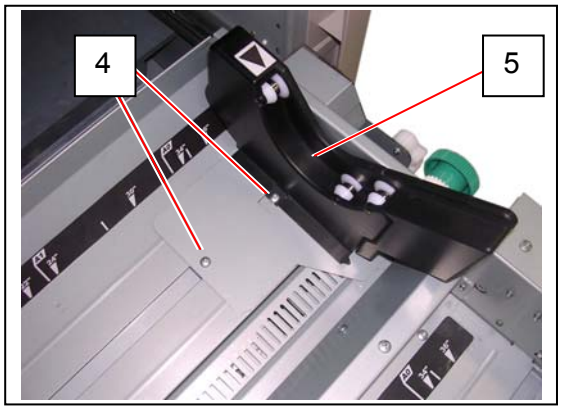
3. Remove 2 screws (3).



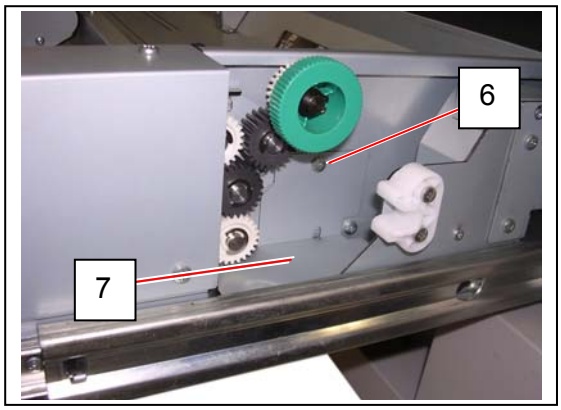
4. Move Slide Guide (2) toward the far end.

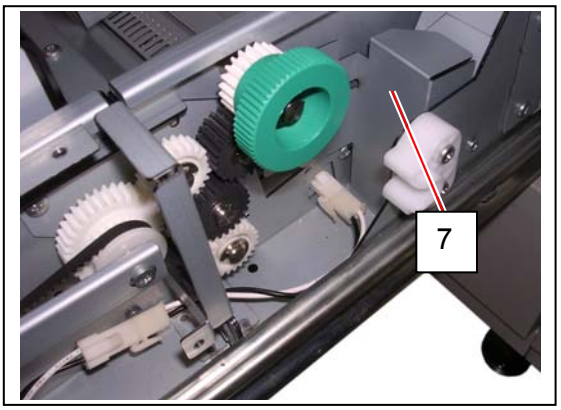


5. Remove 2 screws (4) to remove Slide Guide 2 R Assy (5).

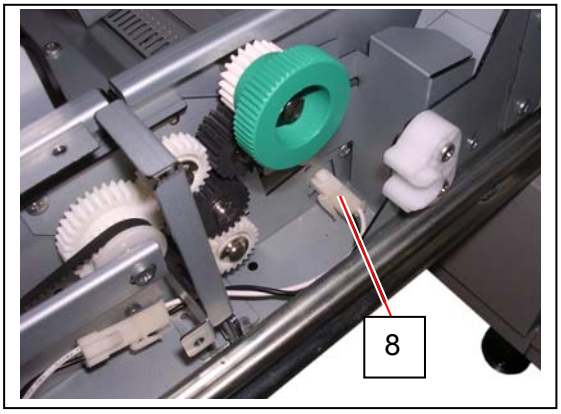


6. Remove 1 screw (6) to move Cover 7 (7).

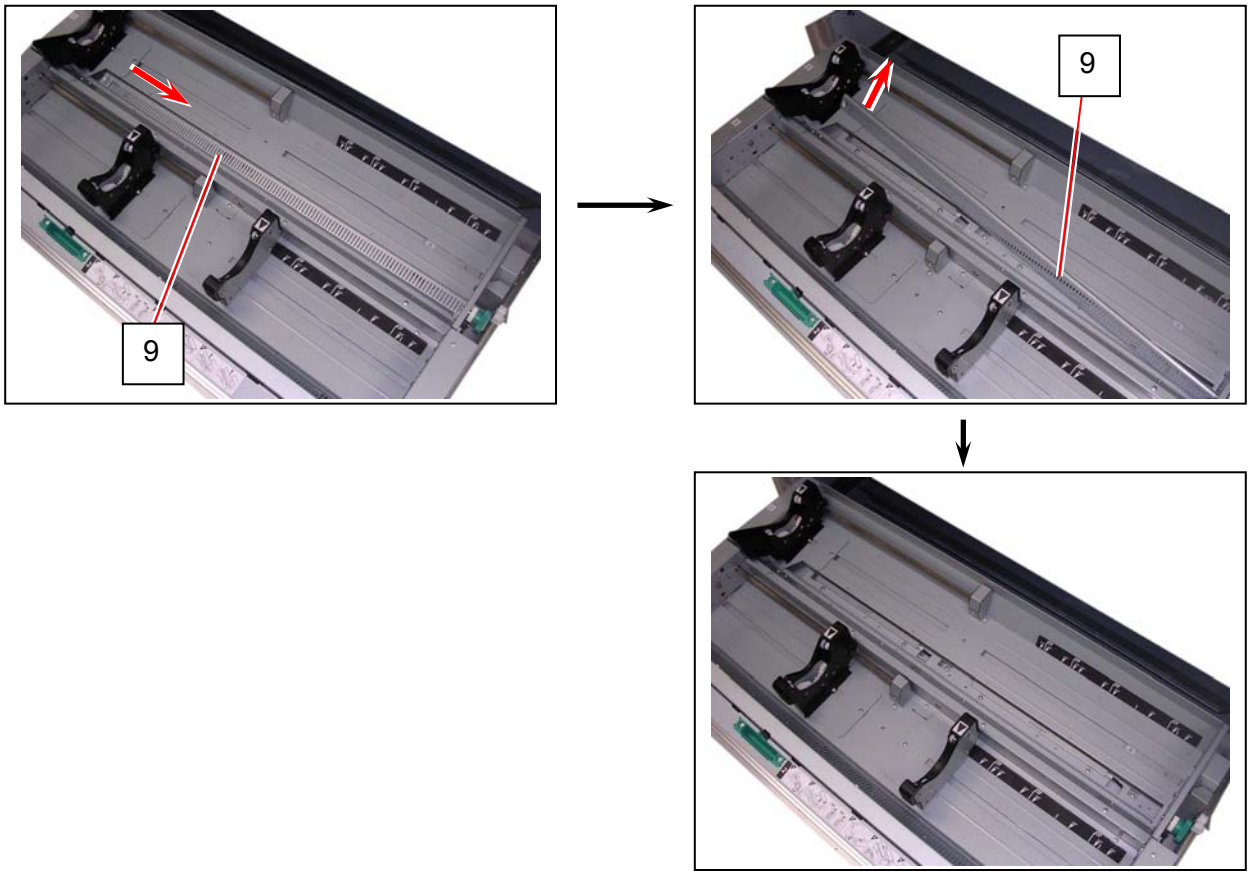




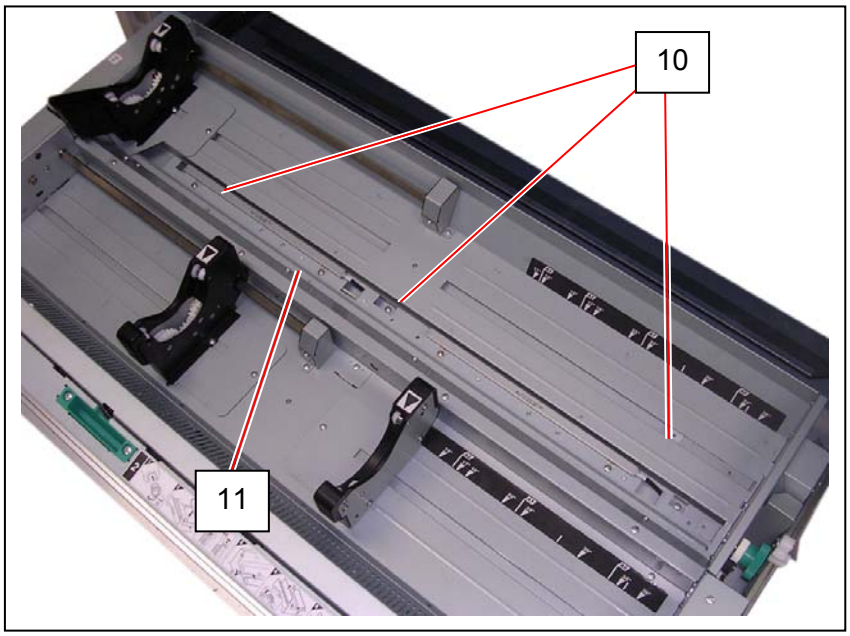
7. Disconnect 1 connector (8).

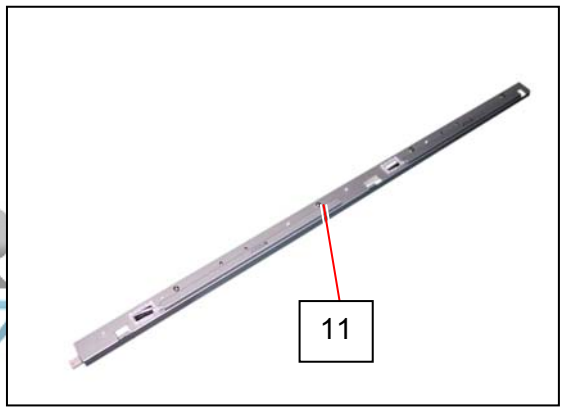


8. Move Cover 4 (9) to the arrow direction to remove it.

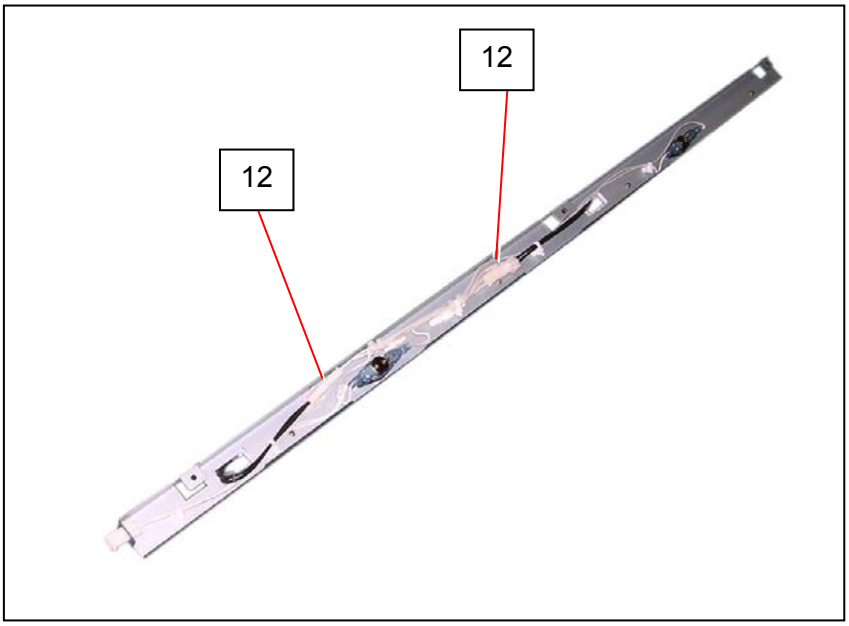


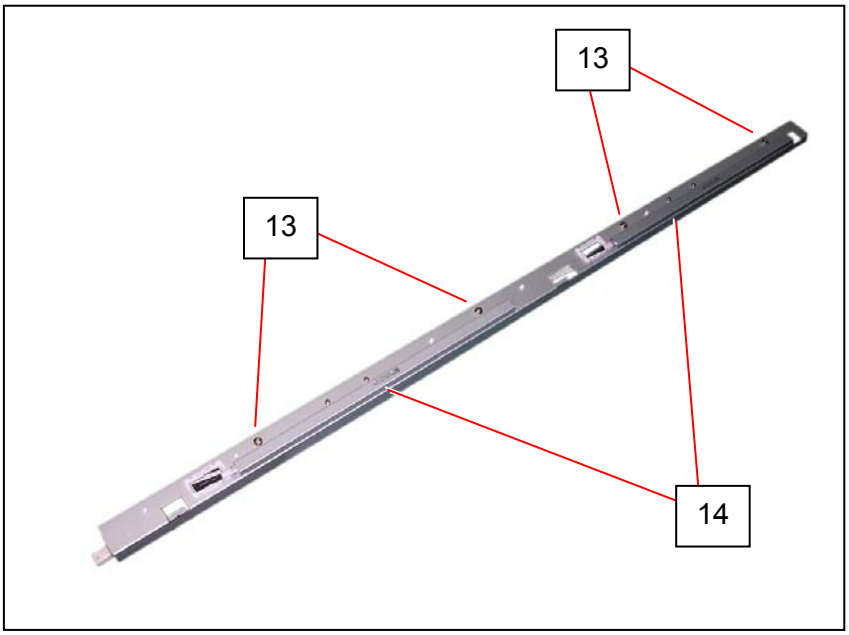
9. Remove 3 screws (10) to remove Roll 2 dehumidifier casing (11).





10. Disconnect 1 connector (12). Remove 2 screws (13).
    Remove and replace Resistor (square type) (14) with a new one.

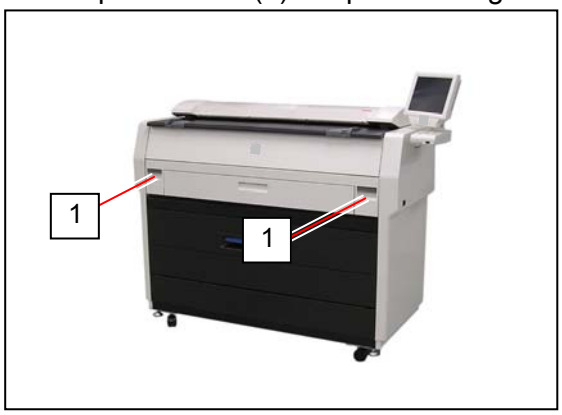




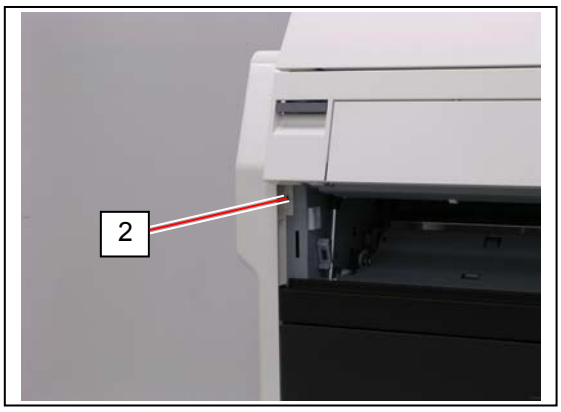
5. 5 Photoconductive Drum

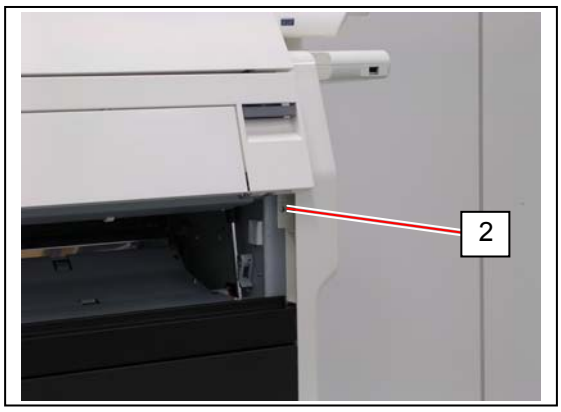
5. 5. 1 Replacement of the Photoconductive Drum

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

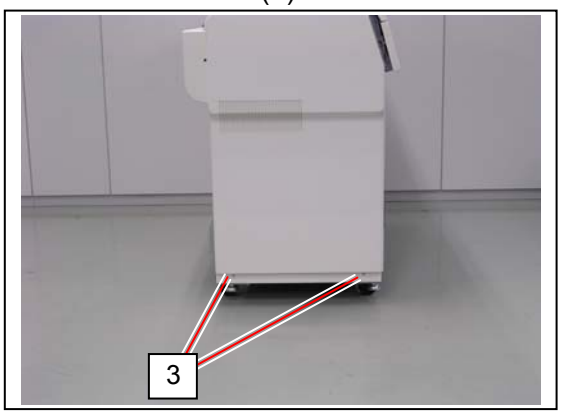


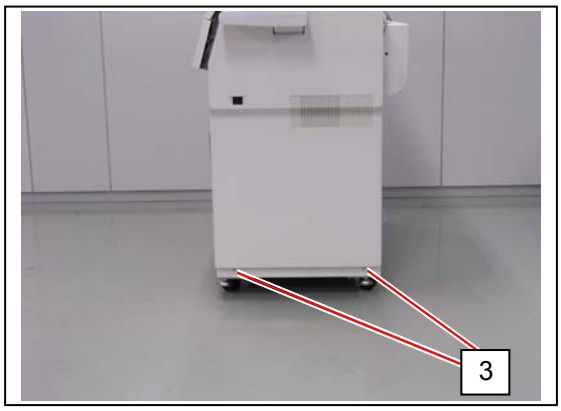
2. Remove 2 screws (2) on the front.



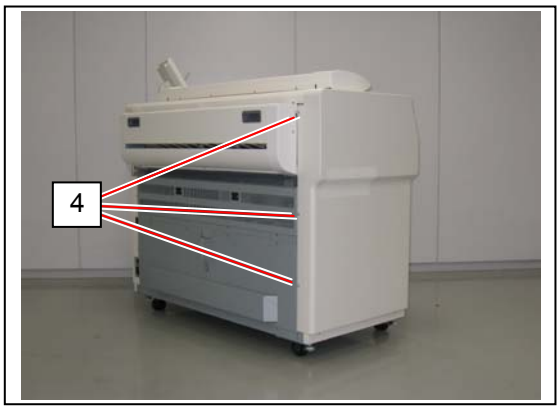


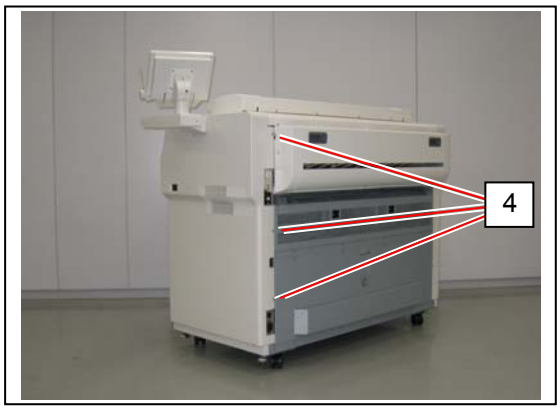
3. Remove 4 screws (3) on the side bottom.





4. Remove 6 screws (4) on the rear.

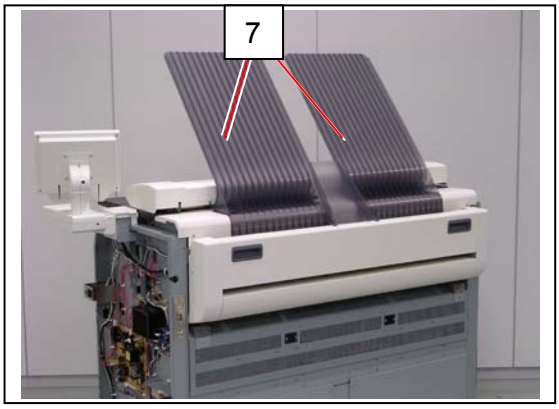




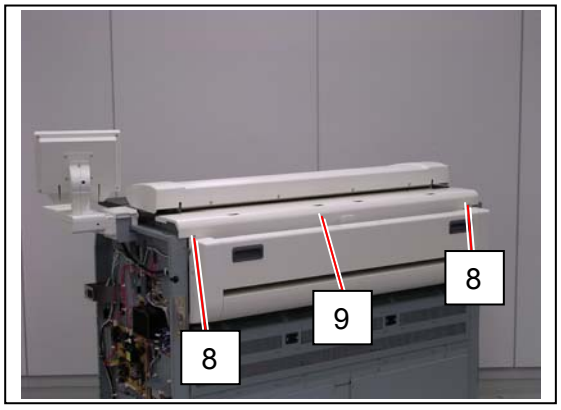
5. Remove Cover (5) / Cover (6).

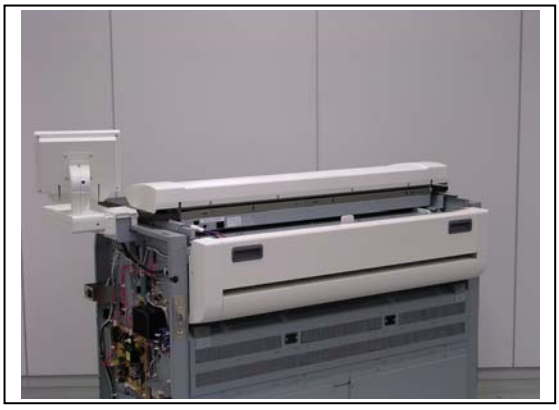
6. Close the Engine Unit.

7. Remove 2 pieces of Tray (7).

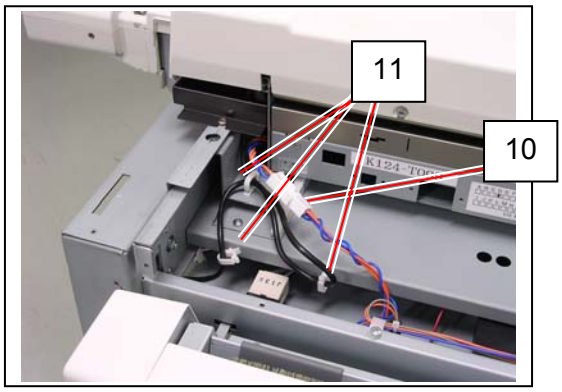


8. Remove 2 pieces of 4x6 screw (8) to remove the Cover (9).



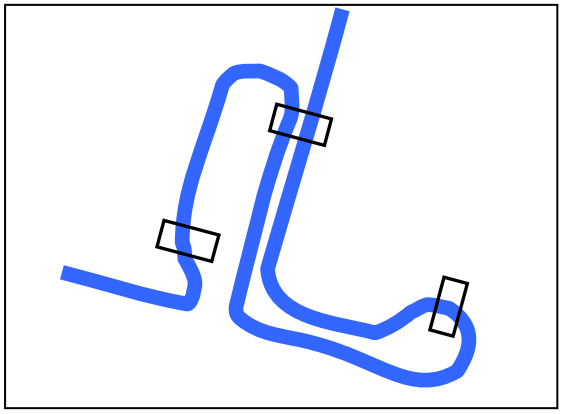


9. Disconnect the connector (10), and open the wire saddles (11) to release the harness.

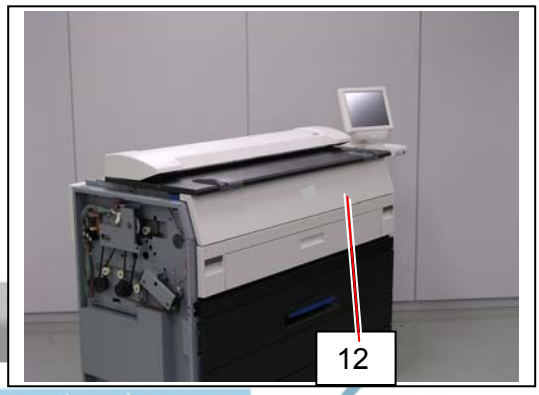


NOTE

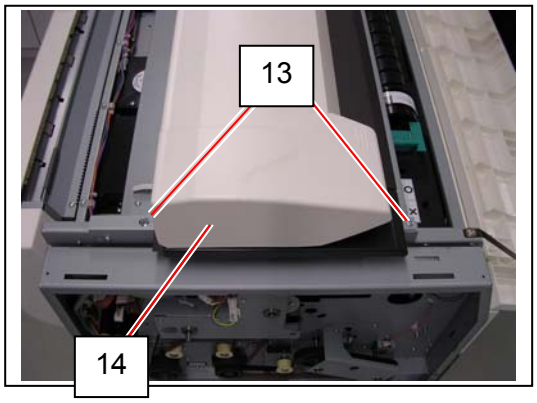
Wind excessive length of the USB Cable with the wire saddles (11) when reassembling.
Do not bundle the 2 cables in any of the wire saddles (11) together.

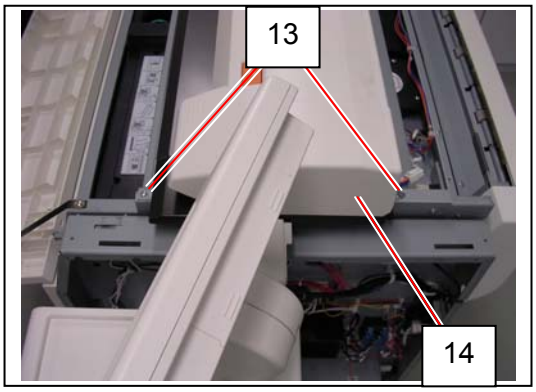


10. Open the Cover (12).

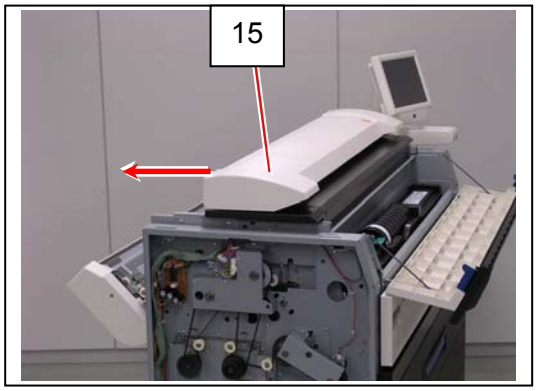


11. Remove 4 pieces of 4x6 screw (13) and 2 pieces of washer screw (14).

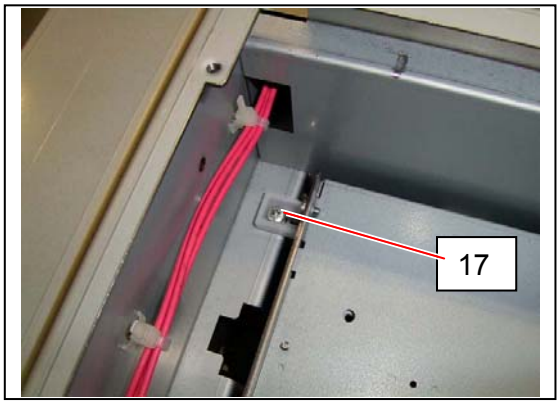




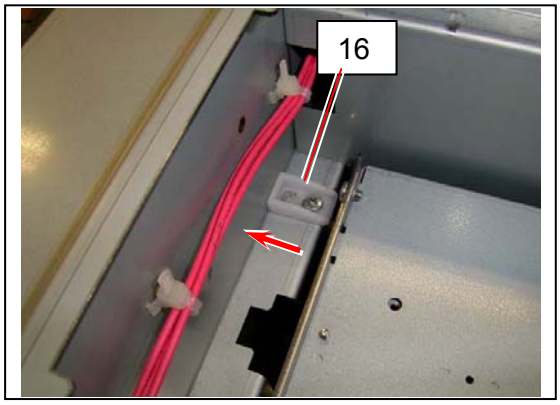
12. Slide the Scanner Unit (15) fully backward.



13. There are 2 pieces of Stopper (16) at both sides, which lock the LED Head Frame.
Loosen the screw (17) and then slide the Stoppers (16) outside to unlock the LED Head Frame.

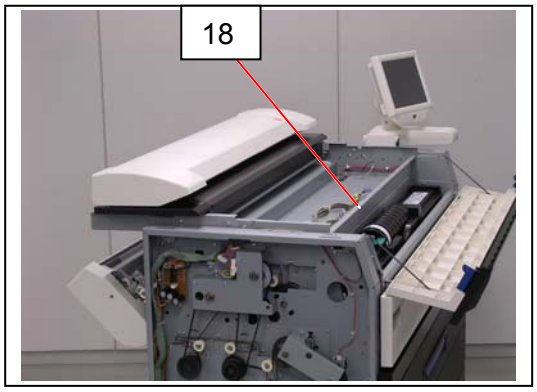


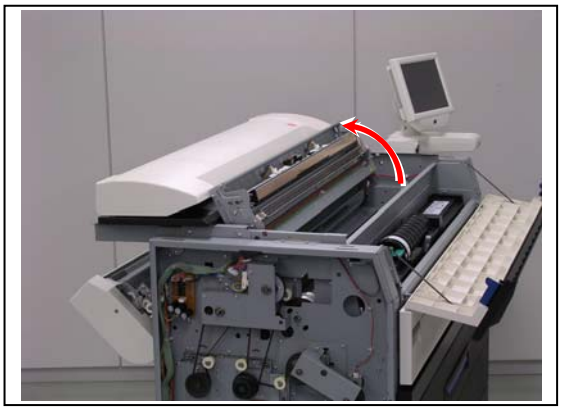
Lock position



Unlock position

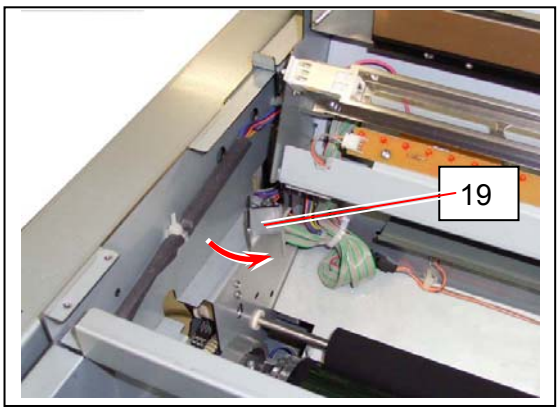
14. Open the LED Head Frame (18).



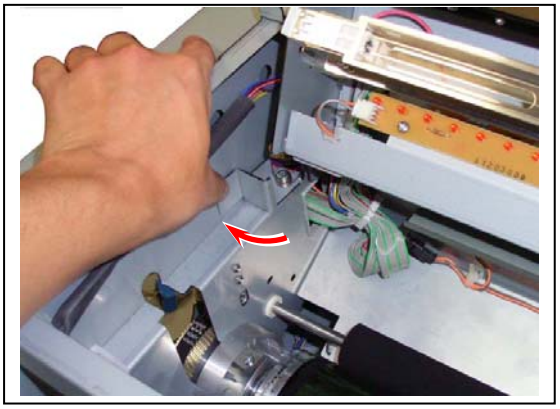


NOTE

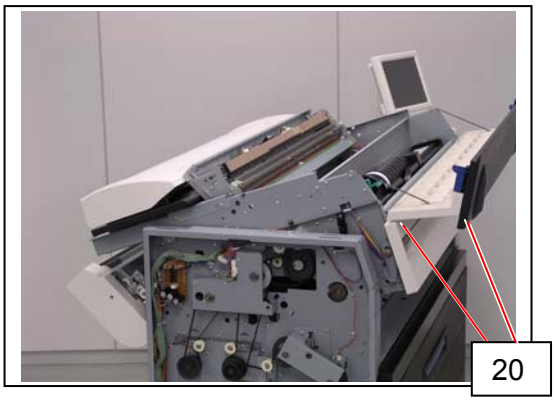
The Stopper 2 (19) comes out automatically to prevent the LED Head Frame from falling down.



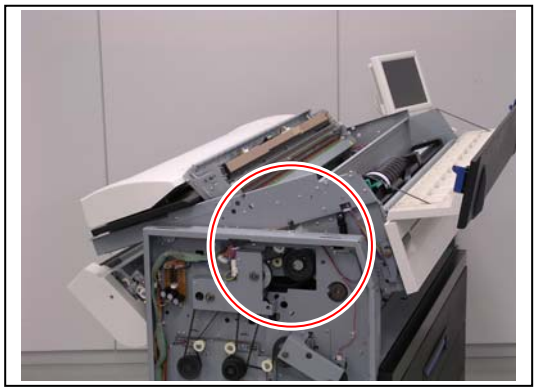
Press the Stopper 2 as the right photo if you will close the LED Head Frame.

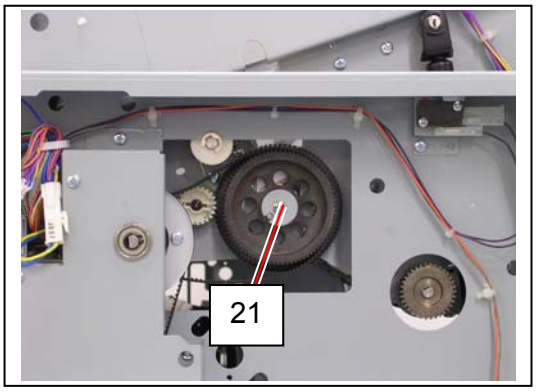


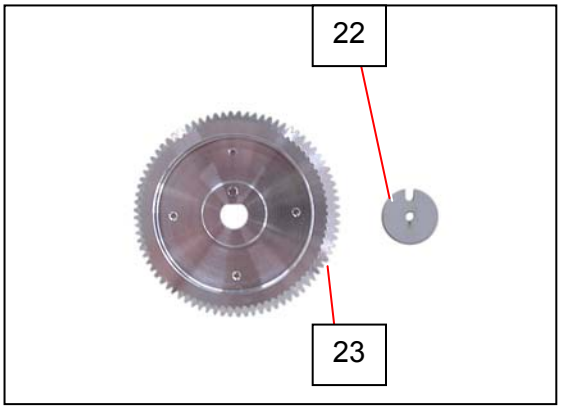
15. Pull up the Lever 2 (20) to open the Engine Unit.



16. Remove 1 tooth washer screw (21: M4x8), and remove Plate 2 (22) and Pulley Gear (23).

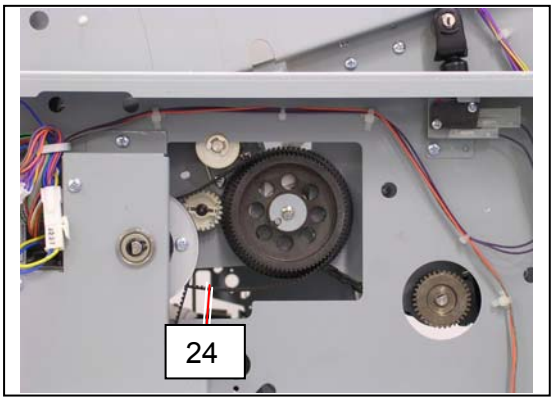




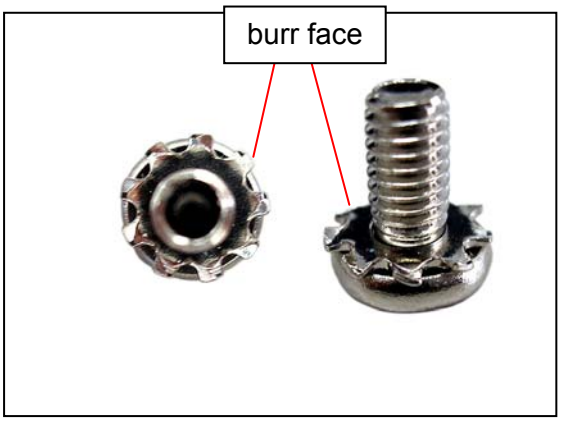


⚠ NOTE

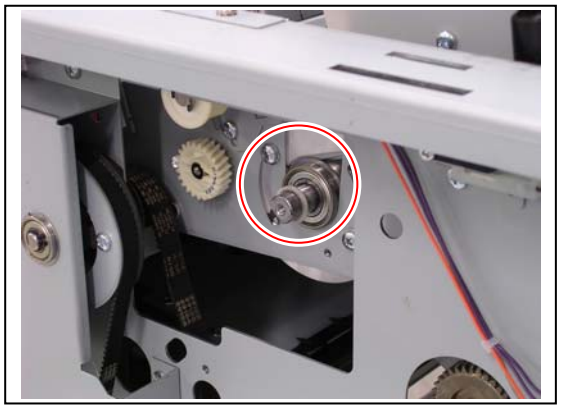
(1) Belt 4 (24) is automatically loosed with Engine Unit open.
It will be strained with Engine Unit closed.

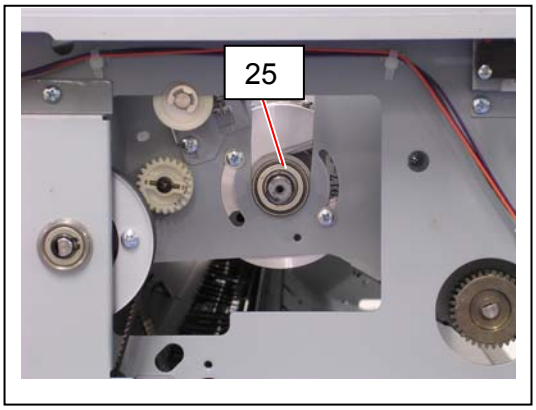


(2) The tooth washer screw (21) has a tooth washer of which burr face meets the composition surface.



17. Remove the Collar (25) from the left Drum Shaft.

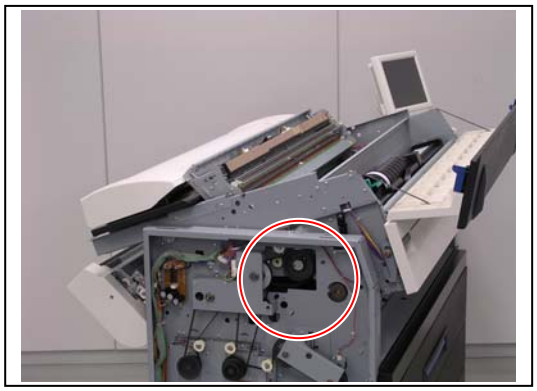


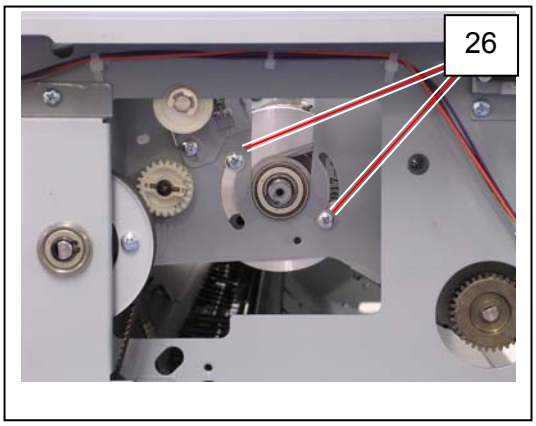


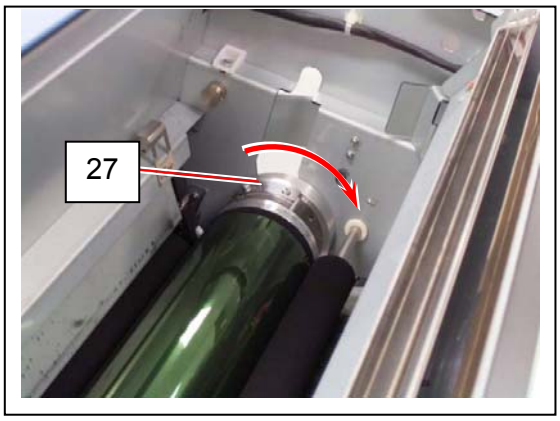
NOTE

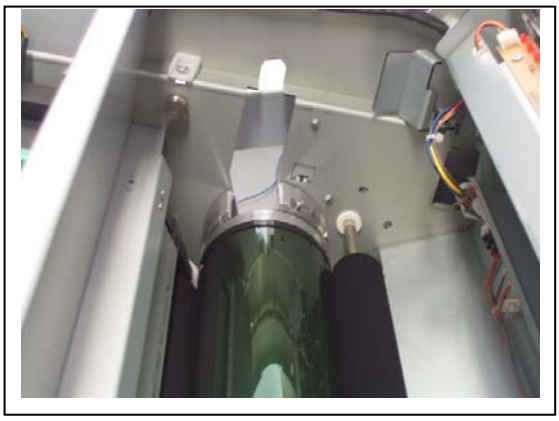
The new (spare) Drum Assembly does not include the Collar (25).
So please reuse it.

18. There are 2 pieces of screw (26) on the left which fix the Block (27).
Loosen these screws (26) and rotate the Block (27) as the arrow marks.

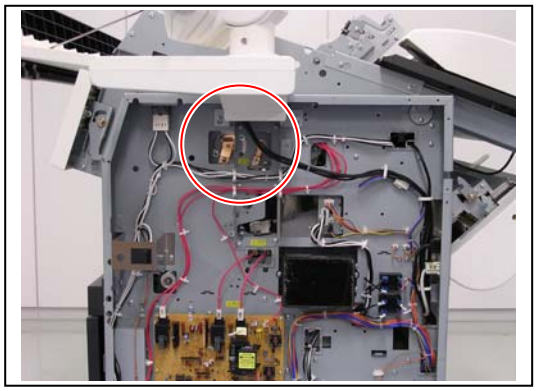


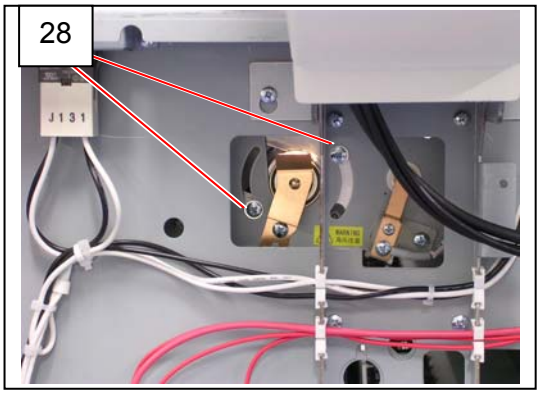


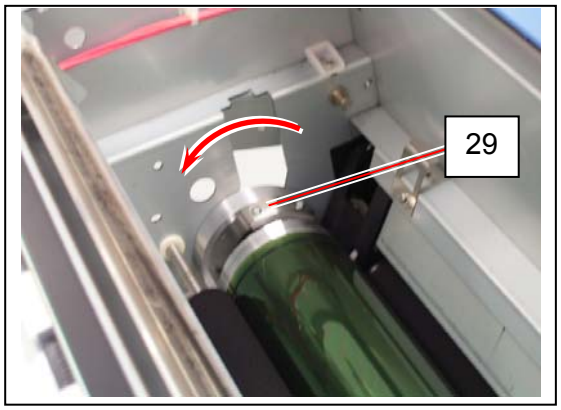


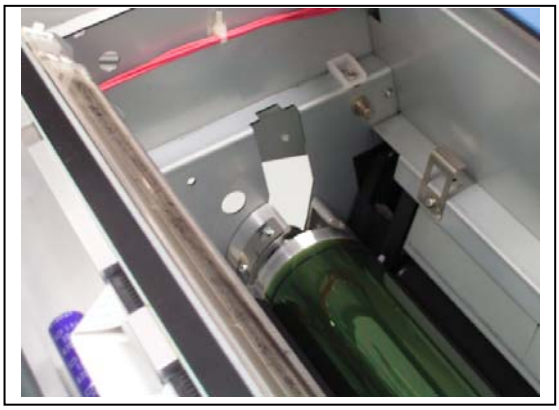


19. Similarly loosen 2 pieces of screw (28) on the right and rotate the Block 2 (29) as the arrow marks.

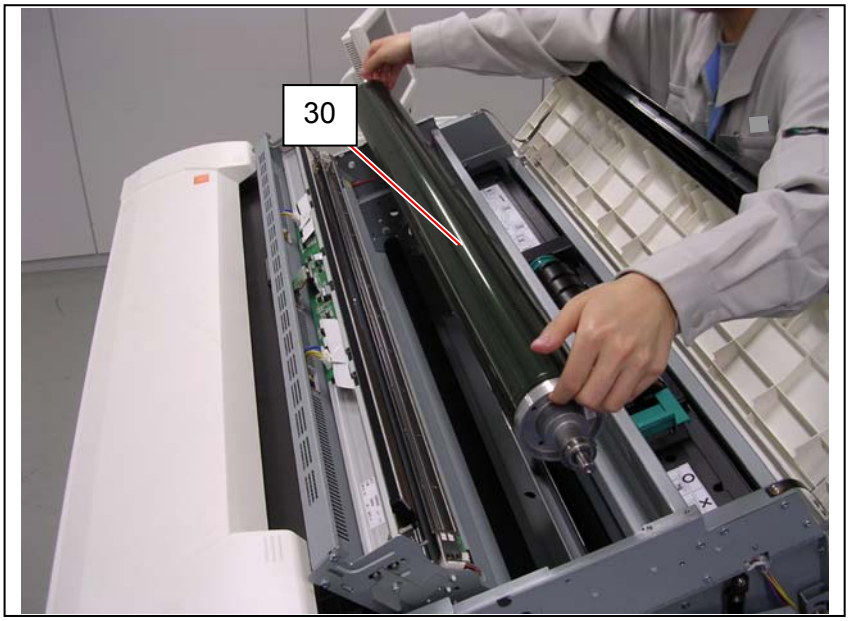








20. Remove Photoconductive Drum (30), and replace it with the new one.

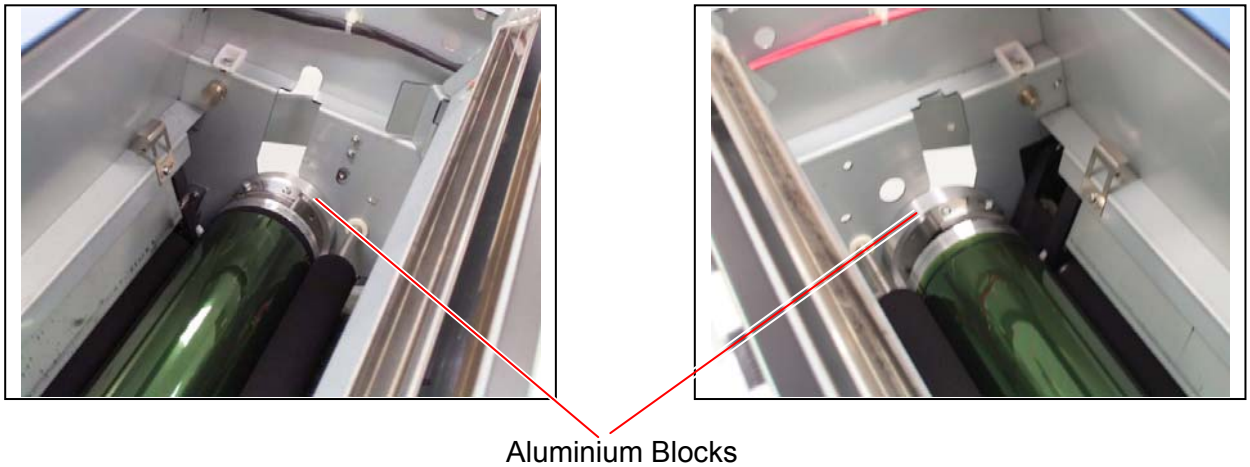


NOTE

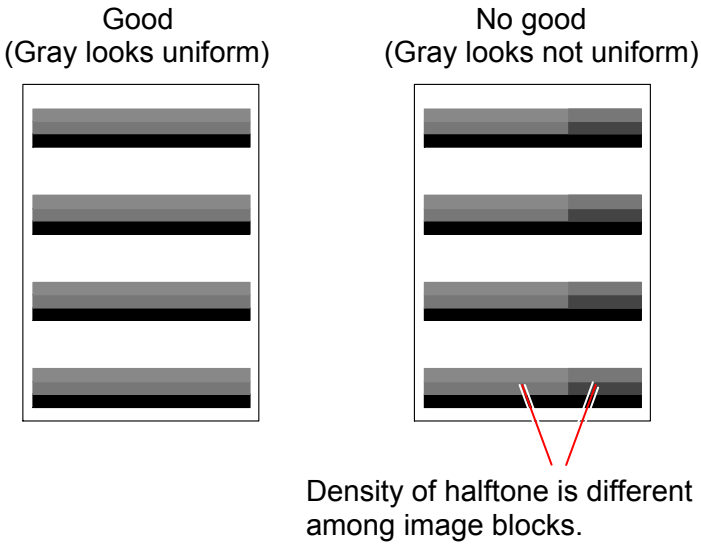
The Aluminium Block (27) and (29) maintain the focus of the LED Head.
Therefore it is necessary to re-position them correctly after replacing the Photoconductive Drum.
Please fix them making reference to [5.5.2 How to fix the Aluminium Blocks] on page 5-151.

5. 5. 2 How to fix the Aluminium Blocks

There are Aluminium Blocks at both sides of the Drum Shaft.
As they maintain the focus of LED Head, it is necessary to re-position them correctly after replacing the Photoconductive Drum.



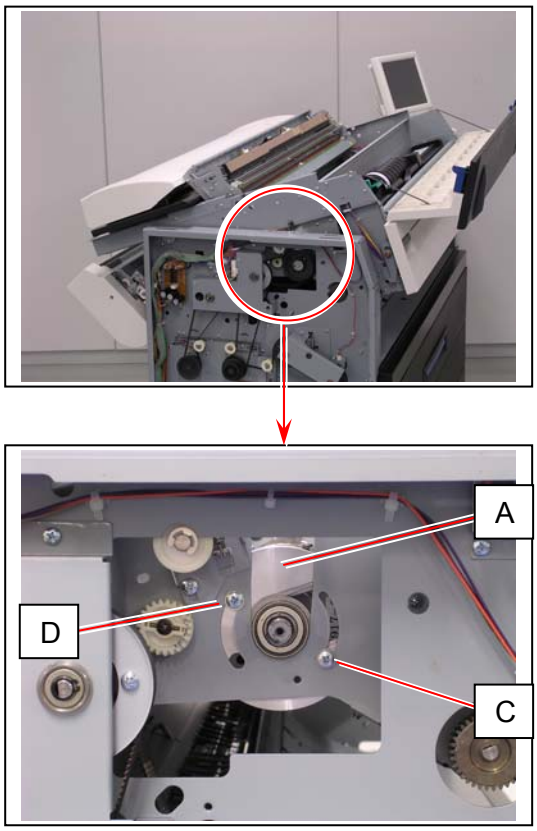
Print out the Test Pattern No.3 to check if the Aluminium Blocks are fixed at the correct position.
The density of halftone is uniform as the following left image if the Aluminium Blocks are fixed at the correct positions (focus is good).
But the density of halftone is different among image blocks as the following right image if blocks are not fixed correctly (focus is not good).



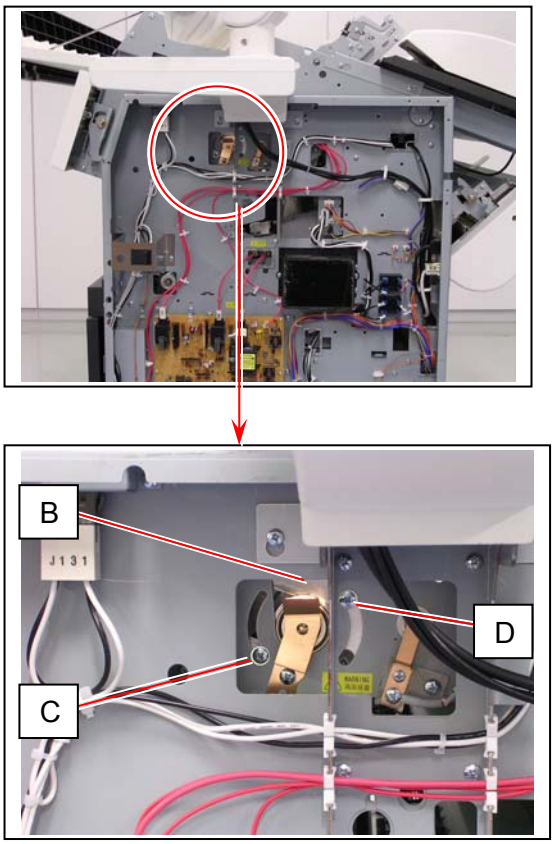
If the focus of LED Head is not good, fix the Aluminium Blocks properly making reference to the next page.

There are Aluminium Blocks (A) (B) at both sides, and each of them is fixed with 2 screws (C) (D).

Left side



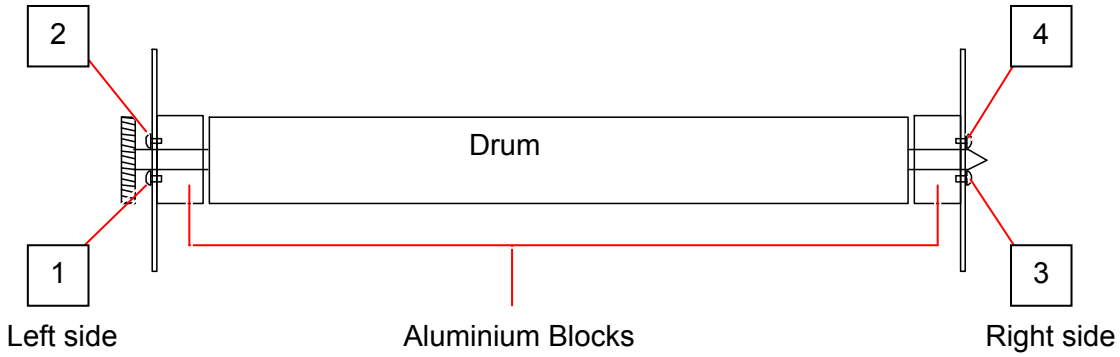
Right side



Do as follows to fix the Aluminium Blocks correctly.

a) Always fix the Aluminium Block of the **left (A) first and then right (B).**
b) When you tighten 2 screws (C) (D) to fix each Aluminium Block, always tighten **the lower one (C) first and then the upper one (D)**.

The following picture shows the order to tighten the screws. **Tighten in the order as 1 to 4 necessarily**.

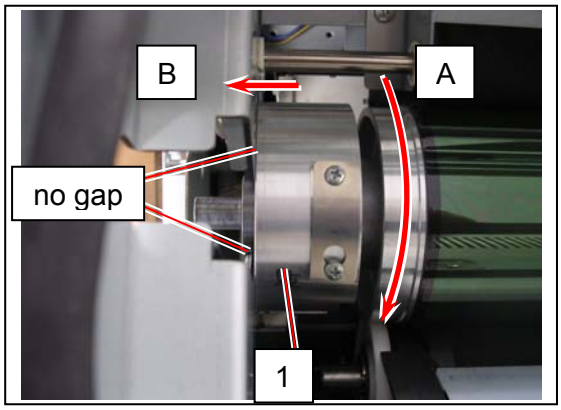


NOTE

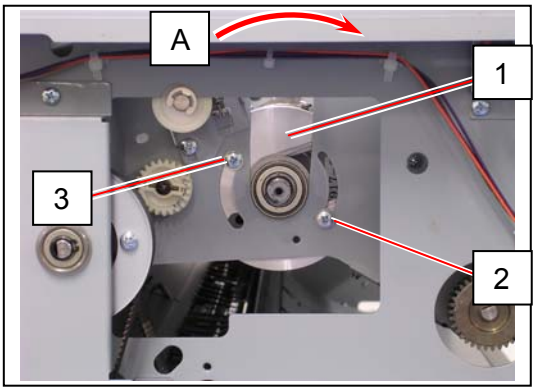
The focus of LED Head will become defective if you do not satisfy the above requirements.
Refer to the later pages for greater details.
Using Drum Block Fix Tool (P/N 305JG85010) is recommended.

5. 5. 2. 1 Fixing Block with Drum Block Fix Tool

1. Rotate the left Block (1) fully to the arrow direction (A: to front) and also press it to the arrow direction (B: to outside). This will remove any gap between Block (1) and the side frame of the machine.
   With holding Block (1), tighten the screws (2) (3) just enough turn to fix Block (1) temporarily.



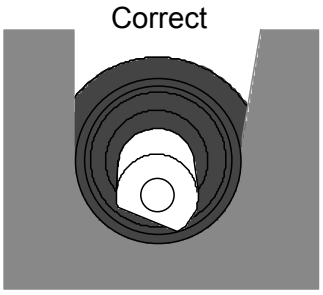
(Seen from the top of machine)

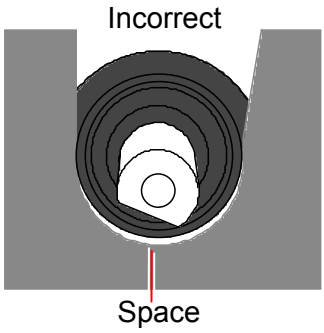


(Seen from the outside of machine)

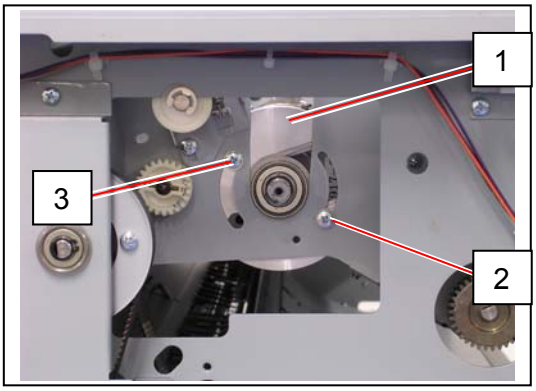
NOTE

There should be no space between the Bearing and U-shape opening.
The LED focus will become defective if there is any space.

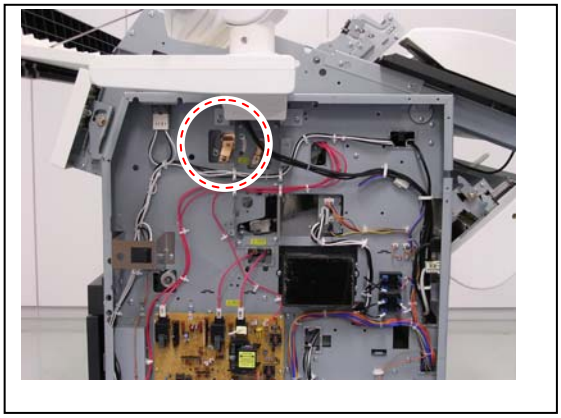


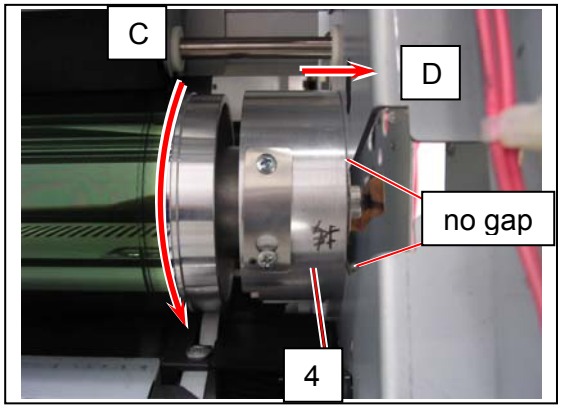


2. Loosen the screws (2) (3) in a (approximately) quarter turn to release Block (1). Check that no excessive backlash to sideways appears.

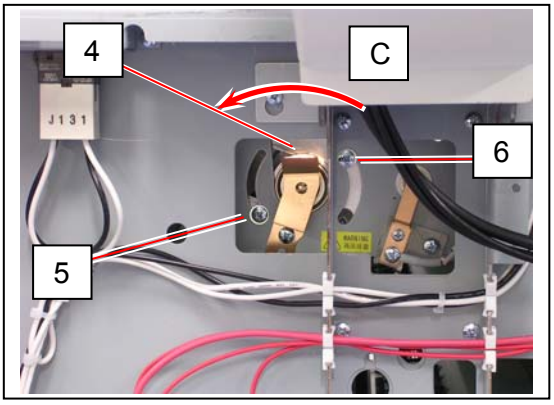


3. Similarly to step 1, rotate the right Block (4) fully to the arrow direction (C: to front) and also press it to the arrow direction (D: to outside). This will remove any gap between Block (4) and the side frame of the machine.
With holding Block (4), tighten the screws (5) (6) just enough turn to fix Block (4) temporarily.



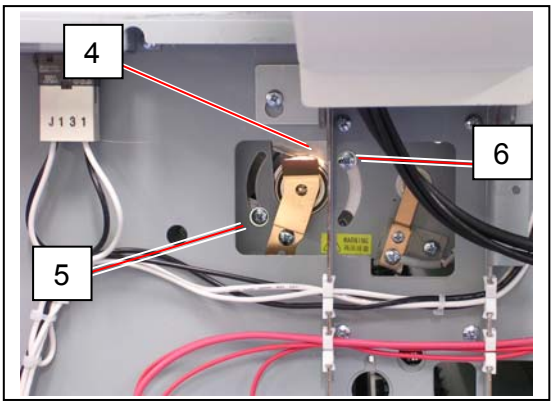


(Seen from the top of machine)

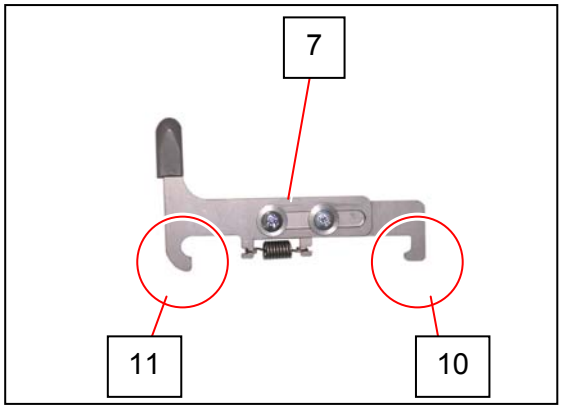


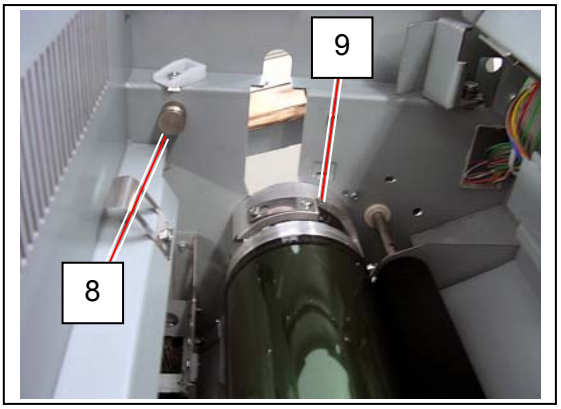
(Seen from the outside of machine)

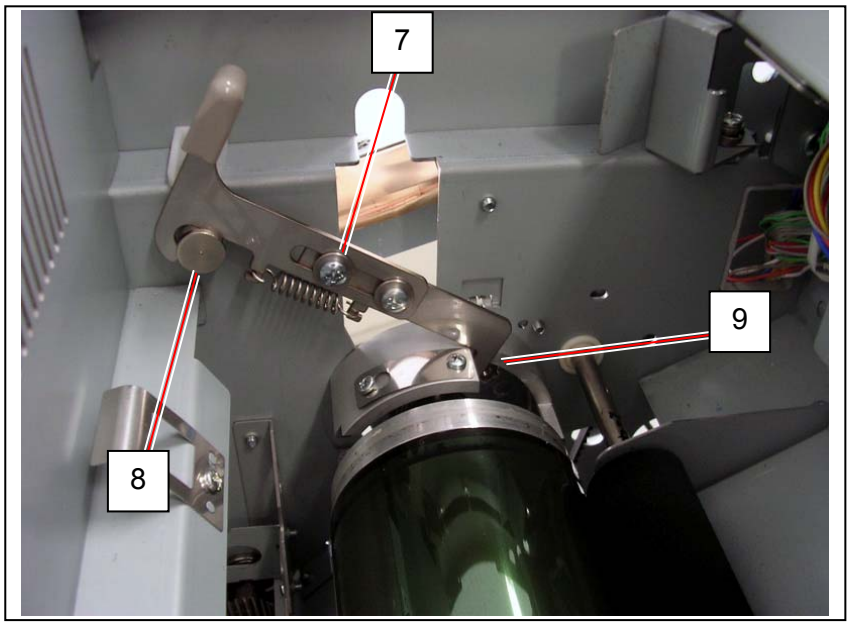
4. Loosen the screws (5) (6) in a (approximately) quarter turn to release Block (4). Check that no excessive backlash to sideways appears.



5. On the left side, hook Drum Block Fix Tool (7) on between the pin (8) on the frame and the U-shape opening (9) of Block (1).
Hook the rear hook (10) the rim of the U-shape opening (9) and the front hook (11) in the groove of the pin (8).



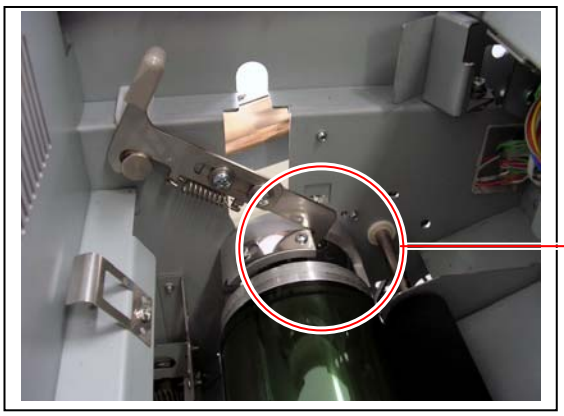


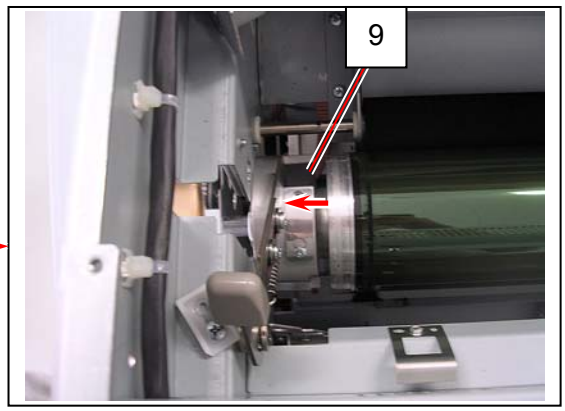


NOTE

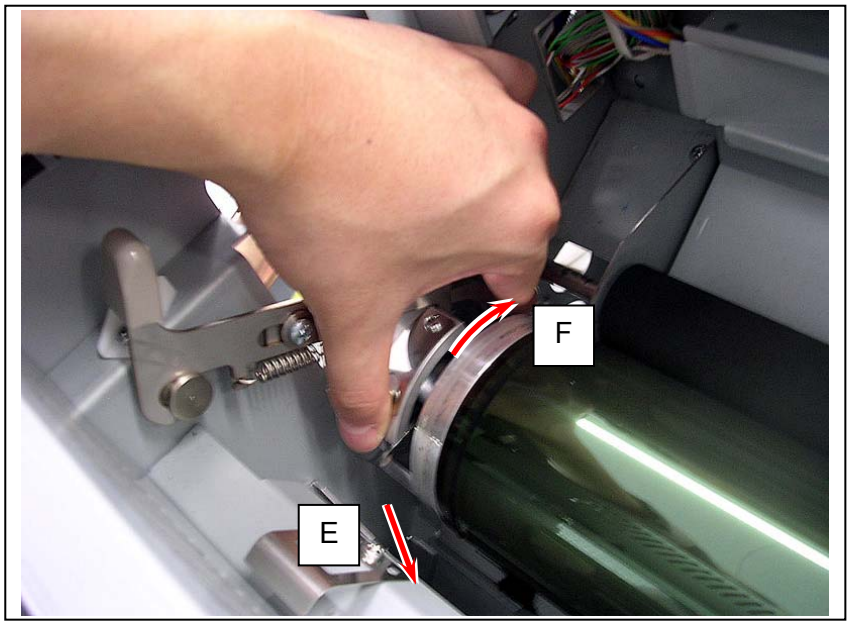
(1) Handle Drum Block Fix Tool with care. Be sure not to damage Drum or any other components when removing/attaching it.

(2) Set the rear hook (10) against the corner rim of U-shape opening (9).

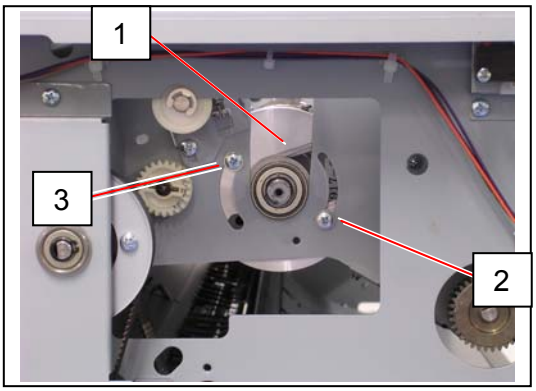




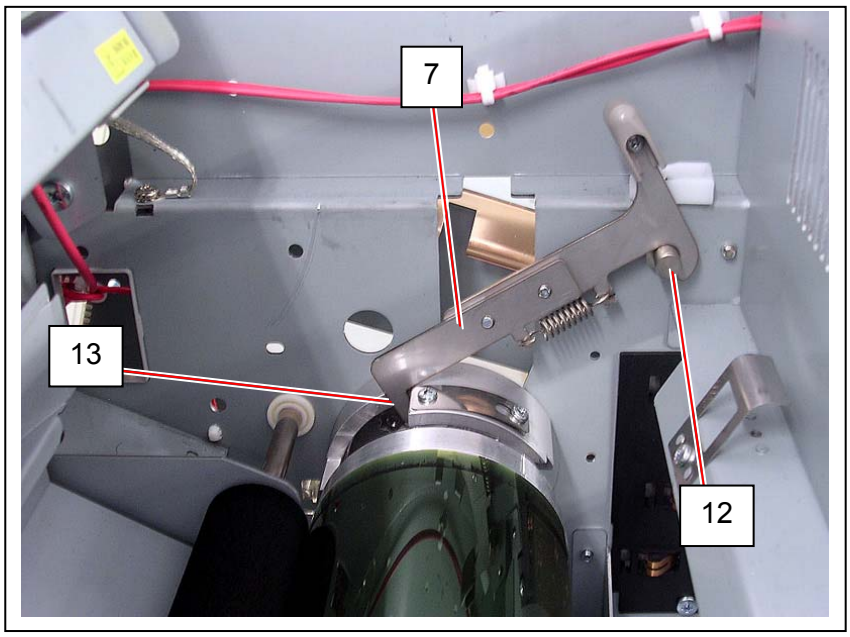
6. With pressing Block (1) down (E), slightly turn Block to the arrow direction (F) and release it to locate Block correctly by restoring spring.



7. Tighten the lower screw (2) and then the upper screw (3) to secure Block (1).



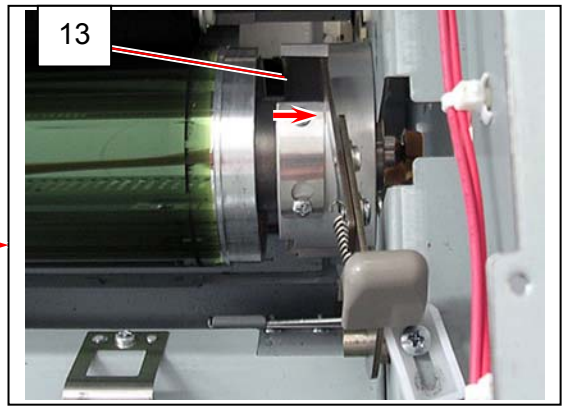
8. Similarly to step 5, on the right side, hook Drum Block Fix Tool (7) on between the pin (12) on the frame and the U-shape opening (13) of Block (4).



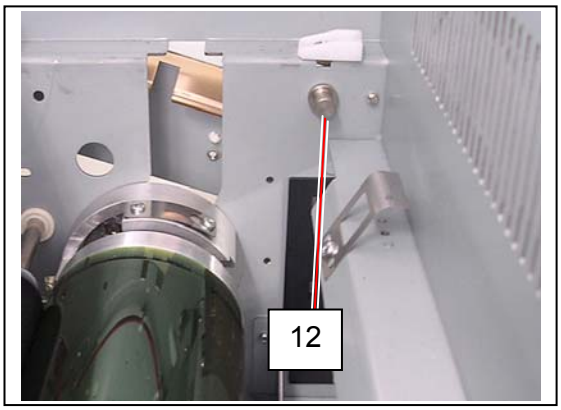
NOTE

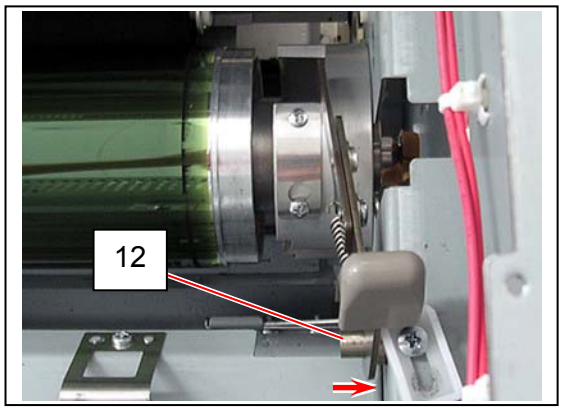
(1) Handle Drum Block Fix Tool with care. Be sure not to damage Drum or any other components when removing/attaching it.

(2) Set the rear hook (10) against the corner rim of U-shape opening (13).

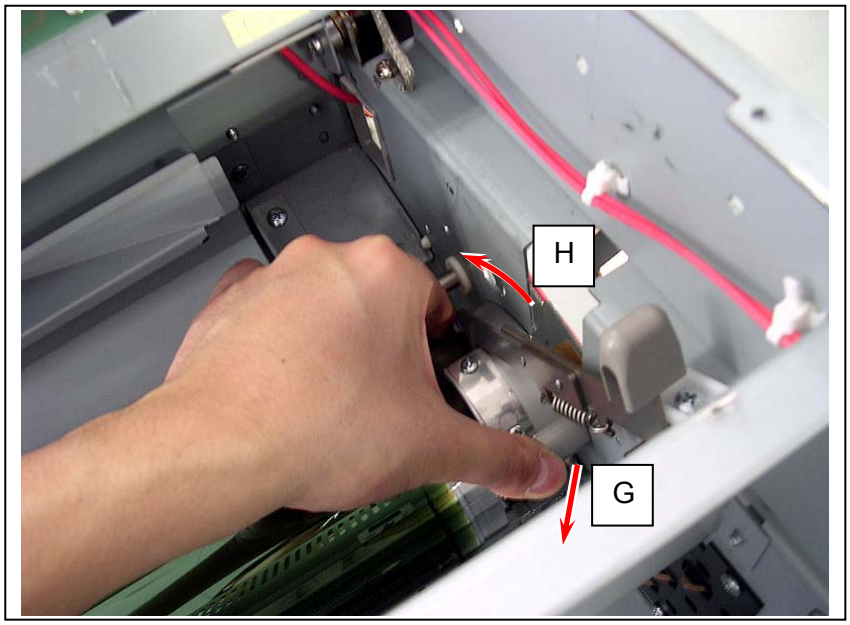


(3) Set the front hook (11) against the step on the pin (12).

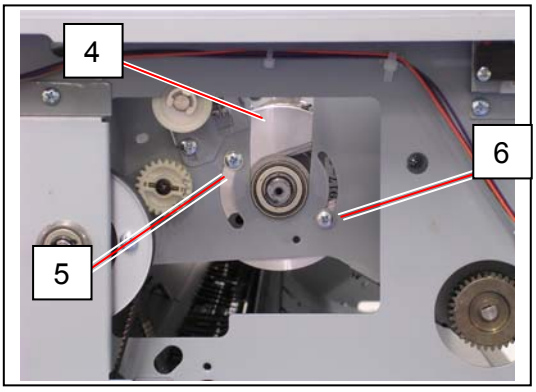




9. Similarly to step 6, with pressing Block (4) down (G), slightly turn Block to the arrow direction (H) and release it to locate Block correctly by restoring spring.



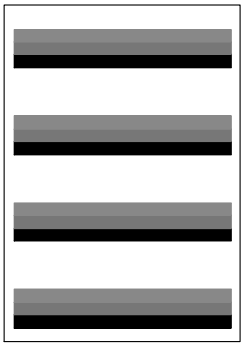
10. Tighten the lower screw (5) and then the upper screw (6) to secure Block (4).



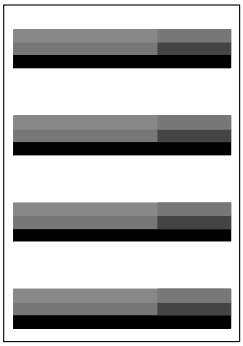
11. Remove Drum Block Fix Tool. Replace all the parts in position and turn on the machine.

12. Print out the Test Pattern No.3, and confirm that the density of halftone is uniform.
If it is still not uniform, fix Blocks again.

Good
(Gray looks uniform)



No good
(Gray looks not uniform)

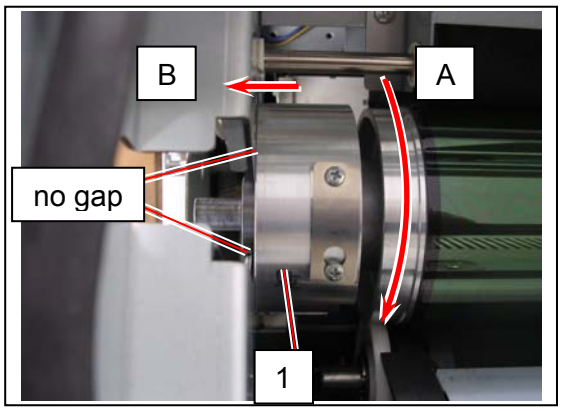


NOTE

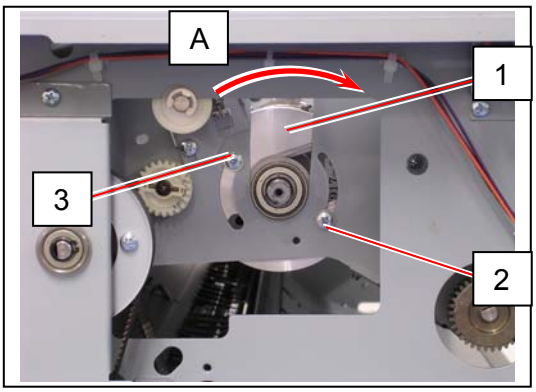
Only reseating Drum may lose LED Head focus on rare occasion even Blocks have been fixed properly. in such case please refer to [5.6.2.3 Focus Adjustment with Spacers] on page 5-191.

5. 5. 2. 2 Fixing Block by hand (w/o Drum Block Fix Tool)

1. Rotate the left Block (1) fully to the arrow direction (A: to front) and also press it to the arrow direction (B: to outside). This will remove any gap between Block (1) and the side frame of the machine.
   With holding Block (1), tighten the screws (2) (3) just enough turn to fix Block (1) temporarily.



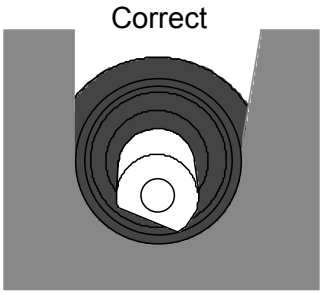
(Seen from the top of machine)

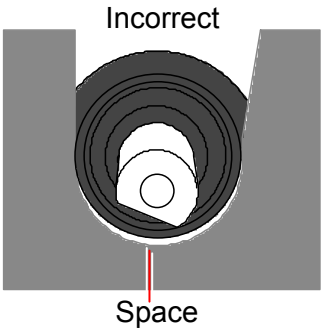


(Seen from the outside of machine)

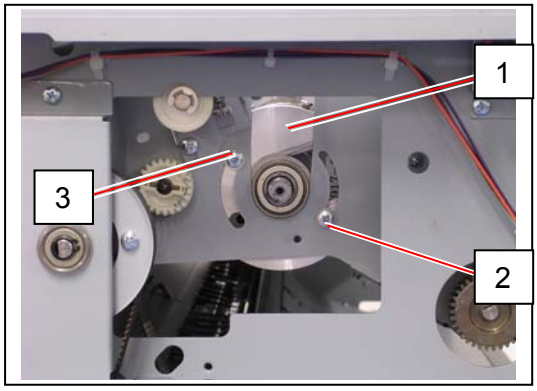
NOTE

There should be no space between the Bearing and U-shape opening.
The LED focus will become defective if there is any space.

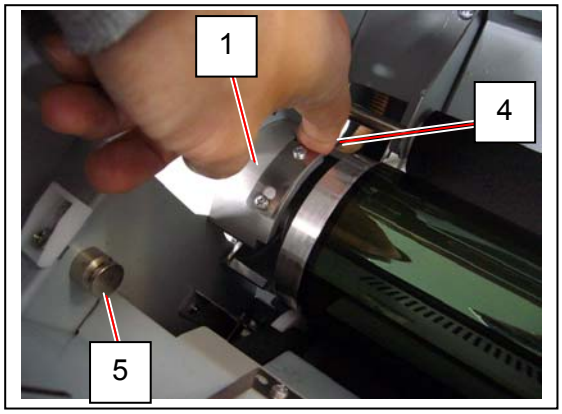


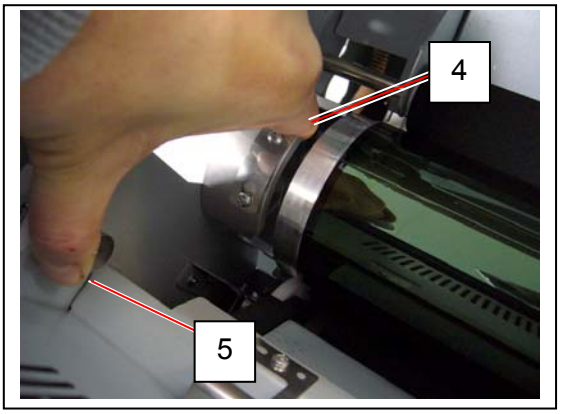


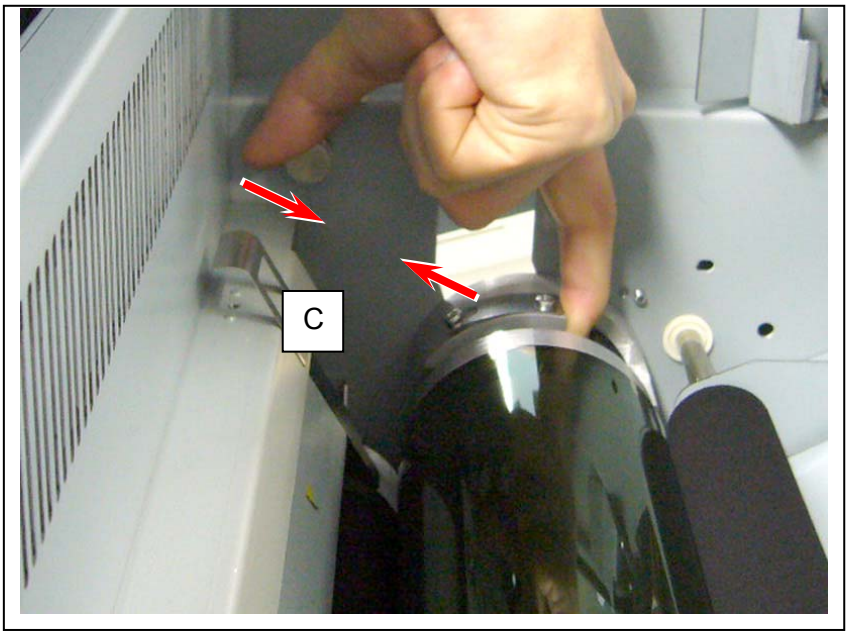
2. Loosen the screws (2) (3) in a (approximately) quarter turn to release Block (1). Check that no excessive backlash to sideways appears.

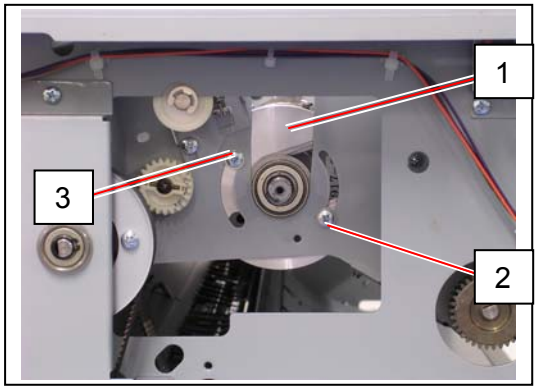


3. Put your finger inside the U-shape opening (4) of Block (1). Put the other finger on the pin (5) of the frame.
   Push the fingers toward each other (C: inside). Note that the entire Block (1) is shifted towards the pin (5) by the finger at the U-shape opening (4).
   While pushing and holding, tighten the lower screw (2) and then the upper screw (3) to secure Block (1).

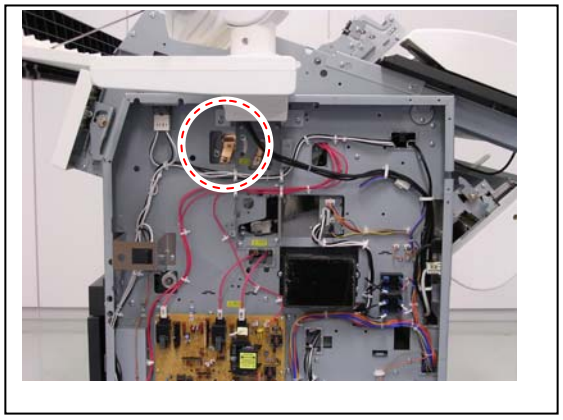


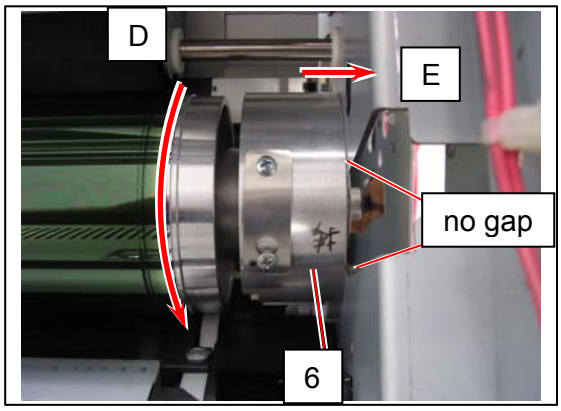




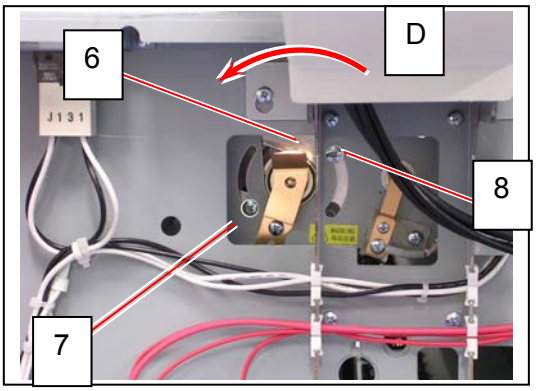


4. Similarly to step 1, rotate the right Block (6) fully to the arrow direction (D: to front) and also press it to the arrow direction (E: to outside). This will remove any gap between Block (6) and the side frame of the machine.
   With holding Block (6), tighten the screws (7) (8) just enough turn to fix Block (6) temporarily.



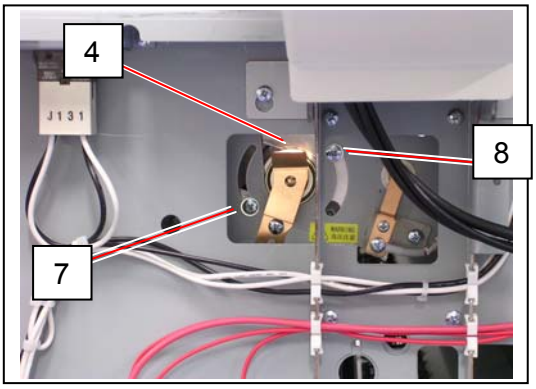


(Seen from the top of machine)

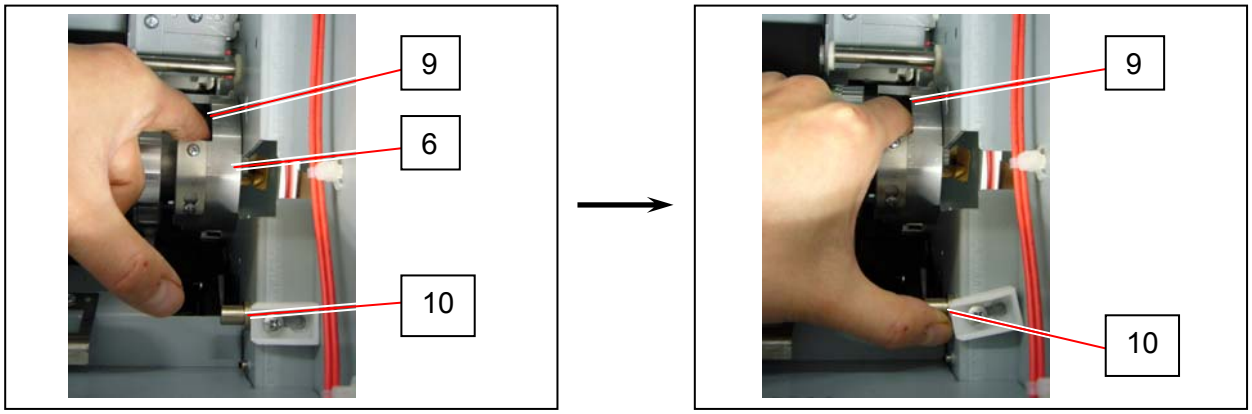


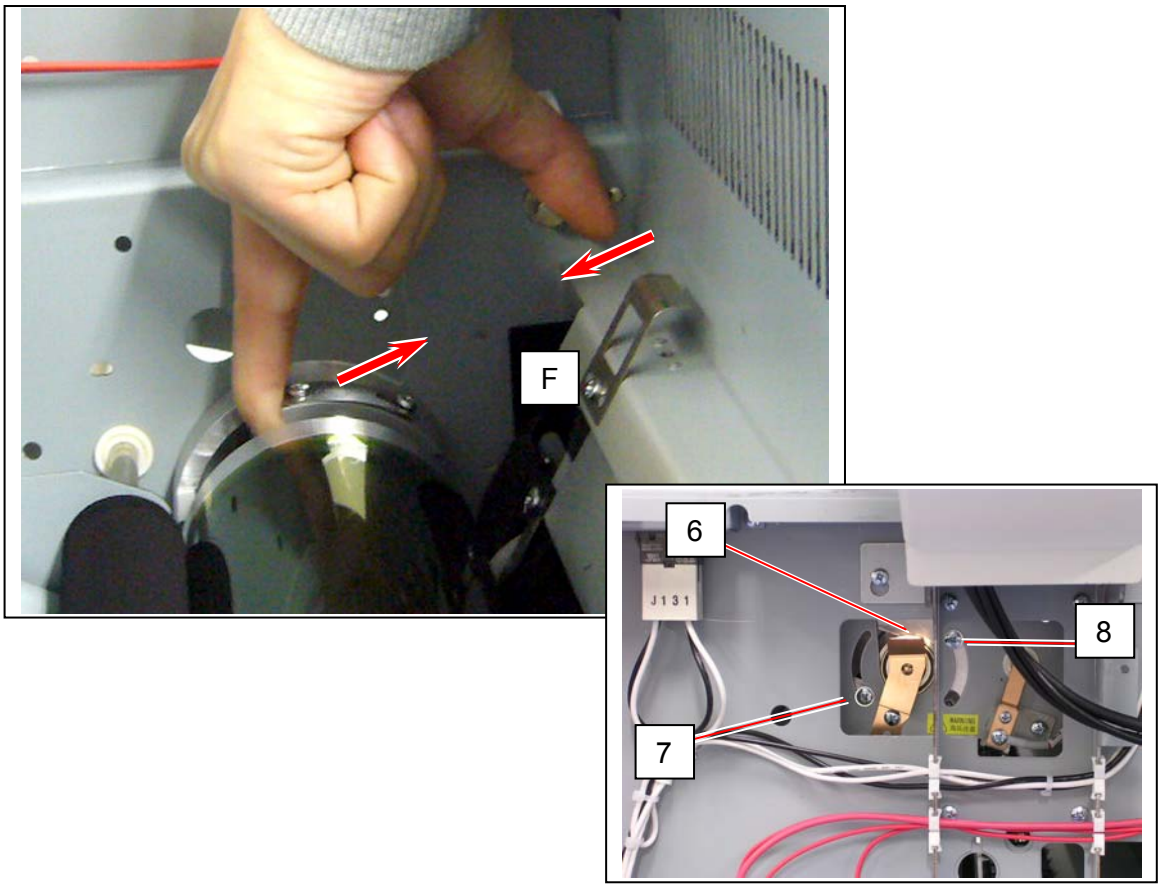
(Seen from the outside of machine)

5. Loosen the screws (7) (8) in a (approximately) quarter turn to release Block (6). Check that no excessive backlash to sideways appears.



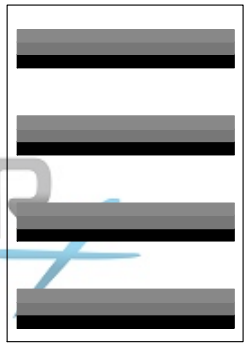
6. Similarly to step 3, put your finger inside the U-shape opening (9) of Block (6) and put the other finger on the pin (10) of the frame.
   Push the fingers toward each other (F: inside). Note that the entire Block (6) is shifted towards the pin (10) by the finger at the U-shape opening (9).
   While pushing and holding, tighten the lower screw (7) and then the upper screw (8) to secure Block (6).





7. Print out the Test Pattern No.3, and confirm that the density of halftone is uniform.
   If it is still not uniform, fix Blocks again.

Good
(Gray looks uniform)



No good
(Gray looks not uniform)

5. 5. 3 Cleaning of Photoconductive Drum

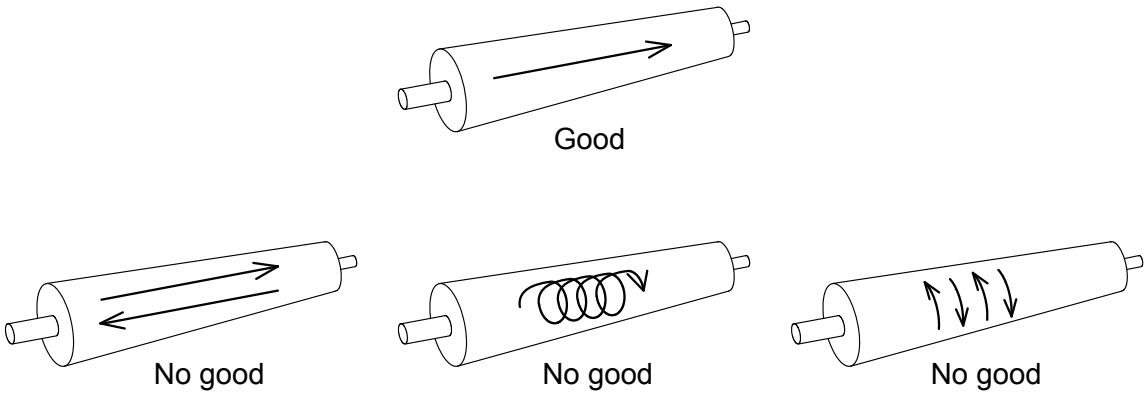
1. Remove the Photoconductive Drum from the machine making reference to [5. 5. 1 Replacement of the Photoconductive Drum] on the page 5-142.

2. Wipe the surface of Photoconductive Drum with a dry cloth.
3. If the toner strongly sticks on the surface and it is impossible to remove it, wipe with the cloth impregnated with the alcohol.
4. After using the alcohol, wipe all surface of Drum with a cloth impregnated with water so that there should be no unevenness of cleaning.
5. Wipe all surface of Drum with a dry cloth, and dry the Drum leaving in a dark place for about 10 minutes.
6. Put back the Drum to the machine.

NOTE

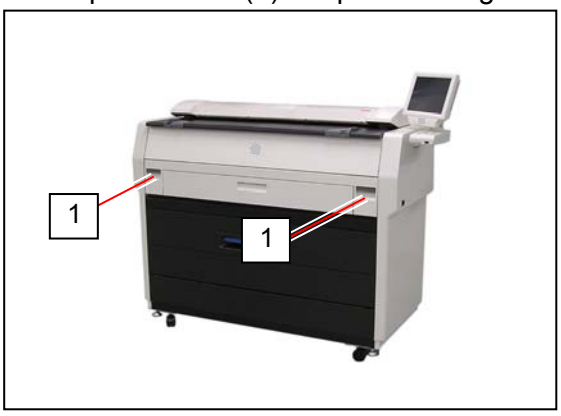
(1) A defective image may be printed right after the cleaning (about 10 to 20 sheets of A0), but it will be fixed naturally as the time passes.

(2) Wipe the surface always to one direction.
You will damage the Drum if you wipe in other ways.

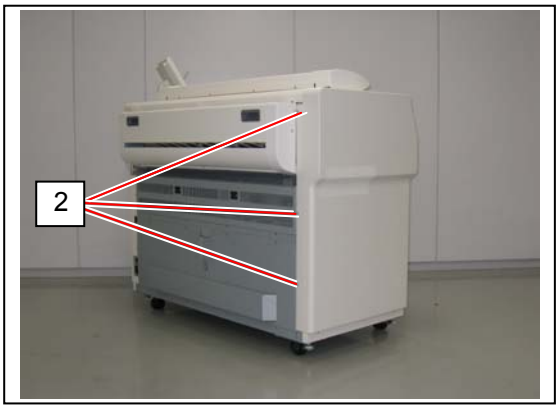


5. 5. 4 Replacement of Belt 4

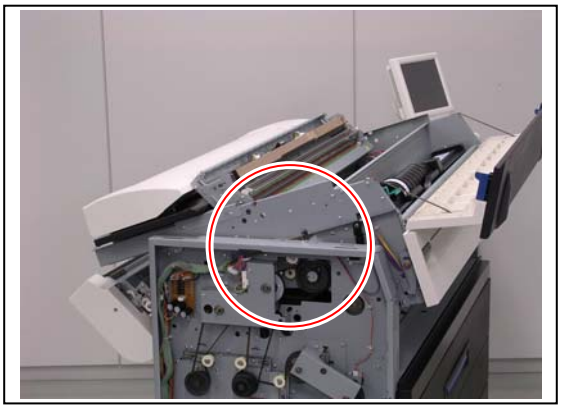
1. Pull up the Lever (1) to open the Engine Unit.

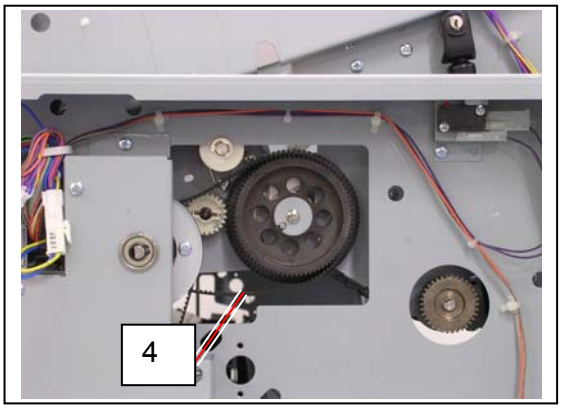


2. Remove 3 screws (2) to remove Cover (3).



3. Remove Belt 4 (4).





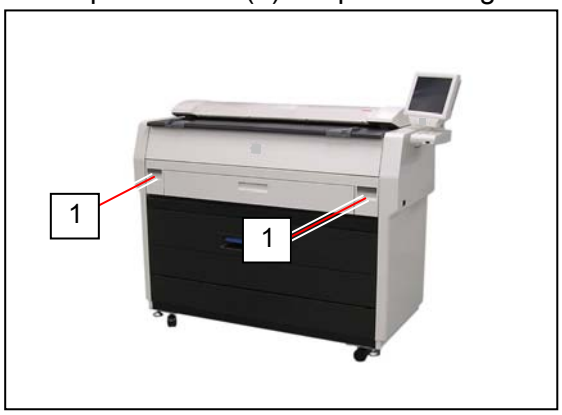
NOTE

Belt 4 is automatically unfastened if only you open the Engine Unit.

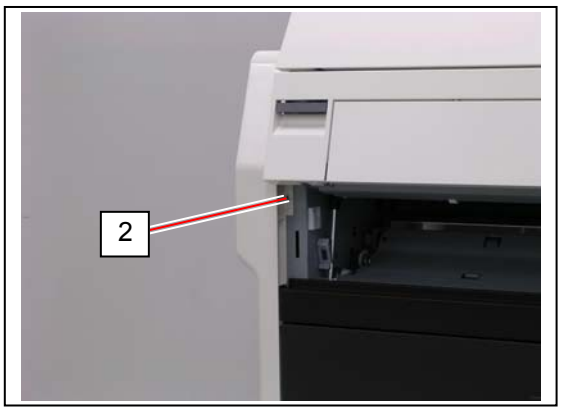
5. 6 LED Head

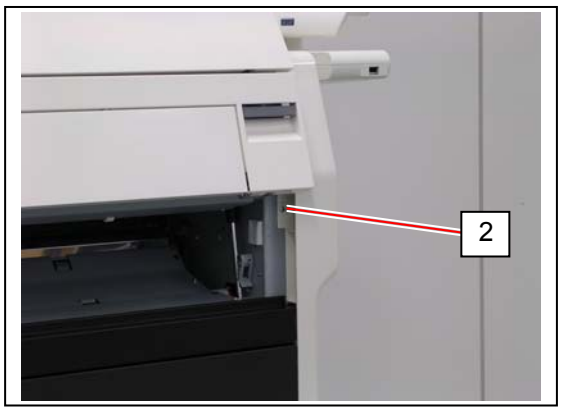
5. 6. 1 Replacement of the LED Head Unit

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

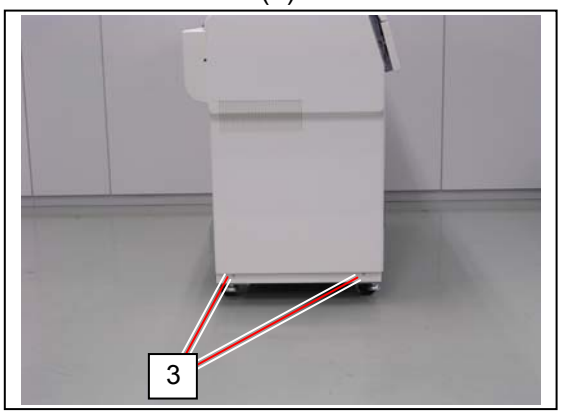


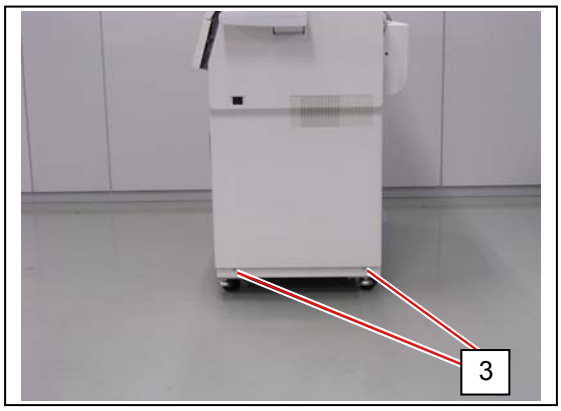
2. Remove 2 screws (2) on the front.



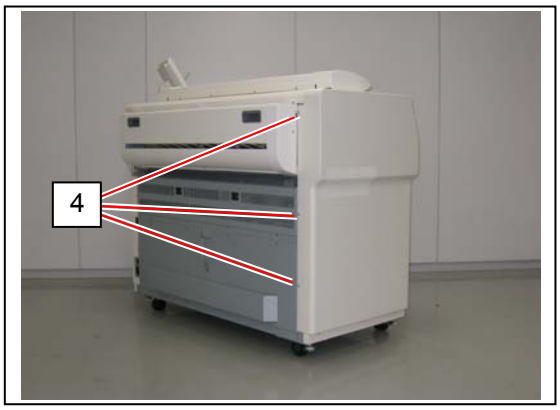


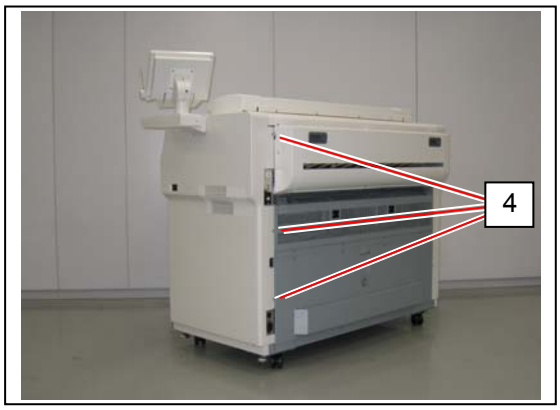
3. Remove 4 screws (3) on the side bottom.





4. Remove 6 screws (4) on the rear.

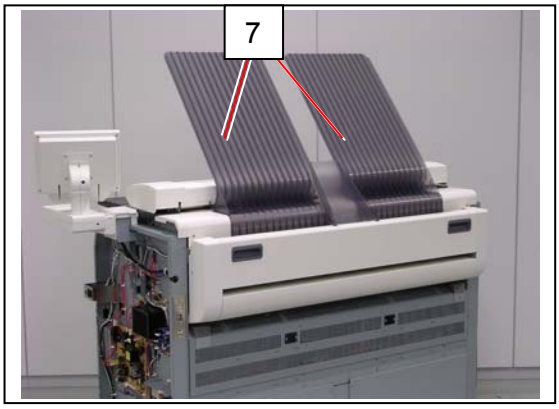




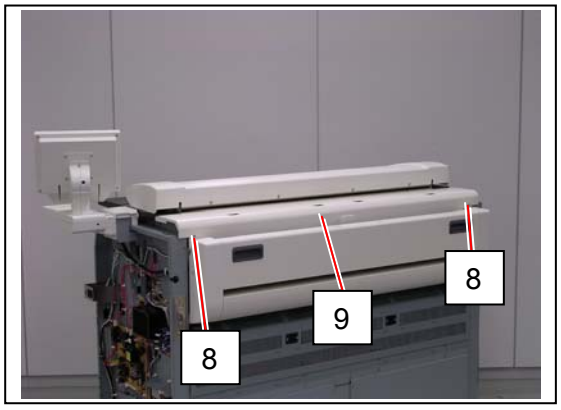
5. Remove Cover (5) / Cover (6).

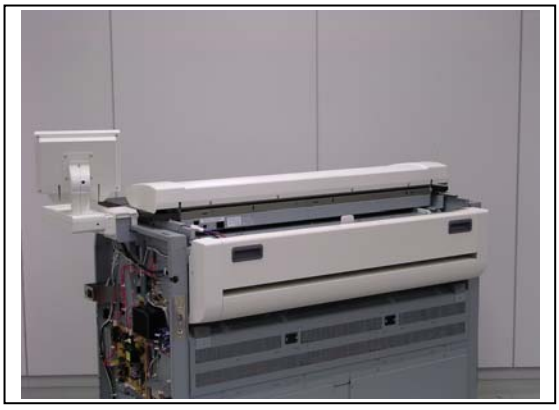
6. Close the Engine Unit.

7. Remove 2 pieces of Tray (7).

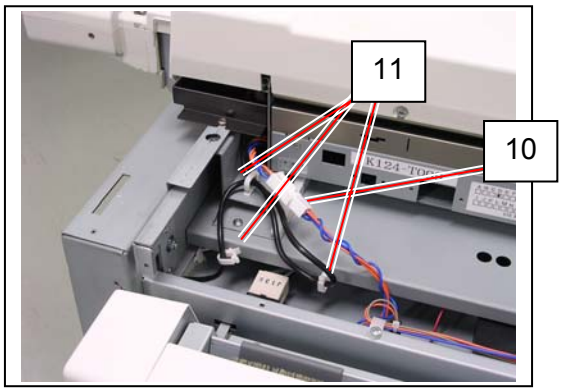


8. Remove 2 pieces of 4x6 screw (8) to remove the Cover (9).



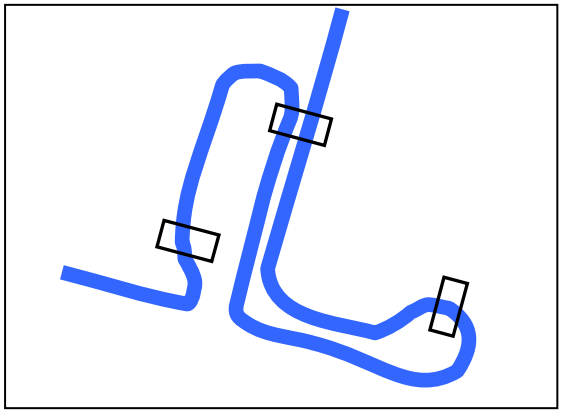


9. Disconnect the connector (10), and open the wire saddles (11) to release the harness.

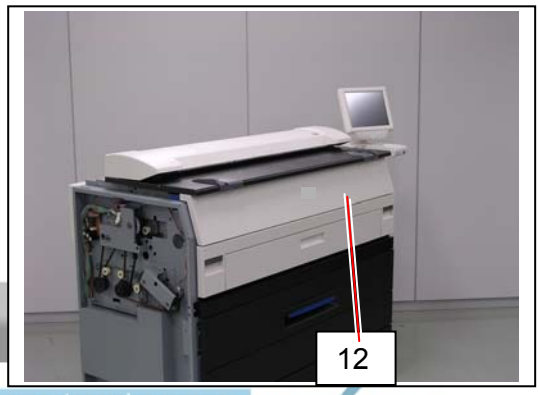


NOTE

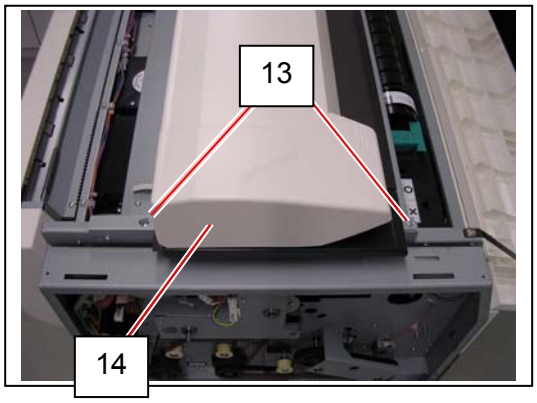
Wind excessive length of the USB Cable with the wire saddles (11) when reassembling.
Do not bundle the 2 cables in any of the wire saddles (11) together.

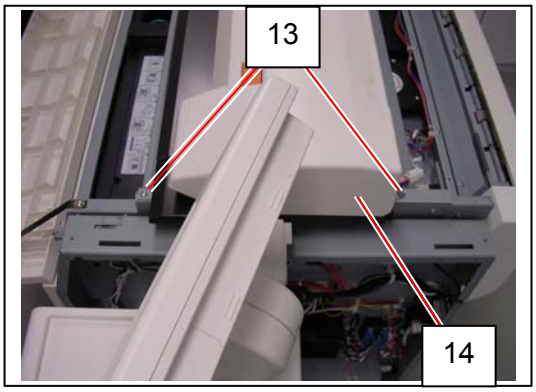


10. Open the Cover (12).

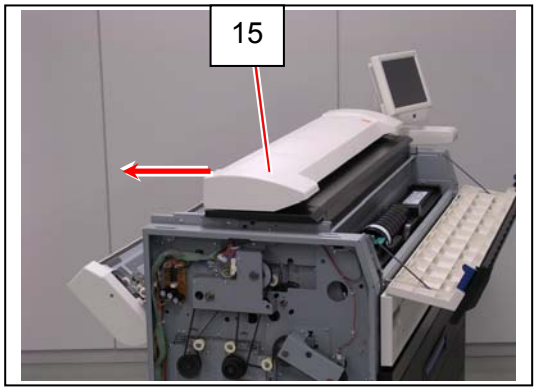


11. Remove 4 pieces of 4x6 screw (13) and 2 pieces of washer screw (14).

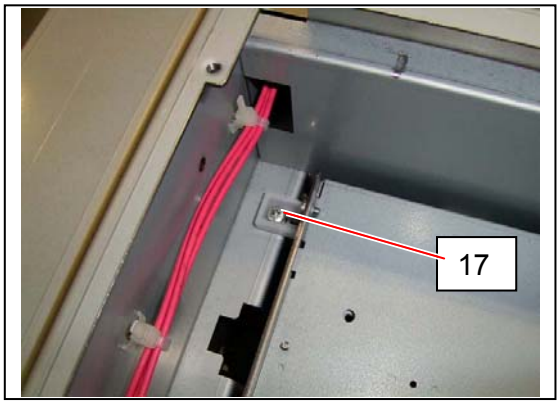




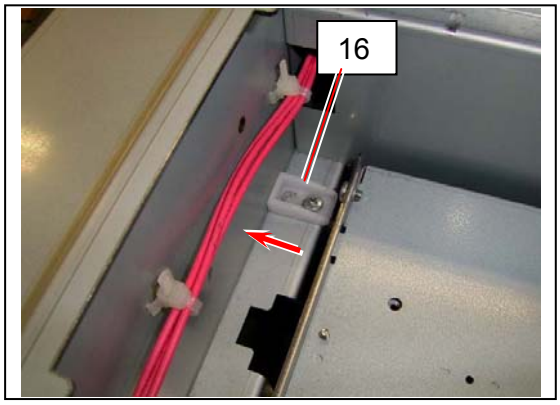
12. Slide the Scanner Unit (15) fully backward.



13. There are 2 pieces of Stopper (16) at both sides, which lock the LED Head Frame.
Loosen the screw (17) and then slide the Stoppers (16) outside to unlock the LED Head Frame.

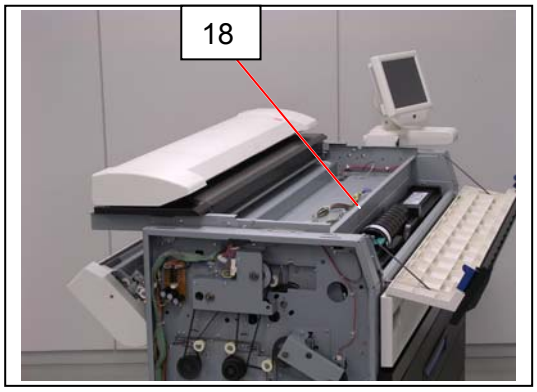


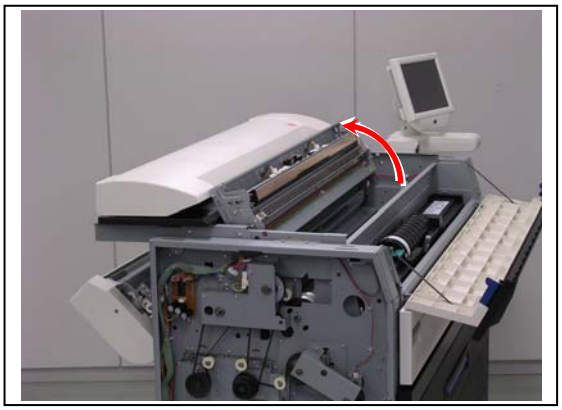
Lock position



Unlock position

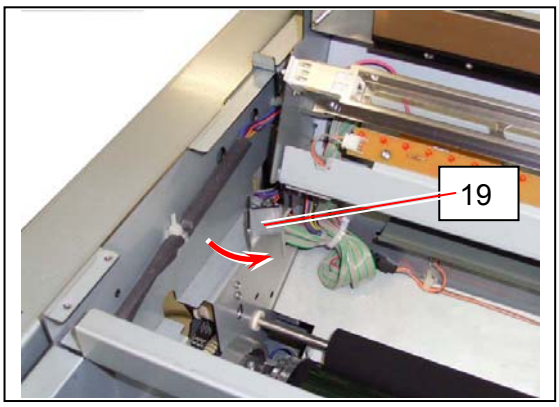
14. Open the LED Head Frame (18).



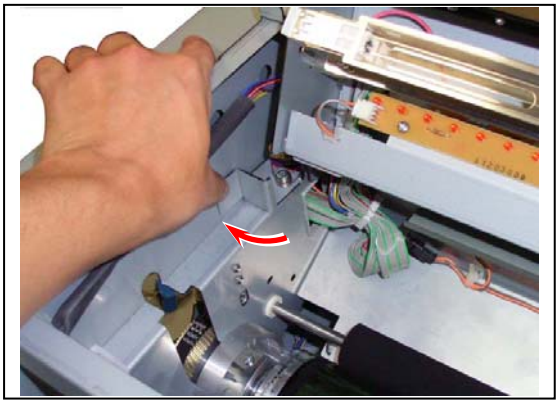


NOTE

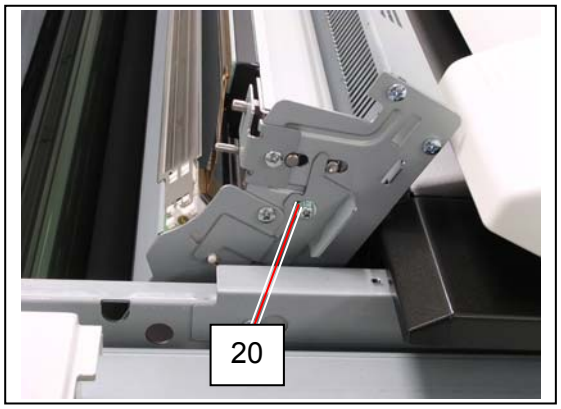
The Stopper 2 (19) comes out automatically to prevent the LED Head Frame from falling down.

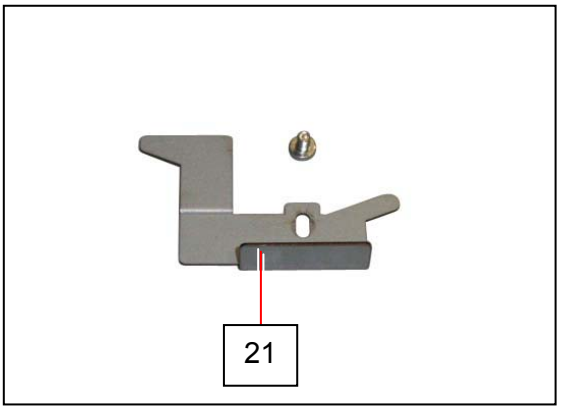


Press the Stopper 2 as the right photo if you will close the LED Head Frame.



15. Remove the 4x6 screw (20) to remove the Fixing Bracket (21) on the right.

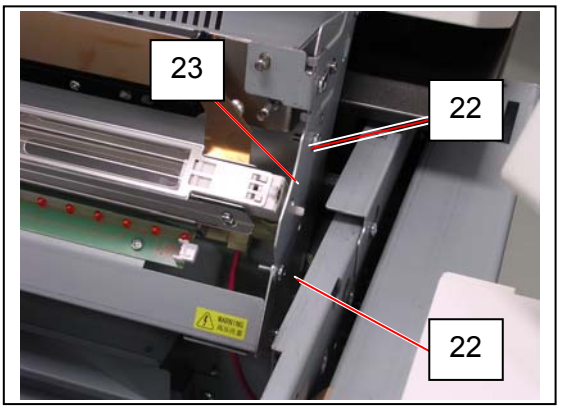




NOTE

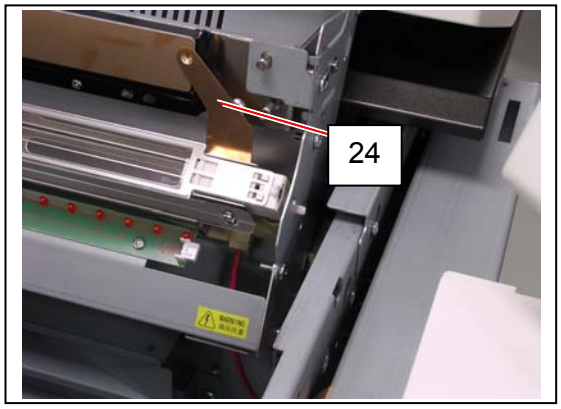
You do not have to put back the Fixing Bracket (21) at the time of reassembly, because it is a part required only before the delivery of machine.

16. Loosen 2 pieces of 4x10 screw (22) to make the Plate (23) enough movable.

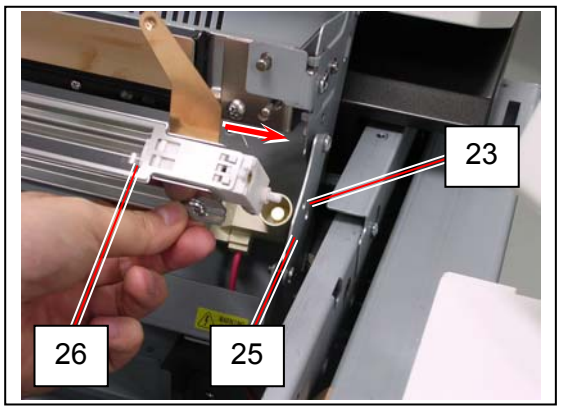


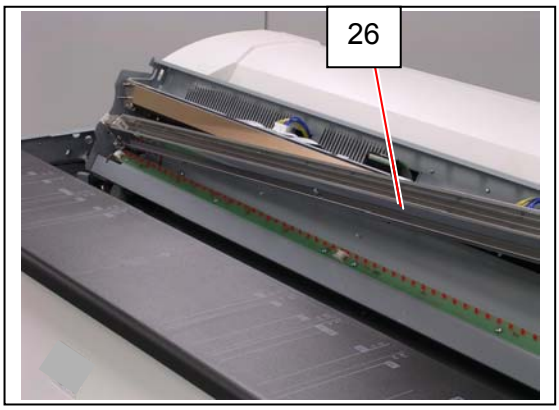
NOTE

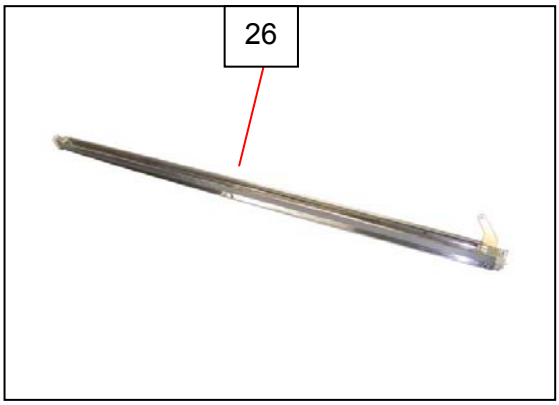
Be careful not to damage/deform/stretch Leaf Spring 2 (24).
Doing so may damage LED Head Unit.



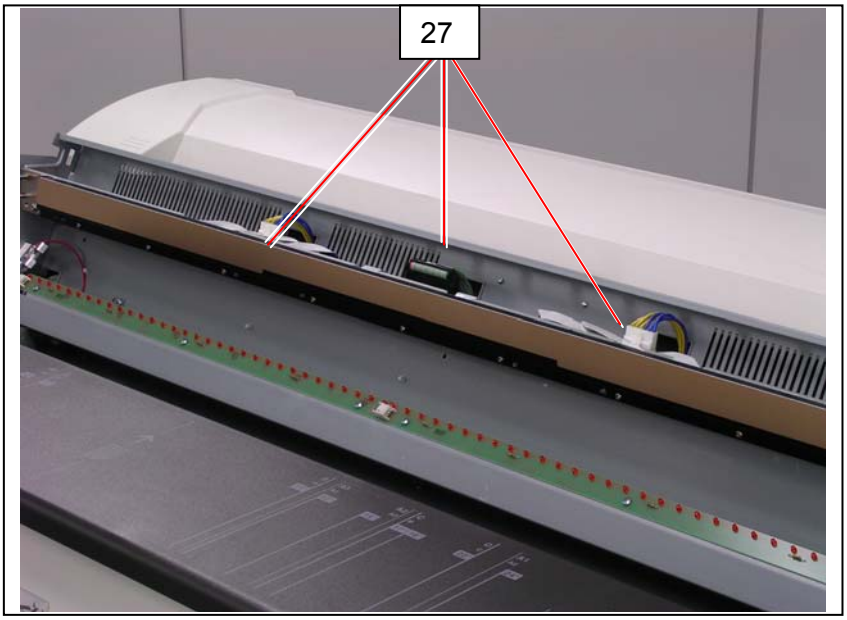
17. Move the Plate (23) to the right to release the pin (25) of Corona Block.
Then remove the Image Corona Unit (26).



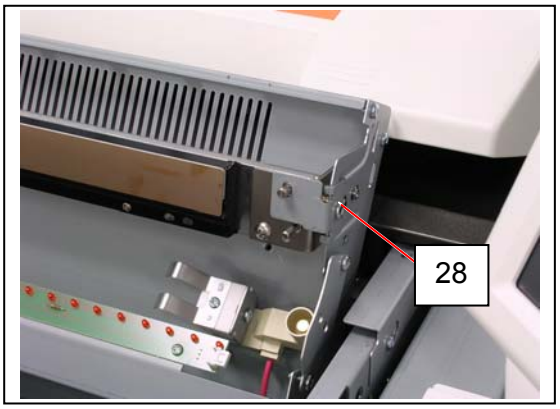


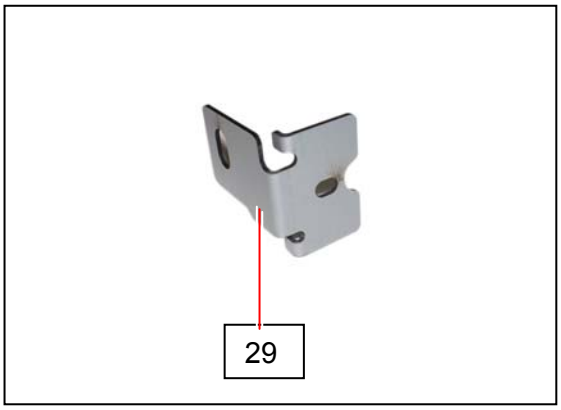


18. Disconnect 3 connectors (27).

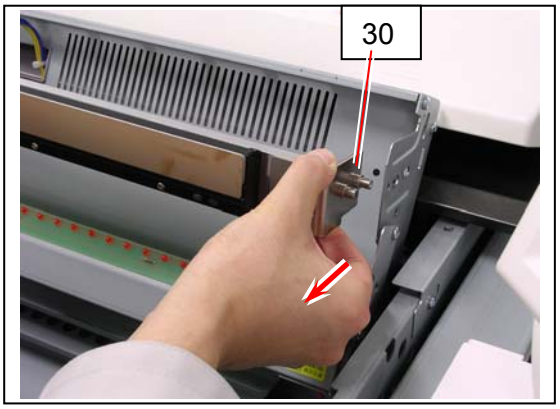


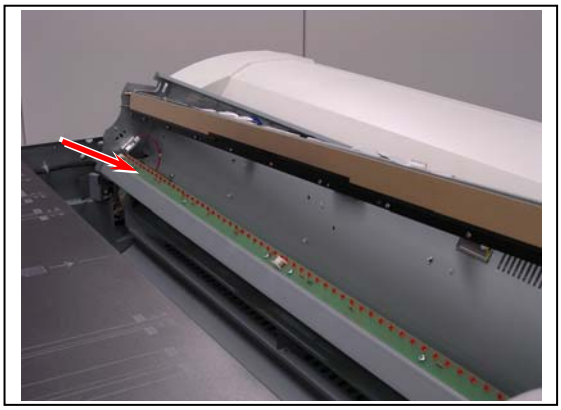
19. Remove the screw (28) to remove the Bracket (29).

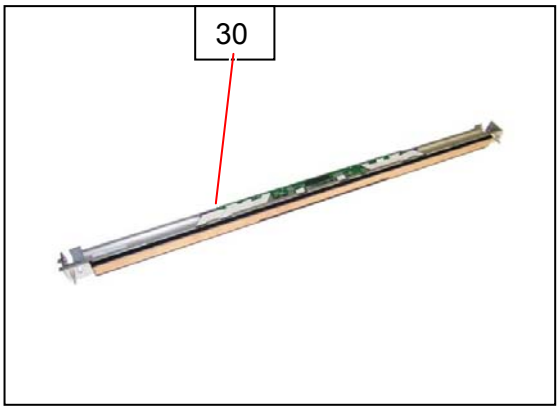




20. Move the right end of LED Head (30) a little to the front side, and then slide the whole unit to the right.
Replace LED Head Unit (30) with the new one.







NOTE

It is necessary to check and adjust the focus of LED Head after its replacement.
Refer to [5. 6. 2 LED focus adjustment] on the next page.

5. 6. 2 LED focus adjustment

Please adjust the focus of LED Head after the replacement of LED Head.
Also adjust it if you have lost the correct focus by some reason.

Adjust the focus by the following 3 steps.
(1) Check of the Test Pattern Image
(2) Positioning of the Aluminium Blocks
(3) Focus Adjustment with Spacers

5. 6. 2. 1 Check of the Test Pattern Image

Print out the Test Pattern No.3 in the Service Mode, and check its halftone image.

If the density of halftone is uniform as the following left image, you do not have to make anything because the focus is correctly adjusted.

But it is different among image blocks as the following right image, it is necessary to adjust the focus.
Go to [5. 6. 2. 2 Positioning of the Aluminium Blocks] on the next page in this case.

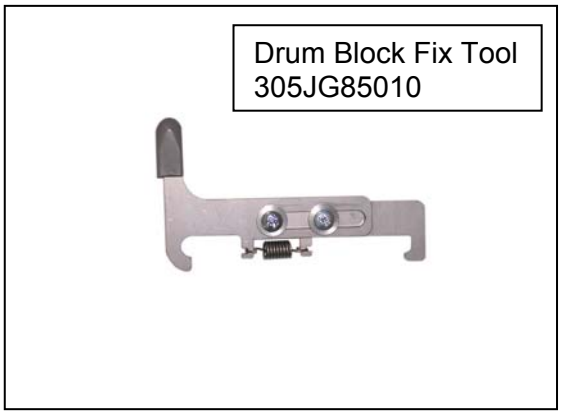
5. 6. 2. 2 Positioning of the Aluminium Blocks

There are Aluminium Blocks at both sides of the Drum, which adjust the distance between LED Head and Drum. If the LED focus is not correct, at first it is necessary to place them at the correct positions in the following way.

NOTE

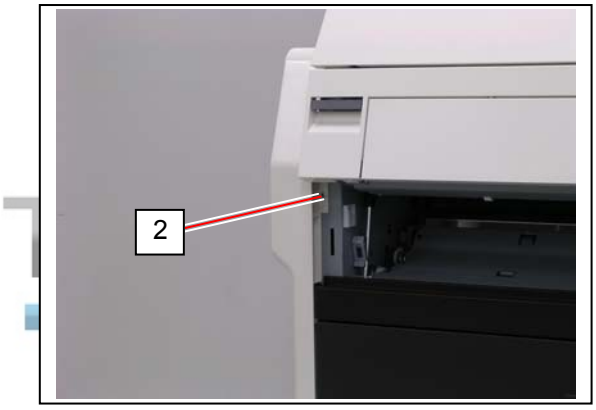
Using Drum Block Fix Tool is recommended.

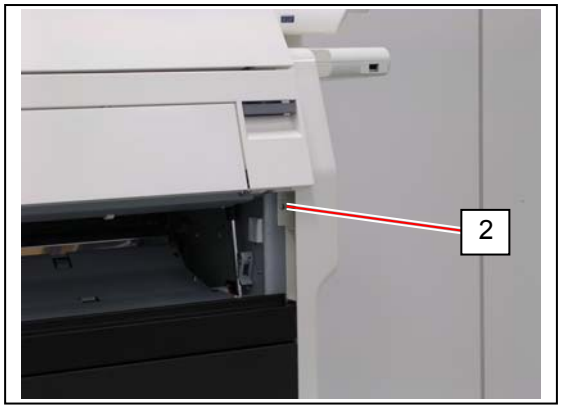
Blocks can be fix properly without Drum Block Fix Tool, in such case please follow the later step 23 for further information.



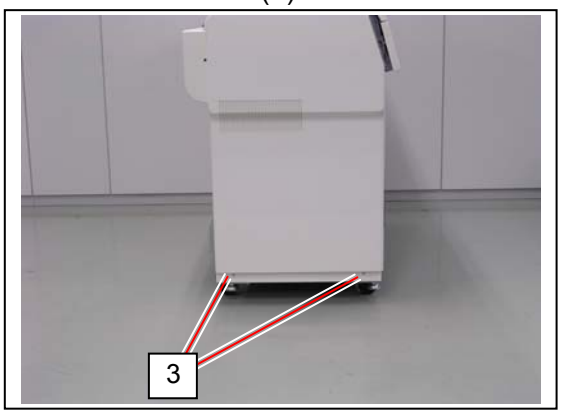
1. Pull up the Lever (1) to open the Engine Unit.

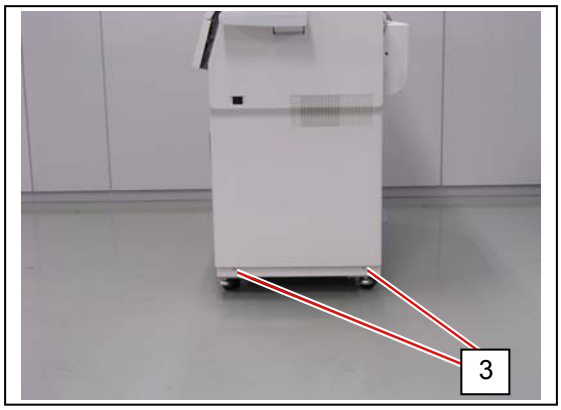
2. Remove 2 screws (2) on the front.



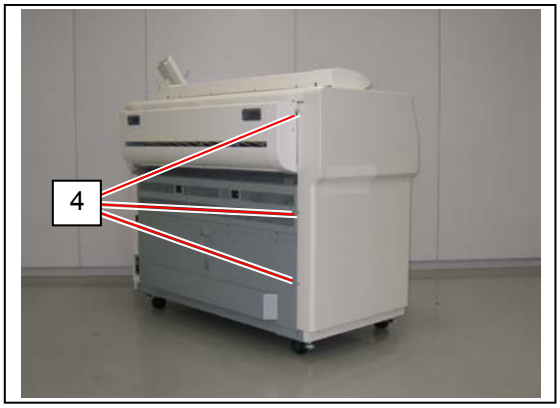


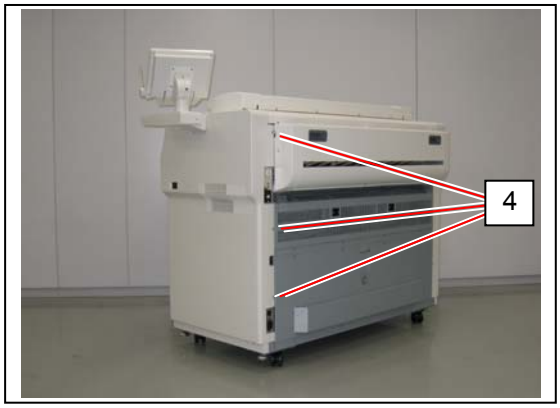
3. Remove 4 screws (3) on the side bottom.





4. Remove 6 screws (4) on the rear.

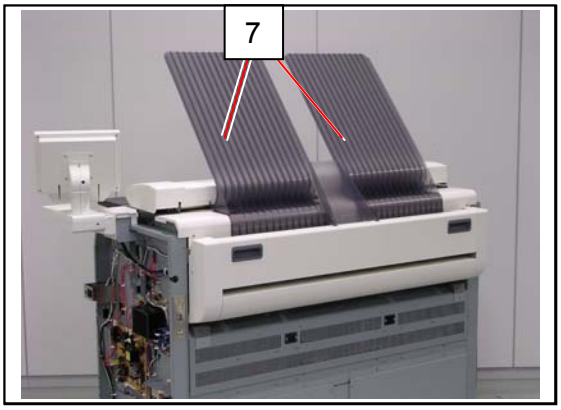




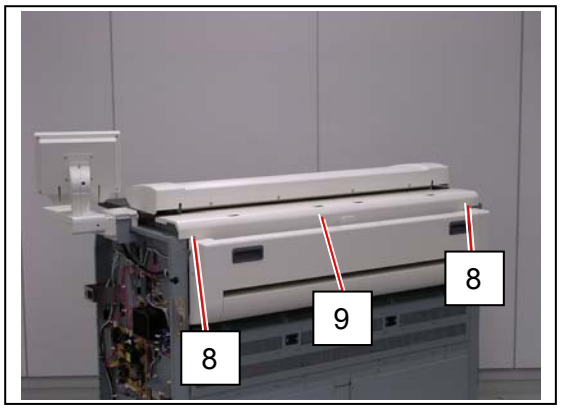
5. Remove Cover (5) / Cover (6).

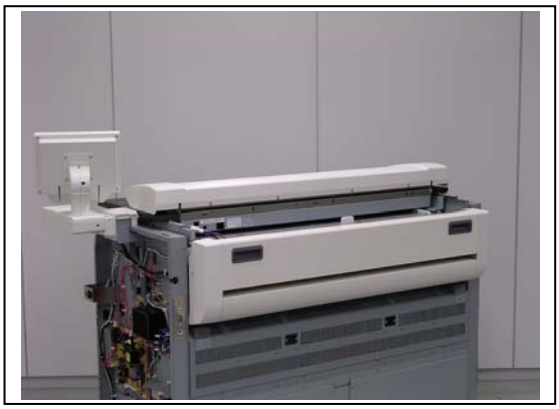
6. Close the Engine Unit.

7. Remove 2 pieces of Tray (7).

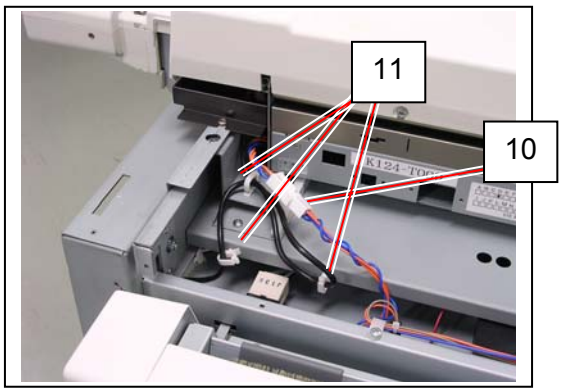


8. Remove 2 pieces of 4x6 screw (8) to remove the Cover (9).



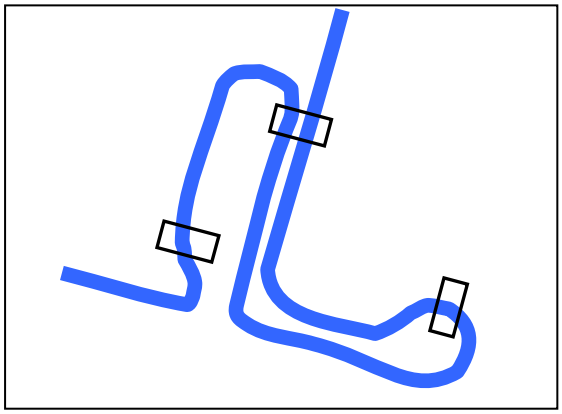


9. Disconnect the connector (10), and open the wire saddles (11) to release the harness.

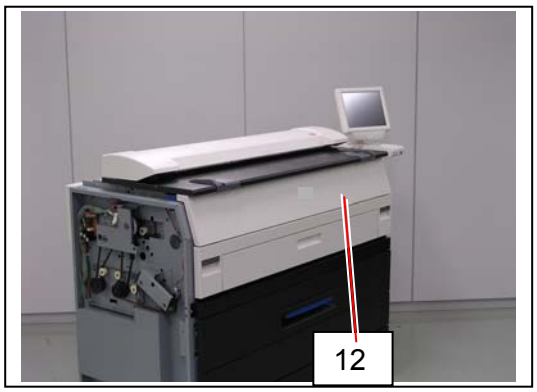


NOTE

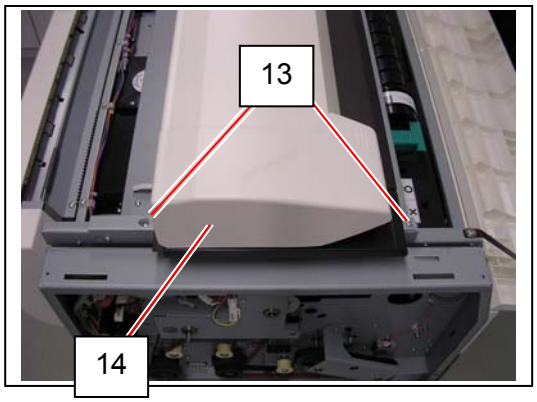
Wind excessive length of the USB Cable with the wire saddles (11) when reassembling.
Do not bundle the 2 cables in any of the wire saddles (11) together.

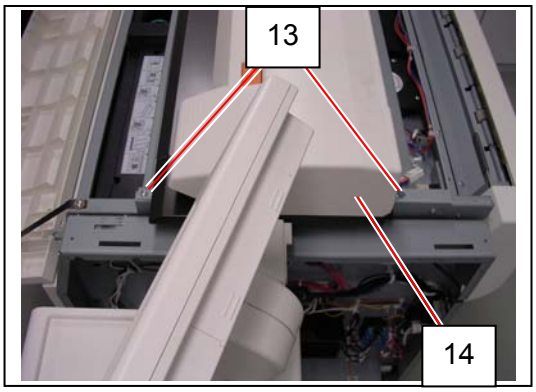


10. Open the Cover (12).

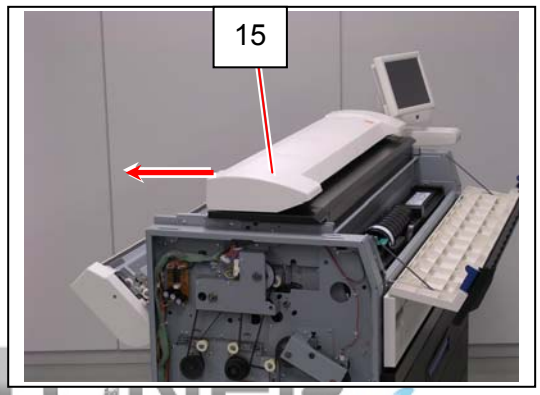


11. Remove 4 pieces of 4x6 screw (13) and 2 pieces of washer screw (14).

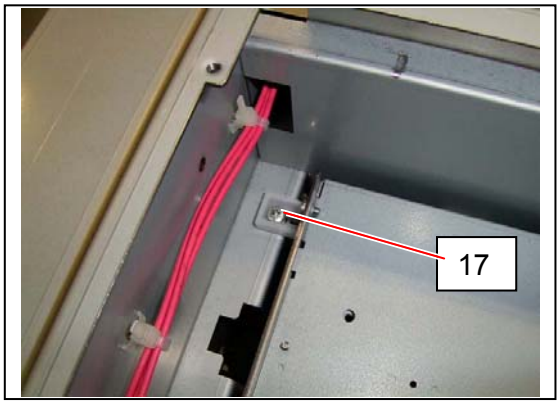




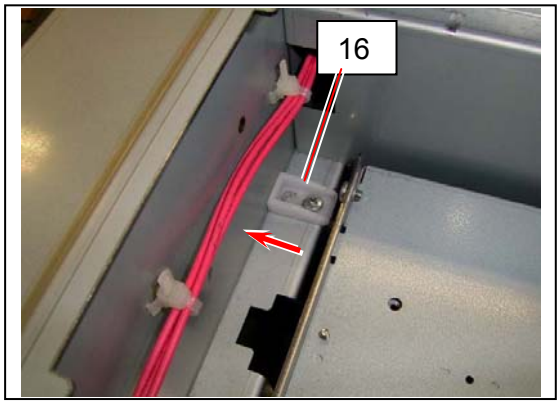
12. Slide the Scanner Unit (15) fully backward.



13. There are 2 pieces of Stopper (16) at both sides, which lock the LED Head Frame.
Loosen the screw (17) and then slide the Stoppers (16) outside to unlock the LED Head Frame.

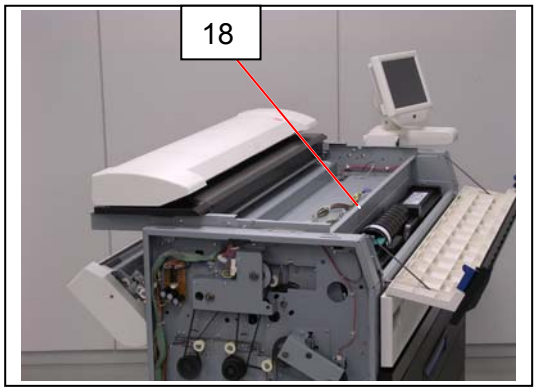


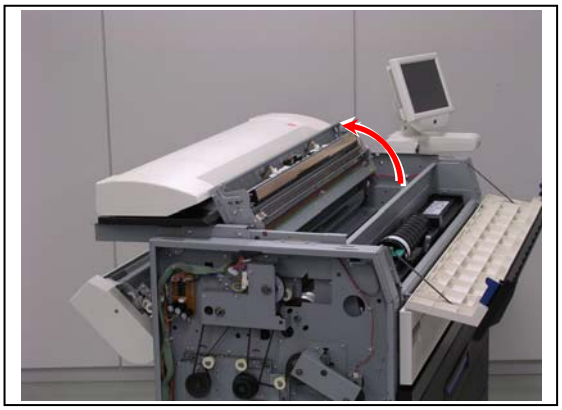
Lock position



Unlock position

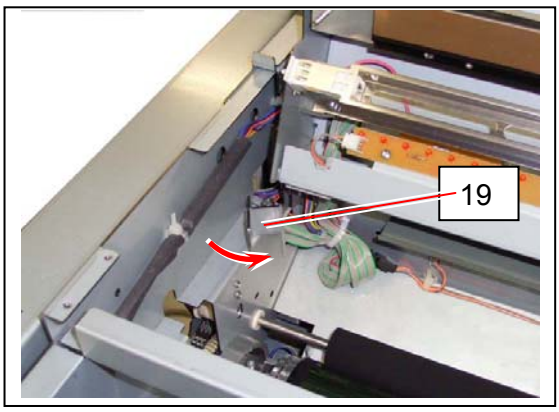
14. Open the LED Head Frame (18).



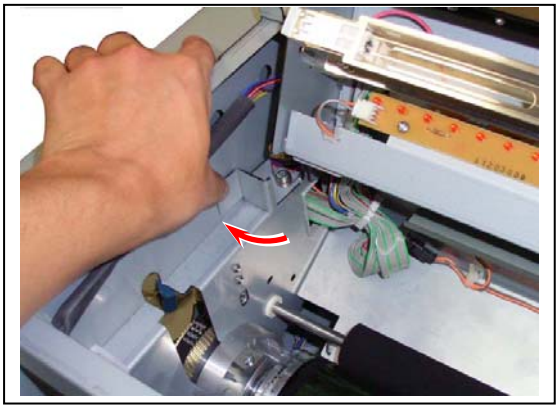


NOTE

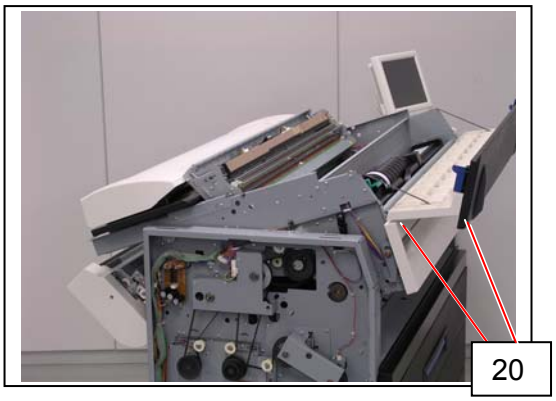
The Stopper 2 (19) comes out automatically to prevent the LED Head Frame from falling down.



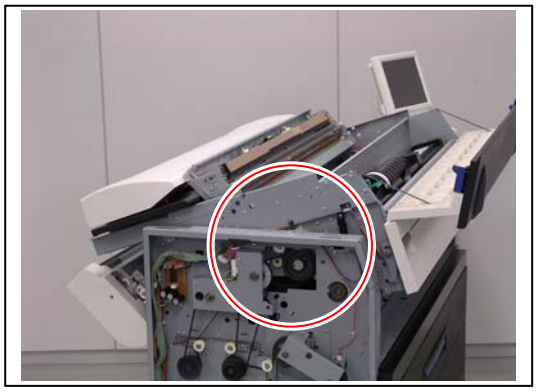
Press the Stopper 2 as the right photo if you will close the LED Head Frame.

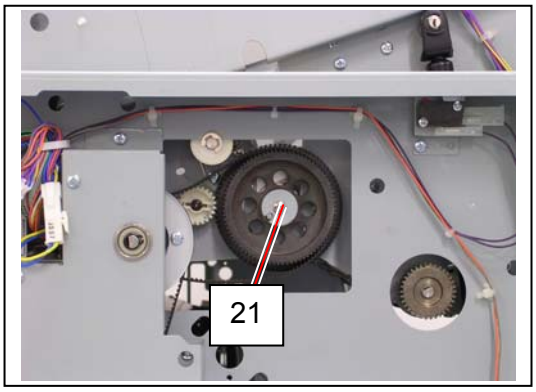


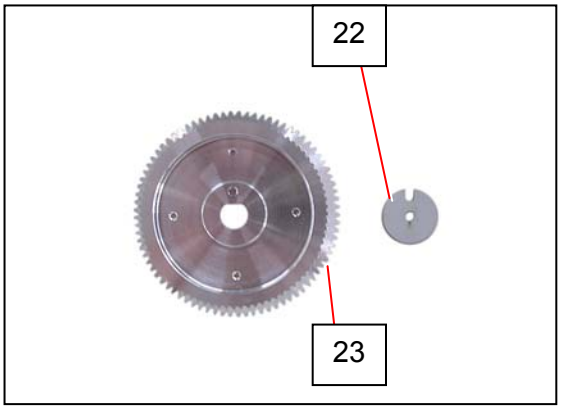
15. Pull up the Lever (20) to open the Engine Unit.



16. Remove 1 tooth washer screw (21: M4x8), and remove Plate 2 (22) and Pulley Gear (23).

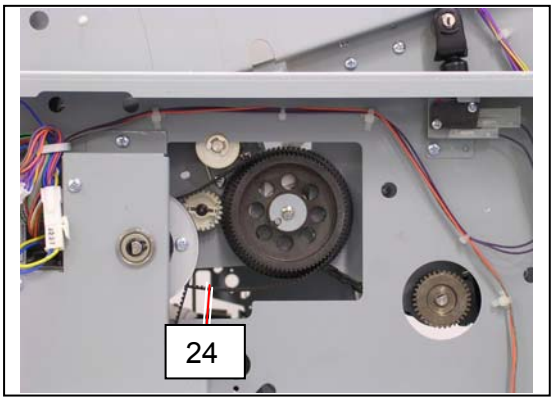




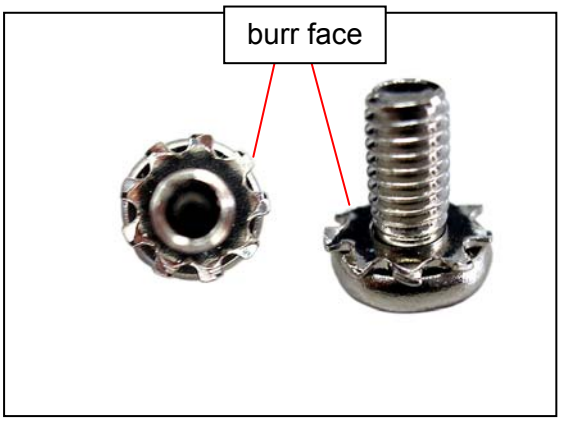


⚠ NOTE

(1) Belt 4 (24) is automatically loosed with Engine Unit open.
It will be strained with Engine Unit closed.

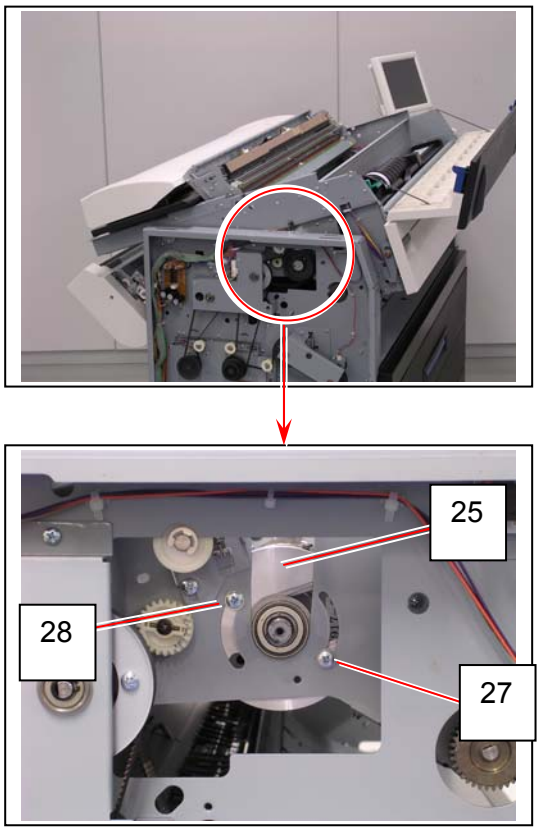


(2) The tooth washer screw (21) has a tooth washer of which burr face meets the composition surface.

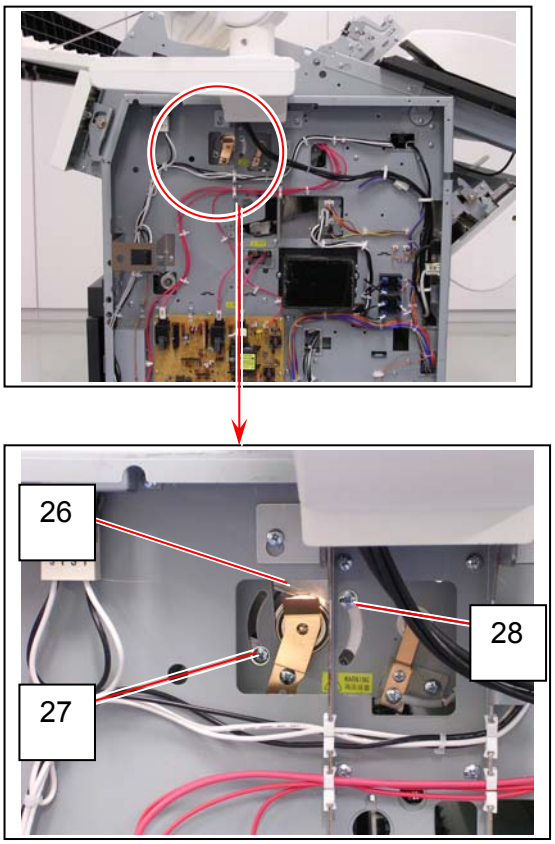


17. There are Aluminium Block (25: left) (26: right) and each of them is fixed with 2 screws (27).

Left side



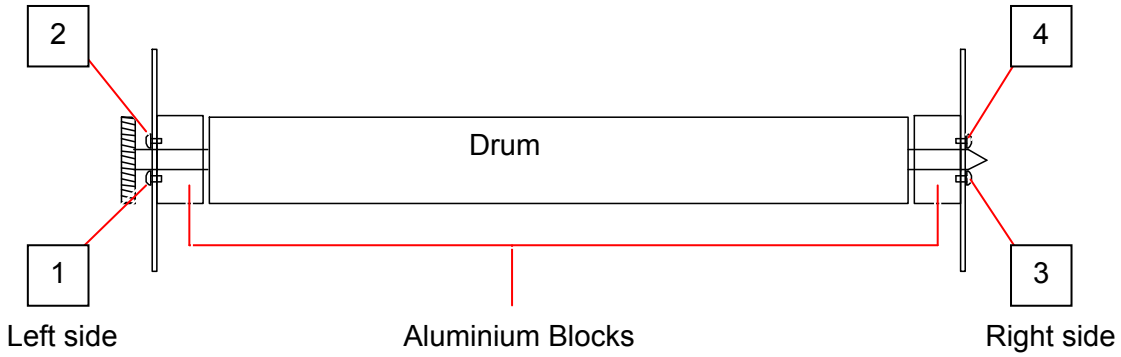
Right side



Do as follows to fix the Aluminium Blocks correctly.

a) Always fix the Aluminium Block of the **left (25) first and then right (26).**
b) When you tighten 2 screws (27) (28) to fix each Aluminium Block, always tighten **the lower one (27) first and then the upper one (28)**.

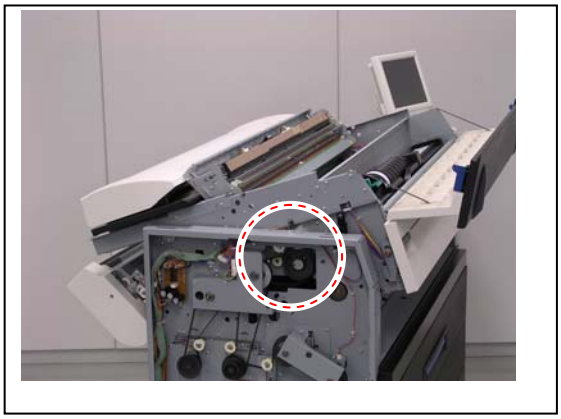
The following picture shows the order to tighten the screws. **Tighten in the order as 1 to 4 necessarily**.

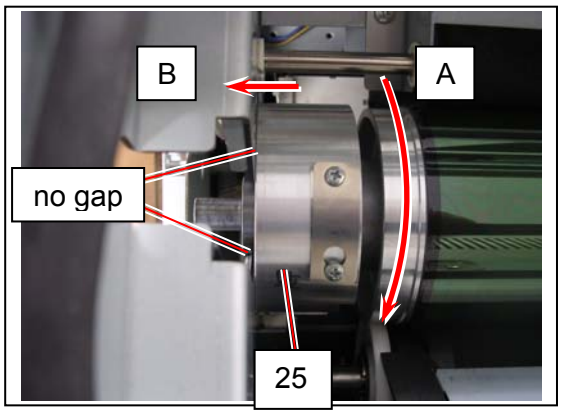


NOTE

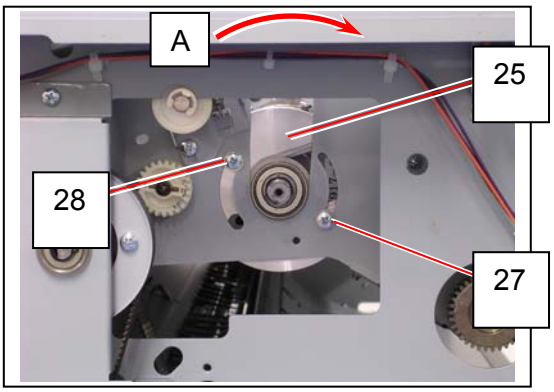
The focus of LED Head will become defective if you do not satisfy the above requirements. Refer to the later pages for greater details.

18. Rotate the left Block (25) fully to the arrow direction (A: to front) and also press it to the arrow direction (B: to outside). This will remove any gap between Block (25) and the side frame of the machine.
With holding Block (25), tighten the screws (27) (28) just enough turn to fix Block (25) temporarily.





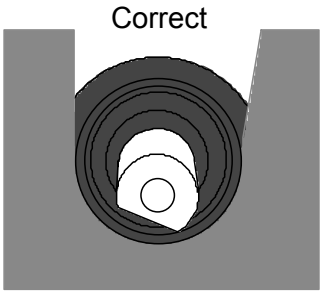
(Seen from the top of machine)

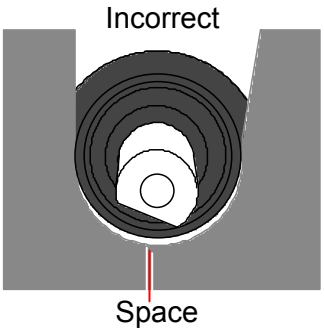


(Seen from the outside of machine)

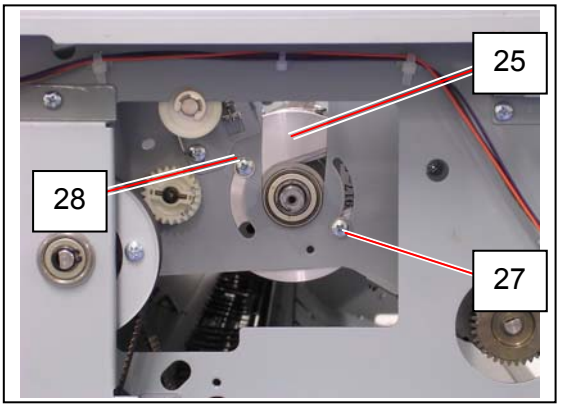
NOTE

There should be no space between the Bearing and U-shape opening.
The LED focus will become defective if there is any space.

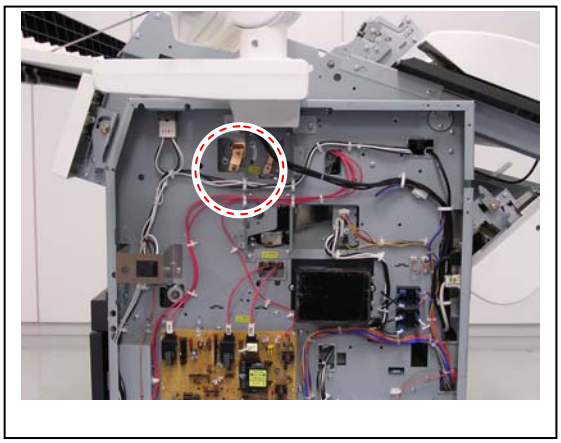


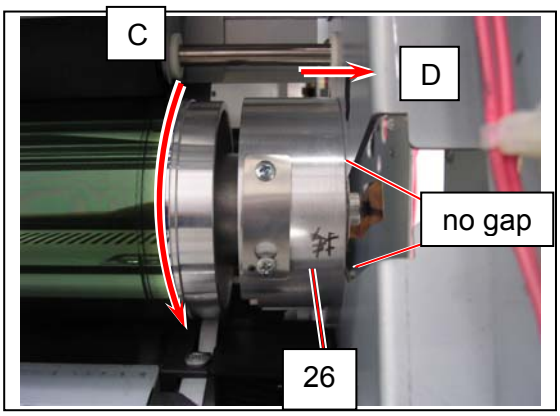


19. Loosen the screws (27) (28) in a (approximately) quarter turn to release Block (25). Check that no excessive backlash to sideways appears.

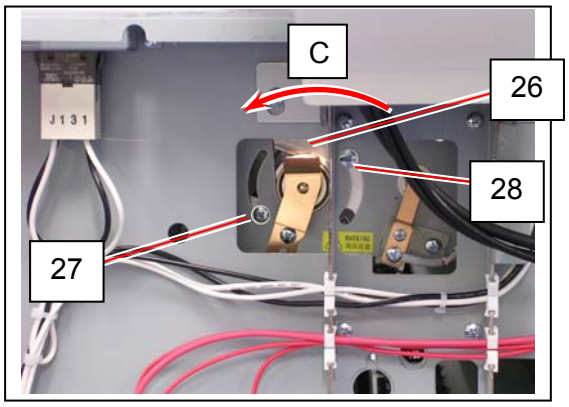


20. Similarly to step 18, rotate the right Block (26) fully to the arrow direction (C: to front) and also press it to the arrow direction (D: to outside). This will remove any gap between Block (26) and the side frame of the machine.
With holding Block (26), tighten the screws (27) (28) just enough turn to fix Block (26) temporarily.



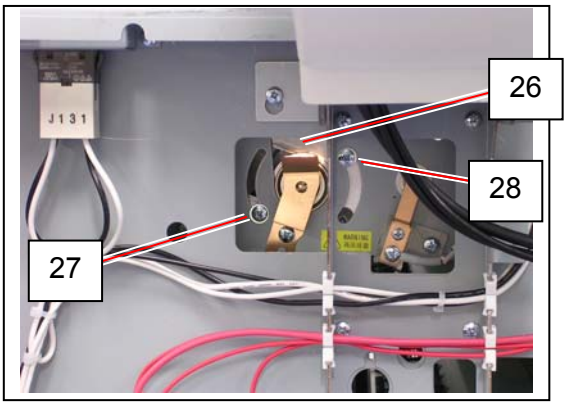


(Seen from the top of machine)



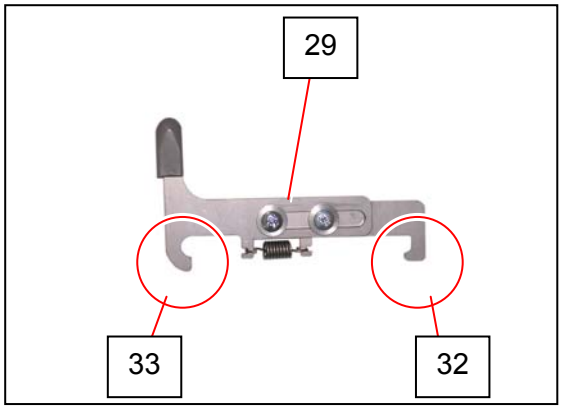
(Seen from the outside of machine)

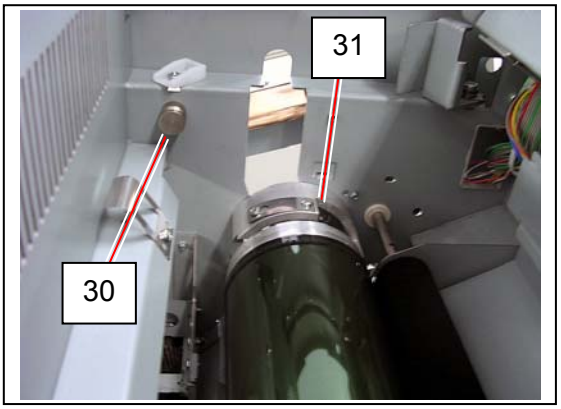
21. Loosen the screws (27) (28) in a (approximately) quarter turn to release Block (26). Check that no excessive backlash to sideways appears.

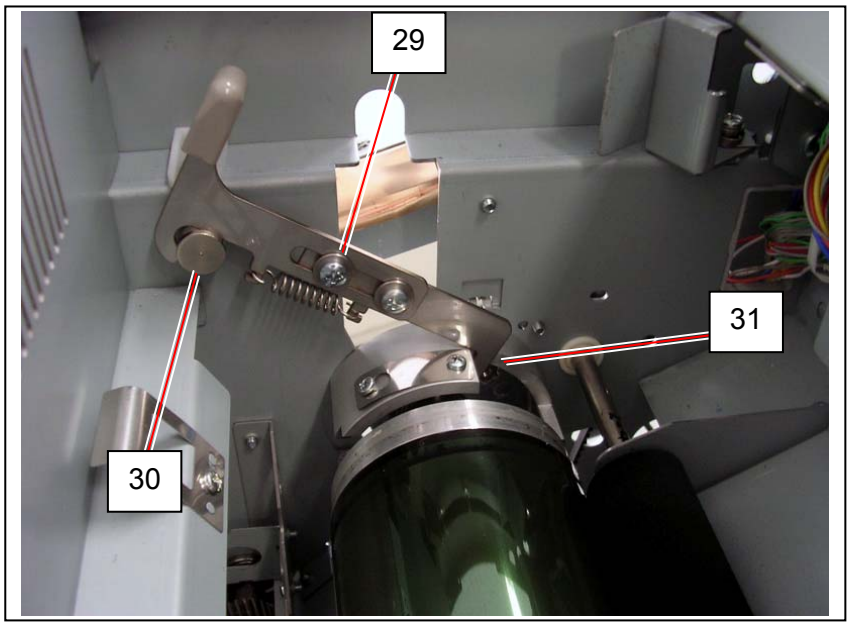


22. Fix Blocks with Drum Block Fix Tool (or by hand). Go to step 22-1 for using Drum Block Fix Tool. Go to step 23 for without Drum Block Fix Tool.

22-1. On the left side, hook Drum Block Fix Tool (29) on between the pin (30) on the frame and the U-shape opening (31) of Block (25).
Hook the rear hook (32) the rim of the U-shape opening (31) and the front hook (33) in the groove of the pin (30).



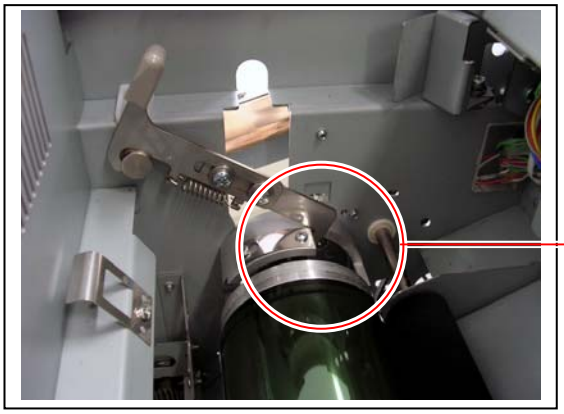


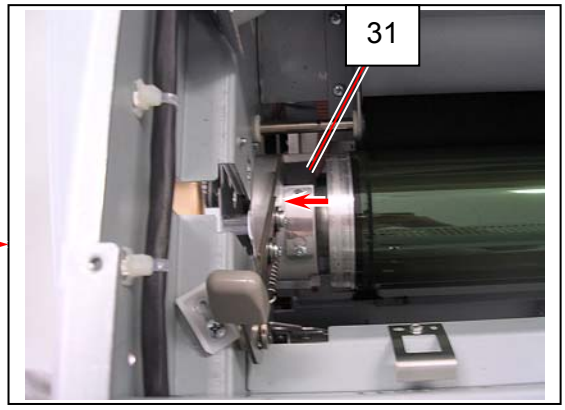


NOTE

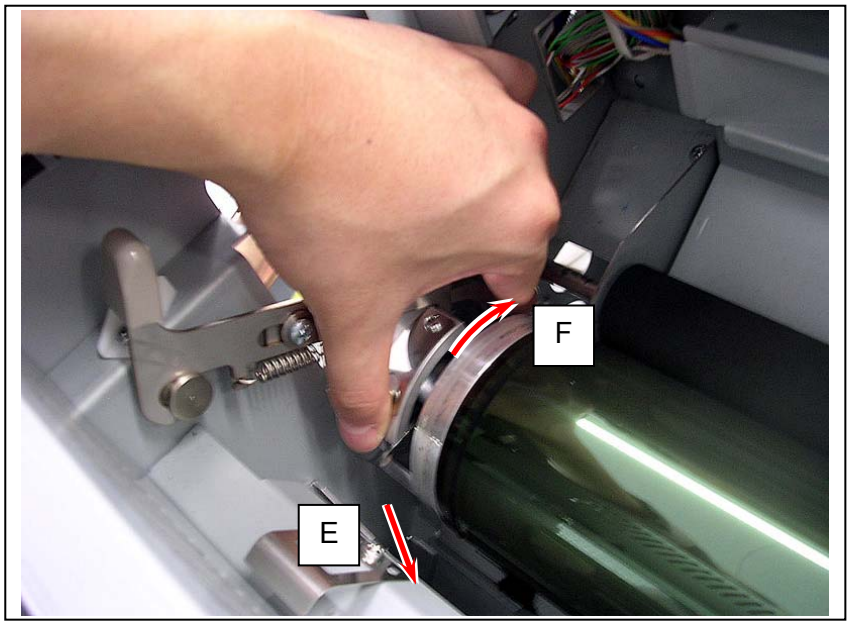
(1) Handle Drum Block Fix Tool with care. Be sure not to damage Drum or any other components when removing/attaching it.

(2) Set the rear hook (32) against the corner rim of U-shape opening (31).

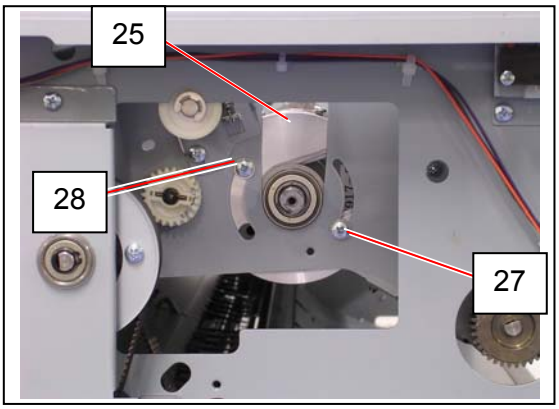




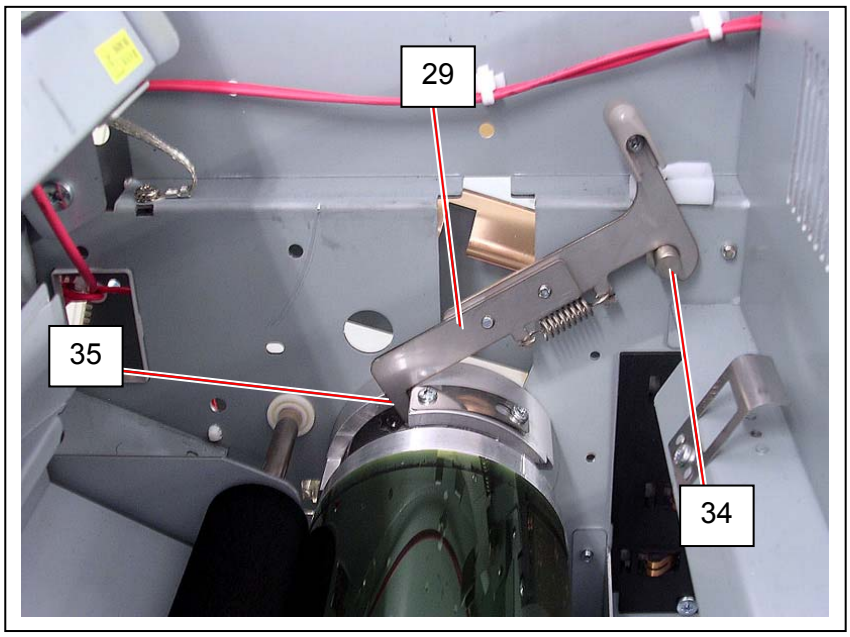
22-2. With pressing Block (25) down (E), slightly turn Block to the arrow direction (F) and release it to locate Block correctly by restoring spring.



22-3. Tighten the lower screw (27) and then the upper screw (28) to secure Block (25).



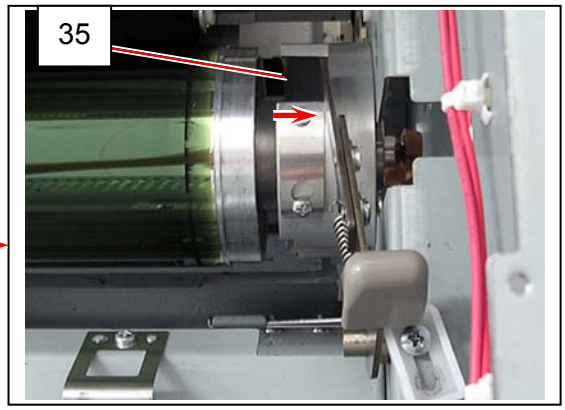
22-4. Similarly to step 22-2, on the right side, hook Drum Block Fix Tool (29) on between the pin (34) on the frame and the U-shape opening (35) of Block (26).



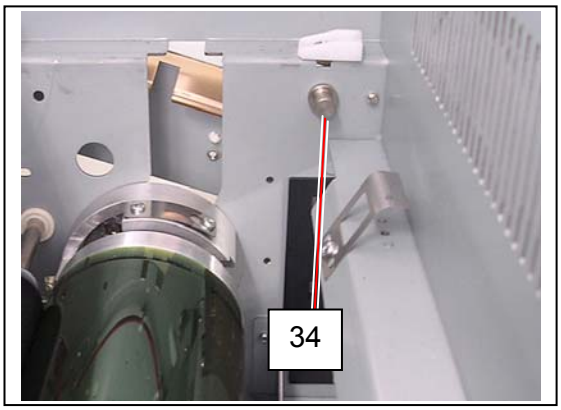
NOTE

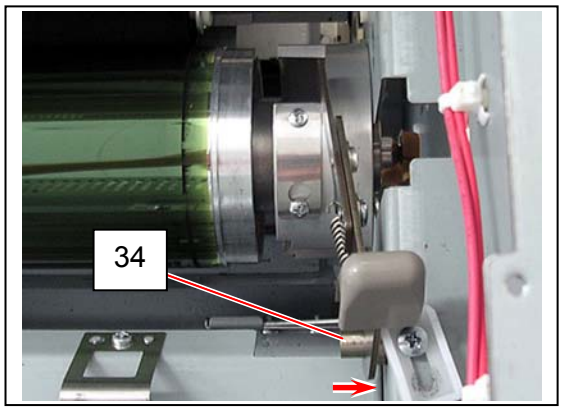
(1) Handle Drum Block Fix Tool with care. Be sure not to damage Drum or any other components when removing/attaching it.

(2) Set the rear hook (32) against the corner rim of U-shape opening (35).

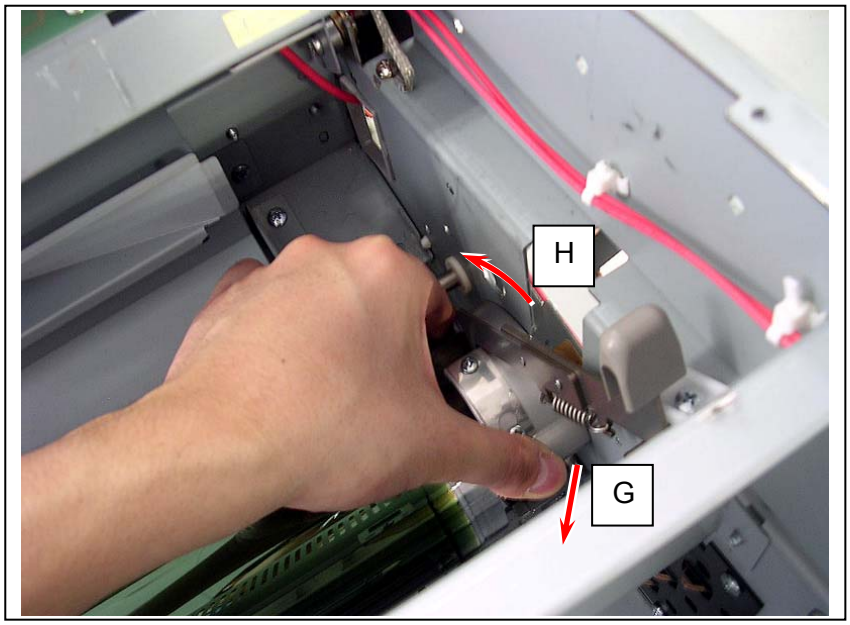


(3) Set the front hook (33) against the step on the pin (34).

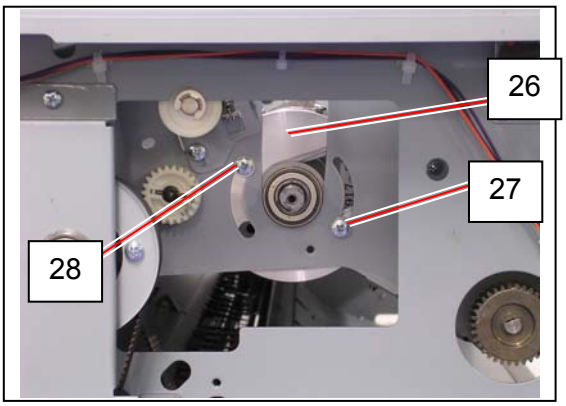




22-5. Similarly to step 22-2, with pressing Block (26) down (G), slightly turn Block to the arrow direction (H) and release it to locate Block correctly by restoring spring.



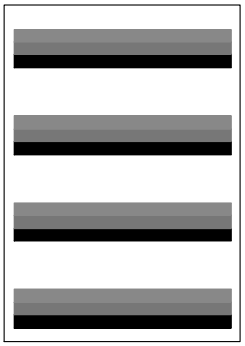
22-6. Tighten the lower screw (27) and then the upper screw (28) to secure Block (26).



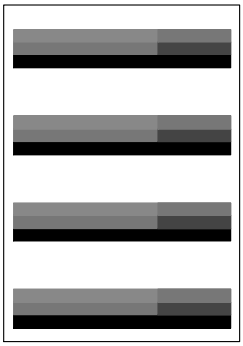
22-7. Remove Drum Block Fix Tool. Replace all the parts in position.

22-8. Print out the Test Pattern No.3, and confirm that the density of halftone is uniform.
If it is still not uniform, fix Blocks again.

Good
(Gray looks uniform)



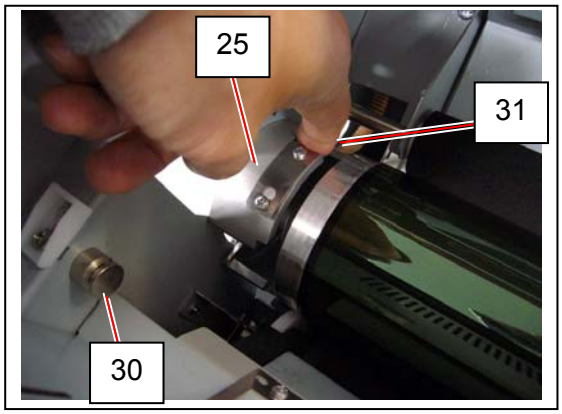
No good
(Gray looks not uniform)

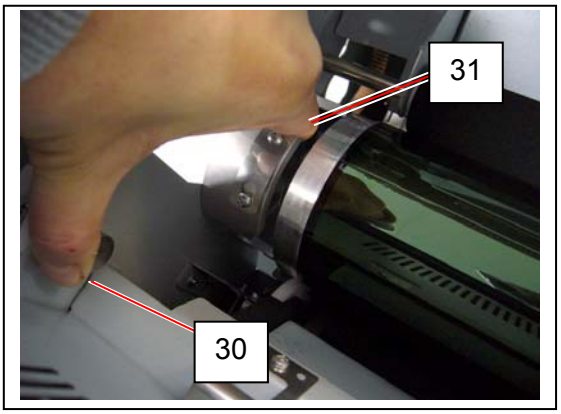


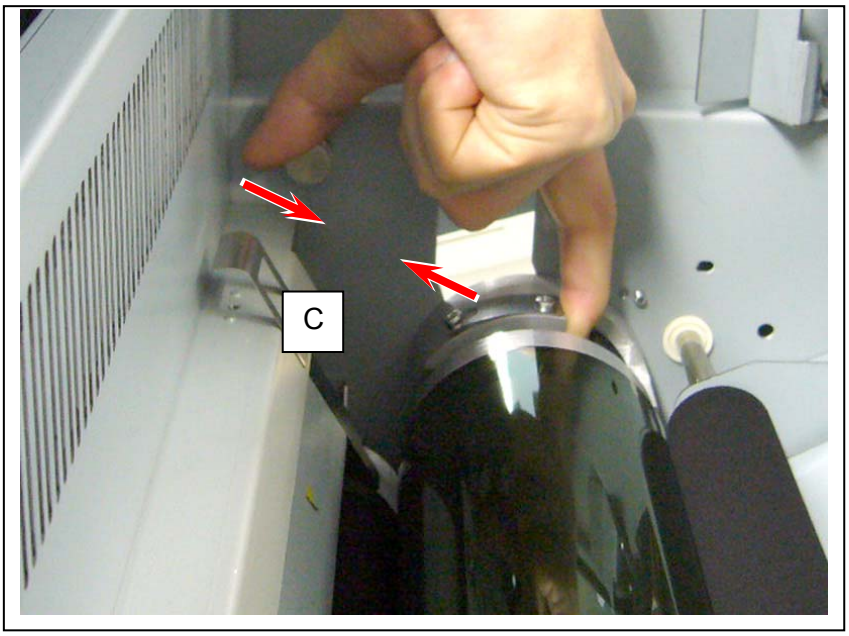
If it is still not uniform although you have fixed the Aluminium Blocks correctly, it is necessary to make focus adjustment with Spacers.
Go to [5. 6. 2. 3 Focus Adjustment with Spacers].

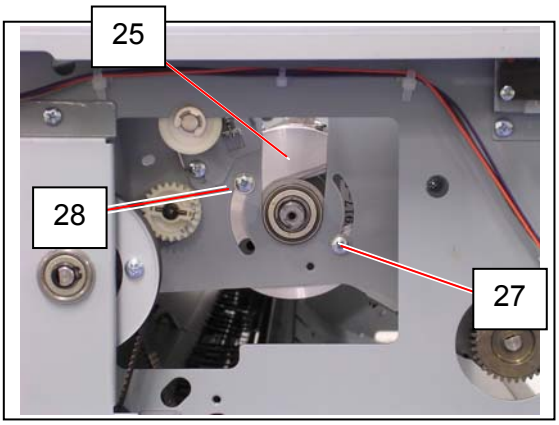
23. Follow the instruction below to fix Blocks without Drum Block Fix Tool.

23-1. Put your finger inside the U-shape opening (31) of Block (25). Put the other finger on the pin (30) of the frame.
Push the fingers toward each other (C: inside). Note that the entire Block (25) is shifted towards the pin (30) by the finger at the U-shape opening (31).
While pushing and holding, tighten the lower screw (27) and then the upper screw (28) to secure Block (25).

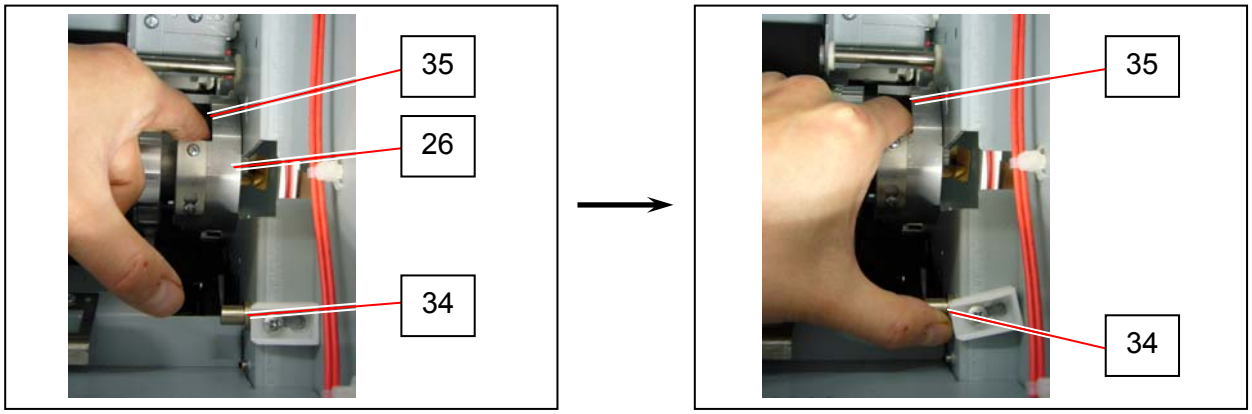


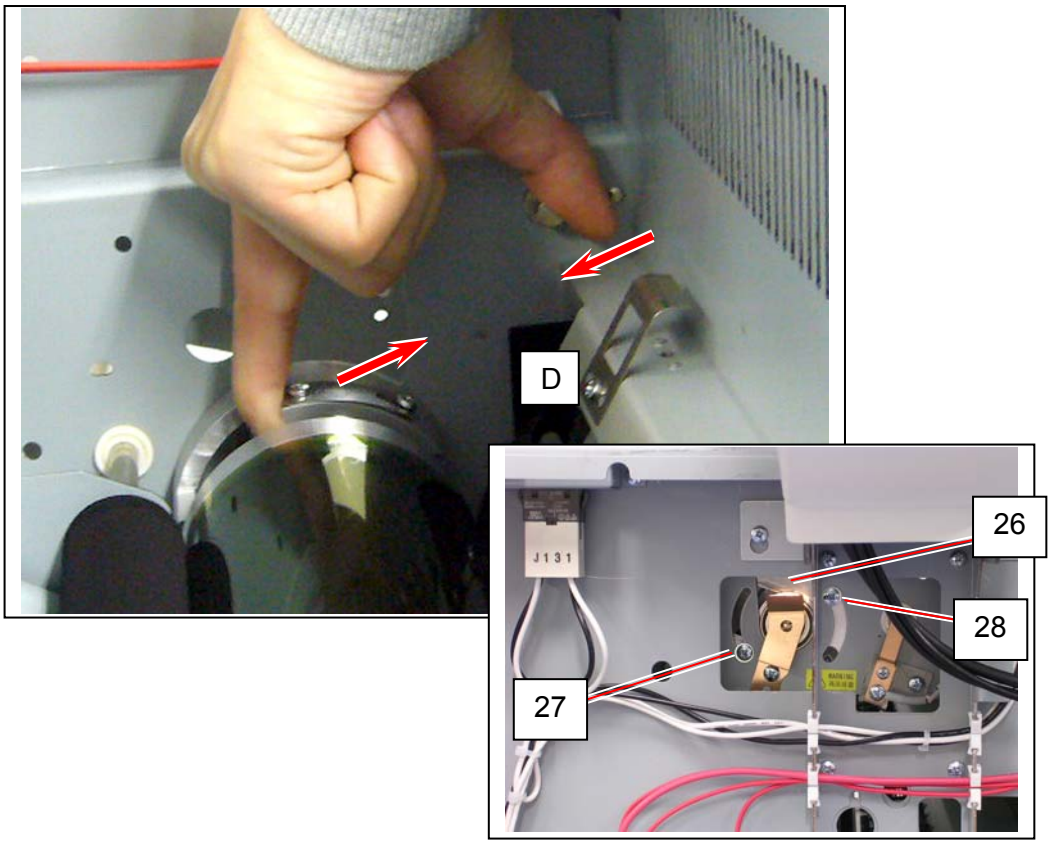






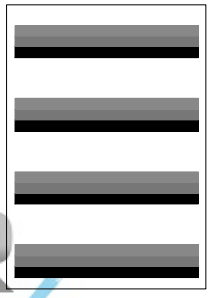
23-2. Similarly to step 23-1, put your finger inside the U-shape opening (35) of Block (26) and put the other finger on the pin (34) of the frame.
Push the fingers toward each other (D: inside). Note that the entire Block (26) is shifted towards the pin (34) by the finger at the U-shape opening (35).
While pushing and holding, tighten the lower screw (27) and then the upper screw (28) to secure Block (26).



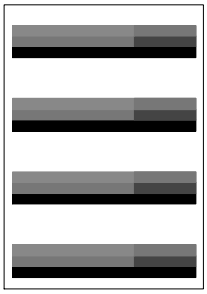


23-3. Print out the Test Pattern No.3, and confirm that the density of halftone is uniform.
If it is still not uniform, fix Blocks again.

Good
(Gray looks uniform)



No good
(Gray looks not uniform)

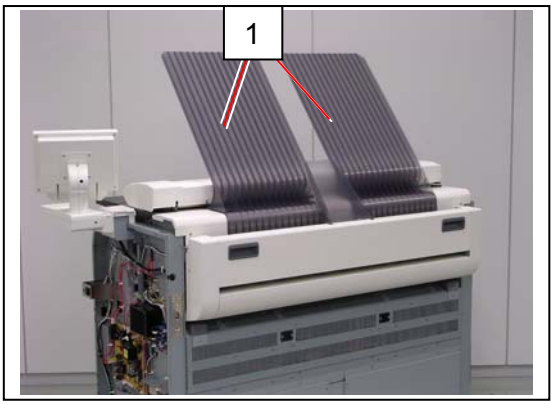


If it is still not uniform although you have fixed the Aluminium Blocks correctly, it is necessary to make focus adjustment with Spacers.
Go to [5. 6. 2. 3 Focus Adjustment with Spacers].

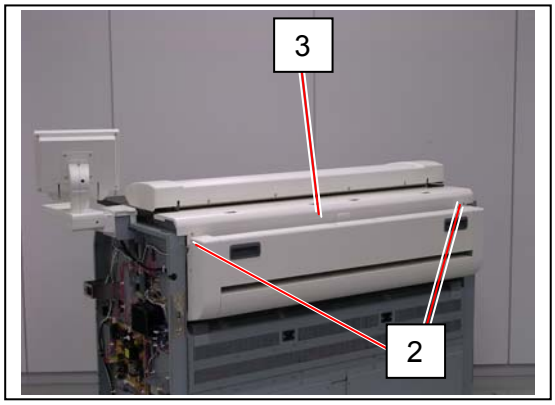
5. 6. 2. 3 Focus Adjustment with Spacers

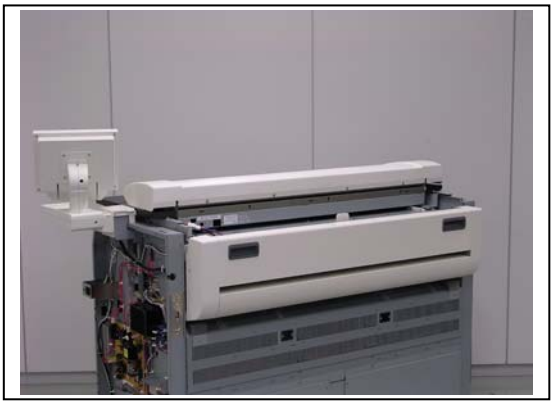
There may be the case that the focus of LED is not correct even if you have placed the Aluminium Blocks at both sides of the Drum Shaft correctly.
This is because the height of the LED is mechanically different between left and right by some reason.
In this case adjust the height by adding or removing the Spacers.

1. Remove 2 pieces of Tray (1).

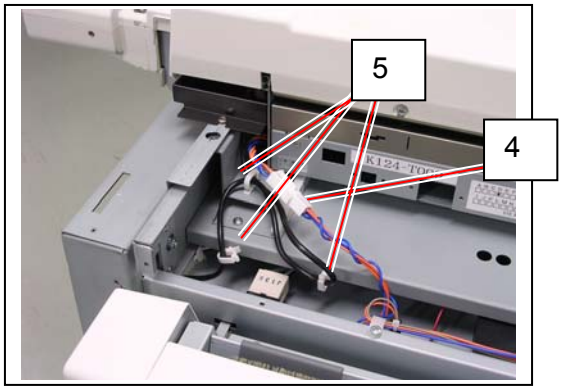


2. Remove 2 pieces of 4x6 screw (2) to remove the Cover (3).



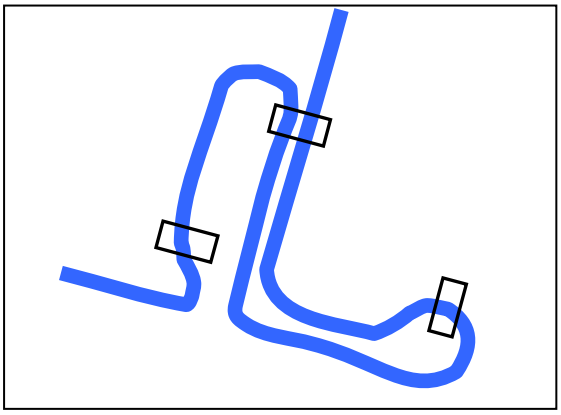


3. Disconnect the connector (4), and open the wire saddles (5) to release the harness.

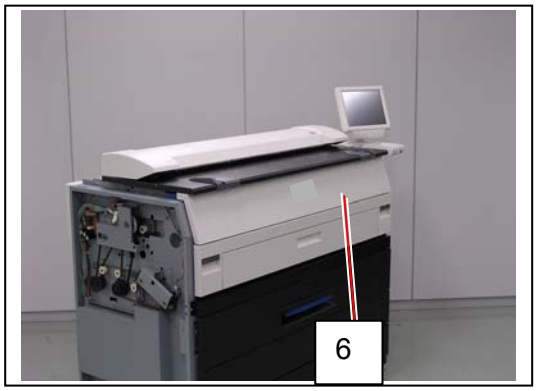


NOTE

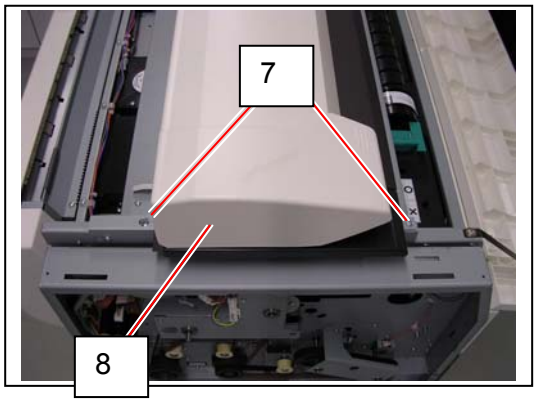
Wind excessive length of the USB Cable with the wire saddles (5) when reassembling.
Do not bundle the 2 cables in any of the wire saddles (5) together.

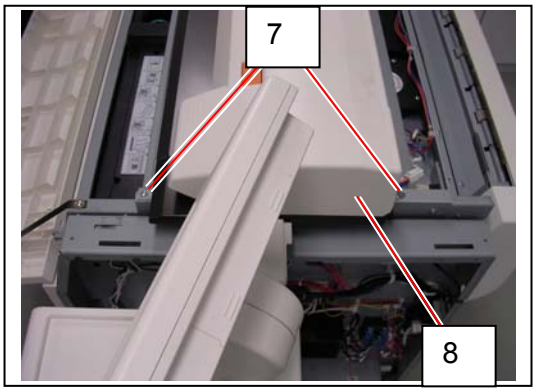


4. Open the Cover (6).

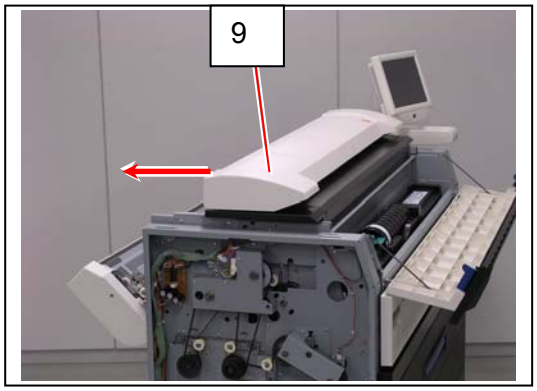


5. Remove 4 pieces of 4x6 screw (7) and 2 pieces of washer screw (8).

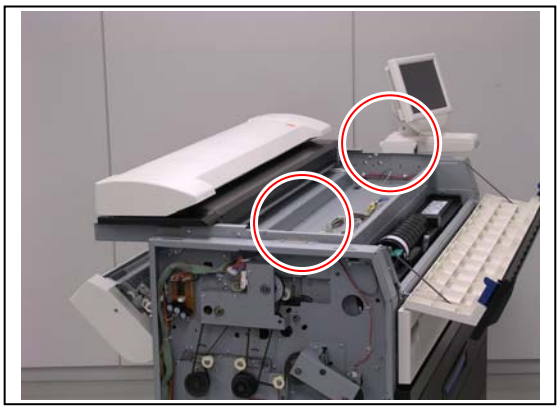


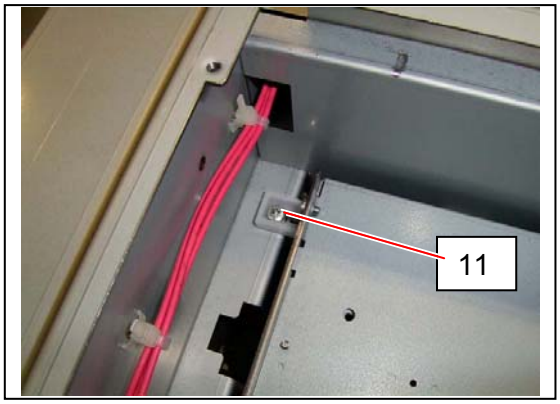


6. Slide the Scanner Unit (9) fully backward.

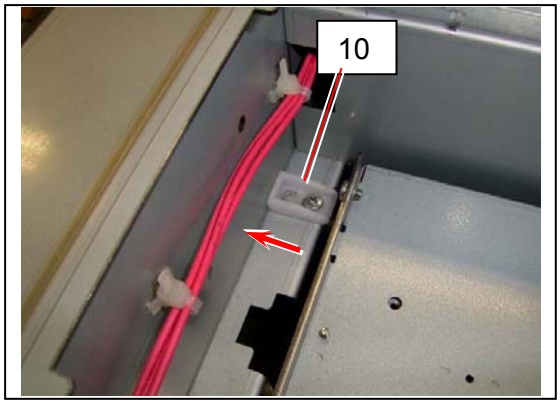


7. There are 2 pieces of Stopper (10) at both sides, which lock the LED Head Frame.
   Loosen the screw (11) and then slide the Stoppers (10) outside to unlock the LED Head Frame.



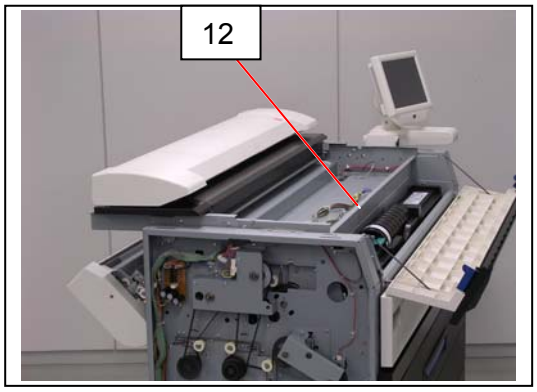


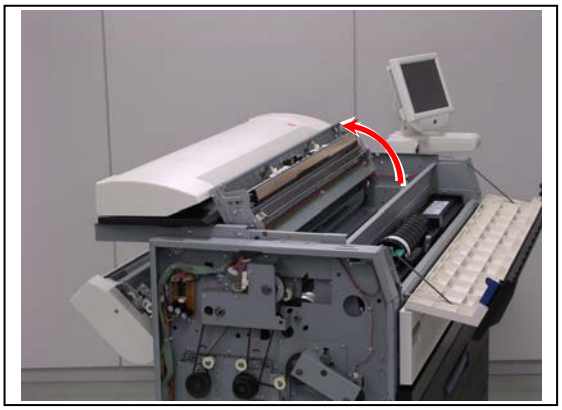
Lock position



Unlock position

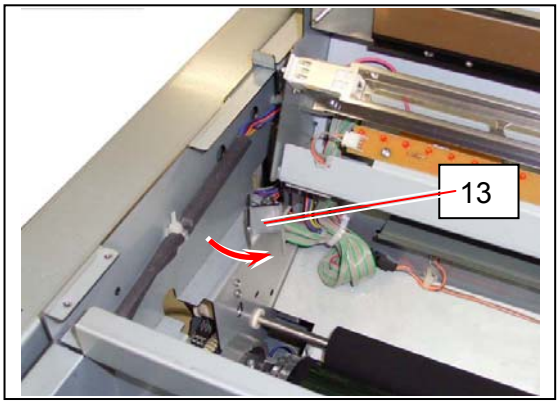
8. Open the LED Head Frame (12).



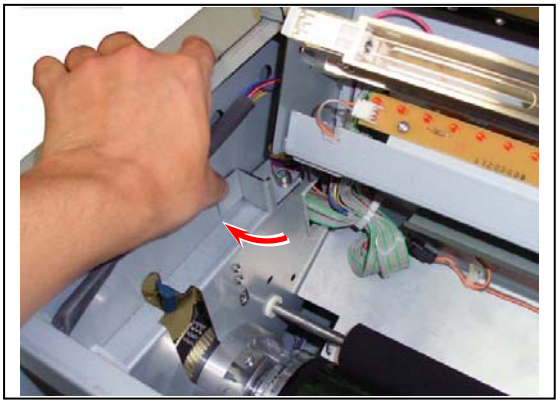


NOTE

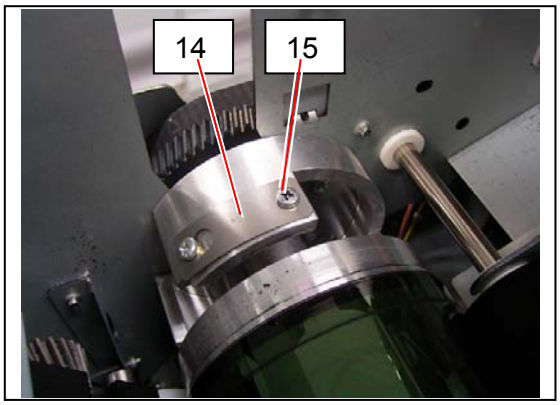
The Stopper 2 (13) comes out automatically to prevent the LED Head Frame from falling down.

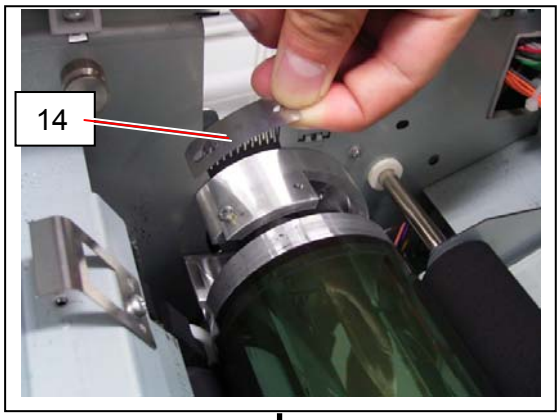


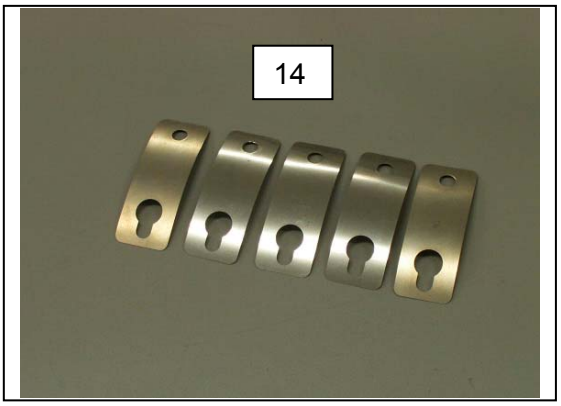
Press the Stopper 2 as the right photo if you will close the LED Head Frame.



9. There are Spacers (14) on each Aluminium Block at both sides.
   The height of the LED Head can be adjusted by adding more Spacer or removing some of them.
   Remove the screw (15), and remove all Spacers (14) at first.
   And then adjust the height of LED Head adding or removing the Spacers (14).





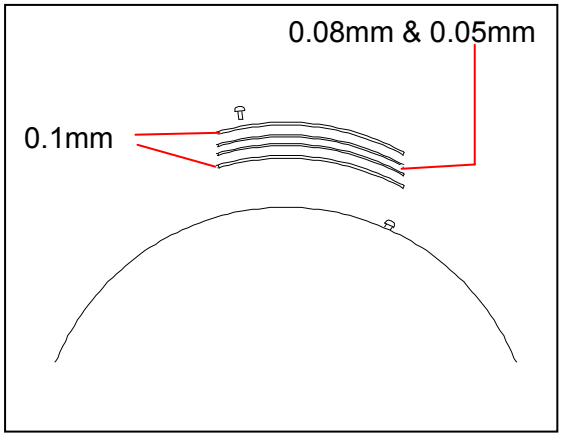


⚠ NOTE

(1) The number of Spacers initially installed is individually different machine to machine.

(2) There are 3 kinds of spacers such as “0.1mm”, “0.08mm” and “0.05mm” in thickness. Please find the best combination by making several times of trial.

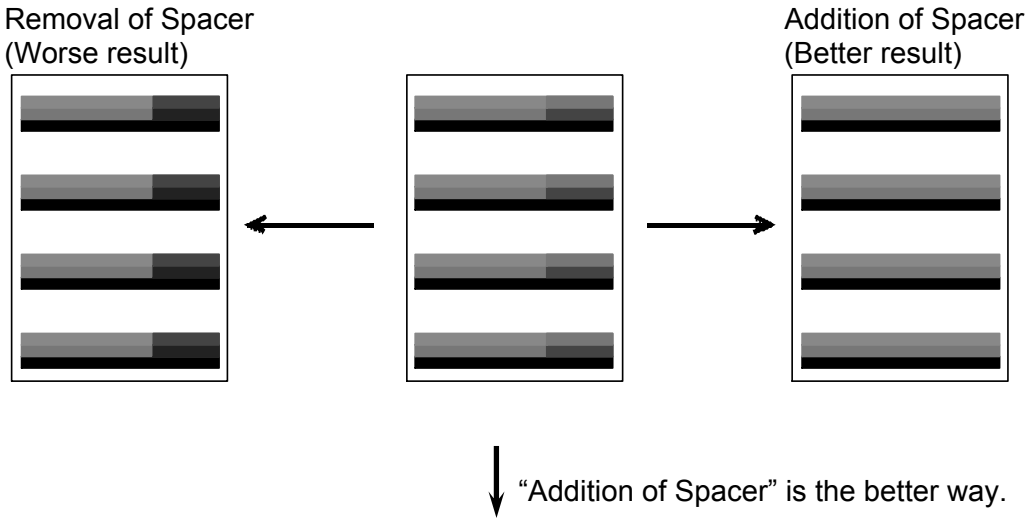
(3) Basically thinner Spacers (0.08mm & 0.05mm ones) must be held between the 0.1mm Spacer as the right picture.



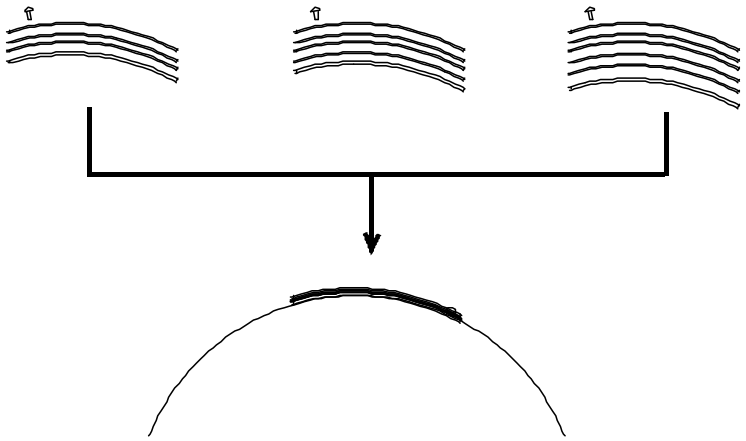
⚠ NOTE

(4) It is quite not clear which of “addition” or “removal” of Spacer is effective to solve the focus problem.
(Even if the defective image caused by the focus problem looks same, for example, it is fixed by “addition” in some case but in another case it is fixed by “removal”.

Only the way to find the best focus is just “trial”.
Please try both “removal” and “addition” to find which way the image becomes better.
After finding the better way, try several combinations of Spacers to find the best height.



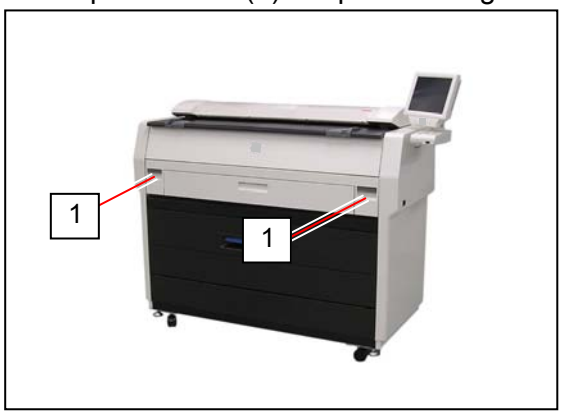
Try several combinations of Spacers by adding the Spacers gradually.



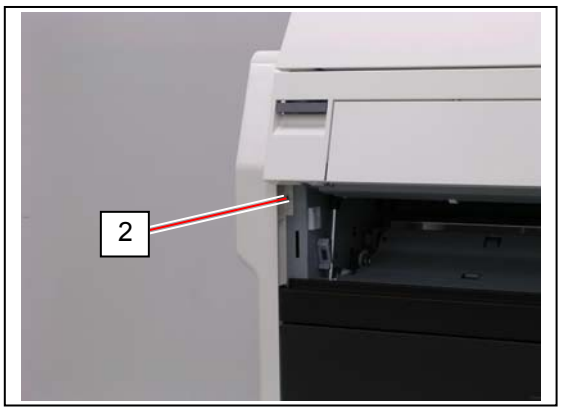
5. 7 Image Corona

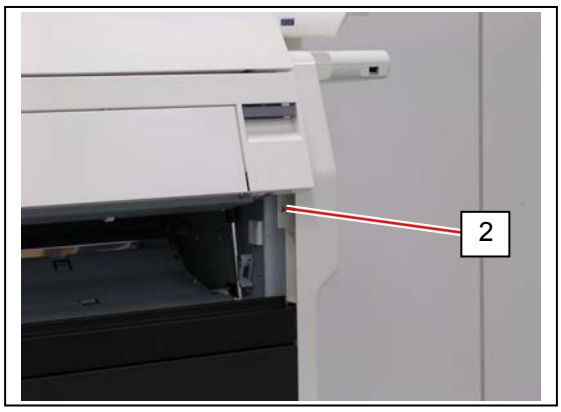
5. 7. 1 Removal of the Image Corona Unit

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

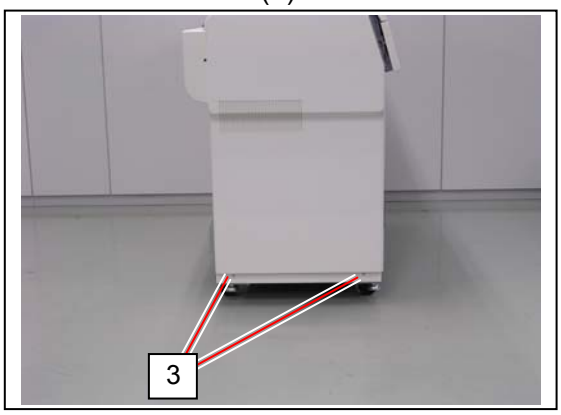


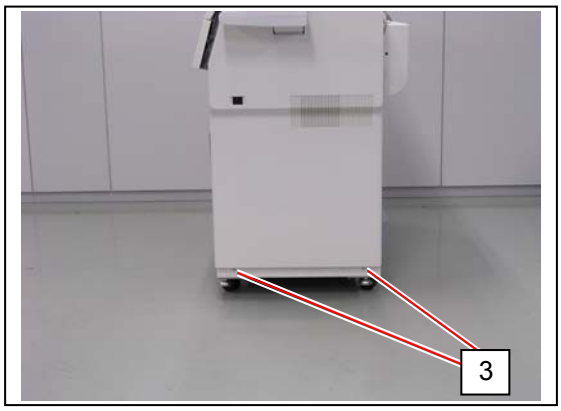
2. Remove 2 screws (2) on the front.



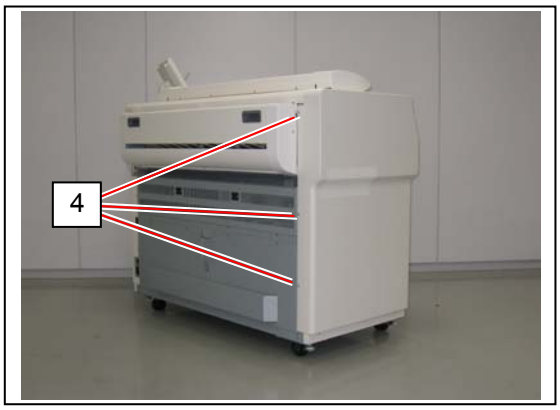


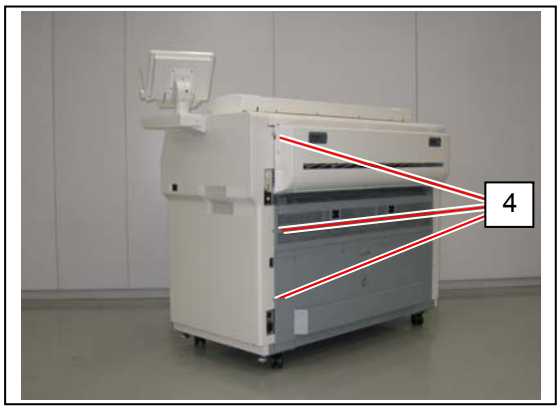
3. Remove 4 screws (3) on the side bottom.





4. Remove 6 screws (4) on the rear.

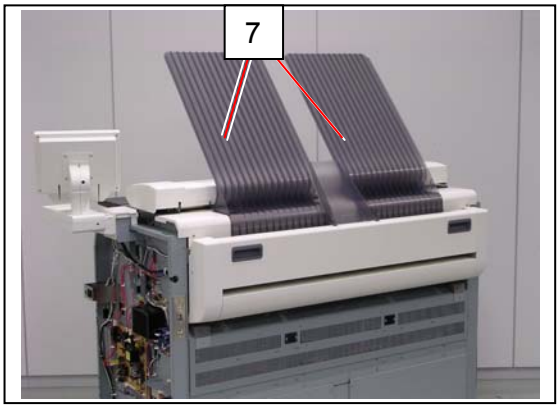




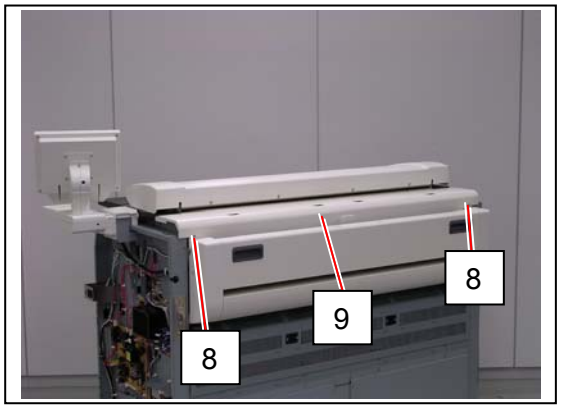
5. Remove Cover (5) / Cover (6).

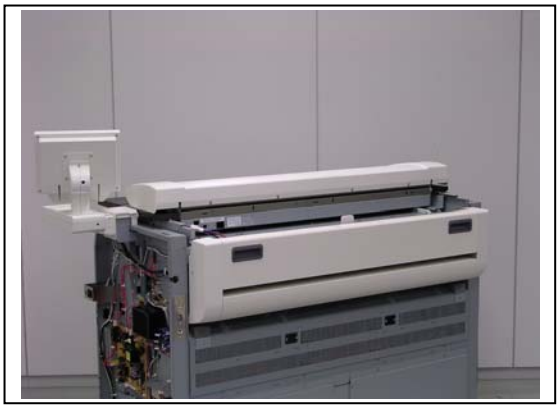
6. Close the Engine Unit.

7. Remove 2 pieces of Tray (7).

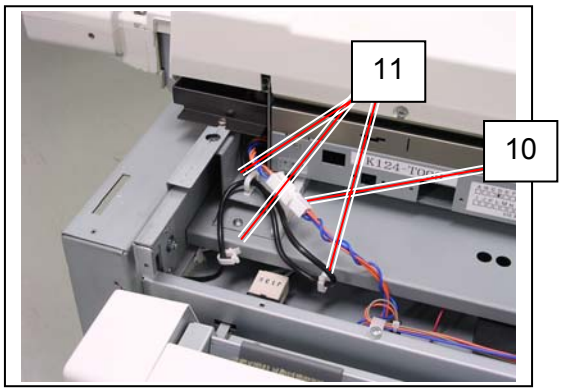


8. Remove 2 pieces of 4x6 screw (8) to remove the Cover (9).



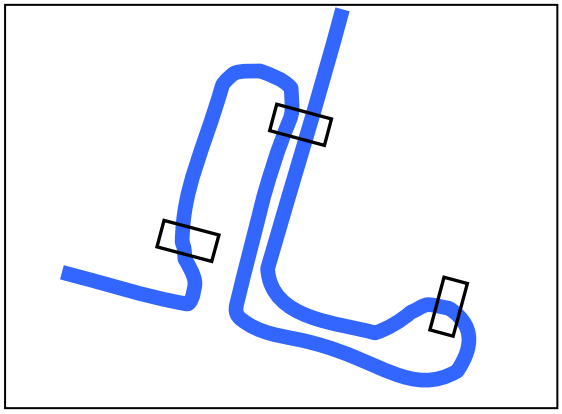


9. Disconnect the connector (10), and open the wire saddles (11) to release the harness.

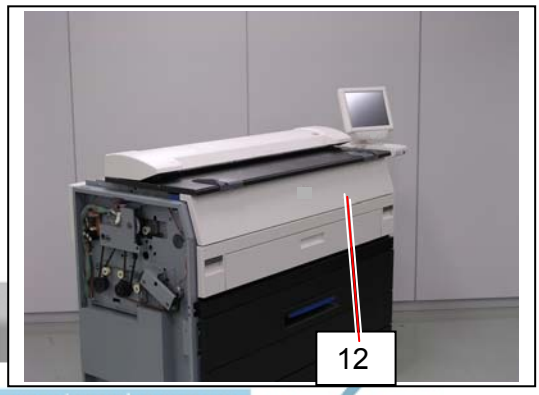


NOTE

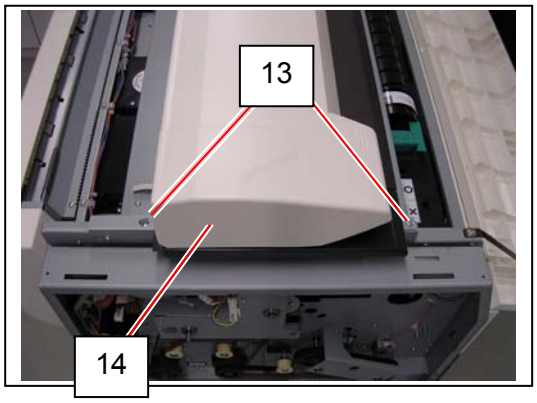
Wind excessive length of the USB Cable with the wire saddles (11) when reassembling.
Do not bundle the 2 cables in any of the wire saddles (11) together.

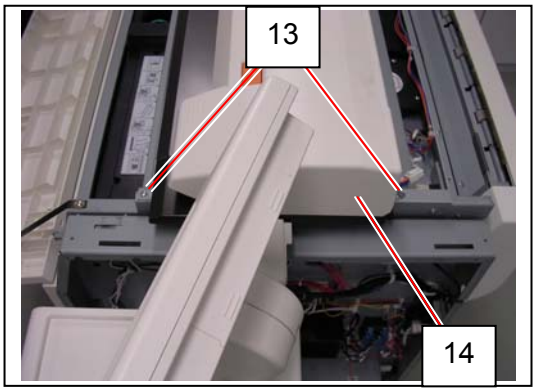


10. Open the Cover (12).

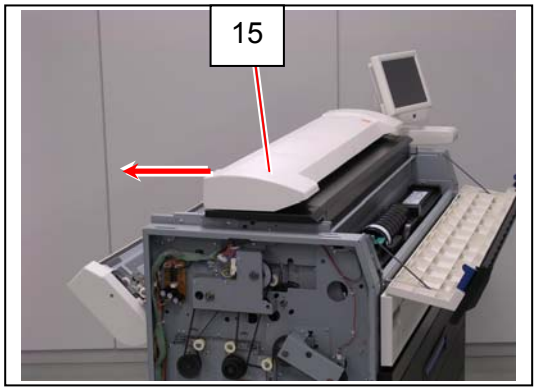


11. Remove 4 pieces of 4x6 screw (13) and 2 pieces of washer screw (14).

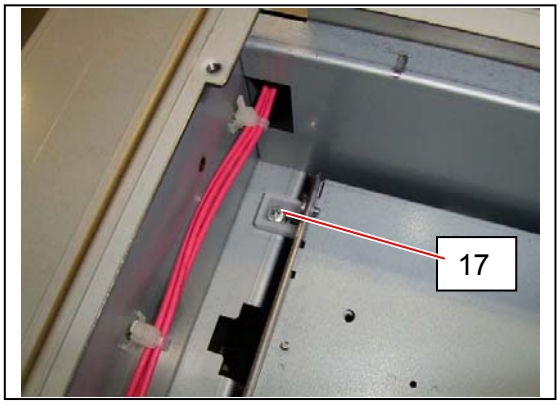




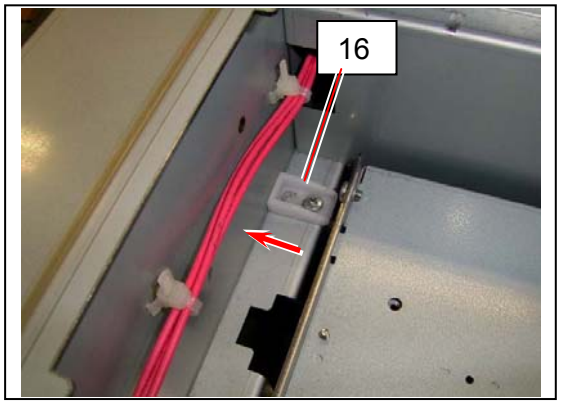
12. Slide the Scanner Unit (15) fully backward.



13. There are 2 pieces of Stopper (16) at both sides, which lock the LED Head Frame.
Loosen the screw (17) and then slide the Stoppers (16) outside to unlock the LED Head Frame.

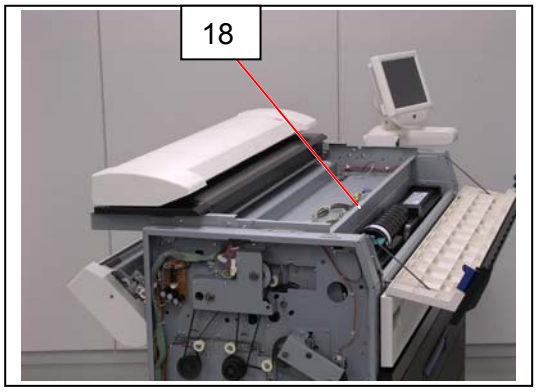


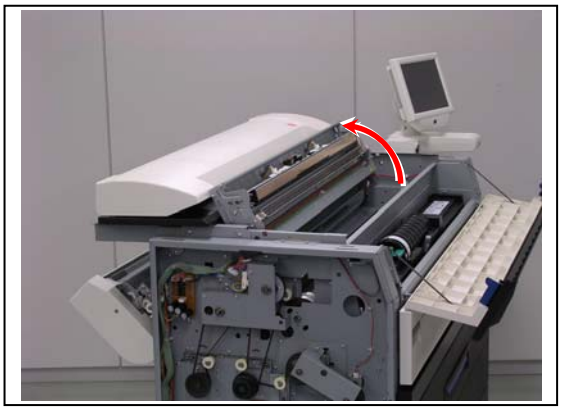
Lock position



Unlock position

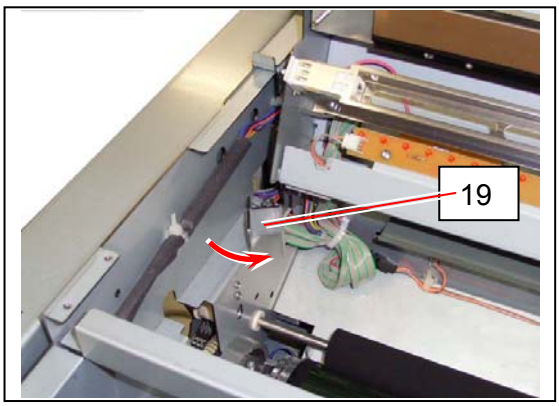
14. Open the LED Head Frame (18).



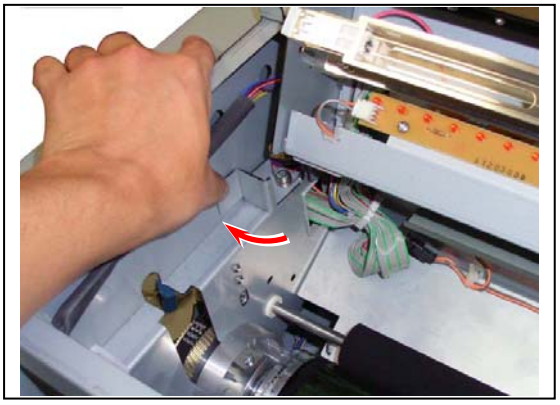


NOTE

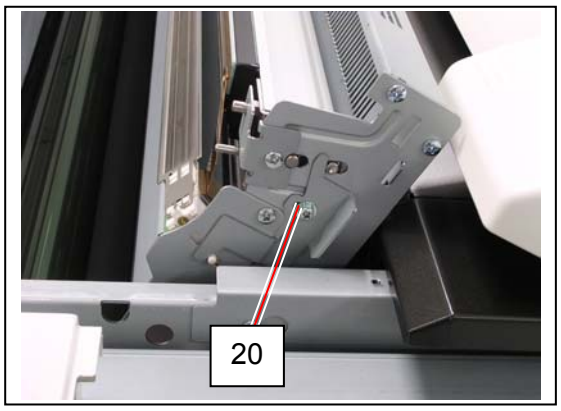
The Stopper 2 (19) comes out automatically to prevent the LED Head Frame from falling down.

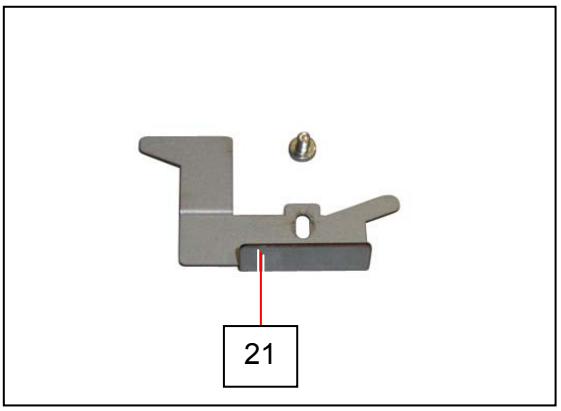


Press the Stopper 2 as the right photo if you will close the LED Head Frame.



15. Remove the 4x6 screw (20) to remove the Fixing Bracket (21) on the right.

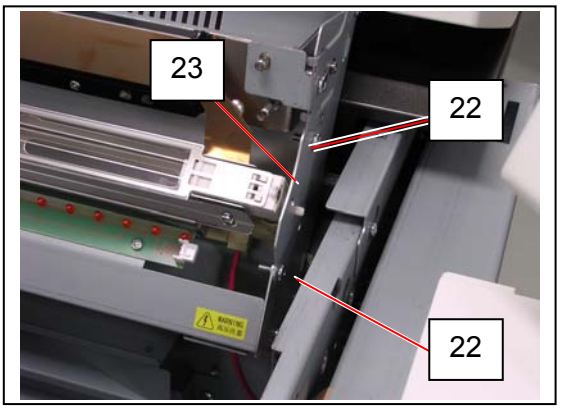




NOTE

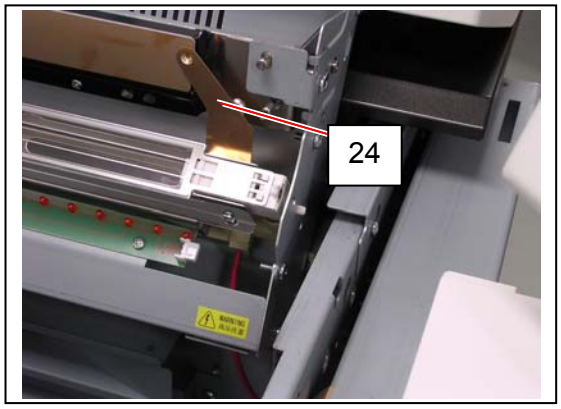
You do not have to put back the Fixing Bracket (21) at the time of reassembly, because it is a part required only before the delivery of machine.

16. Loosen 2 pieces of 4x10 screw (22) to make the Plate (23) enough movable.

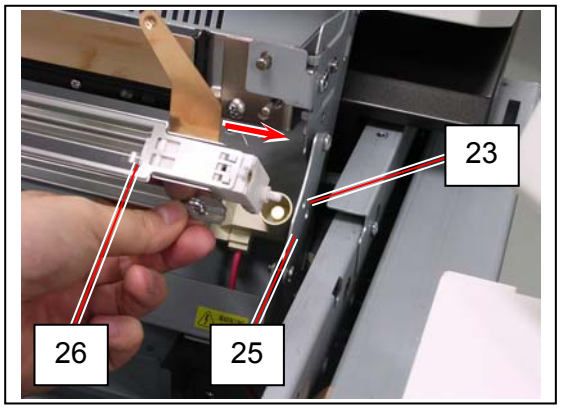


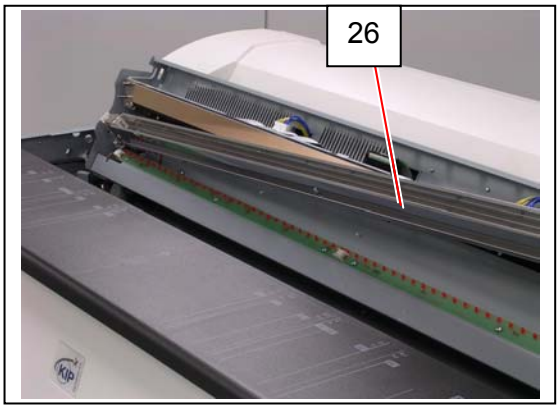
NOTE

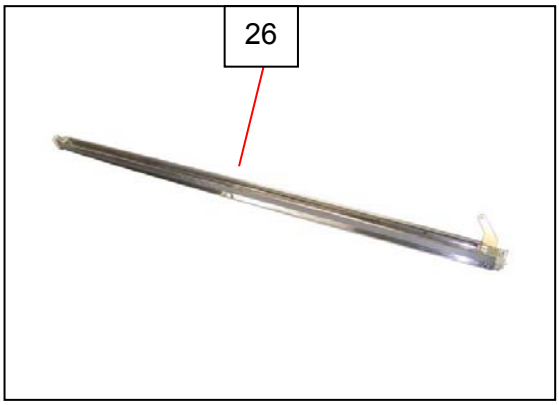
Be careful not to damage/deform/stretch Leaf Spring 2 (24).
Doing so may damage LED Head Unit.



17. Move the Plate (23) to the right to release the pin (25) of Corona Block.
Then remove the Image Corona Unit (26).







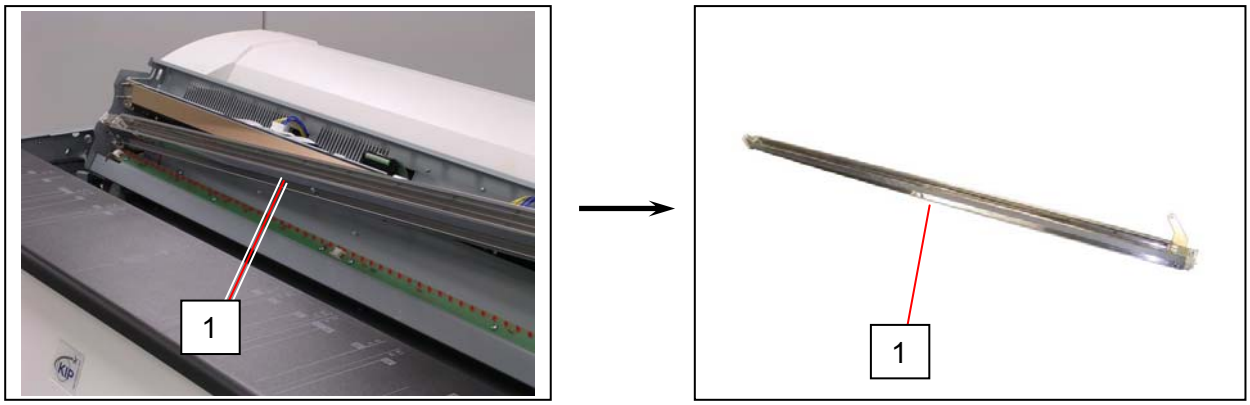
5. 7. 2 Replacement of the Corona Wire

NOTE

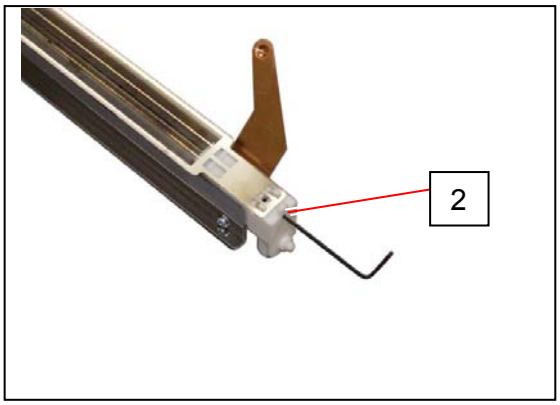
A periodic replacement for the following parts is recommended.

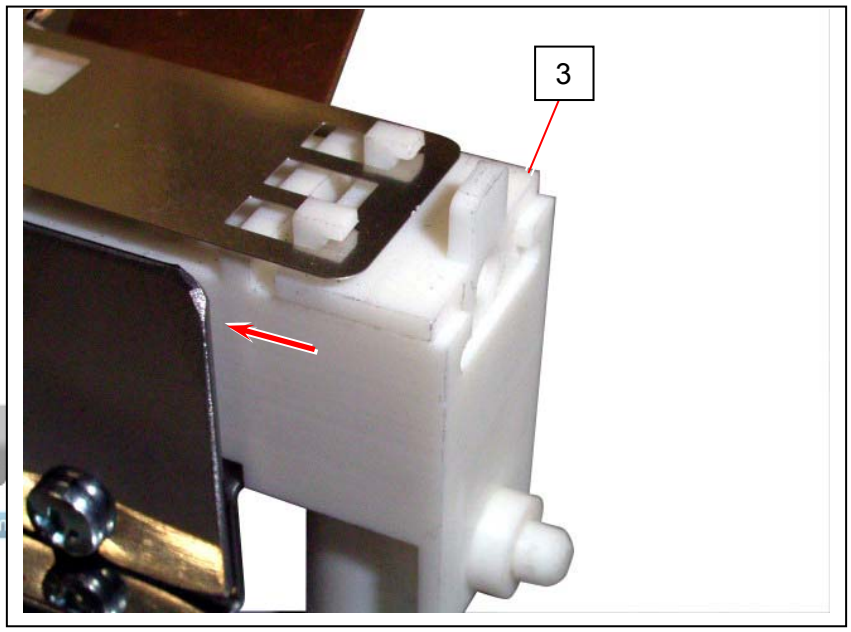
Item	Number of article	Remarks
Corona Wire (1) Assy	1	All of these parts are contained in MC-960 “Corona Wire Kit” (305JG70030)
Spring 2	1	

1. Remove the Image Corona Unit (1) from the machine making reference to [5. 7. 1 Removal of the Image Corona Unit] on the page 5-198.



2. Loosen the Set Screw (2) with hexagon wrench.
   The Block 3 (3) moves to the arrow mark and the Grid Plate is unfastened.

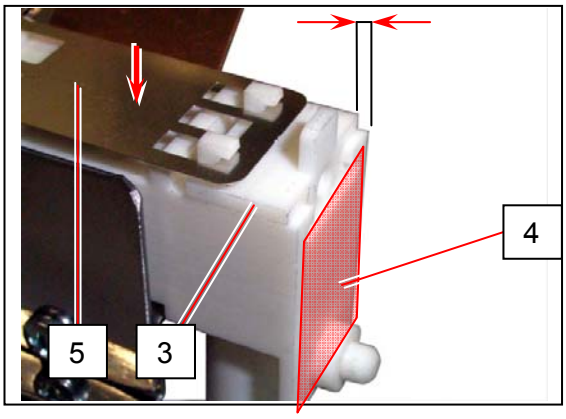


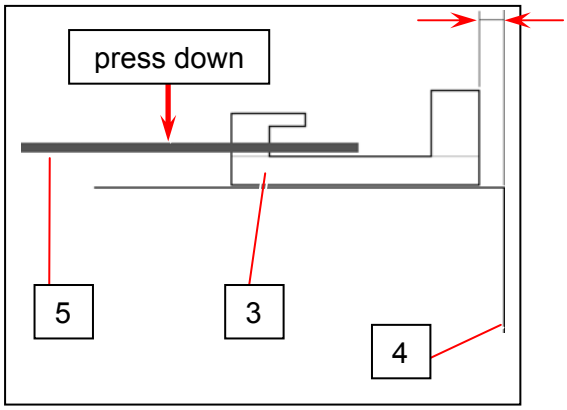


⚠ NOTE

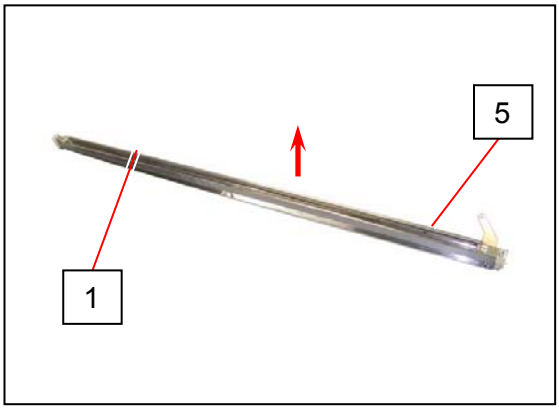
Check the following when reassembling.

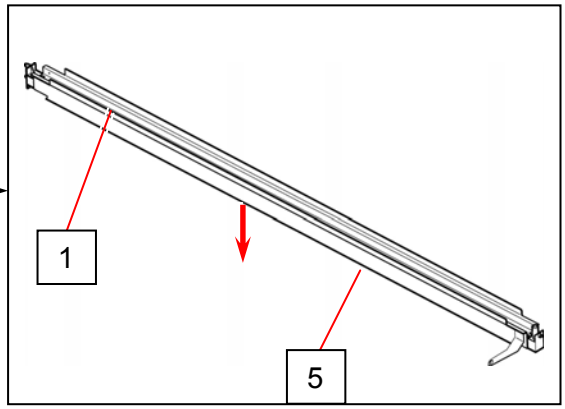
(1) The side edge of Block 3 (3) should stop at 0.5mm short of the side face (4) of the corona block for a proper tension.
Rotate a hexagon wrench in either direction with pressing down Grid Plate (5).

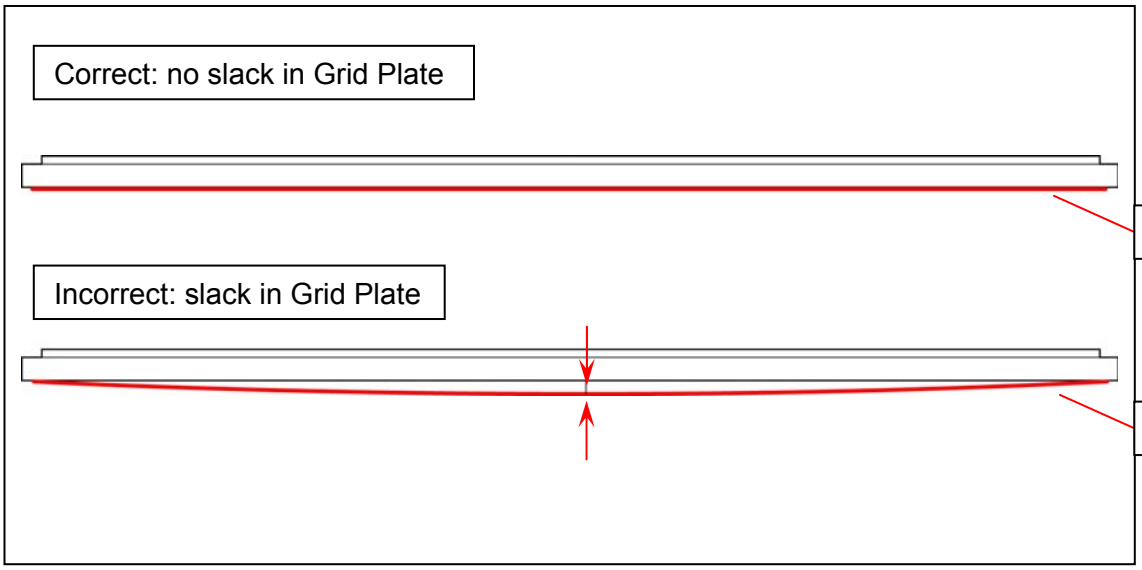




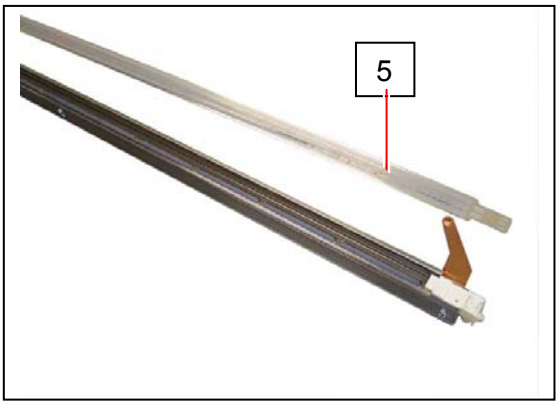
(2) Carry Image Corona Unit (1) by both corona blocks so that Grid Plate (5) faces the floor.
Make sure that Grid Plate (5) has no excess slack (in less than 1mm) on the middle of the housing.







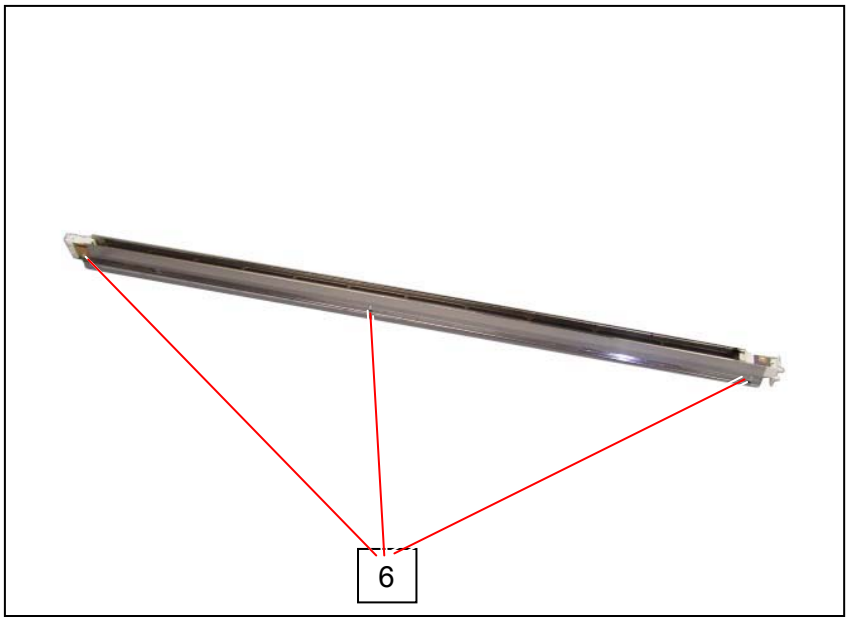
3. Remove the Grid Plate (5).

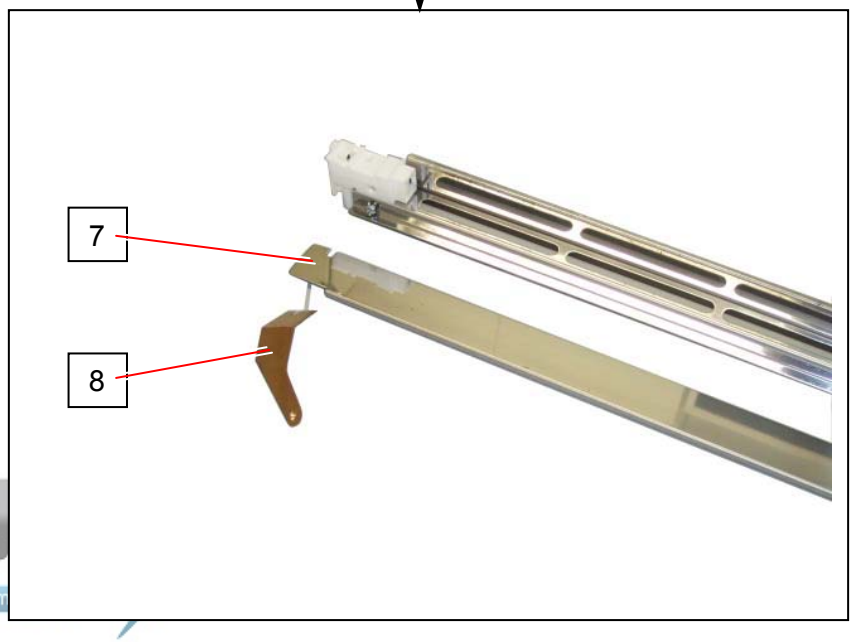


NOTE

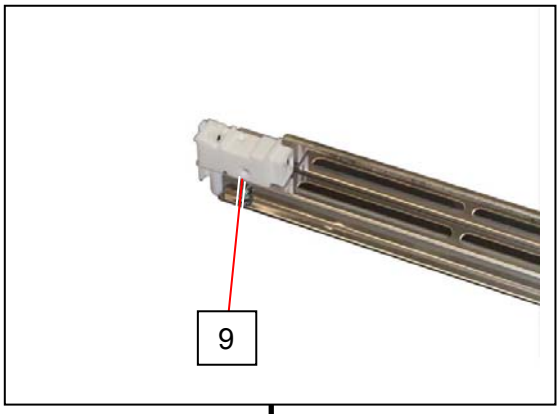
If Grid Plate is dirty, wash it with the neutral detergent and then with water. Dry it well after washing.

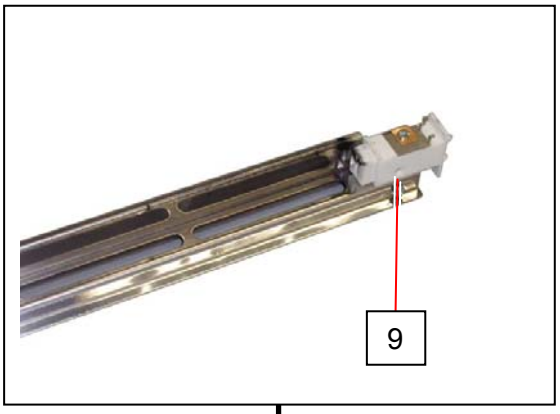
4. Loosen 3 pieces of 3x6 screw (6), and then remove Corona Housing (7) and Plate Electrode (8).

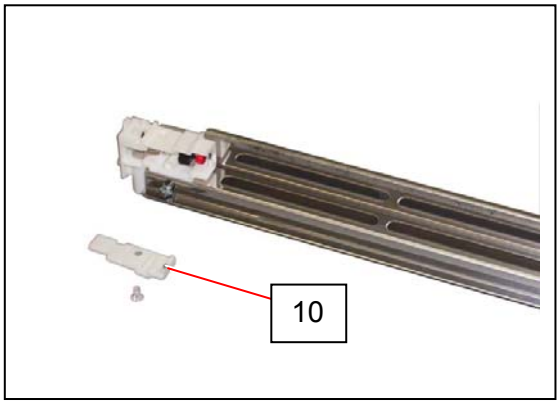


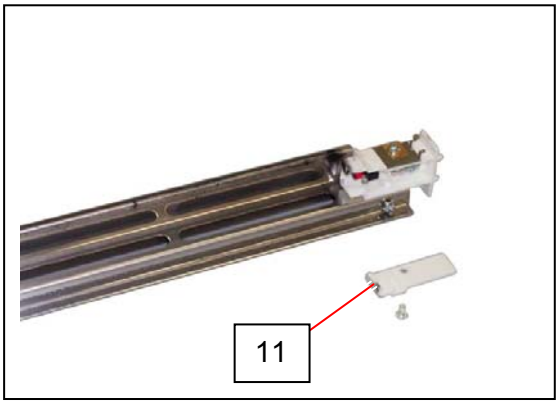


5. Remove the Flush Head Screw (9), and remove each Cover (10) and Cover 2 (11).

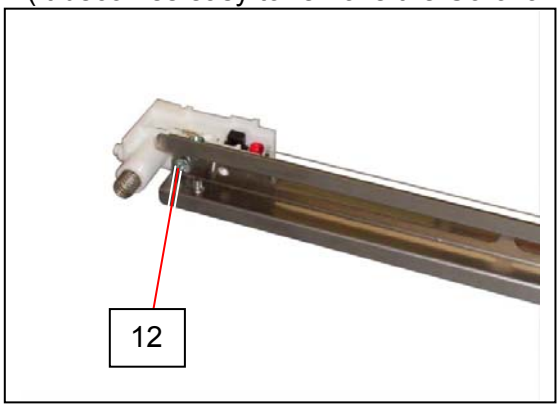


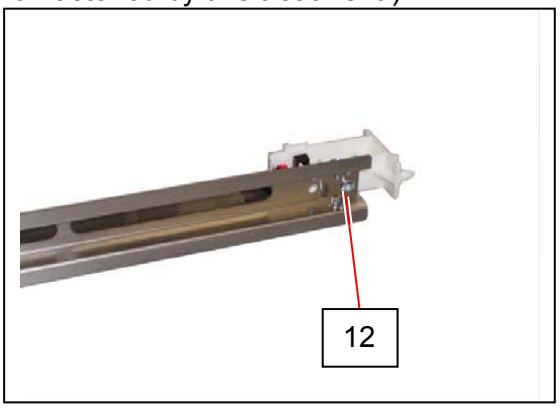




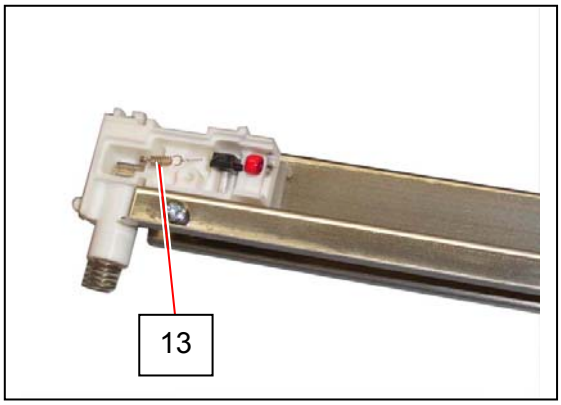


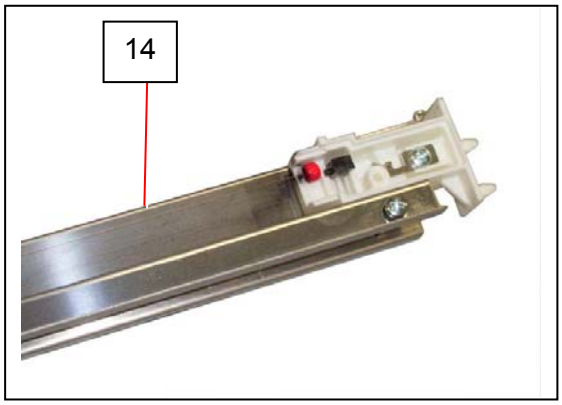
6. Loosen the screws (12) to lower the Height Adjuster.
(It becomes easy to remove the Corona Wire as it is unfastened by this treatment.)





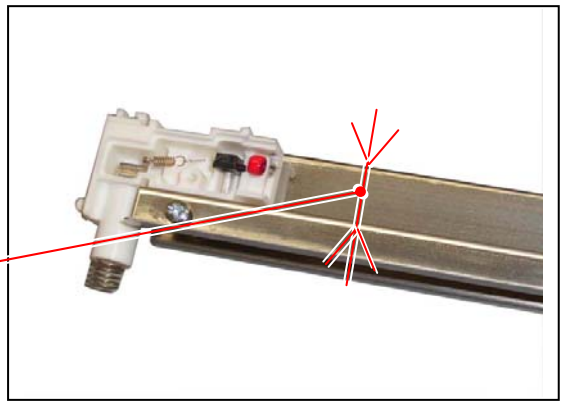
7. Remove **Spring 2** (13) and **Corona Wire 1 Assy** (14).
   Replace **Spring 2** (13) and **Corona Wire 1 Assy** (14) with new ones.



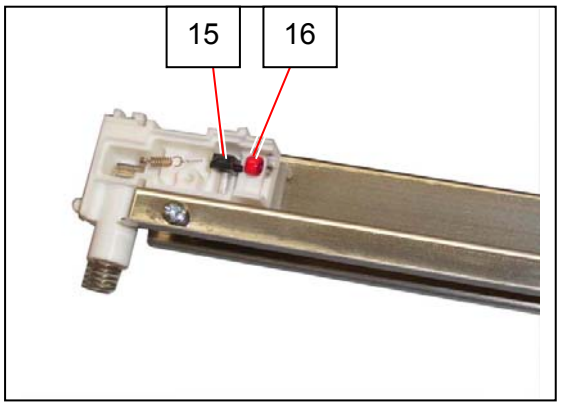


⚠ NOTE

(1) Please keep 11mm between Corona Wire (14) and bottom plate of the Corona Unit after the replacement.



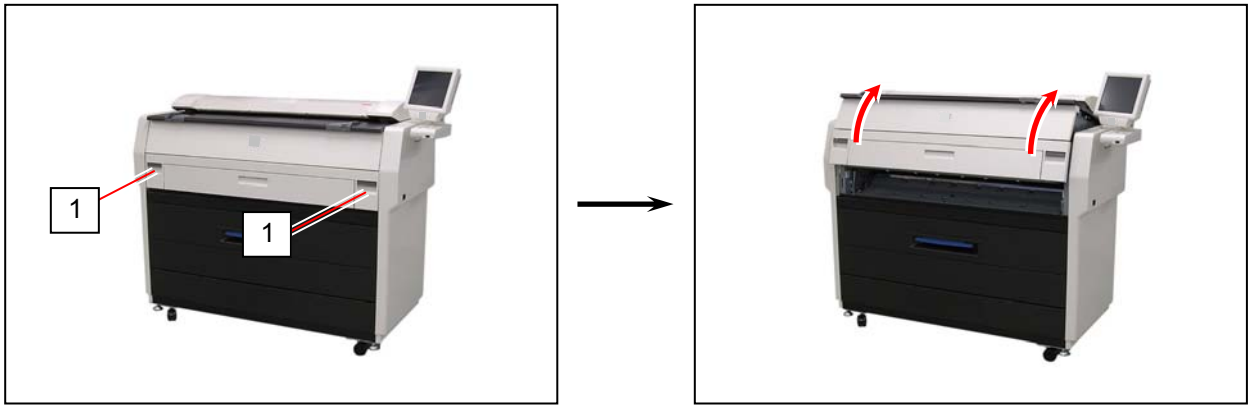
(2) Fit the Corona Wire into the groove of Height Adjuster (15).
Also fit the beads (16) into the correct positions.



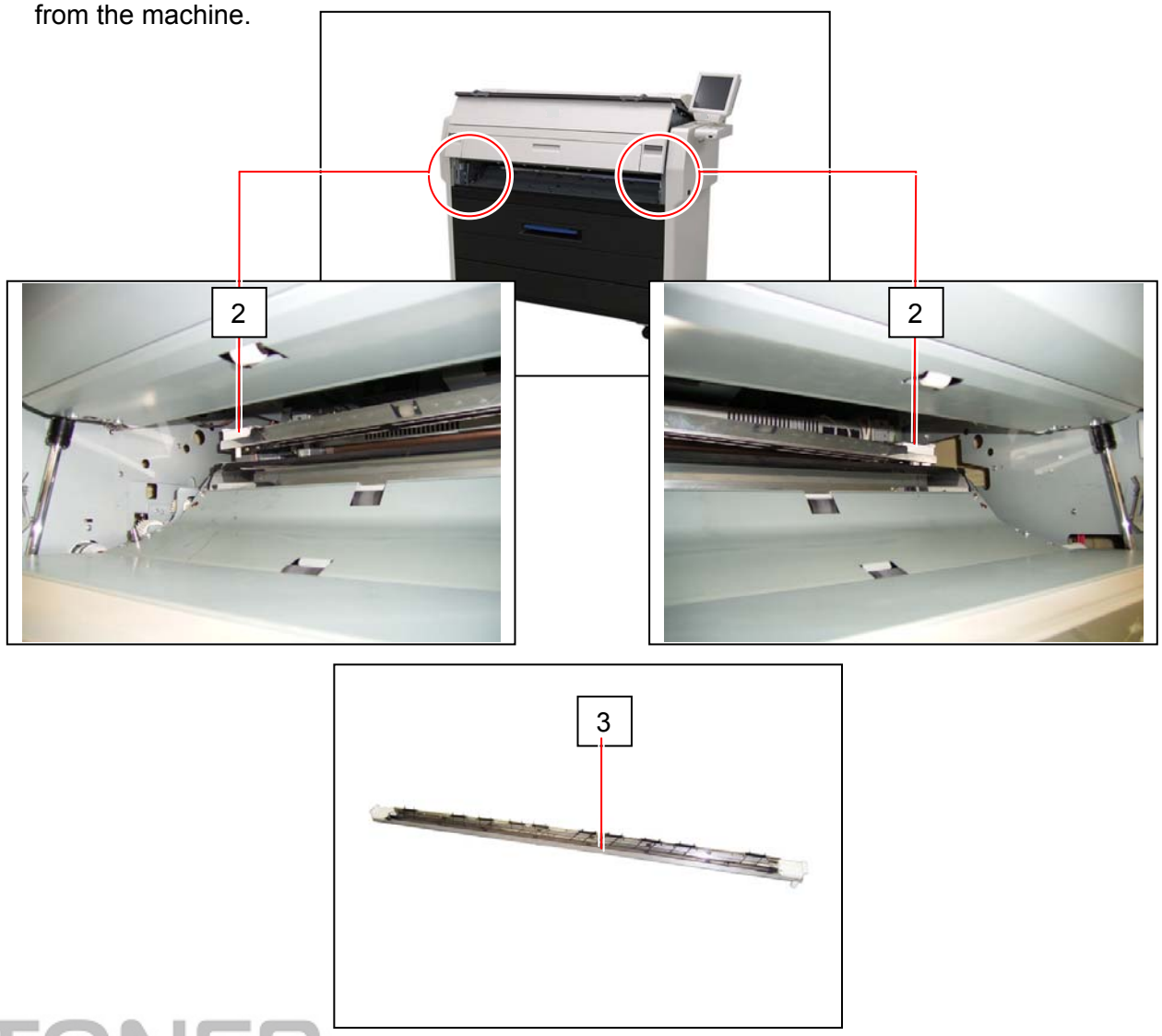
5. 8 Transfer / Separation Corona

5. 8. 1 Removal of the Transfer / Separation Corona

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



2. Holding both Corona Blocks (2: white plastic), remove the Transfer / Separation Corona (3) from the machine.



NOTE

There is the Drum above the Transfer / Separation Corona.
Do not touch it.

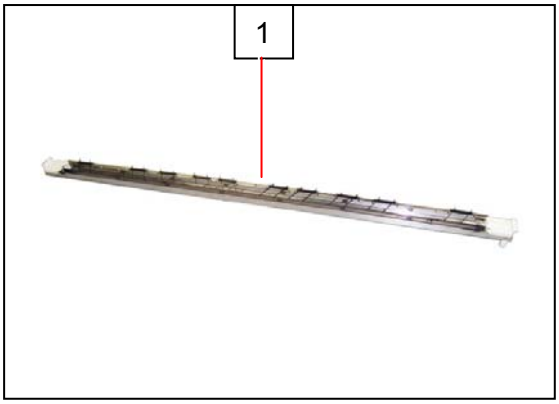
5. 8. 2 Replacement of Corona Wires

NOTE

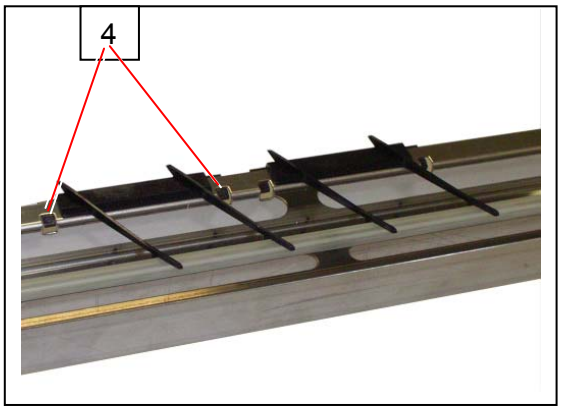
A periodic replacement for the following parts is recommended.

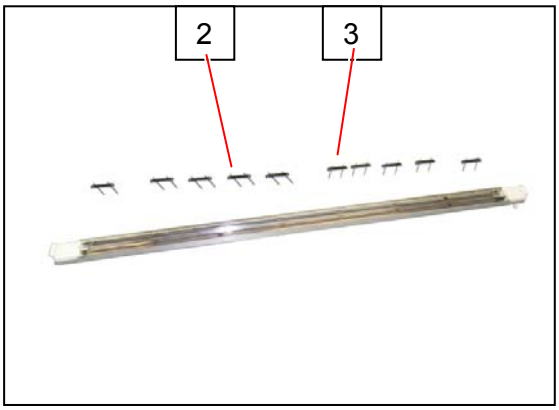
Item	Number of article	Remarks
Corona Wire	2	All of these parts are contained in MC-960 “Corona Wire Kit” (305JG70030)
Wire Spring	4	

1. Remove the Transfer / Separation Corona (1) making reference to [5. 8. 1 Removal of the Transfer / Separation Corona] on the page 5-211.



2. There are 5 pieces of Corona Guards A (2) and Corona Guards B (3) on the housing. Remove them pressing the stoppers (4) with such tool as a screwdriver.

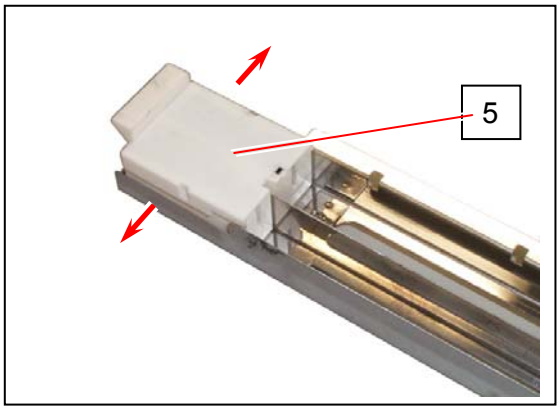


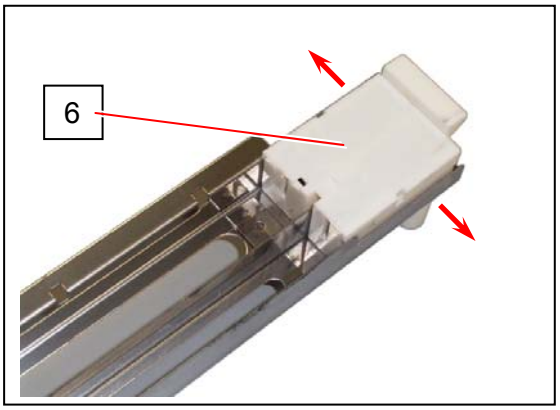


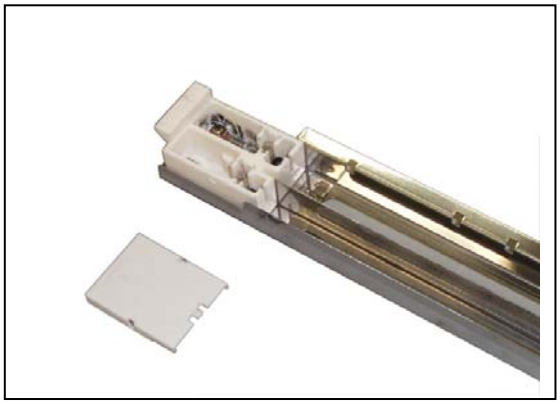
NOTE

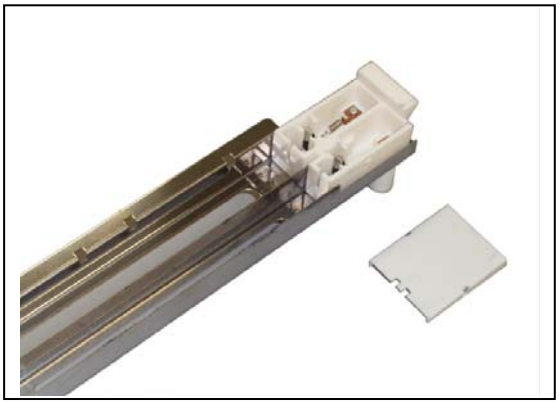
Do not replace the position of Corona Guards A (2) and Corona Guards B (3) at the time of reassembly.

3. Remove both Covers 3 (5) (6) pulling their sides outward.

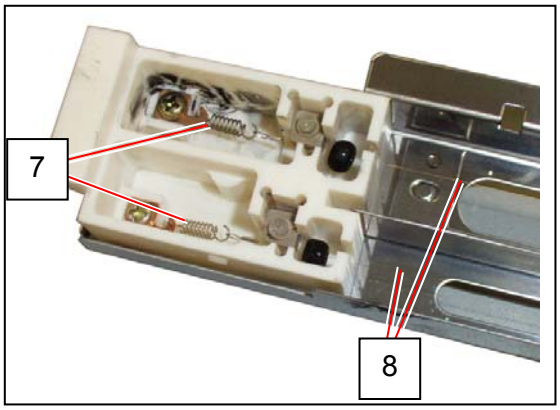


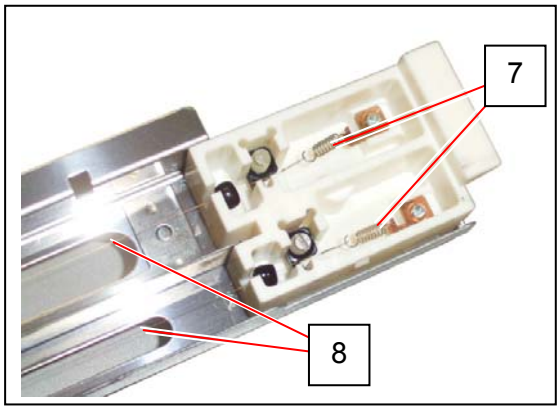






4. Remove 4 pieces of **Wire Springs** (7) and **Corona Wires** (8).
   Replace **Wire Springs** (7) and **Corona Wires** (8) with new ones.



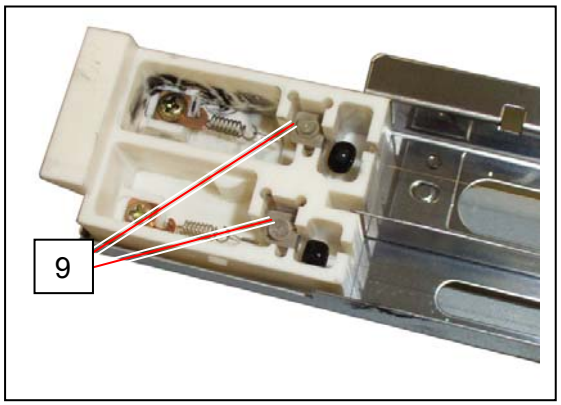


⚠ NOTE

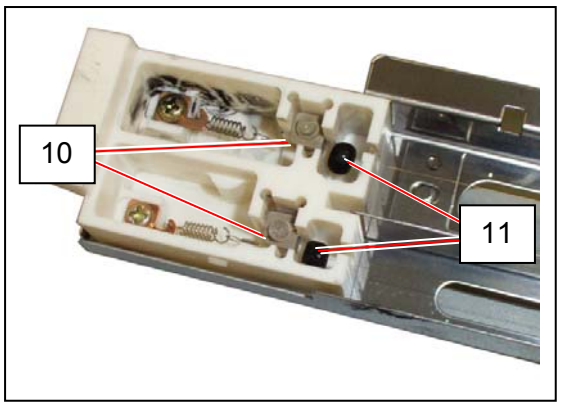
(1) Do not touch the wire part. Pinch the hook part of both ends to handle Corona Wire.

(2) Keep 11mm distance (height) between each Corona Wire and bottom plate of the housing.

To adjust the distance, rotate the screws (9) with a flathead screwdriver.



(3) Fit the Corona Wire into the groove of Height Adjuster (10).
Also fit the beads (11) into the correct positions.

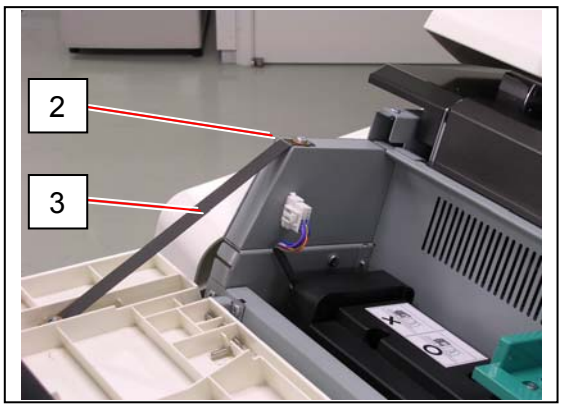


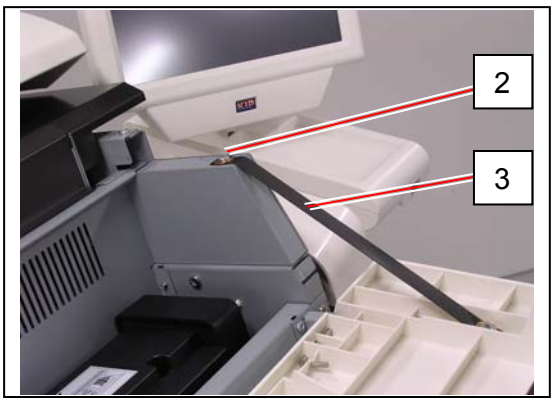
5. 9 Engine Frame

5. 9. 1 Replacement of DC Motor (M4) and Developer Press Sensor (PH4)

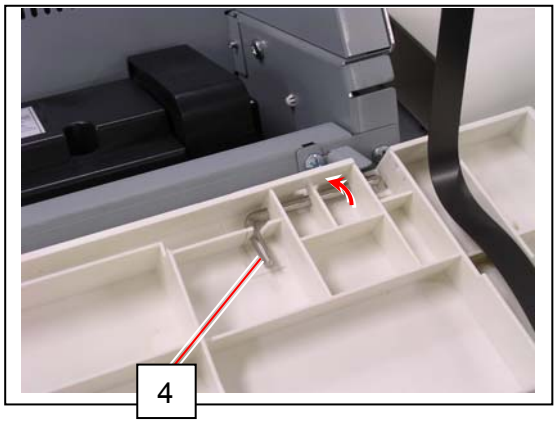
1. Open the Cover (1).

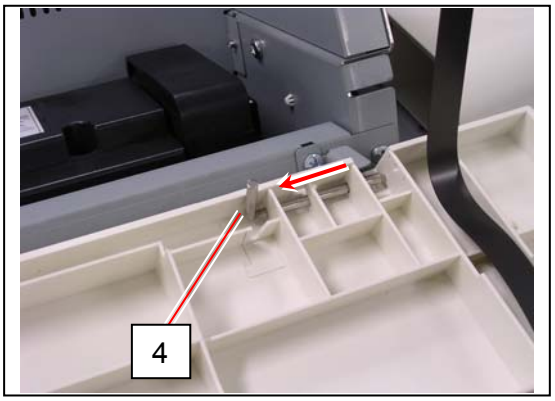
2. Remove the 4x6 screws and washers (2) at both sides to make the Bands (3) free.





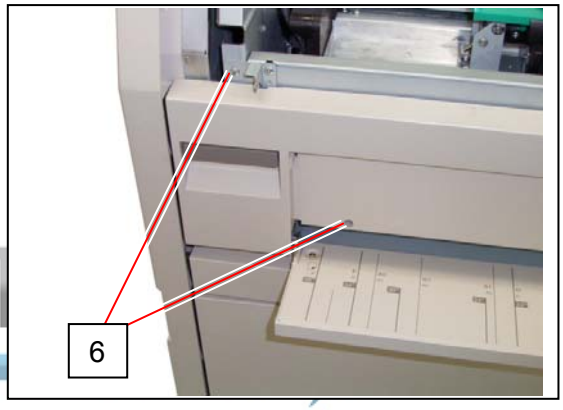
3. There are Pins (4) at both sides.
   Slide them inside to remove the Cover (1).

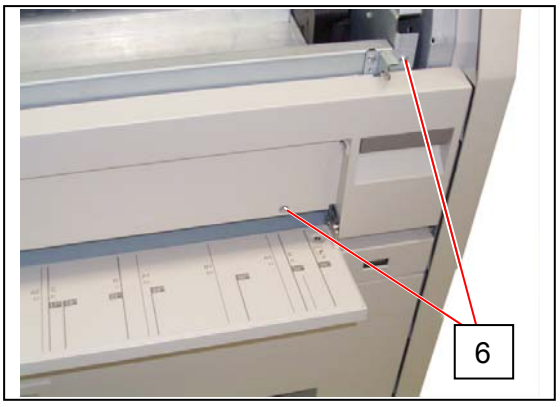




4. Open the Bypass Feeder (5).

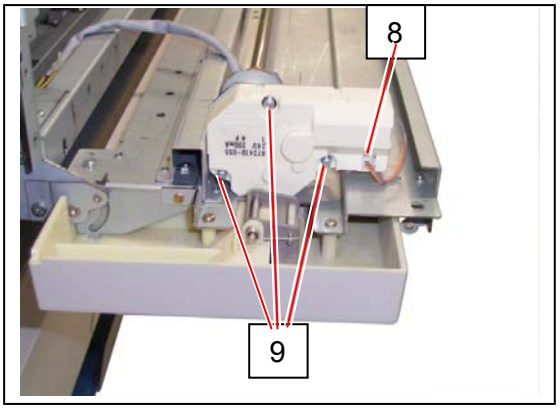
5. Remove 4 pieces of 4x8 screw (6).

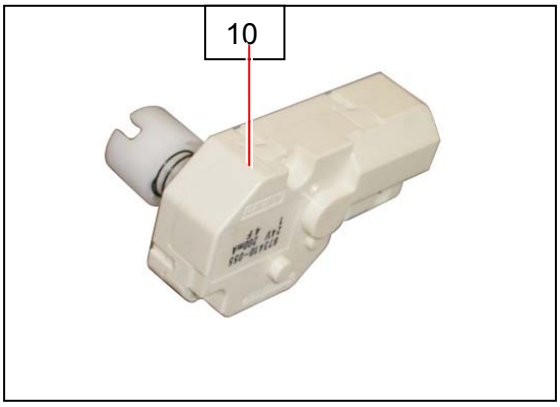




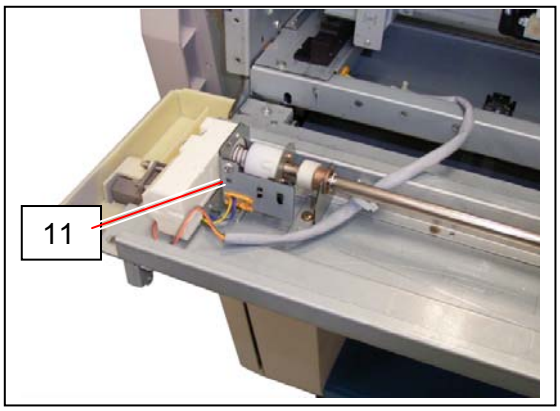
6. Close the Bypass Feeder, and then open the Developer Press Unit (7).

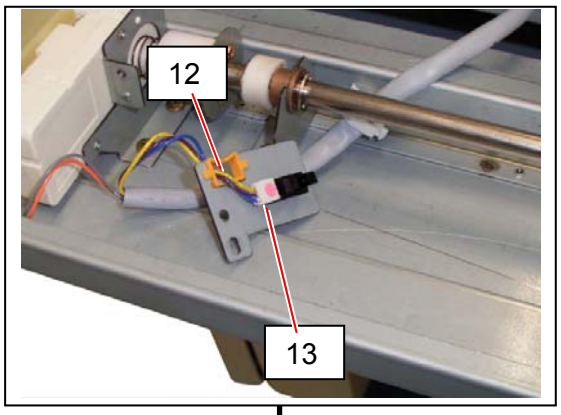
7. Disconnect the connector (8) and remove 3 pieces of screw (9), and remove the DC Motor (10). Replace DC Motor (10) with the new one.

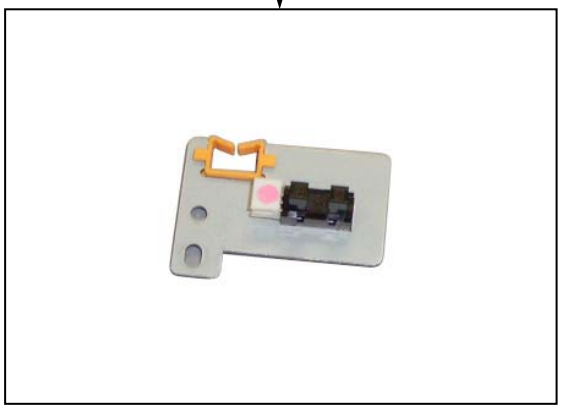




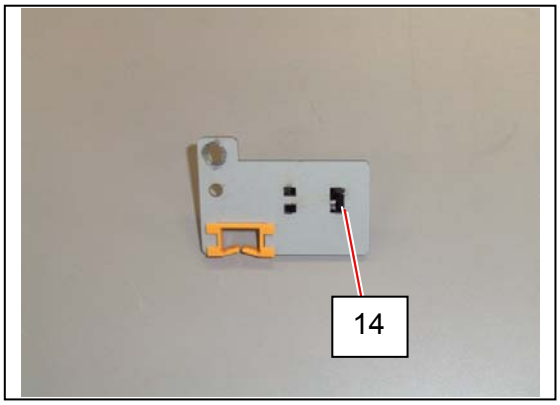
8. Remove the 4x6 screw (11), release the harness from the Edge Saddle (12), and disconnect the connector (13).

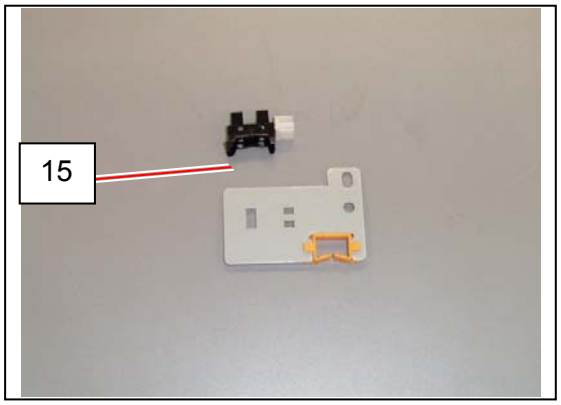






9. Pressing the stoppers (14) with such tool as a screwdriver, remove Developer Press Sensor (15). Replace Developer Press Sensor (15) with the new one.

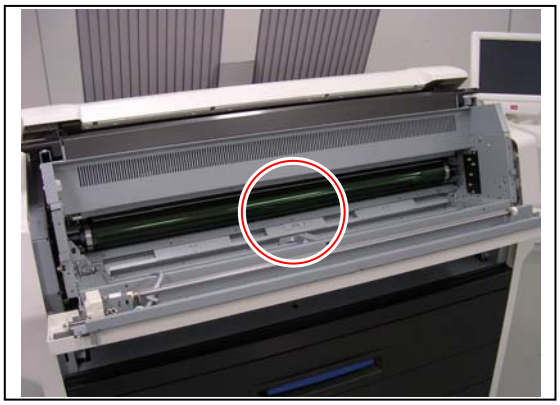


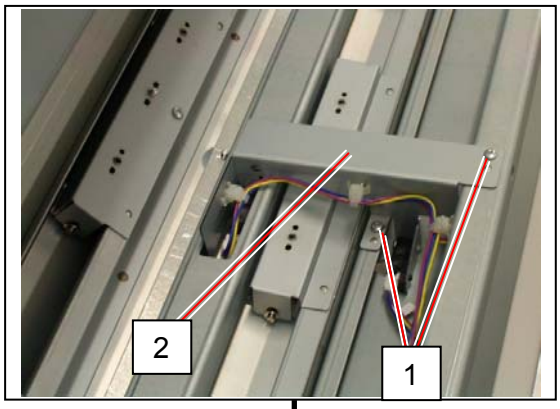


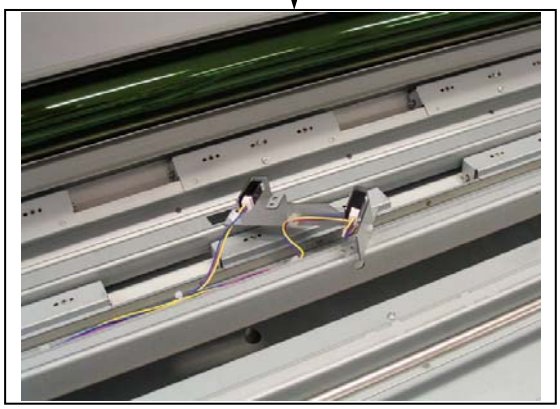
5. 9. 2 Replacement of Manual Set Sensor (PH5) & Registration Sensor (PH1)

1. Remove the Developer Unit from the machine making reference to [5. 2. 1 Removal of the Developer Unit] on the page 5-5.

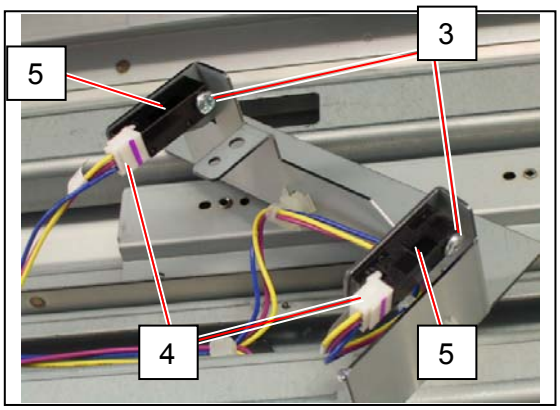
2. Remove 2 pieces of 3x6 screw (1), and then turn over the Bracket 11 (2).

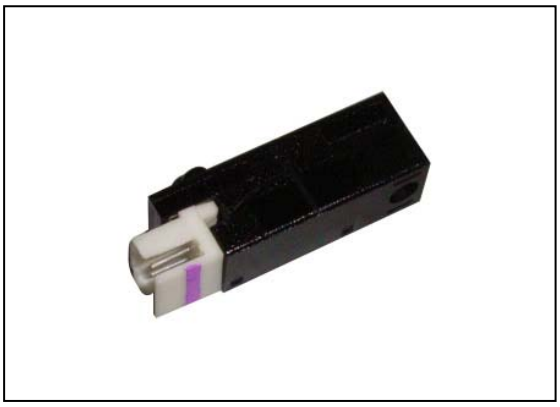






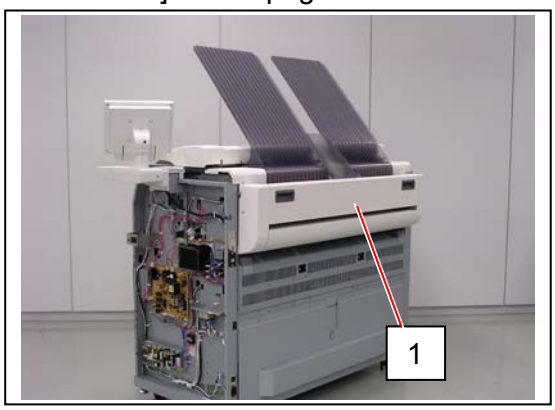
3. Remove the screw (3) and disconnect the connector (4) to remove each Sensor (5 : Manual Set Sensor or Registration Sensor).
   Replace Sensor (5) with the new one.



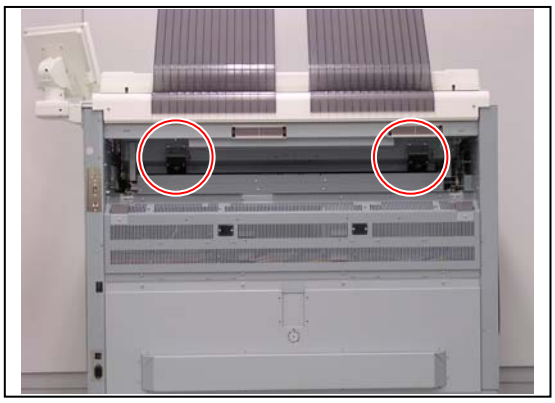


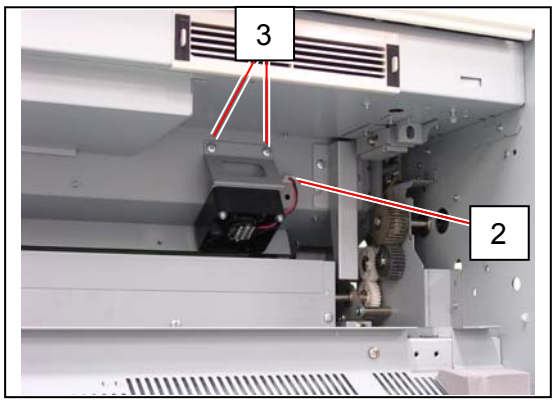
5. 9. 3 Replacement of Fans (BL5, BL6)

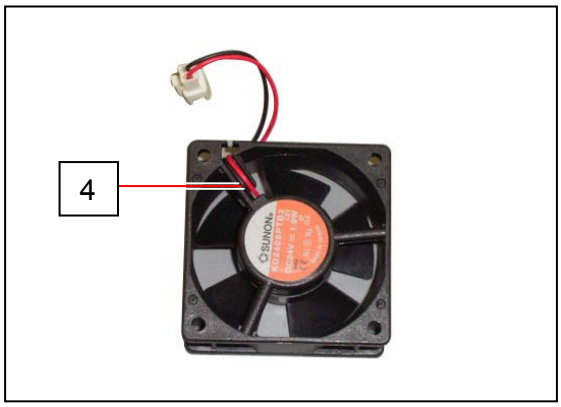
1. Remove the Fuser Unit (1) from the machine making reference to [5. 3. 1 Removal of the Fuser Unit] on the page 5-74.



2. Disconnect the connector (2), remove 2 screws (3), and remove each Fan (4) with the bracket. Remove 2 screws from the bracket and replace Fan(BL5 / BL6) with the new one.

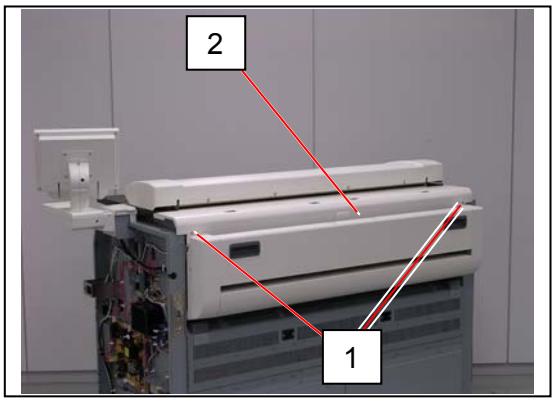


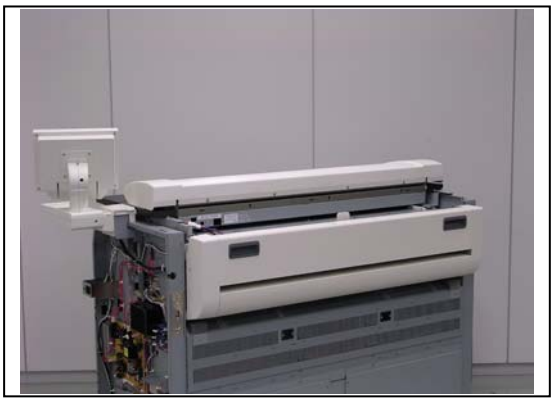




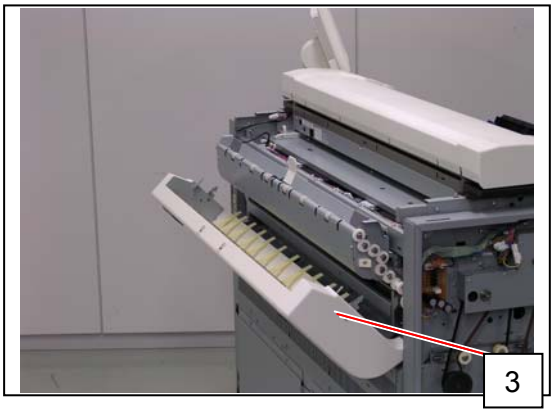
5. 9. 4 Replacement of Blowers (BL3, BL4)

1. Remove 2 pieces of 4x6 screw (1) to remove the Cover (2).

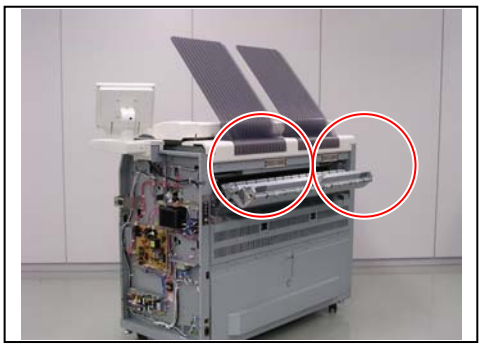


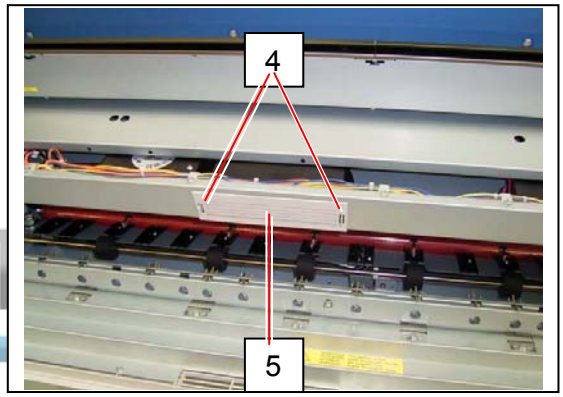


2. Open the Cover Assembly (3).

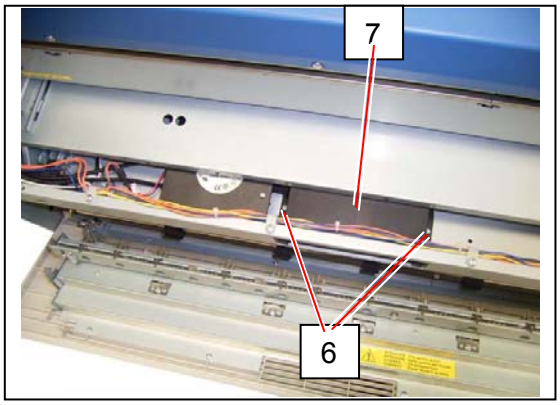


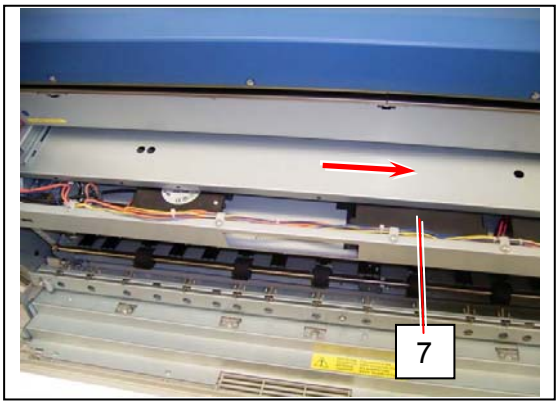
3. Moving the stopper levers (4) to the inside, remove each Duct 5 (5) with Filter 4.



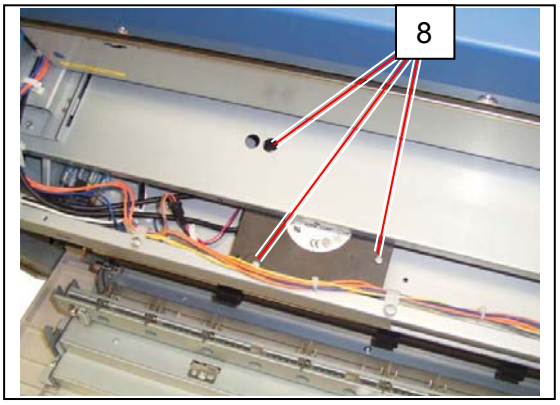


4. Remove 2 pieces of 4x6 screw (6), and then slide the Duct 6 (7) to the left.

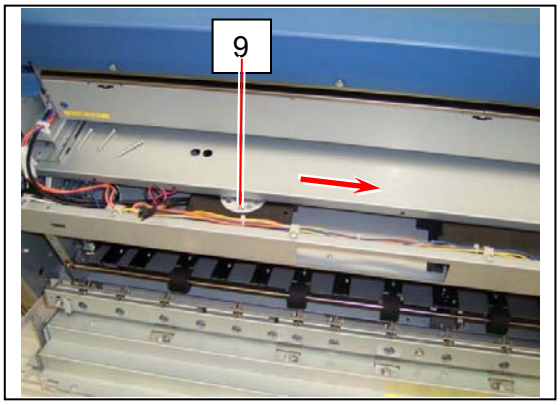


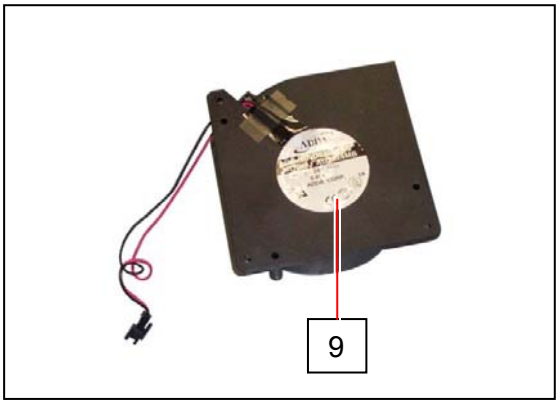


5. Remove 3 pieces of 4x35 screw (8).



6. Remove the Blower (9 : BL3 & BL4) moving as the following photos.

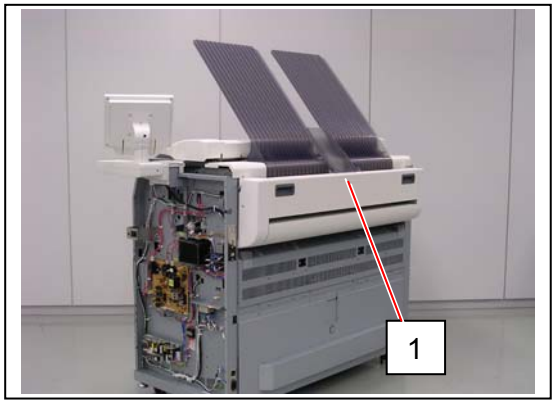




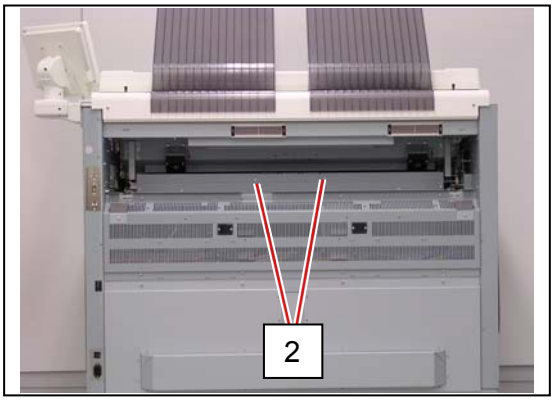
5. 10 Inner Transport Unit

5. 10. 1 Removal of the Inner Transport Unit

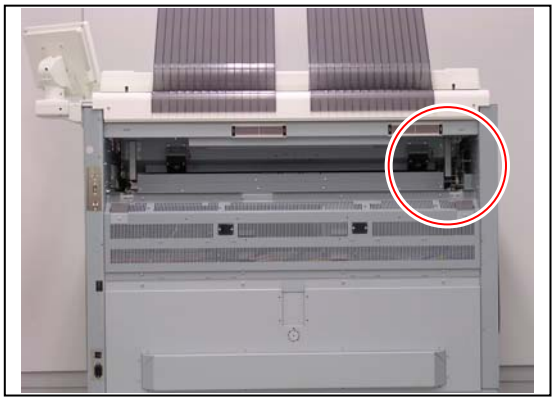
1. Remove the Fuser Unit (1) from the machine making reference to [5. 3. 1 Removal of the Fuser Unit] on the page 5-74.

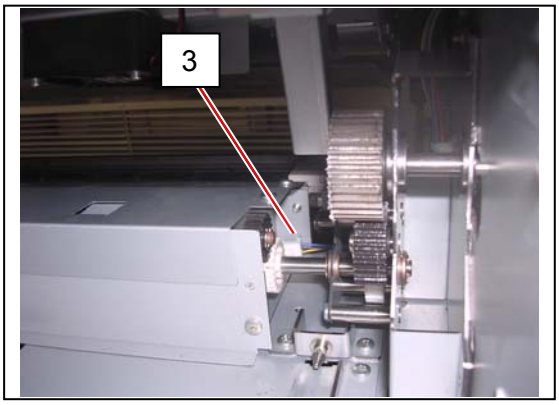


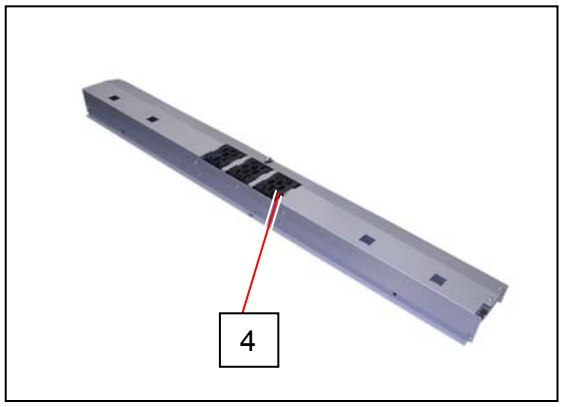
2. Remove 2 pieces of 4x6 screw (2).



3. Disconnect the connector on the left (3), and then remove Inner Transport Unit (4).

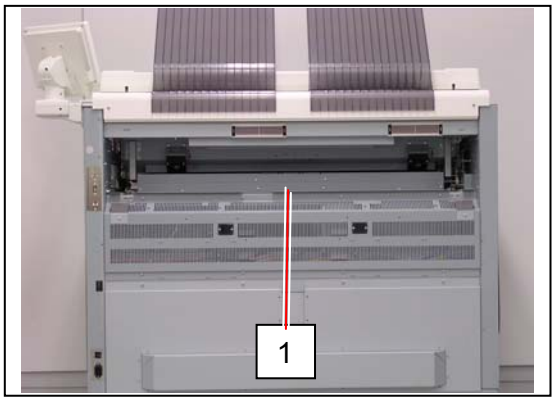


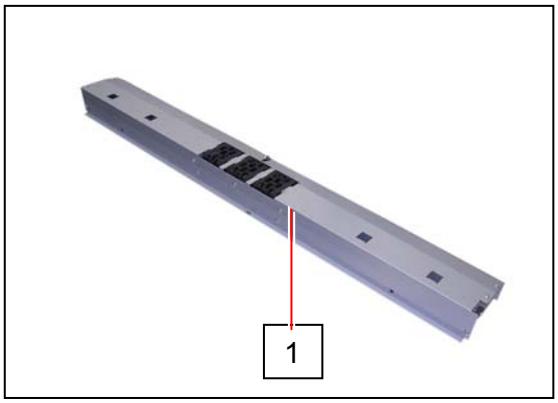




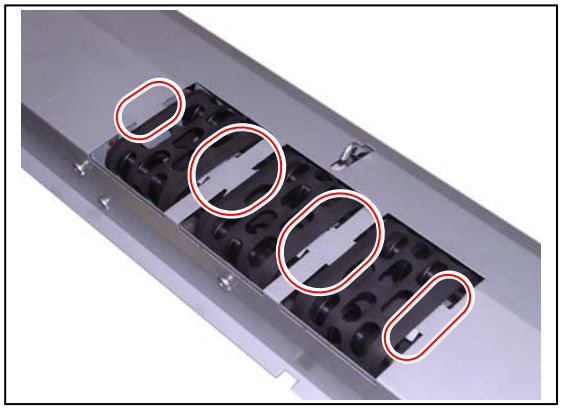
5. 10. 2 Replacement of Sensor (PH2) & Belt

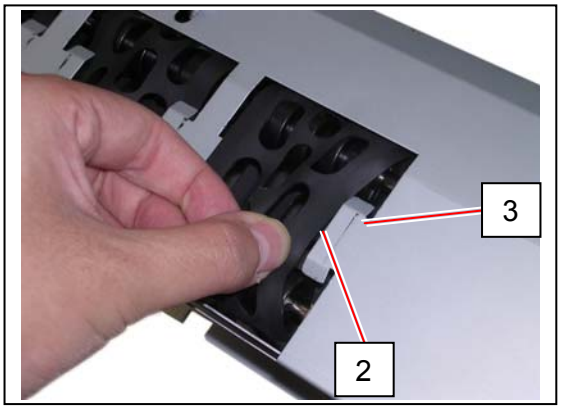
1. Remove the Inner Transport Unit (1) from the machine making reference to [5.10. 1 Removal of the Inner Transport Unit] on the page 5-224.



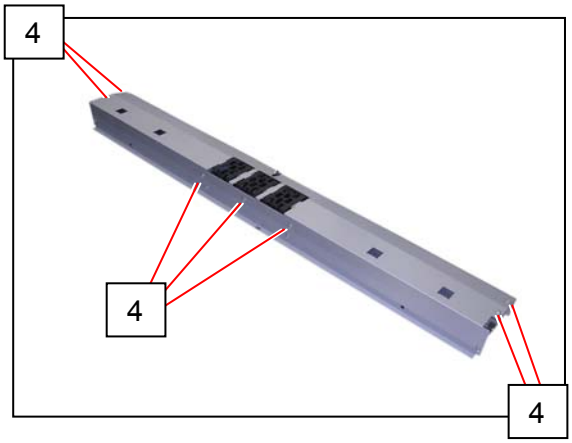


2. Tuck the rim of Belts (2) under the tab of Guide Plate (3)

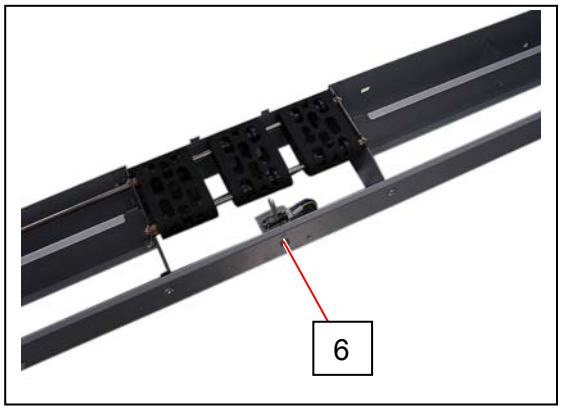


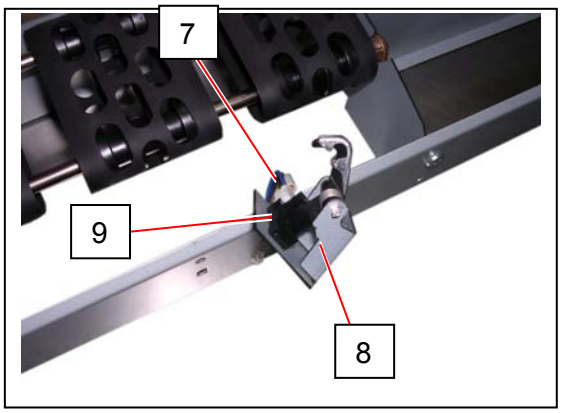


3. Remove 7 pieces of 4x6 screw (4) to remove Guide Plate (5).

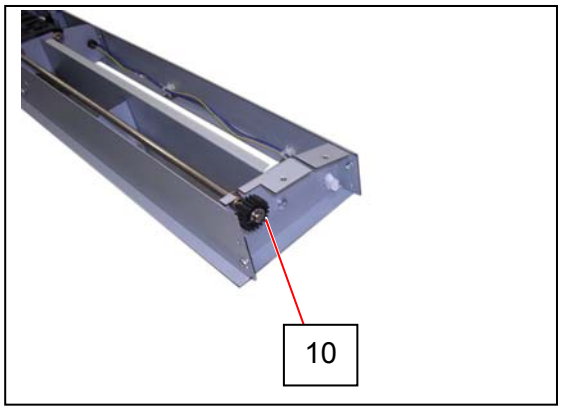


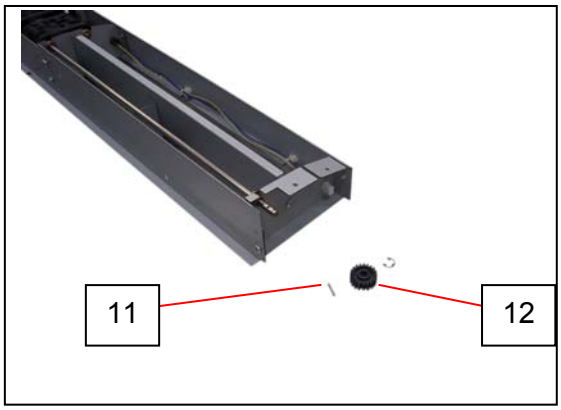
4. Remove 1 screw (6) and the harness (7) to release the sensor bracket (8).
   Remove Sensor (9) from the bracket (8) and replace Sensor with a new one.



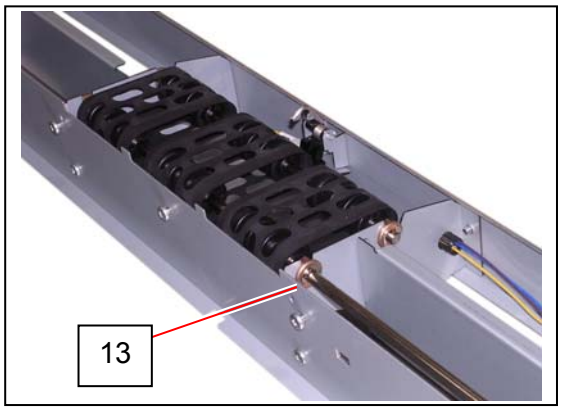


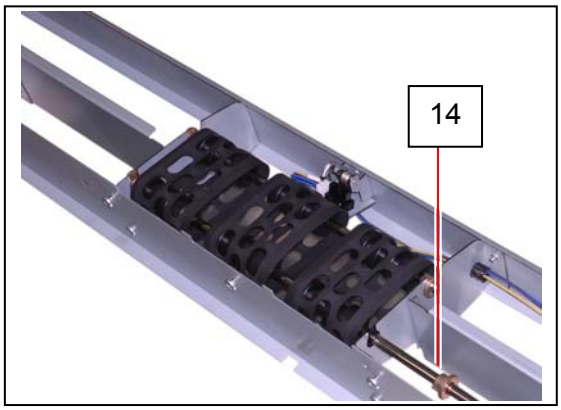
5. Remove Retaining Ring-E (10) to remove Gear (11) and Parallel Pin (12).



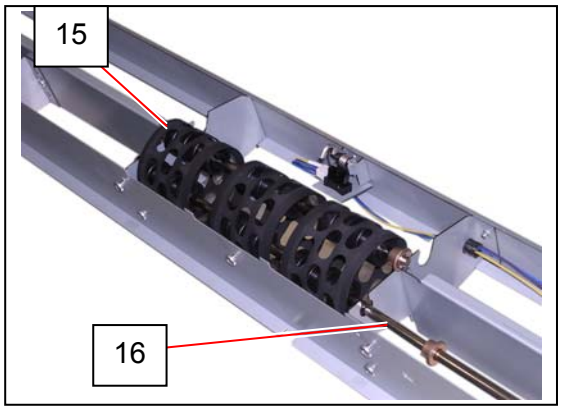


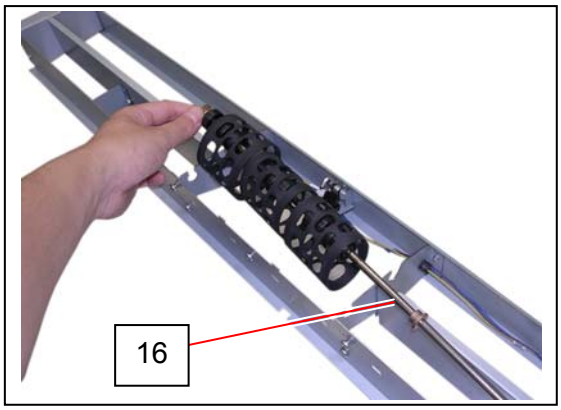
6. Remove Retaining Ring-E in the middle (13) to release Bearing (14).

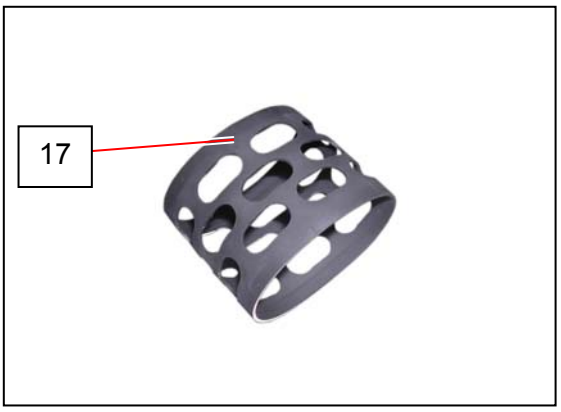




7. Release Shaft 3 (15: shorter) to remove Shaft 2 (16: longer) from the unit.
   Remove and replace Belt (17) with new ones.

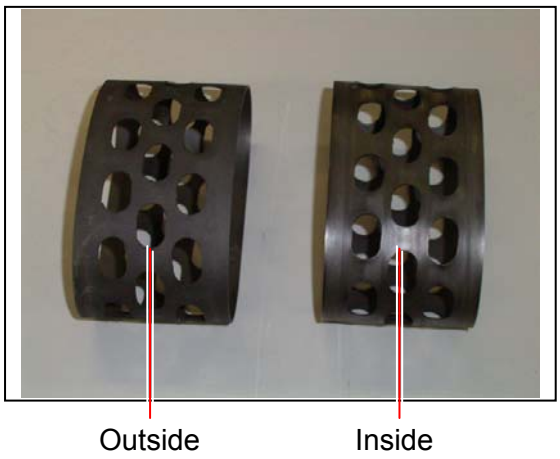






NOTE

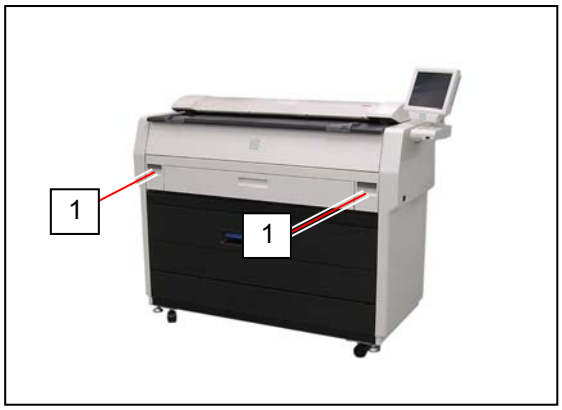
Be careful of the outside/inside of the Belt (17).
The smooth and shiny side of it should be inside.



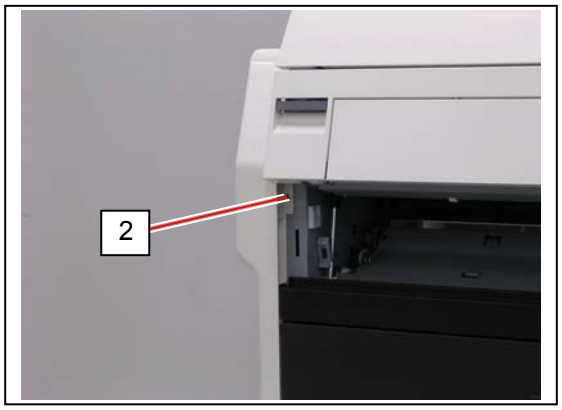
5. 11 Main Frame

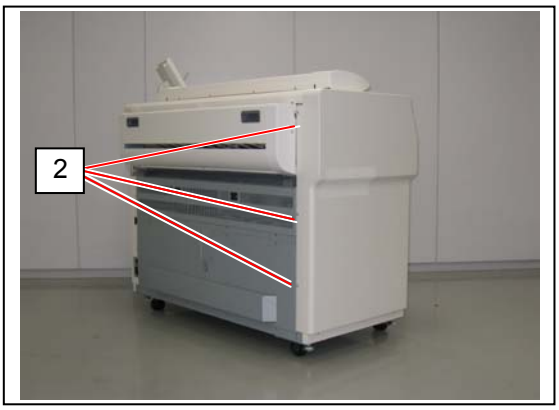
5. 11. 1 Replacement of DC Motors (M1, M2), Belt 8, Belt 9, Belt 7

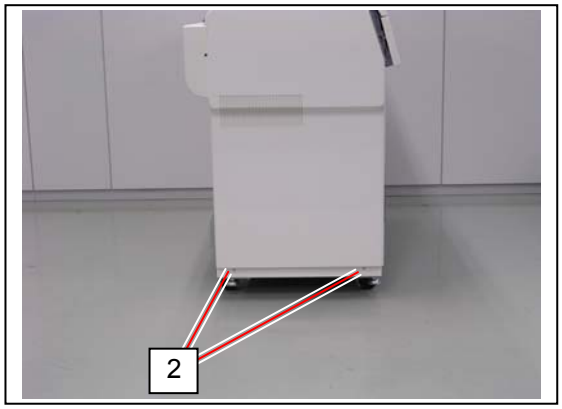
1. Pull up the Lever (1) to open the Engine Unit.



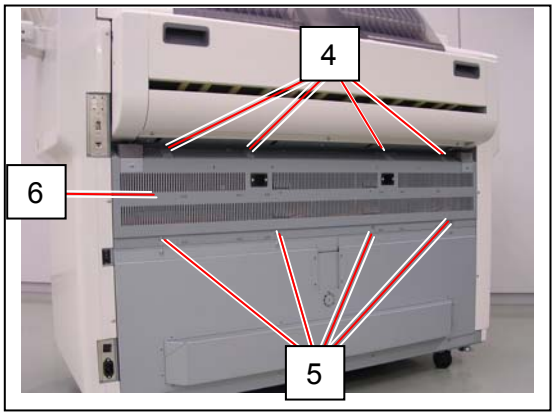
2. Remove 6 screws (2) to remove Cover (3).

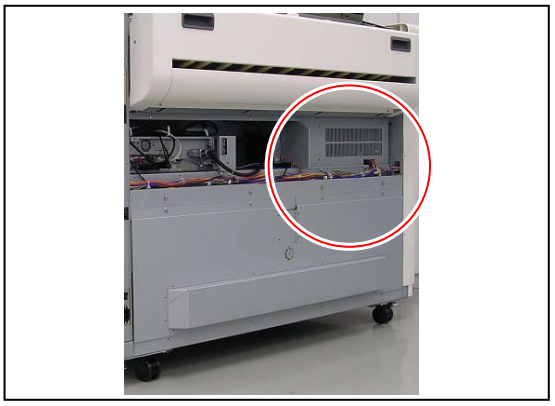




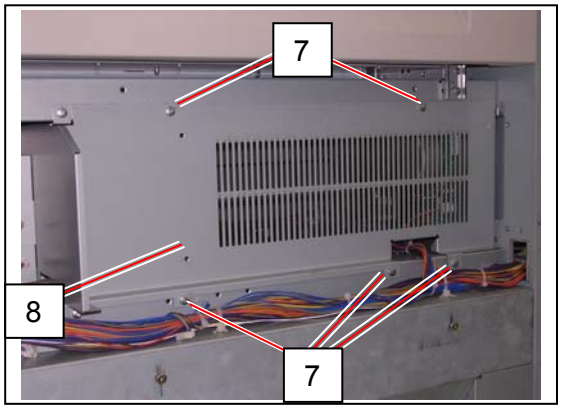


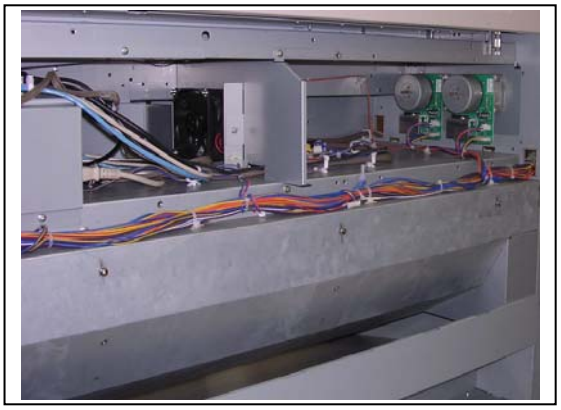
3. Remove 4 pieces of 4x6 screw (4), loosen 4 pieces of 4x6 screw (5), and then remove the Cover 15 (6).



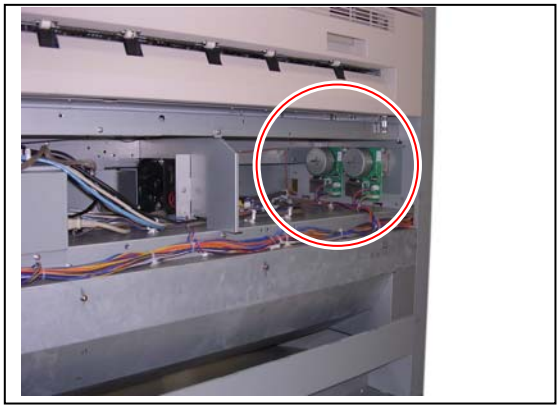


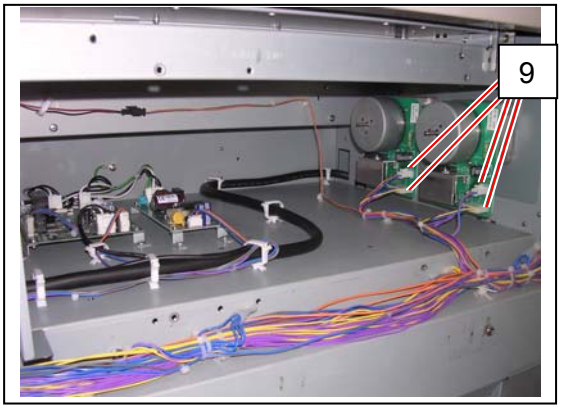
4. Remove 5 screws (7) to remove Case 5 (8).



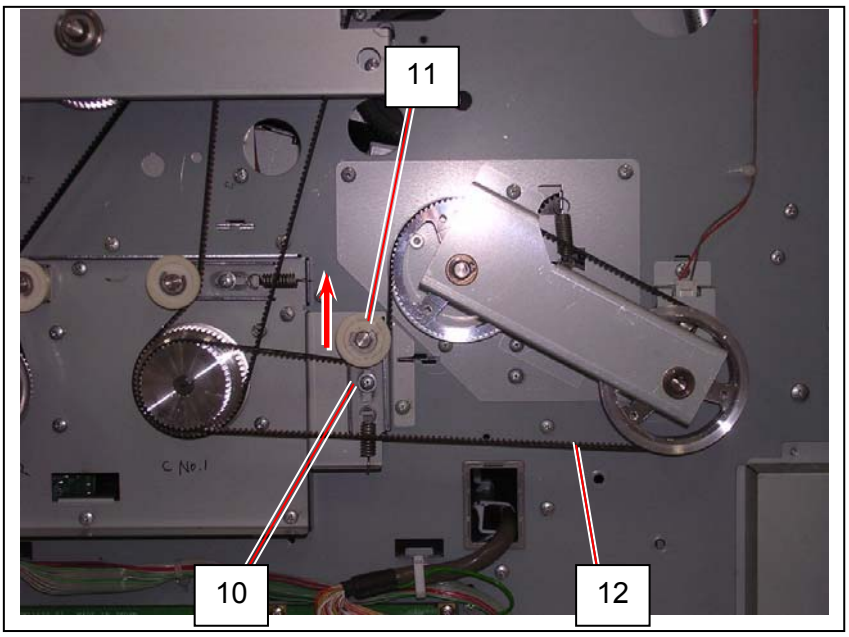


5. Disconnect 4 connectors (9).





6. Loosen the 4x6 screw (10). Move the Pulley 3 (11) toward the arrow mark and secure it to slacken Belt 8 (12).

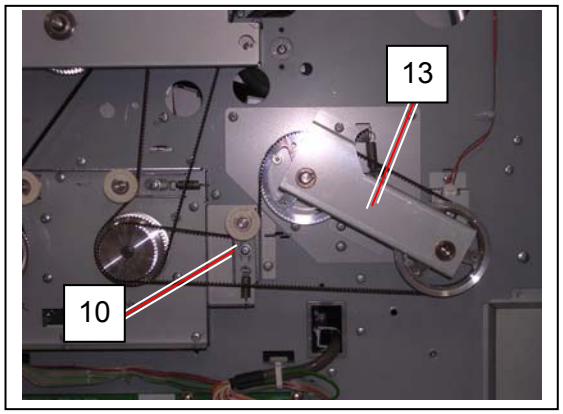


⚠ NOTE

To adjust the tension of the Belt 8, do as follows.
If you do not make the following works, Belt 8 may slip because the tension is not correct.

a) Replace Bracket (13) before tensioning.

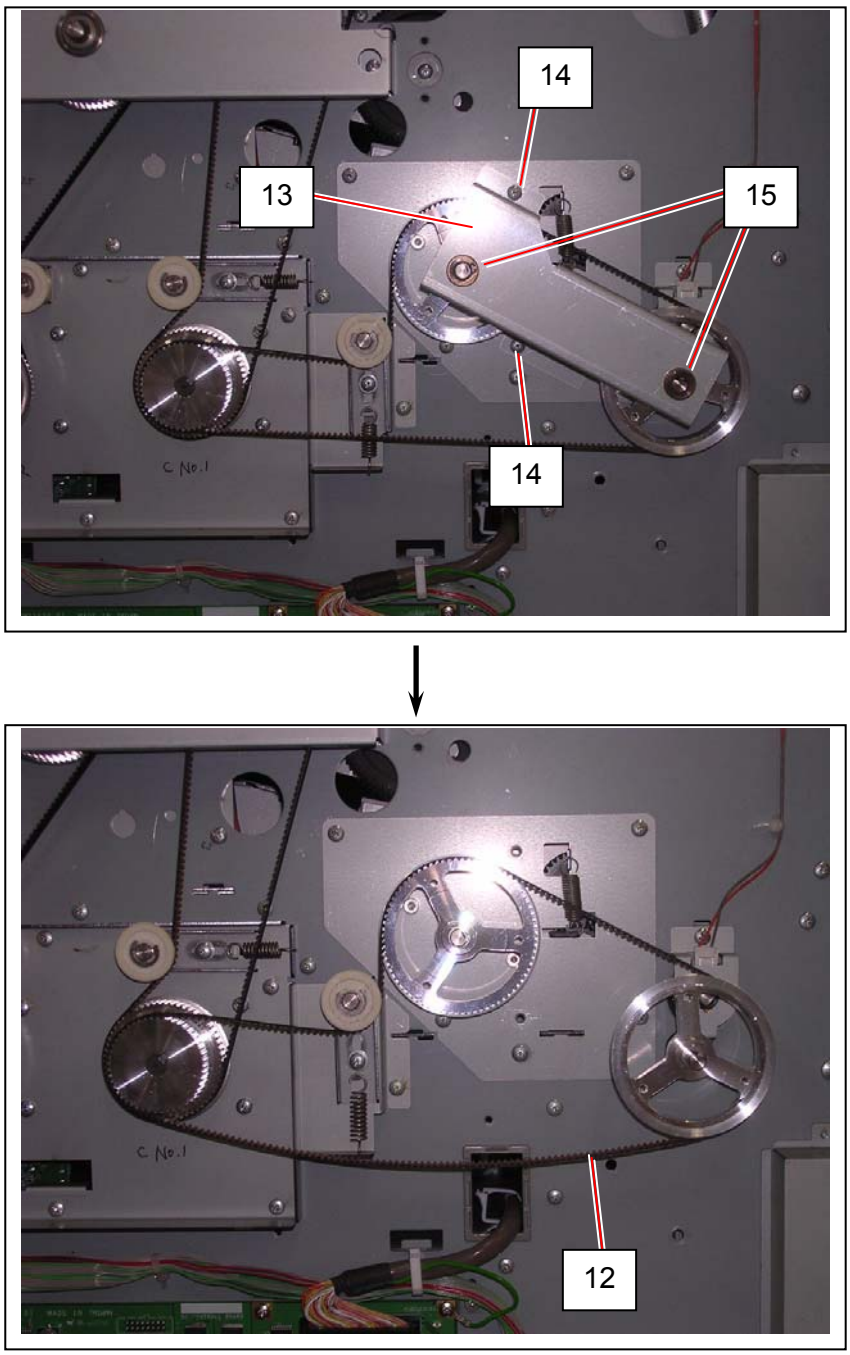
b) Giving the spring tension to the Belt 8, tighten the screw (10) of Pulley 3 (11).



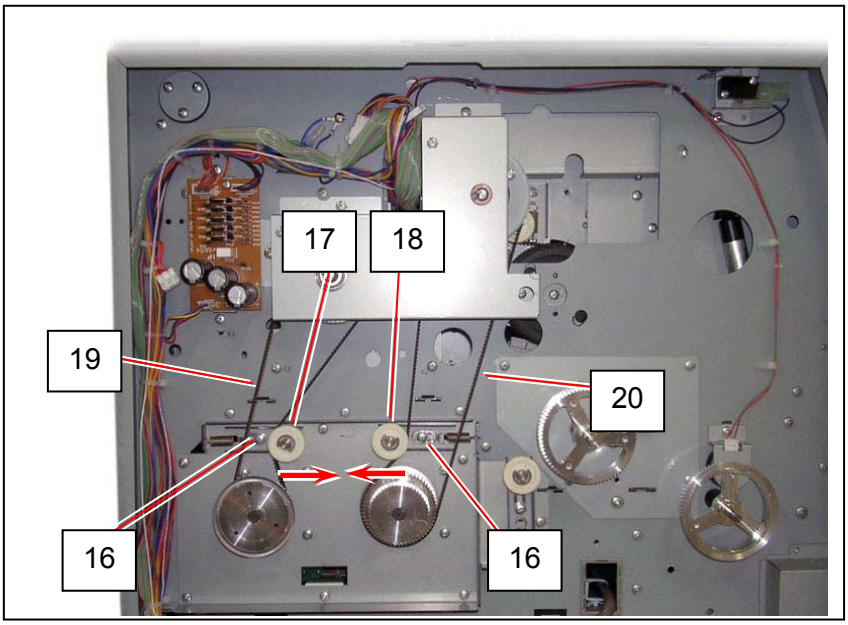
c) Turn on the machine, and then turn it off some seconds later.
The Belt 8 is driven by the motor, and it may be slackened around the Pulley 3 at this time.

d) Loosen the screw to release the Pulley 3.
The slack of Belt 8 generated by the above c) is removed because the Tension Spring pulls the Pulley 3.
Then tighten the screw again.

7. Remove 2 screws (14), Grip Ring and Bearing (15) to remove Bracket (13). Replace Belt 8 (12: 90S3M756) with the new one.



8. Loosen 2 screws (16). Move the Pulley (17) (18) toward the arrow mark and secure them to slacken Belt 9 (19) and Belt 7 (20).

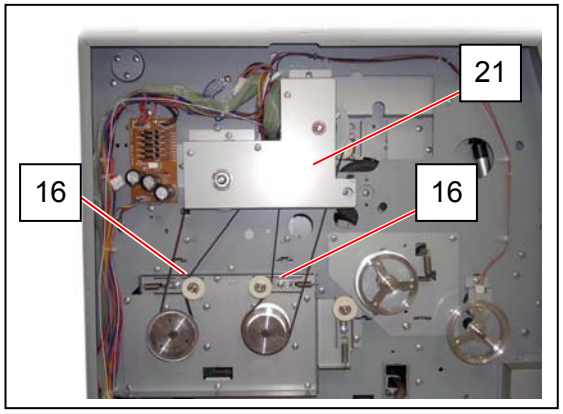


⚠ NOTE

To adjust the tension of the Belt 9 and Belt 7, do as follows.
If you do not make the following works, the belts may slip because the tension is not correct.

a) Replace Bracket (21) before tensioning.

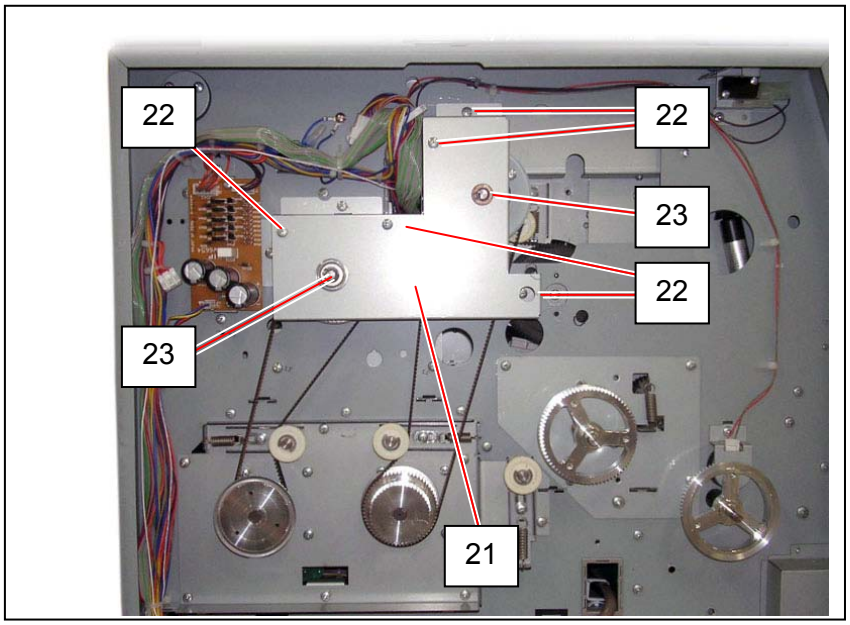
b) Giving the spring tension to the belt, tighten the screw (16) of each Pulley.

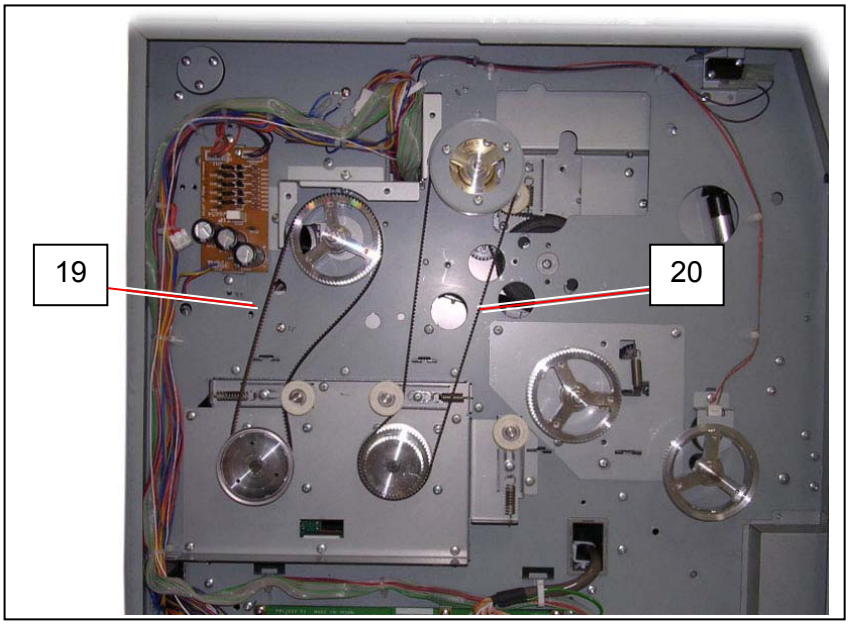


c) Turn on the machine, and then turn it off some seconds later.
The belts are driven by the motor, and it may be slackened around the Pulley at this time.

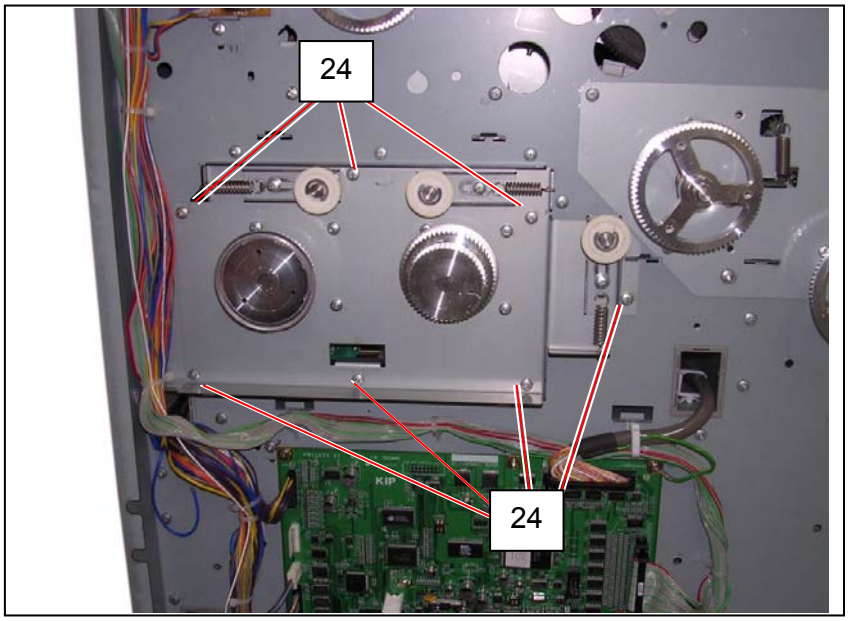
d) Loosen the screw to release the Pulley.
The slack of the belts generated by the above c) is removed because the Tension Spring pulls the Pulley.
Then tighten the screw again.

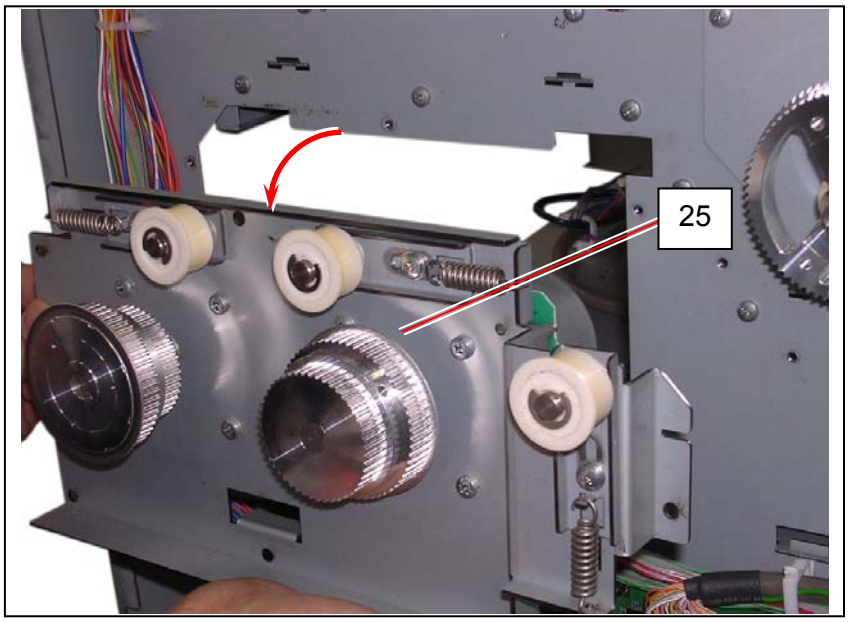
9. Remove 5 screws (22), Grip Ring and Bearing (23) to remove Bracket (21).
   Remove and replace Belt 9 (19: 90S3M576) and Belt 7 (20: 90S3M699) with new ones.





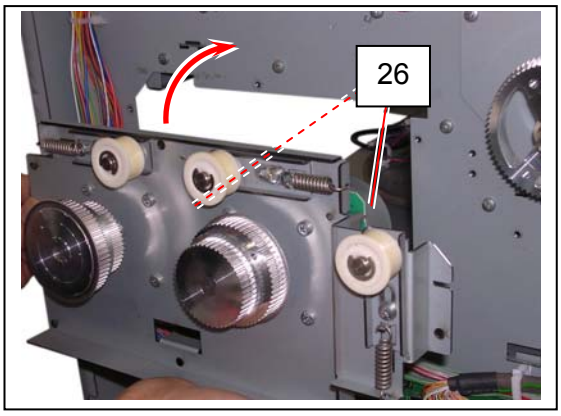
10. Remove 7 pieces of 4x10 screw (24) to remove the Plate 6 Assembly (25).

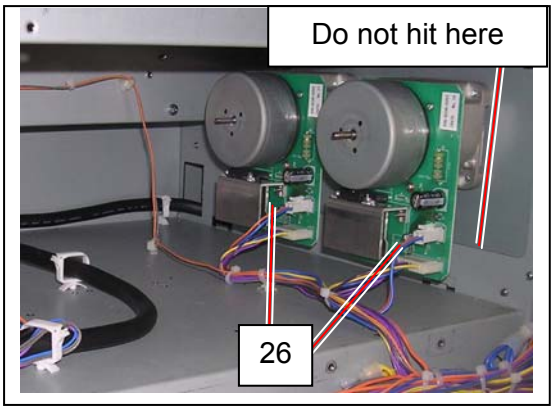




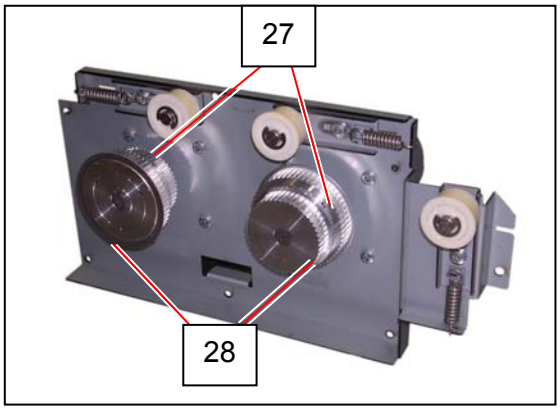
NOTE

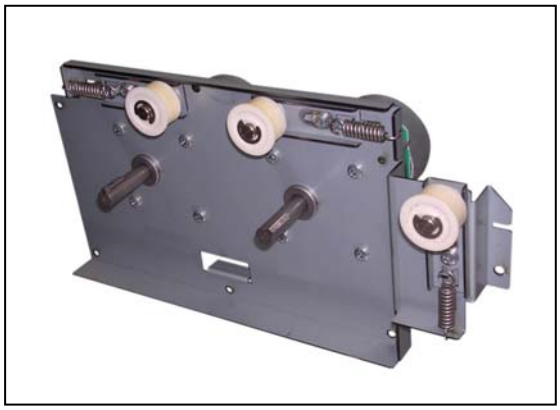
When reassembling, do not bump DC Motor (26) and its PCB on the frame rim.





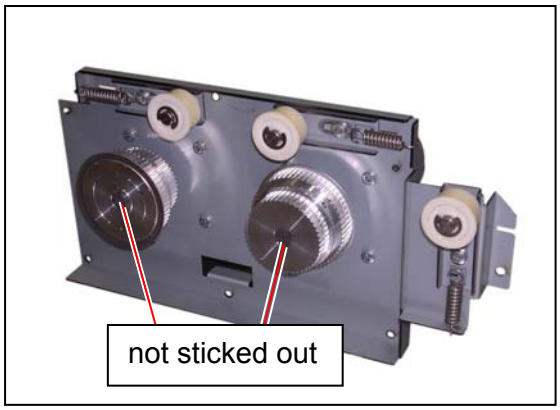
11. Remove Set Screws (27) on the side surface to remove each Pulley 4 (28).



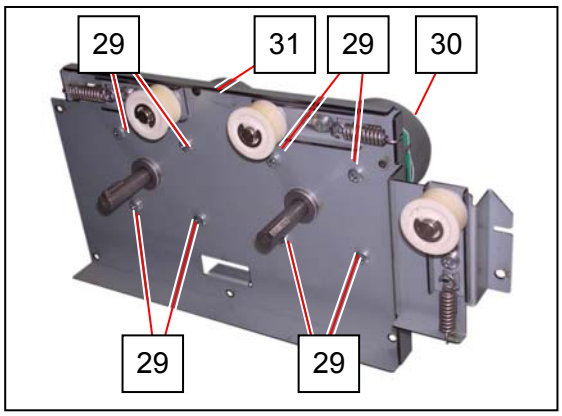


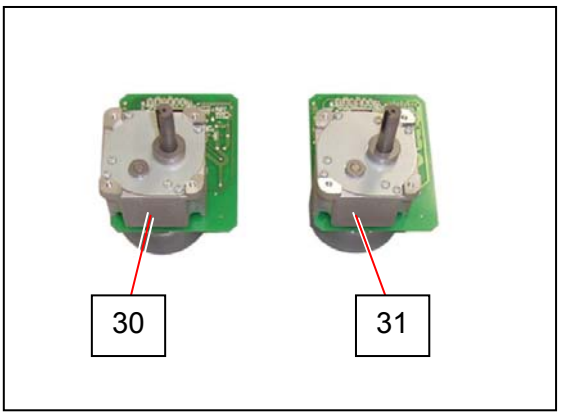
NOTE

The tip of the motor shaft should be aligned with the outside surface of Pulley 4.



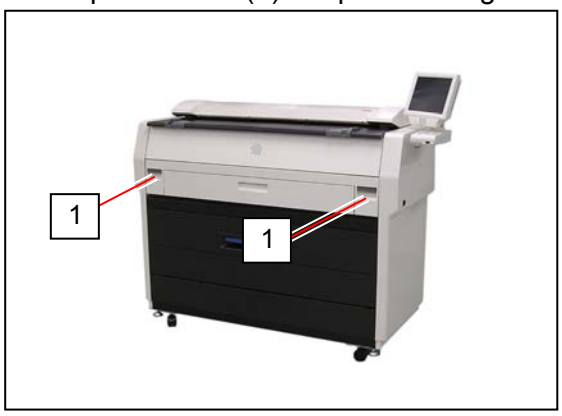
12. Remove 4 pieces of 4x10 screws (29) to remove DC Motor (30: Main) (31: Fuser).
Replace DC Motor (30) (31) with a new one.



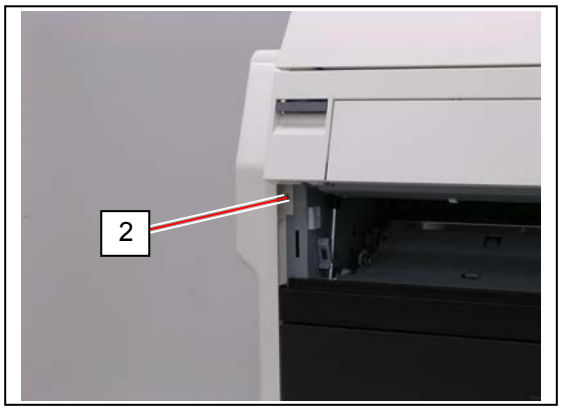


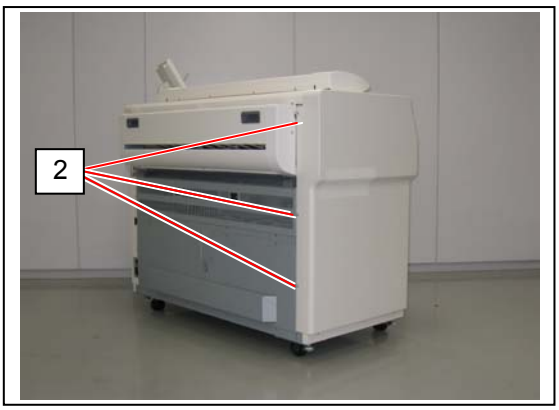
5. 11. 2 Replacement of Clutch (CL1)

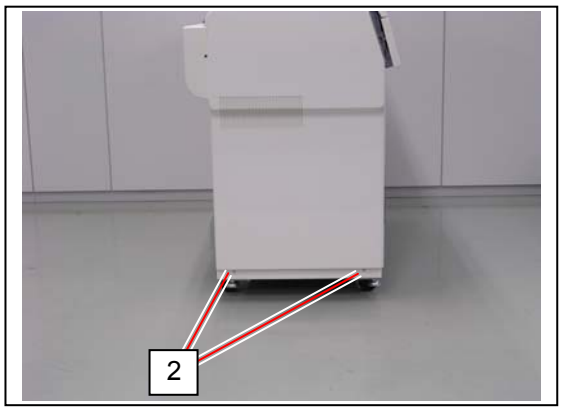
1. Pull up the Lever (1) to open the Engine Unit.



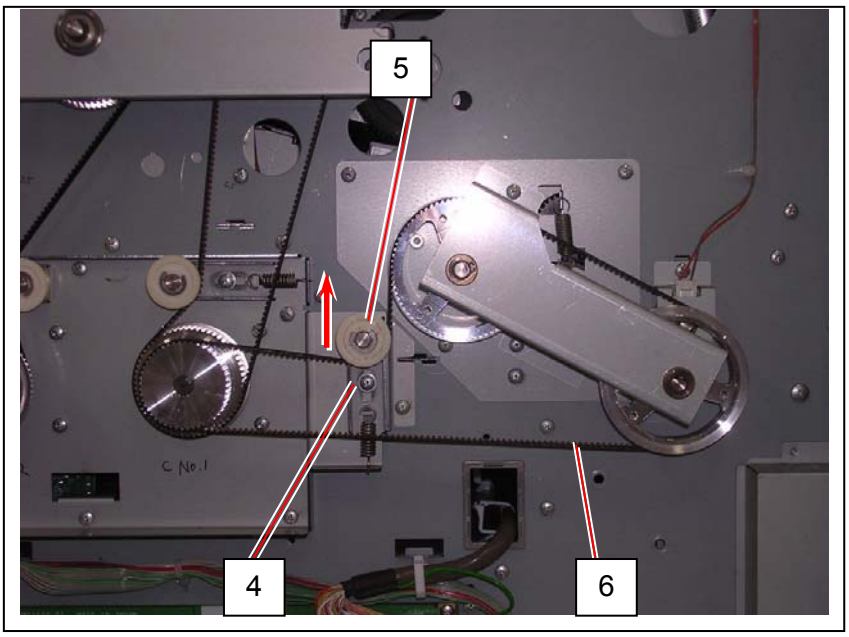
2. Remove 6 screws (2) to remove Cover (3).







3. Loosen the 4x6 screw (4), move the Pulley 3 (5) toward the arrow mark and secure it to slacken Belt 8 (6).

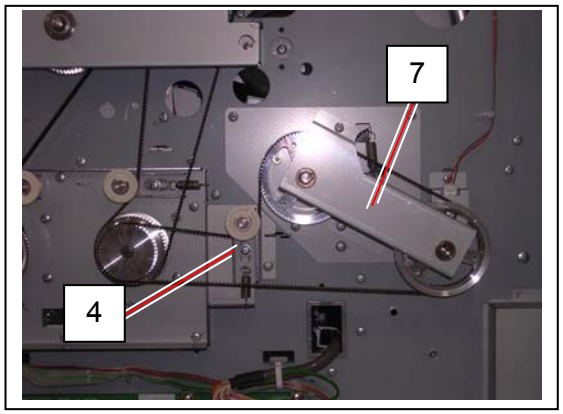


⚠ NOTE

To adjust the tension of the Belt 8, do as follows.
If you do not make the following works, Belt 8 may slip because the tension is not correct.

a) Replace Bracket (7) before tensioning.

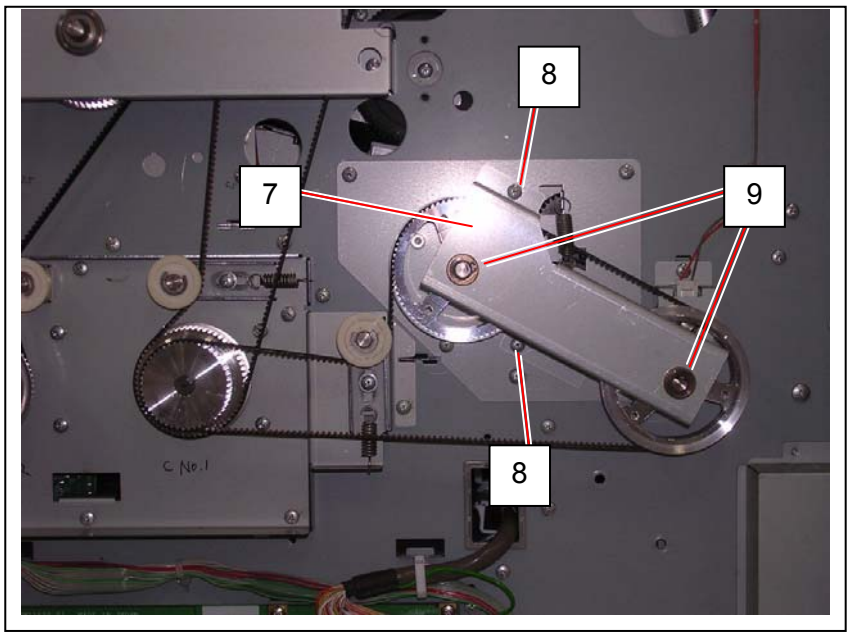
b) Giving the spring tension to the Belt 8, tighten the screw (4) of Pulley 3 (5).

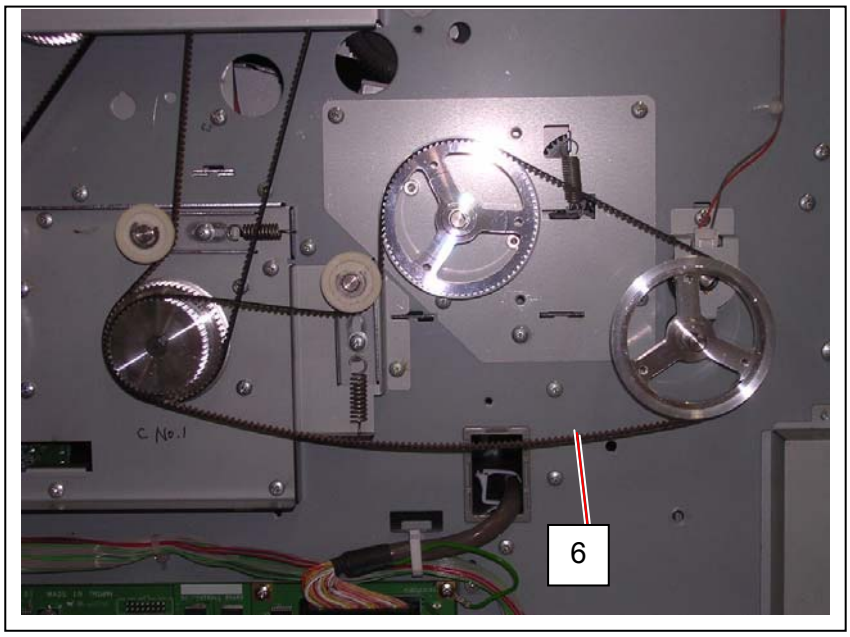


c) Turn on the machine, and then turn it off some seconds later.
The Belt 8 is driven by the motor, and it may be slackened around the Pulley 3 at this time.

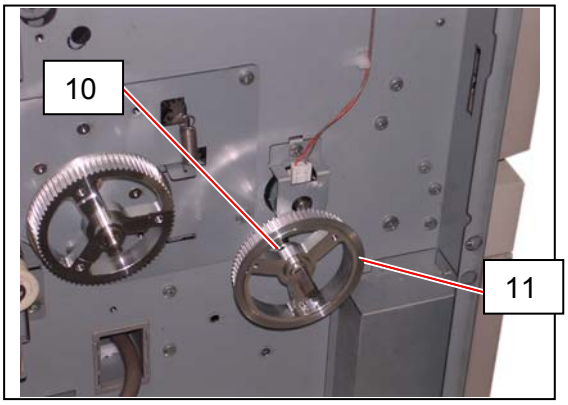
d) Loosen the screw to release the Pulley 3.
The slack of Belt 8 generated by the above c) is removed because the Tension Spring pulls the Pulley 3.
Then tighten the screw again.

4. Remove 2 screws (8), Grip Ring and Bearing (9) to remove Bracket (7).
   Remove Belt 8 (6).

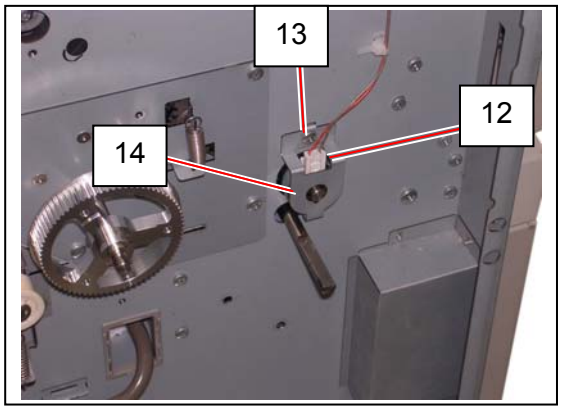


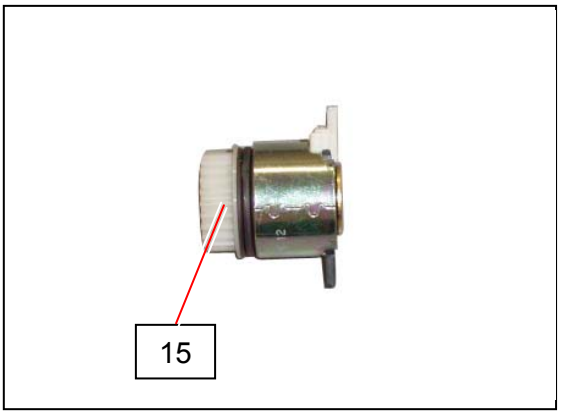


5. Remove the Hex. Cap Screw (10) to remove the Pulley 13 (11).



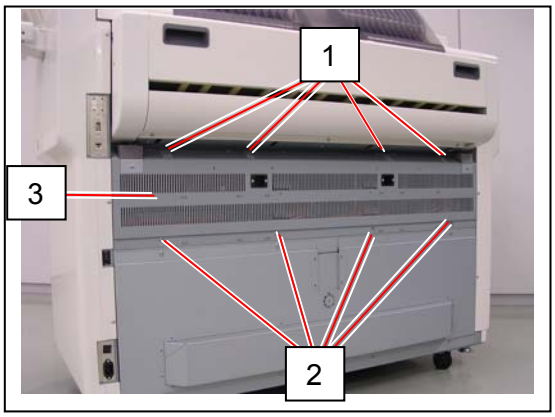
6. Disconnect the connector (12), and remove the 4x6 screw (13) to remove Bracket Clutch (14), Clutch (15).
   Replace Clutch (15) with the new one.

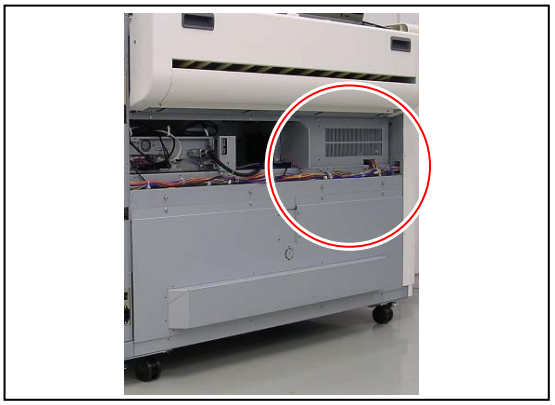




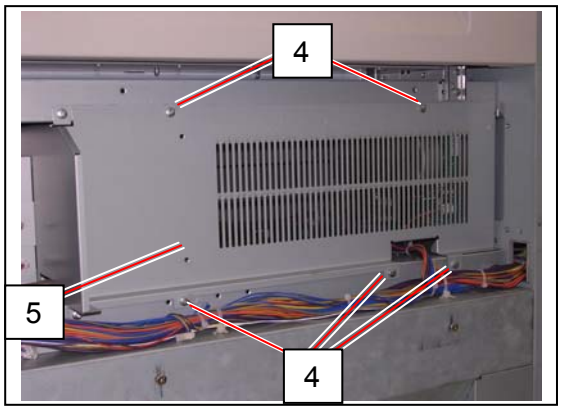
5. 11. 3 Replacement of Blower (BL7)

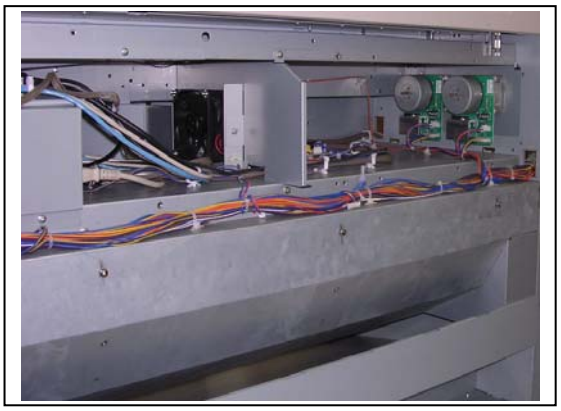
1. Remove 4 pieces of 4x6 screw (1), loosen 4 pieces of 4x6 screw (2), and then remove the Cover (3).



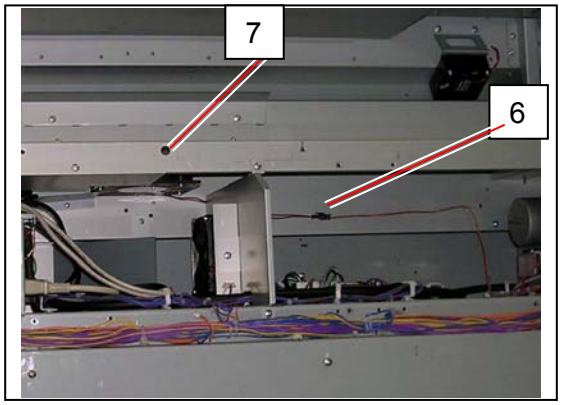


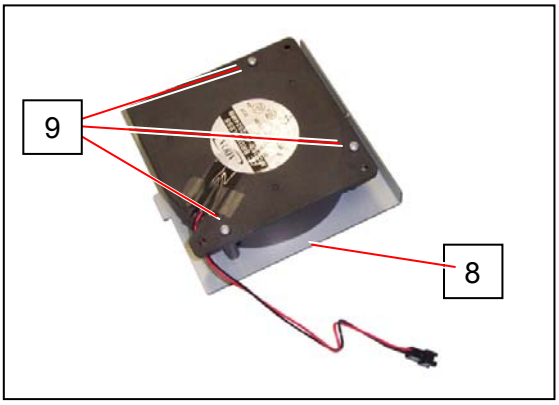
2. Remove 5 screws (4) to remove Case 5 (5).

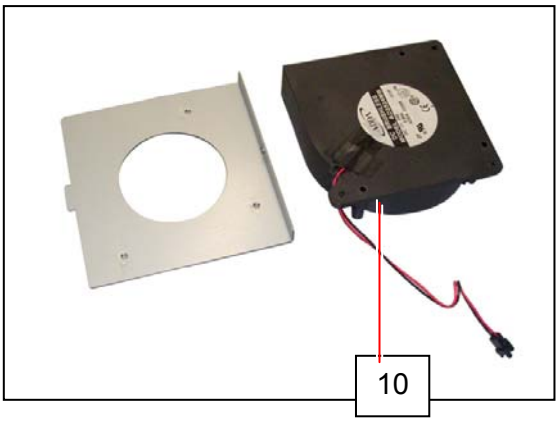




3. Disconnect the connector (6), remove 1 screw (7), and then remove the Bracket Blower (8). Remove 3 screws (9) to replace Blower (10) with the new one.

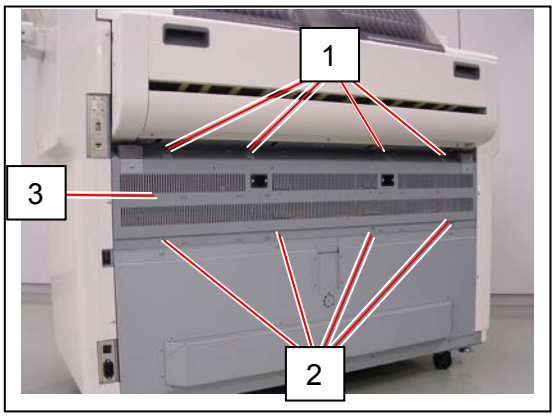




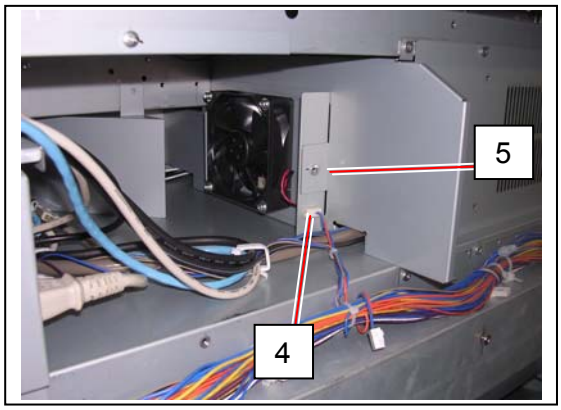


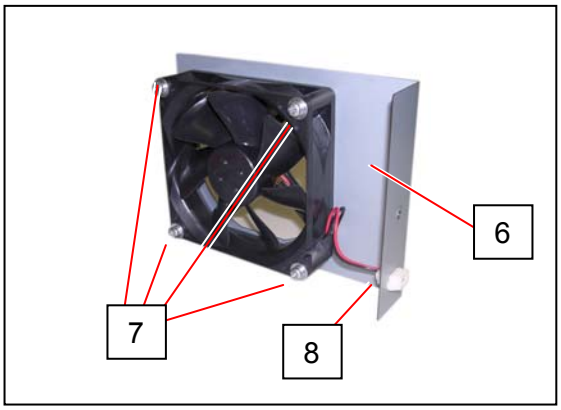
5. 11. 4 Replacement of Fan (BL8)

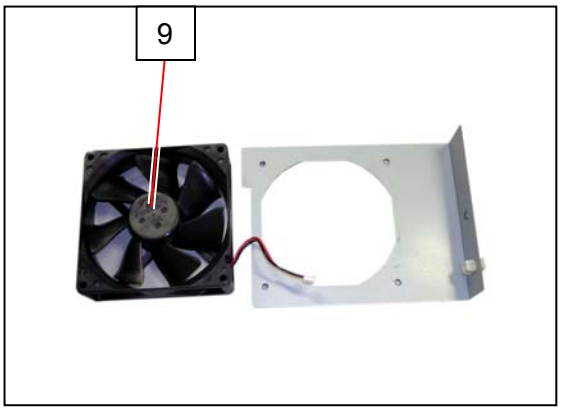
1. Remove 4 pieces of 4x6 screw (1), loosen 4 pieces of 4x6 screw (2), and then remove the Cover (3).



2. Disconnect the connector (4), remove 1 screw (5), and then remove the Fan Bracket (6). Remove 4 screws (7) and 1 connector (8) to replace Fan (9) with a new one.



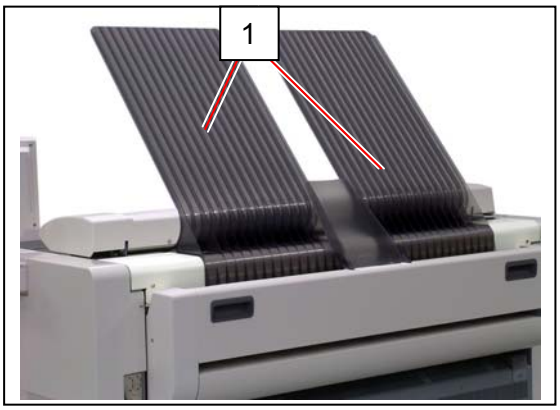




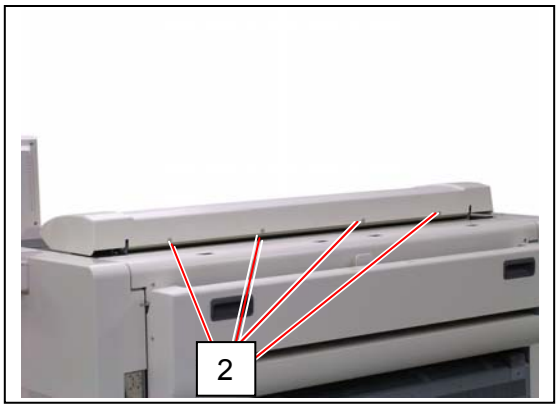
5. 12 Scanner Unit (Old scanner)

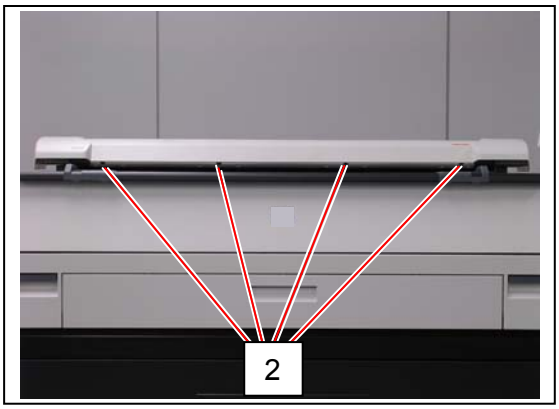
5. 12. 1 Removal of Scanner Unit

1. Remove 2 pieces of Tray (1).



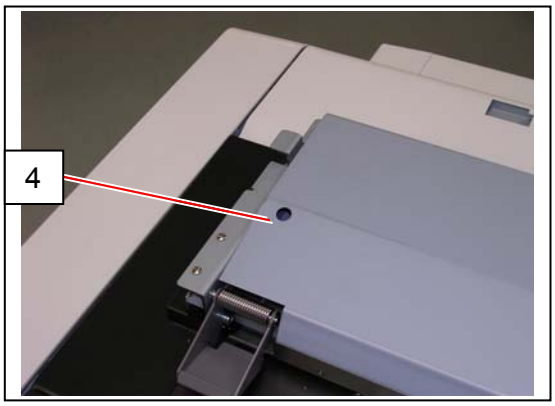
2. Remove 8 pieces of screws (2).

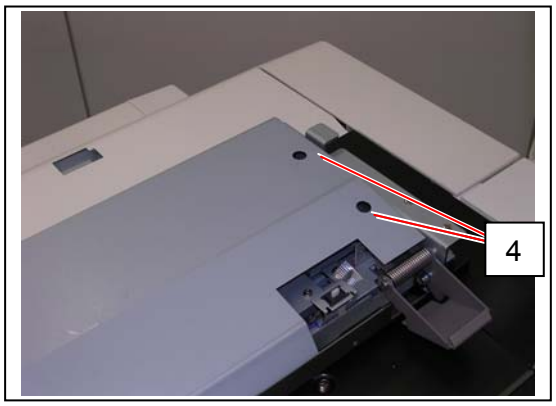




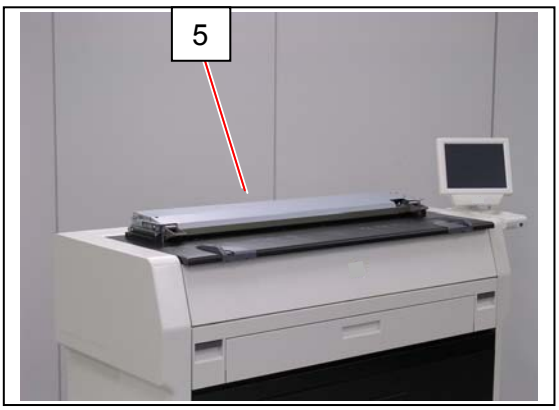
3. Remove Cover (3).

4. Remove 3 screws (4).

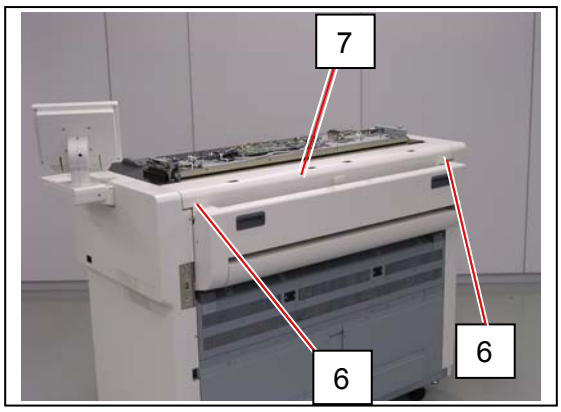




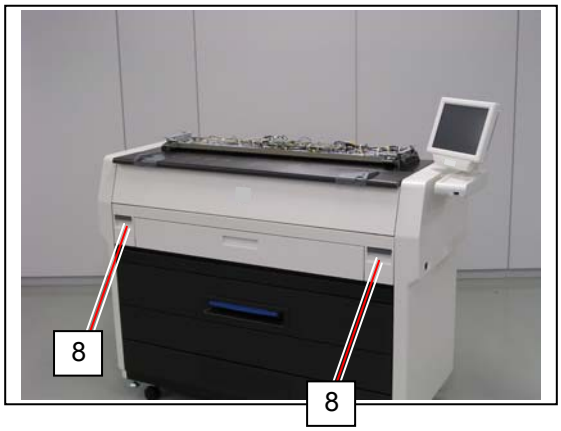
5. Remove Shield Cover (5).



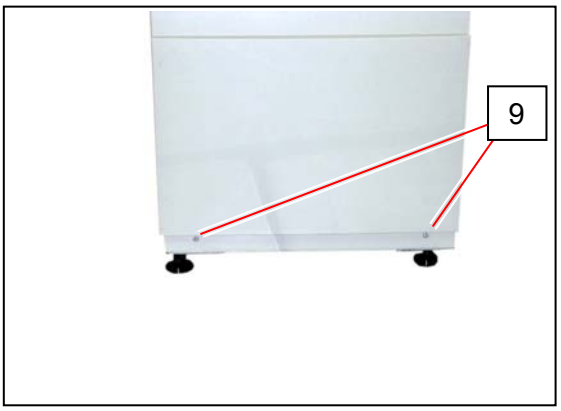
6. Remove 2 tooth washer screws (6) to remove Cover (7)

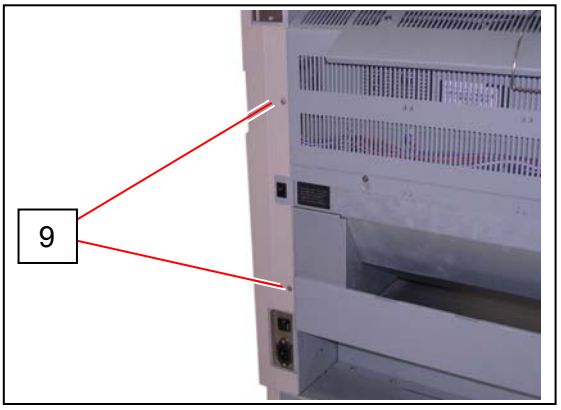


7. Pull up Lever (8) to open the Engine Unit.



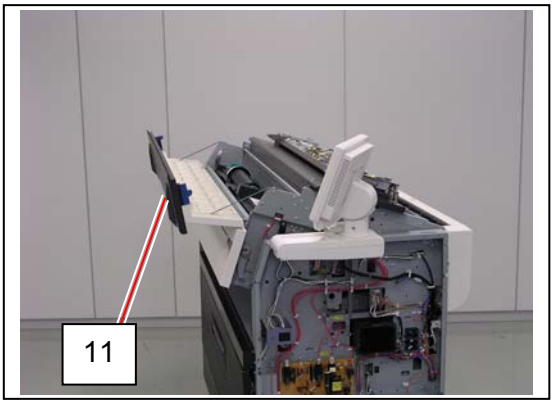
8. Remove 5 screws (9).



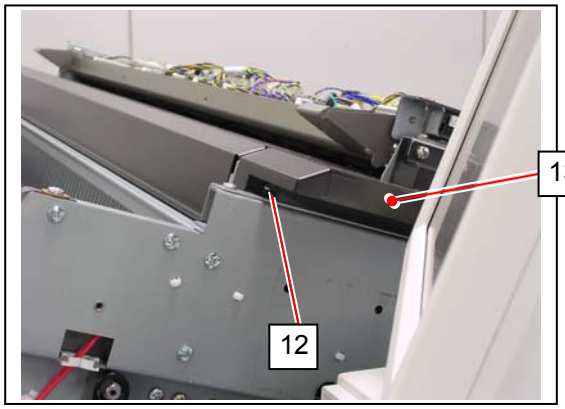


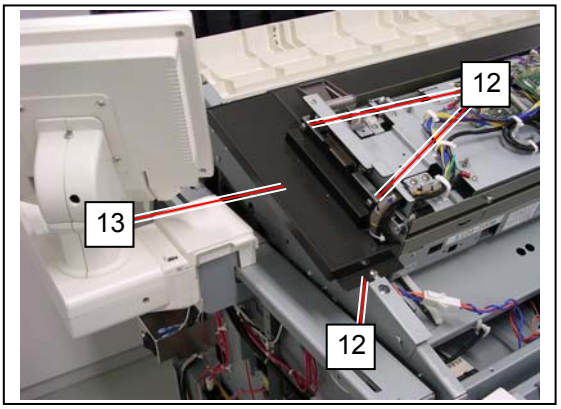
9. Remove Cover (10).

10. Open Cover (11).

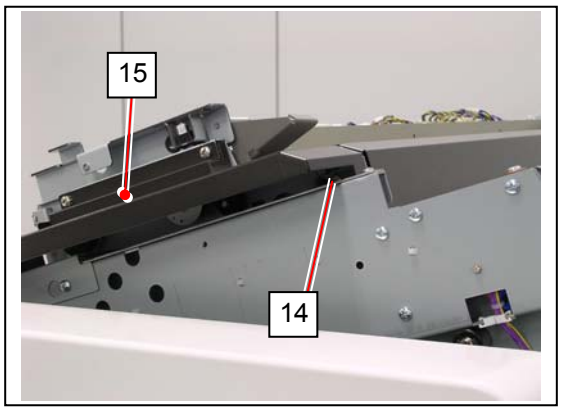


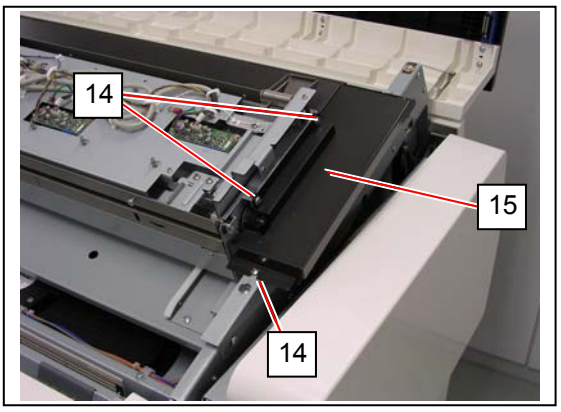
11. Remove 4 screws (12) to remove Cover (13).



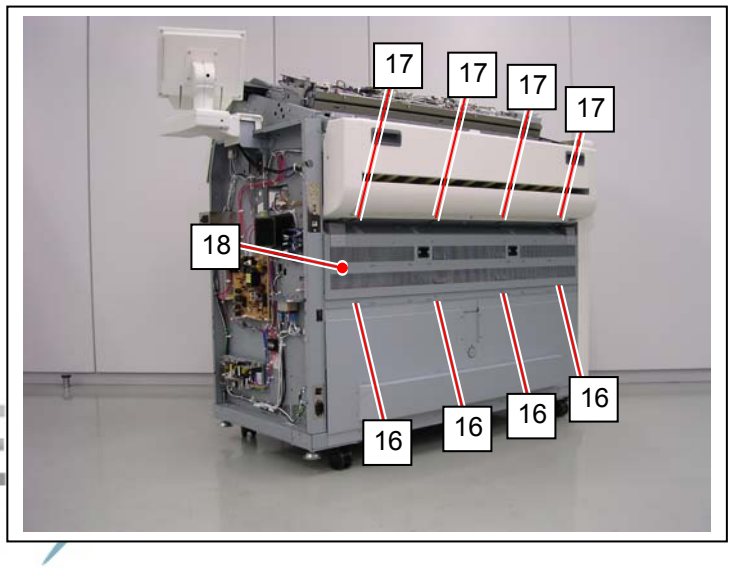


12. Remove 4 screws (14) to remove Cover (15).

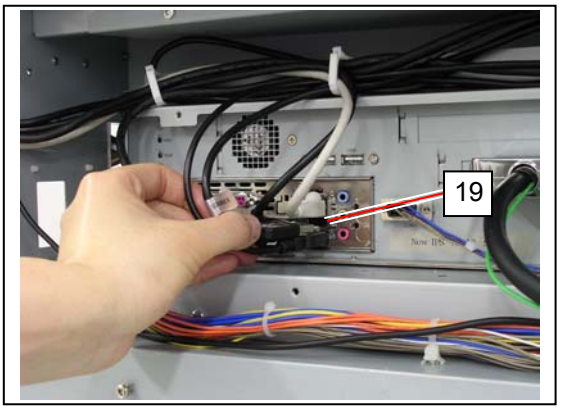




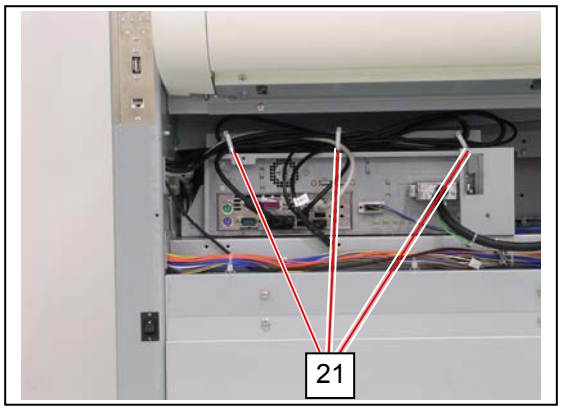
13. Loosen 4 screws (16) and remove 4 screws (17) to remove Cover (18).

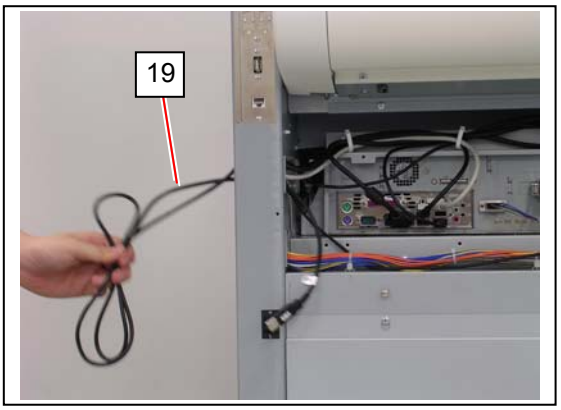


14. Disconnect the Scanner USB Cable (19: with the label “SC”) from the upper right USB port of IPS.

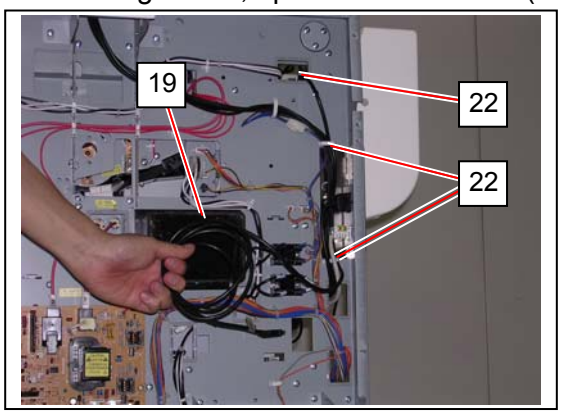


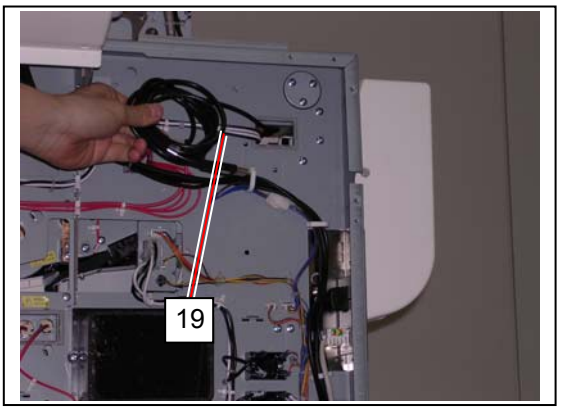
15. Open 3 wire saddles (21) to release the Scanner USB Cable (19).



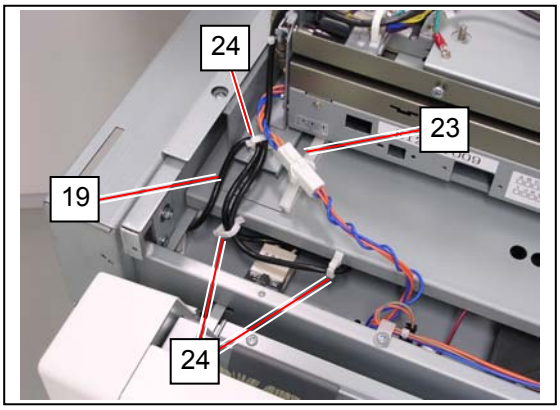


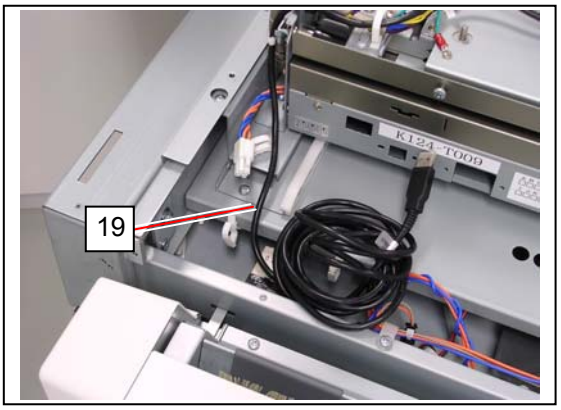
16. On the right side, open 3 wire saddles (22) to release the Scanner USB Cable (19).





17. Disconnect the connector (23). Open the wire saddles (24) to release the Scanner USB Cable (19).

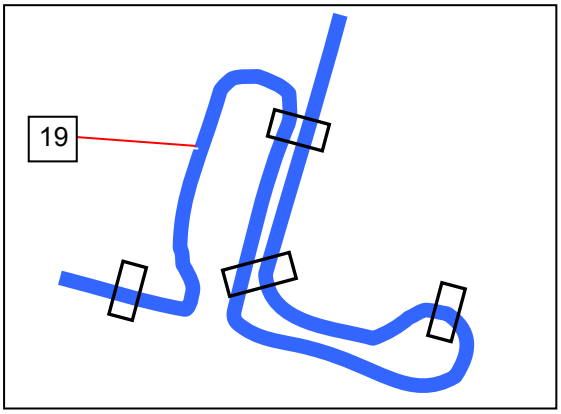




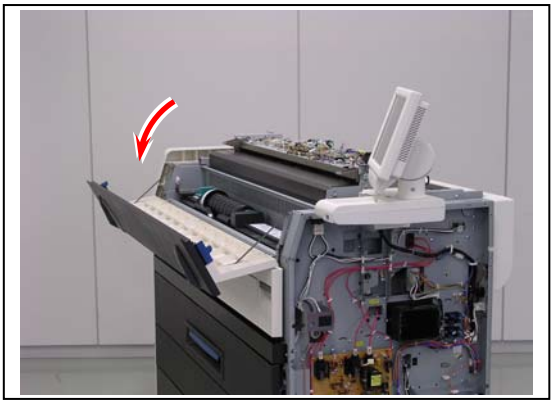
NOTE

Wind excessive length of the Scanner USB Cable (19) with the wire saddles (24) when reassembling.

Do not bundle the 2 cables in any of the wire saddles (24) together.



18. Close the Engine Unit.

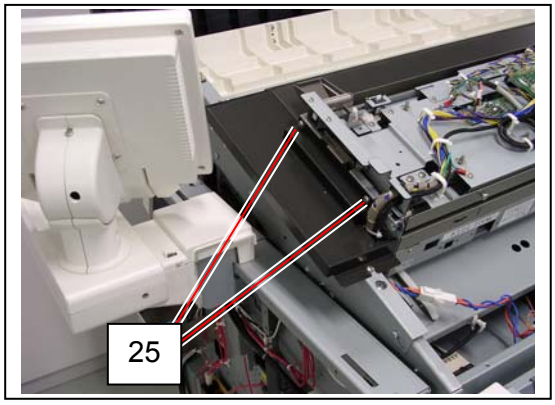


NOTE

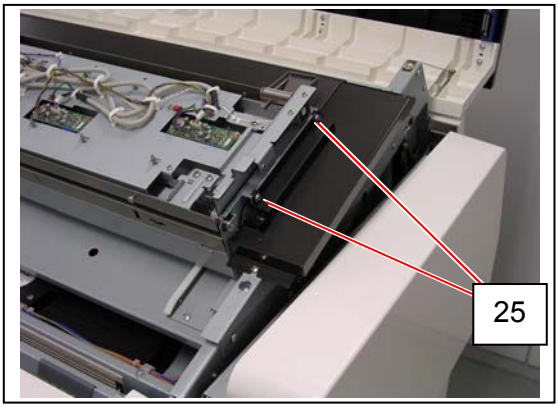
Be sure to close the Engine Unit before removing the screws which fix the Scanner Unit. Otherwise the Scanner Unit may fall down and damage.

19. Remove 4 screws (25) which fix the Scanner Unit.

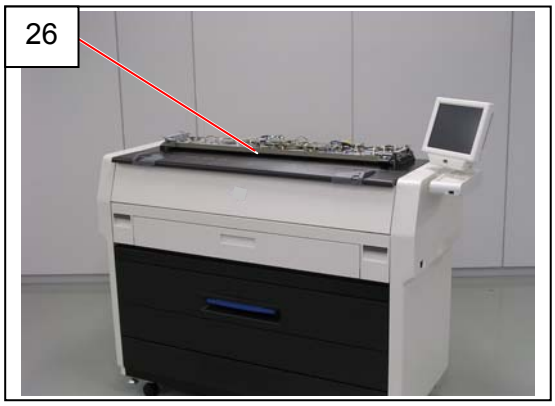
(Right side)

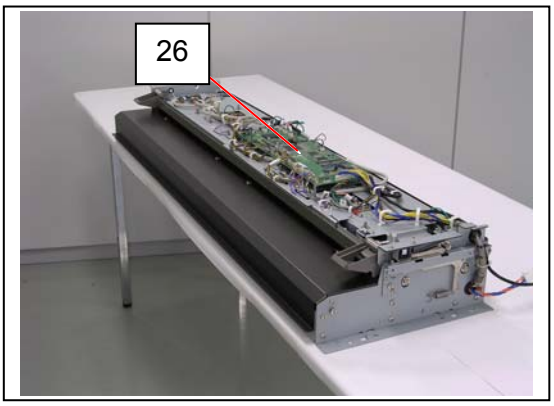


(Left side)



19. Remove the Scanner Unit (26) from the machine.



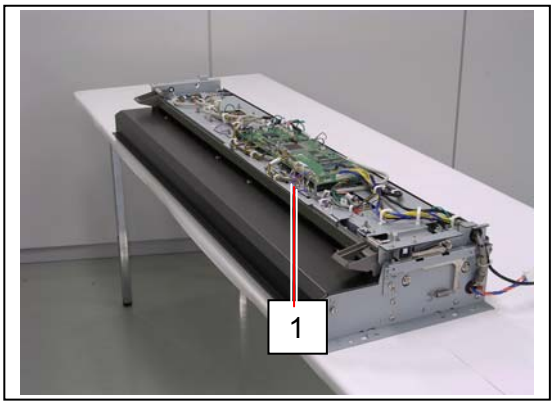


CAUTION

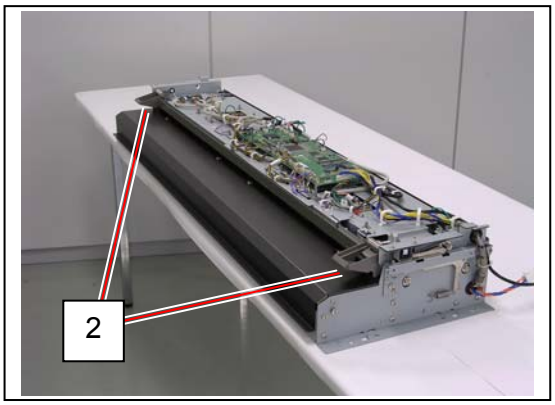
Please carry the Scanner Unit by 2 persons as it is heavy.

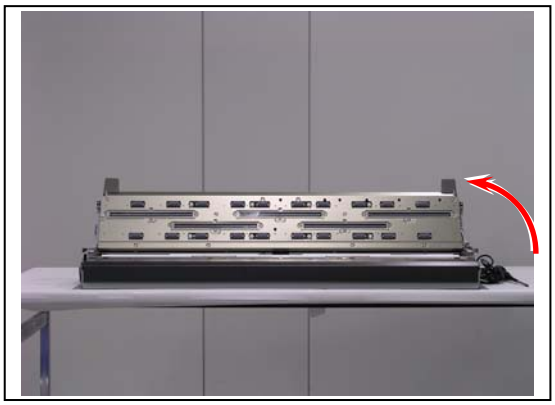
5. 12. 2 Replacement of Belt

1. Remove the Scanner Unit (1) from the machine making reference to [5.12. 1 Removal of the Scanner Unit] on the page 5-242.

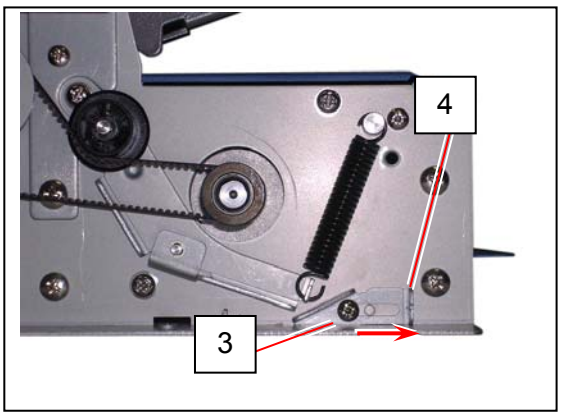


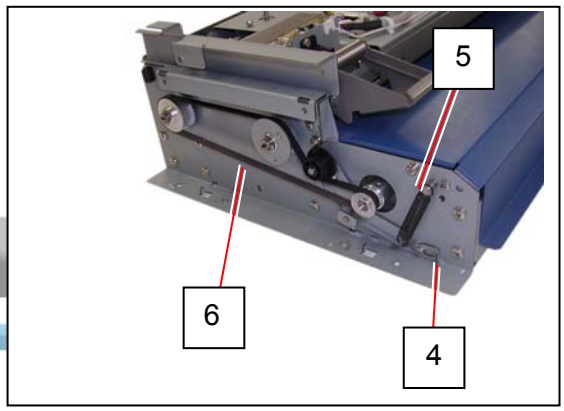
2. Pull up the Levers (2) and open Upper Unit.

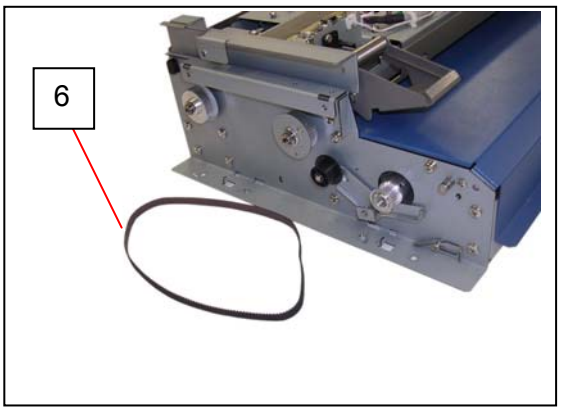




3. Loosen 1 screw (3) to slide the stopper (4) and remove Spring (5) to remove Belt (6). Replace Belt with a new one.





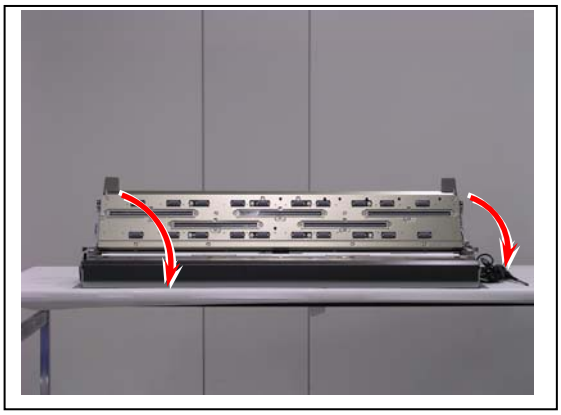


⚠ NOTE

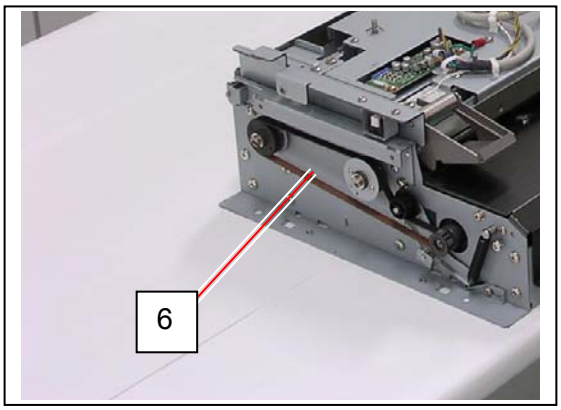
Belt (6) requires its tensioning when reassembling.

(1) Be sure to close Upper Unit prior to tensioning. Not doing so may prevent a proper tensioning.

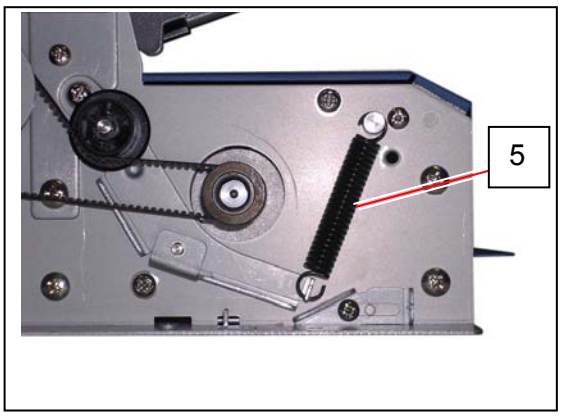
Press down Upper Unit on both sides to close it. Pressing only on one side may result in twisting the frame.



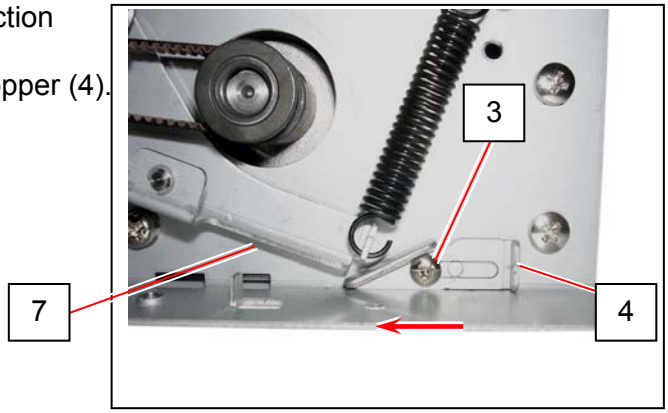
(2) Place Belt (6) in the original routing position. (No tension is applied to Belt at this time.)



(3) Replace Spring (5) in the original position. (A proper tension is applied to Belt.)

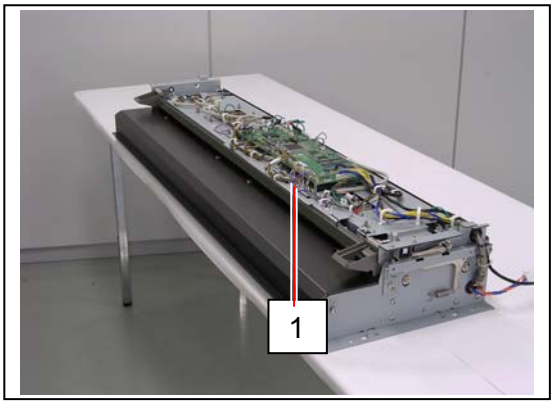


(4) Move the stopper (4) to the arrow direction until it stops against Spring Hook (7). Tighten the screw (3) to secure the stopper (4).

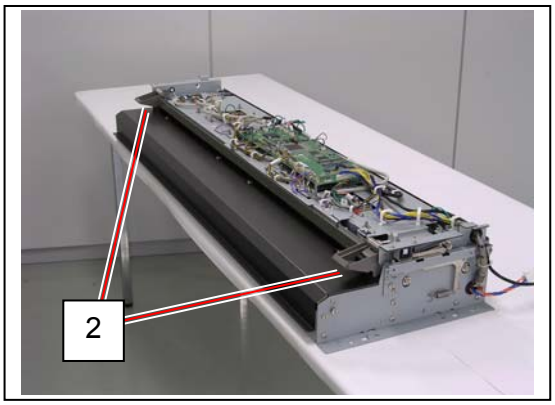


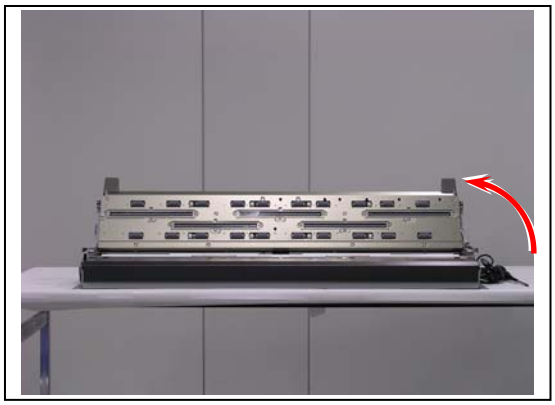
5. 12. 3 Replacement of Motor Assy

1. Remove the Scanner Unit (1) from the machine making reference to [5.12. 1 Removal of the Scanner Unit] on the page 5-242.

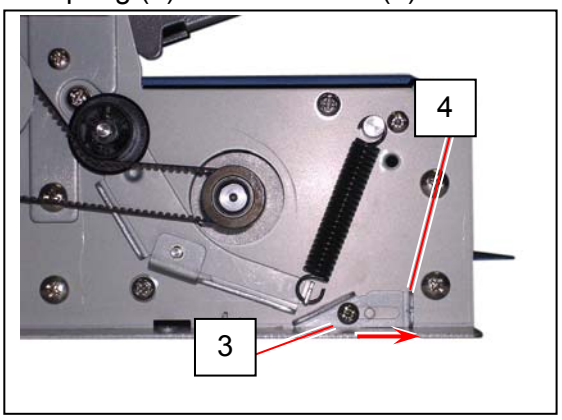


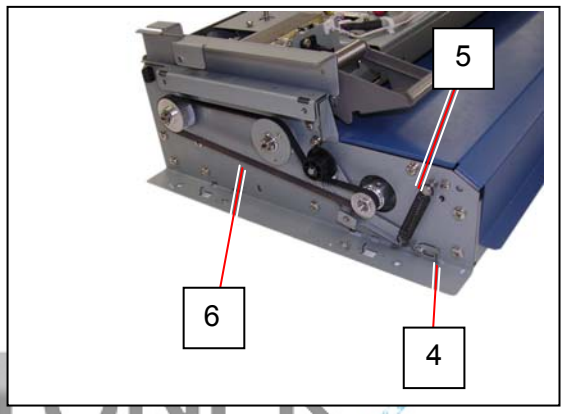
2. Pull up the Levers (2) and open Upper Unit.

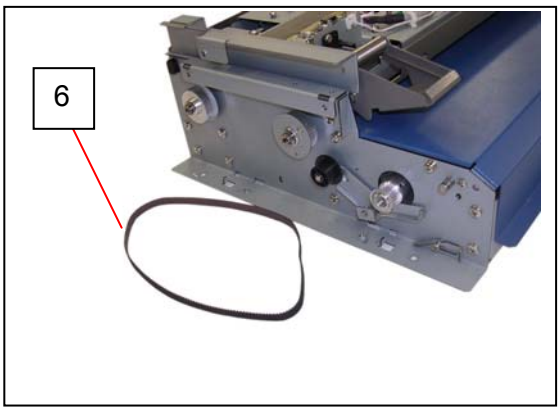




3. Loosen 1 screw (3) to slide the stopper (4) and remove Spring (5) to remove Belt (6).





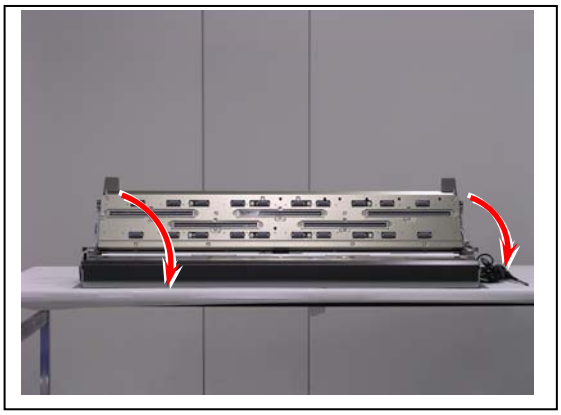


⚠ NOTE

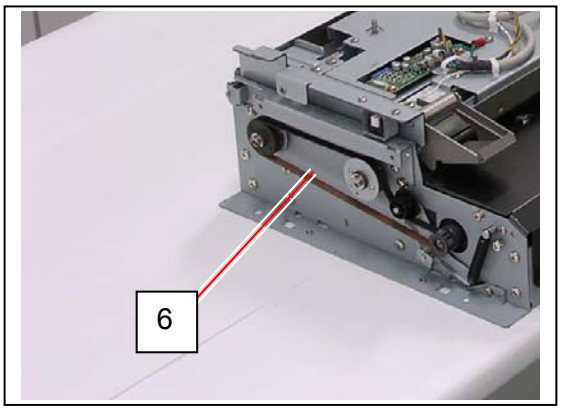
Belt (6) requires its tensioning when reassembling.

(1) Be sure to close Upper Unit prior to tensioning. Not doing so may prevent a proper tensioning.

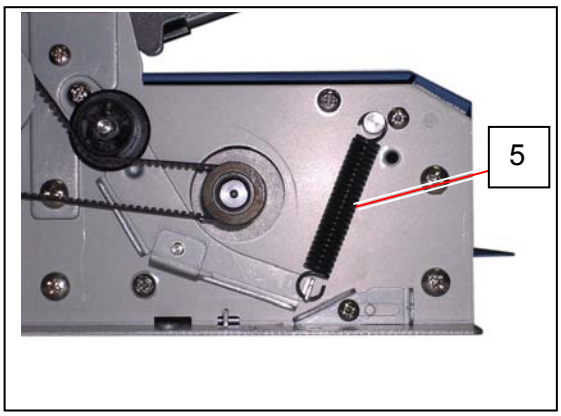
Press down Upper Unit on both sides to close it. Pressing only on one side may result in twisting the frame.



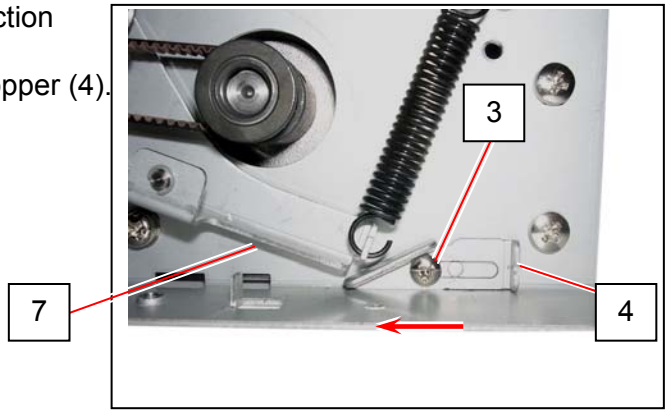
(2) Place Belt (6) in the original routing position. (No tension is applied to Belt at this time.)



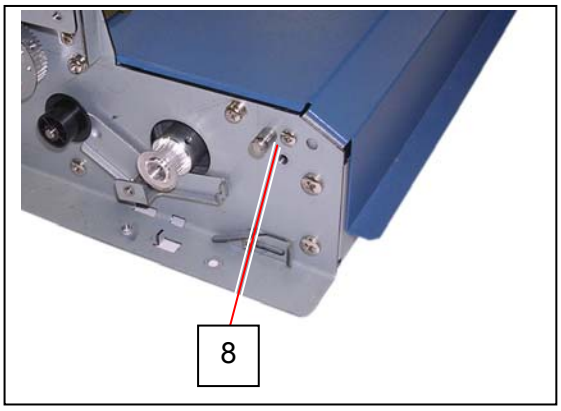
(3) Replace Spring (5) in the original position. (A proper tension is applied to Belt.)

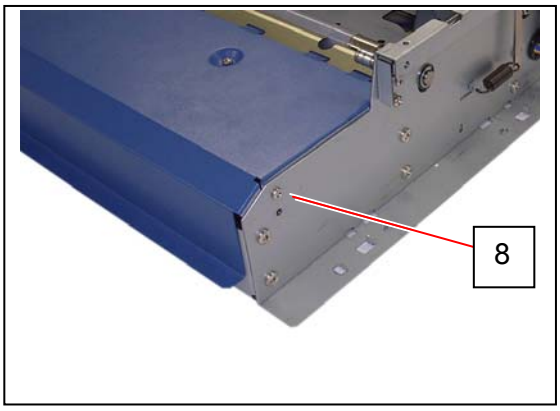


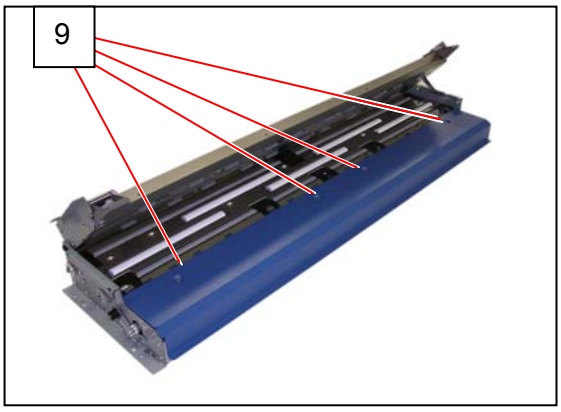
(4) Move the stopper (4) to the arrow direction until it stops against Spring Hook (7). Tighten the screw (3) to secure the stopper (4).

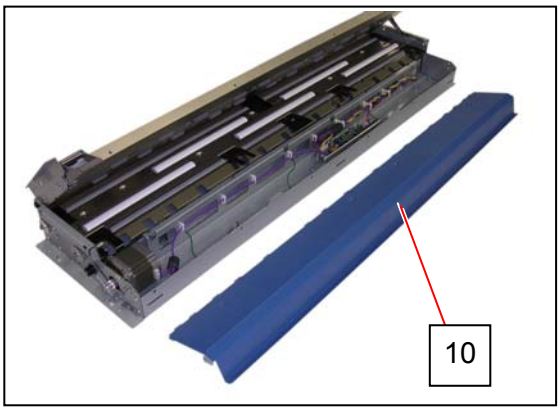


4. Remove 2 screws (8: M3x6) and 4 screws (9: M3x6 w/ FW) to remove Sheet Guide (10).

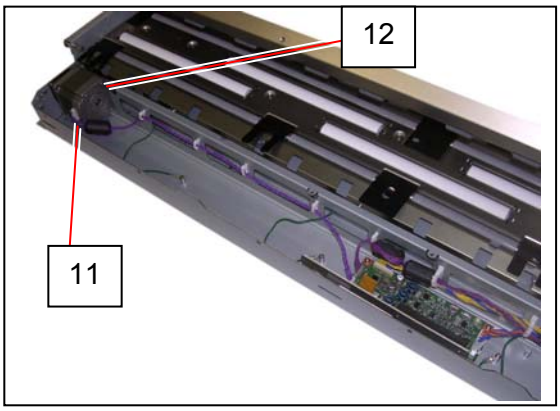




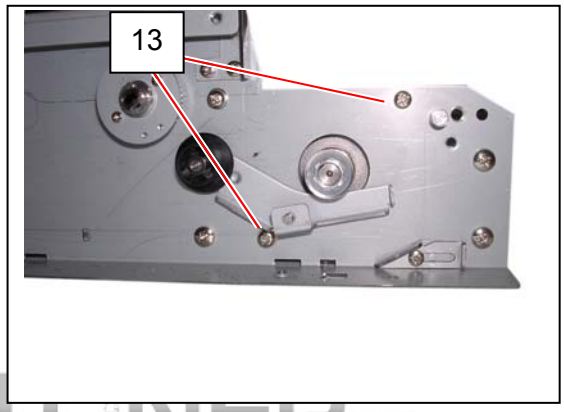


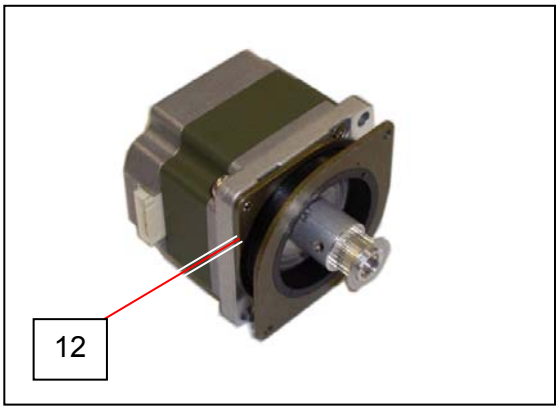


5. Disconnect the harness (11) from Motor Assy (12).



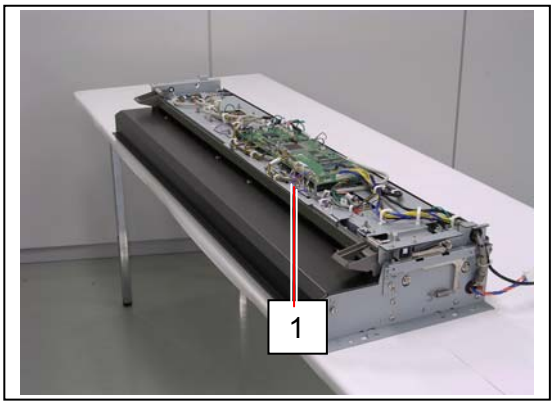
6. Remove 2 screws (13) to remove Motor Assembly (12).
   Replace Motor Assembly with a new one.



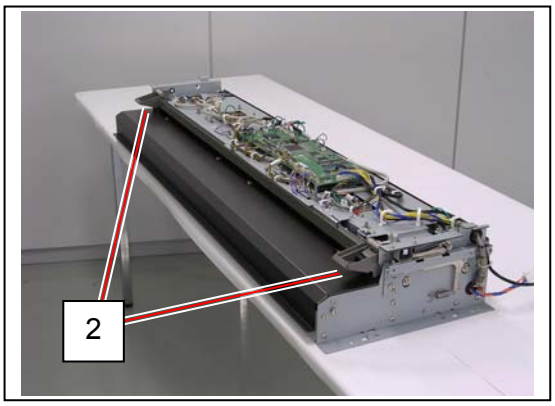


5. 12. 4 Replacement of Feed Roller

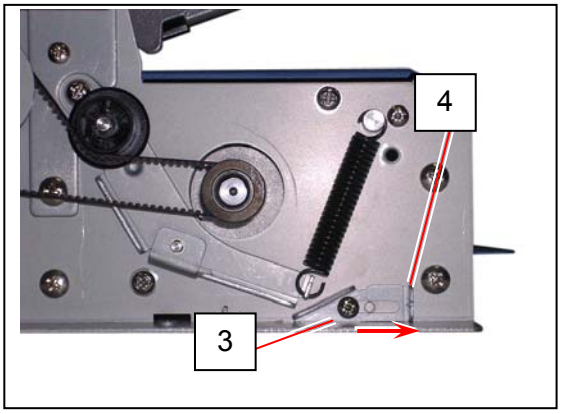
1. Remove the Scanner Unit (1) from the machine making reference to [5.12. 1 Removal of the Scanner Unit] on the page 5-242.

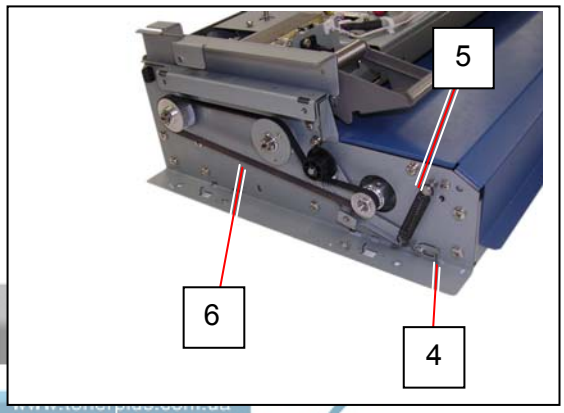


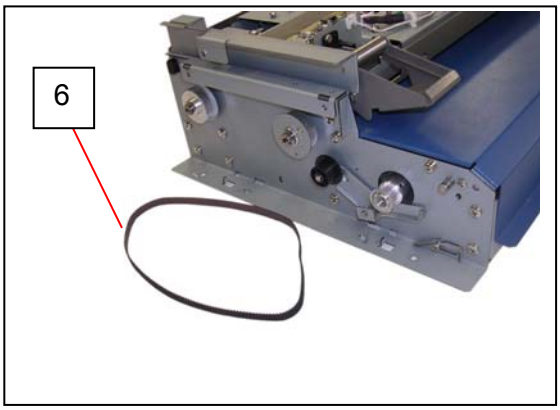
2. Pull up the Levers (2) and open Upper Unit.



3. Loosen 1 screw (3) to slide the stopper (4) and remove Spring (5) to remove Belt (6).





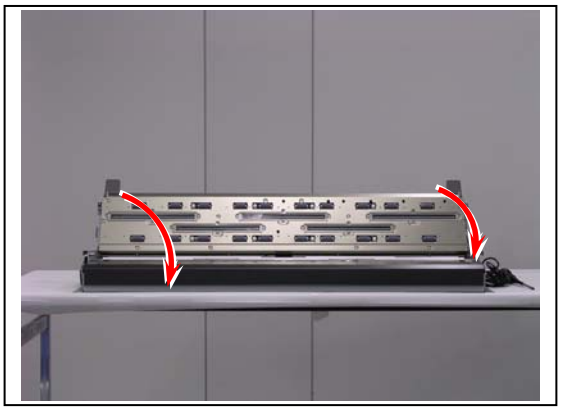


NOTE

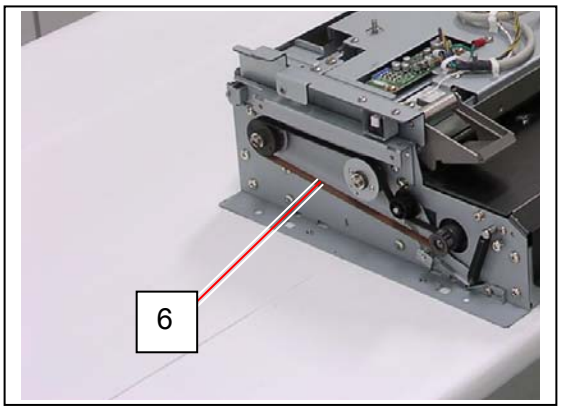
Belt (6) requires its tensioning when reassembling.

(1) Be sure to close Upper Unit prior to tensioning. Not doing so may prevent a proper tensioning.

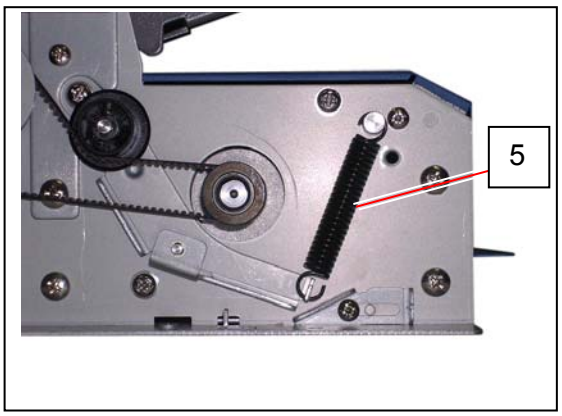
Press down Upper Unit on both sides to close it. Pressing only on one side may result in twisting the frame.



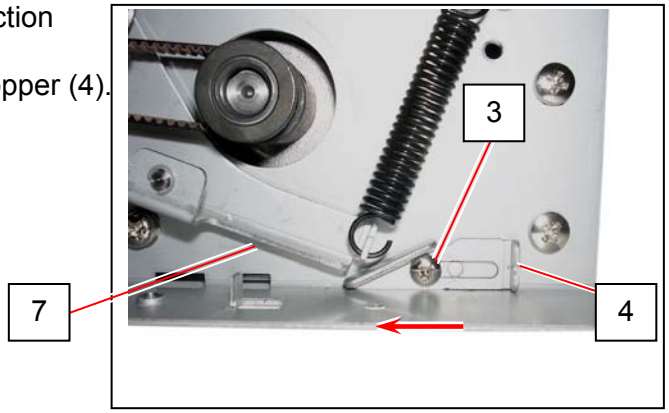
(2) Place Belt (6) in the original routing position. (No tension is applied to Belt at this time.)



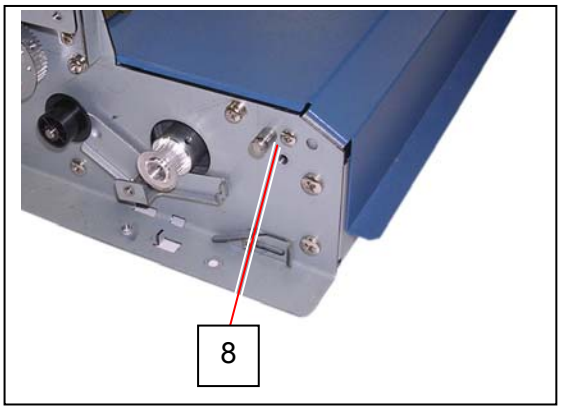
(3) Replace Spring (5) in the original position. (A proper tension is applied to Belt.)

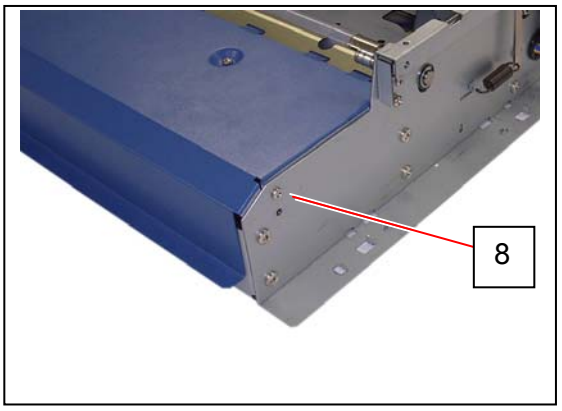


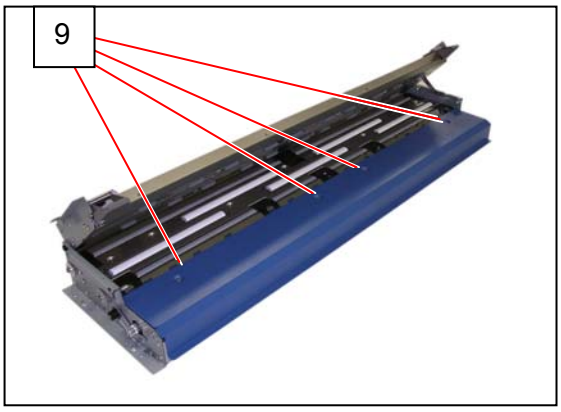
(4) Move the stopper (4) to the arrow direction until it stops against Spring Hook (7). Tighten the screw (3) to secure the stopper (4).

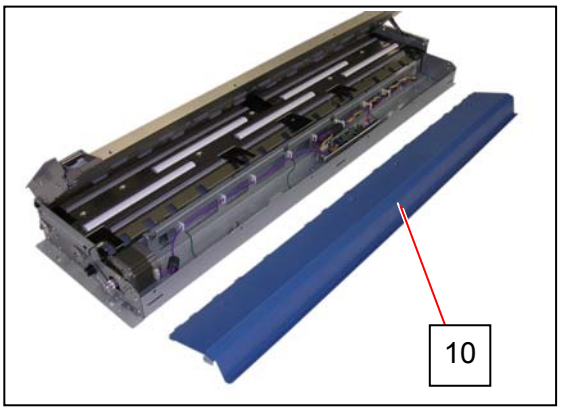


4. Remove 2 screws (8: M3x6) and 4 screws (9: M3x6 w/ FW) to remove Sheet Guide (10).

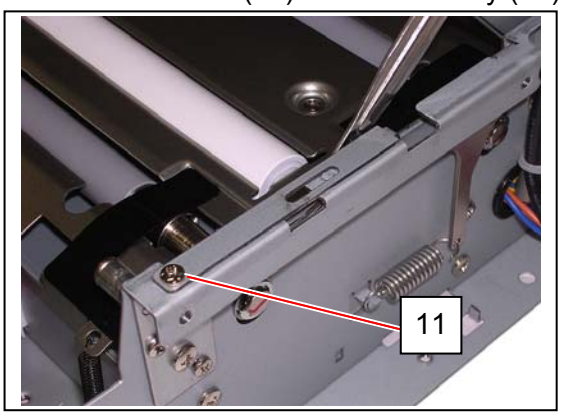


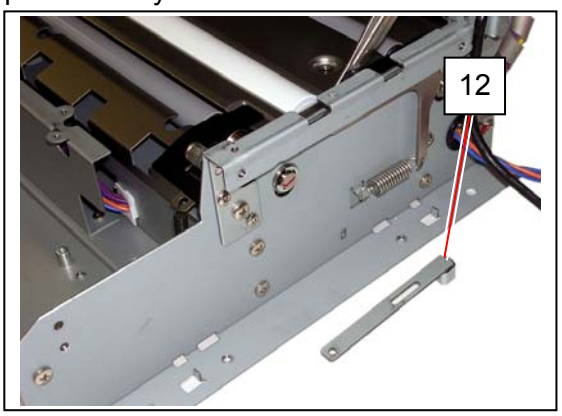


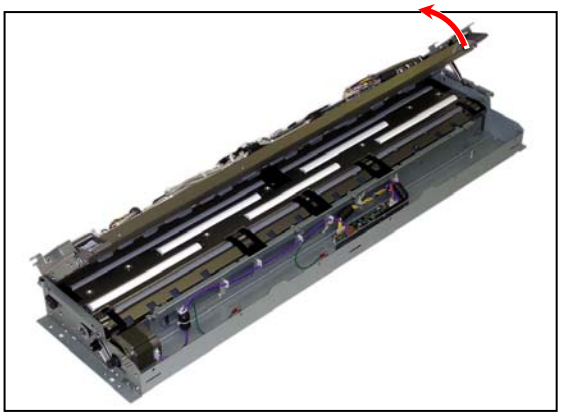


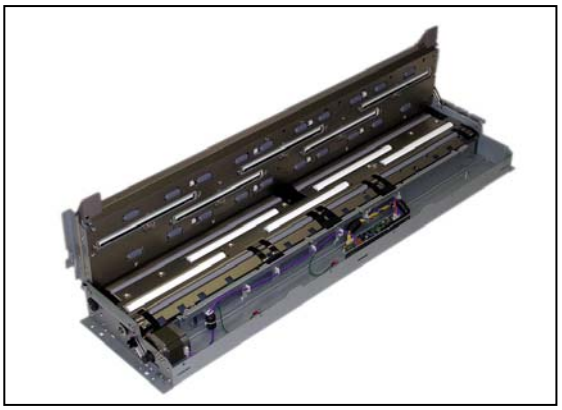


5. Remove 1 screw (11) to remove Stay (12). Open Upper Unit fully.

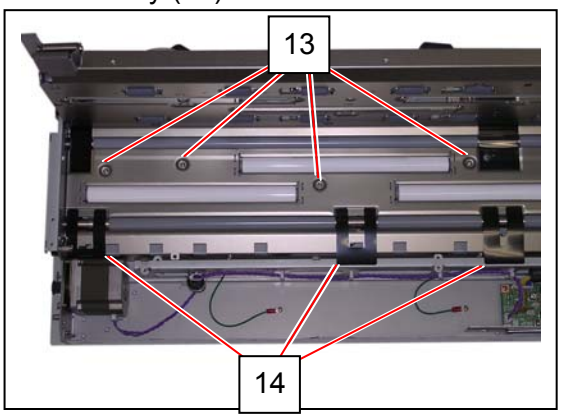


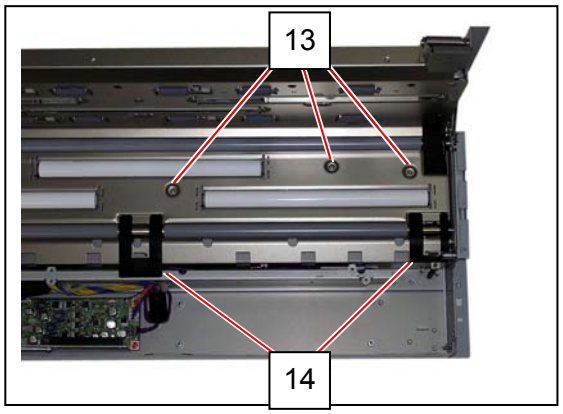


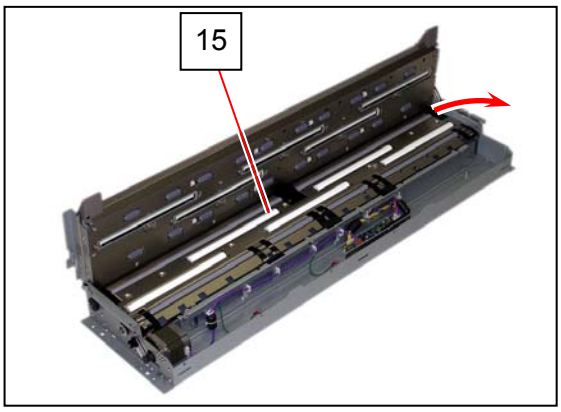


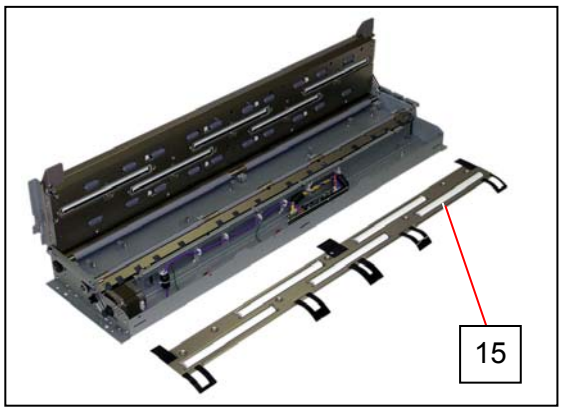


6. Remove 7 screws (13). Release the black plastic sheets (14) from the frame to remove Press Roller Assy (15).



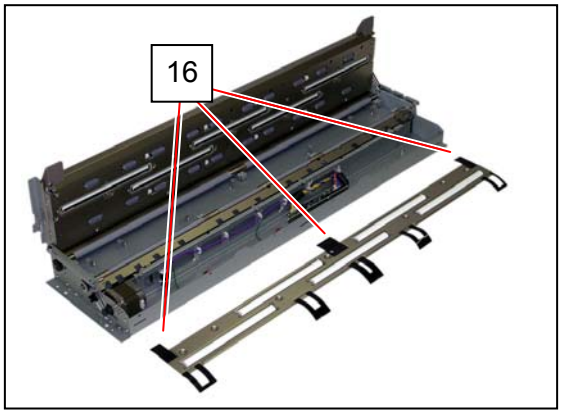


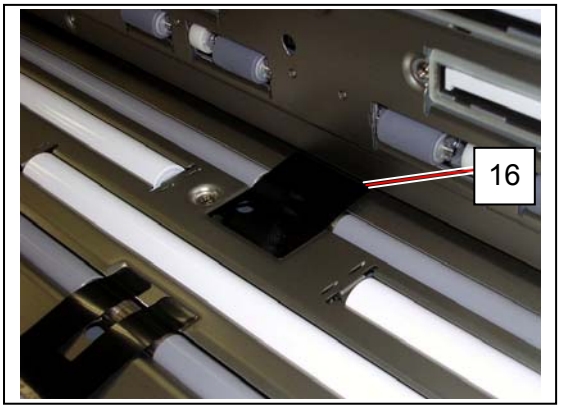




NOTE

When reassembling, make sure that the 3 black plastic sheets on the rear of Press Roller Assy (16) are in position. Do not flip them up.

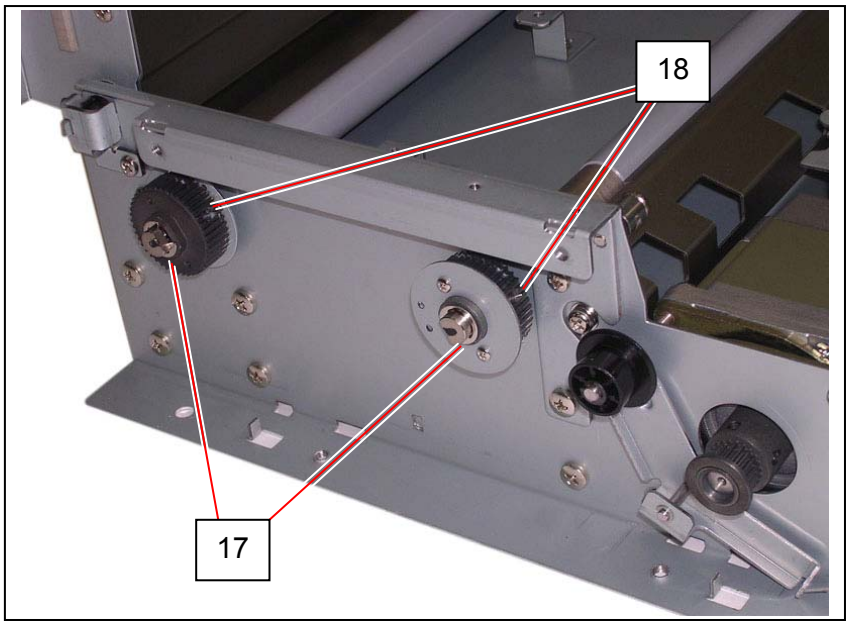


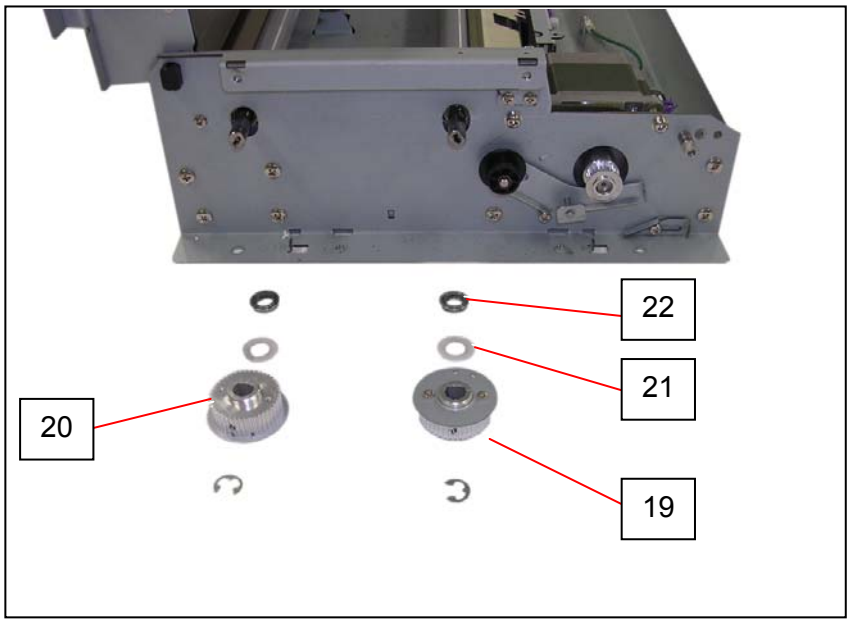


Correct: black sheet in position

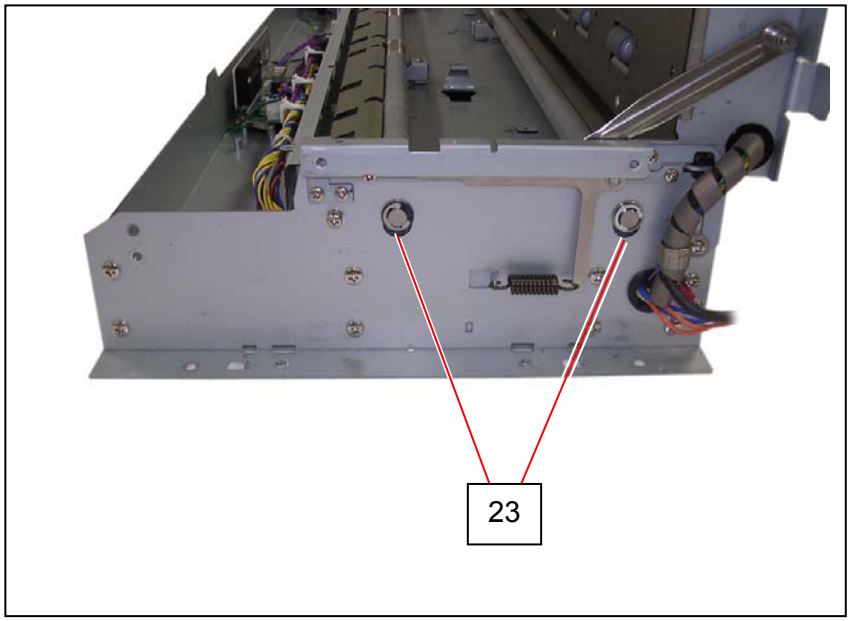
Wrong: flipping up

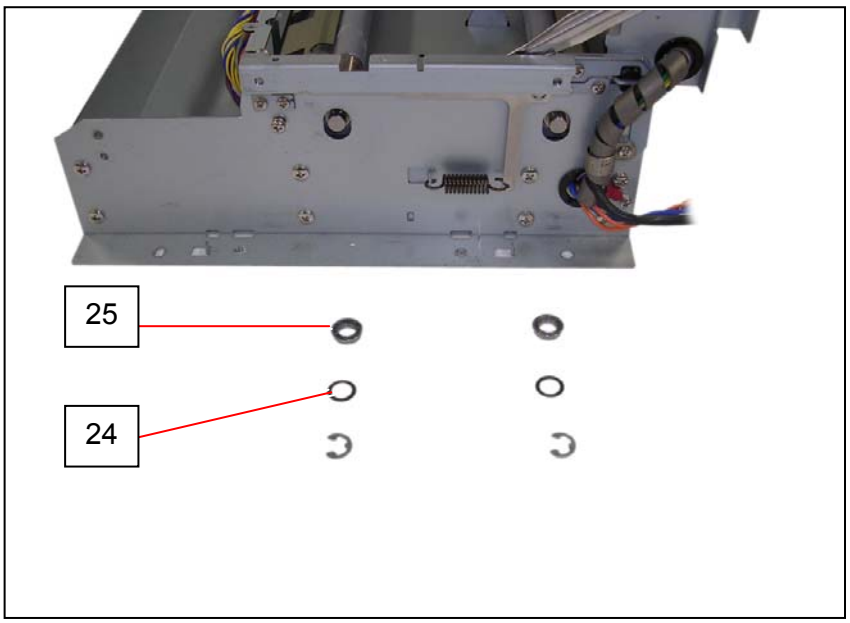
7. On the left side, remove Retaining Ring-E (17), Set Screw (18) to remove Pulley (19) (20), Spacer (21), Bearing (22) from each roller shaft.



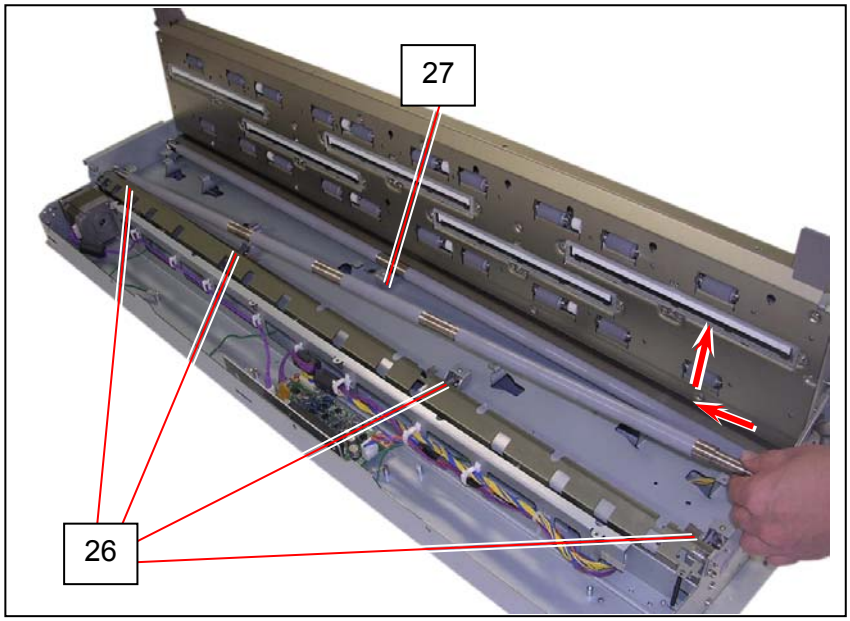


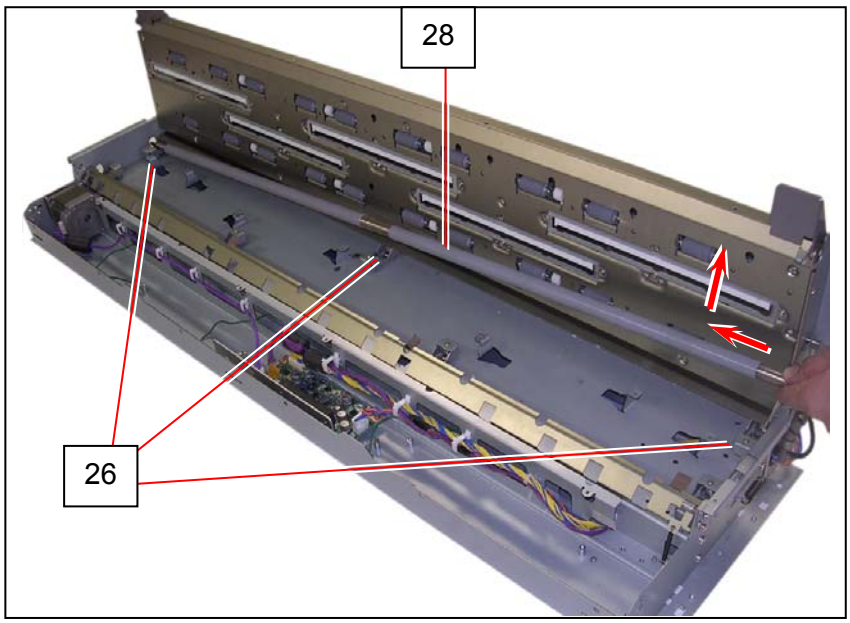
8. On the right side, remove Retaining Ring-E (23) to remove Washer (24), Bearing (25) from each roller shaft.

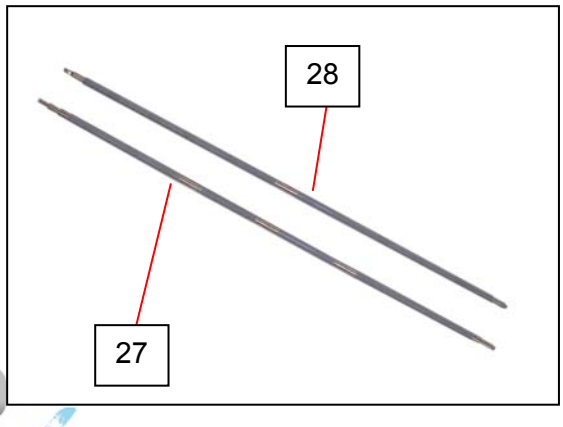




9. Pressing Press Assys (26) down, slide Feed Roller F (27: front) and Feed Roller R (28: rear) to the motor side and remove it.
   Replace Feed Roller F / Feed Roller R with a new one.

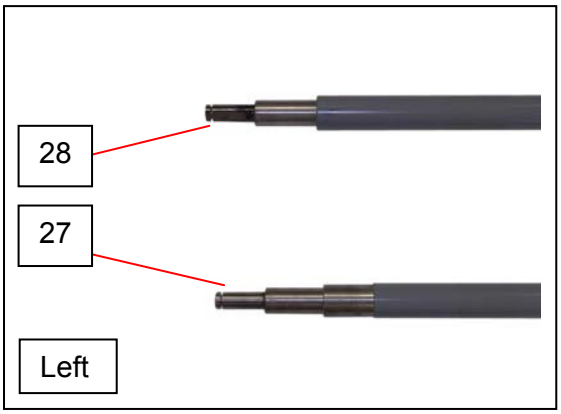


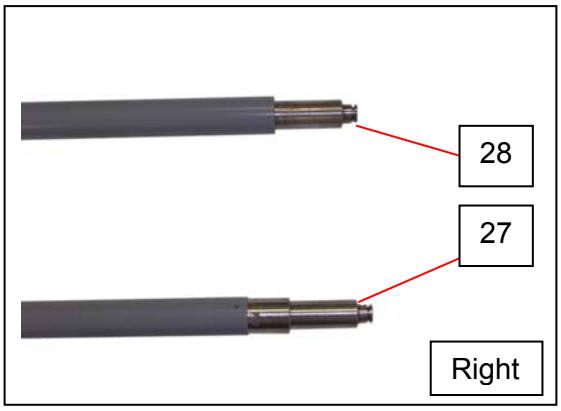




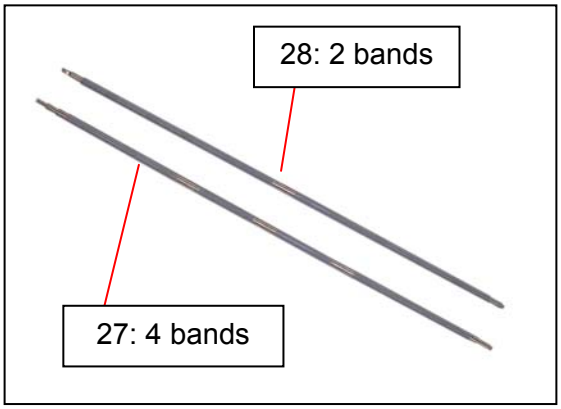
NOTE

(1) The longer thin end of Feed Rollers should be placed at the left.





(2) Feed Roller F (27) and Feed Roller R (28) are not interchangeable.
The 2 rollers have different rubber belt pattern.



(3) Use alcohol. Do not use water for cleaning Feed Rollers.

10. Replace all the parts in position.

11. Install Scanner Unit to the machine. Connect the USB cable of Scanner Unit to your PC.

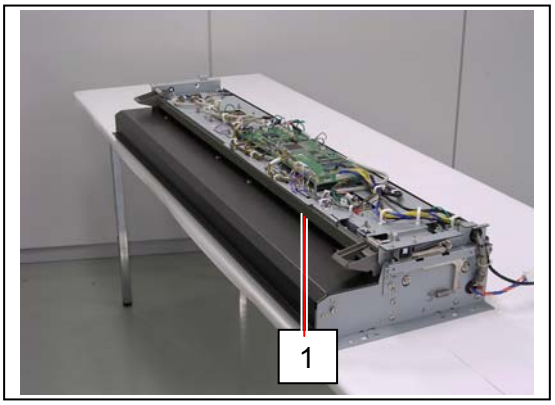
12. Perform Feed Distance adjustment.

NOTE

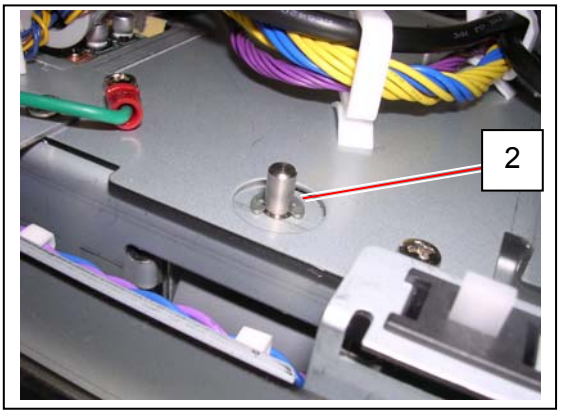
Replacement of Feed Rollers requires Feed Distance adjustment.
Refer to [8. 13 Scanner Utility] for adjustment.

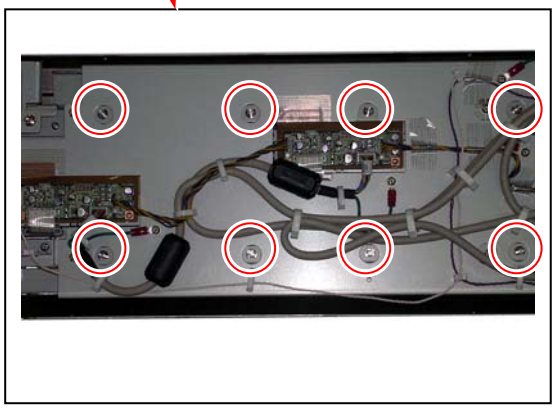
5. 12. 5 Replacement of Pinch Roller Assy

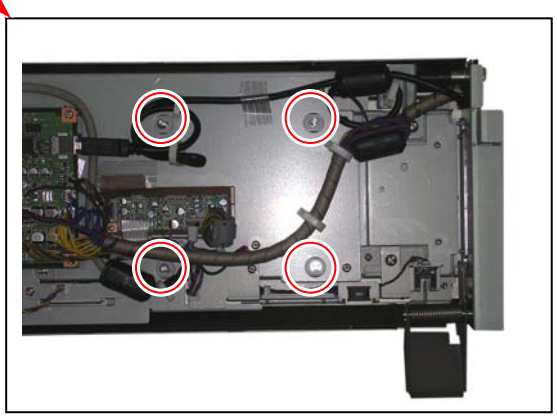
1. Remove the Scanner Unit (1) from the machine making reference to [5.12. 1 Removal of the Scanner Unit] on the page 5-242.

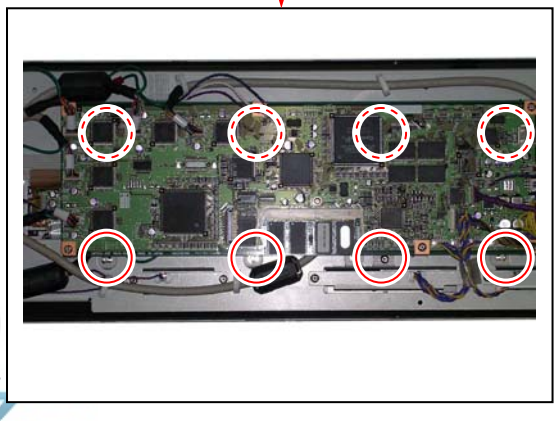


2. Remove Retaining Ring-E (2) from the shaft of Pinch Roller.



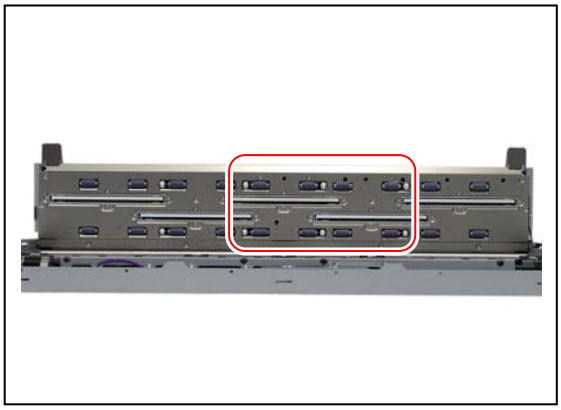


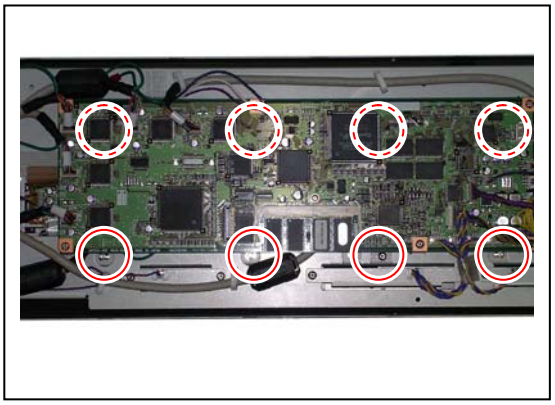




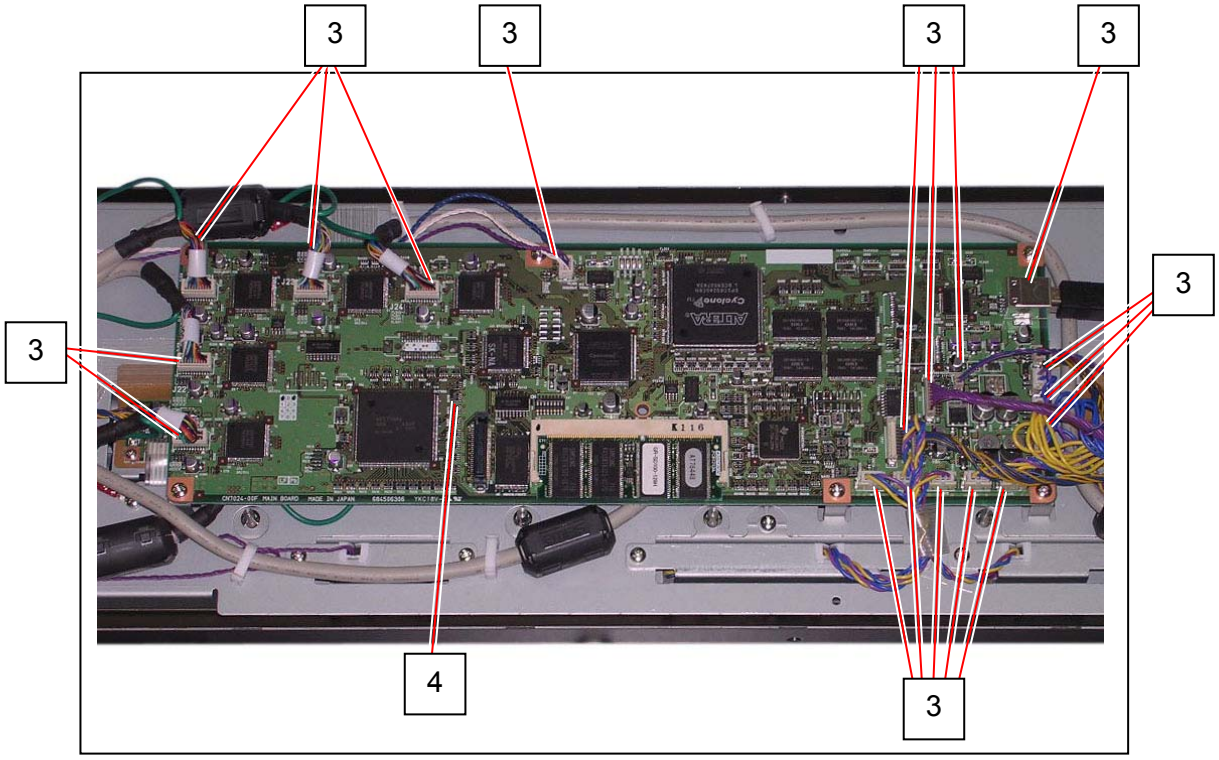
NOTE

For replacement of Pinch Rollers beneath (or near) SVC Main BD K, remove Retaining Ring-E for the concerning Pinch Roller (shown below) after removing SVC Main BD K.

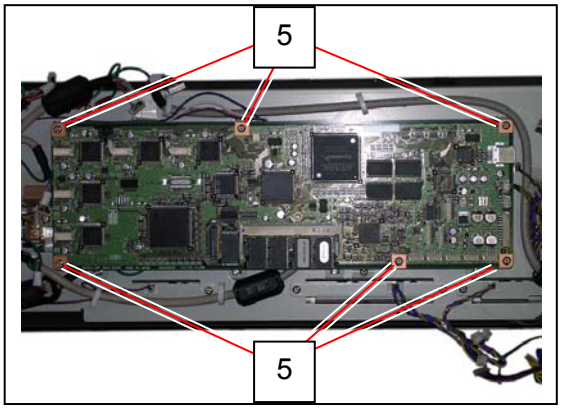


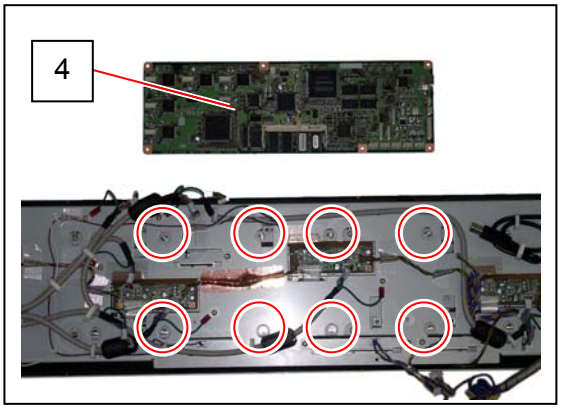


(1) Remove all the connectors (3) from SVC Main BD K (4).

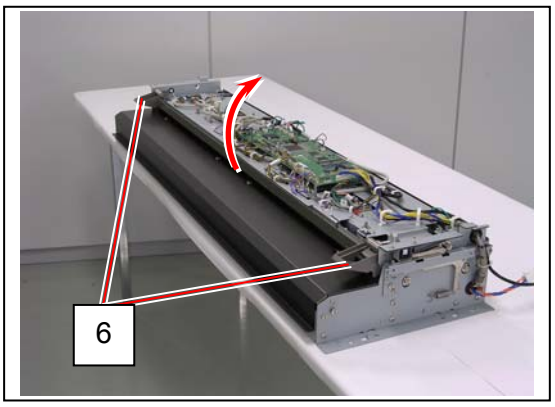


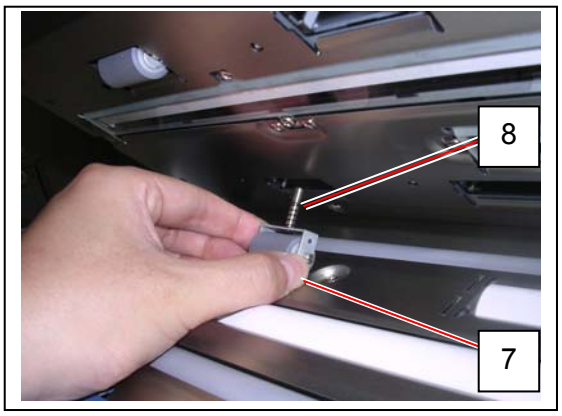
(2) Remove 6 screws (5) to remove SVC Main BD K (4).

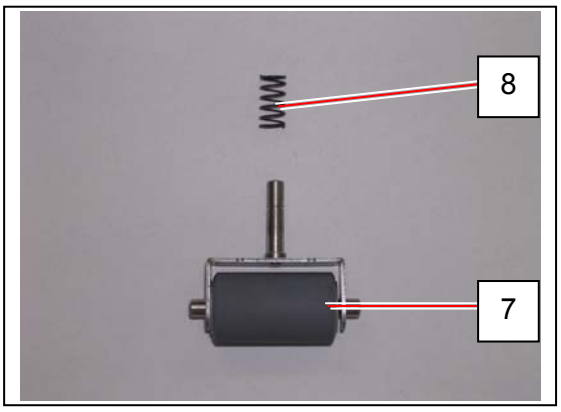




3. Pull up the Levers (6) and open Upper Unit slightly.
   Put your hand in between Upper and Lower Unit and hold the Pinch Roller Assy (7) not to fall its Spring (8) inside Upper Unit.
   Remove Pinch Roller Assy (7) and Spring (8).
   Replace Pinch Roller Assy with a new one.







5. 12. 6 Replacement of CIS

NOTE

A CIS is divided into several classes according to wavelength variations of their LED.

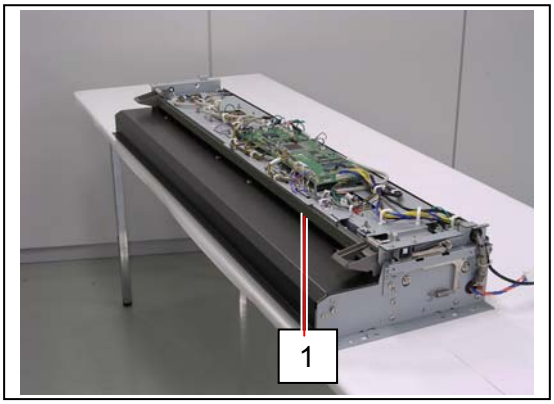
All the 5 pieces of CIS on a certain scanner should be the same class to assure even image quality (brightness, color quality and etc) among image blocks.

Be sure to check which CIS class is used to the scanner before replacing to avoid class mixing. Otherwise even image quality can not be expected.

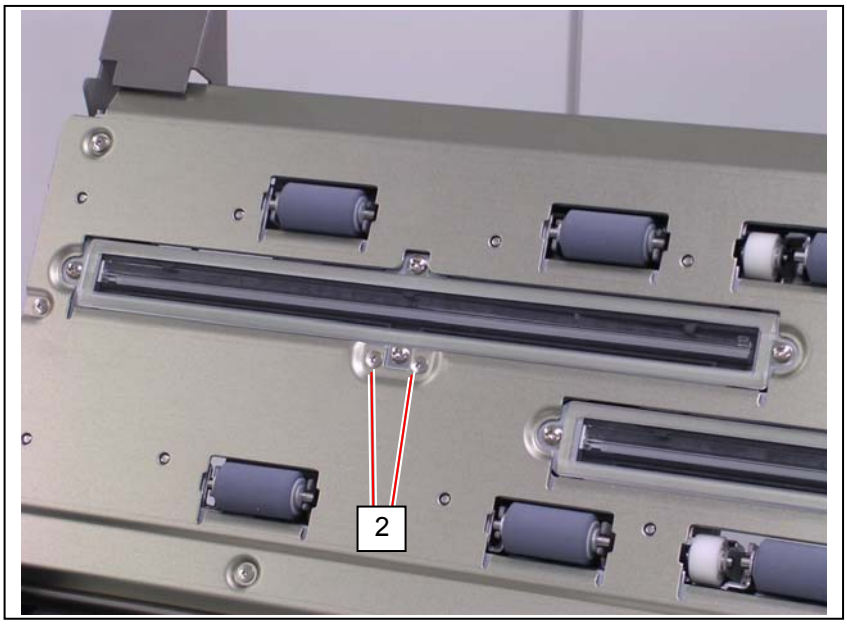
Equipped CIS class can be identified on the label on the CIS unit, and can be checked with the label on the rear of the scanner.

Label

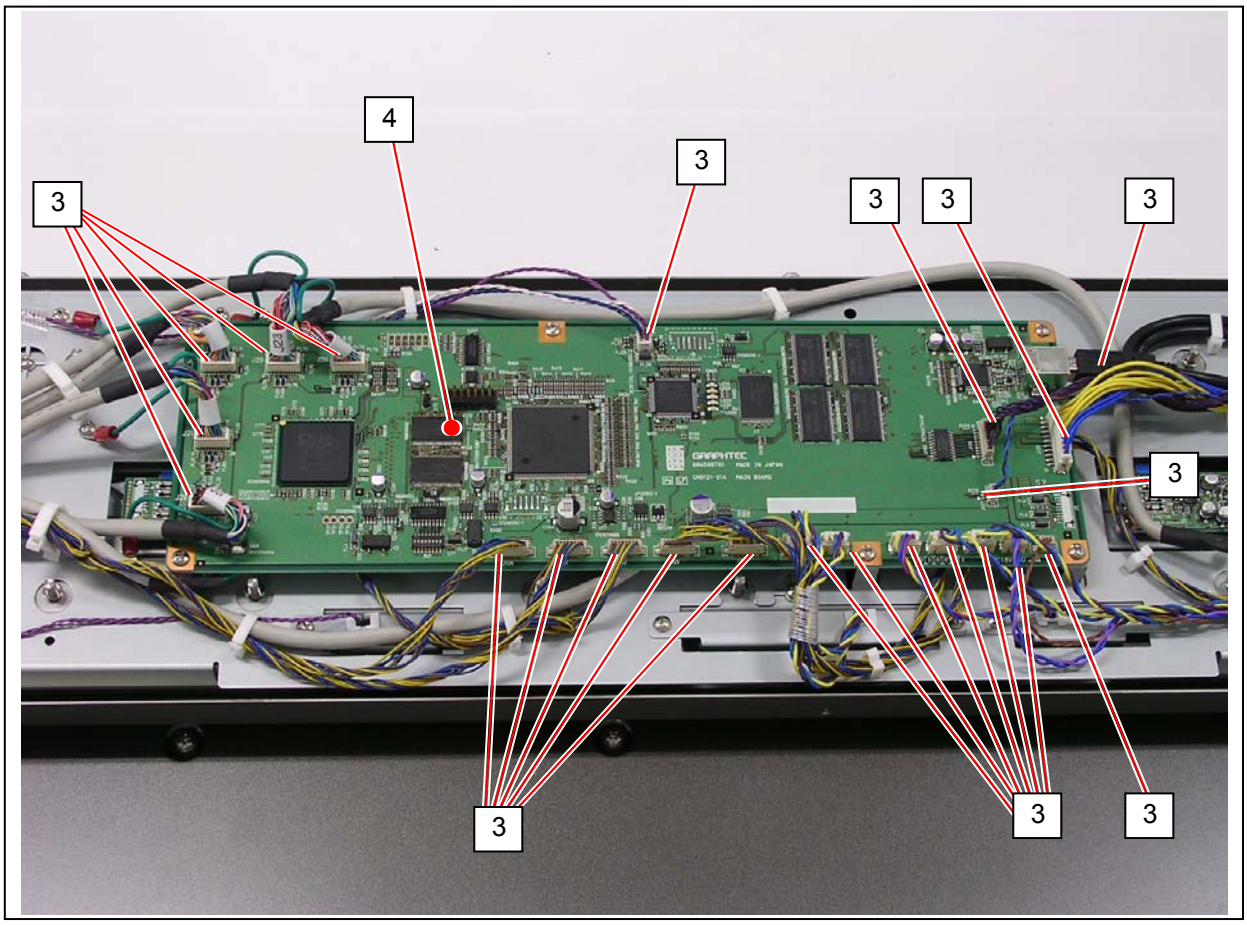
1. Remove the Scanner Unit (1) from the machine making reference to [5.12. 1 Removal of the Scanner Unit] on the page 5-242.



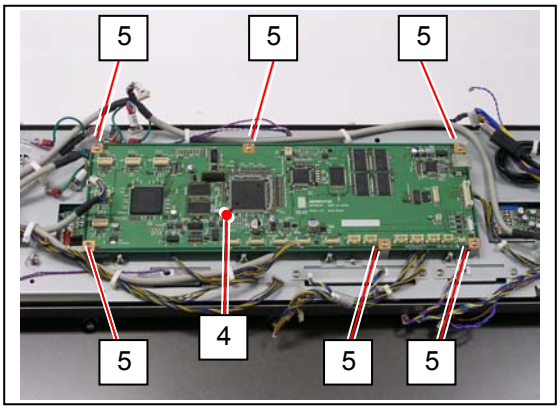
2. Open the Scanner Upper Unit.
   On a CIS to be replaced, remove 2 small screws (2) with a sharp screwdriver.

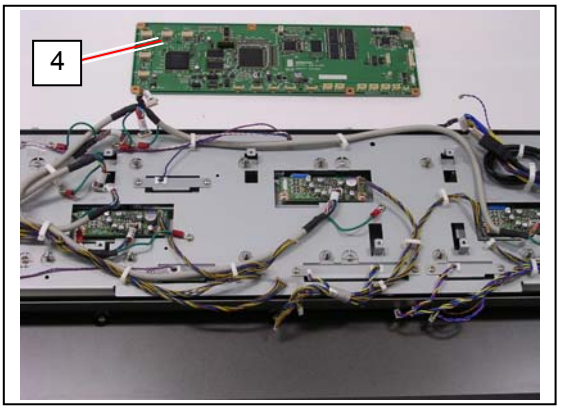


3. Remove all the connectors (3) from SVC Main BD K (3).

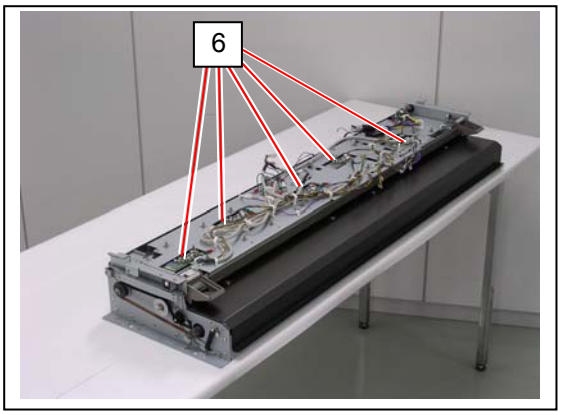


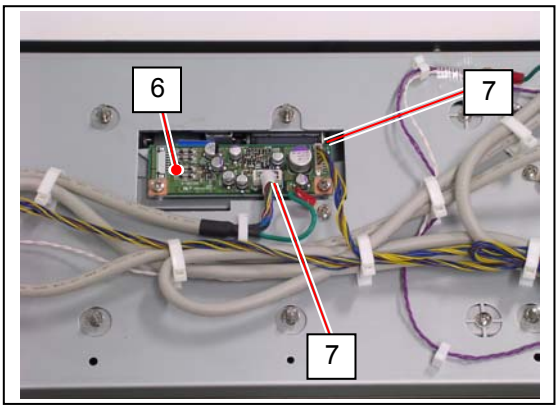
4. Remove 6 screws (5) to Remove SVC Main BD K (4).



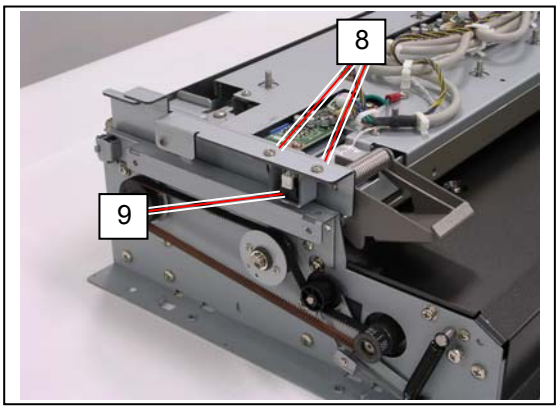


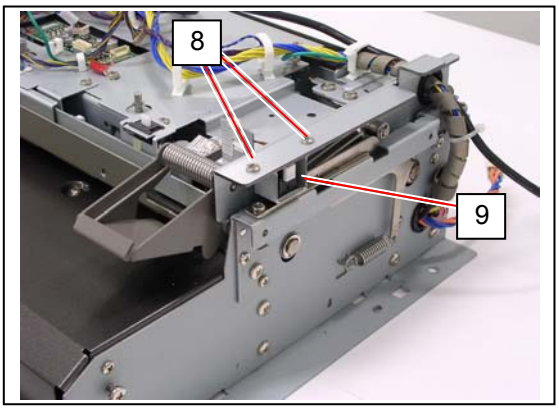
5. On all CIS Boards (6), remove 2 harnesses (7)

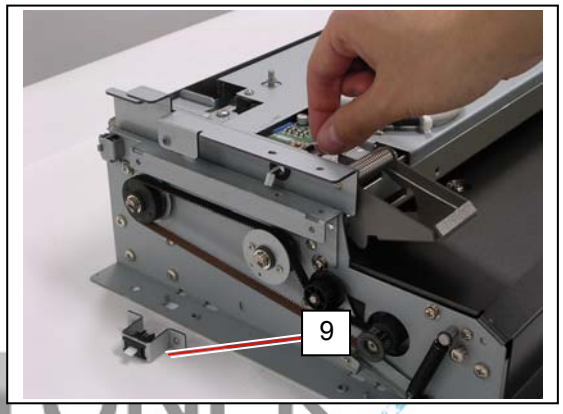


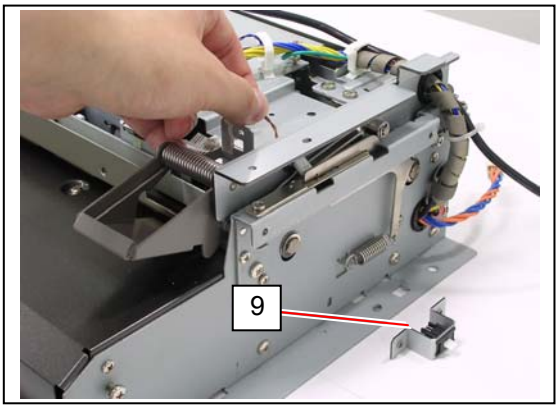


6. Remove 4 screws (8) and the harness to remove Switch Bracket R / L (9).

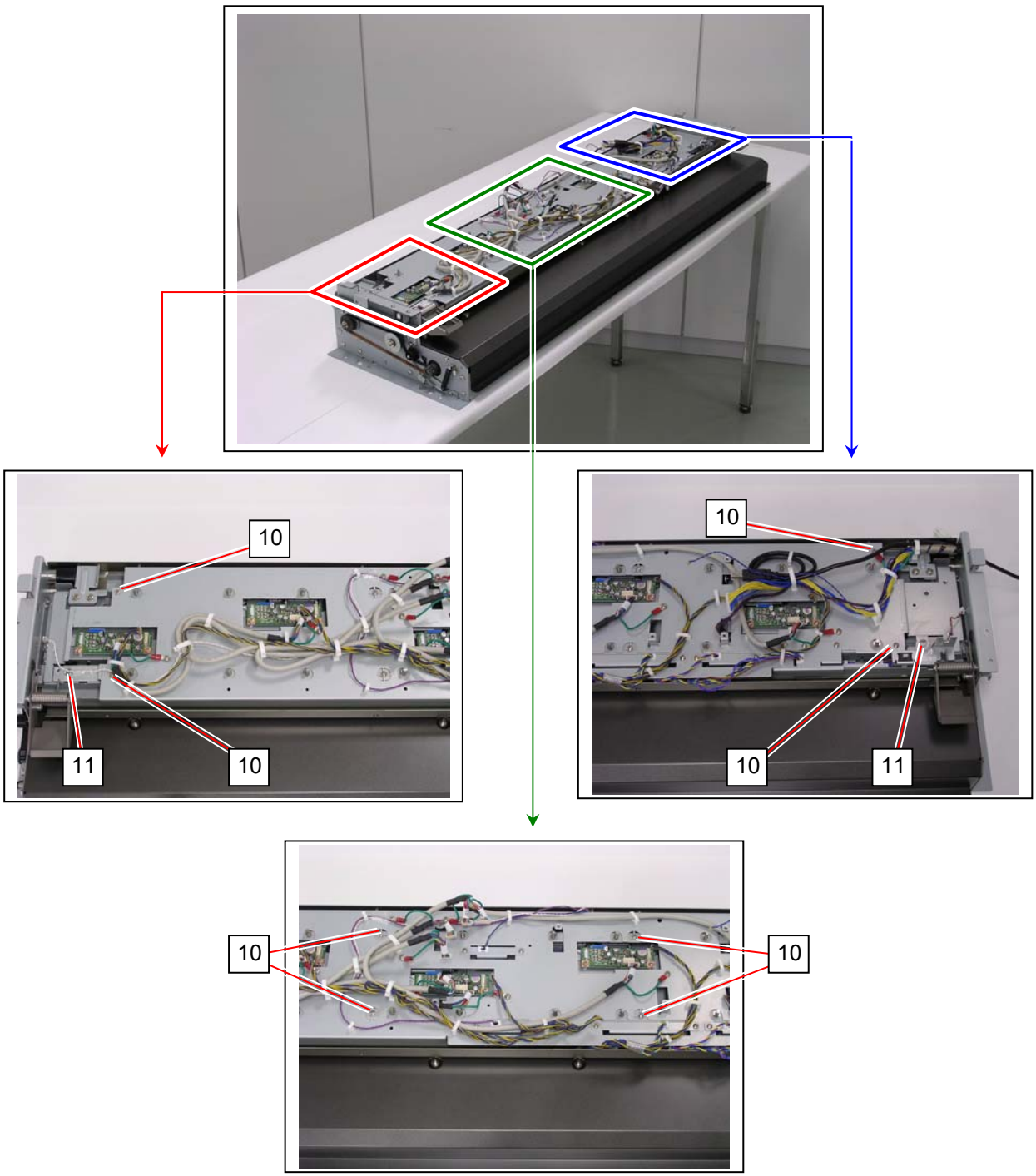




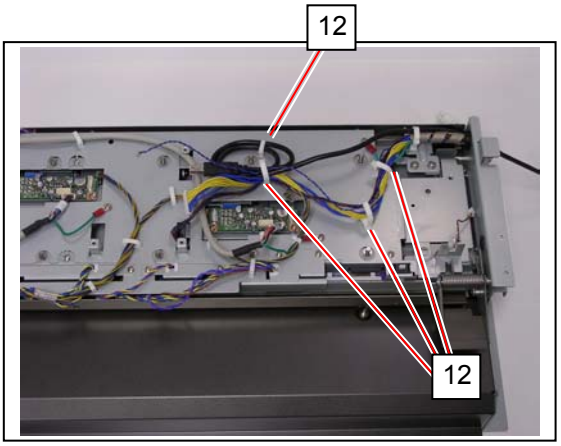




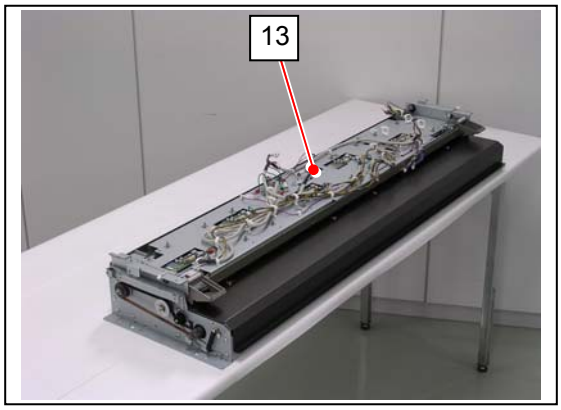
7. Remove 8 screws (10, M3x6) and 2 screws (11, M4x6).

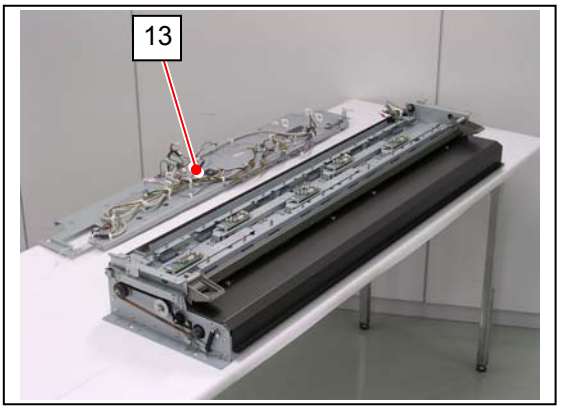


8. Open 4 wire saddles (12) to release the harnesses.

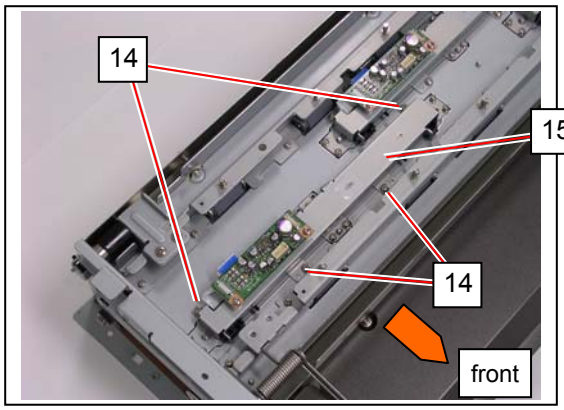


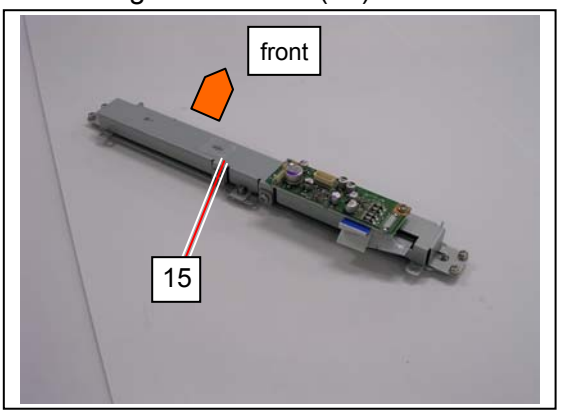
9. Remove the Base Plate (13).





10. Remove 4 screws (14, M3x4 w/ TW) to remove the concerning CIS Bracket (15).

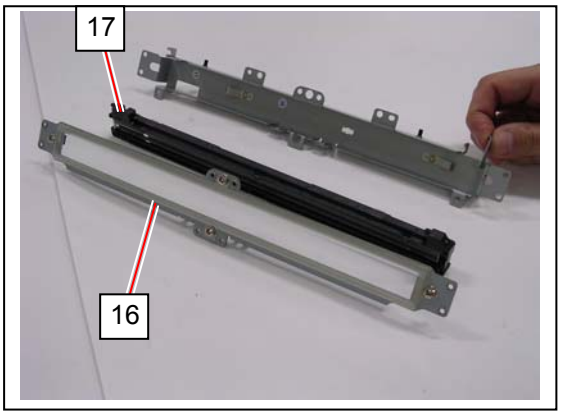




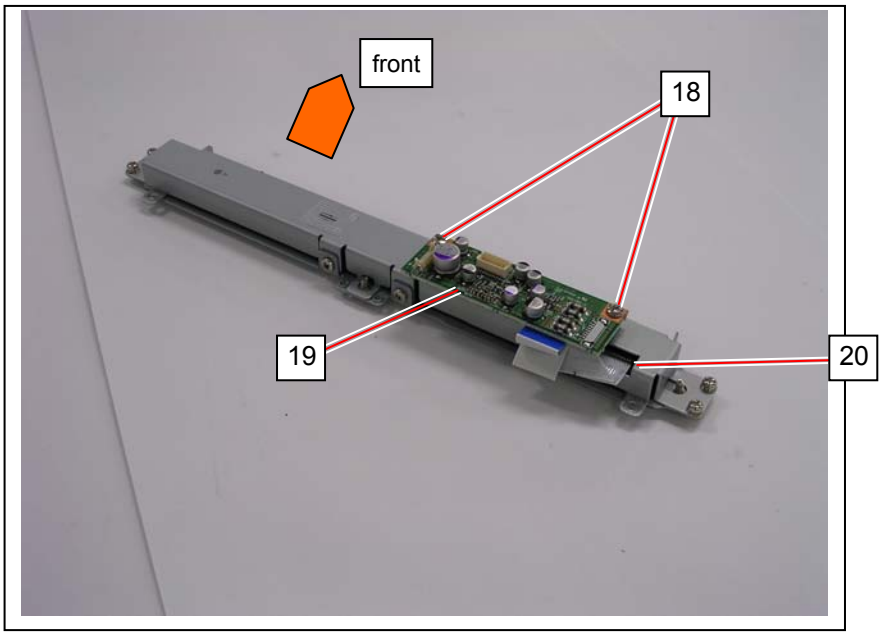
NOTE

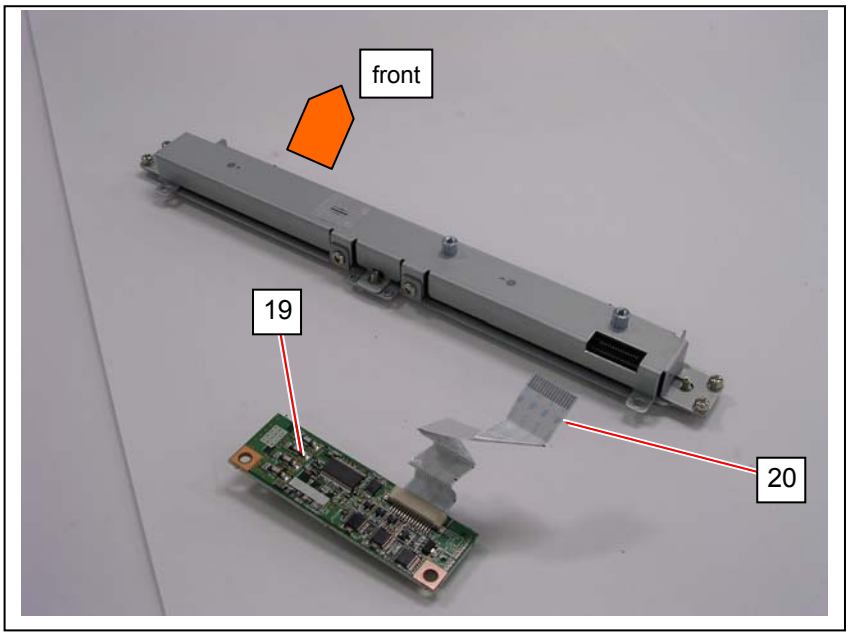
Place CIS Bracket on a soft cloth or anything to avoid damage on the Scan Glass Assy (16).

If you remove the Scan Glass Assy just in case, still you should prepare such to avoid damage on the sensor array of the CIS (17).



11. Remove 2 screws (18) to release CIS Board (19).
    Carefully remove the flat cable (20) from CIS.

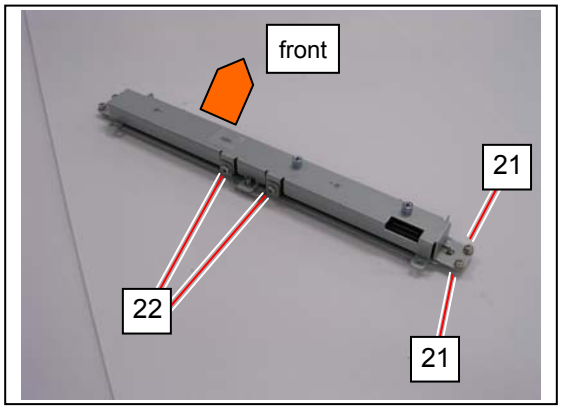


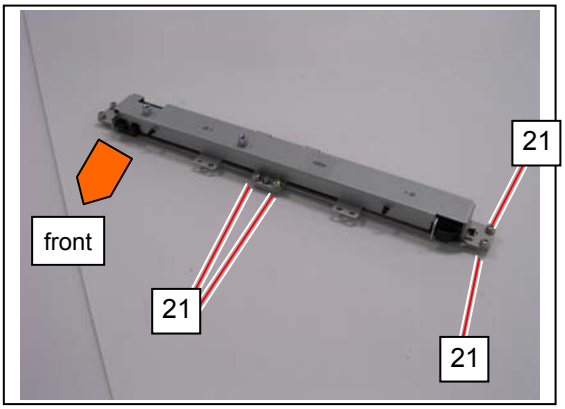


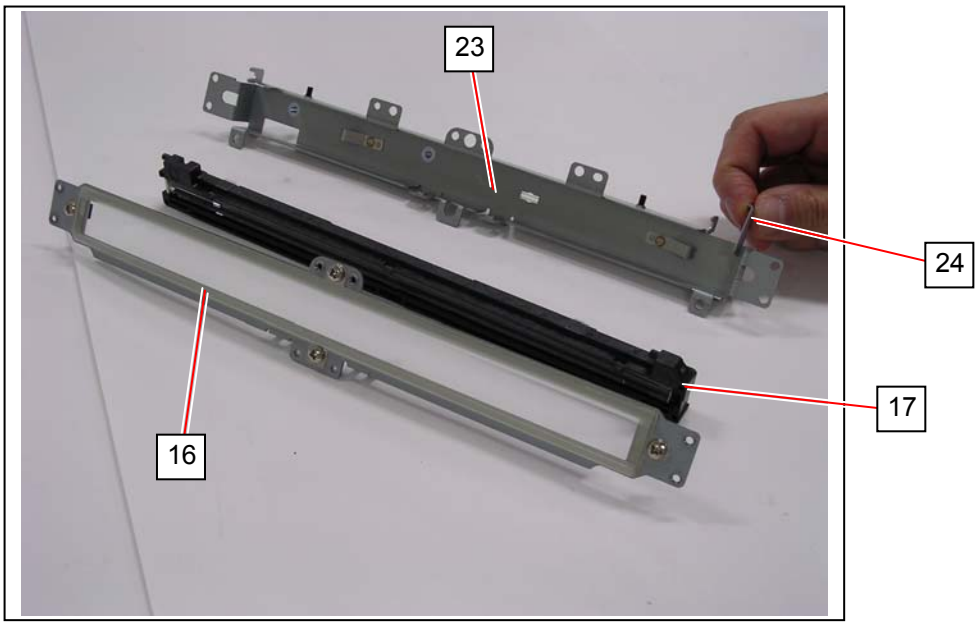
NOTE

When reassembling, gently insert Flat Cable (20) all the way in the terminal on the CIS.
Inserting incorrectly would lead abnormal scan image.
FRAGILE. Handle Flat Cable with great care.

12. Remove 6 screws (21: M3x4 w/ SW) and 2 screws (22: M3x4) disassemble the CIS Unit.
    - upper bracket (23)
    - small spacer (24)
    - CIS (17)
    - lower bracket with Scan Glass Assy (16)



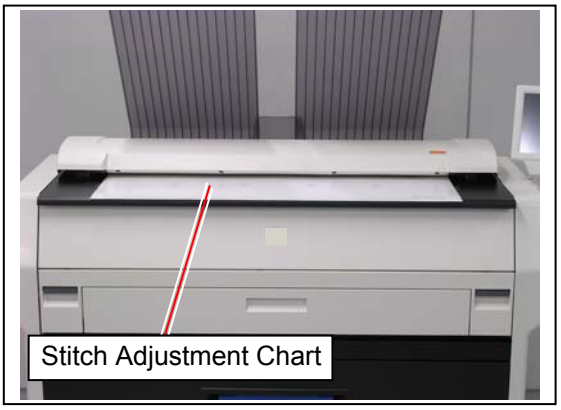




13. Replace **CIS** with a new one.

14. Return all the parts in position.

15. Perform the scanner calibration. See [8.13.4 Scanner Adjustment Procedure].
    This is a must!

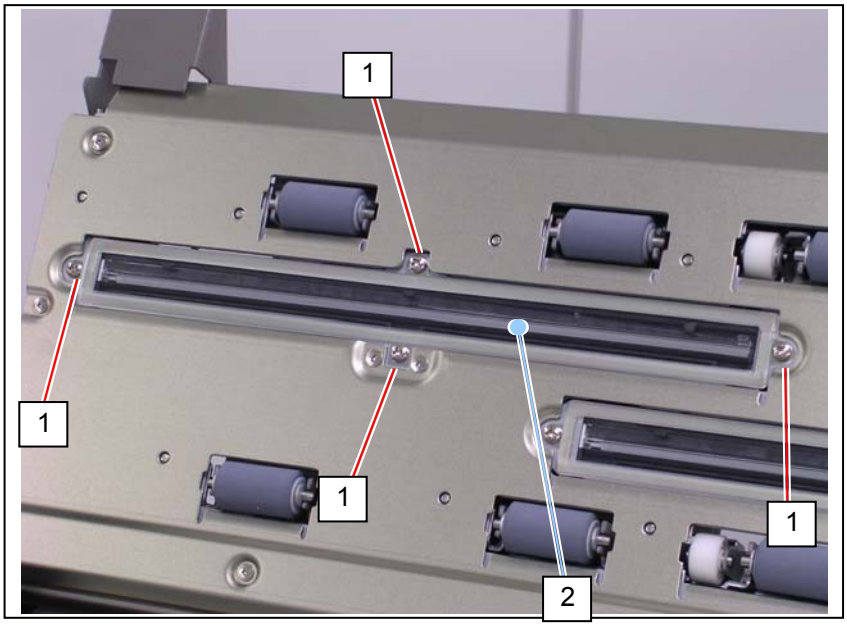


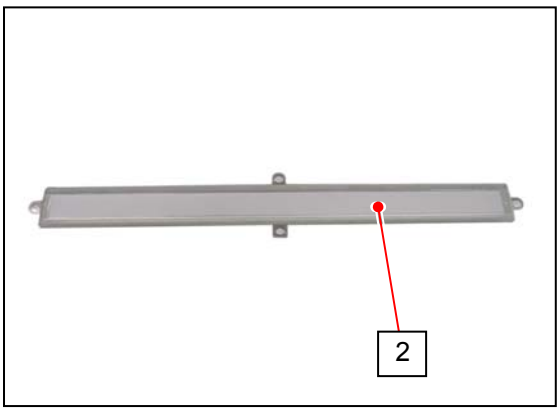
5. 12. 7 Replacement of Scan Glass Assy

Reference

Dismounting Scanner Unit is not mandatory to remove Scan Glass Assy.

1. Open the Scanner Upper Unit.
   Remove 4 screws (1) to remove Scan Glass Assy (2).

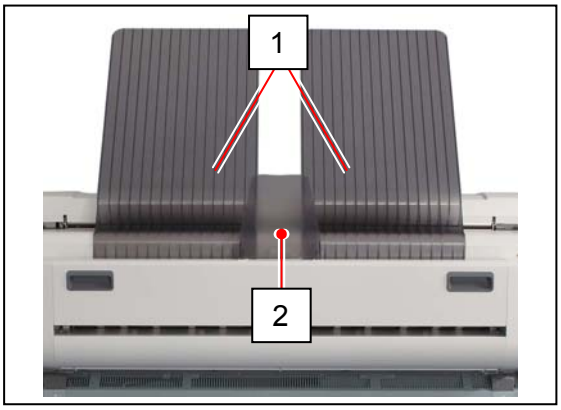




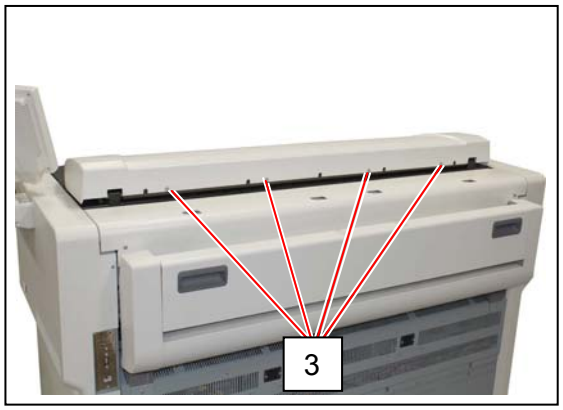
5. 13 Scanner Unit (New scanner)

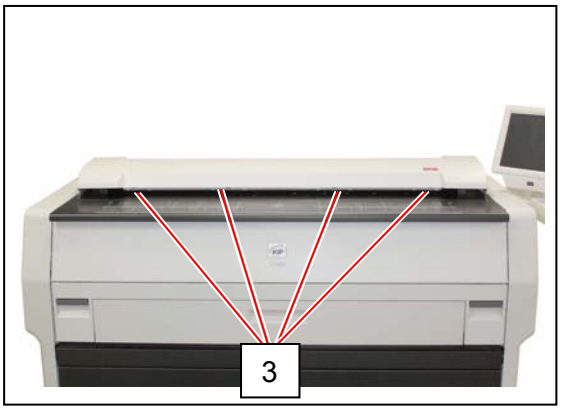
5. 13. 1 Removal of Scanner Unit

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

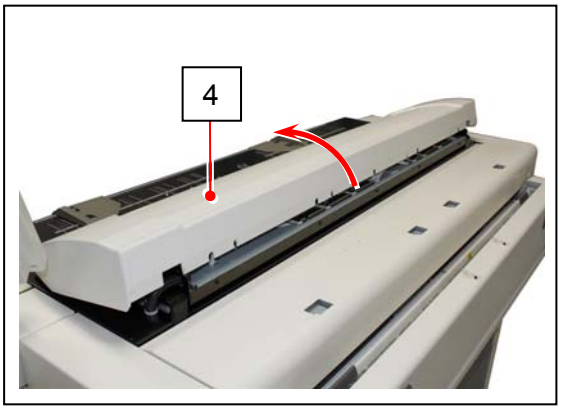


2. Remove 8 pieces of screws (3).



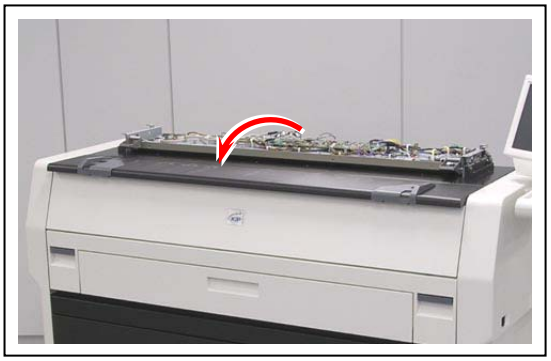


3. Remove the Top Cover (4).

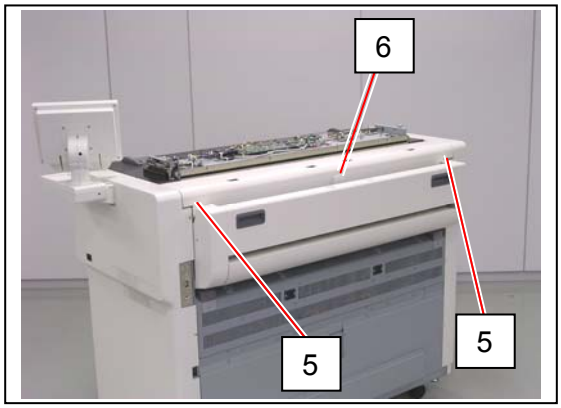


NOTE

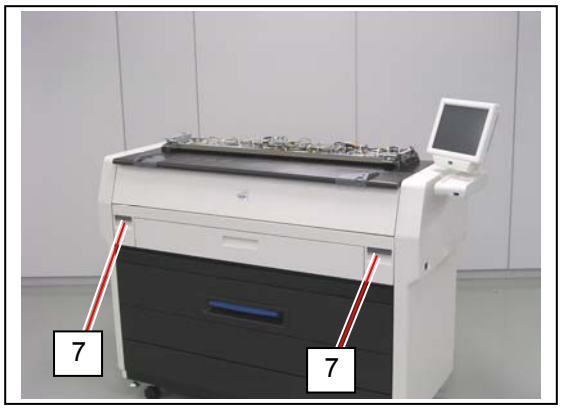
It is necessary to install under the condition to Closing “Upper Unit” when installing “Top Cover”.



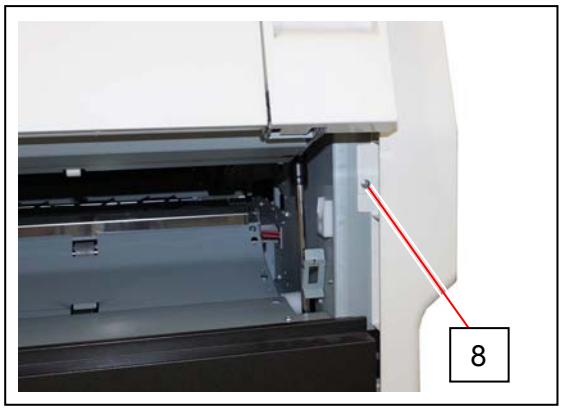
4. Remove 2 tooth washer screws (5) to remove Cover (6).

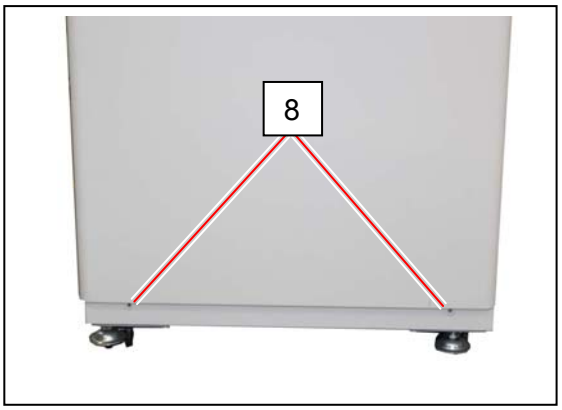


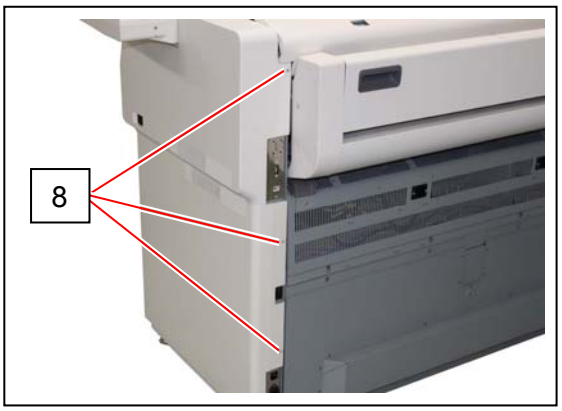
5. Pull up Lever 2 (7) to open the Engine Unit.



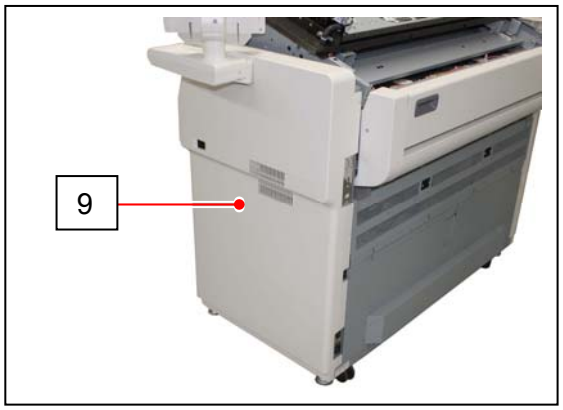
6. Remove 6 screws (8).



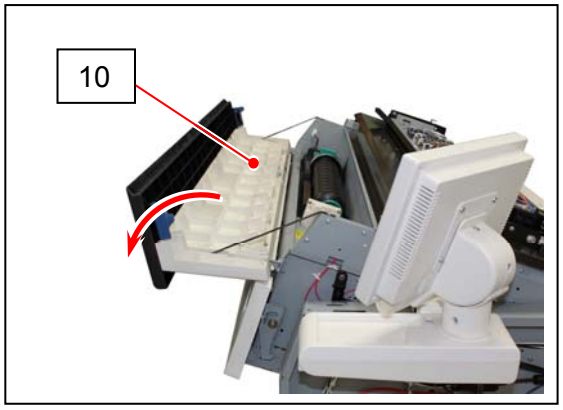




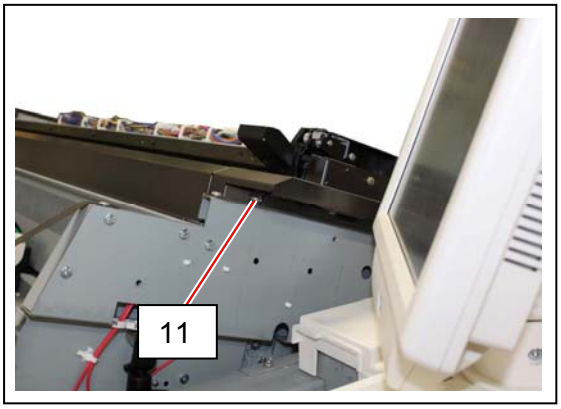
7. Remove the Cover (9).

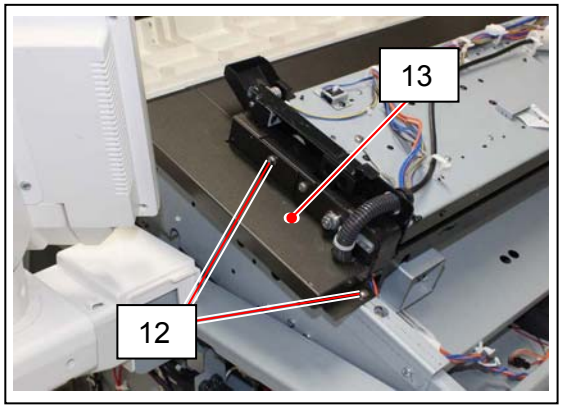


8. Open the Cover (10).

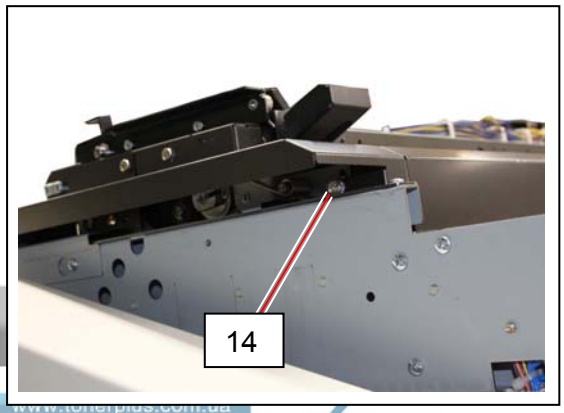


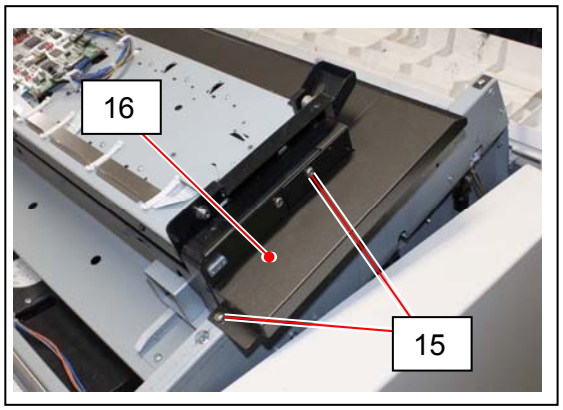
9. Loosen 1 screw (11).
   Remove 2 screws (12) to remove the Cover (13).



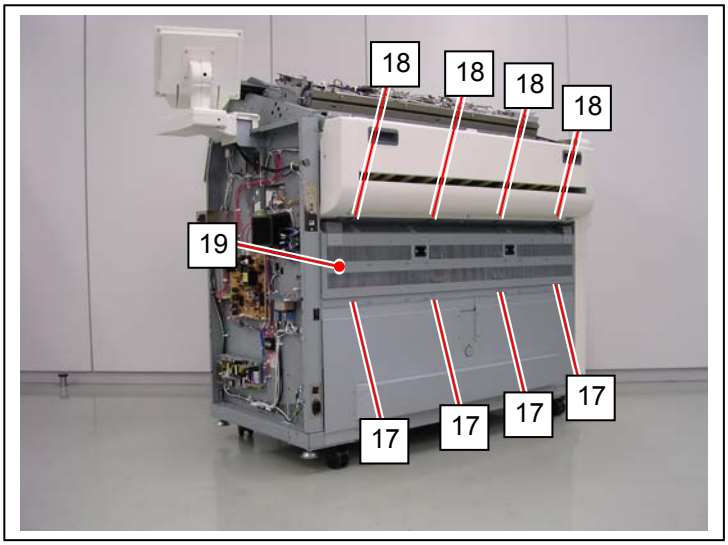


10. Loosen 1 screw (14).
    Remove 2 screws (15) to remove the Cover (16).

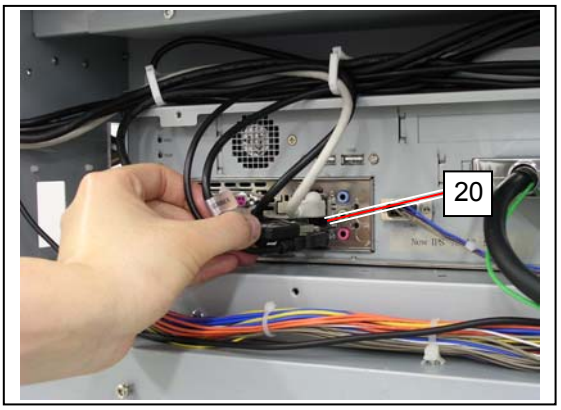




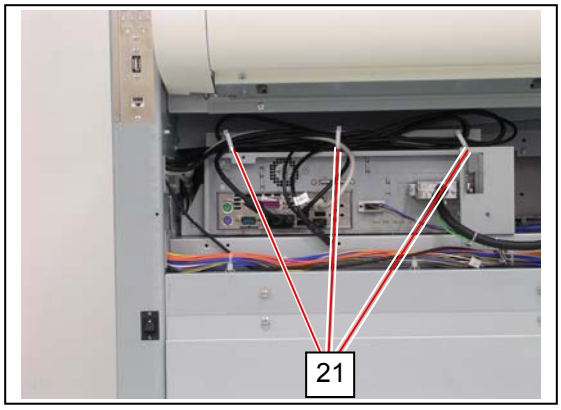
11. Loosen 4 screws (17) and remove 4 screws (18) to remove the Cover (19).

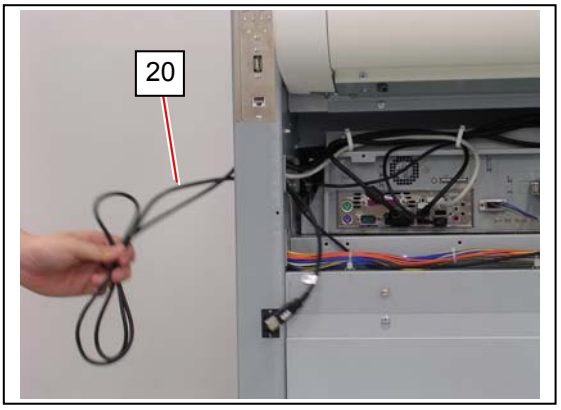


12. Disconnect the Scanner USB Cable (20: with the label “SC”) from the upper right USB port of IPS.

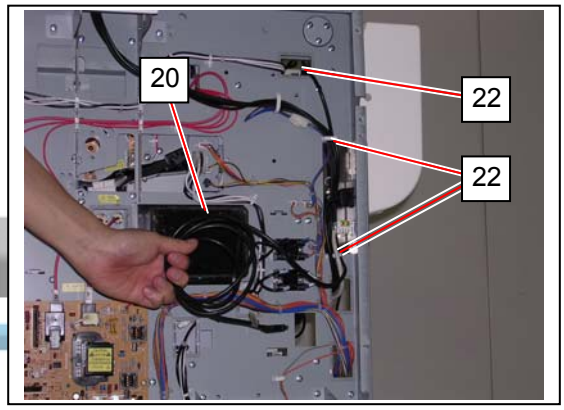


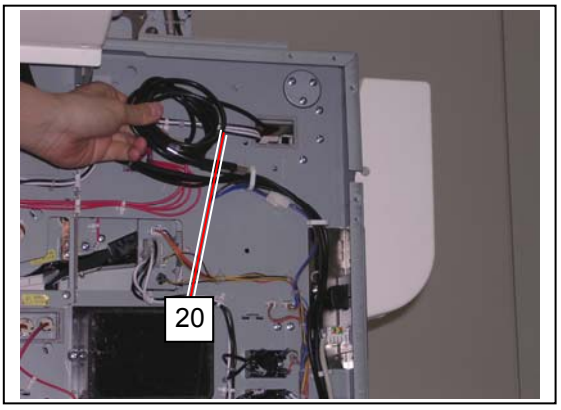
13. Open 3 wire saddles (21) to release the Scanner USB Cable (20).



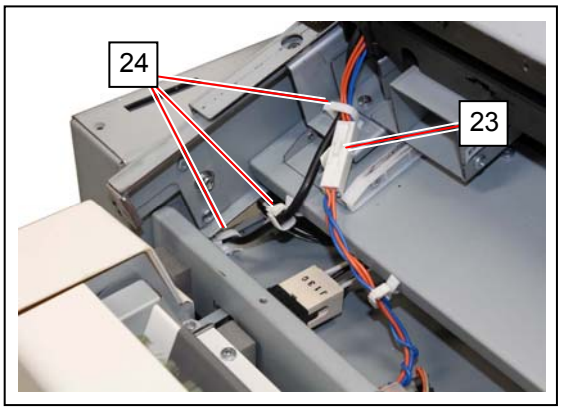


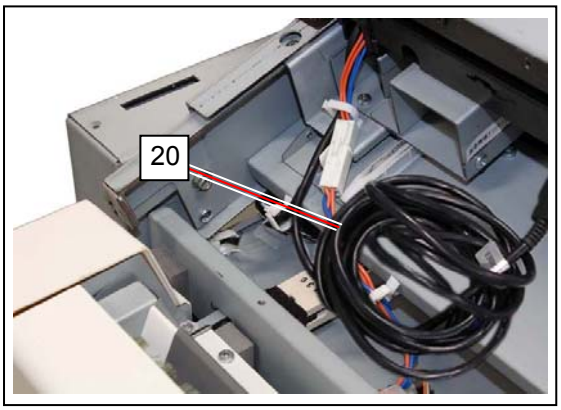
14. On the right side, open 3 wire saddles (22) to release the Scanner USB Cable (20).



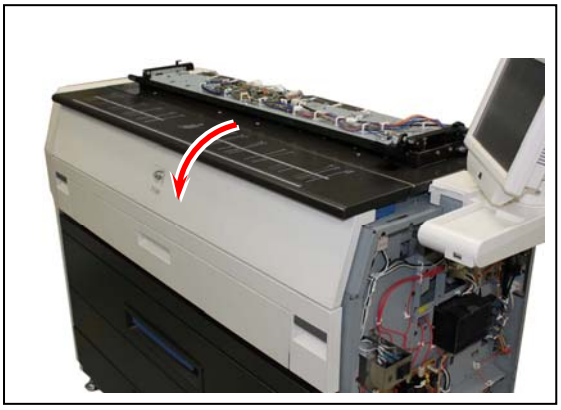


15. Disconnect the connector (23). Open the wire saddles (24) to release the Scanner USB Cable (20).





16. Close the Engine Unit.

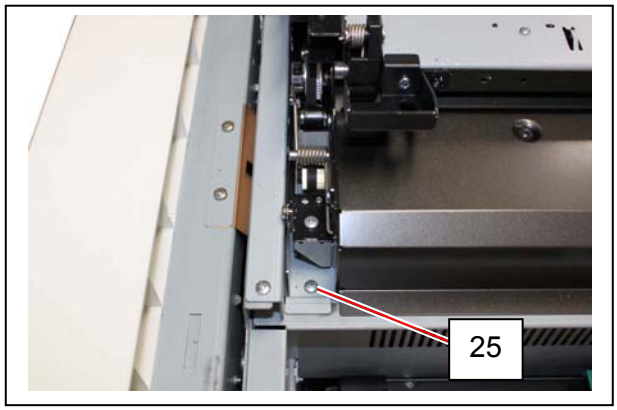


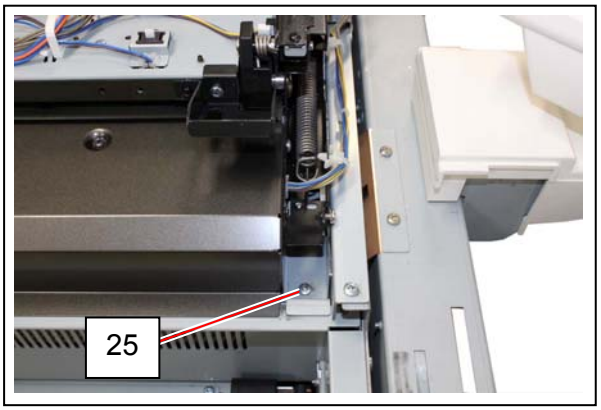
NOTE

Be sure to close the Engine Unit before removing the screws which fix the Scanner Unit. Otherwise the Scanner Unit may fall down and damage.

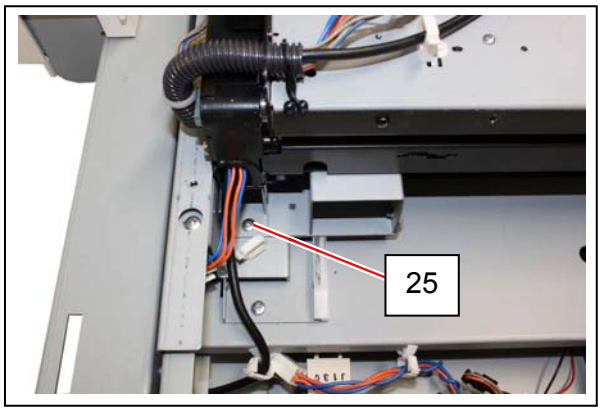
17. Remove 4 screws (25) which fix the Scanner Unit.

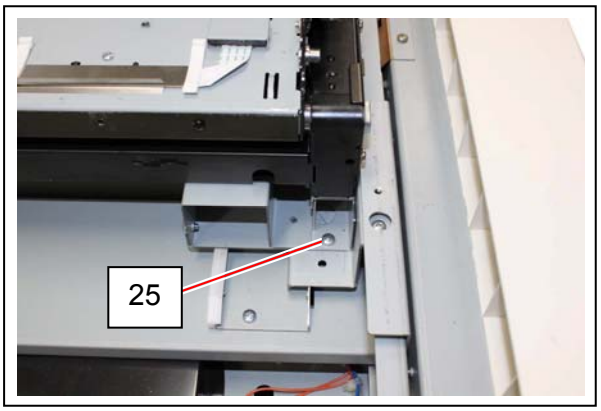
(Front side)



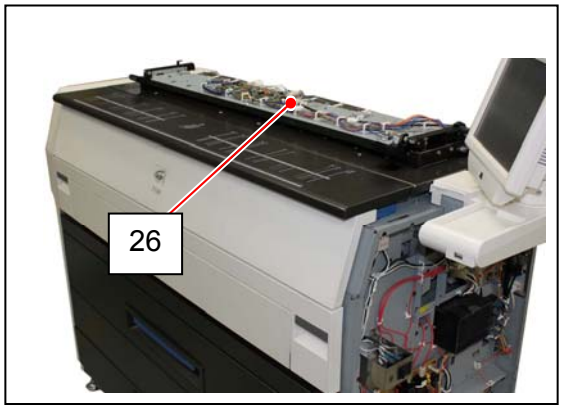


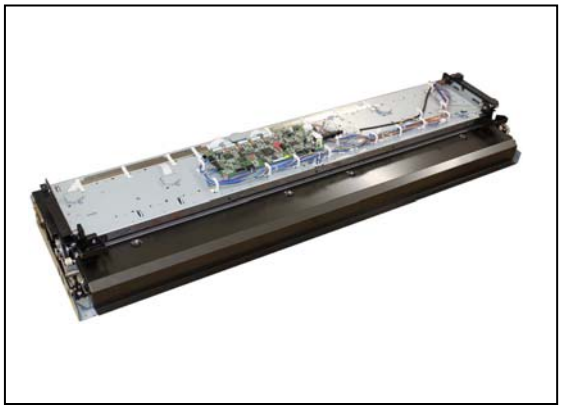
(Rear side)





18. Remove the Scanner Unit (26) from the machine.



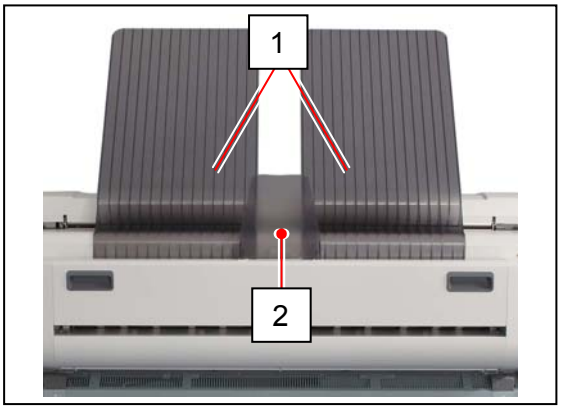


⚠ CAUTION

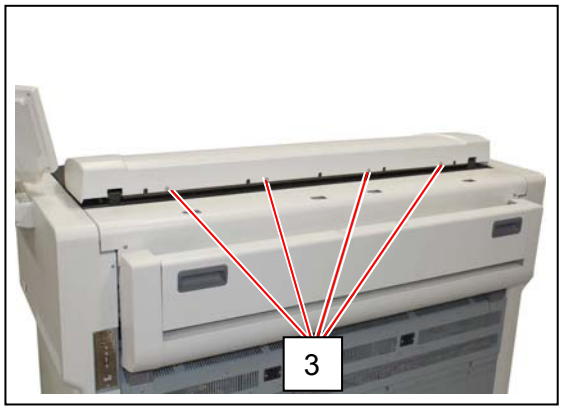
Please carry the Scanner Unit by 2 persons as it is heavy.

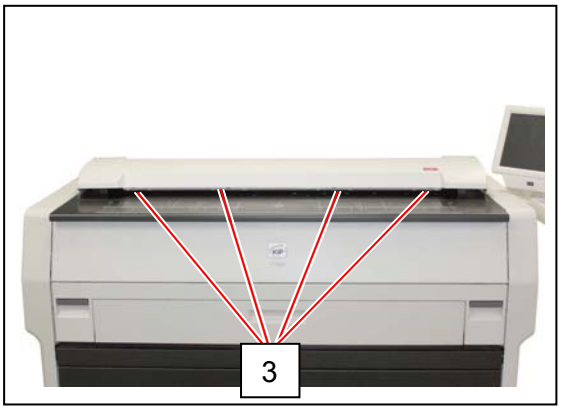
5. 13. 2 Replacement of Belt

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

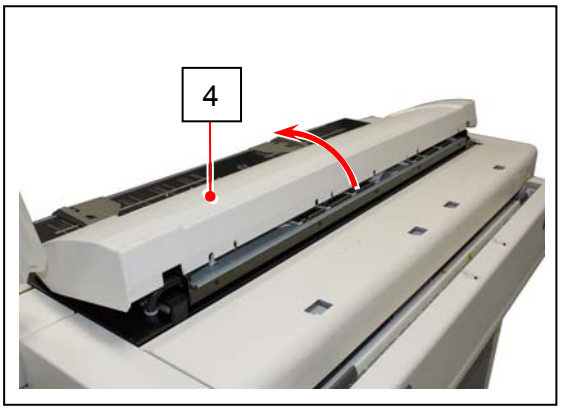


2. Remove 8 pieces of screws (3).



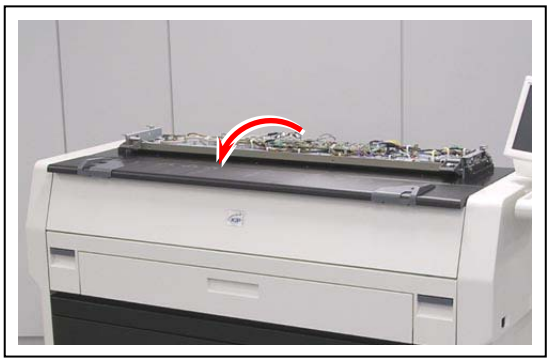


3. Remove the Top Cover (4).

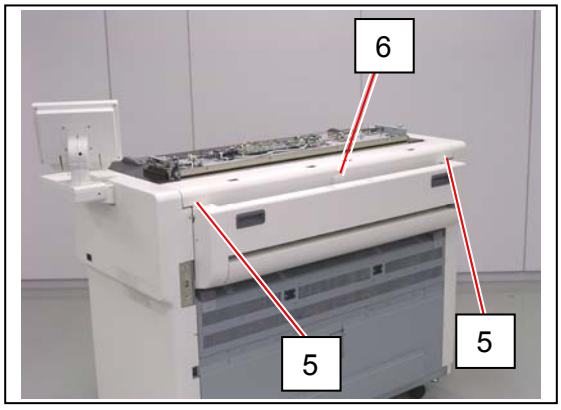


NOTE

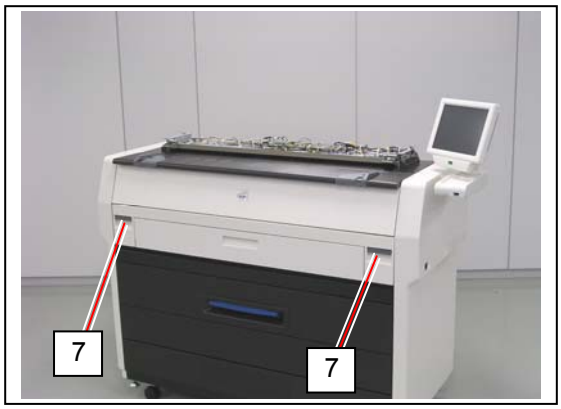
It is necessary to install under the condition to Closing “Upper Unit” when installing “Top Cover”.



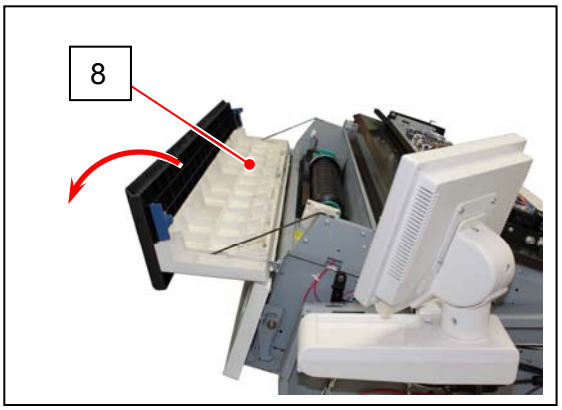
4. Remove 2 tooth washer screws (5) to remove the Cover (6)



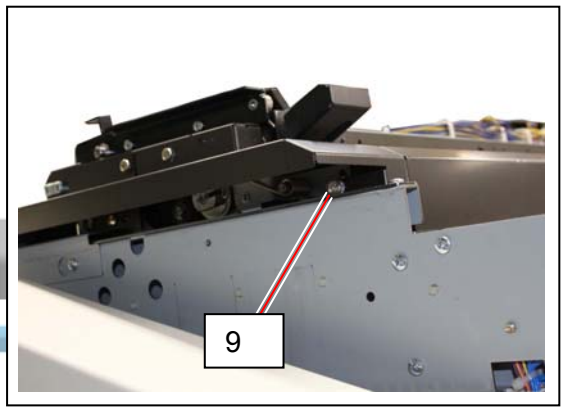
5. Pull up Lever 2 (7) to open the Engine Unit.

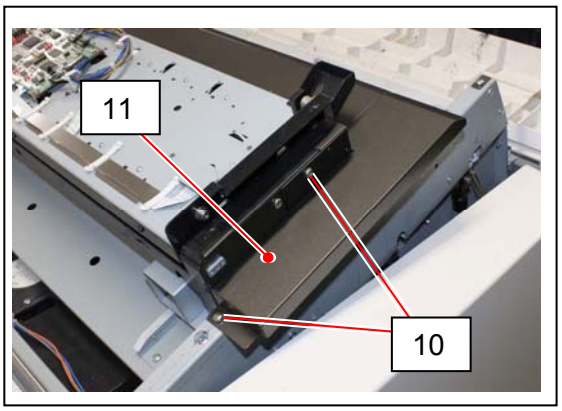


6. Open the Cover (8).

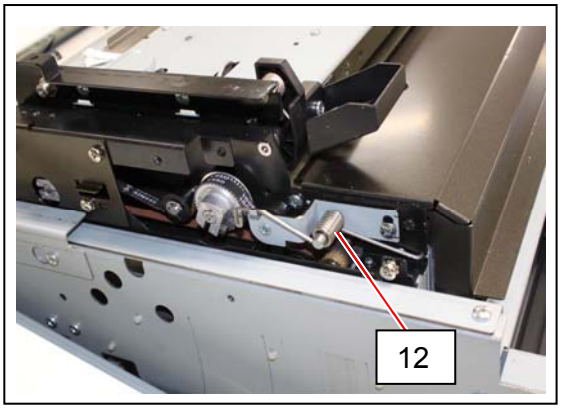


7. Loosen 1 screw (9).
Remove 2 screws (10) to remove the Cover (11).

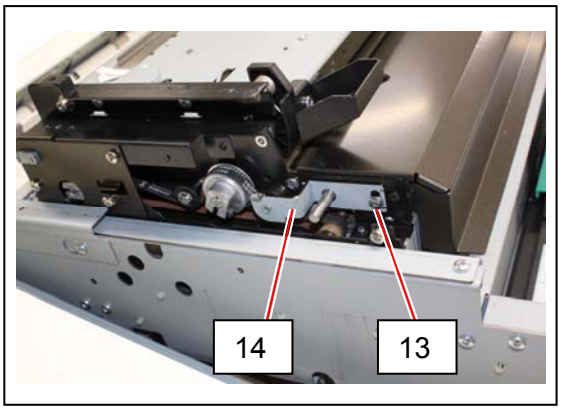




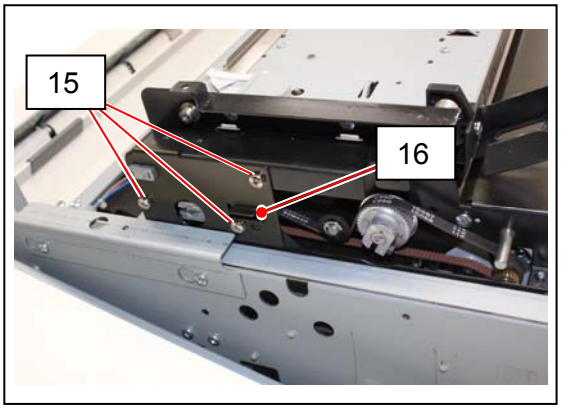
8. Remove the Spring (12).



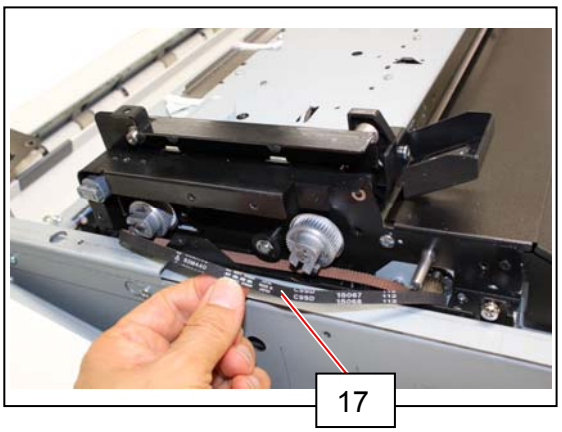
9. Remove Screw (13) to remove the Tension Bracket (14).



10. Remove 3 screws (15) to remove the Bracket (16).



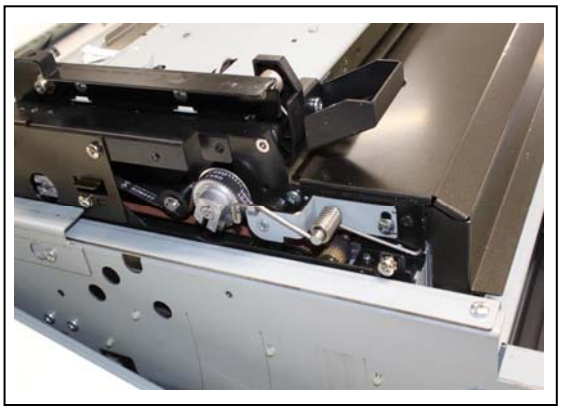
11. Remove the Belt (17).
    Replace the Belt with a new one.



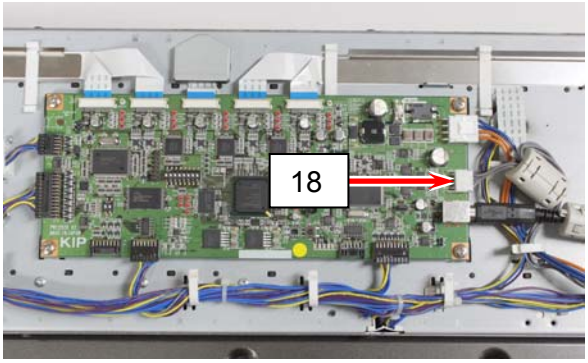
NOTE

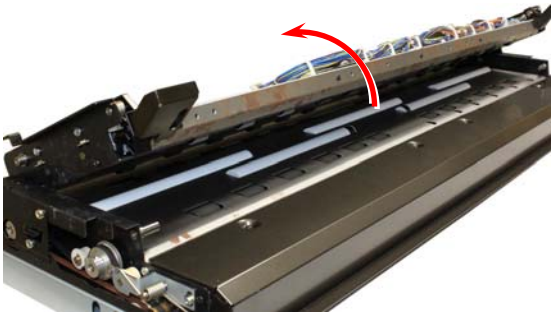
In order to apply right tension on the “Belt”, it is necessary to execute following procedure before proceeding.

(1) Assemble until right photo.

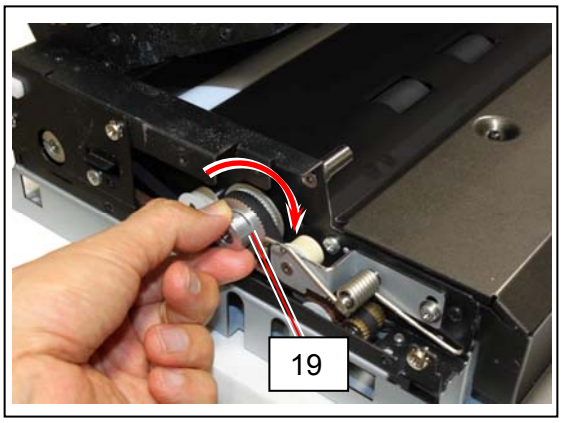


(2) Disconnect the Motor Connector (18) of the main board and open the Upper Unit.

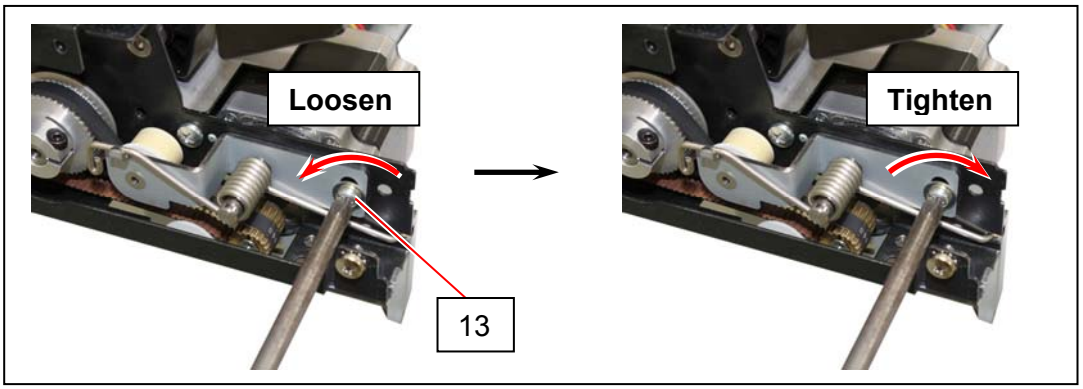




(3) Turn Pulley (19) in several revolutions to the direction of the arrows.



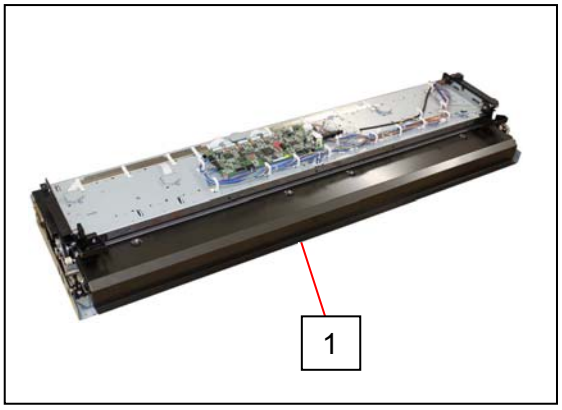
(4) Once loosen “Screw (13)” and then re-tightenthe “Screw”.



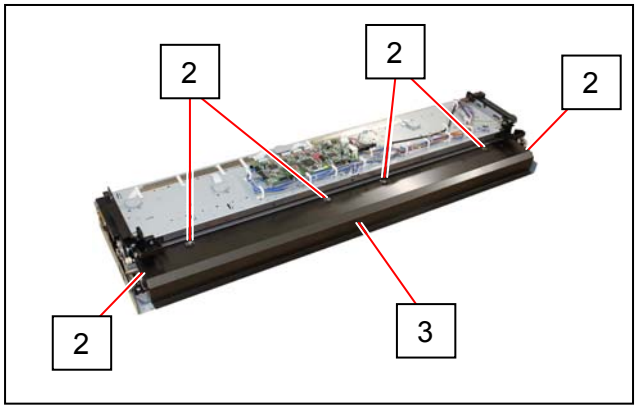
(5) Connect the Motor Connector.

5. 13. 3 Replacement of Motor Assy

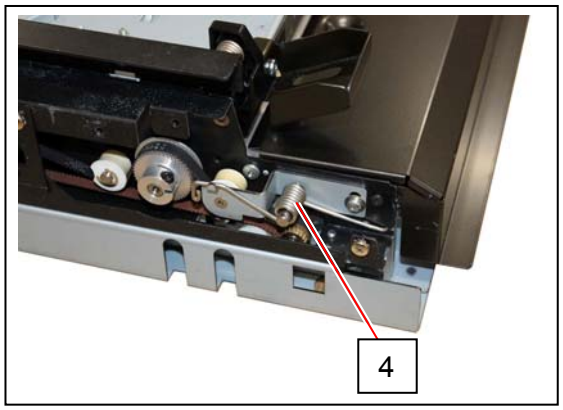
1. Remove the Scanner Unit (1) from the machine making reference to [5.13. 1 Removal of the Scanner Unit] on the page 5-273.

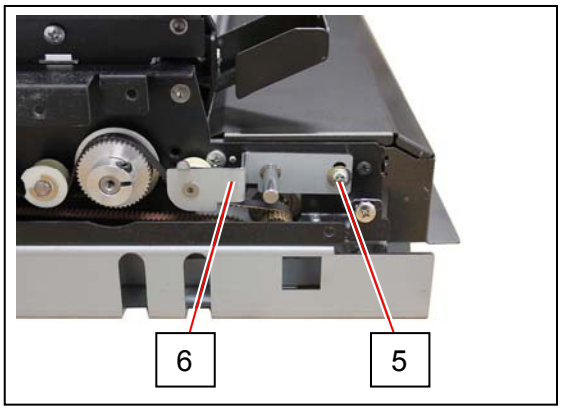


2. Remove 6 screws (2) to remove the SHEET GUIDE (3).

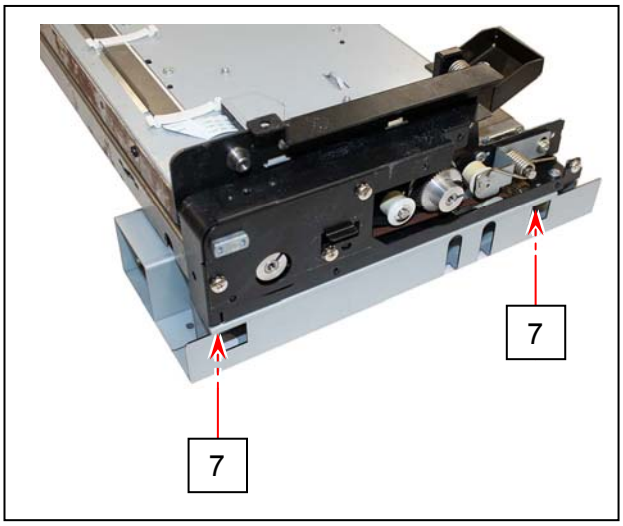


3. Remove the spring (4), and then remove the screw (5) to remove the tension bracket (6).

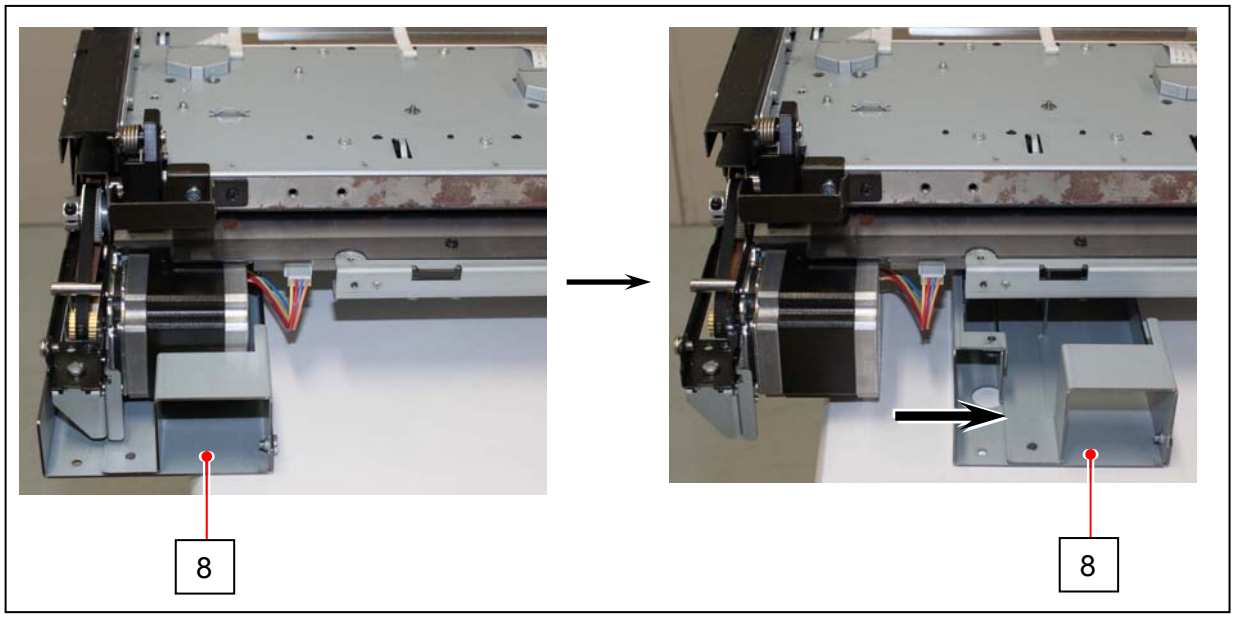




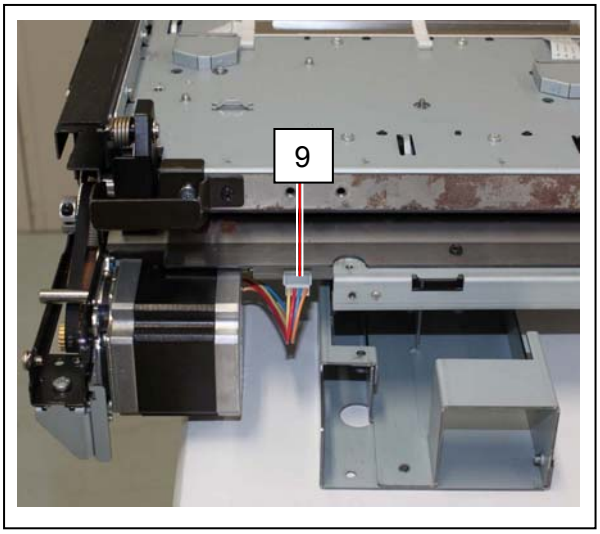
4. Remove 2 screws (7).



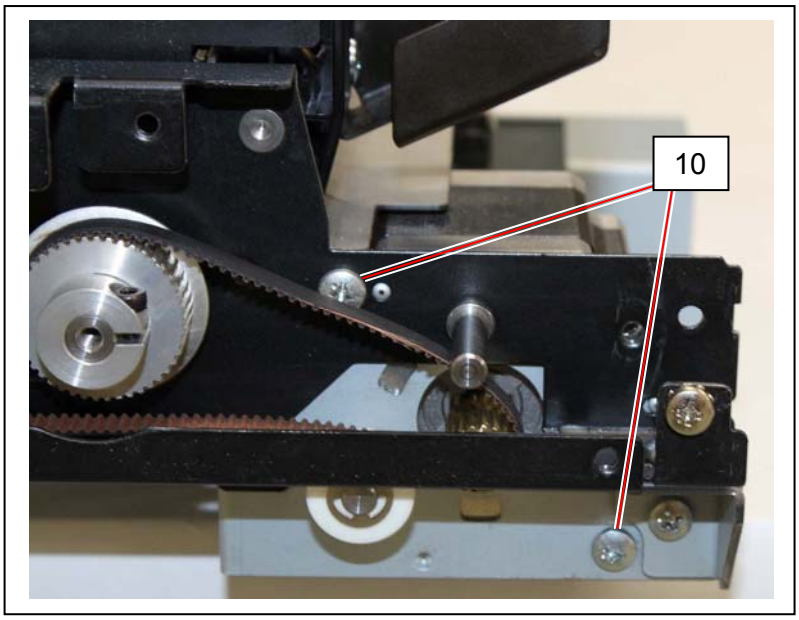
5. Move “Bracket (8)” to inside by pulling up “Scanner Unit”.

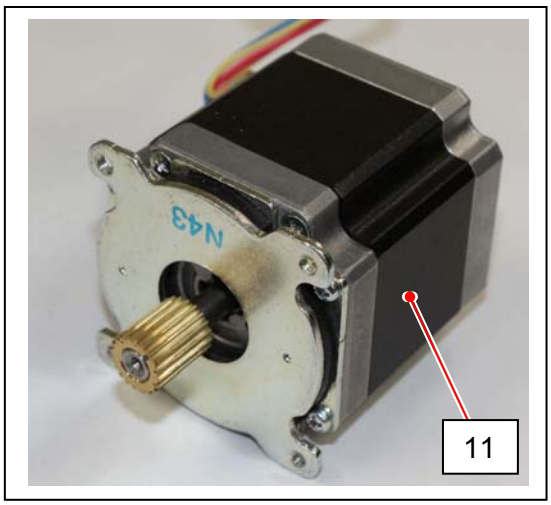


6. Disconnect connector (9).



7. Remove 2 screws (10) to remove Motor Assy (11).
   Replace Motor Assy with new one.

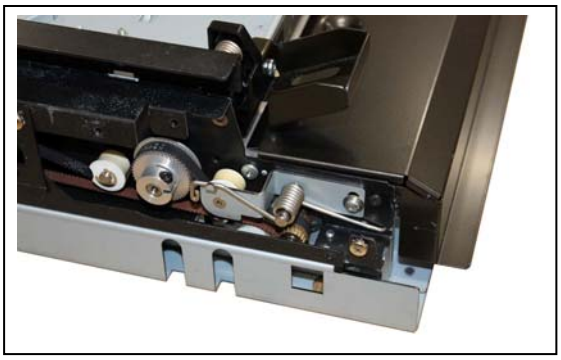




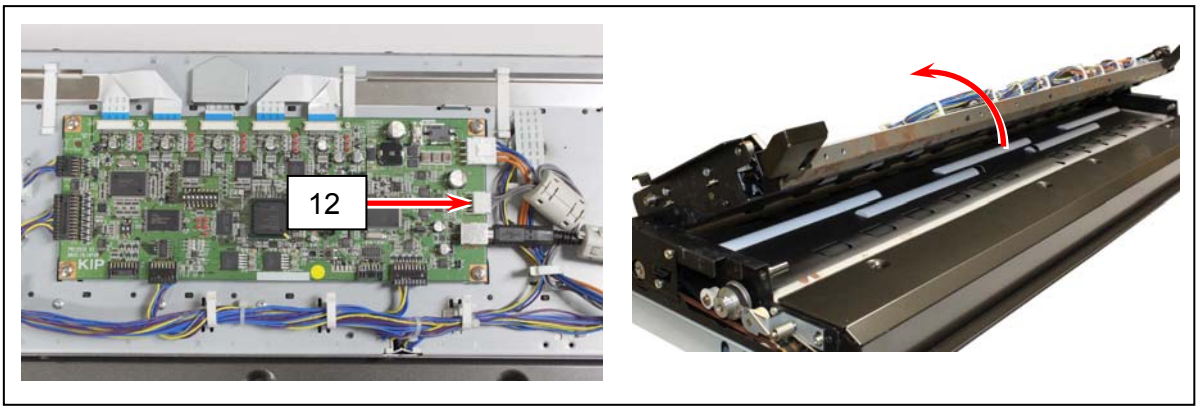
⚠ NOTE

In order to apply right tension on the “Belt”, it is necessary to execute following procedure before proceeding.

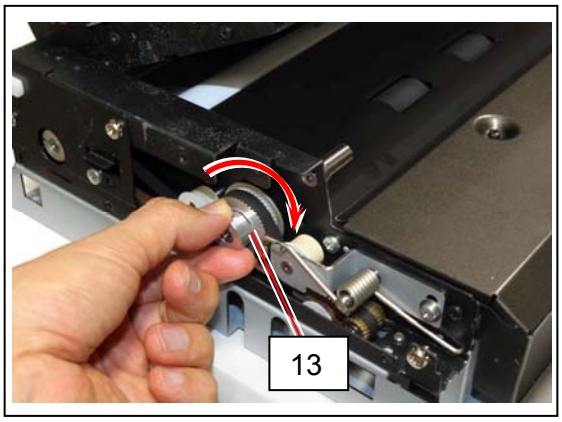
(1) Assemble until right photo.



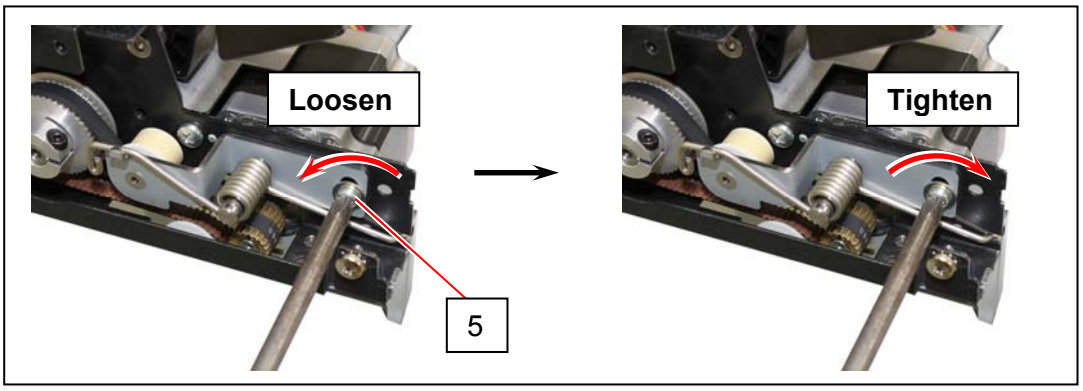
(2) Disconnect the Motor Connector (12) of the main board and open the Upper Unit.



(3) Turn Pulley (13) in several revolutions to the direction of the arrows.



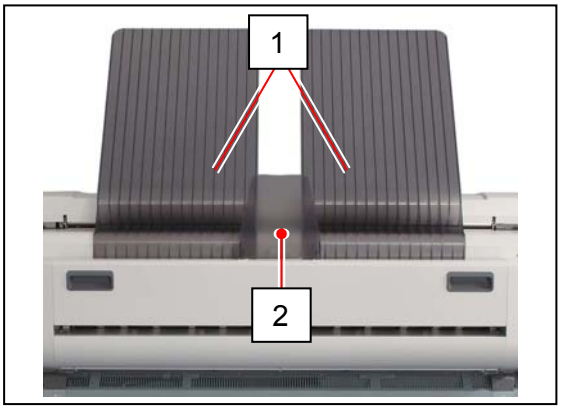
(4) Once loosen “Screw (5)” and then re-tighten the “Screw”.



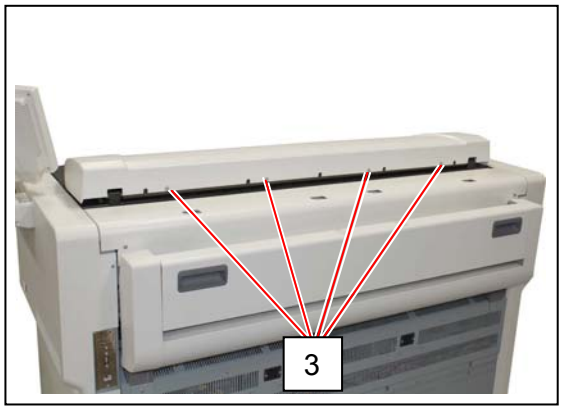
(5) Connect the Motor Connector.

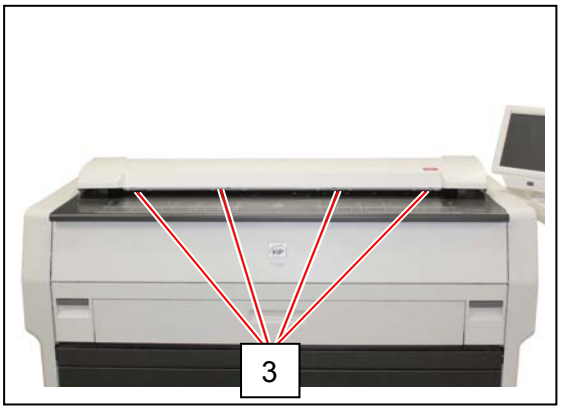
5. 13. 4 Replacing Sheet Roller (Platen)

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

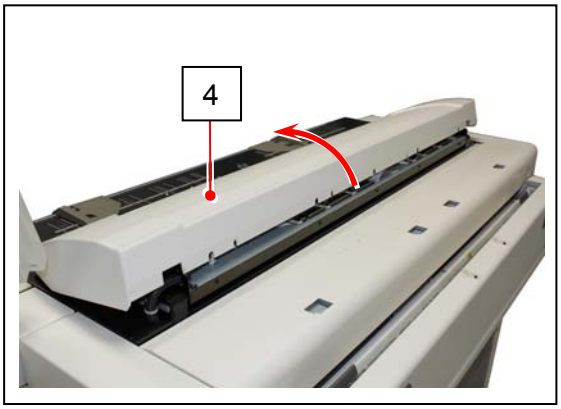


2. Remove 8 pieces of screws (3).





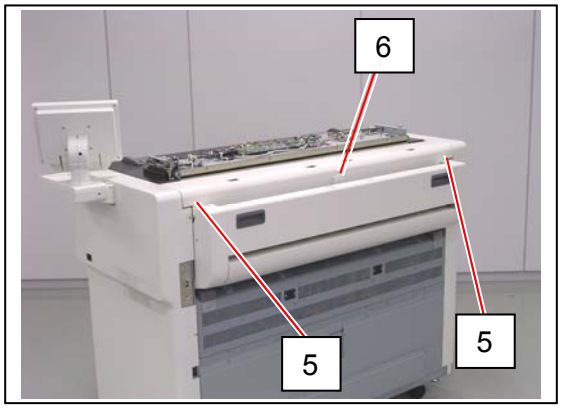
3. Remove the Top Cover (4).



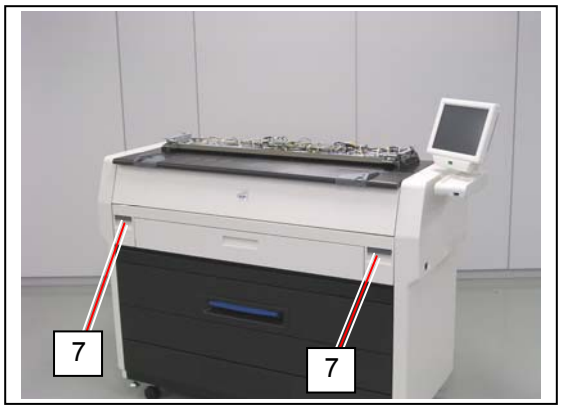
⚠ NOTE

It is necessary to install under the condition to Closing “Upper Unit” when installing “Top Cover”.

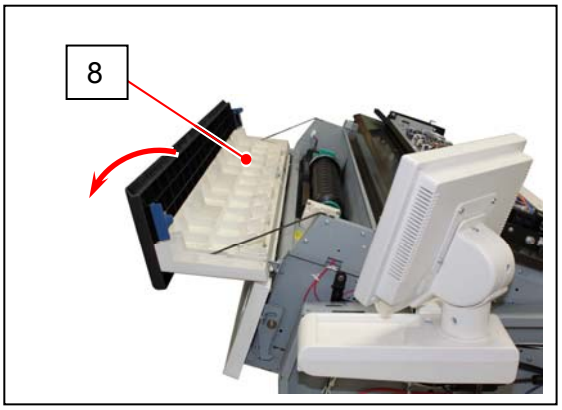
4. Remove 2 tooth washer screws (5) to remove Cover (6)



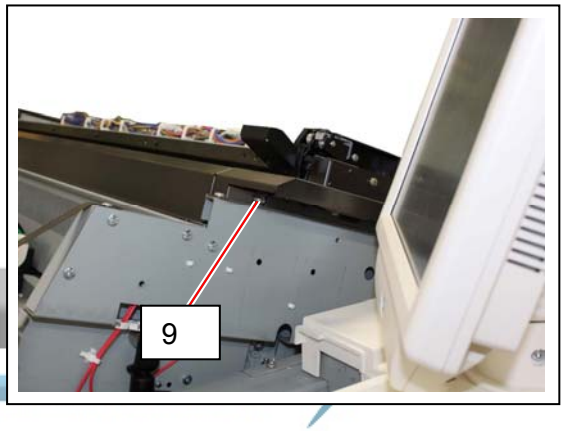
5. Pull up Lever 2 (7) to open the Engine Unit.

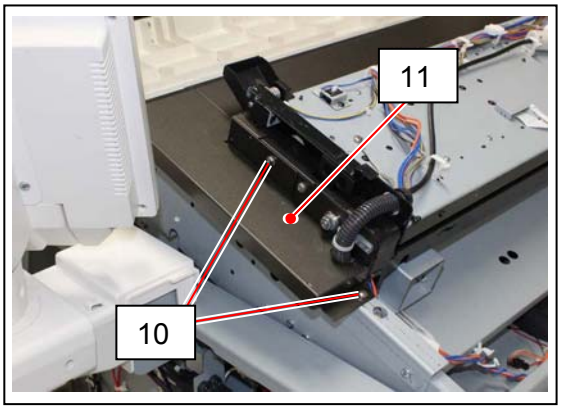


6. Open Cover (8).

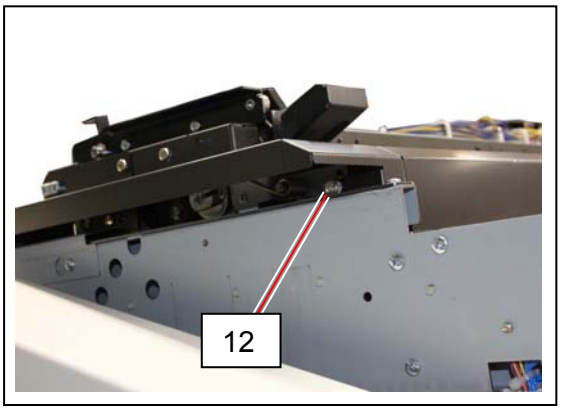


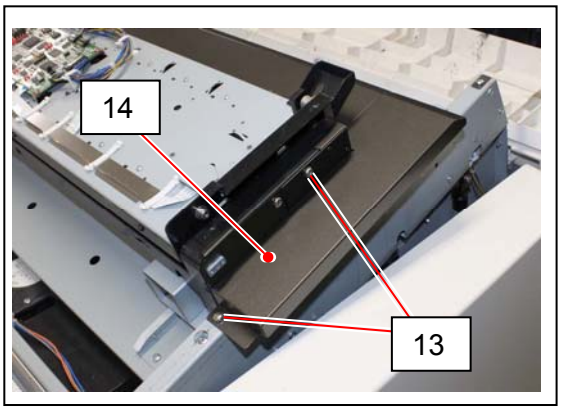
7. Loosen 1 screw (9).
Remove 2 screws (10) to remove Cover (11).



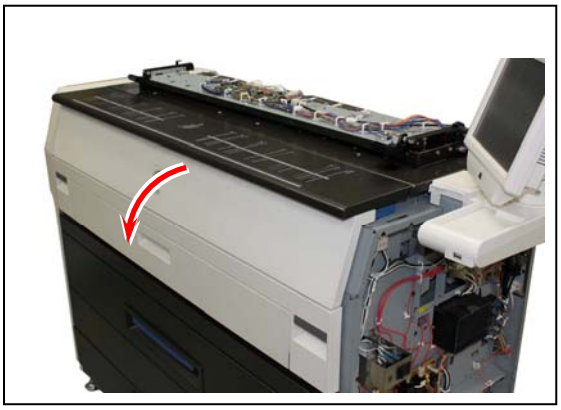


8. Loosen 1 screw (12).
   Remove 2 screws (13) to remove Cover (14).

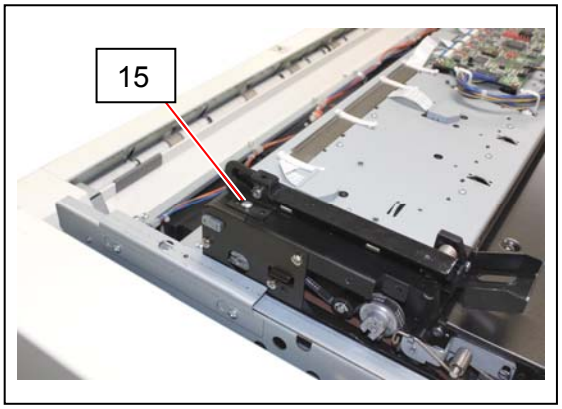


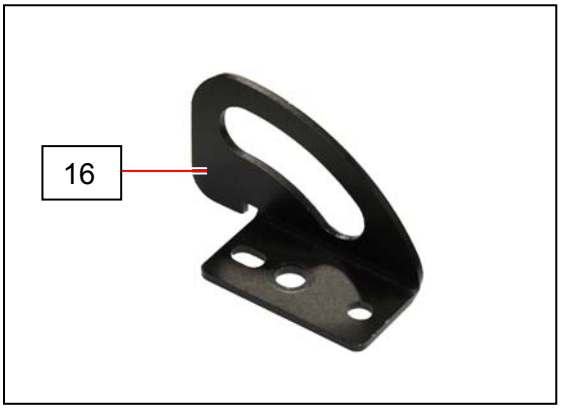


9. Close the Engine Unit.

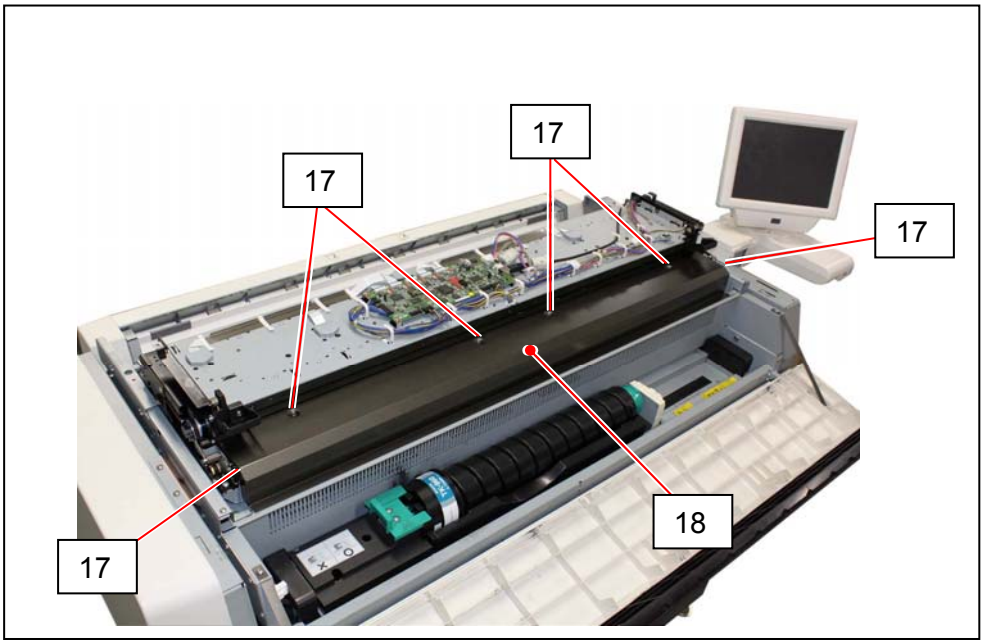


10. Remove 1 screw (15) to remove Stopper Plate (16).

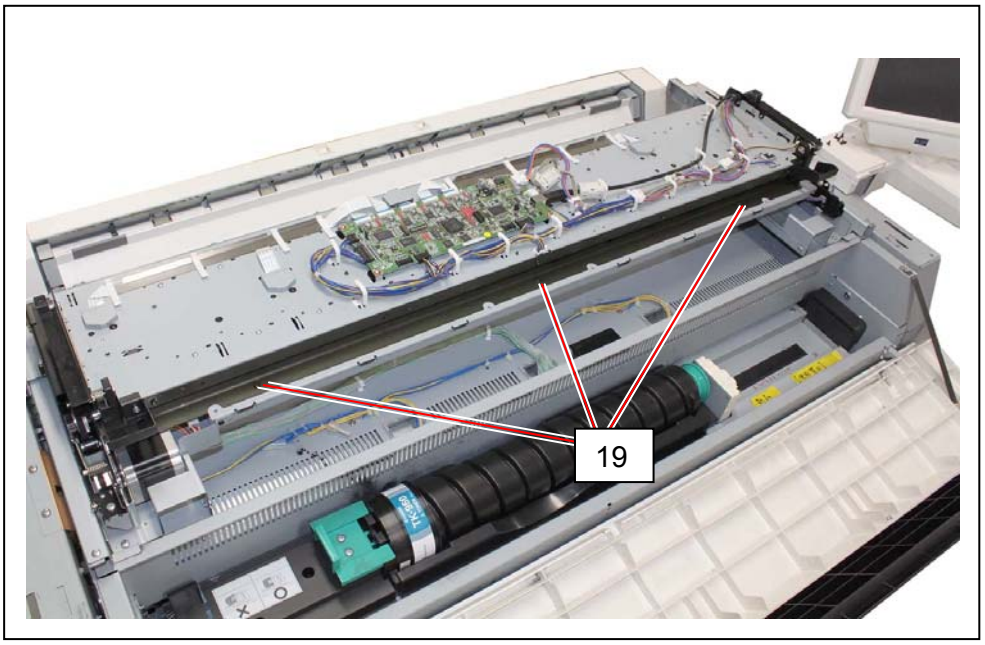




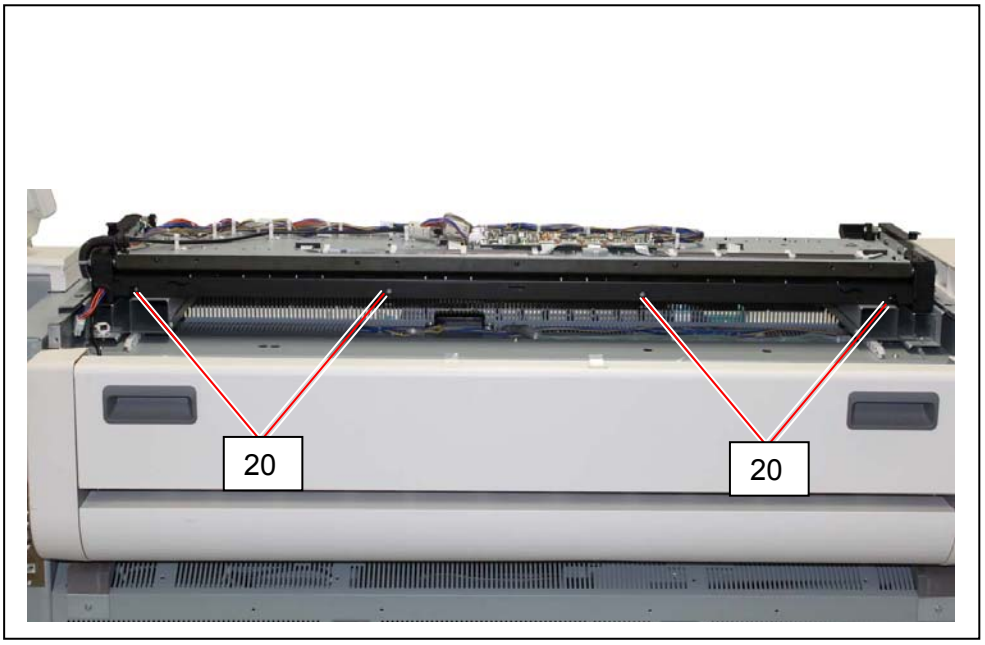
11. Remove 6 screws (17) to remove Sheet Guide (18).

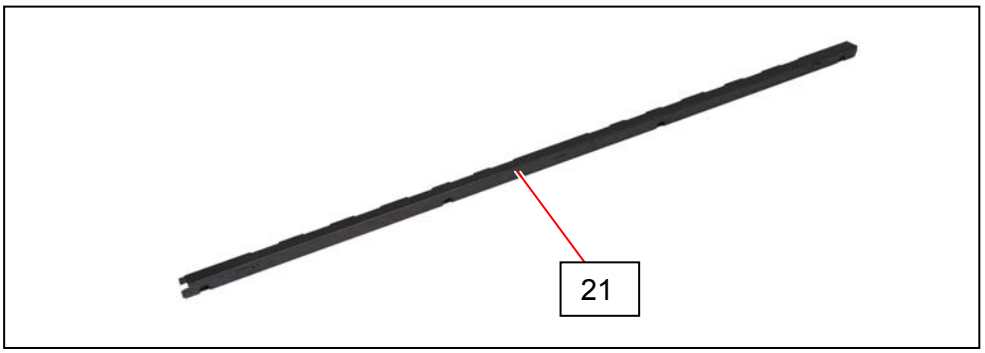


12. Remove 3 screws (19).

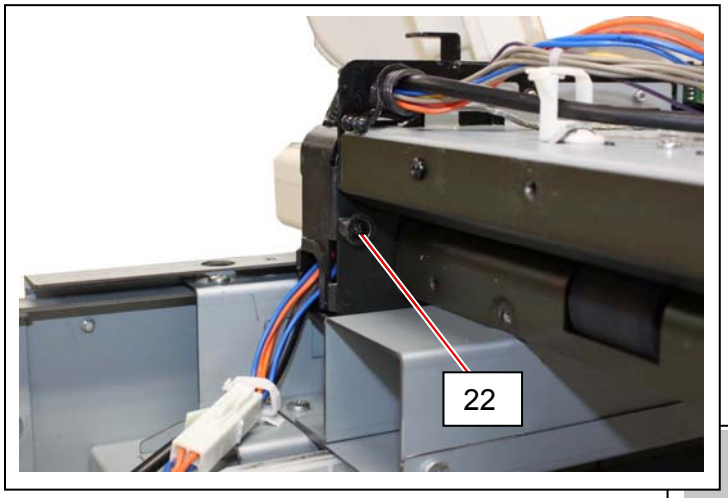


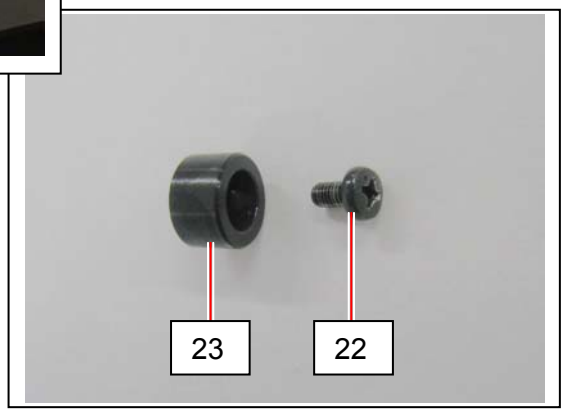
13. Remove 4 screws (20) to remove Exit Guide (21)



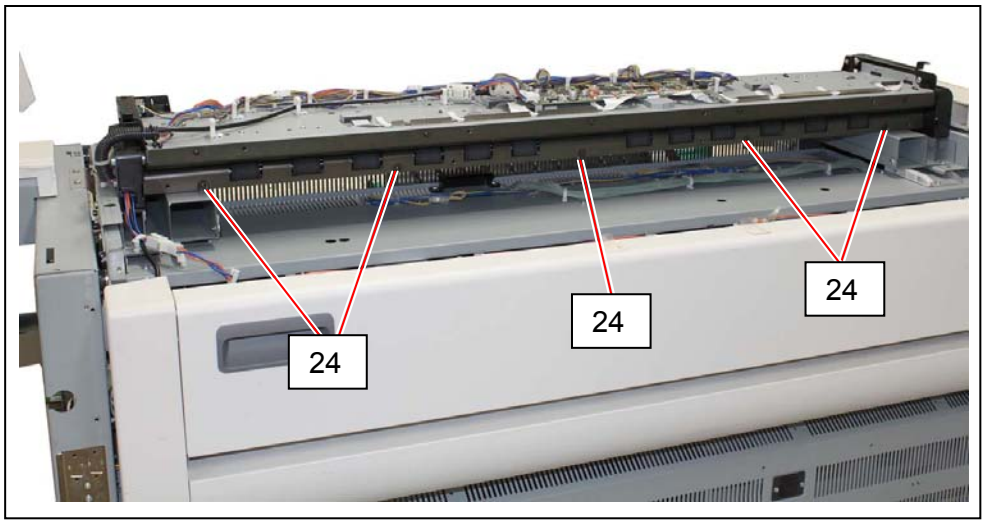


14. Remove 1 screw (22) to remove Stopper (23).

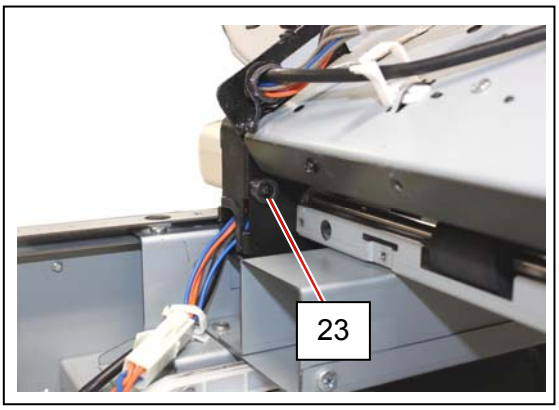




15. Remove 5 screws (24).



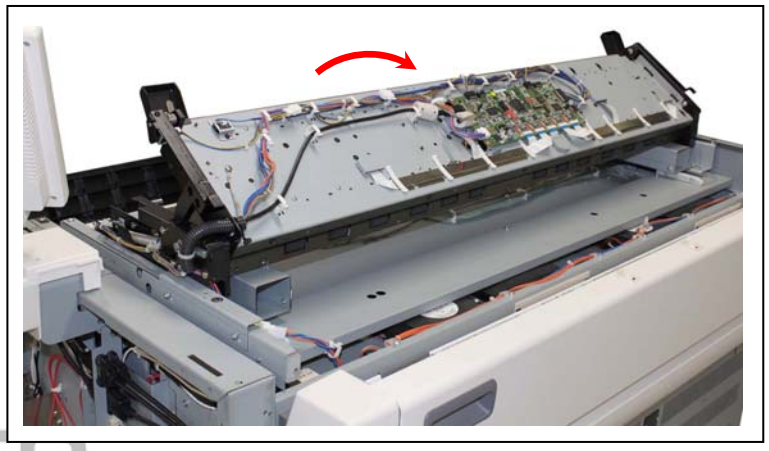
16. Return Stopper (23) in position.



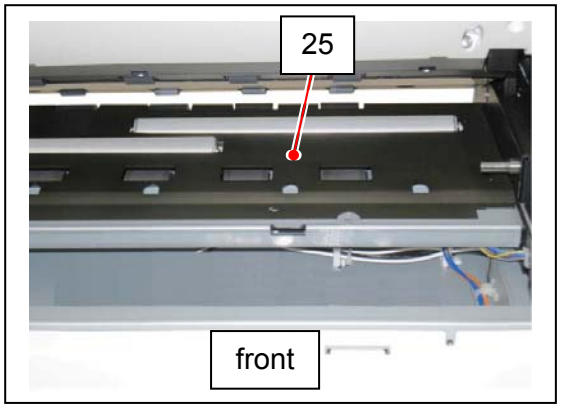
NOTE

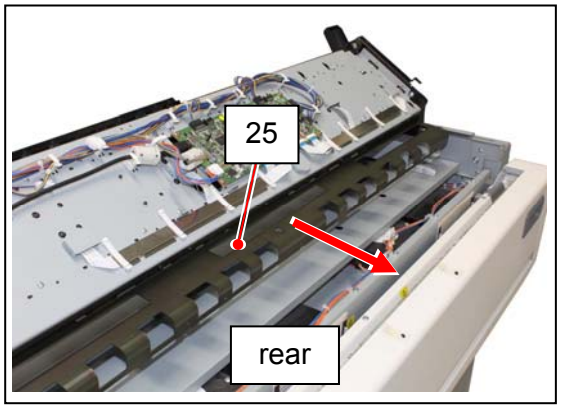
During this procedure, it is possible to go down “Upper Unit” to backside and may possible make damage on “Harness” and “Damper” during this procedure. So, it is necessary to surely install “Stopper (23) and then proceed.

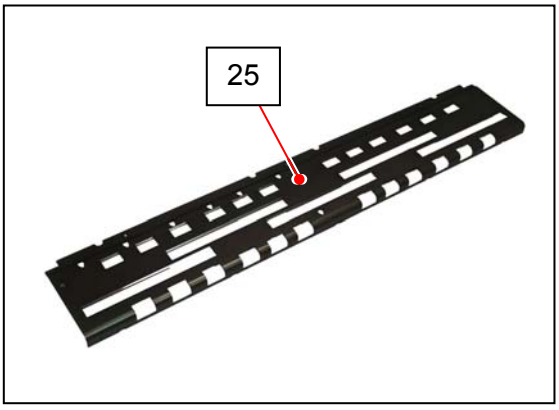
17. Open the Upper Unit



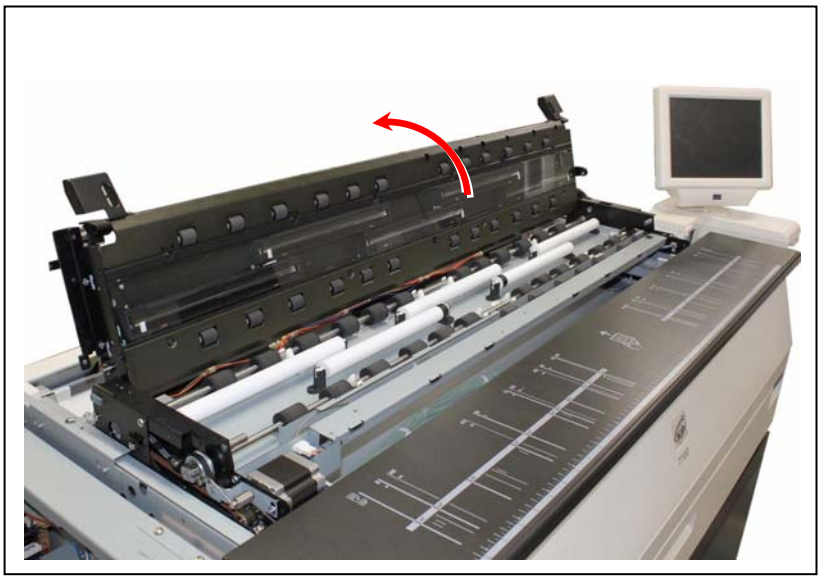
18. Lift up the front side of the Lower Unit Guide Plate (25) to escape from the rollers.
Pull and remove the Lower Unit Guide Plate (25) to the rear side.



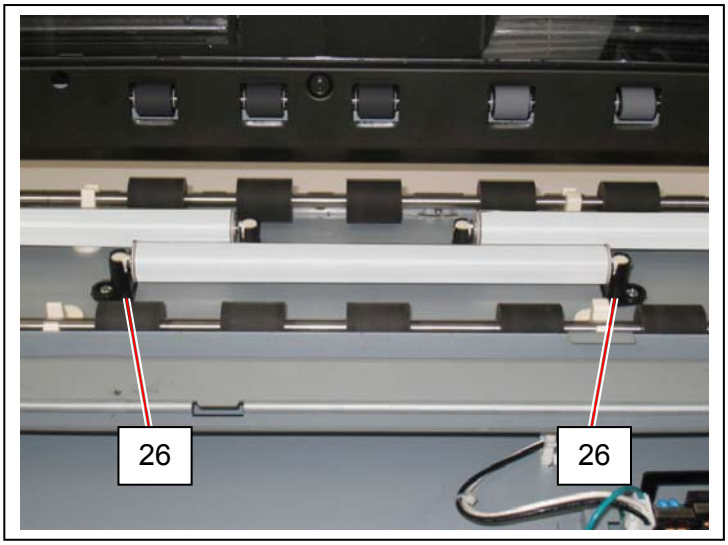


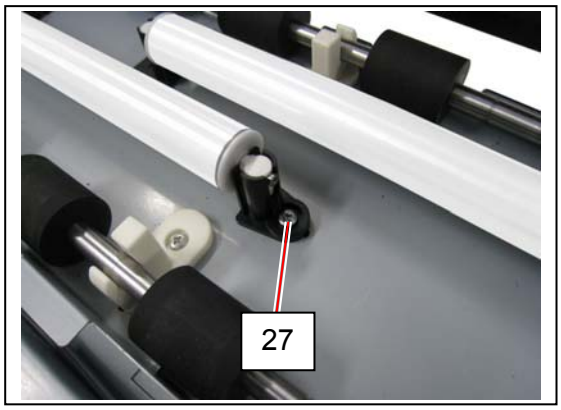


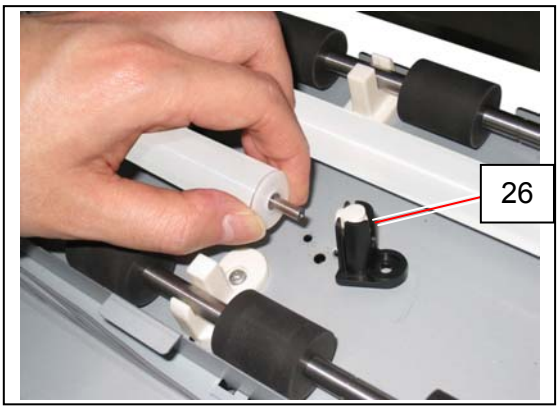
19. Open the Upper Unit.



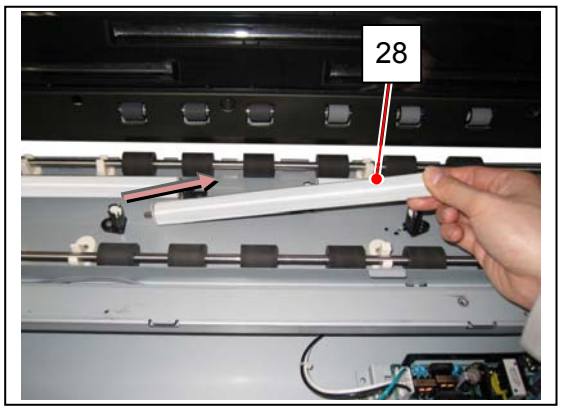
20. Each Sheet Roller is set in a pair of the holders (26).
    Remove 1 screw (27) on either side to remove the holder (26).

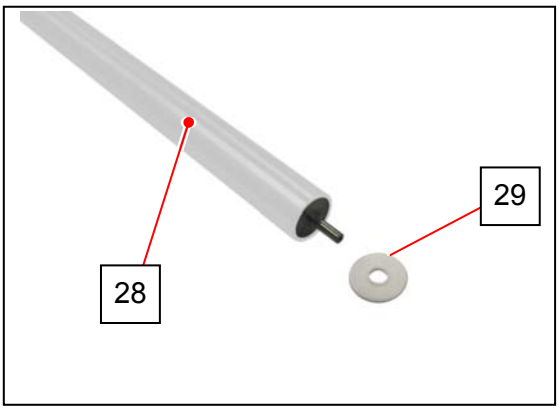






21. Pull and remove the Sheet Roller (28) from the other holder (26). Replace the Sheet Roller (28) with a new one.
    The white collars on both ends (29) of the Sheet Roller (28) should be reused.



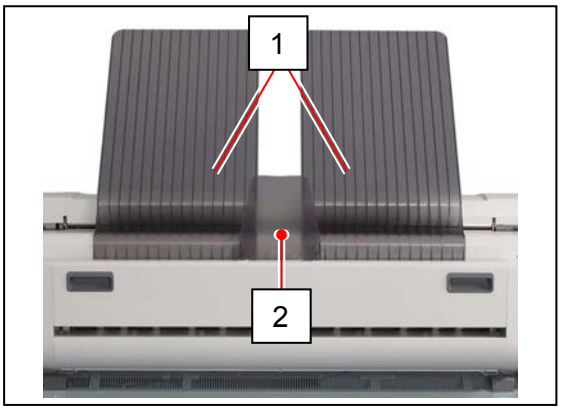


5. 13. 5 Replacing Main Board (PW12920)

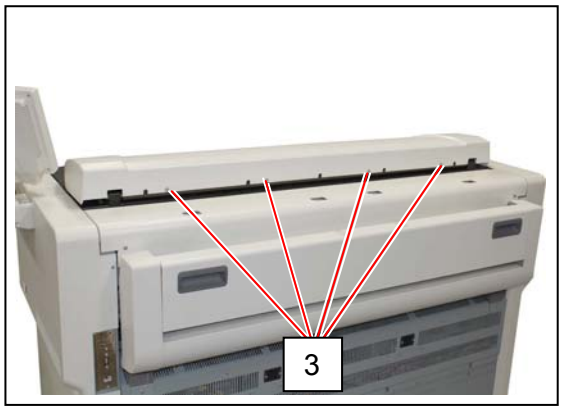
NOTE

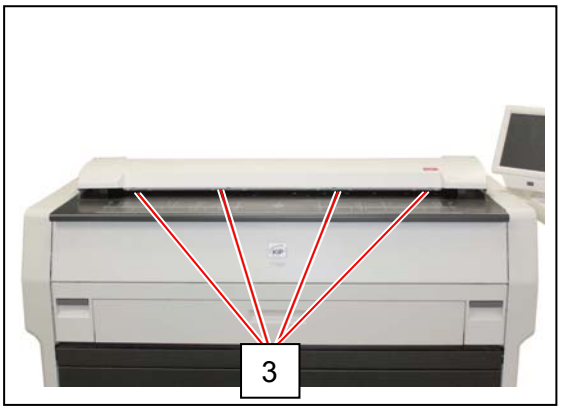
After replacement, the Main Board requires importing a backup data.
You have to **save the current backup data and shading data** to utilize the spare Main Board without any fail. Otherwise you will be requested to get the factory backup from the manufacturer.

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

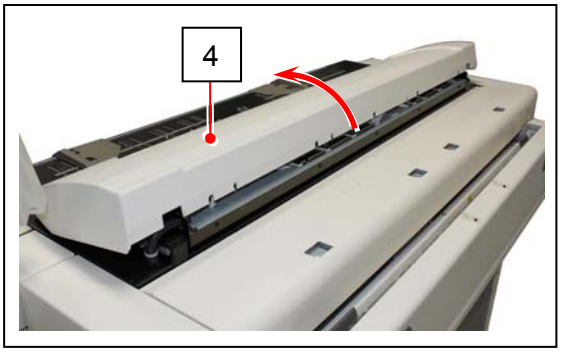


2. Remove 8 pieces of screws (3).



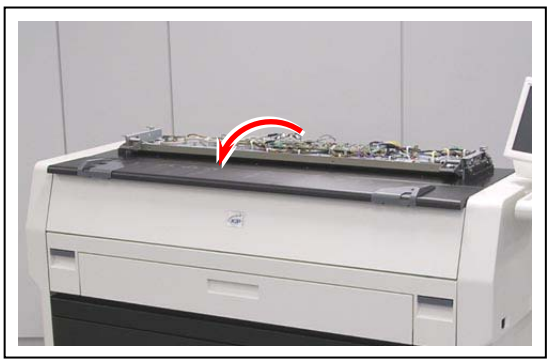


3. Remove the Top Cover (4).

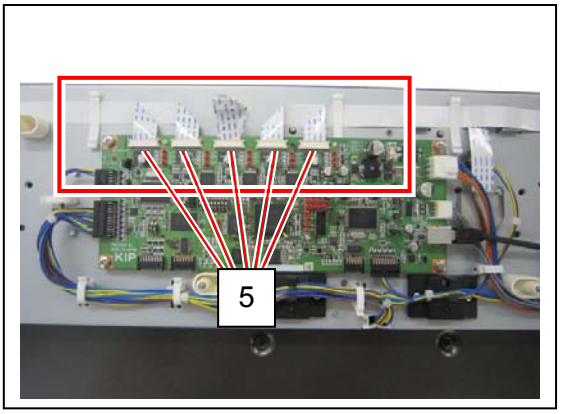


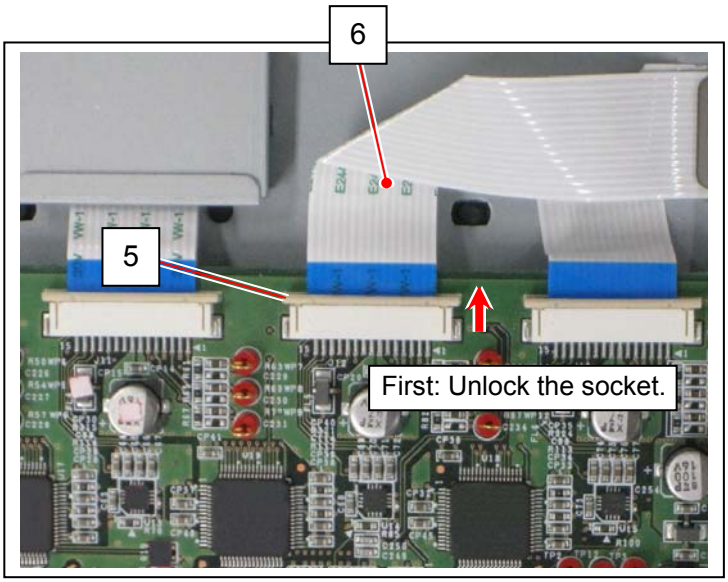
NOTE

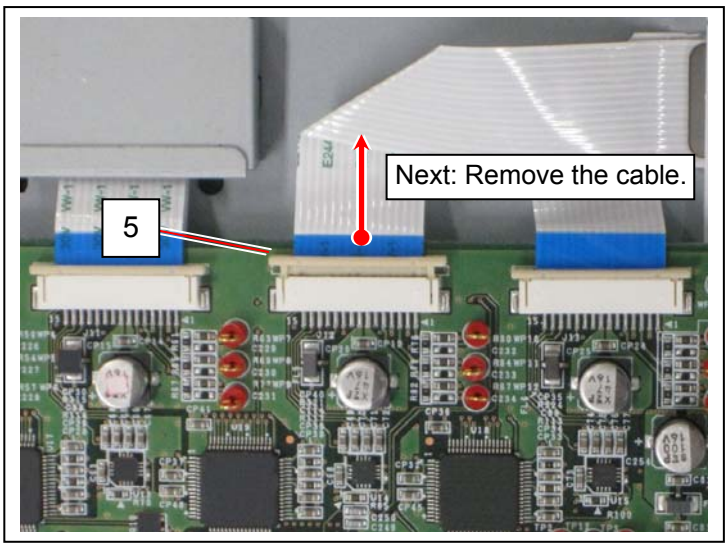
It is necessary to install under the condition to Closing “Upper Unit” when installing “Top Cover”.



4. Unlock all the 5 flat cable's terminal socket (5), and then gently remove 5 flat cables (6).





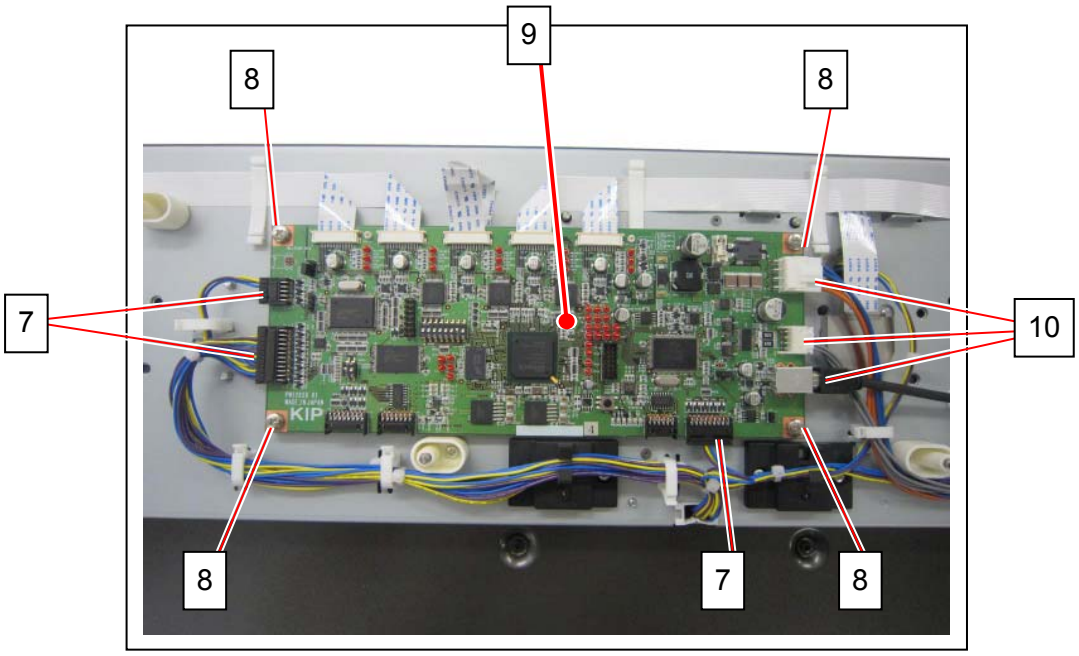


NOTE

(1) **FRAGILE.** Handle the flat cables with great care.

(2) For reassembling, first confirm that the terminal socket has been released. Next gently insert the flat cable's end to the terminal correctly.
Reassembling incorrectly would lead abnormal scan image, for example the concerning area of the scanned image turns solid black.

5. Disconnect all the other cables (7), remove 4 screws (8) on every corner, and then replace the Main Board (9) with a new one.



NOTE

After replacement, the Main Board requires importing backup data and Shading Adjustments.

5. 13. 6 Replacing CIS

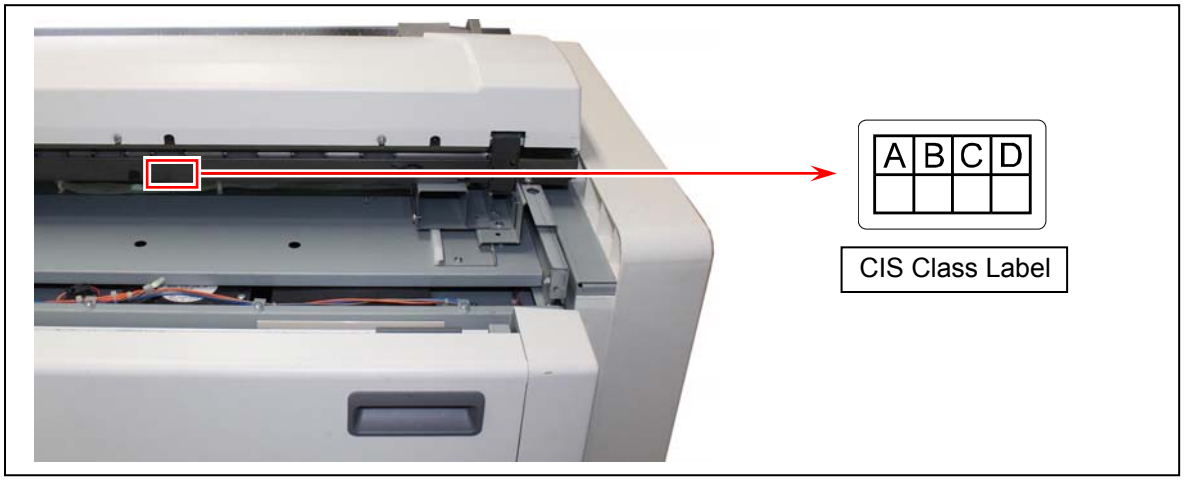
NOTE

CIS Sensor is classified into classes according to wavelength variations of their LED.

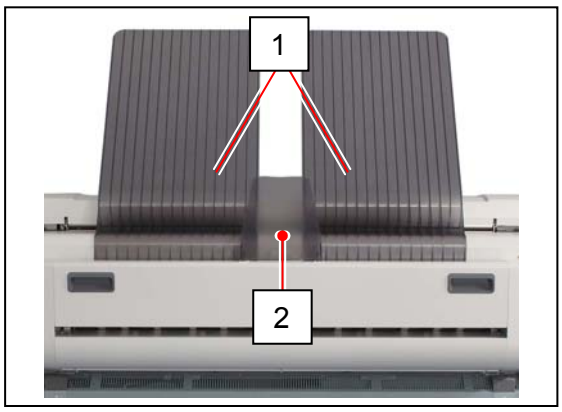
All 5 pieces of CIS on a certain scanner should belong in the identical class to assure even image quality (brightness, color quality and etc) among image blocks.

Be sure to check which CIS class is used to the scanner before replacing to avoid class mixing. Otherwise even image quality cannot be expected.

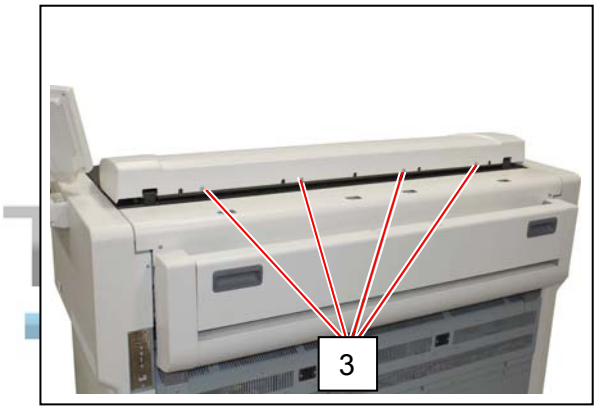
Equipped CIS class can be checked with the label on CIS itself or the label at the rear of the scanner.

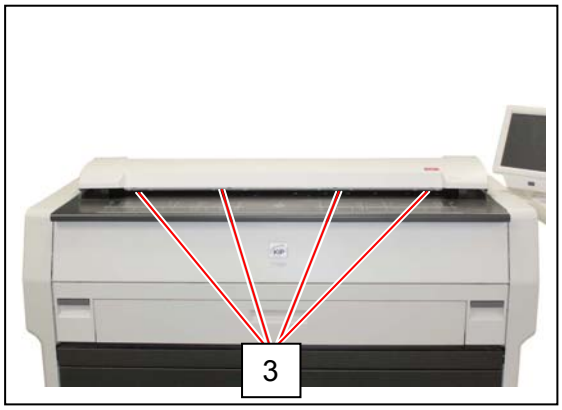


1. Remove 2 pieces of Exit Tray (1) and Exit Tray 2 (2).

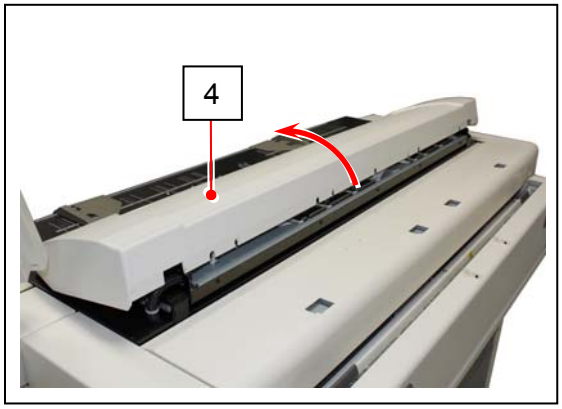


2. Remove 8 pieces of screws (3).



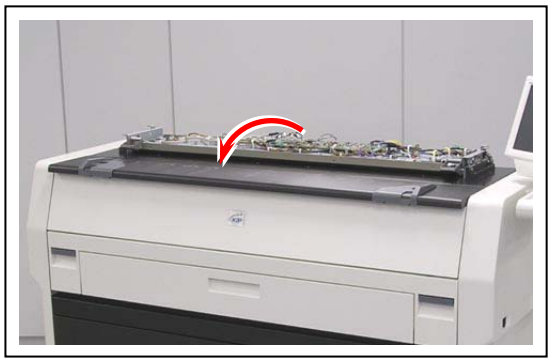


3. Remove the Top Cover (4).

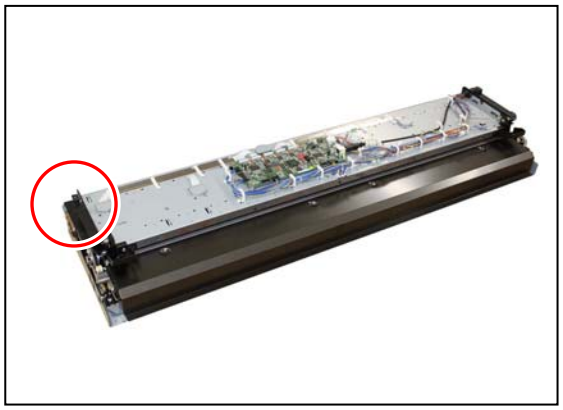


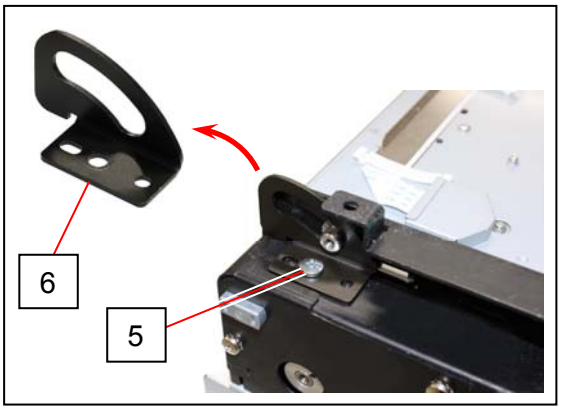
NOTE

It is necessary to install under the condition to Closing “Upper Unit” when installing “Top Cover”.



4. Remove 1 screw (5) to remove Stopper Plate (6).

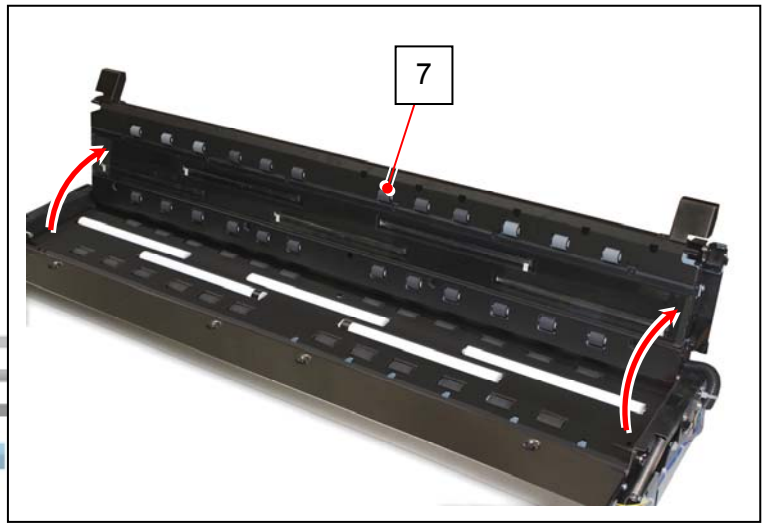




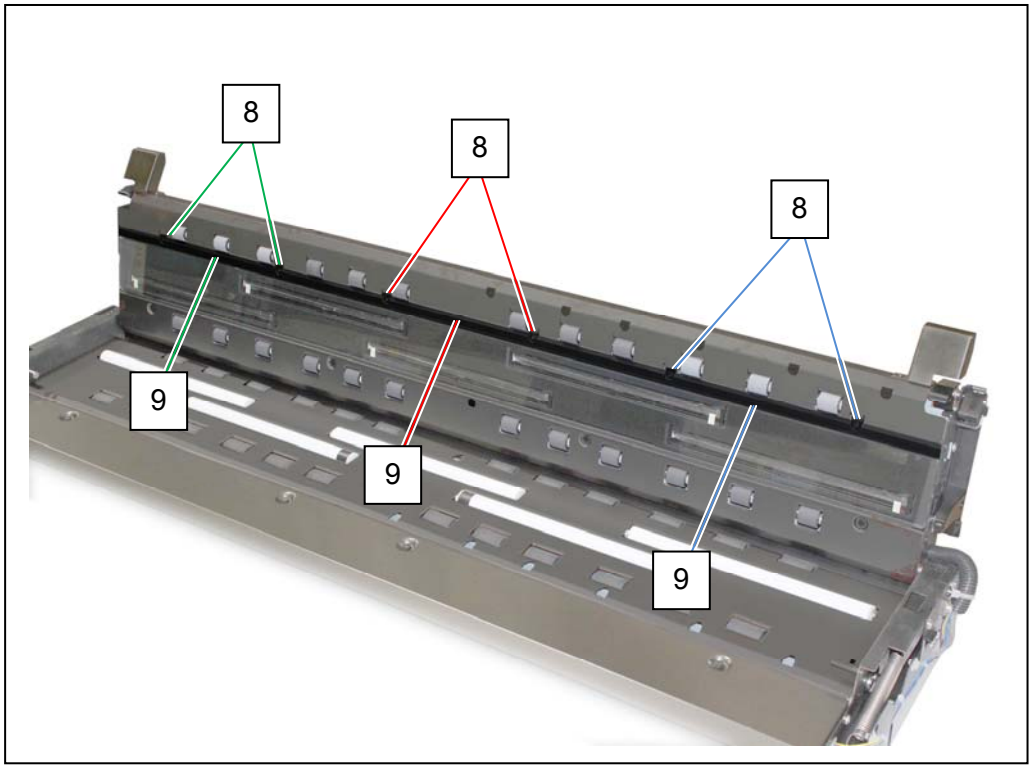
Reference

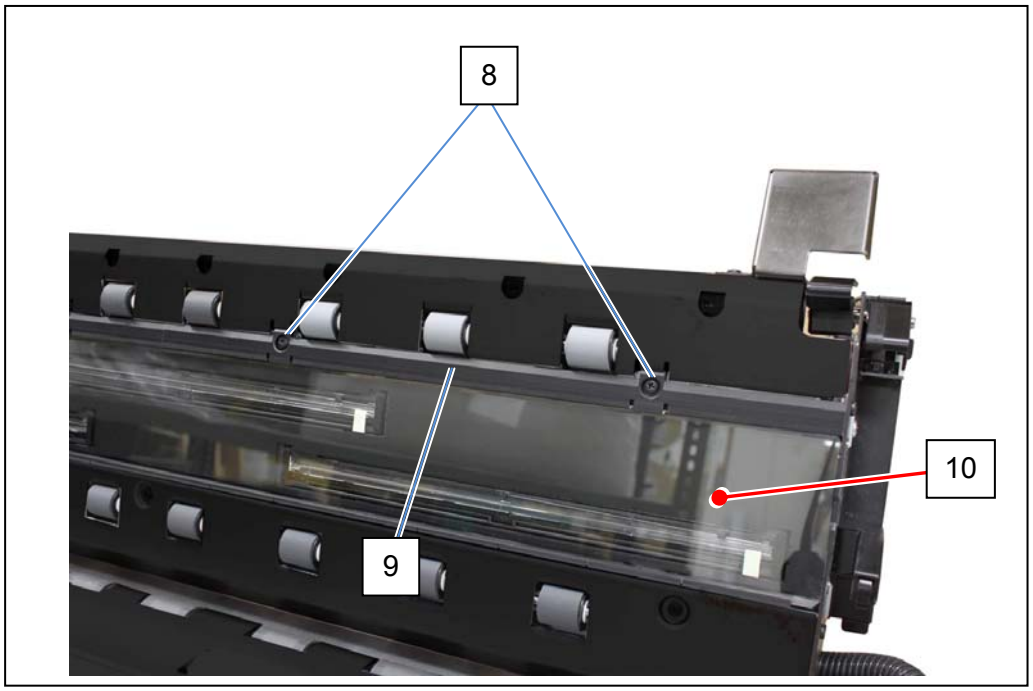
The Stopper Plate (6) is a safety to limit the motion range of the Upper Unit at “operation position 40 degrees”. In this section, another safety at “service position 100 degrees” works.

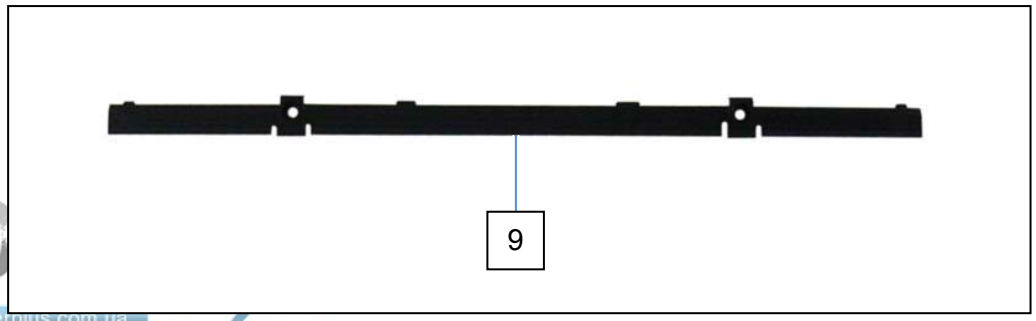
5. Fully open the Upper Unit (7). The Upper Unit is now open at 100 degrees.



6. Remove 6 screws (8) to remove 3 Glass Holders (9).
   As the Upper Unit is now open at 100 degrees, the Glass DCMNT (10) will stay without supporting.



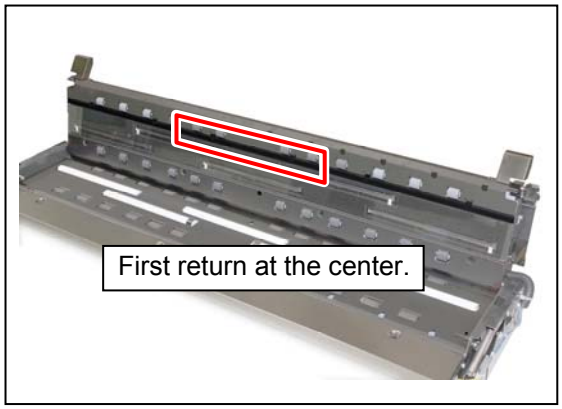




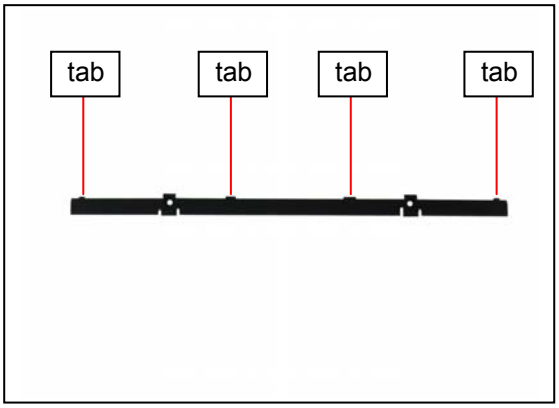
NOTE

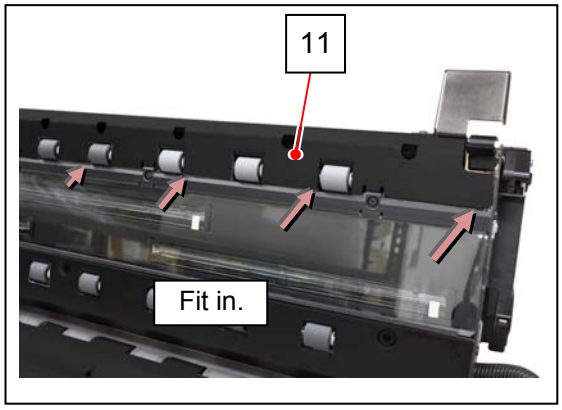
(1) Keep in mind that there is no fixation on the Glass DCMNT at this point.
It may fall if you close the Upper Unit.

(2) For reassembling, first reinstall the Glass Holder at the center.

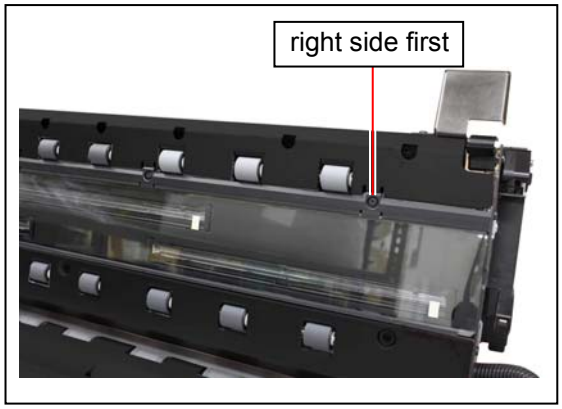


(3) For reassembling, fit the 4 tab parts under the Upper Front Guide Plate (11).

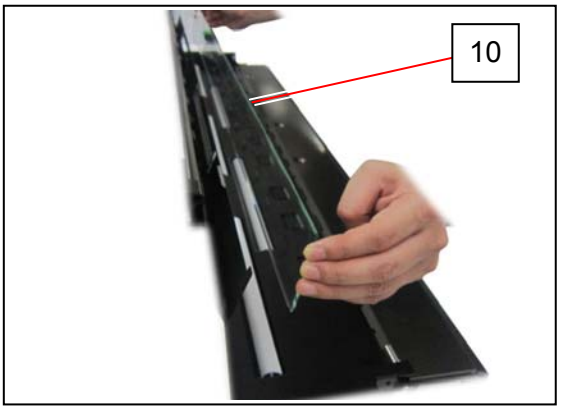




(4) For reassembling, first tighten the screw (8) on the right side.



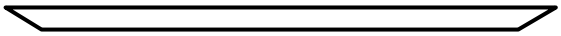
7. Remove the Glass DCMNT (10).



NOTE

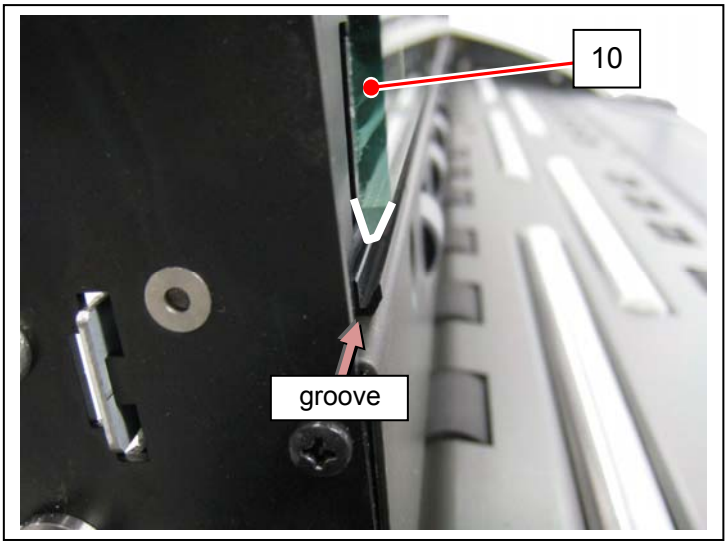
(1) The wider face with 5 stickers should be the inner face. (CIS side)
The narrower face should be the outer face. (document side)

Inner face (CIS side)



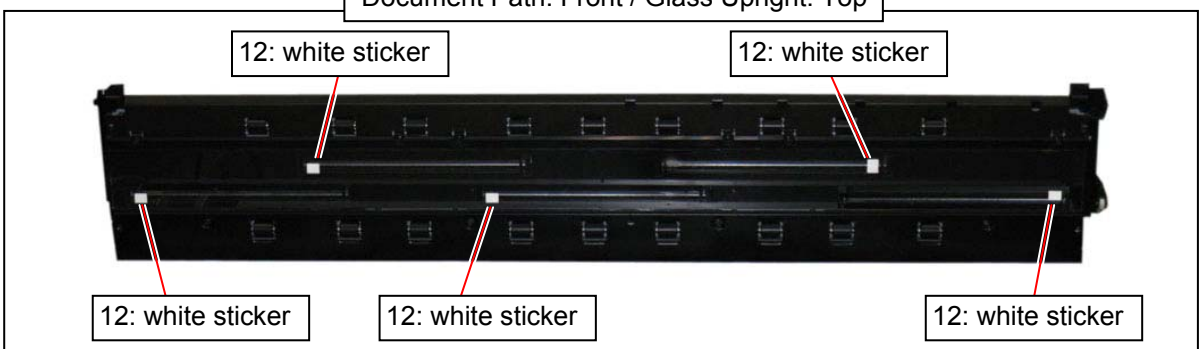
Outer face (document side)

(2) For reassembling, fit the glass's edge in the groove.



(3) There are 5 portions of the white sticker (12) on the Glass DCMNT's inner face.
This is for self calibration (white level).
For reassembling, 2-sticker row should correspond to the front CIS row as follows.

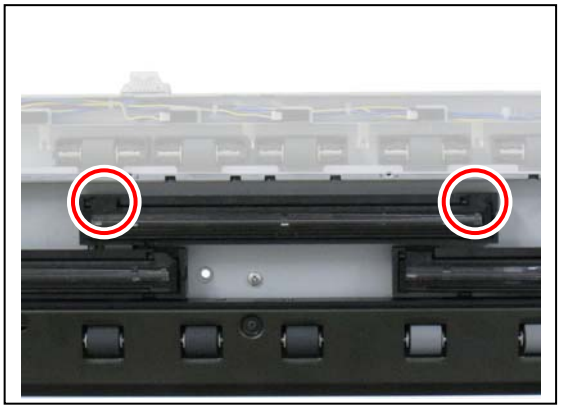
Document Path: Front / Glass Upright: Top

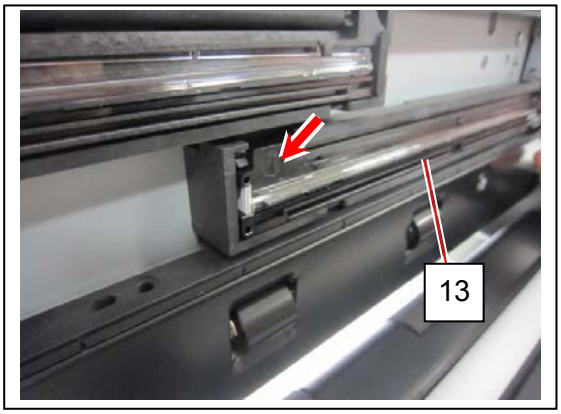


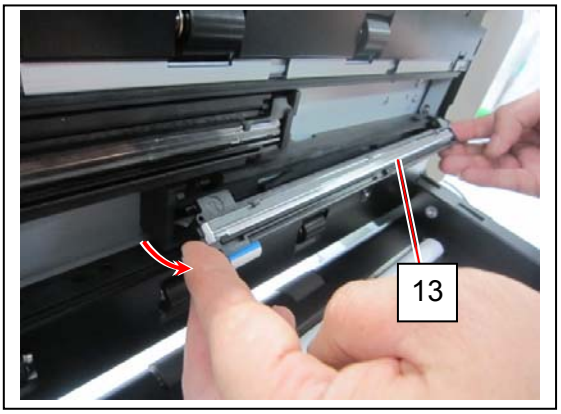
Document Path: Rear / Glass Upright: Bottom

(4) For reassembling, press the Glass DCMNT against the left side.

8. Press the flat areas on both sides to pivot the CIS (13).

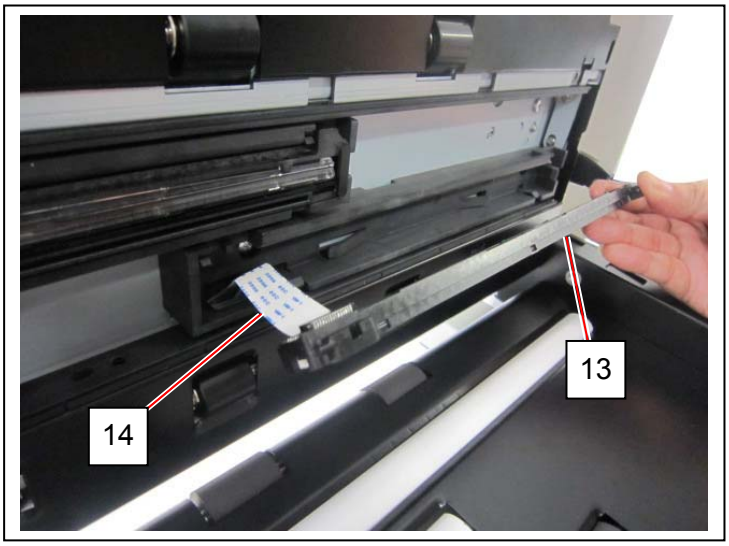






NOTE

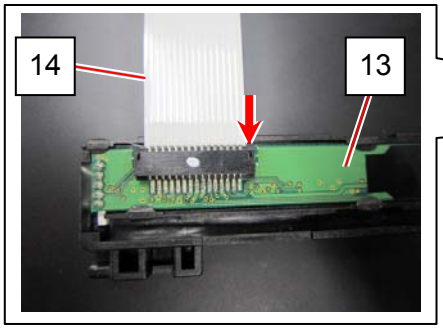
(1) At this point, just release the CIS (13) from the CIS Holder. The CIS is still connected with the flat cable (14). Never pull the CIS by force.



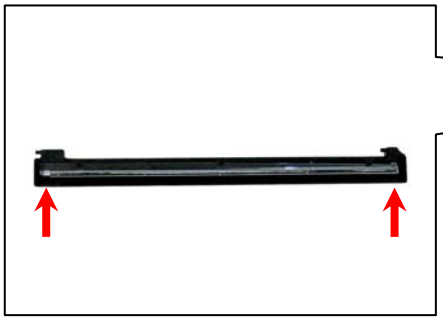
NOTE

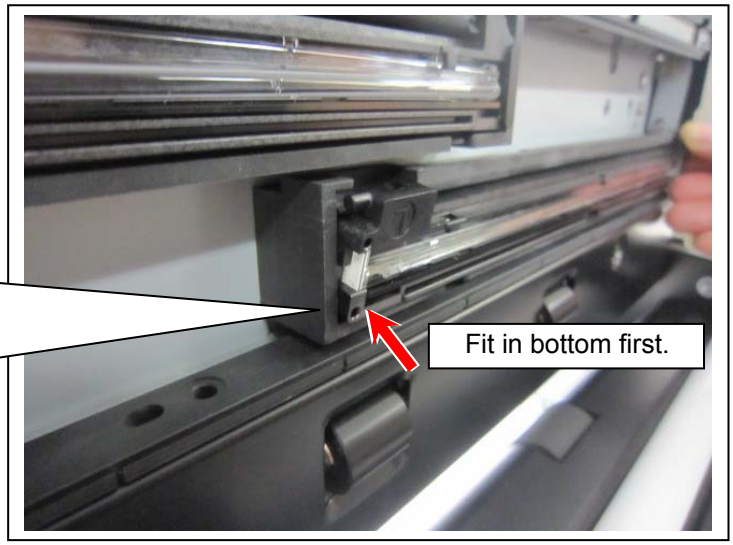
(2) For reassembling, follow the instruction below.

1. Insert the flat cable (14) to the CIS (13).

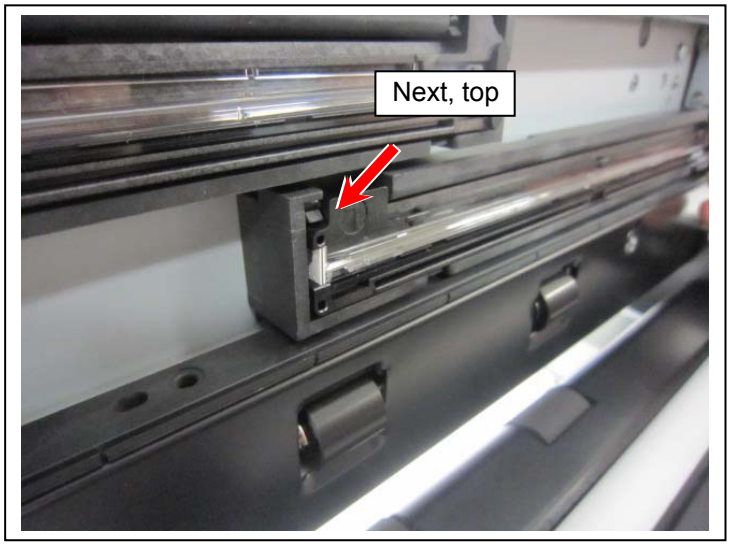


2. Return the CIS's bottom to the CIS Holder first.



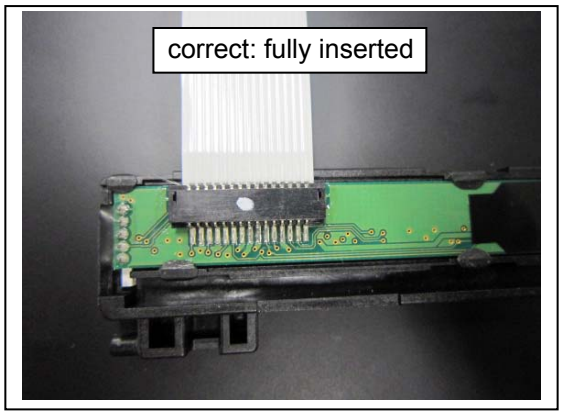


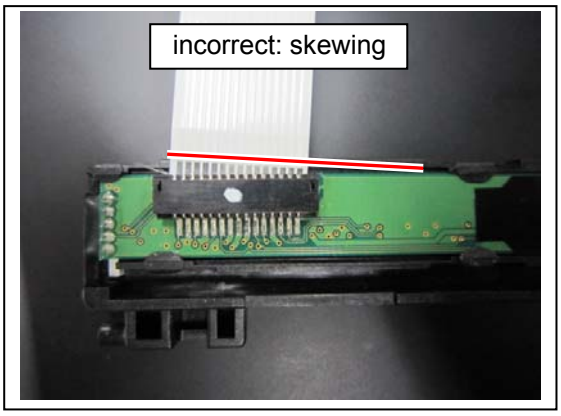
3. Return the CIS's top to the CIS Holder until the Holder's latch surely catches the CIS.

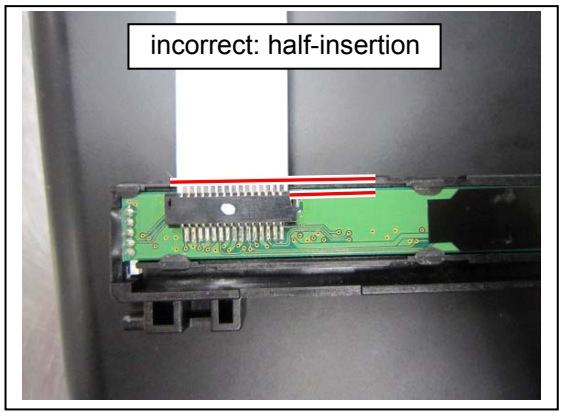


NOTE

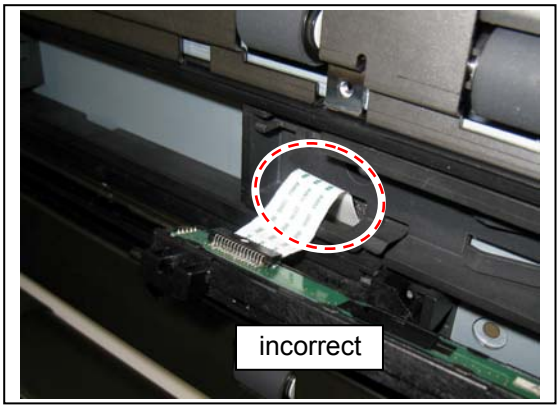
(3) For the flat cables, avoid skewing or half-insertion.

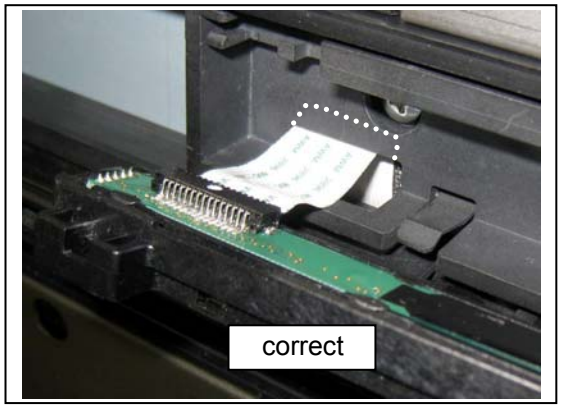




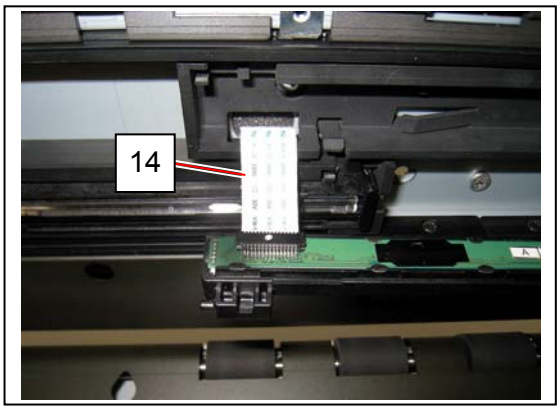


(4) For the flat cables, tuck the excess stretch under the CIS Holder.





12. Carefully disconnect the flat cable (14).

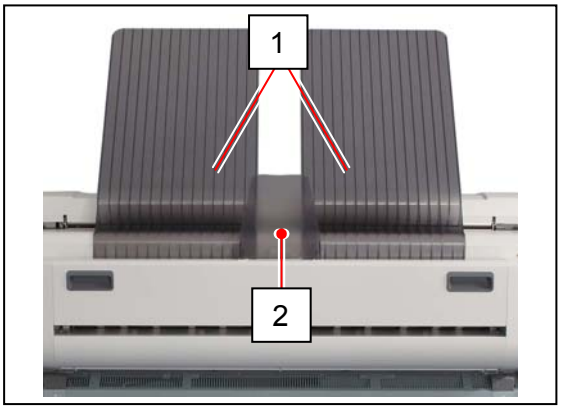


NOTE

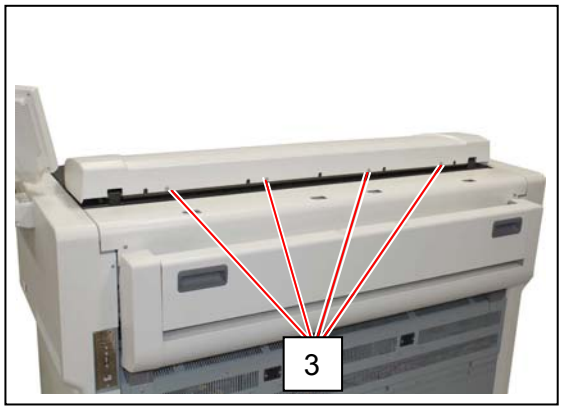
After replacement, the CIS requires Shading / Stitch Adjustments.

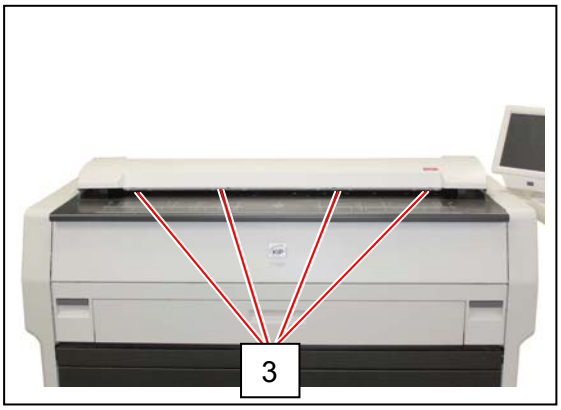
5. 13. 7 Replacing Size Sensor & Jam Sensor

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

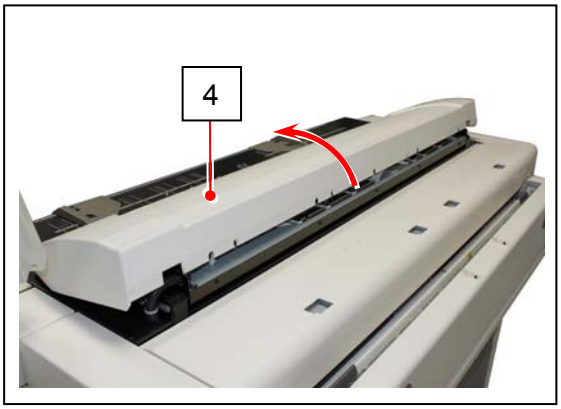


2. Remove 8 pieces of screws (3).



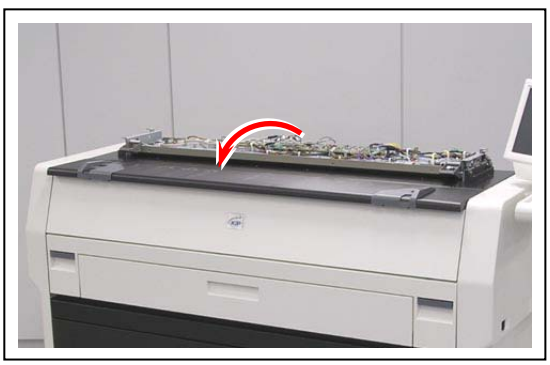


3. Remove the Top Cover (4).

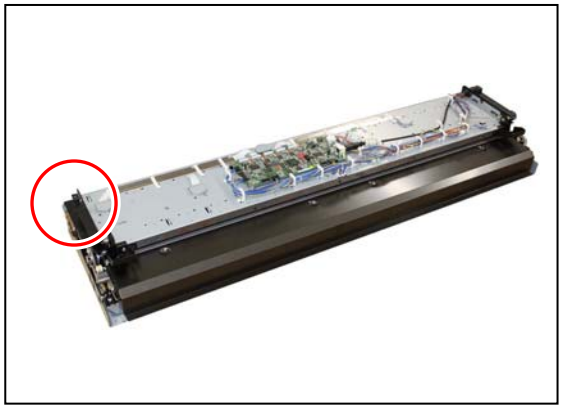


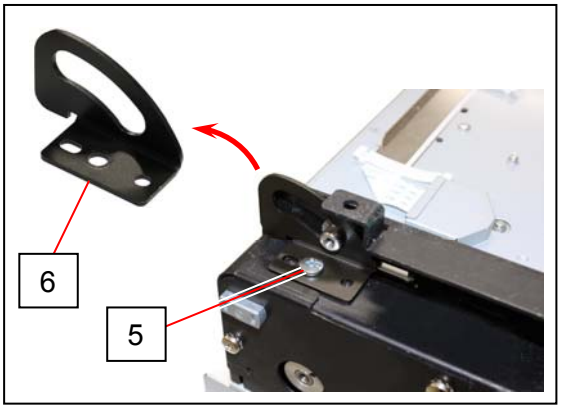
NOTE

It is necessary to install under the condition to Closing “Upper Unit” when installing “Top Cover”.



4. Remove 1 screw (5) to remove Stopper Plate (6).

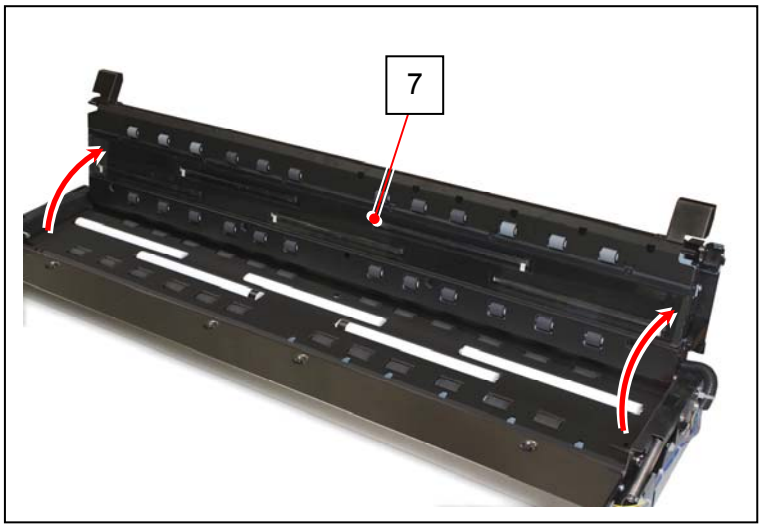




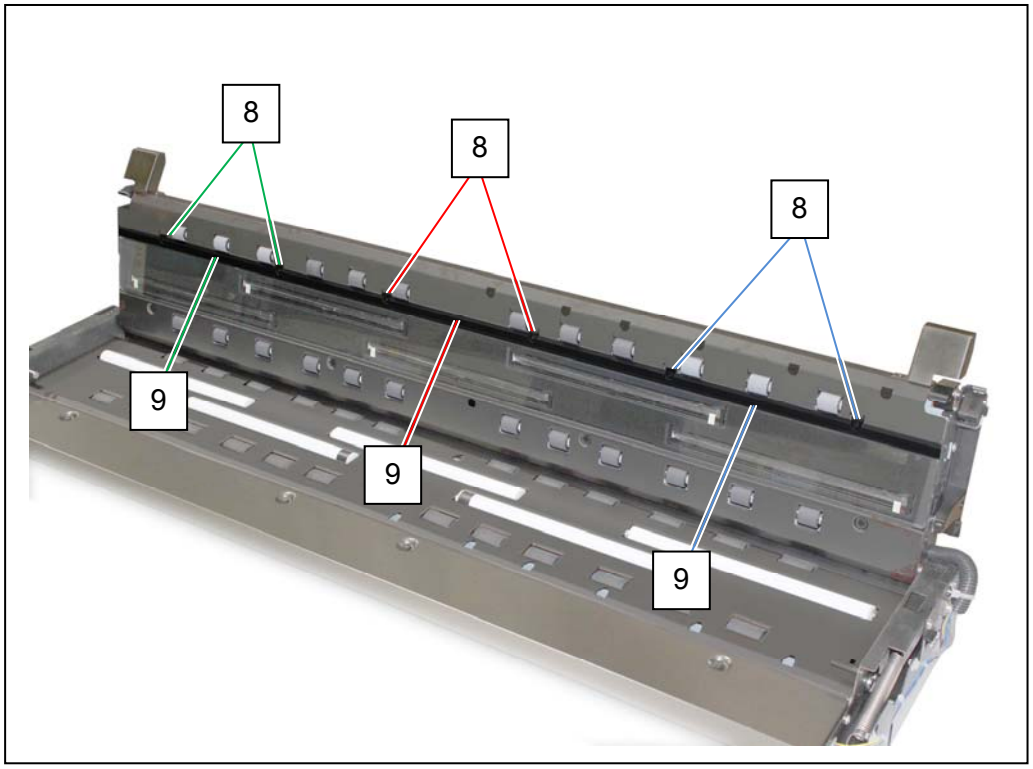
Reference

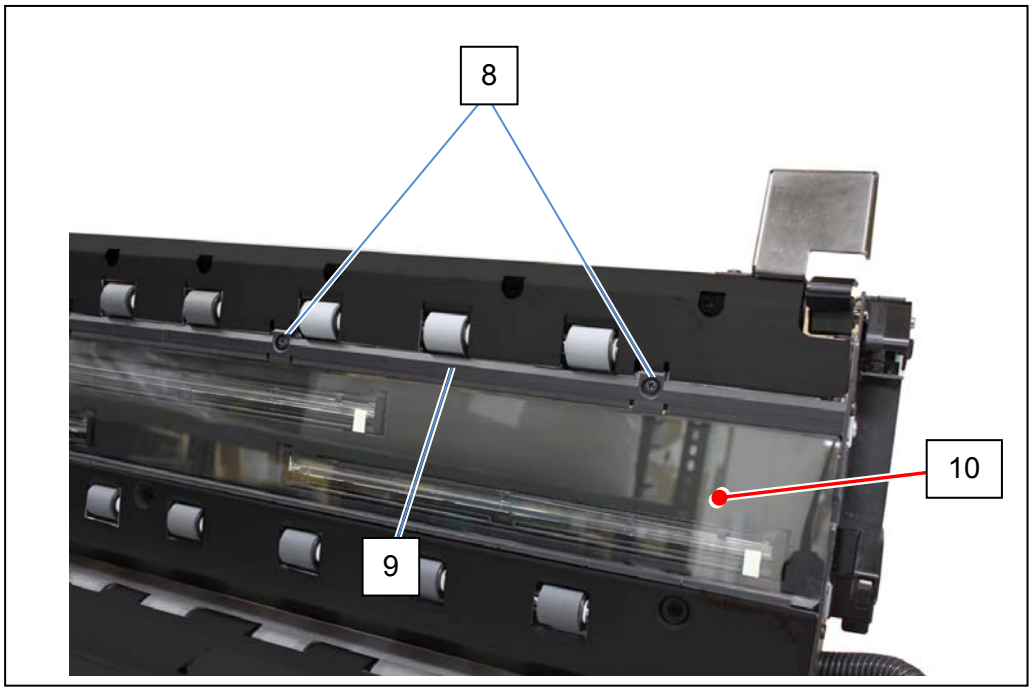
The Stopper Plate (6) is a safety to limit the motion range of the Upper Unit at “operation position 40 degrees”. In this section, another safety at “service position 100 degrees” works.

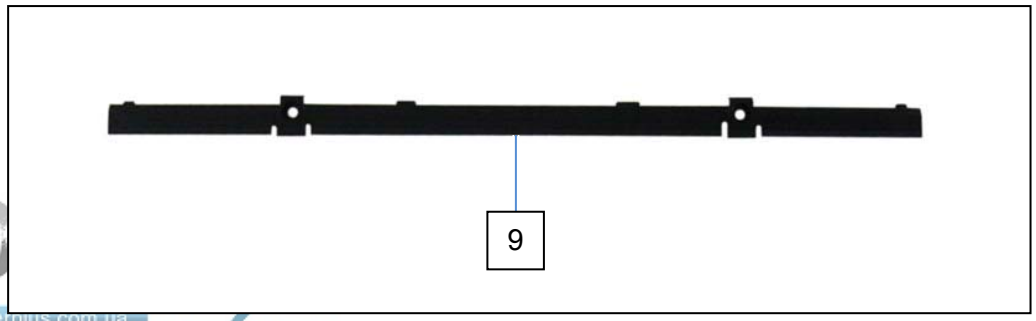
5. Fully open the Upper Unit (7). The Upper Unit is now open at 100 degrees.



6. Remove 6 screws (8) to remove 3 Glass Holders (9).
   As the Upper Unit is now open at 100 degrees, the Glass DCMNT (10) will stay without supporting.



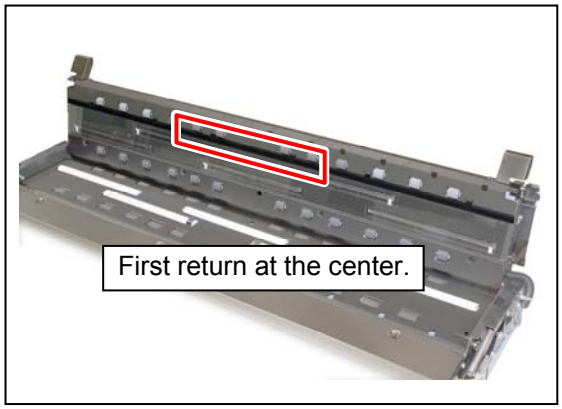




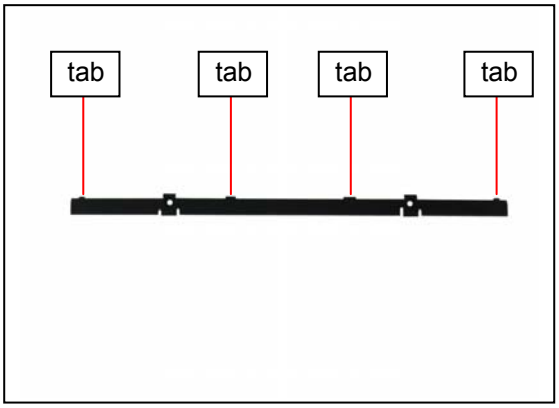
NOTE

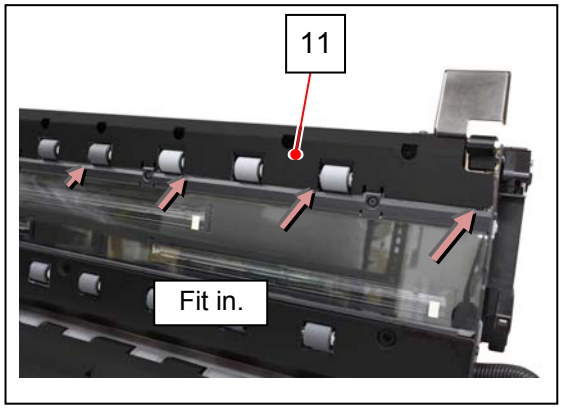
(1) Keep in mind that there is no fixation on the Glass DCMNT at this point.
It may fall if you close the Upper Unit.

(2) For reassembling, first reinstall the Glass Holder at the center.

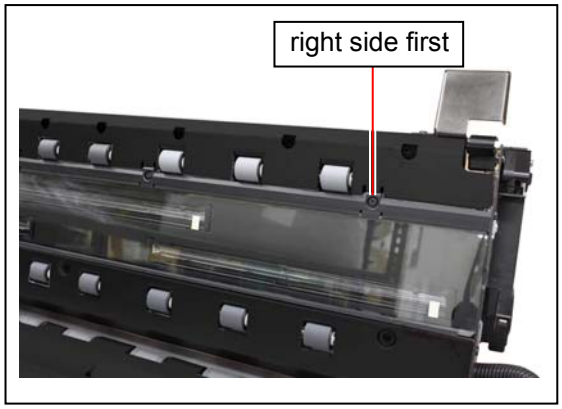


(3) For reassembling, fit the 4 tab parts under the Upper Front Guide Plate (11).

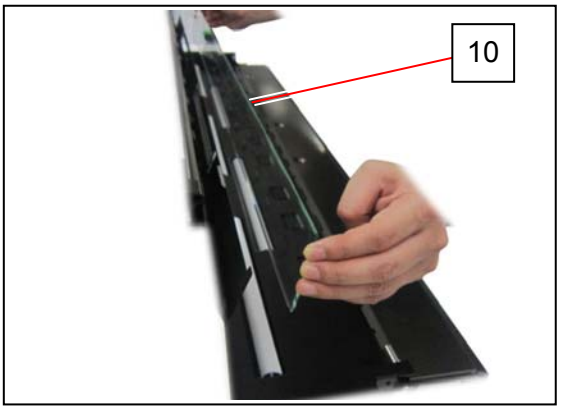




(4) For reassembling, first tighten the screw (8) on the right side.



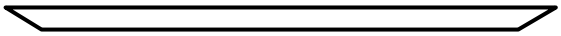
7. Remove the Glass DCMNT (10).



NOTE

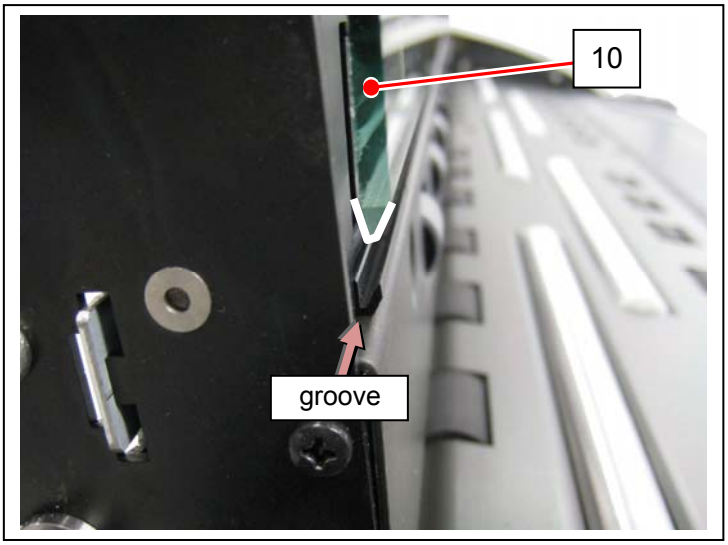
(1) The wider face with 5 stickers should be the inner face. (CIS side)
The narrower face should be the outer face. (document side)

Inner face (CIS side)



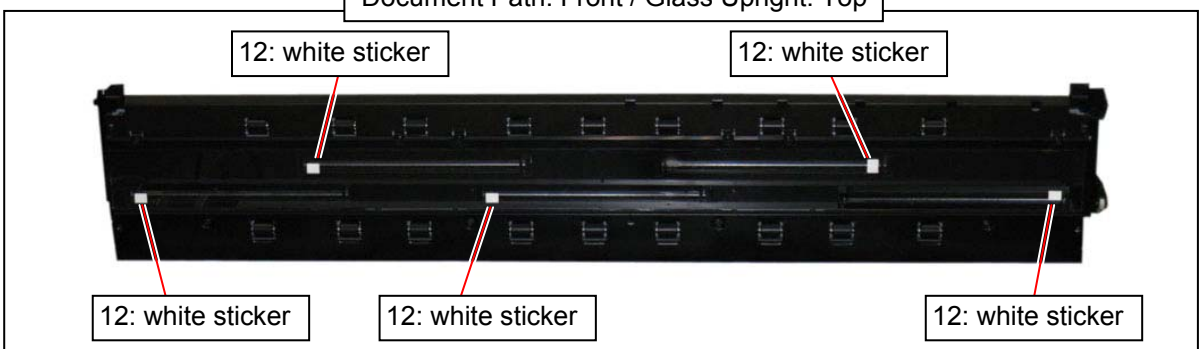
Outer face (document side)

(2) For reassembling, fit the glass's edge in the groove.



(3) There are 5 portions of the white sticker (12) on the Glass DCMNT's inner face.
This is for self calibration (white level).
For reassembling, 2-sticker row should correspond to the front CIS row as follows.

Document Path: Front / Glass Upright: Top

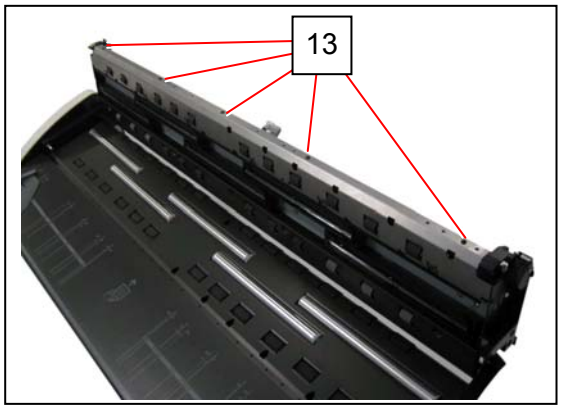


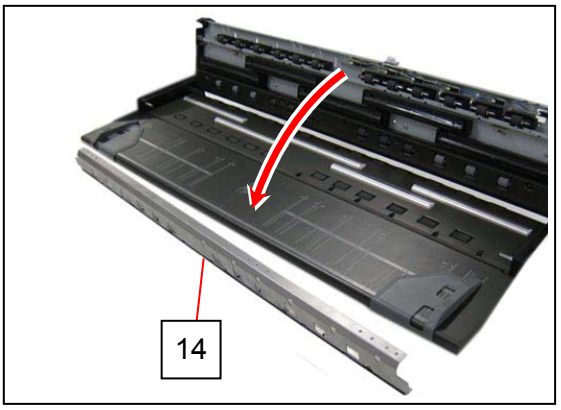
Document Path: Rear / Glass Upright: Bottom

(4) For reassembling, press the Glass DCMNT against the left side.

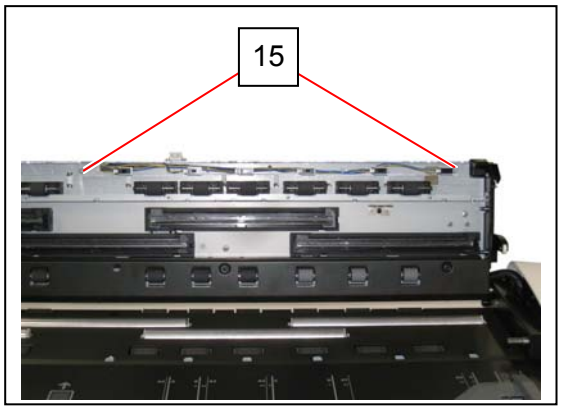
(For the front sensors: size detection)

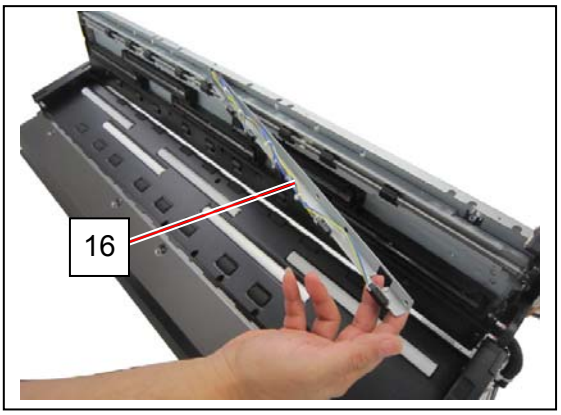
8. Remove 5 screws (13) on the front (Upper Unit upright: top) to remove the Upper Front Guide Plate (14).





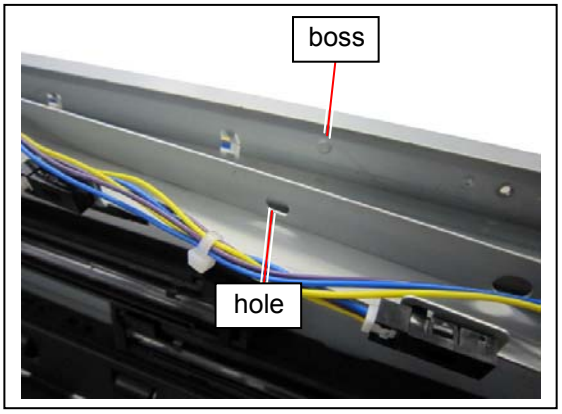
9. Remove 2 screws (15) to release the sensor bracket (16).



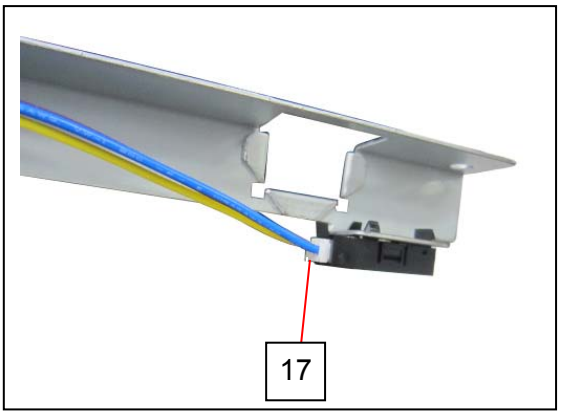


NOTE

For reassembling, fit the boss (Upper Unit) to the hole (sensor bracket).

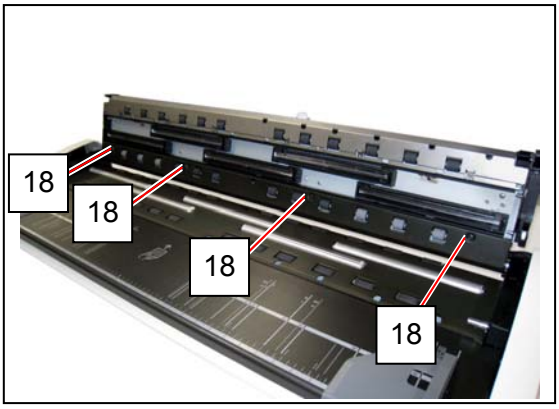


10. Disconnect the harness (17) and release the sensor from the bracket.

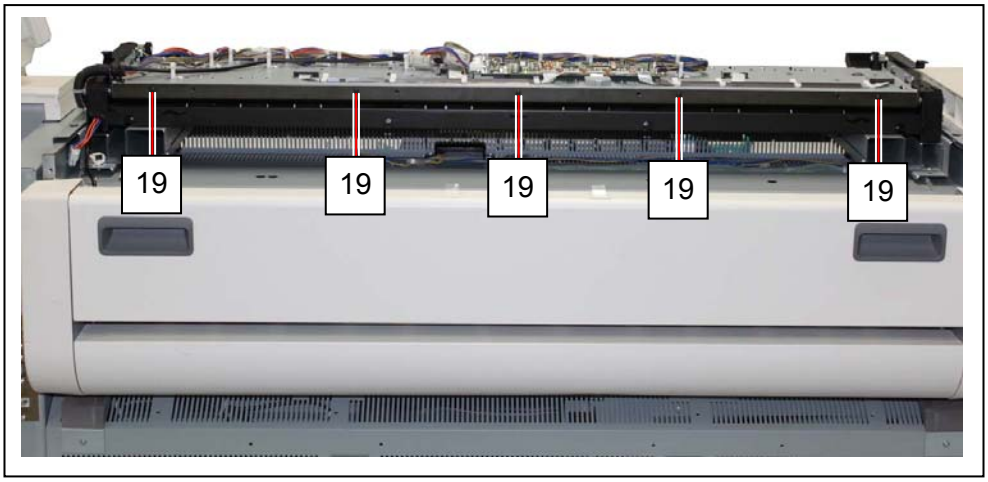


(For the rear sensor: jam detection)

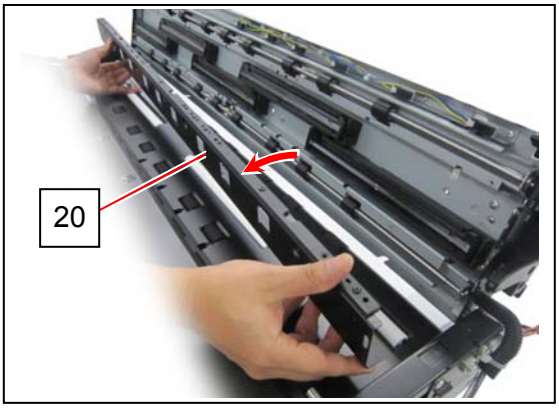
11. Remove 4 screws (18).



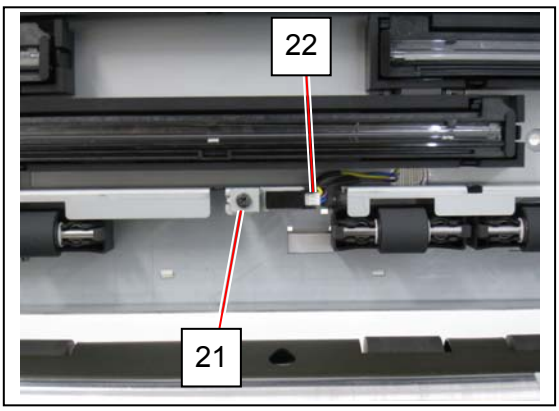
12. Remove 5 screws (19) on the rear.



13. Remove the Upper Rear Guide Plate (20).

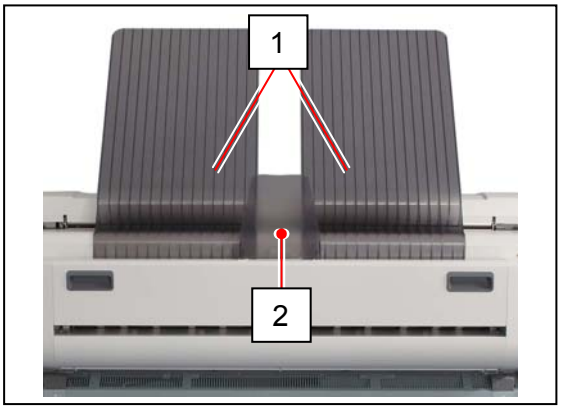


14. Remove 1 screw (21) to release the sensor bracket. Disconnect the harness (22). Release the sensor from the bracket.

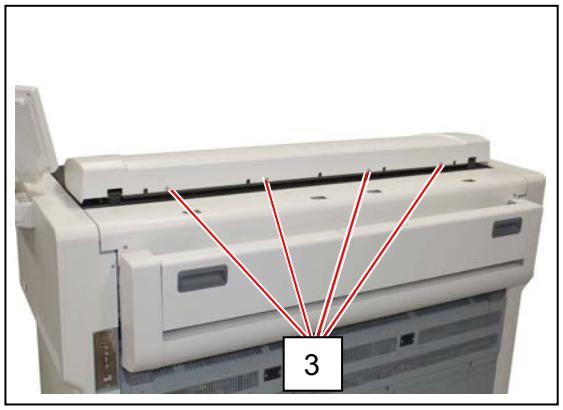


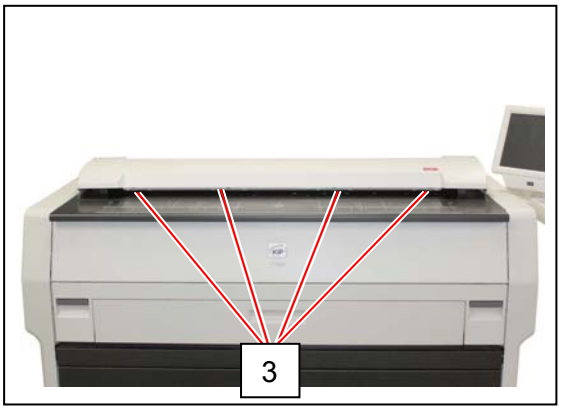
5. 13. 8 Replacing Home Position Sensor

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

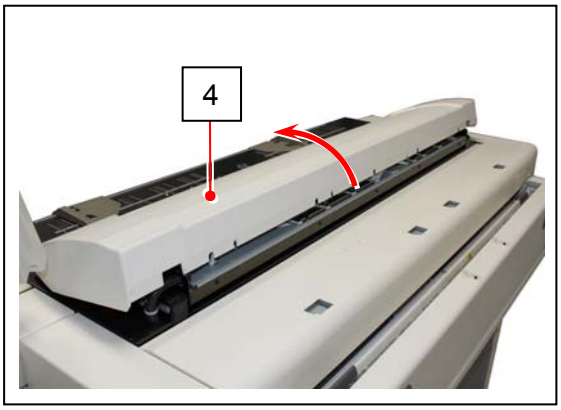


2. Remove 8 pieces of screws (3).



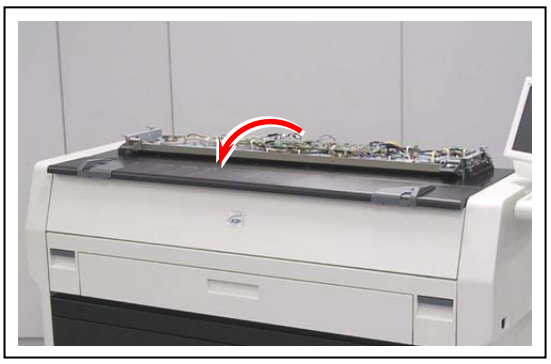


3. Remove the Top Cover (4).

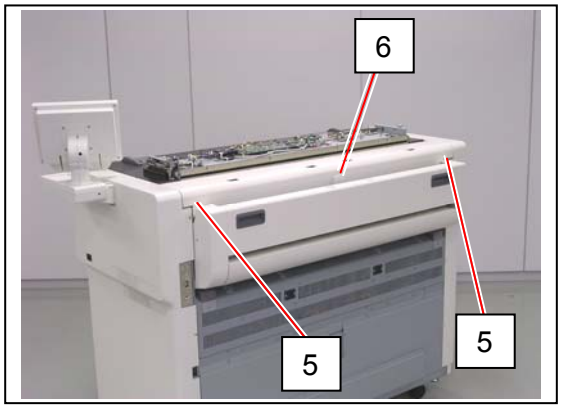


NOTE

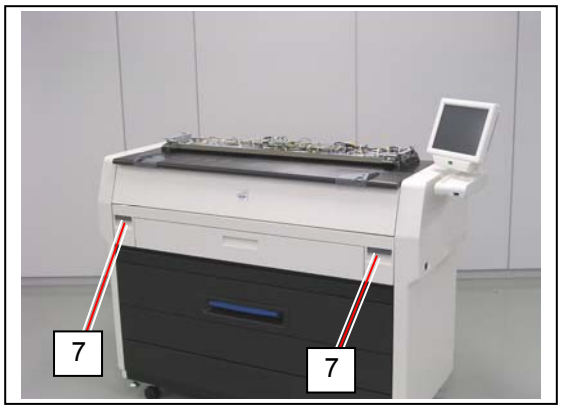
It is necessary to install under the condition to Closing “Upper Unit” when installing “Top Cover”.



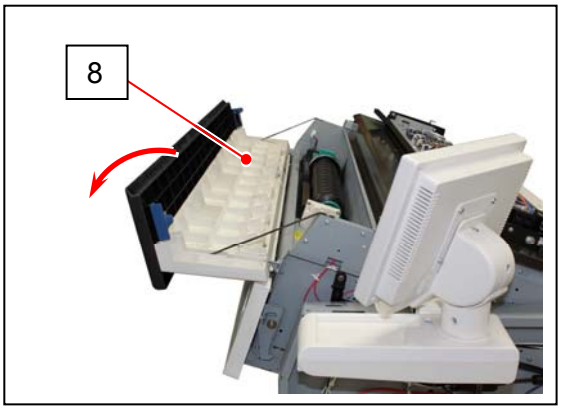
4. Remove 2 tooth washer screws (5) to remove Cover (6)



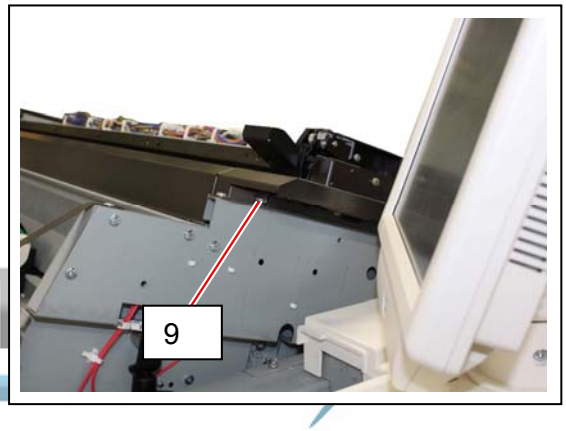
5. Pull up Lever 2 (7) to open the Engine Unit.

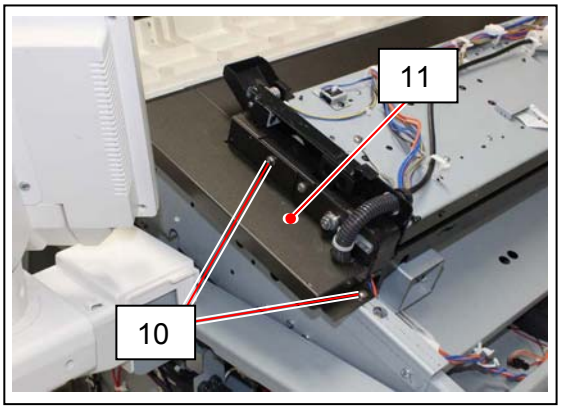


6. Open Cover (8).

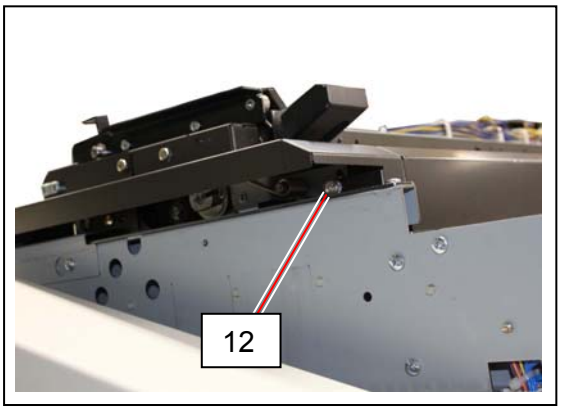


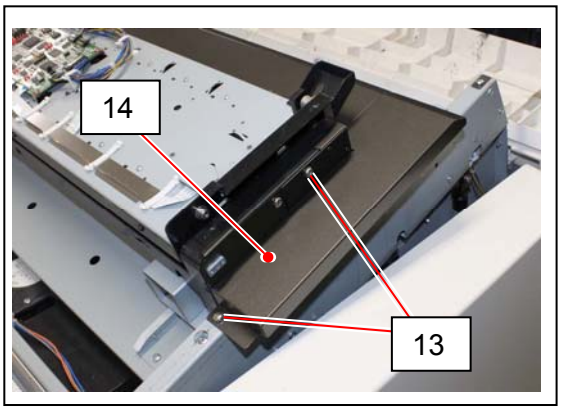
7. Loosen 1 screw (9).
   Remove 2 screws (10) to remove Cover (11).



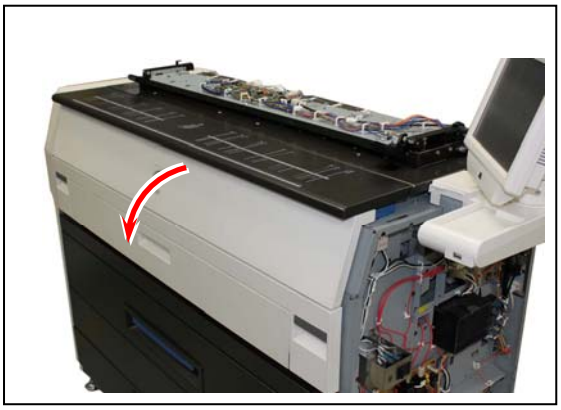


8. Loosen 1 screw (12).
   Remove 2 screws (13) to remove Cover (14).

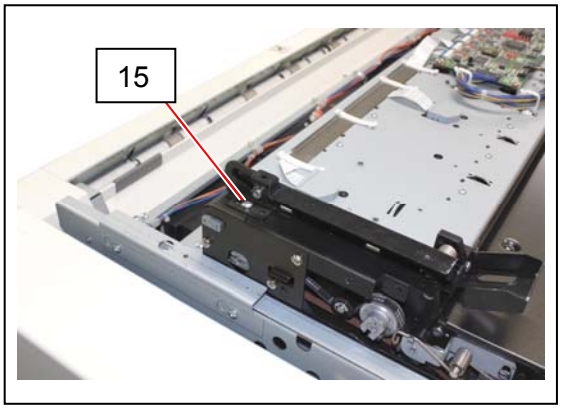


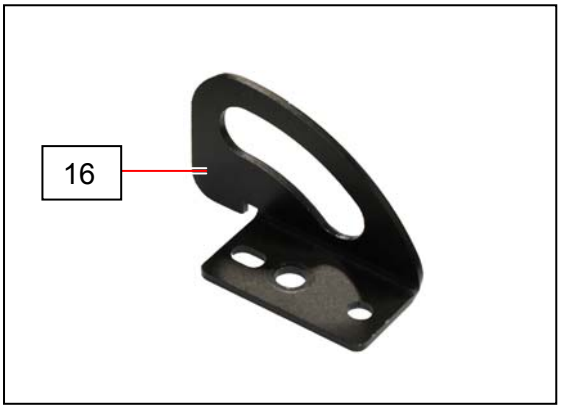


9. Close the Engine Unit.

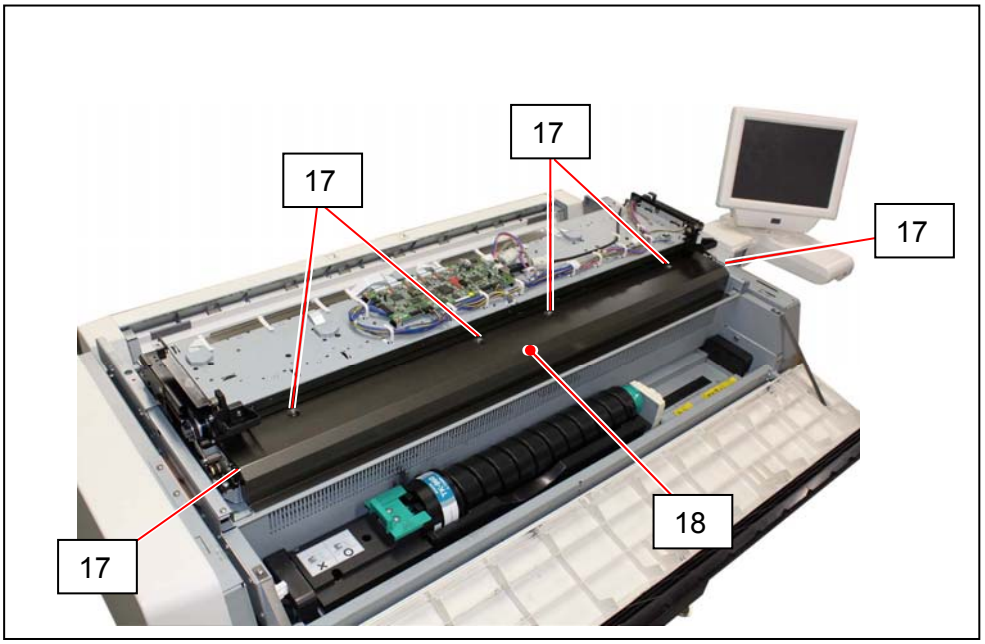


10. Remove 1 screw (15) to remove Stopper Plate (16).

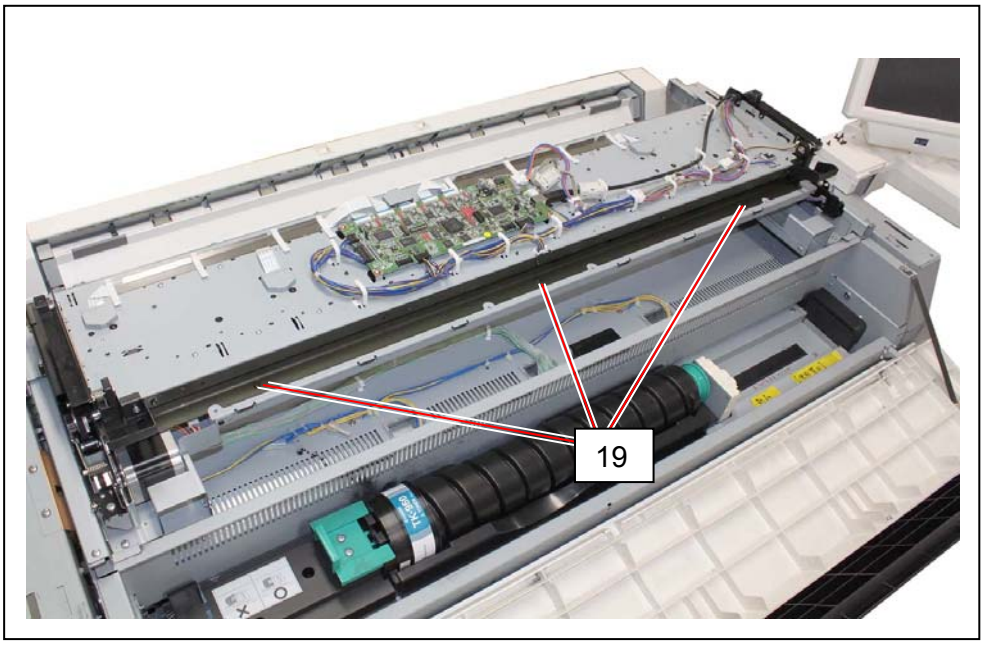




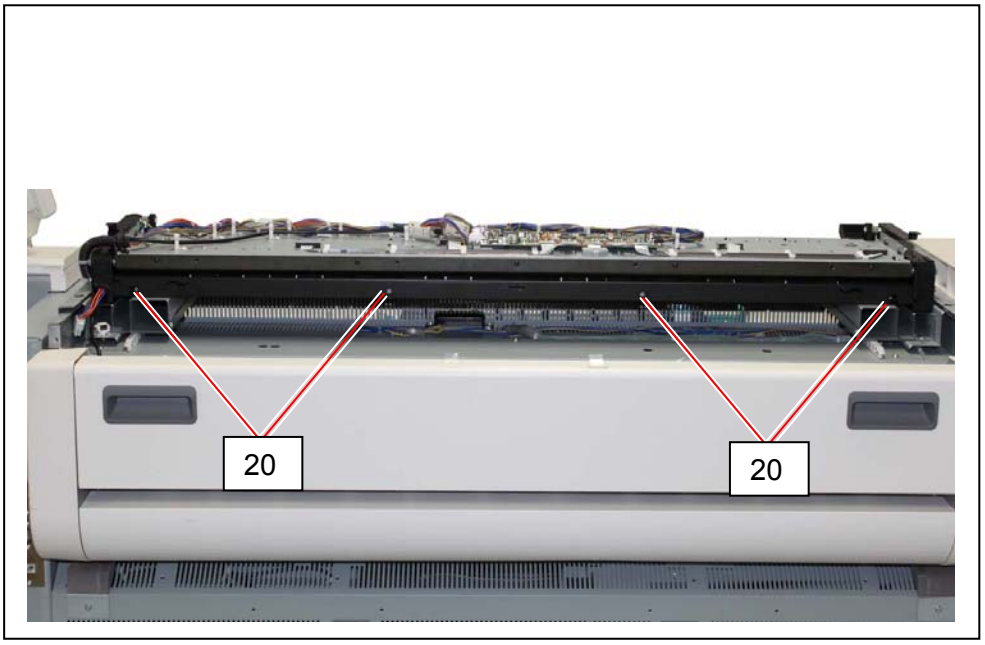
11. Remove 6 screws (16) to remove Sheet Guide (17).

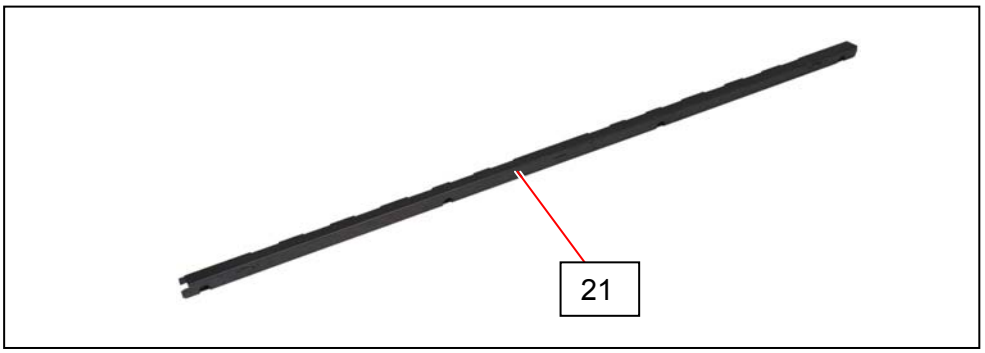


12. Remove 3 screws (19).

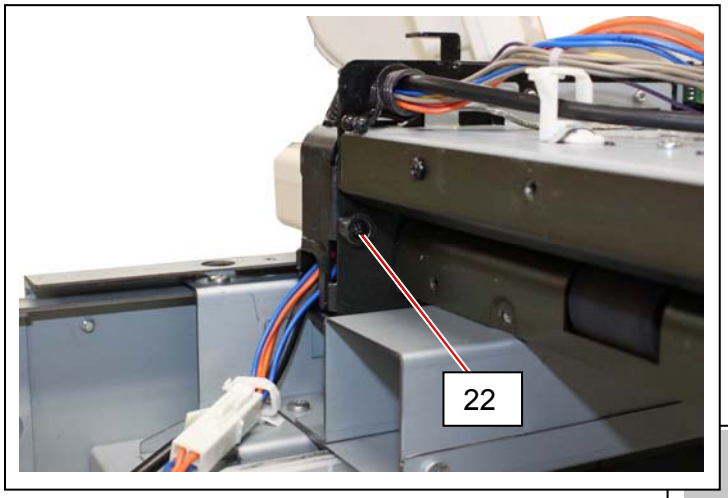


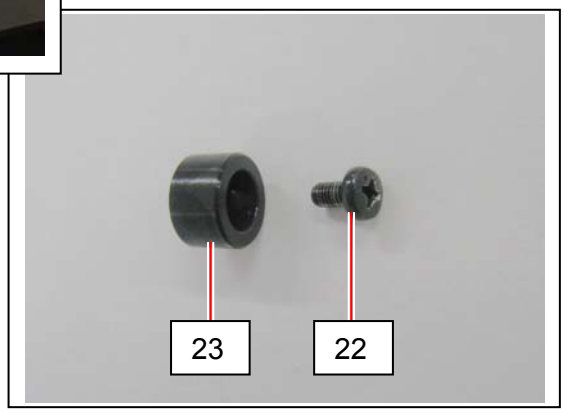
13. Remove 4 screws (20) to remove Exit Guide (21)



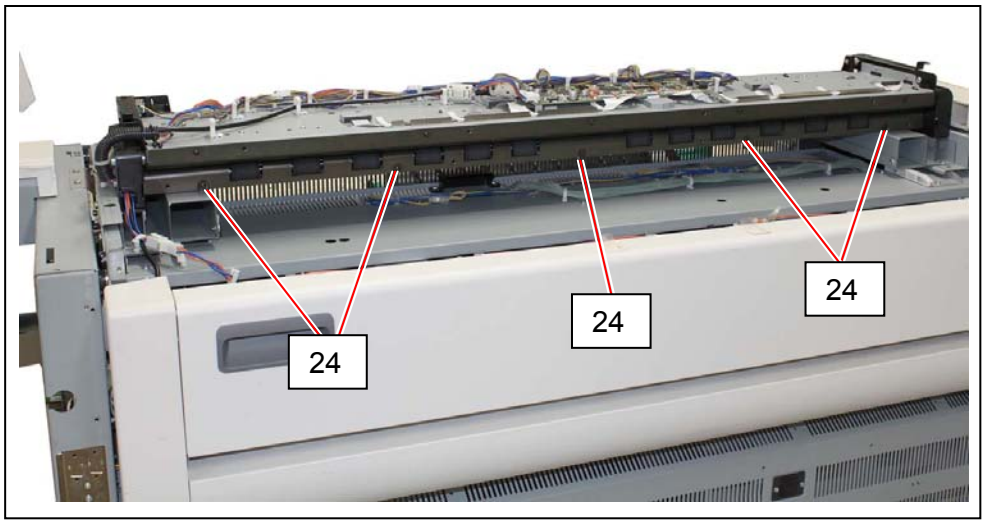


14. Remove 1 screw (22) to remove Stopper (23).

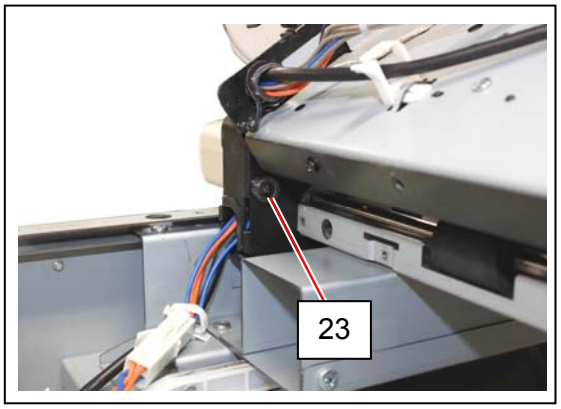




15. Remove 5 screws (24).



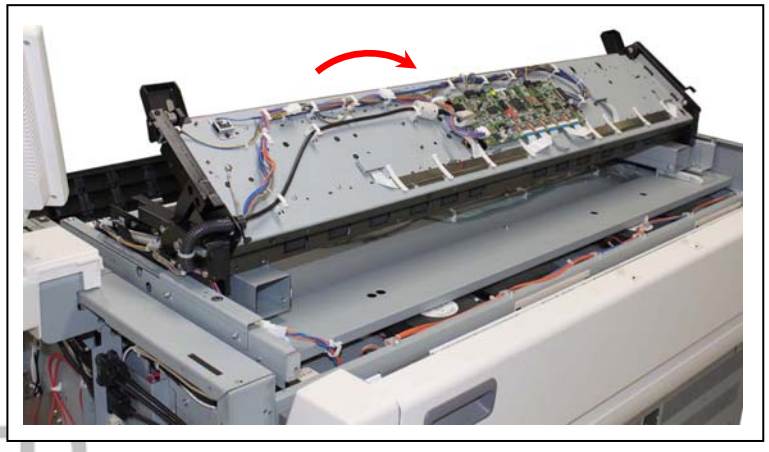
16. Return Stopper (23) in position.



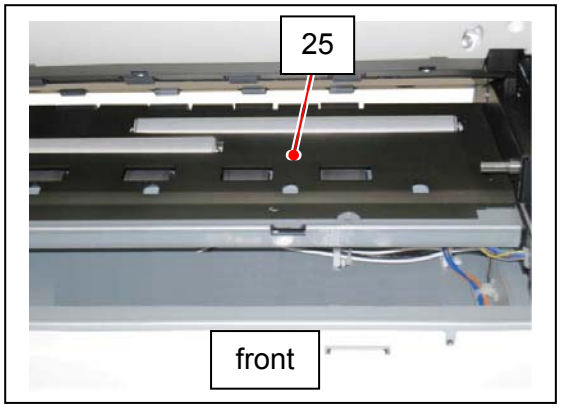
NOTE

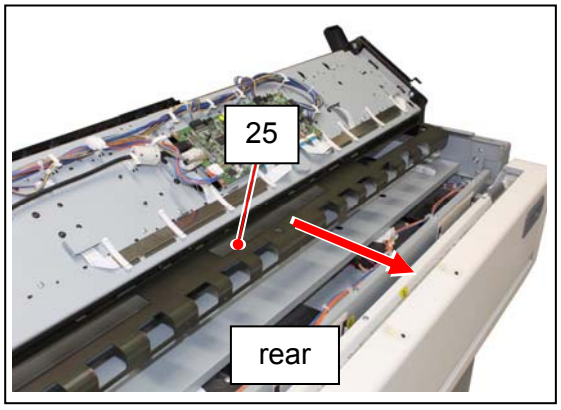
During this procedure, it is possible to go down “Upper Unit” to backside and may possible make damage on “Harness” and “Damper” during this procedure. So, it is necessary to surely install “Stopper (23) and then proceed.

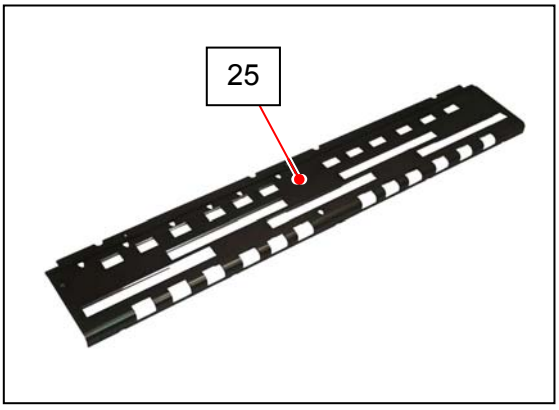
17. Open the Upper Unit.



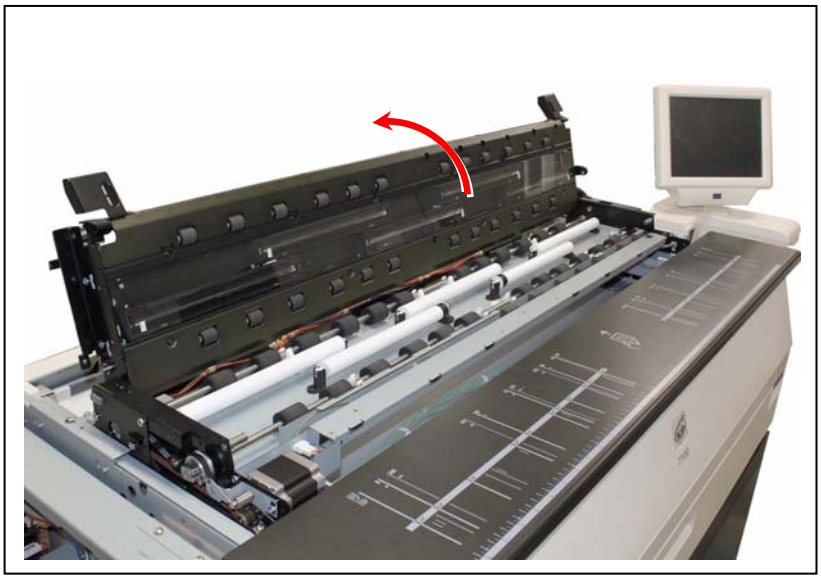
18. Lift up the front side of the Lower Unit Guide Plate (25) to escape from the rollers.
Pull and remove the Lower Unit Guide Plate (25) to the rear side.



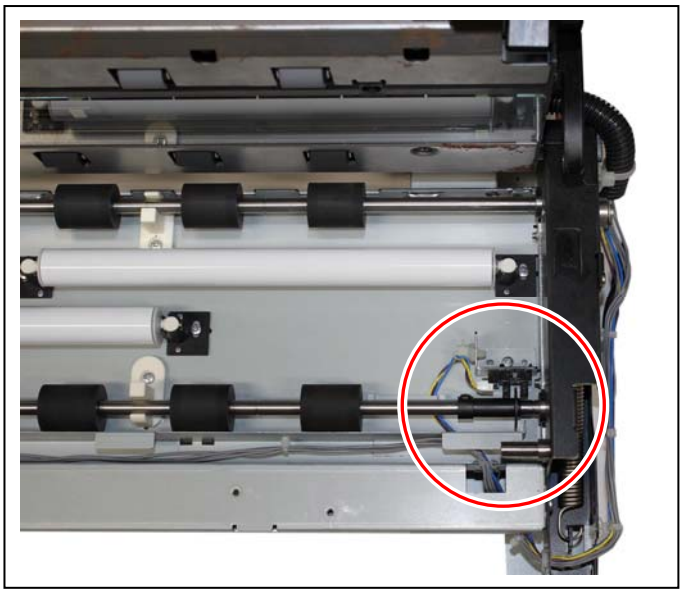


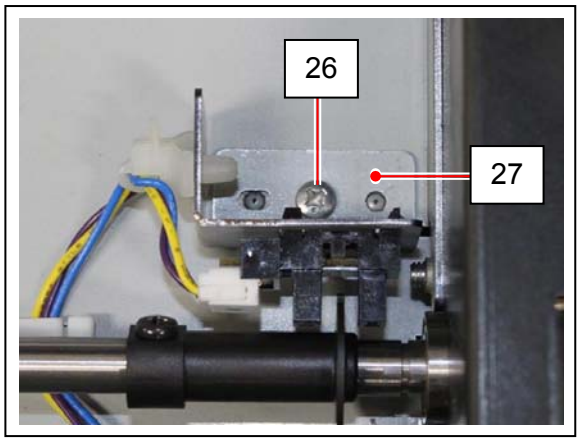


19. Open the Upper Unit.

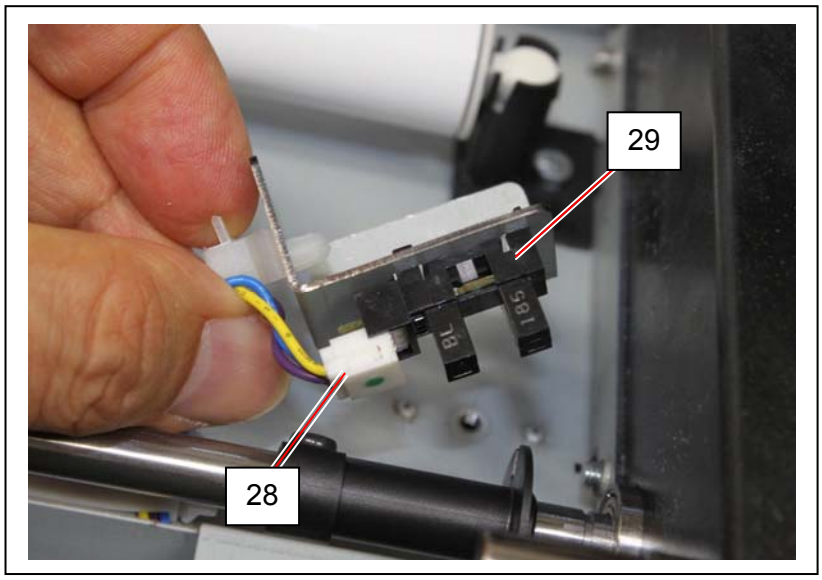


20. Remove 1 screw (26) to remove Sensor Bracket (27).



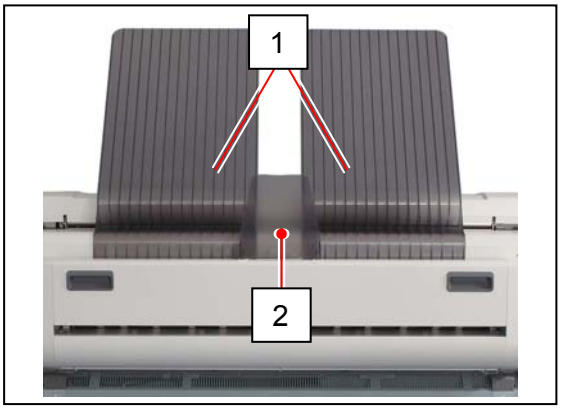


21. Disconnect the connector (28).
    Replace Home Position Sensor (29) with a new one.

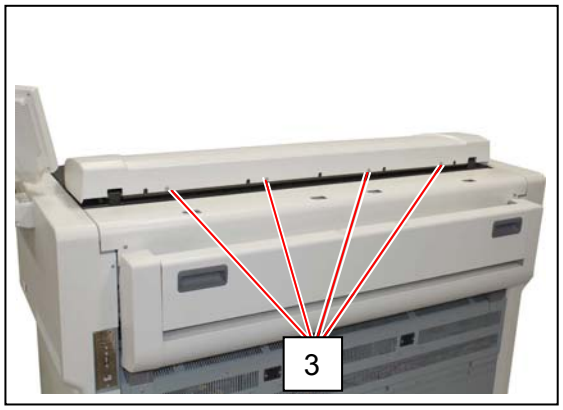


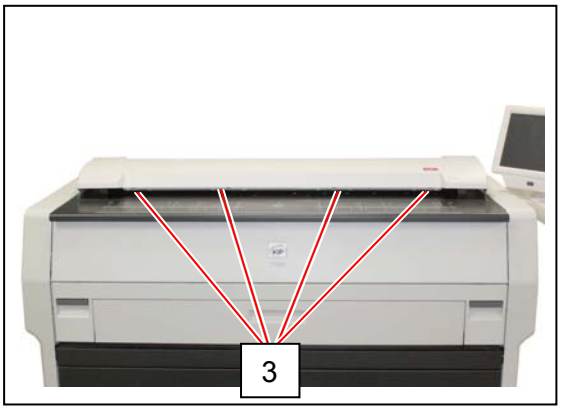
5. 13. 9 Replacing Open Switch

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

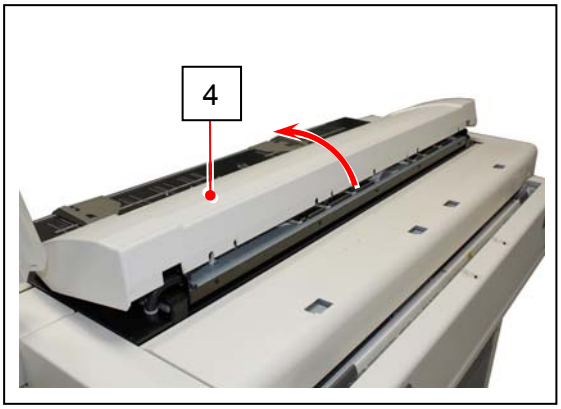


2. Remove 8 pieces of screws (3).



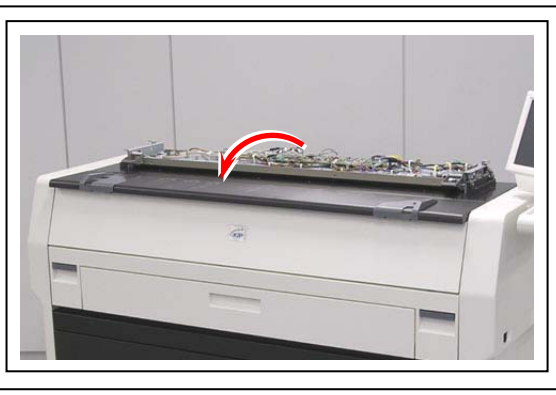


3. Remove the Top Cover (4).

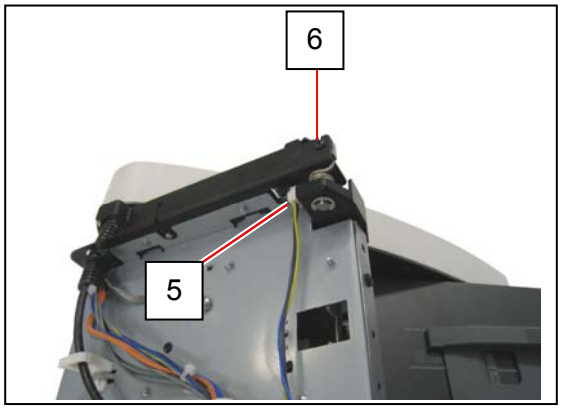


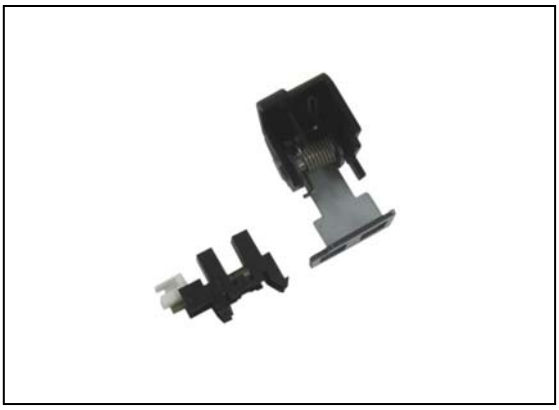
NOTE

It is necessary to install under the condition to Closing “Upper Unit” when installing “Top Cover”.



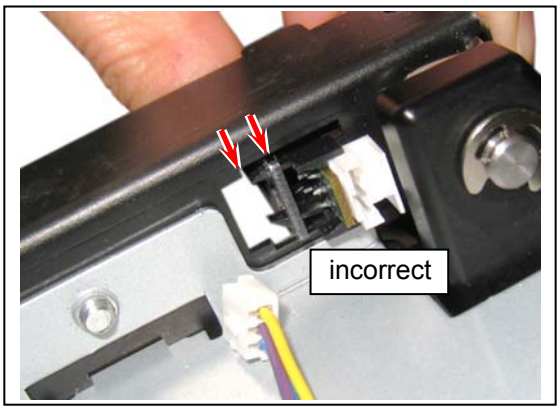
4. Disconnect the harness (5), and then remove 1 screw (6) to release the sensor bracket. Release the sensor form the bracket.

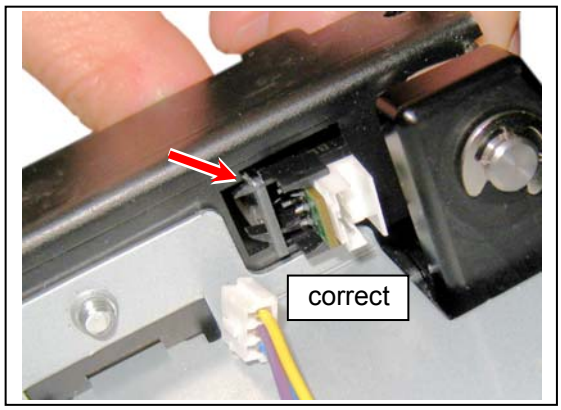




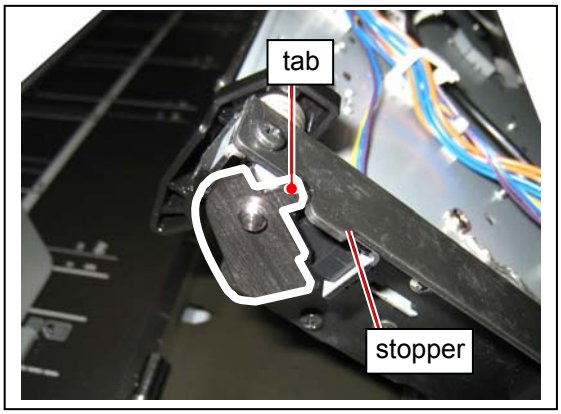
NOTE

(1) For reassembling, adjust the location of the sensor bracket so as to touch with the dent of the opening.



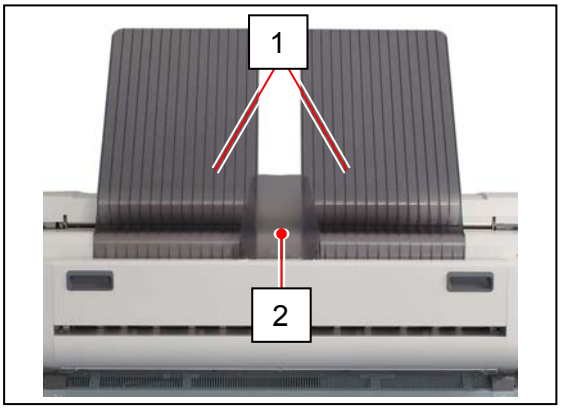


(2) For reassembling, the tab part should come the front of its stopper.

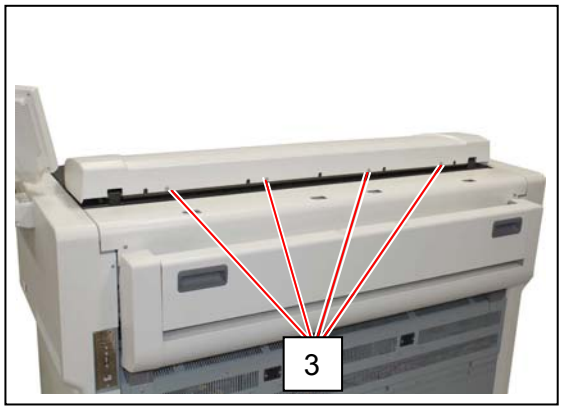


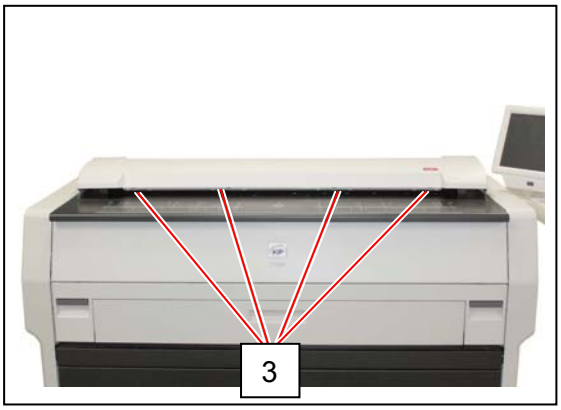
5. 13. 10 Replacing Emergent Stop Switch

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

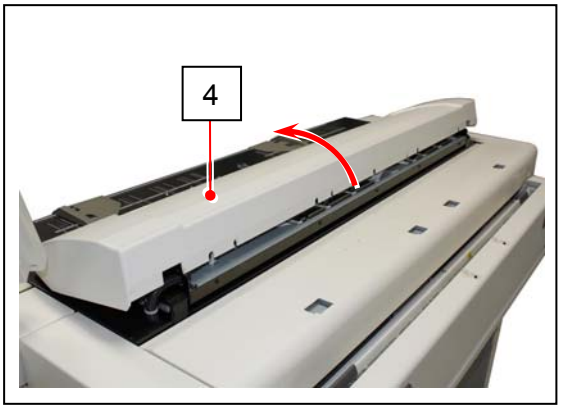


2. Remove 8 pieces of screws (3).



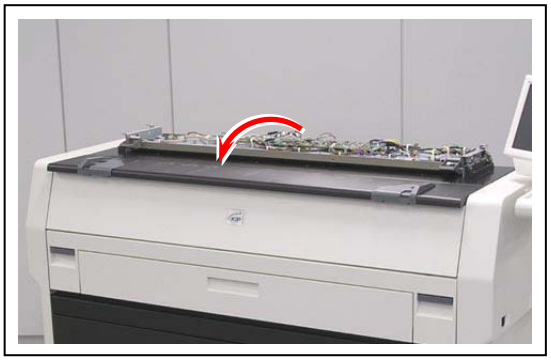


3. Remove the Top Cover (4).

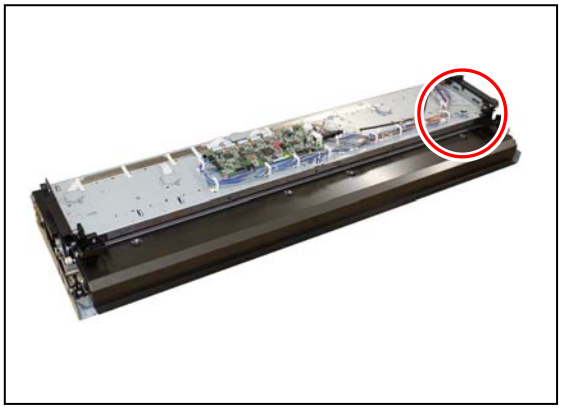


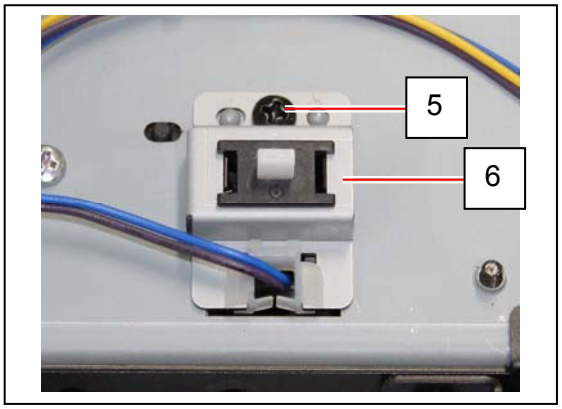
NOTE

It is necessary to install under the condition to Closing “Upper Unit” when installing “Top Cover”.

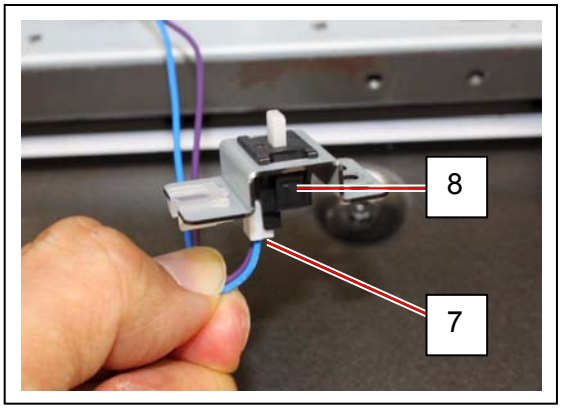


4. Remove 1 screw (5) to remove Switch Bracket (6).





5. Disconnect the connector (7).
   Replace Emergent Stop Switch (8) with a new one.



Chapter 6

Maintenance

6. 1 Recommended Periodic Replacement Parts

For keeping the machine quality in a satisfactory level, a periodic replacement for the following parts is recommended.
A damaged part (even if it looks not) may result in a critical failure.

Location	Part Name	Quantity	Remarks
Developer Unit	Scraper	1	DV-960 “Developer Maintenance Kit A” (305JG70010)
	Sheet	2	
	Sheet 2	2	
	Roller Developer	1	
	Sheet 3	2	
	Sheet 4	2	
	Blade Roller	1	
	Seal R2 Assy	1	
	Seal L2 Assy	1	
	Seal 1	2	
	Seal 23	2	
	Seal 3	2	
	Seal 4	2	
Image Corona	Corona Wire (1) Assy	1	MC-960 “Corona Wire Kit” (P/N: 305JG70030)
	Spring 2	1	
Transfer / Separation Corona	Corona Wire	2	
	Wire Spring	4	
Main Frame	Filter 4	1	SK-960 “Filter Kit” (P/N: 305JG70040)
Fuser Upper Area	Filter 3 Assy	2	
Fuser Unit	Roller Fusing	1	FK-960 “Fuser Maintenance Kit” (P/N: 305JG70020)
	Bush	2	
	Nail Stripping	13	
	Nail Lower	6	
Engine Frame	Photoconductive Drum	1	P/N: 305H670070

6. 2 Maintenance

Please make the following maintenances to keep the machine in a good condition and to get a superior image.

6. 2. 1 Cleaning

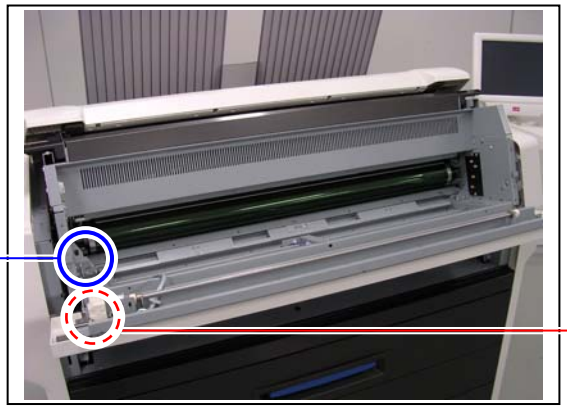
Unit / Area	Maintenance part	Maintenance Period				Remarks
		6k [m]	12k [m]	18k [m]	24k [m]	
		4k [m^2]	9k [m^2]	13k [m^2]	18k [m^2]	
		52k [ft^2]	104k [ft^2]	156k [ft^2]	208k [ft^2]	
Developer Unit	Counter Roller			X		Clean with a cloth impregnated with alcohol.
Fuser Unit	Roller Fusing			X		Clean with a cloth impregnated with alcohol.
	Roller Pressure			X		Clean with a cloth impregnated with alcohol.
	Nail Stripping	X				Clean with a dry cloth.
	Nail Lower	X				Clean with a dry cloth.
	Thermistor			X		Clean with a dry cloth.
	Thermostat			X		Clean with a dry cloth.
Image Corona	Corona Wire	X				Clean with a cloth impregnated with water then with a dry cloth.
	Corona Housing	X				Clean with a cloth impregnated with water then with a dry cloth.
Transfer / Separation Corona	Corona Wire	X				Clean with a cloth impregnated with water then with a dry cloth.
	Corona Housing	X				Clean with a cloth impregnated with water then with a dry cloth.
Engine Frame	LED Head (Selfoc Lens)	X				Clean with a dry cloth.
	Photoconductive Drum	X				Read [5.5.3 Cleaning of Photoconductive Drum] for the way of cleaning.
Main Frame	Machine inside	X				

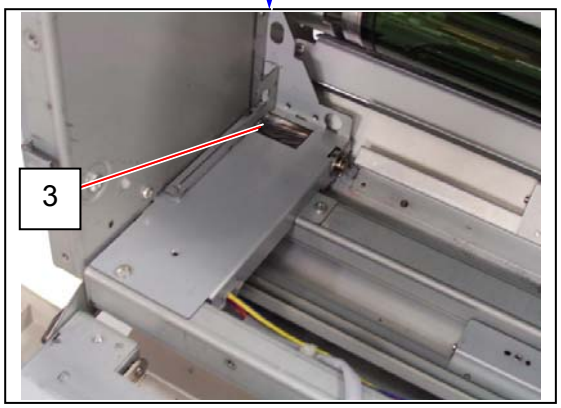
6. 2. 2 Lubrication

Please apply an adequate amount of grease to the components shown in the following section.
Recommended lubrication term is in every 18,000m.
Use silicone grease unless otherwise noted.

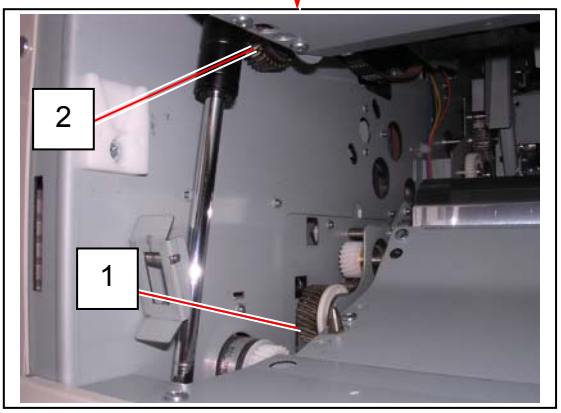
6. 2. 2. 1 Driving Gears on Machine Frame

Remove Developer Unit and Fuser Unit.
Apply grease to Gear 3 (1), Gear Helical 34T (2), Gear Helical 20T (3).
Apply heat-proof grease to Gear 36T (4).

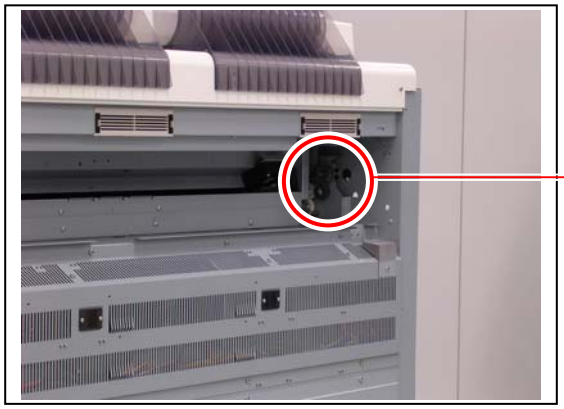




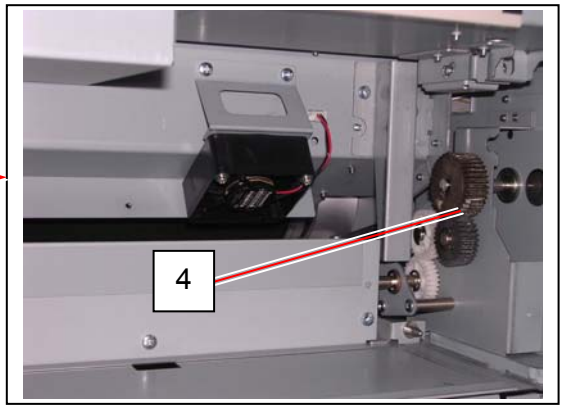
Engine Unit from top, Developer Unit removed



Engine Unit open, Developer Unit removed

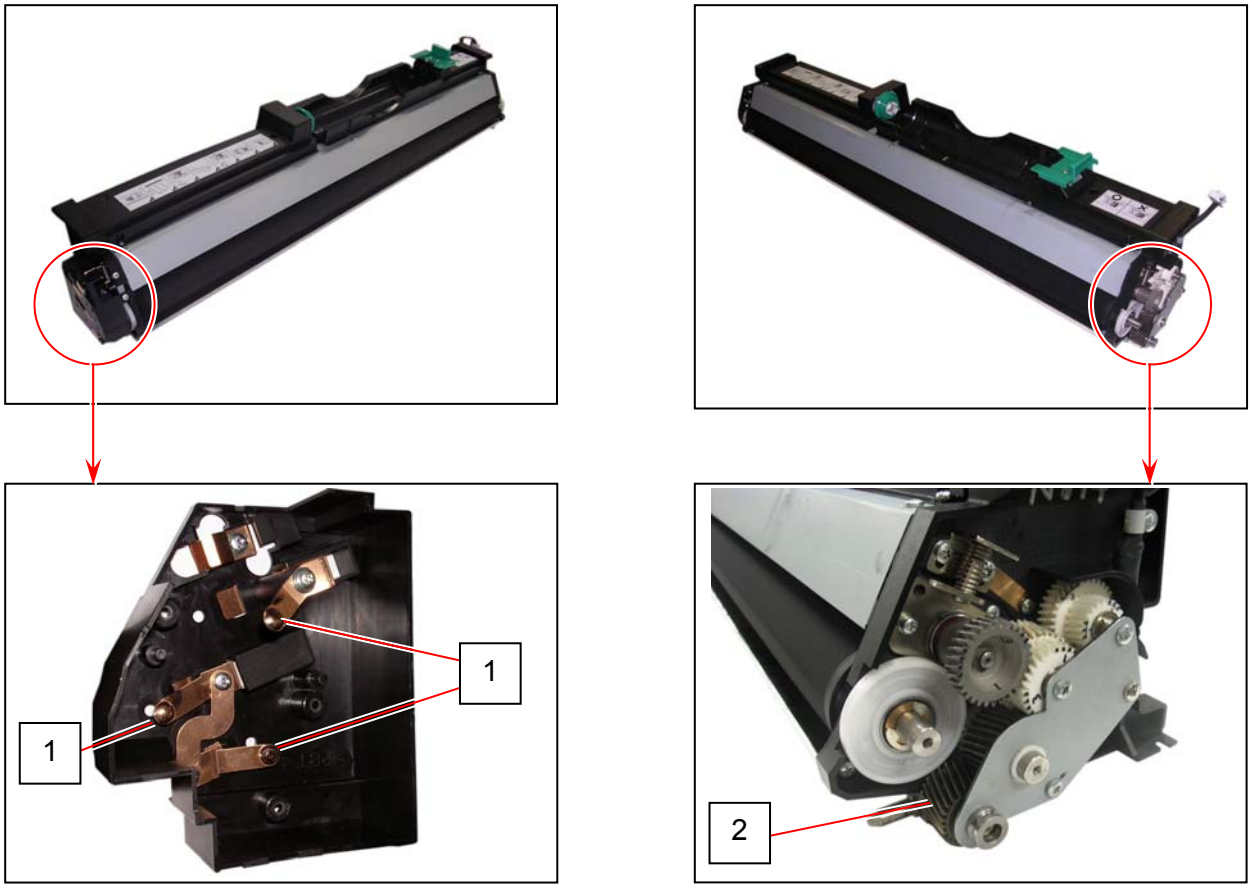


From rear, Fuser Unit removed



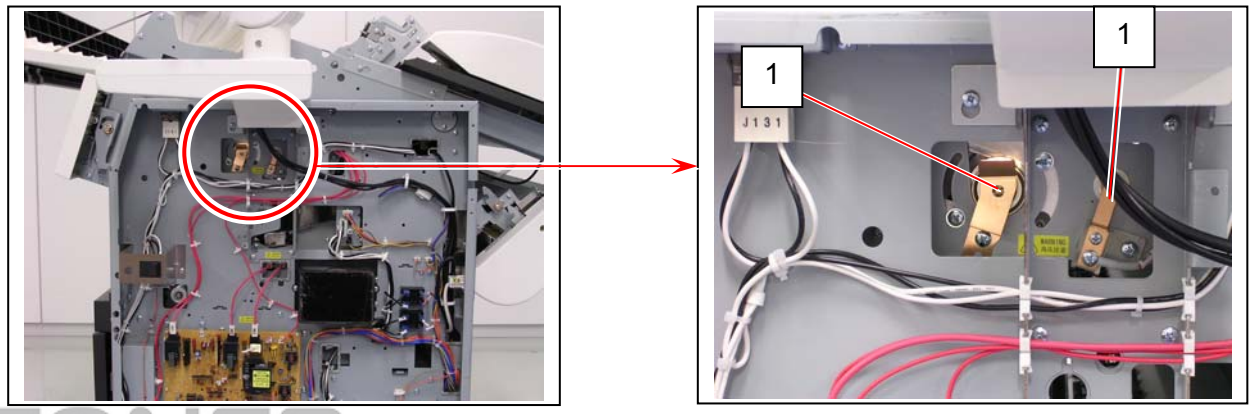
6. 2. 2. 2 Developer Unit

Remove Developer Unit.
Apply conductive grease to the contacting points for Developer/Blade/Toner Supply Rollers on the metal plates (1).
Apply grease to Gear Helical 28T (2).



6. 2. 2. 3 Terminal Plates on Machine Frame

Open Engine Unit.
Apply conductive grease to the contacting points for Photoconductive Drum / Cleaning Roller on the metal plates (1).



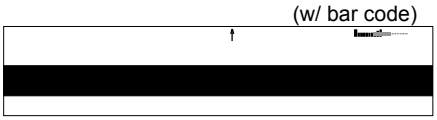
6. 3 Service Kit

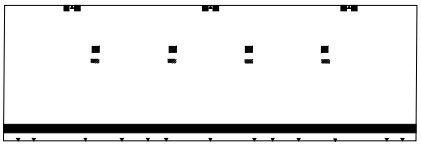
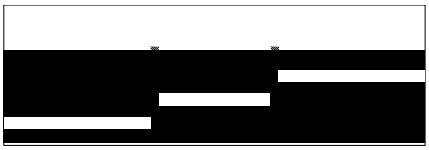
The following service kits are assigned taking the serviceability into consideration.

Kit Name (Part Number)	Contained Parts	Quantity	Remarks
DV-960 "Developer Maintenance Kit A" (305JG70010)	Scraper	1	[5.2.2 Replacement of Recommended Periodic Replacement Parts] (Time for replacement :about 24,000m)
	Sheet	2	
	Sheet 2	2	
	Roller Developer	1	
	Sheet 3	2	
	Sheet 4	2	
	Blade Roller	1	
	Seal R2 Assy	1	
	Seal L2 Assy	1	
	Seal 1	2	
	Seal 23	2	
	Seal 3	2	
	Seal 4	2	
Developer Seal Set (305JG70050)	Seal R2 Assy	1	
	Seal L2 Assy	1	
	Seal 1	2	
	Seal 23	2	
	Seal 3	2	
	Seal 4	2	
MC-960 "Corona Wire Kit" (P/N: 305JG70030)	Corona Wire (1) Assy	1	[5.7.2 Replacement of Corona Wire] (Time for replacement :about 24,000m)
	Spring 2	1	
	Corona Wire	2	[5.8.2 Replacement of Corona Wire] (Time for replacement :about 24,000m)
	Wire Spring	4	
SK-960 "Filter Kit" (P/N: 305JG70040)	Filter 4	1	right, middle rear, upper (Time for replacement :about 36,000m)
	Filter 3 Assy	2	
FK-960 "Fuser Maintenance Kit" (P/N: 305JG70020)	Roller Fusing	1	[5.2.2 Replacement of Recommended Periodic Replacement Parts] (Time for replacement :about 42,000m)
	Bush	2	
	Nail Stripping	13	
	Nail Lower	6	
Nail Stripping Set (305JG70150)	Nail Stripping	13	
Nail Lower Set (305JG70110)	Nail Lower	6	
Photoconductive Drum (305H670070)	Photoconductive Drum	1	[5.5.1 Replacement of Photoconductive Drum] (Time for replacement :about 36,000m)

6. 4 Service Tool List

Here is the table to list special tools for field service.
It is recommended to check them through in Parts List and Publication Bulletin for the latest information.

Part Name (Part Number)	Appearance / Usage Requirement	Related Section
DEV HANDLE ASSY (Developer Handle) (305H679920)		5.2.2 Replacement of Recommended Replacement Parts 5.2.3 Replacement of Roller Supply 5.2.8 Readjustment of the pressure of Regulation Roller
DRUM BLOCK FIX TOOL (305JG85010)		5.5.2 How to fix the Aluminum Blocks 5.5.3 Cleaning of Photoconductive Drum 5.6.2 LED focus adjustment
SPACER SET (LED focus) t0.1mm t0.08mm t0.05mm (305JG70160)		5.6.2 LED focus adjustment
SHADING SHEET (mono/color calibration) (305JZ70210)		8.13.4.1 Shading (Calibration) **for Old Scanner**
SCANNER TEST CHART (Feed Distance) (305H680020)		8.13.4.2 Feed Distance (1:1) **for Old Scanner**
STITCH ADJUSTMENT CHART (Position) (305JG74560)		8.13.4.3 Position (Stitching) **for Old Scanner**
Scanner Utility Version 1.23 or later (Scanner adjustment)	Windows 2000/XP w/ scanner unit USB driver	8.13.4.1 Shading (Calibration) 8.13.4.2 Feed Distance (1:1) 8.13.4.3 Position (Stitching) 8.13.5 Updating Scanner Firmware **for Old Scanner**

Part Name (Part Number)	Appearance / Usage Requirement	Related Section
SHADING SHEET (mono/color calibration) (Position) (305JZ71910)		8.14.6.1 Shading 8.14.6.2 Stitching **for New Scanner**
CORRECTION CHART (mono/color calibration) (305JZ72290)		8.14.6.1 Shading (Calibration) **for New Scanner**
K129 Diag (Scanner adjustment)	Windows 2000 and both 64/32 bit editions of Windows 7,Vista, XP	8.14.6.1 Shading 8.14.6.2 Stitching 8.14.5 Update **for New Scanner**

Chapter 7

Troubleshooting

7. 1 Troubleshooting - Printer Errors

7. 1. 1 Countermeasures - Call Operator Errors

7. 1. 1. 1 Roll 2 Feeding Jam “Delay” (J-0101)

Reference

Delay : Paper arrives the sensor much later than required timing.
Stay : Paper exists on the sensor for longer time than required.
Early : Paper arrives the sensor much earlier than required timing.
Remained : Paper has already existed on the sensor when turning on the machine.

Cause	Checking order	Checking	Result	Treatment
Installation of roll paper	1	Is the roll paper correctly installed to the Roll Deck 2?	No	Install it correctly.
Roll 2 Set Sensor (PH9)	2	Check the status of Roll 2 Set Sensor in the Signal Status Mode of the Service Mode. Signal Code : 106 (Roll 2 Set Sensor) Is the status “H” when the roll paper is set?	No	1. Is there any problem with the Drawer Connector which connects the machine and the Roll Deck. 2. Check if there is any problem with the wire connected to the Roll 2 Set Sensor. 3. Replace the Roll 2 Set Sensor if there is no problem with the wire.
Roll 2 Feed Clutch (CL6)	3	Check the operation of Roll 2 Feed Clutch in the Device Operation Mode of the Service Mode. Device Code : 08 (Roll 2 Feed Clutch) Does the clutch operate when you change the output signal from “L” to “H”?	No	1. Check if there is any problem with the wire connected to the Roll 2 Feed Clutch. 2. Replace the Roll 2 Feed Clutch if there is no problem with the wire.
Main Motor (M1)	4	Check the status of Roll 2 Set Sensor in the Signal Status Mode of the Service Mode while making the following operation. (Signal Code : 106) 1. Set the leading edge of roll 2 between feeding rollers. (Leading edge must not pass over the Roll 2 Set Sensor.) 2. Close the Roll Deck. Does the status change from “L” to “H” when the machine is transporting the paper?	No	1. Check the driving belts of the Roll Deck. 2. Check if there is any problem with the wire connected to the Main Motor. 3. Replace the Main Motor if there is no problem with the wire.
			Yes	1. Remove the whole Roll Deck, and then re-install it to the machine correctly.

7. 1. 1. 2 Roll 1 Feeding Jam “Delay” (J-0102)

Cause	Checking order	Checking	Result	Treatment
Installation of roll paper	1	Is the roll paper correctly installed to the Roll Deck 2?	No	Install it correctly.
Roll 1 Set Sensor (PH7)	2	Check the status of Roll 1 Set Sensor in the Signal Status Mode of the Service Mode. Signal Code : 105 (Roll 1 Set Sensor) Is the status “H” when the roll paper is set?	No	1. Is there any problem with the Drawer Connector which connects the machine and the Roll Deck. 2. Check if there is any problem with the wire connected to the Roll 1 Set Sensor. 3. Replace the Roll 1 Set Sensor if there is no problem with the wire.
Roll 1 Feed Clutch (CL4)	3	Check the operation of Roll 1 Feed Clutch in the Device Operation Mode of the Service Mode. Device Code : 06 (Roll 1 Feed Clutch) Does the clutch operate when you change the output signal from “L” to “H”?	No	1. Check if there is any problem with the wire connected to the Roll 1 Feed Clutch. 2. Replace the Roll 1 Feed Clutch if there is no problem with the wire.
Main Motor (M1)	4	Check the status of Roll 1 Set Sensor in the Signal Status Mode of the Service Mode while making the following operation. (Signal Code : 105) 1. Set the leading edge of roll 1 between feeding rollers. (Leading edge must not pass over the Roll 1 Set Sensor.) 2. Close the Roll Deck. Does the status change from “L” to “H” when the machine is transporting the paper?	No	1. Check the driving belts of the Roll Deck. 2. Check if there is any problem with the wire connected to the Main Motor. 3. Replace the Main Motor if there is no problem with the wire.
			Yes	1. Remove the whole Roll Deck, and then re-install it to the machine correctly.

7. 1. 1. 3 Feeding Jam “Delay” (J-0103) & “Early” (J-0303)

Cause	Checking order	Checking	Result	Treatment
Mis-feed of paper	1	Does the paper mis-fed occur between Roll 1 Set Sensor and Feed Sensor?	Yes	Remove the mis-fed paper.
Feed Sensor (PH6)	2	Check the status of Feed Sensor in the Signal Status Mode of the Service Mode. Signal Code : 108 (Feed Sensor) Is the status “L” when the paper is not passing beside the sensor? And is it “H” when the paper is passing beside the sensor?	No	1. Is there any problem with the Drawer Connector which connects the machine and the Roll Deck. 2. Check if there is any problem with the wire connected to the Feed Sensor. 3. Replace the Feed Sensor if there is no problem with the wire.
Cutter Home Position Sensor (MS6 & MS7)	3	Check the status of Cutter Home Position Sensors in the Signal Status Mode of the Service Mode. Signal Code : 094 (Cutter Home Position Right) 095 (Cutter Home Position Left) Is the status “H” when the Cutter is at each home position? And is it “L” when the Cutter is not at the home position?	No	1. Check if there is any problem with the wire connected to the Cutter Home Position Sensor. 2. Replace the Cutter Home Position Sensors if there is no problem with the wire.
Driving mechanism	4	Check the operation of Feed Clutch in the Device Operation Mode of the Service Mode. Device Code : 10 (Feed Clutch) Also open and close the Roll Deck, and check if the Main Motor rotates correctly. Does each Feed Clutch and Main Motor operate correctly?	No	Replace the Feed Clutch or Main Motor if it is defective.

7. 1. 1. 4 Reg. Jam “Delay” (J-0104), “Stay” (J-0204) “Early” (J-0304), “Remained” (J-1004)

Cause	Checking order	Checking	Result	Treatment
Mis-feed of paper	1	Does the paper mis-fed occur around the Registration Roller?	Yes	Remove the mis-fed paper.
Registration Sensor (PH1)	2	Check the status of Registration Sensor in the Signal Status Mode of the Service Mode. Signal Code : 100 (Registration Sensor) Is the status “L” when the paper is not passing beside the sensor? And is it “H” when the paper is passing beside the sensor?	No	1. Check if there is any problem with the wire connected to the Registration Sensor. 2. Replace the Registration Sensor if there is no problem with the wire.
Engine Unit	3	Is the Engine Unit closed firmly until it is locked? (Is the pressure around the Registration Roller correct?)	No	1. Close the Engine Unit firmly. 2. Adjust the pressure around the Registration Roller.
Driving mechanism	4	Check the operation of Registration Clutch in the Device Operation Mode of the Service Mode. Device Code : 11 (Registration Clutch) Also open and close the Roll Deck, and check if the Main Motor rotates correctly. Does each Registration Clutch and Main Motor operate correctly?	No	Replace the Registration Clutch or Main Motor if it is defective.

7. 1. 1. 5 Internal Jam “Delay” (J-0106), “Stay” (J-0206) “Early” (J-0306), “Remained” (J-1006)

Cause	Checking order	Checking	Result	Treatment
Mis-feed of paper	1	Does the paper mis-fed occur around the separation area?	Yes	Remove the mis-fed paper.
Separation Sensor (PH2)	2	Check the status of Separation Sensor in the Signal Status Mode of the Service Mode. Signal Code : 010 (Separation Sensor) Is the status “L” when the paper is not passing beside the sensor? And is it “H” when the paper is passing beside the sensor?	No	1. Check if there is any problem with the wire connected to the Separation Sensor. 2. Replace the Separation Sensor if there is no problem with the wire.
Transfer / Separation Corona	3	Is the Transfer / Separation Corona Unit installed to the machine correctly?	Yes	Install the Transfer / Separation Corona Unit correctly.
		Is the Corona Wire broken?	Yes	Replace the Corona Wire.
HV Power Supply	4	Is the output from the HV Power Supply to the Separation Corona correct?	No	Replace the HV Power Supply.

7. 1. 1. 6 Fuser Jam “Delay” (J-0107), “Stay” (J-0207) “Early” (J-0307), “Remained” (J-1007)

Cause	Checking order	Checking	Result	Treatment
Mis-feed of paper	1	Does the paper mis-fed occur around the fuser area?	Yes	Remove the mis-fed paper.
Exit Sensor (PH3)	2	Check the status of Exit Sensor in the Signal Status Mode of the Service Mode. Signal Code : 011 (Exit Sensor) Is the status “L” when the paper is not passing beside the sensor? And is it “H” when the paper is passing beside the sensor?	No	1. Check if there is any problem with the wire connected to the Exit Sensor. 2. Replace the Exit Sensor if there is no problem with the wire.

7. 1. 1. 7 Paper jam by opening the Roll Deck during printing (J-1100)

Cause	Checking order	Checking	Result	Treatment
Opening the Roll Deck	1	Did you open the Roll Deck before the completion of printing? (Roll paper will be rewound after printing. J-1100 will be indicated if you open the deck at that time.)	Yes	Wait until the roll paper is completely rewound.
Lock of Roll Deck	2	Is the Roll Deck firmly locked?	No	Close it firmly.

7. 1. 1. 8 Paper jam by opening the Exit Cover during printing (J-1200)

Cause	Checking order	Checking	Result	Treatment
Opening the Exit Cover	1	Did you open the Exit Cover during printing?	Yes	Do not open it during printing.

7. 1. 1. 9 Deck Open

Cause	Checking order	Checking	Result	Treatment
Roll Deck	1	Is the Roll Deck opened?	Yes	Close it firmly.
Switch (MS5)	2	Check the status of the following signal in the Signal Status Mode of the Service Mode. Signal Code : 009 (Roll Deck Open) Is the status “L” when the Roll Deck is closed? And is it “H” when the Roll Deck is opened?	No	1. Check if there is any problem with the wire connected to the Switch (MS5). 2. Replace the Switch (MS5) if there is no problem with the wire.

7. 1. 1.10 Deck Jam

Cause	Checking order	Checking	Result	Treatment
Mis-feed of paper	1	Does the paper mis-fed occur in the Roll Deck?	Yes	Remove the mis-fed paper.
Installation of roll paper	2	Is the roll paper correctly installed to the Roll Deck 2?	No	Install it correctly.
Roll 1 Set Sensor (PH7) Roll 2 Set Sensor (PH9)	3	Check the status of Roll 1 Set Sensor and Roll 2 Set Sensor in the Signal Status Mode of the Service Mode. Signal Code : 105 (Roll 1 Set Sensor) 106 (Roll 2 Set Sensor) Is the status of each sensor “H” when you set the roll paper?	No	1. Is there any problem with the Drawer Connector which connects the machine and the Roll Deck. 2. Check if there is any problem with the wire connected to each sensor. 3. Replace the concerning sensor if there is no problem with the wire.
Roll 1 Feed Clutch (CL4) Roll 2 Feed Clutch (CL6) Roll 1 Back Clutch (CL5) Roll 2 Back Clutch (CL7)	4	Check the operation of the following clutches in the Device Operation Mode of the Service Mode. Device Code : 06 (Roll 1 Feed Clutch) 07 (Roll 1 Back Clutch) 08 (Roll 2 Feed Clutch) 09 (Roll 2 Back Clutch) Does each clutch operate correctly?	No	1. Check if there is any problem with the wire connected to each clutch. 2. Replace the concerning clutch if there is no problem with the wire.
Main Motor (M1)	5	Check the status of Roll 1 Set Sensor and Roll 2 Set Sensor in the Signal Status Mode of the Service Mode while making the following operation. Signal Code : 105 (Roll 1 Set Sensor) 106 (Roll 2 Set Sensor) 1. Set the leading edge of each roll paper between the concerning feeding rollers. (Leading edge must not pass over each Roll 1 (2) Set Sensor.) 2. Close the Roll Deck. Does the status change from “L” to “H” when the machine is transporting the paper?	No	1. Check the driving belts of the Roll Deck. 2. Check if there is any problem with the wire connected to the Main Motor. 3. Replace the Main Motor if there is no problem with the wire.
			Yes	1. Remove the whole Roll Deck, and then re-install it to the machine correctly.

7. 1. 1.11 Manual Set NG

Cause	Checking order	Checking	Result	Treatment
Mis-feed	1	Have you already set the cut sheet paper to the Bypass Feeder before you turned on the machine?	Yes	Remove the paper.
Manual Set Sensor	2	Check the status of Manual Feed Sensor in the Signal Status Mode of the Service Mode. Signal Code : 008 (Manual Set Sensor) Is the status “L” when the paper is not passing beside the sensor? And is it “H” when the paper is passing beside the sensor?	No	1. Check if there is any problem with the wire connected to the Manual Set Sensor. 2. Replace the Manual Set Sensor if there is no problem with the wire.
Registration Sensor	3	Check the status of Registration Sensor in the Signal Status Mode of the Service Mode. Signal Code : 100 (Registration Sensor) Is the status “L” when the paper is not passing beside the sensor? And is it “H” when the paper is passing beside the sensor?	No	1. Check if there is any problem with the wire connected to Registration Sensor. 2. Replace the Registration Sensor if there is no problem with the wire.
Engine Unit	4	Is Engine Unit closed firmly? (Is the pressure around Registration Roller correct?)	No	1. Close Engine Unit firmly. 2. Adjust the pressure around Registration Roller.
Driving mechanism	5	Check the operation of Registration Clutch in the Device Operation Mode of the Service Mode. Device Code : 11 (Registration Clutch) Open and close Roll Deck and check if Main Motor rotates correctly. Does each Registration Clutch and Main Motor operate correctly?	No	Replace the Registration Clutch or Main Motor if it is defective.

7. 1. 1.12 Toner Empty

Cause	Checking order	Checking	Result	Treatment
Toner Cartridge	1	Is there enough toner in the Toner Cartridge?	No	Replace the Toner Cartridge.
Toner Supply Motor (M3)	2	Check the operation of Toner Supply Motor by the following 2 ways. 1. Turn on the machine and check the action of Toner Supply Motor at that time. 2. Enter Factory Adjustment Mode and carry out Sub Mode No.05. Press [*] Key when the machine is operating. (Toner Supply Motor rotates during [*] Key pressed.) Does Toner Supply Motor operate correctly in both cases?	No	1. Check if there is any problem with the wires among Toner Supply Motor, Driver PCB B and PW12420 PCB. 2. Replace the Toner Supply Motor if there is no problem with the wire.

(continued on the next page)

Cause	Checking order	Checking	Result	Treatment
Toner Sensor (TLS1)	3	Confirm that the Toner Sensor is not buried in the toner. Then check the status of Toner Sensor in the Input/Output Mode of the Service Mode. I/O Signal Code : 107 (Toner Sensor) Is the status “H” when the Toner Sensor is covered with the toner? And is it “L” when the sensor is not covered?	No	Replace the Toner Sensor.
			Yes	Replace the PW12420 PCB.

7. 1. 1.13 The door opened during the print

Cause	Checking order	Checking	Result	Treatment
Mis-feed of paper	1	Is there a paper anywhere in the machine?	Yes	Open the Exit Cover and the Engine Unit, and then remove the paper. (Cut the paper manually if it has not been cut yet.)
Switch (MS5)	2	Check the status of the following signal in the Signal Status Mode of the Service Mode. Signal Code : 009 (Roll Deck Open) Is the status “L” when the Roll Deck is closed? And is it “H” when the Roll Deck is opened?	No	1. Check if there is any problem with the wire connected to the Switch (MS5). 2. Replace the Switch (MS5) if there is no problem with the wire.
Fuse	3	Does the fuse (F2) have a proper conductivity?	No	Replace the fuse (F2).

7. 1. 1.14 Abnormal variation in cut length

Cause	Checking order	Checking	Result	Treatment
Sensor (PH12) with encoder	1	Check the status of the following signal in the Signal Status Mode of the Service Mode. Signal Code : 109 (Feed Encoder) Is the status changed “H” and “L” alternately when rotating the encoder by hand?	No	1. Check if there is any problem with the wire connected to the Sensor (PH12). 2. Replace the Sensor (PH12) if there is no problem with the wire.
	2	Does the encoder rotate smoothly when feeding media by Feed Knob?	No	Replace the shaft or bracket that supports the encoder.

7. 1. 2 Countermeasures - Call Service Errors

The followings are the names of Service Call Errors and the conditions that those errors occur.

Error Code	Error Indication	Conditions
E-000	Fuser Temperature Rising Error	Fuser Temperature does not reach 50 °C within 120 seconds after turning on.
E-001	Fuser Over Temperature Error	Fuser Temperature reaches over 230 °C.
E-002	Fuser Low Temperature Error	1. Fuser Temperature at the time of turning on was 50 to 100 °C, but it does not rise up to 120 °C within 150 seconds after that. 2. Fuser Temperature at the time of turning on was higher than 100 °C, but it does not rise up to the setting temperature within 330 seconds after that.
E-003	Fuser Temperature Abnormal Fall Error	The difference of temperature between center and side of fuser becomes 50 °C or more.
E-004	Fuser Temperature Abnormal Fall Error	The Lamp of fuser lights (Signal HEAT1 is “H”) to heat up the Fuser Roller in the ready condition, but even 1 °C of temperature rise can not be accomplished within 30 seconds.
E-010	Main Motor Error	The Main Motor Output Detection Signal (MAINM_LD) continues to be “H” for 3 seconds or longer when the Main Motor is rotating.
E-011	Fuser Motor Error	The Fuser Motor Output Detection Signal (HEATM_LD) continues to be “H” for 3 seconds or longer when the Fuser Motor is rotating.
E-012	Developer Press Motor Error	The Developer Press Sensor Signal (PRESS_S) does not change to “L” within 30 seconds after turning on.
E-020	Counter Error	The Counter Connection Detection Signal (COUNT_OPN) continues to be “L” for 1 second or longer after turning on.
E-031	Image Corona Output Error	The Image Corona Output Detection Signal (IM_LD) continues to be “L” for 1 second or longer when the Image Corona is ON.
E-032	Separation Corona Output Error	The Separation Corona Output Detection Signal (AC_LD) continues to be “L” for 1 second or longer when the Separation Corona is ON.
E-033	Transfer Corona Output Error	The Transfer Corona Output Detection Signal (TR_LD) continues to be “L” for 1 second or longer when the Transfer Corona is ON.

Error Code	Error Indication	Conditions
E-034	Bias Output Error	Bias Output Detection Signal (BIAS_LD) continues to be “L” for 1 second or longer when a specified bias is supplied to the corresponding Developer Unit components.
E-040	Cutter Error	1. The Cutter Home Sensor Signal (MSCUT_L or MSCUT_R) does not change to “H” within 100 millisecond since the Cutter has started the operation. 2. The Cutter Home Sensor Signal (MSCUT_L or MSCUT_R) does not change to “L” within 1 second since the Cutter has started the operation.
E-050	FPGA Error	Initialization of FPGA is failed after turning on.
E-070	Developer Unit Set Error	1. The Connector J-253 is not connected. 2. The Switch (MS4) is “open” condition, which detects open/close of Engine Unit or Toner Hatch.
E-080	Density Sensor Error	The default output of Density Sensor reaches less than 0.1V or more than 1.3V.
E-081	Density Sensor Output Error	The gap between the default output and the standard output of Density Sensor reaches less than 2V.

7. 1. 2. 1 Fuser Error (E-000, E-002 & E-004)

E-000 : Fuser Temperature Rising Error
E-002 : Fuser Low Temperature Error
E-004 : Fuser Temperature Abnormal Fall Error

Cause	Checking order	Checking	Result	Treatment
Error clearance	1	Have you cleared the fuser error in the Error Clear Mode?	Yes	Wait until the Fuser Unit is enough cooled down. Then select the Error Clear Mode and clear the concerning error.
Wires	2	Are wires among Lamp (H1, H2), Solid State Relay (SSR1) and Thermistors (TH1 & TH2) connected properly?	No	Connect them properly.
Lamp (H1, H2)	3	Unplug the machine, and then check the resistance of Lamp (H1, H2) with the multi-meter. Is it 15k ohm or lower?	No	Replace the Lamp.
Thermistors (TH1 & TH2)	4	Select the Information Mode, and then check the temperature of fuser detected by Thermistors (TH1 & TH2). Item No. : 00 (Fuser temperature 1) 01 (Fuser temperature 2) Is each temperature normal?	No	Replace the concerning Thermistor.
DC Power Supply (DCP1) or Fuse	5	Confirm that the machine is turned on, and then check the voltage of the orange line (J220-4). Is it 24V?	No	Replace the DC Power Supply if there is no problem with the wires.
		Confirm that the machine is turned off, and then check whether or not each Fuse is broken. Is any Fuse broken?	Yes	Replace the Fuse.
Relay (RY1)	6	Select the Device Operation Mode, and then change the signal of the following signal to “H”. Device Code : 22 (Fuser Relay) And check the resistance between the following points. Between RY1-2 and RY1-4 Between RY1-6 and RY1-8 Is the each resistance almost 0 ohm?	No	Replace the Relay.

Cause	Checking order	Checking	Result	Treatment
Solid State Relay (SSR1)	7	Select the Device Operation Mode, and then change the signal of the following signals to “H”. Device Code : 22 (Fuser Relay) 21 (Fuser Lamp 1) Then check the voltage between J105-1 and J105-2. Is it 0V? **CAUTION** **Change the signal of “21” (Fuser Lamp 1) to “L” after checking!**	Yes	Replace the Solid State Relay
			No	Replace the PW12420 PCB.

7. 1. 2. 2 Fuser Error (E-001)

Cause	Checking order	Checking	Result	Treatment
Error clearance	1	Have you cleared the fuser error in the Error Clear Mode? (Refer to the page 8-154 as for the Error Clear Mode.)	Yes	Wait until the Fuser Unit is enough cooled down. Then select the Error Clear Mode and clear the concerning error.
Wires	2	Are wires among Lamp (H1, H2), Solid State Relay (SSR1) and Thermistors (TH1 & TH2) connected properly?	No	Connect them properly.
Solid State Relay (SSR1)	3	Does the error occur again even if you have cleared it in the Error Clear Mode?	Yes	Replace the Solid State Relay.
Thermistors (TH1 & TH2)	4	Select the Information Mode, and then check the temperature of fuser detected by Thermistors (TH1 & TH2). Item No. : 00 (Fuser temperature 1) 01 (Fuser temperature 2) Is each temperature normal?	No	Replace the concerning Thermistor.

7. 1. 2. 3 Fuser Error (E-003)

Cause	Checking order	Checking	Result	Treatment
Error clearance	1	Have you cleared the fuser error in the Error Clear Mode?	Yes	Wait until the Fuser Unit is enough cooled down. Then select the Error Clear Mode and clear the concerning error.
Wires	2	Are wires among Lamp (H1, H2), Solid State Relay (SSR1) and Thermistors (TH1 & TH2) connected properly?	No	Connect them properly.
Thermistors (TH1 & TH2)	3	Select the Information Mode, and then check the temperature of fuser detected by Thermistors (TH1 & TH2). Item No. : 00 (Fuser temperature 1) 01 (Fuser temperature 2) Is each temperature normal?	No	Replace the concerning Thermistor.

7. 1. 2. 4 Main Motor Error (E-010)

Cause	Checking order	Checking	Result	Treatment
Wires	1	Is the wire between Main Motor and PW12420 PCB connected properly?	No	Connect it properly.
DC Power Supply (DCP1) or Fuse	2	Confirm that the machine is turned on, and then check the voltage of the orange line (J220-4). Is it 24V?	No	Replace the DC Power Supply if there is no problem with the wires.
		Confirm that the machine is turned off, and then check whether or not each Fuse is broken. Is any Fuse broken?	Yes	Replace the Fuse.
Main Motor (M1)	3	Check the operation of Main Motor in the Device Operation Mode of the Service Mode. Device Code : 00 (Main Motor) Does the Main Motor operate correctly?	No	Replace the Main Motor.

7. 1. 2. 5 Fuser Motor Error (E-011)

Cause	Checking order	Checking	Result	Treatment
Wires	1	Is the wire between Fuser Motor and PW12420 PCB connected properly?	No	Connect it properly.
DC Power Supply (DCP1) or Fuse	2	Confirm that the machine is turned on, and then check the voltage of the orange line (J220-4). Is it 24V?	No	Replace the DC Power Supply if there is no problem with the wires.
		Confirm that the machine is turned off, and then check whether or not each Fuse is broken. Is any Fuse broken?	Yes	Replace the Fuse.
Fuser Motor (M2)	3	Check the operation of Fuser Motor in the Device Operation Mode of the Service Mode. Device Code : 01 (Fuser Motor) Does the Fuser Motor operate correctly?	No	Replace the Fuser Motor.

7. 1. 2. 6 Developer Press Motor Error (E-012)

Cause	Checking order	Checking	Result	Treatment
Wires	1	Are the wires among Developer Press Sensor (PH4), PW12420 PCB, Driver PCB B (PW6654) and Developer Press Motor (M4) connected properly?	No	Connect them properly.
Developer Press Motor (M4) Driver PCB B (PW6654)	2	Turn off the machine, and then turn it on again. Is the Developer Unit moved to the Drum side?	No	Replace the Developer Press Motor or Driver PCB B.
Developer Press Sensor (PH4)	3	Select the Signal Code “104” (Developer Press Sensor) in the Signal Status Mode, and then turn on the machine again. Does the status change from “H” to “L” after turning on?	No	Replace the Developer Press Sensor.
Fuse	4	Does the fuse (F3) have a proper conductivity?	No	Replace the fuse (F3).

7. 1. 2. 7 Counter Error (E-020)

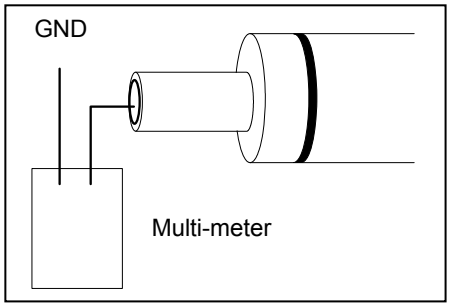
Cause	Checking order	Checking	Result	Treatment
Wires	1	Is the wire between Counter and PW12420 PCB connected properly?	No	Connect it properly.
DC Power Supply (DCP1) or Fuse	2	Confirm that the machine is turned on, and then check the voltage of the orange line (J220-5). Is it 24V?	No	Replace the DC Power Supply if there is no problem with the wires.
		Turn off the machine. Does the fuse (F1) have a proper conductivity?	No	Replace the fuse (F1).
Counter	3	Check the operation of Counter in the Device Operation Mode of the Service Mode. Device Code : 26 (Counter) Does the Counter operate correctly?	No	Replace the Counter.

7. 1. 2. 8 High Voltage Output Error (E-031, E-032 & E-033)

E-031 : Image Corona Output Error
E-032 : Separation Corona Output Error
E-033 : Transfer Corona Output Error

Cause	Checking order	Checking	Result	Treatment
Wires	1	Are wires among Image Corona, HV Power Supply PCB and PW12420 PCB connected properly?	No	Connect them properly.
Image Corona	2	Is the Image Corona dirty?	Yes	Clean each Corona Wire, Grid Plate and housing.
		Is the Corona Wire broken?	Yes	Replace the Corona Wire.
Cleaning Roller	3	Does the bias terminal plate touch to Cleaning Roller shaft properly?	No	Remove and reapply conductive grease to Cleaning Roller shaft. Relocate the bias terminal plates properly.
		Is grease applied enough?	No	Remove and reapply conductive grease to Cleaning Roller shaft.
Transfer Corona	4	Is the Transfer Corona dirty?	Yes	Clean each Corona Wire and housing.
		Is the Corona Wire broken?	Yes	Replace the Corona Wire.
Separation Corona	5	Is the Separation Corona dirty?	Yes	Clean each Corona Wire and housing.
		Is the Corona Wire broken?	Yes	Replace the Corona Wire.
HV Power Supply	6	Can you fix the problem if you replace the HV Power Supply?	Yes	OK

7. 1. 2. 9 Bias Output Error (E-034)

Cause	Checking order	Checking	Result	Treatment
Wires	1	Are wires among Developer Unit, HV Power Supply PCB and PW12420 PCB connected properly?	No	Connect them properly.
Developer Unit	2	Is the toner spill out from the Developer Unit? (Or is there any similar problem?)	Yes	Clean each Corona Wire, Grid Plate and housing.
		Is the high voltage of Regulation Roller leaking? (The resistance between the central part of Regulation Roller and the Ground is 5 mega ohm or smaller if leaking.)  	Yes	Replace the Regulation Roller.
HV Power Supply	3	Can you fix the problem if you replace the HV Power Supply?	Yes	OK

7. 1. 2. 10 Cutter Error (E-040)

Cause	Checking order	Checking	Result	Treatment
Wires	1	Is the wire between Cutter Unit and PW12420 PCB connected properly?	No	Connect it properly.
Cutter Home Position Sensors (MS6 & MS7)	2	Check the status of the following signals in the Signal Status Mode of the Service Mode. Signal Code : 094 (Cutter Home Position Right) 095 (Cutter Home Position Left) Is the status “L” when the Cutter is at each home position?	No	Replace the Cutter Unit.
Developer Press Sensor (PH4)	3	Check the operation of Cutter in the Device Operation Mode of the Service Mode. Device Code : 27 (Cutter Motor 1) 28 (Cutter Motor 2) Does the Cutter operate?	No	Replace the Cutter Unit.

7. 1. 2. 11 FPGA Error (E-050)

Cause	Checking order	Checking	Result	Treatment
PW12420 PCB	1	Can you fix the problem if you replace the PW12420 PCB?	Yes	OK

7. 1. 2. 12 Developer Error (E-070)

Cause	Checking order	Checking	Result	Treatment
Wires	1	Is the wire between Developer Unit and PW12420 PCB connected properly?	No	Connect it properly.
Switch (MS4)	2	Is the actuator of Switch correctly pressed down when you close the Engine Unit or Toner Hatch?	No	Adjust the positions of Switch (or Toner Hatch and Engine Unit).

7. 1. 2. 13 Density Sensor Error (E-080)

Cause	Checking order	Checking	Result	Treatment
Wires	1	Is the wire between Toner Density Sensor and PW12420 PCB connected properly?	No	Connect it properly.
Density Sensor (PH11)	2	Can you fix the problem if you replace Density Sensor?	No	Replace PW12420 with a new one.

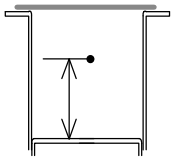
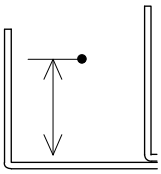
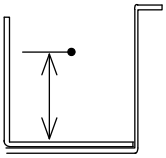
7. 1. 2. 14 Density Sensor Output Error (E-081)

Cause	Checking order	Checking	Result	Treatment
Wires	1	Is the wire between Toner Density Sensor and PW12420 PCB connected properly?	No	Connect it properly.
Density Sensor (PH11)	2	Can you fix the problem if you replace Density Sensor?	No	Replace PW12420 with a new one.

7. 2 Troubleshooting - Image Quality Defects

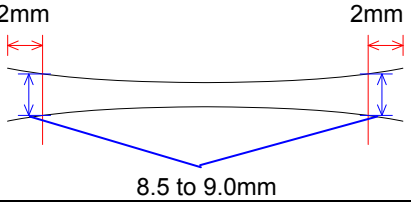
7. 2. 1 Basic Image Adjustment

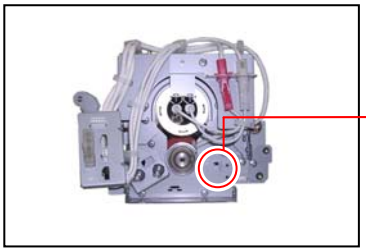
The followings are the settings specified to the image creation components.
When a defective image is printed out, please check whether or not these settings are satisfied for the beginning.

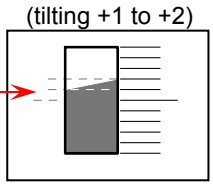
Component	Check Point (PW12420)	Designated voltage	Way of adjustment	Corona Wire Height
Image Corona	CP11 (+) CPCOM (-)	1.3 +/-0.05VDC	VR101	
Transfer Corona	CP21 (+) CP22 (-)	Plain paper: 1.2 +/-0.05VDC other media: 1.0 +/-0.05VDC	Adjustment Mode No.029 (Plain) No.030 (Tracing) No.031 (Film)	
Separation Corona (AC)	CP31 (+) CPCOM (-)	5.0 +/-0.05V	VR302	
Separation Corona (DC)	CP33 (+) Ground (-)	-250 +/-5VDC	VR303	
Negative Developer Roller Bias	OUTPUT2 (+) Ground (-)	-180 +/-5VDC	Adjustment Mode No.022 (Plain) No.023 (Tracing) No.024 (Film)	
Positive Developer Roller Bias	CP41 (+) CP42 (-)	0.350 +/-0.005V	VR401	
Toner Supply Roller Bias	OUTPUT1 (+) OUTPUT2 (-)	the same voltage as Developer Bias	-	
Regulation Roller Bias	OUTPUT2 (+) OUTPUT3 (-)	-80 +/-5VDC	Adjustment Mode No.622	
Positive Cleaning Roller Bias	OUTPUT5 (+) Ground (-)	+450 +/-5VDC	VR001	
Negative Cleaning Roller Bias	OUTPUT5 (+) Ground (-)	-550 +/-5VDC	VR002	

NIP Width

Test Patter No.2 S(0) with a tracing paper (36" or A0)

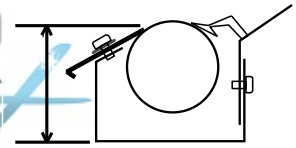




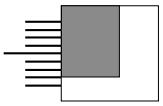


Entrance Guide Plate Height

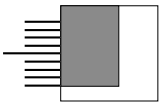
From the frame bottom surface,
Side : 70.7 to 71.3mm
Middle : 73.7 to 74.3mm (US)
: 74.5 to 75.1mm (EU)



(to both adjusters)



US: 3



EU: 4

7. 2. 2 Countermeasures - Image Quality Defects

7. 2. 2. 1 Halftone is too light

Check the following matters with the Test Pattern No.1 S(0) and No.3 S(0).
If necessary use other Test Patterns.

Cause	Checking order	Checking	Result	Treatment
	1	Try to readjust each image creation component according to [7.2.1 Basic Image Adjustment]. Is the problem fixed?	Yes	OK
LED Head	2	Is the Lens Array of LED Head dirty?	Yes	Clean it.
Paper	3	Can you fix the problem if you use a newly unpacked paper?	Yes	1. If the paper was humidified, instruct the customer of the way store the paper. 2. If the paper was not the specified one, explain the customer that some image problem may occur in that case.
Image Corona	4	Is the Image Corona dirty?	Yes	Clean each Corona Wire, Grid Plate and housing, or replace the Corona Wire if it is too dirty.
		Is the input voltage to the Image Corona correct?	No	Readjust the input voltage making reference to [4. 3. 2 Analog Voltage to the Image Corona] on the page 4-33. Or replace the HV Power Supply PCB.
Eraser Lamp	5	Does the Eraser Lamp light properly?	No	1. Check the wire connected to the Eraser Lamp. 2. Check or replace the Eraser Lamp.
Separation Lamp	6	Does the Separation Lamp light properly?	No	1. Check the wire connected to the Separation Lamp. 2. Check or replace the Separation Lamp.
Transfer Corona	7	Is the Transfer / Separation Corona dirty?	Yes	Clean each Corona Wire and housing, or replace the Corona Wire if it is too dirty.
		Is the input voltage to the Transfer Corona correct?	No	Readjust the input voltage making reference to [4. 3. 3 Analog Voltage to Transfer Corona] on the page 4-35. Or replace the HV Power Supply PCB.
Contact points of Developer Bias	8	Is each Electrode Plate on the right of the Developer Unit surely contacted to the Electrode Plate on the machine side?	No	Try to install the Developer Unit so that they are contacted each other. And supply the conductive grease to the Electrode Plates.
HV Power Supply PCB	9	Can you fix the problem if you replace the HV Power Supply PCB?	Yes	OK

Cause	Checking order	Checking	Result	Treatment
Installation of Developer Unit	10	Is the driving gear on the left of the Developer Unit surely fitted to the driving mechanism on machine side?	No	Check whether or not the Cam of Developer Press Unit surely presses the Developer Unit. Check the concerning gears.
Developer Unit	11	Is the Developer Roller evenly covered with the toner?	No	Check the whole Developer Unit to find the cause.
			Yes	Replace the Photoconductive Drum.

7. 2. 2. 2 Halftone and solid black are too light

Check the following matters with the Test Pattern No.1 S(0) and No.3 S(0).
If necessary use other Test Patterns.

Cause	Checking order	Checking	Result	Treatment
	1	Try to readjust each image creation component according to [7.2.1 Basic Image Adjustment]. Is the problem fixed?	Yes	OK
	2	Turn off the machine in the middle of printing, and then check the toner image on the Drum. Is the toner image looks normal?	Yes	Go on to the step 3.
			No	Go on to the step 7.
Transfer Corona	3	Is the Transfer/Separation Corona installed to the machine correctly?	No	Install it correctly.
		Is the high voltage of Transfer Corona leaking?	Yes	Clean the Transfer Corona.
Paper	4	Can you fix the problem if you use a newly unpacked paper?	Yes	1. If the paper was humidified, instruct the customer of the way store the paper. 2. If the paper was not the specified one, explain the customer that some image problem may occur in that case.
Lead Wire	5	Is the resistance of Lead Wire about 10 kilo ohm, which connects the HV Power Supply and the Transfer Corona?	No	Replace the Lead Wire.
Input voltage to the Transfer Corona	6	Is a correct voltage supplied from the HV Power Supply to the Transfer Corona?	No	Readjust the input voltage making reference to [4. 3. 3 Analog Voltage to Transfer Corona] on the page 4-35. Or replace the HV Power Supply PCB.
Dirt of the LED Head	7	Is the LED Head dirty?	Yes	Clean it.
Developer Unit	8	Is the Developer Roller evenly covered with the toner?	No	Check the whole Developer Unit to find the cause.
	9	Is the Developer Unit firmly pressed toward the Drum? (Do Counter Rollers at both sides of the Developer Roller touch the Drum Unit?)	No	Remove the Developer Unit, and then install it to the machine correctly. Check the Developer Press Unit.
Installation of Developer Unit	10	Is the driving gear on the left of the Developer Unit surely fitted to the driving mechanism on machine side?	No	Check whether or not the Cam of Developer Press Unit surely presses the Developer Unit. Check the concerning gears.
Toner Sensor	11	Is there enough toner in the Developer Unit?	No	1. Check the wire or the connector connected to the Toner Sensor. 2. Check the Toner Sensor.
			Yes	Replace the Photoconductive Drum.

7. 2. 2. 3 The whole image is extremely light

Check the following matters with the Test Pattern No.1 S(0) and No.3 S(0).
If necessary use other Test Patterns.

Cause	Checking order	Checking	Result	Treatment
	1	Try to readjust each image creation component according to [7.2.1 Basic Image Adjustment]. Is the problem fixed?	Yes	OK
Paper	2	Can you fix the problem if you use a newly unpacked paper?	Yes	1. If the paper was humidified, instruct the customer of the way store the paper. 2. If the paper was not the specified one, explain the customer that some image problem may occur in that case.
		Do you have the problem only when you use a film?	Yes	Change the setting of Item No.067 (Transfer Assist Setting) in the Adjustment Mode of Service Mode, so that the Separation Lamp works for the film.
	3	Turn off the machine in the middle of printing, and then check the toner image on the Drum. Is the toner image looks normal?	Yes	Go on to the step 4.
			No	Go on to the step 8.
Transfer Corona	4	Is the Transfer/Separation Corona installed to the machine correctly?	No	Install it correctly.
		Is the high voltage of Transfer Corona leaking?	Yes	Clean the Transfer Corona.
Lead Wire	5	Is the resistance of Lead Wire about 10 kilo ohms, which connects HV Power Supply and the Transfer Corona?	No	Replace the Lead Wire.
Input voltage to the Transfer Corona	6	Is a correct voltage inputted from the HV Power Supply to the Transfer Corona?	No	Readjust the input voltage making reference to [4. 3. 3 Analog Voltage to Transfer Corona] on the page 4-35. Or replace the HV Power Supply PCB.
Driving mechanism of Developer Unit	7	Is the Developer Unit driving normally?	No	Check the driving mechanism.
Developer Unit	8	Is the Developer Unit firmly pressed toward the Drum? (Are Counter Rollers at both sides of the Developer Roller touch the Drum Unit?)	No	Remove the Developer Unit, and then install it to the machine correctly.
Lead Wire	9	Is the Lead Wire to supply the Developer Bias correctly connected?	No	Connect the Lead Wire correctly.
Developer Bias	10	Is the Developer Unit supplied with the Developer Bias correctly?	No	Check the contact points of Developer Bias, and also check the HV Power Supply.

7. 2. 2. 4 Density is uneven

Check the following matters with the Test Pattern No.1 S(0) and No.3 S(0).
If necessary use other Test Patterns.

Cause	Checking order	Checking	Result	Treatment
Image Corona	1	Is the Image Corona dirty?	Yes	Clean the Image Corona, or replace the Corona Wire.
		Is the height of Corona Wire different between left and right?	Yes	Adjust the height properly.
Installation of Developer Unit	2	Is the Developer Unit firmly pressed toward the Drum? (Do Counter Rollers at both sides of the Developer Roller touch the Drum Unit?)	No	Remove the Developer Unit, and then install it to the machine correctly. Check the Developer Press Unit.
LED Head	3	Is the Lens Array dirty	Yes	Clean it.
Eraser Lamp	4	Are all LED of the Eraser Lamp light properly during the print?	No	1. Replace the Eraser Lamp. 2. Replace the PW12420 PCB.
Developer Unit	5	Is the Developer Roller evenly covered with the toner?	No	1. Clean Regulation Roller. 2. Reinstall Scraper.
		Is the toner accumulating evenly in the Developer Unit?	No	Level the machine correctly.

7. 2. 2. 5 Totally appeared foggy image

Check the following matters with the Test Pattern No.1 S(0) and No.4 S(0).
If necessary use other Test Patterns.

Cause	Checking order	Checking	Result	Treatment
	1	Try to readjust each image creation component according to [7.2.1 Basic Image Adjustment]. Is the problem fixed?	Yes	OK
Developer Unit	2	Is the Developer Roller insulated from the ground?	No	Check the Developer Roller and connector.
Image Corona	3	Is the foggy image printed even if you print a completely white pattern?	Yes	Check the output voltage from the HV Power Supply to the Image Corona. If it is not correct, readjust it.
Developer Bias	4	Is the Developer Unit supplied with a correct Developer Bias during the print?	No	Check the output voltage from the HV Power Supply to the Developer Unit. If it is not correct, readjust it. Or replace the HV Power Supply PCB
Photoconductive Drum	5	Have you used the Photoconductive Drum longer than its part life?	Yes	Replace the Photoconductive Drum.

7. 2. 2. 6 Foggy image or blurred black wide line (vertical)

Check the following matters with the Test Pattern No.1 S(0) and No.4 S(0).
If necessary use other Test Patterns.

Cause	Checking order	Checking	Result	Treatment
Light from the outside	1	Is any light from the outside thrown onto the Drum?	Yes	Install the outer cover correctly.
Image Corona	2	Is the Image Corona dirty?	Yes	Clean the Image Corona, or replace the Corona Wire.
Developer Unit	3	Is the Developer Roller evenly covered with the toner?	No	Check if the Regulation Roller is fixed at the proper position. If not, fix it at the correct position.

7. 2. 2. 7 Clear black thin line (vertical)

Check the following matters with the Test Pattern No.1 S(0) and No.4 S(0).
If necessary use other Test Patterns.

Cause	Checking order	Checking	Result	Treatment
Image Corona	1	Is there something like filament on the Grid Plate, which is contacted to the Drum?	Yes	Remove it.
		Is the Image Corona dirty?	Yes	Clean the Image Corona, or replace the Corona Wire.
Foreign substance	2	Is there some foreign substance on each Corona Unit or LED Head, which is contacted to the Drum?	Yes	Remove it.
Photoconductive Drum	3	Is there any black line or damage on the Drum, of which position corresponds with the black line on the print?	Yes	Clean the Drum making reference to [5. 5. 3 Cleaning of Photoconductive Drum]. Replace the Drum if it is damaged. Be sure to find the cause of the damage.

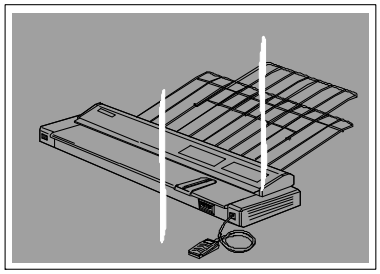
7. 2. 2. 8 White line (Vertical)

Check the following matters with the Test Pattern No.1 S(0) and No.7 S(0).
If necessary use other Test Patterns.

Cause	Checking order	Checking	Result	Treatment
Image Corona	1	Is there something like filament on the Grid Plate, which is contacted to the Drum?	Yes	Remove it.
Dirt of the LED Head	2	Can you fix the problem if you clean the LED Head?	Yes	OK
Transfer/Separation Corona	3	Is there any foreign substance or dirt on the Transfer/Separation Corona?	Yes	Clean the Transfer / Separation Corona.
Developer Unit	4	Is the Developer Roller evenly covered with the toner?	No	Check whether or not there is damage or foreign substance on the Regulation Roller.
Entrance of Fuser Unit	5	Is there any foreign substance or dirt around the entrance area of the Fuser Unit?	Yes	Clean it off
Photoconductive Drum	6	Is there any damage on the Drum, which runs to the direction of Drum rotation.	Yes	Clean the Drum making reference to [5. 5. 3 Cleaning of Photoconductive Drum]. Replace the Drum if it is damaged. Be sure to find the cause of the damage.

7. 2. 2. 9 Void of image

Check the following matters with the Test Pattern No.1 S(0) and No.7 S(0).
If necessary use other Test Patterns.

Cause	Checking order	Checking	Result	Treatment
	1	Print out the Test Patter No.7 (halftone). Can you find void of image on the print?	Yes	Go to the step 2.
Paper	2	Can you fix the problem if you use a newly unpacked paper?	Yes	1. If the paper was humidified, instruct the customer of the way store the paper. 2. If the paper was not the specified one, explain the customer that some image problem may occur in that case.
Developer Unit	3	Does the void of image appear on the print constantly Keeping about 160mm of interval?	Yes	1. Clean the Counter Rollers at both sides of the Developer Roller. 2. Wipe the Developer Roller with a dry cloth. 3. Replace the Developer Roller if damaged.
		Is the void of image mainly runs vertically as follows? 	Yes	1. Check if there is enough toner in the Developer Unit. 2. Also select the Device Status Mode and check the Toner Sensor Signal (Device Code: 107). It must be “L” when the toner is not covering the Toner Sensor. If not, replace the Toner Sensor.
Photoconductive Drum	4	Does the void of image appear on the print constantly Keeping about 251mm of interval?	Yes	Clean Drum making reference to [5. 5. 3 Cleaning of Photoconductive Drum]. Replace Drum if damaged. Be sure to find the cause of the damage.

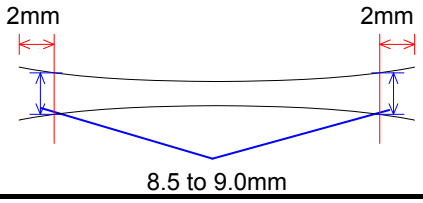
7. 2. 2.10 Dirt on the back of the print

Check the following matters with the Test Pattern No.1 S(0) and No.4 S(0).
If necessary use other Test Patterns.

Cause	Checking order	Checking	Result	Treatment
	1	Try to readjust each image creation component according to [7.2.1 Basic Image Adjustment]. Is the problem fixed?	Yes	OK
Transfer Guide Plates	2	Are Transfer Guides or the black rubber area of the guide plate near Transfer / Separation Corona dirty with the toner?	Yes	Clean them. After that, check the distance between Transfer Guide and Drum. (It should be 0.5 to 0.7mm.)
Developer Unit	3	Is too much toner accumulating under the Developer Roller?	Yes	Clean the Developer Unit.
Inner Transport Unit	4	Is the Inner Transport Unit dirty with the toner?	Yes	Clean it, and also find where the toner came.
Fuser Unit	5	Is the Guide Plate at the entrance of Fuser Unit dirty with the toner?	Yes	Clean it.
		Are Fuser Roller and Pressure Roller dirty with the toner?	Yes	Clean them

7. 2. 2.11 Defective fusing

Check the following matters with the Test Pattern No.1 S(0) and No.3 S(0).
If necessary use other Test Patterns.

Cause	Checking order	Checking	Result	Treatment
Fuser Unit	1	Is the Fuser Roller properly heated up after turning on the machine?	No	Refer to [7. 1. 2. 1 Fuser Error (E-001, E-002 & E-004)] to check the Fuser Unit.
Paper	2	Is the type of paper selected on the UI same with that of actually installed paper?	No	Select the correct paper type on the UI.
		Can you fix the problem if you use a newly unpacked paper?	Yes	1. If the paper was humidified, instruct the customer of the way store the paper. 2. If the paper was not the specified one, explain the customer that some image problem may occur in that case.
Fusing temperature setting	3	Does the fusing temperature specified in the Service Mode suits with the weight (gram/square meter) of paper?	Yes	Is there any part which is burnt? Replace that part if burnt.
			No	Set the fusing temperature correctly.
Fusing pressure (Nip)	4	Print the Test Patter No.2 S(0) with a tracing paper (36" or A0), and turn off the machine in the middle of printing. Remove the print from the machine and check the "nip width". Is it 8.5 to 9.0mm? (Measure at 2 mm from the edge.)  	No	Adjust the fusing pressure correctly.

7. 2. 2.12 Defective image placement, No Leading Edge

Correct leading margin is 5mm (+/-2mm).
Check the following matters with the Test Pattern No.1 S(0) and No.7 S(0).
If necessary use other Test Patterns.

Cause	Checking order	Checking	Result	Treatment
Setting of Leading Registration	1	Is the Leading Registration or Leading Margin properly adjusted in the Service Mode?	No	Adjust it properly.
Feed rollers	2	Have you used the feeding rollers for very long term?	Yes	Replace them.
Registration Clutch	3	Does the Registration Clutch operate correctly without slipping?	No	Replace Registration Clutch.

7. 2. 2.13 Jitter

Check the following matters with the Test Pattern No.1 S(0) and No.7 S(0).
If necessary use other Test Patterns.

Cause	Checking order	Checking	Result	Treatment
Photoconductive Drum and its driving mechanism	1	Does the jitter appear on the print constantly keeping about 251mm of interval?	Yes	1. Check if there is any damage or foreign substance on Pulley on the drum shaft. 2. Check if there is any foreign substance between Drum and Counter Rollers of Developer Unit.
		Does the jitter appear on the print constantly keeping about 3mm of interval?	Yes	Check the engagement of Pulley Gear on the Drum with Belt 4.
Developer Roller	2	Does the void of image appear on the print constantly keeping about 160mm of interval?	Yes	Replace Developer Roller if damaged.
Developer Unit	3	Does the jitter appear on the print constantly keeping about 7.5mm of interval?	Yes	Check if there is any damage or foreign substance on 30T Gear on Regulation Roller shaft (driving side).
		Does the jitter appear on the print constantly keeping about 6.4mm of interval?	Yes	Check if there is any damage or foreign substance on 30T Gear on Supply Roller shaft (driving side) or the driving gears (30T, 25T, 22T) on the electrode plate side.
		Does the jitter appear on the print constantly keeping about 8.6mm of interval?	Yes	Check if there is any damage or foreign substance on the driving gears (16/34T, 21/34T) on the driving side.
		Does the jitter appear on the print constantly keeping about 16.1mm of interval?	Yes	Check if there is any damage or foreign substance on 16T Gears on the screw shafts (driving side)
Fuser Unit	4	Does the jitter appear on the print constantly keeping about 155mm of interval?	Yes	Slightly slow down Fuser Motor Speed 1 or 2 step by step in a concerning media. First half: Speed 1 Last half: Speed 2
	5	Does the jitter appear 60mm from the trailing edge on the print?	Yes	Slightly speed up Fuser Motor Speed 2 step by step in a concerning media.

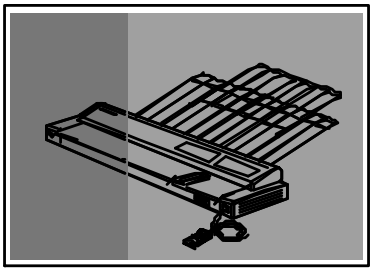
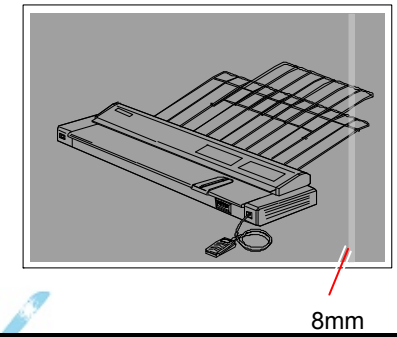
7. 2. 2.14 Image looks not sharp

Check the following matters with the Test Pattern No.1 S(0).
If necessary use other Test Patterns.

Cause	Checking order	Checking	Result	Treatment
Dirt of the LED Head	1	Is the LED Head dirty?	Yes	Clean it.
Installation of LED Head	2	Remove the LED Head, and then re-install it to the machine. Is the problem fixed?	Yes	OK
			No	Adjust the gap between LED Head and Drum by adding or removing the thin plates on the Aluminium Block at both sides of the Drum.
Transfer / Separation Corona	3	Is the Transfer / Separation Corona dirty?	Yes	Clean it.

7. 2. 2.15 Uneven image density (vertical)

Check the following matters with the Test Pattern No.1 S(0) and No.7 S(0).
If necessary use other Test Patterns.

Cause	Checking order	Checking	Result	Treatment
Image Corona	1	Is the Image Corona dirty?	Yes	Clean it.
Transfer/Separation Corona	2	Is the Transfer/Separation Corona dirty?	Yes	Clean it.
Installation of LED Head	3	Remove the LED Head, and then re-install it to the machine. Is the problem fixed?	Yes	OK
	4	Is the density of any image block different from that of other blocks? 	Yes	Adjust the gap between LED Head and Drum by adding or removing the Spacers on the Aluminium Block.
	5	Is the width of abnormal density area about 8mm as follows?  8mm	Yes	Replace the LED Head.

7. 2. 2.16 Completely white (No image)

Check the following matters with the Test Pattern No.1 S(0).
If necessary use other Test Patterns.

Cause	Checking order	Checking	Result	Treatment
Developer Press Unit	1	Is the Developer Unit correctly pressed to the Drum?	No	Check the Developer Press Unit.
Driving mechanism of Developer Unit	2	Does the Developer Roller rotate during the print?	No	Check the driving mechanism of Process Unit.
Developer Bias	3	Is each Electrode Plate on the right of the Developer Unit surely contacted to the Electrode Plate on the machine side?	No	Try to install the Developer Unit so that they are contacted each other. And supply the conductive grease to the Electrode Plates.
LED Head	4	Are connectors of signal cable firmly connected to the LED Head?	No	Connect them firmly.
		Turn off the machine in the middle of printing, and then check the toner image on the Drum. Is there any toner image on the Drum?	No	Replace the LED Head.
Transfer/Separation Corona	5	Is the Transfer Corona Wire broken?	Yes	Replace it.
		Is the Transfer/Separation Corona Unit correctly installed to the machine?	No	Install it correctly.
		If the high voltage leaking from the Transfer Corona?	Yes	Check the Transfer / Separation Corona to find the cause for leaking.
Lead Wire of Transfer Corona	6	Is the connection of Lead Wire correct?	No	Connect it correctly.
		Is the resistance of Lead Wire about 10 kilo ohms, which connects HV Power Supply and the Transfer Corona?	No	Replace the Lead Wire.
HV Power Supply	7	Can you fix the problem if you replace the HV Power Supply?	Yes	OK
PW12420 PCB	8	Can you fix the problem if you replace the PW12420 PCB?	Yes	OK

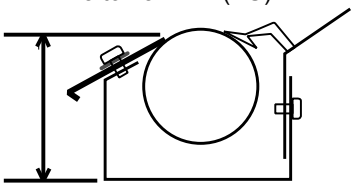
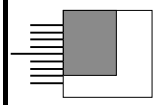
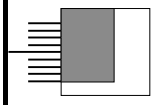
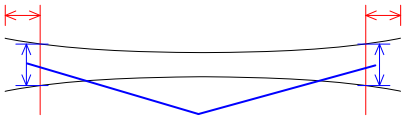
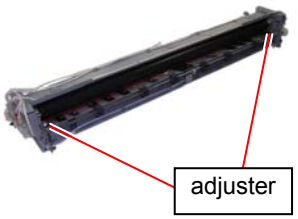
7. 2. 2.17 Completely black

Check the following matters with the Test Pattern No.1 S(0) and No.4 S(0).
If necessary use other Test Patterns.

Cause	Checking order	Checking	Result	Treatment
Image Corona or HV Power Supply PCB	1	Is the Image Corona Wire broken?	Yes	Replace it.
		Is the tension of the Corona Wire correct?	No	Replace it.
		Is the Corona Wire correctly stretched with the spring?	No	Check whether or not the spring is transformed.
		Is a proper high voltage supplied to the Image Corona?	No	Adjust the high voltage, or replace the HV Power Supply PCB
		Is the housing of Image Corona insulated from the ground?	No	Replace the Zener PCB.
PW12420 PCB	2	Can you fix the problem if you replace the PW12420 PCB?	Yes	OK

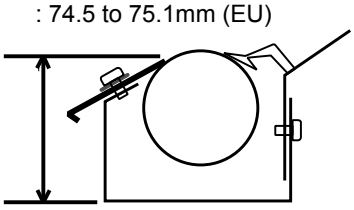
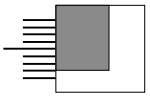
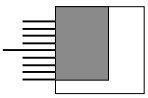
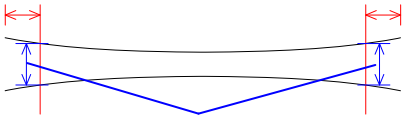
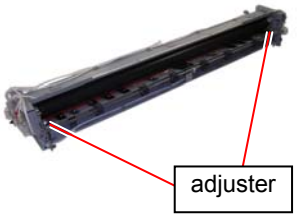
7. 2. 2.18 Crease of paper

Check the following matters with the Test Pattern No.1 S(0).
If necessary use other Test Patterns.

Cause	Checking order	Checking	Result	Treatment
	1	Make a continuous printing. Can you find the crease on the 2nd or later prints?	Yes	Go to the following “8”.
Paper	2	Is the type of paper selected on the UI same with that of actually installed paper?	No	Select the correct paper type on the UI.
		Can you fix the problem if you use a newly unpacked paper?	Yes	1. If the paper was humidified, instruct the customer of the way store the paper. 2. If the paper was not the specified one, explain the customer that some image problem may occur in that case.
		Is the Dehumidify Heater ON although the air is not humid.	Yes	Turn off the Dehumidify Heater.
Lamp (H1, H2) of Fuser	3	Does the Lamp light correctly?	No	Replace it.
Blower (Separation)	4	Is the Blower working properly during a print to help paper transportation?	No	Replace it.
Blower (Fuser Cooler)	5	Is the Blower working properly during a wide print (30”/ 34”/ 36”/ A0) to cool down the Fuser?	No	Replace it.
Fuser Entrance Guide	6	Is the Fuser Entrance Guide transformed? Or Is there anything on the Fuser Entrance Guide?	Yes	Clean or replace it.
		Remove Pressure Roller and measure the location height of Fuser Entrance Guide. Is the height correct? From the frame bottom surface, Side : 70.7 to 71.3mm Middle : 73.7 to 74.3mm (US) : 74.5 to 75.1mm (EU) 	No	Turn the adjuster screw(s) to reach the correct height. Guide Plate Height Adjuster (to both sides)  US: +3 3rd from center  EU: +4 highest
Fusing pressure (Nip)	7	Print the Test Patter No.2 S(0) with a tracing paper (36” or A0), and turn off the machine in the middle of printing. Remove the print from the machine and check the “nip width”. Is it 8.5 to 9.0mm? (Measure at 2 mm from the edge.) 2mm 2mm  8.5 to 9.0mm	No	Adjust the fusing pressure correctly. 
Fuser Motor speed	8	Is the paper slackened during the transportation when you make a long print?	Yes	Make the Fuser Motor speed faster.

7. 2. 2.19 Double Image

Check the following matters with the Test Pattern No.1 S(0).
If necessary use other Test Patterns.

Cause	Checking order	Checking	Result	Treatment
Paper	1	Is the type of paper selected on the UI same with that of actually installed paper?	No	Select the correct paper type on the UI.
		Can you fix the problem if you use a newly unpacked paper?	Yes	1. If the paper was humidified, instruct the customer of the way store the paper. 2. If the paper was not the specified one, explain the customer that some image problem may occur in that case.
Lamp (H1, H2) of Fuser	2	Does the Lamp light correctly?	No	Replace it.
Blower (Separation)	3	Is the Blower working properly during the print to help paper transportation?	No	Replace it.
Blower (Fuser Cooler)	4	Is the Blower working properly during a wide print (30”/ 34”/ 36”/ A0) to cool down the Fuser?	No	Replace it.
Fuser Entrance Guide	6	Is the Fuser Entrance Guide transformed? Or Is there anything on the Fuser Entrance Guide?	Yes	Clean or replace it.
		Remove Pressure Roller and measure the location height of Fuser Entrance Guide. Is the height correct? From the frame bottom surface, Side : 70.7 to 71.3mm Middle : 73.7 to 74.3mm (US) : 74.5 to 75.1mm (EU) 	No	Turn the adjuster screw(s) to reach the correct height. Guide Plate Height Adjuster (to both sides)  US: +3 3rd from center  EU: +4 highest
Fusing Pressure (Nip)	6	Print the Test Patter No.2 S(0) with a tracing paper (36” or A0), and turn off the machine in the middle of printing. Remove the print from the machine and check the “nip width”. Is it 8.5 to 9.0mm? (Measure at 2 mm from the edge.) 2mm 2mm  8.5 to 9.0mm	No	Adjust the fusing pressure correctly. 
Fusing Temperature	7	Does the fusing temperature specified in the Service Mode suits with the weight (gram/square meter) of paper?	Yes	Is there any part which is burnt? Replace that part if burnt.
			No	Set the fusing temperature correctly.

7. 2. 2.20 Dirt on the print (Offset)

Check the following matters with the Test Pattern No.2 S(0).
If necessary use other Test Patterns.

Cause	Checking order	Checking	Result	Treatment
Paper	1	Is the type of paper selected on the UI same with that of actually installed paper?	No	Select the correct paper type on the UI.
Developer Unit or Transfer/Separation Corona	2	Does the paper have dirt before it enters the Fuser Unit?	Yes	Check the Developer Unit or Transfer/Separation Corona to find the cause.
Fuser Unit	3	Clean the Fuser Roller. Do you still have the problem even after the cleaning?	Yes	Decrease the setting value of fusing temperature (-3 to -5).
			No	OK

7. 2. 2. 21 Image Void on Long Print without Crease

The following procedure may address image void on a long print without creases.
Image void without creases would result from a too fast feeding speed.
If you can see image void and a crease at a time, refer to [7.2.2.22 Crease on Long Print (and image void at a time)].

Cause	Checking order	Checking	Result	Treatment
Except feeding	1	Is everything on [7.2.2.9 Void of Image] clear?	No	Refer to [7.2.2.9 Void of Image] and check all the points.
Cause analysis with image void location	2	Does image void appear before 2x standard length?	Yes	Before 2x standard; Go to step 9.
			No	After 2x standard; Go to step 3.
Feed Clutch Off Timing **lack of slack at cutter region**	3	Decrease Feed Clutch Off Timing in 30 (for shorter clutch operation) on Adjustment Mode. Sub Mode: 053 (Feed Clutch Off Timing for Roll 1) : 054 (Feed Clutch Off Timing for Roll 2) Does this fix image void problem?	Yes	OK
	4	Again decrease the Feed Clutch Off Timing in another 30 (for shorter clutch operation). Does this fix image void problem?	Yes	OK
			No	Increase the Feed Clutch Off Timing in 60 to restore the original setting. Go to step 5.
Fuser Motor 4th Speed **print pulled too much after 2x standard**	5	Decrease Fuser Motor 4th Speed that corresponds to the media width/type in 1 (for slower speed) on Adjustment Mode. 4th Speed / Plain / Tracing A3 /12”/11” / 678 / --- A2 /18”/17” / 690 / --- A1 /24”/22” / 702 / --- 30” / 726 / 728 A0 /36”/34” / 714 / 716 Does this fix image void problem?	Yes	OK
	6	Decrease the 4th Speed in another 1 (slower). Does this fix image void problem?	Yes	OK

<table>
<tr><td>Fuser Motor 4th Speed
(cont.)</td><td>7</td><td>Decrease the 4th Speed in another 1 (slower).

Does this fix image void problem?</td><td>No</td><td>Increase the 4th Speed in 3 to restore the original setting.
Go to step 8.</td></tr>
<tr><td rowspan="2">Fuser Motor 3rd Speed</td><td rowspan="2">8</td><td rowspan="2">Decrease Fuser Motor 3rd Speed that corresponds to the media width/type in 1 (for slower speed) on Adjustment Mode.

<table><tr><th>3rd Speed</th><th>Plain</th><th>Tracing</th></tr><tr><td>A3 /12”/11”</td><td>074</td><td>080</td></tr><tr><td>A2 /18”/17”</td><td>110</td><td>116</td></tr><tr><td>A1 /24”/22”</td><td>146</td><td>152</td></tr><tr><td>30”</td><td>440</td><td>446</td></tr><tr><td>A0 /36”/34”</td><td>182</td><td>188</td></tr></table>
Does this fix image void problem?</td><td>Yes</td><td>OK</td></tr>
<tr><td>No</td><td>Go back to step 5.
Decrease the 4th Speed (slower) with remaining the 3rd Speed decreased.

Follow step 5 to 8 until image void disappears.</td></tr>
<tr><td>Fuser Motor 3rd Speed

print pulled too fast before 2x standard</td><td>9</td><td>Decrease Fuser Motor 3rd Speed that corresponds to the media width/type in 1 (for slower speed) on Adjustment Mode.

<table><tr><th>3rd Speed</th><th>Plain</th><th>Tracing</th></tr><tr><td>A3 /12”/11”</td><td>074</td><td>080</td></tr><tr><td>A2 /18”/17”</td><td>110</td><td>116</td></tr><tr><td>A1 /24”/22”</td><td>146</td><td>152</td></tr><tr><td>30”</td><td>440</td><td>446</td></tr><tr><td>A0 /36”/34”</td><td>182</td><td>188</td></tr></table>
Does this fix image void problem?</td><td>No</td><td>Decrease the 3rd Speed in another 1 (slower) until image void disappears.</td></tr>
</table>

7. 2. 2. 22 Crease on Long Print (and image void at a time)

The following procedure may address a crease on a long print.
If a crease and image void can be seen at a time, follow this section.
Creases (and image void seen at a time) would result from a slack on the feeding media, which requires feeding speed adjustment (slightly faster).

<table>
<tr><th>Cause</th><th>Checking order</th><th>Checking</th><th>Result</th><th>Treatment</th></tr>
<tr><td rowspan="2">Except feeding</td><td>1</td><td>Is everything on [7.2.2.18 Crease of paper] clear?</td><td>No</td><td>Refer to [7.2.2.18 Crease of paper] and check all the points.</td></tr>
<tr><td>2</td><td>If image void appears at a time, is everything on [7.2.2.9 Void of Image] on Service Manual clear?</td><td>No</td><td>Refer to [7.2.2.9 Void of Image] and check all the points.</td></tr>
<tr><td rowspan="2">Cause analysis with image void location</td><td rowspan="2">3</td><td rowspan="2">Does a crease appear before 2x standard length?</td><td>Yes</td><td>Before 2x standard;
Go to step 4.</td></tr>
<tr><td>No</td><td>After 2x standard;
Go to step 7.</td></tr>
<tr><td>Fuser Motor 3rd Speed

slack appears before 2x standard</td><td>4</td><td>Increase Fuser Motor 3rd Speed that corresponds to the media width/type in 1 (for faster speed) on Adjustment Mode.

<table><tr><th>3rd Speed</th><th>Plain</th><th>Tracing</th></tr><tr><td>A3 /12”/11”</td><td>074</td><td>080</td></tr><tr><td>A2 /18”/17”</td><td>110</td><td>116</td></tr><tr><td>A1 /24”/22”</td><td>146</td><td>152</td></tr><tr><td>30”</td><td>440</td><td>446</td></tr><tr><td>A0 /36”/34”</td><td>182</td><td>188</td></tr></table>
Does this fix crease problem?</td><td>No</td><td>Increase the 3rd Speed in another 1 (faster) until creases disappear.

Go to step 5.</td></tr>
</table>

<table>
<tr><td>Image Void Check</td><td>5</td><td>Is there any image void after 2x standard length?

Note that step 4 would result in image void there.</td><td>Yes</td><td>Image void remains, or has just come after step 4;
Go to step 6.</td></tr>
<tr><td></td><td></td><td></td><td>No</td><td>OK</td></tr>
<tr><td>Fuser Motor 4th Speed

print pulled too fast before 2x standard</td><td>6</td><td>Decrease Fuser Motor 4th Speed that corresponds to the media width/type in 1 (for slower speed) on Adjustment Mode.

<table><tr><td>4th Speed</td><td>Plain</td><td>Tracing</td></tr><tr><td>A3 /12”/11”</td><td>678</td><td>---</td></tr><tr><td>A2 /18”/17”</td><td>690</td><td>---</td></tr><tr><td>A1 /24”/22”</td><td>702</td><td>---</td></tr><tr><td>30”</td><td>726</td><td>728</td></tr><tr><td>A0 /36”/34”</td><td>714</td><td>716</td></tr></table>
Does this fix image void problem?</td><td>Yes</td><td>OK</td></tr>
<tr><td></td><td></td><td></td><td>No</td><td>Decrease the 4th Speed in another 1 (slower) until image void disappears.</td></tr>
<tr><td>Fuser Motor 3rd Speed</td><td>7</td><td>Increase Fuser Motor 3rd Speed that corresponds to the media width/type in 1 (for faster speed) on Adjustment Mode.

<table><tr><td>3rd Speed</td><td>Plain</td><td>Tracing</td></tr><tr><td>A3 /12”/11”</td><td>074</td><td>080</td></tr><tr><td>A2 /18”/17”</td><td>110</td><td>116</td></tr><tr><td>A1 /24”/22”</td><td>146</td><td>152</td></tr><tr><td>30”</td><td>440</td><td>446</td></tr><tr><td>A0 /36”/34”</td><td>182</td><td>188</td></tr></table>
Does this fix crease problem?</td><td>Yes</td><td>Go to step 9.</td></tr>
<tr><td></td><td>8</td><td>a) <u>No image void seen up to step 7</u>;

Is there any image void that has just come after step 7?

b) <u>Crease and image void seen at a time up to step 7</u>;

Is there any image void shift from after 2x standard length to before 2x standard?</td><td>Yes</td><td>Go to step 10.</td></tr>
<tr><td></td><td></td><td></td><td>No</td><td>- no image void
- no image void shift
Go back to step 7.</td></tr>
<tr><td></td><td>9</td><td>After crease disappears, is there any image void?</td><td>No</td><td>OK</td></tr>
<tr><td>Fuser Motor 4th Speed

slack appears after 2x standard</td><td>10</td><td>First decrease the 3rd Speed (slower) in 1.

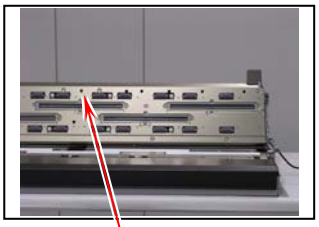
Increase Fuser Motor 4th Speed that corresponds to the media width/type in 1 (for faster speed) on Adjustment Mode.

<table><tr><td>4th Speed</td><td>Plain</td><td>Tracing</td></tr><tr><td>A3 /12”/11”</td><td>678</td><td>---</td></tr><tr><td>A2 /18”/17”</td><td>690</td><td>---</td></tr><tr><td>A1 /24”/22”</td><td>702</td><td>---</td></tr><tr><td>30”</td><td>726</td><td>728</td></tr><tr><td>A0 /36”/34”</td><td>714</td><td>716</td></tr></table>
Does this fix image void / crease problem?</td><td>No</td><td>Increase the 4th Speed in another 1 (faster) until crease and image void disappear.</td></tr>
</table>

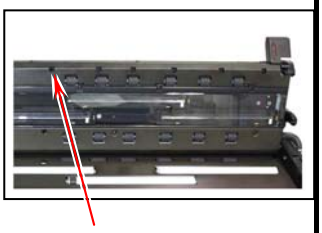
7. 3 Troubleshooting - Scanner Defects

7. 3. 1 Countermeasures - Scanner operation

7. 3. 1. 1 Original can not be set (Old Scanner) (Scanner does not transport)

Cause	Checking order	Checking	Result	Treatment
Sensor (Insertion)	1	Is the original detected?	No	1. Tap the UI screen to cancel the sleep mode. 2. Switch the UI screen to Copy or Scan mode. 3. Check the sensor which detects the leading edge of original. If broken replace it.  Check this sensor.
USB Cable	2	Is the USB Cable connected correctly?	No	Connect it correctly.
Data Controller Board	3	Can you fix the problem if you replace the Data Controller Board?	Yes	OK

7. 3. 1. 2 Original can not be set (New Scanner) (Scanner does not transport)

Cause	Checking order	Checking	Result	Treatment
Sensor (Insertion)	1	Is the original detected?	No	1. Tap the UI screen to cancel the sleep mode. 2. Switch the UI screen to Copy or Scan mode. 3. Check the sensor which detects the leading edge of original. If broken replace it.  Check this sensor.
Motor	2	Open the Upper Unit and push the Open Switch. Does this make the motor rotate?	NO	1. Check if the motor harness is firmly connected. 2. Replace the motor.

Sensor (Home position)	3	Open the Upper Unit and push the Open Switch. Does the feeding roller rotate to the opposite (rewinding) direction first then to the normal (feeding) direction? (If it rotates to the opposite direction then stops without rotating to the normal direction, this behaviour is abnormal.)	NO	1. Check if the motor harness is firmly connected. 2. Check if the position of encoder against the sensor is correct or not. 3. Replace the sensor.
USB Cable	4	Is the USB Cable connected correctly?	No	Connect it correctly.
Data Controller Board	5	Can you fix the problem if you replace the Data Controller Board?	Yes	OK

7. 3. 1. 3 Scanner does not start scanning from the original set position

Cause	Checking order	Checking	Result	Treatment
Foreign substance	1	Is there any foreign substance under the Upper Unit?	Yes	Remove it.
Motor	2	Does the Motor rotate?	No	Check the Motor, and replace it if broken.
+24VDC	3	Is +24VDC supplied to the scanner?	No	Check the DC Power Supply on the printer part. Replace it if broken.
Data Controller Board	4	Can you fix the problem if you replace the Data Controller Board?	Yes	OK

7. 3. 1. 4 Original can not be set (Original feeding does not stop)

Cause	Checking order	Checking	Result	Treatment
Sensor	1	Is any sensor broken?	Yes	Replace it.

7. 3. 1. 5 Original is mis-fed

Cause	Checking order	Checking	Result	Treatment
Foreign substance	1	Is there any foreign substance under the Upper Unit?	Yes	Remove it.

7. 3. 1. 6 Motor rotates endlessly at the time of turning on

Cause	Checking order	Checking	Result	Treatment
Foreign substance	1	Is there any foreign substance under the Upper Unit, which blocks the light of sensor?	Yes	Remove it.

7. 3. 1. 7 Scanner is not recognized

Cause	Checking order	Checking	Result	Treatment
USB Driver	1	Does the PC recognize USB?	No	Check the USB Driver in Device Manager.
USB Cable	2	Is there any problem with the USB cable, such as breakage, short-circuit and damage of connector pin?	Yes	Replace the USB Cable.
DC Power Supply	3	Is the DC Power Supply on the printer part normal?	No	Replace the DC Power Supply.
Data Controller Board	4	Prepare another PC which can recognize another type of USB Scanner. Is it also impossible to recognize the K124SC with this PC?	Yes	Replace the Data Controller PCB.

7. 3. 2 Countermeasures – Scan Image Quality

7. 3. 2. 1 Completely black

Cause	Checking order	Checking	Result	Treatment
Calibration	1	Can you fix the problem if you make Shading (Calibration)? (Refer to [8.13.4.1 Shading].) (Old Scanner) (Refer to [8.14.6.1 Shading].) (New Scanner)	Yes	OK
Cable of CIS	2	Is the cable of each CIS connected properly?	No	Connect it properly, or replace the cable if it is broken.
LED of CIS	3	Is the LED of each CIS lighting?	No	1. Check the DC Power Supply (+24V) of the printer part. Replace it if broken. 2. Replace the CIS. 3. Replace the Data Controller Board.

7. 3. 2. 2 Vertical black lines

Cause	Checking order	Checking	Result	Treatment
Scan Glass	1	Is there any dirt or damage on the Scan Glass?	Yes	Clean / replace it.
Calibration	2	Can you fix the problem if you make Shading (Calibration)? (Refer to [8.13.4.1 Shading].) (Old Scanner) (Refer to [8.14.6.1 Shading].) (New Scanner)	Yes	OK
Feeding rollers	3	Are feeding rollers dirty?	Yes	Clean them.
CIS	4	Can you fix the problem if you replace the CIS?	Yes	OK

7. 3. 2. 3 Vertical white lines

Cause	Checking order	Checking	Result	Treatment
Scan Glass	1	Is there any dirt or damage on the Scan Glass?	Yes	Clean / replace it.
Calibration	2	Can you fix the problem if you make Shading (Calibration)? (Refer to [8.13.4.1 Shading].) (Old Scanner) (Refer to [8.14.6.1 Shading].) (New Scanner)	Yes	OK
Feeding rollers	3	Are feeding rollers dirty?	Yes	Clean them.
CIS	4	Can you fix the problem if you replace the CIS?	Yes	OK

7. 3. 2. 4 Some image is lost at the boundary of Image Blocks

Cause	Checking order	Checking	Result	Treatment
Calibration	1	Can you fix the problem if you make Position? (Refer to [8.13.4.3 Position].) (Old Scanner) (Refer to [8.14.6.2 Stitching].) (New Scanner)	Yes	OK

7. 3. 2. 5 Vertical image gap between Image Blocks

Cause	Checking order	Checking	Result	Treatment
Calibration	1	Can you fix the problem if you make Position? (Refer to [8.13.4.3 Position].) (Old Scanner) (Refer to [8.14.6.2 Stitching].) (New Scanner)	Yes	OK

7. 3. 2. 6 Image quality is not good

Cause	Checking order	Checking	Result	Treatment
Scan Glass	1	Is there any dirt or damage on the Scan Glass?	Yes	Clean / replace it.
Resolution	2	Is the resolution setting proper?	No	Adjust it properly.

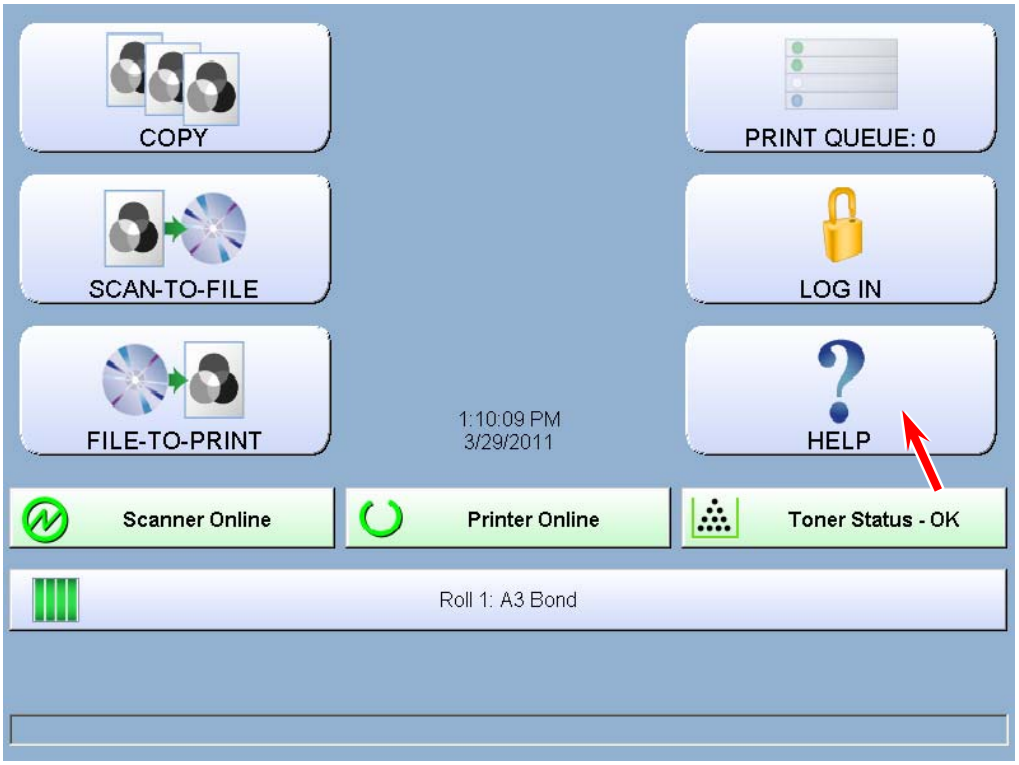
7. 3. 2. 7 Density is different between left and right

Cause	Checking order	Checking	Result	Treatment
Calibration	1	Can you fix the problem if you make Shading (Calibration)? (Refer to [8.13.4.1 Shading].) (Old Scanner) (Refer to [8.14.6.1 Shading].) (New Scanner)	Yes	OK

7. 4 Touch Screen Calibration

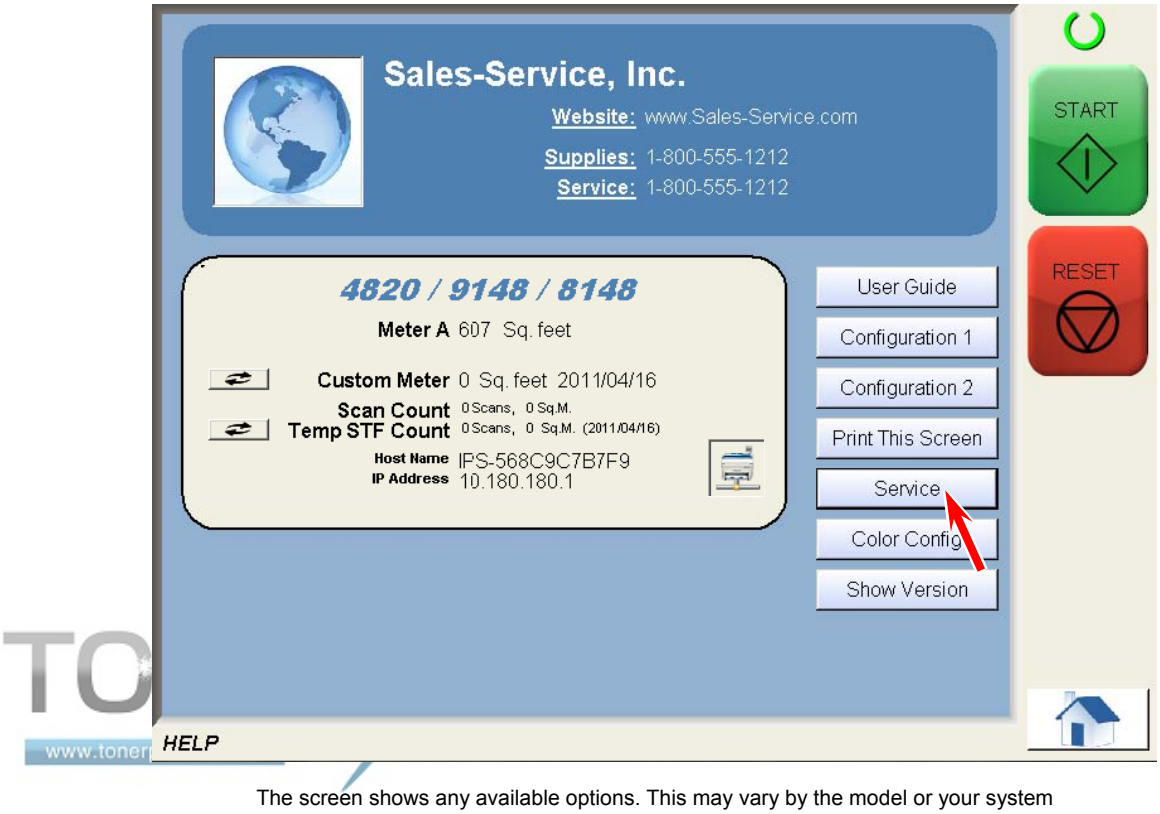
If the cursor position in the screen does not correctly match the tapped position on the panel, the touch screen should be calibrated so that the cursor is located directly underneath your finger or a stylus.

1. Press “? - Help” on Home screen.



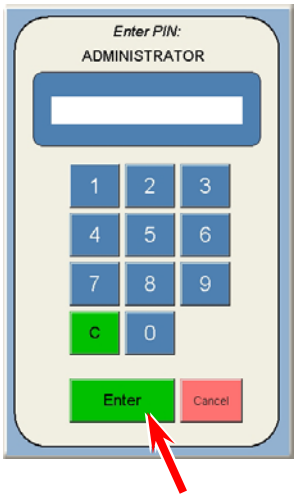
The screen shows any available options. This may vary from the actual one

2. Press [Service].

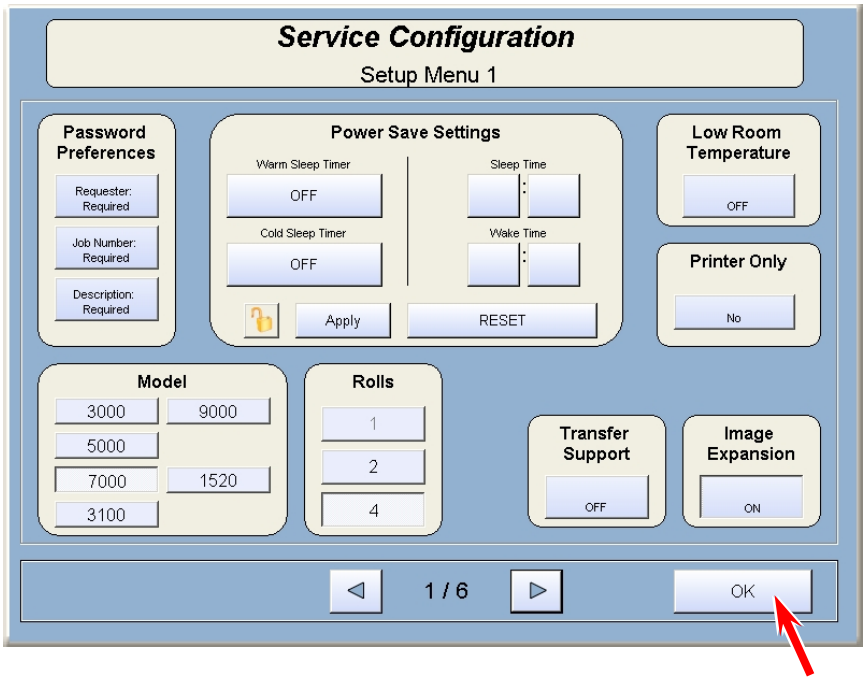


The screen shows any available options. This may vary by the model or your system

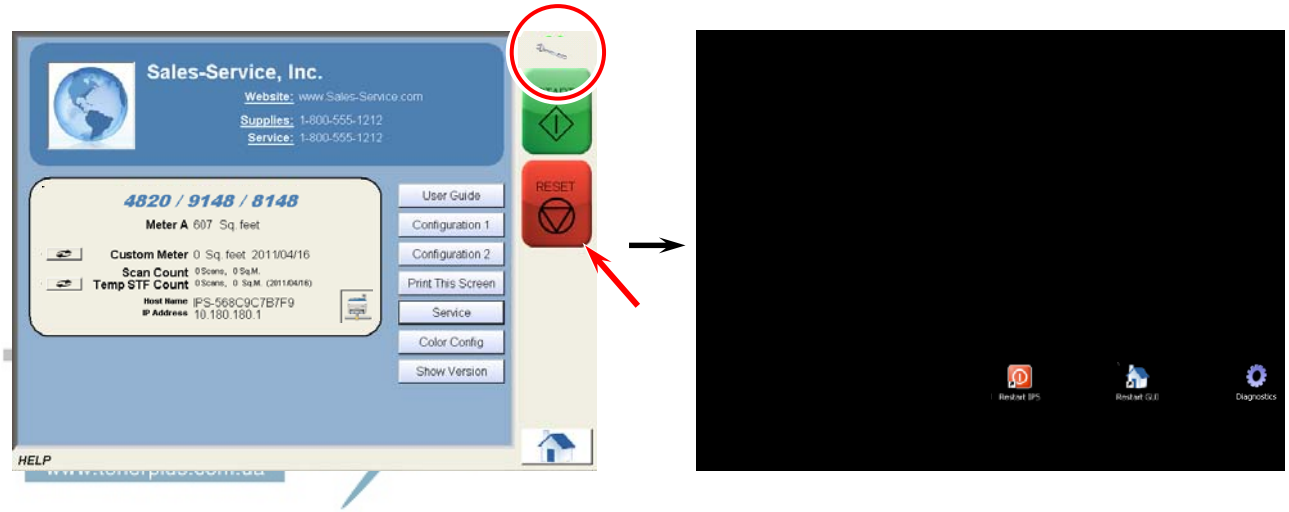
3. On-screen Keypad appears.
   Input “8495107” and press [Enter].



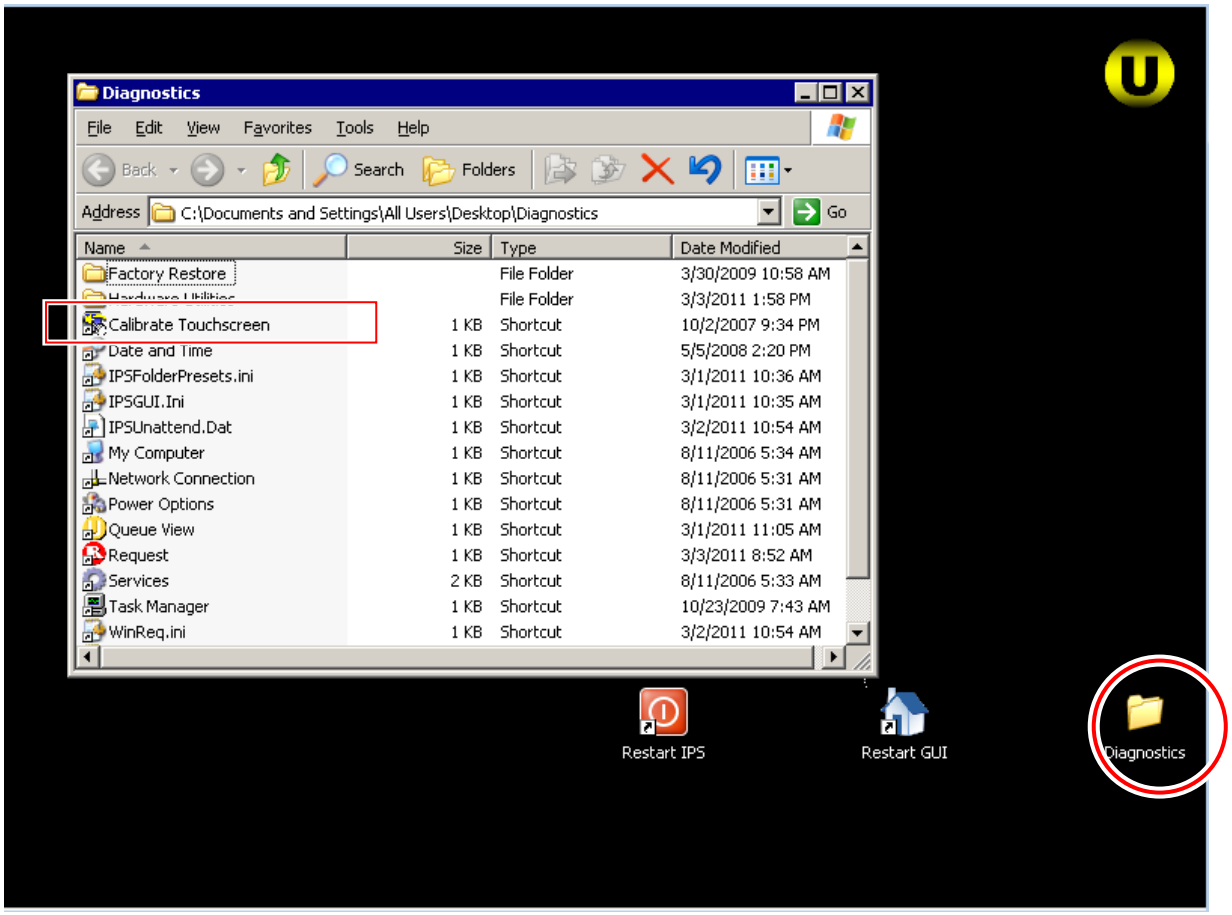
4. Service Configuration screen is displayed. Press [OK].

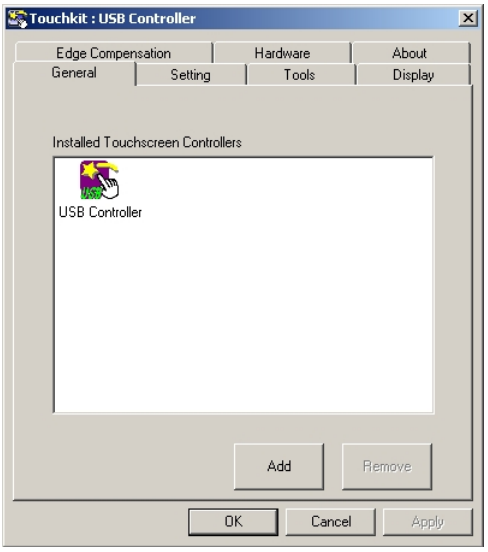


5. Make sure that a wrench symbol is indicated at the upper right of the screen.
   Press [Reset] to close UI operation window.

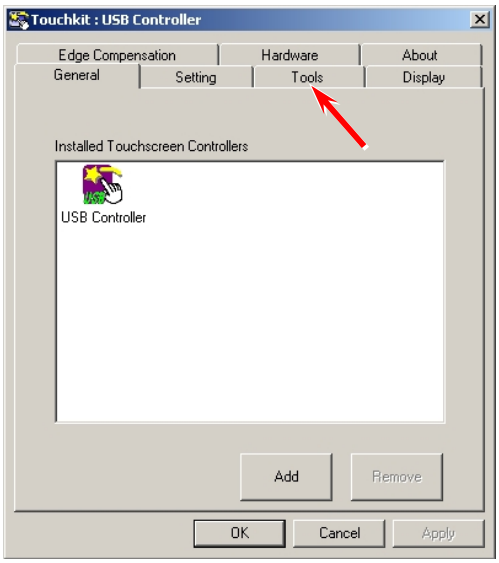


6. Tap Diagnostics folder twice as a double-click.
   Run the shortcut “TouchScreen Configure Utility” for touch screen calibration.

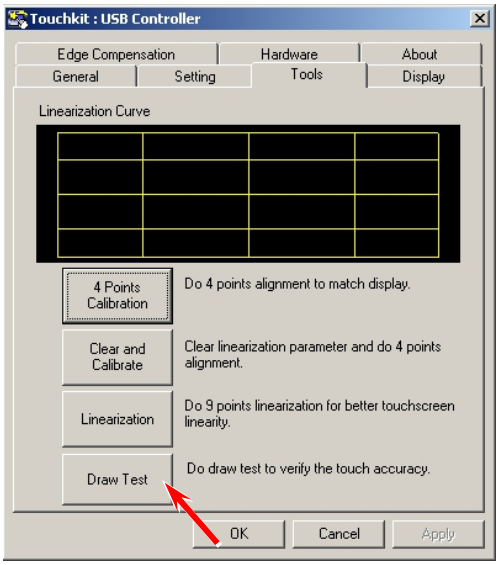




7. Select [Tools] tab.



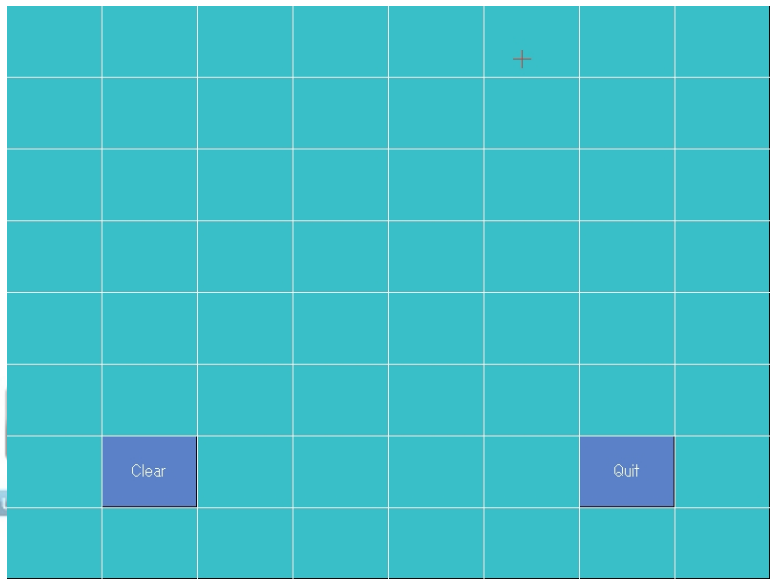
8. Press [Draw Test] to check that the touch screen correctly detects a tapped position.



NOTE

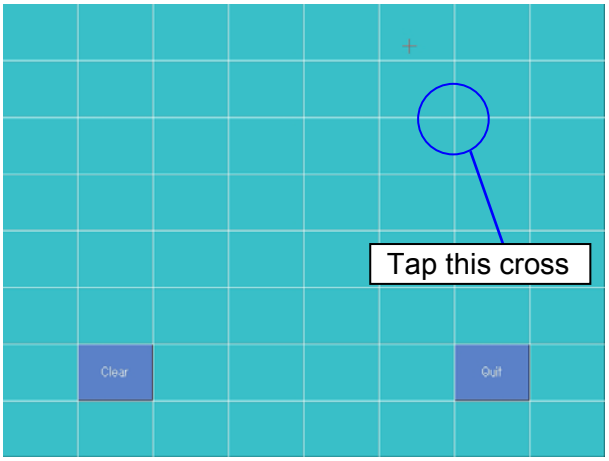
Using a stylus is recommended for easy and accurate touch screen calibration.
Do not use any sharp instrument.

9. Test screen will appear.

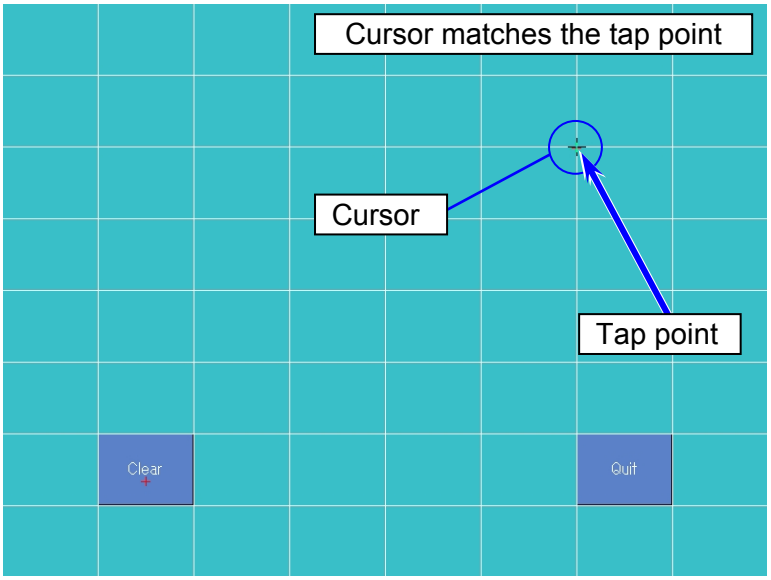


10. Tap a certain point and check the cursor appears directly underneath a stylus.

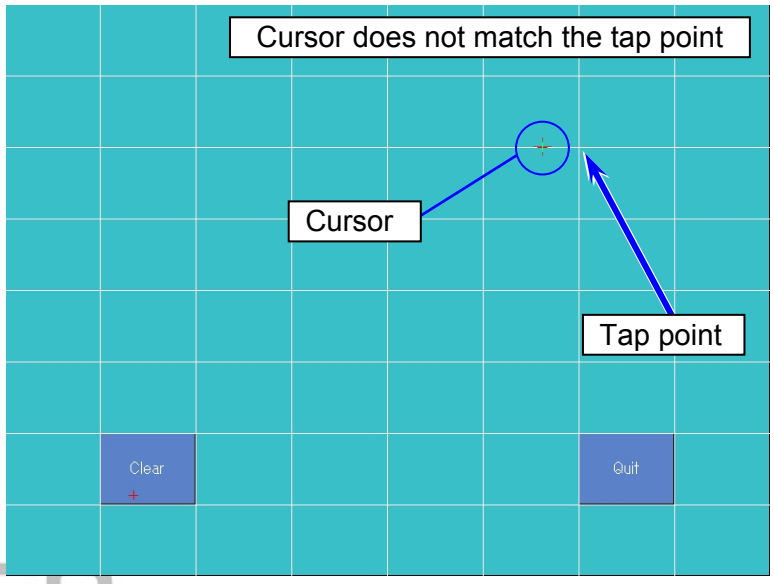
For example, suppose you tap the point shown the next figure.



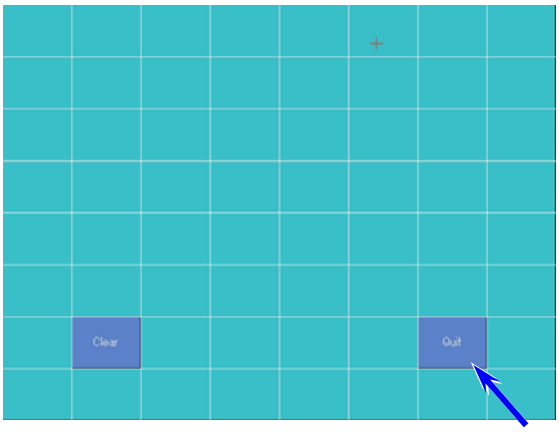
The cursor will appear just underneath the tapped point in a correct condition (calibration is not necessary).



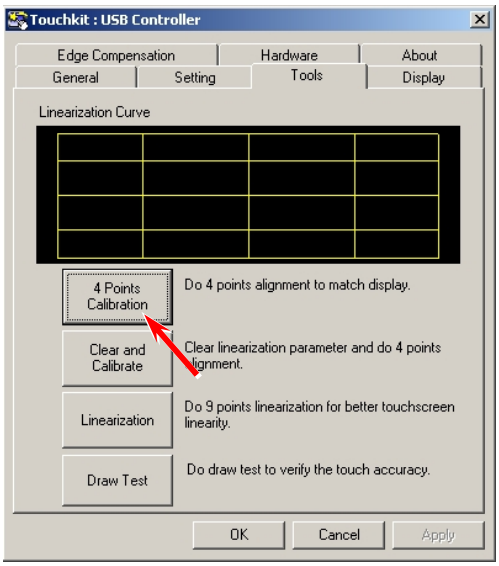
If the cursor appears an unintended position, the touch screen should be calibrated.



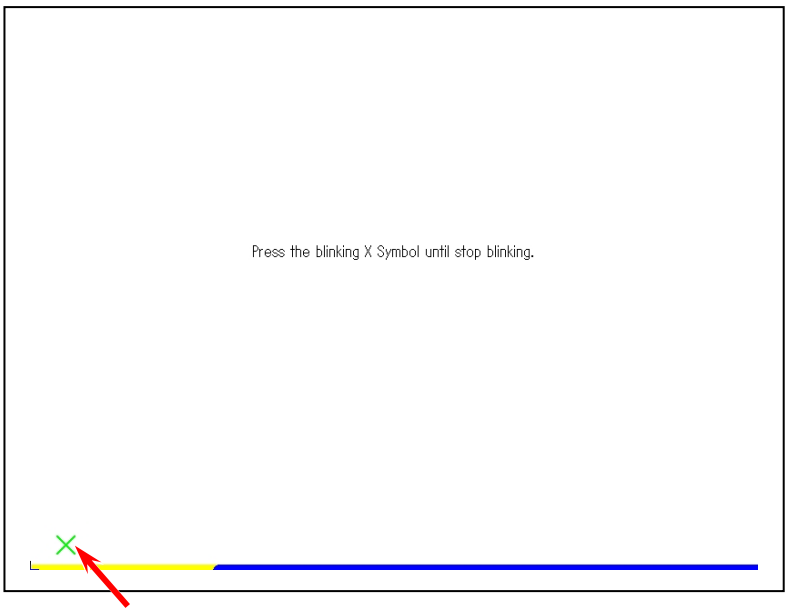
11. Tap [Quit] to close Test screen.



12. Press [4 Points Calibration].



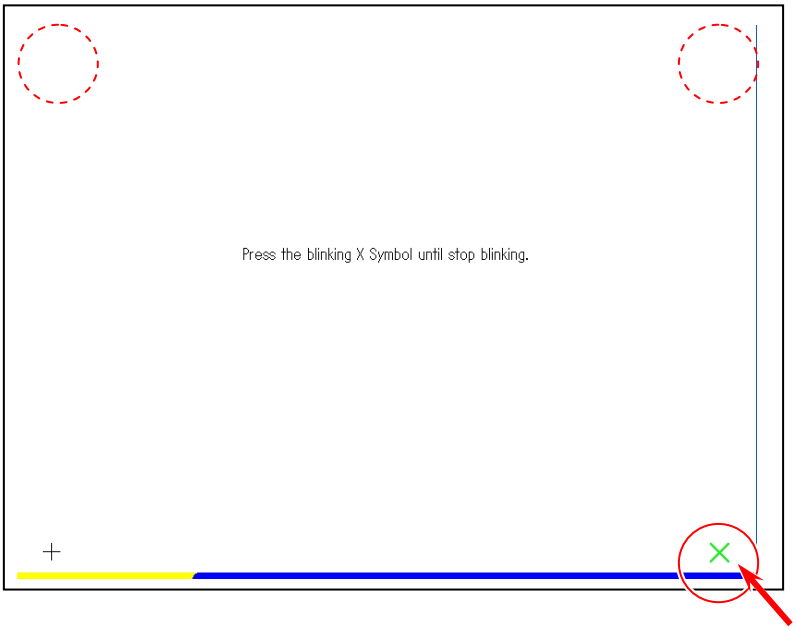
13. On Calibration screen, a blinking X symbol on the bottom left can be seen.
Press the X until it stops blinking with a beep.



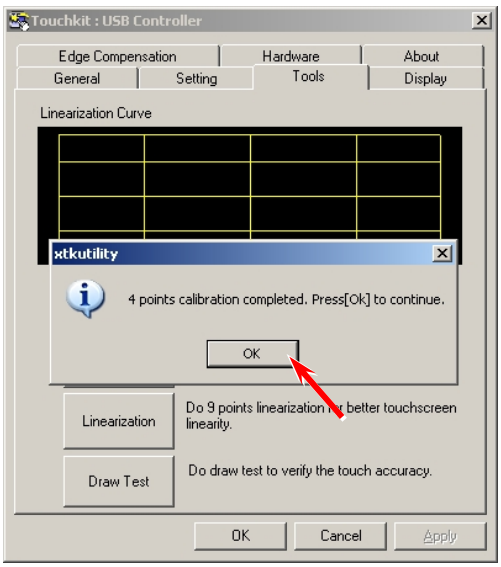
NOTE

Press the X symbol for several seconds before the progress bar at the bottom reaches the end.

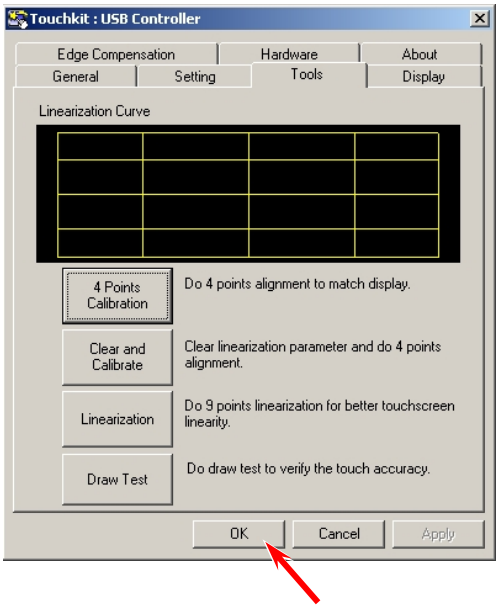
14. The X disappears and the next one will come in the following order:
    bottom right, top right, top left.
    Perform the same way for the other 3 points.



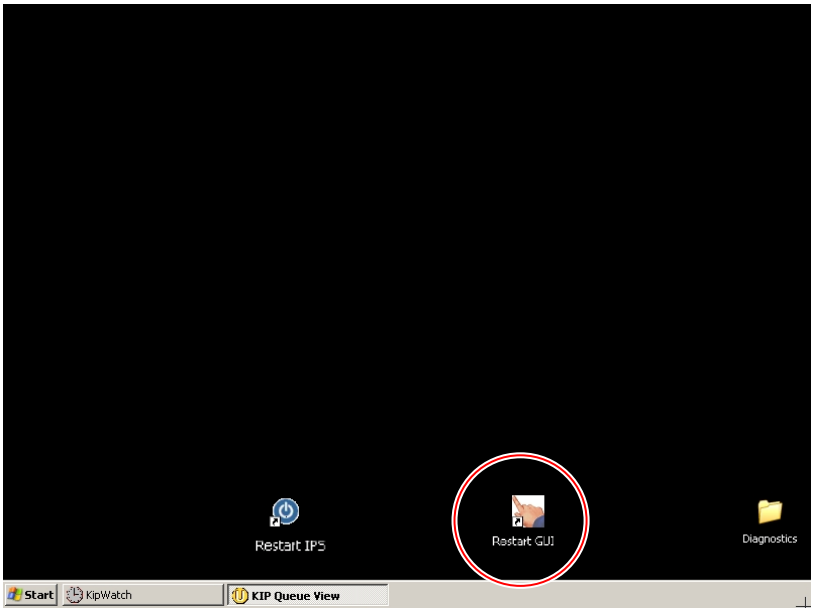
15. When all the 4 points are pressed successfully, Calibration screen disappears and the following dialog appears. Press [OK].



16. Press [OK] to finish touch screen calibration.



17. Run the shortcut “Restart GUI” for GUI operation.



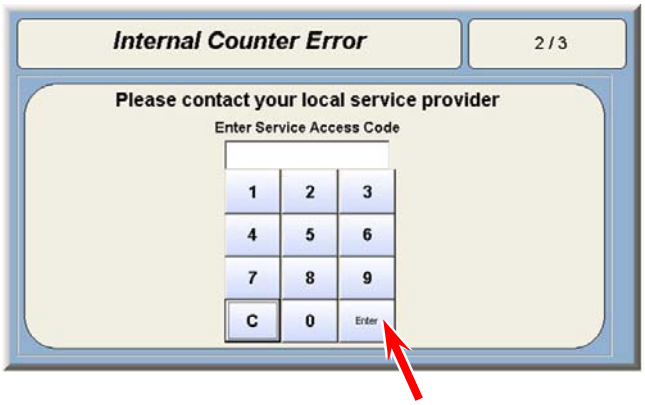
7. 5 Internal Counter Error

The TASKalfa 4820w has 2 kinds of the software counter.
One is “Print Count”, this is shown in “? Help” screen as “Counter A”. The other is “Total Count”, this can be seen NOT in the UI program screen but IPS Service Software.

The counter values are stored on PW12420 PCB Assy and the HDD of IPS at the same time.
The TASKalfa 4820w has a backup system for the counter values. If one of them gets lost, the UI asks “which counter value has been lost, PW12420 or HDD?”

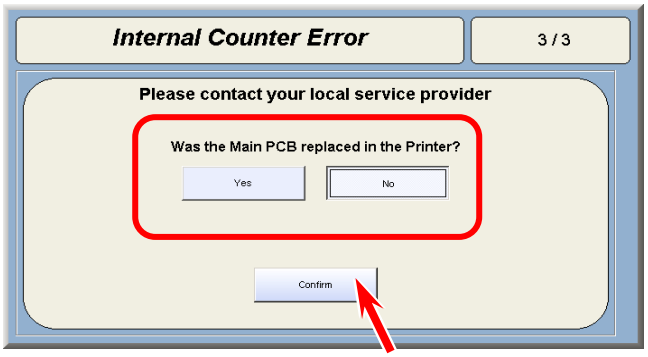
1. “Internal Counter Error” appears. Press [Continue].

2. Input “8495107” and press [Enter].



3. Answer to the question by either Yes or No and press [Confirm].

Action	Selection
Replacing PW12420 PCB	**Yes**
Replacing HDD	**No**
Reghost or Format HDD	**No**
No action	**No**



Yes → The counter values in the HDD will be written to the PW12420 PCB Assy.

No → The counter values in PW12420 PCB Assy will be written to the HDD.

Chapter 8

Service Mode / Utility

8. 1 General Information of Service Mode

The system is equipped with advanced functions for field service to easily achieve its best performance.

Service Mode contains the following categories.

- Signal Status Mode
- Information Mode
- Operation Check Mode
- Adjustment Mode
- Running Mode
- Jam/Error Mask Mode
- Test Print Mode
- Factory Adjustment Mode
- Special Operation Mode
- Send Firmware Mode

Reference

"IPS Service Software" acts as an interface to efficiently utilize any functions in Service Mode.
For further information about how to operate IPS Service Software, see the next page.

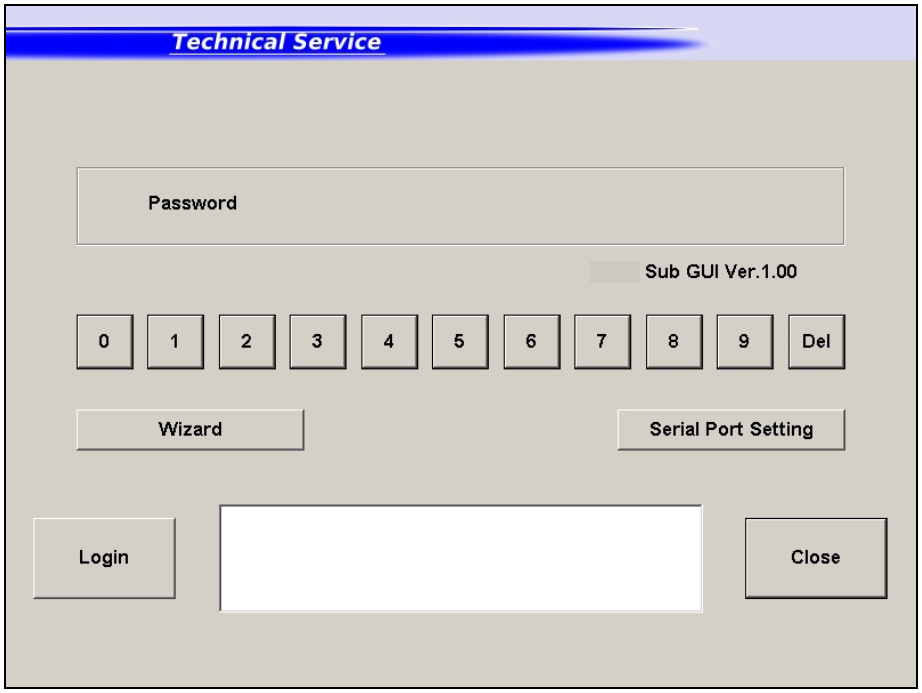
NOTE

In Chapter 8, the screenshot images of IPS Service Software / UI screen / any other may vary by Printer model / your choice of optional features.
They are shown with available options.

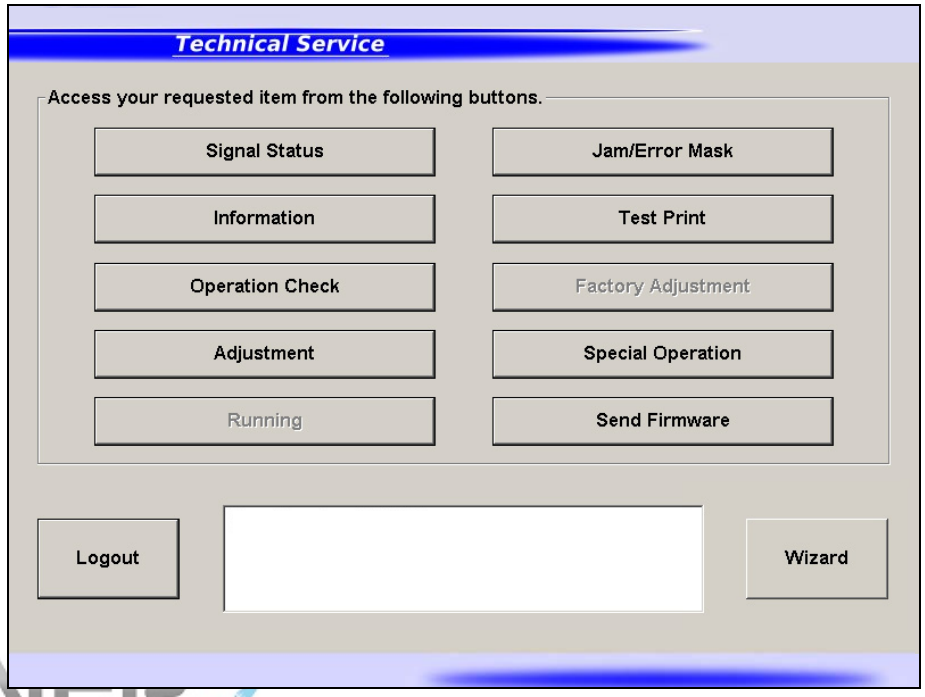
8. 2 IPS Service Software Overview

IPS Service Software is an integrated utility application that provides intuitive operability by using Touch Screen.
IPS Service Software is included in the controller and operates as an interface for monitoring, checking and setting configuration for field service.

Canceling the UI program (controlling user operation such as Copy screen) allows Touch Screen to be free to use Desktop on the controller's operating system.
Launch IPS Service Software and now it is ready to access the printer's Service Mode.



IPS Service Software Login Screen



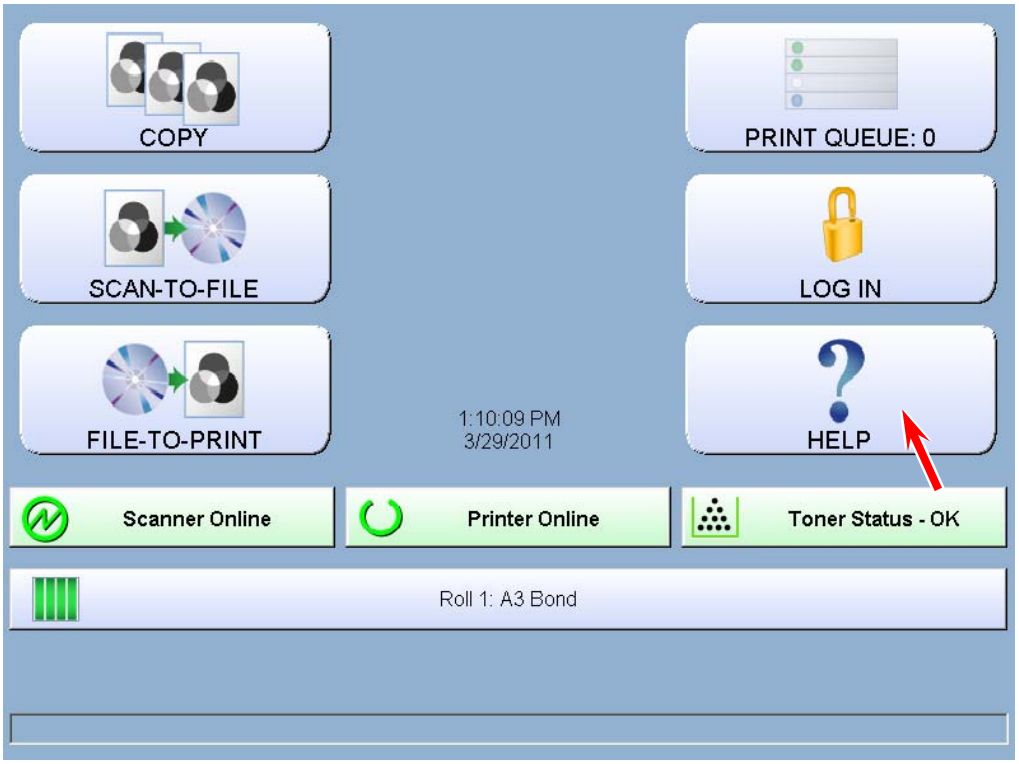
Service Mode Home

IPS Service Software Tree Diagram of screen menu hierarchy

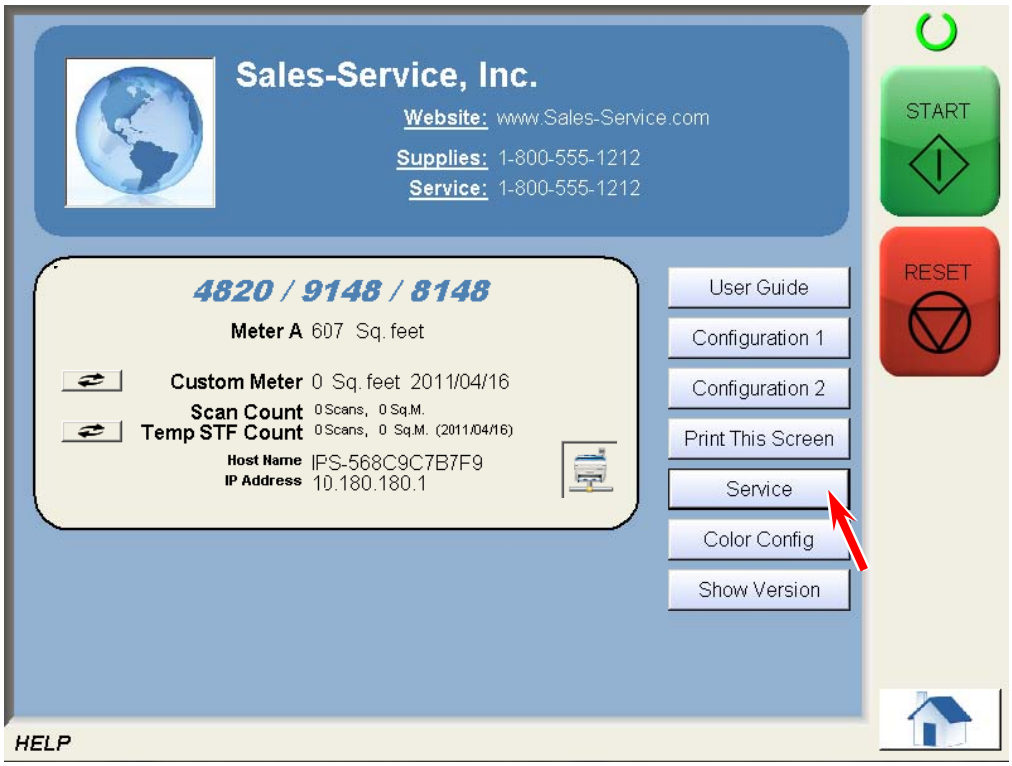
- Login screen
  - Service Mode Home
    - (Signal Status Mode) Signal Status Monitor screen
    - (Information Mode) Information List screen
      - Data Monitor
      - Jam History
      - Error History
    - (Operation Check Mode) Operation Check screen
    - (Adjustment Mode) Adjustment Menu screen
      - Setting Configuration
      - Setting Backup/Restore
    - (Jam/Error Mask Mode) Mask Target screen
      - Jam Mask
      - Error Mask
    - (Test Print Mode) Basic Setting
      - Sub Setting
    - (Special Operation Mode) Operation Target screen
      - Confirmation Dialog
        - Counter Input screen
        - Fuser Unit Error Clear
        - Jam/Error History Clear
        - Bias Adjustment Reset
    - (Send Firmware Mode) Firmware screen
    - Running Mode, Factory Adjustment Mode (not available)

8. 2. 1 Launching IPS Service Software

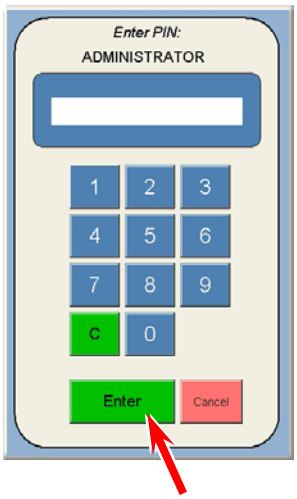
1. Press “? - Help” on Home screen.



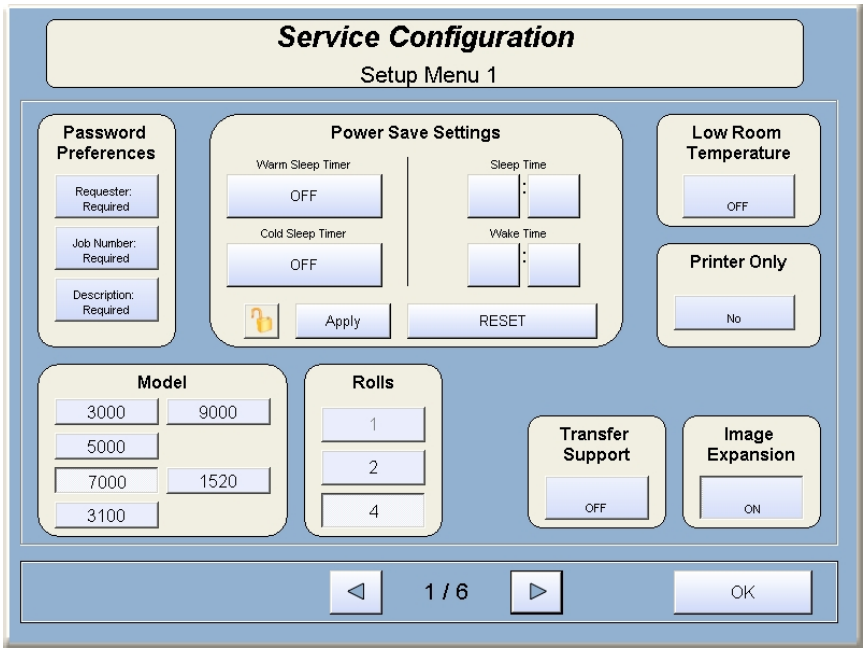
2. Press [Service].



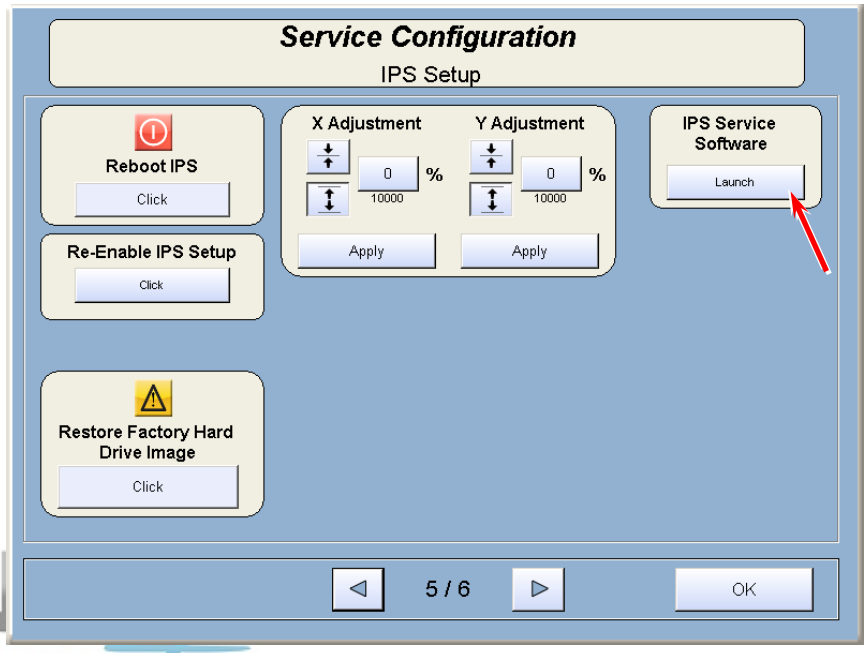
3. On-screen Keypad appears.
   Input “8495107” and press [Enter].



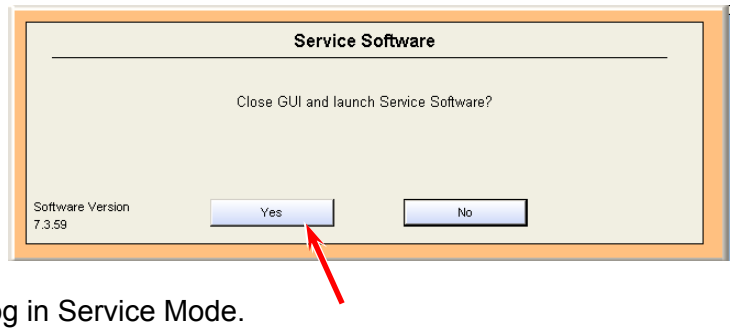
4. Service Configuration screen will appear.



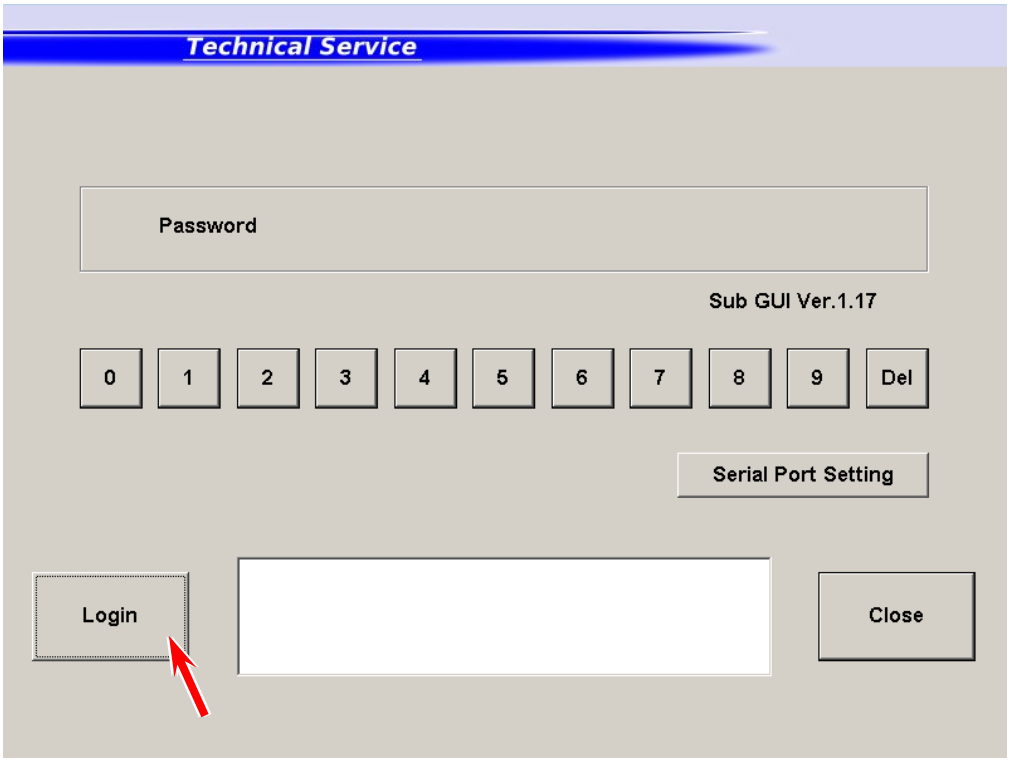
5. Use the arrow keys to open [5/6 IPS Setup]. Press [Launch] in “IPS Service Software”.



6. Press [Yes].

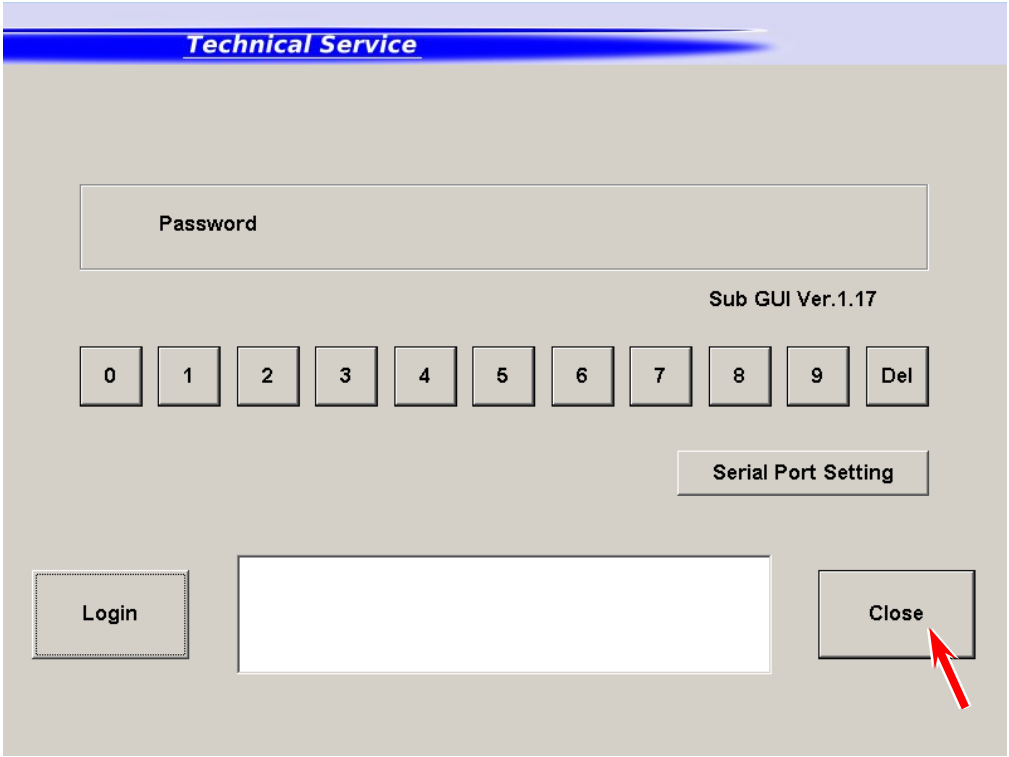


7. Press [Login] to log in Service Mode.



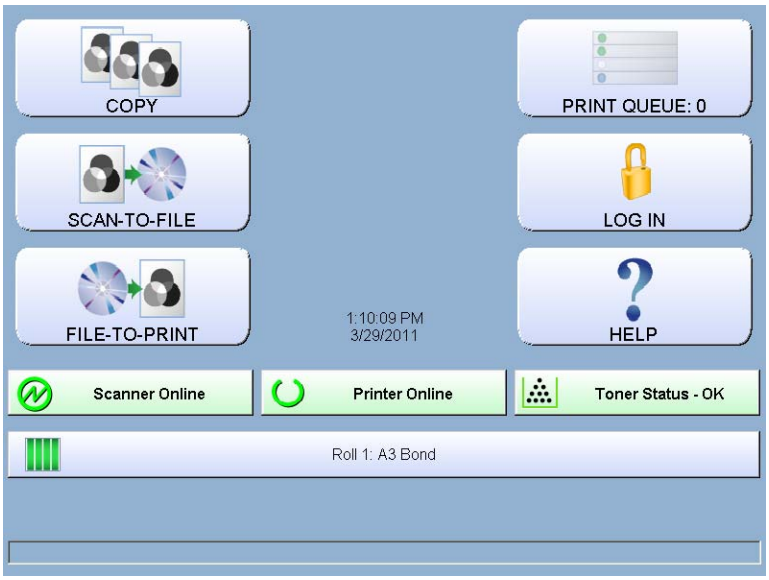
8. 2. 2 Closing IPS Service Software

1. Return to Service Mode Home. Press [Logout].
2. In Login screen, press [Close].

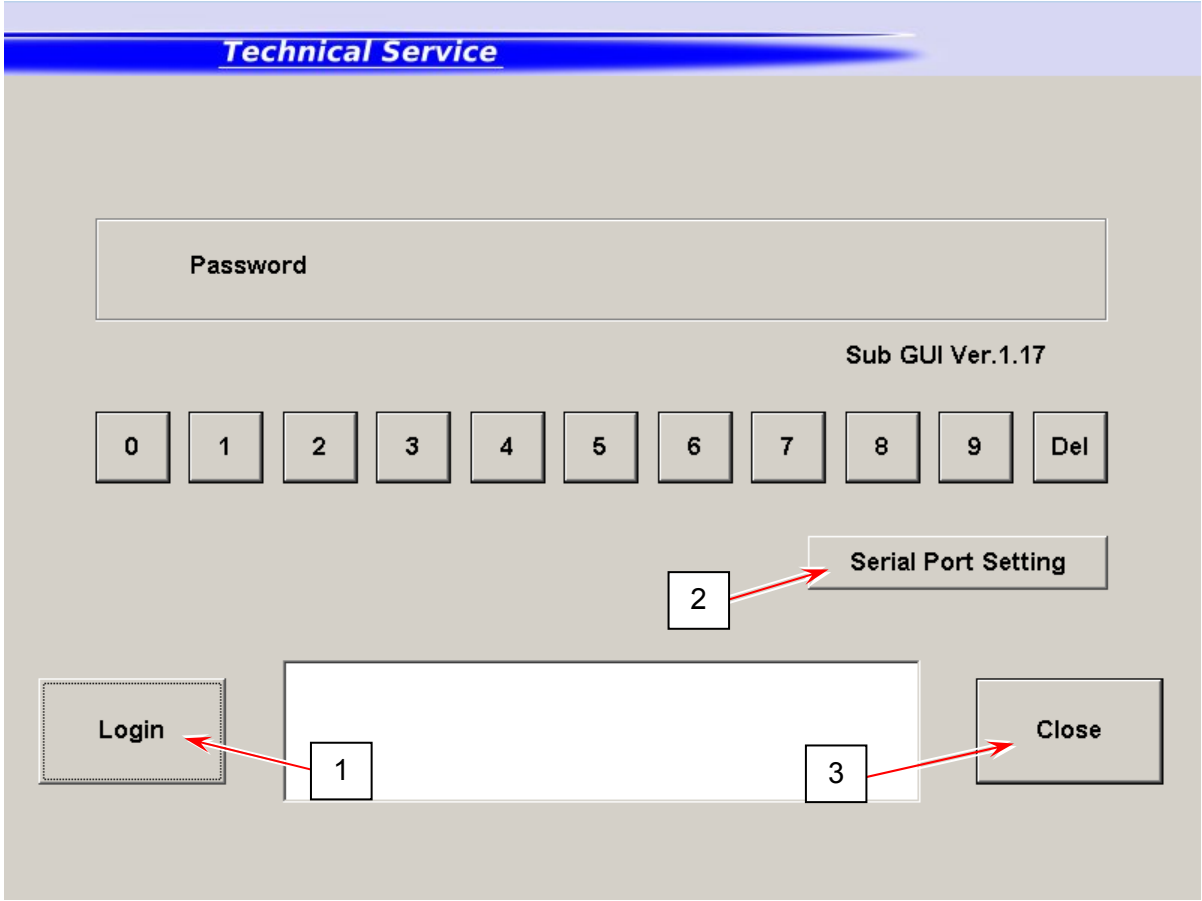


Reference

Closing “IPS Service Software” automatically invoke UI Home screen to be ready for user operation.

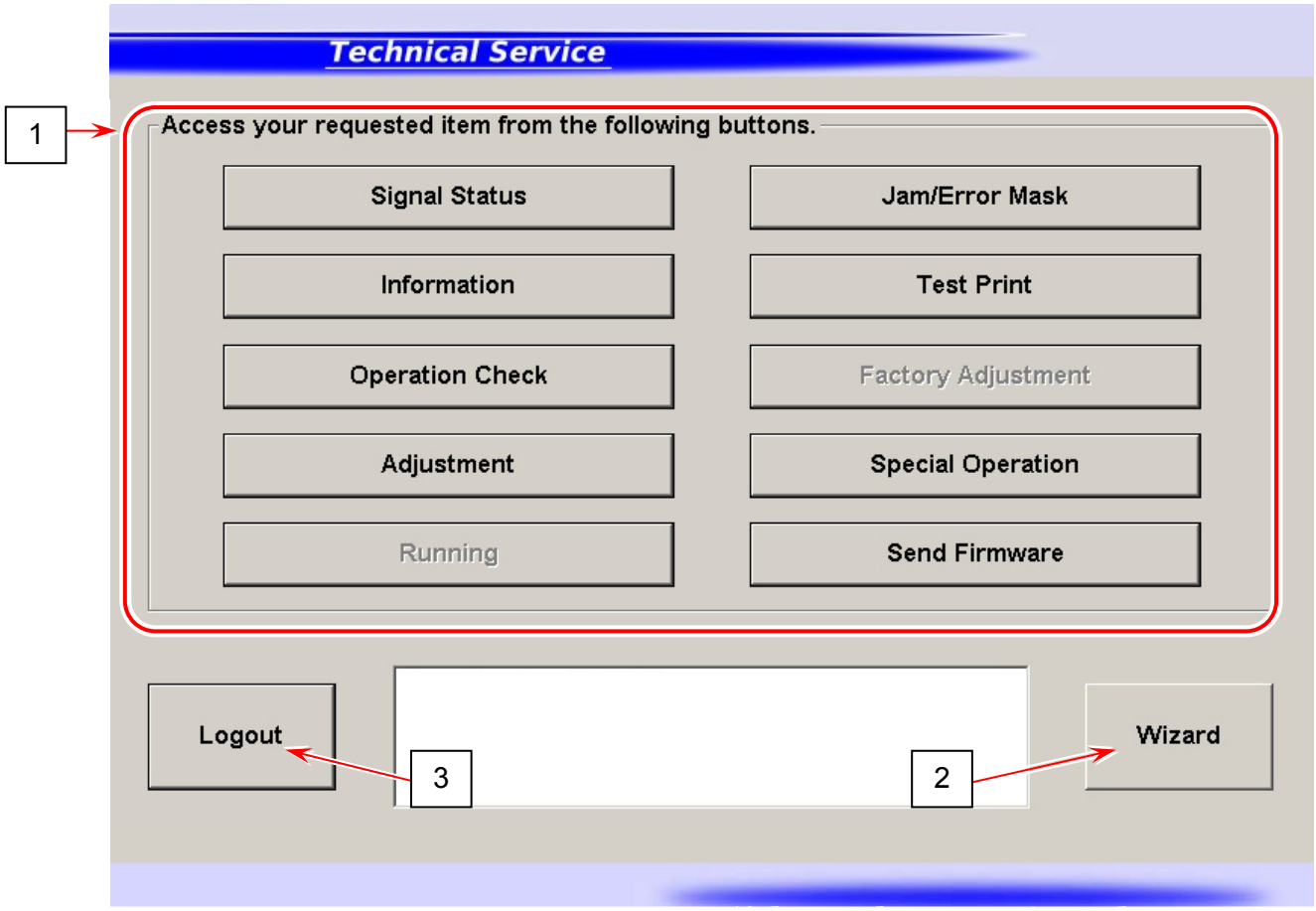


8. 2. 3 Log In screen



	Name	Function
1	Login	Log in Service Mode
2	Serial Port Setting	Configures Communication Port Settings between the controller and DC Controller PCB It is not necessary to use this button in normal condition.
3	Close	Press here to close IPS Service Software.

8. 2. 4 Service Mode Home

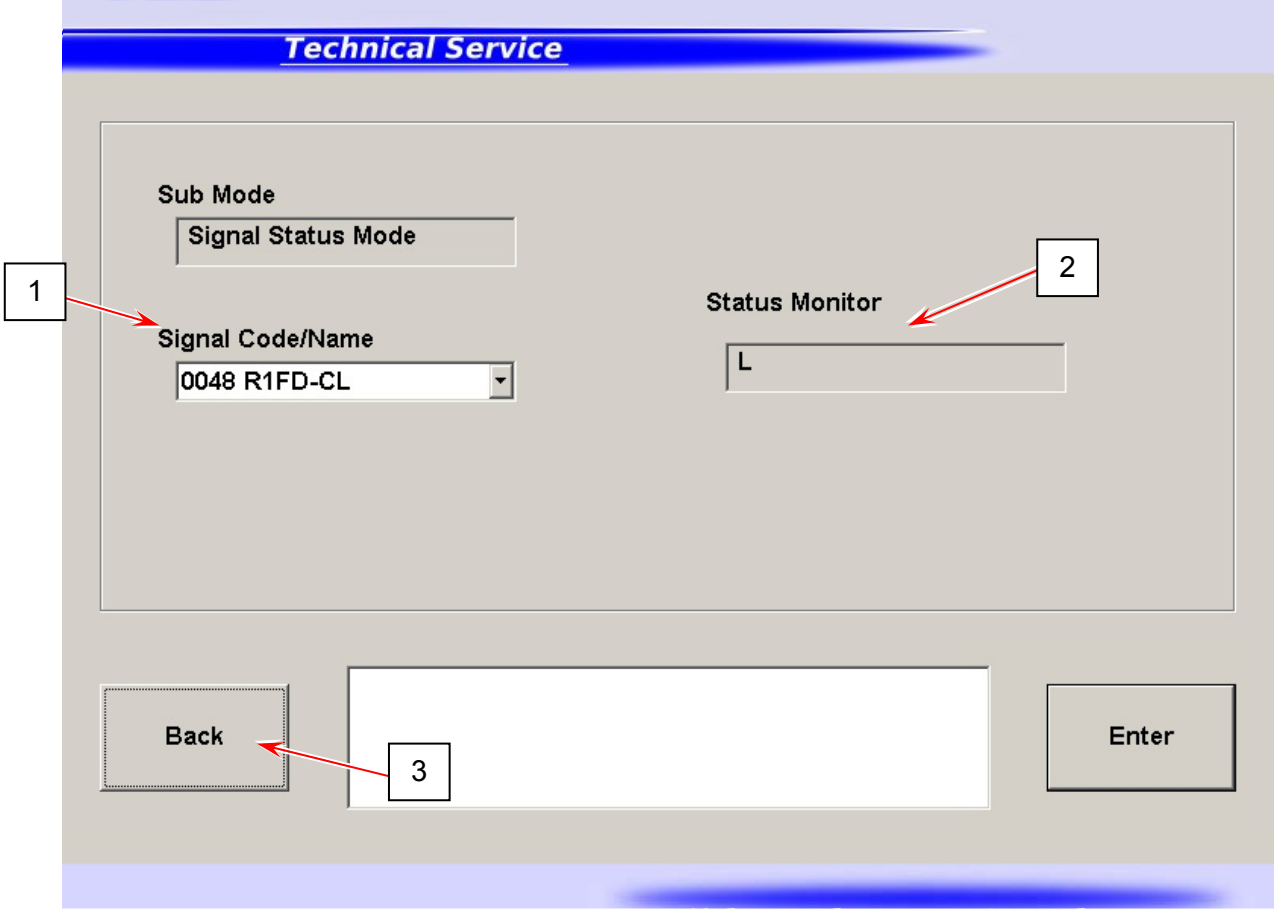


	Name	Function
1	Mode Select	Press one of Mode Category buttons that you want to enter. Signal Status: Input / Output signal monitor Information: Analog data status monitor Operation Check: Electric device check Adjustment: Printer settings Running: not available Jam/Error Mask: Disables jam/error detection Test Print: Test pattern plot command Factory Adjustment: not available Special Operation: Clears history, error status Changes counter value Send Firmware: Sends firmware program to printer
2	Wizard	not available
3	Logout	Press here to log out Service Mode. Returns to Log In screen

8. 3 Signal Status Mode

It is possible to monitor the status of any device signal input to / output from DC Controller PCB with making prints.
For information about Signal Codes, Signal Names and their contents, see [8.3.2 Input / Output Signal List].

Signal Status Monitor screen

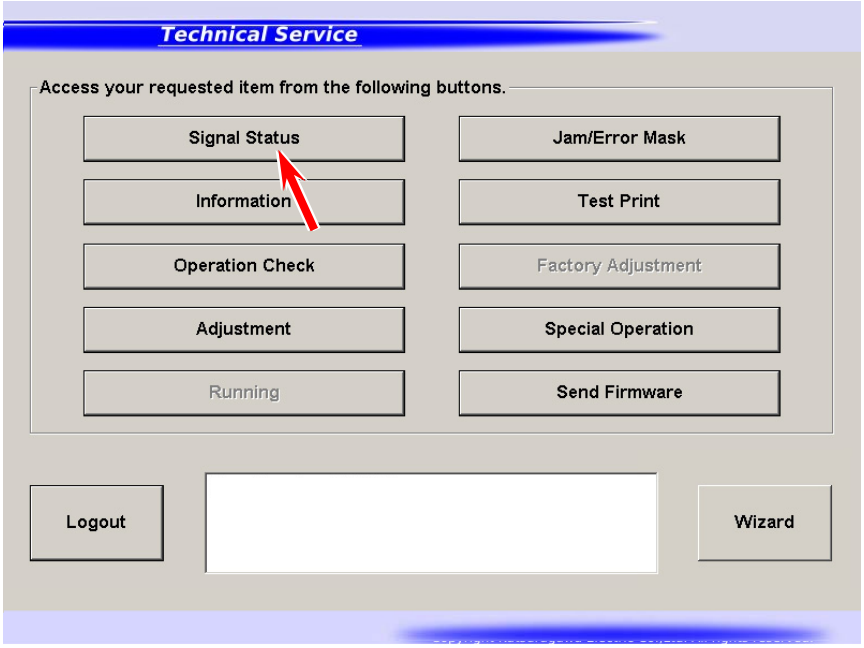


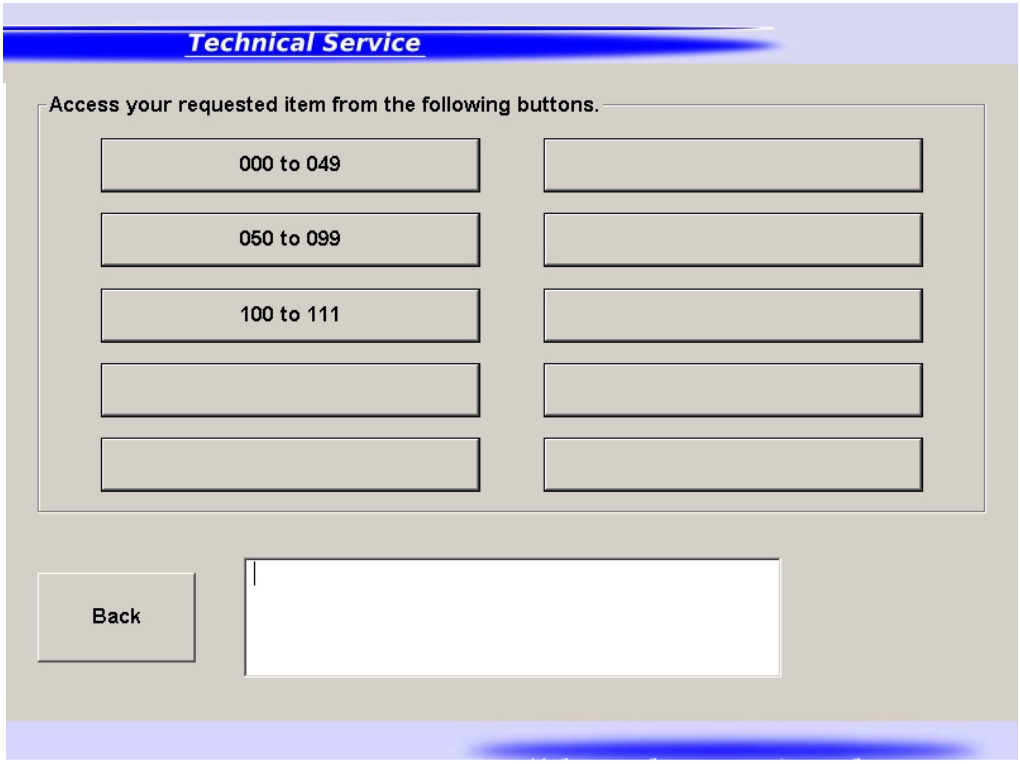
	Name	Function
1	Signal Code / Name	Displays Signal Code / Name in drop-down menu Specify one item that you want to monitor.
2	Signal Monitor	Displays the current status of the selected signal
3	Enter	not available
4	Back	Returns to Service Mode Home

For procedures to monitor device status, follow the instruction on the next page.

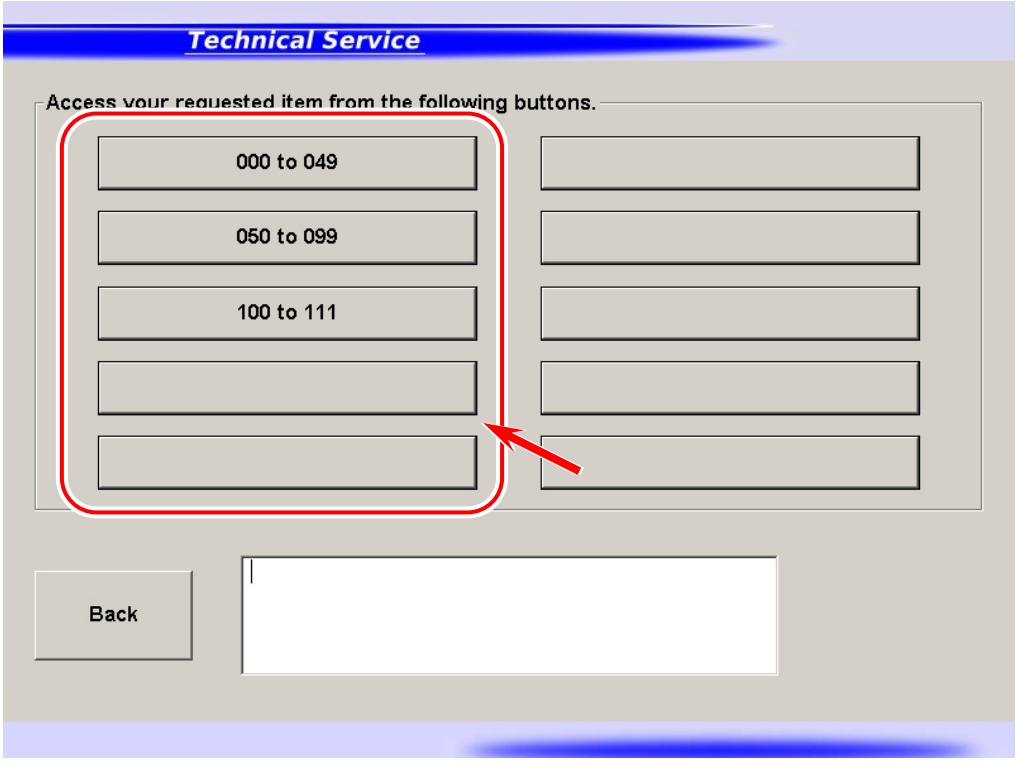
8. 3. 1 Monitoring Signal Status

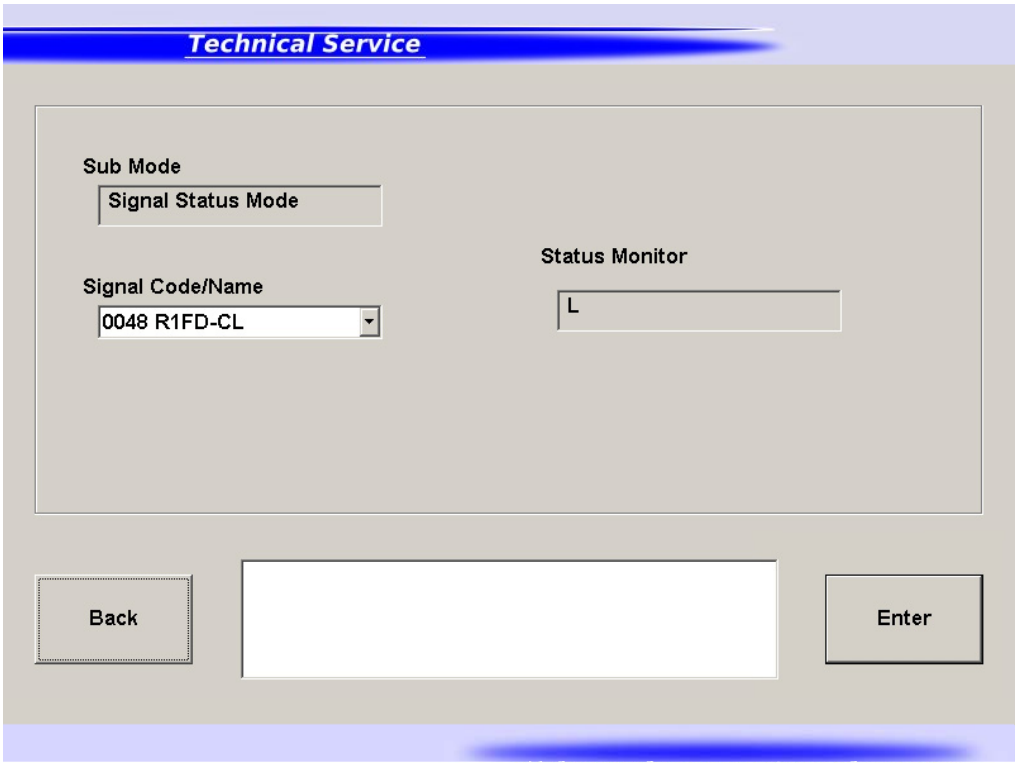
1. Press [Device Status] in Service Mode Home.
   Signal Code Group screen appears.





2. Press one Code Group button that contains the signal code that you want to monitor.
   Signal Status Monitor screen appears.

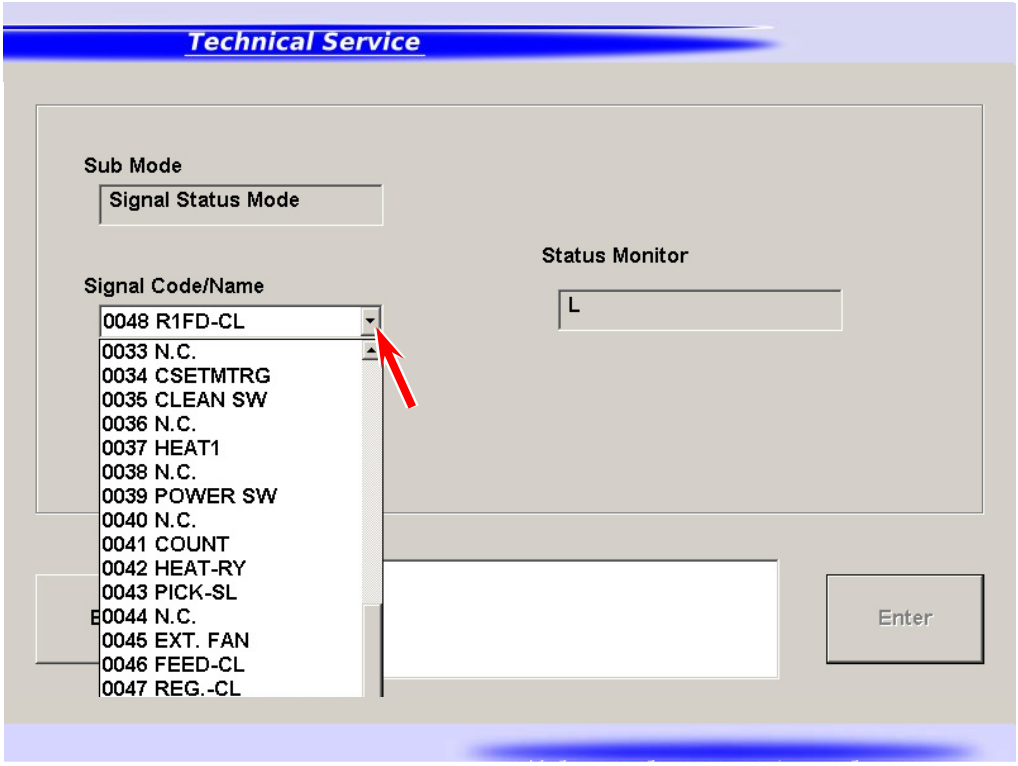




Reference

For Signal Name/Code, see [8.3.2 Input / Output Signal List].

3. Specify one signal item that you want to monitor from Signal Name menu.



4. The current status of the device you have chosen is displayed in Status Monitor.

8. 3. 2 Input / Output Signal List

Signal Code	Symbol	IC Port	Connector	Signal Name	Input / Output	Status
000	SW1	IC3-P20	J205-17	Input Switch 1	Input	L : ON
001	SW2	IC3-P21	J205-18	Input Switch 2	Input	L : ON
002	SW3	IC3-P22	J205-19	Input Switch 3	Input	L : ON
003	SW4	IC3-P23	J205-20	Input Switch 4	Input	L : ON
004	SW5	IC3-P24	J205-21	Input Switch 5	Input	L : ON
005	---	IC3-P25	J202-7			
006	---	IC3-P26	J202-8			
007	---	IC3-P27	J215-3			
008	MAN_S	IC3-P40	J204-20	Manual Feed Sensor	Input	H : Paper detected
009	DOOR_OPN	IC3-P41	J204-21	Roll Deck Open	Input	H : Open
010	SEP_S	IC3-P42	J204-22	Separation Sensor	Input	L : Paper detected
011	HEAT_EXIT	IC3-P43	J204-23	Exit Sensor	Input	L : Paper detected
012	---	IC3-P44	J204-24			
013	HEAT_DOOR	IC3-P45	J207-16	Heater Hatch Open	Input	L : Open
014	---	IC3-P46	J207-15			
015	SIG_IN	IC3-P47	J204-27	Stacker Input	Input	
016	ONLINE_LED	IC3-60	J205-15	Online LED	Output	H : ON
017	---	IC3-61	J207-14			
018	---	IC3-62	J215-7			
019	---	IC3-63	J215-8			
020	---	IC3-64	J207-13			
021	SIG_OUT	IC3-65	J204-28	Stacker Output	Output	
022	HEAT_BL_L	IC3-66	J207-12	Fuser Blower (Low)	Output	H : ON
023	HEAT_BL_H	IC3-67	J207-12	Fuser Blower (High)	Output	H : ON
024	MAMTR	IC3-P10	J206-7	Main Motor	Output	H : Rotate
025	HEAT_M	IC3-P11	J206-8	Fuser Motor	Output	H : Rotate
026	HV_1ST	IC3-P12	J206-9	Image Corona	Output	H : Output
027	HV_TR	IC3-P13	J206-10	Transfer Corona	Output	H : Output
028	HV_AC	IC3-P14	J206-11	Separation Corona	Output	H : Output
029	BIAS_TRG	IC3-P15	J206-12	Developer Bias	Output	H : Output
030	BIAS_SW	IC3-P16	J206-13	Developer Bias Polarity Switch	Output	L : Positive Bias
031	---	IC3-P17	J206-14			
032	H1_CW_CCW	IC3-P30	J206-15	Main Motor Reversal Rotation	Output	H : Reverse
033	PRESS_M	IC3-P31	J206-16	Developer Press Motor	Output	H : Rotate
034	TONER_M	IC3-P32	J206-17	Hopper Motor	Output	H : Rotate
035	CLEAN_SW	IC3-P33	J206-18	Cleaning Roller Voltage Polarity Switch	Output	L : Positive
036	FEED_BL	IC3-P34	J206-22	Blower (BL7) Control	Output	H : Rotate
037	HEAT1	IC3-P35	J206-25	SSR ON/OFF Signal 1	Output	H : Heater Lamp lights
038	COOL_BL	IC3-P36	J206-26	Fuser Cooling Fan	Output	H : Rotate
039	POWER_OFF	IC3-P37	J206-27	Power Switch Output	Output	H : OFF
040	ER2	IC3-P50	J207-3	Separation Lamp Control	Output	H : Lighting
041	COUNT	IC3-P51	J207-4	Counter	Output	H : Counting up
042	HEAT_RY	IC3-P52	J207-5	Fuser Relay	Output	H : ON
043	SLCT_CL	IC3-P53		Clutch Selection (Roll 1 or 2)	Output	H : Roll 1
044	FOWE_CL	IC3-P54	J207-6(R1) J207-8(R2)	Roll 1&2 Feed Clutch	Output	H : ON
045	BACK_CL	IC3-P55	J207-9(R1) J208-9(R2)	Roll 1&2 Back Clutch	Output	H : ON
046	FEED_CL	IC3-P56	J207-10	Feed Clutch	Output	H : ON
047	REGIST_CL	IC3-P57	J207-11	Registration Clutch	Output	H : ON
048	COUNT_OPEN	IC3-P80	J207-4	Counter Connection Detection	Input	
049	M_LD	IC3-P81	J203-14	Main Motor Output Detection	Input	
050	FUMTR_LD	IC3-P82	J203-15	Fuser Motor Output Detection	Input	
051	DIS_CN	IC3-P83	J203-16	Developer Connection Detection	Input	
052	HV1_LD	IC3-P84	J203-17	Image Corona Output Detection	Input	
053	TR_LD	IC3-P85	J203-18	Transfer Corona Output Detection	Input	

Signal Code	Symbol	IC Port	Connector	Signal Name	Input / Output	Status
054	AC_LD	IC3-P86	J203-19	Separation Corona Output Detection	Input	
055	BIAS_LD	IC3-P87	J203-20	Developer Bias Output Detection	Input	
056	DA CLOCK	IC3-P70		DA Conversion Clock		
057	DA DI1	IC3-P71		DA Enable 1		
058	DA BS1	IC3-P72		DA Data 1		
059	DA DI2	IC3-P73		DA Enable 2		
060	DA BS2	IC3-P74		DA Data 2		
061	H2_CW_CCW	IC3-P75	J215-4	Fuser Motor Reverse	Output	H : Reverse
062	HEAT2	IC3-P76	J215-5	SSR ON/OFF 2	Output	H : Heater Lamp lights
063	---	IC3-P77				
064	---	IC3-P90	J215-9			
065	---	IC3-P91	J215-10			
066	---	IC3-P92	J215-12			
067	DENS_SNS1	IC3-P93	J215-13	Density Sensor Output 1		H: On
068	---	IC3-P94	J215-14			
069	---	IC3-P95	J215-15			
070	---	IC3-P96	J215-16			
071	LED2	IC3-P97		PW12420 PCB LED	Output	H: Lights
072	IBUSY_H	IC1-P10		Data Output Busy	Output	H : Busy
073	IPRADY_L	IC1-P11		Printer Ready	Output	L : Ready
074	IPREQ_L	IC1-P12		Print Request	Output	L : Requested
075	PAGEBL	IC1-P13		Print Request	Output	L : Print ON
076	TEST_H	IC1-P14		Test Print	Output	H : Test Printing
077	I_POW_ON_A	IC1-P15				
078	LED_EN	IC1-P16		LED Enable		
079	CLEAN BIAS	IC1-P17	J206-5	Cleaning Roller Bias	Output	H : Output
080	LCD_CLK	IC1-P20		LCD Clock		
081	LCD_DATA	IC1-P21		LCD Data		
082	LCD_EN	IC1-P23	J205-6	LCD Enable		
083	LCD_RW	IC1-P24	J205-5	Data Read / Write Selection	Output	
084	LCD_RS	IC1-P22	J205-4	LCD Input Selection	Output	
085		IC1-P25	J206-28	Main Motor Clock		
086		IC1-P26	J206-6	Fuser Motor Clock		
087	RESET_SIG	IC1-P27		Reset Signal	Output	
088	RXD0	IC1-P32		Serial 0 Input	Input	
089	RXD1	IC1-P33		Serial 1 Input	Input	
090	RXD2	IC1-P51		Serial 2 Input	Input	
091	TXD0	IC1-P30		Serial 0 Output	Output	
092	TXD1	IC1-P31		Serial 1 Output	Output	
093	TXD2	IC1-P50		Serial 2 Output	Output	
094	MSCUTR	IC1-P60	J204-5	Cutter Home Position Sensor (Right)	Input	L : Staying at Home Position
095	MSCUTL	IC1-P61	J204-6	Cutter Home Position Sensor (Left)	Input	L : Staying at Home Position
096	MCUTL	IC1-P63	J207-1	Cutter Motor 1	Output	H : Rotate
097	MCUTR	IC1-P62	J207-2	Cutter Motor 2	Output	H : Rotate
098	IPRINT_L	IC1-P34		Print Request	Input	L : Requested
099	IPCUT_L	IC1-P64		Paper Cut Request	Input	L : Cutting
100	REGIST_S	IC1-P65	J204-7	Registration Sensor	Input	H : Paper detected
101	R1_ENC_S	IC1-P66	J204-8	Roll 1 Encoder	Input	
102	R2_ENC_S	IC1-P67	J204-9	Roll 2 Encoder	Input	
103	VLC_OFF	IC1-PG0		LCD Indication ON/OFF	Output	H : Indicating
104	PRESS_S	IC1-PA5	J204-10	Developer Press Sensor	Input	L : Detecting
105	R1_SET_S	IC1-PA6	J204-11	Roll 1 Set Sensor	Input	H : Paper detected
106	R2_SET_S	IC1-PA7	J204-12	Roll 2 Set Sensor	Input	H : Paper detected
107	TONER_S	AN5	J203-6	Toner Sensor	Input	H : Toner detected
108	R_EDGE	IC1-PF7	J204-13	Feed Sensor	Input	H : Paper detected
109	FEED_ENC	IC1-PF1	J204-26	Feed Encoder		

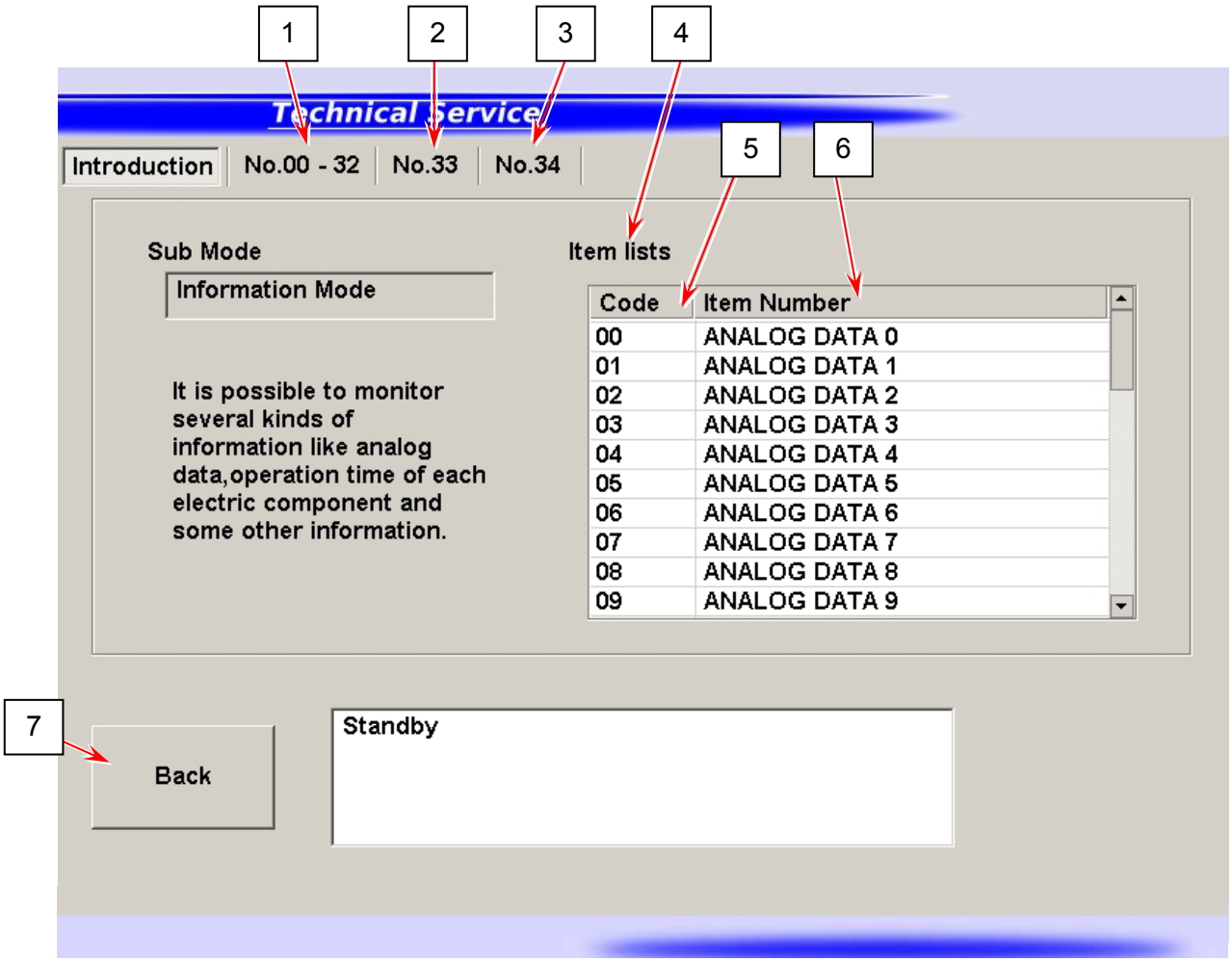
---						

8. 4 Information Mode

It is possible to monitor the analog voltage input sent by devices (such as Thermistor) to DC Controller PCB. It is also possible to monitor the current Fuser temperature which is calculated from the input voltage.

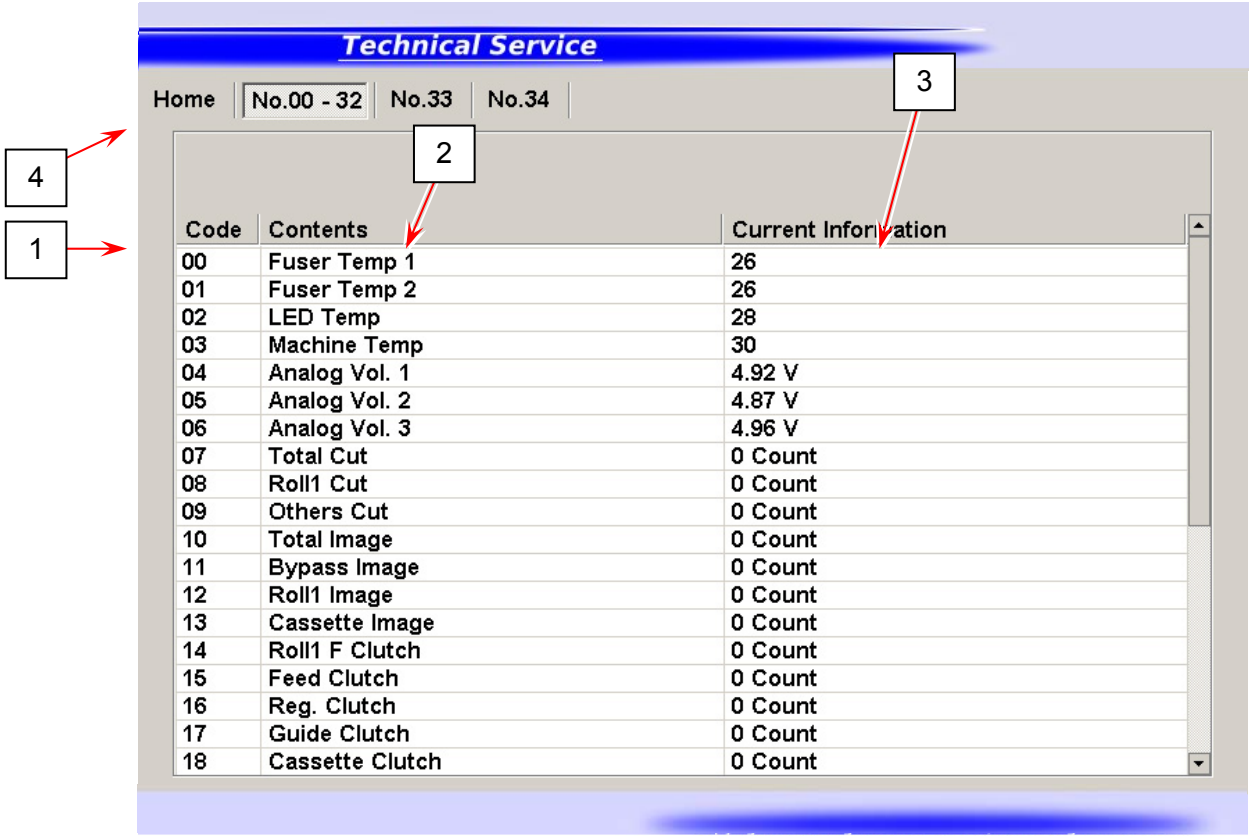
Information Mode includes the list of the latest 100 jam / service call error records.

Information Home screen



	Name	Function
1	No.00 - 32	Switches to Monitor screen
2	No.33	Switches to Jam History screen
3	No.34	Switches to Error History screen
4	Item List	List of Data items and codes
5	Code	Data Code 00 to 32
6	Item Number	Explains the contents of the item
7	Back	Returns to Service Mode Home

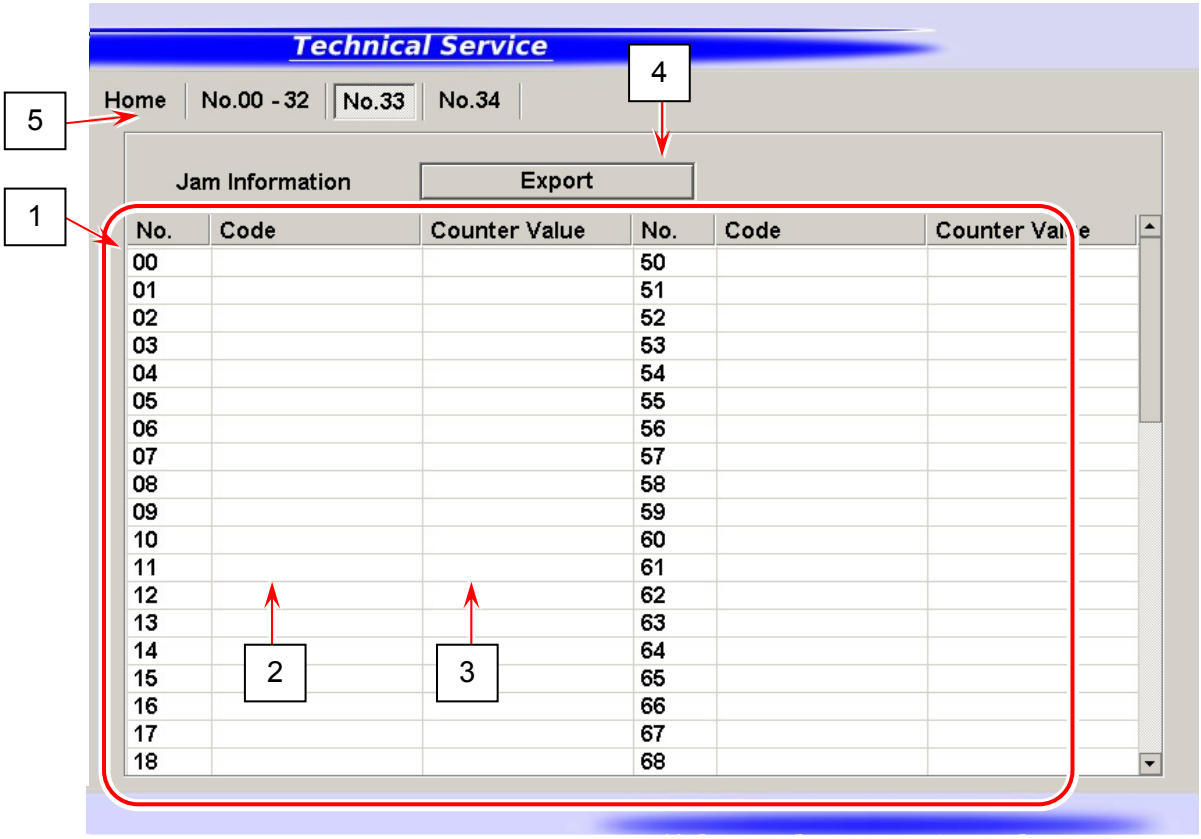
Monitor screen



	Name	Function
1	Code	Data Code 00 to 32
2	Item Number	Explains the contents of the listed items
3	Current Information	Displays the current Analog Voltage and its calculated value for the items to be monitored
4	Introduction	Returns to Information Home screen

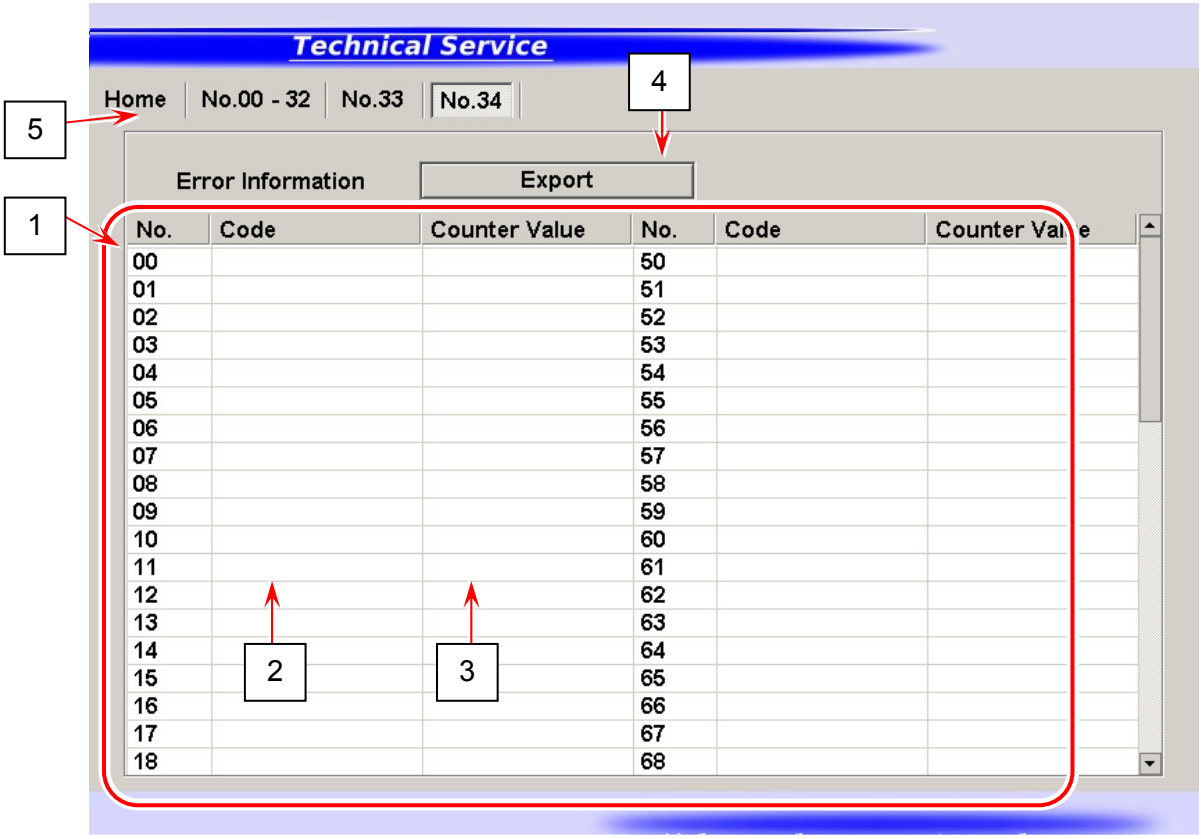
For information about items to be monitored, see [8.4.2 List of Analog Data Monitor].

Jam History screen



	Name	Function
1	Jam Information	Displays the latest 100 jam records
2	Code	Displays Jam Code “J-****”
3	Count	Displays the counter value that the concerning jam occurred
4	Export	Saves the records as a file
5	Introduction	Returns to Information Home screen

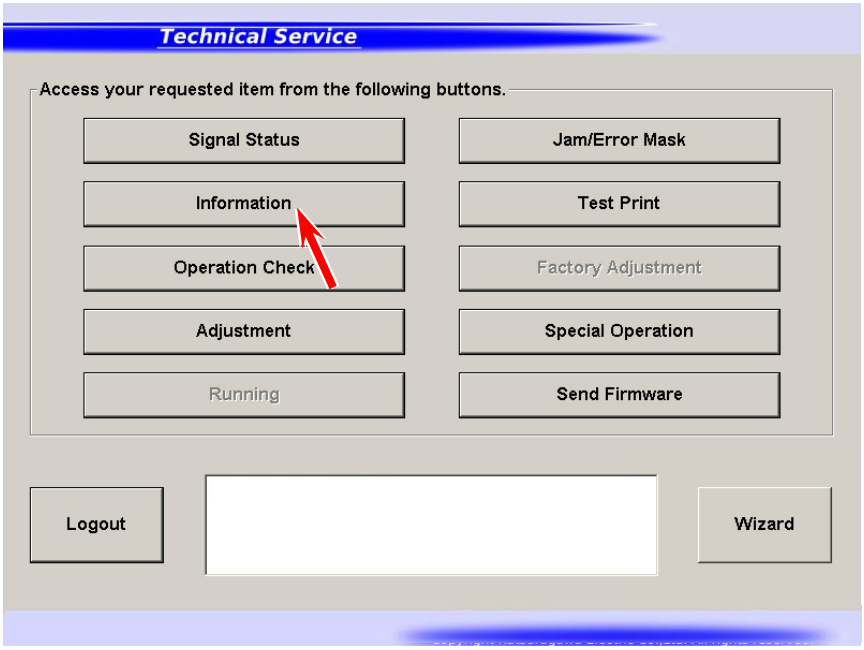
Error History screen

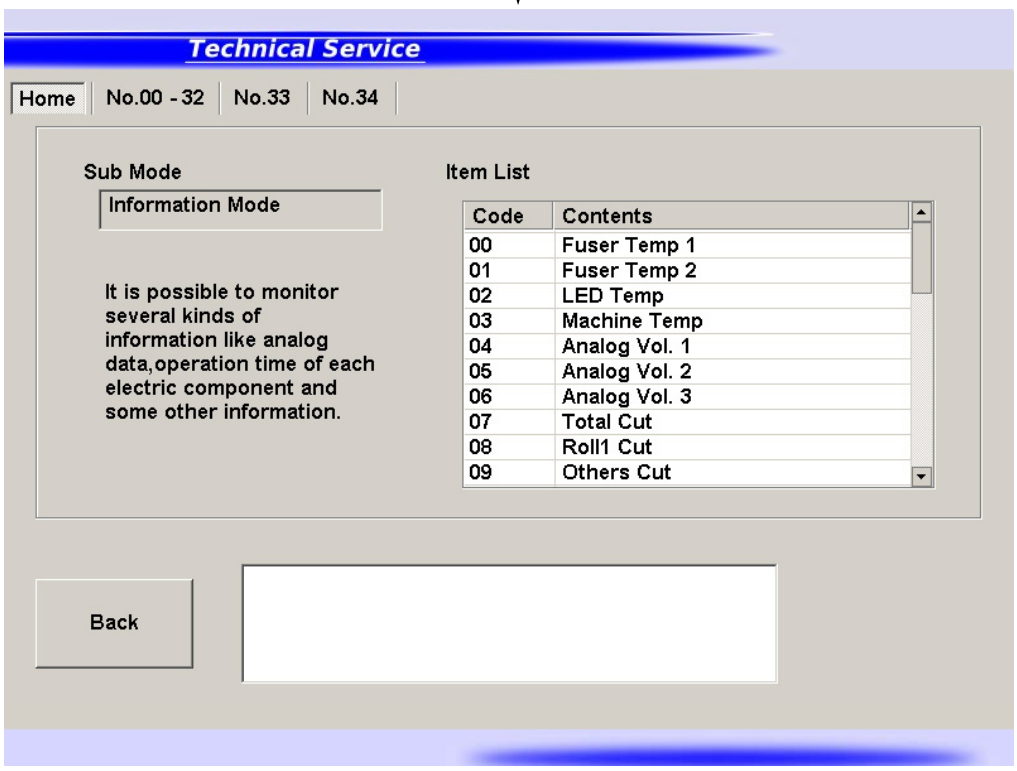


	Name	Function
1	Error Information	Displays the latest 100 service call error records
2	Code	Displays Jam Code “E-****”
3	Count	Displays the counter value that the concerning error occurred
4	Export	Saves the records as a file
5	Introduction	Returns to Information Home screen

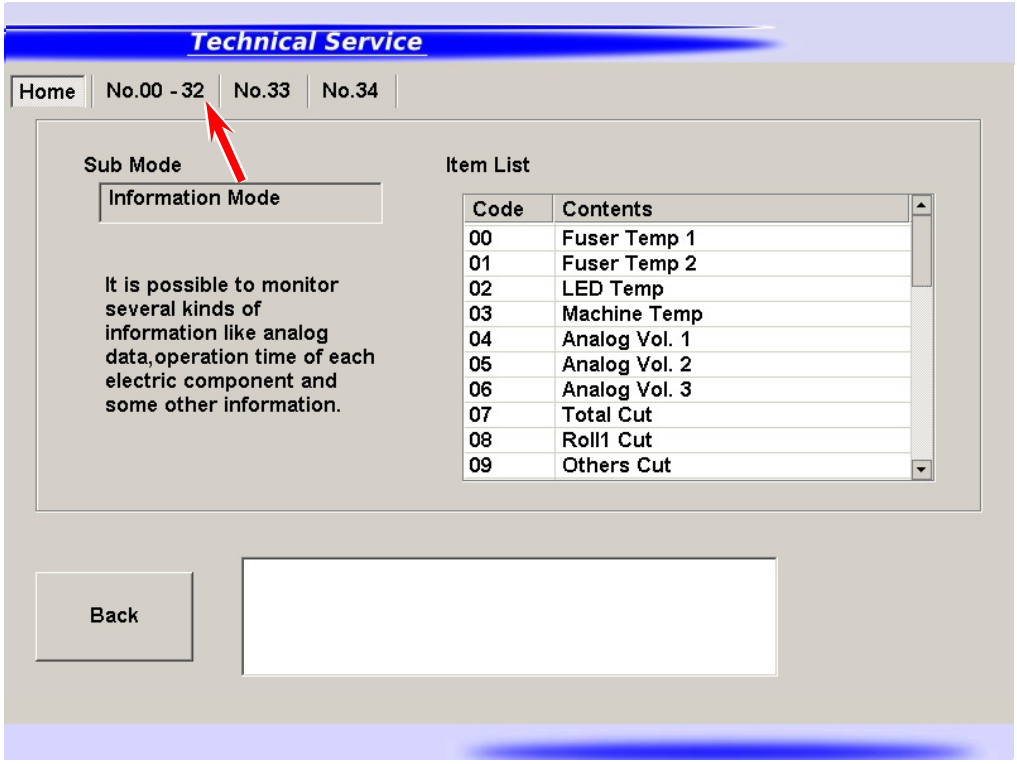
8. 4. 1 Monitoring Analog Data

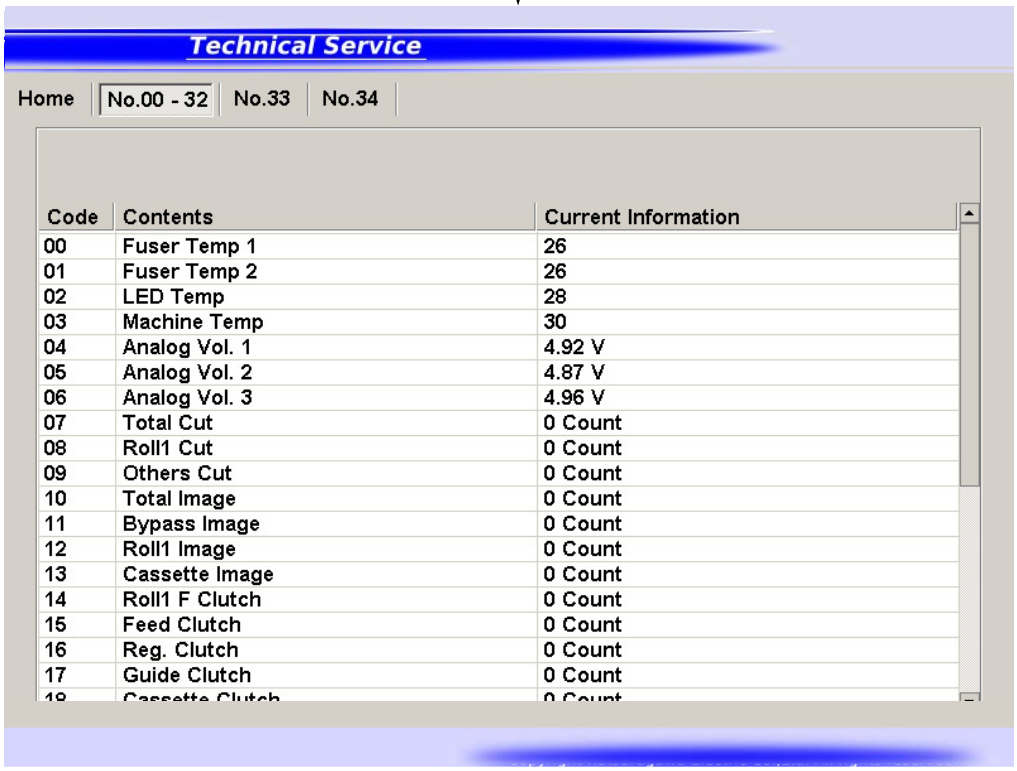
1. Press [Information] in Service Mode Home.
   Information Home screen appears.





2. To monitor any available Analog Data value, open [No.00 - 32] tab to display Monitor screen.



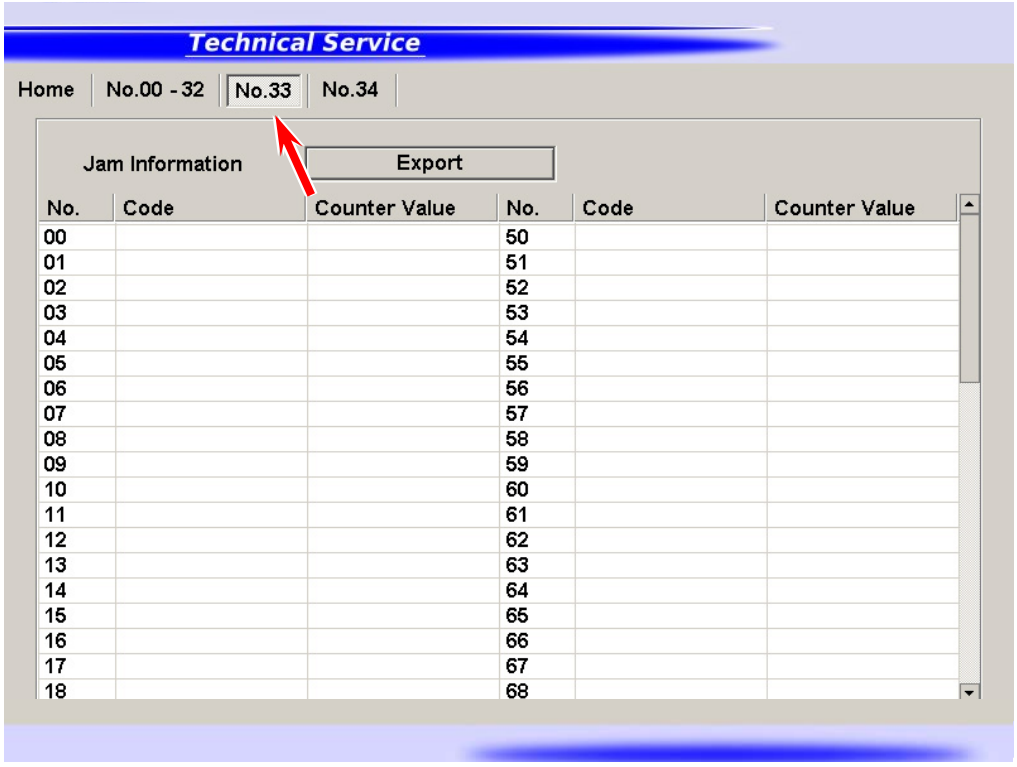


8. 4. 2 List of Analog Data Monitor

Data Code	Item	Unit	Remarks	Contents
00	Fuser Temp 1	Centigrade	Calculated Value	temperature detected by the thermistor on the center of the Fuser Unit
01	Fuser Temp 2	Centigrade	Calculated Value	temperature detected by the thermistor on the right of the Fuser Unit
02	(Reserved)	-	-	-
03	Machine Temp	Centigrade	Calculated Value	temperature detected on PW12420
04	(Reserved)	-	-	-
05	Total Cut			number of operation times in total for media cut with any source / situation
06	Roll 1 Cit			number of operation times for media cutting from Roll 1
07	Roll 2 Cit			number of operation times for media cutting from Roll 2
08	Others Cut			number of operation times for media cutting for trim cut
09	Total Image			number of operation times in total for printing operation with any source
10	R1 Image			number of operation times for printing operation on Roll 1
11	R2 Image			number of operation times for printing operation on Roll 2
12	M Image			number of operation times for printing operation on Bypass Feeder
13	Cassette Image			number of operation times for printing operation on Paper Tray
14	R1F Clutch			number of operation times of Roll 1 Feed Clutch
15	R2F Clutch			number of operation times of Roll 2 Feed Clutch
16	R1B Clutch			number of operation times of Roll 1 Back Clutch
17	R2B Clutch			number of operation times of Roll 2 Back Clutch
18	Feed Clutch			number of operation times of Feed Clutch
19	Reg. Clutch			number of operation times of Registration Clutch
20	Pickup Solenoid			number of operation times of Pickup Solenoid
21	(Reserved)	-	-	-
22	Stack Solenoid			number of operation times of Stack Solenoid
23	Motor 1 Time	minute		total operation time of Main Motor
24	Motor 2 Time	minute		total operation time of Fuser Motor
25	LED ON Time	minute		total lighting-up time of LED Head
26	Motor 3 Time	minute		total operation time of Paper Tray Motor
27	Bias 3 Time	minute		operation time of Main Motor from the last Density Measure
28	Density V0		no use	
29	Density V1		no use	
30	Density Vr		no use	
31	Density W Level		no use	
32	Density B Level		no use	

8. 4. 3 Browsing Jam History

To browse the machine's jam history, open [No.33] tab to display Jam History screen.



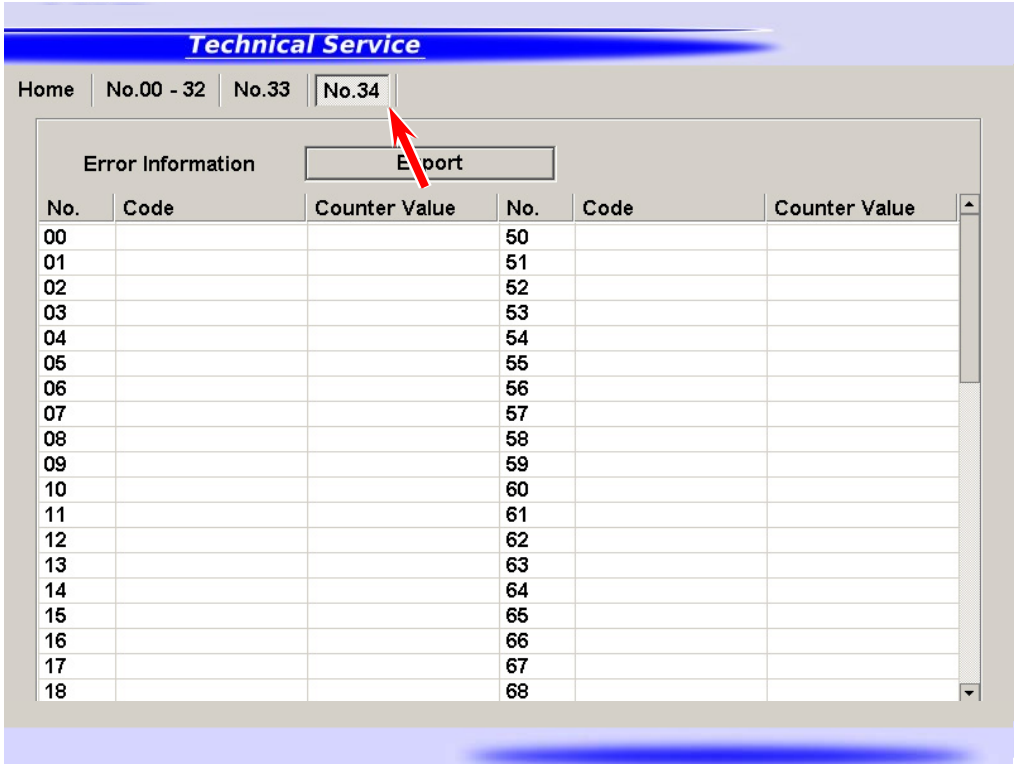
[Export] creates "jaminfo.dat" that contains the currently recorded Jam History.

Reference

To clear the entire jam history record, see [8.11.2 Clearing Fuser Error, Jam/Error History].

8. 4. 4 Browsing Error History

To browse the machine's service call error history, open [No.34] tab to display Error History screen.



[Export] creates "errinfo.dat" that contains the currently recorded Error History.

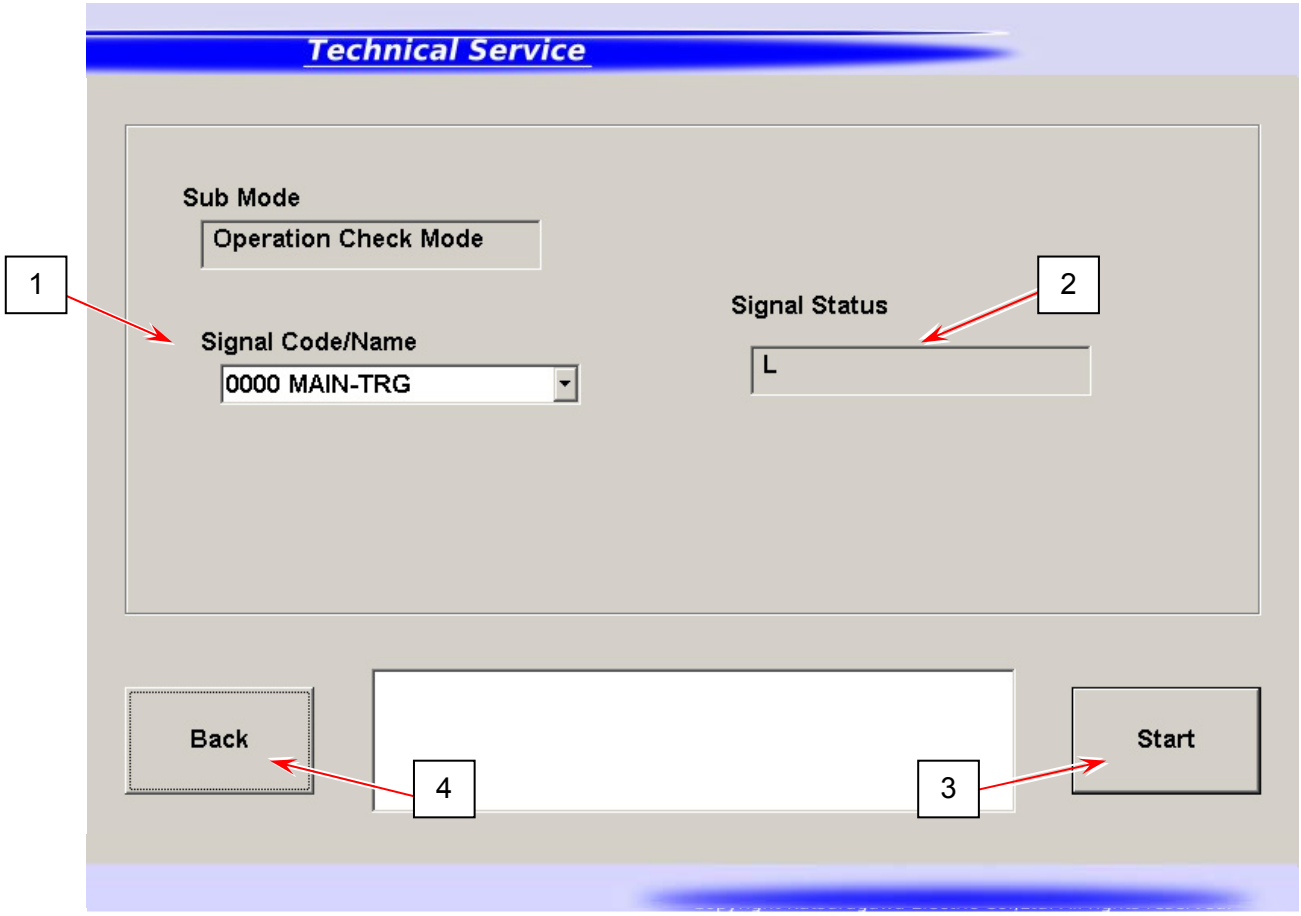
Reference

To clear the entire service call error history record, see [8.11.2 Clearing Fuser Error, Jam/Error History].

8. 5 Operation Check Mode

It is possible to operate several electrical components independently, such as motor, clutch, and fans.

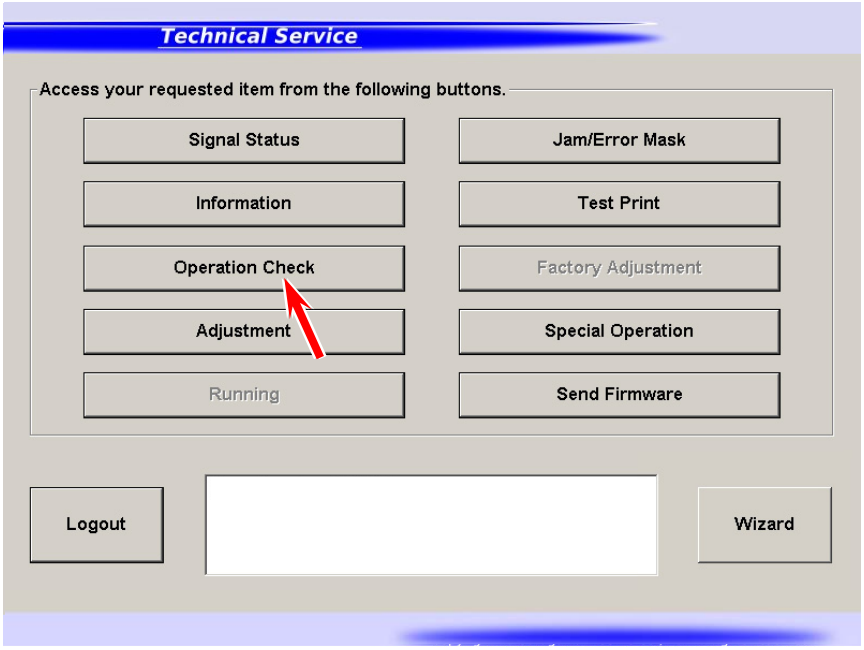
Operation Check screen

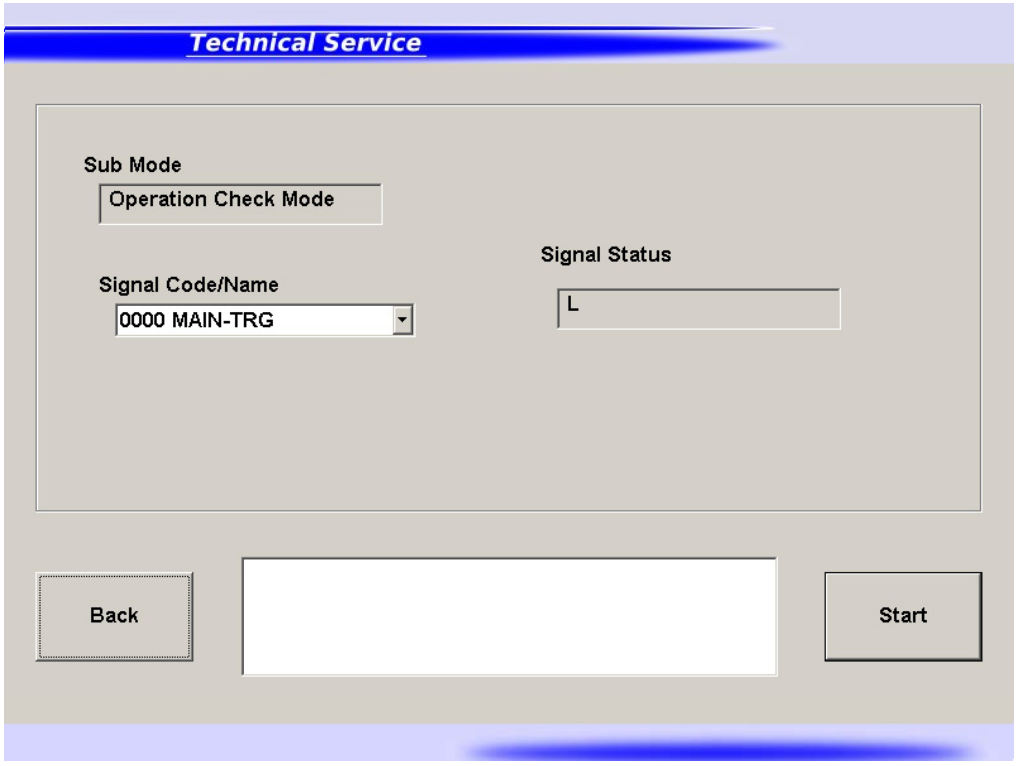


	Name	Function
1	Signal Code / Name	Displays Signal Code/Name in drop-down menu Specify one item that you want to check.
2	Signal Status	Displays the current status of the selected signal
3	Start	Operates the electric device you have chosen not available for sensors
4	Back	Returns to Service Mode Home

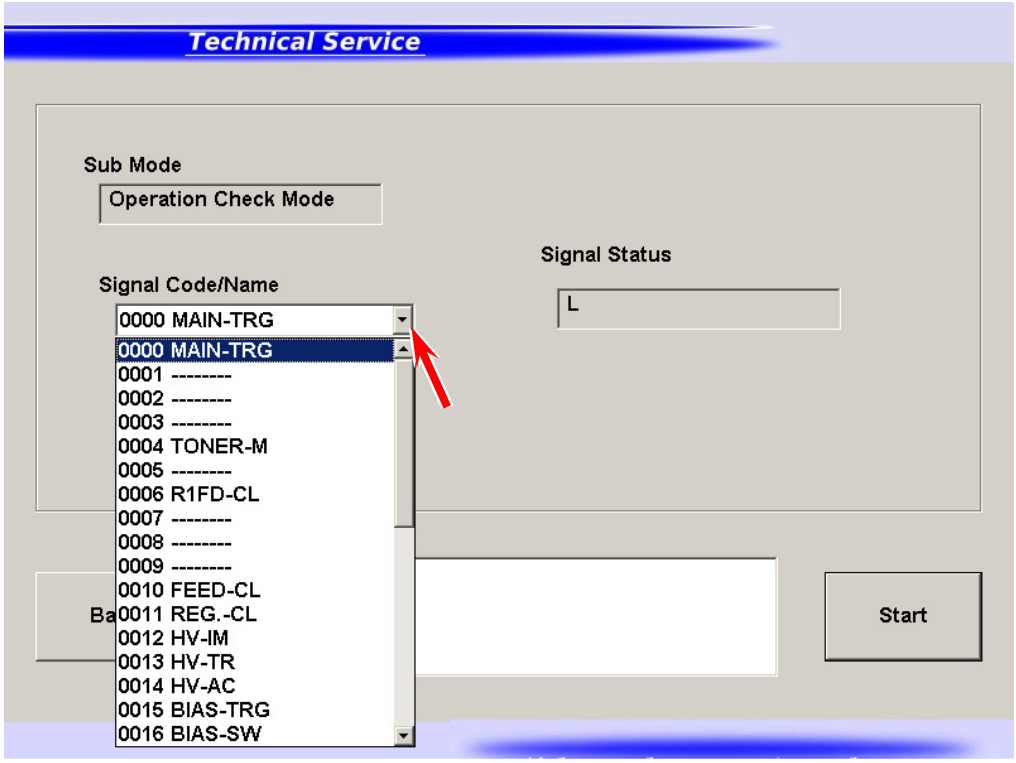
8. 5. 1 Checking Device Operation

1. Press [Operation Check] in Service Mode Home.
   Operation Check screen appears.





2. Specify one signal item that you want to monitor from Signal Code/Name menu.



3. The current status of the device you have chosen is displayed in Signal Status field. Press [Enter] to operate / stop the device alone alternately.

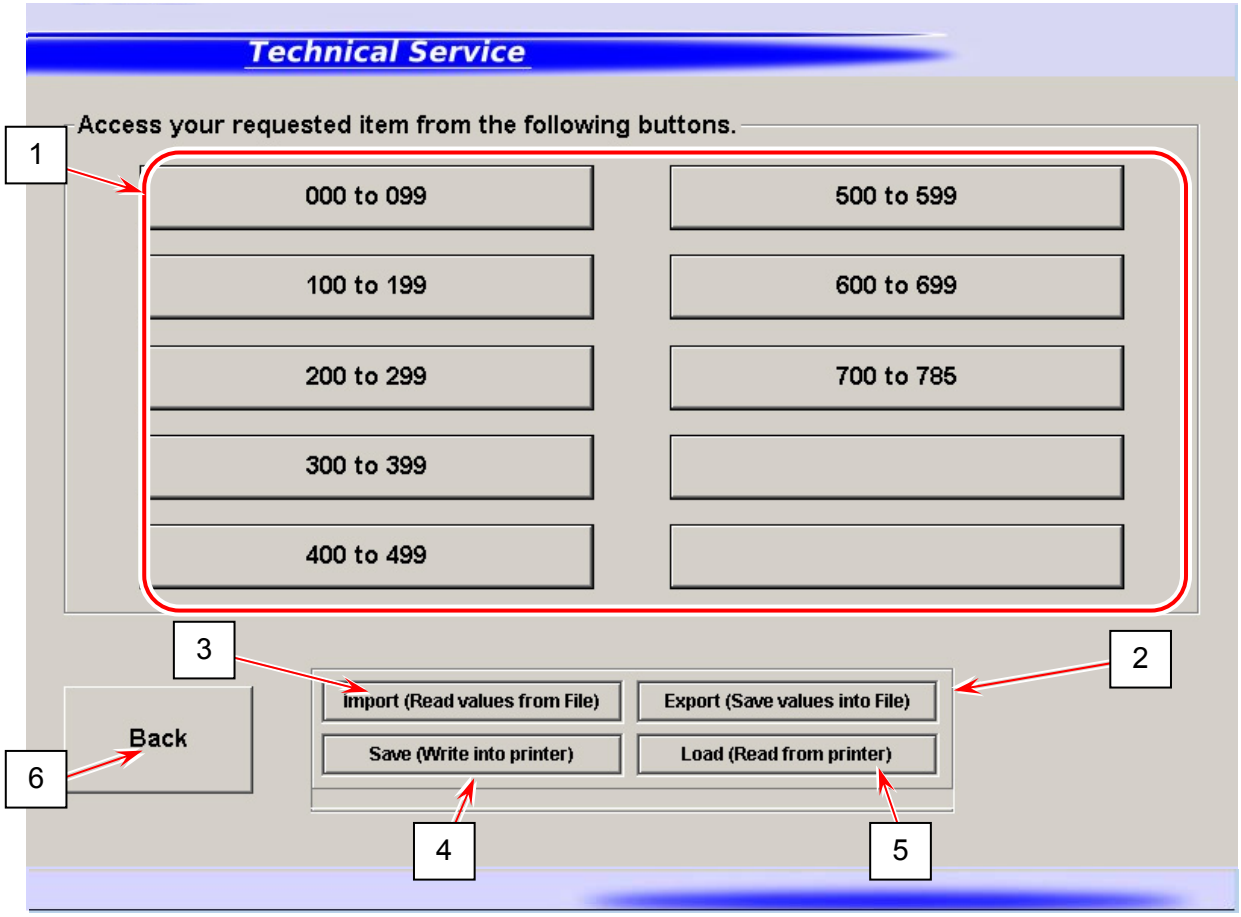
8. 5. 2 Device List

Signal Code	Signal Name	Target item
00	MAIN-TRG	Main Motor
01	FMTR-TRG	Fuser Motor
02	FMTR-REV	Fuser Motor (reversal rotation)
03	PRESS-M	Developer Press Motor
04	TONER-M	Toner Supply Motor
05	---	Reserved
06	R1FD-CL	Roll 1 Feed Clutch
07	R1BK-CL	Roll 1 Back Clutch
08	R2FD-CL	Roll 2 Feed Clutch
09	R2BK-CL	Roll 2 Back Clutch
10	FEED-CL	Feed Clutch
11	REG.-CL	Registration Clutch
12	HV-IM	Image Corona
13	HV-TR	Transfer Corona
14	HV-AC	Separation Corona
15	BIAS-TRG	Developer Bias
16	BIAS-SW	Positive/Negative selection of Developer Bias
17	CLEANTRG	Cleaning Roller Bias
18	CLEAN-SW	Positive/Negative selection of Cleaning Roller Voltage
19	---	Reserved
20	TR LED	Transfer Assist LED
21	HEAT1	Fuser Lamp 1
22	HEAT-RY	Fuser Relay
23	H BLW(L)	Fuser Blower (Low speed)
24	H BLW(H)	Fuser Blower (High speed)
25	FEED-BLW	Paper Feed Blower
26	COUNT	Counter
27	M5_CUTL	Cutter Motor (blade moves to left)
28	M5_CUTR	Cutter Motor (blade moves to right)
29	POWER-SW	Main Switch
30	---	Reserved
31	COOLERBL	Cooling Fan
32	HEAT2	Fuser Lamp 2
33	DENS_S	Density Sensor
34	---	Reserved
35	CMTR-TRG	Paper Tray Motor
36	PICK-SL	Pickup Solenoid
37	---	Reserved
38	STACK_SL	Stacker Solenoid

8. 6 Adjustment Mode

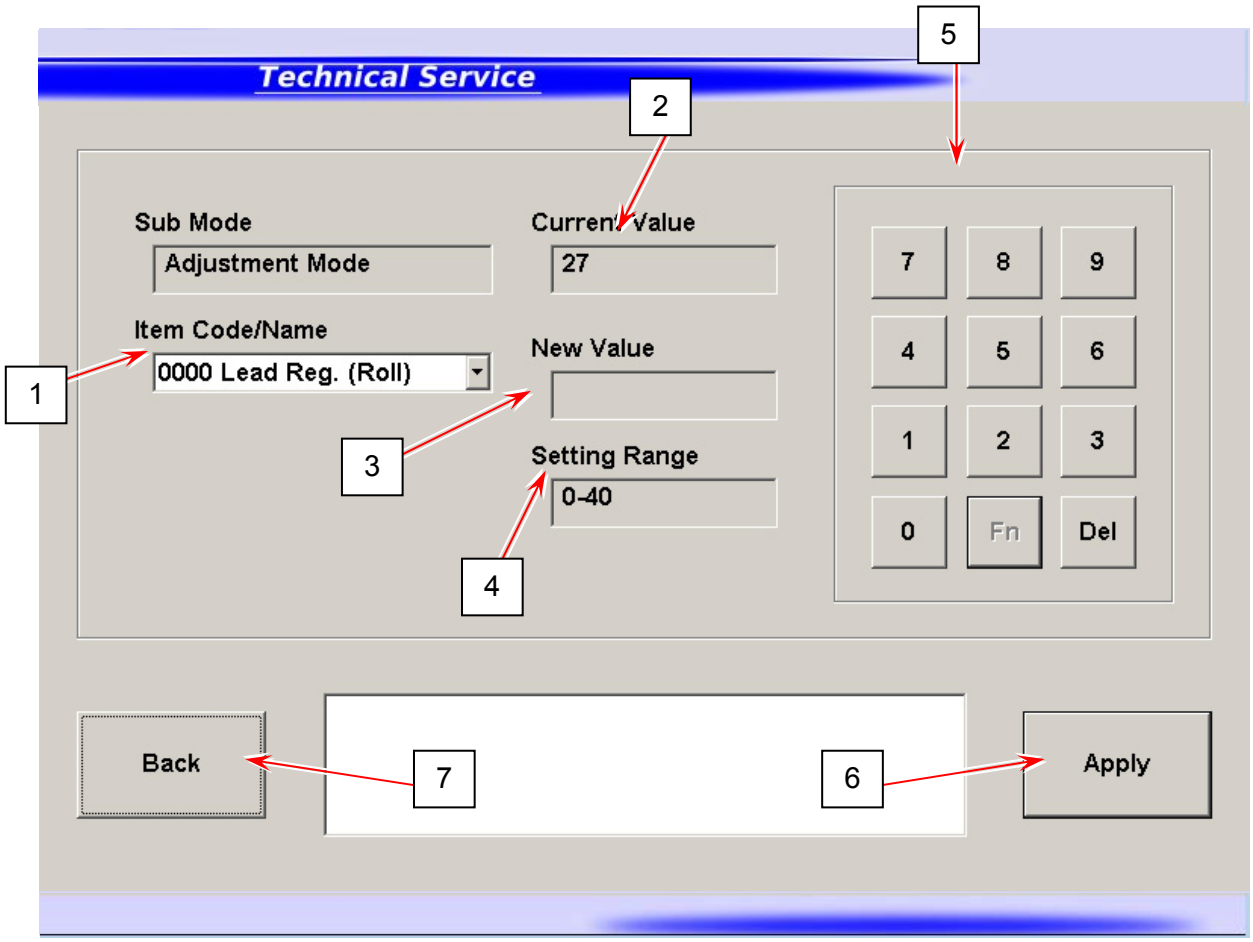
It is possible to configure fundamental settings on the printer.
Every setting item has the corresponding Sub Mode Number.

Adjustment Menu screen



	Name	Function
1	Sub Mode Number Group Button	Press one Code Group button that contains the signal code that you want to configure.
2	Export	Stores the current parameters in a RAM file for backup measure
3	Import	Reads parameters stored in RAM file
4	Save	Applies the parameters read by [Import]
5	Load	Reads the current parameters on the printer
6	Back	Returns to Service Mode Home

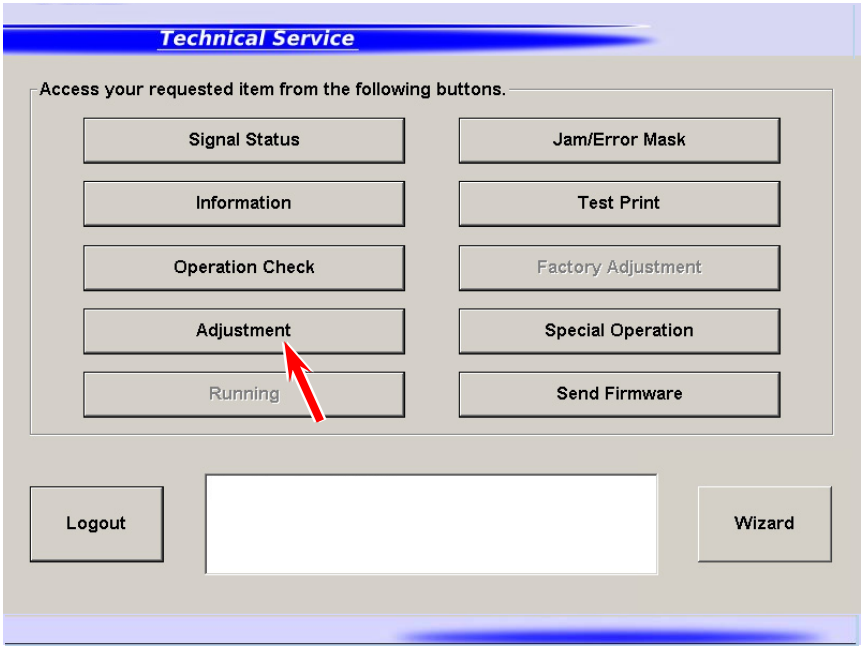
Setting Configuration screen

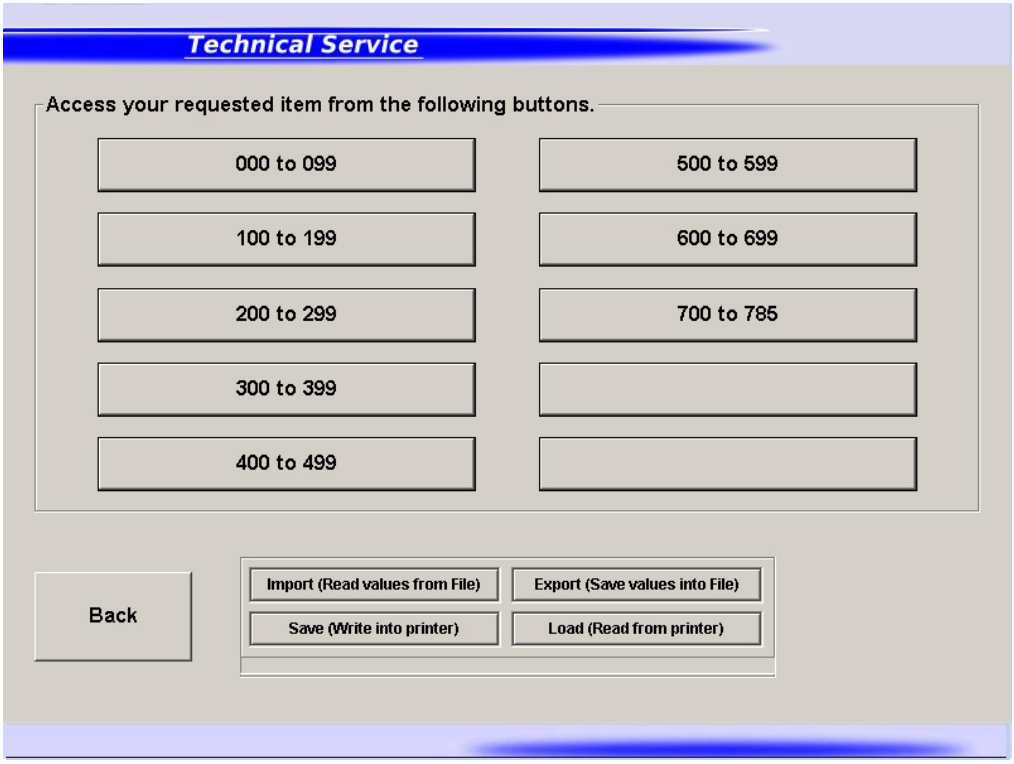


	Name	Function
1	Signal Name	Displays Signal Code/Name in drop-down menu Specify one item that you want to configure.
2	Preset	Displays the current value of the selected item
3	Modify	Displays an input value by using On-screen Keypad
4	Range Value	An input value must be set within this range.
5	Numeric Key	Use On-screen Keypad to input a value to be configured.
6	Apply	Applies a value in “Modify” to the selected item
7	Back	Returns to Service Mode Home

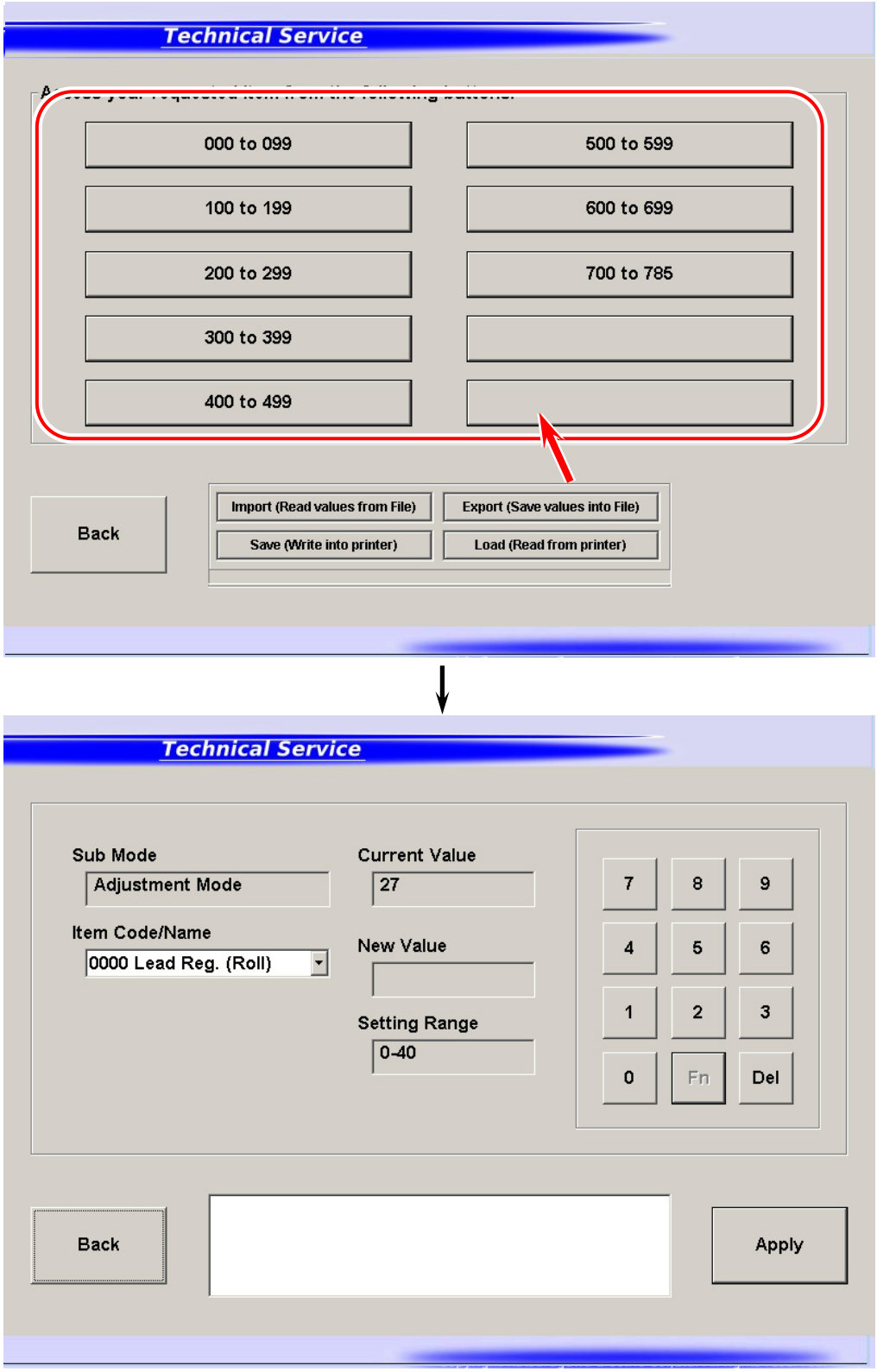
8. 6. 1 Changing Setting Value

1. Press [Adjustment] in Service Mode Home.
   Adjustment Menu screen appears.





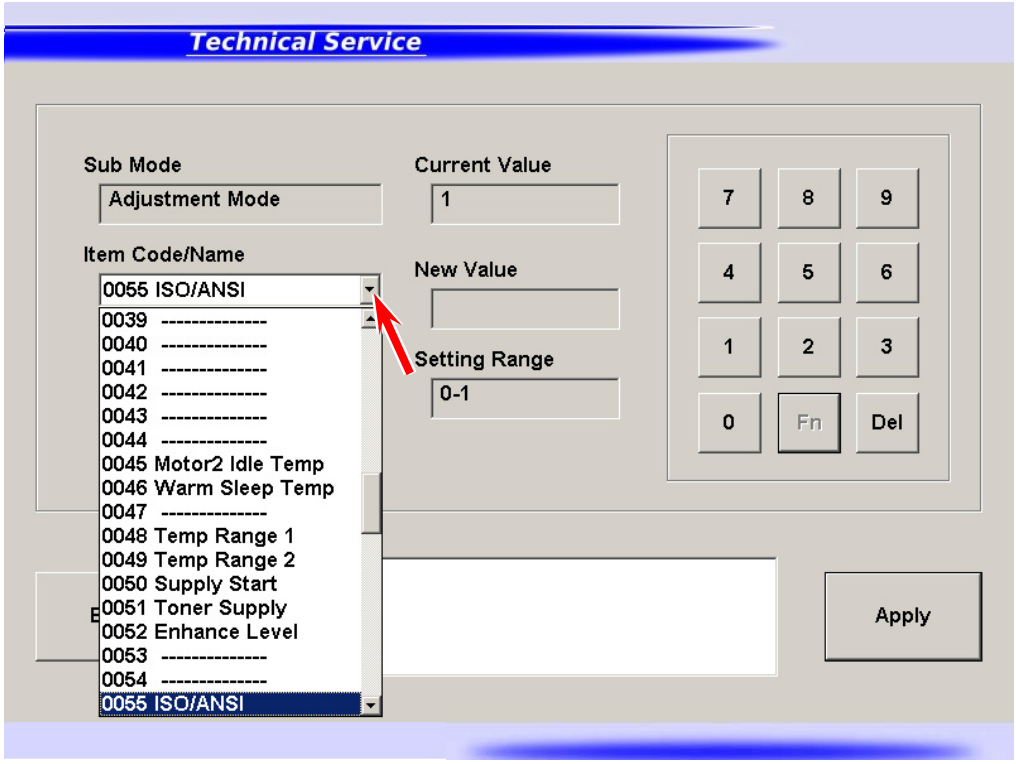
2. Press one Code Group button that contains the signal code that you want to configure.
   Setting Configuration screen appears.



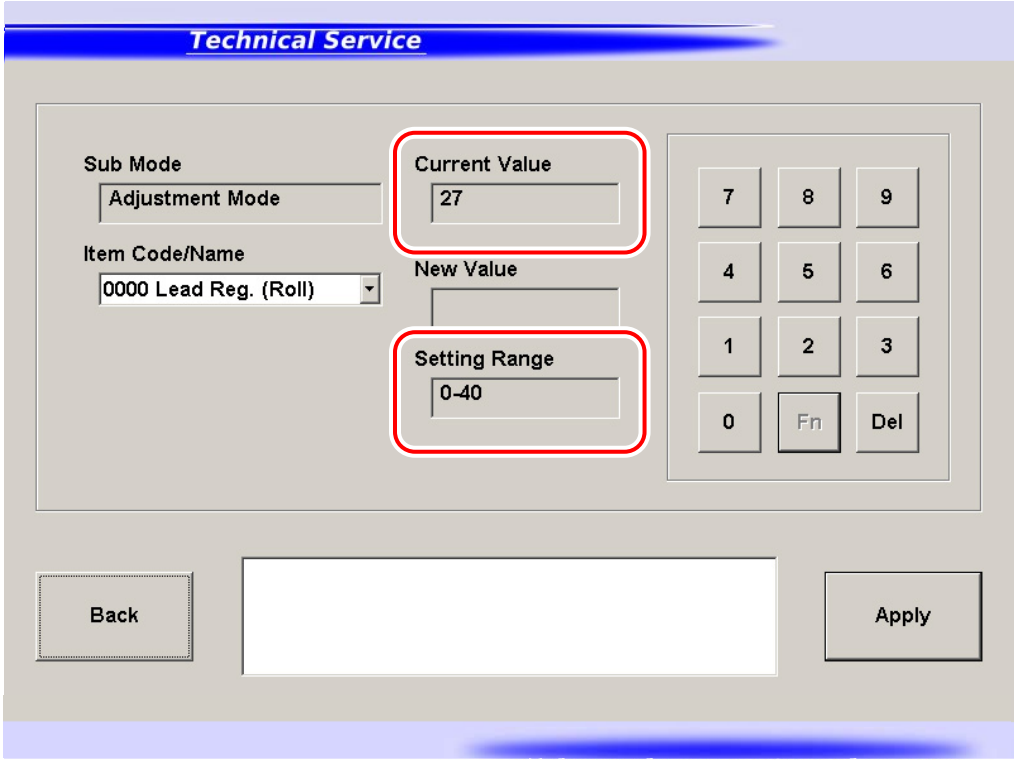
Reference

For correspondence between Signal Name/Code and Code Group button,
see [8.6.2 Setting Item List].

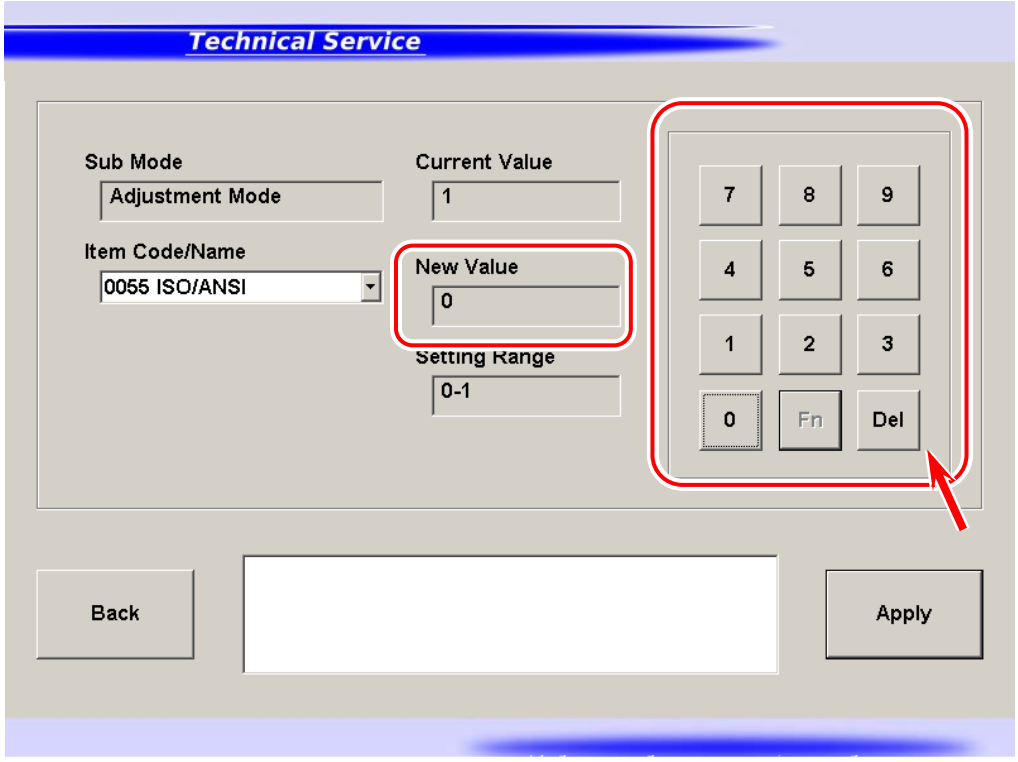
3. Specify one signal item that you want to configure from Signal Name menu.



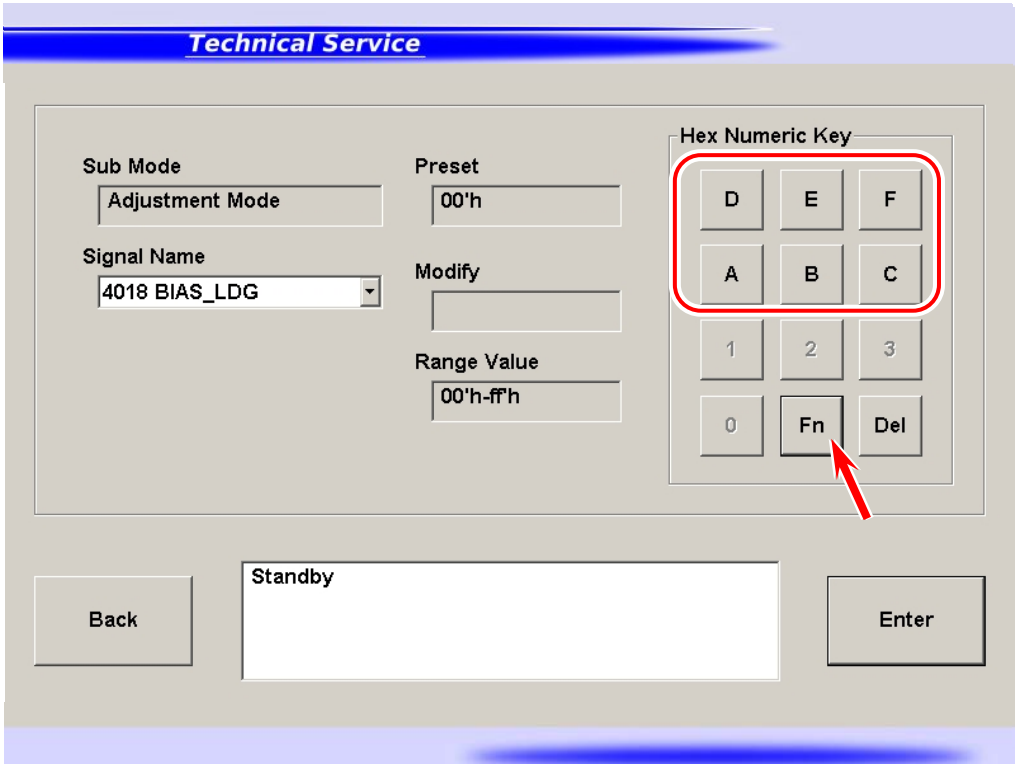
4. The current value and available setting range of the item you have chosen are displayed.



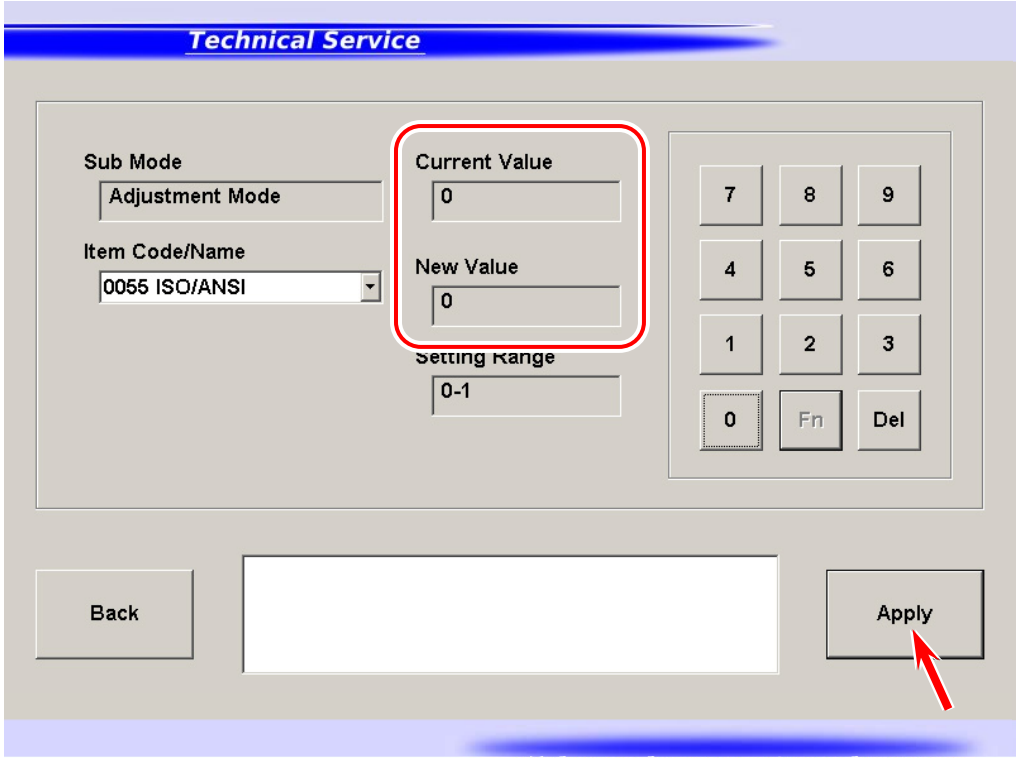
5. To change a setting value, input a desired value with On-screen Keypad.
   The value will be displayed in “Modify” area.



The setting item you have chosen is in hexadecimal, press [Fn] to input alphabetic characters A to F.



6. Press [Enter] to apply the new value to the printer.
   The value in “preset” area will be changed to the new value.



8. 6. 2 Setting Item List

NOTE: All items grayed are not generally for field technician use

Item No.	Setting Item	Unit	Default Value		Setting range
			USA	EUR / AS	
000	Leading Registration (Roll paper)	1mm	19	19	1 to 40
001	Leading Registration (Cut sheet paper)	1mm	19	19	1 to 40
002	Trailing Margin (Roll paper)	1mm	9	9	1 to 40
003	Trailing Margin (Cut sheet paper)	1mm	10	10	1 to 40
004	Side Margin (Left and right)	1mm	3	3	0 to 20
005	Side Registration (Cutsheet)	0.1mm	50	50	0 to 100
006	Side Registration (Roll 1)	0.1mm	50	50	0 to 100
007	Side Registration (Roll 2)	0.1mm	50	50	0 to 100
008	LED Strobe Time for Main Pixel (Block A)	1 microsecond	6	6	0 to 9
009	LED Strobe Time for Main Pixel (Block B)	1 microsecond	6	6	0 to 9
010	LED Strobe Time for Main Pixel (Block C)	1 microsecond	6	6	0 to 9
011	LED Strobe Time for IST (Supplemental Pixel) (Block A)	1 microsecond	0	0	0 to 9
012	LED Strobe Time for IST (Supplemental Pixel) (Block B)	1 microsecond	0	0	0 to 9
013	LED Strobe Time for IST (Supplemental Pixel) (Block C)	1 microsecond	0	0	0 to 9
014	Vertical Alignment of Pixels between Image Blocks A & B	-	8	8	2 to 14
015	Vertical Alignment of Pixels between Image Blocks B & C	-	8	8	2 to 14
016	Cut Length 1 (length information provided)	1mm	50	50	0 to 100
017	Cut Length 2 (length information not provided)	1mm	50	50	0 to 100
018	Cut Length 3 (Compensation of the length of a long print)	0.1mm	475	475	0 to 999
019	Leading Margin	0.1mm	30	30	0 to 50
020	Cut Length 4 (Individual Compensation for Roll 2)	0.16mm	50	50	0 to 100
021	Reserved				
022	Developer Bias (Plain Paper)	-	161	161	0 to 4FF
023	Developer Bias (Tracing Paper)	-	161	161	0 to 4FF
024	Developer Bias (Film)	-	161	161	0 to 4FF
025	Developer Bias (Special Media/Plain Paper)	-	161	161	0 to 4FF
026	Developer Bias (Special Media/Tracing Paper)	-	161	161	0 to 4FF
027	Developer Bias (Special Media/Film)	-	161	161	0 to 4FF
028	Developer Bias compensation - 1st Drum revolution	-	0	0	0 to 255
029	Transfer Voltage (Plain Paper)	-	366	366	0 to 4FF
030	Transfer Voltage (Tracing Paper)	-	28A	28A	0 to 4FF
031	Transfer Voltage (Film)	-	28A	28A	0 to 4FF
032	Transfer Voltage (Special Media/Plain Paper)	-	292	292	0 to 4FF
033	Transfer Voltage (Special Media/Tracing Paper)	-	292	292	0 to 4FF
034	Transfer Voltage (Special Media/Film)	-	292	292	0 to 4FF
035	Separation Corona ON Timing	1mm	50	50	0 to 100
036	Reserved				
037	Transfer Corona ON Timing	1mm	48	48	0 to 100
038	Transfer Corona OFF Timing	1mm	20	20	0 to 100
039	Print - Fuser Temperature Center (Plain)	1°C	160	165	120 to 180
040	Print - Fuser Temperature Center (Tracing)	1°C	160	170	120 to 180
041	Print - Fuser Temperature Center (Film)	1°C	177	170	120 to 180
042	Print - Fuser Temperature Center (Special / Plain)	1°C	160	160	120 to 180
043	Print - Fuser Temperature Center (Special / Tracing)	1°C	160	160	120 to 180
044	Print - Fuser Temperature Center (Special / Film)	1°C	177	177	120 to 180
045	Fuser temperature to Start Idling	1°C	120	120	100 to 140
046	Warm Sleep - Fuser Temperature	1°C	100	100	100 to 160
047	Reserved				
048	Fuser Temperature Control Range (In the print cycle)	1°C	1	1	1 to 6
049	Fuser Temperature Control Range (Stand by)	1°C	2	2	1 to 6
050	Reaction Time of Toner Supply Motor	1 Second	15	15	1 to 30
051	Toner Supply Motor Time	1 Second	10	10	1 to 15
052	Dot Enhancement Level (Dither)	-	1	1	1 to 3
053	Feed Clutch OFF Time for Roll 1 Long Print	1msec.	230	230	80 to 360
054	Feed Clutch OFF Time for Roll 2 Long Print	1msec.	230	230	80 to 360
055	Metric or Inch	-	1	0	0 to 1
056	Language	-	1	1	0 to 1
057	Interface Communication Setting	-	2	2	0 to 2

NOTE: All items grayed are not generally for field technician use

Item No.	Setting Item	Unit	Default Value		Setting range
			USA	EUR / AS	
058	Recognition of Paper Tray	-	0	0	0 to 1
059	Counter Value	-	5	0	0 to 5
060	Maximum Length	-	1	1	0 to 1
061	Stacking Device Setting	-	0	0	0 to 1
062	Operation of Fuser Roller	-	0	0	0 to 1
063	Cut length 5 (Compensation for Tracing Paper)	-	100	100	0 to 200
064	Cut length 6 (Compensation for Film)	-	100	86	0 to 200
065	Drum Reverse Time	1 millisecond	30	30	10 to 70
066	Fuser Motor Reverse Setting	-	0	0	0 to 1
067	Operation of Separation Lamp	-	5	5	1 to 7
068	Reserved				
069	Reserved				
070	Fuser Motor 1st Speed (Roll) (Plain Paper / A3, 12” & 11”)	0.04mm/s	34	39	0 to 80
071	Switch Timing to Fuser Motor 1st Speed (Roll) (Plain Paper / A3, 12” & 11”)	0.5 seconds	1	1	0 to 300
072	Fuser Motor 2nd Speed (Roll) (Plain Paper / A3, 12” & 11”)	0.04mm/s	35	42	0 to 80
073	Switch Timing to Fuser Motor 2nd Speed (Roll) (Plain Paper / A3, 12” & 11”)	0.5 seconds	1	1	0 to 300
074	Fuser Motor 3rd Speed (Roll) (Plain Paper / A3, 12” & 11”)	0.04mm/s	50	48	0 to 80
075	Switch Timing to Fuser Motor 3rd Speed (Roll) (Plain Paper / A3, 12” & 11”)	0.5 seconds	5	5	0 to 300
076	Fuser Motor 1st Speed (Roll) (Tracing / A3, 12” & 11”)	0.04mm/s	33	36	0 to 80
077	Switch Timing to Fuser Motor 1st Speed (Roll) (Tracing / A3, 12” & 11”)	0.5 seconds	1	1	0 to 300
078	Fuser Motor 2nd Speed (Roll) (Tracing / A3, 12” & 11”)	0.04mm/s	39	44	0 to 80
079	Switch Timing to Fuser Motor 2nd Speed (Roll) (Tracing / A3, 12” & 11”)	0.5 seconds	1	3	0 to 300
080	Fuser Motor 3rd Speed (Roll) (Tracing / A3, 12” & 11”)	0.04mm/s	44	44	0 to 80
081	Switch Timing to Fuser Motor 3rd Speed (Roll) (Tracing / A3, 12” & 11”)	0.5 seconds	5	5	0 to 300
082	Fuser Motor 1st Speed (Roll) (Film / A3, 12” & 11”)	0.04mm/s	50	50	0 to 80
083	Switch Timing to Fuser Motor 1st Speed (Roll) (Film / A3, 12” & 11”)	0.5 seconds	2	2	0 to 300
084	Fuser Motor 2nd Speed (Roll) (Film / A3, 12” & 11”)	0.04mm/s	50	50	0 to 80
085	Switch Timing to Fuser Motor 2nd Speed (Roll) (Film / A3, 12” & 11”)	0.5 seconds	4	4	0 to 300
086	Fuser Motor 3rd Speed (Roll) (Film / A3, 12” & 11”)	0.04mm/s	40	40	0 to 80
087	Switch Timing to Fuser Motor 3rd Speed (Roll) (Film / A3, 12” & 11”)	0.5 seconds	0	0	0 to 300
088	Fuser Motor 1st Speed (Roll) (Special Media / Plain Paper / A3, 12” & 11”)	0.04mm/s	40	40	0 to 80
089	Switch Timing to Fuser Motor 1st Speed (Roll) (Special Media / Plain Paper / A3, 12” & 11”)	0.5 seconds	0	0	0 to 300
090	Fuser Motor 2nd Speed Setting (Roll) (Special Media / Plain Paper / A3, 12” & 11”)	0.04mm/s	40	40	0 to 80
091	Switch Timing to Fuser Motor 2nd Speed (Roll) (Special Media / Plain Paper / A3, 12” & 11”)	0.5 seconds	0	0	0 to 300
092	Fuser Motor 3rd Speed (Roll) (Special Media / Plain Paper / A3, 12” & 11”)	0.04mm/s	40	40	0 to 80
093	Switch Timing to Fuser Motor 3rd Speed (Roll) (Special Media / Plain Paper / A3, 12” & 11”)	0.5 seconds	0	0	0 to 300

NOTE: All items grayed are not generally for field technician use

Item No.	Setting Item	Unit	Default Value		Setting range
			USA	EUR / AS	
094	Fuser Motor 1st Speed (Roll) (Special Media / Tracing / A3, 12” & 11”)	0.04mm/s	40	40	0 to 80
095	Switch Timing to Fuser Motor 1st Speed (Roll) (Special Media / Tracing / A3, 12” & 11”)	0.5 seconds	0	0	0 to 300
096	Fuser Motor 2nd Speed (Roll) (Special Media / Tracing / A3, 12” & 11”)	0.04mm/s	40	40	0 to 80
097	Switch Timing to Fuser Motor 2nd Speed (Roll) (Special Media / Tracing / A3, 12” & 11”)	0.5 seconds	0	0	0 to 300
098	Fuser Motor 3rd Speed (Roll) (Special Media / Tracing / A3, 12” & 11”)	0.04mm/s	40	40	0 to 80
099	Switch Timing to Fuser Motor 3rd Speed (Roll) (Special Media / Tracing / A3, 12” & 11”)	0.5 seconds	0	0	0 to 300
100	Fuser Motor 1st Speed (Roll) (Special Media / Film / A3, 12” & 11”)	0.04mm/s	40	40	0 to 80
101	Switch Timing to Fuser Motor 1st Speed (Roll) (Special Media / Film / A3, 12” & 11”)	0.5 seconds	0	0	0 to 300
102	Fuser Motor 2nd Speed (Roll) (Special Media / Film / A3, 12” & 11”)	0.04mm/s	40	40	0 to 80
103	Switch Timing to Fuser Motor 2nd Speed (Roll) (Special Media / Film / A3, 12” & 11”)	0.5 seconds	0	0	0 to 300
104	Fuser Motor 3rd Speed (Roll) (Special Media / Film / A3, 12” & 11”)	0.04mm/s	40	40	0 to 80
105	Switch Timing to Fuser Motor 3rd Speed (Roll) (Special Media / Film / A3, 12” & 11”)	0.5 seconds	0	0	0 to 300
106	Fuser Motor 1st Speed (Roll) (Plain Paper / A2, 18” & 17”)	0.04mm/s	30	31	0 to 80
107	Switch Timing to Fuser Motor 1st Speed (Roll) (Plain Paper / A2, 18” & 17”)	0.5 seconds	3	3	0 to 300
108	Fuser Motor 2nd Speed (Roll) (Plain Paper / A2, 18” & 17”)	0.04mm/s	32	36	0 to 80
109	Switch Timing to Fuser Motor 2nd Speed (Roll) (Plain Paper / A2, 18” & 17”)	0.5 seconds	4	4	0 to 300
110	Fuser Motor 3rd Speed (Roll) (Plain Paper / A2, 18” & 17”)	0.04mm/s	31	38	0 to 80
111	Switch Timing to Fuser Motor 3rd Speed (Roll) (Plain Paper / A2, 18” & 17”)	0.5 seconds	6	6	0 to 300
112	Fuser Motor 1st Speed (Roll) (Tracing / A2, 18” & 17”)	0.04mm/s	33	40	0 to 80
113	Switch Timing to Fuser Motor 1st Speed (Roll) (Tracing / A2, 18” & 17”)	0.5 seconds	3	1	0 to 300
114	Fuser Motor 2nd Speed (Roll) (Tracing / A2, 18” & 17”)	0.04mm/s	38	44	0 to 80
115	Switch Timing to Fuser Motor 2nd Speed (Roll) (Tracing / A2, 18” & 17”)	0.5 seconds	3	5	0 to 300
116	Fuser Motor 3rd Speed (Roll) (Tracing / A2, 18” & 17”)	0.04mm/s	38	45	0 to 80
117	Switch Timing to Fuser Motor 3rd Speed (Roll) (Tracing / A2, 18” & 17”)	0.5 seconds	5	5	0 to 300
118	Fuser Motor 1st Speed (Roll) (Film / A2, 18” & 17”)	0.04mm/s	50	50	0 to 80
119	Switch Timing to Fuser Motor 1st Speed (Roll) (Film / A2, 18” & 17”)	0.5 seconds	2	2	0 to 300
120	Fuser Motor 2nd Speed (Roll) (Film / A2, 18” & 17”)	0.04mm/s	50	50	0 to 80
121	Switch Timing to Fuser Motor 2nd Speed (Roll) (Film / A2, 18” & 17”)	0.5 seconds	6	6	0 to 300
122	Fuser Motor 3rd Speed (Roll) (Film / A2, 18” & 17”)	0.04mm/s	40	40	0 to 80
123	Switch Timing to Fuser Motor 3rd Speed (Roll) (Film / A2, 18” & 17”)	0.5 seconds	0	0	0 to 300

NOTE: All items grayed are not generally for field technician use

Item No.	Setting Item	Unit	Default Value		Setting range
			USA	EUR / AS	
124	Fuser Motor 1st Speed (Roll) (Special Media / Plain Paper / A2, 18” & 17”)	0.04mm/s	40	40	0 to 80
125	Switch Timing to Fuser Motor 1st Speed (Roll) (Special Media / Plain Paper / A2, 18” & 17”)	0.5 seconds	0	0	0 to 300
126	Fuser Motor 2nd Speed (Roll) (Special Media / Plain Paper / A2, 18” & 17”)	0.04mm/s	40	40	0 to 80
127	Switch Timing to Fuser Motor 2nd Speed (Roll) (Special Media / Plain Paper / A2, 18” & 17”)	0.5 seconds	0	0	0 to 300
128	Fuser Motor 3rd Speed (Roll) (Special Media / Plain Paper / A2, 18” & 17”)	0.04mm/s	40	40	0 to 80
129	Switch Timing to Fuser Motor 3rd Speed (Roll) (Special Media / Plain Paper / A2, 18” & 17”)	0.5 seconds	0	0	0 to 300
130	Fuser Motor 1st Speed (Roll) (Special Media / Tracing / A2, 18” & 17”)	0.04mm/s	40	40	0 to 80
131	Switch Timing to Fuser Motor 1st Speed (Roll) (Special Media / Tracing / A2, 18” & 17”)	0.5 seconds	0	0	0 to 300
132	Fuser Motor 2nd Speed (Roll) (Special Media / Tracing / A2, 18” & 17”)	0.04mm/s	40	40	0 to 80
133	Switch Timing to Fuser Motor 2nd Speed (Roll) (Special Media / Tracing / A2, 18” & 17”)	0.5 seconds	0	0	0 to 300
134	Fuser Motor 3rd Speed (Roll) (Special Media / Tracing / A2, 18” & 17”)	0.04mm/s	40	40	0 to 80
135	Switch Timing to Fuser Motor 3rd Speed (Roll) (Special Media / Tracing / A2, 18” & 17”)	0.5 seconds	0	0	0 to 300
136	Fuser Motor 1st Speed (Roll) (Special Media / Film / A2, 18” & 17”)	0.04mm/s	40	40	0 to 80
137	Switch Timing to Fuser Motor 1st Speed (Roll) (Special Media / Film / A2, 18” & 17”)	0.5 seconds	0	0	0 to 300
138	Fuser Motor 2nd Speed (Roll) (Special Media / Film / A2, 18” & 17”)	0.04mm/s	40	40	0 to 80
139	Switch Timing to Fuser Motor 2nd Speed (Roll) (Special Media / Film / A2, 18” & 17”)	0.5 seconds	0	0	0 to 300
140	Fuser Motor 3rd Speed (Roll) (Special Media / Film / A2, 18” & 17”)	0.04mm/s	40	40	0 to 80
141	Switch Timing to Fuser Motor 3rd Speed (Roll) (Special Media / Film / A2, 18” & 17”)	0.5 seconds	0	0	0 to 300
142	Fuser Motor 1st Speed (Roll) (Plain Paper / A1, 24” & 22”)	0.04mm/s	37	35	0 to 80
143	Switch Timing to Fuser Motor 1st Speed (Roll) (Plain Paper / A1, 24” & 22”)	0.5 seconds	3	3	0 to 300
144	Fuser Motor 2nd Speed (Roll) (Plain Paper / A1, 24” & 22”)	0.04mm/s	30	33	0 to 80
145	Switch Timing to Fuser Motor 2nd Speed (Roll) (Plain Paper / A1, 24” & 22”)	0.5 seconds	6	8	0 to 300
146	Fuser Motor 3rd Speed (Roll) (Plain Paper / A1, 24” & 22”)	0.04mm/s	40	41	0 to 80
147	Switch Timing to Fuser Motor 3rd Speed (Roll) (Plain Paper / A1, 24” & 22”)	0.5 seconds	6	8	0 to 300
148	Fuser Motor 1st Speed (Roll) (Tracing / A1, 24” & 22”)	0.04mm/s	36	42	0 to 80
149	Switch Timing to Fuser Motor 1st Speed (Roll) (Tracing / A1, 24” & 22”)	0.5 seconds	3	3	0 to 300
150	Fuser Motor 2nd Speed (Roll) (Tracing / A1, 24” & 22”)	0.04mm/s	41	43	0 to 80
151	Switch Timing to Fuser Motor 2nd Speed (Roll) (Tracing / A1, 24” & 22”)	0.5 seconds	9	9	0 to 300
152	Fuser Motor 3rd Speed (Roll) (Tracing / A1, 24” & 22”)	0.04mm/s	39	40	0 to 80
153	Switch Timing to Fuser Motor 3rd Speed (Roll) (Tracing / A1, 24” & 22”)	0.5 seconds	8	8	0 to 300

NOTE: All items grayed are not generally for field technician use

Item No.	Setting Item	Unit	Default Value		Setting range
			USA	EUR / AS	
154	Fuser Motor 1st Speed (Roll) (Film / A1, 24” & 22”)	0.04mm/s	42	42	0 to 80
155	Switch Timing to Fuser Motor 1st Speed (Roll) (Film / A1, 24” & 22”)	0.5 seconds	2	2	0 to 300
156	Fuser Motor 2nd Speed (Roll) (Film / A1, 24” & 22”)	0.04mm/s	42	42	0 to 80
157	Switch Timing to Fuser Motor 2nd Speed (Roll) (Film / A1, 24” & 22”)	0.5 seconds	14	14	0 to 300
158	Fuser Motor 3rd Speed (Roll) (Film / A1, 24” & 22”)	0.04mm/s	40	40	0 to 80
159	Switch Timing to Fuser Motor 3rd Speed (Roll) (Film / A1, 24” & 22”)	0.5 seconds	0	0	0 to 300
160	Fuser Motor 1st Speed (Roll) (Special Media / Plain Paper / A1, 24” & 22”)	0.04mm/s	40	40	0 to 80
161	Switch Timing to Fuser Motor 1st Speed (Roll) (Special Media / Plain Paper / A1, 24” & 22”)	0.5 seconds	0	0	0 to 300
162	Fuser Motor 2nd Speed (Roll) (Special Media / Plain Paper / A1, 24” & 22”)	0.04mm/s	40	40	0 to 80
163	Switch Timing to Fuser Motor 2nd Speed (Roll) (Special Media / Plain Paper / A1, 24” & 22”)	0.5 seconds	0	0	0 to 300
164	Fuser Motor 3rd Speed (Roll) (Special Media / Plain Paper / A1, 24” & 22”)	0.04mm/s	40	40	0 to 80
165	Switch Timing to Fuser Motor 3rd Speed (Roll) (Special Media / Plain Paper / A1, 24” & 22”)	0.5 seconds	0	0	0 to 300
166	Fuser Motor 1st Speed (Roll) (Special Media / Tracing / A1, 24” & 22”)	0.04mm/s	40	40	0 to 80
167	Switch Timing to Fuser Motor 1st Speed (Roll) (Special Media / Tracing / A1, 24” & 22”)	0.5 seconds	0	0	0 to 300
168	Fuser Motor 2nd Speed (Roll) (Special Media / Tracing / A1, 24” & 22”)	0.04mm/s	40	40	0 to 80
169	Switch Timing to Fuser Motor 2nd Speed (Roll) (Special Media / Tracing / A1, 24” & 22”)	0.5 seconds	0	0	0 to 300
170	Fuser Motor 3rd Speed (Roll) (Special Media / Tracing / A1, 24” & 22”)	0.04mm/s	40	40	0 to 80
171	Switch Timing to Fuser Motor 3rd Speed (Roll) (Special Media / Tracing / A1, 24” & 22”)	0.5 seconds	0	0	0 to 300
172	Fuser Motor 1st Speed (Roll) (Special Media / Film / A1, 24” & 22”)	0.04mm/s	40	40	0 to 80
173	Switch Timing to Fuser Motor 1st Speed (Roll) (Special Media / Film / A1, 24” & 22”)	0.5 seconds	0	0	0 to 300
174	Fuser Motor 2nd Speed (Roll) (Special Media / Film / A1, 24” & 22”)	0.04mm/s	40	40	0 to 80
175	Switch Timing to Fuser Motor 2nd Speed (Roll) (Special Media / Film / A1, 24” & 22”)	0.5 seconds	0	0	0 to 300
176	Fuser Motor 3rd Speed (Roll) (Special Media / Film / A1, 24” & 22”)	0.04mm/s	40	40	0 to 80
177	Switch Timing to Fuser Motor 3rd Speed (Roll) (Special Media / Film / A1, 24” & 22”)	0.5 seconds	0	0	0 to 300
178	Fuser Motor 1st Speed (Roll) (Plain Paper / A0, 36” & 34”)	0.04mm/s	26	26	0 to 80
179	Switch Timing to Fuser Motor 1st Speed (Roll) (Plain Paper / A0, 36” & 34”)	0.5 seconds	4	3	0 to 300
180	Fuser Motor 2nd Speed (Roll) (Plain Paper / A0, 36” & 34”)	0.04mm/s	27	27	0 to 80
181	Switch Timing to Fuser Motor 2nd Speed (Roll) (Plain Paper / A0, 36” & 34”)	0.5 seconds	10	10	0 to 300
182	Fuser Motor 3rd Speed (Roll) (Plain Paper / A0, 36” & 34”)	0.04mm/s	33	37	0 to 80
183	Switch Timing to Fuser Motor 3rd Speed (Roll) (Plain Paper / A0, 36” & 34”)	0.5 seconds	8	8	0 to 300

NOTE: All items grayed are not generally for field technician use

Item No.	Setting Item	Unit	Default Value		Setting range
			USA	EUR / AS	
184	Fuser Motor 1st Speed (Roll) (Tracing / A0, 36” & 34”)	0.04mm/s	29	42	0 to 80
185	Switch Timing to Fuser Motor 1st Speed (Roll) (Tracing / A0, 36” & 34”)	0.5 seconds	3	3	0 to 300
186	Fuser Motor 2nd Speed (Roll) (Tracing / A0, 36” & 34”)	0.04mm/s	35	38	0 to 80
187	Switch Timing to Fuser Motor 2nd Speed (Roll) (Tracing / A0, 36” & 34”)	0.5 seconds	13	13	0 to 300
188	Fuser Motor 3rd Speed (Roll) (Tracing / A0, 36” & 34”)	0.04mm/s	36	39	0 to 80
189	Switch Timing to Fuser Motor 3rd Speed (Roll) (Tracing / A0, 36” & 34”)	0.5 seconds	8	8	0 to 300
190	Fuser Motor 1st Speed (Roll) (Film / A0, 36” & 34”)	0.04mm/s	35	38	0 to 80
191	Switch Timing to Fuser Motor 1st Speed (Roll) (Film / A0, 36” & 34”)	0.5 seconds	2	2	0 to 300
192	Fuser Motor 2nd Speed (Roll) (Film / A0, 36” & 34”)	0.04mm/s	40	43	0 to 80
193	Switch Timing to Fuser Motor 2nd Speed (Roll) (Film / A0, 36” & 34”)	0.5 seconds	18	18	0 to 300
194	Fuser Motor 3rd Speed (Roll) (Film / A0, 36” & 34”)	0.04mm/s	40	40	0 to 80
195	Switch Timing to Fuser Motor 3rd Speed (Roll) (Film / A0, 36” & 34”)	0.5 seconds	0	0	0 to 300
196	Fuser Motor 1st Speed (Roll) (Special Media / Plain Paper / A0, 36” & 34”)	0.04mm/s	40	40	0 to 80
197	Switch Timing to Fuser Motor 1st Speed (Roll) (Special Media / Plain Paper / A0, 36” & 34”)	0.5 seconds	0	0	0 to 300
198	Fuser Motor 2nd Speed (Roll) (Special Media / Plain Paper / A0, 36” & 34”)	0.04mm/s	40	40	0 to 80
199	Switch Timing to Fuser Motor 2nd Speed (Roll) (Special Media / Plain Paper / A0, 36” & 34”)	0.5 seconds	0	0	0 to 300
200	Fuser Motor 3rd Speed (Roll) (Special Media / Plain Paper / A0, 36” & 34”)	0.04mm/s	40	40	0 to 80
201	Switch Timing to Fuser Motor 3rd Speed (Roll) (Special Media / Plain Paper / A0, 36” & 34”)	0.5 seconds	0	0	0 to 300
202	Fuser Motor 1st Speed (Roll) (Special Media / Tracing / A0, 36” & 34”)	0.04mm/s	40	40	0 to 80
203	Switch Timing to Fuser Motor 1st Speed (Roll) (Special Media / Tracing / A0, 36” & 34”)	0.5 seconds	0	0	0 to 300
204	Fuser Motor 2nd Speed (Roll) (Special Media / Tracing / A0, 36” & 34”)	0.04mm/s	40	40	0 to 80
205	Switch Timing to Fuser Motor 2nd Speed (Roll) (Special Media / Tracing / A0, 36” & 34”)	0.5 seconds	0	0	0 to 300
206	Fuser Motor 3rd Speed (Roll) (Special Media / Tracing / A0, 36” & 34”)	0.04mm/s	40	40	0 to 80
207	Switch Timing to Fuser Motor 3rd Speed (Roll) (Special Media / Tracing / A0, 36” & 34”)	0.5 seconds	0	0	0 to 300
208	Fuser Motor 1st Speed (Roll) (Special Media / Film / A0, 36” & 34”)	0.04mm/s	40	40	0 to 80
209	Switch Timing to Fuser Motor 1st Speed (Roll) (Special Media / Film / A0, 36” & 34”)	0.5 seconds	0	0	0 to 300
210	Fuser Motor 2nd Speed (Roll) (Special Media / Film / A0, 36” & 34”)	0.04mm/s	40	40	0 to 80
211	Switch Timing to Fuser Motor 2nd Speed (Roll) (Special Media / Film / A0, 36” & 34”)	0.5 seconds	0	0	0 to 300
212	Fuser Motor 3rd Speed (Roll) (Special Media / Film / A0, 36” & 34”)	0.04mm/s	40	40	0 to 80
213	Switch Timing to Fuser Motor 3rd Speed (Roll) (Special Media / Film / A0, 36” & 34”)	0.5 seconds	0	0	0 to 300
214 to 309	Reserved	-			

NOTE: All items grayed are not generally for field technician use

Item No.	Setting Item	Unit	Default Value		Setting range
			USA	EUR / AS	
310	Main Motor Speed (Plain paper)	-	36	36	0 to 80
311	Main Motor Speed (Tracing paper)	-	40	40	0 to 80
312	Main Motor Speed (Film)	-	40	40	0 to 80
313	Main Motor Speed (Special plain paper)	-	40	40	0 to 80
314	Main Motor Speed (Special tracing paper)	-	40	40	0 to 80
315	Main Motor Speed (Special film)	-	40	40	0 to 80
316	Fuser Motor Speed (36” / 34” / 30” / 24” / 22” / A0 / B1 / A1) (Plain)	-	31	35	0 to 80
317	Fuser Motor Speed (36” / 34” / 30” / 24” / 22” / A0 / B1 / A1) (Tracing)	-	39	50	0 to 80
318	Fuser Motor Speed (36” / 34” / 30” / 24” / 22” / A0 / B1 / A1) (Film)	-	50	50	0 to 80
319	Fuser Motor Speed (36” / 34” / 30” / 24” / 22” / A0 / B1 / A1) (Special / Plain)	-	40	40	0 to 80
320	Fuser Motor Speed (36” / 34” / 30” / 24” / 22” / A0 / B1 / A1) (Special / Tracing)	-	40	40	0 to 80
321	Fuser Motor Speed (36” / 34” / 30” / 24” / 22” / A0 / B1 / A1) (Special / Film)	-	40	40	0 to 80
322	Separation Corona OFF Timing (Plain paper)	1mm	25	25	0 to 100
323	Separation Corona OFF Timing (tracing paper)	1mm	25	25	0 to 100
324	Separation Corona OFF Timing (Film)	1mm	22	25	0 to 100
325	Separation Corona OFF Timing (Special plain paper)	1mm	18	18	0 to 100
326	Separation Corona OFF Timing (Special tracing paper)	1mm	18	18	0 to 100
327	Separation Corona OFF Timing (Special film)	1mm	23	23	0 to 100
328	Fuser Motor 1st Speed (Cut sheet) (Plain Paper / A3, A2, 12”, 11”, 18” & 17”)	0.04mm/s	30	31	0 to 80
329	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Plain Paper / A3, A2, 12”, 11”, 18” & 17”)	0.5 seconds	3	3	0 to 300
330	Fuser Motor 2nd Speed (Cut sheet) (Plain Paper / A3, A2, 12”, 11”, 18” & 17”)	0.04mm/s	32	36	0 to 80
331	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Plain Paper / A3, A2, 12”, 11”, 18” & 17”)	0.5 seconds	4	4	0 to 300
332	Fuser Motor 3rd Speed (Cut sheet) (Plain Paper / A3, A2, 12”, 11”, 18” & 17”)	0.04mm/s	31	38	0 to 80
333	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Plain Paper / A3, A2, 12”, 11”, 18” & 17”)	0.5 seconds	6	6	0 to 300
334	Fuser Motor 1st Speed (Roll) (Tracing / A3, 12” & 11”)	0.04mm/s	33	40	0 to 80
335	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Tracing / A3, A2, 12”, 11”, 18” & 17”)	0.5 seconds	2	1	0 to 300
336	Fuser Motor 2nd Speed (Cut sheet) (Tracing / A3, A2, 12”, 11”, 18” & 17”)	0.04mm/s	38	44	0 to 80
337	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Tracing / A3, A2, 12”, 11”, 18” & 17”)	0.5 seconds	3	5	0 to 300
338	Fuser Motor 3rd Speed (Cut sheet) (Tracing / A3, A2, 12”, 11”, 18” & 17”)	0.04mm/s	38	45	0 to 80
339	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Tracing / A3, A2, 12”, 11”, 18” & 17”)	0.5 seconds	5	2	0 to 300
340	Fuser Motor 1st Speed (Cut sheet) (Film / A3, A2, 12”, 11”, 18” & 17”)	0.04mm/s	50	50	0 to 80
341	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Film / A3, A2, 12”, 11”, 18” & 17”)	0.5 seconds	2	6	0 to 300
342	Fuser Motor 2nd Speed (Cut sheet) (Film / A3, A2, 12”, 11”, 18” & 17”)	0.04mm/s	50	40	0 to 80
343	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Film / A3, A2, 12”, 11”, 18” & 17”)	0.5 seconds	6	0	0 to 300
344	Fuser Motor 3rd Speed (Cut sheet) (Film / A3, A2, 12”, 11”, 18” & 17”)	0.04mm/s	40	40	0 to 80
345	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Film / A3, A2, 12”, 11”, 18” & 17”)	0.5 seconds	0	0	0 to 300
346	Fuser Motor 1st Speed (Cut sheet) (Special Media / Plain Paper / A3, A2, 12”, 11”, 18” & 17”)	0.04mm/s	40	40	0 to 80
347	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Special Media / Plain Paper / A3, A2, 12”, 11”, 18” & 17”)	0.5 seconds	0	0	0 to 300
348	Fuser Motor 2nd Speed (Cut sheet) (Special Media / Plain Paper / A3, A2, 12”, 11”, 18” & 17”)	0.04mm/s	40	40	0 to 80
349	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Special Media / Plain Paper / A3, A2, 12”, 11”, 18” & 17”)	0.5 seconds	0	0	0 to 300
350	Fuser Motor 3rd Speed (Cut sheet) (Special Media / Plain Paper / A3, A2, 12”, 11”, 18” & 17”)	0.04mm/s	40	40	0 to 80
351	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Special Media / Plain Paper / A3, A2, 12”, 11”, 18” & 17”)	0.5 seconds	0	0	0 to 300

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Item No.	Setting Item	Unit	Default Value		Setting range
			USA	EUR / AS	
352	Fuser Motor 1st Speed (Cut sheet) (Special Media / Tracing / A3, A2, 12”, 11”, 18” & 17”)	0.04mm/s	40	40	0 to 80
353	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Special Media / Tracing / A3, A2, 12”, 11”, 18” & 17”)	0.5 seconds	0	0	0 to 300
354	Fuser Motor 2nd Speed (Cut sheet) (Special Media / Tracing / A3, A2, 12”, 11”, 18” & 17”)	0.04mm/s	40	40	0 to 80
355	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Special Media / Tracing / A3, A2, 12”, 11”, 18” & 17”)	0.5 seconds	0	0	0 to 300
356	Fuser Motor 3rd Speed (Cut sheet) (Special Media / Tracing / A3, A2, 12”, 11”, 18” & 17”)	0.04mm/s	40	40	0 to 80
357	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Special Media / Tracing / A3, A2, 12”, 11”, 18” & 17”)	0.5 seconds	0	0	0 to 300
358	Fuser Motor 1st Speed (Cut sheet) (Special Media / Film / A3, A2, 12”, 11”, 18” & 17”)	0.04mm/s	40	40	0 to 80
359	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Special Media / Film / A3, A2, 12”, 11”, 18” & 17”)	0.5 seconds	0	0	0 to 300
360	Fuser Motor 2nd Speed (Cut sheet) (Special Media / Film / A3, A2, 12”, 11”, 18” & 17”)	0.04mm/s	40	40	0 to 80
361	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Special Media / Film / A3, A2, 12”, 11”, 18” & 17”)	0.5 seconds	0	0	0 to 300
362	Fuser Motor 3rd Speed (Cut sheet) (Special Media / Film / A3, A2, 12”, 11”, 18” & 17”)	0.04mm/s	40	40	0 to 80
363	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Special Media / Film / A3, A2, 12”, 11”, 18” & 17”)	0.5 seconds	0	0	0 to 300
364	Fuser Motor 1st Speed (Cut sheet) (Plain Paper / A1, 24” & 22”)	0.04mm/s	37	35	0 to 80
365	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Plain Paper / A1, 24” & 22”)	0.5 seconds	3	3	0 to 300
366	Fuser Motor 2nd Speed (Cut sheet) (Plain Paper / A1, 24” & 22”)	0.04mm/s	30	33	0 to 80
367	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Plain Paper / A1, 24” & 22”)	0.5 seconds	6	8	0 to 300
368	Fuser Motor 3rd Speed (Cut sheet) (Plain Paper / A1, 24” & 22”)	0.04mm/s	40	41	0 to 80
369	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Plain Paper / A1, 24” & 22”)	0.5 seconds	6	8	0 to 300
370	Fuser Motor 1st Speed (Cut sheet) (Tracing / A1, 24” & 22”)	0.04mm/s	36	42	0 to 80
371	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Tracing / A1, 24” & 22”)	0.5 seconds	3	3	0 to 300
372	Fuser Motor 2nd Speed (Cut sheet) (Tracing / A1, 24” & 22”)	0.04mm/s	41	43	0 to 80
373	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Tracing / A1, 24” & 22”)	0.5 seconds	9	9	0 to 300
374	Fuser Motor 3rd Speed (Cut sheet) (Tracing / A1, 24” & 22”)	0.04mm/s	39	40	0 to 80
375	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Tracing / A1, 24” & 22”)	0.5 seconds	8	8	0 to 300
376	Fuser Motor 1st Speed (Cut sheet) (Film / A1, 24” & 22”)	0.04mm/s	42	42	0 to 80
377	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Film / A1, 24” & 22”)	0.5 seconds	2	2	0 to 300
378	Fuser Motor 2nd Speed (Cut sheet) (Film / A1, 24” & 22”)	0.04mm/s	42	42	0 to 80
379	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Film / A1, 24” & 22”)	0.5 seconds	14	14	0 to 300
380	Fuser Motor 3rd Speed (Cut sheet) (Film / A1, 24” & 22”)	0.04mm/s	40	40	0 to 80
381	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Film / A1, 24” & 22”)	0.5 seconds	0	0	0 to 300
382	Fuser Motor 1st Speed (Cut sheet) (Special Media / Plain Paper / A1, 24” & 22”)	0.04mm/s	40	40	0 to 80
383	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Special Media / Plain Paper / A1, 24” & 22”)	0.5 seconds	0	0	0 to 300
384	Fuser Motor 2nd Speed (Cut sheet) (Special Media / Plain Paper / A1, 24” & 22”)	0.04mm/s	40	40	0 to 80
385	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Special Media / Plain Paper / A1, 24” & 22”)	0.5 seconds	0	0	0 to 300

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Item No.	Setting Item	Unit	Default Value		Setting range
			USA	EUR / AS	
386	Fuser Motor 3rd Speed (Cut sheet) (Special Media / Plain Paper / A1, 24” & 22”)	0.04mm/s	40	40	0 to 80
387	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Special Media / Plain Paper / A1, 24” & 22”)	0.5 seconds	0	0	0 to 300
388	Fuser Motor 1st Speed (Cut sheet) (Special Media / Tracing / A1, 24” & 22”)	0.04mm/s	40	40	0 to 80
389	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Special Media / Tracing / A1, 24” & 22”)	0.5 seconds	0	0	0 to 300
390	Fuser Motor 2nd Speed (Cut sheet) (Special Media / Tracing / A1, 24” & 22”)	0.04mm/s	40	40	0 to 80
391	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Special Media / Tracing / A1, 24” & 22”)	0.5 seconds	0	0	0 to 300
392	Fuser Motor 3rd Speed (Cut sheet) (Special Media / Tracing / A1, 24” & 22”)	0.04mm/s	40	40	0 to 80
393	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Special Media / Tracing / A1, 24” & 22”)	0.5 seconds	0	0	0 to 300
394	Fuser Motor 1st Speed (Cut sheet) (Special Media / Film / A1, 24” & 22”)	0.04mm/s	40	40	0 to 80
395	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Special Media / Film / A1, 24” & 22”)	0.5 seconds	0	0	0 to 300
396	Fuser Motor 2nd Speed (Cut sheet) (Special Media / Film / A1, 24” & 22”)	0.04mm/s	40	40	0 to 80
397	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Special Media / Film / A1, 24” & 22”)	0.5 seconds	0	0	0 to 300
398	Fuser Motor 3rd Speed (Cut sheet) (Special Media / Film / A1, 24” & 22”)	0.04mm/s	40	40	0 to 80
399	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Special Media / Film / A1, 24” & 22”)	0.5 seconds	0	0	0 to 300
400	Fuser Motor 1st Speed (Cut sheet) (Plain Paper / A0, 36” & 34”)	0.04mm/s	26	26	0 to 80
401	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Plain Paper / A0, 36” & 34”)	0.5 seconds	4	3	0 to 300
402	Fuser Motor 2nd Speed (Cut sheet) (Plain Paper / A0, 36” & 34”)	0.04mm/s	27	27	0 to 80
403	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Plain Paper / A0, 36” & 34”)	0.5 seconds	10	10	0 to 300
404	Fuser Motor 3rd Speed (Cut sheet) (Plain Paper / A0, 36” & 34”)	0.04mm/s	33	37	0 to 80
405	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Plain Paper / A0, 36” & 34”)	0.5 seconds	8	8	0 to 300
406	Fuser Motor 1st Speed (Cut sheet) (Tracing / A0, 36” & 34”)	0.04mm/s	29	42	0 to 80
407	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Tracing / A0, 36” & 34”)	0.5 seconds	3	3	0 to 300
408	Fuser Motor 2nd Speed (Cut sheet) (Tracing / A0, 36” & 34”)	0.04mm/s	35	38	0 to 80
409	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Tracing / A0, 36” & 34”)	0.5 seconds	13	13	0 to 300
410	Fuser Motor 3rd Speed (Cut sheet) (Tracing / A0, 36” & 34”)	0.04mm/s	36	39	0 to 80
411	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Tracing / A0, 36” & 34”)	0.5 seconds	8	8	0 to 300
412	Fuser Motor 1st Speed (Cut sheet) (Film / A0, 36” & 34”)	0.04mm/s	35	38	0 to 80
413	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Film / A0, 36” & 34”)	0.5 seconds	2	2	0 to 300
414	Fuser Motor 2nd Speed (Cut sheet) (Film / A0, 36” & 34”)	0.04mm/s	42	43	0 to 80
415	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Film / A0, 36” & 34”)	0.5 seconds	18	18	0 to 300
416	Fuser Motor 3rd Speed (Cut sheet) (Film / A0, 36” & 34”)	0.04mm/s	40	40	0 to 80
417	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Film / A0, 36” & 34”)	0.5 seconds	0	0	0 to 300
418	Fuser Motor 1st Speed (Cut sheet) (Special Media / Plain Paper / A0, 36” & 34”)	0.04mm/s	40	40	0 to 80

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Item No.	Setting Item	Unit	Default Value		Setting range
			USA	EUR / AS	
419	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Special Media / Plain Paper / A0, 36” & 34”)	0.5 seconds	0	0	0 to 300
420	Fuser Motor 2nd Speed (Cut sheet) (Special Media / Plain Paper / A0, 36” & 34”)	0.04mm/s	40	40	0 to 80
421	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Special Media / Plain Paper / A0, 36” & 34”)	0.5 seconds	0	0	0 to 300
422	Fuser Motor 3rd Speed (Cut sheet) (Special Media / Plain Paper / A0, 36” & 34”)	0.04mm/s	40	40	0 to 80
423	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Special Media / Plain Paper / A0, 36” & 34”)	0.5 seconds	0	0	0 to 300
424	Fuser Motor 1st Speed (Cut sheet) (Special Media / Tracing / A0, 36” & 34”)	0.04mm/s	40	40	0 to 80
425	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Special Media / Tracing / A0, 36” & 34”)	0.5 seconds	0	0	0 to 300
426	Fuser Motor 2nd Speed (Cut sheet) (Special Media / Tracing / A0, 36” & 34”)	0.04mm/s	40	40	0 to 80
427	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Special Media / Tracing / A0, 36” & 34”)	0.5 seconds	0	0	0 to 300
428	Fuser Motor 3rd Speed (Cut sheet) (Special Media / Tracing / A0, 36” & 34”)	0.04mm/s	40	40	0 to 80
429	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Special Media / Tracing / A0, 36” & 34”)	0.5 seconds	0	0	0 to 300
430	Fuser Motor 1st Speed (Cut sheet) (Special Media / Film / A0, 36” & 34”)	0.04mm/s	40	40	0 to 80
431	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Special Media / Film / A0, 36” & 34”)	0.5 seconds	0	0	0 to 300
432	Fuser Motor 2nd Speed (Cut sheet) (Special Media / Film / A0, 36” & 34”)	0.04mm/s	40	40	0 to 80
433	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Special Media / Film / A0, 36” & 34”)	0.5 seconds	0	0	0 to 300
434	Fuser Motor 3rd Speed (Cut sheet) (Special Media / Film / A0, 36” & 34”)	0.04mm/s	40	40	0 to 80
435	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Special Media / Film / A0, 36” & 34”)	0.5 seconds	0	0	0 to 300
436	Fuser Motor 1st Speed (Roll) (Plain Paper / 30”)	0.04mm/s	28	28	0 to 80
437	Switch Timing to Fuser Motor 1st Speed (Roll) (Plain Paper / 30”)	0.5 seconds	5	5	0 to 300
438	Fuser Motor 2nd Speed (Roll) (Plain Paper / 30”)	0.04mm/s	30	33	0 to 80
439	Switch Timing to Fuser Motor 2nd Speed (Roll) (Plain Paper / 30”)	0.5 seconds	9	9	0 to 300
440	Fuser Motor 3rd Speed (Roll) (Plain Paper / 30”)	0.04mm/s	34	36	0 to 80
441	Switch Timing to Fuser Motor 3rd Speed (Roll) (Plain Paper / 30”)	0.5 seconds	7	7	0 to 300
442	Fuser Motor 1st Speed (Roll) (Tracing / 30”)	0.04mm/s	34	33	0 to 80
443	Switch Timing to Fuser Motor 1st Speed (Roll) (Tracing / 30”)	0.5 seconds	4	4	0 to 300
444	Fuser Motor 2nd Speed (Roll) (Tracing / 30”)	0.04mm/s	38	44	0 to 80
445	Switch Timing to Fuser Motor 2nd Speed (Roll) (Tracing / 30”)	0.5 seconds	11	11	0 to 300
446	Fuser Motor 3rd Speed (Roll) (Tracing / 30”)	0.04mm/s	40	41	0 to 80
447	Switch Timing to Fuser Motor 3rd Speed (Roll) (Tracing / 30”)	0.5 seconds	8	8	0 to 300
448	Fuser Motor 1st Speed (Roll) (Film / 30”)	0.04mm/s	40	40	0 to 80
449	Switch Timing to Fuser Motor 1st Speed (Roll) (Film / 30”)	0.5 seconds	0	0	0 to 300
450	Fuser Motor 2nd Speed (Roll) (Film / 30”)	0.04mm/s	40	40	0 to 80
451	Switch Timing to Fuser Motor 2nd Speed (Roll) (Film / 30”)	0.5 seconds	0	0	0 to 300

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Item No.	Setting Item	Unit	Default Value		Setting range
			USA	EUR / AS	
452	Fuser Motor 3rd Speed (Roll) (Film / 30”)	0.04mm/s	40	40	0 to 80
453	Switch Timing to Fuser Motor 3rd Speed (Roll) (Film / 30”)	0.5 seconds	0	0	0 to 300
454	Fuser Motor 1st Speed (Roll) (Special Media / Plain Paper / 30”)	0.04mm/s	40	40	0 to 80
455	Switch Timing to Fuser Motor 1st Speed (Roll) (Special Media / Plain Paper / 30”)	0.5 seconds	0	0	0 to 300
456	Fuser Motor 2nd Speed (Roll) (Special Media / Plain Paper / 30”)	0.04mm/s	40	40	0 to 80
457	Switch Timing to Fuser Motor 2nd Speed (Roll) (Special Media / Plain Paper / 30”)	0.5 seconds	0	0	0 to 300
458	Fuser Motor 3rd Speed (Roll) (Special Media / Plain Paper / 30”)	0.04mm/s	40	40	0 to 80
459	Switch Timing to Fuser Motor 3rd Speed (Roll) (Special Media / Plain Paper / 30”)	0.5 seconds	0	0	0 to 300
460	Fuser Motor 1st Speed (Roll) (Special Media / Tracing / 30”)	0.04mm/s	40	40	0 to 80
461	Switch Timing to Fuser Motor 1st Speed (Roll) (Special Media / Tracing / 30”)	0.5 seconds	0	0	0 to 300
462	Fuser Motor 2nd Speed (Roll) (Special Media / Tracing / 30”)	0.04mm/s	40	40	0 to 80
463	Switch Timing to Fuser Motor 2nd Speed (Roll) (Special Media / Tracing / 30”)	0.5 seconds	0	0	0 to 300
464	Fuser Motor 3rd Speed (Roll) (Special Media / Tracing / 30”)	0.04mm/s	40	40	0 to 80
465	Switch Timing to Fuser Motor 3rd Speed (Roll) (Special Media / Tracing / 30”)	0.5 seconds	0	0	0 to 300
466	Fuser Motor 1st Speed (Roll) (Special Media / Film / 30”)	0.04mm/s	40	40	0 to 80
467	Switch Timing to Fuser Motor 1st Speed (Roll) (Special Media / Film / 30”)	0.5 seconds	0	0	0 to 300
468	Fuser Motor 2nd Speed (Roll) (Special Media / Film / 30”)	0.04mm/s	40	40	0 to 80
469	Switch Timing to Fuser Motor 2nd Speed (Roll) (Special Media / Film / 30”)	0.5 seconds	0	0	0 to 300
470	Fuser Motor 3rd Speed (Roll) (Special Media / Film / 30”)	0.04mm/s	40	40	0 to 80
471	Switch Timing to Fuser Motor 3rd Speed (Roll) (Special Media / Film / 30”)	0.5 seconds	0	0	0 to 300
472	Fuser Motor 1st Speed (Cut sheet) (Plain Paper / 30”)	0.04mm/s	28	28	0 to 80
473	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Plain Paper / 30”)	0.5 seconds	5	5	0 to 300
474	Fuser Motor 2nd Speed (Cut sheet) (Plain Paper / 30”)	0.04mm/s	30	33	0 to 80
475	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Plain Paper / 30”)	0.5 seconds	9	9	0 to 300
476	Fuser Motor 3rd Speed (Cut sheet) (Plain Paper / 30”)	0.04mm/s	34	36	0 to 80
477	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Plain Paper / 30”)	0.5 seconds	7	7	0 to 300
478	Fuser Motor 1st Speed (Cut sheet) (Tracing / 30”)	0.04mm/s	34	33	0 to 80
479	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Tracing / 30”)	0.5 seconds	4	4	0 to 300
480	Fuser Motor 2nd Speed (Cut sheet) (Tracing / 30”)	0.04mm/s	38	44	0 to 80
481	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Tracing / 30”)	0.5 seconds	11	11	0 to 300
482	Fuser Motor 3rd Speed (Cut sheet) (Tracing / 30”)	0.04mm/s	40	41	0 to 80
483	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Tracing / 30”)	0.5 seconds	8	8	0 to 300
484	Fuser Motor 1st Speed (Cut sheet) (Film / 30”)	0.04mm/s	40	40	0 to 80
485	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Roll / 30”)	0.5 seconds	0	0	0 to 300

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Item No.	Setting Item	Unit	Default Value		Setting range
			USA	EUR / AS	
486	Fuser Motor 2nd Speed (Roll) (Cut sheet) (Film / 30”)	0.04mm/s	40	40	0 to 80
487	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Film / 30”)	0.5 seconds	0	0	0 to 300
488	Fuser Motor 3rd Speed (Cut sheet) (Film / 30”)	0.04mm/s	40	40	0 to 80
489	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Film / 30”)	0.5 seconds	0	0	0 to 300
490	Fuser Motor 1st Speed (Cut sheet) (Special Media / Plain Paper / 30”)	0.04mm/s	40	40	0 to 80
491	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Special Media / Plain Paper / 30”)	0.5 seconds	0	0	0 to 300
492	Fuser Motor 2nd Speed (Cut sheet) (Special Media / Plain Paper / 30”)	0.04mm/s	40	40	0 to 80
493	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Special Media / Plain Paper / 30”)	0.5 seconds	0	0	0 to 300
494	Fuser Motor 3rd Speed (Cut sheet) (Special Media / Plain Paper / 30”)	0.04mm/s	40	40	0 to 80
495	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Special Media / Plain Paper / 30”)	0.5 seconds	0	0	0 to 300
496	Fuser Motor 1st Speed (Cut sheet) (Special Media / Tracing / 30”)	0.04mm/s	40	40	0 to 80
497	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Special Media / Tracing / 30”)	0.5 seconds	0	0	0 to 300
498	Fuser Motor 2nd Speed (Cut sheet) (Special Media / Tracing / 30”)	0.04mm/s	40	40	0 to 80
499	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Special Media / Tracing / 30”)	0.5 seconds	0	0	0 to 300
500	Fuser Motor 3rd Speed (Cut sheet) (Special Media / Tracing / 30”)	0.04mm/s	40	40	0 to 80
501	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Special Media / Tracing / 30”)	0.5 seconds	0	0	0 to 300
502	Fuser Motor 1st Speed (Cut sheet) (Special Media / Film / 30”)	0.04mm/s	40	40	0 to 80
503	Switch Timing to Fuser Motor 1st Speed (Cut sheet) (Special Media / Film / 30”)	0.5 seconds	0	0	0 to 300
504	Fuser Motor 2nd Speed (Cut sheet) (Special Media / Film / 30”)	0.04mm/s	40	40	0 to 80
505	Switch Timing to Fuser Motor 2nd Speed (Cut sheet) (Special Media / Film / 30”)	0.5 seconds	0	0	0 to 300
506	Fuser Motor 3rd Speed (Cut sheet) (Special Media / Film / 30”)	0.04mm/s	40	40	0 to 80
507	Switch Timing to Fuser Motor 3rd Speed (Cut sheet) (Special Media / Film / 30”)	0.5 seconds	0	0	0 to 300
508	Transfer Voltage applied at 100mm from trailing edge (Plain paper)	-	4ff	4ff	9fe
509	Transfer Voltage applied at 100mm from trailing edge (Tracing paper)	-	4ff	4ff	9fe
510	Transfer Voltage applied at 100mm from trailing edge (Film)	-	4ff	4ff	9fe
511	Transfer Voltage applied at 70mm from trailing edge (Plain paper)	-	62f	62f	9fe
512	Transfer Voltage applied at 70mm from trailing edge (Tracing paper)	-	69f	69f	9fe
513	Transfer Voltage applied at 70mm from trailing edge (Film)	-	4ff	4ff	9fe
514	Fuser Motor Speed applied at 30mm from trailing edge (Plain paper)	-	13	17	0 to 80
515	Fuser Motor Speed applied at 30mm from trailing edge (Tracing paper)	-	19	19	0 to 80
516	Fuser Motor Speed applied at 30mm from trailing edge (Film)	-	0	0	0 to 80
517 to 612	Reserved				

NOTE: All items grayed are not generally for field technician use

Item No.	Setting Item	Unit	Default Value		Setting range
			USA	EUR / AS	
613	Judgement Value for Additional Cut Length for Non-standard Size Prints (36"/ 34"/ 30"/ A0 / B1)	1mm	1	1	1 to 20
614	Judgement Value for Additional Cut Length for Non-standard Size Prints (24"/ 20"/ A1)	1mm	1	1	1 to 20
615	Judgement Value for Additional Cut Length for Non-standard Size Prints (18"/ 17"/ 15"/ A2)	1mm	1	1	1 to 20
616	Judgement Value for Additional Cut Length for Non-standard Size Prints (12"/ 11"/ A3)	1mm	1	1	1 to 20
617	Additional Cut Length for Non-standard Size Prints (36"/ 34"/ 30"/ A0 / B1)	1mm	0	0	0 to 35
618	Additional Cut Length for Non-standard Size Prints (24"/ 22"/ A2)	1mm	0	0	0 to 35
619	Additional Cut Length for Non-standard Size Prints (18"/ 17"/ 15"/ A2)	1mm	0	0	0 to 35
620	Additional Cut Length for Non-standard Size Prints (12"/ 11"/ A3)	1mm	0	0	0 to 35
621	Toner Supply Roller Bias		286	286	0 to 800
622	Regulation Bias		270	270	0 to 800
623	Density Sensor Standard Output		0	0	0 to 614
624	Density Sensor Analog Voltage		0	0	0 to 614
625	Print - Fuser Temperature Side (Plain) (12" / 11" / A3)	1°C	160	145	120 to 180
626	Print - Fuser Temperature Side (Tracing) (12" / 11" / A3)	1°C	160	150	120 to 180
627	Print - Fuser Temperature Side (Film) (12" / 11" / A3)	1°C	177	170	120 to 180
628	Print - Fuser Temperature Side (Special / Plain) (12" / 11" / A3)	1°C	160	160	120 to 180
629	Print - Fuser Temperature Side (Special / Tracing) (12" / 11" / A3)	1°C	160	160	120 to 180
630	Print - Fuser Temperature Side (Special media / Film) (12" / 11" / A3)	1°C	177	170	120 to 180
631	Print - Fuser Temperature Side (Plain) (18" / 17" / 15" / A2)	1°C	160	165	120 to 180
632	Print - Fuser Temperature Side (Tracing) (18" / 17" / 15" / A2)	1°C	160	170	120 to 180
633	Print - Fuser Temperature Side (Film) (18" / 17" / 15" / A2)	1°C	177	170	120 to 180
634	Print - Fuser Temperature Side (Special / Plain) (18" / 17" / 15" / A2)	1°C	160	160	120 to 180
635	Print - Fuser Temperature Side (Special / Tracing) (18" / 17" / 15" / A2)	1°C	160	160	120 to 180
636	Print - Fuser Temperature Side (Special / Film) (18" / 17" / 15" / A2)	1°C	177	170	120 to 180
637	Print - Fuser Temperature Side (Plain) (24" / 22" / A1)	1°C	160	165	120 to 180
638	Print - Fuser Temperature Side (Tracing) (24" / 22" / A1)	1°C	160	170	120 to 180
639	Print - Fuser Temperature Side (Film) (24" / 22" / A1)	1°C	177	170	120 to 180
640	Print - Fuser Temperature Side (Special / Plain) (24" / 22" / A1)	1°C	160	160	120 to 180
641	Print - Fuser Temperature Side (Special / Tracing) (24" / 22" / A1)	1°C	160	160	120 to 180
642	Print - Fuser Temperature Side (Specia / Film) (24" / 22" / A1)	1°C	177	170	120 to 180
643	Print - Fuser Temperature Side (Plain) (36" / 34" / 30" / A0 / B1)	1°C	160	165	120 to 180
644	Print - Fuser Temperature Side (Tracing) (36" / 34" / 30" / A0 / B1)	1°C	160	170	120 to 180
645	Print - Fuser Temperature Side (Film) (36" / 34" / 30" / A0 / B1)	1°C	177	170	120 to 180
646	Print - Fuser Temperature Side (Special / Plain) (36" / 34" / 30" / A0 / B1)	1°C	160	160	120 to 180
647	Print - Fuser Temperature Side (Special / Tracing) (36" / 34" / 30" / A0 / B1)	1°C	160	160	120 to 180
648	Print - Fuser Temperature Side (Special / Film) (36" / 34" / 30" / A0 / B1)	1°C	177	177	120 to 180
649	Density Sensor Output Monitor		1	1	0 to 4

NOTE: All items grayed are not generally for field technician use

Item No.	Setting Item	Unit	Default Value		Setting range
			USA	EUR / AS	
650	Regulation Bias Increment forAuto Adjustment Level 2 and 3	0.5V	80	80	0 to 200
651	Total Increment of Regulation Bias Adjustment	0.5V	0	0	0 to 800
652	Density Compensation On/Off	-	1	1	0 to 1
653	Minimum Density		135	135	110 to 150
654	Regulation Bias Maximum		500	500	160 to 800
655	Density Measure Interval at power on	1 hour	18	18	1 to 100
656	Density Measure Interval at Print Completion	1 hour	18	18	1 to 100
657	Developer Bias Increment for Auto Adjustment Level 1 and after		158	158	0 to 400
658	Reserved				
659	Reserved				
660	Ready - Fuser Temperature Center (Plain)	1°C	160	160	120 to 180
661	Ready - Fuser Temperature Center (Tracing)	1°C	160	170	120 to 180
662	Ready - Fuser Temperature Center (Film)	1°C	177	177	120 to 180
663	Ready - Fuser Temperature Center (Special / Plain)	1°C	160	160	120 to 180
664	Ready - Fuser Temperature Center (Special / Tracing)	1°C	160	160	120 to 180
665	Ready - Fuser Temperature Center (Special / Film)	1°C	177	170	120 to 180
666	Ready - Fuser Temperature Side (Plain)	1°C	159	159	120 to 180
667	Ready - Fuser Temperature Side (Tracing)	1°C	159	180	120 to 180
668	Ready - Fuser Temperature Side (Film)	1°C	177	170	120 to 180
669	Ready - Fuser Temperature Side (Special / Plain)	1°C	159	159	120 to 180
670	Ready - Fuser Temperature Side (Special / Tracing)	1°C	159	159	120 to 180
671	Ready - Fuser Temperature Side (Special / Film)	1°C	177	170	120 to 180
672	Fuser Motor Speed (18” / 17” / 15” / 12” / 11” / A2 / A3) (Plain)		50	50	0 to 80
673	Fuser Motor Speed (18” / 17” / 15” / 12” / 11” / A2 / A3) (Tracing)		57	60	0 to 80
674	Fuser Motor Speed (18” / 17” / 15” / 12” / 11” / A2 / A3) (Film)		50	50	0 to 80
675	Fuser Motor Speed (18” / 17” / 15” / 12” / 11” / A2 / A3) (Special / Plain)		40	40	0 to 80
676	Fuser Motor Speed (18” / 17” / 15” / 12” / 11” / A2 / A3) (Special / Tracing)		40	40	0 to 80
677	Fuser Motor Speed (18” / 17” / 15” / 12” / 11” / A2 / A3) (Special / Film)		40	40	0 to 80
678	Fuser Motor 4th Speed (Roll) (Plain Paper / A3, 12” & 11”)	0.04mm/s	34	37	0 to 80
679	Switch Timing to Fuser Motor 4th Speed (Roll) (Plain Paper / A3, 12” & 11”)	0.5 seconds	6	8	0 to 300
680	Fuser Motor 4th Speed (Roll) (Tracing / A3, 12” & 11”)	0.04mm/s	40	40	0 to 80
681	Switch Timing to Fuser Motor 4th Speed (Roll) (Tracing / A3, 12” & 11”)	0.5 seconds	0	0	0 to 300
682	Fuser Motor 4th Speed (Roll) (Film / A3, 12” & 11”)	0.04mm/s	40	40	0 to 80
683	Switch Timing to Fuser Motor 4th Speed (Roll) (Film / A3, 12” & 11”)	0.5 seconds	0	0	0 to 300
684	Fuser Motor 4th Speed (Roll) (Special Media / Plain Paper / A3, 12” & 11”)	0.04mm/s	40	40	0 to 80
685	Switch Timing to Fuser Motor 4th Speed (Roll) (Special Media / Plain Paper / A3, 12” & 11”)	0.5 seconds	0	0	0 to 300
686	Fuser Motor 4th Speed (Roll) (Special Media / Tracing / A3, 12” & 11”)	0.04mm/s	40	40	0 to 80
687	Switch Timing to Fuser Motor 4th Speed (Roll) (Special Media / Tracing / A3, 12” & 11”)	0.5 seconds	0	0	0 to 300
688	Fuser Motor 4th Speed (Roll) (Special Media / Film / A3, 12” & 11”)	0.04mm/s	40	40	0 to 80
689	Switch Timing to Fuser Motor 4th Speed (Roll) (Special Media / Film / A3, 12” & 11”)	0.5 seconds	0	0	0 to 300
690	Fuser Motor 4th Speed (Roll) (Plain Paper / A2, 18” & 17”)	0.04mm/s	37	40	0 to 80
691	Switch Timing to Fuser Motor 4th Speed (Roll) (Plain Paper / A2, 18” & 17”)	0.5 seconds	10	0	0 to 300
692	Fuser Motor 4th Speed (Roll) (Tracing / A2, 18” & 17”)	0.04mm/s	40	40	0 to 80
693	Switch Timing to Fuser Motor 4th Speed (Roll) (Tracing / A2, 18” & 17”)	0.5 seconds	0	0	0 to 300
694	Fuser Motor 4th Speed (Roll) (Film / A2, 18” & 17”)	0.04mm/s	40	40	0 to 80
695	Switch Timing to Fuser Motor 4th Speed (Roll) (Film / A2, 18” & 17”)	0.5 seconds	0	0	0 to 300

NOTE: All items grayed are not generally for field technician use

Item No.	Setting Item	Unit	Default Value		Setting range
			USA	EUR / AS	
696	Fuser Motor 4th Speed (Roll) (Special Media / Plain Paper / A2, 18” & 17”)	0.04mm/s	40	40	0 to 80
697	Switch Timing to Fuser Motor 4th Speed (Roll) (Special Media / Plain Paper / A2, 18” & 17”)	0.5 seconds	0	0	0 to 300
698	Fuser Motor 4th Speed (Roll) (Special Media / Tracing / A2, 18” & 17”)	0.04mm/s	40	40	0 to 80
699	Switch Timing to Fuser Motor 4th Speed (Roll) (Special Media / Tracing / A2, 18” & 17”)	0.5 seconds	0	0	0 to 300
700	Fuser Motor 4th Speed (Roll) (Special Media / Film / A2, 18” & 17”)	0.04mm/s	40	40	0 to 80
701	Switch Timing to Fuser Motor 4th Speed (Roll) (Special Media / Film / A2, 18” & 17”)	0.5 seconds	0	0	0 to 300
702	Fuser Motor 4th Speed (Roll) (Plain Paper / A1, 24” & 22”)	0.04mm/s	35	36	0 to 80
703	Switch Timing to Fuser Motor 4th Speed (Roll) (Plain Paper / A1, 24” & 22”)	0.5 seconds	16	16	0 to 300
704	Fuser Motor 4th Speed (Roll) (Tracing / A1, 24” & 22”)	0.04mm/s	40	40	0 to 80
705	Switch Timing to Fuser Motor 4th Speed (Roll) (Tracing / A1, 24” & 22”)	0.5 seconds	0	0	0 to 300
706	Fuser Motor 4th Speed (Roll) (Film / A1, 24” & 22”)	0.04mm/s	40	40	0 to 80
707	Switch Timing to Fuser Motor 4th Speed (Roll) (Film / A1, 24” & 22”)	0.5 seconds	0	0	0 to 300
708	Fuser Motor 4th Speed (Roll) (Special Media / Plain Paper / A1, 24” & 22”)	0.04mm/s	40	40	0 to 80
709	Switch Timing to Fuser Motor 4th Speed (Roll) (Special Media / Plain Paper / A1, 24” & 22”)	0.5 seconds	0	0	0 to 300
710	Fuser Motor 4th Speed (Roll) (Special Media / Tracing / A1, 24” & 22”)	0.04mm/s	40	40	0 to 80
711	Switch Timing to Fuser Motor 4th Speed (Roll) (Special Media / Tracing / A1, 24” & 22”)	0.5 seconds	0	0	0 to 300
712	Fuser Motor 4th Speed (Roll) (Special Media / Film / A1, 24” & 22”)	0.04mm/s	40	40	0 to 80
713	Switch Timing to Fuser Motor 4th Speed (Roll) (Special Media / Film / A1, 24” & 22”)	0.5 seconds	0	0	0 to 300
714	Fuser Motor 4th Speed (Roll) (Plain Paper / A0, 36” & 34”)	0.04mm/s	30	30	0 to 80
715	Switch Timing to Fuser Motor 4th Speed (Roll) (Plain Paper / A0, 36” & 34”)	0.5 seconds	20	20	0 to 300
716	Fuser Motor 4th Speed (Roll) (Tracing / A0, 36” & 34”)	0.04mm/s	34	40	0 to 80
717	Switch Timing to Fuser Motor 4th Speed (Roll) (Tracing / A0, 36” & 34”)	0.5 seconds	20	0	0 to 300
718	Fuser Motor 4th Speed (Roll) (Film / A0, 36” & 34”)	0.04mm/s	40	40	0 to 80
719	Switch Timing to Fuser Motor 4th Speed (Roll) (Film / A0, 36” & 34”)	0.5 seconds	0	0	0 to 300
720	Fuser Motor 4th Speed (Roll) (Special Media / Plain Paper / A0, 36” & 34”)	0.04mm/s	40	40	0 to 80
721	Switch Timing to Fuser Motor 4th Speed (Roll) (Special Media / Plain Paper / A0, 36” & 34”)	0.5 seconds	0	0	0 to 300
722	Fuser Motor 4th Speed (Roll) (Special Media / Tracing / A0, 36” & 34”)	0.04mm/s	40	40	0 to 80
723	Switch Timing to Fuser Motor 4th Speed (Roll) (Special Media / Tracing / A0, 36” & 34”)	0.5 seconds	0	0	0 to 300
724	Fuser Motor 4th Speed (Roll) (Special Media / Film / A0, 36” & 34”)	0.04mm/s	40	40	0 to 80
725	Switch Timing to Fuser Motor 4th Speed (Roll) (Special Media / Film / A0, 36” & 34”)	0.5 seconds	0	0	0 to 300
726	Fuser Motor 4th Speed (Roll) (Plain Paper / 30”)	0.04mm/s	36	30	0 to 80
727	Switch Timing to Fuser Motor 4th Speed (Roll) (Plain Paper / 30”)	0.5 seconds	20	20	0 to 300
728	Fuser Motor 4th Speed (Roll) (Tracing / 30”)	0.04mm/s	34	40	0 to 80
729	Switch Timing to Fuser Motor 4th Speed (Roll) (Tracing / 30”)	0.5 seconds	20	0	0 to 300
730	Fuser Motor 4th Speed (Roll) (Film / 30”)	0.04mm/s	40	40	0 to 80
731	Switch Timing to Fuser Motor 4th Speed (Roll) (Film / 30”)	0.5 seconds	0	0	0 to 300

NOTE: All items grayed are not generally for field technician use

Item No.	Setting Item	Unit	Default Value		Setting range
			USA	EUR / AS	
732	Fuser Motor 4th Speed (Roll) (Special Media / Plain Paper / 30”)	0.04mm/s	40	40	0 to 80
733	Switch Timing to Fuser Motor 4th Speed (Roll) (Special Media / Plain Paper / 30”)	0.5 seconds	0	0	0 to 300
734	Fuser Motor 4th Speed (Roll) (Special Media / Tracing / 30”)	0.04mm/s	40	40	0 to 80
735	Switch Timing to Fuser Motor 4th Speed (Roll) (Special Media / Tracing / 30”)	0.5 seconds	0	0	0 to 300
736	Fuser Motor 4th Speed (Roll) (Special Media / Film / 30”)	0.04mm/s	40	40	0 to 80
737	Switch Timing to Fuser Motor 4th Speed (Roll) (Special Media / Film / 30”)	0.5 seconds	0	0	0 to 300
738	Standby - Fuser Temperature Center	1°C	167	167	120 to 180
739	Standby - Fuser Temperature Side	1°C	155	155	120 to 180
740	Assist Fan Off Timing (18” / 17” / 15” / A2)		8	4	0 to 8
741	Assist Fan Off Timing (24” / 22” / A1)		8	4	0 to 8
742	Assist Fan Off Timing (36” / 34” / 30” / A0 / B1)		8	6	0 to 8
743	Fuser Motor Speed applied at 100mm from trailing edge (36” / 34” / 30” / A0 / B1) (Plain)		0	0	0 to 80
744	Fuser Motor Speed applied at 100mm from trailing edge (36” / 34” / 30” / A0 / B1) (Tracing)		0	0	0 to 80
745	Fuser Motor Speed applied at 100mm from trailing edge (36” / 34” / 30” / A0 / B1) (Film)		0	0	0 to 80
746	Roll 2 Forward Standby		0	0	0 to 1
747	Roll 2 Forward Standby Position Adjustment	mm	0	0	0 to 50
748	Roll 2 Rewind Timer	minute	15	15	1 to 15
749	Tracing Mode		0	0	0 to 1
750	Roll 1 Setting Mode		0	0	0 to 1
751	Disable HV Error Detection Mode		0	0	0 to 1
752	(Reserved)				
753	Auto Initial Cut After Long Print (Length)	100mm	10	10	10 to 60
754	Auto Initial Cut After Long Print (Number of sheet)		0	0	0 to 3
755	Length for Forced Initial Cut Before Print	mm	594	594	210 to 600
756	Leading Registration for Paper Tray	mm			
757	Trailing Margin for Paper Tray	mm			
758	Side Registration for Paper Tray	mm			

8. 6. 3 Setting Item Explanation

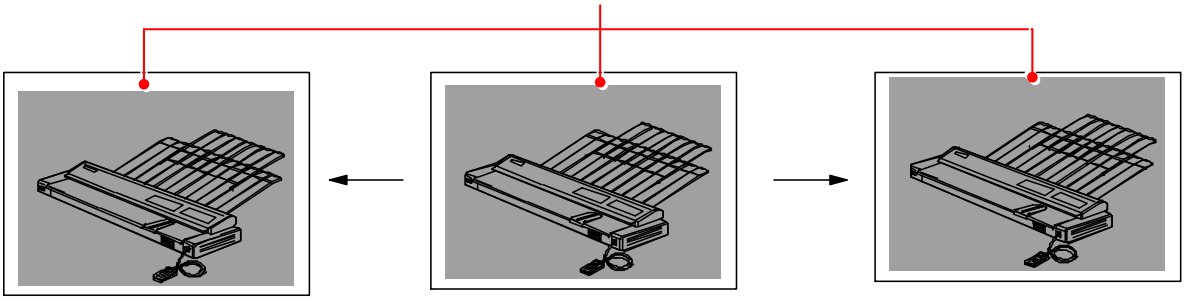
Item No. starts with “4”. For example, IPS Service Software shows 4000, this section shows “No.000”.

8. 6. 3. 1 Leading Registration (No. 000 & 001)

It is possible to specify where to start printing the image at the leading edge of the media.
If you increase the setting value by “+1 “, the head of image is shifted 1mm downward toward the trailing edge As a result the leading margin becomes larger.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
000	Leading Registration (Roll paper)	19	19	1 to 40	1mm
001	Leading Registration (Cut sheet paper)	19	19	1 to 40	1mm

Leading Registration



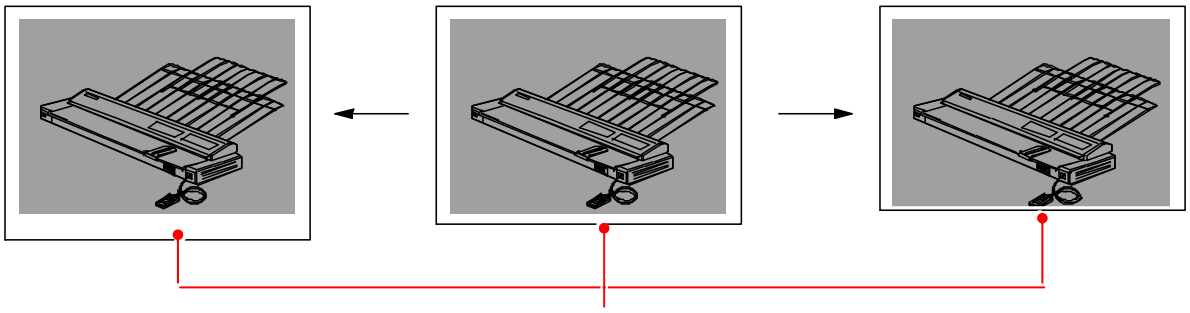
value is increased. value is decreased.

8. 6. 3. 2 Trailing Margin (No. 002 & 003)

It is possible to adjust the length of trailing margin.
The length of trailing margin becomes 1mm longer if you Increase the setting value by “+1 “.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
002	Trailing Margin (Roll paper)	9	9	1 to 40	1mm
003	Trailing Margin (Cut sheet paper)	10	10	1 to 40	1mm

Setting value is increased. Setting value is decreased.



Trailing Margin

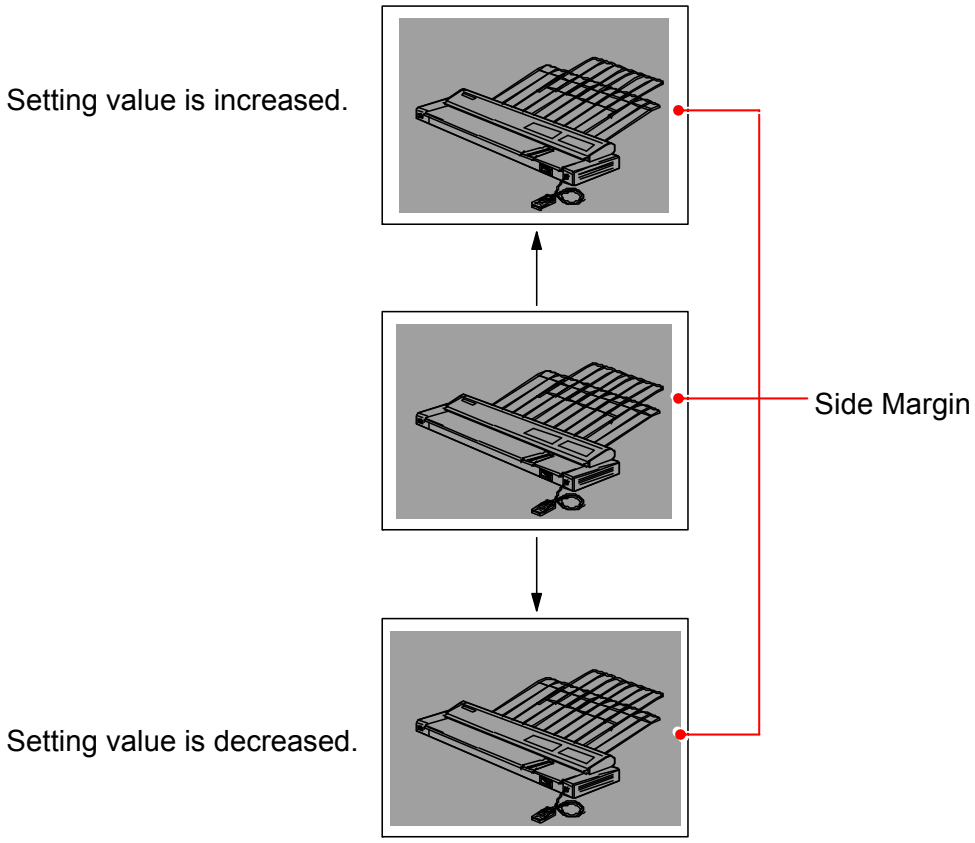
NOTE

Some trailing image may be lost if you decrease the value too much.

8. 6. 3. 3 Side Margin (Left & Right) (No. 004)

It is possible to adjust the amount of side margin. (Both left and right)
Each side margin becomes 1mm wider if you increase the setting value.
(As a result the width of print image becomes 2mm narrower.)

Default value		Setting range	Step of increment
USA	EUR/ASIA		
3	3	0 to 20	1mm



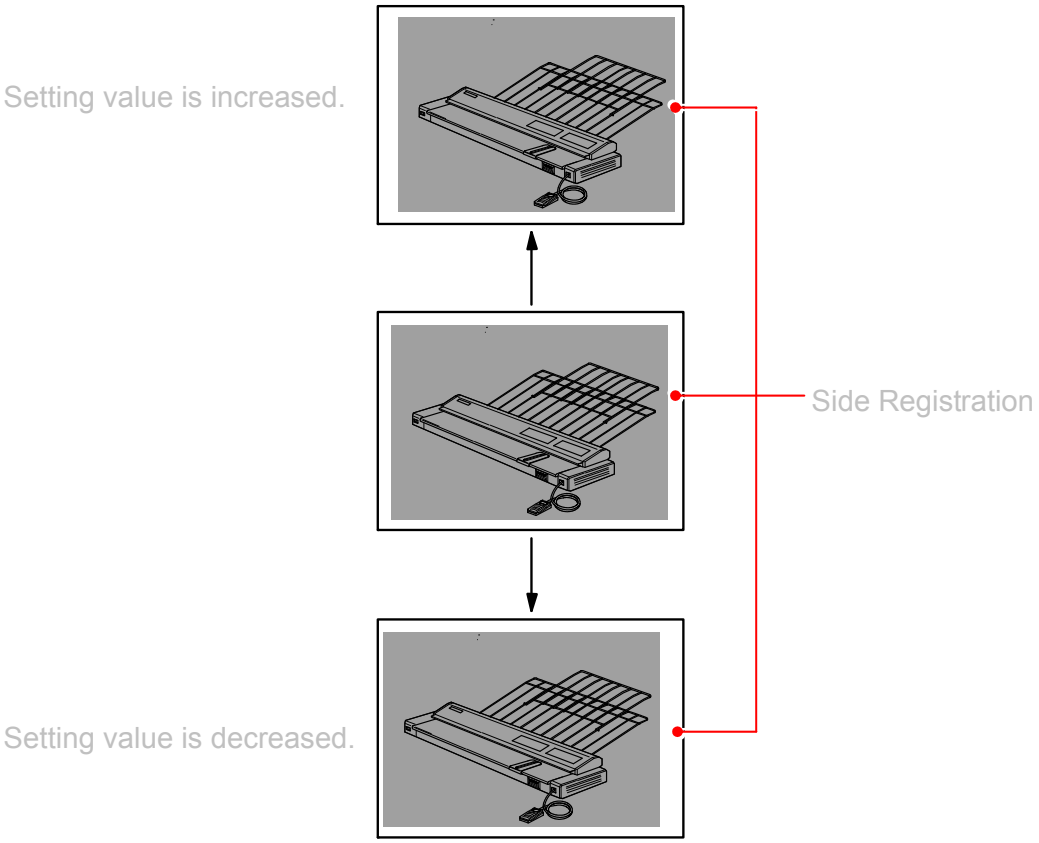
NOTE

Image quality created with a reduced side margin (less than 3 in the setting value) is not guaranteed.

8. 6. 3. 4 Side Registration (No. 005 to 007)

It is possible to specify where to start printing the image at the side edge of the media.
If you increase the setting value by “+1 “, image is shifted 0.1mm to the right.

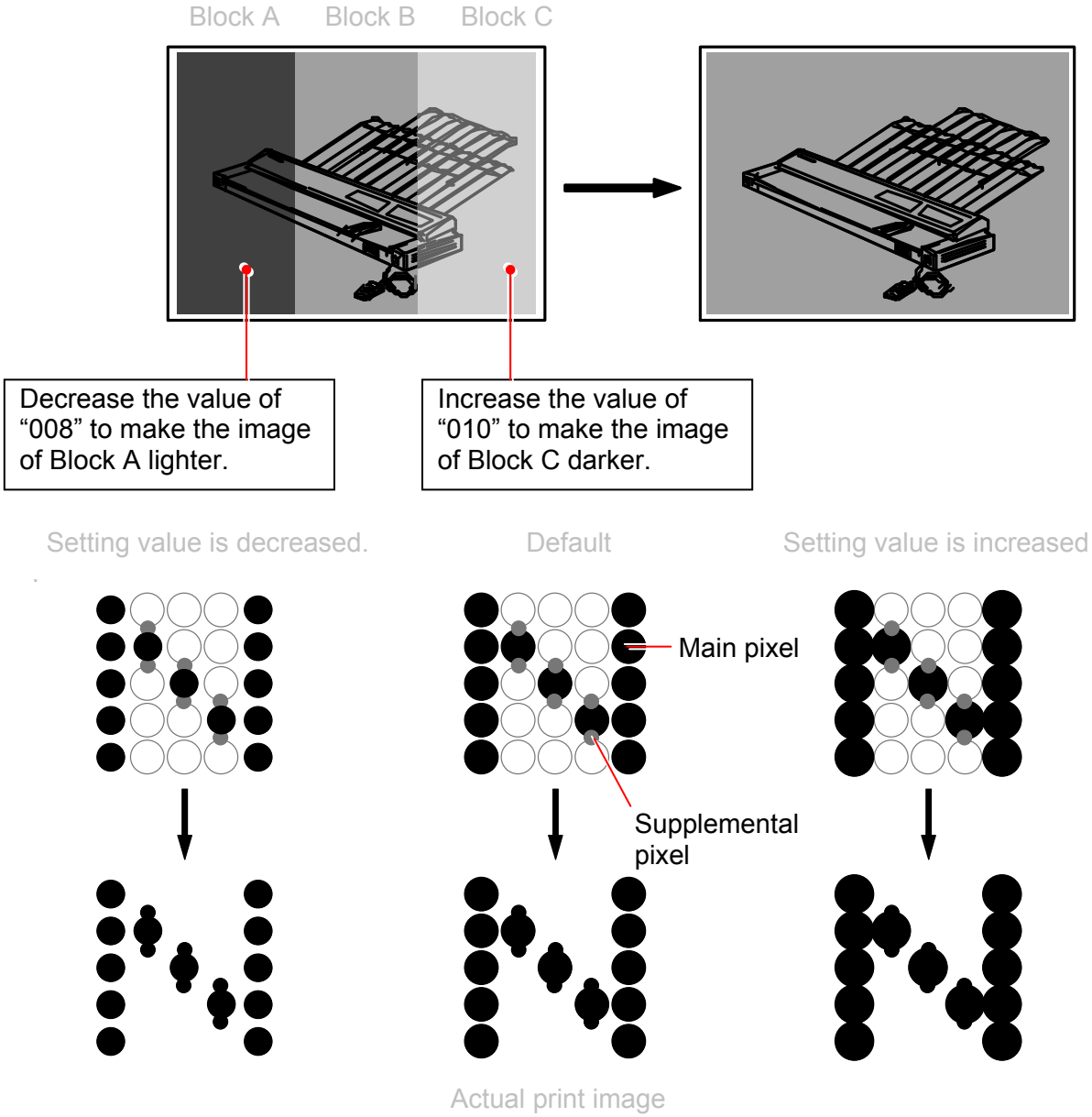
Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
005	Side Registration (Cutsheet)	50	50	0 to 100	0.1mm
006	Side Registration (Roll 1)	50	50	0 to 100	0.1mm
007	Side Registration (Roll 2)	50	50	0 to 100	0.1mm



8. 6. 3. 5 LED Strobe Time for Main Pixel of each Block (No.008 to 010)

It is possible to make the whole image of each Image Block (A, B and C) darker or lighter independently by changing the LED Strobe Time for the Main Pixels.
As a result an even image density can be accomplished among 3 Image Blocks.
The whole image of the concerning Image Block becomes darker if you increase the setting value.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
008	LED Strobe Time for Main Pixel (Image Block A : Left)	6	6	0 to 9	1 micro second
009	LED Strobe Time for Main Pixel (Image Block B : Center)	6	6	0 to 9	1 micro second
010	LED Strobe Time for Main Pixel (Image Block C : Right)	6	6	0 to 9	1 micro second

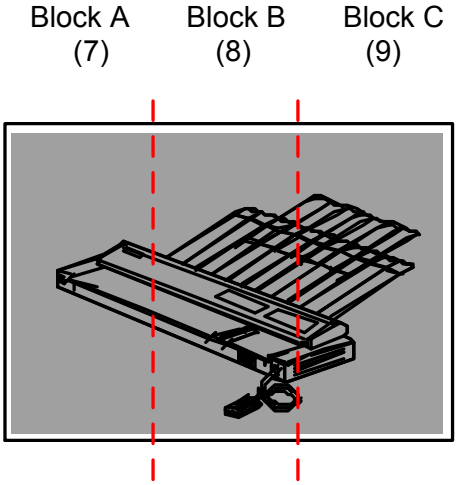


For the detail information about "Main Pixel" and "Supplemental Pixel", see the reference column in [8.6.3.6 LED Strobe Time for IST (Supplemental Pixel)].

⚠ NOTE

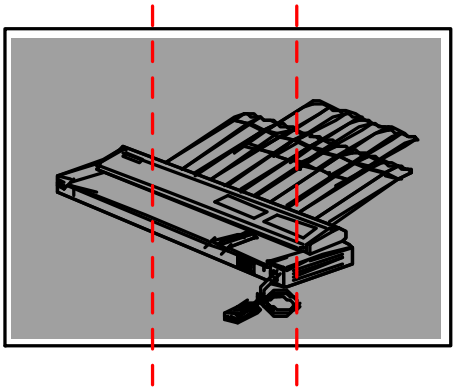
(1) The LED Strobe Times specified in these 008, 009 and 010 are directly applied to the Test Print.
If the setting values are 7 (for 008), 8 (for 009) and 9 (for 010), for example, the actual LED Strobe Times are also 7 (for block A), 8 (for block B) and 9 (for block C).

<u>In case of Test Print</u>
008: 7 microseconds
009: 8 microseconds
010: 9 microseconds



But in case of a copy or a plot, the density command (LED Strobe Time) sent from the output device (image scanner or controller) is applied to the Image Block A.
And only the difference of setting values among 008, 009 and 010 are applied to the actual LED Strobe Time.
If the density command from the output device is 5 microsecond and the setting values are 7 (for 008), 8 (for 009) and 9 (for 010), for example, the actual LED Strobe Times are 5 (for block A), 6 (for block B) and 7 (for block C).

<u>In case of copy or plot</u>
Density command from output device: 5 microseconds
008: 7 microseconds
009: 8 microseconds
010: 9 microseconds

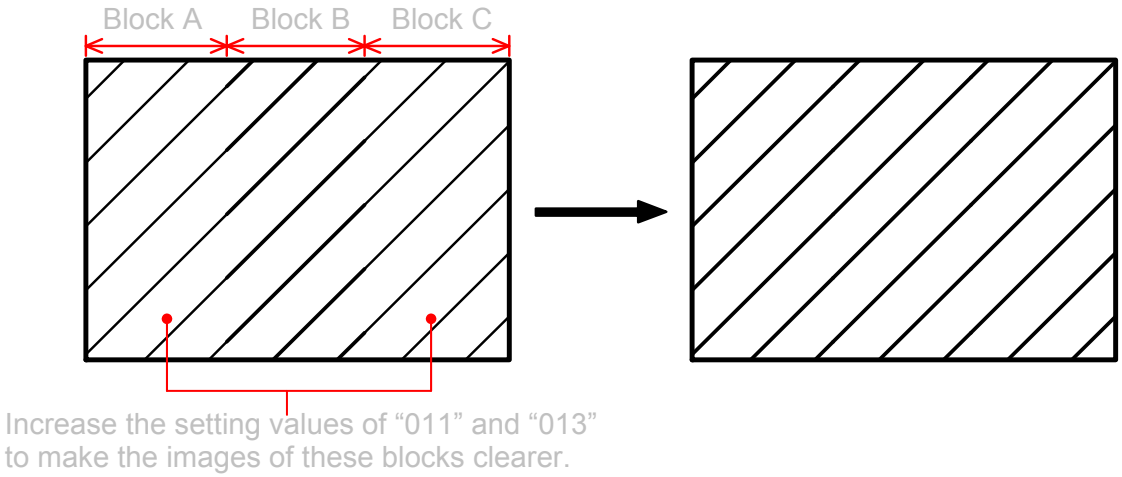


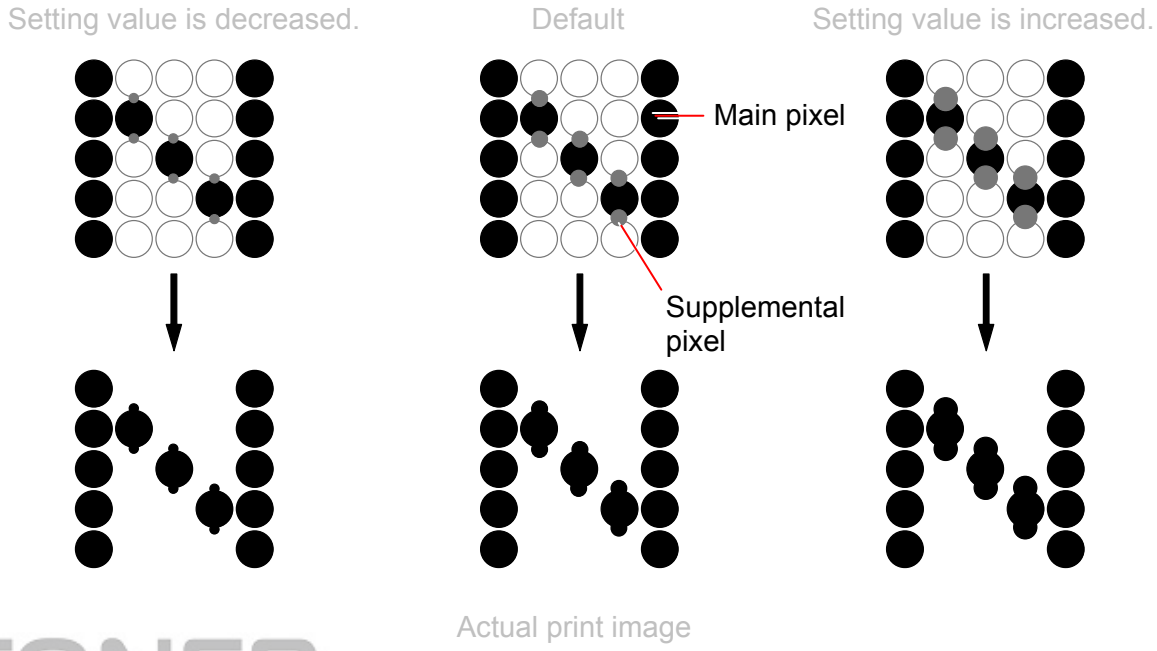
(2) If the value of density command (LED Strobe Time) sent from the output device is larger than “9 microsecond” (Max.), it is automatically corrected to “9 microsecond”.
If it is smaller than “0 microsecond” (Min.), it is corrected to “0 microsecond” similarly.

8. 6. 3. 6 LED Strobe Time for IST (Supplemental Pixel) of each Block (No.011 to 013)

If such image as a diagonal line looks too weak, you can make it clearer by changing the LED Strobe Time for the Supplemental Pixels.
The adjustment is available for each Image Block independently.
A diagonal line comes to look clearer if you increase the setting value, as the LED Strobe Time for the Supplemental Pixels becomes longer.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
011	LED Strobe Time for Supplemental Pixel (Image Block A : Left)	0	0	0 to 9	1 micro second
012	LED Strobe Time for Supplemental Pixel (Image Block B : Center)	0	0	0 to 9	1 micro second
013	LED Strobe Time for Supplemental Pixel (Image Block C : Right)	0	0	0 to 9	1 micro second

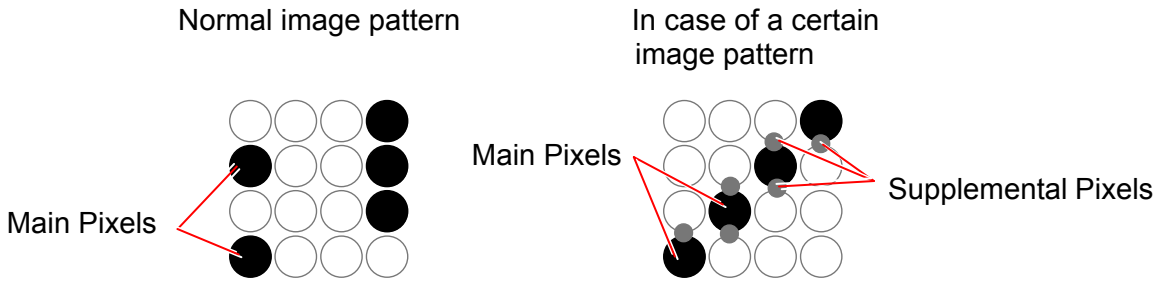




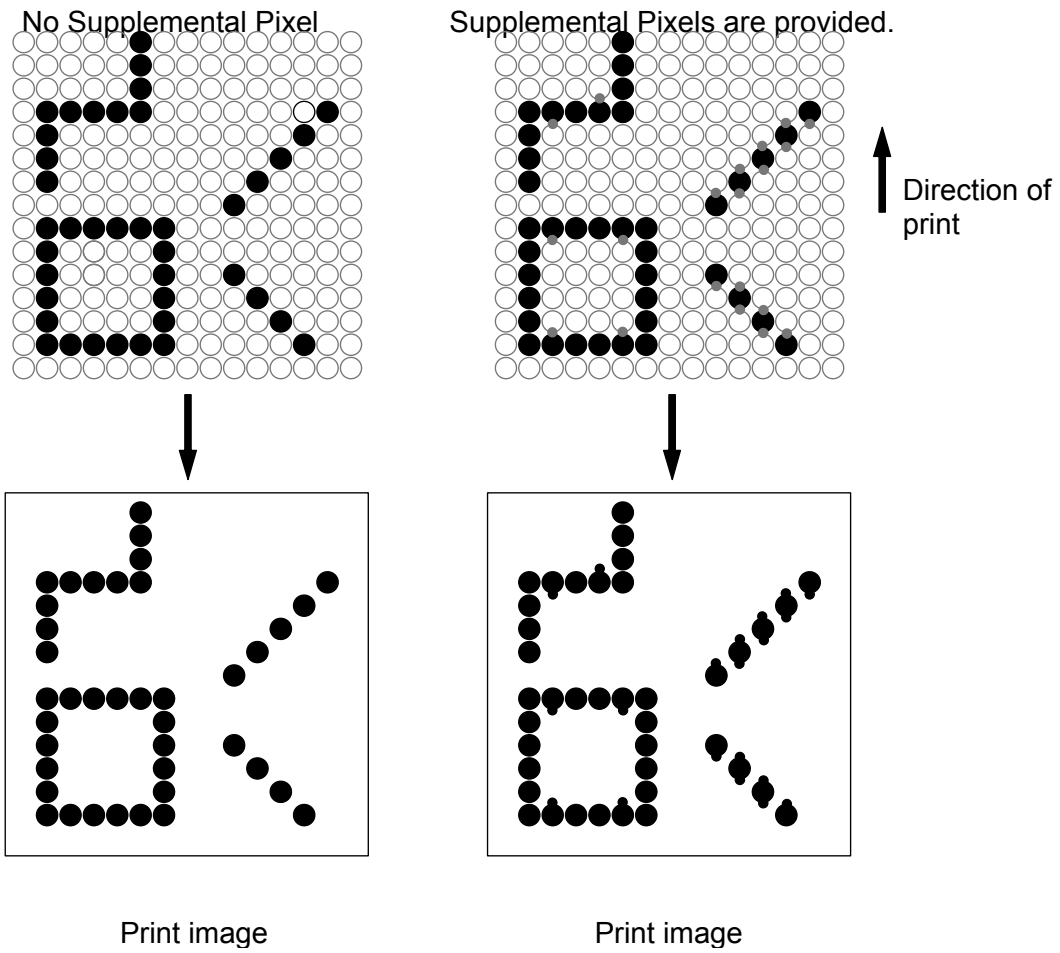
For the detail information about “Main Pixel” and “Supplemental Pixel”, see the reference document on the next page.

Reference

Normally the TASKalfa 4820w takes 600 times of image exposure per inch for the vertical direction as its resolution is 600DPI. Pixels created by this normal timing are called [Main Pixel].
When a specific image pattern (like a diagonal line) is printed, however, the TASKalfa 4820w will make additional image exposure between vertically neighboring 2 Main Pixels. This additional image exposure is completed within a very short time. The pixel created by this additional process is called [Supplemental Pixel].



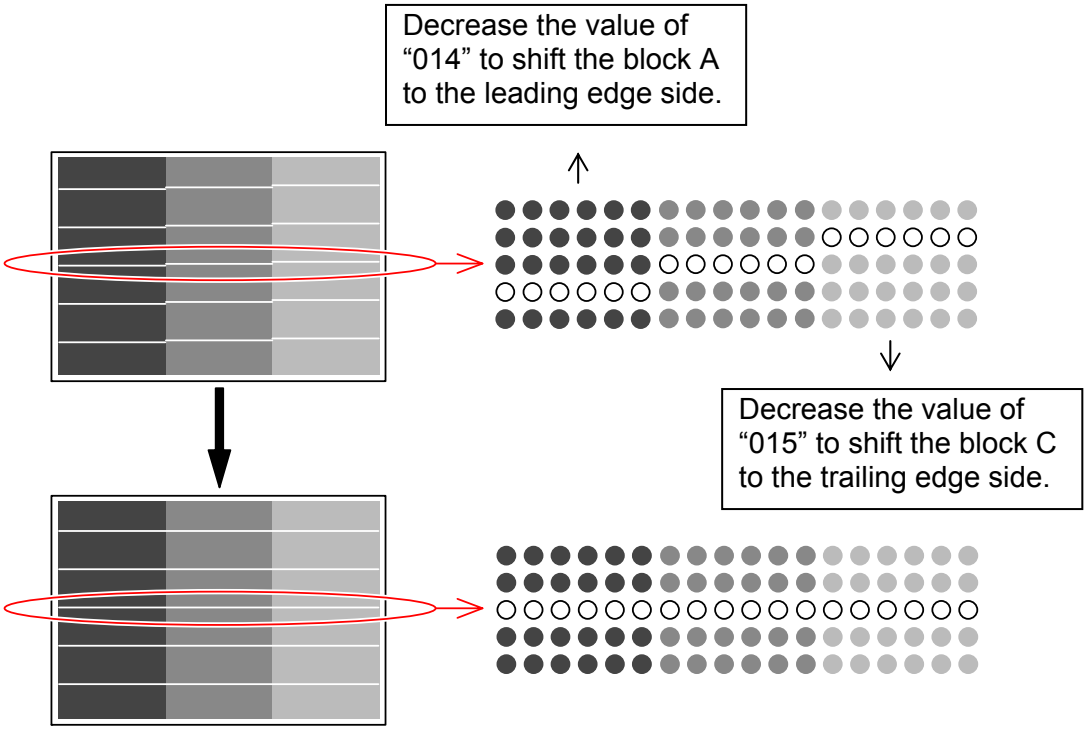
Supplemental Pixels are provided so as to fill the space between Main Pixels.
When we compare a vertical / horizontal 1 dot line and a diagonal 1 dot line, for example, the diagonal one looks vague and rough although the vertical / horizontal one looks clear and smooth.
This is because the diagonal line has a wider space between Main Pixels than the vertical / horizontal one.
If this space is filled with the Supplemental Pixel, diagonal line comes to look smoother and clearer.



8. 6. 3. 7 Vertical Alignment of Pixels between Image Blocks (No.014 & 015)

It is possible to align the pixels between Image Blocks if there is a gap of pixels.
The Image Block B is the standard, and both the Image Blocks A and C can be shifted vertically.
If you increase the setting value by “+1”, the whole pixels of the concerning Image Block is shifted “1 line (pixel)” to the trailing edge side.
These can be used if a horizontal line has a step at the border of the Blocks.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
014	Horizontal Alignment of Pixels between Image Blocks A & B	8	8	2 to 14	1 pixel
015	Horizontal Alignment of Pixels between Image Blocks B & C	8	8	2 to 14	1 pixel

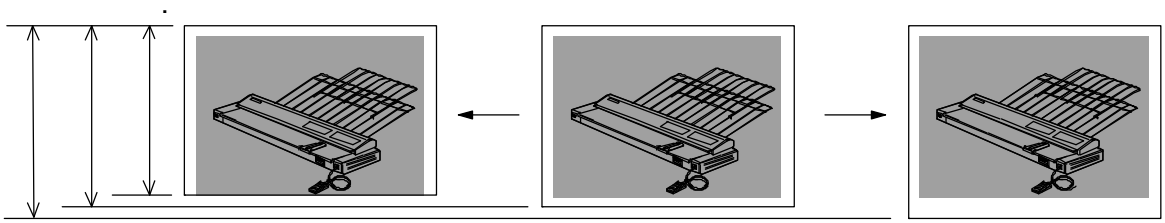


8. 6. 3. 8 Cut Length 1 (length information provided) (No.016)

It is possible to make the print length longer or shorter.
This setting is applied when the print command (plot & copy) is provided with the length information. **(this is command used on all standard pages printed from the IPS)**
If you increase the setting value by “+1”, the print length becomes 1mm longer.

Default value		Setting range	Step of increment
USA	EUR/ASIA		
50	50	0 to 100	1mm

Setting value is increased. Setting value is decreased



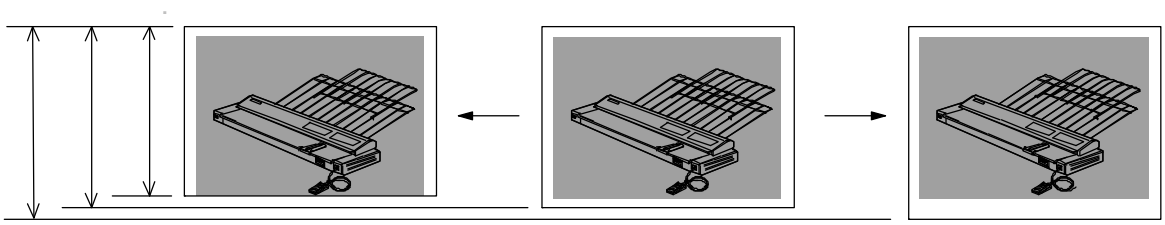
Cut length

8. 6. 3. 9 Cut Length 2 (length information not provided) (No.017)

It is possible to make the print length longer or shorter.
This setting is applied when the print command (plot & copy) is not provided with the length information. **(This is may only be used on LONG prints over 6 meters on the IPS)**
If you increase the setting value by “+1”, the print length becomes 1mm longer.

Default value		Setting range	Step of increment
USA	EUR/ASIA		
50	50	0 to 100	1mm

Setting value is increased. Setting value is decreased



Cut length

8. 6. 3.10 Cut Length 3 (Compensation of the length of a long print) (No.018)

When you make a long print, the actual print length may become shorter than expected because the paper is likely to shrink. It is possible in this mode to compensate the print length manually.

The length of long print is not compensated directly, but it is indirectly compensated by correcting the length of A1 print.
If you increase the setting value by “+1”, the length of A1 print becomes 0.1mm longer per 10mm.

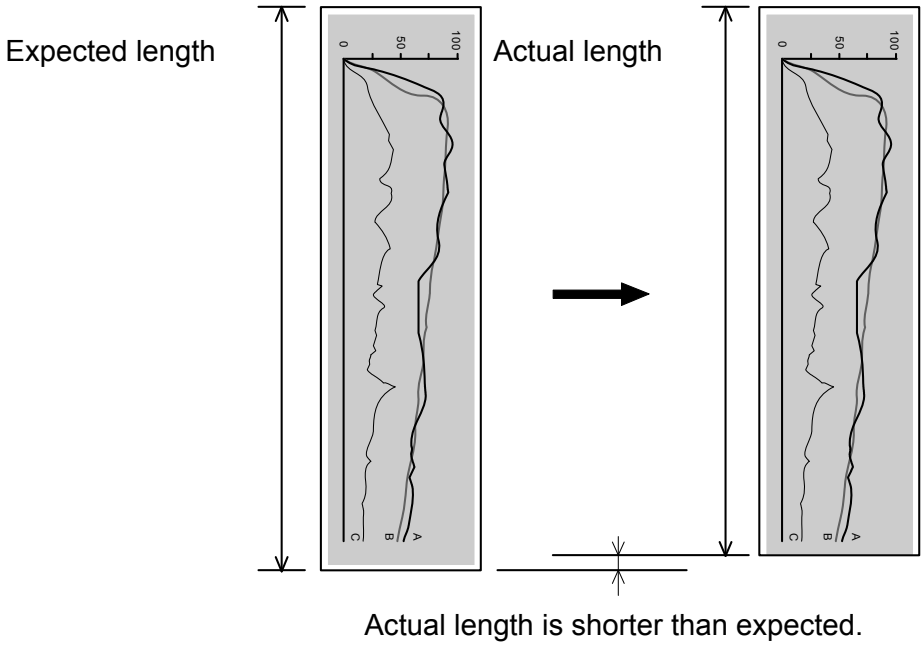
Default value		Setting range	Step of increment
USA	EUR/ASIA		
475	475	0 to 999	0.1mm

NOTE

It is necessary to finish the adjustment of Cut Length 1 (No.016) before starting the adjustment in this Cut Length 3 (No.018).

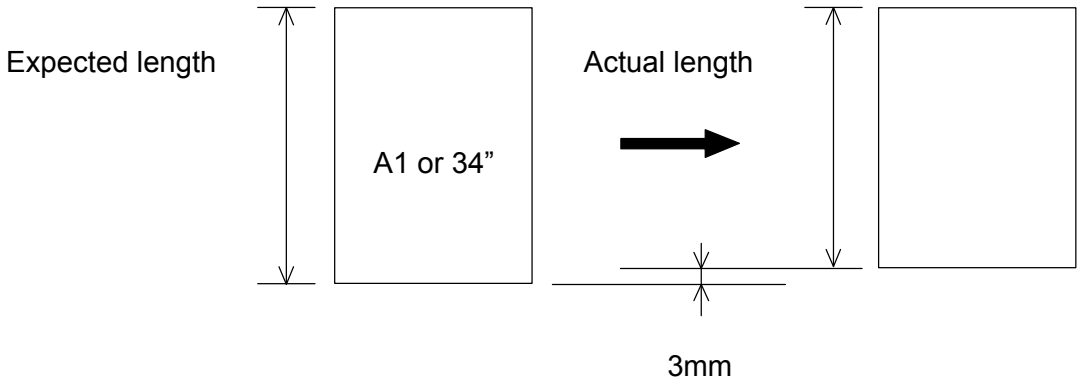
[Example of adjustment]

1. Supposing the actual length of a long print is shorter than expected.



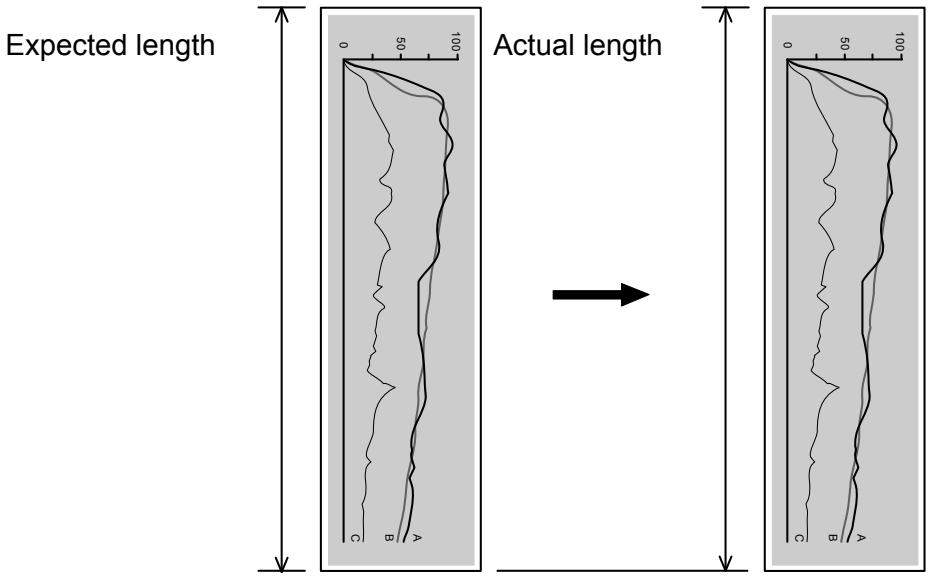
2. Make an A1 (841mm long) or 34” long print.
   Measure the actual length of this A1 or 34” print to know how long millimeter it is shorter than expected.

   (Example: Print out is 838mm, so it is 3mm shorter than expected.)



3. Necessary value for the compensation is 10 times as long as the difference between actual length and expected length.
   It is “30” in this example. (3mm x 10 = 30)
   Specify “30” as the setting value of No.018.

4. Make a long print.
   The actual print out will be as long as expected.



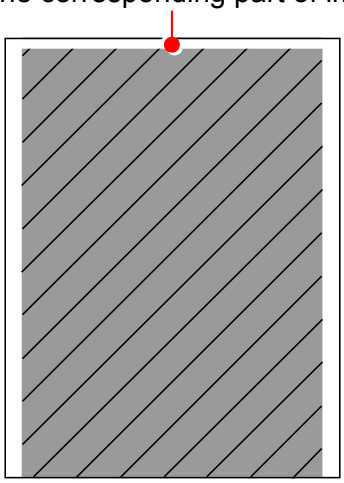
8. 6. 3.11 Leading Margin (No. 019)

It is possible to adjust the length of the leading margin.
An image portion that corresponds to the given length of the leading margin is not printed.
The length of the leading margin becomes 0.1mm longer if you Increase the setting value by “+1 “.

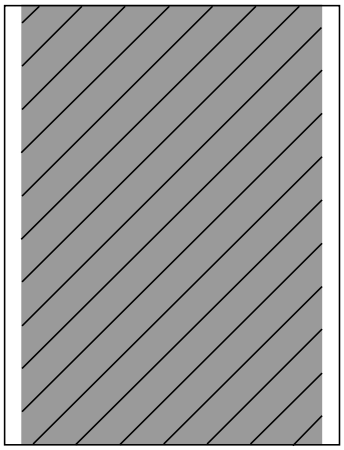
Changing the value to “0” removes whole the margin, thus a portion image on the leading edge will appear.

Default Value	Setting Range	Step of increment
30	0 to 50	0.1mm

Default: 30
A 3mm Leading Margin added to leading edge.
Hides the corresponding part of image.



Example: 0
Leading Margin disappears.
Corresponding part of image printed.



NOTE

There is no guarantee of proper operation and image quality with a reduced leading margin (less than 30 in the setting value).

Reference

Setting to “0” may result in a jam in Fuser Unit and a ghost image at approximately 252mm from the leading edge.

8. 6. 3.12 Cut Length 4 (Individual Compensation for Roll 2) (No.020)

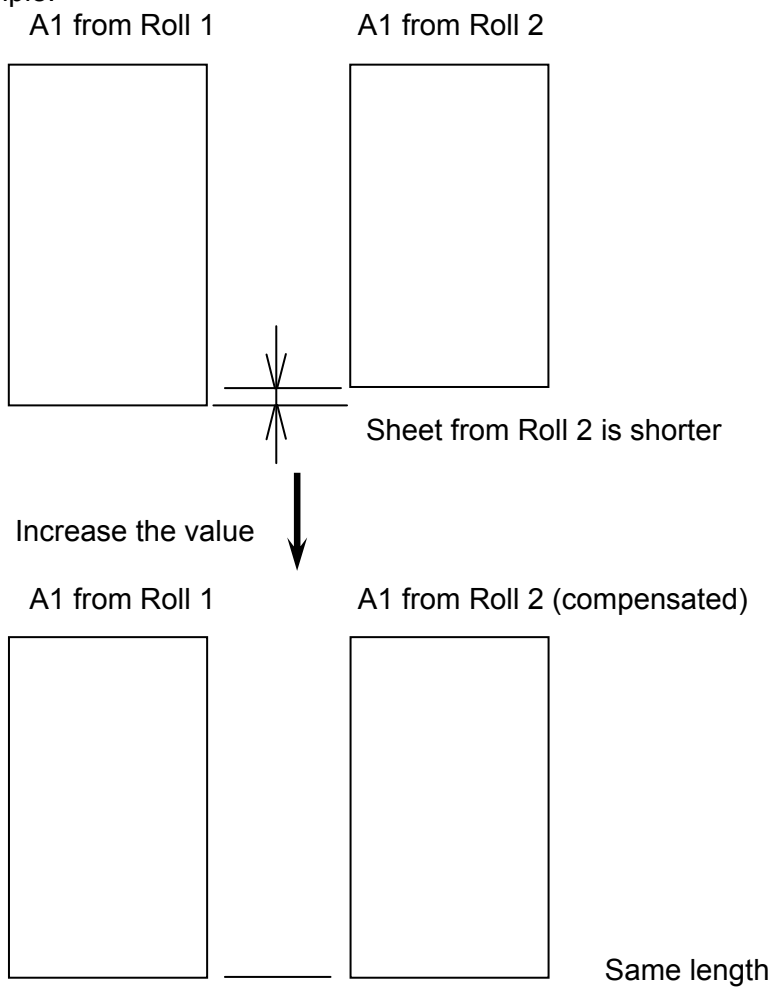
It is possible to compensate the print length of Roll 2 individually.
This setting would be used if a different cut length is provided to Roll 1 and Roll 2.

Measure the length gap between a piece of A1 size sheet from each Roll 1 and 2.

If you increase the setting value by “+1”, the print length of Roll 2 becomes 0.16mm longer.

Default Value	Setting Range	Step of increment
50	0 to 100	0.16mm

Example:



NOTE

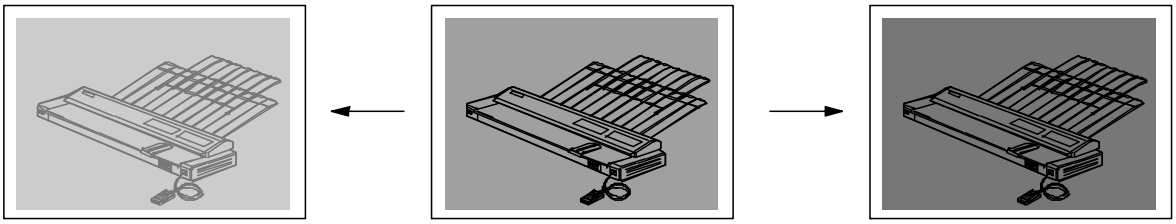
It is necessary to finish the adjustment of Cut Length 1 (No.016) before starting the adjustment in this Cut Length 3 (No.018).

8. 6. 3.13 Developer Bias (No.022 to 027)

It is possible to make the print density darker or lighter by adjusting the Developer Bias (Negative Developer Roller Bias).
The print density becomes lighter if you increase the setting value.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
022	Developer Bias (Plain paper)	161	161	0 to 4FF	1
023	Developer Bias (Tracing paper)	161	161	0 to 4FF	1
024	Developer Bias (Film)	161	161	0 to 4FF	1
025	Developer Bias (Special media / Plain paper)	161	161	0 to 4FF	1
026	Developer Bias (Special media / Tracing paper)	161	161	0 to 4FF	1
027	Developer Bias (Special media / Film)	161	161	0 to 4FF	1

Setting value is increased. Setting value is decreased.



NOTE

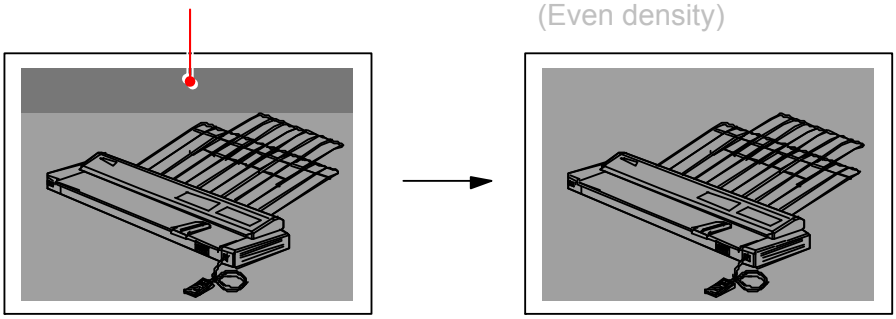
Please adjust the Developer Bias while checking the actual voltage with the multi-meter.

8. 6. 3.14 Developer Bias compensation - 1st Drum revolution (No.028)

It is possible to compensate the Developer Bias only for the 1st Drum revolution.
The print density becomes lighter if you increase the setting value.
(Developer Bias is not compensated at all if the setting value is “0”)

Default value		Setting range	Step of increment
USA	EUR/ASIA		
0	0	0 to 255	1

Density of leading area is darker. Setting value is increased. (Even density)



NOTE

There may be the case that the density of leading area, which corresponds to the 1st revolution of Drum, is darker than other area.
In this case compensate the Developer Bias to have even density on both areas.

8. 6. 3.15 Transfer Voltage (No.029 to 034)

It is possible to adjust the analog voltage outputted to the Transfer Corona during the print cycle.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
029	Transfer Corona Analog Voltage (Plain paper)	366	366	0 to 4FF	1
030	Transfer Corona Analog Voltage (Tracing paper)	28A	28A	0 to 4FF	1
031	Transfer Corona Analog Voltage (Film)	28A	28A	0 to 4FF	1
032	Transfer Corona Analog Voltage (Special media / Plain paper)	292	292	0 to 4FF	1
033	Transfer Corona Analog Voltage (Special media / Tracing paper)	292	292	0 to 4FF	1
034	Transfer Corona Analog Voltage (Special media / Film)	292	292	0 to 4FF	1

NOTE

Please adjust Transfer Corona Analog Voltage while checking the actual voltage with the multi-meter.

8. 6. 3.16 Separation Corona ON Timing (No.035)

It is possible to adjust the timing that the Separation Corona starts discharging during the print cycle.
If you increase the setting value by “+1”, the timing to start discharging is 1mm delayed.

Default value		Setting range	Step of increment
USA	EUR/ASIA		
50	50	0 to 100	1mm

8. 6. 3.17 Transfer Corona ON Timing (No.037)

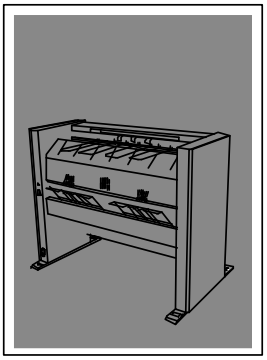
It is possible to adjust the timing that the Transfer Corona starts discharging during the print cycle. If you increase the setting value by “+1”, the timing to start discharging is 1mm delayed.

Default value		Setting range	Step of increment
USA	EUR/ASIA		
48	48	0 to 100	1mm

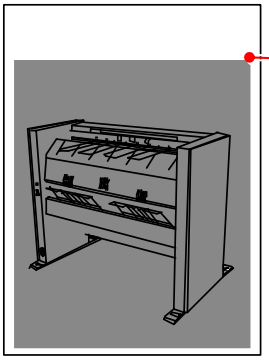
NOTE

You may lose some leading image as the following example if you increase the setting value too much, because the timing to start discharging is too much delayed.

Normal



Setting value is increased too much.



Transfer Corona starts discharging at this point.

8. 6. 3.18 Transfer Corona OFF Timing (No.038)

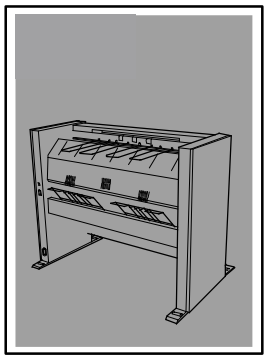
It is possible to adjust the timing that the Transfer Corona stops discharging during the print cycle. If you increase the setting value by “+1”, the timing to stop discharging is 1mm delayed.

Default value		Setting range	Step of increment
USA	EUR/ASIA		
20	20	0 to 100	1mm

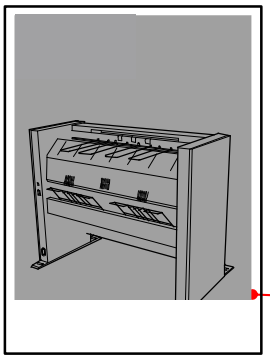
NOTE

You may lose some trailing image as the following example if you decrease the setting value too much, because the Transfer Corona stops discharging too early.

Normal



Setting value is increased too much.



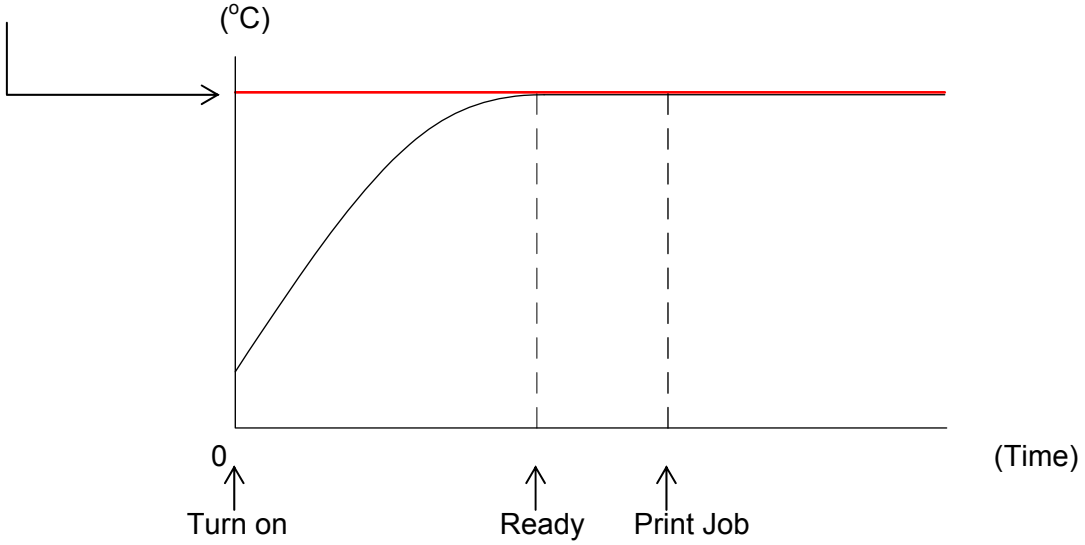
Transfer Corona stops discharging at this point.

8. 6. 3.19 Print - Fuser Temperature Center (No.039 to 044)

It is possible to adjust the center part of Fuser Temperature in a print cycle.
You can specify the temperature for each type of media separately.
The Fuser Temperature becomes 1 degree higher if you increase the setting value by “+1”.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
039	Print - Fuser Temperature Center (Plain paper)	160	165	120 to 180	1°C
040	Print - Fuser Temperature Center (Tracing paper)	160	170	120 to 180	1°C
041	Print - Fuser Temperature Center (Film)	177	170	120 to 180	1°C
042	Print - Fuser Temperature Center (Special media / Plain paper)	160	160	120 to 180	1°C
043	Print - Fuser Temperature Center (Special media / Tracing paper)	160	160	120 to 180	1°C
044	Print - Fuser Temperature Center (Special media / Film)	177	177	120 to 180	1°C

Setting value of 039 to 044
(Example: Film 170°C)



Reference

(1) The both sides part of Fuser Temperature will be controlled by Print - Fuser Temperature Side (No. 625 to 648) separately.

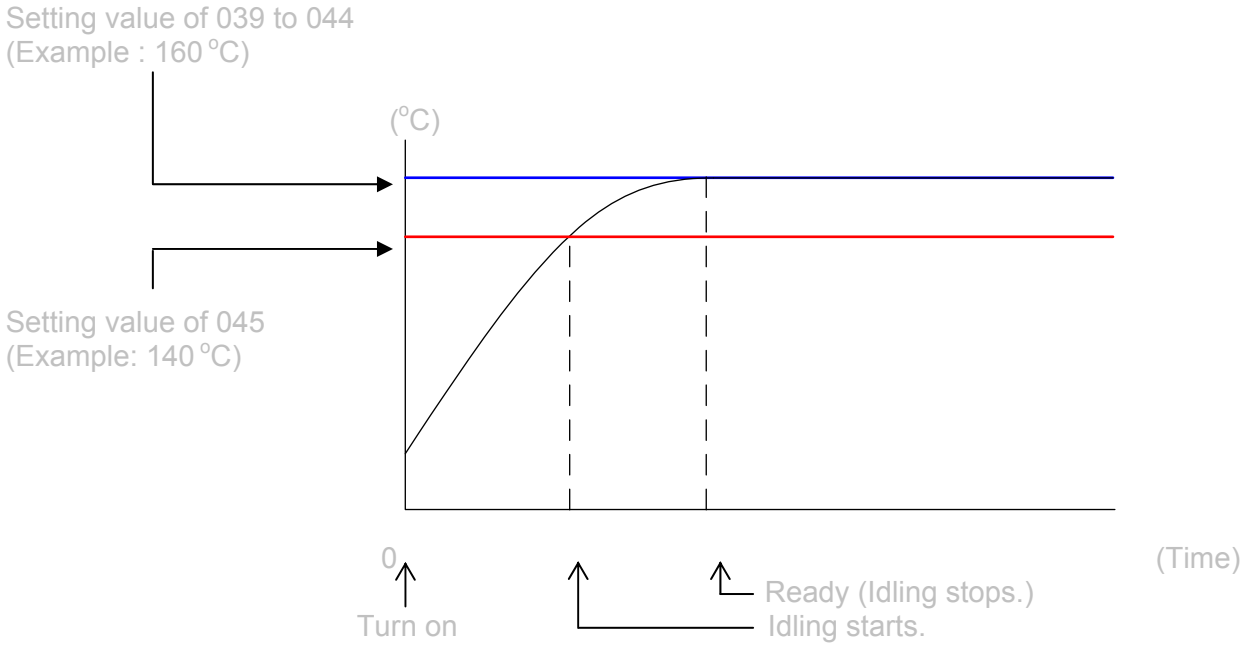
(2) Item List of Fuser Temperature Control (center / side)

	Fuser Center	Fuser Sides
Print (for printing period)	No.039 to 044	No.625 to 648
Ready (target temperature to get “Ready”)	No.660 to 665	No.666 to 671
Standby (during “standby”)	No.738	No.739
Warm Sleep	No.046 (common to both Center / Side)	

8. 6. 3.20 Fuser Temperature to start idling (No.045)

It is possible to decide the temperature to start idling.
When the Fuser Temperature reaches the value specified in this No.045 during the warming up, the Fuser Motor starts rotating to drive the Fuser Roller (idling).

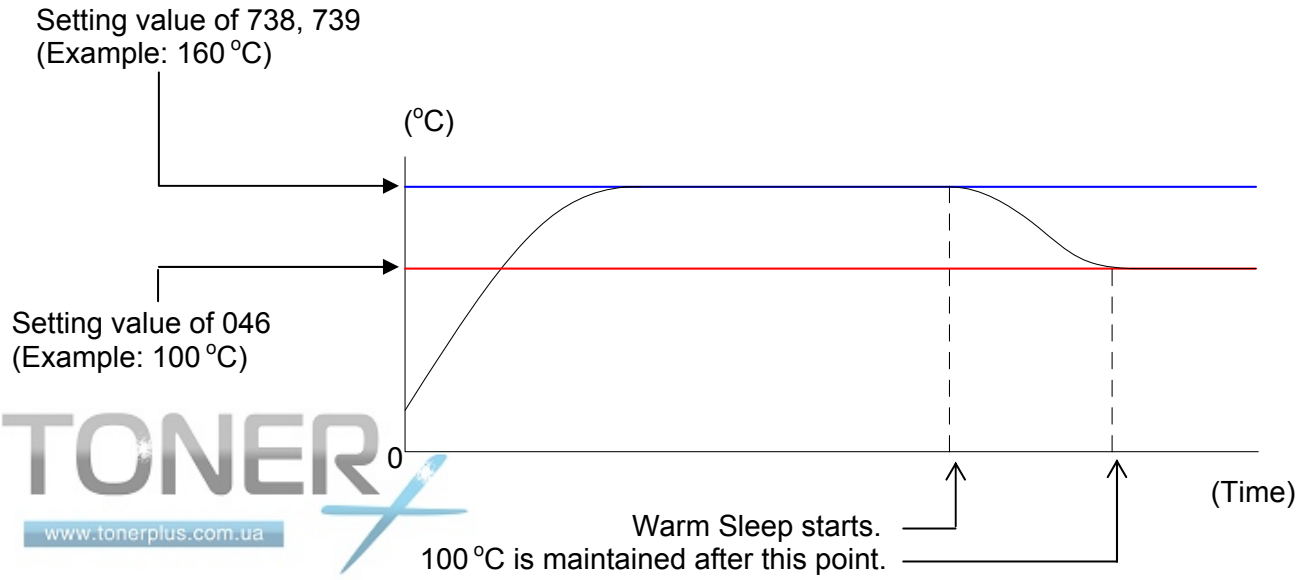
Default value		Setting range	Step of increment
USA	EUR/ASIA		
120	120	100 to 140	1°C



8. 6. 3.21 Warm Sleep – Fuser Temperature (No.046)

It is possible to decide the temperature which is maintained in the Warm Sleep.

Default value		Setting range	Step of increment
USA	EUR/ASIA		
100	100	100 to 160	1°C



8. 6. 3.22 Fuser Temperature Control Range (No.048 & 049)

It is possible to specify the control range of temperature of Fuser Roller.

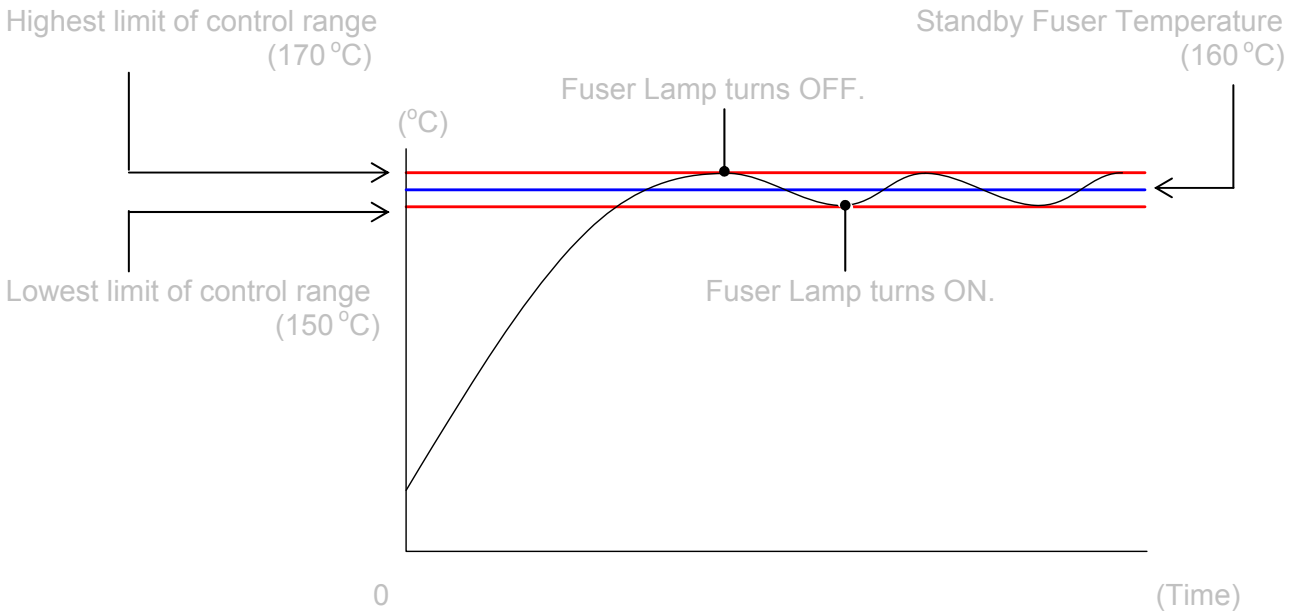
If you specify some setting value “X” on these No.048 and 049, for example, you can decide the highest limit and the lowest one of the control range of temperature.
The highest limit is “Fuser Temperature (Decided in No.039 to 044)” plus the setting value “X”.
And the lowest one is “Fuser Temperature” minus “X”.

The Fuser Lamp continues to light up when the temperature of Fuser Roller is colder than the highest limit, and it is put out when the temperature reaches the highest limit.
The Fuser Roller gradually gets colder after that, and the Fuser Lamp lights again when the temperature reaches the lowest limit.

Control range can be decided separately to each condition “in the print cycle” and “stand by”.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
048	Fuser Temperature Control Range (In the print cycle)	1	1	1 to 6	1°C
049	Fuser Temperature Control Range (Stand by)	2	2	1 to 6	1°C

Example: Value of No.048 (Fuser Temperature Control Range) is “10”
Value of No.739 Standby - Fuser Temperature Side) is “160”



8. 6. 3.23 Reaction Time of Toner Supply Motor (No.050)

It is possible to change the reaction time of Toner Supply Motor.
“Reaction time” is the time taken until the Toner Supply Motor starts working since “Toner Low” has been detected.
The reaction time becomes 1 second longer if you increase the setting value by “+1”.

Default value		Setting range	Step of increment
USA	EUR/ASIA		
15	15	1 to 30	1 second

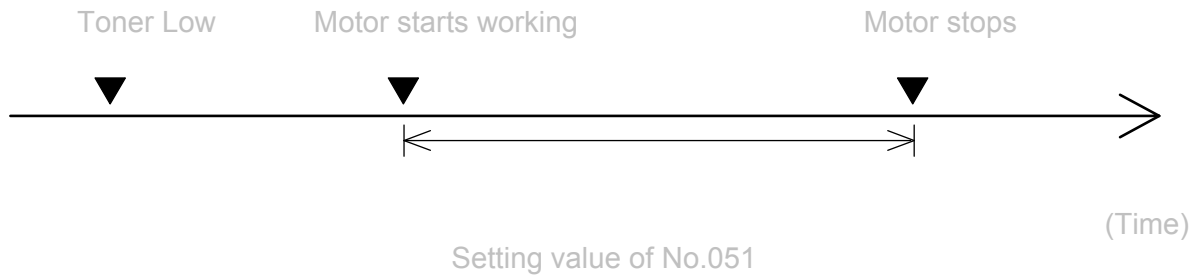
NOTE

The reaction time may be too long if the image gets lighter and lighter when you make large volume prints continuously.
In this case try to decrease the setting value of No.050 to shorten the reaction time.

8. 6. 3.24 Toner Supply Motor ON Time (No.051)

It is possible change the time the Toner Supply Motor works (ON time).
The ON time becomes 1 second longer if you increase the setting value.

Default value		Setting range	Step of increment
USA	EUR/ASIA		
10	10	1 to 15	1 second



NOTE

The ON time may be too short if the image gets lighter and lighter when you make large volume prints continuously.
In this case try to increase the setting value of No.051 to make the ON time longer.

8. 6. 3.25 Dot Enhancement Level (Dither) (No.052)

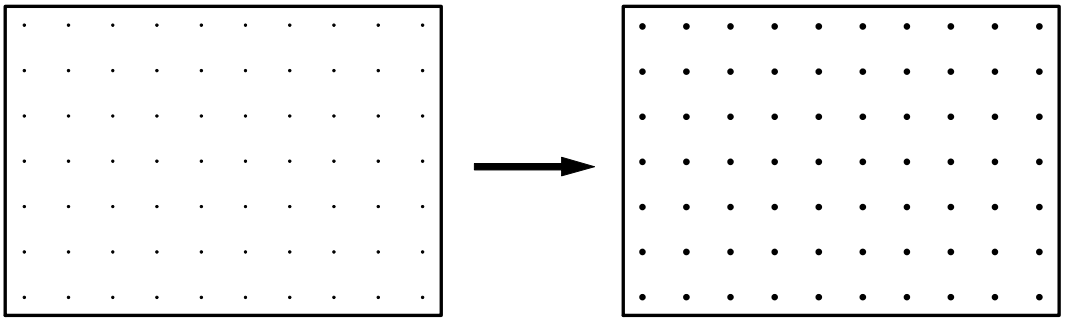
It is possible to validate the Dot Enhancement function which makes an isolated dot look clearer. An isolated dot image is more emphasized if you increase the setting value.

Setting value	Contents
1 (Default in USA, EUR & ASIA)	Emphasized
2	More emphasized
3	Most emphasized

Reference

(1) An isolated dot image tends to look so weak.
The Dot Enhancement function emphasizes the isolated dot so that it looks clear.
(Dot Enhancement function emphasizes only the isolated dot. It will not emphasize the dots coming together some degree.)

Dot Enhancement function is OFF. Dot Enhancement function is ON.

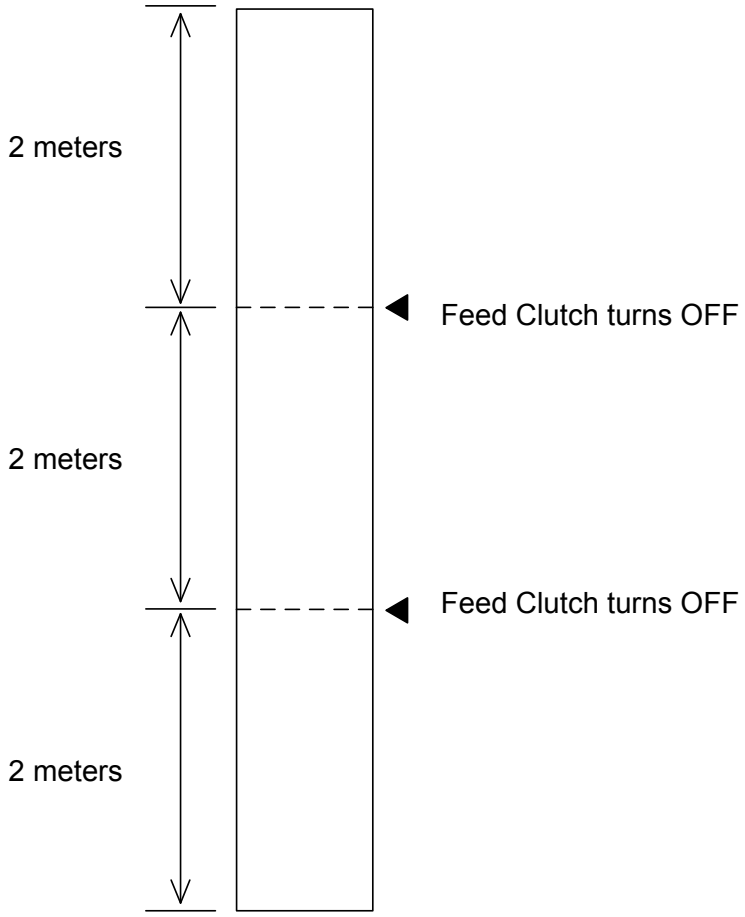


(2) The Dot Enhancement function can be validated in the User Mode.
It will not work if not validated.

8. 6. 3.26 Feed Clutch OFF time (No.053, 054)

The Feed Clutch turns OFF for a very short period whenever the machine transports the paper 2 meters long, so as to remove the paper slack in a long printing.
It is possible to specify how long period the Feed Clutch continues to be OFF.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
053	Feed Clutch Off Timing (Roll 1)	230	230	80 to 360	1msec.
054	Feed Clutch Off Timing (Roll 2)	230	230	80 to 360	1msec.



8. 6. 3.27 Metric or Inch (No.055)

It is possible to decide the base format of the print.

Setting value	Contents
0 (Default in EUR & ASIA)	Metric
1 (Default in USA)	Inch

NOTE

No.055 is effective only to the size format selection available in the UI screen. This does not effect to the count unit.

8. 6. 3.28 Language (No.056)

NOTE

This setting does not function. Keep the value unchanged.

8. 6. 3.29 Interface Communication Setting (No.057)

It is possible to specify the communication of Interface.

Setting value	Contents
0	Both the A Channel and the B Channel are used alternately. Interface Board communicates with both the image scanner (through A Channel) and the controller (through B Channel) alternately.
1	The A Channel only is used. Interface Board communicates with image scanner through the A Channel.
2 (Default in USA, EUR & ASIA)	The B Channel only is used. Interface Board communicates with controller through the B Channel.

8. 6. 3.30 Recognition of Paper Tray (No.058)

It is possible to make the machine recognize Paper Tray (multiple cut sheet feeder, option) if it is installed.

Setting value	Contents
0 (Default in USA, EUR & ASIA)	Paper Tray not installed.
1	Paper Tray installed.

8. 6. 3.31 Counter Value (No.059)

It is possible to specify the counting unit of Counter.

Setting value	Contents
0	1 linear meter
1	0.1 linear meter
2 (Default in EUR & ASIA)	1 square meter
3	0.1 square meter
4	1 linear foot
5 (Default in USA)	1 square foot
6	Size Count

Reference

Size Count:
- A4/A3: 1 count
- A2: 2 counts
- A1: 3 counts
- A0: 5 counts

8. 6. 3.32 Maximum Length (No.060)

It is possible to specify the maximum cut length.

Setting value	Contents
0 (Default in USA, EUR & ASIA)	Maximum cut length is 6.0m.
1	Maximum cut length is 200m.

NOTE

We will not guarantee the print quality if the print is longer than the following sizes.

A0 / 36” plain paper 6.0m
Other sizes of plain paper ..... 5 times as long as each standard size
Tracing paper ..... Twice as long as each standard size
Film ..... Standard sizes

8. 6. 3.33 Stacking Device setting (No.061)

It is possible to make the TASKalfa 4820w recognize the optional device (stacker or folder) if connected.

Setting value	Contents
0 (Default in USA, EUR & ASIA)	Optional device is not connected.
1	Auto Stacker

8. 6. 3.34 Operation of Fuser Roller (No.062)

It is possible to decide whether or not the Fuser Roller should rotate periodically in the stand by condition.

Setting value	Contents
0 (Default in USA, EUR & ASIA)	Fuser Roller rotates periodically in the stand by condition.
1	Fuser Roller does not rotate at all in the stand by condition.

Reference

Fuser Roller periodically rotates and stops when the machine is ready, so as to equalize the temperature at every point of Fuser Roller. If you feel it is so noisy, select the setting value “1”.
In this case please note that the fusing quality may not be so good because the temperature of Fuser Roller is not equalized.

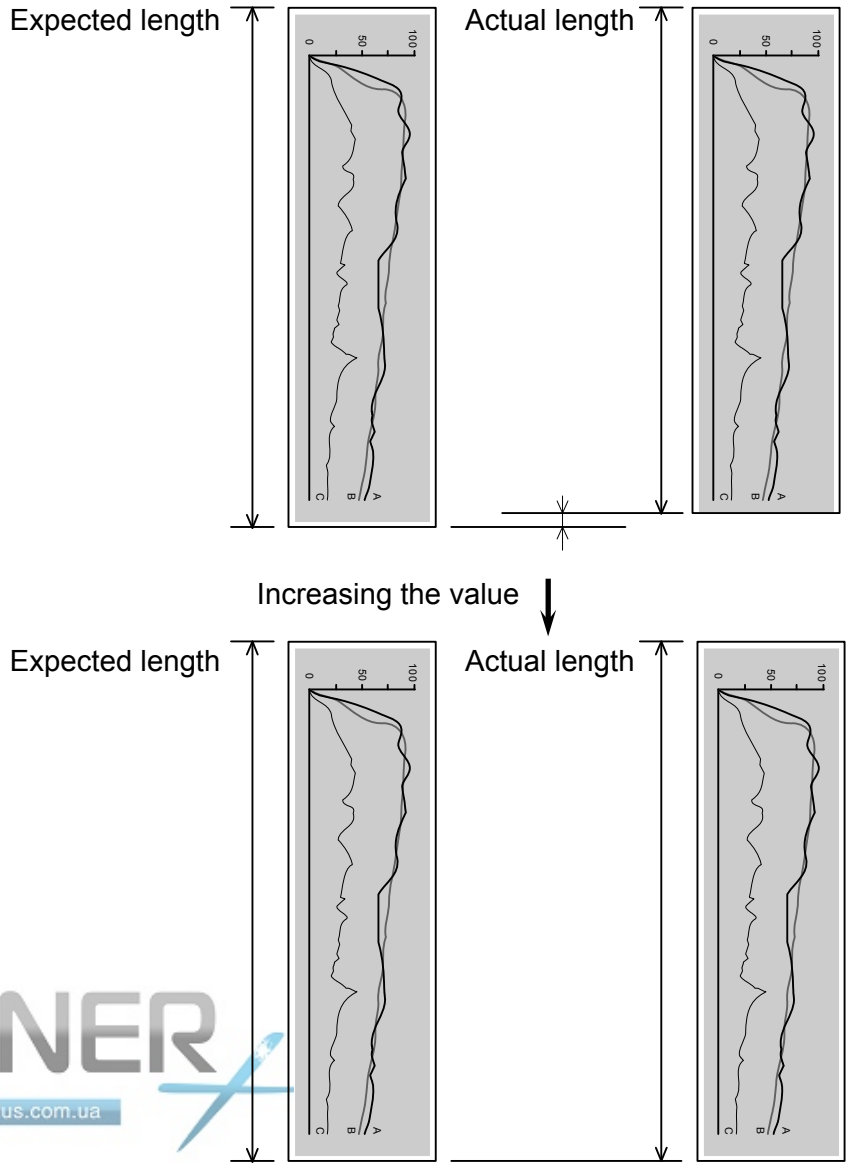
8. 6. 3.35 Cut Length 5 & 6 (Length Compensation for Tracing Paper / Film)(No.063, 064)

It is possible to compensate the print length for the tracing paper and film.
If you increase the setting value by “+1”, the length of the print becomes longer.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
063	Cut Length 5 (Tracing Paper)	100	100	0 to 200	depends on paper length
064	Cut Length 6 (Film)	100	86	0 to 200	depends on paper length

An amount of the length to be added / removed against “1” increment of the setting value will vary depending on the length of the media length to be printed.
“1” increment will correspond to the length listed below to be compensated.

paper length	length to be added / removed (Approx.)
A0 (1189mm)	0.16mm
A1 (841mm)	0.11mm
A2 (594mm)	0.08mm
A3 (420mm)	0.05mm
A4 (297mm)	0.04mm



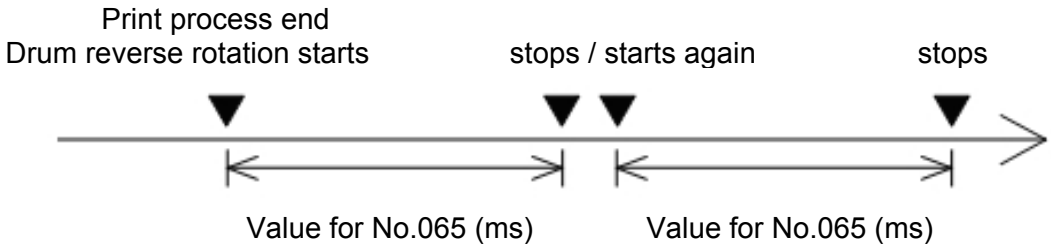
8. 6. 3.36 Drum Reverse Rotation Time (No.065)

It is possible to change the period for the Drum reverse rotation.

Developer Roller is strongly pressed to the Drum and that may cause an indentation on Developer Roller's surface. The indentation may result in defective imaging.
The Drum makes a reverse rotation in a given period twice after finishing a job.

Setting a bigger value for No.065 makes the reverse rotation period longer.

Default value		Setting range	Step of increment
USA	EUR/ASIA		
30	30	10 to 70	1 millisecond



Reference

(1) Drum reverse rotations may produce a slight amount of toner sticking on Drum's surface. This causes a black line about 50mm below the leading edge on a print. Setting a smaller value will reduce such a line.

(2) Setting an extremely small value may cause an indentation on Developer Roller.

8. 6. 3. 37 Fuser Motor Reverse Setting (No.066)

It is possible to make a decision to allow reverse operation of Fuser Motor at the time of Drum Reverse.

Setting value	Contents
0 (default)	Fuser Motor does not make a reverse operation at all
1	Fuser Motor makes a reverse operation in conjunction with Drum Reverse.

8. 6. 3.38 Operation of Separation Lamp (No.067)

There may be the case that some type of printing paper has a difficulty in paper separation.
In this case it is possible to assist paper separation by lighting the Separation Lamp.
It is possible in this No.067 to decide to which type of paper the Separation Lamp should light.
Selectable values are from 1 to 7

Setting value	Contents
1	Separation Lamp lights for plain paper.
2	Separation Lamp lights for tracing paper.
3	Separation Lamp lights for plain paper and tracing paper.
4	Separation Lamp lights for film.
5 (Default in USA, EUR & ASIA)	Separation Lamp lights for plain paper and film.
6	Separation Lamp lights for tracing paper and film.
7	Separation Lamp lights for all kinds of paper.

Reference

Sometimes you can avoid “defect of transfer (light image)” by making the Separation Lamp work.
So if you feel the print image is too light, try to make it work.
You may be able to fix the problem.

8. 6. 3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd, 4th Speed. It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a plain paper of A3, 12” and 11” sizes by roll paper feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
070	Fuser Motor 1st Speed (Roll / Plain paper / A3, 12” & 11”)	34	39	0 to 80	0.04mm/s
071	Switch Timing to Fuser Motor 1st Speed (Roll / Plain paper / A3, 12” & 11”)	1	1	0 to 300	0.5 sec
072	Fuser Motor 2nd Speed (Roll / Plain paper / A3, 12” & 11”)	35	42	0 to 80	0.04mm/s
073	Switch Timing to Fuser Motor 2nd Speed (Roll / Plain paper / A3, 12” & 11”)	1	1	0 to 300	0.5 sec
074	Fuser Motor 3rd Speed (Roll / Plain paper / A3, 12” & 11”)	50	48	0 to 80	0.04mm/s
075	Switch Timing to Fuser Motor 3rd Speed (Roll / Plain paper / A3, 12” & 11”)	5	5	0 to 300	0.5 sec
678	Fuser Motor 4th Speed (Roll / Plain paper / A3, 12” & 11”)	34	37	0 to 80	0.04mm/s
679	Switch Timing to Fuser Motor 4th Speed (Roll / Plain paper / A3, 12” & 11”)	6	8	0 to 300	0.5 sec

Please refer to the next page for further information.

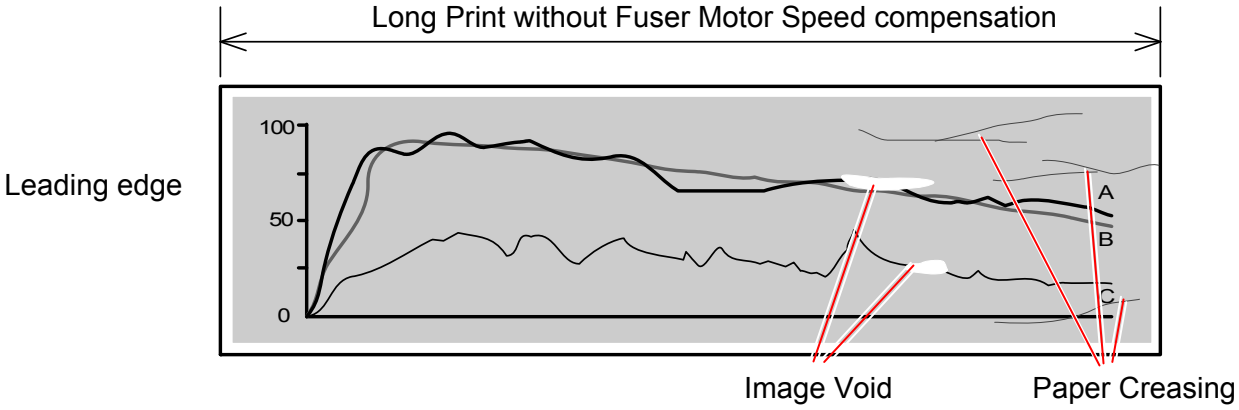
NOTE

(1) Fuser Motor Speed is factory-adjusted based on an individual machine, and the result is written in the service sheet. Be sure to confirm the service sheet in case of a setting change on Fuser Motor Speed.

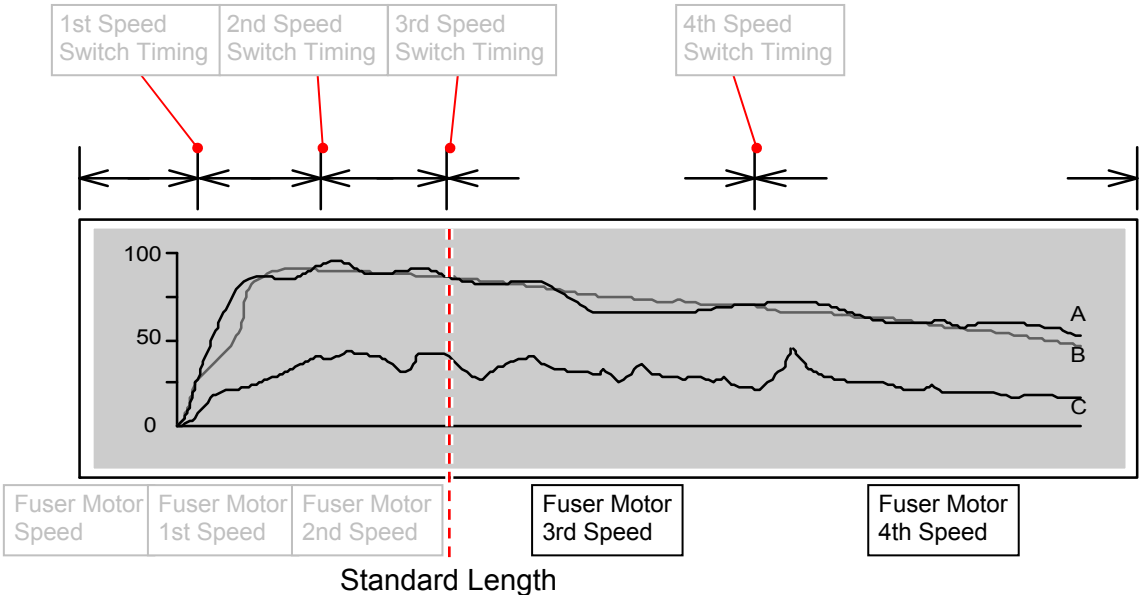
(2) Fuser Motor Speed should be changed with visual check. Remove the right cover and see inside of the machine to check the feeding balance (media not to be pulled too much / without slack, etc).

Reference

"Paper creasing" or "image void" on a long print may be removed by Fuser Motor Speed compensation.



Fuser Motor Speed, Fuser Motor 1/2/3/4 Speed correspond to the area shown as follows.
To remove "paper creasing" or "image void", adjust Fuser Motor **3rd/4th** Speed according to the situation.



NOTE

(1) When "Switching Timing" is set to 0, the subsequent Fuser Motor Speed settings are not applied.
4th Speed is not used when Fuser Motor 4th Speed Switch Timing is set to "0".
3rd/4th Speed is not used when Fuser Motor 3rd Speed Switch Timing is set to "0".

(2) Fuser Motor 3rd/4th Speed are factory-adjusted for the following media width as follows.

	3rd Speed	4th Speed
plain	all width	all width
tracing/vellum	all width	A0/36"/34"/30" less than above: not used
film	not used	not used
cutsheet (except film)	factory-adjusted	not used

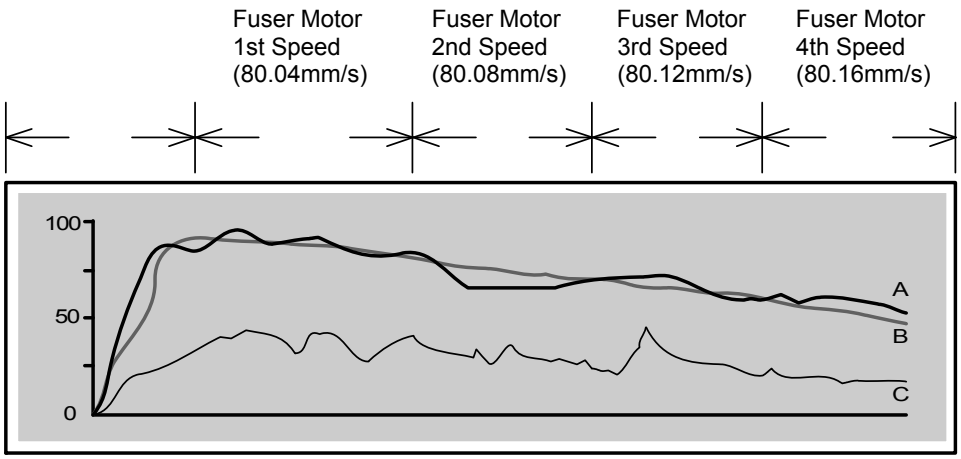
"not used" means that the previous Switch Timing is set to "0" because the corresponding print area exceeds the guaranteed length.

This page explains Fuser Motor Speed Compensation on A3/12”/11” width for example.

You can specify the Fuser Motor 1st Speed, 2nd, 3rd and 4th in each Item No.070, 072, 074, 678.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.
(The default setting value “40” corresponds to 80mm/second.)

(Example)

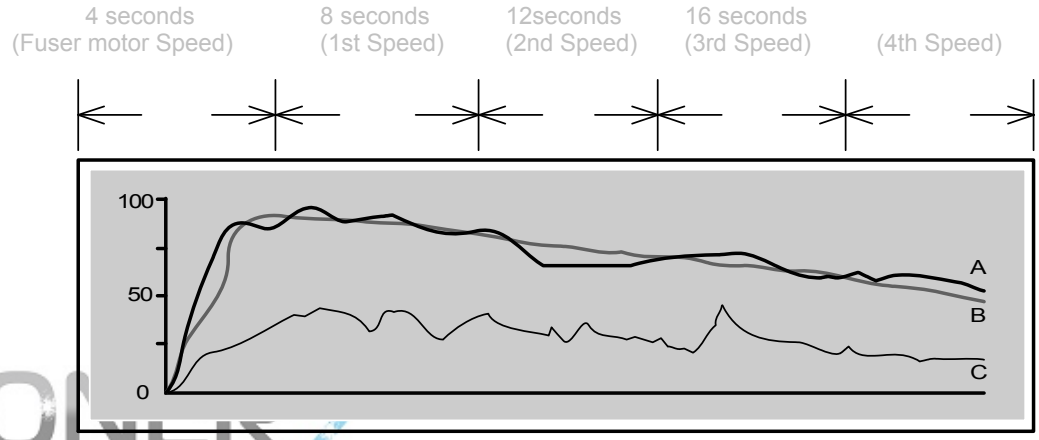
Setting value of 070 is “41” ⟶ Fuser Motor 1st Speed is 80.04mm/sec.
Setting value of 072 is “42” ⟶ Fuser Motor 2nd Speed is 80.08mm/sec.
Setting value of 074 is “43” ⟶ Fuser Motor 3rd Speed is 80.12mm/sec.
Setting value of 678 is “44” ⟶ Fuser Motor 4th Speed is 80.16mm/sec.



You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.071, 073, 075, 679.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.
(If you specify “0”, the Fuser Motor Speed does not change.)

(Example)

Setting value of 071 is “8” ⟶ Fuser Motor 1st Speed starts 4 seconds after the Registration Sensor detects the leading edge.
Setting value of 073 is “16” ⟶ Fuser Motor 2nd Speed starts 8 seconds after the start of Fuser Motor 1st Speed.
Setting value of 075 is “24” ⟶ Fuser Motor 3rd Speed starts 12 seconds after the start of Fuser Motor 2nd Speed.
Setting value of 678 is “32” ⟶ Fuser Motor 4th Speed starts 16 seconds after the start of Fuser Motor 3rd Speed.



8. 6. 3.40 Compensation of Fuser Motor Speed for roll paper (Tracing paper / A3, 12” & 11”) (No.076 to 081, 680, 681)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a tracing paper of A3, 12” and 11” sizes by roll paper feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
076	Fuser Motor 1st Speed (Roll / Tracing / A3, 12” & 11”)	33	36	0 to 80	0.04mm/s
077	Switch Timing to Fuser Motor 1st Speed (Roll / Tracing / A3, 12” & 11”)	1	1	0 to 300	0.5 sec
078	Fuser Motor 2nd Speed (Roll / Tracing / A3, 12” & 11”)	39	44	0 to 80	0.04mm/s
079	Switch Timing to Fuser Motor 2nd Speed (Roll / Tracing / A3, 12” & 11”)	1	3	0 to 300	0.5 sec
080	Fuser Motor 3rd Speed (Roll / Tracing / A3, 12” & 11”)	44	44	0 to 80	0.04mm/s
081	Switch Timing to Fuser Motor 3rd Speed (Roll / Tracing / A3, 12” & 11”)	5	5	0 to 300	0.5 sec
680	Fuser Motor 4th Speed (Roll / Tracing / A3, 12” & 11”)	40	40	0 to 80	0.04mm/s
681	Switch Timing to Fuser Motor 4th Speed (Roll / Tracing / A3, 12” & 11”)	0	0	0 to 300	0.5 sec

You can specify Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.076, 078, 080, 680.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.077, 079, 081, 681.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.41 Compensation of Fuser Motor Speed for roll paper (Film / A3, 12” & 11”) (No.082 to 087, 682, 683)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a film of A3, 12” and 11” sizes by roll paper feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
082	Fuser Motor 1st Speed (Roll / Film / A3, 12” & 11”)	50	50	0 to 80	0.04mm/s
083	Switch Timing to Fuser Motor 1st Speed (Roll / Film / A3, 12” & 11”)	2	2	0 to 300	0.5 sec
084	Fuser Motor 2nd Speed (Roll / Film / A3, 12” & 11”)	50	50	0 to 80	0.04mm/s
085	Switch Timing to Fuser Motor 2nd Speed (Roll / Film / A3, 12” & 11”)	4	4	0 to 300	0.5 sec
086	Fuser Motor 3rd Speed (Roll / Film / A3, 12” & 11”)	40	40	0 to 80	0.04mm/s
087	Switch Timing to Fuser Motor 4th Speed (Roll / Film / A3, 12” & 11”)	0	0	0 to 300	0.5 sec
682	Fuser Motor 4th Speed (Roll / Film / A3, 12” & 11”)	40	40	0 to 80	0.04mm/s
683	Switch Timing to Fuser Motor 4th Speed (Roll / Film / A3, 12” & 11”)	0	040	0 to 300	0.5 sec

You can specify Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.082, 084, 086, 682.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.083, 085, 087, 683.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.42 Compensation of Fuser Motor Speed for roll paper (Special plain paper / A3, 12” & 11”) (No.088 to 093, 684, 685)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a plain paper (special media) of A3, 12” and 11” sizes by roll paper feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
088	Fuser Motor 1st Speed (Roll / Special plain paper / A3, 12” & 11”)	40	40	0 to 80	0.04mm/s
089	Switch Timing to Fuser Motor 1st Speed (Roll / Special plain paper / A3, 12” & 11”)	0	0	0 to 300	0.5 sec
090	Fuser Motor 2nd Speed Setting (Roll / Special plain paper / A3, 12” & 11”)	40	40	0 to 80	0.04mm/s
091	Switch Timing to Fuser Motor 2nd Speed (Roll / Special plain paper / A3, 12” & 11”)	0	0	0 to 300	0.5 sec
092	Fuser Motor 3rd Speed (Roll / Special plain paper / A3, 12” & 11”)	40	40	0 to 80	0.04mm/s
093	Switch Timing to Fuser Motor 3rd Speed (Roll / Special plain paper / A3, 12” & 11”)	0	0	0 to 300	0.5 sec
684	Fuser Motor 4th Speed (Roll / Special plain paper / A3, 12” & 11”)	40	40	0 to 80	0.04mm/s
685	Switch Timing to Fuser Motor 4th Speed (Roll / Special plain paper / A3, 12” & 11”)	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.088, 090, 092, 684.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.089, 091, 093, 685.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.43 Compensation of Fuser Motor Speed for roll paper (Special tracing paper / A3, 12” & 11”) (No.094 to 099, 686, 687)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a tracing paper (special media) of A3, 12” and 11” sizes by roll paper feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
094	Fuser Motor 1st Speed (Roll/ Special Media / Tracing / A3, 12” & 11”)	40	40	0 to 80	0.04mm/s
095	Switch Timing to Fuser Motor 1st Speed (Roll/ Special Media / Tracing / A3, 12” & 11”)	0	0	0 to 300	0.5 sec
096	Fuser Motor 2nd Speed (Roll/ Special Media / Tracing / A3, 12” & 11”)	40	40	0 to 80	0.04mm/s
097	Switch Timing to Fuser Motor 2nd Speed (Roll/ Special Media / Tracing / A3, 12” & 11”)	0	0	0 to 300	0.5 sec
098	Fuser Motor 3rd Speed (Roll/ Special Media / Tracing / A3, 12” & 11”)	40	40	0 to 80	0.04mm/s
099	Switch Timing to Fuser Motor 3rd Speed (Roll/ Special Media / Tracing / A3, 12” & 11”)	0	0	0 to 300	0.5 sec
686	Fuser Motor 4th Speed (Roll/ Special Media / Tracing / A3, 12” & 11”)	40	40	0 to 80	0.04mm/s
687	Switch Timing to Fuser Motor 4th Speed (Roll/ Special Media / Tracing / A3, 12” & 11”)	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.094, 096, 098, 686.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.095, 097, 099, 687.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.44 Compensation of Fuser Motor Speed for roll paper (Special film / A3, 12” & 11”) (No.100 to 105, 688, 689)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a film (special media) of A3, 12” and 11” sizes by roll paper feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
100	Fuser Motor 1st Speed (Roll / Special film / A3, 12” & 11”)	40	40	0 to 80	0.04mm/s
101	Switch Timing to Fuser Motor 1st Speed (Roll / Special film / A3, 12” & 11”)	0	0	0 to 300	0.5 sec
102	Fuser Motor 2nd Speed (Roll / Special film / A3, 12” & 11”)	40	40	0 to 80	0.04mm/s
103	Switch Timing to Fuser Motor 2nd Speed (Roll / Special film / A3, 12” & 11”)	0	0	0 to 300	0.5 sec
104	Fuser Motor 3rd Speed (Roll / Special film / A3, 12” & 11”)	40	40	0 to 80	0.04mm/s
105	Switch Timing to Fuser Motor 3rd Speed (Roll / Special film / A3, 12” & 11”)	0	0	0 to 300	0.5 sec
688	Fuser Motor 4th Speed (Roll / Special film / A3, 12” & 11”)	40	40	0 to 80	0.04mm/s
689	Switch Timing to Fuser Motor 4th Speed (Roll / Special film / A3, 12” & 11”)	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.100, 102, 104, 688.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.101, 103, 105, 689.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.45 Compensation of Fuser Motor Speed for roll paper (Plain paper / A2, 18” & 17”) (No.106 to 111, 690, 691)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a plain paper of A2, 18” and 17” sizes by roll paper feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
106	Fuser Motor 1st Speed (Roll / Plain paper / A2, 18” & 17”)	30	31	0 to 80	0.04mm/s
107	Switch Timing to Fuser Motor 1st Speed (Roll / Plain paper / A2, 18” & 17”)	3	3	0 to 300	0.5 sec
108	Fuser Motor 2nd Speed (Roll / Plain paper / A2, 18” & 17”)	32	36	0 to 80	0.04mm/s
109	Switch Timing to Fuser Motor 2nd Speed (Roll / Plain paper / A2, 18” & 17”)	4	4	0 to 300	0.5 sec
110	Fuser Motor 3rd Speed (Roll / Plain paper / A2, 18” & 17”)	31	38	0 to 80	0.04mm/s
111	Switch Timing to Fuser Motor 3rd Speed (Roll / Plain paper / A2, 18” & 17”)	6	6	0 to 300	0.5 sec
690	Fuser Motor 4th Speed (Roll / Plain paper / A2, 18” & 17”)	37	40	0 to 80	0.04mm/s
691	Switch Timing to Fuser Motor 4th Speed (Roll / Plain paper / A2, 18” & 17”)	10	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.106, 108, 110, 690.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.107, 109, 111, 691.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.46 Compensation of Fuser Motor Speed for roll paper (Tracing paper / A2, 18” & 17”) (No.112 to 117, 692, 693)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a tracing paper of A2, 18” and 17” sizes by roll paper feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
112	Fuser Motor 1st Speed (Roll / Tracing / A2, 18” & 17”)	33	40	0 to 80	0.04mm/s
113	Switch Timing to Fuser Motor 1st Speed (Roll / Tracing / A2, 18” & 17”)	3	1	0 to 300	0.5 sec
114	Fuser Motor 2nd Speed (Roll / Tracing / A2, 18” & 17”)	38	44	0 to 80	0.04mm/s
115	Switch Timing to Fuser Motor 2nd Speed (Roll / Tracing / A2, 18” & 17”)	3	5	0 to 300	0.5 sec
116	Fuser Motor 3rd Speed (Roll / Tracing / A2, 18” & 17”)	38	45	0 to 80	0.04mm/s
117	Switch Timing to Fuser Motor 3rd Speed (Roll / Tracing / A2, 18” & 17”)	5	5	0 to 300	0.5 sec
692	Fuser Motor 4th Speed (Roll / Tracing / A2, 18” & 17”)	40	40	0 to 80	0.04mm/s
693	Switch Timing to Fuser Motor 4th Speed (Roll / Tracing / A2, 18” & 17”)	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.112, 114, 116, 692.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.113, 115, 117, 693.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.47 Compensation of Fuser Motor Speed for roll paper (Film / A2, 18” & 17”) (No.118 to 123, 694, 695)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a film of A2, 18” and 17” sizes by roll paper feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
118	Fuser Motor 1st Speed (Roll / Film / A2, 18” & 17”)	50	50	0 to 80	0.04mm/s
119	Switch Timing to Fuser Motor 1st Speed (Roll / Film / A2, 18” & 17”)	2	2	0 to 300	0.5 sec
120	Fuser Motor 2nd Speed (Roll / Film / A2, 18” & 17”)	50	50	0 to 80	0.04mm/s
121	Switch Timing to Fuser Motor 2nd Speed (Roll / Film / A2, 18” & 17”)	6	6	0 to 300	0.5 sec
122	Fuser Motor 3rd Speed (Roll / Film / A2, 18” & 17”)	40	40	0 to 80	0.04mm/s
123	Switch Timing to Fuser Motor 3rd Speed (Roll / Film / A2, 18” & 17”)	0	0	0 to 300	0.5 sec
694	Fuser Motor 4th Speed (Roll / Film / A2, 18” & 17”)	40	40	0 to 80	0.04mm/s
695	Switch Timing to Fuser Motor 4th Speed (Roll / Film / A2, 18” & 17”)	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.118, 120, 122, 694.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.119, 121, 123, 695.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.48 Compensation of Fuser Motor Speed for roll paper (Special plain paper / A2, 18” & 17”) (No.124 to 129, 696, 697)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a plain paper (special media) of A2, 18” and 17” sizes by roll paper feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
124	Fuser Motor 1st Speed (Roll / Special plain paper / A2, 18” & 17”)	40	40	0 to 80	0.04mm/s
125	Switch Timing to Fuser Motor 1st Speed (Roll / Special plain paper / A2, 18” & 17”)	0	0	0 to 300	0.5 sec
126	Fuser Motor 2nd Speed (Roll / Special plain paper / A2, 18” & 17”)	40	40	0 to 80	0.04mm/s
127	Switch Timing to Fuser Motor 2nd Speed (Roll / Special plain paper / A2, 18” & 17”)	0	0	0 to 300	0.5 sec
128	Fuser Motor 3rd Speed (Roll / Special plain paper / A2, 18” & 17”)	40	40	0 to 80	0.04mm/s
129	Switch Timing to Fuser Motor 3rd Speed (Roll / Special plain paper / A2, 18” & 17”)	0	0	0 to 300	0.5 sec
696	Fuser Motor 4th Speed (Roll / Special plain paper / A2, 18” & 17”)	40	40	0 to 80	0.04mm/s
697	Switch Timing to Fuser Motor 4th Speed (Roll / Special plain paper / A2, 18” & 17”)	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.124, 126, 128, 696.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.125, 127, 129, 697.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.49 Compensation of Fuser Motor Speed for roll paper (Special tracing paper / A2, 18” & 17”) (No.130 to 135, 698, 699)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a tracing paper (special media) of A2, 18” and 17” size by roll paper feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
130	Fuser Motor 1st Speed (Roll / Special tracing / A2, 18” & 17”)	40	40	0 to 80	0.04mm/s
131	Switch Timing to Fuser Motor 1st Speed (Roll / Special tracing / A2, 18” & 17”)	0	0	0 to 300	0.5 sec
132	Fuser Motor 2nd Speed (Roll / Special tracing / A2, 18” & 17”)	40	40	0 to 80	0.04mm/s
133	Switch Timing to Fuser Motor 2nd Speed (Roll / Special tracing / A2, 18” & 17”)	0	0	0 to 300	0.5 sec
134	Fuser Motor 3rd Speed (Roll / Special tracing / A2, 18” & 17”)	40	40	0 to 80	0.04mm/s
135	Switch Timing to Fuser Motor 3rd Speed (Roll / Special tracing / A2, 18” & 17”)	0	0	0 to 300	0.5 sec
698	Fuser Motor 4th Speed (Roll / Special tracing / A2, 18” & 17”)	40	40	0 to 80	0.04mm/s
699	Switch Timing to Fuser Motor 4th Speed (Roll / Special tracing / A2, 18” & 17”)	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.130, 132, 134, 698.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.131, 133, 135, 699.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.50 Compensation of Fuser Motor Speed for roll paper (Special film / A2, 18” & 17”) (No.136 to 141, 700, 701)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a film (special media) of A2, 18” and 17” sizes by roll paper feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
136	Fuser Motor 1st Speed (Roll / Special film / A2, 18” & 17”)	40	40	0 to 80	0.04mm/s
137	Switch Timing to Fuser Motor 1st Speed (Roll / Special film / A2, 18” & 17”)	0	0	0 to 300	0.5 sec
138	Fuser Motor 2nd Speed (Roll / Special film / A2, 18” & 17”)	40	40	0 to 80	0.04mm/s
139	Switch Timing to Fuser Motor 2nd Speed (Roll / Special film / A2, 18” & 17”)	0	0	0 to 300	0.5 sec
140	Fuser Motor 3rd Speed (Roll / Special film / A2, 18” & 17”)	40	40	0 to 80	0.04mm/s
141	Switch Timing to Fuser Motor 3rd Speed (Roll / Special film / A2, 18” & 17”)	0	0	0 to 300	0.5 sec
700	Fuser Motor 4th Speed (Roll / Special film / A2, 18” & 17”)	40	40	0 to 80	0.04mm/s
701	Switch Timing to Fuser Motor 4th Speed (Roll / Special film / A2, 18” & 17”)	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.136, 138,140, 700.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.137, 139, 141, 701.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.51 Compensation of Fuser Motor Speed for roll paper (Plain paper / A1, 24” & 22”) (No.142 to 147, 702, 703)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a plain paper of A1, 24” and 22” sizes by roll paper feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
142	Fuser Motor 1st Speed (Roll / Plain paper / A1, 24” & 22”)	37	35	0 to 80	0.04mm/s
143	Switch Timing to Fuser Motor 1st Speed (Roll / Plain paper / A1, 24” & 22”)	3	3	0 to 300	0.5 sec
144	Fuser Motor 2nd Speed (Roll / Plain paper / A1, 24” & 22”)	30	33	0 to 80	0.04mm/s
145	Switch Timing to Fuser Motor 2nd Speed (Roll / Plain paper / A1, 24” & 22”)	6	8	0 to 300	0.5 sec
146	Fuser Motor 3rd Speed (Roll / Plain paper / A1, 24” & 22”)	40	41	0 to 80	0.04mm/s
147	Switch Timing to Fuser Motor 3rd Speed (Roll / Plain paper / A1, 24” & 22”)	6	8	0 to 300	0.5 sec
702	Fuser Motor 4th Speed (Roll / Plain paper / A1, 24” & 22”)	35	36	0 to 80	0.04mm/s
703	Switch Timing to Fuser Motor 4th Speed (Roll / Plain paper / A1, 24” & 22”)	16	16	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.142, 144, 146, 702.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.143, 145, 147, 703.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.52 Compensation of Fuser Motor Speed for roll paper (Tracing paper / A1, 24” & 22”) (No.148 to 153, 704, 705)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a tracing paper of A1, 24” and 22” sizes by roll paper feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
148	Fuser Motor 1st Speed (Roll / Tracing / A1, 24” & 22”)	36	42	0 to 80	0.04mm/s
149	Switch Timing to Fuser Motor 1st Speed (Roll / Tracing / A1, 24” & 22”)	3	3	0 to 300	0.5 sec
150	Fuser Motor 2nd Speed (Roll / Tracing / A1, 24” & 22”)	41	43	0 to 80	0.04mm/s
151	Switch Timing to Fuser Motor 2nd Speed (Roll / Tracing / A1, 24” & 22”)	9	9	0 to 300	0.5 sec
152	Fuser Motor 3rd Speed (Roll / Tracing / A1, 24” & 22”)	39	40	0 to 80	0.04mm/s
153	Switch Timing to Fuser Motor 3rd Speed (Roll / Tracing / A1, 24” & 22”)	8	8	0 to 300	0.5 sec
704	Fuser Motor 4th Speed (Roll / Tracing / A1, 24” & 22”)	40	40	0 to 80	0.04mm/s
705	Switch Timing to Fuser Motor 4th Speed (Roll / Tracing / A1, 24” & 22”)	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.148, 150, 152, 704.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.149, 151, 153, 705.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.53 Compensation of Fuser Motor Speed for roll paper (Film / A1, 24” & 22”) (No.154 to 159, 706, 707)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a film of A1, 24” and 22” sizes by roll paper feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
154	Fuser Motor 1st Speed (Roll / Film / A1, 24” & 22”)	42	42	0 to 80	0.04mm/s
155	Switch Timing to Fuser Motor 1st Speed (Roll / Film / A1, 24” & 22”)	2	2	0 to 300	0.5 sec
156	Fuser Motor 2nd Speed (Roll / Film / A1, 24” & 22”)	42	42	0 to 80	0.04mm/s
157	Switch Timing to Fuser Motor 2nd Speed (Roll / Film / A1, 24” & 22”)	14	14	0 to 300	0.5 sec
158	Fuser Motor 3rd Speed (Roll / Film / A1, 24” & 22”)	40	40	0 to 80	0.04mm/s
159	Switch Timing to Fuser Motor 3rd Speed (Roll / Film / A1, 24” & 22”)	0	0	0 to 300	0.5 sec
706	Fuser Motor 4th Speed (Roll / Film / A1, 24” & 22”)	40	40	0 to 80	0.04mm/s
707	Switch Timing to Fuser Motor 4th Speed (Roll / Film / A1, 24” & 22”)	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.154, 156, 158, 706.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.155, 157, 159, 707.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.54 Compensation of Fuser Motor Speed for roll paper (Special plain paper / A1, 24 & 22”) (No.160 to 165, 708, 709)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a plain paper (special media) of A1, 24” and 22” sizes by roll paper feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
160	Fuser Motor 1st Speed (Roll / Special plain paper / A1, 24” & 22”)	40	40	0 to 80	0.04mm/s
161	Switch Timing to Fuser Motor 1st Speed (Roll / Special plain paper / A1, 24” & 22”)	0	0	0 to 300	0.5 sec
162	Fuser Motor 2nd Speed (Roll / Special plain paper / A1, 24” & 22”)	40	40	0 to 80	0.04mm/s
163	Switch Timing to Fuser Motor 2nd Speed (Roll / Special plain paper / A1, 24” & 22”)	0	0	0 to 300	0.5 sec
164	Fuser Motor 3rd Speed (Roll / Special plain paper / A1, 24” & 22”)	40	40	0 to 80	0.04mm/s
165	Switch Timing to Fuser Motor 3rd Speed (Roll / Special plain paper / A1, 24” & 22”)	0	0	0 to 300	0.5 sec
708	Fuser Motor 4th Speed (Roll / Special plain paper / A1, 24” & 22”)	40	40	0 to 80	0.04mm/s
709	Switch Timing to Fuser Motor 4th Speed (Roll / Special plain paper / A1, 24” & 22”)	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.160, 162, 164, 708.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.161, 163, 165, 709.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.55 Compensation of Fuser Motor Speed for roll paper (Special tracing paper / A1, 24” & 22”) (No.166 to 171, 710, 711)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a tracing paper (special media) of A1, 24” and 22” size by roll paper feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
166	Fuser Motor 1st Speed (Roll / Special tracing / A1, 24” & 22”)	40	40	0 to 80	0.04mm/s
167	Switch Timing to Fuser Motor 1st Speed (Roll / Special tracing / A1, 24” & 22”)	0	0	0 to 300	0.5 sec
168	Fuser Motor 2nd Speed (Roll / Special tracing / A1, 24” & 22”)	40	40	0 to 80	0.04mm/s
169	Switch Timing to Fuser Motor 2nd Speed (Roll / Special tracing / A1, 24” & 22”)	0	0	0 to 300	0.5 sec
170	Fuser Motor 3rd Speed (Roll / Special tracing / A1, 24” & 22”)	40	40	0 to 80	0.04mm/s
171	Switch Timing to Fuser Motor 3rd Speed (Roll / Special tracing / A1, 24” & 22”)	0	0	0 to 300	0.5 sec
710	Fuser Motor 4th Speed (Roll / Special tracing / A1, 24” & 22”)	40	40	0 to 80	0.04mm/s
711	Switch Timing to Fuser Motor 4th Speed (Roll / Special tracing / A1, 24” & 22”)	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.166, 168, 170, 710.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.167, 169, 171, 711.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.56 Compensation of Fuser Motor Speed for roll paper (Special film / A1, 24” & 22”) (No.172 to 177, 712, 713)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a film (special media) of A1, 24” and 22” sizes by roll paper feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
172	Fuser Motor 1st Speed (Roll / Special film / A1, 24” & 22”)	40	40	0 to 80	0.04mm/s
173	Switch Timing to Fuser Motor 1st Speed (Roll / Special film / A1, 24” & 22”)	0	0	0 to 300	0.5 sec
174	Fuser Motor 2nd Speed (Roll / Special film / A1, 24” & 22”)	40	40	0 to 80	0.04mm/s
175	Switch Timing to Fuser Motor 2nd Speed (Roll / Special film / A1, 24” & 22”)	0	0	0 to 300	0.5 sec
176	Fuser Motor 3rd Speed (Roll / Special film / A1, 24” & 22”)	40	40	0 to 80	0.04mm/s
177	Switch Timing to Fuser Motor 3rd Speed (Roll / Special film / A1, 24” & 22”)	0	0	0 to 300	0.5 sec
712	Fuser Motor 4th Speed (Roll / Special film / A1, 24” & 22”)	40	40	0 to 80	0.04mm/s
713	Switch Timing to Fuser Motor 4th Speed (Roll / Special film / A1, 24” & 22”)	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.172, 174, 176, 712.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.173, 175, 177, 713.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.57 Compensation of Fuser Motor Speed for roll paper (Plain paper / A0, 36” & 34”) (No.178 to 183, 714, 715)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a plain paper of A0, 36” and 34” sizes by roll paper feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
178	Fuser Motor 1st Speed (Roll / Plain paper / A0, 36” & 34”)	26	26	0 to 80	0.04mm/s
179	Switch Timing to Fuser Motor 1st Speed (Roll / Plain paper / A0, 36” & 34”)	4	3	0 to 300	0.5 sec
180	Fuser Motor 2nd Speed (Roll / Plain paper / A0, 36” & 34”)	27	27	0 to 80	0.04mm/s
181	Switch Timing to Fuser Motor 2nd Speed (Roll / Plain paper / A0, 36” & 34”)	10	10	0 to 300	0.5 sec
182	Fuser Motor 3rd Speed (Roll / Plain paper / A0, 36” & 34”)	33	37	0 to 80	0.04mm/s
183	Switch Timing to Fuser Motor 3rd Speed (Roll / Plain paper / A0, 36” & 34”)	8	8	0 to 300	0.5 sec
714	Fuser Motor 4th Speed (Roll / Plain paper / A0, 36” & 34”)	30	30	0 to 80	0.04mm/s
715	Switch Timing to Fuser Motor 4th Speed (Roll / Plain paper / A0, 36” & 34”)	20	20	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.178, 180, 182, 714.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.179, 181, 183, 715.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.58 Compensation of Fuser Motor Speed for roll paper (Tracing paper / A0, 36” & 34”) (No.184 to 189, 716, 717)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a tracing paper of A0, 36” and 34” sizes by roll paper feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
184	Fuser Motor 1st Speed (Roll / Tracing / A0, 36” & 34”)	29	42	0 to 80	0.04mm/s
185	Switch Timing to Fuser Motor 1st Speed (Roll / Tracing / A0, 36” & 34”)	3	3	0 to 300	0.5 sec
186	Fuser Motor 2nd Speed (Roll / Tracing / A0, 36” & 34”)	35	38	0 to 80	0.04mm/s
187	Switch Timing to Fuser Motor 2nd Speed (Roll / Tracing / A0, 36” & 34”)	13	13	0 to 300	0.5 sec
188	Fuser Motor 3rd Speed (Roll / Tracing / A0, 36” & 34”)	36	39	0 to 80	0.04mm/s
189	Switch Timing to Fuser Motor 3rd Speed (Roll / Tracing / A0, 36” & 34”)	8	8	0 to 300	0.5 sec
716	Fuser Motor 4th Speed (Roll / Tracing / A0, 36” & 34”)	34	40	0 to 80	0.04mm/s
717	Switch Timing to Fuser Motor 4th Speed (Roll / Tracing / A0, 36” & 34”)	20	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.184, 186, 188, 716.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.185, 187, 189, 717.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.59 Compensation of Fuser Motor Speed for roll paper (Film / A0, 36” & 34”) (No.190 to 195, 718, 719)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a film of A0, 36” and 34” sizes by roll paper feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
190	Fuser Motor 1st Speed (Roll / Film / A0, 36” & 34”)	35	38	0 to 80	0.04mm/s
191	Switch Timing to Fuser Motor 1st Speed (Roll / Film / A0, 36” & 34”)	2	2	0 to 300	0.5 sec
192	Fuser Motor 2nd Speed (Roll / Film / A0, 36” & 34”)	40	43	0 to 80	0.04mm/s
193	Switch Timing to Fuser Motor 2nd Speed (Roll / Film / A0, 36” & 34”)	18	18	0 to 300	0.5 sec
194	Fuser Motor 3rd Speed (Roll / Film / A0, 36” & 34”)	40	40	0 to 80	0.04mm/s
195	Switch Timing to Fuser Motor 3rd Speed (Roll / Film / A0, 36” & 34”)	0	0	0 to 300	0.5 sec
718	Fuser Motor 4th Speed (Roll / Film / A0, 36” & 34”)	40	40	0 to 80	0.04mm/s
719	Switch Timing to Fuser Motor 4th Speed (Roll / Film / A0, 36” & 34”)	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.190, 192, 194, 718.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.191, 193, 195, 719.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.60 Compensation of Fuser Motor Speed for roll paper (Special plain paper / A0, 36 & 34”) (No.196 to 201, 720, 721)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a plain paper (special media) of A0, 36” and 34” sizes by roll paper feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
196	Fuser Motor 1st Speed (Roll / Special plain paper / A0, 36” & 34”)	40	40	0 to 80	0.04mm/s
197	Switch Timing to Fuser Motor 1st Speed (Roll / Special plain paper / A0, 36” & 34”)	0	0	0 to 300	0.5 sec
198	Fuser Motor 2nd Speed (Roll / Special plain paper / A0, 36” & 34”)	40	40	0 to 80	0.04mm/s
199	Switch Timing to Fuser Motor 2nd Speed (Roll / Special plain paper / A0, 36” & 34”)	0	0	0 to 300	0.5 sec
200	Fuser Motor 3rd Speed (Roll / Special plain paper / A0, 36” & 34”)	40	40	0 to 80	0.04mm/s
201	Switch Timing to Fuser Motor 3rd Speed (Roll / Special plain paper / A0, 36” & 34”)	0	0	0 to 300	0.5 sec
720	Fuser Motor 4th Speed (Roll / Special plain paper / A0, 36” & 34”)	40	40	0 to 80	0.04mm/s
721	Switch Timing to Fuser Motor 4th Speed (Roll / Special plain paper / A0, 36” & 34”)	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.196, 198, 200, 720.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.197, 199, 201, 721.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.61 Compensation of Fuser Motor Speed for roll paper (Special tracing paper / A0, 36” & 34”) (No.202 to 207, 722, 723)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a tracing paper (special media) of A0, 36” and 34” size by roll paper feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
202	Fuser Motor 1st Speed (Roll / Special tracing / A0, 36” & 34”)	40	40	0 to 80	0.04mm/s
203	Switch Timing to Fuser Motor 1st Speed (Roll / Special tracing / A0, 36” & 34”)	0	0	0 to 300	0.5 sec
204	Fuser Motor 2nd Speed (Roll / Special tracing / A0, 36” & 34”)	40	40	0 to 80	0.04mm/s
205	Switch Timing to Fuser Motor 2nd Speed (Roll / Special tracing / A0, 36” & 34”)	0	0	0 to 300	0.5 sec
206	Fuser Motor 3rd Speed (Roll / Special tracing / A0, 36” & 34”)	40	40	0 to 80	0.04mm/s
207	Switch Timing to Fuser Motor 3rd Speed (Roll / Special tracing / A0, 36” & 34”)	0	0	0 to 300	0.5 sec
722	Fuser Motor 4th Speed (Roll / Special tracing / A0, 36” & 34”)	40	40	0 to 80	0.04mm/s
723	Switch Timing to Fuser Motor 4th Speed (Roll / Special tracing / A0, 36” & 34”)	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.202, 204, 206, 722.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.203, 205, 207, 723.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.62 Compensation of Fuser Motor Speed for roll paper (Special film / A0, 36” & 34”) (No.208 to 213, 724, 725)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a film (special media) of A0, 24” and 22” sizes by roll paper feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
208	Fuser Motor 1st Speed (Roll / Special film / A0, 36” & 34”)	40	40	0 to 80	0.04mm/s
209	Switch Timing to Fuser Motor 1st Speed (Roll / Special film / A0, 36” & 34”)	0	0	0 to 300	0.5 sec
210	Fuser Motor 2nd Speed (Roll / Special film / A0, 36” & 34”)	40	40	0 to 80	0.04mm/s
211	Switch Timing to Fuser Motor 2nd Speed (Roll / Special film / A0, 36” & 34”)	0	0	0 to 300	0.5 sec
212	Fuser Motor 3rd Speed (Roll / Special film / A0, 36” & 34”)	40	40	0 to 80	0.04mm/s
213	Switch Timing to Fuser Motor 3rd Speed (Roll / Special film / A0, 36” & 34”)	0	0	0 to 300	0.5 sec
724	Fuser Motor 4th Speed (Roll / Special film / A0, 36” & 34”)	40	40	0 to 80	0.04mm/s
725	Switch Timing to Fuser Motor 4th Speed (Roll / Special film / A0, 36” & 34”)	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.208, 210, 212, 724.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.209, 211, 213, 725.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.63 Main Motor Speed (No.310 to 315)

It is possible to adjust the speed of Main Motor for each type of paper separately.
If you increase the setting value by “+1”, the motor speed becomes 0.04mm/second faster.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
310	Main Motor Speed (Plain paper)	36	36	0 to 80	0.04mm/s
311	Main Motor Speed (Tracing paper)	40	40	0 to 80	0.04mm/s
312	Main Motor Speed (Film)	40	40	0 to 80	0.04mm/s
313	Main Motor Speed (Special plain paper)	40	40	0 to 80	0.04mm/s
314	Main Motor Speed (Special tracing paper)	40	40	0 to 80	0.04mm/s
315	Main Motor Speed (Special film)	40	40	0 to 80	0.04mm/s

⚠ CAUTION

The Main Motor Speed is the basis for many other print settings.
So you have to re-adjust all of these print settings if you change the Main Motor Speed.

8. 6. 3.64 Fuser Motor Speed (36” / 34” / 30” / 24” / 22” / A0 / B1 / A1) (No.316 to 321)

It is possible to adjust the speed of Fuser Motor for each type of paper separately.
If you increase the setting value by “+1”, the motor speed becomes 0.04mm/second faster.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
316	Fuser Motor Speed (36” / 34” / 30” / 24” / 22” / A0 / B1 / A1) (Plain paper)	31	35	0 to 80	0.04mm/s
317	Fuser Motor Speed (36” / 34” / 30” / 24” / 22” / A0 / B1 / A1) (Tracing paper)	39	50	0 to 80	0.04mm/s
318	Fuser Motor Speed (36” / 34” / 30” / 24” / 22” / A0 / B1 / A1) (Film paper)	50	50	0 to 80	0.04mm/s
319	Fuser Motor Speed (36” / 34” / 30” / 24” / 22” / A0 / B1 / A1) (Special plain paper)	40	40	0 to 80	0.04mm/s
320	Fuser Motor Speed (36” / 34” / 30” / 24” / 22” / A0 / B1 / A1) (Special tracing paper)	40	40	0 to 80	0.04mm/s
321	Fuser Motor Speed (36” / 34” / 30” / 24” / 22” / A0 / B1 / A1) (Special film)	40	40	0 to 80	0.04mm/s

Refer to [8. 6. 3.119 Fuser Motor Speed] for narrower originals than the above.

8. 6. 3.65 Separation Corona OFF Timing (No.322 to 327)

It is possible to adjust the timing that the Separation Corona stops discharging during the print cycle.
You can specify the timing for each type of paper separately.
If you increase the setting value by “+1”, the timing to start discharging is 1mm delayed.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
322	Separation Corona OFF Timing (Plain paper)	25	25	0 to 100	1mm
323	Separation Corona OFF Timing (tracing paper)	25	25	0 to 100	1mm
324	Separation Corona OFF Timing (Film)	22	25	0 to 100	1mm
325	Separation Corona OFF Timing (Special plain paper)	18	18	0 to 100	1mm
326	Separation Corona OFF Timing (Special tracing paper)	18	18	0 to 100	1mm
327	Separation Corona OFF Timing (Special film)	23	23	0 to 100	1mm

8. 6. 3.66 Compensation of Fuser Motor Speed for cut sheet paper (Plain paper / A3, A2, 12”, 11”, 18” & 17”) (No.328 to 333)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a plain paper of A2, 18” and 17” sizes by cut sheet bypass feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
328	Fuser Motor 1st Speed (Cut sheet / Plain paper / A3, A2, 12”, 11”, 18” & 17”)	30	31	0 to 80	0.04mm/s
329	Switch Timing to Fuser Motor 1st Speed (Cut sheet / Plain paper / A3, A2, 12”, 11”, 18” & 17”)	3	3	0 to 300	0.5 sec
330	Fuser Motor 2nd Speed (Cut sheet / Plain paper / A3, A2, 12”, 11”, 18” & 17”)	32	36	0 to 80	0.04mm/s
331	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / Plain paper / A3, A2, 12”, 11”, 18” & 17”)	4	4	0 to 300	0.5 sec
332	Fuser Motor 3rd Speed (Cut sheet / Plain paper / A3, A2, 12”, 11”, 18” & 17”)	31	38	0 to 80	0.04mm/s
333	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / Plain paper / A3, A2, 12”, 11”, 18” & 17”)	6	6	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.328, 330 and 332.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.329, 331 and 333.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.67 Compensation of Fuser Motor Speed for cut sheet paper (Tracing paper / A3, A2, 12”, 11”, 18” & 17”) (No.334 to 339)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a tracing paper of A2, 18” and 17” sizes by cut sheet bypass feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
334	Fuser Motor 1st Speed (Cut sheet / Tracing / A3, A2, 12”, 11”, 18” & 17”)	33	40	0 to 80	0.04mm/s
335	Switch Timing to Fuser Motor 1st Speed (Cut sheet / Tracing / A3, A2, 12”, 11”, 18” & 17”)	2	1	0 to 300	0.5 sec
336	Fuser Motor 2nd Speed (Cut sheet / Tracing / A3, A2, 12”, 11”, 18” & 17”)	38	44	0 to 80	0.04mm/s
337	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / Tracing / A3, A2, 12”, 11”, 18” & 17”)	3	5	0 to 300	0.5 sec
338	Fuser Motor 3rd Speed (Cut sheet / Tracing / A3, A2, 12”, 11”, 18” & 17”)	38	45	0 to 80	0.04mm/s
339	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / Tracing / A3, A2, 12”, 11”, 18” & 17”)	5	2	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.334, 336 and 338.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.335, 337 and 339.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.68 Compensation of Fuser Motor Speed for cut sheet paper (Film / A3, A2, 12”, 11”, 18” & 17”) (No.340 to 345)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a film of A2, 18” and 17” sizes by cut sheet bypass feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
340	Fuser Motor 1st Speed (Cut sheet / Film / A3, A2, 12”, 11”, 18” & 17”)	50	50	0 to 80	0.04mm/s
341	Switch Timing to Fuser Motor 1st Speed (Cut sheet / Film / A3, A2, 12”, 11”, 18” & 17”)	2	6	0 to 300	0.5 sec
342	Fuser Motor 2nd Speed (Cut sheet / Film / A3, A2, 12”, 11”, 18” & 17”)	50	40	0 to 80	0.04mm/s
343	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / Film / A3, A2, 12”, 11”, 18” & 17”)	6	0	0 to 300	0.5 sec
344	Fuser Motor 3rd Speed (Cut sheet / Film / A3, A2, 12”, 11”, 18” & 17”)	40	40	0 to 80	0.04mm/s
345	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / Film / A3, A2, 12”, 11”, 18” & 17”)	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.340, 342 and 344.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.341, 343 and 345.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.69 Compensation of Fuser Motor Speed for cut sheet paper (Special plain paper / A3, A2, 12”, 11”, 18” & 17”) (No.346 to 351)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a plain paper (special media) of A2, 18” and 17” sizes by cut sheet bypass feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
346	Fuser Motor 1st Speed (Cut sheet / Special plain paper / A3, A2, 12”, 11”, 18” & 17”)	40	40	0 to 80	0.04mm/s
347	Switch Timing to Fuser Motor 1st Speed (Cut sheet / Special plain paper / A3, A2, 12”, 11”, 18” & 17”)	0	0	0 to 300	0.5 sec
348	Fuser Motor 2nd Speed (Cut sheet / Special plain paper / A3, A2, 12”, 11”, 18” & 17”)	40	40	0 to 80	0.04mm/s
349	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / Special plain paper / A3, A2, 12”, 11”, 18” & 17”)	0	0	0 to 300	0.5 sec
350	Fuser Motor 3rd Speed (Cut sheet / Special plain paper / A3, A2, 12”, 11”, 18” & 17”)	40	40	0 to 80	0.04mm/s
351	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / Special plain paper / A3, A2, 12”, 11”, 18” & 17”)	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.346, 348 and 350.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.347, 349 and 351.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.70 Compensation of Fuser Motor Speed for cut sheet paper (Special tracing paper / A3, A2, 12”, 11”, 18” & 17”) (No.352 to 357)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a tracing paper (special media) of A2, 18” and 17” size by cut sheet bypass feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
352	Fuser Motor 1st Speed (Cut sheet / Special tracing / A3, A2, 12”, 11”, 18” & 17”)	40	40	0 to 80	0.04mm/s
353	Switch Timing to Fuser Motor 1st Speed (Cut sheet / Special tracing / A3, A2, 12”, 11”, 18” & 17”)	0	0	0 to 300	0.5 sec
354	Fuser Motor 2nd Speed (Cut sheet / Special tracing / A3, A2, 12”, 11”, 18” & 17”)	40	40	0 to 80	0.04mm/s
355	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / Special tracing / A3, A2, 12”, 11”, 18” & 17”)	0	0	0 to 300	0.5 sec
356	Fuser Motor 3rd Speed (Cut sheet / Special tracing / A3, A2, 12”, 11”, 18” & 17”)	40	40	0 to 80	0.04mm/s
357	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / Special tracing / A3, A2, 12”, 11”, 18” & 17”)	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.352, 354 and 356.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.353, 355 and 357.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.71 Compensation of Fuser Motor Speed for cut sheet paper (Special film / A3, A2, 12”, 11”, 18” & 17”) (No.358 to 363)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a film (special media) of A2, 18” and 17” sizes by cut sheet bypass feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
358	Fuser Motor 1st Speed (Cut sheet / Special film / A3, A2, 12”, 11”, 18” & 17”)	40	40	0 to 80	0.04mm/s
359	Switch Timing to Fuser Motor 1st Speed (Cut sheet / Special film / A3, A2, 12”, 11”, 18” & 17”)	0	0	0 to 300	0.5 sec
360	Fuser Motor 2nd Speed (Cut sheet / Special film / A3, A2, 12”, 11”, 18” & 17”)	40	40	0 to 80	0.04mm/s
361	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / Special film / A3, A2, 12”, 11”, 18” & 17”)	0	0	0 to 300	0.5 sec
362	Fuser Motor 3rd Speed (Cut sheet / Special film / A3, A2, 12”, 11”, 18” & 17”)	40	40	0 to 80	0.04mm/s
363	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / Special film / A3, A2, 12”, 11”, 18” & 17”)	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.358, 360 and 362.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.359, 361 and 363.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.72 Compensation of Fuser Motor Speed for cut sheet paper (Plain paper / A1, 24” & 22”) (No.364 to 369)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a plain paper of A1, 24” and 22” sizes by cut sheet bypass feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
364	Fuser Motor 1st Speed (Cut sheet / Plain paper / A1, 24” & 22”)	37	35	0 to 80	0.04mm/s
365	Switch Timing to Fuser Motor 1st Speed (Cut sheet / Plain paper / A1, 24” & 22”)	3	3	0 to 300	0.5 sec
366	Fuser Motor 2nd Speed (Cut sheet / Plain paper / A1, 24” & 22”)	30	33	0 to 80	0.04mm/s
367	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / Plain paper / A1, 24” & 22”)	6	8	0 to 300	0.5 sec
368	Fuser Motor 3rd Speed (Cut sheet / Plain paper / A1, 24” & 22”)	40	41	0 to 80	0.04mm/s
369	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / Plain paper / A1, 24” & 22”)	6	8	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.364, 366 and 368.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.365, 367 and 369.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.73 Compensation of Fuser Motor Speed for cut sheet paper (Tracing paper / A1, 24” & 22”) (No.370 to 375)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a tracing paper of A1, 24” and 22” sizes by cut sheet bypass feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
370	Fuser Motor 1st Speed (Cut sheet / Tracing / A1, 24” & 22”)	36	42	0 to 80	0.04mm/s
371	Switch Timing to Fuser Motor 1st Speed (Cut sheet / Tracing / A1, 24” & 22”)	3	3	0 to 300	0.5 sec
372	Fuser Motor 2nd Speed (Cut sheet / Tracing / A1, 24” & 22”)	41	43	0 to 80	0.04mm/s
373	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / Tracing / A1, 24” & 22”)	9	9	0 to 300	0.5 sec
374	Fuser Motor 3rd Speed (Cut sheet / Tracing / A1, 24” & 22”)	39	40	0 to 80	0.04mm/s
375	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / Tracing / A1, 24” & 22”)	8	8	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.370, 372 and 374.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.371, 373 and 375.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.74 Compensation of Fuser Motor Speed for cut sheet paper (Film / A1, 24” & 22”) (No.376 to 381)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a film of A1, 24” and 22” sizes by cut sheet bypass feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
376	Fuser Motor 1st Speed (Cut sheet / Film / A1, 24” & 22”)	42	42	0 to 80	0.04mm/s
377	Switch Timing to Fuser Motor 1st Speed (Cut sheet / Film / A1, 24” & 22”)	2	2	0 to 300	0.5 sec
378	Fuser Motor 2nd Speed (Cut sheet / Film / A1, 24” & 22”)	42	42	0 to 80	0.04mm/s
379	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / Film / A1, 24” & 22”)	14	14	0 to 300	0.5 sec
380	Fuser Motor 3rd Speed (Cut sheet / Film / A1, 24” & 22”)	40	40	0 to 80	0.04mm/s
381	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / Film / A1, 24” & 22”)	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.376, 378 and 380.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.377, 379 and 381.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.75 Compensation of Fuser Motor Speed for cut sheet paper (Special plain paper / A1, 24” & 22”) (No.382 to 387)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a plain paper (special media) of A1, 24” and 22” sizes by cut sheet bypass feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
382	Fuser Motor 1st Speed (Cut sheet / Special plain paper / A1, 24” & 22”)	40	40	0 to 80	0.04mm/s
383	Switch Timing to Fuser Motor 1st Speed (Cut sheet / Special plain paper / A1, 24” & 22”)	0	0	0 to 300	0.5 sec
384	Fuser Motor 2nd Speed (Cut sheet / Special plain paper / A1, 24” & 22”)	40	40	0 to 80	0.04mm/s
385	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / Special plain paper / A1, 24” & 22”)	0	0	0 to 300	0.5 sec
386	Fuser Motor 3rd Speed (Cut sheet / Special plain paper / A1, 24” & 22”)	40	40	0 to 80	0.04mm/s
387	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / Special plain paper / A1, 24” & 22”)	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.382, 384 and 386.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.383, 385 and 387.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.76 Compensation of Fuser Motor Speed for cut sheet paper (Special tracing paper / A1, 24” & 22”) (No.388 to 393)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a tracing paper (special media) of A1, 24” and 22” size by cut sheet bypass feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
388	Fuser Motor 1st Speed (Cut sheet / Special tracing / A1, 24” & 22”)	40	40	0 to 80	0.04mm/s
389	Switch Timing to Fuser Motor 1st Speed (Cut sheet / Special tracing / A1, 24” & 22”)	0	0	0 to 300	0.5 sec
390	Fuser Motor 2nd Speed (Cut sheet / Special tracing / A1, 24” & 22”)	40	40	0 to 80	0.04mm/s
391	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / Special tracing / A1, 24” & 22”)	0	0	0 to 300	0.5 sec
392	Fuser Motor 3rd Speed (Cut sheet / Special tracing / A1, 24” & 22”)	40	40	0 to 80	0.04mm/s
393	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / Special tracing / A1, 24” & 22”)	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.388, 390 and 392.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.389, 391 and 393.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.77 Compensation of Fuser Motor Speed for cut sheet paper (Special film / A1, 24” & 22”) (No.394 to 399)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a film (special media) of A1, 24” and 22” sizes by cut sheet bypass feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
394	Fuser Motor 1st Speed (Cut sheet / Special film / A1, 24” & 22”)	40	40	0 to 80	0.04mm/s
395	Switch Timing to Fuser Motor 1st Speed (Cut sheet / Special film / A1, 24” & 22”)	0	0	0 to 300	0.5 sec
396	Fuser Motor 2nd Speed (Cut sheet / Special film / A1, 24” & 22”)	40	40	0 to 80	0.04mm/s
397	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / Special film / A1, 24” & 22”)	0	0	0 to 300	0.5 sec
398	Fuser Motor 3rd Speed (Cut sheet / Special film / A1, 24” & 22”)	40	40	0 to 80	0.04mm/s
399	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / Special film / A1, 24” & 22”)	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.394, 396 and 398.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.395, 397 and 399.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.78 Compensation of Fuser Motor Speed for cut sheet paper (Plain paper / A0, 36” & 34”) (No.400 to 405)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a plain paper of A0, 36” and 34” sizes by cut sheet bypass feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
400	Fuser Motor 1st Speed (Cut sheet / Plain paper / A0, 36” & 34”)	26	26	0 to 80	0.04mm/s
401	Switch Timing to Fuser Motor 1st Speed (Cut sheet / Plain paper / A0, 36” & 34”)	4	3	0 to 300	0.5 sec
402	Fuser Motor 2nd Speed (Cut sheet / Plain paper / A0, 36” & 34”)	27	27	0 to 80	0.04mm/s
403	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / Plain paper / A0, 36” & 34”)	10	10	0 to 300	0.5 sec
404	Fuser Motor 3rd Speed (Cut sheet / Plain paper / A0, 36” & 34”)	33	37	0 to 80	0.04mm/s
405	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / Plain paper / A0, 36” & 34”)	8	8	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.400, 402 and 404.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.401, 403 and 405.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.79 Compensation of Fuser Motor Speed for cut sheet paper (Tracing paper / A0, 36” & 34”) (No.406 to 411)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a tracing paper of A0, 36” and 34” sizes by cut sheet bypass feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
406	Fuser Motor 1st Speed (Cut sheet / Tracing / A0, 36” & 34”)	29	42	0 to 80	0.04mm/s
407	Switch Timing to Fuser Motor 1st Speed (Cut sheet / Tracing / A0, 36” & 34”)	3	3	0 to 300	0.5 sec
408	Fuser Motor 2nd Speed (Cut sheet / Tracing / A0, 36” & 34”)	35	38	0 to 80	0.04mm/s
409	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / Tracing / A0, 36” & 34”)	13	13	0 to 300	0.5 sec
410	Fuser Motor 3rd Speed (Cut sheet / Tracing / A0, 36” & 34”)	36	39	0 to 80	0.04mm/s
411	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / Tracing / A0, 36” & 34”)	8	8	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.406, 408 and 410.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.407, 409 and 411.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.80 Compensation of Fuser Motor Speed for cut sheet paper (Film / A0, 36” & 34”) (No.412 to 417)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a film of A0, 36” and 34” sizes by cut sheet bypass feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
412	Fuser Motor 1st Speed (Cut sheet / Film / A0, 36” & 34”)	35	38	0 to 80	0.04mm/s
413	Switch Timing to Fuser Motor 1st Speed (Cut sheet / Film / A0, 36” & 34”)	2	2	0 to 300	0.5 sec
414	Fuser Motor 2nd Speed (Cut sheet / Film / A0, 36” & 34”)	42	43	0 to 80	0.04mm/s
415	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / Film / A0, 36” & 34”)	18	18	0 to 300	0.5 sec
416	Fuser Motor 3rd Speed (Cut sheet / Film / A0, 36” & 34”)	40	40	0 to 80	0.04mm/s
417	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / Film / A0, 36” & 34”)	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.412, 414 and 416.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.413, 415 and 417.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.81 Compensation of Fuser Motor Speed for cut sheet paper (Special plain paper / A0, 36 & 34”) (No.418 to 423)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a plain paper (special media) of A0, 36” and 34” sizes by cut sheet bypass feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
418	Fuser Motor 1st Speed (Cut sheet / Special plain paper / A0, 36” & 34”)	40	40	0 to 80	0.04mm/s
419	Switch Timing to Fuser Motor 1st Speed (Cut sheet / Special plain paper / A0, 36” & 34”)	0	0	0 to 300	0.5 sec
420	Fuser Motor 2nd Speed (Cut sheet / Special plain paper / A0, 36” & 34”)	40	40	0 to 80	0.04mm/s
421	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / Special plain paper / A0, 36” & 34”)	0	0	0 to 300	0.5 sec
422	Fuser Motor 3rd Speed (Cut sheet / Special plain paper / A0, 36” & 34”)	40	40	0 to 80	0.04mm/s
423	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / Special plain paper / A0, 36” & 34”)	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.418, 420 and 422.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.419, 421 and 423.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.82 Compensation of Fuser Motor Speed for cut sheet paper (Special tracing paper / A0, 36” & 34”) (No.424 to 429)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a tracing paper (special media) of A0, 36” and 34” size by cut sheet bypass feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
424	Fuser Motor 1st Speed (Cut sheet / Special tracing / A0, 36” & 34”)	40	40	0 to 80	0.04mm/s
425	Switch Timing to Fuser Motor 1st Speed (Cut sheet / Special tracing / A0, 36” & 34”)	0	0	0 to 300	0.5 sec
426	Fuser Motor 2nd Speed (Cut sheet / Special tracing / A0, 36” & 34”)	40	40	0 to 80	0.04mm/s
427	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / Special tracing / A0, 36” & 34”)	0	0	0 to 300	0.5 sec
428	Fuser Motor 3rd Speed (Cut sheet / Special tracing / A0, 36” & 34”)	40	40	0 to 80	0.04mm/s
429	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / Special tracing / A0, 36” & 34”)	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.424, 426 and 428.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.425, 427 and 429.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.83 Compensation of Fuser Motor Speed for cut sheet paper (Special film / A0, 36” & 34”) (No.430 to 435)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a film (special media) of A0, 24” and 22” sizes by cut sheet bypass feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
430	Fuser Motor 1st Speed (Cut sheet / Special film / A0, 36” & 34”)	40	40	0 to 80	0.04mm/s
431	Switch Timing to Fuser Motor 1st Speed (Cut sheet / Special film / A0, 36” & 34”)	0	0	0 to 300	0.5 sec
432	Fuser Motor 2nd Speed (Cut sheet / Special film / A0, 36” & 34”)	40	40	0 to 80	0.04mm/s
433	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / Special film / A0, 36” & 34”)	0	0	0 to 300	0.5 sec
434	Fuser Motor 3rd Speed (Cut sheet / Special film / A0, 36” & 34”)	40	40	0 to 80	0.04mm/s
435	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / Special film / A0, 36” & 34”)	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.430, 432 and 434.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.431, 433 and 435.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.84 Compensation of Fuser Motor Speed for roll paper (Plain paper / 30”) (No.436 to 441, 726, 727)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a plain paper of 30” size by roll paper feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
436	Fuser Motor 1st Speed (Roll / plain paper / 30”)	28	28	0 to 80	0.04mm/s
437	Switch Timing to Fuser Motor 1st Speed (Roll / plain paper / 30”)	5	5	0 to 300	0.5 sec
438	Fuser Motor 2nd Speed (Roll / plain paper / 30”)	30	33	0 to 80	0.04mm/s
439	Switch Timing to Fuser Motor 2nd Speed (Roll / plain paper / 30”)	9	9	0 to 300	0.5 sec
440	Fuser Motor 3rd Speed (Roll / plain paper / 30”)	34	36	0 to 80	0.04mm/s
441	Switch Timing to Fuser Motor 3rd Speed (Roll / plain paper / 30”)	7	7	0 to 300	0.5 sec
726	Fuser Motor 4th Speed (Roll / plain paper / 30”)	36	30	0 to 80	0.04mm/s
727	Switch Timing to Fuser Motor 4th Speed (Roll / plain paper / 30”)	20	20	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.436, 438, 440, 726.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.437, 439, 441, 727.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.85 Compensation of Fuser Motor Speed for roll paper (Tracing paper / 30”) (No.442 to 447, 728, 729)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a tracing paper of 30” size by roll paper feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
442	Fuser Motor 1st Speed (Roll / tracing / 30”)	34	33	0 to 80	0.04mm/s
443	Switch Timing to Fuser Motor 1st Speed (Roll / tracing / 30”)	4	4	0 to 300	0.5 sec
444	Fuser Motor 2nd Speed (Roll / tracing / 30”)	38	44	0 to 80	0.04mm/s
445	Switch Timing to Fuser Motor 2nd Speed (Roll / tracing / 30”)	11	11	0 to 300	0.5 sec
446	Fuser Motor 3rd Speed (Roll / tracing / 30”)	40	41	0 to 80	0.04mm/s
447	Switch Timing to Fuser Motor 3rd Speed (Roll / tracing / 30”)	8	8	0 to 300	0.5 sec
728	Fuser Motor 4th Speed (Roll / tracing / 30”)	34	40	0 to 80	0.04mm/s
729	Switch Timing to Fuser Motor 4th Speed (Roll / tracing / 30”)	20	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.442, 444, 446, 728.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.443, 445, 447, 729.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.86 Compensation of Fuser Motor Speed for roll paper (Film / 30”) (No.448 to 453, 730, 731)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a film of 30” size by roll paper feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
448	Fuser Motor 1st Speed (Roll / film / 30”)	40	40	0 to 80	0.04mm/s
449	Switch Timing to Fuser Motor 1st Speed (Roll / film / 30”)	0	0	0 to 300	0.5 sec
450	Fuser Motor 2nd Speed (Roll / film / 30”)	40	40	0 to 80	0.04mm/s
451	Switch Timing to Fuser Motor 2nd Speed (Roll / film / 30”)	0	0	0 to 300	0.5 sec
452	Fuser Motor 3rd Speed (Roll / film / 30”)	40	40	0 to 80	0.04mm/s
453	Switch Timing to Fuser Motor 3rd Speed (Roll / film / 30”)	0	0	0 to 300	0.5 sec
730	Fuser Motor 4th Speed (Roll / film / 30”)	40	40	0 to 80	0.04mm/s
731	Switch Timing to Fuser Motor 4th Speed (Roll / film / 30”)	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.448, 450, 452, 730.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.449, 451, 453, 731.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.87 Compensation of Fuser Motor Speed for roll paper (Special plain paper / 30”) (No.454 to 459, 732, 733)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a plain paper (special media) of 30” size by roll paper feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
454	Fuser Motor 1st Speed (Roll / special plain paper / 30”)	40	40	0 to 80	0.04mm/s
455	Switch Timing to Fuser Motor 1st Speed (Roll / special plain paper / 30”)	0	0	0 to 300	0.5 sec
456	Fuser Motor 2nd Speed (Roll / special plain paper / 30”)	40	40	0 to 80	0.04mm/s
457	Switch Timing to Fuser Motor 2nd Speed (Roll / special plain paper / 30”)	0	0	0 to 300	0.5 sec
458	Fuser Motor 3rd Speed (Roll / special plain paper / 30”)	40	40	0 to 80	0.04mm/s
459	Switch Timing to Fuser Motor 3rd Speed (Roll / special plain paper / 30”)	0	0	0 to 300	0.5 sec
732	Fuser Motor 4th Speed (Roll / special plain paper / 30”)	40	40	0 to 80	0.04mm/s
733	Switch Timing to Fuser Motor 4th Speed (Roll / special plain paper / 30”)	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.454, 456, 458, 732.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.455, 457, 459, 733.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.88 Compensation of Fuser Motor Speed for roll paper (Special tracing paper / 30”) (No.460 to 465, 734, 735)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a tracing paper (special media) of 30” size by roll paper feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
460	Fuser Motor 1st Speed (Roll / special tracing / 30”)	40	40	0 to 80	0.04mm/s
461	Switch Timing to Fuser Motor 1st Speed (Roll / special tracing / 30”)	0	0	0 to 300	0.5 sec
462	Fuser Motor 2nd Speed (Roll / special tracing / 30”)	40	40	0 to 80	0.04mm/s
463	Switch Timing to Fuser Motor 2nd Speed (Roll / special tracing / 30”)	0	0	0 to 300	0.5 sec
464	Fuser Motor 3rd Speed (Roll / special tracing / 30”)	40	40	0 to 80	0.04mm/s
465	Switch Timing to Fuser Motor 3rd Speed (Roll / special tracing / 30”)	0	0	0 to 300	0.5 sec
734	Fuser Motor 4th Speed (Roll / special tracing / 30”)	40	40	0 to 80	0.04mm/s
735	Switch Timing to Fuser Motor 4th Speed (Roll / special tracing / 30”)	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.460, 462, 464, 734.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.461, 463, 465, 735.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.89 Compensation of Fuser Motor Speed for roll paper (Special film / 30”) (No.466 to 471, 736, 737)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a film (special media) of 30” size by roll paper feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
466	Fuser Motor 1st Speed (Roll / special film / 30”)	40	40	0 to 80	0.04mm/s
467	Switch Timing to Fuser Motor 1st Speed (Roll / special film / 30”)	0	0	0 to 300	0.5 sec
468	Fuser Motor 2nd Speed (Roll / special film / 30”)	40	40	0 to 80	0.04mm/s
469	Switch Timing to Fuser Motor 2nd Speed (Roll / special film / 30”)	0	0	0 to 300	0.5 sec
470	Fuser Motor 3rd Speed (Roll / special film / 30”)	40	40	0 to 80	0.04mm/s
471	Switch Timing to Fuser Motor 3rd Speed (Roll / special film / 30”)	0	0	0 to 300	0.5 sec
736	Fuser Motor 4th Speed (Roll / special film / 30”)	40	40	0 to 80	0.04mm/s
737	Switch Timing to Fuser Motor 4th Speed (Roll / special film / 30”)	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.466, 468, 470, 736.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.467, 469, 471, 737.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.90 Compensation of Fuser Motor Speed for cut sheet paper (Plain paper / 30”) (No.472 to 477)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a plain paper of 30” size by cut sheet bypass feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
472	Fuser Motor 1st Speed (Cut sheet / plain paper / 30”)	28	28	0 to 80	0.04mm/s
473	Switch Timing to Fuser Motor 1st Speed (Cut sheet / plain paper / 30”)	5	5	0 to 300	0.5 sec
474	Fuser Motor 2nd Speed (Cut sheet / plain paper / 30”)	30	33	0 to 80	0.04mm/s
475	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / plain paper / 30”)	9	9	0 to 300	0.5 sec
476	Fuser Motor 3rd Speed (Cut sheet / plain paper / 30”)	34	36	0 to 80	0.04mm/s
477	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / plain paper / 30”)	7	7	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.472, 474 and 476.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.473, 475 and 477.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.91 Compensation of Fuser Motor Speed for cut sheet paper (Tracing paper / 30”) (No.478 to 483)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a tracing paper of 30” size by cut sheet bypass feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
478	Fuser Motor 1st Speed (Cut sheet / tracing / 30”)	34	33	0 to 80	0.04mm/s
479	Switch Timing to Fuser Motor 1st Speed (Cut sheet / tracing / 30”)	4	4	0 to 300	0.5 sec
480	Fuser Motor 2nd Speed (Cut sheet / tracing / 30”)	38	44	0 to 80	0.04mm/s
481	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / tracing / 30”)	11	11	0 to 300	0.5 sec
482	Fuser Motor 3rd Speed (Cut sheet / tracing / 30”)	40	41	0 to 80	0.04mm/s
483	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / tracing / 30”)	8	8	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.478, 480 and 482.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.479, 481 and 483.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.92 Compensation of Fuser Motor Speed for cut sheet paper (Film / 30”) (No.484 to 489)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a film of 30” size by cut sheet bypass feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
484	Fuser Motor 1st Speed (Cut sheet / film / 30”)	40	40	0 to 80	0.04mm/s
485	Switch Timing to Fuser Motor 1st Speed (Cut sheet / film / 30”)	0	0	0 to 300	0.5 sec
486	Fuser Motor 2nd Speed (Cut sheet / film / 30”)	40	40	0 to 80	0.04mm/s
487	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / film / 30”)	0	0	0 to 300	0.5 sec
488	Fuser Motor 3rd Speed (Cut sheet / film / 30”)	40	40	0 to 80	0.04mm/s
489	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / film / 30”)	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.484, 486 and 488.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.48. 6. 387 and 489.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.93 Compensation of Fuser Motor Speed for cut sheet paper (Special plain paper / 30”) (No.490 to 495)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a plain paper (special media) of 30” size by cut sheet bypass feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
490	Fuser Motor 1st Speed (Cutsheet / special plain paper / 30”)	40	40	0 to 80	0.04mm/s
491	Switch Timing to Fuser Motor 1st Speed (Cutsheet / special plain paper / 30”)	0	0	0 to 300	0.5 sec
492	Fuser Motor 2nd Speed (Cutsheet / special plain paper / 30”)	40	40	0 to 80	0.04mm/s
493	Switch Timing to Fuser Motor 2nd Speed (Cutsheet / special plain paper / 30”)	0	0	0 to 300	0.5 sec
494	Fuser Motor 3rd Speed (Cutsheet / special plain paper / 30”)	40	40	0 to 80	0.04mm/s
495	Switch Timing to Fuser Motor 3rd Speed (Cutsheet / special plain paper / 30”)	0	0	0 to 300	0.5 sec

You can specify the Fuser Motor 1st Speed, 2nd, 3rd in each Item No.490, 492 and 494.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.491, 493 and 495.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.94 Compensation of Fuser Motor Speed for cut sheet paper (Special tracing paper / 30”) (No.496 to 501)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a tracing paper (special media) of 30” size by cut sheet bypass feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
496	Fuser Motor 1st Speed (Cut sheet / special tracing / 30”)	40	40	0 to 80	0.04mm/s
497	Switch Timing to Fuser Motor 1st Speed (Cut sheet / special tracing / 30”)	0	0	0 to 300	0.5 sec
498	Fuser Motor 2nd Speed (Cut sheet / special tracing / 30”)	40	40	0 to 80	0.04mm/s
499	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / special tracing / 30”)	0	0	0 to 300	0.5 sec
500	Fuser Motor 3rd Speed (Cut sheet / special tracing / 30”)	40	40	0 to 80	0.04mm/s
501	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / special tracing / 30”)	0	0	0 to 300	0.5 sec

You can specify Fuser Motor 1st Speed, 2nd, 3rd in each Item No.496, 498 and 500.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.497, 499 and 501.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.95 Compensation of Fuser Motor Speed for cut sheet paper (Special film / 30”) (No.502 to 507)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd and 3rd Speed.
It is also possible to specify when to switch the speed. (Switch timing)
These settings become effective when you use a film (special media) of 30” size by cut sheet bypass feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
502	Fuser Motor 1st Speed (Cut sheet / special film / 30”)	40	40	0 to 80	0.04mm/s
503	Switch Timing to Fuser Motor 1st Speed (Cut sheet / special film / 30”)	0	0	0 to 300	0.5 sec
504	Fuser Motor 2nd Speed (Cut sheet / special film / 30”)	40	40	0 to 80	0.04mm/s
505	Switch Timing to Fuser Motor 2nd Speed (Cut sheet / special film / 30”)	0	0	0 to 300	0.5 sec
506	Fuser Motor 3rd Speed (Cut sheet / special film / 30”)	40	40	0 to 80	0.04mm/s
507	Switch Timing to Fuser Motor 3rd Speed (Cut sheet / special film / 30”)	0	0	0 to 300	0.5 sec

You can specify Fuser Motor 1st Speed, 2nd, 3rd in each Item No.502, 504 and 506.
If you increase the setting value by “+1”, each Fuser Motor Speed becomes 0.04mm/second faster.

You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd in each Item No.503, 505 and 507.
If you increase the setting value by “+1”, the timing to switch the speed is 0.5 second delayed.

For the detail information above, see [8.6.3.39 Compensation of Fuser Motor Speed for roll paper (Plain paper / A3, 12” & 11”) (No.070 to 075, 678, 679)].

8. 6. 3.96 Transfer Voltage applied at 100mm from trailing edge (Plain paper / Tracing paper / Film) (No.508 to 510)

It is possible to adjust the analog voltage to Transfer Corona on 100mm end of a print.
This section does not function and is reserved for future update.

Item No.	Setting Item	Default value		Setting range	Step of increment
		US A	EUR/ ASIA		
508	Transfer Voltage applied at 100mm from trailing edge (Plain)	4FF	4FF	0 to 9FE	-
509	Transfer Voltage applied at 100mm from trailing edge (Tracing)	4FF	4FF	0 to 9FE	-
510	Transfer Voltage applied at 100mm from trailing edge (Film)	4FF	4FF	0 to 9FE	-

8. 6. 3.97 Transfer Voltage applied at 70mm from trailing edge (Plain paper / Tracing paper / Film) (No.511 to 513)

It is possible to adjust the analog voltage to Transfer Corona on 70mm end of a print.
A setting combination among No.511 to No.516 can reduce ghost images on the bottom area of a print in some cases.

Item No.	Setting Item	Default value		Setting range	Step of increment
		US A	EUR/ ASIA		
511	Transfer Voltage applied at 70mm from trailing edge (Plain)	62F	62F	0 to 9FE	-
512	Transfer Voltage applied at 70mm from trailing edge (Tracing)	69F	69F	0 to 9FE	-
513	Transfer Voltage applied at 70mm from trailing edge (Film)	4FF	4FF	0 to 9FE	-

8. 6. 3.98 Fuser Motor Speed applied at 30mm from trailing edge (Plain paper / Tracing paper / Film) (No.514 to 516)

It is possible to adjust the speed of Fuser Motor driving on 30mm end of a print.
A setting combination among No.511 to No.516 can reduce ghost images on the bottom area of a print in some cases.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ ASIA		
514	Fuser Motor Speed applied at 30mm from trailing edge (Plain)	13	17	0 to 80	0.04mm/s
515	Fuser Motor Speed applied at 30mm from trailing edge (Tracing)	19	19	0 to 80	0.04mm/s
516	Fuser Motor Speed applied at 30mm from trailing edge (Film)	0	0	0 to 80	0.04mm/s

8. 6. 3.99 Judgment value for Additional Cut Length for Non-standard Size Prints (No.613 to 616)

It is possible to avoid the lack of trailing image on the non-standard size print, by providing additional paper length by service modes 4-617 to 4-620 (Additional Cut Length for non-standard size print).

Additional Cut Length specified by service mode 4-617 to 4-620 is not always provided.

Whether or not it is provided is judged by service mode 4-613 to 4-616 (Judgment value for "Additional Cut Length for non-standard size print".)

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
613	Judgment value for Additional Cut Length for Non-standard Size Prints (36"/ 34"/ 30"/ A0 / B1)	1	1	1 to 20	1mm
614	Judgment value for Additional Cut Length for Non-standard Size Prints (24"/ 20"/ A1)	1	1	1 to 20	1mm
615	Judgment value for Additional Cut Length for Non-standard Size Prints (18"/ 17"/ 15"/ A2)	1	1	1 to 20	1mm
616	Judgment value for Additional Cut Length for Non-standard Size Prints (12"/ 11"/ A3)	1	1	1 to 20	1mm

Reference

(1) Which Judgement Value / Additional Cut Length setting is applied to a non-standard size print depends on the corresponding roll width.

Roll Width	Standard Size	Standard Cut Length	Judgement Value	Additional Length
36"	36"x48"	1219mm	No.613	No.617
841mm	A0	1189mm		
34"	34"x44"	1118mm		
30"	30"x42"	1067mm		
728mm	B1	1030mm		
24"	24"x36"	914mm	No.614	No.618
22"	22"x34"	864mm		
594mm	A1	841mm		
18"	18"x24"	610mm	No.615	No.619
420mm	A2	594mm		
17"	17"x22"	559mm		
15"	15"x21"	533mm		
12"	12"x18"	457mm	No.616	No.620
11"	11"x17"	432mm		
297mm	A3	420mm		

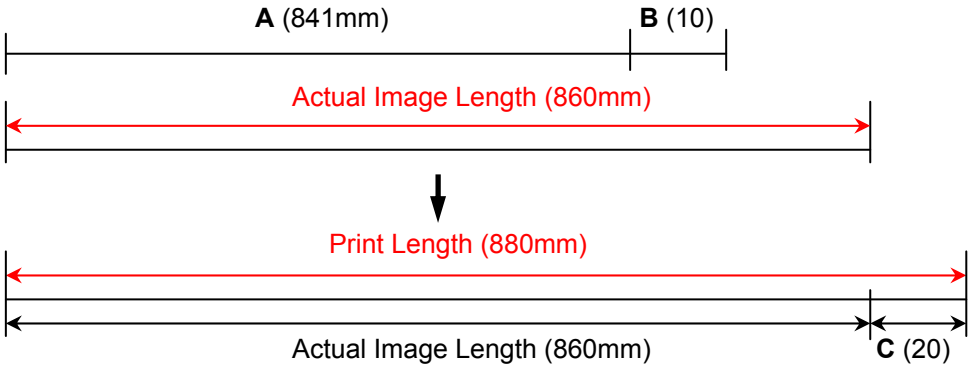
(next page)

Reference

(2) If the actual image length is longer than (or equal to) “A+B”, “C” is provided to the trailing edge of non-standard size print.

A: Standard Cut Length (depends on roll width)
B: Value of “Judgement Value for “Additional Cut Length for Non-standard Size Prints”
C: Value of “Additional Cut Length for Non-standard Size Prints”

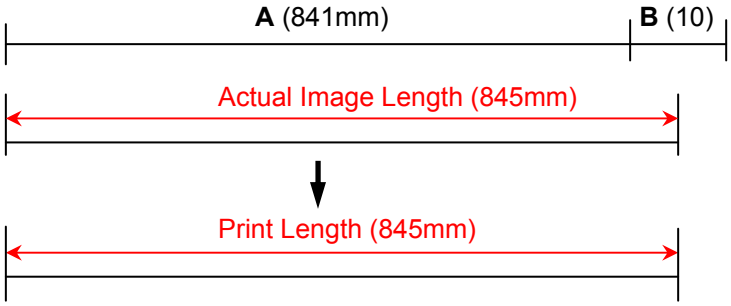
<Example> Actual Image Length: 860mm
A: 841mm (A1 roll width)
B: 10
C: 20



(3) If the actual image length is shorter than “A+B”, the print is cut as long as the actual image length. (“C” is not provided to the trailing edge of the print.)

A: Standard Cut Length (depends on roll width)
B: Value of “Judgement Value for “Additional Cut Length for Non-standard Size Prints”
C: Value of “Additional Cut Length for Non-standard Size Prints”

<Example> Actual Image Length: 845mm
A: 841mm (A1 roll width)
B: 10
C: 20



8. 6. 3.100 Additional Cut Length for Non-standard Size Prints (No.617 to 620)

It is possible to avoid the lack of trailing image on the non-standard size print, by providing additional paper length by service modes 4-617 to 4-620 (Additional Cut Length for non-standard size print).

Additional Cut Length specified by service mode 4-617 to 4-620 is not always provided.

Whether or not it is provided is judged by service mode 4-613 to 4-616 (Judgment value for "Additional Cut Length for non-standard size print".)

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
617	Additional Cut Length for Non-standard Size Prints (36"/ 34"/ 30"/ A0 / B1)	0	0	0 to 35	1mm
618	Additional Cut Length for Non-standard Size Prints (24"/ 22"/ A2)	0	0	0 to 35	1mm
619	Additional Cut Length for Non-standard Size Prints (18"/ 17"/ 15"/ A2)	0	0	0 to 35	1mm
620	Additional Cut Length for Non-standard Size Prints (12"/ 11"/ A3)	0	0	0 to 35	1mm

Refer to page 8-121 and 122 for Additional Cut Length and its Judgment Value.

8. 6. 3. 101 Toner Supply Roller Bias (No.621)

It is possible to make bias adjustment for Toner Supply Roller.

Default Value	Setting Range	Step of increment
286	0 to 800	1

NOTE

This setting does not function. Change of this setting has no effect on the machine operation.

8. 6. 3. 102 Regulation Bias (No.622)

It is possible to make the print density darker or lighter by adjusting Regulation Bias (Center). The print density becomes darker if you increase the setting value.

Default Value	Setting Range	Step of increment
270	0 to 800	1

NOTE

Please adjust Regulation Bias while checking the actual voltage with the multi-meter.

8. 6. 3. 103 Density Sensor Standard Output (No.623)

NOTE

This setting has been factory-adjusted. Keep the value unchanged.

It is possible to change the default analog output of Density Sensor.
“Density Sensor Standard Output” (No.623) and “Density Sensor Analog Voltage” (No.624) are used for Density Measure.

Default Value	Setting Range	Step of increment
0	0 to 614	1

8. 6. 3. 104 Density Sensor Analog Voltage (No.624)

NOTE

This setting has been factory-adjusted. Keep the value unchanged.

It is possible to change the default analog output of Density Sensor.
“Density Sensor Standard Output” (No.623) and “Density Sensor Analog Voltage” (No.624) are used for Density Measure.

Default Value	Setting Range	Step of increment
0	0 to 614	1

8. 6. 3. 105 Print - Fuser Temperature Side (12”/11”/A3) (No.625 to 630)

It is possible to adjust the side part of Fuser Temperature in a print cycle.
You can specify the temperature for each type and size of media separately.
The Fuser Temperature becomes 1 degree higher if you increase the setting value by “+1”.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
625	Print - Fuser Temperature Side (Plain) (12” / 11” / A3)	160	145	120 to 180	1°C
626	Print - Fuser Temperature Side (Tracing) (12” / 11” / A3)	160	150	120 to 180	1°C
627	Print - Fuser Temperature Side (Film) (12” / 11” / A3)	177	170	120 to 180	1°C
628	Print - Fuser Temperature Side (Special / Plain) (12” / 11” / A3)	160	160	120 to 180	1°C
629	Print - Fuser Temperature Side (Special / Tracing) (12” / 11” / A3)	160	160	120 to 180	1°C
630	Print - Fuser Temperature Side (Special media / Film) (12” / 11” / A3)	177	170	120 to 180	1°C

Reference

The center part of Fuser Temperature will be controlled by Print - Fuser Temperature Center (No. 039 to 044) separately.
Refer to [8. 6. 3.19 Print - Fuser Temperature Center (No.039 to 044)] for further information.

8. 6. 3. 106 Print - Fuser Temperature Side (18”/17”/15”/A2) (No.631 to 636)

It is possible to adjust the side part of Fuser Temperature in a print cycle.
You can specify the temperature for each type and size of media separately.
The Fuser Temperature becomes 1 degree higher if you increase the setting value by “+1”.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
631	Print - Fuser Temperature Side (Plain) (18” / 17” / 15” / A2)	160	165	120 to 180	1°C
632	Print - Fuser Temperature Side (Tracing) (18” / 17” / 15” / A2)	160	170	120 to 180	1°C
633	Print - Fuser Temperature Side (Film) (18” / 17” / 15” / A2)	177	170	120 to 180	1°C
634	Print - Fuser Temperature Side (Special / Plain) (18” / 17” / 15” / A2)	160	160	120 to 180	1°C
635	Print - Fuser Temperature Side (Special / Tracing) (18” / 17” / 15” / A2)	160	160	120 to 180	1°C
636	Print - Fuser Temperature Side (Special / Film) (18” / 17” / 15” / A2)	177	170	120 to 180	1°C

Reference

The center part of Fuser Temperature will be controlled by Print - Fuser Temperature Center (No. 039 to 044) separately.
Refer to [8. 6. 3.19 Print - Fuser Temperature Center (No.039 to 044)] for further information.

8. 6. 3. 107 Print - Fuser Temperature Side (24”/22”/A1) (No.637 to 642)

It is possible to adjust the side part of Fuser Temperature in a print cycle.
You can specify the temperature for each type and size of media separately.
The Fuser Temperature becomes 1 degree higher if you increase the setting value by “+1”.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
637	Print - Fuser Temperature Side (Plain) (24” / 22” / A1)	160	165	120 to 180	1°C
638	Print - Fuser Temperature Side (Tracing) (24” / 22” / A1)	160	170	120 to 180	1°C
639	Print - Fuser Temperature Side (Film) (24” / 22” / A1)	177	170	120 to 180	1°C
640	Print - Fuser Temperature Side (Special / Plain) (24” / 22” / A1)	160	160	120 to 180	1°C
641	Print - Fuser Temperature Side (Special / Tracing) (24” / 22” / A1)	160	160	120 to 180	1°C
642	Print - Fuser Temperature Side (Special / Film) (24” / 22” / A1)	177	170	120 to 180	1°C

Reference

The center part of Fuser Temperature will be controlled by Print - Fuser Temperature Center (No. 039 to 044) separately.
Refer to [8. 6. 3.19 Print - Fuser Temperature Center (No.039 to 044)] for further information.

8. 6. 3. 108 Print - Fuser Temperature Side (36”/34”/30”/A0/B1) (No.643 to 648)

It is possible to adjust the side part of Fuser Temperature in a print cycle.
You can specify the temperature for each type and size of media separately.
The Fuser Temperature becomes 1 degree higher if you increase the setting value by “+1”.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
643	Print - Fuser Temperature Side (Plain) (36” / 34” / 30” / A0 / B1)	160	165	120 to 180	1°C
644	Print - Fuser Temperature Side (Tracing) (36” / 34” / 30” / A0 / B1)	160	170	120 to 180	1°C
645	Print - Fuser Temperature Side (Film) (36” / 34” / 30” / A0 / B1)	177	170	120 to 180	1°C
646	Print - Fuser Temperature Side (Special / Plain) (36” / 34” / 30” / A0 / B1)	160	160	120 to 180	1°C
647	Print - Fuser Temperature Side (Special / Tracing) (36” / 34” / 30” / A0 / B1)	160	160	120 to 180	1°C
648	Print - Fuser Temperature Side (Special / Film) (36” / 34” / 30” / A0 / B1)	177	177	120 to 180	1°C

Reference

The center part of Fuser Temperature will be controlled by Print - Fuser Temperature Center (No. 039 to 044) separately.
Refer to [8. 6. 3.19 Print - Fuser Temperature Center (No.039 to 044)] for further information.

8. 6. 3. 109 Density Sensor Output Monitor (No.649)

NOTE

This setting is factory-use only. Keep the value unchanged.

It is possible to change the mode to monitor the default analog output of Density Sensor.

Default Value	Setting Range
1	0 to 4

8. 6. 3. 110 Regulation Bias Increment for Auto Adjustment Level 2 and 3 (No.650)

NOTE

This setting has been factory-adjusted. Keep the value unchanged.

It is possible to change the amount (increment) of Regulation Bias on Auto Adjustment.
A specified increment of Regulation Bias will be applied at switching to Auto Adjustment Level 2 and Level 3.

The default voltage value of the increment is about 40V (corresponding to “80” in the setting value) for switching to Auto Adjustment Level 2 and 3.

If you increase the setting value by “+1”, the increment of Regulation Bias Adjustment becomes about 0.5V higher.

Default Value	Setting Range	Step of increment
80	0 to 200	0.5V

8. 6. 3. 111 Total Increment of Regulation Bias Adjustment (No.651)

⚠ NOTE

This setting can be used for checking purpose only.
Setting change is allowed to factory-use only. Keep the value unchanged.

It is possible to check the total amount (increment) of currently applied Regulation Bias Adjustment by Density Compensation.

It is possible to add a 0.5V to the total amount of Regulation Roller Bias Adjustment directly.

Default Value	Setting Range	Step of increment
0	0 to 800	0.5V

8. 6. 3. 112 Density Compensation ON/OFF (No.652)

It is possible to decide whether Density Compensation is enabled.

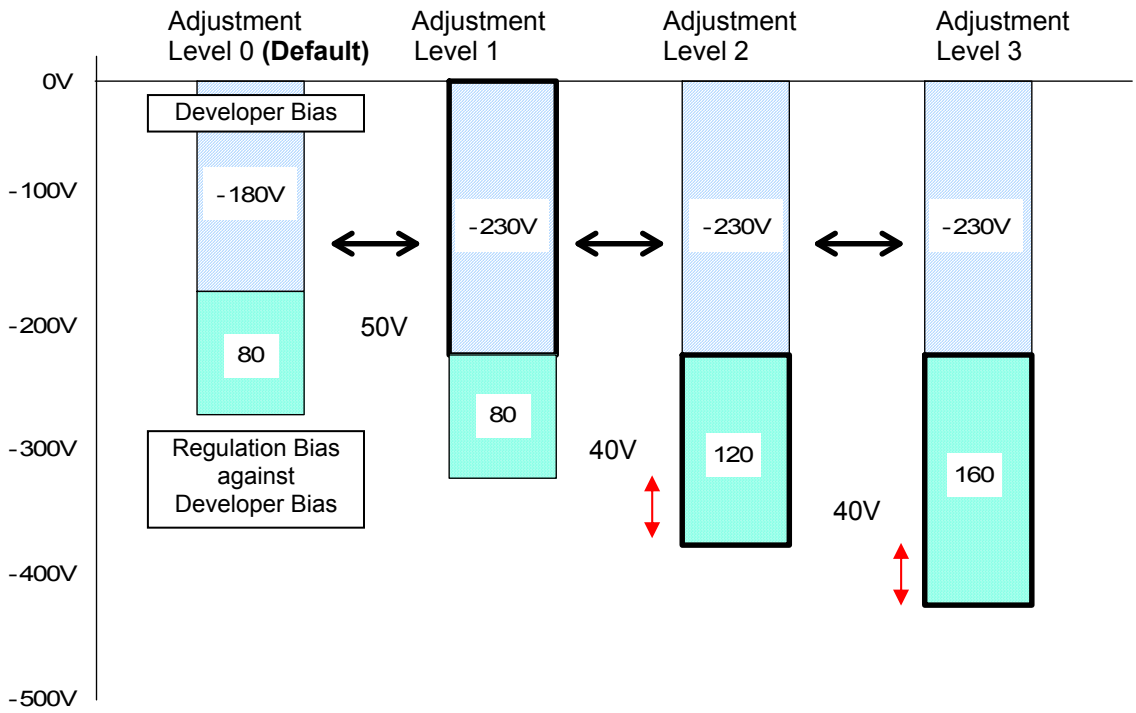
Setting value	Contents
0	Density Compensation Process is disabled
1 (default)	Density Compensation Process is enabled

Reference

Density Compensation Process is performed as follows.

1. Several solid patches are created on Drum and are measured by Density Sensor at a regular interval of Main Motor operating time (No.655).
   This is called Density Measure.
2. If the current density value (calculated based on Density Measure) does not meet Target Density (No.653), one of the Adjustment Level listed below will be applied.
3. Developer Bias and Regulation Bias (No.650) will be adjusted based on the current Adjustment Level.

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



NOTE

Even if Developer Unit is replaced, still the current Auto Adjustment will continue to be applied.

An applied Auto Adjustment Level should be manually set to "000000" after replacing Developer Unit / Developer overhaul.

8. 6. 3. 113 Target Density (No.653)

NOTE

This setting has been factory-adjusted. Keep the value unchanged.

It is possible to change Target Density that should be achieved and maintained for consistent print density.
If the current density does not meet Target Density, Regulation (Developer) Bias will be automatically adjusted based on the current Adjustment Level.

- If the current Density Value is judged “not enough” (lighter than required), the next level will be applied.
- If the current Density Value is judged “adequate”, the current level remains.
- There is possibility for the Density Value to be judged “too much enough” (darker than required), then the previous level will be applied.

If you increase the setting value by “+1”, Target Density will rise and thus Auto Adjustment Level would be switched to the next level earlier.

8. 6. 3. 114 Regulation Bias Maximum (No.654)

NOTE

This setting has been factory-adjusted. Keep the value unchanged.

It is possible to change the maximum of Regulation Bias.
When the total value amount of Regulation Bias (No.622) and Total Increment of Regulation Bias Adjustment (No.641) reaches to the value of this setting, Regulation Bias cannot raise any more.

If you increase the setting value by “+1”, the maximum of Regulation Bias increases.

Default Value	Setting Range	Step of increment
500	160 to 800	1

8. 6. 3. 115 Density Measure Interval (No.655, 656)

NOTE

This setting has been factory-adjusted. Keep the value unchanged.

It is possible to change an interval of Density Measure.
When Bias 3 Time in Information Mode reaches a specified period in this setting, Density Measure will run.
There are 2 kind of the trigger to check Bias 3 Time whether the period passes.

(1) At the time of turning on the machine
(2) After completion of the current print queue

If you increase the setting value by “+1”, the interval of Density Measure becomes 1 hour longer.

Item No.	Setting Item	Default Value	Setting range	Step of increment
655	Density Measure Interval at Power on	18	1 to 100	1 hour
656	Density Measure Interval at Print Completion	18	1 to 100	1 hour

8. 6. 3. 116 Developer Bias Increment for Auto Adjustment Level 1 (No.657)

NOTE

This setting has been factory-adjusted. Keep the value unchanged.

It is possible to change the amount (increment) of Developer Bias Adjustment.
A specified increment of Developer Bias will be applied at switching to and as of Auto Adjustment Level 1.

The default voltage value of the increment is approximately 50V (corresponding to “80” in the setting value) for switching to Auto Adjustment Level 1. The increased Developer Bias will be applied to the subsequent Auto Adjustment Level.

If you increase the setting value by “+1”, the increment of Developer Bias Adjustment becomes higher.

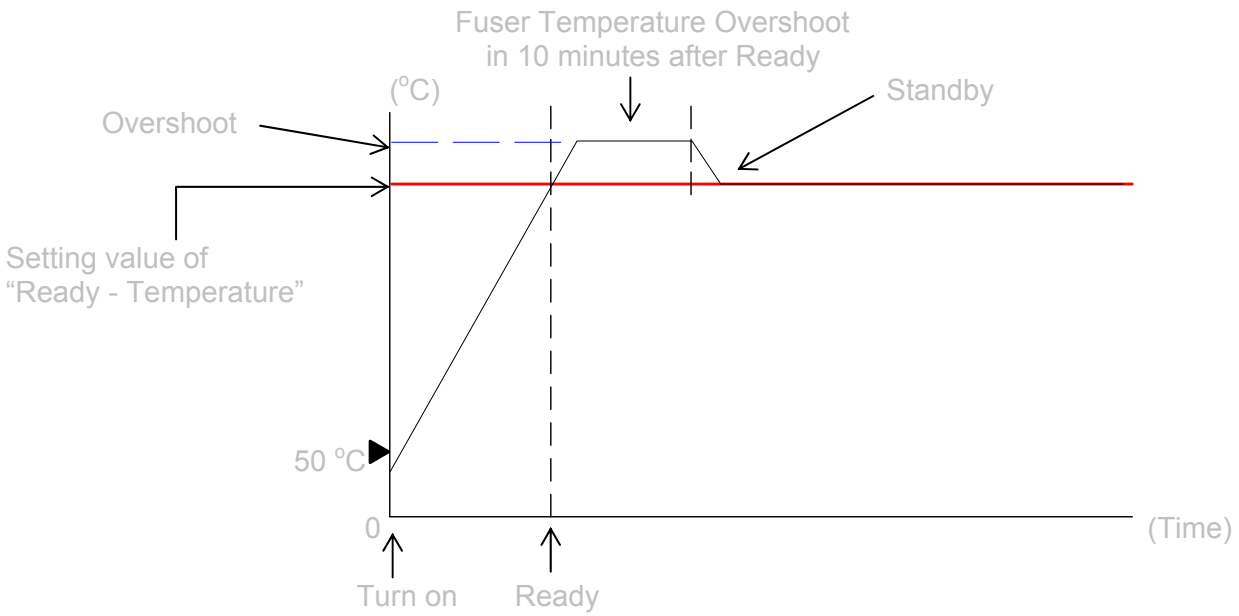
Default Value	Setting Range	Step of increment
158	0 to 400	1

8. 6. 3. 117 Ready - Fuser Temperature Center (No.660 to 665)

It is possible to specify “Ready” temperature.
You can specify the temperature for each type of media separately.
This setting will be applied only when Fuser Temperature is below 50°C at turning on the machine.
The Fuser Temperature becomes 1 degree higher if you increase the setting value by “+1”.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/AS		
660	Ready - Fuser Temperature Center (Plain)	160	160	120 to 180	1°C
661	Ready - Fuser Temperature Center (Tracing)	160	170	120 to 180	1°C
662	Ready - Fuser Temperature Center (Film)	177	177	120 to 180	1°C
663	Ready - Fuser Temperature Center (Special / Plain)	160	160	120 to 180	1°C
664	Ready - Fuser Temperature Center (Special / Tracing)	160	160	120 to 180	1°C
665	Ready - Fuser Temperature Center (Special / Film)	177	170	120 to 180	1°C

After reaching “Ready”, fuser temperature will rise 10 °C higher than “Ready” (Overshoot) in 10 minutes. Then it will be maintained within “Standby” temperature.



8. 6. 3. 118 Ready - Fuser Temperature Side (No.666 to 671)

It is possible to specify “Ready” temperature.
You can specify the temperature for each type of media separately.
This setting will be applied only when Fuser Temperature is below 50°C at turning on the machine.
The Fuser Temperature becomes 1 degree higher if you increase the setting value by “+1”.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/AS		
666	Ready - Fuser Temperature Side (Plain)	159	159	120 to 180	1°C
667	Ready - Fuser Temperature Side (Tracing)	159	180	120 to 180	1°C
668	Ready - Fuser Temperature Side (Film)	177	170	120 to 180	1°C
669	Ready - Fuser Temperature Side (Special / Plain)	159	159	120 to 180	1°C
670	Ready - Fuser Temperature Side (Special / Tracing)	159	159	120 to 180	1°C
671	Ready - Fuser Temperature Side (Special / Film)	177	170	120 to 180	1°C

8. 6. 3. 119 Fuser Motor Speed (18” / 17” / 15” / 12” / 11” / A2 / A3) (No. 672 to 677)

It is possible to adjust the speed of Fuser Motor for each type of paper separately.
If you increase the setting value by “+1”, the motor speed becomes 0.04mm/second faster.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
672	Fuser Motor Speed (18” / 17” / 15” / 12” / 11” / A2 / A3) (Plain paper)	50	50	0 to 80	0.04mm/s
673	Fuser Motor Speed (18” / 17” / 15” / 12” / 11” / A2 / A3) (Tracing paper)	57	60	0 to 80	0.04mm/s
674	Fuser Motor Speed (18” / 17” / 15” / 12” / 11” / A2 / A3) (Film paper)	50	50	0 to 80	0.04mm/s
675	Fuser Motor Speed (18” / 17” / 15” / 12” / 11” / A2 / A3) (Special plain paper)	40	40	0 to 80	0.04mm/s
676	Fuser Motor Speed (18” / 17” / 15” / 12” / 11” / A2 / A3) (Special tracing paper)	40	40	0 to 80	0.04mm/s
677	Fuser Motor Speed (18” / 17” / 15” / 12” / 11” / A2 / A3) (Special film)	40	40	0 to 80	0.04mm/s

For Fuser Motor Speed in larger size, refer to [8. 6. 3.64 Fuser Motor Speed (36” / 34” / 30” / 24” / 22” / A0 / B1 / A1) (No.316 to 321) .

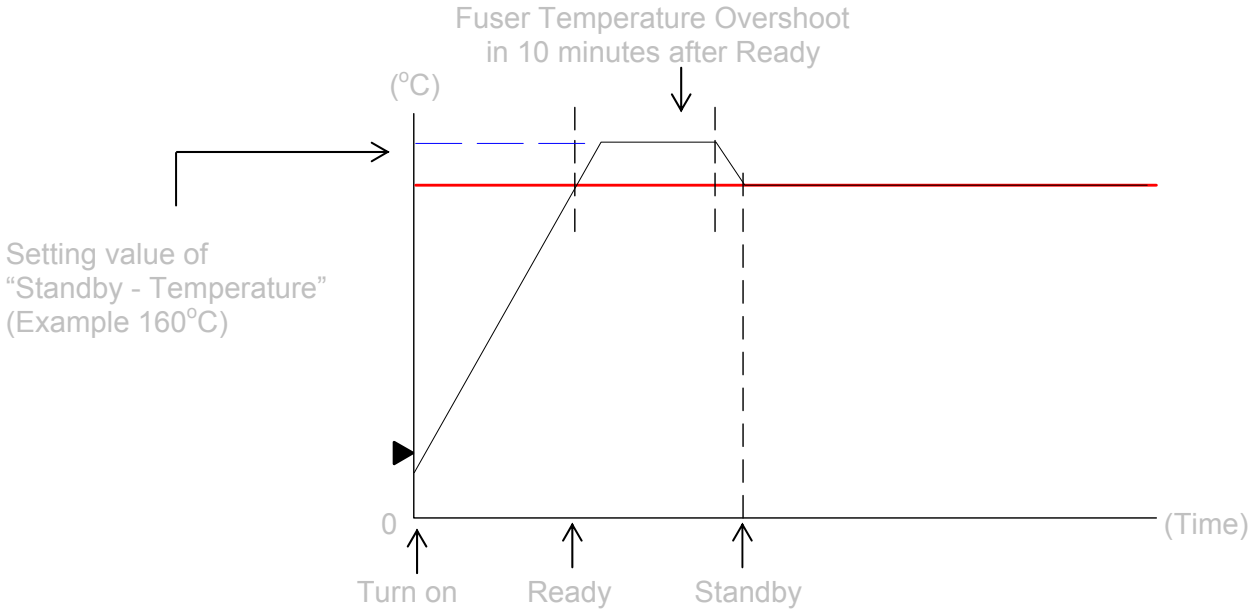
8. 6. 3. 120 Compensation of Fuser Motor Speed 4 (No.678 to 737)

Fuser Motor Speed 4 and its switch timing are explained on Fuser Motor Speed 1, 2, 3 together. Please refer to [8. 6. 3.39 Compensation of Fuser Speed 1 (No.070 to 075)] and the concerning pages for media type / size.

8. 6. 3. 121 Standby - Fuser Temperature (No.738, 739)

It is possible to adjust the Fuser Temperature to be maintained while waiting for a print job. You can specify the temperature for the center and the sides separately.
This setting is applied after the period of Fuser Temperature Overshoot (+10°C against "Ready - Temperature" in 10 minutes).
The Fuser Temperature becomes 1 degree higher if you increase the setting value by "+1".

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
738	Standby - Fuser Temperature Center	167	167	120 to 180	1°C
739	Standby - Fuser Temperature Side	155	155	120 to 180	1°C



8. 6. 3. 122 Assist Fan Off Timing (No.740 to 742)

Assist Fan stops at a regular period after the trailing edge of a print of in 15" or wider reaches Registration Sensor. It is possible to change the timing of Assist Fan off.
This setting may be a solution for image void on the trailing center.

If you increase the setting value by "+1", the timing of Assist Fan off becomes 0.125 seconds later.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/AS		
740	Assist Fan Off Timing (18" / 17" / 15" / A2)	8	4	0 to 8	0.125 sec
741	Assist Fan Off Timing (24" / 22" / A1)	8	4	0 to 8	0.125 sec
742	Assist Fan Off Timing (36" / 34" / 30" / A0 / B1)	8	6	0 to 8	0.125 sec

8. 6. 3. 123 Fuser Motor Speed applied at 100mm from trailing edge (36” / 34” / 30” / A0 / B1 width) (No.743 to 745)

It is possible to adjust the speed of Fuser Motor driving on 100mm end of a print in 36” / 34” / 30” / A0 / B1 width.
This setting may be a solution for image void on the trailing center.

If you increase the setting value by “+1”, speed of Fuser Motor driving becomes 0.04mm/s slower than the applied speed at that point.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/AS		
743	Fuser Motor Speed applied at 100mm from trailing edge (36” / 34” / 30” / A0 / B1 width) (Plain)	0	0	0 to 80	0.04mm/s
744	Fuser Motor Speed applied at 100mm from trailing edge (36” / 34” / 30” / A0 / B1 width) (Tracing)	0	0	0 to 80	0.04mm/s
745	Fuser Motor Speed applied at 100mm from trailing edge (36” / 34” / 30” / A0 / B1 width) (Film)	0	0	0 to 80	0.04mm/s

8. 6. 3. 124 Roll 2 Forward Standby ON/OFF (No.746)

The default Standby Position for the leading edge of Roll 2 is located directly below the set sensor (PH9). This setting will feed the leading edge to Forward Standby Position (approximately 252mm forward from the default Standby Position).

Setting value	Contents
0 (default)	Roll 2 Leading Edge stays at the set sensor
1	Roll 2 Leading Edge goes Forward Standby Position

8. 6. 3. 125 Roll 2 Forward Standby Position Adjustment (No.747)

This setting can adjust Roll 2 Forward Standby Position (approximately 202 to 252mm forward from the default Roll 2 Standby Position) with Roll 2 Forward Standby on. When the setting value increases by 1, Roll 2 Forward Standby Position will shift backward to the default Standby Position in 1mm. (“0” for 252mm forward, “50” for 202mm forward)

Default Value	Setting Range	Step of increment
0	0 to 50	1mm

8. 6. 3. 126 Roll 2 Rewind Timer (No. 748)

This setting can work as a timer to rewind Roll 2 media from Forward Standby Position to the default Standby Position with Roll 2 Forward Standby on. When the setting value decreases by 1, the interval of rewinding Roll 2 media to the default Standby Position becomes 1 minute shorter.

Default Value	Setting Range	Step of increment
15	1 to 15	1 min

8. 6. 3. 127 Tracing Mode (No. 749)

Even in “ready” condition, the fuser temperature is controlled slightly lower than “Print” temperature in order to reduce inside temperature.
It quickly rises up to “Print” temperature at the same time as the printer starts printing an output job.
This setting will keep media feeding wait for the completion of the fuser temperature recovery.

Note that Tracing Mode is effective only for an extremely thin tracing paper (off-specification).

Setting value	Contents
0 (default)	Fuser temperature starts recovery as soon as a print job is sent.
1	A print on tracing paper will start after recovery of fuser temperature.

8. 6. 3. 128 Roll 1 Setting Mode (No. 750)

The default Standby Position for the leading edge of Roll 1 is located directly below the set sensor (PH7). This setting will allow the leading edge of a roll media that has kept waiting a long period in a special circumstance to move about 20mm forward from the default Standby Position.
This will keep the edge from waving.

Note that Roll 1 Setting Mode is effective only for an extremely thin roll media (off-specification).

Setting value	Contents
0 (default)	Roll 1 Leading Edge stays at the set sensor
1	Roll 1 Leading Edge goes 20mm forward from the set sensor.

8. 6. 3. 129 Disable HV Error Detection Mode (No. 751)

“Disable HV Error Detection Mode” functions just as Error Mask Mode for high voltage errors.
This allows the system to ignore service call errors regarding high voltage power supply (E-31, E-32, E-33, E-34) and prevents the concerning error code from being displayed both on the sub UI and the touch screen.
“Disable HV Error Detection Mode” ON is not canceled by turning off the machine, but remains until set to OFF manually.

Setting value	Contents
0 (default)	HV error detection works normally.
1	The system ignores any HV Error.

⚠ NOTE

TAKE GREAT CARE. The system ignores high voltage errors caused by ANY REASON while “Disable HV Error Detection Mode” is ON.
It is recommended that “Disable HV Error Detection Mode” remains OFF in the usual usage.

8. 6. 3. 130 Auto Initial Cut After Long Print (No. 753, 754)

Trimming the leading edge maintains feeding stability for the subsequent print right after a long print longer than the guarantee length.

“Auto Initial Cut After Long Print” ejects a 210mm sheet for initial cut right after completion of a long print that exceeds a specified length and number of sheets.
(The cut length is fixed in 210mm)

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/AS		
753	Auto Initial Cut After Long Print (Length)	10	10	10 to 60	100mm
754	Auto Initial Cut After Long Print (Number of sheet)	0	0	0 to 3	*number of sheets

* “Auto Initial Cut After Long Print” counts long prints (longer than No.753) beyond print jobs.
It makes Initial Cut while the printer is proceeding only long prints (longer than No.753). If a print job contains a “Non long print” (shorter than No.753), the count will be reset.
Such short print obtains the accurate cut length and just works as a “trim cut” for the next long print.

8. 6. 3. 131 Length for Forced Initial Cut Before Print (No. 755)

Under a certain usage environment, the first print of a job sometimes would have a wrinkle or an image void if the prints are made with a roll media left in the deck for a long period.
“Forced Initial Cut Before Print” makes an automatic initial cut (almost 1 revolution of a roll media) at the leading edge before processing a job to obtain image quality and feed balance in such conditions.

Which media type to have “Forced Initial Cut Before Print” can be specified on the UI screen.
(For further information of Configuration on the UI, see IPS Touchscreen Operator’s Guide)

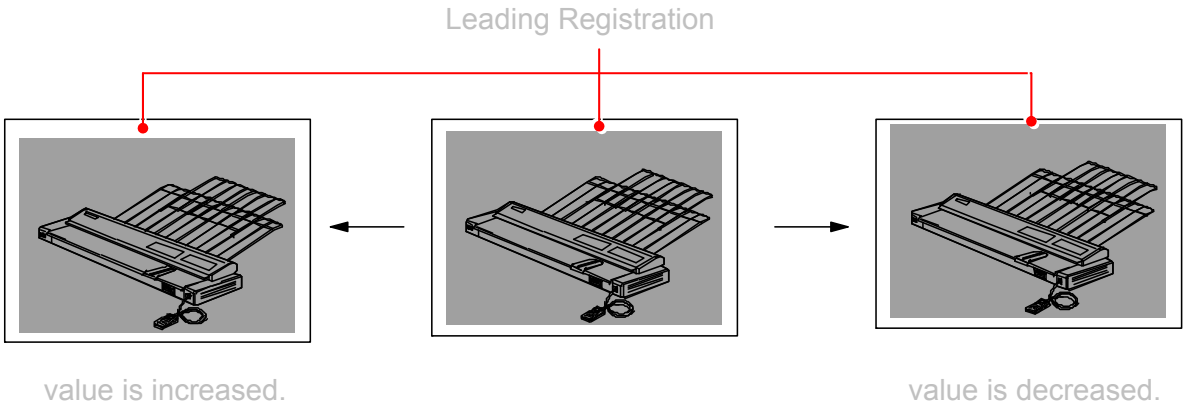
No.755 can specify the length to be cut and ejected prior to start printing.

Default Value	Setting Range	Step of increment
594	210 to 600	1mm

8. 6. 3. 132 Leading Registration for Paper Tray (No. 756)

It is possible to specify where to start printing the image at the leading edge of a sheet from the Paper Tray.
If you increase the setting value by “+1 “, the head of image is shifted 1mm downward toward the trailing edge As a result the leading margin becomes larger.

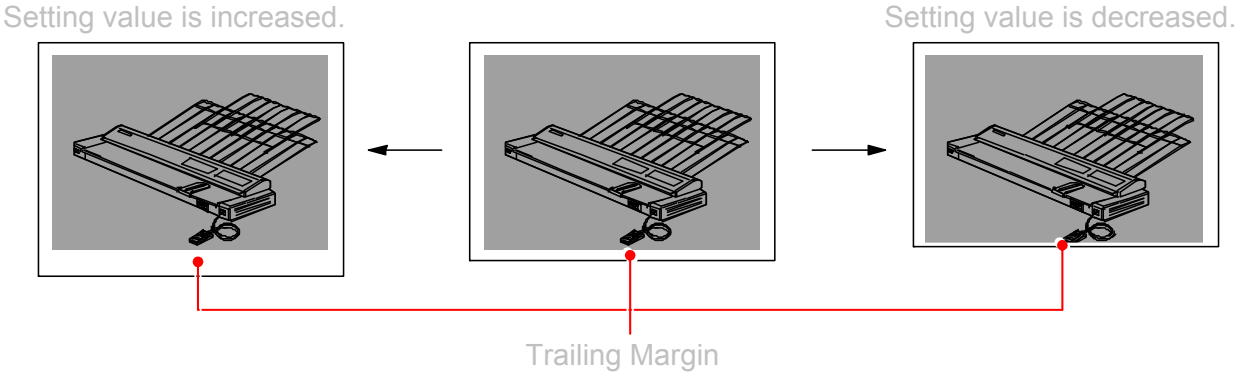
Default Value	Setting Range	Step of increment
not decided	1 to 40	1mm



8. 6. 3. 133 Trailing Margin for Paper Tray (No. 757)

It is possible to adjust the length of trailing margin of a sheet from the Paper Tray.
The length of trailing margin becomes 1mm longer if you Increase the setting value by “+1 “.

Default Value	Setting Range	Step of increment
not decided	1 to 40	1mm



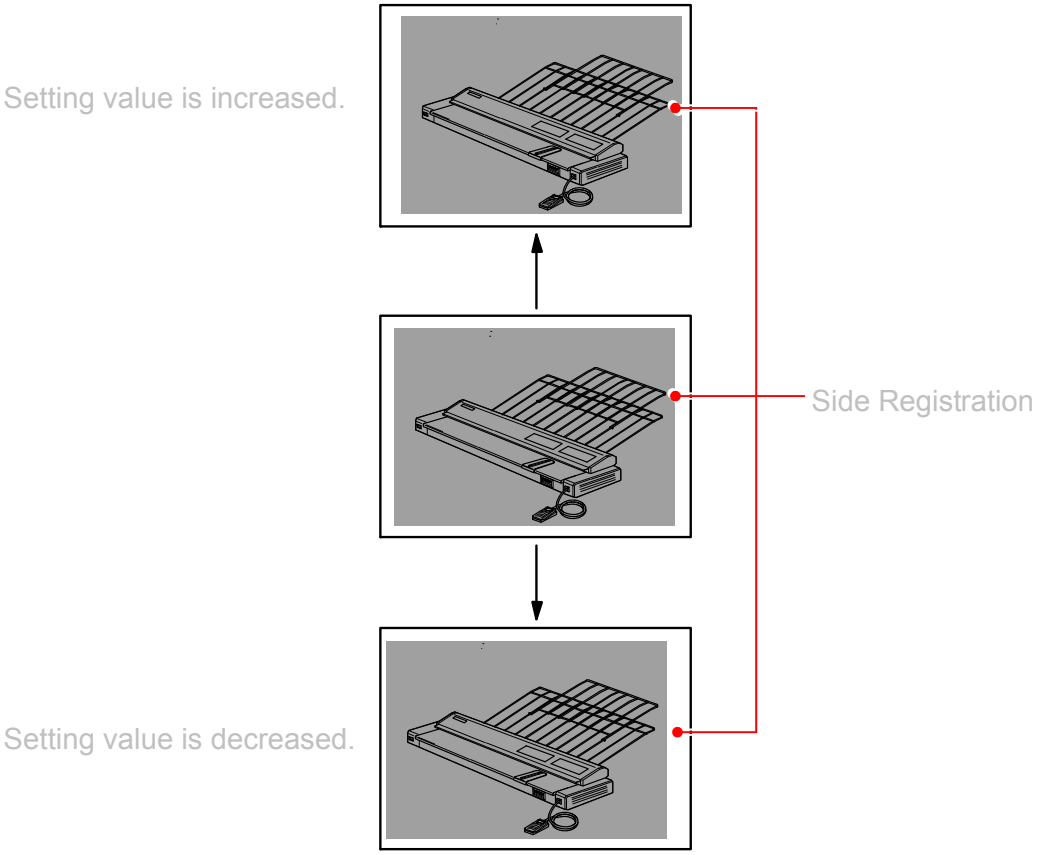
NOTE

Some trailing image may be lost if you decrease the value too much.

8. 6. 3. 134 Side Registration for Paper Tray (No. 758)

It is possible to specify where to start printing the image at the side edge of a sheet from the Paper Tray.
If you increase the setting value by “+1 “, image is shifted 0.1mm to the right.

Default Value	Setting Range	Step of increment
not decided	0 to 100	0.1mm

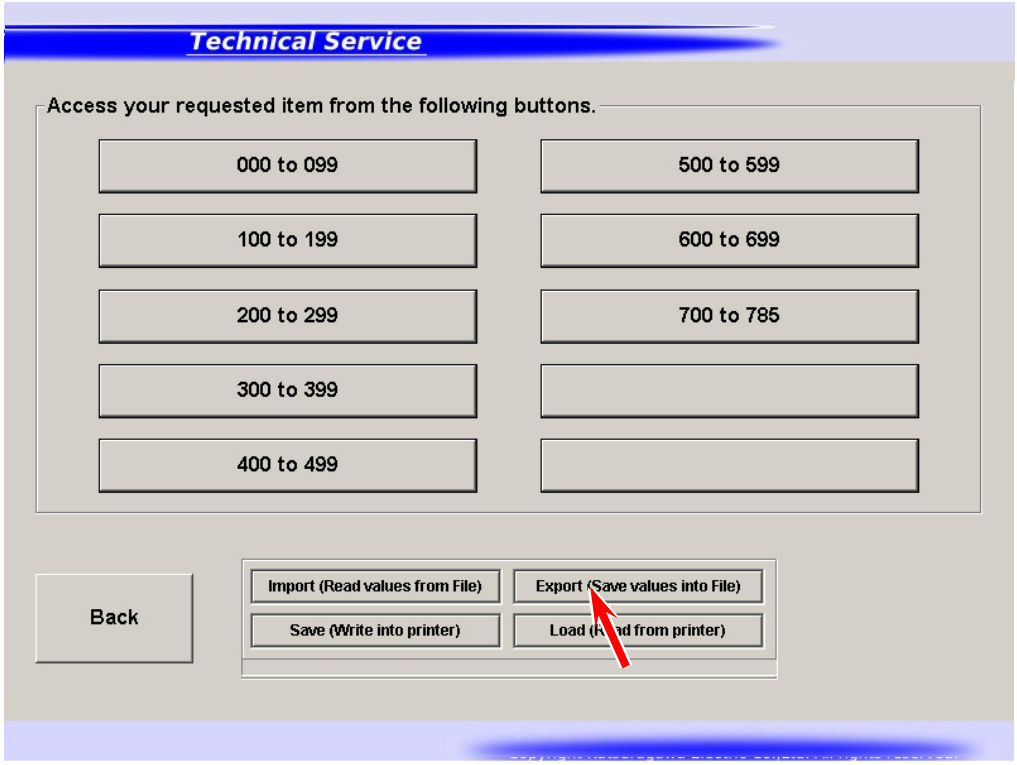


8. 6. 4 Creating Backup

It is possible to save the current parameters in Adjustment Mode as RAM file.
RAM file can be used for backup measure.

> **NOTE**
>
> Prior to any attempts at significant changes on Adjustment Mode, export the current parameters to .RAM file.

1. Press [Export] in Adjustment Menu screen.



2. Specify a place to save the current parameter.
   It will be saved as both *.txt and *.ram in a folder that is automatically created there at this time.
   The printer's serial number will be automatically added to the folder.

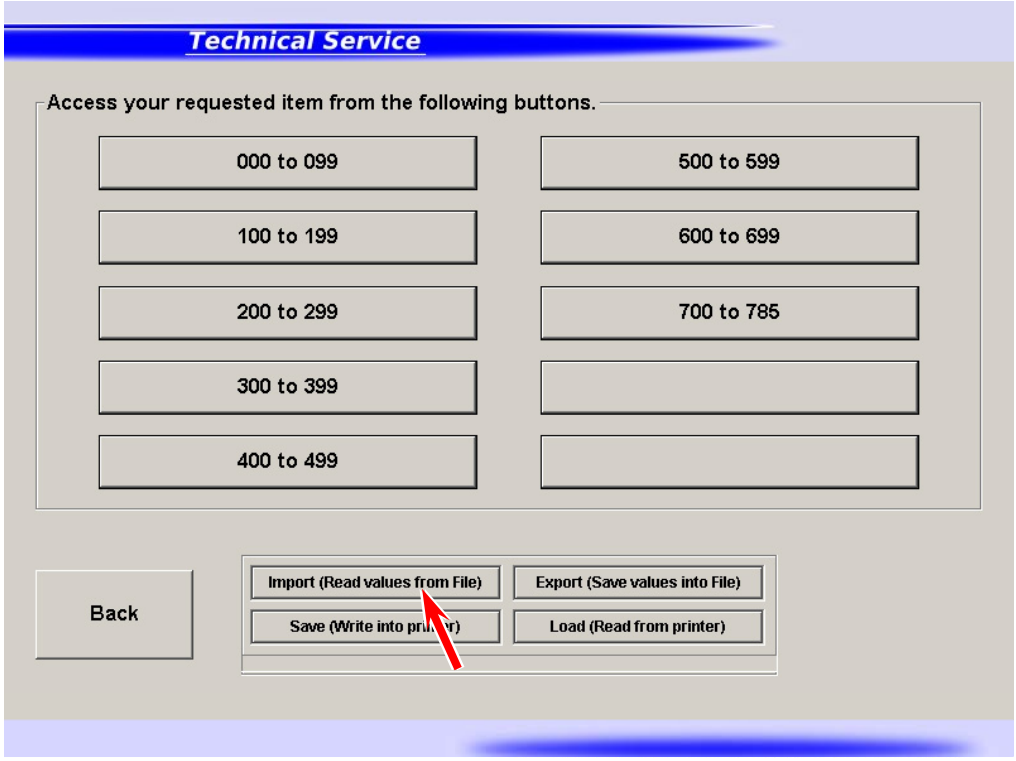
   *.ram is used for backup of the current parameter. You can use it to import the parameter to machines.
   *.txt" is only used for simplified confirmation with an appropriate application such as Notepad.

8. 6. 5 Restoring Configuration from Backup

It is possible to restore the parameters by using a RAM file that has been saved before.
This can be used for the following possible cases.

- If the current parameters have loss or damage of data.
- To apply parameters of a certain printer to another.

1. Press [Import] in Adjustment Menu screen.

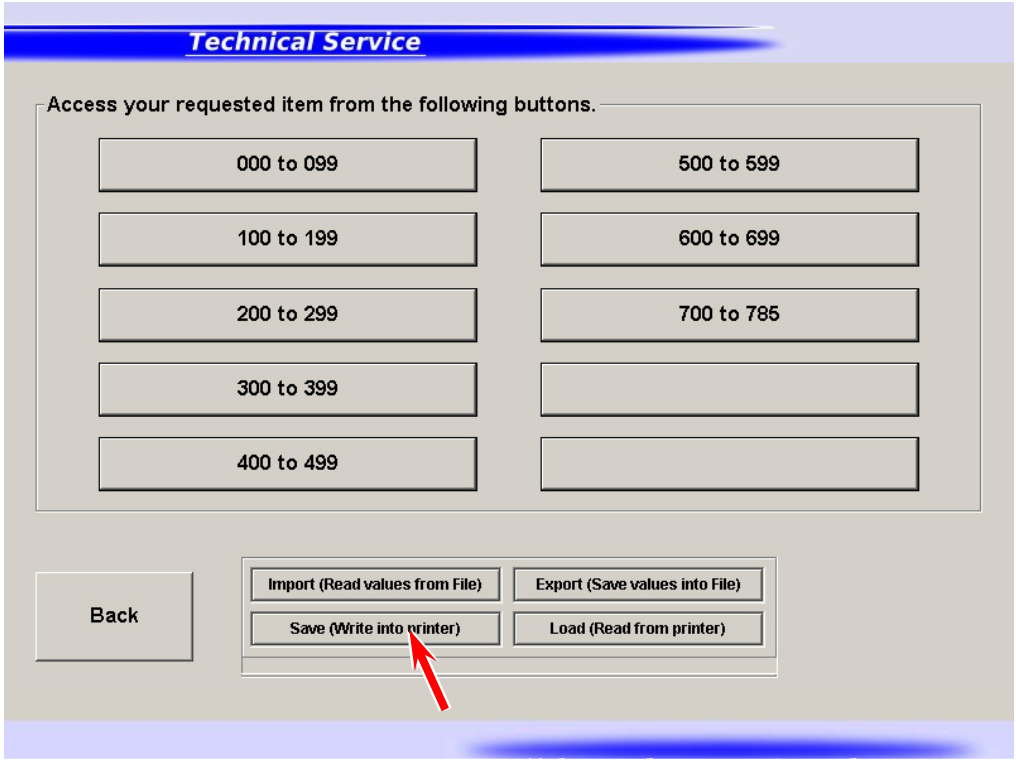


2. Locate and open a RAM file that you want to apply.

3. The system reads all the parameters in the RAM file.
   Then the parameters will be applied to **"New Value"** field.

> ⚠ **NOTE**
>
> **At this point, IPS Service Software just reads and displays the parameters in the RAM file, but the parameters do not take effect on the printer yet.**
>
> Follow the later step to apply the read parameters to the printer.

4. Press [Save]. After confirmation, the read parameters will be sent to the printer.



8. 7 Running Mode (Factory Use Only)

In Running Mode, the printer takes usual printing operation with no print media loaded.
If you install any roll media, it is transported and ejected from the printer as usual as normal print.
Note that the printer will continue printing till the media empty.

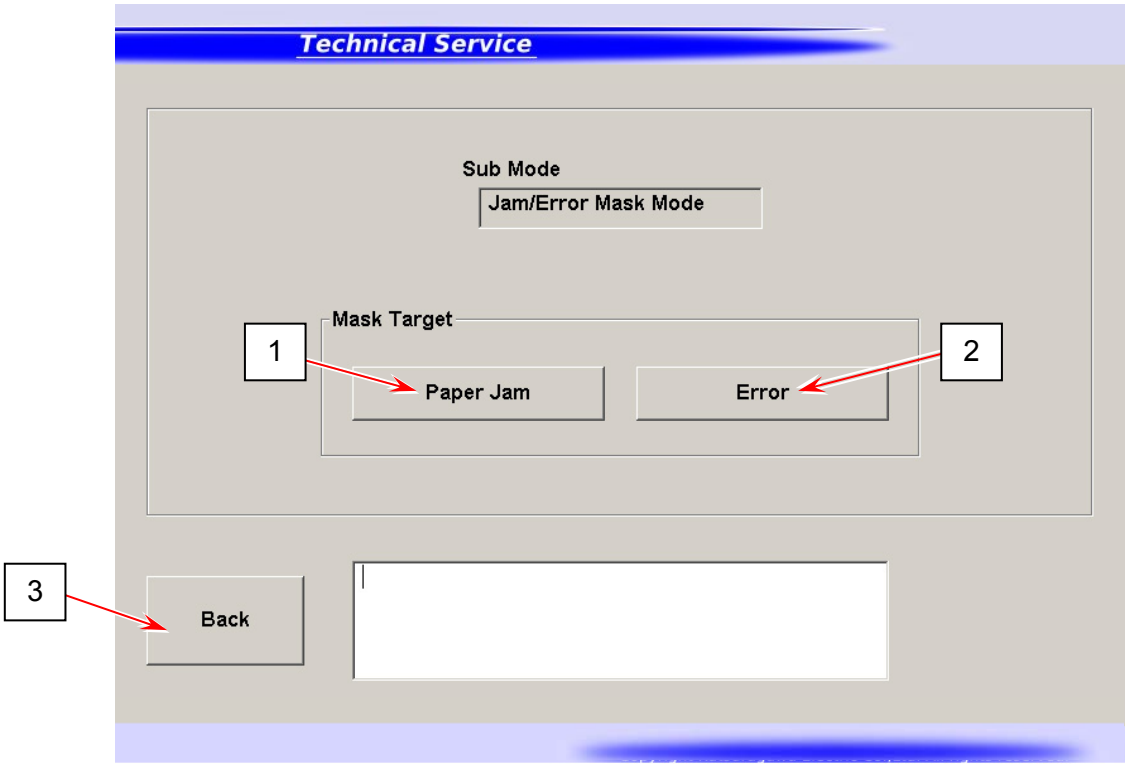
> **NOTE**
>
> Running Mode is not available in Service Mode. Factory Use Only.

8. 8 Jam/Error Mask Mode

If the printer indicates any error (J-****/E-****), it is possible to mask (ignore, not to detect) it in Jam/Error Mask Mode. The error (J-****/E-****) you have chosen to mask will not be detected by masking. You can temporarily operate the printer as usual as normal condition even if a cause of the error is not removed yet.

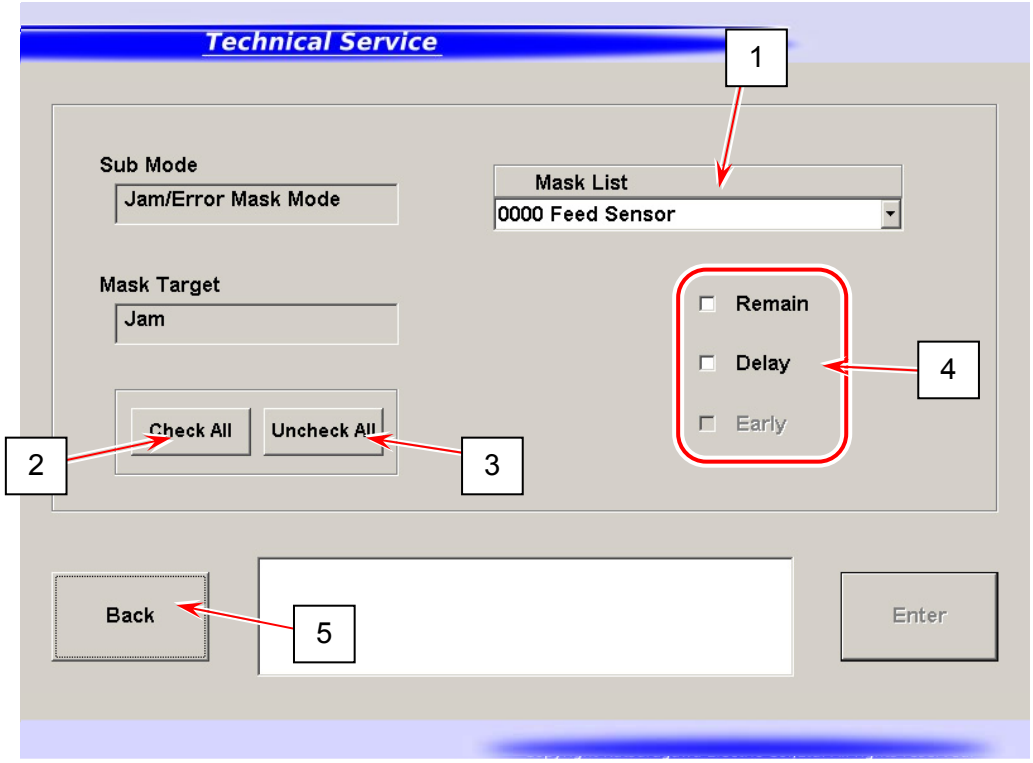
> **NOTE**
>
> Masking condition will be automatically canceled once you quit IPS Service Software or turn off the printer.

Mask Target screen



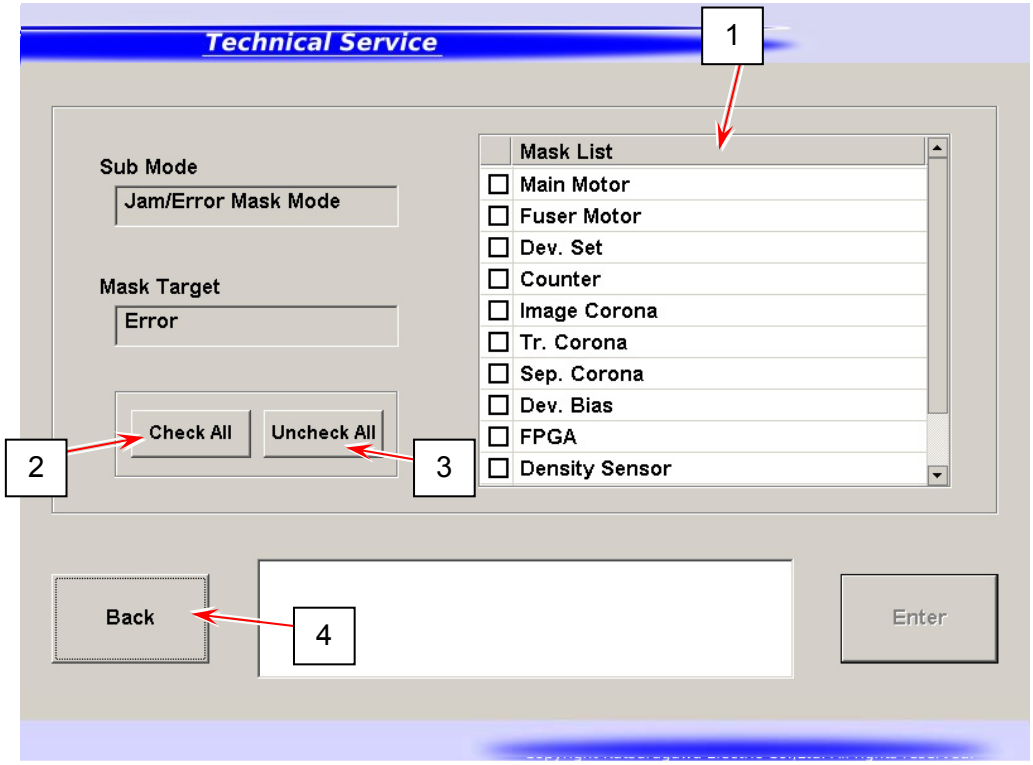
	Name	Function
1	Paper Jam	Switches to Jam Mask screen
2	Error	Switches to Error Mask screen
3	Back	Returns to Service Mode Home

Jam Mask screen



	Name	Function
1	Mask List	Displays Mask items in drop-down menu Choose one item that you want to mask.
2	Check All	Starts jam masking against all the items
3	Uncheck All	Cancels jam masking against checked items
4	media situation to be masked	Specifies which situation to be masked.
5	Back	Returns to Service Mode Home

Error Mask screen



	Name	Function
1	Mask List	Displays Mask items in the list Select mask target(s) that you want to mask. Starts error masking while item(s) is checked
2	Check All	Starts error masking against all the items
3	Uncheck All	Cancels error masking against checked items
4	Back	Returns to Service Mode Home

8. 8. 1 Mask List

Jam Mask

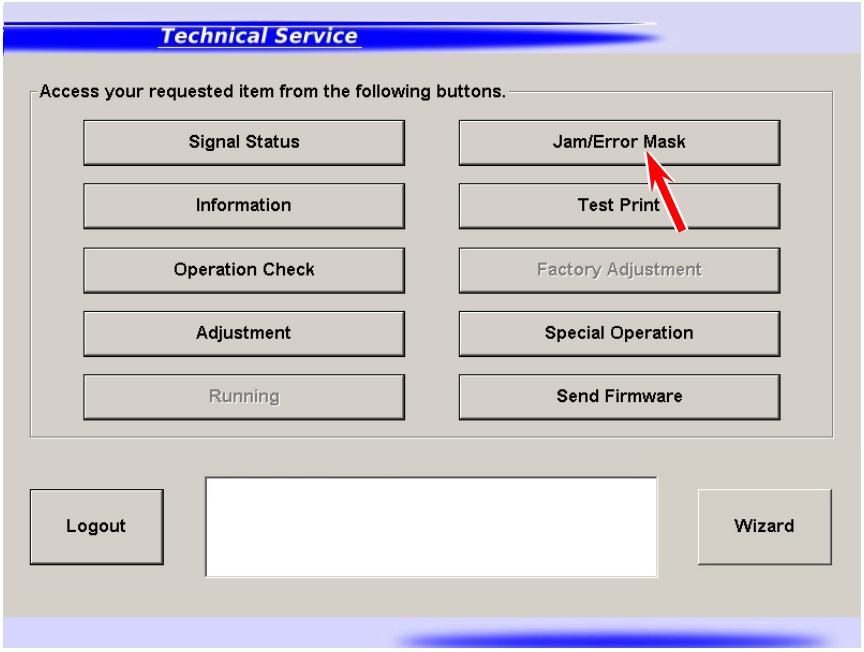
0000	Roll 2 Set	Roll 2 Deck Jam	PH9
0001	Roll 1 Set	Roll 1 Deck Jam	PH7
0002	Feed	Feeding Jam	PH6
0003	Regist	Registration Jam	PH1
0004	Manual	Manual Jam	PH5
0005	Sep	Internal Jam	PH2
0006	Exit	Fuser / Exit Cover Jam	PH3
0007	Pickup	Pickup Jam (Paper Tray)	PH13

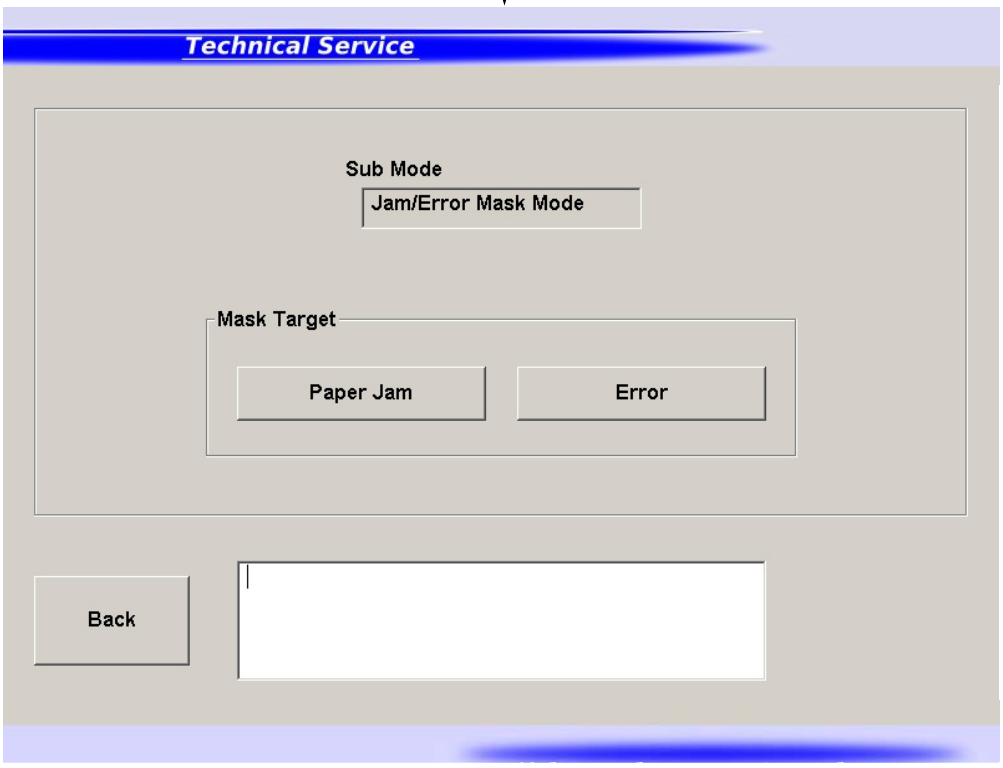
Error Mask

Main Motor	Main Motor Error	E-0010
Fuser Motor	Fuser Motor Error	E-0011
Press Motor	Developer Press Motor Error	E-0012
Dev. Set	Developer Unit Set Error	E-0070
Counter	Counter Error	E-0020
Im Corona	Image Corona Output Error	E-0031
Tr Corona	Transfer Corona Output Error	E-0033
Sp Corona	Separation Corona Output Error	E-0032
Dev. Bias	Developer Bias Error	E-0034
FPGA	FPGA Error	E-0050
Density Sensor	Density Sensor Error	E-0080 E-0081

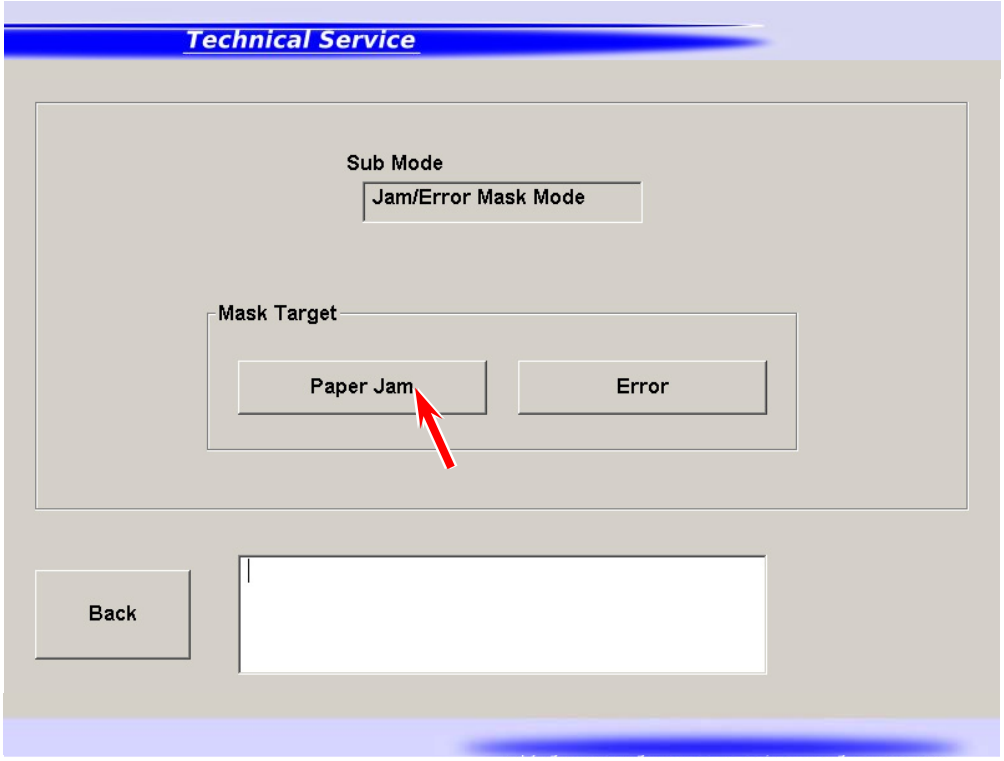
8. 8. 2 Masking Jam

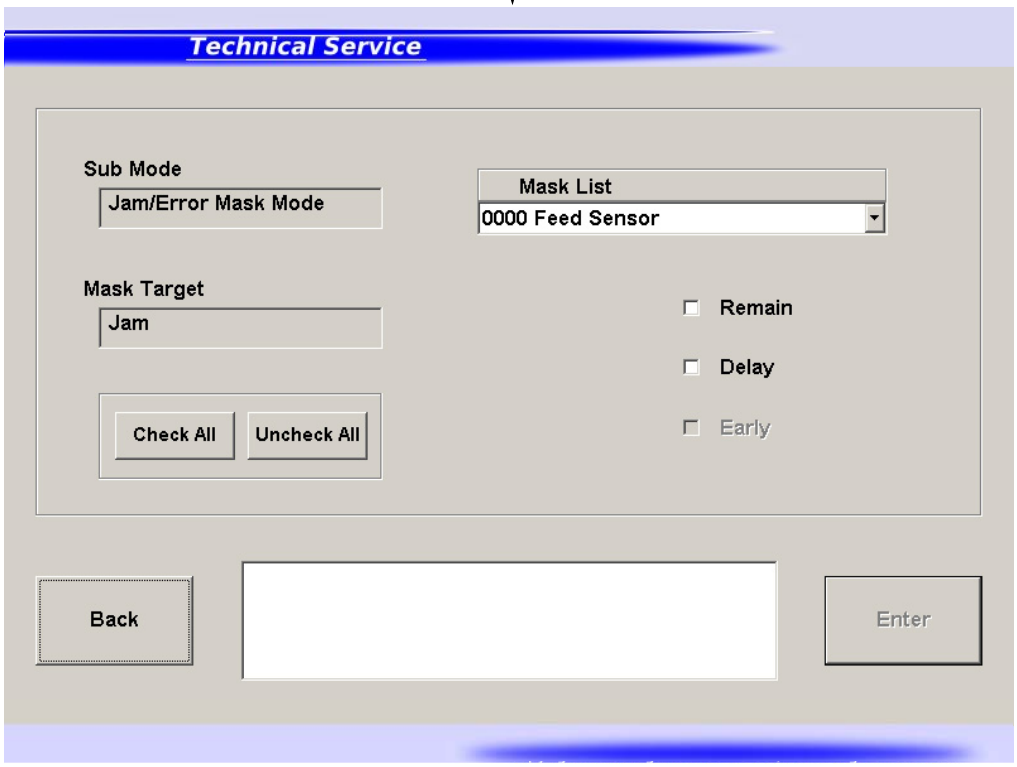
1. Press [Jam Error Mask] in Service Mode Home.
   Mask Target screen appears.



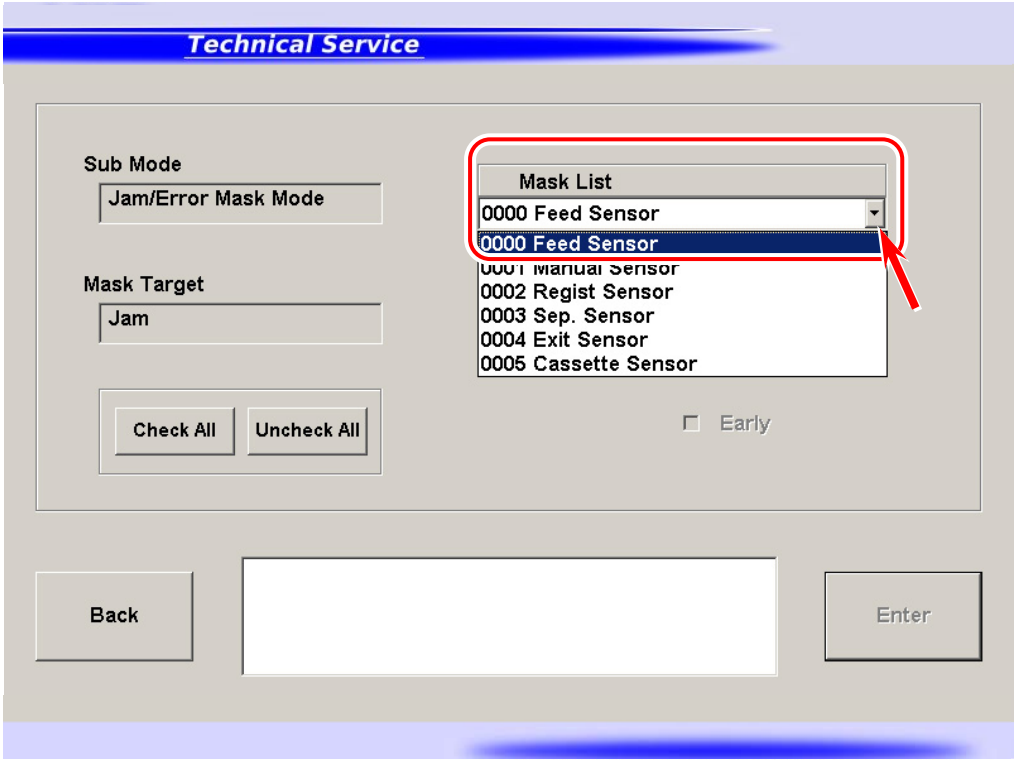


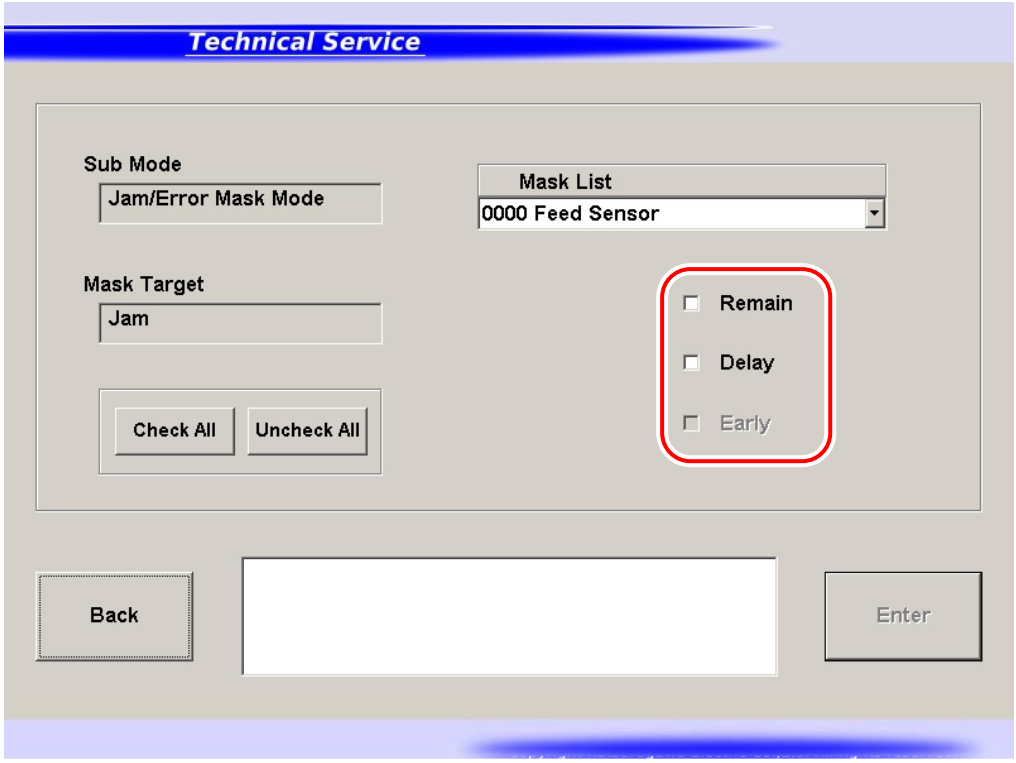
2. Press [Paper Jam].





3. Select the desired target from the pull-down menu.
   Check any of “Remain” / “Delay” / “Early” then the concerning sensor starts to ignore the checked jam.



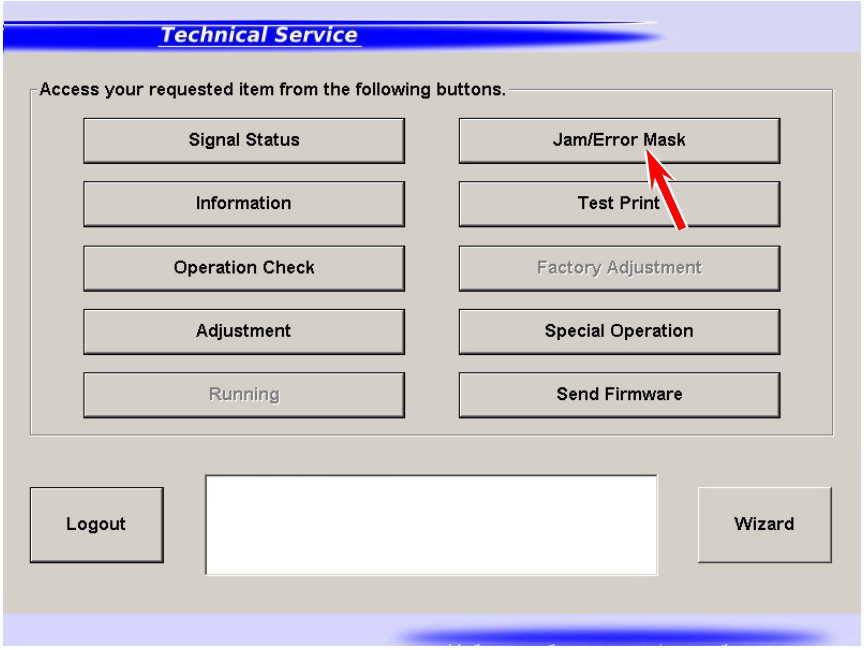


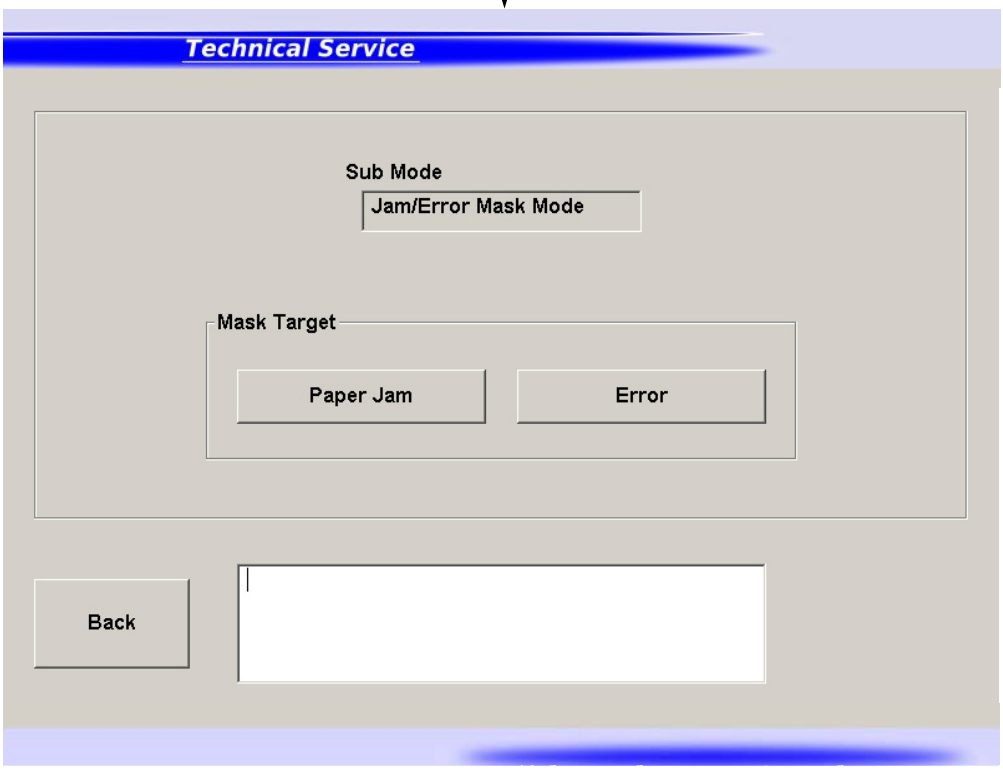
NOTE

Available mask situation selection (Remain, Delay, Early) may vary by printer model.

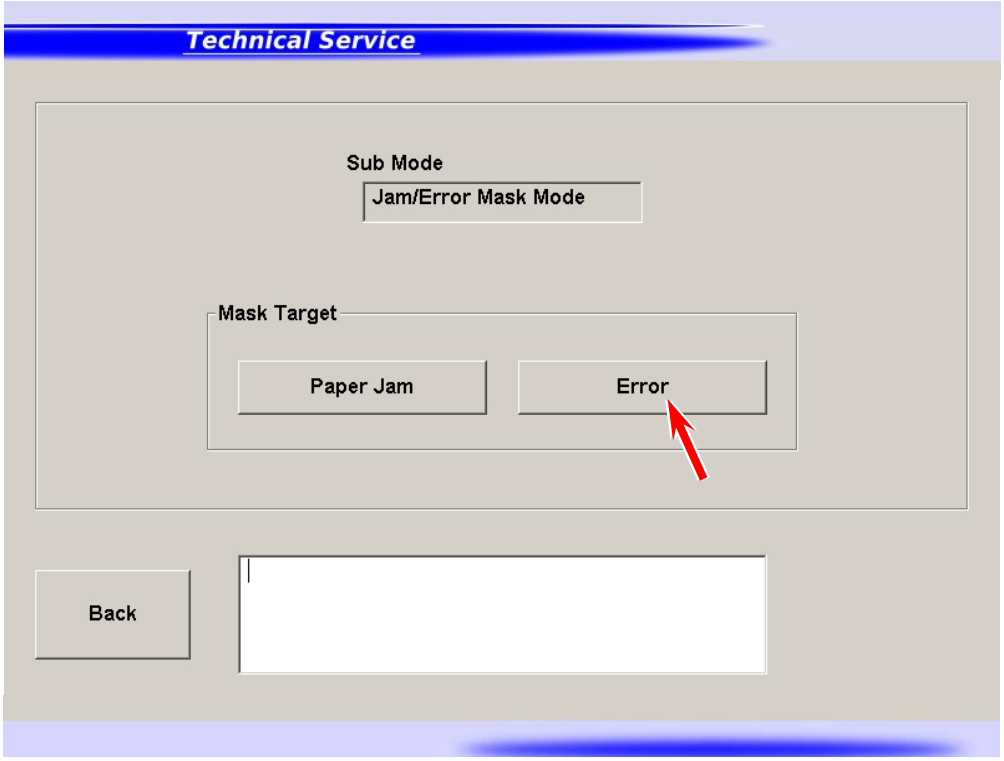
8. 8. 3 Masking Error

1. Press [Jam Error Mask] in Service Mode Home.
   Mask Target screen appears.

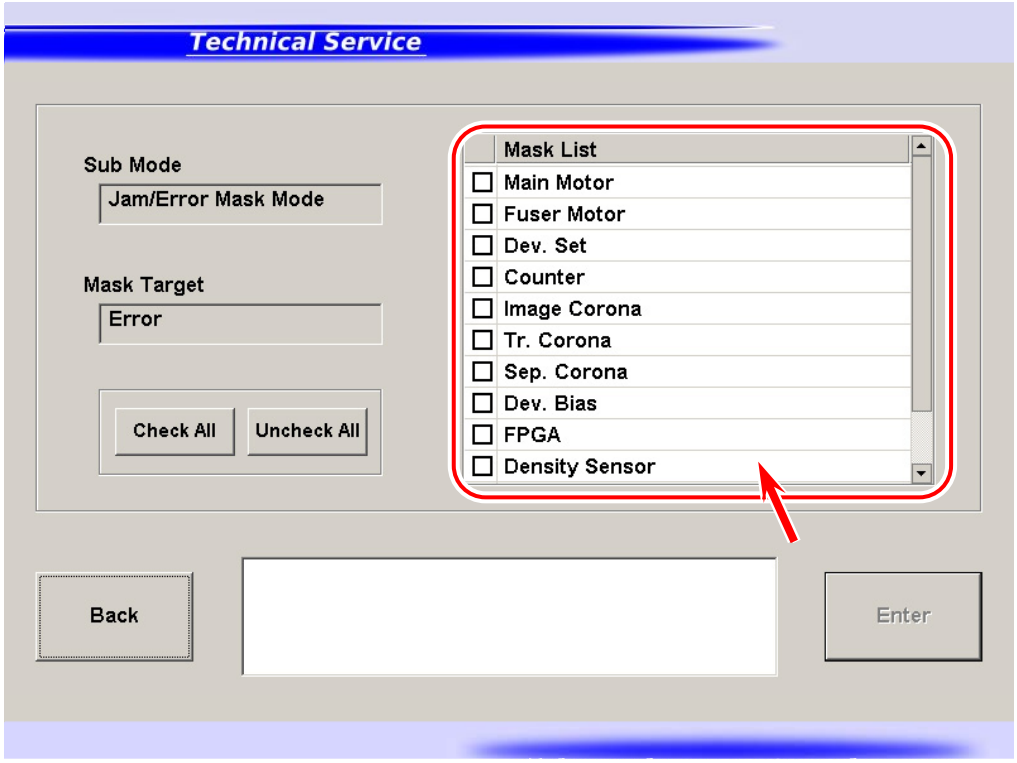




2. Press [Error].



3. Check items that you want to mask. Then the concerning sensor starts to ignore the checked Error.



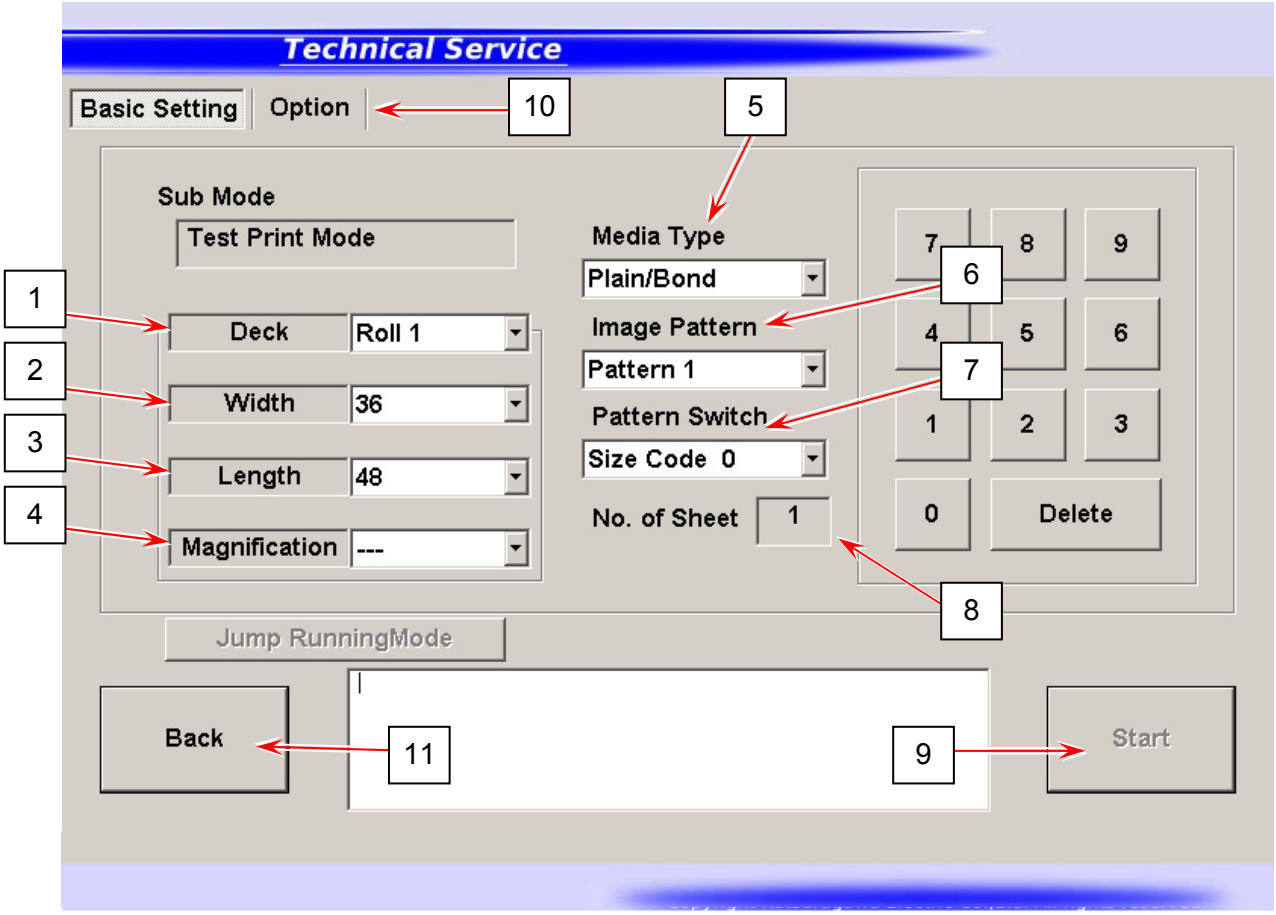
NOTE

No “Door Open” mask is available.

8. 9 Test Print Mode

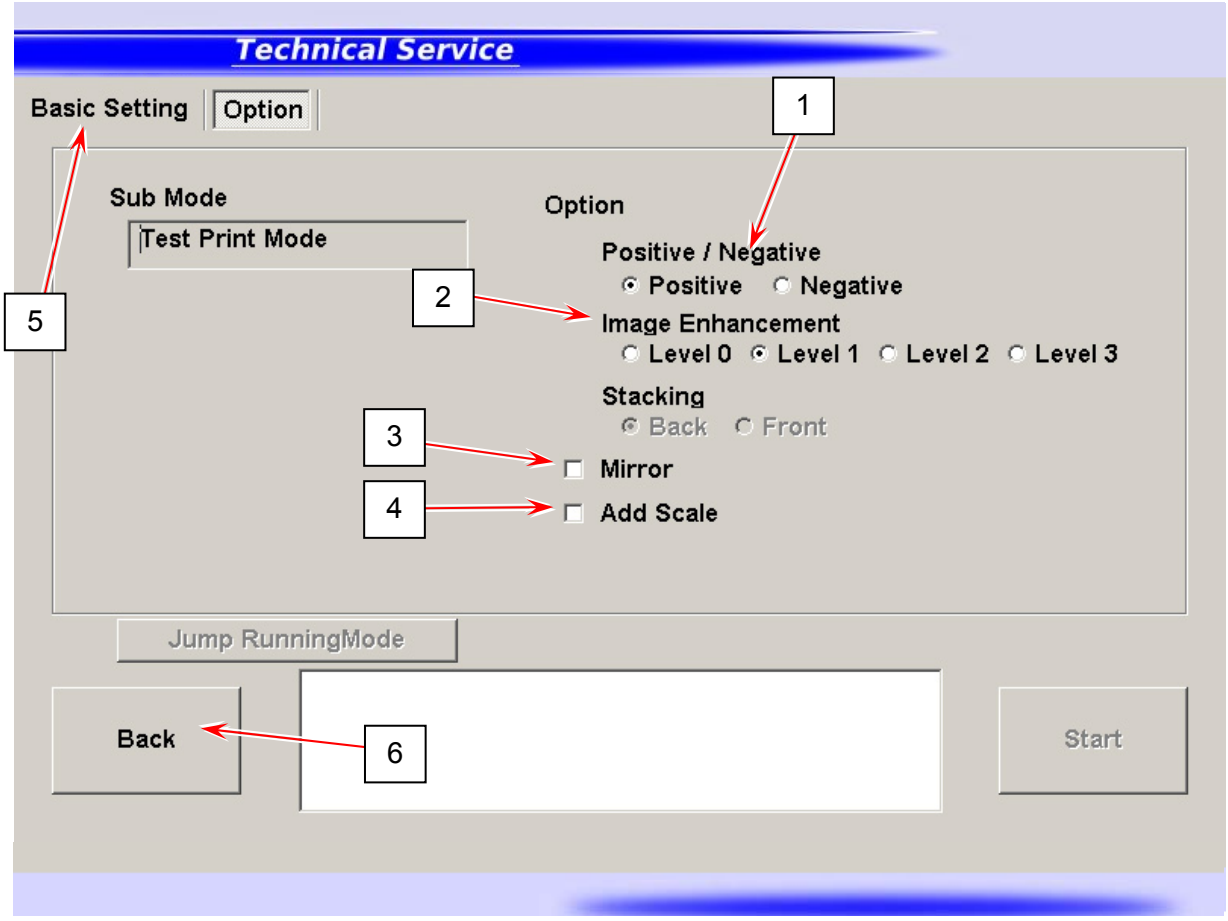
It is possible to output some built-in test patterns as a stand alone plotter.
No external device (controller / scanner / network connection) is required for test pattern plotting.

Basic Setting screen



	Name	Function
1	Deck	Displays media source in drop-down menu Choose one item that you want to use for test print.
2	Width	Displays media width of the selected media source in drop-down menu You can set a different width from the actual media.
3	Length	Displays print length of the test print in drop-down menu Specify one item for test print.
4	Magnification	The print length will extend *n* times specified in “Magnifying”.
5	Media Type	Displays media type in drop-down menu Specify one media type of the selected media source.
6	Image Pattern	Displays built-in image pattern number in drop-down menu Specify one pattern that you want to plot.
7	Pattern Switch	Specify a size code for the size of “repeated patterns” in a test print image. (ex. band pattern width, grid square size, etc)
8	Number of Sheet	Displays the number of sheets to be plotted You can change the number by using On-screen Keypad.
9	Start	Starts the configured test print
10	Option	Switches to Option screen
11	Back	Returns to Service Mode Home

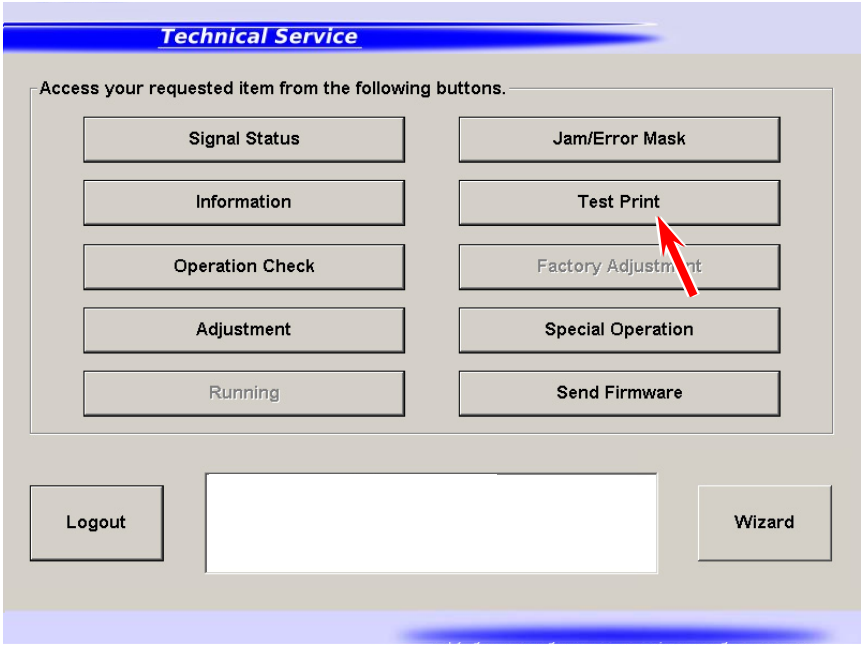
Option screen

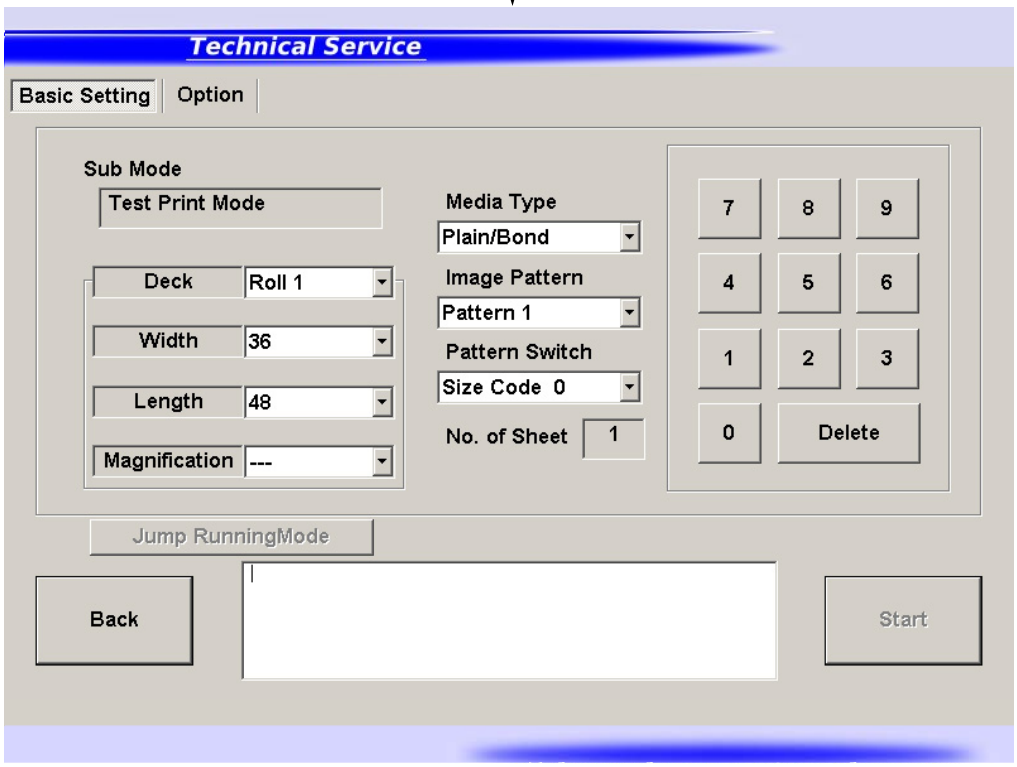


	Name	Function
1	Positive / Negative	Choose “Negative” for B/W inverting.
2	Image Enhancement	Displays Image Enhancement Level
3	Mirror	Enables horizontal reverse image
4	Add Scale	Adds scales on the test print
5	Basic Setting	Switches to Basic Setting screen
6	Back	Returns to Service Mode Home

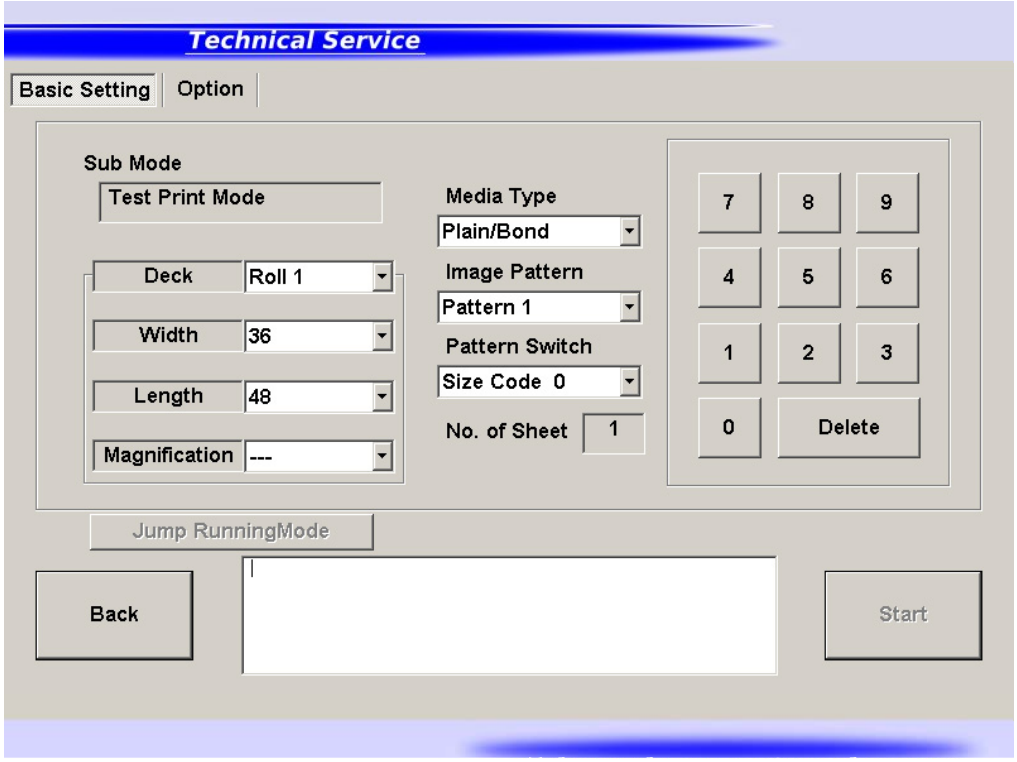
8. 9. 1 Making Test Print

1. Press [Test Print] in Service Mode home.

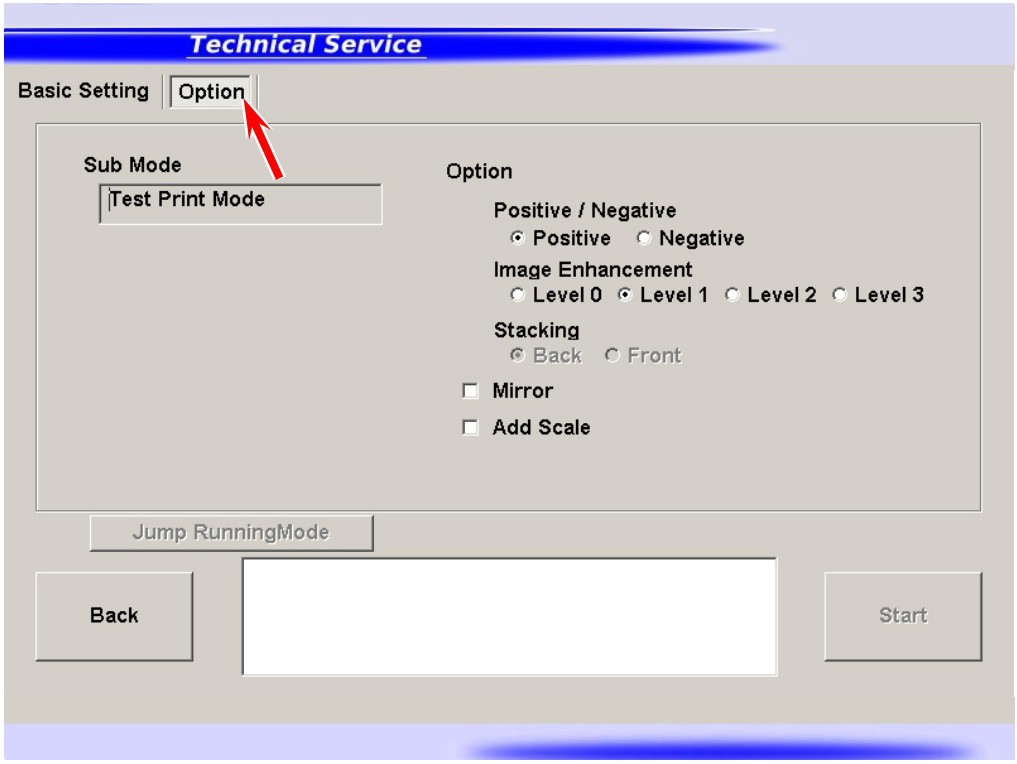




2. Configure a test print job.
   In Basic Setting tab, you can configure media source, type, length, image pattern selection, number of sheets.

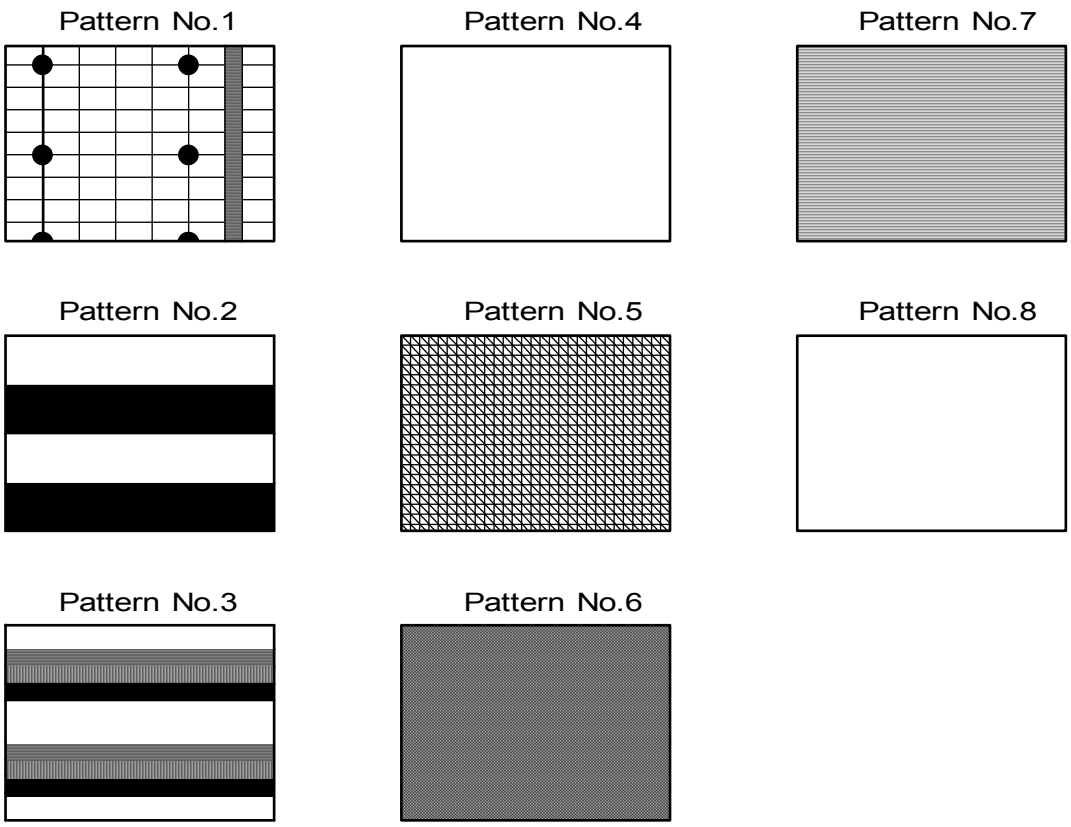


3. If necessary, open Sub Setting tab to configure some other settings.



4. Press [Enter] to start printing the configured test print.

8. 9. 2 Built-in Test Pattern



8. 10 Factory Adjustment Mode (Factory Use Only)

This mode is mainly used at factory for adjustment and product operation test.

NOTE

Factory Adjustment Mode is not available in Service Mode. Factory Use Only.

8. 11 Special Operation Mode

Special Operation Mode has several kinds of special important functions to the machine.

(1) Clears the following recorded error
- E-0000 Fuser Temperature Rising Error
- E-0001 Fuser Over Temperature Error
- E-0002 Fuser Low Temperature Error
- E-0003 / 0004 Fuser Temperature Abnormal Fall Error

(2) Clears the following history
- Jam History
- Error History

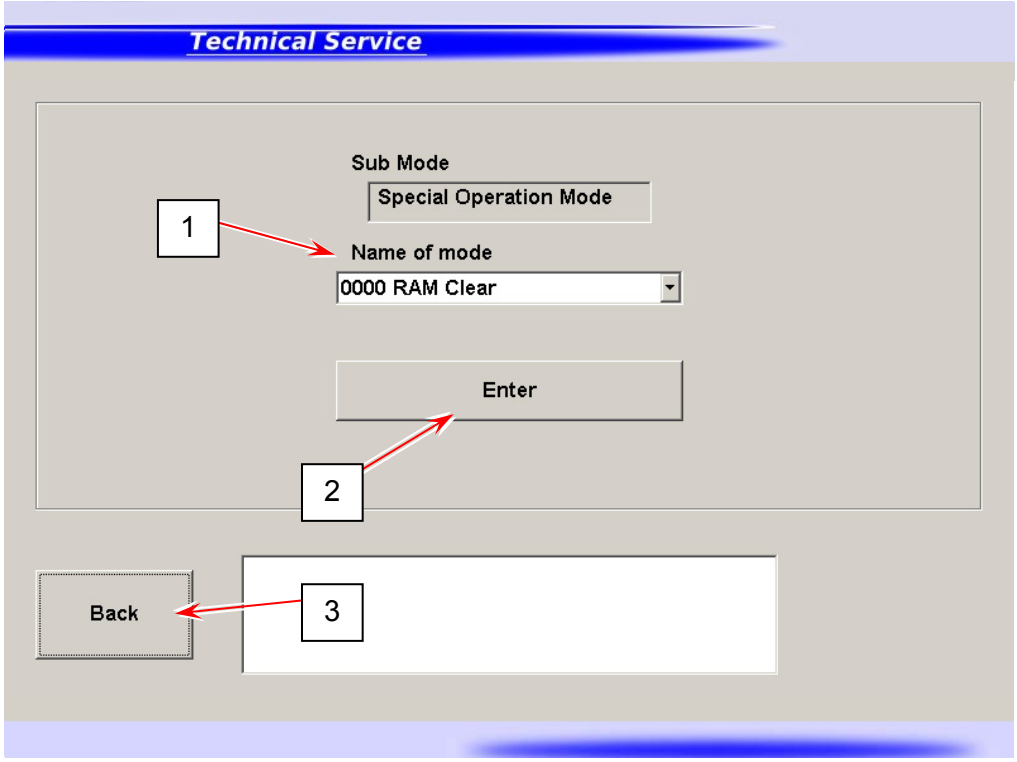
(3) Resets bias adjustment by Density Compensation Process
(4) Starts Toner Supply for initial toner
(5) Resets any counting parameters in Information Mode

NOTE

E-0000 / 0001 / 0002 / 0003 / 0004 (regarding Fuser Error) do not disappear automatically even if you remove any cause of these errors.

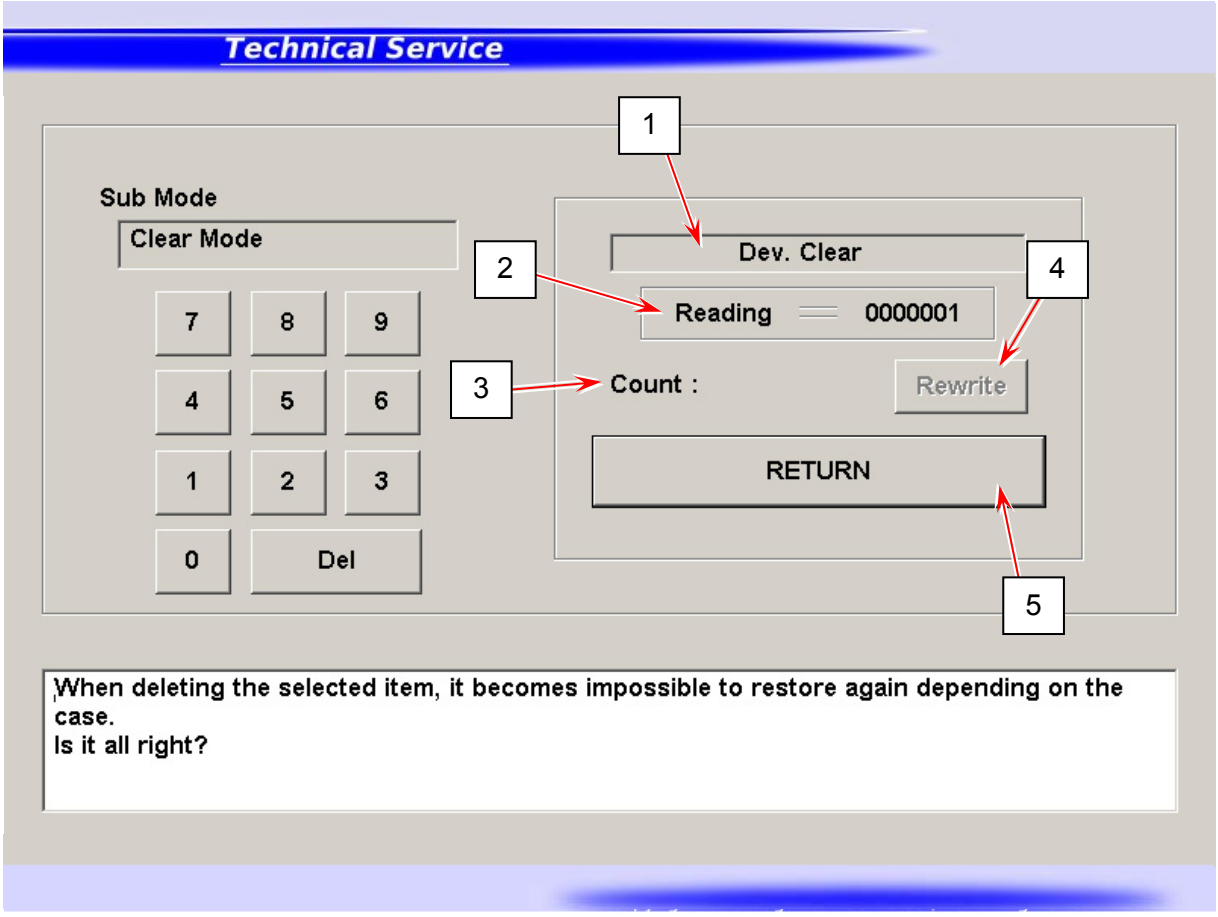
You should clear the error in Special Operation Mode to allow the printer to be ready for printing.

Operation Target screen



	Name	Function
1	Name of Mode	Displays items in drop-down menu Choose one item that you want to use.
2	Enter	Switches to Confirmation screen Clearing is not executed immediately once you press [Enter].
3	Back	Returns to Service Mode Home

Counter Input screen



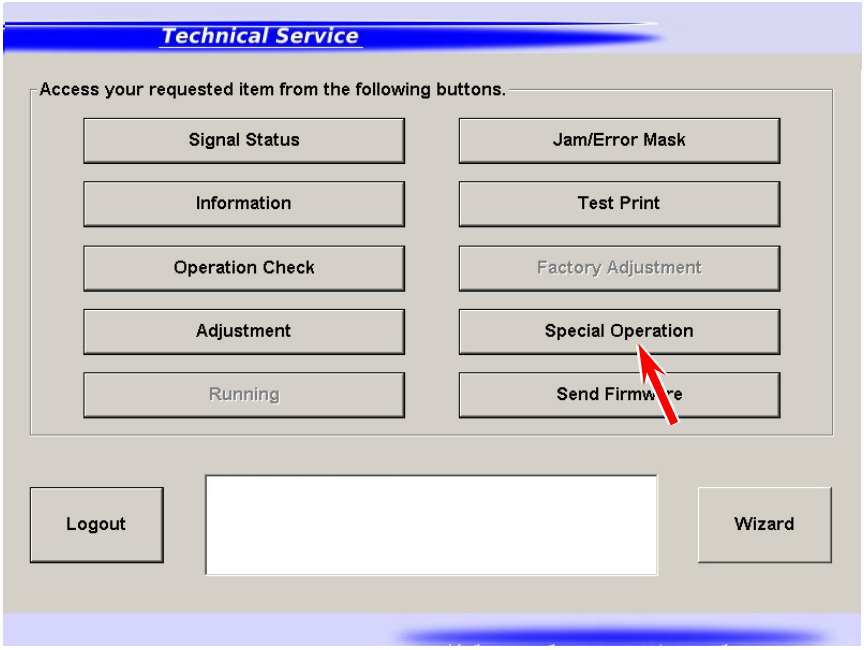
	Name	Function
1	Counter Name	Displays the counter name you have chosen
2	Reading	Displays the current counter value stored in the memory
3	Count	Displays an input counter value by using On-screen Keypad
4	Rewrite	Applies a new counter value in “Count” to the selected counter
5	Return	Returns to Clear Target screen

8. 11. 1 Special Operation List

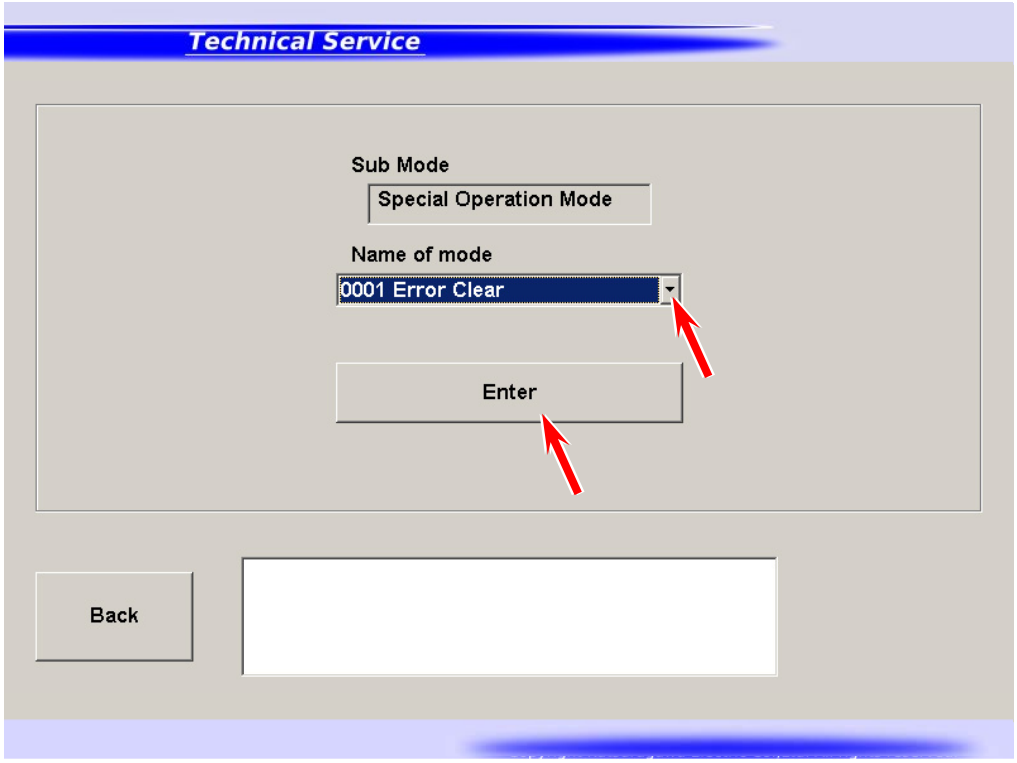
Item No.	Name	Contents
0000	RAM Clear	Clears any stored data in the memory
0001	Error Clear	Clears E-0000 / 0001 / 0002 / 0003 / 0004 from the memory
0002	Jam History	Clears Jam records J-**** in Jam History list
0003	Error History	Clears Error records E-**** in Error History list
0004	Print Count	Changes the counter value for Print Count (unit selectable)
0005	Total Count	Changes the counter value for Total Count (linear meter)
0006	Bias3 Count	Initializes Developer / Regulation Bias adjusted with Density Compensation Process
0007	Toner Supply1	Starts toner supply / agitation in Developer Unit
0008		(Reserved)
0009		(Reserved)
0010		(Reserved)
0011	Info Data Clear	Clears the Items 0012 to 0033 at a time
0012	Total Cut	Clears each Item used in Information Mode See [8.4 Information Mode]
0013	Roll1 Cut	
0014	Roll2 Cut	
0015	Others Cut	
0016	Total Image	
0017	Manual1 Image	
0018	Roll1 Image	
0019	Roll2 Image	
0020	Cassette Image	
0021	Roll1F CL	
0022	Roll2F CL	
0023	Roll1B CL	
0024	Roll2B CL	
0025	Feed CL	
0026	Reg. CL	
0027	Pickup SL	
0028	Sep. SL	
0029	Stack SL	
0030	Motor1 Time	
0031	Motor2 Time	
0032	LED Head on Time	
0033	Motor3 Time	

8. 11. 2 Clearing Fuser Error, Jam/Error History

1. Press [Special Operation] in Service Mode Home.
   Operation Target screen appears.

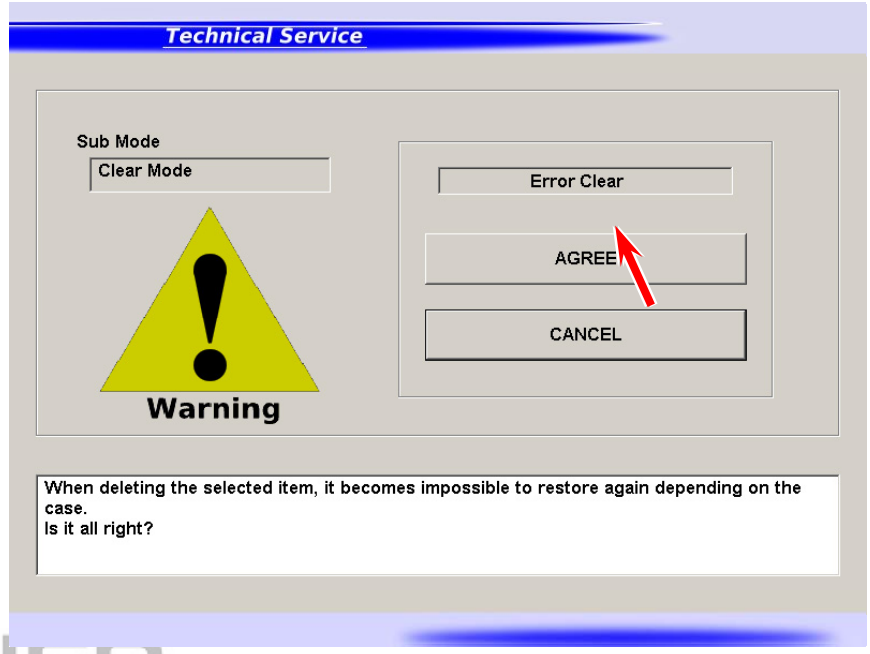


2. Specify one item that you want to use from Name of mode menu. Press [Enter].



Item No.	Clear Item	Contents
0001	Error Clear	Clears E-0000 / 0001 / 0002 / 0003 / 0004 from the memory
0002	Jam History	Clears Jam records J-**** in Jam History list
0003	Error History	Clears Error records E-**** in Error History list

3. Confirmation screen appears.
   Press [Agree] to clear the concerning record(s).



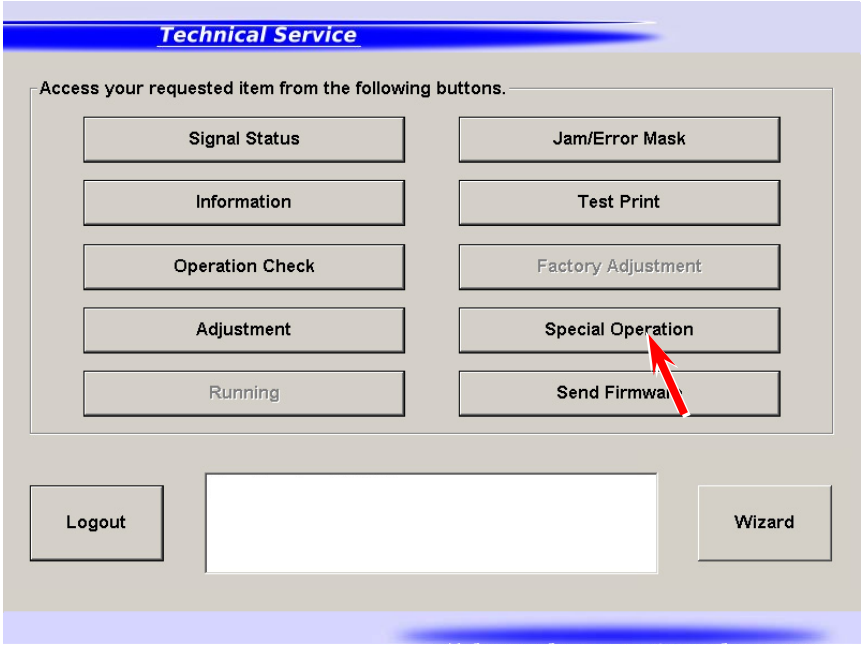
4. Once you press [Agree], it will turn deactivated. Press [RETURN].

8. 11. 3 Reset of Bias Adjustment by Density Compensation Process

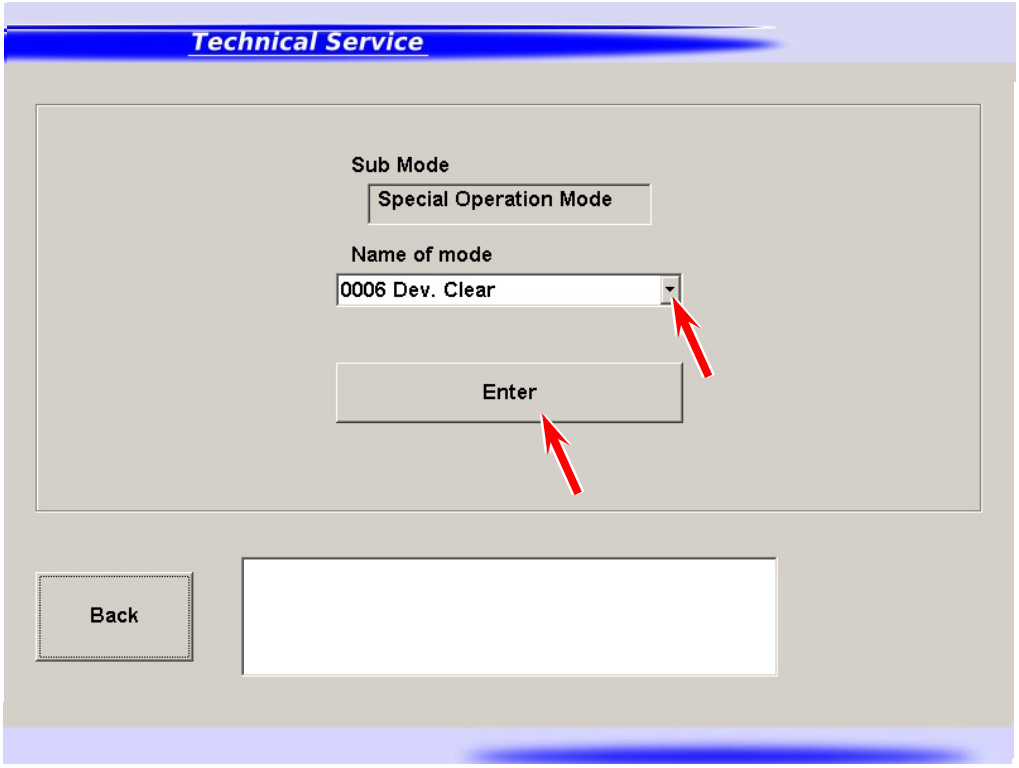
NOTE

After replacing Developer Roller / toner refreshment, you must reset bias adjustment by Density Compensation Process.
Otherwise a darker image appears because the adjusted values are too high voltage for the refreshed Developer Unit.

1. Press [Special Operation] in Service Mode Home.
   Operation Target screen appears.



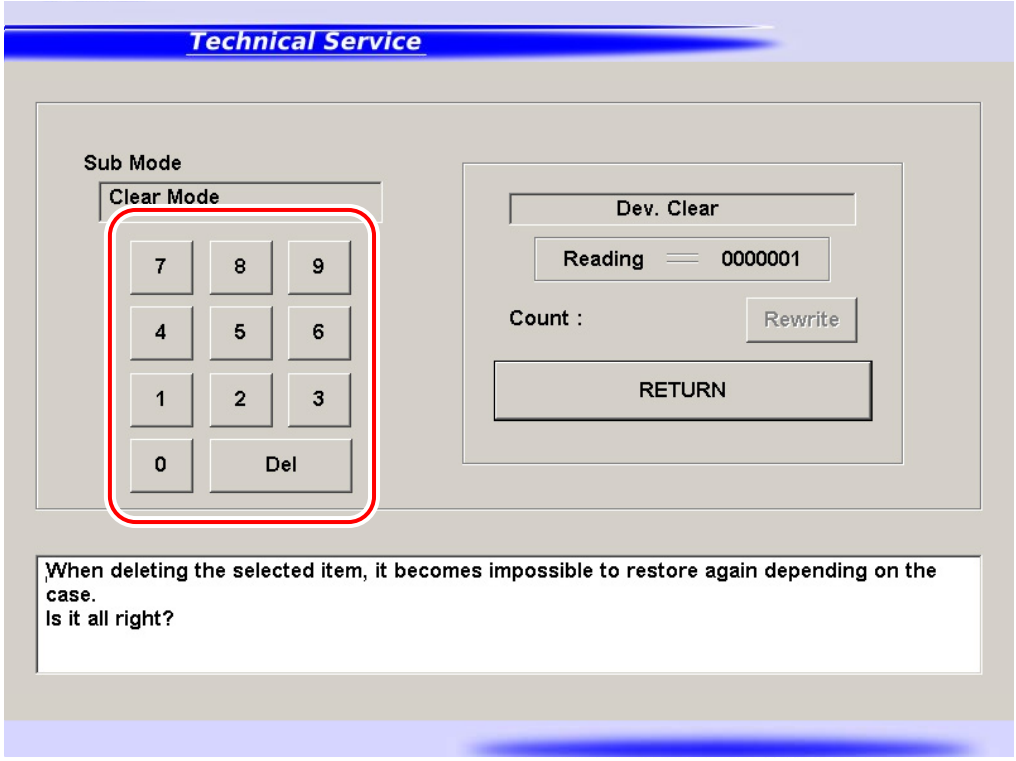
2. Select [0006 Bias3 Count] from Name of mode menu. Press [Enter].



0006	Bias3 Count	Initializes Developer / Regulation Bias adjusted with Density Compensation Process

3. Confirmation screen appears.
   Press [Agree] to reset Bias Adjustment by Density Compensation Process.
   Then the system starts recalculation of the possible best Developer/Regulation Bias.
   (This will take time.)

4. Input screen appears.
   Input “0000000” with On-screen Keypad.

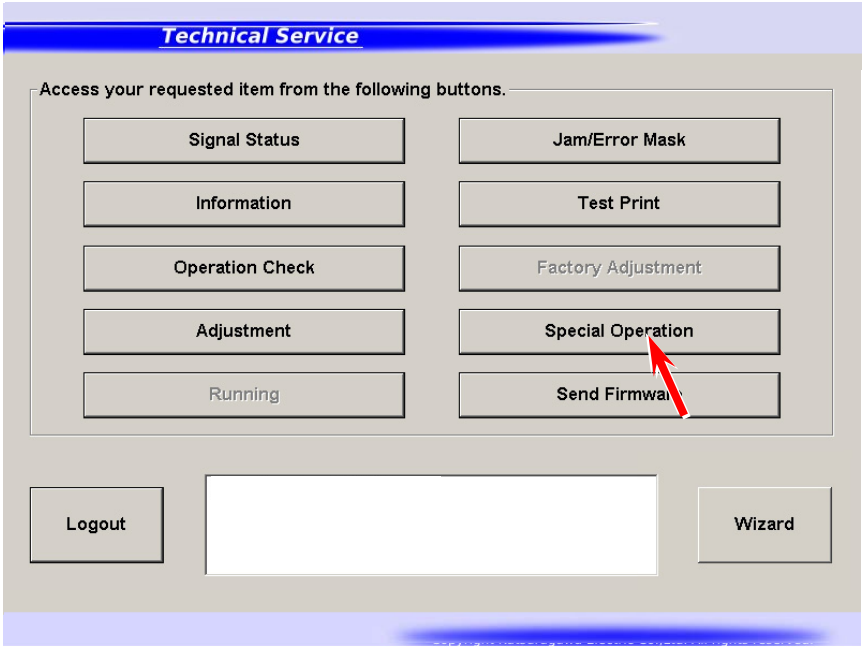


> **NOTE**
>
> The required value for the TASKalfa 4820w to reset Bias Adjustment by Density Compensation Process is “0000000”.
>
> “000000**0**” to “000000**3**” correspond to the <u>adjustment level</u> in Density Compensation Process.
> For example, if you interchange the Developer Unit with your spare unit, you can manually set a certain adjustment level that would be suitable for your spare unit.

5. The value is displayed in “Count” area.
   Once you input a seven digit value, [Rewrite] will be activated.
   Press [Rewrite] to apply the new value to the printer.
   The value in “Reading” area will be changed to the new value.

8. 11. 4 Toner Supply Mode

1. Press [Special Operation] in Service Mode Home.
   Operation Target screen appears.



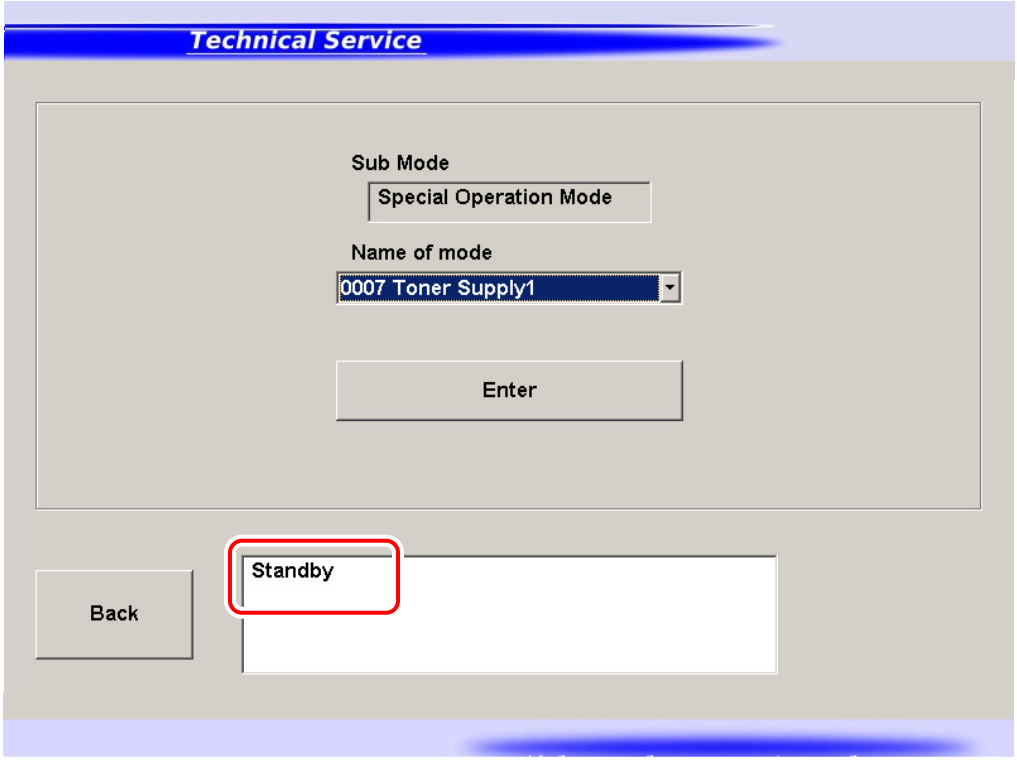
2. Select [0007 Toner Supply1] from Name of mode menu. Press [Enter].

0007	Toner Supply1	Starts toner supply / agitation in Developer Unit

3. Confirmation screen appears. Press [Agree].
   Toner supply / agitation starts. This will take minutes to complete.

4. Once you press [Agree], it will turn deactivated. Press [Return].

5. The screen goes back to Operation Target Screen. The status window shows “warm up” during toner supply / agitation.
   After the completion, it changes to “standby”.



8. 11. 5 Changing Counter Value

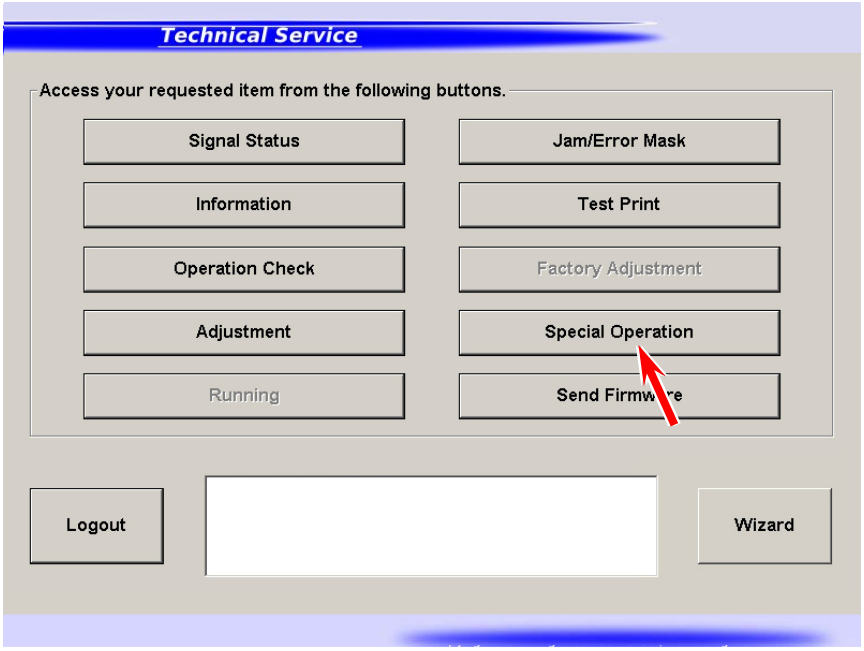
Reference

For any counting parameters, pressing [Enter] switches to Counter Input screen.
This does not effect to the current counter value.

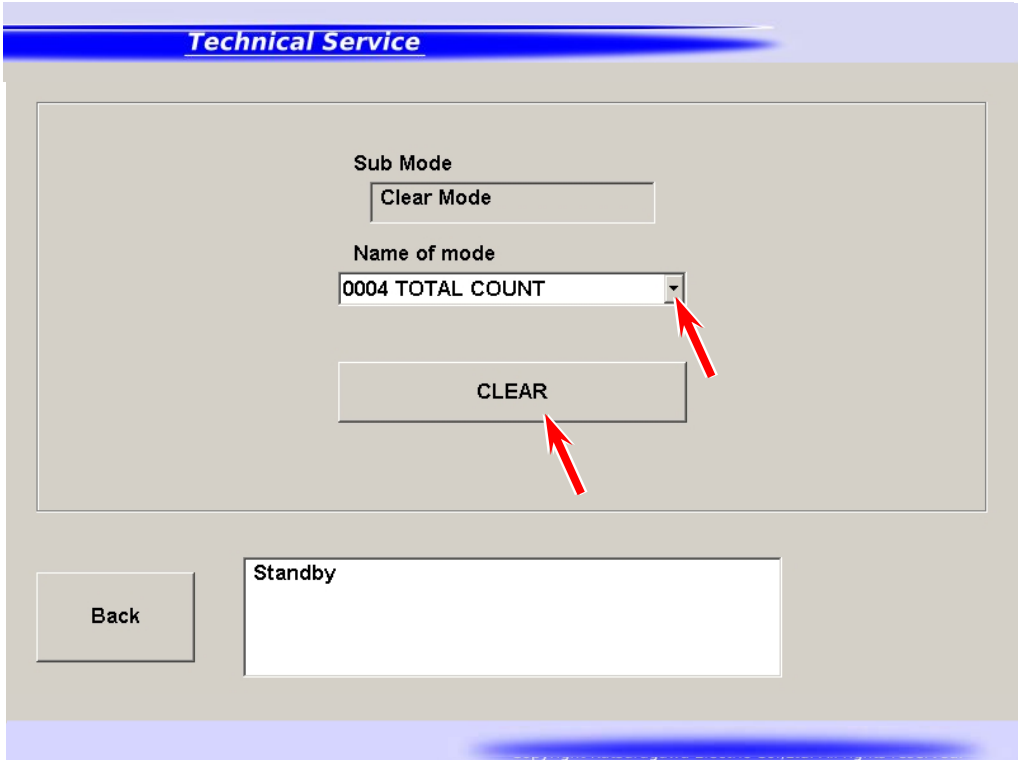
NOTE

Total Count (0005) / Print Count (0004) are stored on both PW12420 and the controller. If you replace one of them, the other will automatically copy the stored Count memory to the replacement. For Total Count (0005) and Print Count (0004), this section would be required only if you replace both PW12420 and the controller at a time.

1. Press [Special Operation] in Service Mode Home.



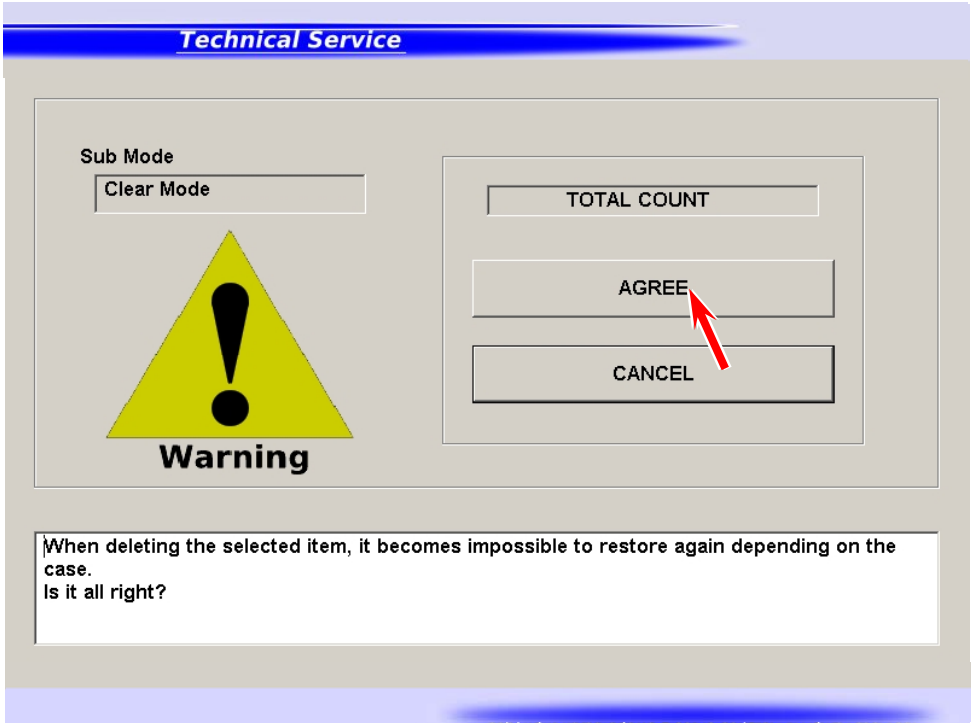
2. Specify one item that you want to use from Name of mode menu. Press [Enter].

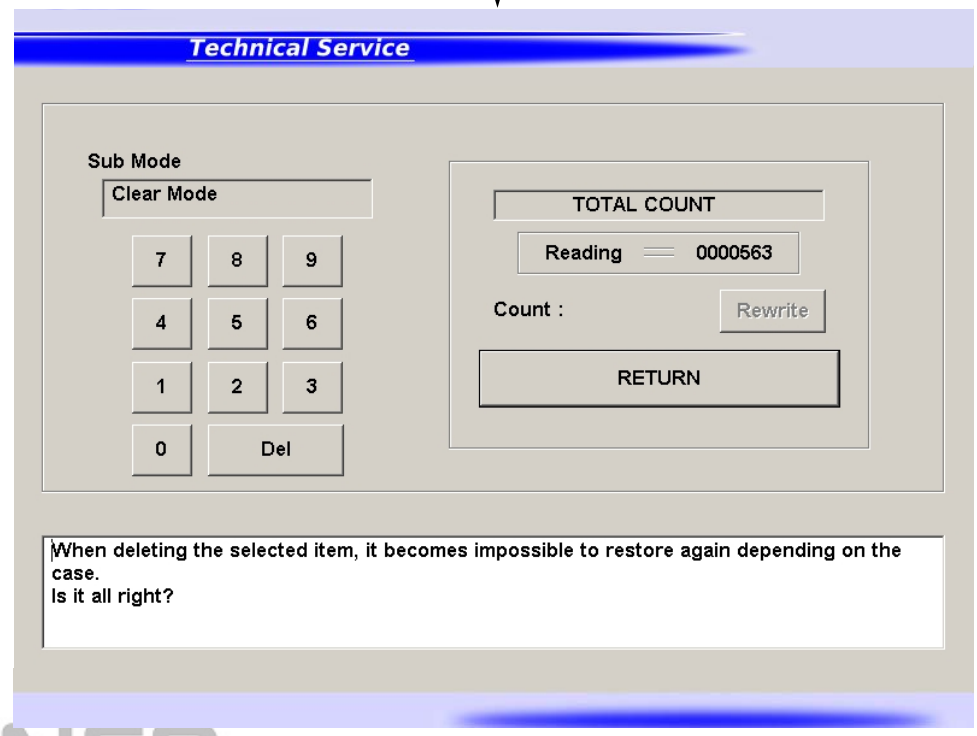


3. Confirmation screen appears.

Reference

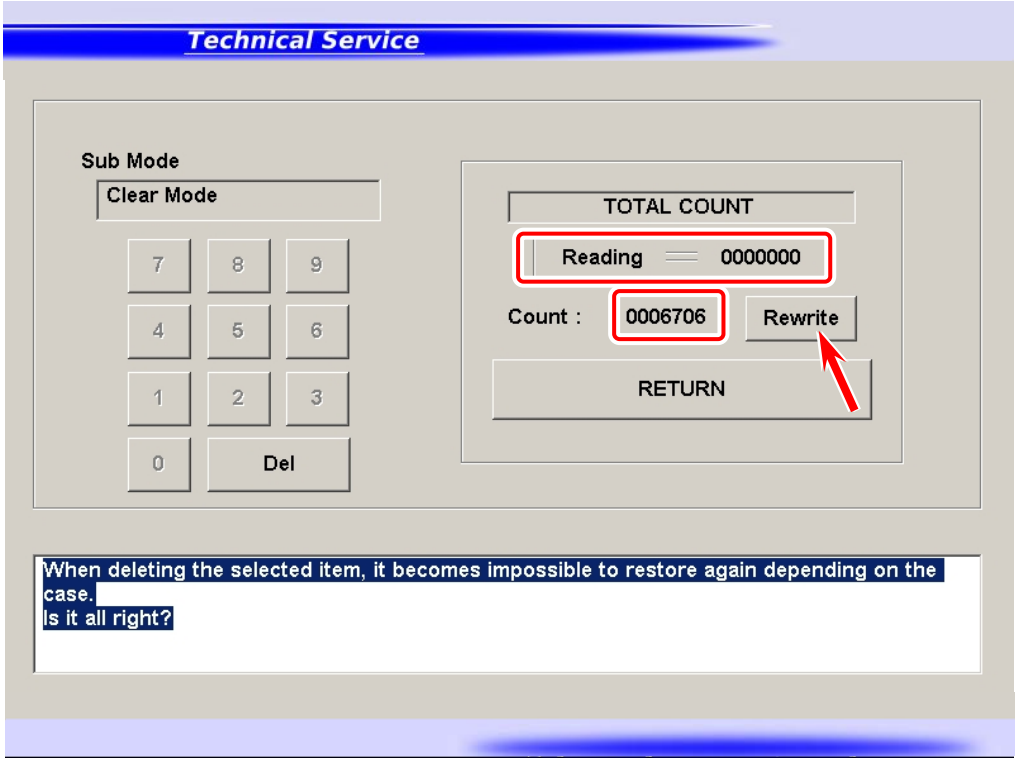
For any counting parameters, pressing [Enter] switches to Counter Input screen.
This does not effect to the current counter value.

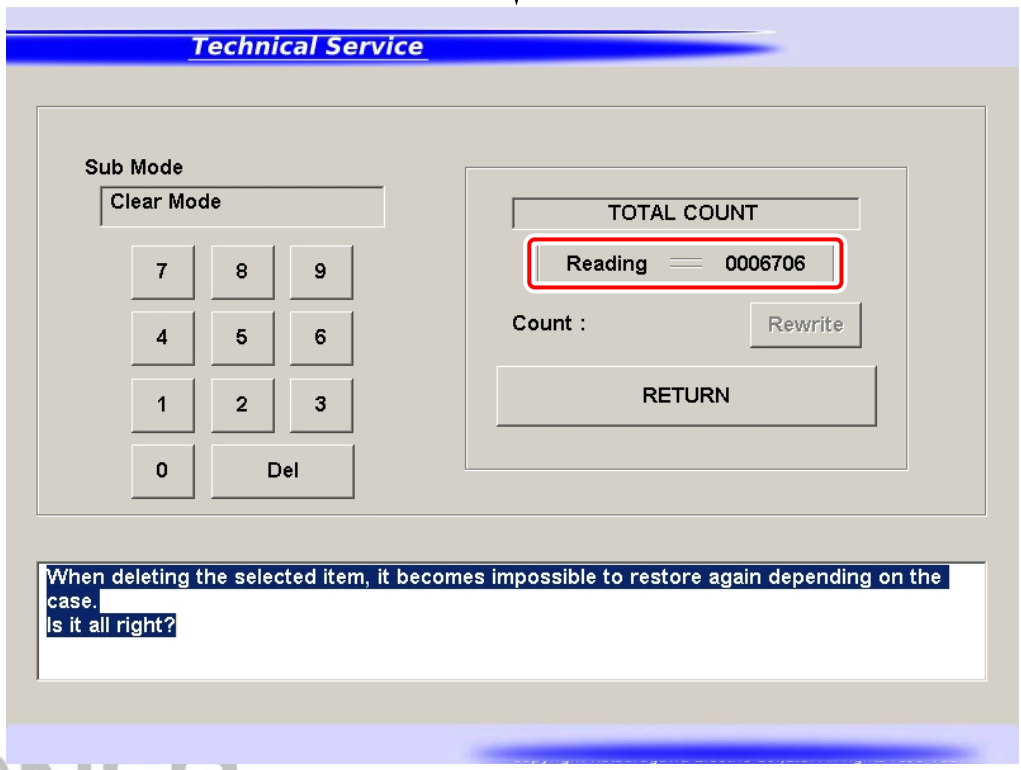




4. Input a desired value with On-screen Keypad.
   The value is displayed in “Count” area.
   Once you input a seven digit value, [Rewrite] will be activated.
   Press [Rewrite] to apply the new value to the printer.
   The value in “Reading” area will be changed to the new value.

   Example: 0000000 → 0006706





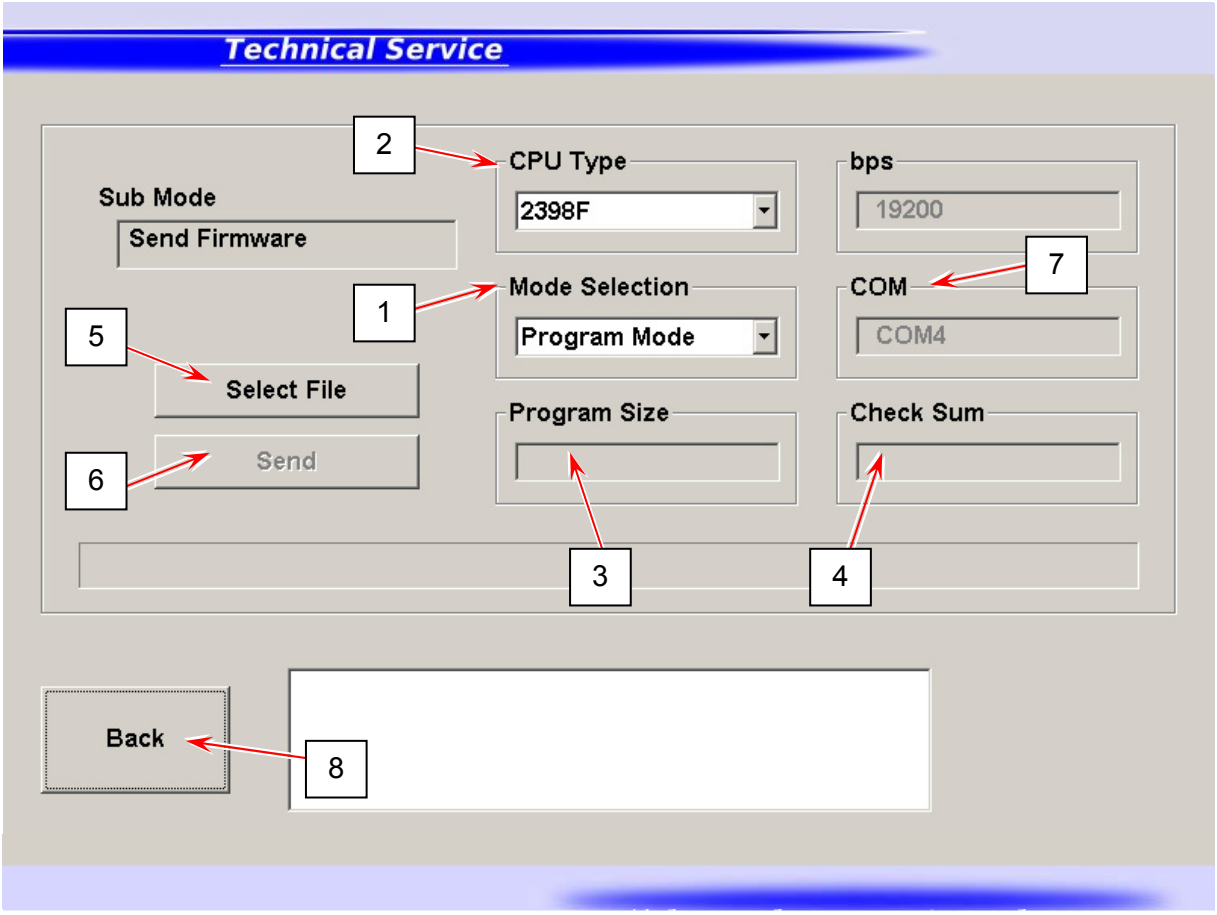
4. Press [RETURN].

8. 12 Send Firmware Mode

You can send a new version firmware program provided by the manufacturer to the printer.
Note that the firmware program is named “K124X##A.mot”.

> **NOTE**
>
> A firmware update does not effect to the current parameters. They remain unchanged.
> But please be sure to make a backup in .RAM prior to any firmware update just in case.

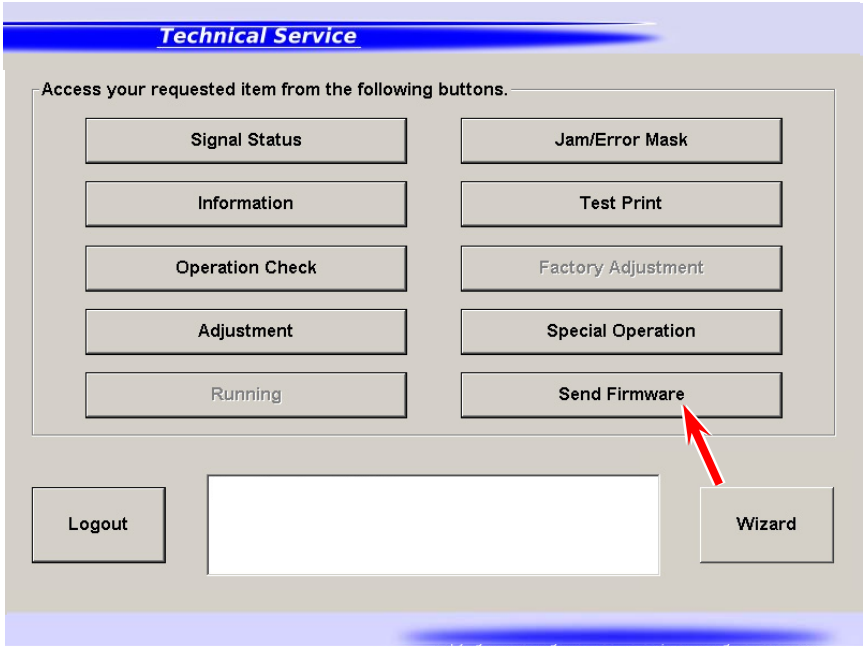
Send Firmware screen

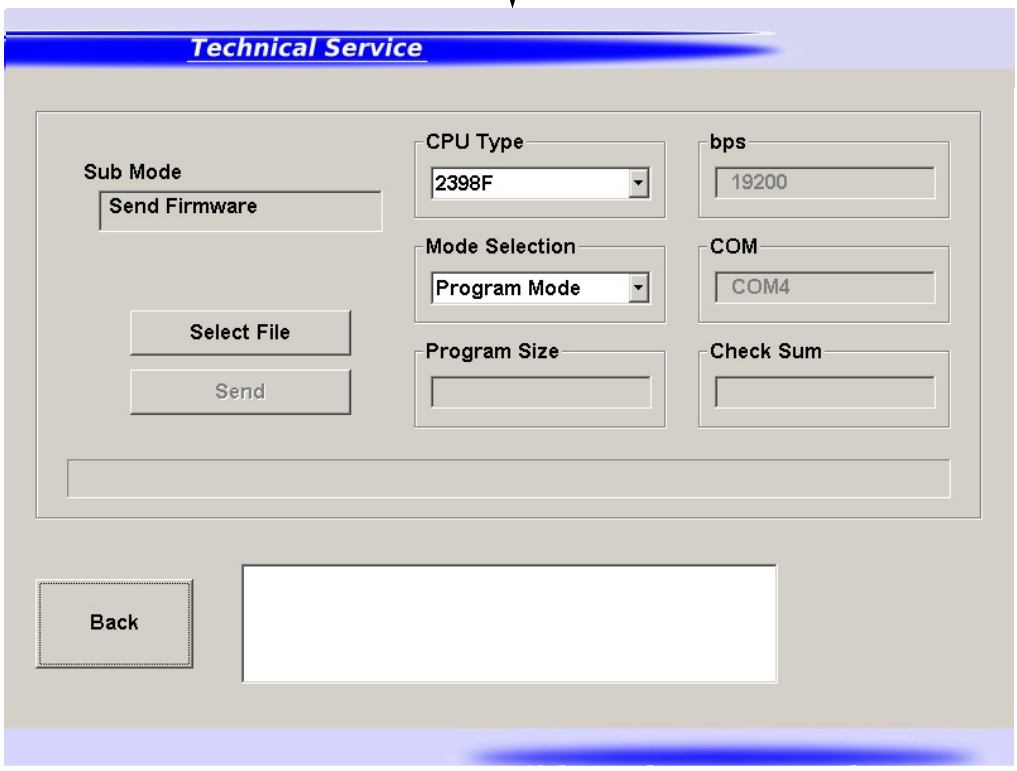


	Name	Function
1	Mode Select	Use “Program Mode” only.
2	CPU Type	Use “2398F” only.
3	Program Size	Displays the file size of a selected firmware program (.mot fie)
4	Checksum	Displays the checksum of a selected .mot file
5	Open File	Locates a .mot file that you want to send to the printer
6	Update	Sends a selected .mot file to the printer
7	COM	Displays a COM port number on the controller to be used for communication that has been configured in Serial Port Setting of Log In screen
8	Back	Returns to Service Mode Home

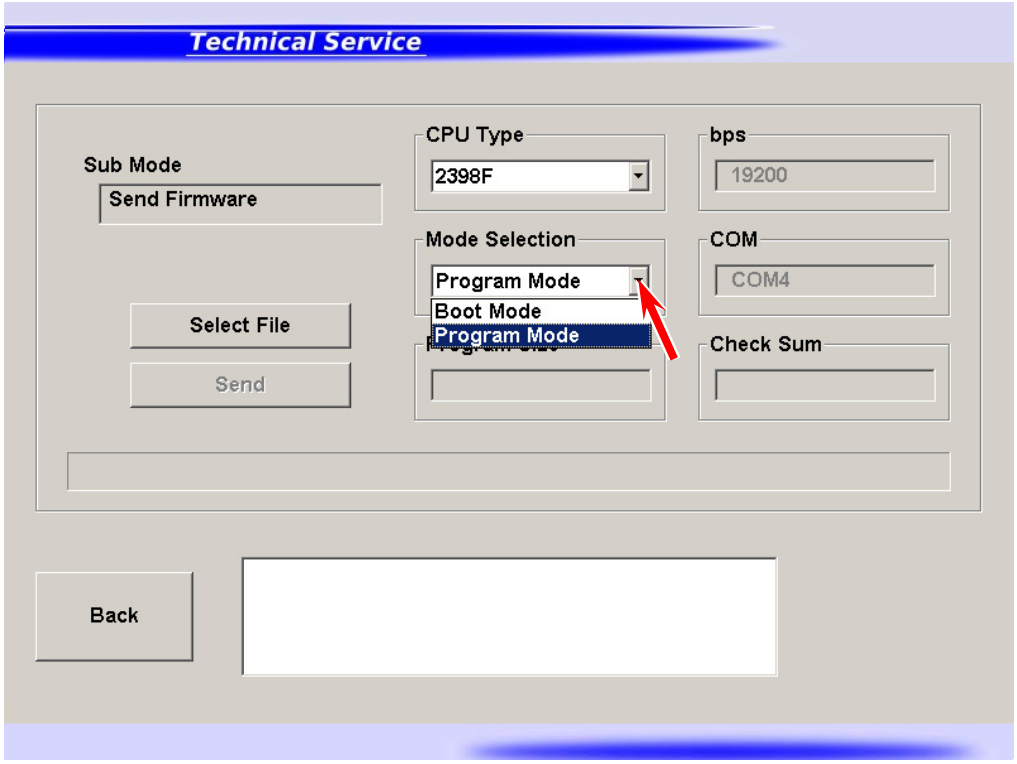
8. 12. 1 Sending Firmware to Printer

1. Press [Send Firmware] in Service Mode Home.
   Send Firmware screen appears.

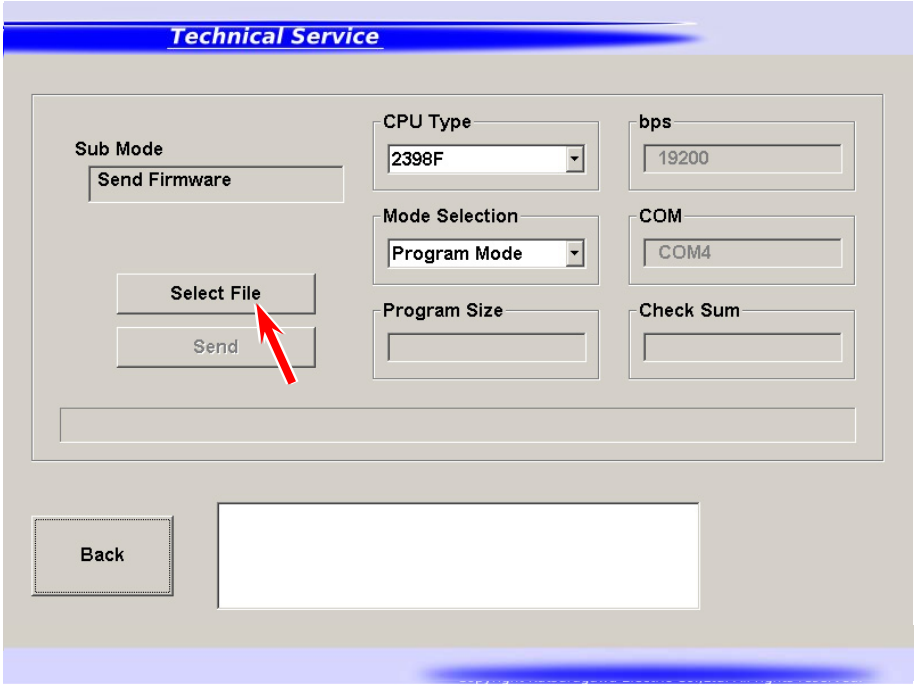


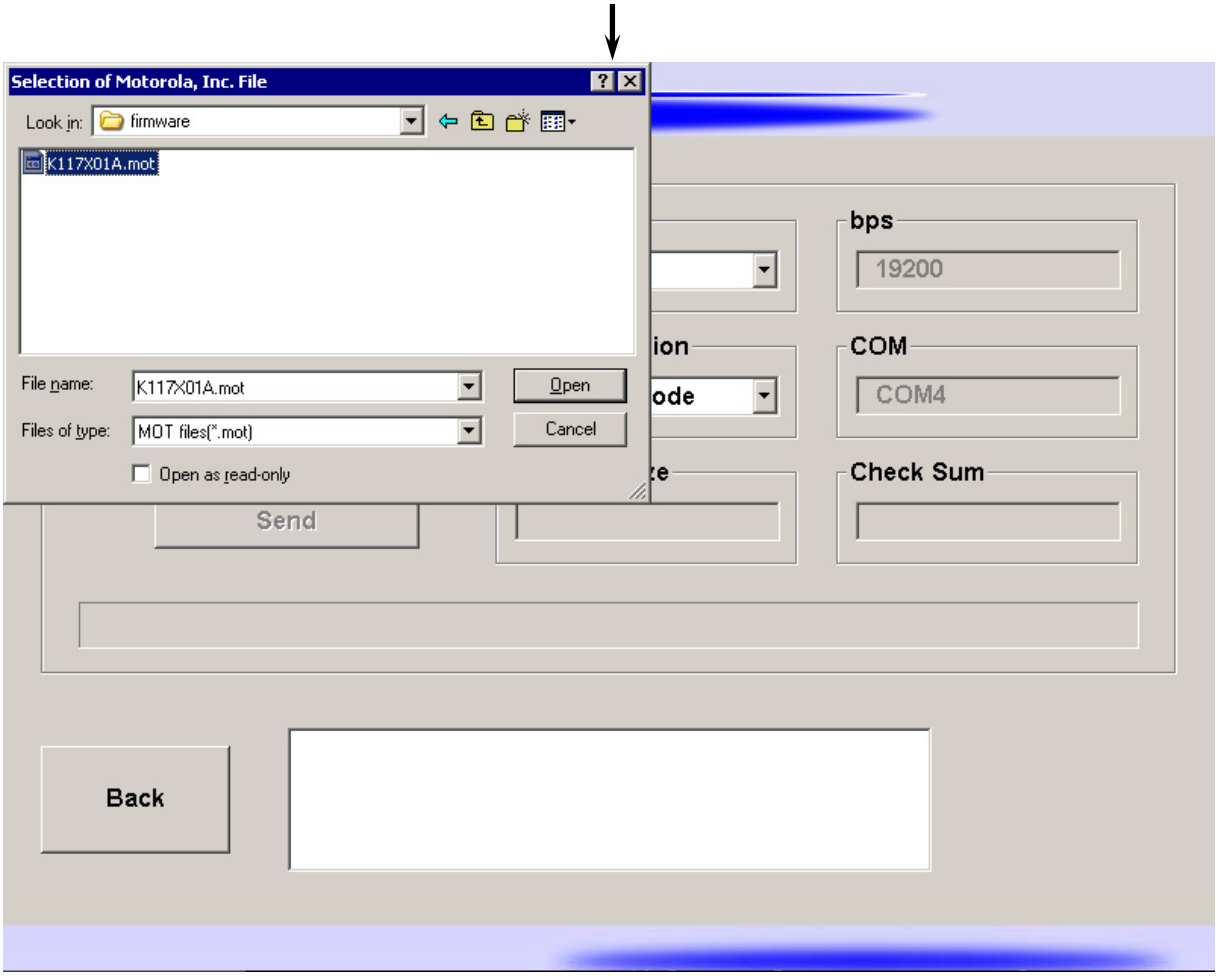


2. Choose “Program Mode” from Mode Select menu if not displayed.



3. Press [Select File] to locate and open a .mot file that you want to apply.





NOTE

For TASKalfa 4820w, its firmware program is always named **"K124X##A.mot"**
Do not open any other file.

4. Check for the program size and its checksum of the .mot file you have chosen.
   Press [Update] to send it to the printer.

NOTE

(1) “Program Size” and “Checksum” vary by the firmware version.

(2) If you accidentally send an incorrect file to the printer, send a correct one when the current transmission is completed.

8. 13 Scanner Utility (for Old Scanner)

Scanner Utility is a program that provides several scanner adjustments.
- Shading (mono/color calibration)
- Feed Distance (1:1)
- Position (stitch)

8. 13. 1 Installation

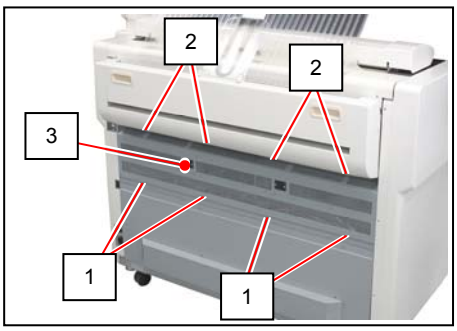
NOTE

Below are the system requirements to operate Scanner Utility.
- Windows 2000 / XP operating system
- USB 2.0 support

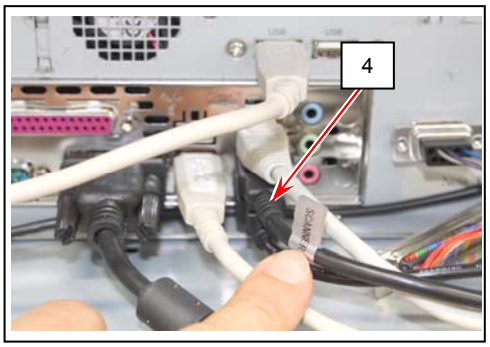
8. 13. 1. 1 Installing USB Driver(1.30 or later)

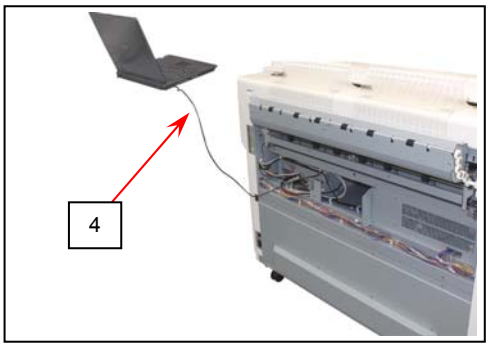
NOTE: Contact your partner for the latest software and save it to any available storage on your service PC.

1. Loosen 4 screws (M4x6) (1), remove 4 screws (M4x6) (2), and then remove Cover (3).



2. Disconnect Scanner USB Cable (4) from IPS Assy and connect it to **your PC**.



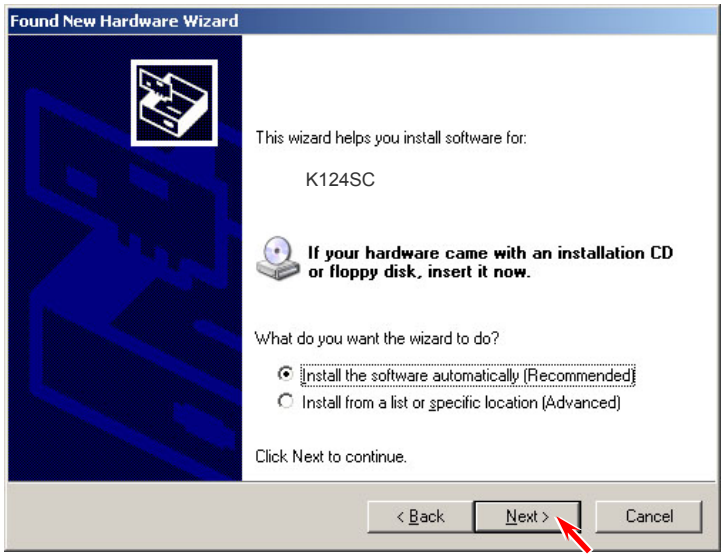


NOTE

Scanner USB Cable (4) has a “SCANNER” tag near the plug. Disconnect this cable and connect it to your PC.

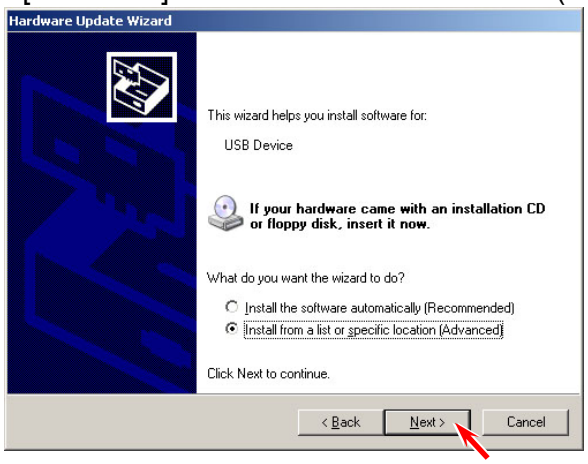
3. Turn on both your PC and the printer.
   [Found New Hardware Wizard] starts automatically. Click [Next].
   If the following message appears, choose “No, not this time” and click [Next].

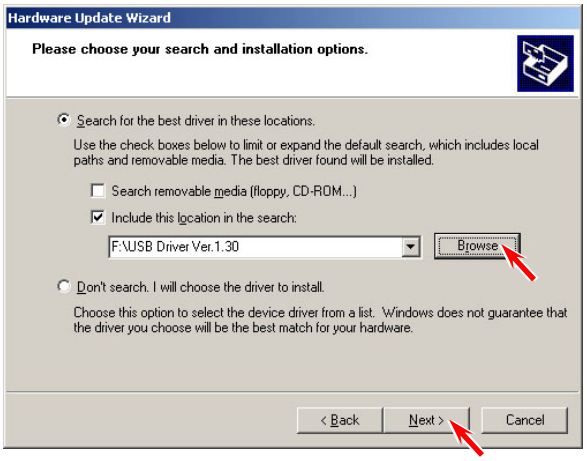
4. Choose “Install the software automatically [Recommended]”. Click [Next].



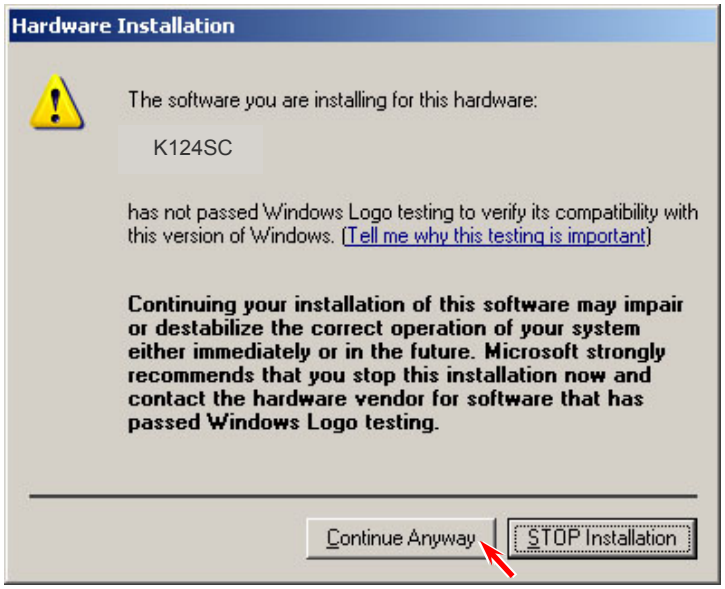
NOTE

If the auto detection does not work properly, click “Install from a list of specific location [Advanced]” to locate the driver software (.ini).

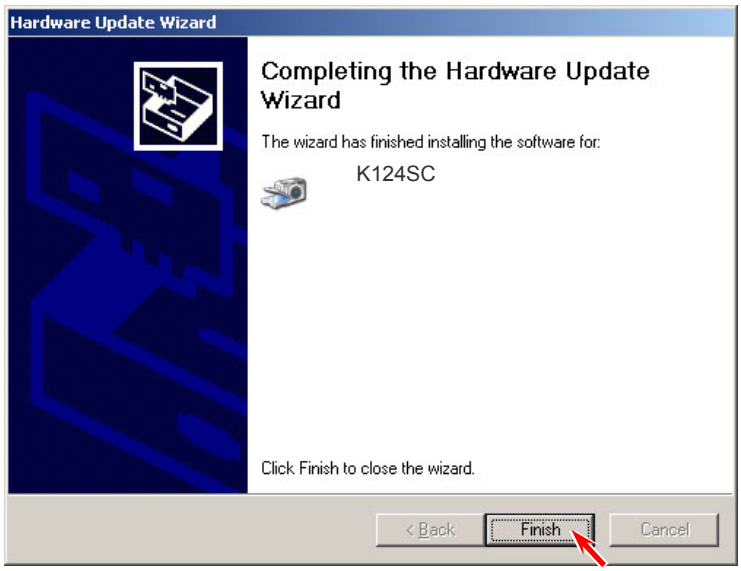




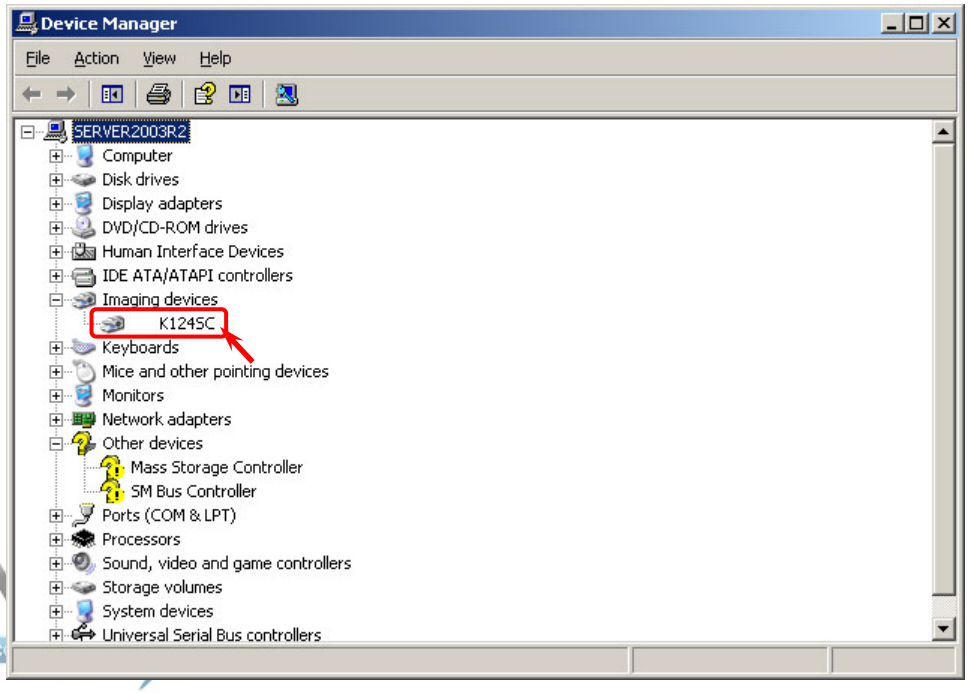
5. Click [Continue Anyway] when the following message is indicated.



6. Click [Finish] to close [Found New Hardware Wizard].



7. Open Device Manager, and confirm that “K124SC” is operating properly.

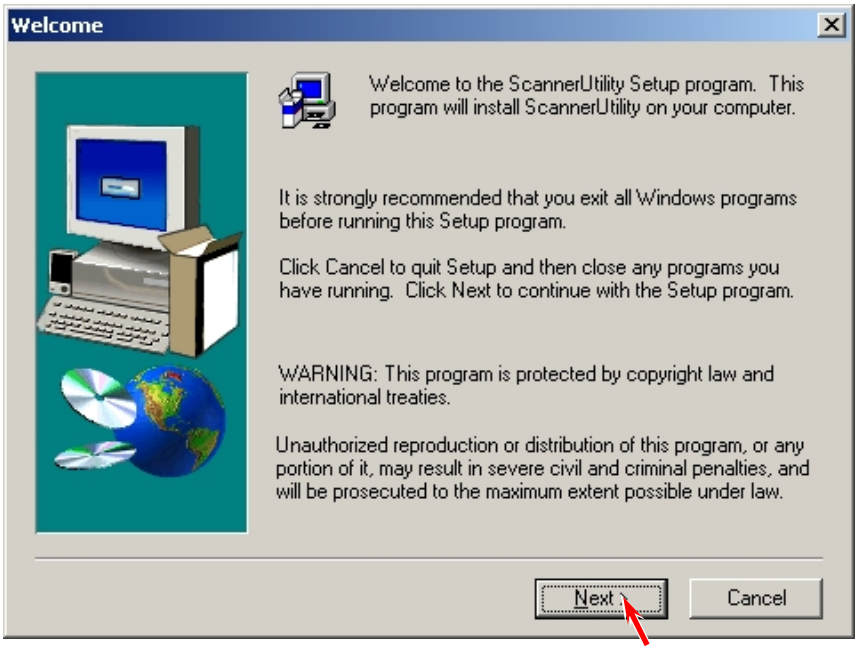


8. 13. 1. 2 Installing Scanner Utility (1.29a or later)

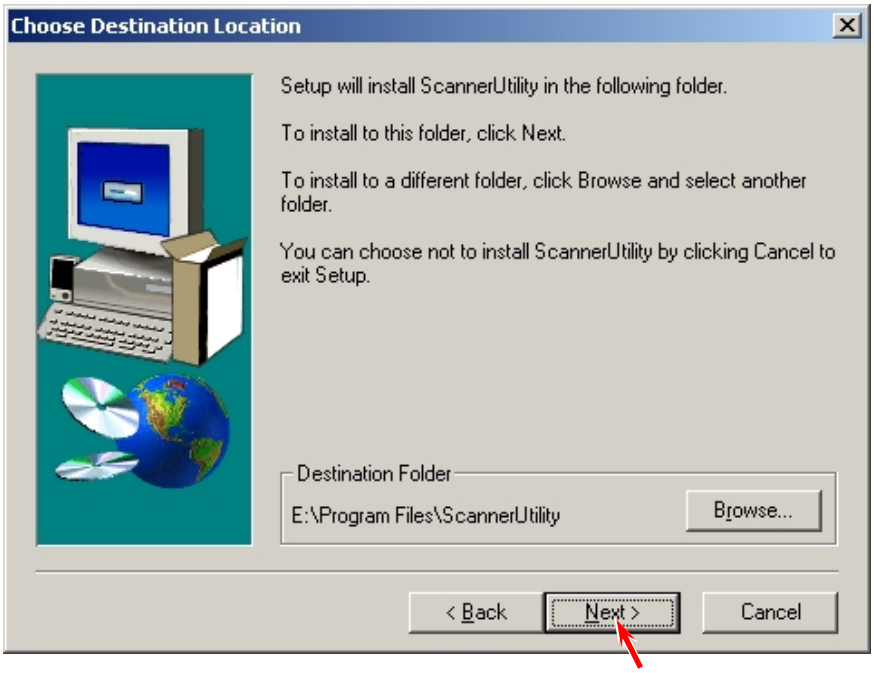
NOTE: Contact your partner for the latest software and save it to any available storage on your service PC.

1. Locate your SETUP.EXE for Scanner Utility and execute it.

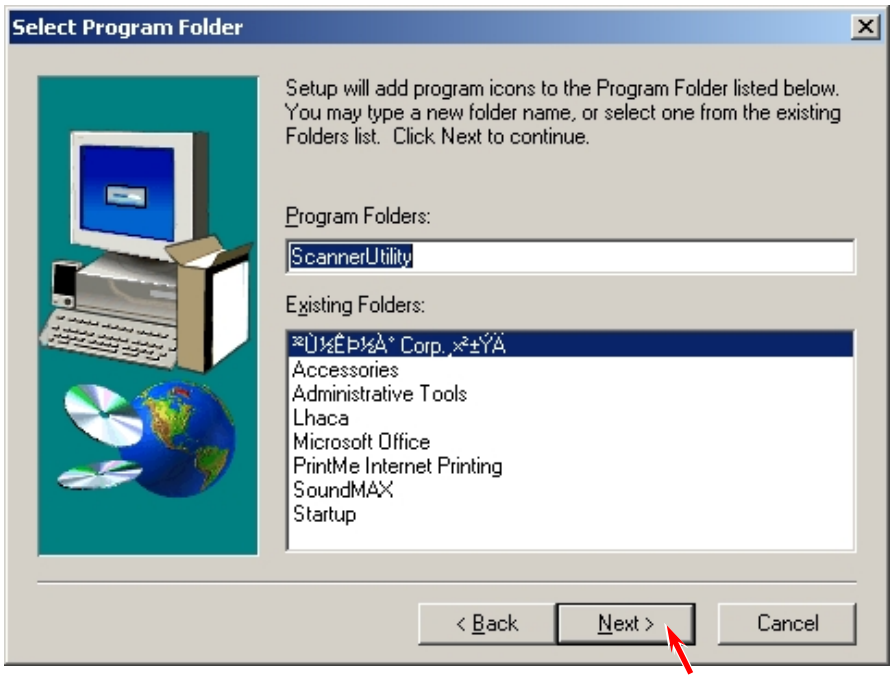
2. The Setup program starts. Click [Next].



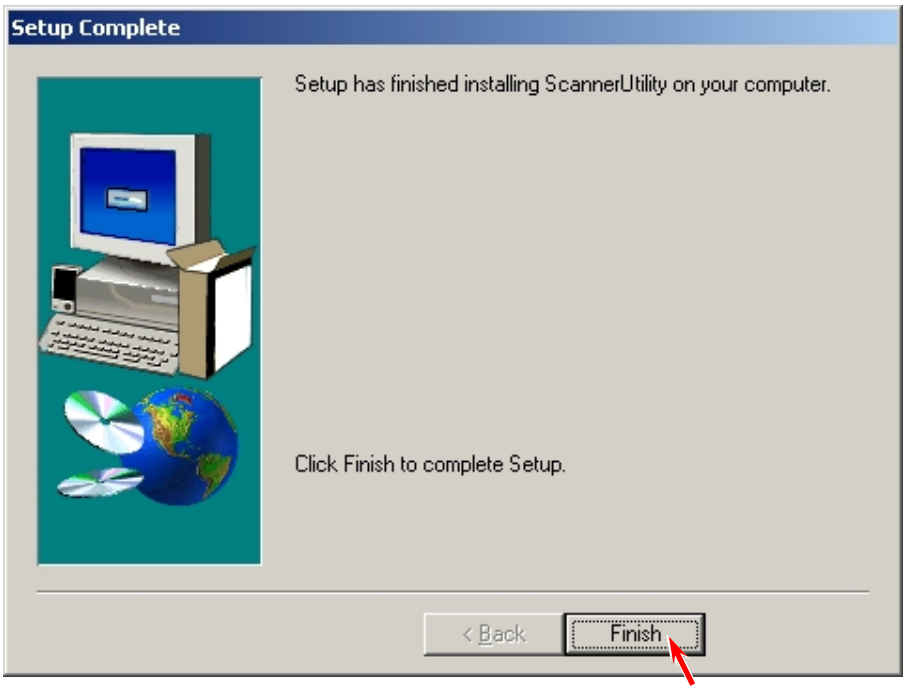
3. The destination of the software can be changed. Click [Next].



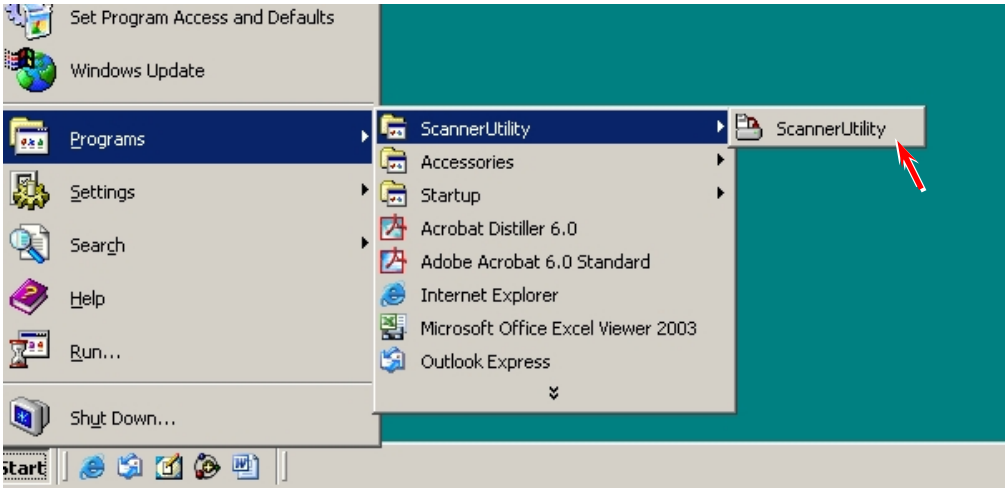
4. The name of the program folder can be changed. Click [Next].



5. The following message is indicated when all files have been copied. Click [Finish].

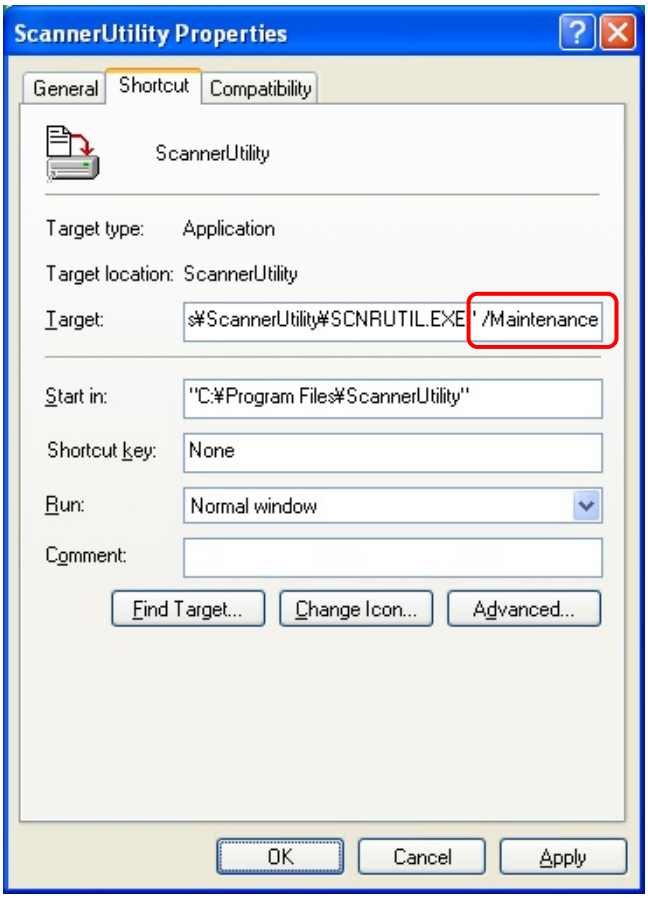


6. Open the properties panel for the “Scanner Utility” shortcut on “Start” _”Program” _ “Scanner Utility” _ “Scanner Utility”. (ex. right click on the shortcut)



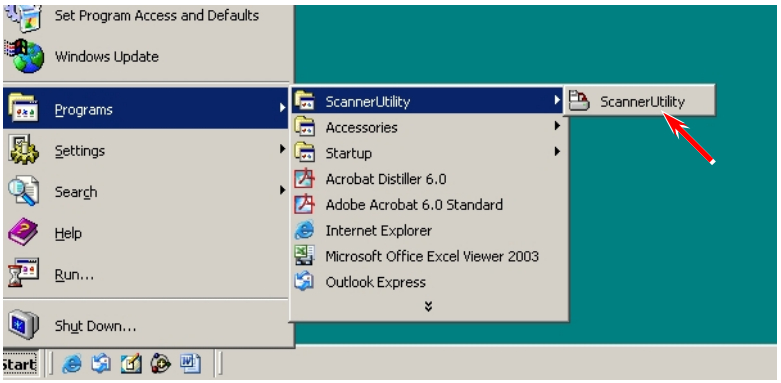
7. Add the following text to the end of the target path. Click [Apply].

“(one byte space)/Maintenance”

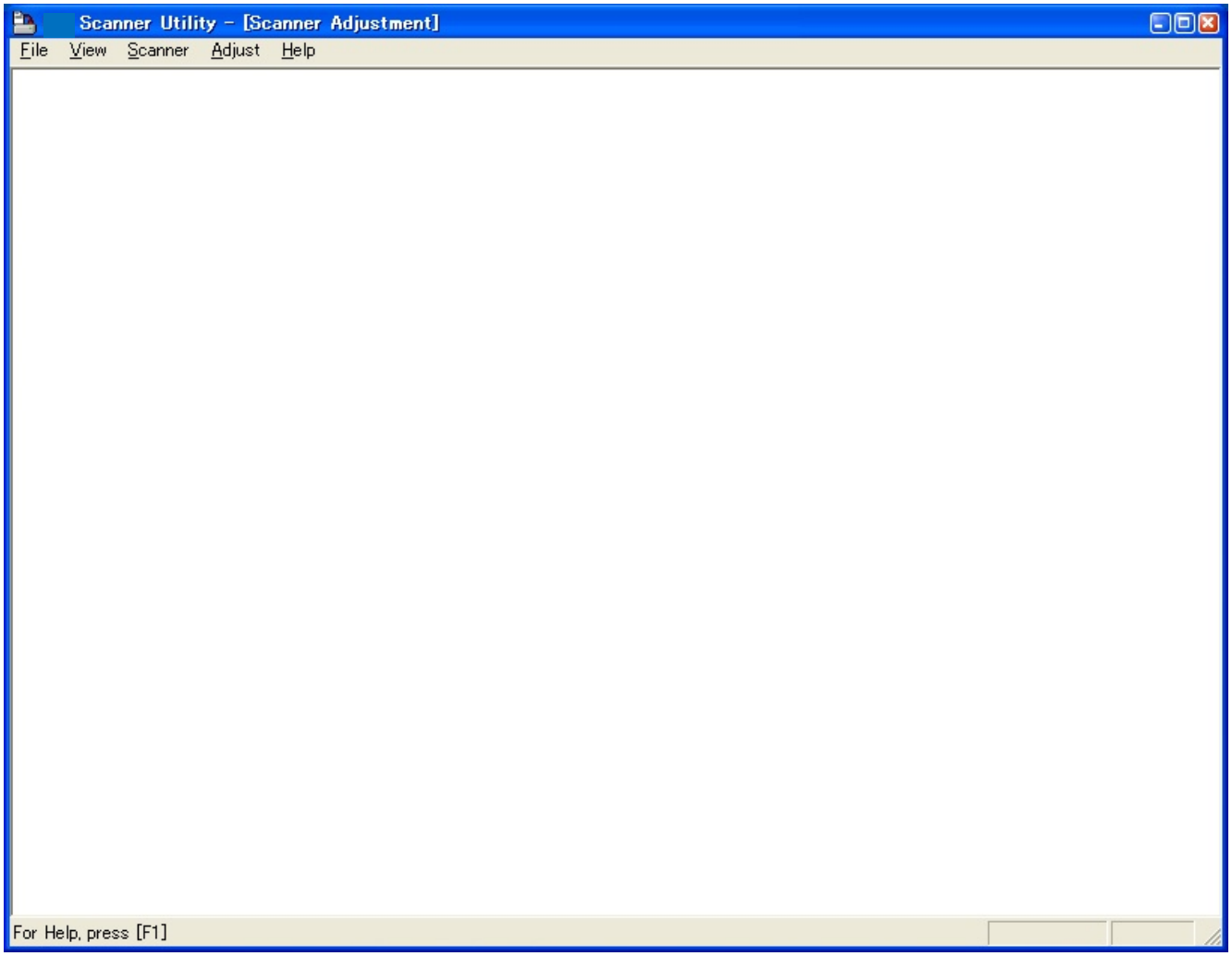


8. 13. 2 Starting Scanner Utility

Start Scanner Utility by; “Start” _”Program” _ “ScannerUtility” _ “ScannerUtility”



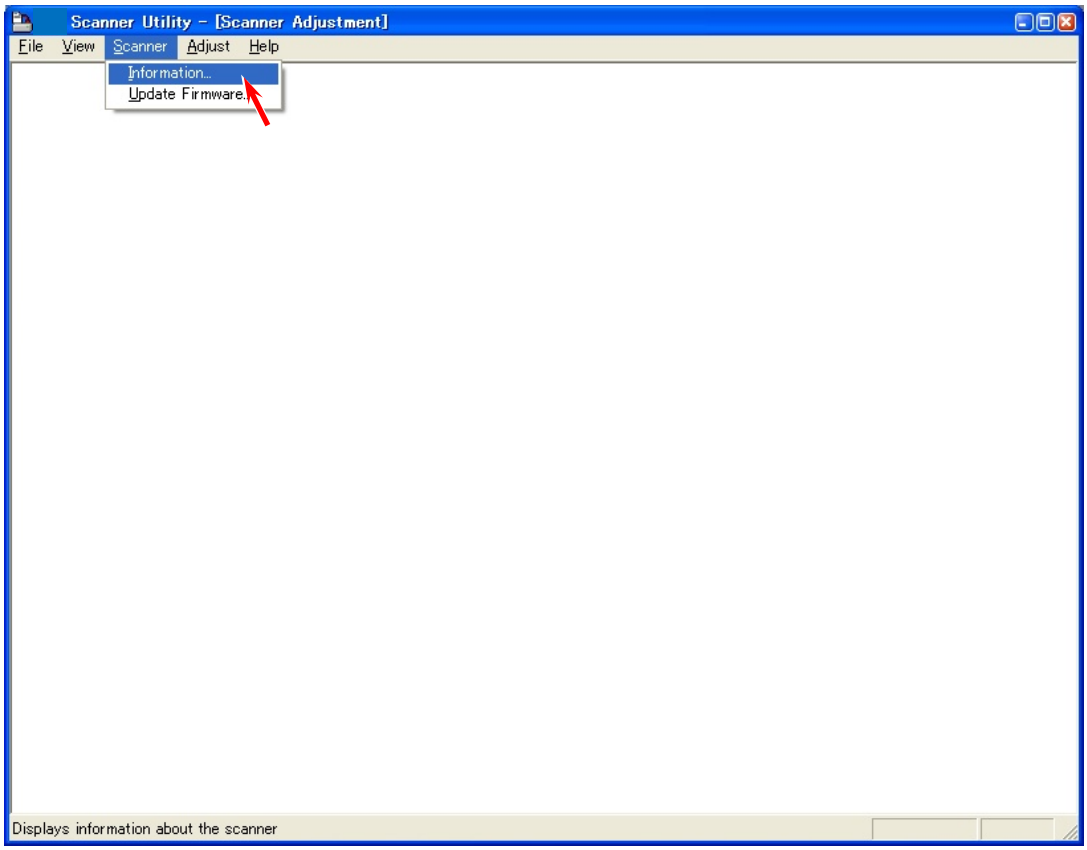
(Scanner Utility’s initial screen)



8. 13. 3 Displaying Scanner Information

It is possible to display the scanner information in the following way.

1. Select [Information] under [Scanner].



2. Scanner Utility acquires the scanner information and displays it.

8. 13. 4 Scanner Adjustment Procedure

It is possible to make the following scanner adjustment with Scanner Utility.

- Shading (calibration)
- Feed Distance (1:1)
- Position (stitching)

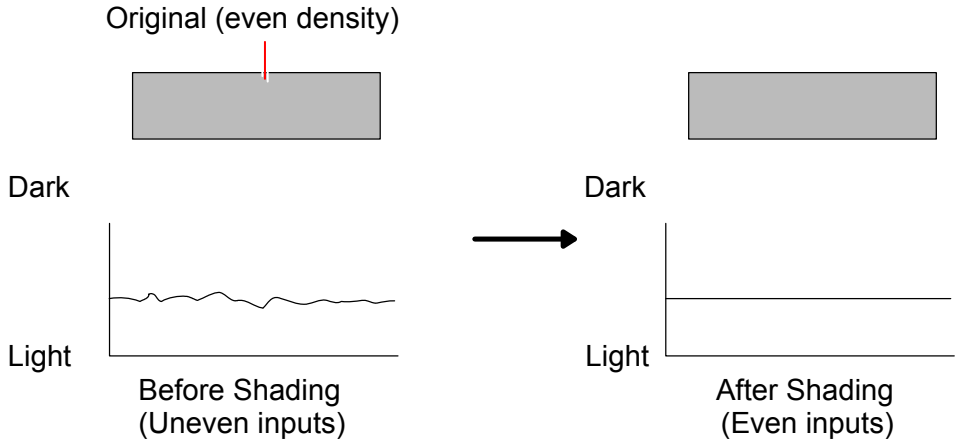
These adjustments are very important because they are greatly related with the image quality.

8. 13. 4. 1 Shading (calibration)

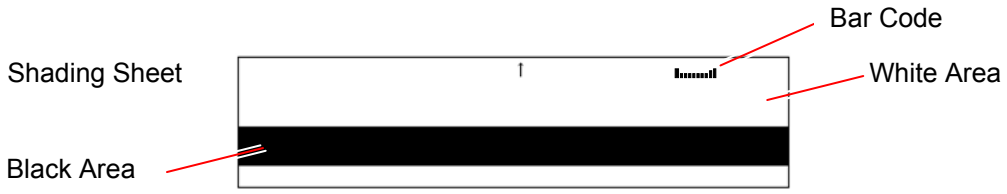
[Purpose of Shading (calibration)]

The pixels on the CIS are not same but they have their own characteristic.
This may be a problem because the inputs (density) from those pixels are uneven although they read the same image (density).

But the Shading compensates the input from each pixel properly to remove the unevenness among the pixels.
As a result the even level of input can be expected from every pixel after Shading.



On Shading adjustment, the pixels on the CIS will be calibrated in the default for R/G/B light source by using input gaps between black and white on Shading Sheet.



The TASKalfa 4820w uses R/G/B light sources not only for color reading but also for monochrome reading. The scanner unit will be calibrated in monochrome/color at the same time.

[Necessary situation]

Shading is required when;

- Machine installation
- After replacing;
  (1) CIS
  (2) CIS Controller PCB (SVC CIS BD)
  (3) Data Controller PCB (SVC Main BD K)

⚠ NOTE

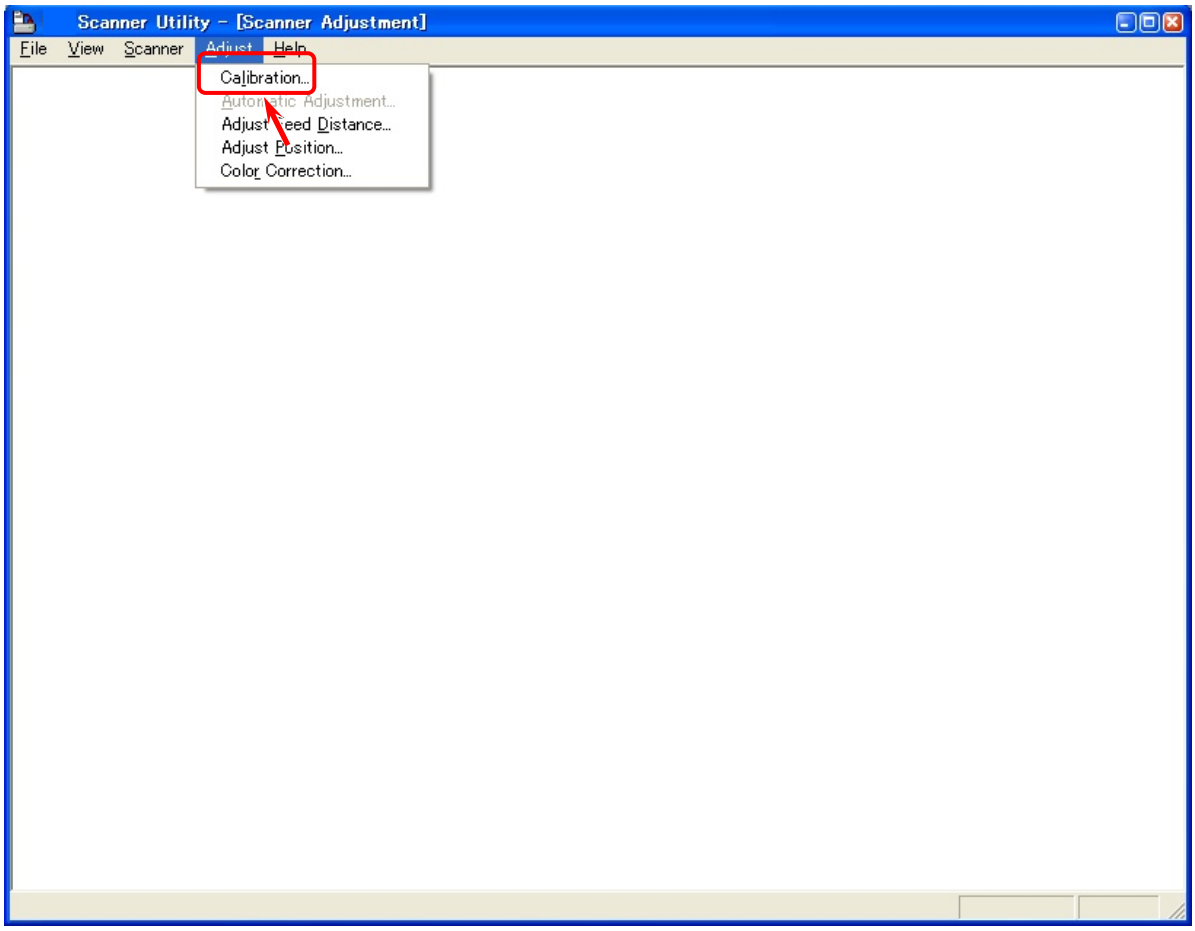
(1) Shading adjustment should be performed with Shading Sheet (P/N: 305JZ70210, with a bar code).
1 sheet of Shading Sheet is included in the product accessary. Keep it in safe custody.

(2) Shading adjustment should be performed with “Scanner Utility 1.23 (or later)”.

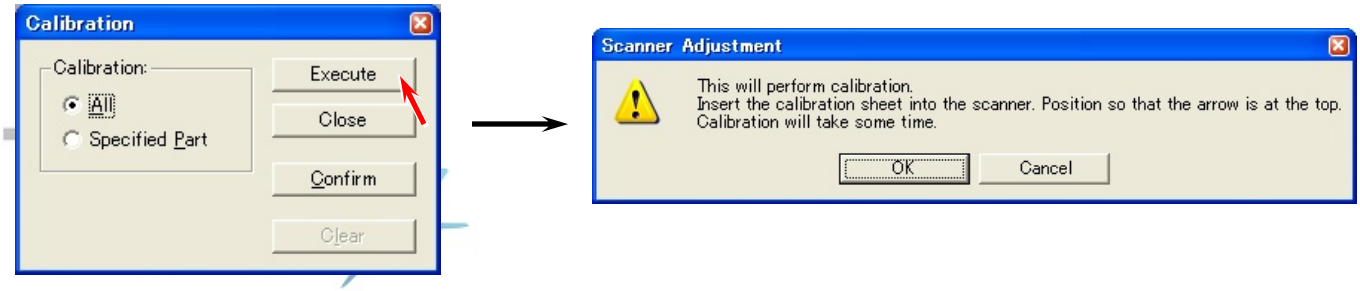
(3) Please clean Scan Glasses before Shading.

[Operation]

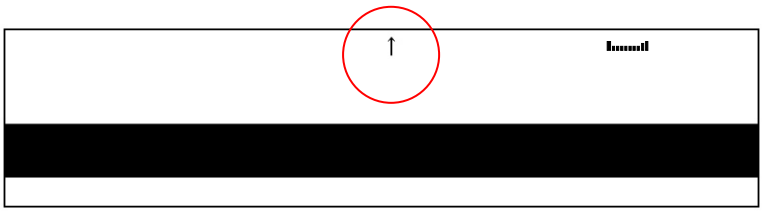
1. Connect the scanner unit and the PC directly with the USB 2.0 Cable.
2. Start Scanner Utility.
3. Select [Calibration] under [Adjust].

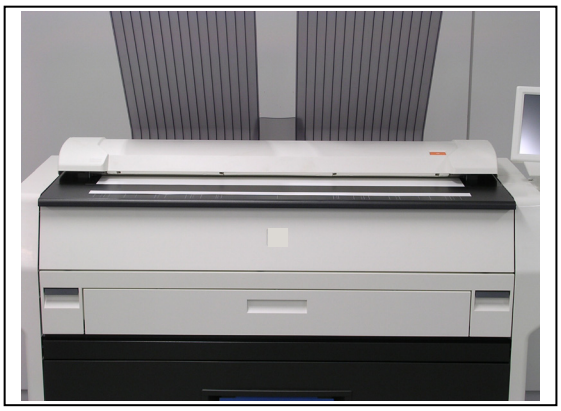


4. At first it is required to calibrate all pixels.
   Select [All] and then click [Execute].
   You will be asked to set Shading Sheet.



5. Remove the Original Guides of the both sides of the Original table. Set the Shading Sheet in the TASKalfa 4820w accessory to the scanner noting the arrow direction.





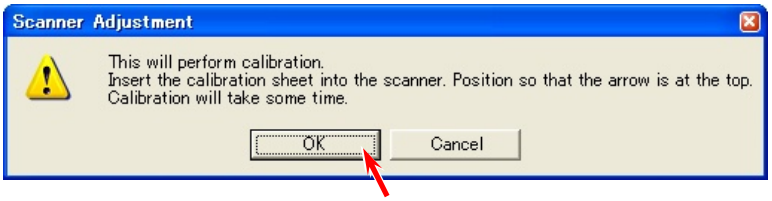
NOTE

(1) Use the Shading Sheet in the TASKalfa 4820w Accessory. The Shading Sheet has a bar code on the top right.
A shading sheet without the bar code cannot properly calibrate the TASKalfa 4820w Scanner Unit.

Bar code

(2) Handle the Shading Sheet with great care. Keep it in safe custody for avoiding dirt, fold or tear.

6. Click [OK] after setting the Shading Sheet, and the scanner reads it.

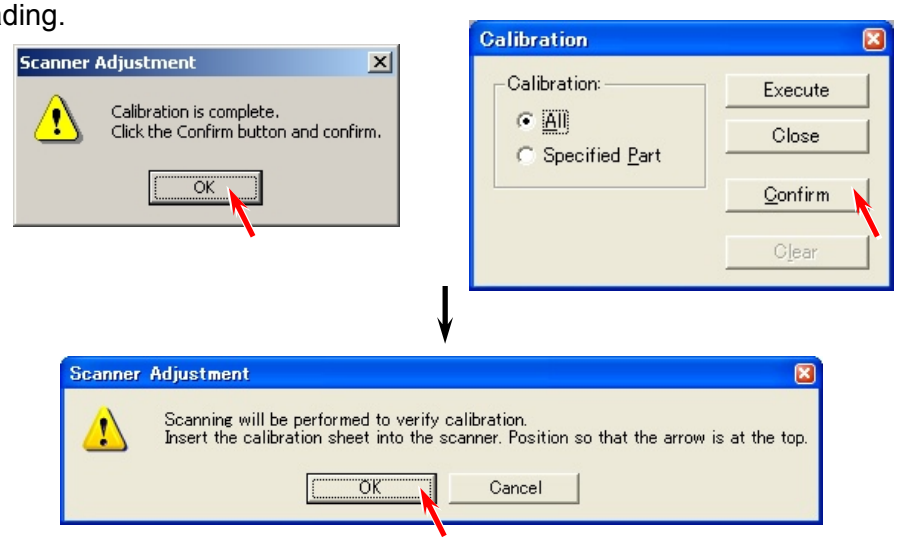


NOTE

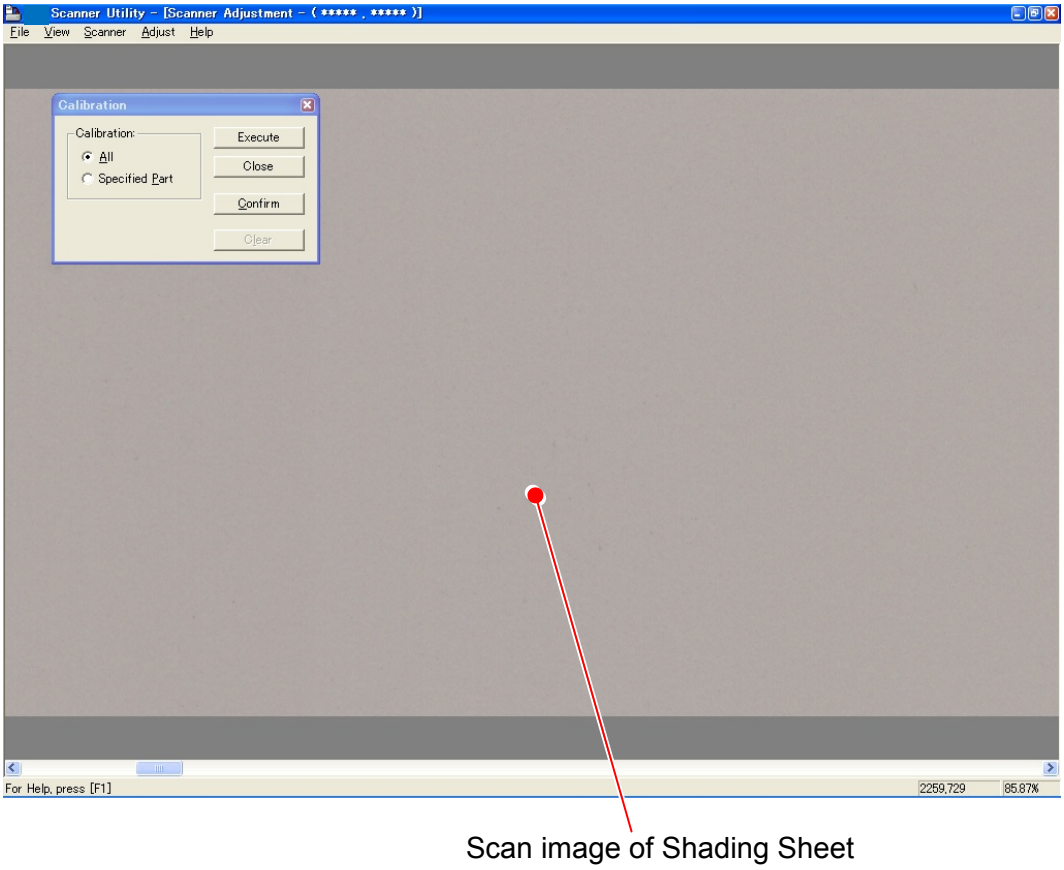
(1) It takes about 7 minutes to complete Shading adjustment.

(2) This operation will calibrate “white balance” (monochrome) and “Color” at a time with Shading Sheet.

7. When Shading is finished, the following message appears. Click [OK].
   Open the scanner and reload Shading Sheet to the scanner and click [Confirm] to check the result of Shading.

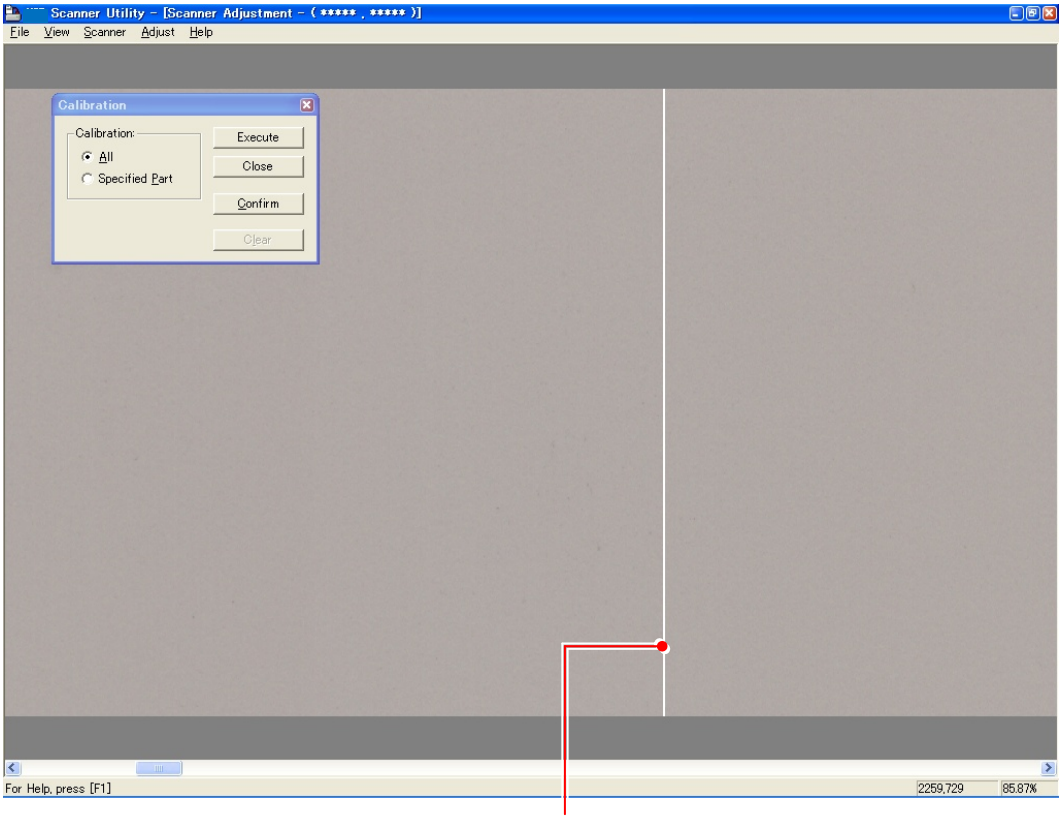


8. The scan image of Shading Sheet is displayed. (It looks gray due to “calibrating” scan)



9. Scroll the image right and left to find a strong black/white line that runs vertically in one pixel wide. If there is no such line in the whole image, click [Close] to finish Shading.

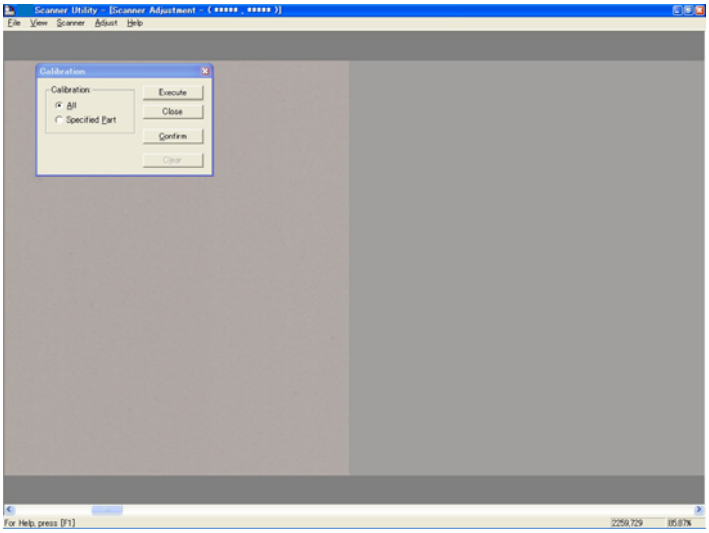
   The following picture is an example of the line (due to “defective pixel”).
   A defective pixel needs individual pixel calibration in the later steps.



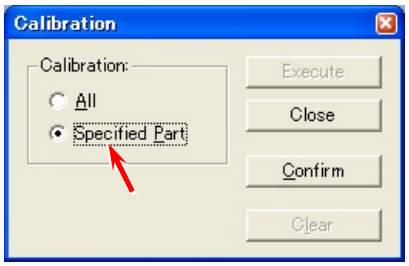
Defective pixel

NOTE

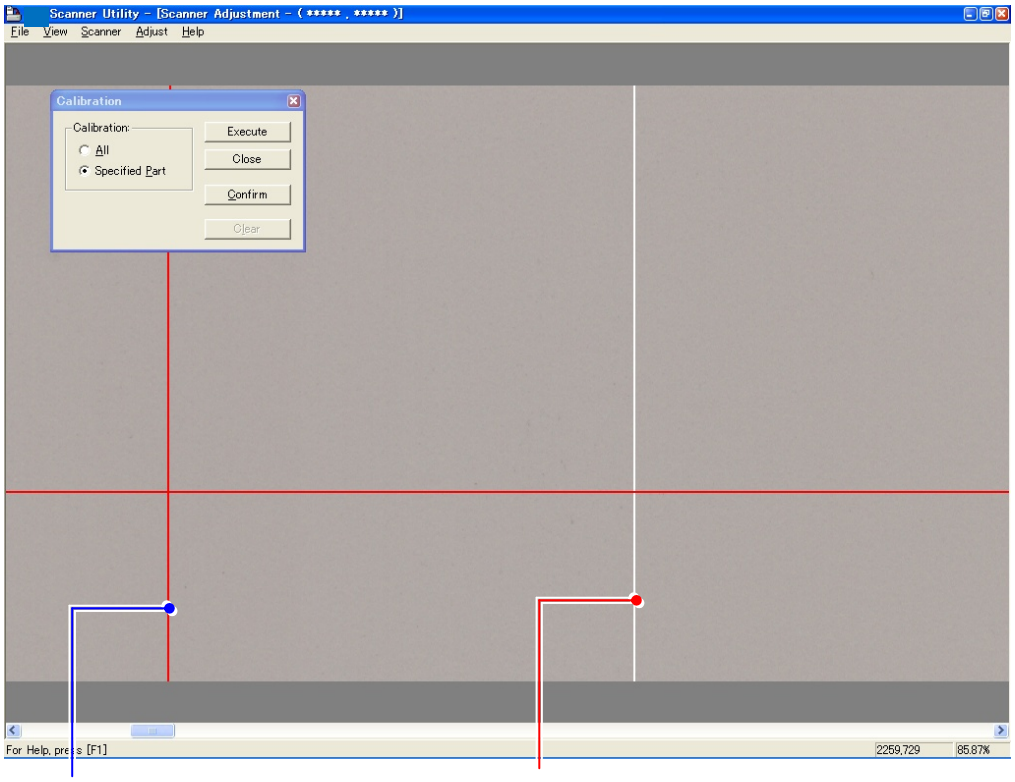
Sometimes the density may be different between left and right as the following image.
This is not a problem but it is just the border of image blocks.



10. If you will calibrate an individual pixel, select [Specified part].

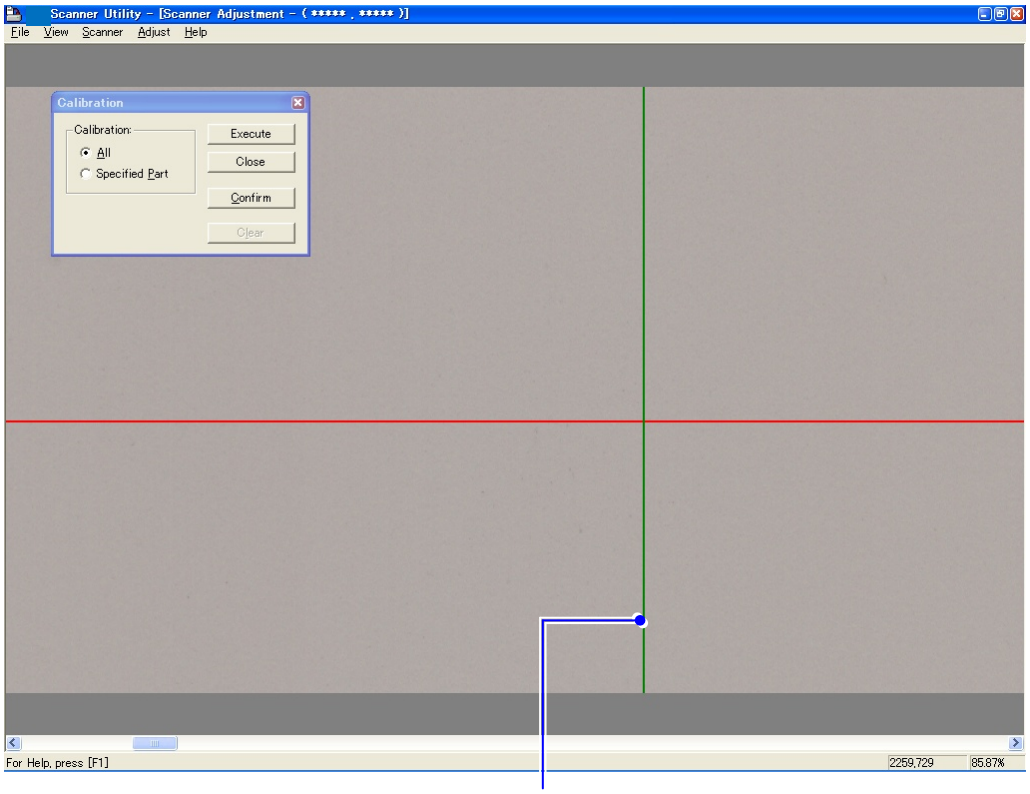


11. Move the pointer onto the scan image, and you will find a kind of red cursor.



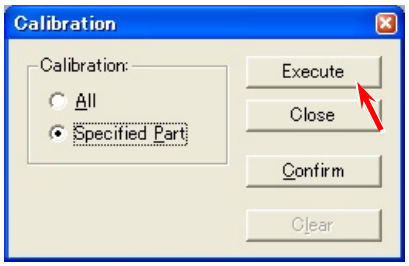
red cross cursor defective pixel

12. Move the red cursor so that its vertical line matches the defective pixel and click it.
    The defective pixel is selected by this operation.
    If there are some more defective pixels, select them in the same way.

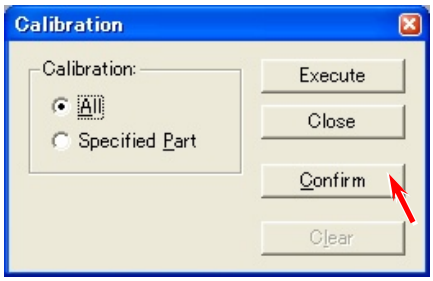


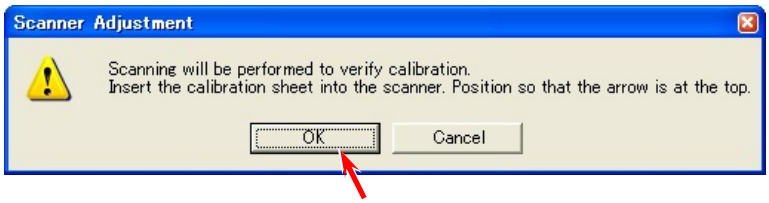
Match the vertical line to a defective pixel.

13. Click [Execute], and the selected “defective pixel” is compensated individually.



14. You will be asked to set Shading Sheet again.
    Set Shading Sheet to the scanner and click [OK].
    Check the result of Shading again.
    When finished, click [Close].



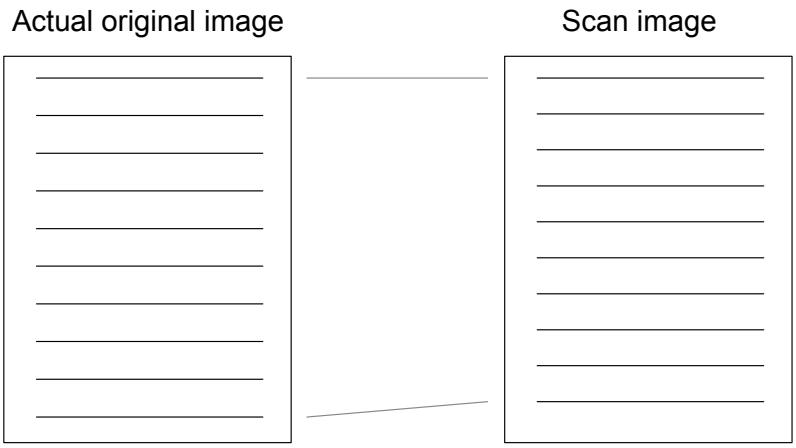


15. Shading (“white balance” / “color” calibration) is completed.

8. 13. 4. 2 Feed Distance (1:1)

[Purpose of Feed Distance (1:1)]

The lengths between actual original image and scan image may become different each other if you replace the Feed Roller of the Scanner Unit.
This is caused by the mechanical play that each Feed Roller has.



“Feed Distance” is the solution for this phenomenon.
It compares the actual original image and the scan image to know how much their lengths are different.
Then “Feed Distance” calculates the best compensation (motor speed) automatically so that both images should become as long as each other.

[Necessary situation]

Feed Distance is required when;

- After replacing;
  (1) Feed Roller R
  (2) Feed Roller F

Also you need to check whether the Feed Distance is proper after replacing the following parts.
(Please record the current setting value before the replacement and input the same value after the replacement.)
(1) CIS
(2) Data Controller PCB (SVC Main BD K)

NOTE

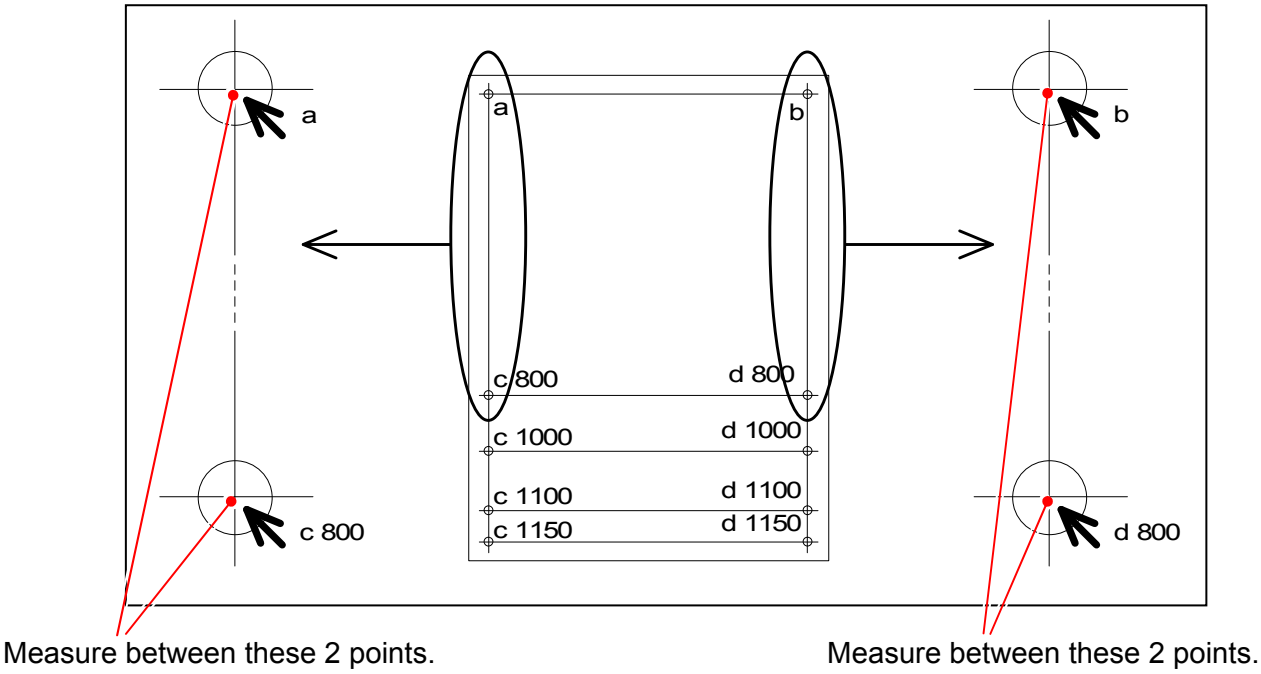
(1) Feeding Distance adjustment should be performed with Scanner Adjustment Chart (P/N: 305H680020).

(2) Feeding Distance adjustment should be performed with “Scanner Utility 1.23 (or later)”.

[Operation]

1. Measure the actual distance between “a point” and “c point” on the far left area of Scanner Adjustment Chart, and between “b point” and “d point” on the far right area.

   Let’s suppose that each distance is as follows.
   Between “a point” and “c point (800)” is “799.7mm”
   Between “b point” and “d point (800)” is 799.8mm



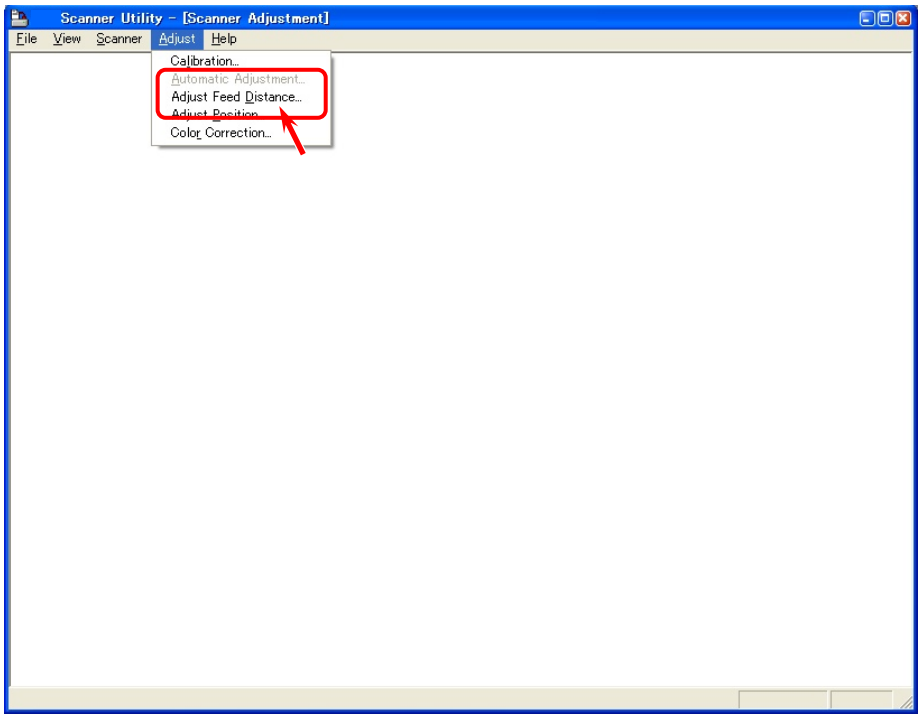
NOTE

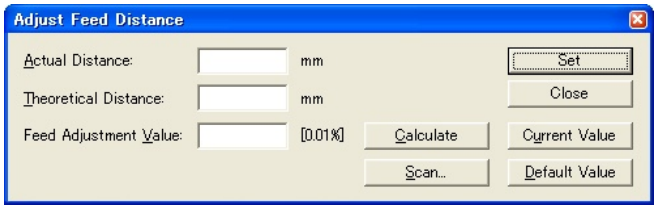
There are some number of “c point X” and “d point X” on the chart.
You can select any one, but better adjustment can be expected if you measure a longer distance.

2. Connect the scanner unit and the PC directly with the USB 2.0 Cable.

3. Start Scanner Utility.

4. Select [Adjust Feed Distance] from [Adjust]. Adjust Feed Distance Dialog is indicated.





NOTE

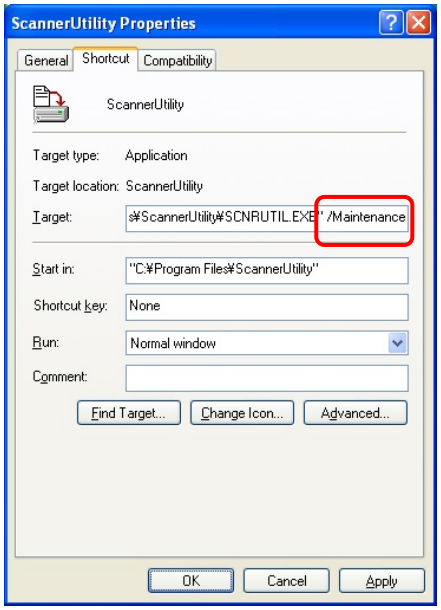
(1) If [Adjust Feed Distance] does not appear, follow the instruction below.

a) Open the properties panel for Scanner Utility shortcut. (ex. right click on the shortcut)

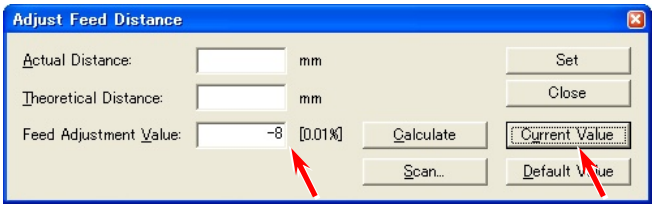
b) Add the following text to the end of the target path.

"(one byte space)/**Maintenance**"

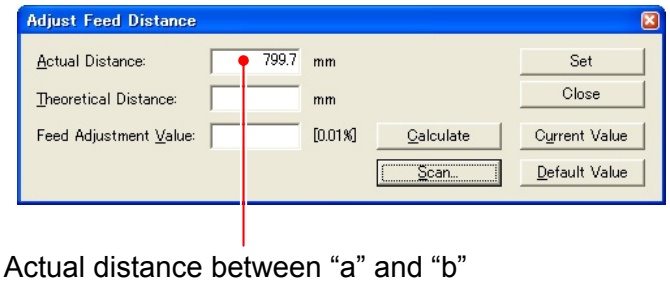
c) Click [Apply].



(2) Write down the current setting value that will be displayed with [Current Value].

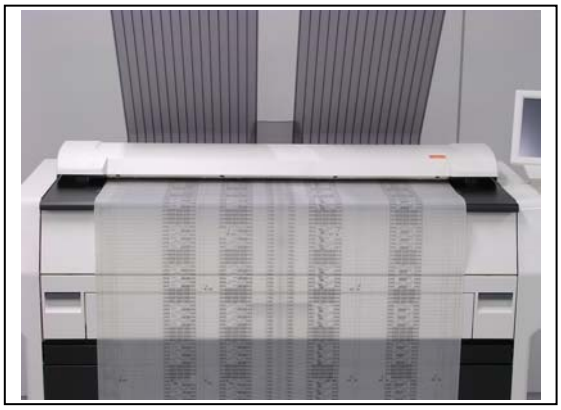


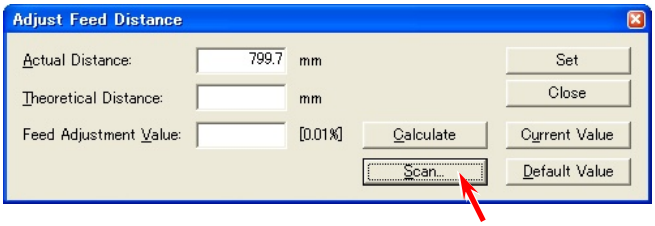
5. At first, input the **actual distance between “a point” and “c point”** in [Actual Distance], which you have measured at the former step “1”.



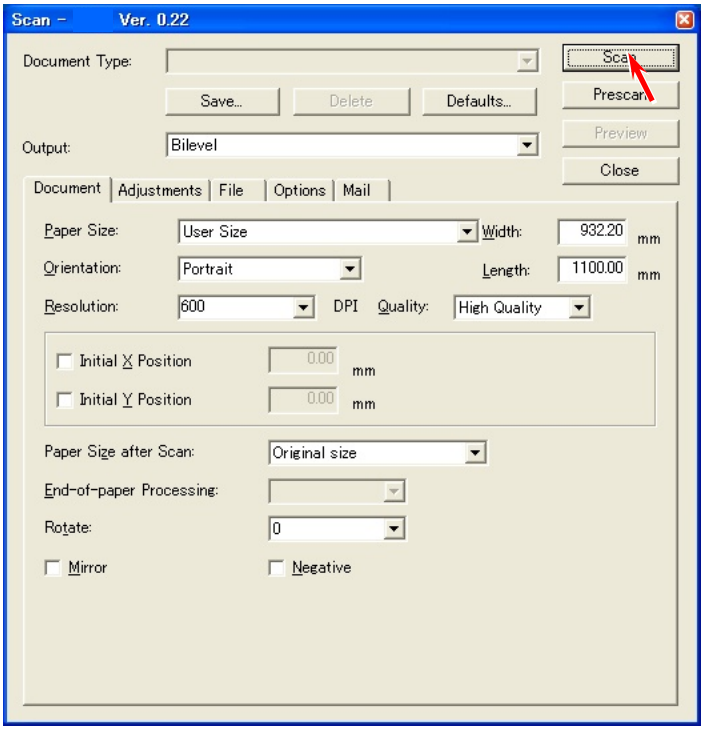
Actual distance between “a” and “b”

6. Set Scanner Adjustment Chart to the scanner unit, and then click [Scan].

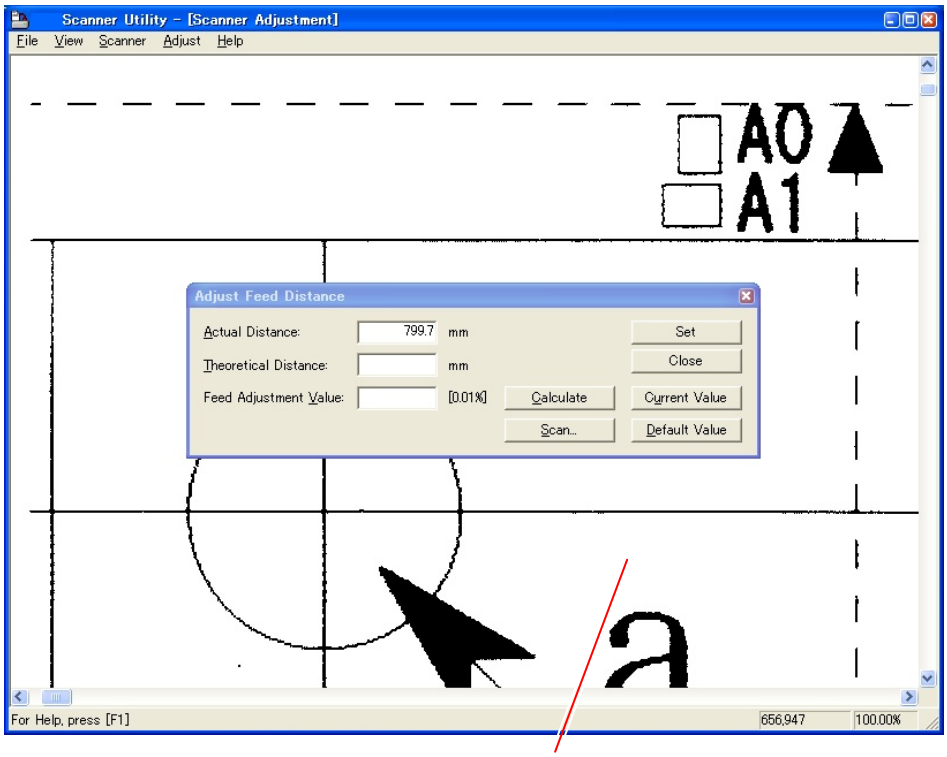




7. A dialog to specify the scan settings is indicated.
Simply click [Scan] to scan the chart. (You do not have to change any setting this time.)



8. The scan image of Scanner Adjustment Chart is indicated in the screen of Scanner Utility.

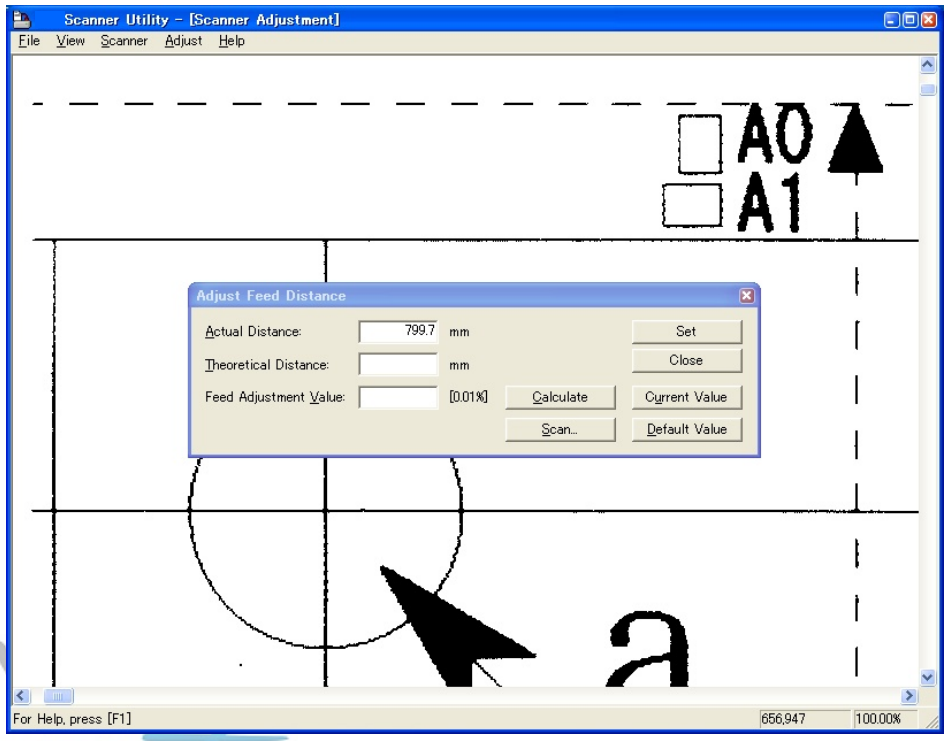


Scan image of the chart

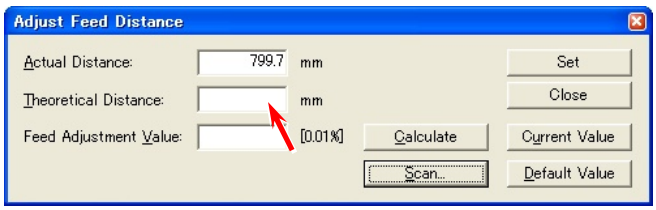
Reference

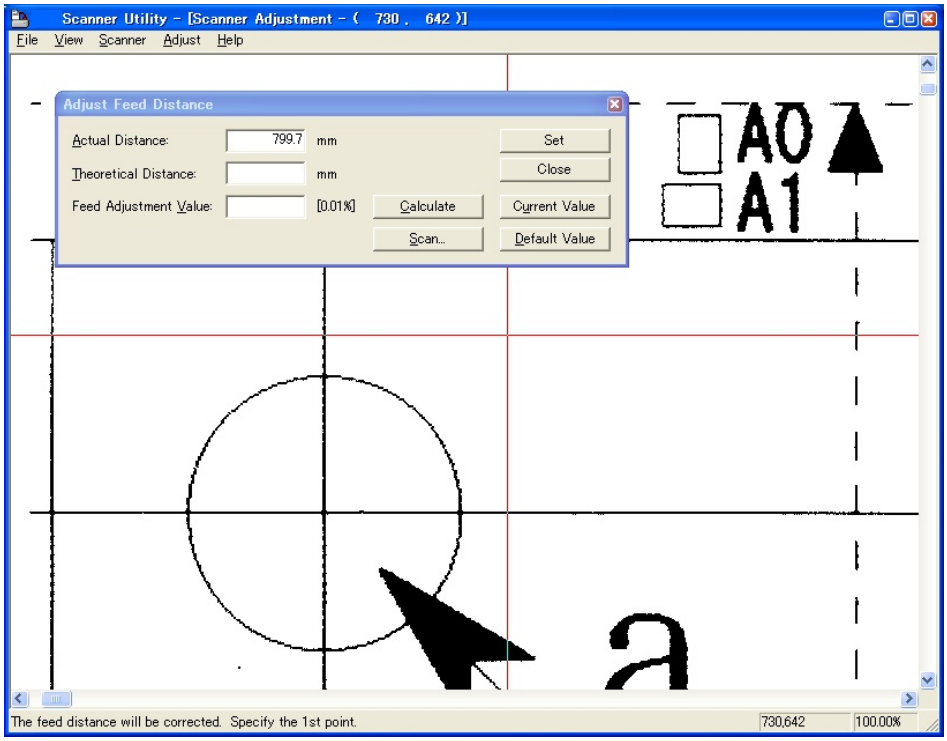
You can enlarge the scan image by dragging with the right button of mouse.
Press the F2 Key when you would like to go back to the reduced image.

9. Indicate the enlarged image of “a point” on the screen, which was the measuring point at the former step “1”.

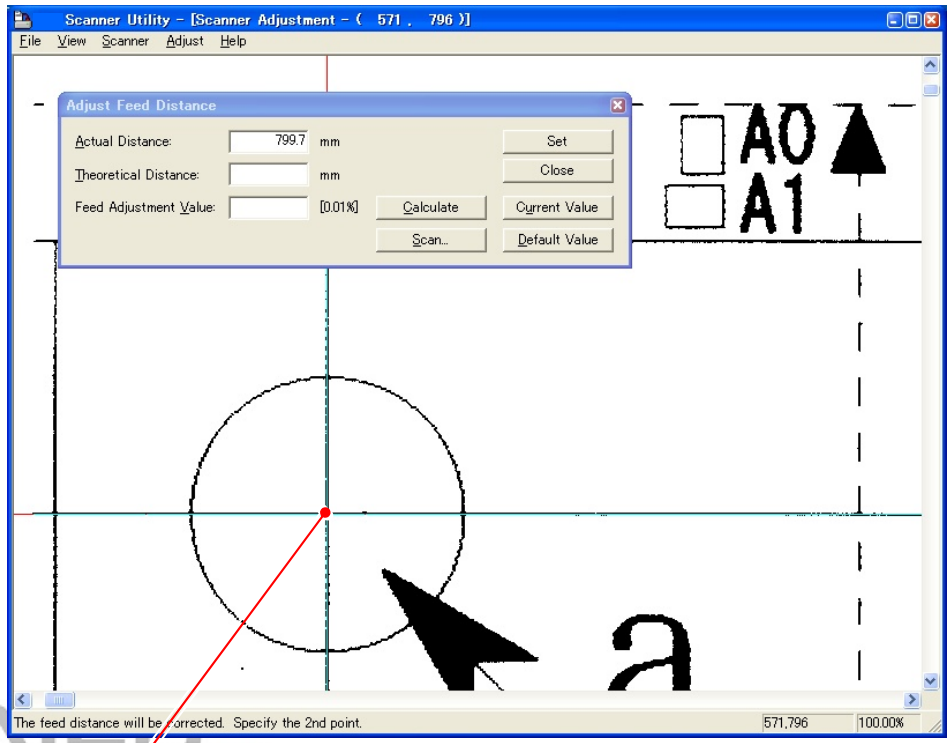


10. Click the input window of [Theoretical Distance].
    A red cursor appears on the screen.



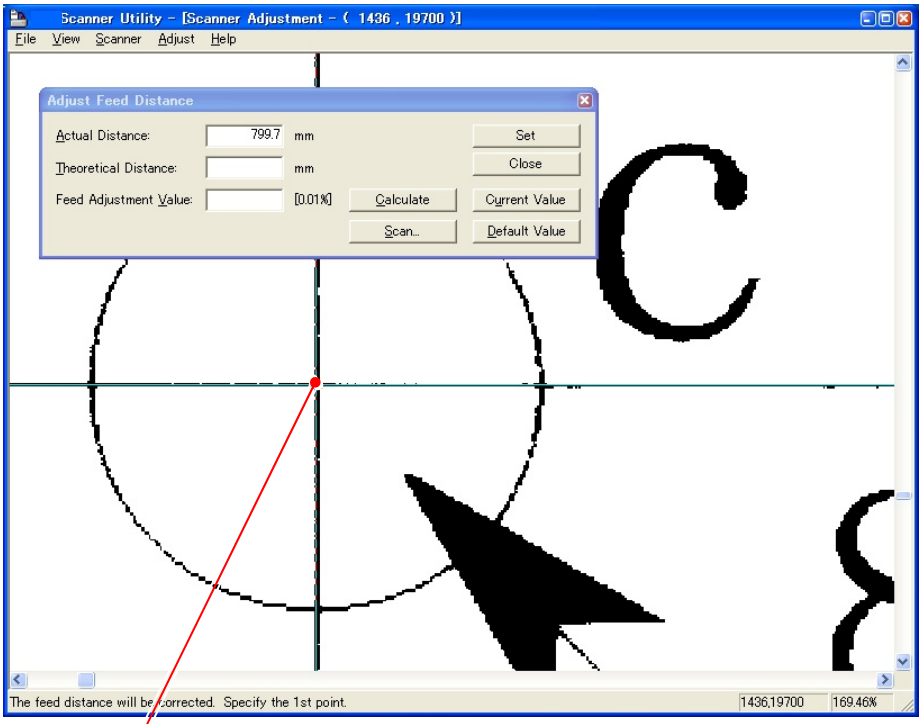


11. Click the mouse once at the measuring point.



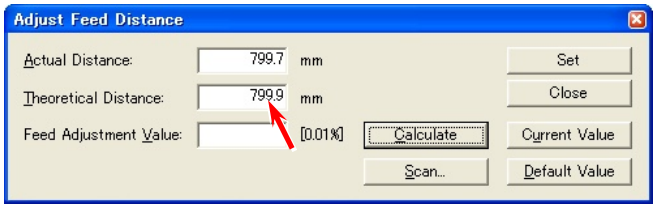
Click on the measuring point “a”.

12. Similarly indicate the enlarged image of “c point” and click the mouse at the measuring point.

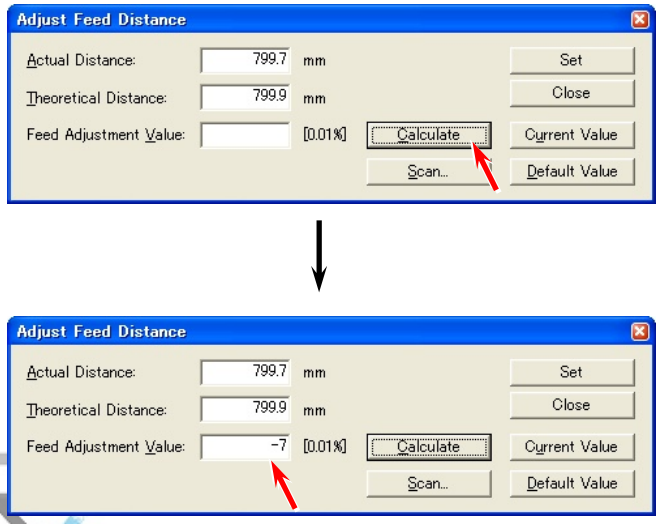


Click on the measuring point “c”.

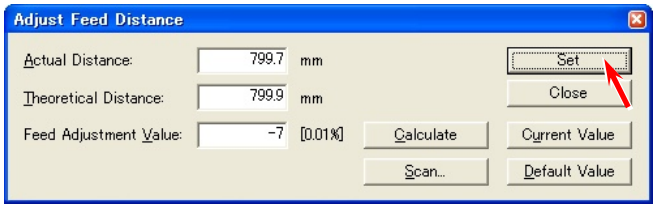
13. Some value is indicated in [Theoretical Distance] according to 2 measuring points you specified at both steps “9” and “10”.
This value means the distance between “a point” and “b point” of the resulting scan image.



14. Click [Calculate].
The program automatically calculates the best compensation value considering the difference of “Actual Distance” and “Theoretical Distance”.
The calculated compensation value (motor speed) is indicated in [Feed Adjustment Value].

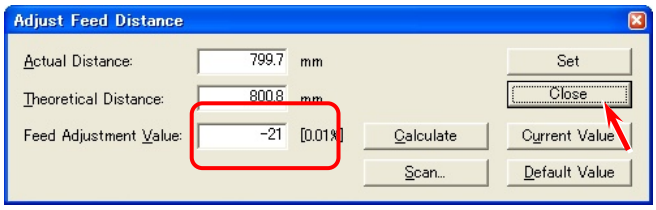


15. Click [Set], and the calculated Feed Adjustment Value is validated.



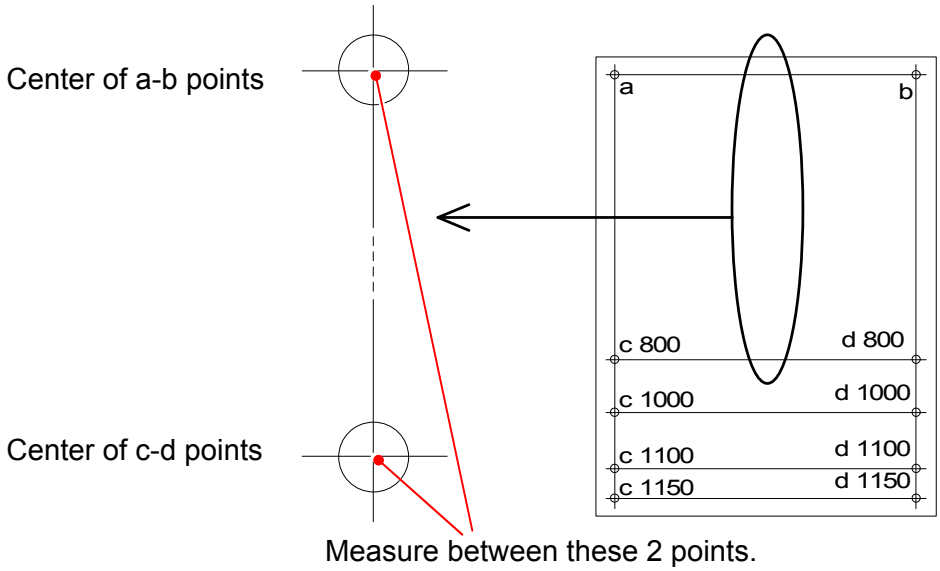
16. It is necessary to check the balance of original feeding between left and right after validating the new setting.
(Left side means “a-c points” side, and right side means “b-d points” side.)

Repeat the former steps from “3” to “12” also for the right side (between “b point” and “d point”), and compare the values of Feed Adjustment Value between left (a-c points) and right (b-d points).
You do not have to do anymore thing if the difference between left and right is within 0.2%.
(“within 0.2%” means the difference of indicated values is within +/-20.)
Please click [Close] without clicking [Set].



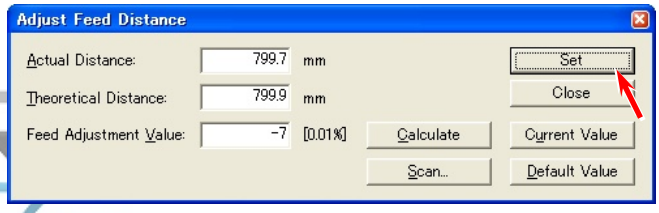
17. If the difference of the values of Feed Adjustment Value between left and right is larger than 0.2%, do as follows.

a) Measure the actual distance between the center of a-b points and that of c-d points on the chart.



b) Repeat the former steps from “3” to “12” for the center area.

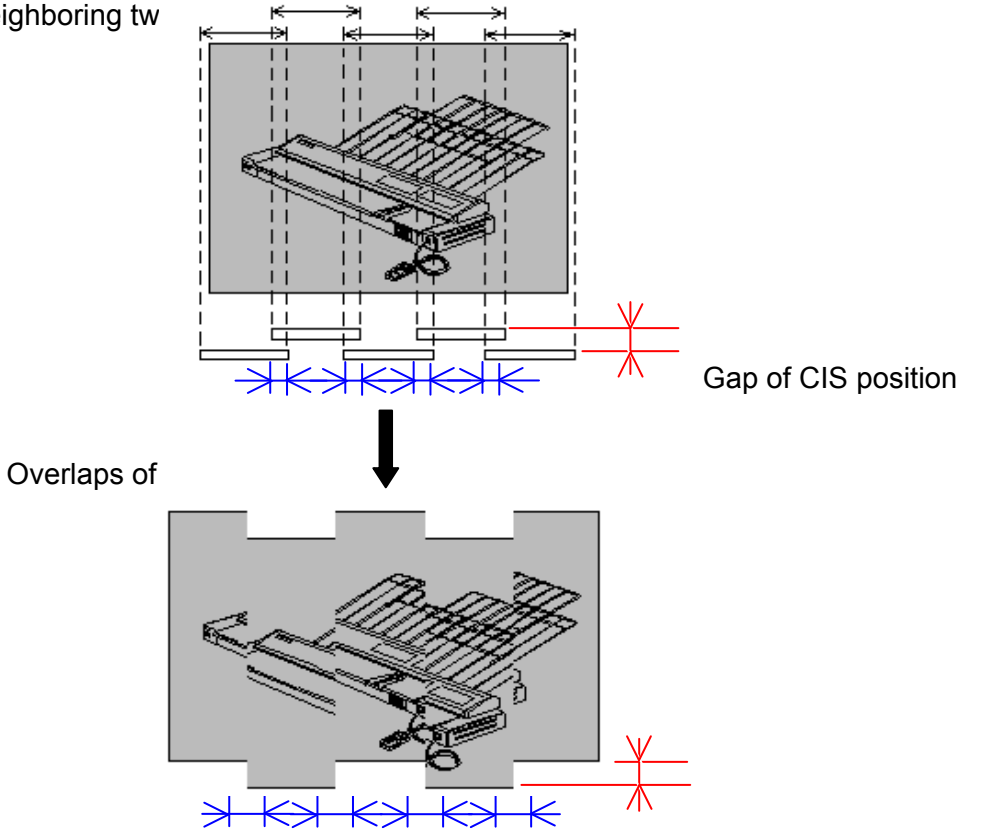
c) Click [Set] to validate the Value indicated in [Feed Adjustment Value].



8. 13. 4. 3 Position (stitching)

[Purpose of Position (stitching)]

The scanner part of TASKalfa 4820w 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. Also the reading area of these 5 pieces of CIS overlaps each other some degree. As a result there occurs the duplication of image between neighboring Image Block (same image is commonly included in the neighboring tw



Duplications of image

“Position” is the solution for these kinds of phenomenon.
It is possible remove the vertical gap of image by vertical positioning process (Y offset).
And it is also possible to remove the duplication of image by horizontal positioning process (X overlap). TASKalfa 4820w has the function to adjust X/Y positioning by automatic. After X/Y positioning, adjustment for the LE (leading edge) positioning should be performed manually.

[Necessary situation]

Position is required when;

- After replacing;
  (1) CIS
  (2) Data Controller PCB (SVC Main BD K)

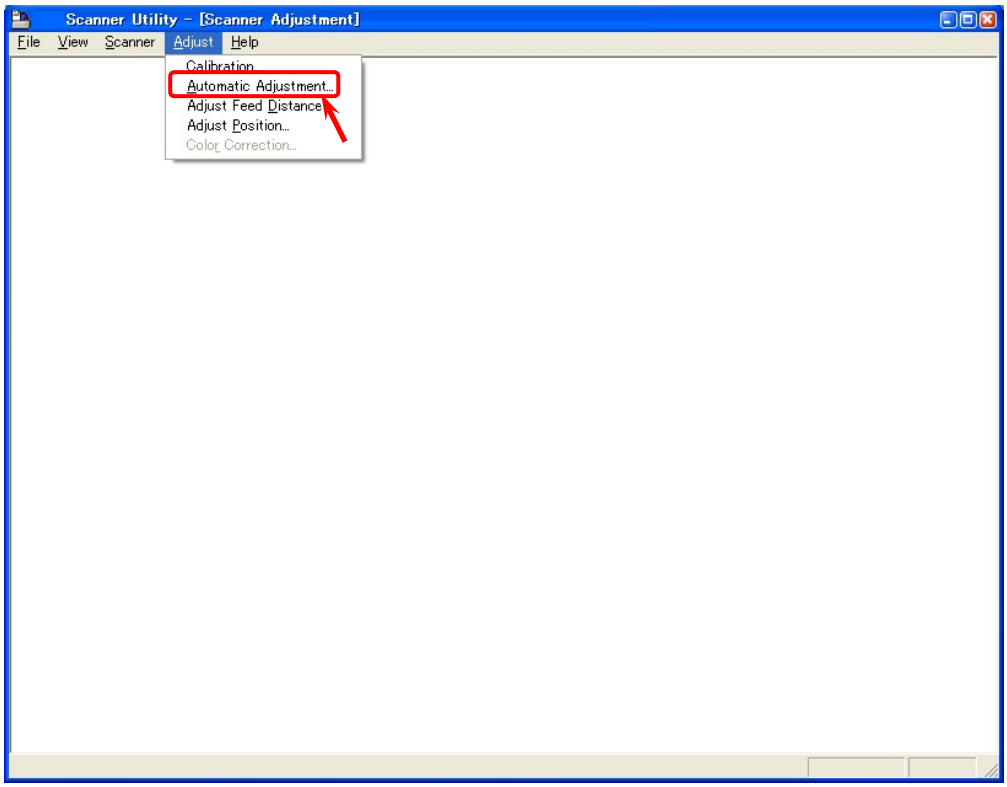
NOTE

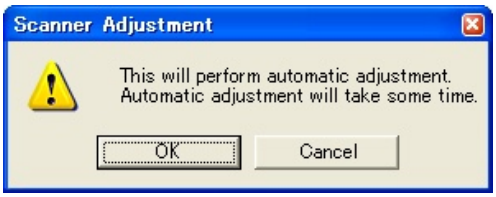
(1) Position adjustment should be performed with Stitch Adjustment Chart (P/N: 305JG74560).

(2) Position adjustment should be performed with “Scanner Utility 1.23 (or later)”.

[Operation]

1. Connect the scanner unit and the PC directly with the USB 2.0 Cable.
2. Start Scanner Utility.
3. Select [Automatic Adjustment] from [Adjust]. Scanner Adjustment Dialog is indicated.





NOTE

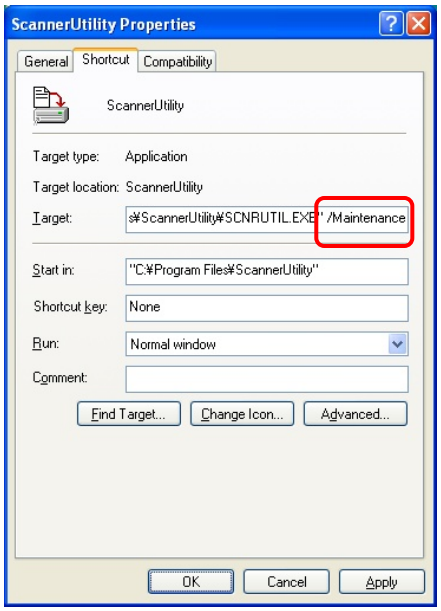
If [Automatic Adjustment] does not appear, follow the instruction below.

a) Open the properties panel for Scanner Utility shortcut. (ex. right click on the shortcut)

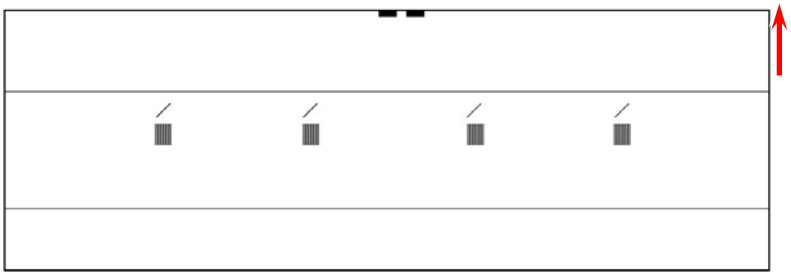
b) Add the following text to the end of the target path.

"(one byte space)/**Maintenance**"

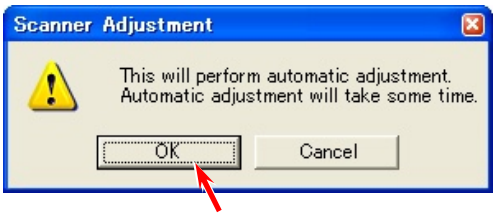
c) Click [Apply].



4. Set Stitch Adjustment Chart to the scanner noting the set direction and press [OK].



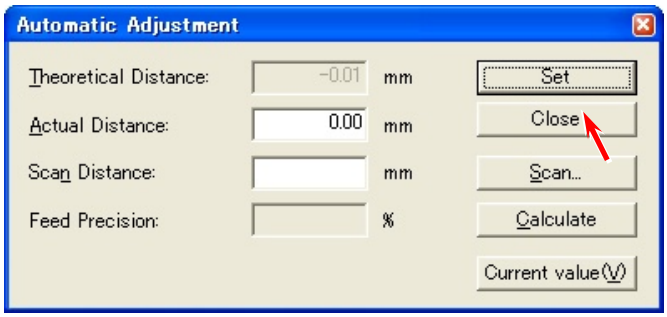
Stitch Adjustment Chart



NOTE

An incorrect feeding of Stitch Adjustment Chart may result in an error. Position Stitch Adjustment Chart with the center of Original Table and avoid skewing.

5. After completing the scan, the following window will be displayed. Press [Close].

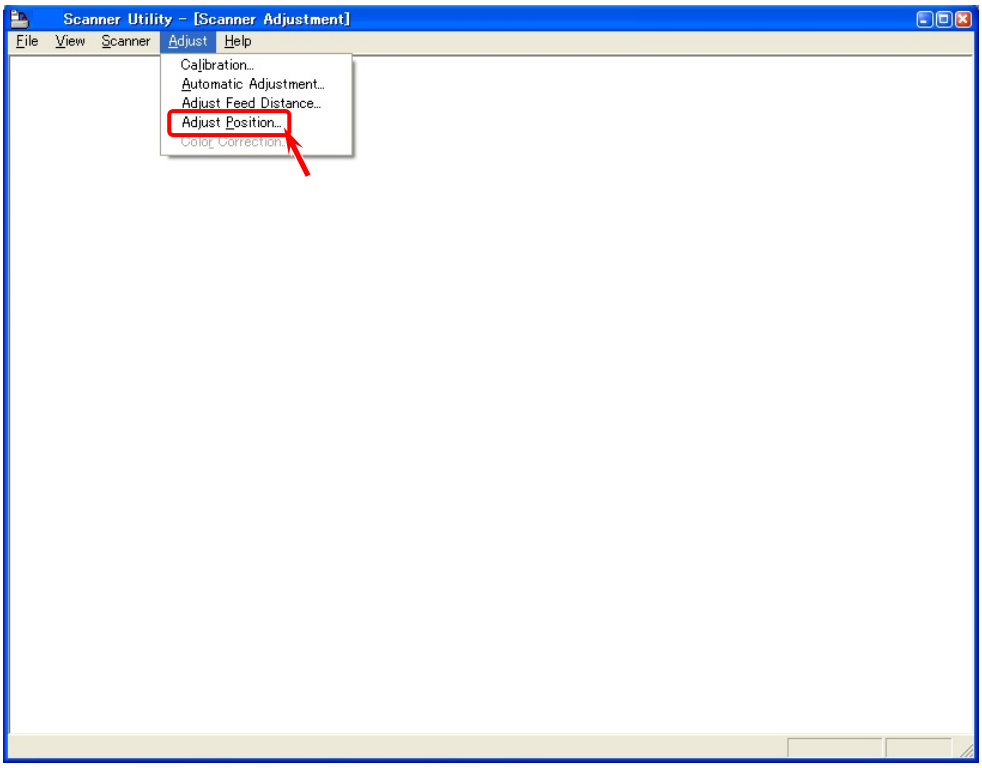


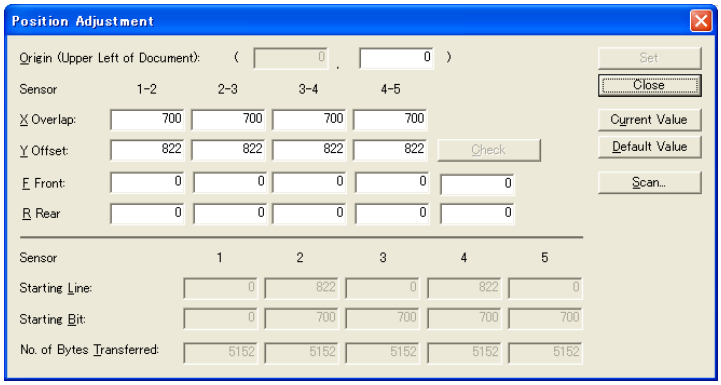
6. Automatic Adjustment for X/Y positioning is completed.
   Continue to the next step for the LE positioning.

NOTE

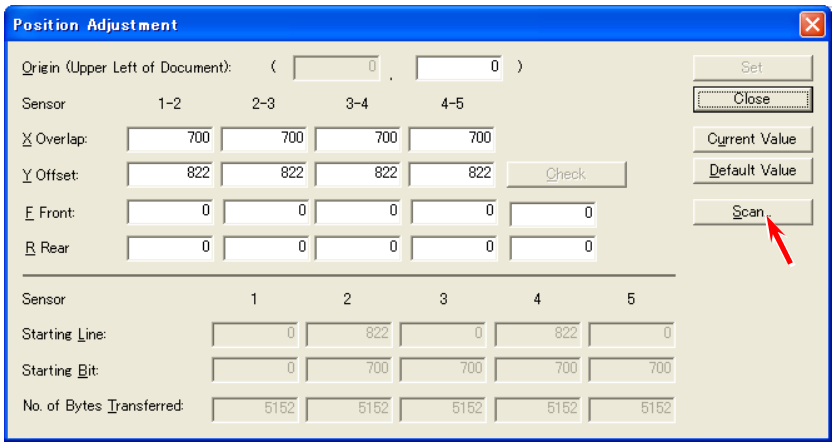
After Automatic Adjustment for X/Y positioning, LE positioning is required. Be sure to follow the later procedure to adjust the LE positioning.

7. Select [Adjust Position] from [Adjust]. Adjust Position subscreen is indicated.

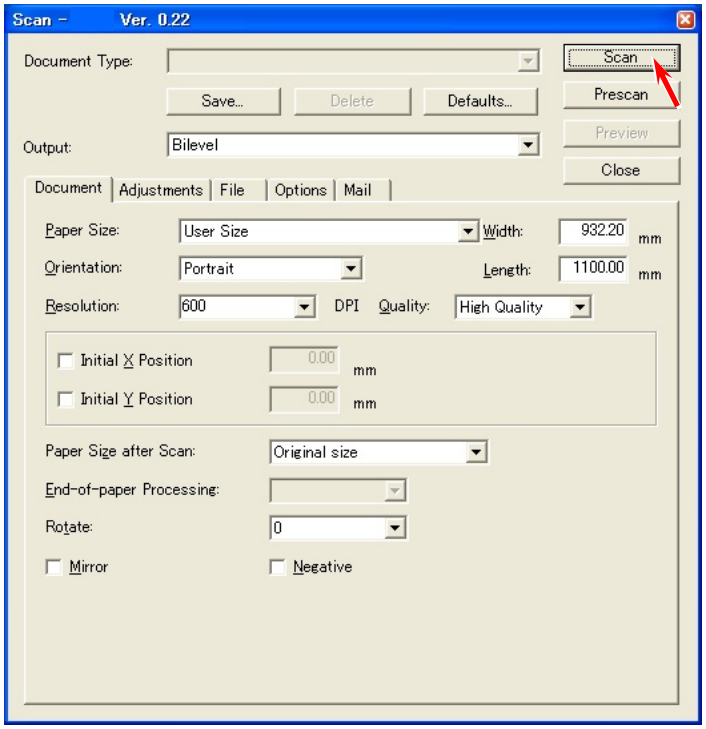




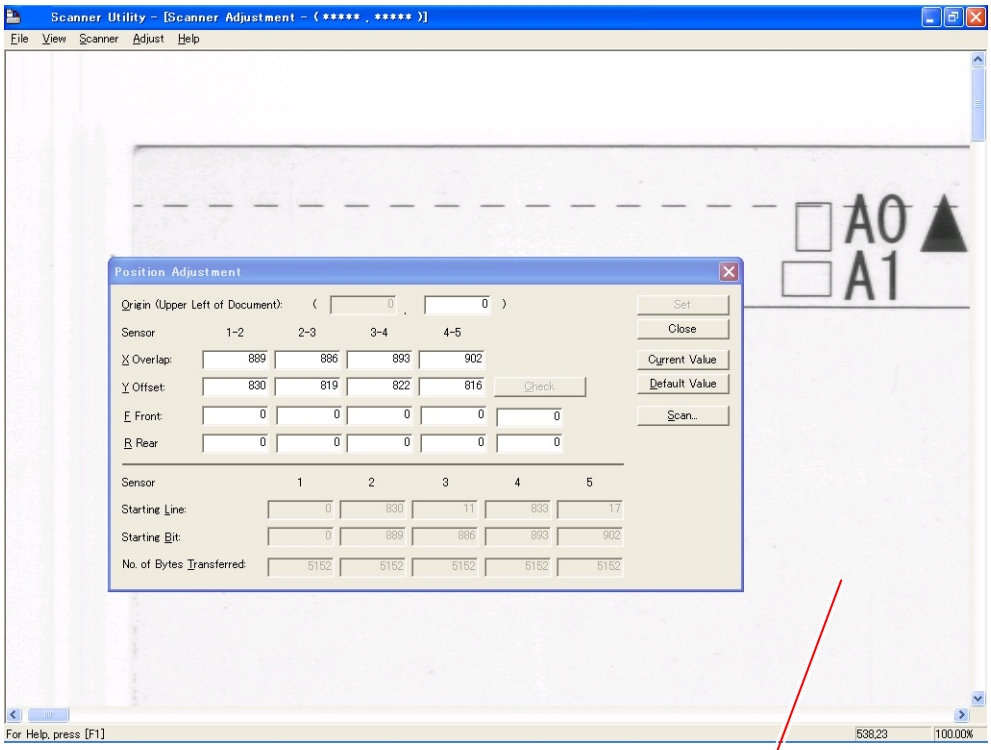
8. Set Stitch Adjustment Chart to the scanner again and press [Scan].



9. A dialog to specify the scan settings is indicated.
   Simply click [Scan] to scan the chart. (You do not have to change any setting this time.)

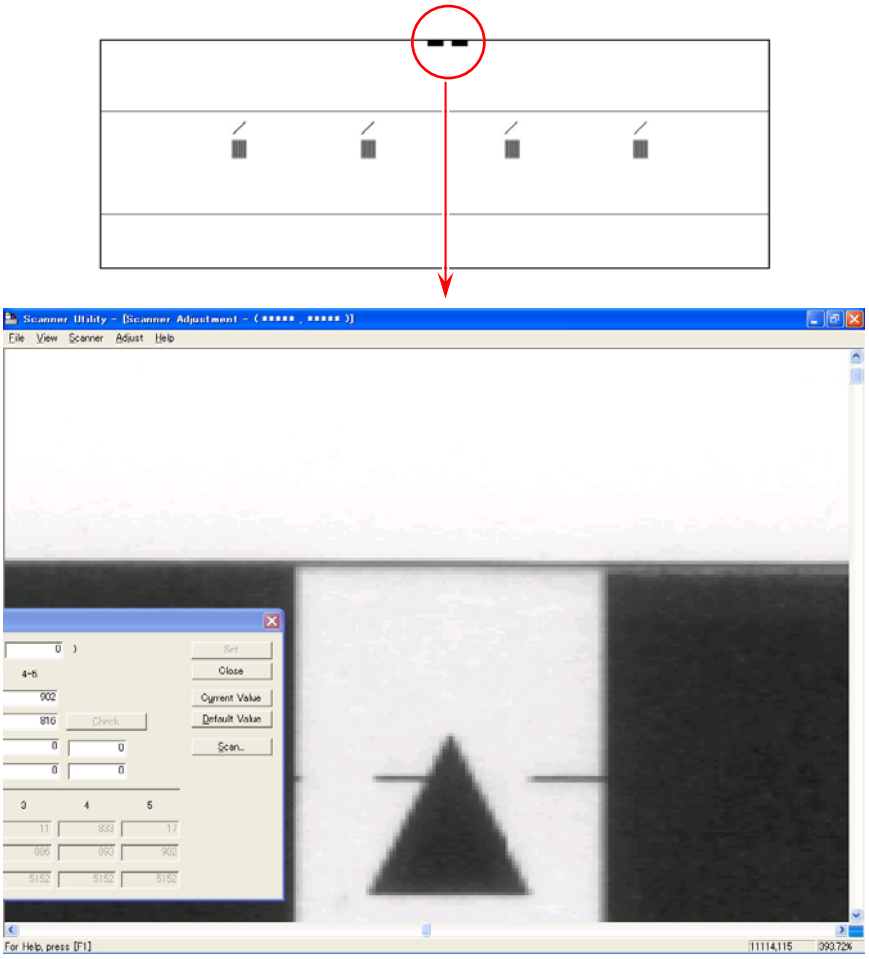


10. The scan image of Scanner Adjustment Chart is indicated in the screen of Scanner Utility.



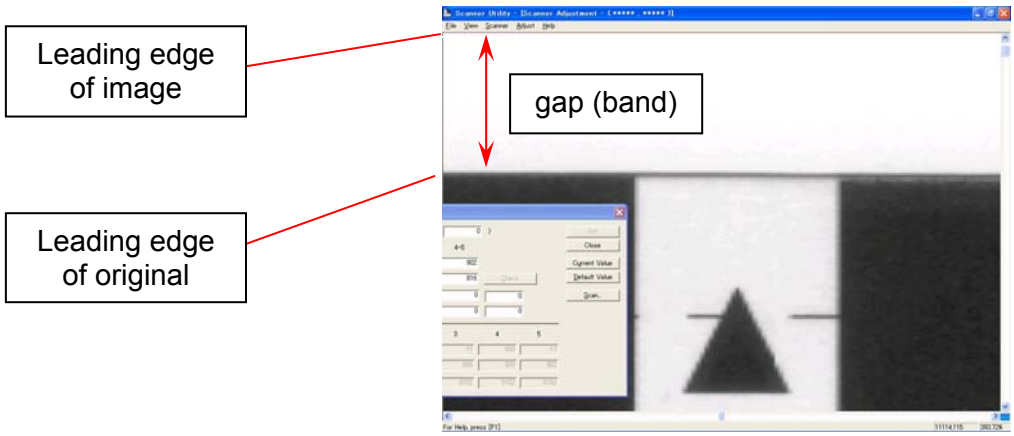
Scan image of the chart

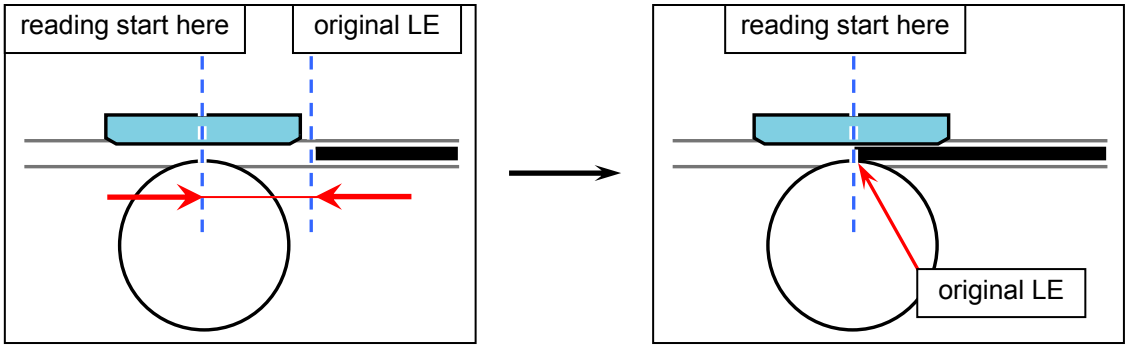
11. Enlarge the top center area by right dragging.



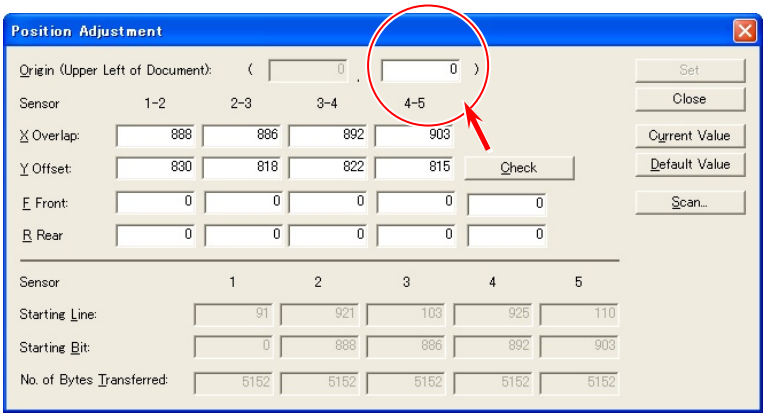
Reference

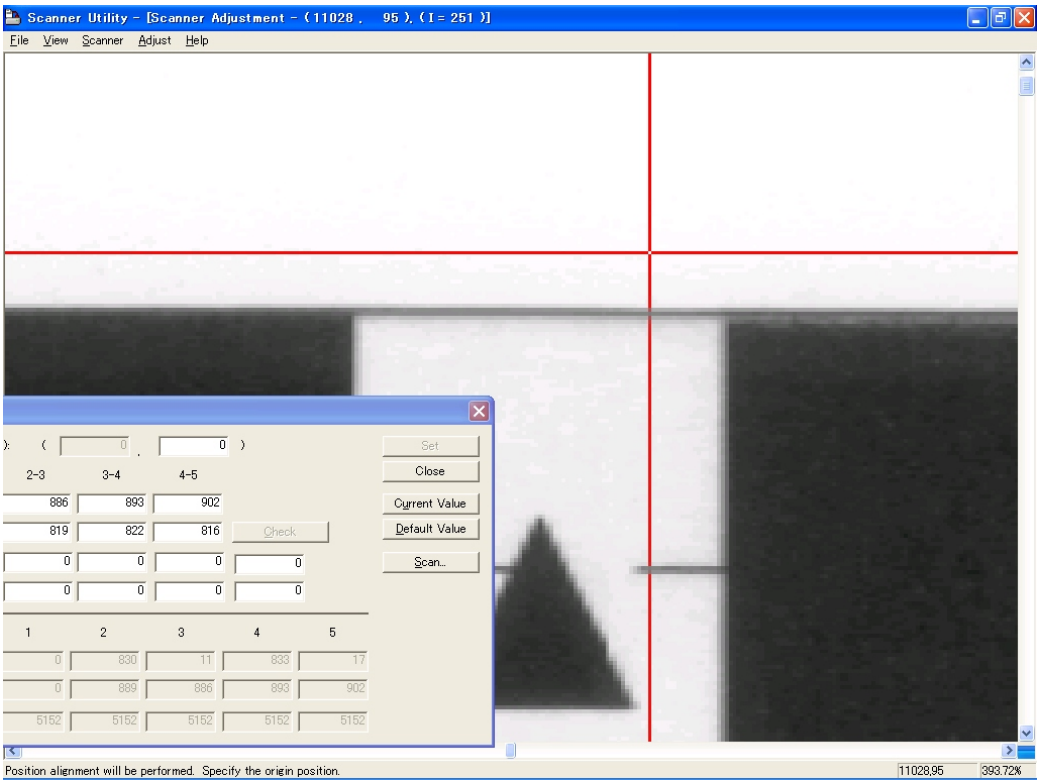
There is a gap between the leading edge of the scan image and the leading edge of the chart at this time. This band area shows that both of the edges do not match together. The gap will be removed after the completion of Position adjustment for the leading edge.



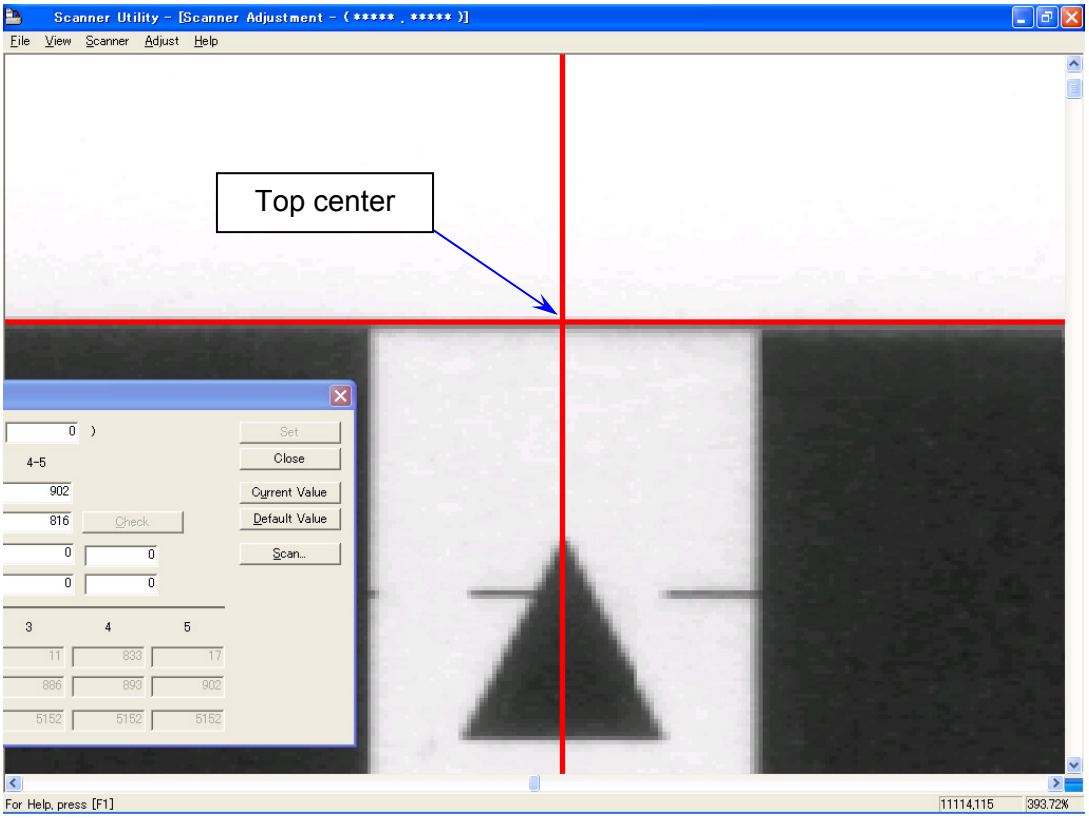


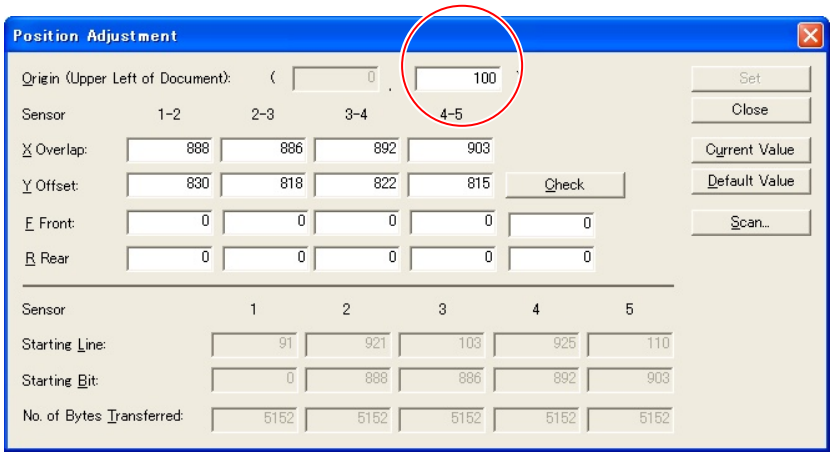
12. Click “Origin” entry field of the subscreen. A red cross cursor appears on the scan image.





13. Click once on the top center of the chart in the scan image.
    A value appears in the field.

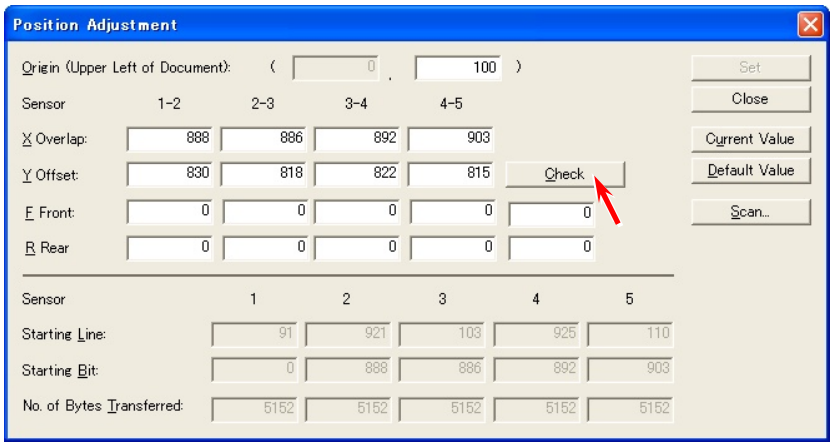


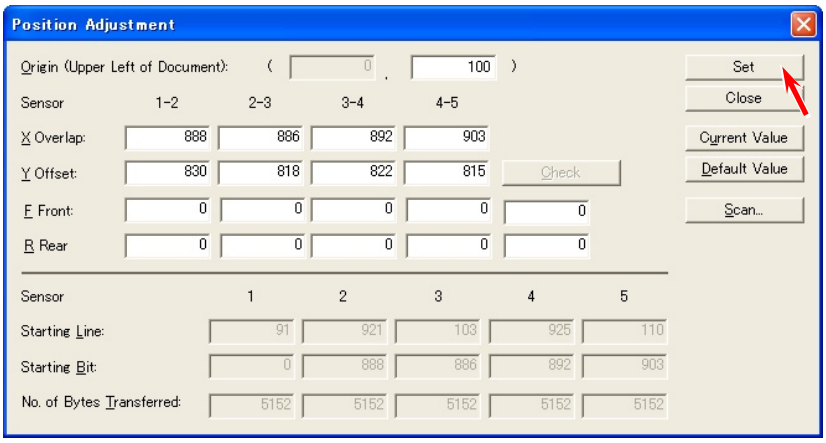


NOTE

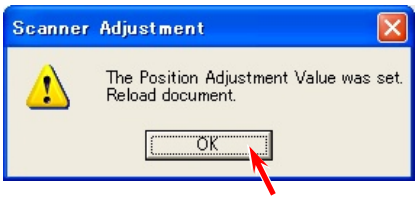
If you make any **unintended clicks** on the image, press [Close] and go back to step 8.

14. Press [Check] then [Set].

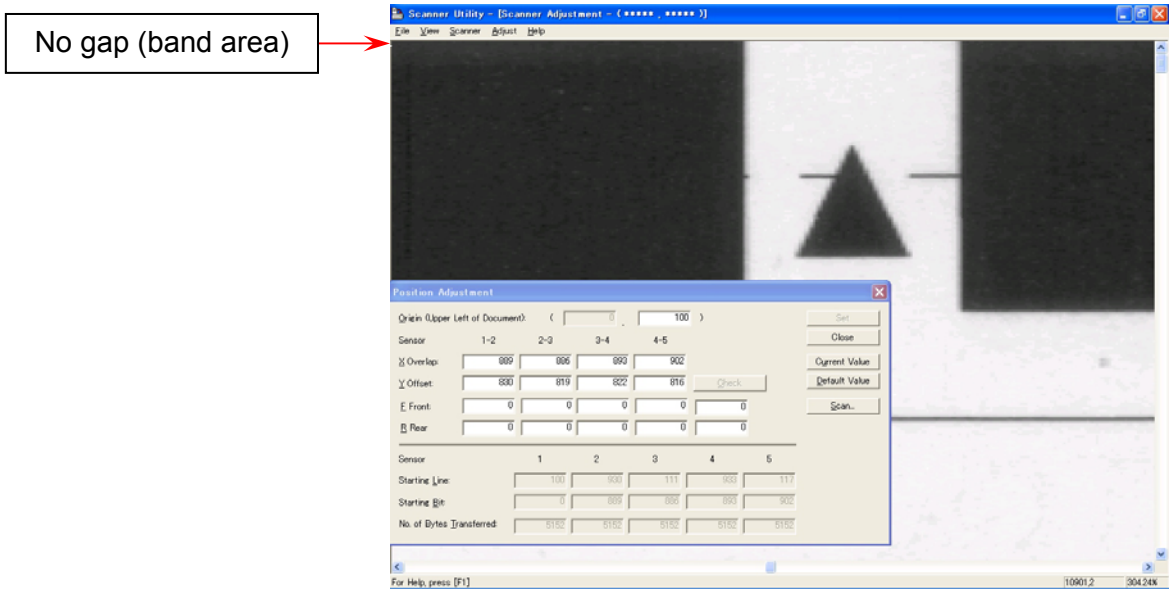




15. A dialog appears to prompt confirmation of the result. Press [OK].

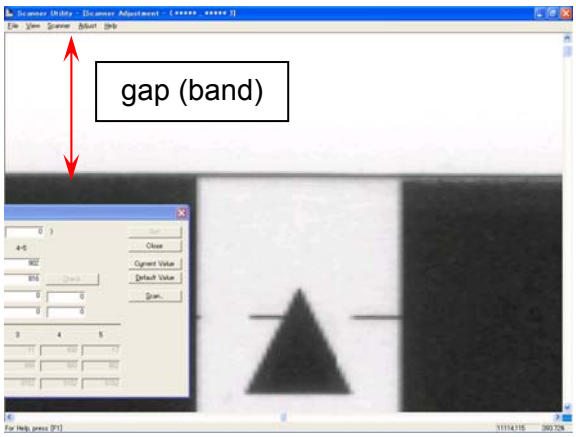


16. Start Adjust Position again. Make a rescan of Stitch Adjustment Chart.
Confirm the result of the adjustment. If the gap disappears, LE positioning is completed.

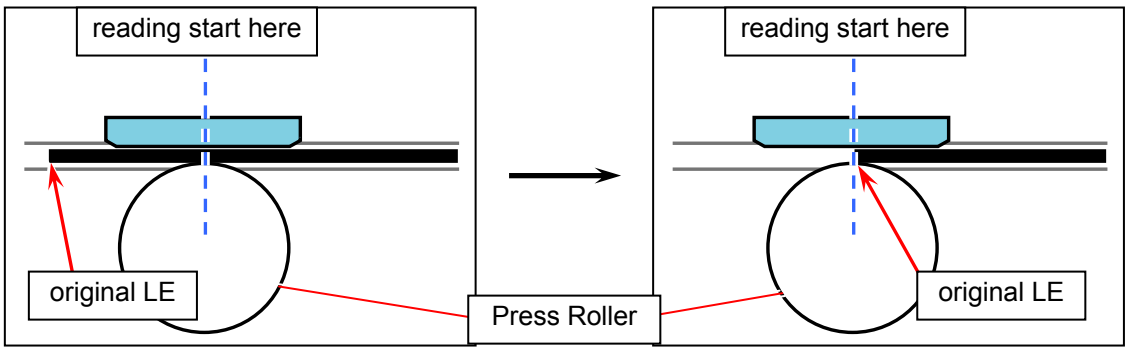


NOTE

If the rescan image still has a gap, go back to step 11 to remove it completely.
Every scan image has a blank band on the leading edge by the gap.
Be sure to remove the gap completely.



If the image on the leading edge is missing, the reading start is too late. Go back to step 4.

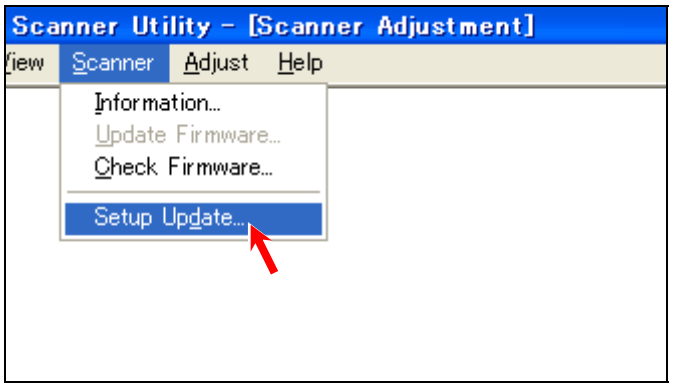


17. The entire Position adjustment is completed.

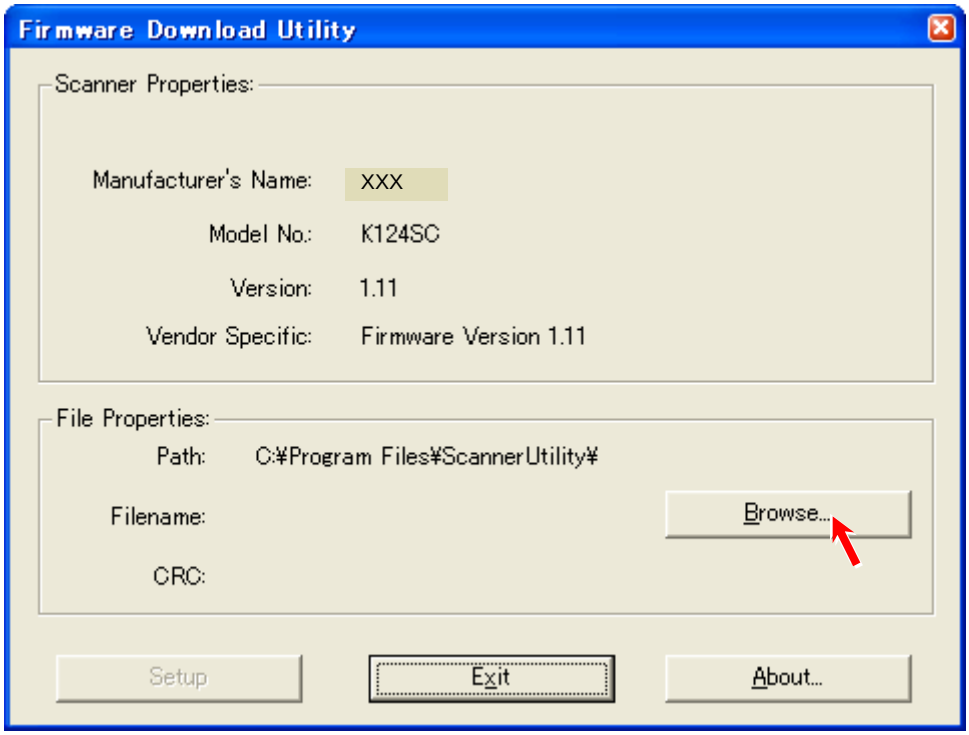
8. 13. 5 Updating Scanner Firmware

It is possible to install a new Firmware to the TASKalfa 4820w with Scanner Utility.

1. Select [Scanner] - [Setup Update].

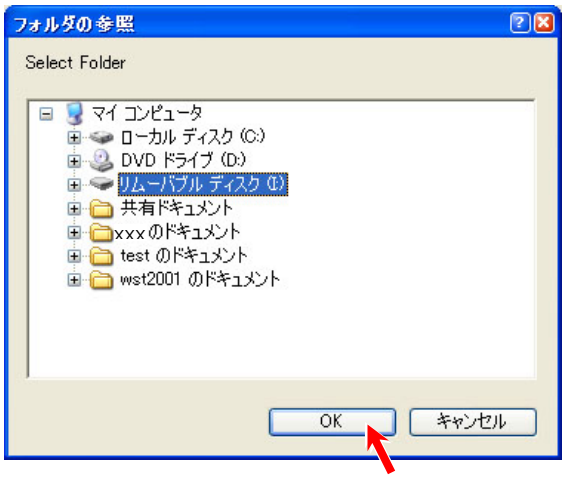


2. Press [Browse].

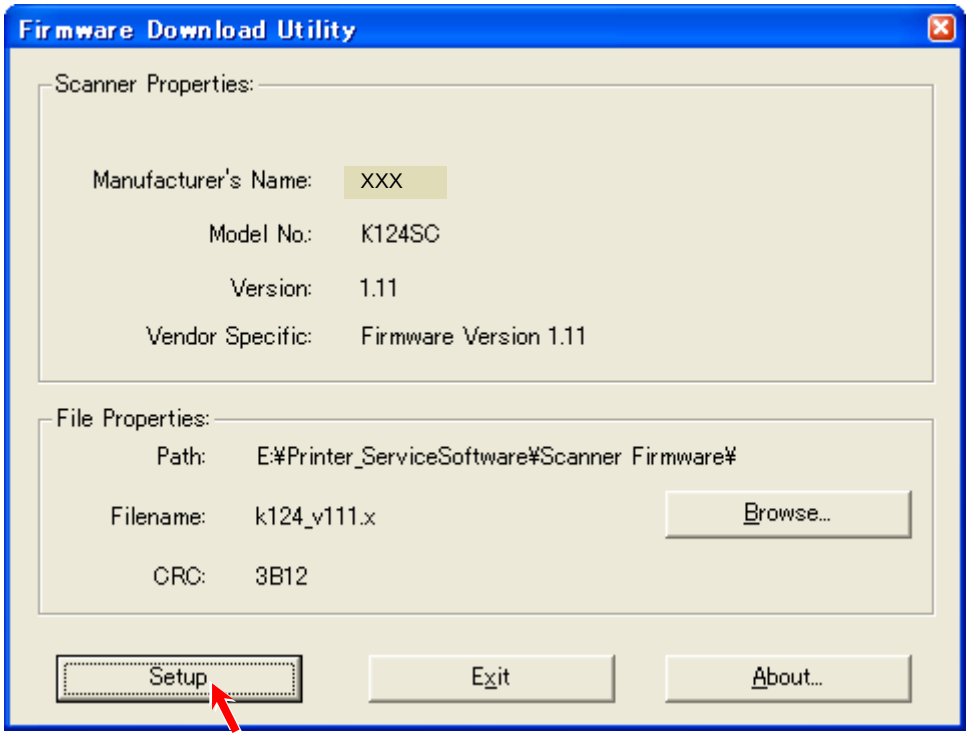


This is just an example.
Revision Level (Scanner Firmware version) may vary from the actual one.

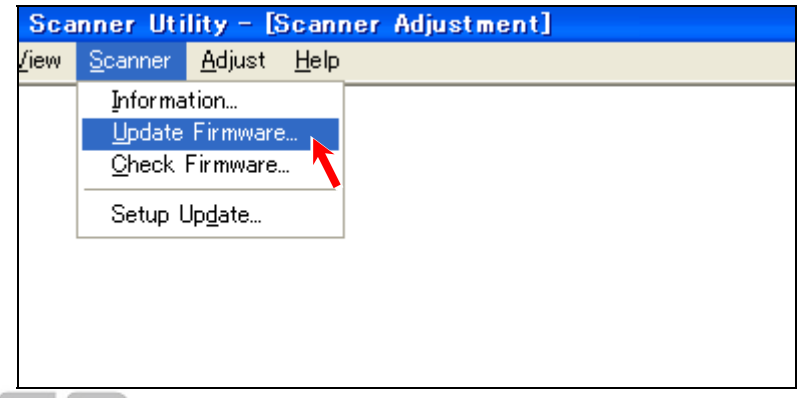
3. Locate a folder where a firmware file is stored, and press [OK].



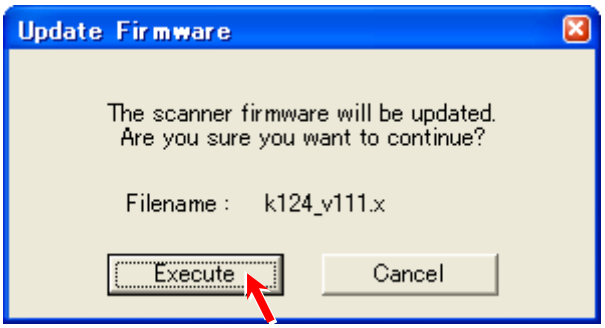
4. Confirm the selected file name and press [Setup].



5. Select [Scanner] - [Update Firmware].



6. Confirm the selected file name and press [Execute].



7. The transmission of the firmware file starts.
   After the completion of transmission, turn off and on the machine power.

8. 13. 6 Registering S/N to Scanner Main Board

The scanner unit's Main Board stores its serial number. As a service part Main Board has no S/N information, you will have to write the printer's serial number (with 8 digits) to the Main Board.

> **NOTE**
>
> Scanner Firmware 1.21 or higher, and Scanner Utility 1.51 or higher are required.

> **NOTE**
>
> A Main Board with no S/N written or with a wrong S/N would be detected as an incorrect hardware configuration. Some license key codes may not be accepted.
>
> **You cannot enter another S/N any more once registered, including correction of a wrong entry.**

1. Open the Properties panel of Scanner Utility's shortcut.

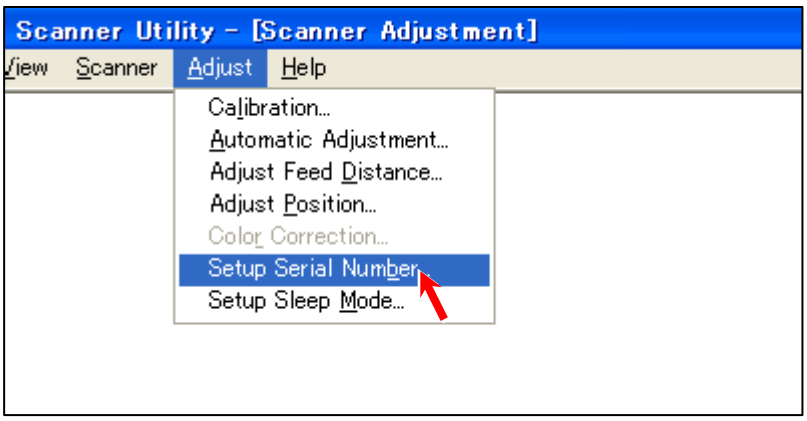
2. Add the following text to the end of the target path.

"(one byte space)/Service"

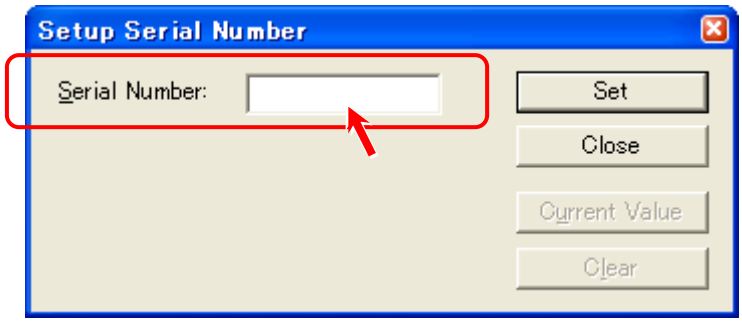
3. Press [OK].

4. Run Scanner Utility.

5. Point [Adjust] and click [Setup Serial Number].



6. Enter your printer's serial number (8 digits).

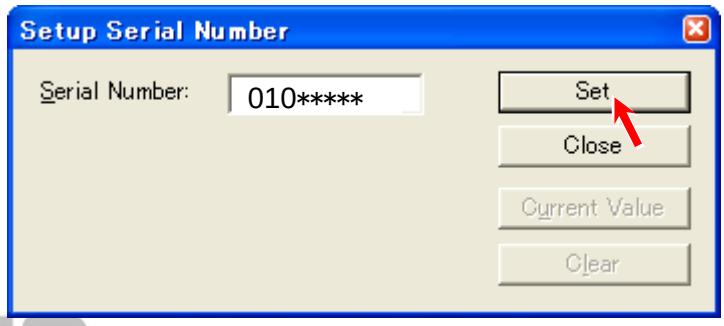


NOTE

The 8 digits serial number which should be entered depends on the product code. Replace the first 5 digits of the machine serial number to the 3 digits number which is fixed as follows. Last 5 digits are same as the serial number of the machine.

- NLZ** -> 010
- NM2** -> 020
- NHP** -> 030
- NM1** -> 040
- NPG** -> 050

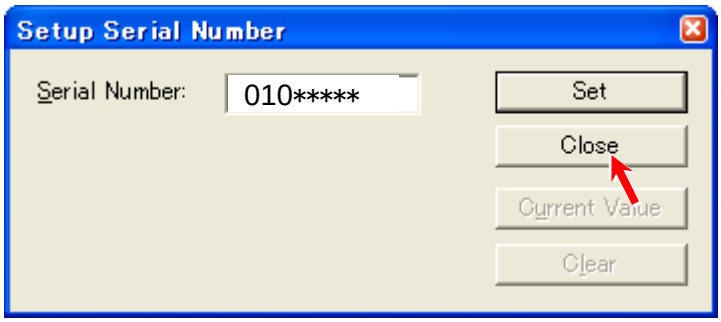
7. If you are sure that the entered serial number is correct, press [Set].



NOTE

Your entry is not finalized yet by pressing [Set].

8. If you are sure that the entered serial number is correct, press [Close].

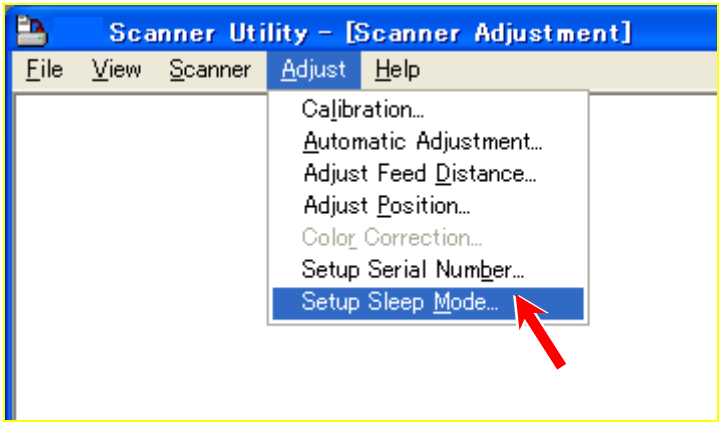


> **NOTE**
>
> Your entry will be written to the Main Board by pressing [Close].
> Once a serial number has been registered, you cannot enter another serial number.

8. 13. 7 Scanner Assembly Sleep

Scanner Assembly has the ability to enter sleep mode individually based on the scanner firmware. Keep its switch setting unchanged from the factory default.

> **NOTE**
>
> Scanner Firmware 1.21 or higher, and Scanner Utility 1.51 or higher are required.

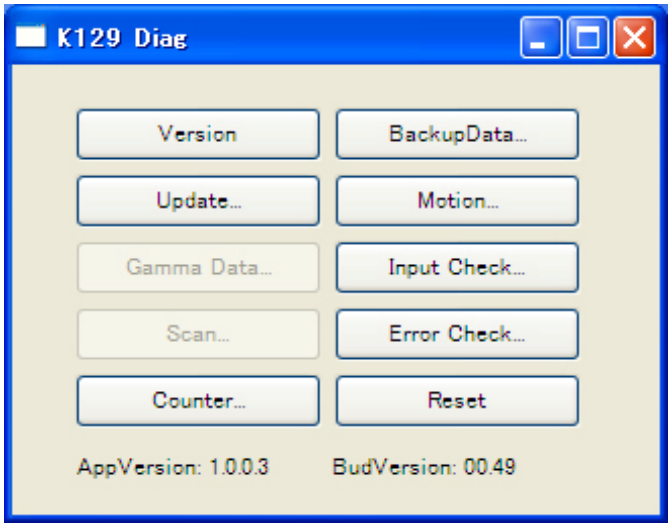


8. 14 K129 Diag (For New Scanner)

8.14. 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 can run on a service PC, the customer’s PC and the “IPS (Printer’s controller) with its touchscreen” as well.



K129 Diag Home (version 1.0.0.3.49
or equivalently said as 1.0.0.3 BUD 00.49)

K129 Diag is required when;

- the scanner’s 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 an existing backup data to the scanner (= restore)
- you want to confirm the detailed error status
- you want to upgrade the firmware...

NOTE

(1) The screenshot images in Chapter 8 may vary by system configuration / software version. Shown with available options.

(2) This chapter uses K129Diag.exe on a service PC for example. It can run on the customer’s PC (scanner controller) or the supported IPS.

8. 14. 1. 1 K129 Diag System Requirements

- Microsoft Windows XP / Vista 32 bit, or Windows 7 64 bit / 32 bit Operating System
- USB 2.0 hardware support

* No warranty is given as to the entire functionality of K129 Diag on any system with the above operating system.

NOTE

Get the latest (or the proper version of) **K129Diag.exe** and save it to any available storage on your PC / removable storage. (no change to the registry required)

As of September 2012: USB Driver version 1.0.0.4 / K129 Diag version 1.0.0.3.49

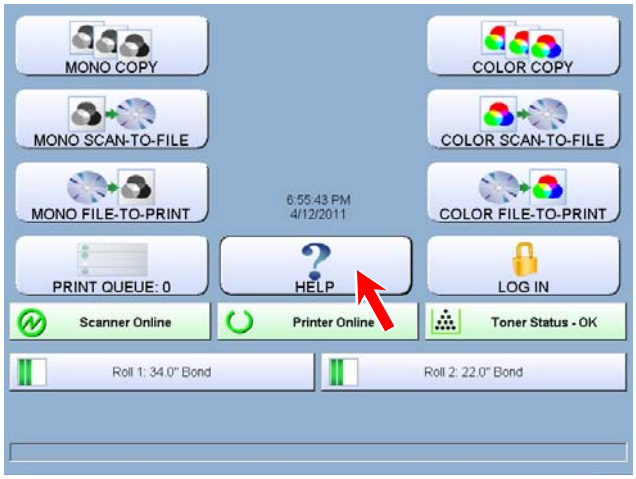
8. 14. 1. 2 K129 Diag Tree Diagram of Screen Hierarchy

Grayed items are not supported for field service.

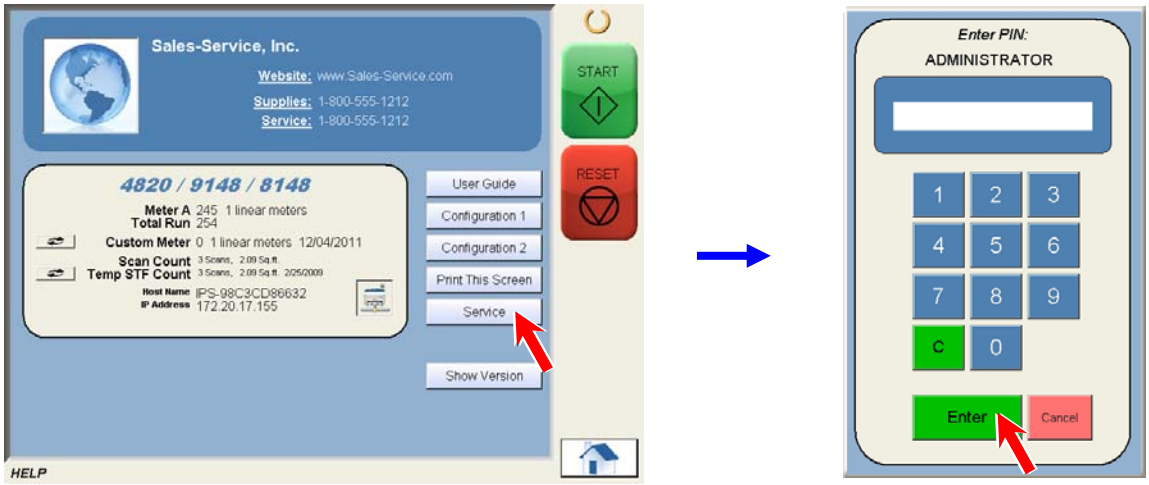
- **Home**
  - **Version:** view software version of CPU / FPGA / USB firmware
  - **Backup Data:**
    - Save / Restore Backup Data
    - Edit Backup Data
    - Save / Restore Shading Data
  - **Update:**
    - Send CPU firmware
    - Send FPGA firmware
    - Send USB communication firmware
  - **Motion:**
    - 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

8.14. 2 Starting K129 Diag

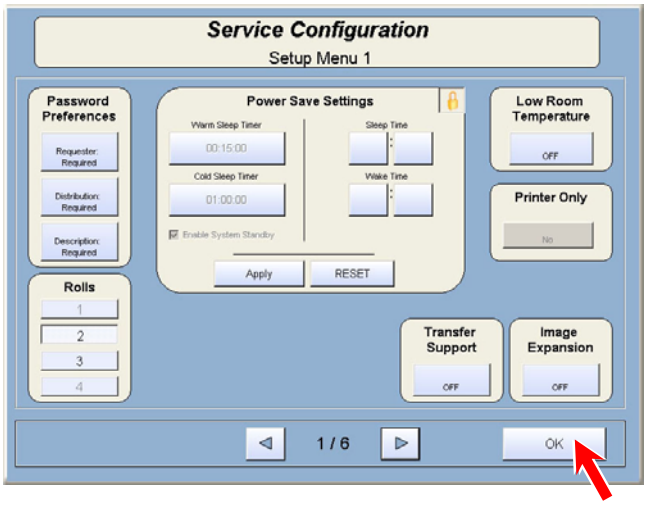
1. Press [? HELP] on the Home screen.



2. Press [Service]. Input “8495107” and press [Enter].

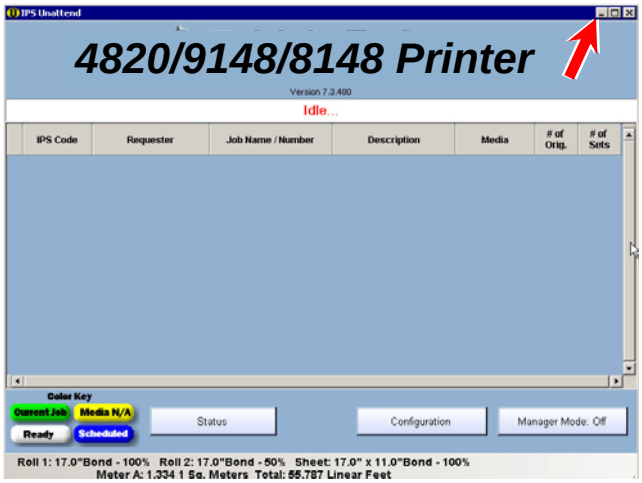


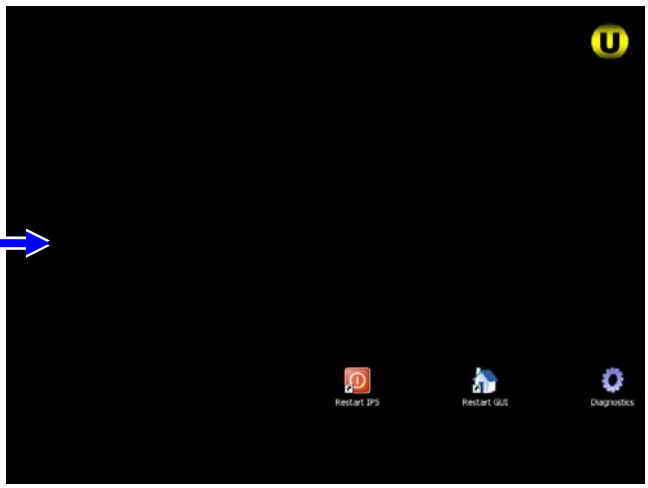
3. Service Configuration screen will appear. On “Setup Menu 1”, press [OK].



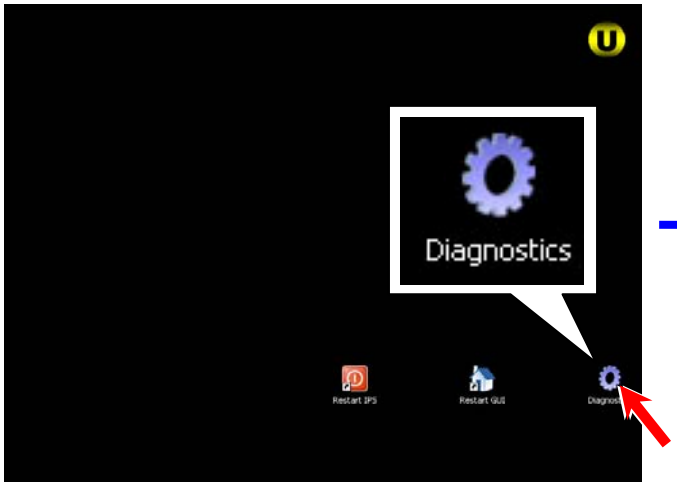
4. Press [Reset].

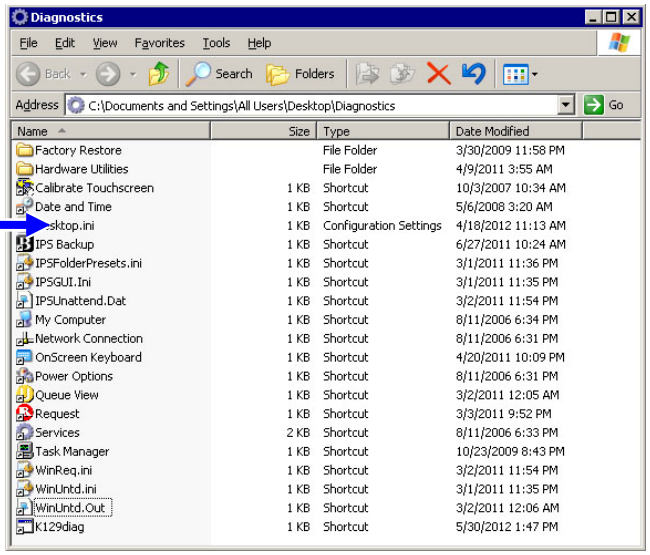
5. Minimize the “IPS Unattend” window.



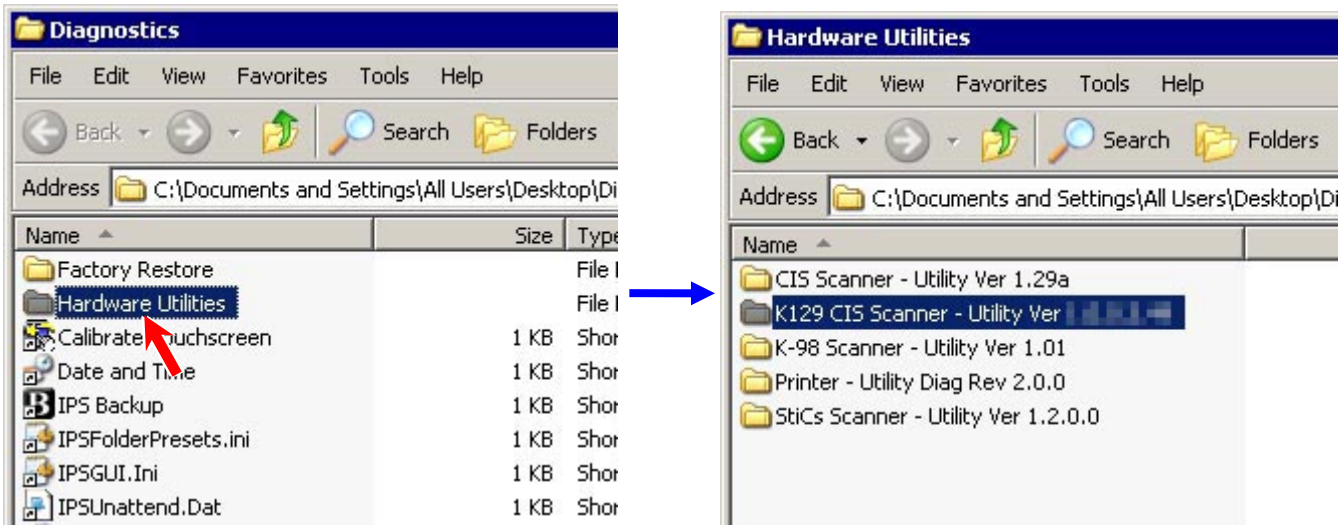


6. Open “Diagnostics” folder (gear icon) in the lower right of the screen.

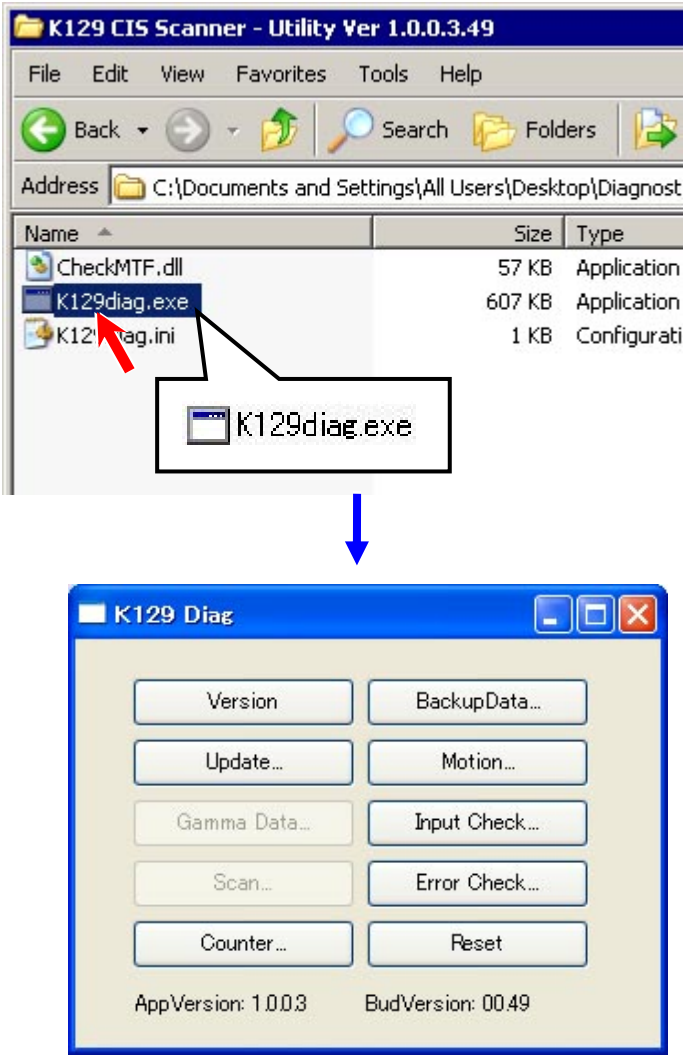




7. Double click [Hardware Utilities] and [K129 CIS Scanner – Utility Ver.X.X.X.X.XX]..



8. Run “K129 Diag”.



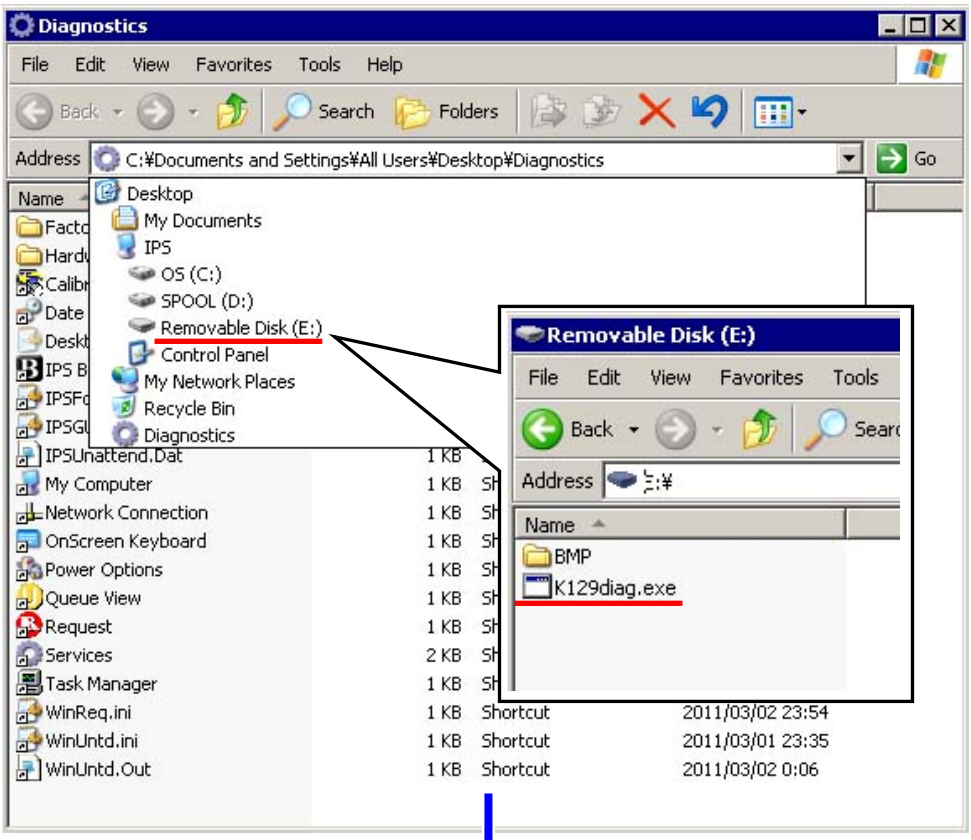
Reference

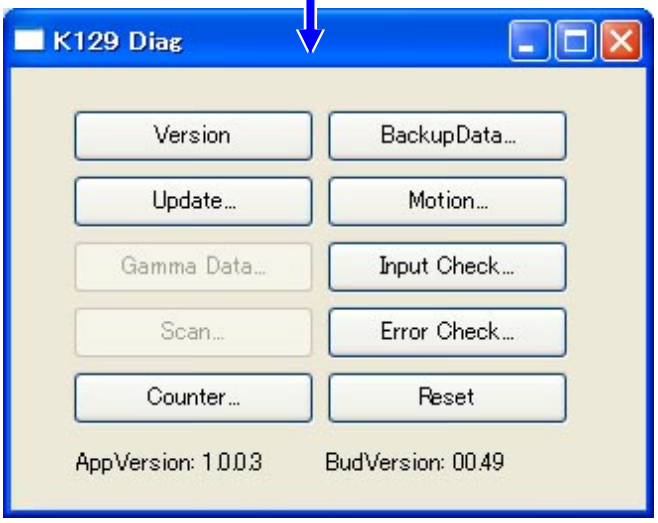
Other ways to run the "K129 Diag" are described on the next page.

Reference

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

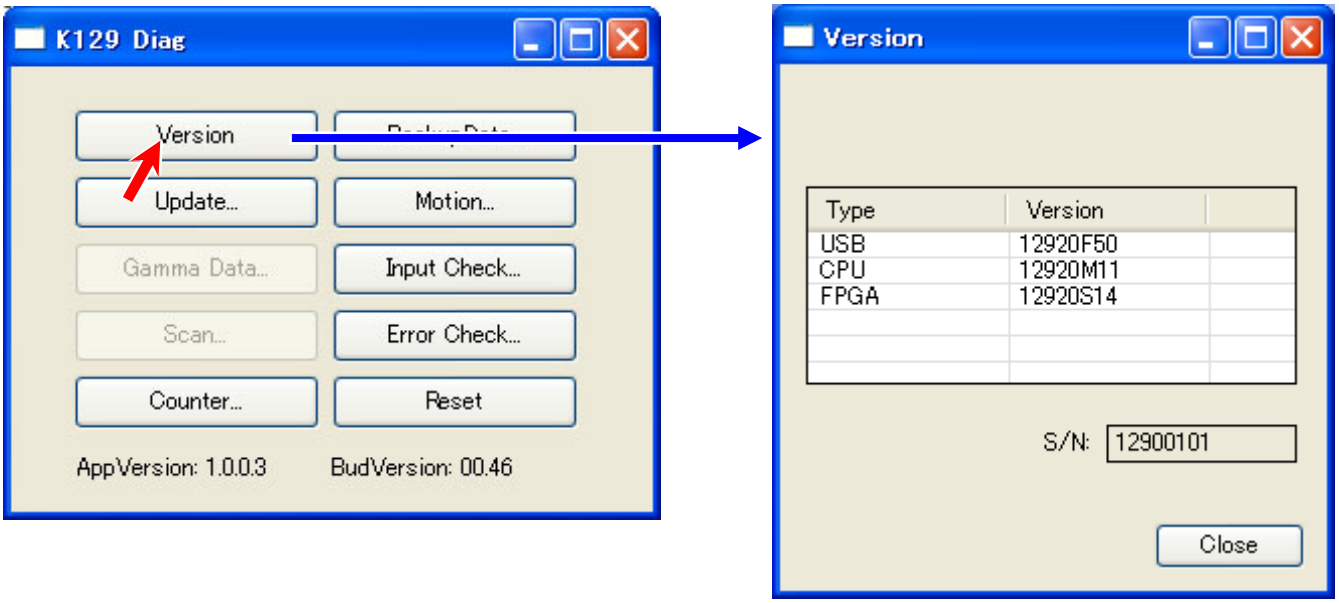
2. Select "Removable Disk", and then run "K129 Diag.exe".





8.14. 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	12920**F****
CPU	hardware control software	12920**M****
FPGA	image processing software	12920**S****

Another information is the equipment’s serial No.

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

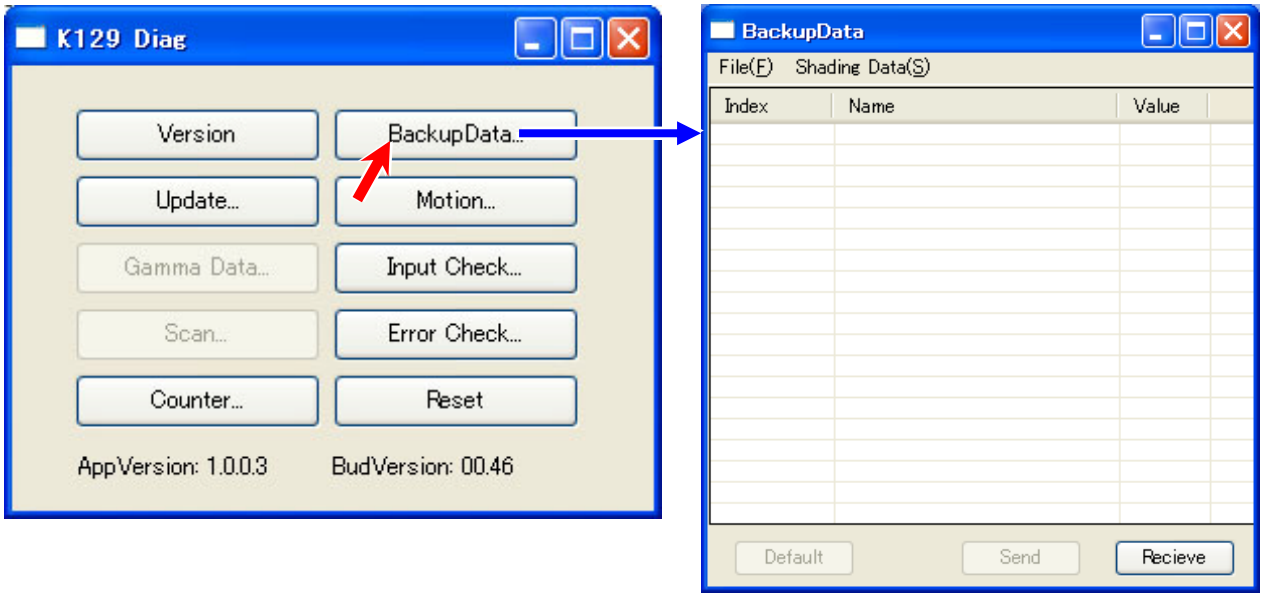
8.14. 4 Backup Data

Setting items regarding the scanner firmware and their setting values is called “Backup Data = BUD (BackUpData).”
Backup Data can be changed (= can enter a setting value), saved as a backup purpose (= can create a list of the current setting value) and restored (= can import an existing setting value list).

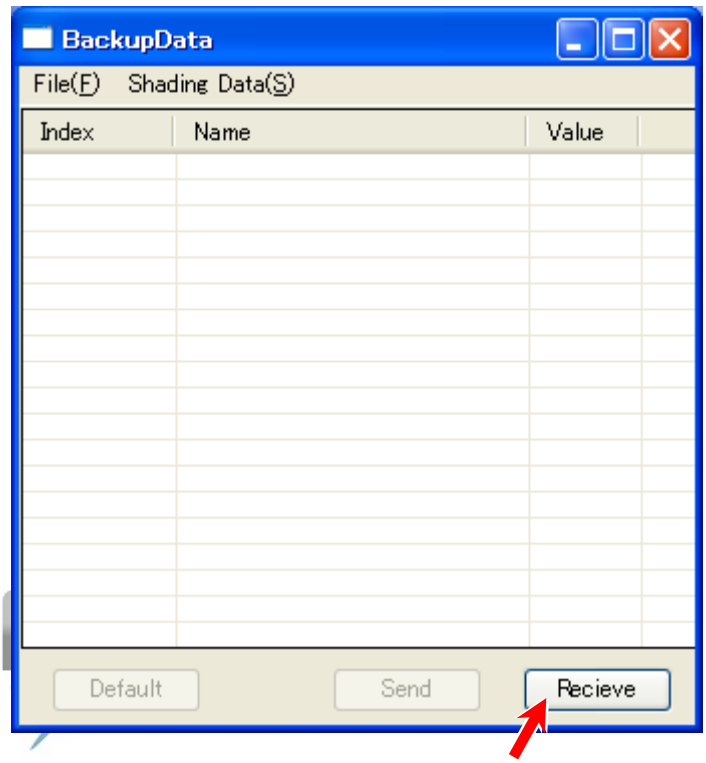
8. 14. 4. 1 Changing Backup Data

> **NOTE**
>
> It is highly recommended to create a backup prior to setting change.
> For backup procedure, see [8.14. 4.2 Saving the Current Backup Data].

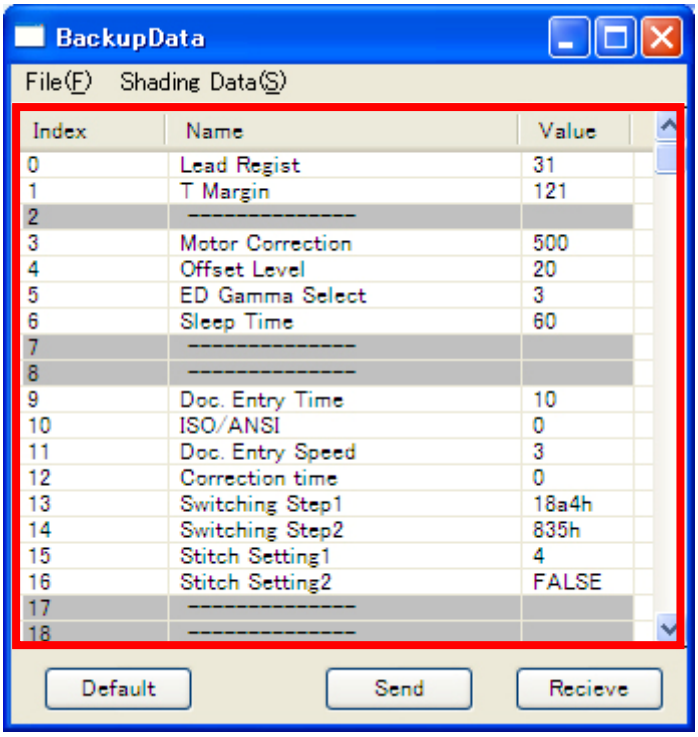
1. Click [BackupData] to recall “Backup Data” sub window.



2. Click [Receive]

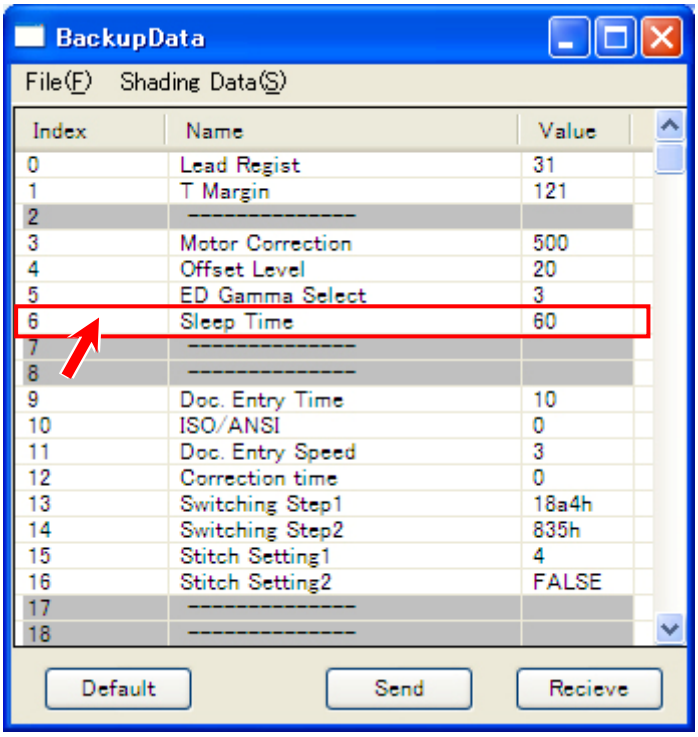


3. The current parameters are retrieved and displayed in the list.



Index	Name	Value
0	Lead Regist	31
1	T Margin	121
2	----------	
3	Motor Correction	500
4	Offset Level	20
5	ED Gamma Select	3
6	Sleep Time	60
7	----------	
8	----------	
9	Doc. Entry Time	10
10	ISO/ANSI	0
11	Doc. Entry Speed	3
12	Correction time	0
13	Switching Step1	18a4h
14	Switching Step2	835h
15	Stitch Setting1	4
16	Stitch Setting2	FALSE
17	----------	
18	----------	

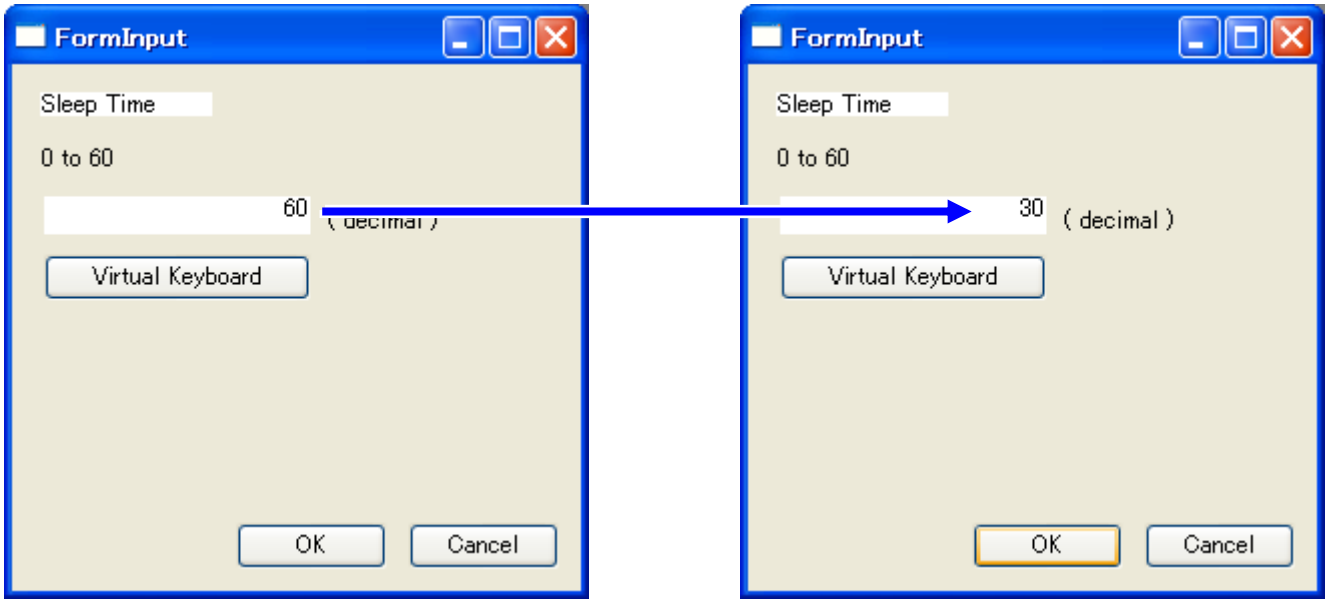
4. Double click on the row you want to change the setting value.
   This section uses “6 Sleep Time 60” for example.



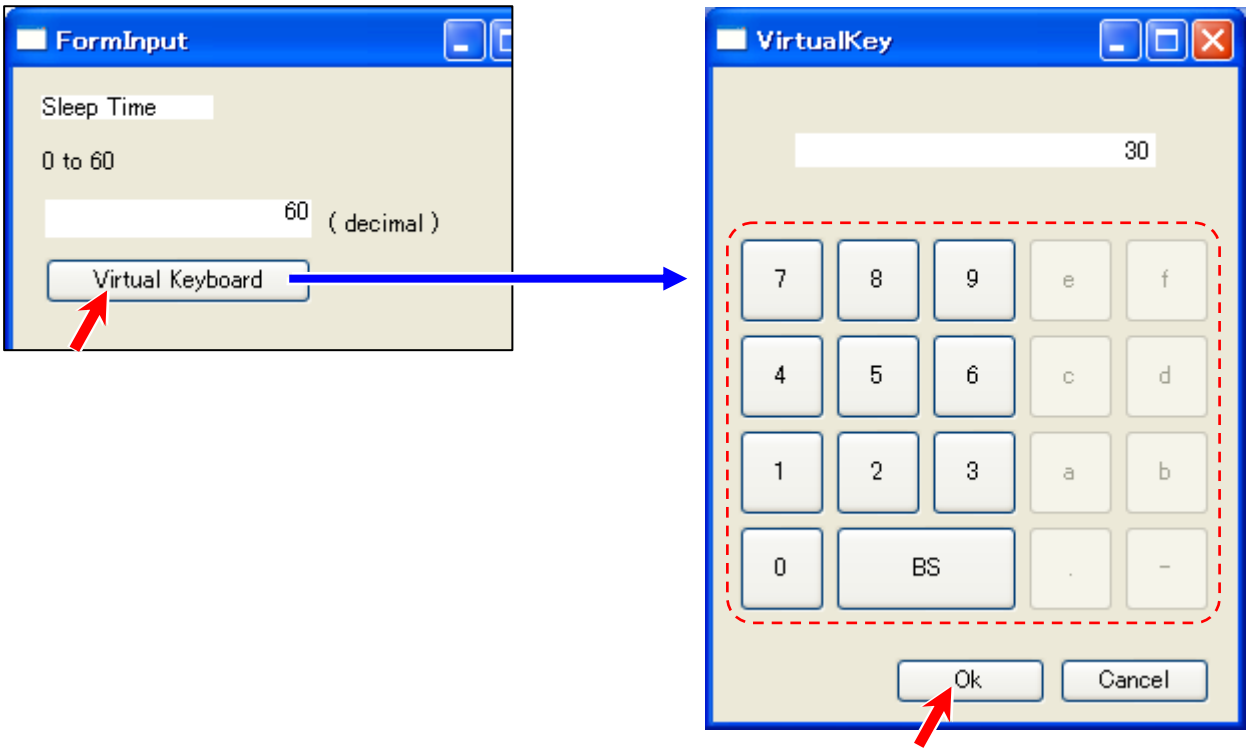
Index	Name	Value
0	Lead Regist	31
1	T Margin	121
2	----------	
3	Motor Correction	500
4	Offset Level	20
5	ED Gamma Select	3
6	Sleep Time	60
7	----------	
8	----------	
9	Doc. Entry Time	10
10	ISO/ANSI	0
11	Doc. Entry Speed	3
12	Correction time	0
13	Switching Step1	18a4h
14	Switching Step2	835h
15	Stitch Setting1	4
16	Stitch Setting2	FALSE
17	----------	
18	----------	

5. “Input” pad pops up. Directly type a value with your keyboard.
The following example shows a setting value change from 60 to 30.

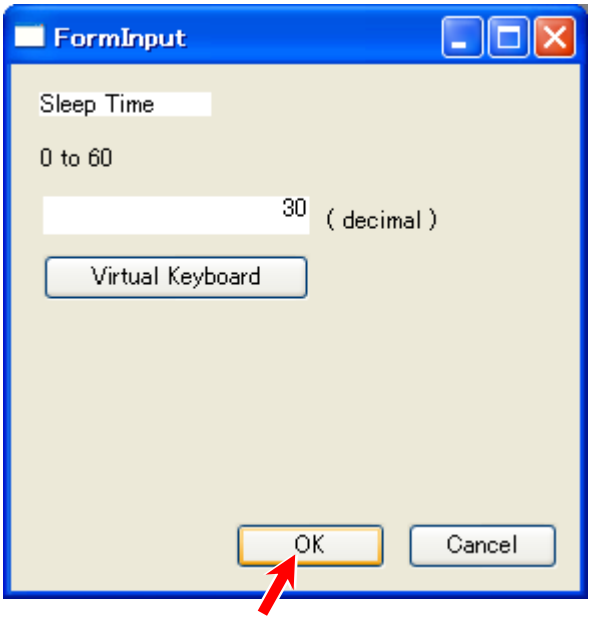
> **NOTE**
>
> Clicking the field displays a caret (flashing “ | ” cursor), but while the caret is flashing, a key entry with your keyboard device is **NOT** accepted.



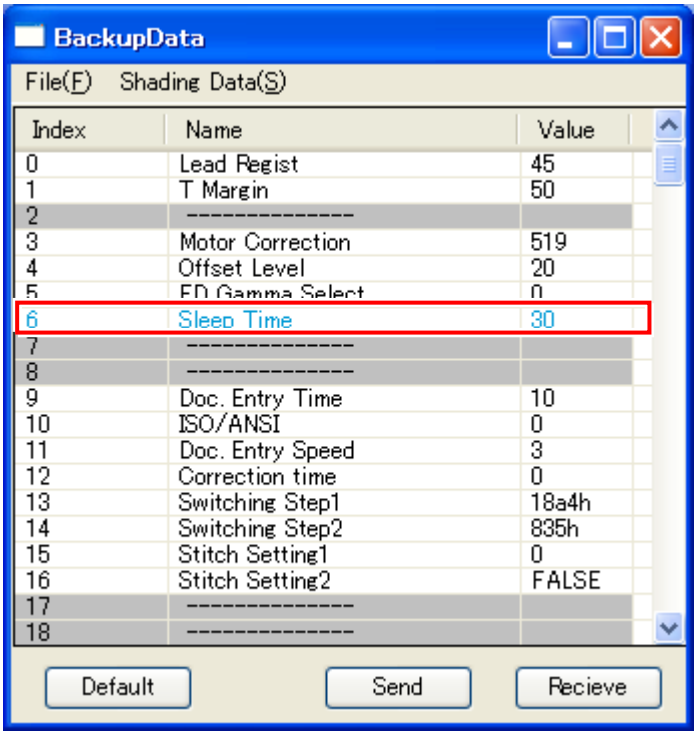
The on-screen keypad is available. Press a number you want to input on the touchscreen.
To finalize the input, press [OK] on the bottom.



6. Click [OK] on the bottom.



7. The setting change you have made is reflected to the list. It will turn blue.

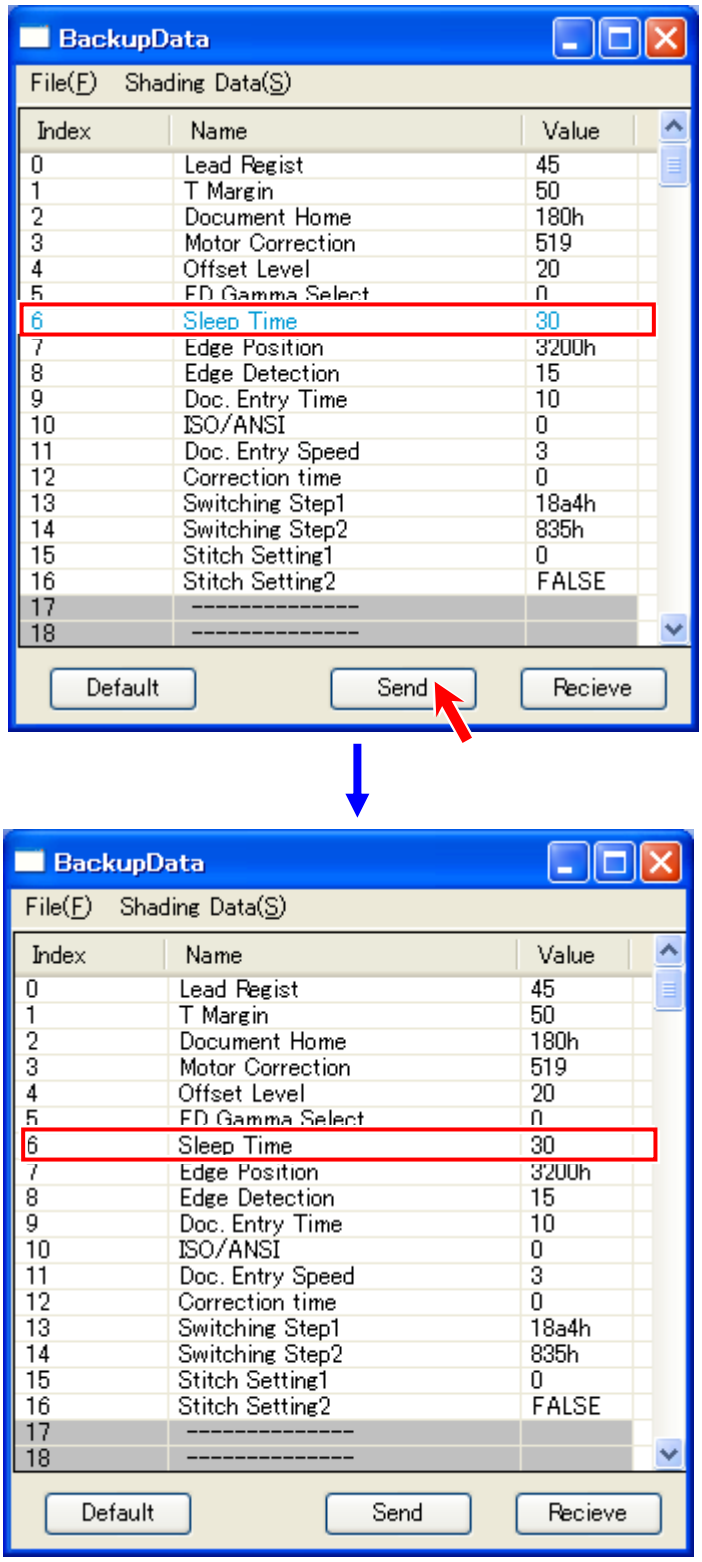


The other parameters can be changed in the same way in this period.

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 scanner's Main Board.
   The following example shows the change "to 30" is now validated.

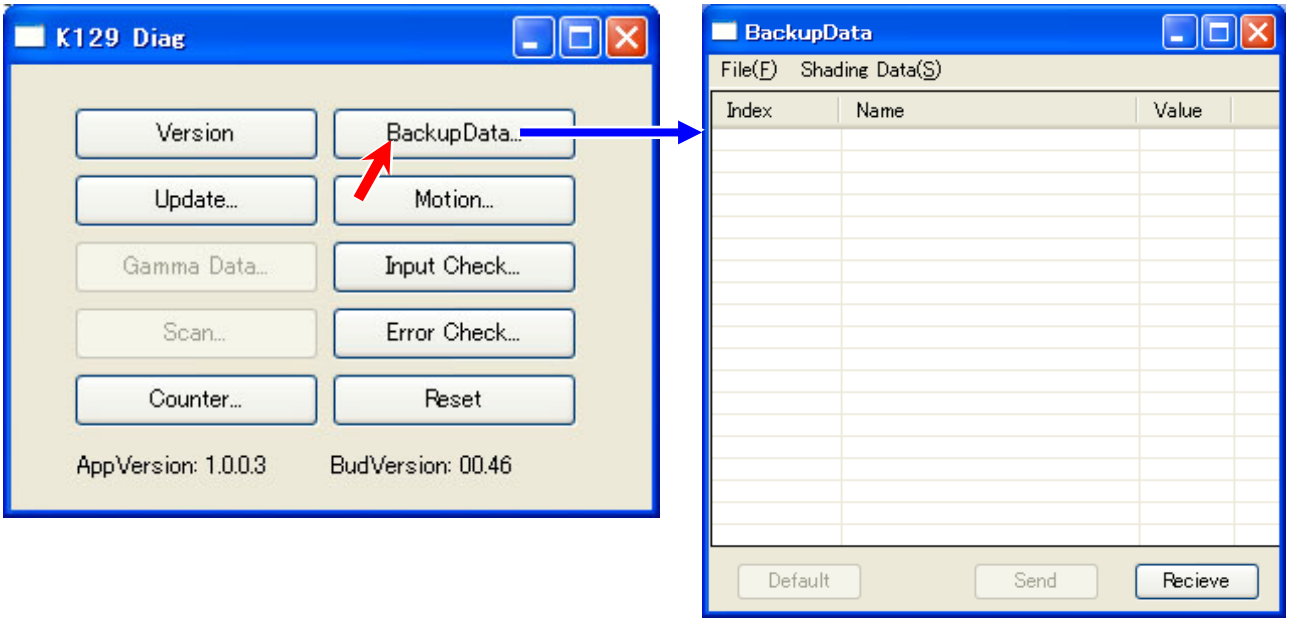


9. To close "BackupData" sub window, click the X button at the upper right corner.

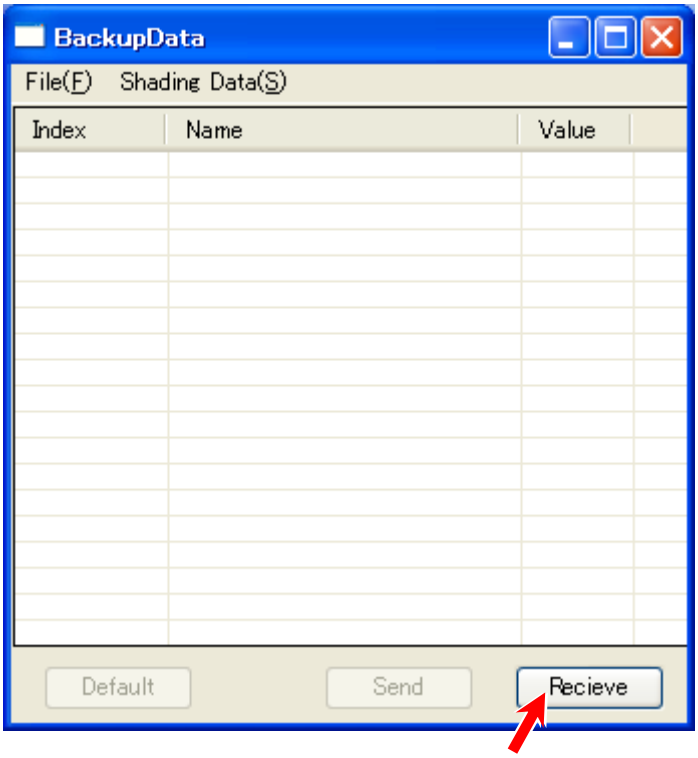
8.14. 4. 2 Saving the Current Backup Data

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 Main Board.

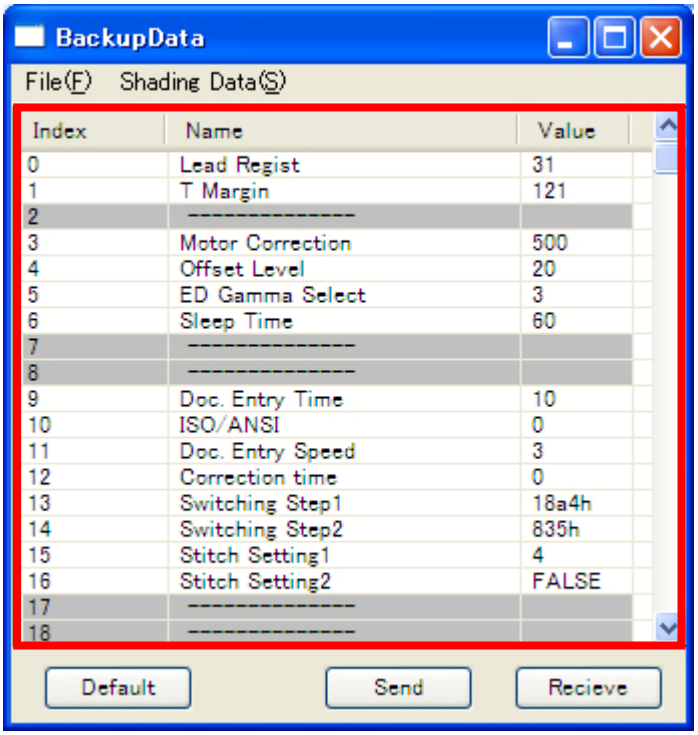
1. Click [BackupData] to recall “Backup Data” sub window.



2. Click [Receive]

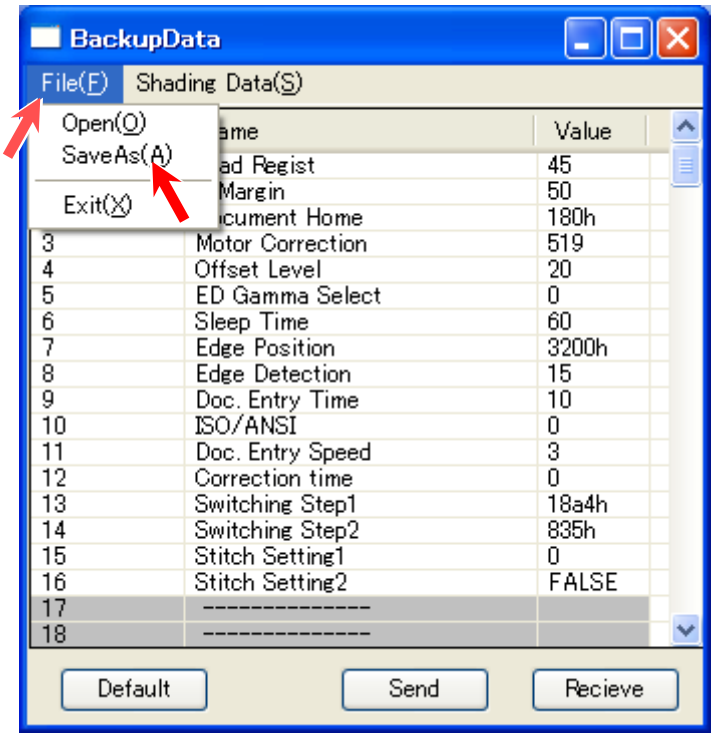


3. The current parameters are retrieved and displayed in the list.



Index	Name	Value
0	Lead Regist	31
1	T Margin	121
2	----------	
3	Motor Correction	500
4	Offset Level	20
5	ED Gamma Select	3
6	Sleep Time	60
7	----------	
8	----------	
9	Doc. Entry Time	10
10	ISO/ANSI	0
11	Doc. Entry Speed	3
12	Correction time	0
13	Switching Step1	18a4h
14	Switching Step2	835h
15	Stitch Setting1	4
16	Stitch Setting2	FALSE
17	----------	
18	----------	

4. Select [File] menu, and then click [Save As].



	ad Regist	45
	Margin	50
	cument Home	180h
3	Motor Correction	519
4	Offset Level	20
5	ED Gamma Select	0
6	Sleep Time	60
7	Edge Position	3200h
8	Edge Detection	15
9	Doc. Entry Time	10
10	ISO/ANSI	0
11	Doc. Entry Speed	3
12	Correction time	0
13	Switching Step1	18a4h
14	Switching Step2	835h
15	Stitch Setting1	0
16	Stitch Setting2	FALSE
17	----------	
18	----------	

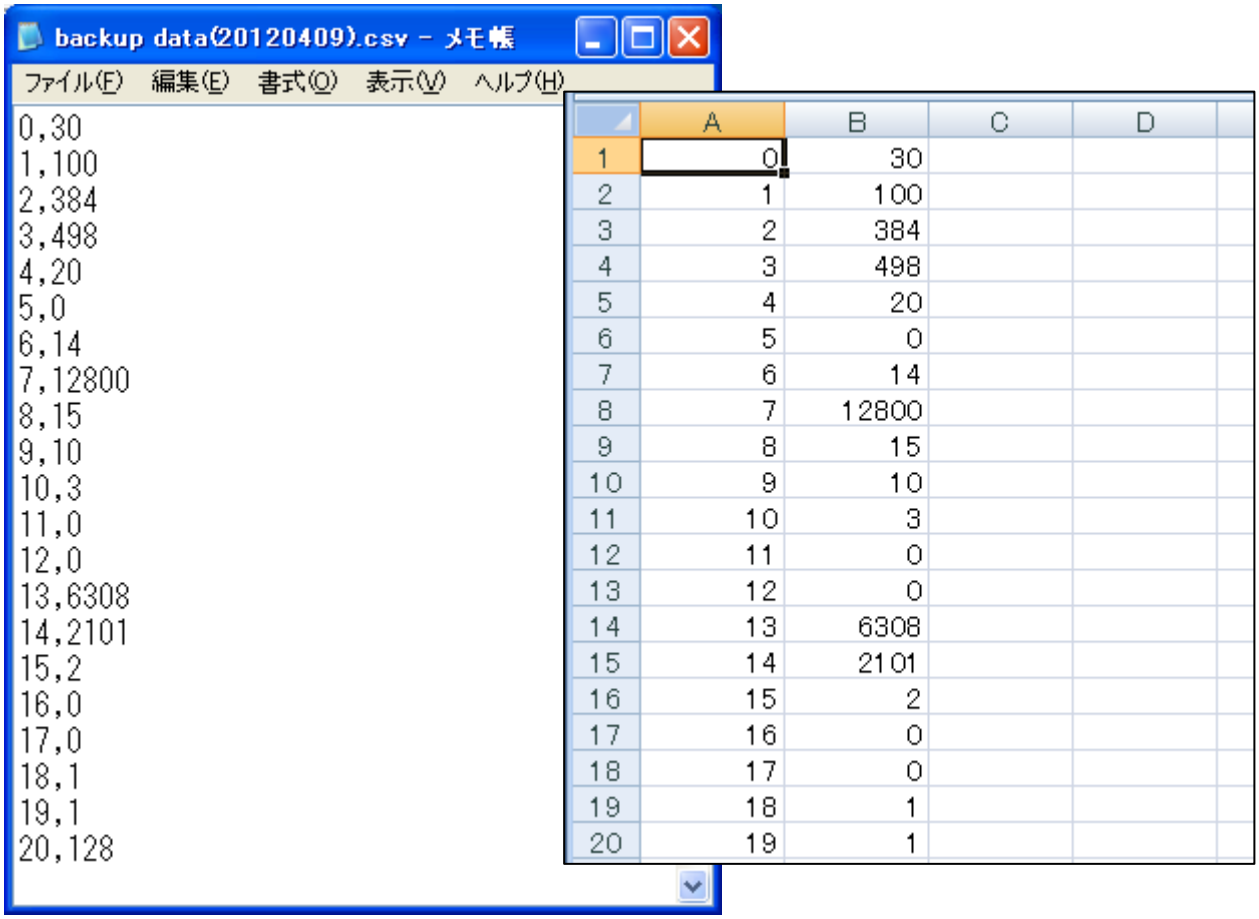
5. Specify a location to save the backup data file. (*.csv)
   You can supply a file name for the csv.

8.14. 4. 3 Editing Backup Data File

You can edit a saved backup data file. (*.csv) Such an edited file can be used for restoring / setting change purpose.

1. Open the backup data file (*.csv) with Notepad or Microsoft Excel for example.

2. (Notepad) You may change the numbers to the right of comma.
   (Microsoft Excel) You may change values in the second column “B”.



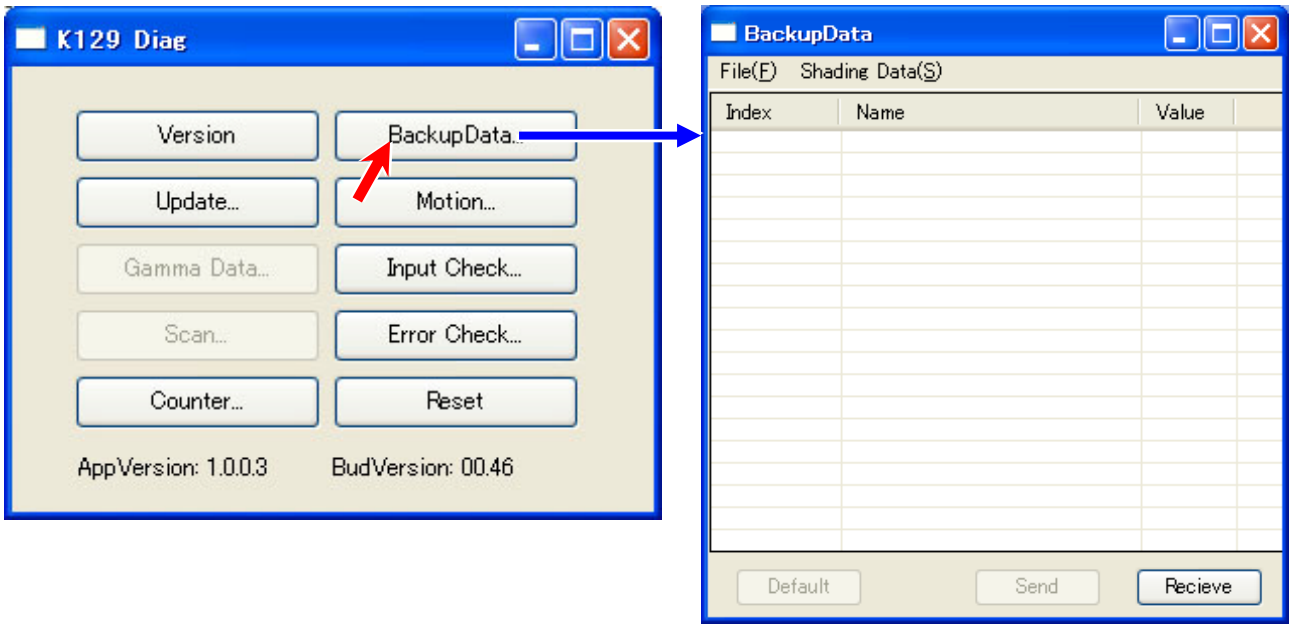
3. Save the file.

4. You can use the file for restoring / setting change purpose.
   Do not delete unchanged lines.

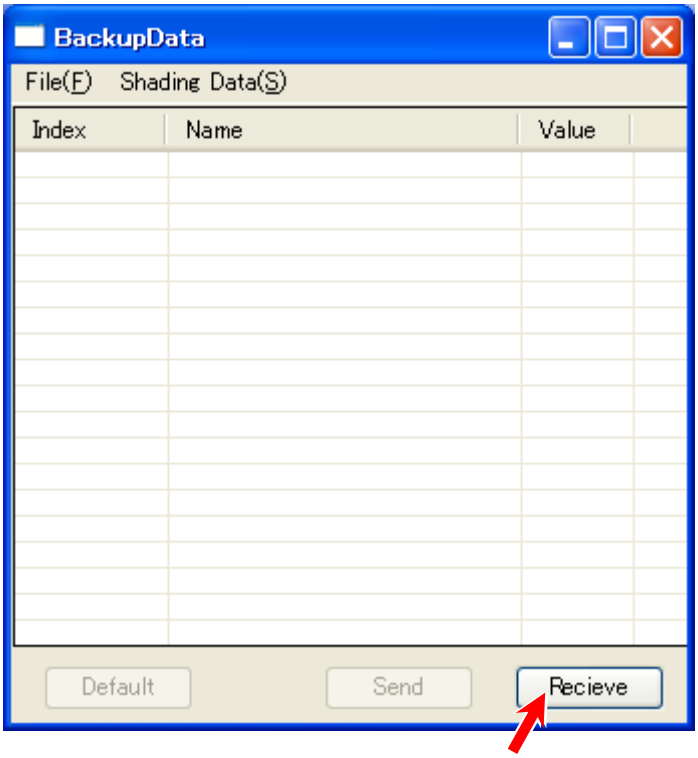
8.14. 4. 4 Restoring Backup Data

Before importing an existing backup data file (*.csv), retrieving the current parameters is required.

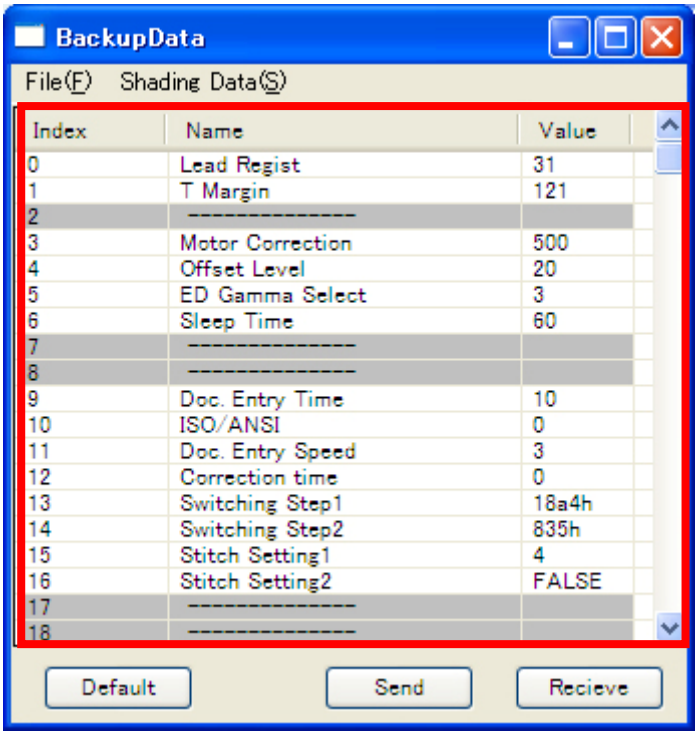
1. Click [BackupData] to recall “Backup Data” sub window.



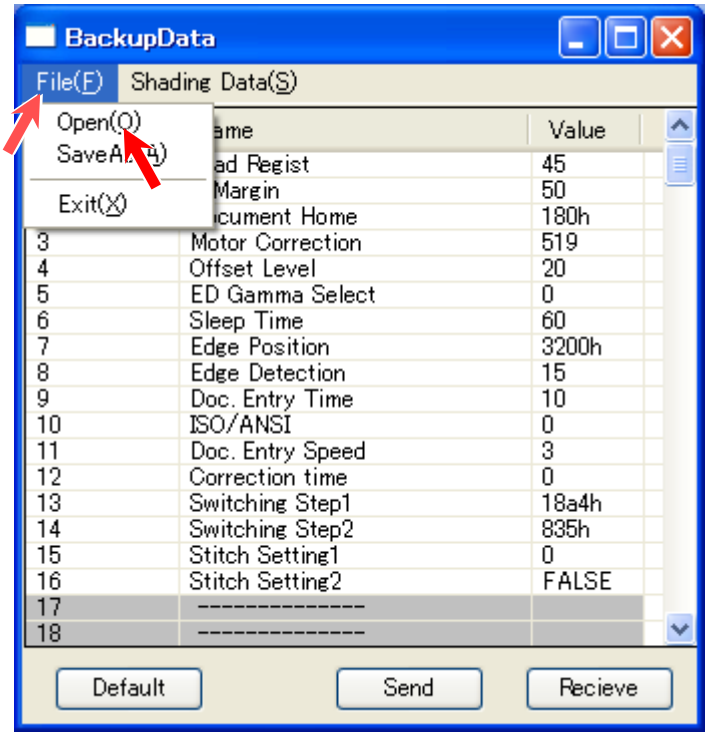
2. Click [Receive]



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



4. Select [File] menu, and then click [Open].

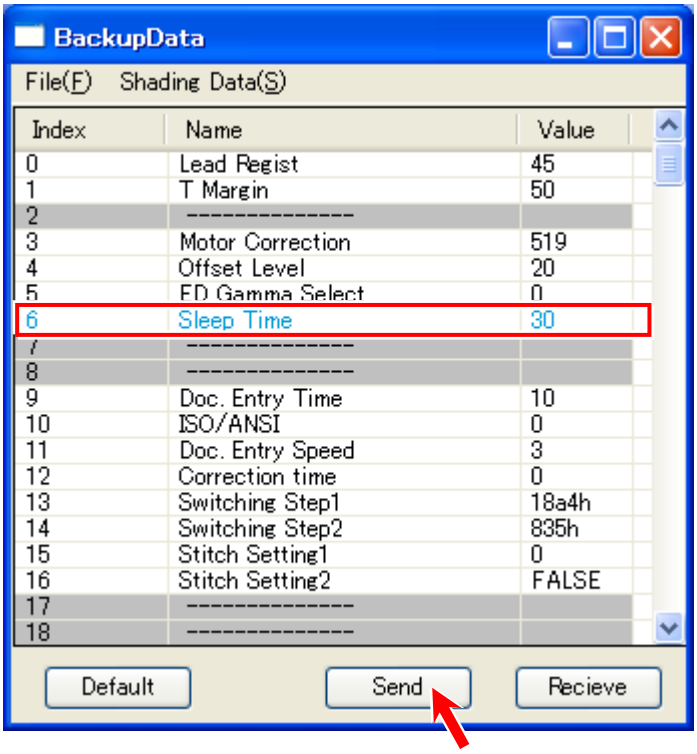


5. Specify a backup data file (*.csv) you want to import.

NOTE

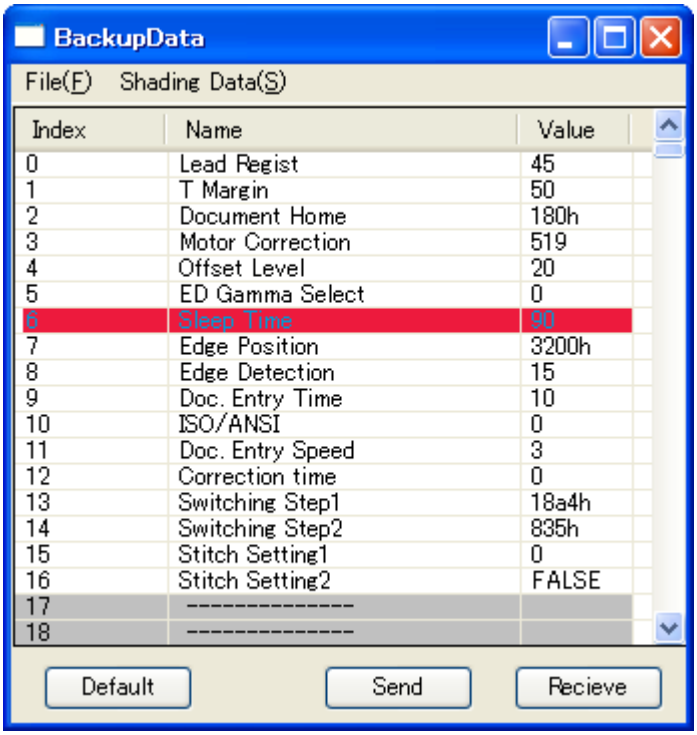
At this time the setting change(s) is not validated yet.

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 scanner's Main Board.



NOTE

If the selected backup data file includes invalid setting value(s), the concerning row in the list will turn red. The scanner does not accept the backup data currently listed in the window.



7. To close "BackupData" sub window, click the X button at the upper right corner.

8.14. 4. 5 Backup Data List

Grayed items are not supposed for field usage.

No.	Subject	Setting Range	Reference	Unit
0	Lead Regist	0 - 60	30	0.1mm
1	T Margin	0 - 200	100	0.1mm
2	reserved			
3	Motor Correction	400 - 600	500	---
4	Offset Level	20 - 100	20	---
5	ED Gamma Select	0 - 4	0	(mode selector)
6	Sleep Time	0 - 60	14	1 minute
7	reserved			
8	reserved			
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	0	1 minute
13	Switching Step1	0x0000 - 0xFFFF	0x18A4	---
14	Switching Step2	0x0000 - 0xFFFF	0x0835	---
15	Stitch Setting1	0 - 4	4	(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)	1 - 255	128	---
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	---
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					
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	---
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	---

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	0 - 0xFFFF	0x03FD	---
202	White Std pxl4	0 - 0xFFFF	0x07FA	---
203	White Std pxl5	0 - 0xFFFF	0x0BF7	---
204	White Std pxl6	0 - 0xFFFF	0x0FD0	---
205	Reserved	-	0	
206	Reserved	-	960	
207	Reserved	-	20	
208	Reserved	-	10	
209	Sampling Width	0 - 2	0	---
210 | 270	reserved	- - -		
271	Correction Block	0 - 1	1	(mode selector)
272	Block Threshold	1 - 255	100	---
273	CIS Slope2	1 - 100	35	---

as of September 2012, firmware M16/S18 applied

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

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.

setting value	Contents
0	----
1	----
2	----
3	TASKalfa 4820w
4	----

NOTE

Do not change the set value [3].

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

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

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.

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	

47 - 51 Luminance

NOTE

Shading will overwrite BUD No.47 to 51.

BUD No.20 to 34 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.52 to 55.

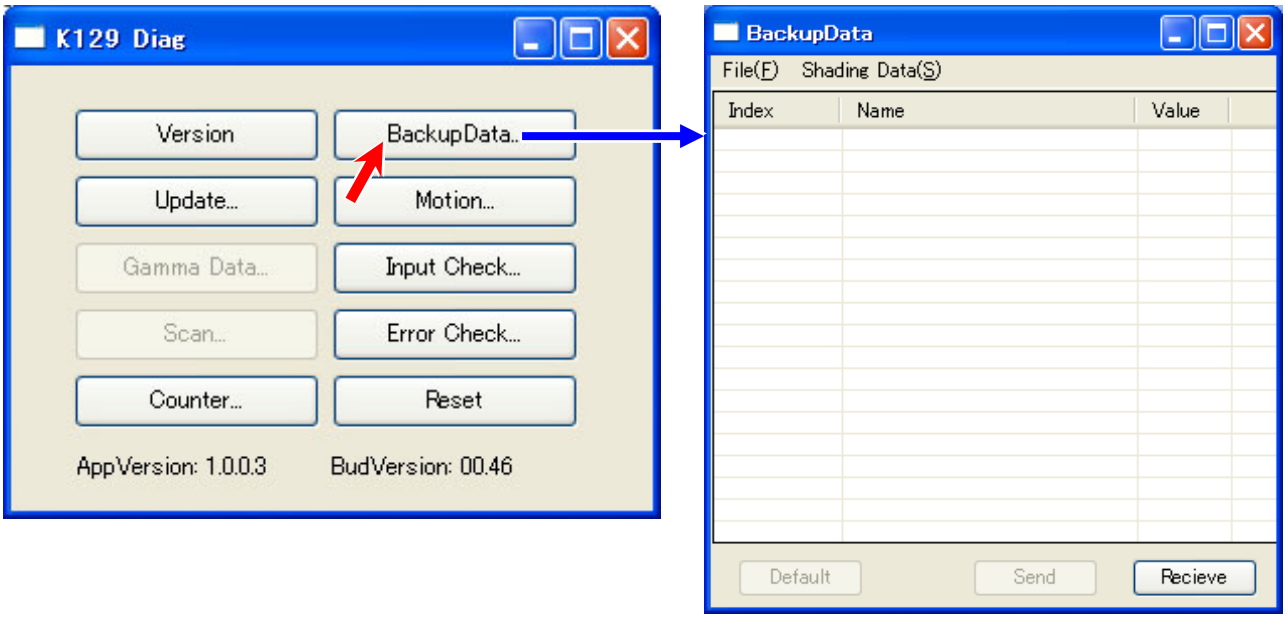
BUD No.56 to 59 are a parameter for pixel shift in sub scanning direction. (vertical = top/bottom) Increasing the value moves the concerning CIS block image to the bottom in 1 pixel. CIS 3 (center) is the reference.
Be noted that Stitching Adjustment will calibrate the possible best values for No.56 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		

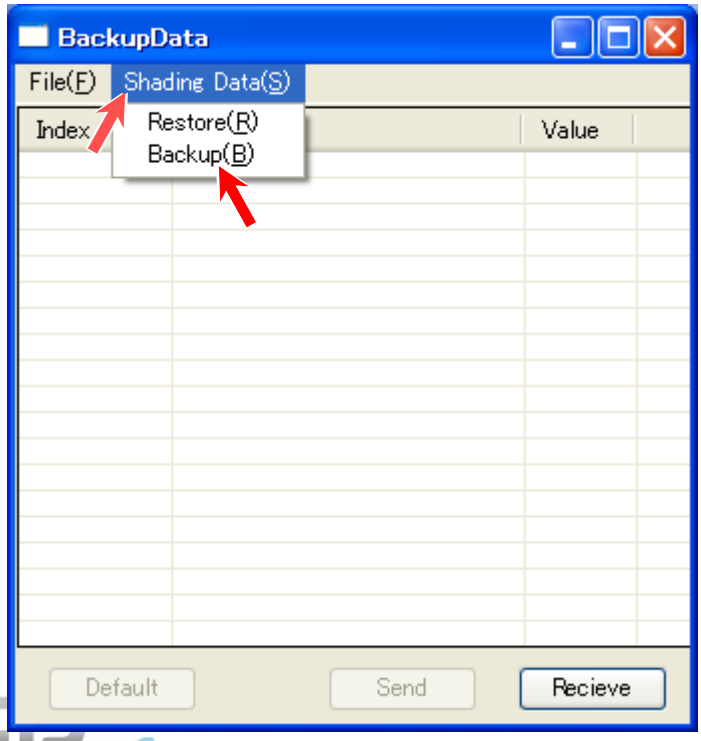
8.14. 4. 6 Saving Shading Data

The current Shading Data (internal parameters for B/W level and image processing) can be saved as a shading data file. (*.bin)
This file will be reused for restoring / replacing the Main Board.

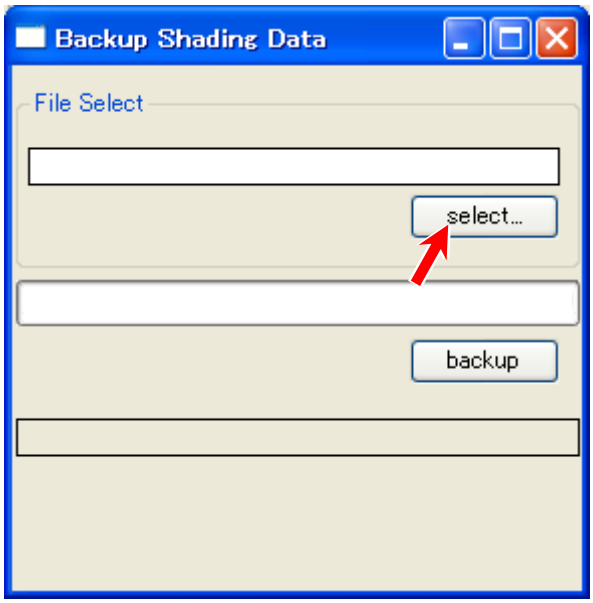
1. Click [BackupData] to recall “Backup Data” sub window.



2. Select [Shading Data] menu, and then click [Backup] to recall “Backup Shading Data” sub window.

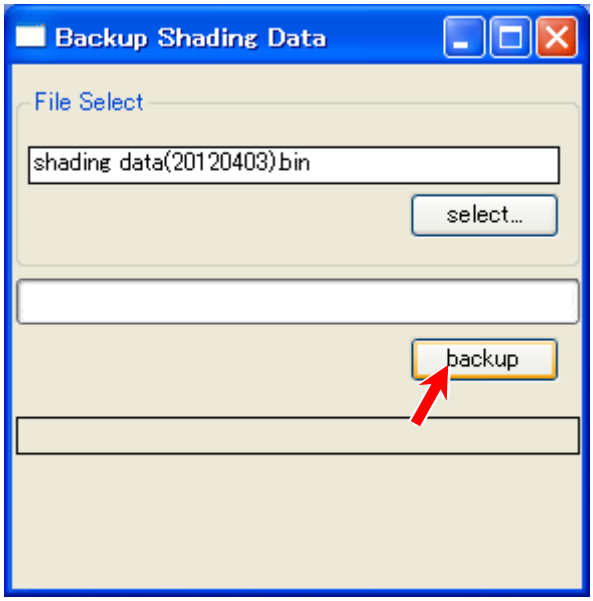


3. Click [select].



4. Specify a location to save the shading data file. (*.bin)
   You can supply its file name.

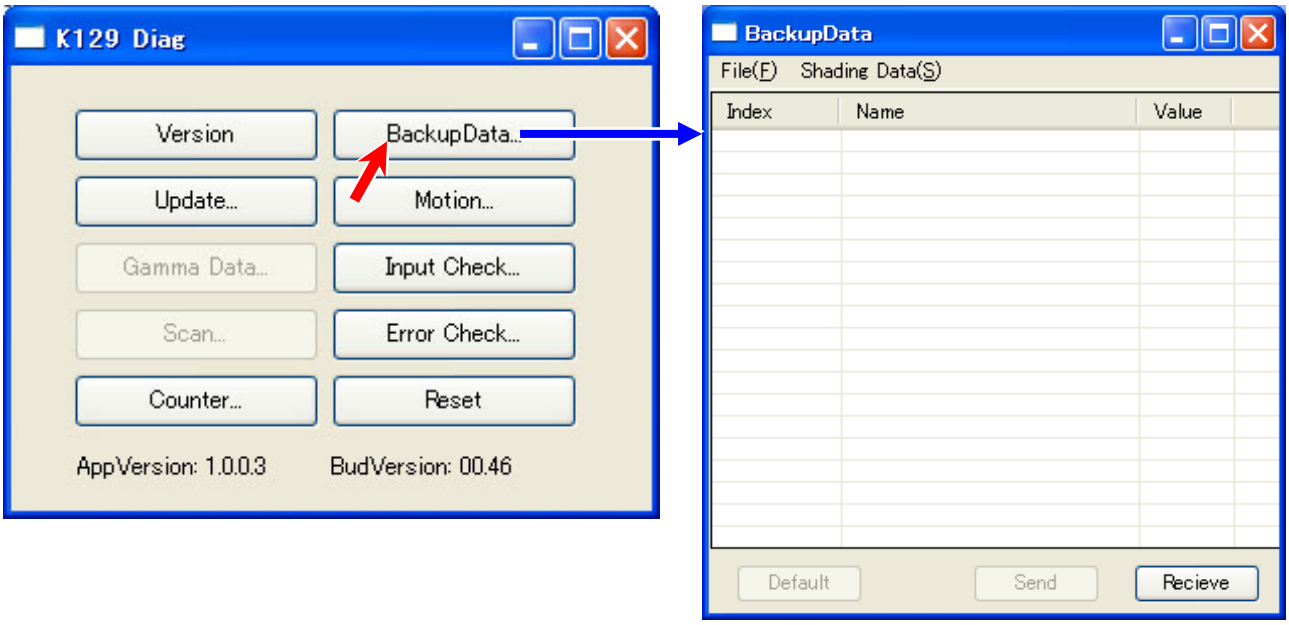
5. The given file name appears in the upper field. Click [backup].



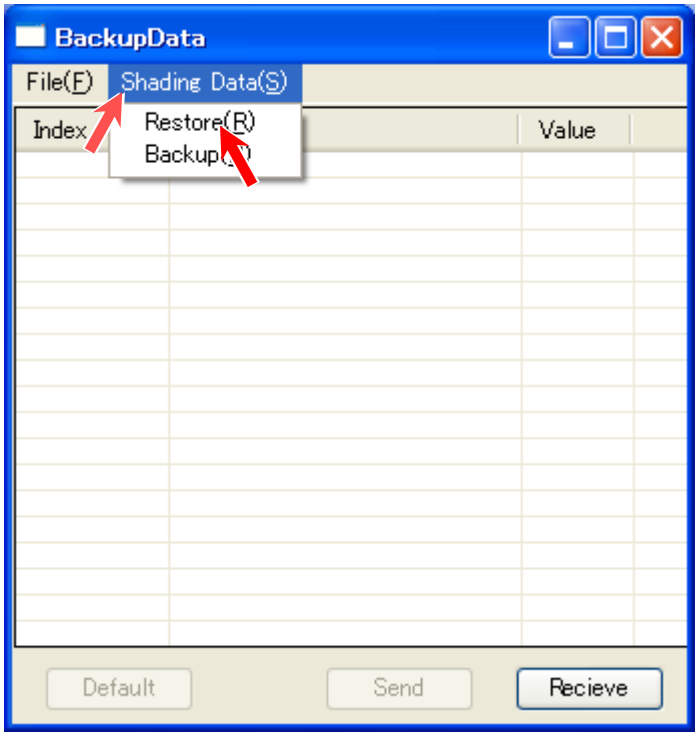
6. When “done” is displayed, saving the file is completed
   Click the X button at the upper right corner to close “Backup Shading Data” sub window.

8.14. 4. 7 Restoring Shading Data

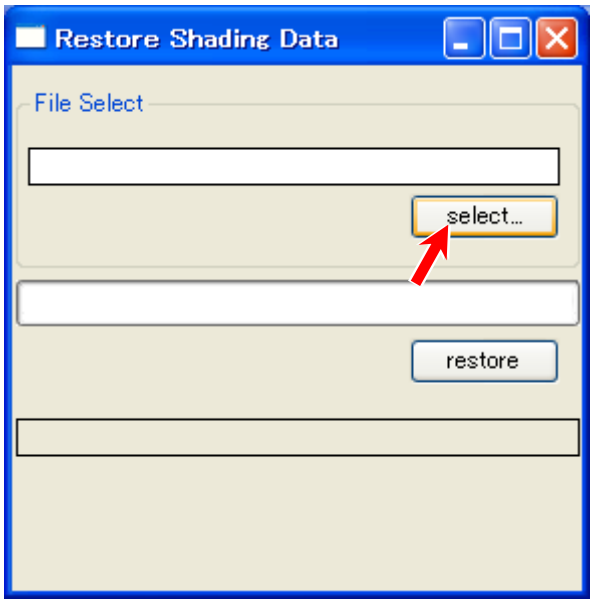
1. Click [BackupData] to recall “Backup Data” sub window.



2. Select [Shading Data] menu, and then click [Restore] to recall “Backup Shading Data” sub window.

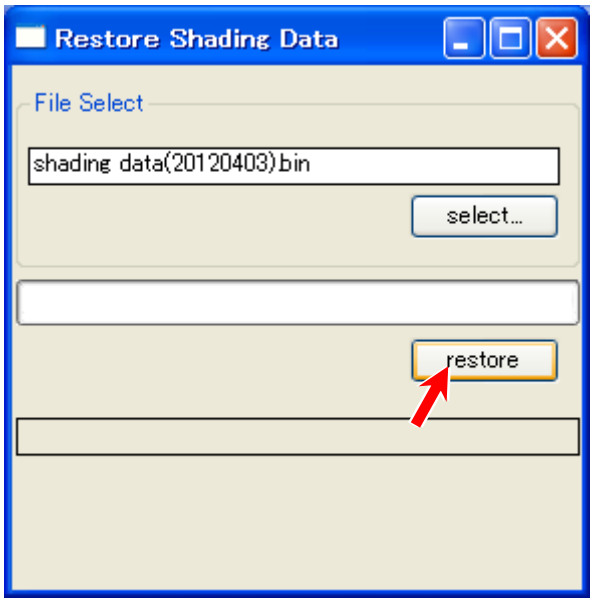


3. Click [select].



4. Specify a shading data file (*.bin) you want to import.

5. The selected file name appears in the upper field. Click [restore].



6. When “done” is displayed, sending the shading data file to the scanner is completed
   Click the X button at the upper right corner to close “Restore Shading Data” sub window.

> **NOTE**
>
> At this time the shading data has just been sent to the Main Board, but is not validated yet.

7. Turn off the scanner. Wait 3 seconds and then turn it on.
   Now the selected shading data file is validated.

> **NOTE**
>
> If you quickly turn off and on again, “The device can run faster...” balloon would pop up.
> This is because the scanner firmware may be loaded to the scanner’s memory incorrectly.
> Please wait 3 seconds before turning on again.

8.14. 5 Update

You can send and write a newer version of the scanner firmware to the scanner's Main Board.

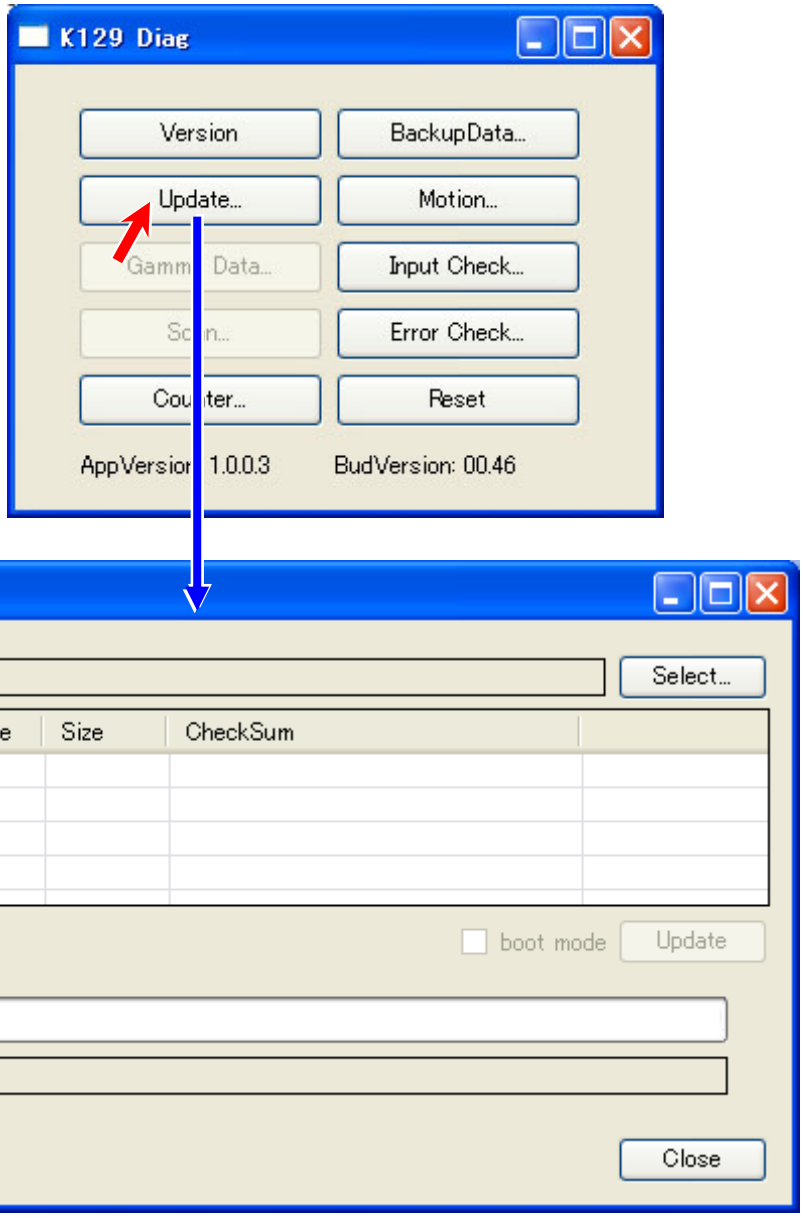
> ⚠ **NOTE**
>
> Normally the current parameters of BUD remain unchanged if you update the scanner firmware, but it is recommended to create a backup prior to update.

8.14. 5. 1 Sending Firmware to Scanner

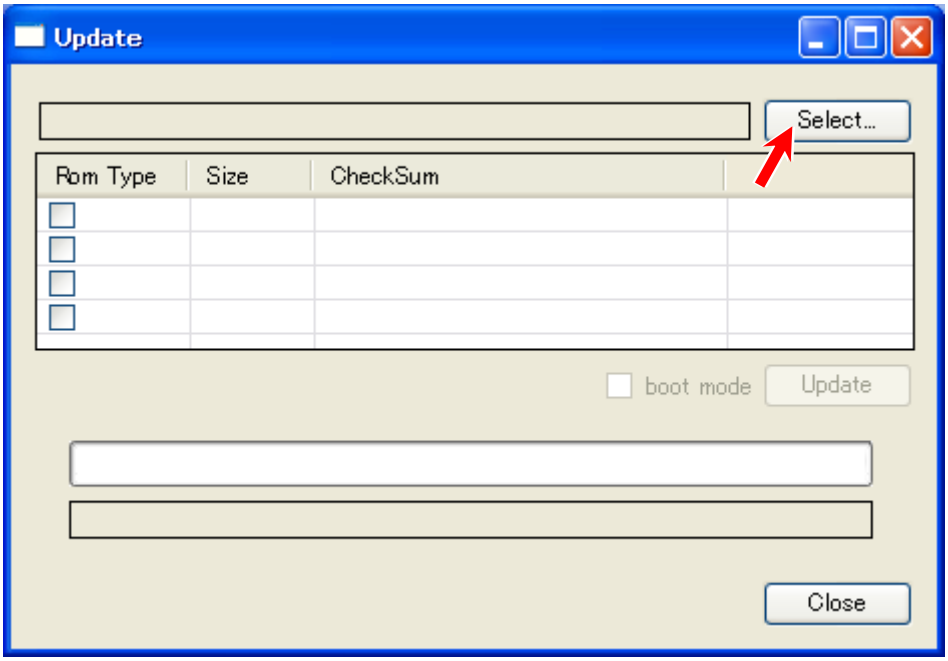
1. Save a delivered firmware file to any available storage on the PC / removable storage.
   The firmware is divided to 3 types of "USB" "CPU" "FPGA".

Type	contents	Firmware File Extension
USB	USB communication firmware	12920F** **.iic**
CPU	hardware control software	12920M** **.mot**
FPGA	image processing software	12920S** **.bin**

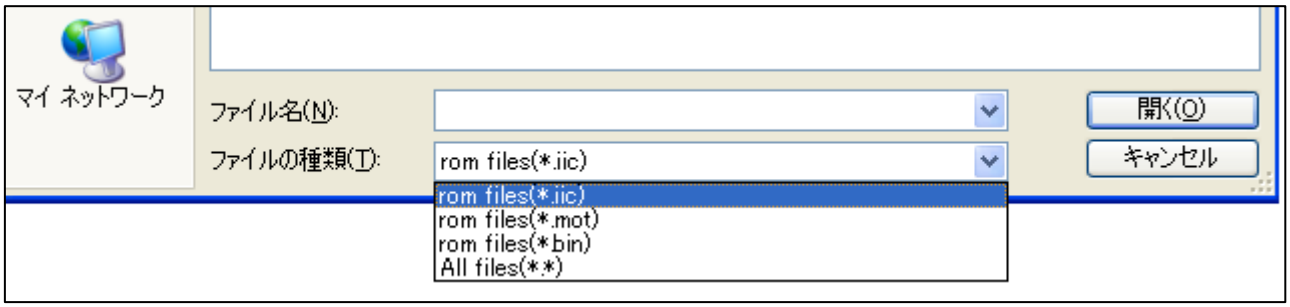
2. Run K129 Diag, and click [Update].



3. Click [Select].

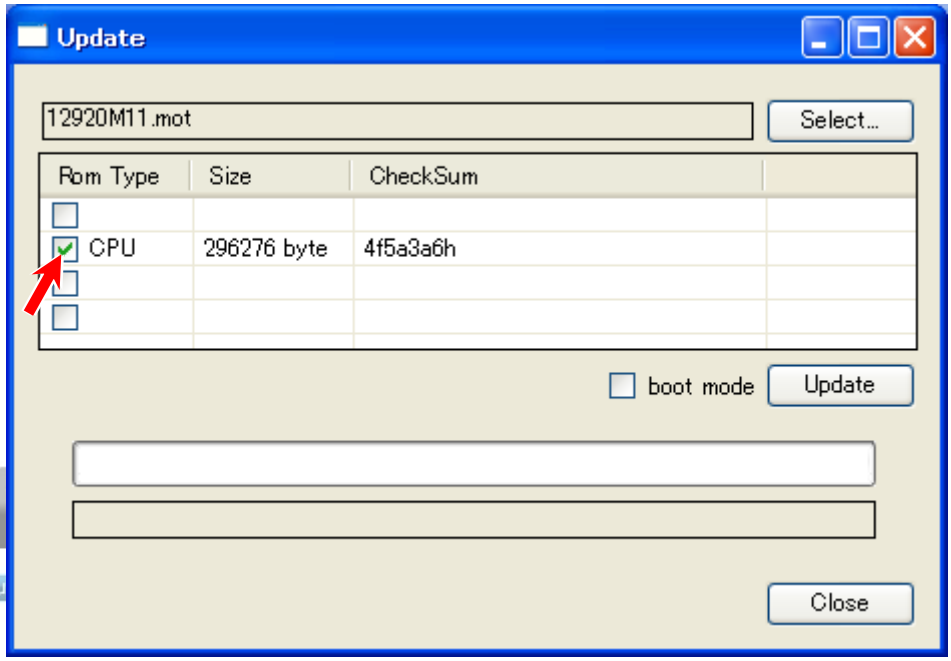


4. Specify a firmware file you want to apply.

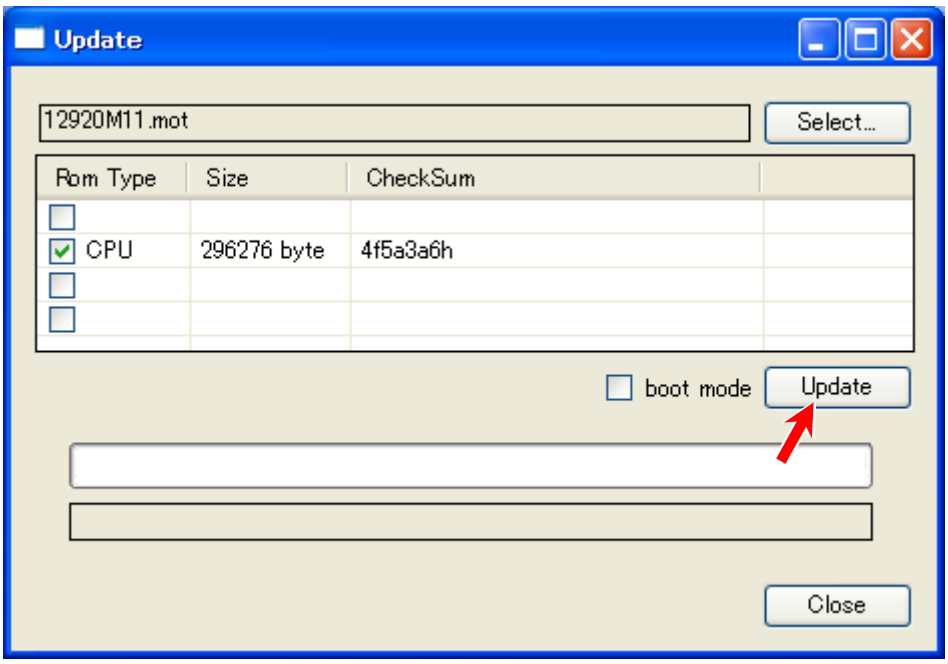


Type	contents	Firmware File Extension
USB	USB communication firmware	12920F** **.iic**
CPU	hardware control software	12920M** **.mot**
FPGA	image processing software	12920S** **.bin**

5. The selected file name is displayed in the list. Put a check in the checkbox beside the file.

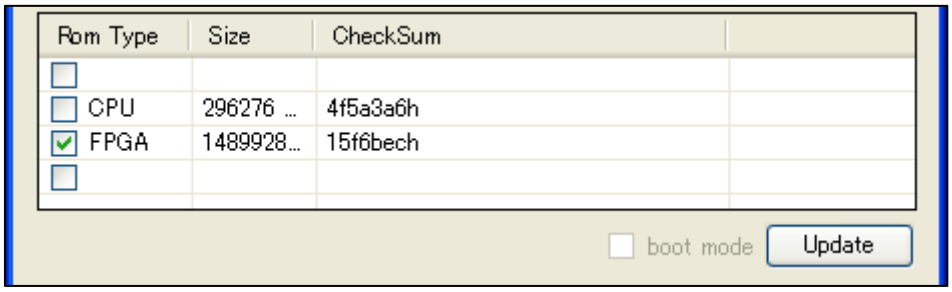


6. [Upload] button in the middle-right is now activated.
   Click it to send the firmware file to the scanner's Main Board.



NOTE

You may add another firmware file (for example: added CPU, and then you add 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 top right corner to close "Update" sub window.

NOTE

At this time the firmware file has just been sent to the Main Board, but is not applied yet.

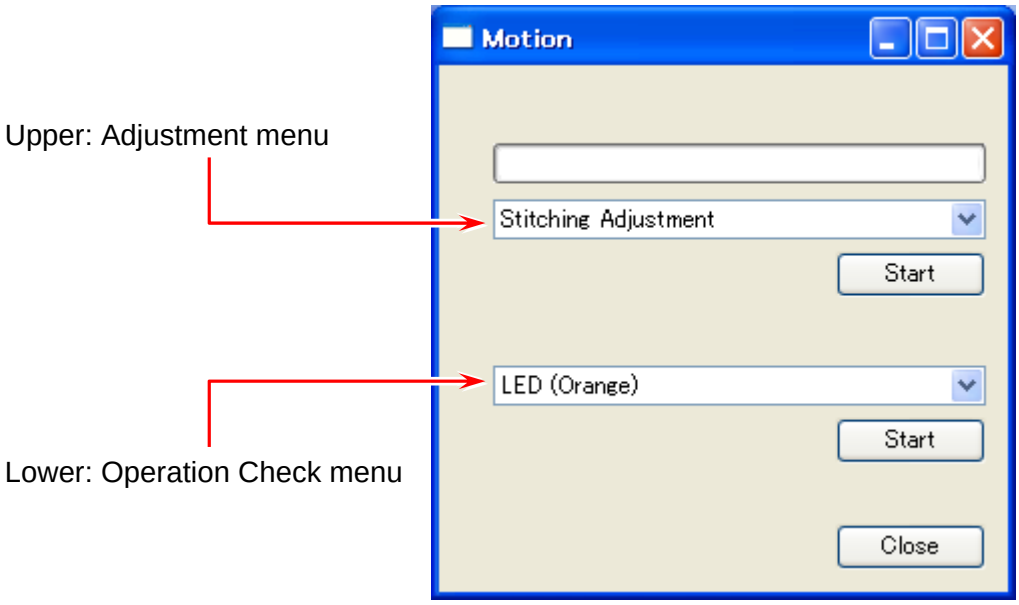
8. Turn off the scanner. Wait 3 seconds and then turn it on.
   Now the selected shading data file is validated.

NOTE

If you quickly turn off and on again, "The device can run faster..." balloon would pop up.
This is because the scanner firmware may be loaded to the scanner's memory incorrectly.
Please wait 3 seconds before turning on again.

8.14. 6 Motion

“Motion” contains 2 major categories, Adjustment and Operation Check.



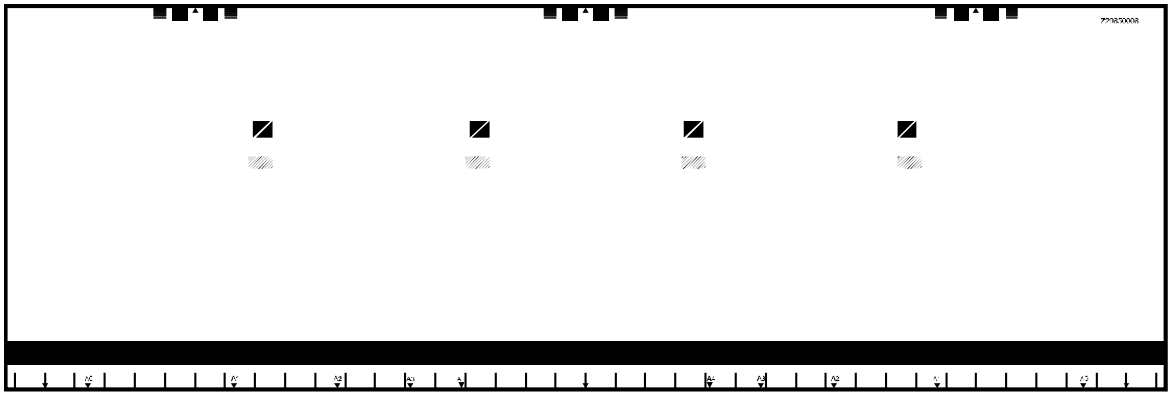
Adjustment menu:

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 density difference between CIS blocks	not supported
	May be required for... - the scanners in S/N 12900097 and lower, - with the firmware M15/S17 (and later) applied for the first time, - and such scanners has a heavy density difference between CIS	

For Operation Check menu, see [8.14.6.5 Operation Check].

8.14. 6. 1 Shading

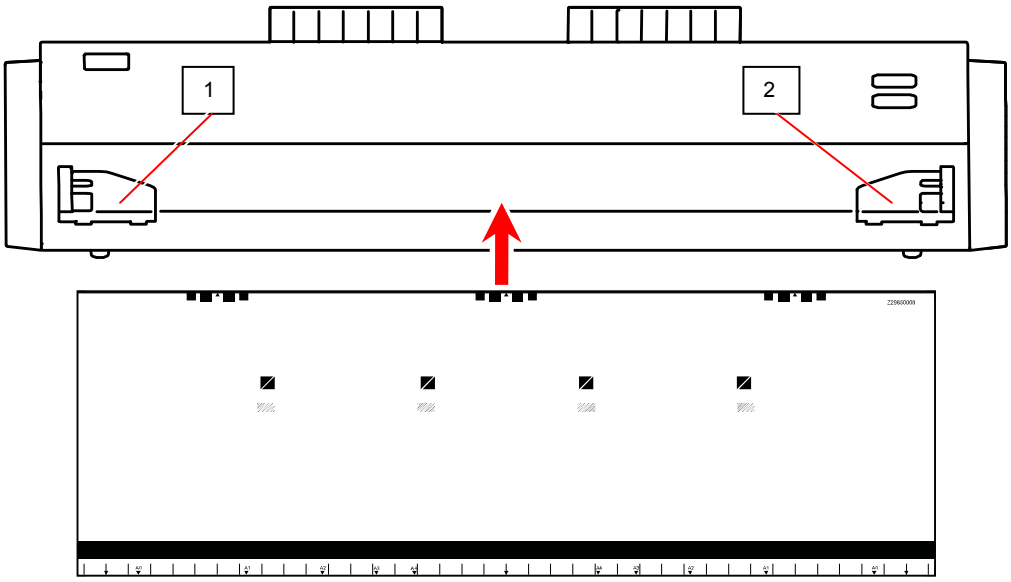
Shading Compensation is to set the target black / white level based on a designated calibration chart “Shading Sheet”. This will also even the density difference between CIS.



One sheet of “Shading Sheet” is included in every scanner accessory.

1. Clean Glass DCMNT with a soft cloth.

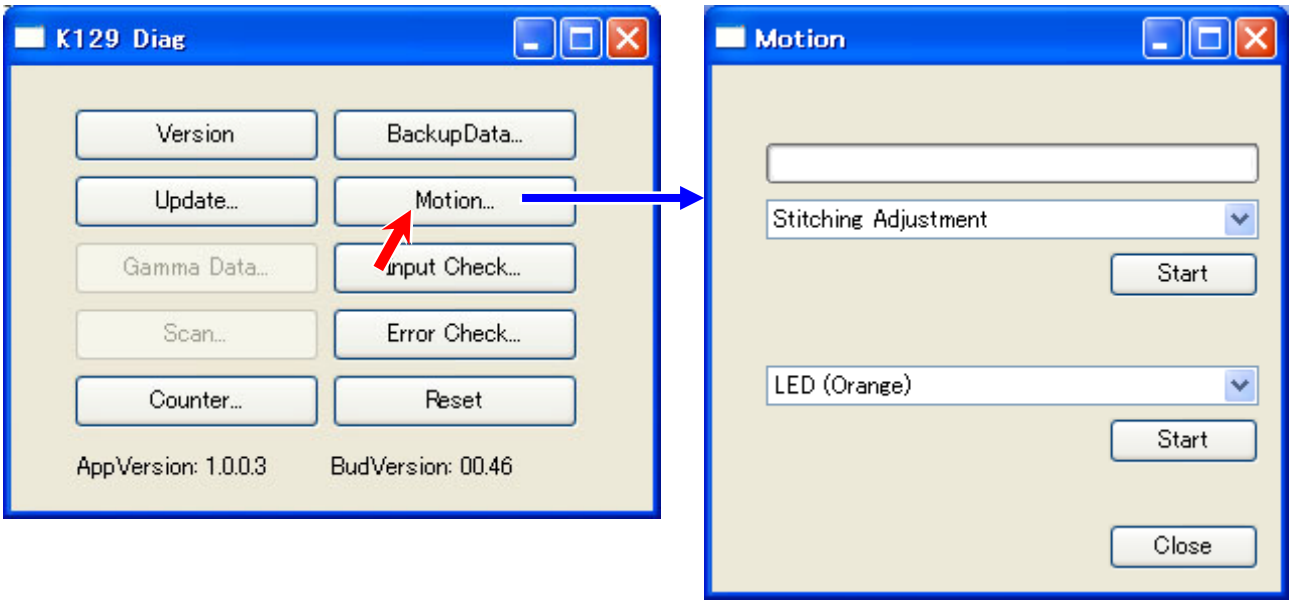
2. Turn on the scanner. Remove the Original Guide (1) and (2). Set the Shading Sheet to the scanner noting the arrow direction.



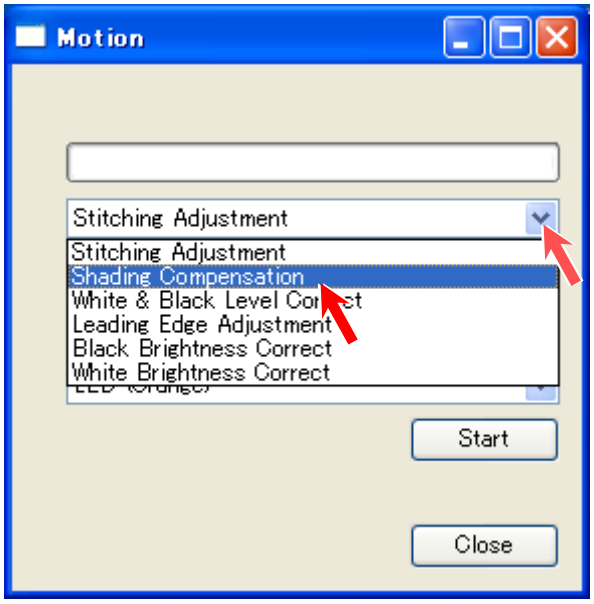
NOTE

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

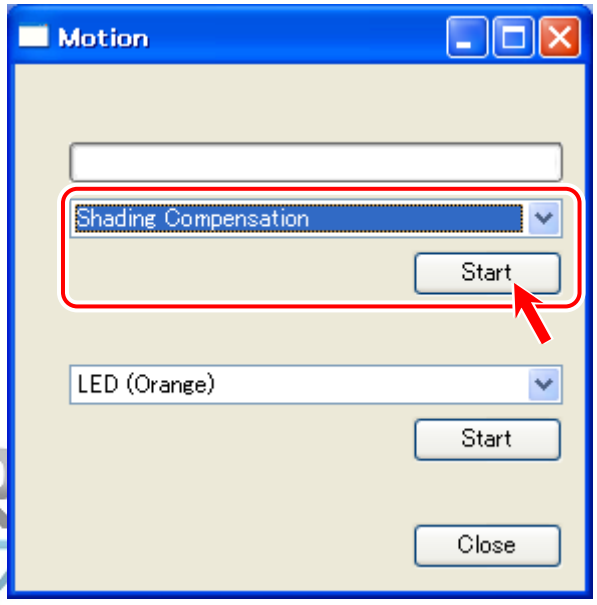
3. Click [Motion] to recall “Motion” sub window.



4. Select “Shading Compensation” in the upper drop-down menu.



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



NOTE

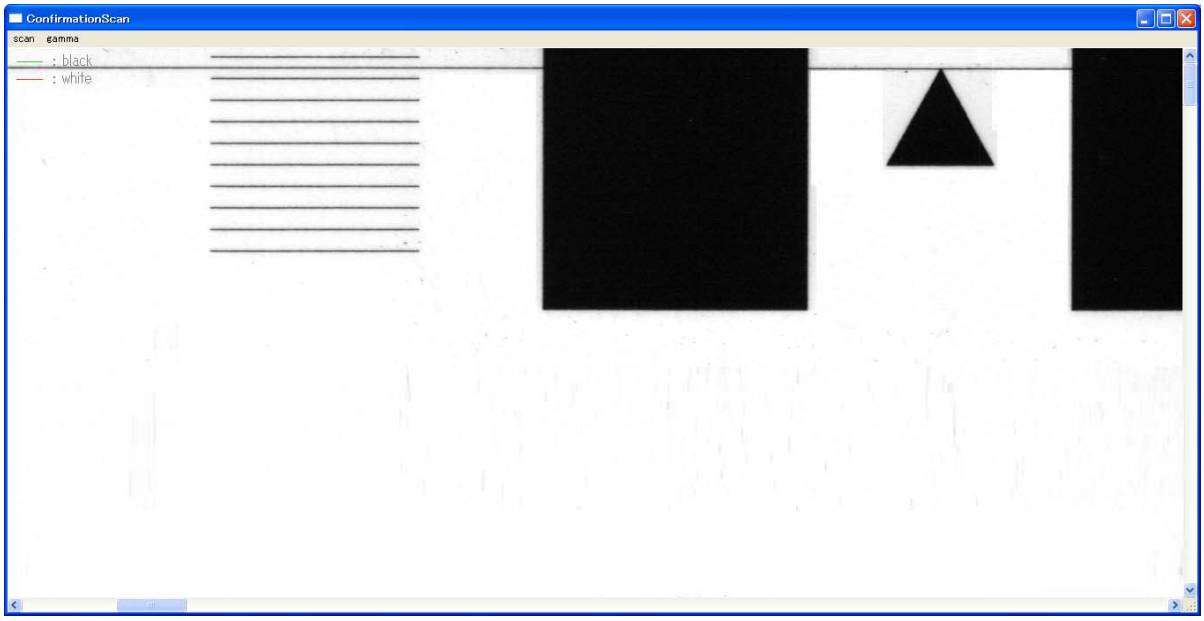
(1) It takes about 6 minutes to complete.

(2) If an error message occurs;
1. Correctly set the Shading Sheet to the scanner.
2. Check for dirt on the Glass DCMNT and the Shading Sheet.

6. When Shading is finished, the system asks you whether you need confirmation.
Click No to finish Shading.

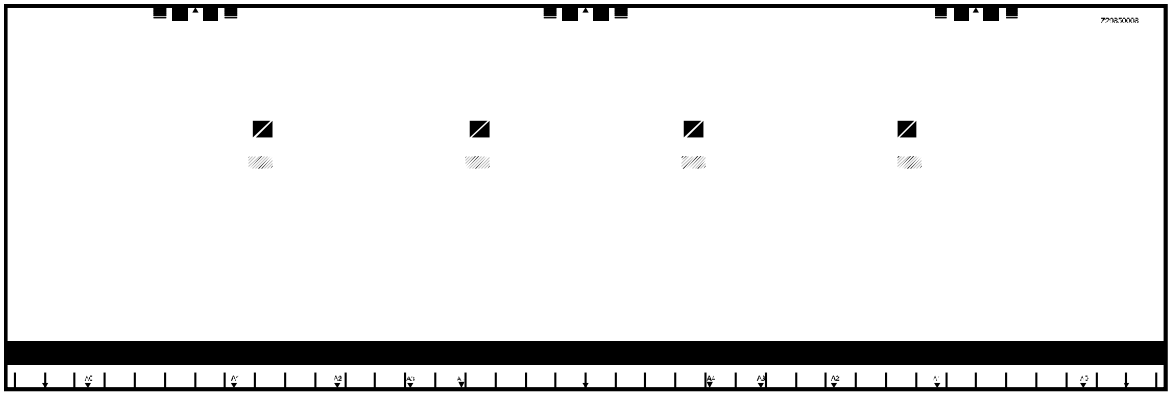
Reference

If you need confirmation, again set the Shading Sheet to the scanner, and then click [Yes].
Another window has the scanned image of Shading Sheet.



8.14. 6. 2 Stitching

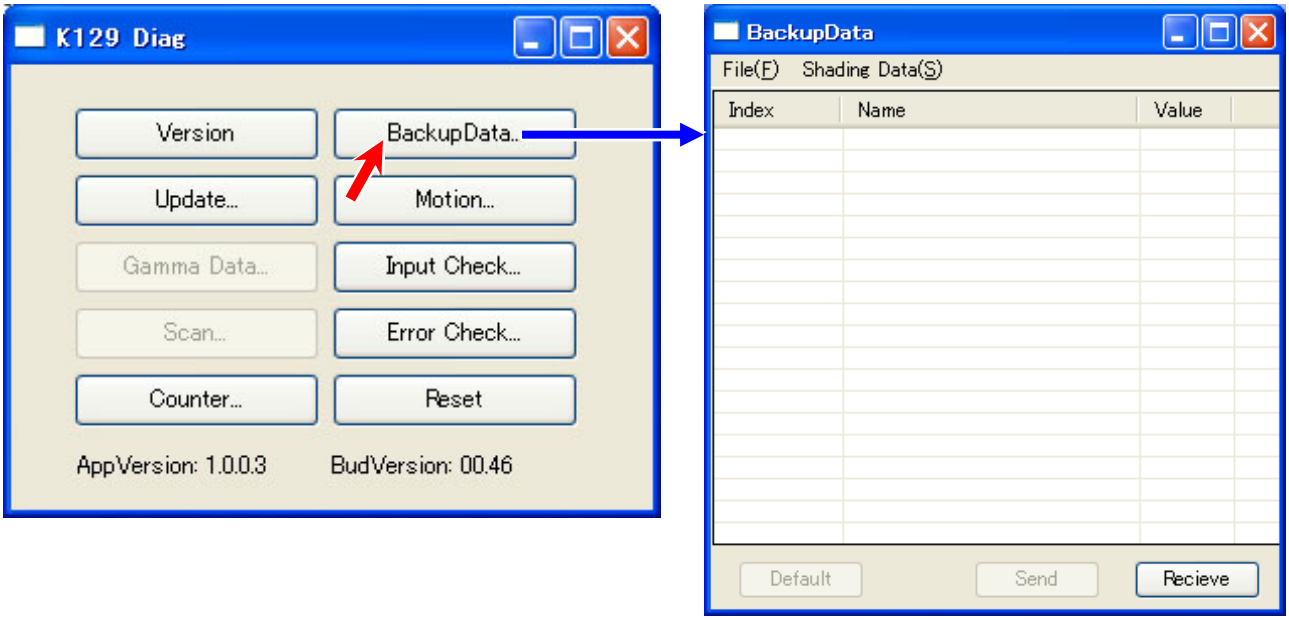
Stitching Adjustment is to calibrate the amount of shift of each image block scanned by CIS in order to organize 5 pieces of image blocks into 1 complete image, based on a designated calibration chart “Shading Sheet”.



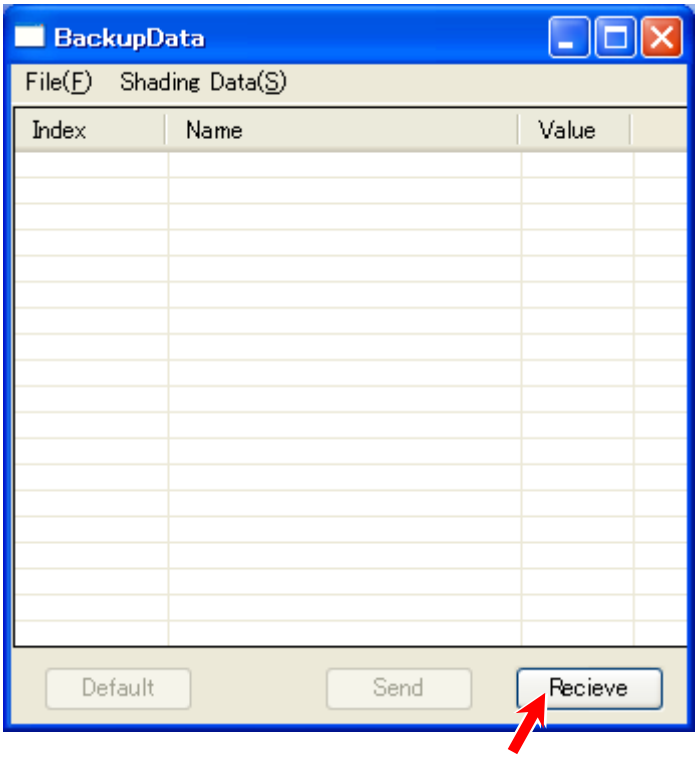
One sheet of “Shading Sheet” is included in every scanner accessory.

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

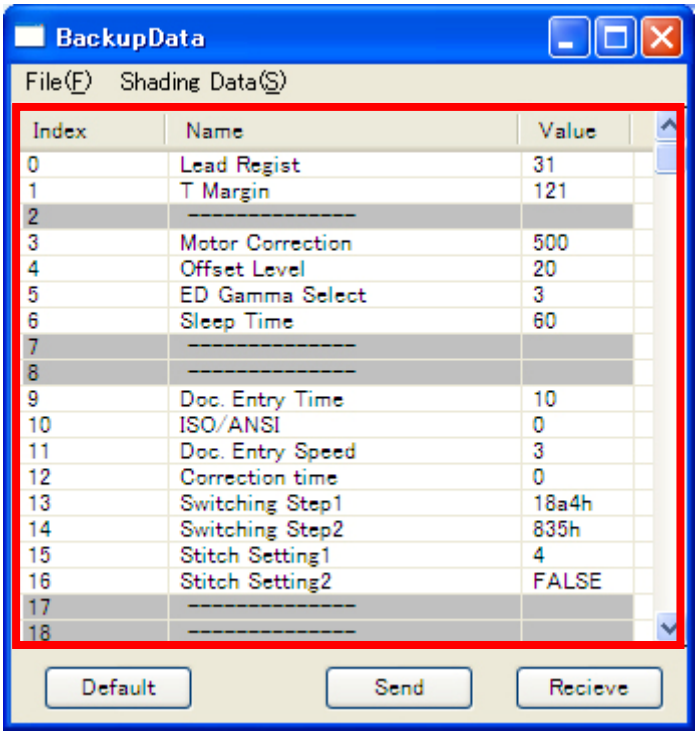
1. Run K129 Diag. Click [BackupData] to recall “Backup Data” sub window.



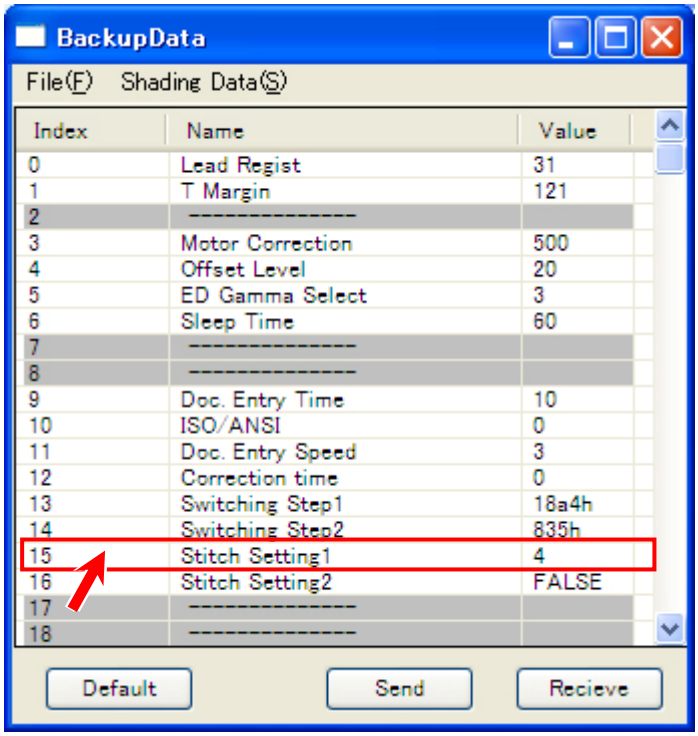
2. Click [Receive]



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

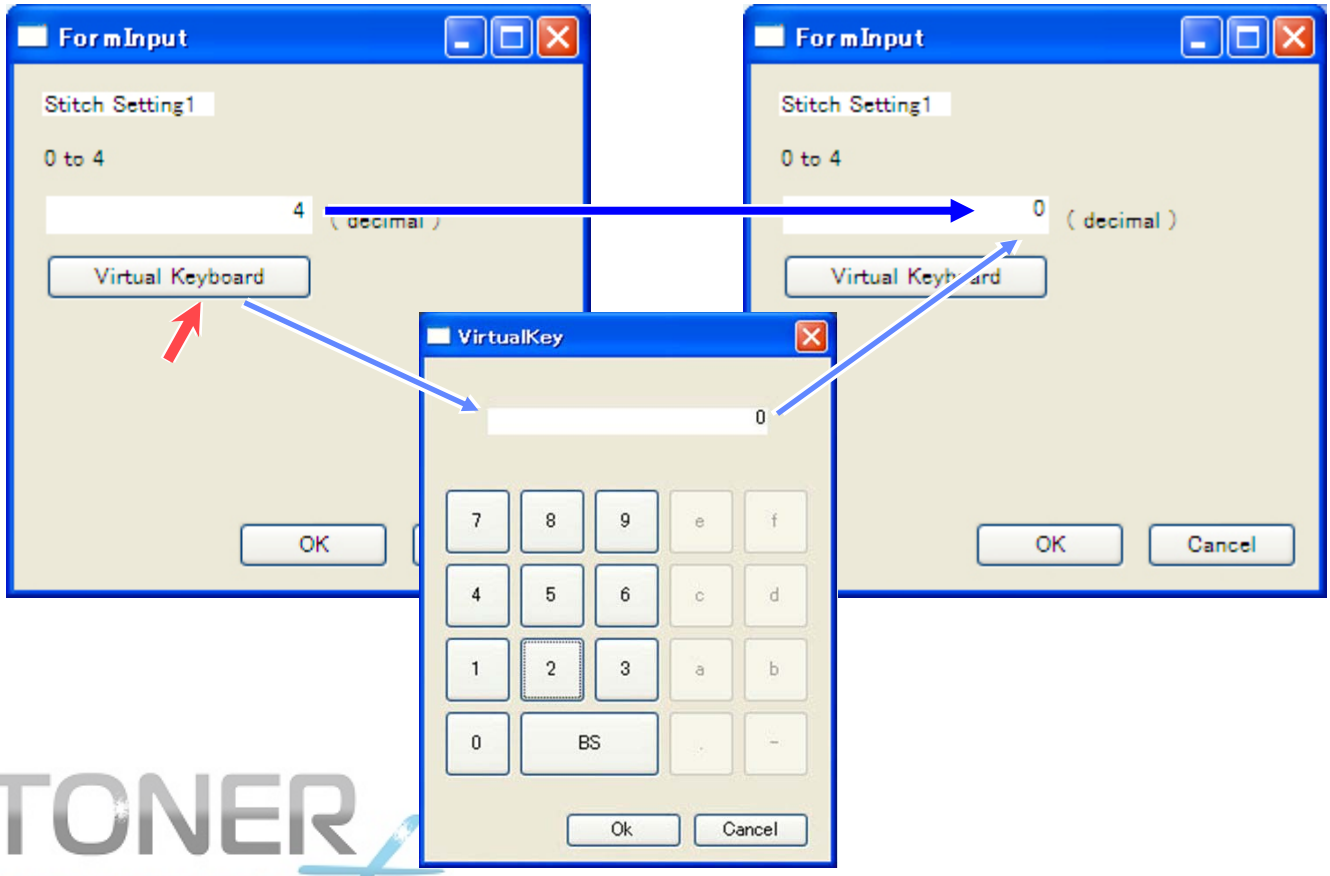


4. Double click on the row No.15 “Stitch Setting 1”.

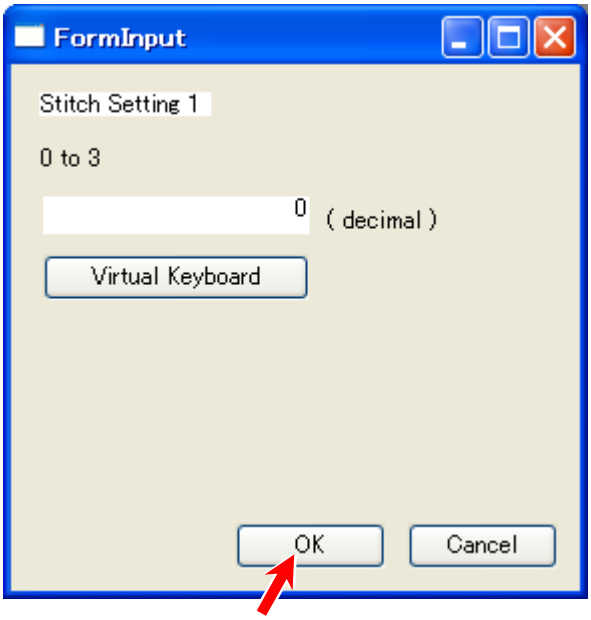


5. “Input” pad pops up. Directly type “0” with your keyboard.

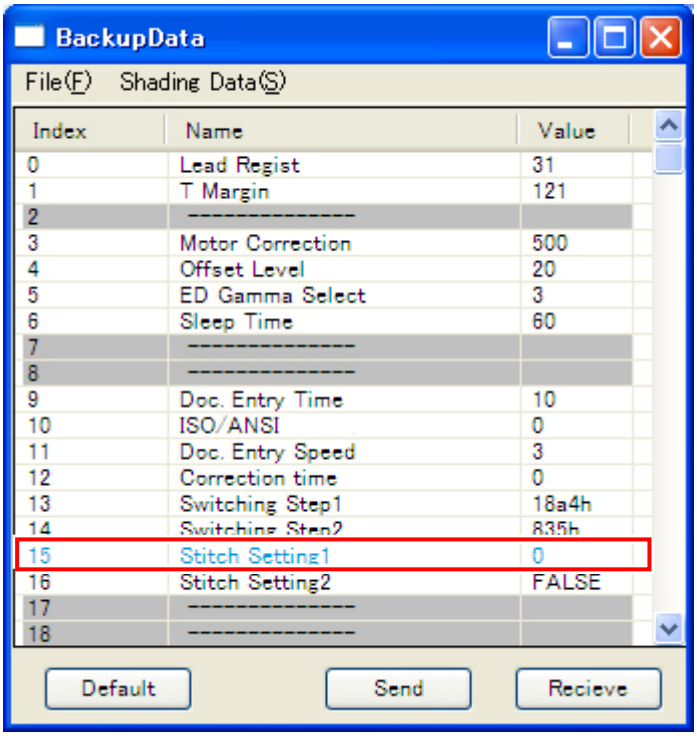
> **NOTE**
>
> Clicking the field displays a caret (flashing “ | ” cursor), but while the caret is flashing, a key entry with your keyboard device is **NOT** accepted.



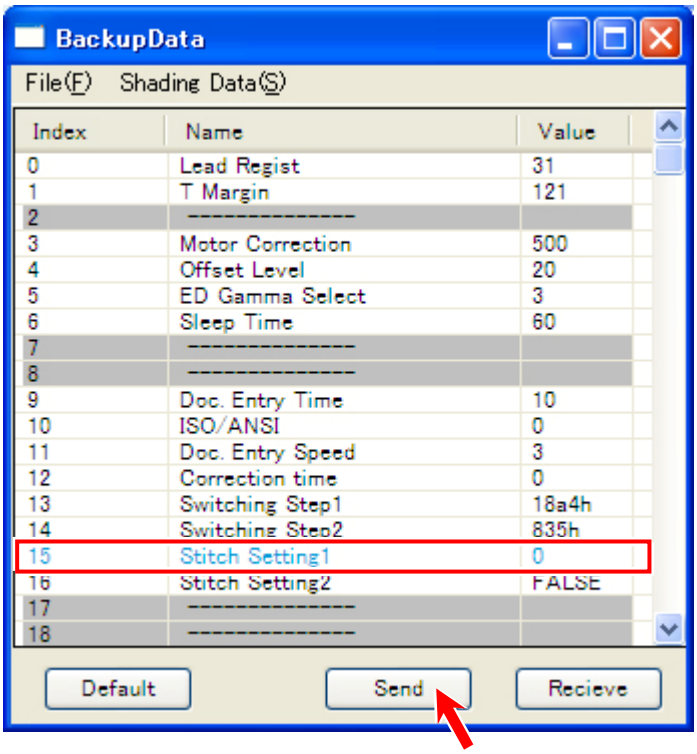
6. Click [OK] on the bottom.



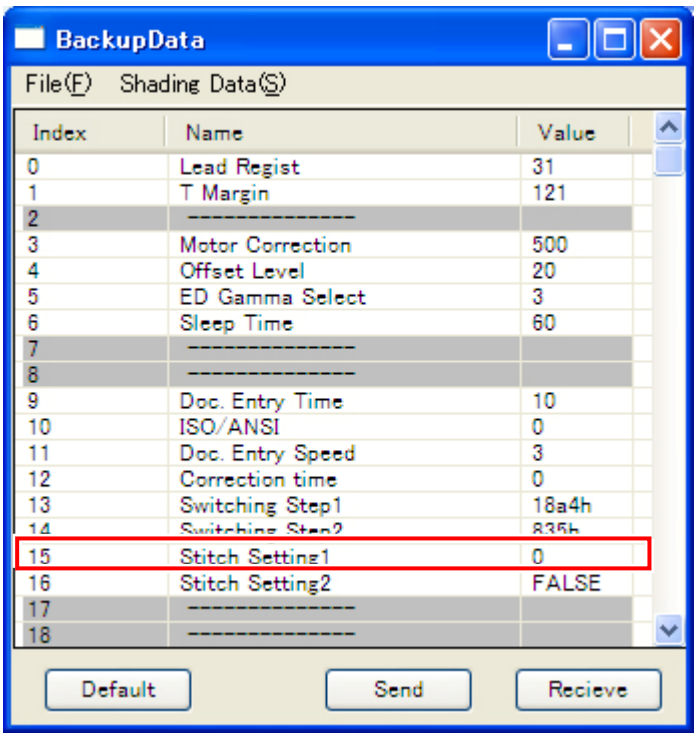
7. The setting change you have made is reflected to the list. It will turn blue.



8. Click [Send] on the bottom. The setting change turns black.
   Now it is sent to the scanner's Main Board.



Index	Name	Value
0	Lead Regist	31
1	T Margin	121
2	----------	
3	Motor Correction	500
4	Offset Level	20
5	ED Gamma Select	3
6	Sleep Time	60
7	----------	
8	----------	
9	Doc. Entry Time	10
10	ISO/ANSI	0
11	Doc. Entry Speed	3
12	Correction time	0
13	Switching Step1	18a4h
14	Switching Step2	835h
15	Stitch Setting1	0
16	Stitch Setting2	FALSE
17	----------	
18	----------	

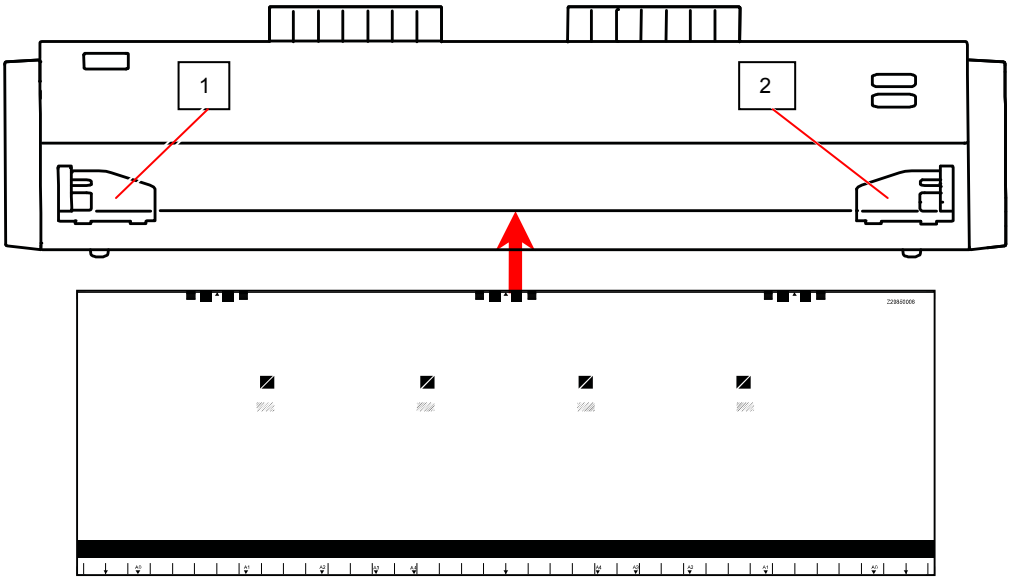


Index	Name	Value
0	Lead Regist	31
1	T Margin	121
2	----------	
3	Motor Correction	500
4	Offset Level	20
5	ED Gamma Select	3
6	Sleep Time	60
7	----------	
8	----------	
9	Doc. Entry Time	10
10	ISO/ANSI	0
11	Doc. Entry Speed	3
12	Correction time	0
13	Switching Step1	18a4h
14	Switching Step2	835h
15	Stitch Setting1	0
16	Stitch Setting2	FALSE
17	----------	
18	----------	

9. To close "BackupData" sub window, click the X button at the top right corner.

10. Clean Glass DCMNT with a soft cloth.

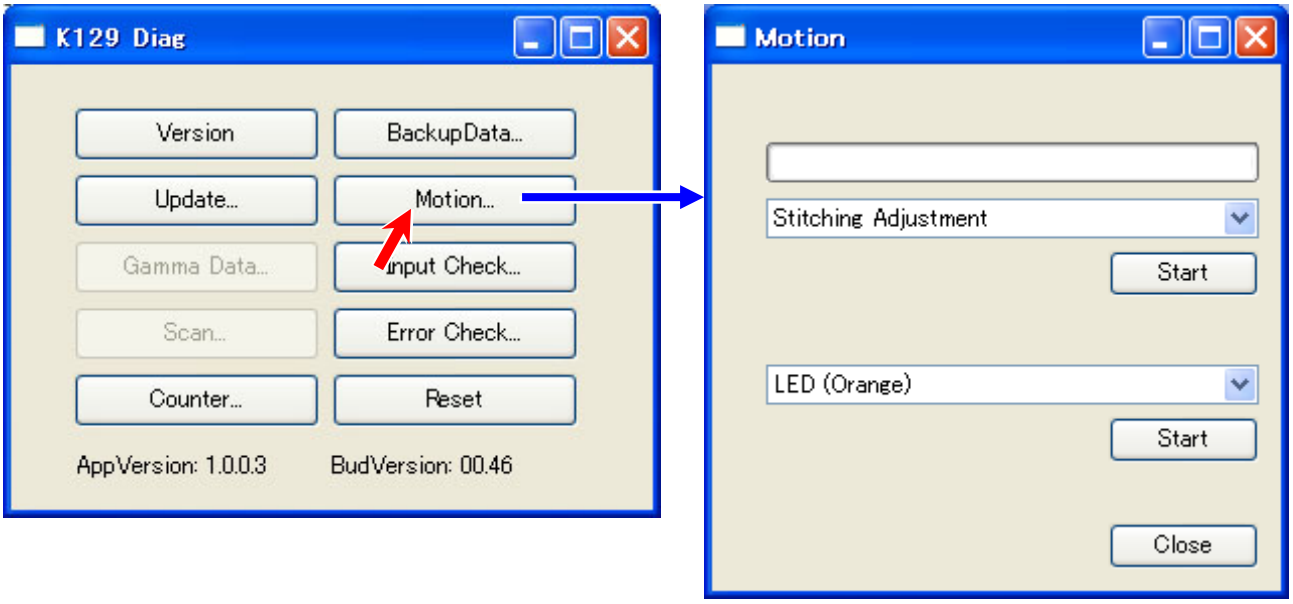
11. Remove the Original Guide (1) and (2). Set the Shading Sheet to the scanner noting the arrow direction.



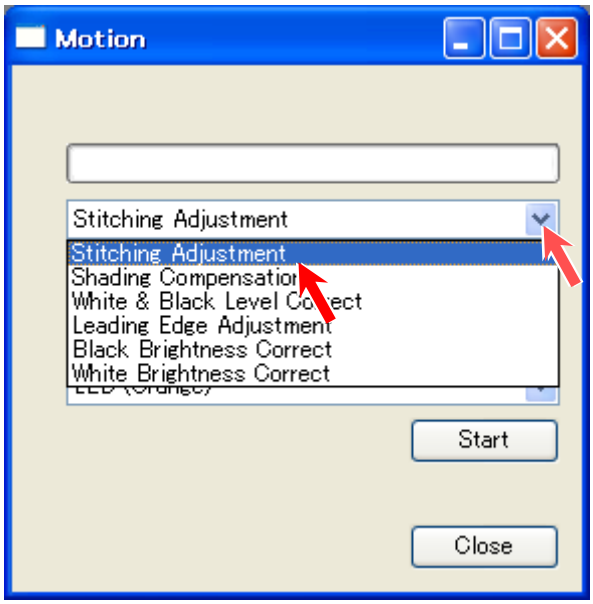
NOTE

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

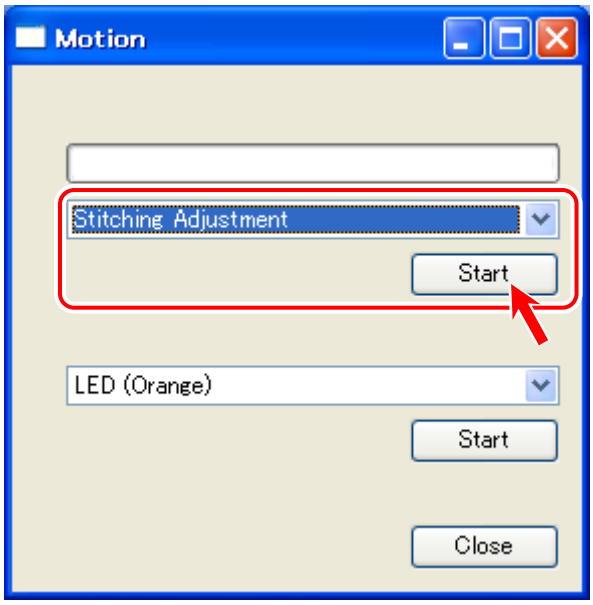
12. Click [Motion] to recall “Motion” sub window.



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



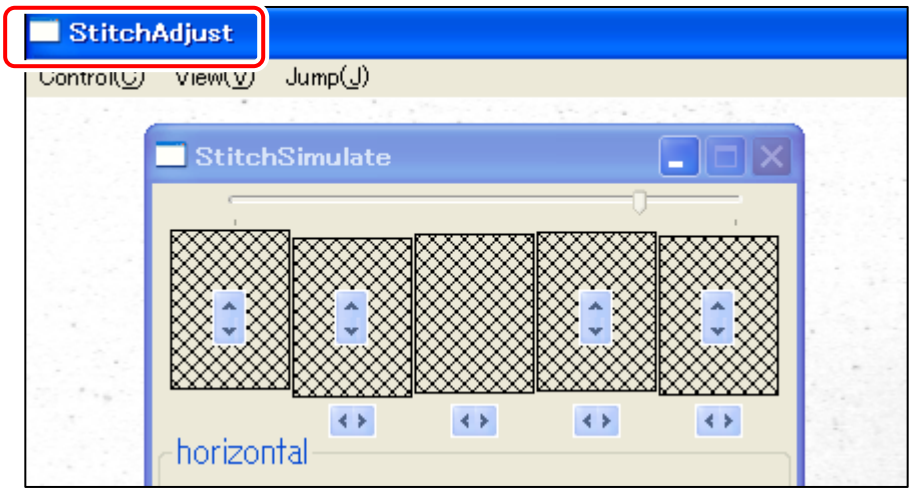
14. Click [Start] beside the upper drop-down menu.



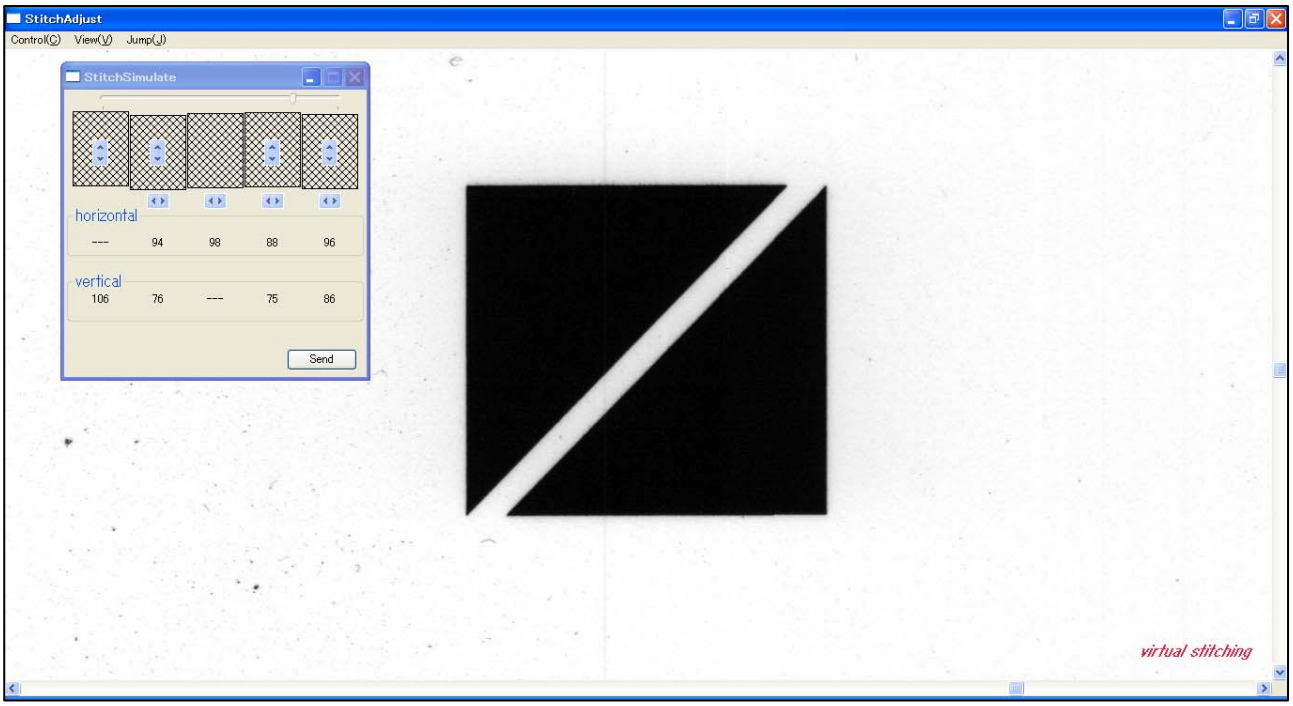
NOTE

If an error message occurs;
1. Correctly set the Shading Sheet to the scanner.
2. Check for dirt on the Glass DCMNT and the Shading Sheet.

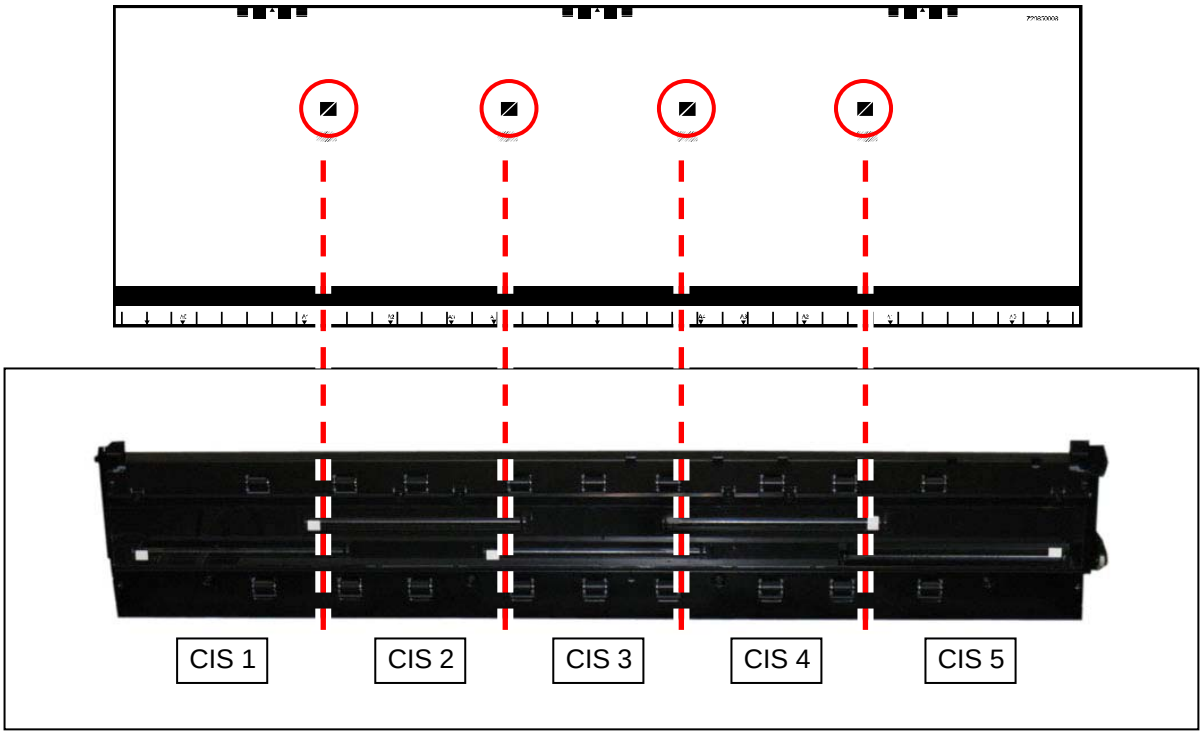
15. When the scanning is finished, two sub windows “Stitch Simulate” and “Stitch Adjust” appear. Enlarge “StitchAdjust” window.



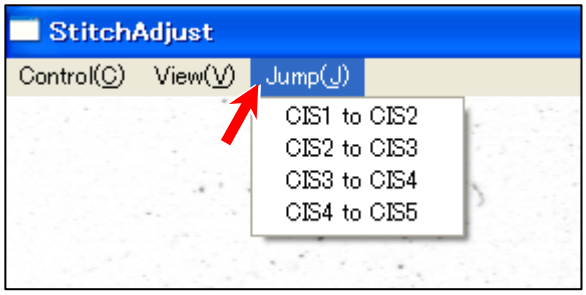
Enlarge “Stitch Adjust” window.

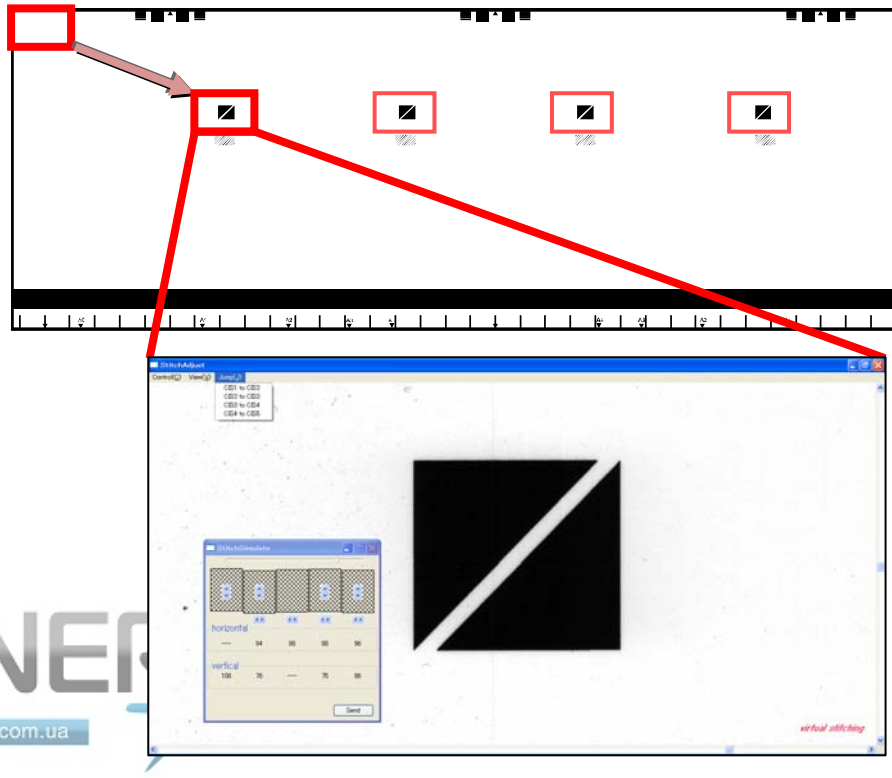


16. There are 4 target signs at every border between the CIS.



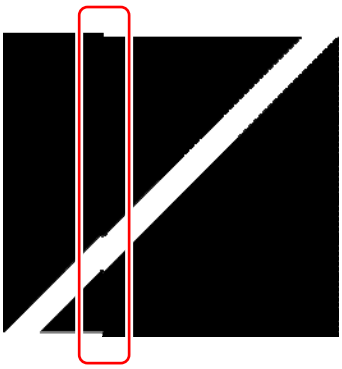
In “Stitch Adjustment” window, Select [Jump] menu, and then click [CIS1 to CIS2]. The display area will jump to the corresponding area on the scanned image.
If “Jump” does not move to the target exactly, manually scroll the image to catch the target in the window.



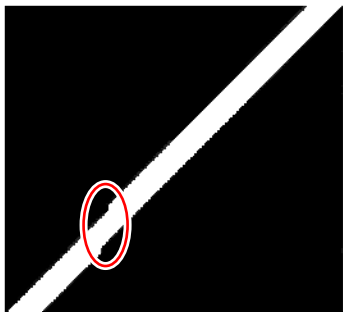


17. Confirm the Stitching Adjustment results.

no misalignment



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



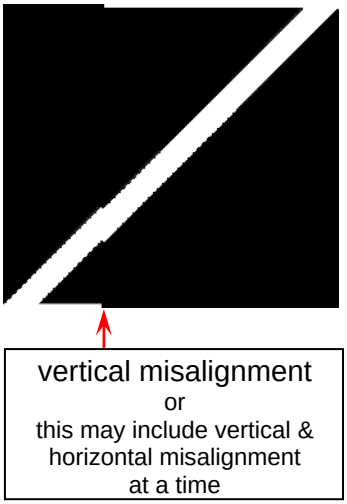
horizontal misalignment

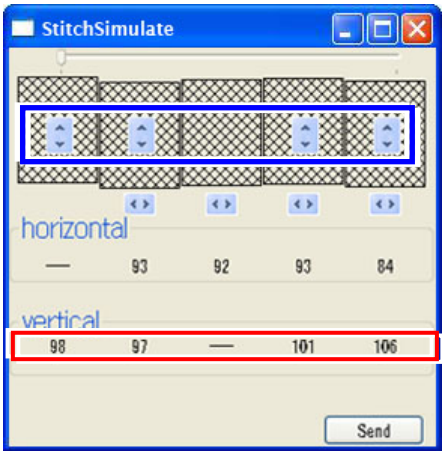
18. Select [Jump] menu, and then click the other CIS borders to confirm the results.
If all of the 4 targets have no misalignment, go to step 25.
If any of the targets has an misalignment, go to step 19 and after for manual correction.

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

19. First, correct vertical misalignment as follows.

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





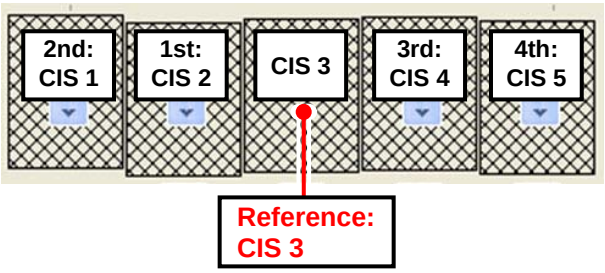
Do the same way for all the 4 targets at the borders.

Setting values will turn red by setting changes. Setting value 1 step = 1 pixel to trailing edge

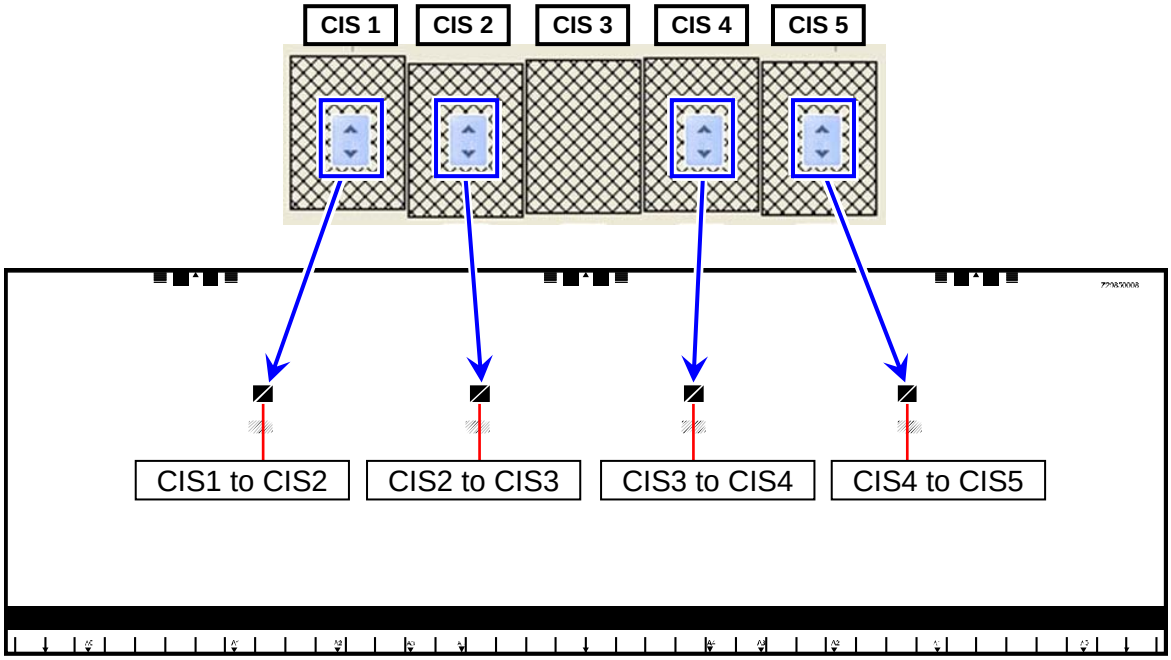
NOTE

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

<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.

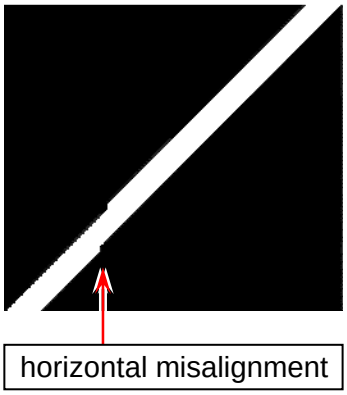


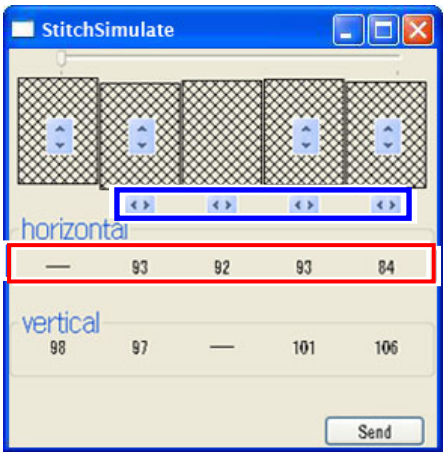
19-2. Image shifting (setting value in red) is not finalized yet. Click [Send].

Once the change is sent to the scanner’s Main Board, setting values turn black.

20. Second, correct horizontal misalignment as follows.

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

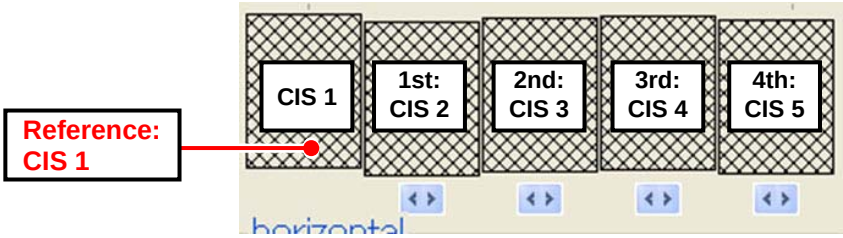




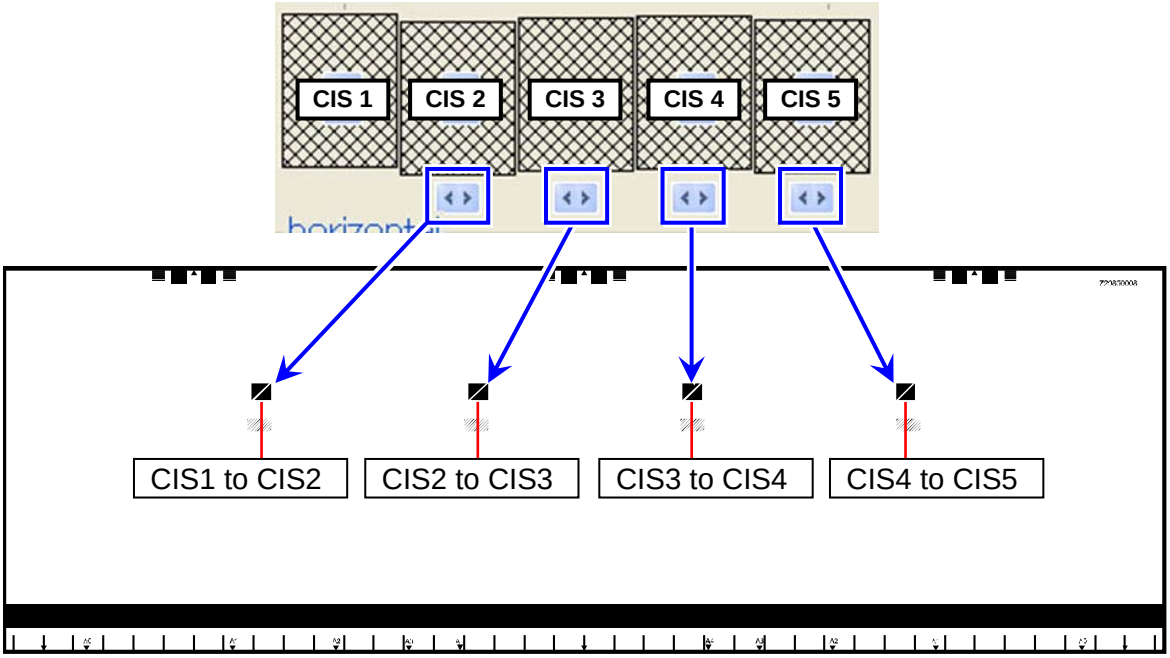
Do the same way for all the 4 targets at the CIS borders if needed.
Setting values will turn red by setting changes. Setting value 1 step = 1 pixel to right

NOTE

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

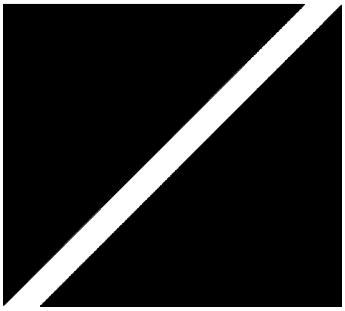


(2) The increase/decrease buttons correspond to the CIS border as follows.



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

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

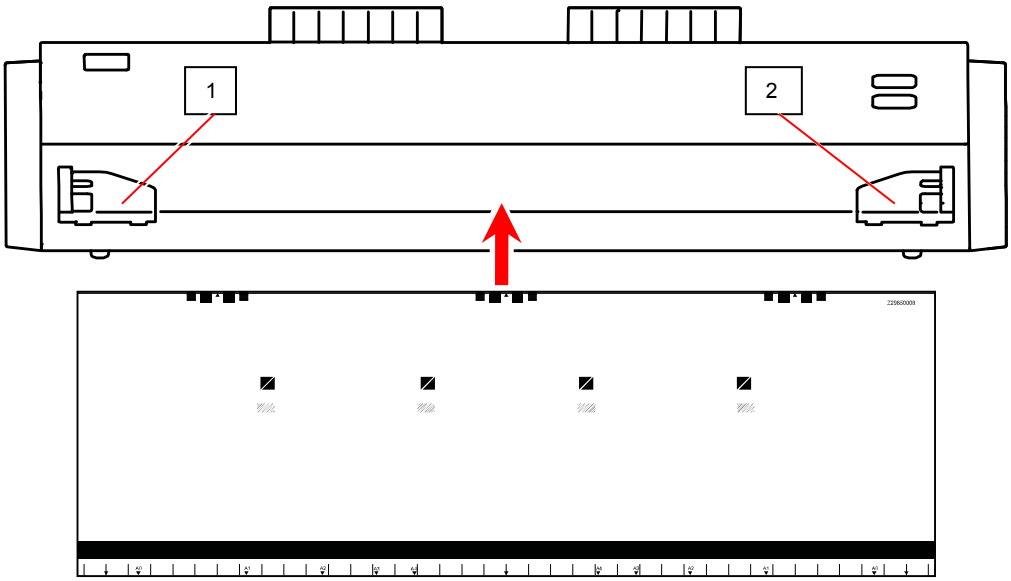


no misalignment

NOTE

Be sure to reconfirm the manual correction result.

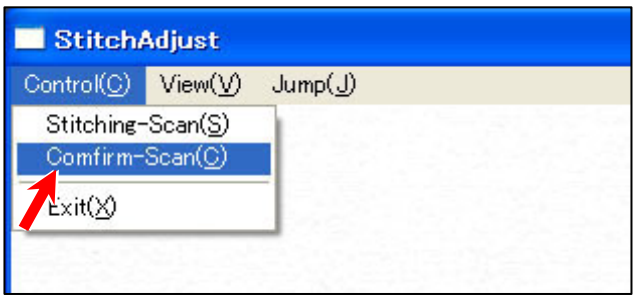
22. Remove the Original Guide (1) and (2). Set the Shading Sheet to the scanner noting the arrow direction.



NOTE

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

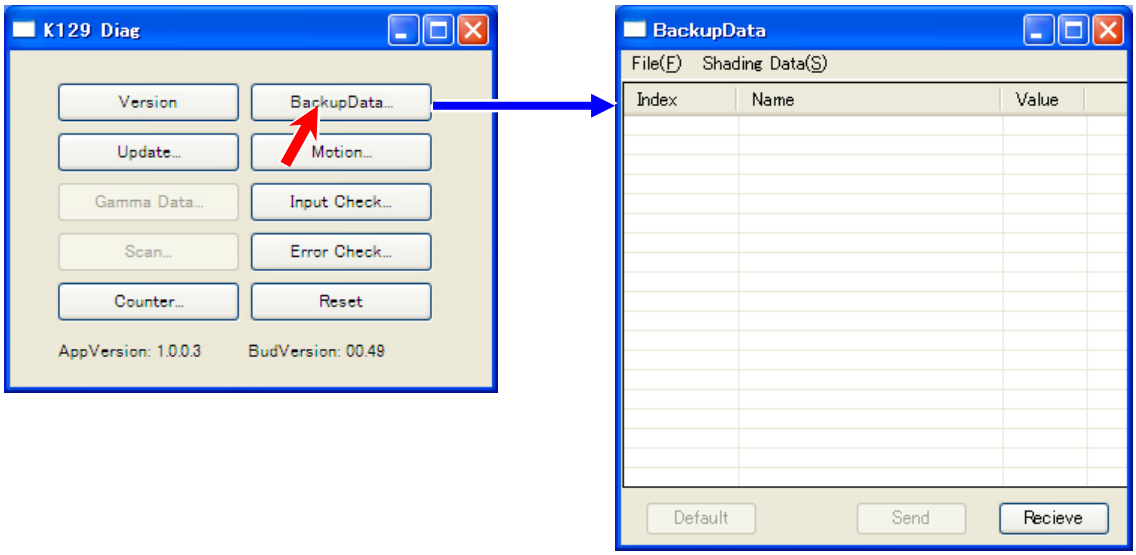
23. In “StitchAdjust” window, select [Control] menu, and then click [Confirm-Scan] to make another scan.



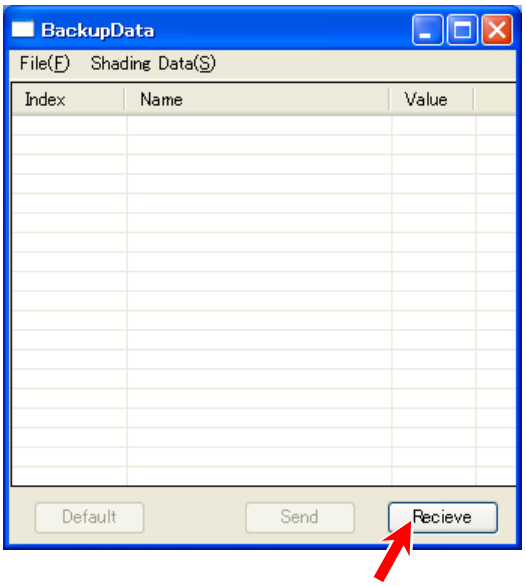
24. The rescan result can be checked in “StitchAdjust” window.

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

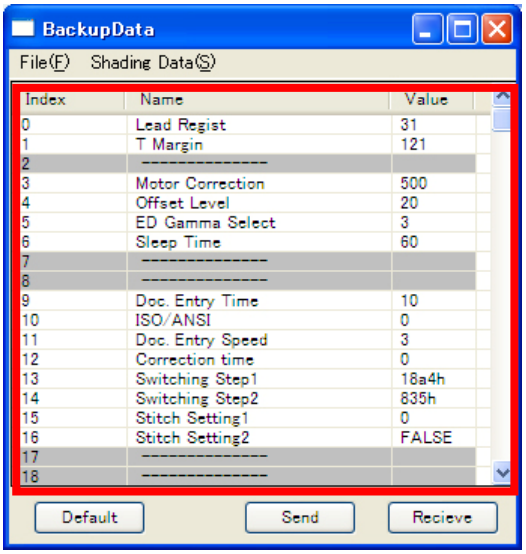
26. Go back to the Home. Click [BackupData] to recall “Backup Data” list sub window.



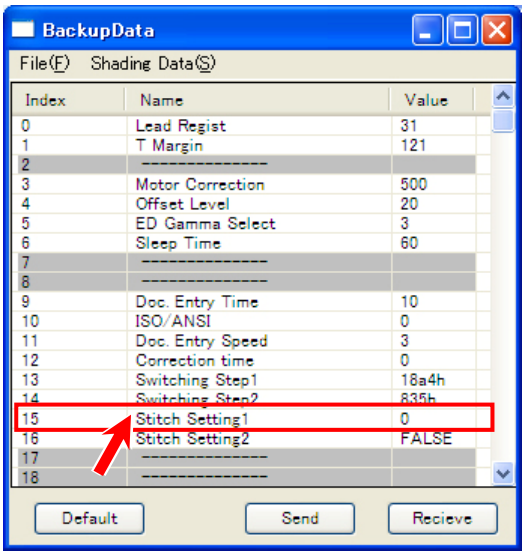
27. Click [Receive]



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

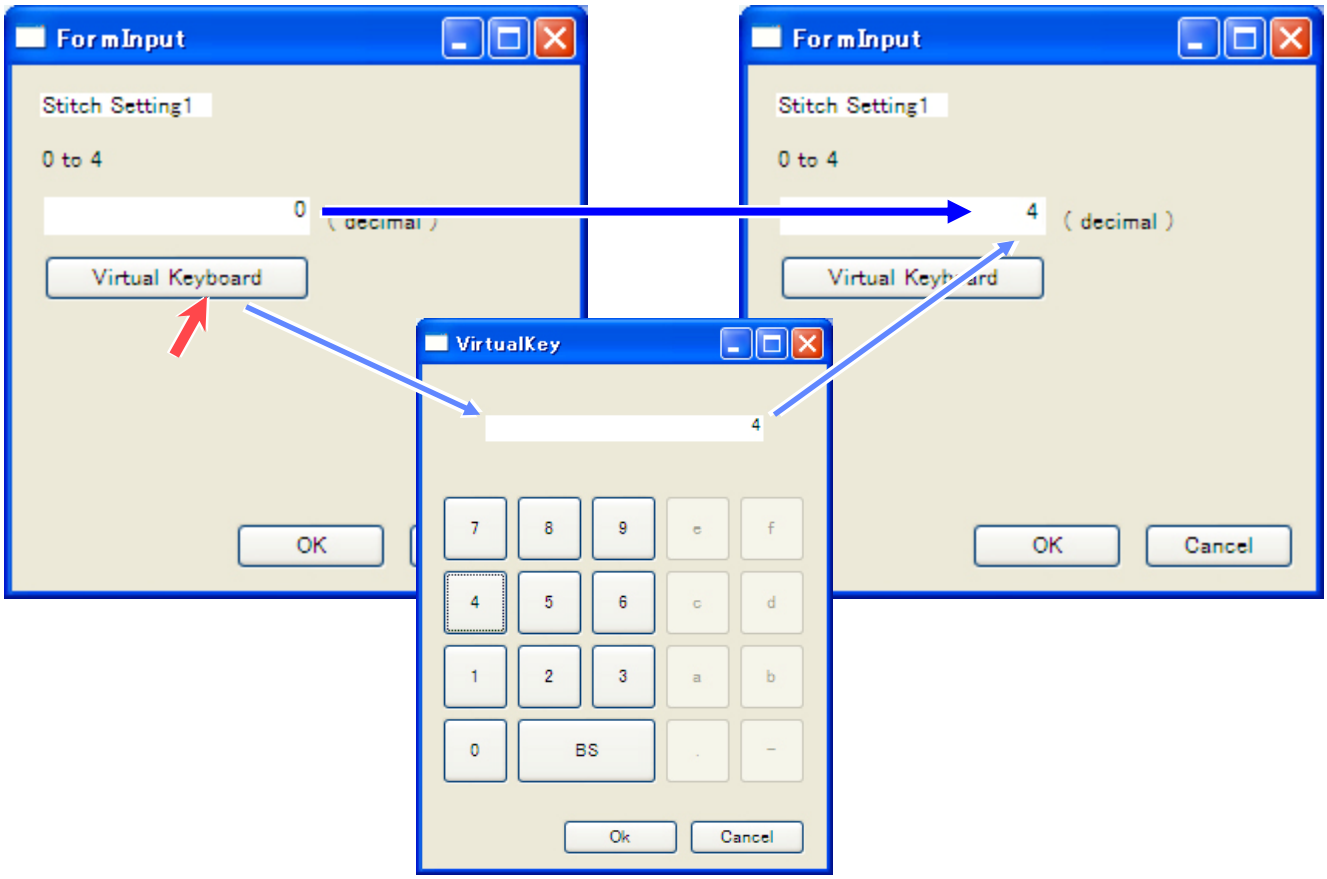


29. Double click on the row No.15 “Stitch Setting 1”.

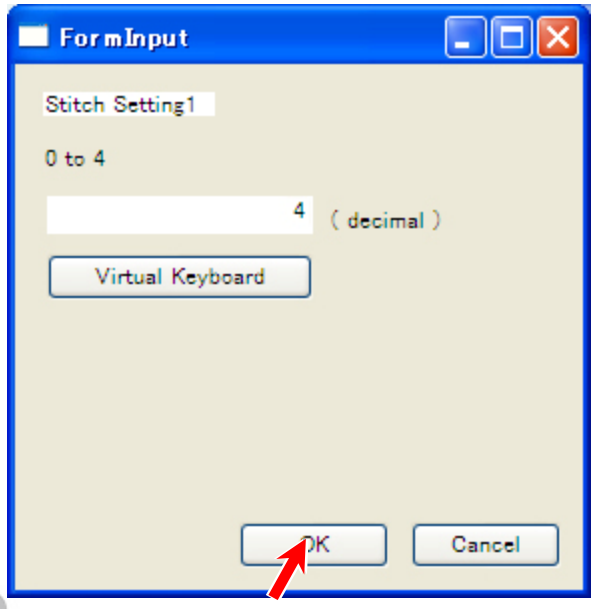


30. “Input” pad pops up. Directly type the number of the original setting (2 or 4) value with your keyboard.

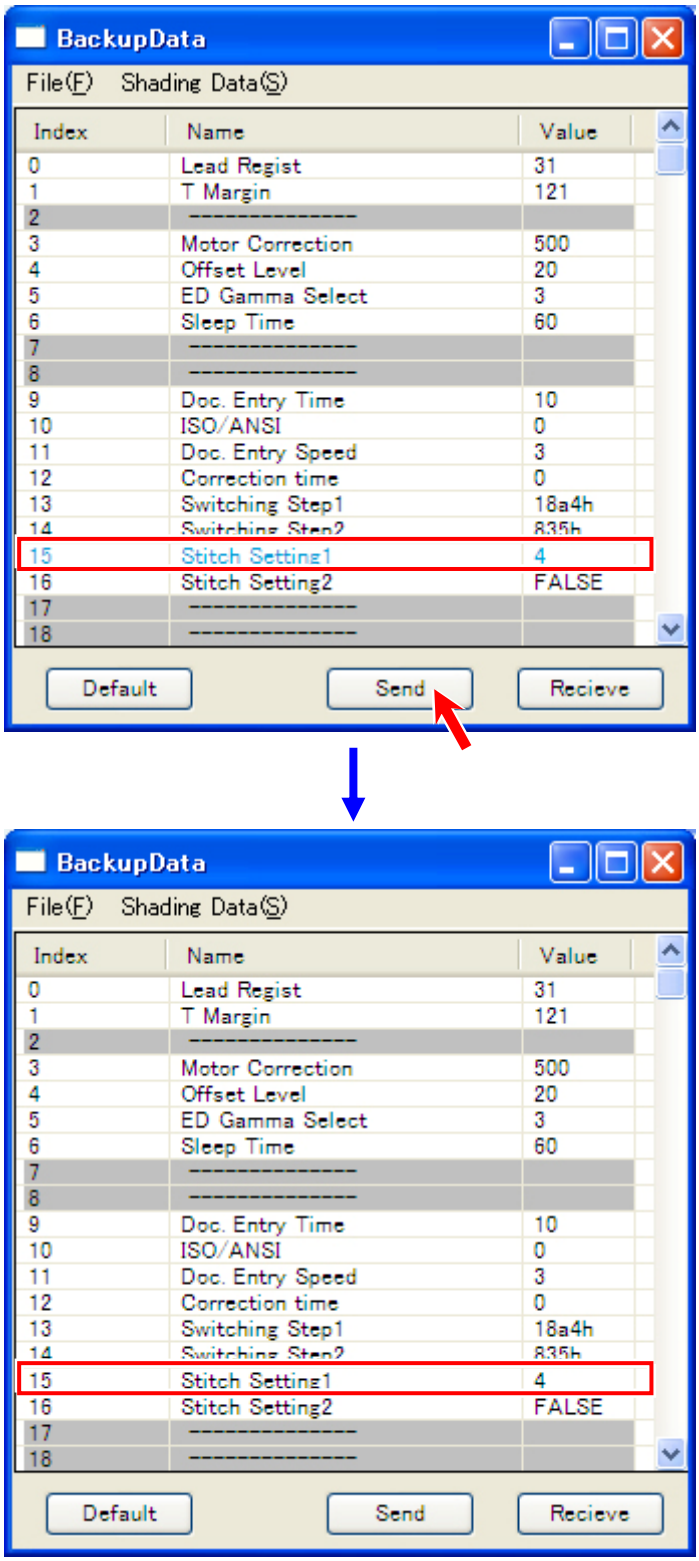
> **NOTE**
>
> Clicking the field displays a caret (flashing “ | ” cursor), but while the caret is flashing, a key entry with your keyboard device is **NOT** accepted.



31. Click [OK] on the bottom.



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



8. 14. 6. 3 Black Brightness Correct

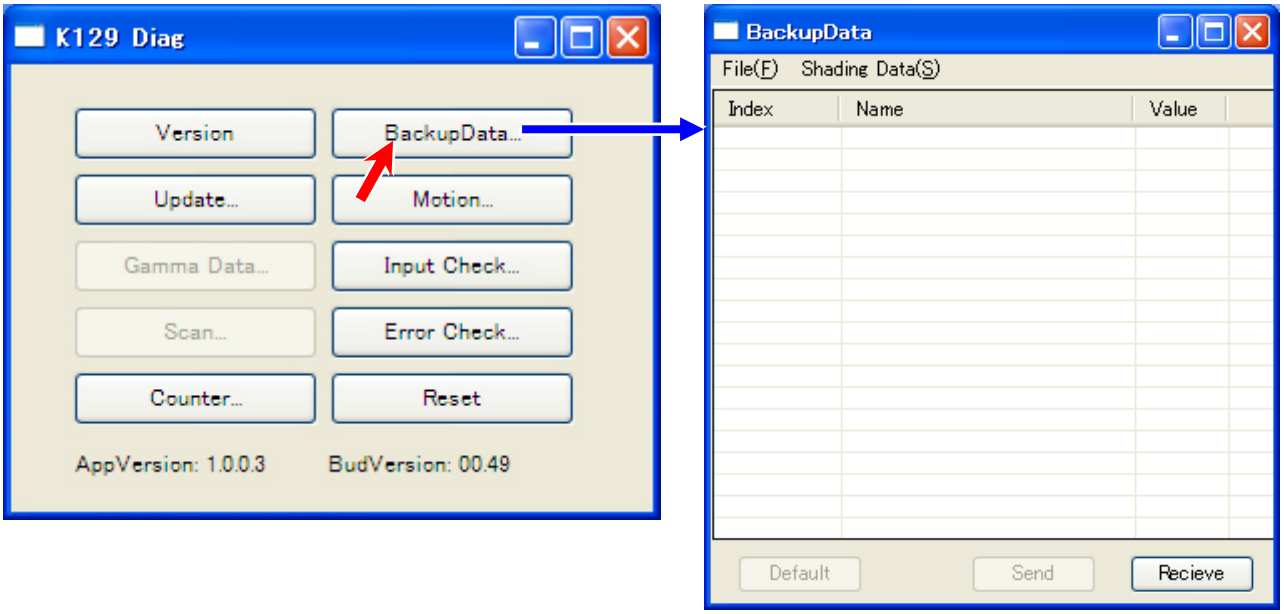
Black Brightness Correct is to define the black level in order to remove density difference between the neighboring CIS image blocks, with using “Black Brightness Correction Chart”.

NOTE

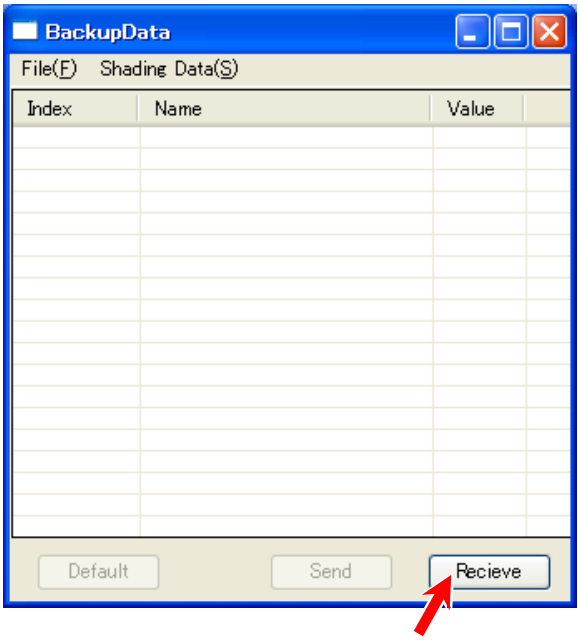
Black Brightness Adjustment requires the firmware (CPU, FPGA) listed below.
If an older version is applied to you scanner, first upgrade the firmware.

Firmware	CPU	12920M15.mot	and after
	FPGA	12920S17.bin	and after
K129 Diag		1.0.0.3 BUD 00.49	and after

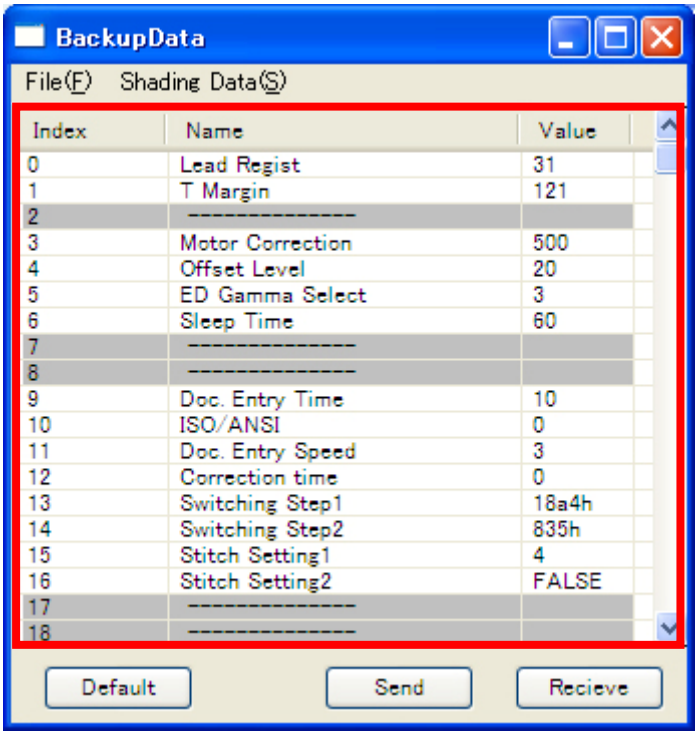
1. Run K129 Diag. Click [BackupData] to recall “Backup Data” list sub window.



2. Click [Receive]



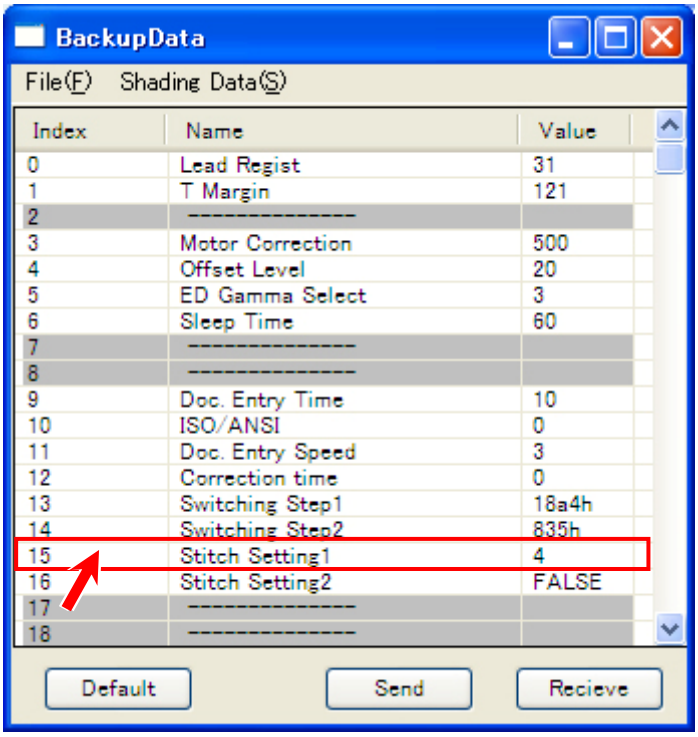
3. The current parameters are retrieved and displayed in the list.



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.

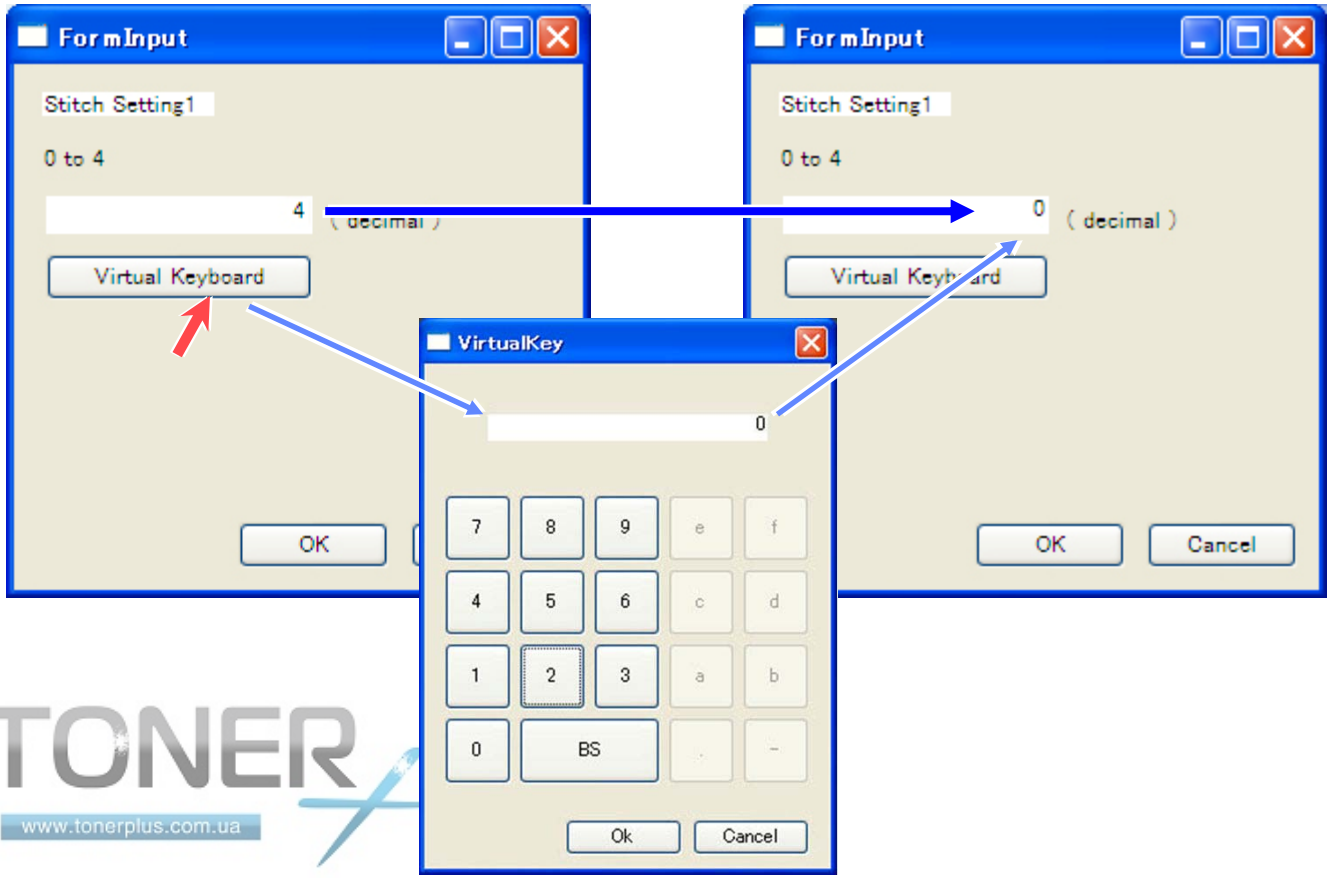
Index	Name	value
15	Stitch Setting1	0
60	Digital gain	0
62	cis1 Detail	0
63	cis2 Detail	0
64	cis4 Detail	0
65	cis5 Detail	0
271	Correction Block	0

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.

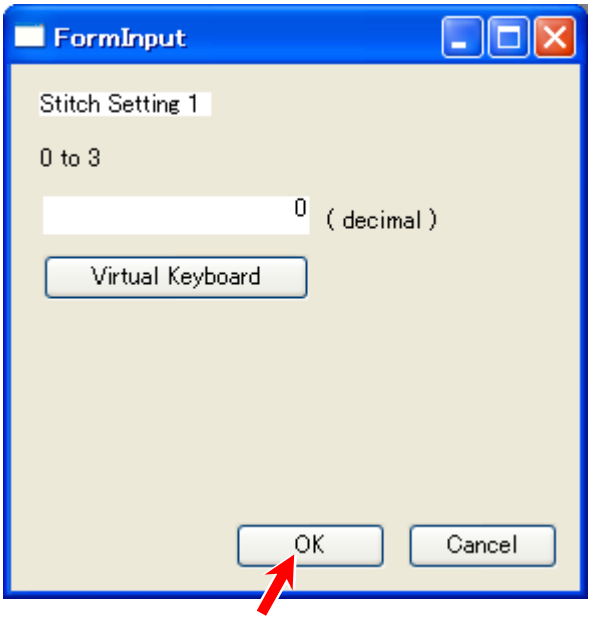


5. “Input” pad pops up. Directly type “0” with your keyboard.

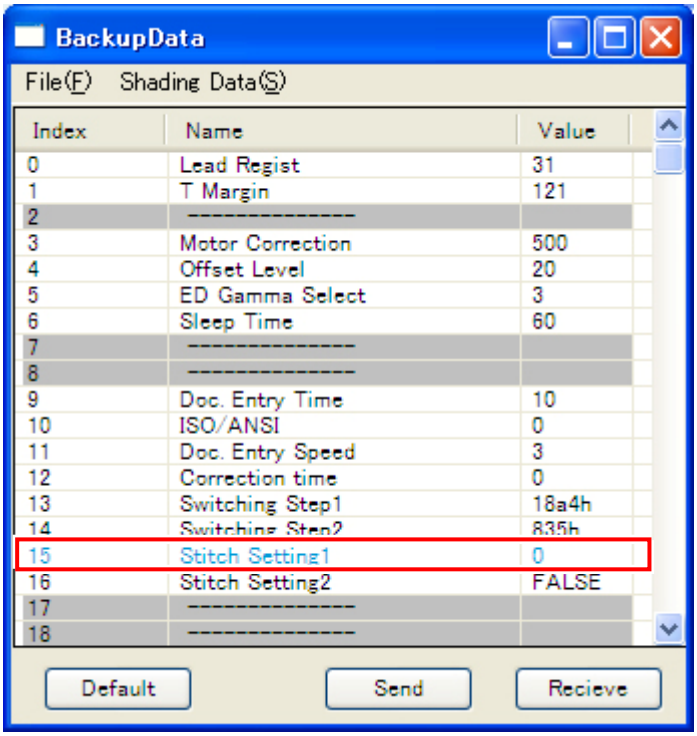
> **NOTE**
>
> Clicking the field displays a caret (flashing “ | ” cursor), but while the caret is flashing, a key entry with your keyboard device is **NOT** accepted.



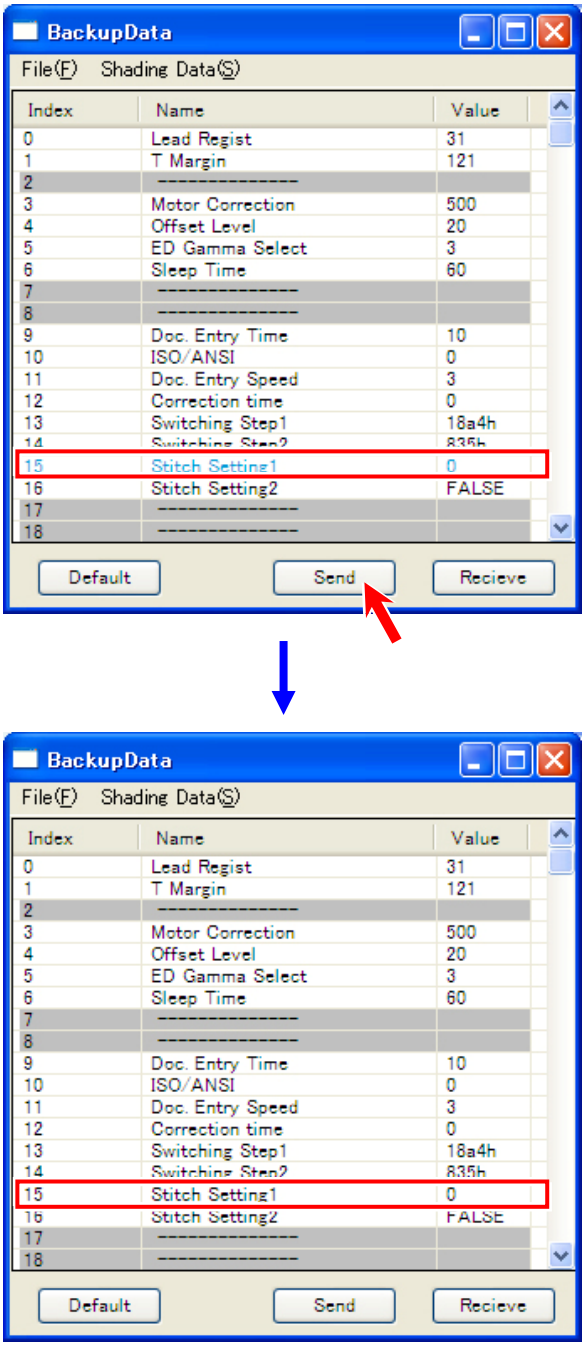
6. Click [OK] on the bottom.



7. The setting change you have made is reflected to the list. It will turn blue.

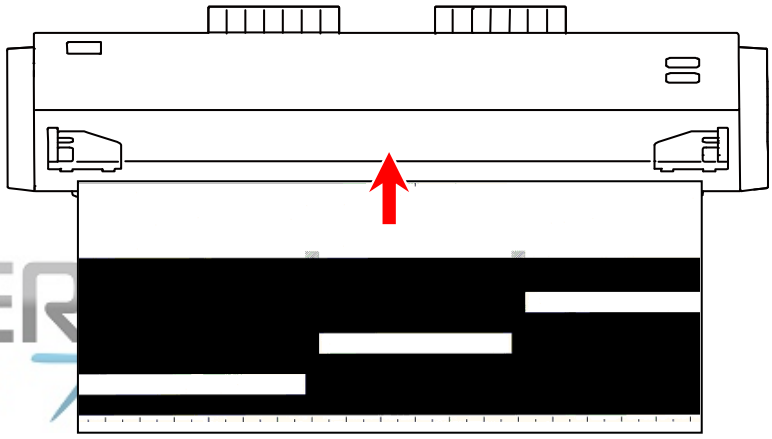


8. Click [Send] on the bottom. The setting change turns black.
   Now it is sent to the scanner's Main Board.

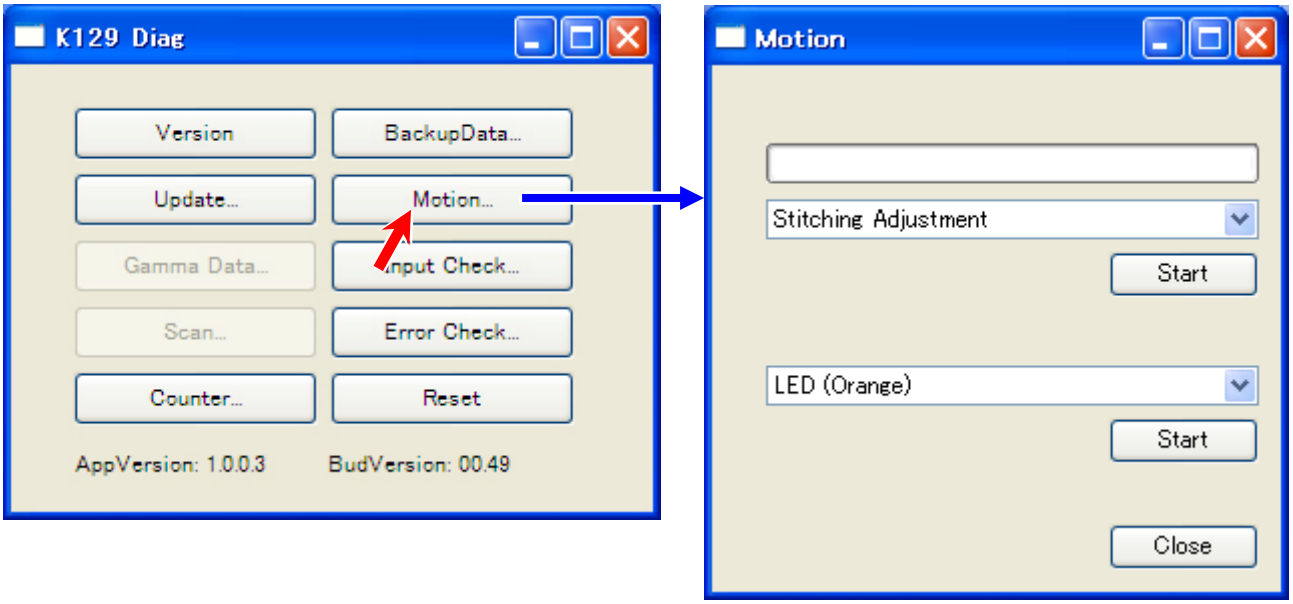


9. To close "BackupData" sub window, click the X button at the top right corner.

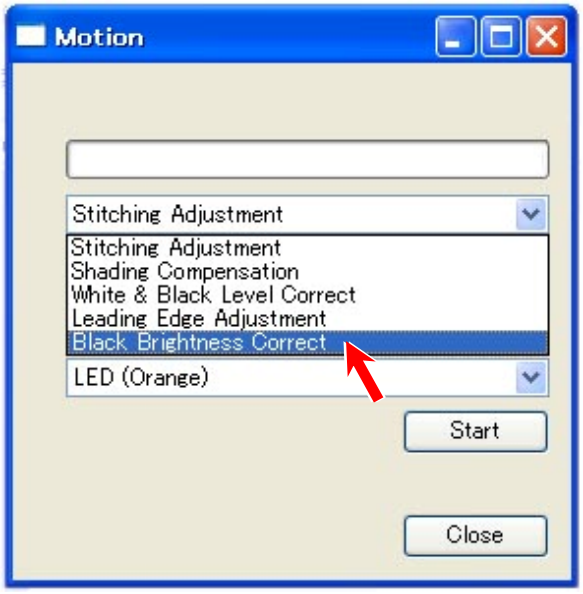
10. Set the Black Brightness Correction Chart to the scanner noting the arrow direction.



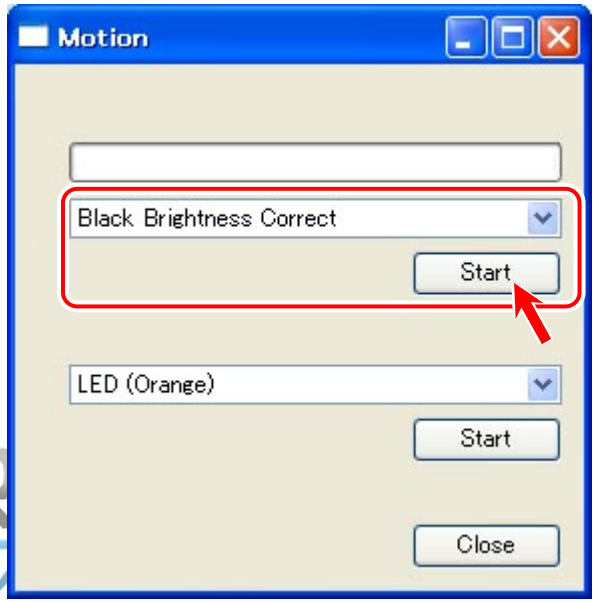
11. Click [Motion] to recall “Motion” sub window.



12. Select “Black Brightness Correct” in the upper drop-down menu.

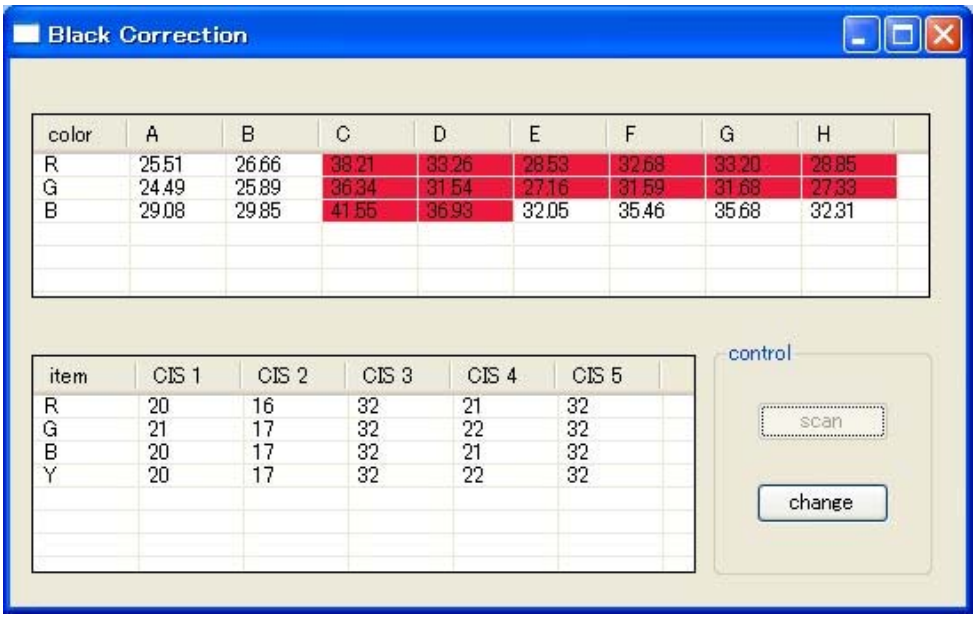


13. Click [Start] beside the upper drop-down menu.



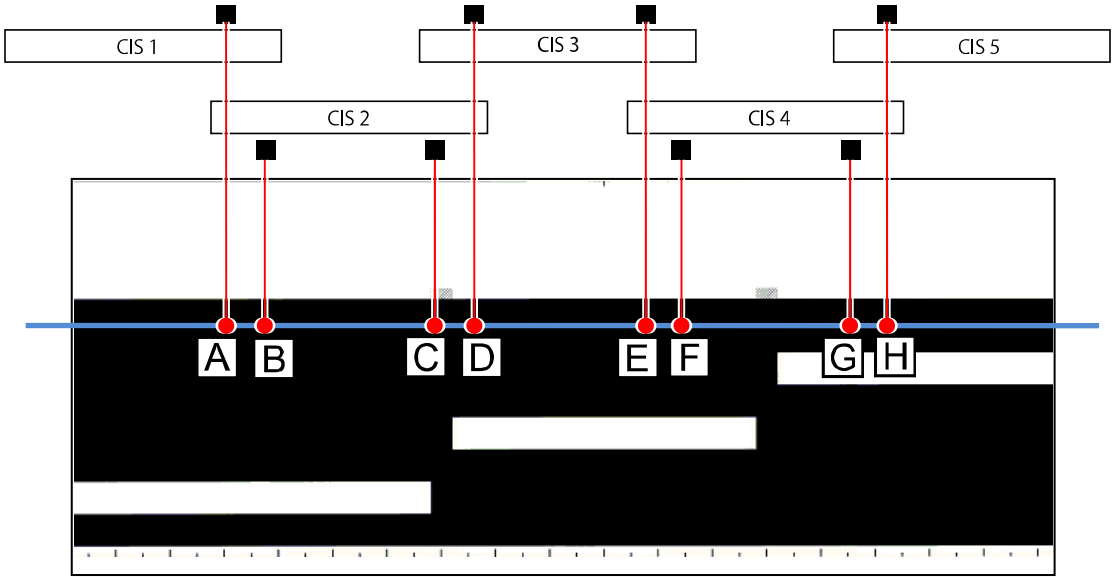
14. After the completion of the scan, “Black Correction” sub window appears.
The upper table shows the measured density at the border areas of each CIS.
At this time, if the values between the neighboring CIS reaches 4.00+, the concerning cell(s) will turn red.

Follow the step 15 until the red cell disappears.
When all the cells turn white, go to step 16.

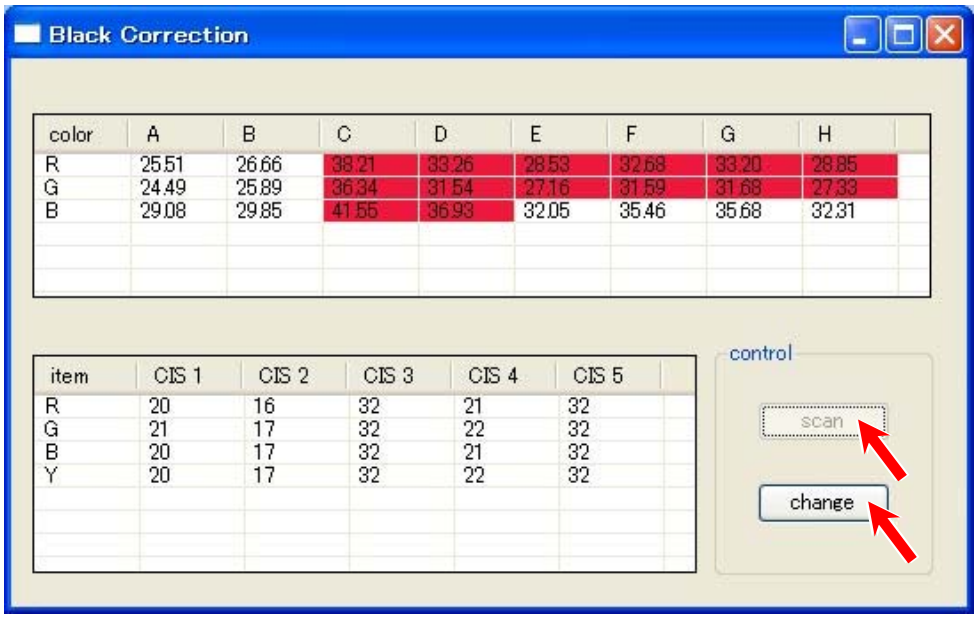


Reference

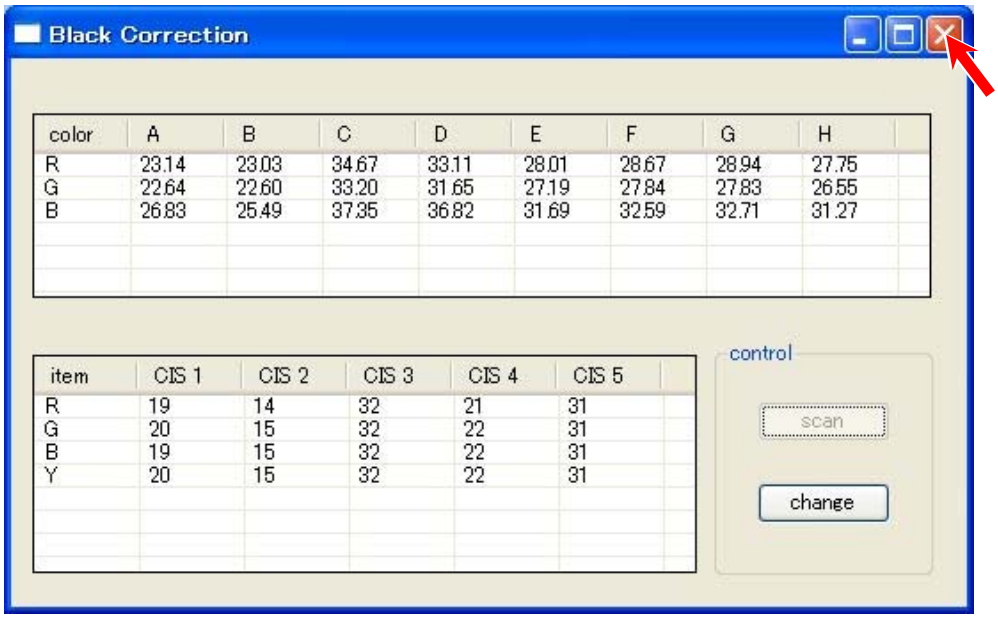
The columns A to H in the upper table correspond to the joint regions as follows.



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.

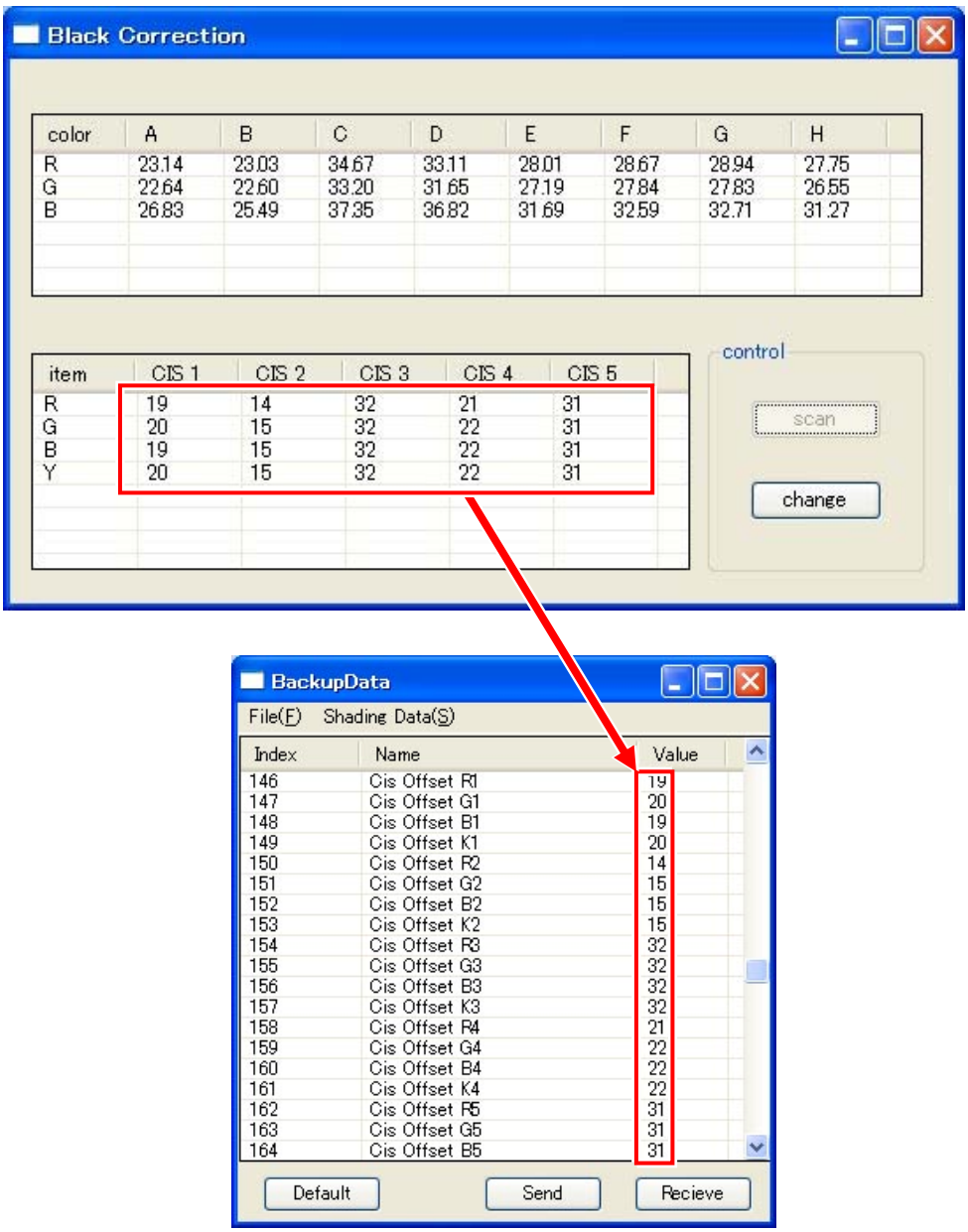


16. When all the cells turn white, click the X button at the top right corner to close “Black Correction” window.



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.

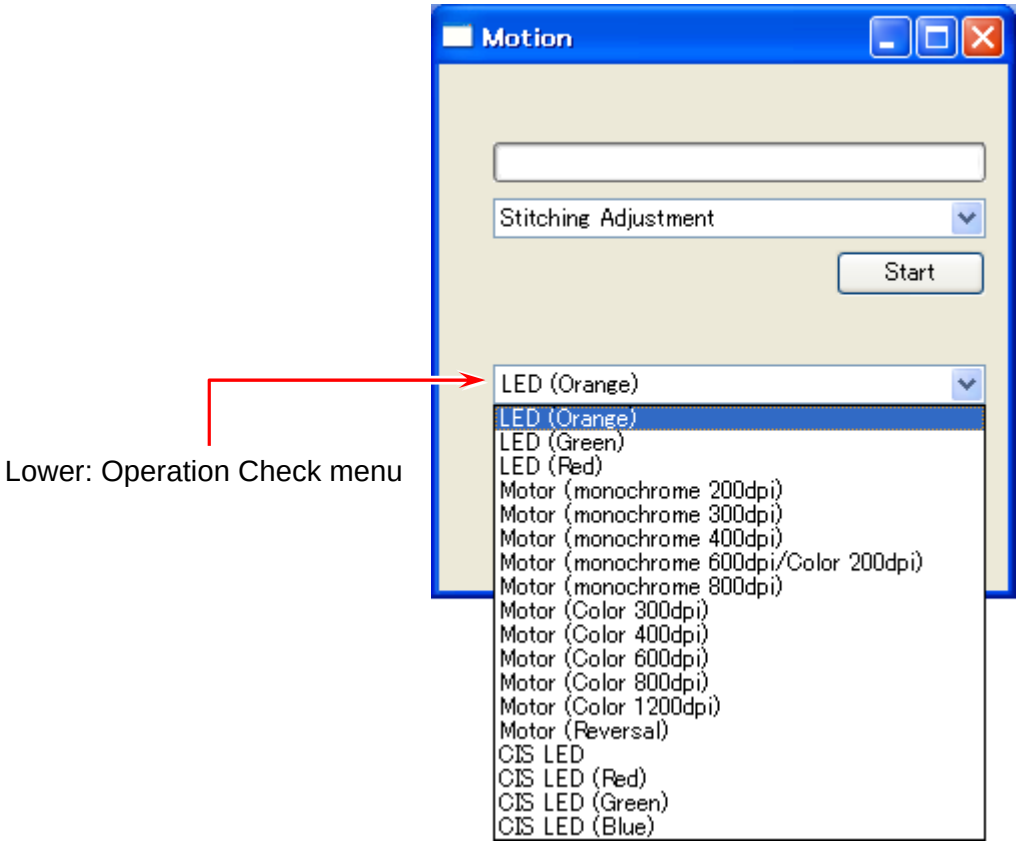
Index	Name	value
15	Stitch Setting1	4
271	Correction Block	1

18. Create a backup. See [8.14.4.2 Saving the Current Backup Data].

8. 14. 6. 4 Other menu on Adjustment

Do not use the other options in the upper dropdown menu (for adjustment)

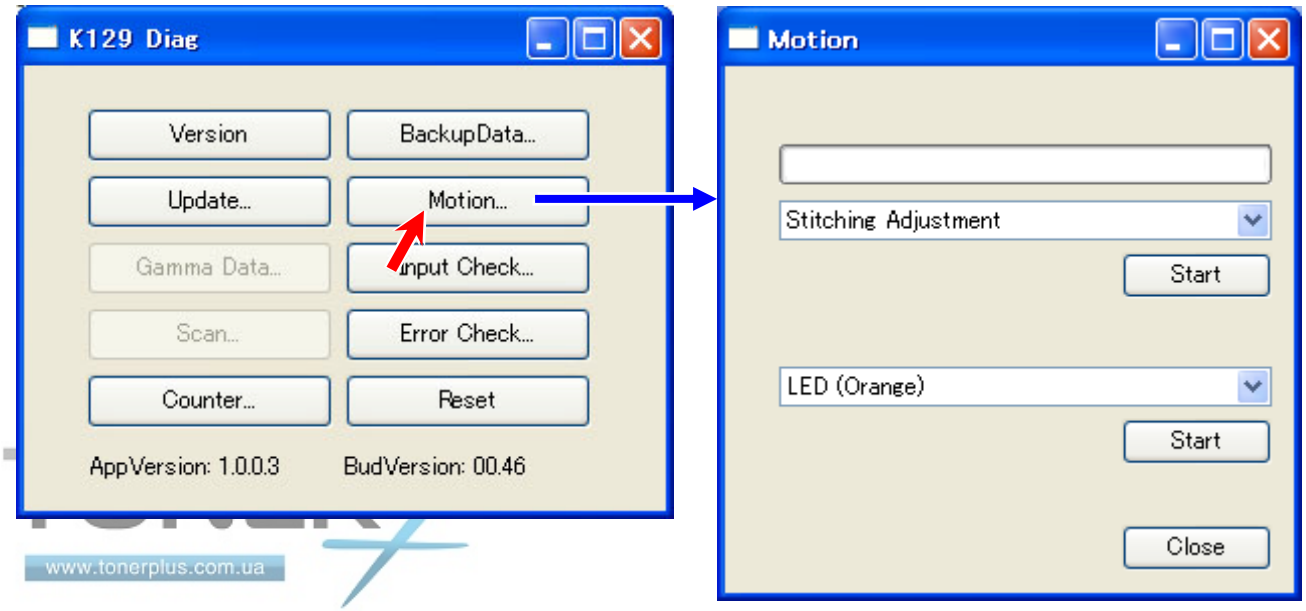
8.14. 6. 5 Operation Check



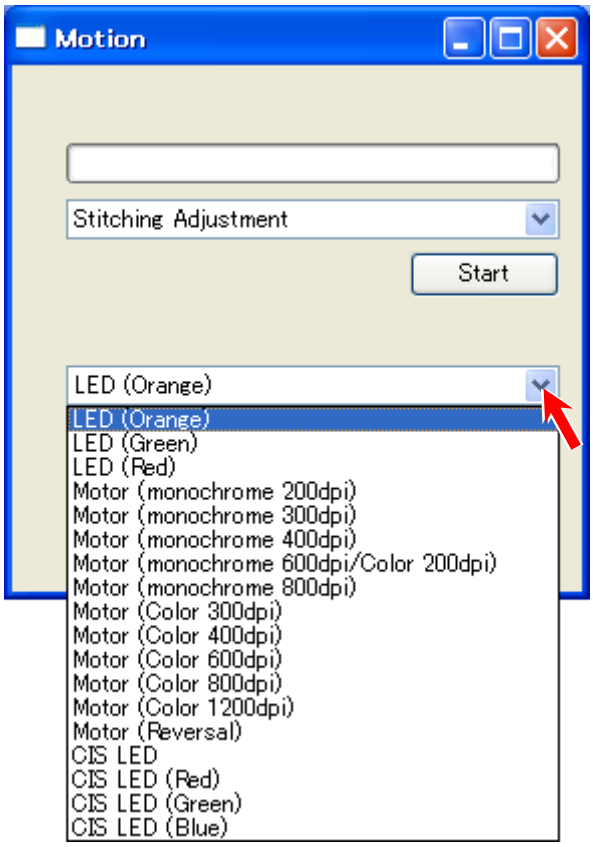
Operation Check menu:

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

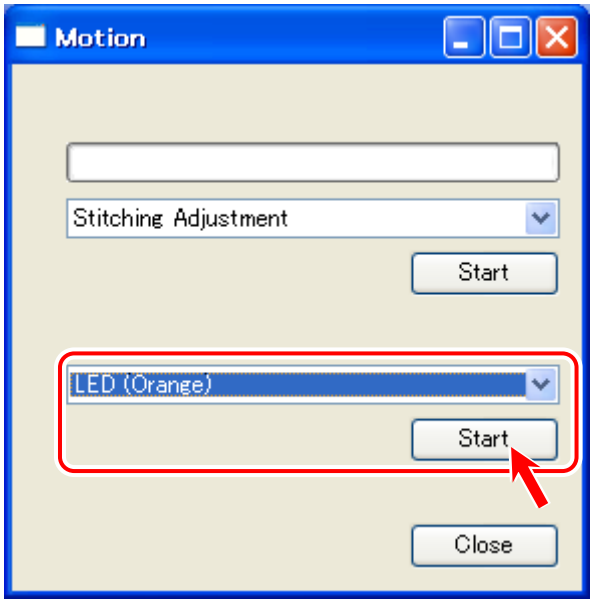
1. Click [Motion] to recall “Motion” sub window.



2. Select one of the component in the lower drop-down menu.



3. Click [Start] beside the upper drop-down menu.
   The selected component operates for some seconds, and then stops.



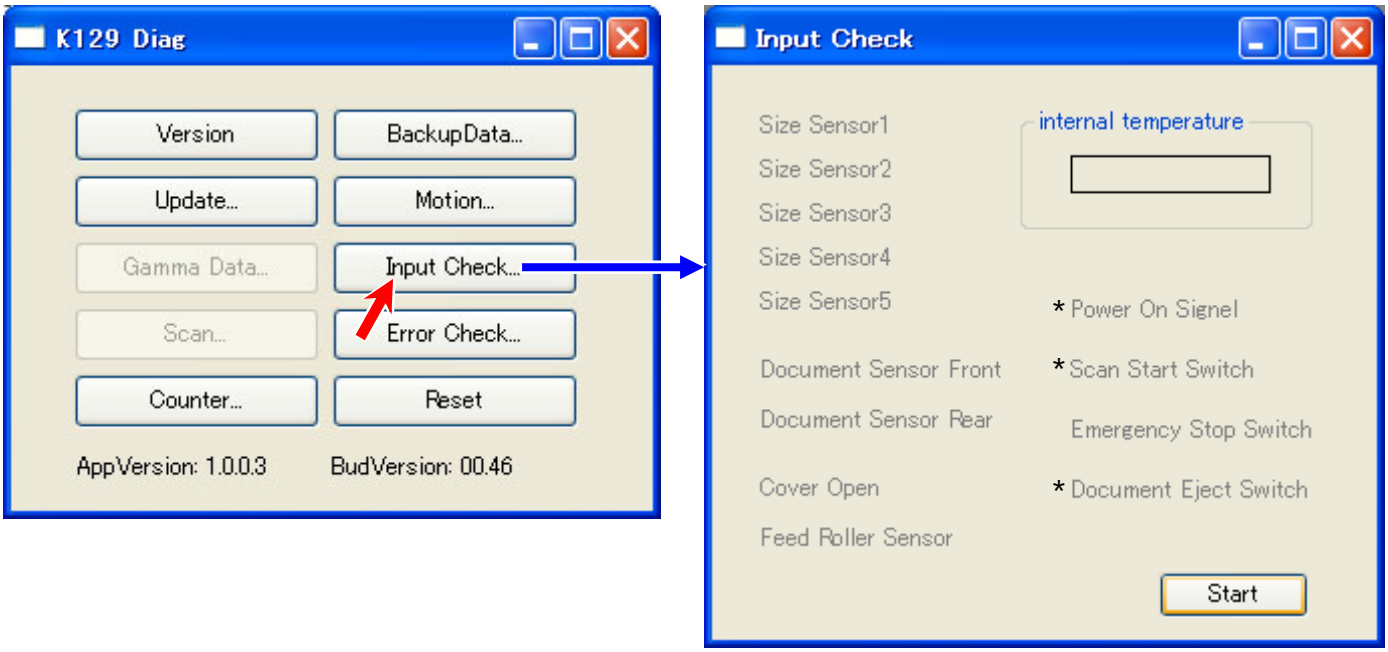
4. To close “Motion” sub window, click the X button at the upper-right corner.

8.14. 7 Input Check

"Input Check" is to be used for I/O check. When a given component gives a correct signal, the name of the component will change the color.

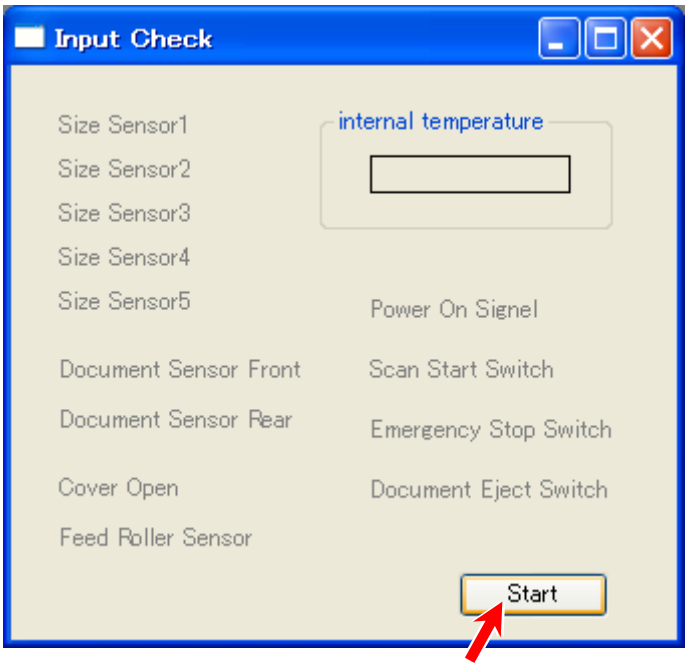
8.14. 7. 1 Getting Input Signal

1. Click [Input Check] to recall "Input Check" sub window.

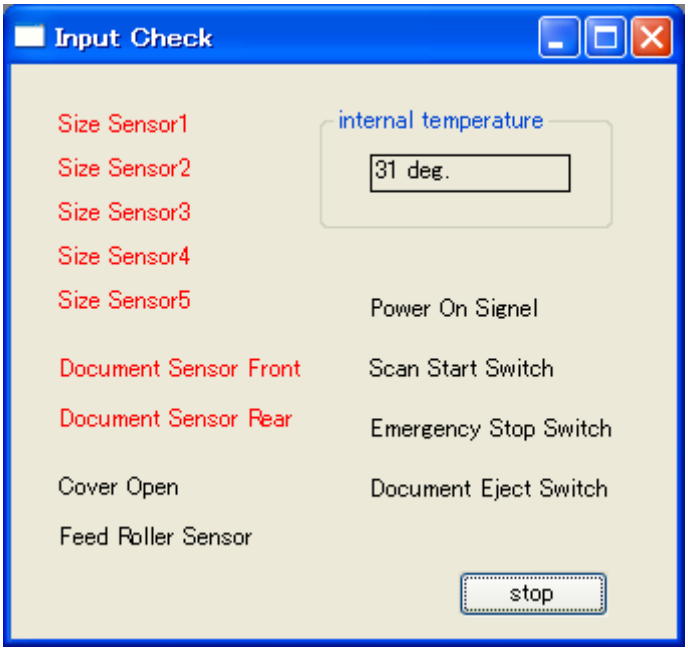


* Not available in TASKalfa 4820w

2. The names of the components are grayed at this time. Click [Start].

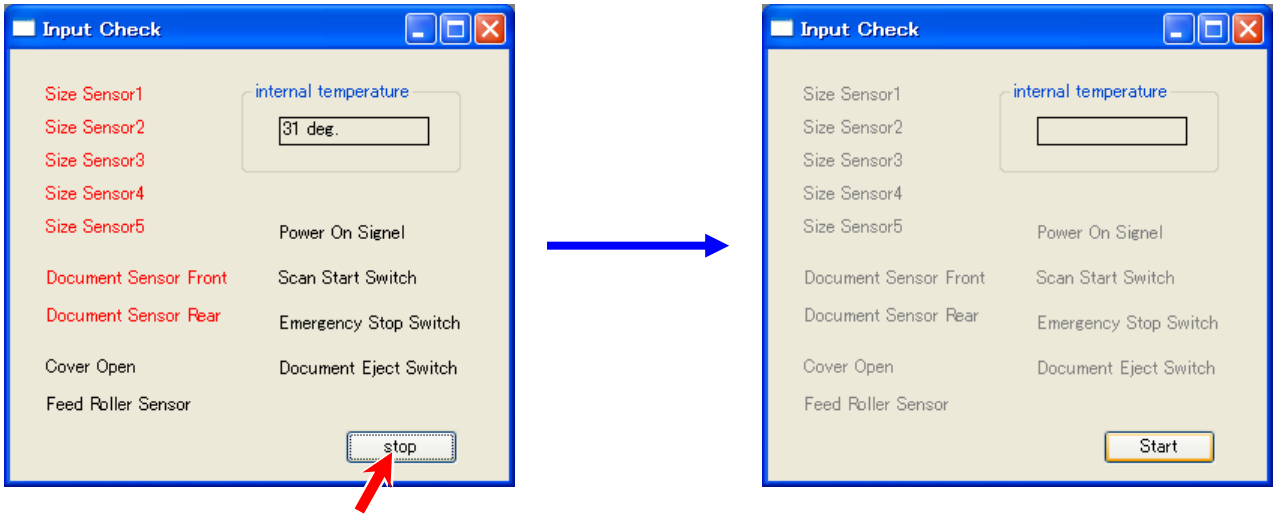


3. Now the names are active. When the status changes on a given component, the name will change the color.



For example, open the Upper Unit, “Cover Open” turns read.

4. To close “Input Check” sub window, click [Stop].



5. Click the X button at the upper-right corner.

8.14. 7. 2 Signal List

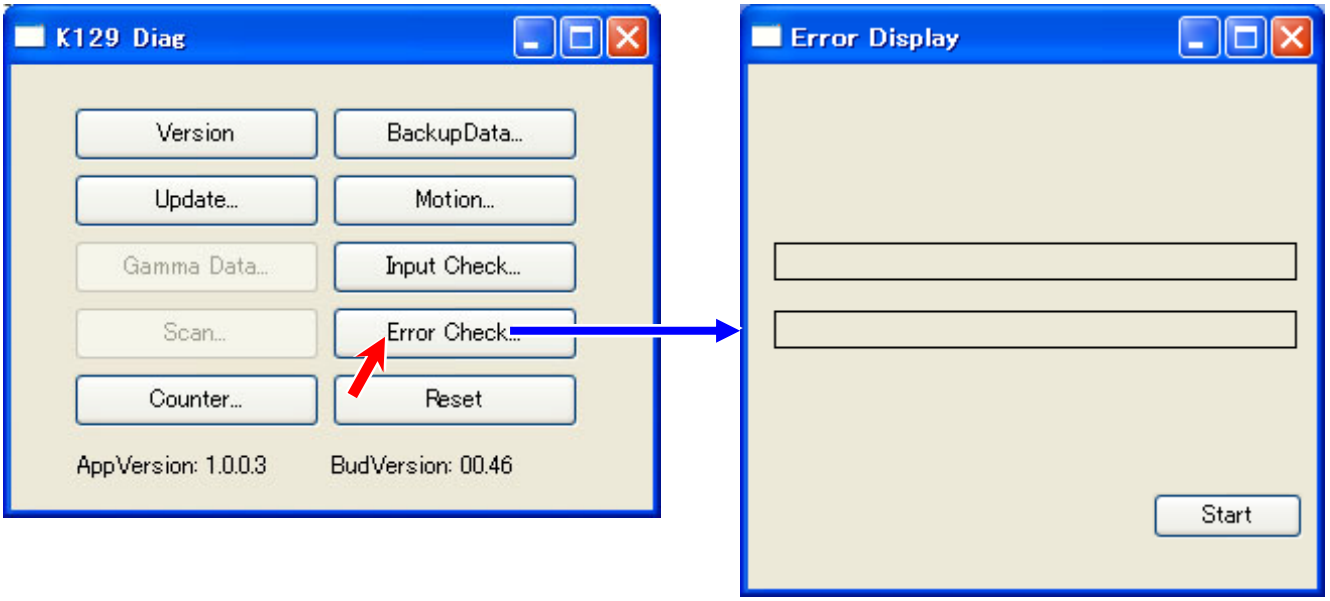
Name	Target	Symbol	default	To change status,
Size Sensor 1	size detection: A4 landscape, A3, 11”, 12”	S_PH2	red	Pass a sheet over the sensor.
Size Sensor 2	size detection: A2, 17”, 18”	S_PH3	red	
Size Sensor 3	size detection: A1, 22”, 24”	S_PH4	red	
Size Sensor 4	size detection: A0, 30”, 34”	S_PH5	red	
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.
FeedRoller Sensor	Feed Roller rotation	S_PH9	(depends)	Gently rotate the Feed Roller toward the rear.
Power ON Signal	----	----	black	
Scan Start Switch	----	----	black	
Emergency Stop Switch	Emergency Stop Button pressed	S_MS1	black	Press [Emergency Stop] button.
Document Eject Switch	----	----	black	

8.14. 8 Error Check

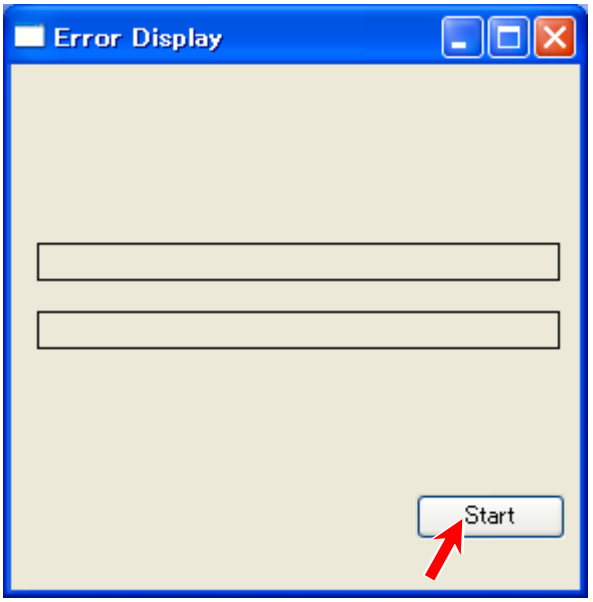
Any internal error occurs, the LED Indicator on the scanner lights solid red.
“Error Check” is used for getting the detailed error status to isolate the cause.

8.14. 8. 1 Getting Error Status

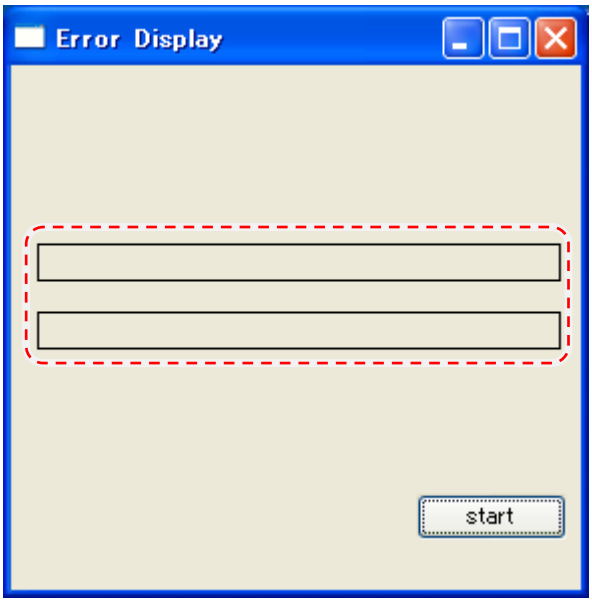
1. Click [Error Check] to recall “Error Check” sub window.



2. Click [Start] on the bottom.



3. Wait several seconds. If there is no error, the fields in the middle of the window indicate nothing.



4. To close “Error Check” sub window, click the X button at the upper-right corner.

8.14. 8. 2 Error List

communication error	Connection lost. - Check for the power supply and USB port on the scanner / PC that K129 Diag runs. - Cycle the power on both the scanner / PC.

document cover open	Upper Unit is not closed. - Firmly close the Upper Unit. - Check S_PH8.

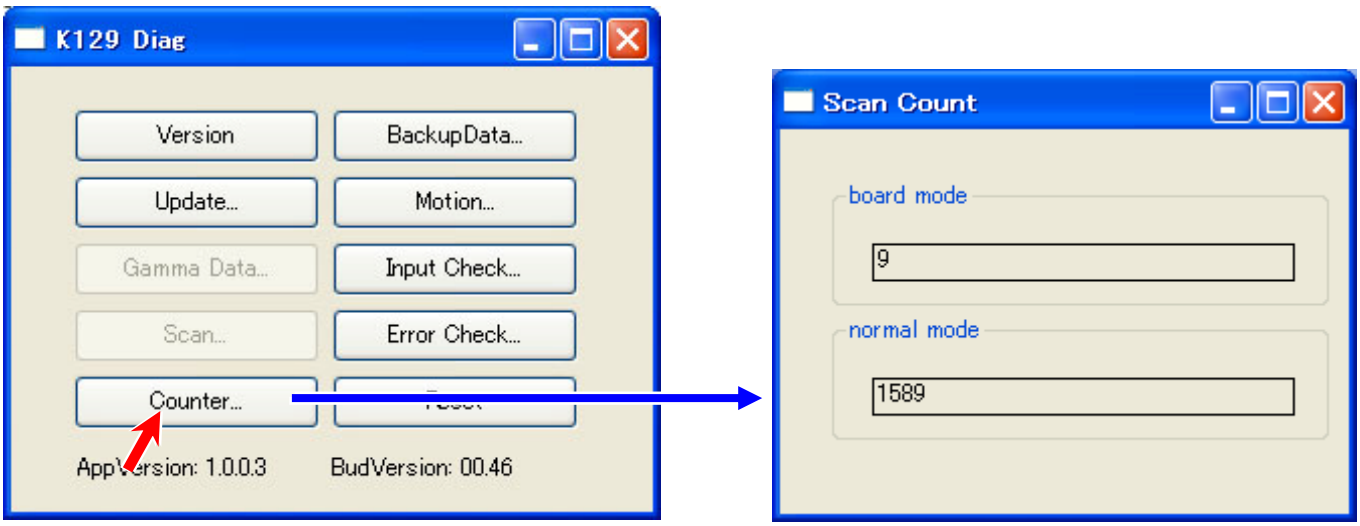
jam at document feed	Document jam is detected. - Remove the jammed document. - Check S_PH1 and S_PH7.

document feed roller HP error	Error on drive system. HP is not detected in the roller’s one rotation. - Check S_PH9. - Check drive system (gear, roller, motor).
shading sequence error	Shading data is abnormal. - Import the shading data. - Perform Shading Compensation. - Check the scanner’s Main Board.
document width error	Size detection discrepancy. - Check size sensors.

For the detailed troubleshooting procedure, see Chapter 7.

8.14. 9 Counter

Pressing [Counter] recalls “Scan Count” sub window.

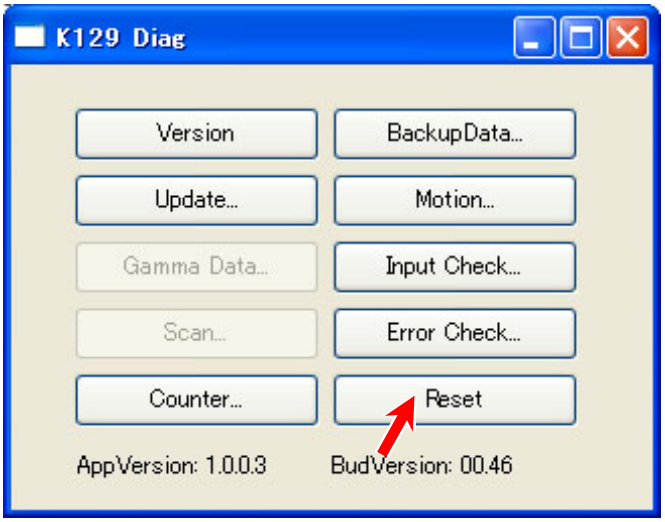


board	scan count for “slow mode” scans (“slow mode” is available on the controller / software)
normal	scan count for normal speed

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

8.14.10 Reset

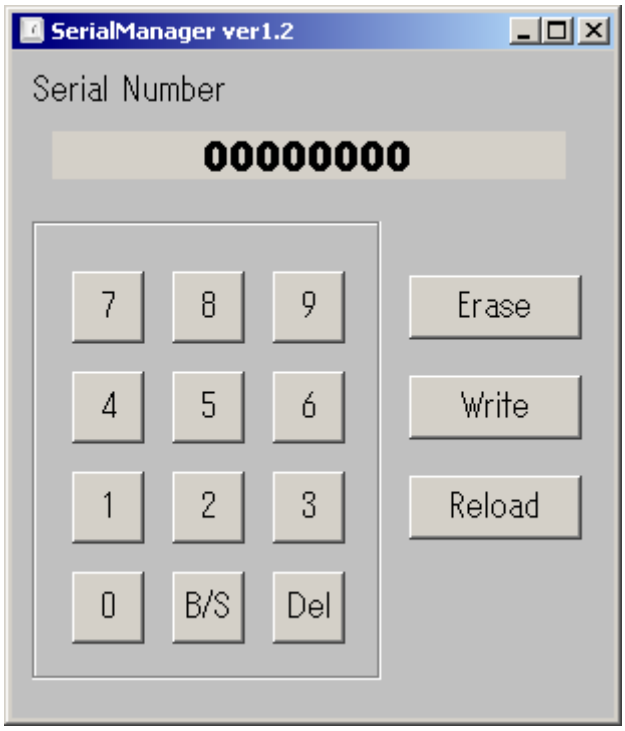
Pressing [Reset] recalls a dialog. If you click [Yes], the communication will be re-established as another session.



8. 14. 11 Serial Manager

The scanner's Main Board stores its serial number. As a service part Main Board has no S/N information on it, you will have to write the serial number (with 8 digits) to the scanner's Main Board.

For writing a serial number, use "Serial manager.exe". SerialManeger.exe



NOTE

A Main Board with no S/N written or with a wrong S/N would be detected as an incorrect hardware configuration. Some license key codes may not be accepted.

You cannot enter another S/N any more once registered, including correction of a wrong entry.

8. 14. 11. 1 Serial Manager System Requirements

- Microsoft Windows XP / Vista 32 bit, or Windows 7 64 bit / 32 bit Operating System
- USB 2.0 hardware support

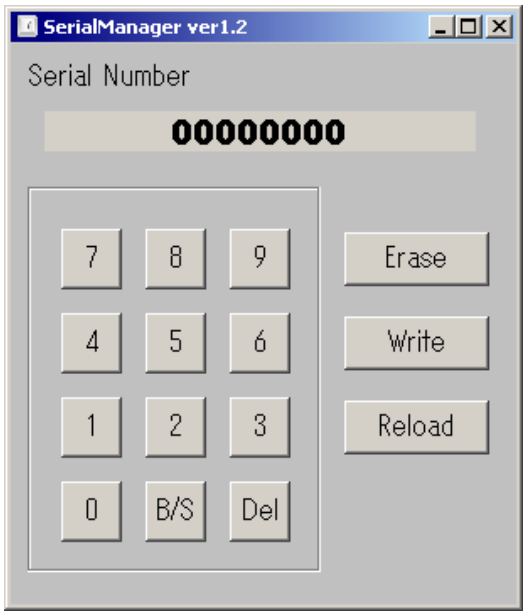
> **NOTE**
>
> Get the latest (or the proper version of) **SerialManager*.exe** and save it to any available storage on your PC / removable storage. (no change to the registry required)
>
> As of January 2013: version 1.2

8. 14. 11. 2 Starting Serial Manager

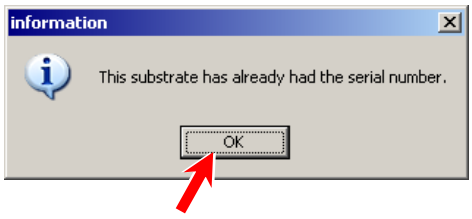
Just run “SerialManager.exe.” on your PC.

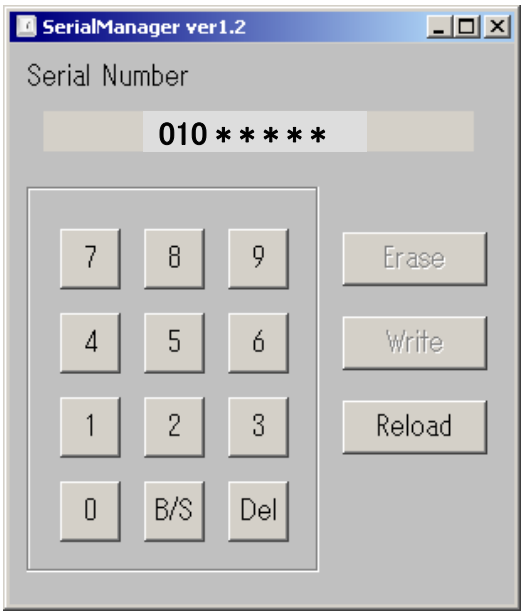
SerialManeger.exe

When your PC connects to a scanner with the **scanner’s Main Board service part**, Serial Manager shows “00000000” in the Serial Number field.



When your PC connects to a scanner with the scanner’s Main Board having its serial number written already, a notification pops up, and then Serial Manager shows the written serial number.

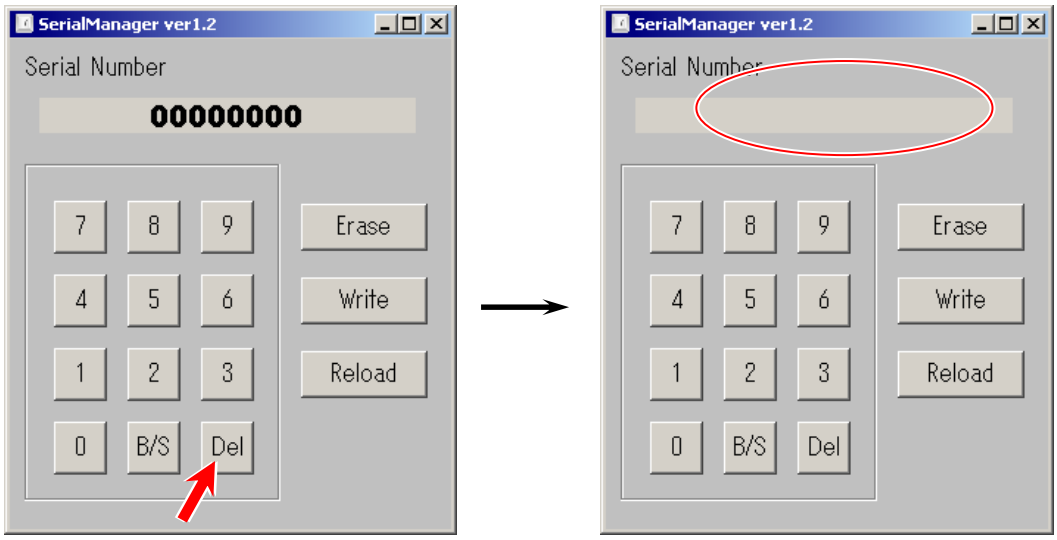




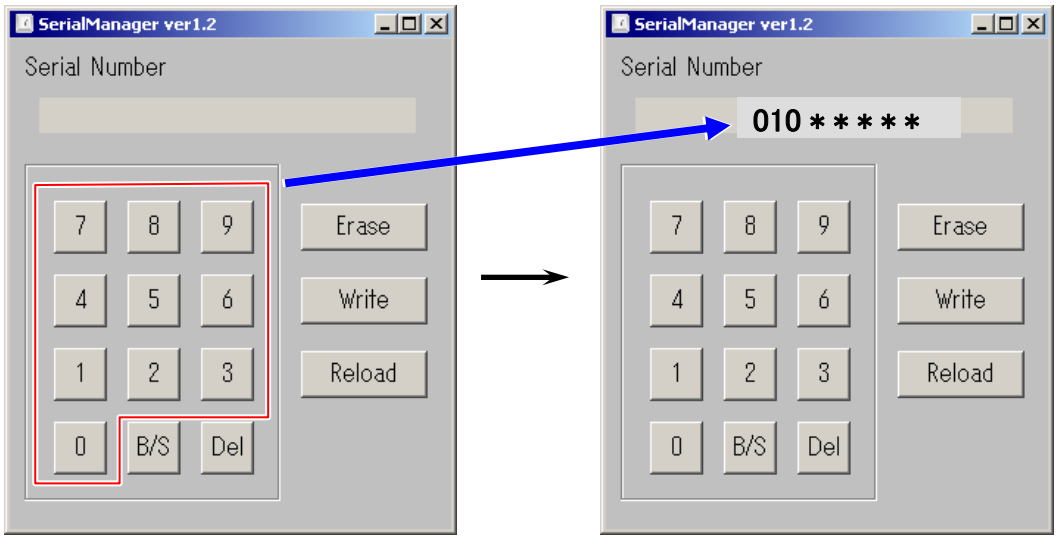
8. 14. 11. 3 Registering S/N to scanner's Main Board

1. Run Serial Manager.

2. Press [Del] to delete the existing "00000000" for a new entry.



3. Enter the correct serial number (8 digits)

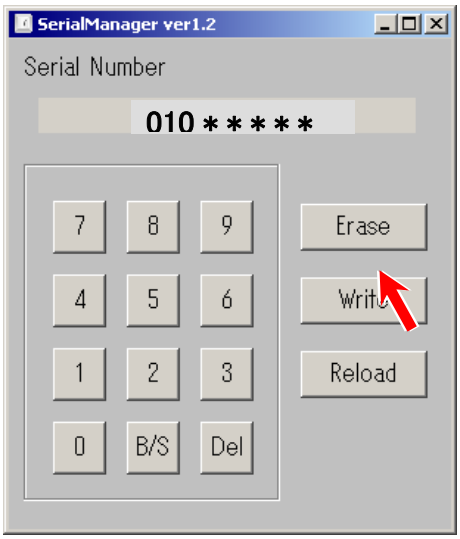


NOTE

The 8 digits serial number which should be entered depends on the product code.
Replace the first 5 digits of the machine serial number to the 3 digits number which is fixed as follows. Last 5 digits are same as the serial number of the machine.

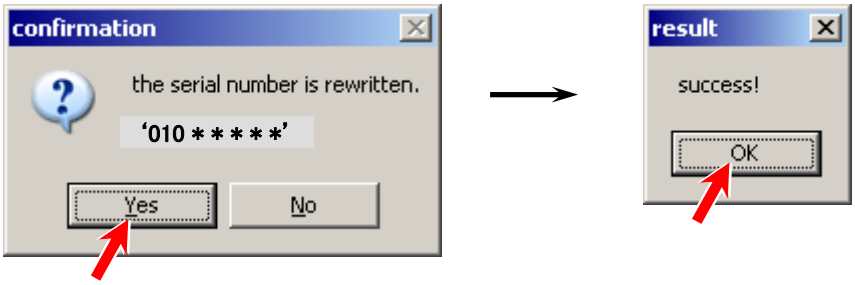
- NLZ** -> 010
- NM2** -> 020
- NHP** -> 030
- NM1** -> 040
- NPG** -> 050

4. Press [Write] to finalize the entry.



> **NOTE**
>
> At this time the entry is not validated yet.

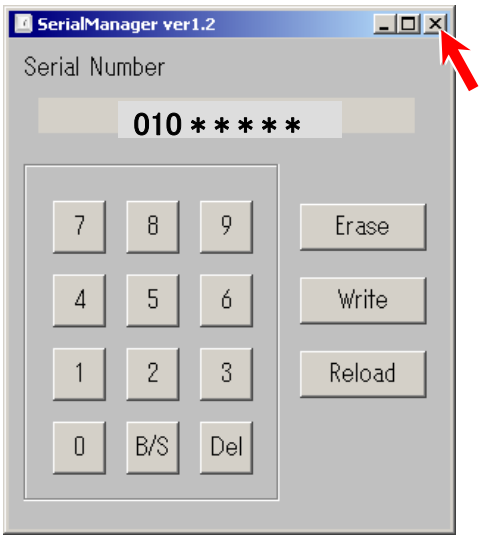
5. Confirmation dialogs pop up.
   Making sure of entering the correct S/N, press [Yes], and then [OK].



> **NOTE**
>
> (1) In case you wrote a wrong number, **DO NOT** close Serial Manager and go back to step 2.
>
> (2) At this time the entered S/N has just been sent to the Main Board, but is not validated yet.

6. To close Serial Manager, press the X button on the top right corner.

> **NOTE**
>
> Once you close Serial Manager, [Write] button will turns gray after that.



7. Turn off the scanner. Wait 3 seconds and then turn it on.
   Now the entered S/N is written to the scanner's Main Board.

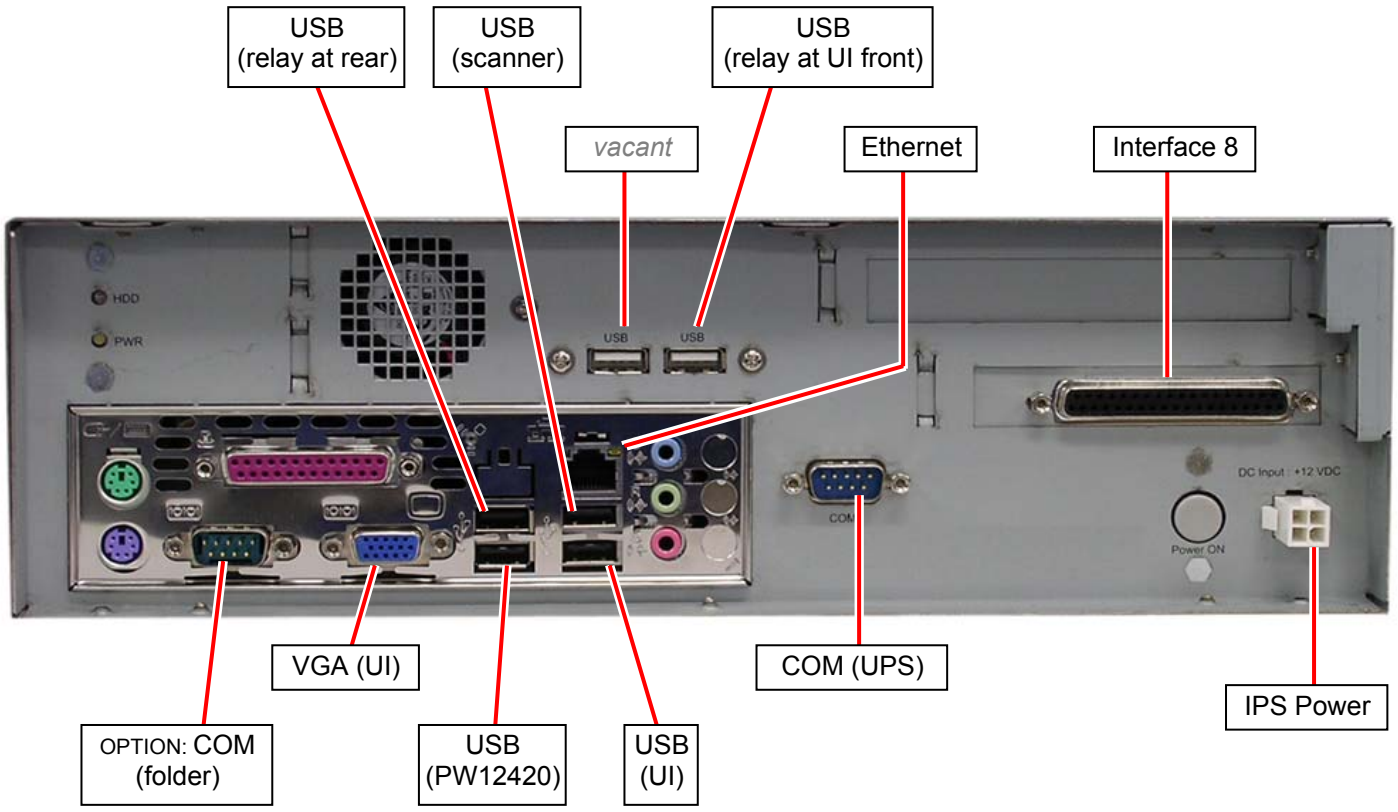
> **NOTE**
>
> If you quickly turn off and on again, "The device can run faster..." balloon would pop up.
> This is because the scanner firmware may be loaded to the scanner's memory incorrectly.
> Please wait 3 seconds before turning on again.

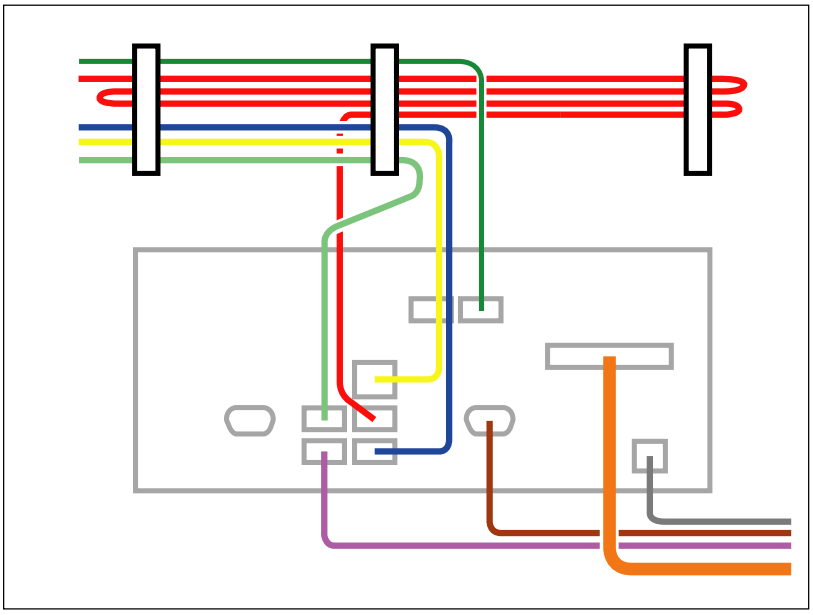
Chapter 9

Appendix

9. 1 Schematic Wiring around Controller

IPS Assy for TASKalfa 4820w (DC1 type)

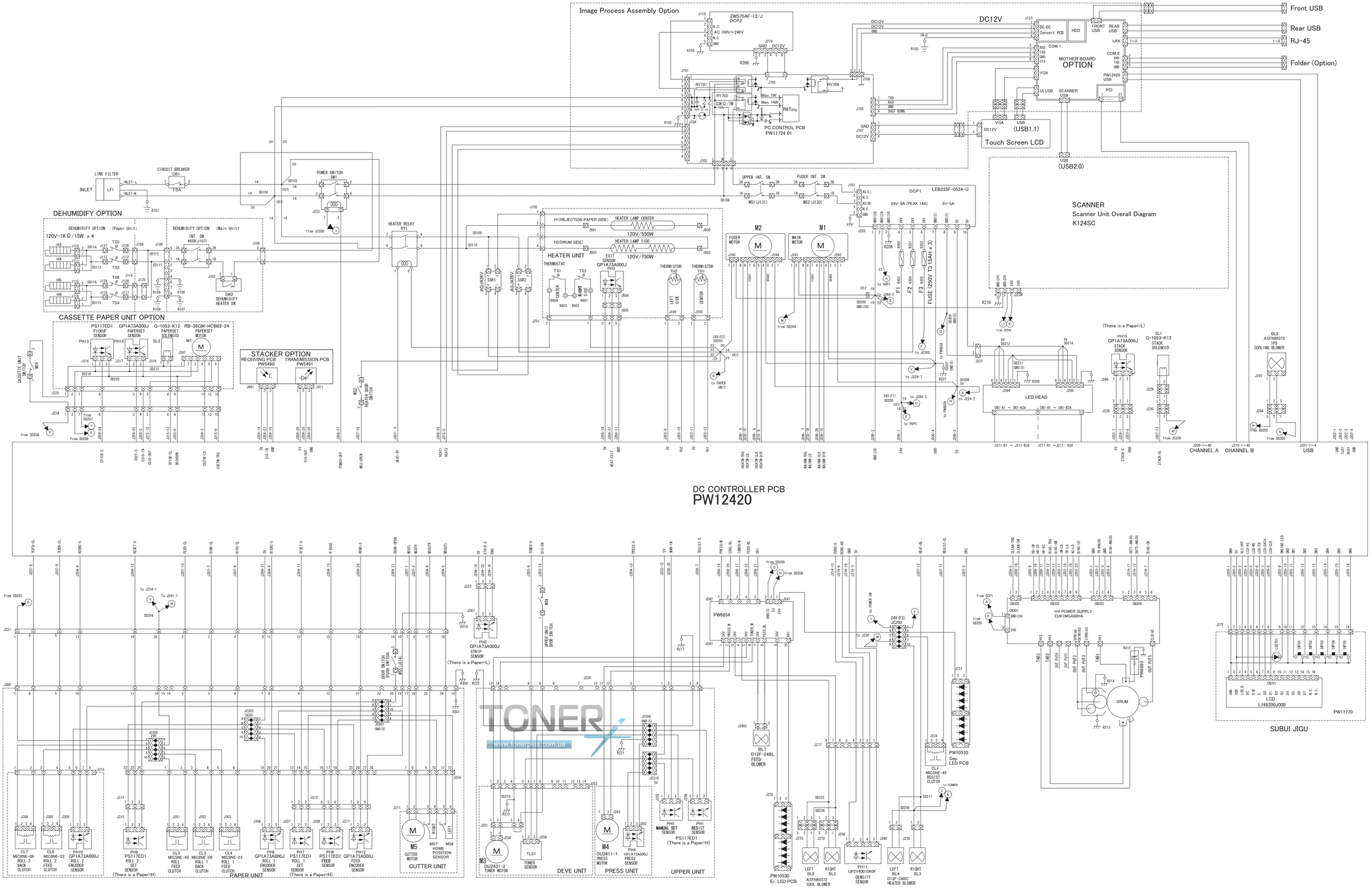




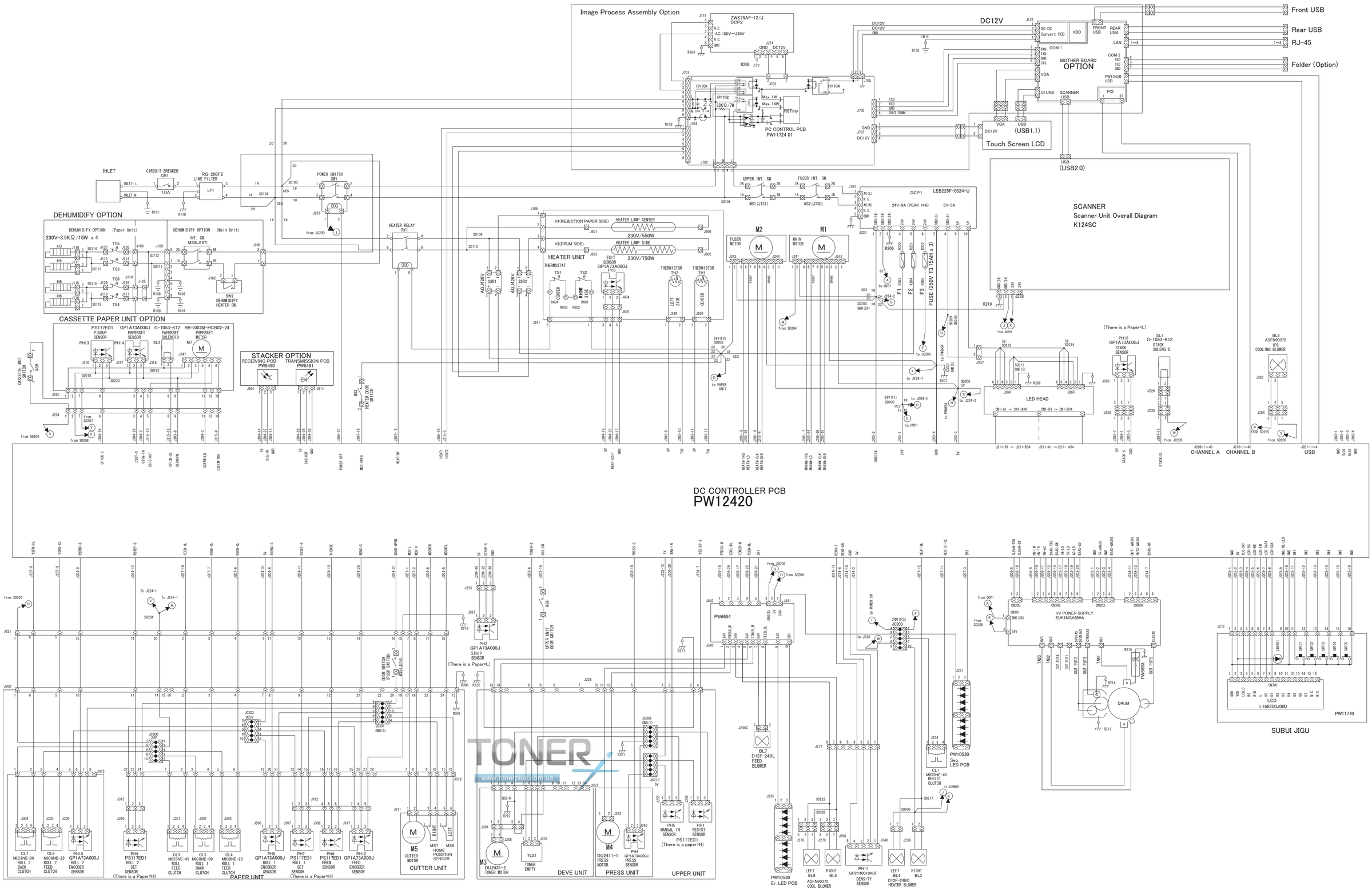
Interface 8
IPS Power
Ethernet
USB to PW12420
USB Relay at rear

USB from Scanner
USB from UI
VGA from UI
USB Relay at UI front

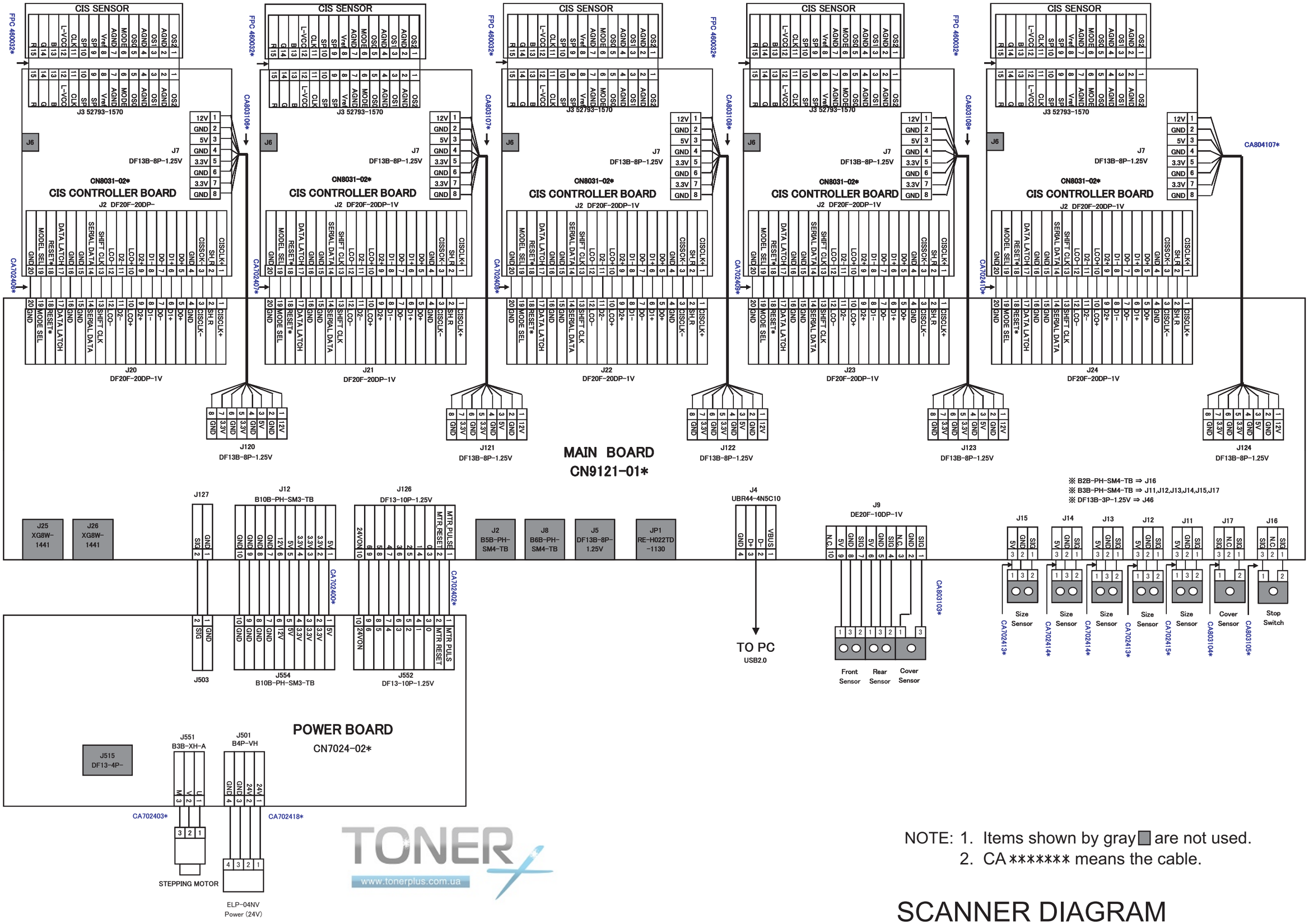
9. 2 Overall Diagram (for Old Scanner)



Overall Circuit Diagram (USA/120V)



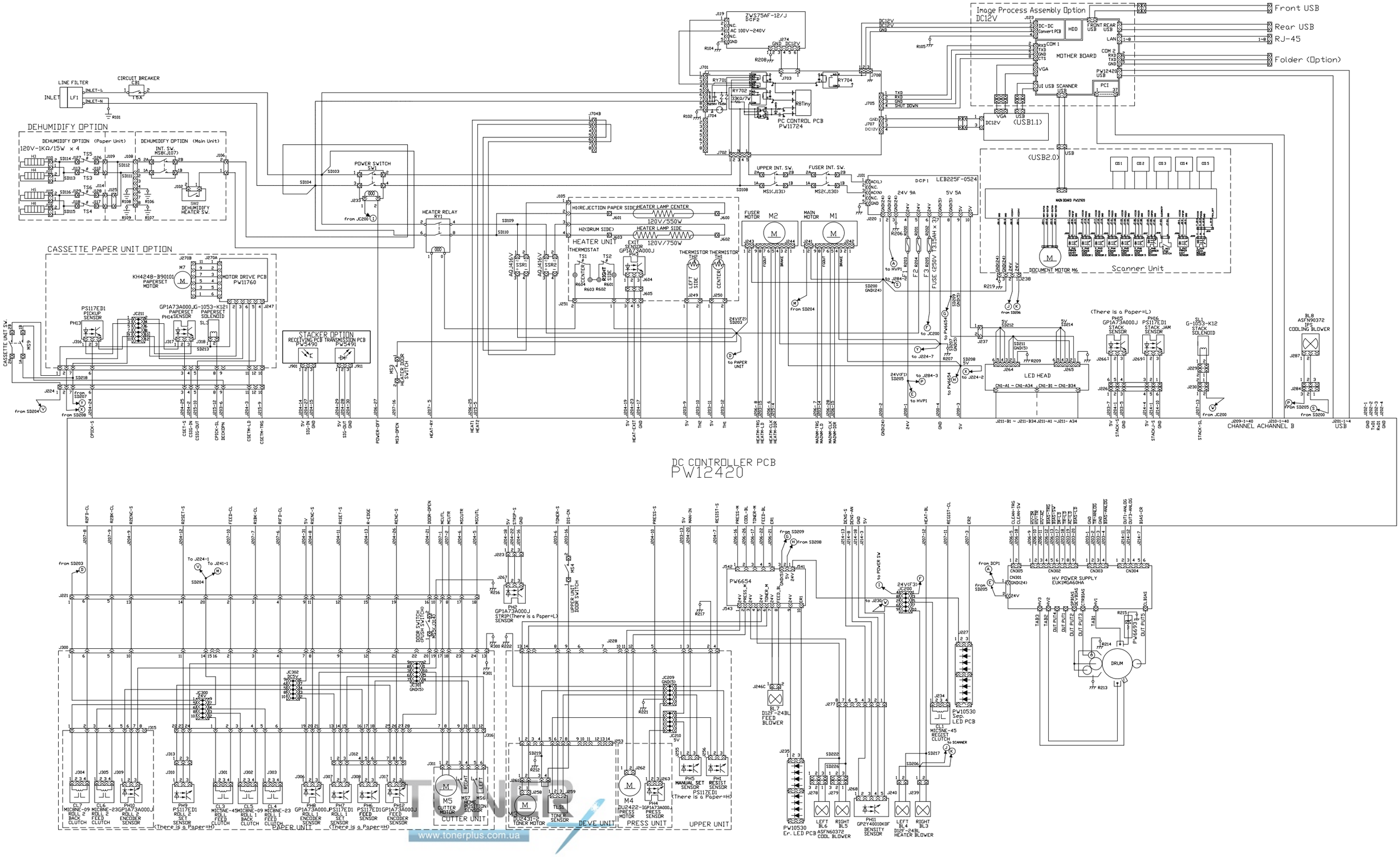
Overall Circuit Diagram (EUR/230V)



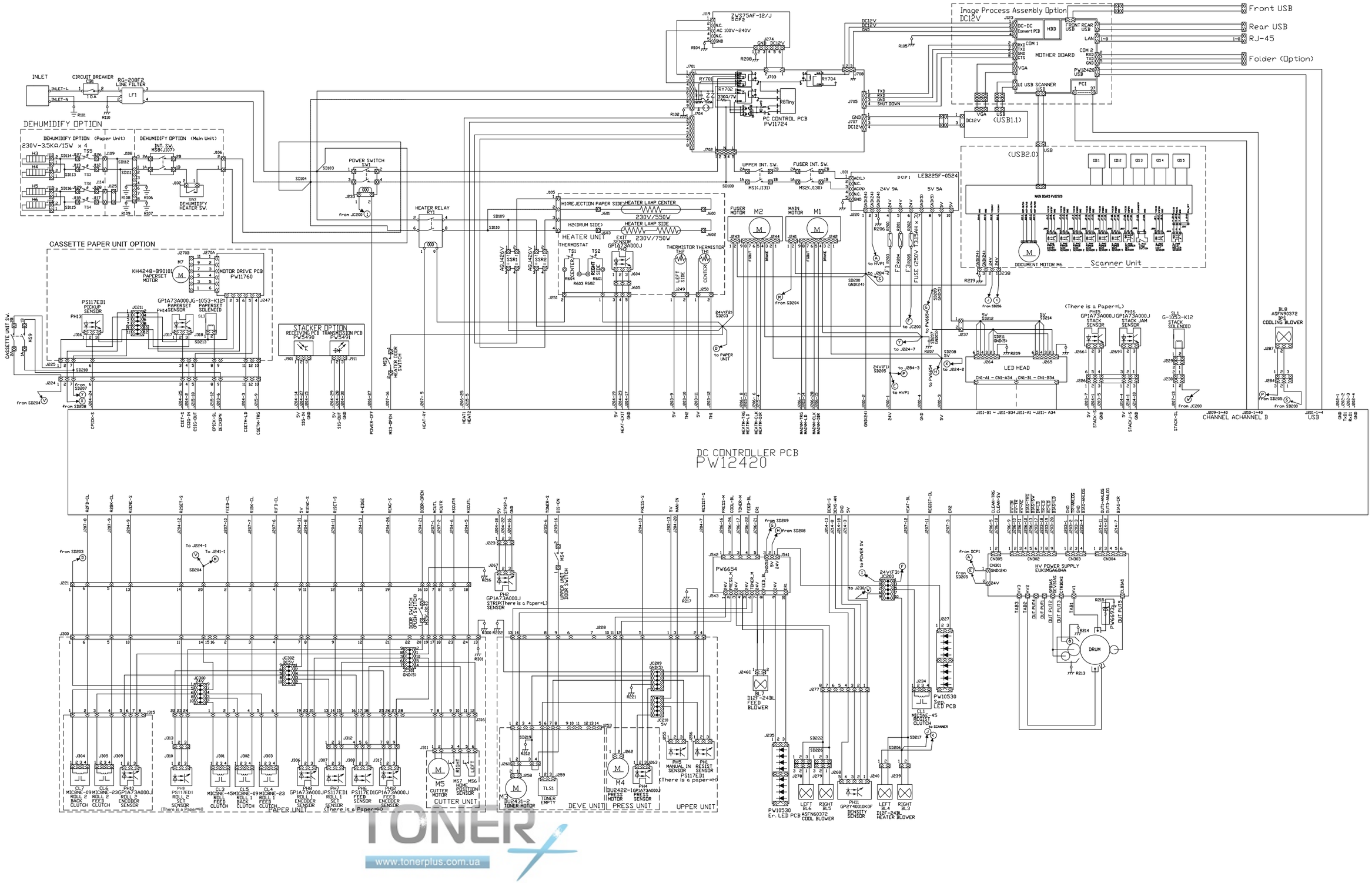
NOTE: 1. Items shown by gray ■ are not used.
2. CA ******* means the cable.

SCANNER DIAGRAM

9. 3 Overall Diagram (for New Scanner)



Overall Circuit Diagram (USA/120V)



Overall Circuit Diagram (EUR/230V)

Chapter 10

Setup Procedure

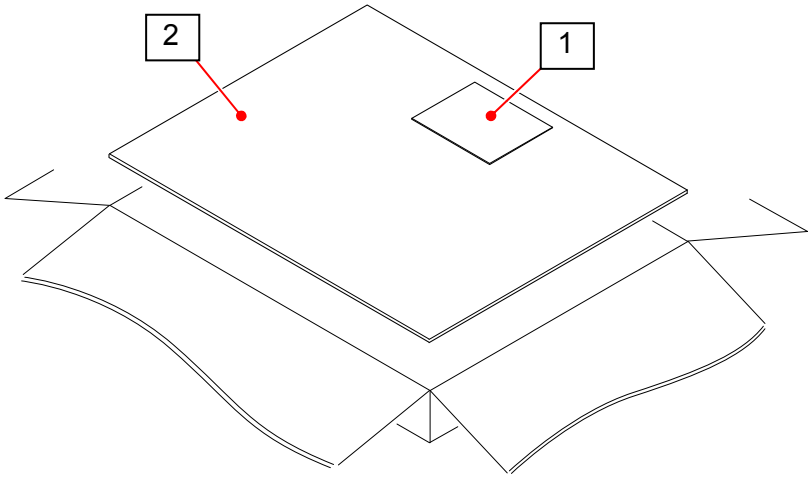
1. **Paper Tray Kit 2**
2. **Original & Print Receiving Tray**
3. **Copy Tray Wide 2**
4. **AK-54G**

PROCEDURE (Paper Tray Kit 2)

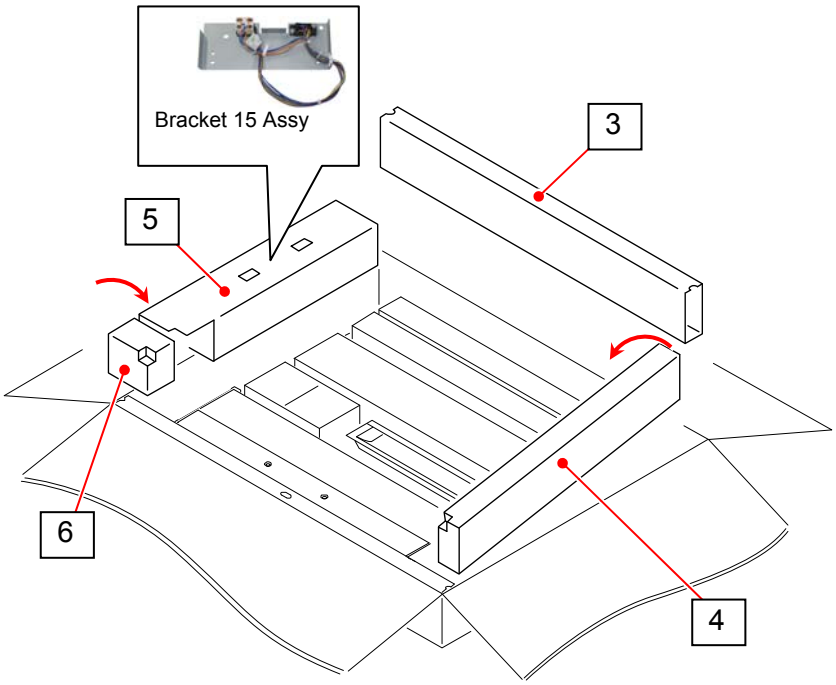
Ver.A.0

1. Unpacking

1. Open Cardboard Box. Remove the Procedure (1) and Cardboard (2).



2. Take out Pad (3).
   Afterwards, take out Pad (4), (5), (6).

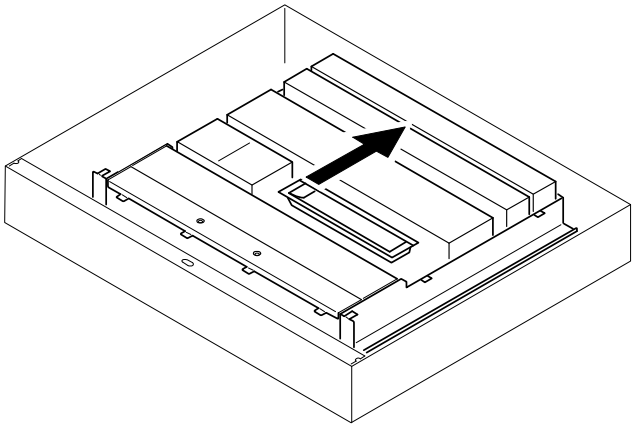


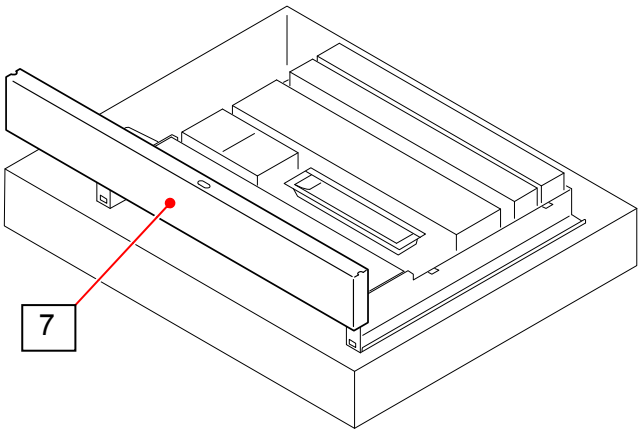
NOTE

1. Rotate and pull Pad (4) (6) to remove.

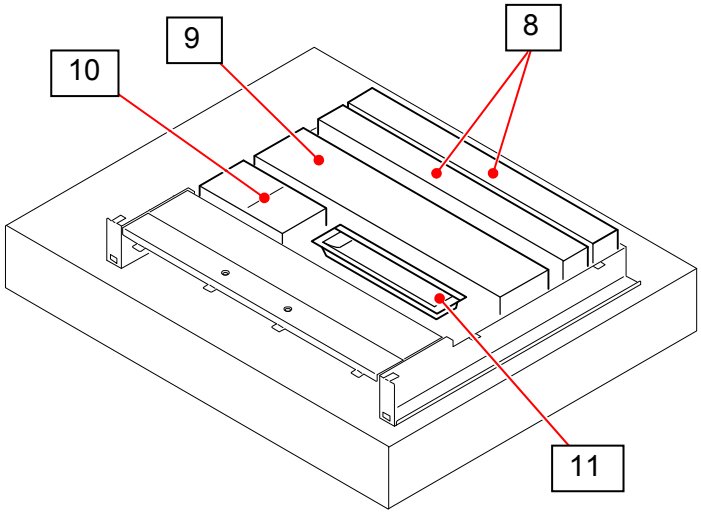
2. Bracket 15 Assy is packed inside Pad (5). Do not throw away Pad (5).

3. Slide the whole Paper Tray Assy to the arrow direction (in 20mm), and then remove Pad (7).





4. Remove the Rail Assy (8), Cover 3, 4 (9), Small Parts (10) and Knob Cover (11).

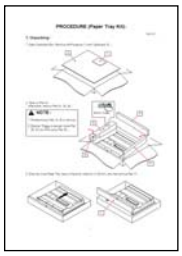


2. Checking Contents

Confirm the following parts are attached to the “Paper Tray Kit 2”.

Paper Tray Assy X 1

Knob Cover X 1



Procedure X 1

Rail Assy X 2

Cover 3 X 1

Cover 4 X 1

Bracket 14 Assy X 1

Guide X 1

Bracket 21 X 1

X 18

Screw

Wire Saddle X 2

X 4

Tooth Washer Screw

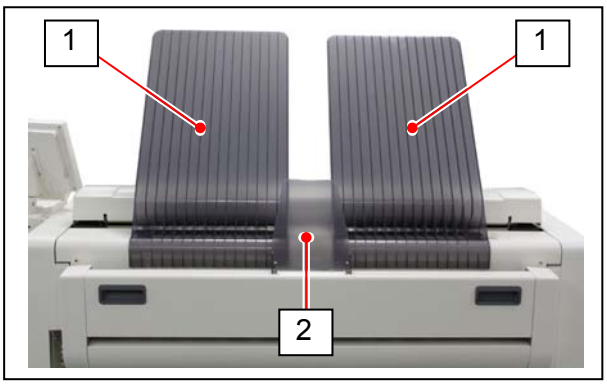
Bracket 15 Assy X 1

3. Installing “Paper Tray Kit 2”

NOTE

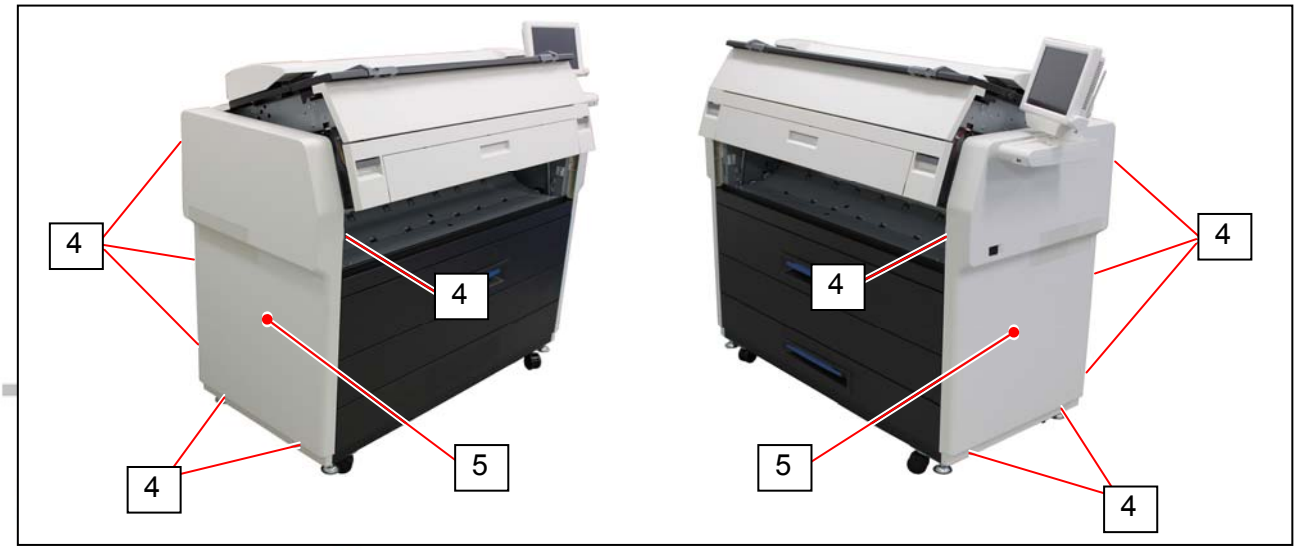
Turn off the main unit before operation.
Unplug the power cord after an interval of 2 minutes for shutdown.

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



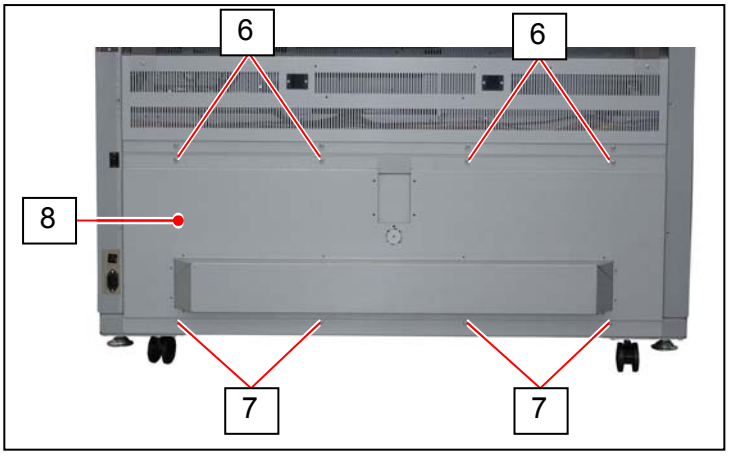
2. Press the levers (3) to open Engine Unit.

3. Remove 6 screws (4) on each side to remove Right and Left Side Cover (5).



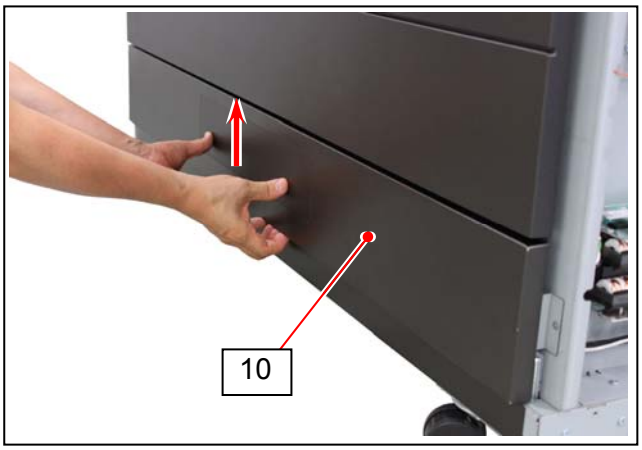
4. Close Engine Unit.

5. Loosen 4 screws (6), remove 4 screws (7) and remove the Rear Cover (8).

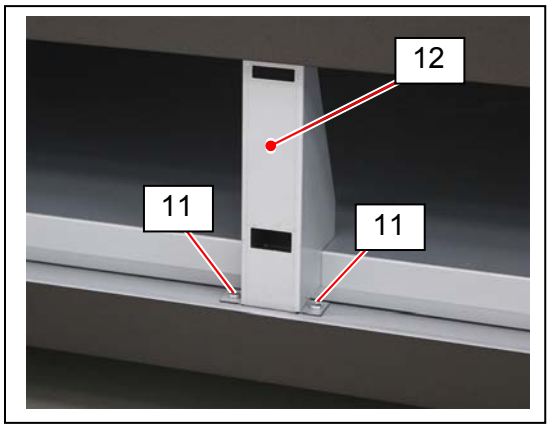


6. Remove 2 screws (9).

7. Lift up Roll Deck Panel (10) and remove it from the machine. (Roll Deck Panel will be reused)

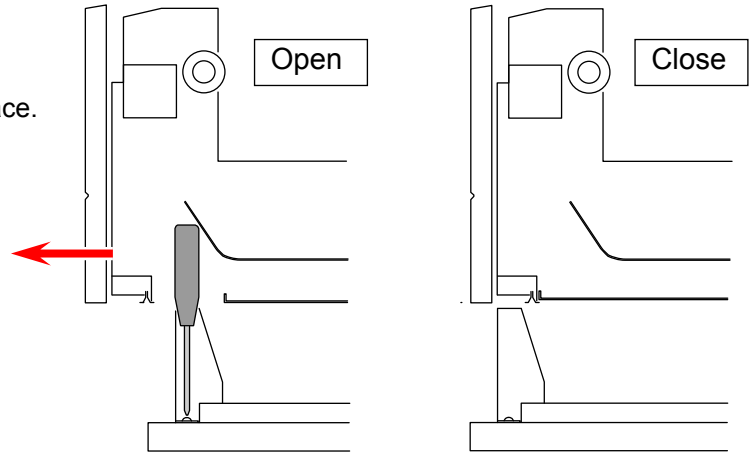


8. Remove 2 screws (11) to remove Bracket 7 (12). (Bracket 7 (12) is not reused)

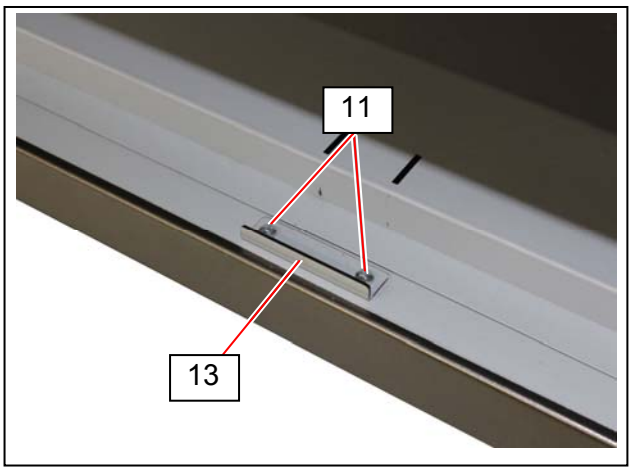


Reference

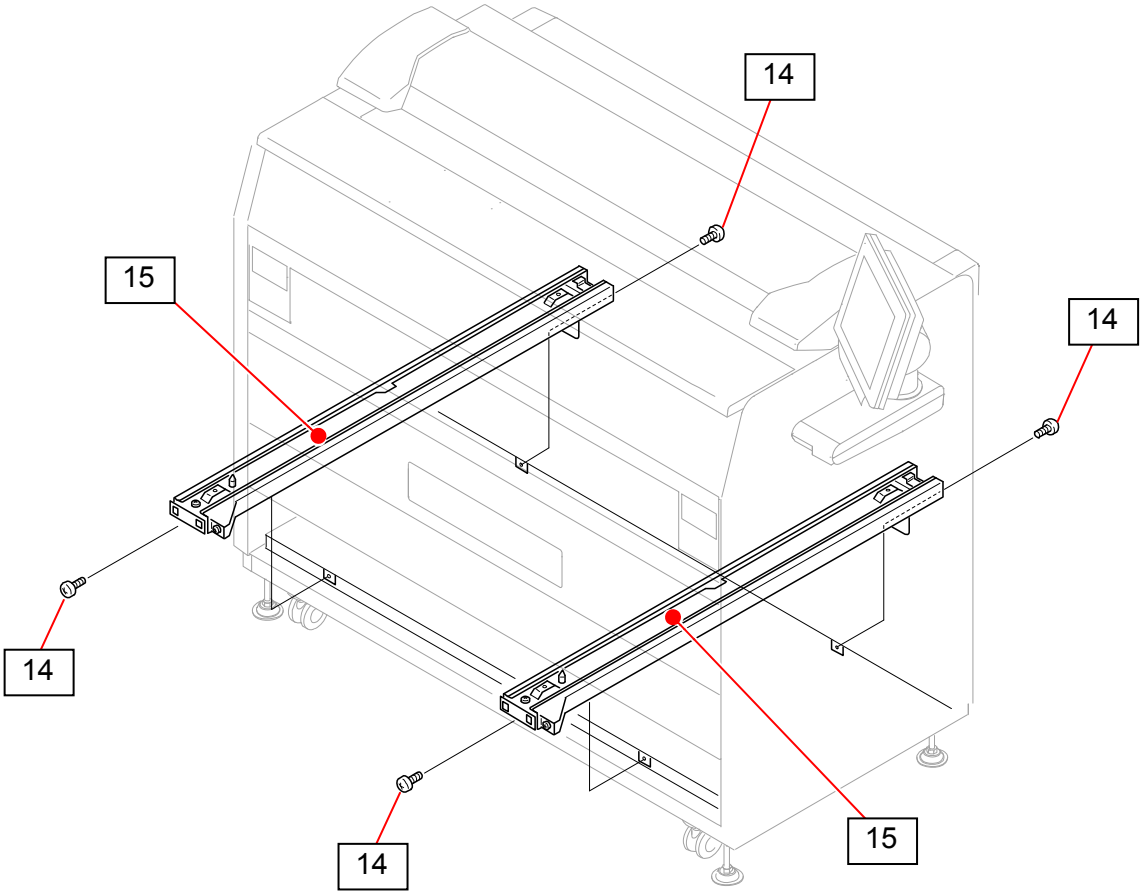
If you use a long screwdriver, draw out Roll Deck in about 10cm to get work space.



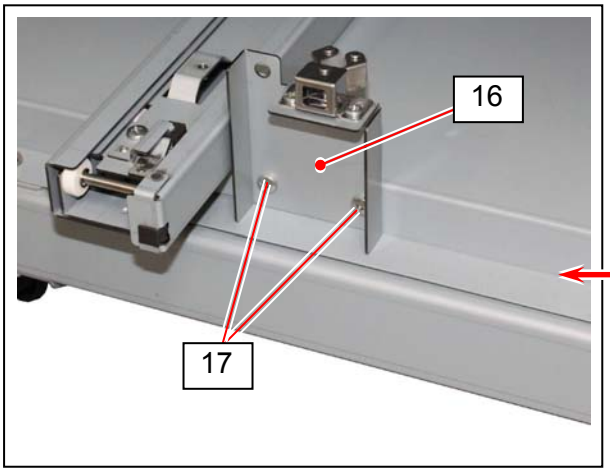
9. Attach Bracket 21 (13) with the screws (11) which were removed on the step 8.



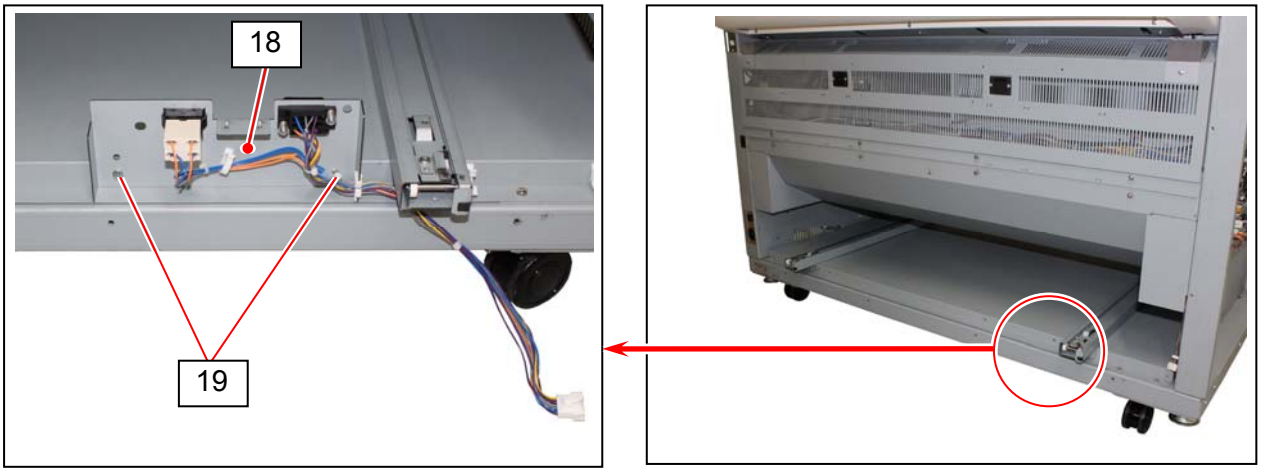
10. Install Rail Assy (15) with 2 screws (14) on both sides.



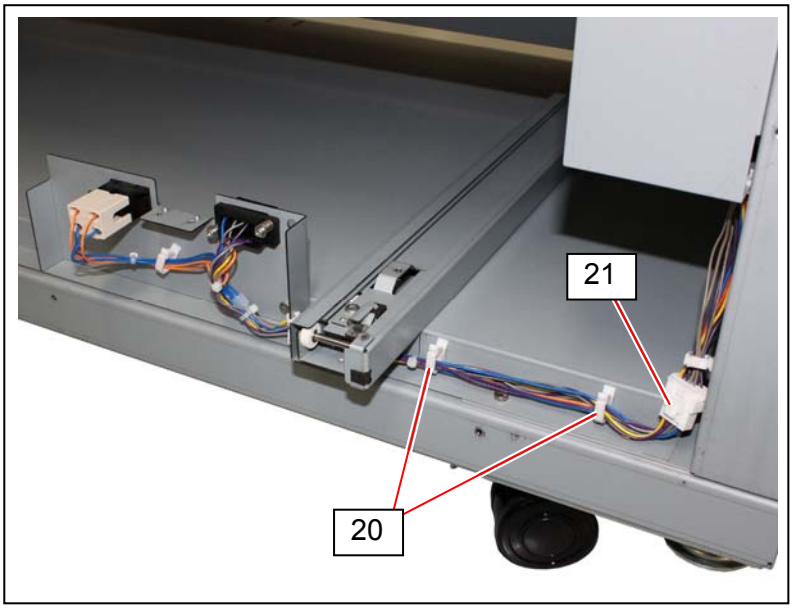
11. On the rear side, install Bracket 14 Assy (16) with 2 Tooth Washer screws (17).



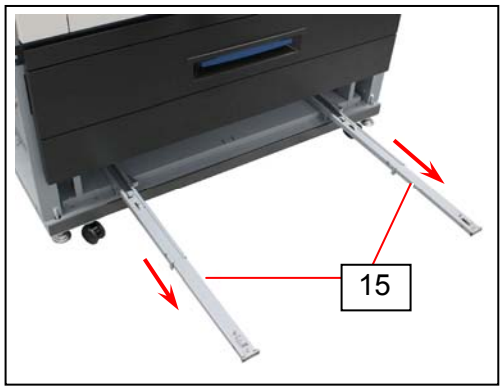
12. Install Bracket 15 Assy (18) with 2 Tooth Washer screws (19).

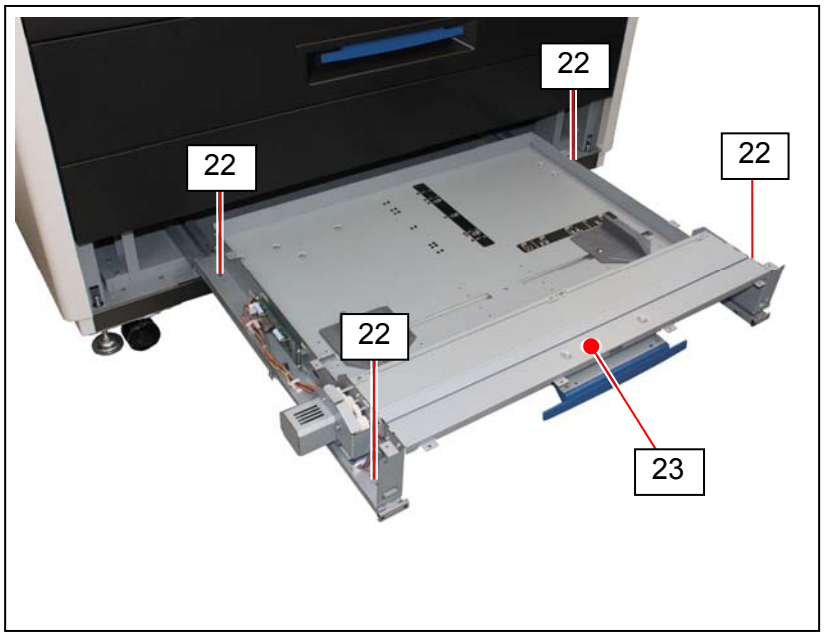


13. Attach 2 Wire Saddles (20) to the machine base.
Secure the harness with them (20) and connect it to the connector (21).



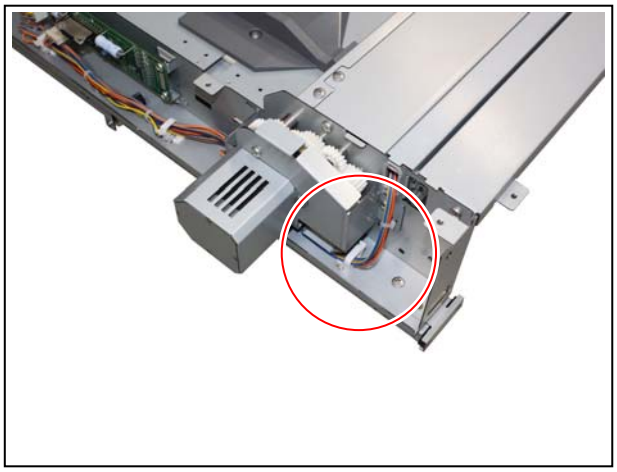
14. Extend the railings on both Rail Assy (15). Place Paper Tray Assy (23) on them.
    Fix them with 4 screws (22).

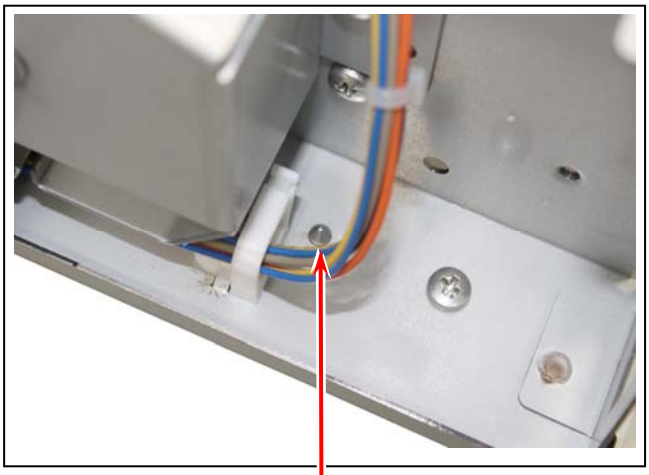


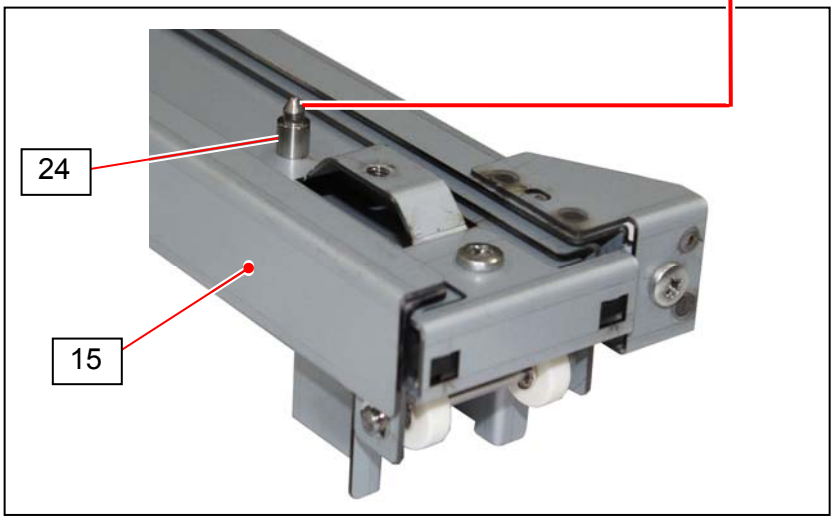


NOTE

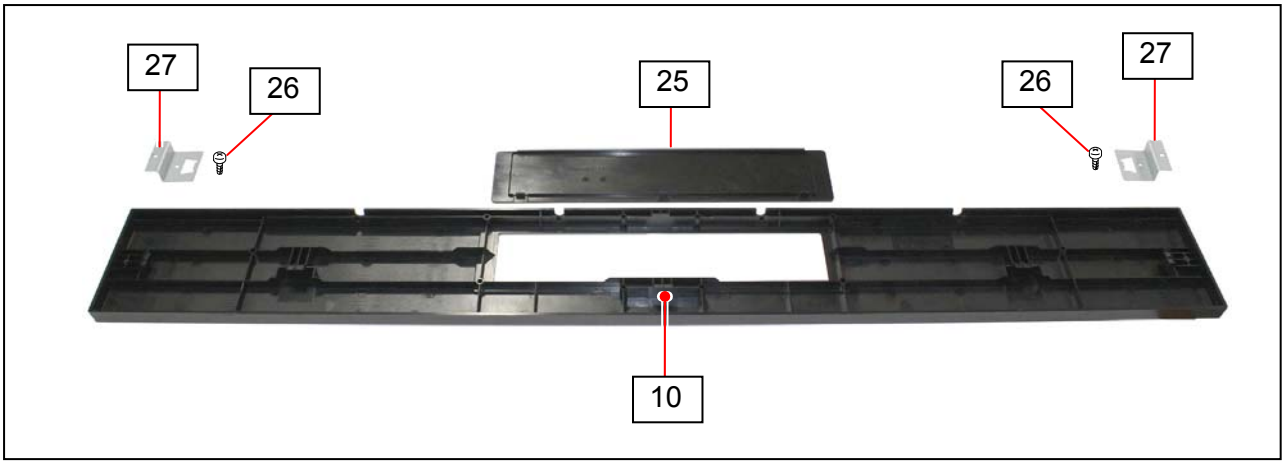
Make sure that the positioning pin (24: on both sides) on the railings (15) fit in the positioning hole of Paper Tray Assy (23).



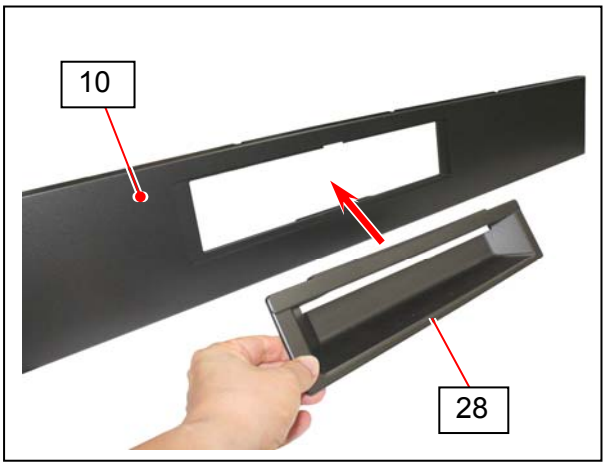




15. Remove Deck Plate (25) from Roll Deck Panel (10, mentioned on step 7).
Remove 2 tapping screws (26) to remove the Bracket 6 (27).
(Deck Plate (25), Bracket 6 (27) are not reused)

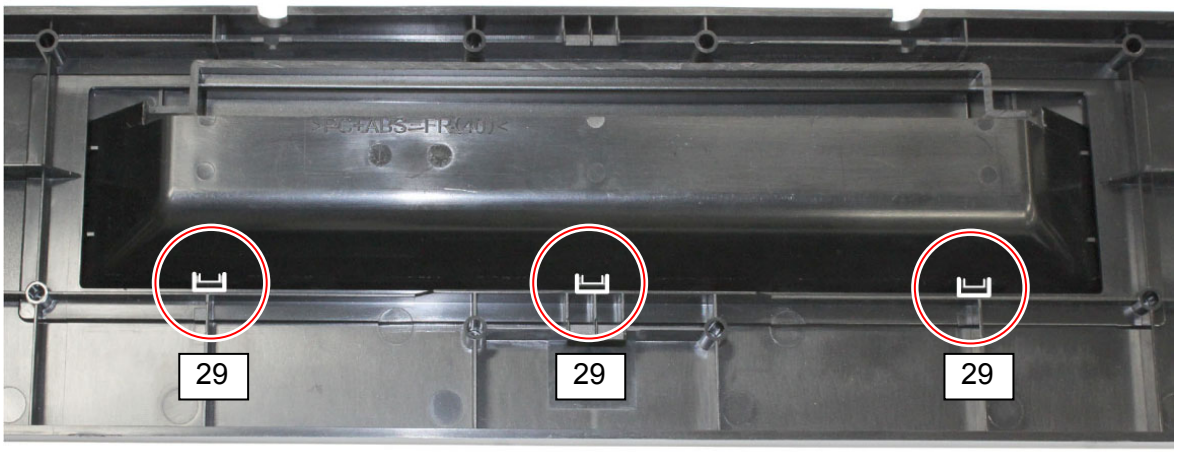


16. Fit Knob Cover (28) in the opening area of Roll Deck Panel (10).

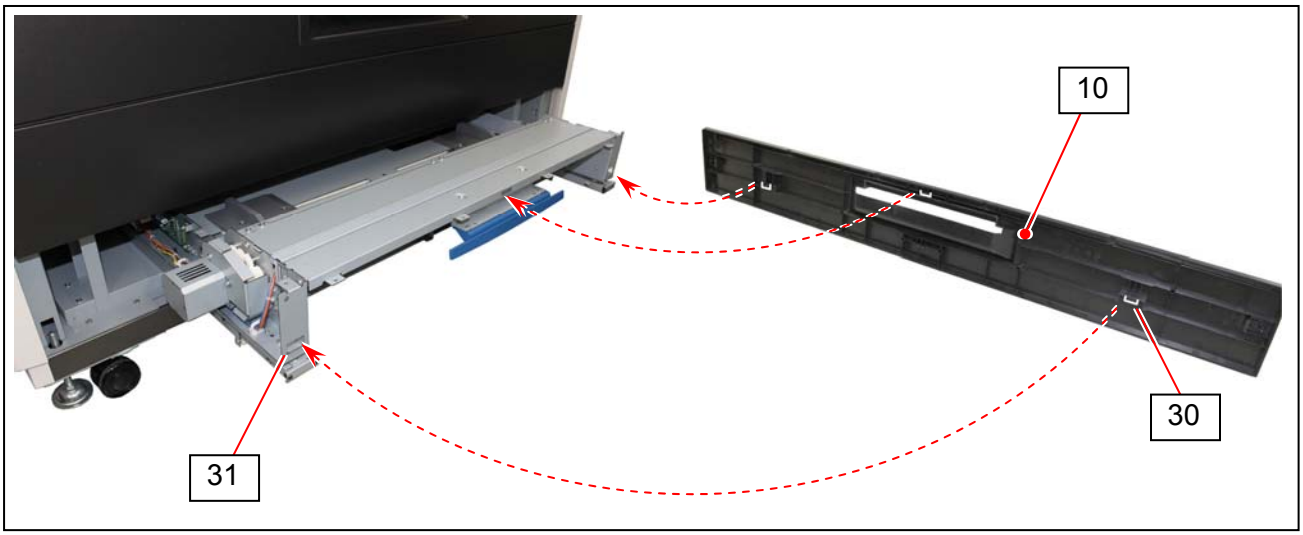


NOTE

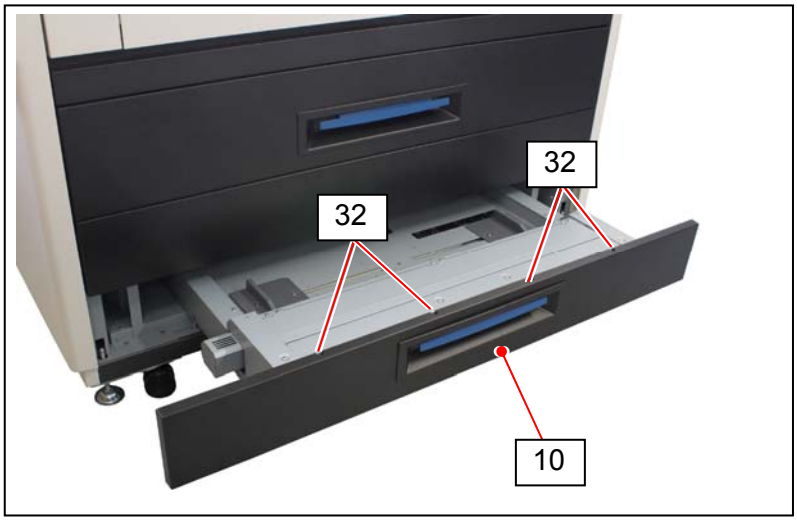
Make sure that the tab parts (29) on the back of Knob Cover firmly catch Roll Deck Panel.

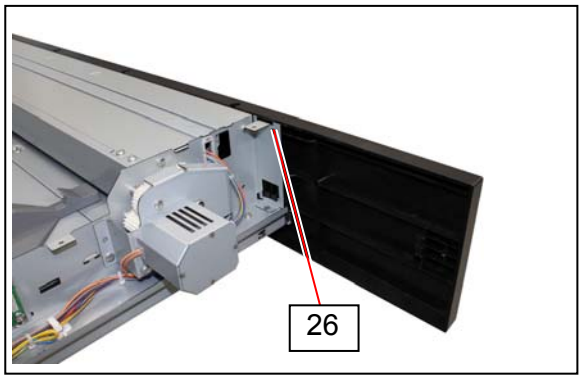


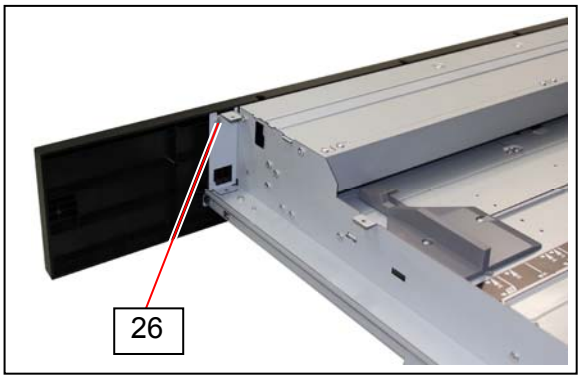
17. Put Roll Deck Panel (10) on Paper Tray Assy.
    Fit the 3 tab areas (30) on the back of Roll Deck Panel to the square holes (31) on the frame of Paper Tray Assy.



18. Fix Roll Deck Panel (10) with 6 screws (26), (32).
    Reuse 2 tapping screws (26) mentioned on step 15.

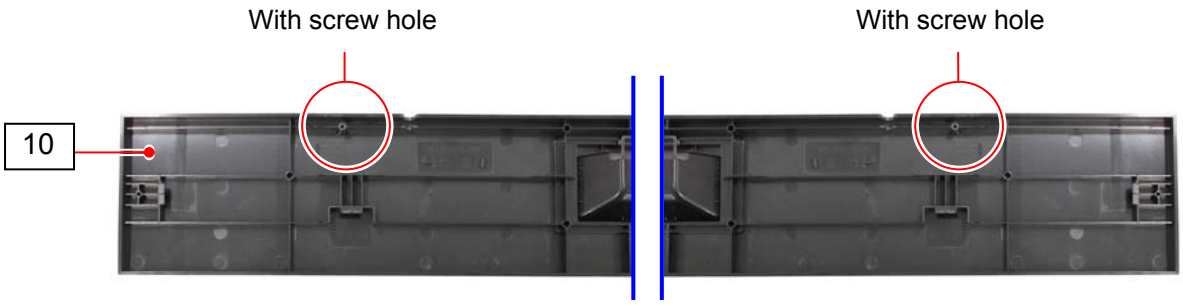


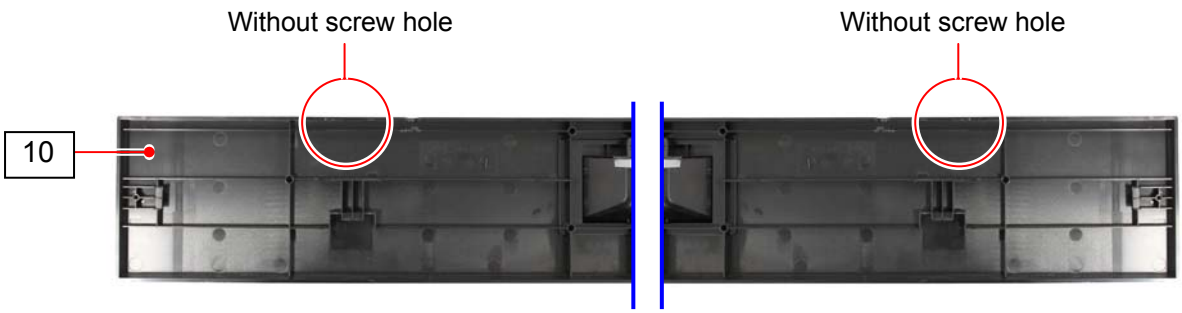




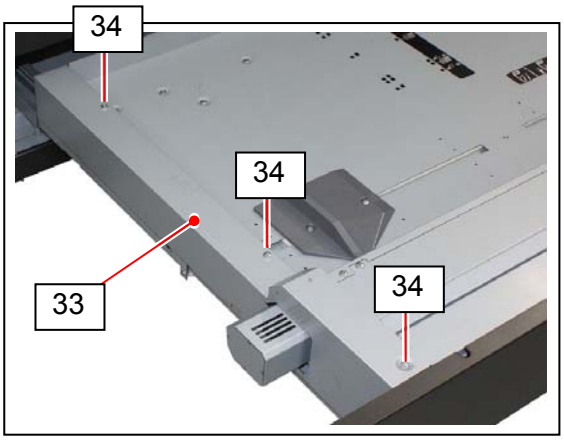
NOTE

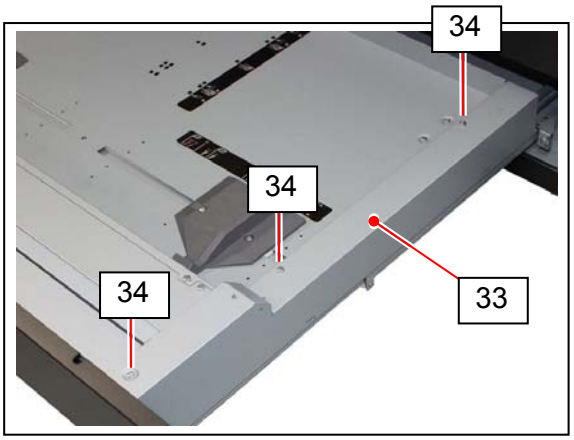
There are 2 types of Roll Deck Panel (10), with or without tapping screw holes.
If your Roll Deck Panel does not have one, 2 tapping screws (26) are not reused.





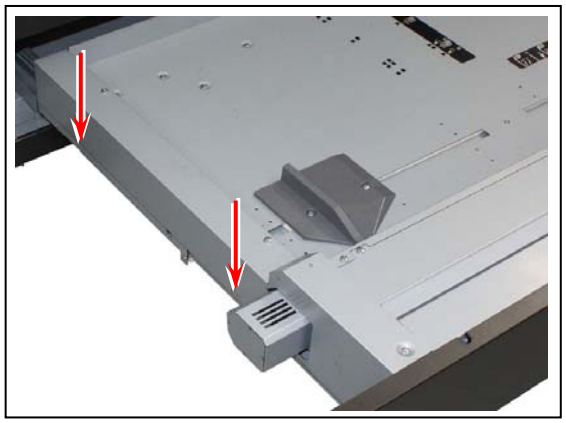
19. On both sides, install Cover 3 / Cover 4 (33) with 3 screws (34) each.

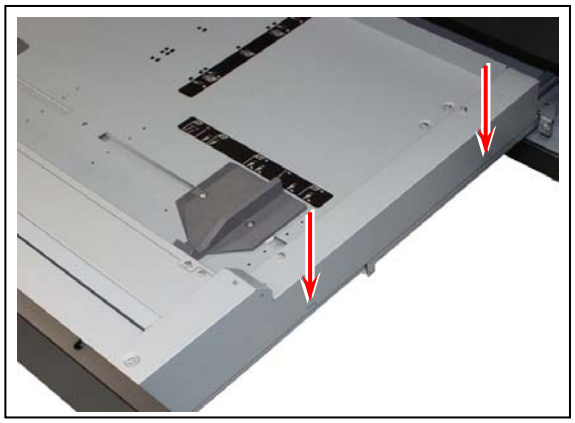




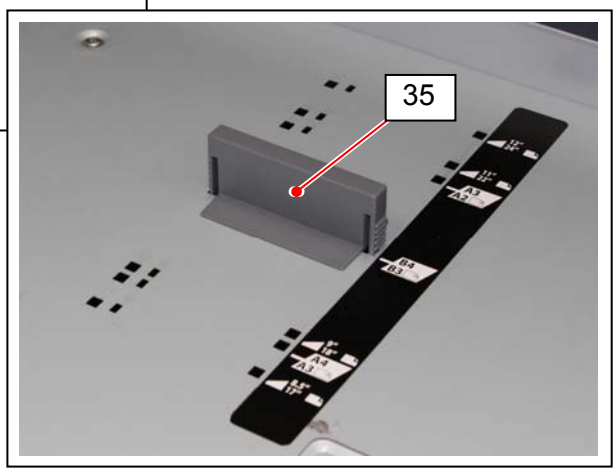
NOTE

Put only (A) tab part of Cover 3 / Cover 4 (33) inside the railings.





20. Put Guide (35) inside Paper Tray Assy.



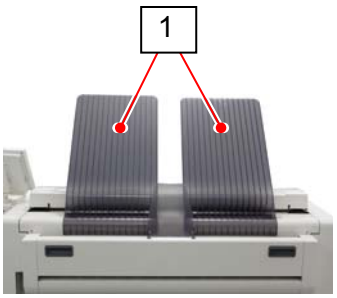
21. Return Rear Cover, Right / Left Side Cover.

22. Close the Engine Unit.

23. Return Exit Tray and Exit Tray 2.

NOTE

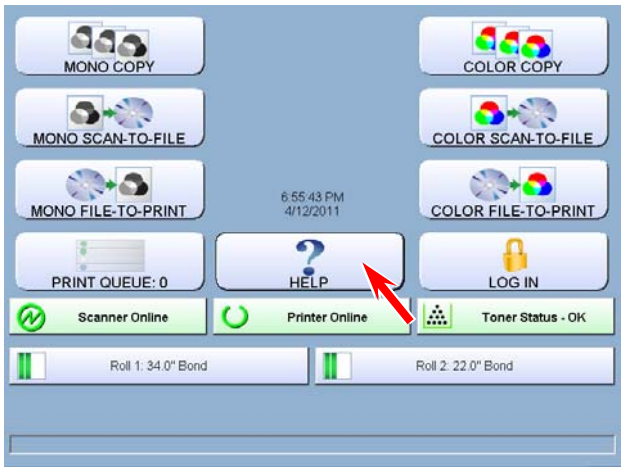
Be sure to reinstall Exit Tray (1) with Engine Unit closed.



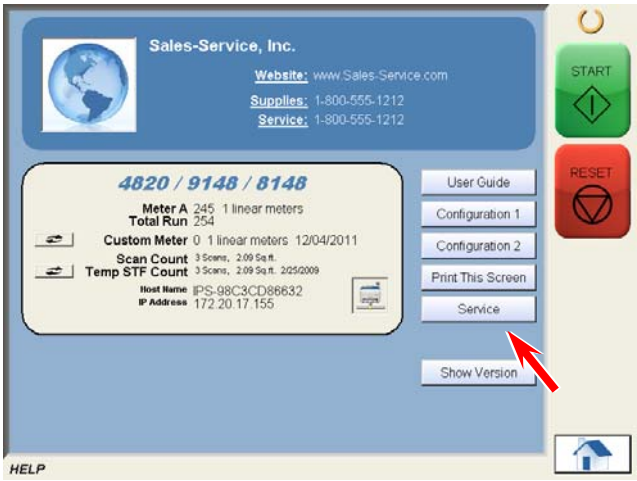
4. Change of the Service Mode Setting

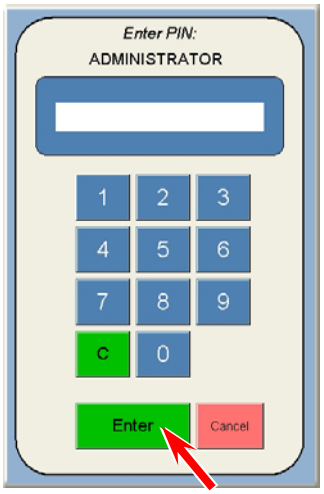
1. Turn on the main unit.

2. Press [? HELP] on the Home screen.

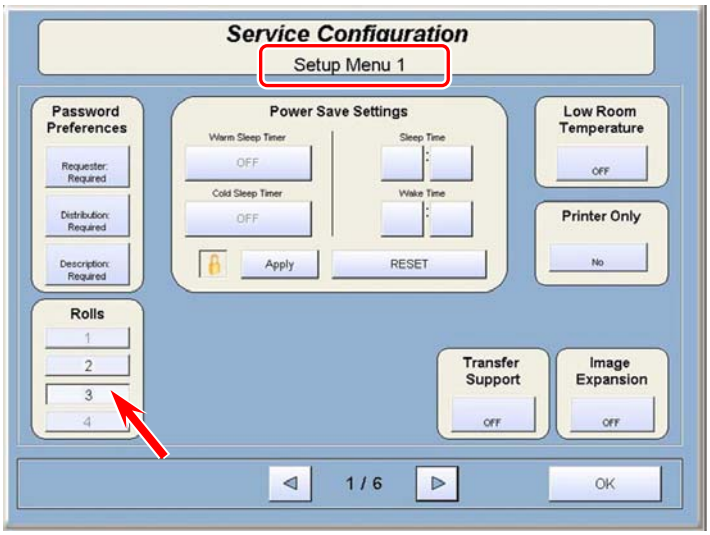


3. Press [Service]. Input “8495107” and press [Enter].

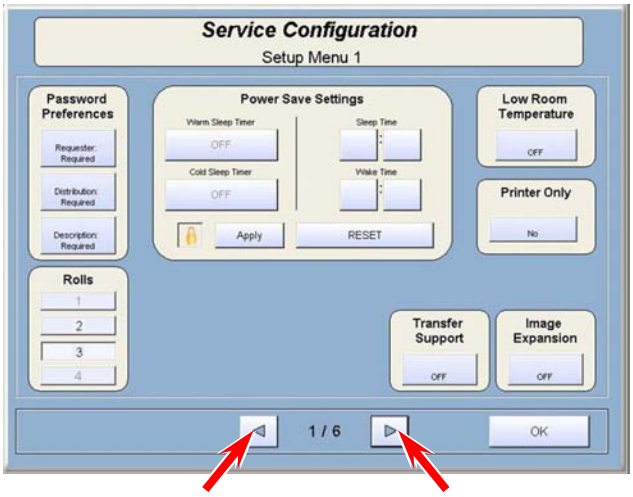


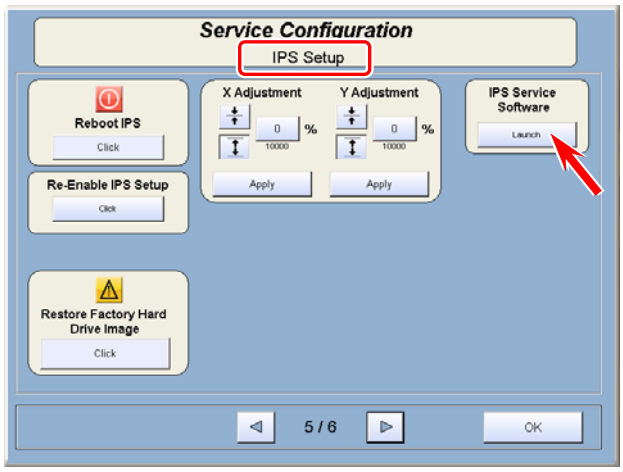


4. Service Configuration screen will appear.
   On “Setup Menu 1”, Change “Rolls” to [3].

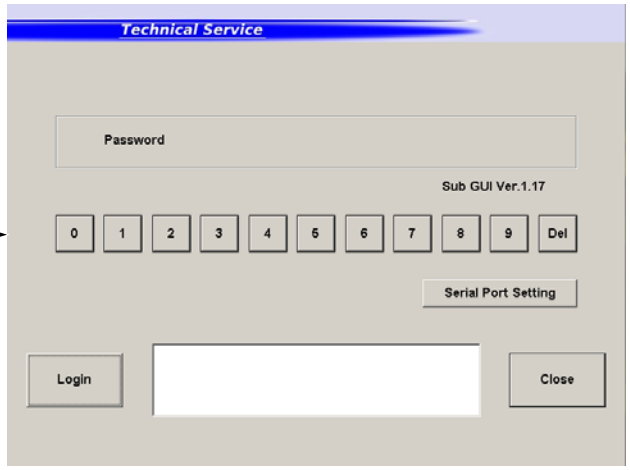


5. Use the arrow keys to move to “IPS Setup”, and then press [Launch].

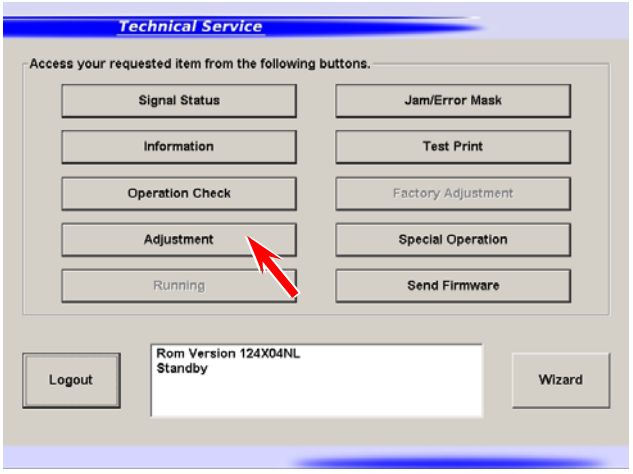


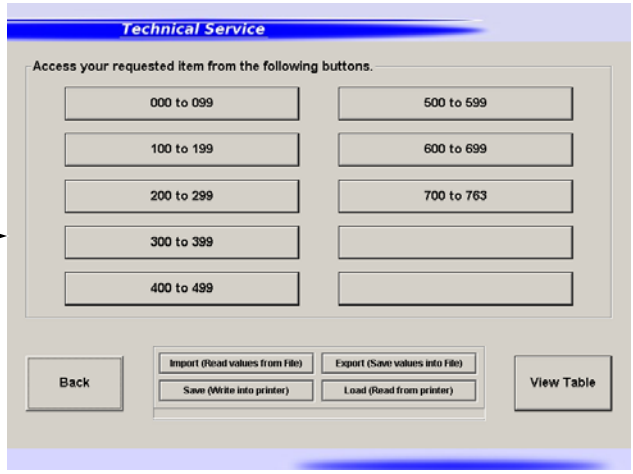


6. A confirmation dialog appears. Press [Yes].
Press [Login] to log in Service Mode.

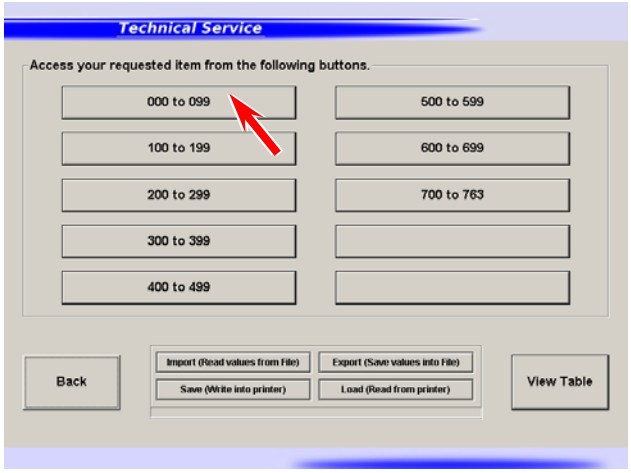


7. Press [Adjustment] in Service Mode Home.

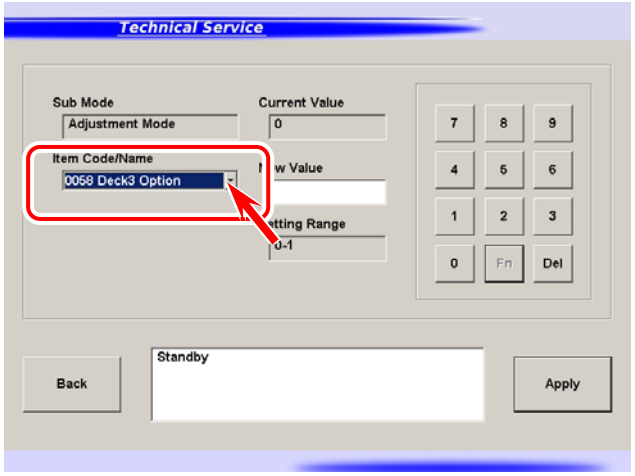




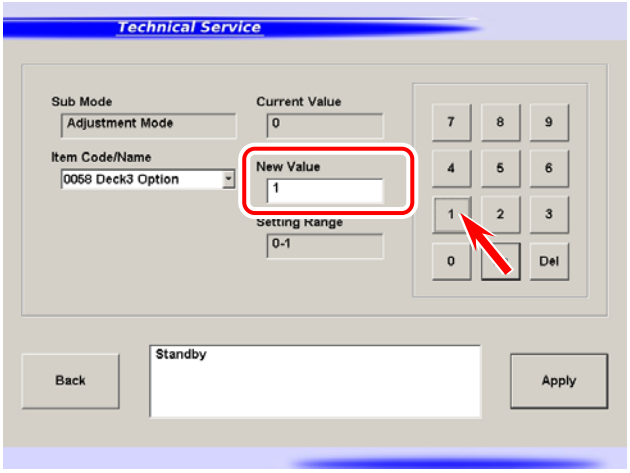
8. Press [000 to 099].



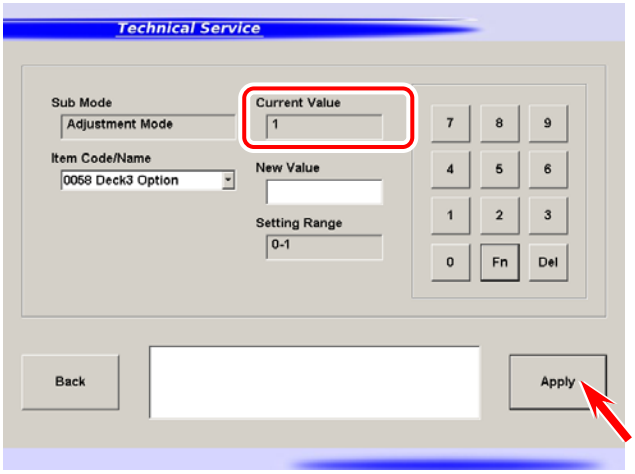
9. Select [0058 Deck3 Option] from “Item Code / Name” menu.



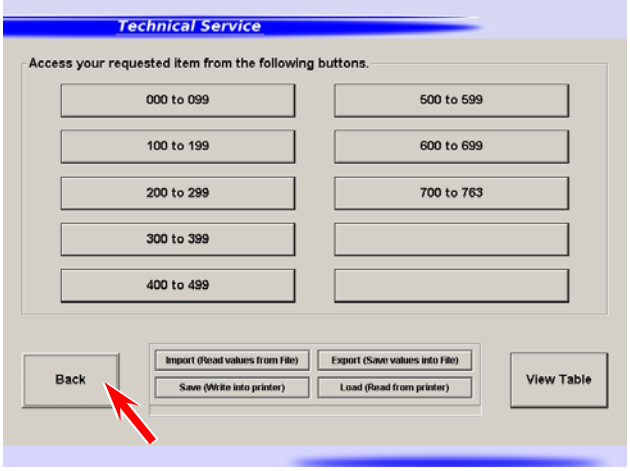
10. Set the parameter to “1”.

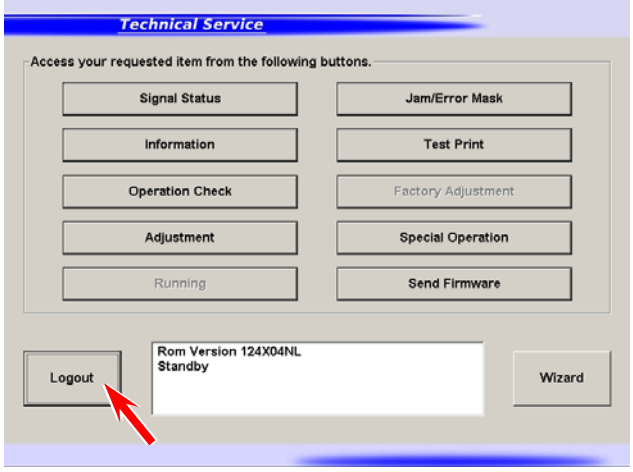


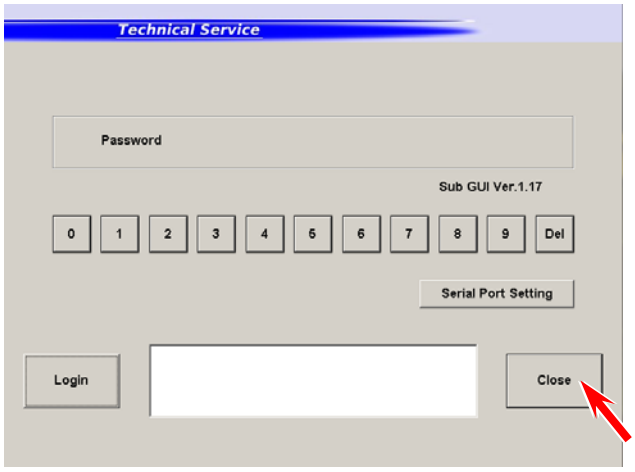
11. Press [Apply] to validate the change.



12. Press [Back], [Logout] then [Close] to cancel Service Mode.







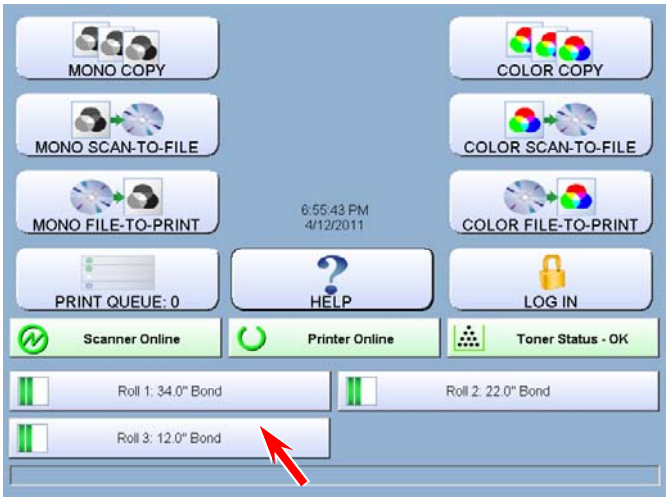
13. UI screen will display Home screen in a short time.

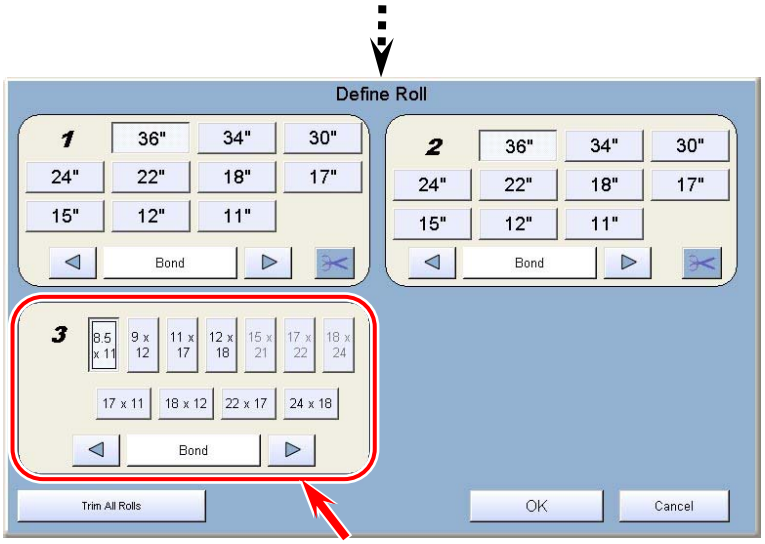
"Sheet 3" appears here.

5. Operation Check and Adjustment

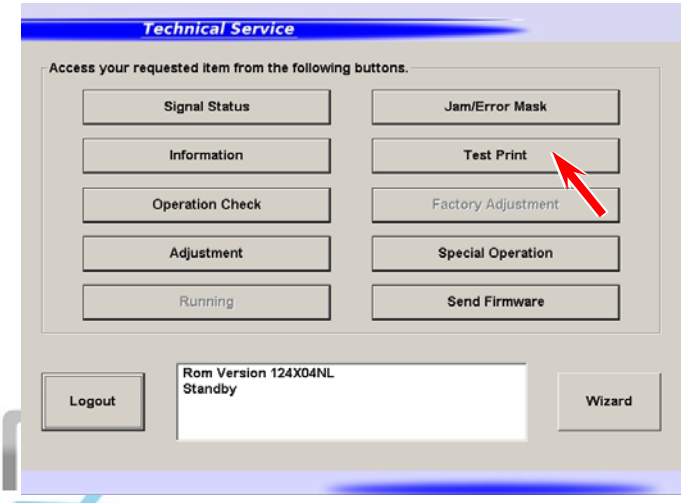
1. Referencing [6. Note for loading media], load the media to the Paper Tray.

2. On Home screen, select the cut sheet size / direction. (example: 8.5” x11” Portrait)

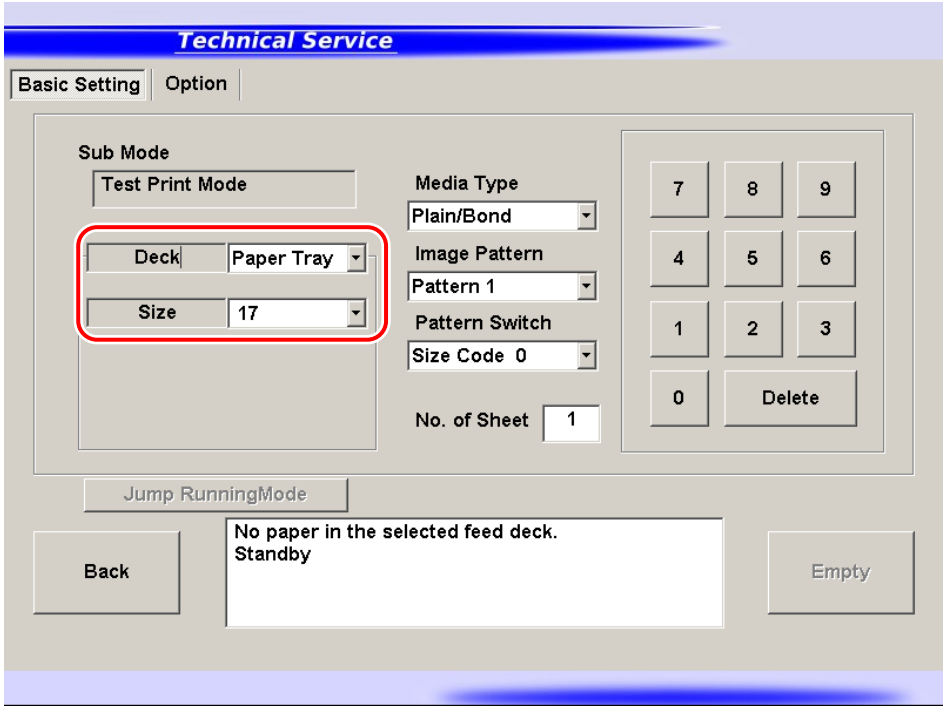




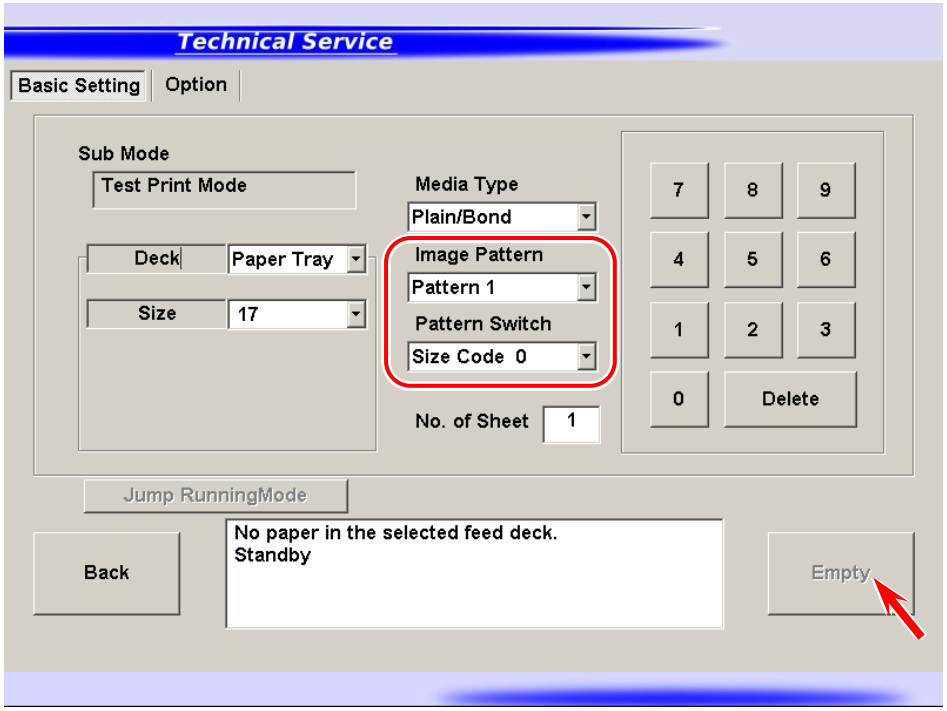
3. Referencing [4. Change of the Service Mode Setting], display the following screen, and then press [Test Print].



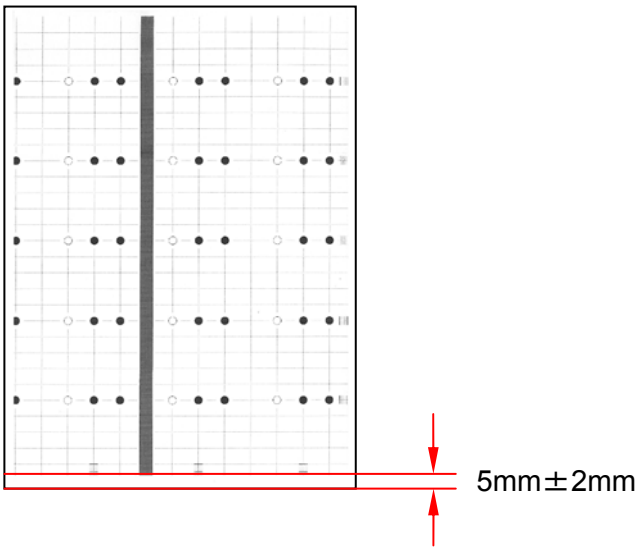
4. Select [Deck] to “Paper Tray”.
   And then, confirm that the setting of [Size] is the paper width which was set at the step 2.



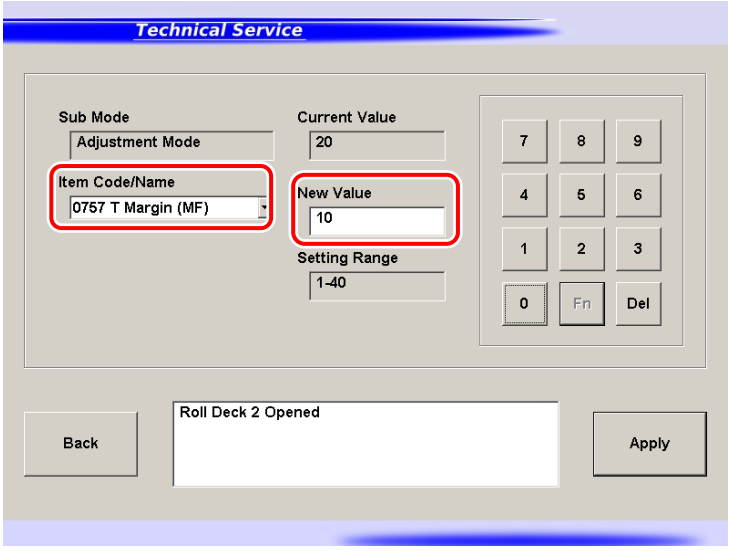
5. Select the test pattern No.1 S(0) and press [Start].



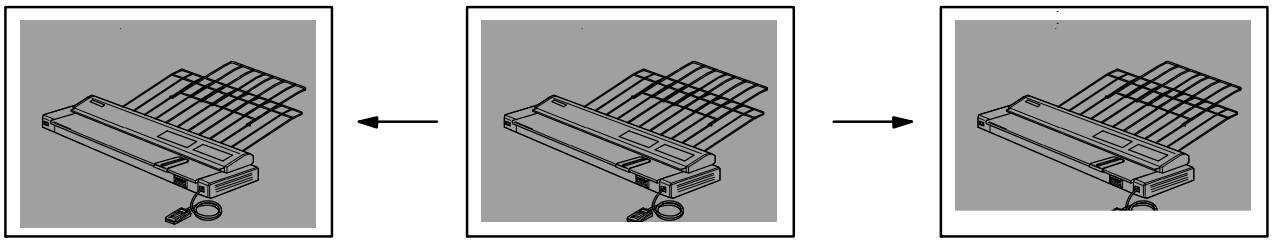
6. Checking the trailing margin (5mm plus or minus 2mm) on the print, adjust the trailing margin, if needed.



7. To adjust the trailing margin, use No.757 (T Margin (MF)).



For smaller trailing margin, increase the value.
Increasing the value by 1 shortens the trailing margin in about 0.5mm.



Value increased

Value decreased

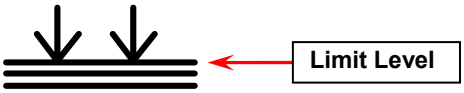
NOTE

Increasing the value too much may result in a dirt image.

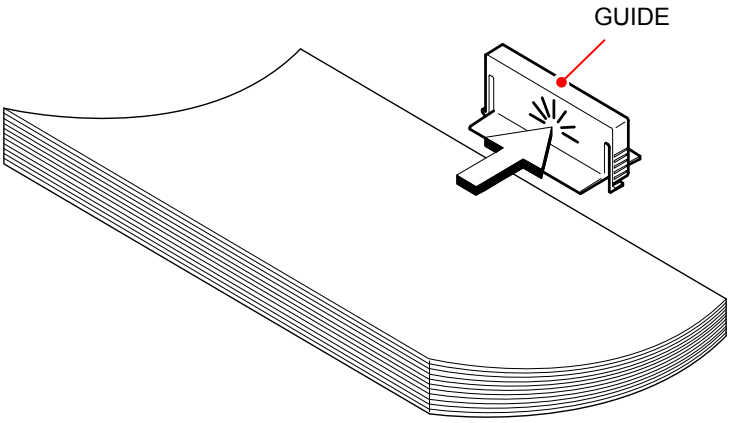
6. Note for loading media

1. Only plain paper / bond is available on “Paper Tray Kit 2”. Do not load the other types of media.

2. Up to 50 sheets can be set on Paper Tray.
   Do not load sheets over the Limit Level on the Paper Guide.



3. Touching the back-end of sheets to GUIDE, load the sheets in good order.
   Otherwise, it may cause the poor paper feeding.



4. Do not load sheet(s) with the crease or curling. Otherwise, it may cause a paper mis-feed or damage of the main unit.

Reference

Please see the right column for the available paper size for Paper Tray.
(* mark means “landscape only”.)

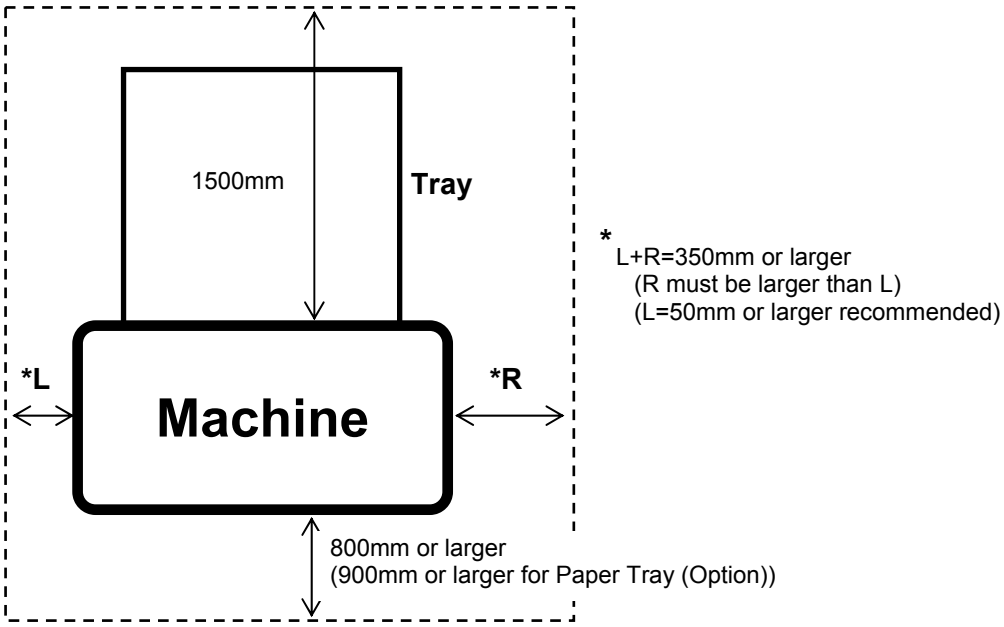
Inch	Metric
8.5”	*A2
9”	A3
11”	A4
12”	*B3
*17”	B4
*18”	
*22”	
*24”	

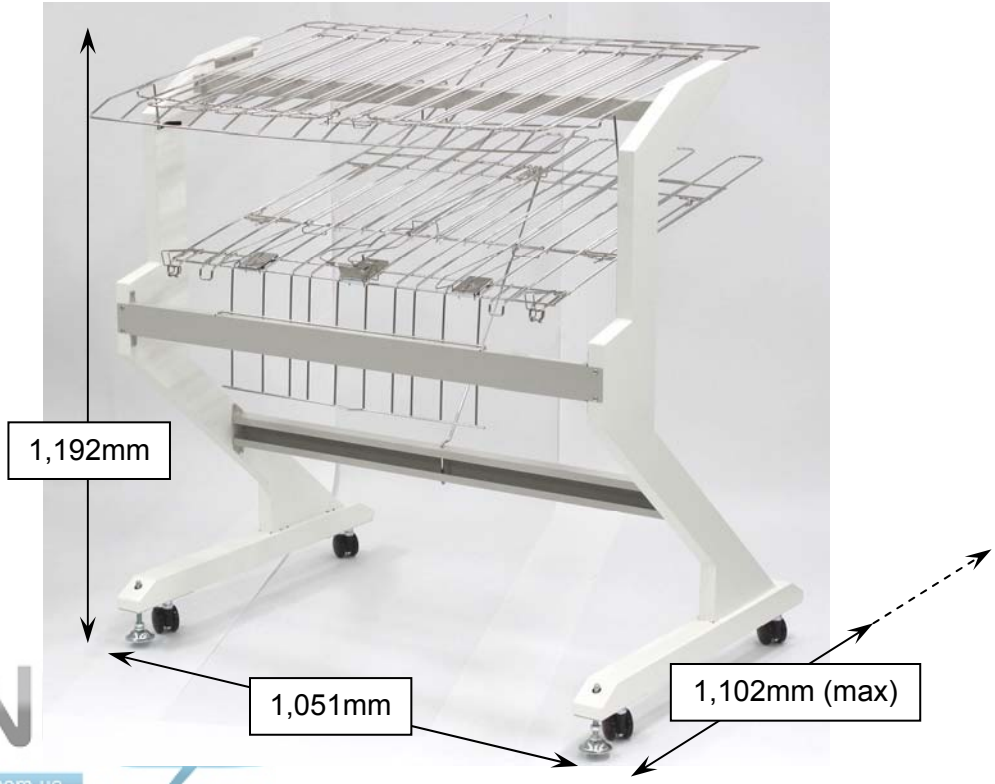
Original & Print Receiving Tray Setup Procedure

Ver.A.0

1. Installation Requirement

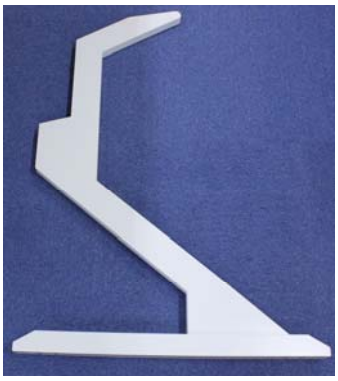
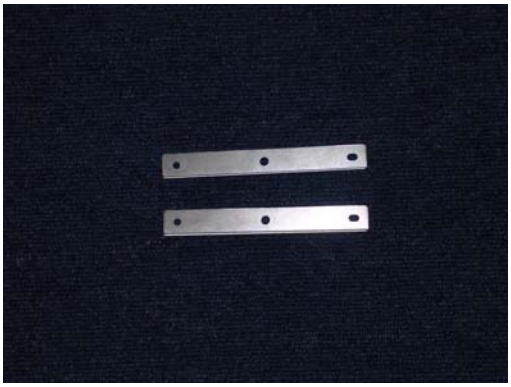
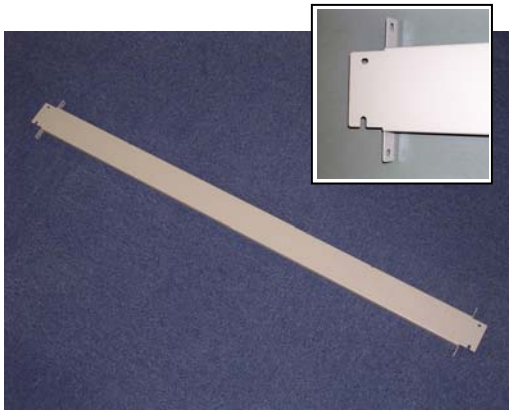
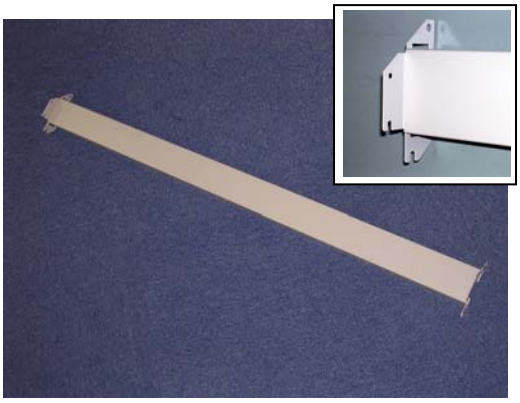
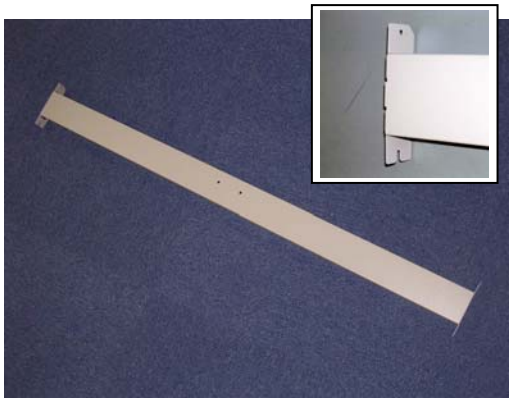
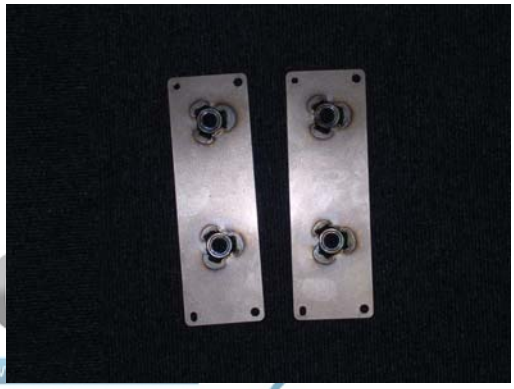
Keep ample space around the equipment to ensure comfortable operation.
(Refer to the following figure.)

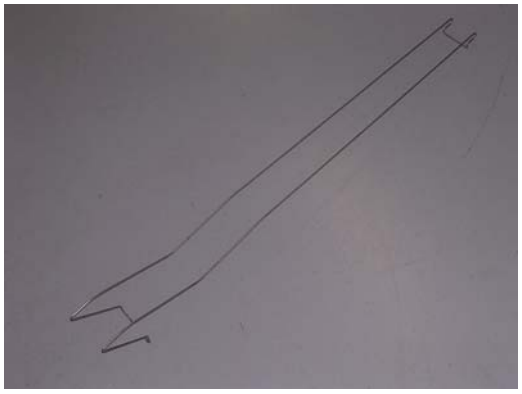
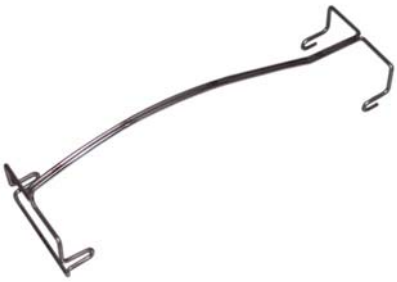
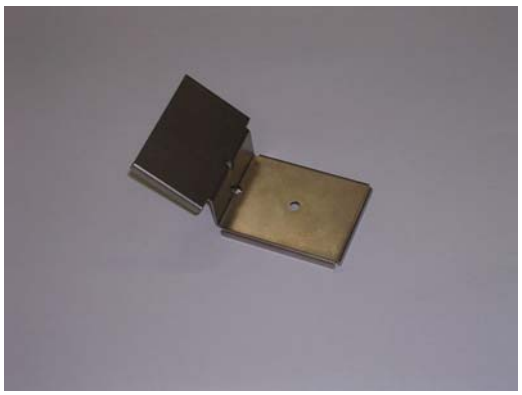


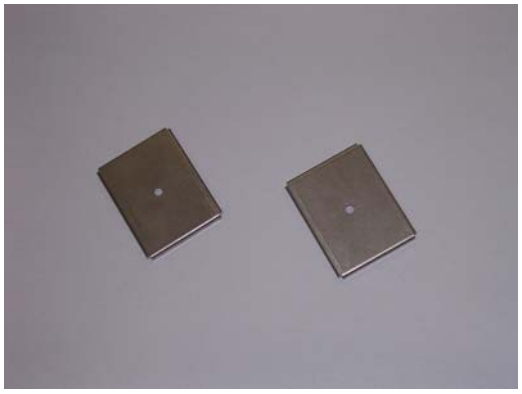
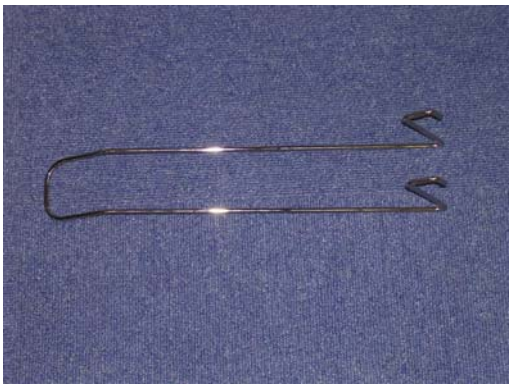
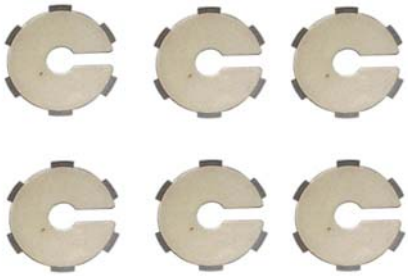


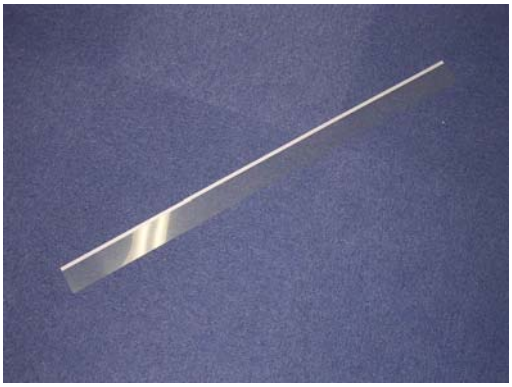
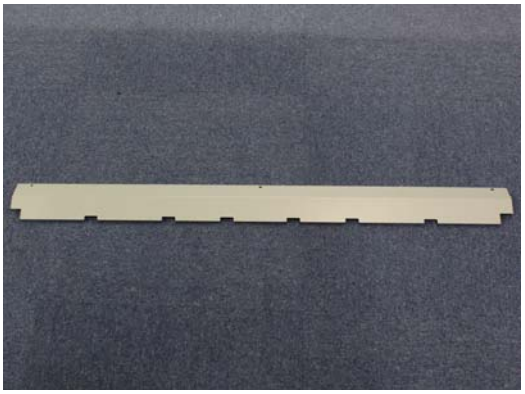
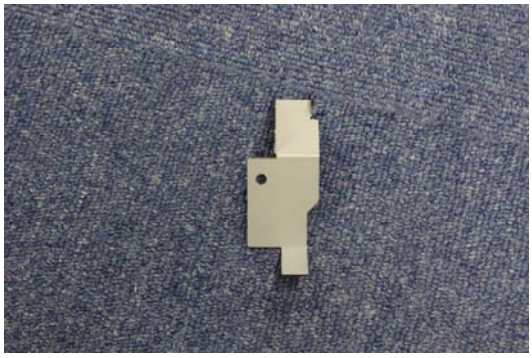
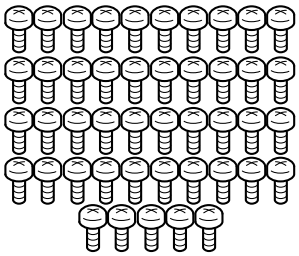
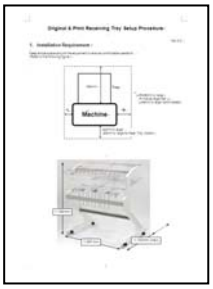
2. Checking Contents

Check that the following parts are included in the package.

Frame 	1	Frame 2 	1
Bracket 2 	2	Beam 3 	1
Beam 2 	1	Beam 4 	1
Plate 4 	2	Adjustment Level 	2

Caster 	4	Plate 	2
Print Tray Assy 	1	Original Tray Assy 	1
Tray 10 	1	Arm 4 	1
Bracket A 	3	Plate 5 	1

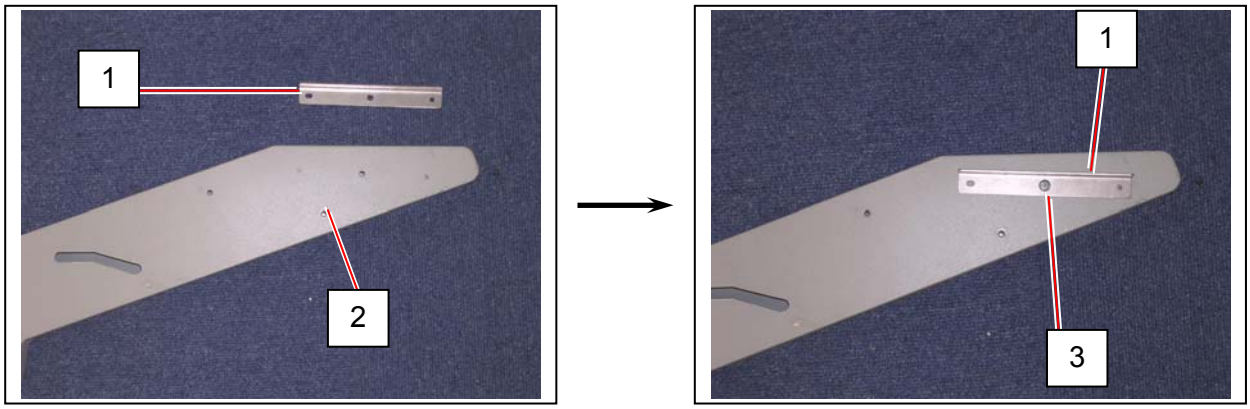
Tray 4 	2	Plate 6 	2
Tray 9 	2	Arm 3 	1
Tray 8 	1	Tray 7 	2
Feeding Roller Assy 	2	Release Ring 	6

Bracket 	2	Sheet 	1
Guide Plate Assy 	1	Cover 5 	1
Cover 6 	1	Bind Head Screw M4x6 	45
Installation Procedure 	1	User's Manual 	1

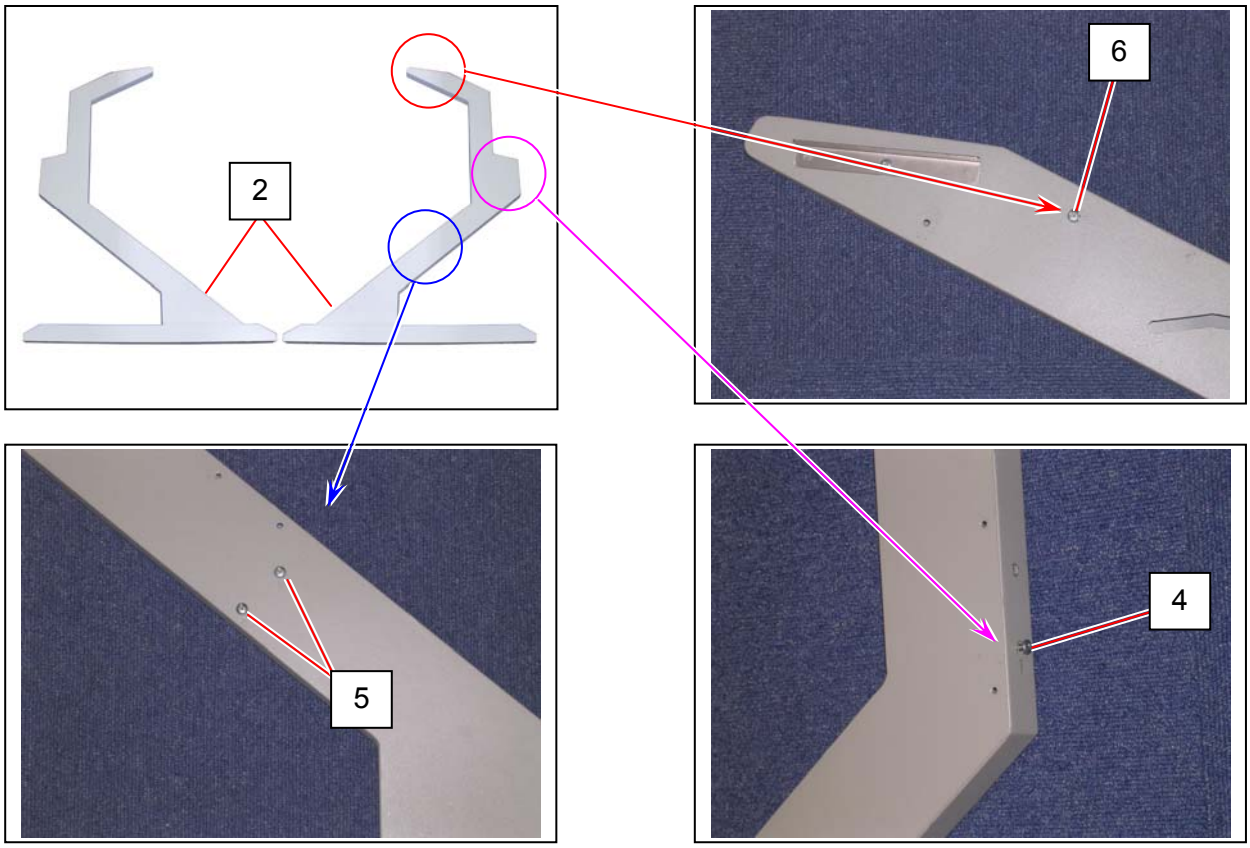
3. Assembling Frame

Note: Some pictures show one side (right). The same way for the left.

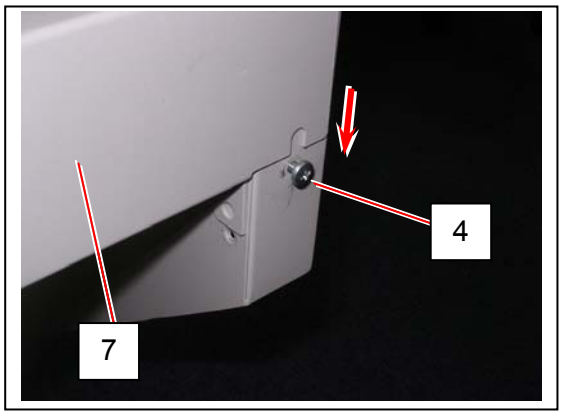
1. Install Bracket 2 (1) to both frames (2) with 1 screw (3) each.

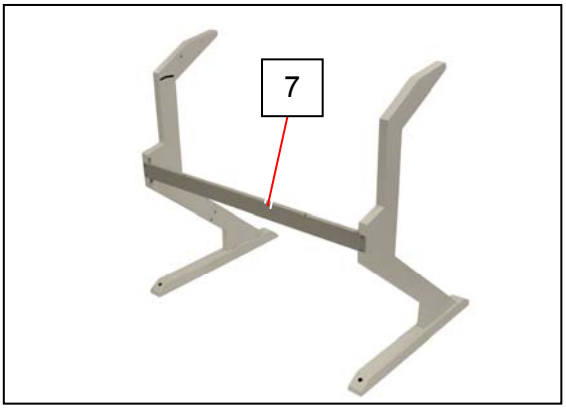


2. Install 1 screw (4), 2 screws (5), 1 screw (6) loose on both frames (2).

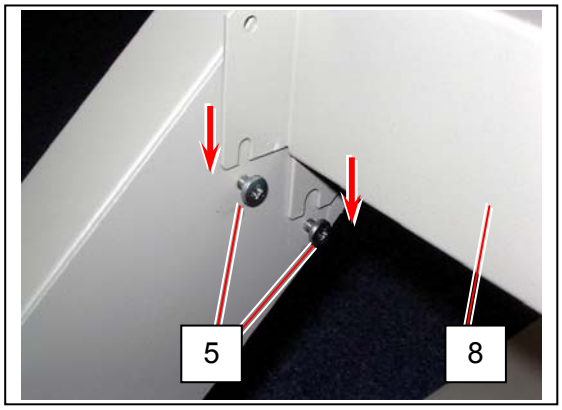


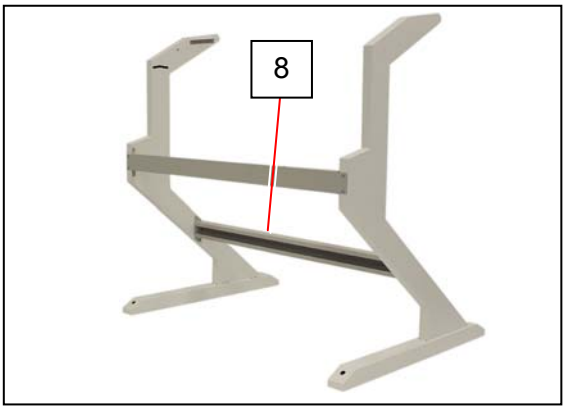
3. Mount Beam 3 (7) on the screws (4).



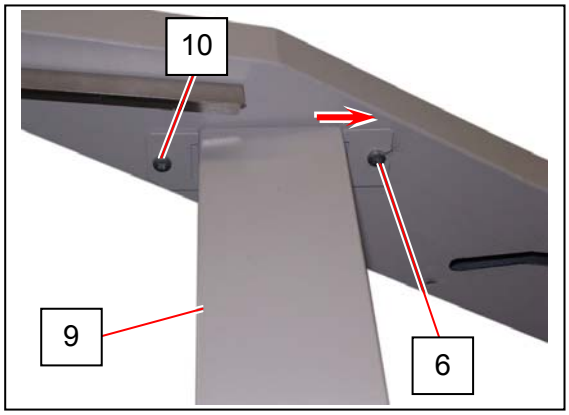


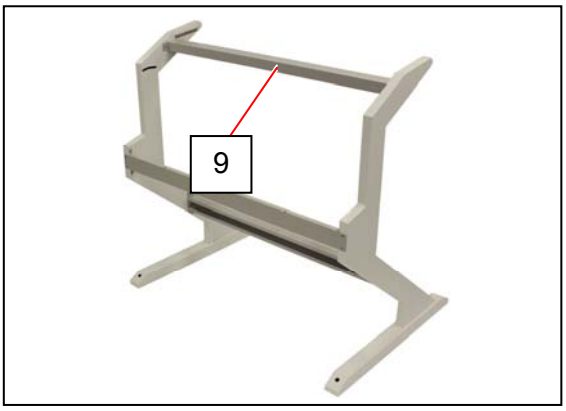
4. Mount Beam 2 (8) on the screws (5).



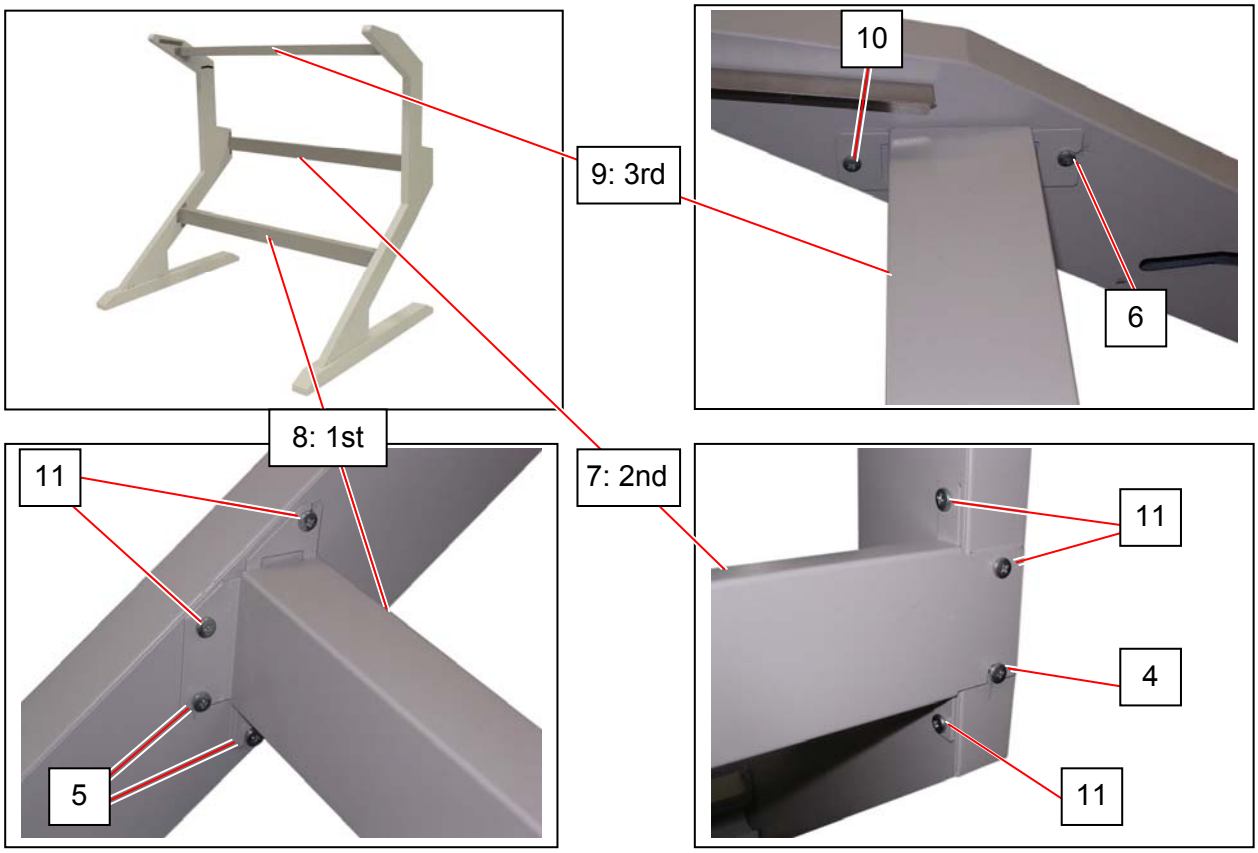


5. Mount Beam 4 (9) on the screws (6) and install 1 screw (10) on each side to support Beam 4 (9).

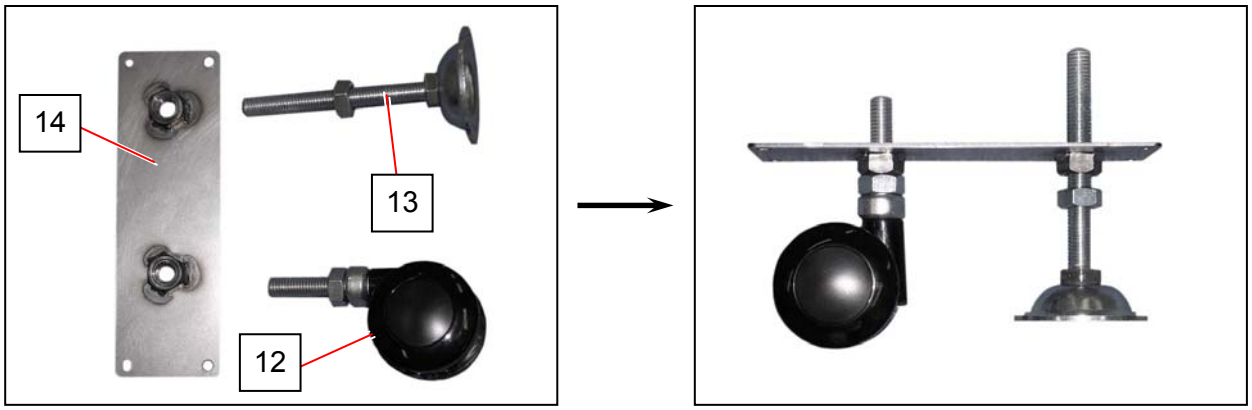




6. Install the rest screws (11) to Beam 3 (7), Beam 2 (8). Tighten the screws (5) (4) (6) (10) (11) on Beam 2 (8), Beam 3 (7), Beam 4 (9).



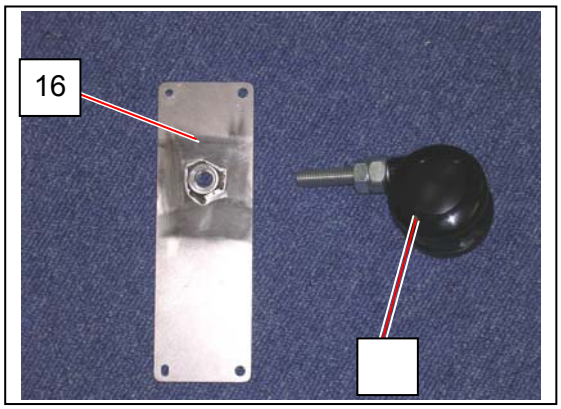
7. Install Caster (12) and Adjustment Level (13) to Plate 2(14).

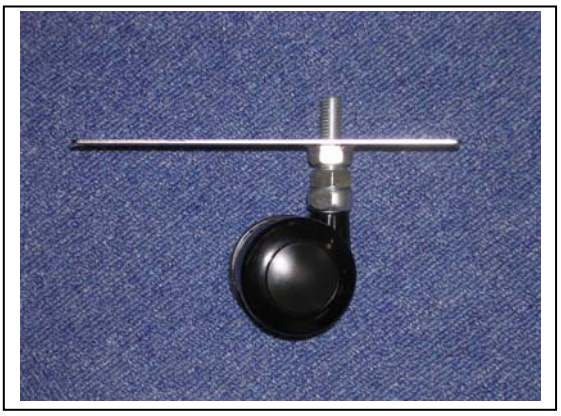


NOTE

Install the Casters in the Plate 4 until the shaft completely passes through the Plate 4.

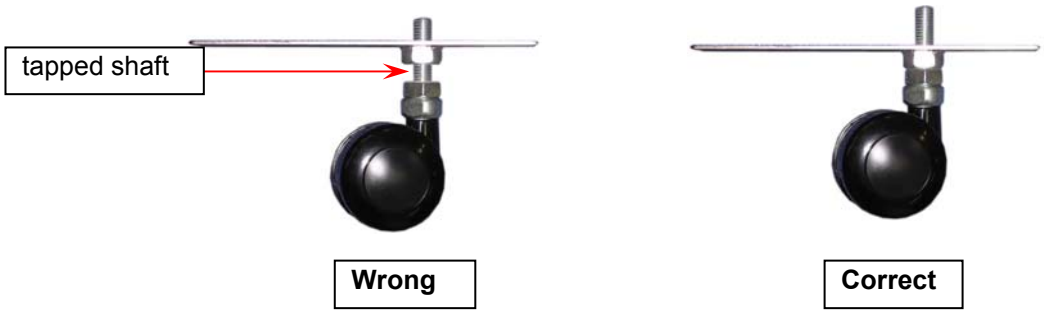
8. Install Caster (15) to Plate (16).



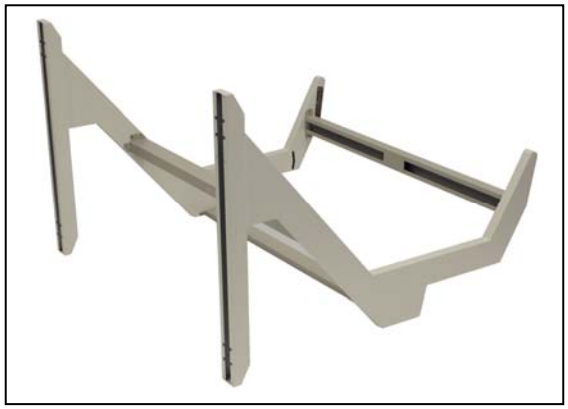


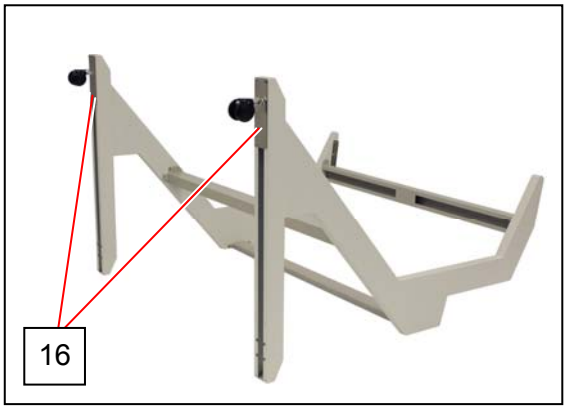
NOTE

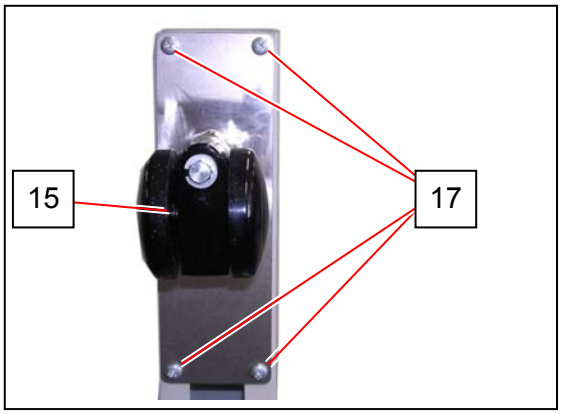
Install the Casters in the Plate until the shaft completely passes through the Plate.



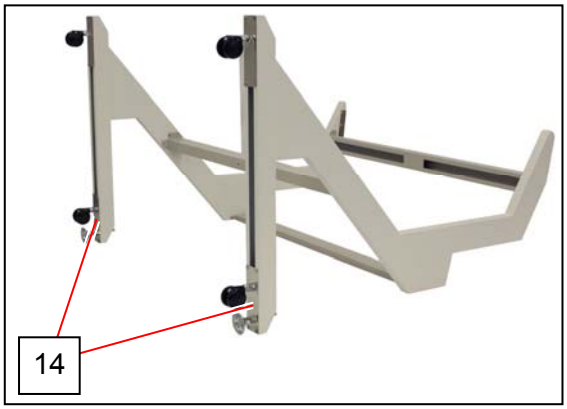
9. Gently turn down the entire frame on a packing material. Fix 2 pieces of Plate (16) to the rear end of the frame with 4 screws (17) each. Caster (15) should be located to a closer end of the frame base.

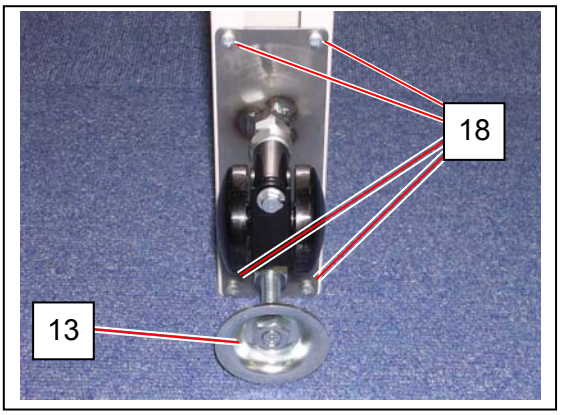






10. Fix 2 pieces of Plate 2 (14) to the front end of the frame with 4 screws (18) each.
Adjustment Level (13) should be located to a closer end of the frame base.



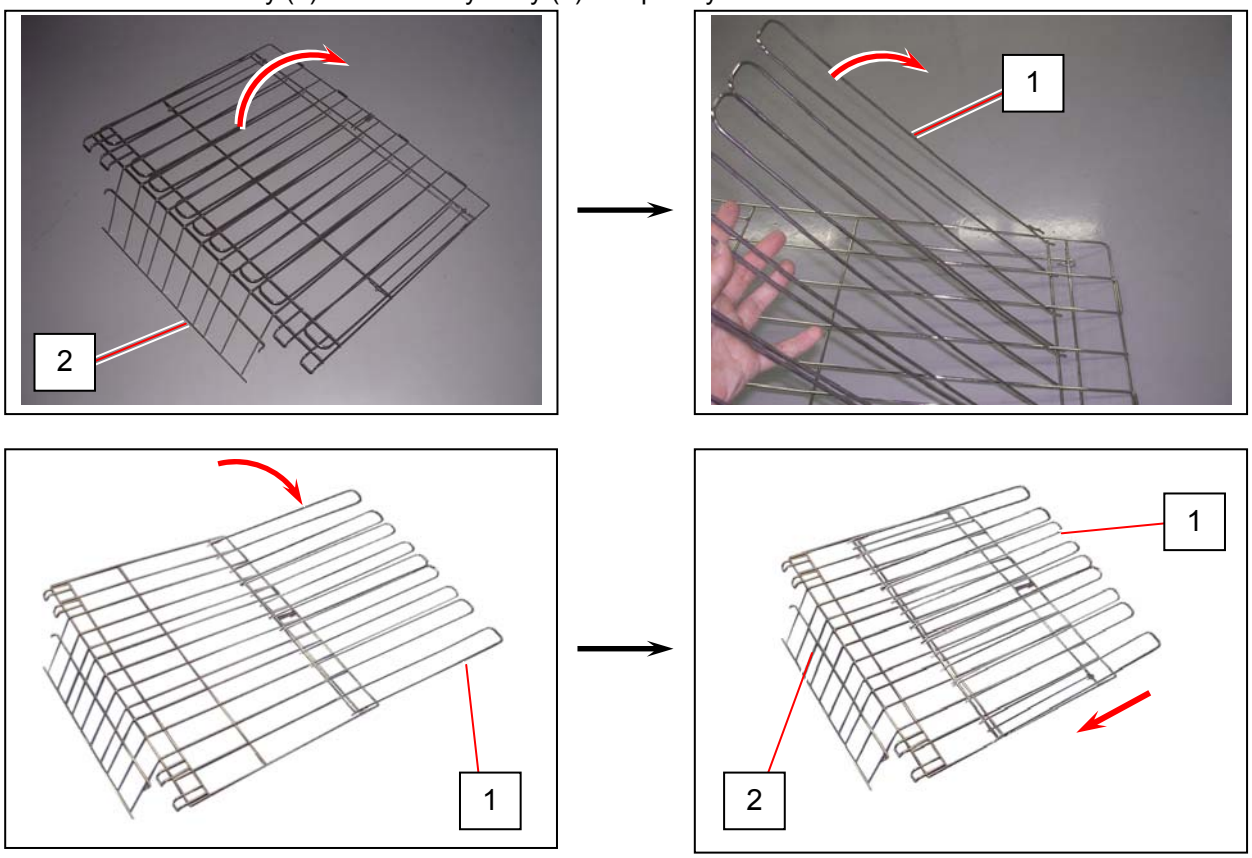


11. Raise the frame.

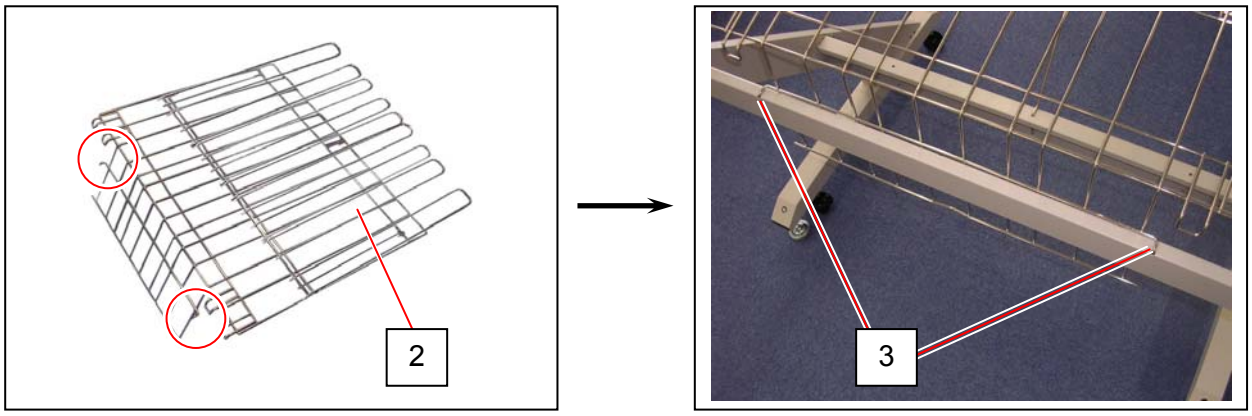
4. Assembling Tray

Note: Some pictures show Print Tray Assy with unmounted for clarification.

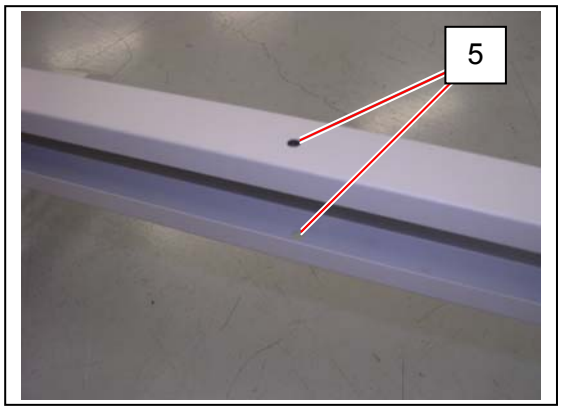
1. Turn the extension tray (1) on Print Tray Assy (2) completely.

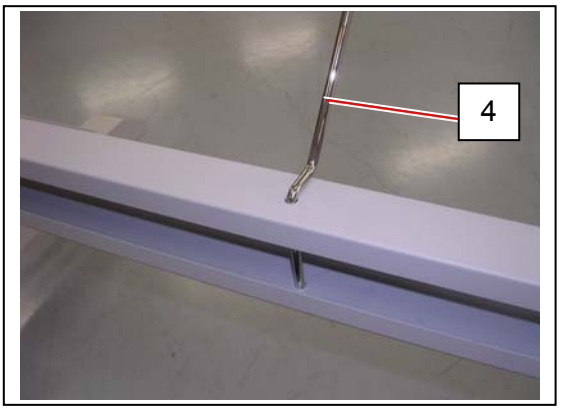


2. Mount Print Tray Assy (2) to the frame. Insert the hook parts on Print Tray Assy (2) to the holes (3) on Beam 3.

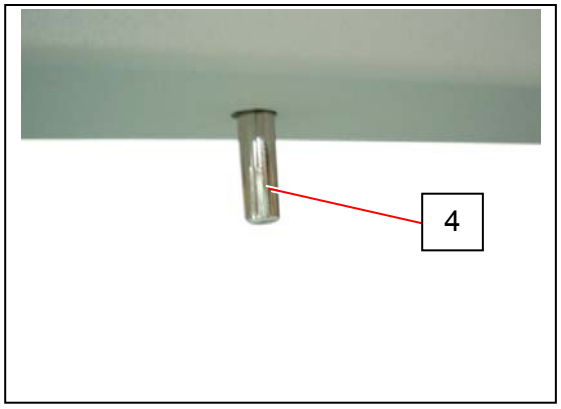


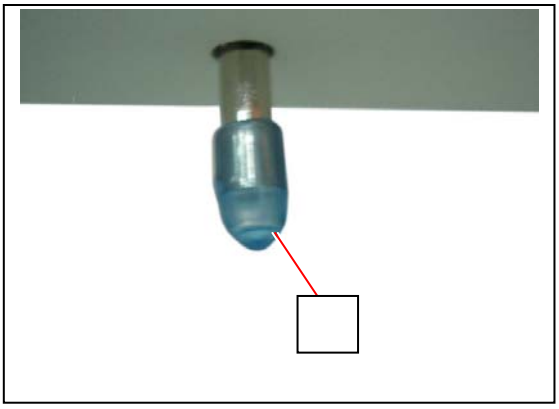
3. Insert Arm 3 (4) to the hole (5) on the center of Beam 2.



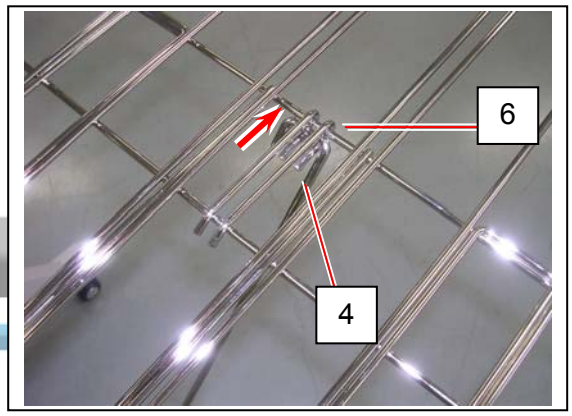


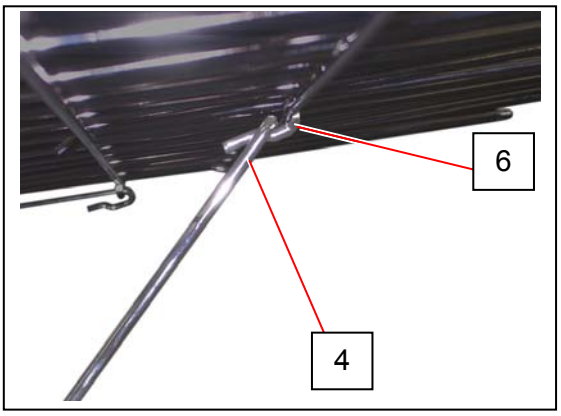
4. Attach VCP CAP (5) to the bottom end of Arm 3 (4).



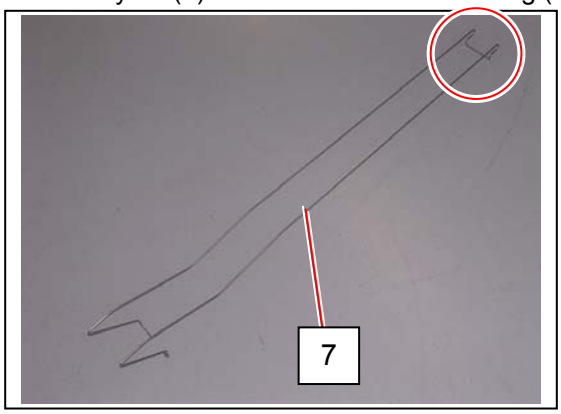


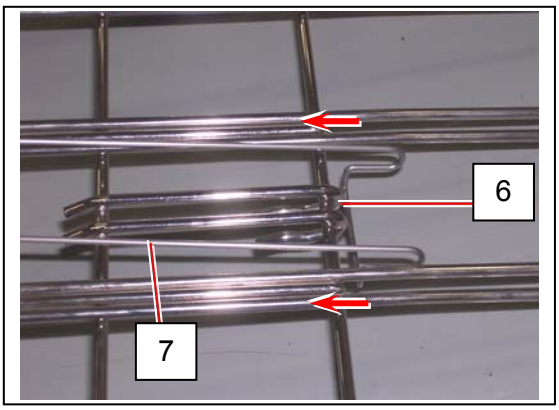
5. Fit the top of Arm 3 (4) into the hooking (6) under the middle of Print Tray Assy.



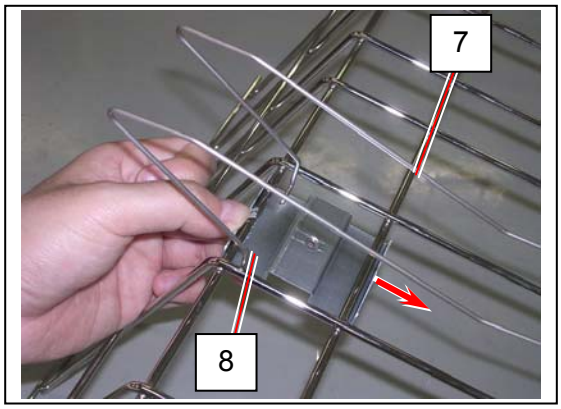


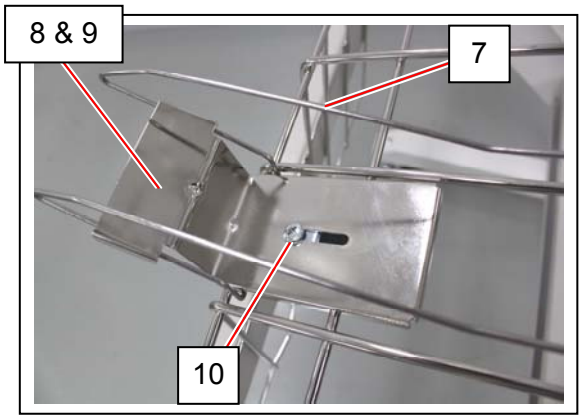
6. Hook Tray 10 (7) on the beam of the hooking (6) in the center block.





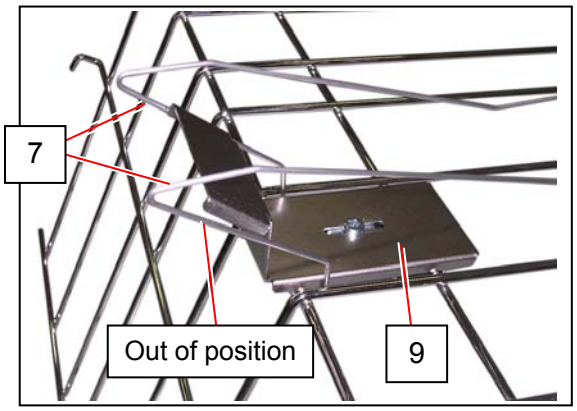
7. Insert the other end of Tray 10 (7) to Bracket A (8). With pushing Bracket A (8) to the arrow direction, fix Plate 5 (9) and them together with 1 screw (10).



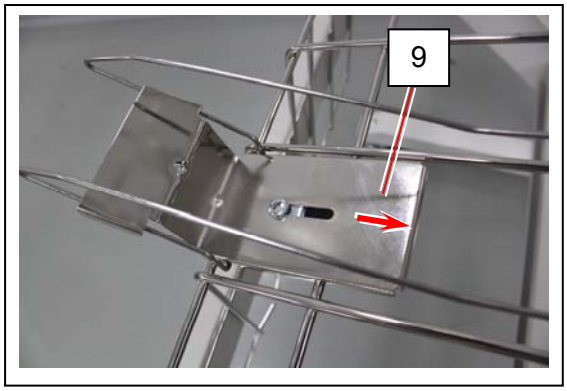


NOTE

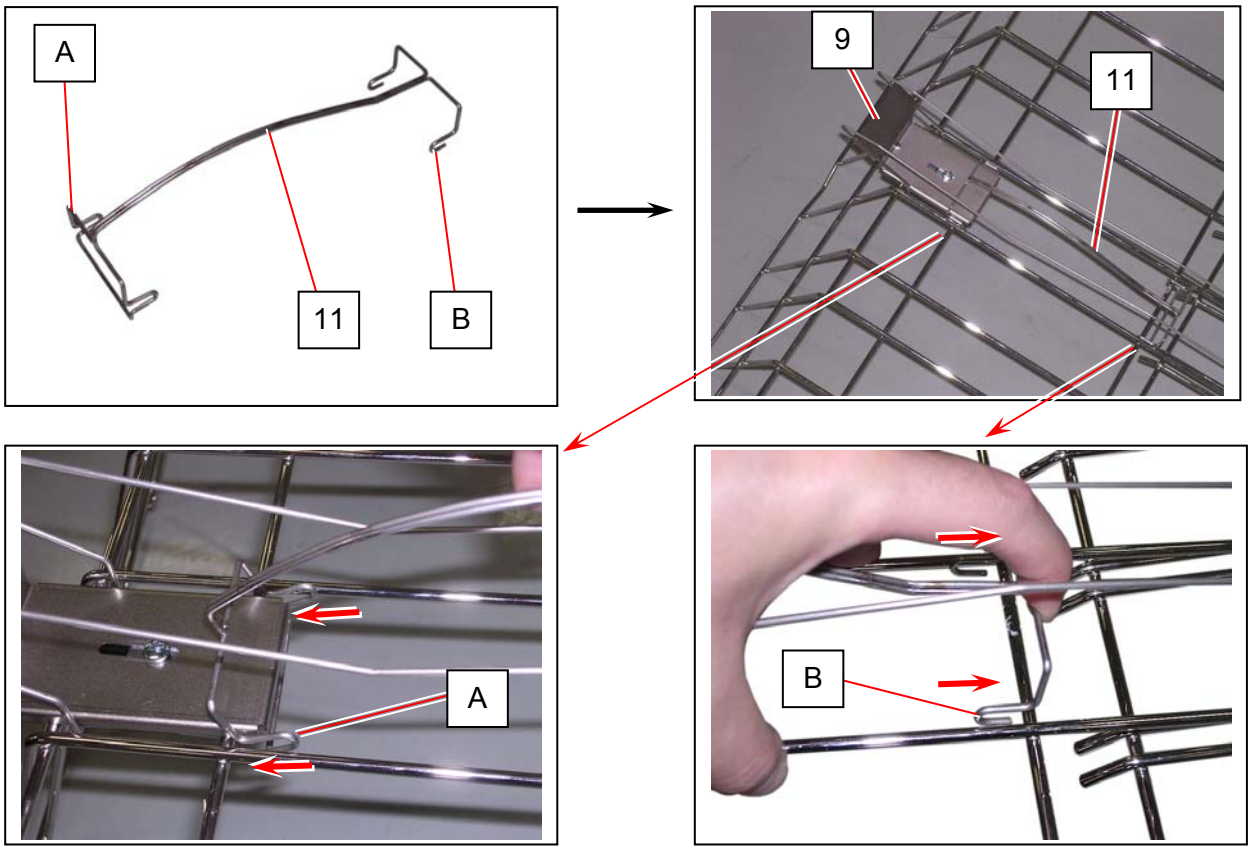
1. Plate 5 (9) should hold Tray 10 (7) on its catch sides.



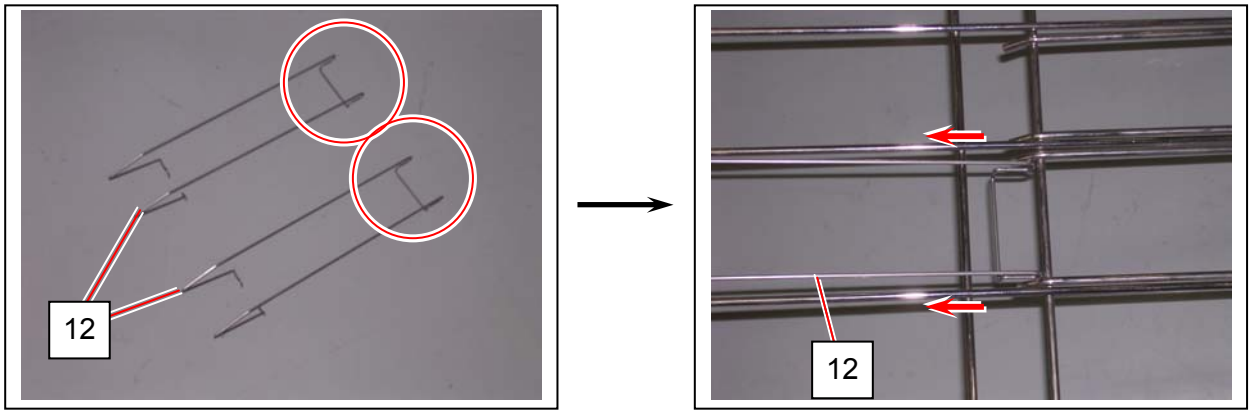
2. Push the Plate 5 (9) to the arrow direction completely and secure it.



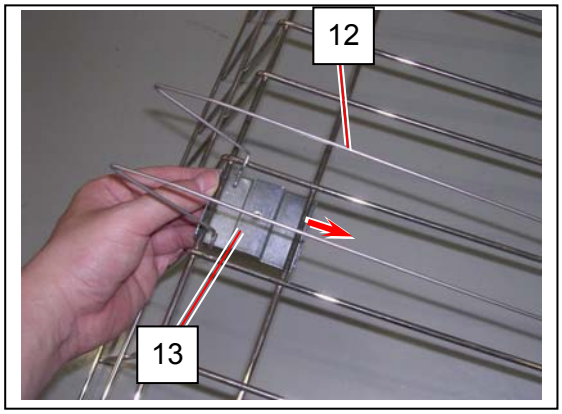
8. Hook Tray 4 (11: A) on the beam near Plate 5 (9). Hook the other end (B) to the beam near the extension tray.

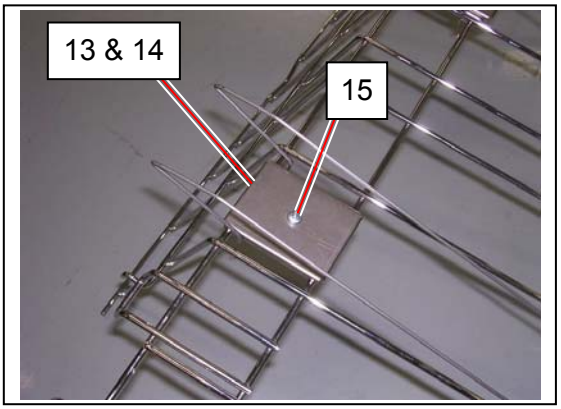


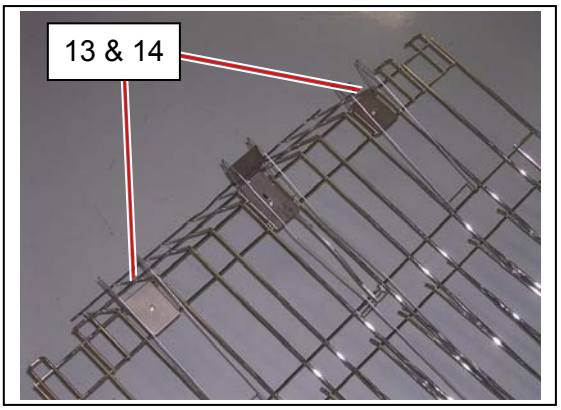
9. Hook Tray 4 (12) on the beam near the end of the extension tray in the third block from the outside as shown below.



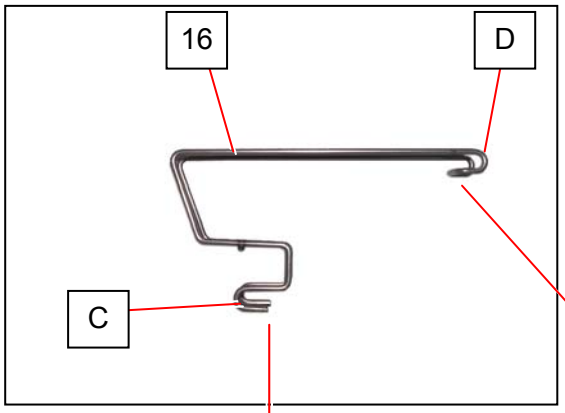
10. Insert the other end of Tray 4 (12) to Bracket A (13). With pushing Bracket A (13) to the arrow direction, fix Plate 6 (14) and them together with 1 screw (15).

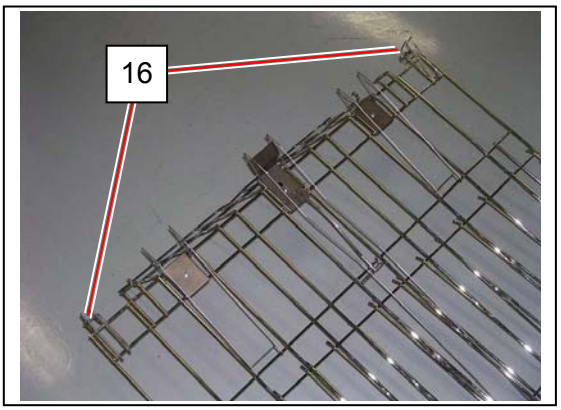


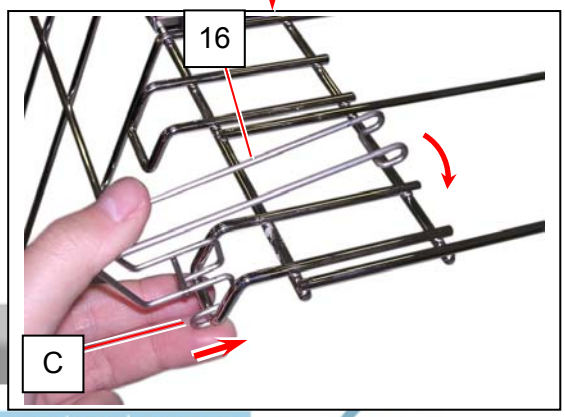


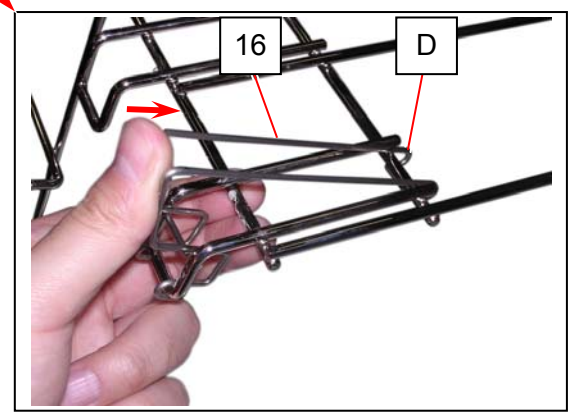


11. Hook Tray 9 (16: C) on the beam near the end of the extension tray in the outside small block. Push Tray 9 (16) to the arrow direction to fit the other end (D) to the beam.

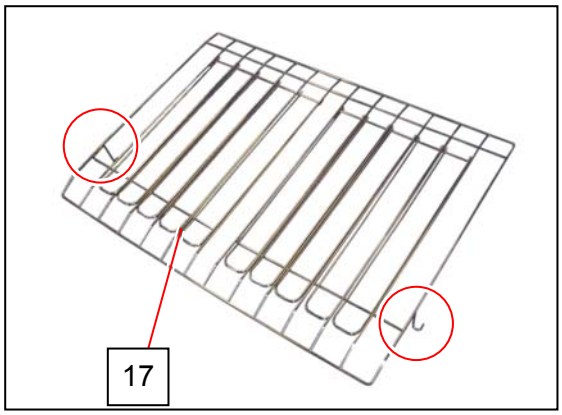


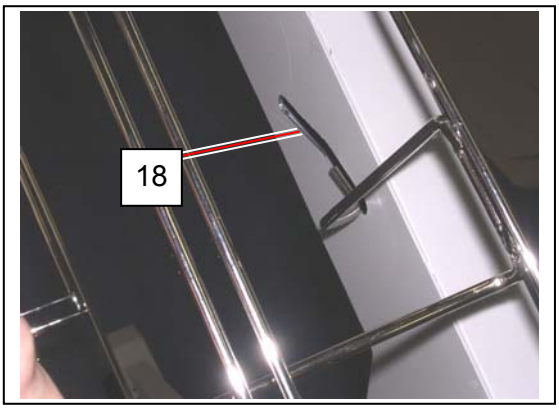


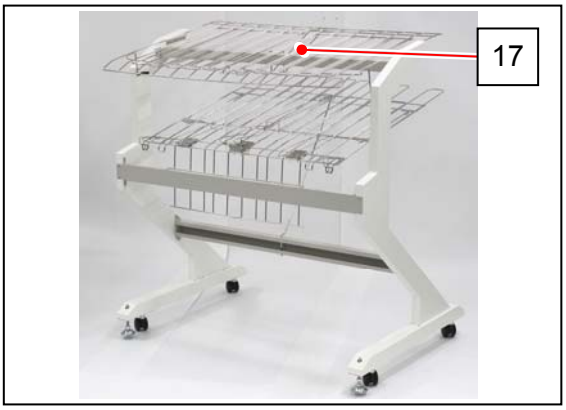




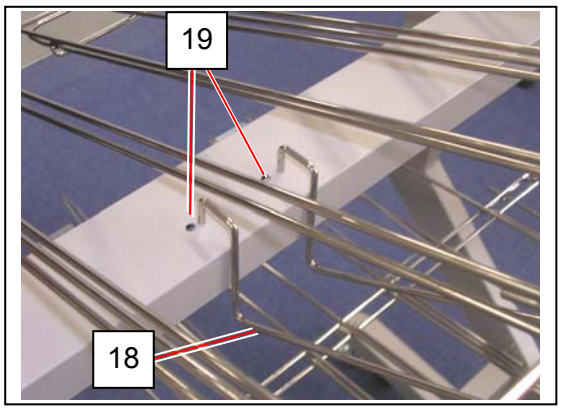
12. Mount Original Tray Assy (17) to the frame. Insert the hook parts of Original Tray assy (17) to the slots (18) upper inside of both frames.

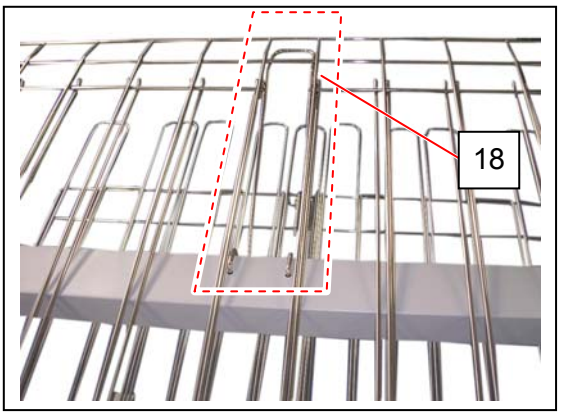






13. Insert Tray 7 (18) to the holes (19) on Beam 3. Locate the other end of Tray 7 (18) under the end of Original Tray Assy to support it.

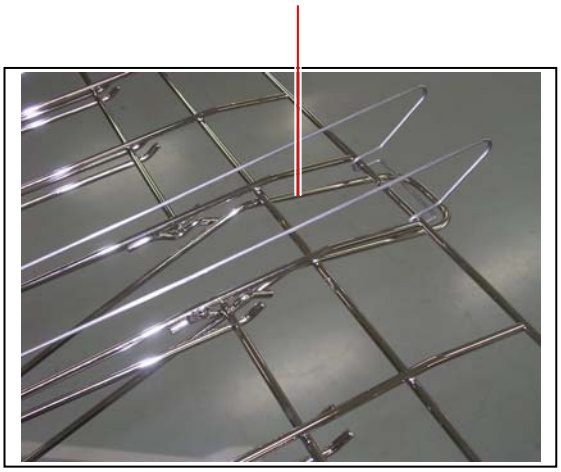




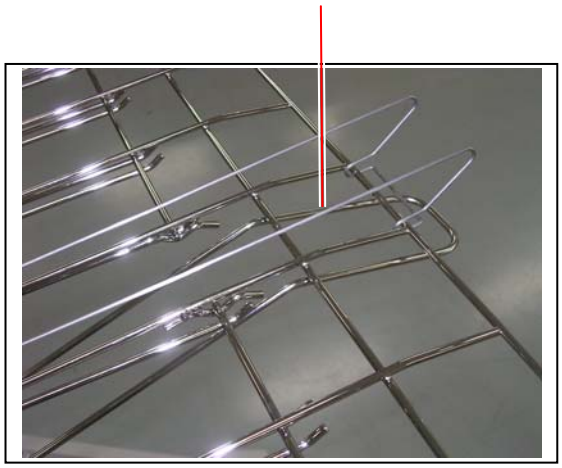
NOTE

Make sure that Tray 7 (18) supports the center of Original Tray Assy in position.

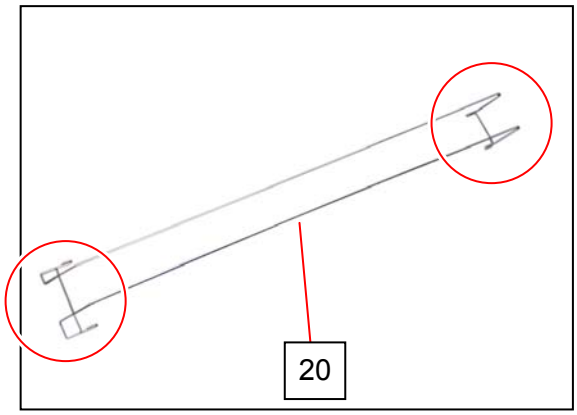
Correct: supported in center

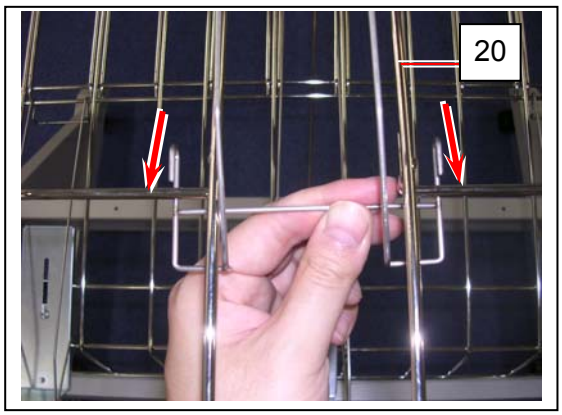


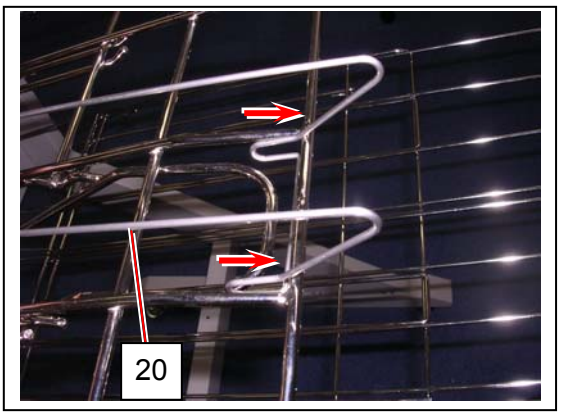
Wrong: out of position



14. Hook Tray 8 (20) to the center outside rim of Original Tray Assy. Hook the other end to the beam shown below.

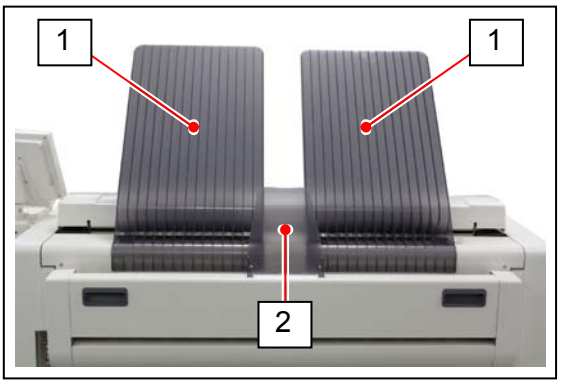




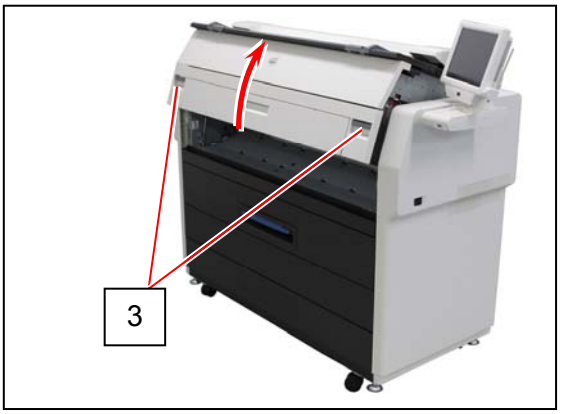


5. Setup of the Paper Exit Part

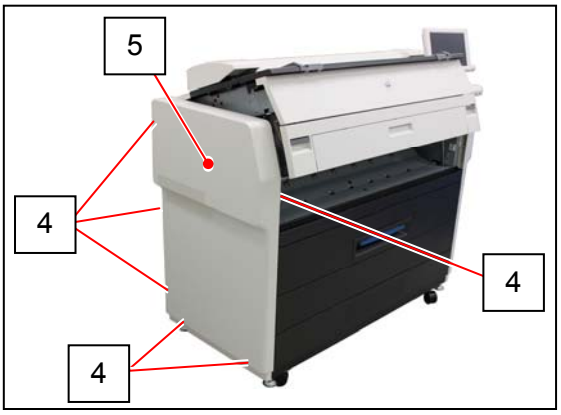
1. Remove Exit Tray (1) and Exit Tray 2 (2).



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

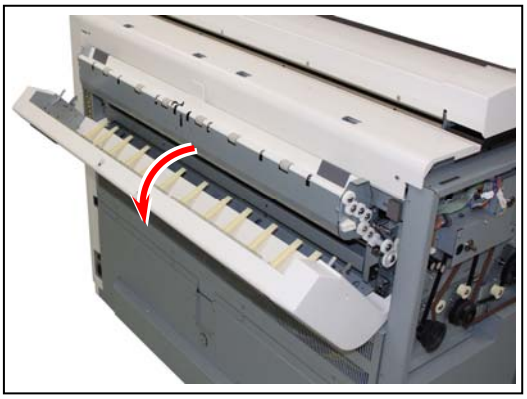


3. Remove 6 screws (4) to remove Cover 2 (5).

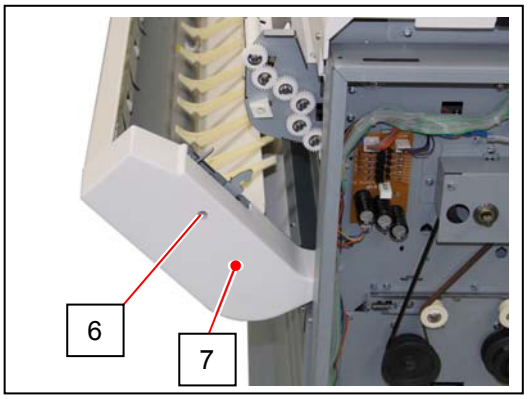


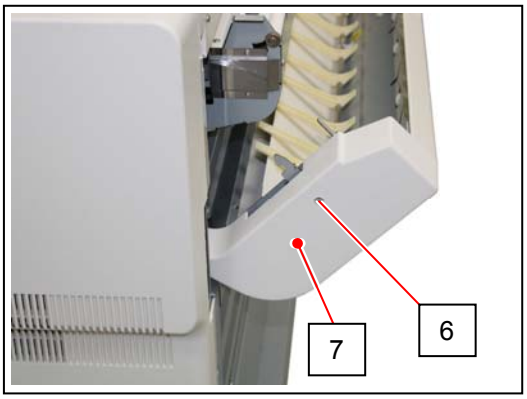
4. Close Engine Unit.

5. Open Paper Exit Assy .

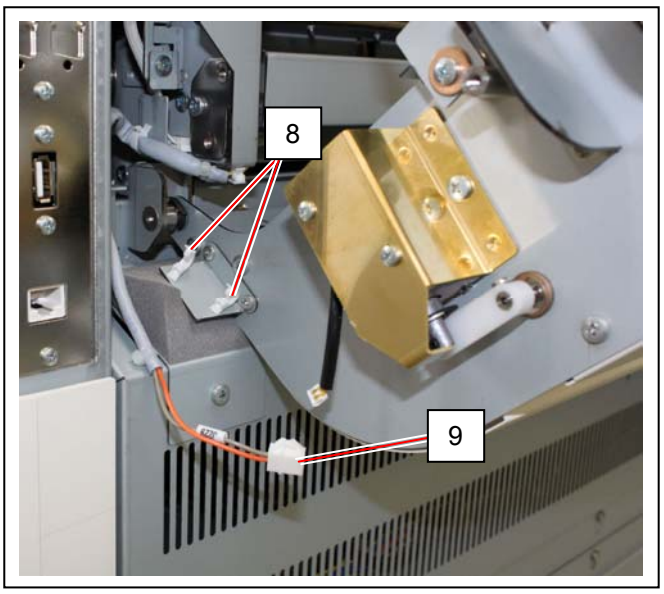


6. Remove screw (6) each to Exit Side Cover (7).

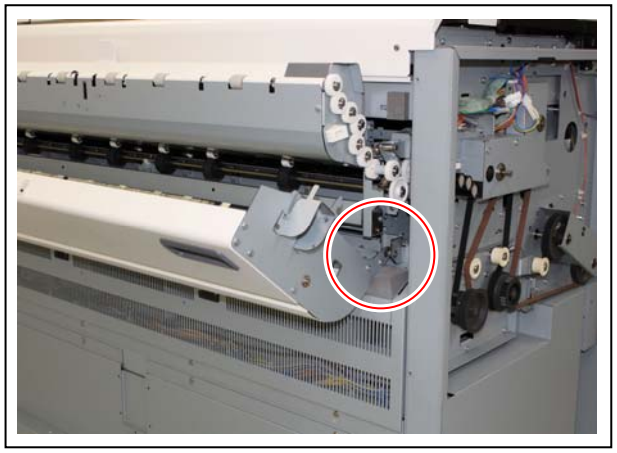


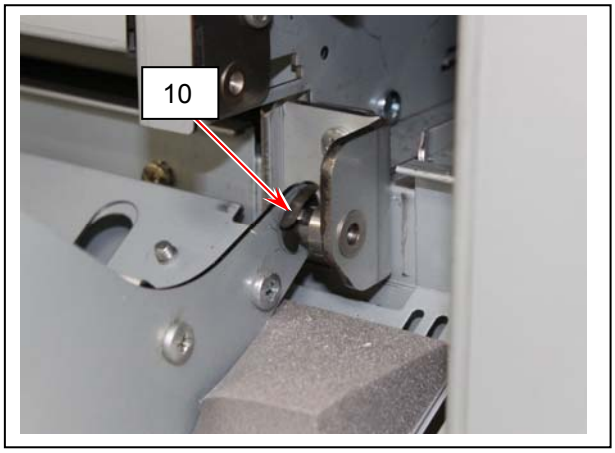


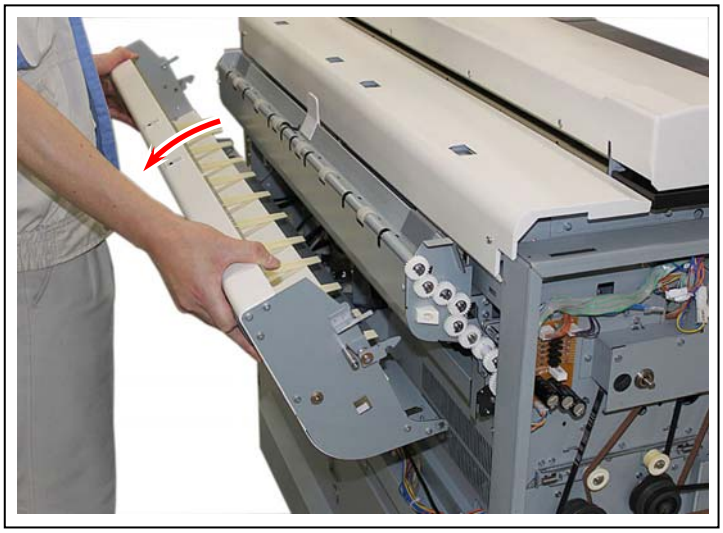
7. Open Wire Saddle (8), and then disconnect Connector (9).



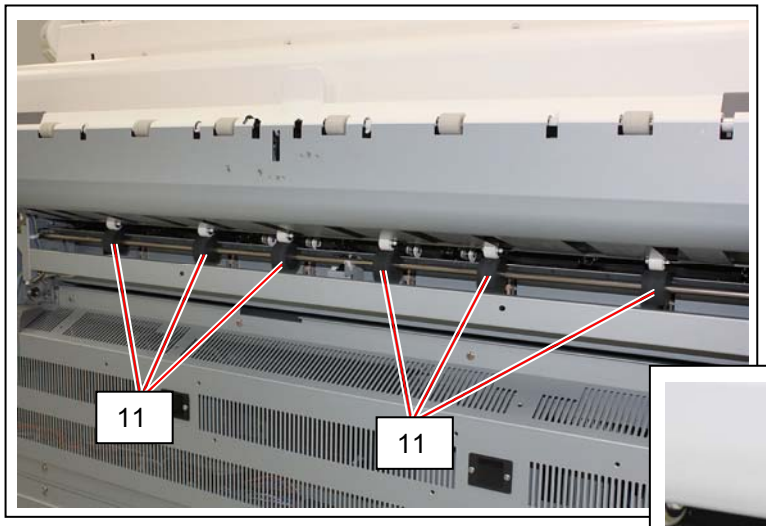
8. Remove KL Clip (10) to remove Paper Exit Assy (Outside).



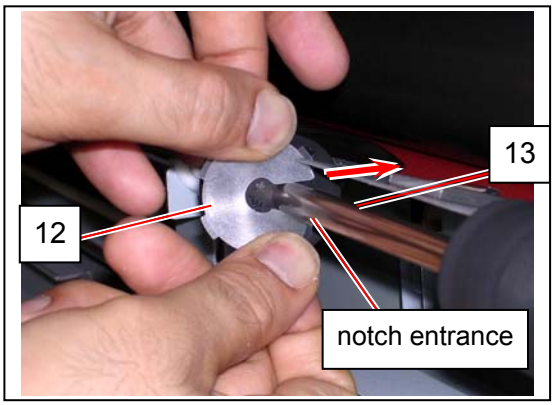


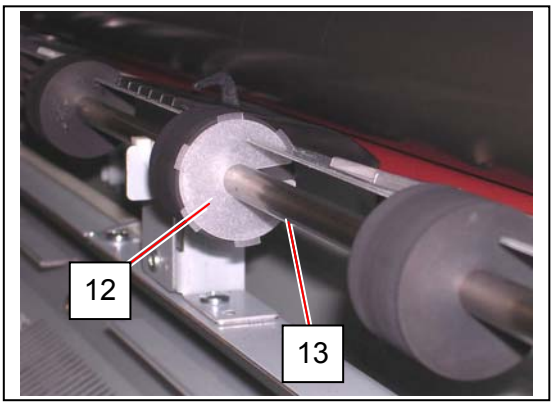


9. On the main unit, clean the outer side of the 6 Exit Rollers (11) with alcohol.



10. Peel the release paper from Release Ring (12). Insert each Release Rings (12) onto Exit Roller shaft (13) and apply them to Exit Rollers' cleaned sides.

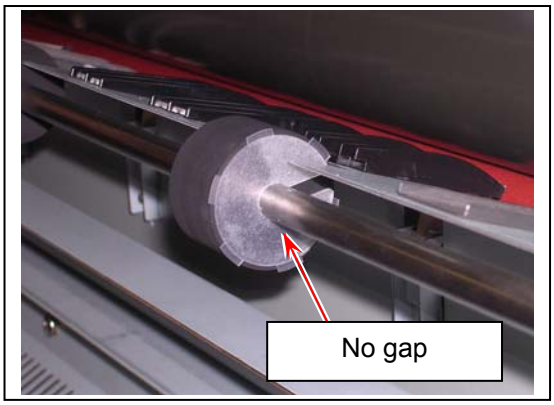




NOTE

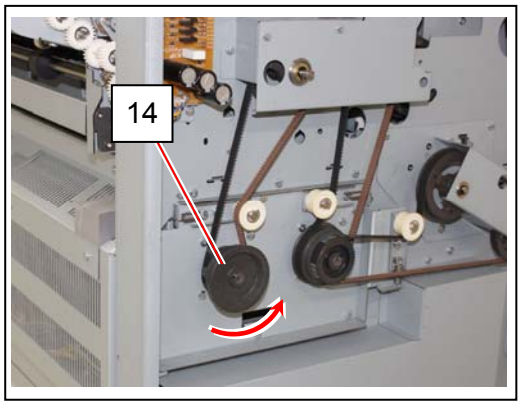
1. Salient portions on Release Ring (12) stick out from Exit Roller surface in about 0.5mm.

2. Make sure of no gap between Release Ring's inside rim and Exit Roller shaft.

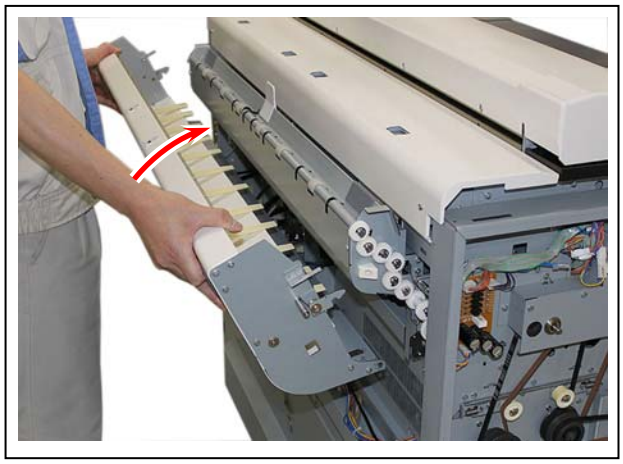


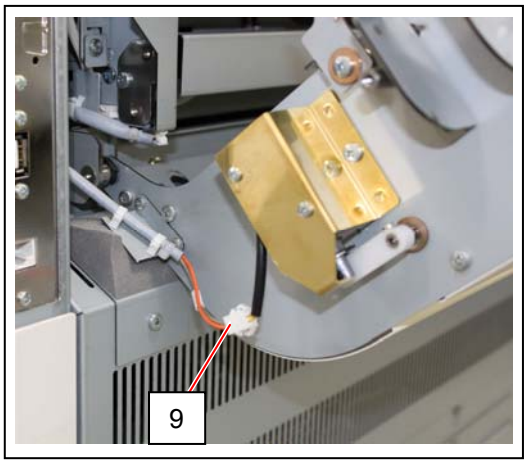
3. Line up the inserting direction of all the 6 Release Rings onto the shaft.

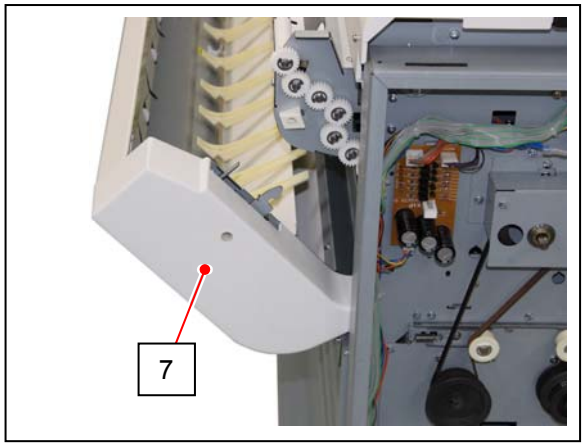
4. Apply the notch entrance side of Release Ring firmly as well. Be sure to check it in position by rotating Pulley (14) to turn the notch entrance side to you.

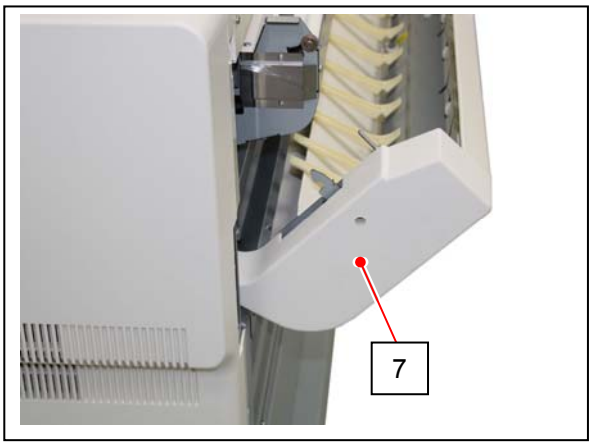


11. Replace Paper Exit Assy.
Connect the connector (9), and then replace left and right Exit Side Cover (7).

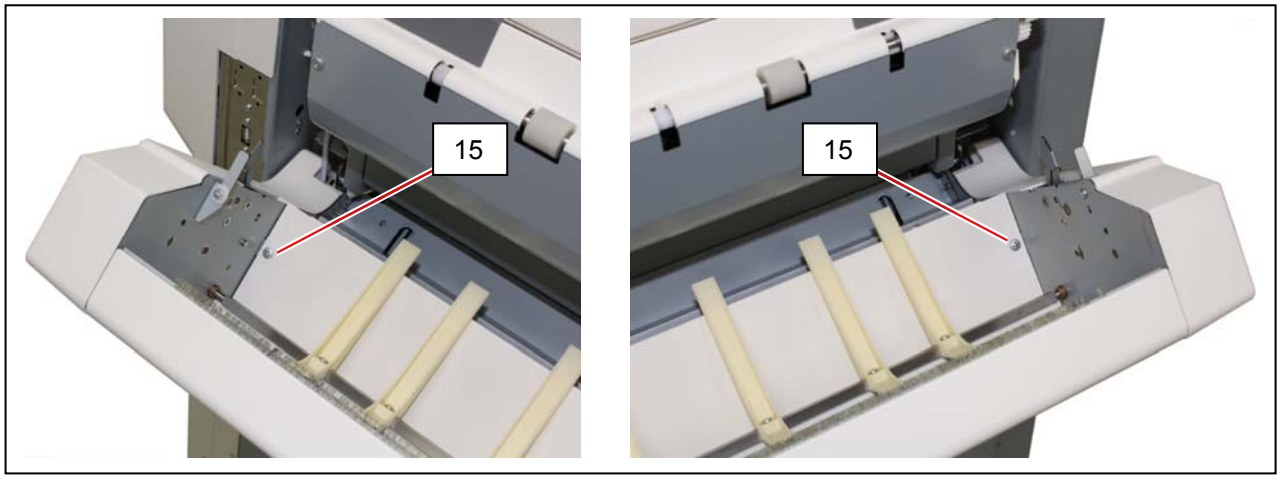




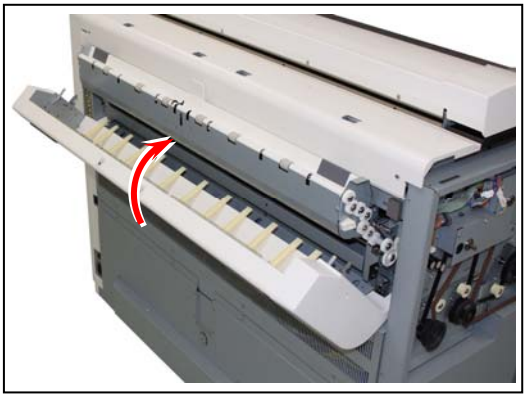




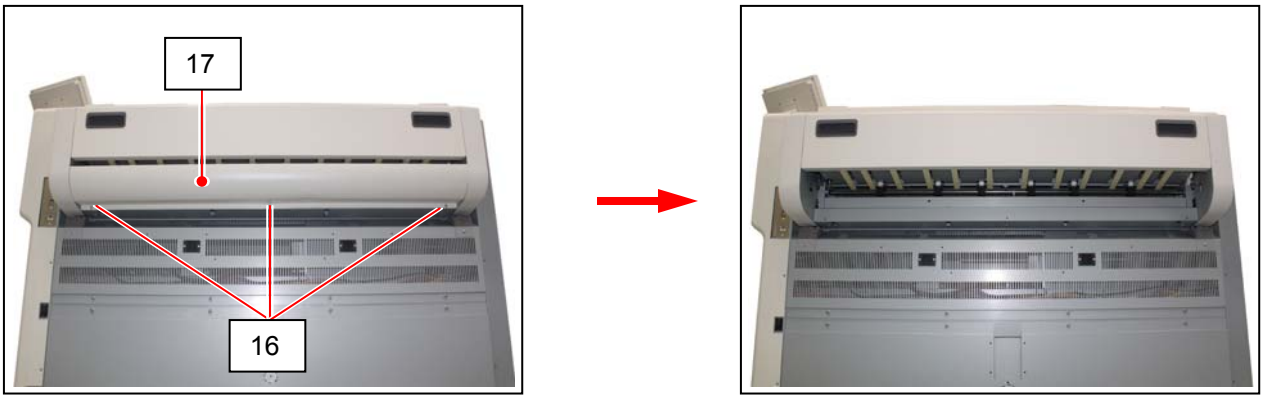
12. Remove right and left screw (15).



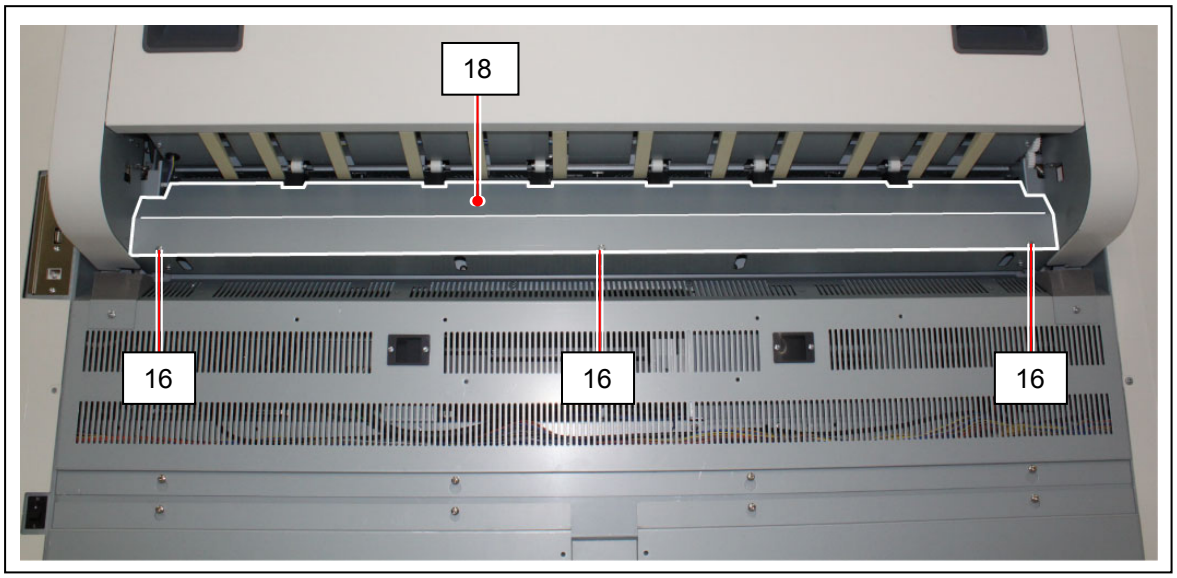
13. Close Paper Exit Assy.



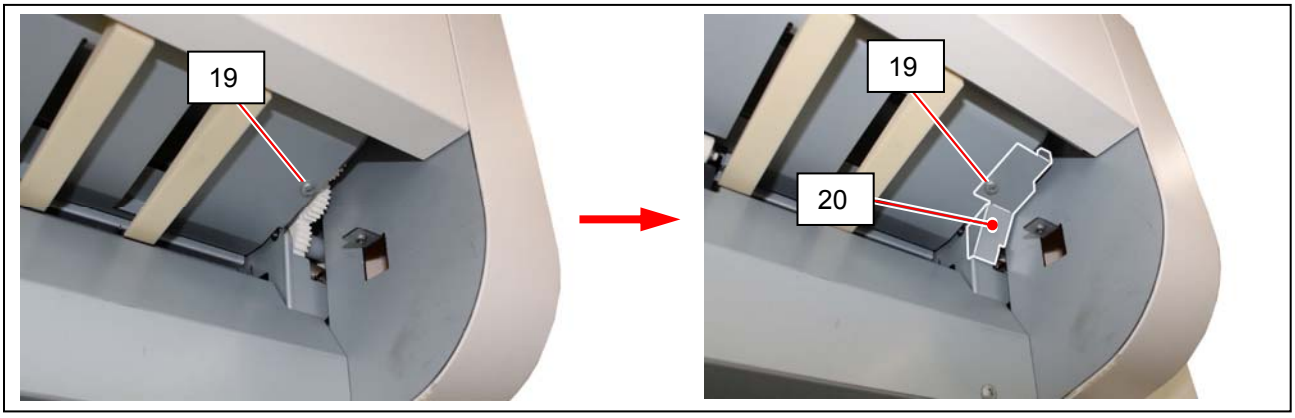
14. Remove 3 screws (16) to remove the Cover (17).



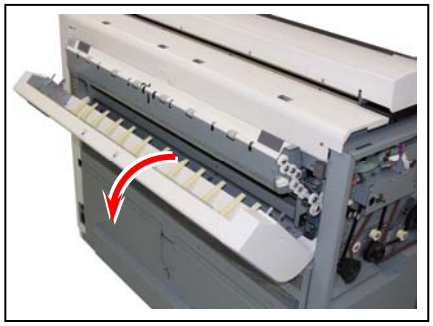
15. Attach Cover 5 (18) with the screws (16) which were removed on the step 14.

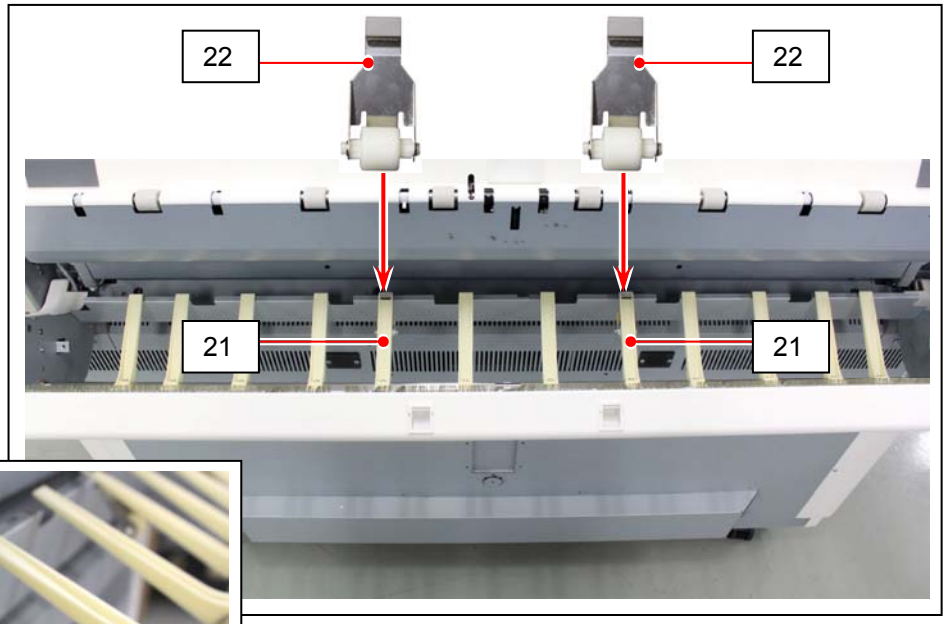


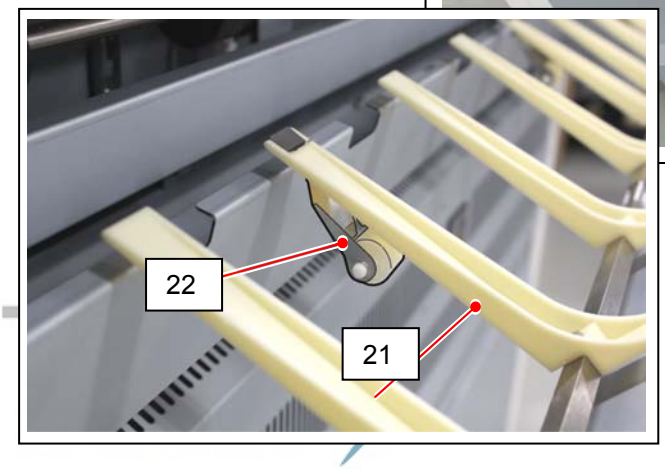
16. Remove 1 screw (19). Install Cover 6 (20) with the screw (19).



17. Open the Exit Cover. Attach Feeding Roller Assys (22) on the tip of the Eject Switch Guide (21) as shown the photo below. (Refer to the photograph for the attached position.)

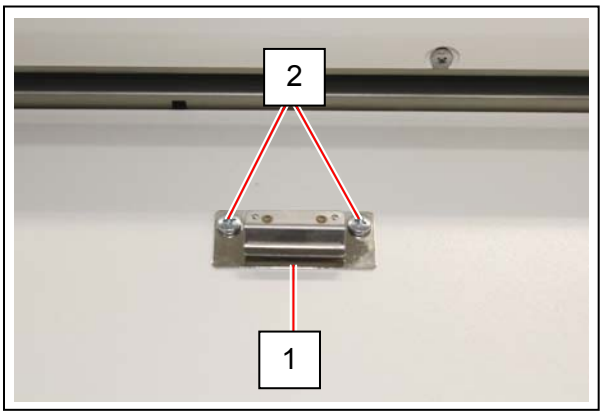


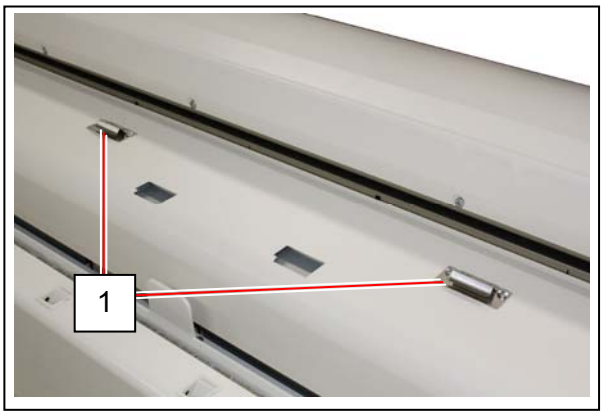




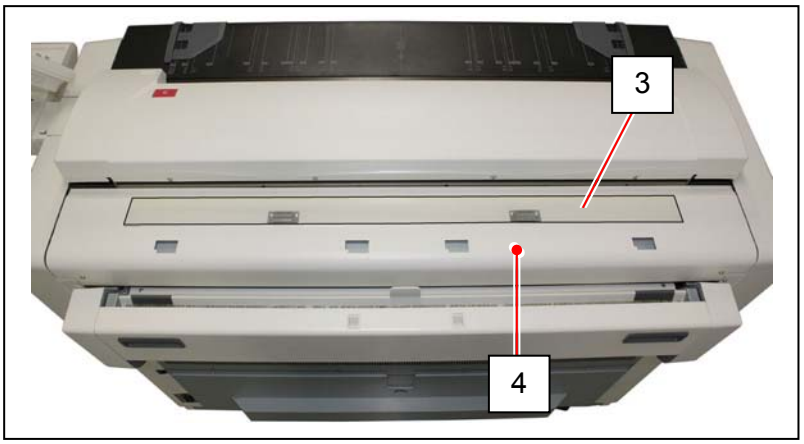
6. Installing Original Guides

1. Install 2 pieces of Bracket (1) to Cover 10 with 2 screws (2) each.





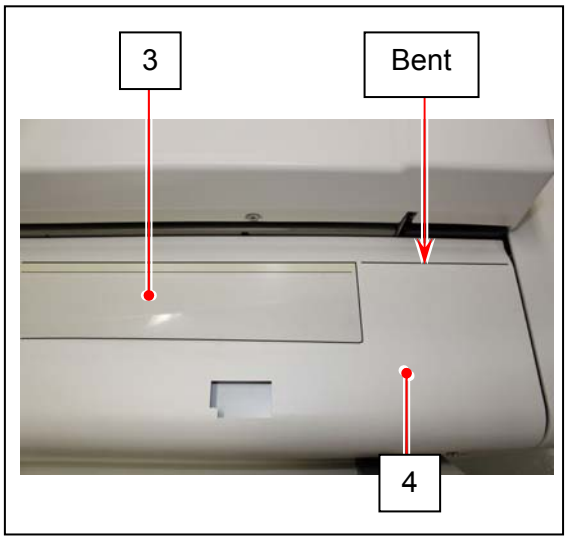
2. Apply Sheet (3) to Cover 10 (4).



NOTE

Note the following instruction for applying Sheet (3).

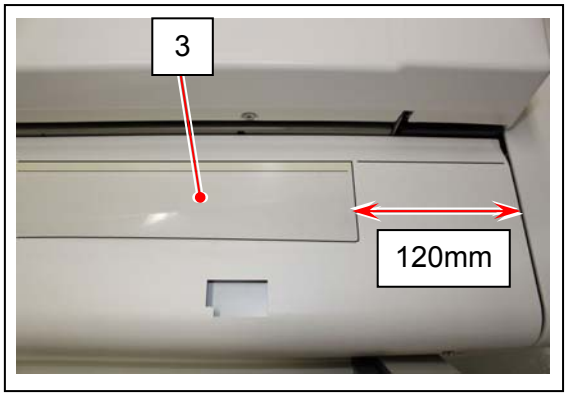
1. Align the bent on Cover 10 (4) and the rim of Sheet (3) on the taped side.



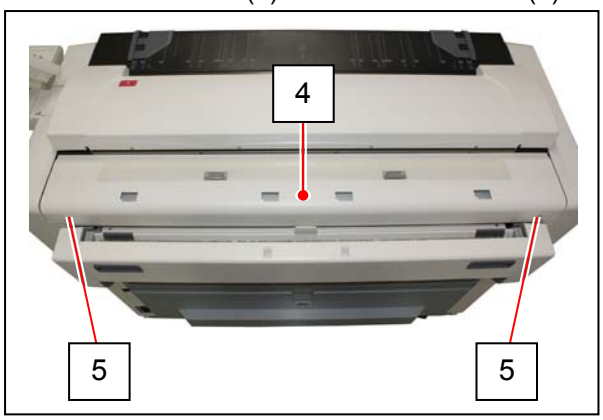
continued on next page

NOTE

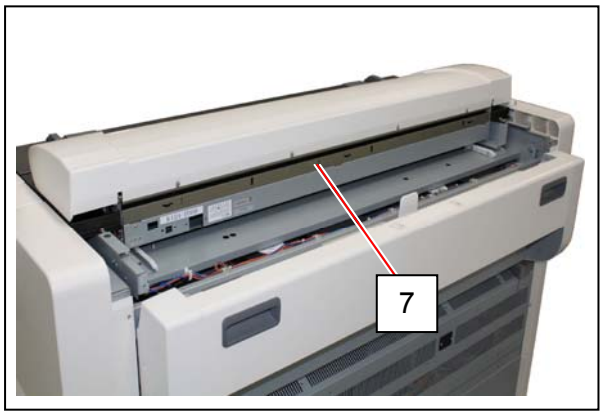
2. The side ends of Sheet (3) should be approximately 120mm away from the rim of Cover 10.

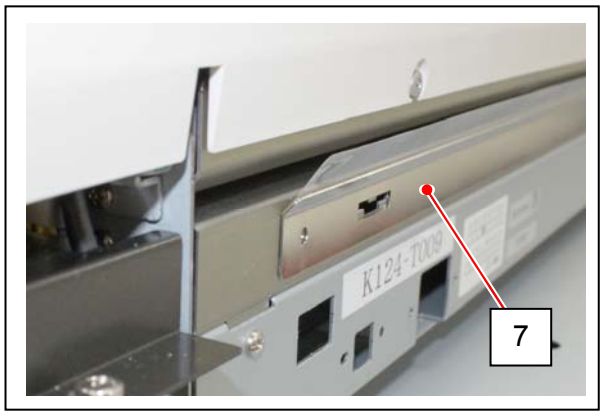


3. Remove 2 screws (5) to remove Cover 10 (4).



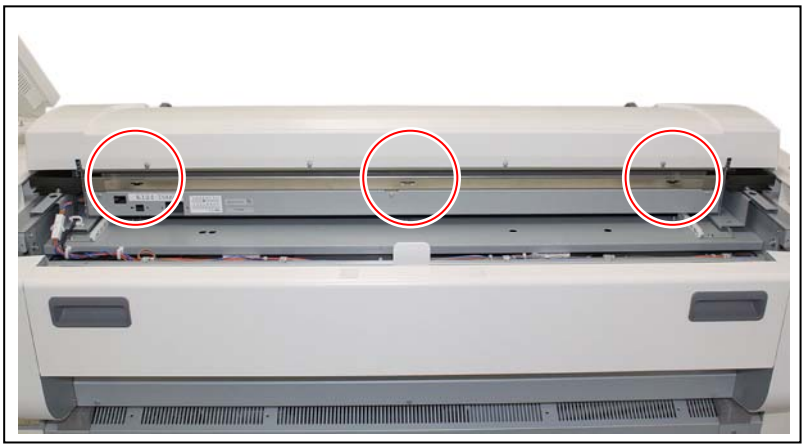
4. Apply Guide Plate Assy (7) to the back of the scanner unit.

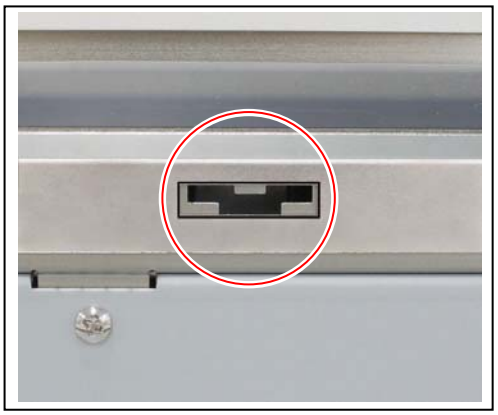




NOTE

Match 3 square holes on Guide Plate Assy (7) with the relief holes on the scanner unit. To match them at the center first will avoid skew installation of Guide Plate Assy.

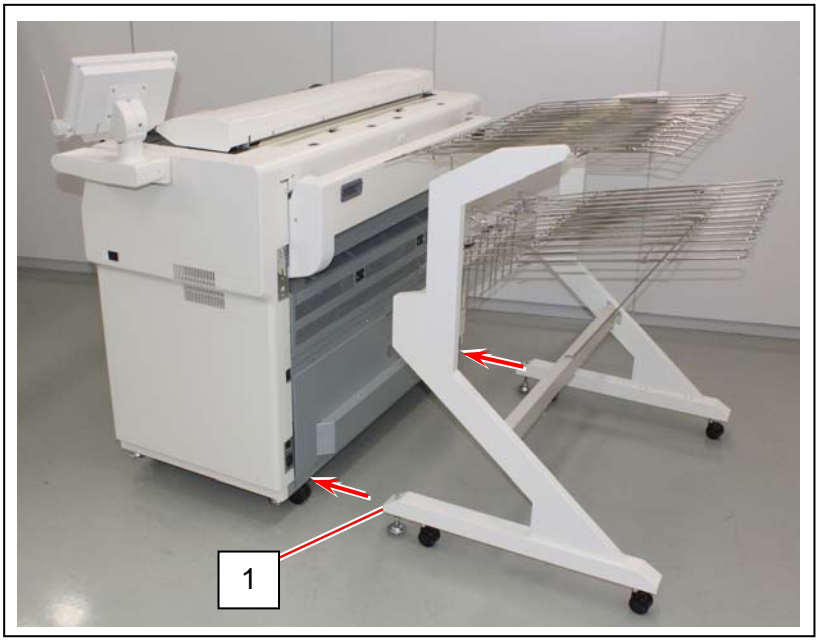


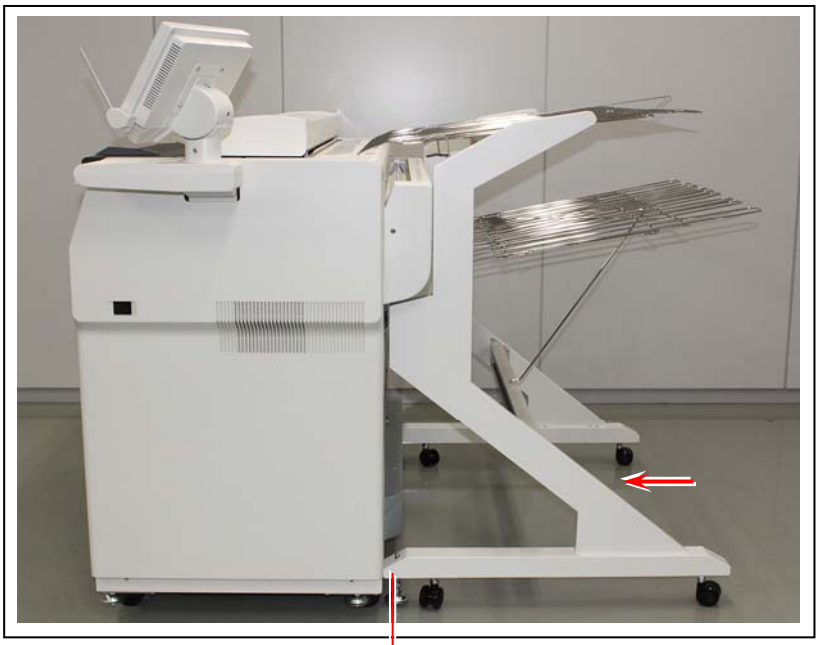


5. Replace Cover 10 (4).

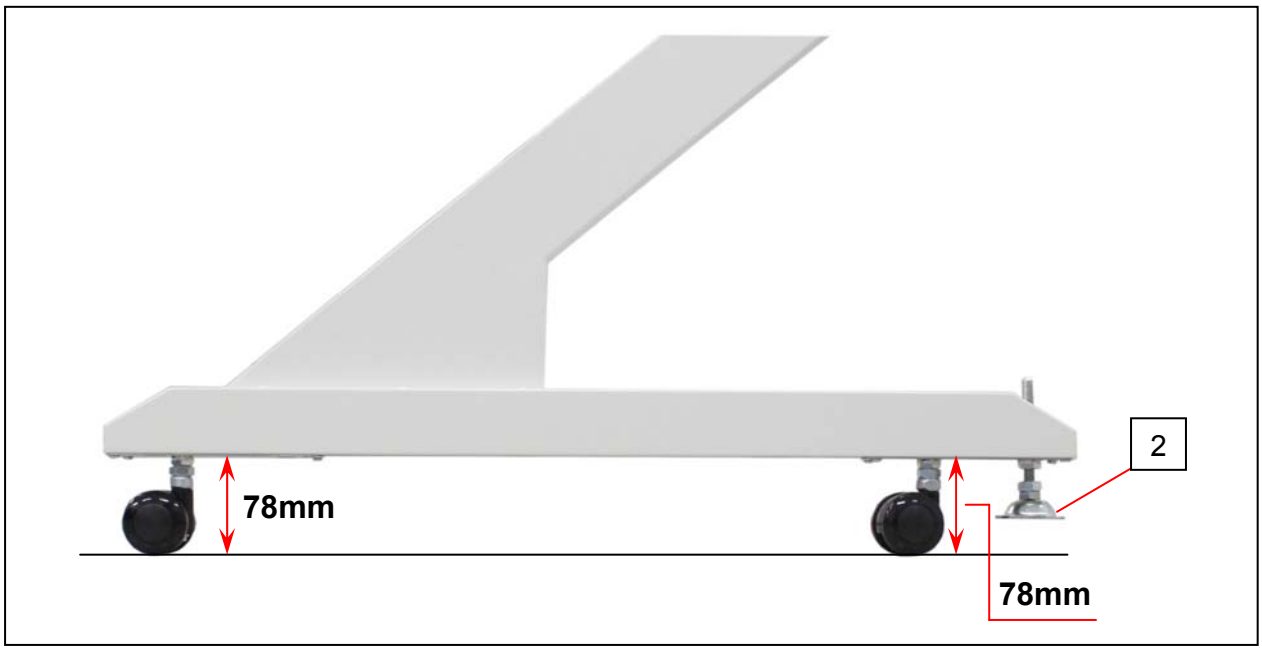
7. Connecting the main unit

1. Move the whole tray behind the main unit so that the front faces of the frame (1) touch the main unit.

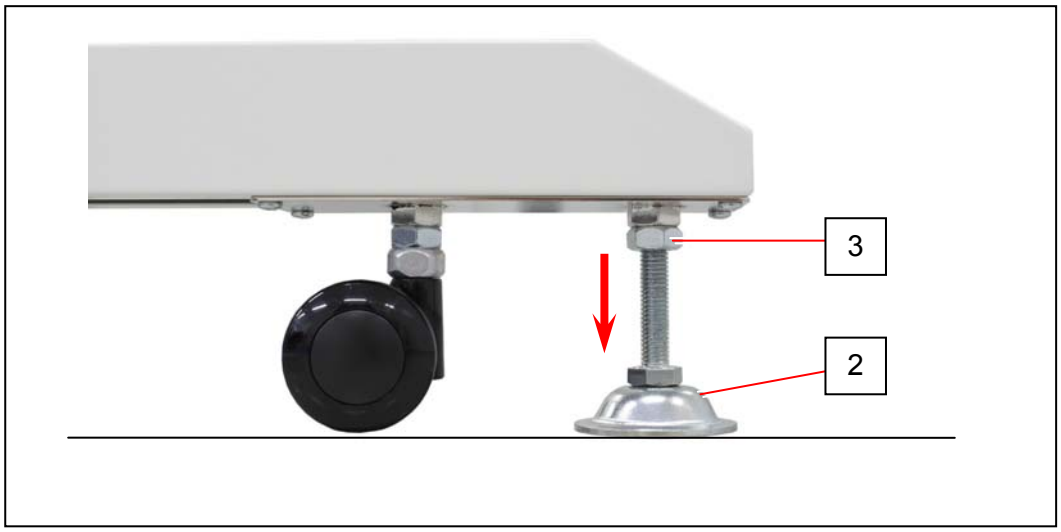




2. Make sure that the Adjusters (2) do not touch with the floor. Confirm that the distance between the floor and the bottom face of the frame should be 78mm.



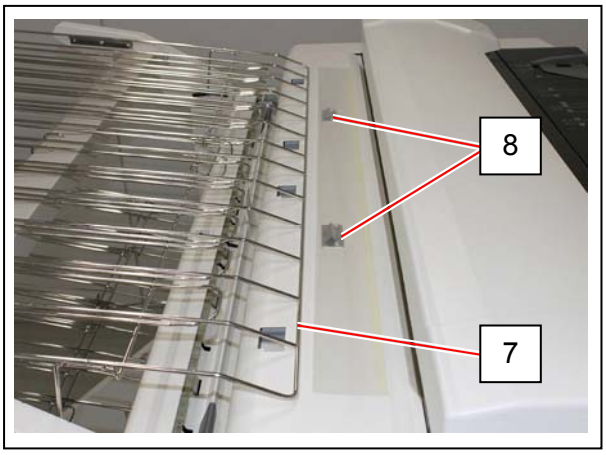
3. Unload until Adjustment Level (2) touches the floor. Afterwards, lock by nut (3).



Reference

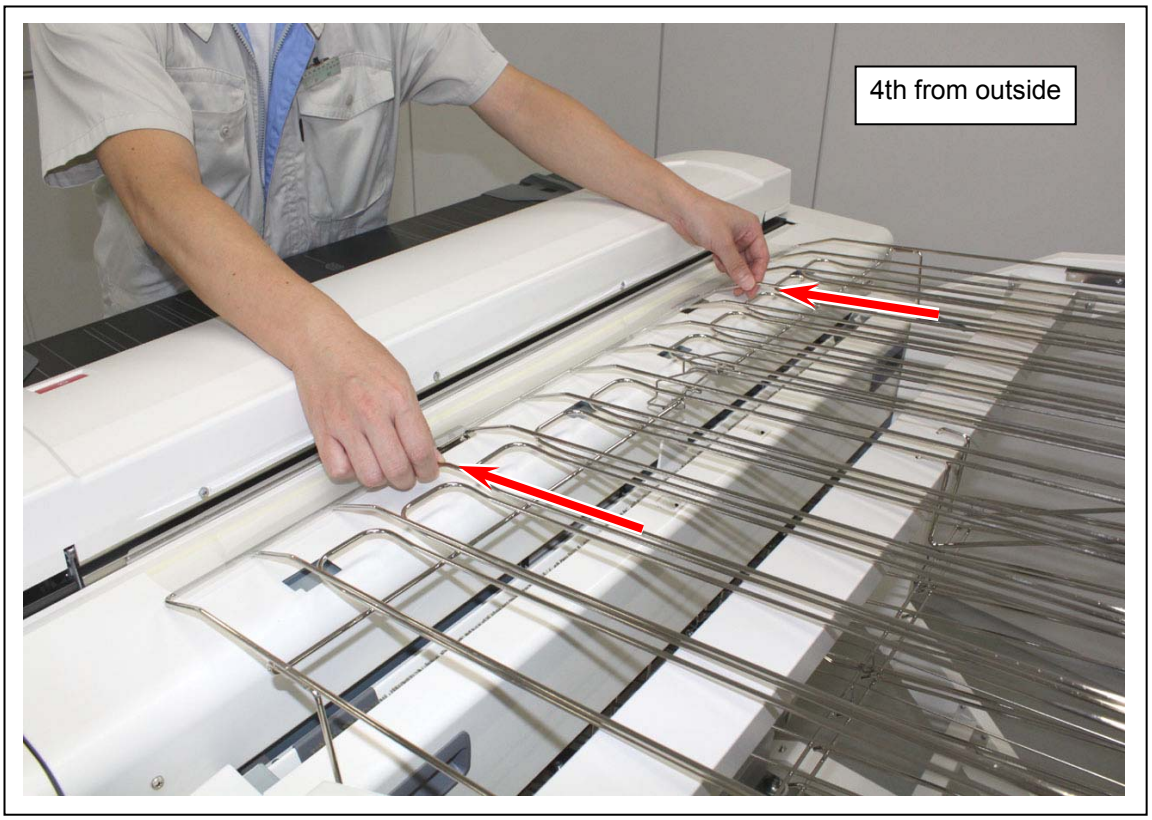
Landing Adjustment Level and all of the 4 Casters ensures the tray's stabilization and easy movability when removing a paper jam on the main unit.

4. Attach Original Tray Assy to the main unit. The front beam (7) will fit into Bracket (8).



NOTE

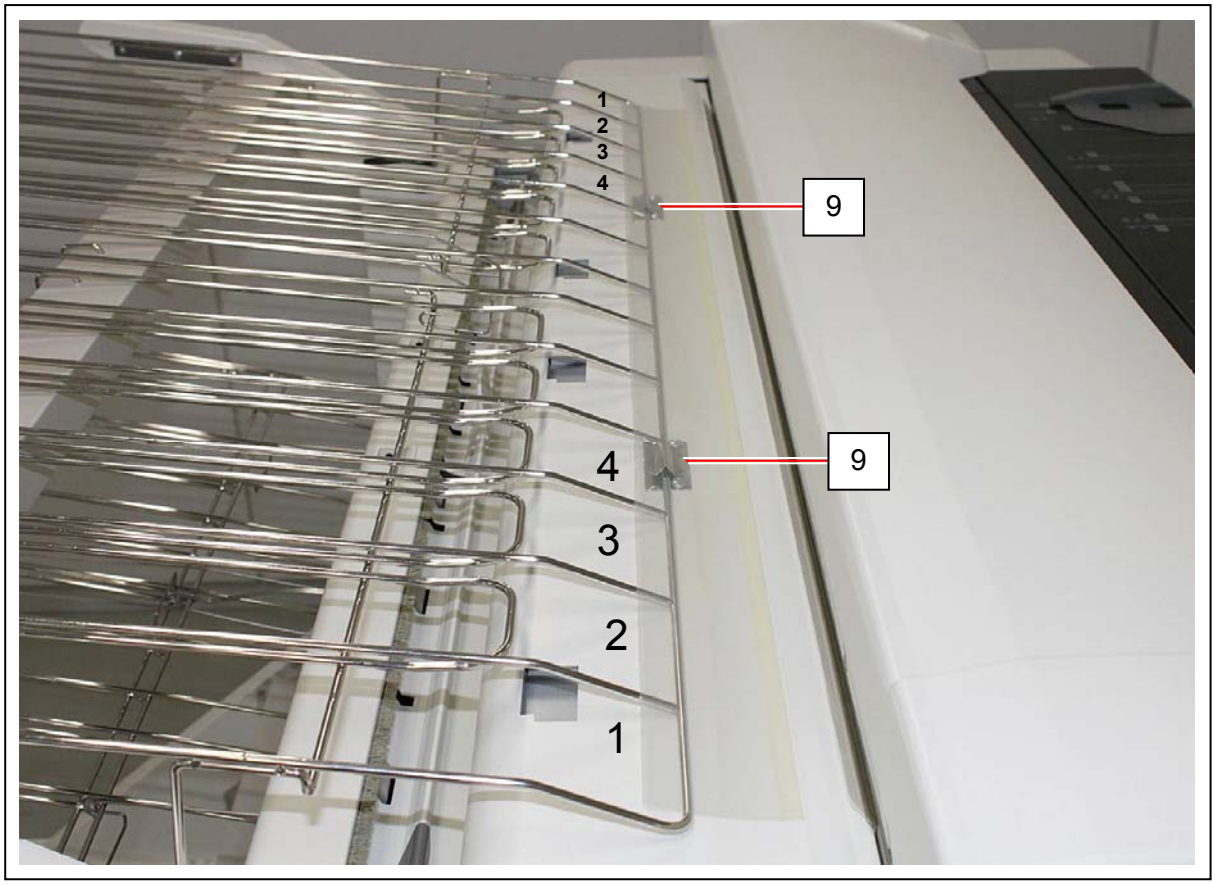
1. Holding the fourth shaft from the outside, attach Original Tray Assy.



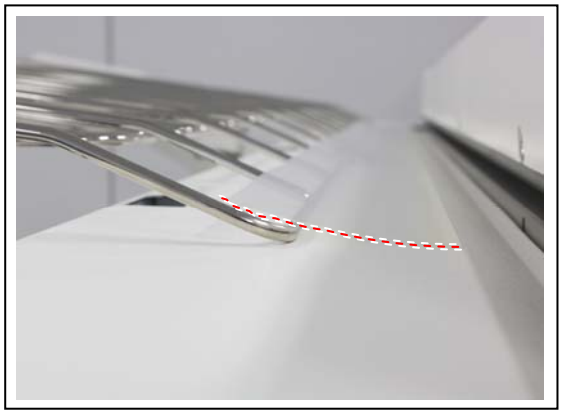
continued on next page

NOTE

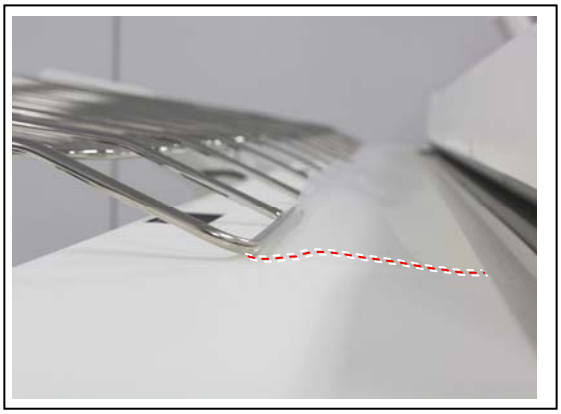
2. Locate the whole tray to the center so that Brackets (9) hold the beam in the fourth block from the outside.



3. The plastic sheet on the main unit should overlap Original Tray front.
   If the plastic sheet gets into under Original Tray, the plastic sheet may damage and an incorrect feeding of originals may occur.



Correct

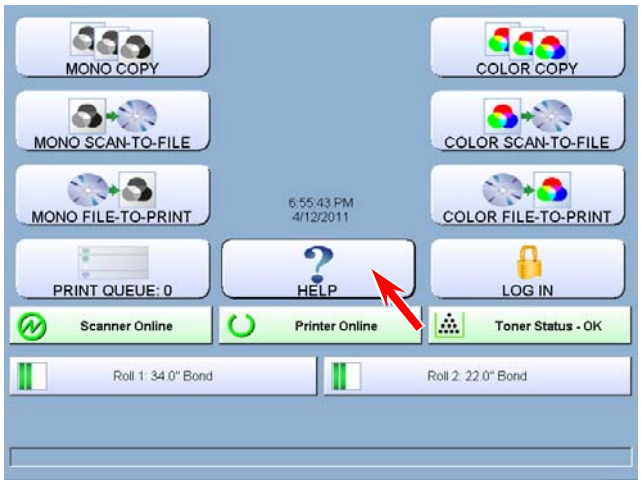


Wrong

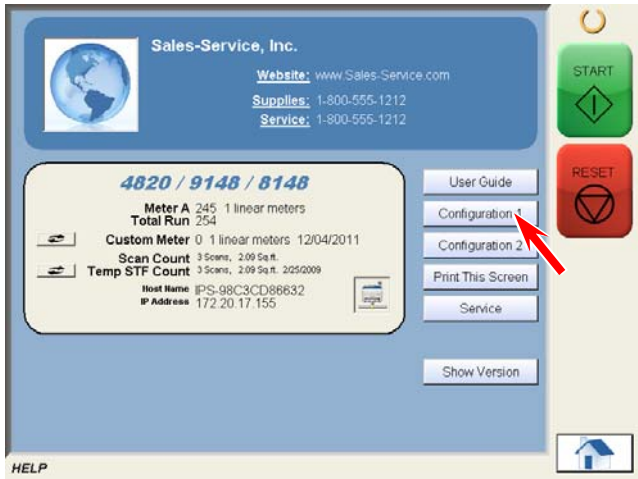
8. Change of the Stack Setting

1. Turn on the main unit.

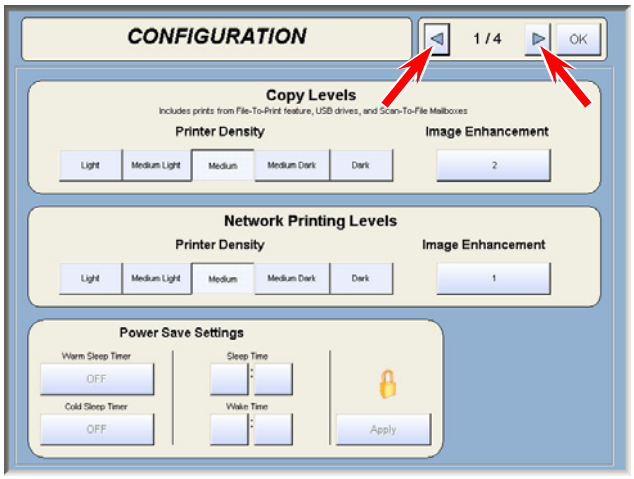
2. Press [? HELP] on the Home screen.

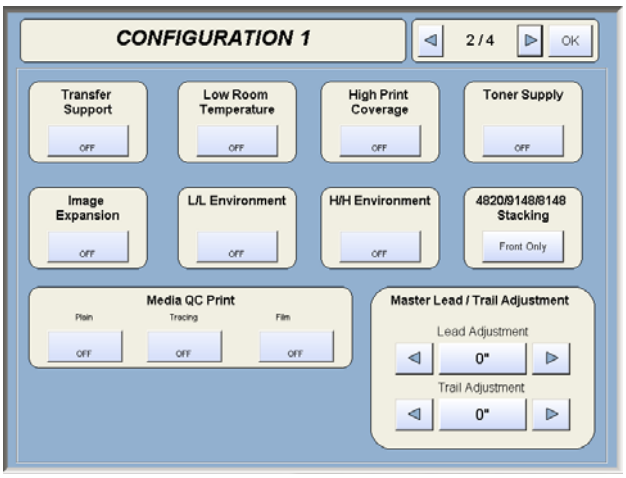


3. Press [Configuration 1].

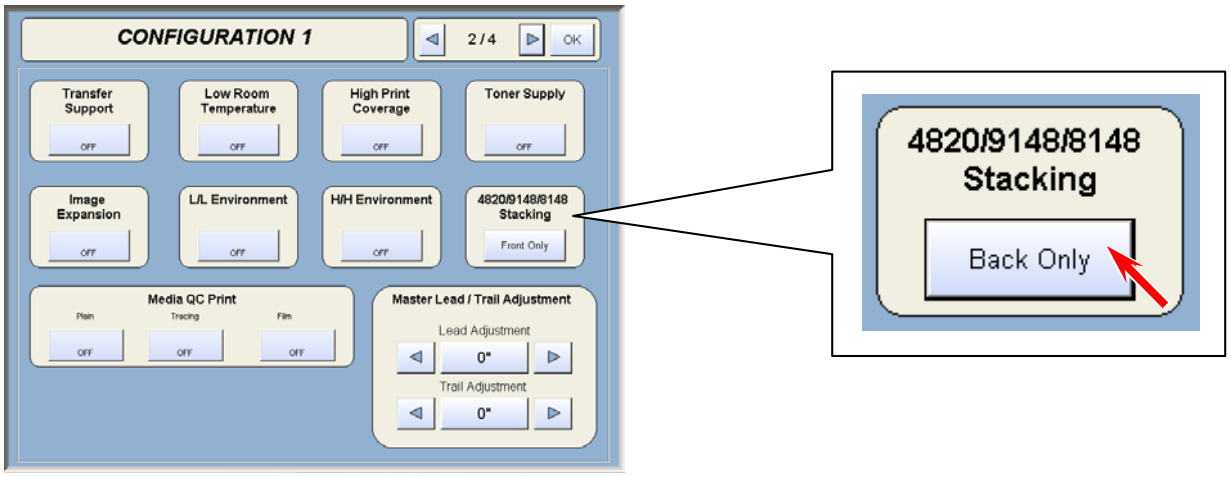


4. Configuration screen will appear. Press the arrow keys to move to page 2/4.

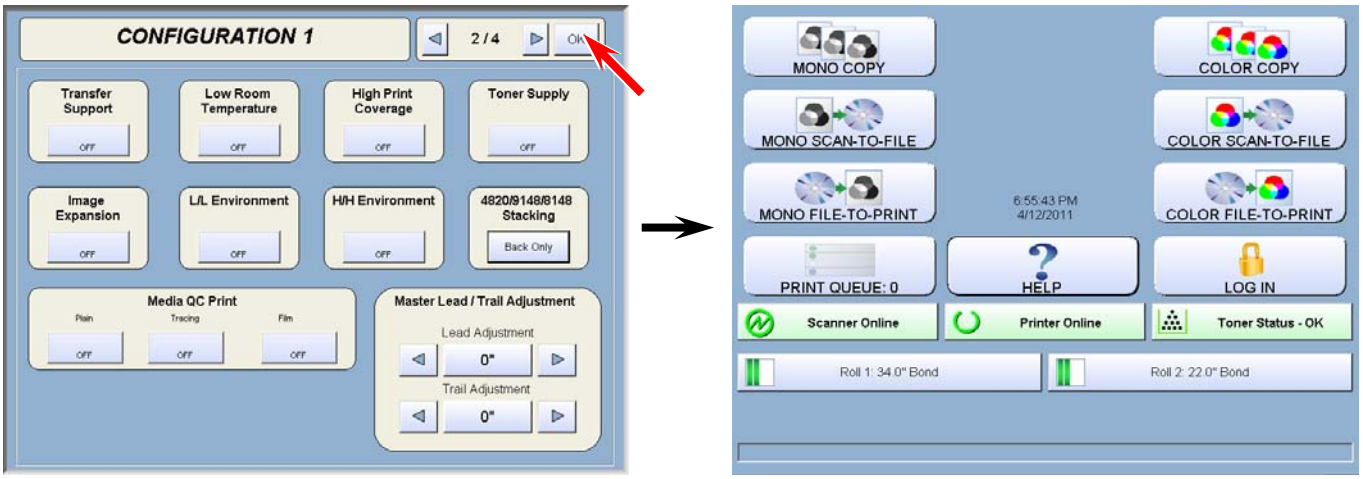




5. Change “4820/9148/8148 Stacking” from [Front Only] to [Back Only].



6. Press [OK]. Home screen will appear.



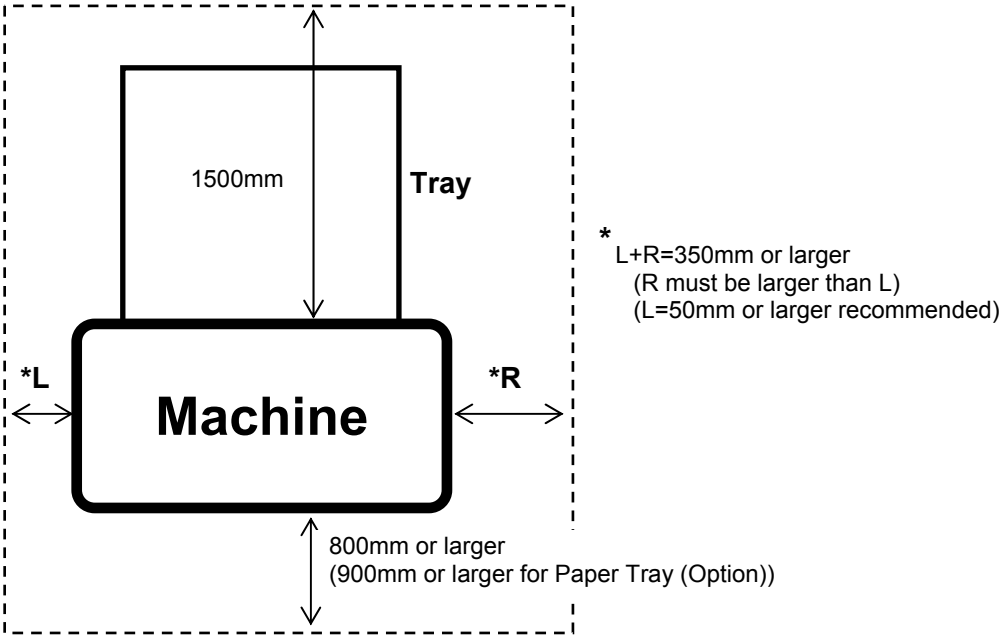
7. Stack Setting is completed.

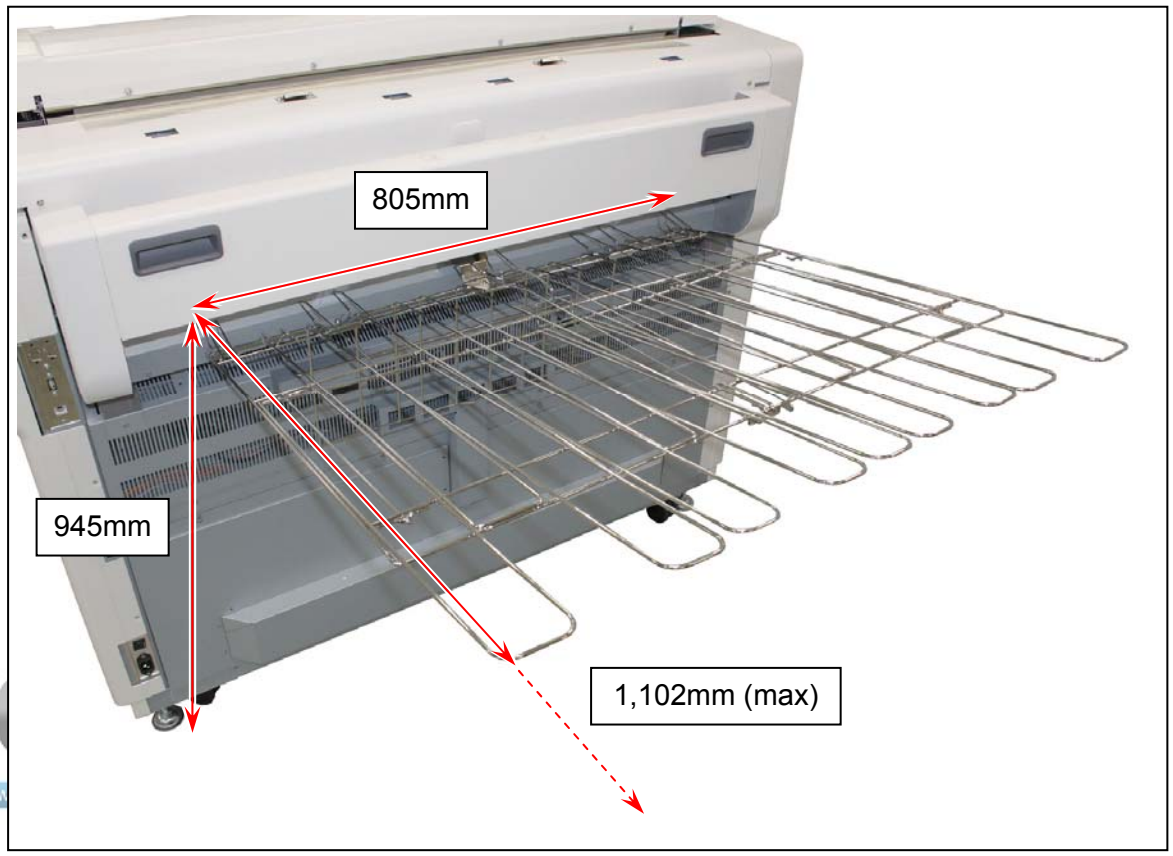
Copy Tray Wide 2 Installation Procedure

Ver.A.0

1. Installation Requirement

Keep ample space around the equipment to ensure comfortable operation.
(Refer to the following figure.)





2. Checking Contents

Check that the following parts are included in the package.

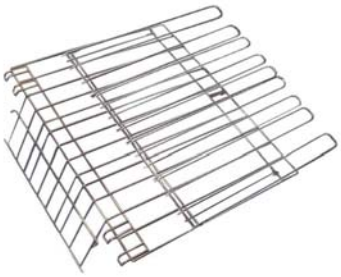
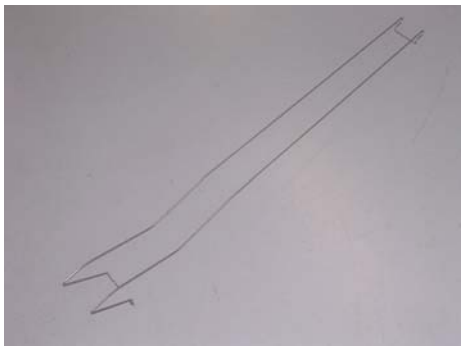
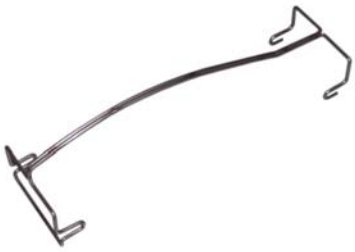
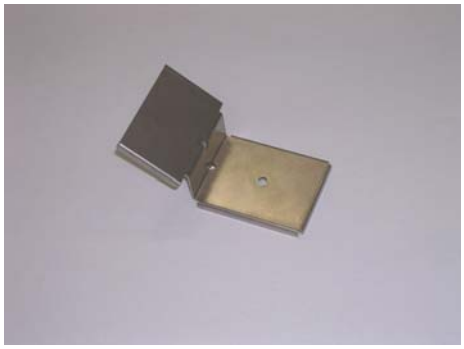
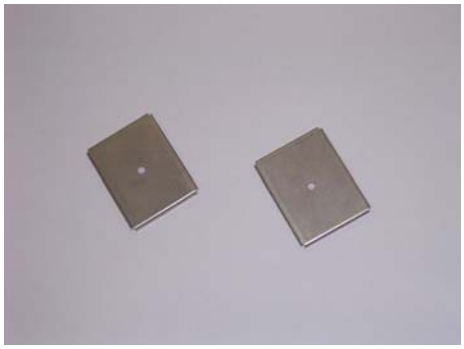
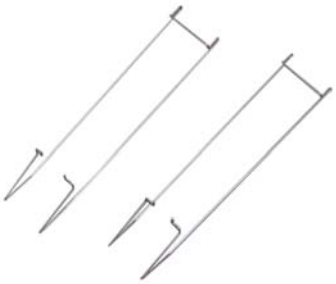
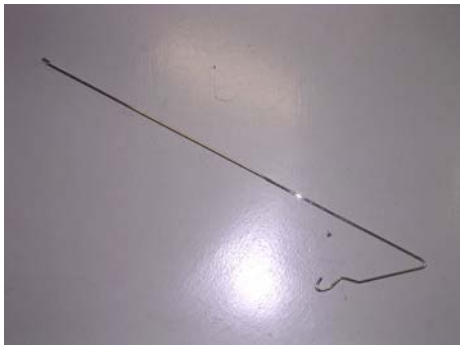
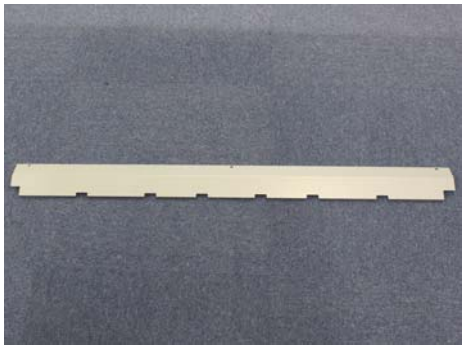
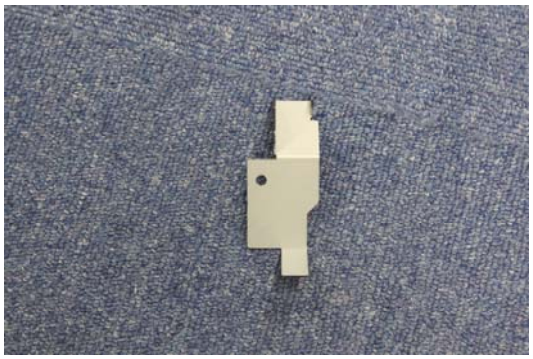
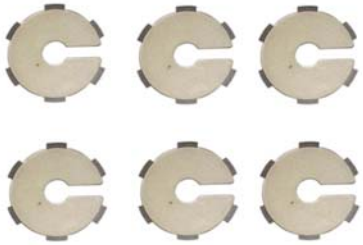
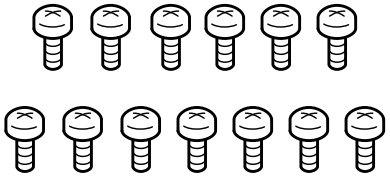
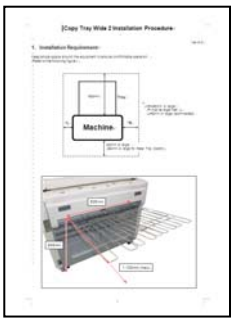
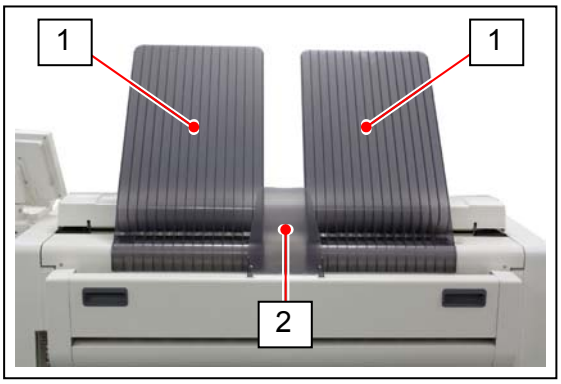
Bracket 26 	1	Bracket 27 	1
Bracket 25 	1	Bracket 24 	1
Print Tray Assy 	1	Tray 10 	1
Arm 4 	1	Bracket A 	3

Plate 5 	1	Plate 6 	2
Tray 4 	2	Tray 9 	2
Arm 2 	1	Cover 5 	1
Cover 6 	1	Release Ring 	6

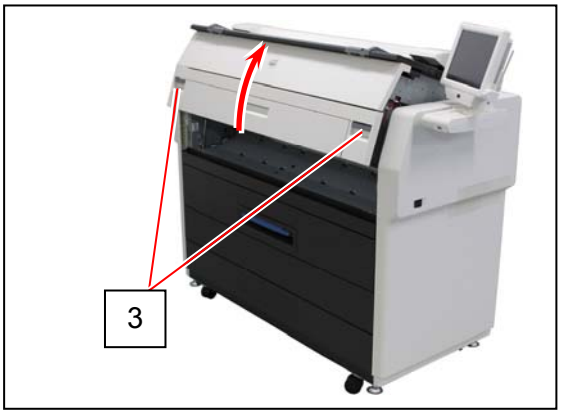
Feeding Roller Assy 	2	Bind Head Screw M4x6 	13
Installation Procedure 	1	-	-

3. Installation

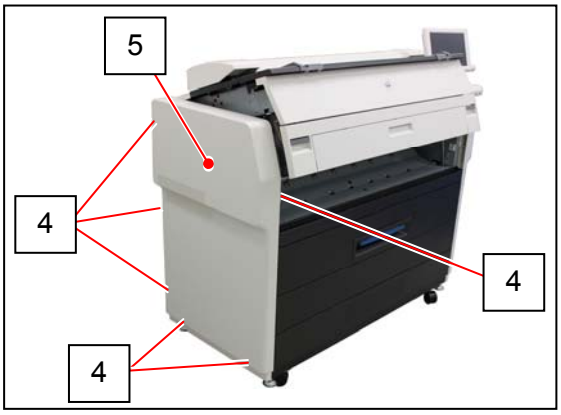
1. Remove Exit Tray (1) and Exit Tray 2 (2).



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

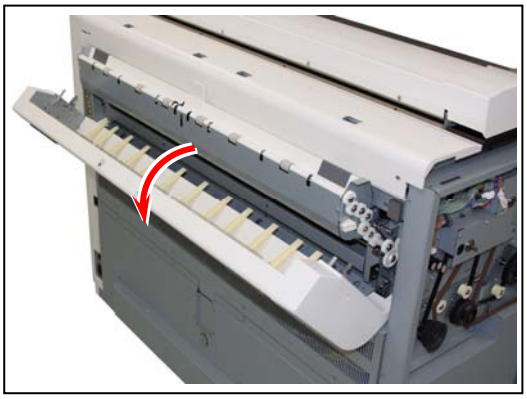


3. Remove 6 screws (4) to remove Cover 2 (5).

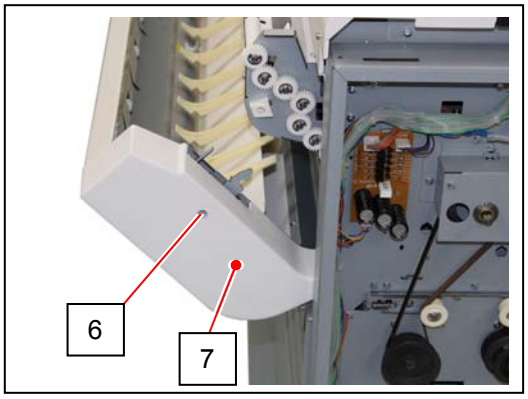


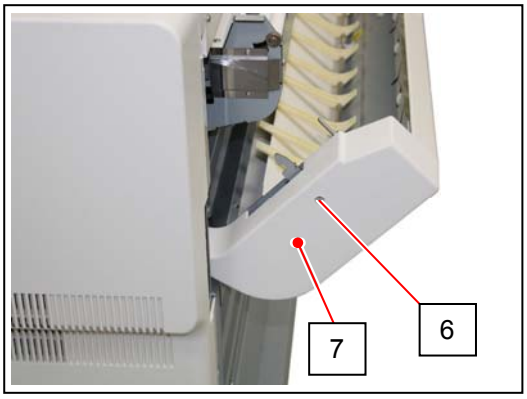
4. Close Engine Unit.

5. Open Paper Exit Assy .

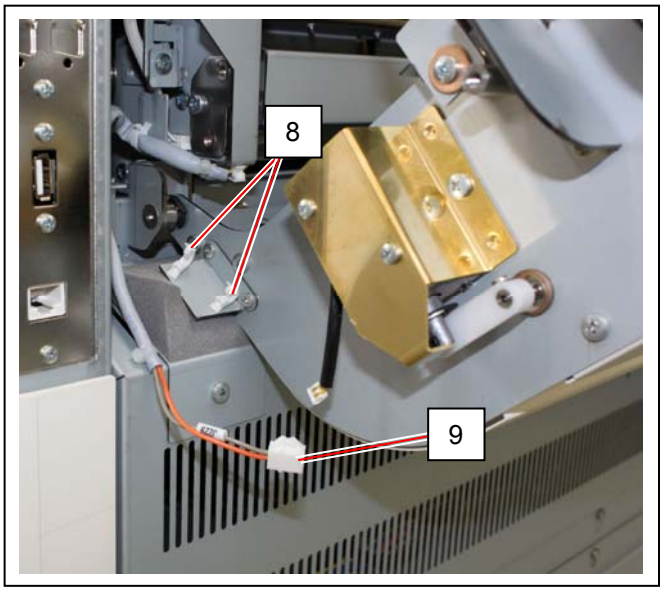


6. Remove screw (6) each to Exit Side Cover (7).

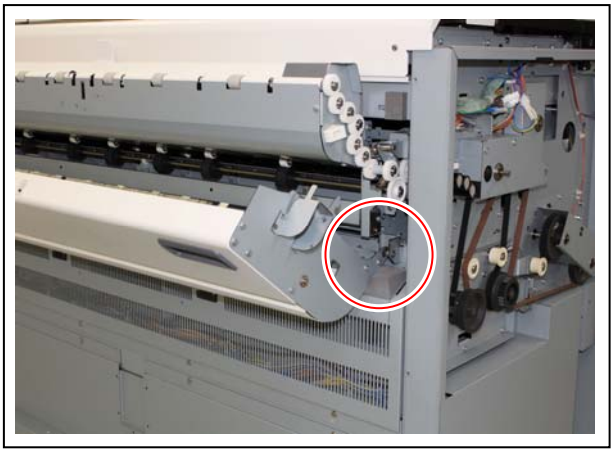


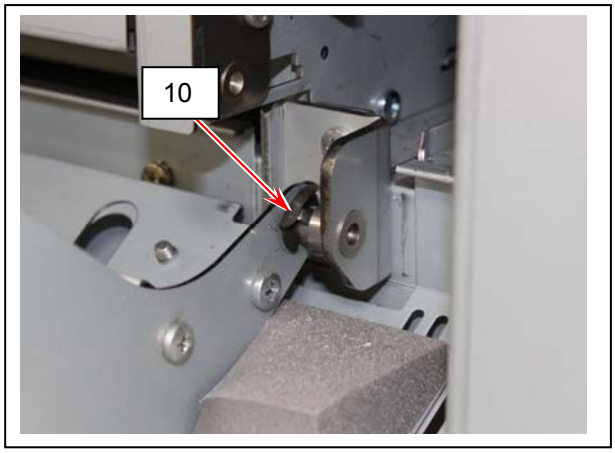


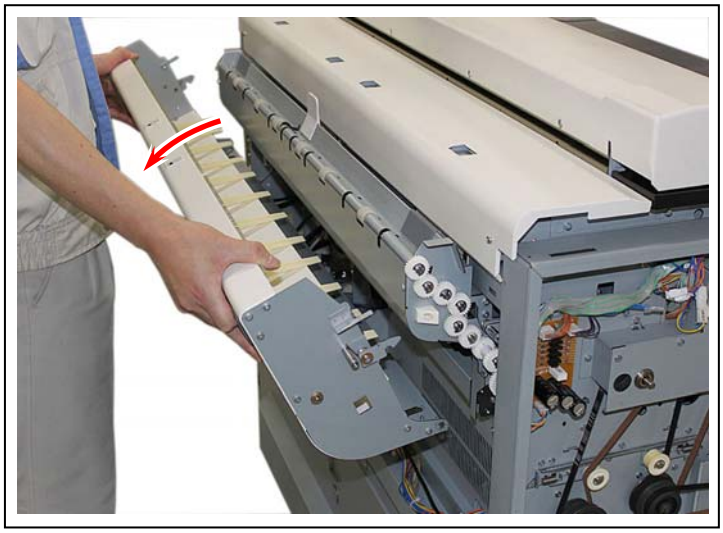
7. Open Wire Saddle (8), and then disconnect Connector (9).



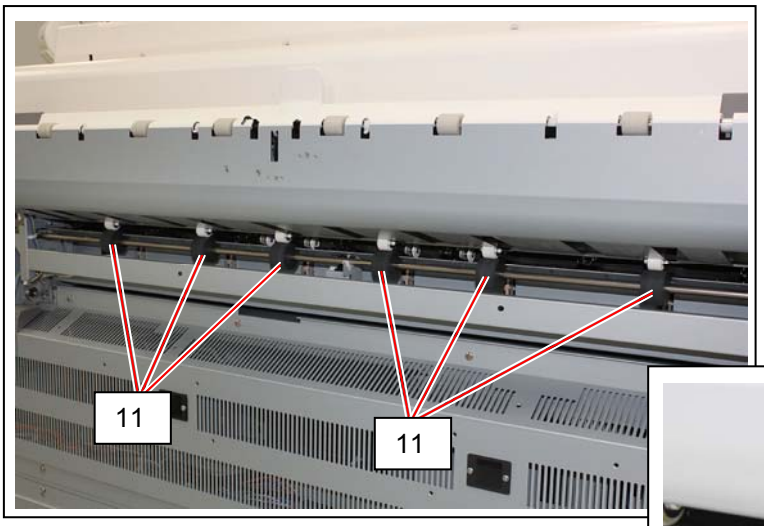
8. Remove KL Clip (10) to remove Paper Exit Assy (Outside).



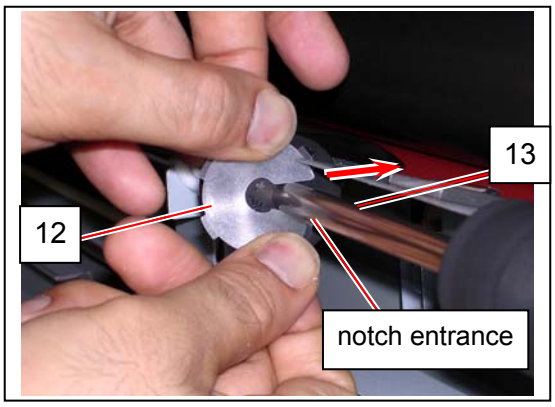


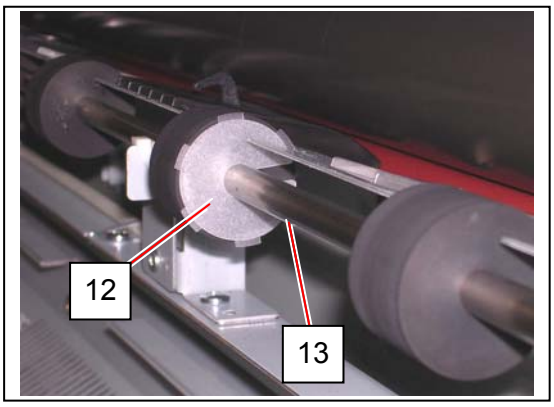


9. On the main unit, clean the outer side of the 6 Exit Rollers (11) with alcohol.



10. Peel the release paper from Release Ring (12). Insert each Release Rings (12) onto Exit Roller shaft (13) and apply them to Exit Rollers' cleaned sides.

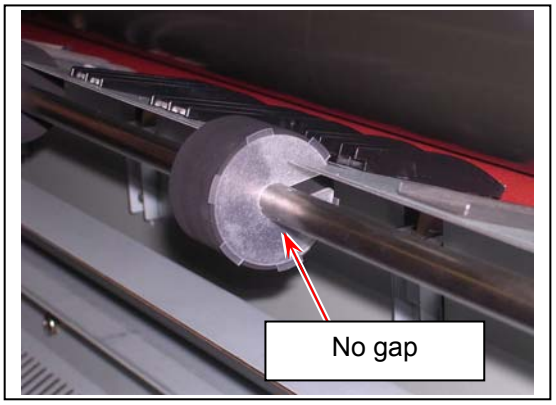




NOTE

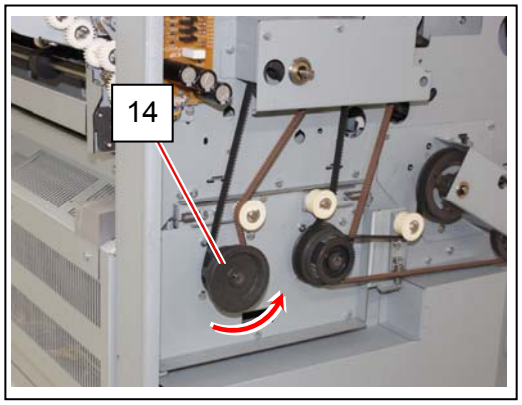
1. Salient portions on Release Ring (12) stick out from Exit Roller surface in about 0.5mm.

2. Make sure of no gap between Release Ring's inside rim and Exit Roller shaft.

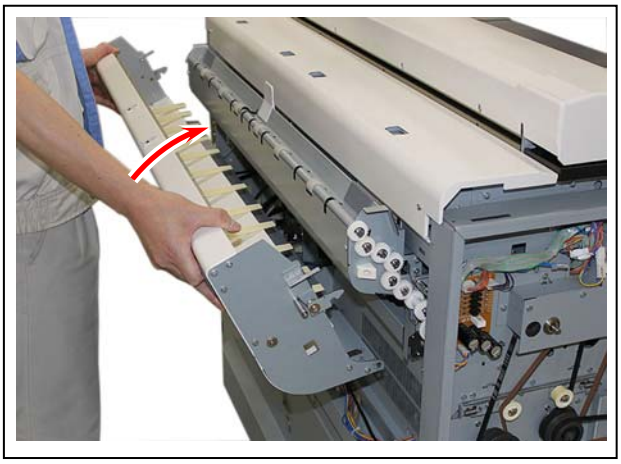


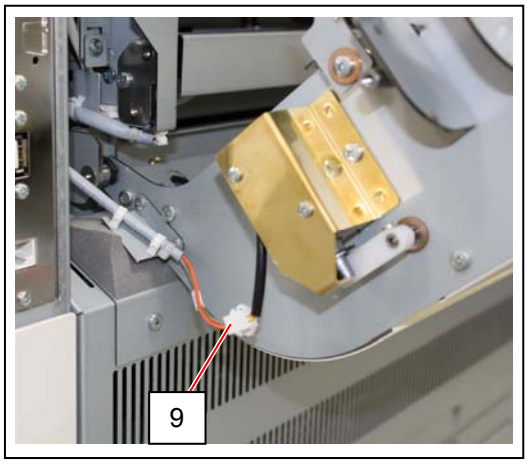
3. Line up the inserting direction of all the 6 Release Rings onto the shaft.

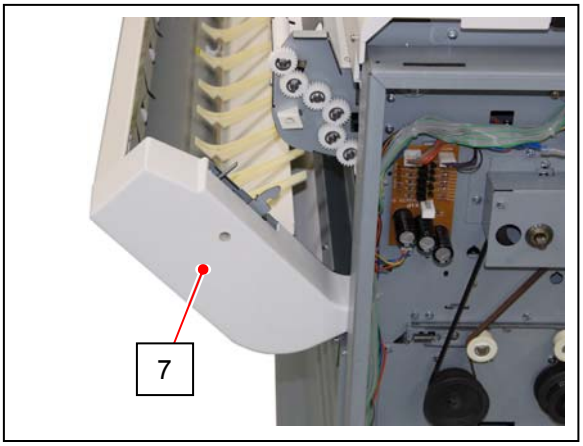
4. Apply the notch entrance side of Release Ring firmly as well. Be sure to check it in position by rotating Pulley (14) to turn the notch entrance side to you.

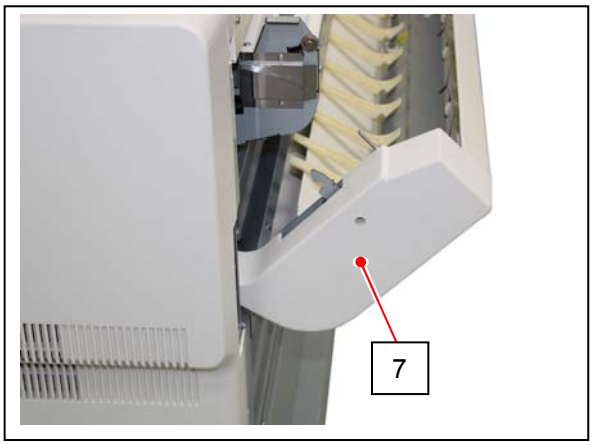


11. Replace Paper Exit Assy.
Connect the connector (9), and then replace left and right Exit Side Cover (7).

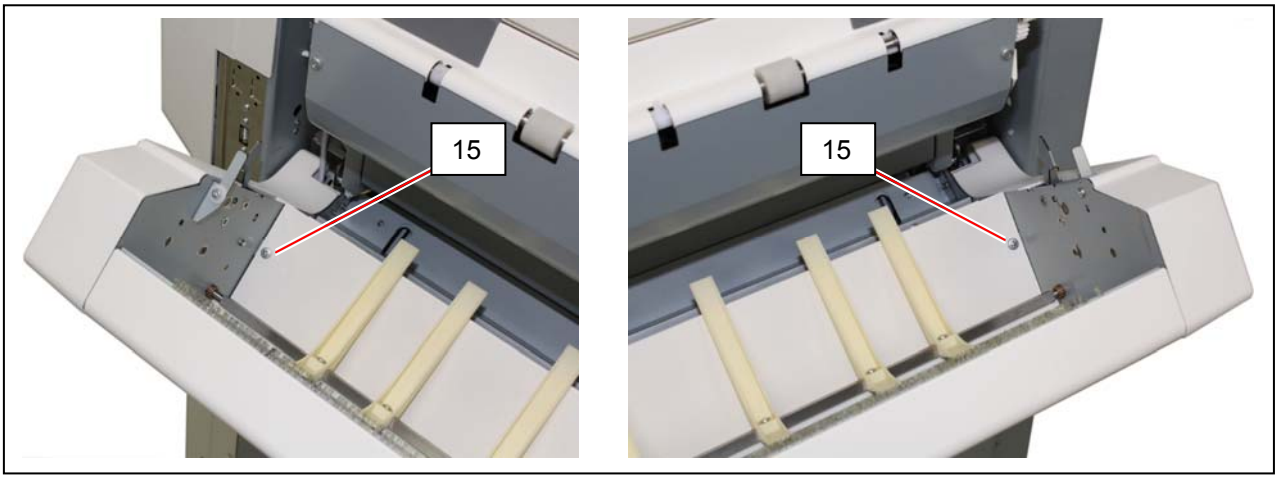




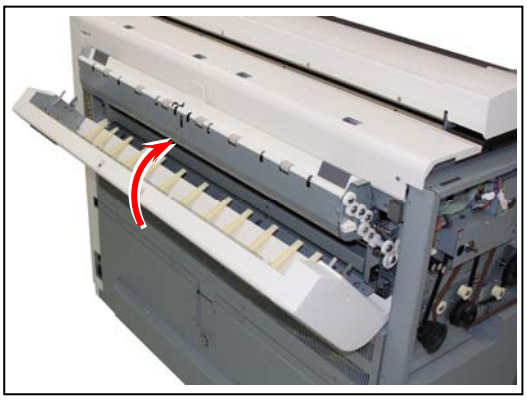




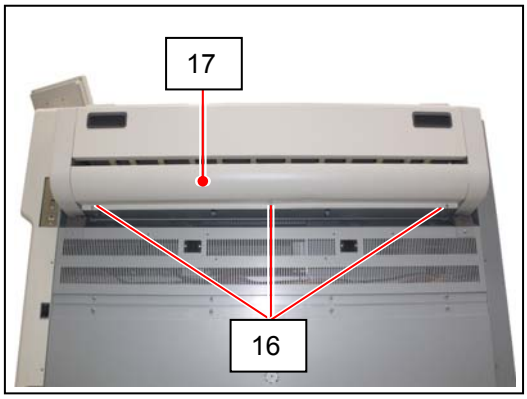
12. Remove right and left screw (15).



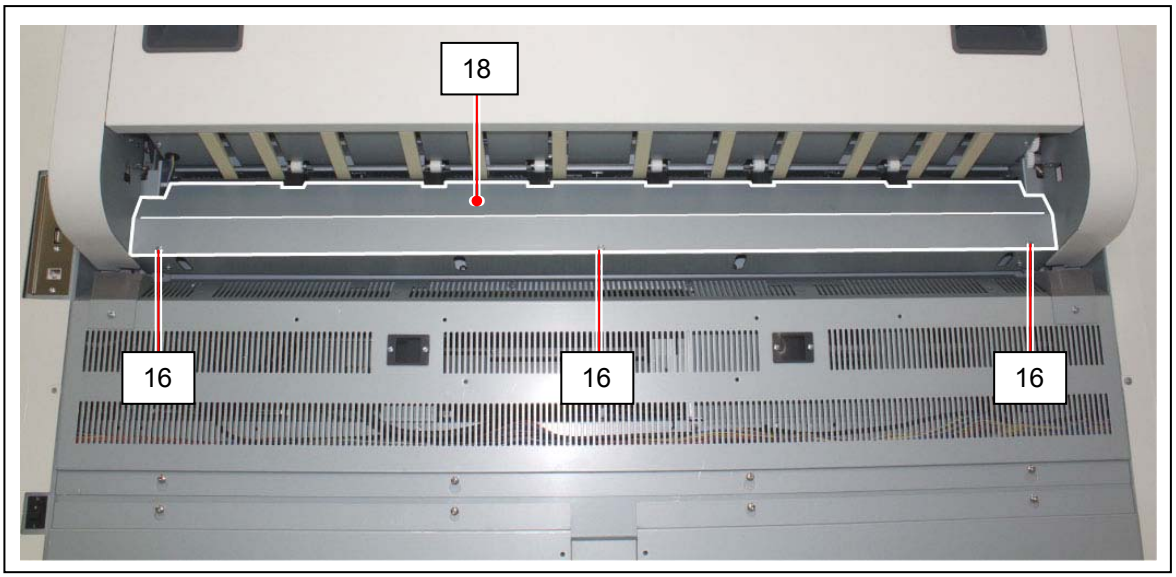
13. Close Paper Exit Assy.



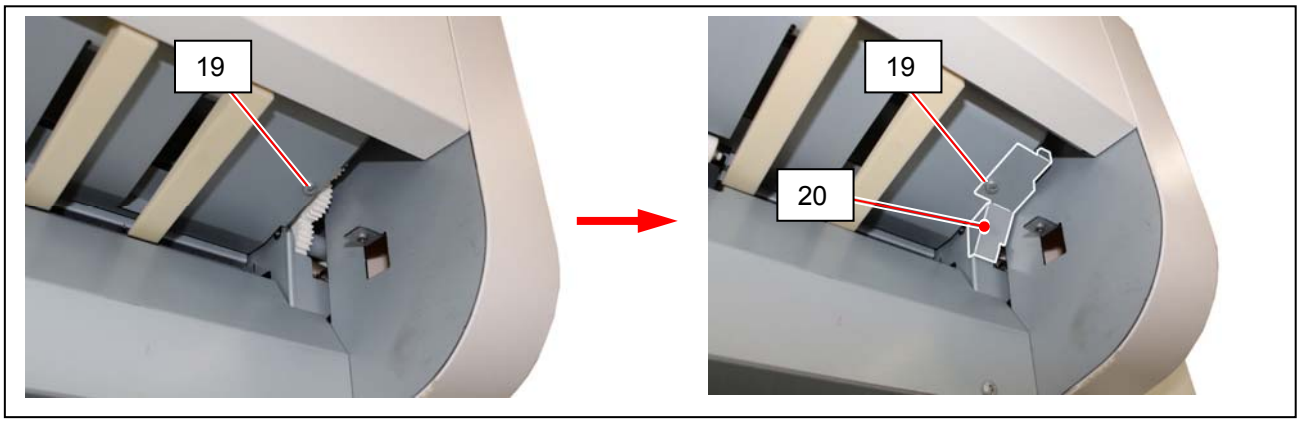
14. Remove 3 screws (16) to remove the Cover (17).



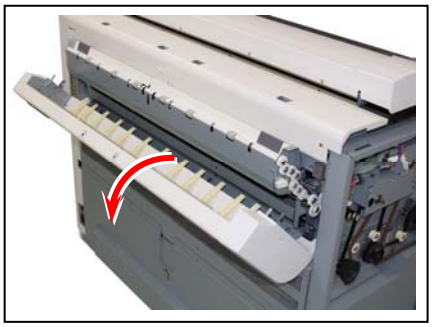
15. Attach Cover 5 (18) with the screws (16) which were removed on the step 14.

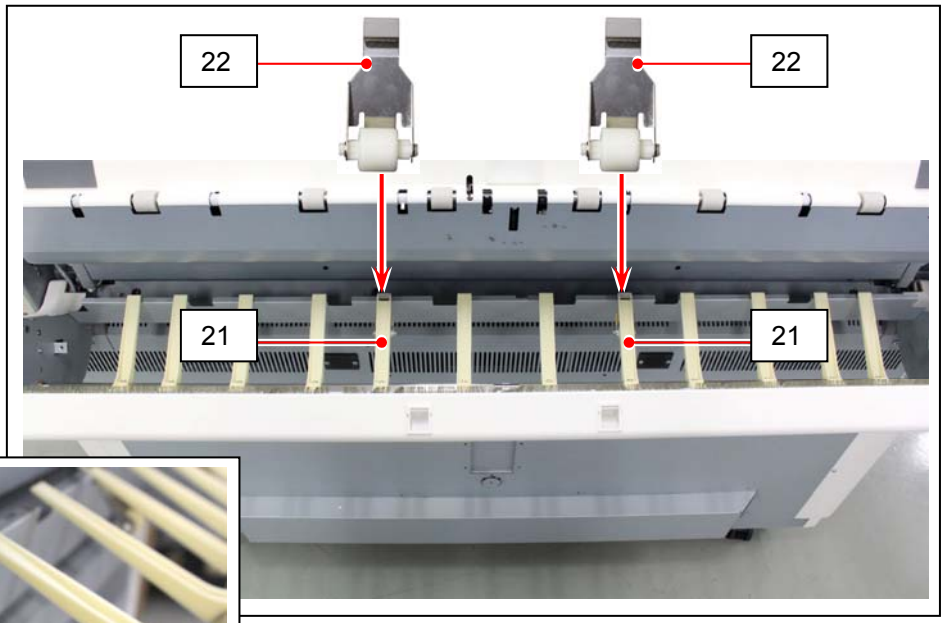


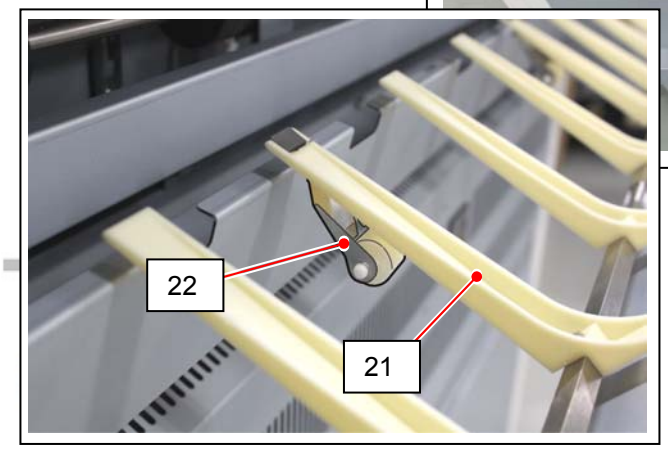
16. Remove 1 screw (19). Install Cover 6 (20) with the screw (19).



17. Open the Exit Cover. Attach Feeding Roller Assys (22) on the tip of the Eject Switch Guide (21) as shown the photo below. (Refer to the photograph for the attached position.)

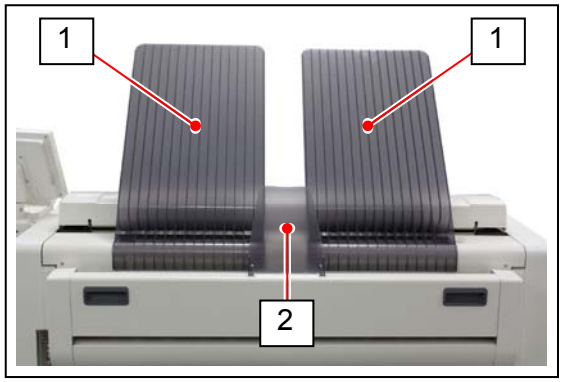




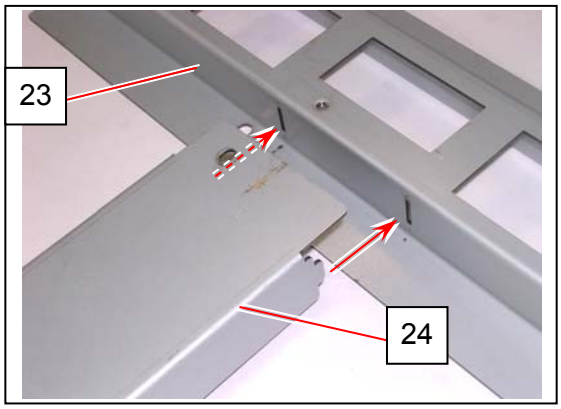


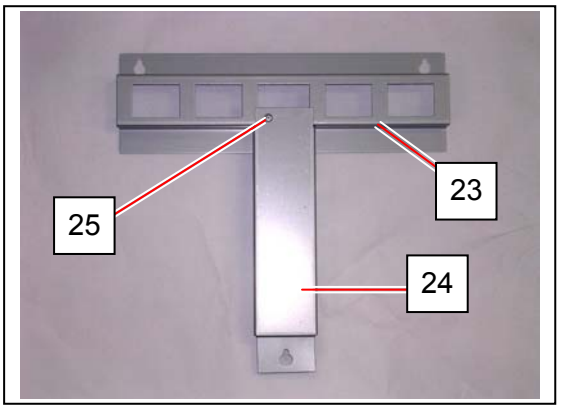
18. Return COVER 2 (5), and then close Engine Unit.

19. Return EXIT TRAY (1) and EXIT TRAY 2 (2).

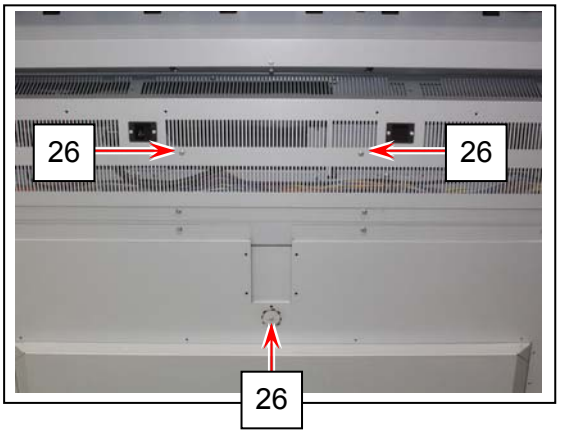


20. Fix Bracket 26 (23) and Bracket 27 (24) with 1 screw (25).
The tab portion will fit into the slit on the bottom of Bracket 27 (24).

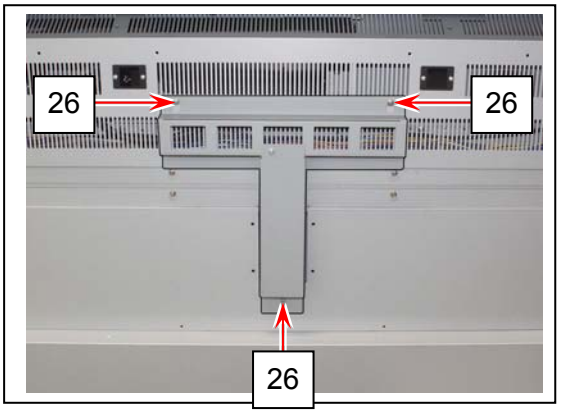




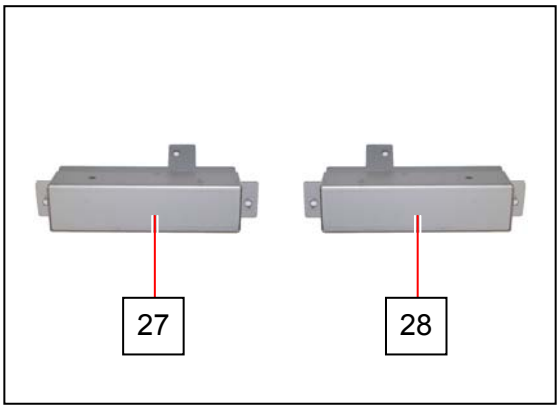
21. Install 3 screws (26) to the main unit rear.

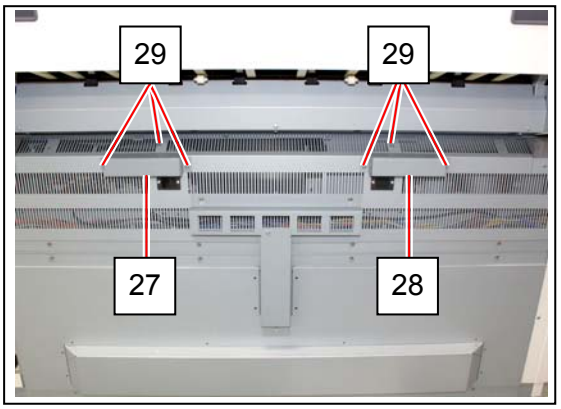


22. Install Bracket 26 and Bracket 27 to the 3 screws (26).

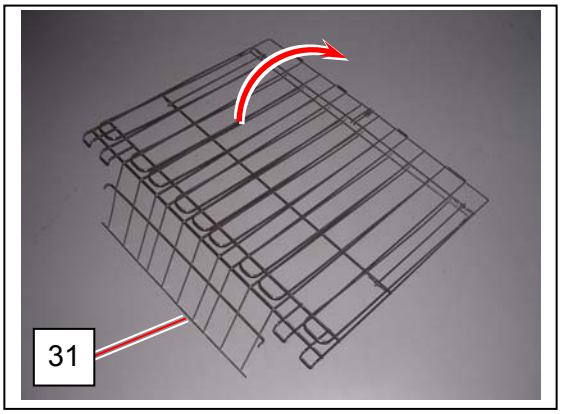


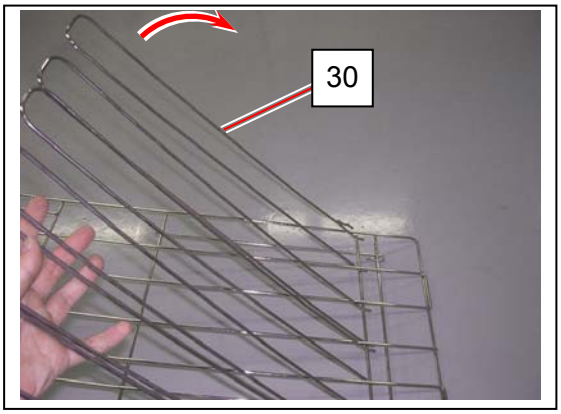
23. Install Bracket 24 (27) and Bracket 25 (28) to the rear with 3 screws (29) each.

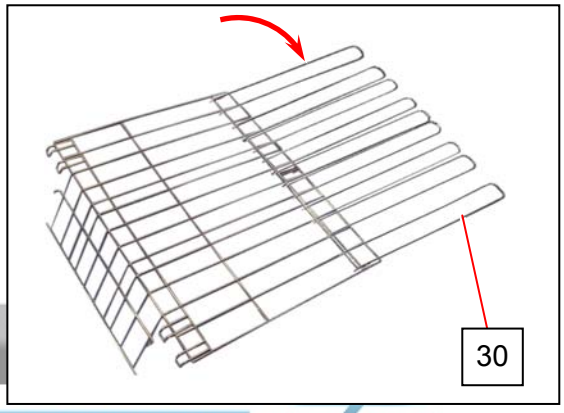


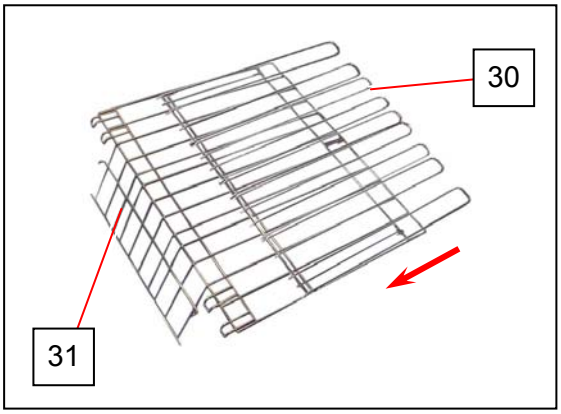


24. Turn the extension tray (30) on Print Tray Assy (31) completely.

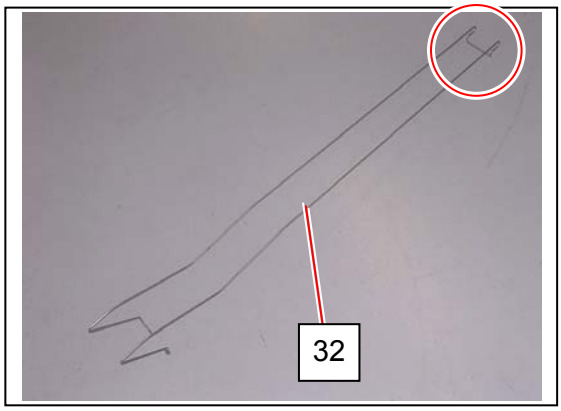


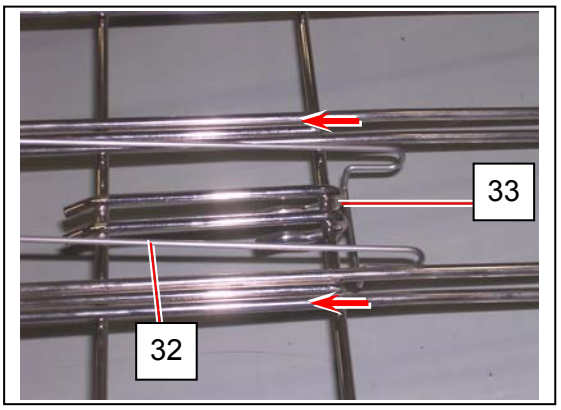




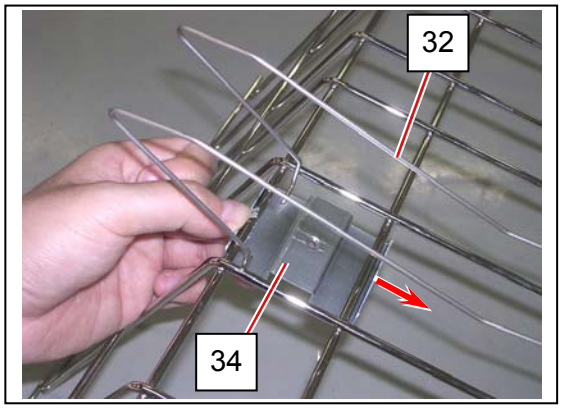


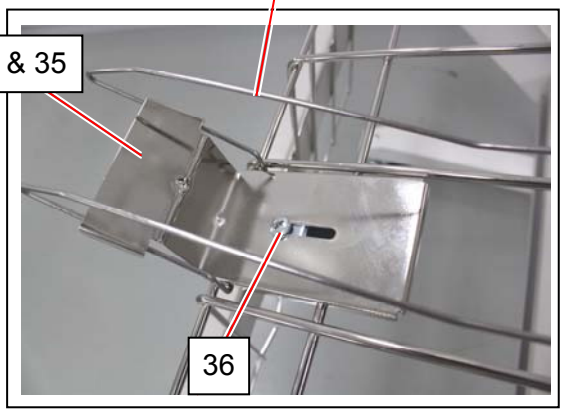
25. Hook Tray 10 (32) on the beam of the hooking (33) in the center block.





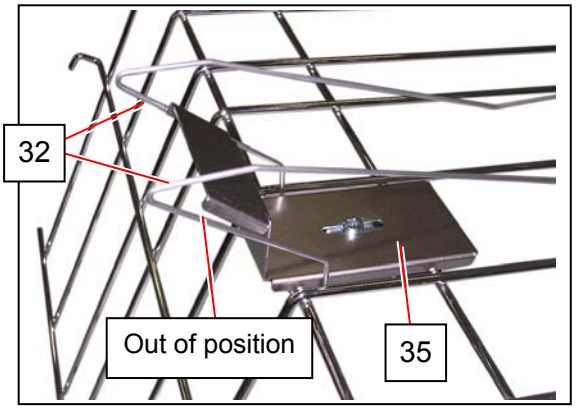
26. Insert the other end of Tray 10 (32) to Bracket A (34). With pushing Bracket A (34) to the arrow direction, fix Plate 5 (35) and them together with 1 screw (36).



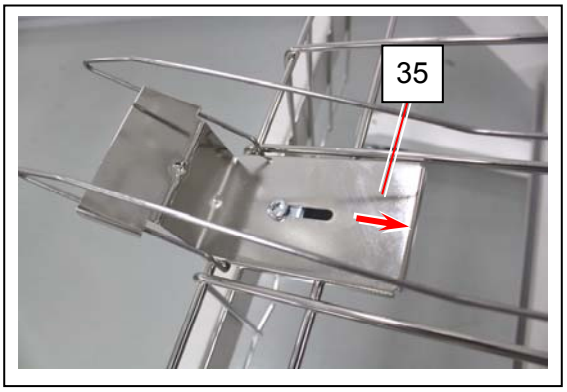


NOTE

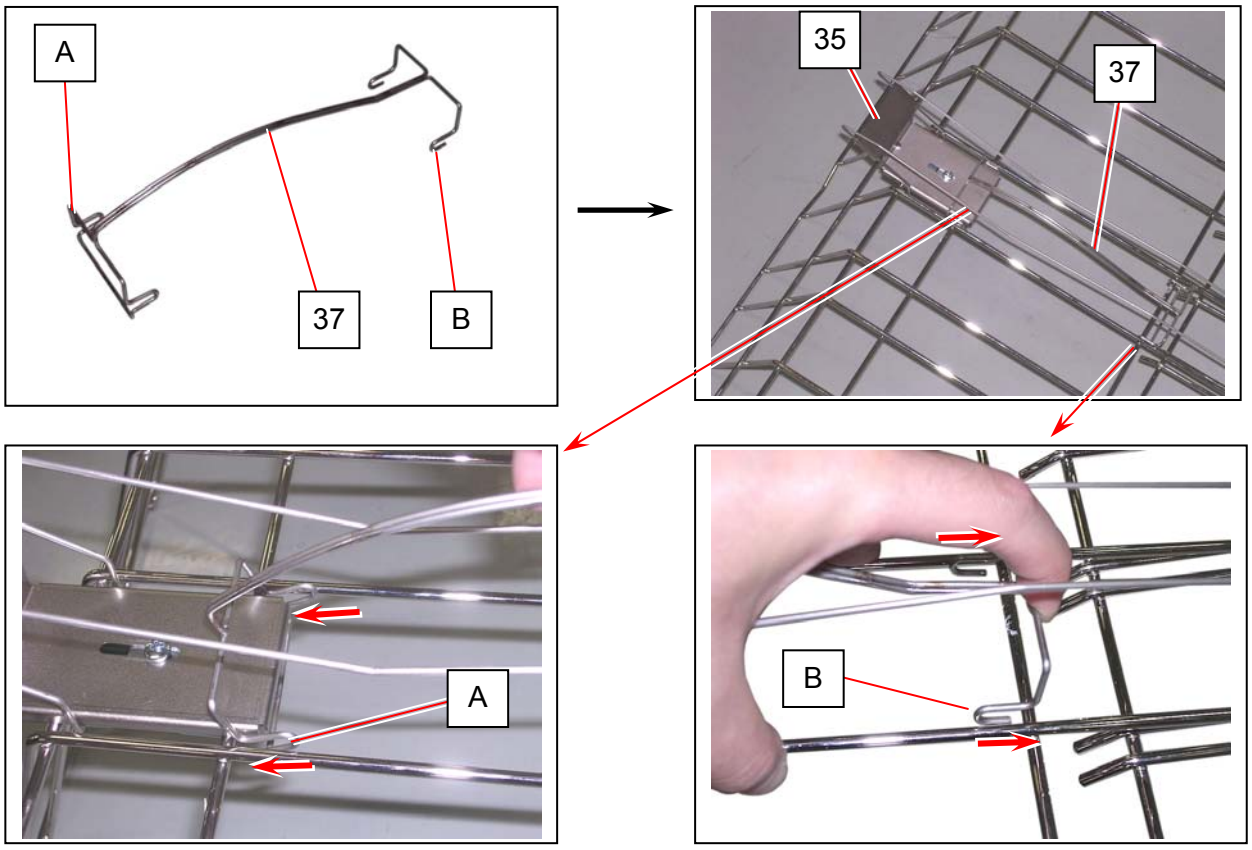
1. Plate 5 (35) should hold Tray 10 (32) on its catch sides.



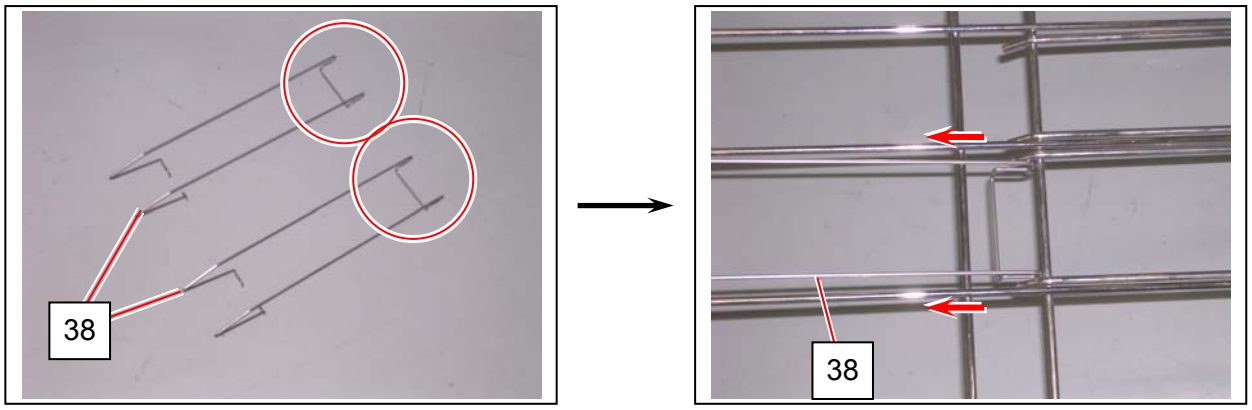
2. Push the Plate 5 (9) to the arrow direction completely and secure it.



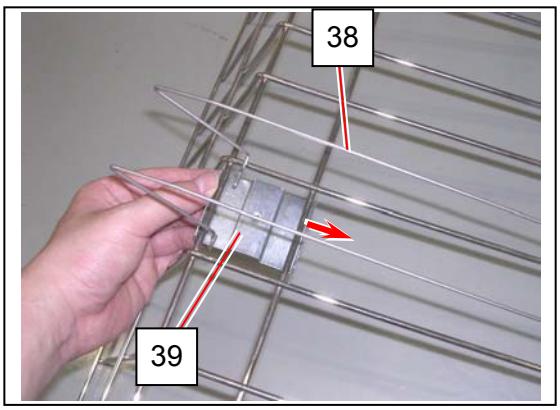
27. Hook Tray 4 (37: A) on the beam near Plate 5 (35). Hook the other end (B) to the beam near the extension tray.

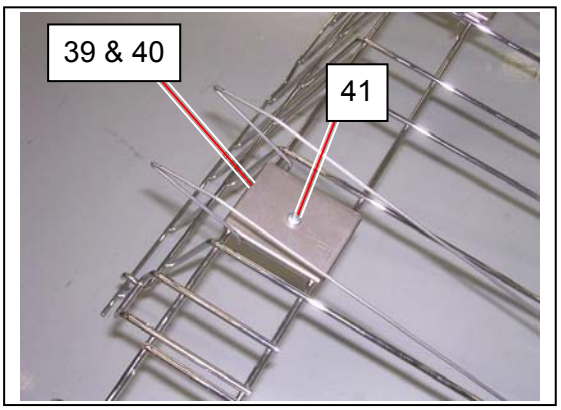


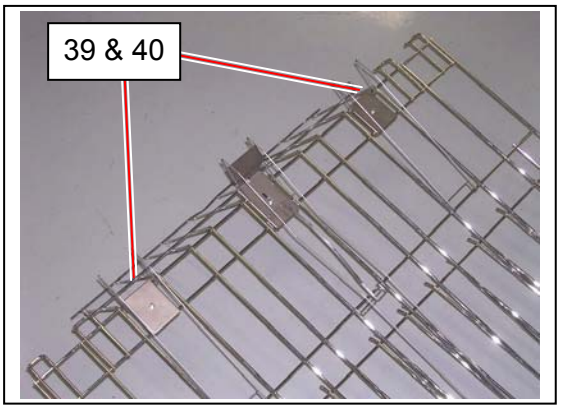
28. Hook Tray 4 (38) on the beam near the extension tray in the third block from the outside.



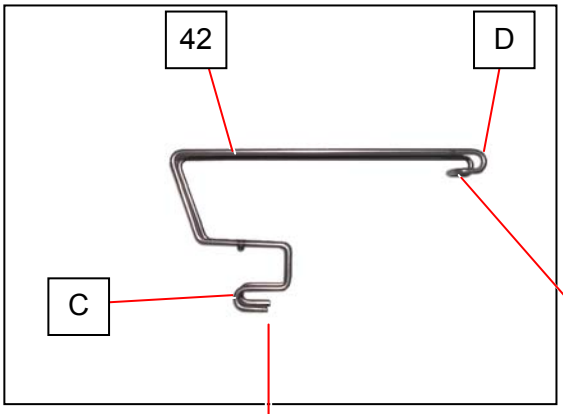
29. Insert the other end of Tray 4 (38) to Bracket A (39). With pushing Bracket A (39) to the arrow direction, fix Plate 6 (40) and them together with 1 screw (41).

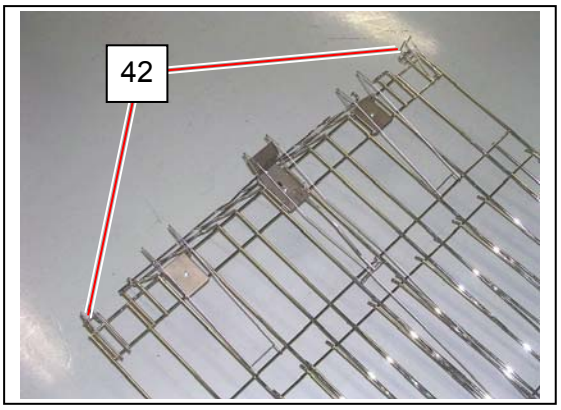


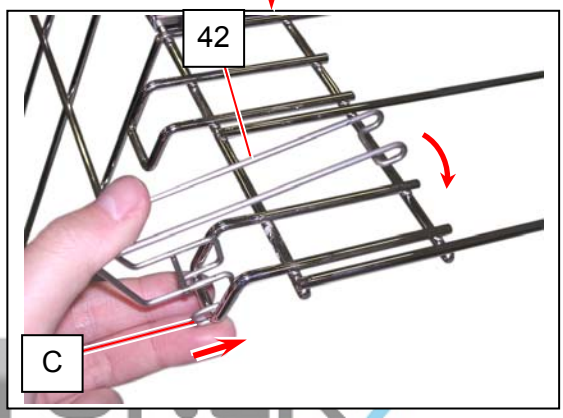


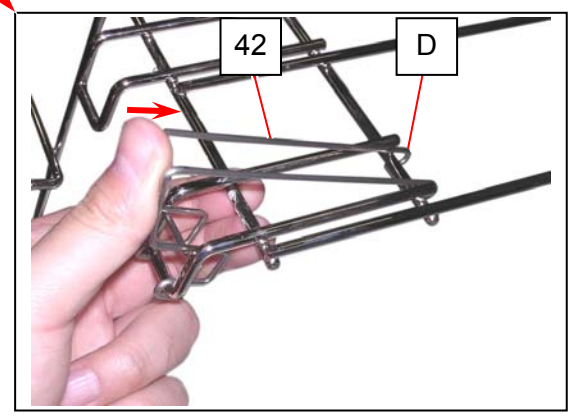


30. Hook Tray 9 (42: C) on the beam near the end of the extension tray in the outside small block. Push Tray 9 (42) to the arrow direction to fit the other end (D) to the beam.

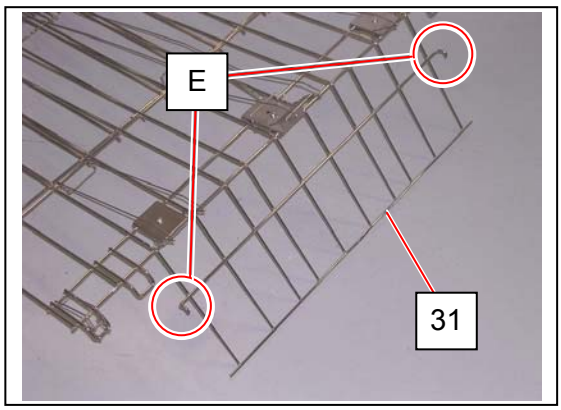


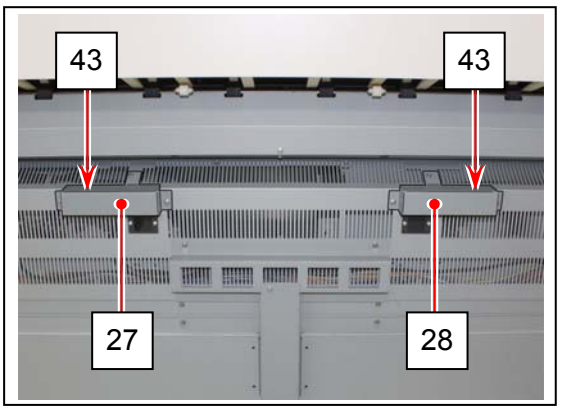




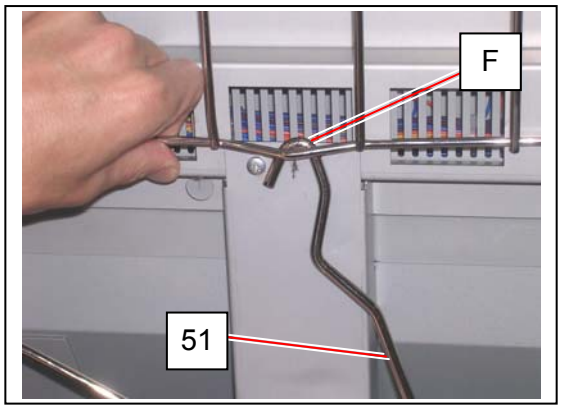


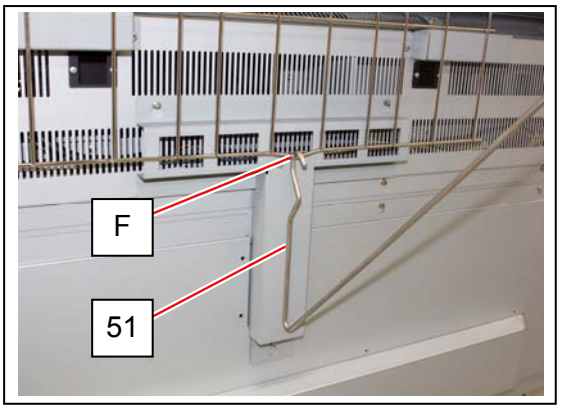
31. Mount Print Tray Assy (31) to the frame. Insert the hook parts (E) on Print Tray Assy (31) to the holes (43) on Bracket 24 (27) and Bracket 25 (28).



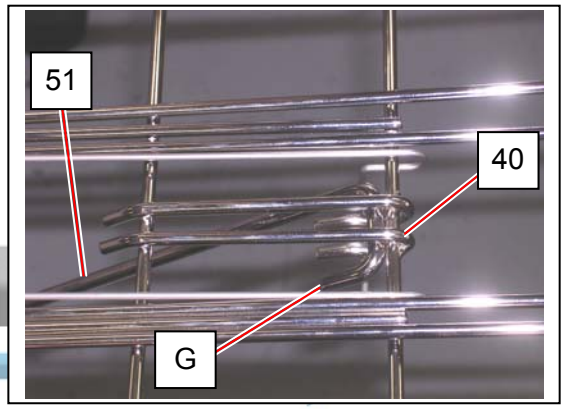


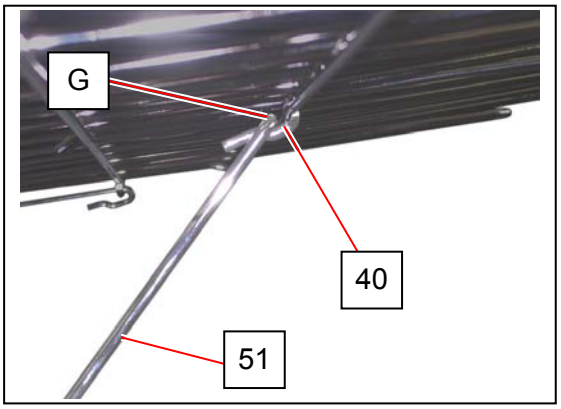
32. Fit the hook on the shorter side of Arm 2 (51: F) into the bottom dimple of Print Tray Assy.





33. Fit the hook on the longer side of Arm 2 (51: G) into the hooking (52) under the middle of Print Tray Assy.

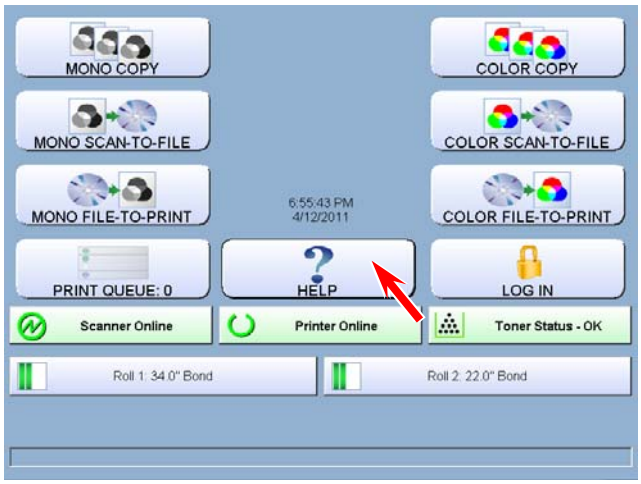




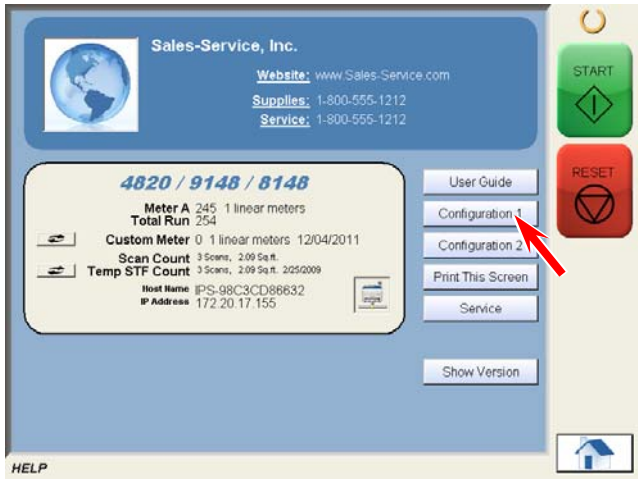
4. Change of the Stack Setting

1. Turn on the main unit.

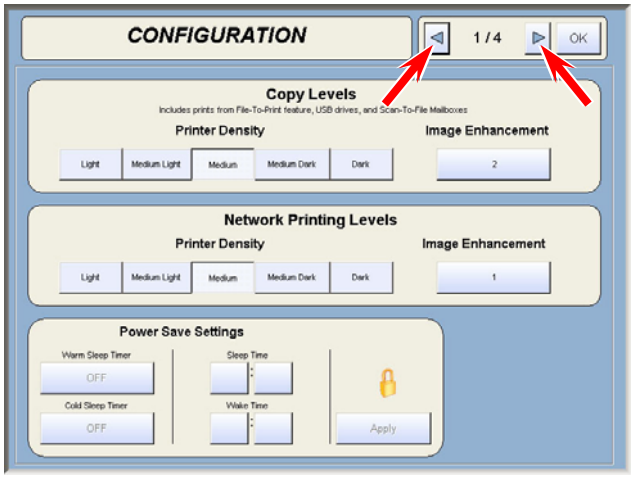
2. Press [? HELP] on the Home screen.

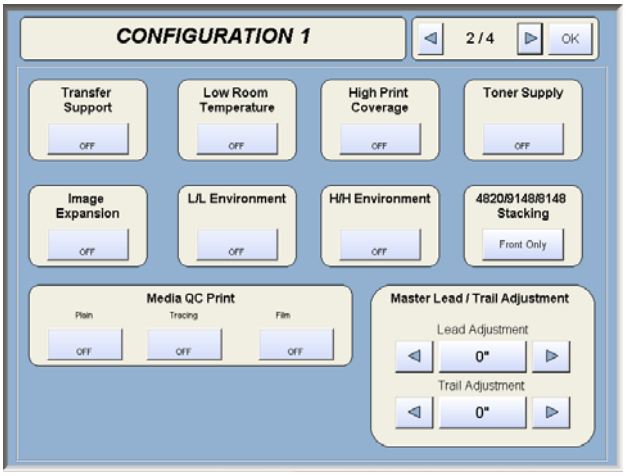


3. Press [Configuration 1].

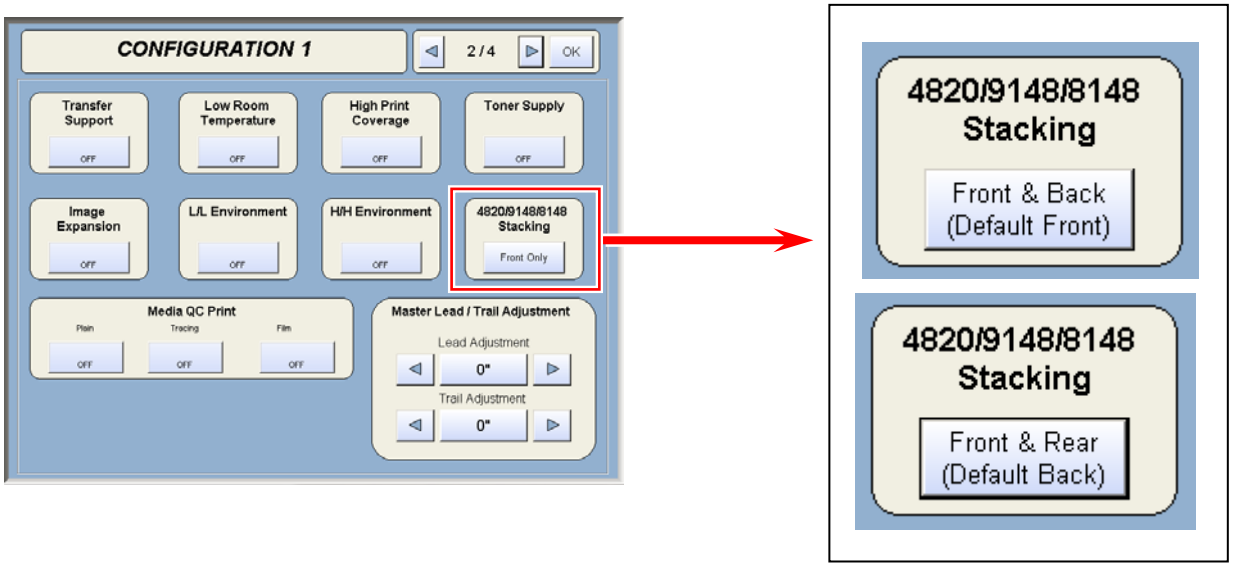


4. Configuration screen will appear. Press the arrow keys to move to page 2/4.

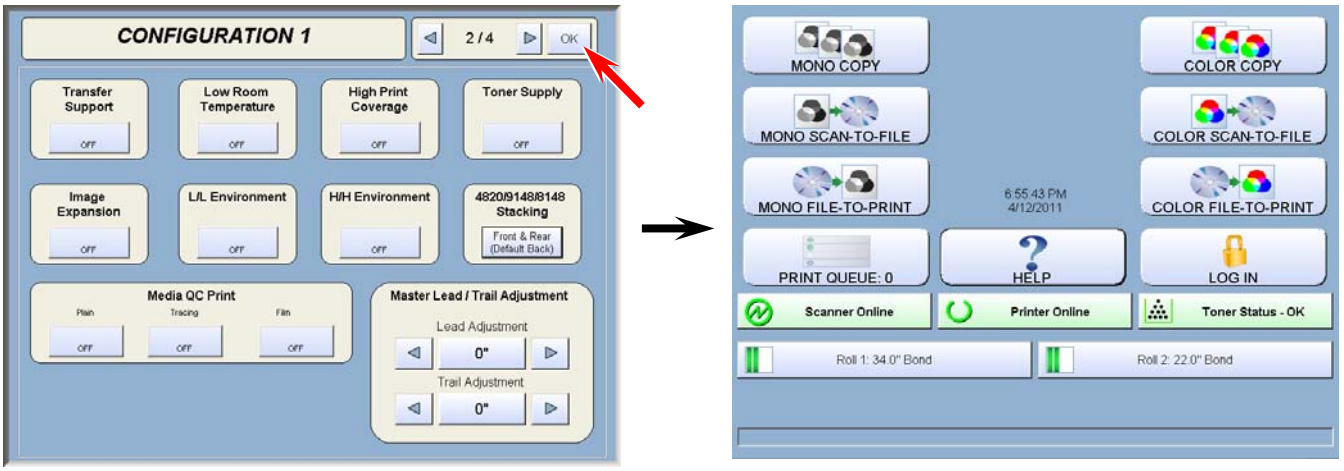




5. Change “4820/9148/8148 Stacking” from [Front Only] to the method of the use.



6. Press [OK]. Home screen will appear.

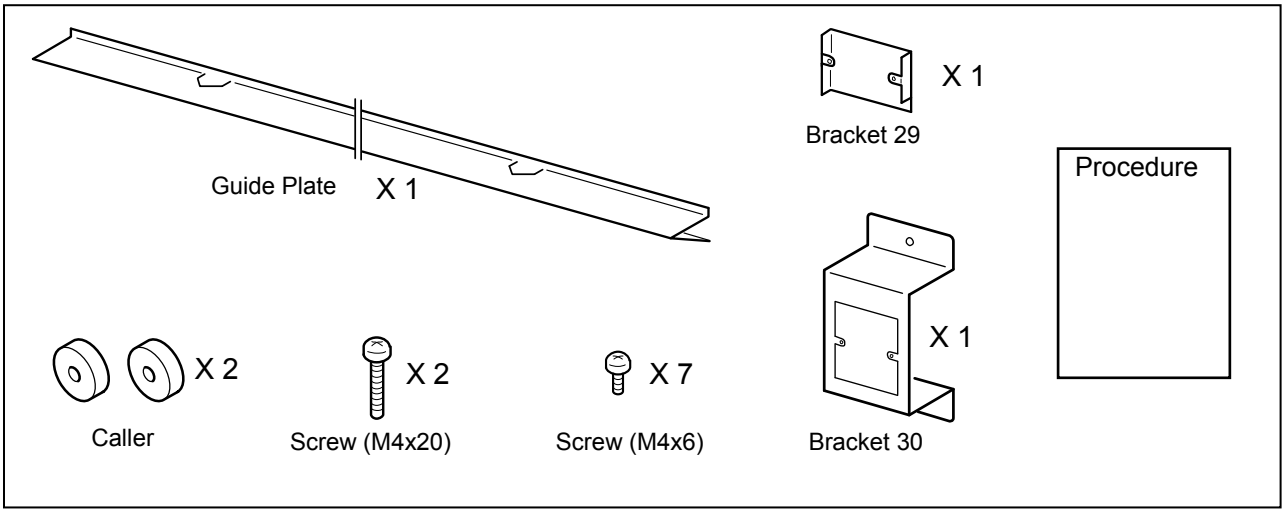


7. Stack Setting is completed.

AK-54G Setup Procedure
(for connecting Auto Stacker K-54G)

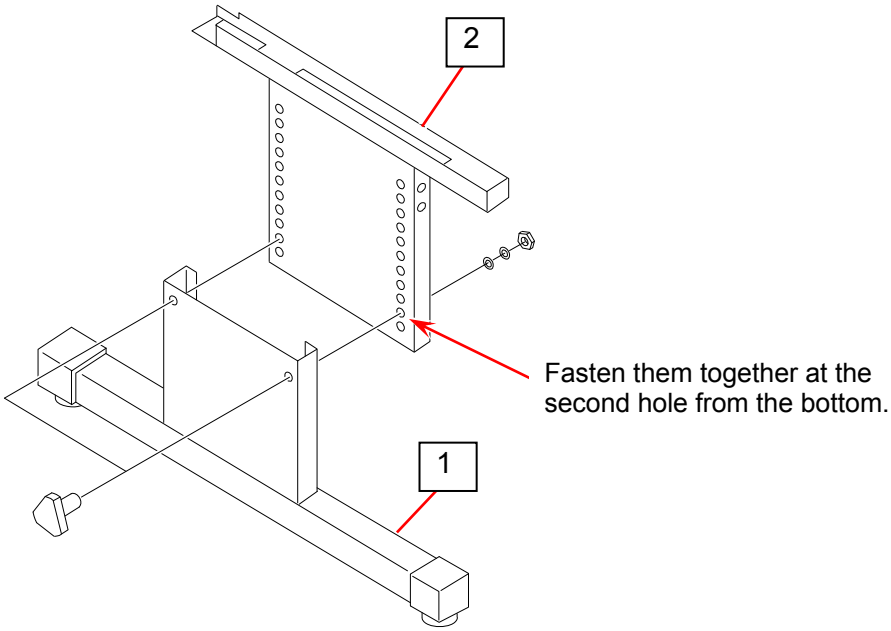
Ver.A.0

The following parts are included in “K-54G Connect Kit”.

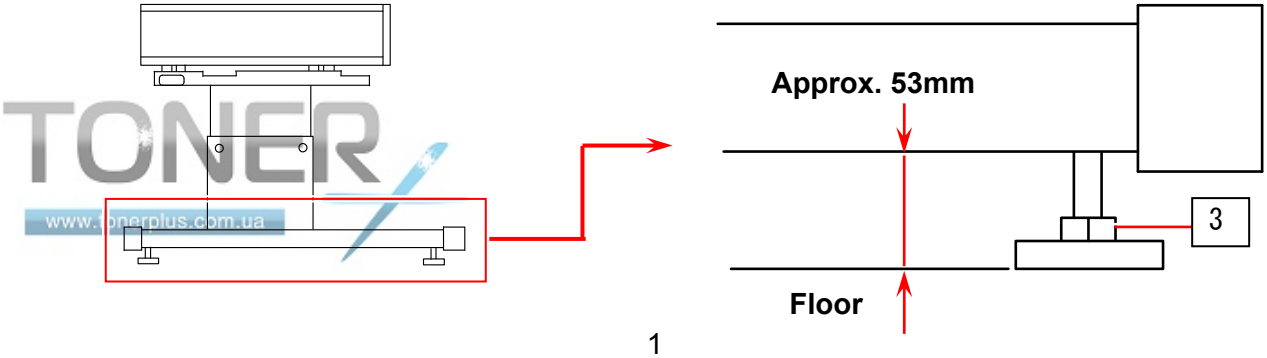


1. Height Adjustment of Stand

1. Fasten the Stand (1) and the Adjust Frame (2) together at the second hole from the bottom of Adjust Frame (2).

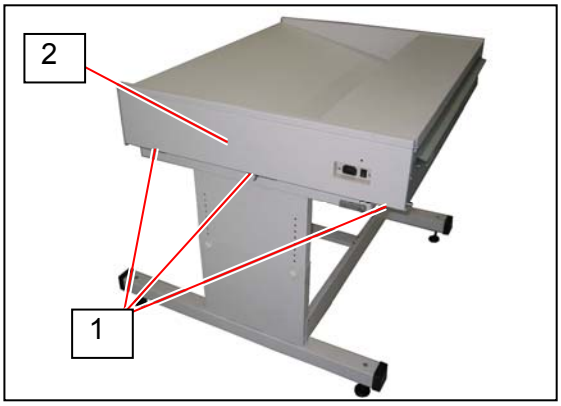


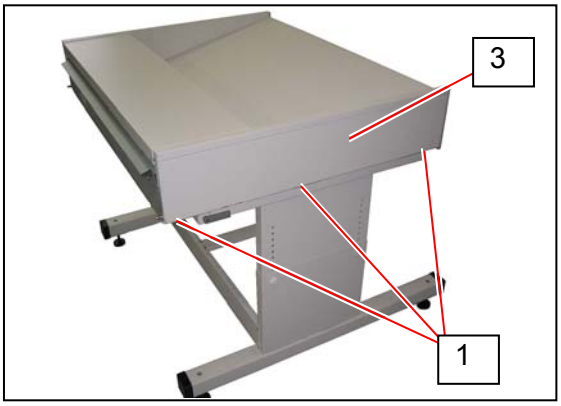
2. Rotate the Adjust Bolt (3) until the distance between the floor and the upper of Stand becomes approx. 53mm.



2. Removal of Cover L & R, Upper Panel Assy and Guide Plate

1. Remove 3 screws (M4x6) (1) each to remove the Cover L (2) and the Cover R (3).

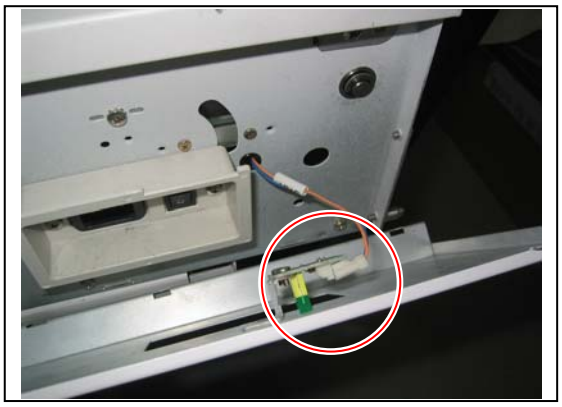




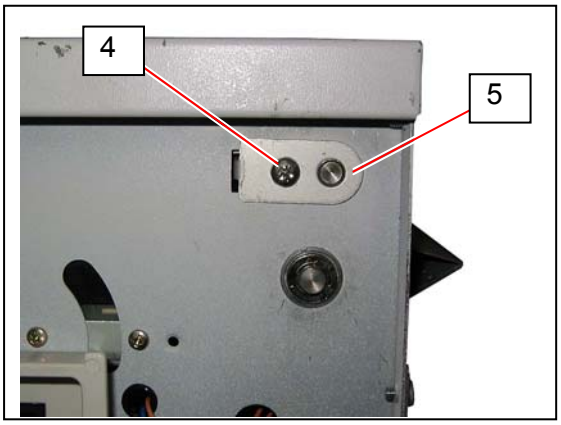
⚠ NOTE

In case of removing the Cover L (2), **open the Cover L gently**, disconnect the connector, and then remove the Cover L .

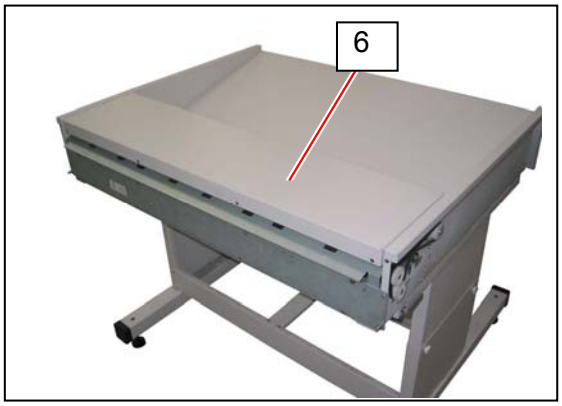
The Indication PCB Assy is attached to the inside of Cover L, and the connector is connected.



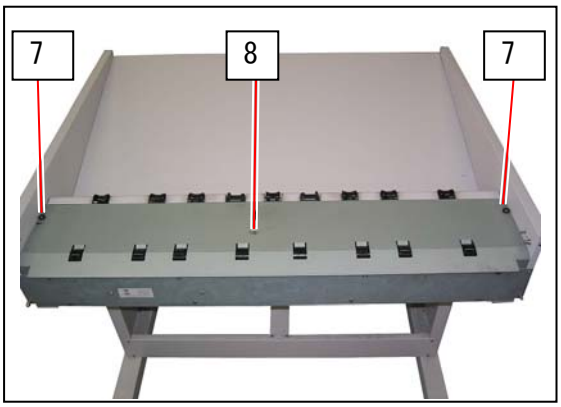
2. Remove a screw (M4x6 with outer toothed washer) (4) to remove the Pivot Assy (5) from one side.



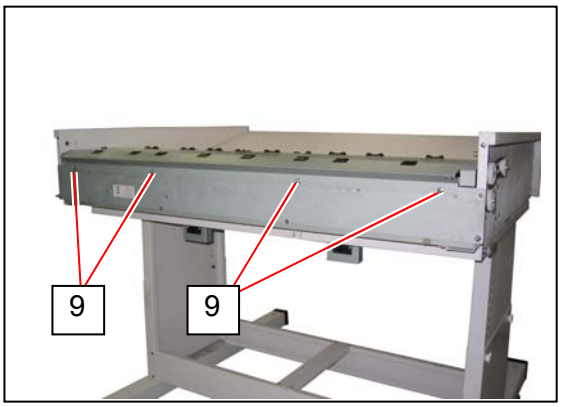
3. Remove the Upper Panel Assy (6).

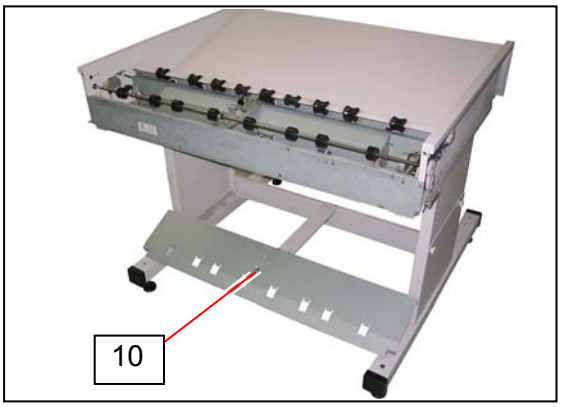


4. Remove 2 screws (M4x6) (7) with the Spacer and a screw (M4x6 with outer toothed washer) (8).



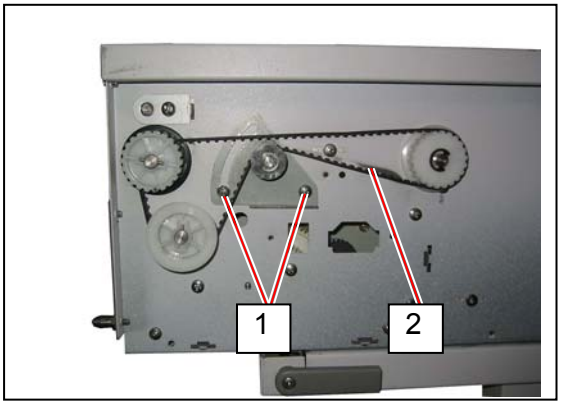
5. Remove 4 screws (M4x6) (9) with the Collar, and then remove the Guide Plate Lower (10).



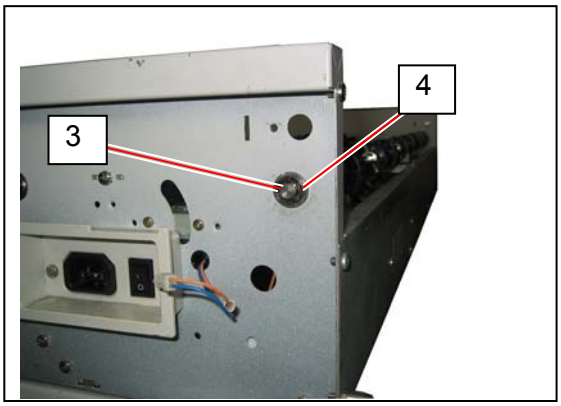


3. Replacement of Gear

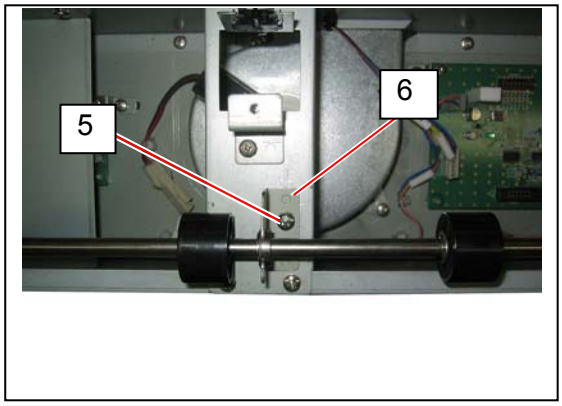
1. Loosen 2 screws (1), and then remove the Timing Belt (2).



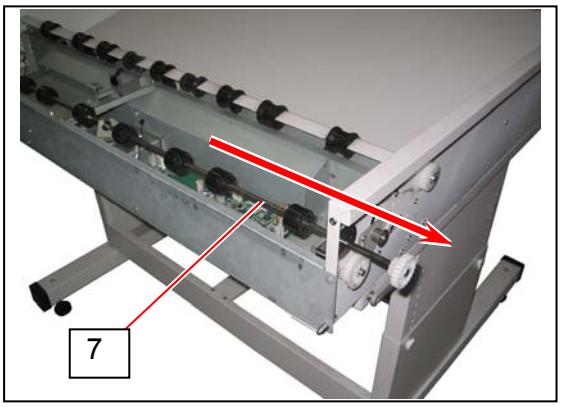
2. Remove the Retaining Ring-E (E7) (3) and the Ball Bearing (4).

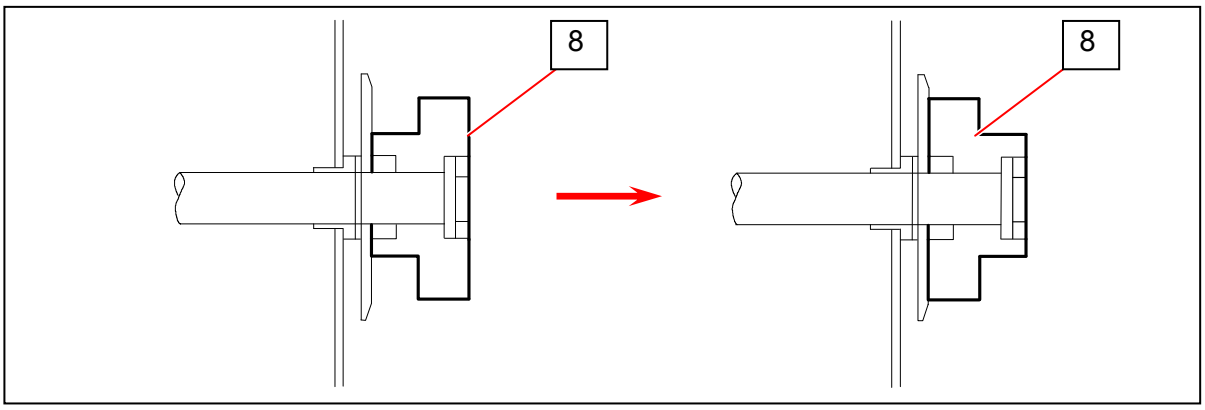


3. Remove a screw (M4x6 with outer toothed washer) (5) to remove the Bearing Bracket (6).



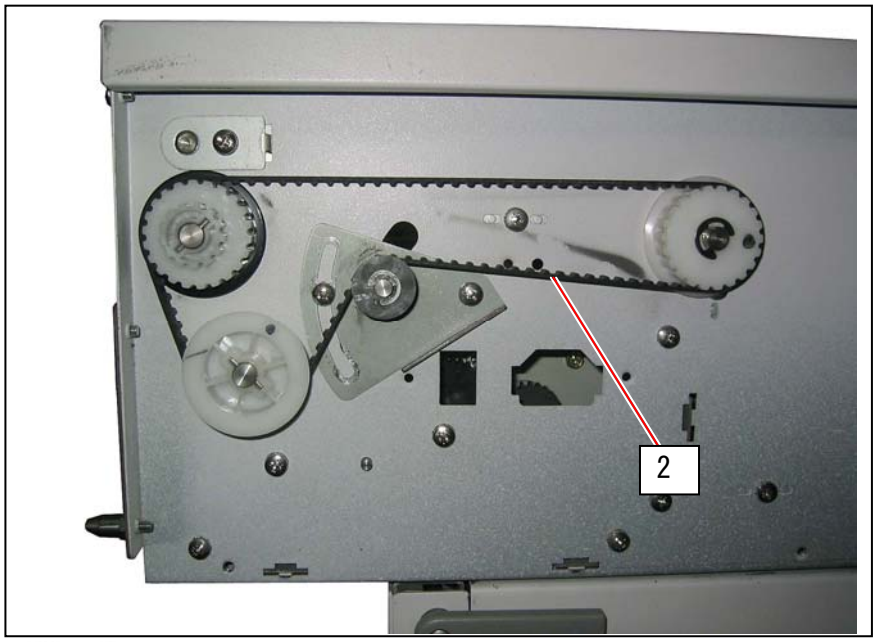
4. Slide the Roller Shaft (7) rightward, turn the Timing Pulley (8) inside out, and then put it back to the Roller Shaft (7).



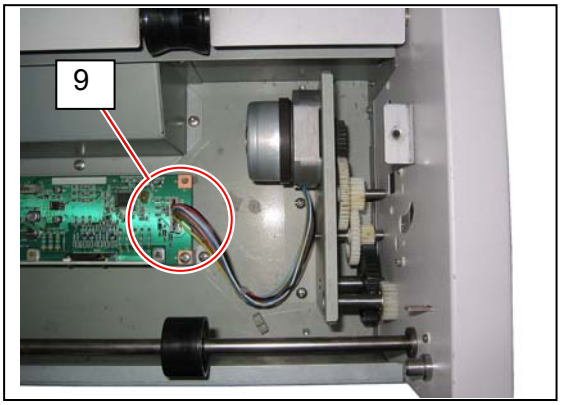


5. Making reference to the former step 3-2 and 3-3, put back the Roller Shaft in reverse order.

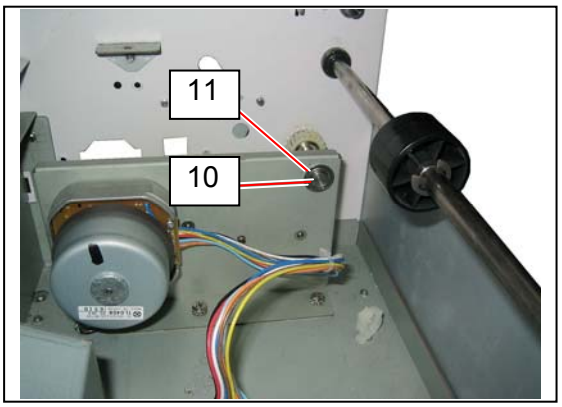
6. Attach the Timing Belt (2).



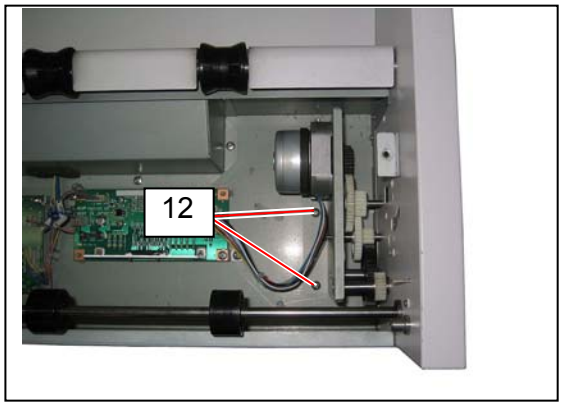
7. Disconnect the connector (9) of the DC Motor.

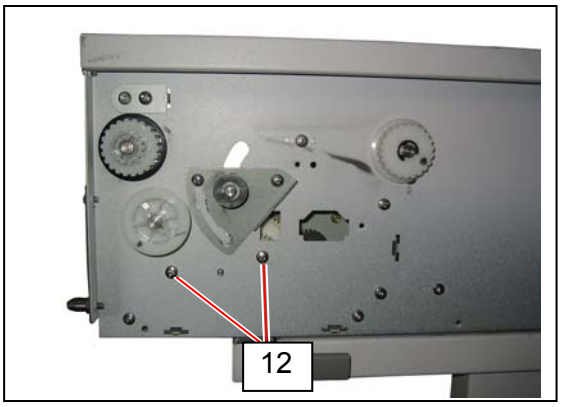


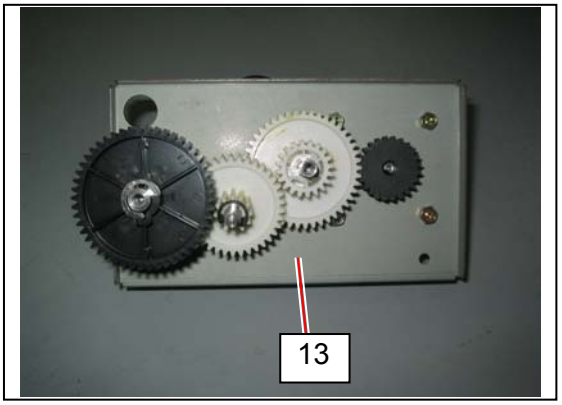
8. Remove the Retaining Ring-E (10) and the Ball Bearing (11).



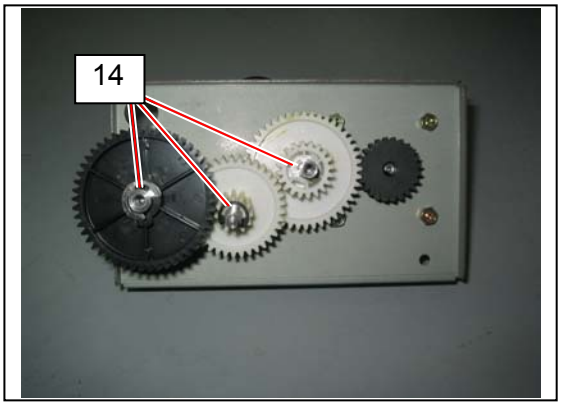
9. Remove 4 screws (M4x6 with outer toothed washer) (12) to remove the Drive Unit (13).



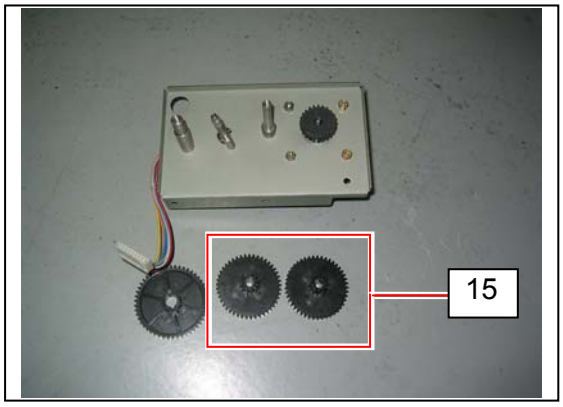




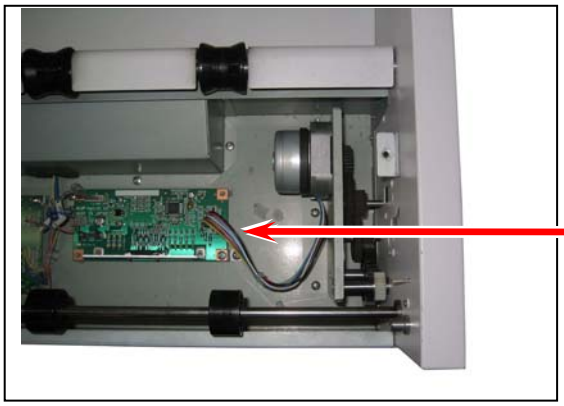
10. Remove 3 pieces of Retaining Ring-E (14) to remove the Gears.



11. Replace the white Gears with the black Gears (Low Speed Type) (15) which are included in the Accessory Kit of Auto Stacker.



12. Making reference to the former step 3-7 to 3-9, put back the Drive Unit in reverse order.

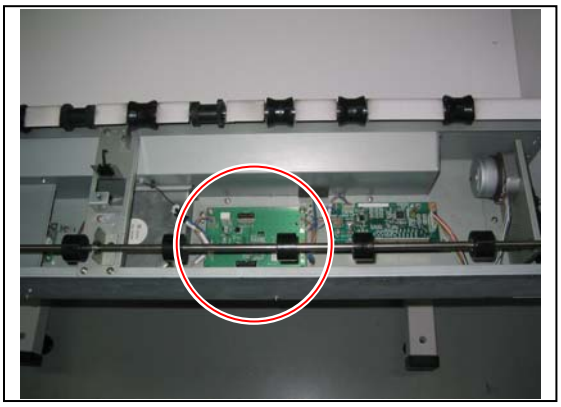


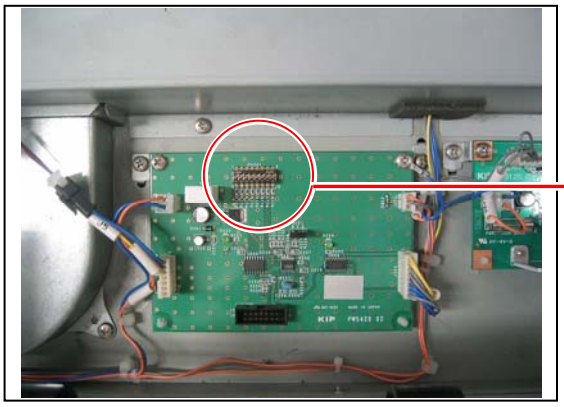
NOTE

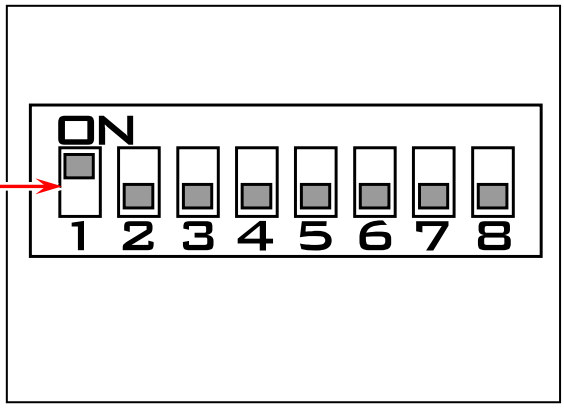
Do not forget to connect the connector of the DC Motor.

4. Switch Setting of Controller PCB Assy PW5420

Turn ON the Switch No. 1 (leftmost) on the Controller PCB Assy PW5420.





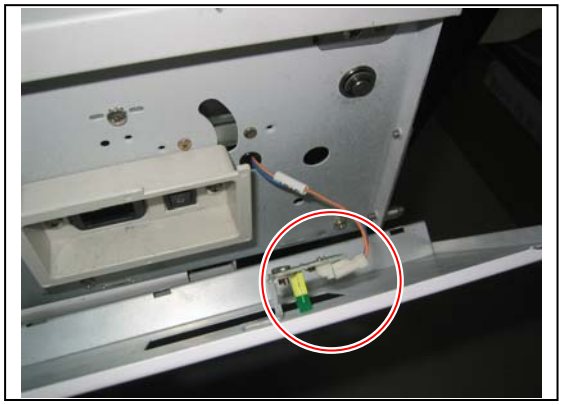


5. Attachment of Guide Plate, Upper Panel Assy and Cover L & R

Making reference of “2. Removal of Cover L & R, Upper Panel Assy and Guide Plate”, attach the Guide Plate, the Upper Panel Assy, the Cover L and the Cover R in reverse order.

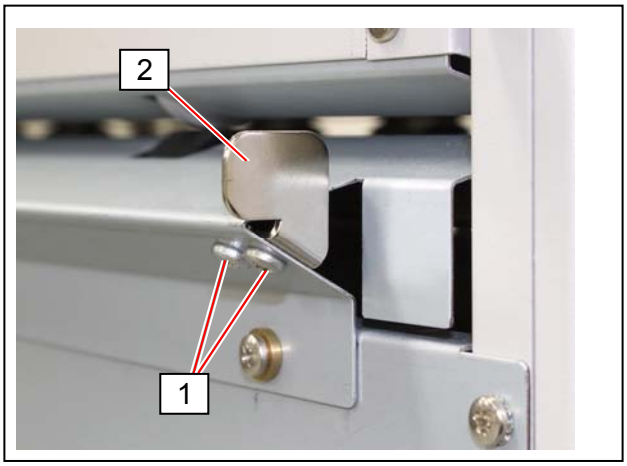
NOTE

In case of attaching the Cover L, do not forget to connect the connector of Indication PCB Assy.

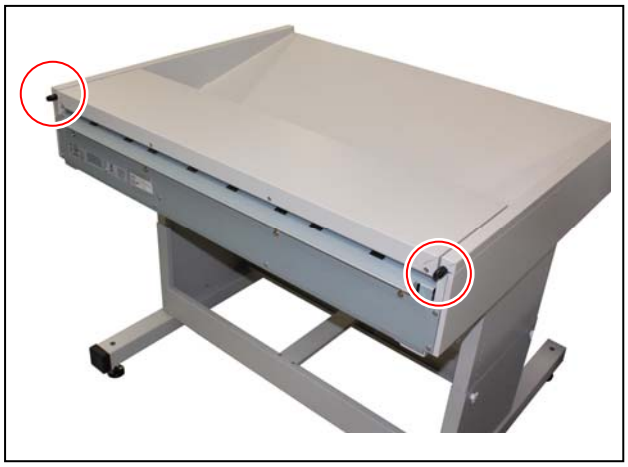


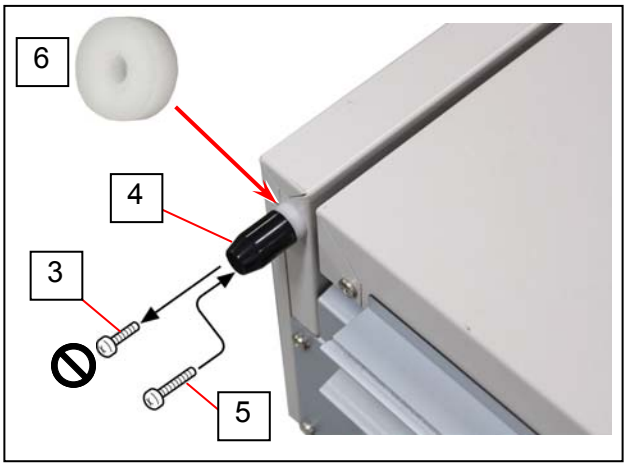
6. Attachment of Guide Plate

1. Remove 2 screws (1) each to remove right and left Adjust Plate (2). (Adjust Plate (2) is not used.)

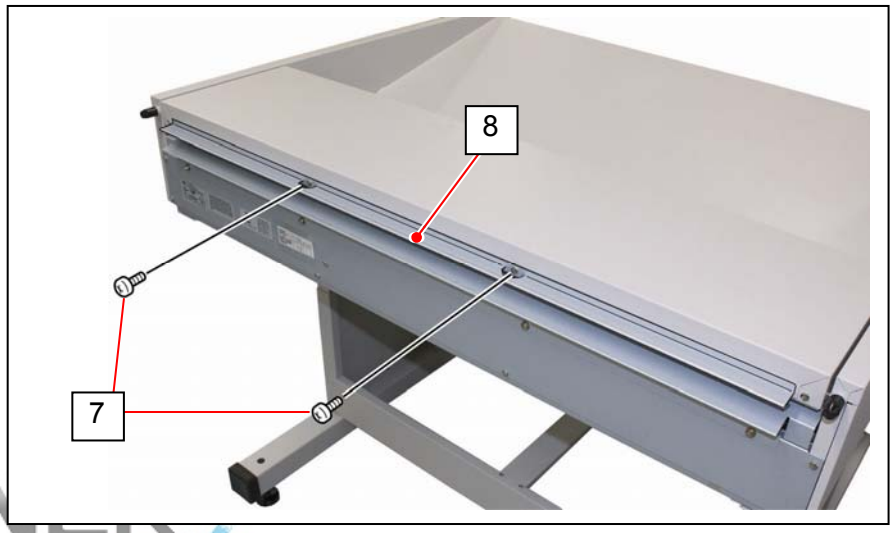


2. Remove 1 screw (M4x16) each to remove Bumper (4) on both sides.
   Install Collar (6) and Bumper (4) together with 1 screw (M4x20) (5) in the kit.





3. Remove 2 screws (M4x6) (7). Install Guide Plate (8) with the screws (7).

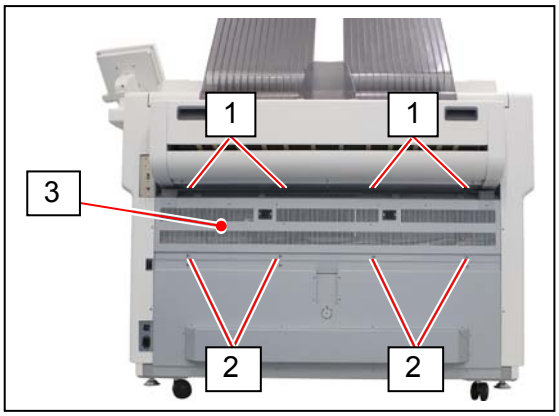


7. Attachment of Receiving PCB Assy and Transmission PCB Assy

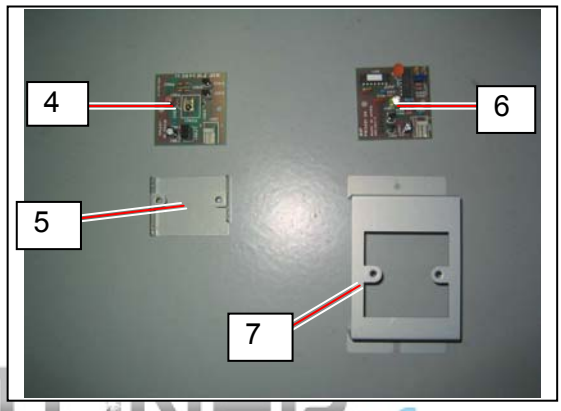
NOTE

Turn off the main unit before operation.
Unplug the power cord after an interval of 2 minutes for shutdown.

1. Remove 4 screws (1), loosen 4 screws (2) and remove the Cover 22 (3).

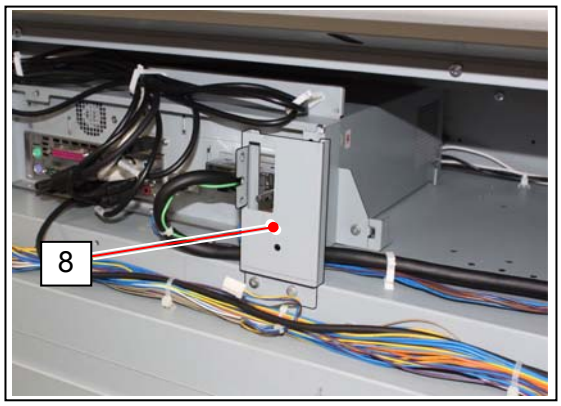


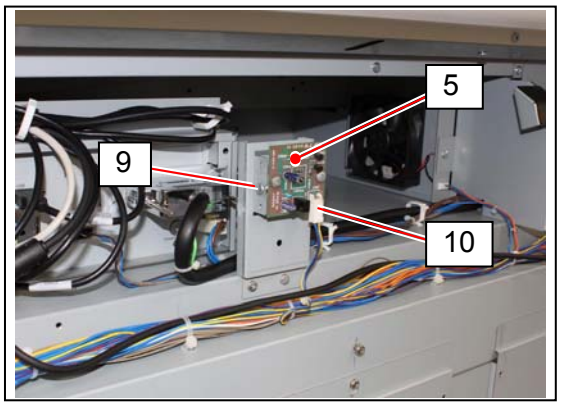
2. Attach the Reception PCB Assy (PW5490) (4) to the Bracket 29 (5) by the screws, and attach the Transmission PCB Assy (PW5491) (6) to the Bracket 30 (7) by the screws. (Fixing screws : M4x6)



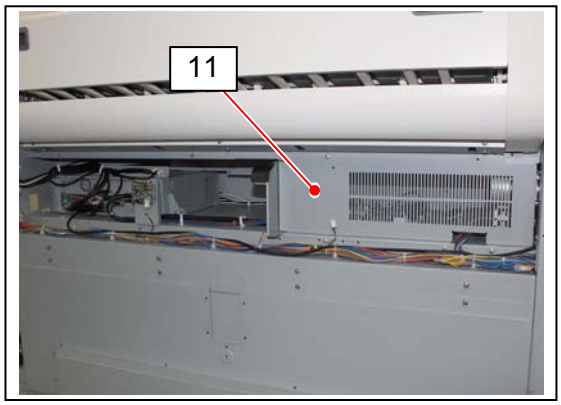
* Reception PCB Assy (PW5490) and Transmission PCB Assy (PW5491) are bundled with K-54G Auto Stacker.

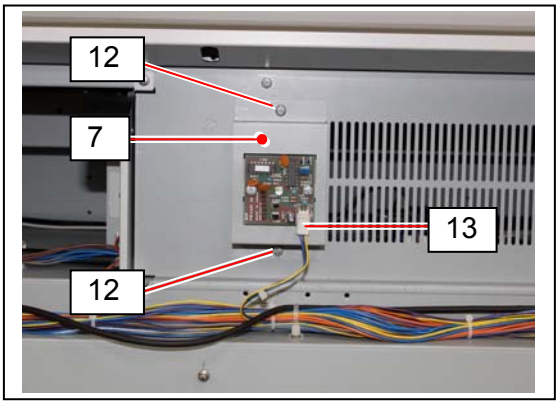
3. There is the Bracket 7 (8) inside of the main unit.
   Install the Bracket 29 (5: with Reception PCB) to the Bracket 7 (8) with one screw (9).
   Connect the cable (10)



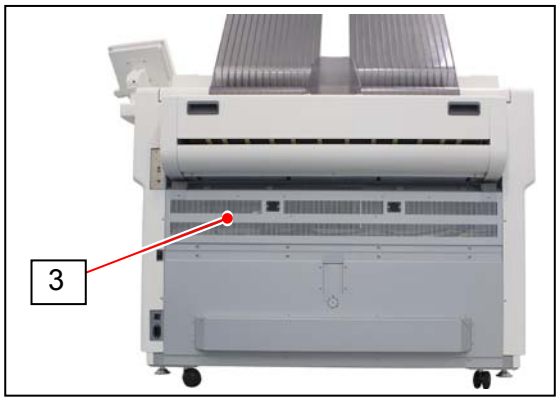


4. There is the Case (11) inside of the main unit.
   Install the Bracket 30 (10: with Transmission PCB) to the Case (11) with 2 screws (12).
   Connect the cable (13)





5. Put back the Cover 22 (3).

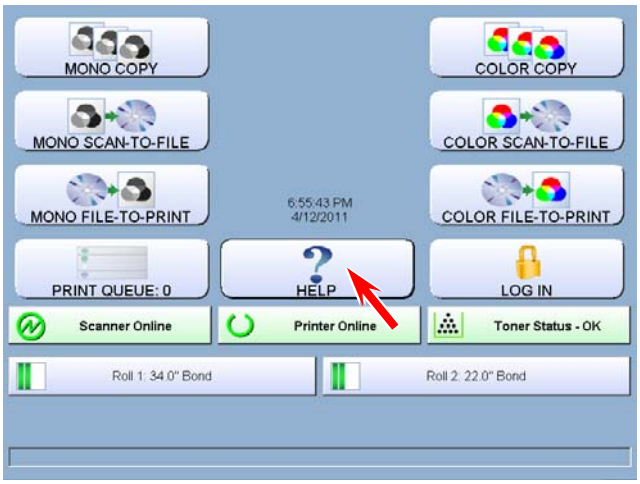


9. Change of the Stack Setting and Service Mode Setting

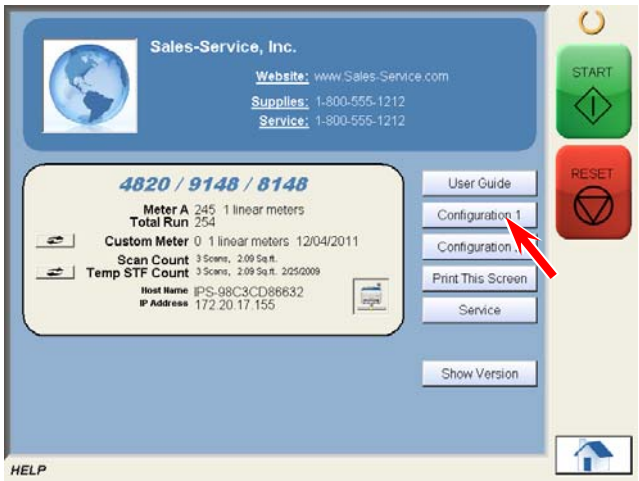
1. Connect the Auto Stacker to the main unit.

2. Turn on the Auto Stacker and main unit.

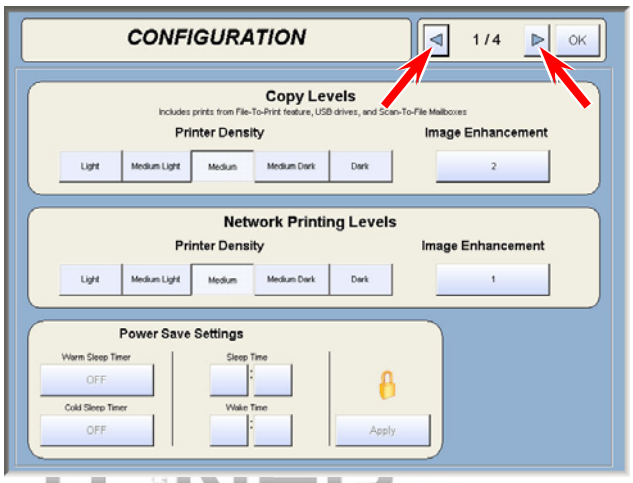
3. Press [? HELP] on the Home screen.

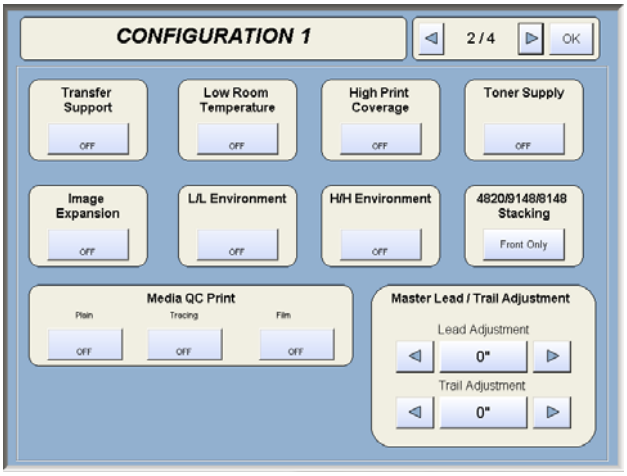


4. Press [Configuration 1].

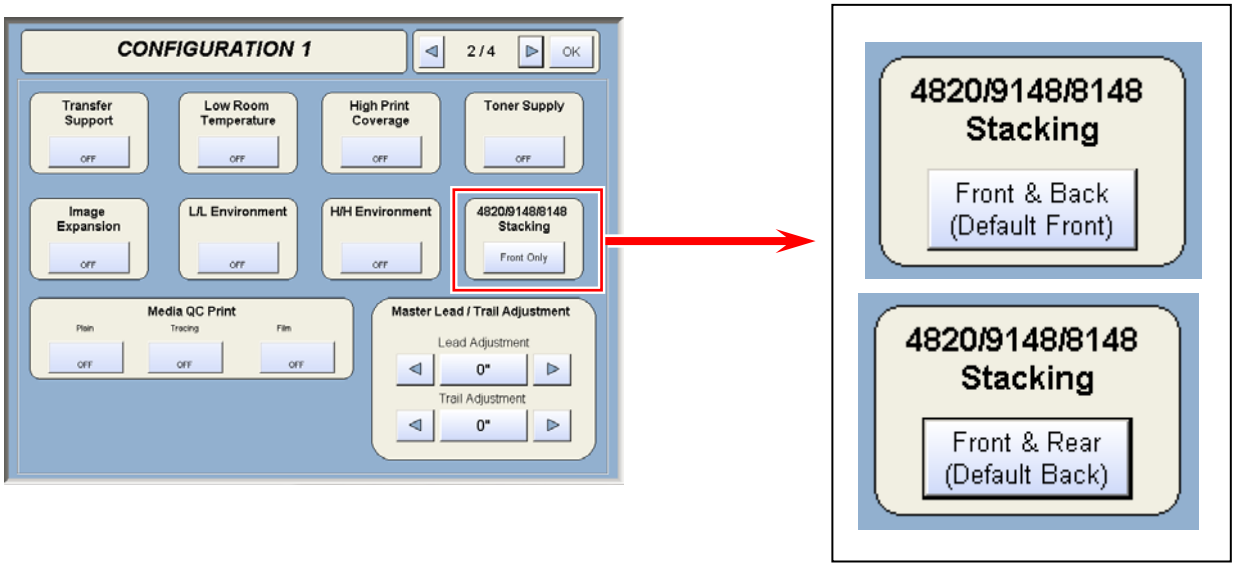


5. Configuration screen will appear. Press the arrow keys to move to page 2/4.

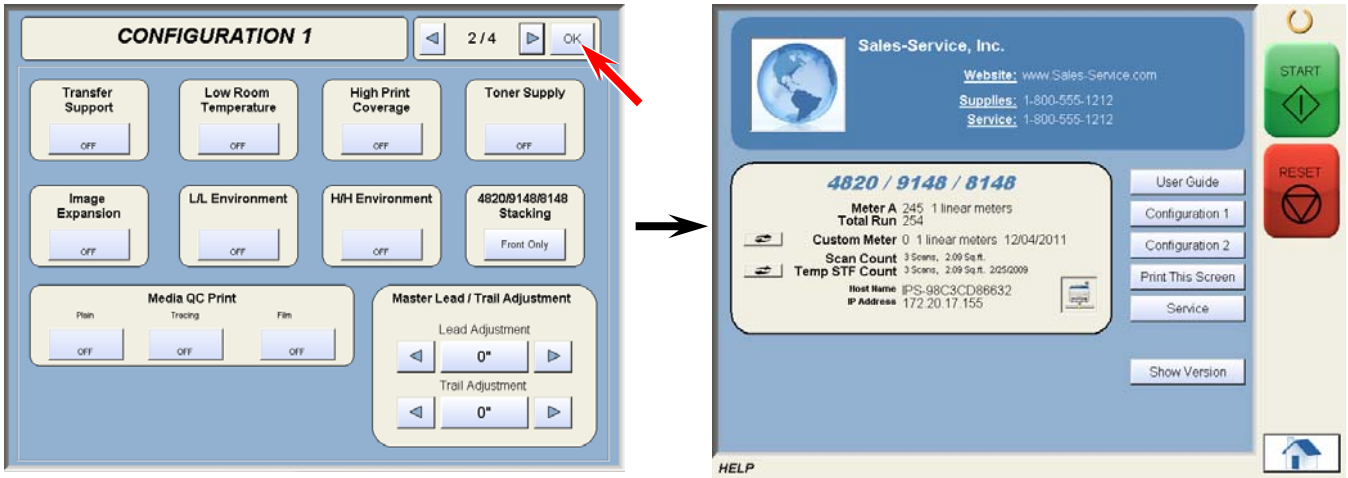




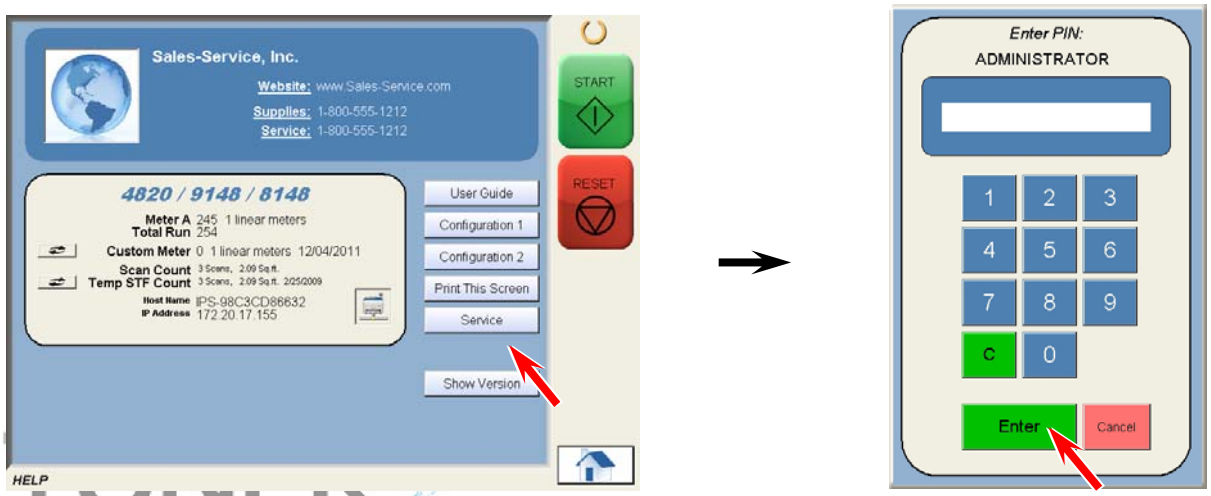
6. Change “4820/9148/8148 Stacking” from [Front Only] to the method of the use.



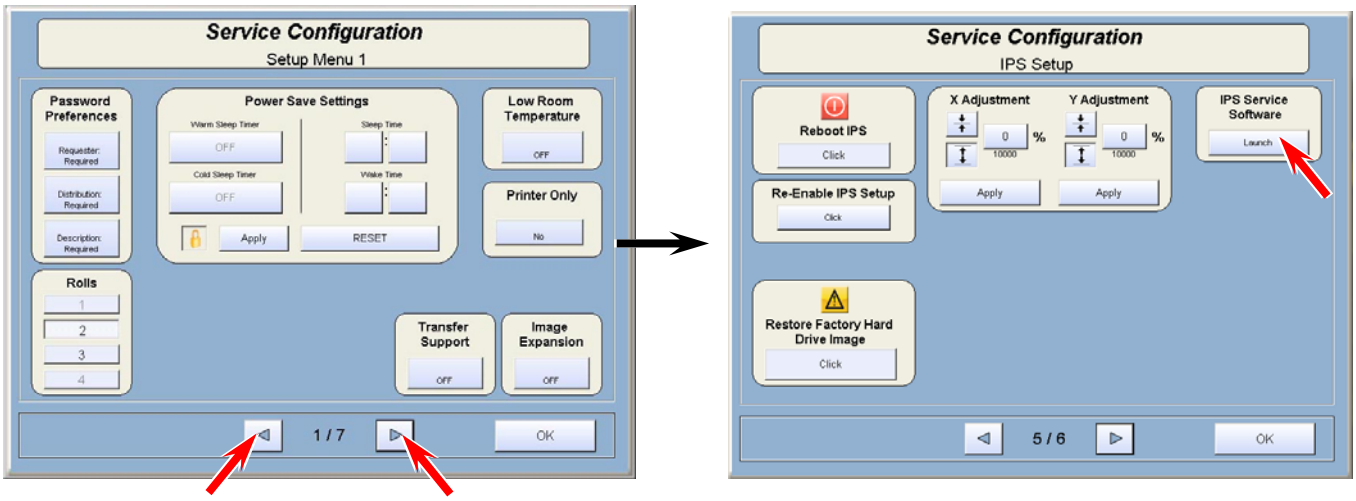
7. Press [OK].



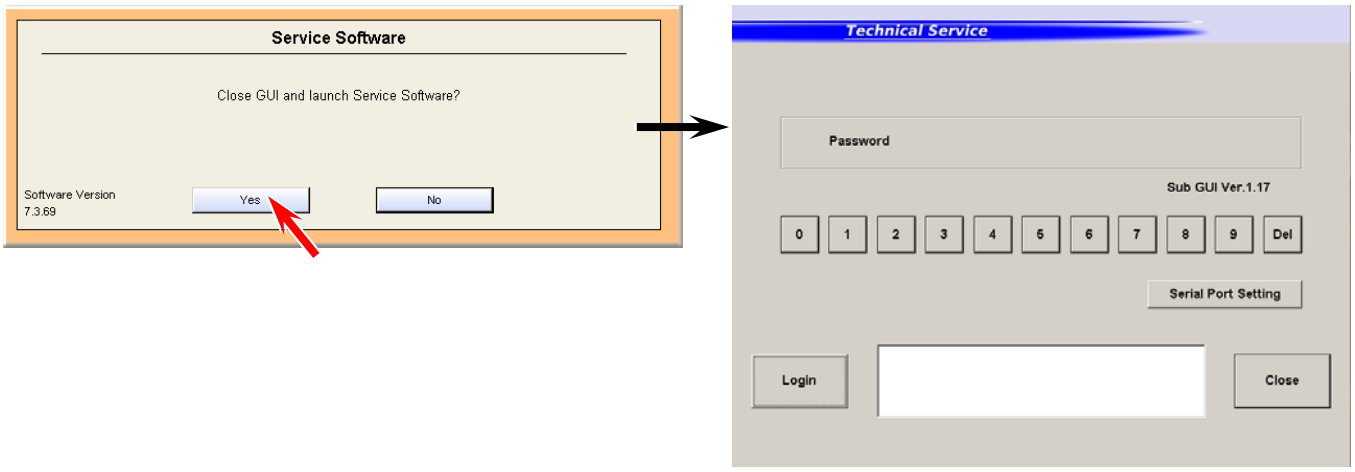
8. Press [Service]. Input “8495107” and press [Enter].



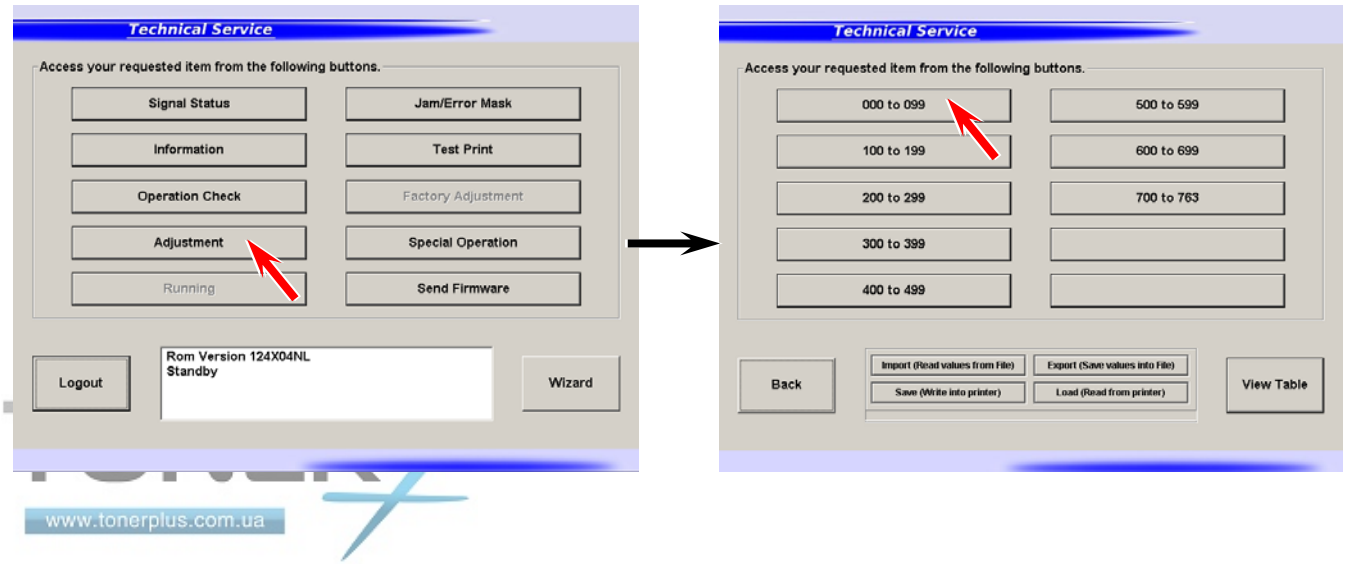
9. Service Configuration screen will appear. Press the arrow keys to move to page 5/7.
On 5/7 page, press [Launch]. Use the arrow keys to open [5/7 IPS Setup].



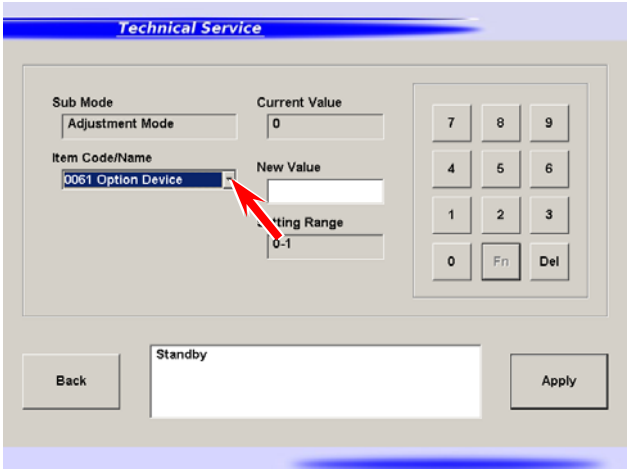
10. A confirmation dialog appears. Press [Yes].
Press [Login] to log in Service Mode.

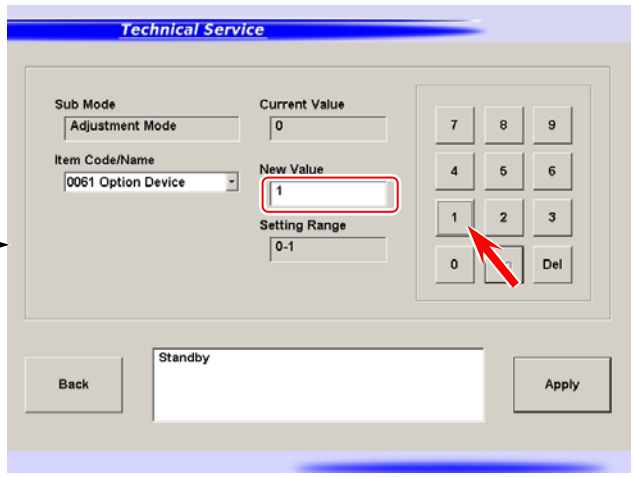


11. Press [Adjustment] in Service Mode Home. Press [000 to 099].

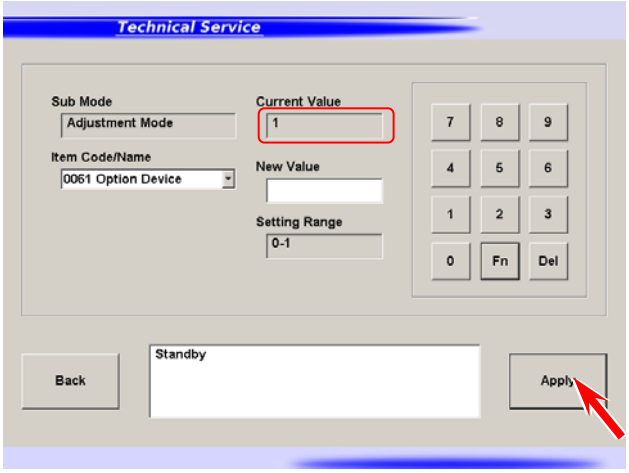


12. Select [0061 Option Device] from “Item Code / Name” menu. Set the parameter to “1”.

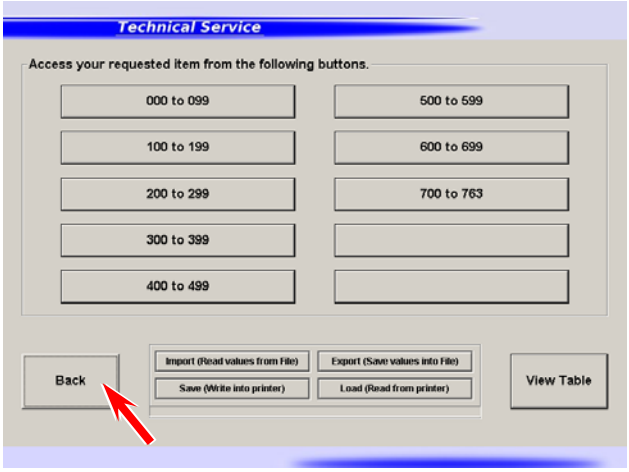


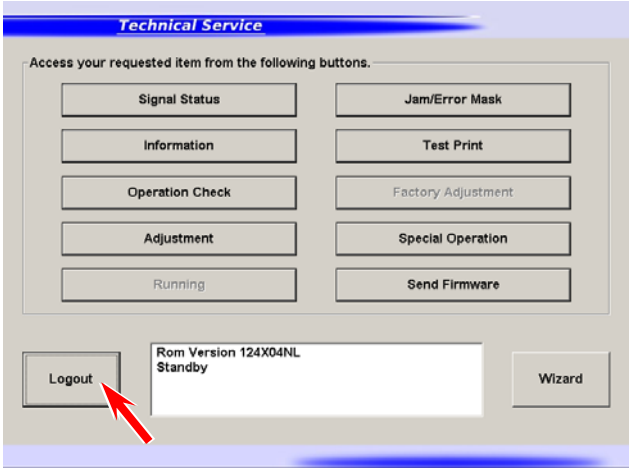


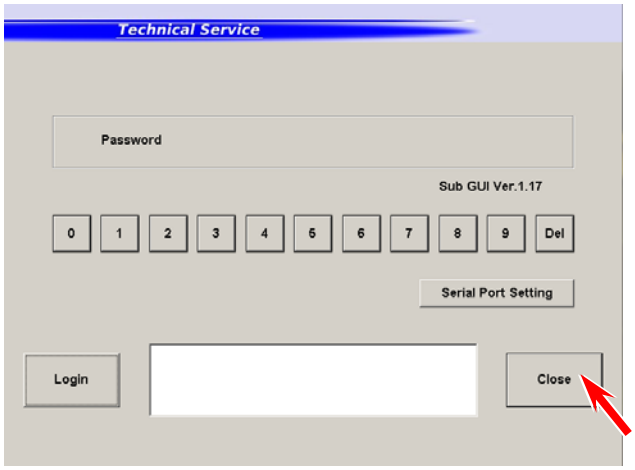
13. Press [Apply] to validate the change.



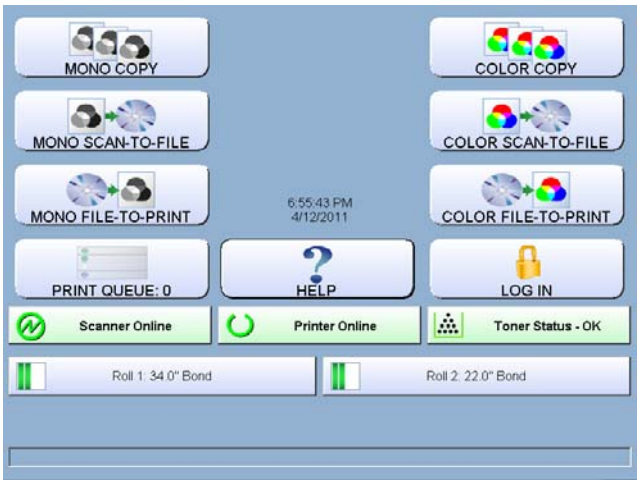
14. Press [Back], [Logout] then [Close] to cancel Service Mode.







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



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