

KIP 3100

Service Manual

Version A.3



This service manual includes the basic information about the KIP 3100 Multi-Function Printer, which is required when you during field service to maintain the product's quality and reliability.

Chapter 1 Introduction	Overview (Features, specifications, name of parts and etc.)
Chapter 2 Installation	Installation requirements, method of installation, connection with PC & printer
Chapter 3 Print / Scan Process	explanation for the steps of the print and scan process
Chapter 4 Electrical	Circuit diagrams, image process system, electric parts location and etc.
Chapter 5 Mechanical	Parts replacement and mechanical disassembly
Chapter 6 Maintenance	Field maintenance information
Chapter 7 Troubleshooting	Problem resolution
Chapter 8 Service Mode / Utility	Service Mode settings, Diagnosis and etc.
Chapter 9 Appendix	General Circuit Diagram

Some of the information included in this manual may be changed by product upgrades. Such information will be informed to you through Technical Bulletins or Engineering Change Orders. Read this service manual and these TBs / ECOs to understand the KIP 3100 correctly, and you will be able to maintain the product quality for a long period of time.

All sections of the document are subject to change without notice.

Chapter 1

Introduction

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1.1 Features

The KIP 3100 is a single footprint Multi-Function Printer which can copy, scan and print. Advanced drivers and comprehensive print utilities make the KIP 3100 an advanced, easy to use system. (some functions may be optional)

The scan and print speeds are up to 80mm/sec.

KIP HDP technology generates no waste toner.

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

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).

Up to 600dpi print and scan resolutions, with an advanced Image Process System, produces the highest quality images.

Copier Features

- Easy Touch screen control panel
- Collated Sets copying
- Real-time image preview
- Recall/reprint previous jobs
- 600x600DPI copy quality
- Integrated Accounting and Reports for all copying, network printing, scanning
- Network ready copier
- Simple Operator assistance for every day tasks (toner replacement procedure)
- Image stamping
- All hardware/software included for instant upgrade from Digital Copier to Network Printer to Scan-to-File system.
- Information center displays all support information, meter readings, and serial number.

Network Printer Features (Optional)

- Standard TCP/IP connectivity
- Direct support for vector file formats: HPGL1/2, HP-RTL, Calcomp 906/907
- KIP 3100 DWF format support
- Direct support for raster file formats: TIF Group 3/4, Cals Group 4, Uncompressed Grayscale/Color TIF,
- Optional KIP 3100 PDF format support: PS/PDF file format.
- Standard Windows Driver for KIP Script (PS output) and KIP-GL (HPGL/2,RTL output)
- Standard AutoCAD Drivers
- Unlimited site license of KIP Request allows users to group supported formats together for printing collated sets.
- Integrated Accounting in all KIP Drivers/Request for all network printing.
- Integrated KIP 3100 Web Printing (web server)
- Open architecture ASCII Job Ticket for third party applications

Scan-to-File Features

- Scan directly to PDF, TIF Group 4, Cals Group 4
- Scan to file to FTP or personal inbox on the KIP 3100
- Selected resolution – up to 600 DPI optical
- Automatic original size recognition
- Retrieve scanned image files with KIP Request

1.2 Specifications

1.2.1 General

Subject	Specification
Model	KIP 3100
Configuration	Console
Power consumption (Maximum)	US model: 1,440W Europe/Asia model: 1,680W (Including Scanner & Controller Unit)
Power consumption (Cold Sleep mode)	30W or less
Acoustic noise	Idling Max. 60db Printing Max. 65db (Impulse sound not included) EN ISO7779
Ozone	Max. 0.05ppm (Measurement method under UL Standard)
Dimensions	1266mm (Width) x 600mm (Depth) x 1107mm (Height) (UI not included)
Weight	About 219kg, 485lbs (1 roll) About 232kg, 511lbs (2 roll)
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)
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. 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 : 279.4mm
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 <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"><p>⚠ NOTE</p><p>If the original is thicker than 0.6mm, its image quality is not guaranteed.</p></div>
Scanning speed	65 mm per second (mono 600dpi max)

⚠ 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 11" to 36" (275.0mm 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.
- (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

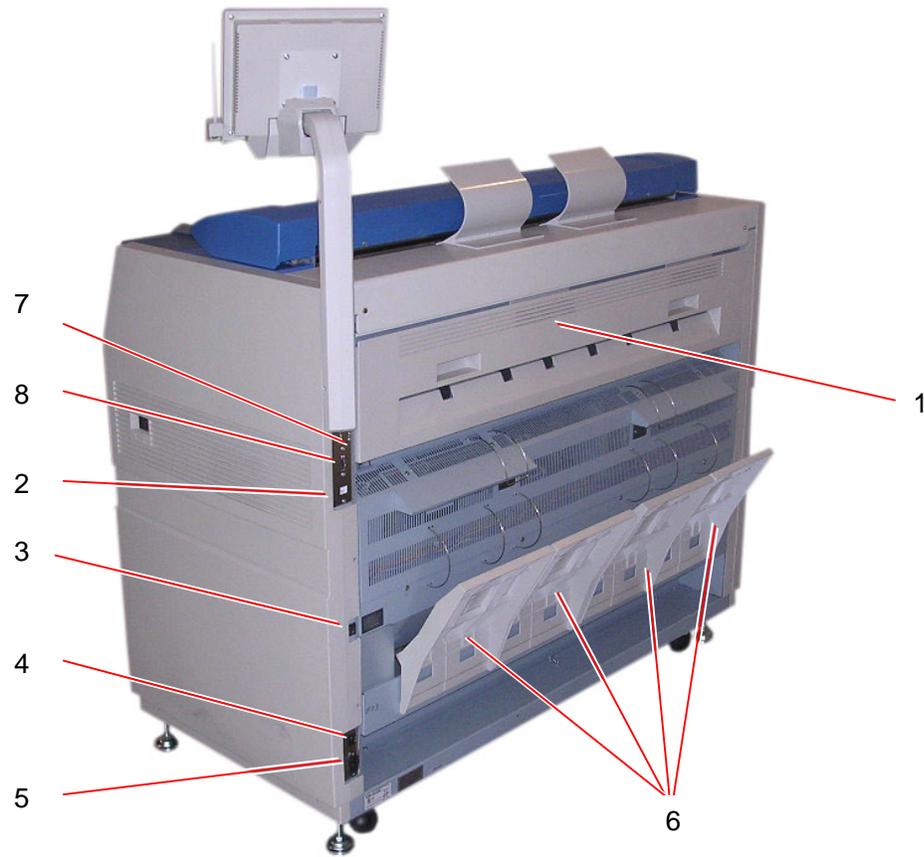
1.4 Appearance

1.4.1 Front



No.	Name	Function
1	Main Switch	You can turn on/off the KIP 3100.
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	Original Tray	These trays catch the original ejected from the Scanner Unit.
6	Scanner Unit	Read the original with this unit when you make scan or copy.
7	Toner Hatch (Original Table)	Open the Toner Hatch when you replace the Toner Cartridge. Also put the original here and then feed it into the Scanner Unit when you make scan or copy.
8	Engine Unit Open Lever	Pull up these levers when you open the Engine Unit.
9	Bypass Feeder	Feed a cut sheet paper from the Bypass Feeder.
10	Roll Deck	Roll paper can be set here. (You can set 1 roll paper normally, but 2 roll paper are available if you install the optional 2nd Roll Deck.)
11	Print Tray	Prints are stacked here after the ejection.
12	Counter	It counts the total amount printing.
13	Stylus	Use this to press buttons on the touch screen. PLEASE DO NOT use any other pointed object to tap on the UI.

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 KIP 3100 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	Print Guide Trays	These trays guide the prints to the Print Tray.
7	COM Port (Optional)	Connect the cable from the Optional Device. (D-Sub Connector 9 pins: 12VDC max.)
8	USB Port	5VDC max.

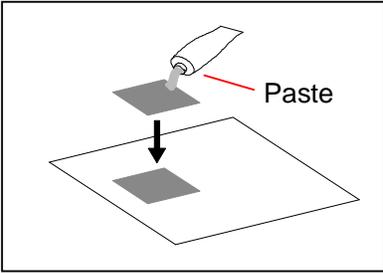
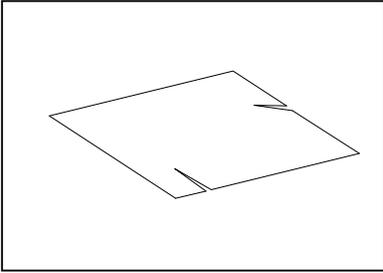
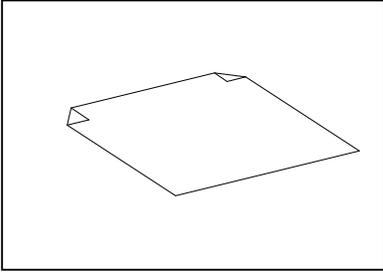
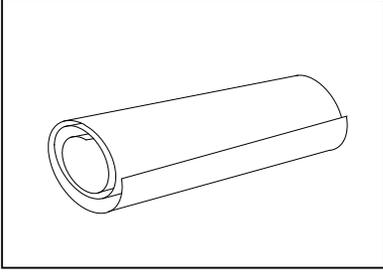
1.5 Specifications for Scan Original

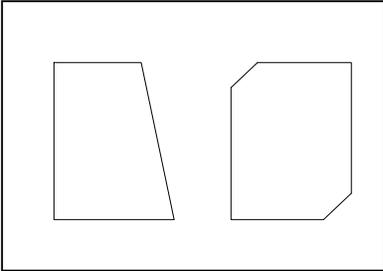
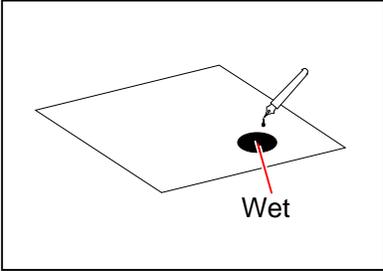
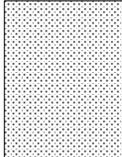
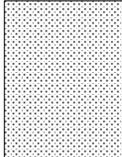
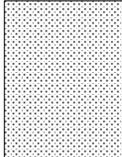
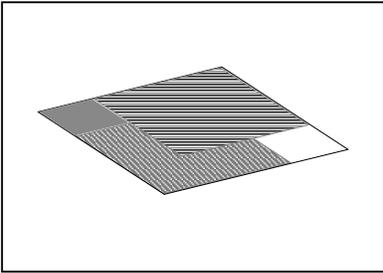
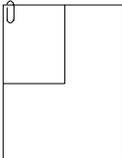
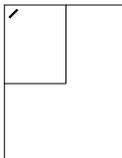
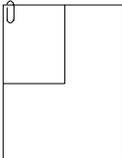
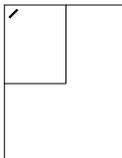
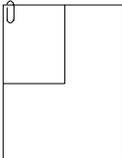
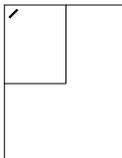
A scan original must satisfy the following specifications.

Thickness	0.05mm to 0.6mm
Width	279.4mm to 914.4mm
Length	210mm to 6,000mm

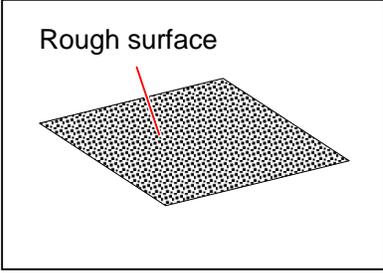
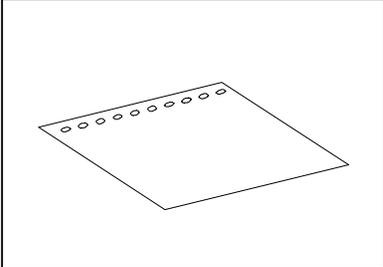
(If an original is thicker than 0.6mm, its image quality is not guaranteed even it is transported.)

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	<table border="0" style="width: 100%;"> <tr> <td style="text-align: center; width: 50%;">Metal</td> <td style="text-align: center; width: 50%;">Fabric</td> </tr> <tr> <td style="text-align: center;"></td> <td style="text-align: center;"></td> </tr> </table>	Metal	Fabric		
Metal	Fabric				
					
Patched					
Clipped or stapled	<table border="0" style="width: 100%;"> <tr> <td style="text-align: center; width: 50%;">Clipped</td> <td style="text-align: center; width: 50%;">Stapled</td> </tr> <tr> <td style="text-align: center;"></td> <td style="text-align: center;"></td> </tr> </table>	Clipped	Stapled		
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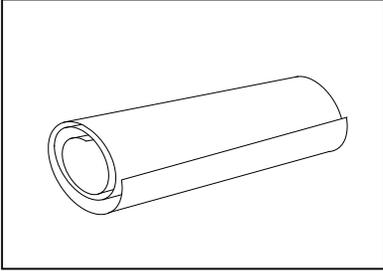
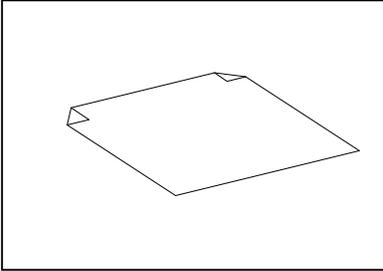
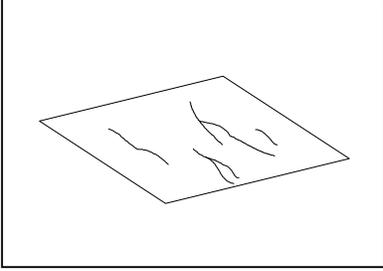
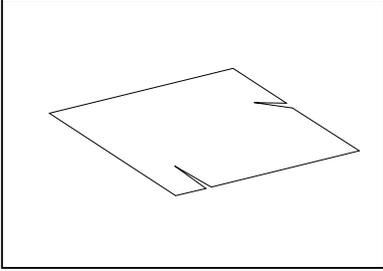
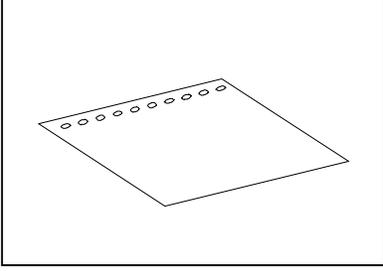
The following kinds of originals can be read with using a carrier sheet.
Image quality or the reliability of paper feeding for them is not guaranteed.

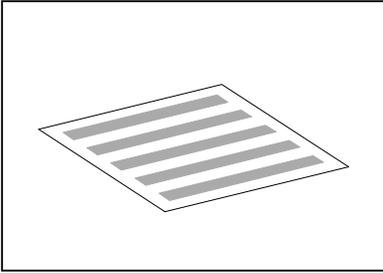
<p>Rough surface (Carbon paper for example)</p>	<p>Rough surface</p>  A 3D perspective drawing of a rectangular surface covered in a dense, irregular pattern of small black dots, representing a rough texture. A red arrow points from the text 'Rough surface' to the center of the textured area.
<p>Punched</p>	 A 3D perspective drawing of a rectangular surface with a series of small circles along one of its longer edges, representing a punched edge.

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.
40%	“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.
70%	“Void of image” occurs when you print with plain paper and tracing paper.	Remove the paper from the machine after everyday use, and keep it in a polyethylene bag.
High ↓	“Void of image”, “crease of paper” and other problems occurs when you print with plain paper and tracing paper.	1. Turn on the Dehumidify Heater.(if installed) 2. Remove the paper from the machine right after the completion of print, and keep it in a polyethylene bag.

NOTE

(1) KIP 3100 is equipped with the Dehumidify Heater (option for US model.)
Using it in high humidity environment (65% or higher) is recommended.

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

Normal Print



If the media is humidified ;

Crease of paper



Normal Print



If the media is humidified ;

Loss of image



Chapter 2

Installation

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

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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.

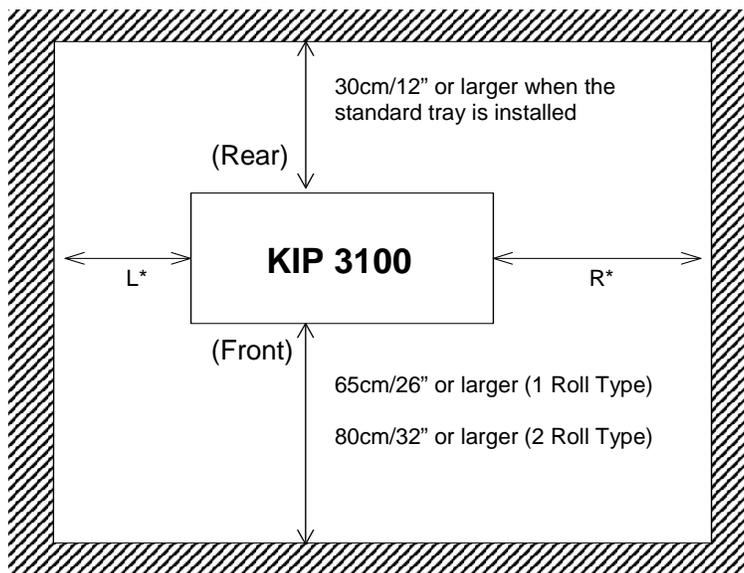
When you open the printer (Upper Half), do not expose the Photoconductive Drum to strong (intense) light as this will damage the Drum.



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

2.2 Unpacking

2.2.1 Unpacking

1. Cut the bands (1) and remove the top board (2).



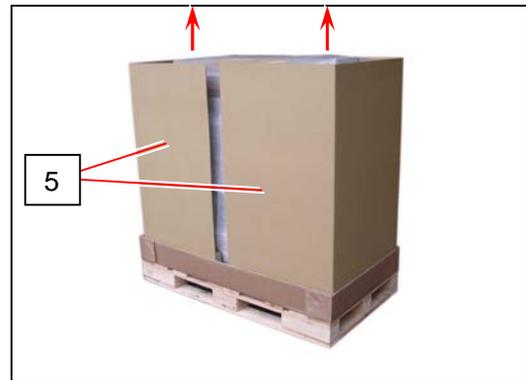
2. Remove pads (3) and the outer cardboard box (4).

Please note that and Software Box will be included in the crate.
The Software box has the Software CD and other important installation notes and documents.

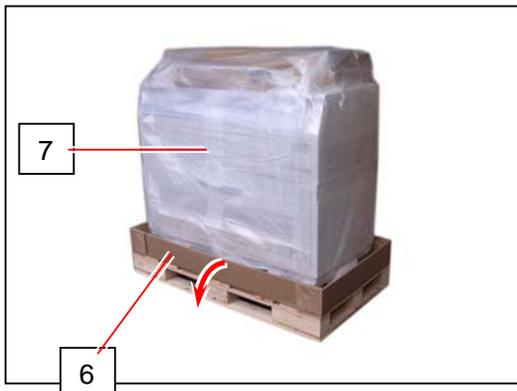
**OPEN THIS BOX FIRST.
DO NOT DISCARD THIS BOX.**



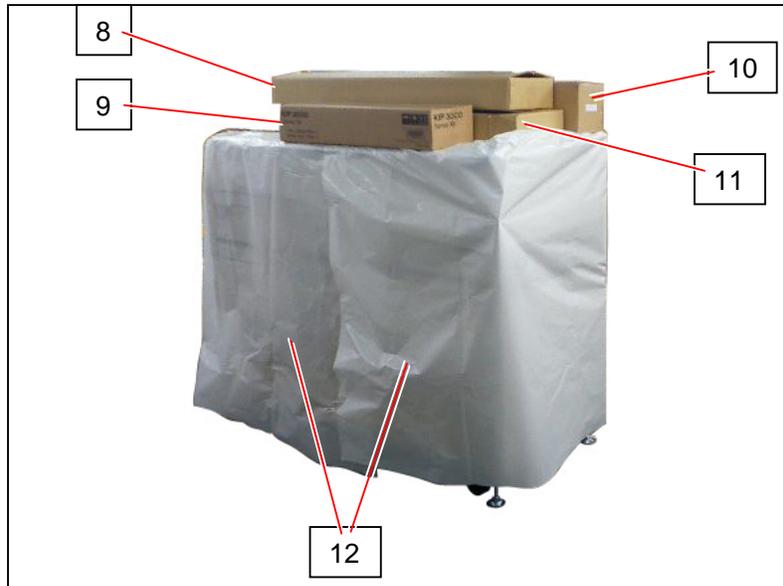
3. Remove the inner cardboard cases (5).



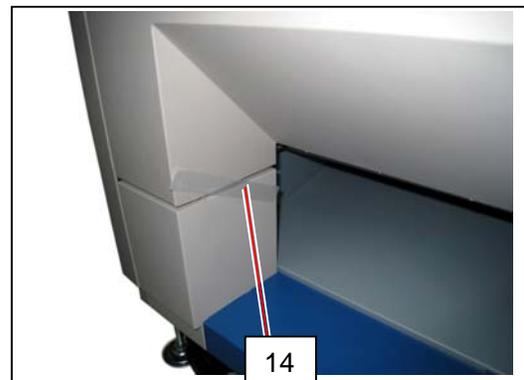
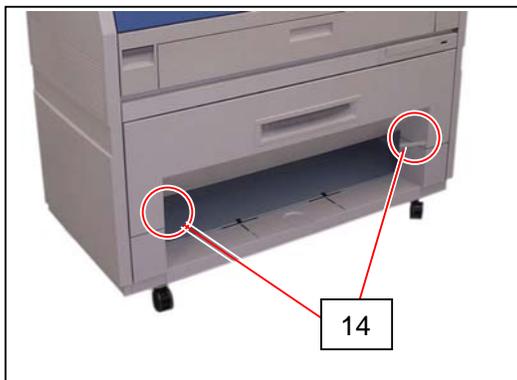
4. Open the front face (6) of the bottom board. Peel off the plastic bag (7).
Remove the wrapped machine with a forklift, and move it to the installation place.
Unwrap the machine.



5. Put aside each accessory box (8), Startup Kit (9: Europe/Asia model only) and empty Drum Box (10). **DO NOT DISCARD THESE ITEMS.** Remove the scanner protection box (11) and the protection papers (12) around the machine.



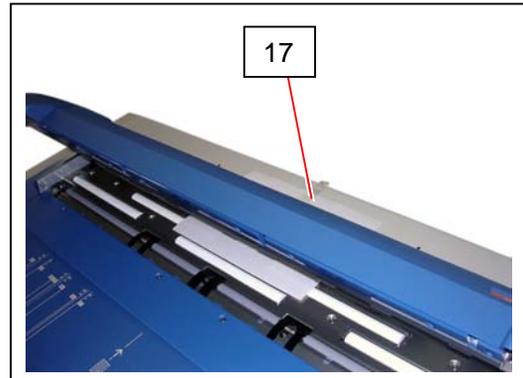
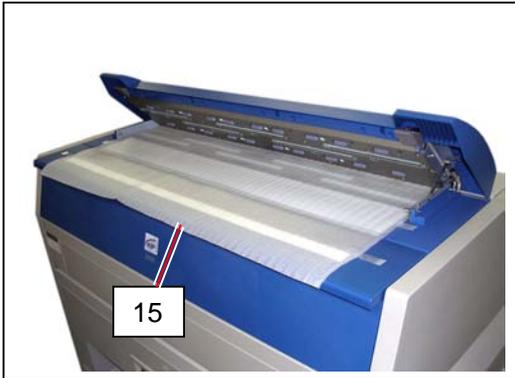
6. Put aside one more accessory box (13) and the protection mat under the Roll Deck. **DO NOT DISCARD THE BOX.** Remove the tapes (14) on Roll Deck.



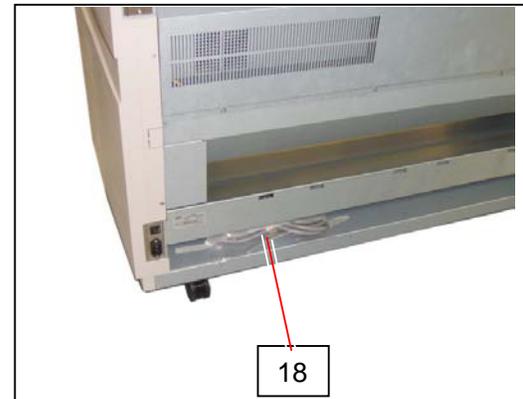
7. Open the Scanner Unit. Remove the protection mat (14). Put aside Shading Sheet (15) for the scanner adjustment.

**DO NOT DISCARD THE SHEET. HANDLE WITH GREAT CARE.
KEEP THE SHEET IN SAFE COSTODY FOR AVOIDING DAMAGE.**

Remove the protection sheet (16) on the top rear of the machine. Close the Scanner Unit.

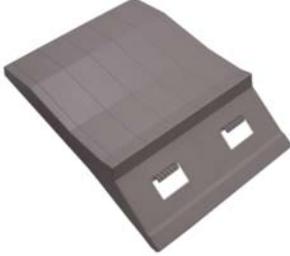
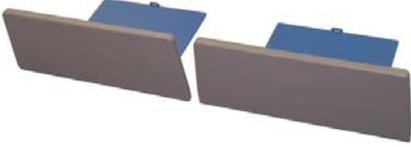


8. Put aside the Power Cord (18) which is on the bottom plate of machine.

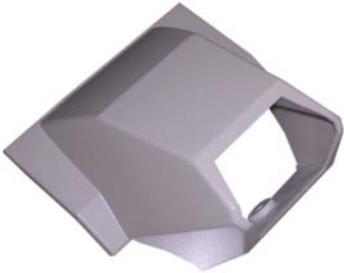


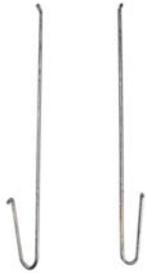
2. 2. 2 Confirmation of Accessories

Confirm the following parts are attached to the product.

Item name	Picture	Number of article
Tray		4
Drum Box (empty)		1
Guide 3		2
Tray 2 Assembly		2

Item name	Picture	Number of article
Guide 4		2
Original Guide 1 & 2		1 1
Power Cord		1
Monitor Assembly		1

Item name	Picture	Number of article
Arm Assembly		1
Cover 3		1
Holder Assy		1
Stylus		1

Item name	Picture	Number of article
Plate 2		2
Arm		2
Arm 2		4
Guide 5 & 6		1 1

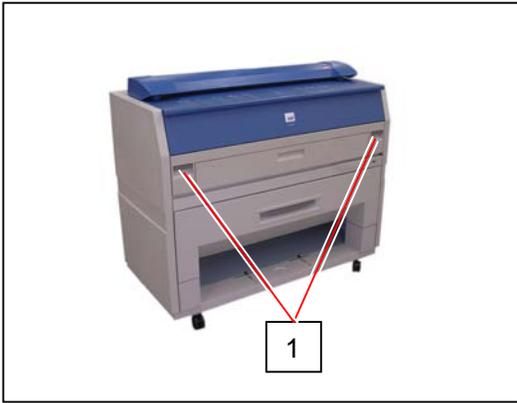
Item name	Picture	Number of article
Guide Sheets		2
Developer Handle		1
Starting Toner (500g) (Europe/Asia model only)		1
Toner Cartridge (300g) (Europe/Asia model only)		2

Item name	Picture	Number of article
Shading Sheet		1
Cap Assy	 <p>(2 for 1 Roll / 4 for 2 Rolls)</p>	2 or 4
4x8 Tooth Washer Screws 4x6 Bind Screw (for Arm Assembly)		8 1
3x8 Bind Screws (for Guide 4)		4

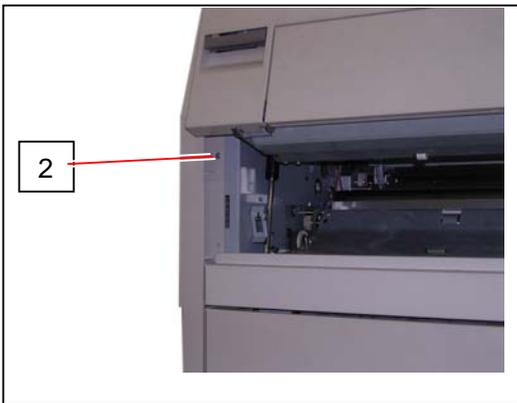
Item name	Picture	Number of article
Setup Procedure		1
User CD (Operator manual) (Europe/Asia model only)		1
Hardcopy of User's Manual (German) (Europe/Asia model only)		1

2. 3 Leveling the KIP 3100

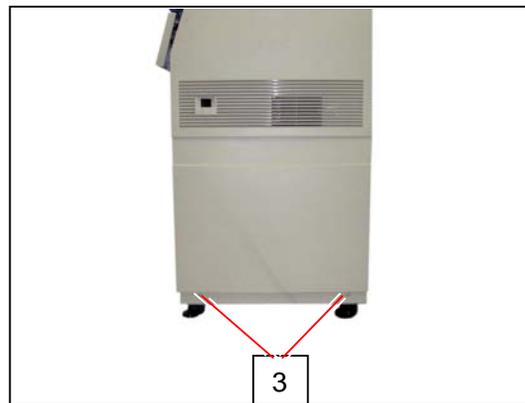
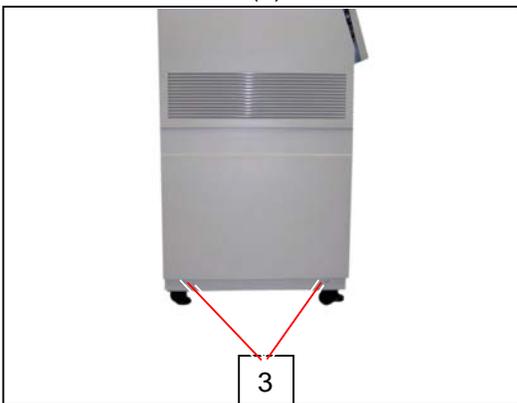
1. Pull up the Lever 2 (1) to open the Engine.



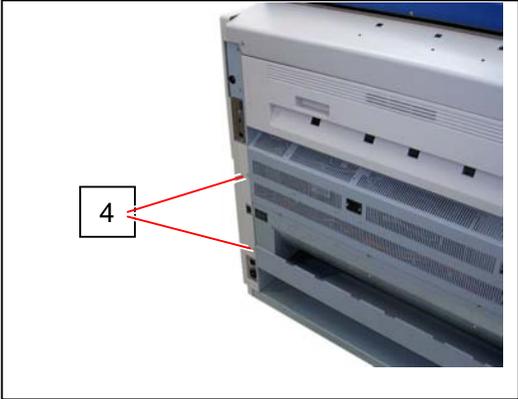
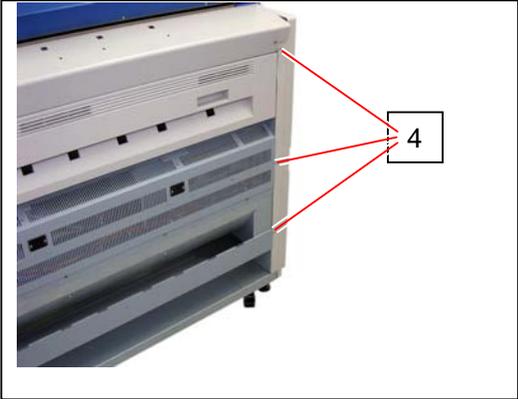
2. Remove the screws (2) at both sides.



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



4. Remove 5 screws (4) at the back on both sides. (3 pieces on the left and 2 pieces on the right)



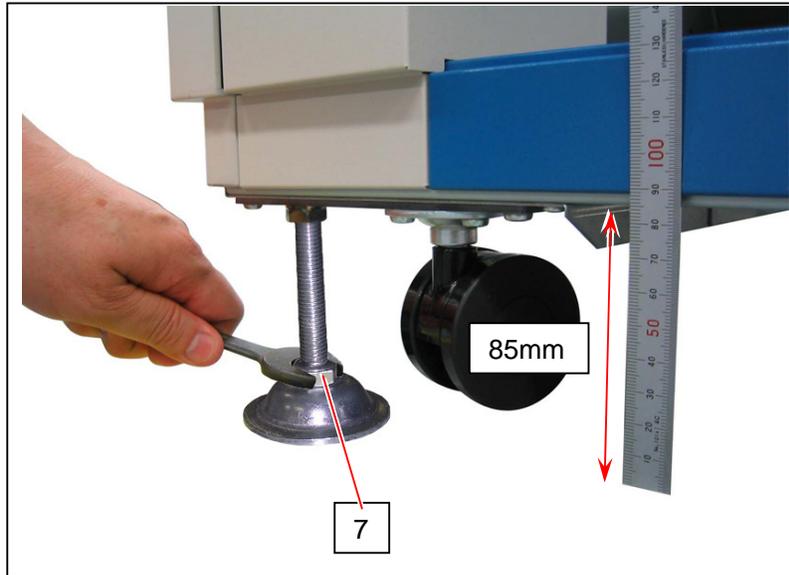
6. Remove the Cover 2 (5) and the Cover 3 (6).



7. Close the Engine Unit.



8. Rotate 4 Leveling Bolts (7) on the bottom of the KIP 3100 with a wrench to bring up the KIP 3100 from the floor.
Keep 85mm of distance between the bottom plate and the floor. (It is about 80mm before the adjustment.)

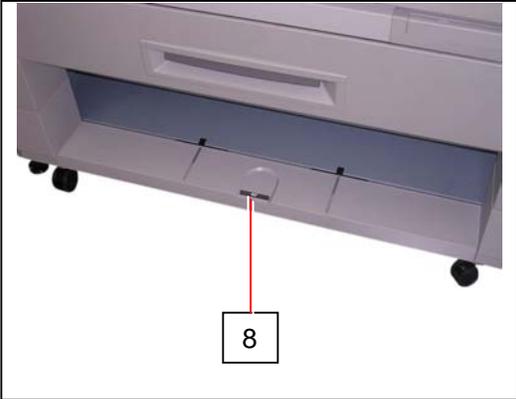


⚠ NOTE

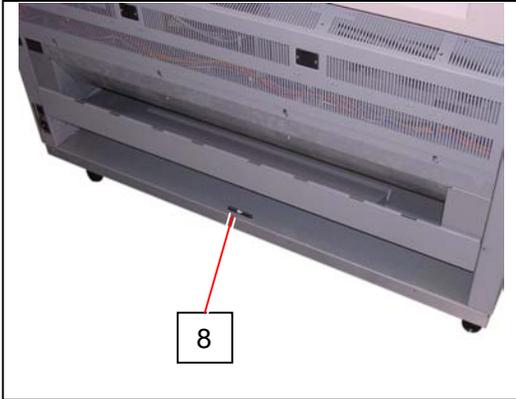
Do not rotate the Levelling Bolts too much.
If the distance between the bottom plate and the floor becomes wider than 95mm, the Adjuster Bolt may be removed.

9. Put a level (8) on the specified positions shown to check the level of the KIP 3100.
If not leveled, adjust by rotating the Adjustment Bolts.

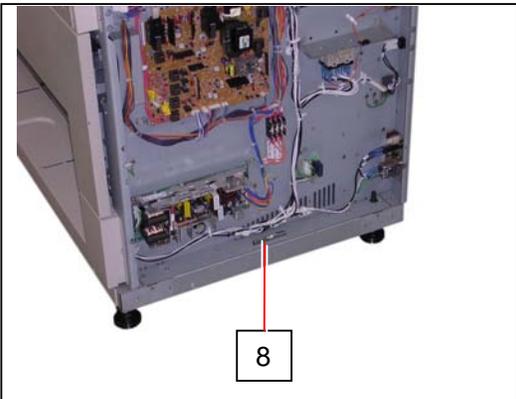
Front



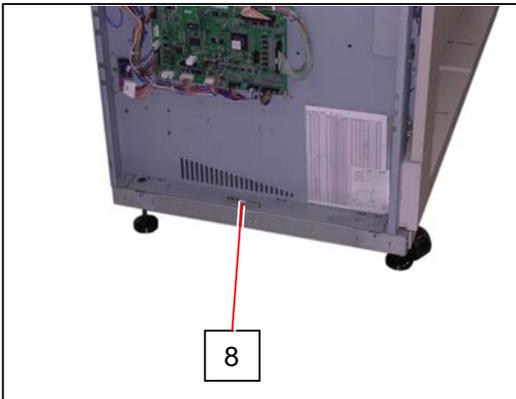
Rear



Right



Left

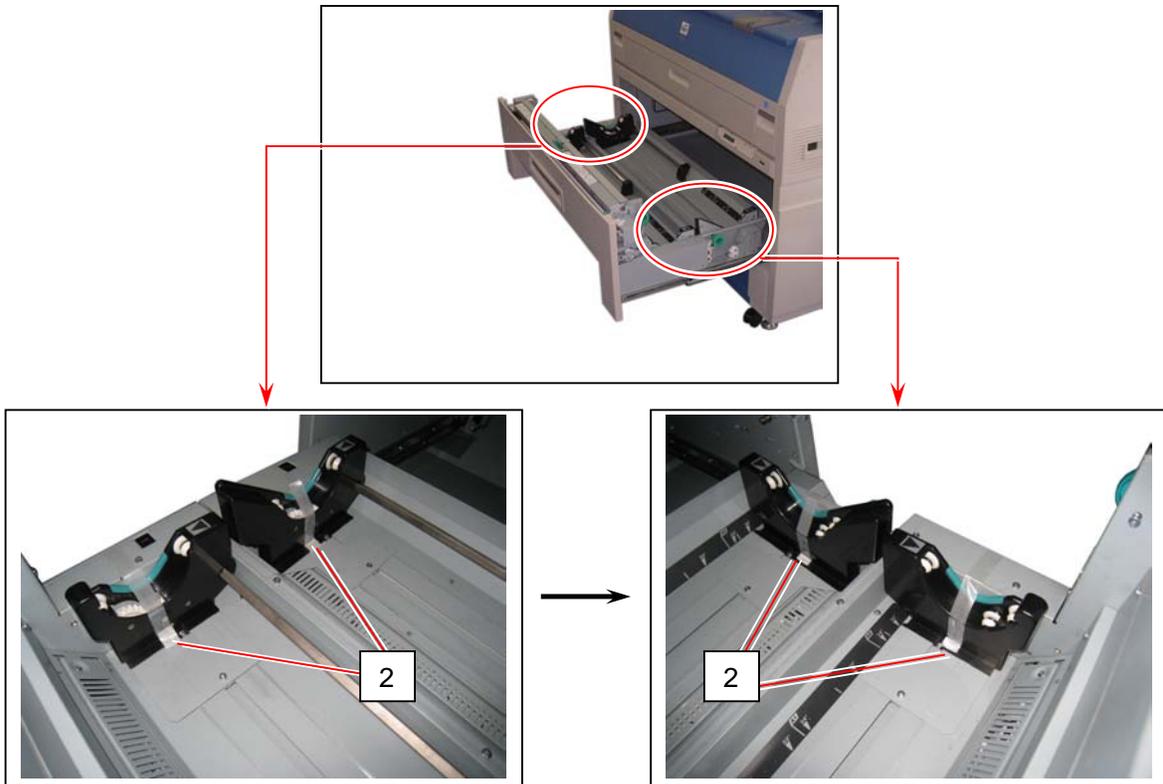


2.4 Setup of the Roll Deck

1. Open the Roll Deck (1).



2. Remove the tapes (2) from Roll Deck.



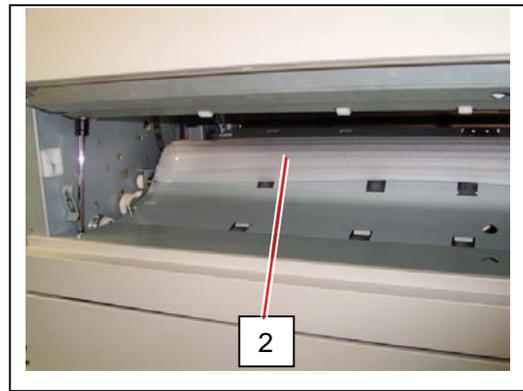
3. Close the Roll Deck.

2.5 Setup of the Machine

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



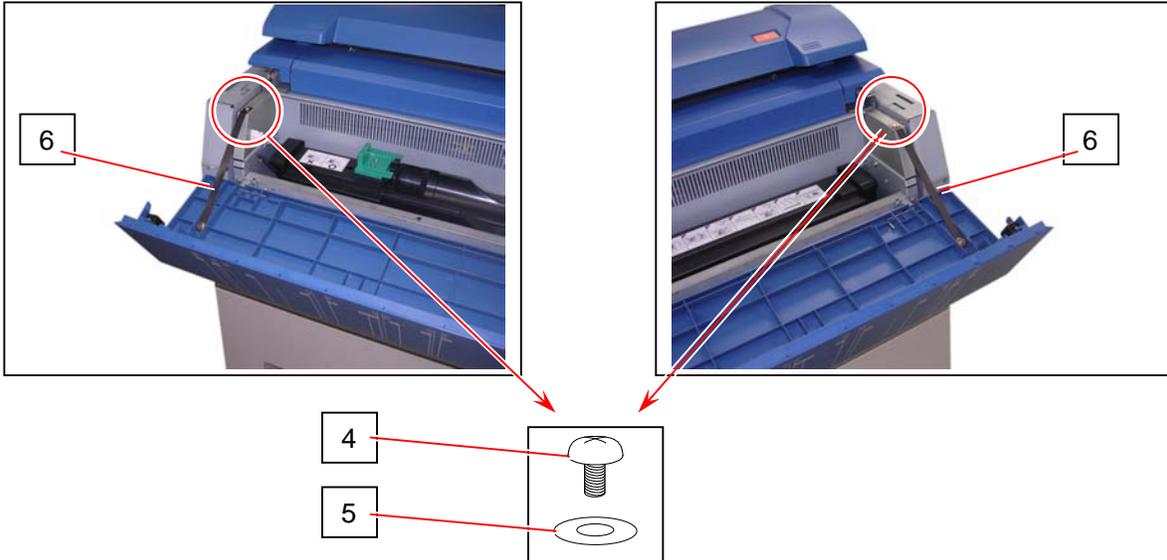
2. **Carefully remove** the protection mat (2) under the Drum.



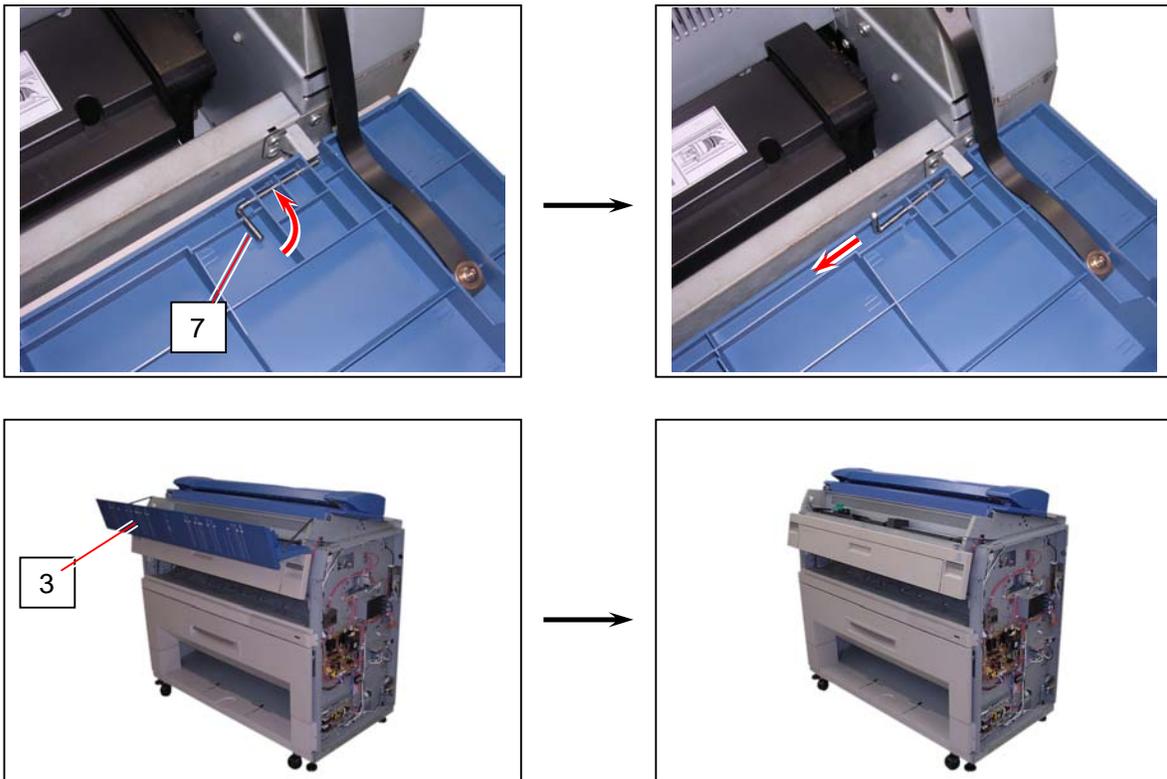
3. Open the Cover 4 (3).



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



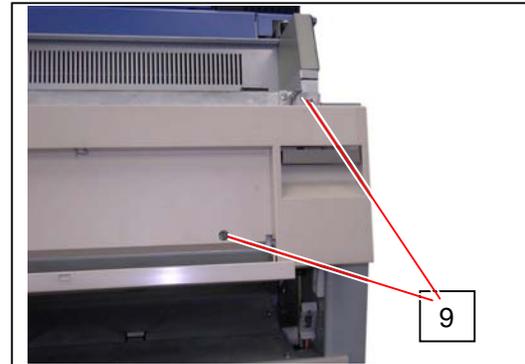
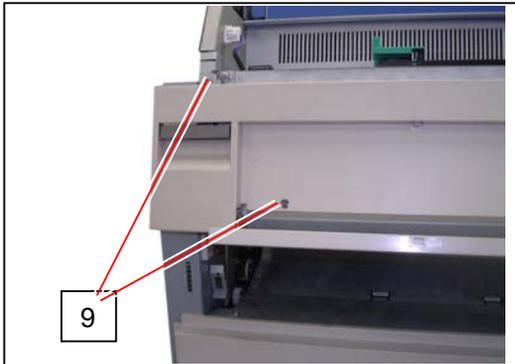
5. Rotate up the Pins (7) and move them to the inside to pull them out from the holes. Remove the Cover 4 (3).



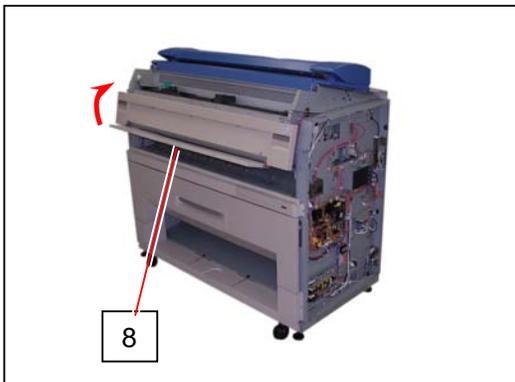
6. Open the Bypass Feeder (8).



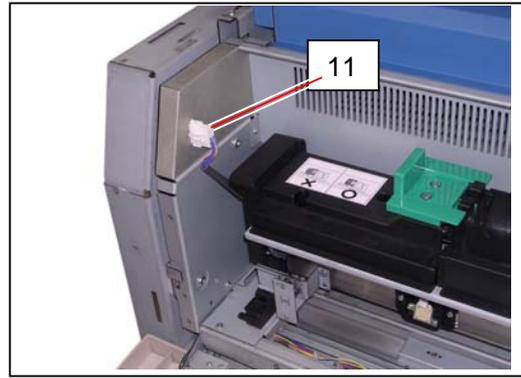
7. Remove 4 pieces of screw (9).



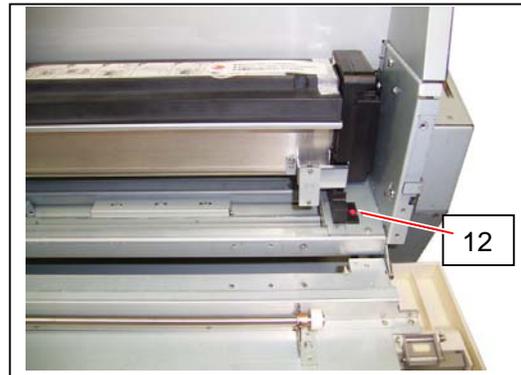
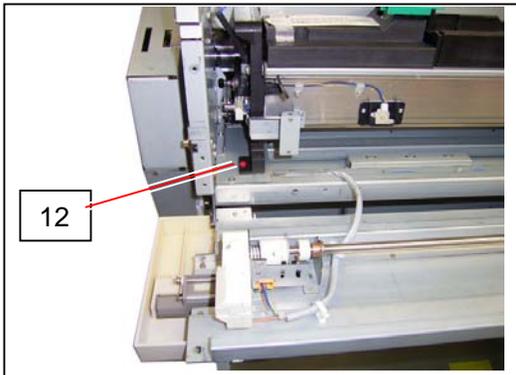
8. Close the Bypass Feeder (8). Open the Developer Press Unit (10).



9. Disconnect the connector (11).



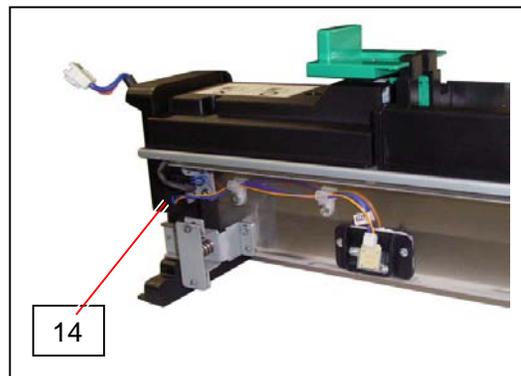
10. Remove 2 pieces of red screw (12) at both sides of the Developer Unit, which protect the Developer Unit from vibration during transportation. (They are no longer required.)



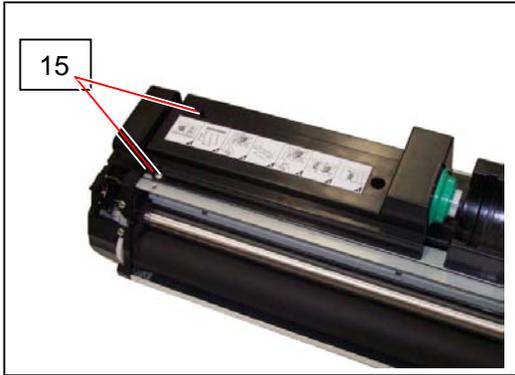
11. Holding both side plates firmly, slide the Developer Unit (13) out of the machine.



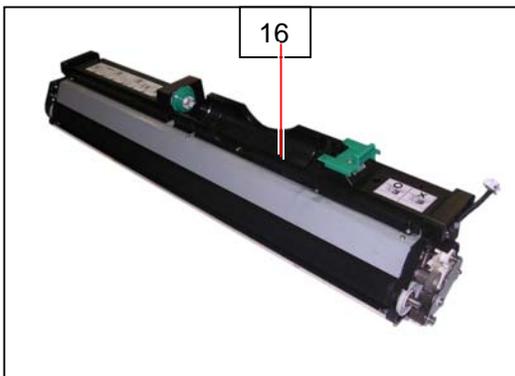
12. Disconnect the connector (14).



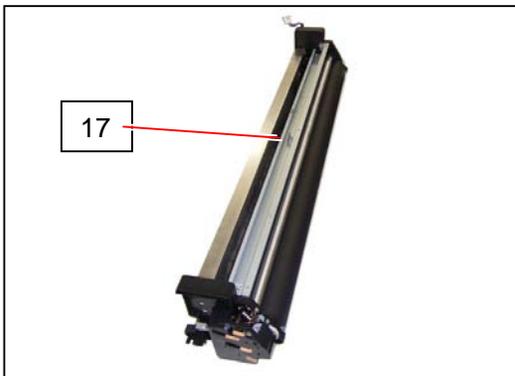
13. Remove 4 screws (15).



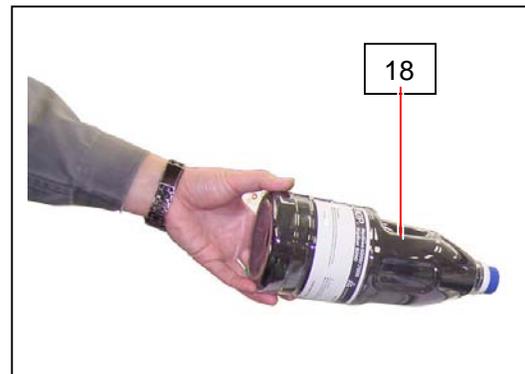
14. Remove the Hopper Assembly (16).



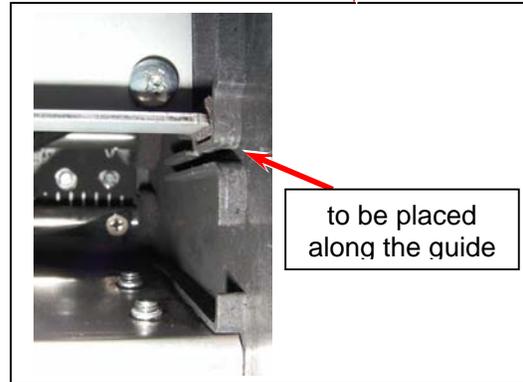
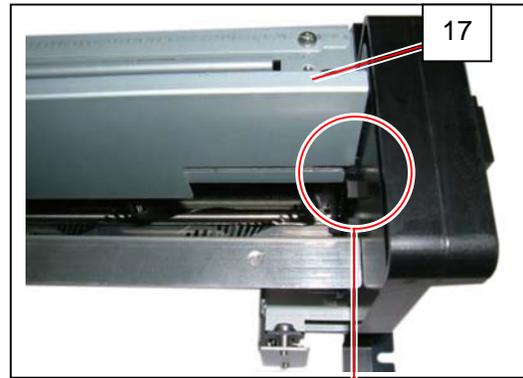
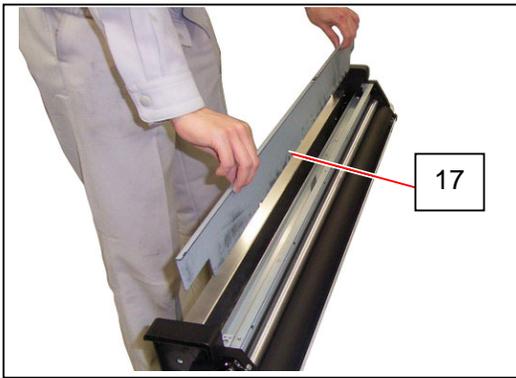
15. Remove the Separator (17).



16. Shake the Starting Toner Bottle (18) well, and add the toner to the Developer Unit.
(Please even out the toner in the Developer unit.)

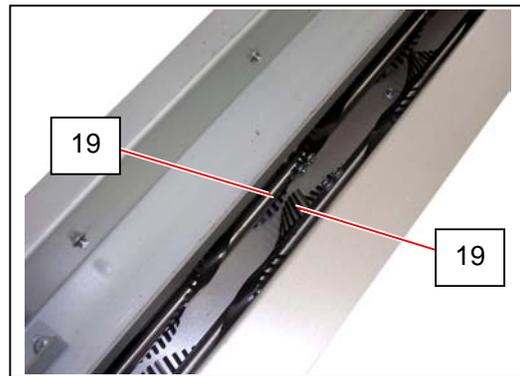
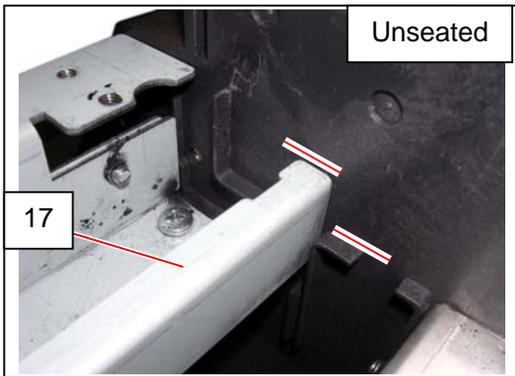


17. Along the guide on the side plates, gently place Separator (17) on the added toner.
Do not push it in.

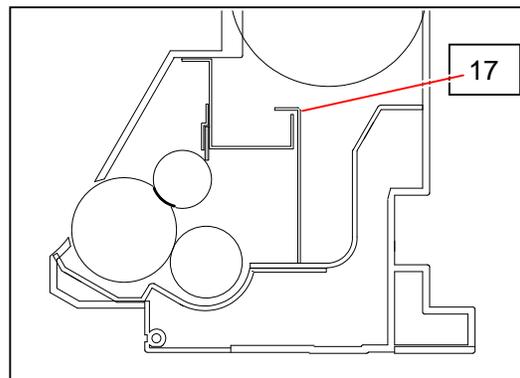


NOTE

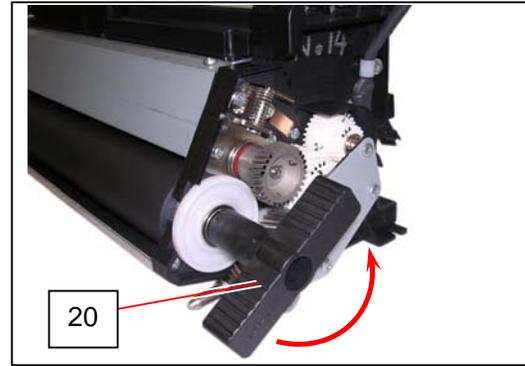
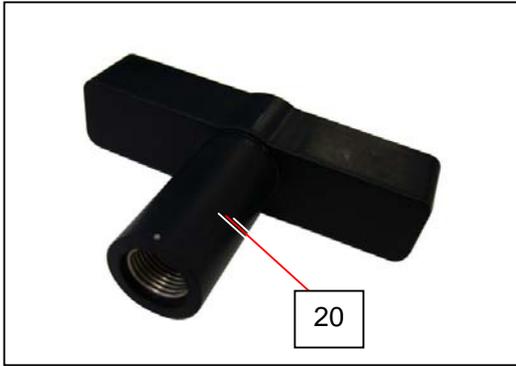
- (1) Just put Separator (17) on the toner. It will be placed unseated. Do not push it completely at this time. Doing so may damage the plastic screw sheets (19) on the 2 shafts.



- (2) Be careful of the direction of Separator (17). Do not install it in the wrong direction.

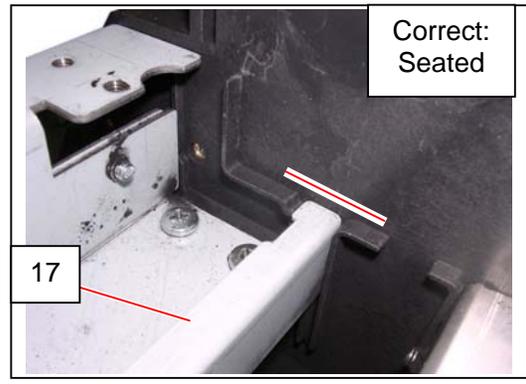
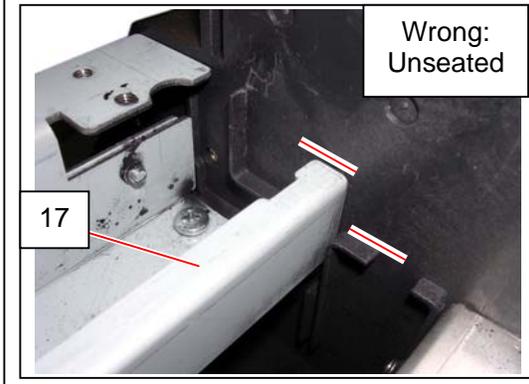


18. Insert Developer Handle (20) to the shaft of Roller Developer, and gently turn Developer Handle (20).
Separator will sink in the toner. Turn Developer Handle (20) until Separator sinks in position.

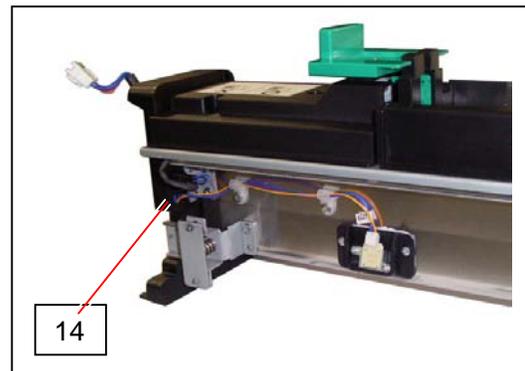
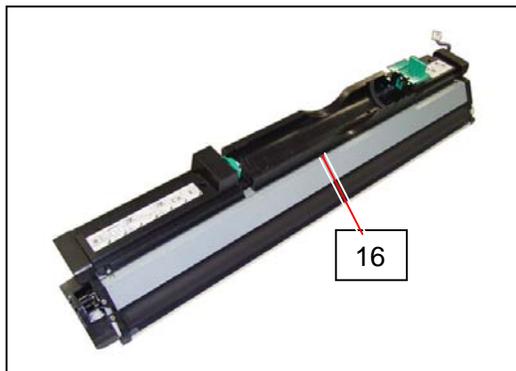


! NOTE

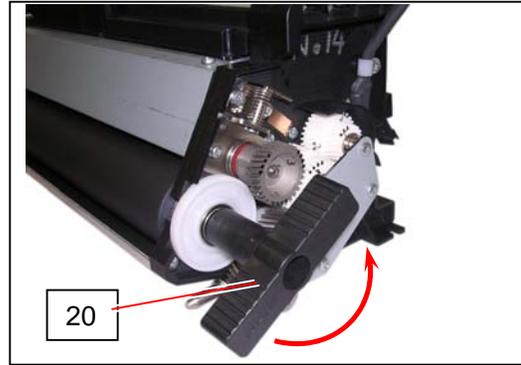
- (1) Slowly turn Developer Handle. Otherwise the toner may spill out.
(2) Make sure that Separator (17) completely sinks in position by a 1/2 or more rotation of Developer Handle.
If not in position, the plastic screw sheets may be damaged at the next step.



19. Replace the Hopper Assembly (16) and connect the connector (14).



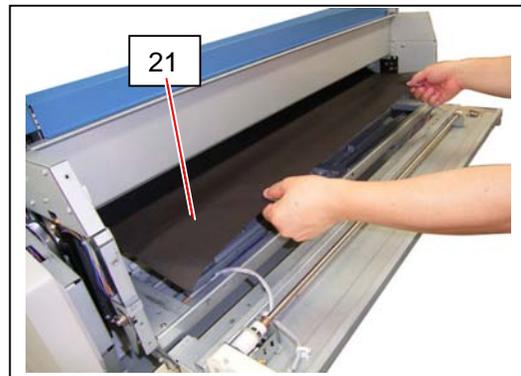
20. Insert the Developer Handle (20) to the shaft of Roller Developer, and rotate the Roller Developer several times so that its surface is covered with the toner.



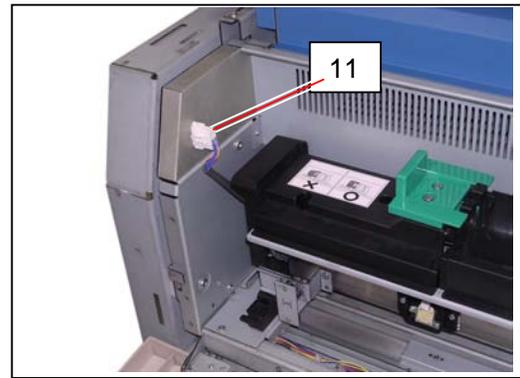
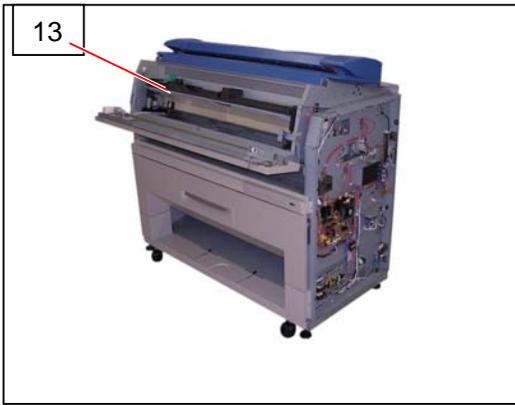
⚠ NOTE

Do not install the Developer Unit at this time, as it must be removed when you setup the Drum in the later procedure.

21. 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.

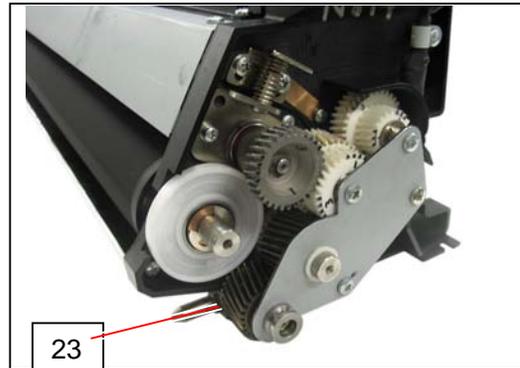
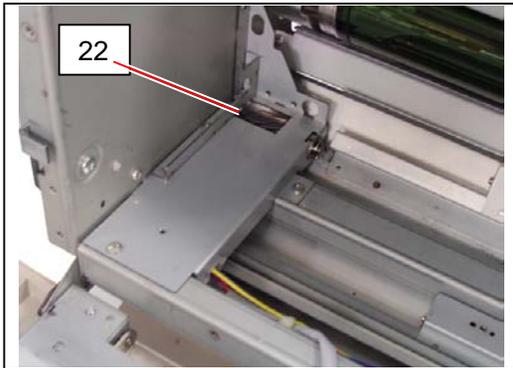


22. Install the Developer Unit (13) to the machine. Connect the connector (11).

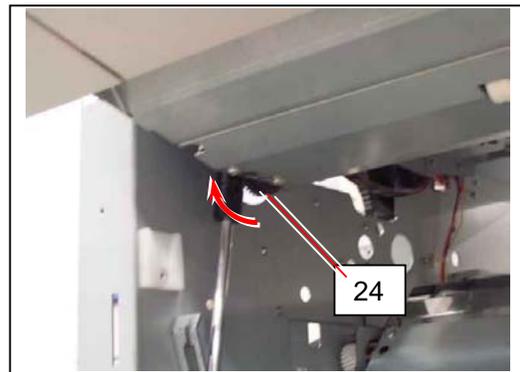
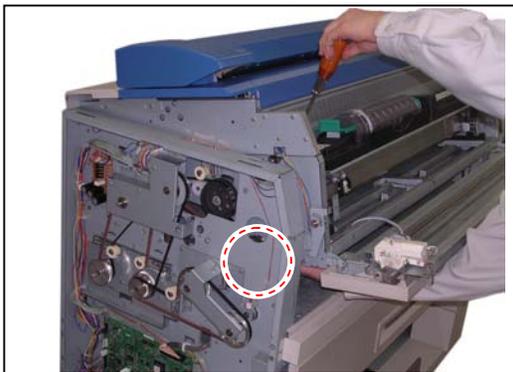


! NOTE

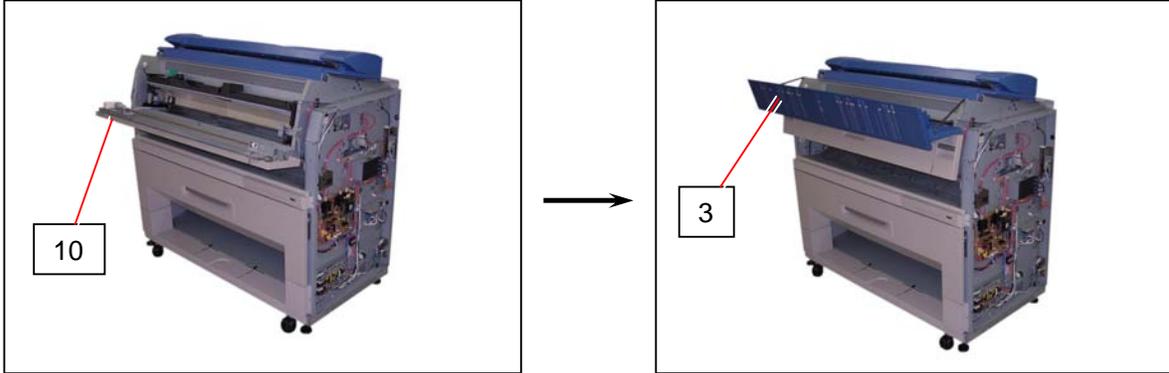
Both the Gear Helical 20T (22) on machine side and the Gear Helical 28T (23) on Developer Unit side must be in gear firmly with each other, but they may not be in gear with each other by just installing the Developer Unit to the machine.



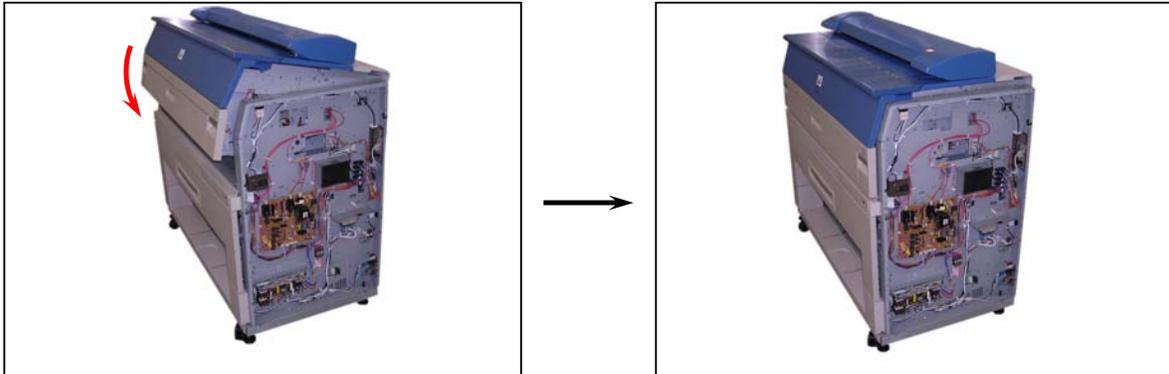
After installing the Developer Unit to the machine, rotate the Gear Helical 34T (24: instead of Gear Helical 20T) by hand from under the Engine Unit. Both gears will be in gear by this way.



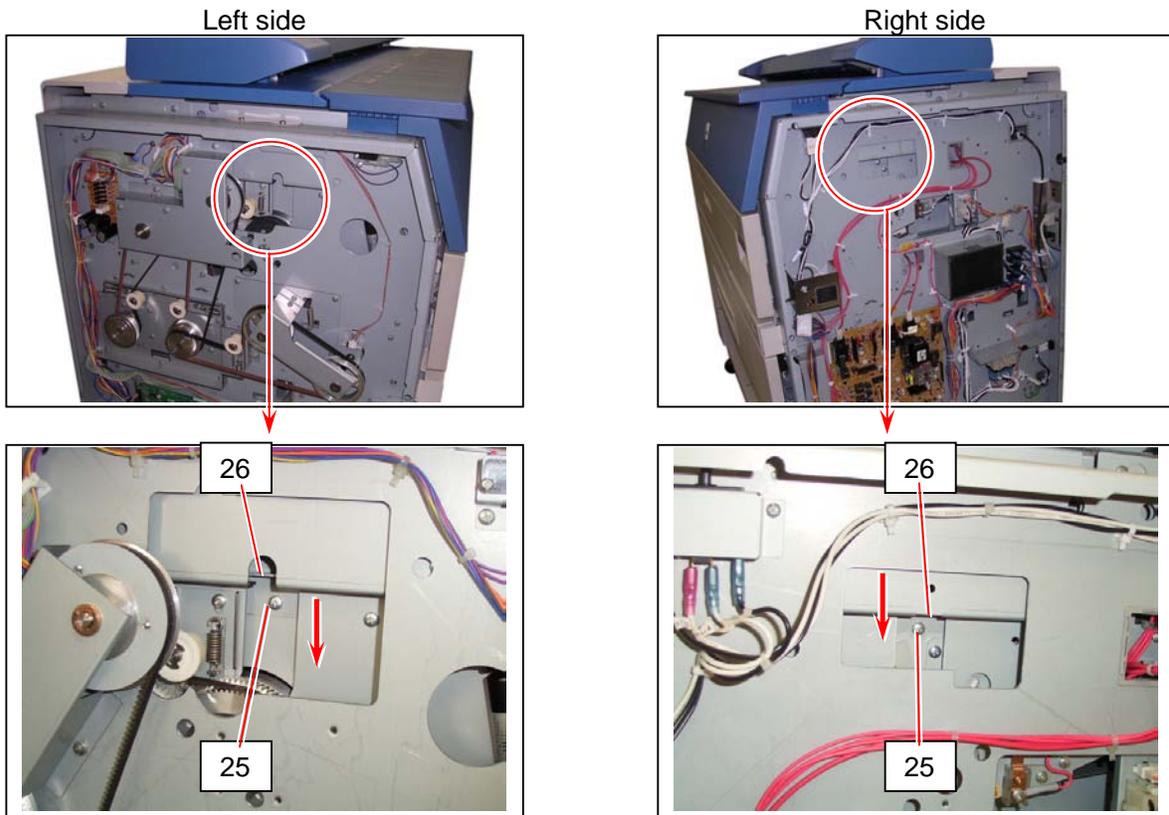
23. Close and fix the Developer Press Unit (10), and put back the Cover 4 (3).



24. Close the Engine Unit.



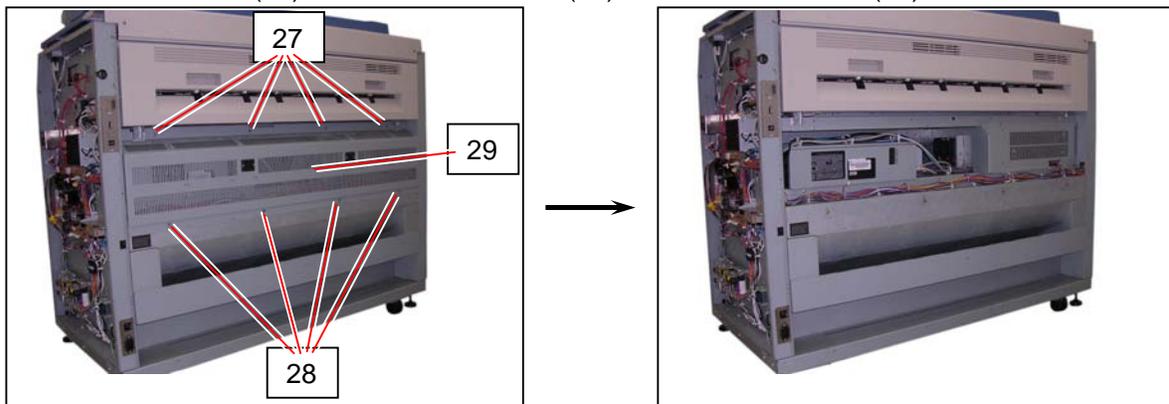
25. Both the LED Head and the Image Corona are locked with the screws (25) being separated from the Drum, not to be damaged during the transportation. Loosen the screws (25) to unlock the Fixing Brackets (26) at both sides. Pressing down the Fixing Brackets (26) firmly, tighten the screws (25).



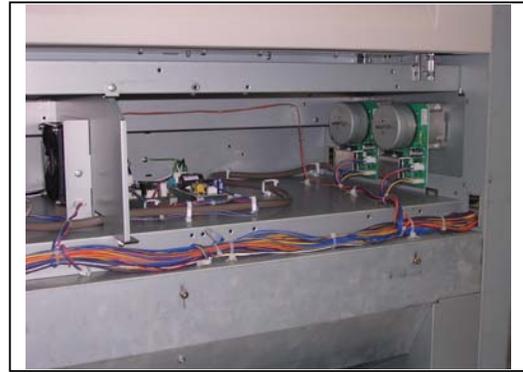
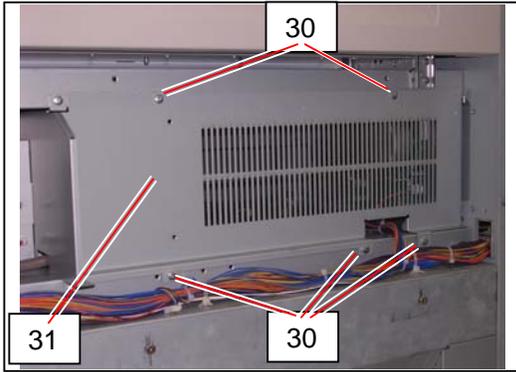
NOTE

Please satisfy the following requirements before performing Step 25.
 (1) The black sheet has been removed from the Drum. (See the former procedure 21.)
 (2) The Engine Unit is closed firmly. (See the former procedure 24.)
 Otherwise a proper distance can not be kept between LED Head and Drum.

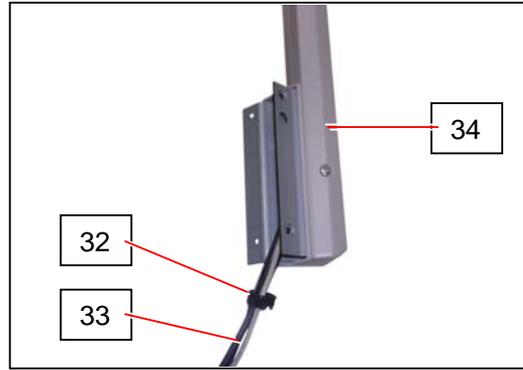
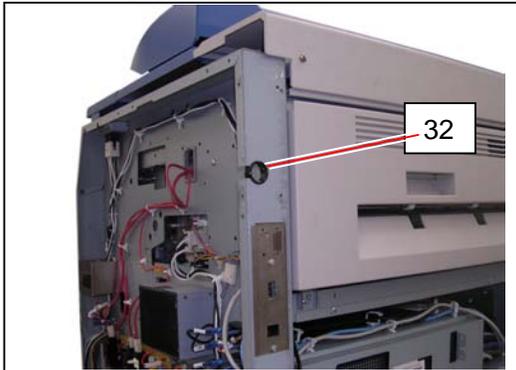
26. Remove 4 screws (27) and loosen 4 screws (28) to remove Cover 15 (29)



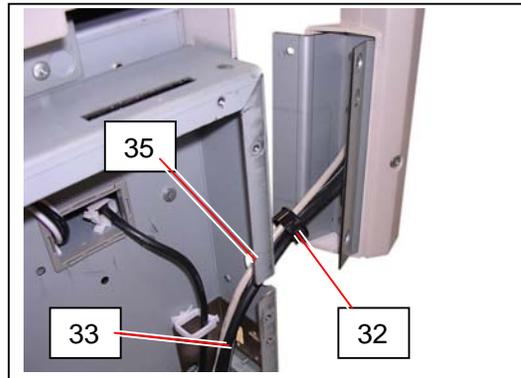
27. Remove 5 screws (30) to remove Case 5 (31).



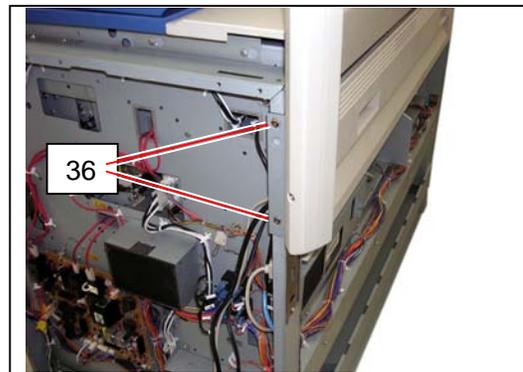
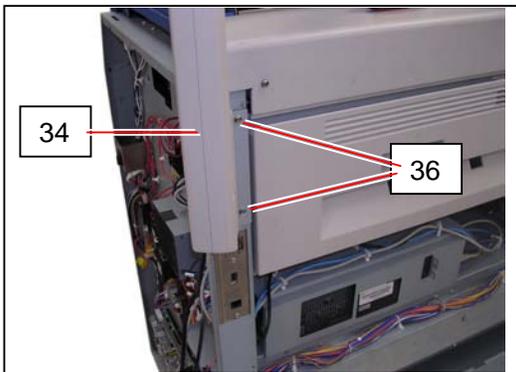
28. Remove Bushing (32) from the frame and insert it onto the harnesses (33) of Arm Assembly (34).



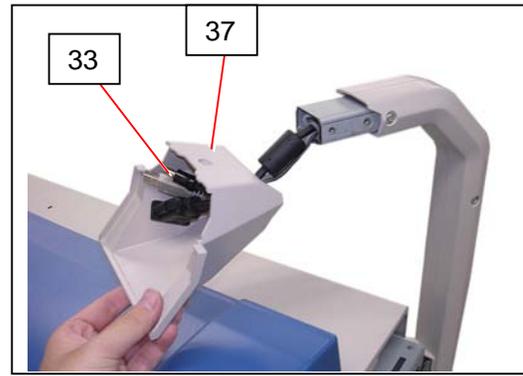
29. Route the harness (33) and fit Bushing (32) to the original position (35).



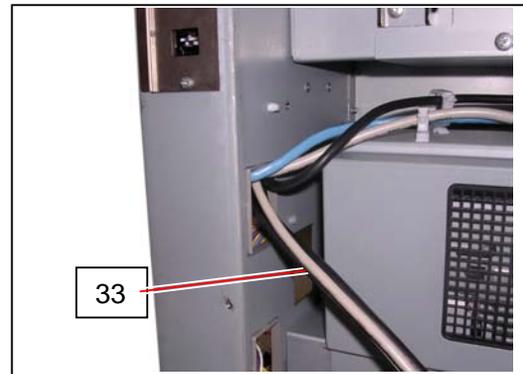
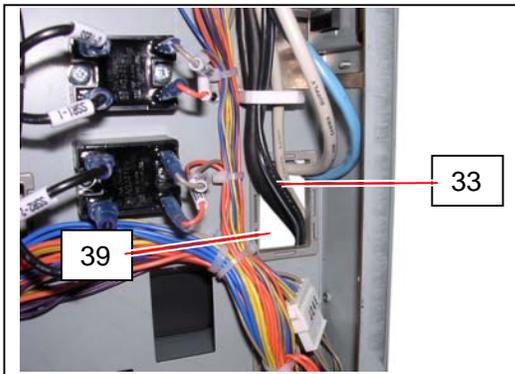
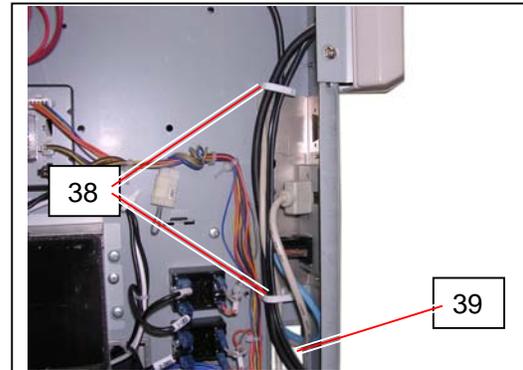
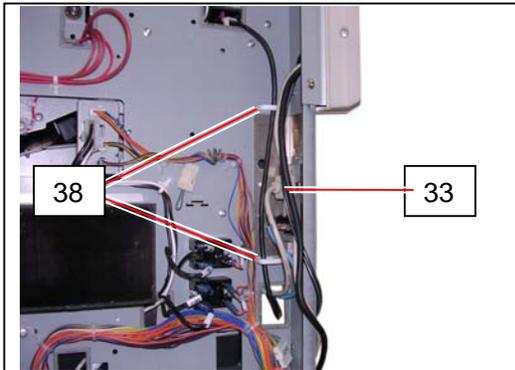
30. Fix Arm Assembly (34) to the frame with 4-4x8 tooth washer screws (36).



31. Pass through the harnesses (33) to the Arm Cover (37).



32. Secure the harnesses (33) with the wire saddles (38). Pass through the harnesses (33) to the square hole (39).

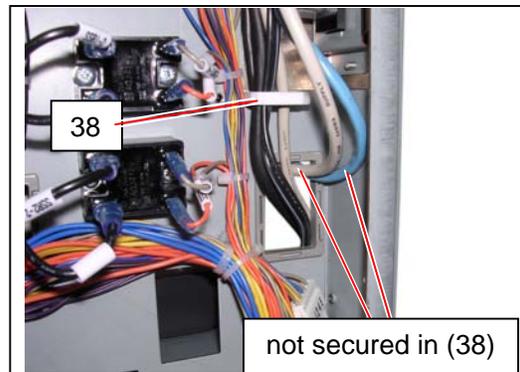


! NOTE

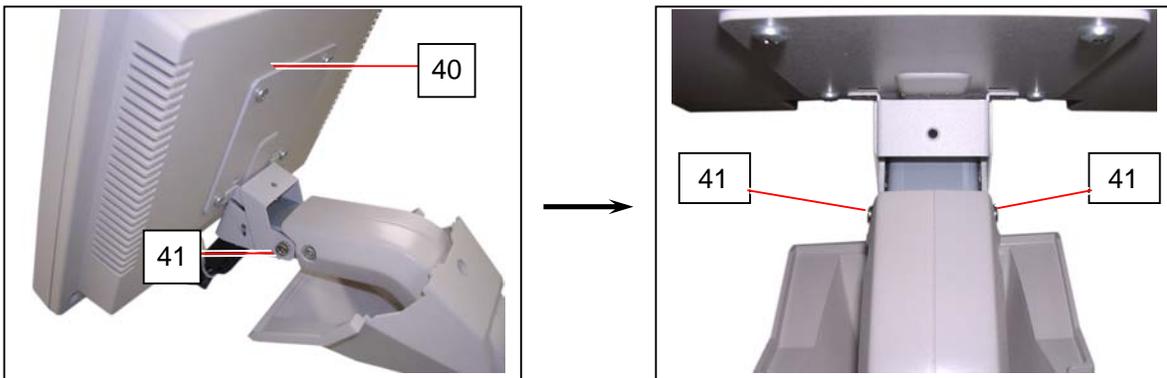
There are 2 kinds of cable inside of the machine. One is the internal cable such as VGA Cable, USB Cable (of the scanner, monitor) and Power Supply Cable and the other is the external one such as LAN Cable, USB Relay Cable or Folder Cable (Option).

These 2 kinds of cable must not be bundled with the same Wire Saddle because an electric noise problem may occur.

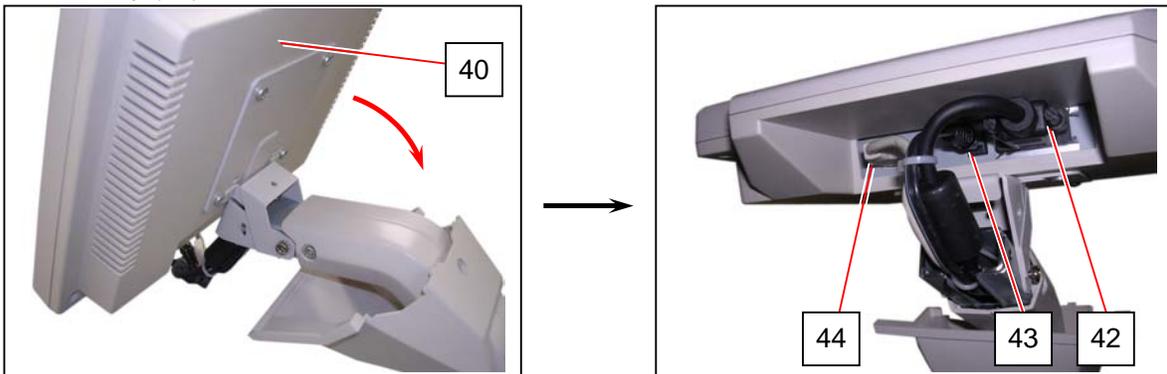
Therefore bundle the internal cables only with the Wire Saddles (38) at this time.



33. Attach Monitor Assembly (40) to Arm Assembly. Fix it with 2-4x8 tooth washer screws (41) of accessory loose so that it can turn upward on the screws (41).

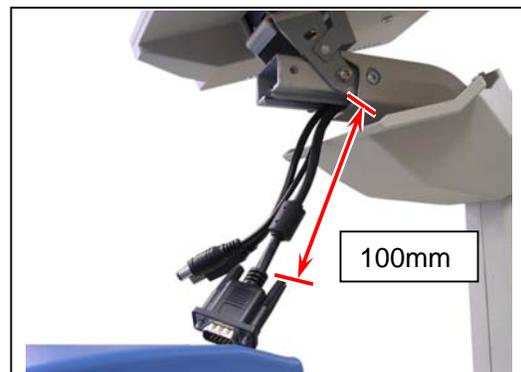


34. Lean Monitor Assembly (40) back. Check that the exposed cables' length is about 100mm. Connect VGA Cable (42), Power Supply Cable (43), Monitor USB Cable (44) to Monitor Assembly (40).

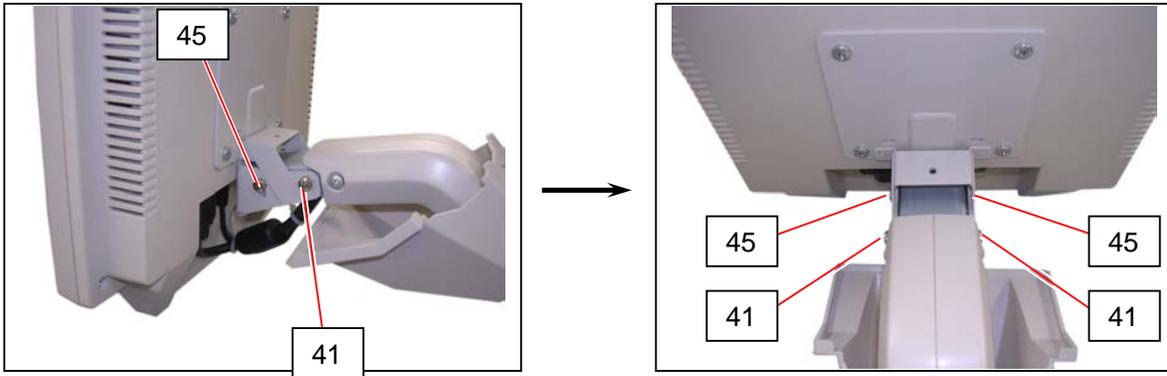


NOTE

- (1) Pull out the harnesses from the bottom opening of Arm Assembly about 100mm. Adjust the exposed length with pulling the harnesses on the other opening of Arm Assembly. But do not pull out the harnesses too much. Otherwise an electric noise problem may occur.
- (2) Visually confirm the shape of each connector and its connecting direction to connect the cables correctly.

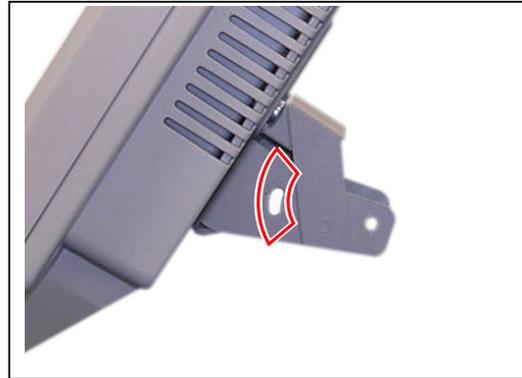


35. Install 2 more 4x8 tooth washer screws (45) of accessory to the longer screw holes. Secure the screws (45) in the top of the longer holes on Monitor Assembly. Secure the screws (41) (45) to fix Monitor Assembly (40).

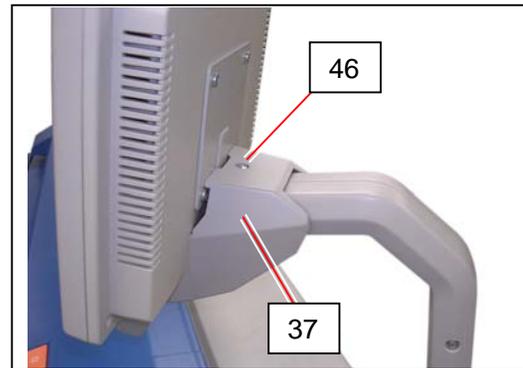


Reference

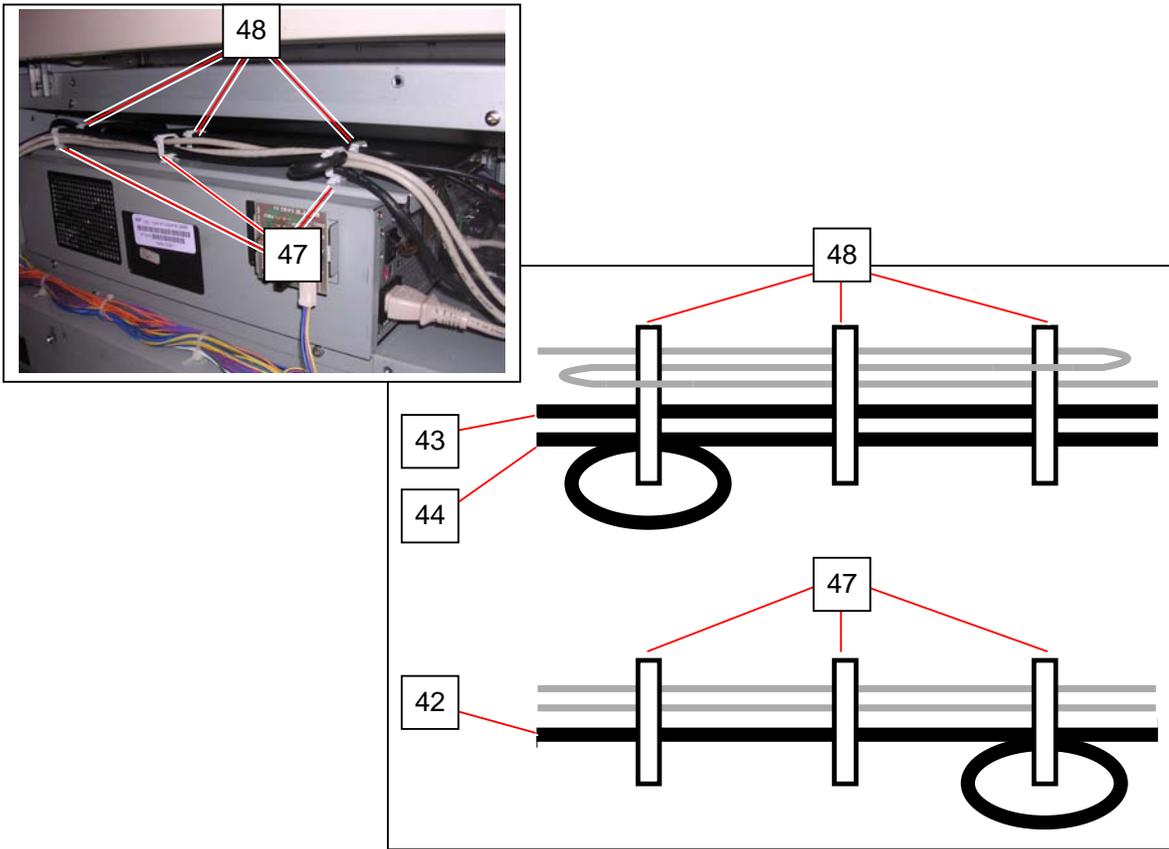
Monitor Assembly can be tilted up (in 5 degree maximum) by adjusting the location of the tooth washer screws (45).



36. Fix Arm Cover (37) with 1-4x6 bind screw (46) of accessory.



37. Secure VGA Cable (42) with the outside wire saddles (47). Secure Power Supply Cable (43) and Monitor USB Cable (44) with the inside wire saddles (48).

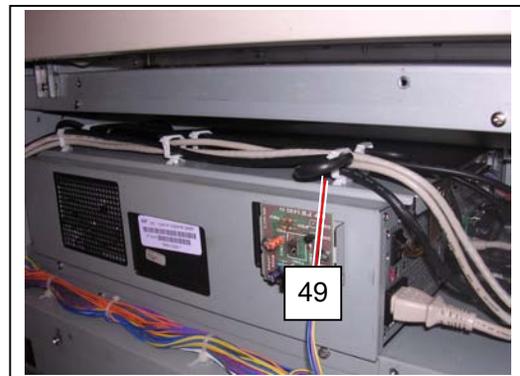


NOTE

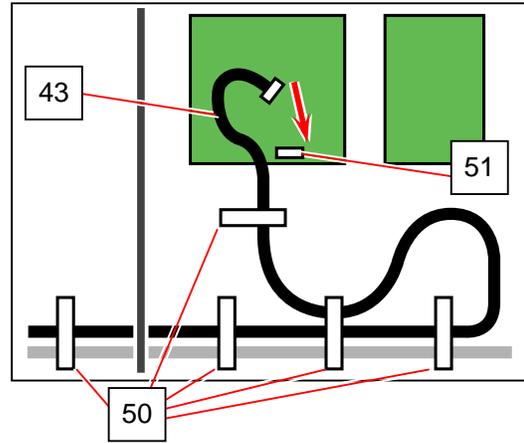
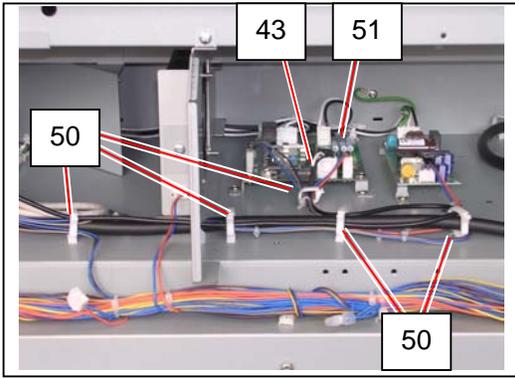
(1) There are 6 wire saddles in 2 rows on the cover. The inside line (48) is for internal cables (Power Supply Cable (43), Monitor USB Cable (44), Scanner USB Cable). Note that the outside line is for external cables (VGA Cable (42), LAN Cable, USB Relay Cable or optional Folder Cable). Mixing the internal/external cables up may cause electric noise.

	before (factory)	after (setup completion)
inside line (48)	Scanner USB	Scanner USB Monitor USB (44) Power Supply (43)
outside line (47)	LAN USB Relay	LAN USB Relay VGA (42) Folder (option)

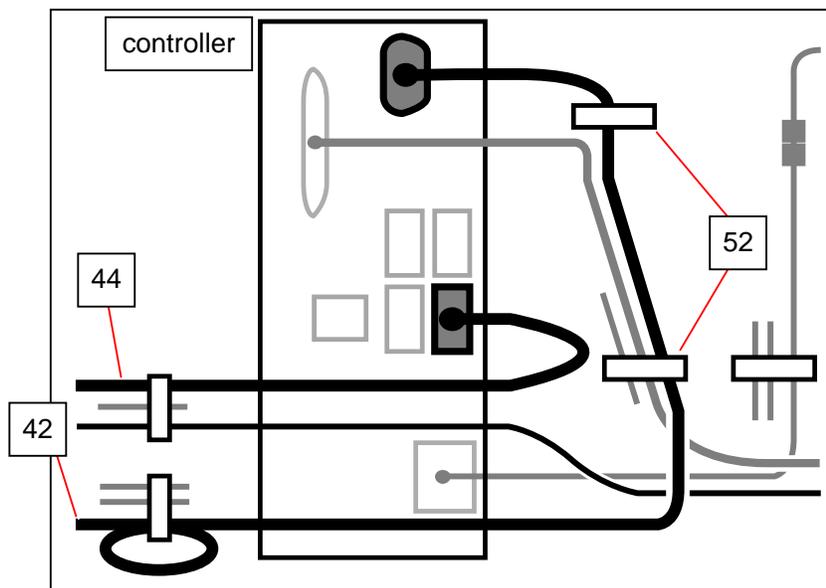
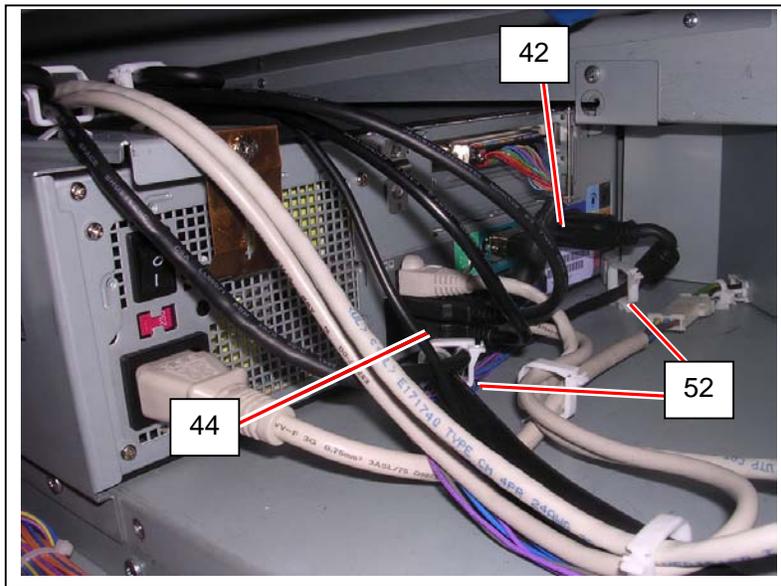
(2) Route an excessive VGA Cable (49) into loop at the shown wire saddle so that the loop keeps away from the inside line.



38. Secure Power Supply Cable (43) with wire saddles (50) and connect it to the connector on DC Power Supply (51).



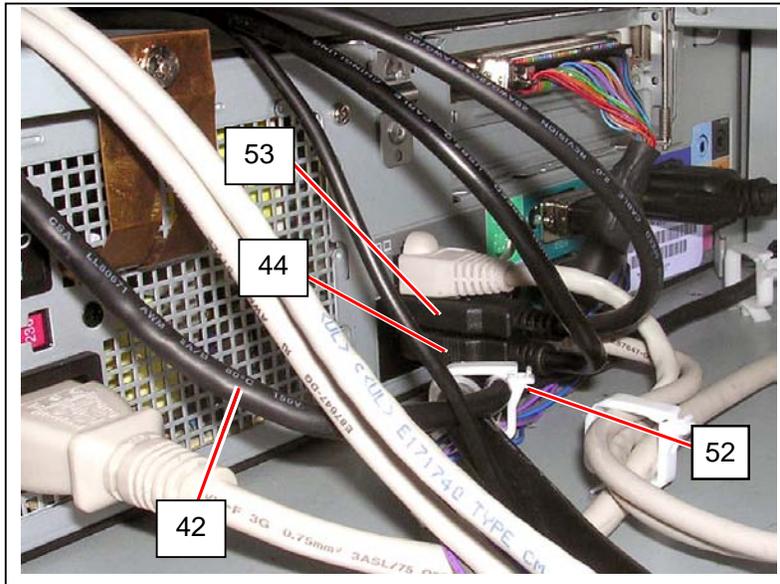
39. Connect Monitor USB Cable (44) to the lower USB port and VGA cable (42) to VGA port on the controller respectively. Secure VGA Cable (42) with 2 wire saddles (52).



(continued on the next page)

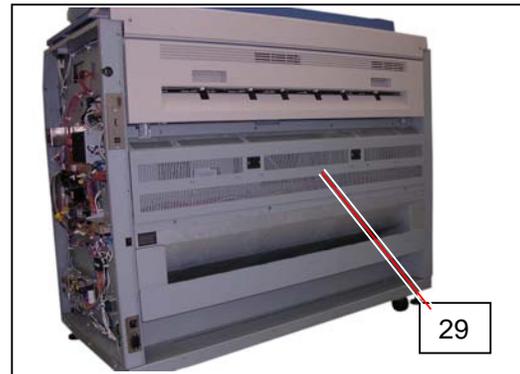
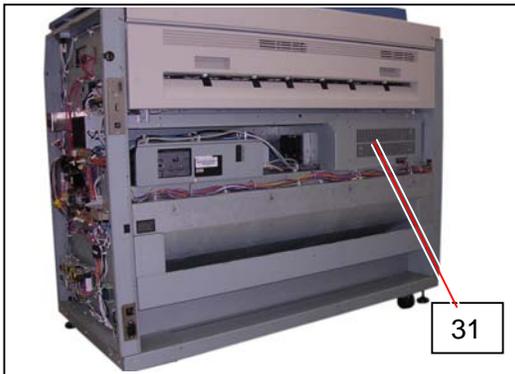
! NOTE

- (1) There are two USB ports under the network connector on IPS. Monitor USB Cable (44) is to be connected to the lower USB port. The upper one should be occupied by Scanner USB Cable (53). Do not interchange the USB Cables.

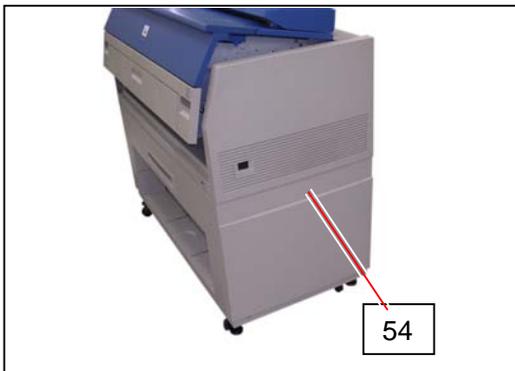


- (2) Secure only VGA Cable (42) with the wire saddle (52) besides USB connector of the controller. Do not bundle USB Cables (44) (53) together. USB Cables may cause electric noise.

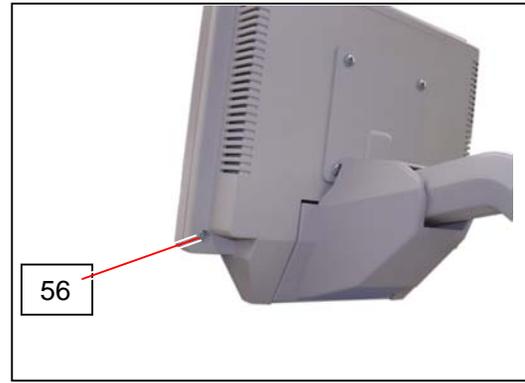
40. Replace Case 5 (31) and Cover 15 (29).



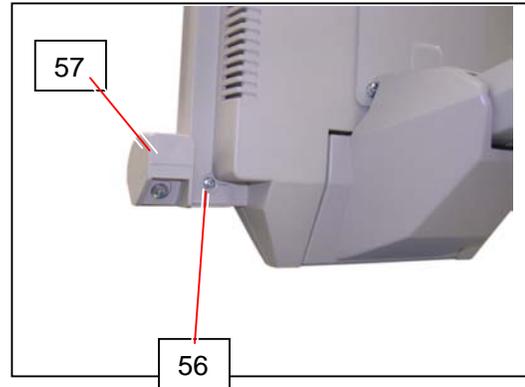
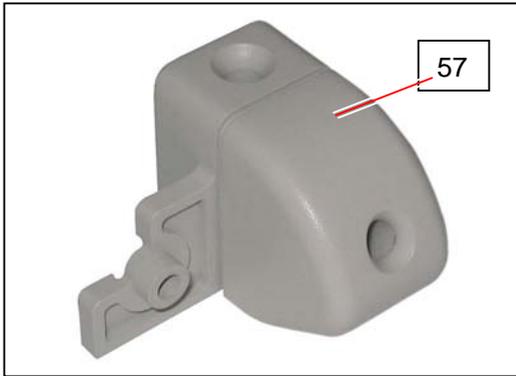
41. Replace Cover 2 (54) and Cover 3 (55).



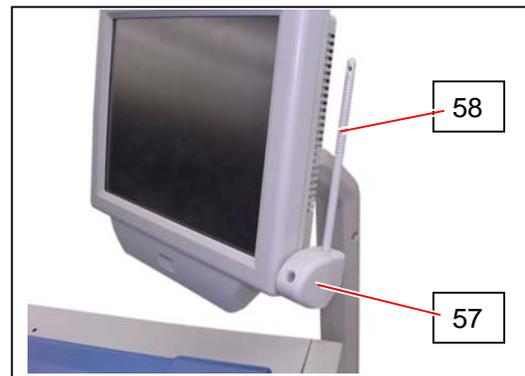
42. Remove 1 screw (56) on the lower left corner of the back of Monitor Assembly.



43. Attach Holder Assy (57) to the corner shown as follows and fix it with the screw (56).

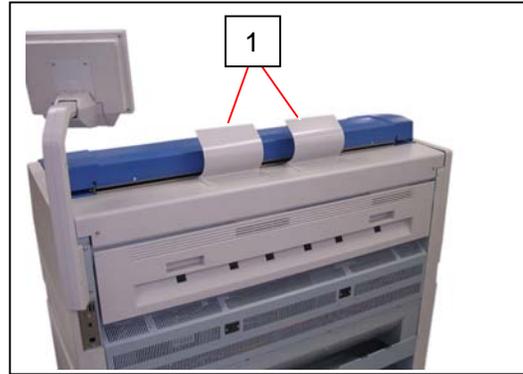
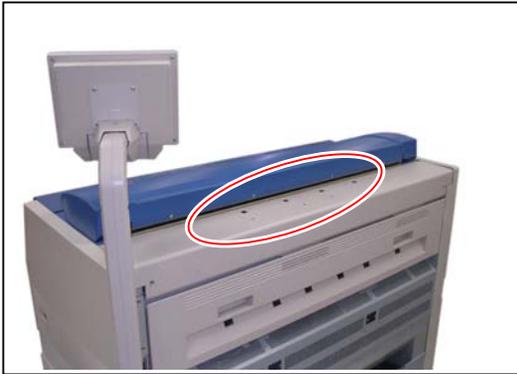


44. Place the Stylus (58) to the Holder Assy (57).



2. 6 Installation of Accessories

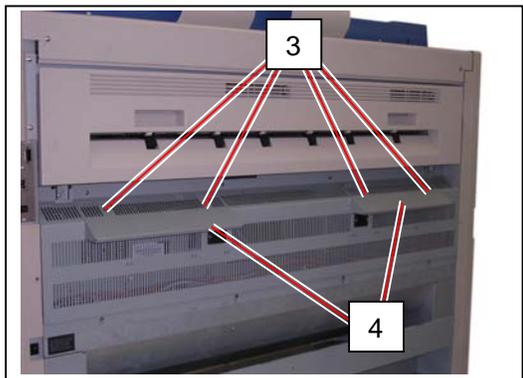
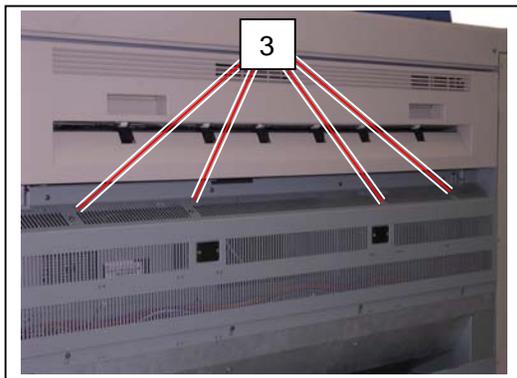
1. Fit 2 Guide 3 (1) to the notches on the Cover 10.



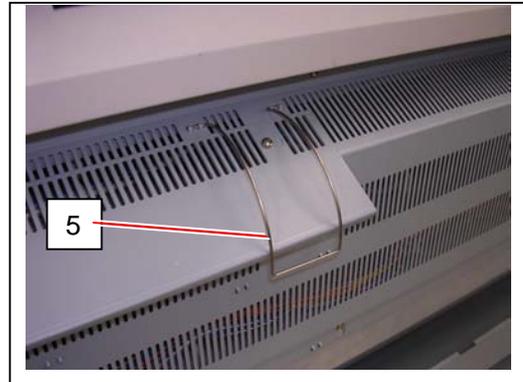
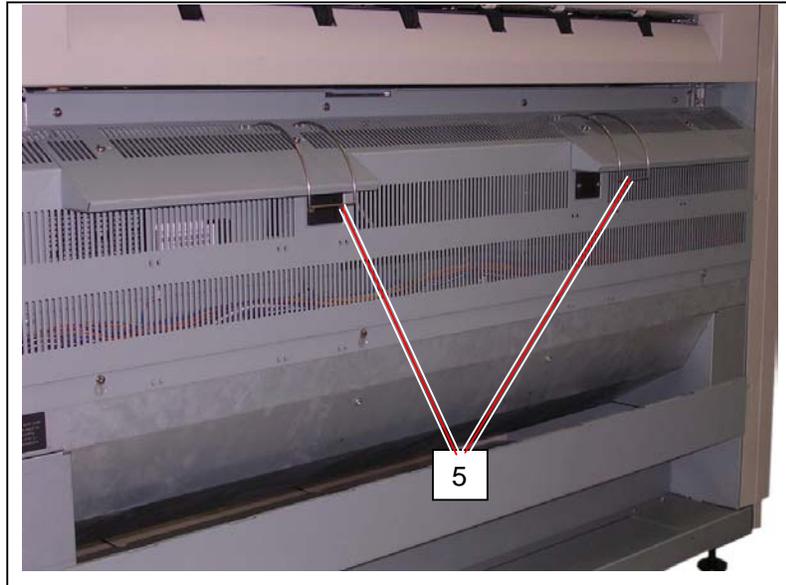
2. Fit the Guide 1 & 2 (2) to the Cover 4.



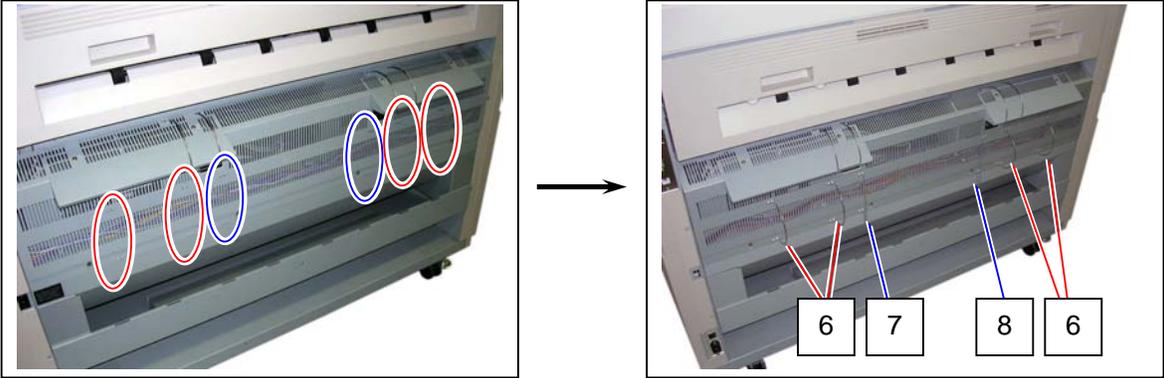
3. Loosen 4 screws (3), fit the Plate 2 (4) to the screws (3), and tighten the screws (3).



4. Install 2 pieces of Arm (5).

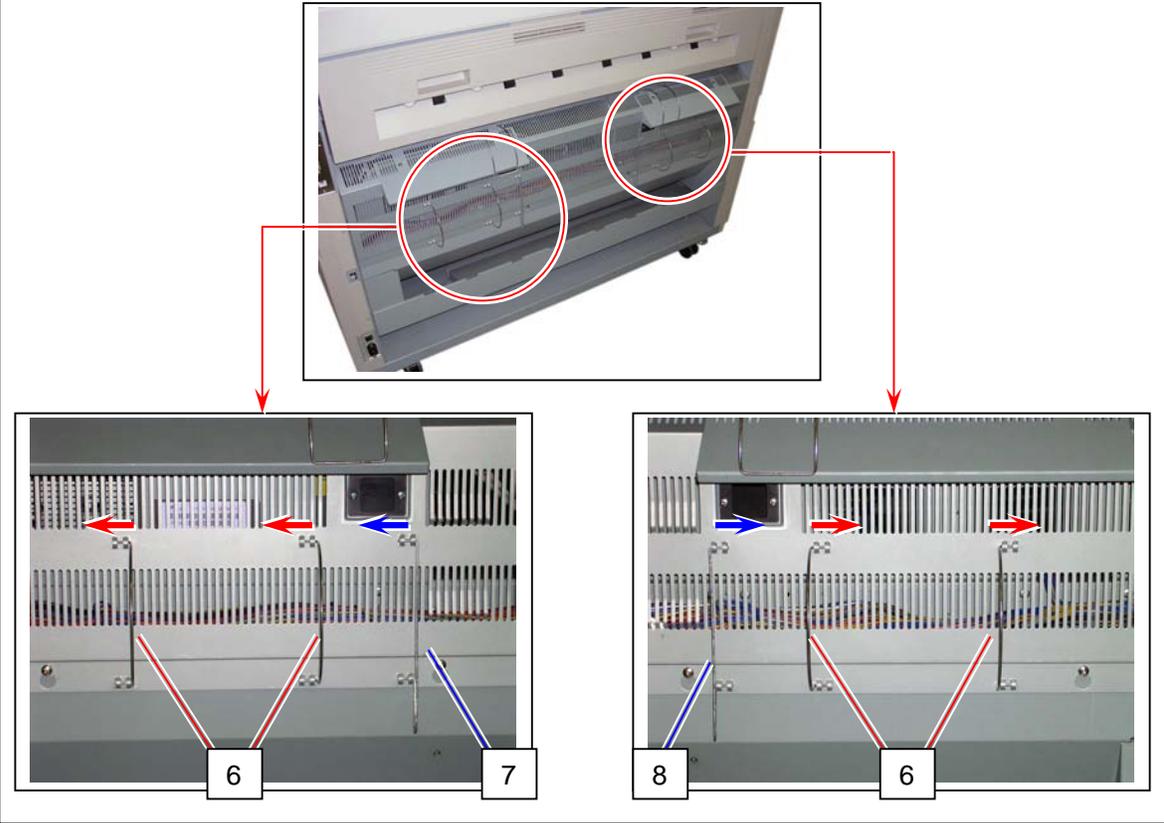


5. Install Arm 2 (6), Guide 6 (7), Guide 5 (8).

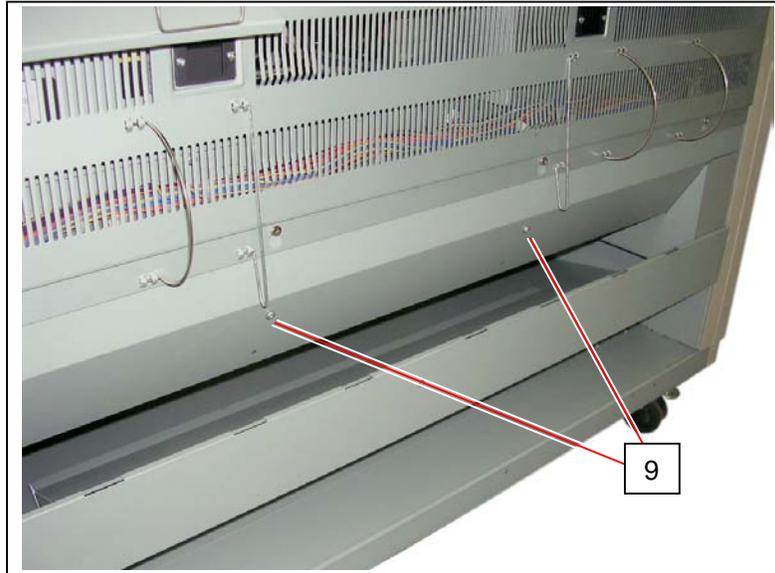


NOTE

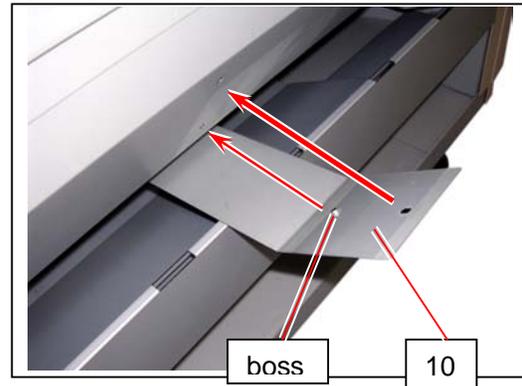
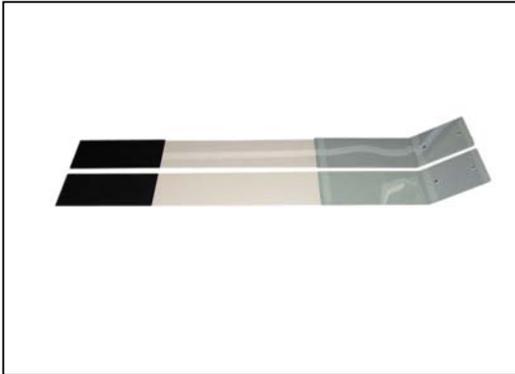
Insert all Arm 2 (6), Guide 6 (7), Guide 5 (8) as the following photos. (Be careful of the direction of insertion.)



6. Remove 2 - 4x6 Bind Screws (9).



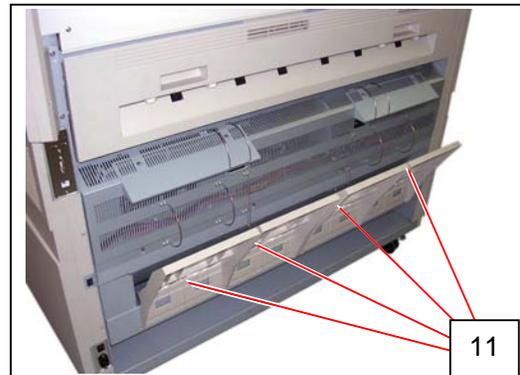
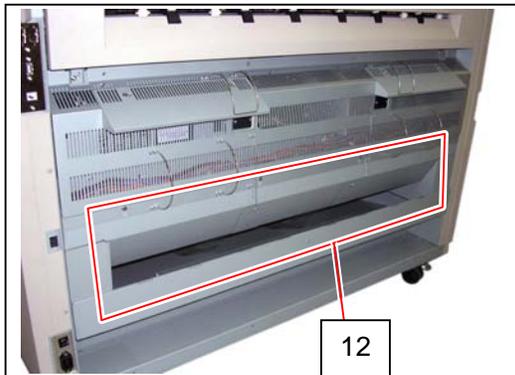
7. Attach 2 Guide Sheets (10) with 4x6 Bind Screws (9) you have removed at step 6.



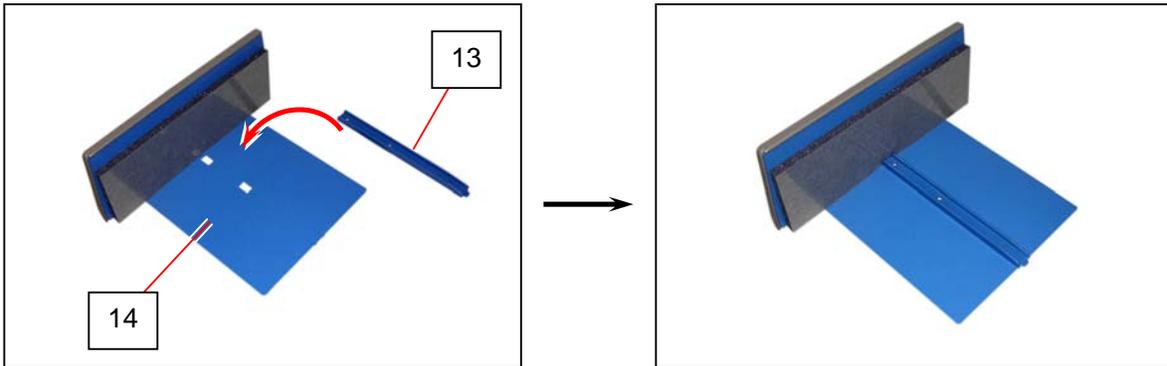
NOTE

Fit the positioning bosses on the Guide Sheet to the positioning holes on machine side at this time.

8. Fit 4 pieces of Tray (11) to the notches (12) on the back of the machine.

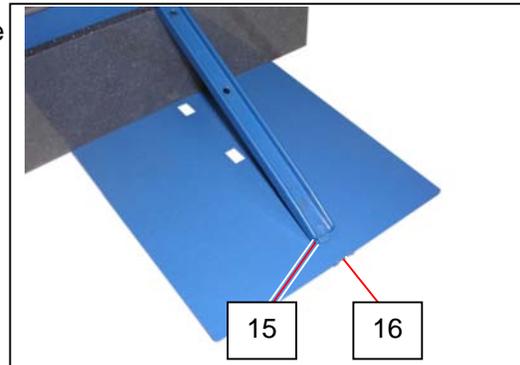


9. Fit the Guides 4 (13) to the Tray 2 Assemblies (14).

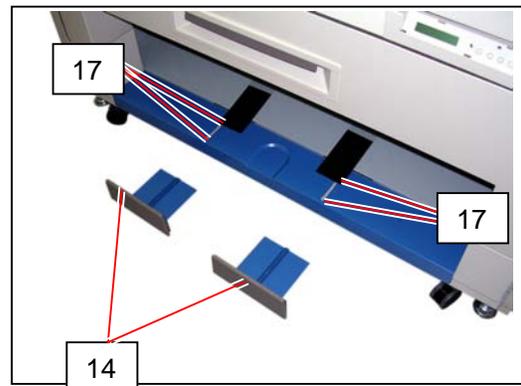


! NOTE

Insert the tip plate (15) of the Guide 4 (13) into the slit (16) of the Tray 2 Assembly (14).



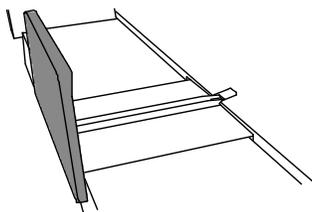
10. Put each Tray 2 Assembly (14) onto the slide rails on machine side, and fix with 2 - 3x8 screws (17).



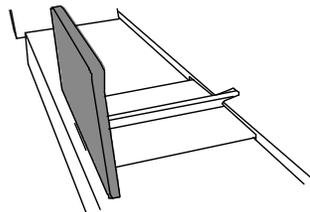
! NOTE

Change the position of Tray 2 Assemblies (14) according to the format of printing paper.

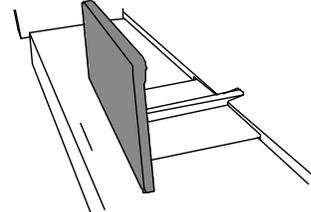
ISO (A/B)
Pull out completely.



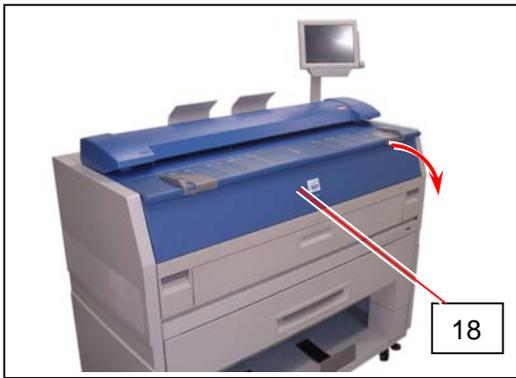
Architecture
Align with the marking line.



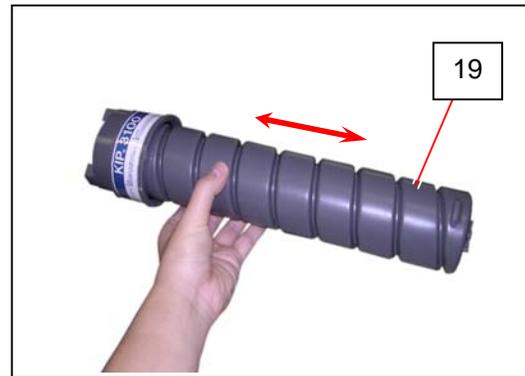
Engineering
Push in completely.



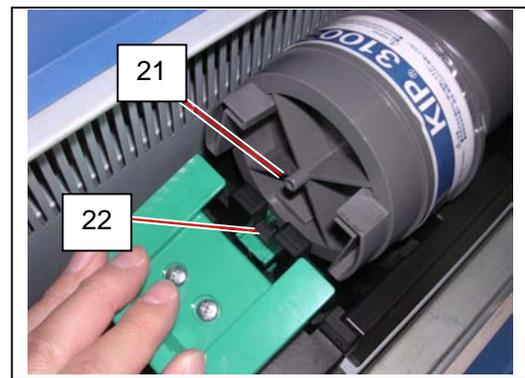
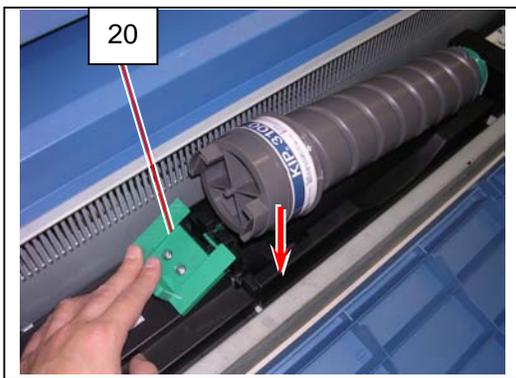
11. Open Cover 4 (18).



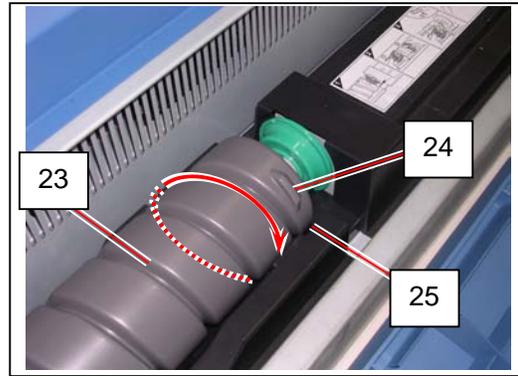
12. Shake Toner Cartridge (19) several times.



13. Pressing Lock Lever (20), locate the pin (21) on top of Toner Cartridge to the groove (22). Make sure that Lock Lever (20) correctly locks Toner Cartridge.

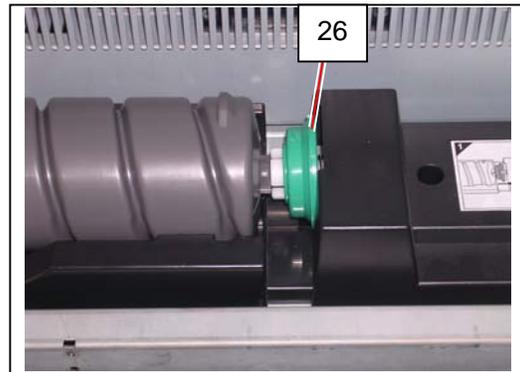


14. To open the toner supply hole, rotate Toner Cartridge body (23) in one revolution to the arrow direction so that the tab (24) goes into the notch (25).



NOTE

It is not necessary for the cartridge bottom to be locked by the lever (26). That will be done at the machine's power on.

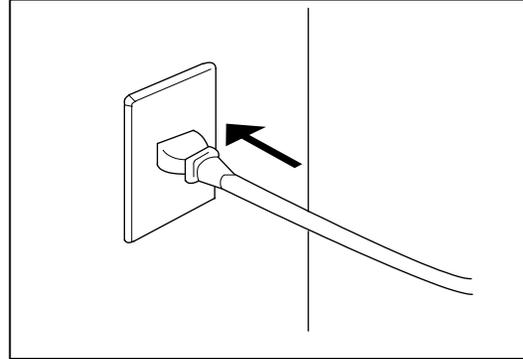


15. Close Cover 4 (18).



2.7 Turning on the KIP 3100

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



! WARNING

- (1) Do not handle the Power Plug with wet hands, or you may receive an electrical shock.
- (2) Make sure to earth 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 : 220-240V plus 6% or minus 10%, 50/60Hz and 10A

2. There is a Power Switch on the right side of KIP 3100.
Press its "I" side to turn on the KIP 3100.



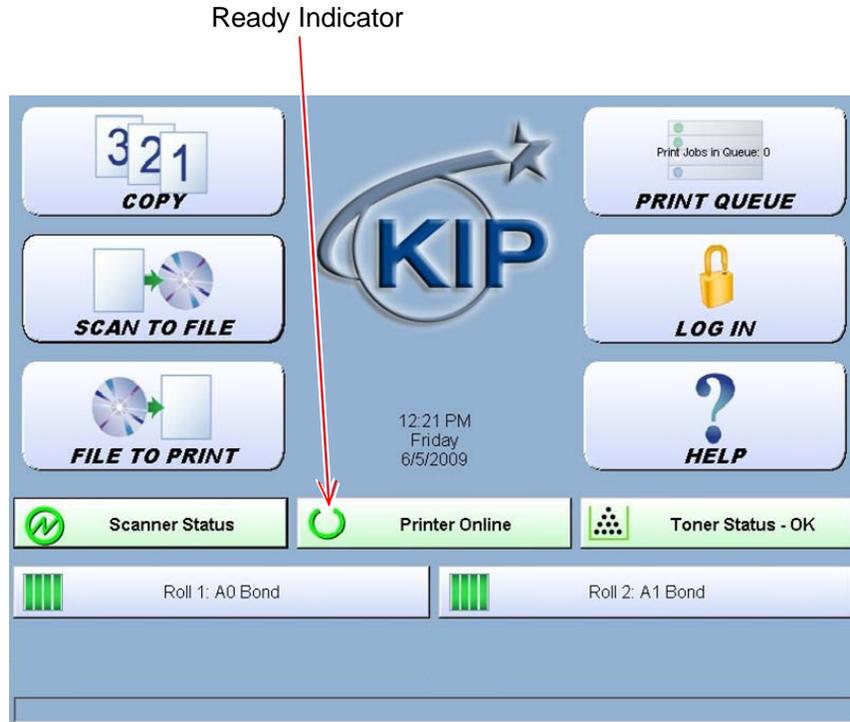
Power Switch



Press " | " side.

3. The User Interface (UI) starts operating, and displays the following Copy Mode Screen in one minute.

There is a Ready Indicator in the Copy Mode Screen, which flashes during warming up.



Note: The screen shown with available options.

4. The Ready Indicator lights green when ready.
You can make a copy, scan or print.

2. 8 Initializing the KIP 3100 Scanner Unit

After the setup, the KIP 3100 Scanner Unit requires initialization. This provides a clearer and more accurate scan image. Initialize the KIP 3100 using KIP Scanner Utility.

2. 8. 1 Installation

NOTE

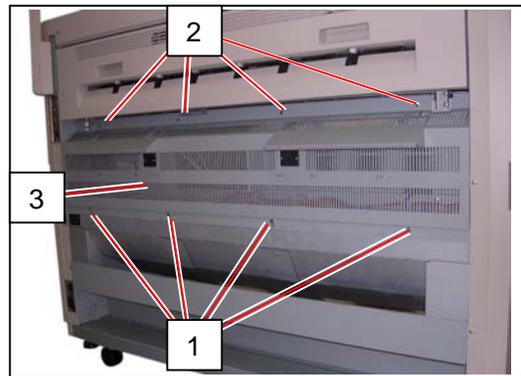
Below are the system requirements to operate KIP Scanner Utility.

- Windows 2000 / XP operating system
- USB 2.0 support

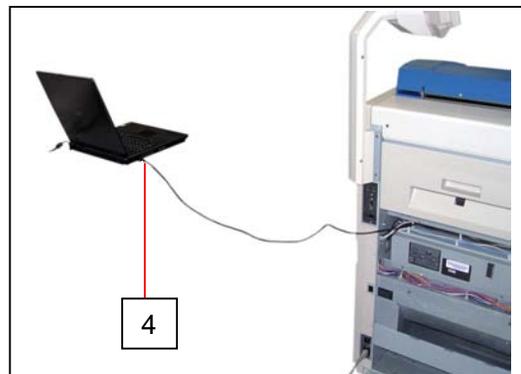
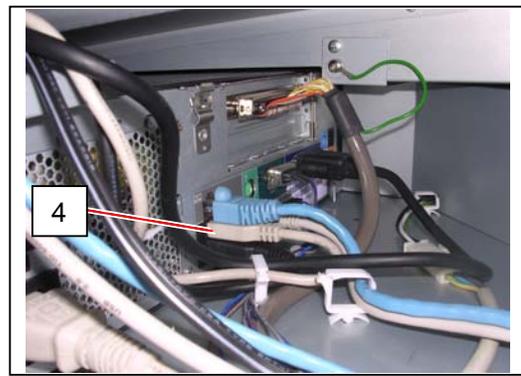
2. 8. 1. 1 Installing USB Driver

NOTE: Contact your KIP partner for the latest software and save it to any available storage on your service PC.

1. Loosen 4 screws (1), remove 4 screws (2) to remove Cover 10 (3).



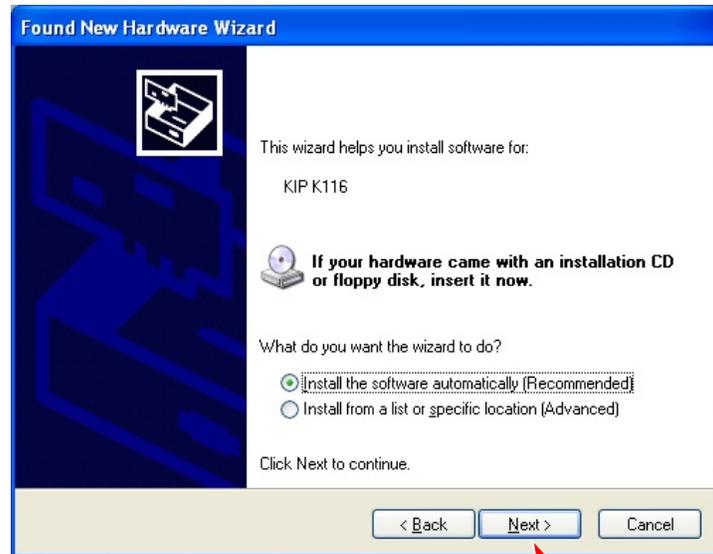
2. Disconnect the USB Cable (4), and connect it to the USB Terminal to **your service PC**.



3. Turn on both your PC and the KIP 3100.
[Found New Hardware Wizard] for “KIP K116” starts automatically.
If the following message appears, select your driver update option and click [Next].



4. Choose “Search for a suitable driver for my device [recommended]”. Click [Next].
If the auto detection does not work properly, click “Install from a list of specific location [Advanced]” to locate the driver software (.ini).



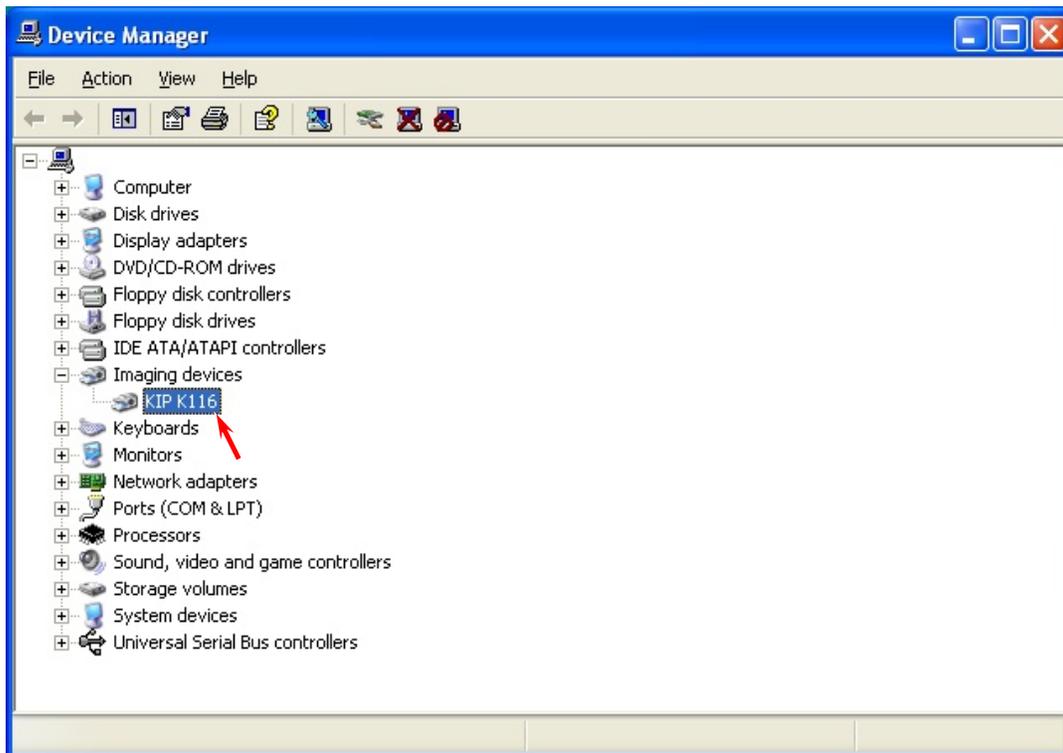
5. Click [Continue Anyway] when the following message is indicated.



6. Click [Finish] to close [Found New Hardware Wizard].



7. Open Device Manager, and confirm that “KIP K116” is operating properly.



2. 8. 1. 2 Installing KIP Scanner Utility

NOTE: Contact your KIP partner for the latest software and save it to any available storage on your service PC.

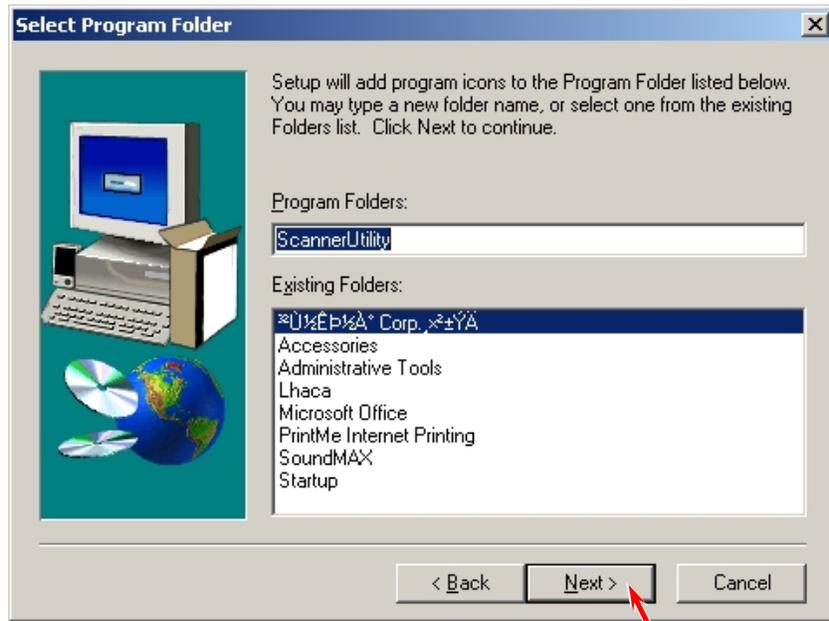
1. Locate and run SETUP.EXE for KIP Scanner Utility.
2. The Setup program starts. Click [Next].



3. The destination of the software can be changed. Click [Next].



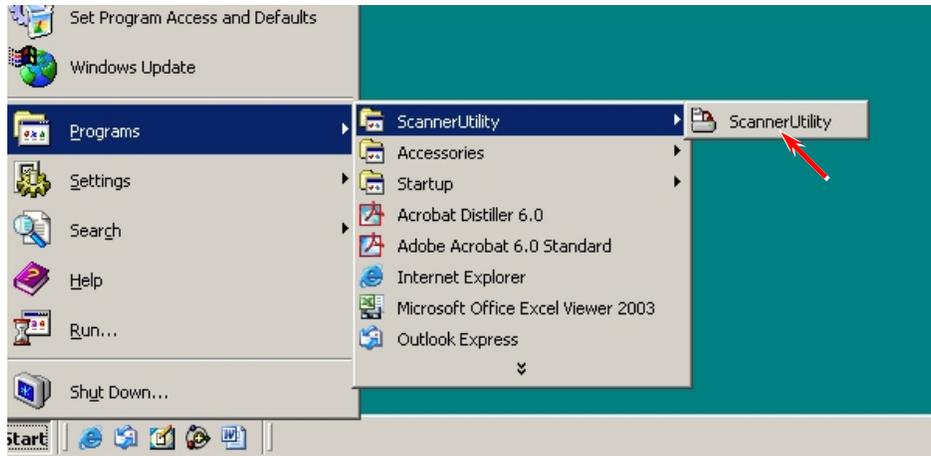
4. The name of the program folder can be changed. Click [Next].



5. The following message is indicated when all files have been copied. Click [Finish].

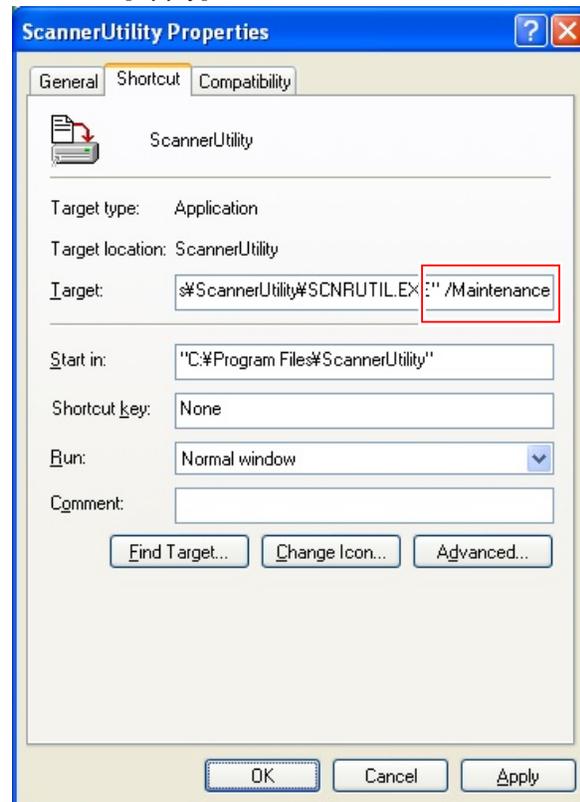


6. Open the properties panel for the “KIP Scanner Utility” shortcut on “Start” _”Program” _
“Scanner Utility” _ “Scanner Utility”. (ex. right click on the shortcut)



7. Add the following text to the end of the target path. Click [Apply].

“(one byte space)/Maintenance”

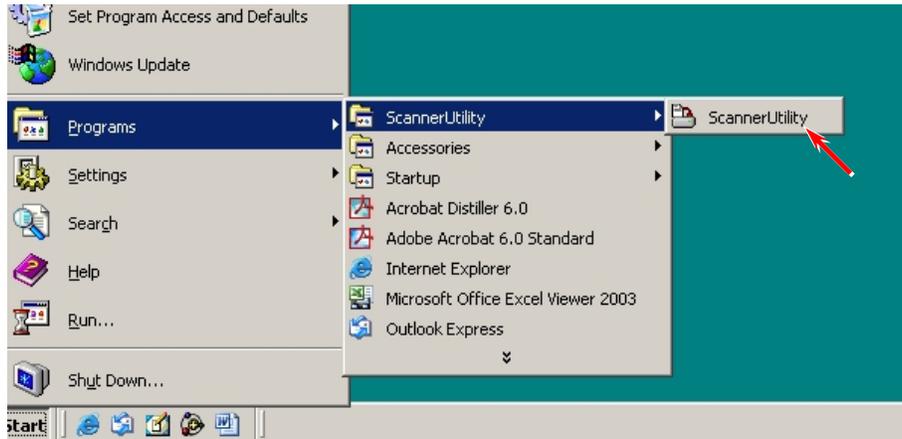


2. 8. 2 Scanner Calibration

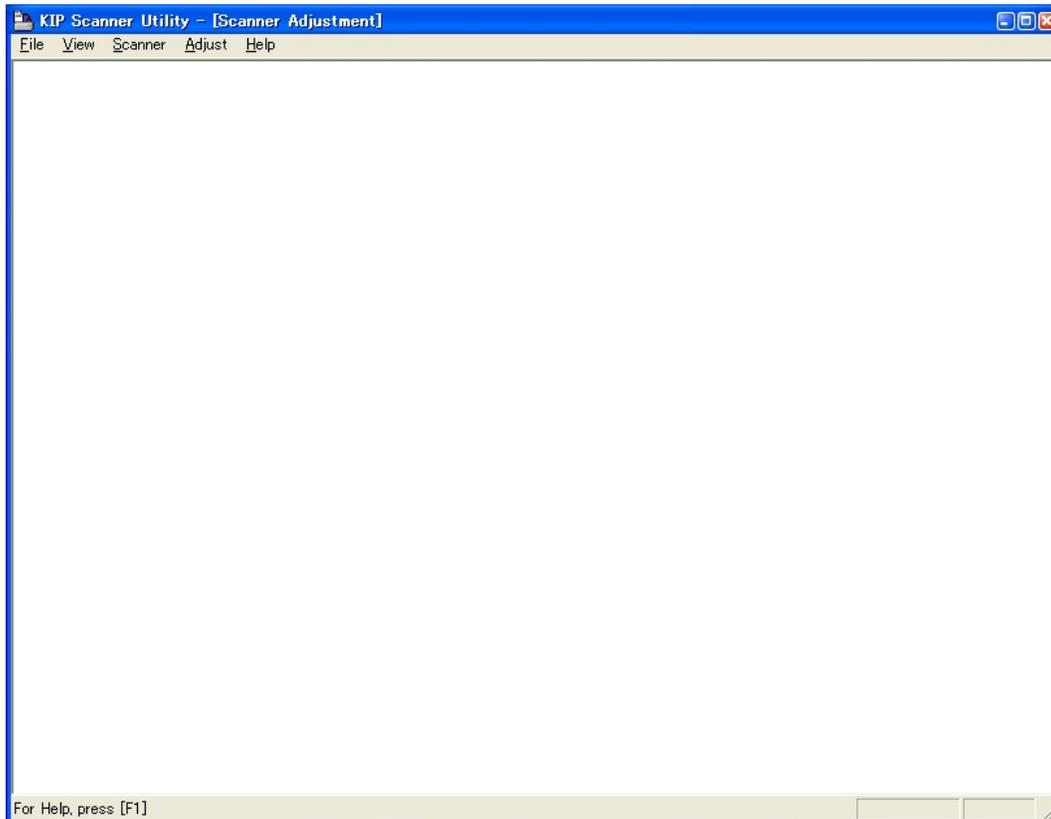
! NOTE

Scanner Calibration should be performed with “KIP Scanner Utility 1.12 (or later)”.
No “K105Utility”.

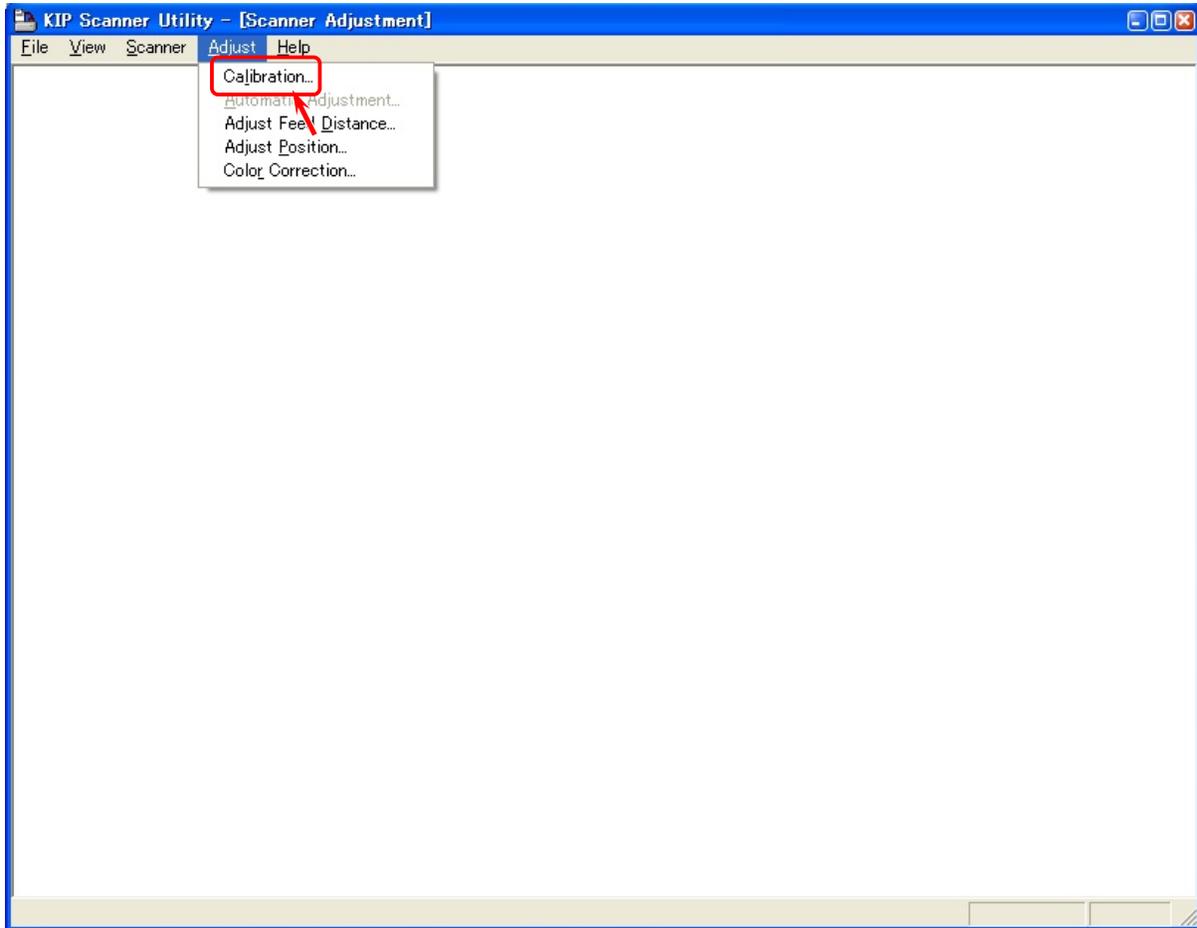
1. Connect the scanner unit and the PC directly with the USB 2.0 Cable.
2. Start KIP Scanner Utility by; “Start” _”Program” _ “ScannerUtility” _ “ScannerUtility”



(KIP Scanner Utility's initial screen)



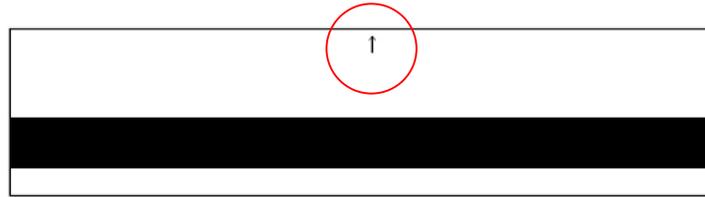
3. Select [Calibration] under [Adjust].
If it does not appear, check for step 7 (“/Maintenance”) on page 2-52.



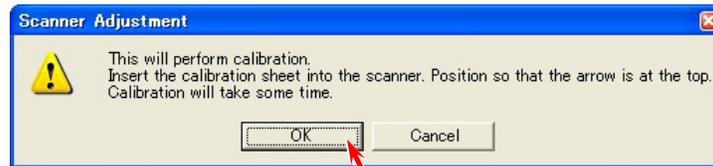
4. At first it is required to calibrate all pixels.
Select [All] and then click [Execute].
You will be asked to set the original.



5. Set Shading Sheet in the KIP 3100 accessory to the scanner.



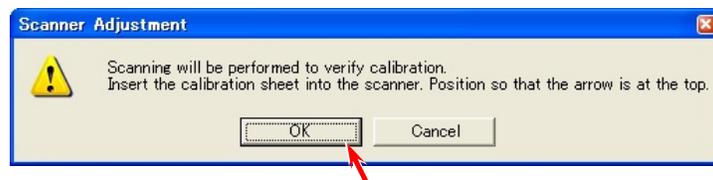
6. Click [OK] after setting Shading Sheet, and the scanner reads it.



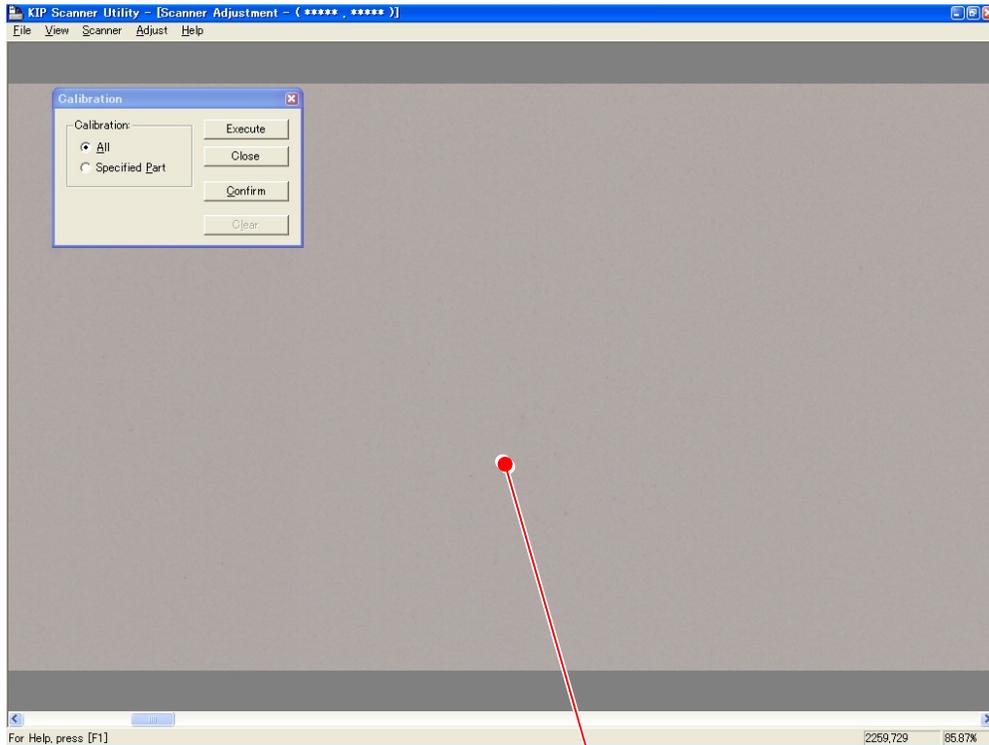
NOTE

- (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.
Click [Confirm] to check the result of Shading.



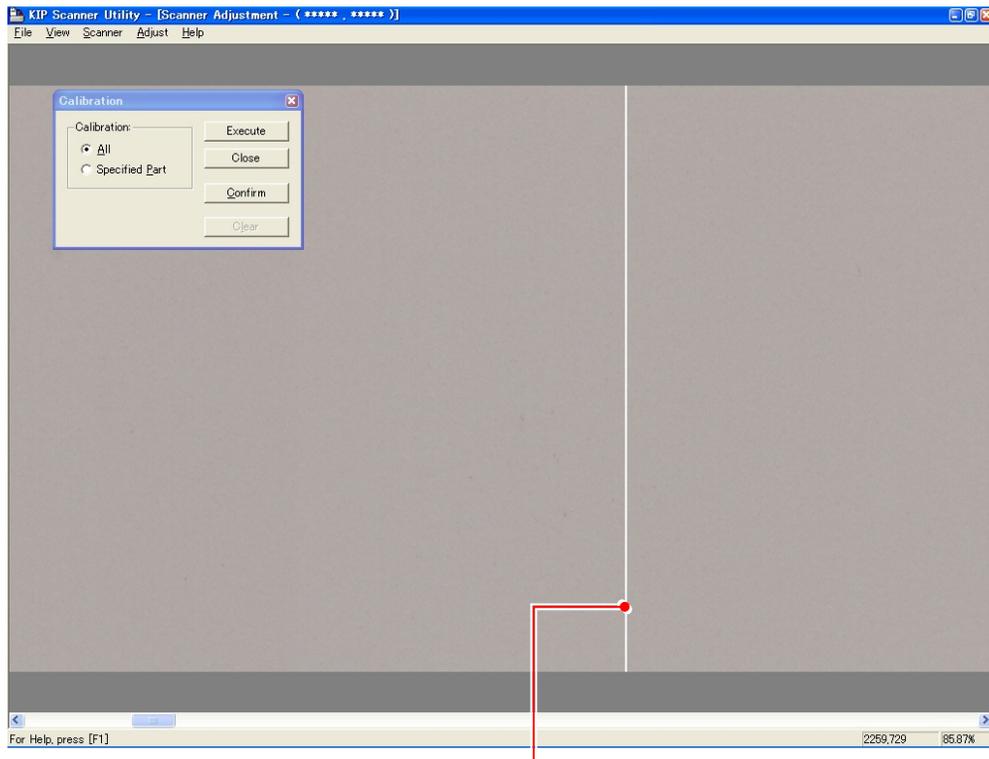
8. The scan image of Shading Sheet is displayed. (It looks gray due to “calibrating” scan)



Scan image of Shading Sheet

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.

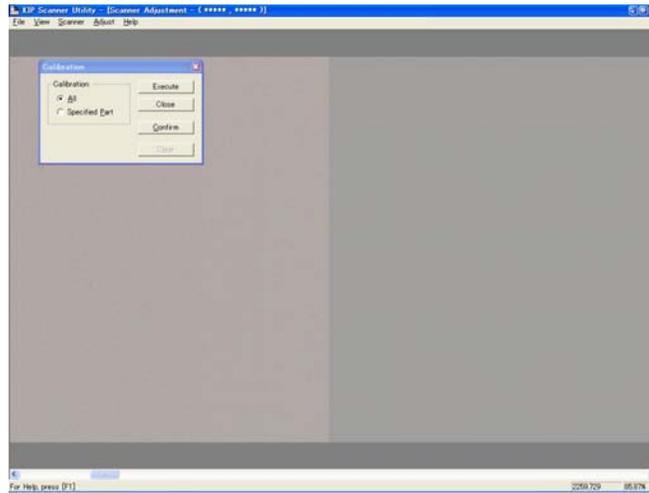
The following picture is an example of the line (due to “defective pixel”).
A defective pixel needs individual pixel calibration in the later steps.



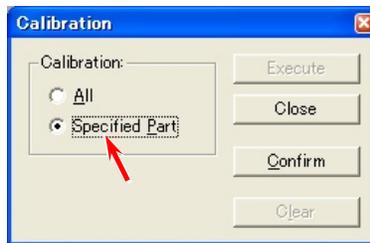
Defective pixel

NOTE

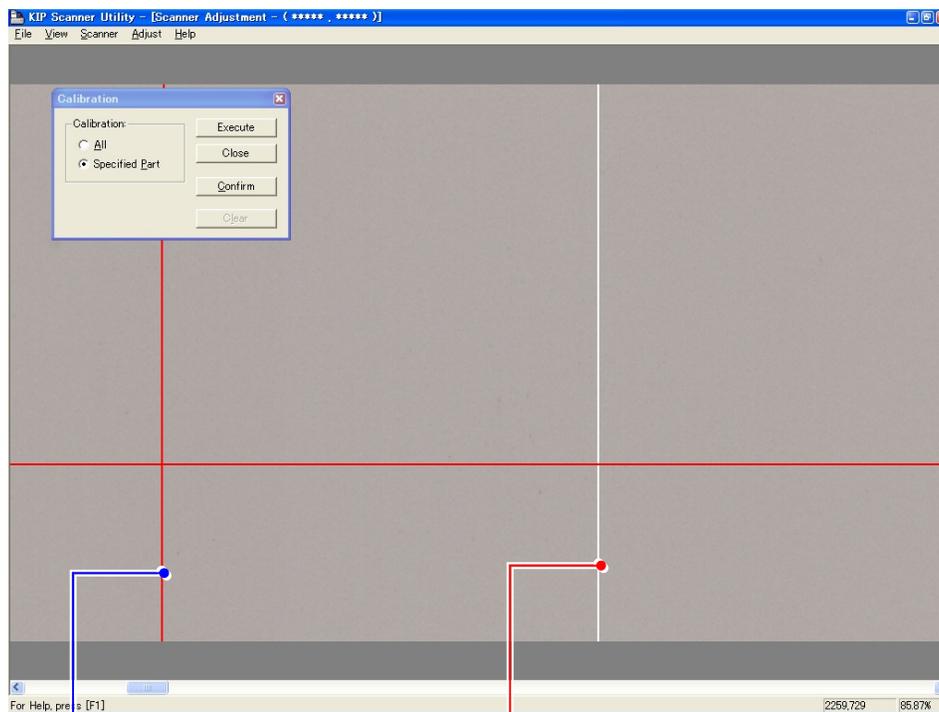
Sometimes the density may be different between left and right as the following image. This is not a problem but it is just the border of image blocks.



10. If you will calibrate an individual pixel, select [Specified part].



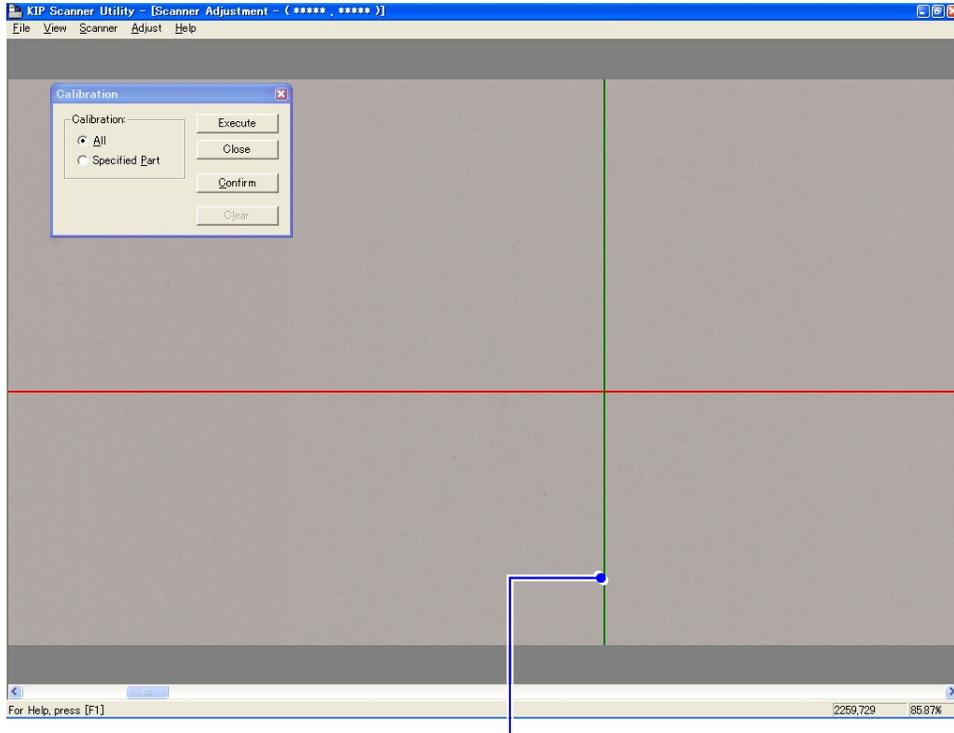
11. Move the pointer onto the scan image, and you will find a kind of red cursor.



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 the original again. Set Shading Sheet to the scanner and click [OK]. Check the result of Shading again. When finished, click [Close].



15. Initializing (“white balance” / “color”) is completed.

Chapter 3

Print / Scan Process

3.1	Print Process	Page
3.1.1	Characteristic of toner	3- 2
3.1.2	Each step of the print process	3- 3
3.1.2.1	Erasing (Removal of negative electric charges)	3- 5
3.1.2.2	Charge of Drum	3- 6
3.1.2.3	Exposure	3- 7
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3. 1 Print Process

3. 1. 1 Characteristic of toner

The toner used for KIP 3100 has a characteristic to be charged “negative”, which tends to be attracted to a more “positive” object.

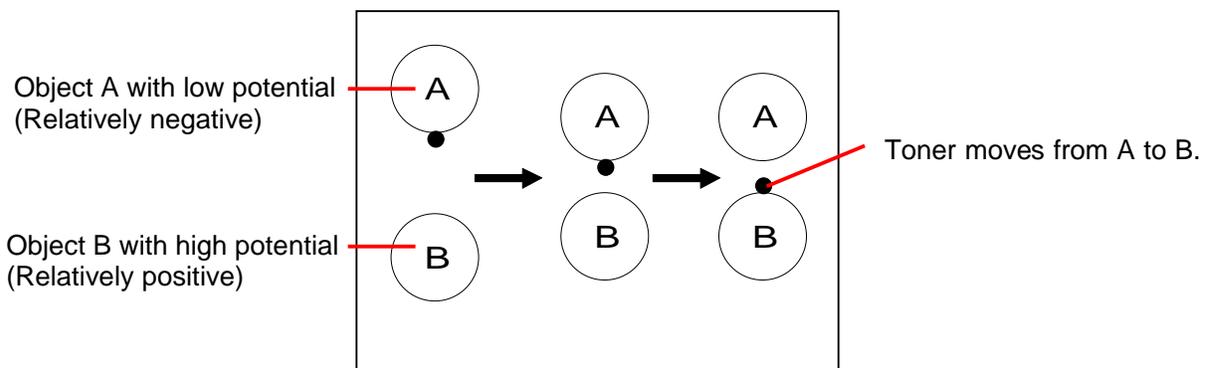
Suppose that there are objects A and B, and the situation is as follows.

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

Comparing the potential of both objects, it can be said that the object B is relatively “positive” and the object A is “negative”. (In another word, object B is more “positive” than the object A.)

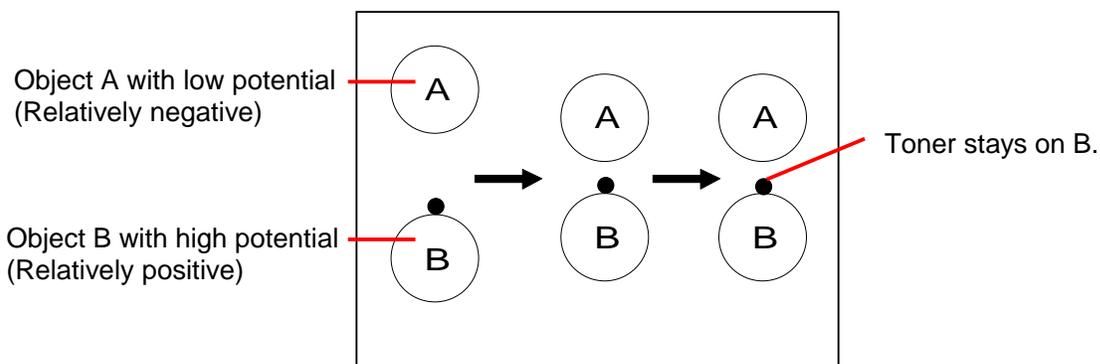
As the toner is “negative”, it is attracted to the object B that is more “positive”.

If you move the object B close to the object A, therefore, the toner moves onto the object B.



On the contrary, suppose that the toner exists on the object B of which electric potential is higher than the object A.

Even if you move the object A close to the object B, the toner continues to stay on the object B because negative toner and relatively negative object A repel each other.



Thus, the toner has a characteristic to move from one place with a lower potential to another place with a higher potential.

If we control the electric potentials, it is possible to move the toner from one place to another as we intend, or it is also possible to remove the toner from an unwanted place.

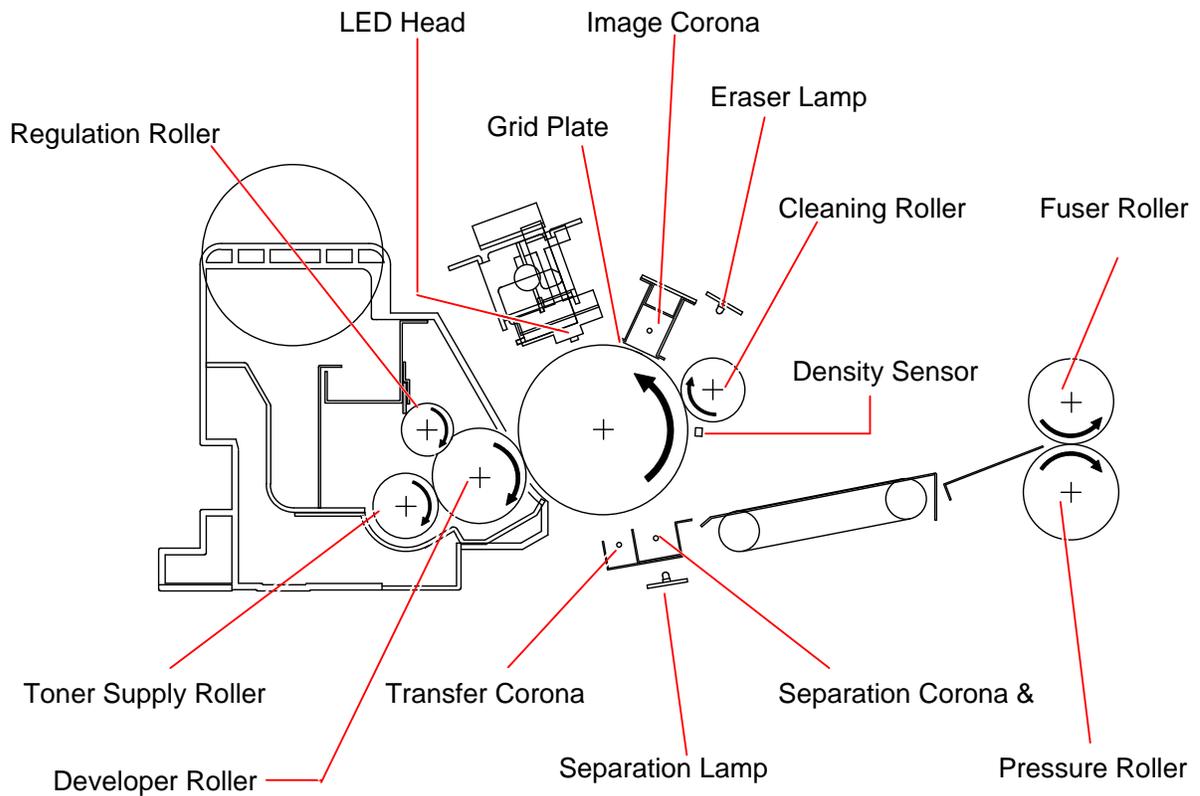
KIP 3100 controls the electric potentials properly working each part as Drum, Corona Units, Lamps, Developer Unit and Cleaning Roller.

The movement of toner is controlled correctly and several processes as Development, Toner Transfer, Drum Cleaning and etc. are performed.

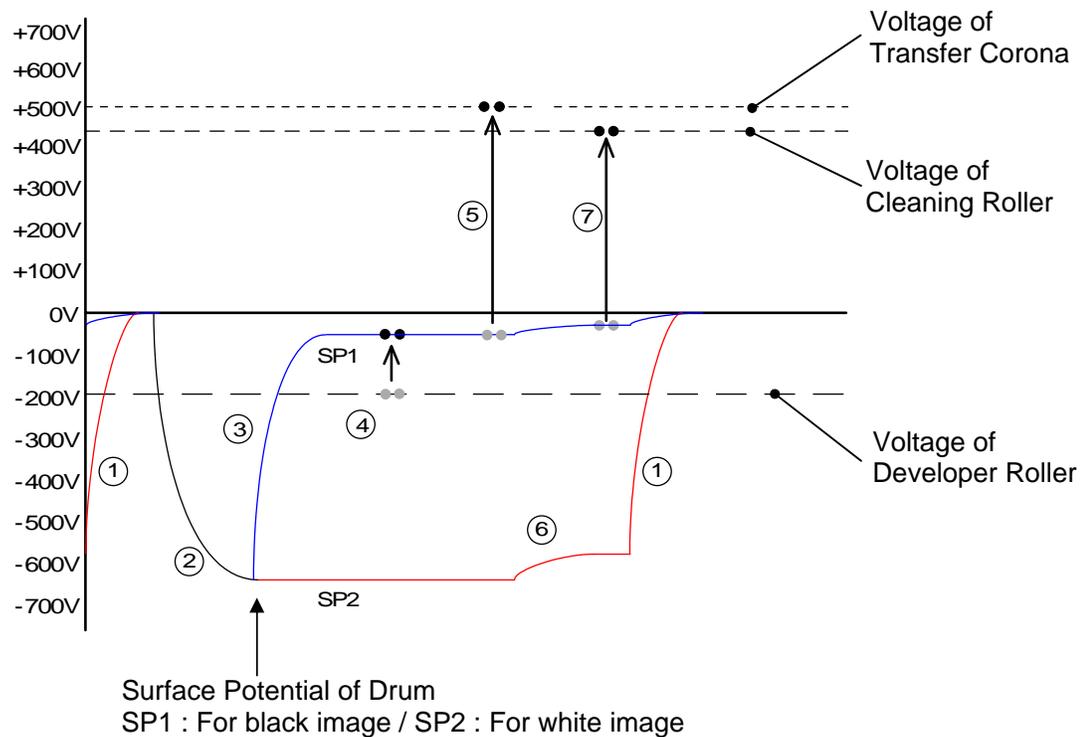
3. 1. 2 Each step of print process

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.



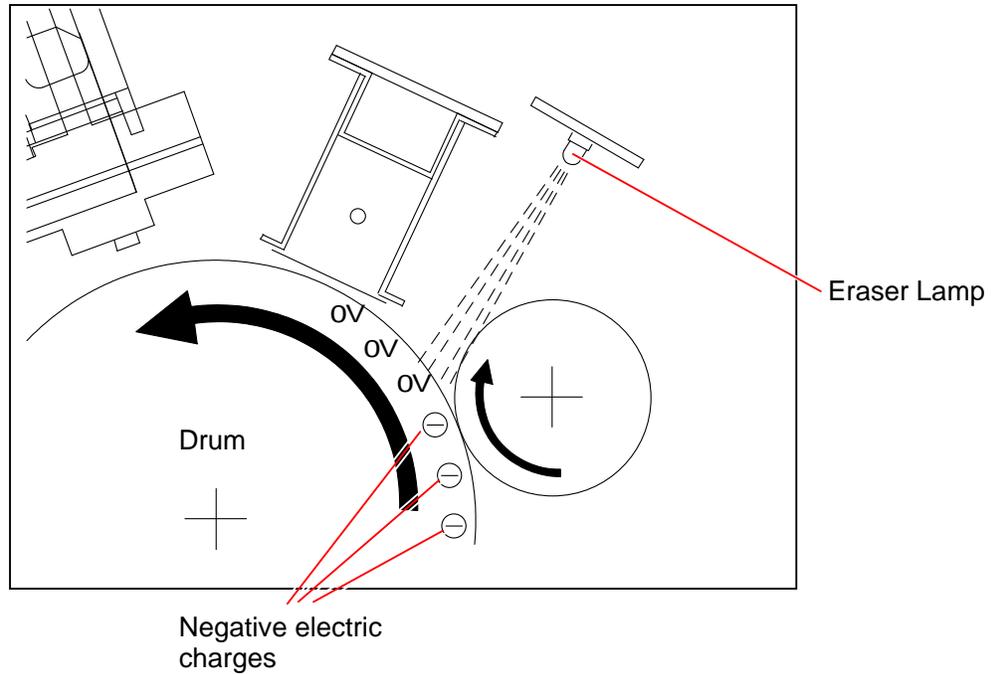
Name of part	Voltage (Current) during Print Cycle	Voltage during Toner Collection Process
Image Corona Wire	-1.3mA +/-0.05mA	
Grid Plate	-620V +/-30V	
Developer Roller	-180V +/-5V	+350V +/-5V
Regulation Roller (Center)	-80V +/-5V against the Developer Roller Bias	-80V +/-5V against the Developer Roller 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, the KIP 3100 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] on the page 3-20 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.



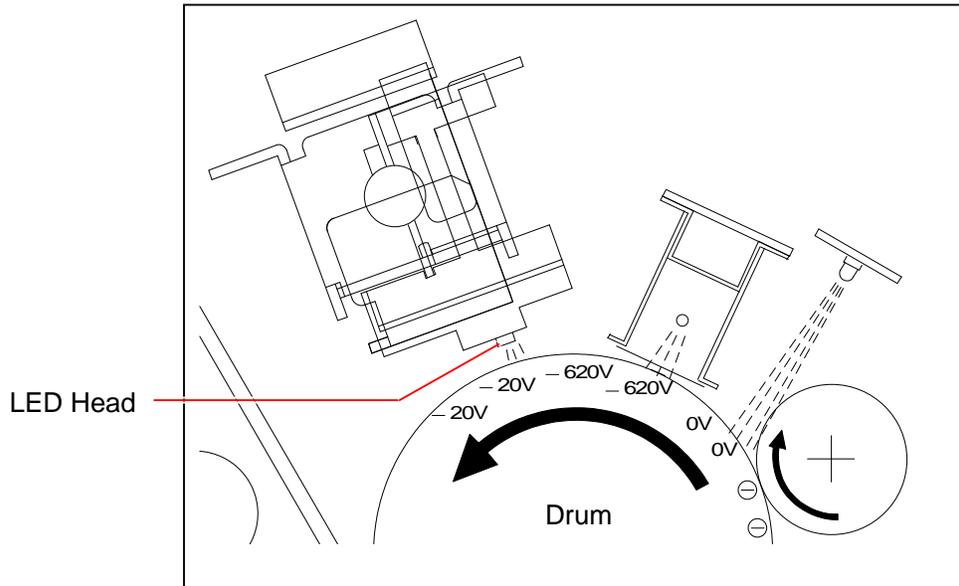
3. 1. 2. 3 Exposure

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.

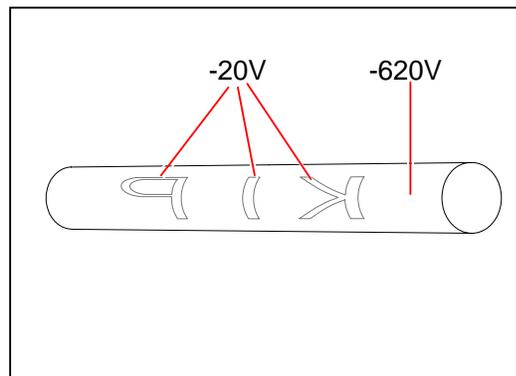
As the Drum has a characteristic to lose the negative electric charges if it is exposed to the light, this part of Drum surface loses the charges and its potential becomes about -20V. (This potential is not constant but is variable by the environment.)

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.)

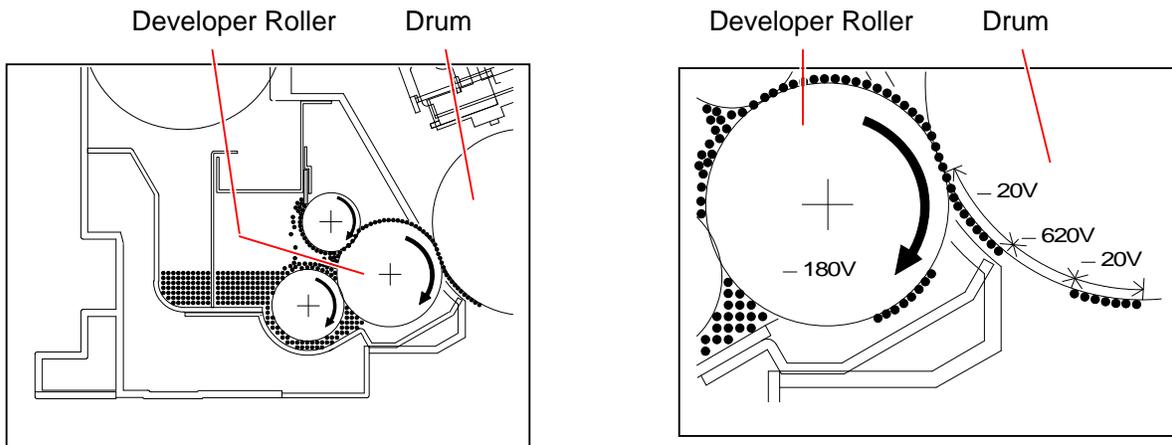
The Developer Roller is supplied with -180V (+/-5V) during the print cycle.

And both -620V area and -20V area exist on the Drum because the Electrostatic Latent Image has been formed in the former Exposure process.

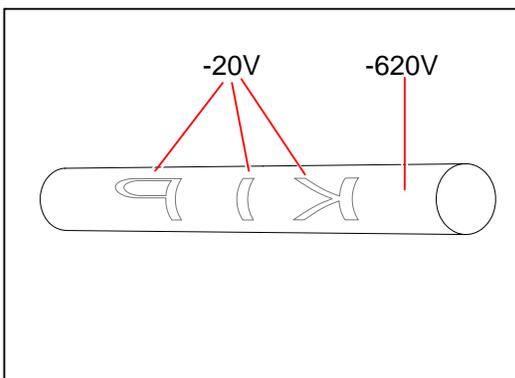
Seen from the voltage of Developer Roller Bias (-180V), the -20V area on the Drum is relatively "positive". So the toner moves from the Developer Roller to the -20V area of Drum.

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.

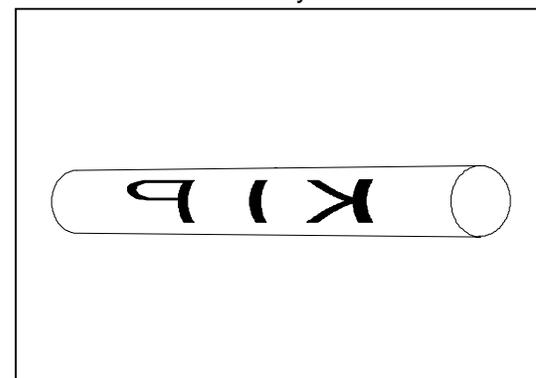


Before Development



(Invisible Electrostatic Latent Image)

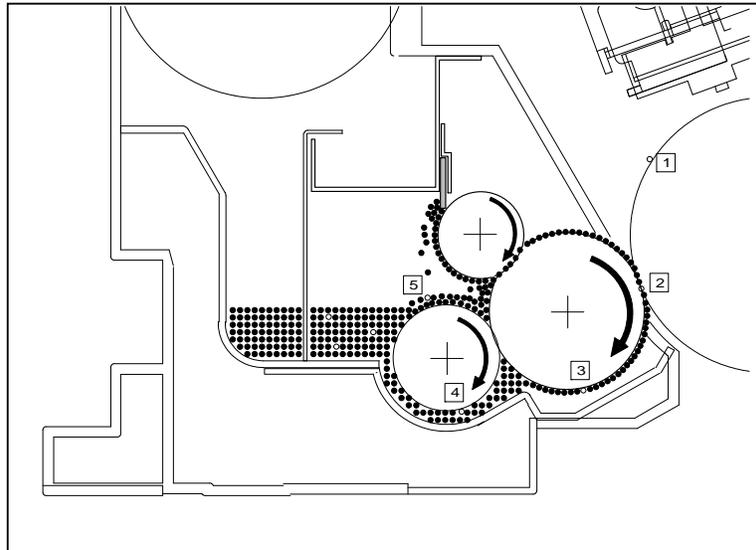
After Development : Toner moves only to -20V area.



(Visible toner image)

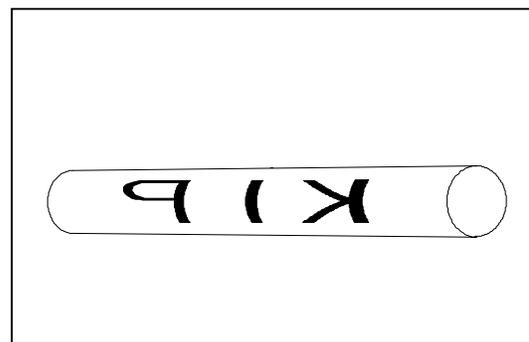
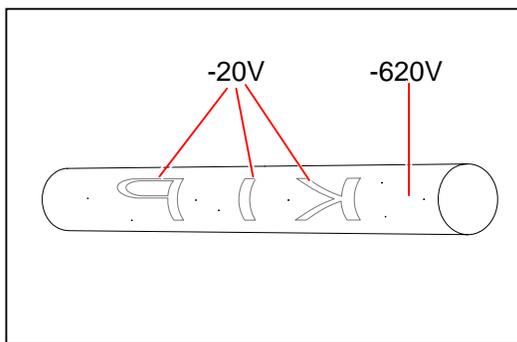
Even if some toner has not been removed by the Cleaning Roller but remained on the -620V area of Drum (It corresponds to the white area of the print) in the later [3.1.2.7 Drum Cleaning], this toner is removed at the time of Development because it moves to the Developer Roller of which potential (-180V) 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 Toner Supply Roller. 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 know 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.

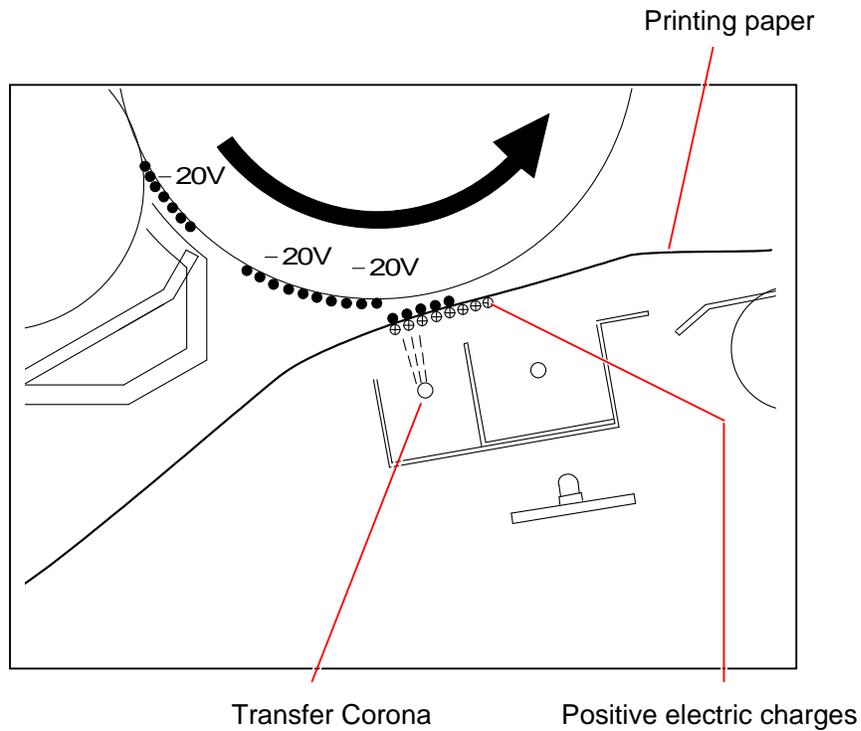
The toner existing on the -20V area on the Drum will move to the printing paper because the potential of the paper comes to be higher than the Drum by the Transfer Process.
The voltage supplied to the Transfer Corona Wire is as follows.

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.

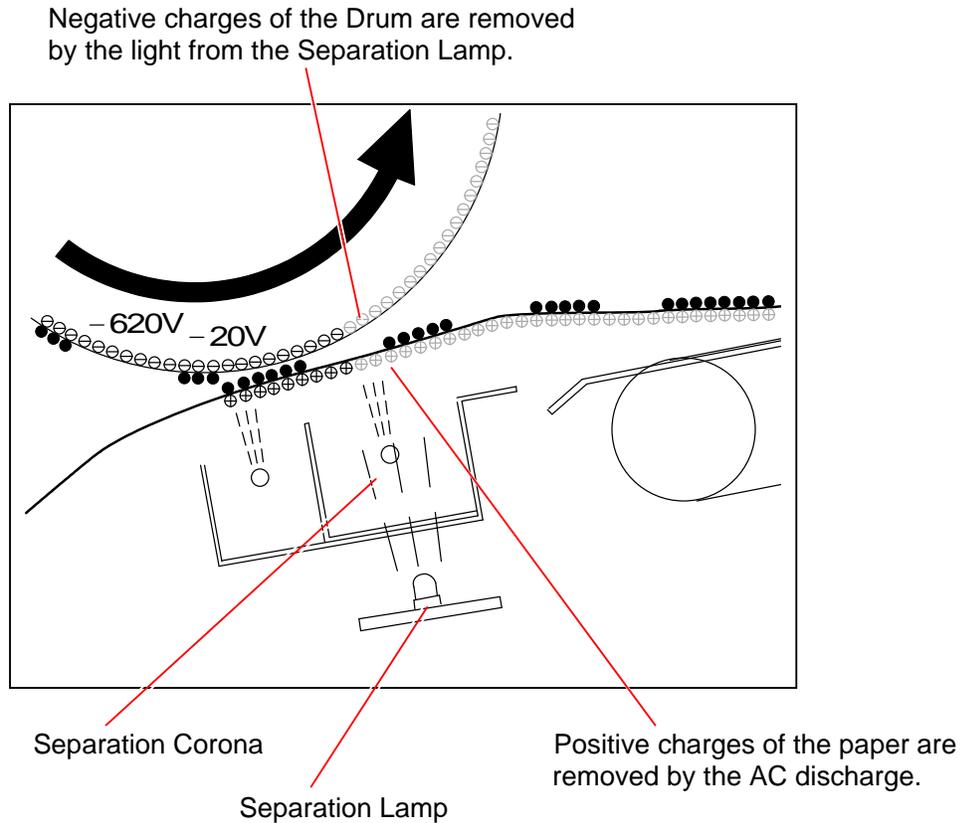
AC voltage : 5.0KV

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.



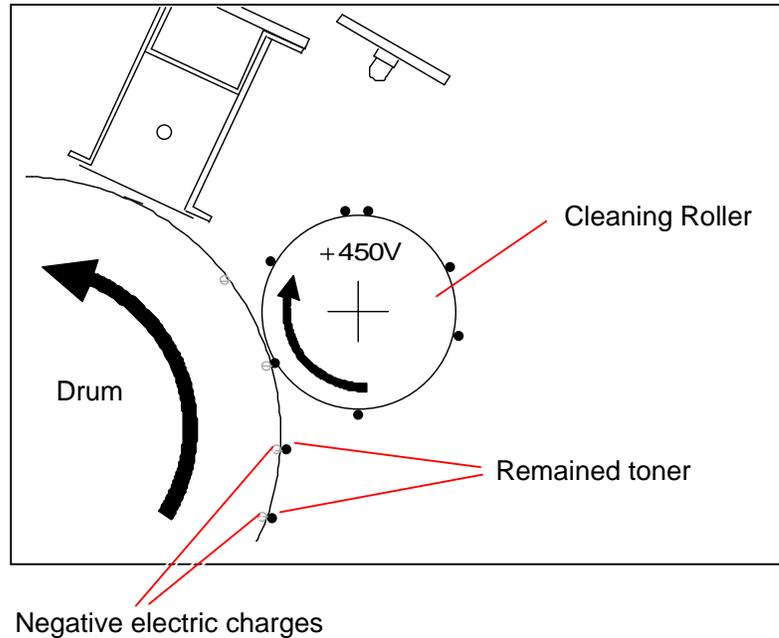
3. 1. 2. 7 Drum Cleaning (Removal of remained toner)

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 the page 3-9 for the detail.

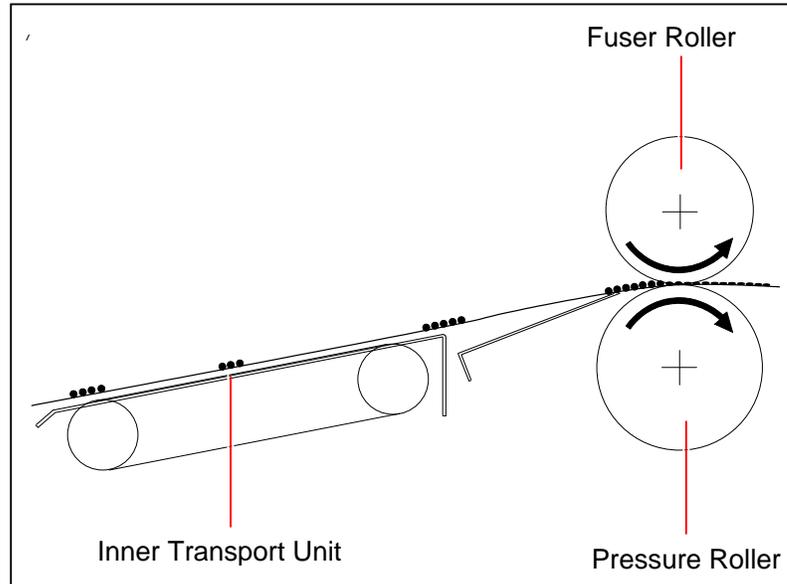
3. 1. 2. 8 Fusing

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.



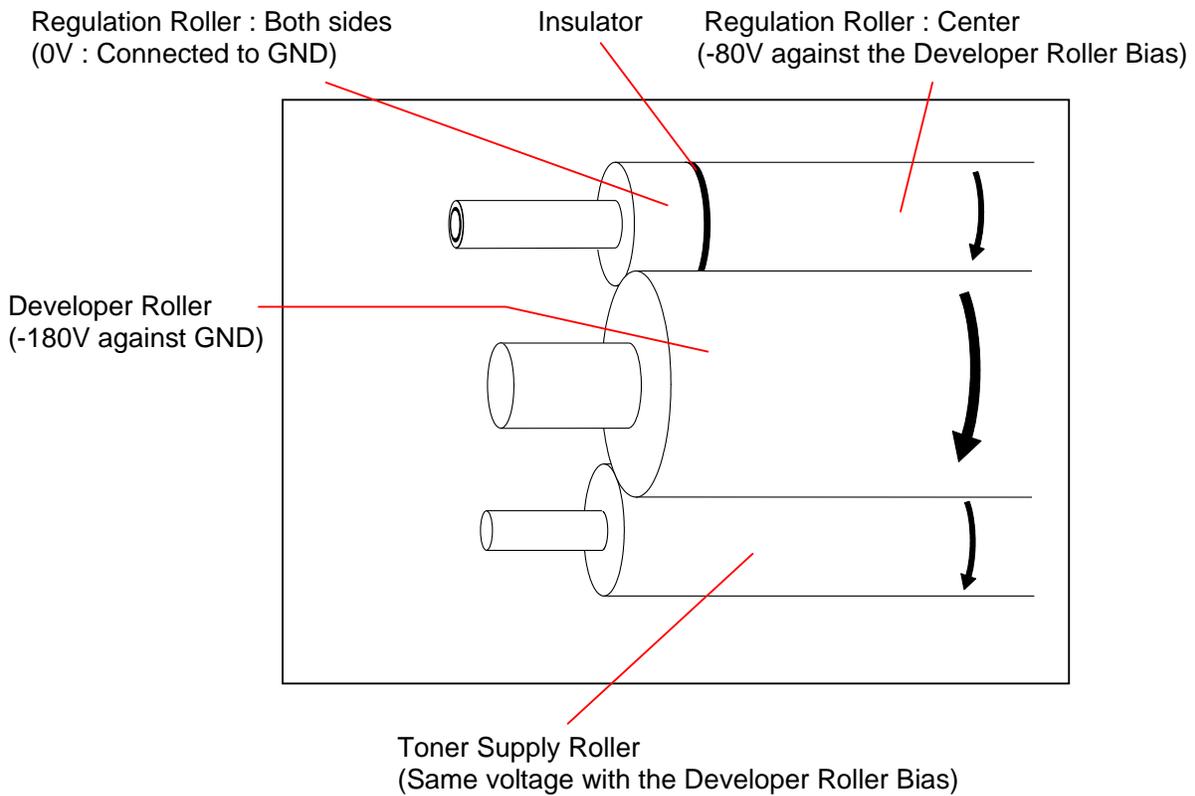
3. 1. 3 Controlling the movement of toner in the Developer Unit

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.)

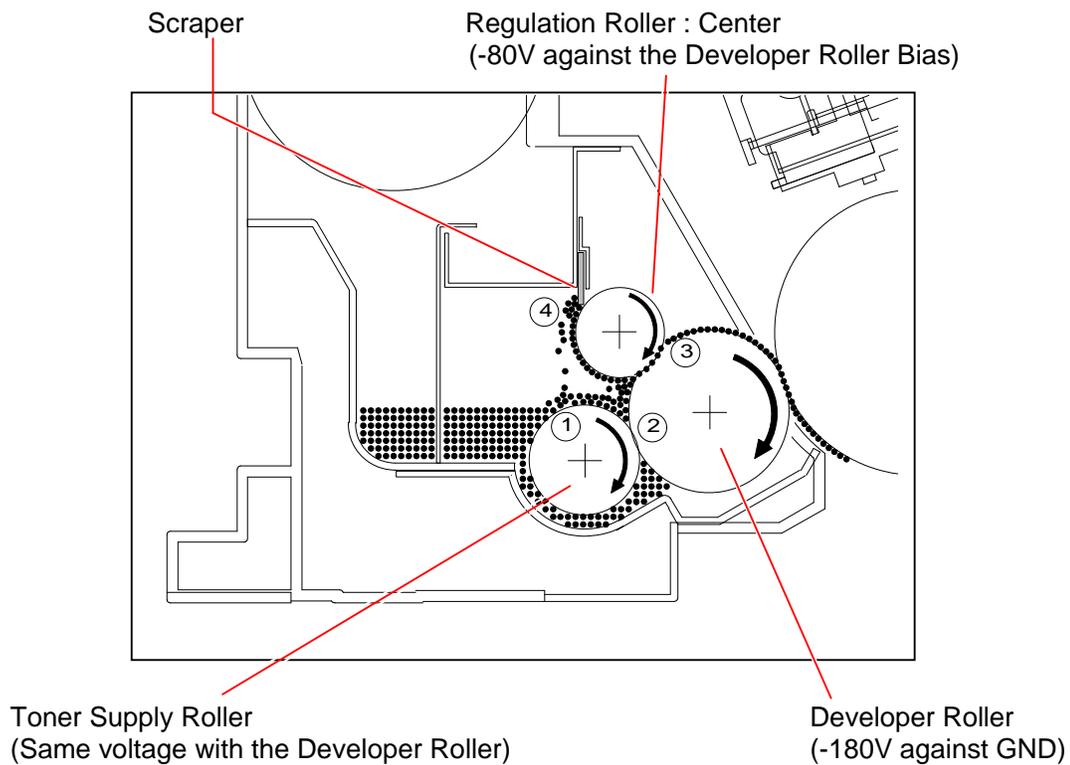


⚠ NOTE

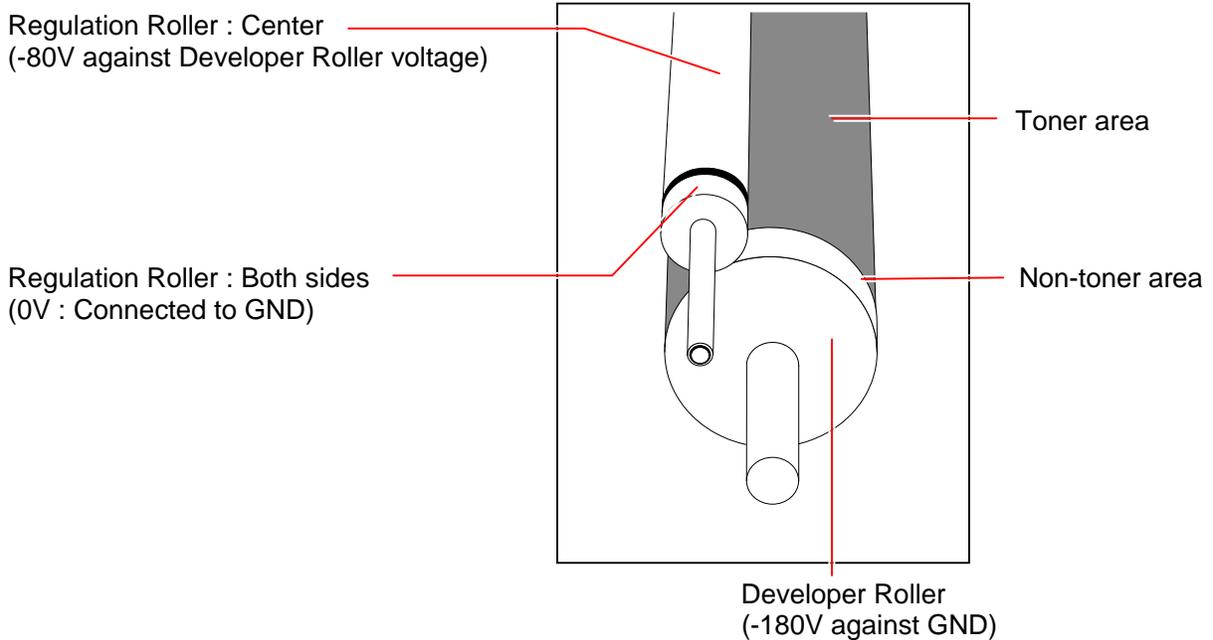
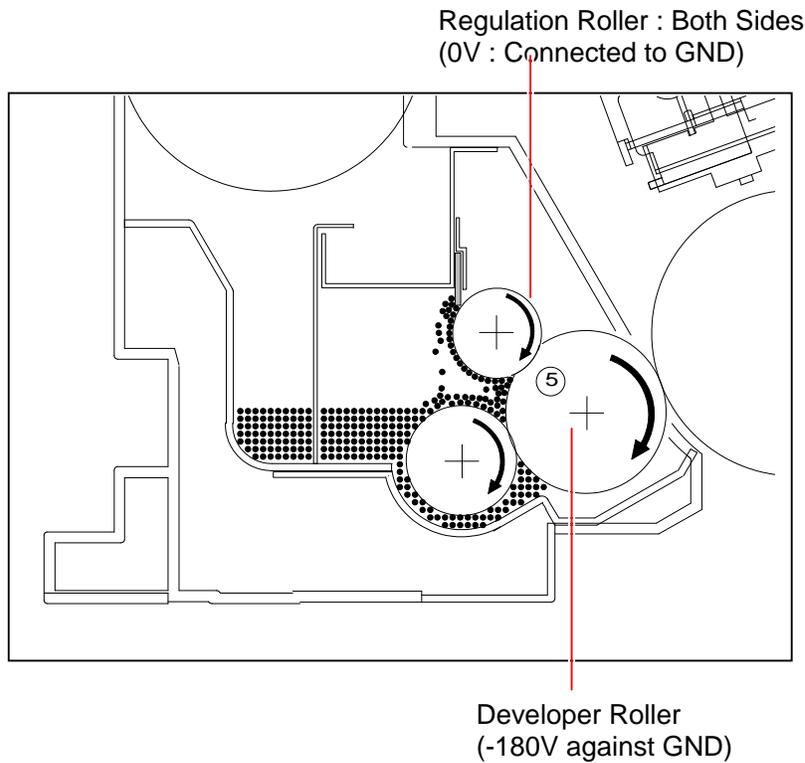
The Regulation Roller is divided into central area and both side areas by the insulator, and individual voltage is supplied to each area.

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

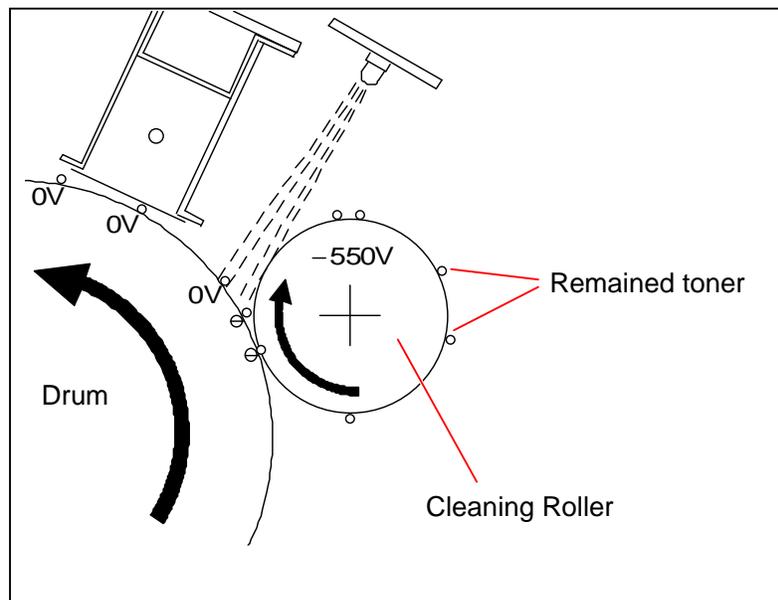
As explained in [3.1.2.7 Drum Cleaning] on the page 3-12, the Cleaning Roller is supplied with +450V to remove the remained toner from the Drum during the print cycle. This toner gathered by the Cleaning Roller is returned to the Developer Unit in the following 3 cases.

- (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.

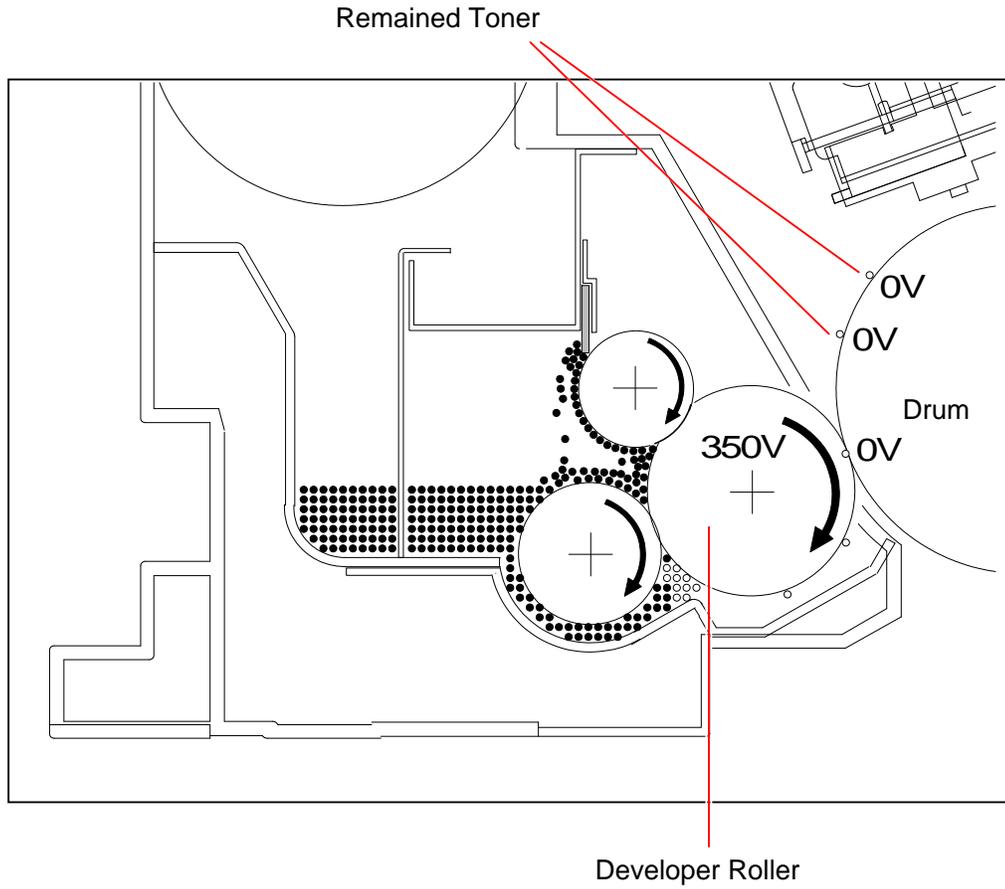
This process to return the toner is called "Toner Collection Process".

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.



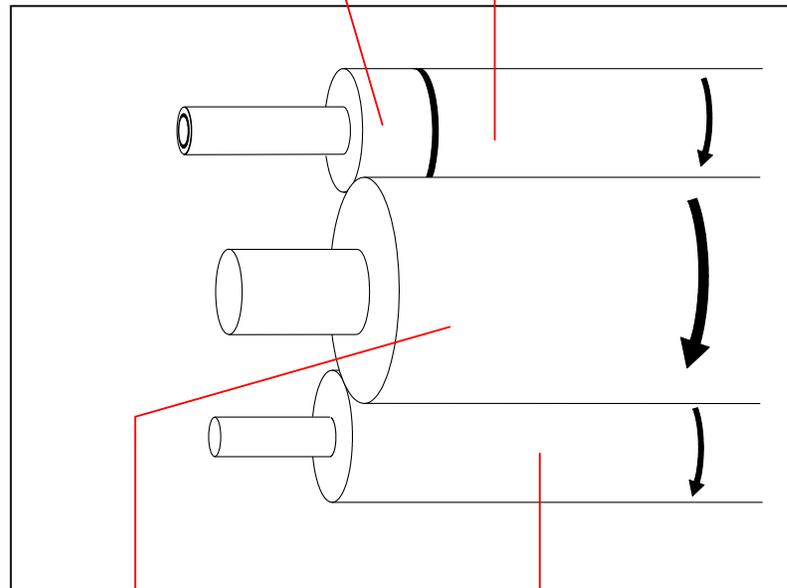
Reference

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

Regulation Roller : Both sides
(0V : Connected to GND)

Regulation Roller : Center
(-80V against the Developer Roller Bias)



Developer Roller
(+350V against GND)

Toner Supply Roller
(Same voltage with the Developer Roller Bias)

3. 1. 5 Density Compensation Process

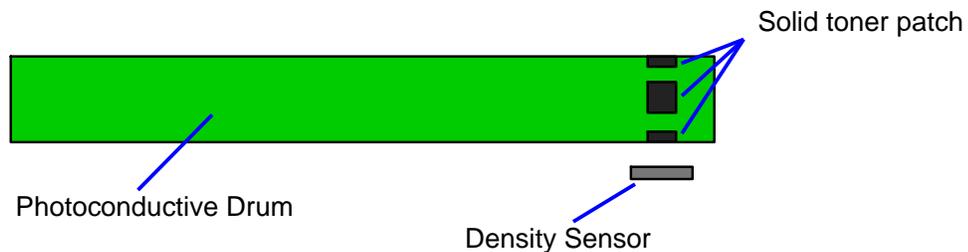
On rare occasion, loss of image density may occur under a special usage. KIP 3100 has the ability to reduce such loss of image density and this enables to maintain a satisfactory image quality regardless of the machine usage.

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 Density Value falls short of the lower density limit (Minimum Density), one of the Auto Adjustment Level listed below will be applied. Developer / Regulation Bias will be automatically adjusted based on the current Auto Adjustment Level.

	Default upon shipment	No Compensation	Auto Adjustment Level 1	Auto Adjustment Level 2	Auto Adjustment Level 3
Developer Bias (Negative)	-180V	-180V remain default	-230V	-230V	-230V
Regulation Bias against Developer Bias	-80V	-80V remain default	-80V	-120V	-160V

4. Due to Auto Adjustment Level (adjustment on Developer / Regulation Bias), image density will stabilize for a satisfactory image quality regardless of the machine usage.

NOTE

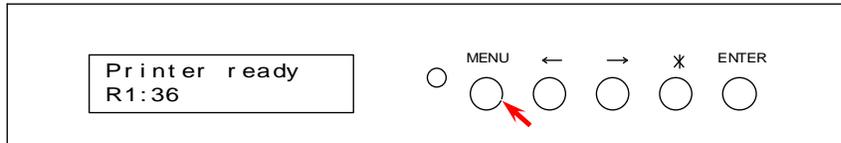
- (1) While Density Value exceeds Minimum Density, the current Auto Adjustment Level will remain.
- (2) An applied Auto Adjustment Level should be reset after replacing Developer / Regulation Roller.

1. Complete the replacement and return all the parts in position.

2. Remove the cover from the front face of the machine to access the Sub UI.

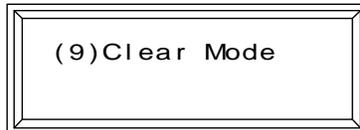


3. Turn on the machine while pressing the [MENU].

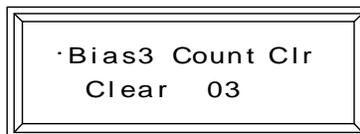


4. Press and hold the [*], and then press the keys in the order as [←], [←], [→], [←] to enter the Service Mode.

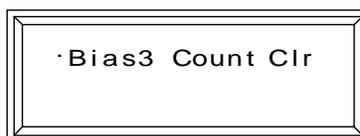
5. Press [MENU] until "(9) Clear Mode" appears. When it appears, press [ENTER].



6. Press [MENU] until "Bias 3 Count Clr" appears. When it appears, press [ENTER].



7. Press and hold [*], press [Enter] to reset Auto Adjustment Level.
An applied bias adjustment by Density Compensation Process will be set to the default.

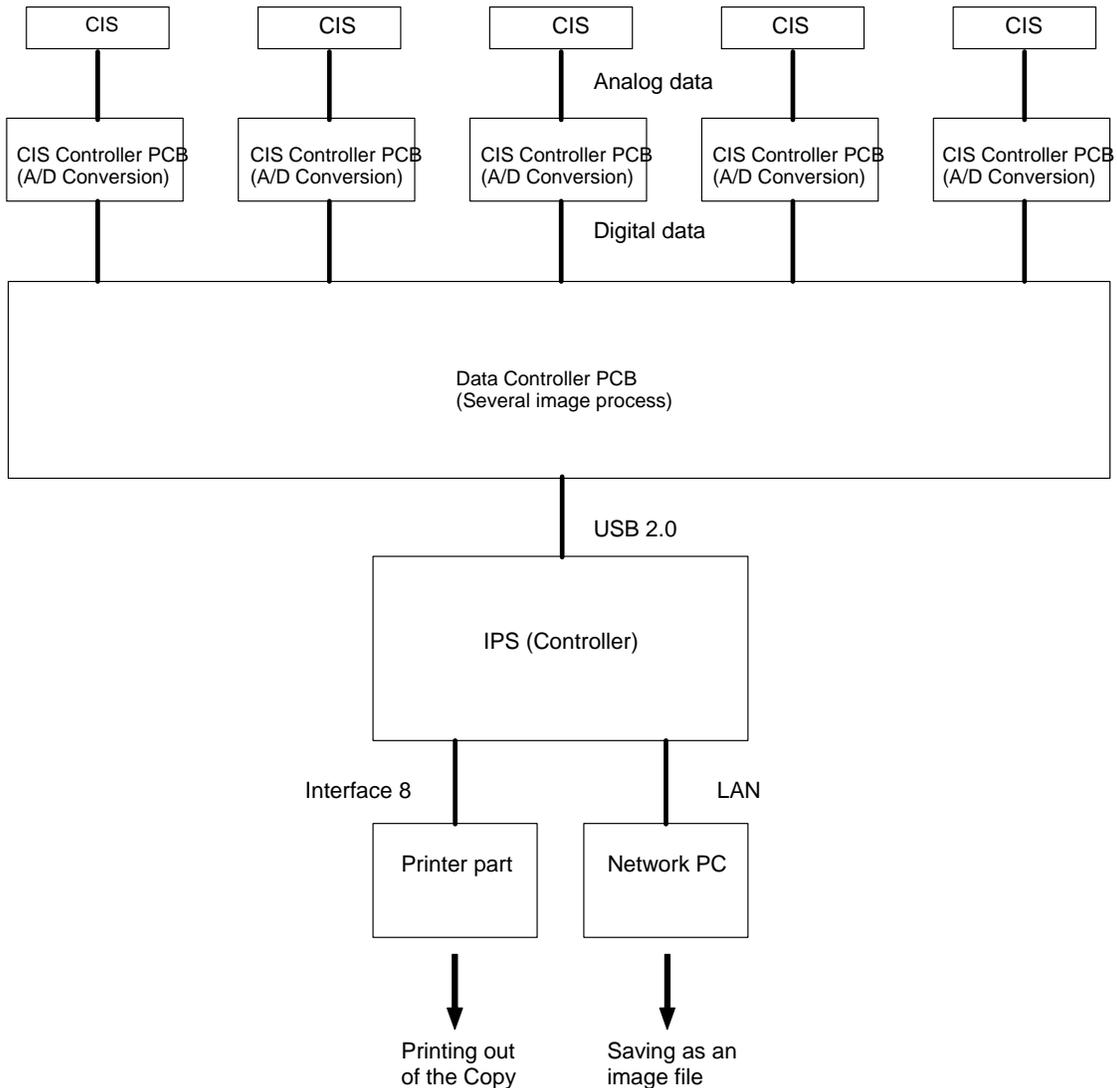


3. 2 Scan Process

3. 2. 1 Data flow in scan and copy

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 KIP 3100 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 Positioning process of Image Block

The scanner part of KIP 3100 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

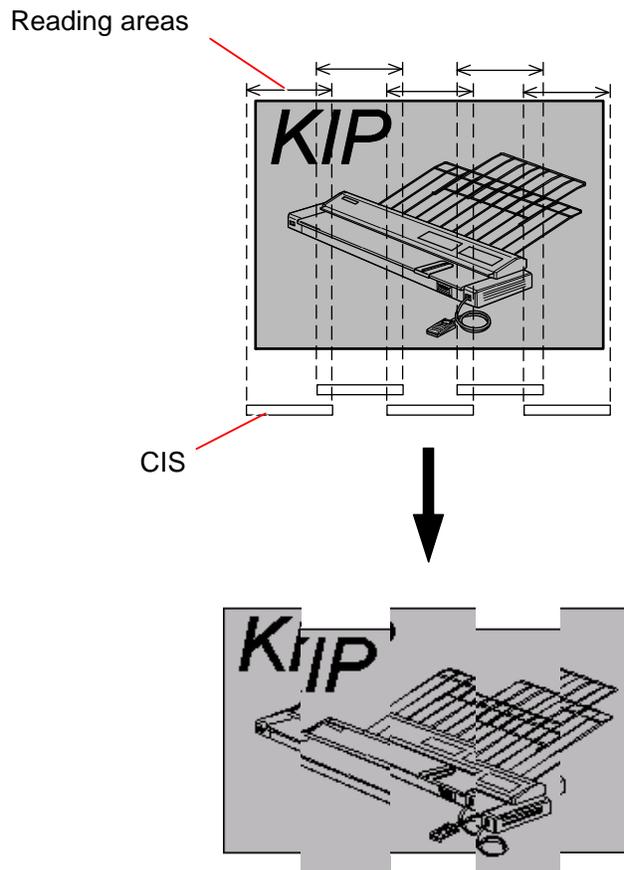
The KIP 3100 performs these positioning processes (X overlap & Y offset) according to the setting specified through KIP Scanner Utility.
Please refer to [8.12. 4. 3 Position] (page 8-205) for this setting.

[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.

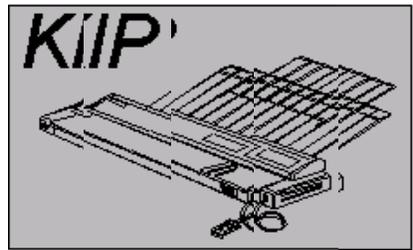
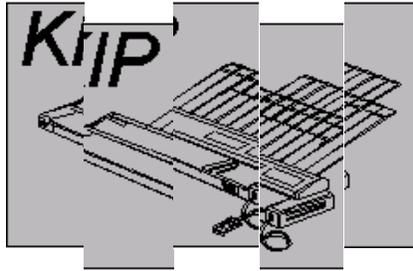
- (1) There occurs a vertical gap of image among the image blocks.
- (2) Some image pixels are commonly included (duplicating) in the neighboring two Image Blocks.



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 KIP Scanner Utility.

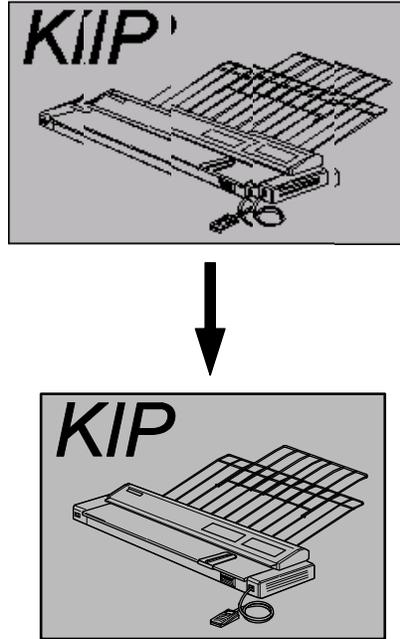
The image data before the positioning process



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 KIP Scanner Utility.

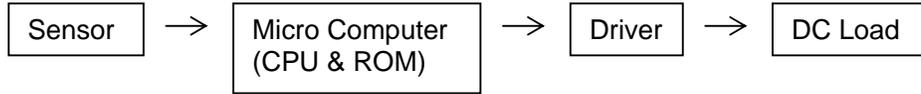
The image data after the positioning process (Y offset)



The image data after the positioning process (X overlap)

4. 1 General Information

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



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

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

0VDC	Blue
5VDC	Yellow
12VDC / 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.

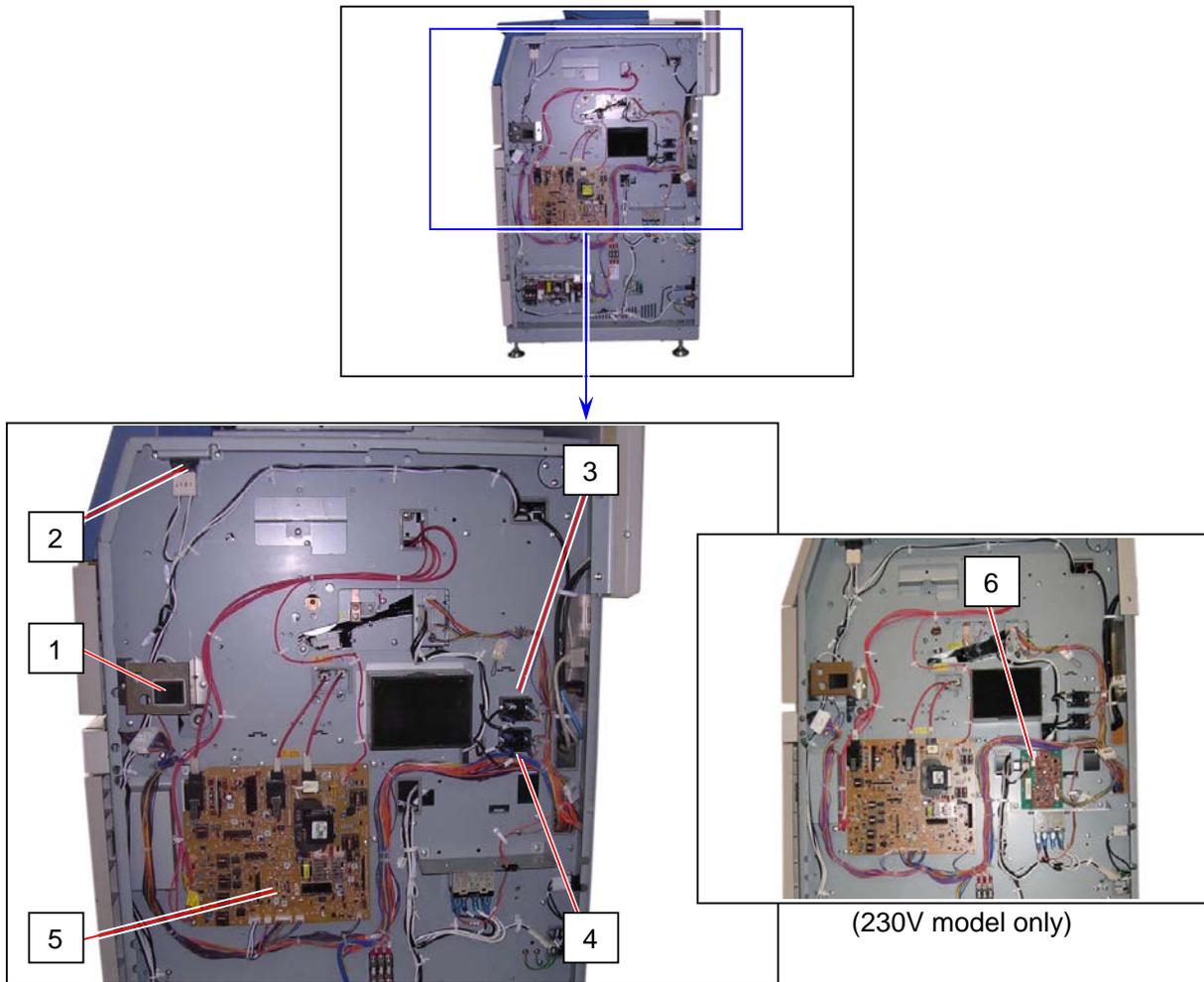
Replace only with the same or equivalent type recommended by the manufacturer.

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

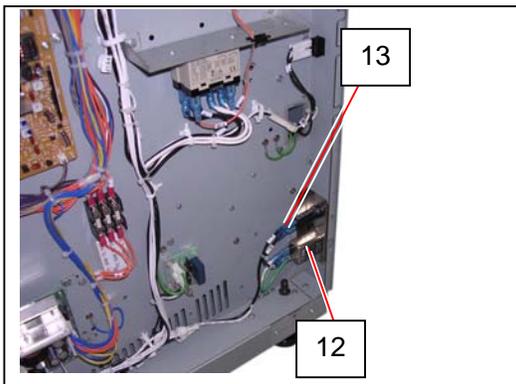
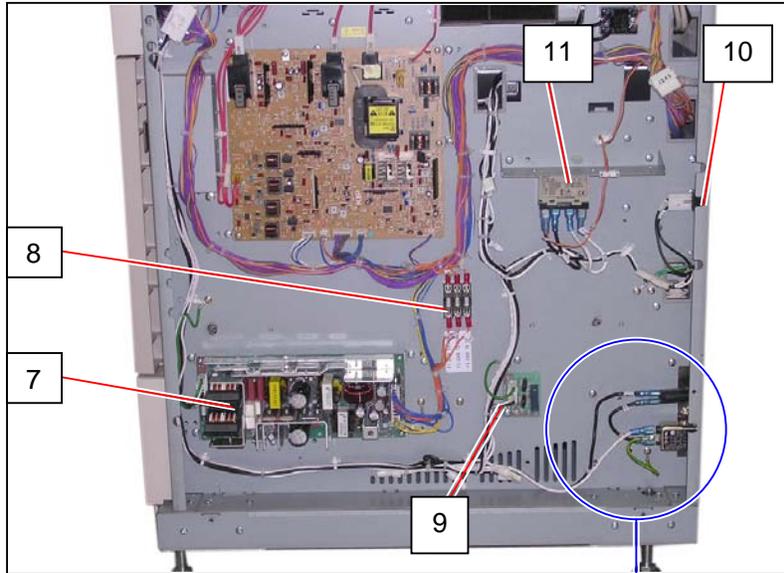
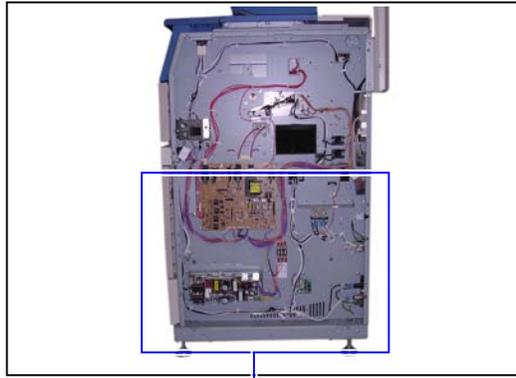
4.2.1 Right Side



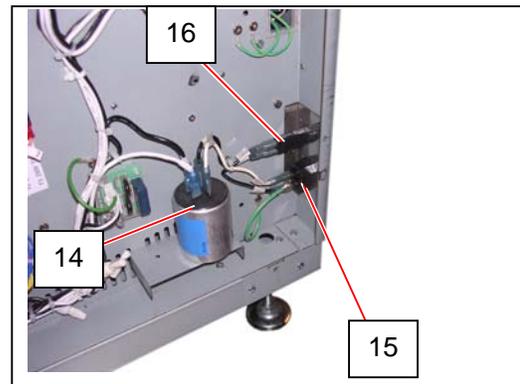
Item	Symbol	Signal name	Name	Type	Function
1	SW1	(POWER-OFF)	Switch	AJ8R2004BBCF	Turning on and off the machine
2	MS1		Switch	FA1L-AA22	Shuts off the AC power to the DCP1 when Toner Hatch or the right side of Engine Unit is opened
3	SSR1		Solid State Relay	AQJ416V (US) AQJ426V (EU)	ON / OFF control of 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"



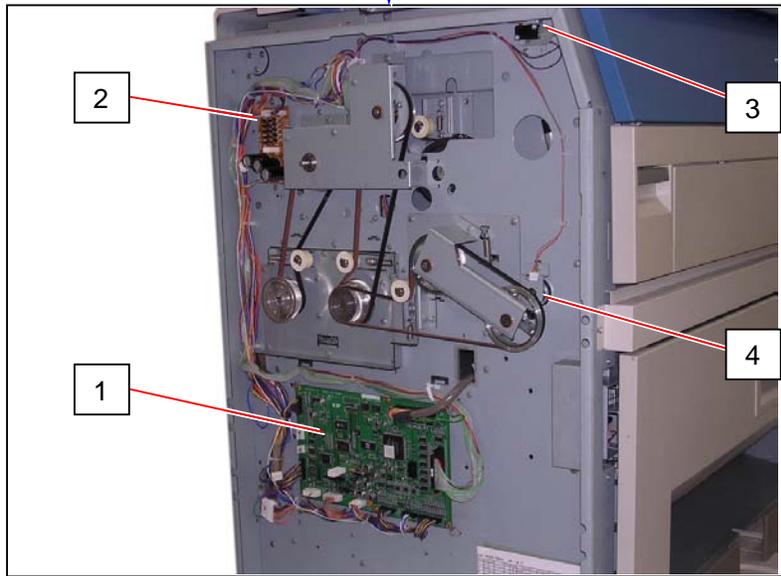
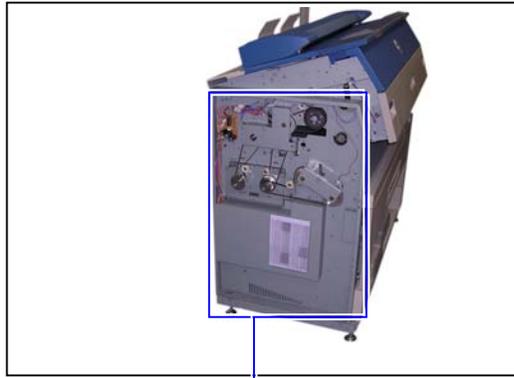
(120V model)



(230V model)

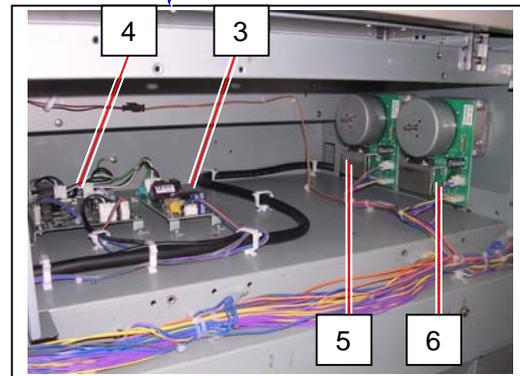
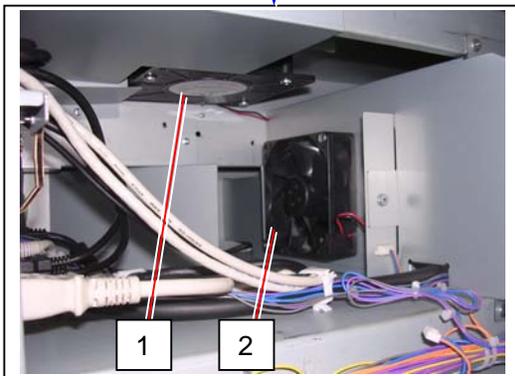
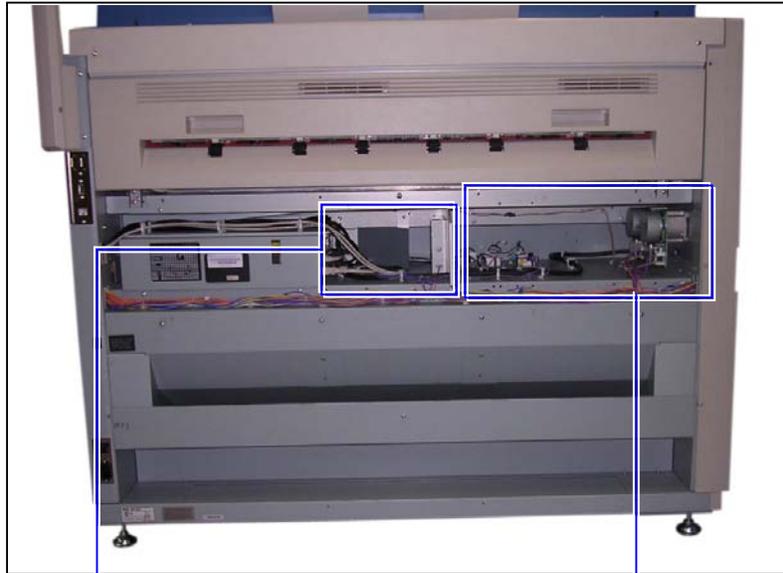
Item	Symbol	Signal name	Name	Type	Function
7	DCP1	-	DC Power Supply	LEB225F-0524-U	Outputting each 24VDC, 5VDC and 0VDC
8	F1 F2 F3	-	Fuse	Walter TSC3.15AH or LITTLE 0215 3.15MXP	Protecting the 24VDC from the over-current If you replace the fuses, make sure to use one listed left.
9	--- (PW10810)	- -	--- (PW10810 PCB ASSY)	--- (PW10810)	--- * PW10810 omitted on New ES (2009). Lightning surge protector * for non New ES (2009) only
10	SW2	-	Switch (Option)	SDDJE1	Turning on and off the Dehumidify Heater
11	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.)
12	LF1	-	Noise Filter		Removing the noise from the AC line Used on 120V model
13	CB1	-	Breaker	X28-XQ1A-15	Protecting the AC line from the over-current Used on 120V model
14	LF1	-	Noise Filter	RG-208F2	Removing the noise from the AC line Used on 230V model
15	INLET	-	Inlet		Inputting the AC Power Used on 230V model
16	CB1	-	Breaker	X28-XQ1A-10	Protecting the AC line from the over-current Used on 230V model

4. 2. 2 Left Side



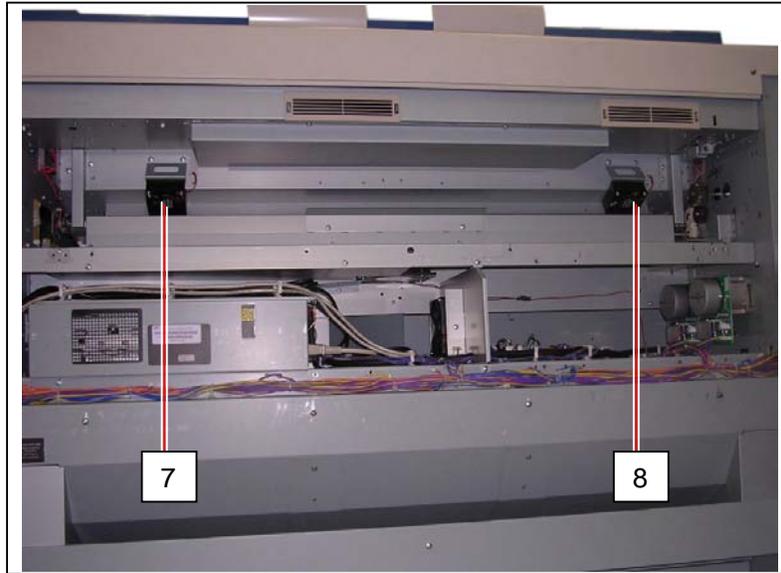
Item	Symbol	Signal name	Name	Type	Function
1	PW11620	-	PW11620 PCB Assy	PW11620	Overall sequence control
2	PW6654B	-	Driver PCB B	PW6654B	Driver for the motors, clutches and so on
3	MS4	-	Switch	V-162-1C25 10E	Detecting whether or not the Toner Hatch or the left side of Engine Unit is opened (The machine 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

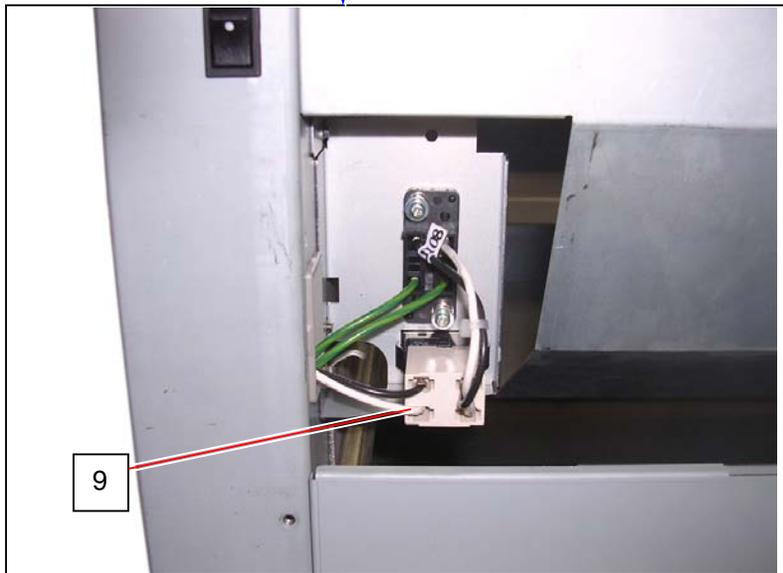


Item	Symbol	Signal name	Name	Type	Function
1	BL7	-	Blower	D12F-24BL 05	Assisting to transport the paper on the Inner Transport Unit
2	BL8	-	Fan	ASFN90372 □90	Cooling down the IPS Controller
3	DCP2	-	DC Power Supply	LDA15F-12	Supplying the DC power to both the UI and the PW10523
4	PW11723 (B) (PW10523)	- -	PW11723 PCB ASSY	PW11723 (B) (PW10523)	- Lightning surge protector - Shutting down the controller * for New ES (2009) only Shutting down the controller. * for non New ES (2009) only
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

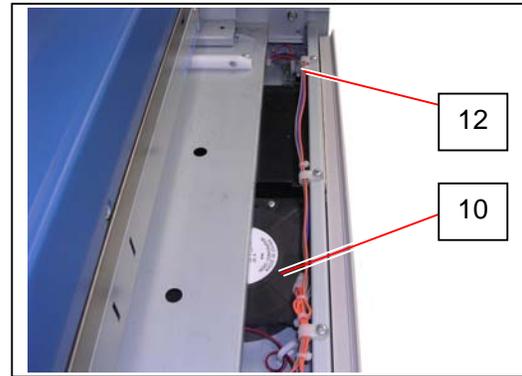
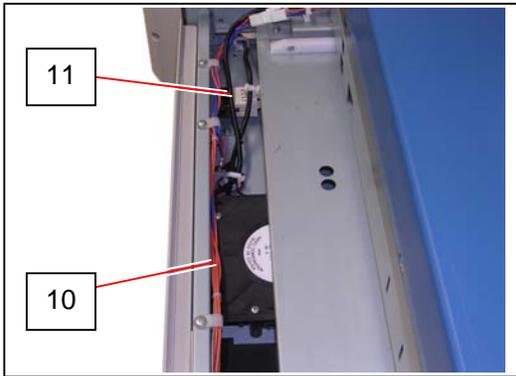
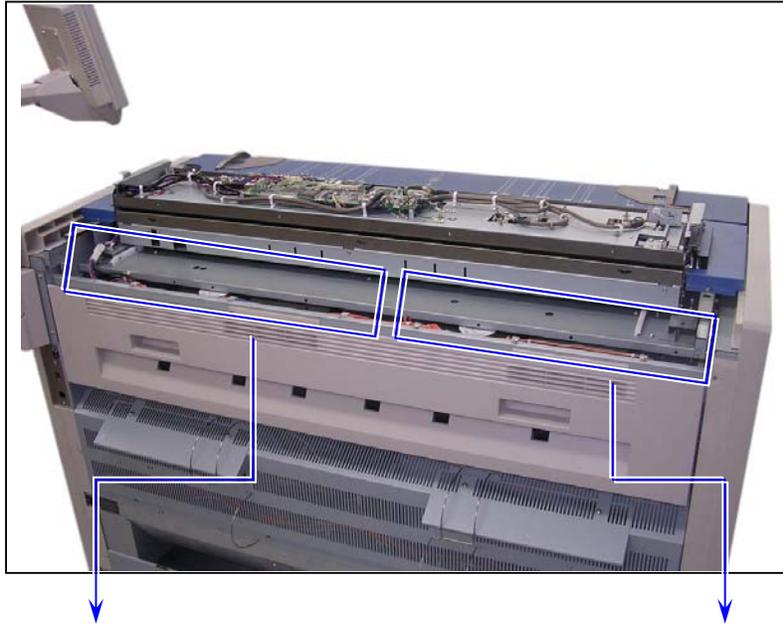
(Fuser Unit omitted)



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

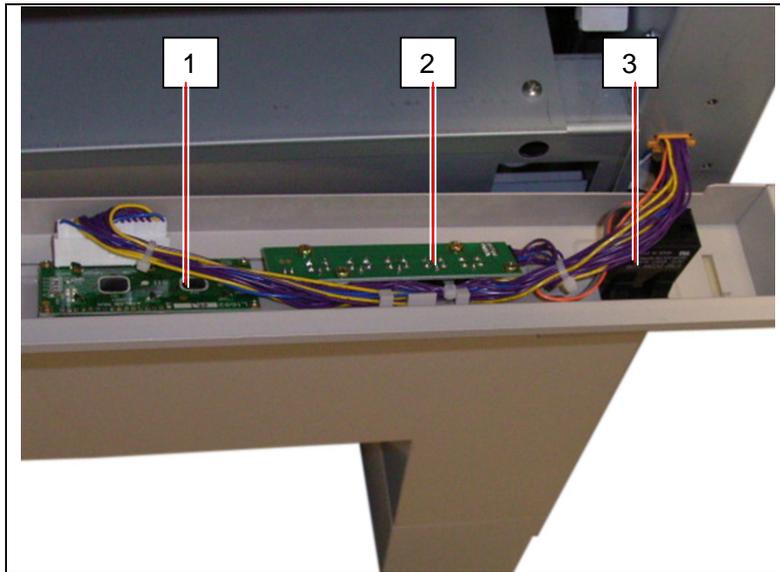


Item	Symbol	Signal name	Name	Type	Function
9	MS8		Switch (Optional in USA)	FA2L-BA22	It stops supplying the AC power to the Dehumidify Heater when the Roll Deck is opened.



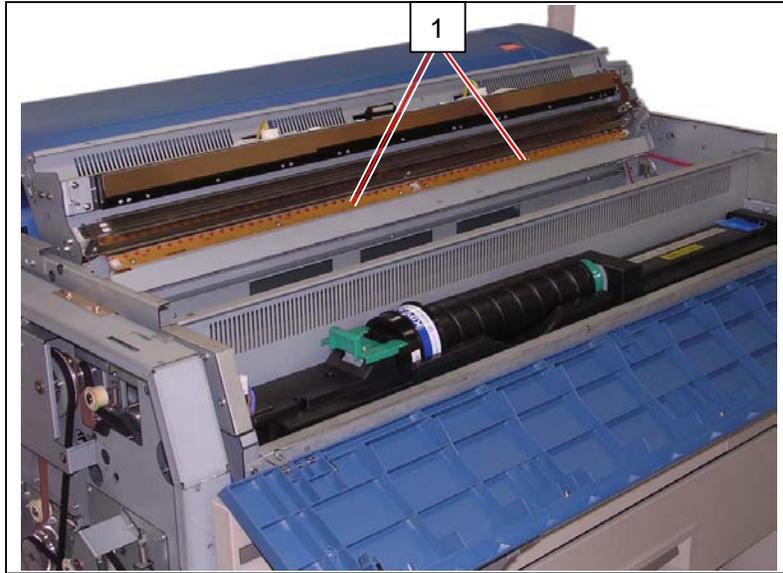
Item	Symbol	Signal name	Name	Type	Function
10	BL3 & BL4	HEAT_BL_L HEAT_BL_R	Blower	D12F-24BL 05	Exhausting the inside air. (They are equipped with the Ozone Filter.)
11	MS2		Switch	FA1L-AA22	Shuts off the AC power to the DCP1 when the right side of Heater Hatch is opened.
12	MS3		Switch	V-162-1C25 10E	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 Front Side

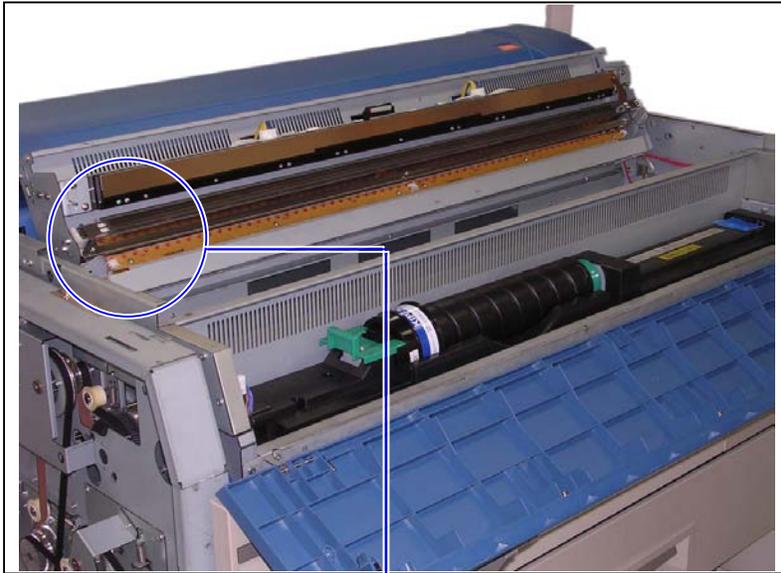


Item	Symbol	Signal name	Name	Type	Function
1	LCD		LCD	L168200J000	Several kinds of message are indicated.
2	PW10570		PW10570 PCB	PW10570	Several kinds of service operations are available.
3	EC1	COUNT	Counter	E760PC10DC 24-551	Counting the total linear meter (linear foot) or square meter (square foot). It is possible to change the counting unit in the Service Mode.

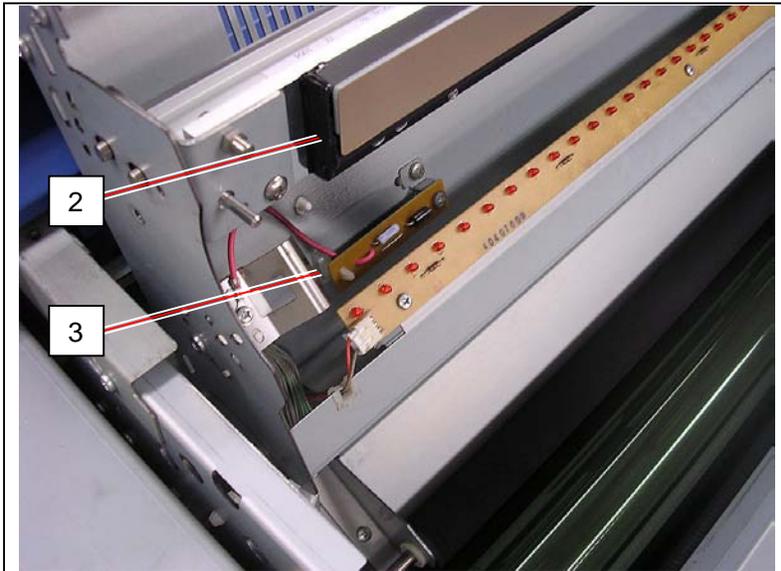
4. 2. 5 LED Head Frame



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



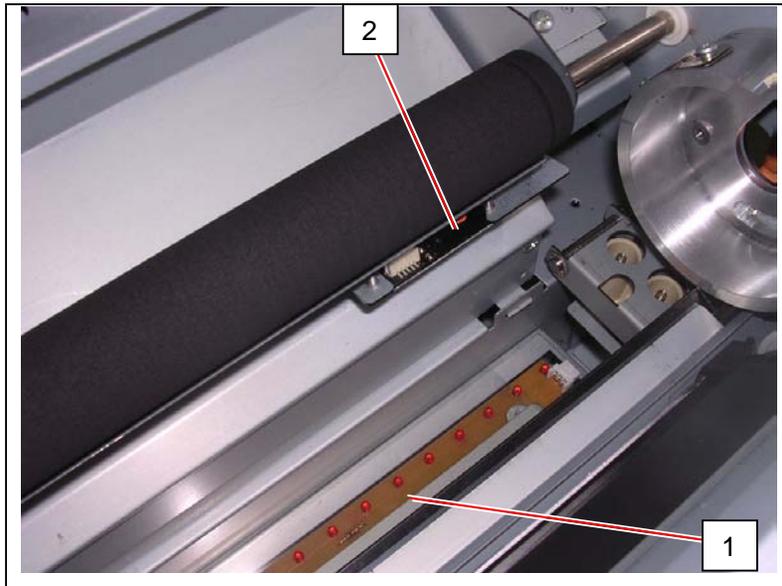
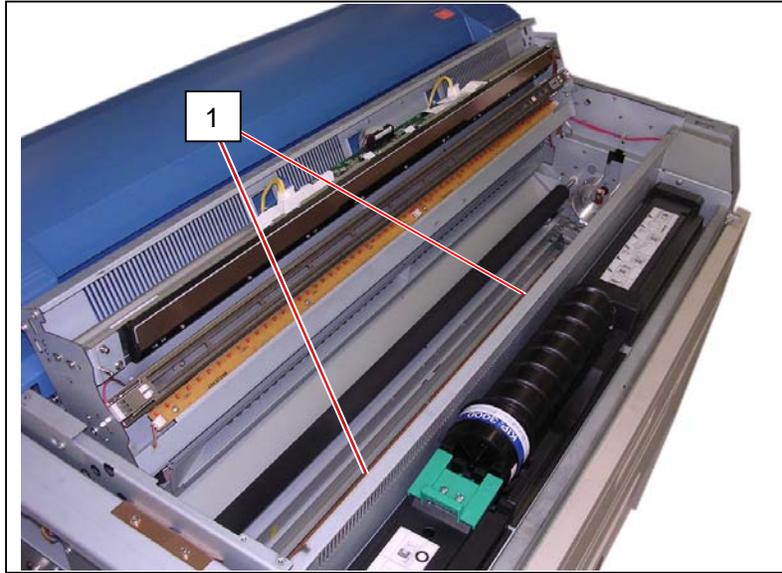
(Image Corona Unit omitted)



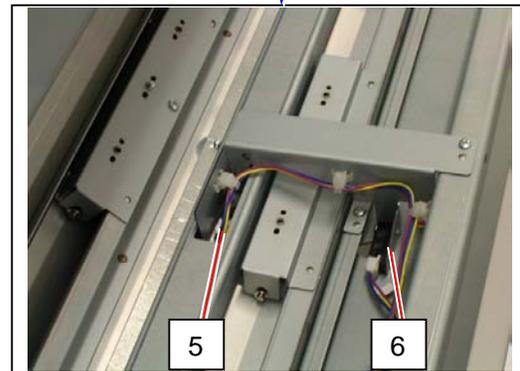
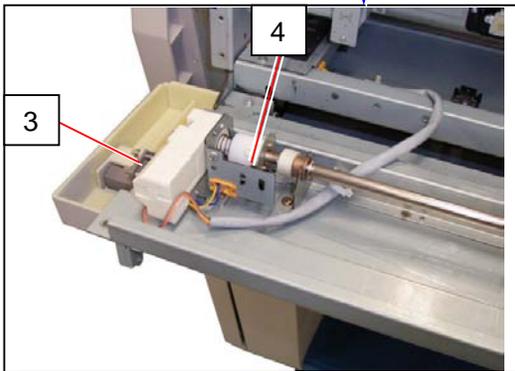
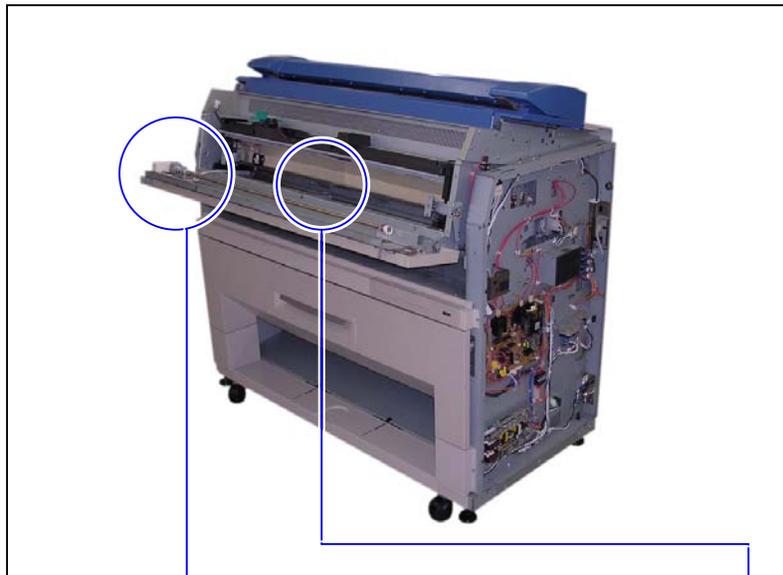
Item	Symbol	Signal name	Name	Type	Function
2	LED HEAD		LED Head	LH6604	Creating latent Images on Drum
3	PW6693		HV-ZD Assy	PW6693	Keeping the Grid Voltage constant (Control of the surface potential)

4. 2. 6 Main Frame

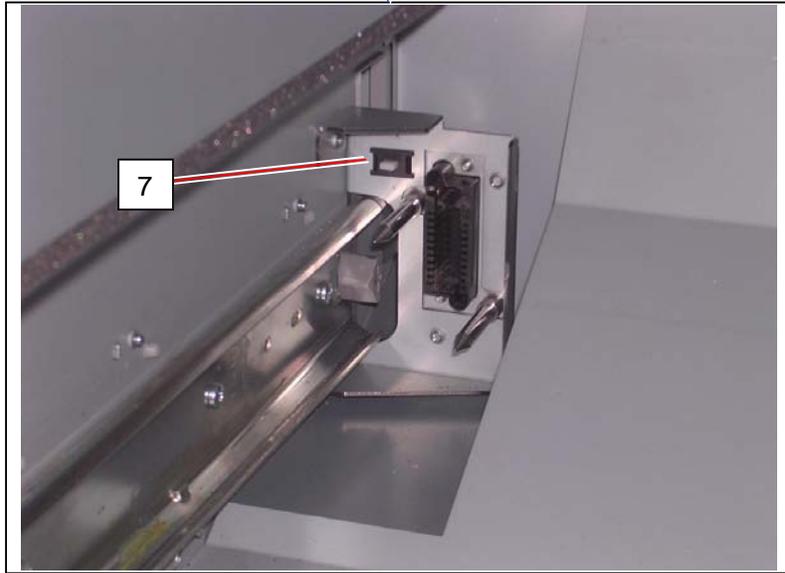
(Drum omitted)



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	GP2Y40010K0 F	Detecting the toner density on the drum surface. Outputting analog voltage to PW11620

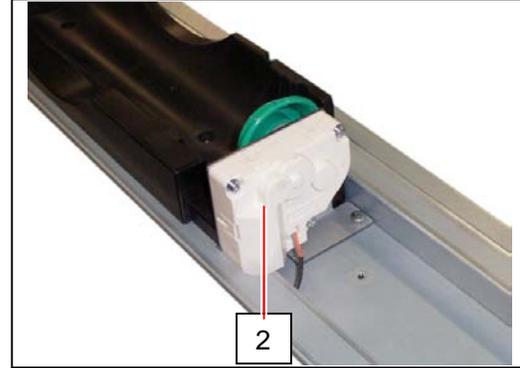
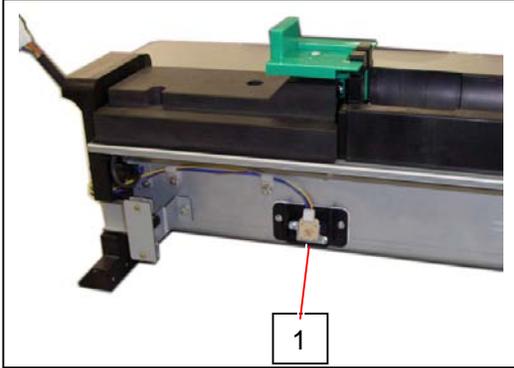
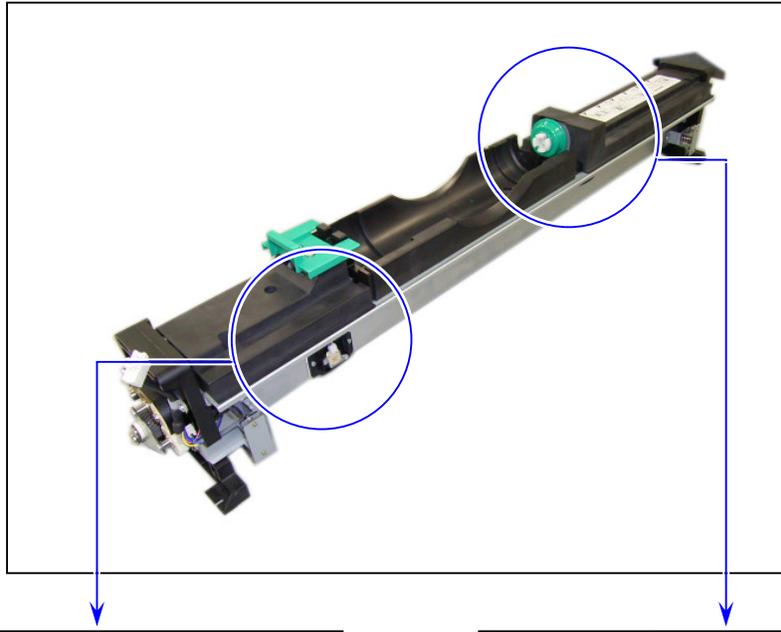


Item	Symbol	Signal name	Name	Type	Function
3	M4	PRESS_M	DC Motor	DU2422-1	Pressing the Developer Unit to the Drum (Or keeping the Developer Unit away from the Drum)
4	PH4	PRESS_S	Sensor	GP1A73A000J	Detecting the Developer Unit is pressed or kept away
5	PH1	REGIST_S	Sensor	PS117ED1	Detecting the paper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



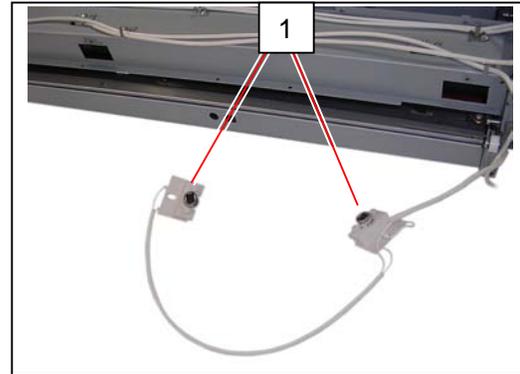
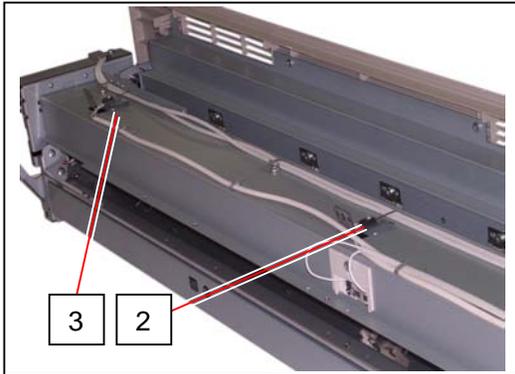
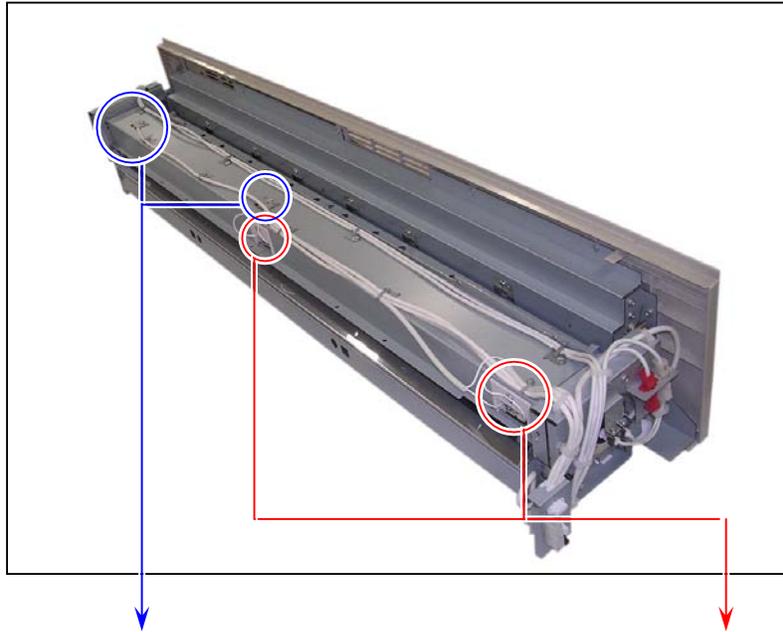
Item	Symbol	Signal name	Name	Type	Function
7	MS5	DOOR-OPEN	Switch	CS1A-B2CA	Detecting the Roll Deck Open Error

4. 2. 7 Developer Unit

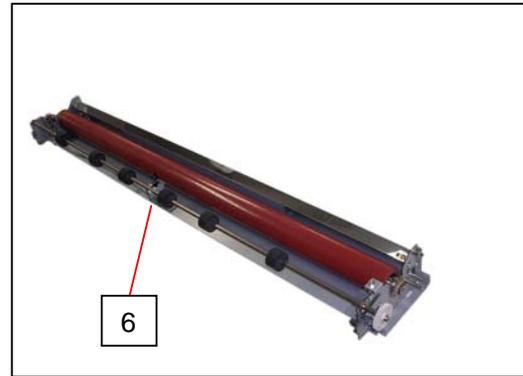
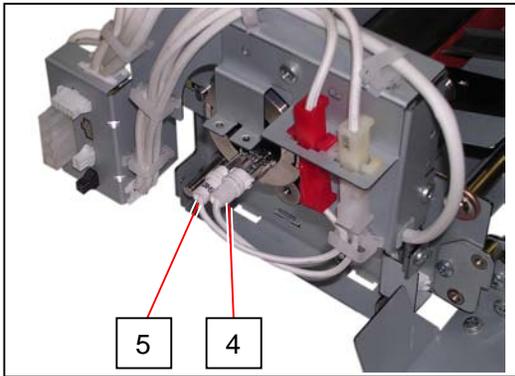
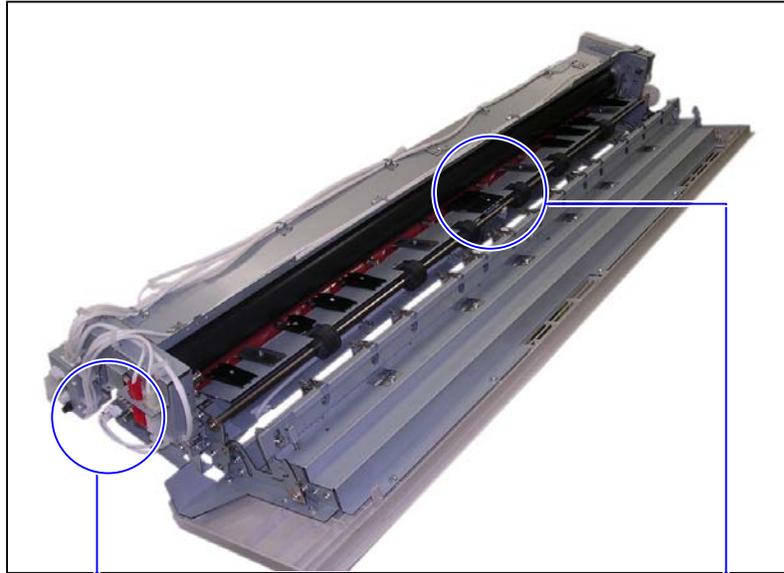


Item	Symbol	Signal name	Name	Type	Function
1	TLS1	TONER_S	Sensor	TSP15DA10C-01	Detecting whether or not the toner exists in the Developer Unit
2	M3	TONER_M	DC Motor	DU2431-2	Driving the Toner Hopper to supply the toner to the Developer Unit

4. 2. 8 Fuser Unit

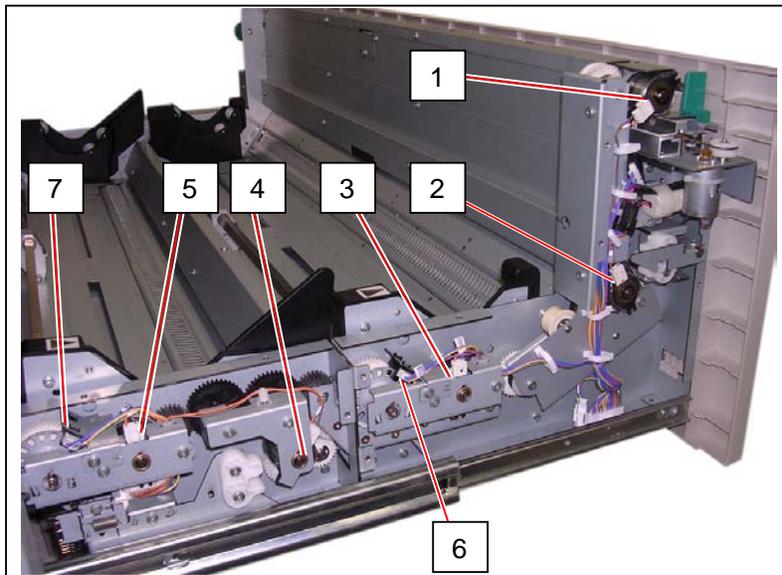


Item	Symbol	Signal name	Name	Type	Function
1	TS1 TS2		Thermostat	CH-152-35-170	Preventing over-heat
2	TH1	TH1	Thermistor	FS-K0113	Detecting the temperature on the central area of Fuser Roller
3	TH2	TH2	Thermistor 3	FS-K0115	Detecting the temperature on the driven side of Fuser Roller

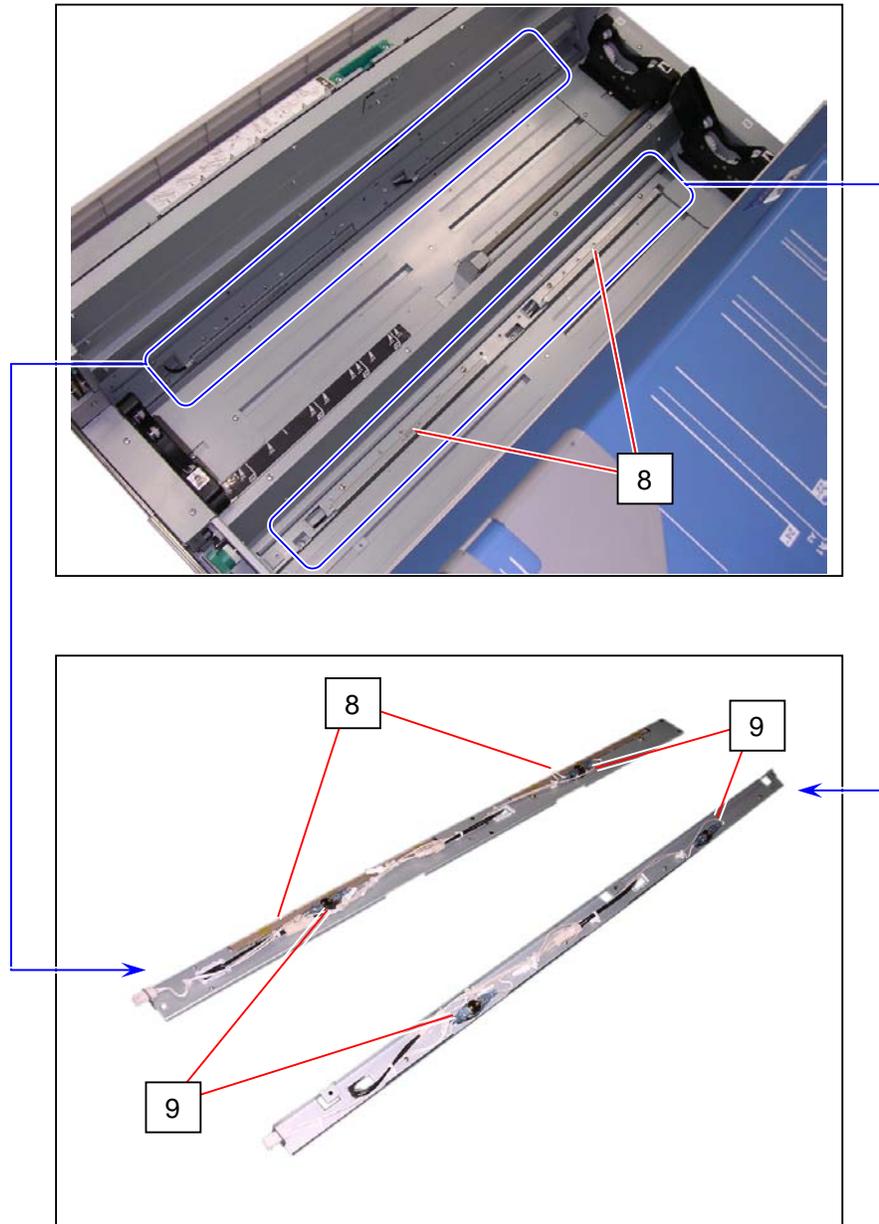


Item	Symbol	Signal name	Name	Type	Function
4	H1		Lamp 120V : Z166800001 230V : Z166800003		Heating up the central part of Fuser Roller
5	H2		Lamp 120V : Z166800002 230V : Z166800004		Heating up the right and the left part of Fuser Roller
6	PH3	HEAT_EXIT	Sensor	GP1A73A000J	Detecting the paper mis-feed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

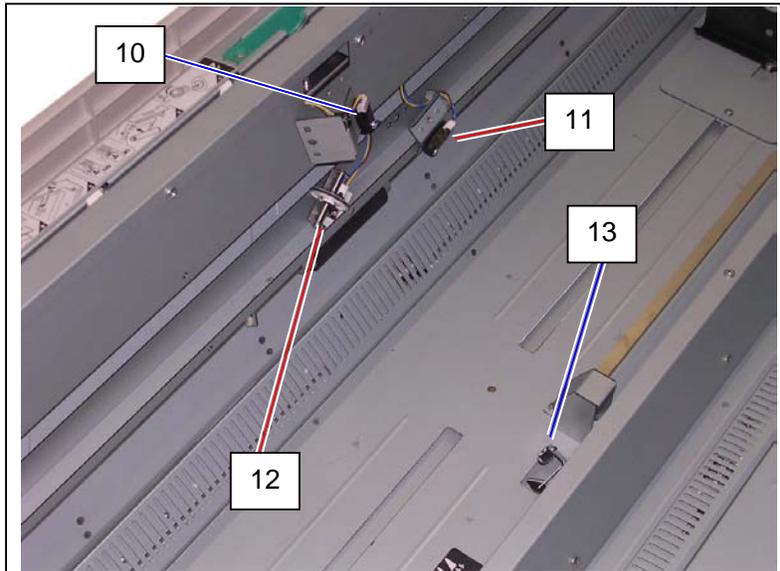
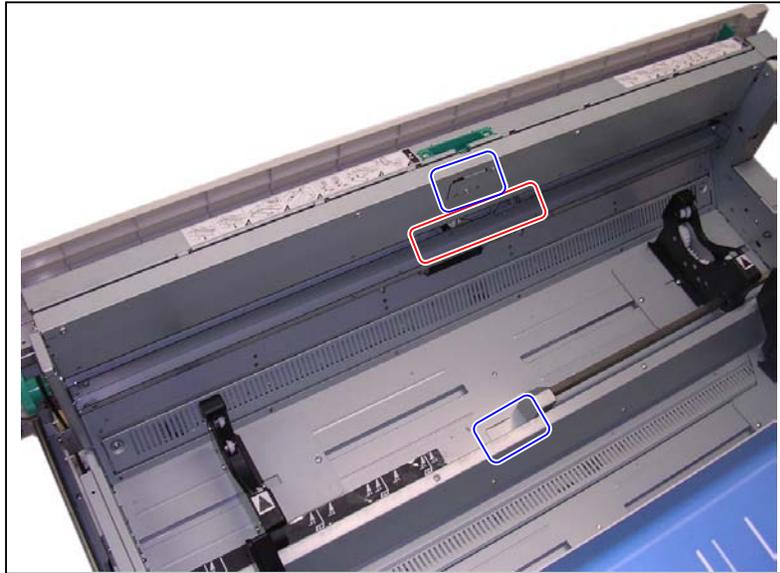
4. 2. 9 Roll Deck



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

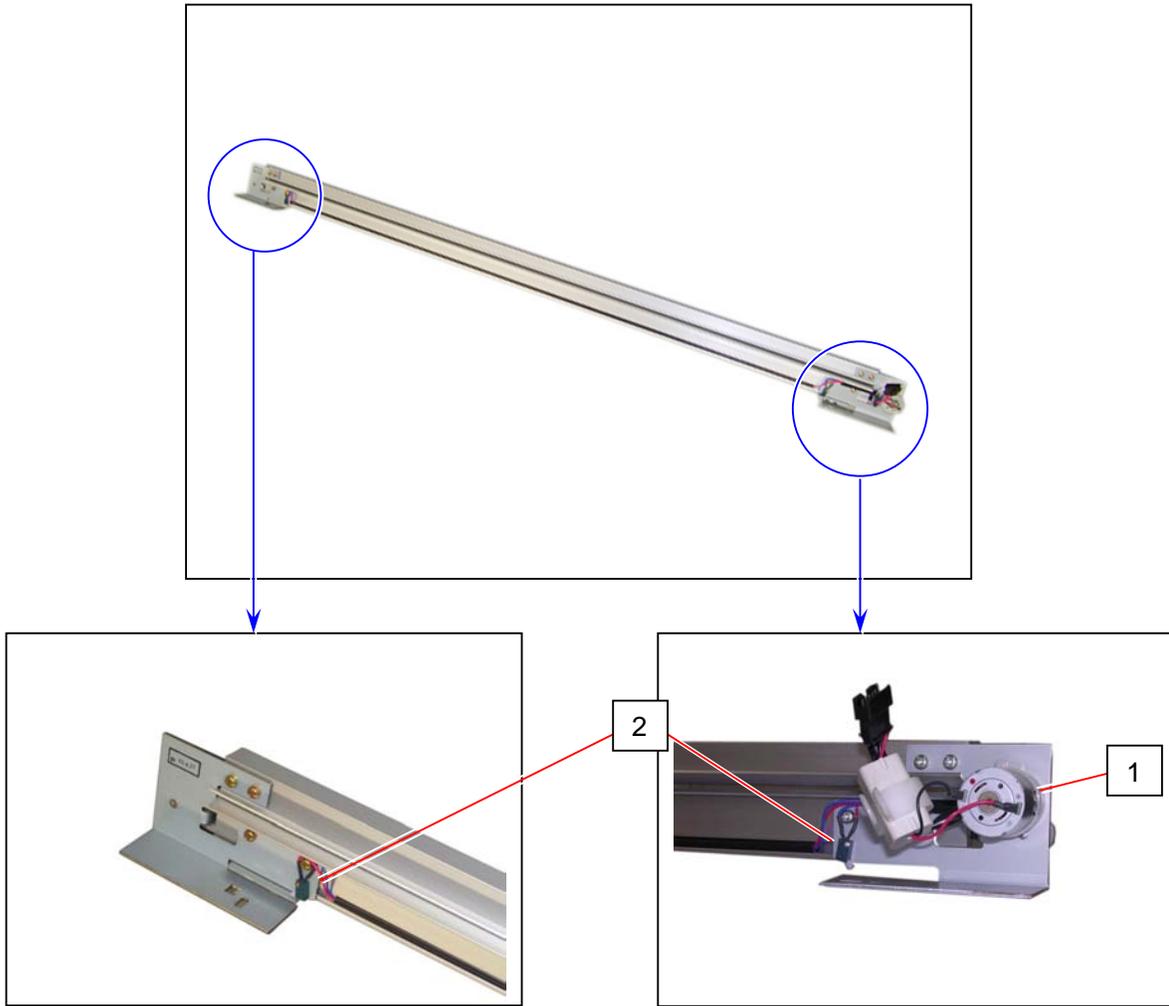


Item	Symbol	Signal name	Name	Type	Function
8	H3 H4 H5 H6		Resister	120V 1K 15W 230V 3.5K 15W	Dehumidifying the roll paper
9	TS3 TS4 TS5 TS6		Thermostat	2455RM-158-37	Controlling the temperature of Resister (The Resisters turn on when the Thermostat detects some decided temperature, and they turn off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



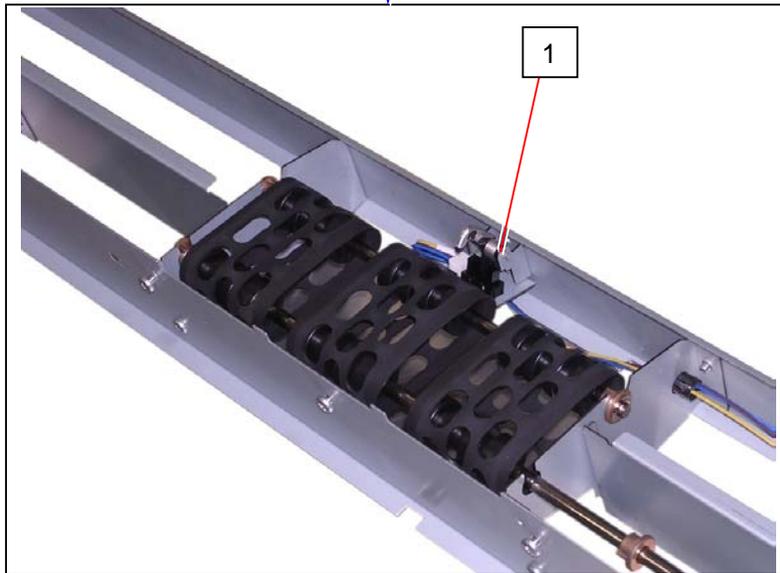
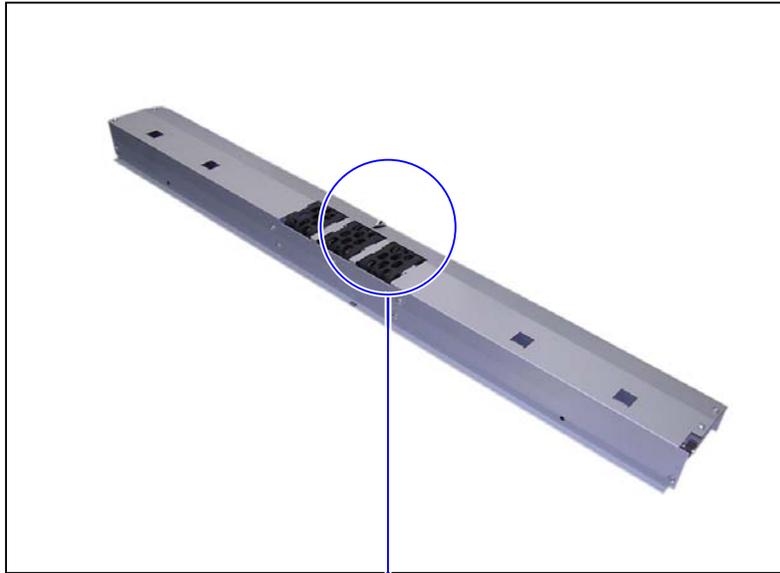
Item	Symbol	Signal name	Name	Type	Function
10	PH6	R_EDGE	Sensor	PS117ED1	Detecting the trailing edge of the roll paper
11	PH7	R1SET_S	Sensor	PS117ED1	Detecting the set of Roll 1
12	PH12	FEED_ENC	Sensor	GP1A73A000J	Detecting the length of the proceeding paper to be cut
13	PH9	R2SET_S	Sensor	PS117ED1	Detecting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

4. 2. 10 Cutter Unit



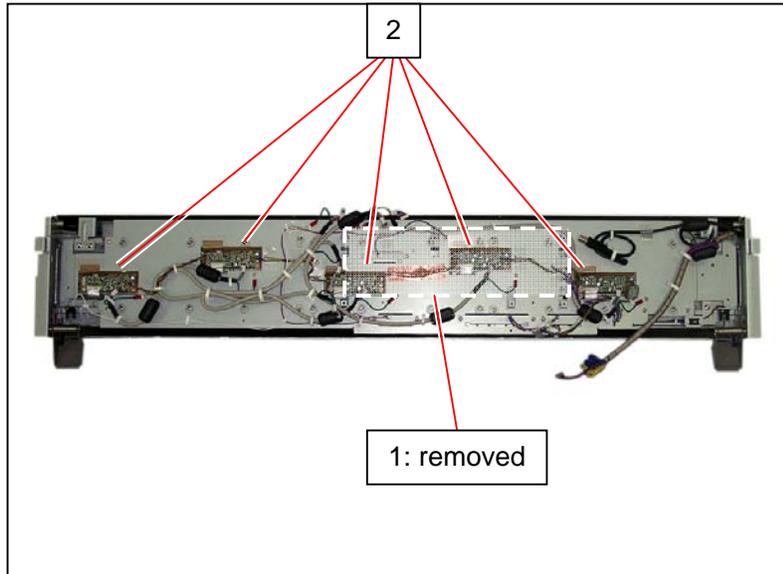
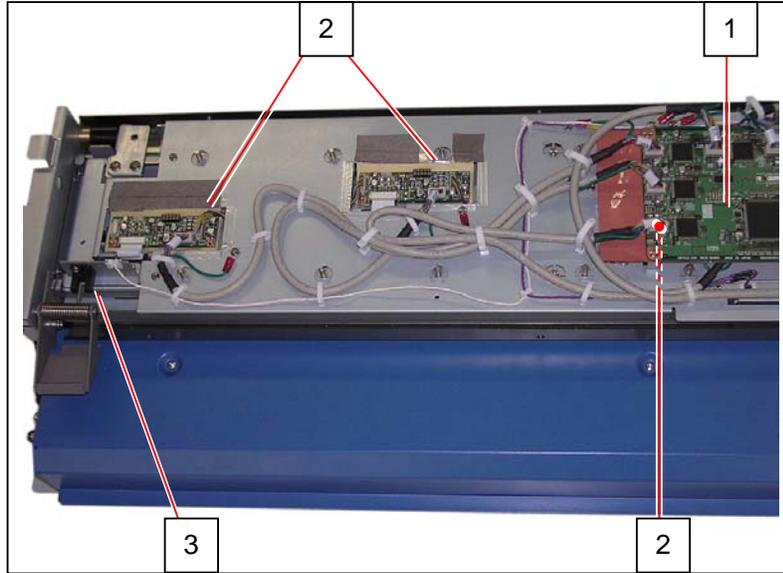
Item	Symbol	Signal name	Name	Type	Function
1	M5		Cutter Motor	-	Moving the Cutter Blade
2	MS6 MS7		Cutter Home Position Sensor	-	Detecting the Home Position of Cutter Blade.

4. 2. 11 Inner Transport Unit

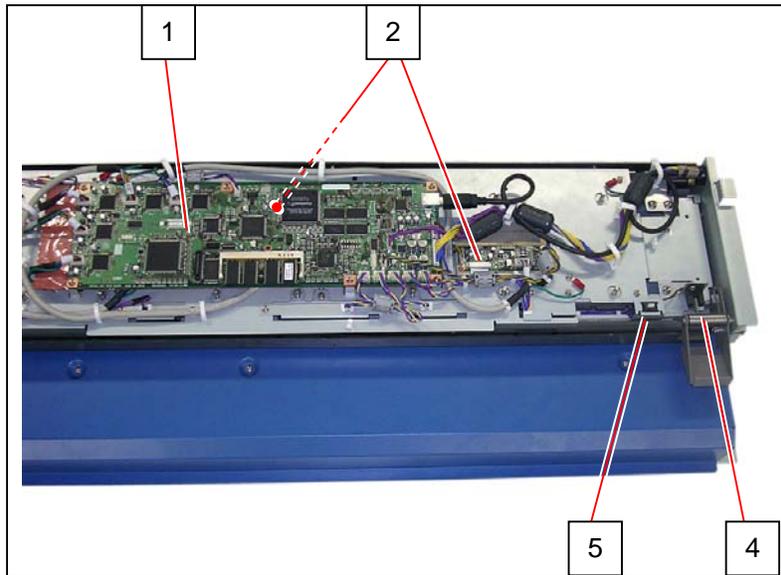


Item	Symbol	Signal name	Name	Type	Function
1	PH2	STRIP_S	Sensor	GP1A73A000J	Detecting the paper mis-feed at the Separation Area

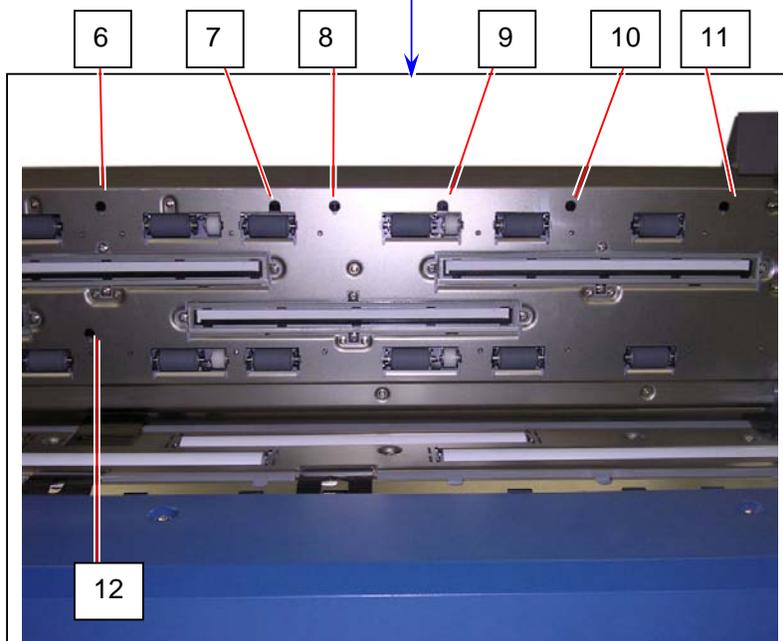
4. 2. 12 Scanner Unit



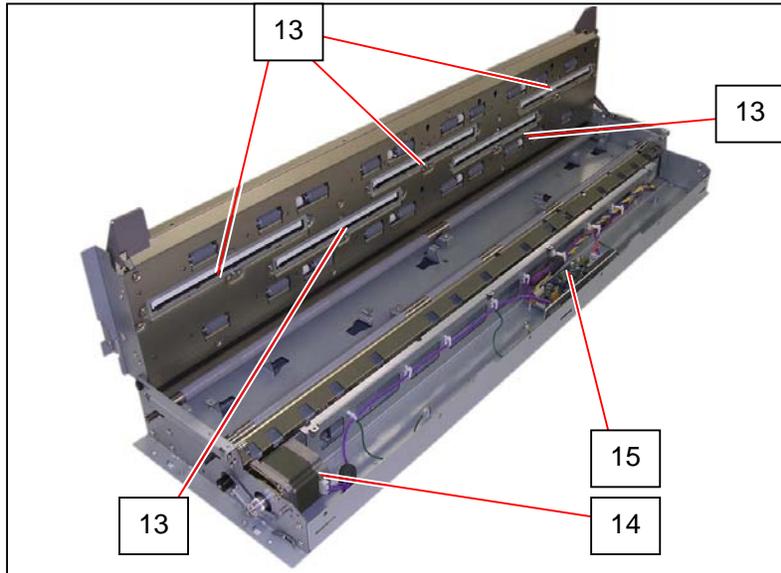
Item	Symbol	Signal name	Name	Type	Function
1			SVC Main BD K (Data Controller)		SVC Main BD K makes image processes to the digital data sent from SVC CIS BD. And then it sends the processed image data to the controller.
2			SVC CIS BD (CIS Controller)		Converting the analog data read by the CIS to the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



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
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. 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.

PW11620 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	4-31
Analog Voltage to the Transfer Corona	4-33
AC Component to the Separation Corona	4-35
DC Component to the Separation Corona	4-37
Negative Developer Bias to the Developer Roller	4-39
Positive Developer Bias to the Developer Roller	4-41
Bias gap between Developer Roller and Regulation Roller	4-43
Positive Cleaning Roller Bias (Print Cycle)	4-45
Negative Cleaning Roller Bias (Toner Collection Process)	4-47

Reference

Please try to replace the PW11620 PCB or HV Power Supply PCB if you have the following kinds of problem.

PW11620 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)

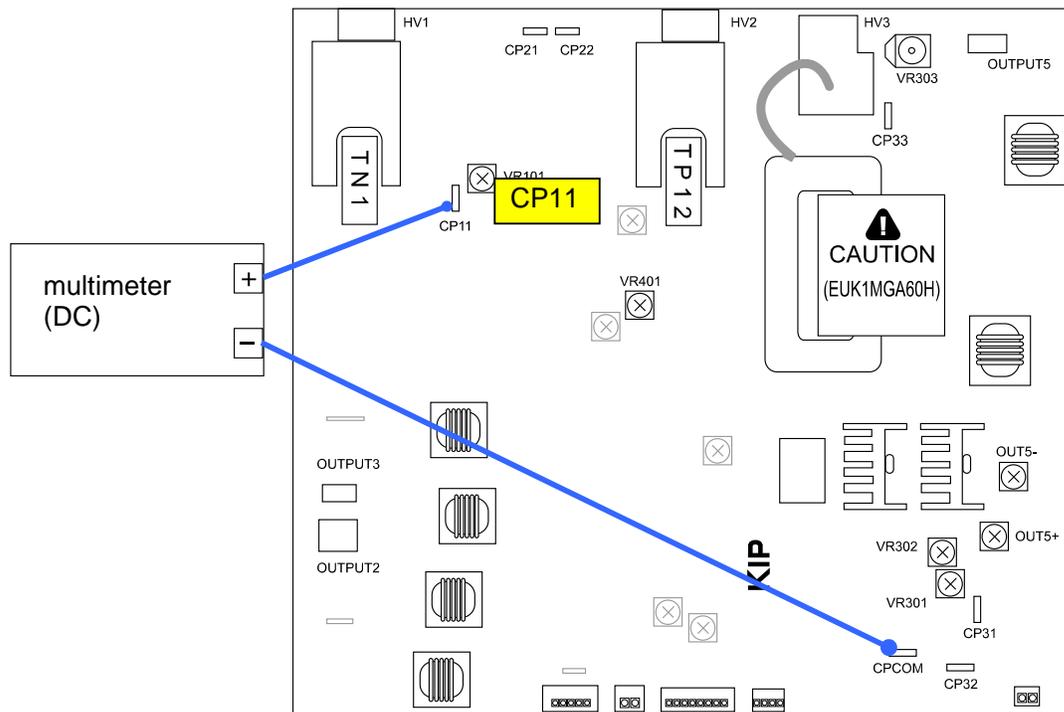
When the output to Image Corona / Transfer Corona / Separation Corona / Developer Roller / Toner Supply Roller / Regulation Roller / Cleaning Roller is abnormal.

4. 3. 2 Check & Adjustment of Analog Voltage to the 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.

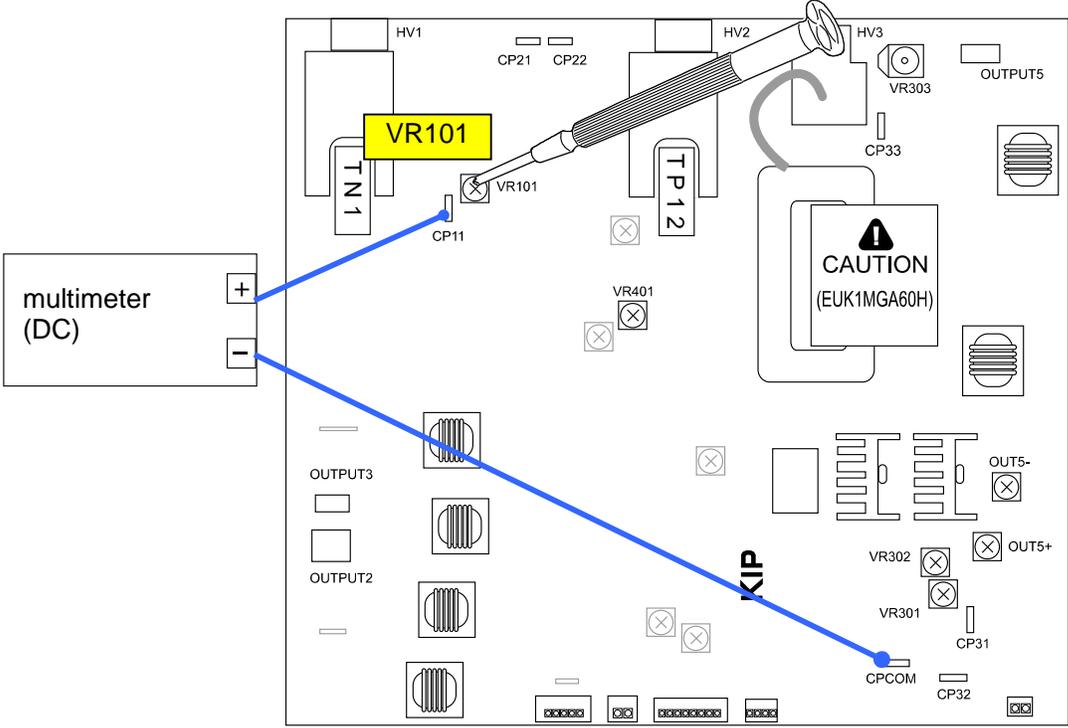
1. Connect the “+” cable of the multi-meter to the “CP11” pin on the HV Power Supply PCB (EUK1MGA60HA).
Also connect the “-” one to the “CPCOM”.
And then, select the DC volt range on the multi-meter.



2. Make a Test Print making reference to [8. 8 Test Print Mode] on and after the page 8-141.
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 Check & Adjustment of Analog Voltage to the 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.

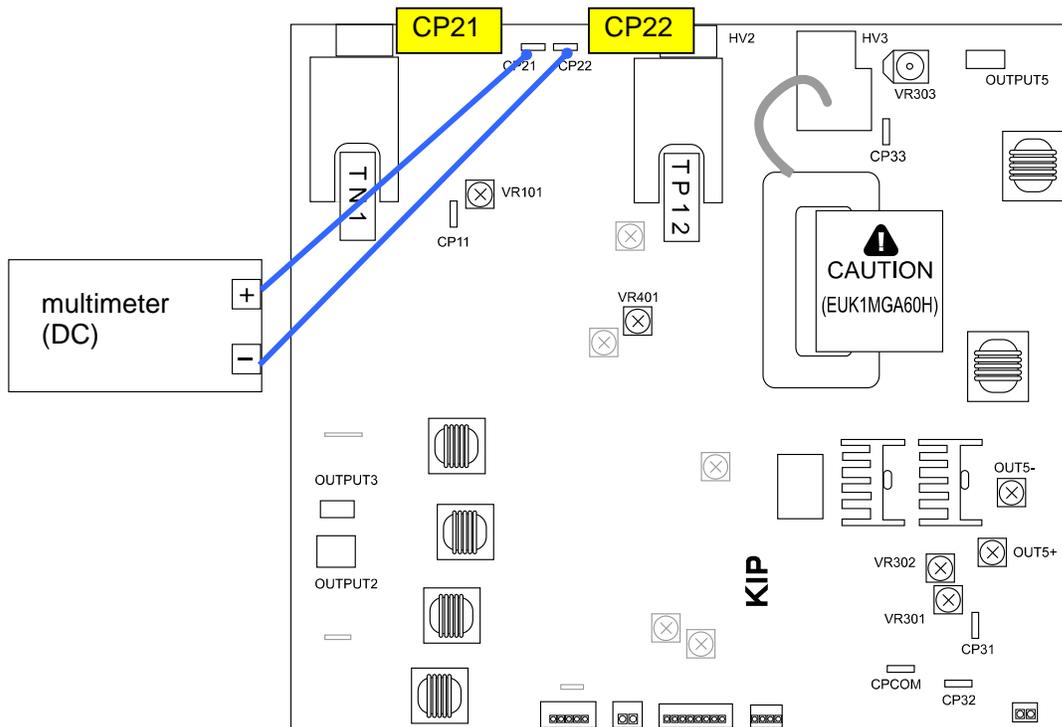
Plain paper	1.20 +/-0.05V
Tracing paper	1.00 +/-0.05V
Film	1.00 +/-0.05V

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. 8 Test Print Mode] on and after the page 8-141.
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 (Mode No.4), select each of following Sub Mode Numbers, and change the setting value so that the output voltage satisfies the above specifications.
(Refer to [8. 5. 4.13 Transfer Voltage (No.029 to 034)] on the page 8-47 for the detail.)

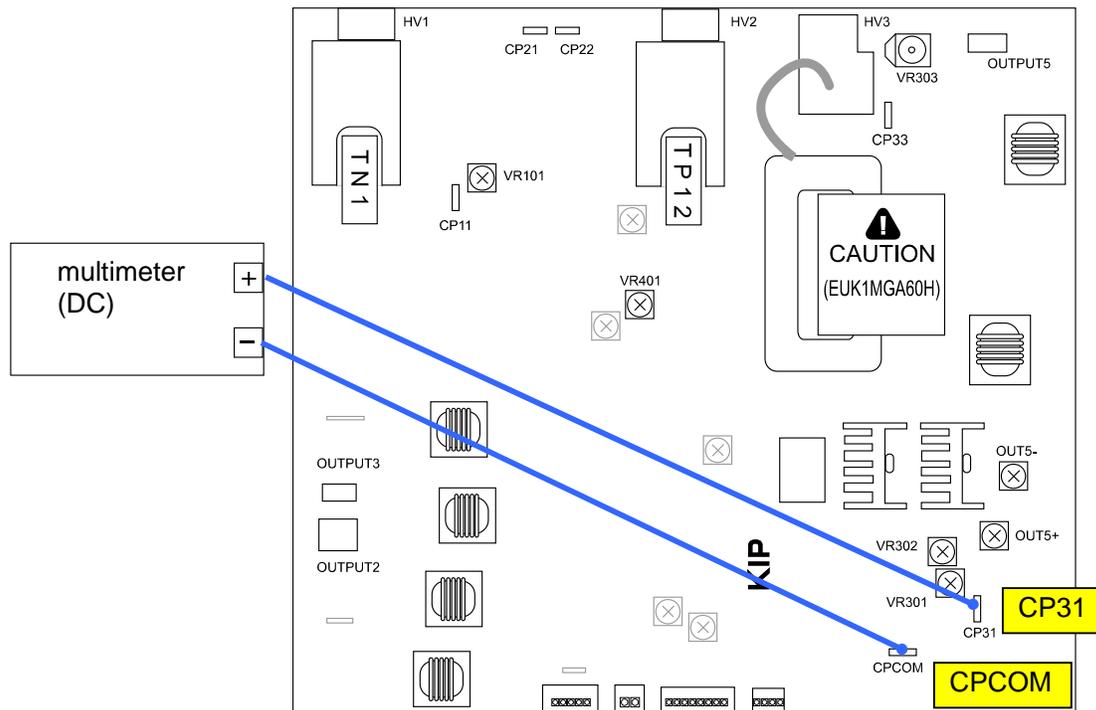
Sub Mode No.	Contents
029	Transfer Voltage (Plain paper)
030	Transfer Voltage (Tracing paper)
031	Transfer Voltage (Film)
032	Transfer Voltage (Plain paper : Special)
033	Transfer Voltage (Tracing paper : Special)
034	Transfer Voltage (Film : Special)

4. 3. 4 Check & Adjustment of AC Component to the 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.

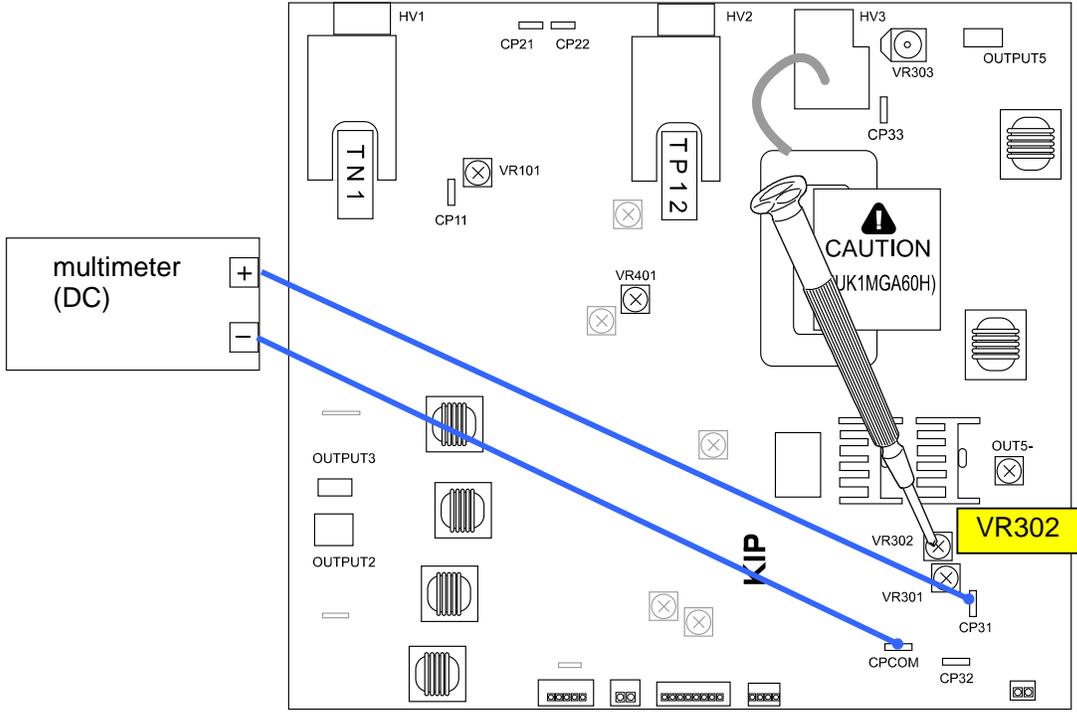
1. Connect the “+” cable of the multi-meter to the “CP31” pin on the HV Power Supply PCB (EUK1MGA60HA).
Also connect the “-” one to the “CPCOM” pin.
And then, select the DC volt range on the multi-meter.



2. Make a Test Print making reference to [8. 8 Test Print Mode] on and after the page 8-141.
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.

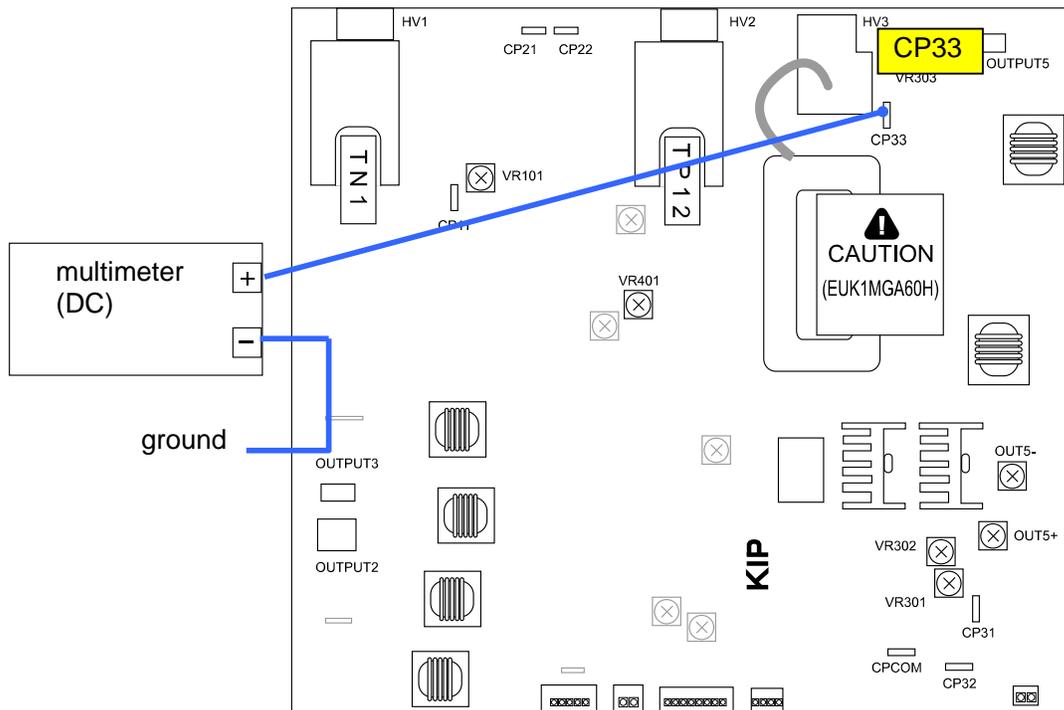


4. 3. 5 Check & Adjustment of DC Component to the Separation Corona

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. 8 Test Print Mode] on and after the page 8-141.
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**.

4. 3. 6 Check & Adjustment of Negative Developer Bias to the 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.

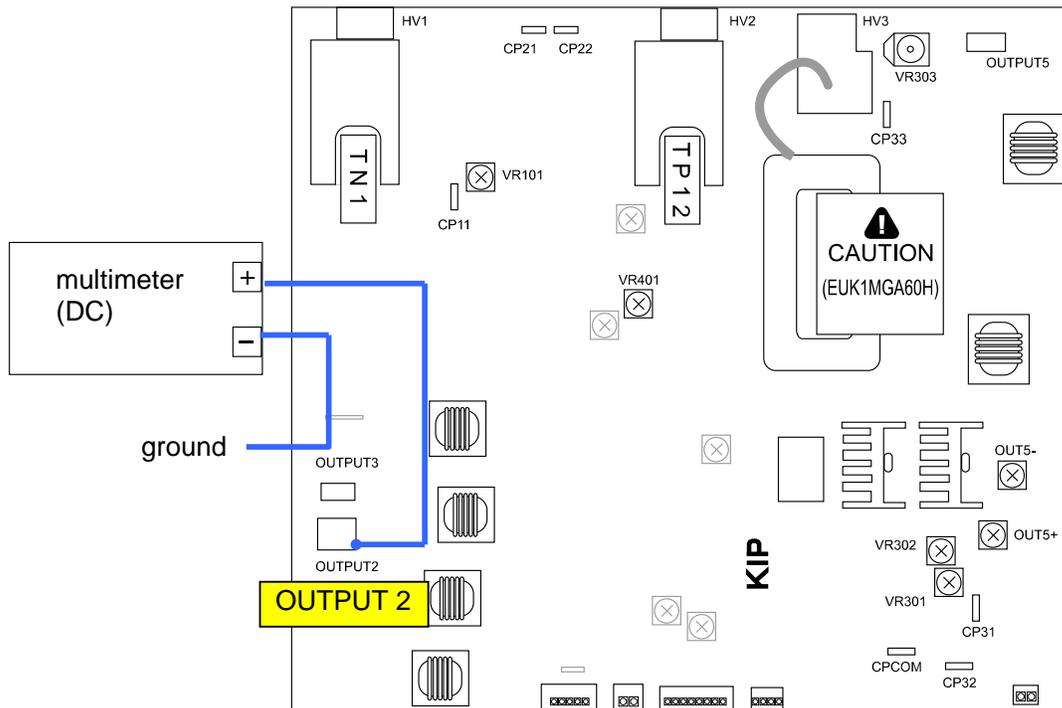
Plain paper	-180 +/-5V against the ground
Tracing paper	-180 +/-5V against the ground
Film	-180 +/-5V against the ground

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.



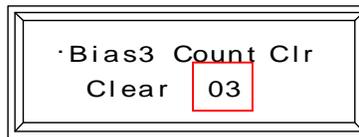
2. Make a Test Print making reference to [8. 8 Test Print Mode] on and after the page 8-141.
As the Negative Developer Bias is supplied to the Developer Roller during the Test Print, check the voltage with the multi-meter.

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 Clear Mode (Mode No.10) and Density Compensation Reset Mode (Sub Mode No. 7).



A voltage “-230V +/- 5V” is correct when the above 2 digits (corresponding to Auto Adjustment Level by Density Compensation Process) show “01”, “02” or “03”.

2 digits (current Auto Adjustment Level)	Supposed Developer Bias
00	-180 +/-5V
01, 02, 03	-230 +/-5V

Refer to [8. 5. 4.112 Density Compensation ON/OFF (No.652)] on page 8-129 for Density Compensation Process.)

Refer to [8. 10. 2. 7 Density Compensation Reset Mode] on page 8-160 for checking the current Auto Adjustment Level.

If not satisfied according to the current Auto Adjustment Level, go to the next step for manual Developer Bias adjustment.

4. Select the Adjustment Mode (Mode No.4), 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. 5. 4.13 Developer Bias (No.022 to 027)] on page 8-49 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)

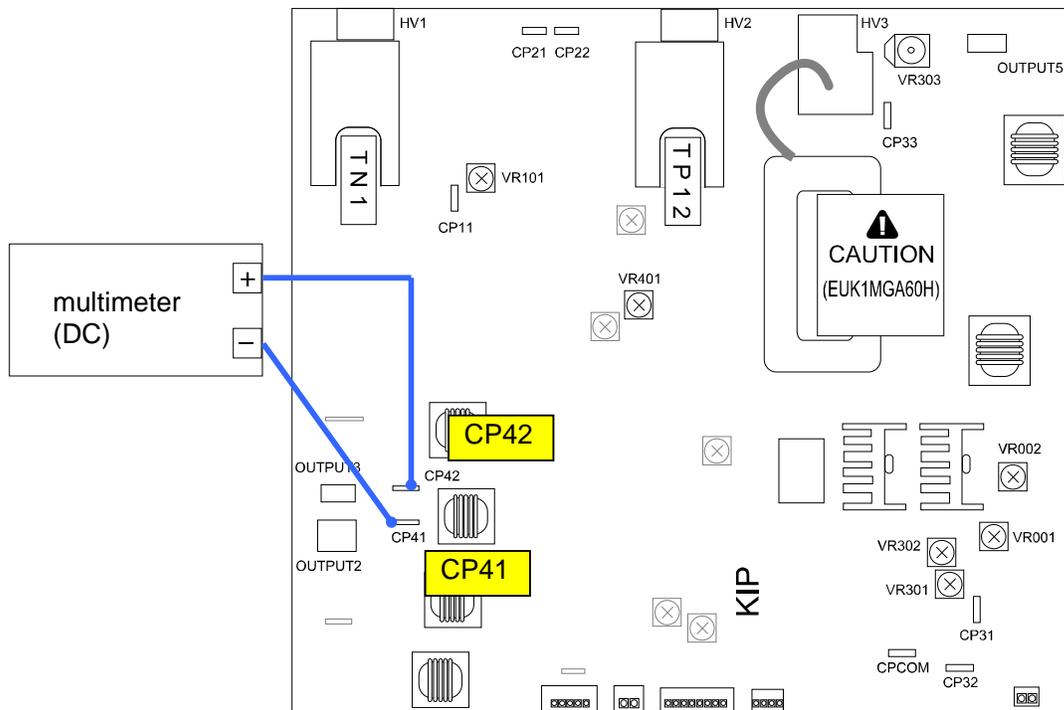
4. 3. 7 Check & Adjustment of Positive Developer Bias to the Developer Roller

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 ground.**

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

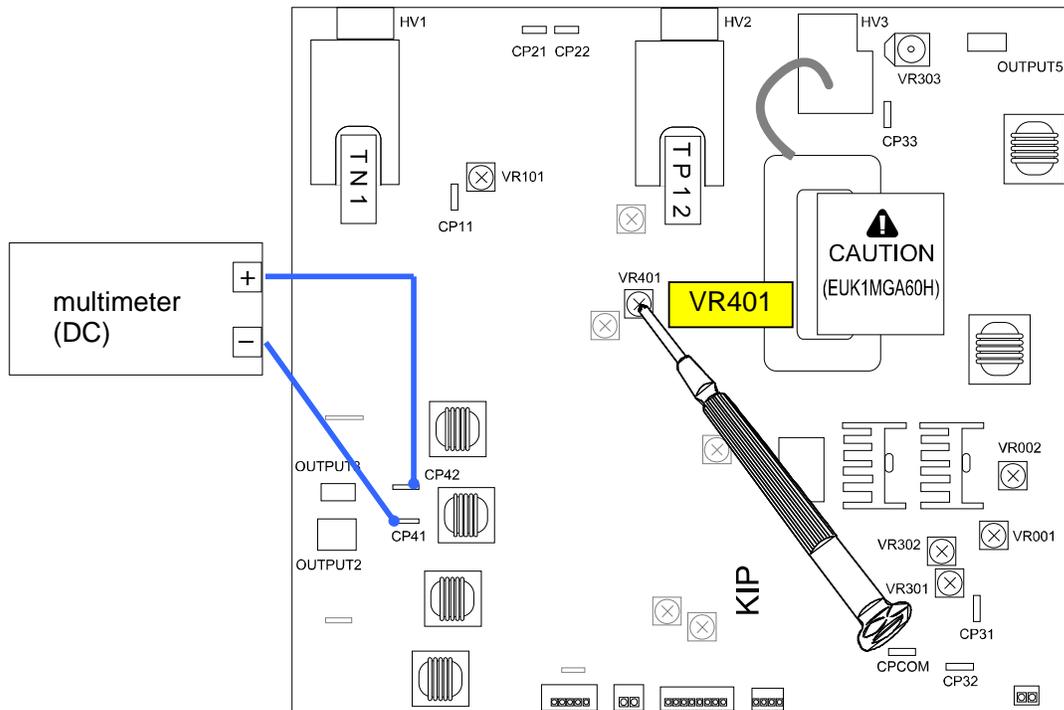
1. Connect the “+” cable of the multi-meter to “CP41” pin on the HV Power Supply PCB (EUK1MGA60HA).
Also connect the “-” one to “CP42”.
And then, select the DC volt range on the multi-meter.



2. Make a Test Print making reference to [8. 8 Test Print Mode] on and after the page 8-141.
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 8 for the adjustment.

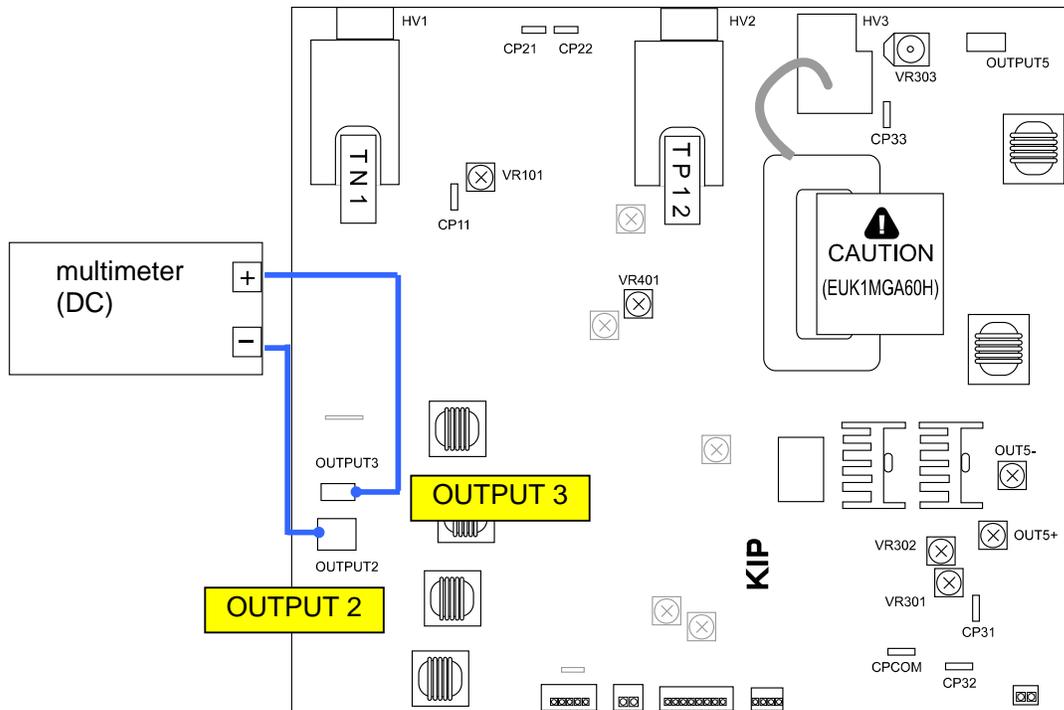
3. Adjust the Positive Developer Bias rotating the VR401, so that it should satisfy **0.350 +/-0.005V against the CP42**.



4. 3. 8 Check & Adjustment of the 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.

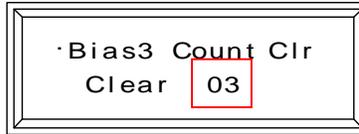


2. Make a Test Print making reference to [8. 8 Test Print Mode] on and after the page 8-141. As the Bias is supplied to both the Developer Roller and the Regulation Roller, check the Bias gap between them with the multi-meter.

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.

- If the value (voltage) is “120 +/-5V” or “160 +/- 5V”, Regulation Bias may be automatically adjusted by Density Compensation Process.
Enter Clear Mode (Mode No.10) and Density Compensation Reset Mode (Sub Mode No. 7).



A voltage “120V +/- 5V” is correct when the above 2 digits (corresponding to Auto Adjustment Level) show “02”, and “160V +/- 5V” is correct when the digits show “03”.
If not, go to the next step for the adjustment.

2 digits (current Auto Adjustment Level)	Regulation Bias
00, 01	80 +/-5V
02	120 +/-5V
03	160 +/-5V

Refer to [8. 10. 2. 7 Density Compensation Reset Mode] on page 8-160 for checking the current Density Compensation Level.
Refer to [8. 5. 4.112 Density Compensation ON/OFF (No.652)] on page 8-129 for Density Compensation Process.)

If not satisfied according to the current Auto Adjustment Level, go to the next step for manual Regulation Bias adjustment.

- Select the Adjustment Mode (Mode No.4), select Sub Mode No. 622, and change the value so that the output voltage satisfies **30 +/-5V**.
(Refer to [8. 5. 4.102 Regulation Bias (No.622)] on page 8-123 for the detail.)

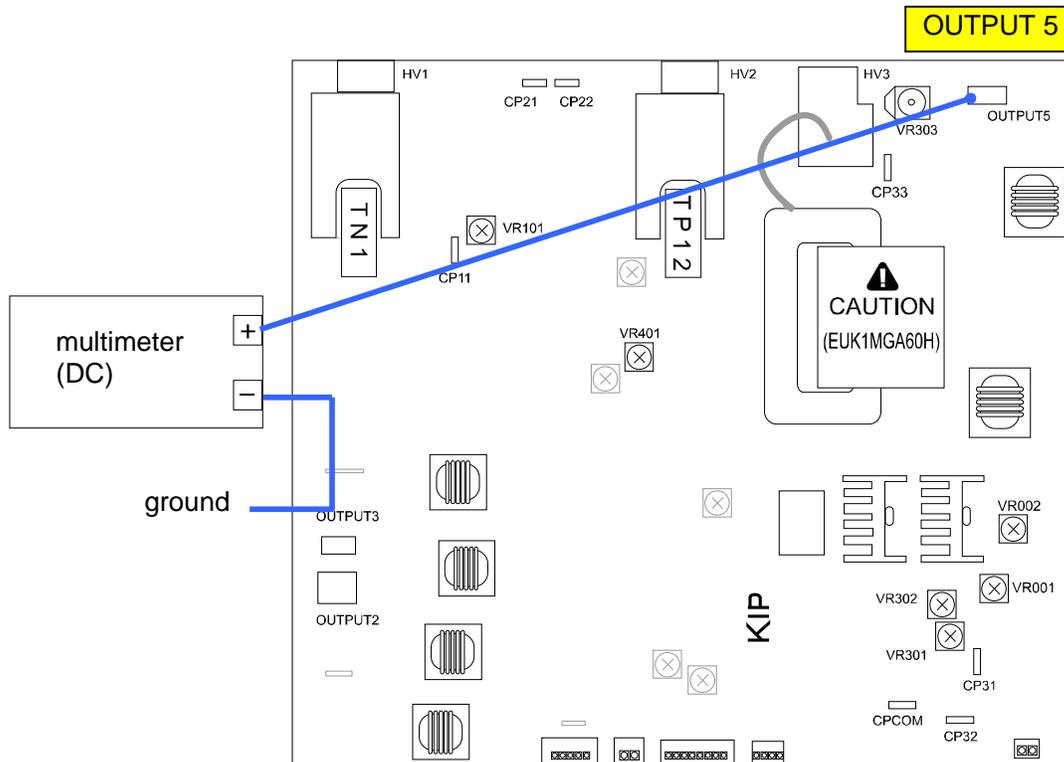
4. 3. 9 Check & Adjustment of Positive Cleaning Roller Bias (Print Cycle)

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. 8 Test Print Mode] on and after the page 8-141.
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**.

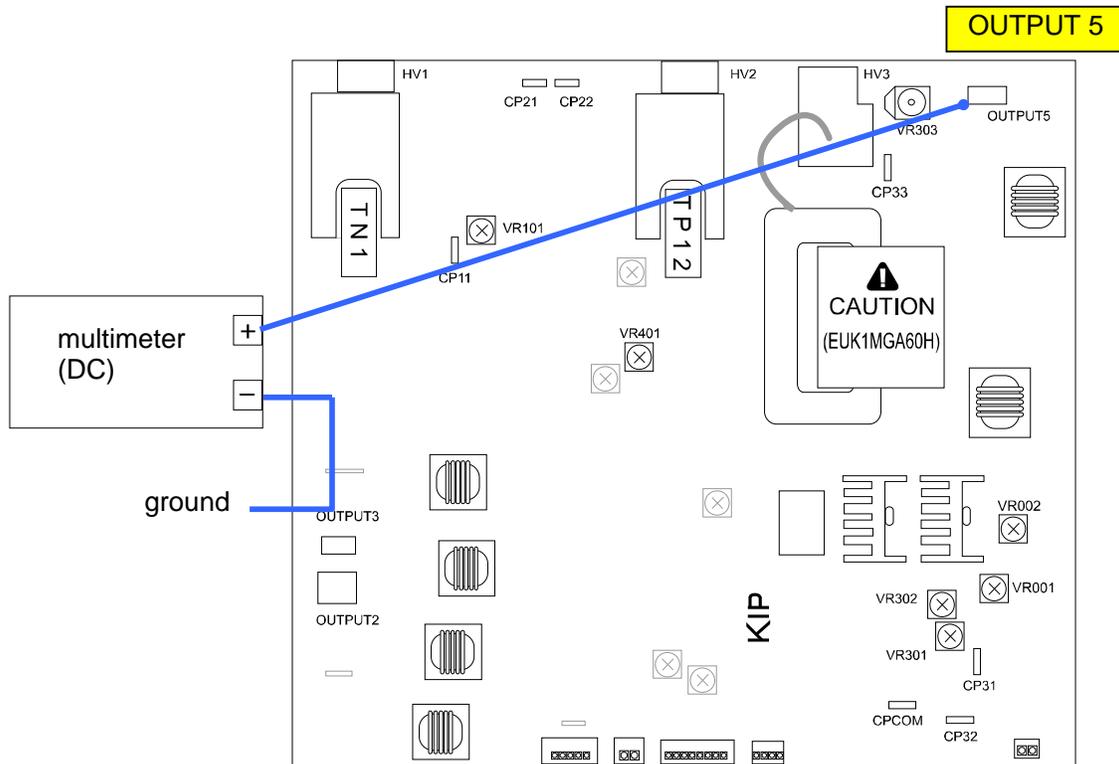
4. 3.10 Check & Adjustment of Negative Cleaning Roller Bias (Toner Collection Process)

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. 8 Test Print Mode] on and after the page 8-141.

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**.

5.6	LED Head	5-249
5.6.1	Replacement of the LED Head Unit	5-249
5.6.2	LED focus adjustment	5-257
5.6.2.1	Check of the Test Pattern Image	5-257
5.6.2.2	Positioning of the Aluminum Blocks	5-258
5.6.2.3	Focus Adjustment with Spacers	5-274
5.7	Image Corona	5-280
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5.7.2	Replacement of the Corona Wire	5-287
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5.11.2	Replacement of Clutch (CL1)	5-317
5.11.3	Replacement of Blower (BL7)	5-321
5.11.4	Replacement of Fan (BL8)	5-322
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5.12.3	Replacement of Motor Assy	5-331
5.12.4	Replacement of Feed Roller	5-334
5.12.5	Replacement of Pinch Roller Assy	5-342
5.12.6	Replacement of Sensor	5-345
5.12.7	Replacement of CIS	5-349
5.12.8	Replacement of Scan Glass Assy	5-353

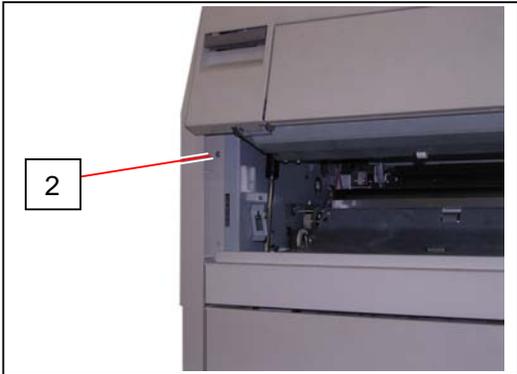
5.1 Outer Covers

5.1.1 Removal of Side Covers

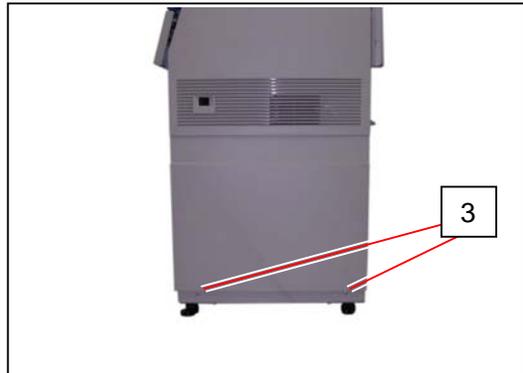
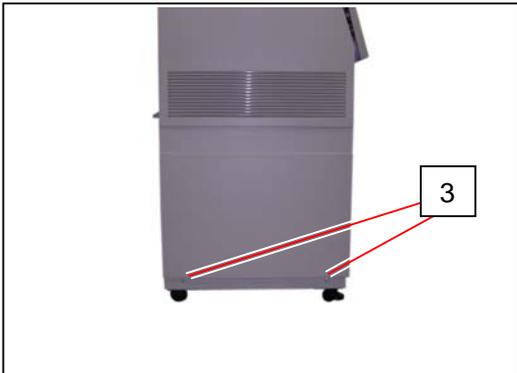
1. Pull up the Lever 2 (1) to open the Engine Unit.



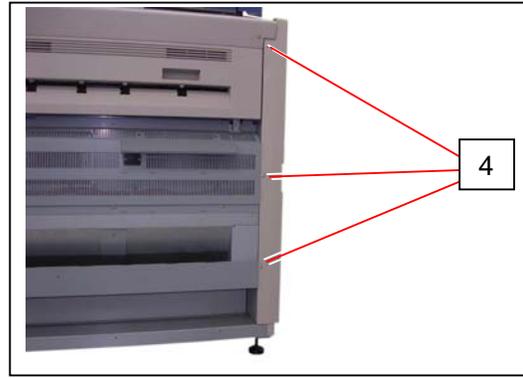
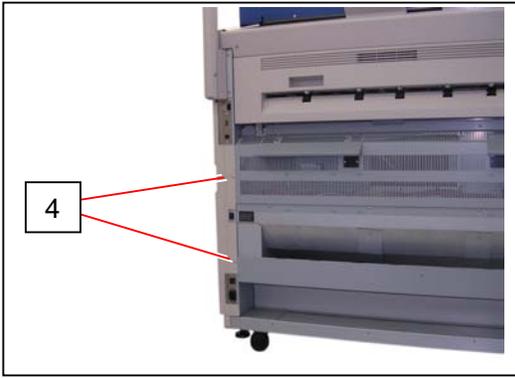
2. Remove the screws (2) at both sides.



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



4. Remove 5 pieces of screw (4) at both sides.
(2 pieces on the right and 3 pieces on the left)

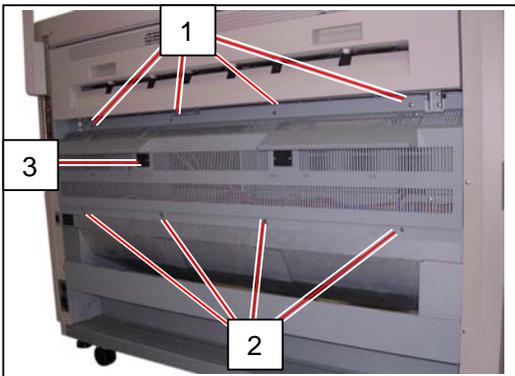


5. Remove both **Cover 2** (5) and **Cover 3** (6).



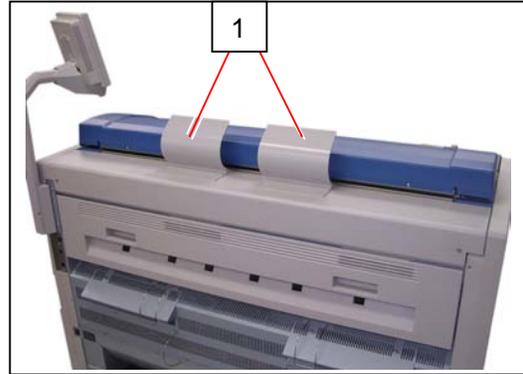
5. 1. 2 Removal of Cover 15

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

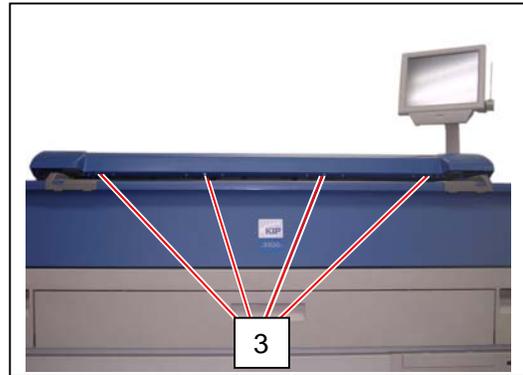


5. 1. 3 Removal of Cover 14

1. Remove 2 pieces of Guide 3 (1).



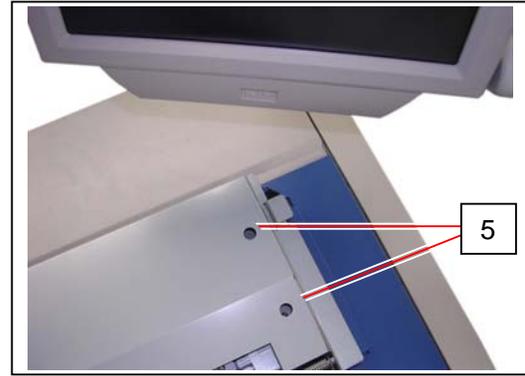
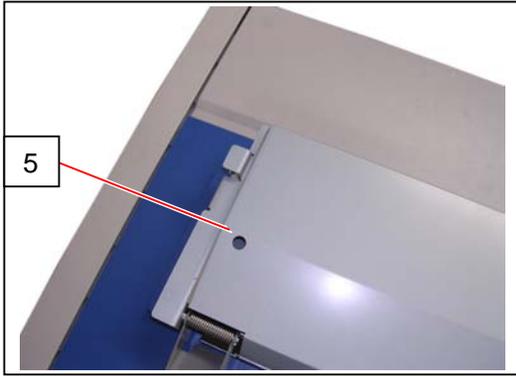
2. Loosen 4 pieces of screw (2) on the back, and remove 4 pieces of screw (3) on the front.



3. Remove Cover 14 (4).



4. Remove 3 screws (5).



5. Remove Shield Cover N (6).



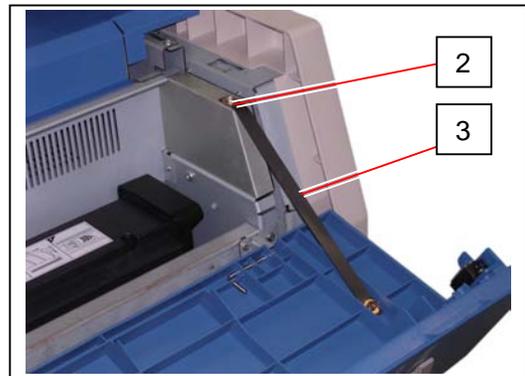
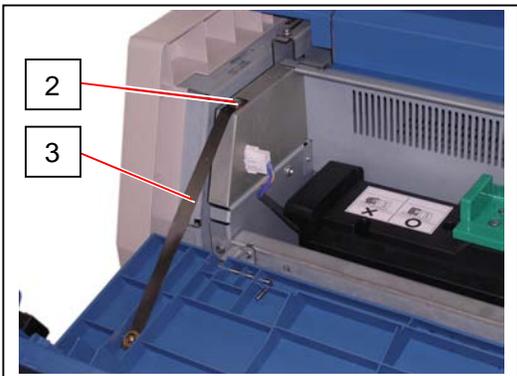
5. 2 Developer Unit

5. 2. 1 Removal of the Developer Unit

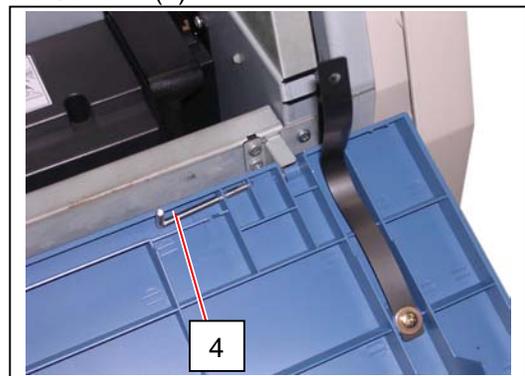
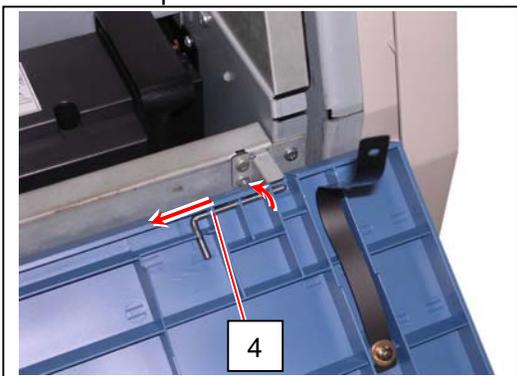
1. Open the Cover 4 (1).



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



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



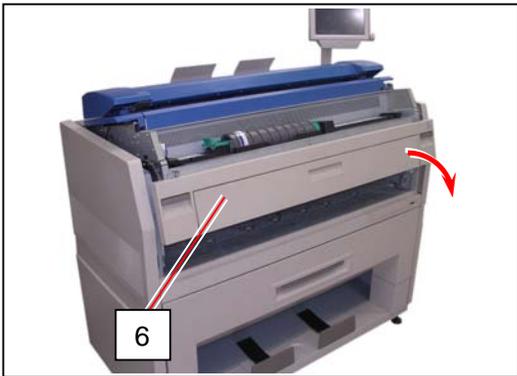
4. Pull up the Lever 2 (5) to open the Engine Unit.



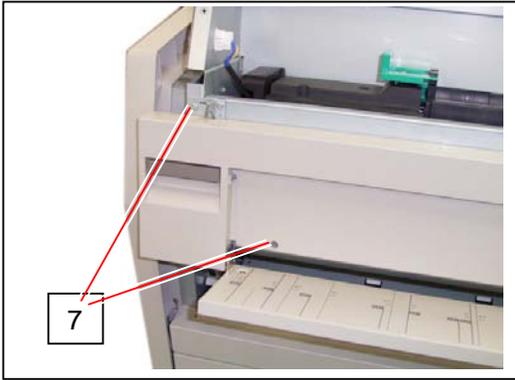
⚠ NOTE

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).



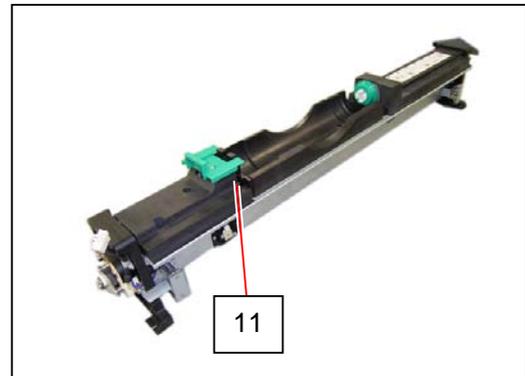
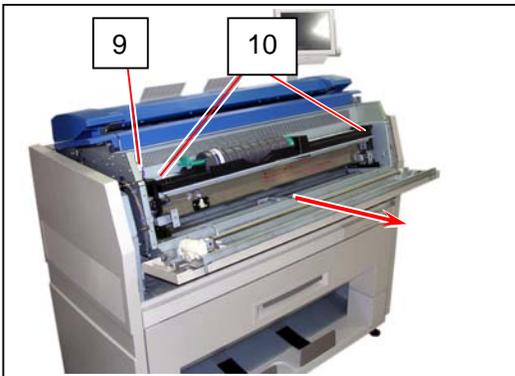
6. Remove 4 pieces of 4x8 screw (7).



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)] on page 5-47.

5. 2. 2 Replacement of Recommended Periodic Replacement Parts

NOTE

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

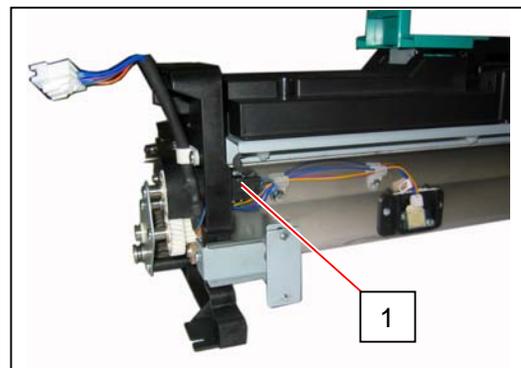
Item	Number of article	Remarks
Scraper	1	All of these parts are contained in "Developer Maintenance Kit A" (Z160980020).
Sheet	2	
Sheet 2	2	
Roller Developer	1	
Sheet 3	2	
Sheet 4	2	
Blade Roller	1	
Seal R2 Assy	1	
Seal L2 Assy	1	
Seal 1	2	
Seal 23	2	
Seal 3	2	
Seal 4	2	

- (2) Remove all the toner from Developer Unit before replacing the above parts.
- (3) After replacing Developer / Blade Rollers, an applied Bias Adjustment should be reset manually with using Service Mode - Clear Mode.

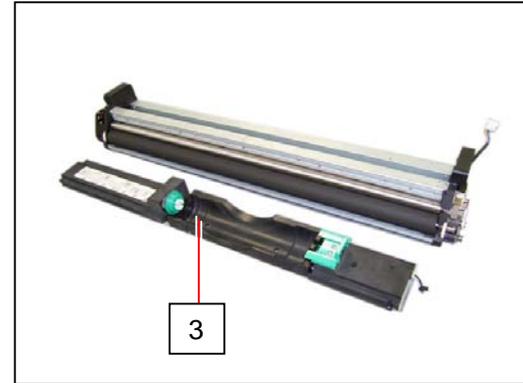
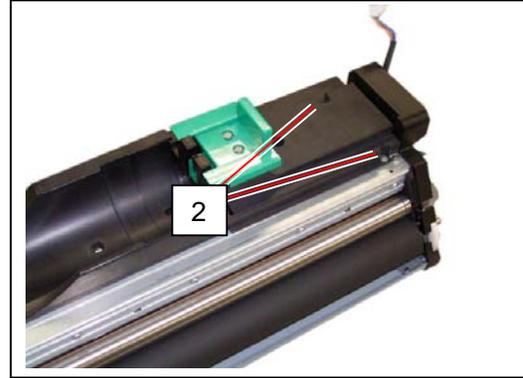
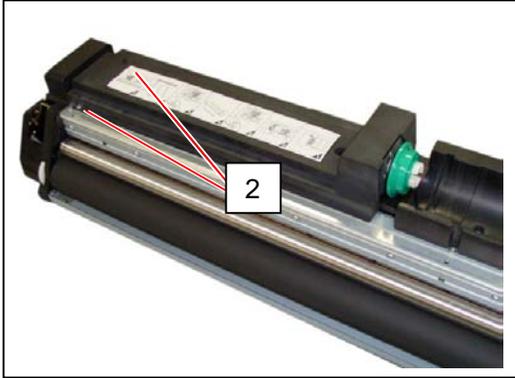
1. Remove the Developer Unit from the machine making reference to [5. 2. 1 Removal of the Developer Unit] on the page 5-5.



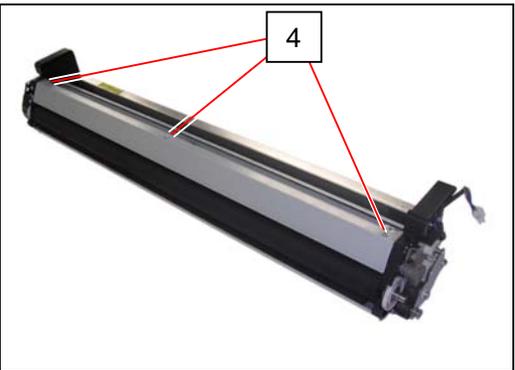
2. Disconnect the connector (1).



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



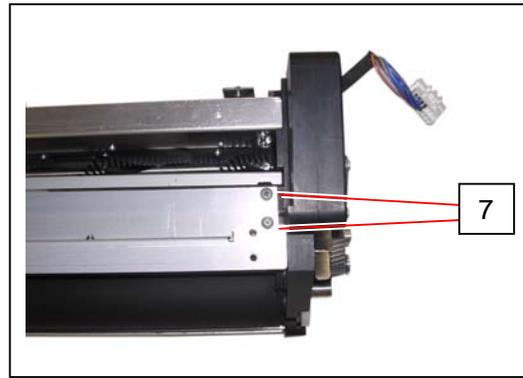
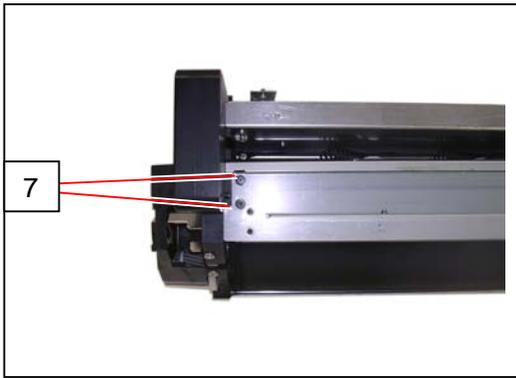
4. Remove 3 pieces of M4x6 screws (4) to remove Cover (5).



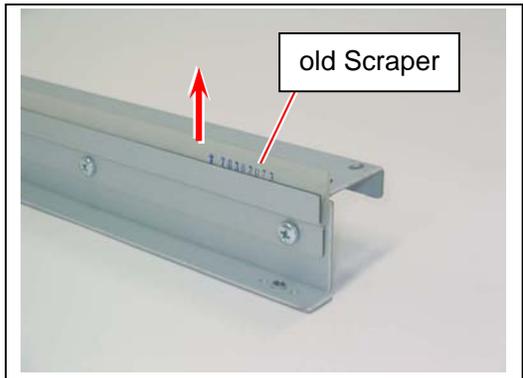
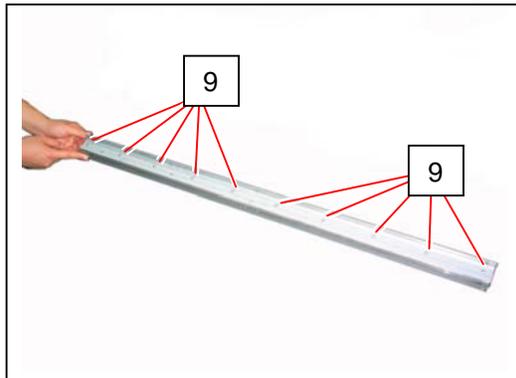
5. Remove Separator (6).



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



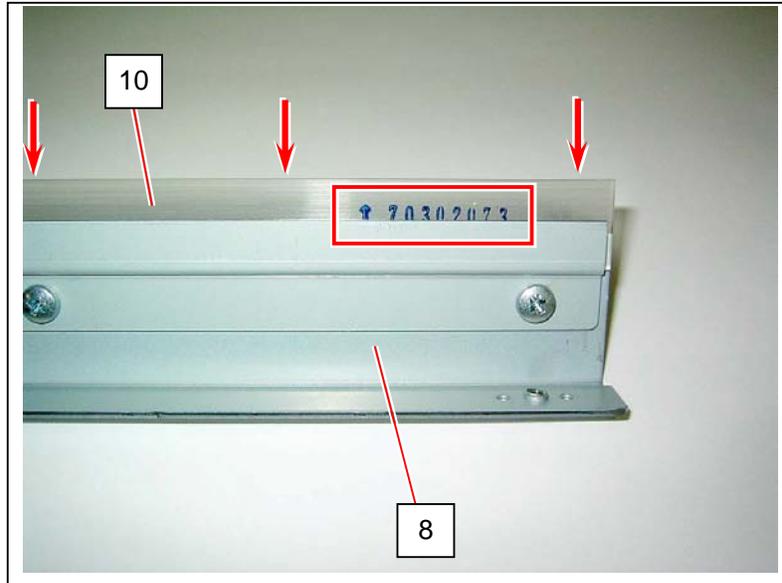
7. Loosen 10 screws (9) to remove Scraper from Scraper Assembly.



⚠ NOTE

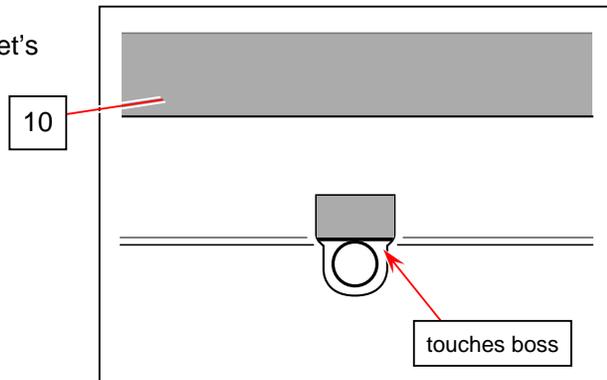
Just loosen the screws as little as possible to remove Scraper.
Doing so will reduce the new Scraper's wave.

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

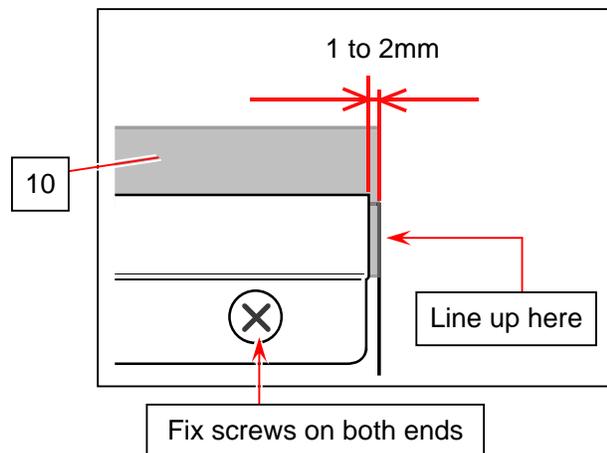


NOTE

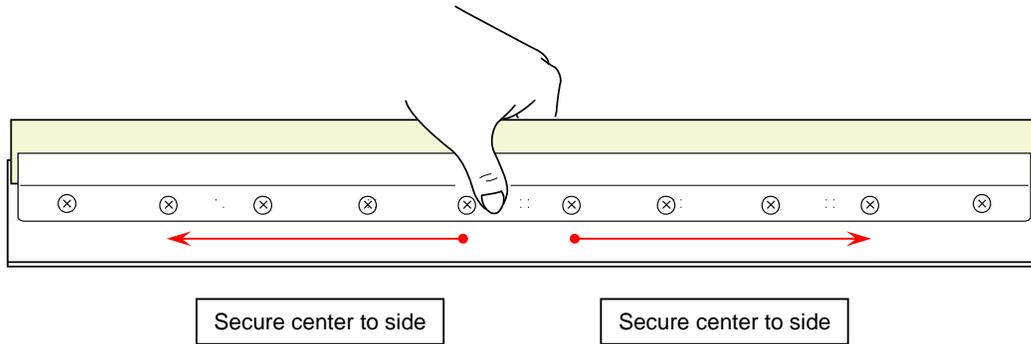
Visually check that Scraper's bottom edge touches the round boss through the bracket's opening.



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



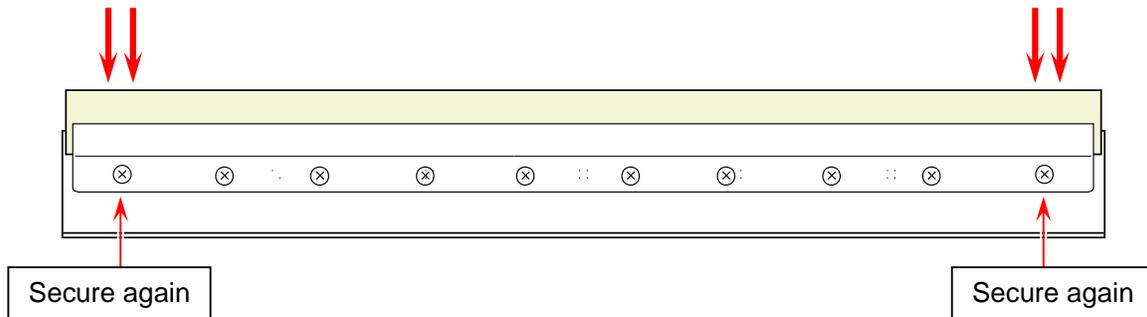
10. Tighten the screws from the center to the sides with holding around each screw on the bracket.



NOTE

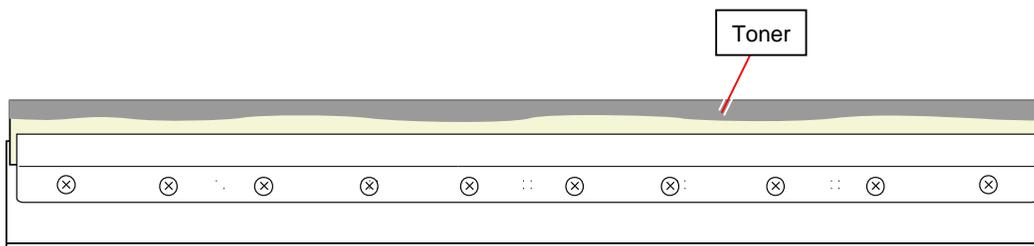
Be sure to check for wave on Scraper's edge. If there is, go back to step 7 to install Scraper again.

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



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

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



NOTE

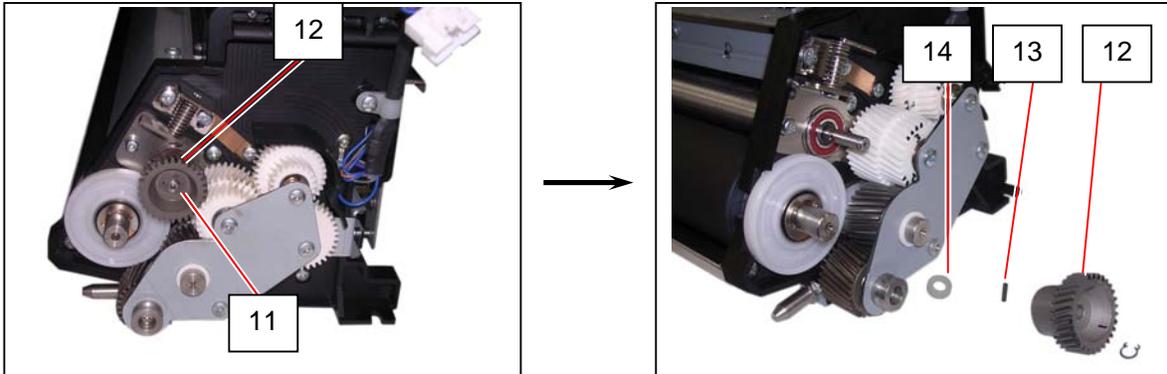
- (1) Toner powders on the edge reduce friction between the edge and the Drum's surface. If there is no toner on the edge, Scraper may flip up or damage.
- (2) The edge must be straight. Otherwise the toner will not be scraped off properly.

14. Remove all the toner from Developer Unit.

! NOTE

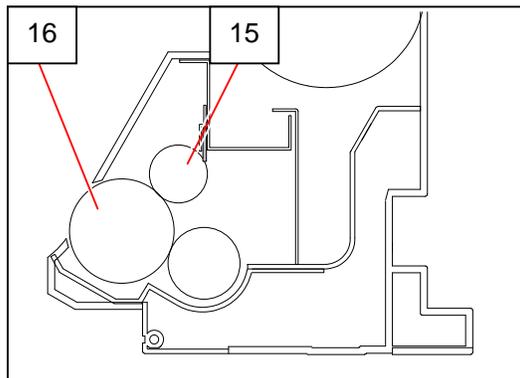
Do not reuse the removed toner.

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

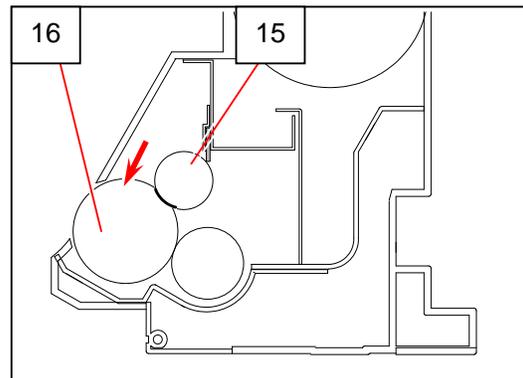


! NOTE

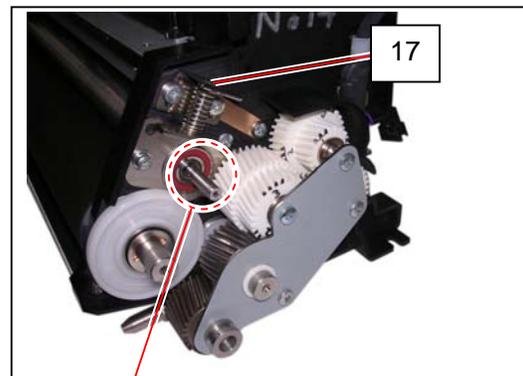
Blade Roller (15) is pressed onto / released from Developer Roller (16) by Bracket 4 (17) (on the driving side) and Bracket 5 (18) (on the electrode plate side).
When reassembling, Blade Roller (15) should be pressed onto Roller Developer (16).
Pressurizing will be required prior to reinstallation of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



not pressurized

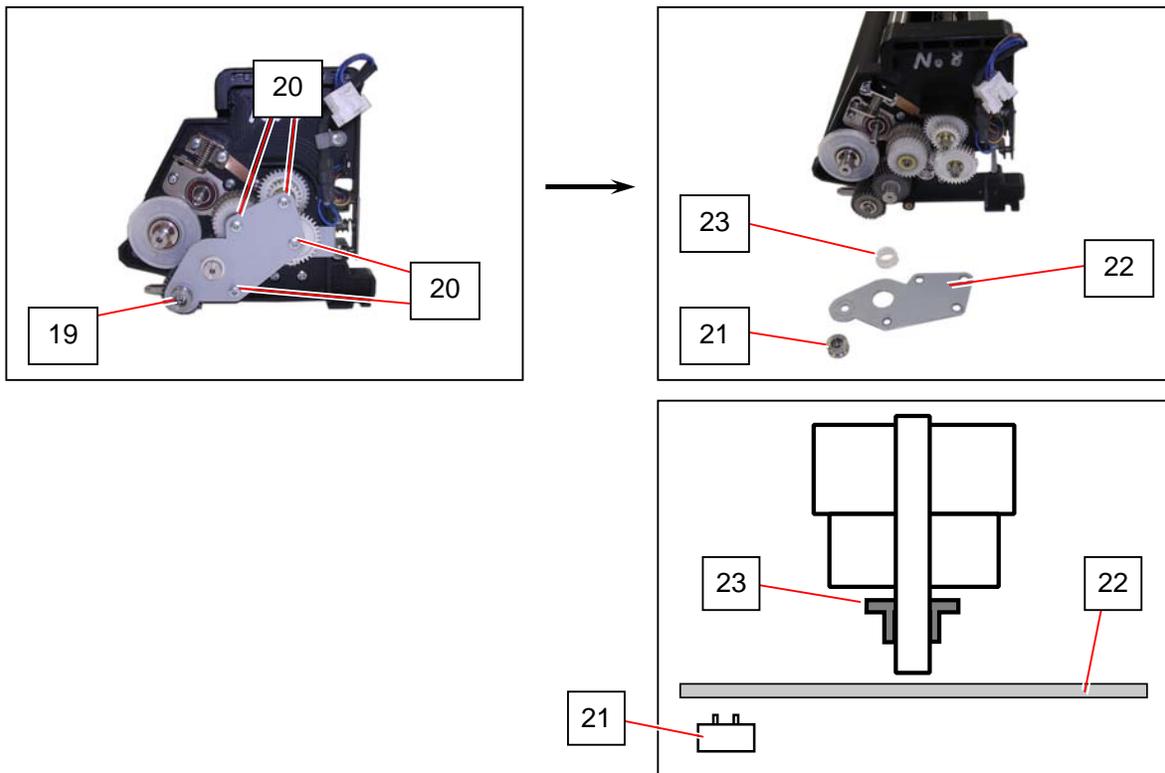


pressurized

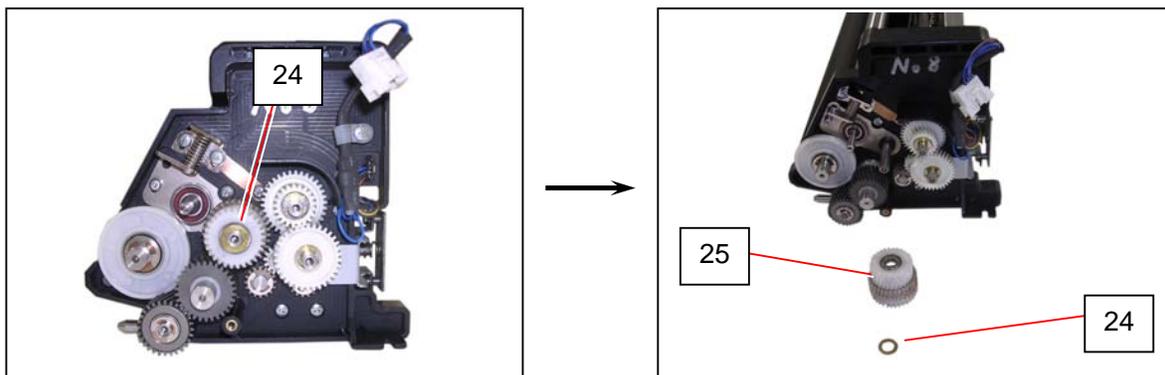


Pressurize without Gear Helical 30T (12)

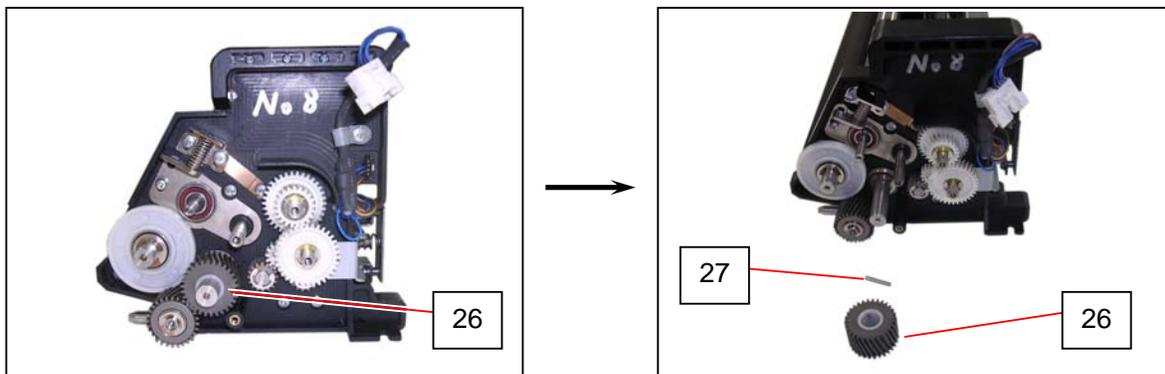
16. Remove 5 screws (19: M4x8) (20: M4x6) to remove Pin 4 (21), Plate 9 (22), Collar (23).



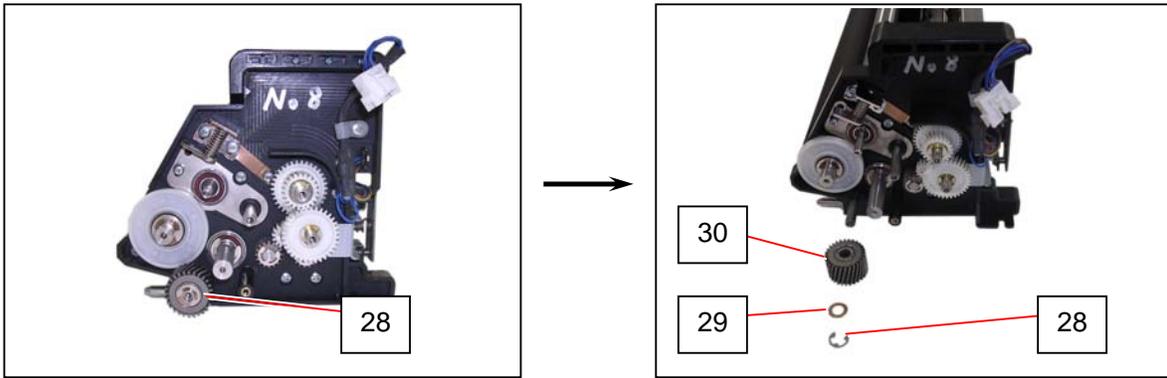
17. Remove Washer (24: 8.1x14x0.5t) and Gear 29T-34T Assy (25)



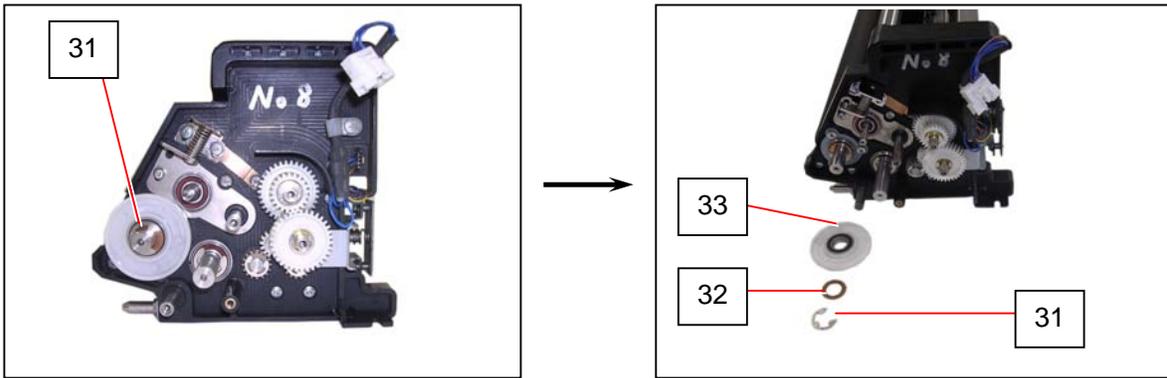
18. Remove Gear Helical 30T (26) and Parallel Pin (27: 3x20) from Toner Supply Roller shaft. If you cannot remove Parallel Pin (27) at this time, remove it after the later step 15.



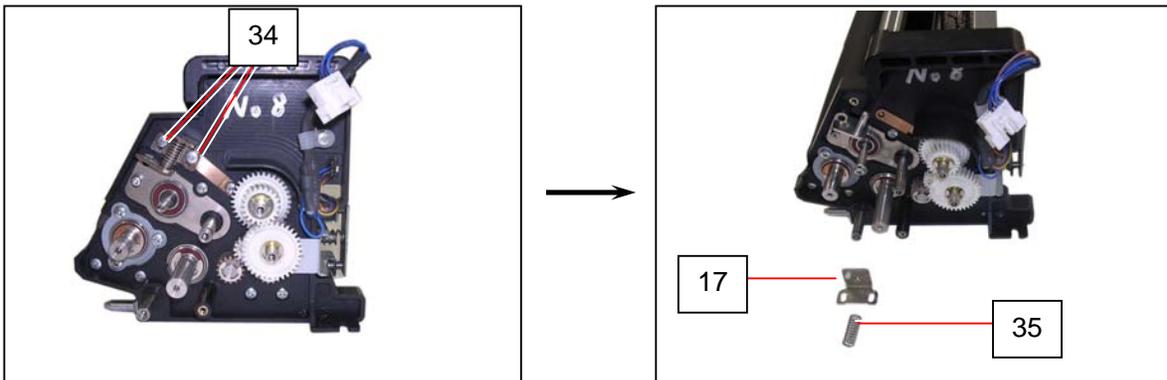
19. Remove Retaining Ring-E (28: E7) to remove Washer (29: 8.1x12x0.2t) and Gear Helical 28T Assy (30).



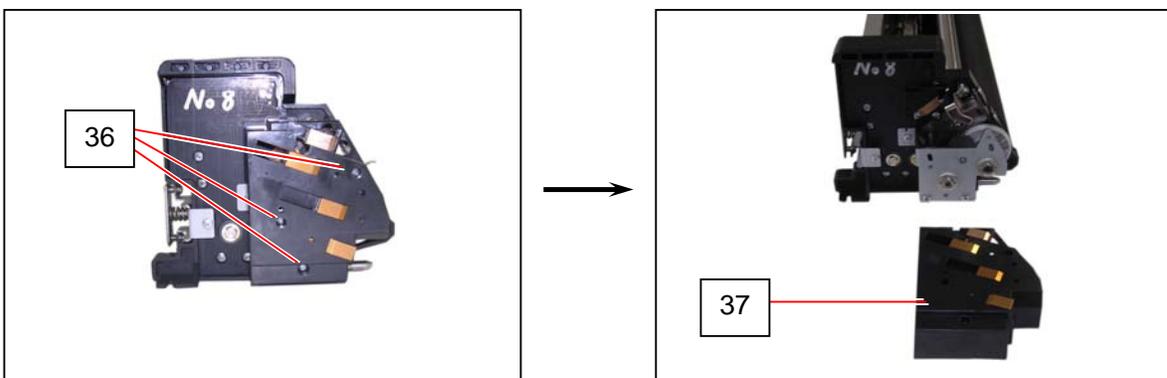
20. Remove Retaining Ring-E (31: E10) to remove Washer (32: 12.2x20x0.5t) and Counter Roller (33) from Developer Roller shaft.



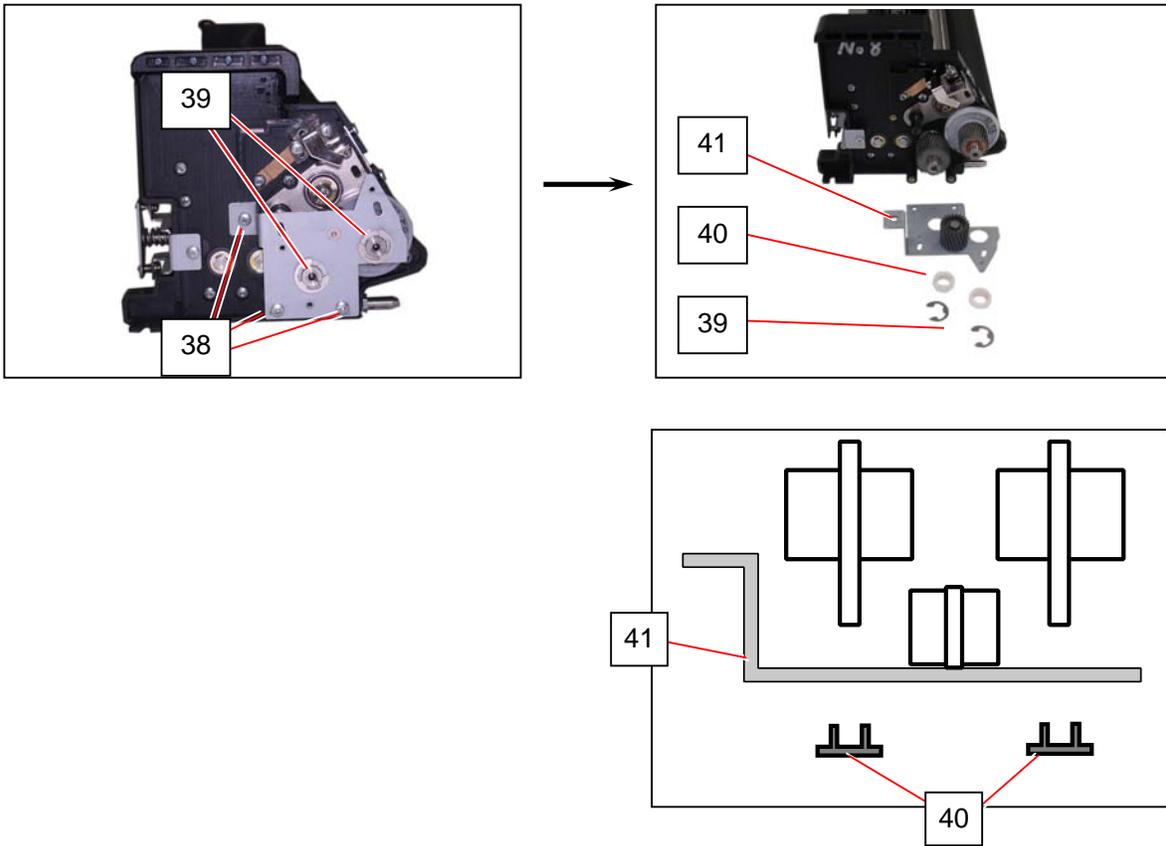
21. Remove 2 screws (34: M4x8) to remove Bracket 4 (17) and Spring (35).
At this time, Blade Roller on the driving side will be released from Roller Developer by unsecured Bracket 4 (17).



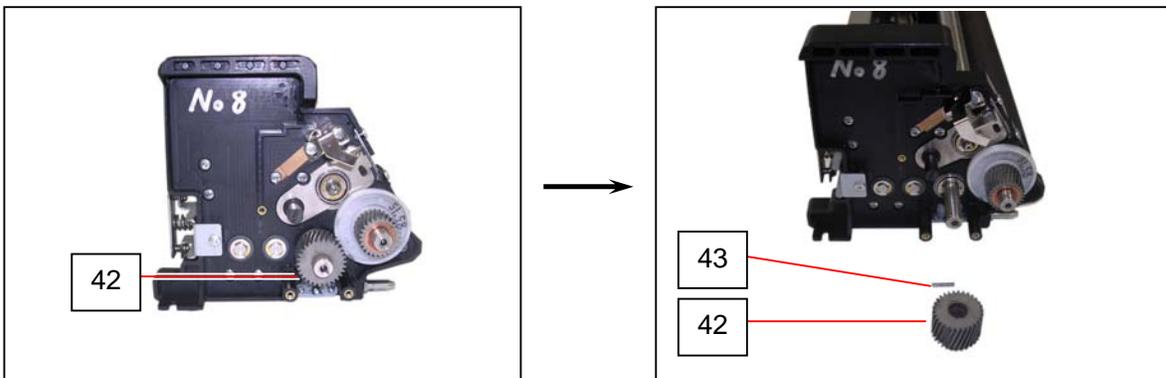
22. On the electrode plate side, remove 3 screws (36) to remove Holder 2 Assy (37).



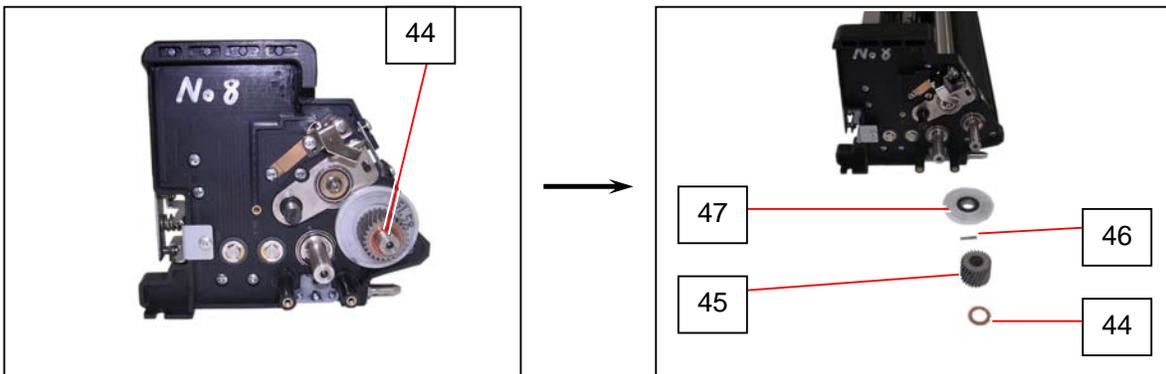
23. Remove 3 screws (38: M4x6) and 2 Retaining Ring-E (39: E10) to remove Collar (40) and Bracket 10 Assy (41).



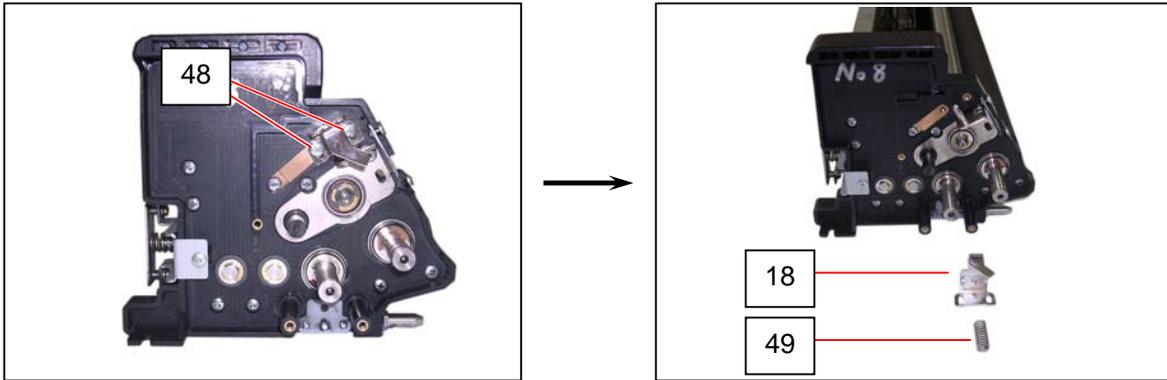
24. Remove Gear Helical 30T (42) and Parallel Pin (43: 3x16) from Toner Supply Roller shaft.



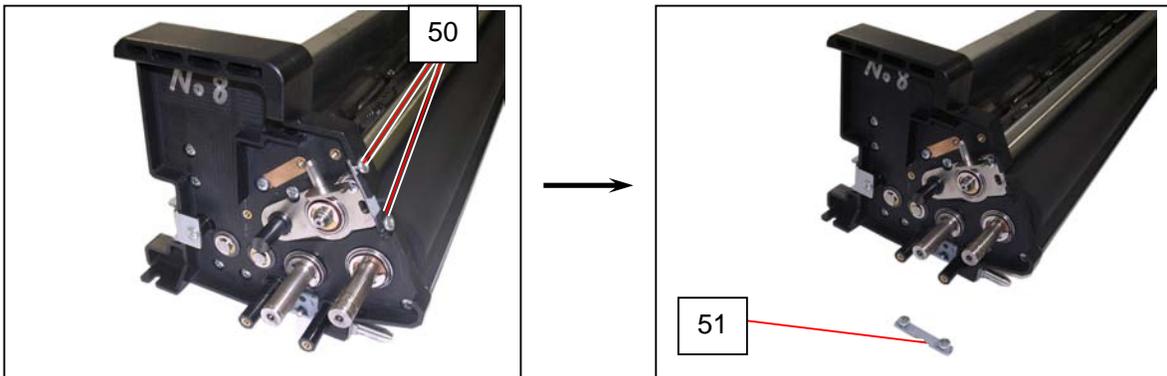
25. Remove Washer (44: 12.1x20x0.2t), Gear Helical 25T (45), Parallel Pin (46: 3x16), Counter Roller (47) from Roller Developer shaft.



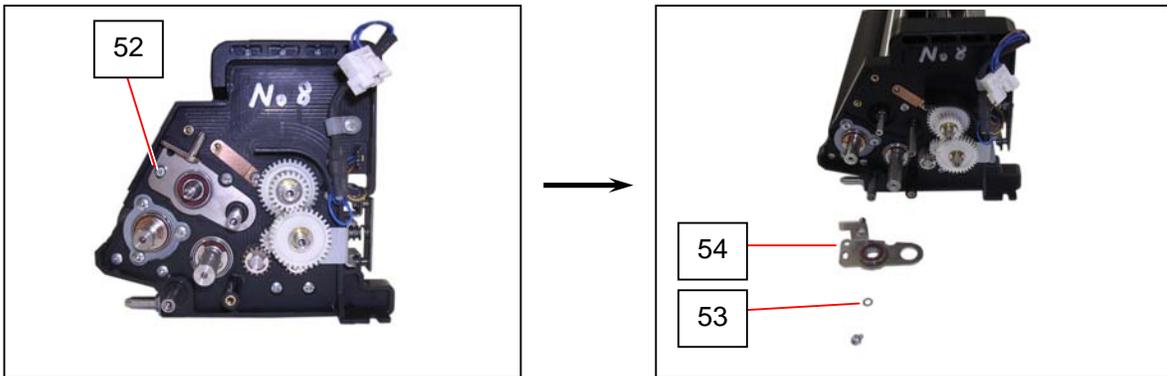
26. Remove 2 screws (48: M4x6) to remove Bracket 5 (18) and Spring (49).
At this time, Blade Roller on the electrode plate side will be released from Roller Developer by unsecured Bracket 5 (18).



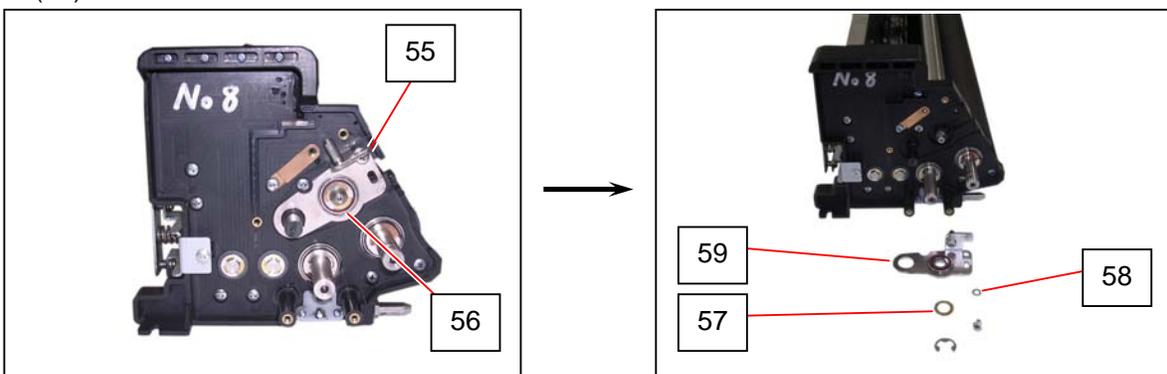
27. Loosen 2 screws (50) to remove Bracket 19 (51).



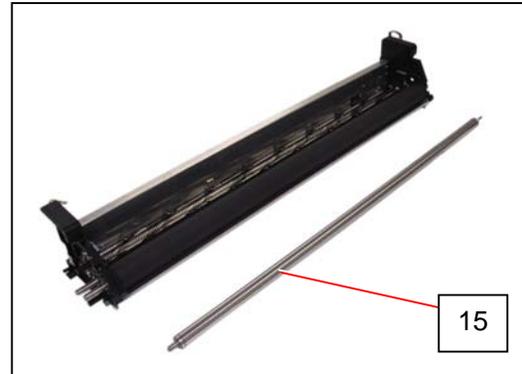
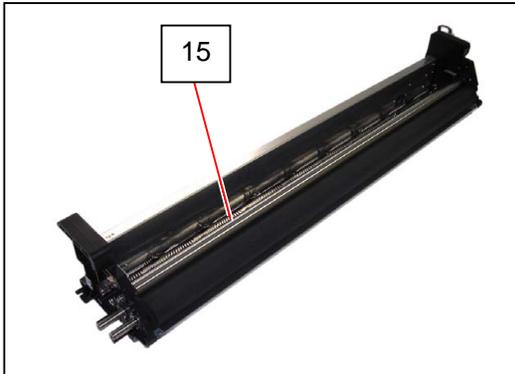
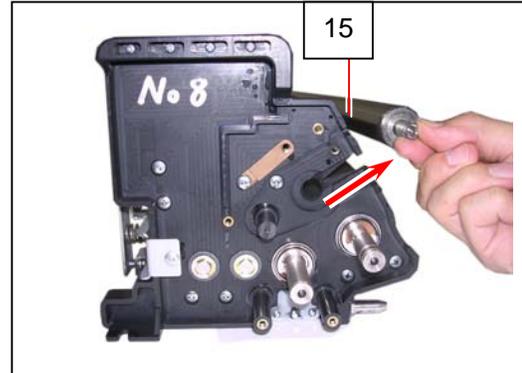
28. On the driving side, remove 1 pan head screw (52: M4x8 W/ SW FW) to remove 1 flat washer (53: M4) and Bracket 6 Assy (54).



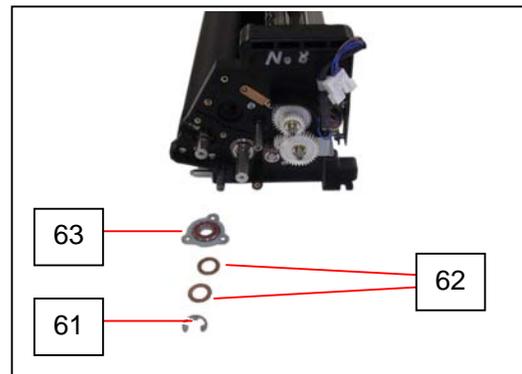
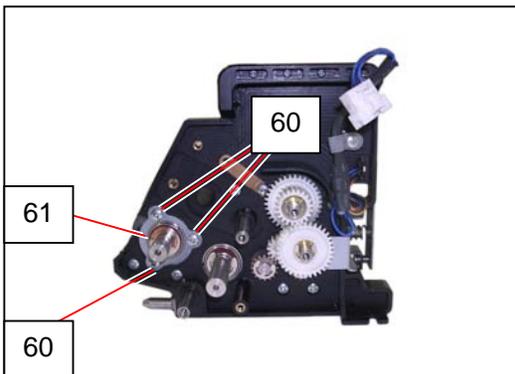
29. On the electrode plate side, remove 1 pan head screw (55: M4x8 W/ SW FW) and Retaining Ring-E (56: E8) to remove Washer (57: 10.1x16x0.5t), Flat Washer (58: M4), Bracket 7 Assy (59).



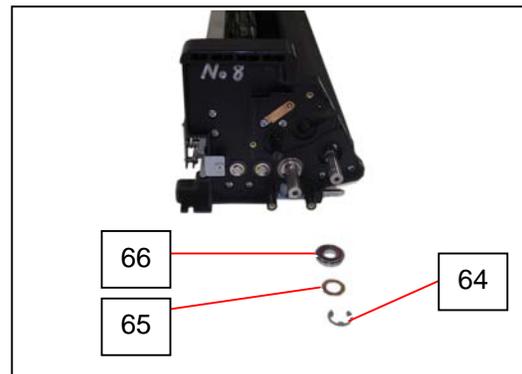
30. Remove Blade Roller (15) from Developer Unit.
Do not install the new Blade Roller at this time.



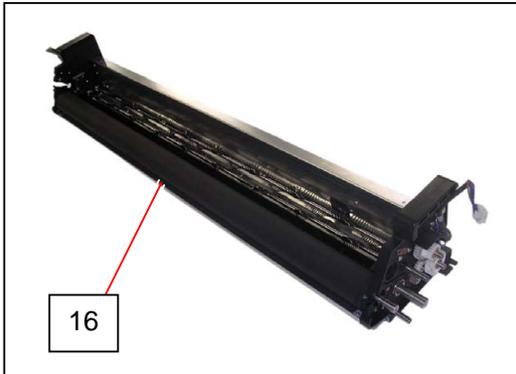
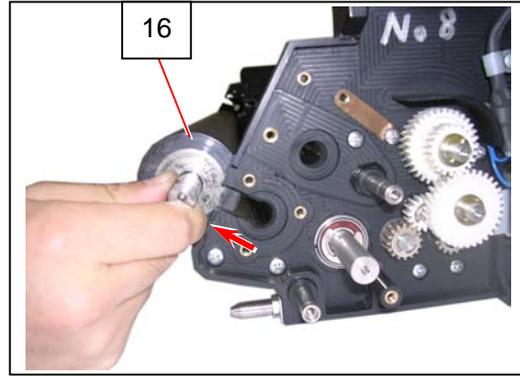
31. On the driving side, remove 3 screws (60: M4x6) and Retaining Ring-E (61: E10) to remove Washers (62: 12.2 x 20 x 0.5t), Bracket 8 Assy (63).



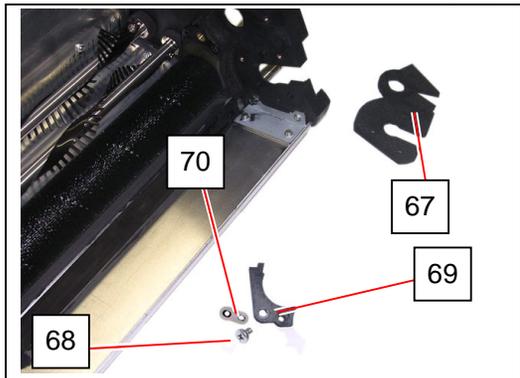
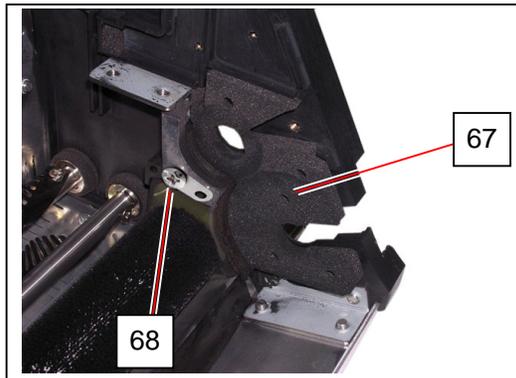
32. On the electrode plate side, remove Retaining Ring-E (64: E10) to remove Washer (65: 12.2x20x0.5t), Bearing (66).



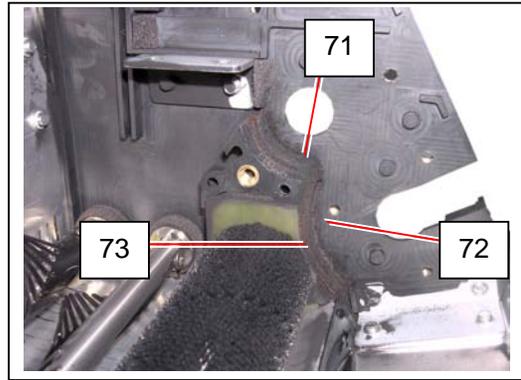
33. Remove Roller Developer (16).
Do not install the new Roller Developer at this time.



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

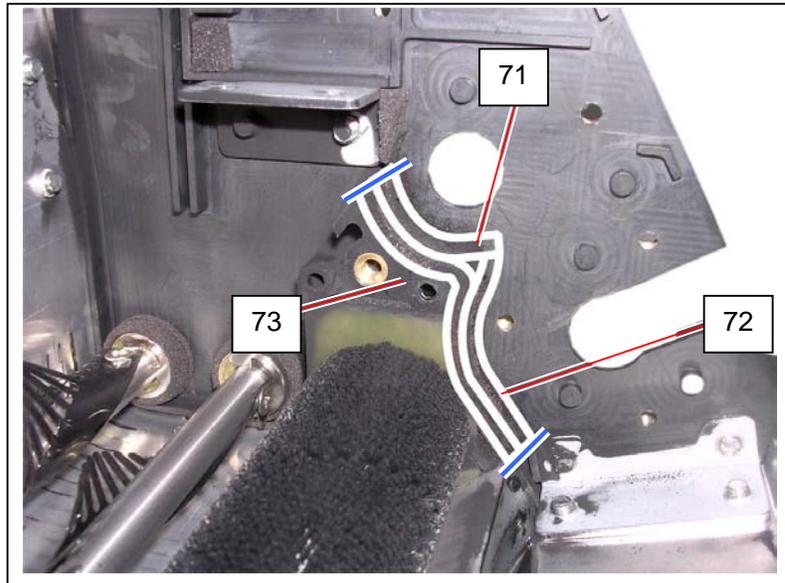


35. On each side, remove Seal 23 (71: upper), Seal 4 (72: lower), Seal 3 (73: under).
Replace **Seal 23**, **Seal 4** and **Seal 3** with new ones.

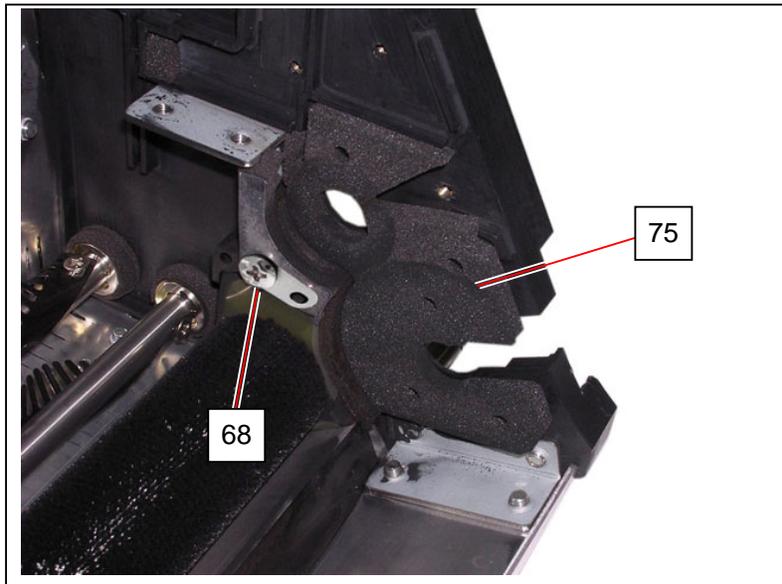
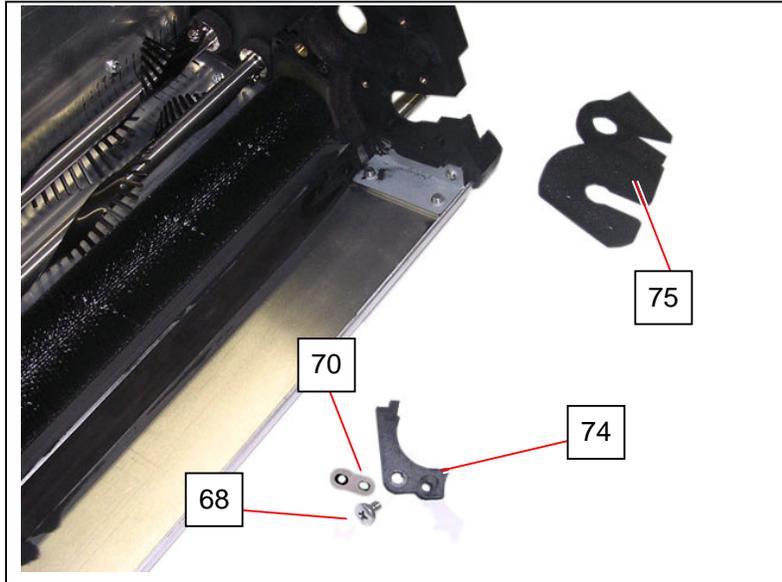


! NOTE

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



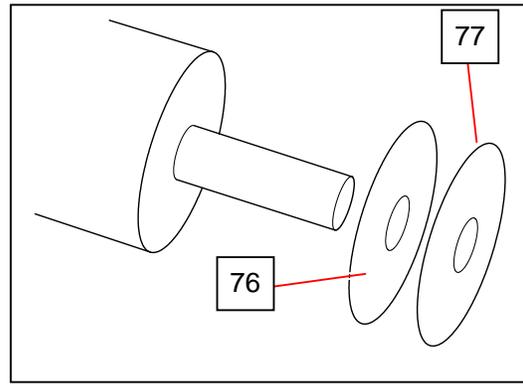
36. Install the new **Seal R2 Assy / Seal L2 Assy** (74), **Support Bracket** (70), **Seal 1** (75).



⚠ NOTE

- (1) Fit the positioning boss to the longer hole on Support Bracket (70).
- (2) Do not tighten the screws (68) so much as the seals (74) will be transformed.

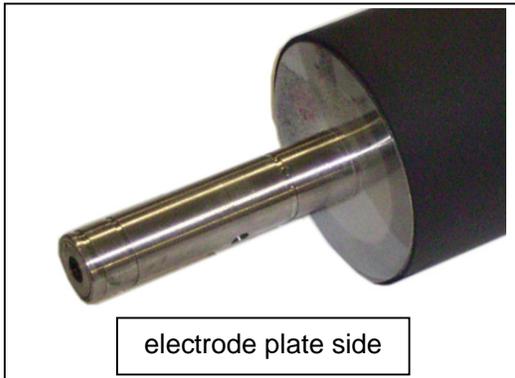
37. Apply the new **Sheet 3** (76), **Sheet 4** (77) to both sides of the new Developer Roller. Keep water or grease away from between the sheets.



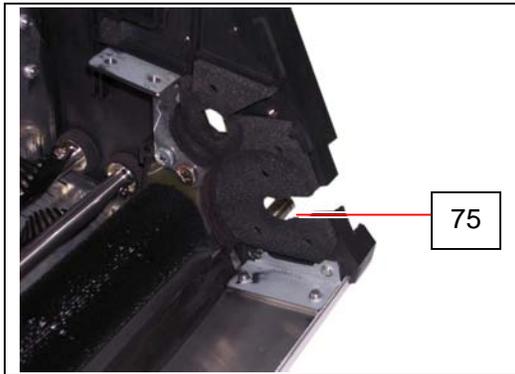
38. Install the new **Developer Roller** to Developer Unit and fix it with the bearings.

NOTE

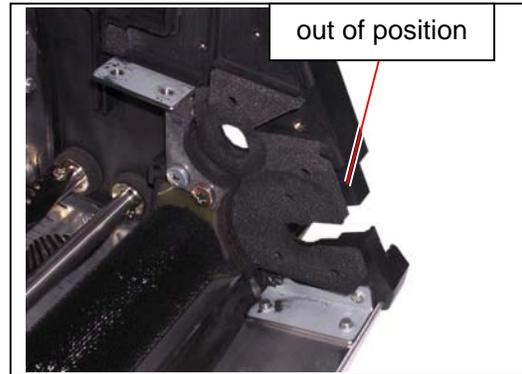
- (1) Note the installation direction. The shorter shaft should be placed to the driving side.



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



Correct

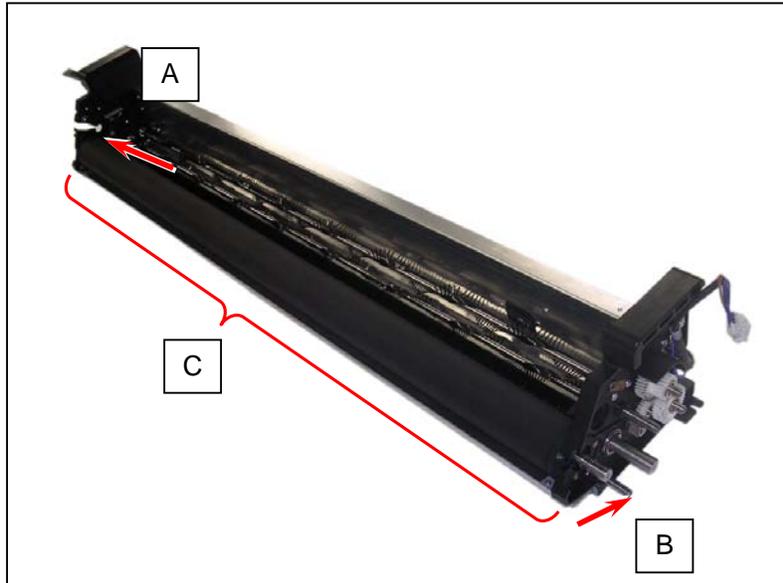


Wrong

(continued on the next page)

! **NOTE**

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

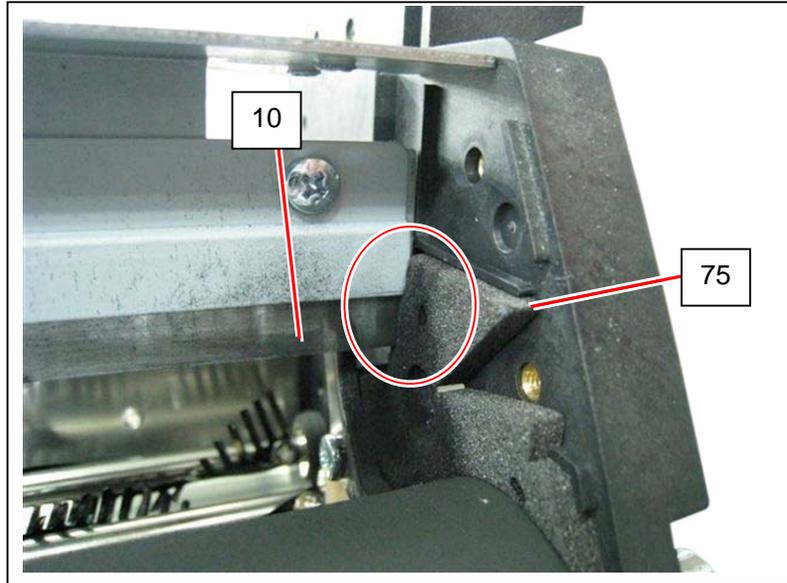


- (4) While installing toward (A) then (B), be careful not to damage Sheet 3 and Sheet 4 on Roller Developer shaft.
- (5) Do not bump Roller Developer on the frame rim (C).

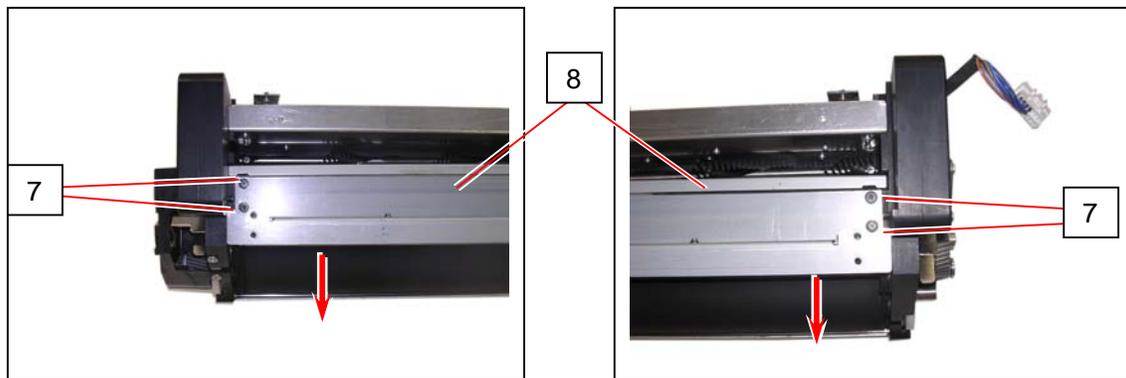
39. Reinstall Scraper Assembly.

NOTE

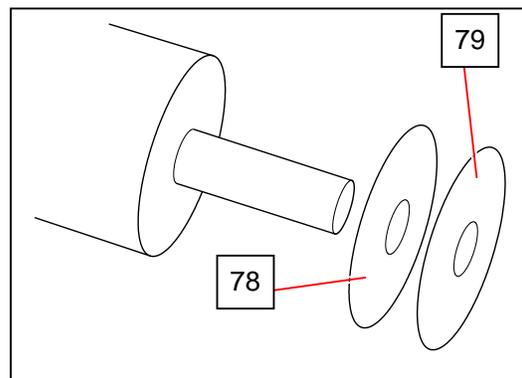
- (1) For Scraper Assembly and Blade Roller, please reinstall Scraper Assembly first and then locate Blade Roller in position later. This will avoid making Scraper's edge waving.
- (2) After reinstalling Scraper Assembly, check that neither Scraper (10) nor Seal 1 (75) flips up on both sides.



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



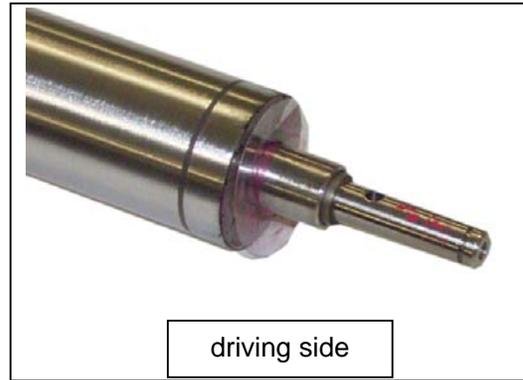
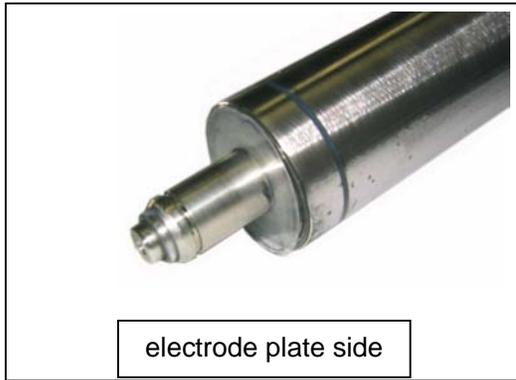
40. Apply the new **Sheet** (78), **Sheet 2** (79) to both sides of the new Blade Roller. Keep water or grease away from between the sheets.



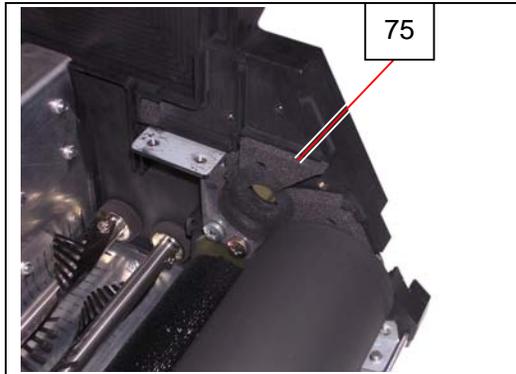
41. Install the new **Blade Roller** to Developer Unit and fix it with the brackets.

NOTE

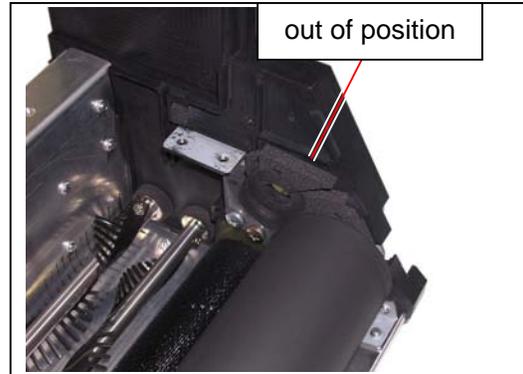
(1) Note the installation direction. The longer shaft should be placed to the driving side.



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

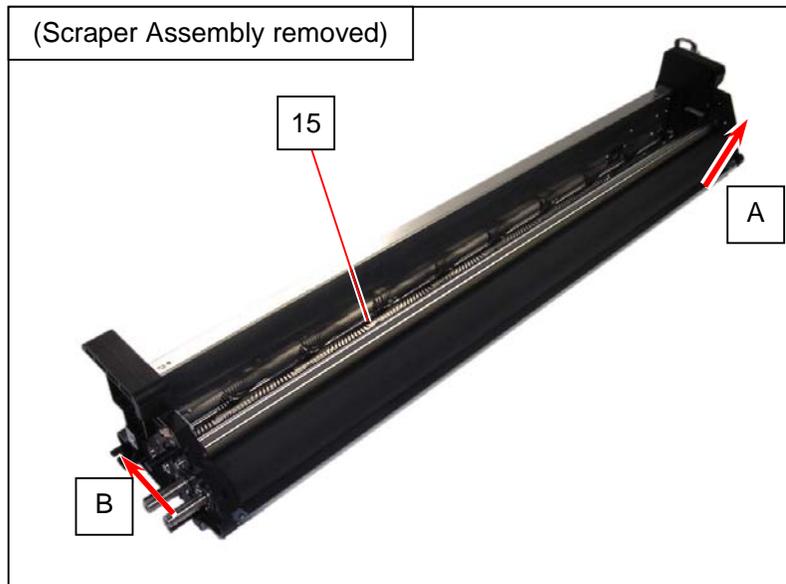


Correct



Wrong

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



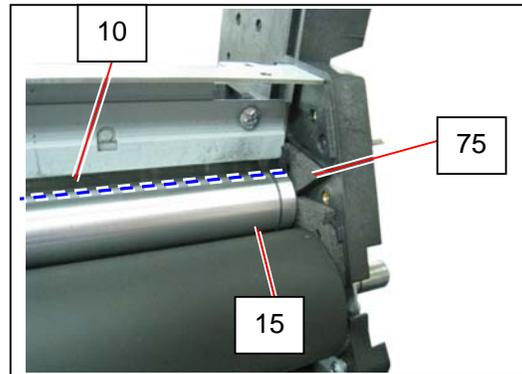
(4) During installing toward (A) then (B), be careful not to damage Sheet (78) and Sheet 2 (79) on Blade Roller shaft.

(continued on the next page)

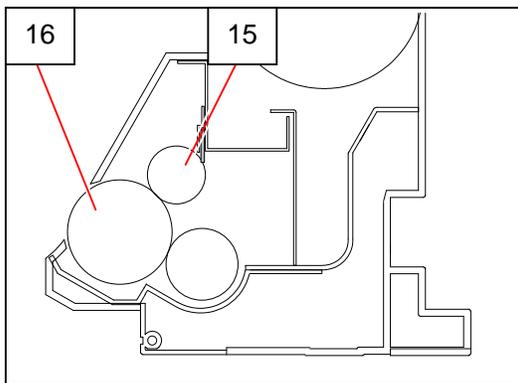
NOTE

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

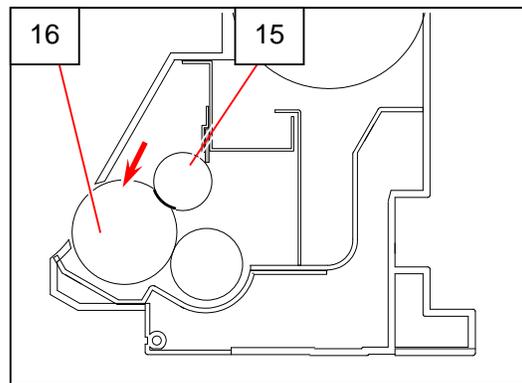
(6) After locating, check that Scraper (10) is not wavy.



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



not pressurized

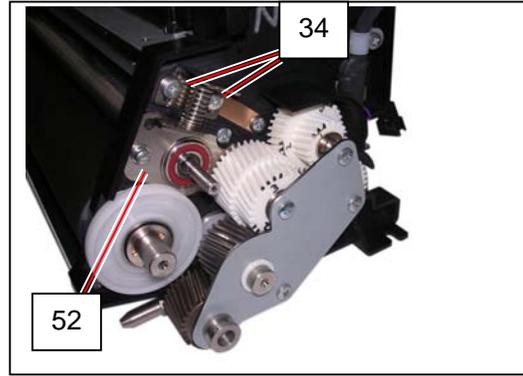
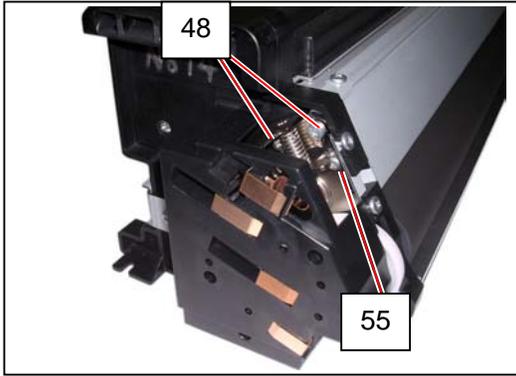


pressurized

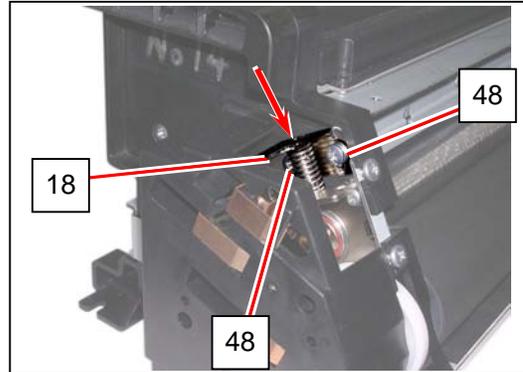
42. Replace all the components except Gear Helical 30T (12), Separator (4) and Hopper Assy (3) in position.



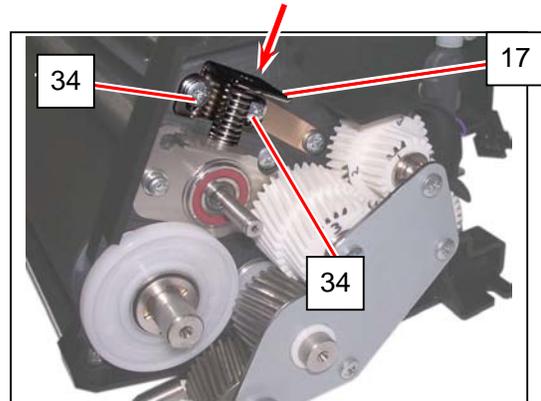
43. Make sure that the 6 screws (48) (55) (34) (52) are installed loose. If not, loosen them.



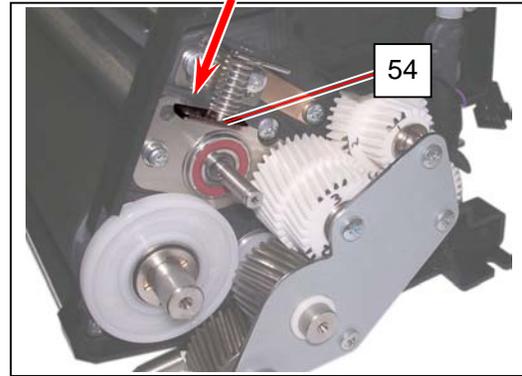
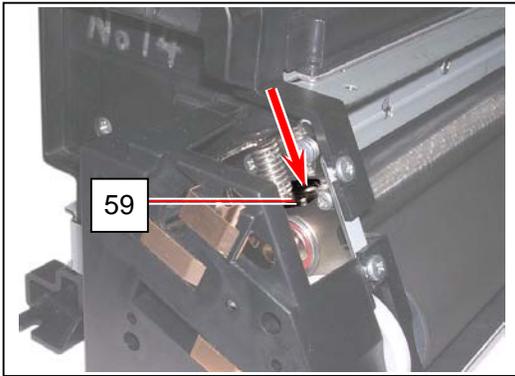
44. On the electrode plate side, fully press down the top of Bracket 5 (18). With pressing, tighten 2 screws (48) to secure Bracket 5 (18).



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

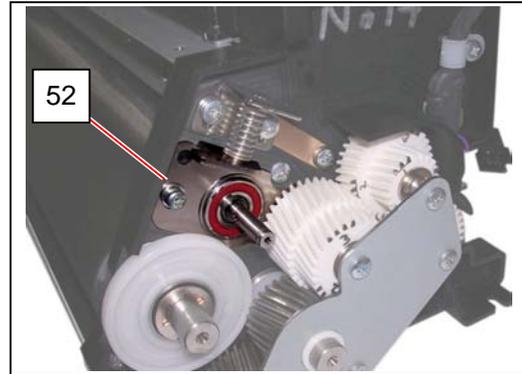
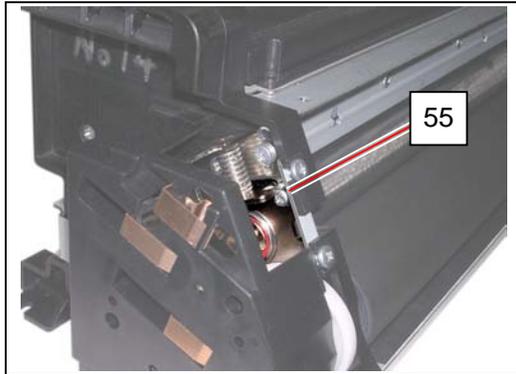


46. Press down the top of Bracket 7 Assy (59) and Bracket 6 Assy (54) at a time. This will allow Blade Roller to be seated in the correct position.



NOTE

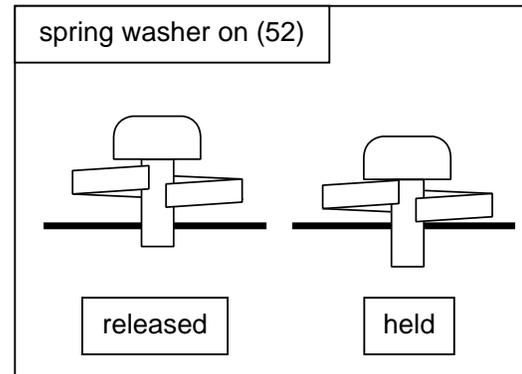
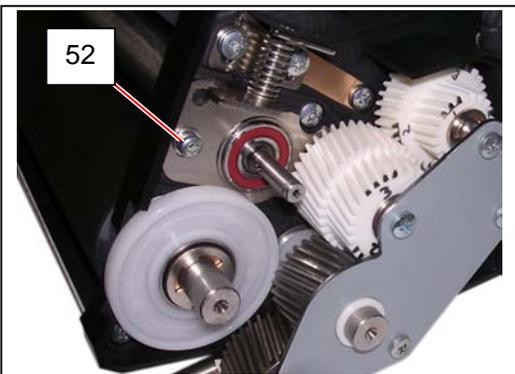
- (1) Press down both Bracket 7 Assy and Bracket 6 Assy at the same time. Pressing only one side may lose the correct pressure balance between the electrode plate side and the gear side.
- (2) Do not turn the screws (55) (52) for Bracket 7 Assy / Bracket 6 Assy at this point. Follow the later instruction to correctly tighten the screws (55) (52).



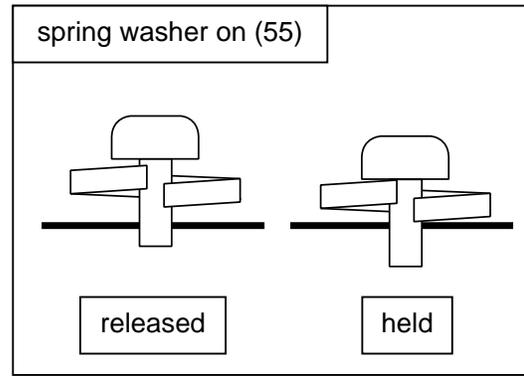
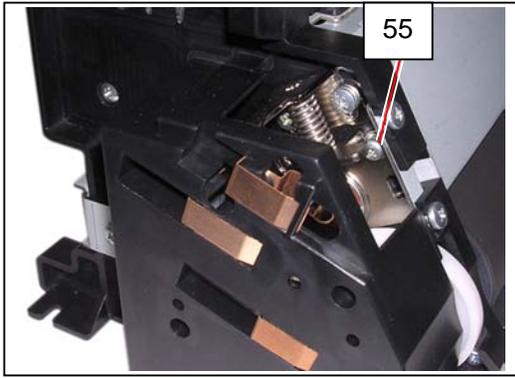
47. Turn the screw (52) in just enough revolution so that its spring washer is held in the gap.

NOTE

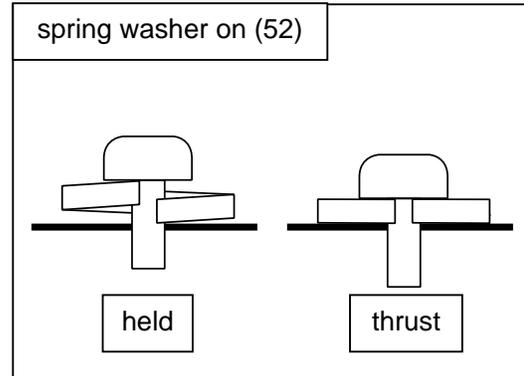
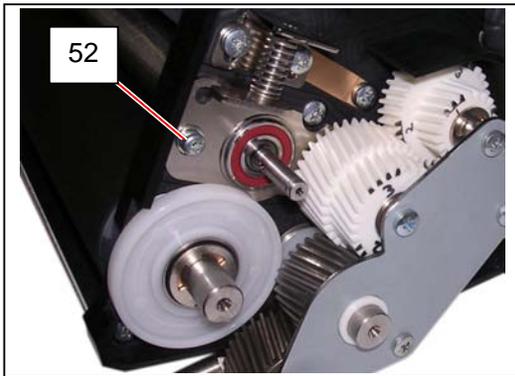
Do not tighten the screw (52) (55) firmly at this point of time. Otherwise proper and even pressurization of Blade Roller between left/right may fail, and this will make the toner layer on Roller Developer get thicker than required.



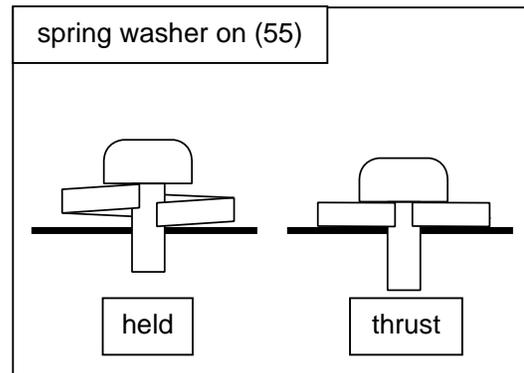
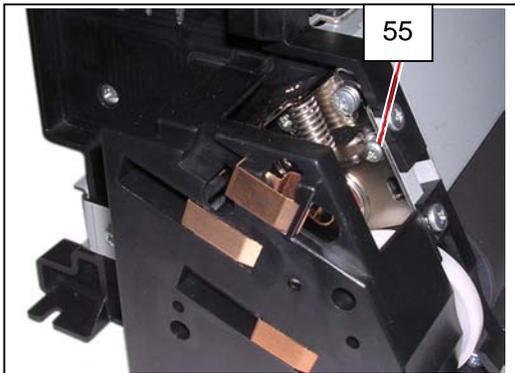
48. Turn the screw (55) in just enough revolution so that its spring washer is held in the gap.



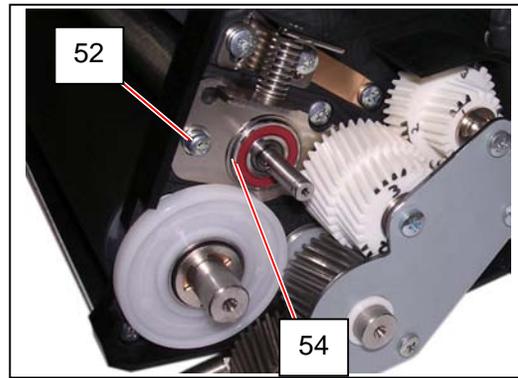
49. Turn the screw (52) in just enough revolution so that its spring washer is thrust in the gap.
Do not turn it completely.



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



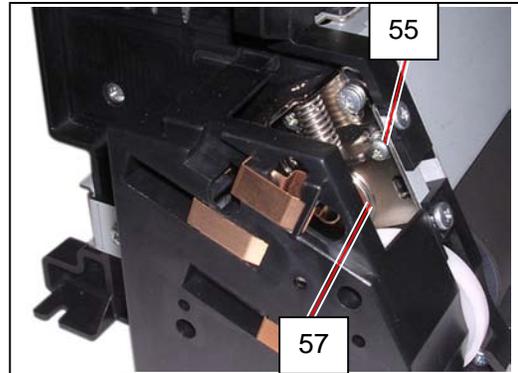
51. Slowly tighten the screw (52) to secure Bracket 6 Assy (54).



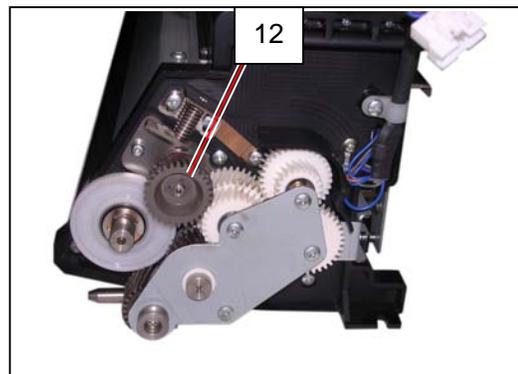
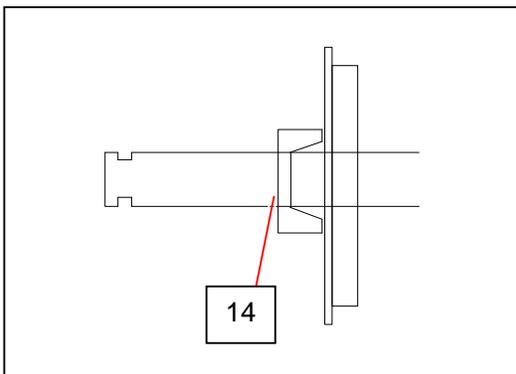
! NOTE

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

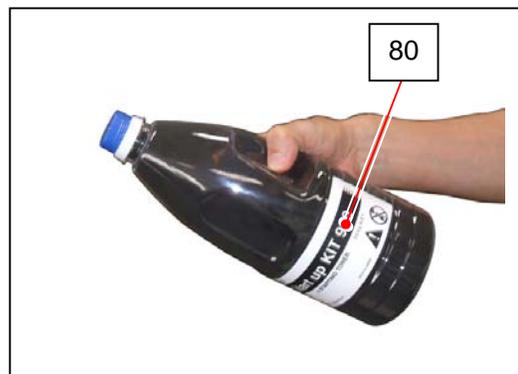
52. Slowly tighten the screw (55) to secure Bracket 7 Assy (57) in the same way with the previous step.



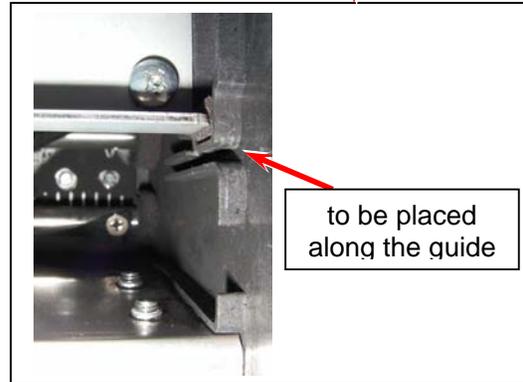
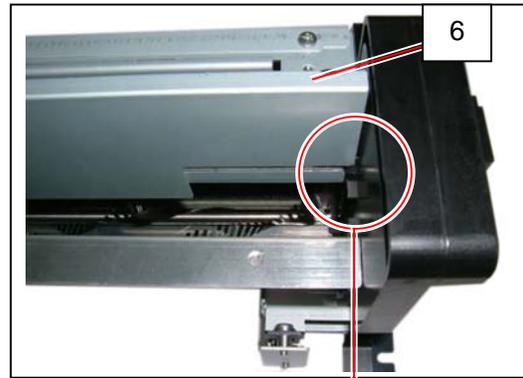
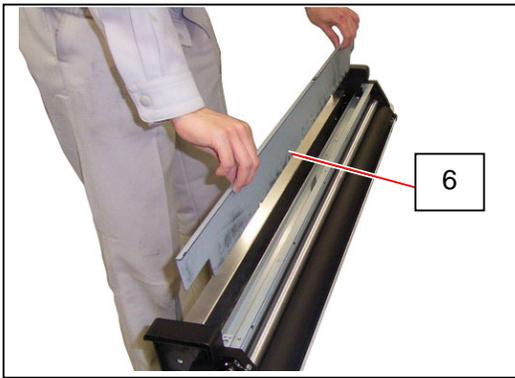
53. On the driving side, reinstall Collar 3 (14), Parallel Pin, Gear Helical 30T (12) and Retaining Ring-E to Blade Roller shaft.



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

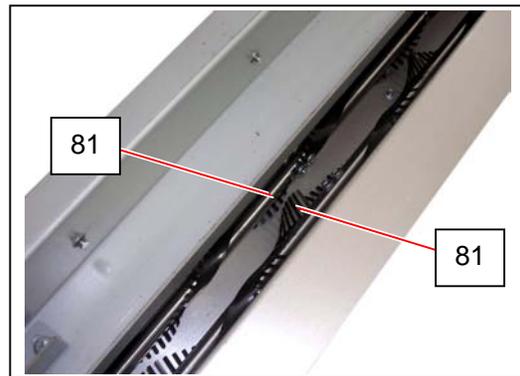
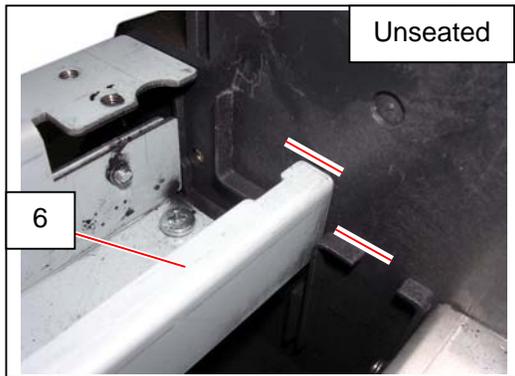


55. Along the guide on the side plates, gently place Separator (6) on the added toner.
Do not push it in.

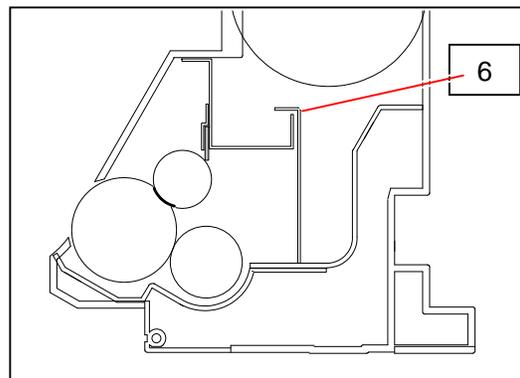


NOTE

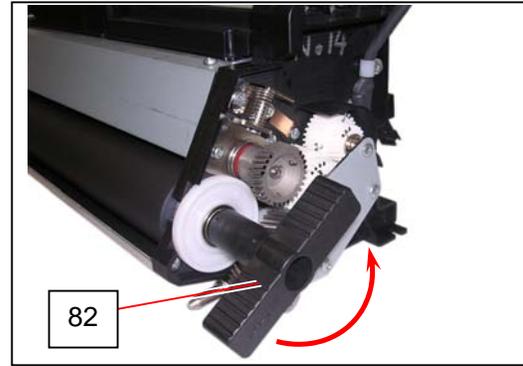
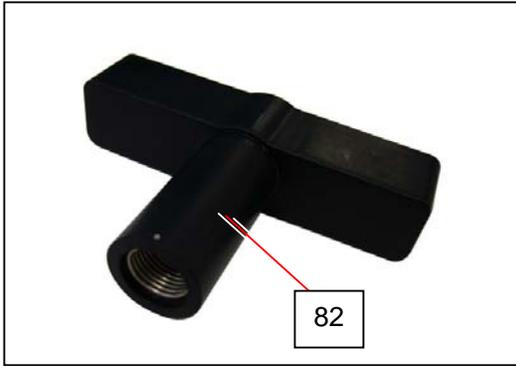
(1) Just put Separator (6) on the toner. It will be placed unseated. Do not push it completely at this time. Doing so may damage the plastic screw mylars (81) on the 2 shafts



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

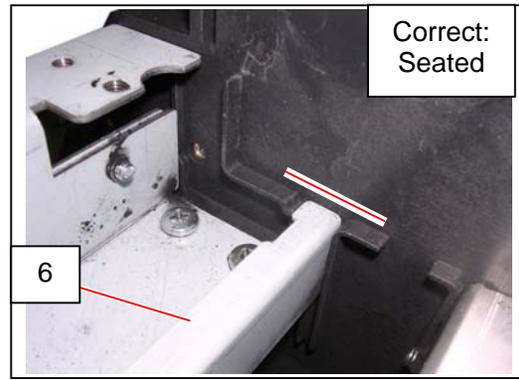
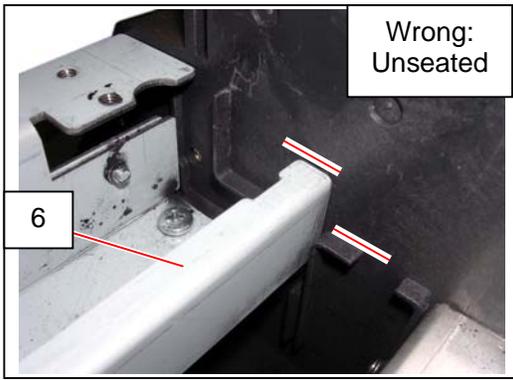


56. Insert Developer Handle (82) to the shaft of Roller Developer, and gently turn Developer Handle (82).
Separator will sink in the toner. Turn Developer Handle (82) until Separator sinks in position.

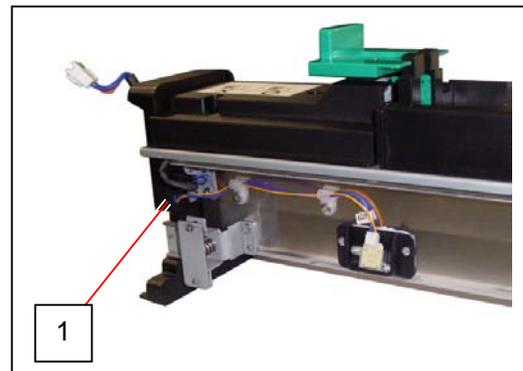
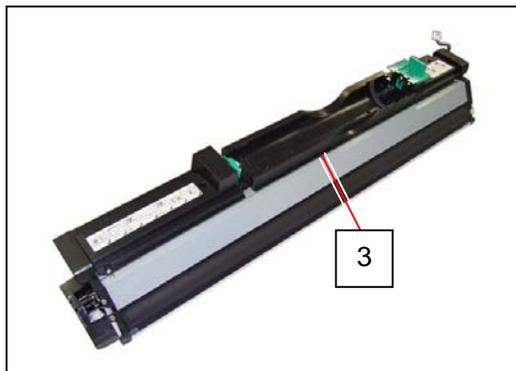


! NOTE

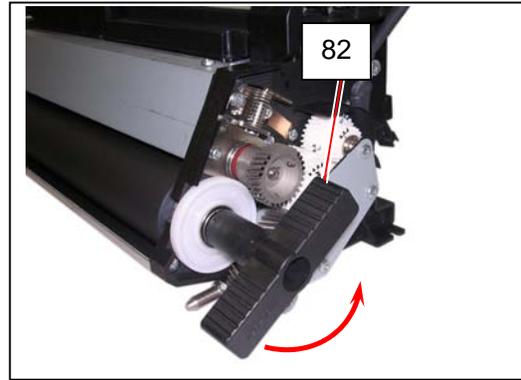
- (1) Slowly turn Developer Handle. Otherwise the toner may spill out.
- (2) Make sure that Separator (6) completely sinks in position by a 1/2 or more rotation of Developer Handle.
If not in position, the plastic screw mylars may be damaged at the next step.



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



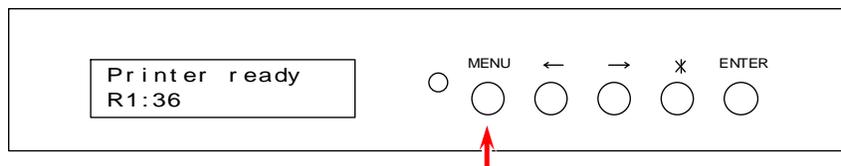
58. Install Developer Handle (82) to Roller Developer shaft. Rotate Roller Developer several times so that the roller surface is covered with the toner.



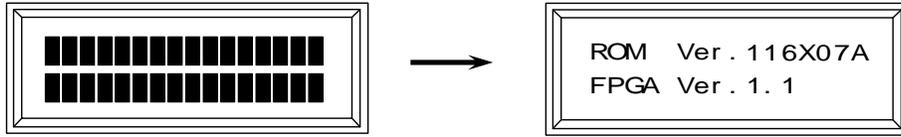
! NOTE

If the pressures of Blade Roller on either or both sides are weaker than required, the toner layer on the Developer Unit will be much thicker than required when you rotate the Roller Developer in the above procedure 53.
Pressurize the Blade Roller in the correct way in this case.
Refer to [5. 2. 8 Readjustment of the Pressure of Regulation Roller] on page 5-53.

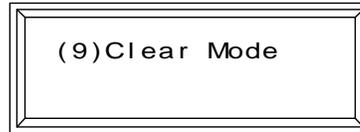
59. Reinstall Developer Unit to the machine.
60. With pressing [MENU] on the sub UI, turn on the machine to unlock the sub UI operation.



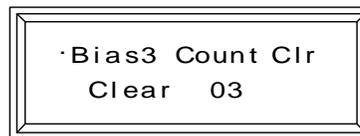
61. With pressing [*], press [←][←][→][←] to enter Service Mode.
 All segments on the sub UI LCD will light when you enter Service Mode.
 Release [*] and the sub UI LCD displays ROM version.



62. Press [Menu] until “9 Clear Mode” appears. When it appears, press [Enter].



63. Press [Menu] until “Bias 3 Count Clr” appears to reset the bias adjustment by Density Compensation Process.

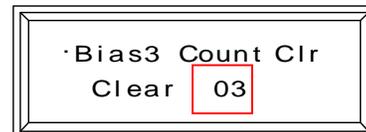


64. Press [*] and [Enter] at the same time to reset.



NOTE

The 2 digits “01”, “02” or “03” show that the current Developer / Regulation Roller Bias are automatically adjusted by Density Compensation Process.
 (The digits correspond to the current Auto Adjustment Level.)



After replacing Developer / Blade Rollers, an applied Auto Adjustment Level should be reset manually with Service Mode - Clear Mode.

Replacing the rollers without adjustment reset may cause a darker image problem because the adjustments was intended to suit the previously equipped rollers and will not suit the new rollers.

Refer to the related section for further details for the function.

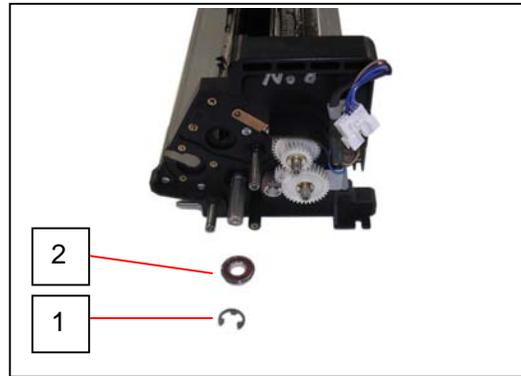
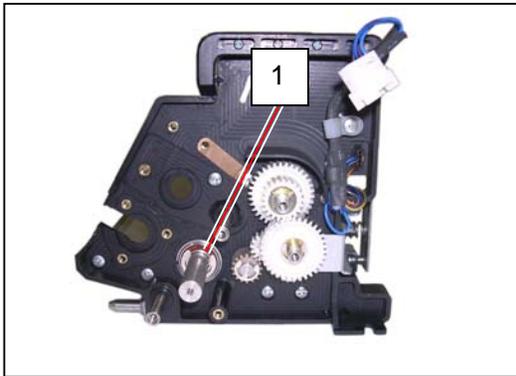
- [8. 5. 4.112 Density Compensation ON/OFF (No.652)] on page 8-129
- [8. 10. 2. 7 Density Compensation Reset Mode] on page 8-160

5. 2. 3 Replacement of Roller Supply

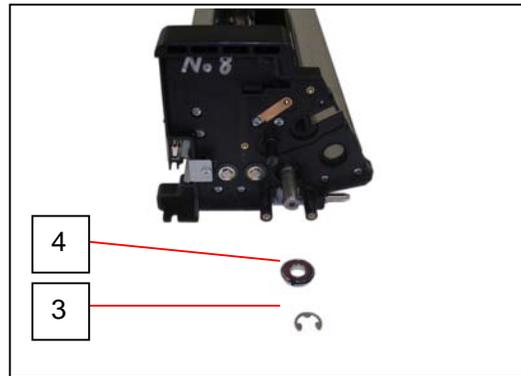
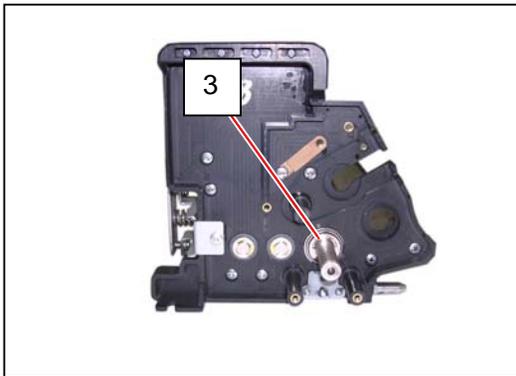
1. Remove Blade Roller and Roller Developer from Developer Unit making reference to [5. 2. 2 Replacement of Developer Unit Components] on the page 5-8.



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



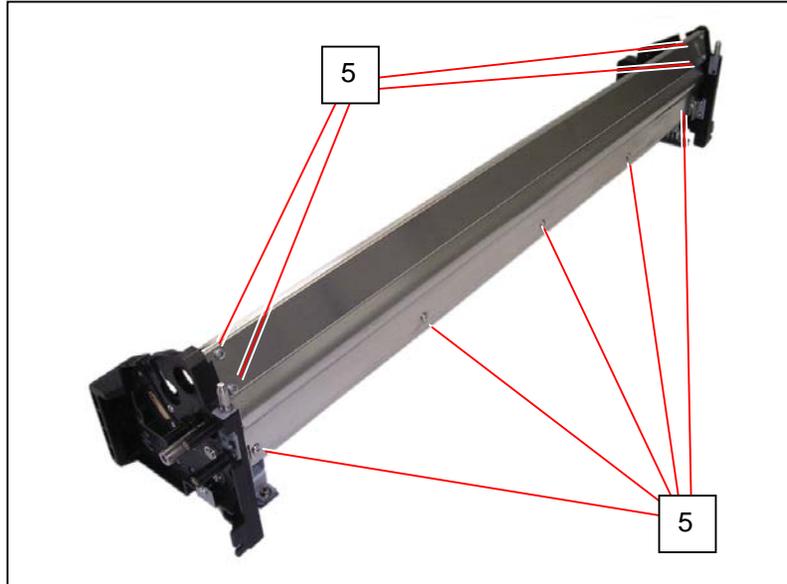
3. On the electrode plate side, remove Retaining Ring-E (3: E10) to remove Bearing (4).



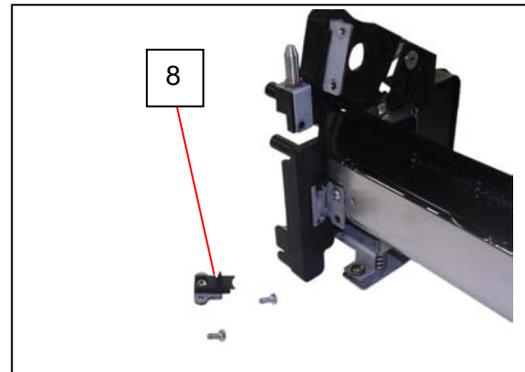
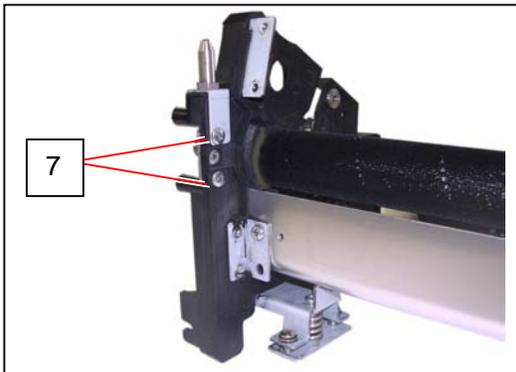
4. Turn the whole Developer Unit frame to the arrow direction to be laid down.



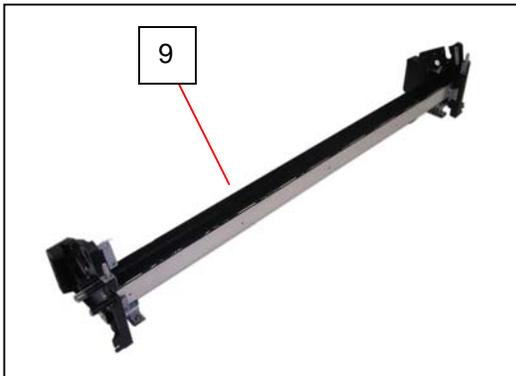
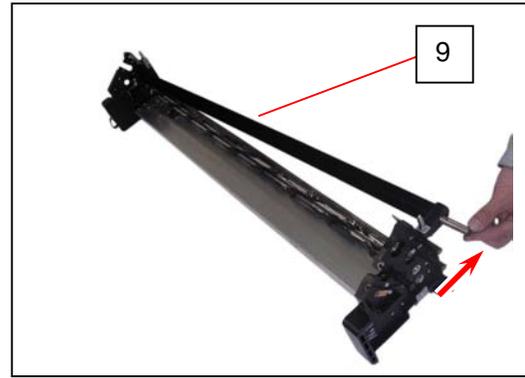
5. Remove 9 screws (5) to remove Frame 2 (6).



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



7. Remove Toner Supply Roller (9).

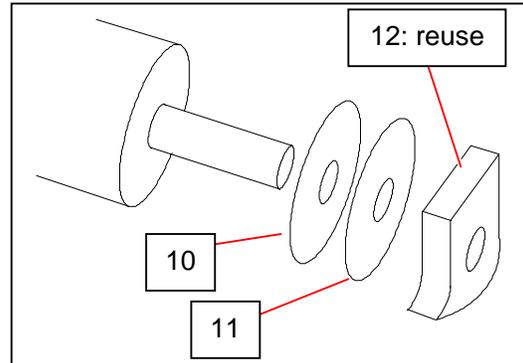


NOTE

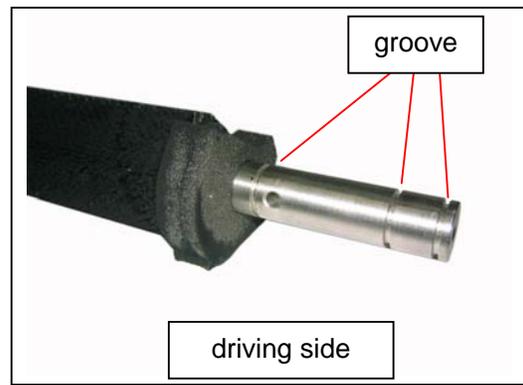
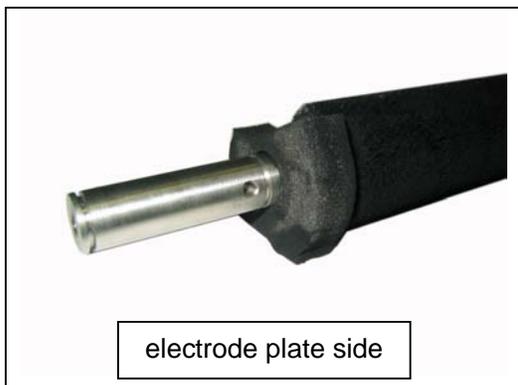
(1) Sheet 6 (10), Sheet 5 (11), Seal R Assy or Seal L Assy (12) are attached on each side shaft of Roller Supply.

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

Keep water or grease away from between the sheets.

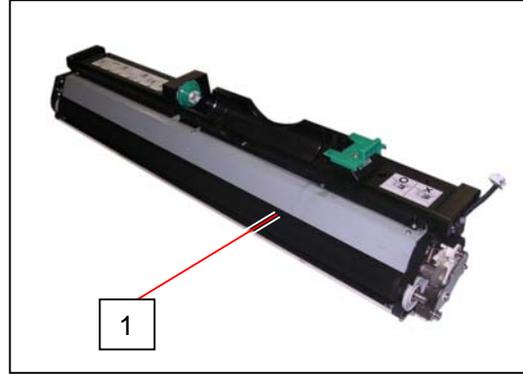


(2) Note the installation direction. The shaft with three grooves should be placed to the driving side.

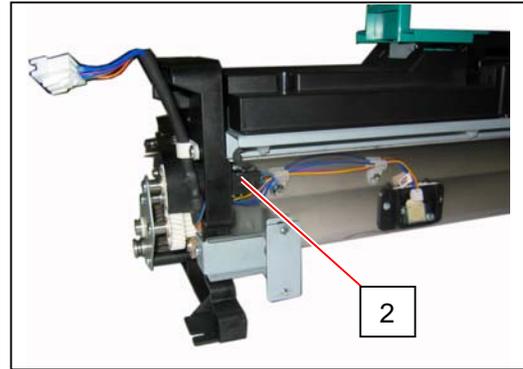


5. 2. 4 Replacement of Screw Assy

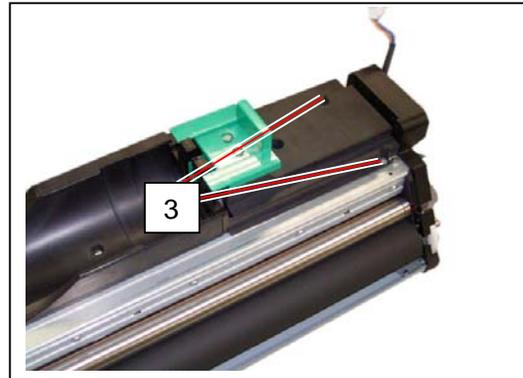
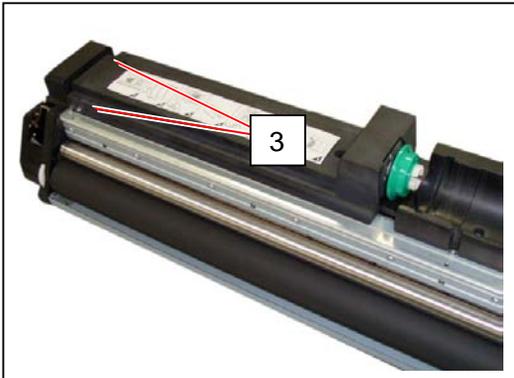
1. Remove the Developer Unit (1) from the machine making reference to [5. 2. 1 Removal of the Developer Unit] on the page 5-5.



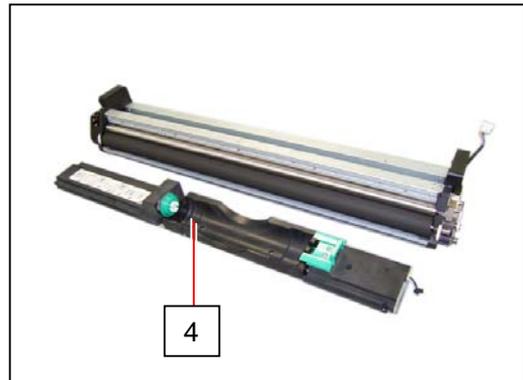
2. Disconnect the connector (2).



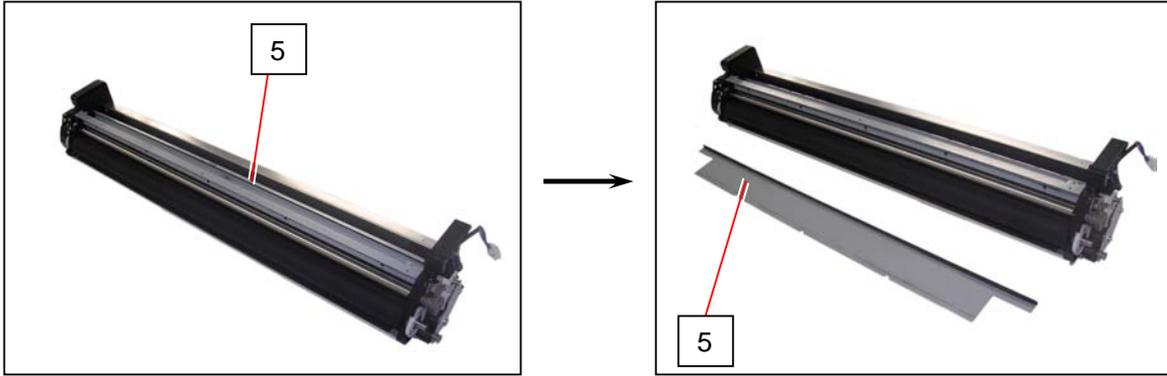
3. Remove 4 pieces of 4x6 screws (3) which fix the Hopper Assembly (4).



4. Remove the Hopper Assembly (4).



5. Remove Separator (5).

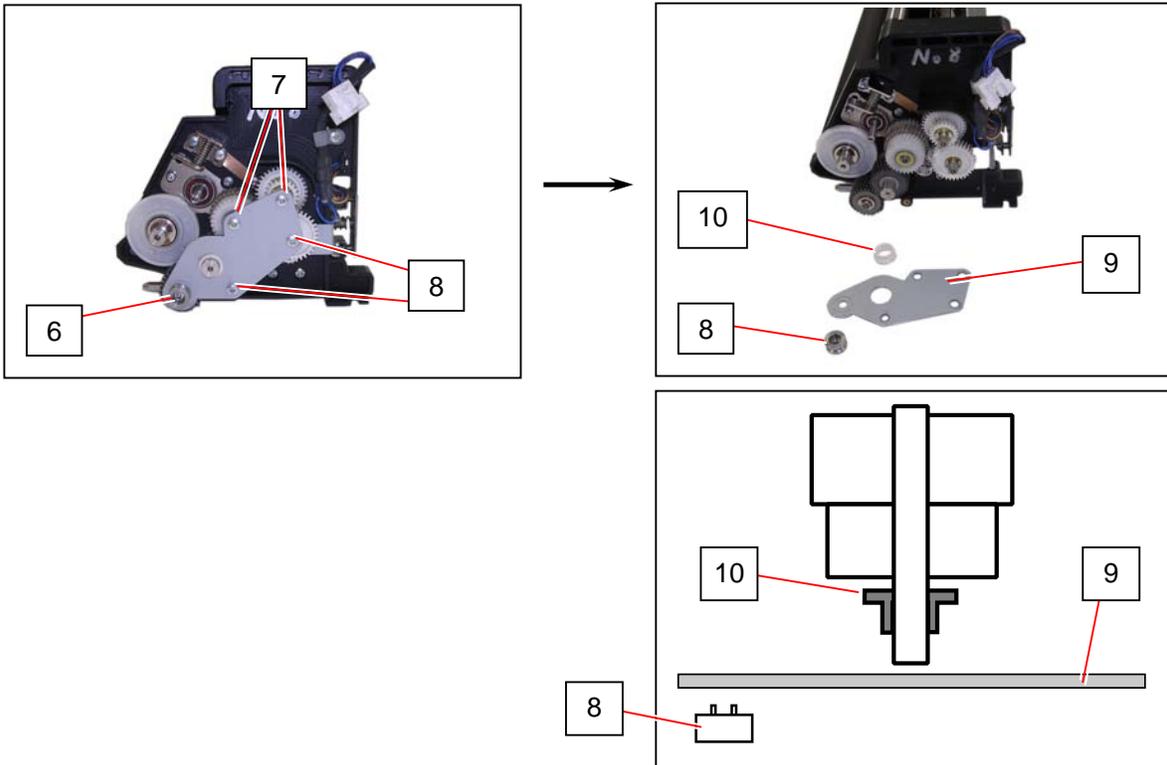


6. Remove all the toner from Developer Unit.

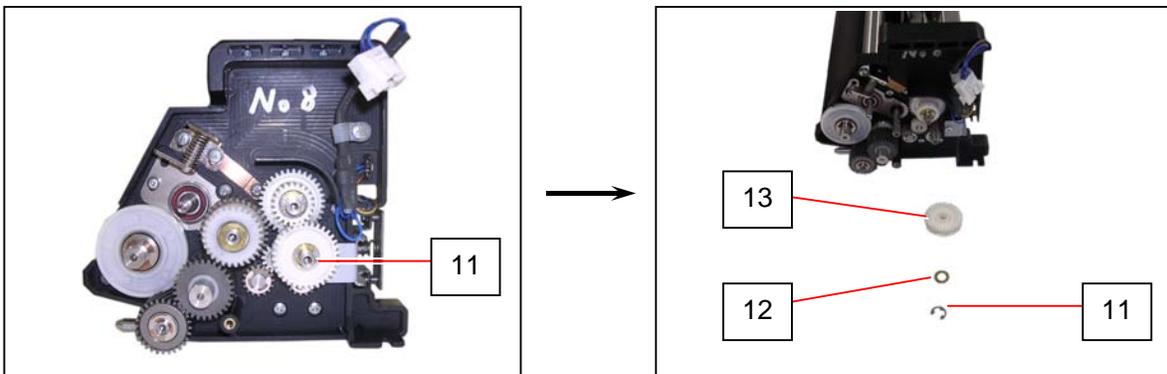
⚠ NOTE

Do not reuse the removed toner.

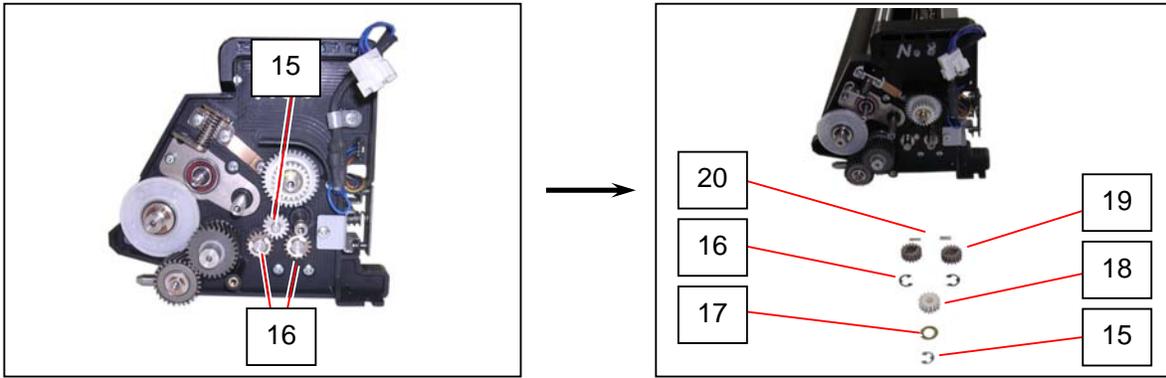
7. Remove 5 screws (6: M4x8) (7: M4x6) to remove Pin 4 (8), Plate (9), Collar (10).



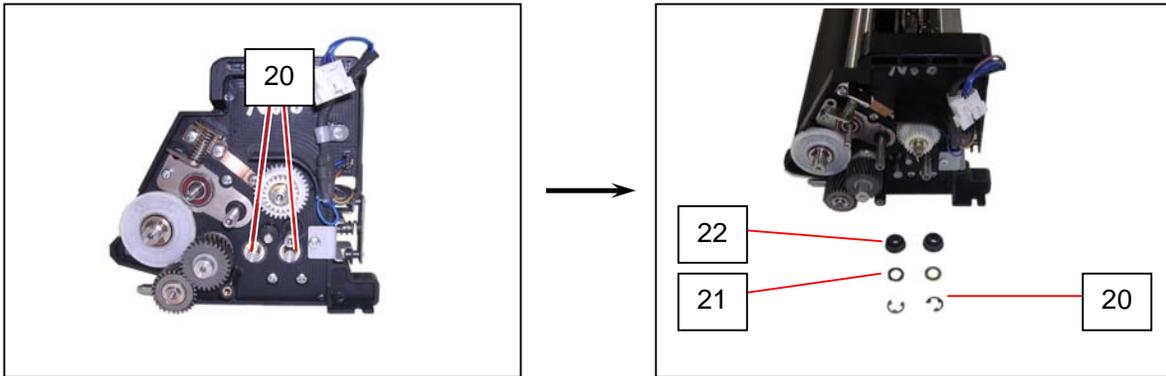
8. Remove Retaining Ring-E (11: E7) to remove Spacer (12), Gear 16T-34T (13).



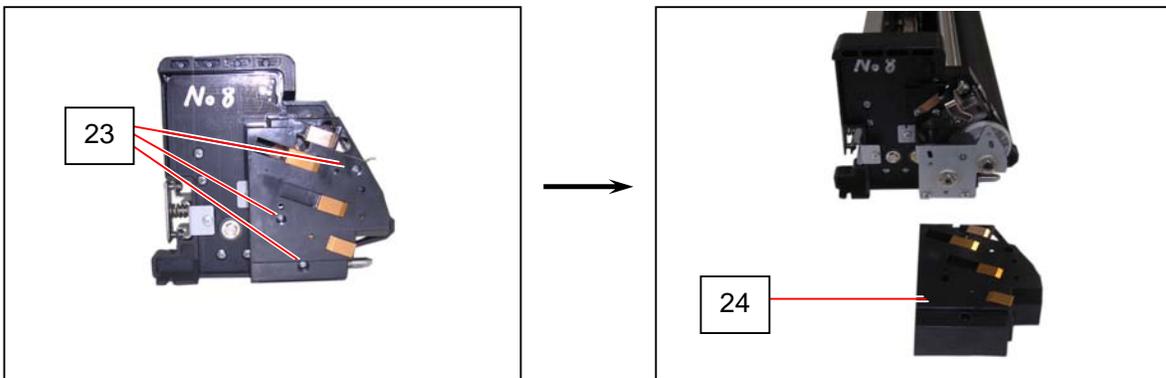
9. Remove Retaining Ring-E (14: E5) (15: E7) to remove Washer (16), Gear 15T (17), Gear 16T (18) and Parallel Pin (19).



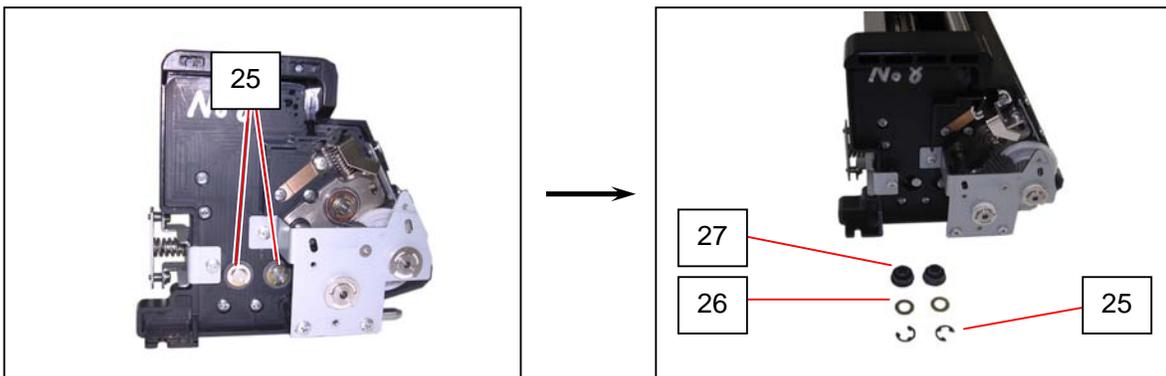
10. Remove Retaining Ring-E (20) to remove Washer (21) and Bush (22).



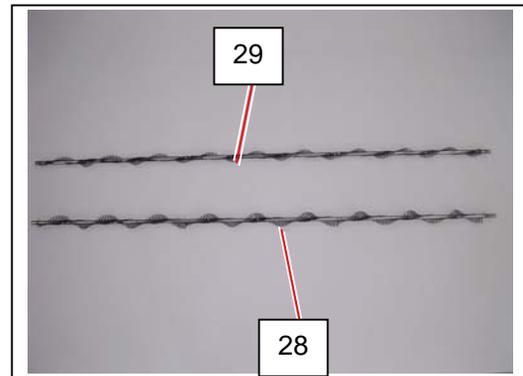
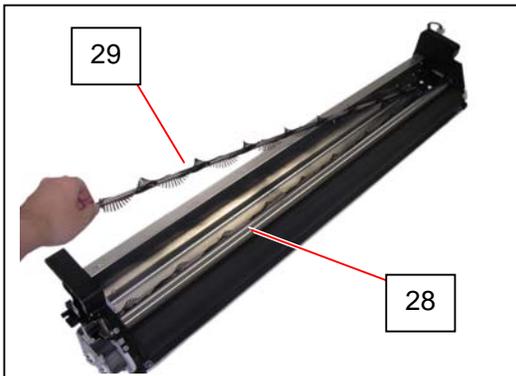
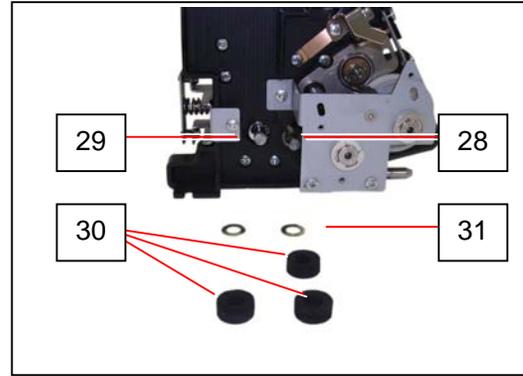
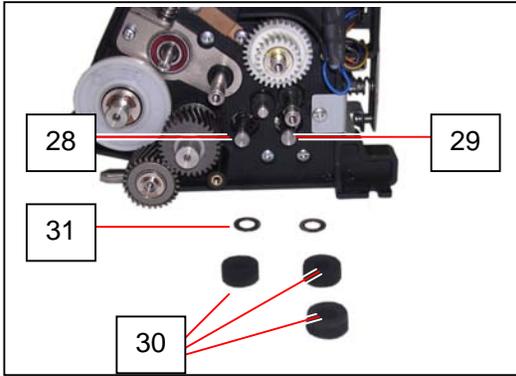
11. On the electrode plate side, remove 3 screws (23) to remove Holder 2 Assy (24).



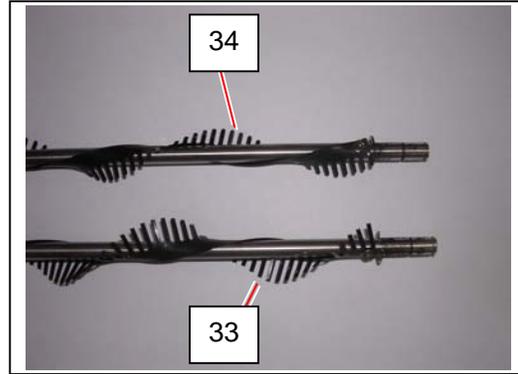
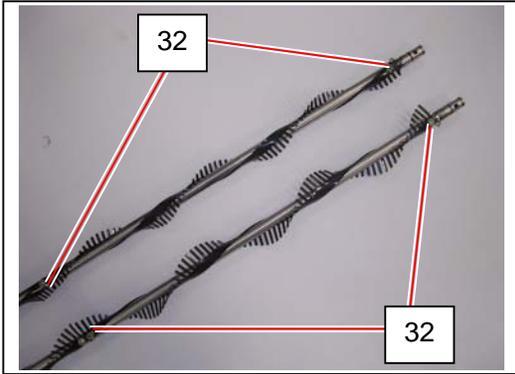
12. Remove Retaining Ring-E (25) to remove Washer (26) and Bush (27).



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



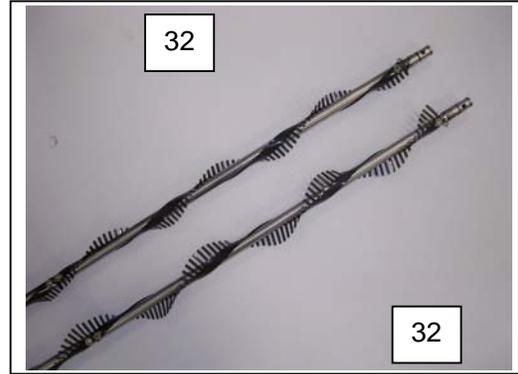
14. Remove each 2 screws (32: M3x5) to remove Screw A (33) / Screw B (34).



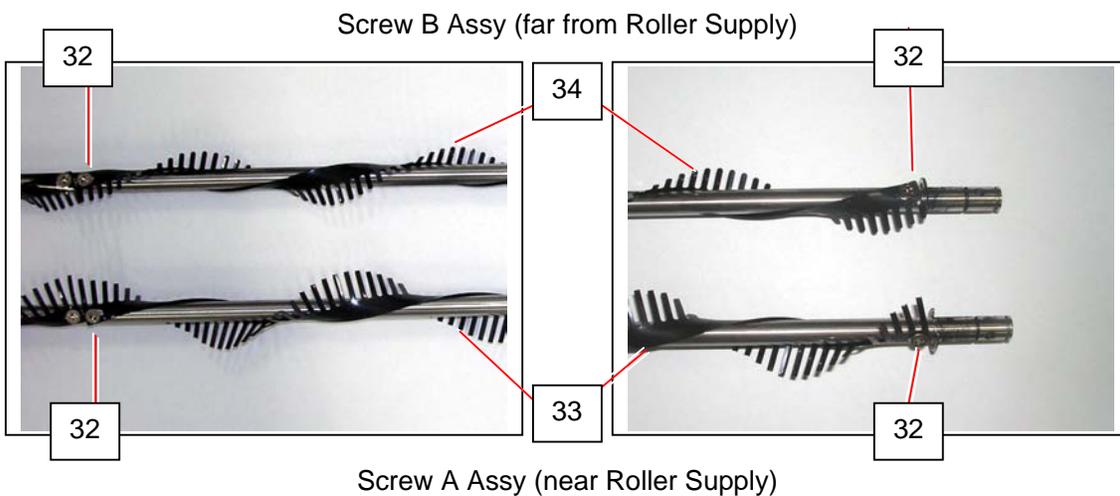
⚠ NOTE

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

- (1) Note the twisting direction around the shaft.
- (2) Each Screw A (33) / Screw B (34) has a 3 twist between the screws (32).



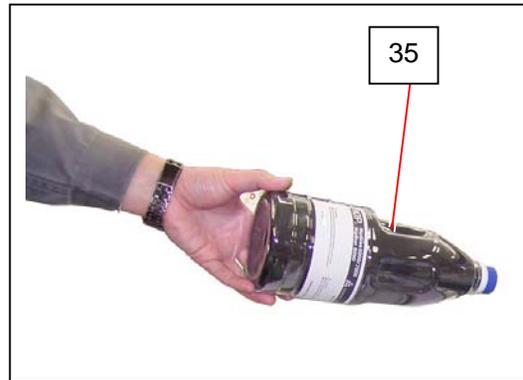
- (3) Screw A (33) / Screw B (34) are fragile. Gently turn the screws (32) to fix Screw A (33) / Screw B (34).



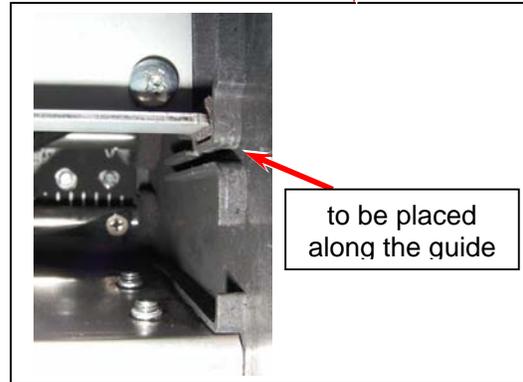
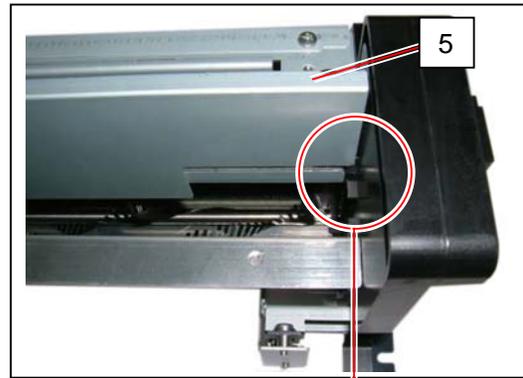
15. Replace all the components except Separator (5) and Hopper Assy (4) in position.



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

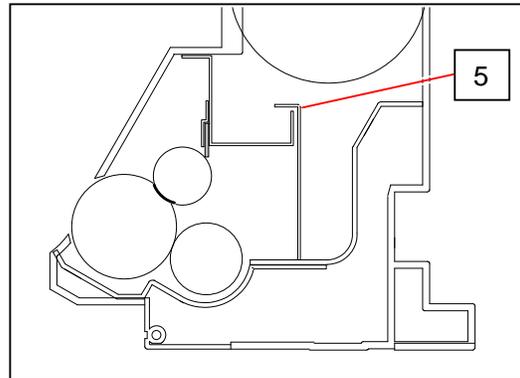


17. Along the guide on the side plates, gently place Separator (5) on the added toner.
Do not push it in.

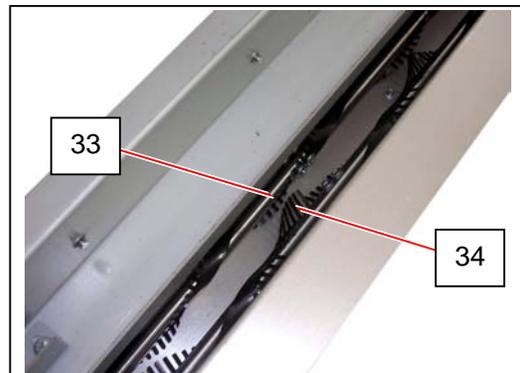
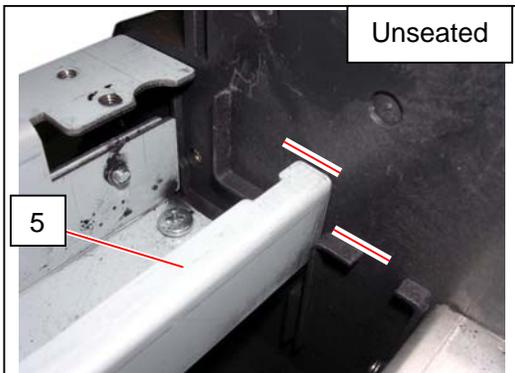


NOTE

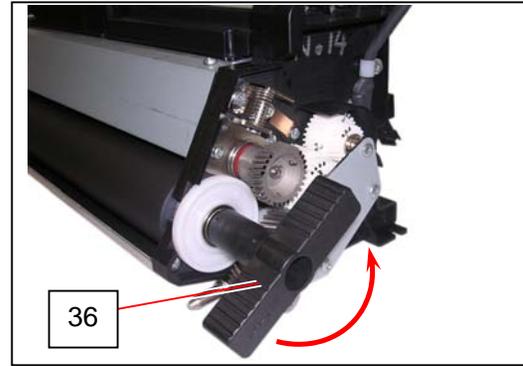
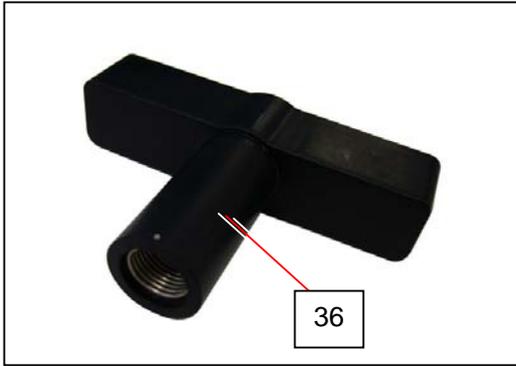
- (1) Be careful of the direction of Separator (5).
Do not install it in the wrong direction.



- (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).

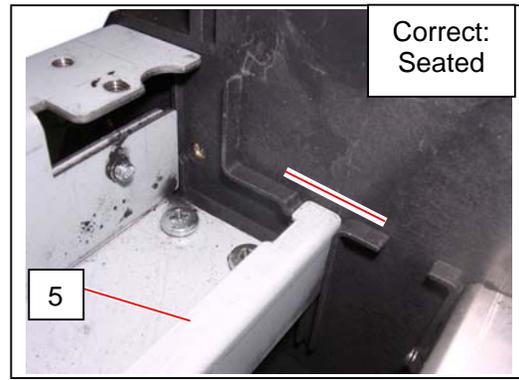
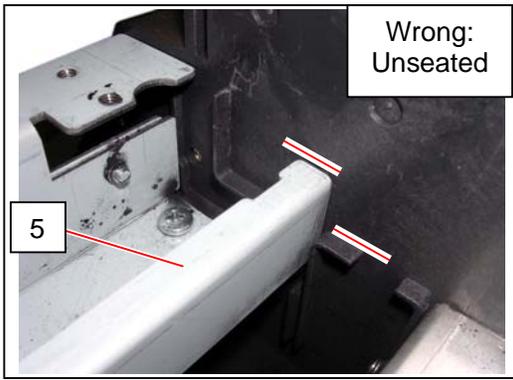


18. Insert Developer Handle (36) to the shaft of Roller Developer, and gently turn Developer Handle (36).
Separator will sink in the toner. Turn Developer Handle (36) until Separator sinks in position.

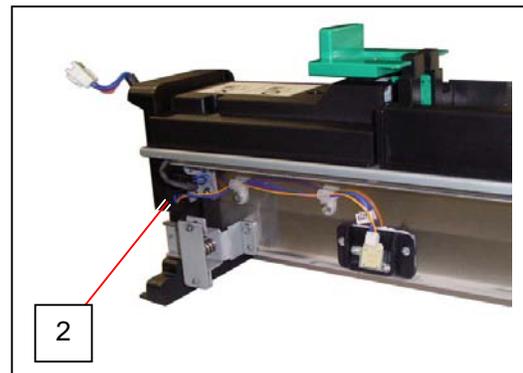
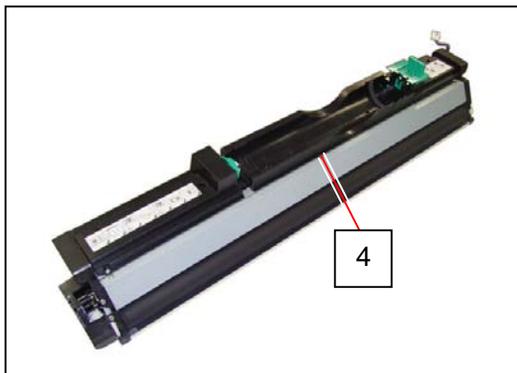


! NOTE

- (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.

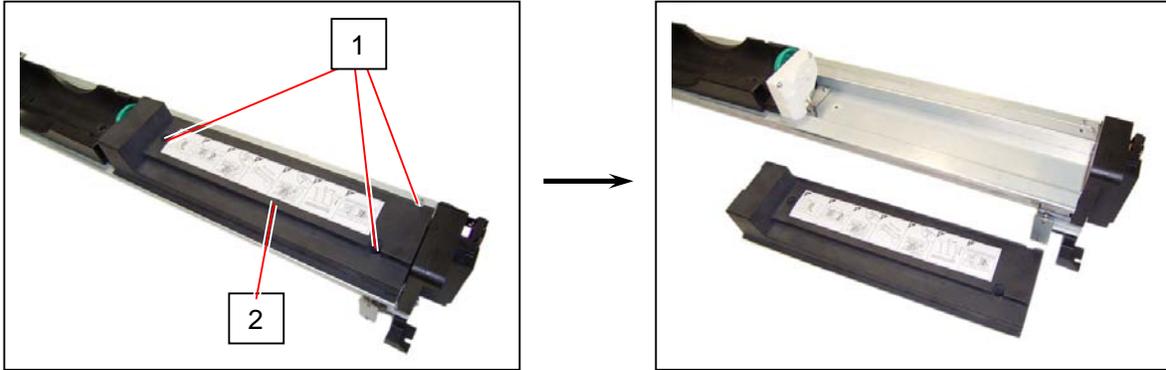


19. Replace the Hopper Assembly (4) and connect the connector (2).

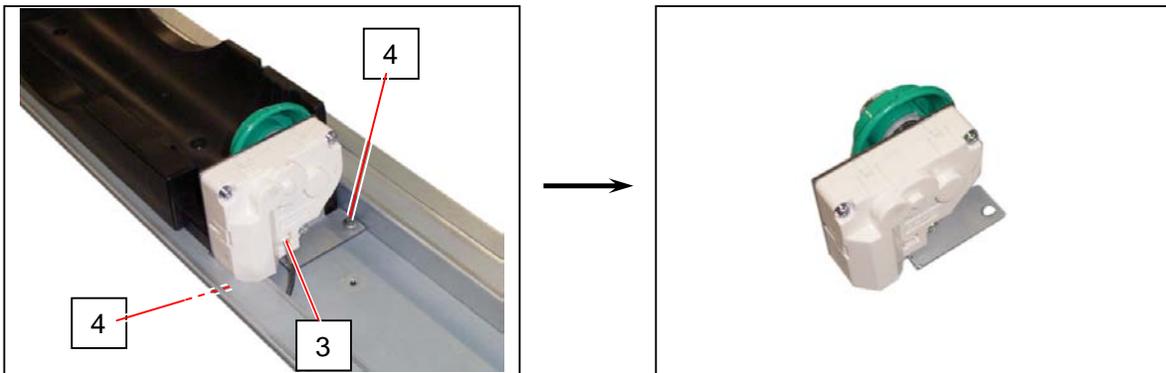


5. 2. 5 Replacement of DC Motor

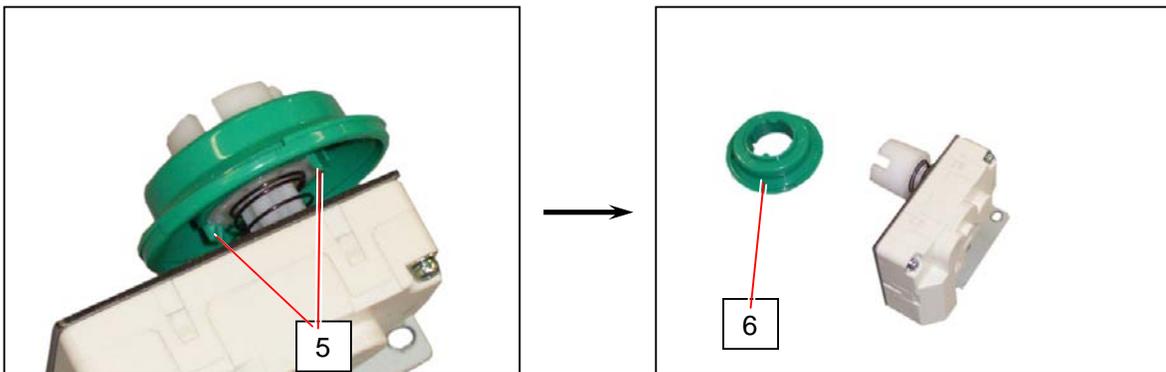
1. Remove 3 pieces of 4x6 screw (1) to remove the Cover 2 (2).



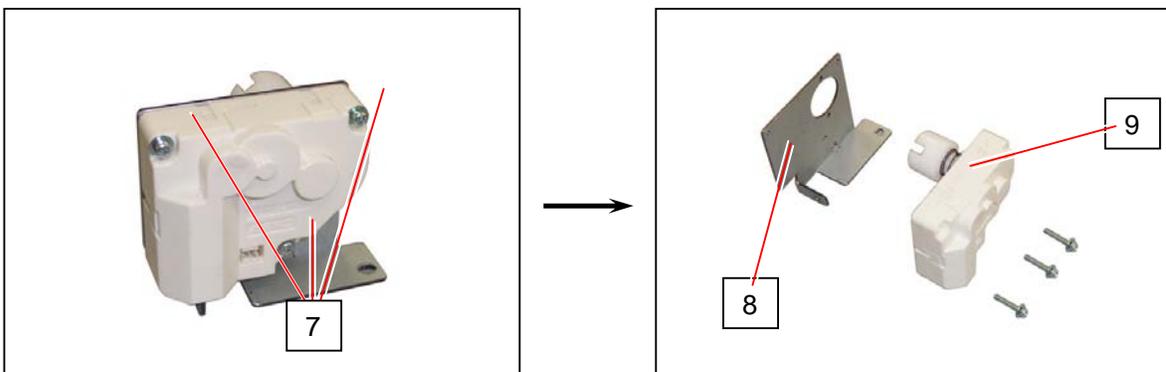
2. Disconnect the connector (3), remove 2 pieces of 4x6 screw (4), and then remove the motor assembly.



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

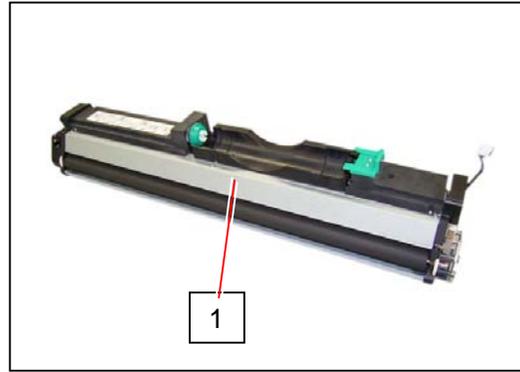


4. Remove 3 pieces of 3x20 screw (7) to remove the Bracket 19 (8).
Replace the **DC Motor** (9) with the new one.

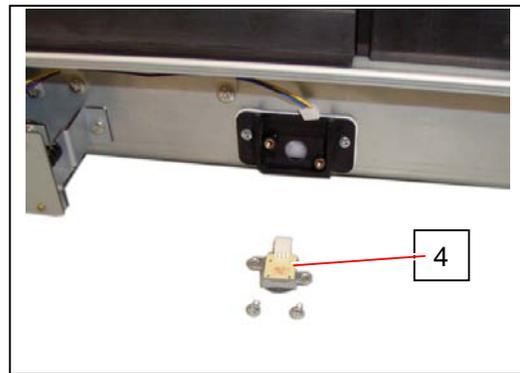
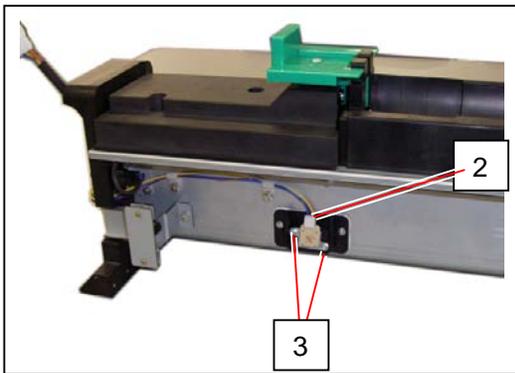


5. 2. 6 Replacement of Sensor (TLS1)

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 then 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)

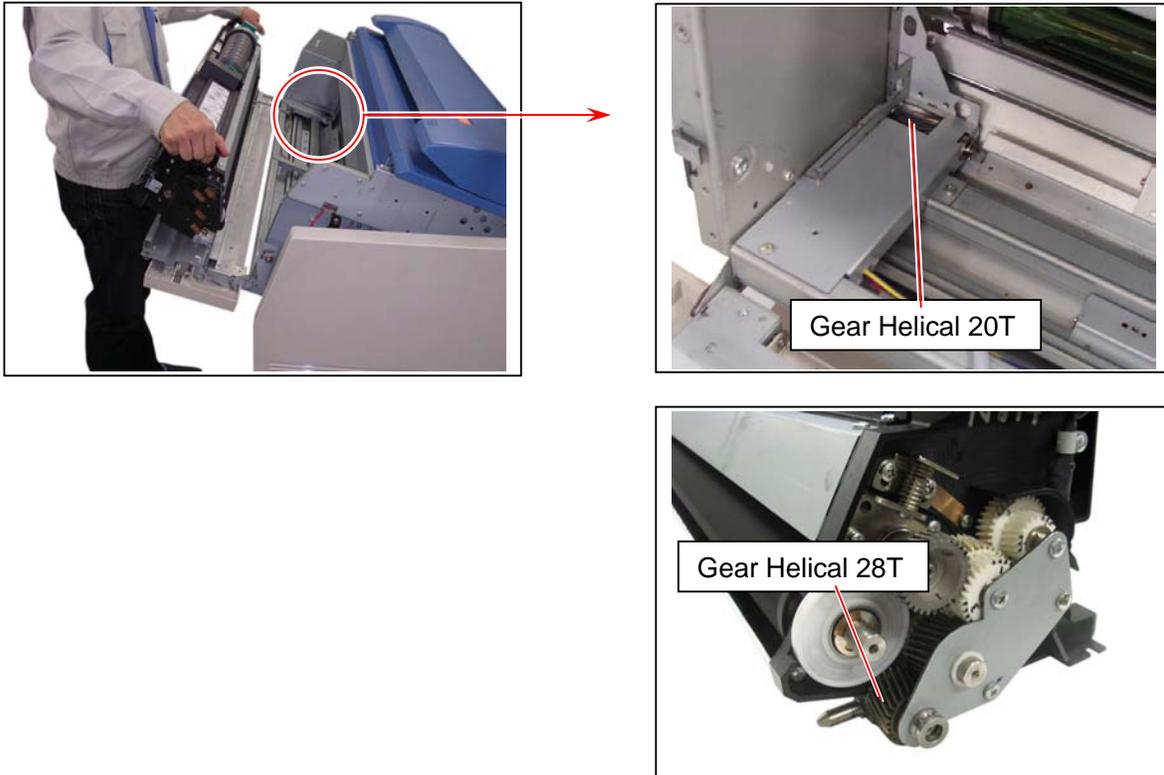
⚠ NOTE

You do not have to adjust the space between gears basically as it has been adjusted in the factory.

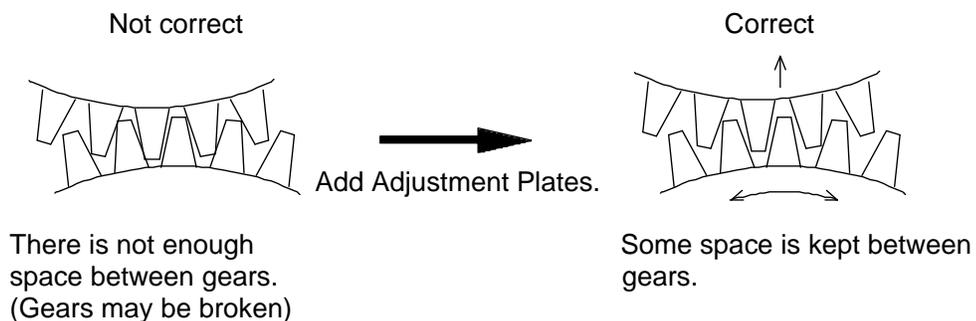
But please do it only when you replace the whole Developer Unit.

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.)

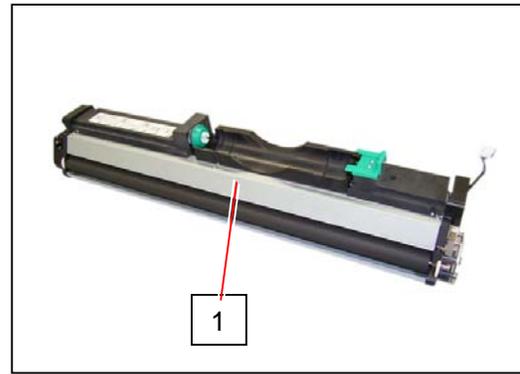


If there is no space between these gears, **the gear may be broken.**
In this case it is necessary to add Adjustment Plates to keep a space.

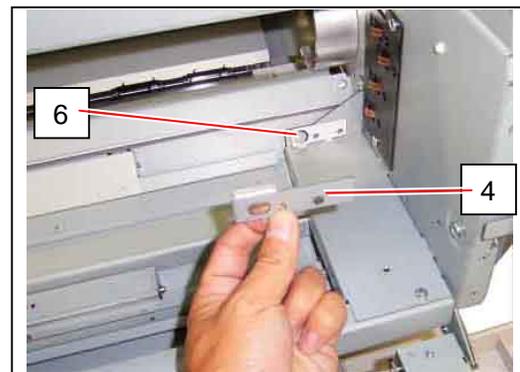
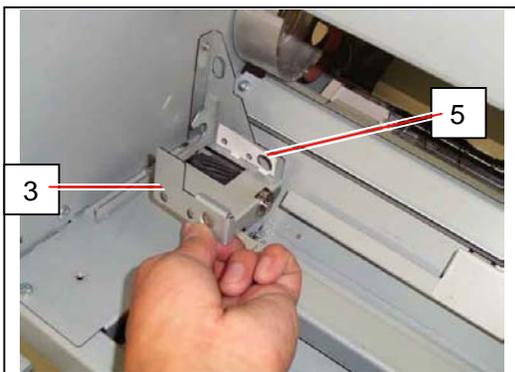
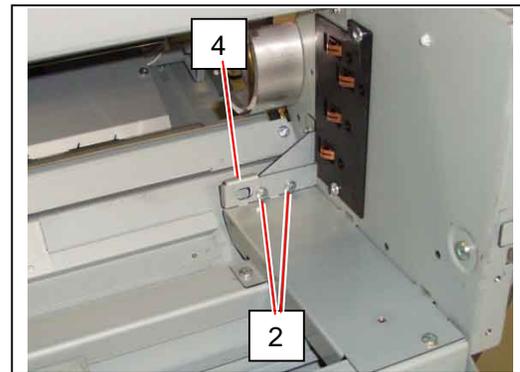
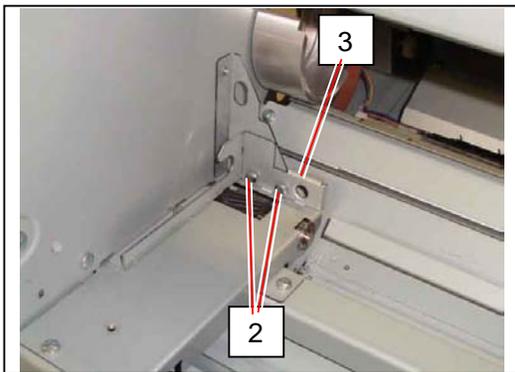
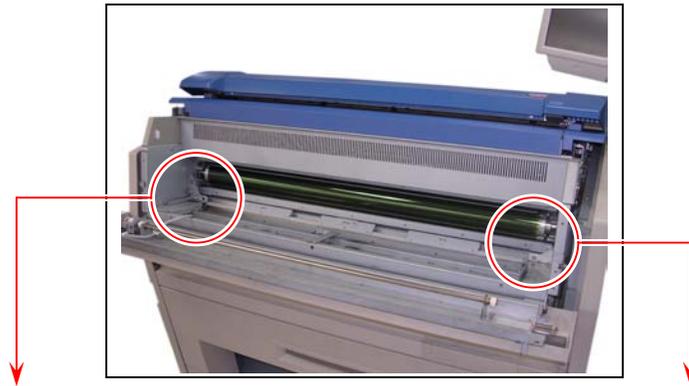


Refer to the next page how to add the Adjustment Plates.

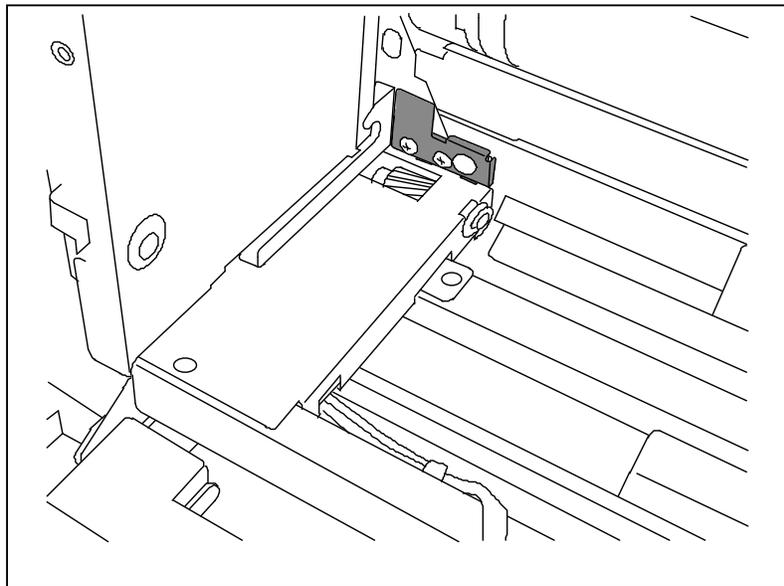
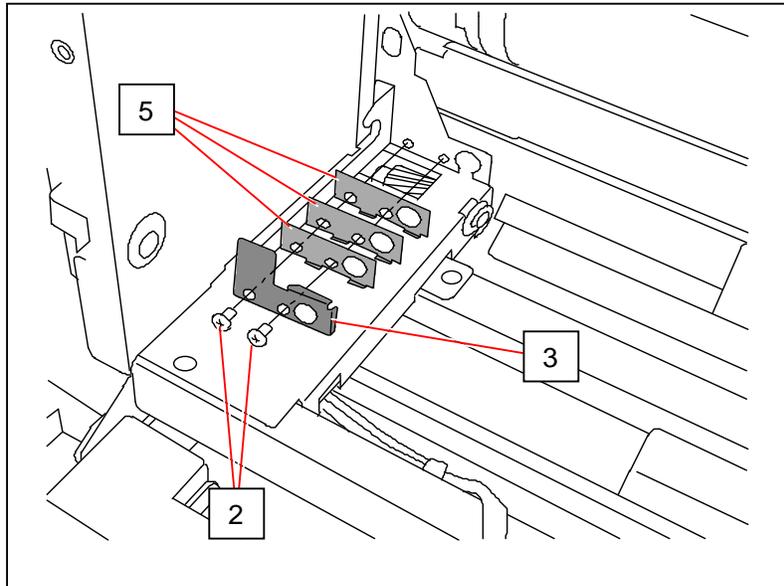
1. Remove the Developer Unit (1) from the machine making reference to [5. 2. 1 Removal of the Developer Unit] on the page 5-5.



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).

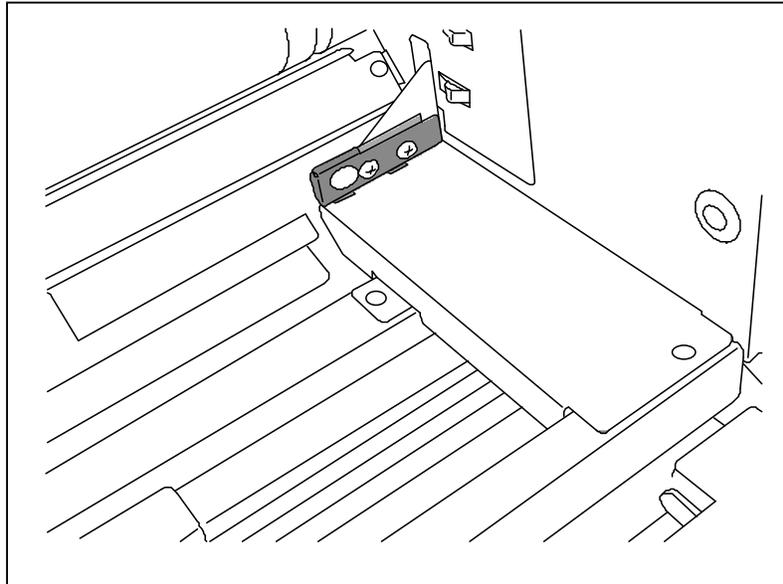
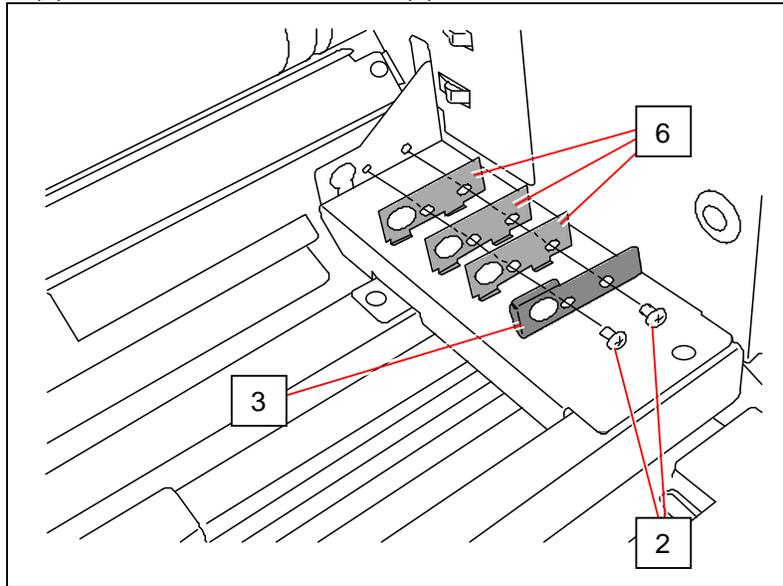


▲ NOTE

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

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

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



▲ NOTE

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

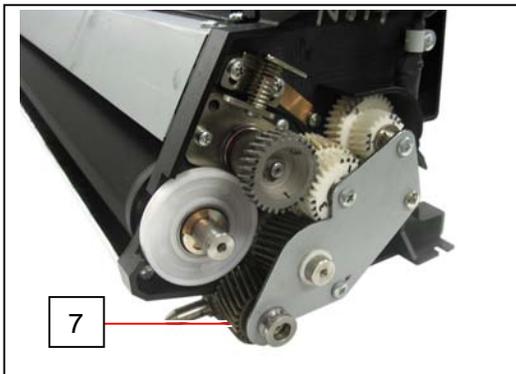
Spacer 2	Z053101210 (thickness is 0.05mm)
Spacer 6	Z053101360 (0.1mm)
Spacer 4	Z053101340 (0.2mm)

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

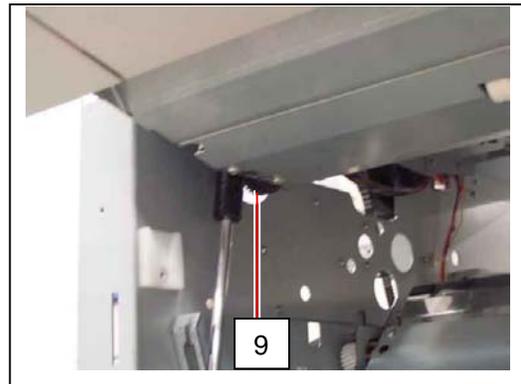
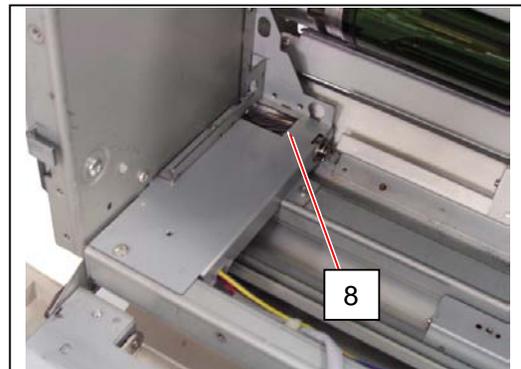


6. There is Gear Helical 28T (7) on Developer Unit side. There is Gear Helical 20T (8) on Engine Unit, and also there is Gear Helical 34T (9) on Engine Unit.

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



(Top of Engine Unit)

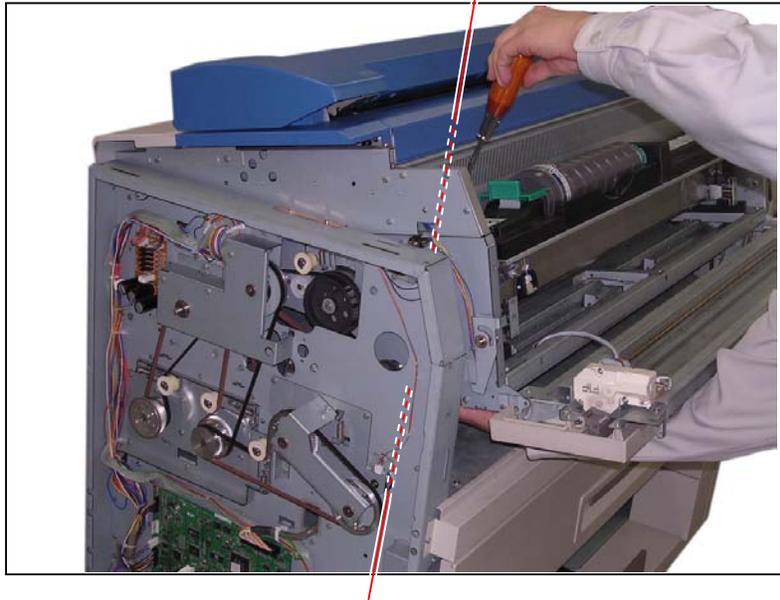


(Bottom of Engine Unit)

(continued on the next page)

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

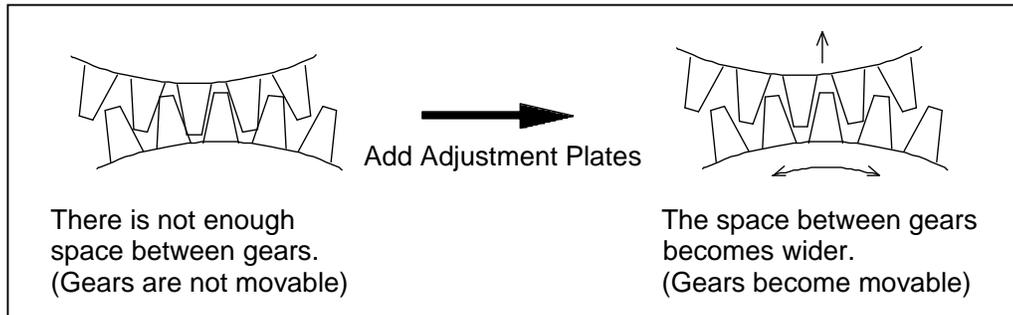
Hold the Gear Helical 28T with one hand.



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

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

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



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

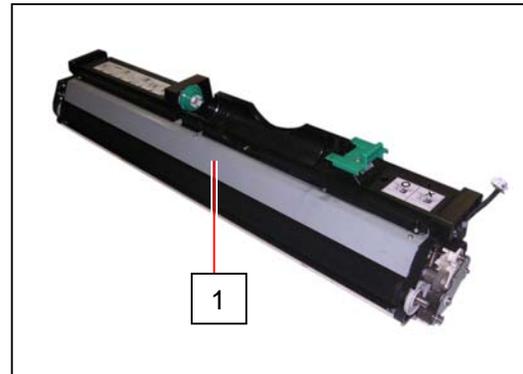
If the pressure of Blade Roller is weak, the toner layer on the Developer Unit will be much thicker than required when you rotate the Developer Roller.

Pressurize the Blade Roller in the correct way as shown below in this case.

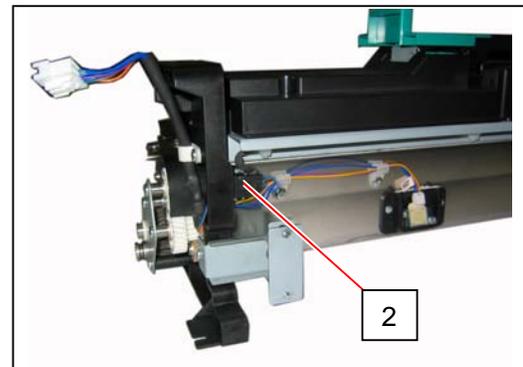
(You will not be able to pressurize it successfully by the usual way of pressurization once a too thick toner layer is created.)

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.

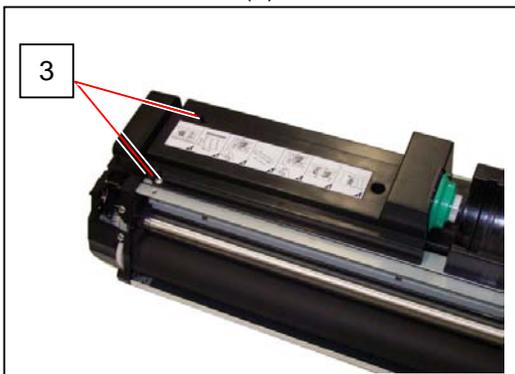
1. Remove the Developer Unit (1) from the machine making reference to [5. 2. 1 Removal of the Developer Unit] on the page 5-5.



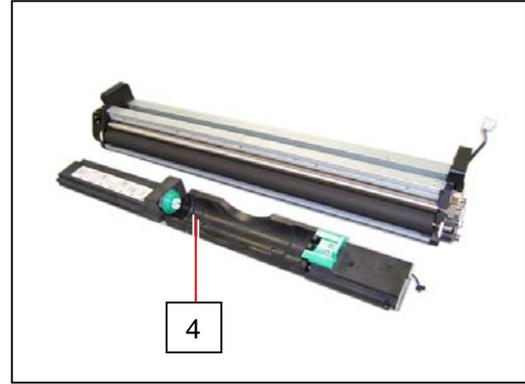
2. Disconnect the connector (2).



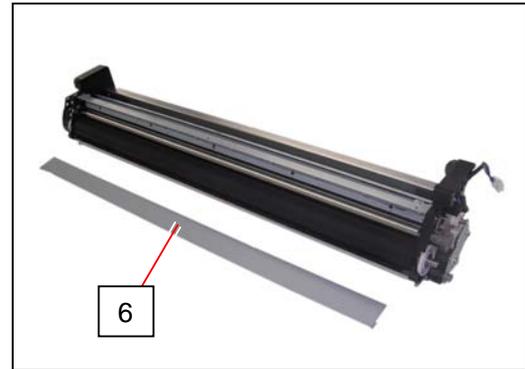
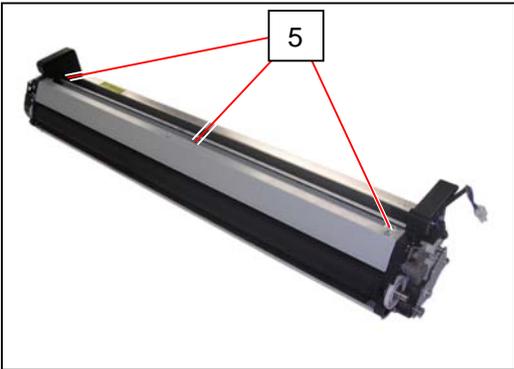
3. Remove 4 screws (3).



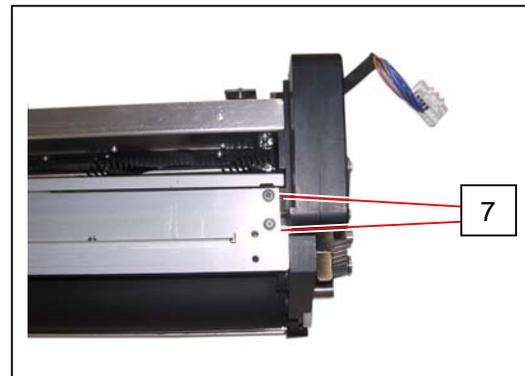
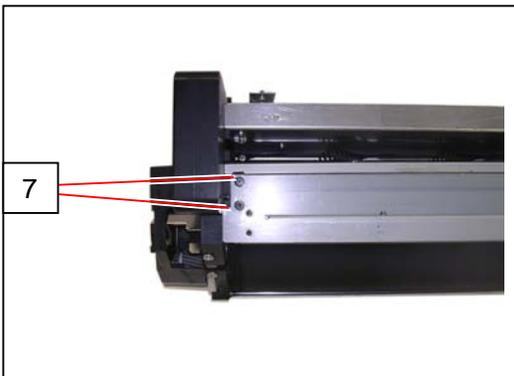
4. Remove the Hopper Assembly (4).



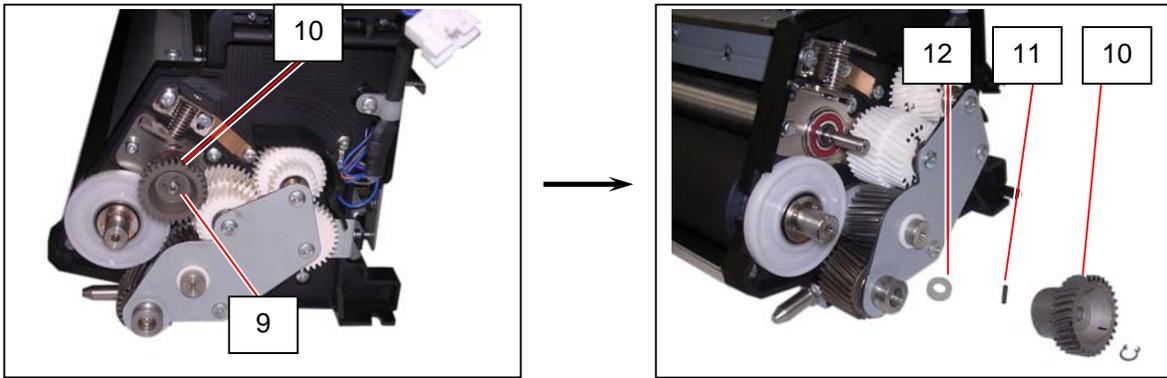
5. Remove 3 pieces of M4x6 screws (5) to remove Cover (6).



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

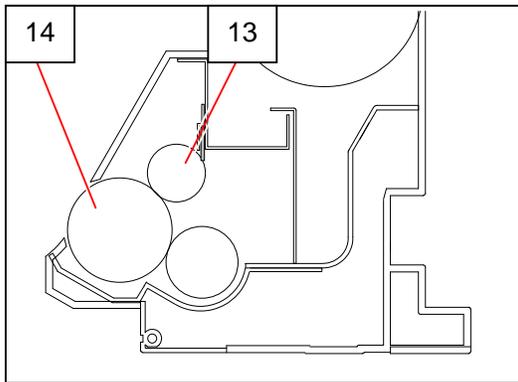


7. On the driving side, remove Retaining Ring-C (9: C6) to remove Gear Helical 30T (10), Parallel Pin (11: 2.5x10) and Collar 3 (12) from Blade Roller shaft.

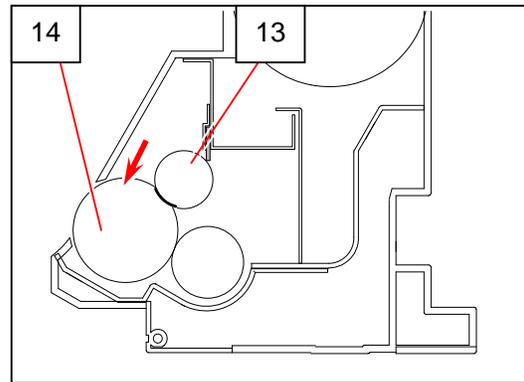


! NOTE

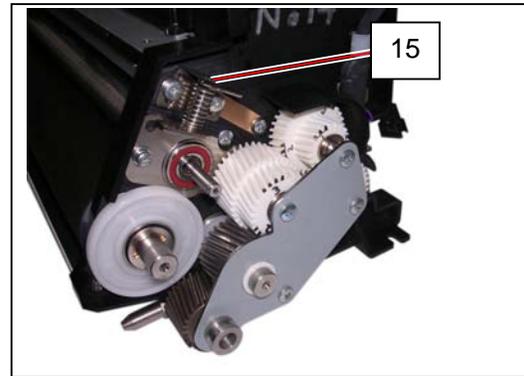
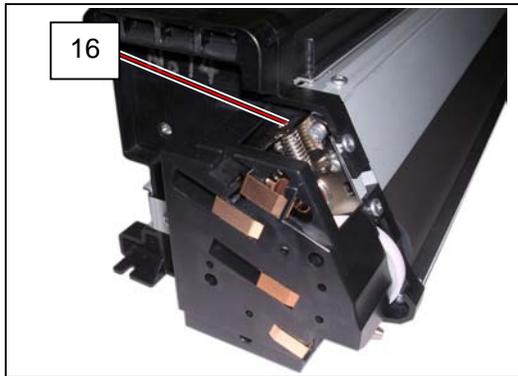
Blade Roller (13) is pressed onto / released from Developer Roller (14) by Bracket 4 (15) on the driving side, by Bracket 5 (16) on the electrode plate side. When reassembling, re-pressurization should be required prior to reinstallation of Gear Helical 30T (10).



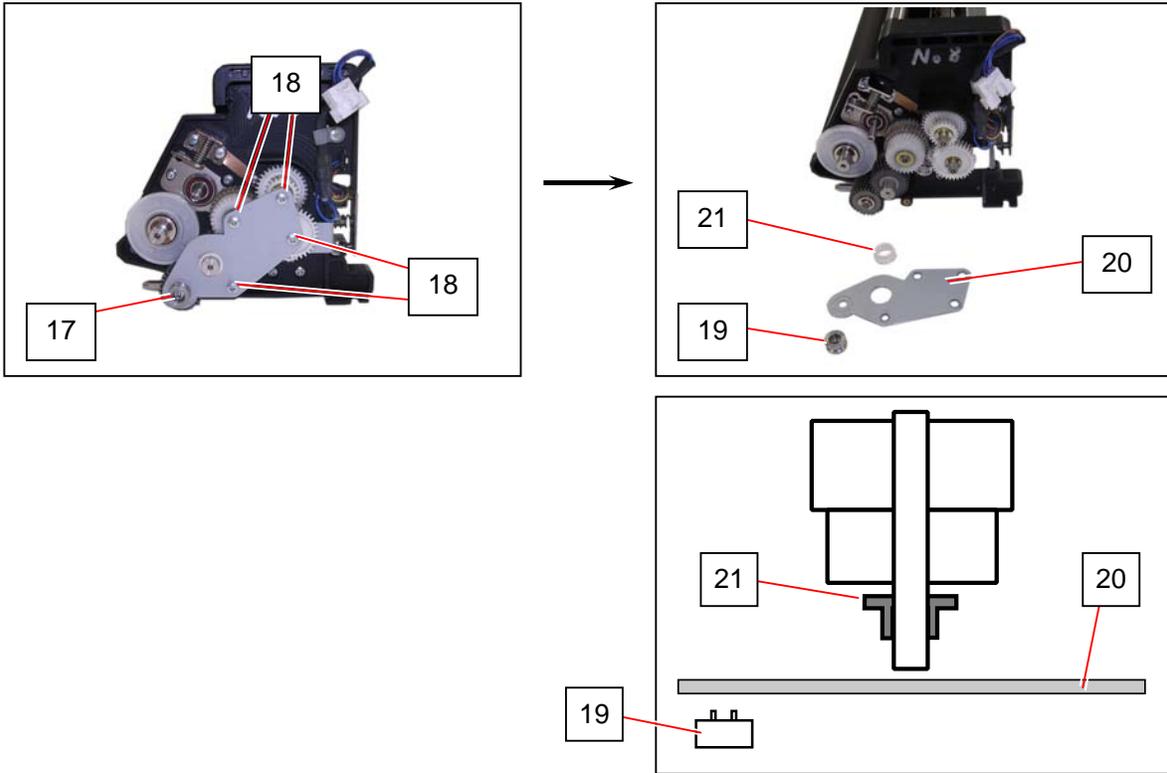
not pressurized



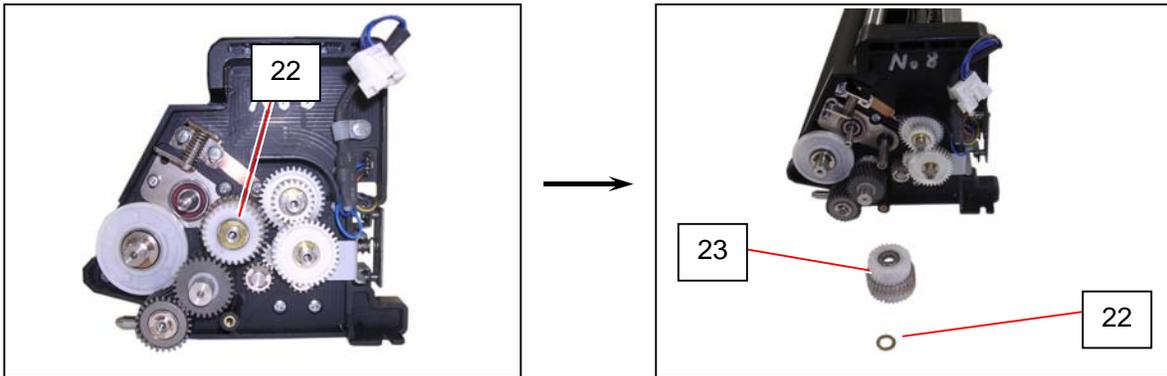
pressurized



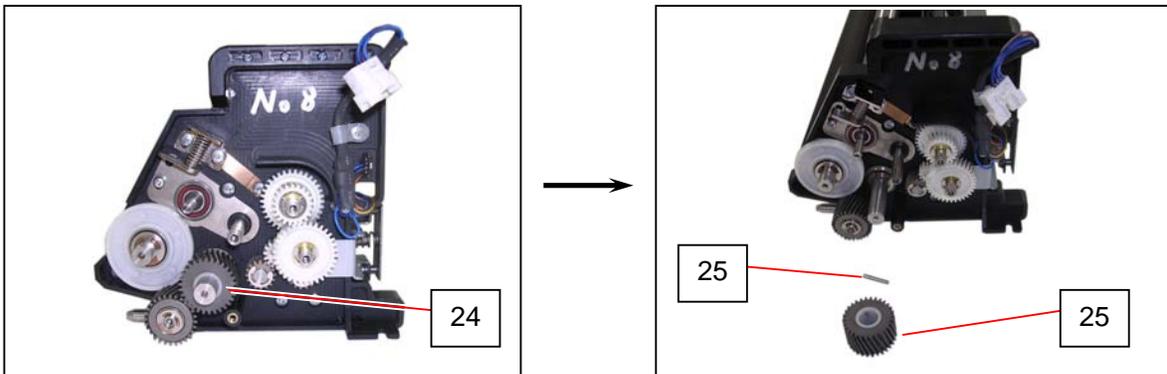
8. Remove 5 screws (17: M4x8) (18: M4x6) to remove Pin 4 (19), Plate 9 (20), Collar (21).



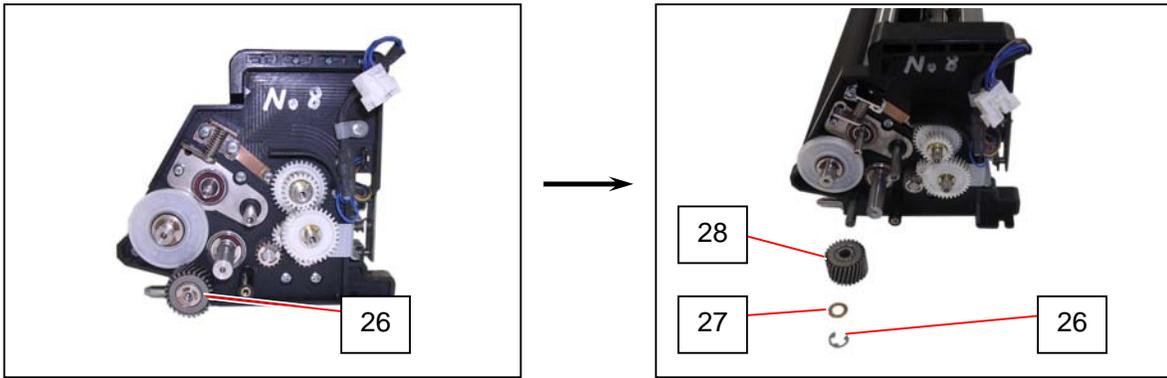
9. Remove Washer (22: 8.1x14x0.5t) and Gear 29T-34T Assy (23)



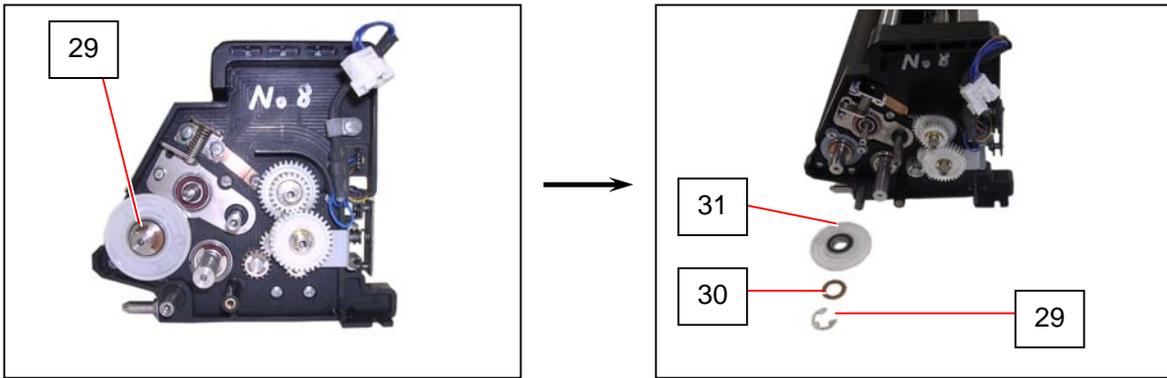
10. Remove Helical 30T (24) and Parallel Pin (25: 3x20) from Toner Supply Roller shaft.
If you cannot remove Parallel Pin (25) at this time, remove it after the later step 12.



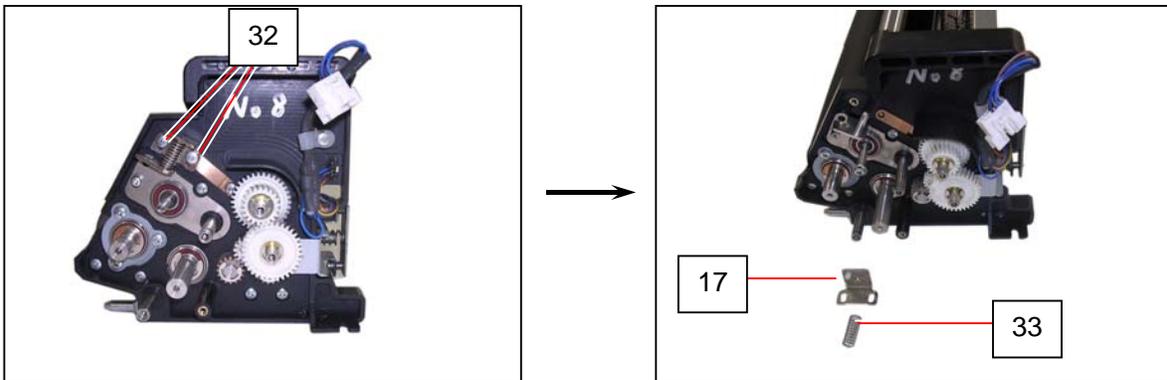
11. Remove Retaining Ring-E (26: E7) to remove Washer (27: 8.1x12x0.2t) and Gear Helical 28T Assy (28).



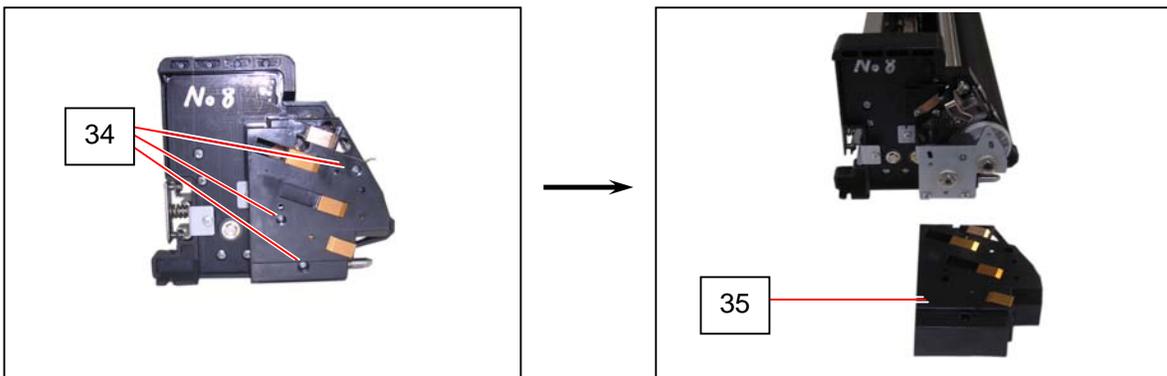
12. Remove Retaining Ring-E (29: E10) to remove Washer (30: 12.2x20x0.5t) and Counter Roller (31) from Developer Roller shaft.



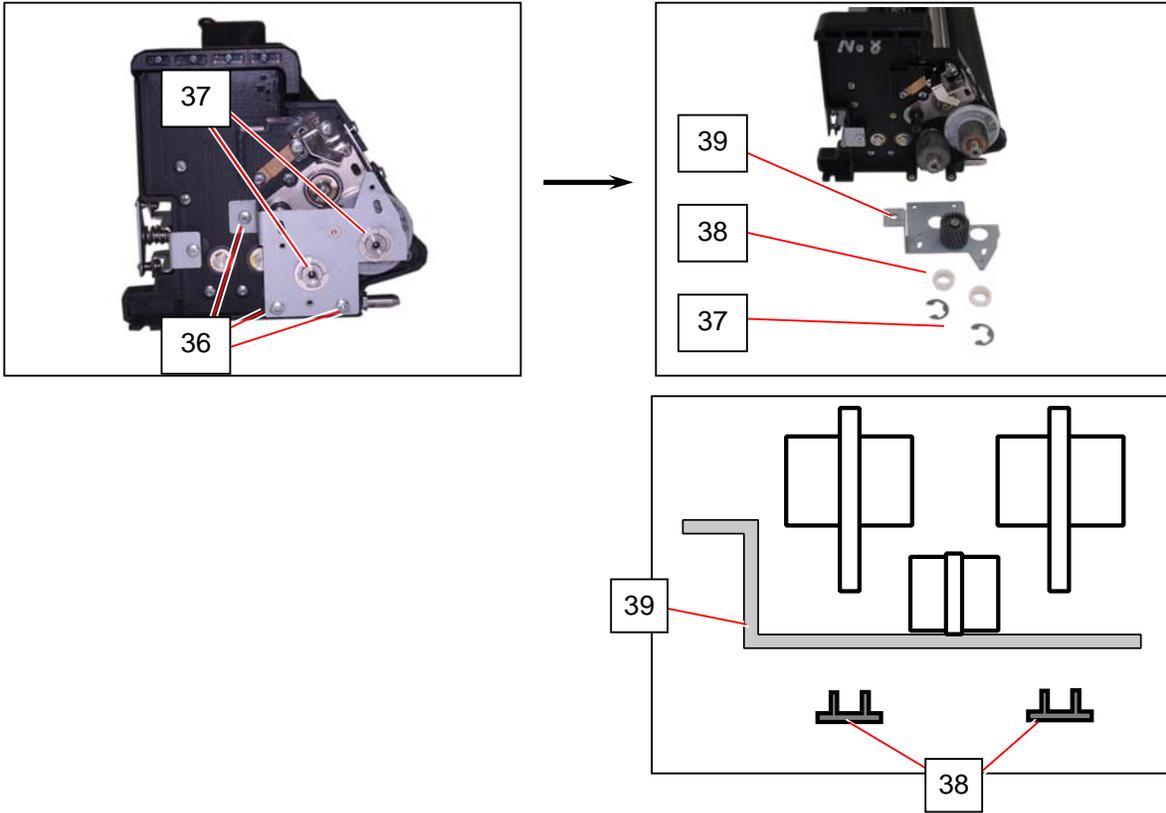
13. Remove 2 screws (32: M4x8) to remove Bracket 4 (15) and Spring (33).



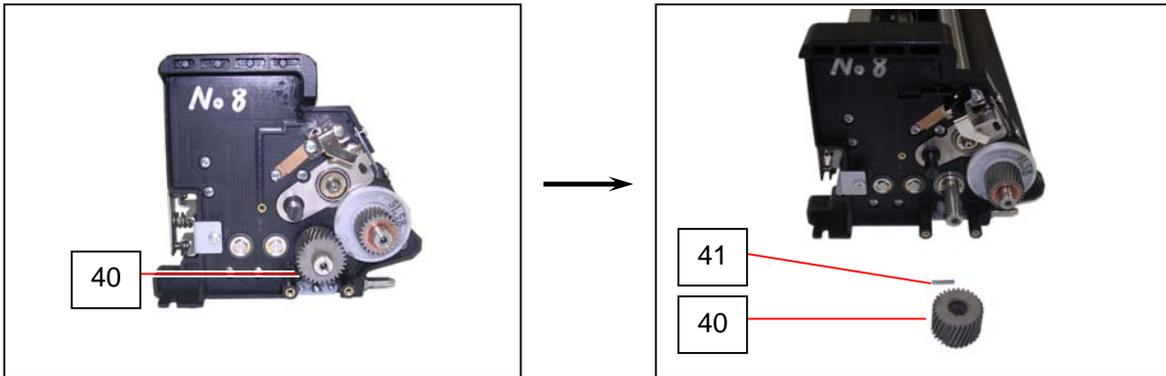
14. On the electrode plate side, remove 3 screws (34) to remove Holder 2 Assy (35).



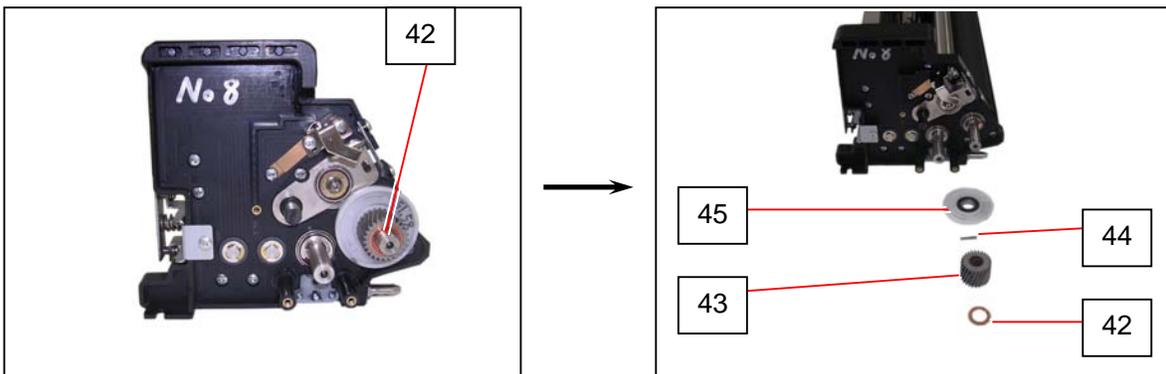
15. Remove 3 screws (36: M4x6) and 2 Retaining Ring-E (37: E10) to remove Collar (38) and Bracket 10 Assy (39).



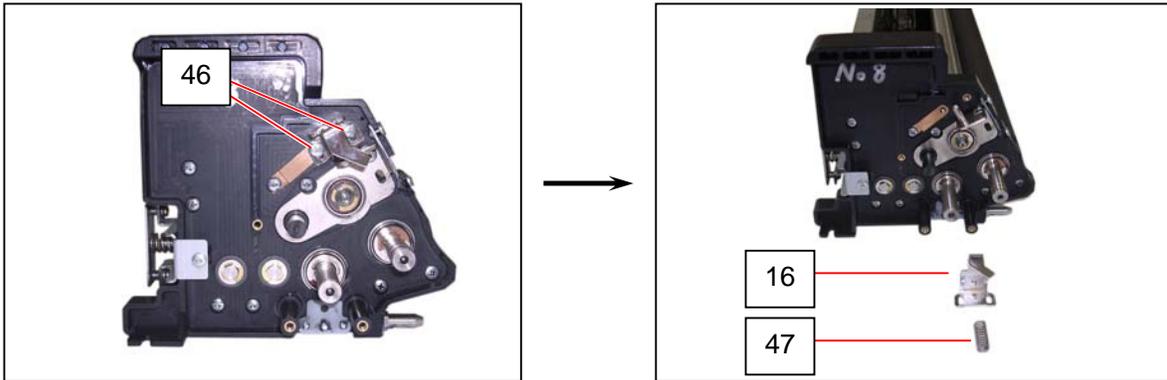
16. Remove Gear Helical 30T (40) and Parallel Pin (41: 3x16) from Toner Supply Roller shaft.



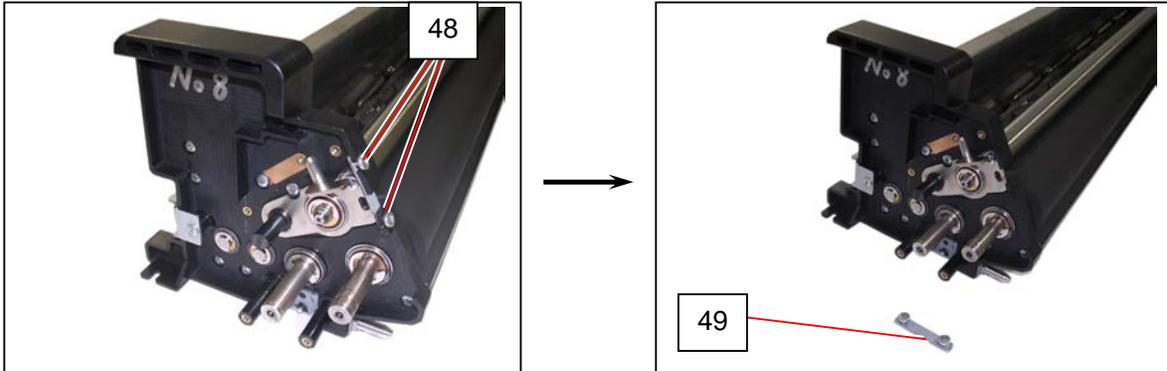
17. Remove Washer (42: 12.1x20x0.2t), Gear Helical 25T (43), Parallel Pin (44: 3x16), Counter Roller (45) from Developer Roller shaft.



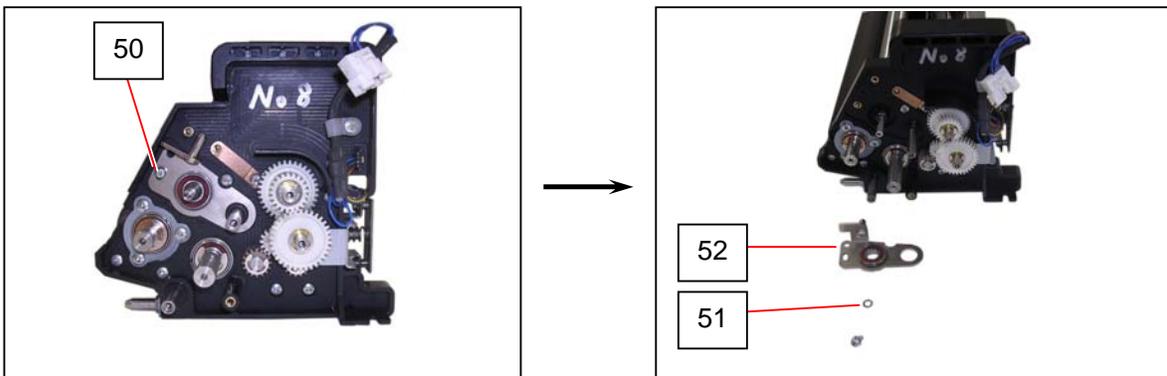
18. Remove 2 screws (46: M4x6) to remove Bracket 5 (16) and Spring (47).



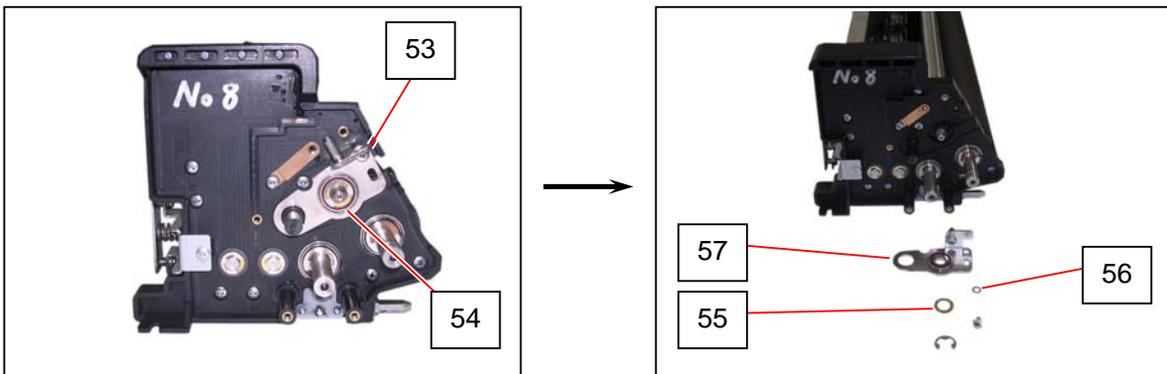
19. Loosen 2 screws (48) to remove Bracket 19 (49).



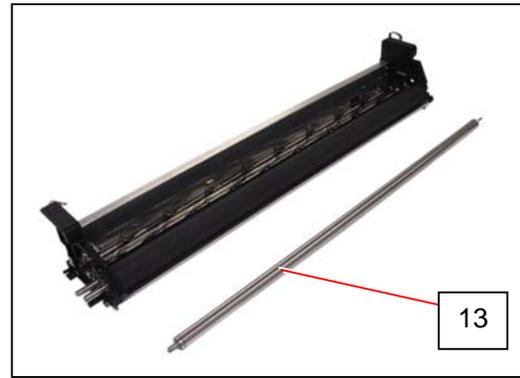
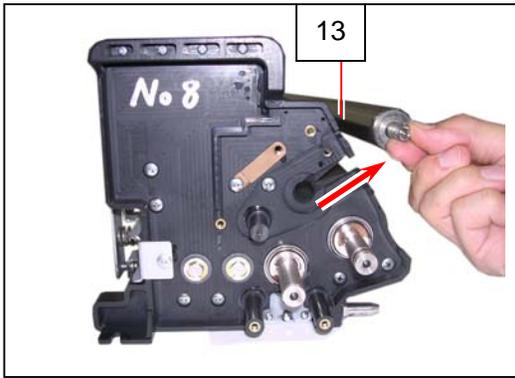
20. On the driving side, remove 1 pan head screw (50: M4x8 W/ SW FW) to remove 1 flat washer (51: M4) and Bracket 6 Assy (52).



21. On the electrode plate side, 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 (57).

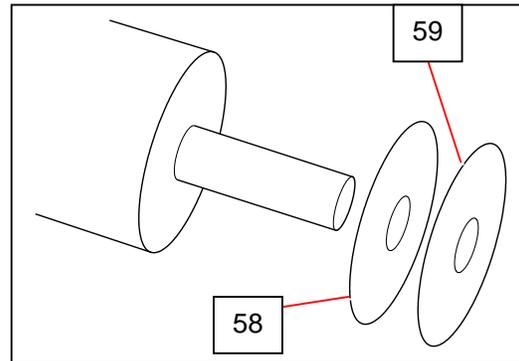


22. Remove Blade Roller (13) from Developer Unit.
Clean Blade Roller if it gets dirty.

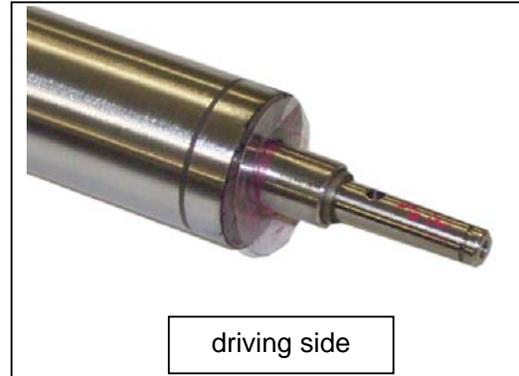
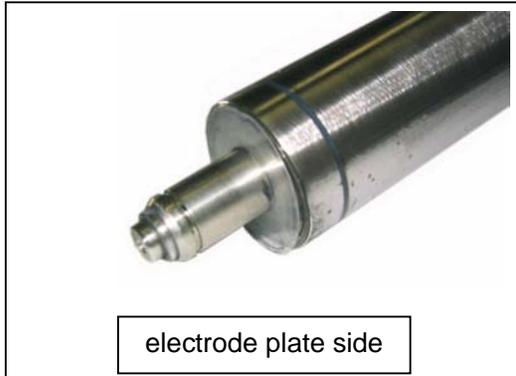


NOTE

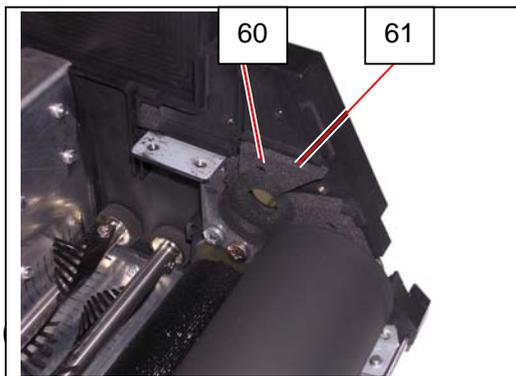
- (1) Be careful not to damage Sheet (58) and Sheet 2 (59) on Blade Roller shaft.



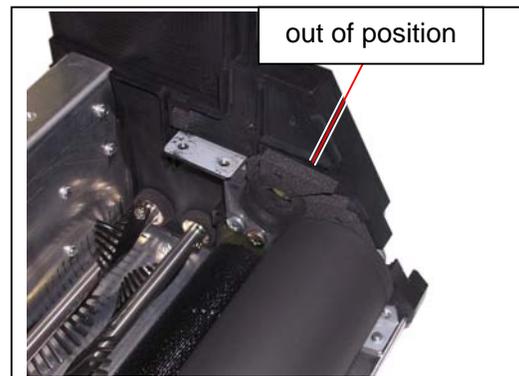
- (2) Note the installation direction. The longer shaft should be placed to the driving side.



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

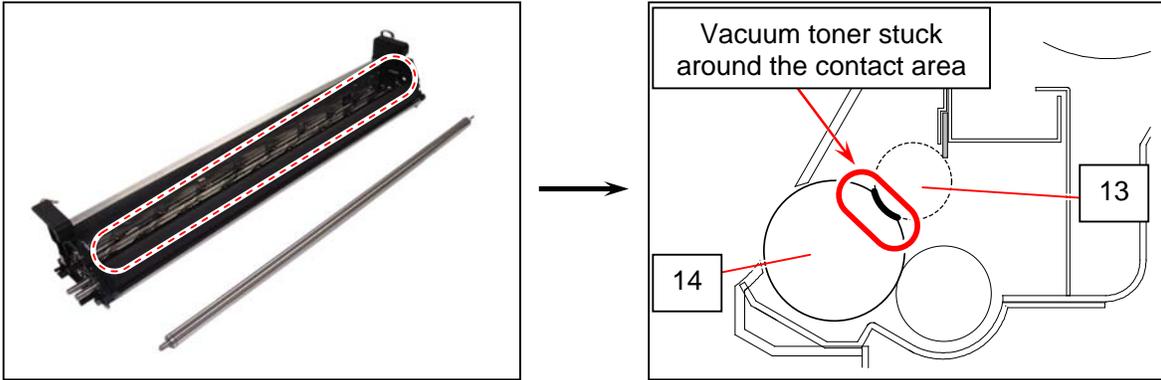


Correct



Wrong

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



NOTE

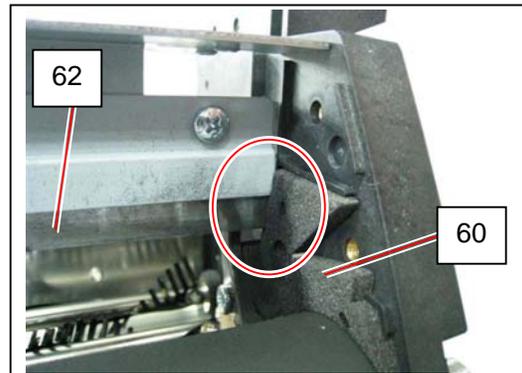
If some toner remains on the surface of Roller Developer, the toner will cushion the pressure by Blade Roller. This will prevent a proper pressurization.

24. Reinstall Scraper Assembly (8).

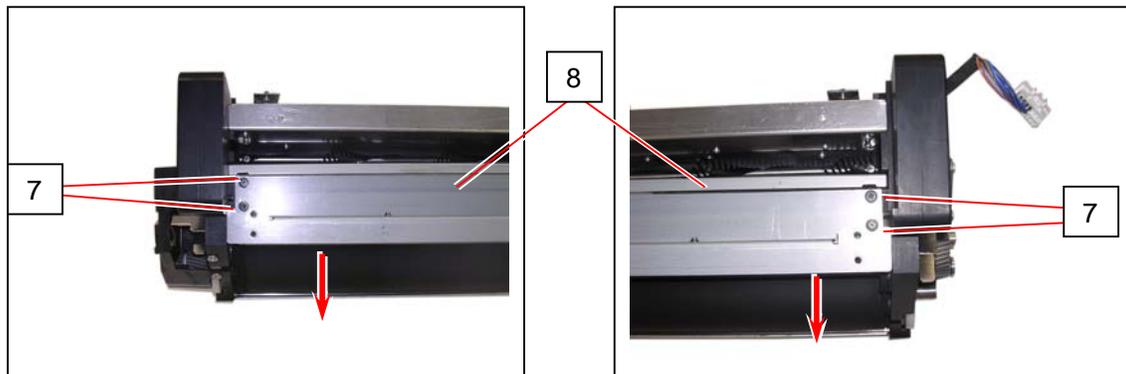
NOTE

(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.



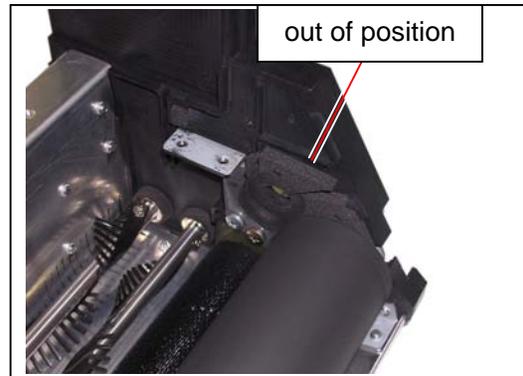
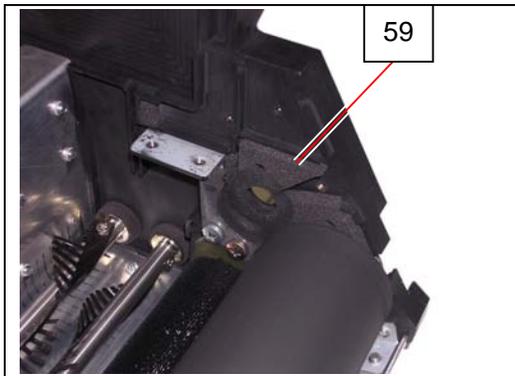
25. Reinstall Blade Roller (13).

NOTE

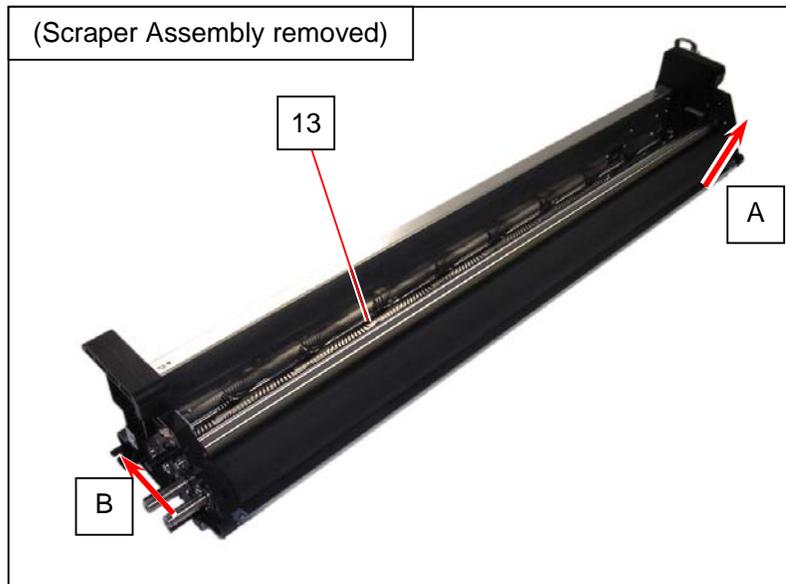
(1) Note the installation direction. The longer shaft should be placed to the driving side.



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



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

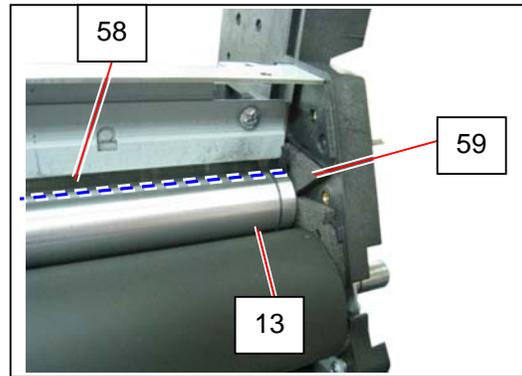


(4) During installing toward (A) then (B), be careful not to damage Sheet (78) and Sheet 2 (79) on Blade Roller shaft.

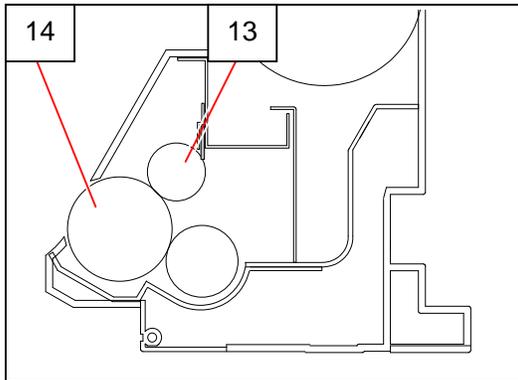
(continued on the next page)

NOTE

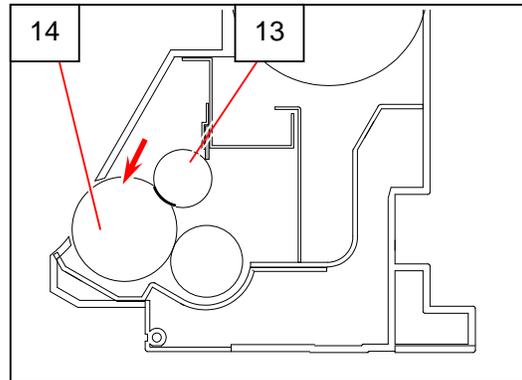
- (5) After installing, check that Seal 1 (59), Sheet / Sheet 2 (on Blade Roller shaft) are not damaged or deformed.
- (6) After locating, check that Scraper (58) is not wavy.



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



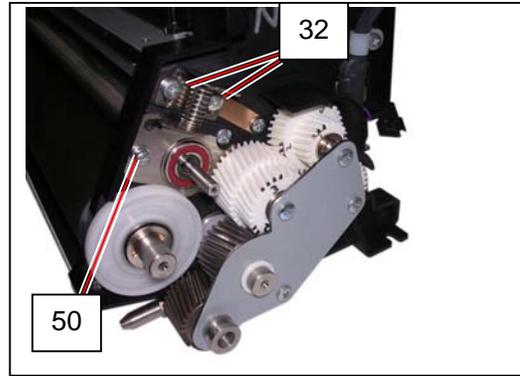
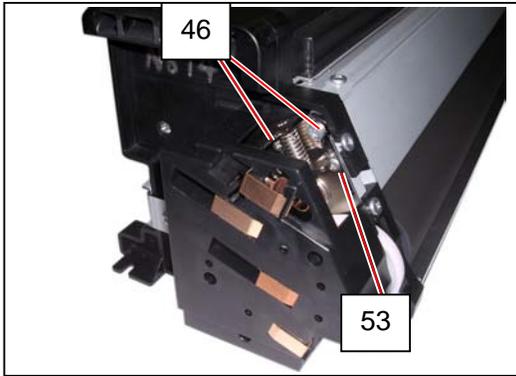
not pressurized



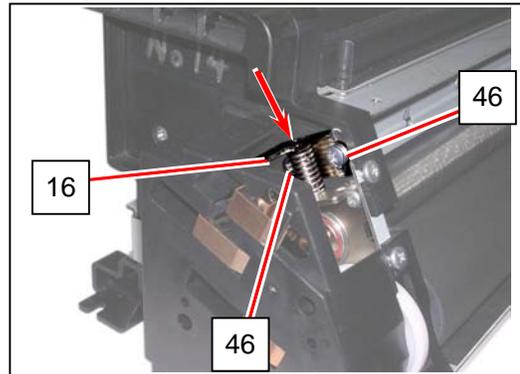
pressurized

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

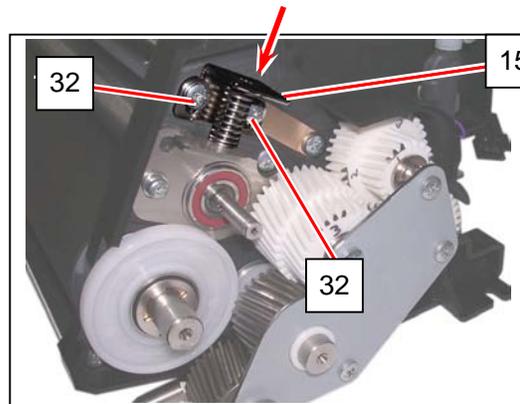
27. Make sure that the 6 screws (46) (53) (32) (50) are installed loose.



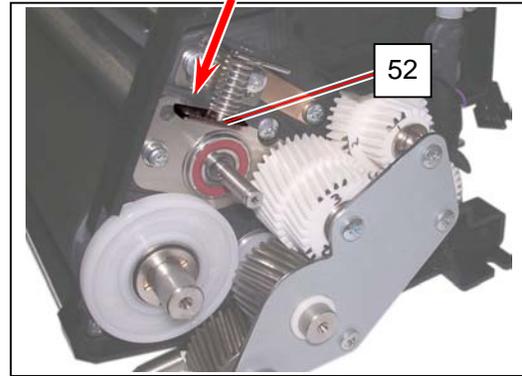
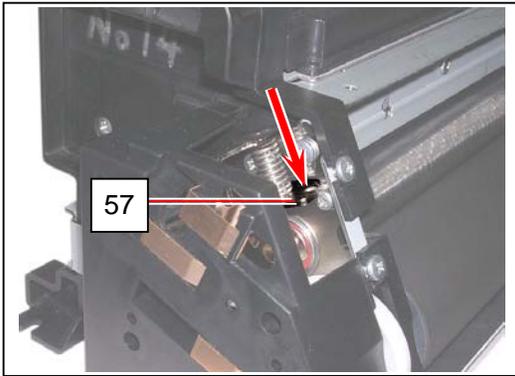
28. On the electrode plate side, fully press down the top of Bracket 5 (16). With pressing, tighten 2 screws (46) to secure Bracket 5 (16).



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

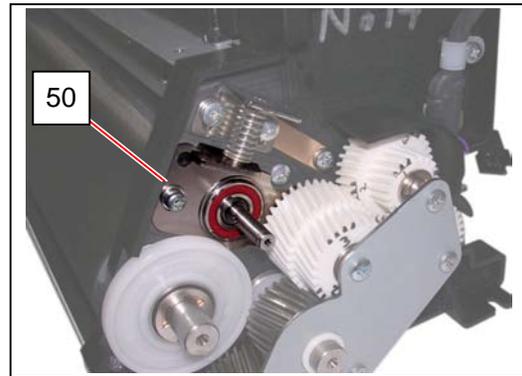
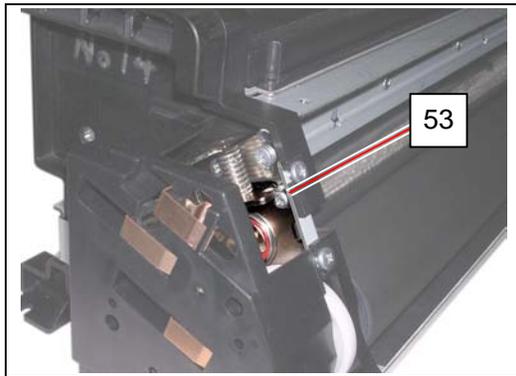


30. Press down the top of Bracket 7 Assy (57) and Bracket 6 Assy (52) at a time. This will allow Blade Roller to be seated in the correct position.



NOTE

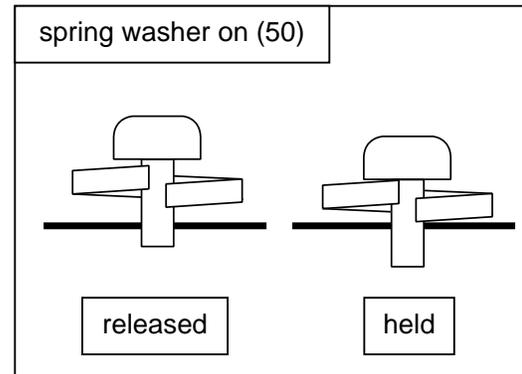
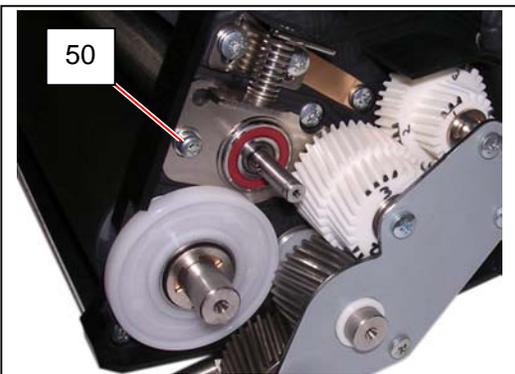
- (1) Press down both Bracket 7 Assy and Bracket 6 Assy at the same time. Pressing only one side may lose the correct pressure balance between the electrode plate side and the gear side.
- (2) Do not turn the screws (53) (50) for Bracket 7 Assy / Bracket 6 Assy at this point. Follow the later instruction to correctly tighten the screws (53) (50).



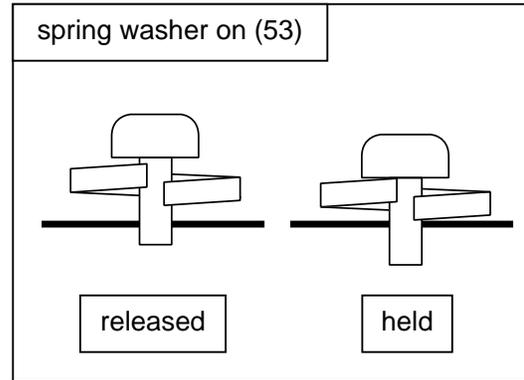
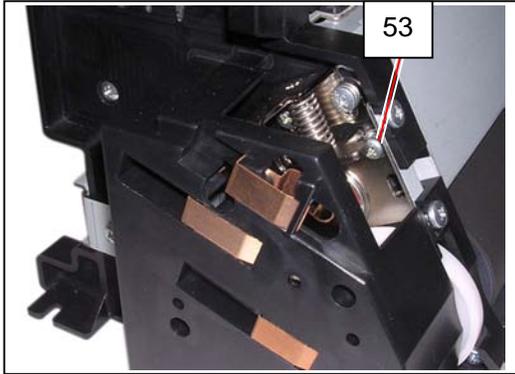
31. Turn the screw (50) in just enough revolution so that its spring washer is held in the gap.

NOTE

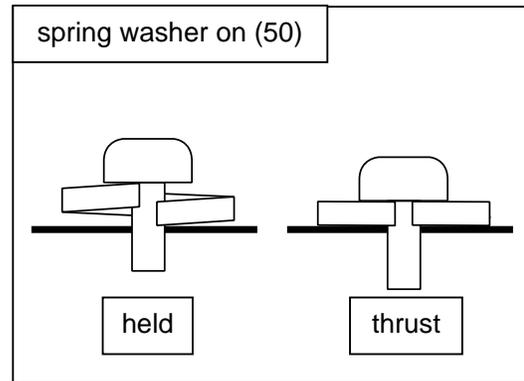
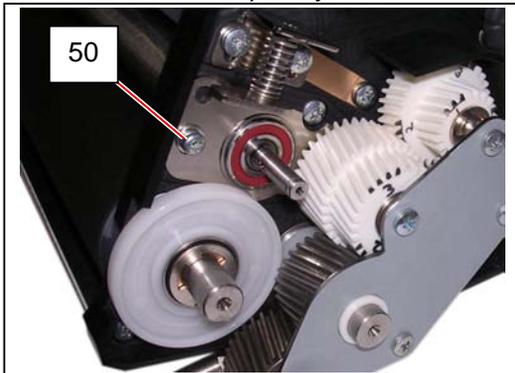
Do not tighten the screw (50) (53) firmly at this point of time. Otherwise proper and even pressurization of Blade Roller between left/right may fail, and this will make the toner layer on Roller Developer get thicker than required.



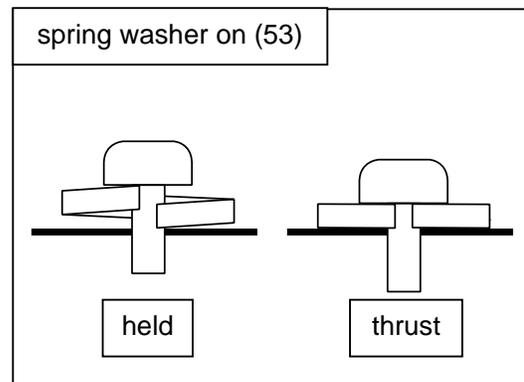
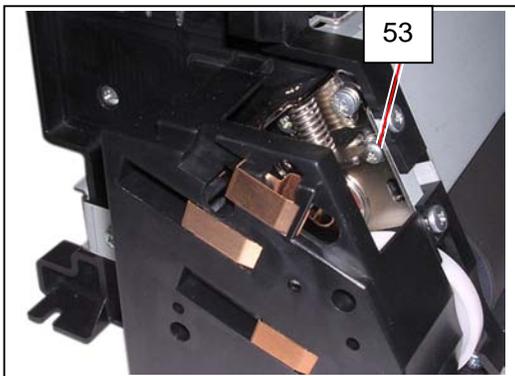
32. Turn the screw (53) in just enough revolution so that its spring washer is held in the gap.



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



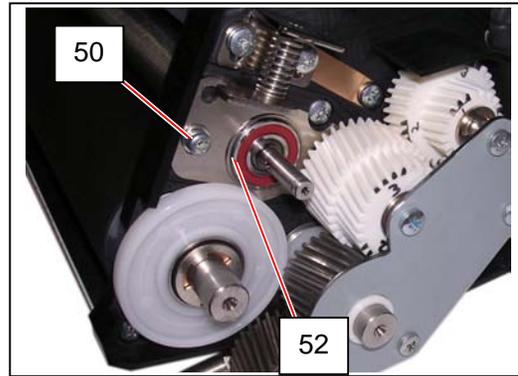
34. Turn the screw (53) in just enough revolution so that its spring washer is thrust in the gap.
Do not turn it completely.



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

! NOTE

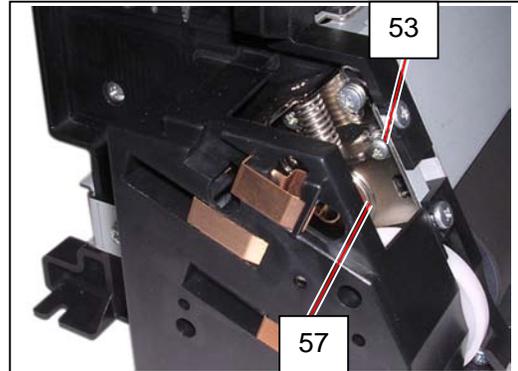
Do not tighten the screw (50) quickly at this time. Otherwise proper and even pressurization of Blade Roller between both the sides may be failed, and this will make the toner layer on Developer Roller get thicker than required.



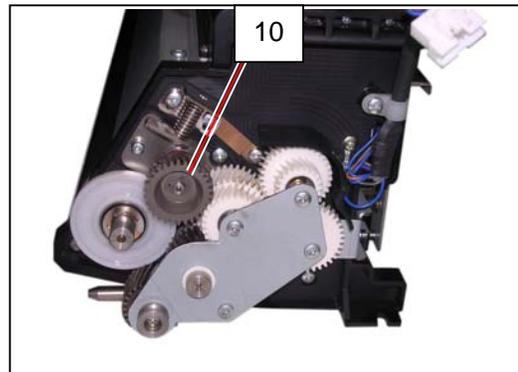
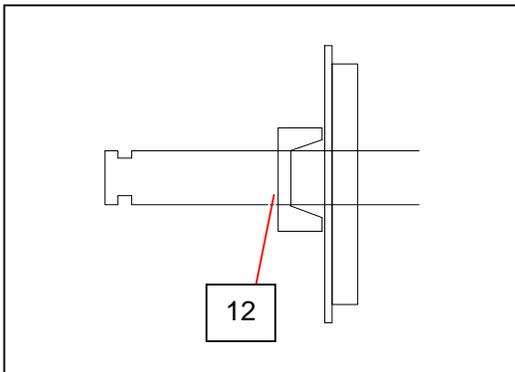
36. Slowly tighten the screw (53) to secure Bracket 7 Assy (57).

! NOTE

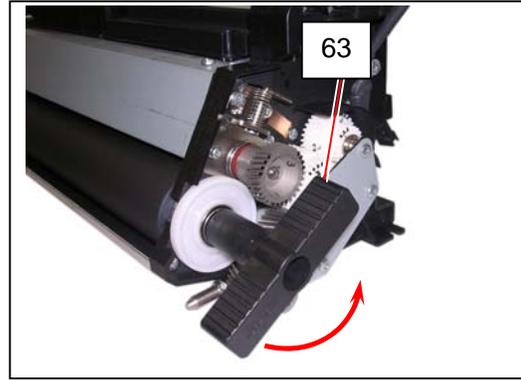
Do not tighten the screw (53) quickly at this time. Otherwise proper and even pressurization of Blade Roller between both the sides may be failed, and this will make the toner layer on Developer Roller get thicker than required.



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



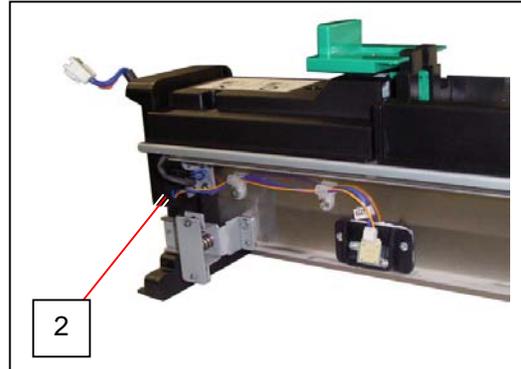
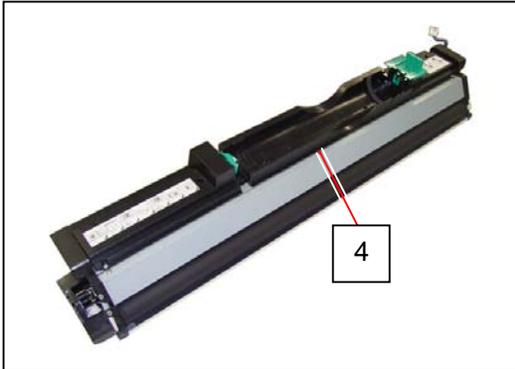
38. Install Developer Handle (63) to Developer Roller shaft. Rotate Developer Roller several times so that the roller surface is covered with the toner.



! NOTE

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

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



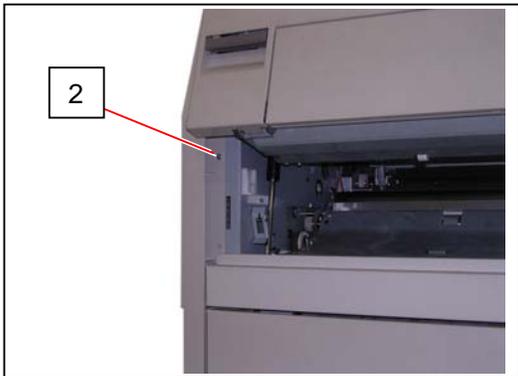
5.3 Fuser Unit

5.3.1 Removal of Fuser Unit

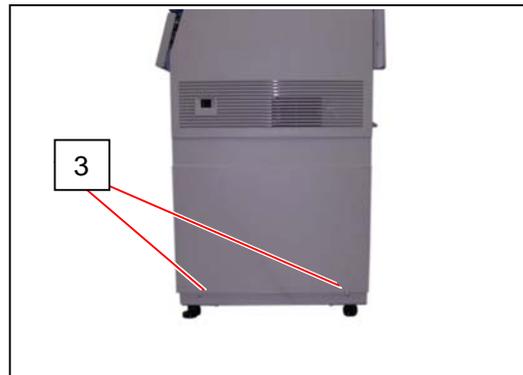
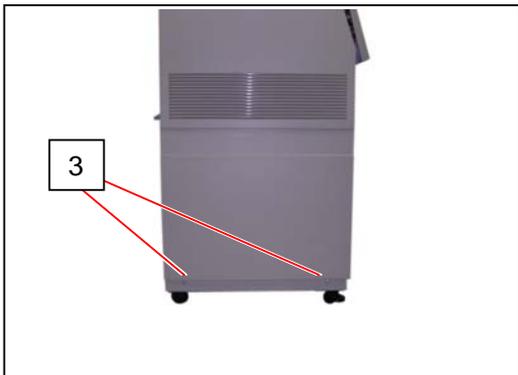
1. Pull up the Lever 2 (1) to open the Engine Unit.



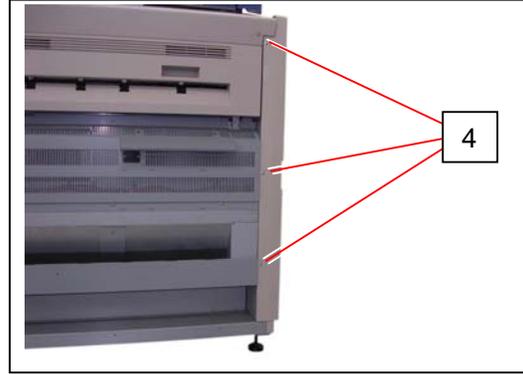
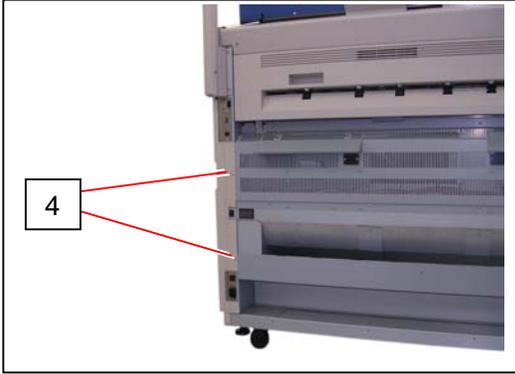
2. Remove 2 screws (2).



3. Remove 4 screws (3).



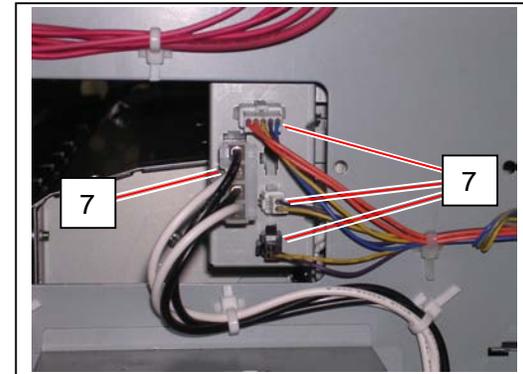
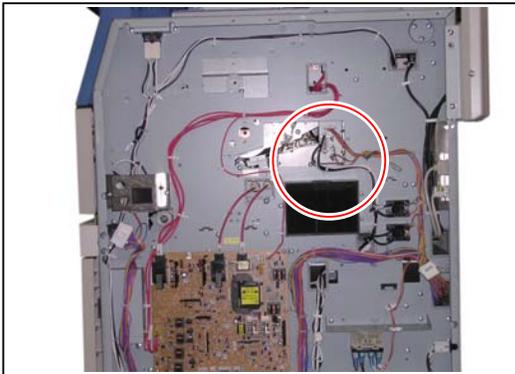
4. Remove 5 screws (4).



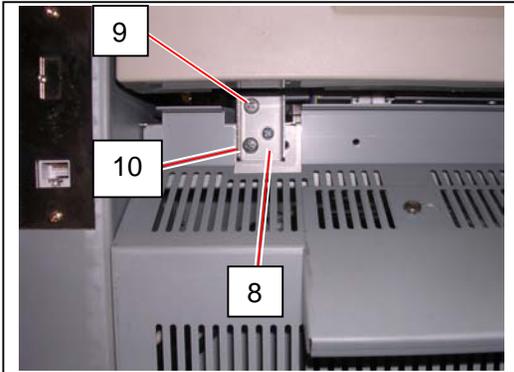
5. Remove Cover 2 (5) and Cover 3 (6).



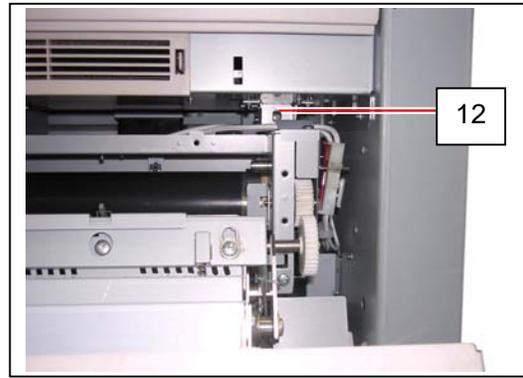
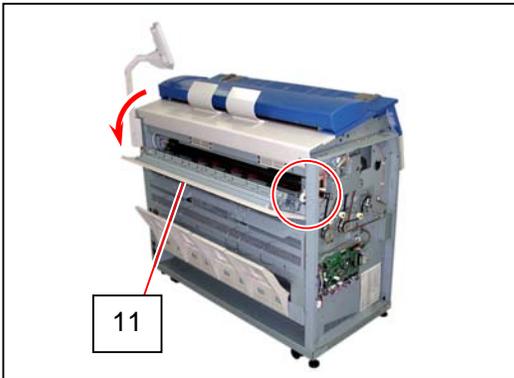
6. Disconnect 4 connectors (7).



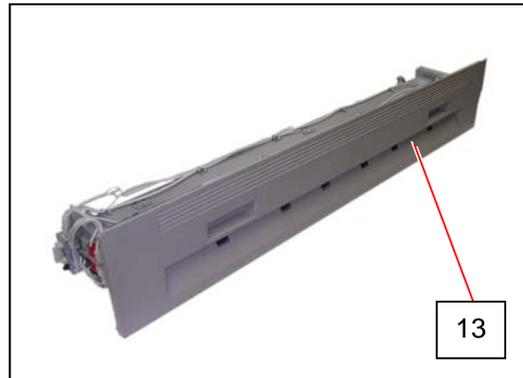
7. There are 2 pieces of Bracket (8) on the back of the machine.
Remove the screws (9) (10) to remove both Bracket (8).



8. Open Paper Exit Assy (11). Loosen 1 screw (12) fixing Fuser Unit inside the machine.



9. With Engine Unit open, remove **Fuser Unit** (13).

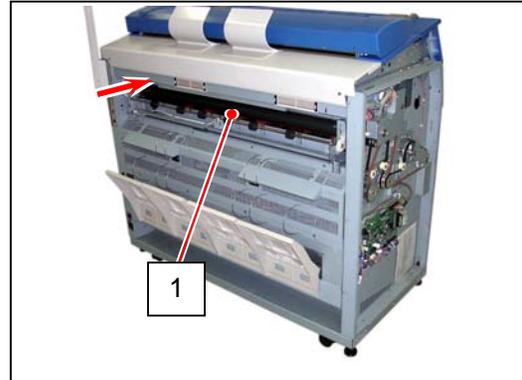


5.3.2 Reinstallation of Fuser Unit

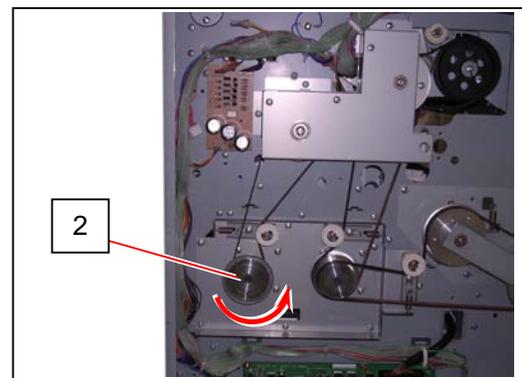
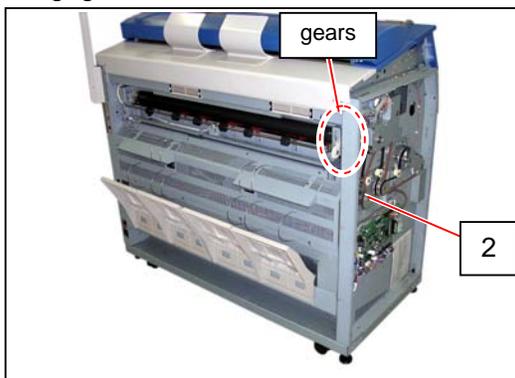
Reference

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

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

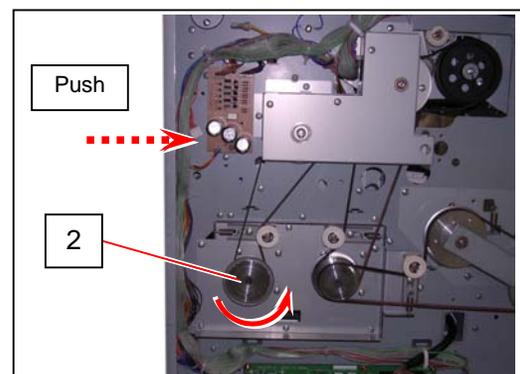
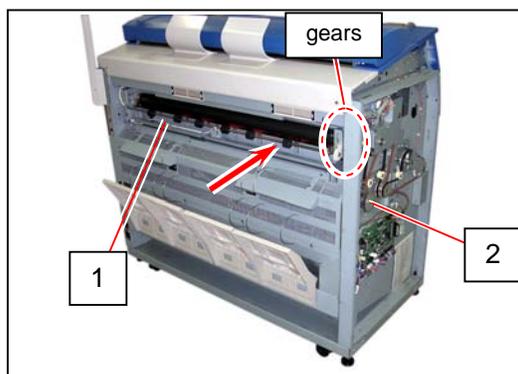


2. On the left side of the machine, rotate Pulley (2) counterclockwise to check the gear engagement between Fuser Unit and the machine.

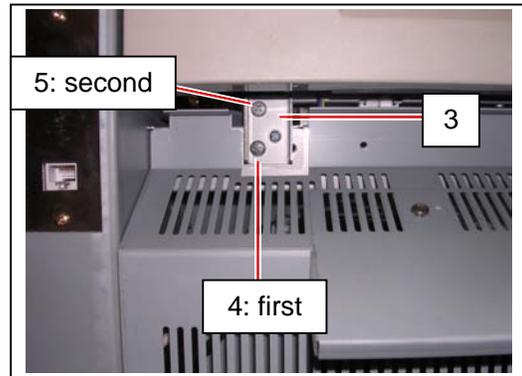


NOTE

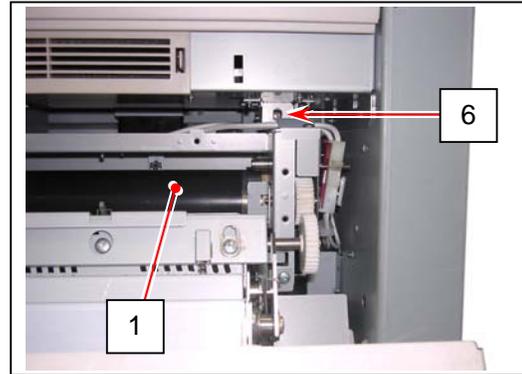
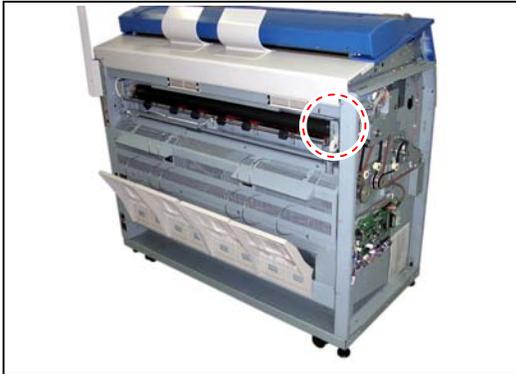
If the gears on Fuser Unit and Pulley (2) do not move together, the engagement may fail. With pushing Fuser Unit (1) to the machine inside, rotate Pulley (2) again to obtain the correct engagement.



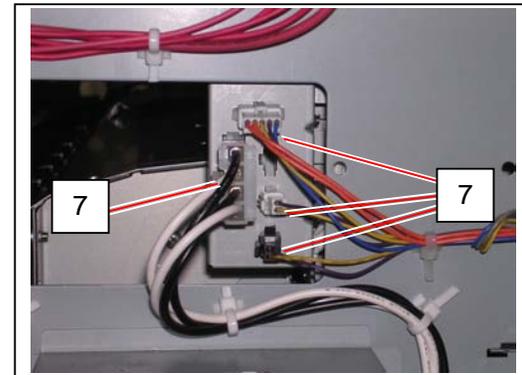
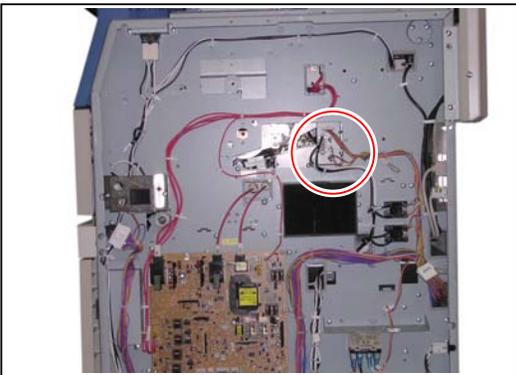
3. Install the brackets (3) with the screws (4) (5).
Tighten the lower one (4) and then the upper one (5).



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



5. Reconnect the connectors (7).



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

7. Close Engine Unit.

5. 3. 3 Replacement of Recommended Periodic Replacement Parts

NOTE

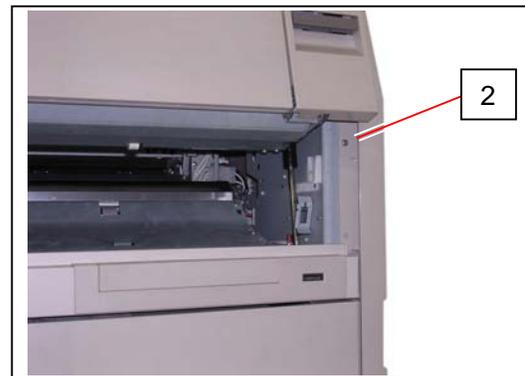
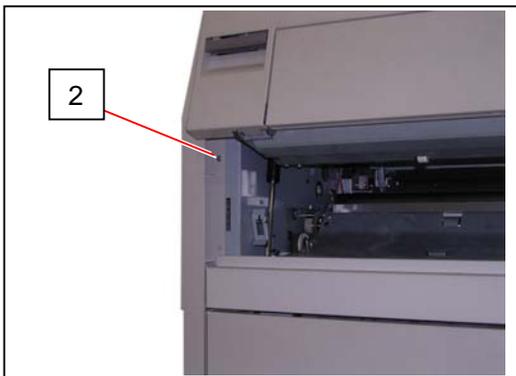
A periodic replacement for them is recommended.
This section shows how to replace all of them in one sequent operation.

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

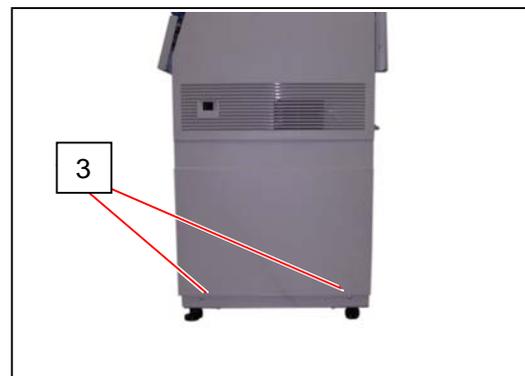
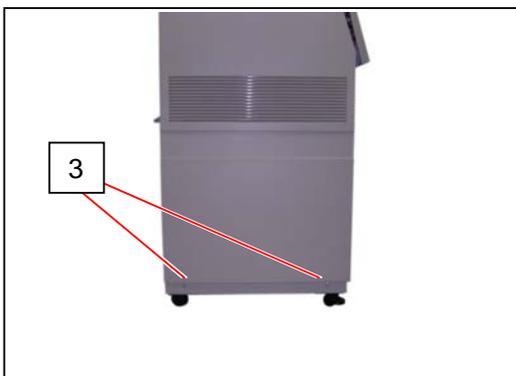
1. Pull up the Lever 2 (1) to open the Engine Unit.



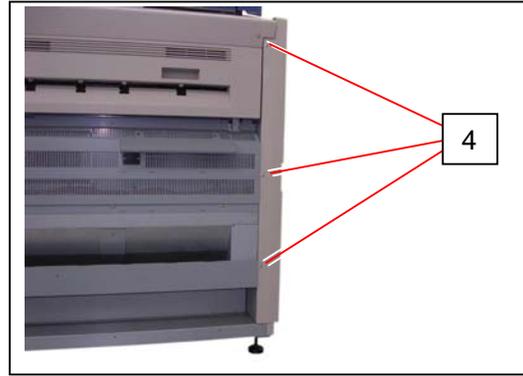
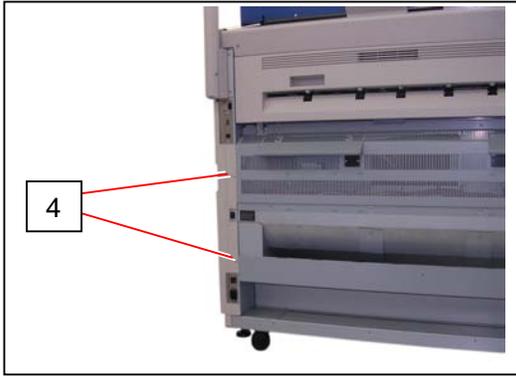
2. Remove 2 screws (2).



3. Remove 4 screws (3).



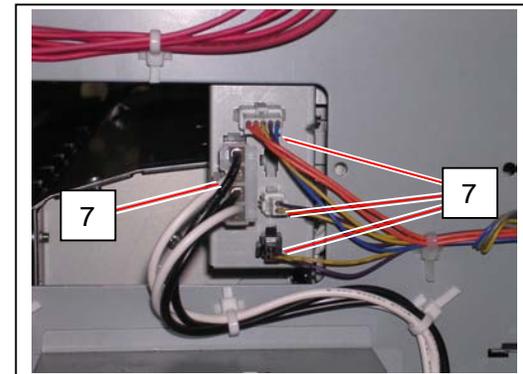
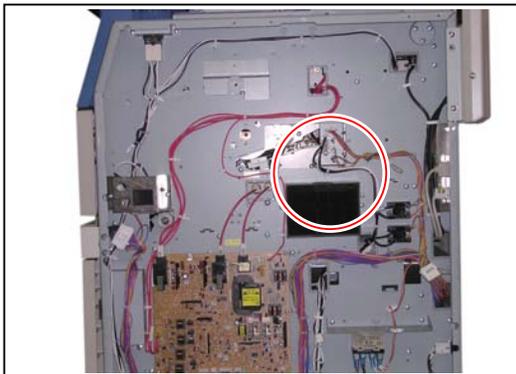
4. Remove 5 screws (4).



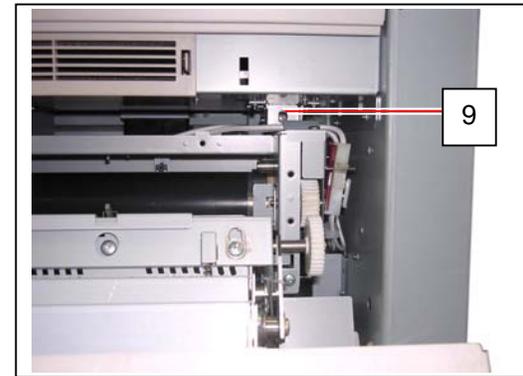
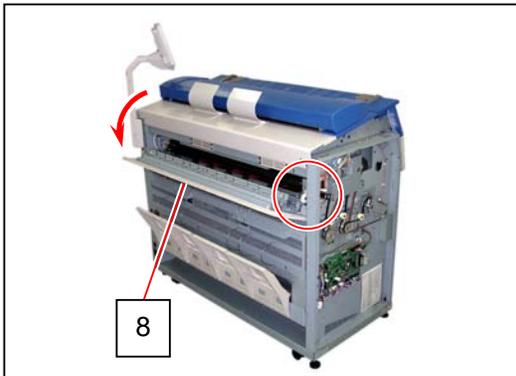
5. Remove Cover 2 (5) and Cover 3 (6).



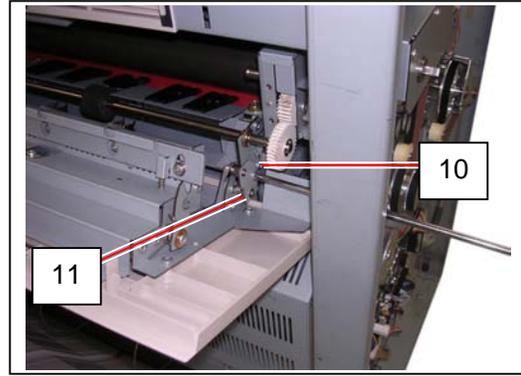
6. Disconnect 4 connectors (7).



7. Open Paper Exit Assy (8). Loosen 1 screw (9) fixing Fuser Unit inside the machine.



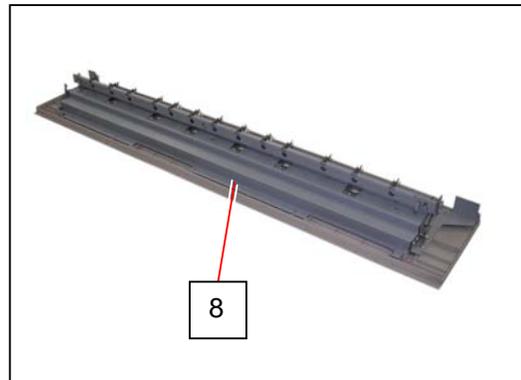
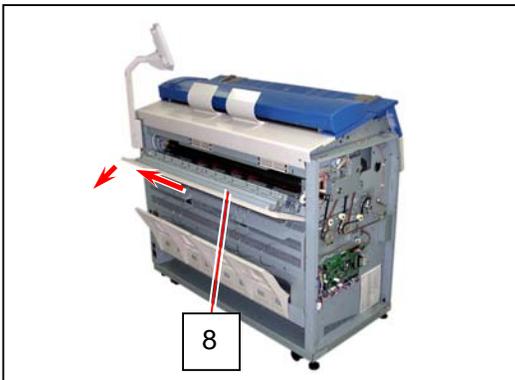
8. Remove 1 screw (10: M4x6) to remove Plate (11) on the left side.



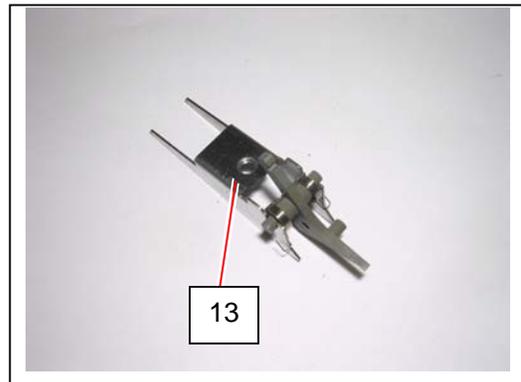
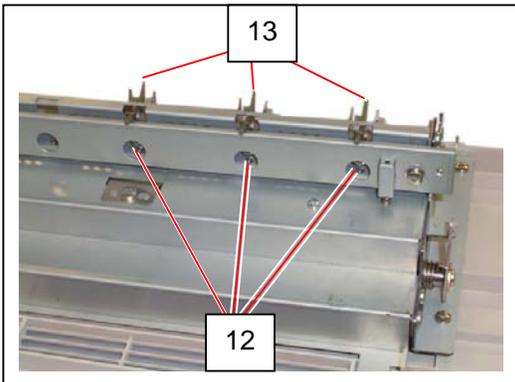
! NOTE

- (1) Please remove the Plate (11) with holding Paper Exit Assy (8).
Otherwise you may drop Paper Exit Assy.
- (2) There is the Plate 2 on the right side of machine, which is a symmetric part of Plate (11).
You may remove it instead of Plate (11).

9. Remove Paper Exit Assy (8).



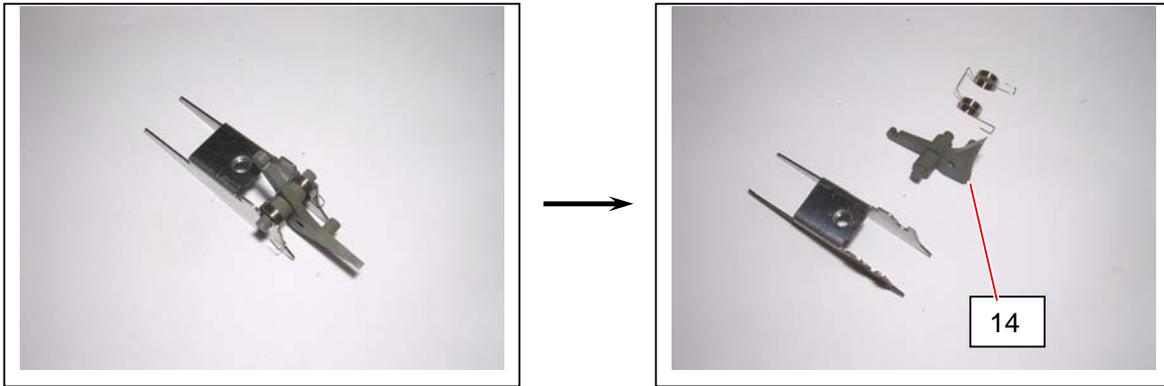
10. Remove the 4x6 screw (12) to remove each Nail Stripping Assembly (13).



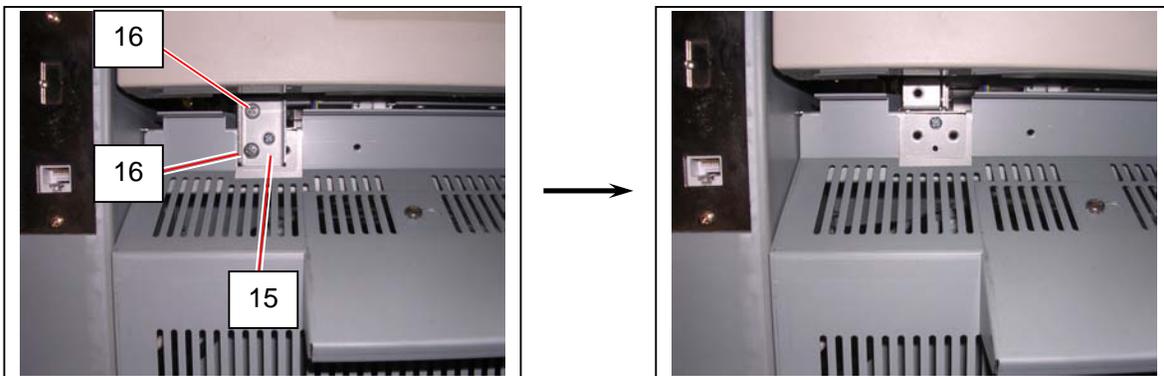
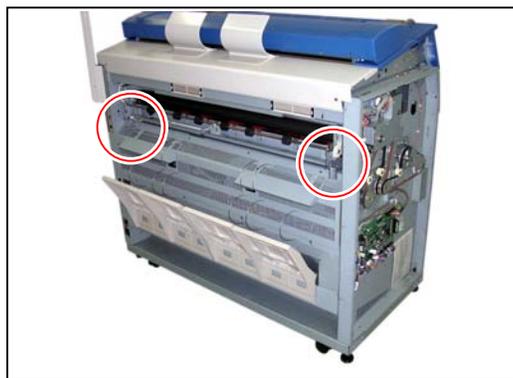
! NOTE

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).

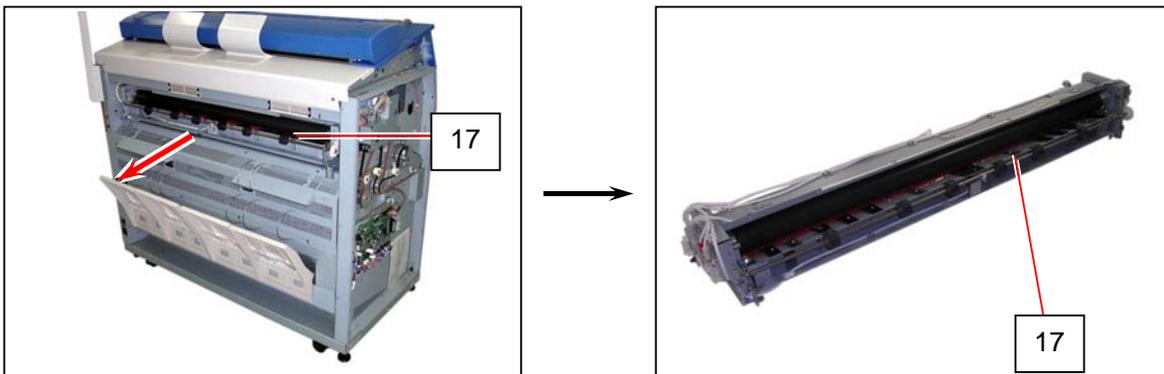
11. Disassemble the Nail Stripping Assembly as the following photo.
Replace the **Nail Stripping** (14) with the new one.



12. There are 2 pieces of the bracket (15) on the back of the machine.
Remove the screws (16) to remove both Bracket (15).



13. With Engine Unit open, remove Fuser Unit (17).

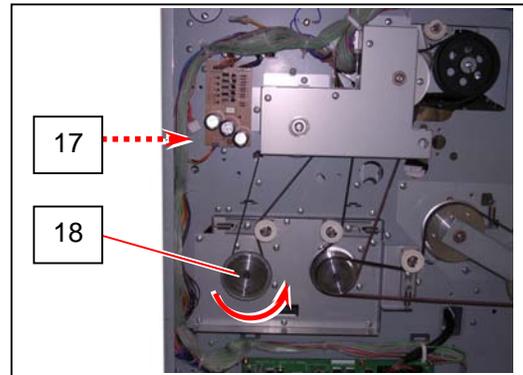
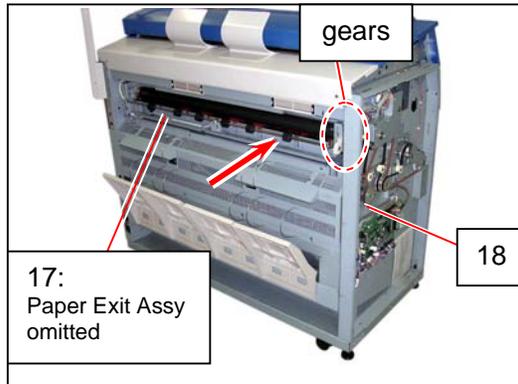


! NOTE

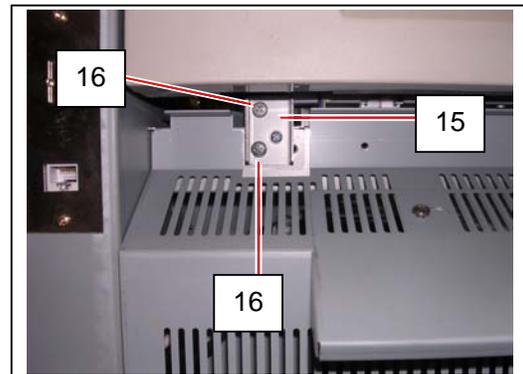
To reinstall Fuser Unit, follow the instruction below.

- (1) With Engine Unit open, fully mount Fuser Unit (17) to the machine.
- (2) On the left side of the machine, rotate Pulley (18) counterclockwise to check the gear engagement between Fuser Unit and the machine.

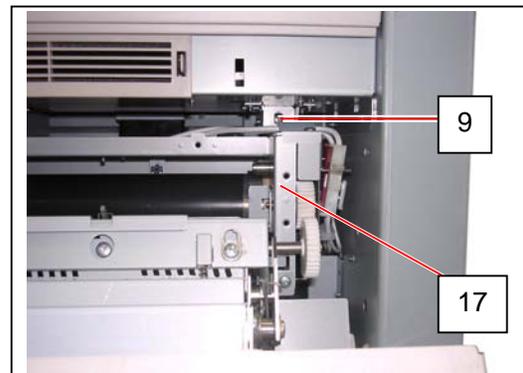
If the gears on Fuser Unit and Pulley (18) do not move together, the engagement may fail. With pushing Fuser Unit (17) to the machine inside, rotate Pulley (18) again to obtain the correct engagement.



- (3) Install Bracket (15) with the screws (16).
Tighten the lower screw and then the upper.

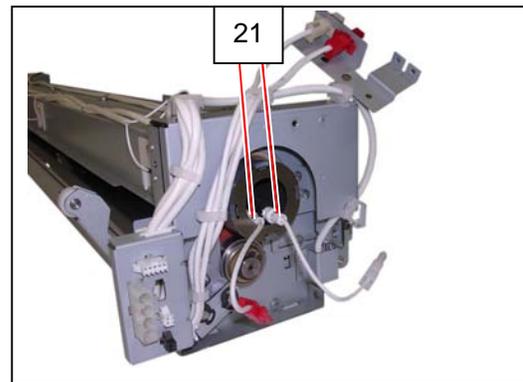
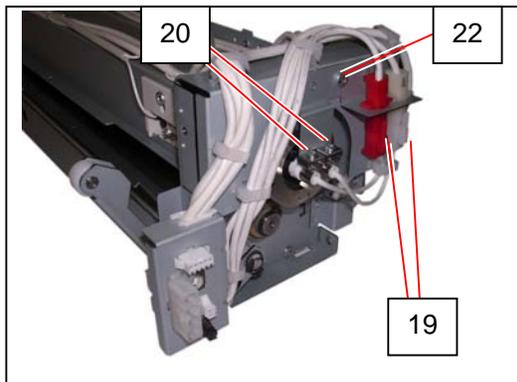
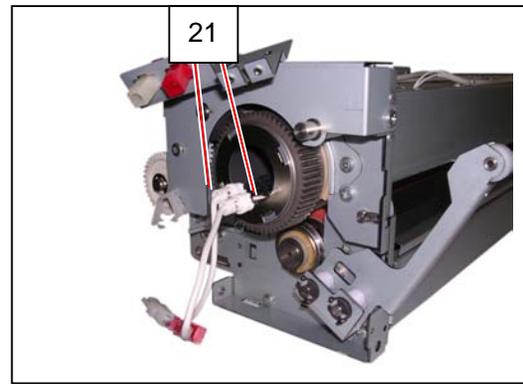
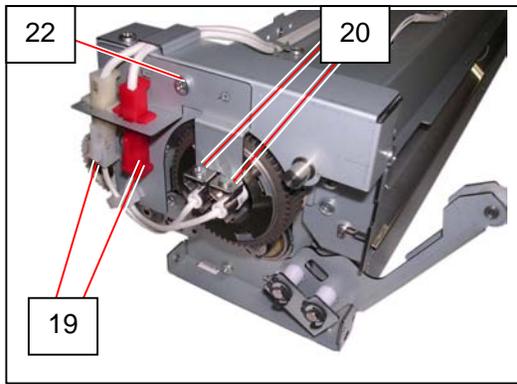


- (4) Tighten the screw (9) to fix Fuser Unit (17) to the machine.

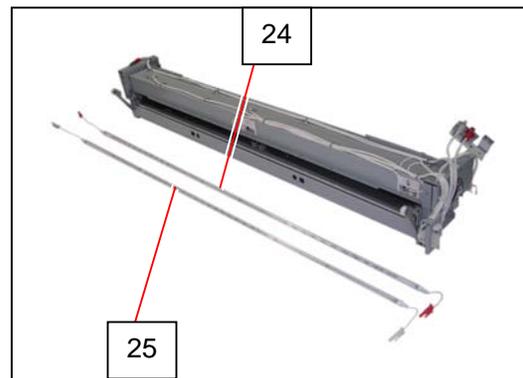
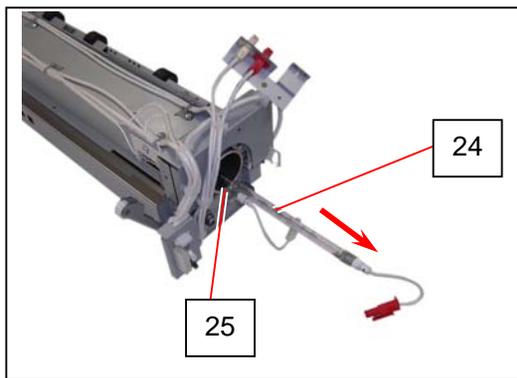
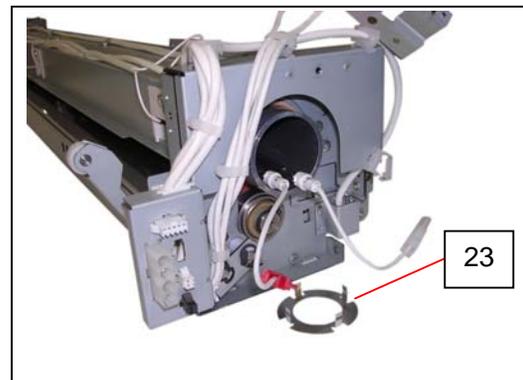
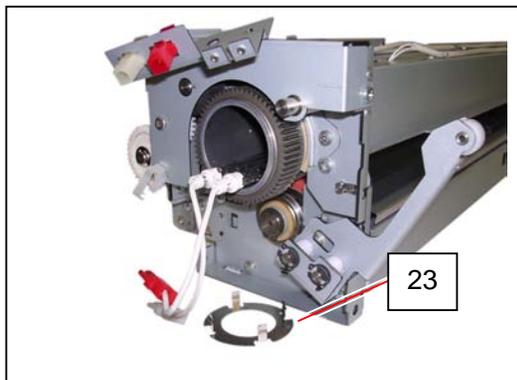


- (5) Replace Paper Exit Assy (8), the connectors (7), Cover 2 (5) and Cover 3 (6).
Close Engine Unit.

14. Disconnect the connectors (19). Remove 4 screws (20) to release IR Lamps (21).
Remove 2 screws (22) to release the connector brackets.

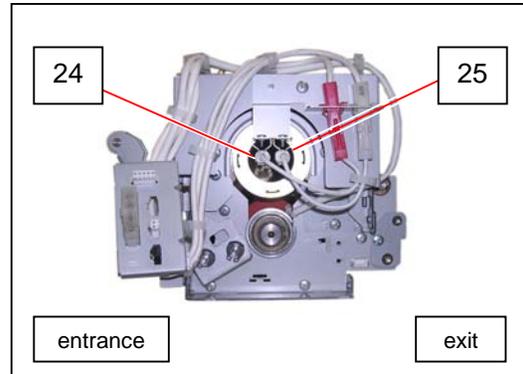
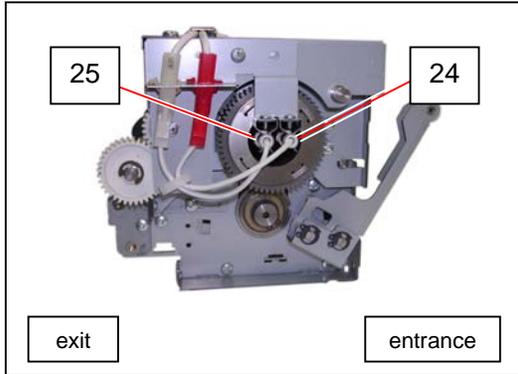


15. Remove Cover (23) on both sides of Roller Fusing.
Gently pull IR Lamps (24: red) (25: white) toward either way to remove them.

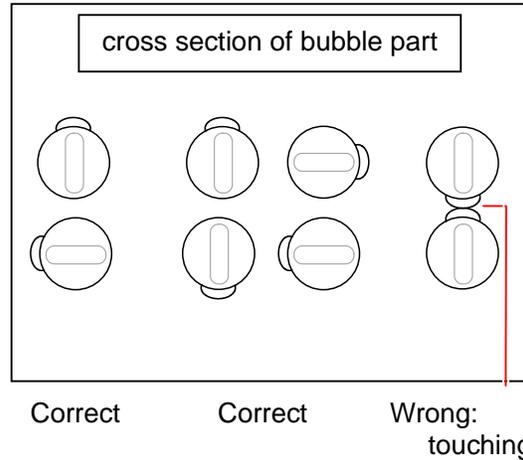


NOTE

- (1) Do not touch the glass part of the Lamp with a bare hand.
- (2) Do not interchange the IR Lamps (24) (25). One with red connectors (24) should be installed to the media entrance side and the other with white connectors (25) to the media exit side.

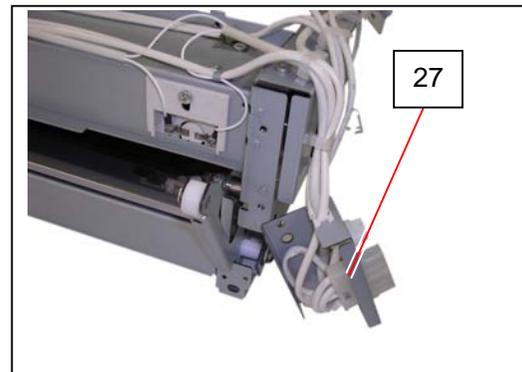
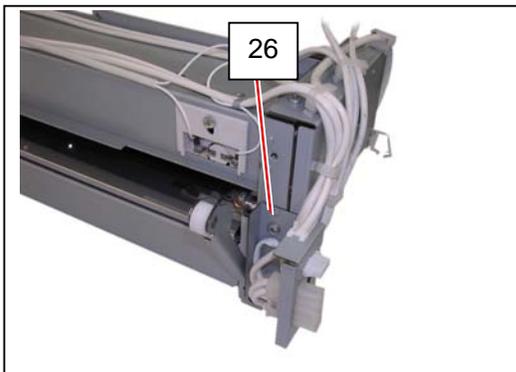


- (3) There is a bubble (projection) on the glass part of IR Lamp. If the bubbles of both IR Lamps touch each other, IR Lamps will be broken because of vibration or heat. Make sure not to face the bubbles each other. Install the IR Lamps so that the bubbles will be located far from each other.

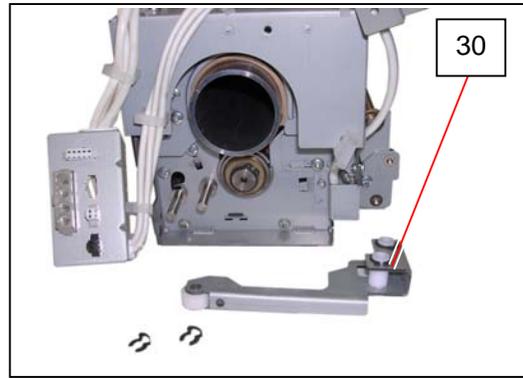
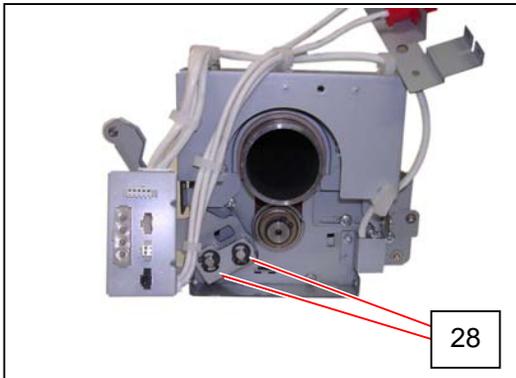
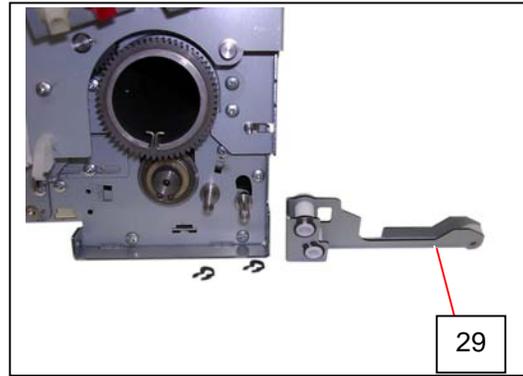
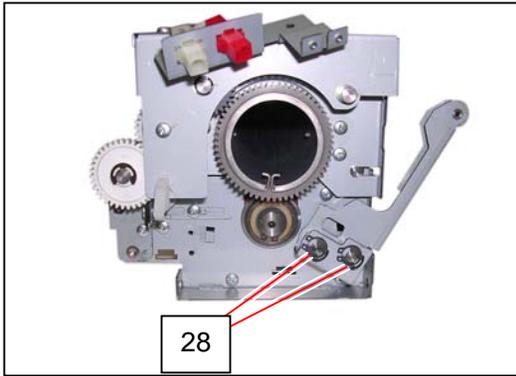


- (4) IR Lamps can be installed to Fuser Unit in either way.

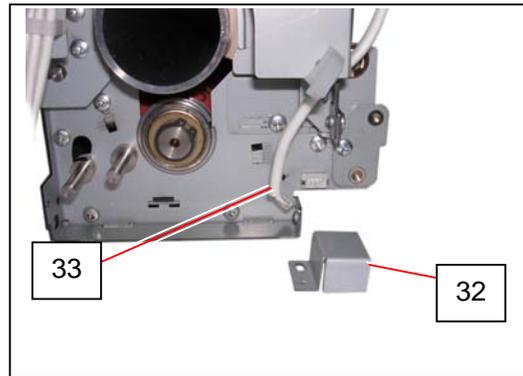
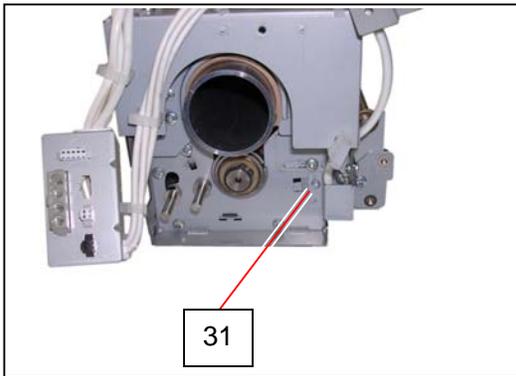
- 16. On the connector side, remove 1 screw (26) to release Bracket 10 Assy (27).



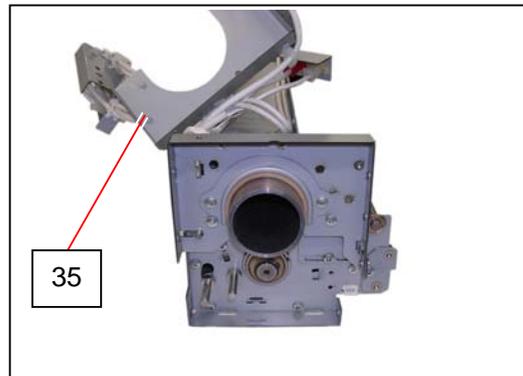
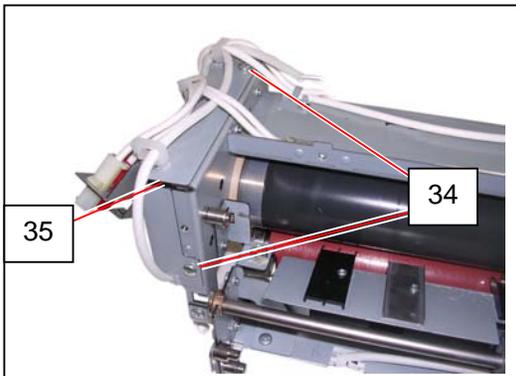
17. On both sides, remove 4 KL Clips (28) to remove Arm 4 (29) and Arm 3 (30).



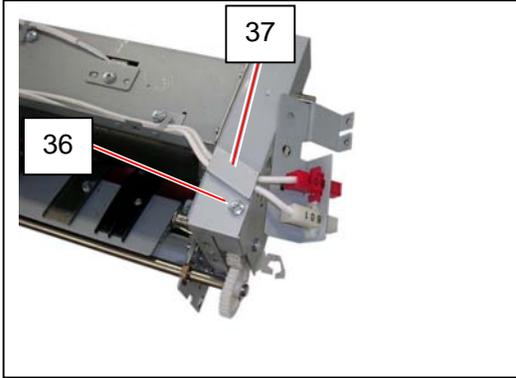
18. On the connector side, remove 1 screw (31) to remove Cover 2 (32). Disconnect the harness (33).



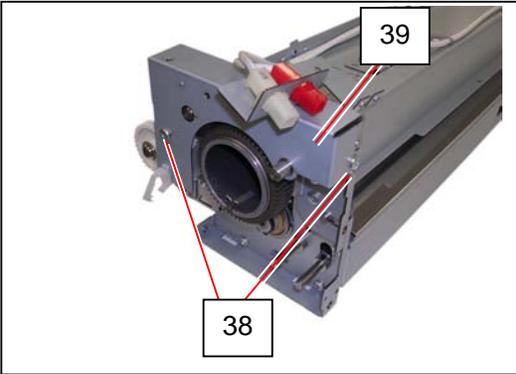
19. Remove 2 screws (34) to remove Bracket 6 Assy (35).



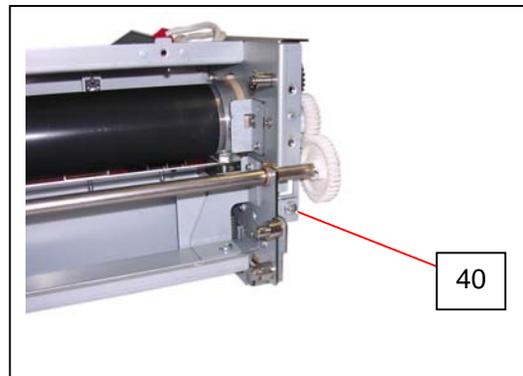
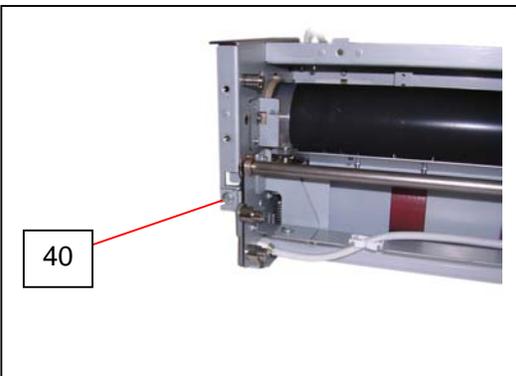
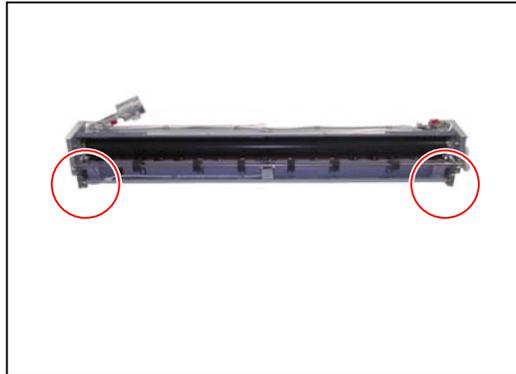
20. On the gear side, remove 1 screw (36) to remove Bracket 20 (37).



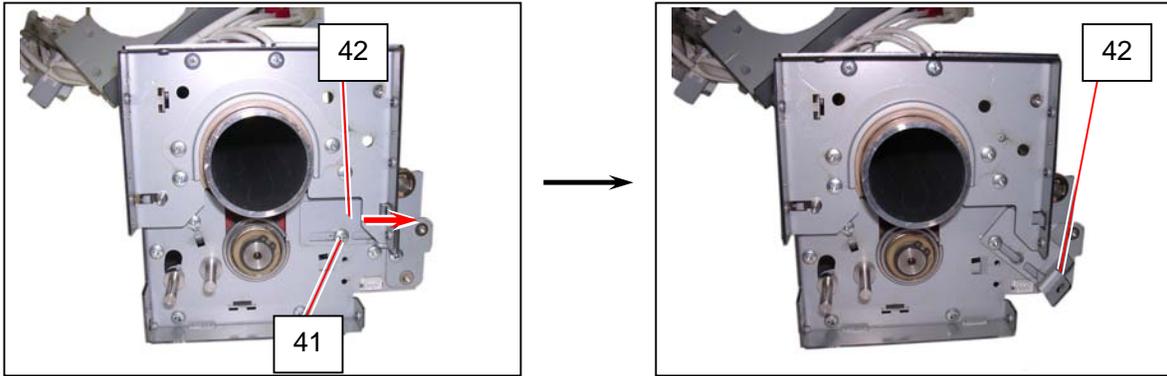
21. Remove 2 screws (38) to remove Bracket 7 Assy (39).



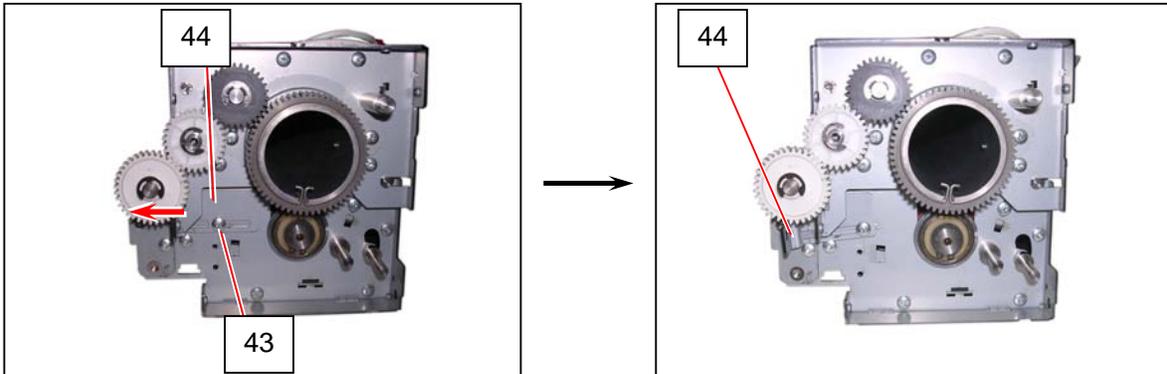
22. Remove 2 screws (40) on the media exit side.



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



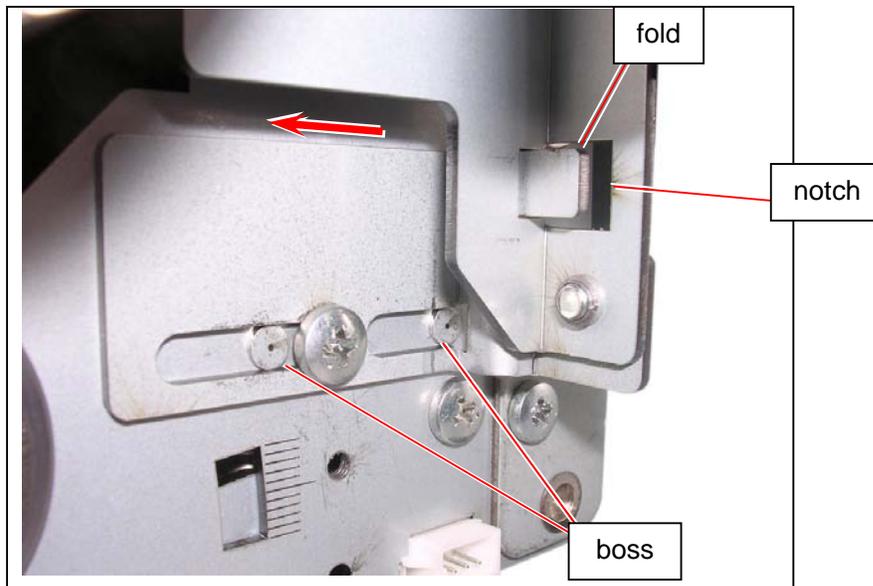
24. On the gear side, loosen 1 screw (43) to release Bracket 3 (44).



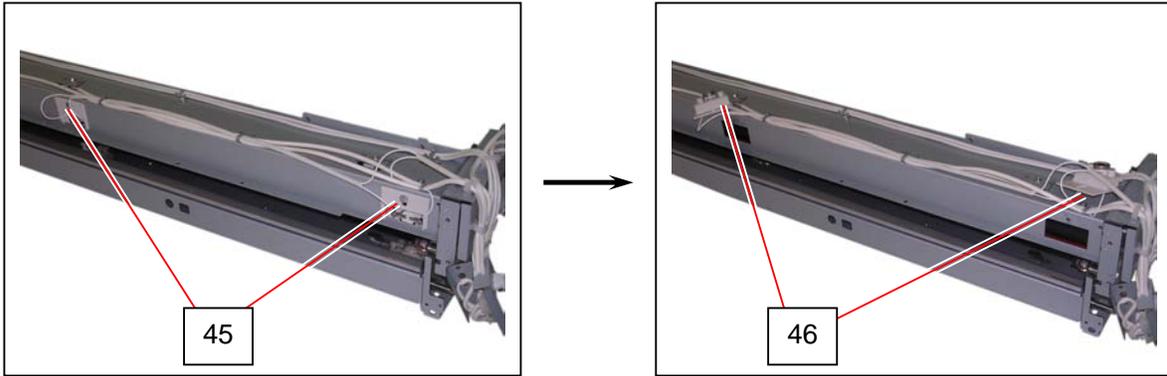
NOTE

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

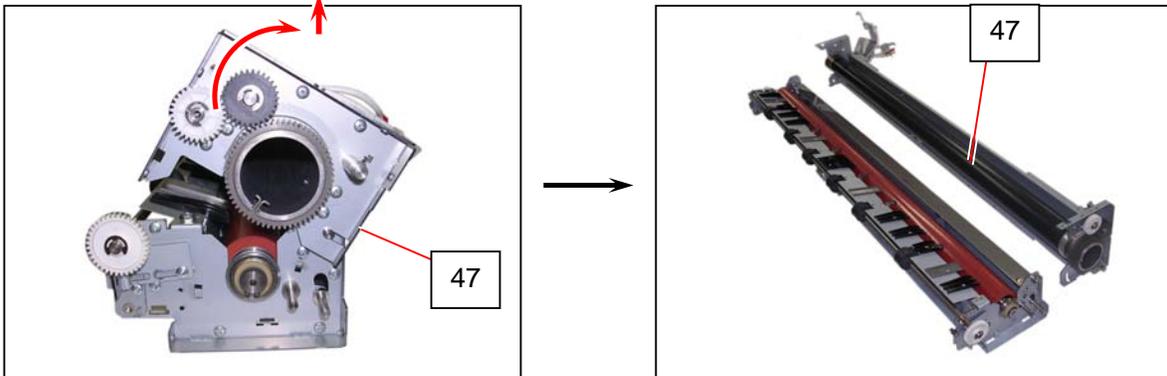
- (1) Fully push to slide the bracket to the arrow direction so that the fold portion on the bracket will fit into the notch on Fuser Upper Unit.
- (2) The 2 positioning bosses locate the bracket. The bracket should not ride over them.



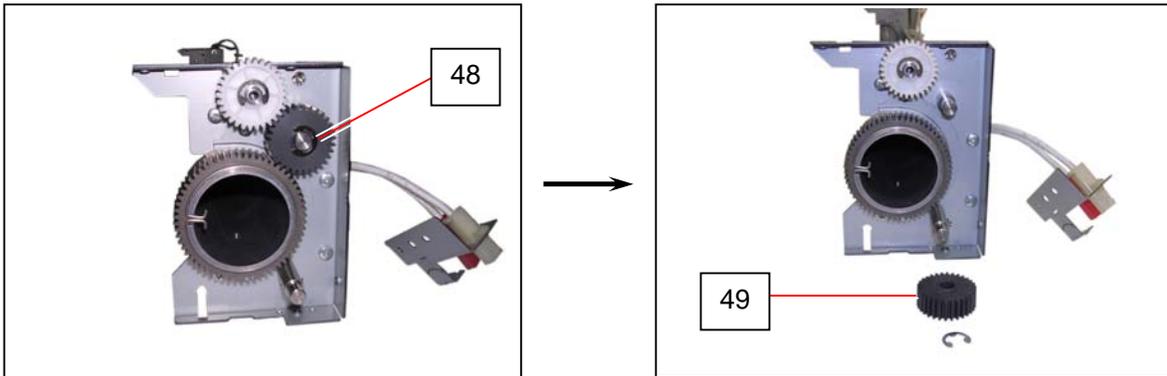
25. On the media entrance side, remove 2 screws (45) to release Thermostat Bracket (46).



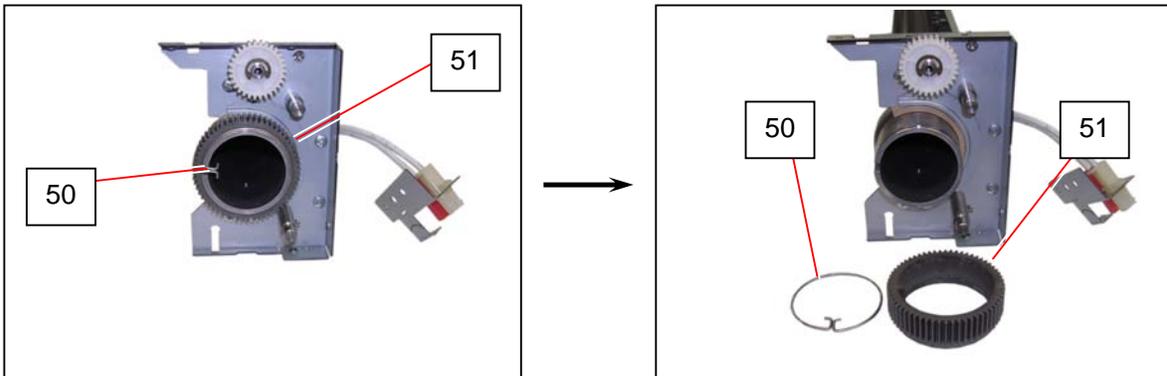
26. Turn Fuser Upper Unit (47) to the back. Lift Fuser Upper Unit (47) upward to remove it.



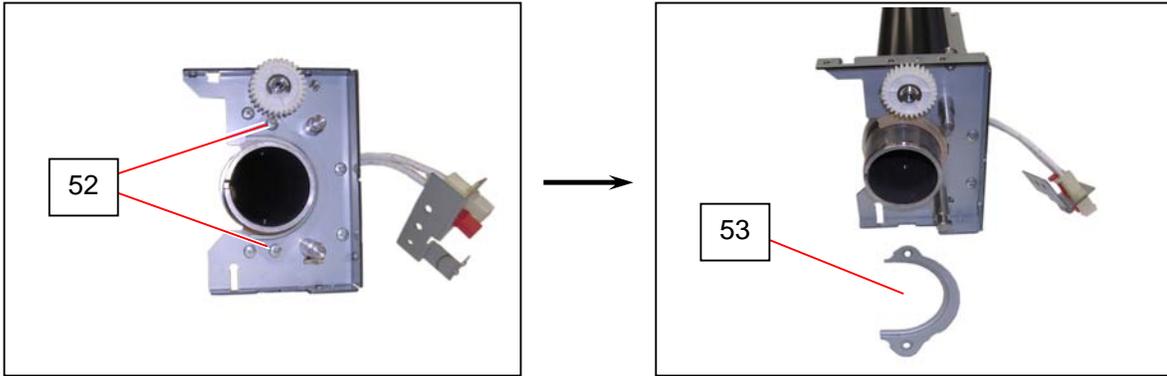
27. On the gear side of Fuser Upper Unit, remove Retaining Ring-E (48) to remove Gear 30T (49).



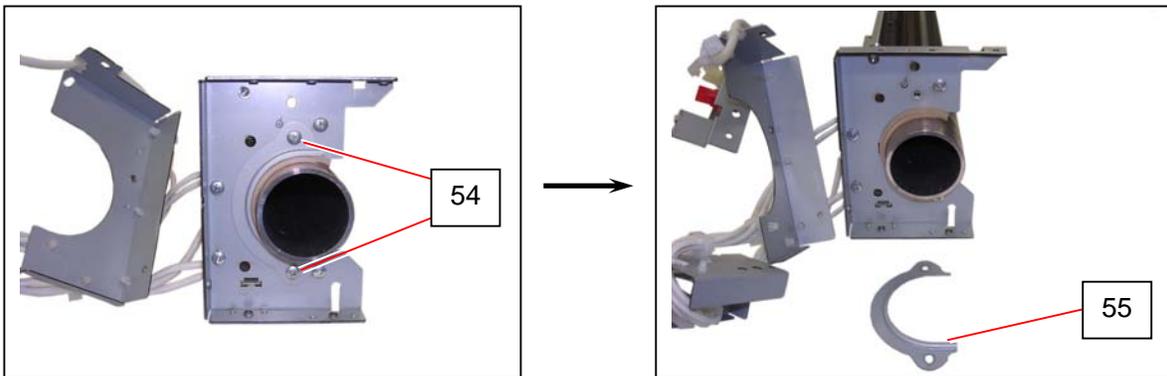
28. Remove Stopper (50) to remove Gear 60T (51).



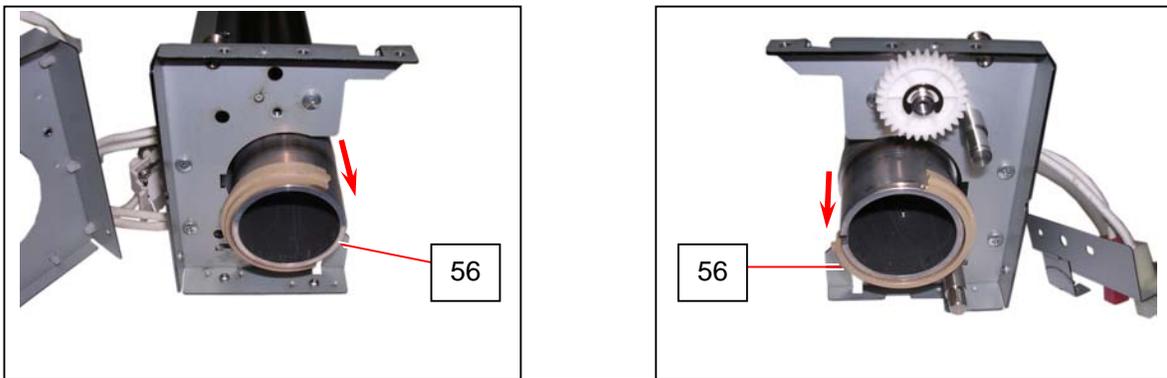
29. Remove 2 screws (52) to remove Bearing Holder (53).



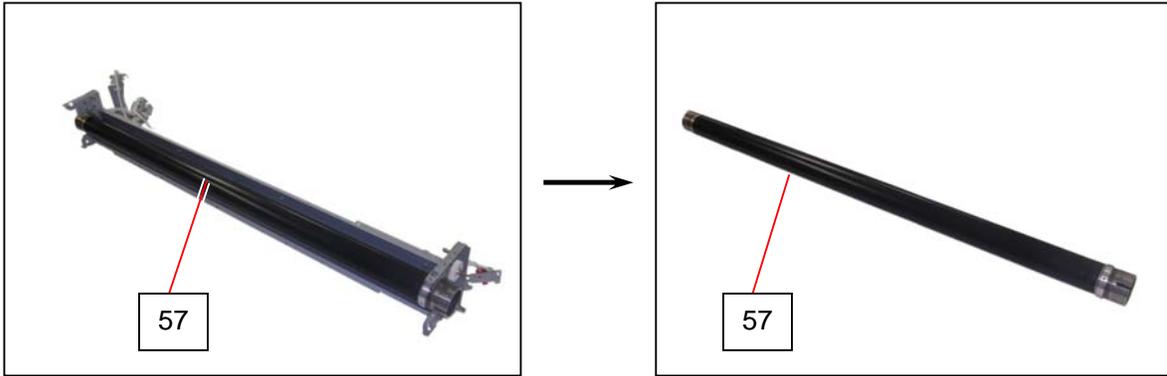
30. On the connector side of Fuser Upper Unit, remove 2 screws (54) to remove Bearing Holder (55).



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

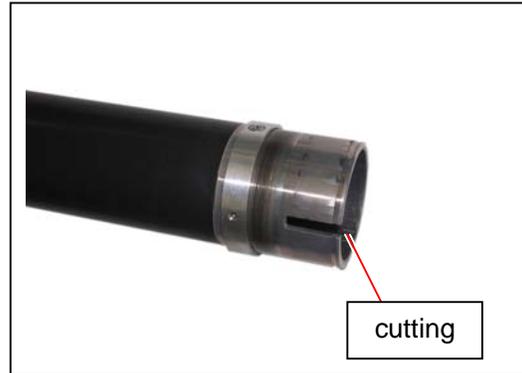


32. Remove Roller Fusing (57).

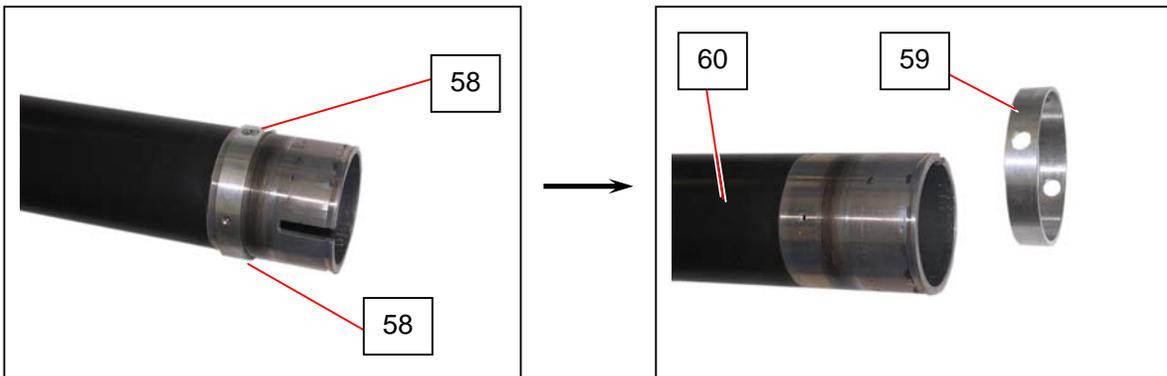


⚠ NOTE

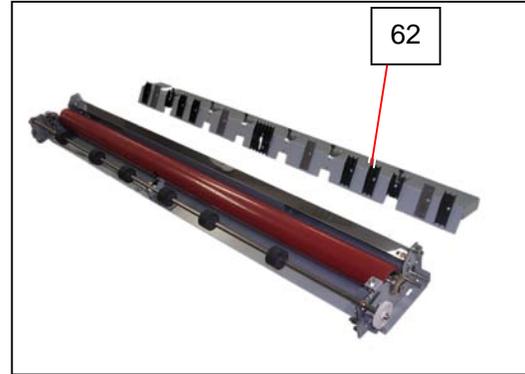
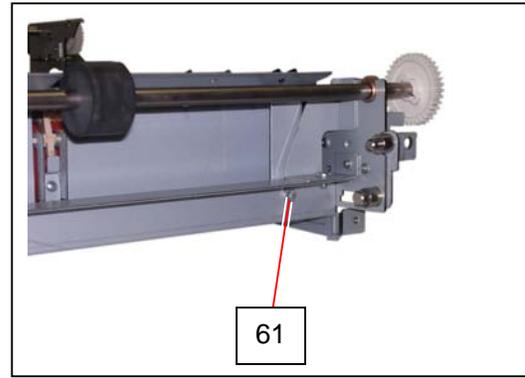
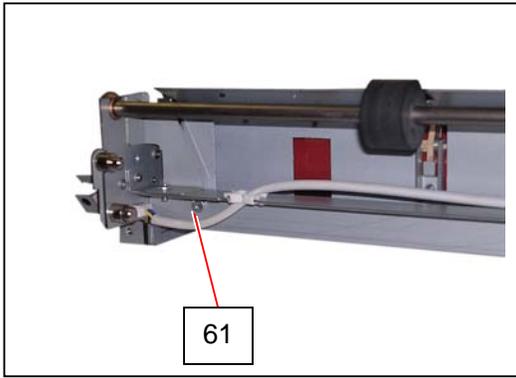
Install Roller Fusing to Upper Fuser Assy in the correct direction. One end with a cutting should be placed to the gear side.



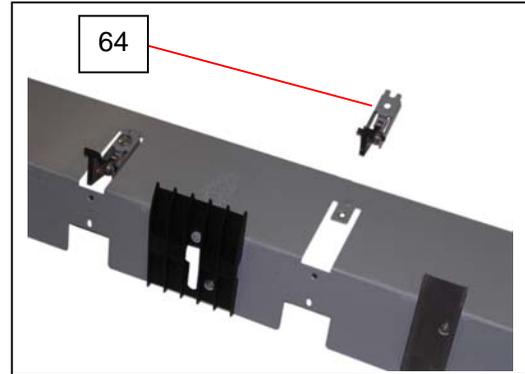
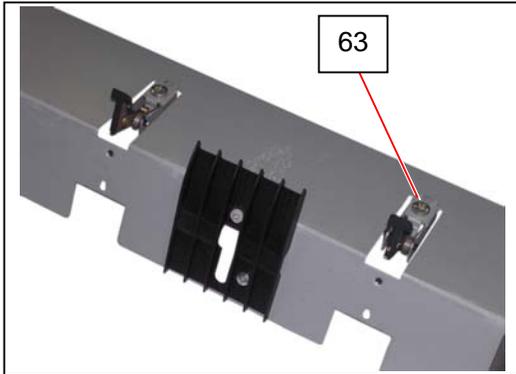
33. Remove 2 screws (58) to remove Collar (59) from Roller Fusing (60).
Replace **Roller Fusing** with a new one.



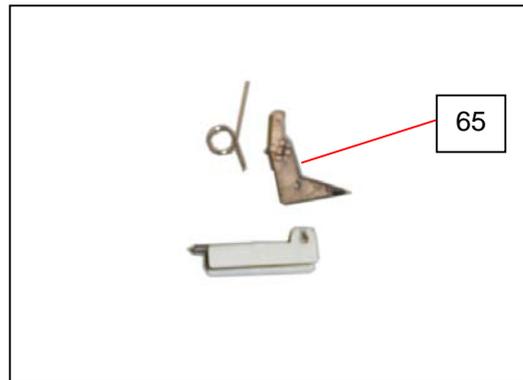
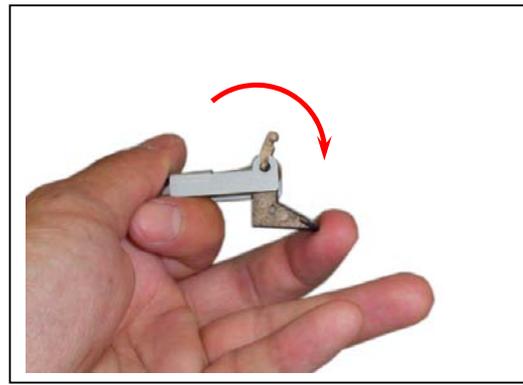
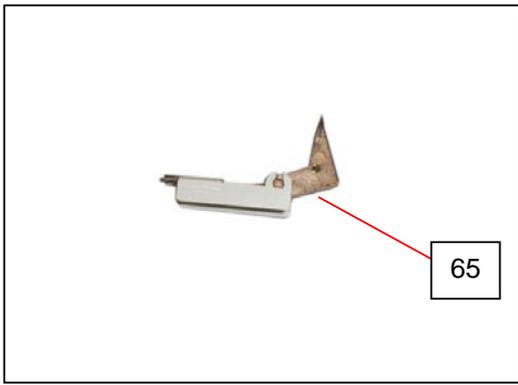
34. On the media exit side of Fuser Lower Unit, remove 2 screws (61) to remove Guide Plate 2 Assy (62).



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



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

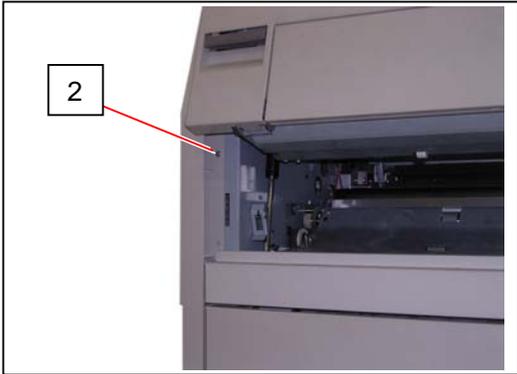


5.3.4 Replacement of Roller Pressure

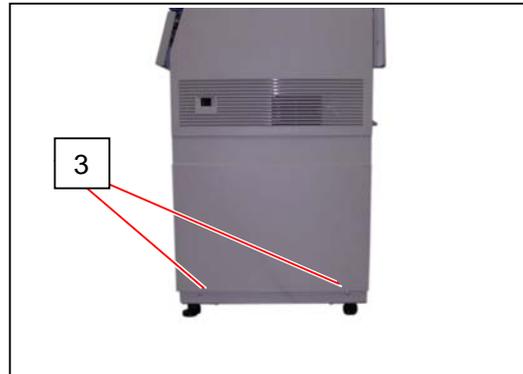
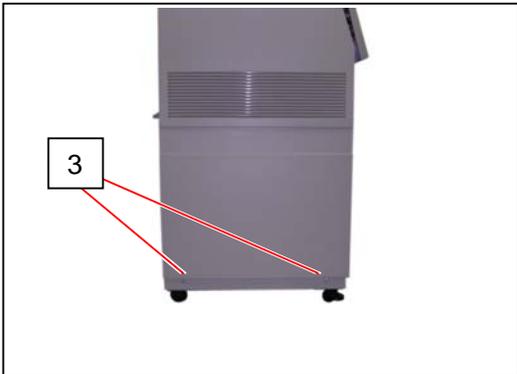
1. Pull up the Lever 2 (1) to open the Engine Unit.



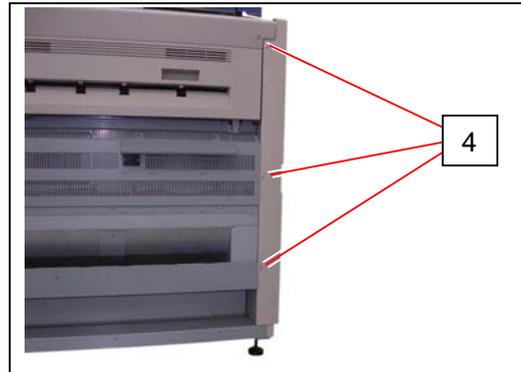
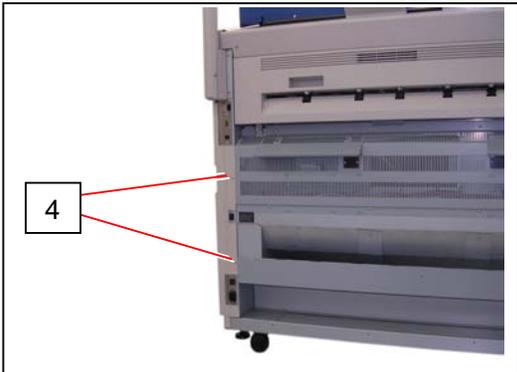
2. Remove 2 screws (2).



3. Remove 4 screws (3).



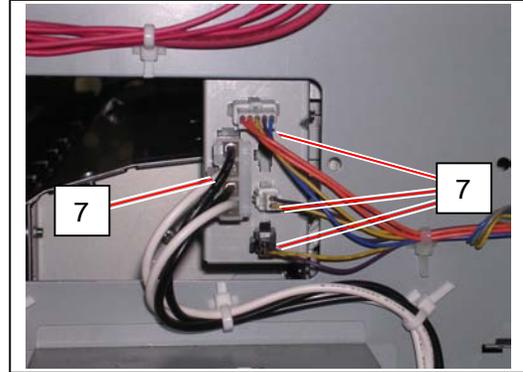
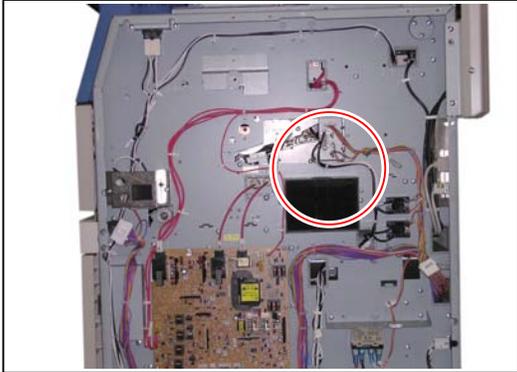
4. Remove 5 screws (4).



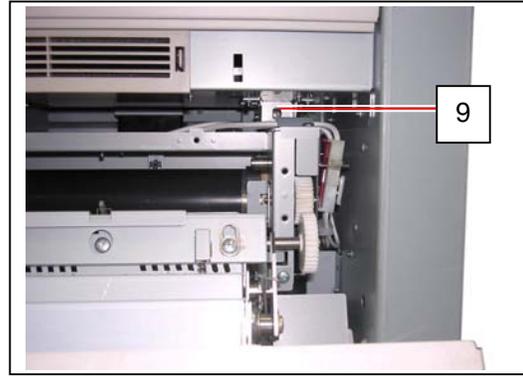
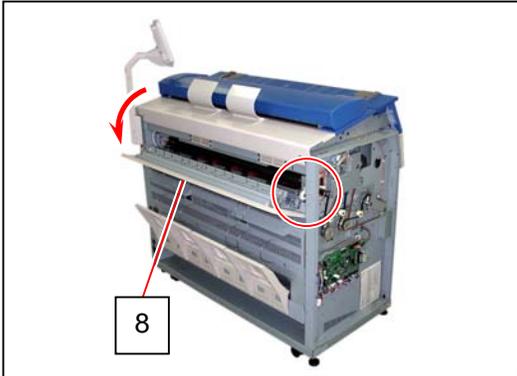
5. Remove Cover 2 (5) and Cover 3 (6).



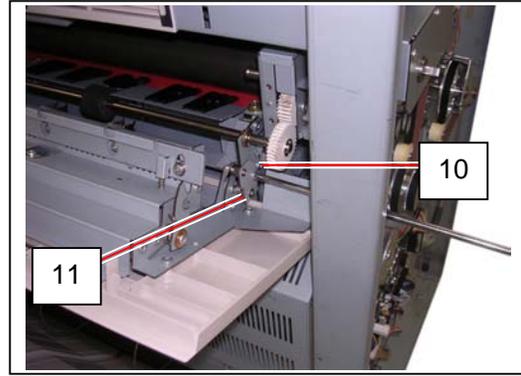
6. Disconnect 4 connectors (7).



7. Open Cover Assembly (8). Loosen 1 screw (9) fixing Fuser Unit inside the machine.



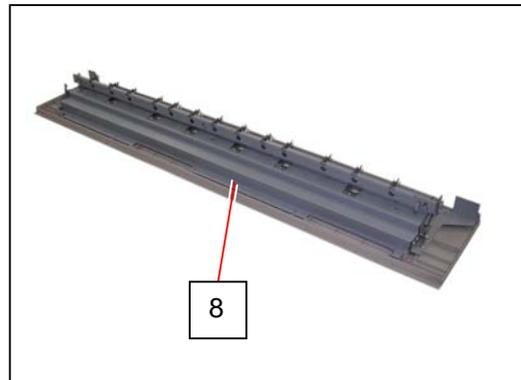
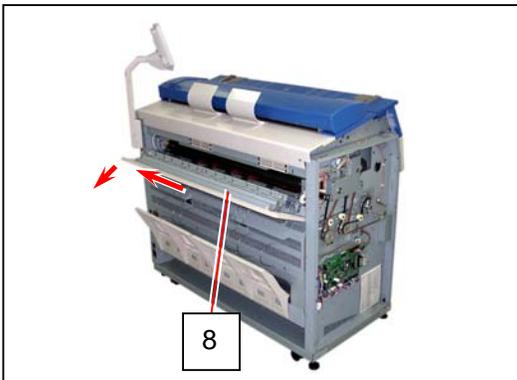
8. Remove 1 screw (10: M4x6) to remove Plate (11) on the left side.



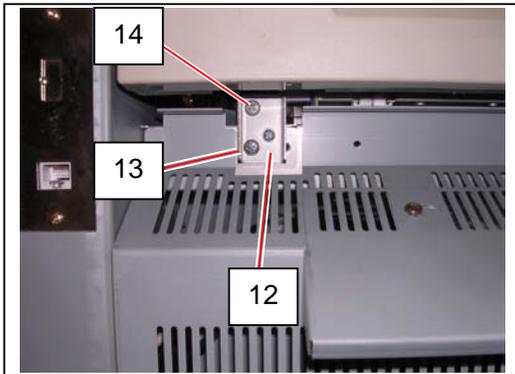
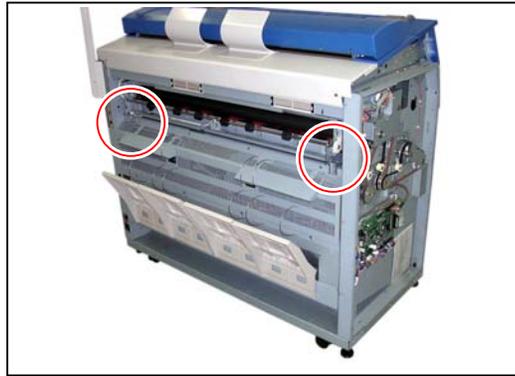
! NOTE

- (1) Please remove the Plate (11) while holding Cover Assembly (8). Otherwise you may drop the Cover Assembly.
- (2) There is the Plate 2 on the right side of machine, which is a symmetric part of Plate (11). You may remove it instead of Plate (11).

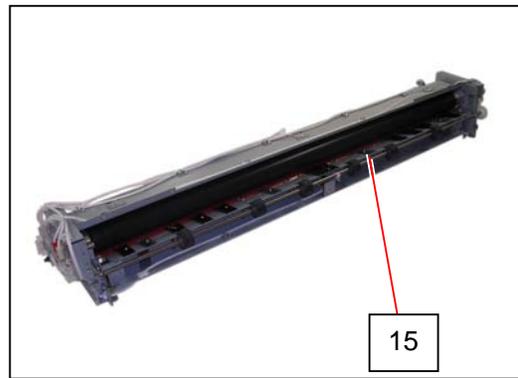
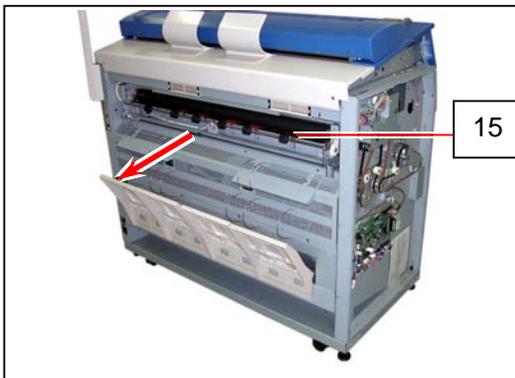
9. Remove the Cover Assembly (8).



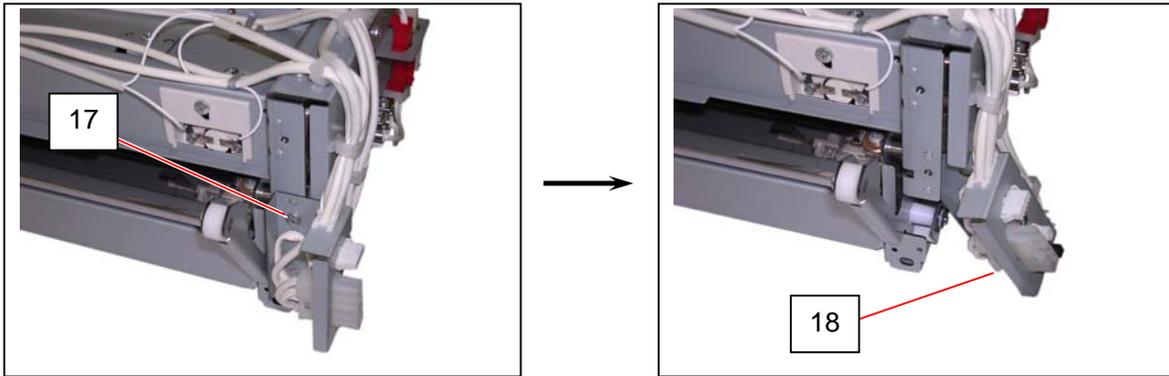
10. There are 2 pieces of the brackets (12) on the back of the machine.
Remove the screws (13) (14) to remove both Bracket (12).



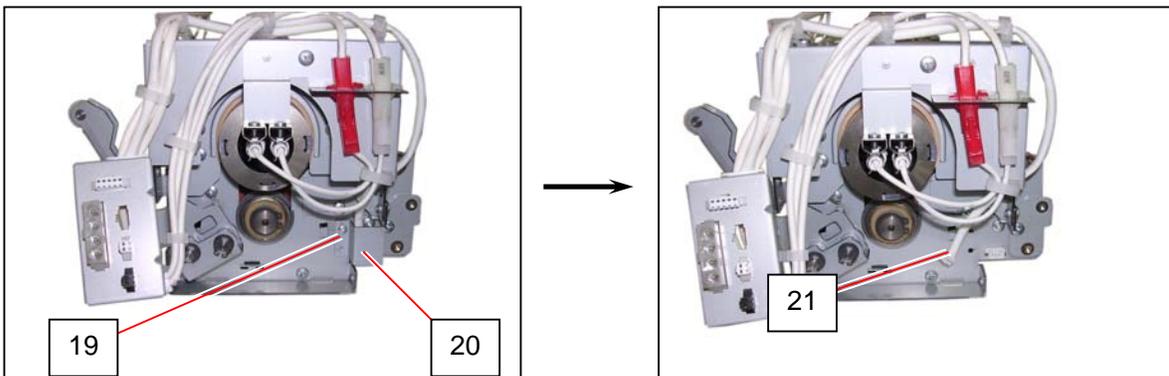
11. With Engine Unit open, remove **Fuser Unit** (15).



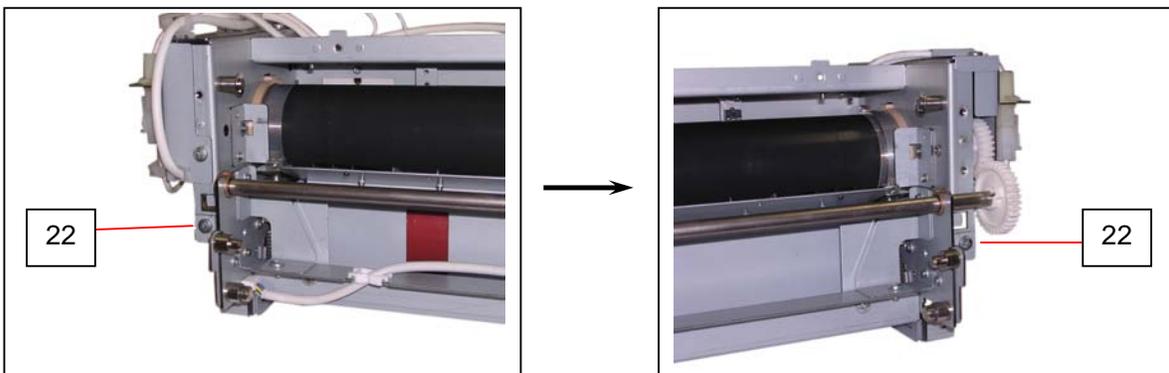
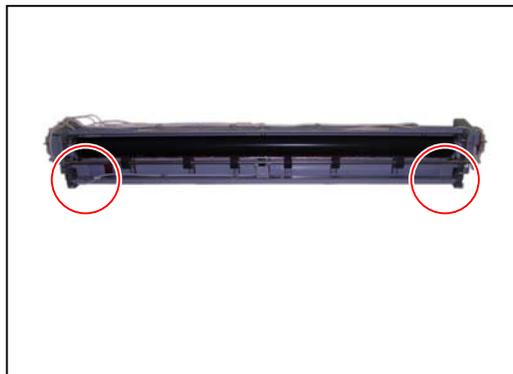
12. On the connector side, remove 1 screw (17) to release Bracket 10 Assy (18).



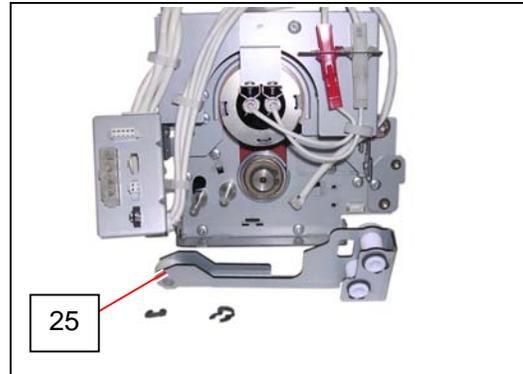
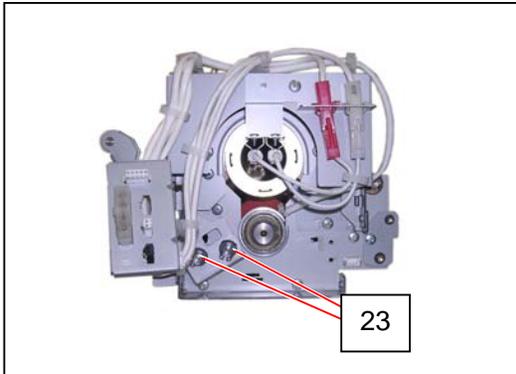
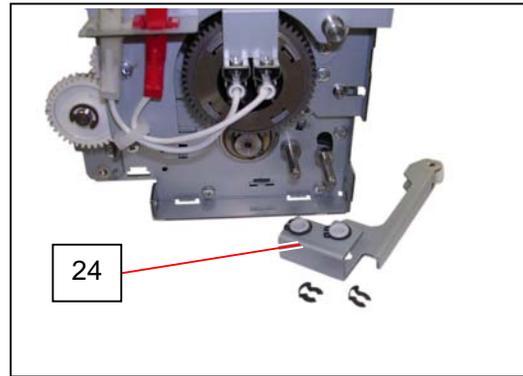
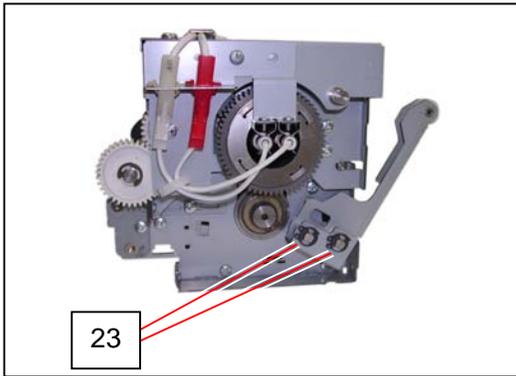
13. On the connector side, remove 1 screw (19) to remove Cover 2 (20). Disconnect the harness (21).



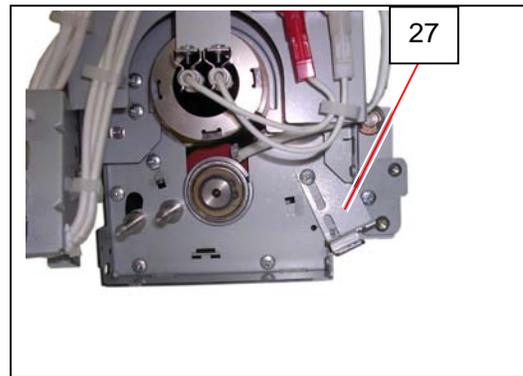
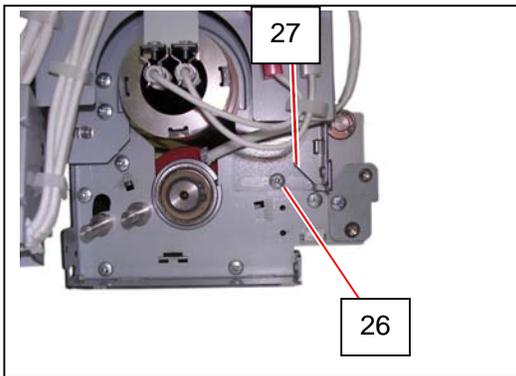
14. Remove 2 screws (22) on the media exit side.



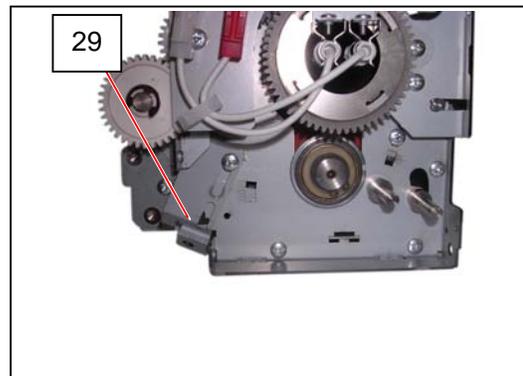
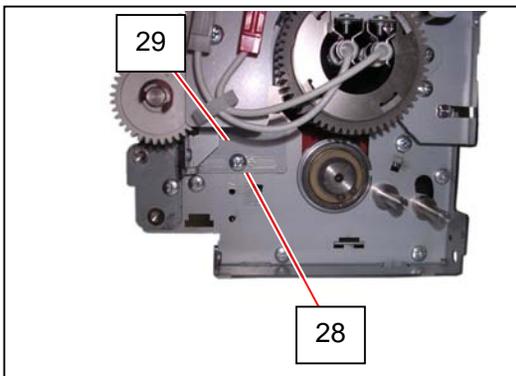
15. On both sides, remove 4 grip rings (23) to remove Arm 4 (24) and Arm 3 (25).



16. On the connector side, loosen 1 screw (26) to release Bracket 2 (27).



17. On the gear side, loosen 1 screw (28) to release Bracket 3 (29).

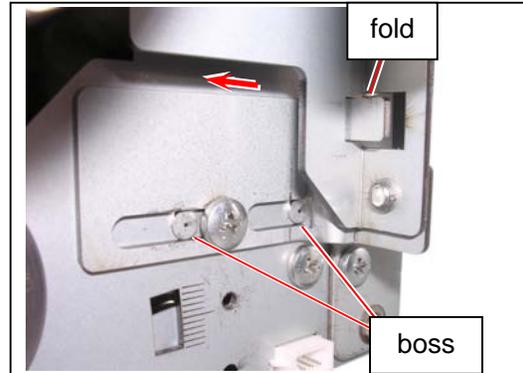


! NOTE

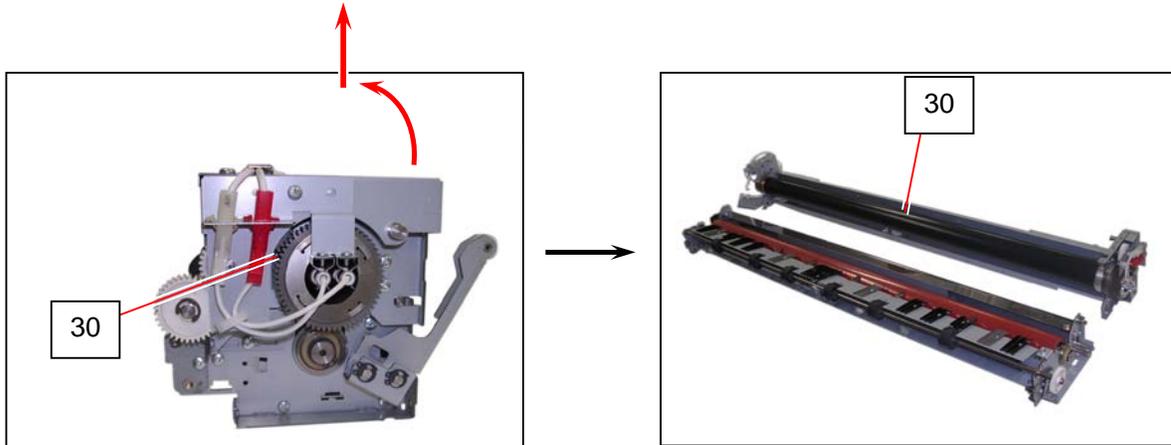
Reinstall Bracket 2 (27) and Bracket 3 (29) in the correct position.

(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.

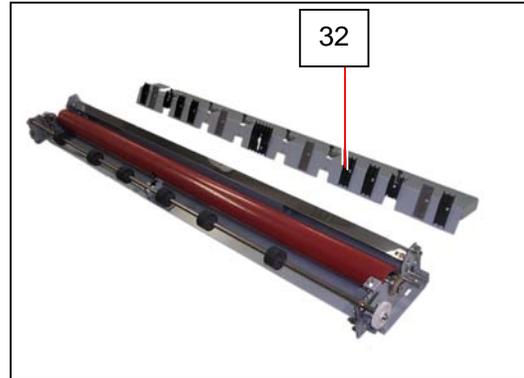
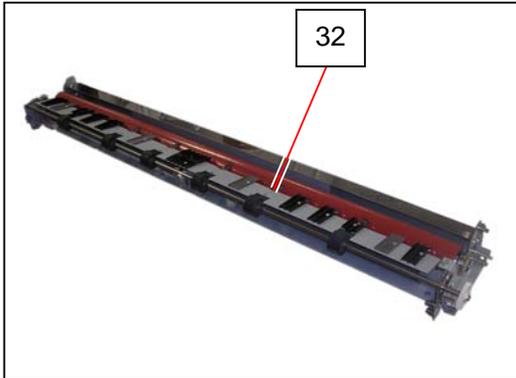
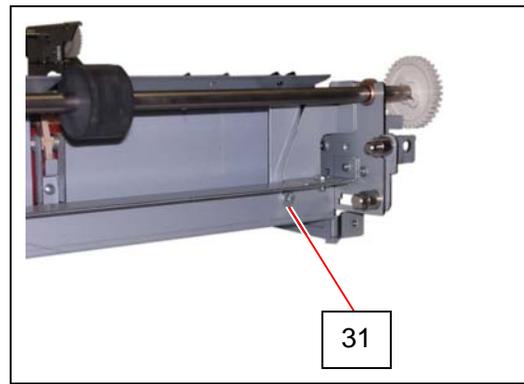
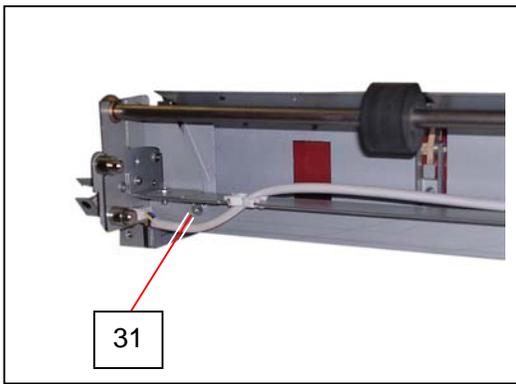
(2) The 2 positioning bosses locate the bracket. The bracket should not ride over them.



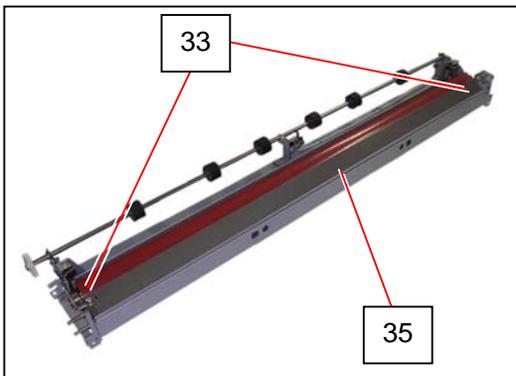
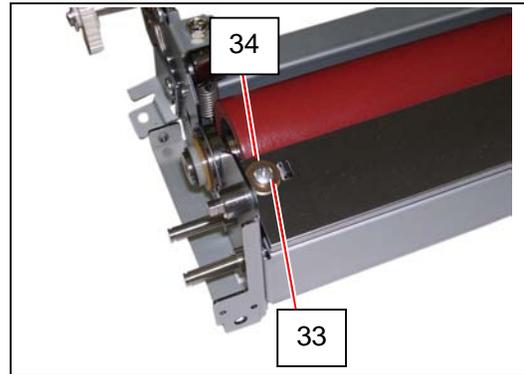
18. Turn Fuser Upper Unit (30) to the back. Lift Fuser Upper Unit upward to remove it.



19. On the media exit side of Fuser Lower Unit, remove 2 screws (31) to remove Guide Plate 2 Assy (32).



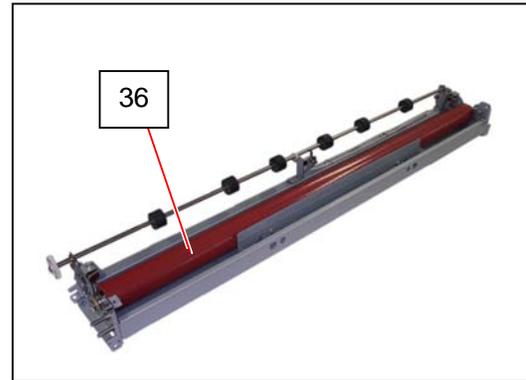
20. Remove 2 screws (33) to remove Washer Special (34) and Guide Plate (35).



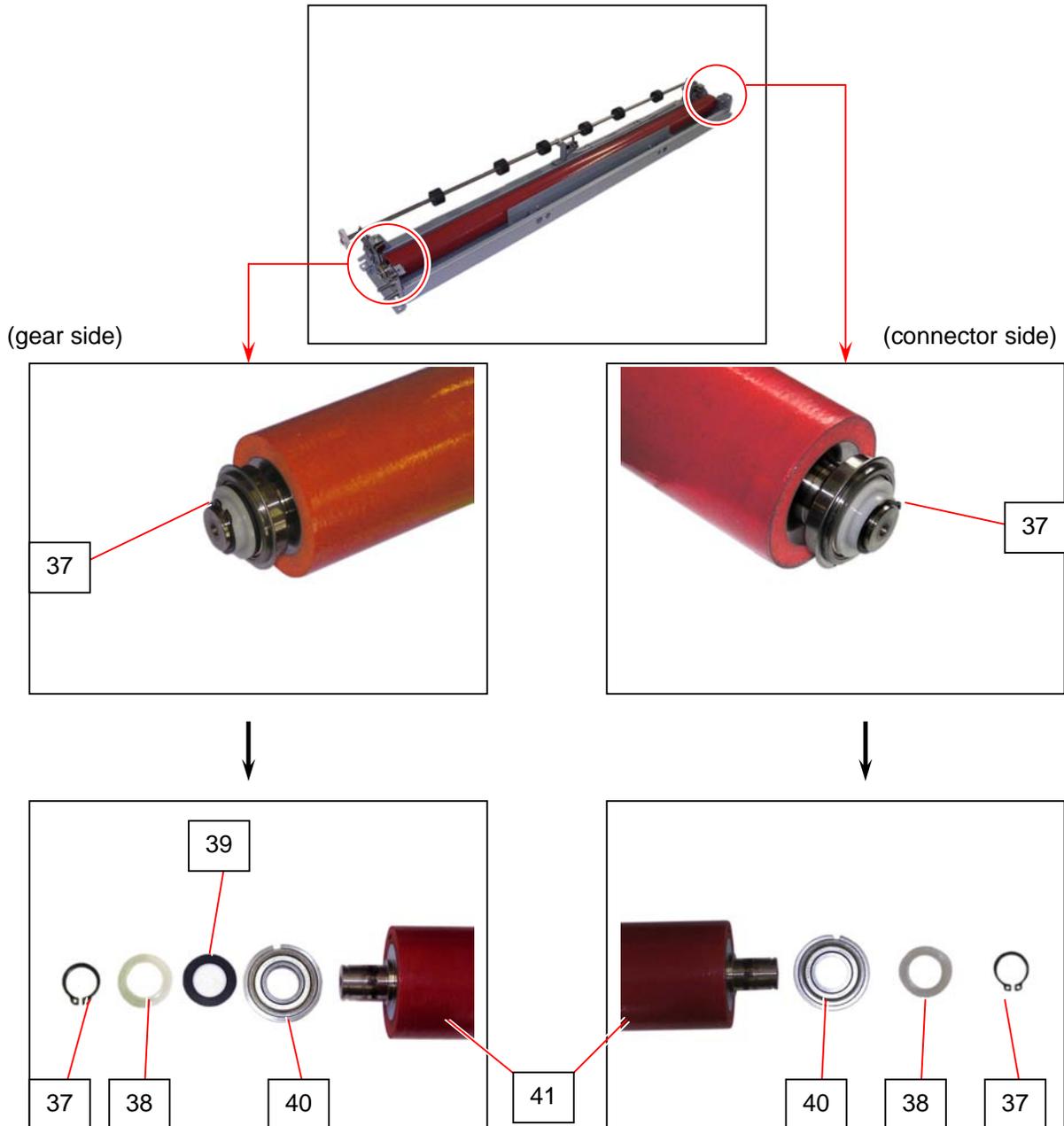
NOTE

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.

21. Remove Pressure Roller (36) from the unit.



22. Remove Retaining Ring-C (37) to remove Collar (38) (39: only on the gear side), Bearing (40) from each shaft end of Roller Pressure (41).
Replace **Roller Pressure** with a new one.

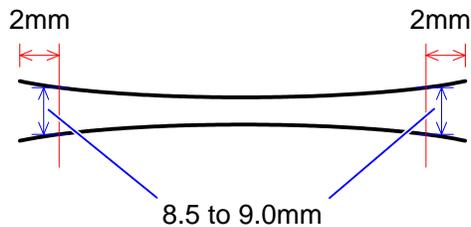


5. 3. 5 Fuser Pressure Adjustment (NIP width check)

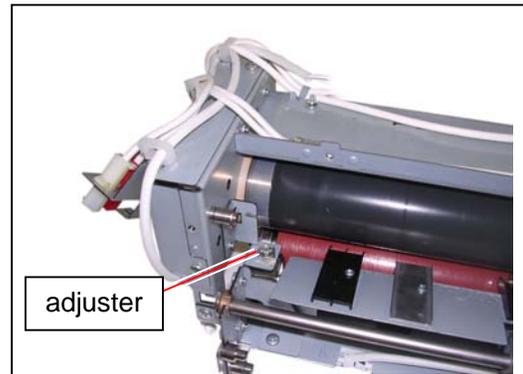
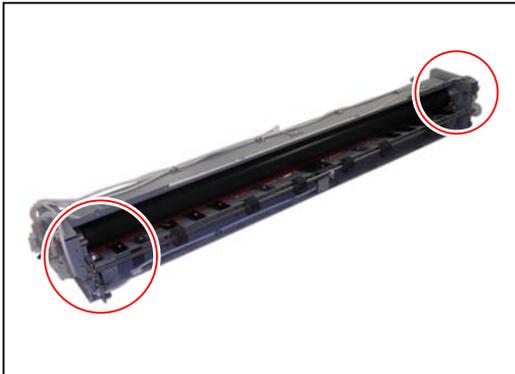
1. Load a tracing paper roll in 36"/A0 width into any available Roll Deck.
2. Make a test print in pattern No.2 S(0) with the roll in 297mm length.
3. When the test print's leading edge appears within 50mm at the exit cover, stop the print process by opening any cover. At this point, the black area on 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



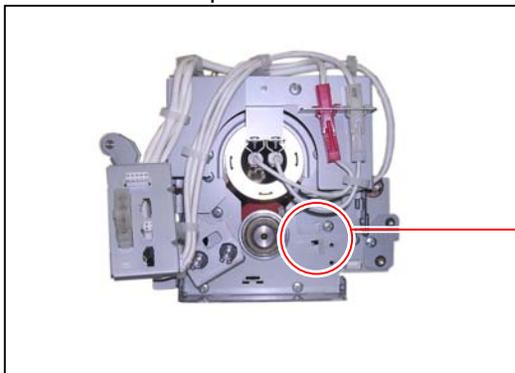
6. If the nip width at any point is not proper, adjust the fuser pressure with the pressure adjuster.



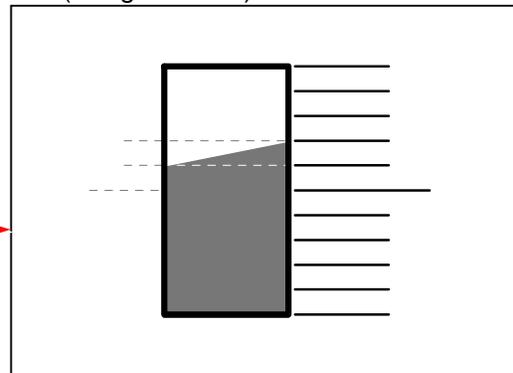
(ex. machine right side)

Reference

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



(ex. machine right side)

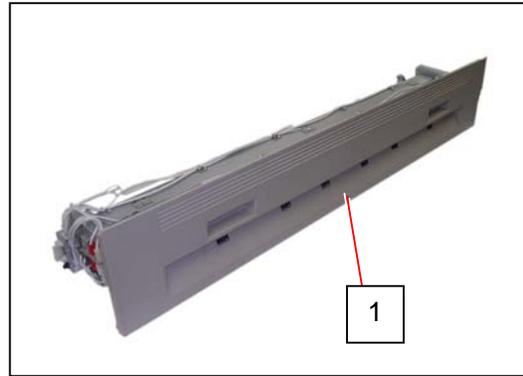


default

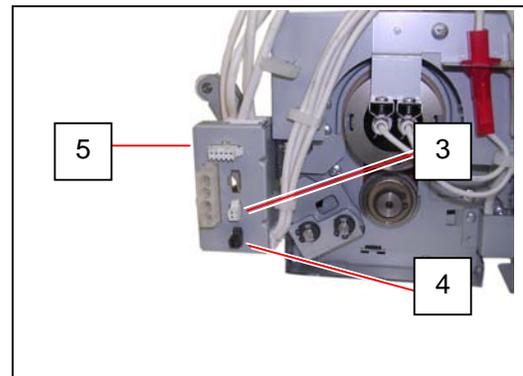
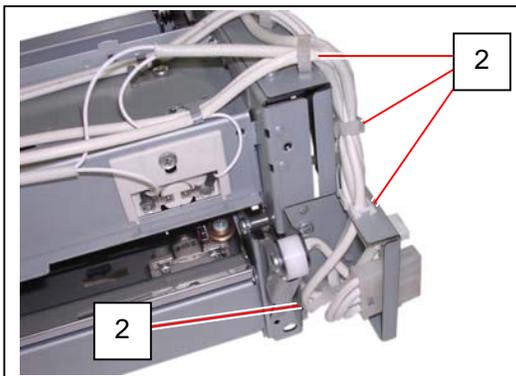
7. Make another test print and check the nip widths until they meet the specification.

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

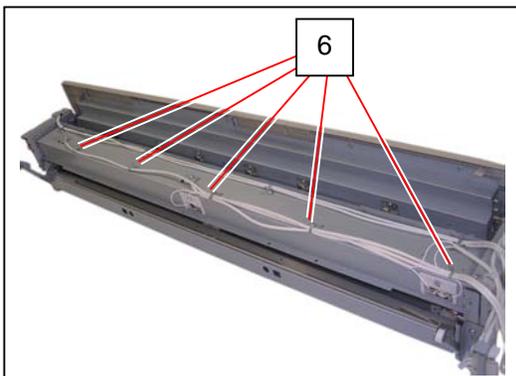
1. Remove the Fuser Unit (1) from the machine making reference to [5. 3. 1 Removal of the Fuser Unit] on the page 5-70.



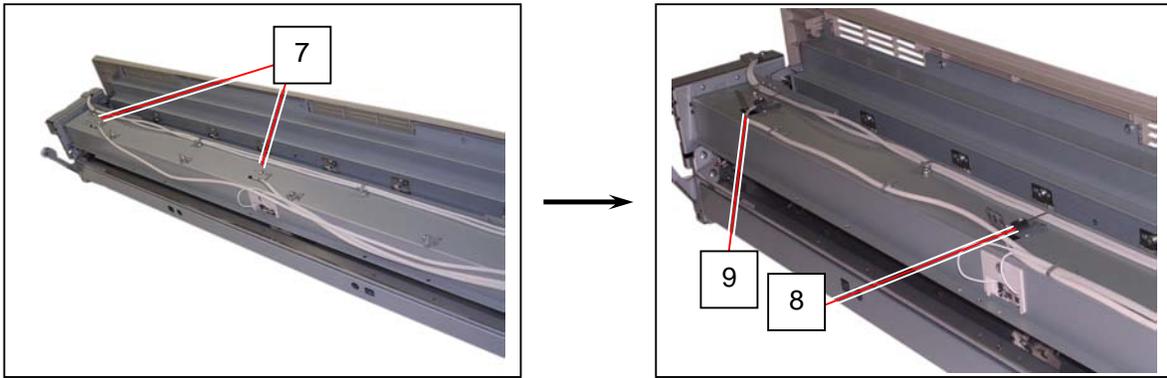
2. Release the harness from the clamps (2).
Remove the connectors (3: TH1, white) (4: TH2, black) from Bracket 10 Assy (5).



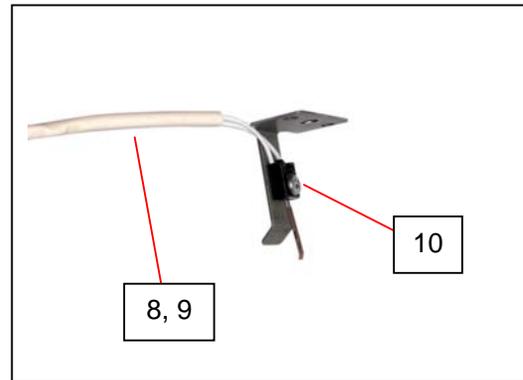
3. Release the harness from the clamps (6).



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

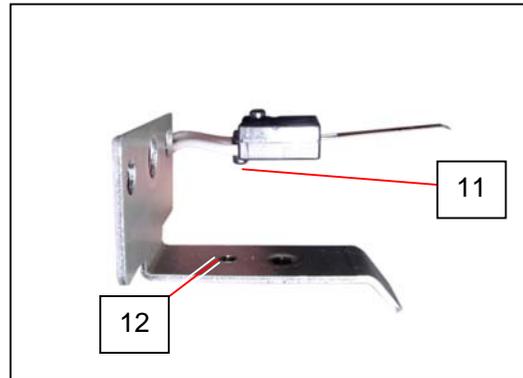


5. Remove 1 screw (10) to replace **Thermistor** (8: TH1) (9: TH2) with a new one.



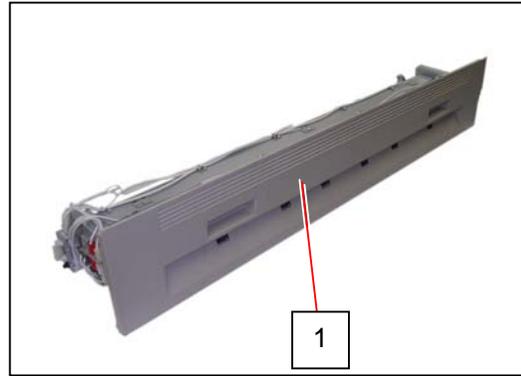
NOTE

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

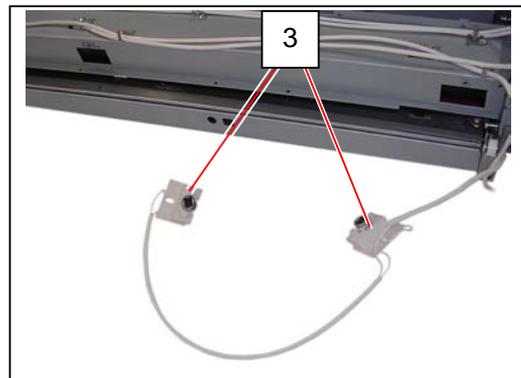
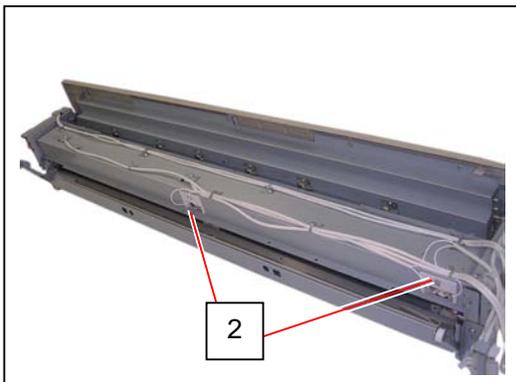


5. 3. 7 Replacement of Thermostat (TS1, TS2)

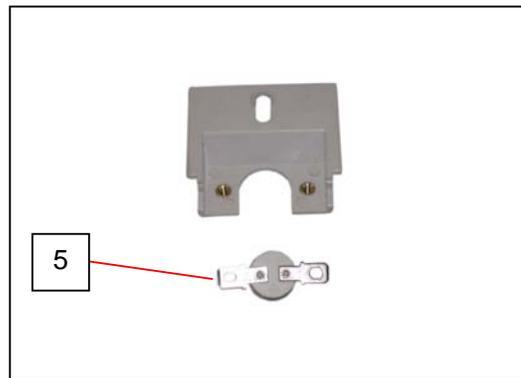
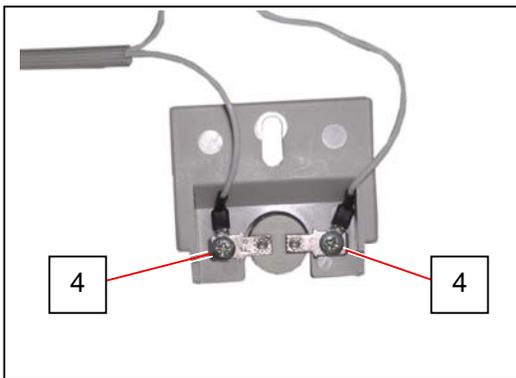
1. Remove the Fuser Unit (1) from the machine making reference to [5. 3. 1 Removal of the Fuser Unit] on the page 5-70.



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.

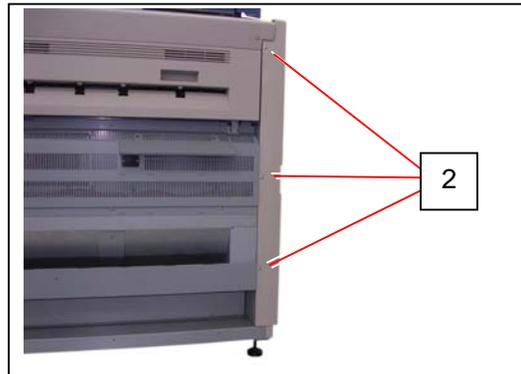
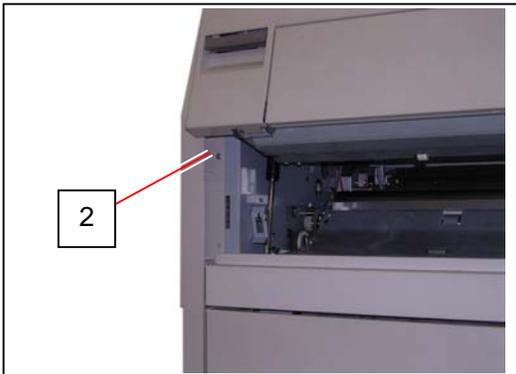


5. 3. 8 Replacement of Exit Sensor (PH3)

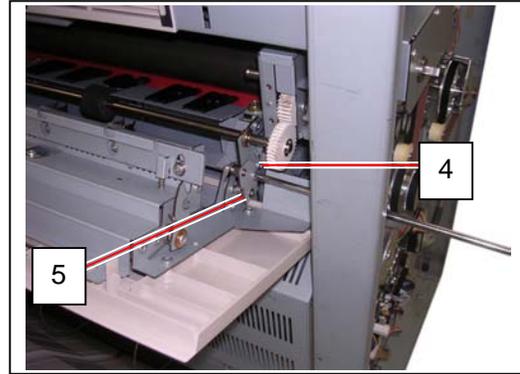
1. Pull up the Lever 2 (1) to open the Engine Unit.



2. Remove 6 screws (2) to remove Cover 2 (3).



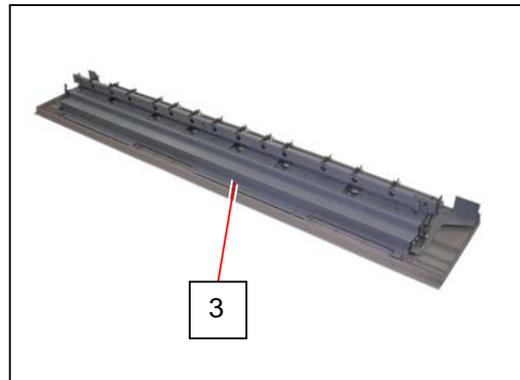
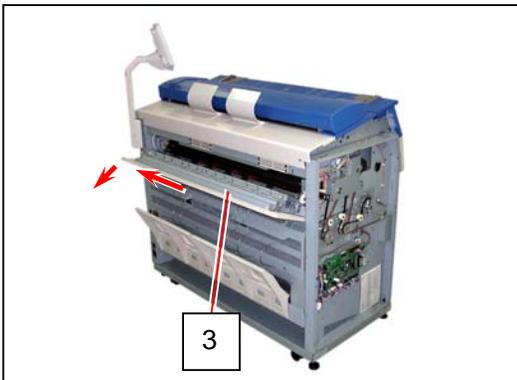
3. Remove 1 screw (4: M4x6) to remove Plate (5) on the left side.



! NOTE

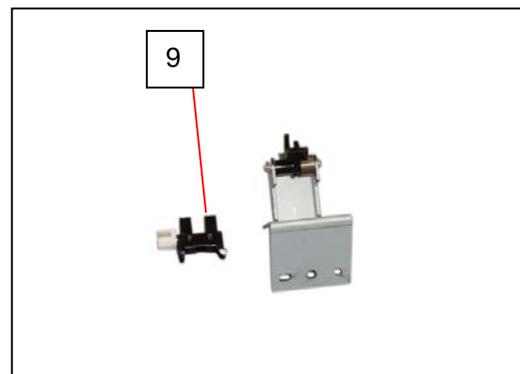
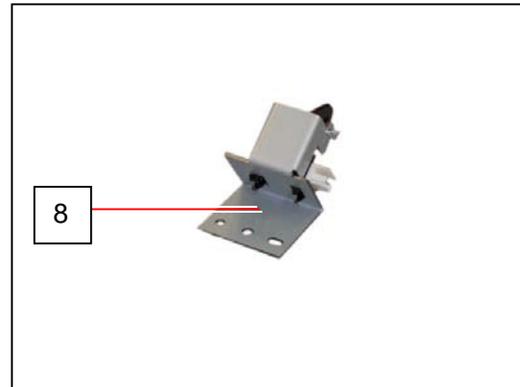
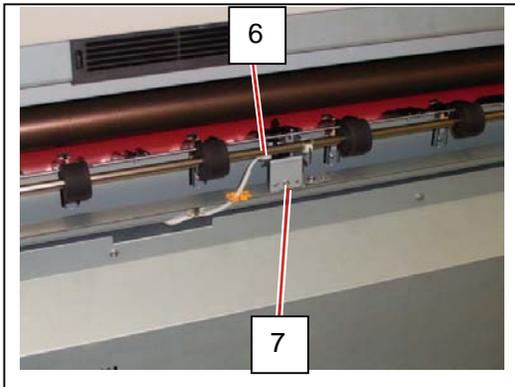
- (1) Please remove the Plate (5) while holding Cover Assembly (3). Otherwise you may drop the Cover Assembly.
- (2) There is the Plate 2 on the right side of machine, which is a symmetric part of Plate (5). You may remove it instead of Plate (5).

4. Remove the Cover Assembly (3).



5. Close Engine Unit.

6. Remove the harness (6) and remove the screw (7) to remove Exit Sensor Assy (8).
Remove Exit Sensor (9) form Exit Sensor Assy (8). Replace **Exit Sensor** with a new one.



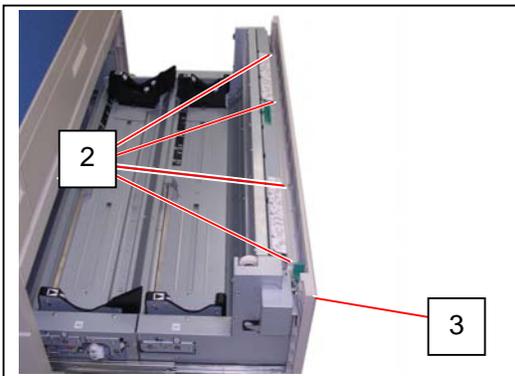
5.4 Roll Deck

5.4.1 Replacement of Cutter Assembly

1. Draw out the Roll Deck (1).

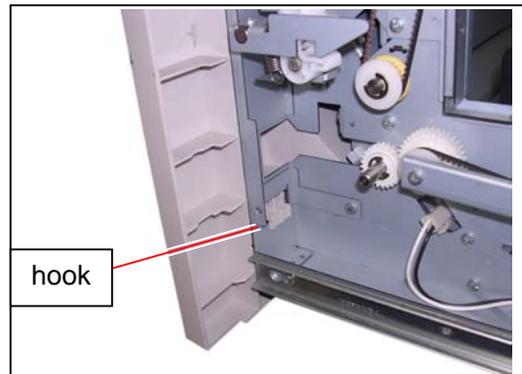


2. Remove 4 screws (2) to remove Cover 1 (3).

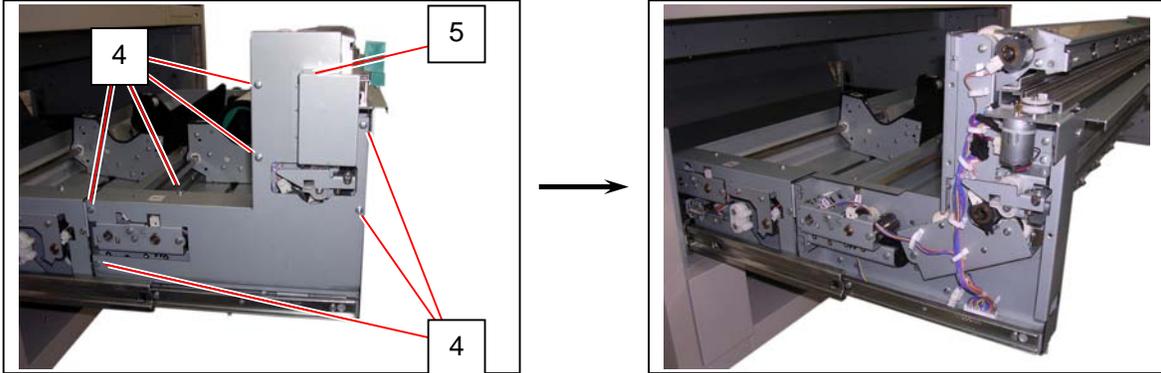


NOTE

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

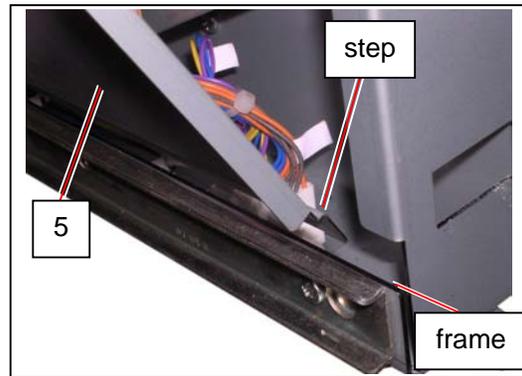


3. Remove 7 screws (4) to remove Cover 14 (5).

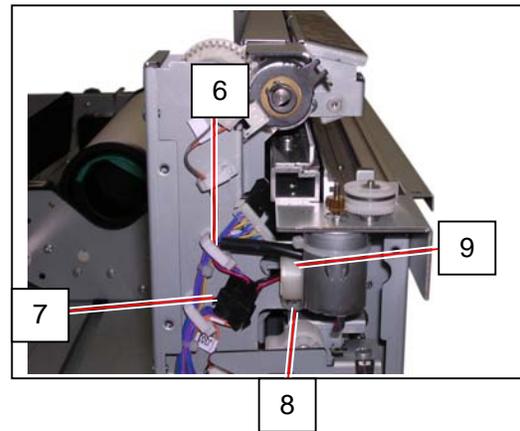


⚠ NOTE

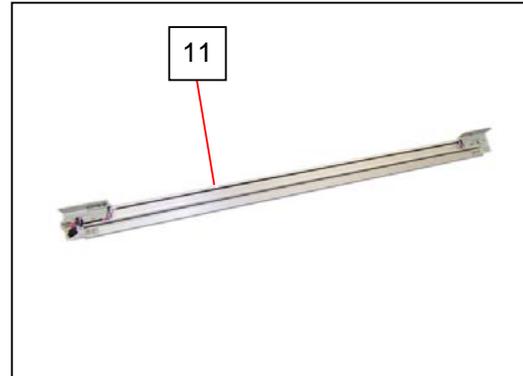
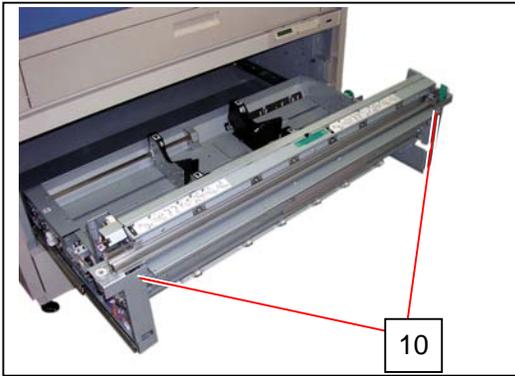
Make sure that the step part on the bottom side of Cover 14 (5) is inside the bottom frame.



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.

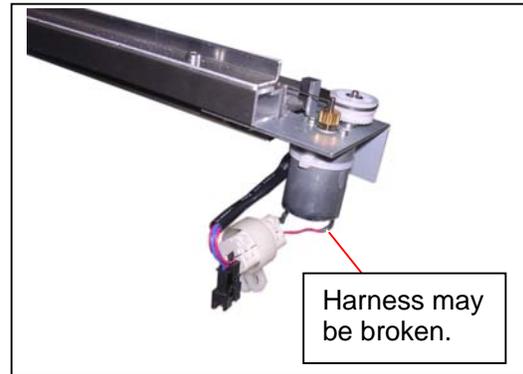


! NOTE

- (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.

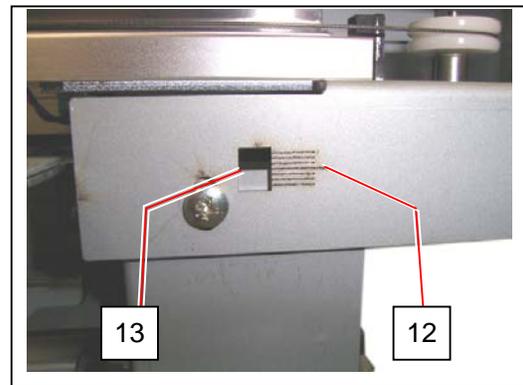


Good



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.

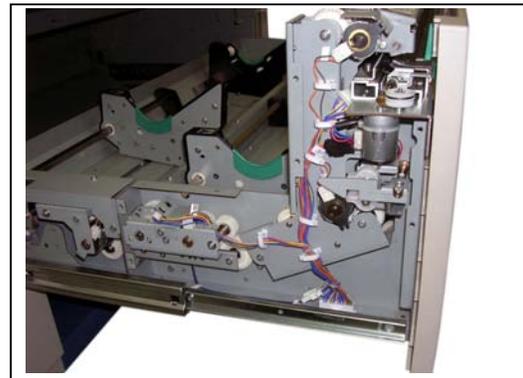
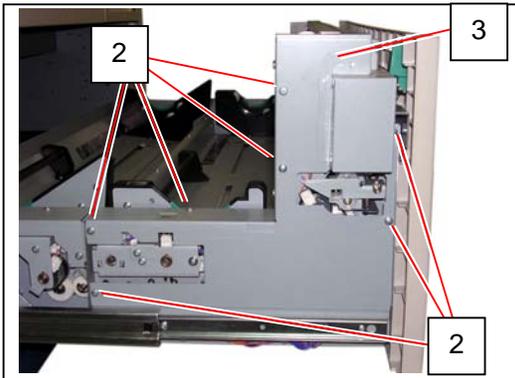


5. 4. 2 Replacement of Clutches (CL3, CL4, CL5) of Roll 1

1. Draw out the Roll Deck (1).

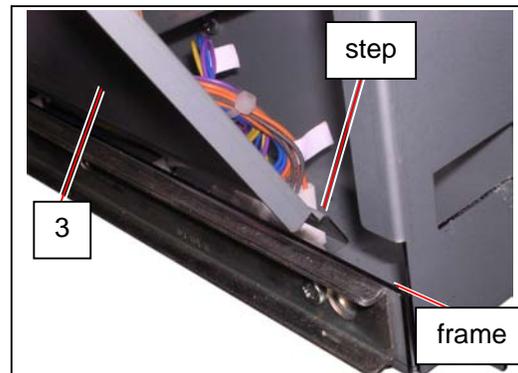


2. Remove 7 screws (2) to remove Cover 14 (3).

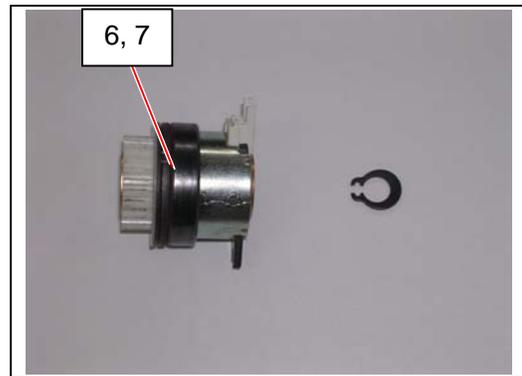
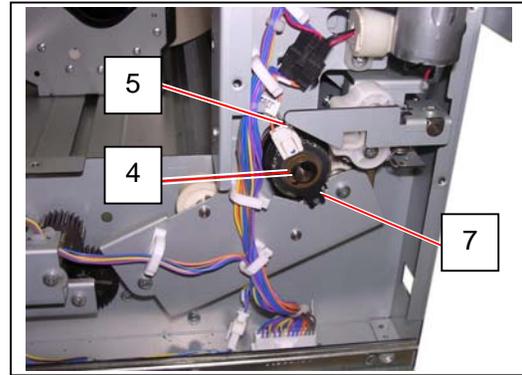
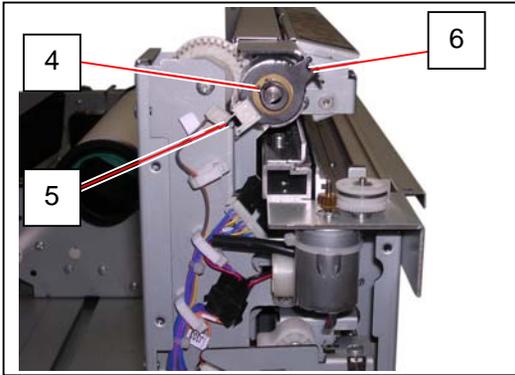


! NOTE

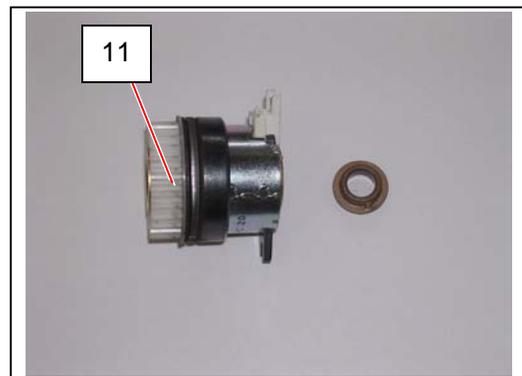
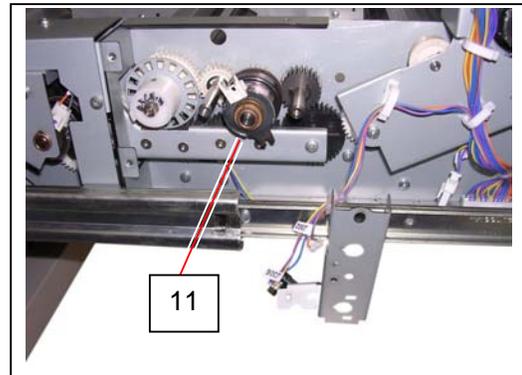
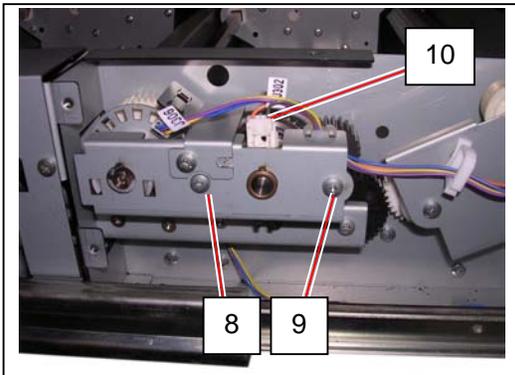
Make sure that the step part on the bottom side of Cover 14 (3) is inside the bottom frame.



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.

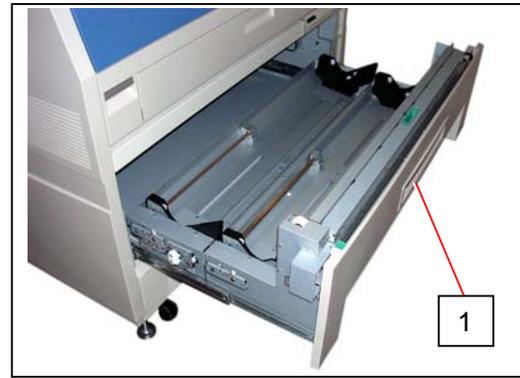


4. Remove 1 Bind Head Screw (8) and 1 Pan Head Screw (9), disconnect the harness (10) to remove Clutch (11: CL5). Replace **Clutch** with a new one.

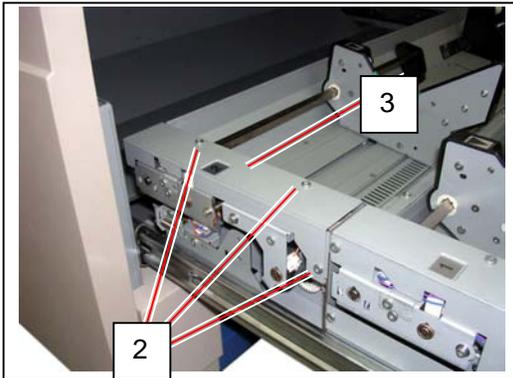


5. 4. 3 Replacement of Clutches (CL6, CL7) of Roll 2

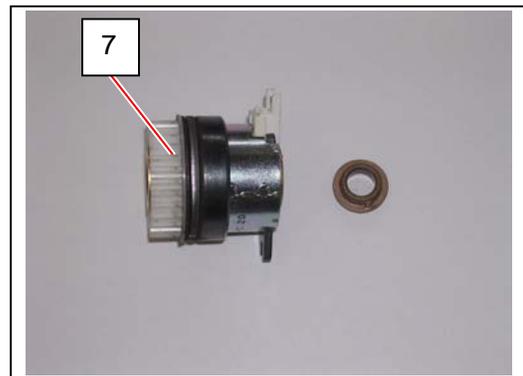
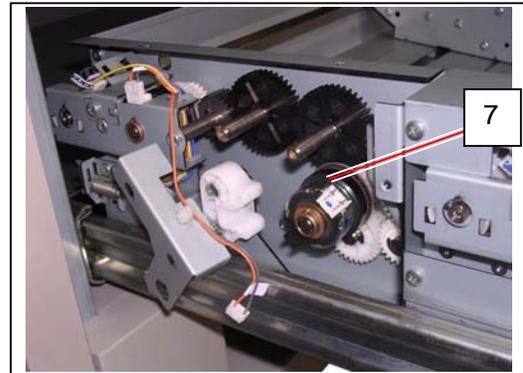
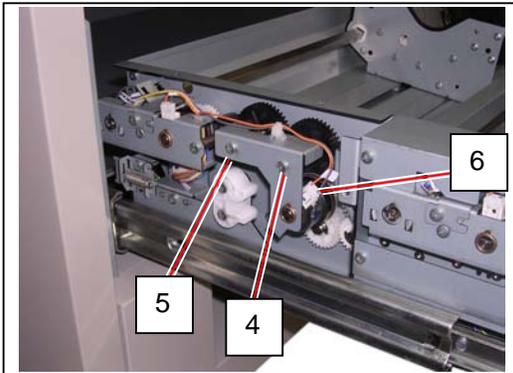
1. Draw out the Roll Deck (1).



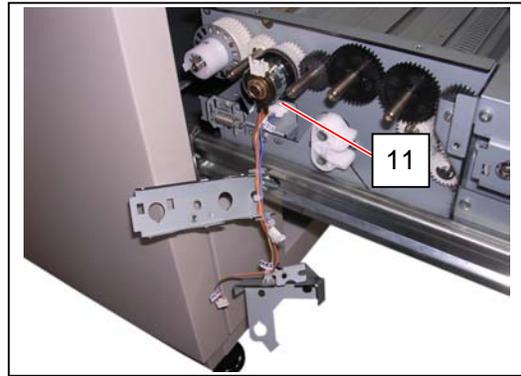
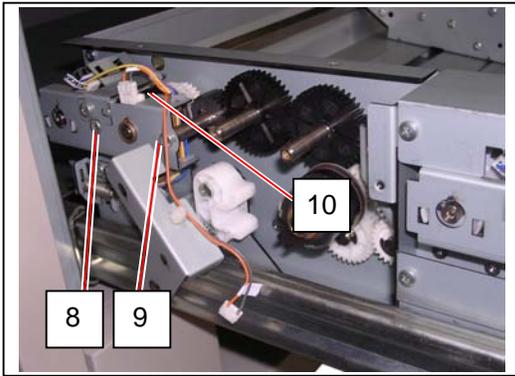
2. Remove 3 screws (2) to remove Cover 16 (3).



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.

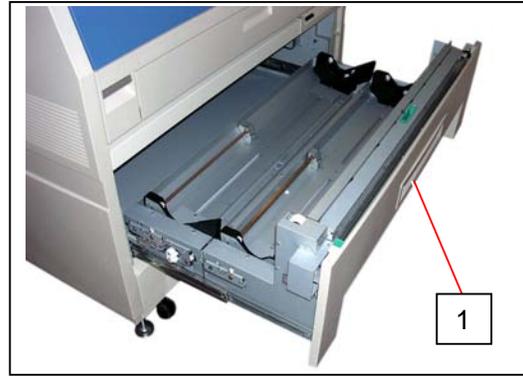


4. Remove 1 Bind Head Screw (8) and 1 Pan Head Screw (9), disconnect the harness (10) to remove Clutch (11: CL7). Replace **Clutch** with a new one.

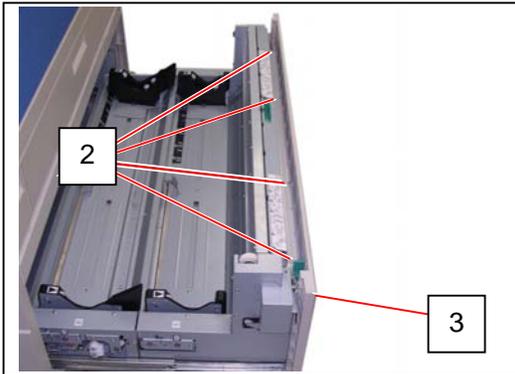


5. 4. 4 Replacement of Timing Belt 633

1. Draw out the Roll Deck (1).

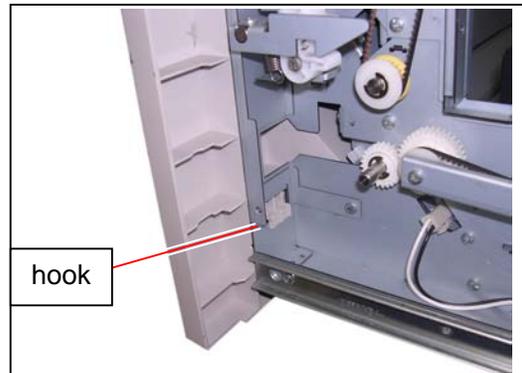


2. Remove 4 screws (2) to remove Cover 1 (3).

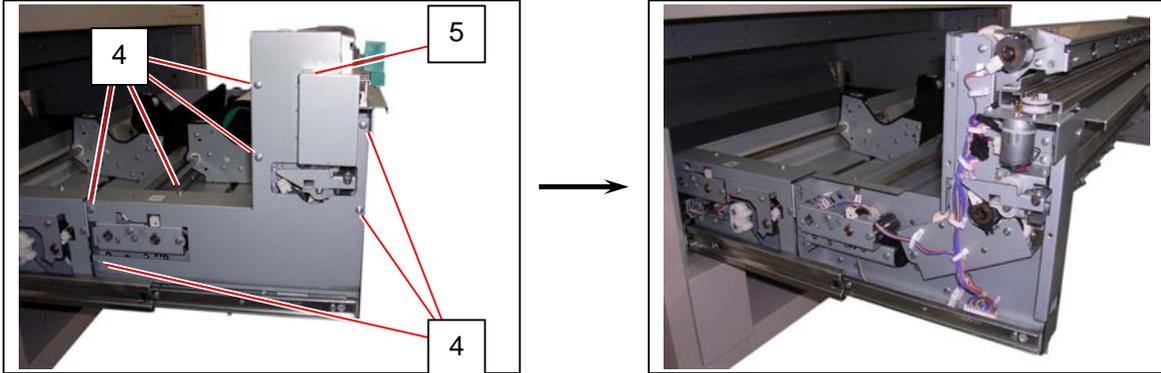


NOTE

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

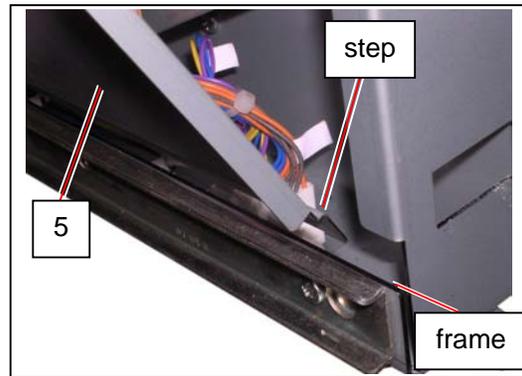


3. Remove 7 screws (4) to remove Cover 14 (5).

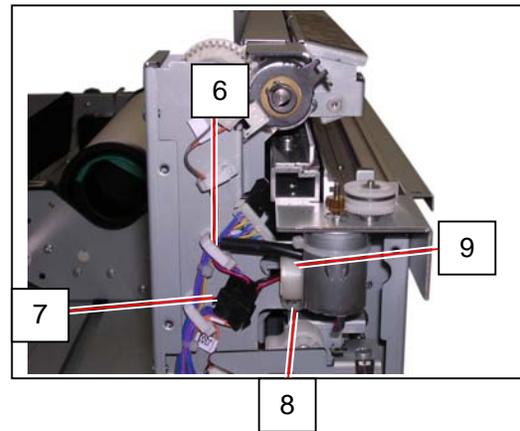


⚠ NOTE

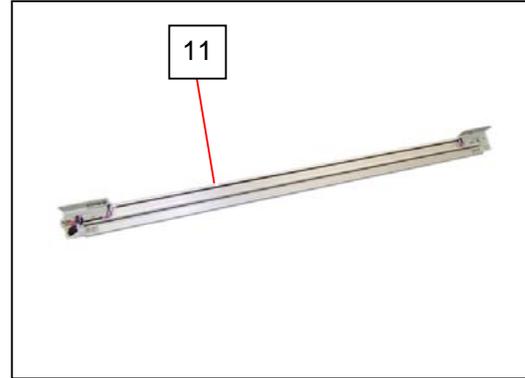
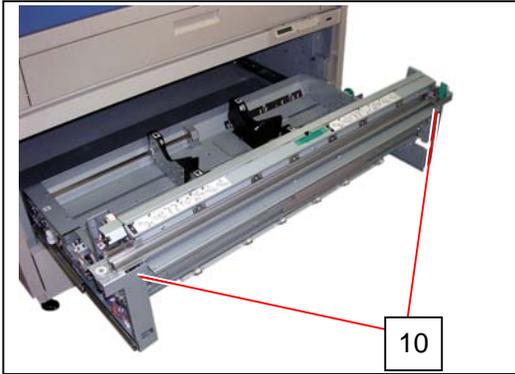
Make sure that the step part on the bottom side of Cover 14 (5) is inside the bottom frame.



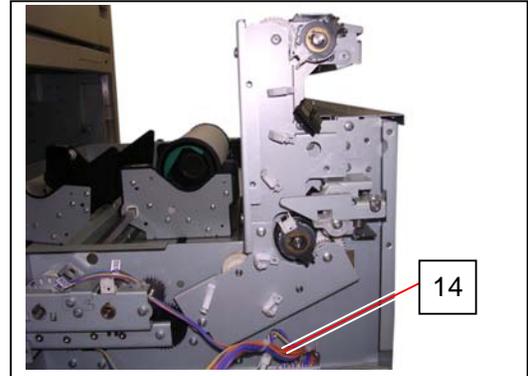
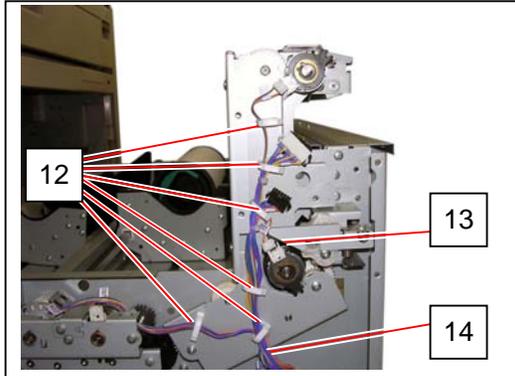
4. Open the wire saddle (6) and disconnect the connector (7) to release the harness. Remove 1 screw (8) and remove the clamp (9) to release the core.



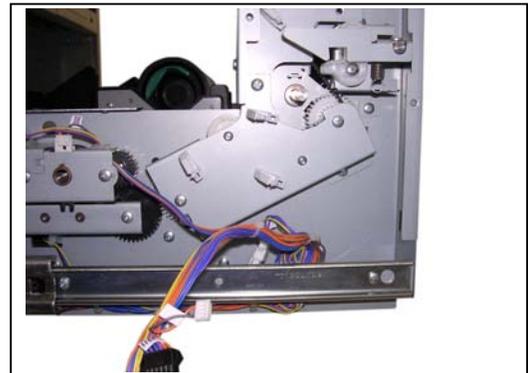
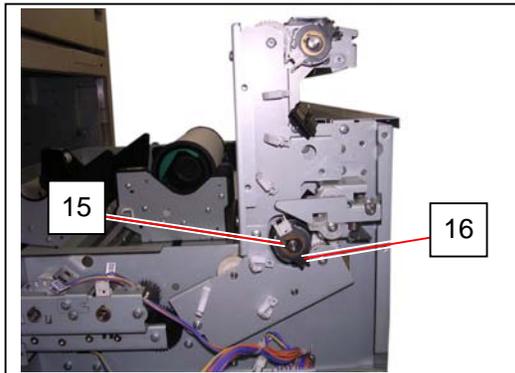
5. Remove 2 screws on the front (10) to remove Cutter Assy (11).



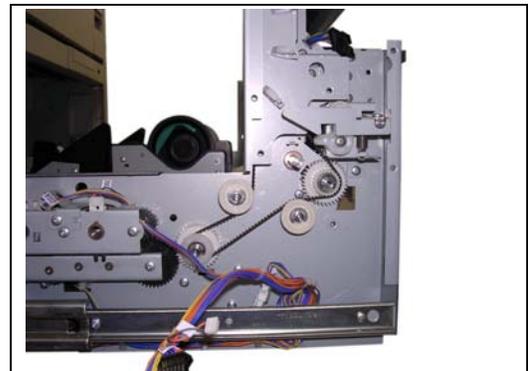
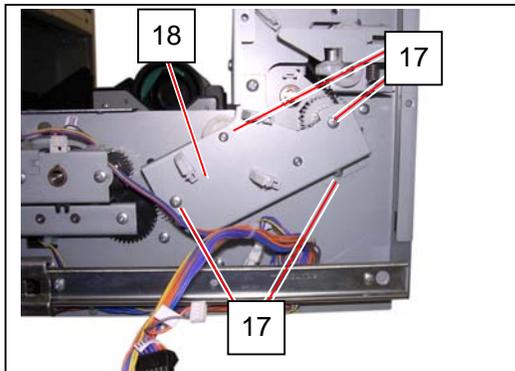
6. Open 6 wire saddles (12) and release 3 connectors (13) to release the harness (14).



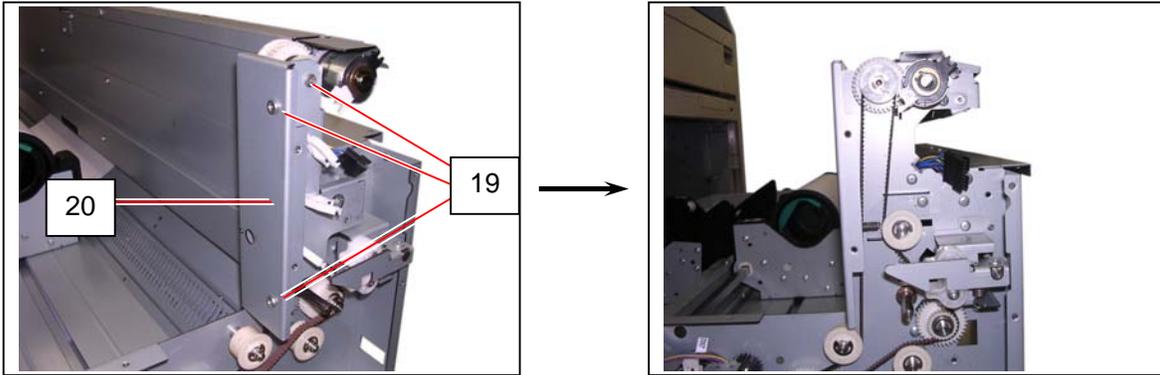
7. Remove Retaining Ring-C (15) to remove Clutch (16: CL4).



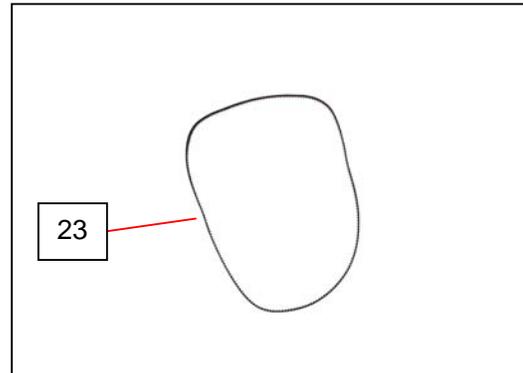
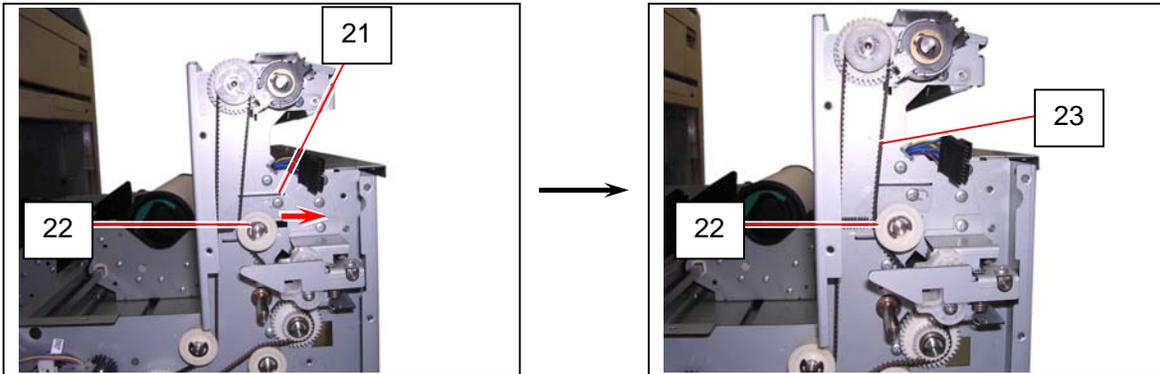
8. Remove 4 screws (17) to remove Bracket 33 (18).



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.

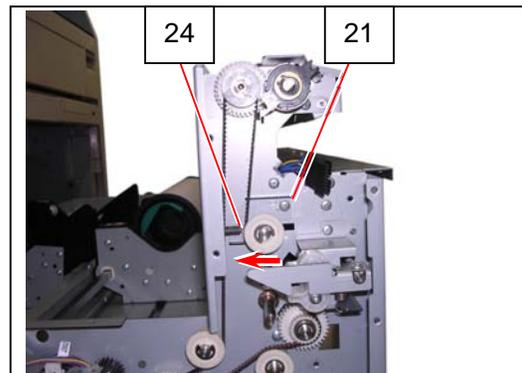


NOTE

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.)

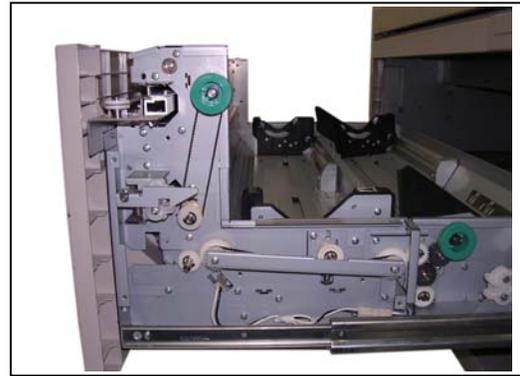
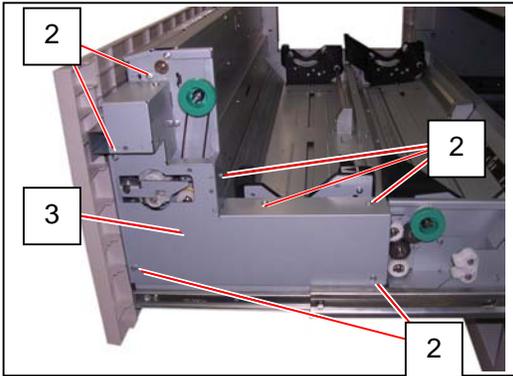


5. 4. 5 Replacement of Timing Belt 453

1. Draw out the Roll Deck (1).

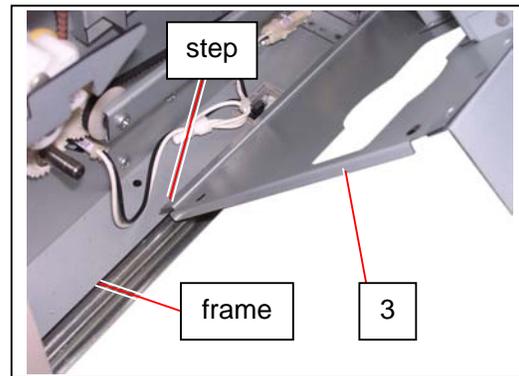


2. Remove 7 screws (2) to remove Cover 22 (3).

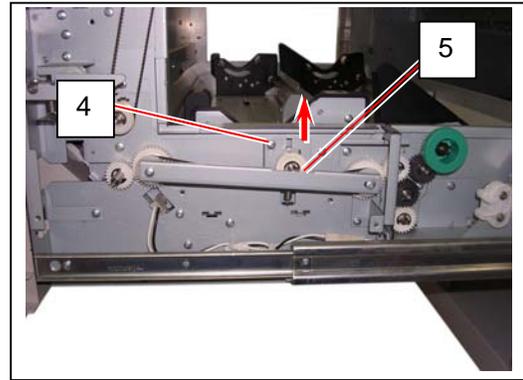


NOTE

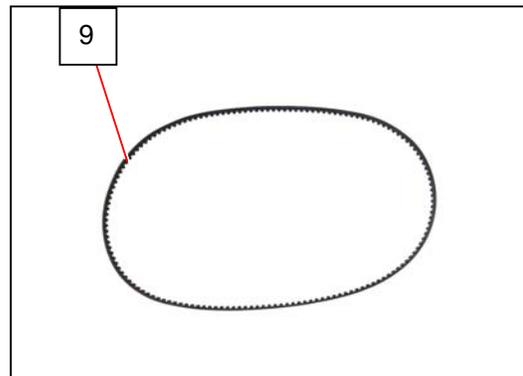
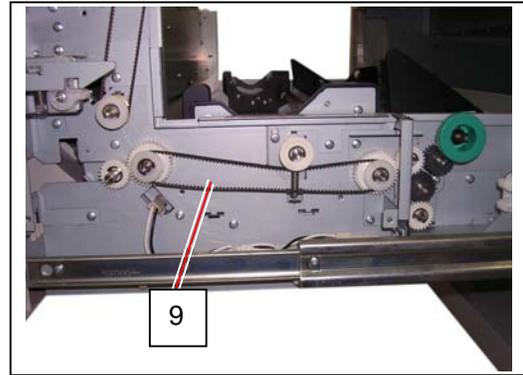
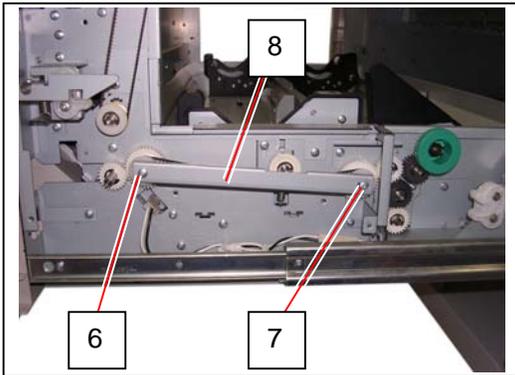
Make sure that the step part on the bottom side of Cover 22 (3) is inside the bottom frame.



- 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.



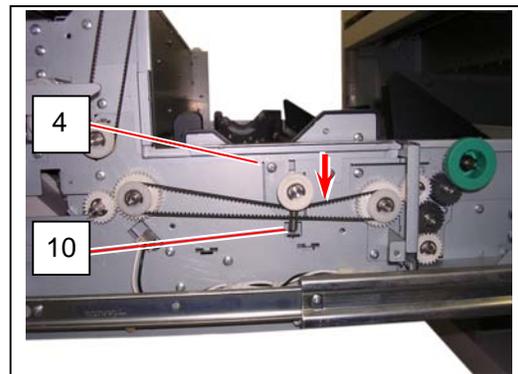
- Remove 1 Bind Head Screw (6) and 1 Pan Head Screw (7) to remove Bracket 12 (8). Replace **Timing Belt 453** (9) with a new one.



NOTE

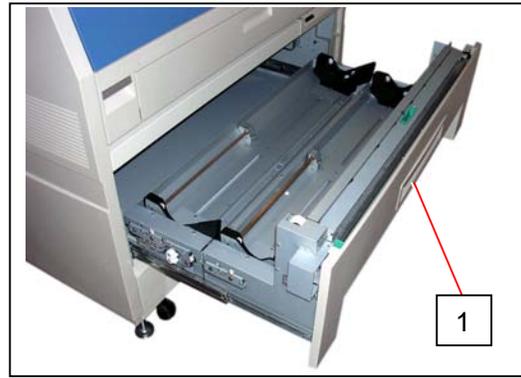
You do not have to adjust the belt tension.

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

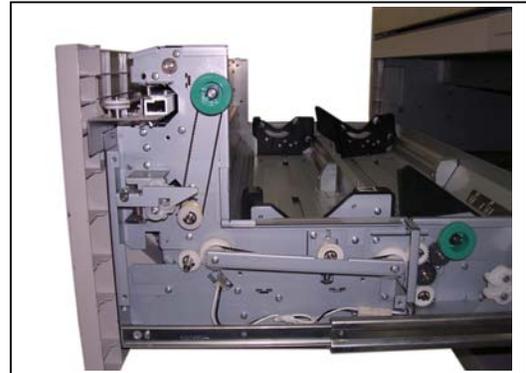
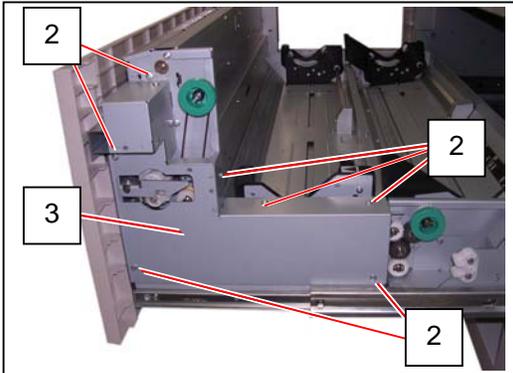


5. 4. 6 Replacement of Timing Belt 330

1. Draw out the Roll Deck (1).

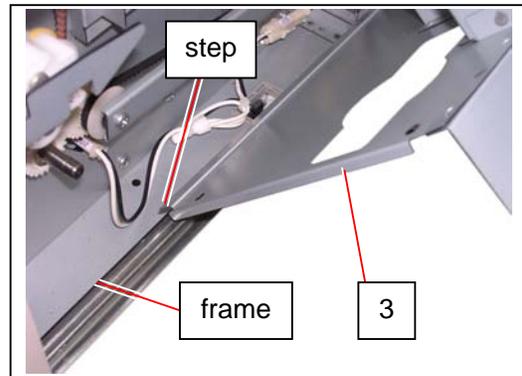


2. Remove 7 screws (2) to remove Cover 22 (3).

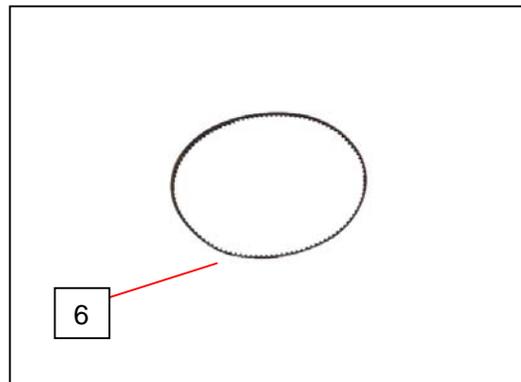
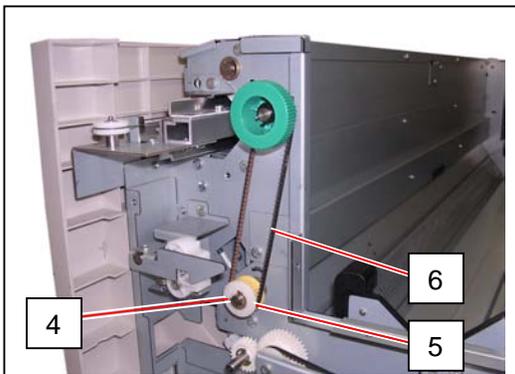


NOTE

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



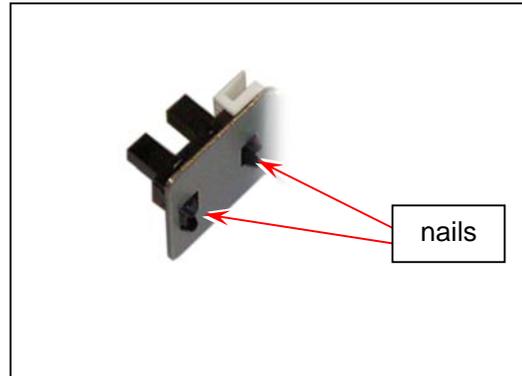
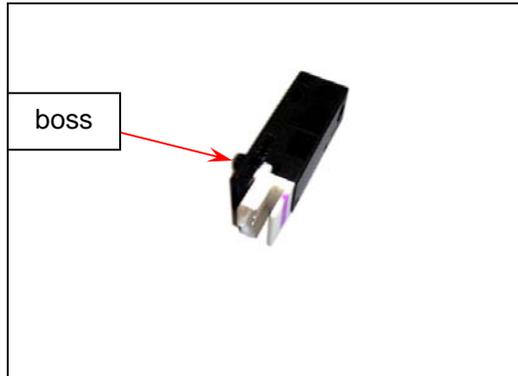
3. Remove Retaining Ring-E (4) to remove Collar (5).
Replace **Timing Belt 330** (6) with a new one.



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.

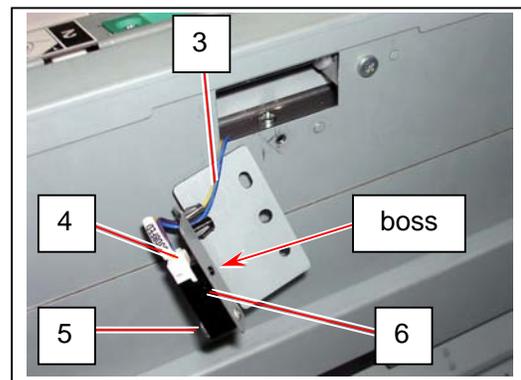
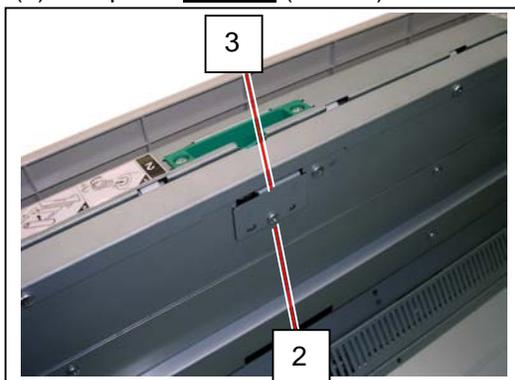


(2) When reassembling, fit positioning bosses on the frame (or the sensor bracket) into the corresponding holes.

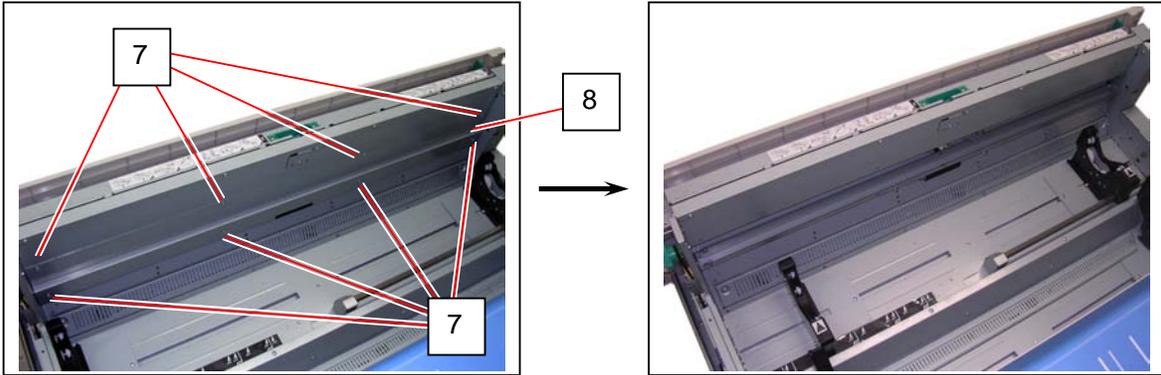
1. Draw out the Roll Deck (1).
Remove a roll media if mounted.



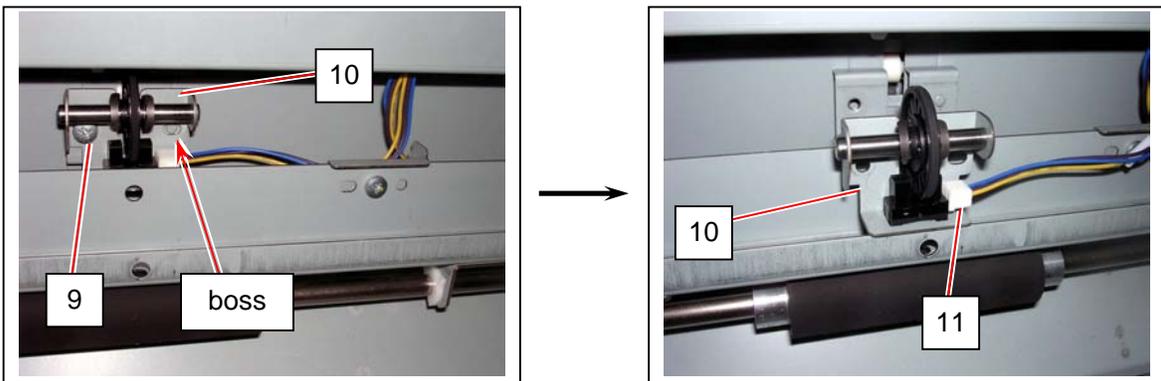
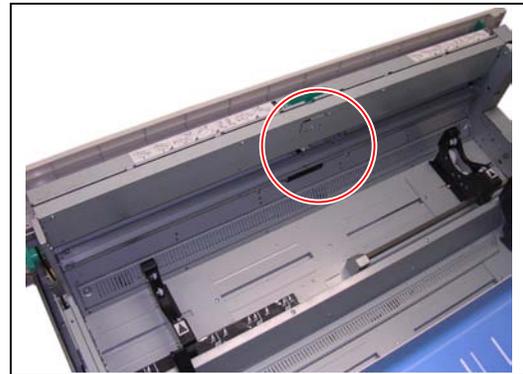
2. Remove 1 screw (2) to release the sensor bracket (3). Remove the connector (4) and 1 screw (5) to replace **Sensor** (3: PH6) with a new one.



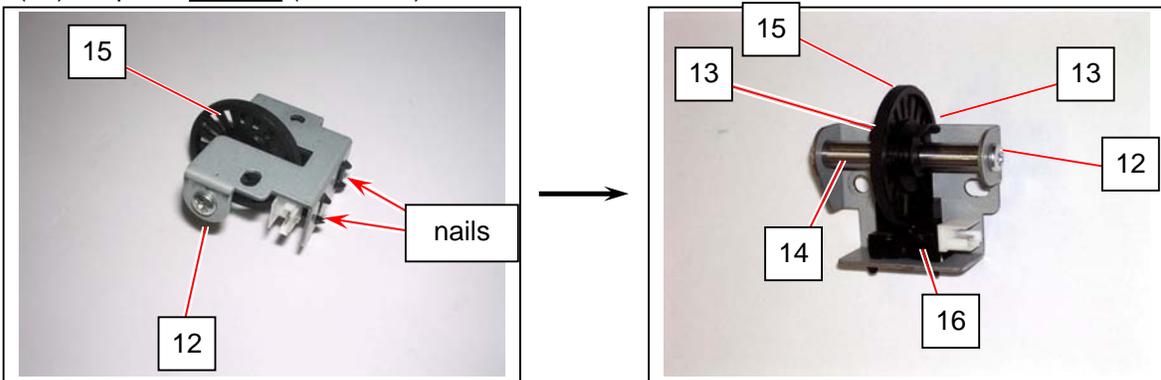
3. Remove 8 screws (7) to remove Plate (8).



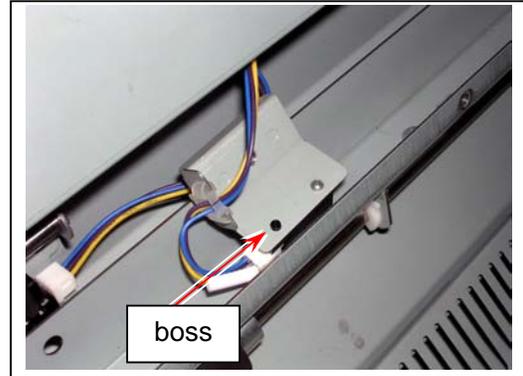
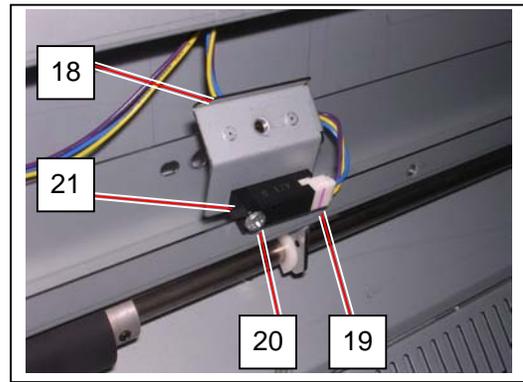
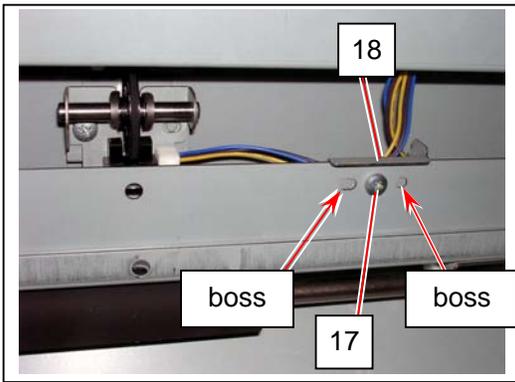
4. Remove 1 screw (9) to release the sensor bracket (10). Remove the connector (11) to remove the bracket (10).



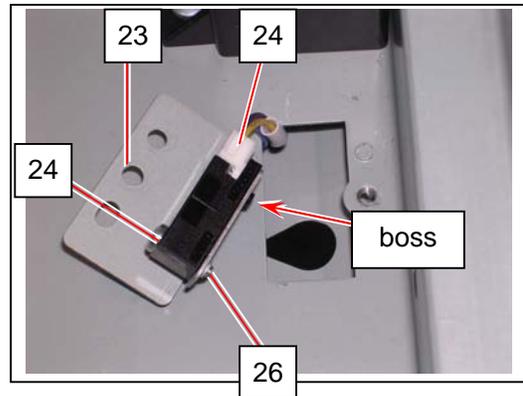
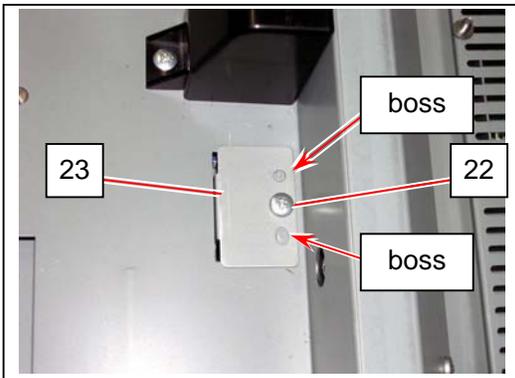
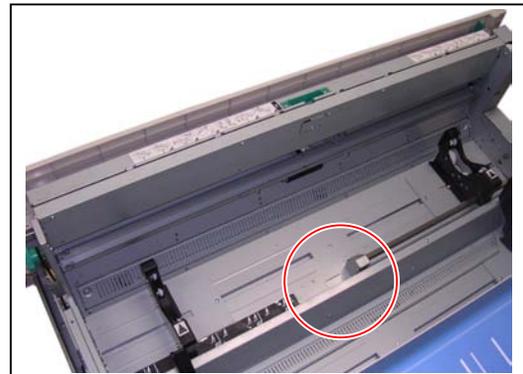
5. Remove 1 screw (12: M3x6) and 2 KL Clips (13) to remove Shaft 4 (14) and Encoder 2 Assy (15). Replace **Sensor** (16: PH12) with a new one.



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.

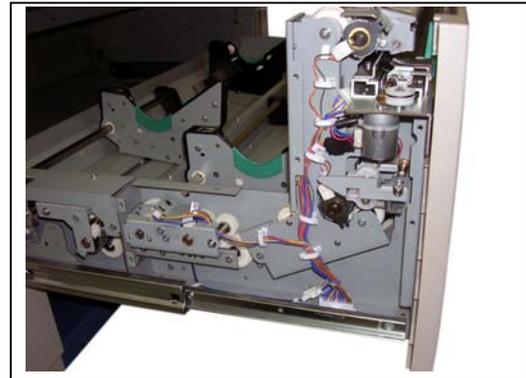
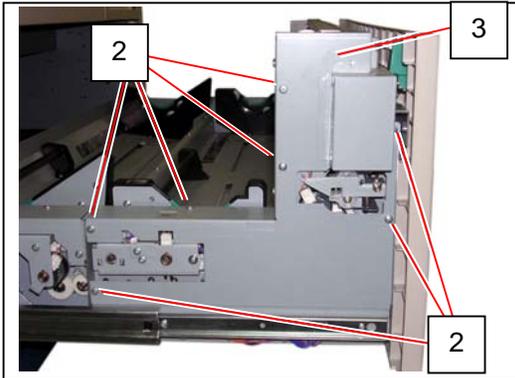


5. 4. 8 Replacement of Sensor (PH8)

1. Draw out the Roll Deck (1).

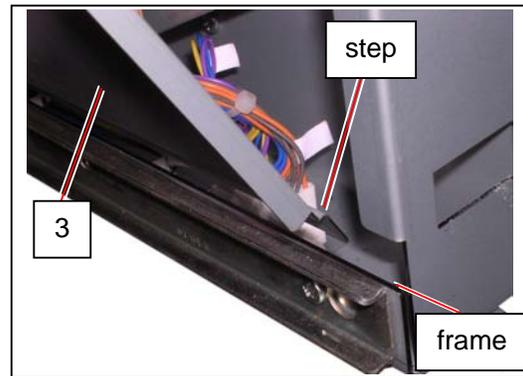


2. Remove 7 screws (2) to remove Cover 14 (3).

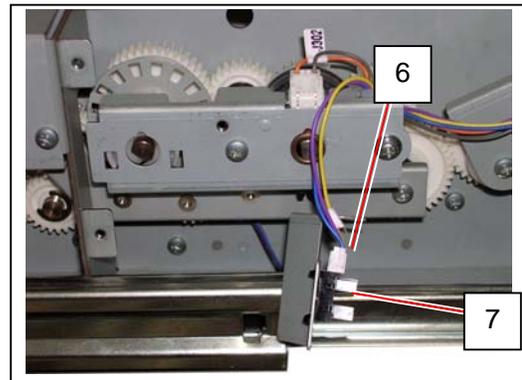
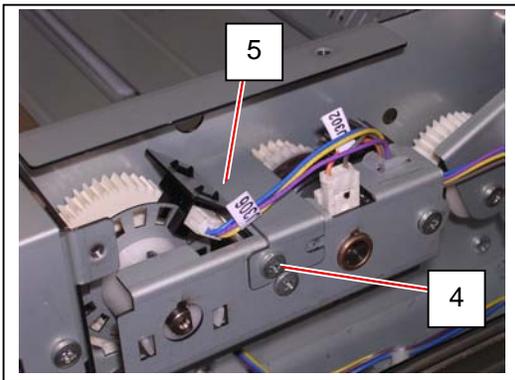


NOTE

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

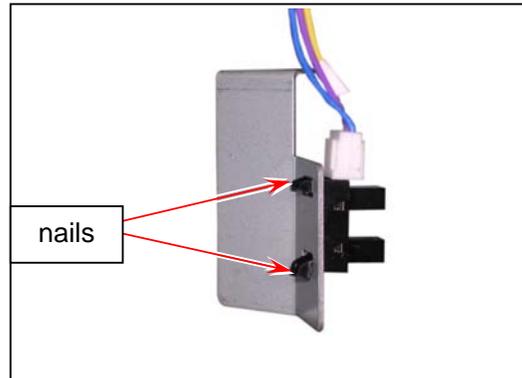


3. Remove 1 screw (4) to release the sensor bracket (5). Remove 1 connector (6) to replace **Sensor** (7: PH8) with a new one.

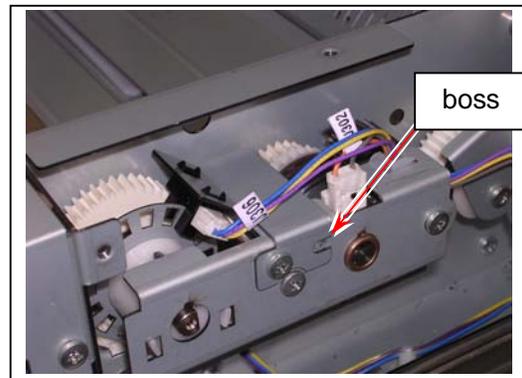


NOTE

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

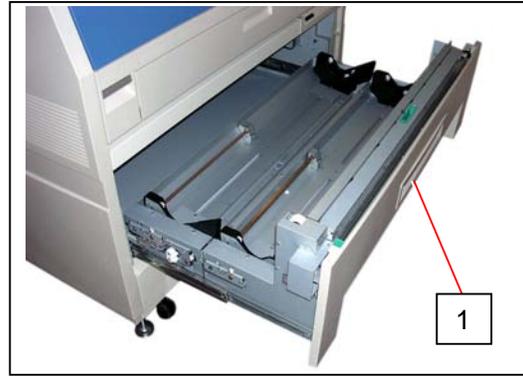


- (2) When reassembling, fit the positioning boss on the frame into the notch on the bracket.

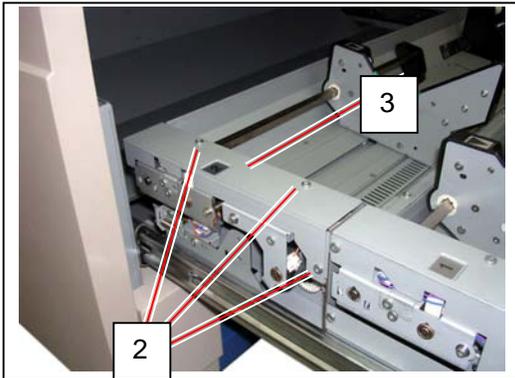


5. 4. 9 Replacement of Sensor (PH10)

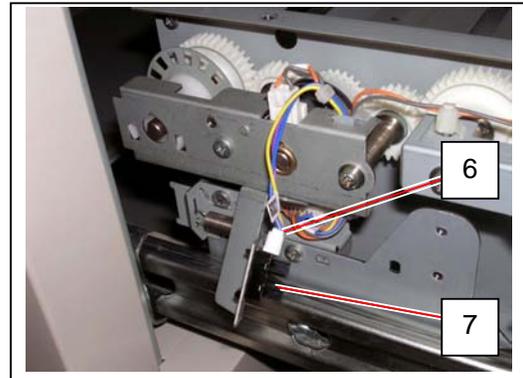
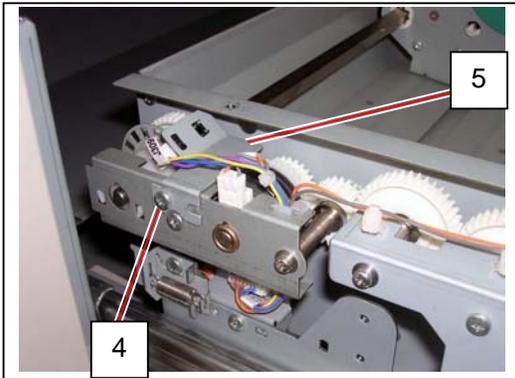
1. Draw out the Roll Deck (1).



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

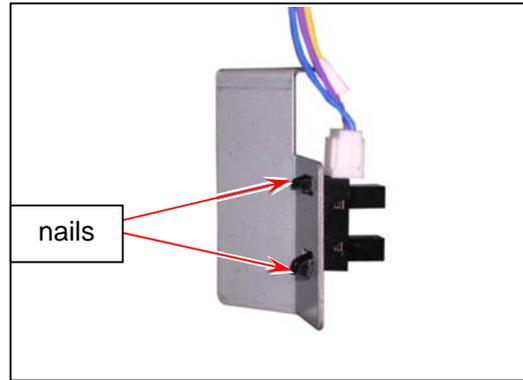


3. Remove 1 screw (4) to release the sensor bracket (5). Remove 1 connector (6) to replace **Sensor** (7: PH10) with a new one.

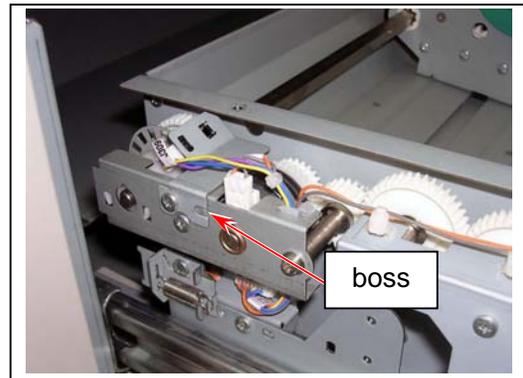


! **NOTE**

(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.

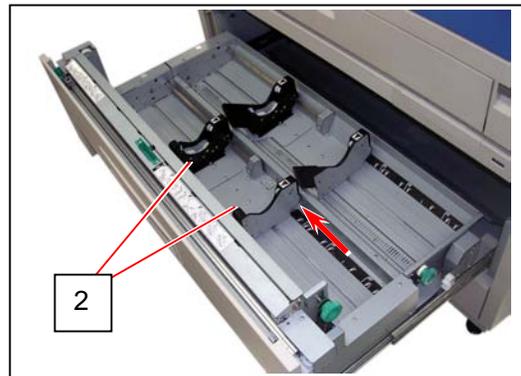


5. 4. 10 Replacement of Dehumidify Heater (Roll 1)

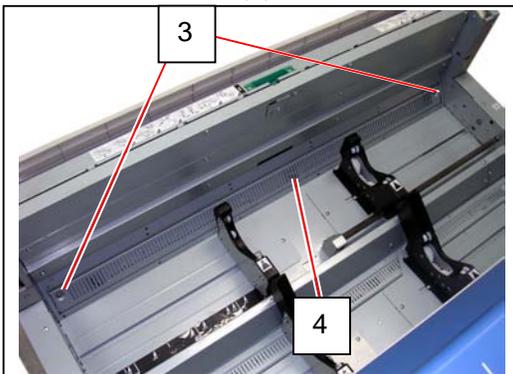
1. Draw out the Roll Deck (1).
Remove a roll media if mounted.



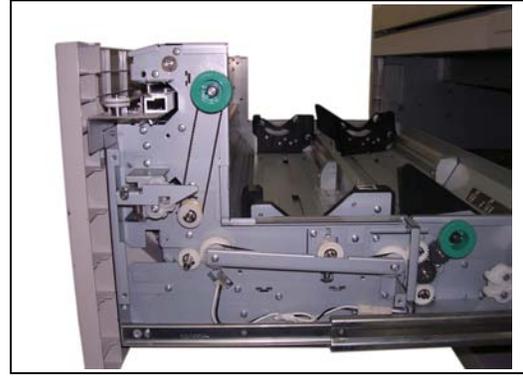
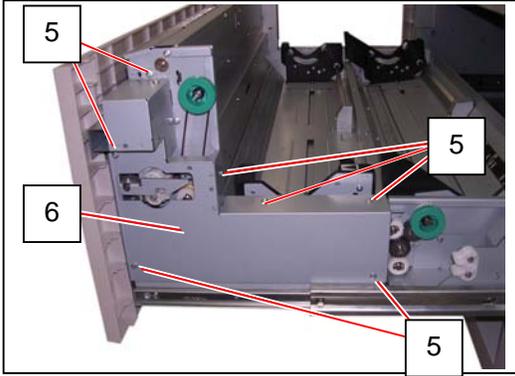
2. Move Slide Guide (2) toward the middle.



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

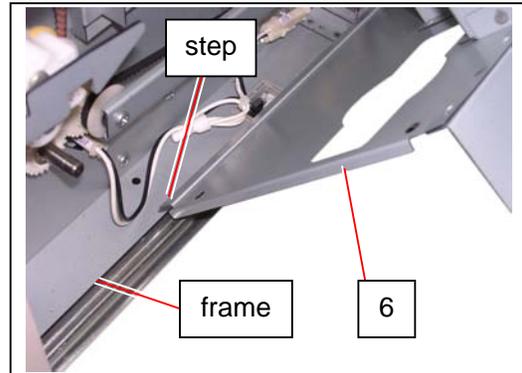


4. Remove 7 screws (5) to remove Cover 22 (6).

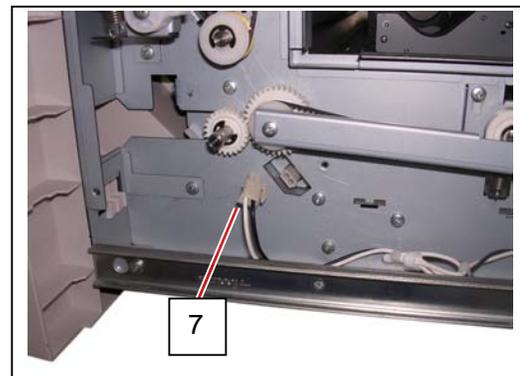


NOTE

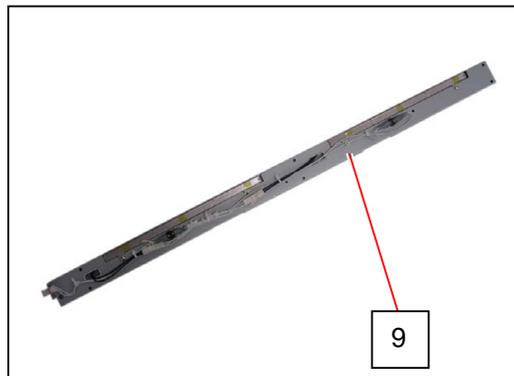
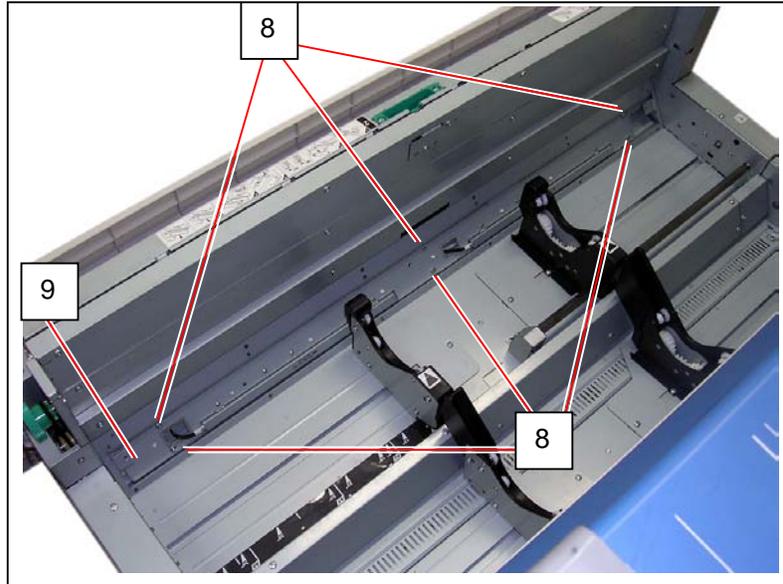
Make sure that the step part on the bottom side of Cover 22 (6) is inside the bottom frame.



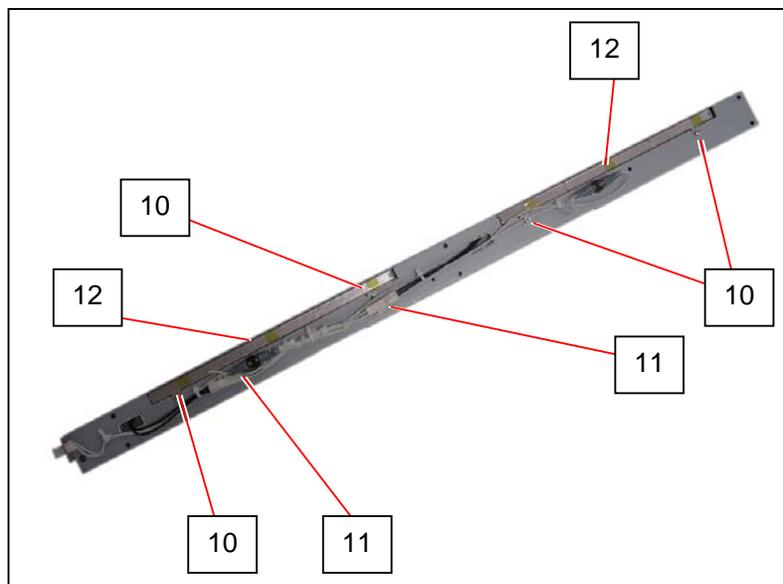
5. Disconnect 1 connector (7).



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



7. Remove 2 screws (10) and 1 connector (11) from each Resistor (12).
Replace **Resistor** with a new one.

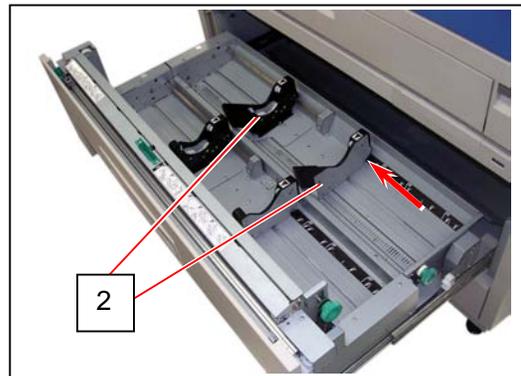


5. 4. 11 Replacement of Dehumidify Heater (Roll 2)

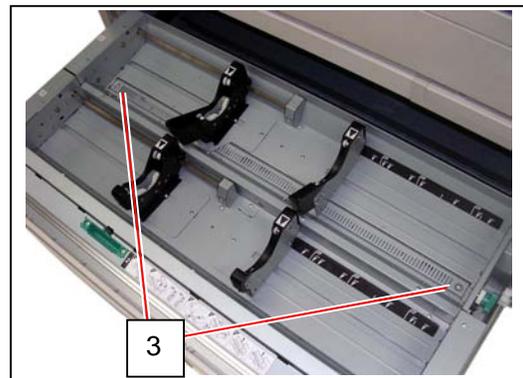
1. Draw out the Roll Deck (1).
Remove a roll media if mounted.



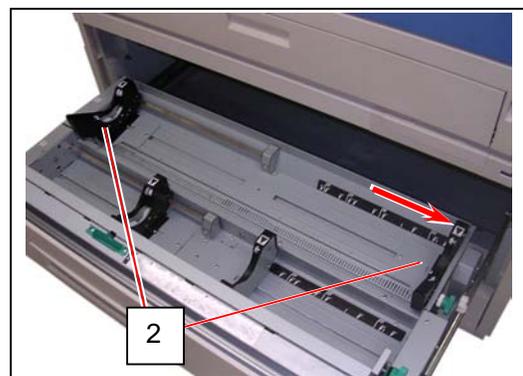
2. Move Slide Guide (2) toward the middle.



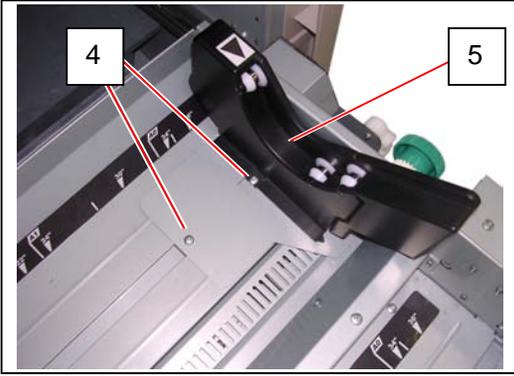
3. Remove 2 screws (3).



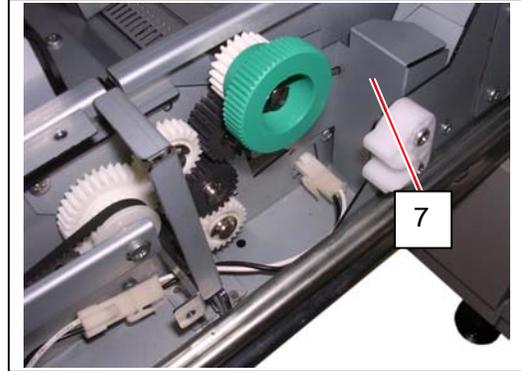
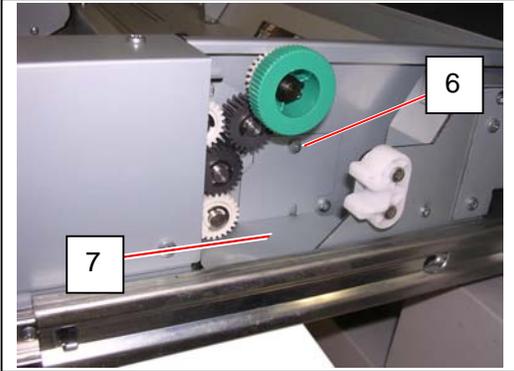
4. Move Slide Guide (2) toward the far end.



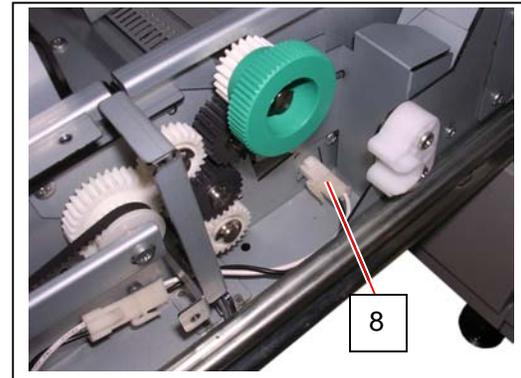
5. Remove 2 screws (4) to remove Slide Guide 2 R Assy (5).



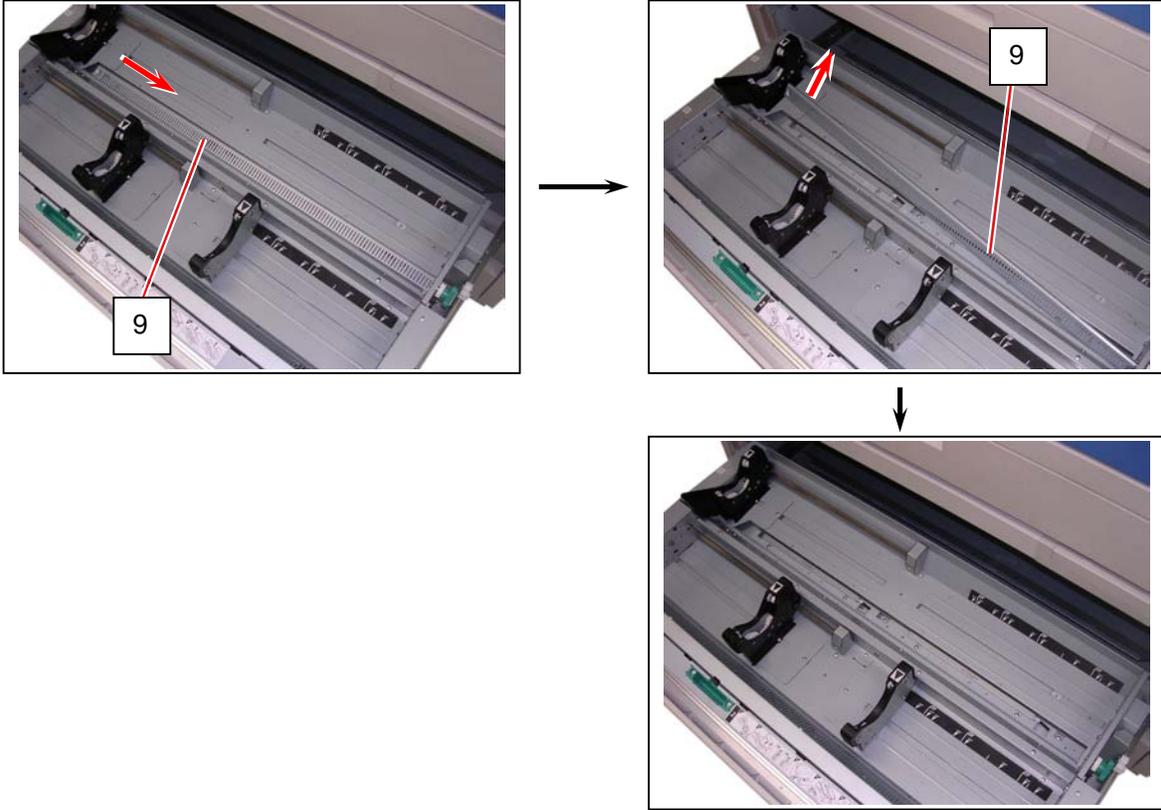
6. Remove 1 screw (6) to move Cover 7 (7).



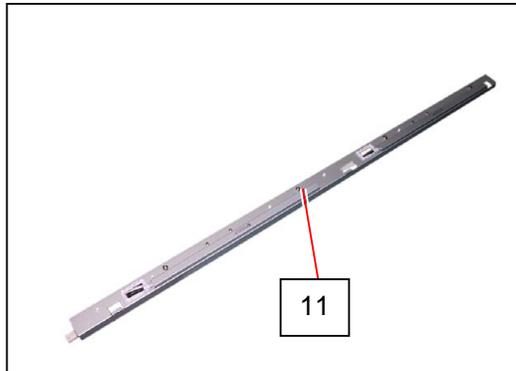
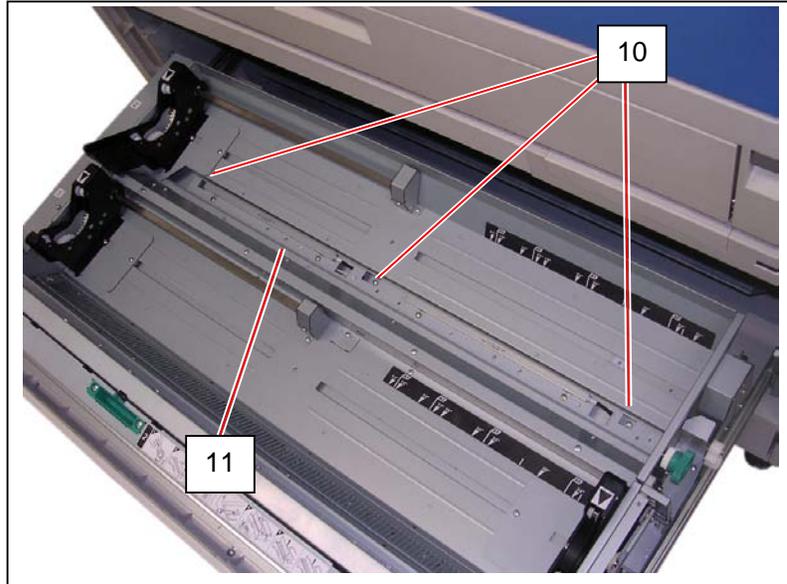
7. Disconnect 1 connector (8).



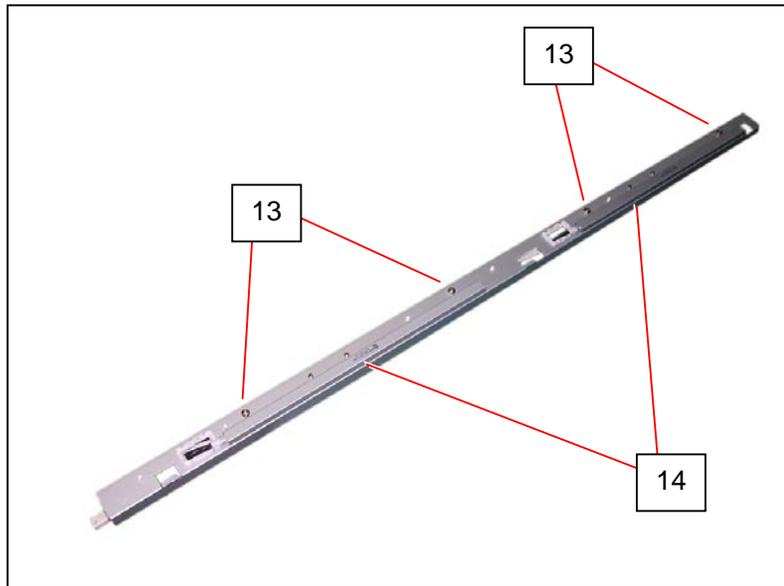
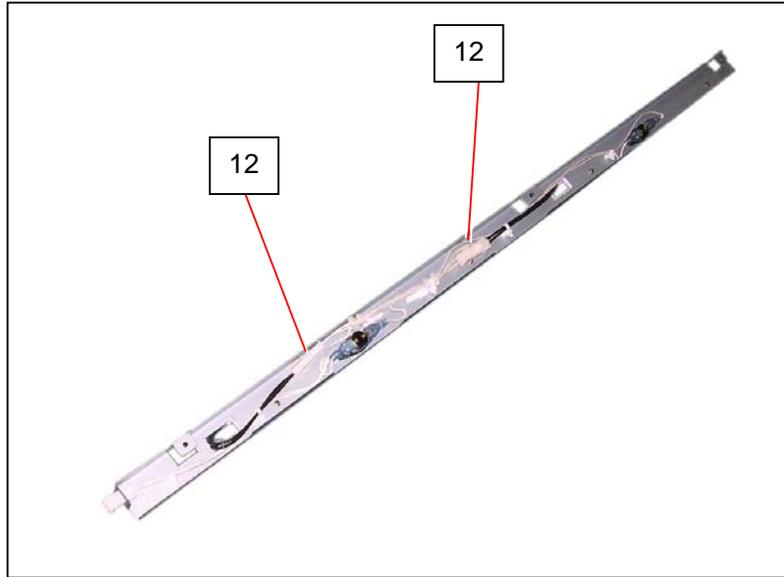
8. Move Cover 4 (9) to the arrow direction to remove it.



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** (14) with a new one.



5. 4.12 Installation of Dehumidify Heater

(Option for US model)

5. 4. 12. 1 Installation of US1 Dehumidify Kit (P/N: Z168080120)

1. Confirm the following parts are included in the kit.

NOTE

- (1) US1 Dehumidify Kit consists of two large packages.
Package A contains the parts listed on this page, including Setup Procedure (this leaflet).
Package B contains the parts listed on the next page, including electrical components.

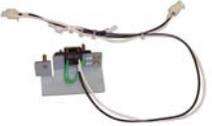
The setup procedure explains that you will install components of Package B first (step 5 to 37) and Package A next (step 38 and after).

- (2) Machines in some pictures may partly vary from the actual one.

(Package A)

Item	Number of article	Item	Number of article
Cover 24 Assy 	1	Cover 23 	1
Cover 12 	1	Band ---	1
Cover 13 	1	Bind Head Screw (M4x6) 2 for Cover 24 Assy 3 for Cover 12 & Cover 13 4 for Cover 23	9
Setup Procedure (this leaflet)	1	---	-

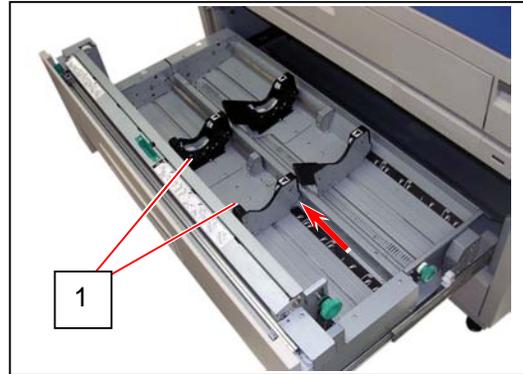
(Package B)

Item	Number of article	Item	Number of article
Roll 1 Heater Case 	1	Switch Label Label 	1 1
Bush 	2	Switch 	1
Snap Band 	5	Bracket Connector 2 Assy 	1
Bracket 21 Assy 	1	Cover 3 Assy 	1
Cover 2 Assy 	1	Bind Head Screw (M4x6) 2 for Bracket 21 Assy 2 for Bracket Connector 2 Assy 6 for Cover 3 Assy 6 for Cover 2 Assy 5 for Cover Assy Tooth Washer Screw for Roll 1 Heater Case	21 6
Cover Assy 	1	Bind Screw (M4x6, Bs+Ni) Tooth Washer  for ground wires	2 2

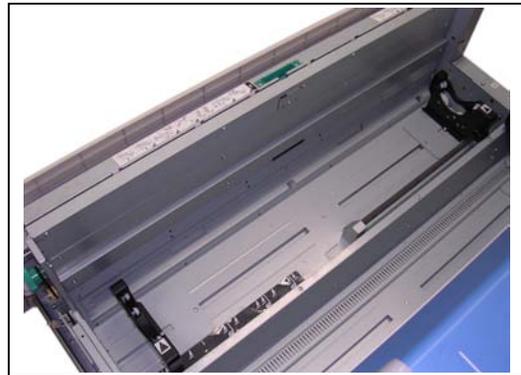
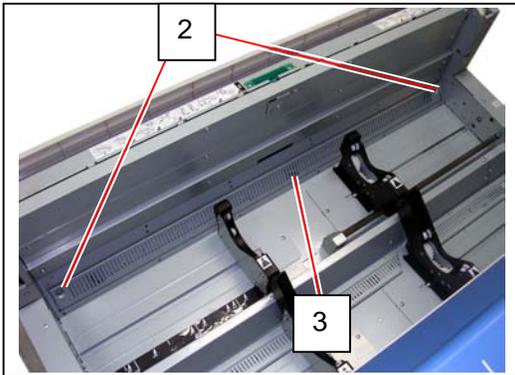
2. Draw out Roll Deck.
Remove a roll media if mounted.



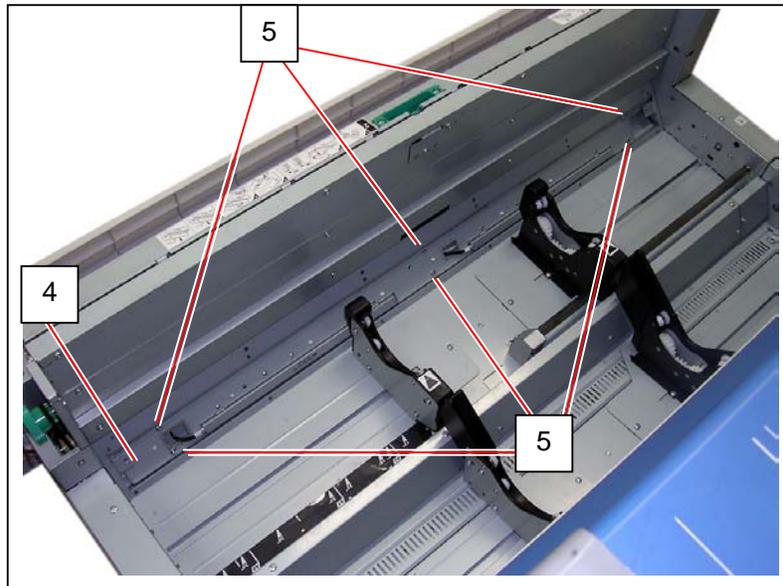
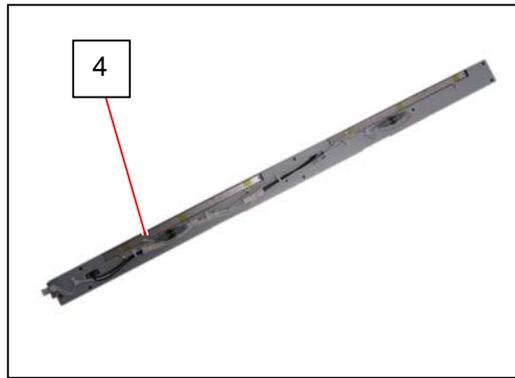
3. Move Slide Guide (1) toward the middle.



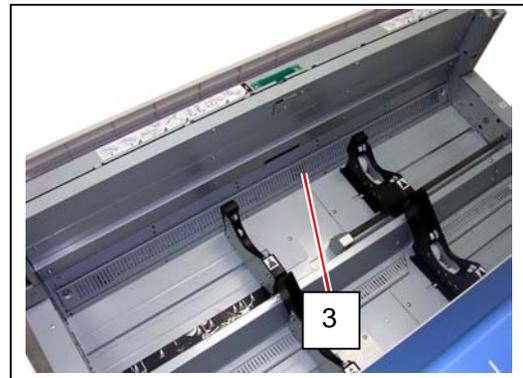
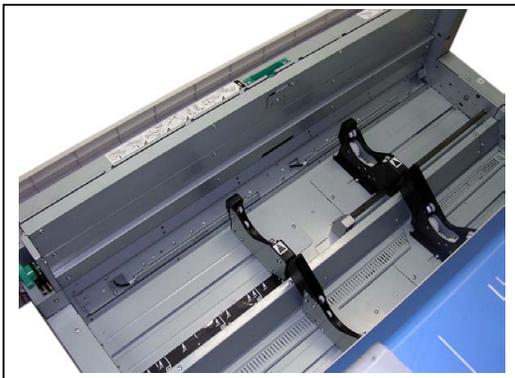
4. Remove 2 screws (2) to remove Cover 15 (3).



5. Install **Roll 1 Heater Case** (4) to Roll Deck with 6 **Tooth Washer Screws** (5).



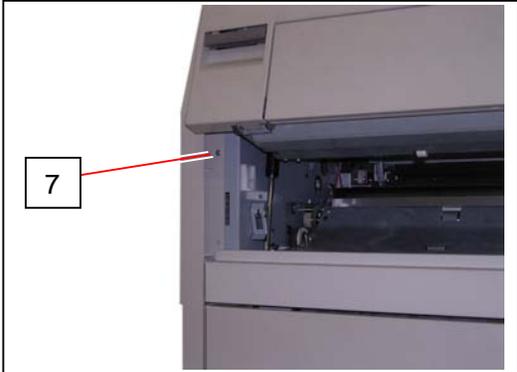
6. Replace Cover 15 (3).



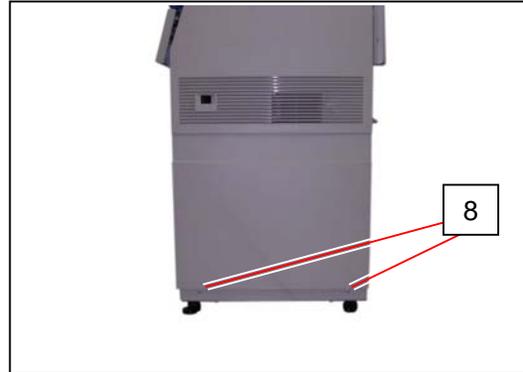
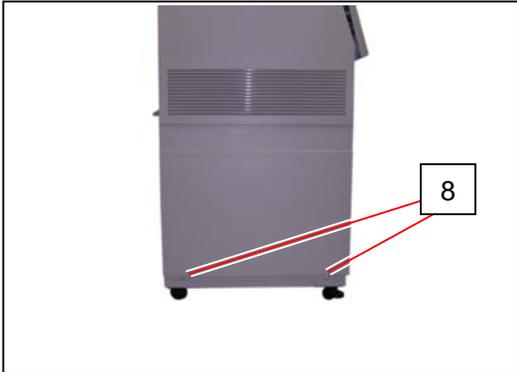
7. Pull up the Lever 2 (6) to open Engine Unit.



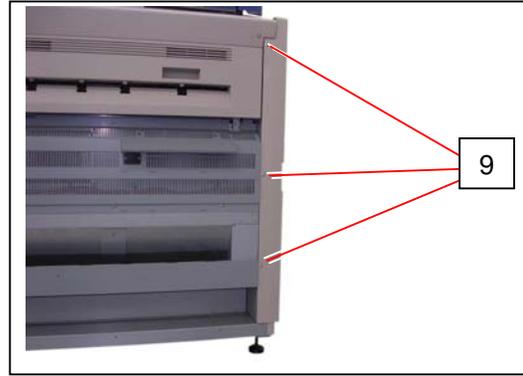
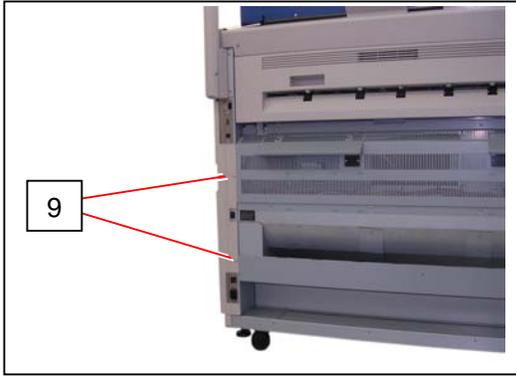
8. Remove 2 screws (7) at both sides.



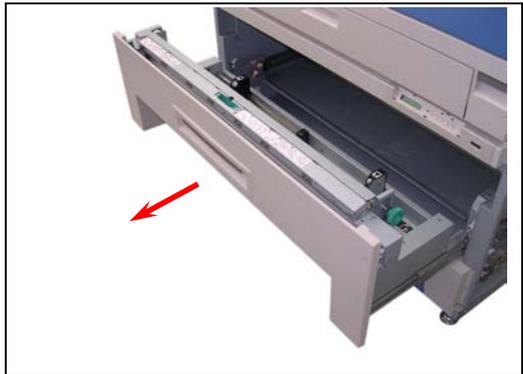
9. Remove 4 screws (8) at both sides.



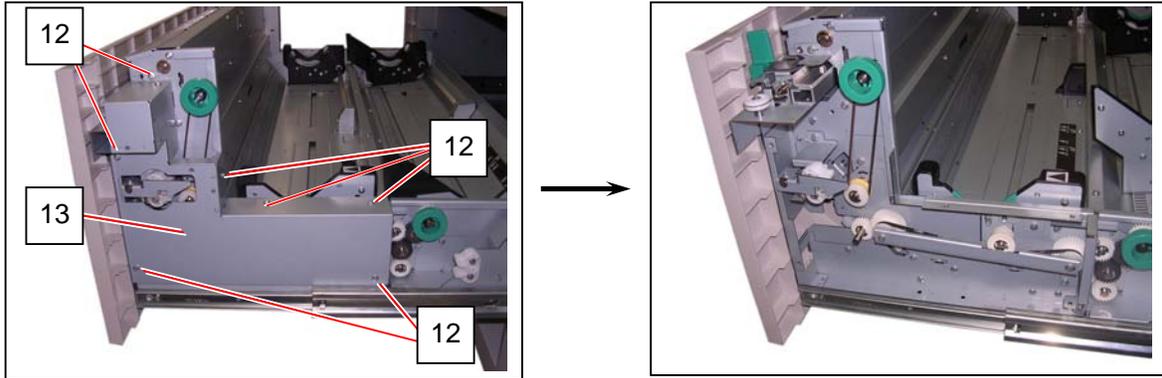
10. Remove 5 screws (9) at both sides to remove Cover 2 (10) and Cover 3 (11).
(2 pieces on the right and 3 pieces on the left)



11. Close Engine Unit and draw out Roll Deck.

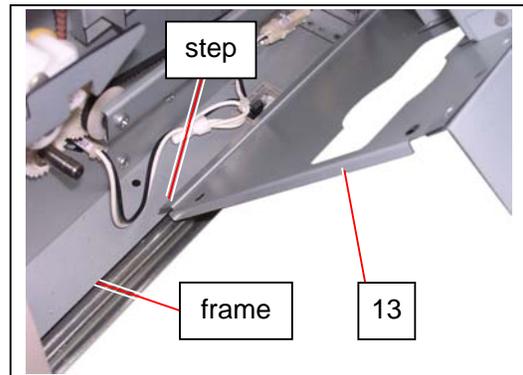


12. Remove 7 screws (12) to remove Cover 22 (13).

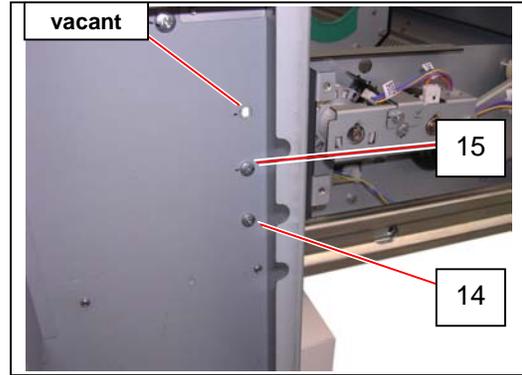
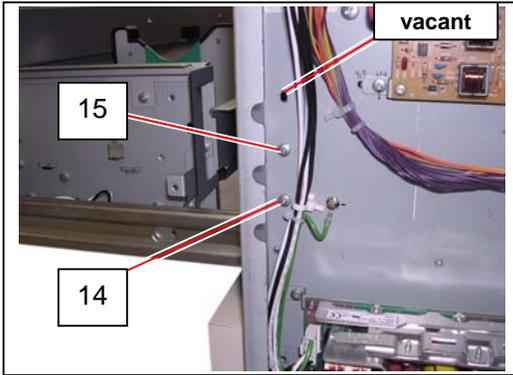


⚠ NOTE

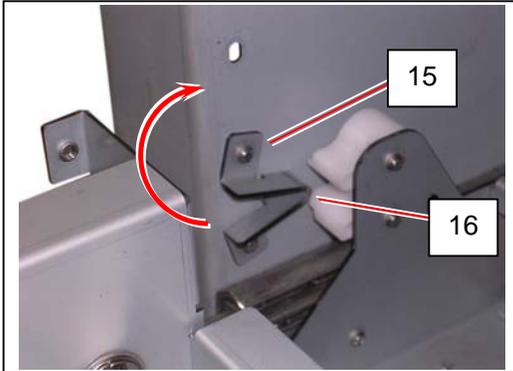
Make sure that the step part on the bottom side of Cover 22 (13) is inside the bottom frame.



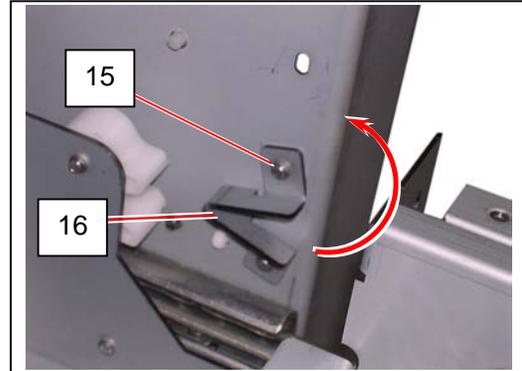
13. Remove 1 screw (14) and loosen 1 screw (15) on each side.



14. Turn Bracket 26 (16) on the screw (15) in a 180 degree arc like the arrow direction.



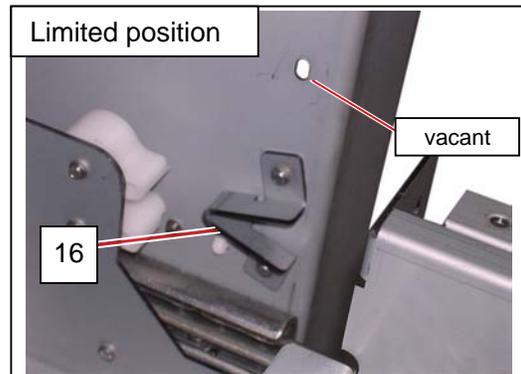
Left



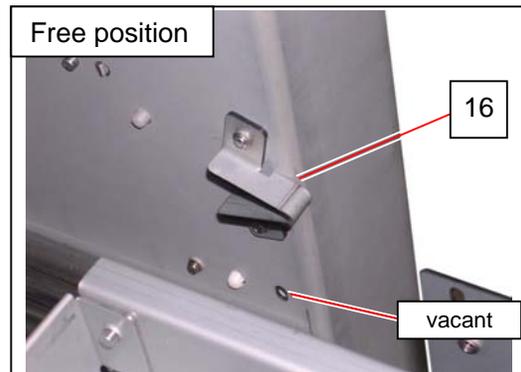
Right

NOTE

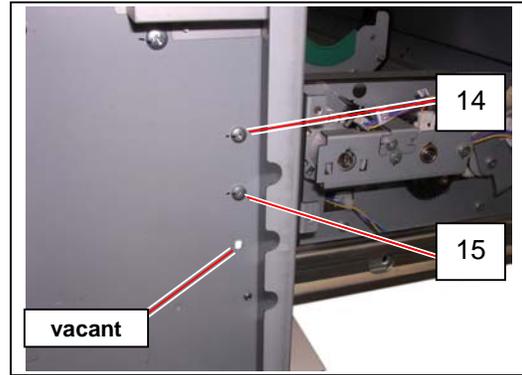
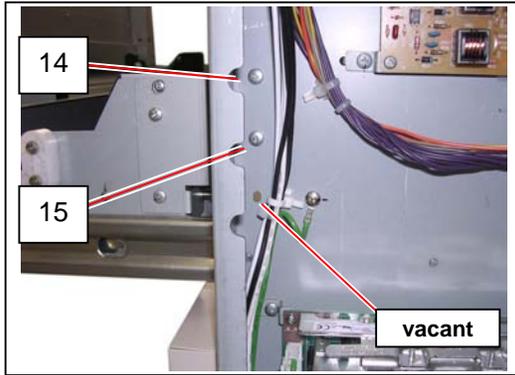
This is "limited position" of Bracket 26 (16). You can not open the Roll Deck fully in this situation because the Stopper restricts to do so.



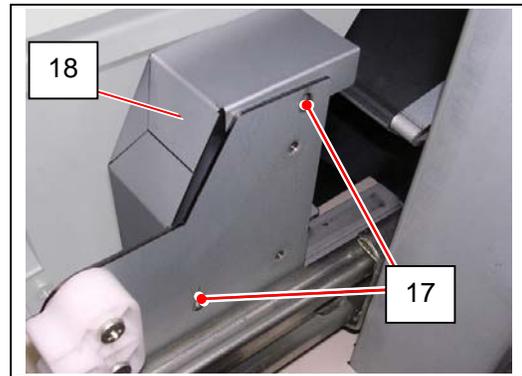
This is "free position" of Bracket 26 (16). You can open the Roll Deck widely in this situation.



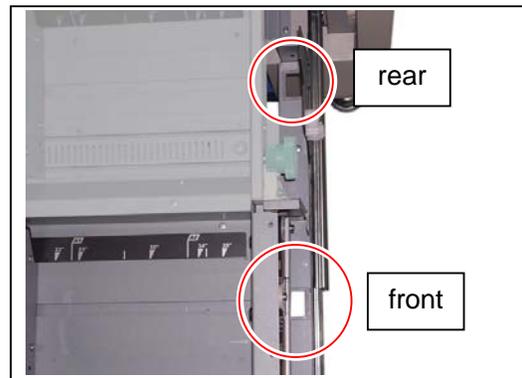
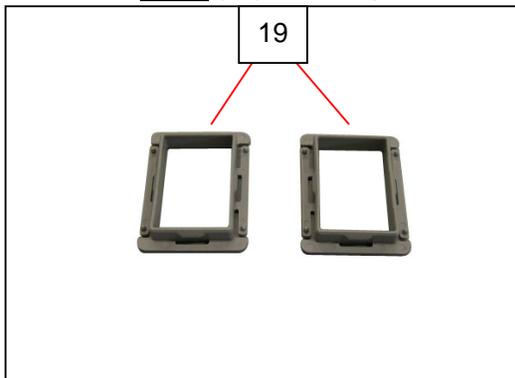
15. Fix Bracket 26 in "free position" with the screws (14) (15).



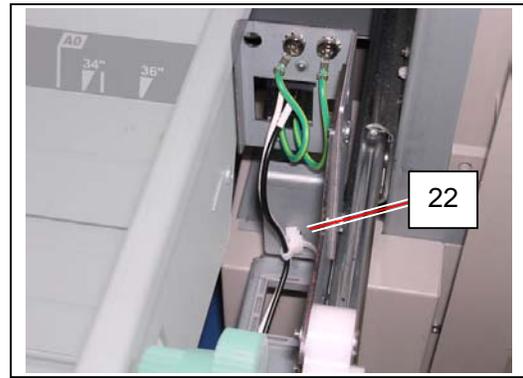
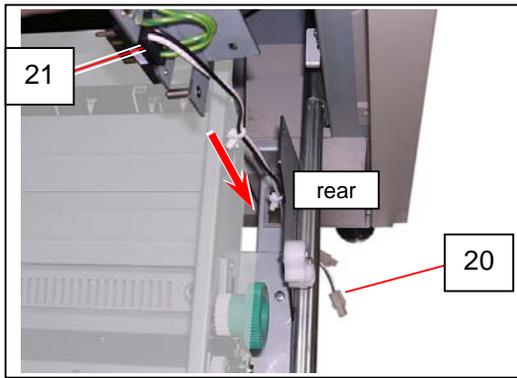
16. Draw out Roll Deck fully.
Remove 2 screws (17) to remove Cover 9 (18).



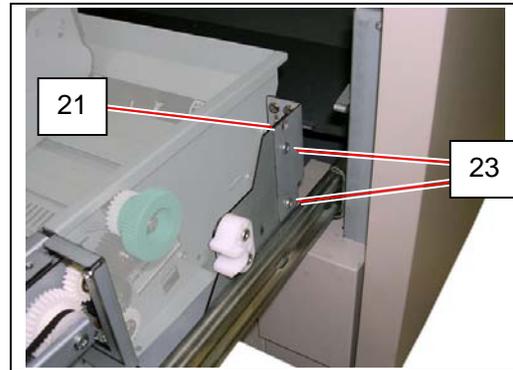
17. Attach 2 **Bush** (19) to the square holes on the right side of Roll Deck.



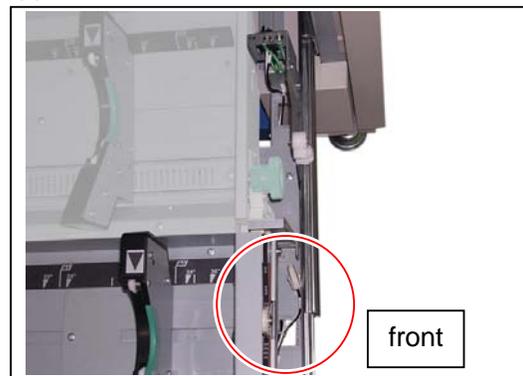
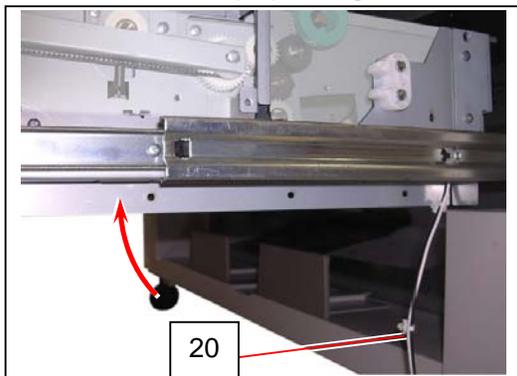
18. Put the harness (20) of **Bracket 21 Assy** (21) through the rear Bush to the bottom side. Attach **Snap Band** (22) and secure the harness (20).



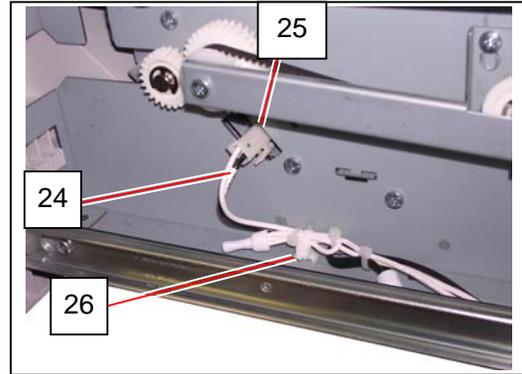
19. Fix Bracket 21 Assy (21) with 2 **Bind Head Screws** (23).



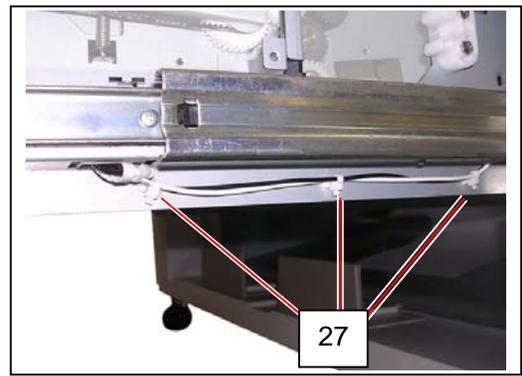
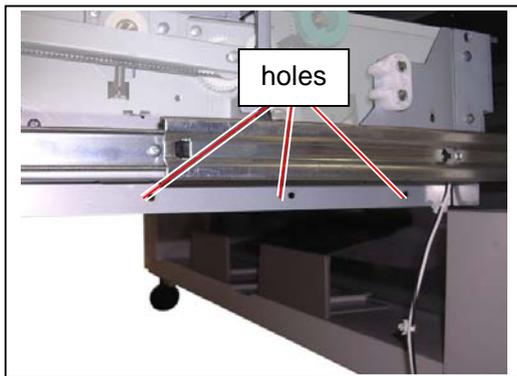
20. Put the harness (20) through the front Bush to the upper side.



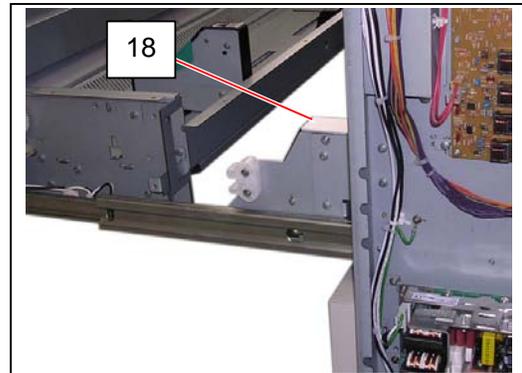
21. Connect the connector (24: J109) to the connector of Roll 1 Heater Case (25).
Secure the harness with **Snap Band** (26).



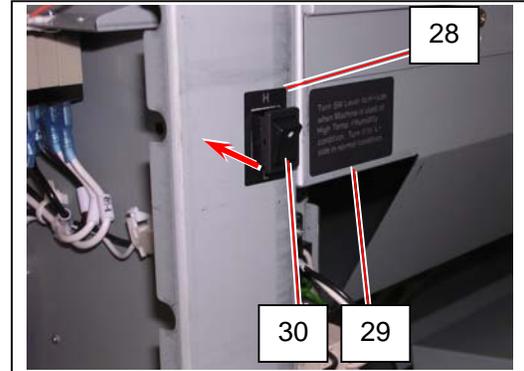
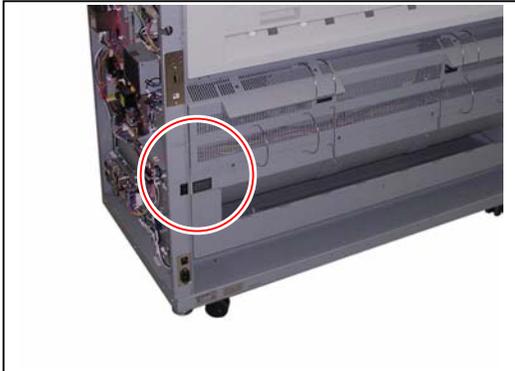
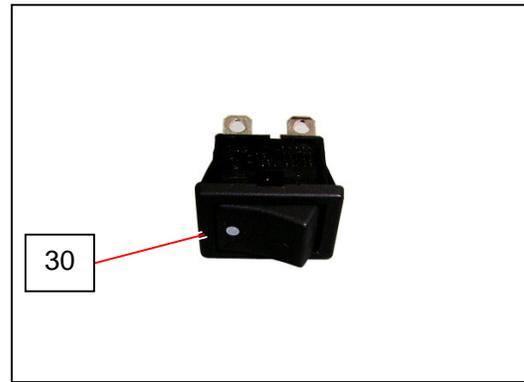
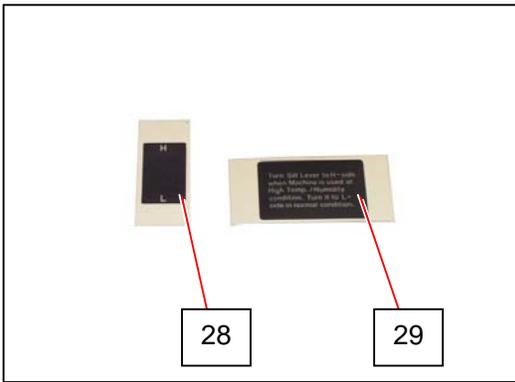
22. Tie the harness firmly with 3 **Snap Bands** (27) at the holes on the side plate. Cut off the excessive band.



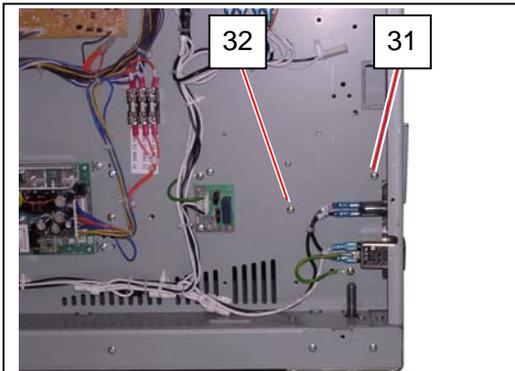
23. Replace Cover 9 (18).



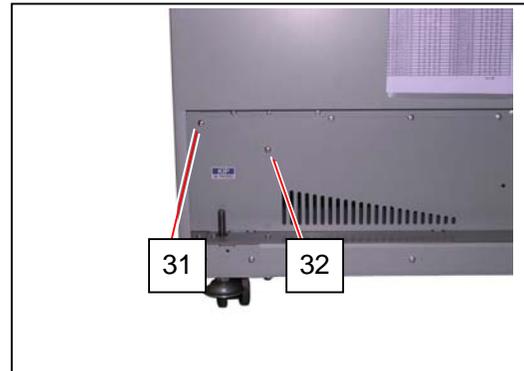
24. Apply **Switch Label** (28) and **Label** (29). Install **Switch** (30) to the square hole from the rear.
 (The white dot should be upside.)



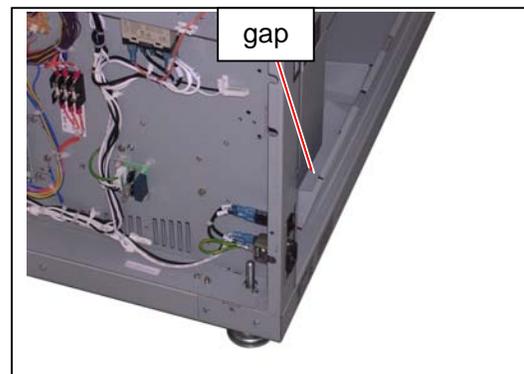
25. Remove 2 screws (31) and loosen 2 screws (32) to release the beam frame on rear bottom.



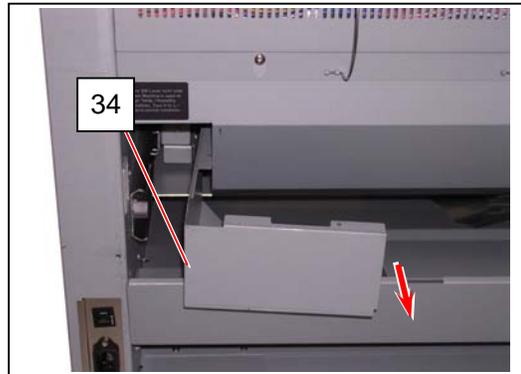
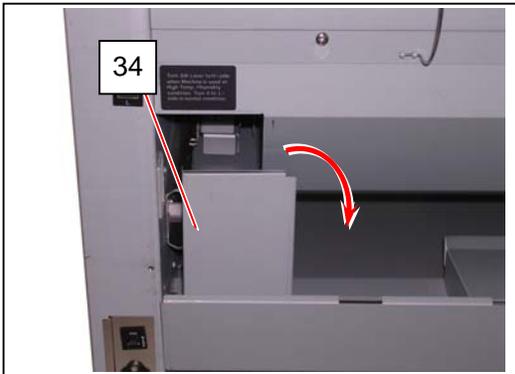
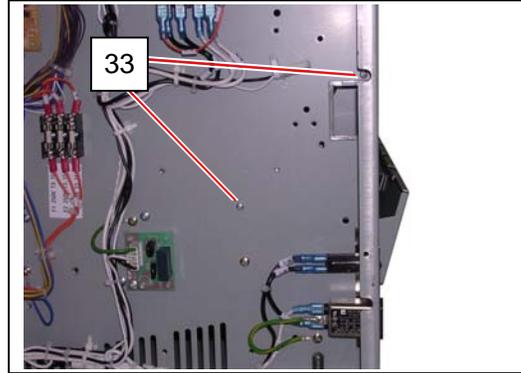
(Right rear bottom)



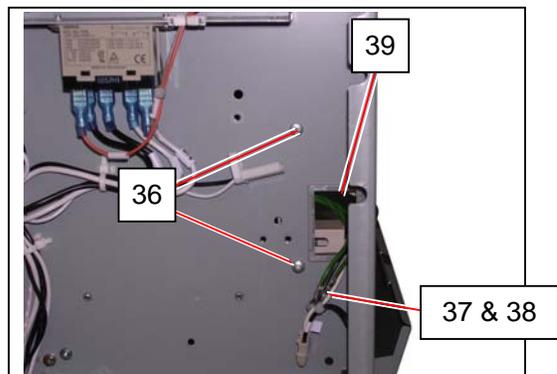
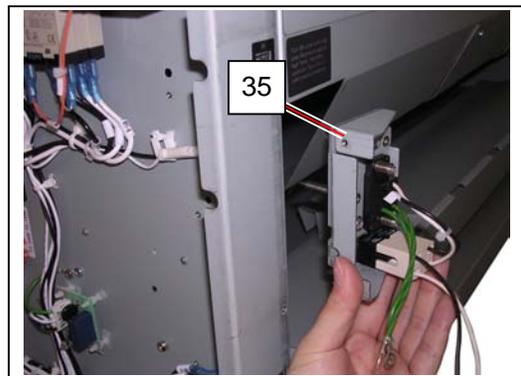
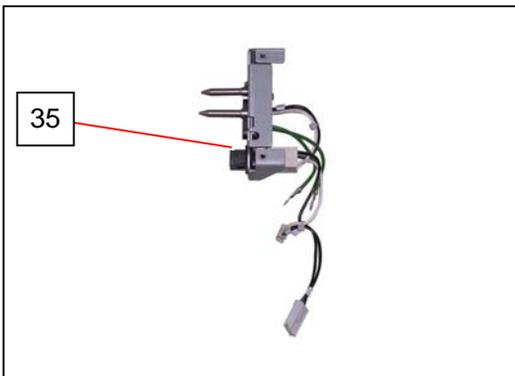
(Left rear bottom)



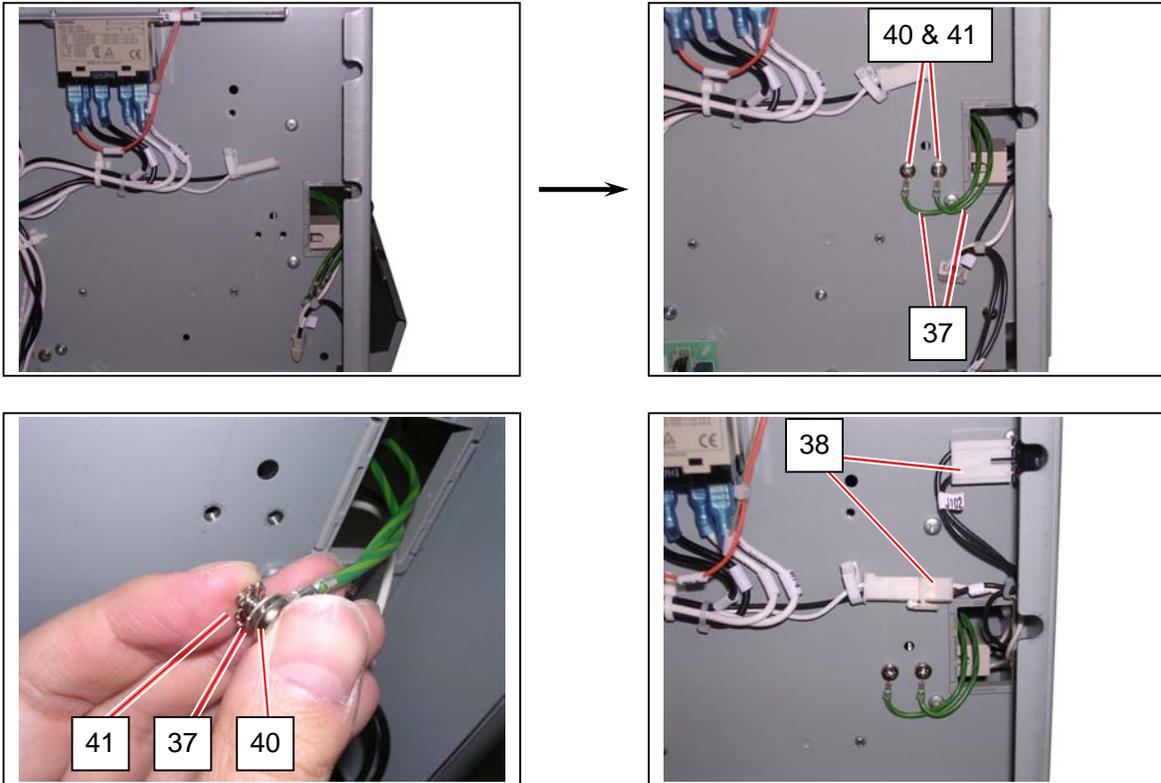
26. Remove 2 screws (33: M3x6) to remove Cover 5 (34).



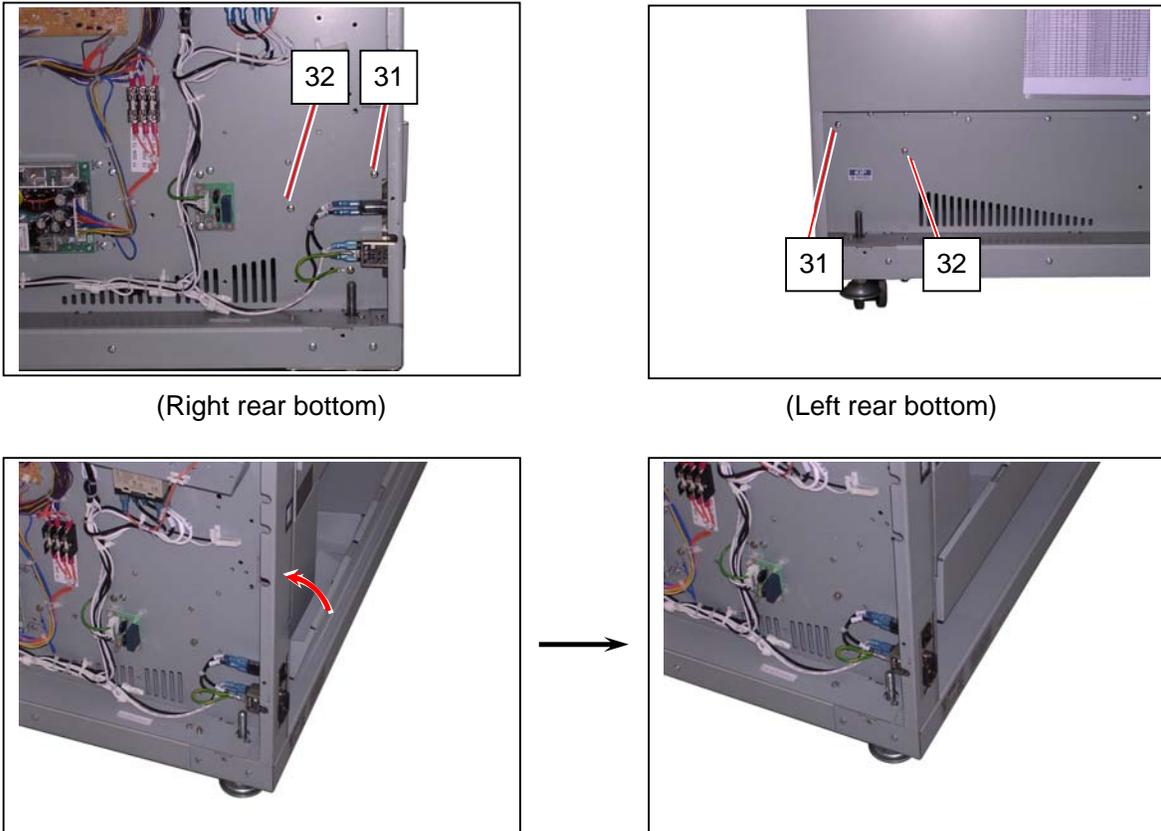
27. Install **Bracket Connector 2 Assy** (35) with 2 **Bind Head Screws** (36).
Route the ground wires (37) and the harnesses (38) into the square hole (39) from inside to outside.



28. Fix the ground wires (37) with **Bind Screw (Bs+Ni)** (40) and **Tooth Washer** (41) on each. Connect the harnesses (38) to the connectors on the frame.



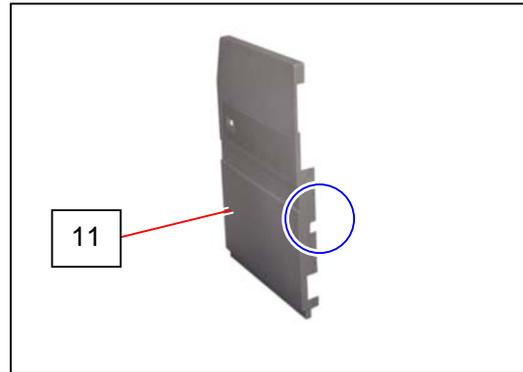
29. Replace the beam frame on rear bottom in position with 4 screws (31) (32).



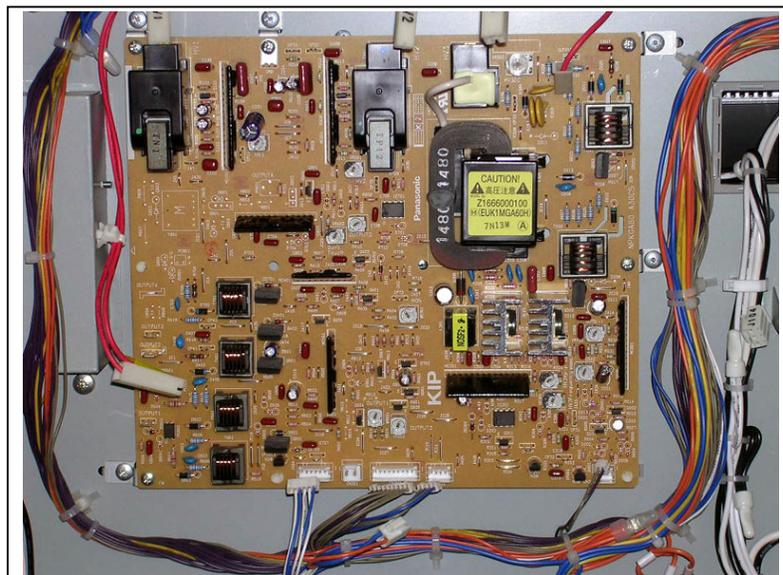
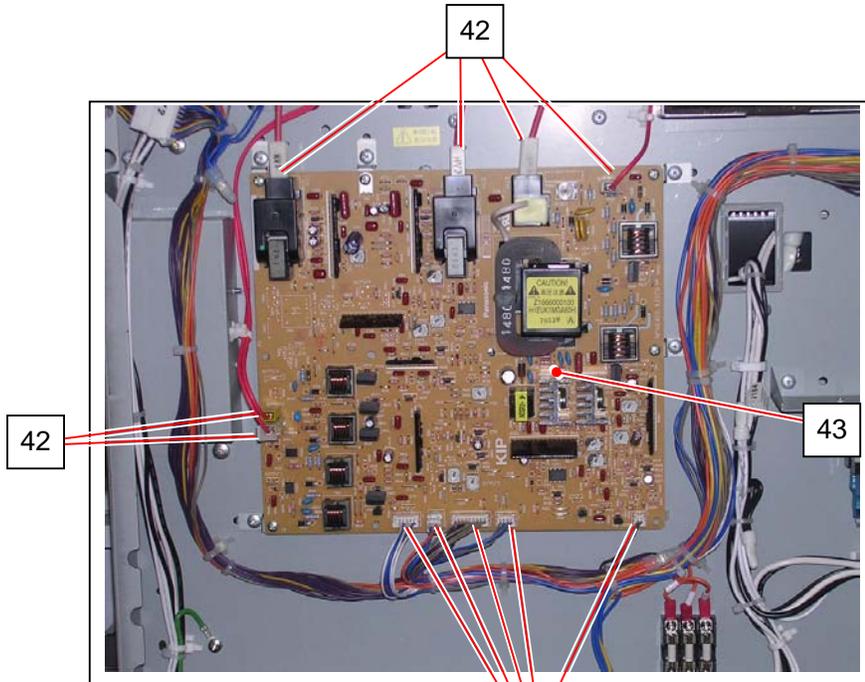
(Right rear bottom)

(Left rear bottom)

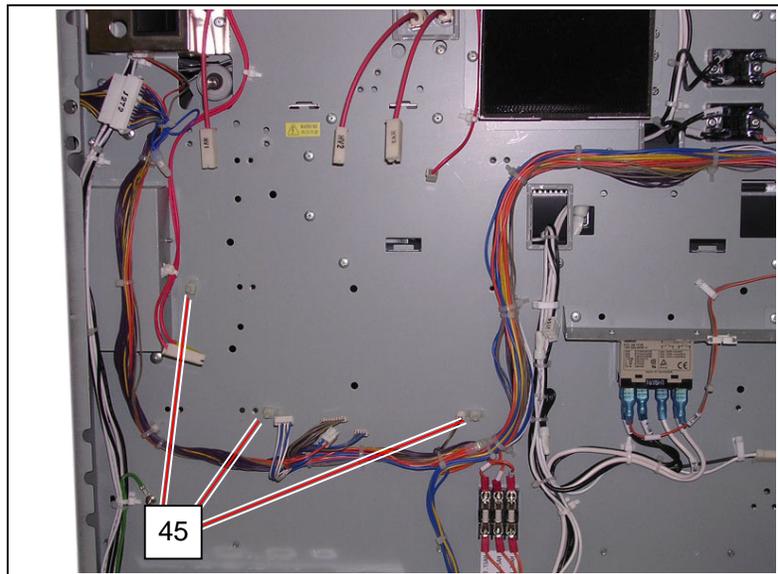
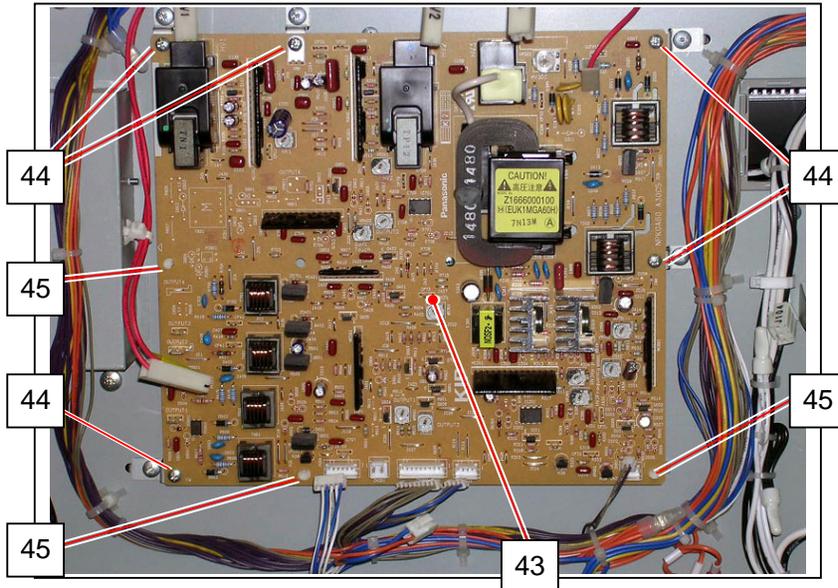
30. Cut off the portion on the rear of Cover 3 (11) for Dehumidify Heater Switch.



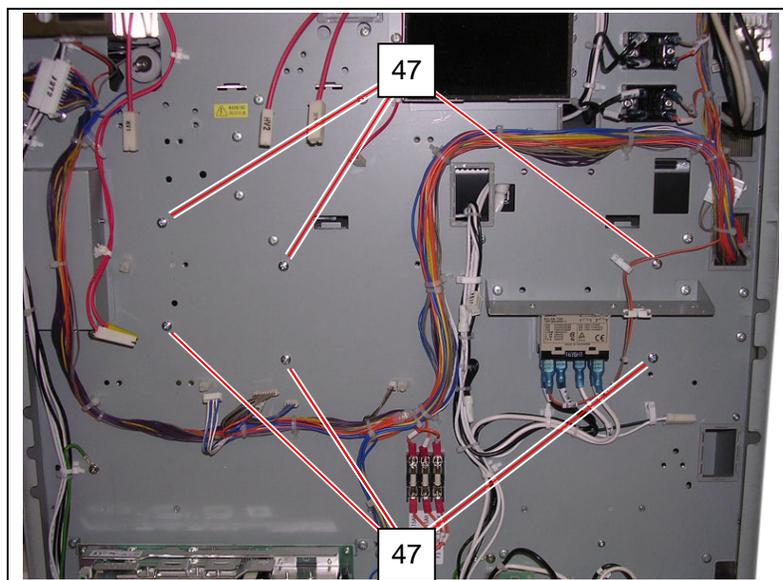
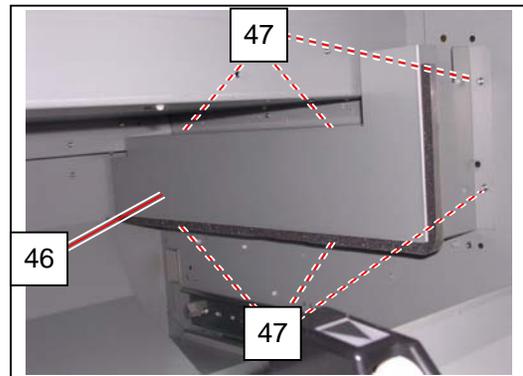
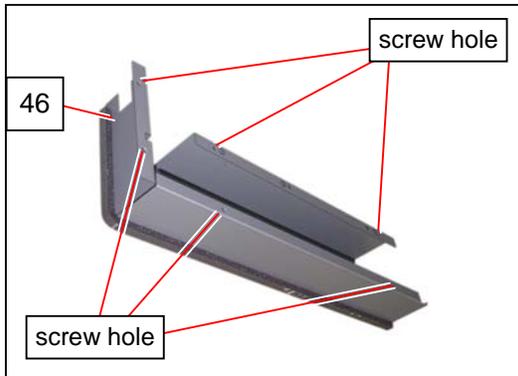
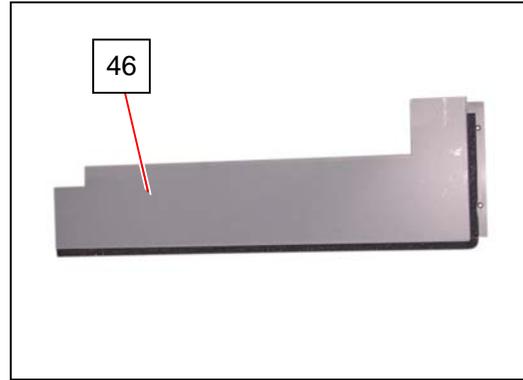
31. Remove all the harnesses (42) from HV Power Supply (43).



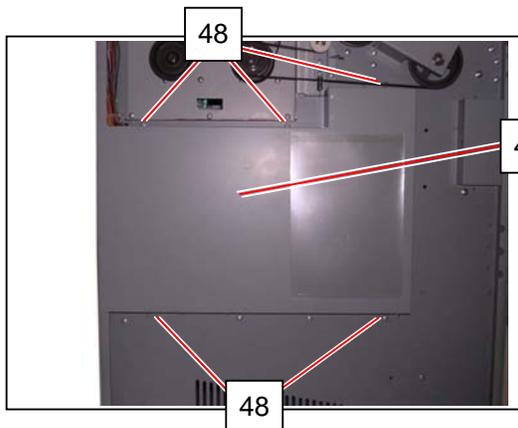
32. Remove 5 screws (44) and release 3 spacers (45) to remove HV Power Supply (43).



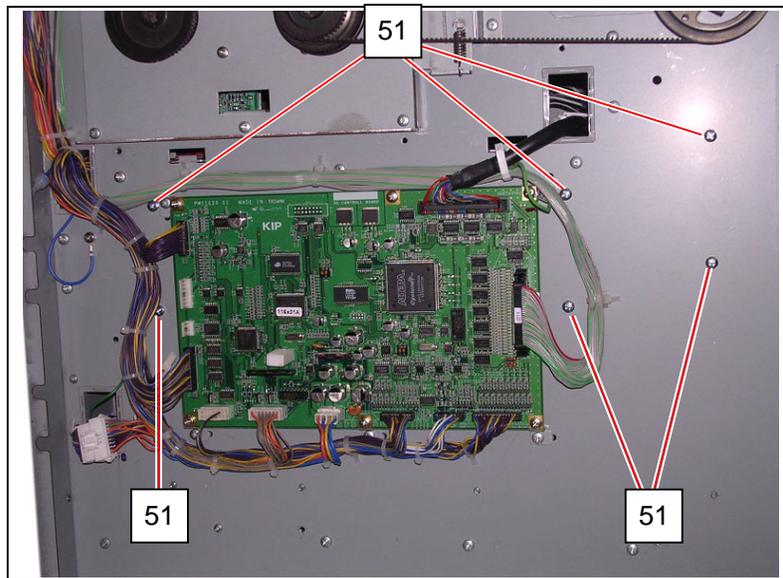
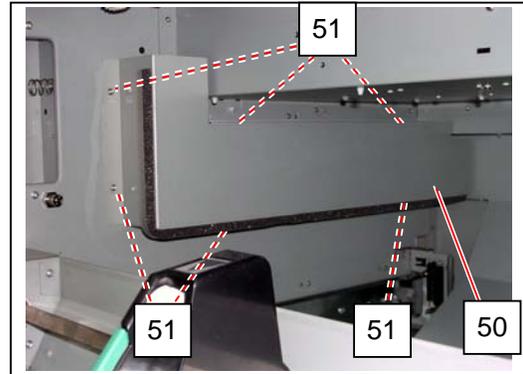
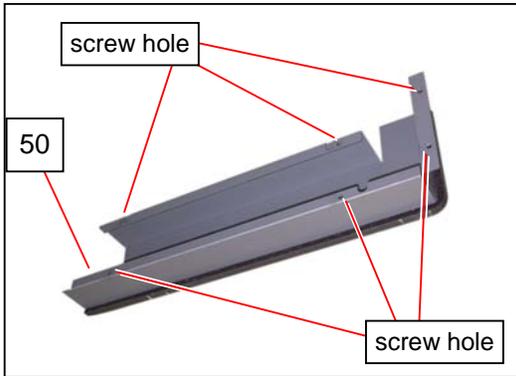
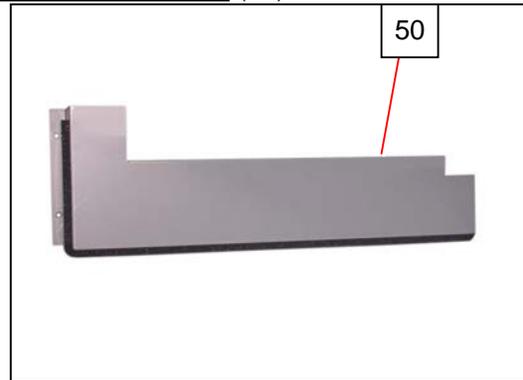
33. Fix **Cover 3 Assy** (46) inside the machine with 6 **Bind Head Screws** (47) from outside.



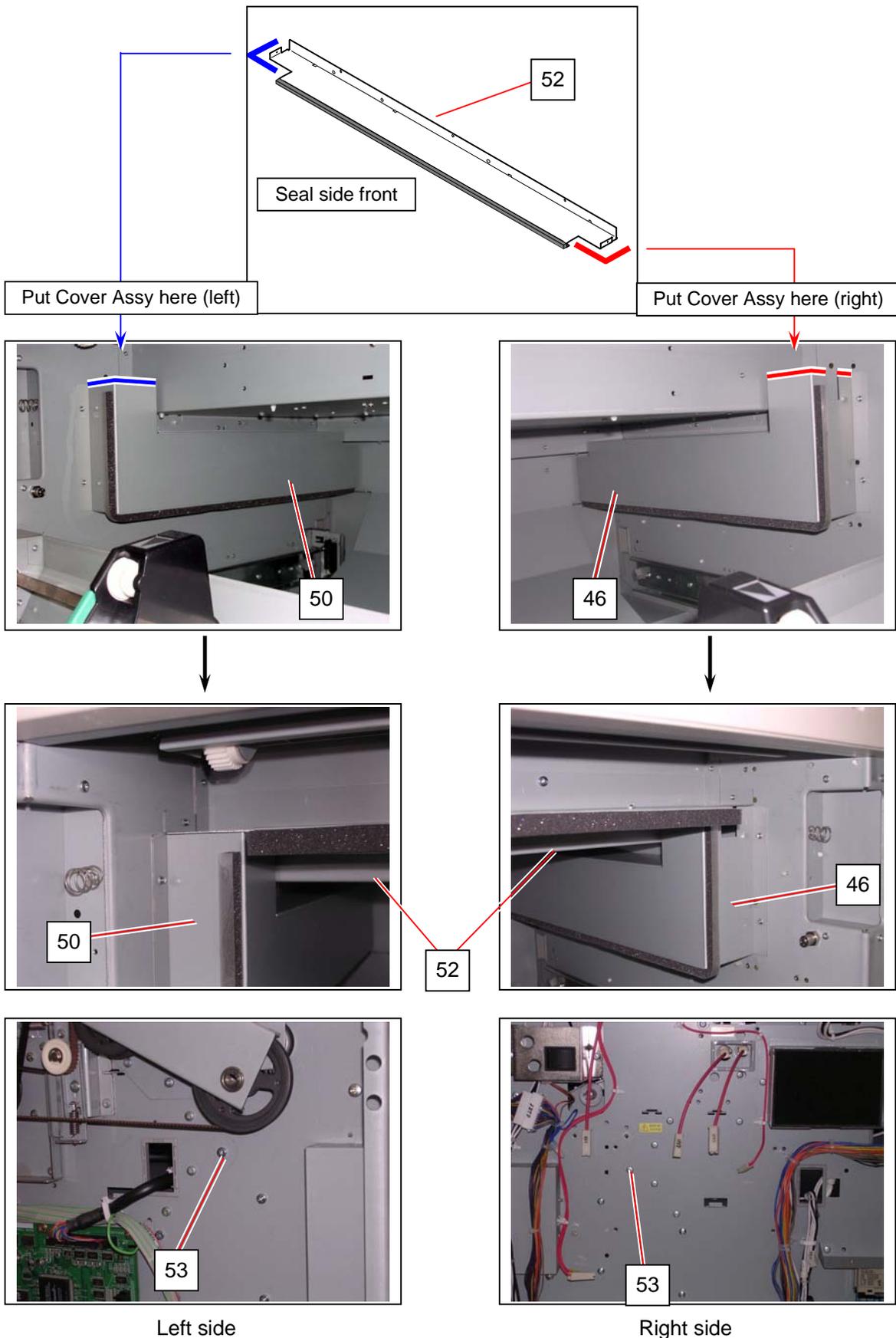
34. On the machine left, remove 5 screws (48) to remove Cover 10 (49).



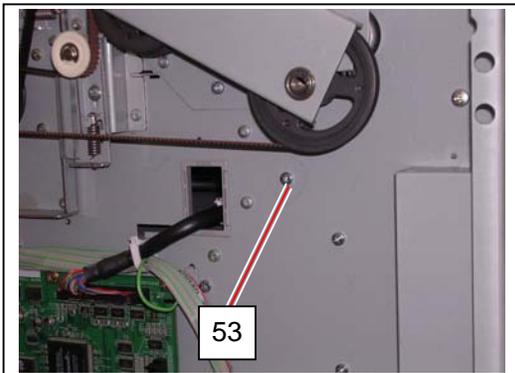
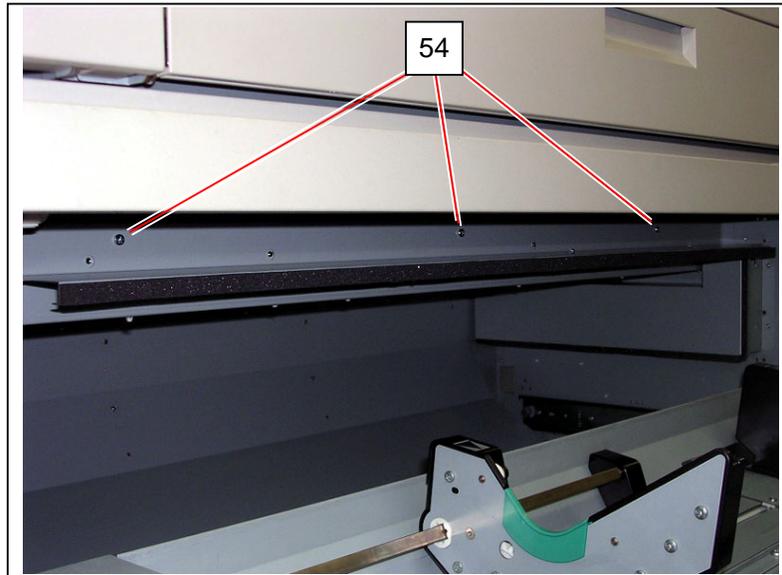
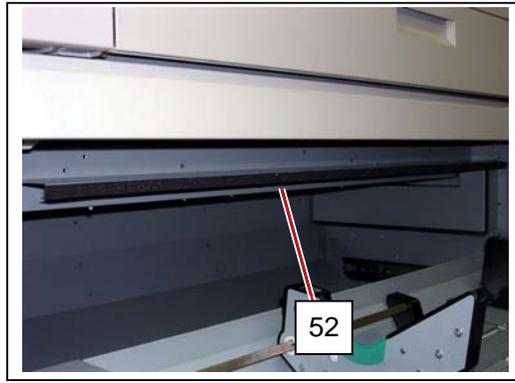
35. Fix **Cover 2 Assy** (50) inside the machine with 6 **Bind Head Screws** (51) from outside.



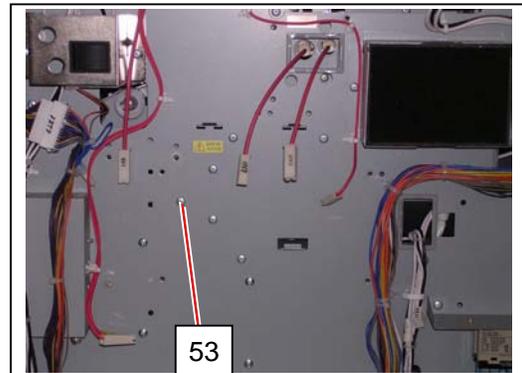
36. Install **Cover Assy** (52) onto the top front of Cover 3 Assy (46) and Cover 2 Assy (50).
Fix Cover Assy (52) with 2 **Bind Head Screws** (53) temporarily.



37. Install 3 **Bind Head Screws** (54) to the front face of Cover Assy (52) and tighten 5 screws (53) (54) to secure Cover Assy (52).

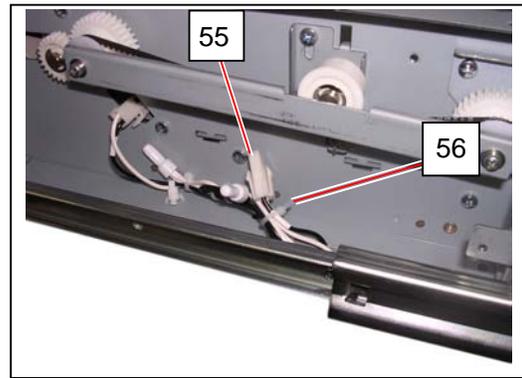


Left side



Right side

38. Tie the harness for the dehumidifier and the branch cable "J125" (55) together using **Band** (56). Remove the excessive portion of Band.

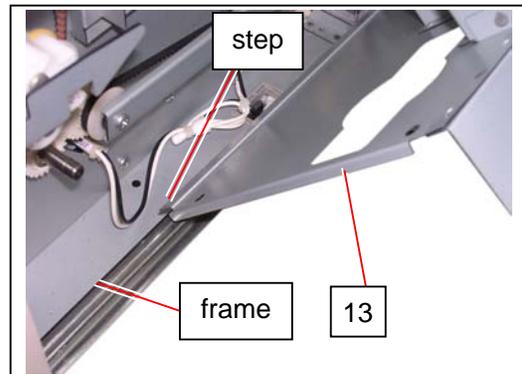


39. Replace Cover 22 (13).

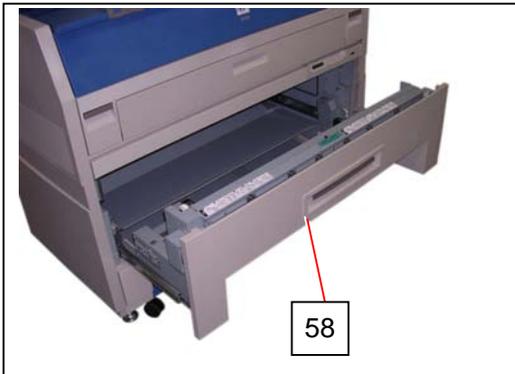
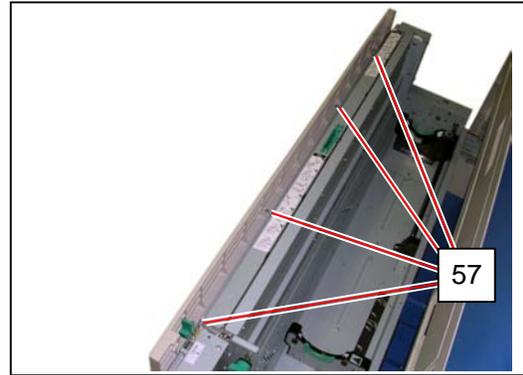


! **NOTE**

Make sure that the step part on the bottom side of Cover 22 (13) is inside the bottom frame.

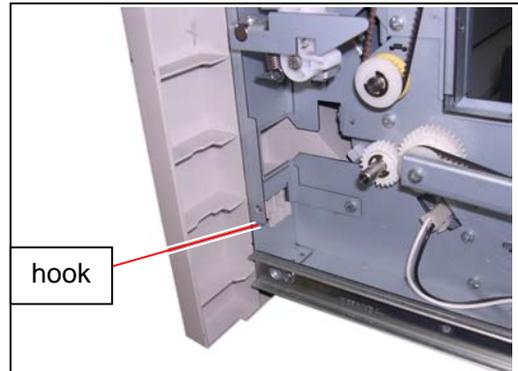


40. Remove 4 screws (57) to remove Cover 1 (58).

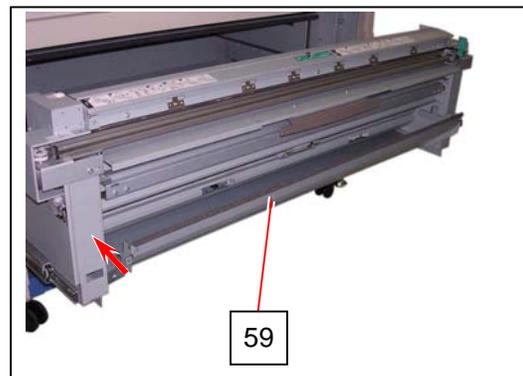
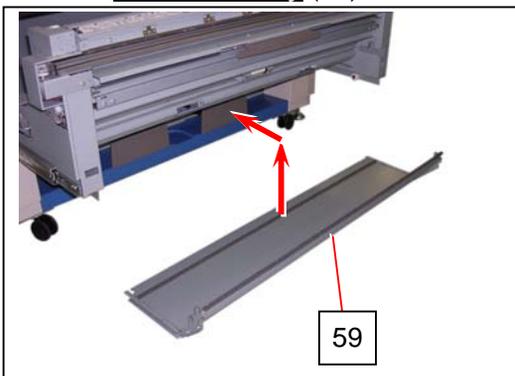


! NOTE

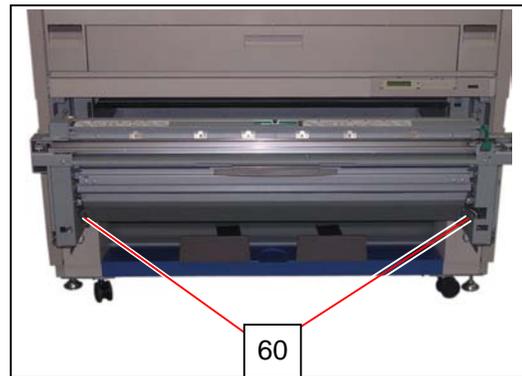
Make sure to insert the hooking part to the slit as the following photo when you put back the Cover 1 (58).



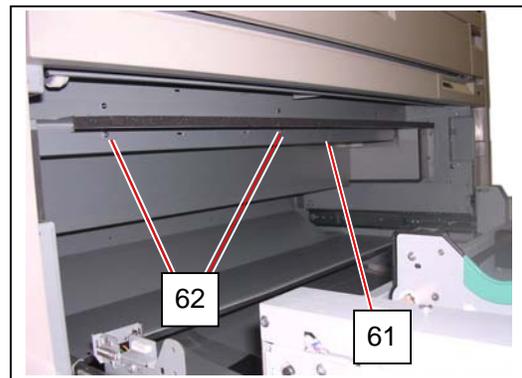
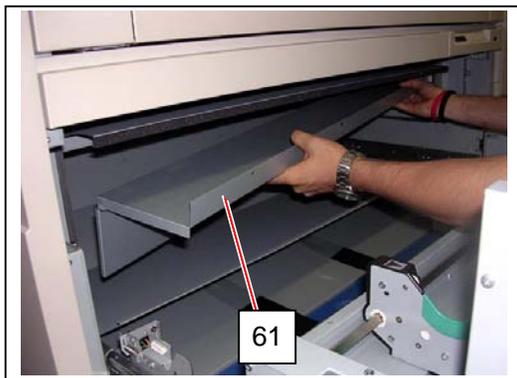
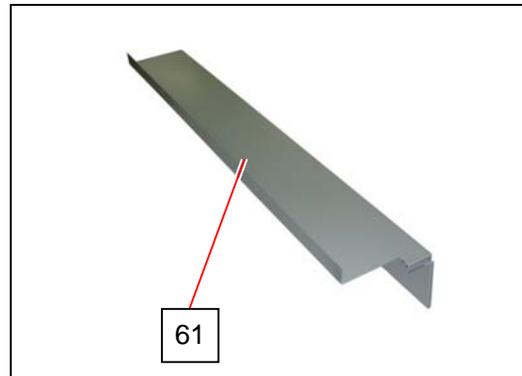
41. Mount **Cover 24 Assy** (59) onto the railing at the front bottom of Roll Deck.



42. Secure Cover 24 Assy with 2 **Bind Head Screws** (60).

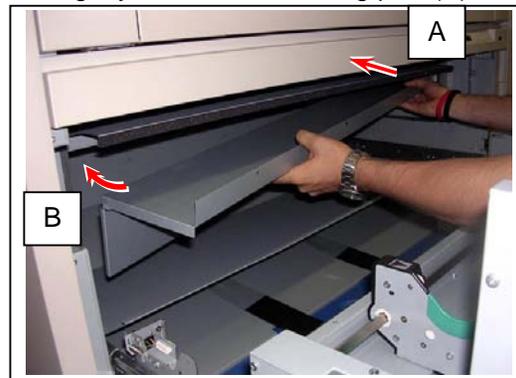
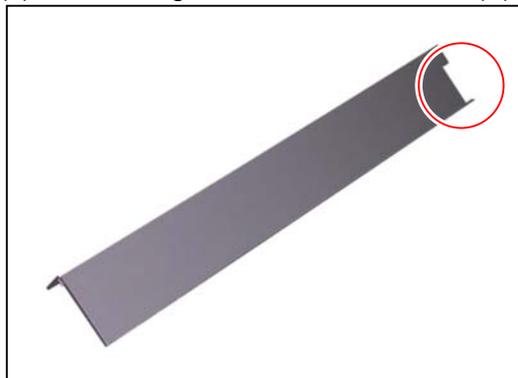


43. Install **Cover 12** (61) upper inside of Roll Deck and fix it with 2 **Bind Head Screws** (62) temporarily.

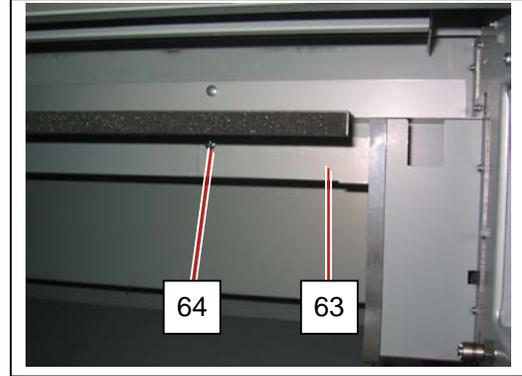
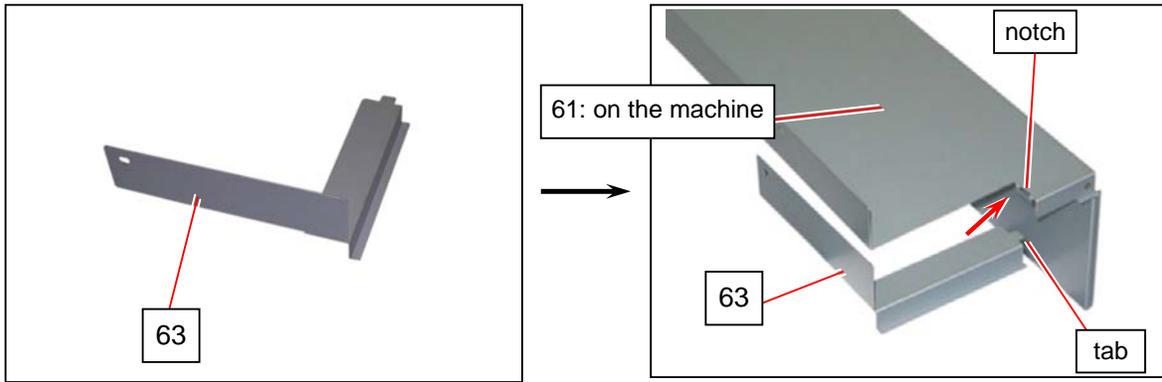


! NOTE

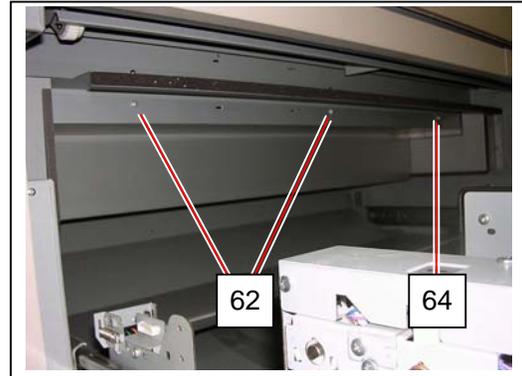
- (1) Support Cover 12 not to fall while installing the screws.
- (2) Push the right side of Cover 12 first (A) and then slightly turn it on its cutting part (B).



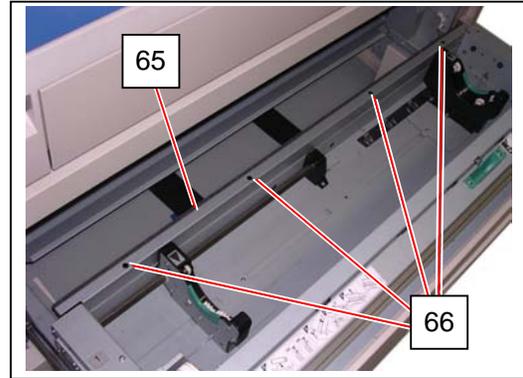
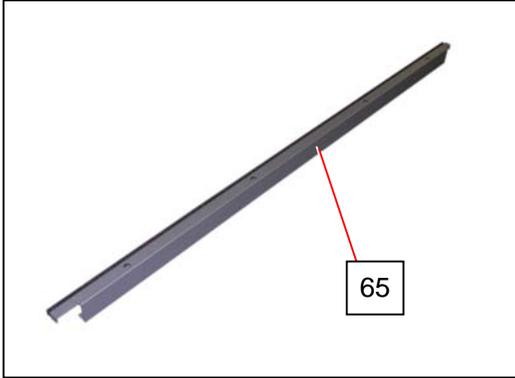
44. Fit the tab tip of **Cover 13** (63) into the notch on the top right corner of Cover 12.
Fix Cover 13 (63) and Cover 12 (61) together with 1 **Bind Head Screw** (64) temporarily.



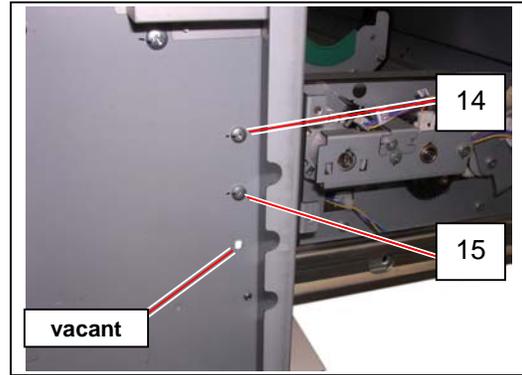
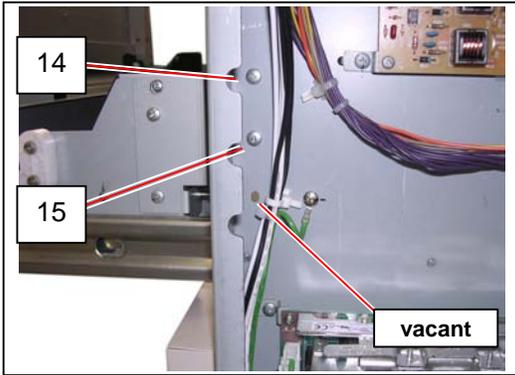
45. Tighten 3 screws (62) (64) to secure Cover 12 and Cover 13.



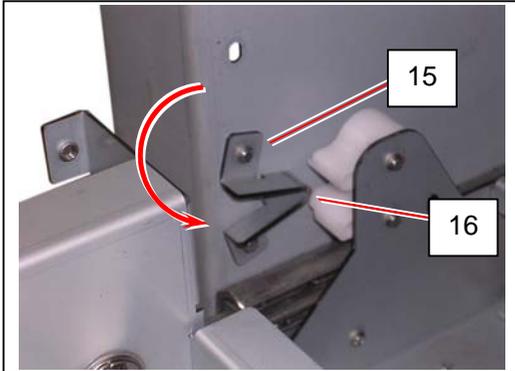
46. Install **Cover 23** (65) to the top rear of Roll Deck 1 with 4 **Bind Head Screws** (66).



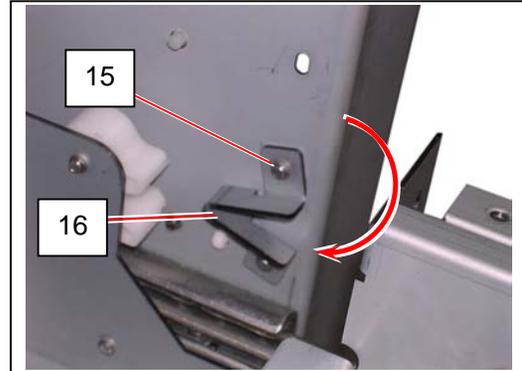
47. Remove 1 screw (14) and loosen 1 screw (15) on each side.



48. Turn Bracket 26 (16) on the screw (15) in a 180 degree arc like the arrow direction.

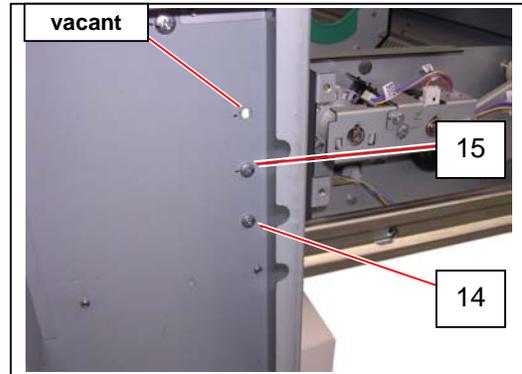
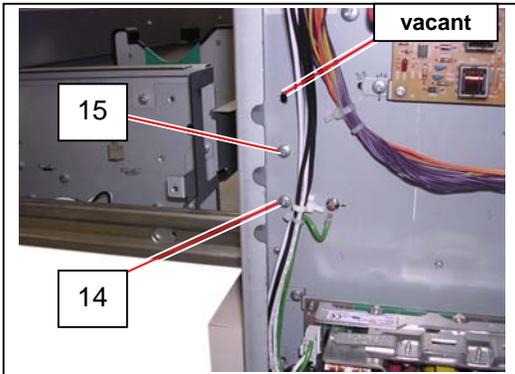


Left



Right

49. Fix Bracket 26 in "limited position" with the screws (14) (15).



50. Replace all of the removed covers.

5. 4. 12. 2 Installation of US2 Dehumidify Kit (P/N: Z168080130)

1. Confirm the following parts are included in the kit.

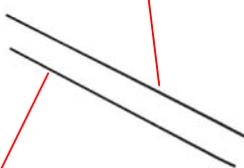
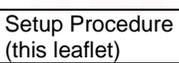
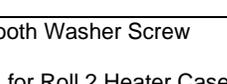
NOTE

US2 Dehumidify Kit consists of two large packages.

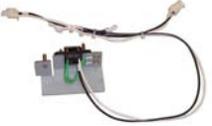
Package A contains the parts listed on this page, including Setup Procedure (this leaflet).
Package B contains the parts listed on the next page, including more electrical components.

The setup procedure explains that you will install components of Package B first (step 5 to 45) and Package A next (step 46 and after).

(Package A)

Item	Number of article	Item	Number of article
	1		1
	1		1
	1		2 in 1 sheet
	1		3
		---	-

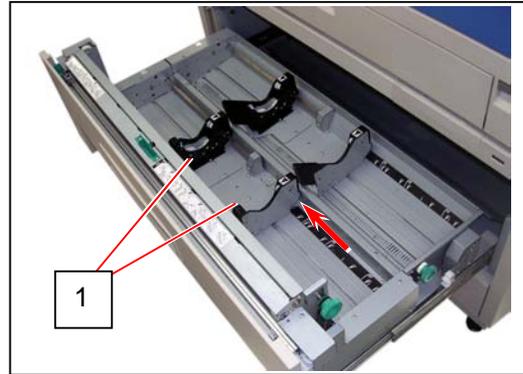
(Package B)

Item	Number of article	Item	Number of article
Roll 1 Heater Case 	1	Switch Label Label 	1 1
Bush 	2	Switch 	1
Snap Band 	5	Bracket Connector 2 Assy 	1
Bracket 21 Assy 	1	Cover 3 Assy 	1
Cover 2 Assy 	1	Bind Head Screw (M4x6) 2 for Bracket 21 Assy 2 for Bracket Connector 2 Assy 6 for Cover 3 Assy 6 for Cover 2 Assy 5 for Cover Assy Tooth Washer Screw for Roll 1 Heater Case	21 6
Cover Assy 	1	Bind Screw (M4x6, Bs+Ni) Tooth Washer  for ground wires	2 2

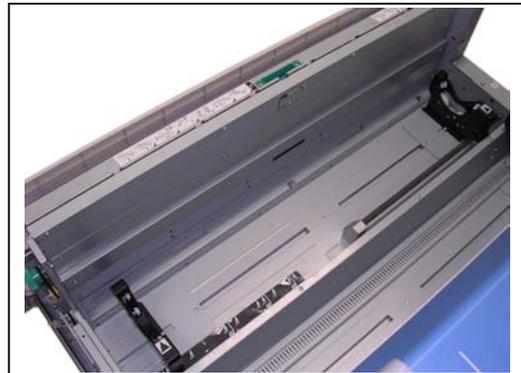
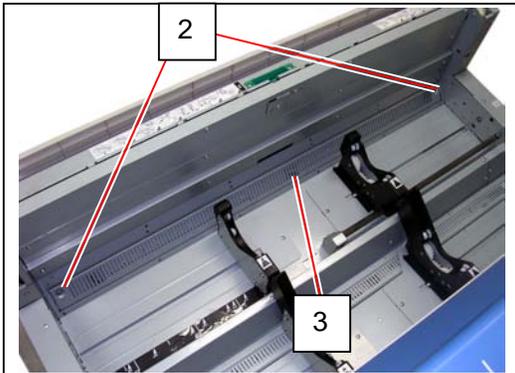
2. Draw out Roll Deck.
Remove a roll media if mounted.



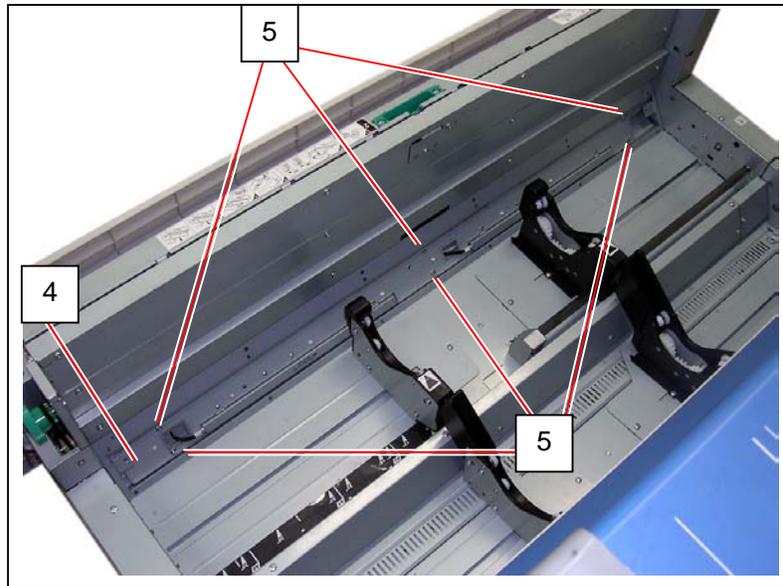
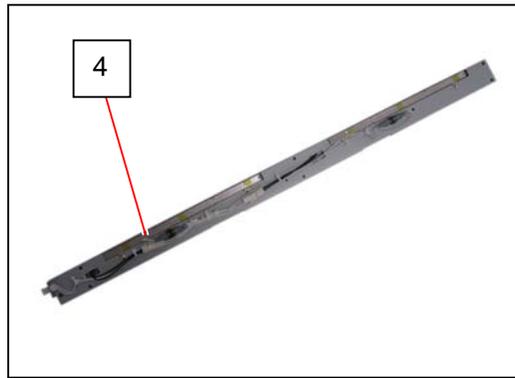
3. Move Slide Guide (1) toward the middle.



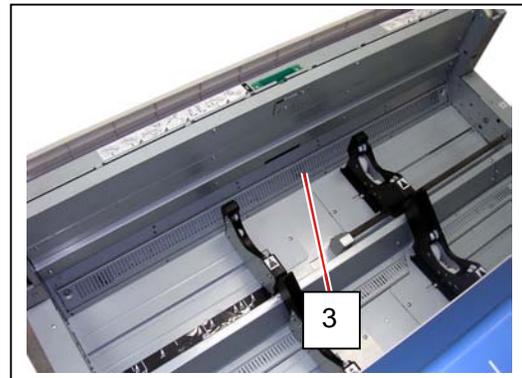
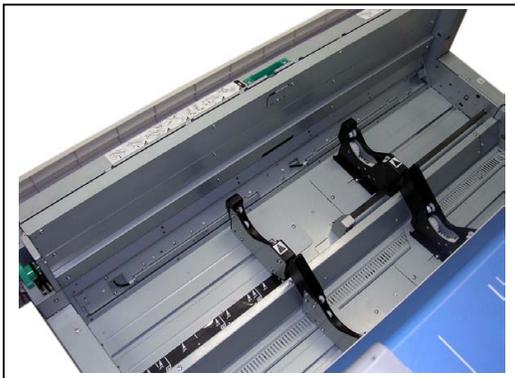
4. Remove 2 screws (2) to remove Cover 15 (3).



5. Install **Roll 1 Heater Case** (4) to Roll Deck with 6 **Tooth Washer Screws** (5).



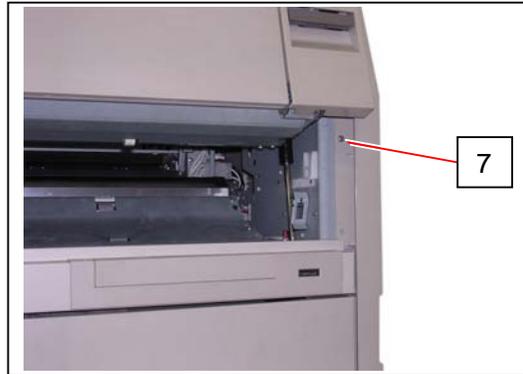
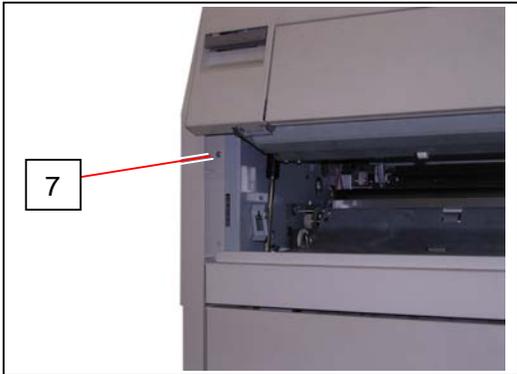
6. Replace Cover 15 (3).



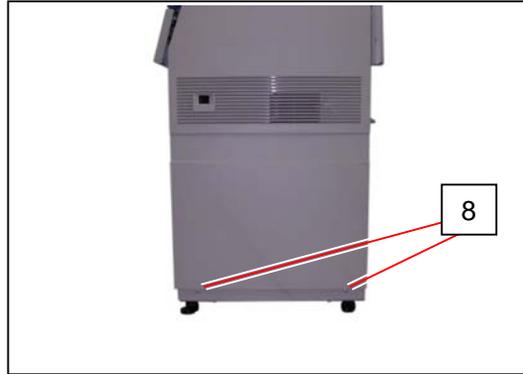
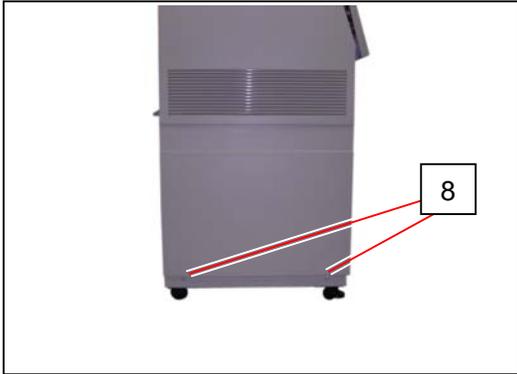
7. Pull up the Lever 2 (6) to open Engine Unit.



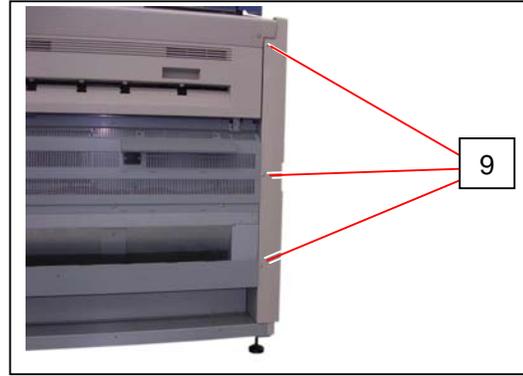
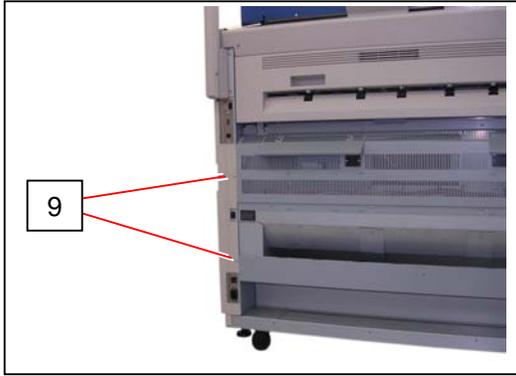
8. Remove 2 screws (7) at both sides.



9. Remove 4 screws (8) at both sides.



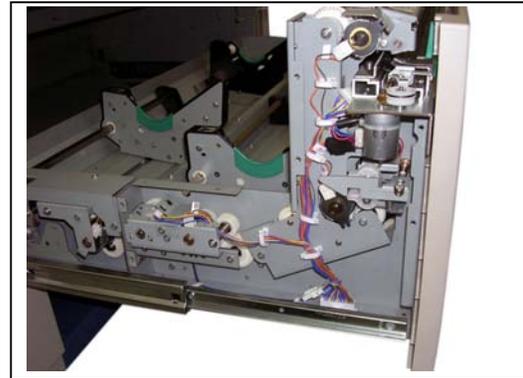
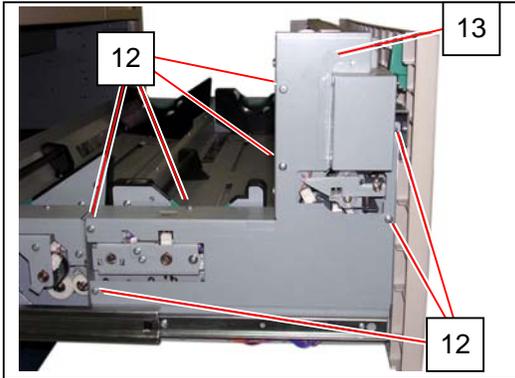
10. Remove 5 screws (9) at both sides to remove Cover 2 (10) and Cover 3 (11).
(2 pieces on the right and 3 pieces on the left)



11. Close Engine Unit and draw out Roll Deck.

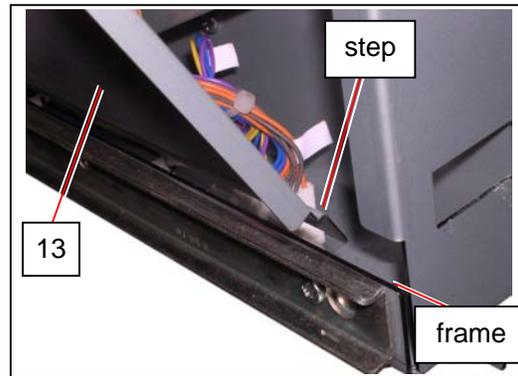


12. Remove 7 screws (12) to remove Cover 14 (13).

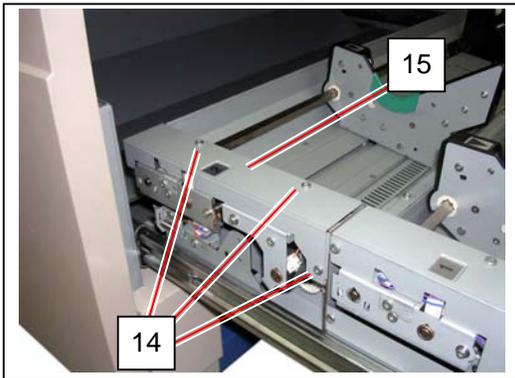


⚠ NOTE

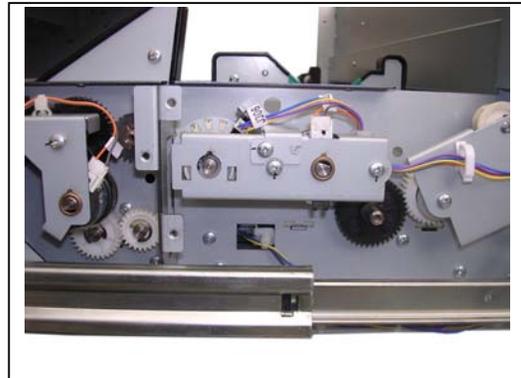
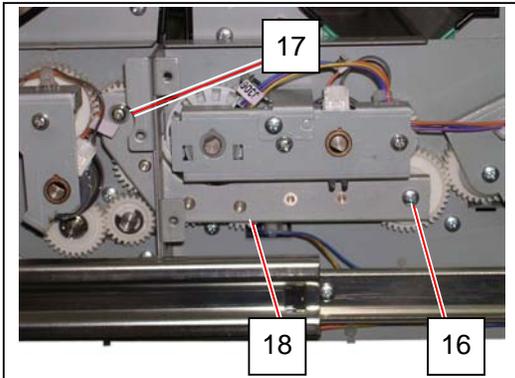
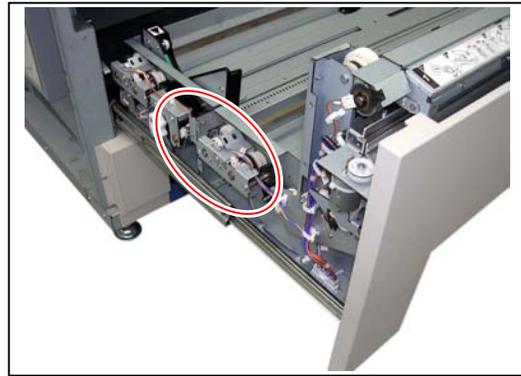
Make sure that the step part on the bottom side of Cover 14 (13) is inside the bottom frame.



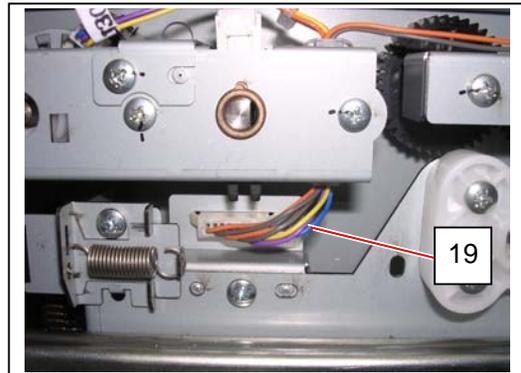
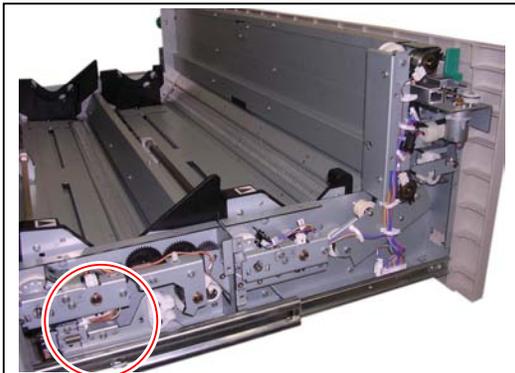
13. Remove 3 screws (14) to remove Cover 16 (15).



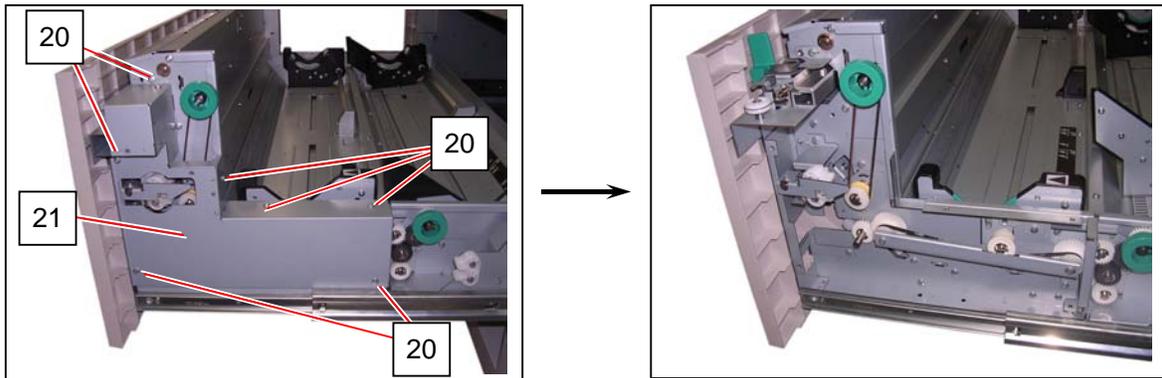
14. Remove 1 Bind Head Screw (16) and 1 Pan Head Screw (17) to remove Gear Bracket 2 Assy (18).



15. Remove the harness (19) from the connector on the left rail.

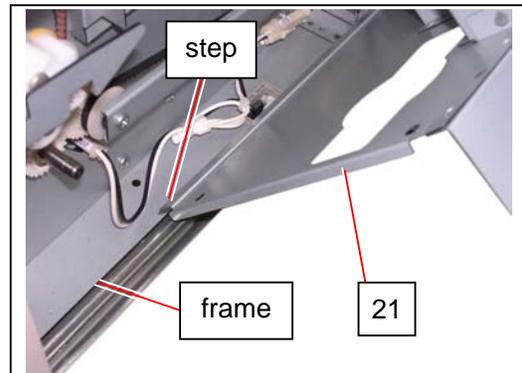


16. Remove 7 screws (20) to remove Cover 22 (21).

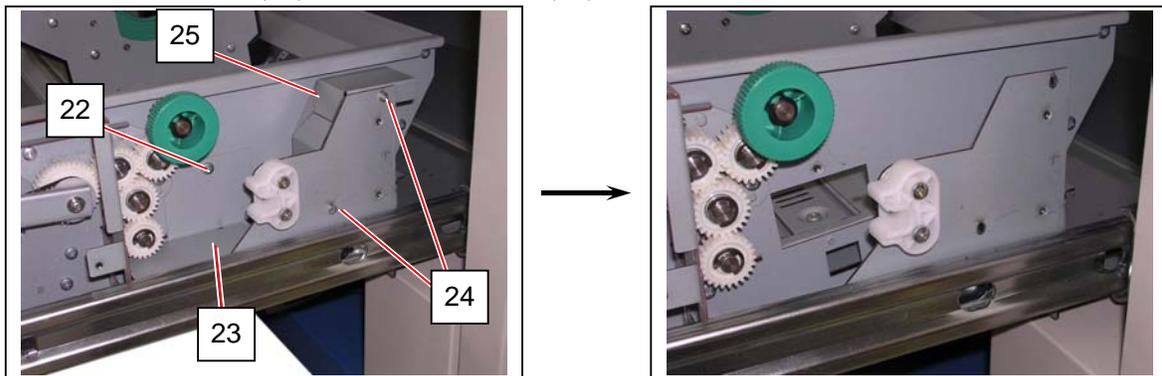


NOTE

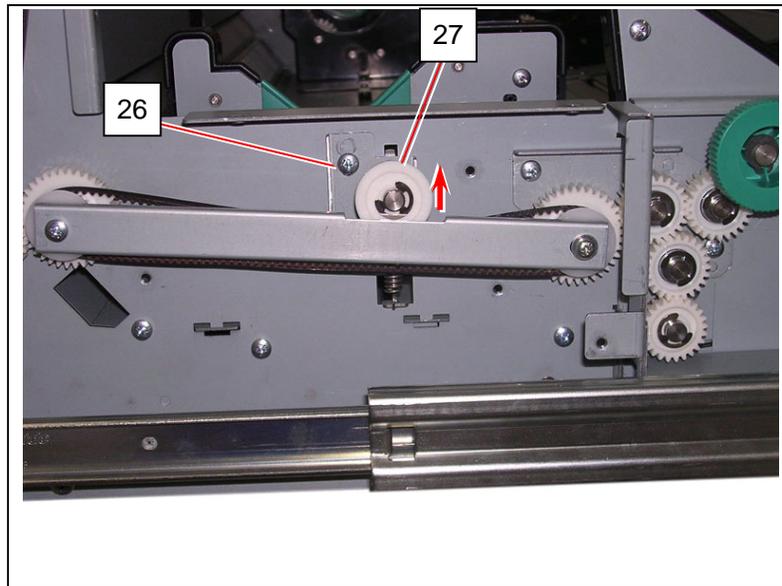
Make sure that the step part on the bottom side of Cover 22 (21) is inside the bottom frame.



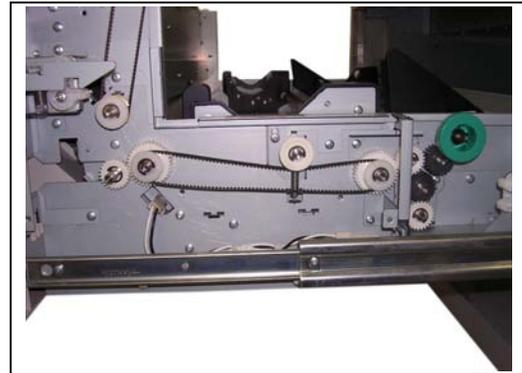
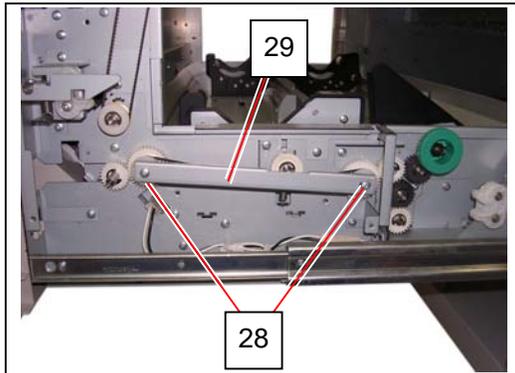
17. Remove 1 screw (22) to remove Cover 7 (23).
Remove 2 screws (24) to remove Cover 9 (25)



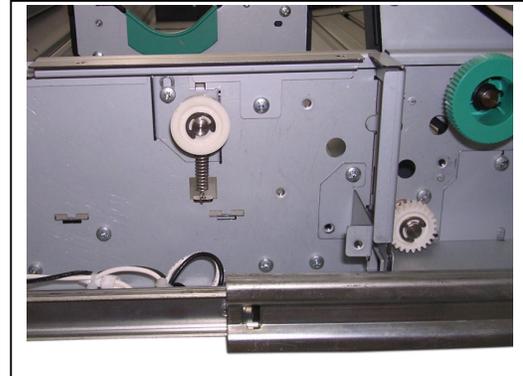
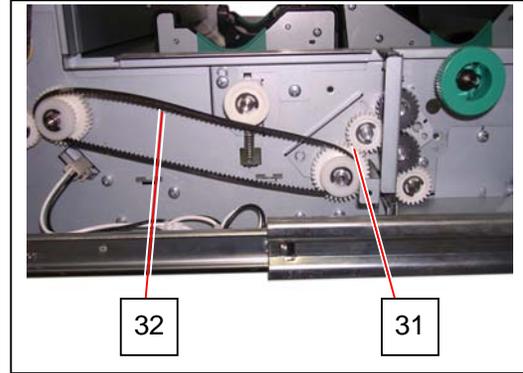
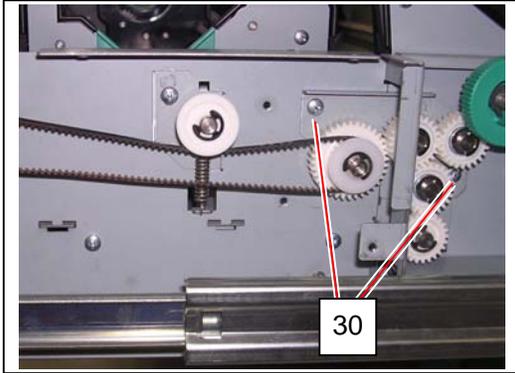
18. Loosen 1 screw (26) to release Pulley 3 (27). Move Pulley 3 (27) upward and fix it with the screw (26) to release Timing Belt 453.



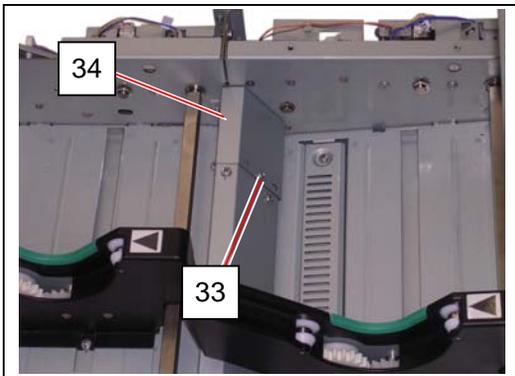
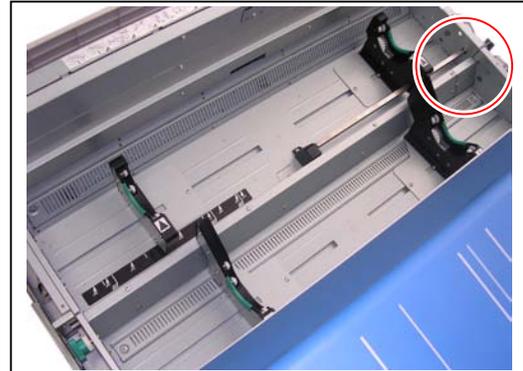
19. Remove 2 Pan Head Screws (28) to remove Bracket 12 (29).



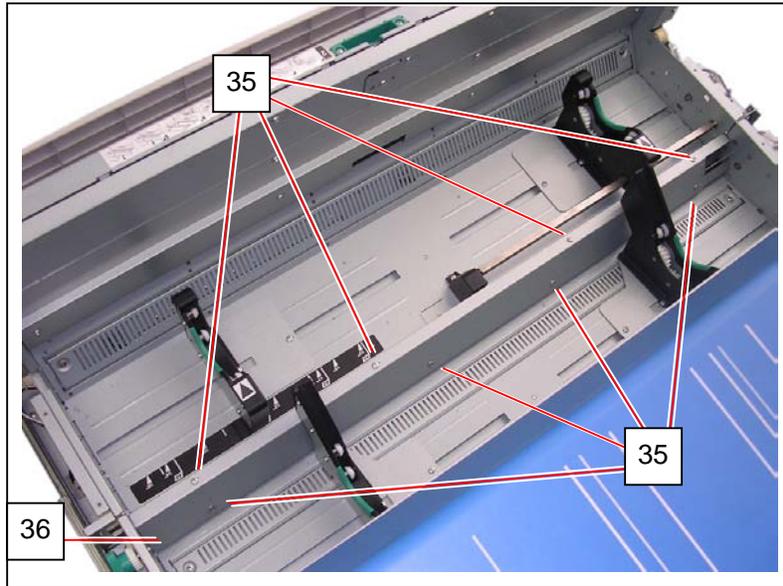
20. Remove 2 screws (30: **M4x4**) to remove Gear Bracket Assy (31) and Timing Belt 453 (32).



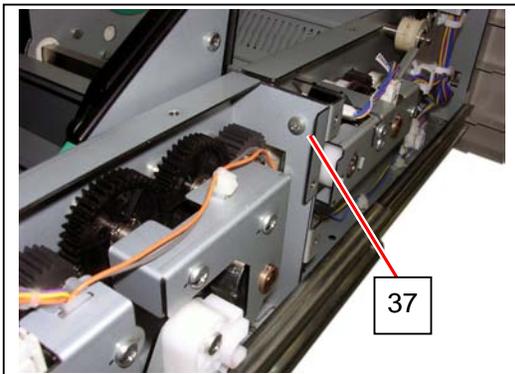
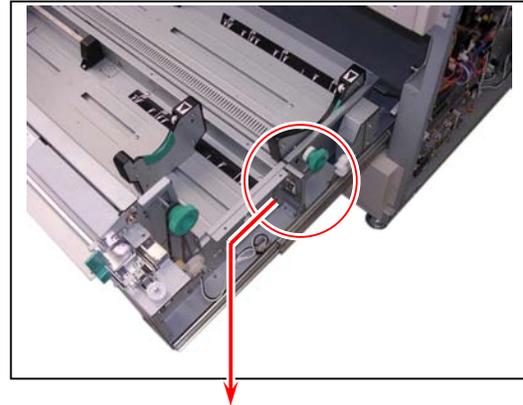
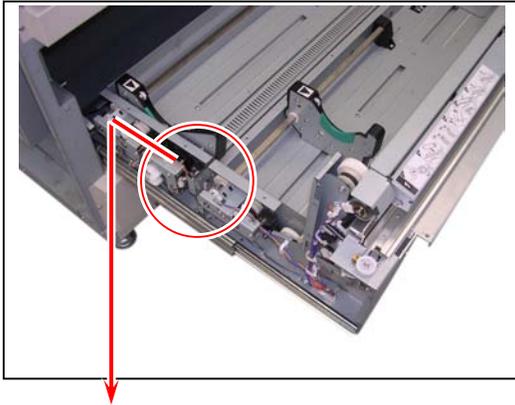
21. Remove 1 screw (33) to remove Bracket 7 (34).



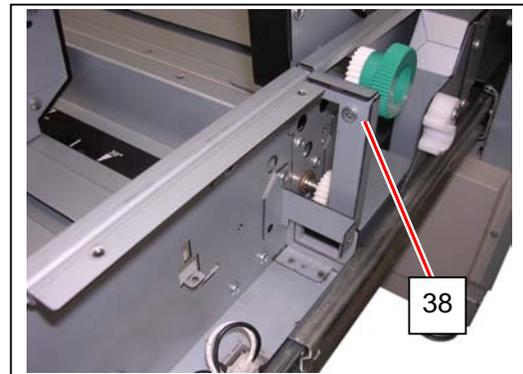
22. Remove 8 screws (35) to remove Guide Plate (36) from the joint of the decks.



23. Remove 1 screw (37: **M4x4**) from the back on the left.
Remove 1 screw (38: **M4x4**) from the front on the right.

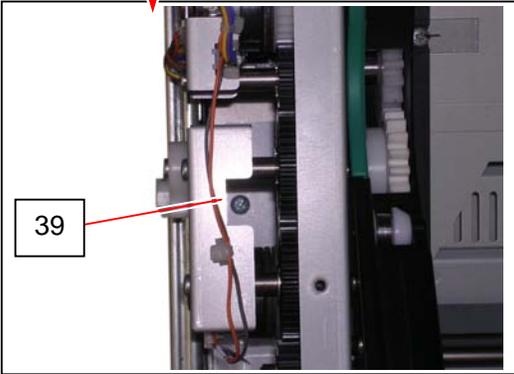
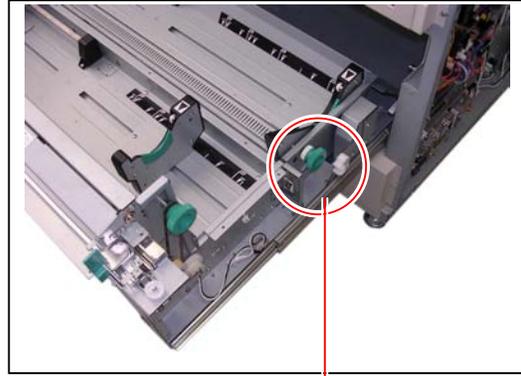
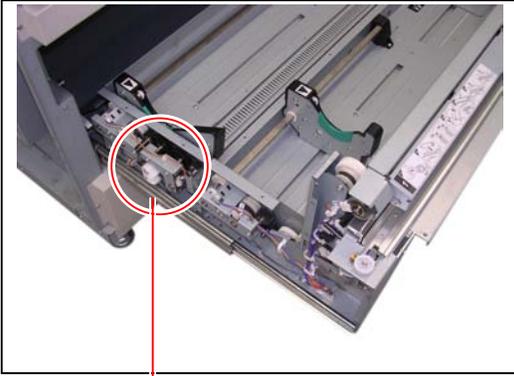


Left: from rear

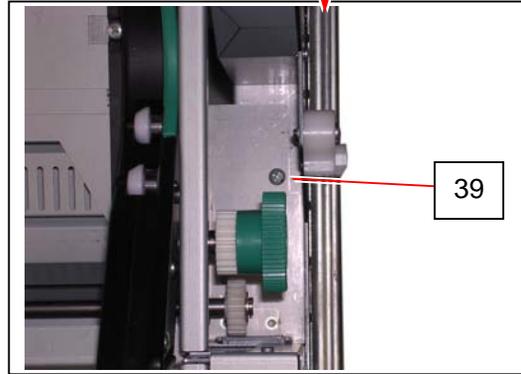


Right: from front

24. Remove 2 screws (39: w/ OTW) from the top on both rails.

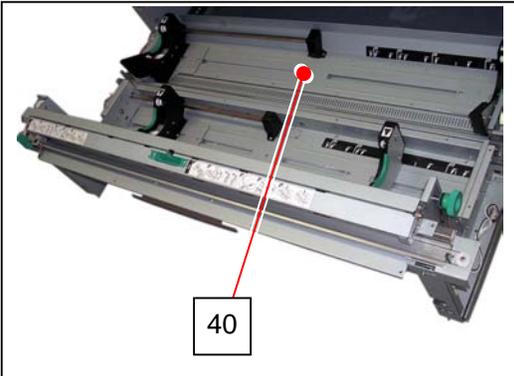


Left: from top

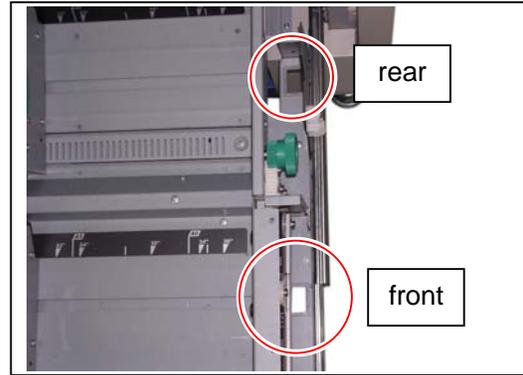


Right: from top

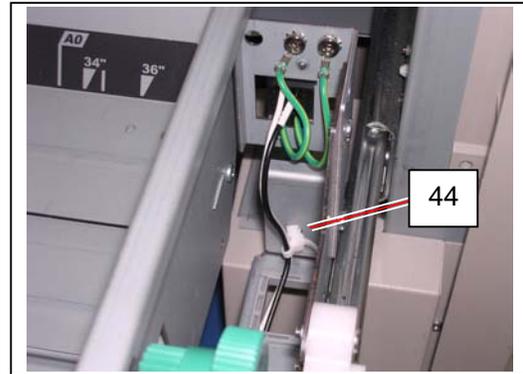
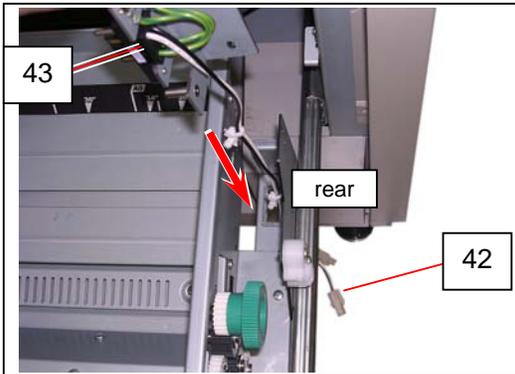
25. Dismount Roll Deck 2 Assy (40) from the back of Roll Deck 1.



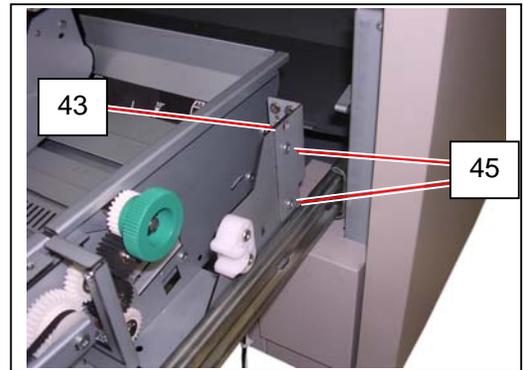
26. Attach 2 **Bush** (41) to the square holes on the right side of Roll Deck.



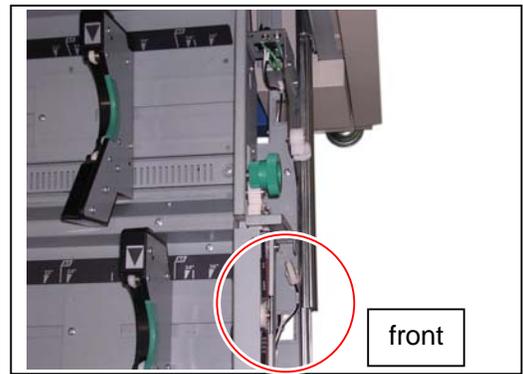
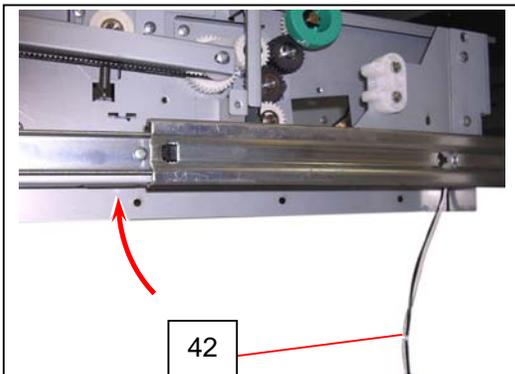
27. Put the harness (42) of **Bracket 21 Assy** (43) through the rear Bush to the bottom side. Attach **Snap Band** (44) and secure the harness (42).



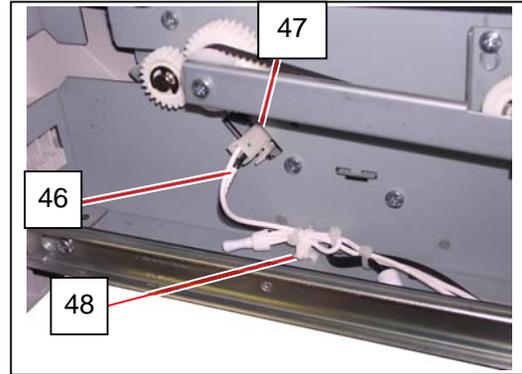
28. Fix Bracket 21 Assy (43) with 2 **Bind Head Screws** (45).



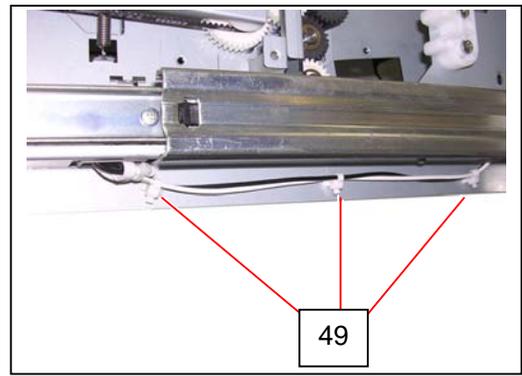
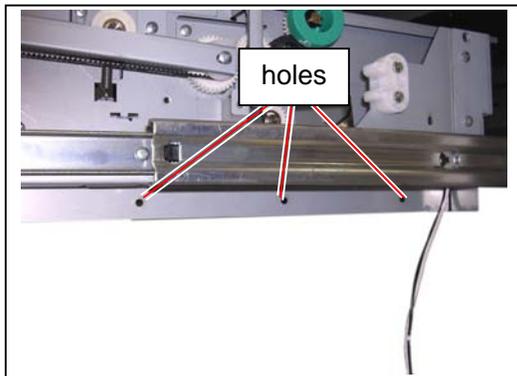
29. Put the harness (42) through the front Bush to the upper side.



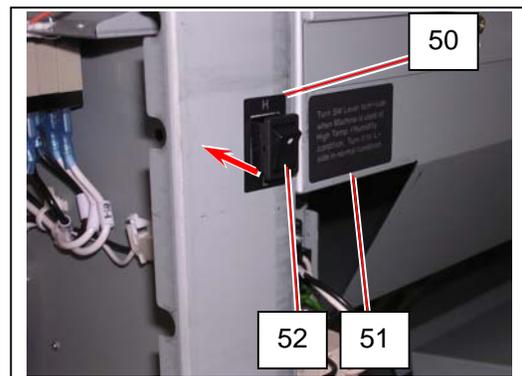
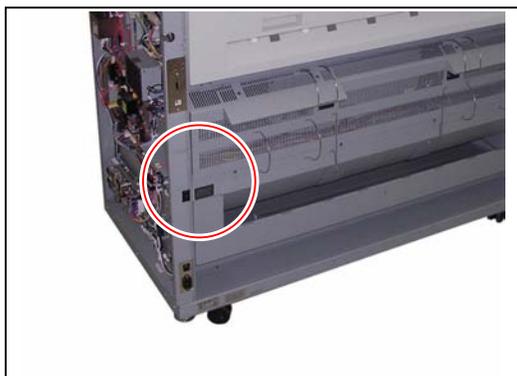
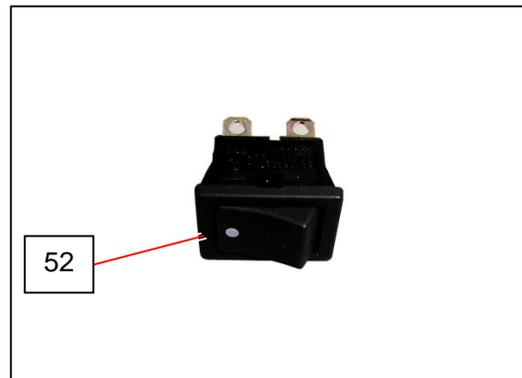
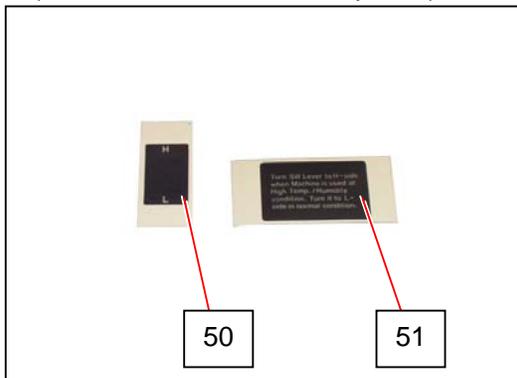
30. Connect the connector (46: J109) to the connector of Roll 1 Heater Case (47).
Secure the harness with **Snap Band** (48).



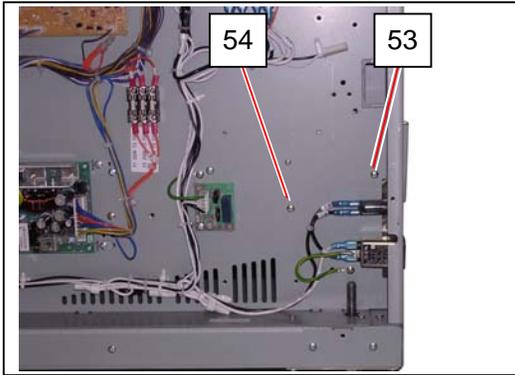
31. Tie the harness firmly with 3 **Snap Bands** (49) at the holes on the side plate. Cut off the excessive band.



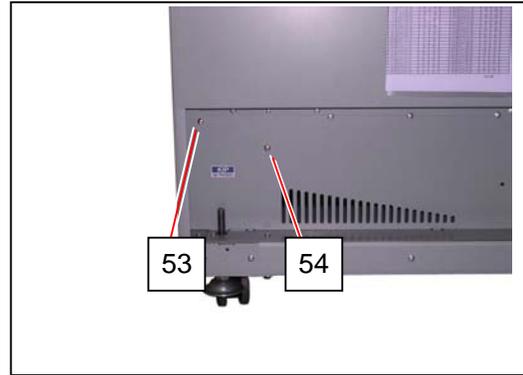
32. Apply **Switch Label** (50) beneath the square hole on the rear. Apply **Label** (51) next to the square hole. Install **Switch** (52) to the square hole from the rear.
(The white dot should be upside.)



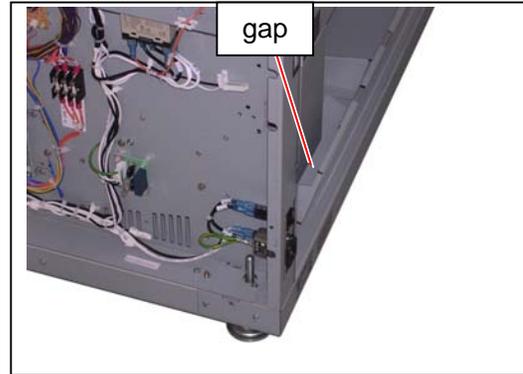
33. Remove 2 screws (53) and loosen 2 screws (54) to release the beam frame on rear bottom.



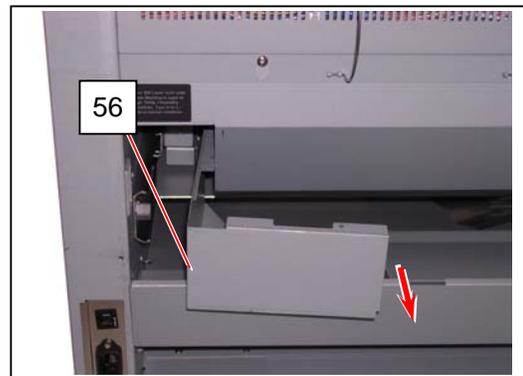
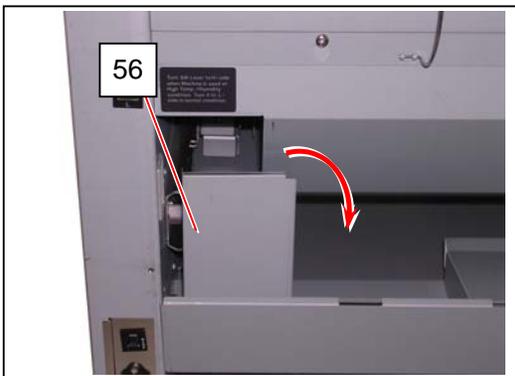
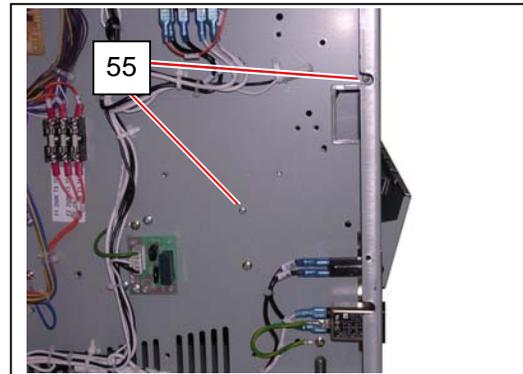
(Right rear bottom)



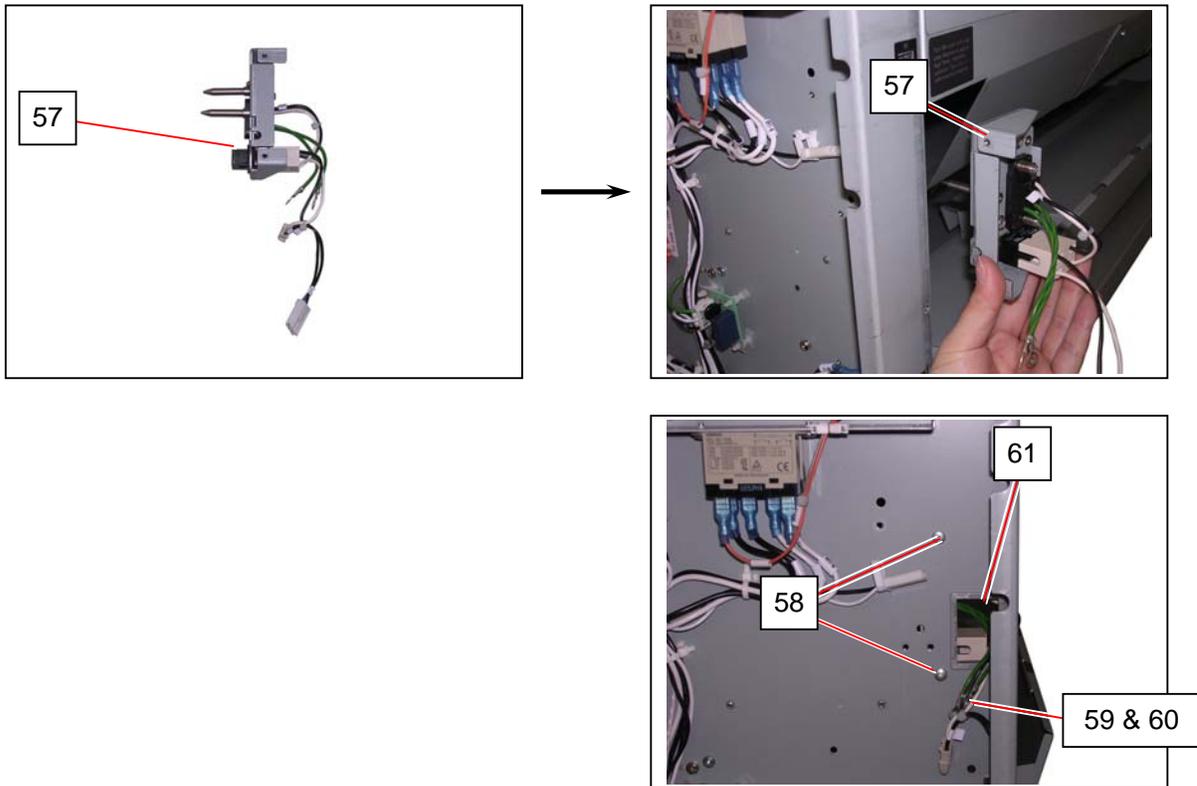
(Left rear bottom)



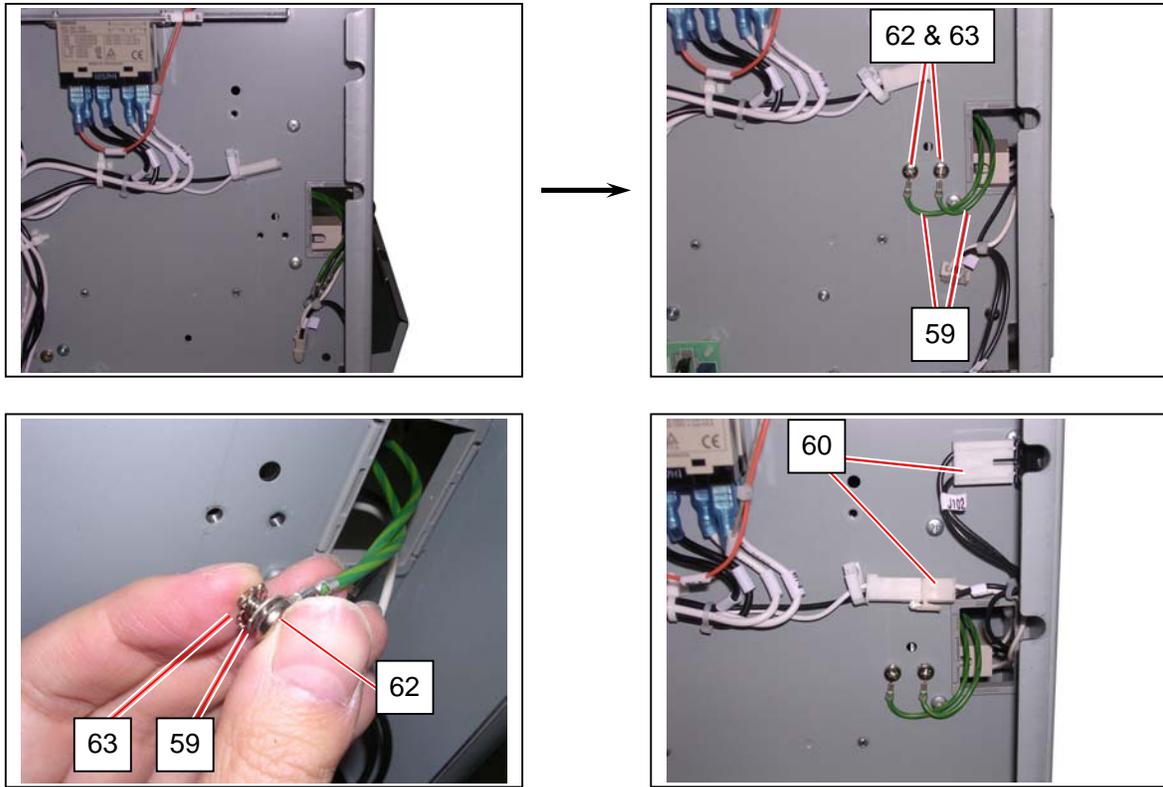
34. Remove 2 screws (55: M3x6) to remove Cover 5 (56).



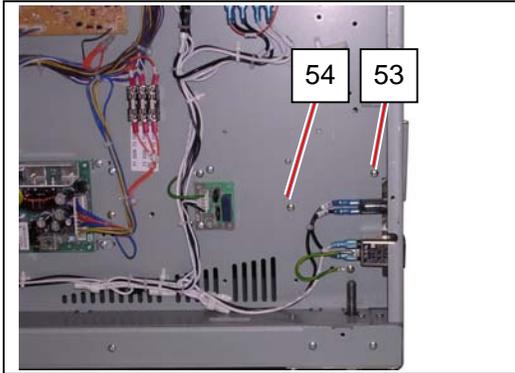
35. Install **Bracket Connector 2 Assy** (57) with 2 **Bind Head Screws** (58).
Route the ground wires (59) and the harnesses (60) into the square hole (61) from inside to outside.



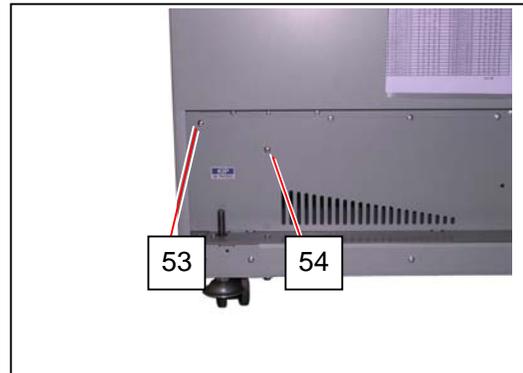
36. Fix the ground wires (59) with **Bind Screw (Bs+Ni)** (62) and **Tooth Washer** (63) on each. Connect the harnesses (60) to the connectors on the frame.



37. Replace the beam frame on rear bottom in position with 4 screws (53) (54).



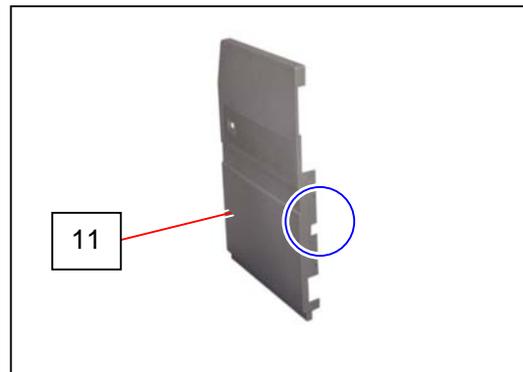
(Right rear bottom)



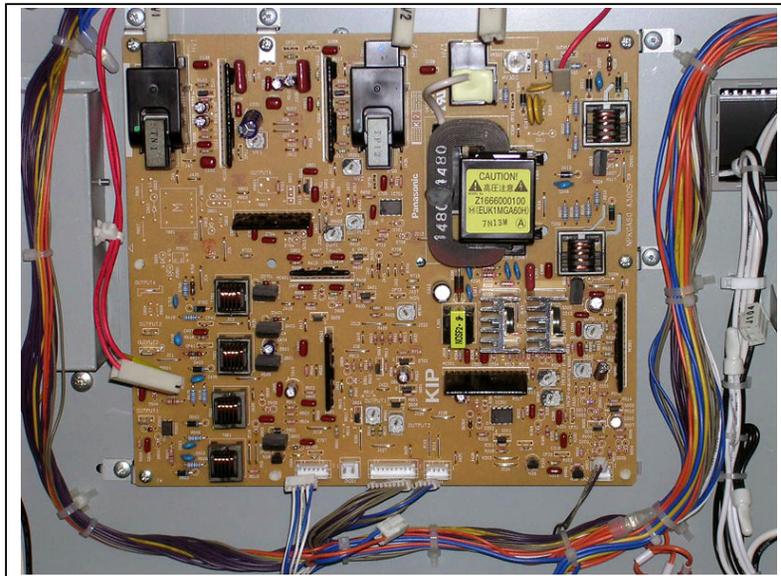
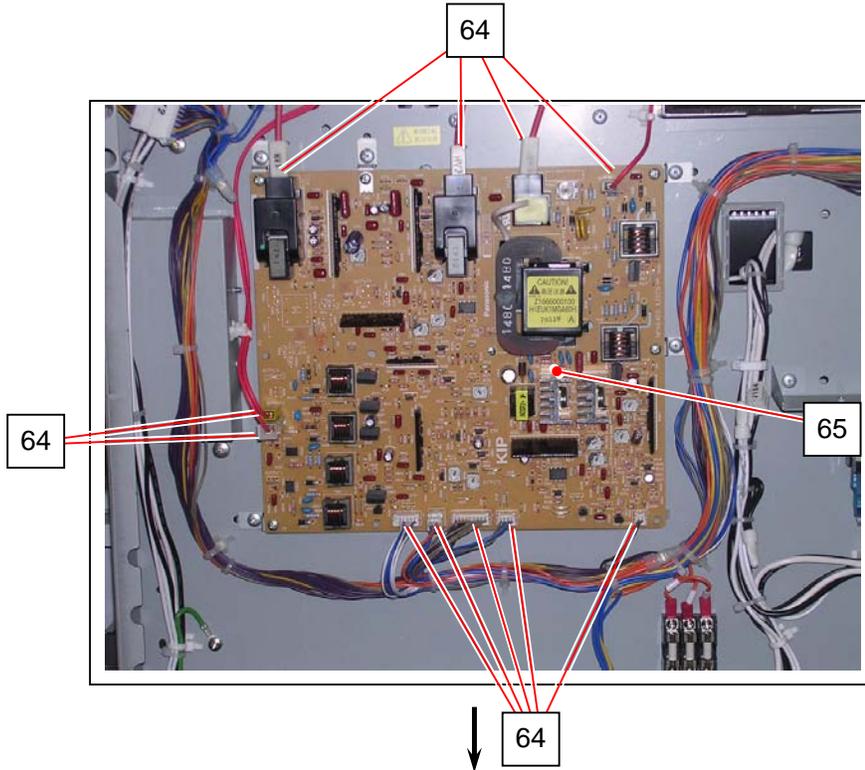
(Left rear bottom)



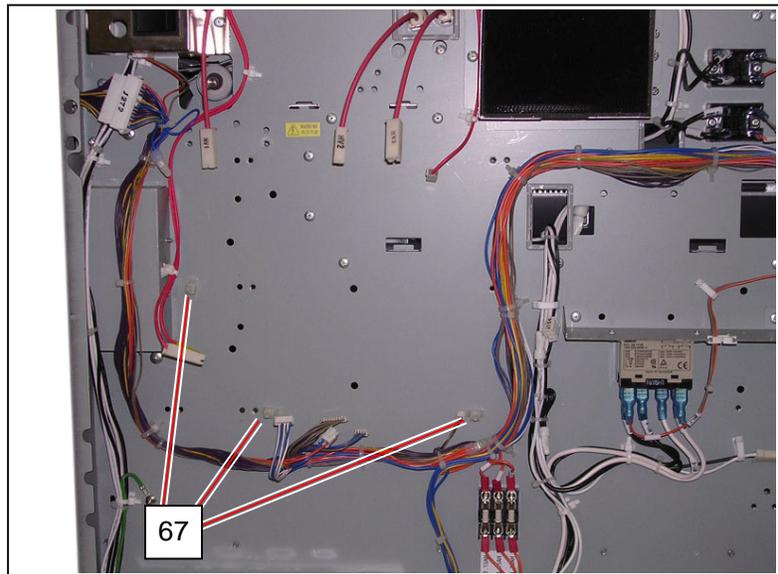
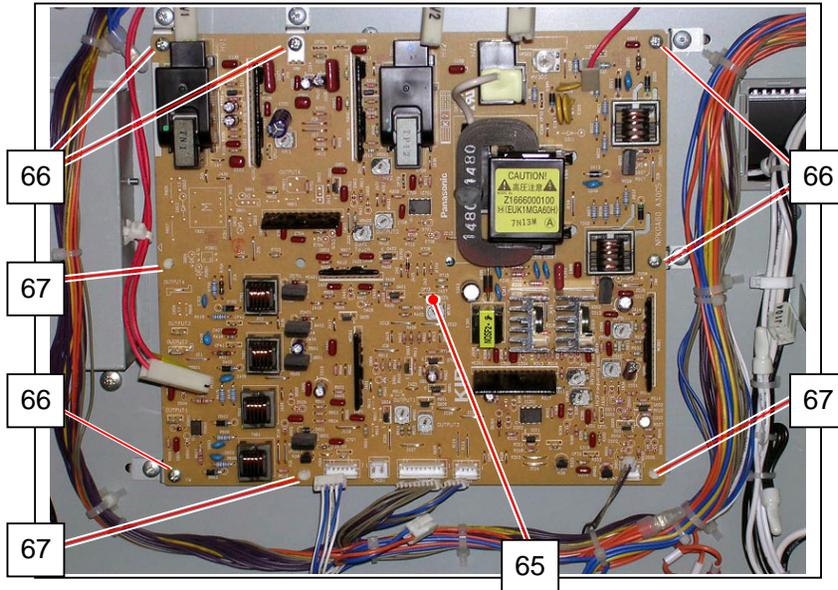
38. Cut off the portion on the rear of Cover 3 (11) for Dehumidify Heater Switch.



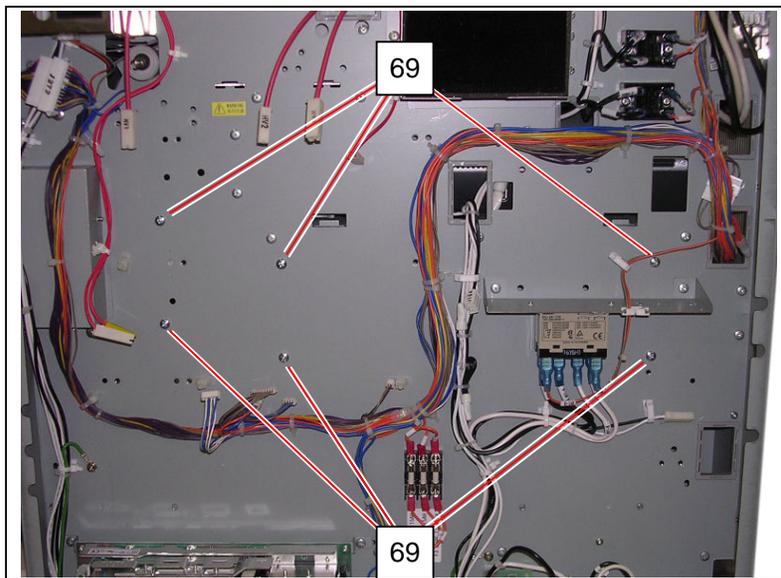
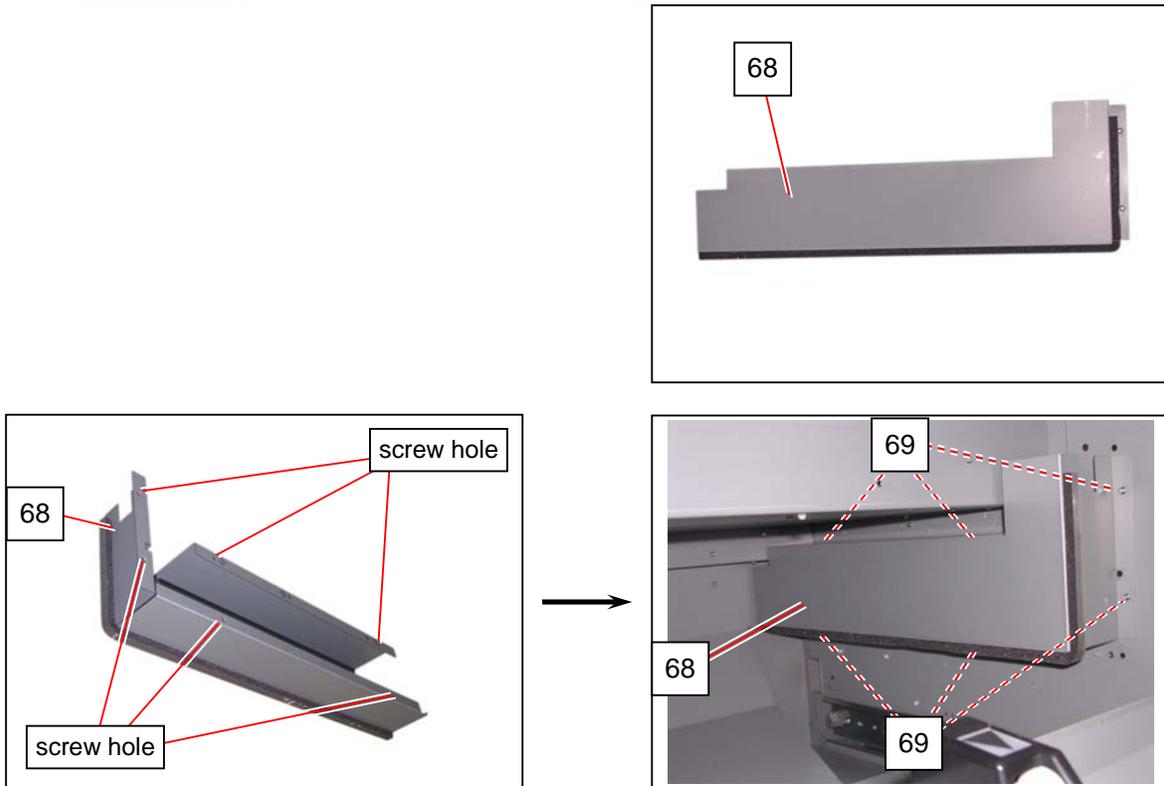
39. Remove all the harnesses (64) from HV Power Supply (65).



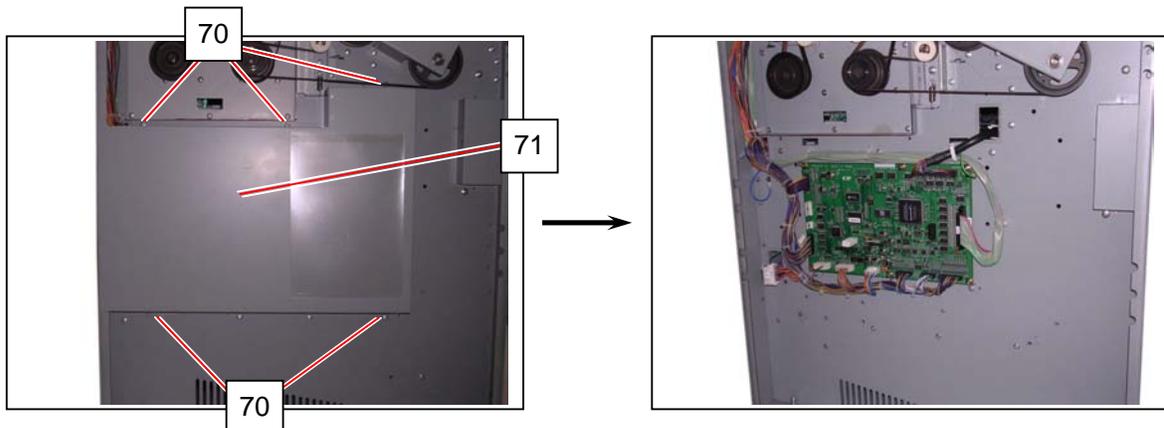
40. Remove 5 screws (66) and release 3 spacers (67) to remove HV Power Supply (65).



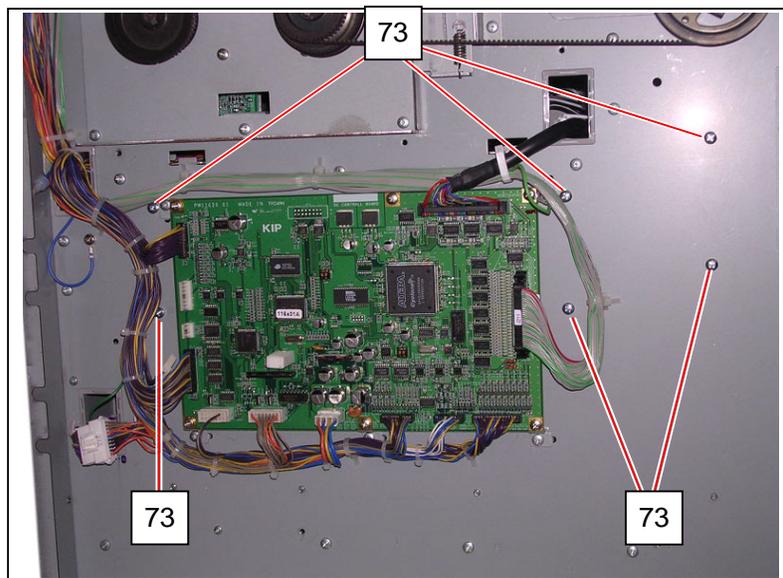
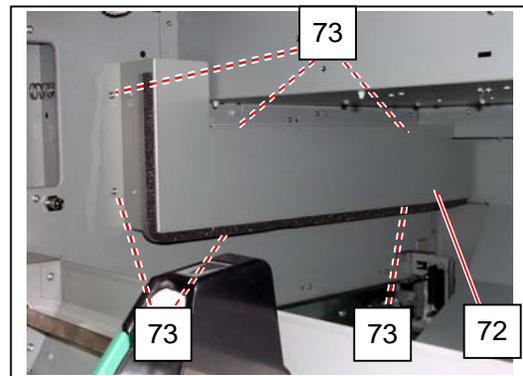
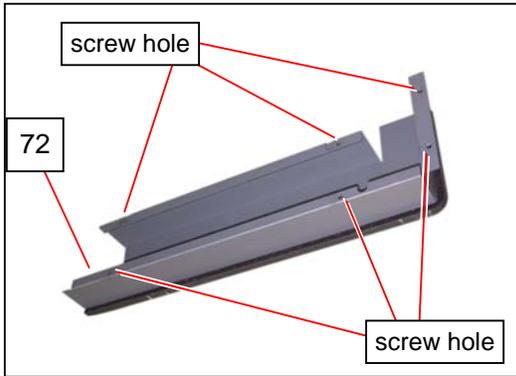
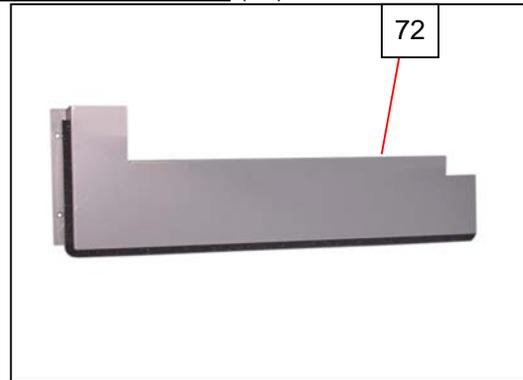
41. Fix **Cover 3 Assy** (68) inside the machine with 6 **Bind Head Screws** (69) from outside.



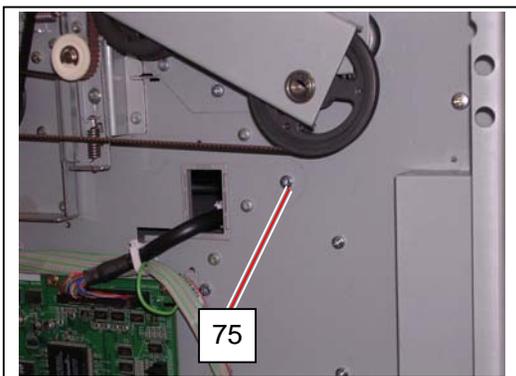
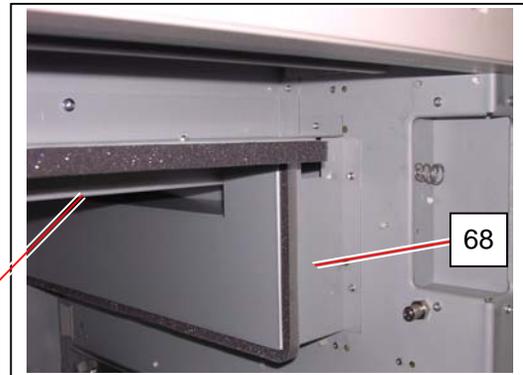
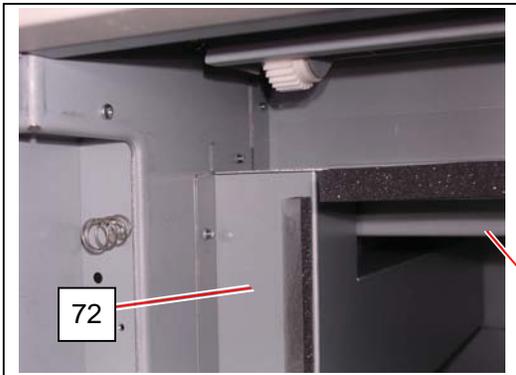
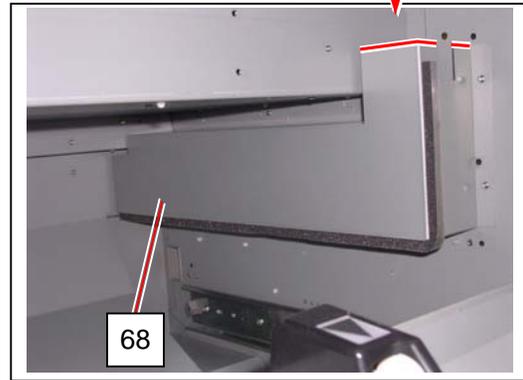
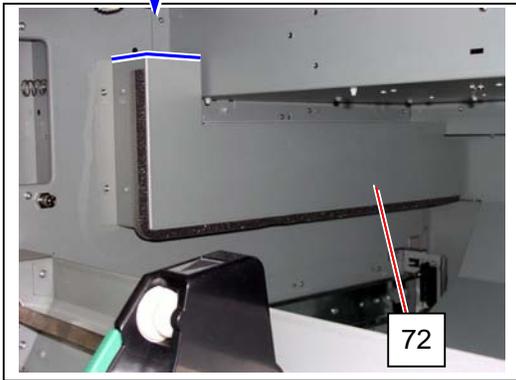
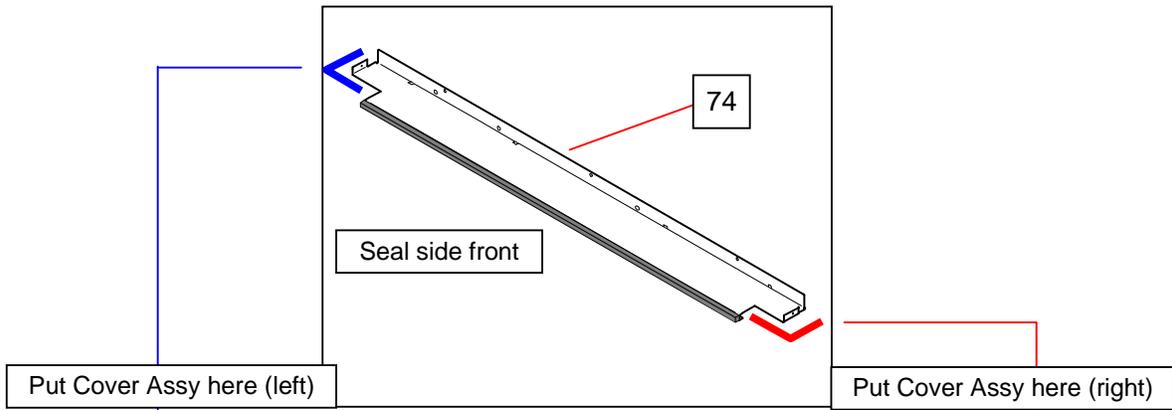
42. On the machine left, remove 5 screws (70) to remove Cover 10 (71).



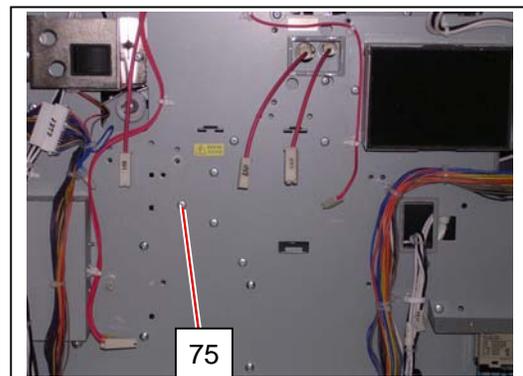
43. Fix **Cover 2 Assy** (72) inside the machine with 6 **Bind Head Screws** (73) from outside.



44. Install **Cover Assy** (74) onto the top front of Cover 3 Assy (68) and Cover 2 Assy (72).
Fix Cover Assy (74) with 2 **Bind Head Screws** (75) temporarily.

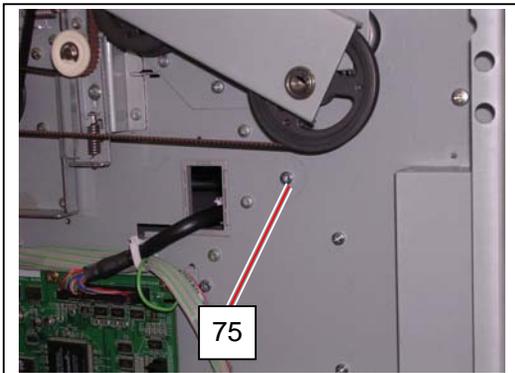
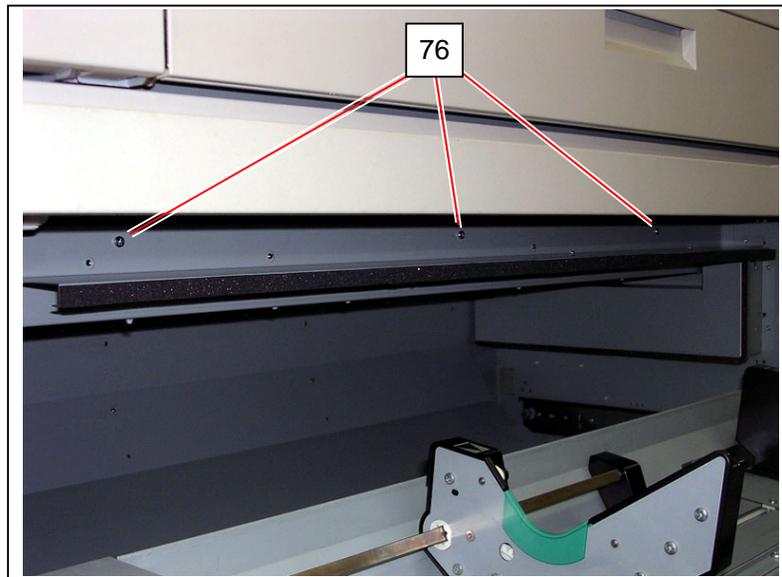
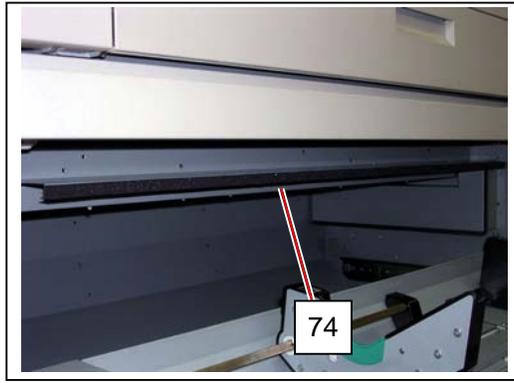


Left side

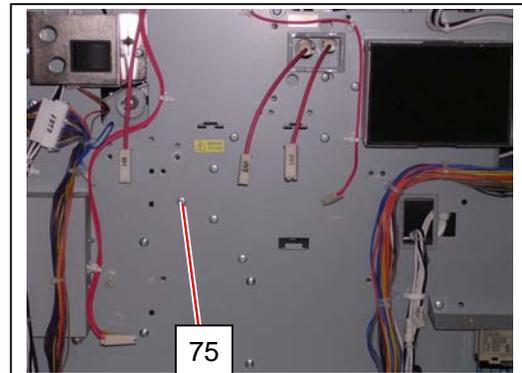


Right side

45. Install 3 **Bind Head Screws** (76) to the front face of Cover Assy (74) and tighten 5 screws (75) (76) to secure Cover Assy (74).

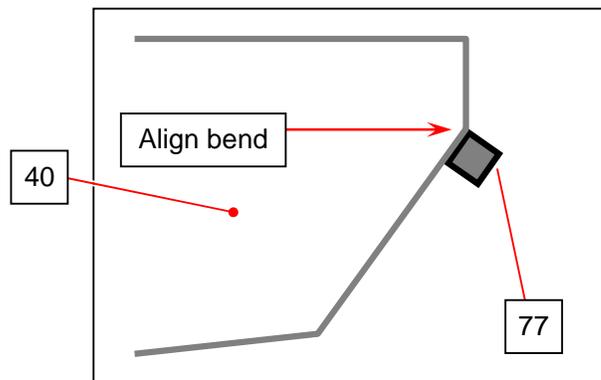
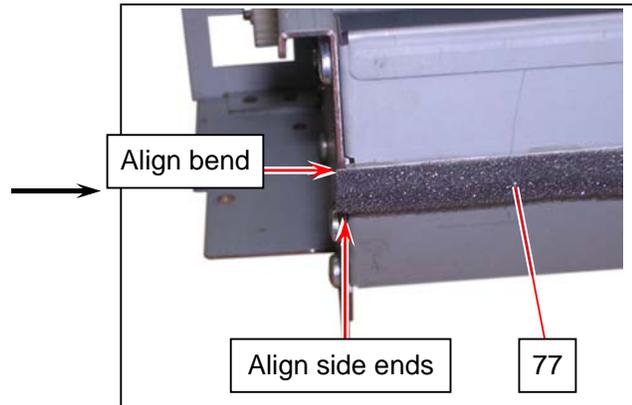
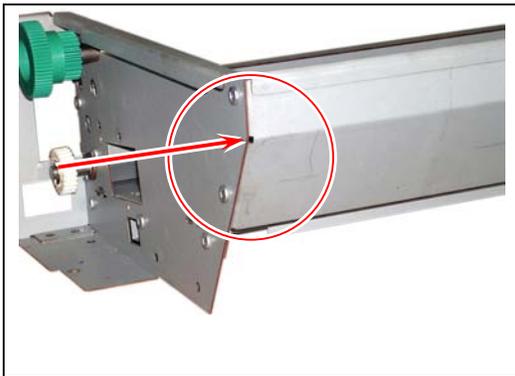
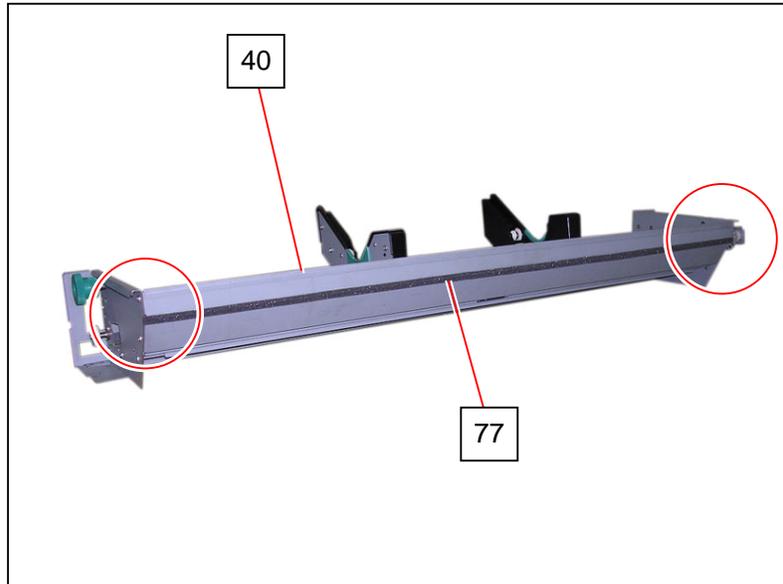
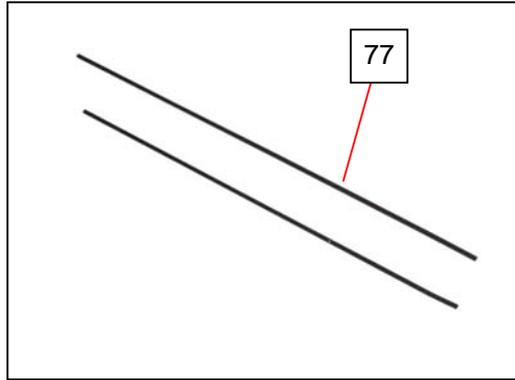


Left side



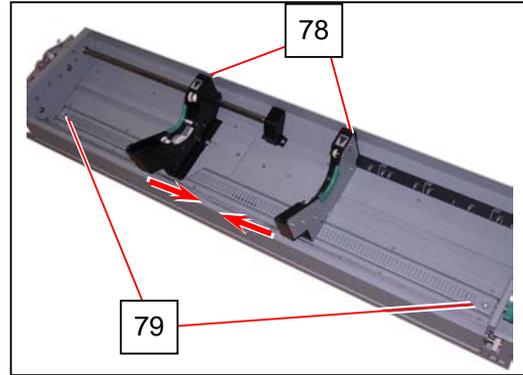
Right side

46. Apply **Seal 5** (77) straight on the back of Roll Deck 2 Assy (40).

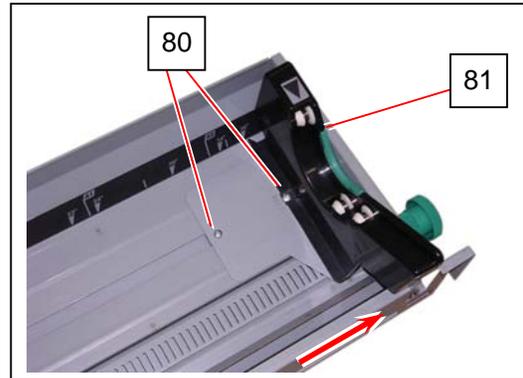


Section - Side

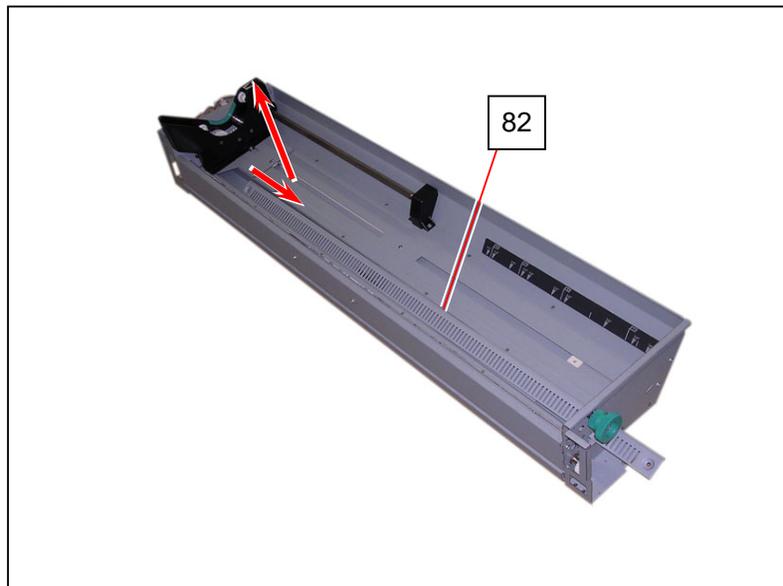
47. Move Slide Guides (78) toward the middle.
Remove 2 screws (79).



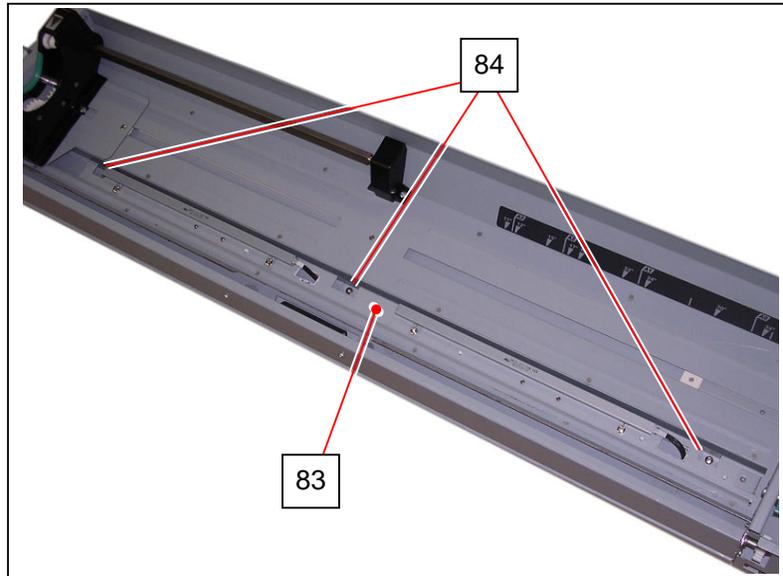
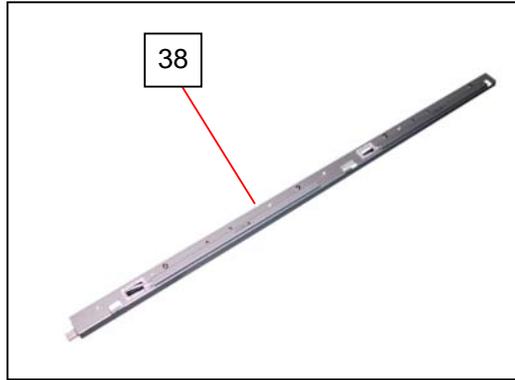
48. Move Slide Guides (78) toward the far end.
Remove 2 screws (80: M4x8) to remove Slide Guide 2 R Assy (81).



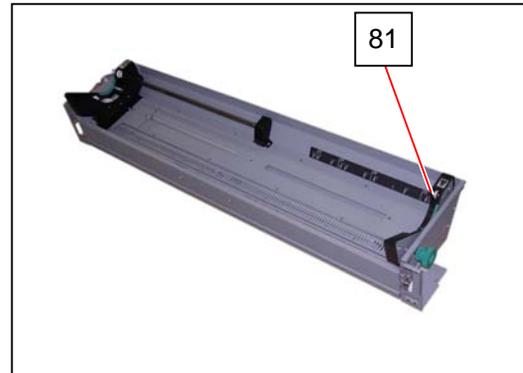
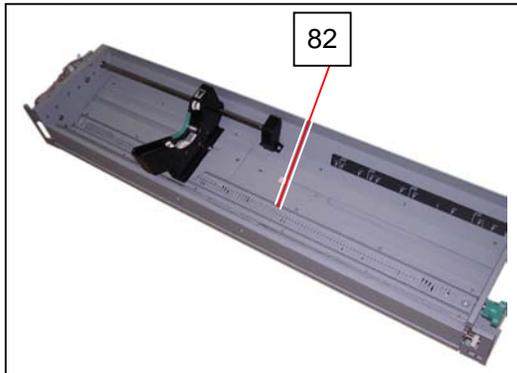
49. Move Cover 4 (82) to the arrow direction to remove it.



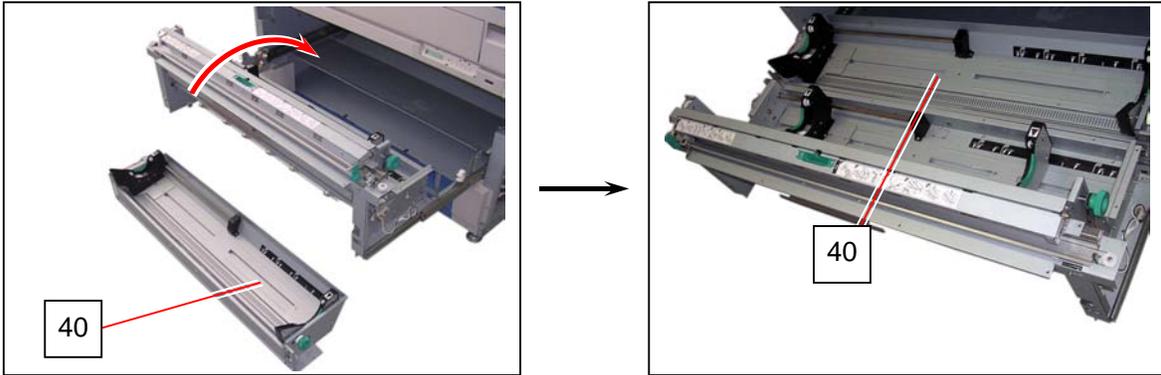
50. Install **Roll 2 Heater Case** (83) with 3 **Tooth Washer Screws** (84).



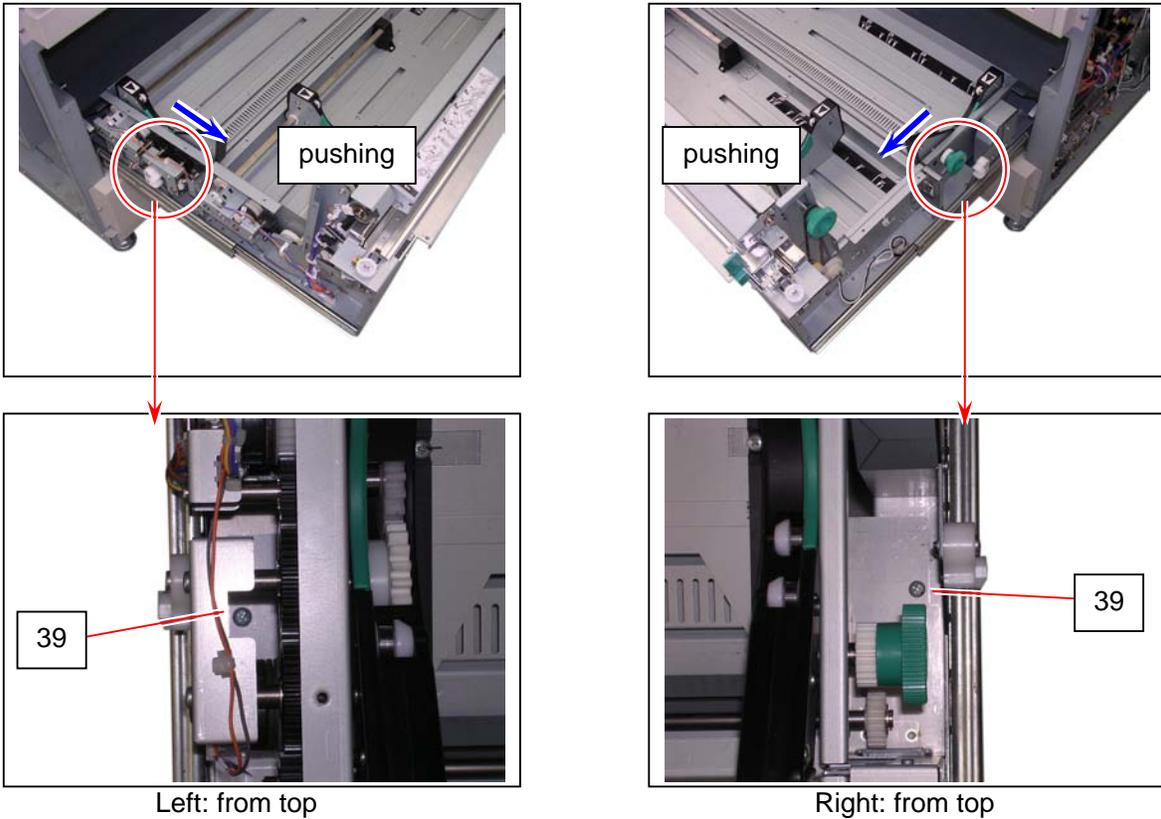
51. Replace Cover 4 (82) and Slide Guide 2 R Assy (81).



52. Remount Roll Deck 2 Assy (40) to the rails of the back of Roll Deck 1.

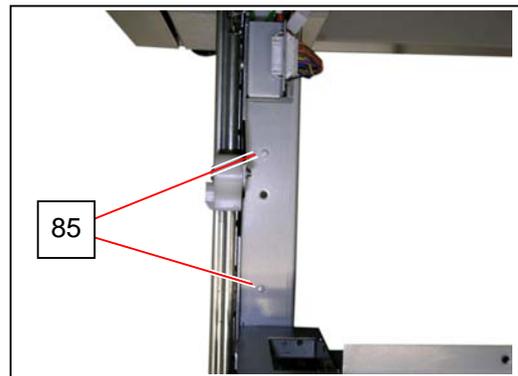


53. With pushing Roll Deck 2 Assy to Roll Deck 1 (forward), secure it to the rails with 2 screws (39: w/ OTW) from the top.

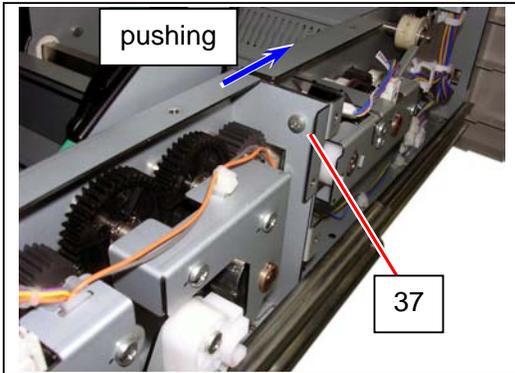
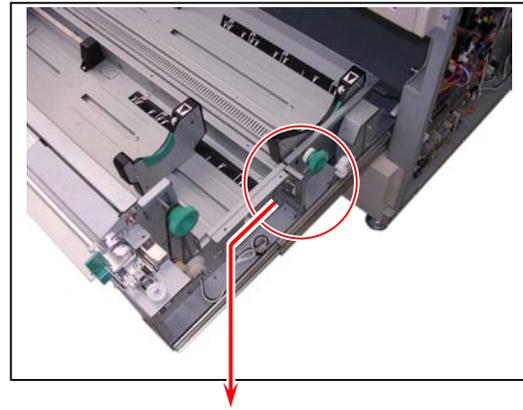
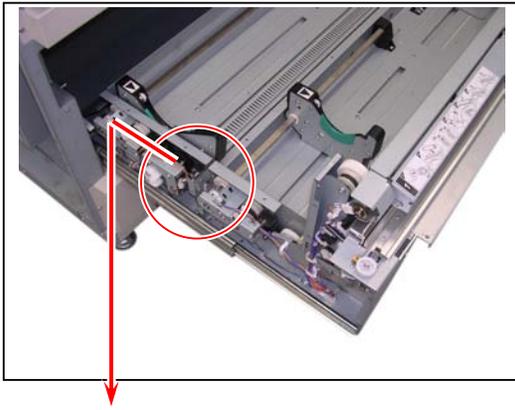


NOTE

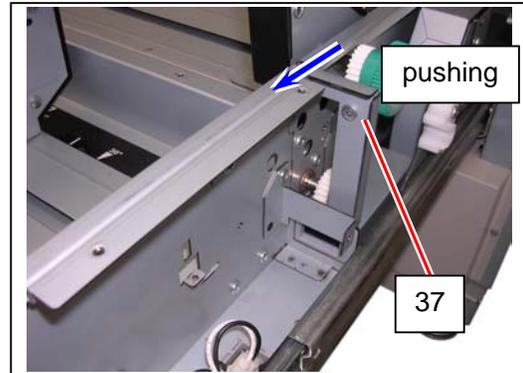
Locate Roll Deck 2 Assy with using the 2 positioning bosses (85) on the left rail.



54. With pushing Roll Deck 2 Assy to Roll Deck 1 (forward), secure it to the rear frame of Roll Deck 1 with 2 screws (37: from rear on the left, **M4x4**) (38: from front on the right: **M4x4**).



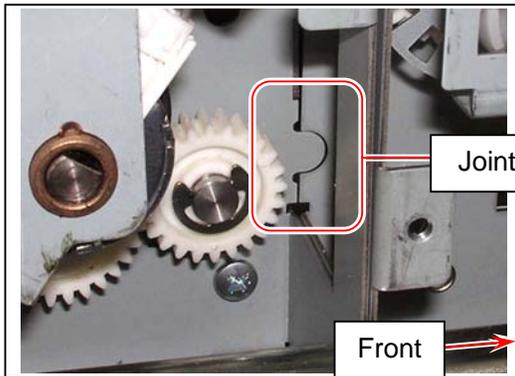
Left: from rear



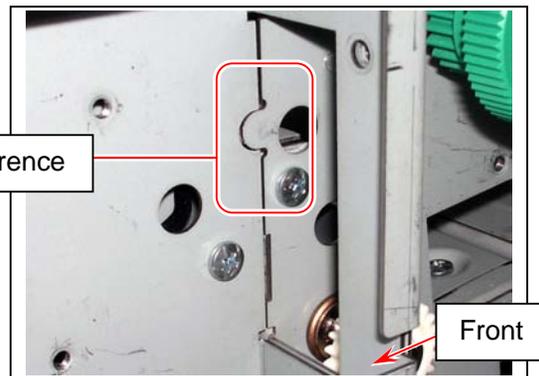
Right: from front

! NOTE

Push Roll Deck 2 Assy forward so that there is no gap between both the decks with using the joint references.

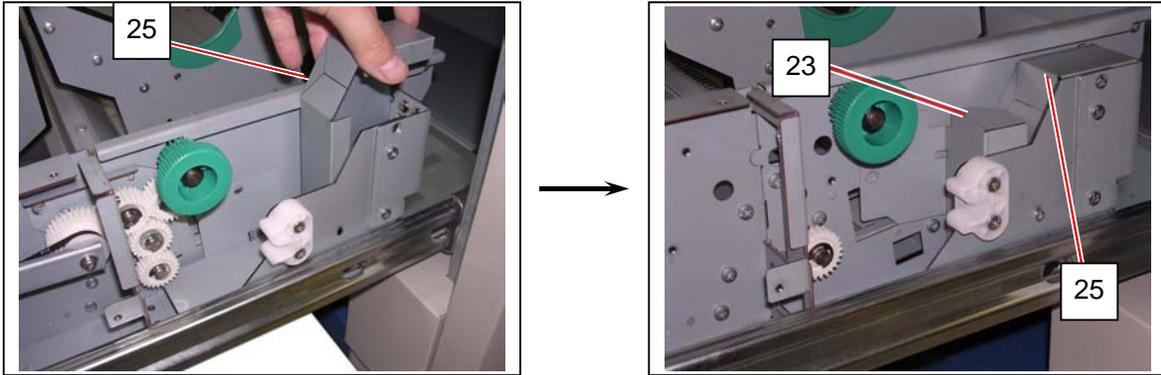


Left

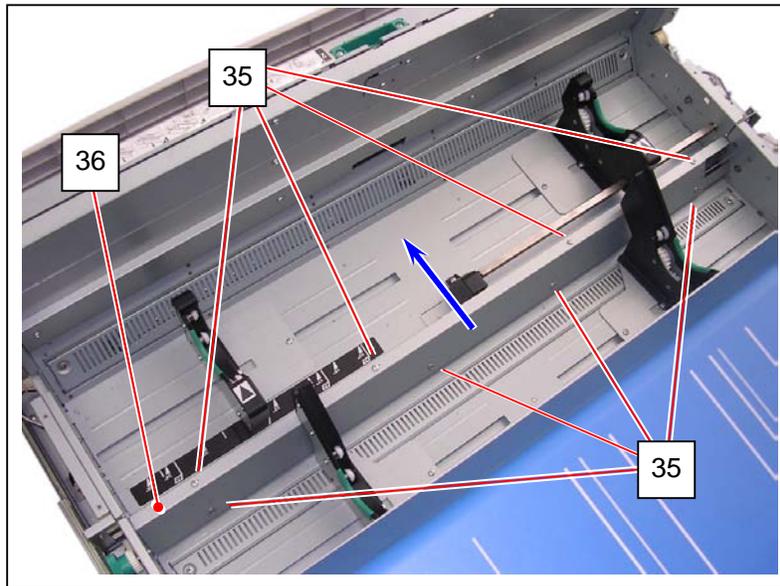


Right

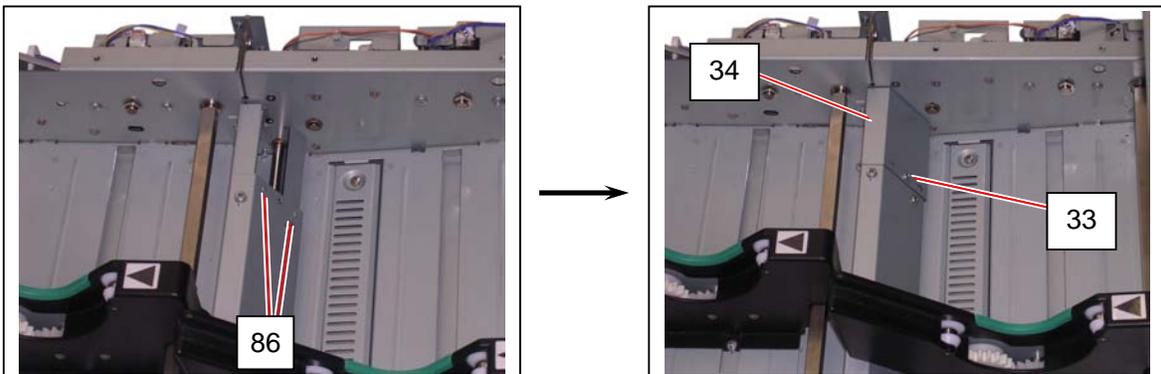
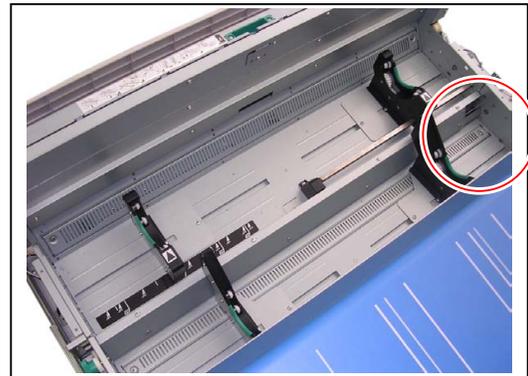
55. Replace Cover 9 (25). Place Cover 7 (23) beside Cover 9 (25) and put it aside.



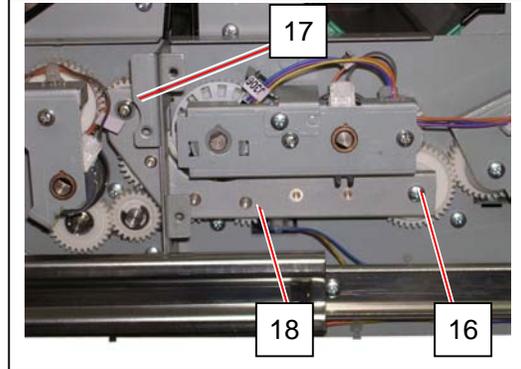
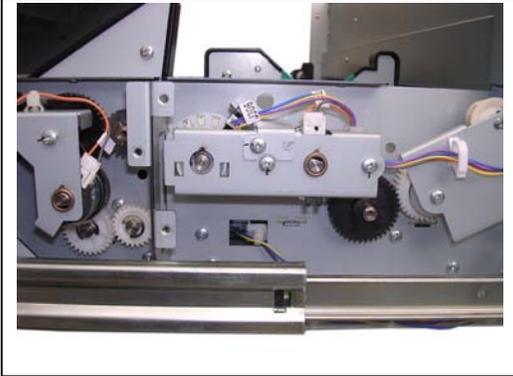
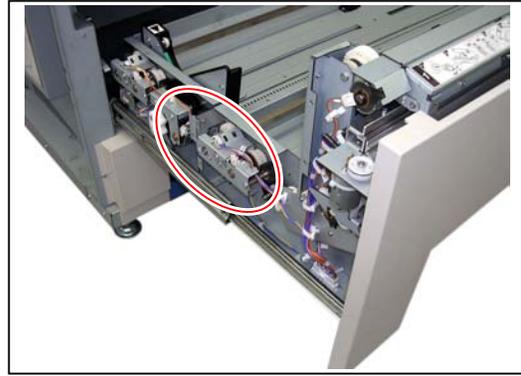
56. Install Guide Plate (36) on the joint of the decks.
With pushing Roll Deck 2 Assy to Roll Deck 1 (forward), fix it with 8 screws (35).



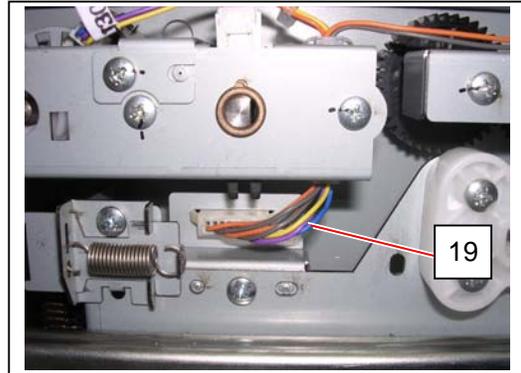
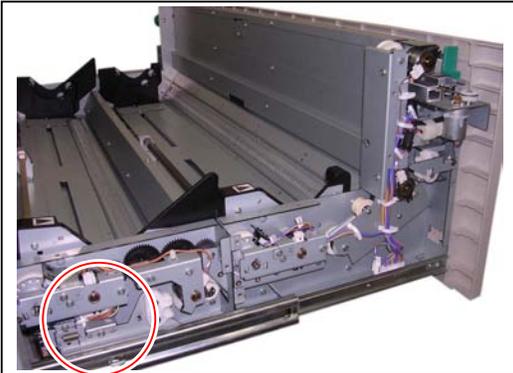
57. Install Bracket 7 (34) using the positioning bosses (86) and fix it with 1 screw (33).



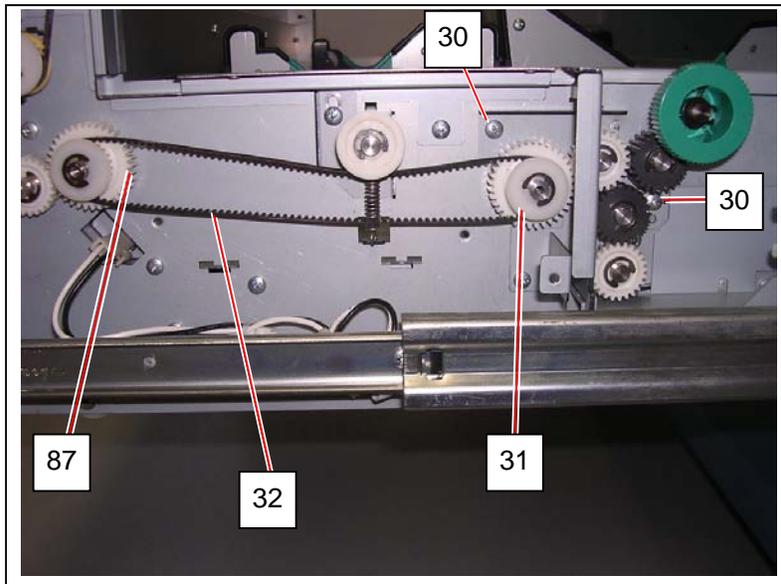
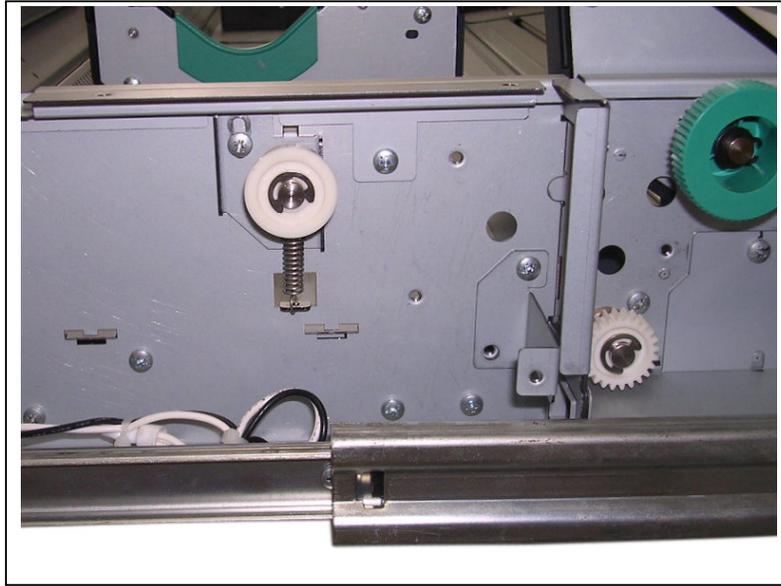
58. Install Gear Bracket 2 Assy (18) on the left side with 1 Bind Head Screw (16) and 1 Pan Head Screw (17).



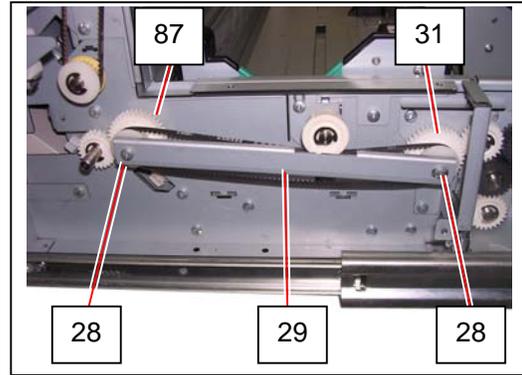
59. Connect the harness (19) to the connector.



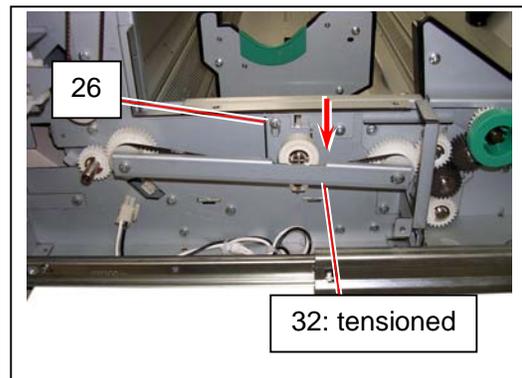
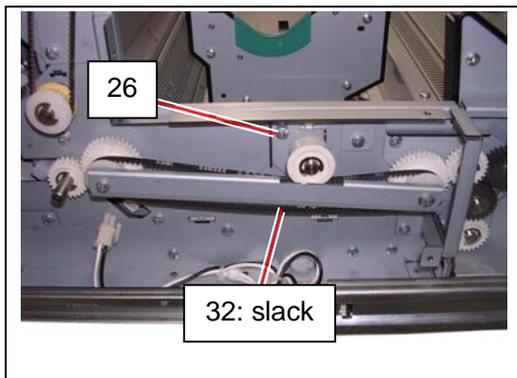
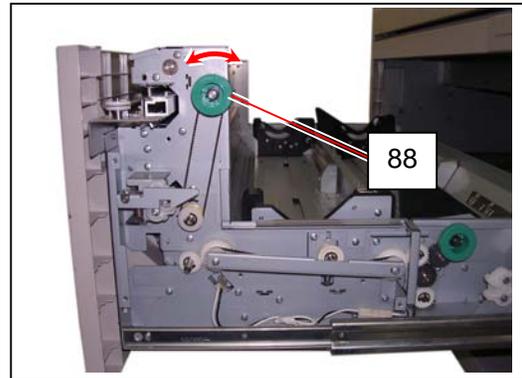
60. Route Timing Belt 453 (32) between Gear Bracket Assy (31) and 36T Gear 24T Pulley (87).
Fix Gear Bracket Assy (31) with 2 screws (30: **M4x4**).



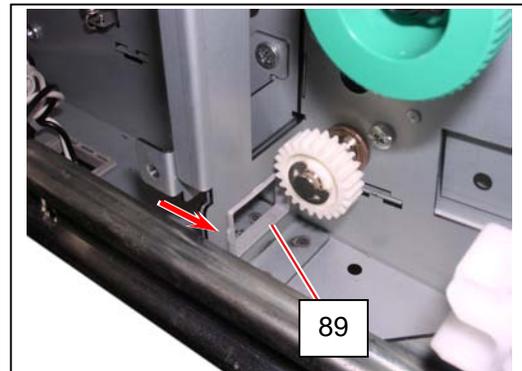
61. Install Bracket 12 (29) to the shafts of the gears (31) (87) with 2 Pan Head Screws (28).



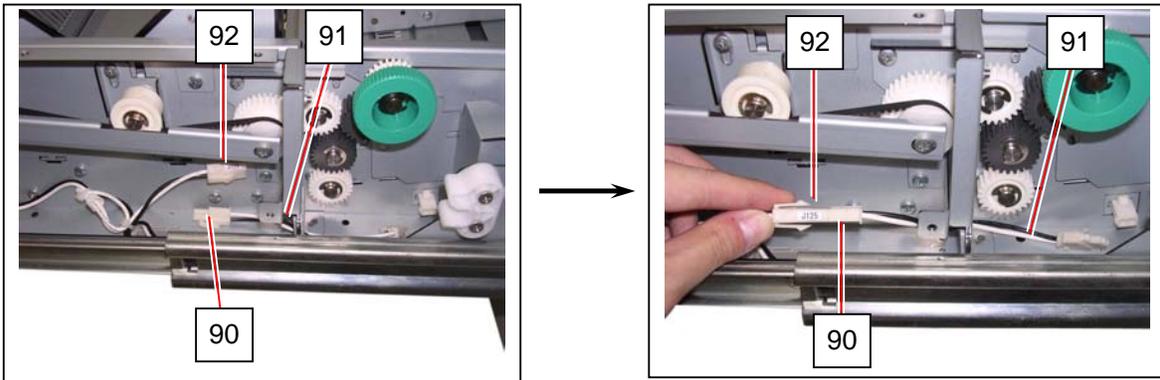
62. Check the gear rotation by using the feed knob (88). Loosen the screw (26) to apply tension to Timing Belt 453 (32) by Pulley Bracket Assy (27). After tensioning, tighten the screw (26).



63. Attach **Bush** (89) to the square holes on the right side of Roll Deck.

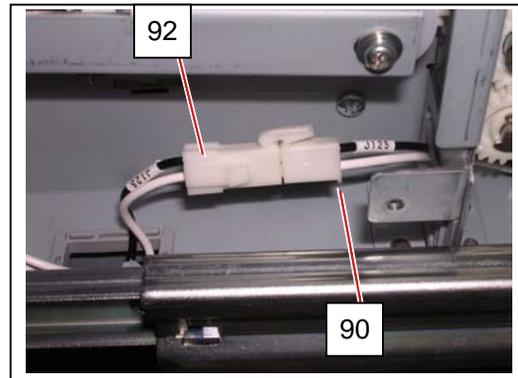


64. Pass J125 connector (90) of **AC Paper Harness 2** (91) through the square hole and connect to J125 connector (92) on the deck 1 harness.

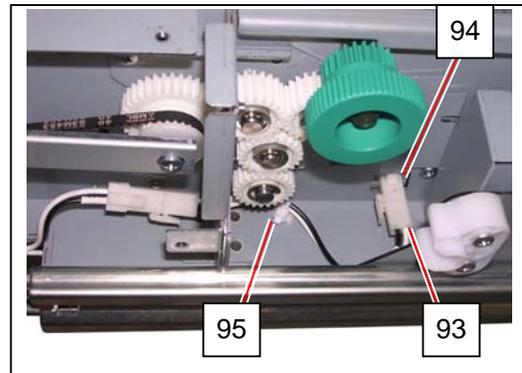


! NOTE

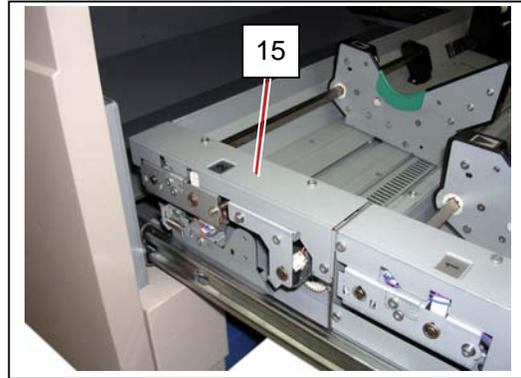
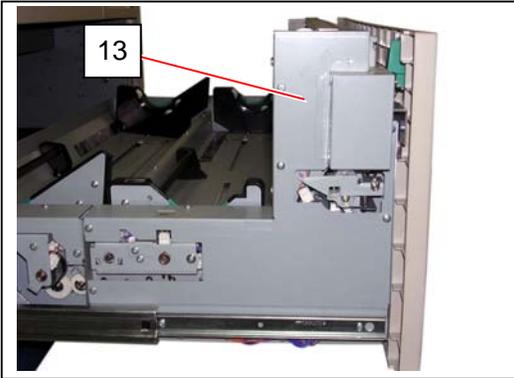
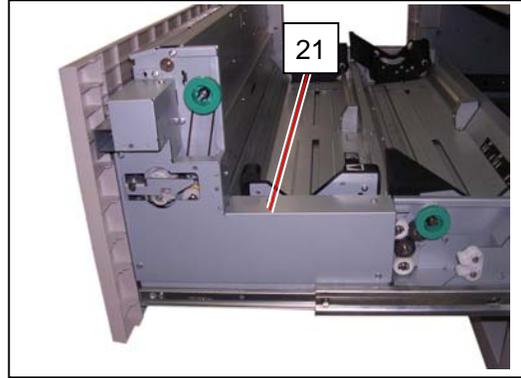
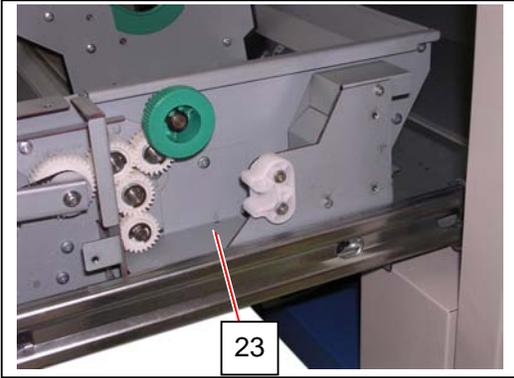
There are labels near each connector of the harness of Roll Deck 1 and AC Paper Harness 2.
Please engage J125 (90) to J125 (92).



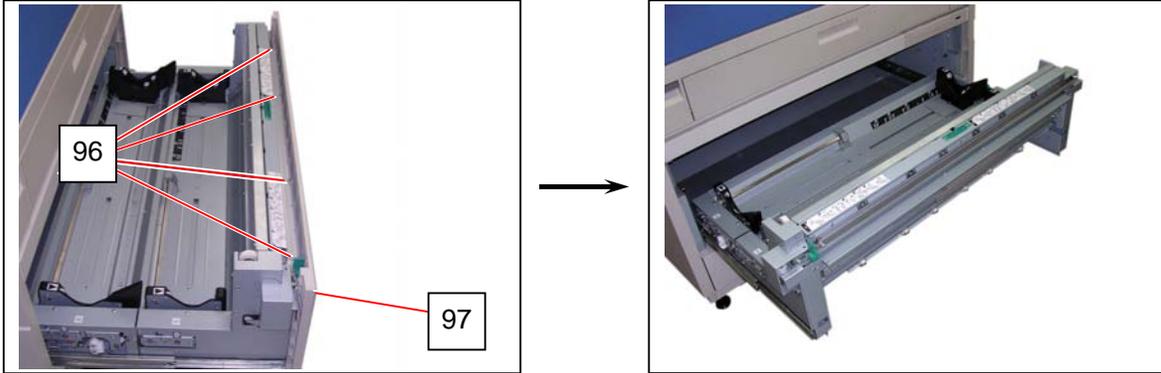
65. Connect J114 connector (93) of AC Paper Harness 2 to the connector (94) of Roll 2 Heater Case.
Secure AC Paper Harness 2 with **Snap Band** (95).



66. Replace Cover 7 (23), Cover 22 (21), Cover 16 (15), Cover 14 (13), Cover 2 (10), Cover 3 (11).

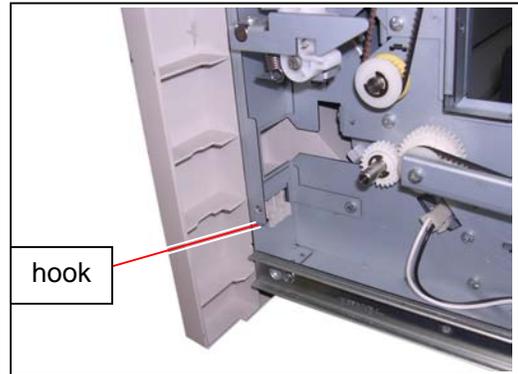


67. Remove 4 screws (96) to remove Cover 1 (97).

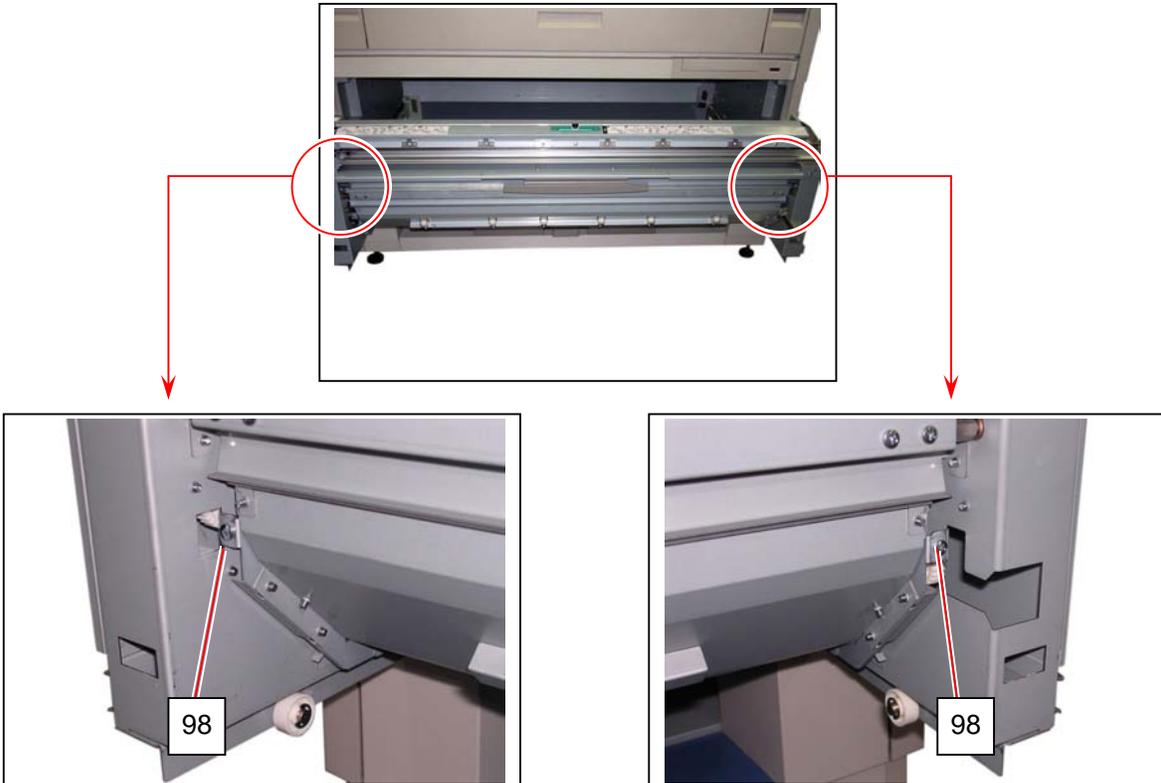


NOTE

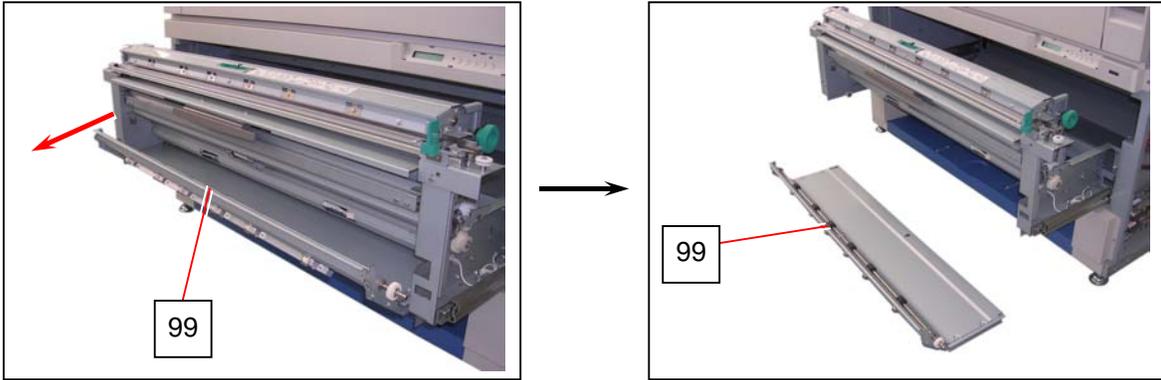
Make sure to insert the hooking part to the slit as the following photo when you put back the Cover 1 (97).



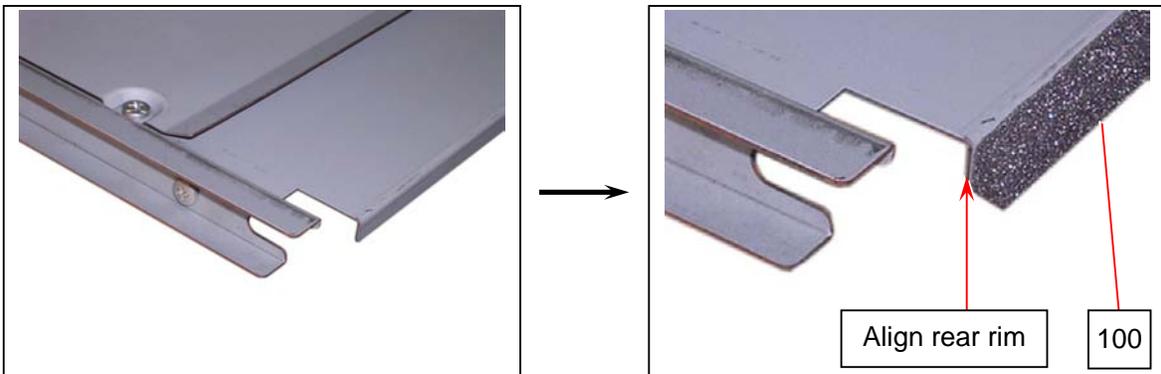
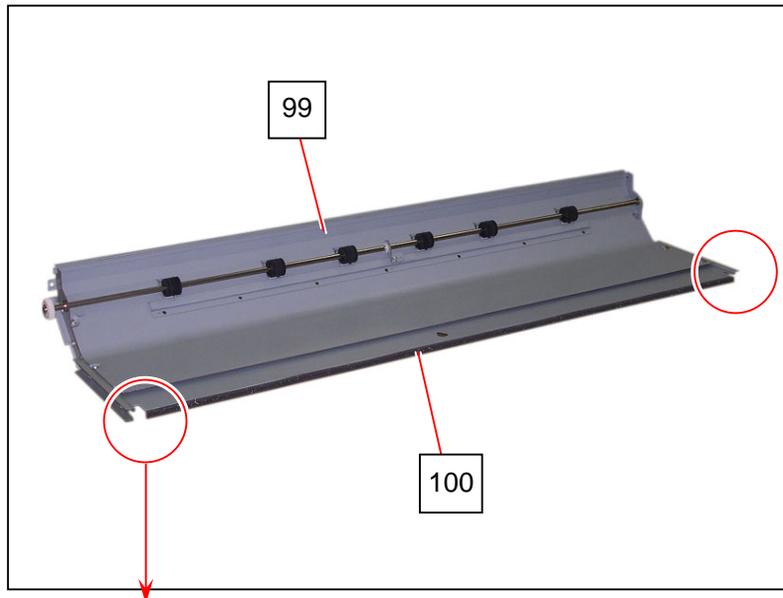
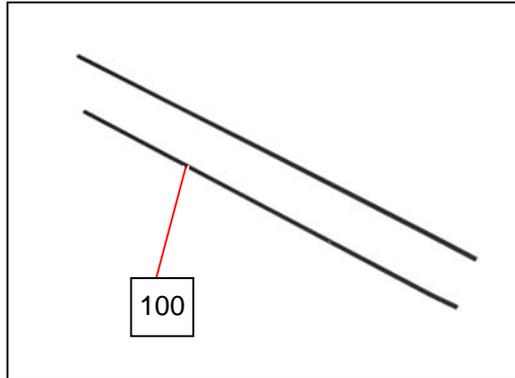
68. Remove 2 screws (98).



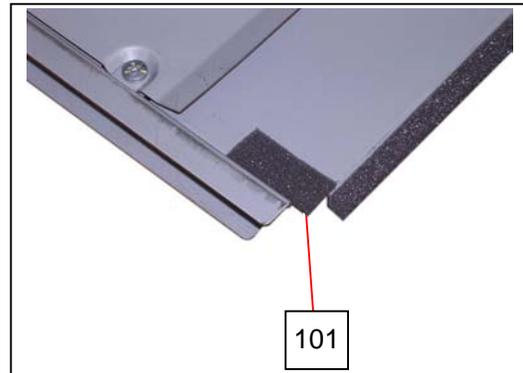
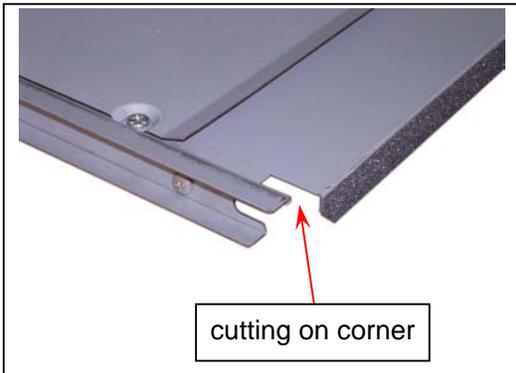
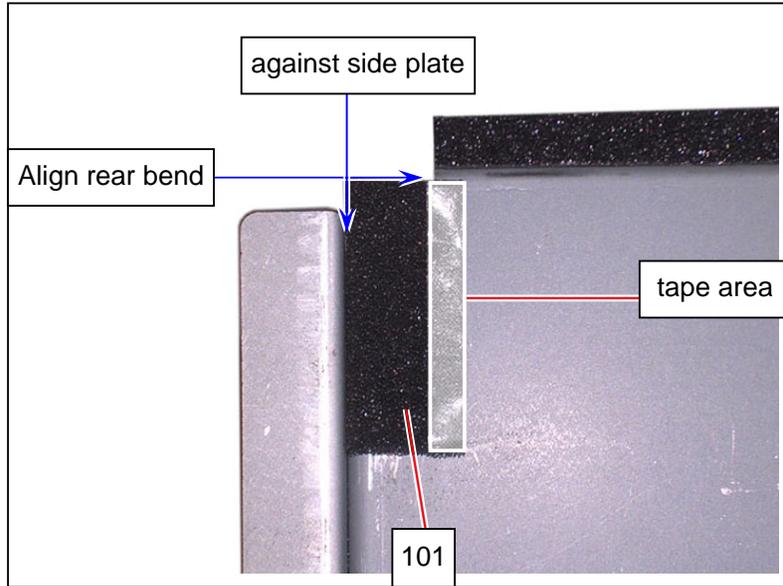
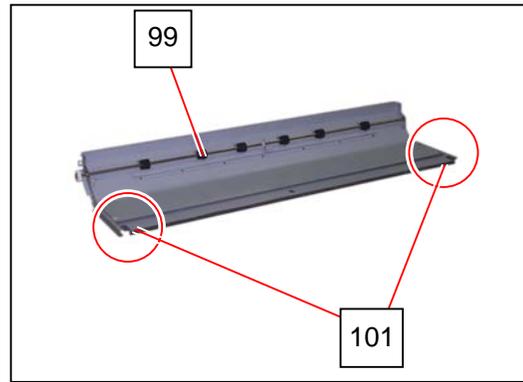
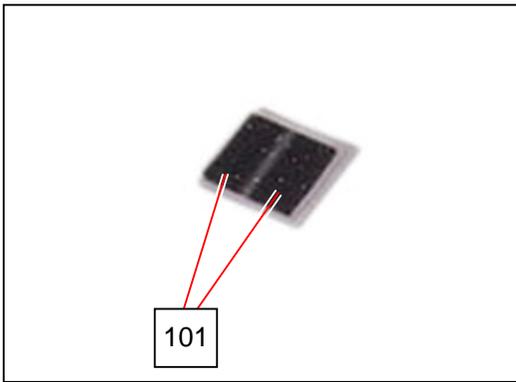
69. Remove Roll Deck 2 Drive Assy (99).



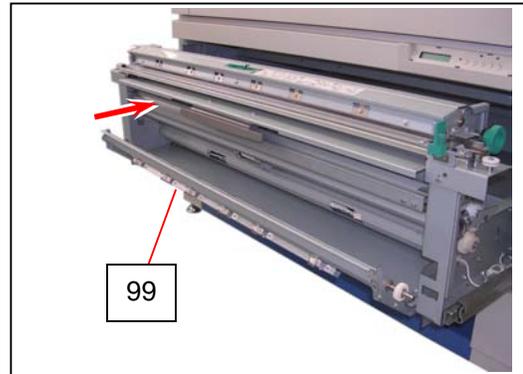
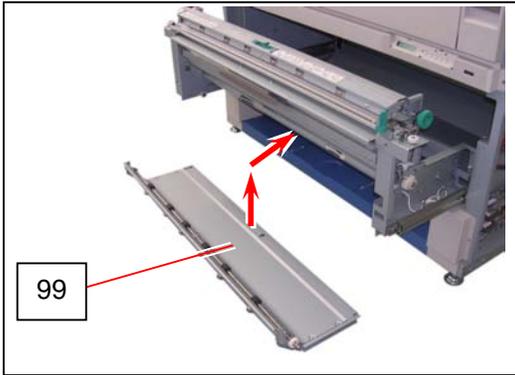
70. Apply **Seal 3** (100) to the bending part on the rear of Roll Deck 2 Drive Assy (99).
Fit the seal's ends to the rear rim on both sides.



71. Apply **Seal 4** (101) to both corners on the top rear of Roll Deck 2 Drive Assy (99). Seal 4 (101) will be positioned in order to hide the cuttings on the corner.

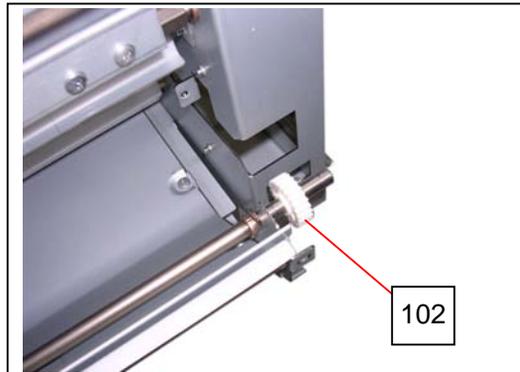


72. Remount Roll Deck 2 Drive Assy (99) onto the railing at the front bottom of Roll Deck.

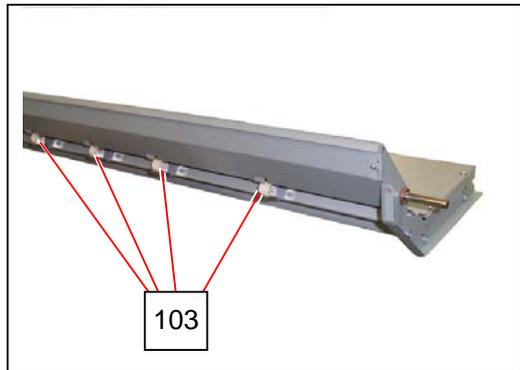


⚠ NOTE

(1) Be careful not to hit the gear (102) to the cutting on the frame.

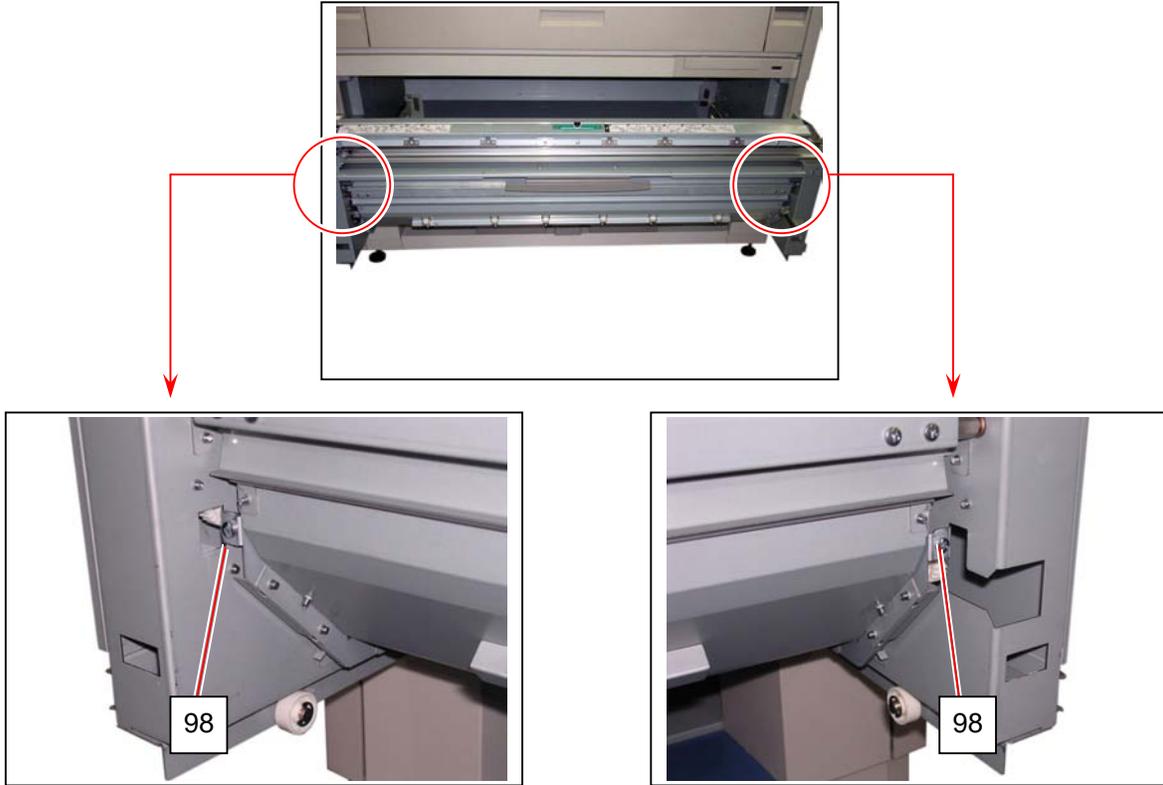


(2) Do not hold the rollers (103). Roll Deck 2 Drive Assy may be deformed.



(3) Do not hurt your hand by touching the sharp edges

73. Secure Roll Deck 2 Drive Assy with 2 screws (98).



74. Replace Cover 1 (97).



5. 4. 13 Installation of Roll Deck 2 Kit

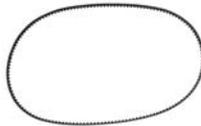
(US model P/N: Z168080010)

(Europe/Asia model P/N: Z168080020)

NOTE

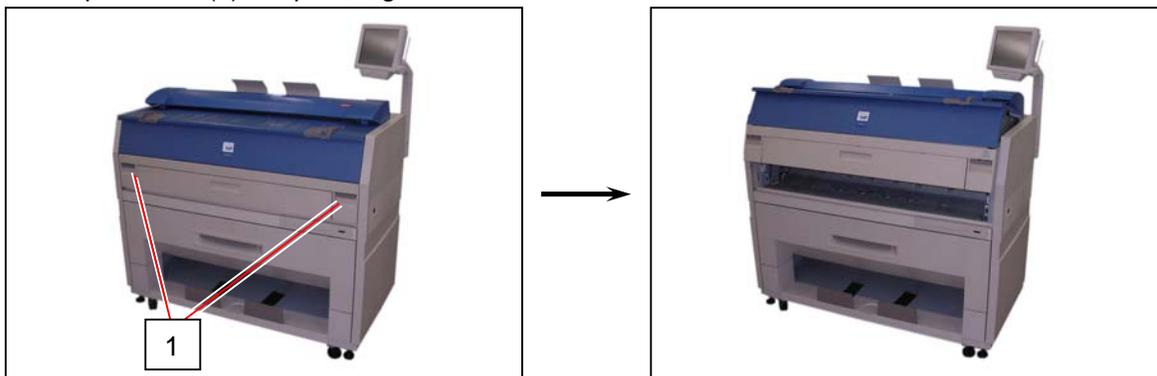
After installing the Kit it is necessary to make the KIP 3100 recognize the Roll Deck 2 in the Service Mode, which you can do in the Item Number 058 of the Adjustment Mode.

1. Check the kit contents.

Item	Number of article	Item	Number of article
Roll Deck 2 Drive Assy 	1	Roll Deck 2 Assy (Dehumidify Heater installed to Europe/Asia model only) 	1
Gear Bracket 2 Assy 	1	Pulley Bracket Assy 	1
Gear Bracket Assy 	1	Spring 11 	1
Gear Bracket Assy 	1	Timing Belt 453 	1
Bracket 12 	1	Bracket 15 	1
36T Gear 24T Pulley 	1	Flange 	1

Item	Number of article	Item	Number of article
Cap Assy 	2	Bushing (Europe/Asia model only) 	1
Loading Instruction Label 	1	AC Paper Harness 2 (Europe/Asia model only) 	1
Bracket 7 	1	Snap Band 	1
Pan Head Screw w/ SW FW (M4x8) Bind Head Screw (M4x6) Bind Head Screw (M4x4) Bind Head Screw w/ OTW (M4x6)	3 8 5 2	Retaining Ring-E (E7) 	1

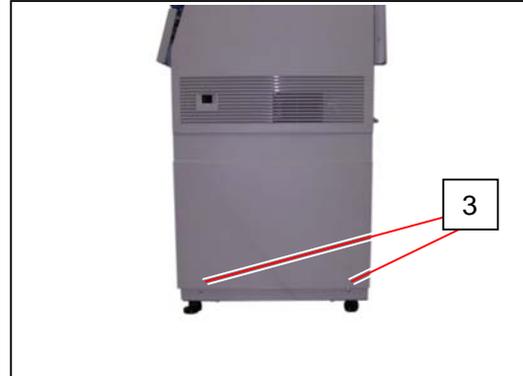
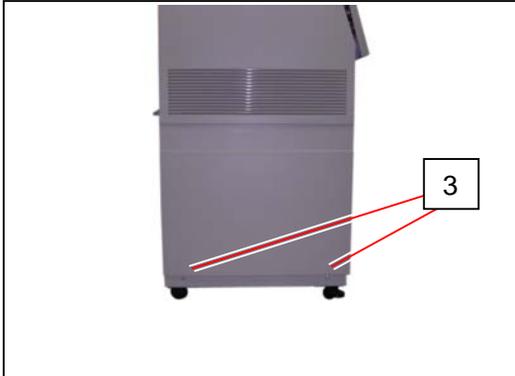
2. Pull up Lever 2 (1) to open Engine Unit.



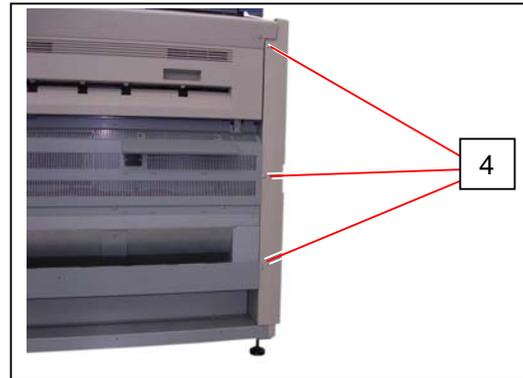
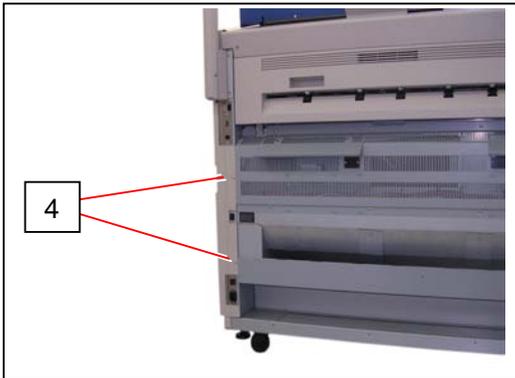
3. Remove 2 screws (2) on the front.



4. Remove 4 screws (3) on the sides.



5. Remove 5 screws (4) on the rear.



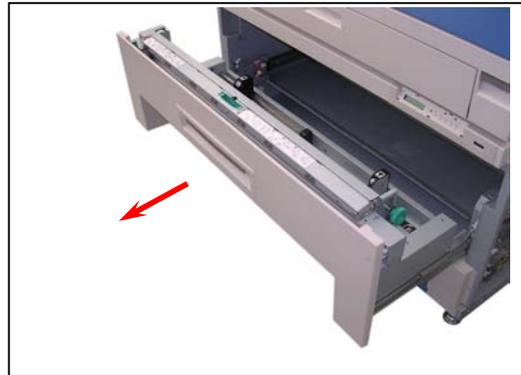
6. Remove Cover 2 (5) and Cover 3 (6).



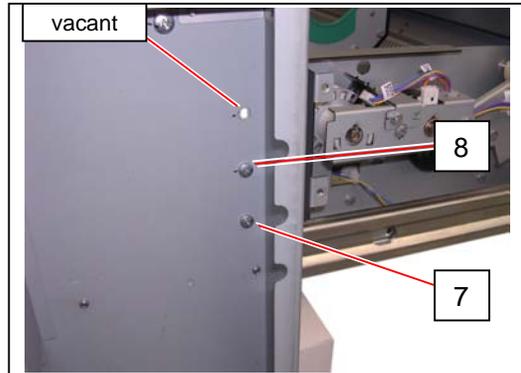
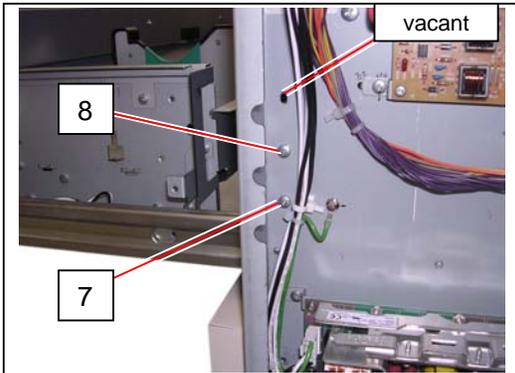
7. Close Engine Unit.



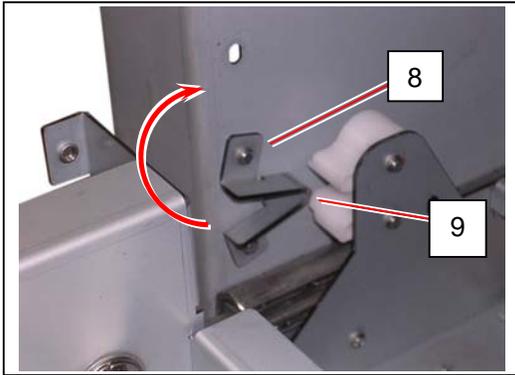
8. Draw out the Roll Deck.
Remove a roll media if mounted.



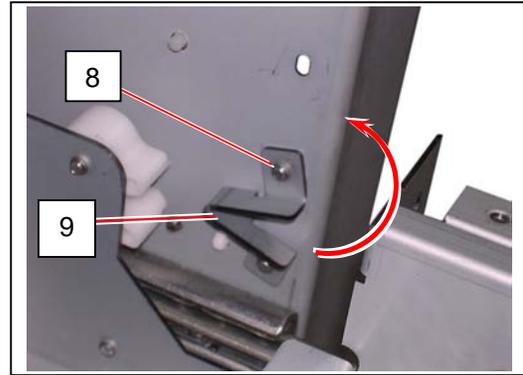
9. Remove 1 screw (7) and loosen 1 screw (8) on each side.



10. Turn Bracket 26 (9) on the screw (8) in a 180 degree arc like the arrow direction.



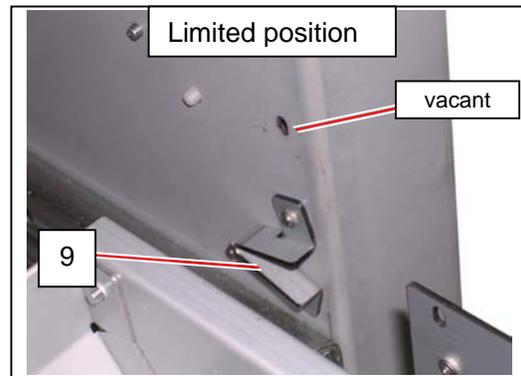
Left



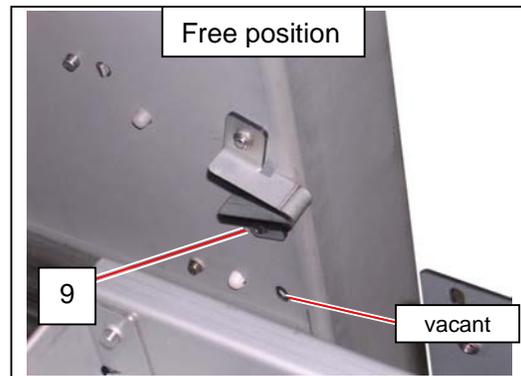
Right

! NOTE

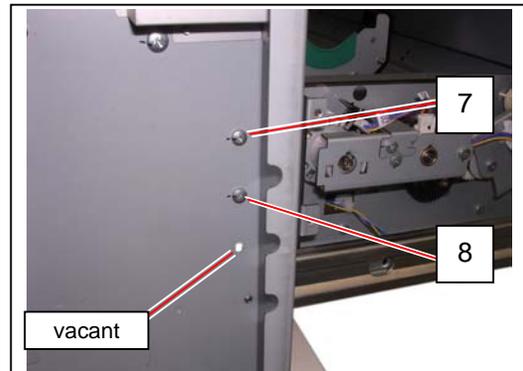
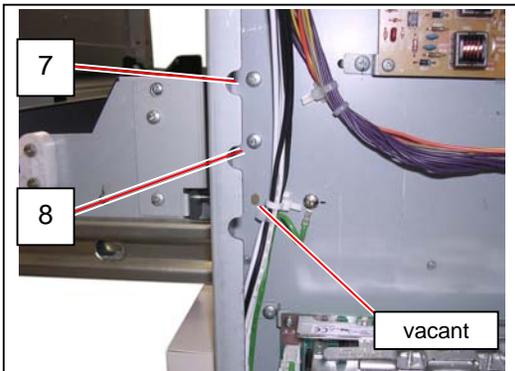
This is the “limited position” of Bracket 26 (9). You can not open the Roll Deck so widely in this situation because the Stopper restricts to do so.



This is the “free position” of Bracket 26 (9). You can open the Roll Deck widely in this situation.



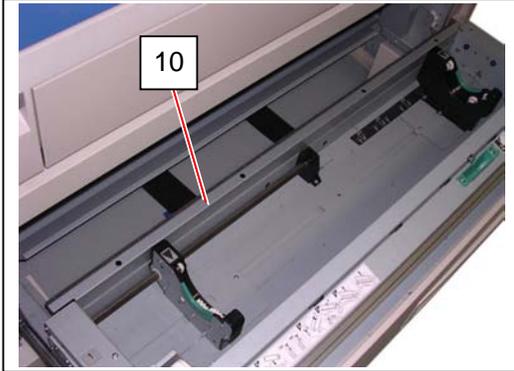
11. Fix Bracket 26 in the free position with the screws (7) (8).



! NOTE

For Europe/Asia model, please go to step 12 to continue the work.
For US model, read the instruction below.

If Cover 23 (10) is installed to your Roll Deck, the machine has been equipped with 1 Roll Dehumidify Deal Kit.
Before proceeding Roll Deck 2 installation, please remove some of the components of 1 Roll Dehumidify Deal Kit instructed in the later step.
If your machine does not have Cover 23, please go to step 17.

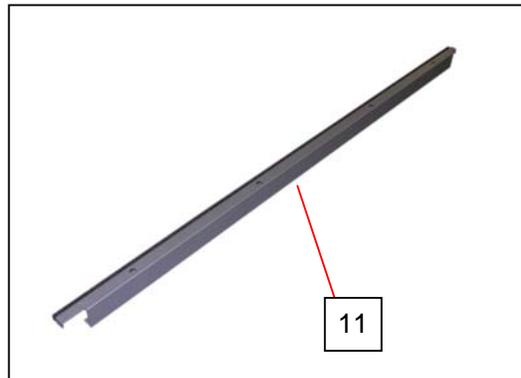
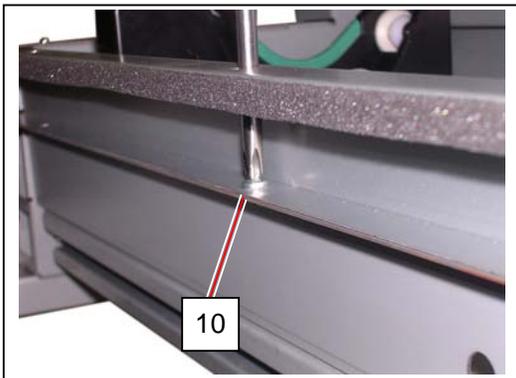
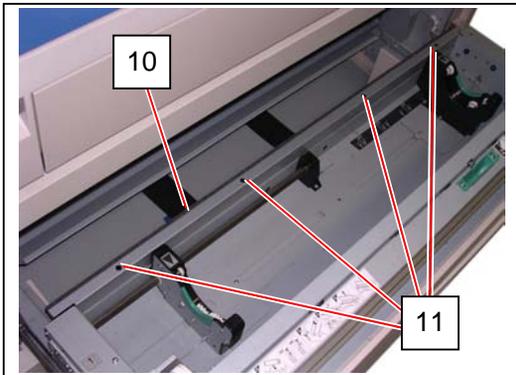


Cover 23 exists: go to step 12.

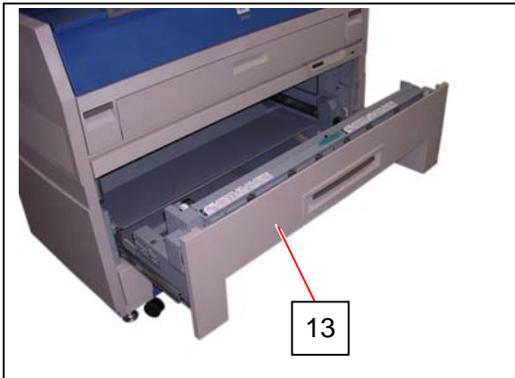
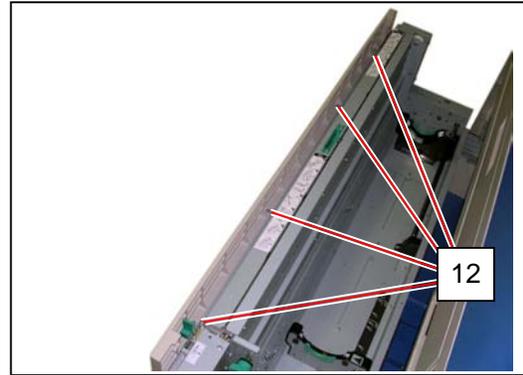


No Cover 23: go to step 17

12. Remove 4 screws (11) to remove Cover 23 (10).
(Cover 23 will not be used in 2 Roll Configuration)

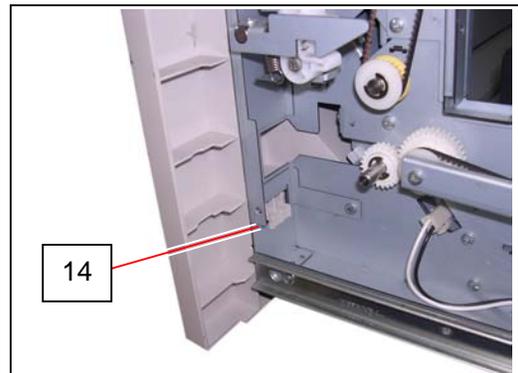


13. Remove 4 screws (12) to remove Cover 1 (13).

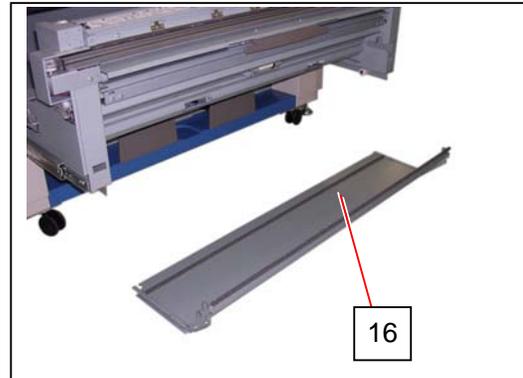
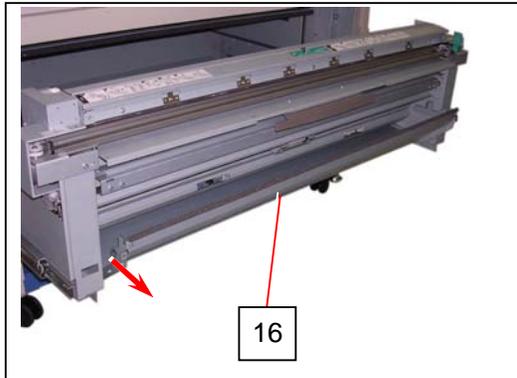
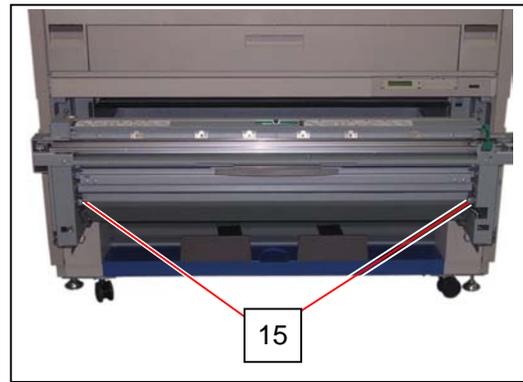


! NOTE

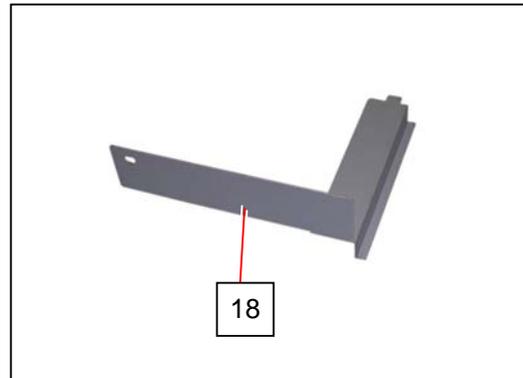
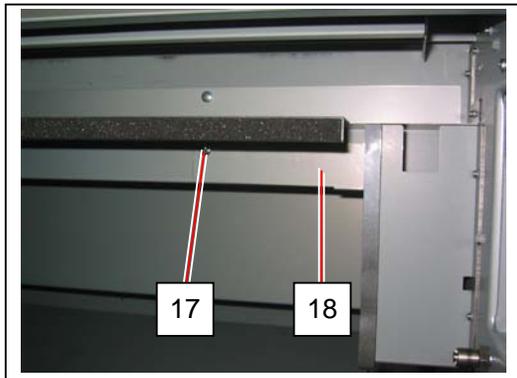
Make sure to insert the hooking part (14) to the slit as the following photo when you put back the Cover 1.



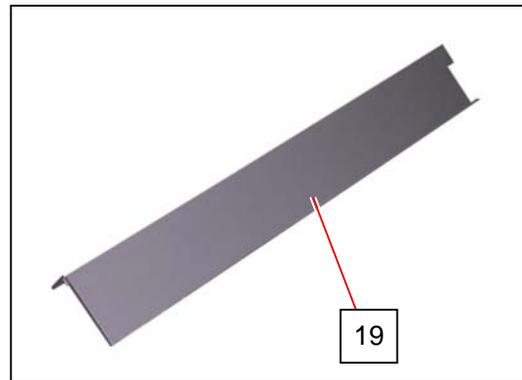
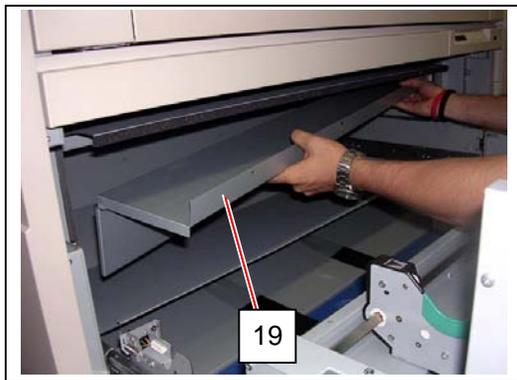
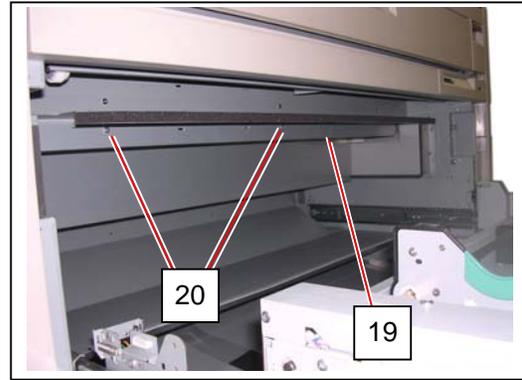
14. Remove 2 screws (15) on the front to remove Cover 24 Assy (16).
(Cover 24 Assy will not be used in 2 Roll Configuration)



15. Remove 1 screw (17) to remove Cover 13 (18).
(Cover 13 will not be used in 2 Roll Configuration)



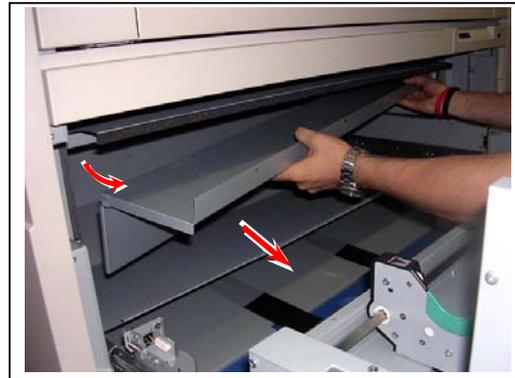
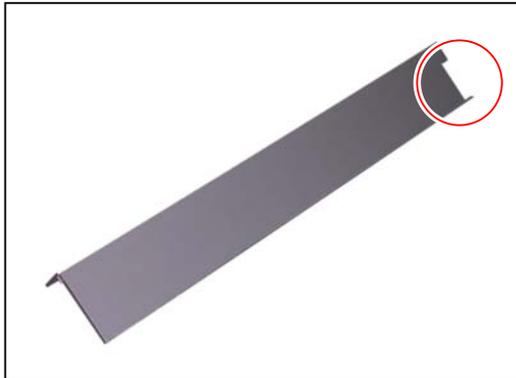
16. With supporting Cover 14 (19) upper inside of Roll Deck, remove 2 screws (20) to remove Cover 14 (19).
(Cover 14 will not be used in 2 Roll Configuration)



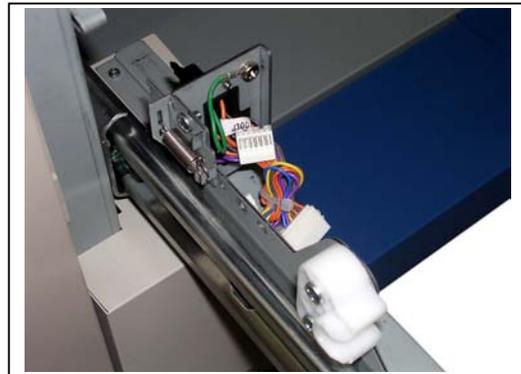
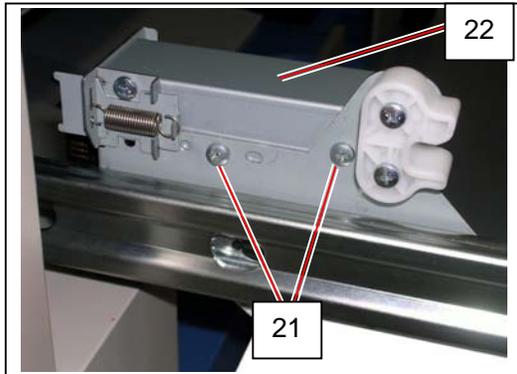
! NOTE

(1) Cover 14 may fall removing the screws without supporting.

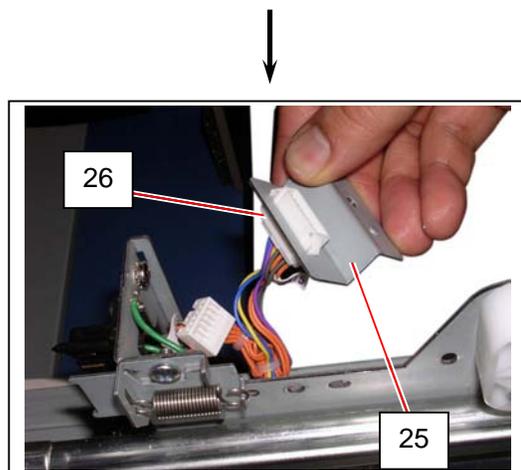
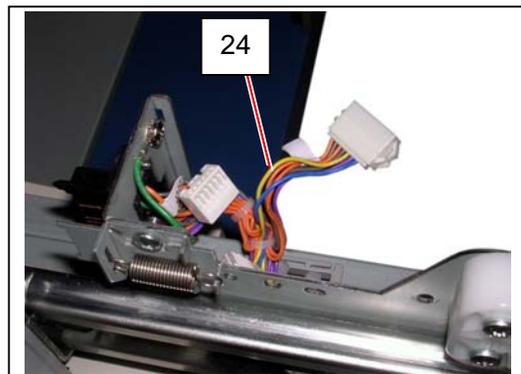
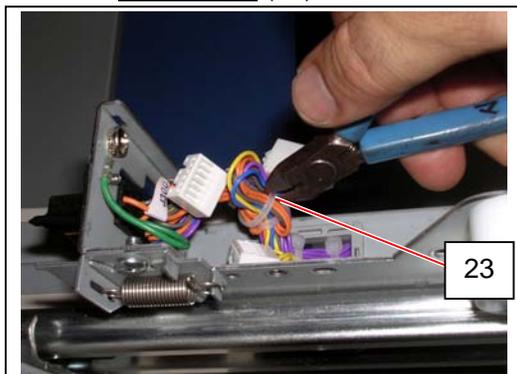
(2) Pull the left side of Cover 14 by a slight turn on its right with using the cutting part.



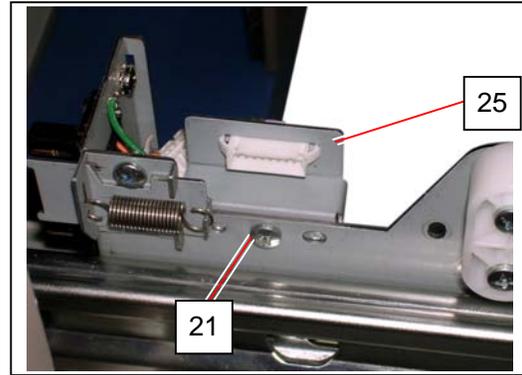
17. Remove 2 screws (21) to remove Bracket (22).
(One of the screws (21) will be reused.)



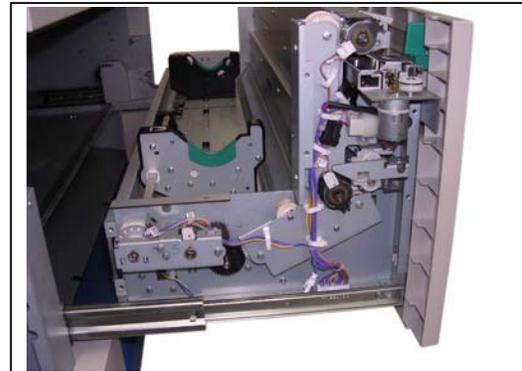
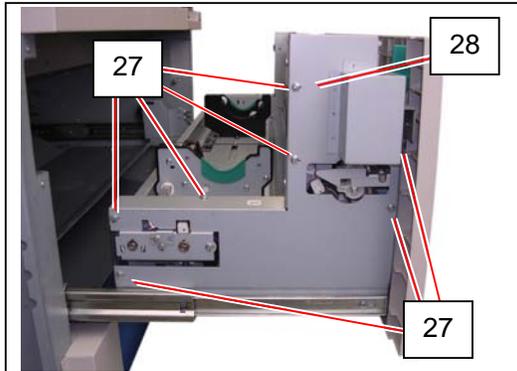
18. Cut the band (23) to release the harness (24).
Attach **Bracket 15** (25) to the connector (26).



19. Fix Bracket 15 (25) with 1 screw (21: one removed at step 17).

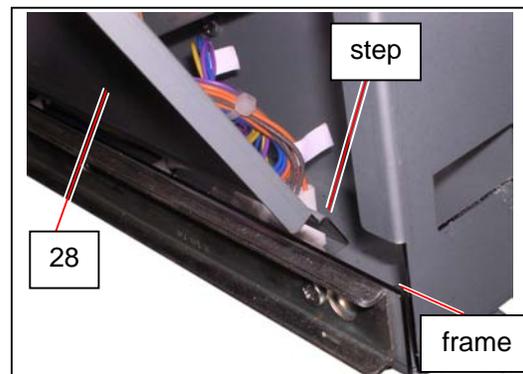


20. Remove 7 screws (27) to remove Cover 14 (28) on the left of Roll Deck.

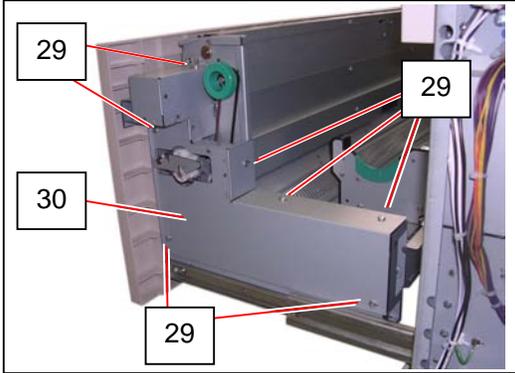


! NOTE

Make sure that the step part on the bottom side of Cover 14 (28) is inside the bottom frame.

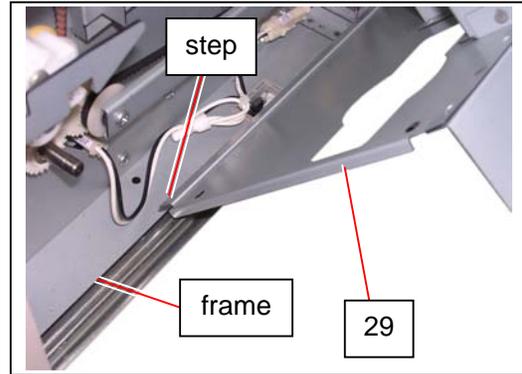


21. Remove 7 screws (29) to remove Cover 22 (30).

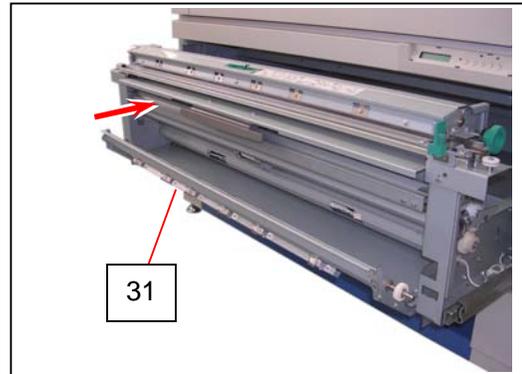
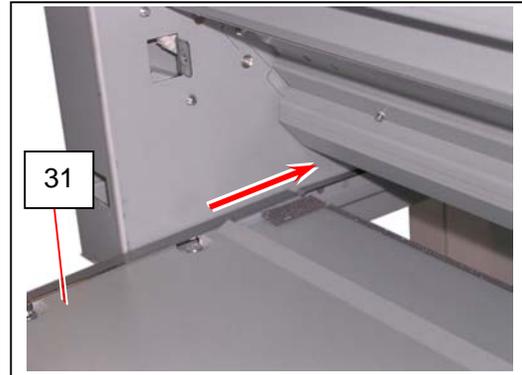
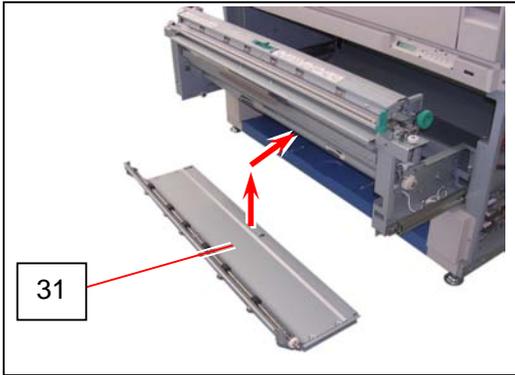


⚠ NOTE

Make sure that the step part on the bottom side of Cover 22 (29) is inside the bottom frame.

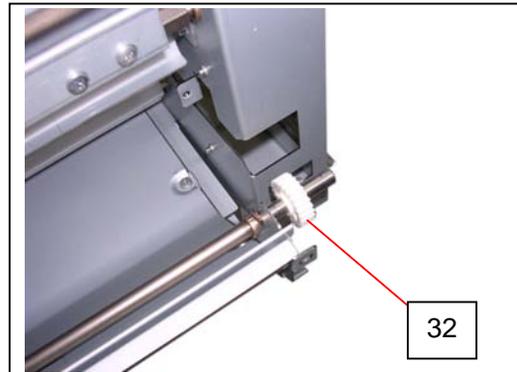


22. Mount **Roll Deck 2 Drive Assy** (31) onto the railing at the front bottom of Roll Deck.

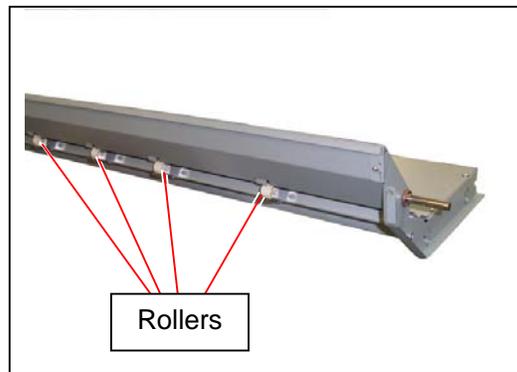


NOTE

(1) Be careful not to hit the gear (32) to the cutting on the frame.

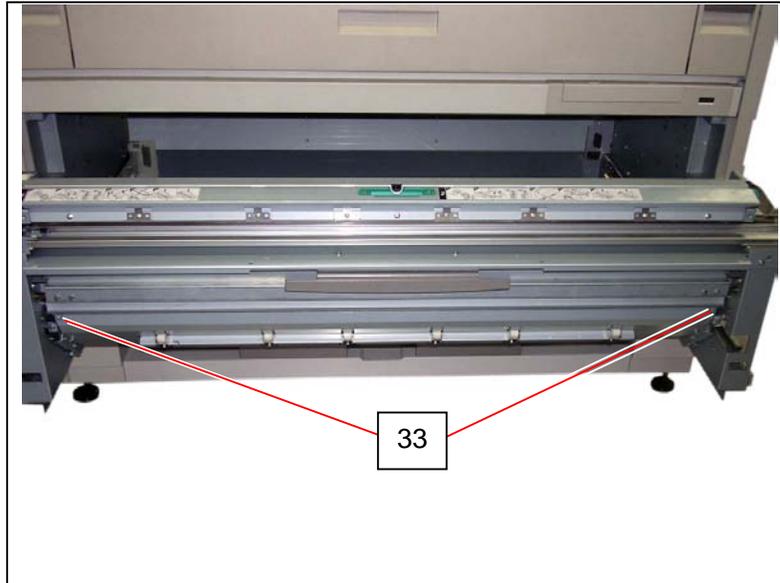


(2) Do not hold the rollers. Roll Deck 2 Drive Assy may be deformed.

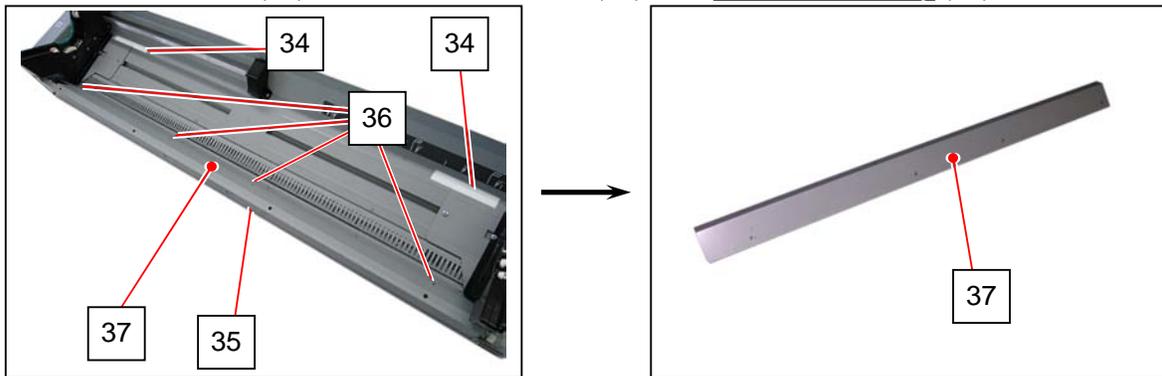


(3) Do not hurt your hand by touching the sharp edges

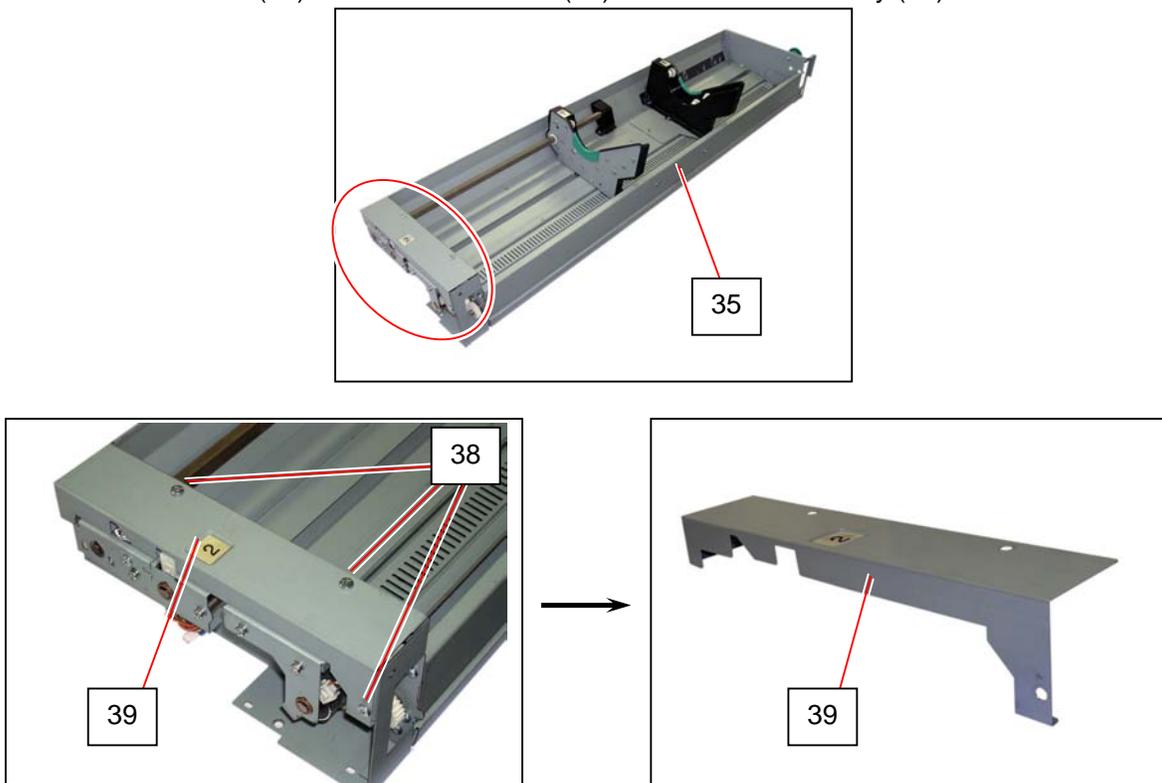
23. Secure Roll Deck 2 Drive Assy with 2 **Bind Head Screws** (33: **M4x6**).



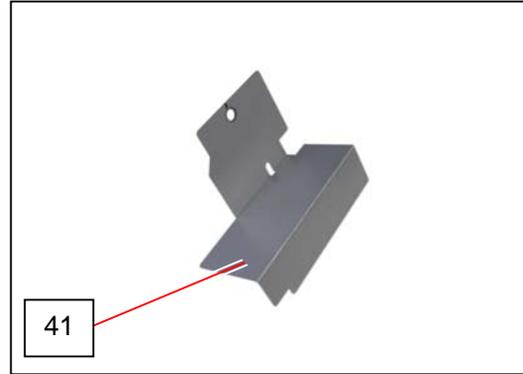
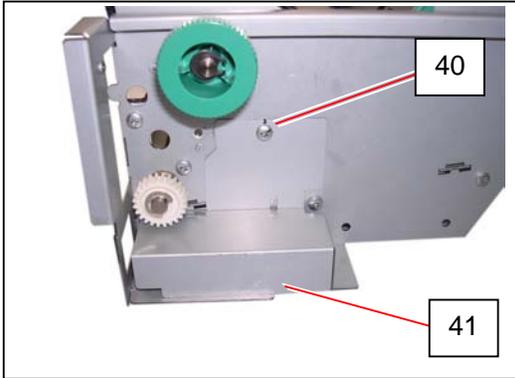
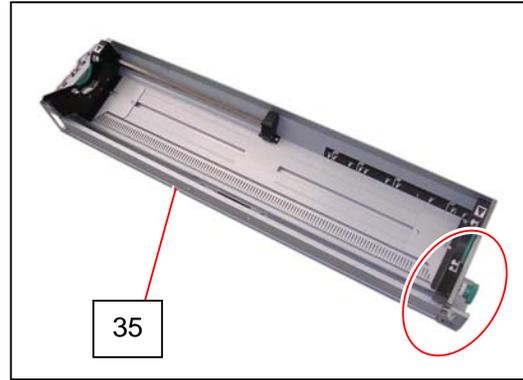
24. Remove the tapes (34) inside **Roll Deck 2 Assy** (35).
Remove 4 screws (36) to remove Guide Plate (37) from **Roll Deck 2 Assy** (35).



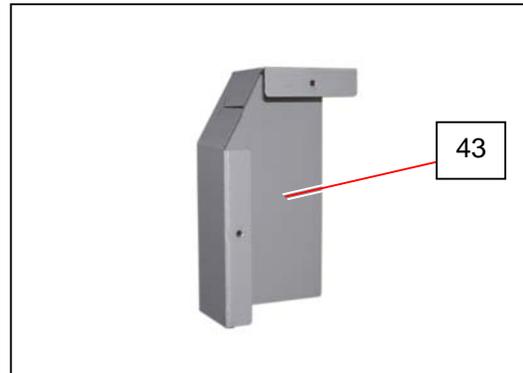
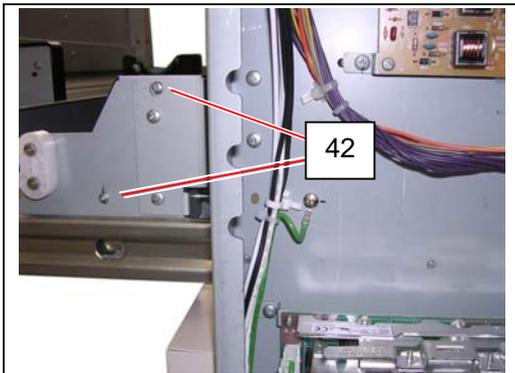
25. Remove 3 screws (38) to remove Cover 16 (39) from Roll Deck 2 Assy (35).



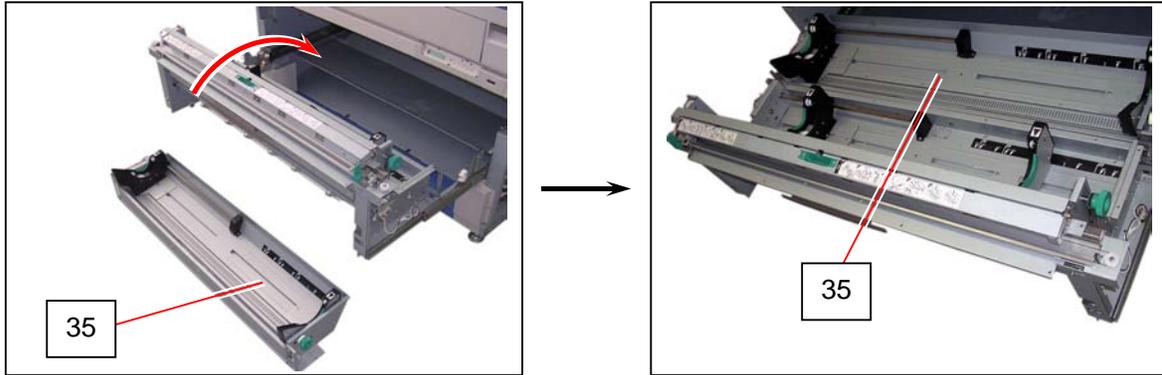
26. Remove 1 screw (40) to remove Cover 7 (41) from Roll Deck 2 Assy (35).



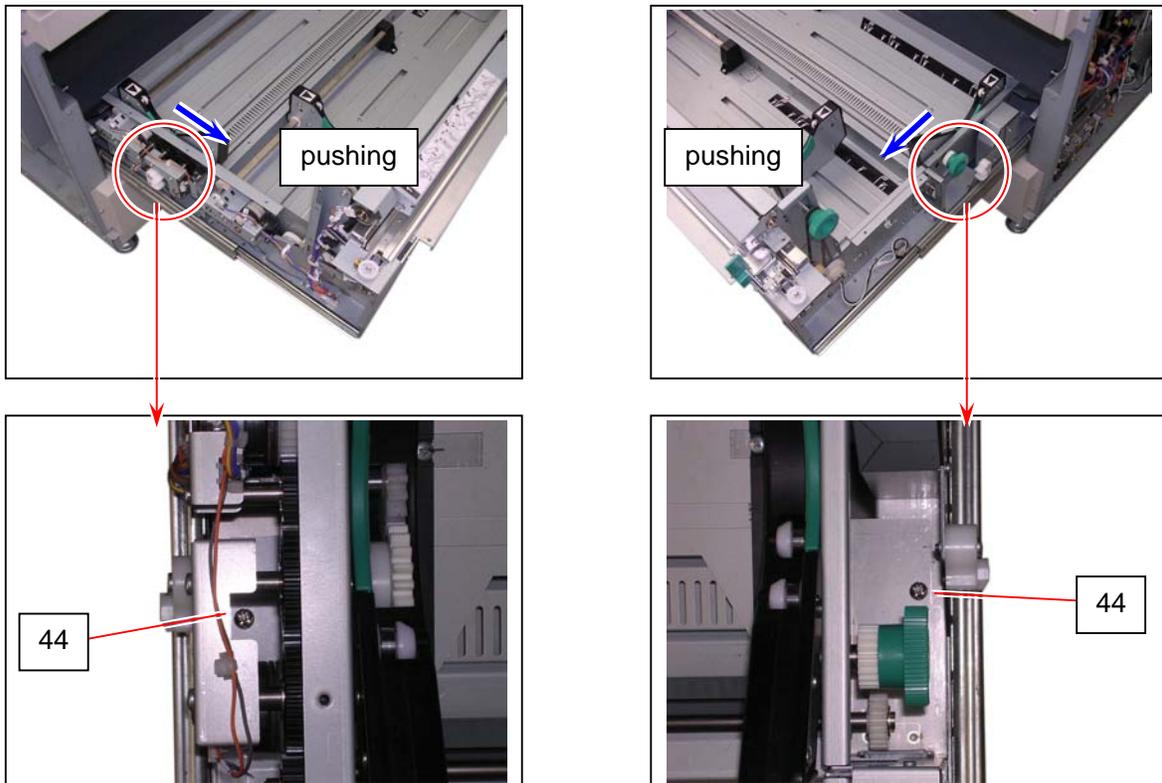
27. Remove 2 screws (42) to remove Cover 9 (43).



28. Mount Roll Deck 2 Assy (35) to the rails of the back of Roll Deck 1.



29. With pushing Roll Deck 2 Assy to Roll Deck 1 (forward), secure it to the rails with 2 **Bind Head Screws w/ OTW** (44) from the top.

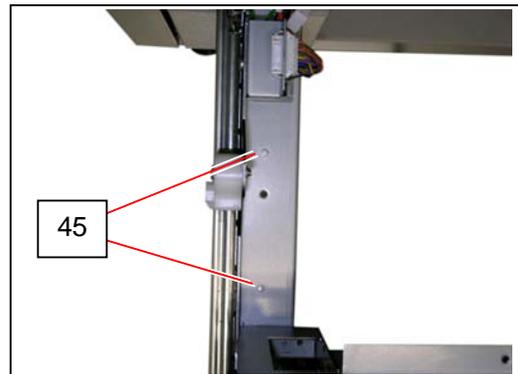


Left: from top

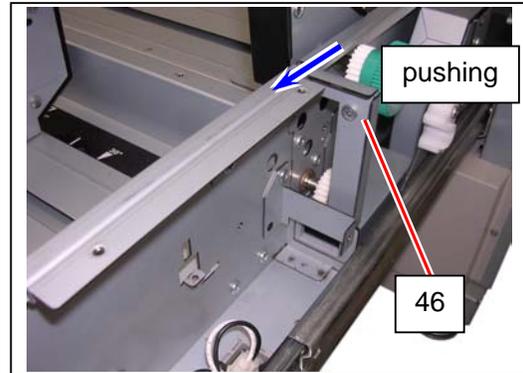
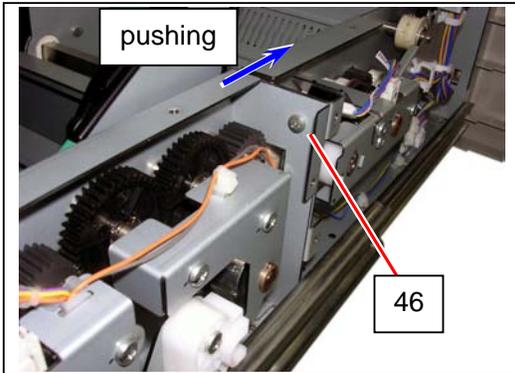
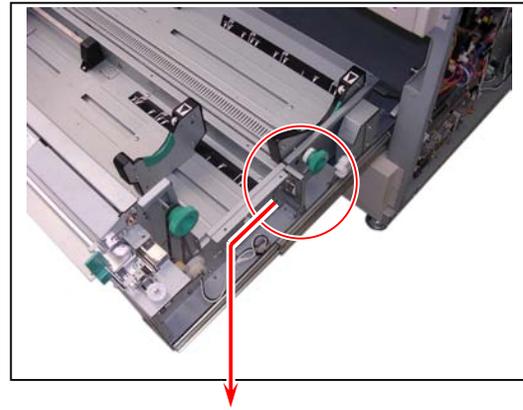
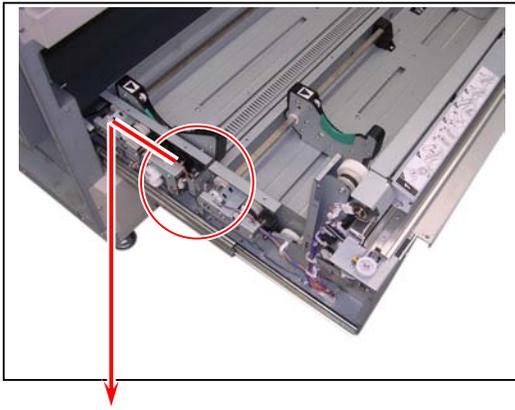
Right: from top

! NOTE

Locate Roll Deck 2 Assy with using the 2 positioning bosses (45) on the left rail.



30. With pushing Roll Deck 2 Assy to Roll Deck 1 (forward), secure it to the rear frame of Roll Deck 1 with 2 **Bind Head Screws** (46: M4x4).

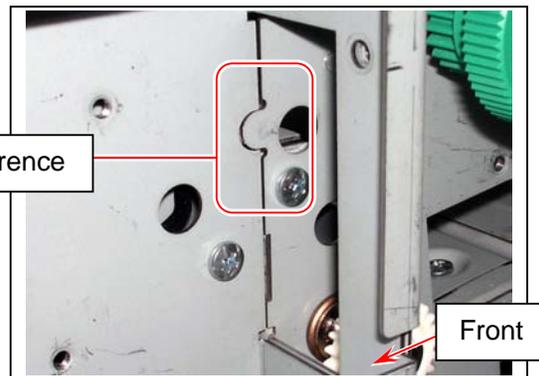
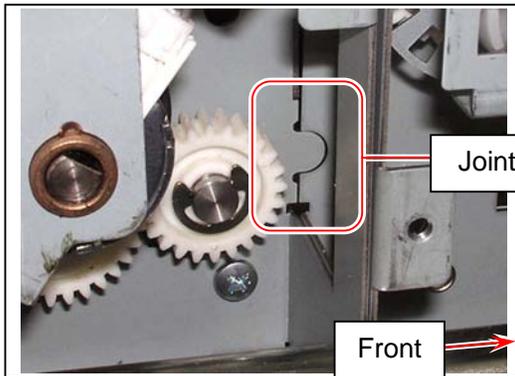


Left: from rear

Right: from front

! NOTE

Push Roll Deck 2 Assy forward so that there is no gap between both the decks with using the joint references.

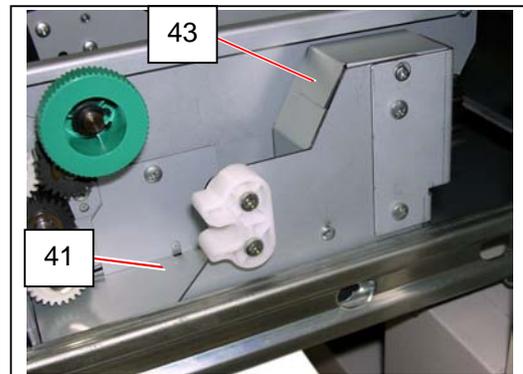


Joint Reference

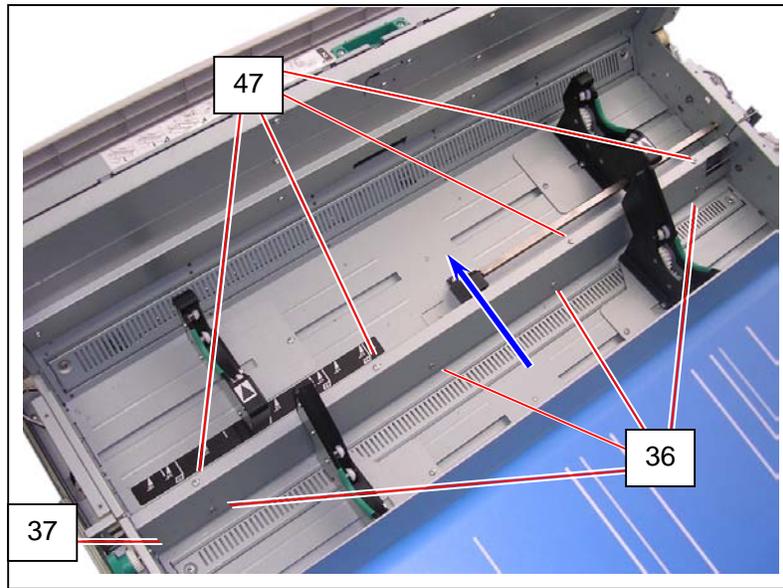
Left

Right

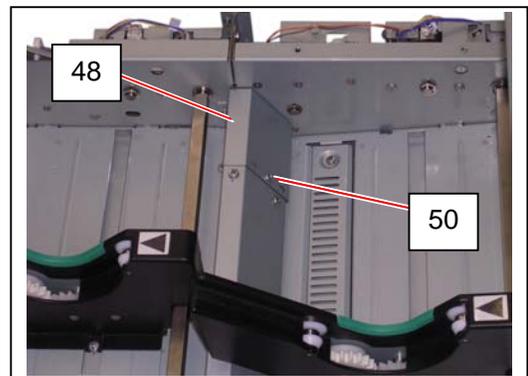
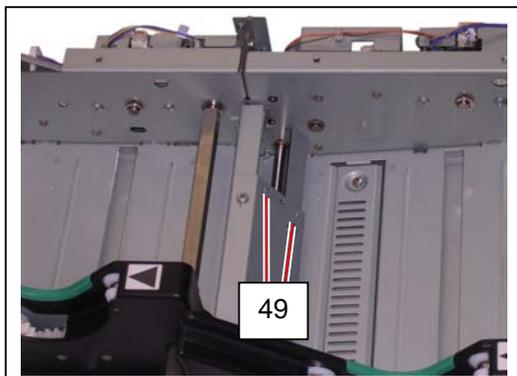
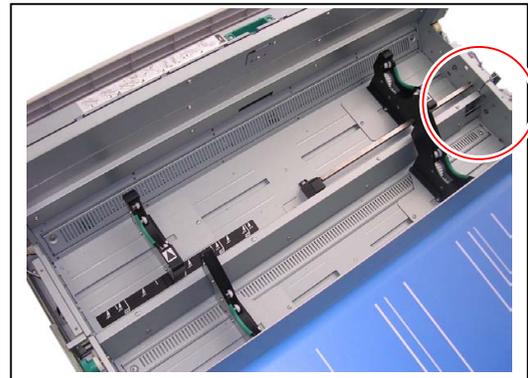
31. Replace Cover 7 (41) and Cover 9 (43).



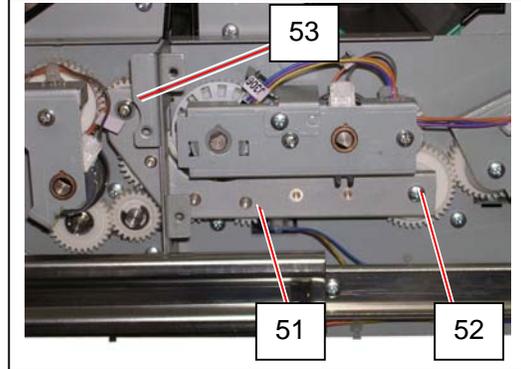
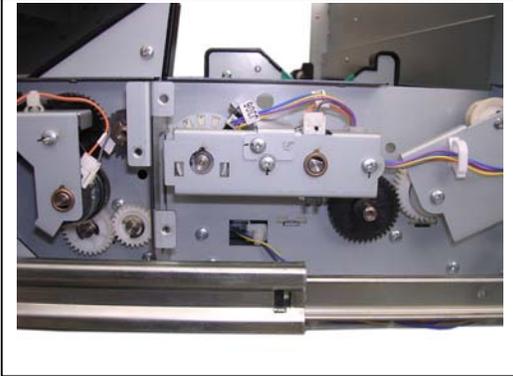
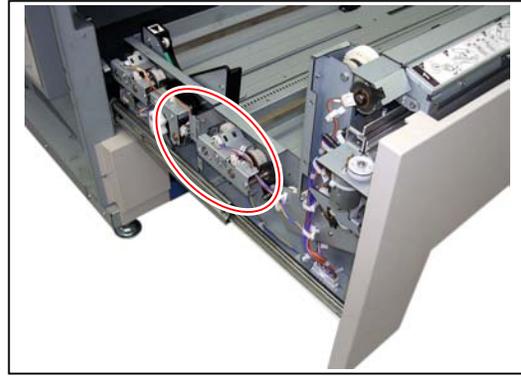
32. Install Guide Plate (37) on the joint of the decks. With pushing Roll Deck 2 Assy to Roll Deck 1 (forward), fix it with 4 screws (36) and 4 **Bind Head Screws** (47: **M4x6**).



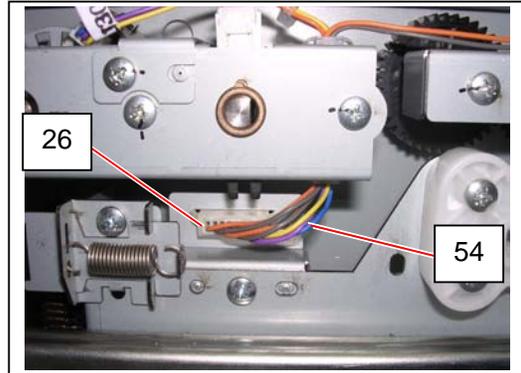
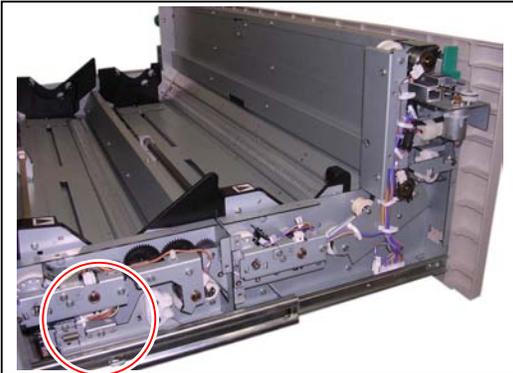
33. Install **Bracket 7** (48) using the positioning bosses (49) and fix it with 1 **Bind Head Screw** (50: **M4x6**).



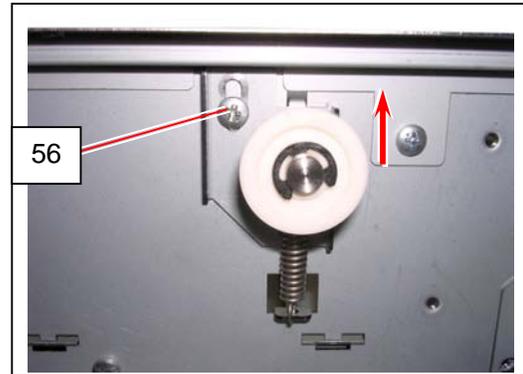
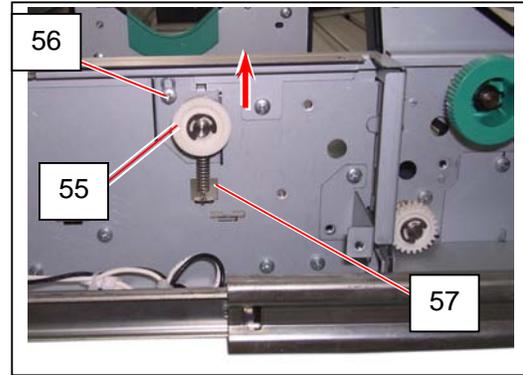
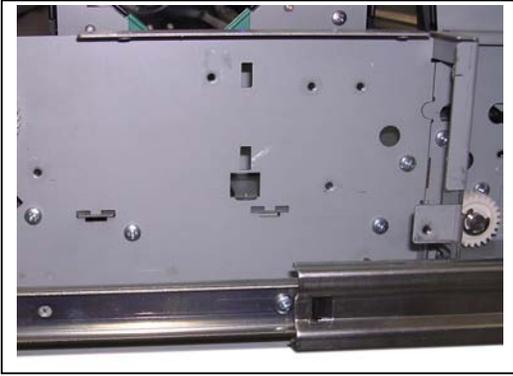
34. Install **Gear Bracket 2 Assy** (51) on the left side with 1 **Bind Head Screws** (52: **M4x6**) and 1 **Pan Head Screw w/ SW FW** (53).



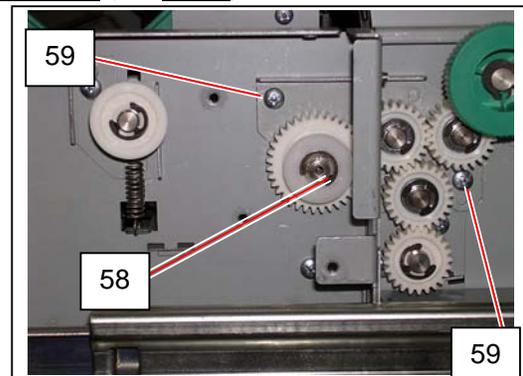
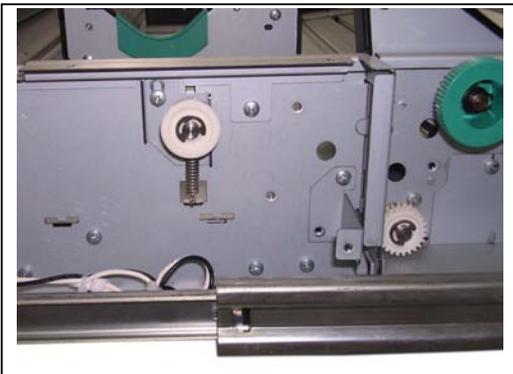
35. Connect the harness (54) on Roll Deck 2 Assy to the connector (26).



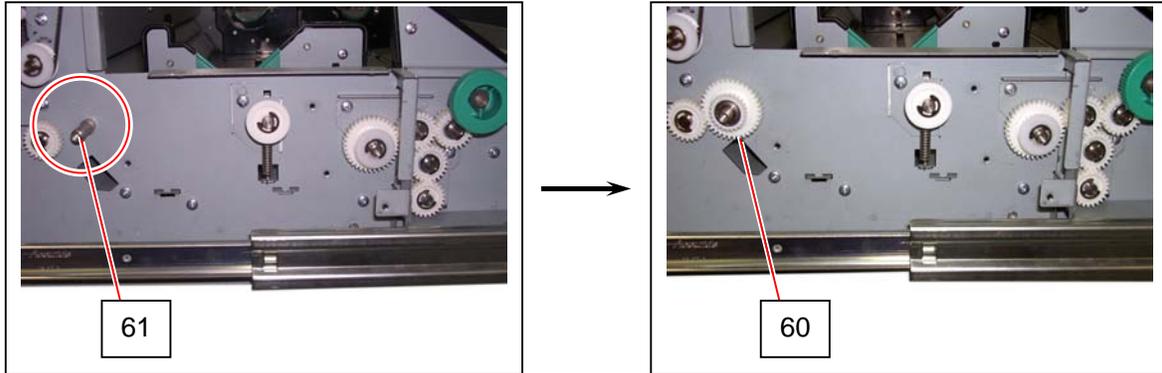
36. Install **Pulley Bracket Assy** (55) with 1 **Bind Head Screw** (56: **M4x4**) loose. Hook **Spring 11** (57) on between Pulley Bracket Assy (55) and the latch on the deck side. With pushing the pulley upward, fix it with the screw (56).



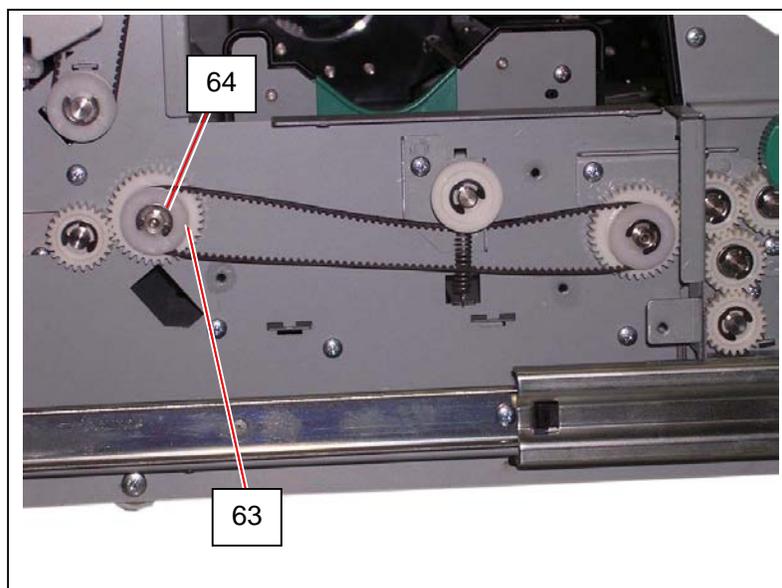
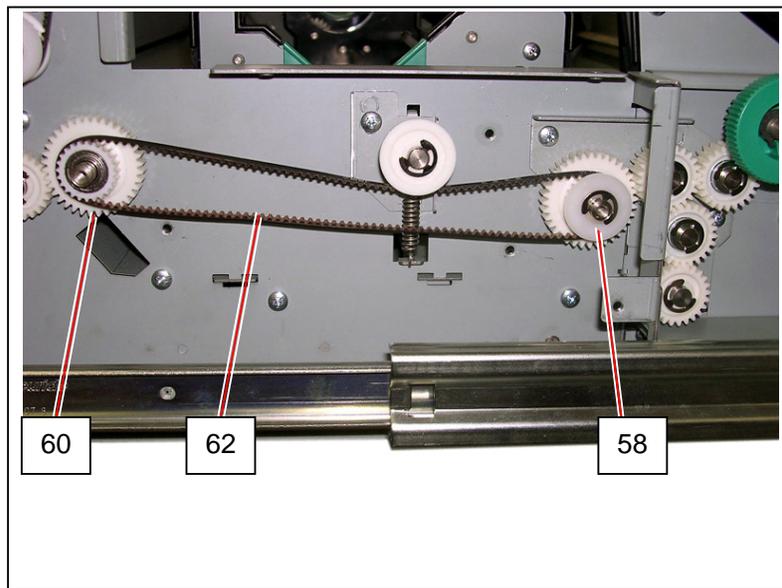
37. Install **Gear Bracket Assy** (58) with 2 **Bind Head Screws** (59: **M4x4**).



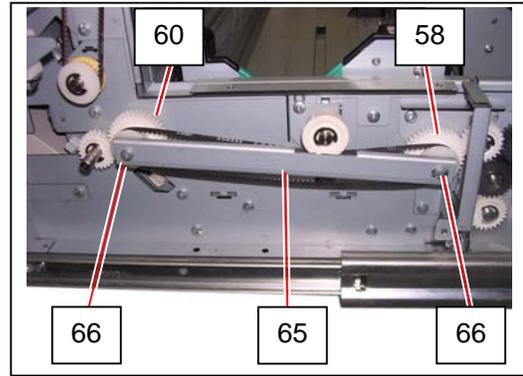
38. Install **36T Gear 24T Pulley (60)** to the shaft (61).



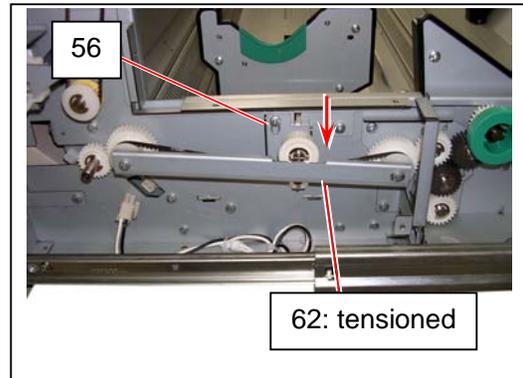
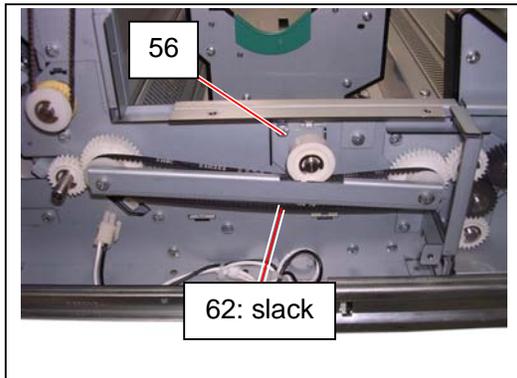
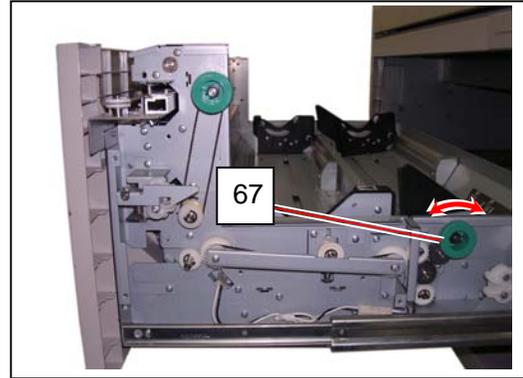
39. Route **Timing Belt 453 (62)** between Gear Bracket Assy (58) and 36T Gear 24T Pulley (60).
Install **Flange (63)** with **Retaining Ring-E (64: E7)** on 36T Gear 24T Pulley (60).



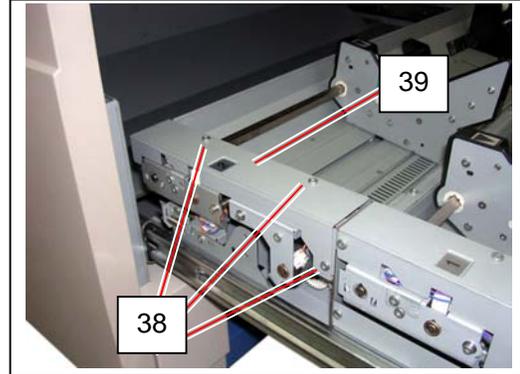
40. Install **Bracket 12** (65) to the shafts of the gears (58) (60) with 2 **Pan Head Screws w/ SW FW** (66).



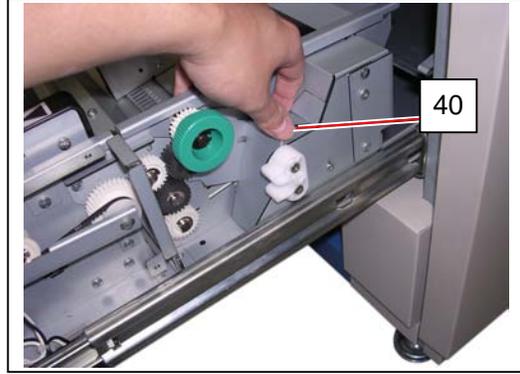
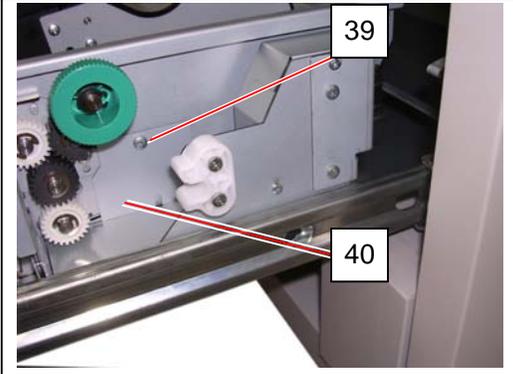
41. Check the gear rotation by using the feed knob (67). Loosen the screw (56) to apply tension to Timing Belt 453 (62) by Pulley Bracket Assy. After tensioning, tighten the screw (56).



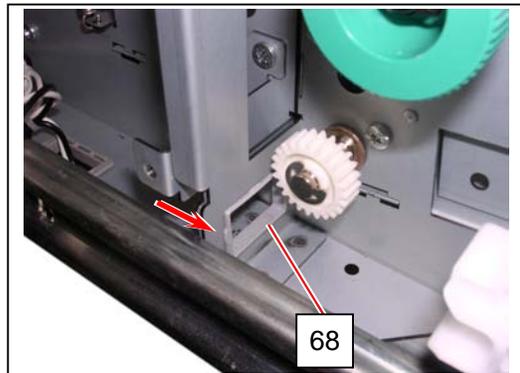
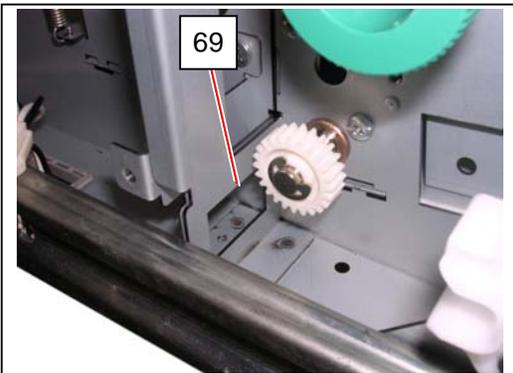
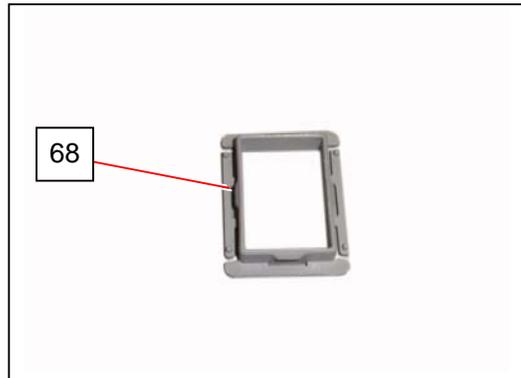
42. Reinstall Cover 16 (39) with the 3 screws (38).



43. On the right side, remove 1 screw (39) to move Cover 7 (40).

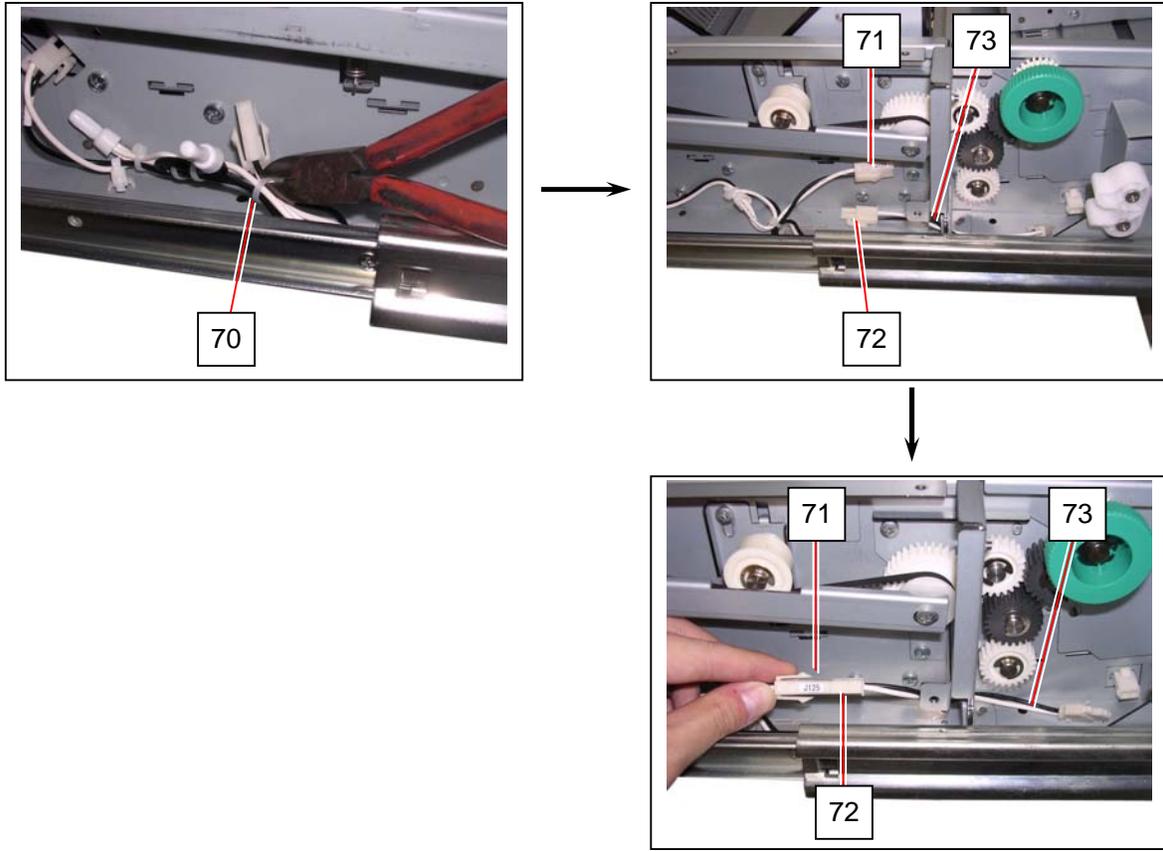


44. **(Europe/Asia model only. For US model machines, please jump to step 47.)**
Attach **Bush** (68) to the square hole (69) in the arrow direction (from the front).



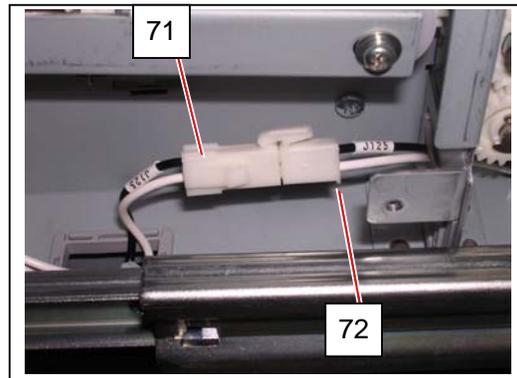
45. (Europe/Asia model only)

Cut the band (70) on the harness of Roll Deck 1 to release J125 connector (71).
Pass J125 connector (72) of **AC Paper Harness 2** (73) through the square hole and connect to J125 connector (71) on the harness.



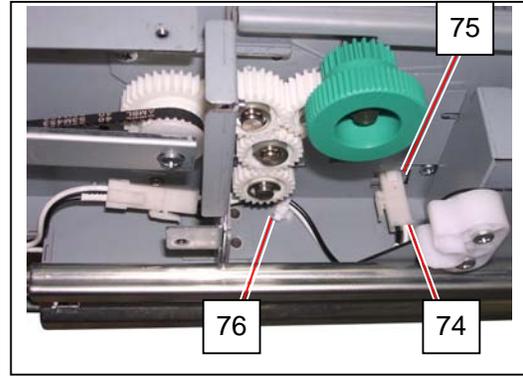
NOTE

There are labels near each connector of the harness of Roll Deck 1 and AC Paper Harness 2.
Please engage J125 (71) to J125 (72).

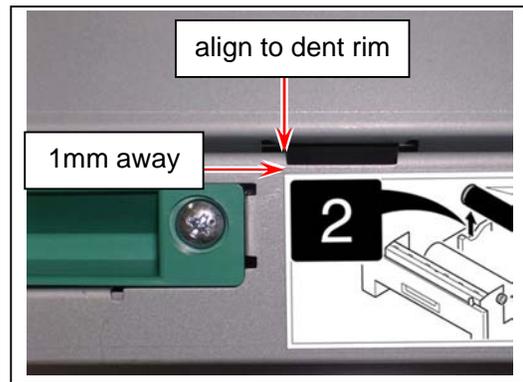
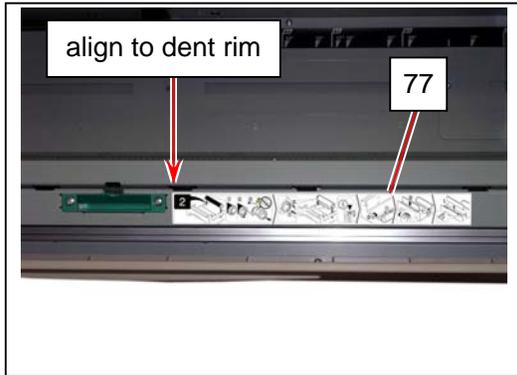


46. **(Europe/Asia model only)**

Connect J114 connector (74) of AC Paper Harness 2 to the connector (75) of Roll 2 Heater Case. Secure AC Paper Harness 2 with **Snap Band** (76).



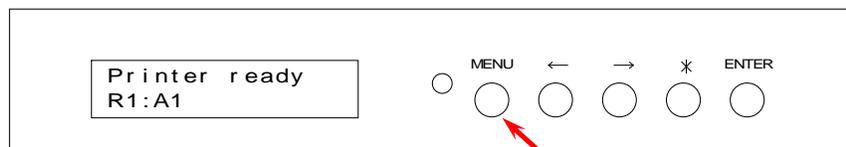
47. Apply **Loading Instruction Label** (77) to the middle of the guide plate.



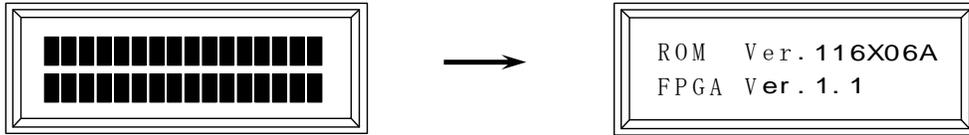
48. Replace all the coverings in position.

49. Remove the front cover (78).

With pressing [MENU] on the sub UI, turn on the machine to unlock the sub UI operation.



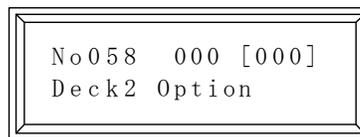
50. With pressing [*], press [←] [←] [→] [←] to enter Service Mode.
 All segments on the sub UI LCD will light when you enter Service Mode.
 Release [*] and the sub UI LCD displays ROM version.



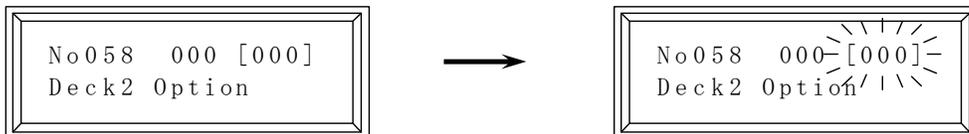
51. Press [Menu] until “(4) Adjust Mode” appears. When it appears, press [Enter].



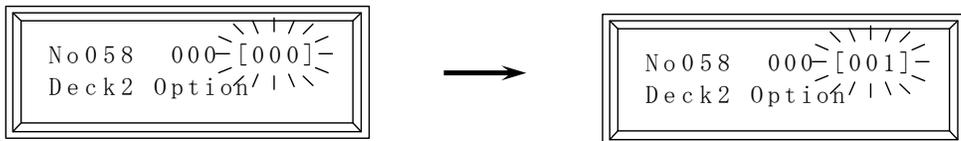
52. Press [Menu] until “No058 Deck 2 Option” appears. When it appears, press [Enter].



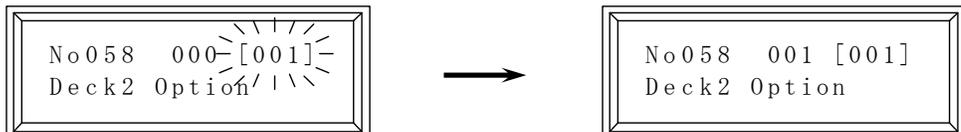
53. Press [Enter] to be ready for setting changes.



54. Change the setting to “1” with using the arrow keys.



55. Press [Enter] again to apply the setting change.



56. Turn off the machine. Installation is completed.

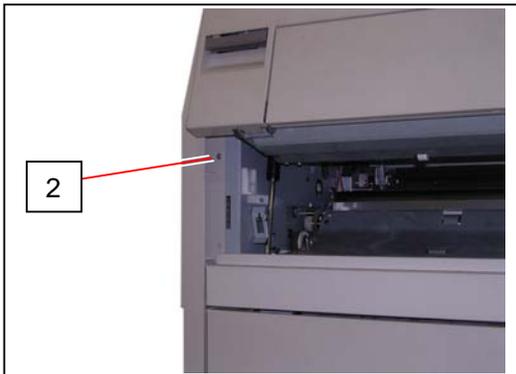
5.5 Photoconductive Drum

5.5.1 Replacement of the Photoconductive Drum

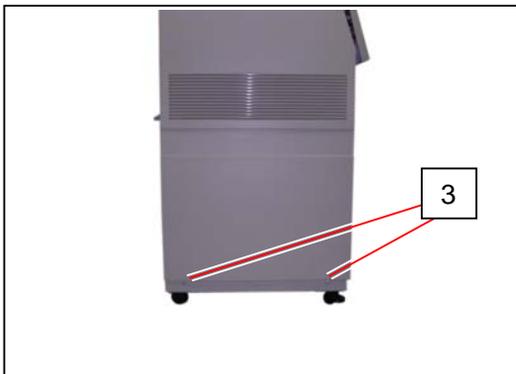
1. Pull up the Lever 2 (1) to open the Engine Unit.



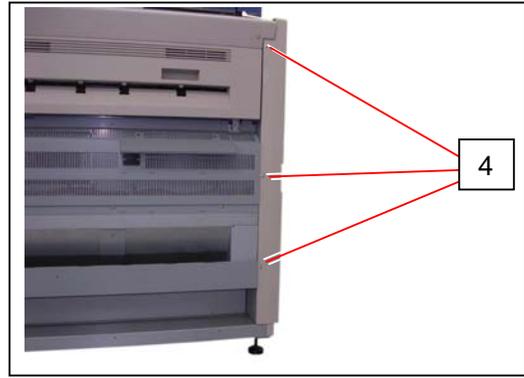
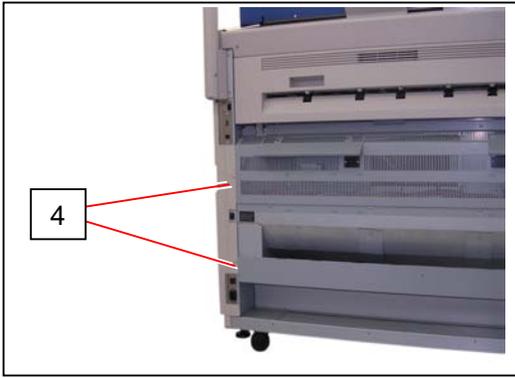
2. Remove the screws (2) at both sides.



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



4. Remove 5 pieces of screw (4) at both sides.
(2 pieces on the right and 3 pieces on the left)



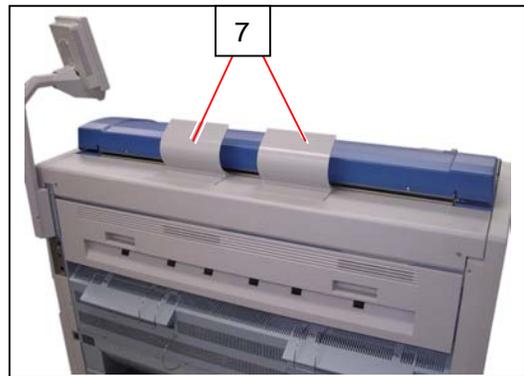
5. Remove both Cover 2 (5) and Cover 3 (6).



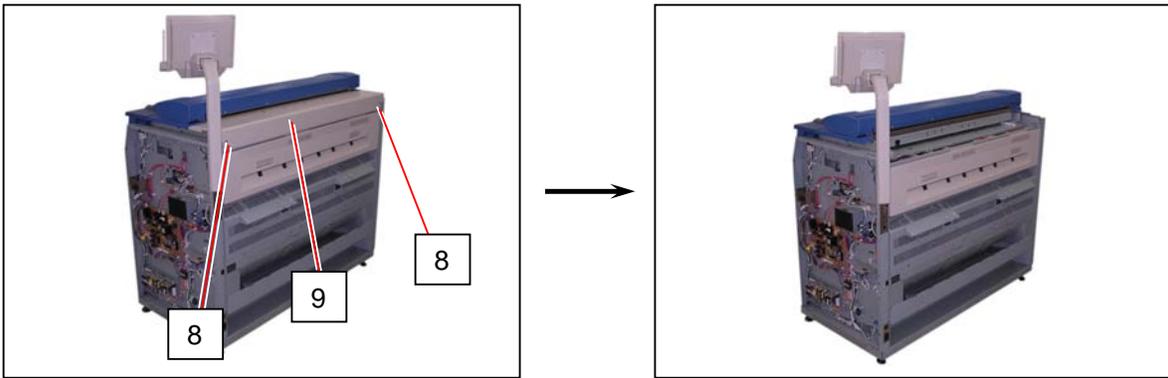
6. Close the Engine Unit.



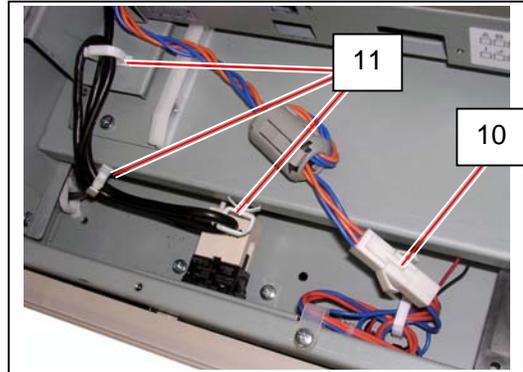
7. Remove the Guides 3 (7).



8. Remove 2 pieces of 4x6 screw (8) to remove the Cover 10 (9).

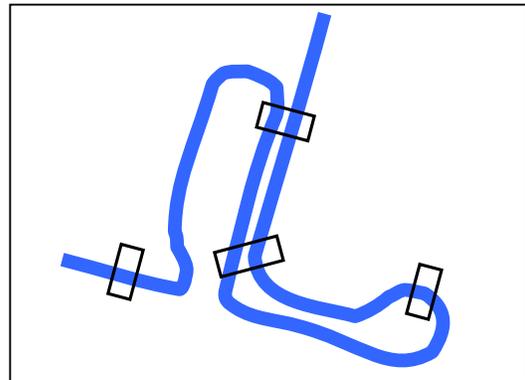


9. Disconnect the connector (10), and open the wire saddles (11) to release the harness.

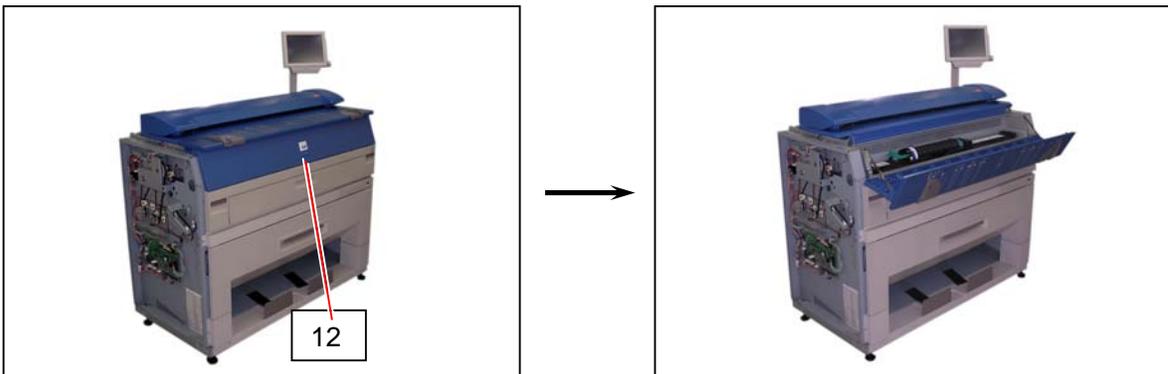


! NOTE

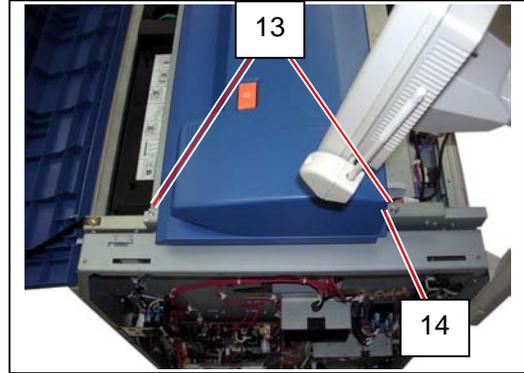
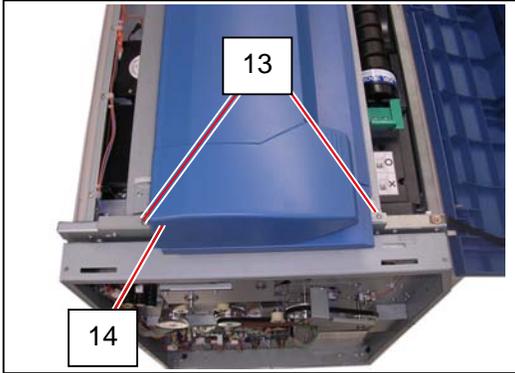
Wind excessive length of the USB Cable with the wire saddles (11) when reassembling.
Do not bundle the 2 cables in any of the wire saddles (11) together.



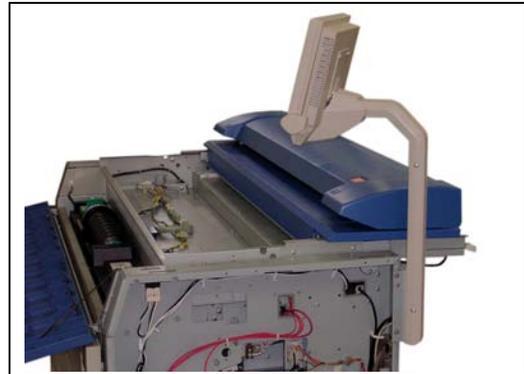
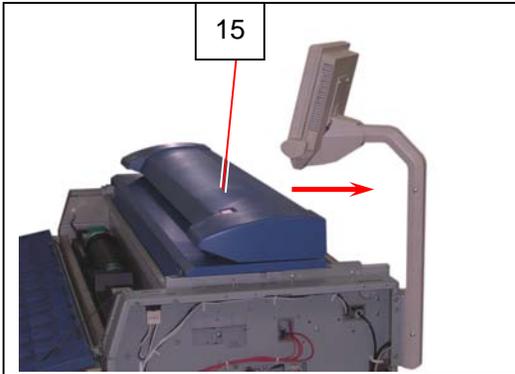
10. Open the Cover 4 (12).



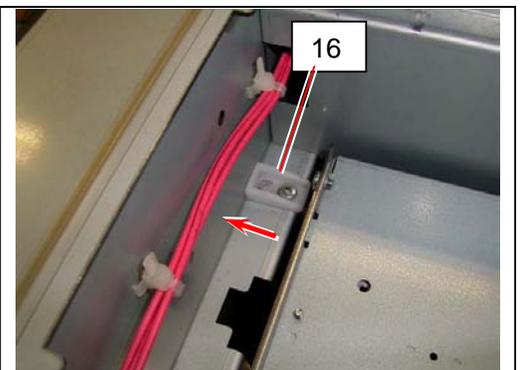
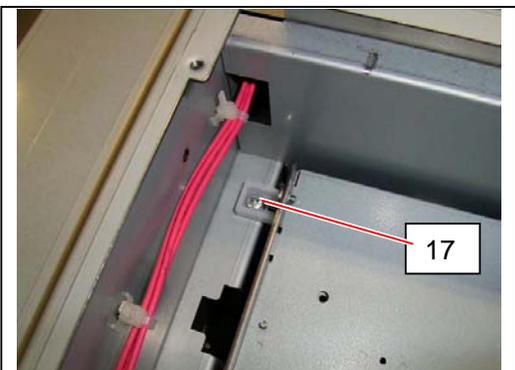
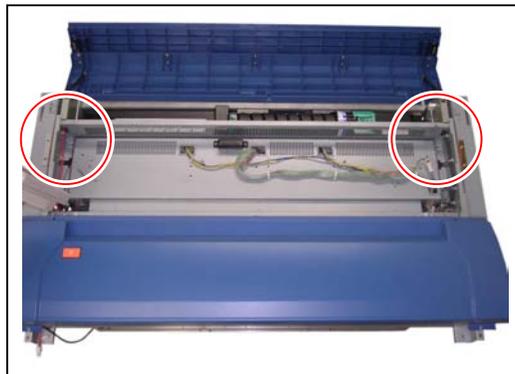
11. Remove 4 pieces of 4x6 screw (13) and 2 pieces of washer screw (14).



12. Slide the Scanner Unit (15) fully backward.



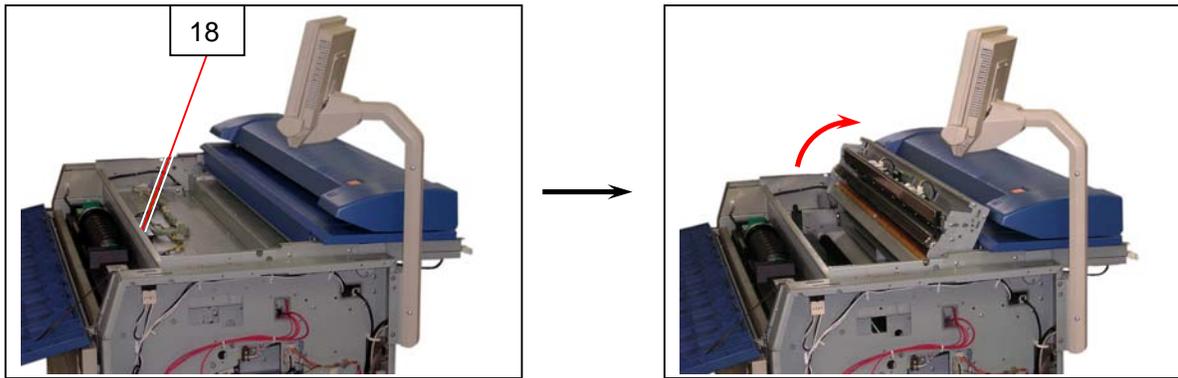
13. There are 2 pieces of Stopper (16) at both sides, which lock the LED Head Frame.
Loosen the screw (17) and then slide the Stoppers (16) outside to unlock the LED Head Frame.



Lock position

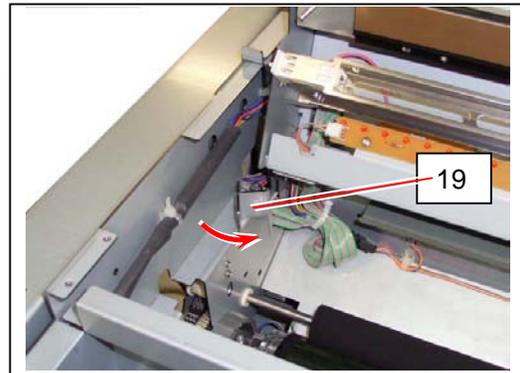
Unlock position

14. Open the LED Head Frame (18).

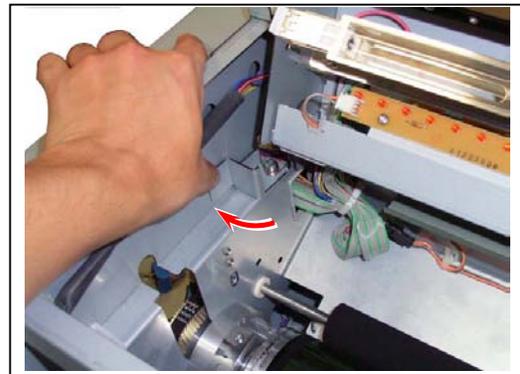


! NOTE

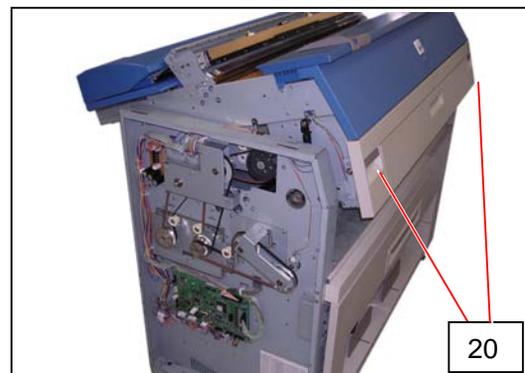
The Stopper 2 (19) comes out automatically to prevent the LED Head Frame from falling down.



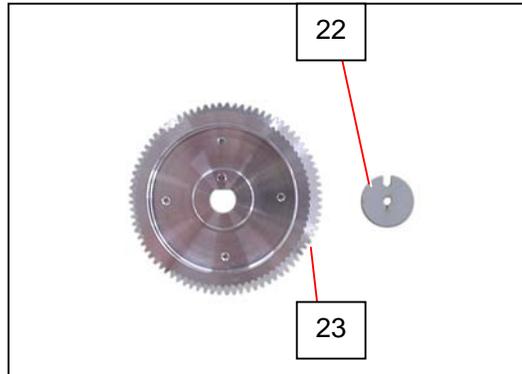
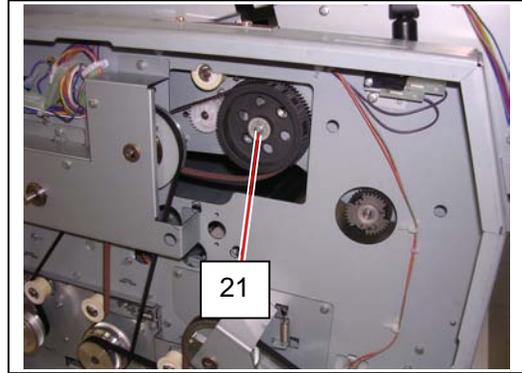
Press the Stopper 2 as the right photo if you will close the LED Head Frame.



15. Pull up the Lever 2 (20) to open the Engine Unit.

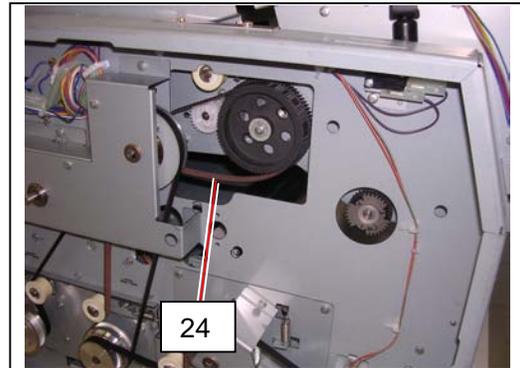


16. Remove 1 tooth washer screw (21: M4x8), and remove Plate 2 (22) and Pulley Gear (23).

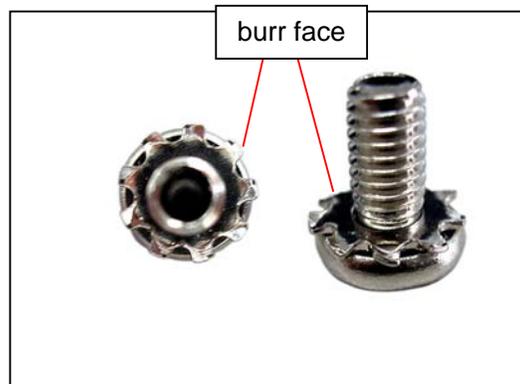


NOTE

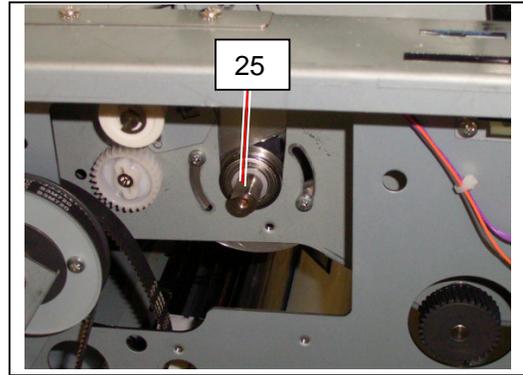
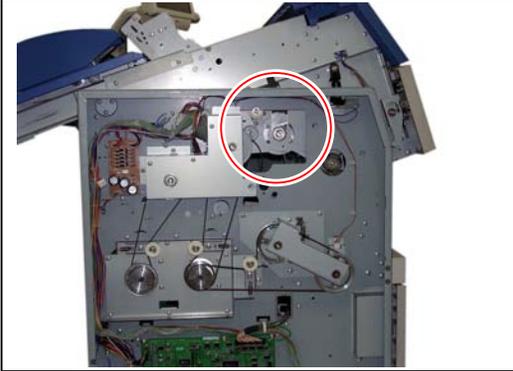
(1) Belt 4 (24) is automatically loosed with Engine Unit open.
It will be strained with Engine Unit closed.



(2) The tooth washer screw (21) has a tooth washer of which burr face meets the composition surface.



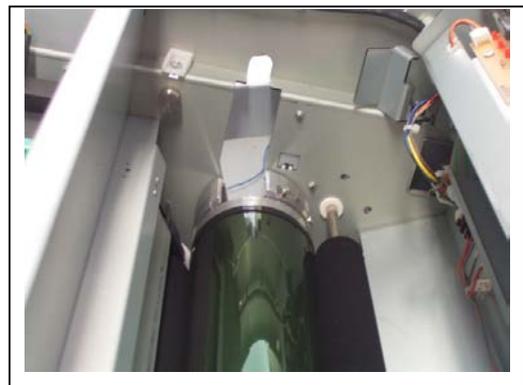
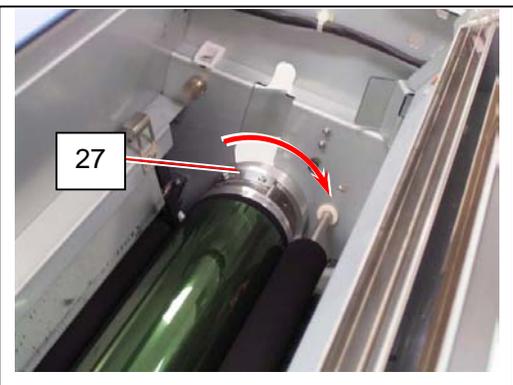
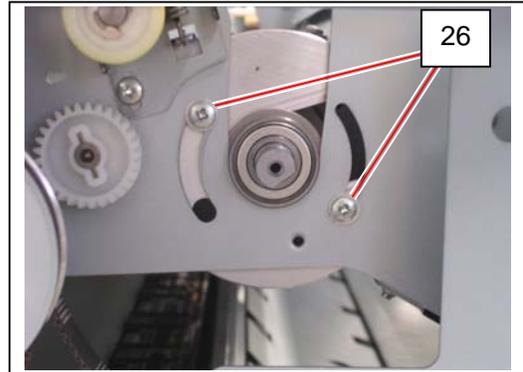
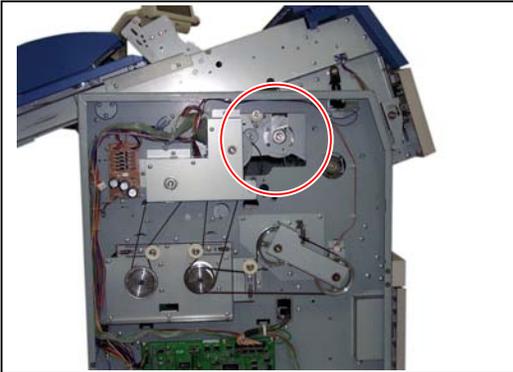
17. Remove the Collar (25) from the left Drum Shaft.



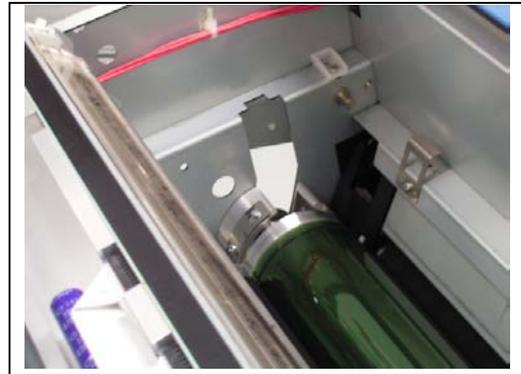
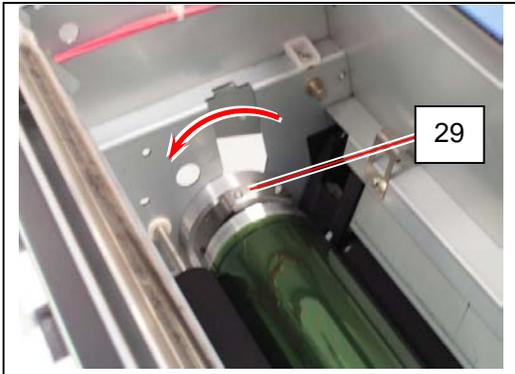
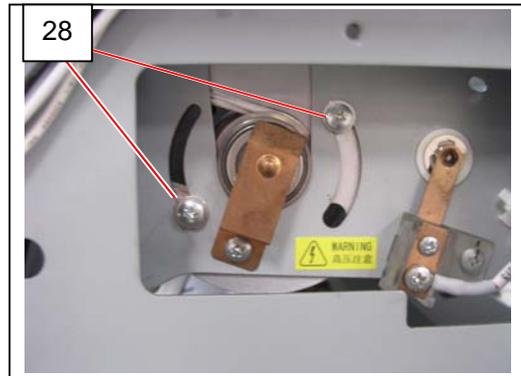
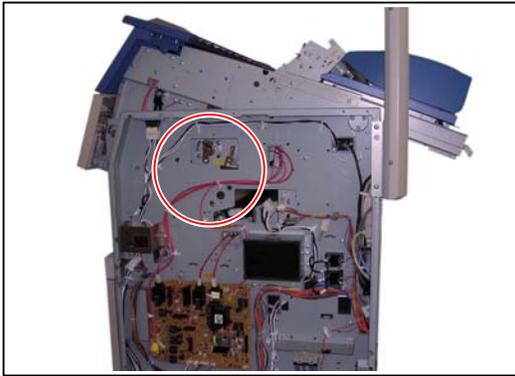
! NOTE

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 the **Photoconductive Drum** (30), and replace it with the new one.



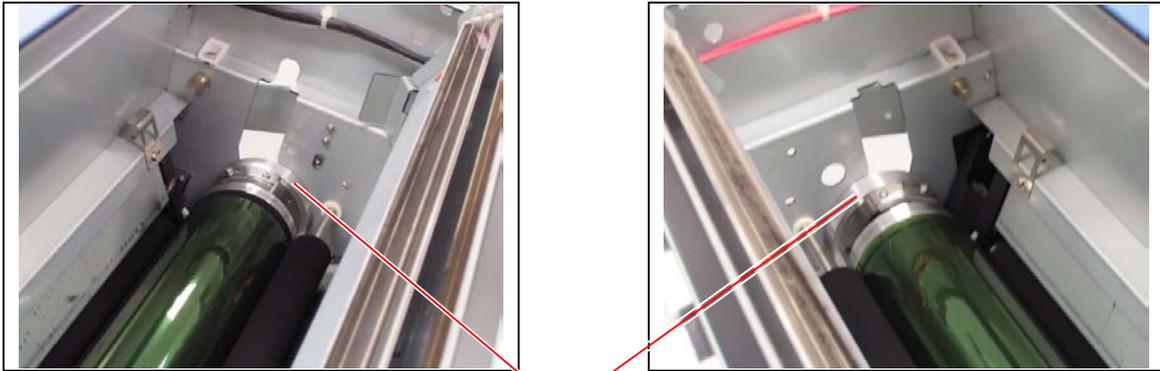
! NOTE

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 5-235.

5. 5. 2 How to fix the Aluminium Blocks

There are Aluminium Blocks at both sides of the Drum Shaft.

As they maintain the focus of LED Head, it is necessary to re-position them correctly after replacing the Photoconductive Drum.

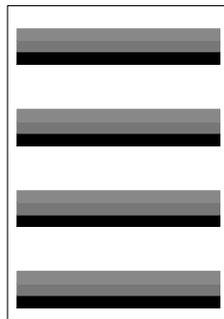


Aluminium Blocks

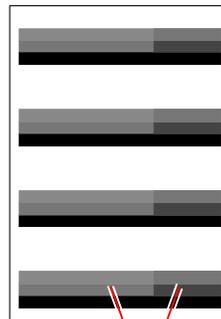
Print out the Test Pattern No.3 to check if the Aluminium Blocks are fixed at the correct position. The density of halftone is uniform as the following left image if the Aluminium Blocks are fixed at the correct positions (focus is good).

But the density of halftone is different among image blocks as the following right image if blocks are not fixed correctly (focus is not good).

Good
(Gray looks uniform)



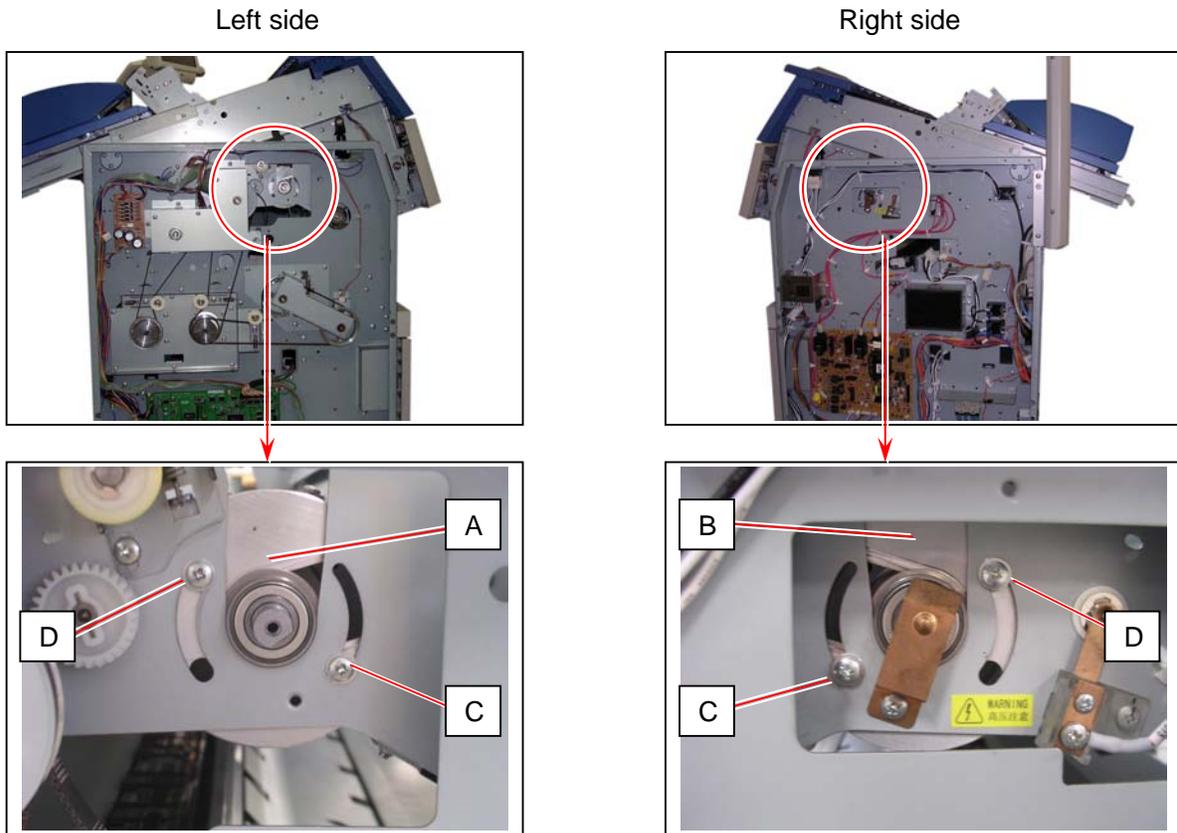
No good
(Gray looks not uniform)



Density of halftone is different among image blocks.

If the focus of LED Head is not good, fix the Aluminium Blocks properly making reference to the next page.

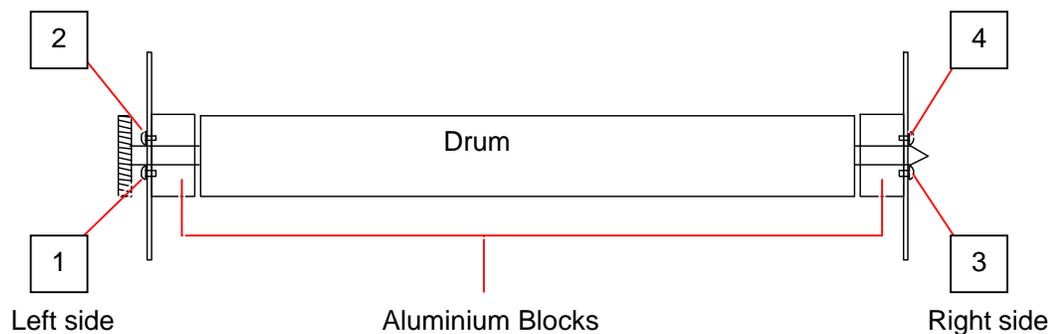
There are Aluminium Blocks (A) (B) at both sides, and each of them is fixed with 2 screws (C) (D).



Do as follows to fix the Aluminium Blocks correctly.

- a) Always fix the Aluminium Block of the **left (A) first and then right (B)**.
- b) When you tighten 2 screws (C) (D) to fix each Aluminium Block, always tighten **the lower one (C) first and then the upper one (D)**.

The following picture shows the order to tighten the screws. **Tighten in the order as 1 to 4 necessarily.**



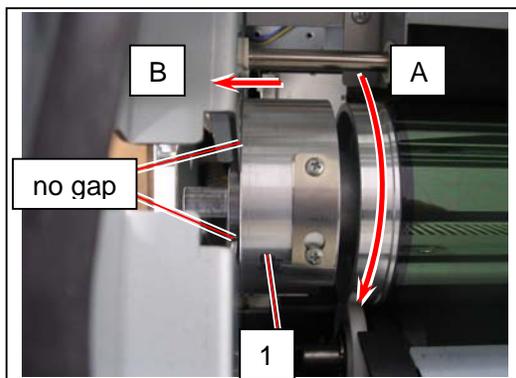
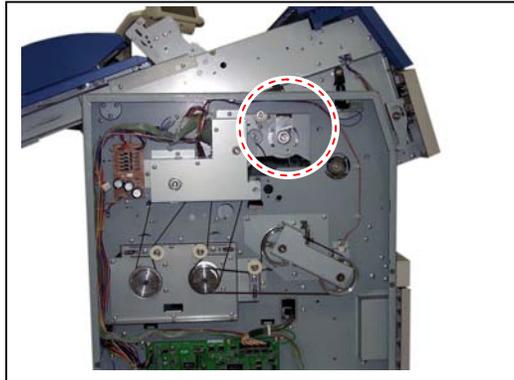
NOTE

The focus of LED Head will become defective if you do not satisfy the above requirements. Refer to the later pages for greater details. Using Drum Block Fix Tool (P/N Z168580040) is recommended.

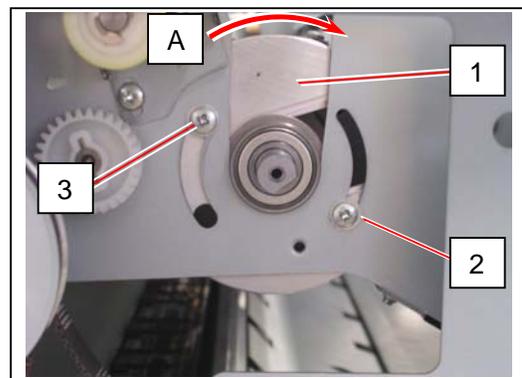
5. 5. 2. 1 Fixing Block with Drum Block Fix Tool

1. Rotate the left Block (1) fully to the arrow direction (A: to front) and also press it to the arrow direction (B: to outside). This will remove any gap between Block (1) and the side frame of the machine.

With holding Block (1), tighten the screws (2) (3) just enough turn to fix Block (1) temporarily.



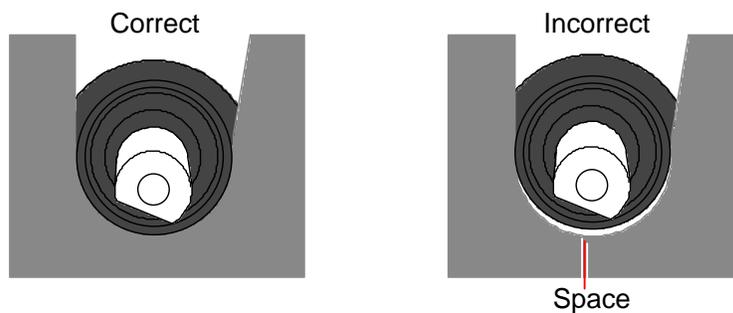
(Seen from the top of machine)



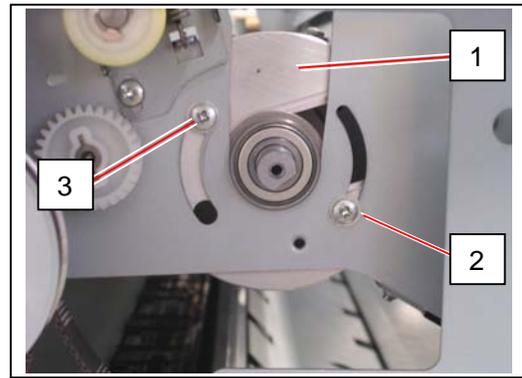
(Seen from the outside of machine)

NOTE

There should be no space between the Bearing and U-shape opening. The LED focus will become defective if there is any space.

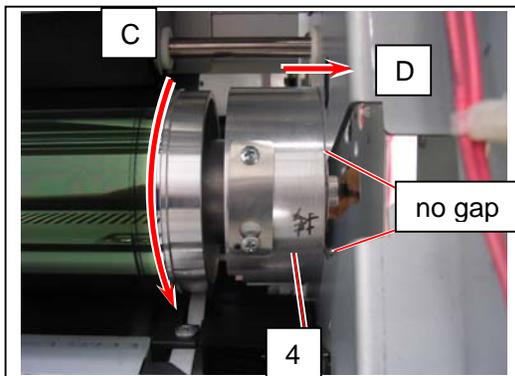
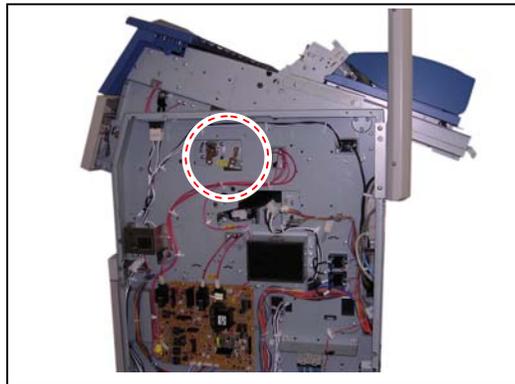


- Loosen the screws (2) (3) in a (approximately) quarter turn to release Block (1). Check that no excessive backlash to sideways appears.

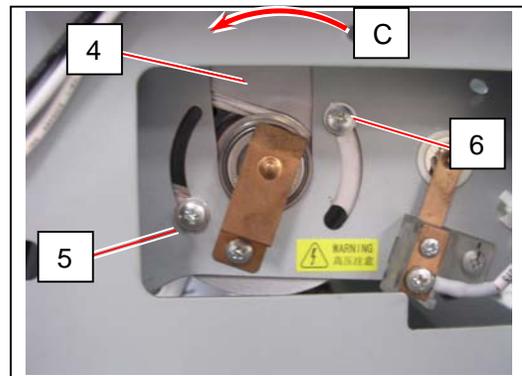


- Similarly to step 1, rotate the right Block (4) fully to the arrow direction (C: to front) and also press it to the arrow direction (D: to outside). This will remove any gap between Block (4) and the side frame of the machine.

With holding Block (4), tighten the screws (5) (6) just enough turn to fix Block (6) temporarily.

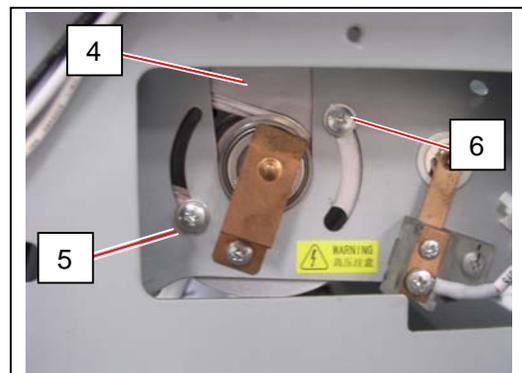


(Seen from the top of machine)

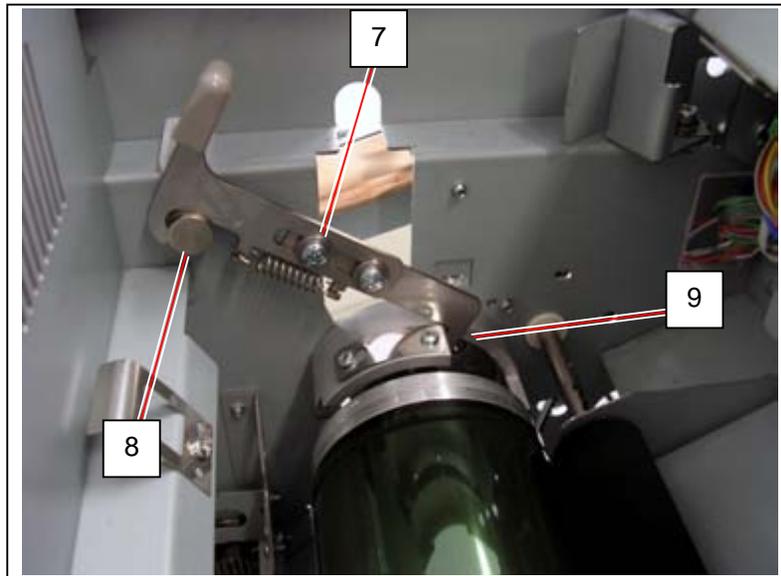
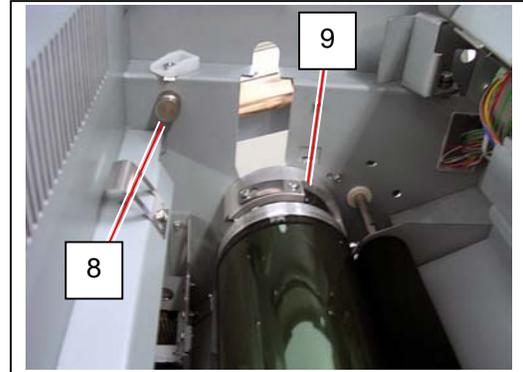
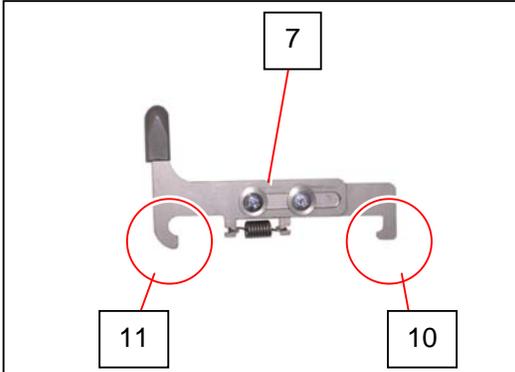


(Seen from the outside of machine)

- Loosen the screws (5) (6) in a (approximately) quarter turn to release Block (4). Check that no excessive backlash to sideways appears.

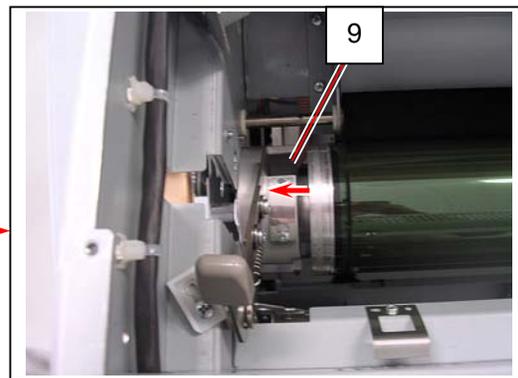
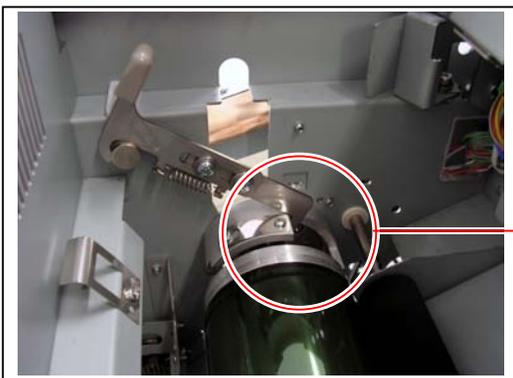


5. On the left side, hook Drum Block Fix Tool (7) on between the pin (8) on the frame and the U-shape opening (9) of Block (1). Hook the rear hook (10) the rim of the U-shape opening (9) and the front hook (11) in the groove of the pin (8).

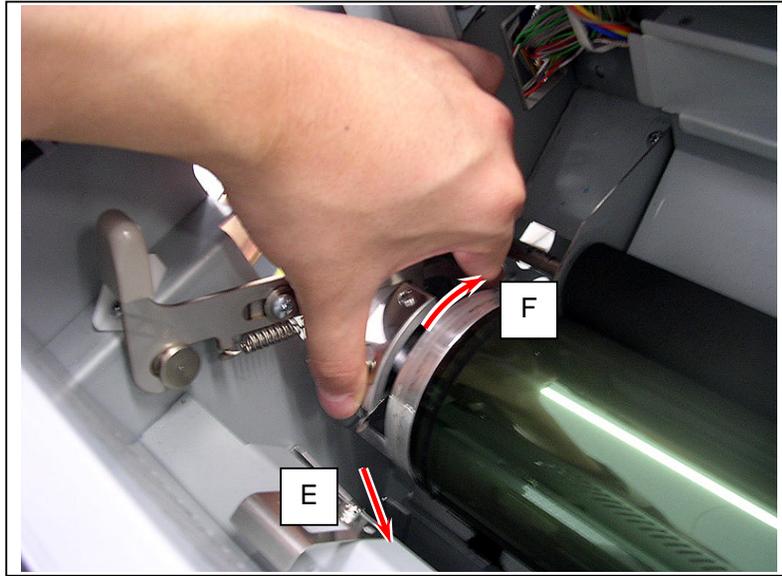


NOTE

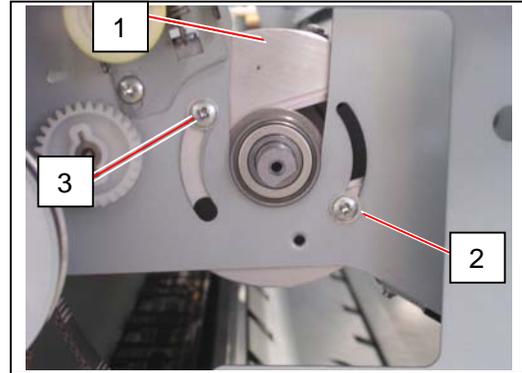
- (1) Handle Drum Block Fix Tool with care. Be sure not to damage Drum or any other components when removing/attaching it.
- (2) Set the rear hook (10) against the corner rim of U-shape opening (9).



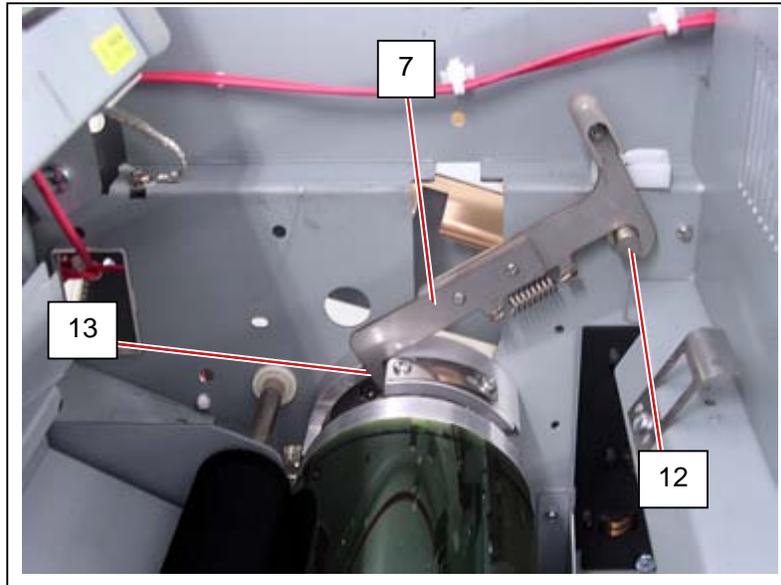
6. With pressing Block (1) down (E), slightly turn Block to the arrow direction (F) and release it to locate Block correctly by restoring spring.



7. Tighten the lower screw (2) and then the upper screw (3) to secure Block (1).

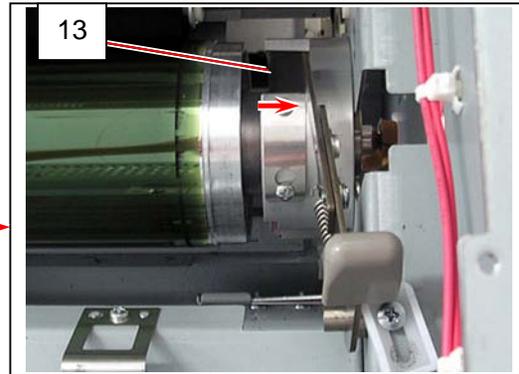


8. Similarly to step 5, on the right side, hook Drum Block Fix Tool (7) on between the pin (12) on the frame and the U-shape opening (13) of Block (4).

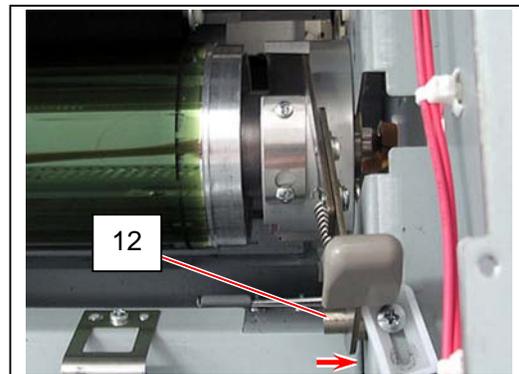
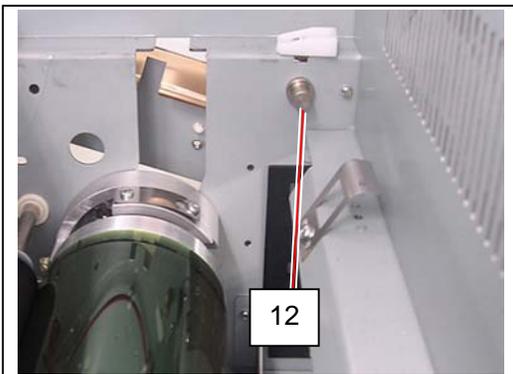


! NOTE

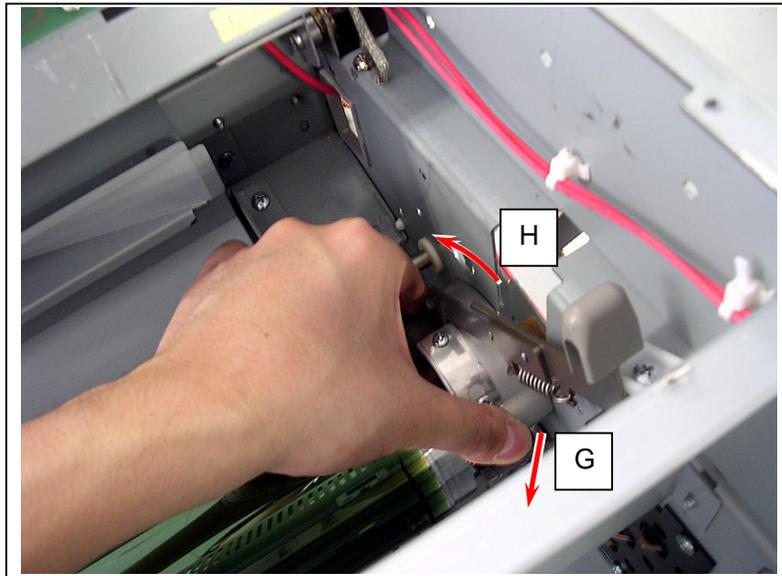
- (1) Handle Drum Block Fix Tool with care. Be sure not to damage Drum or any other components when removing/attaching it.
- (2) Set the rear hook (10) against the corner rim of U-shape opening (13).



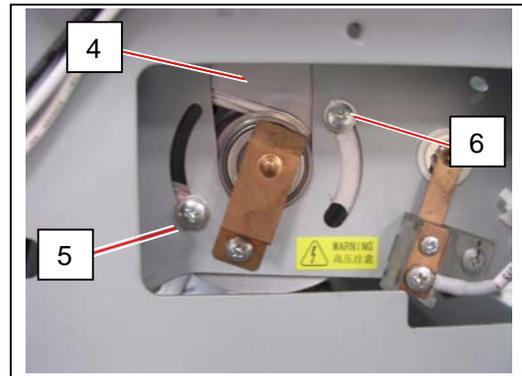
- (3) Set the front hook (11) against the step on the pin (12).



9. Similarly to step 6, with pressing Block (4) down (G), slightly turn Block to the arrow direction (H) and release it to locate Block correctly by restoring spring.

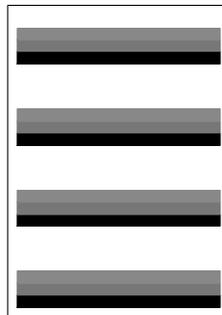


10. Tighten the lower screw (5) and then the upper screw (6) to secure Block (4).

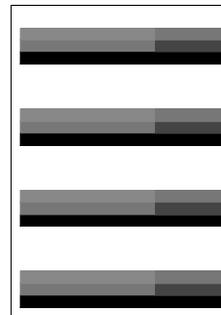


11. Remove Drum Block Fix Tool. Replace all the parts in position and turn on the machine.
12. Print out the Test Pattern No.3, and confirm that the density of halftone is uniform.
If it is still not uniform, fix Blocks again.

Good
(Gray looks uniform)



No good
(Gray looks not uniform)



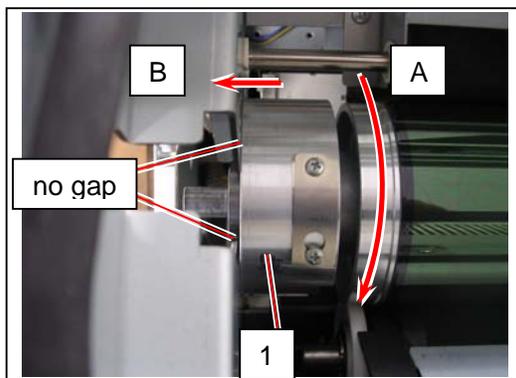
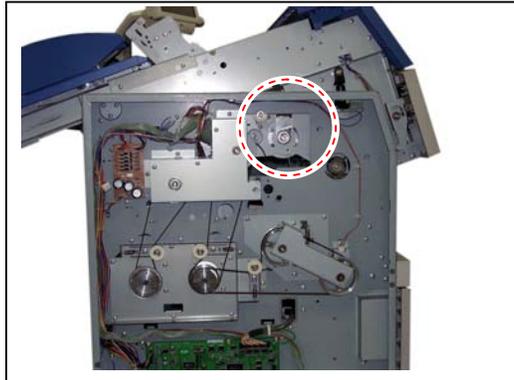
NOTE

Only reseating Drum may lose LED Head focus on rare occasion even Blocks have been fixed properly. in such case please refer to [5.6.2.3 Focus Adjustment with Spacers] on page 5-274.

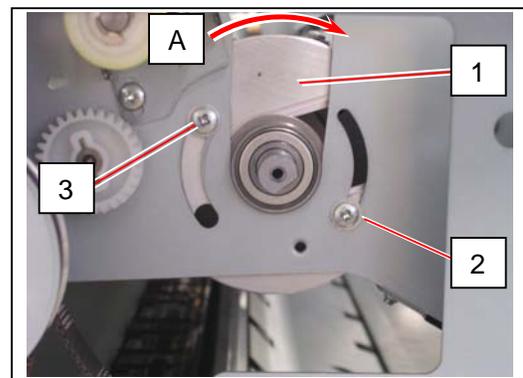
5. 5. 2. 2 Fixing Block by hand (w/o Drum Block Fix Tool)

1. Rotate the left Block (1) fully to the arrow direction (A: to front) and also press it to the arrow direction (B: to outside). This will remove any gap between Block (1) and the side frame of the machine.

With holding Block (1), tighten the screws (2) (3) just enough turn to fix Block (1) temporarily.



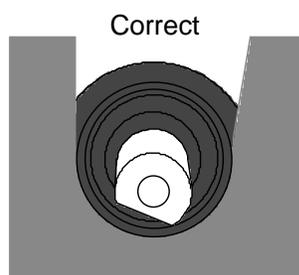
(Seen from the top of machine)



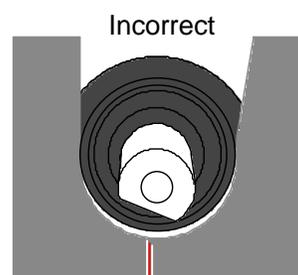
(Seen from the outside of machine)

NOTE

There should be no space between the Bearing and U-shape opening. The LED focus will become defective if there is any space.



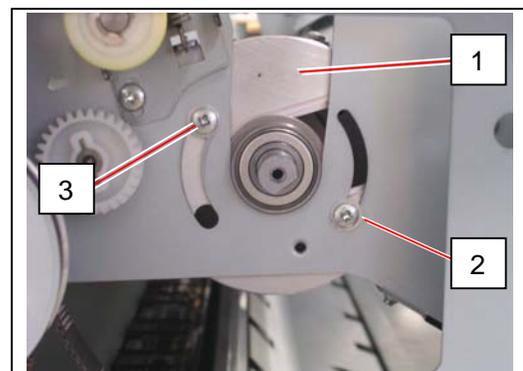
Correct



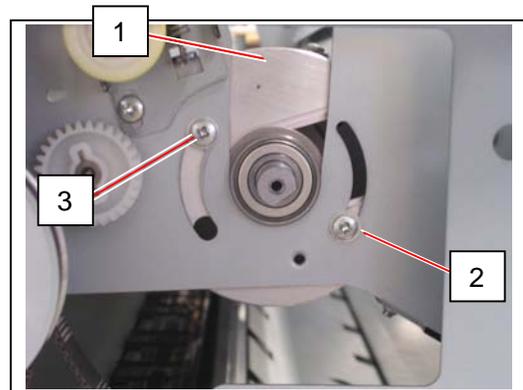
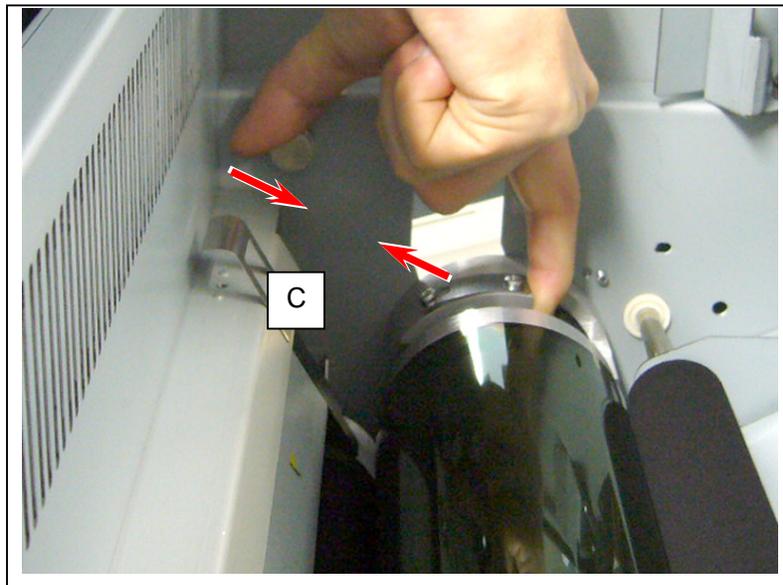
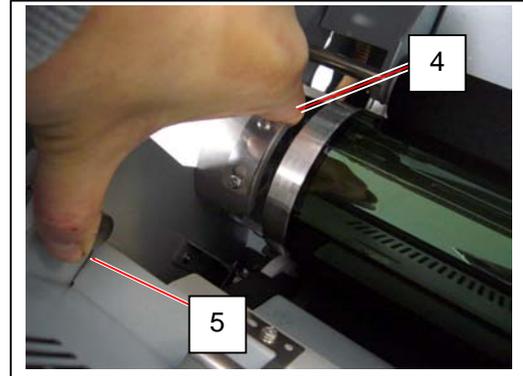
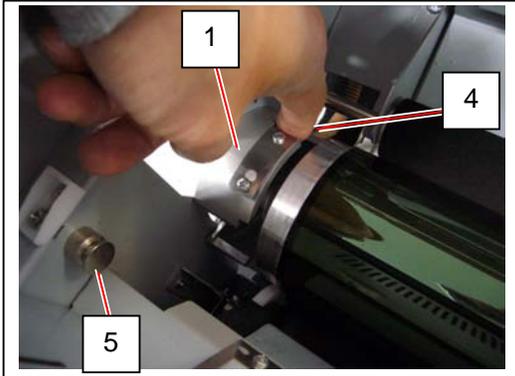
Incorrect

Space

2. Loosen the screws (2) (3) in a (approximately) quarter turn to release Block (1). Check that no excessive backlash to sideways appears.

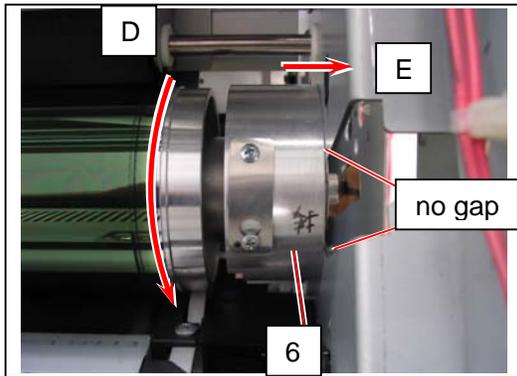
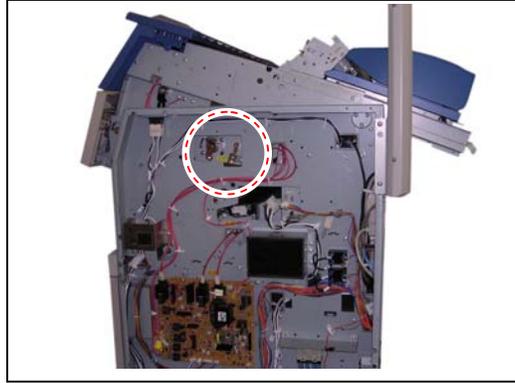


3. Put your finger inside the U-shape opening (4) of Block (1). Put the other finger on the pin (5) of the frame.
Push the fingers toward each other (C: inside). Note that the entire Block (1) is shifted towards the pin (5) by the finger at the U-shape opening (4).
While pushing and holding, tighten the lower screw (2) and then the upper screw (3) to secure Block (1).

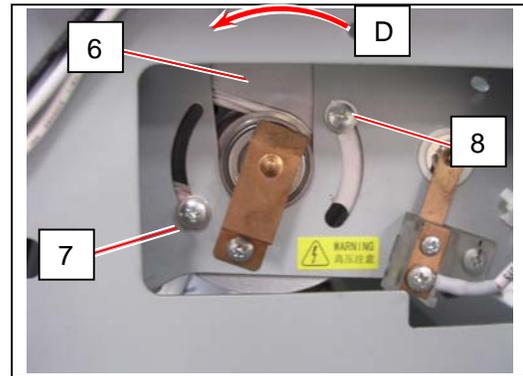


4. Similarly to step 1, rotate the right Block (6) fully to the arrow direction (D: to front) and also press it to the arrow direction (E: to outside). This will remove any gap between Block (6) and the side frame of the machine.

With holding Block (6), tighten the screws (7) (8) just enough turn to fix Block (6) temporarily.

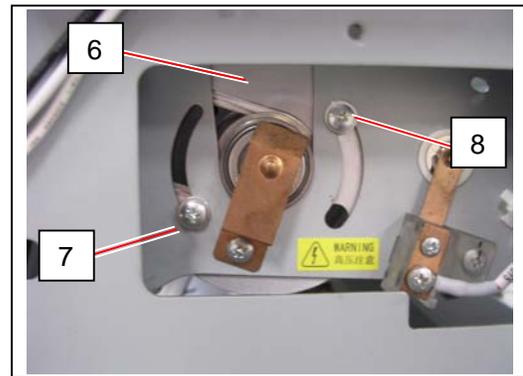


(Seen from the top of machine)

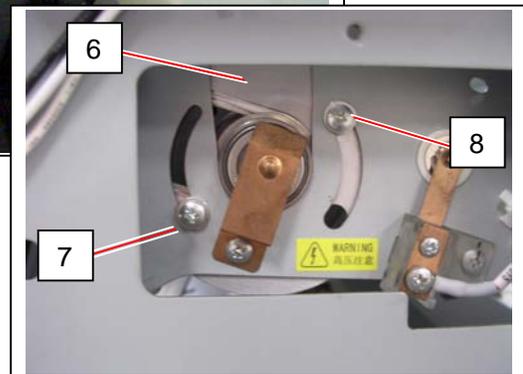
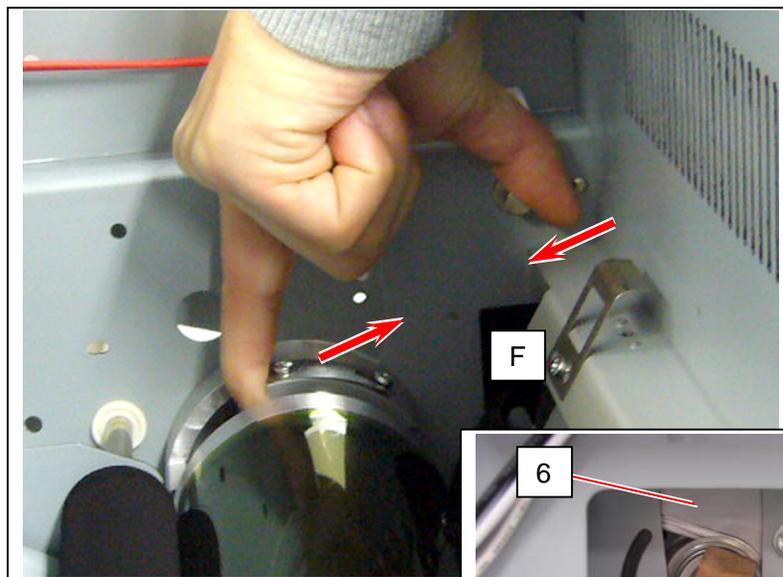
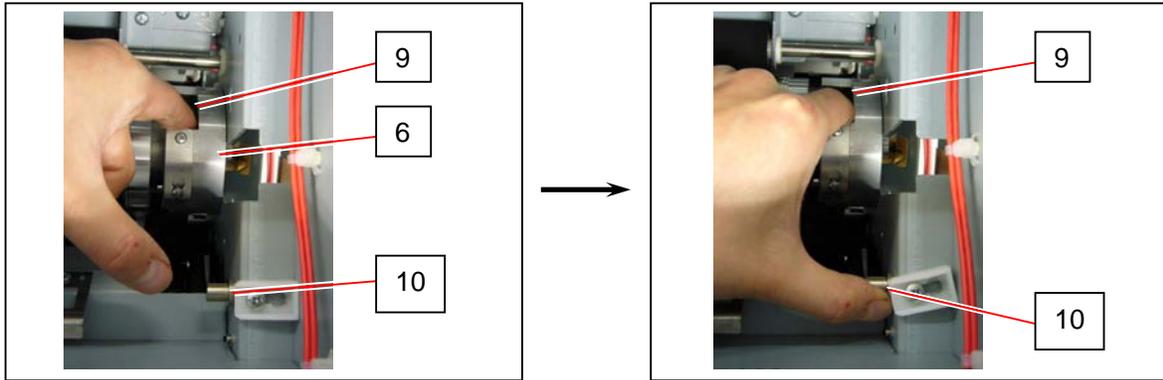


(Seen from the outside of machine)

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).

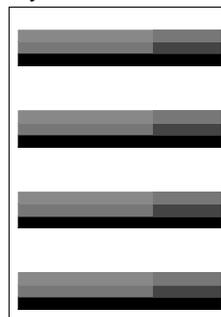


7. Print out the Test Pattern No.3, and confirm that the density of halftone is uniform. If it is still not uniform, fix Blocks again.

Good
(Gray looks uniform)



No good
(Gray looks not uniform)



5. 5. 3 Cleaning of Photoconductive Drum

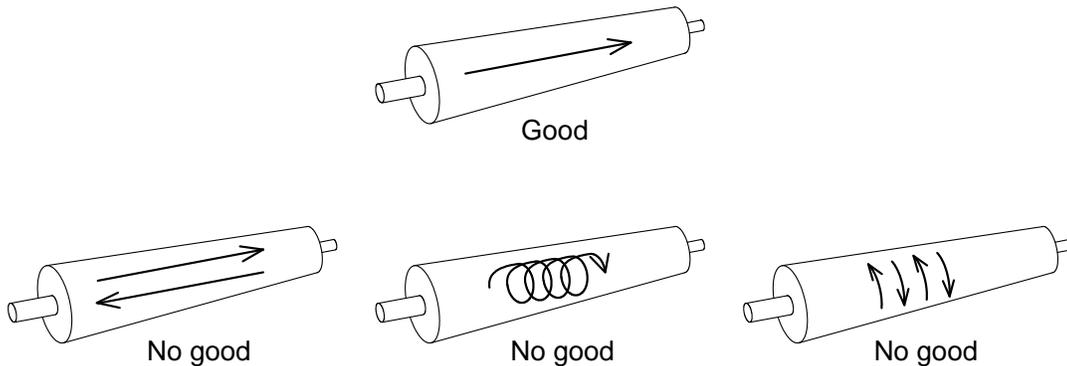
1. Remove the Photoconductive Drum from the machine making reference to [5. 5. 1 Replacement of the Photoconductive Drum] on the page 5-227.



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.

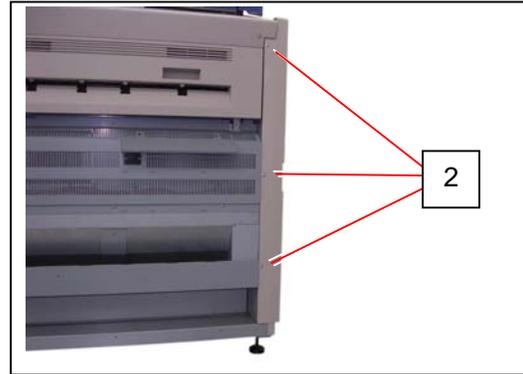
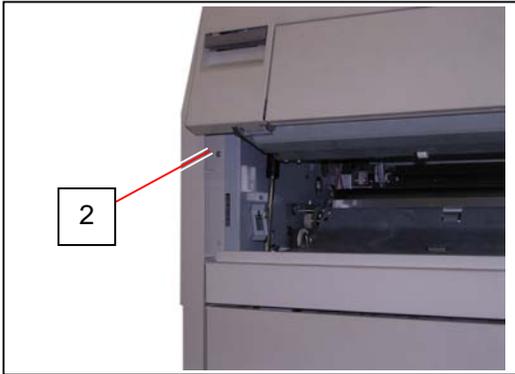


5. 5. 4 Replacement of Belt 4

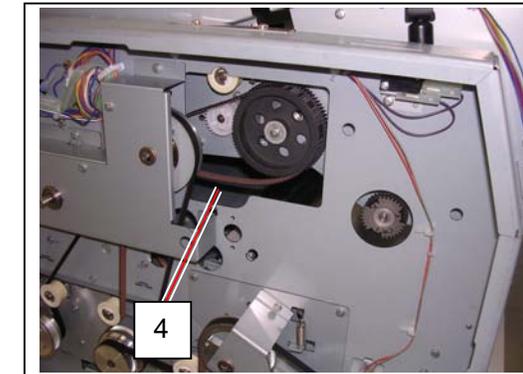
1. Pull up the Lever 2 (1) to open the Engine Unit.



2. Remove 6 screws (2) to remove Cover 2 (3).



3. Remove the **Belt 4** (4).



NOTE

Belt 4 is automatically unfastened if only you open the Engine Unit.

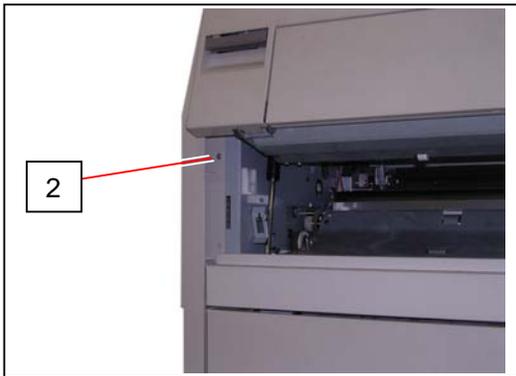
5.6 LED Head

5.6.1 Replacement of the LED Head Unit

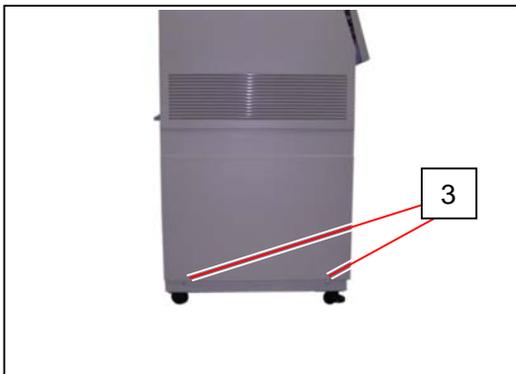
1. Pull up the Lever 2 (1) to open the Engine Unit.



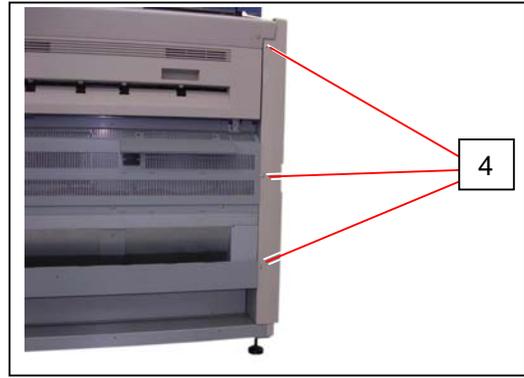
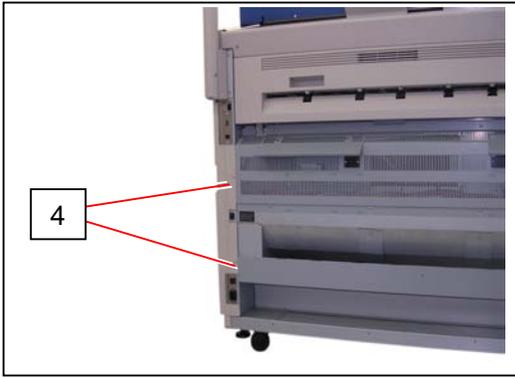
2. Remove the screws (2) at both sides.



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



4. Remove 5 pieces of screw (4) at both sides.
(2 pieces on the right and 3 pieces on the left)



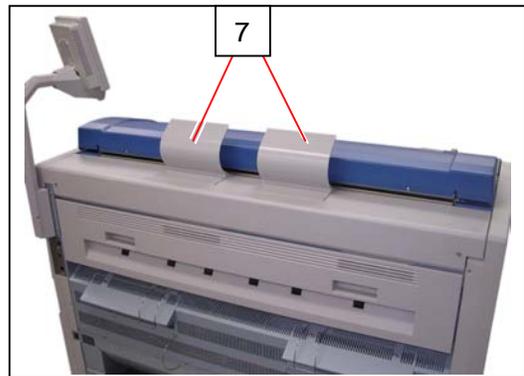
5. Remove both Cover 2 (5) and Cover 3 (6).



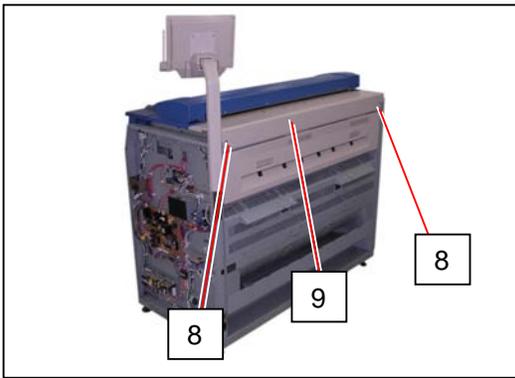
6. Close the Engine Unit.



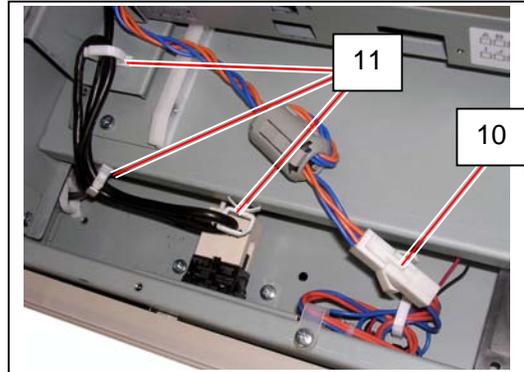
7. Remove the Guides 3 (7).



8. Remove 2 pieces of 4x6 screw (8) to remove the Cover 10 (9).

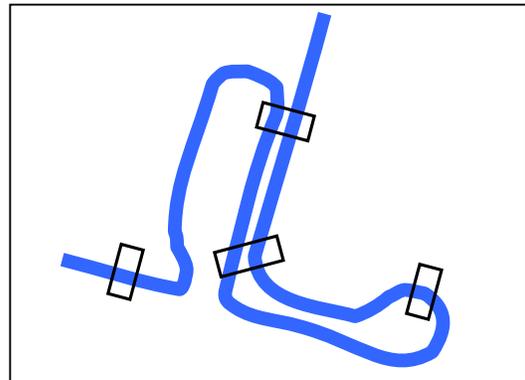


9. Disconnect the connector (10), and open the wire saddles (11) to release the harness.



! NOTE

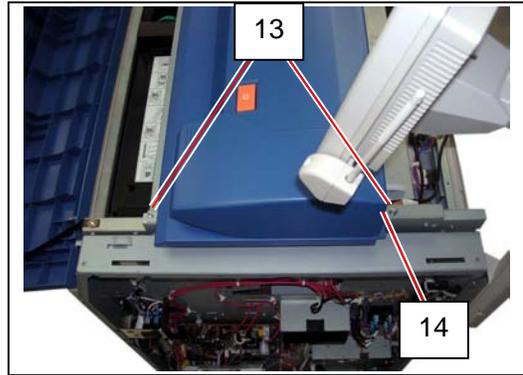
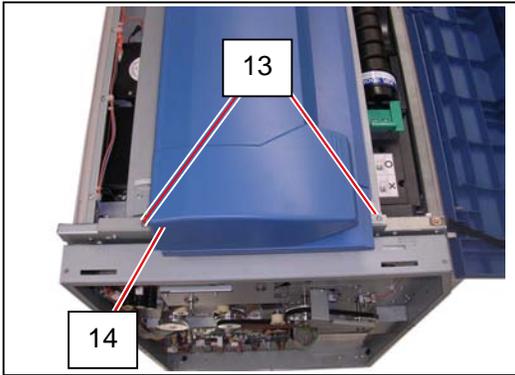
Wind excessive length of the USB Cable with the wire saddles (11) when reassembling.
Do not bundle the 2 cables in any of the wire saddles (11) together.



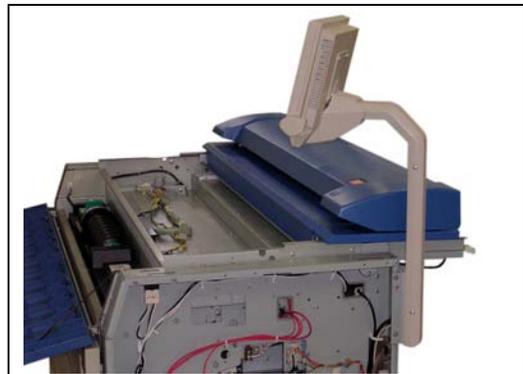
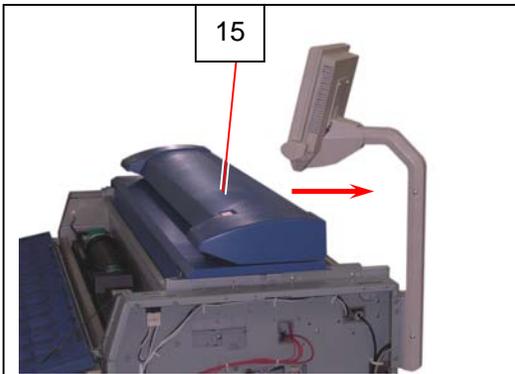
10. Open the Cover 4 (12).



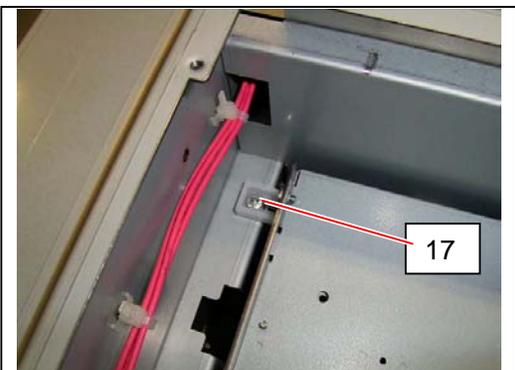
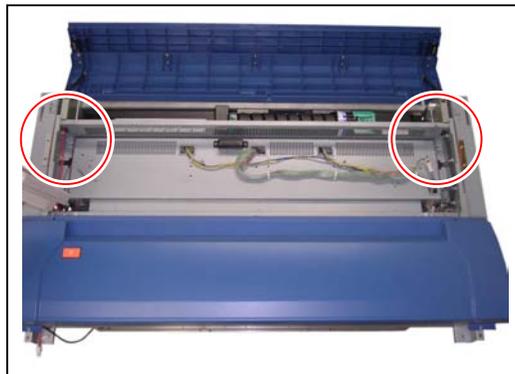
11. Remove 4 pieces of 4x6 screw (13) and 2 pieces of washer screw (14).



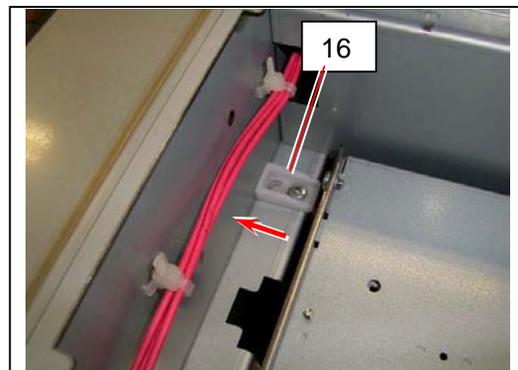
12. Slide the Scanner Unit (15) fully backward.



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.

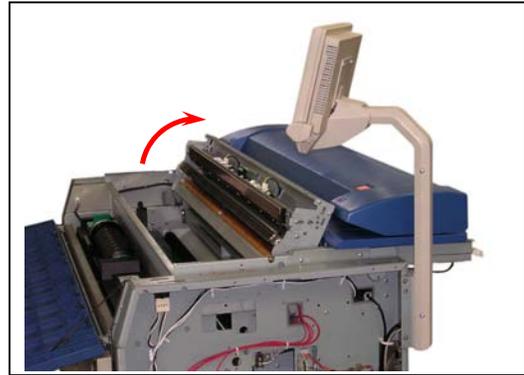
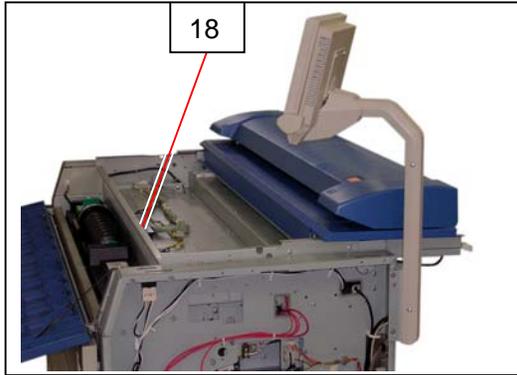


Lock position



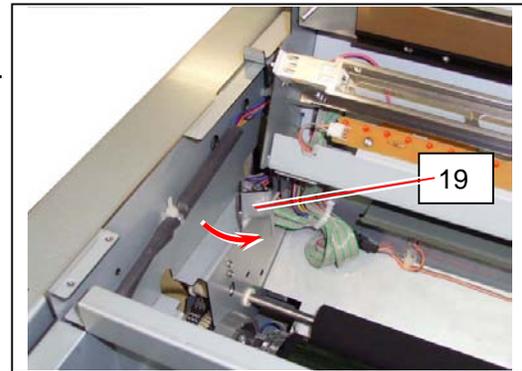
Unlock position

14. Open the LED Head Frame (18).

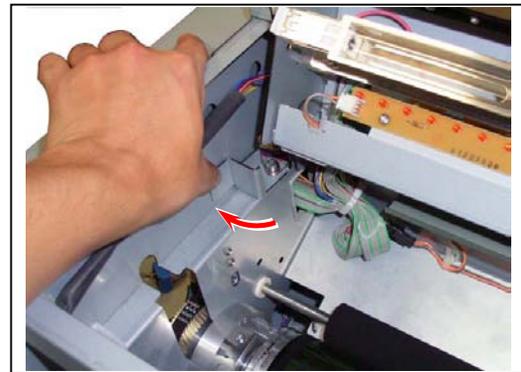


! NOTE

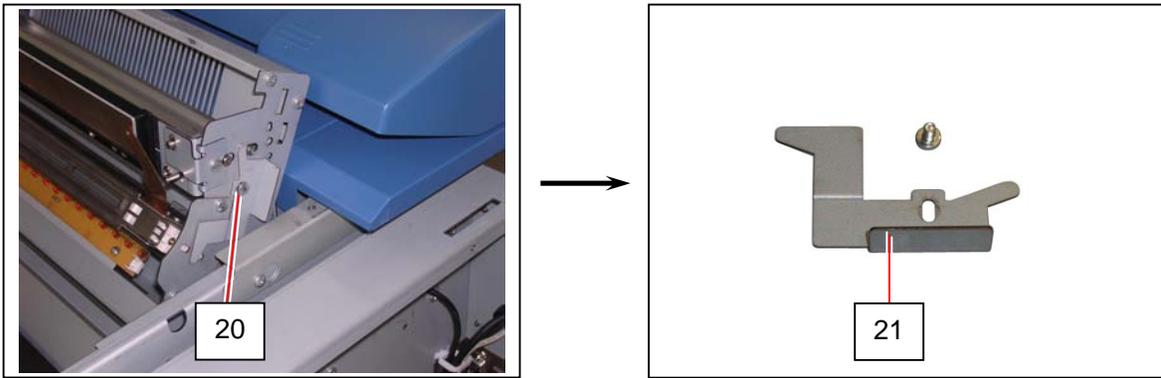
The Stopper 2 (19) comes out automatically to prevent the LED Head Frame from falling down.



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



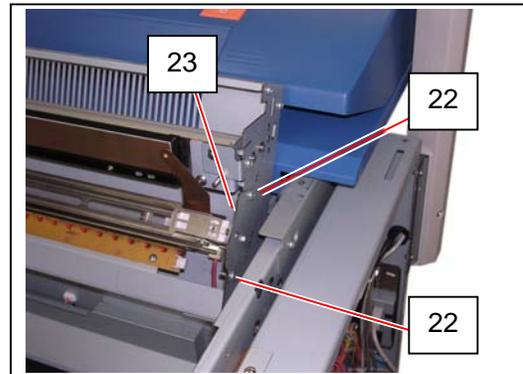
15. Remove the 4x6 screw (20) to remove the Fixing Bracket (21) on the right.



! NOTE

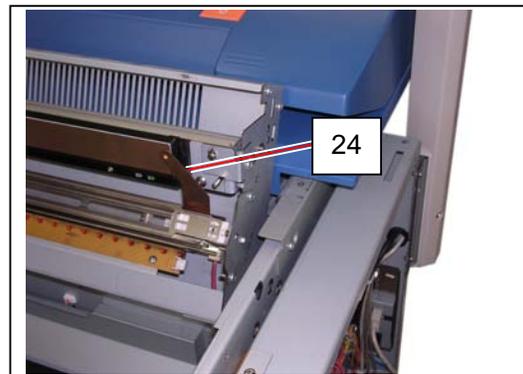
You do not have to put back the Fixing Bracket (21) at the time of reassembly, because it is a part required only before the delivery of machine.

16. Loosen 2 pieces of 4x10 screw (22) to make the Plate (23) enough movable.

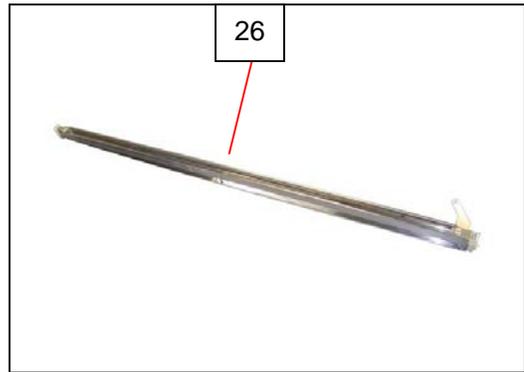
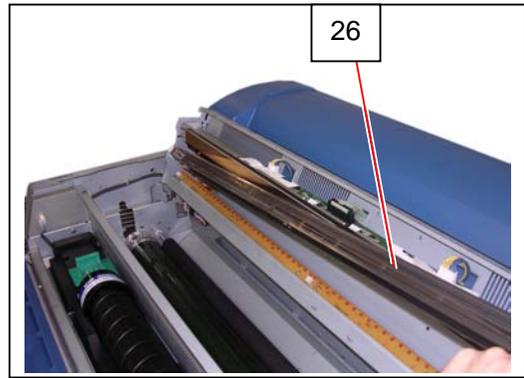
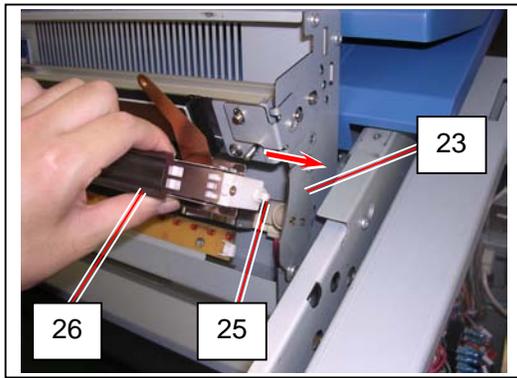


! NOTE

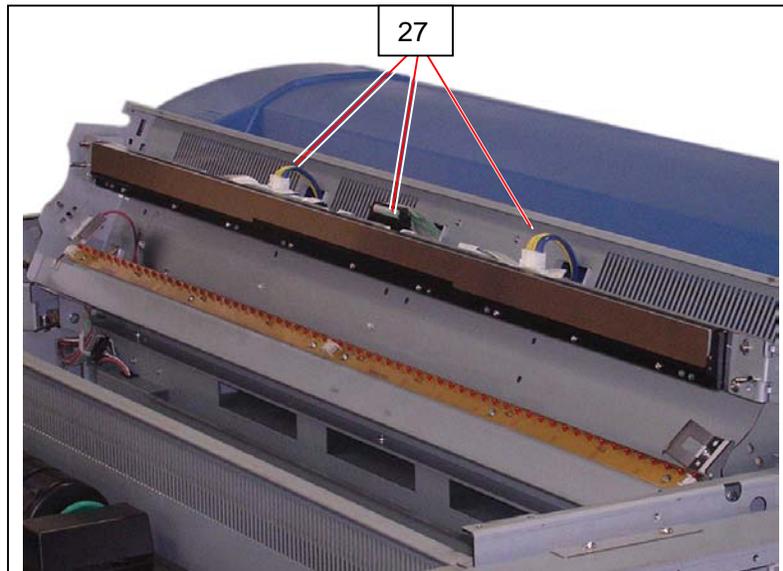
Be careful not to damage/deform/stretch Leaf Spring 2 (24).
Doing so may damage LED Head Unit.



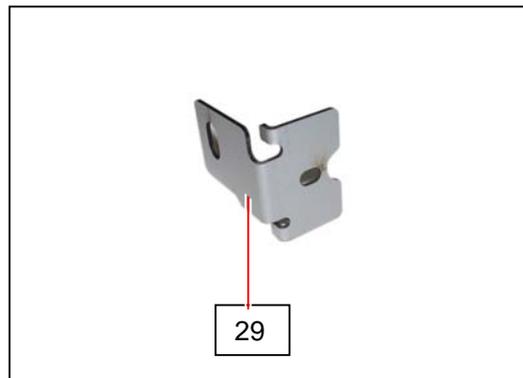
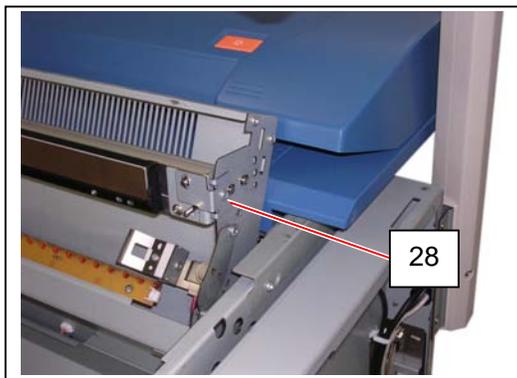
17. Move the Plate (23) to the right to release the pin (25) of Corona Block.
Then remove the Image Corona Unit (26).



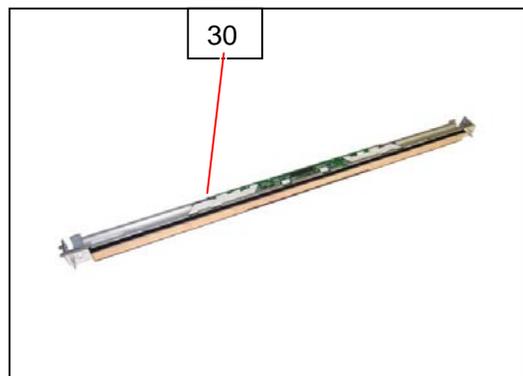
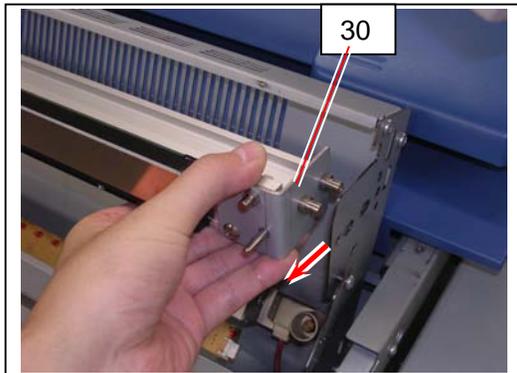
18. Disconnect 3 connectors (27).



19. Remove the screw (28) to remove the Bracket 2 (29).



20. Move the right end of **LED Head Unit** (30) a little to the front side, and then slide the whole unit to the right.
Replace the **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

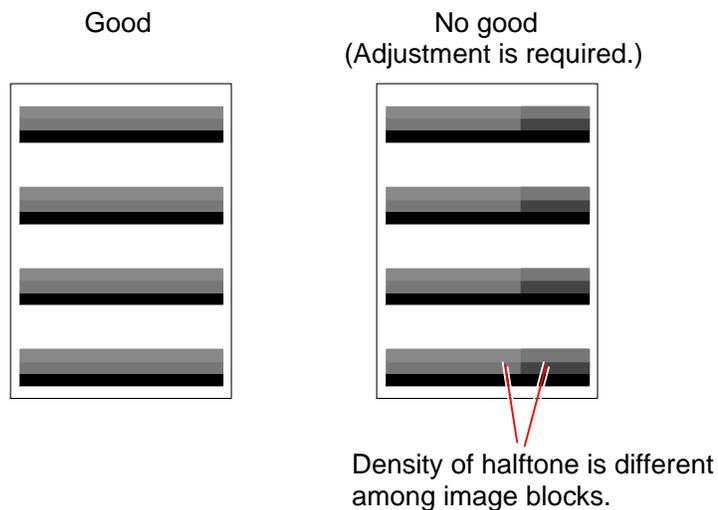
5. 6. 2. 1 Check of the Test Pattern Image

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.

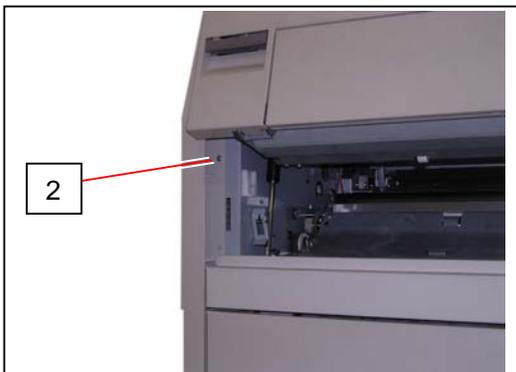
Drum Block Fix Tool
Z168580040



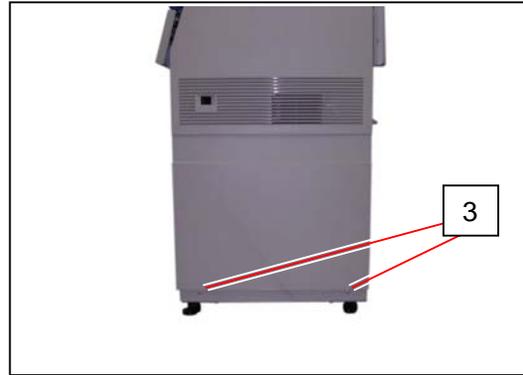
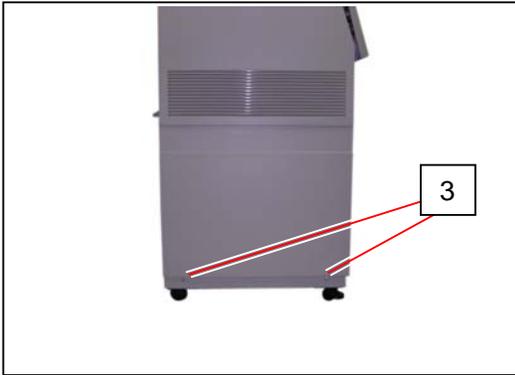
1. Pull up the Lever 2 (1) to open the Engine Unit.



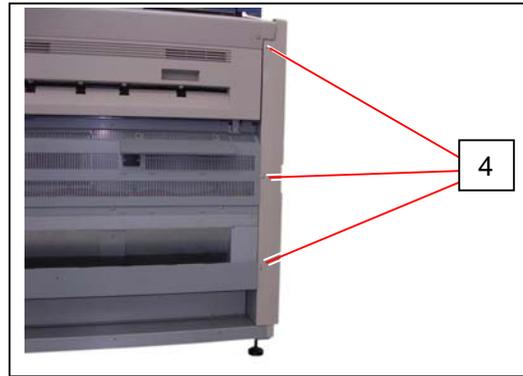
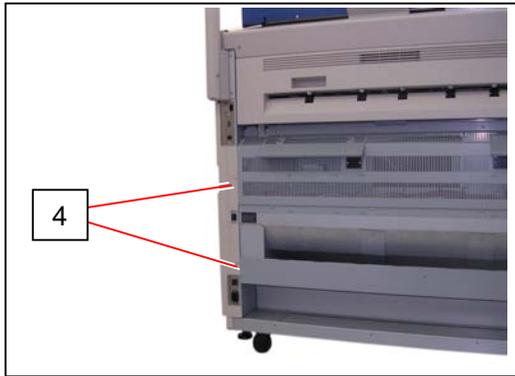
2. Remove the screws (2) at both sides.



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



4. Remove 5 pieces of screw (4) at both sides.
(2 pieces on the right and 3 pieces on the left)



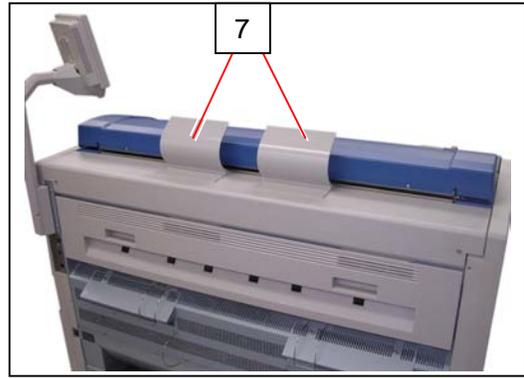
5. Remove both Cover 2 (5) and Cover 3 (6).



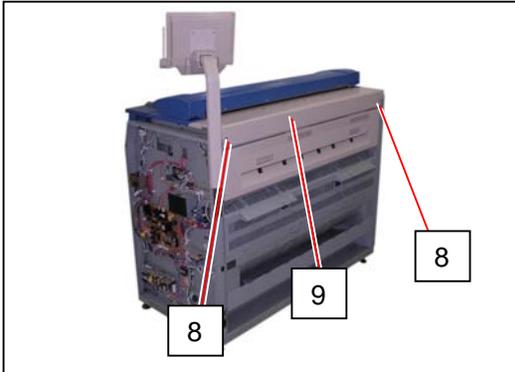
6. Close the Engine Unit.



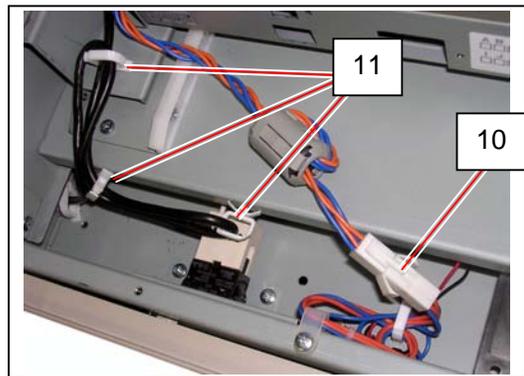
7. Remove the Guides 3 (7).



8. Remove 2 pieces of 4x6 screw (8) to remove the Cover 10 (9).

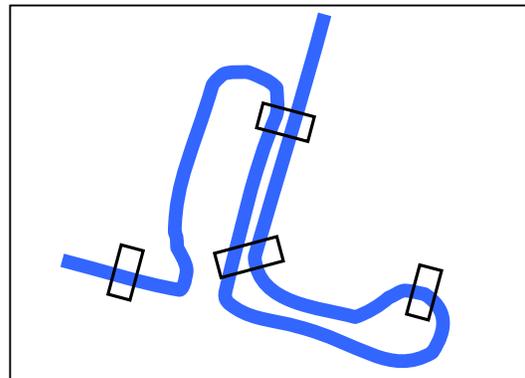


9. Disconnect the connector (10), and open the wire saddles (11) to release the harness.

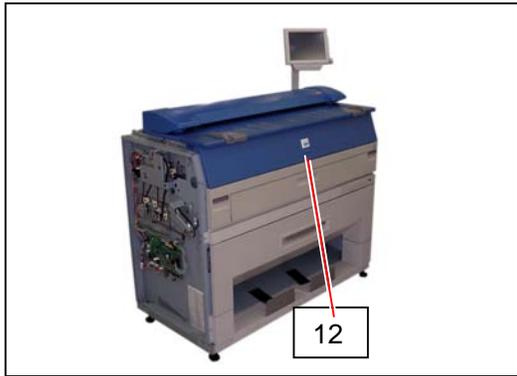


! NOTE

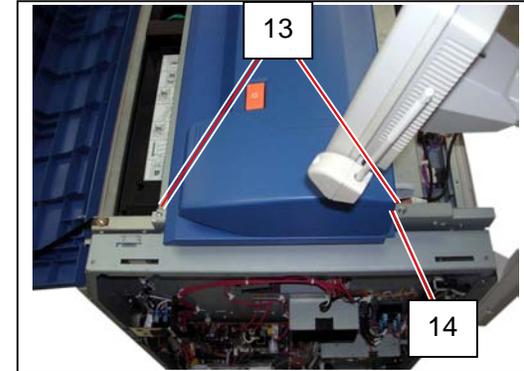
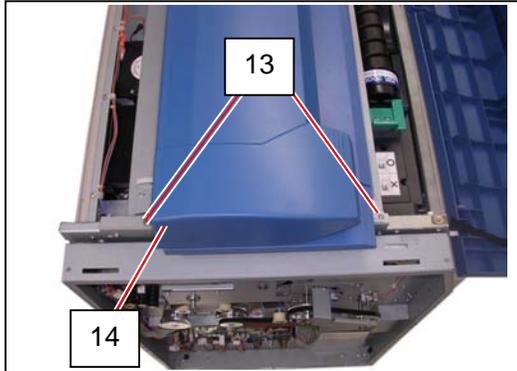
Wind excessive length of the USB Cable with the wire saddles (11) when reassembling.
Do not bundle the 2 cables in any of the wire saddles (11) together.



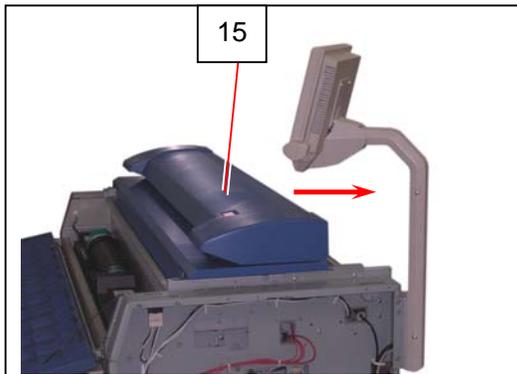
10. Open the Cover 4 (12).



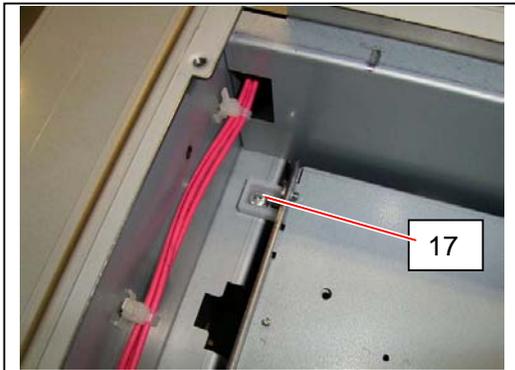
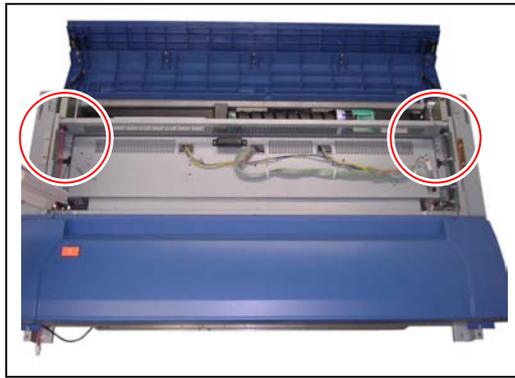
11. Remove 4 pieces of 4x6 screw (13) and 2 pieces of washer screw (14).



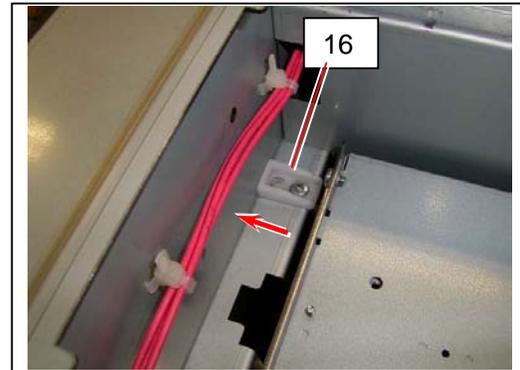
12. Slide the Scanner Unit (15) fully backward.



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.

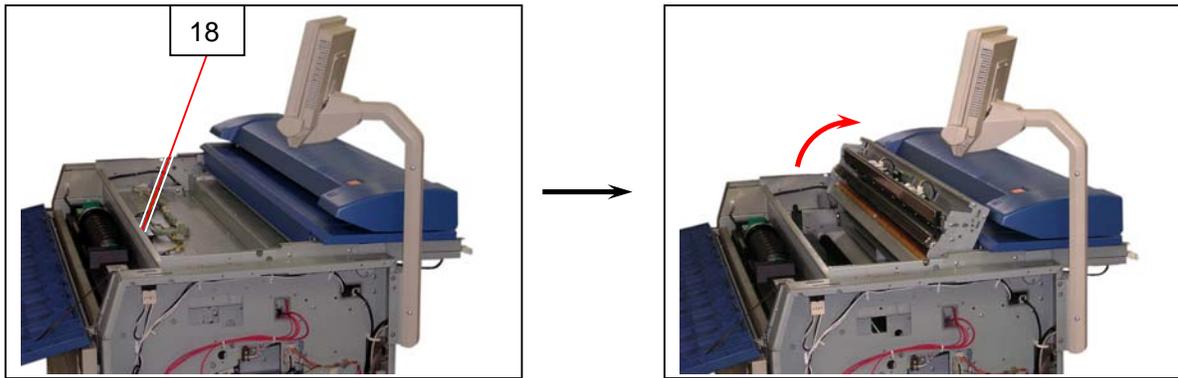


Lock position



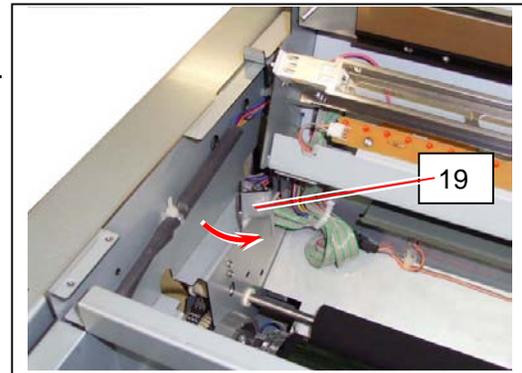
Unlock position

14. Open the LED Head Frame (18).

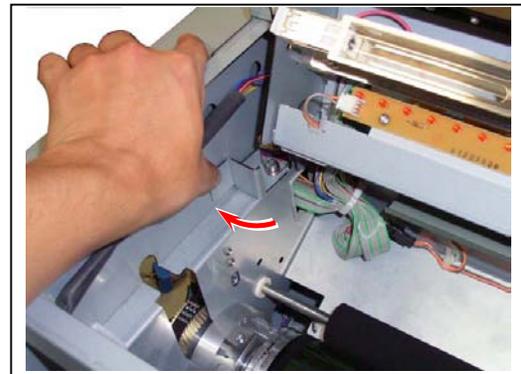


NOTE

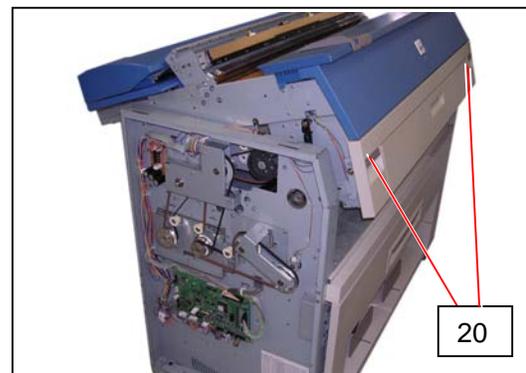
The Stopper 2 (19) comes out automatically to prevent the LED Head Frame from falling down.



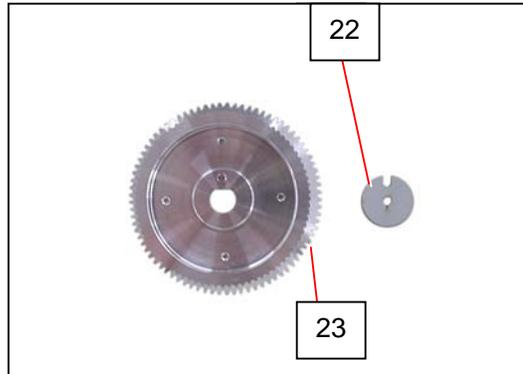
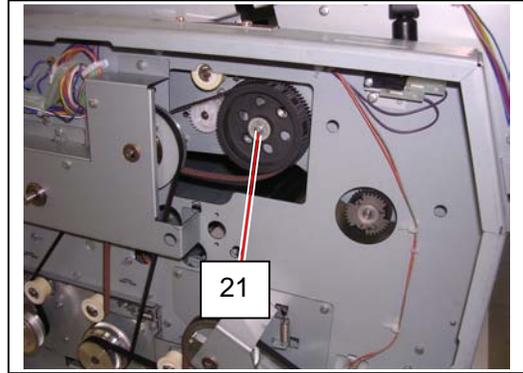
Press the Stopper 2 as the right photo if you will close the LED Head Frame.



15. Pull up the Lever 2 (20) to open the Engine Unit.

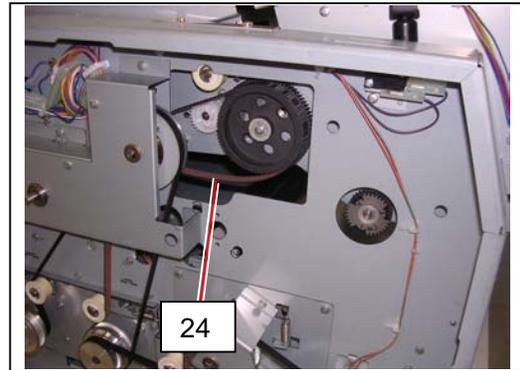


16. Remove 1 tooth washer screw (21: M4x8), and remove Plate (22) and Pulley Gear (23).

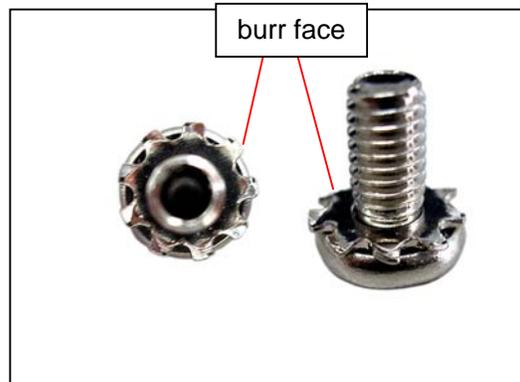


NOTE

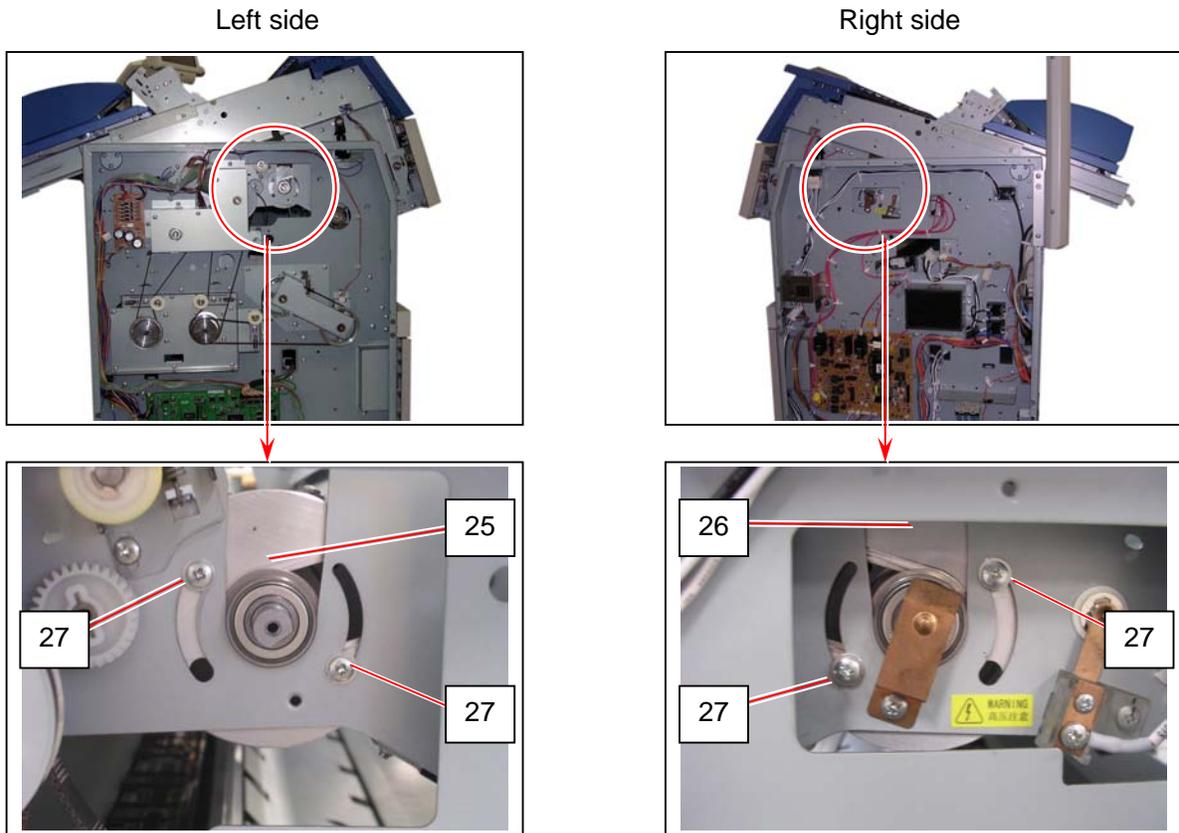
(1) Belt 4 (24) is automatically loosed with Engine Unit open.
It will be strained with Engine Unit closed.



(2) The tooth washer screw (21) has a tooth washer of which burr face meets the composition surface.



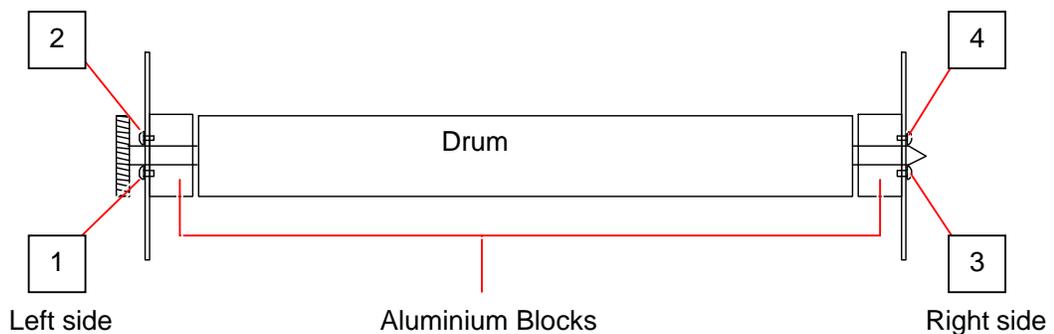
17. There are Aluminium Block (25: left) (26: right) and each of them is fixed with 2 screws (27).



Do as follows to fix the Aluminium Blocks correctly.

- a) Always fix the Aluminium Block of the **left (25) first and then right (26)**.
- b) When you tighten 2 screws (C) (D) to fix each Aluminium Block, always tighten **the lower one (C) first and then the upper one (D)**.

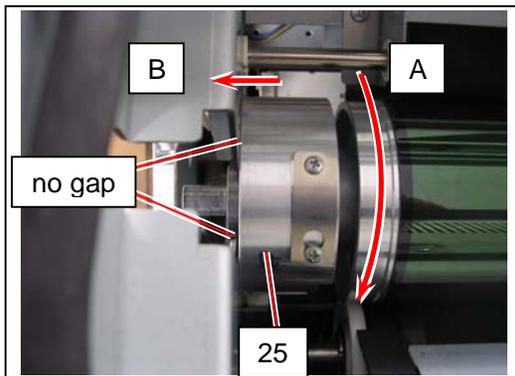
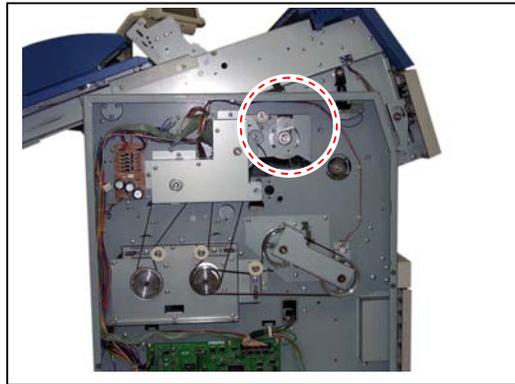
The following picture shows the order to tighten the screws. **Tighten in the order as 1 to 4 necessarily.**



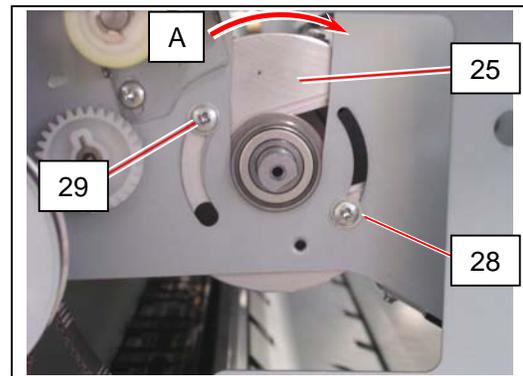
NOTE

The focus of LED Head will become defective if you do not satisfy the above requirements. Refer to the later pages for greater details.

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 (28) (29) just enough turn to fix Block (25) temporarily.



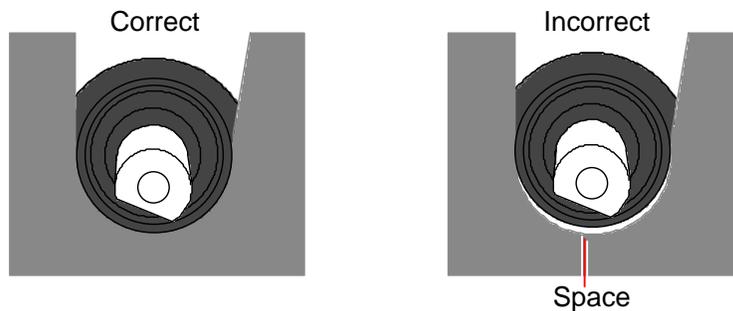
(Seen from the top of machine)



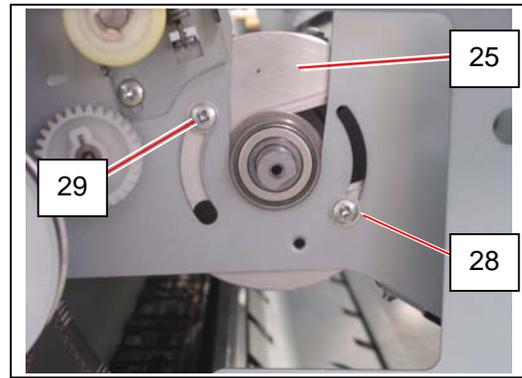
(Seen from the outside of machine)

⚠ NOTE

There should be no space between the Bearing and U-shape opening.
 The LED focus will become defective if there is any space.

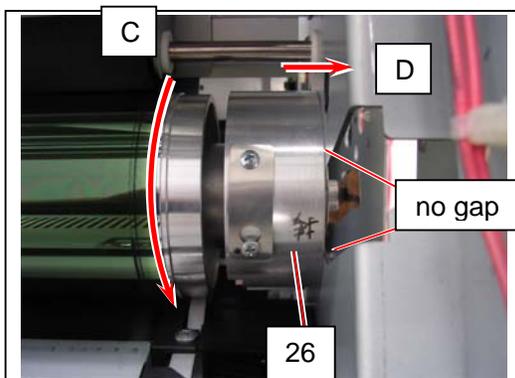
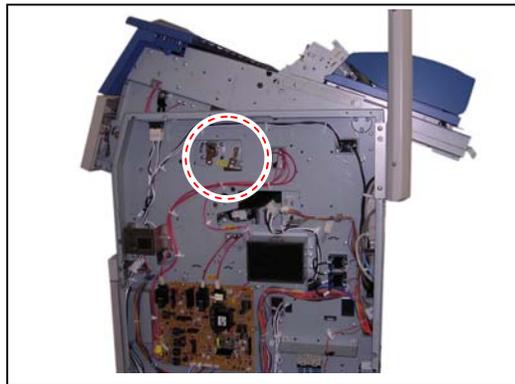


19. Loosen the screws (28) (29) in a (approximately) quarter turn to release Block (25). Check that no excessive backlash to sideways appears.

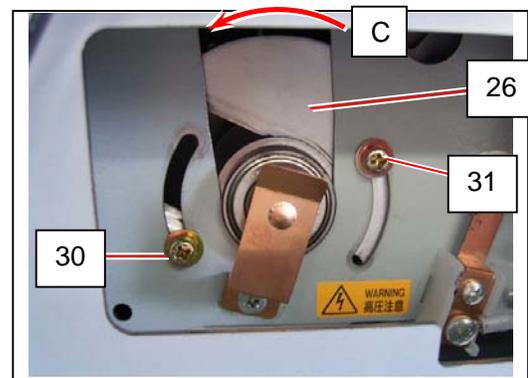


20. Similarly to step 18, rotate the right Block (26) fully to the arrow direction (C: to front) and also press it to the arrow direction (D: to outside). This will remove any gap between Block (26) and the side frame of the machine.

With holding Block (26), tighten the screws (30) (31) just enough turn to fix Block (26) temporarily.

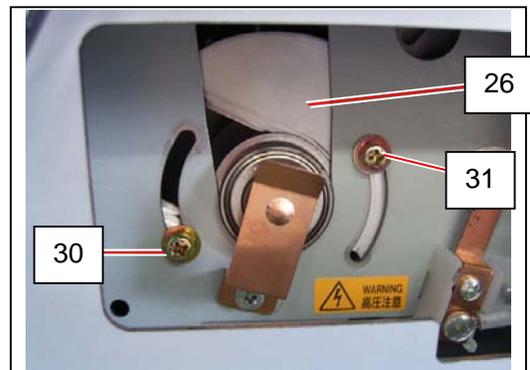


(Seen from the top of machine)



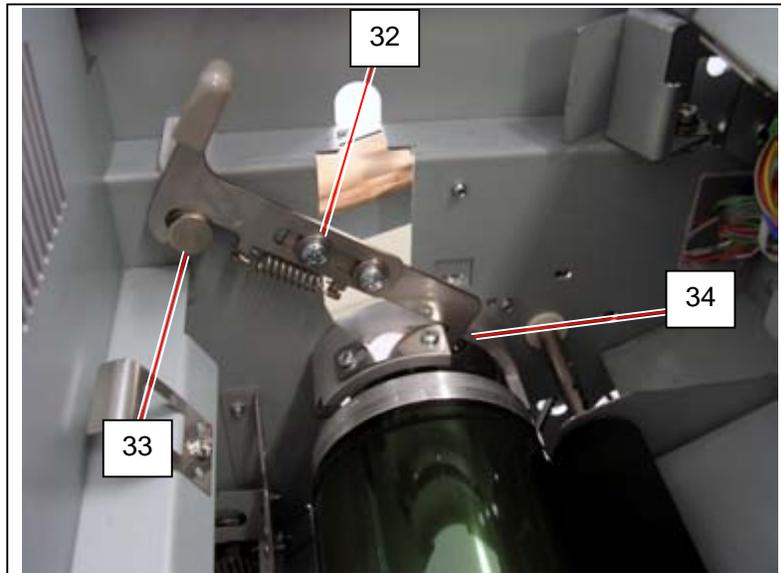
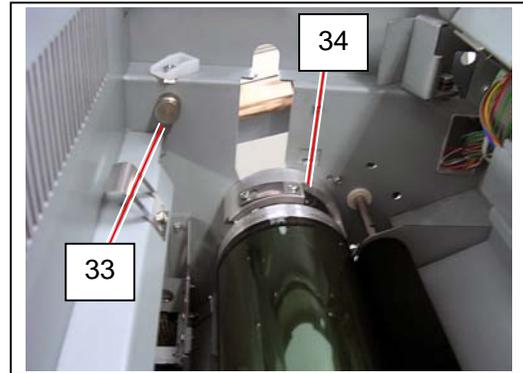
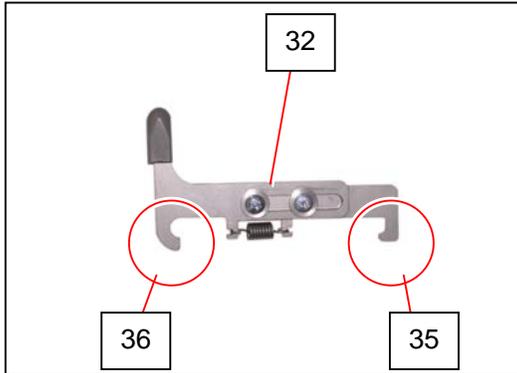
(Seen from the outside of machine)

21. Loosen the screws (30) (31) in a (approximately) quarter turn to release Block (4). Check that no excessive backlash to sideways appears.



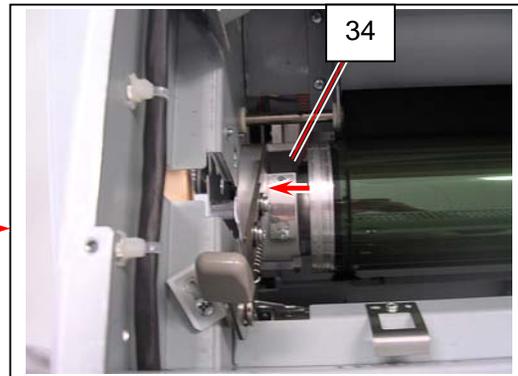
22. Fix Blocks with Drum Block Fix Tool (or by hand). Go to step 22-1 for using Drum Block Fix Tool. Go to step 23 for without Drum Block Fix Tool.

22-1. On the left side, hook Drum Block Fix Tool (32) on between the pin (33) on the frame and the U-shape opening (34) of Block (25). Hook the rear hook (35) the rim of the U-shape opening (34) and the front hook (36) in the groove of the pin (33).

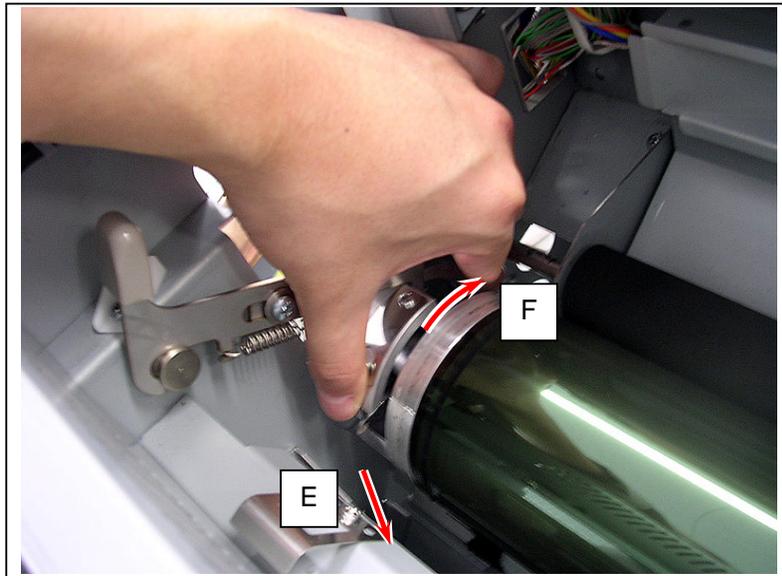


NOTE

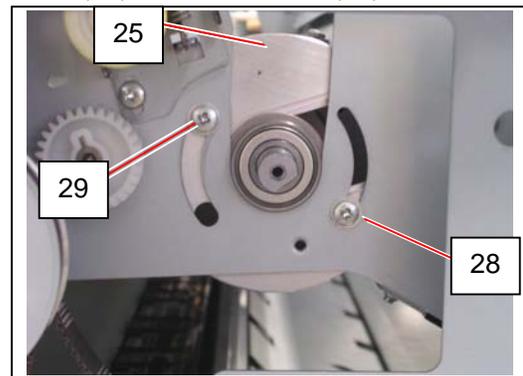
- (1) Handle Drum Block Fix Tool with care. Be sure not to damage Drum or any other components when removing/attaching it.
- (2) Set the rear hook (35) against the corner rim of U-shape opening (34).



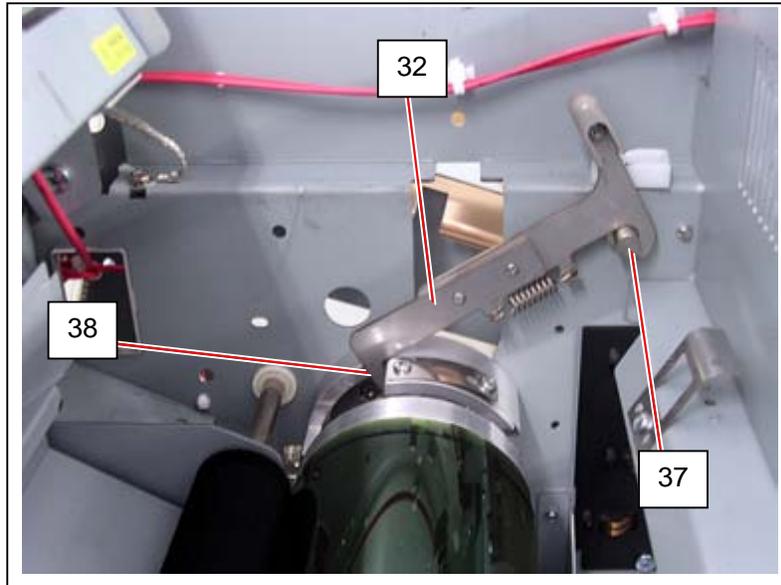
22-2. With pressing Block (25) down (E), slightly turn Block to the arrow direction (F) and release it to locate Block correctly by restoring spring.



22-3. Tighten the lower screw (28) and then the upper screw (29) to secure Block (25).

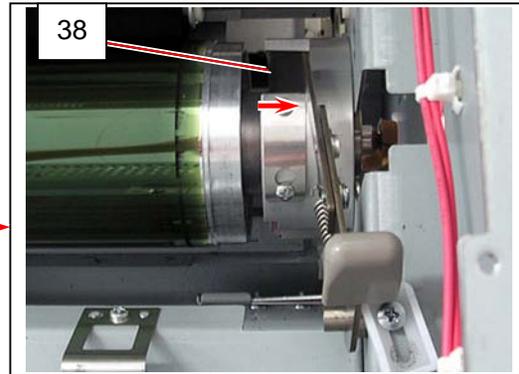


22-4. Similarly to step 22-2, on the right side, hook Drum Block Fix Tool (32) on between the pin (37) on the frame and the U-shape opening (38) of Block (26).

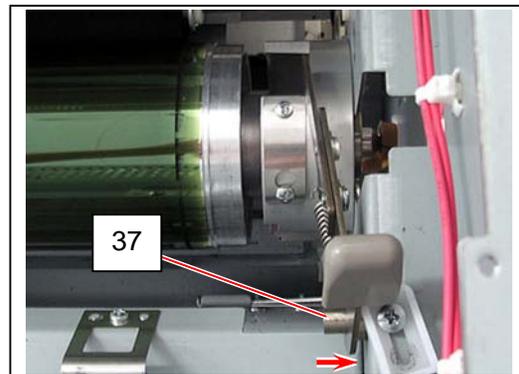
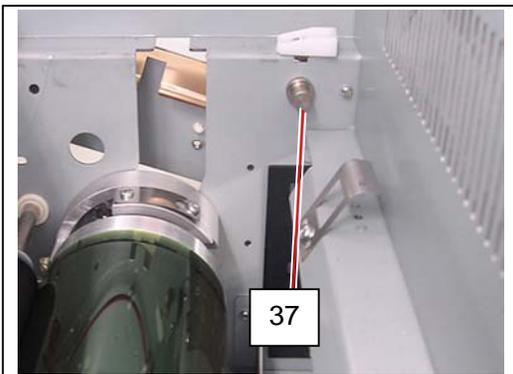


NOTE

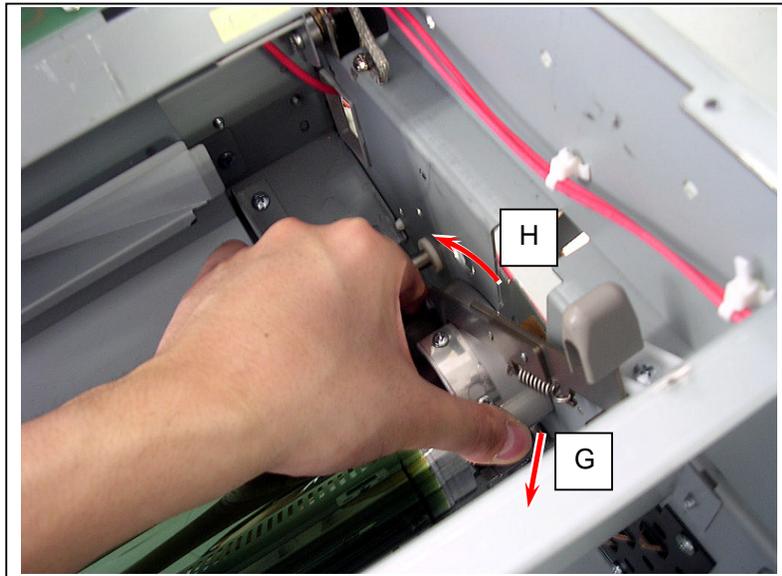
- (1) Handle Drum Block Fix Tool with care. Be sure not to damage Drum or any other components when removing/attaching it.
- (2) Set the rear hook (35) against the corner rim of U-shape opening (38).



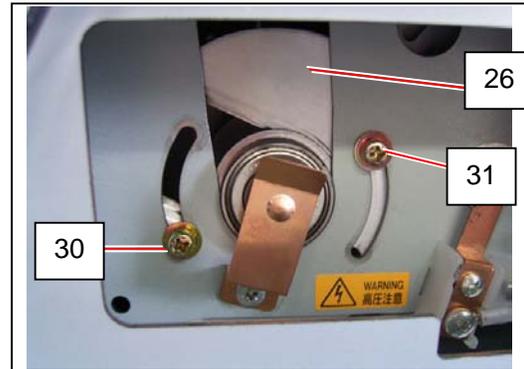
- (3) Set the front hook (36) against the step on the pin (37).



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.



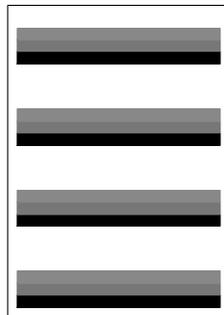
22-6. Tighten the lower screw (30) and then the upper screw (31) to secure Block (26).



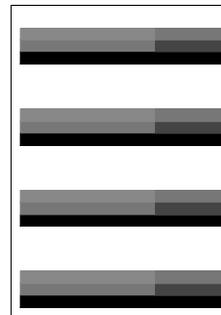
22-7. Remove Drum Block Fix Tool. Replace all the parts in position.

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.

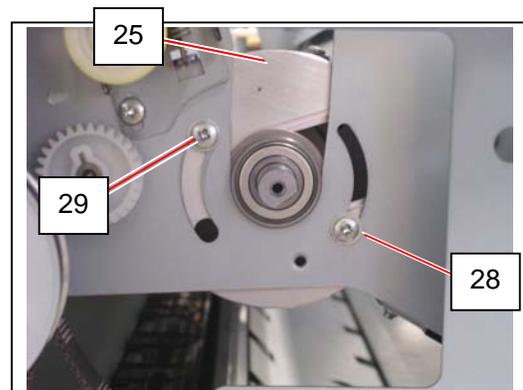
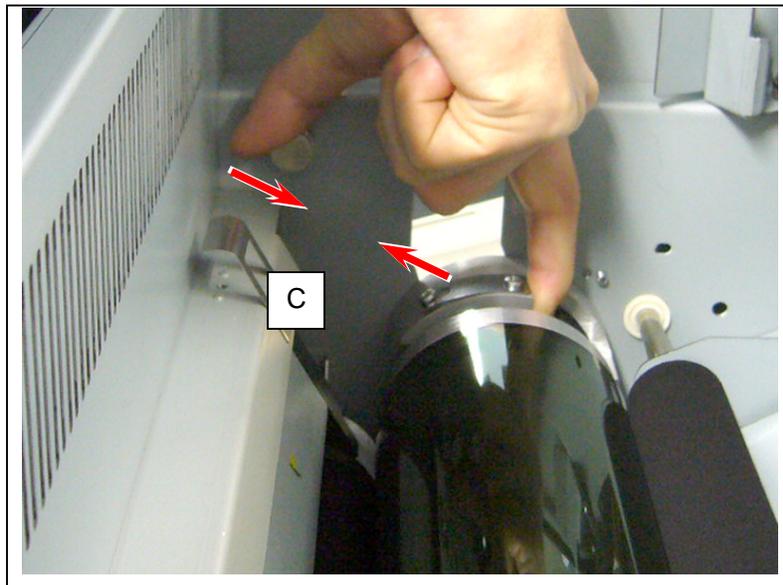
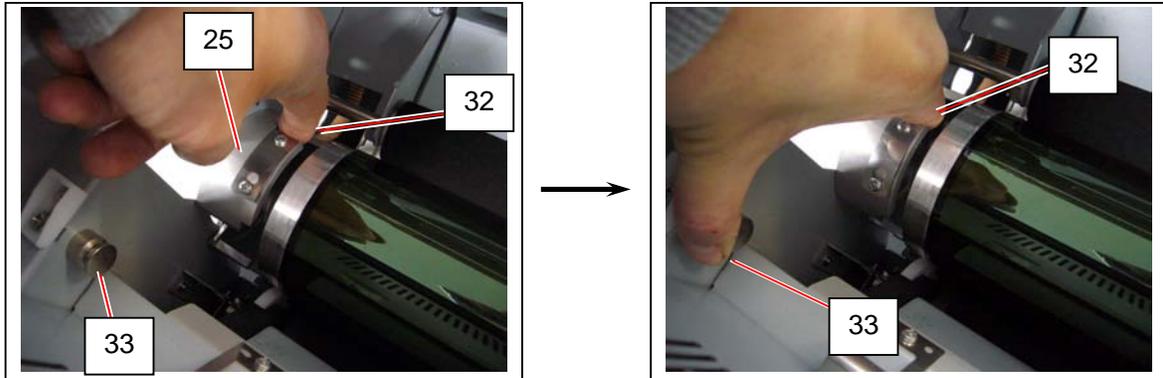
Go to [5. 6. 2. 3 Focus Adjustment with Spacers].

23. Follow the instruction below to fix Blocks without Drum Block Fix Tool.

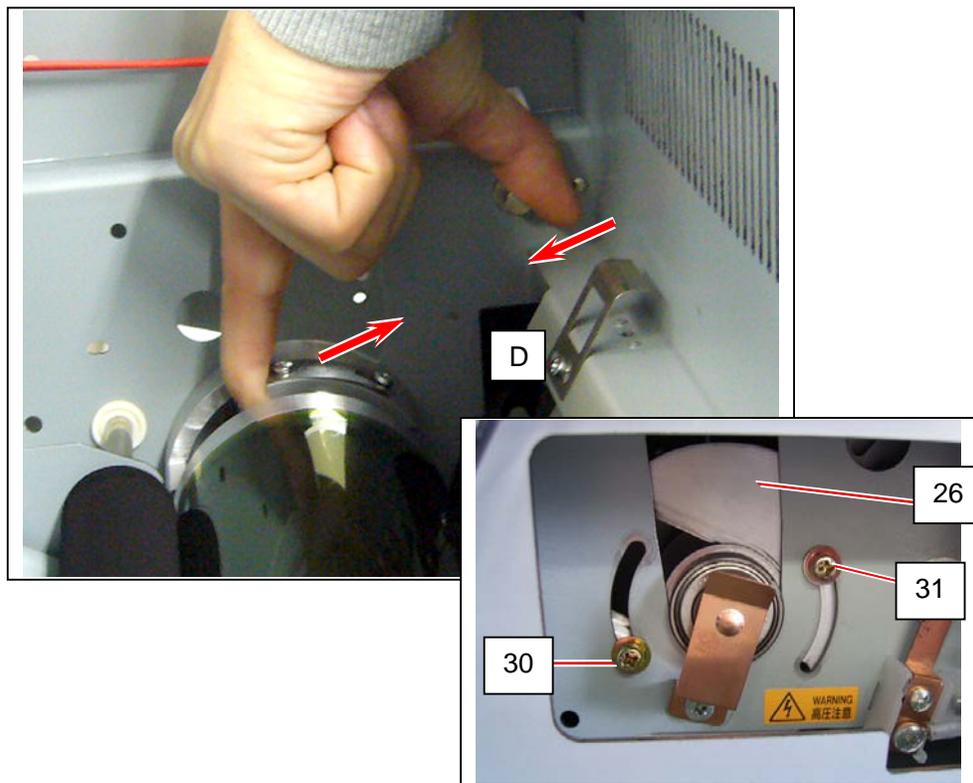
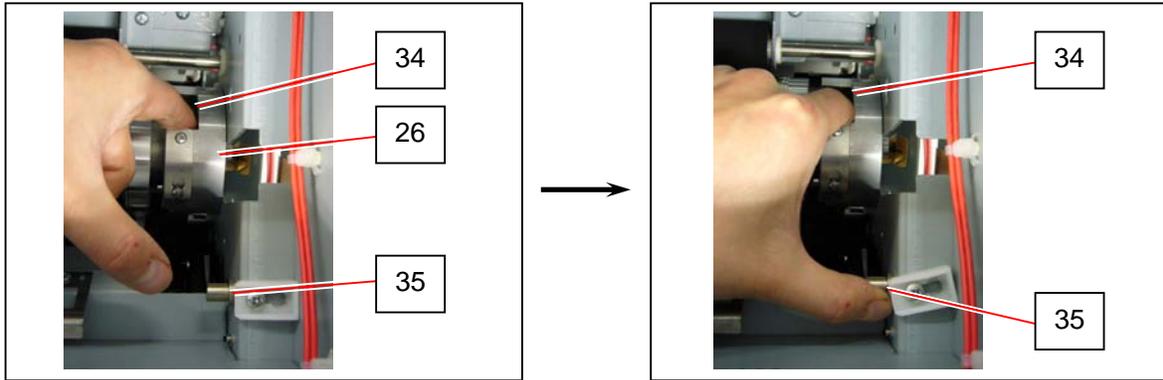
23-1. Put your finger inside the U-shape opening (32) of Block (25). Put the other finger on the pin (33) of the frame.

Push the fingers toward each other (C: inside). Note that the entire Block (25) is shifted towards the pin (33) by the finger at the U-shape opening (32).

While pushing and holding, tighten the lower screw (28) and then the upper screw (29) to secure Block (25).

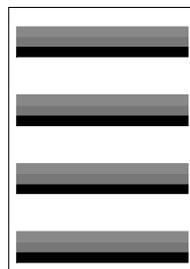


23-2. Similarly to step 23-1, put your finger inside the U-shape opening (34) of Block (26) and put the other finger on the pin (35) of the frame. Push the fingers toward each other (D: inside). Note that the entire Block (26) is shifted towards the pin (35) by the finger at the U-shape opening (34). While pushing and holding, tighten the lower screw (30) and then the upper screw (31) to secure Block (26).

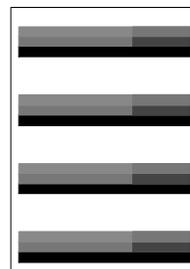


23-3. Print out the Test Pattern No.3, and confirm that the density of halftone is uniform. If it is still not uniform, fix Blocks again.

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].

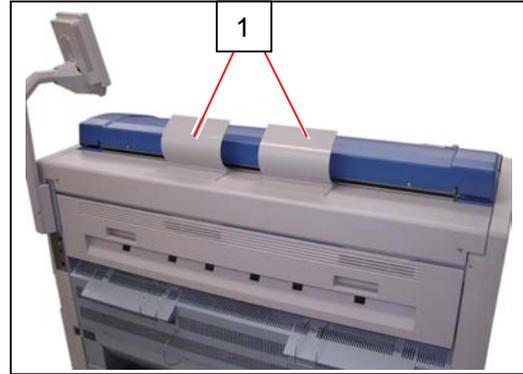
5. 6. 2. 3 Focus Adjustment with Spacers

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.

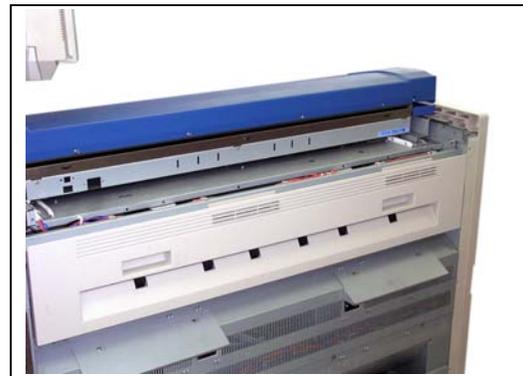
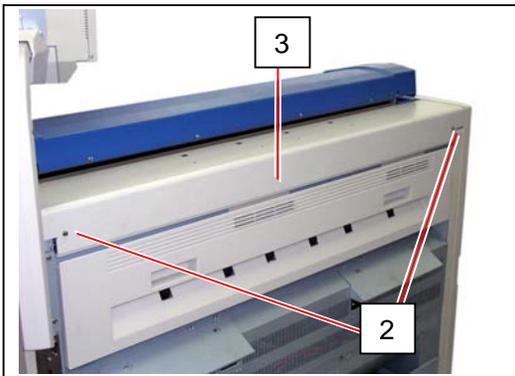
This is because the height of the LED is mechanically different between left and right by some reason.

In this case adjust the height by adding or removing the Spacers.

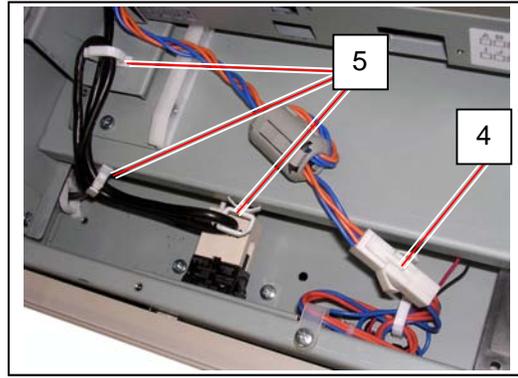
1. Remove the Guides 3 (1).



2. Remove 2 pieces of 4x6 screw (2) to remove the Cover 10 (3).

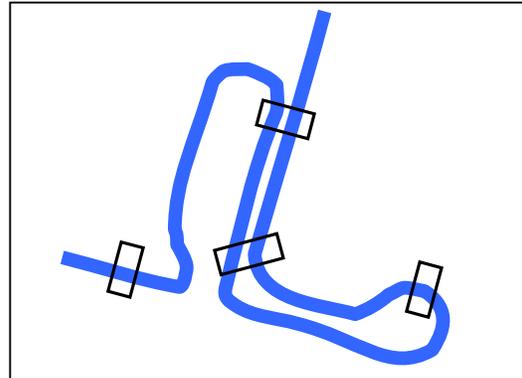


3. Disconnect the connector (4), and open the wire saddles (5) to release the harness.

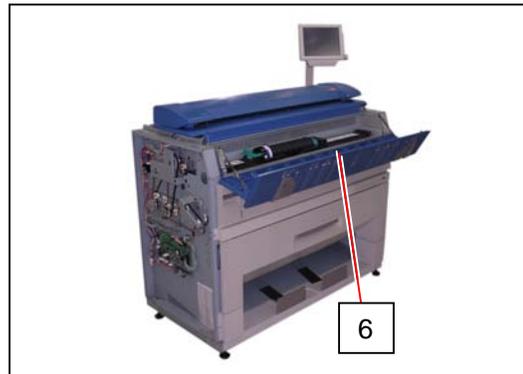


! NOTE

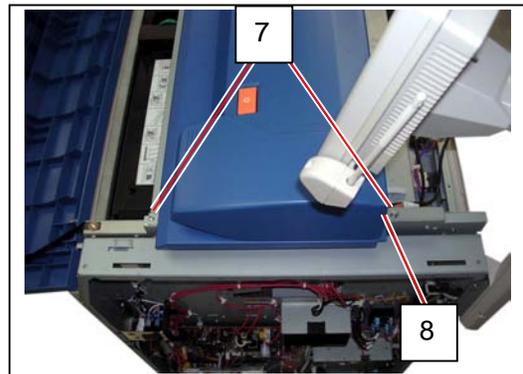
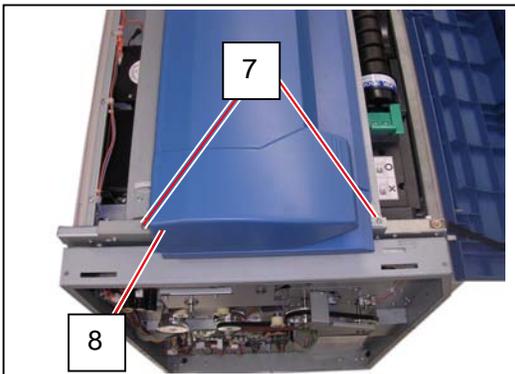
Wind excessive length of the USB Cable with the wire saddles (5) when reassembling.
Do not bundle the 2 cables in any of the wire saddles (5) together.



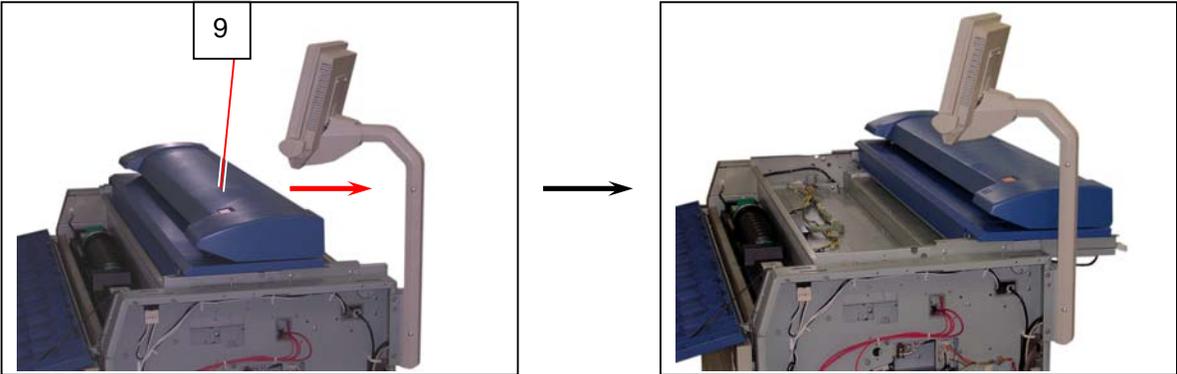
4. Open the Cover 4 (6).



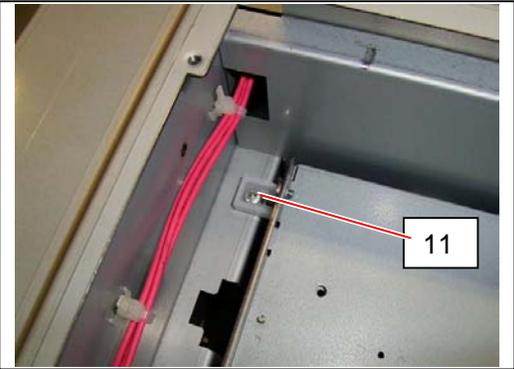
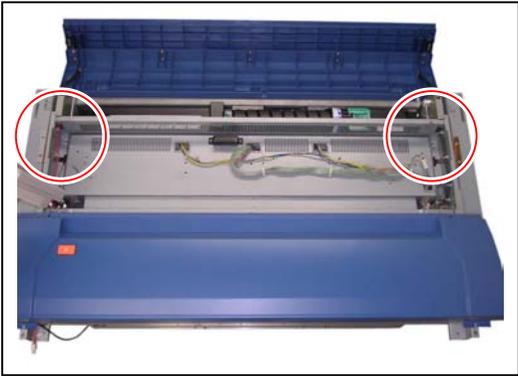
5. Remove 4 pieces of 4x6 screw (7) and 2 pieces of washer screw (8).



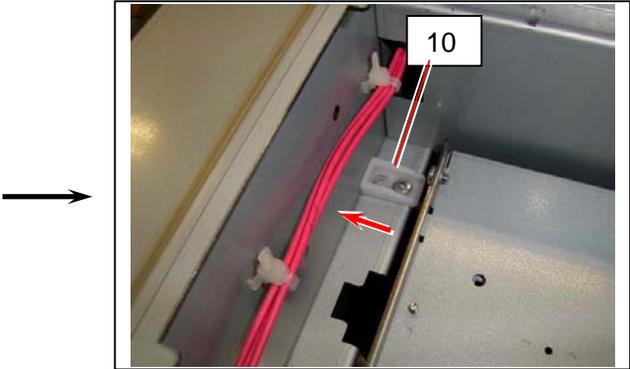
6. Slide the Scanner Unit (9) fully backward.



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.

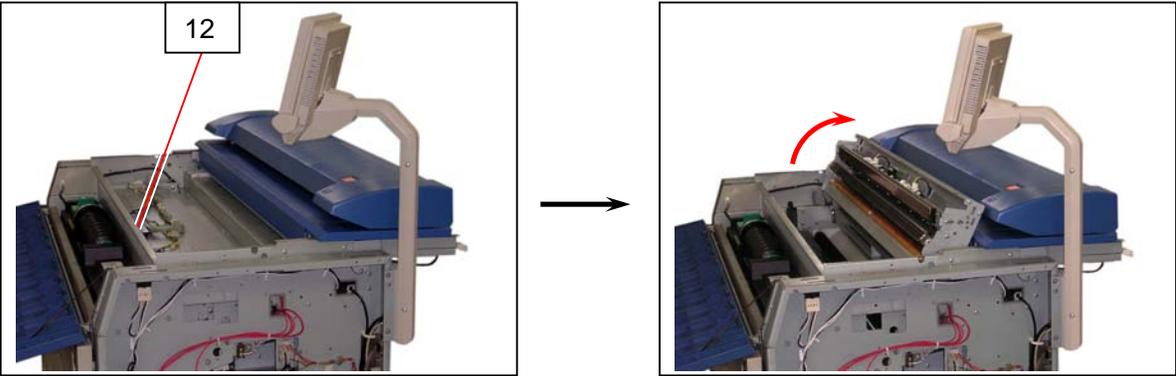


Lock position



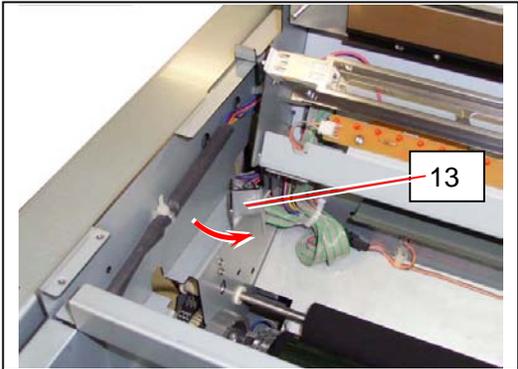
Unlock position

8. Open the LED Head Frame (12).

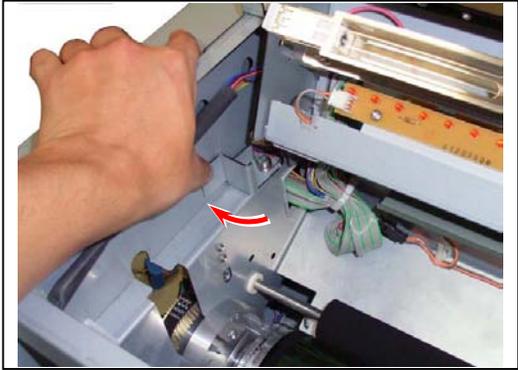


! NOTE

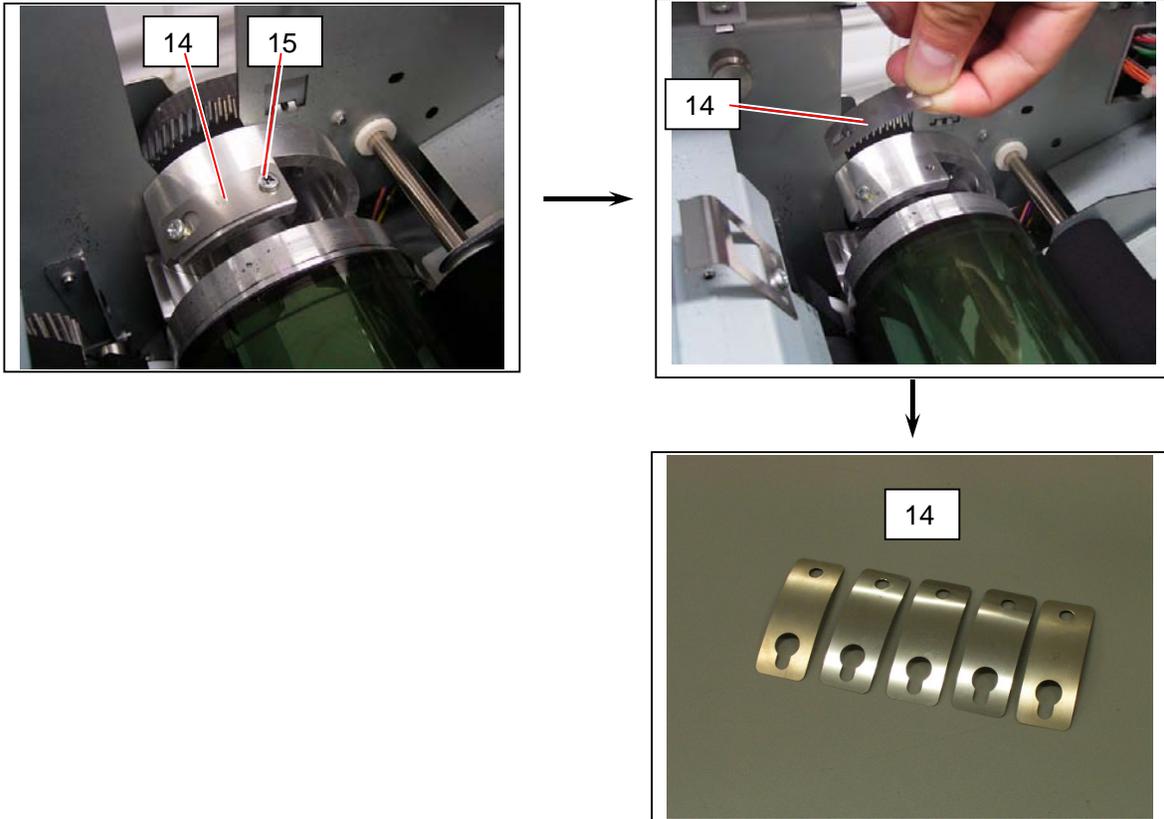
The Stopper 2 (13) comes out automatically to prevent the LED Head Frame from falling down.



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

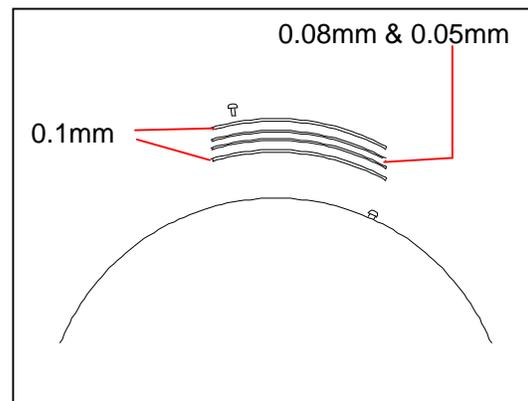


9. There are Spacers (14) on each Aluminium Block at both sides.
The height of the LED Head can be adjusted by adding more Spacer or removing some of them.
Remove the screw (15), and remove all Spacers (14) at first.
And then adjust the height of LED Head adding or removing the Spacers (14).



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.

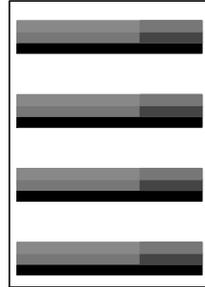
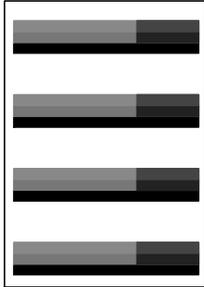


! NOTE

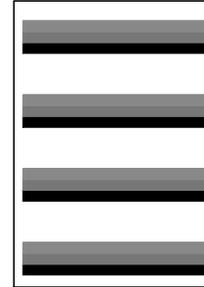
(4) It is quite not clear which of “addition” or “removal” of Spacer is effective to solve the focus problem.
(Even if the defective image caused by the focus problem looks same, for example, it is fixed by “addition” in some case but in another case it is fixed by “removal”.

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.

Removal of Spacer
(Worse result)

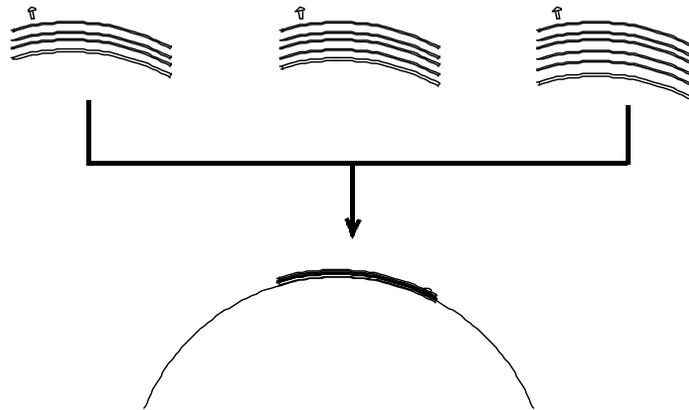


Addition of Spacer
(Better result)



↓ “Addition of Spacer” is the better way.

Try several combinations of Spacers by adding the Spacers gradually.



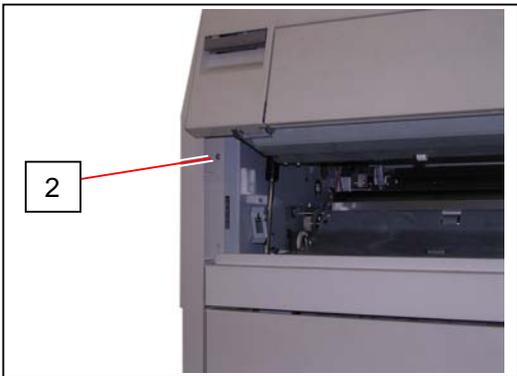
5.7 Image Corona

5.7.1 Removal of the Image Corona Unit

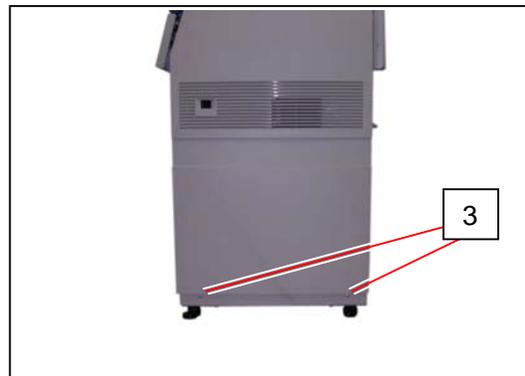
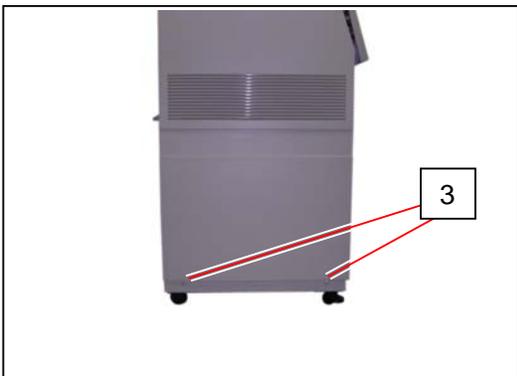
1. Pull up the Lever 2 (1) to open the Engine Unit.



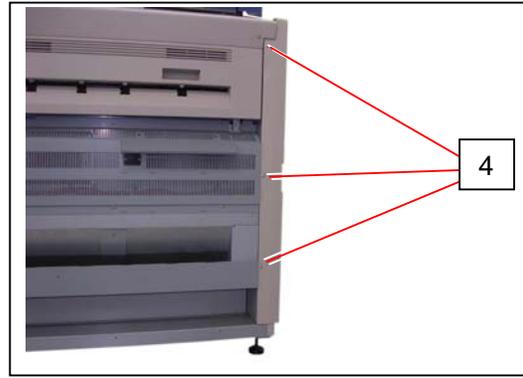
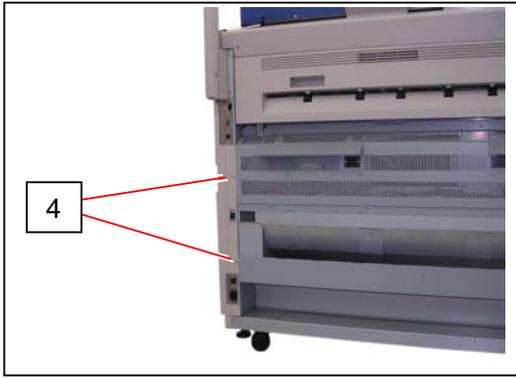
2. Remove the screws (2) at both sides.



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



4. Remove 5 pieces of screw (4) at both sides.
(2 pieces on the right and 3 pieces on the left)



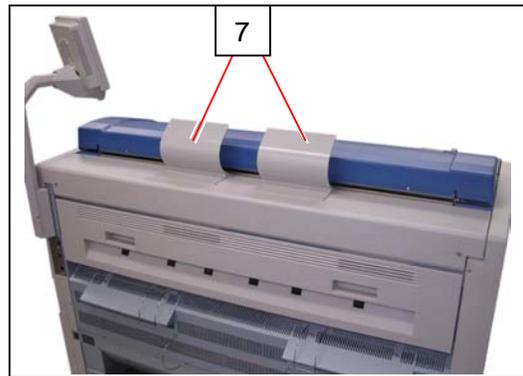
5. Remove both Cover 2 (5) and Cover 3 (6).



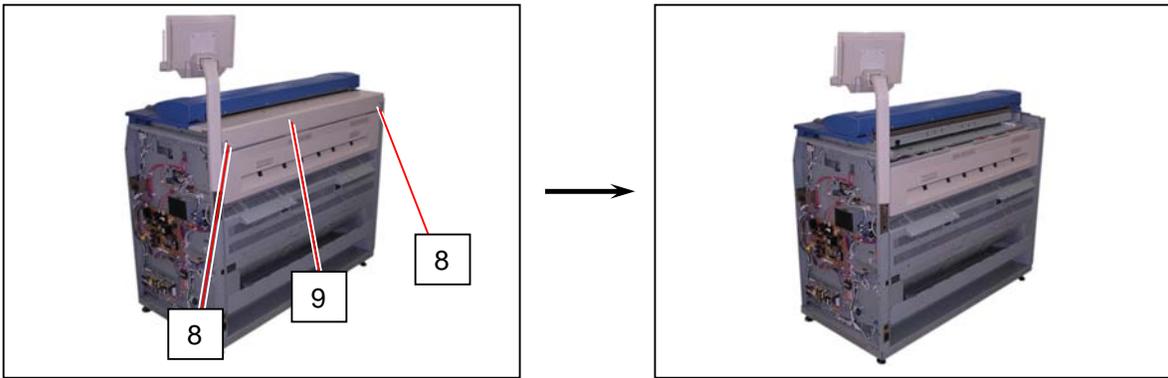
6. Close the Engine Unit.



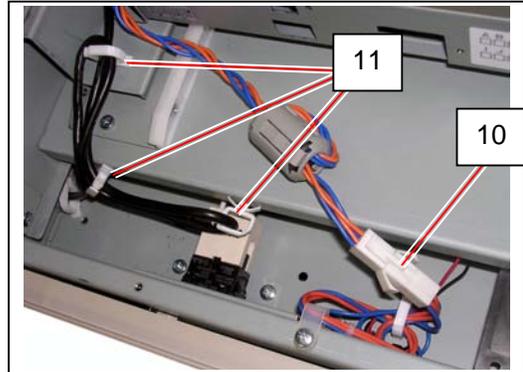
7. Remove the Guides 3 (7).



8. Remove 2 pieces of 4x6 screw (8) to remove the Cover 10 (9).

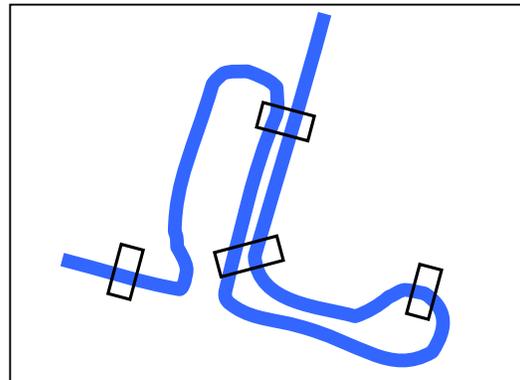


9. Disconnect the connector (10), and open the wire saddles (11) to release the harness.

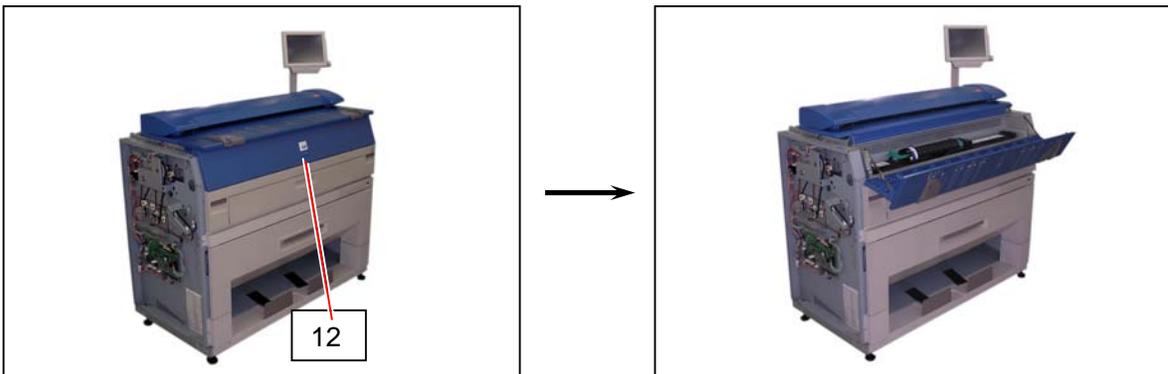


! NOTE

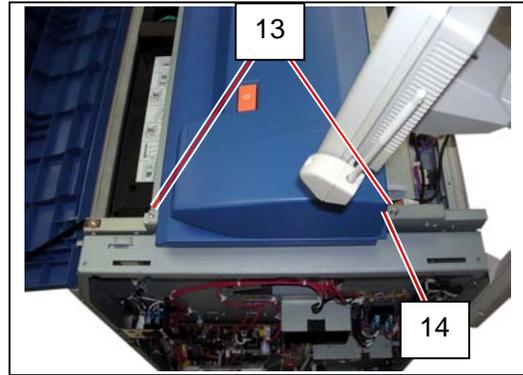
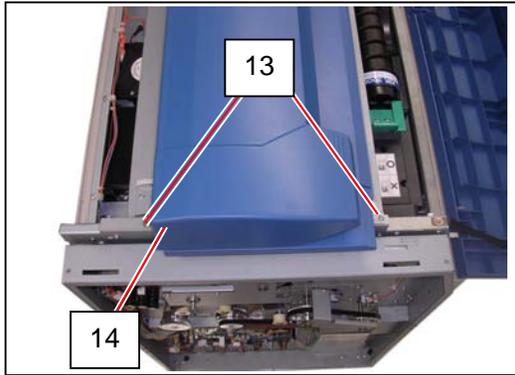
Wind excessive length of the USB Cable with the wire saddles (11) when reassembling.
Do not bundle the 2 cables in any of the wire saddles (11) together.



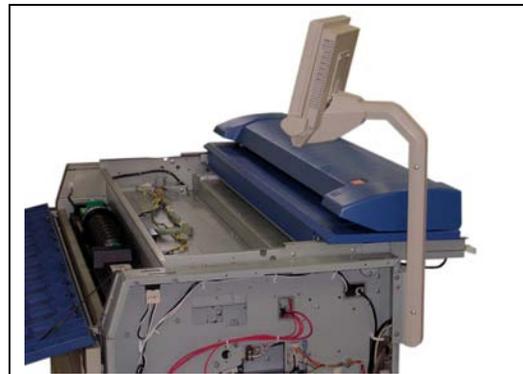
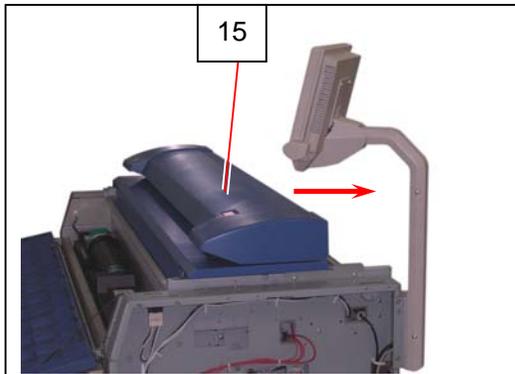
10. Open the Cover 4 (12).



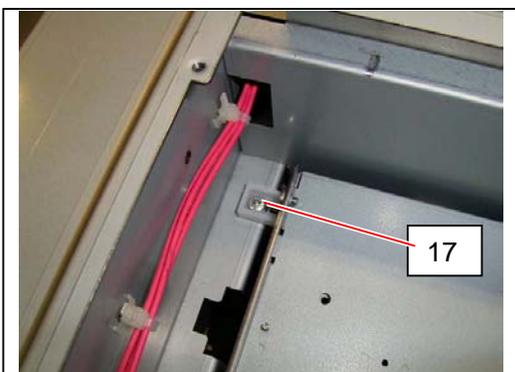
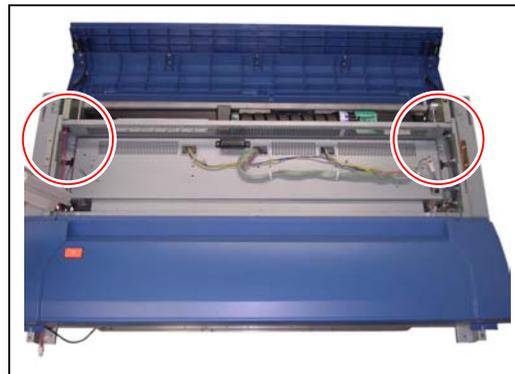
11. Remove 4 pieces of 4x6 screw (13) and 2 pieces of washer screw (14).



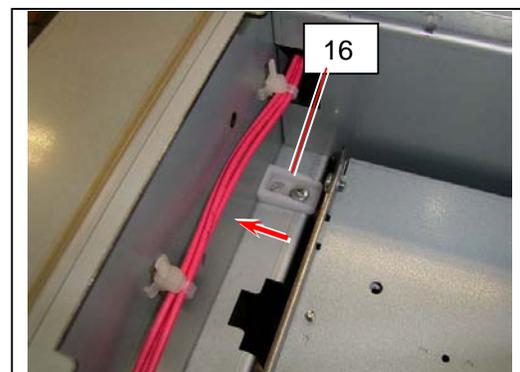
12. Slide the Scanner Unit (15) fully backward.



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.

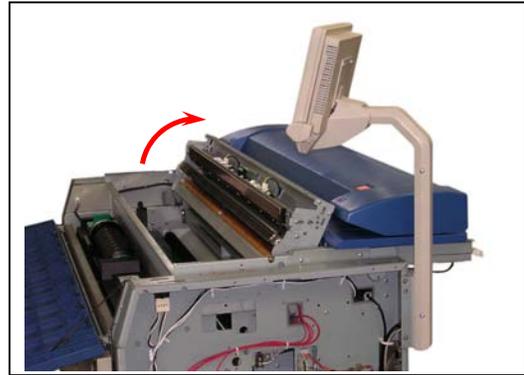
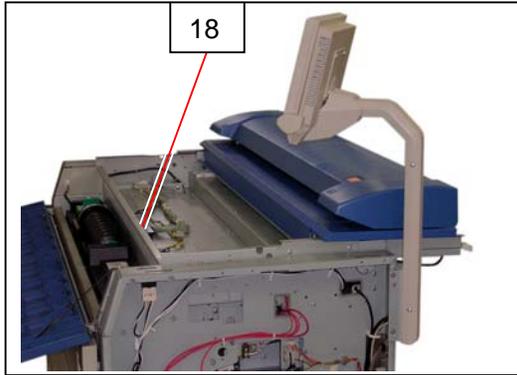


Lock position



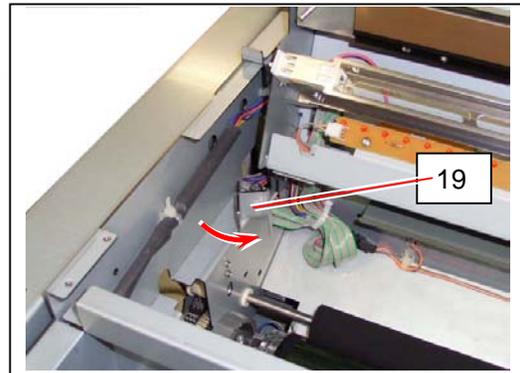
Unlock position

14. Open the LED Head Frame (18).

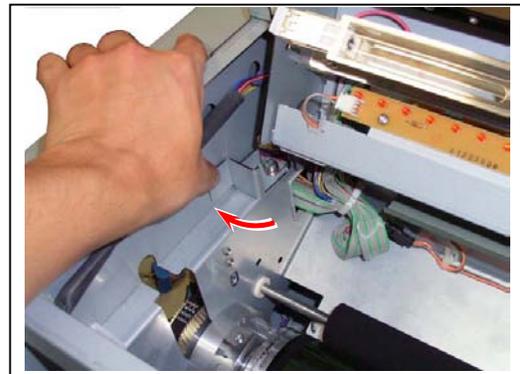


⚠ NOTE

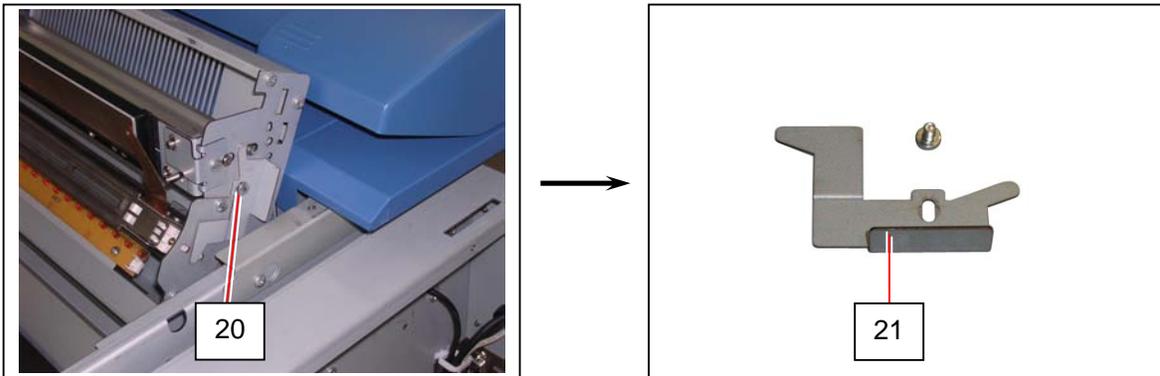
The Stopper 2 (19) comes out automatically to prevent the LED Head Frame from falling down.



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



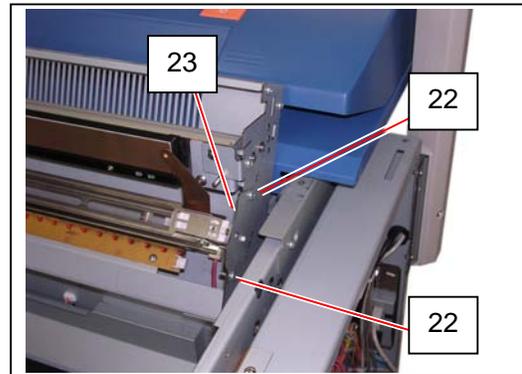
15. Remove the 4x6 screw (20) to remove the Fixing Bracket (21) on the right.



! NOTE

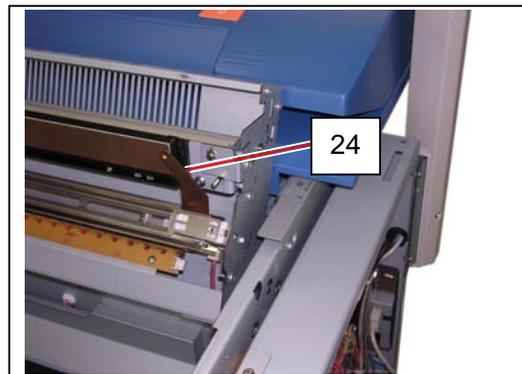
You do not have to put back the Fixing Bracket (21) at the time of reassembly, because it is a part required only before the delivery of machine.

16. Loosen 2 pieces of 4x10 screw (22) to make the Plate (23) enough movable.

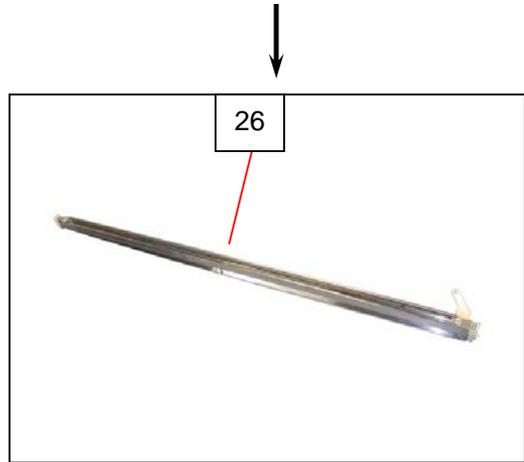
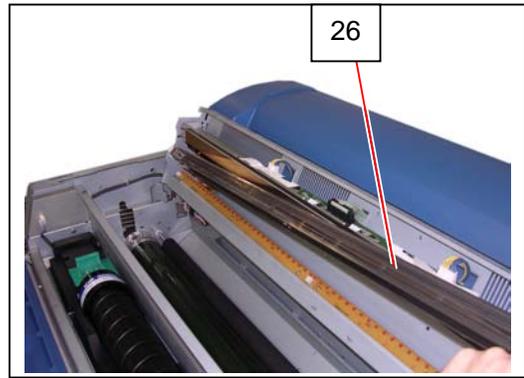
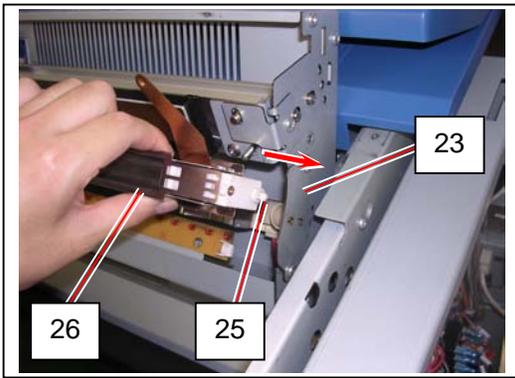


! NOTE

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).



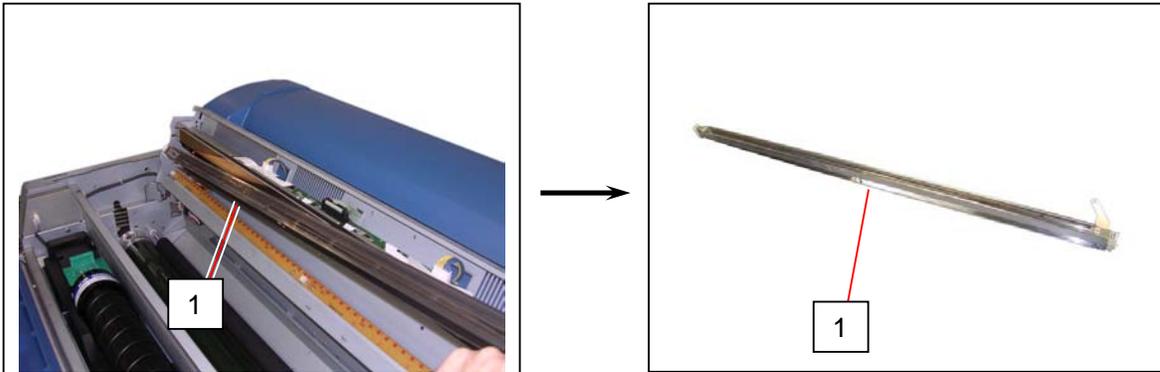
5. 7. 2 Replacement of the Corona Wire

NOTE

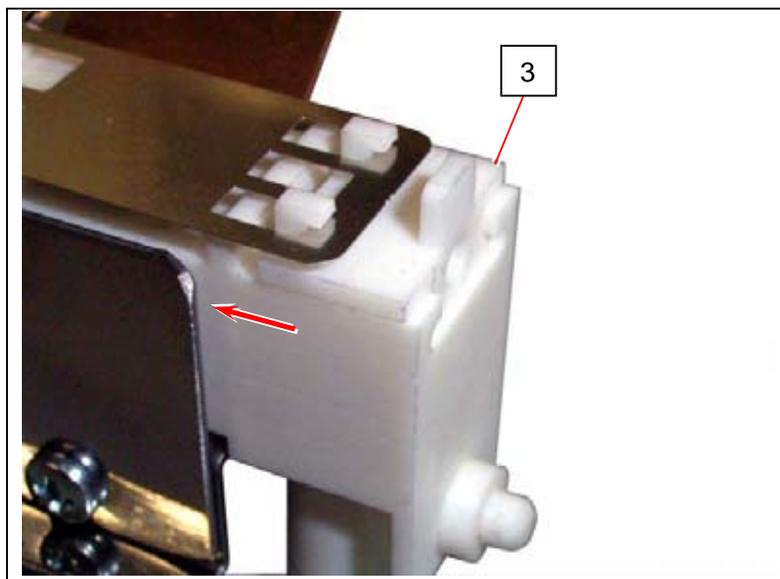
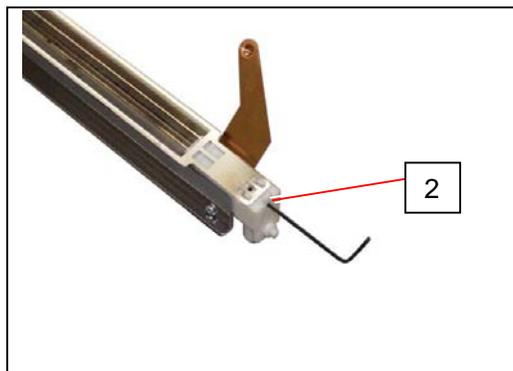
A periodic replacement for the following parts is recommended.

Item	Number of article	Remarks
Corona Wire (1) Assy	1	All of these parts are contained in "Corona Wire Kit" (Z160980200)
Spring 2	1	

1. Remove the Image Corona Unit (1) from the machine making reference to [5. 7. 1 Removal of the Image Corona Unit] on the page 5-280.



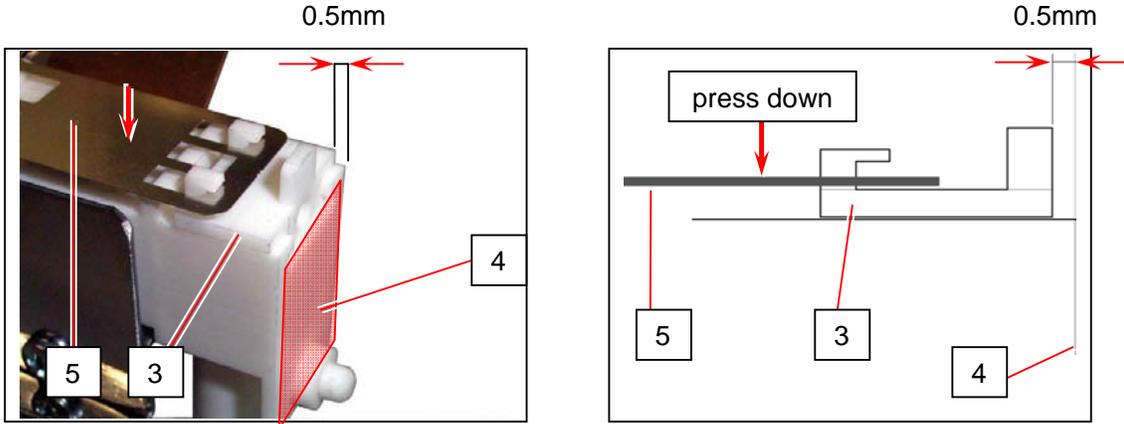
2. Loosen the Set Screw (2) with hexagon wrench.
The Block 3 (3) moves to the arrow mark and the Grid Plate is unfastened.



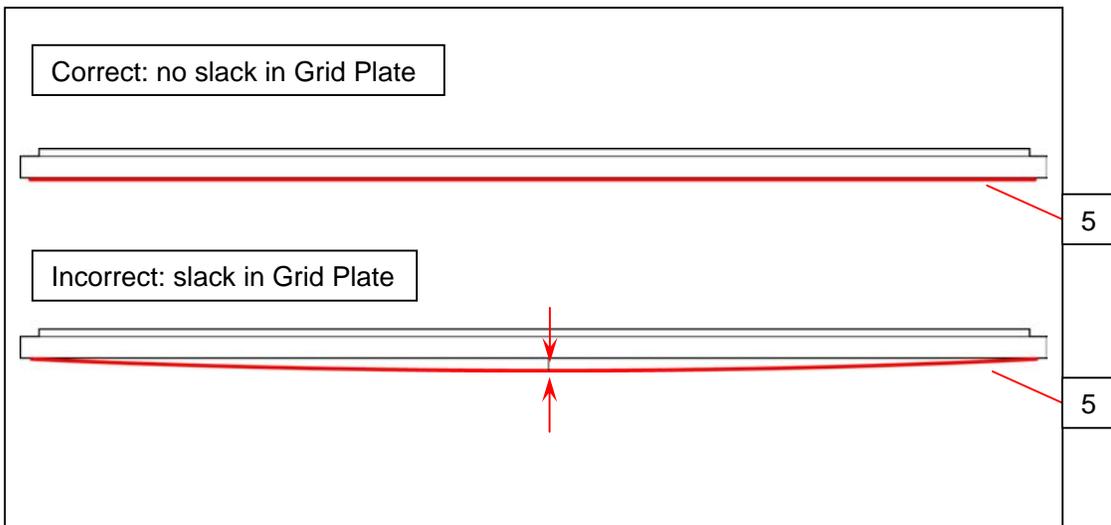
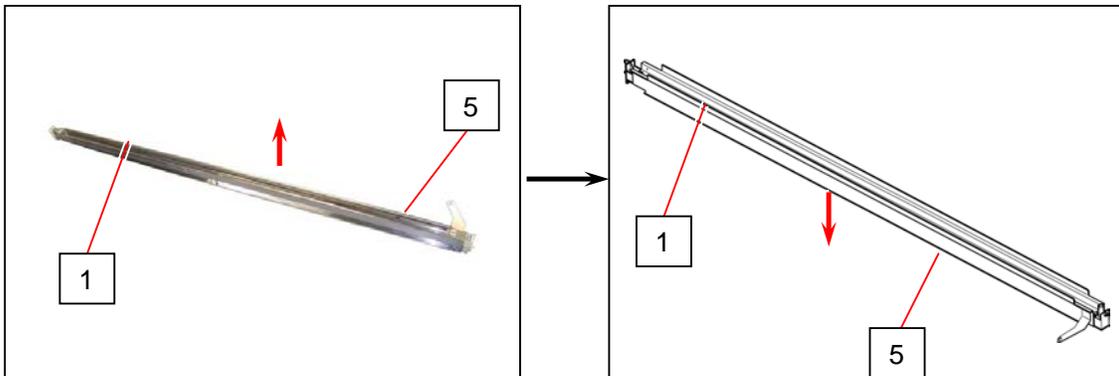
NOTE

Check the following when reassembling.

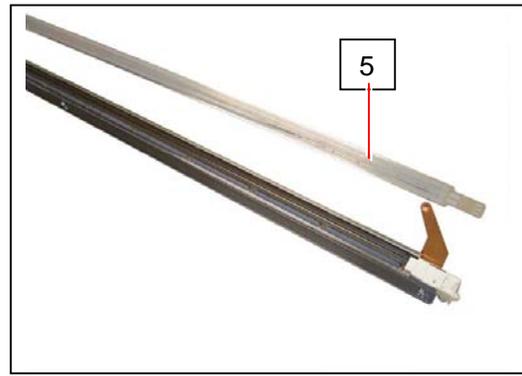
- (1) The side edge of Block 3 (3) should stop at 0.5mm short of the side face (4) of the corona block for a proper tension.
Rotate a hexagon wrench in either direction with pressing down Grid Plate (5).



- (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.



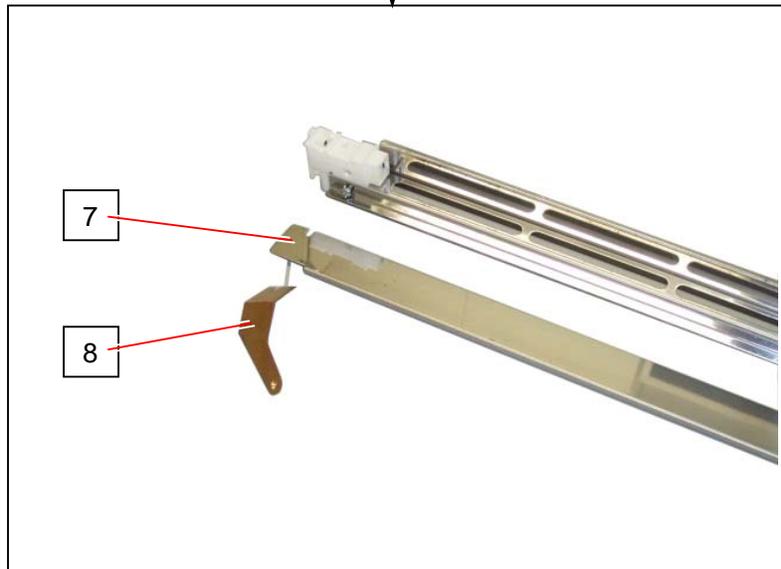
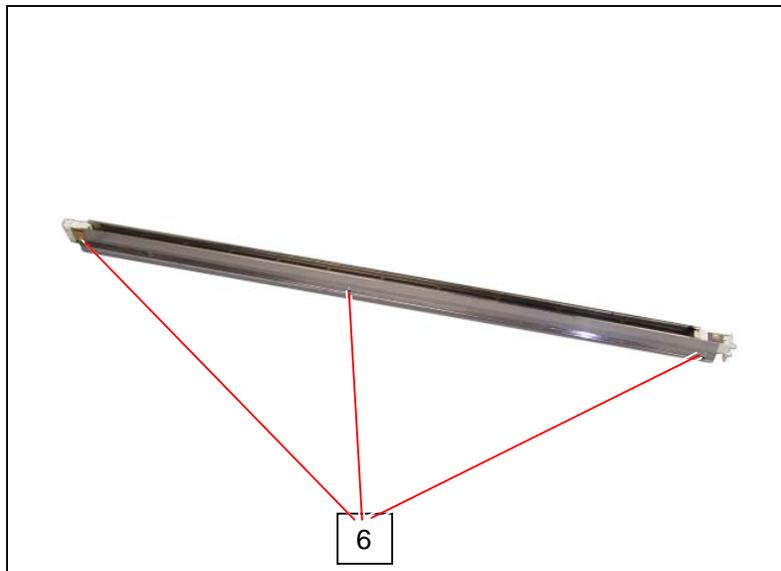
3. Remove the Grid Plate (5).



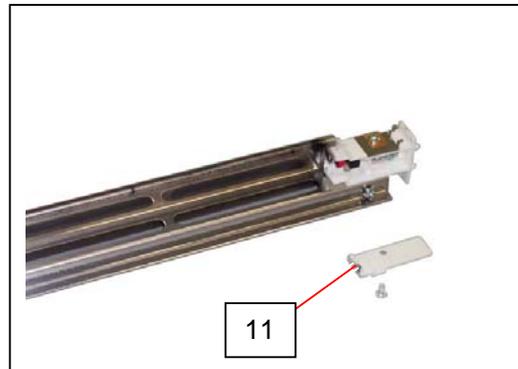
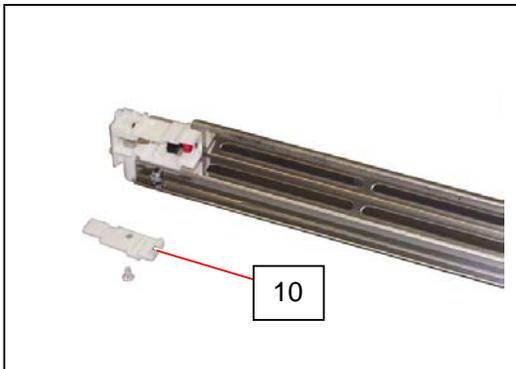
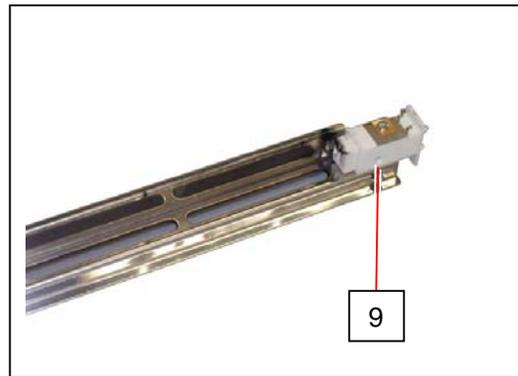
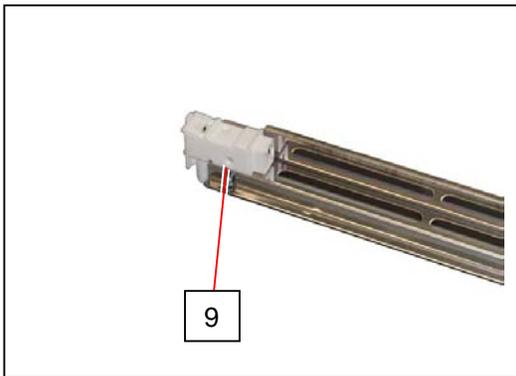
! NOTE

If Grid Plate is dirty, wash it with the neutral detergent and then with water. Dry it well after washing.

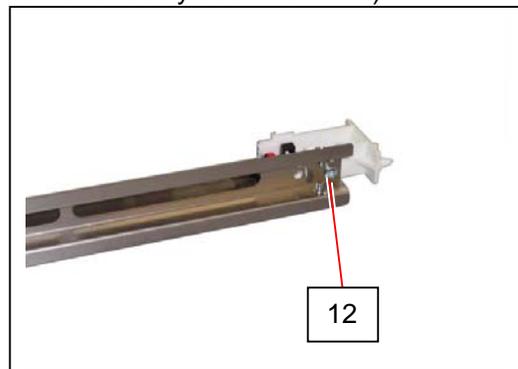
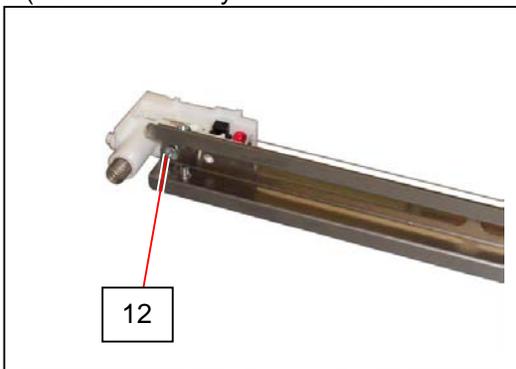
4. Loosen 3 pieces of 3x6 screw (6), and then remove Corona Housing (7) and Plate Electrode (8).



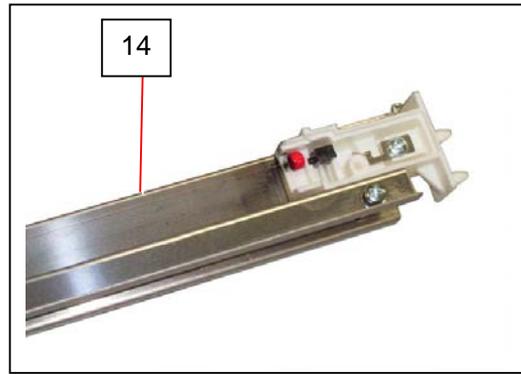
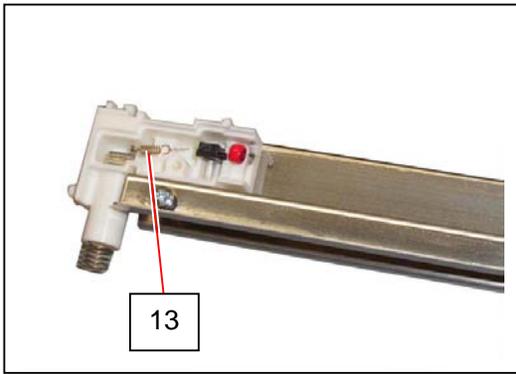
5. Remove the Flush Head Screw (9), and remove each Cover (10) and Cover 2 (11).



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.)



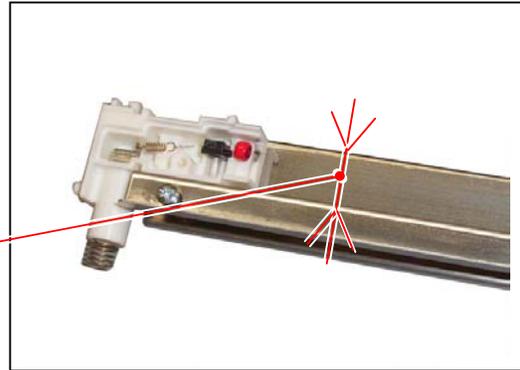
7. Remove **Spring 2** (13) and **Corona Wire 1 Assy** (14).
Replace **Spring 2** (13) and **Corona Wire 1 Assy** (14) with new ones.



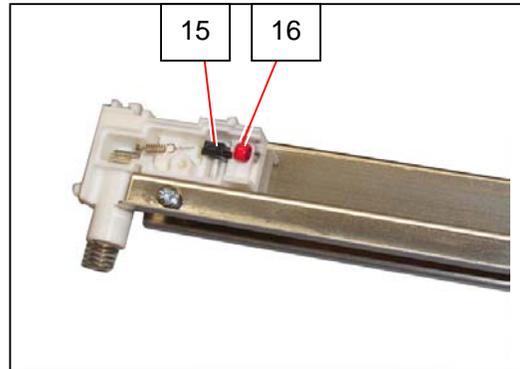
! NOTE

- (1) Please keep 11mm between Corona Wire (14) and bottom plate of the Corona Unit after the replacement.

11mm



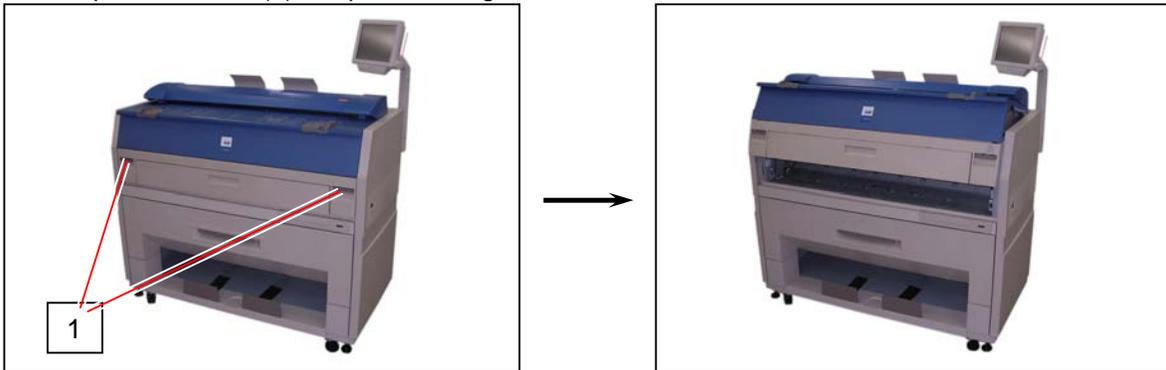
- (2) Fit the Corona Wire into the groove of Height Adjuster (15).
Also fit the beads (16) into the correct positions.



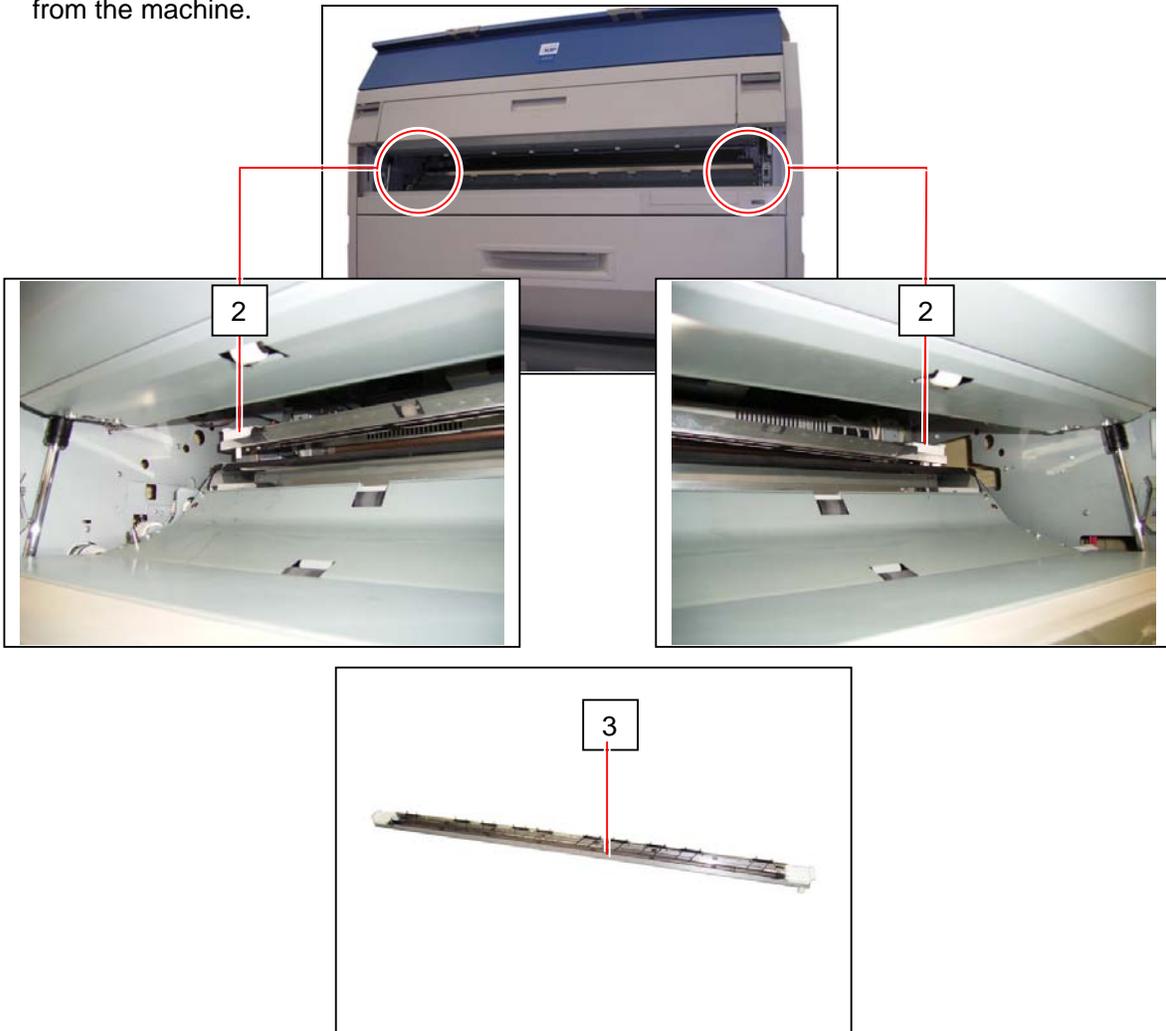
5. 8 Transfer / Separation Corona

5. 8. 1 Removal of the Transfer / Separation Corona

1. Pull up the Lever 2 (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.

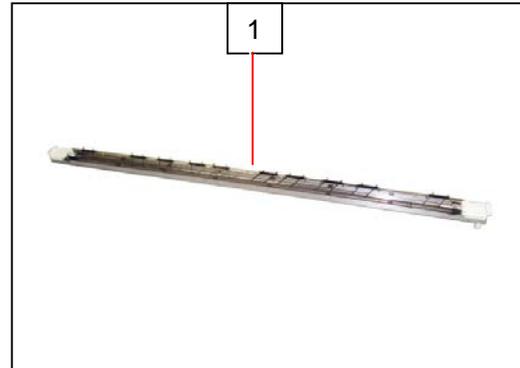
5. 8. 2 Replacement of Corona Wires

⚠ NOTE

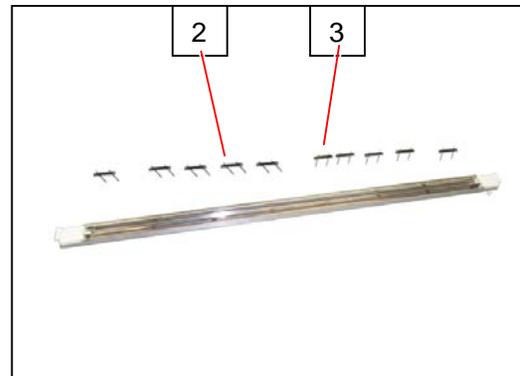
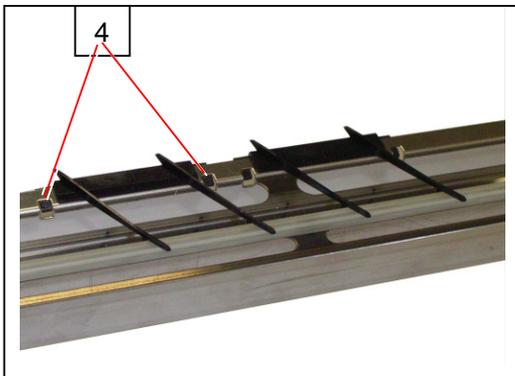
A periodic replacement for the following parts is recommended.

Item	Number of article	Remarks
Corona Wire	2	All of these parts are contained in "Corona Wire Kit" (Z160980200)
Wire Spring	4	

1. Remove the Transfer / Separation Corona (1) making reference to [5. 8. 1 Removal of the Transfer / Separation Corona] on the page 5-292.



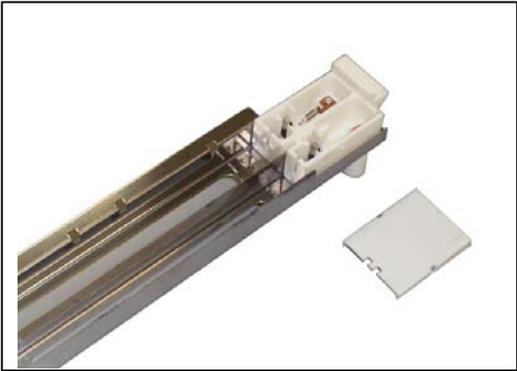
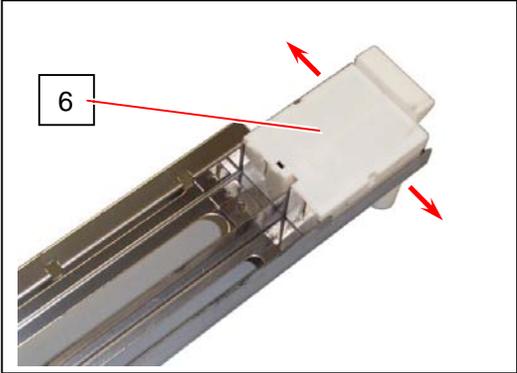
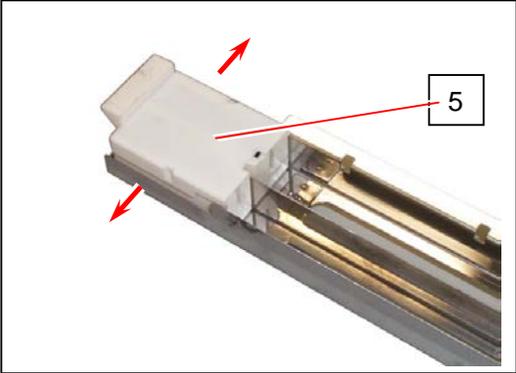
2. There are 5 pieces of Corona Guards A (2) and Corona Guards B (3) on the housing. Remove them pressing the stoppers (4) with such tool as a screwdriver.



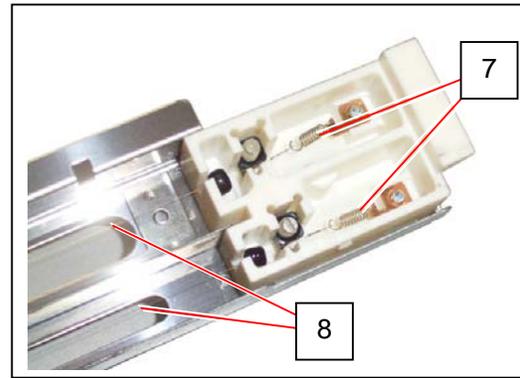
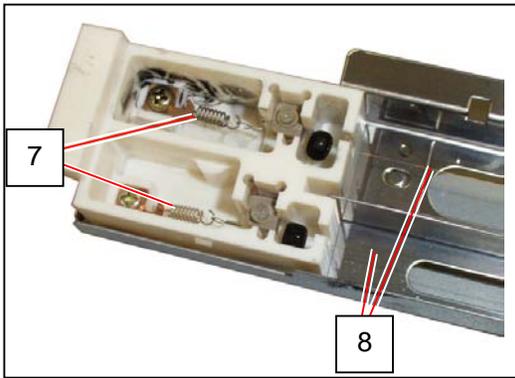
⚠ NOTE

Do not replace the position of Corona Guards A (2) and Corona Guards B (3) at the time of reassembly.

3. Remove both Covers 3 (5) (6) pulling their sides outward.



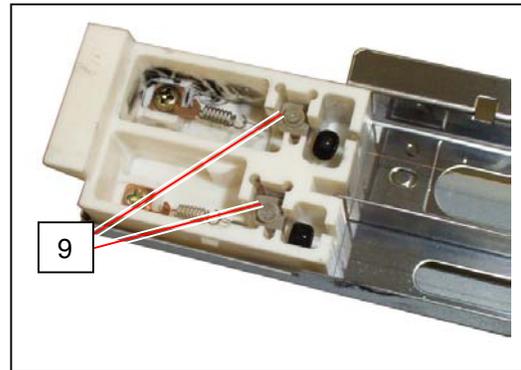
4. Remove 4 pieces of **Wire Springs (7)** and **Corona Wires (8)**.
Replace **Wire Springs (7)** and **Corona Wires (8)** with new ones.



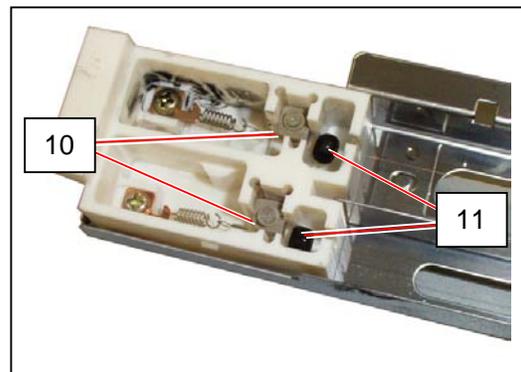
! NOTE

- (1) Do not touch the wire part. Pinch the hook part of both ends to handle Corona Wire.
- (2) Keep 11mm distance (height) between each Corona Wire and bottom plate of the housing.

To adjust the distance, rotate the screws (9) with a flathead screwdriver.



- (3) Fit the Corona Wire into the groove of Height Adjuster (10). Also fit the beads (11) into the correct positions.



5.9 Engine Frame

5.9.1 Replacement of DC Motor (M4) and Developer Press Sensor (PH4)

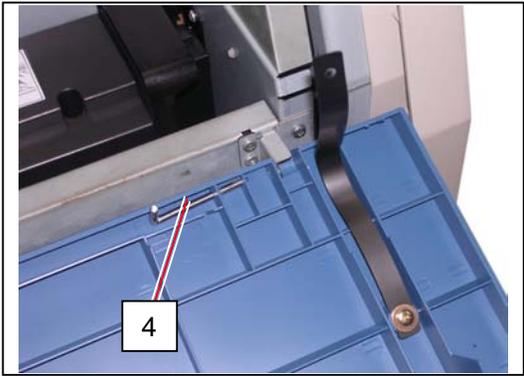
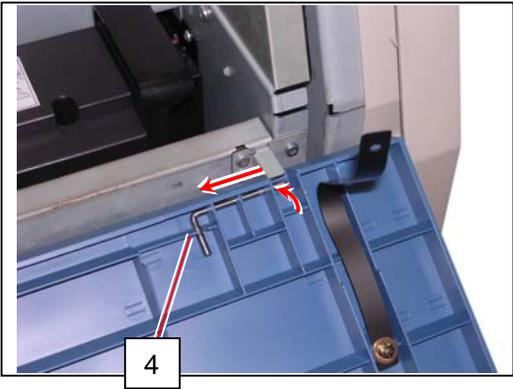
1. Open the Cover 4 (1).



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



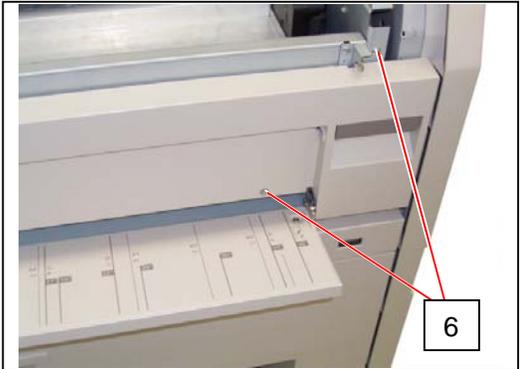
3. There are Pins (4) at both sides.
Slide them inside to remove the Cover 4 (1).



4. Open the Bypass Feeder (5).



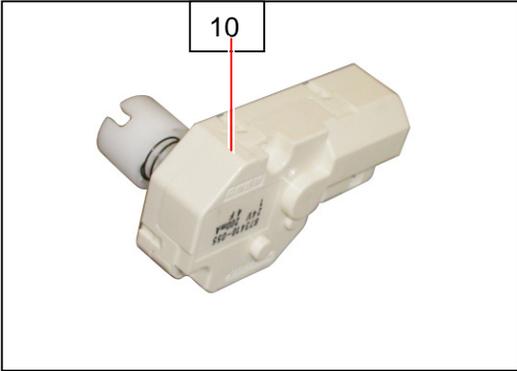
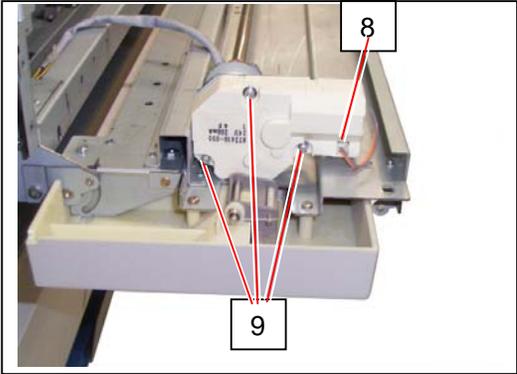
5. Remove 4 pieces of 4x8 screw (6).



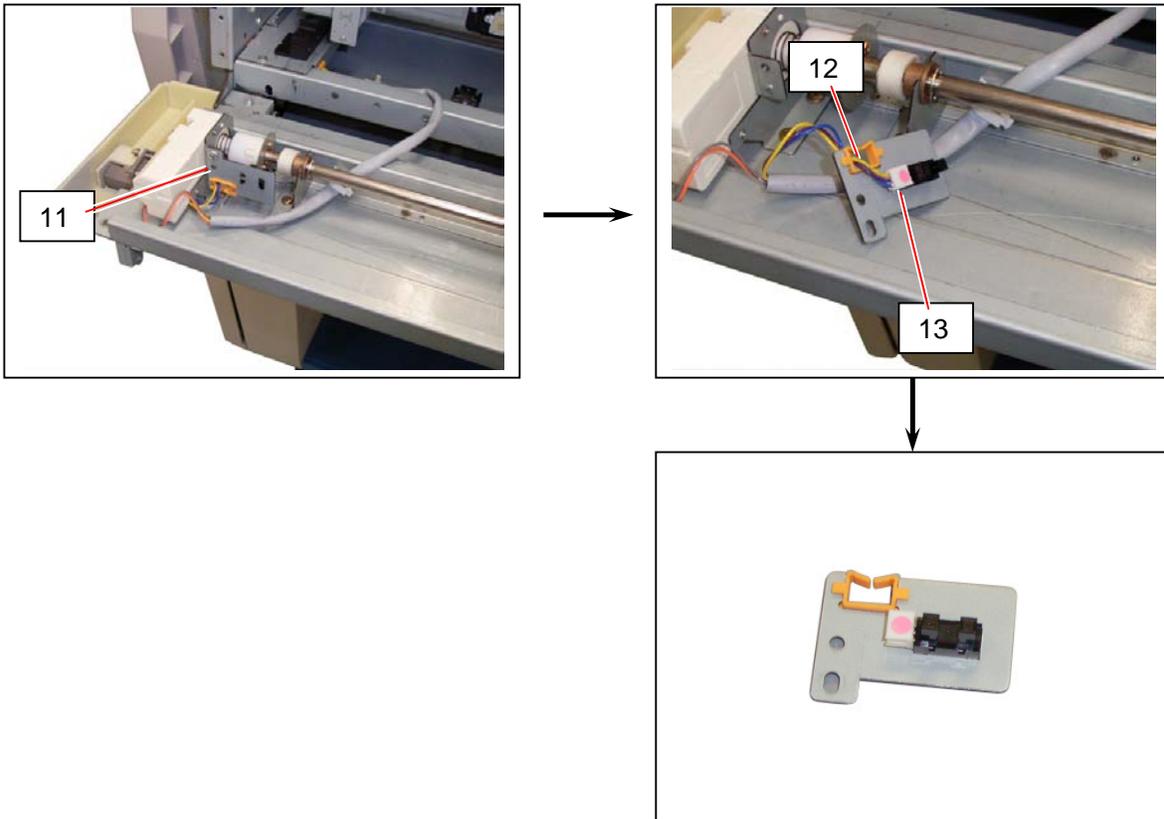
6. Close the Bypass Feeder, and then open the Developer Press Unit (7).



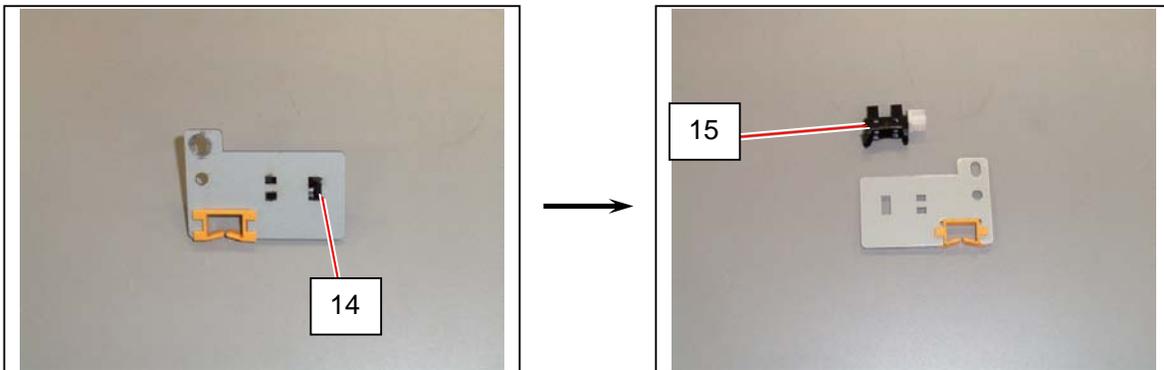
7. Disconnect the connector (8) and remove 3 pieces of screw (9), and remove the **DC Motor** (10).
Replace the **DC Motor** (10) with the new one.



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 the **Developer Press Sensor** (15).
Replace the **Developer Press Sensor** (15) with the new one.

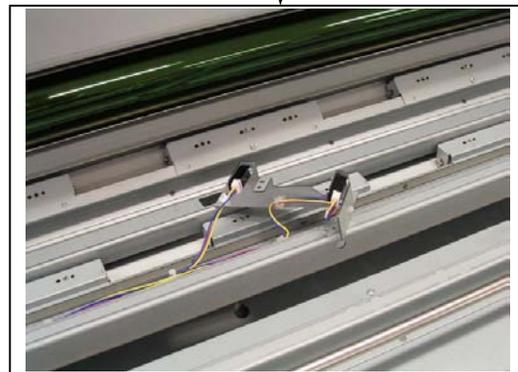
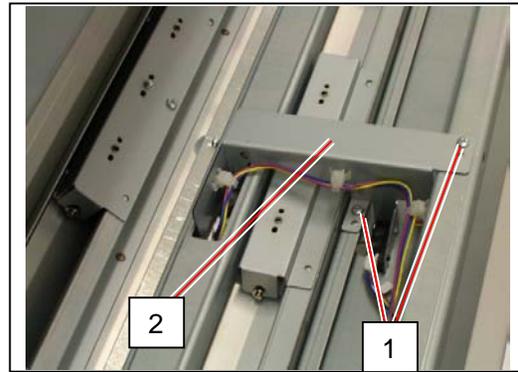


5. 9. 2 Replacement of Manual Set Sensor (PH5) & Registration Sensor (PH1)

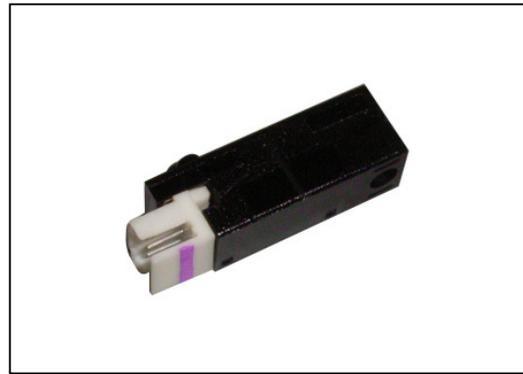
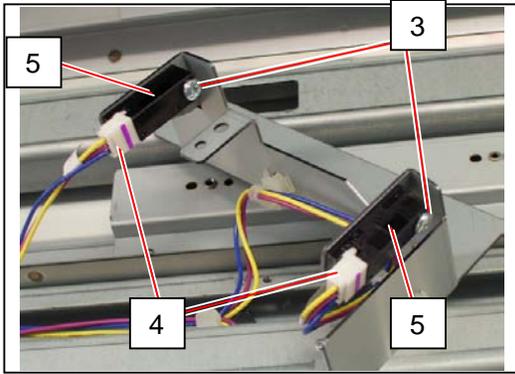
1. Remove the Developer Unit from the machine making reference to [5. 2. 1 Removal of the Developer Unit] on the page 5-8.



2. Remove 2 pieces of 3x6 screw (1), and then turn over the Bracket 11 (2).

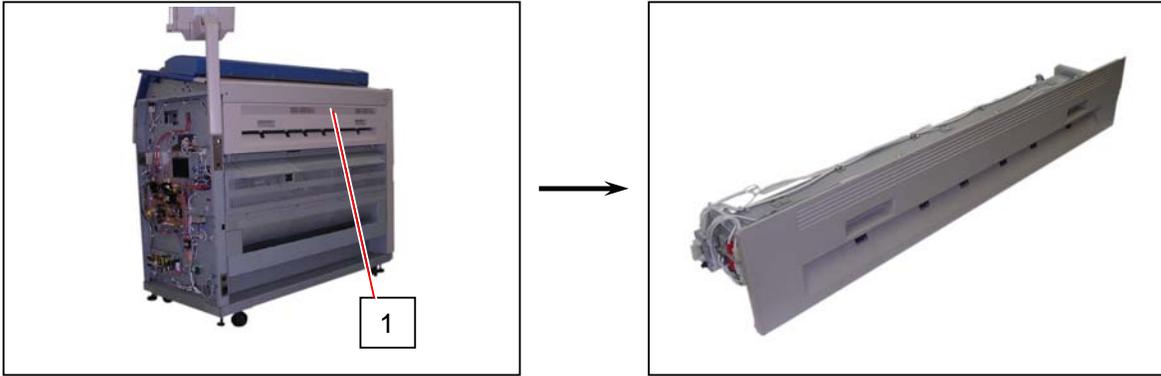


3. Remove the screw (3) and disconnect the connector (4) to remove each **Sensor** (5 : Manual Set Sensor or Registration Sensor).
Replace the **Sensor** (5) with the new one.

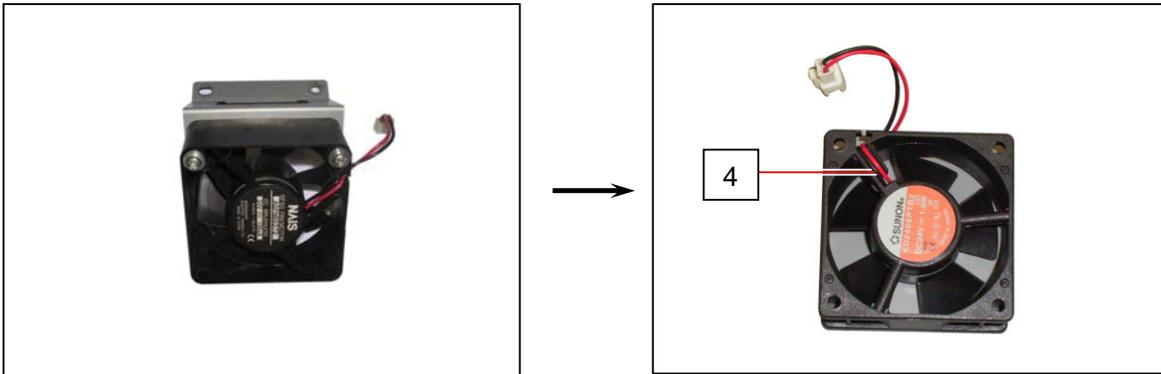


5. 9. 3 Replacement of Fans (BL5, BL6)

1. Remove the Fuser Unit (1) from the machine making reference to [5. 3. 1 Removal of the Fuser Unit] on the page 5-70.

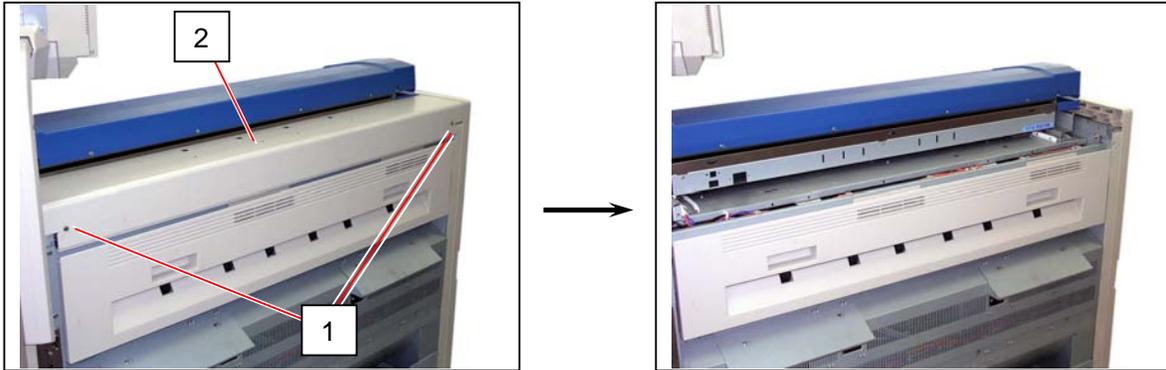


2. Disconnect the connector (2), remove 2 pieces of screw (3), and remove each **Fan** (4 : BL5 & BL6) with the bracket. Remove 2 screws from the bracket and replace the **Fan** (4 : BL5 & BL6) with the new one.

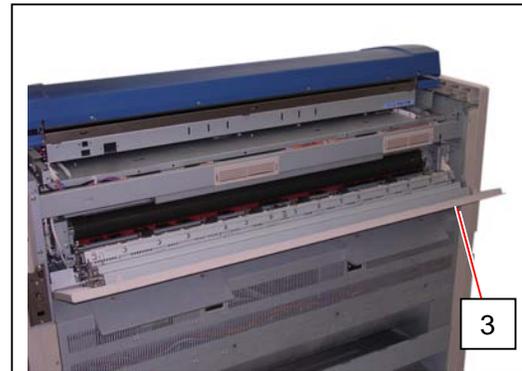


5. 9. 4 Replacement of Blowers (BL3, BL4)

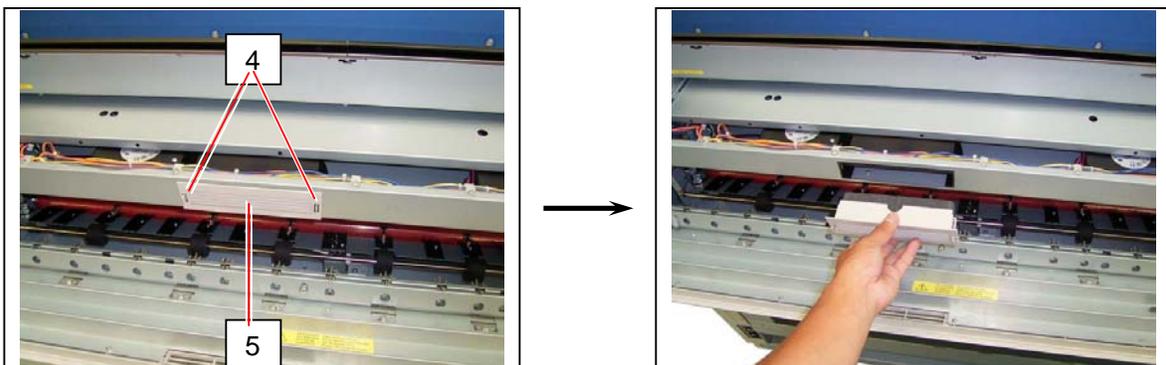
1. Remove 2 pieces of 4x6 screw (1) to remove the Cover 10 (2).



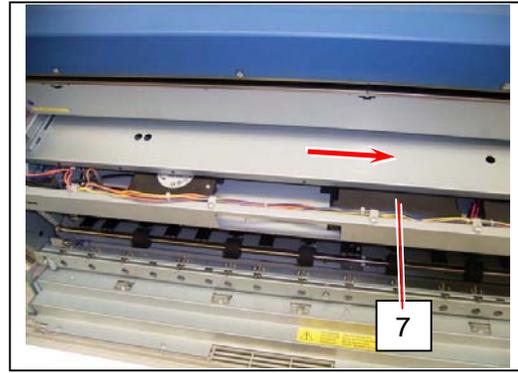
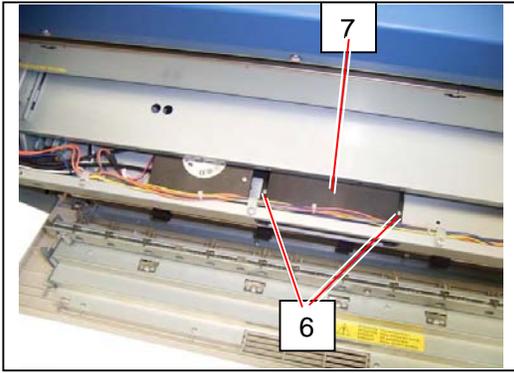
2. Open the Cover Assembly (3).



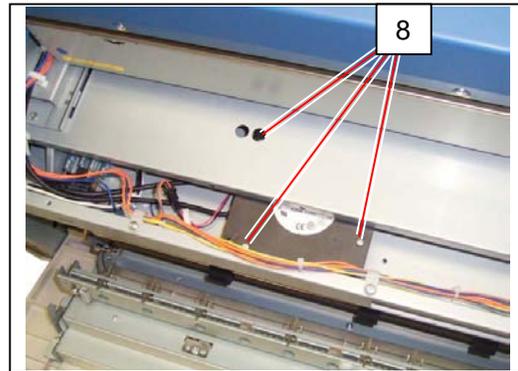
3. Moving the stopper levers (4) to the inside, remove each Duct 5 (5) with Filter 4.



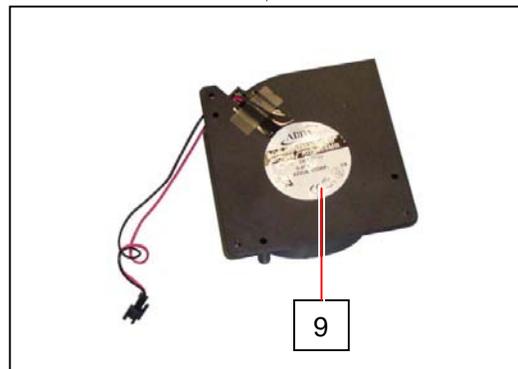
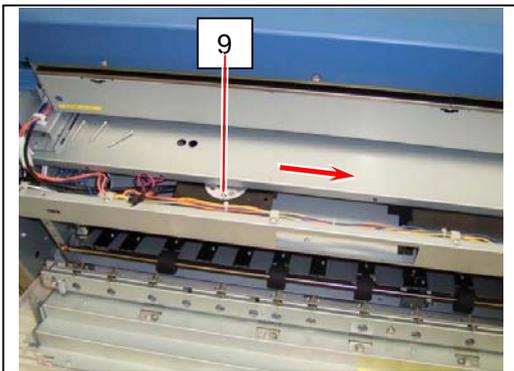
4. Remove 2 pieces of 4x6 screw (6), and then slide the Duct 6 (7) to the left.



5. Remove 3 pieces of 4x35 screw (8).



6. Remove the Blower (9 : BL3 & BL4) moving as the following photos.



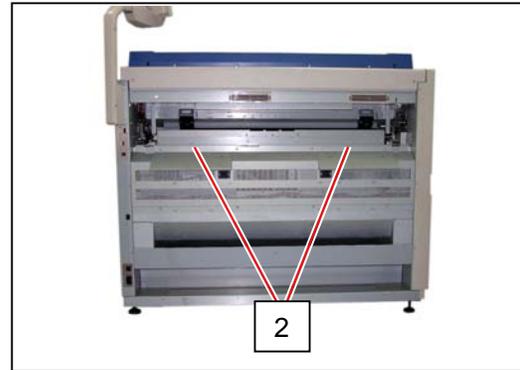
5. 10 Inner Transport Unit

5. 10. 1 Removal of the Inner Transport Unit

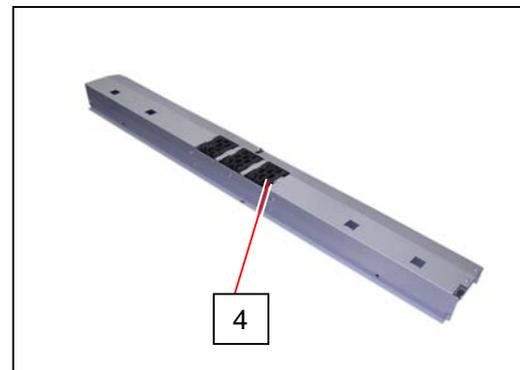
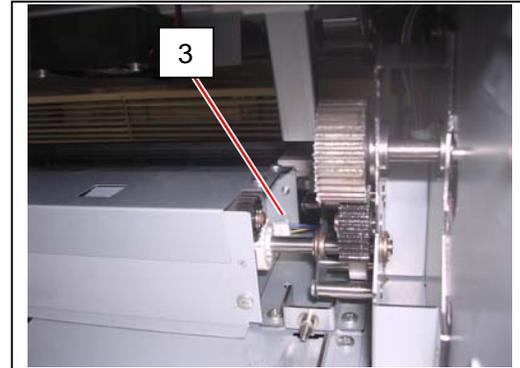
1. Remove the Fuser Unit (1) from the machine making reference to [5. 3. 1 Removal of the Fuser Unit] on the page 5-70.



2. Remove 2 pieces of 4x6 screw (2).

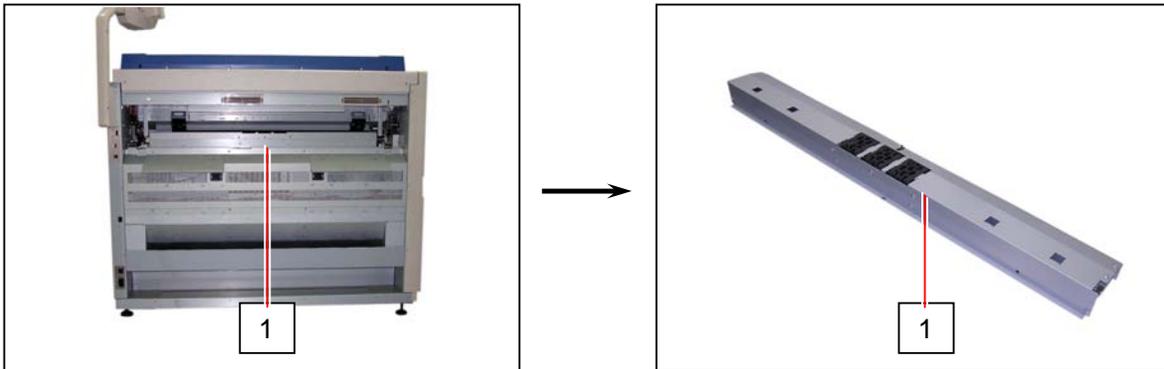


3. Disconnect the connector on the left (3), and then remove the **Inner Transport Unit** (4).



5. 10. 2 Replacement of Sensor (PH2) & Belt

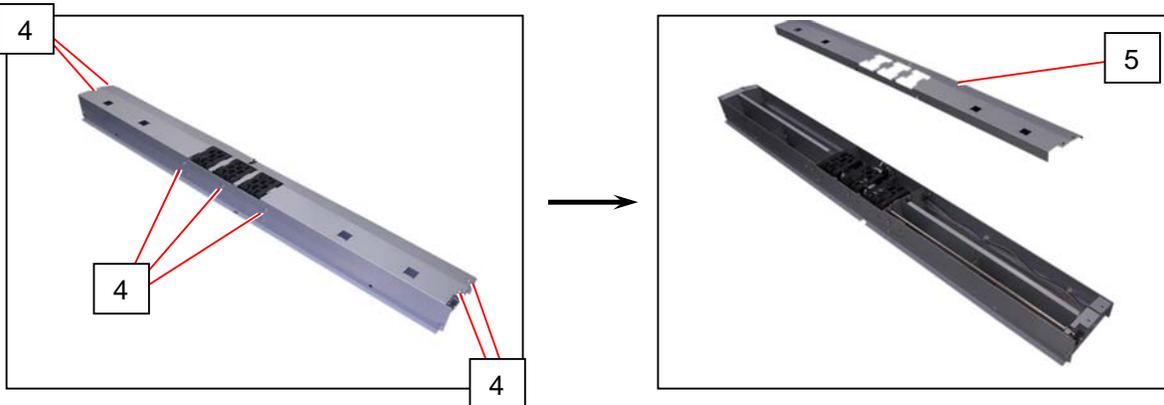
1. Remove the Inner Transport Unit (1) from the machine making reference to [5.10. 1 Removal of the Inner Transport Unit] on the page 5-305.



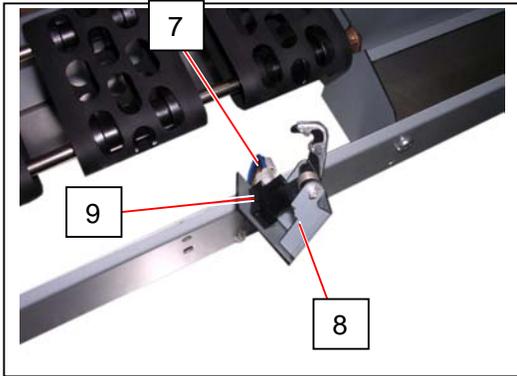
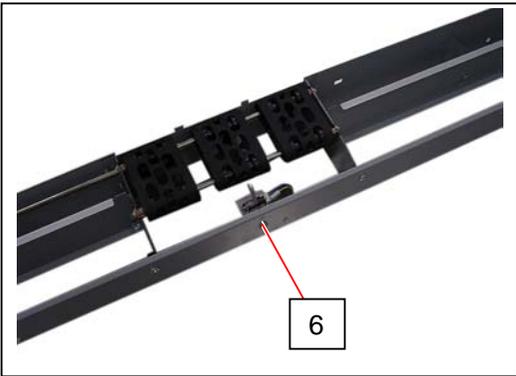
2. Tuck the rim of Belts (2) under the tab of Guide Plate (3)



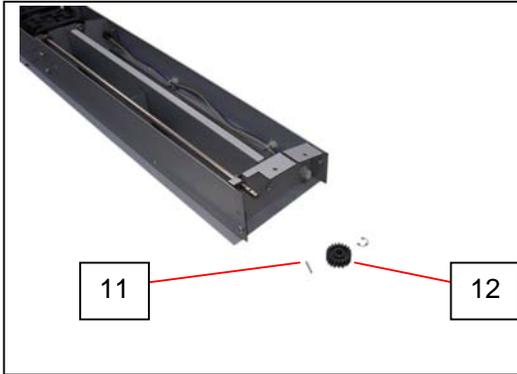
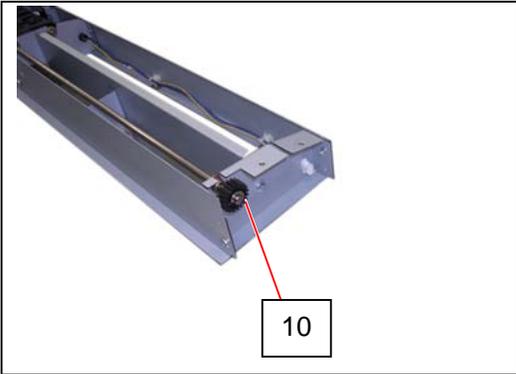
3. Remove 7 pieces of 4x6 screw (4) to remove Guide Plate (5).



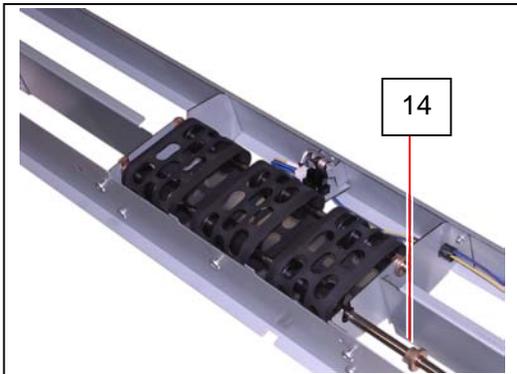
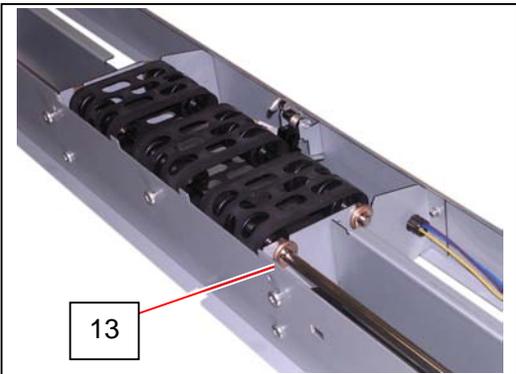
4. Remove 1 screw (6) and the harness (7) to release the sensor bracket (8).
Remove Sensor (9) from the bracket (8) and replace **Sensor** with a new one.



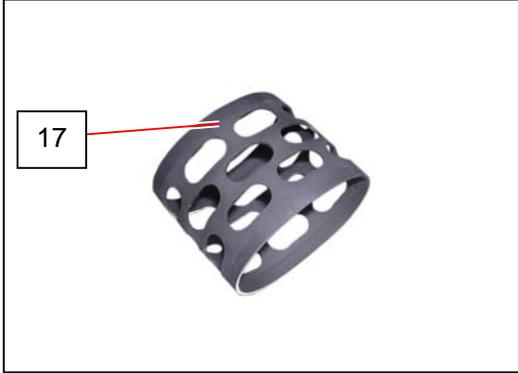
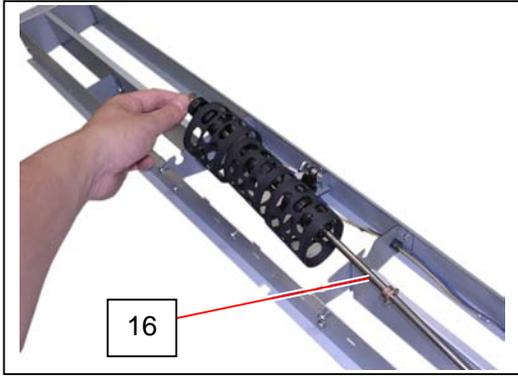
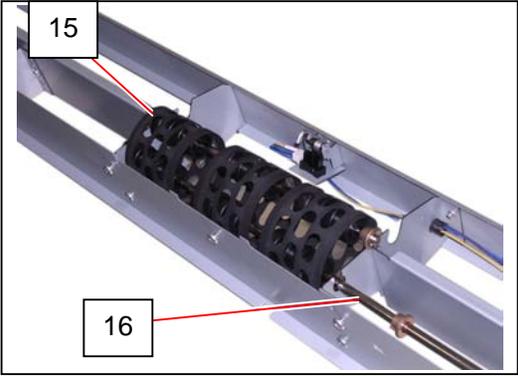
5. Remove Retaining Ring-E (10) to remove Gear (11) and Parallel Pin (12).



6. Remove Retaining Ring-E in the middle (13) to release Bearing (14).

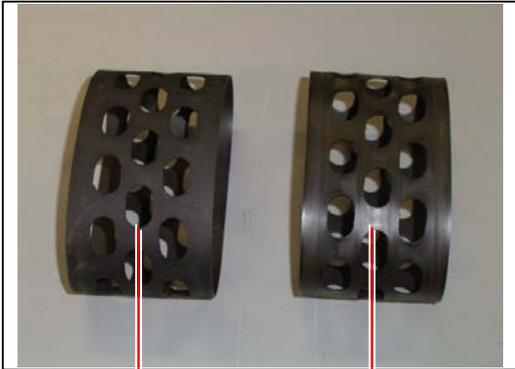


7. Release Shaft 3 (15: shorter) to remove Shaft 2 (16: longer) from the unit. Remove and replace **Belt** (17) with new ones.



⚠ NOTE

Be careful of the outside/inside of the Belt (17). The smooth and shiny side of it should be inside.



Outside

Inside

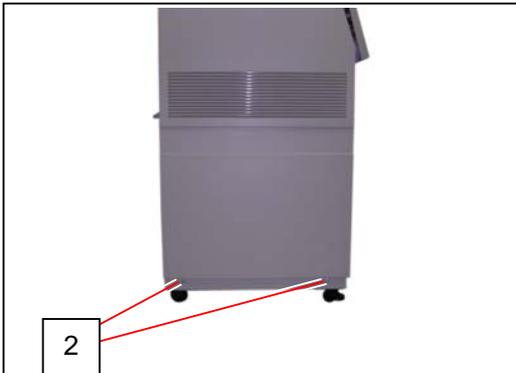
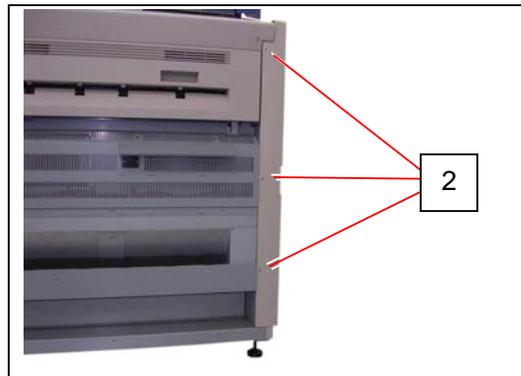
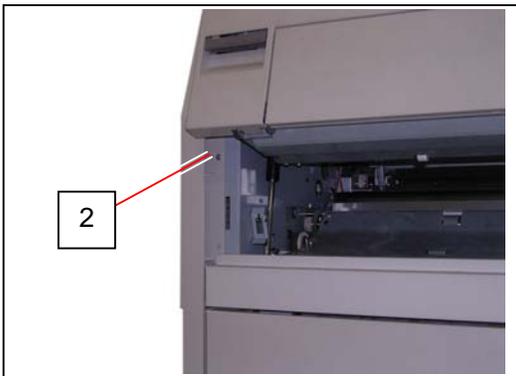
5. 11 Main Frame

5. 11. 1 Replacement of DC Motors (M1, M2), Belt 8, Belt 9, Belt 7

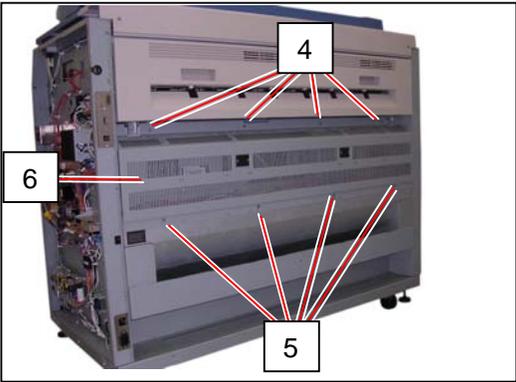
1. Pull up the Lever 2 (1) to open the Engine Unit.



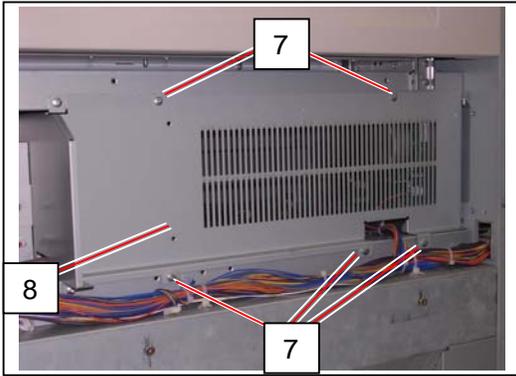
2. Remove 6 screws (2) to remove Cover 2 (3).



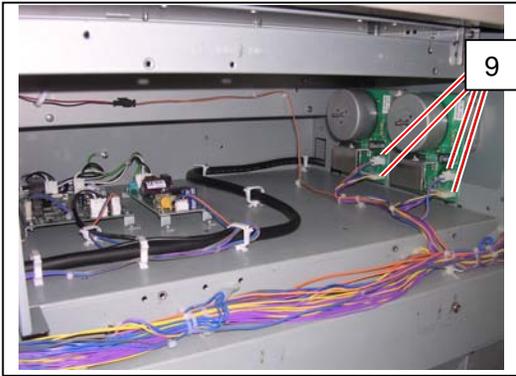
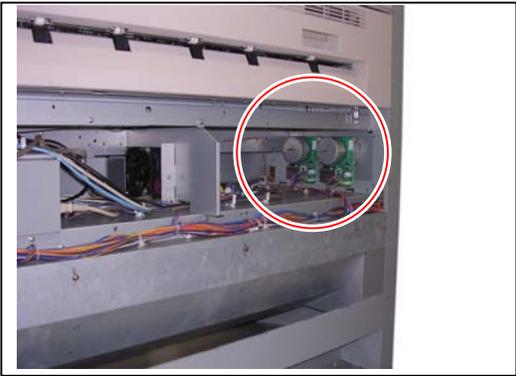
3. Remove 4 pieces of 4x6 screw (4), loosen 4 pieces of 4x6 screw (5), and then remove the Cover 15 (6).



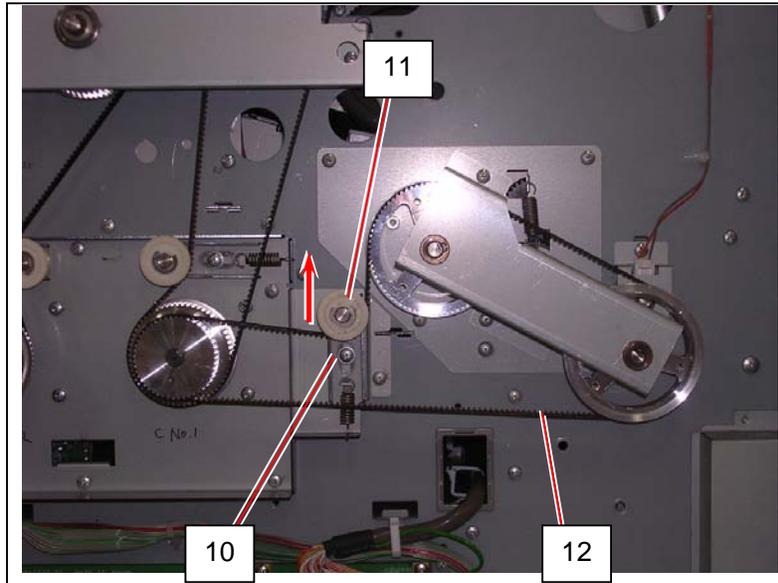
4. Remove 5 screws (7) to remove Case 5 (8).



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).

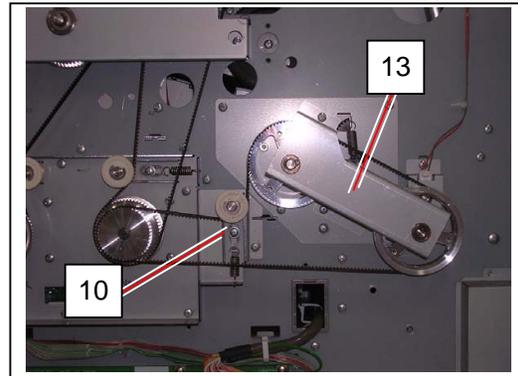


! NOTE

To adjust the tension of the Belt 8, do as follows.

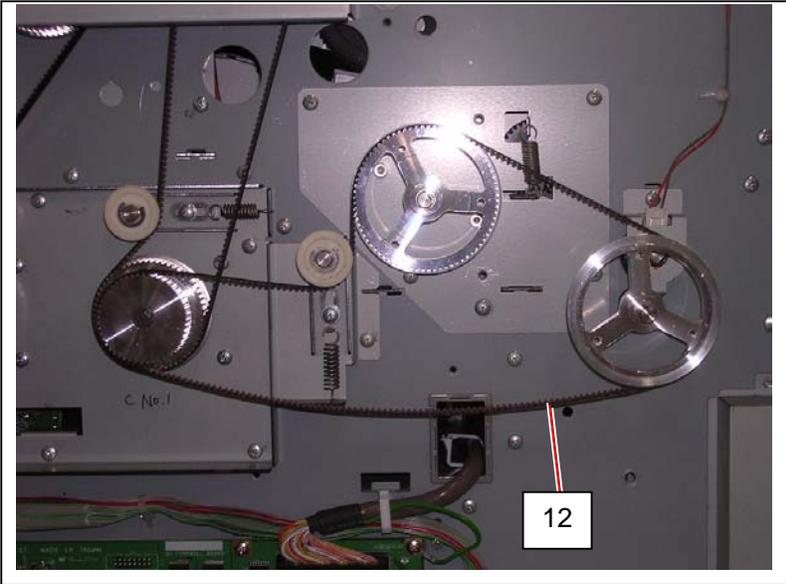
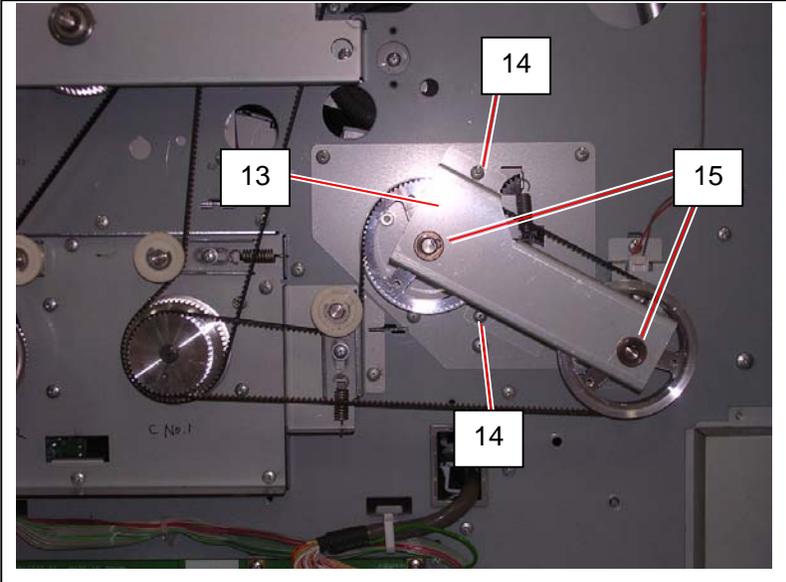
If you do not make the following works, Belt 8 may slip because the tension is not correct.

- a) Replace Bracket (13) before tensioning.
- b) Giving the spring tension to the Belt 8, tighten the screw (10) of Pulley 3 (11).

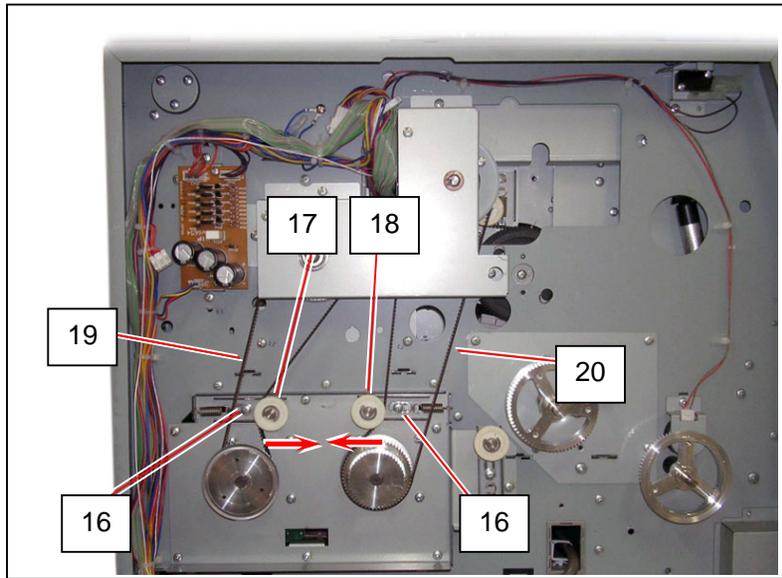


- c) Turn on the machine, and then turn it off some seconds later.
The Belt 8 is driven by the motor, and it may be slackened around the Pulley 3 at this time.
- d) Loosen the screw to release the Pulley 3.
The slack of Belt 8 generated by the above c) is removed because the Tension Spring pulls the 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).

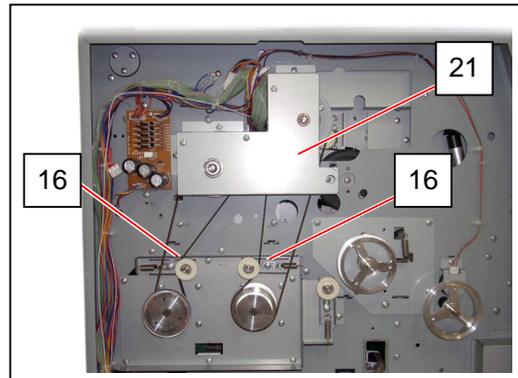


⚠ NOTE

To adjust the tension of the Belt 9 and Belt 7, do as follows.

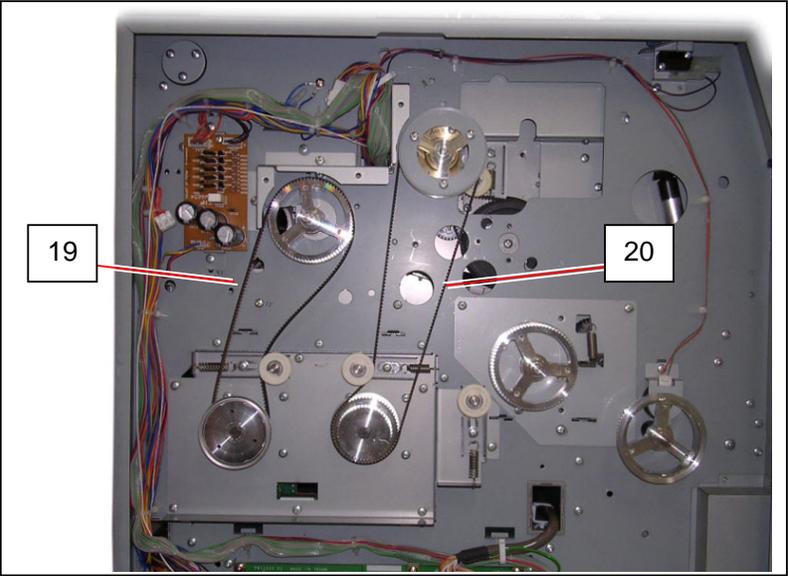
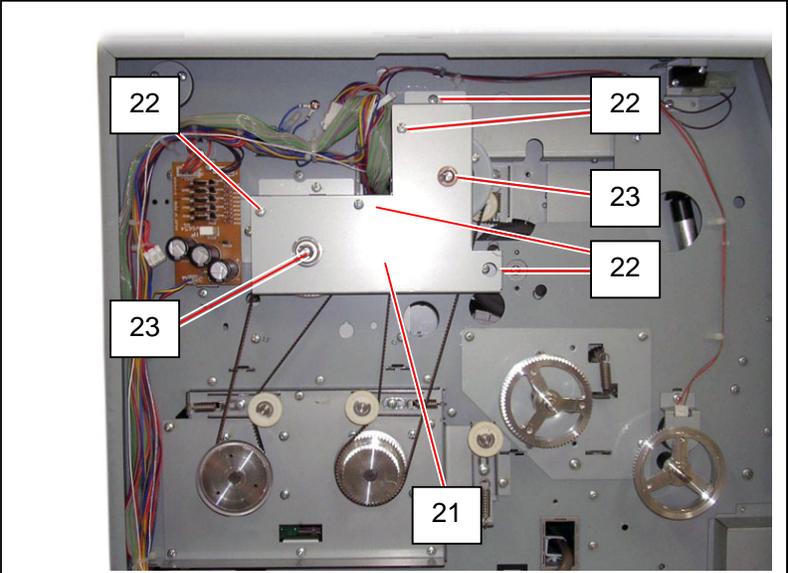
If you do not make the following works, the belts may slip because the tension is not correct.

- Replace Bracket (21) before tensioning.
- Giving the spring tension to the belt, tighten the screw (16) of each Pulley.

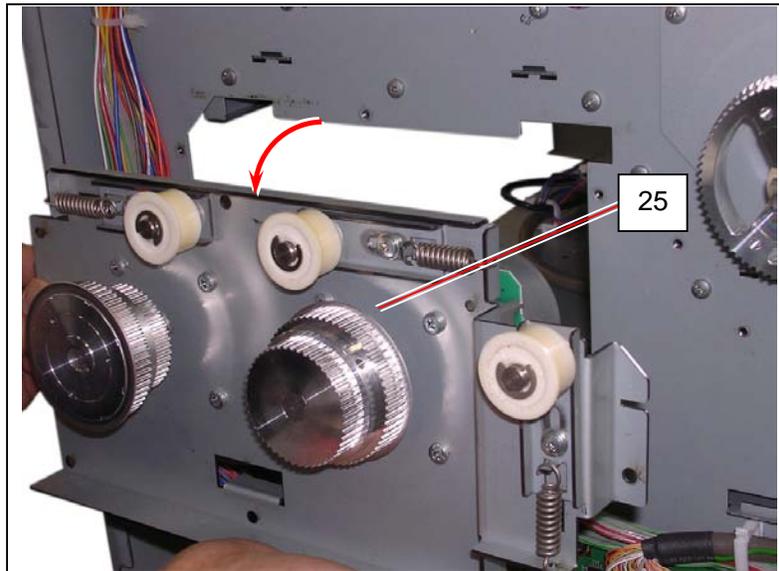
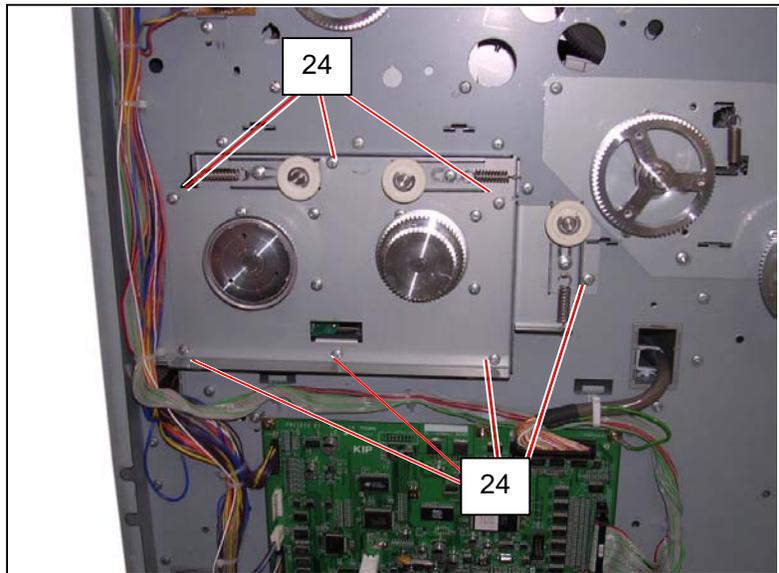


- Turn on the machine, and then turn it off some seconds later.
The belts are driven by the motor, and it may be slackened around the Pulley at this time.
- Loosen the screw to release the Pulley.
The slack of the belts generated by the above c) is removed because the Tension Spring pulls the Pulley.
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.

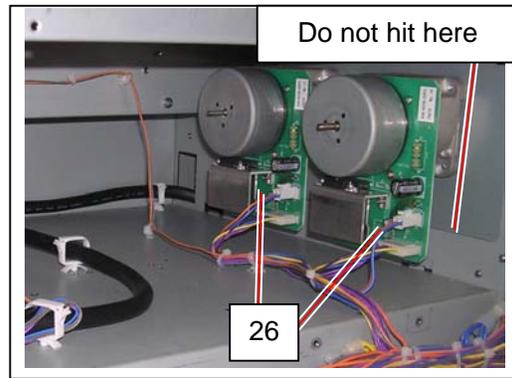
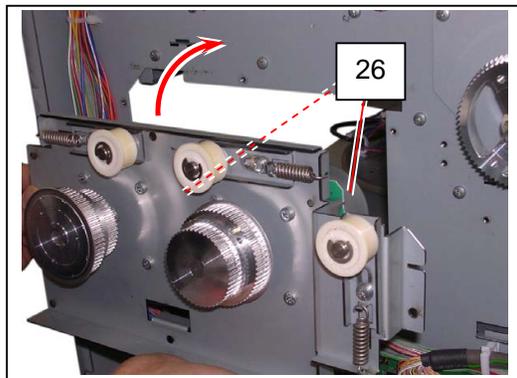


10. Remove 7 pieces of 4x10 screw (24) to remove the Plate 6 Assembly (25).

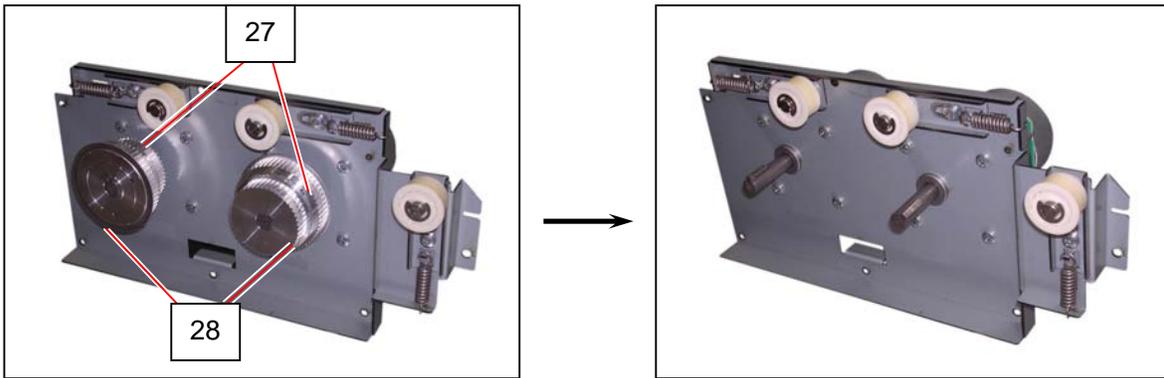


! NOTE

When reassembling, do not bump DC Motor (26) and its PCB on the frame rim.

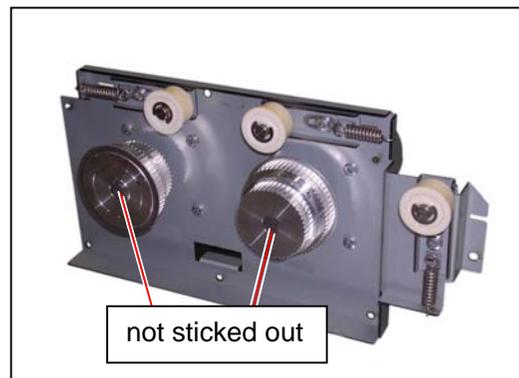


11. Remove Set Screws (27) on the side surface to remove each Pulley 4 (28).

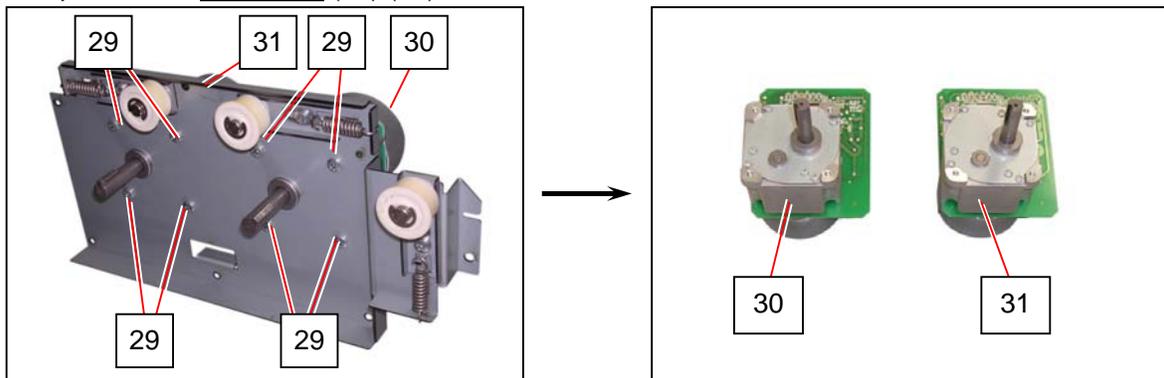


! NOTE

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 each **DC Motor** (30: Main) (31: Fuser). Replace each **DC Motor** (30) (31) with new ones.

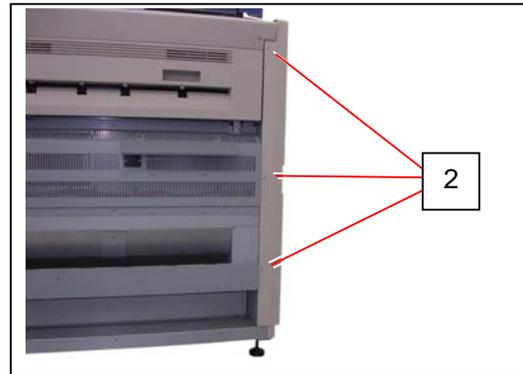
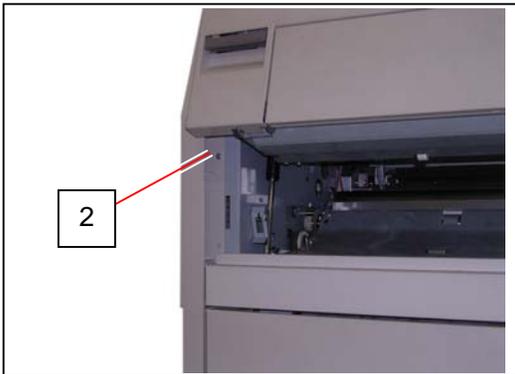


5. 11. 2 Replacement of Clutch (CL1)

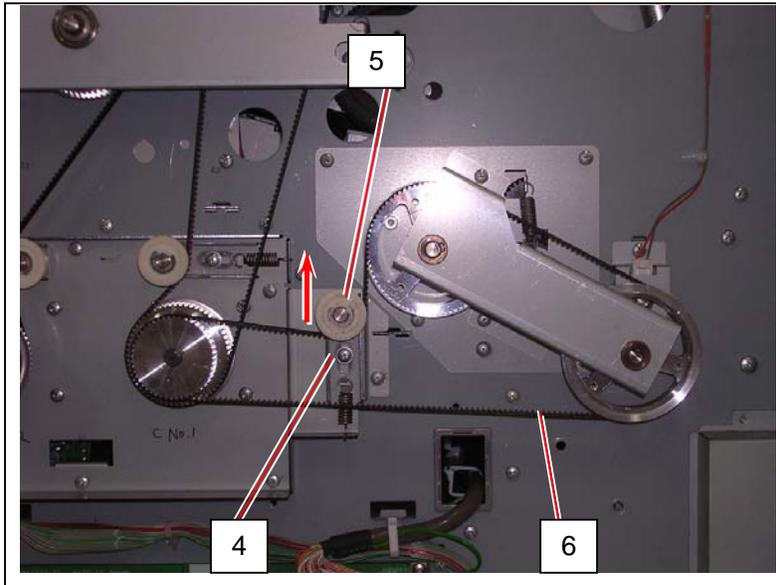
1. Pull up the Lever 2 (1) to open the Engine Unit.



2. Remove 6 screws (2) to remove Cover 2 (3).



3. Loosen the 4x6 screw (4), move the Pulley 3 (5) toward the arrow mark and secure it to slacken Belt 8 (6).

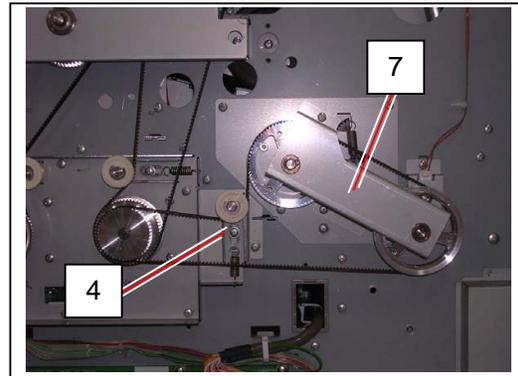


! NOTE

To adjust the tension of the Belt 8, do as follows.

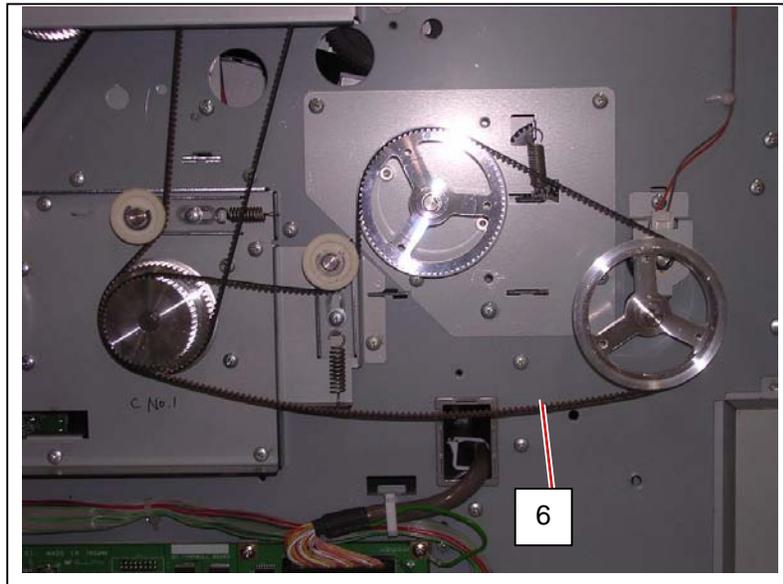
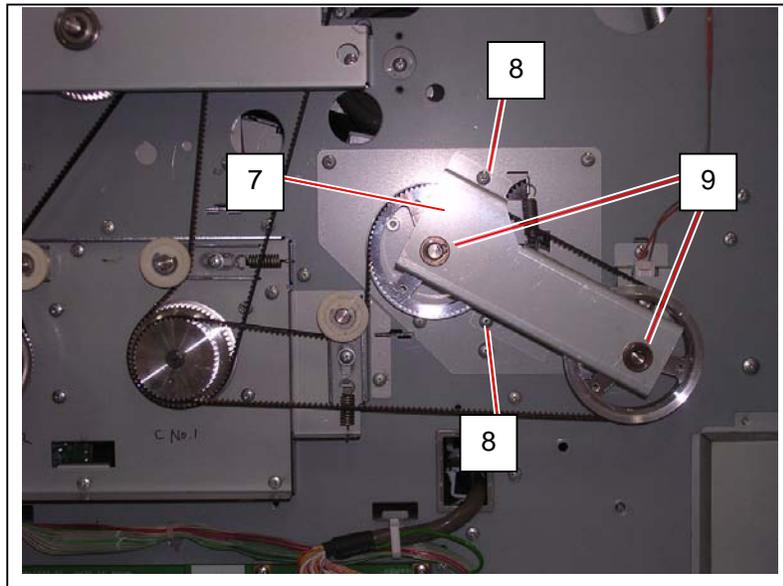
If you do not make the following works, Belt 8 may slip because the tension is not correct.

- a) Replace Bracket (7) before tensioning.
- b) Giving the spring tension to the Belt 8, tighten the screw (4) of Pulley 3 (5).

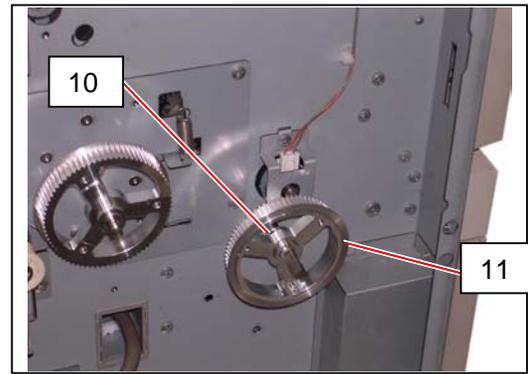


- c) Turn on the machine, and then turn it off some seconds later.
The Belt 8 is driven by the motor, and it may be slackened around the Pulley 3 at this time.
- d) Loosen the screw to release the Pulley 3.
The slack of Belt 8 generated by the above c) is removed because the Tension Spring pulls the Pulley 3.
Then tighten the screw again.

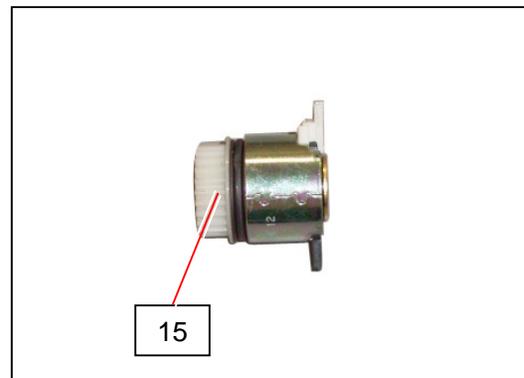
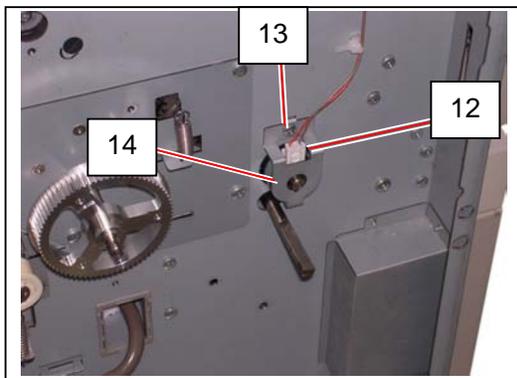
4. Remove 2 screws (8), Grip Ring and Bearing (9) to remove Bracket (7).
Remove Belt 8 (6).



5. Remove the Hex. Cap Screw (10) to remove the Pulley 13 (11).

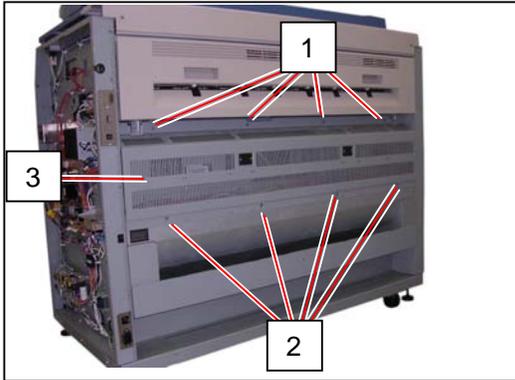


6. Disconnect the connector (12), and remove the 4x6 screw (13) to remove Bracket Clutch (14), **Clutch** (15).
Replace **Clutch** (15) with the new one.

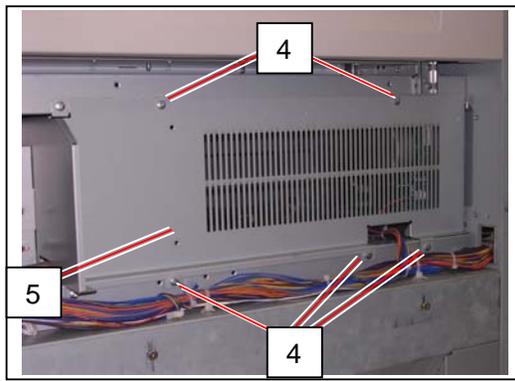


5. 11. 3 Replacement of Blower (BL7)

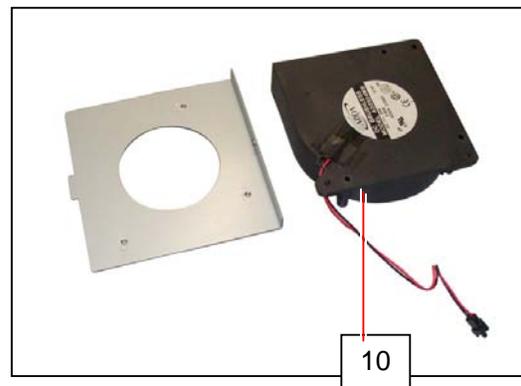
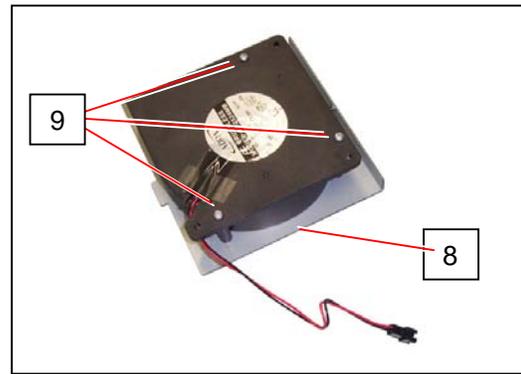
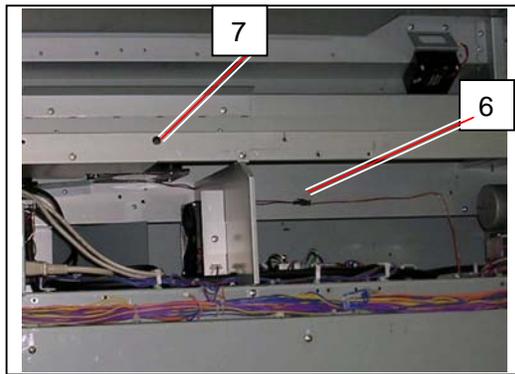
1. Remove 4 pieces of 4x6 screw (1), loosen 4 pieces of 4x6 screw (2), and then remove the Cover 15 (3).



2. Remove 5 screws (4) to remove Case 5 (5).

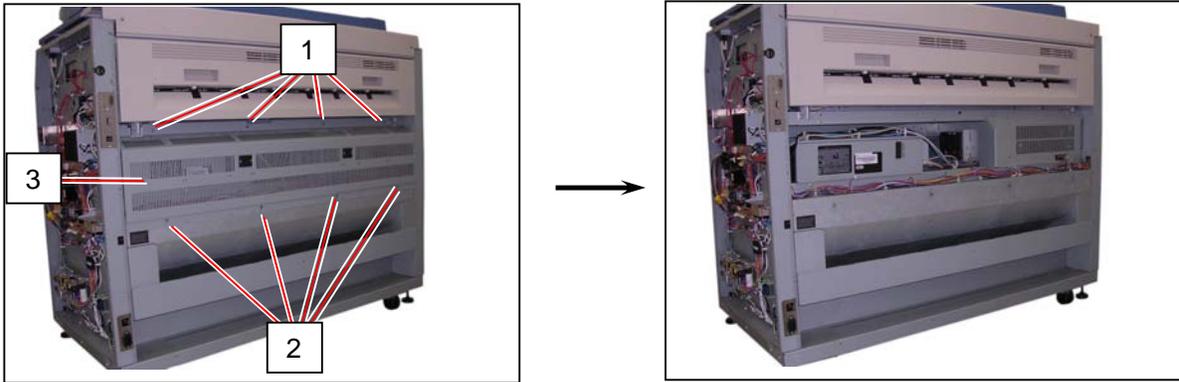


3. Disconnect the connector (6), remove 1 screw (7), and then remove the Bracket Blower (8). Remove 3 screws (9) to replace **Blower** (10) with the new one.

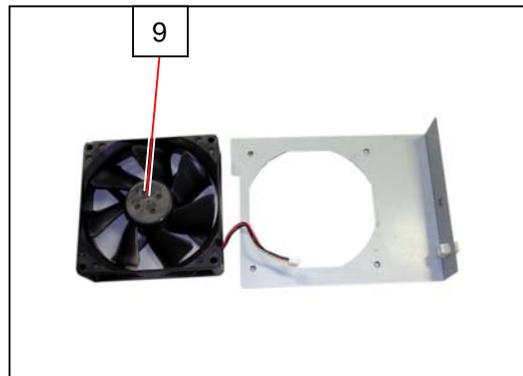
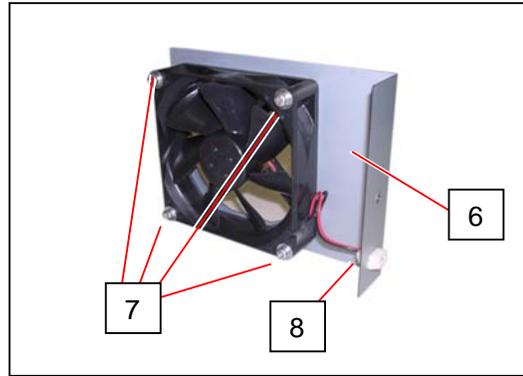
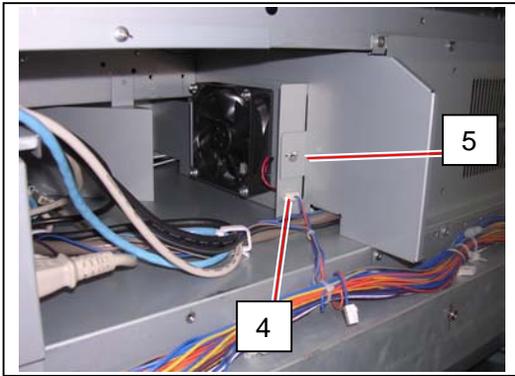


5. 11. 4 Replacement of Fan (BL8)

1. Remove 4 pieces of 4x6 screw (1), loosen 4 pieces of 4x6 screw (2), and then remove the Cover 15 (3).



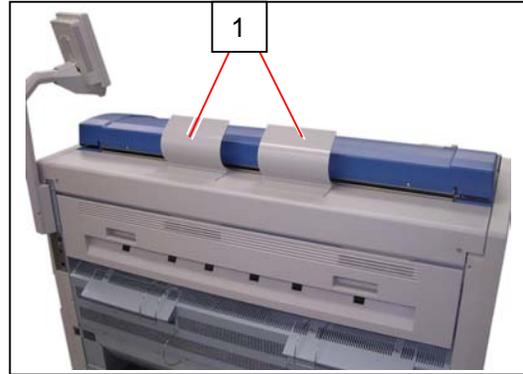
2. Disconnect the connector (4), remove 1 screw (5), and then remove the Fan Bracket (6). Remove 4 screws (7) and 1 connector (8) to replace **Fan** (9) with a new one.



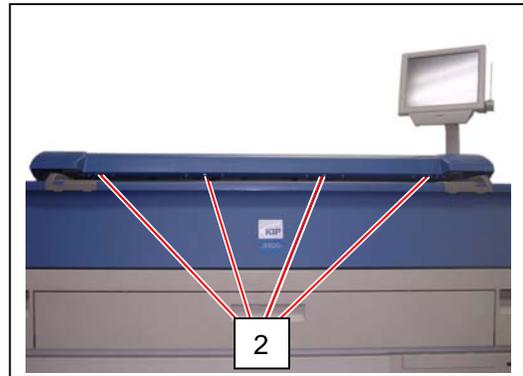
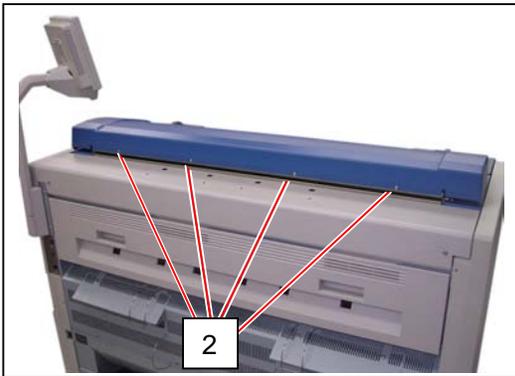
5. 12 Scanner Unit

5. 12. 1 Removal of Scanner Unit

1. Remove 2 pieces of Guide 3 (1).



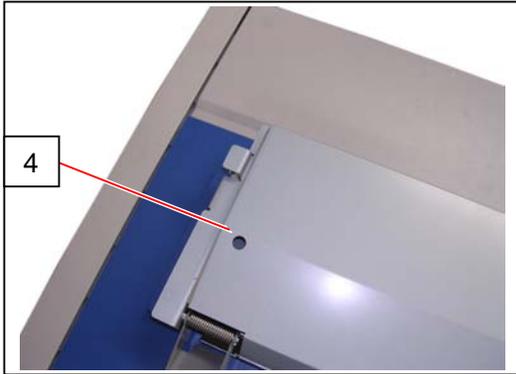
2. Remove 8 pieces of screws (2).



3. Remove Cover 14 (3).



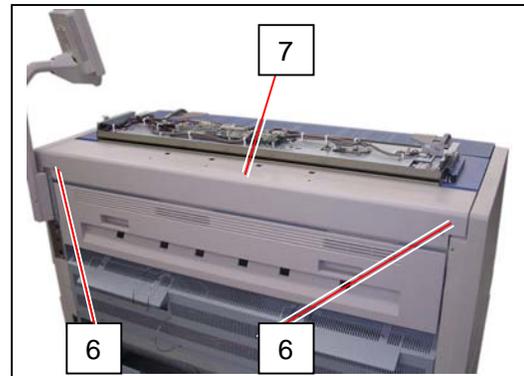
4. Remove 3 screws (4).



5. Remove Shield Cover N (5).



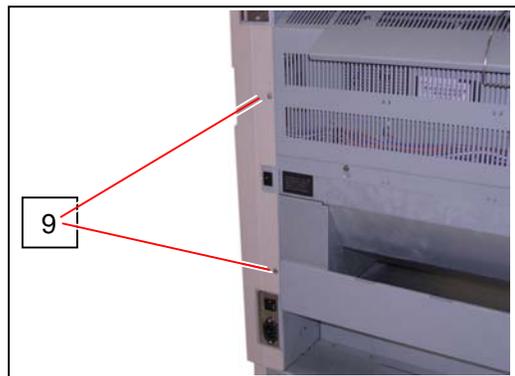
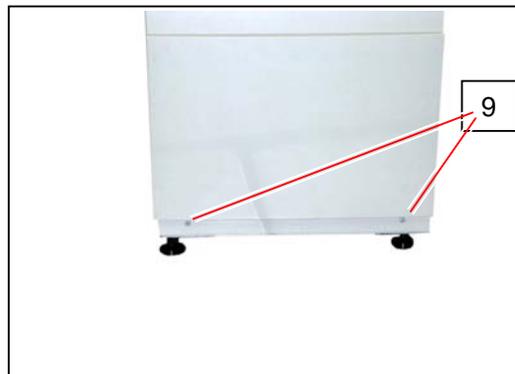
6. Remove 2 tooth washer screws (6) to remove Cover 10 (7)



7. Pull up Lever 2 (8) to open the Engine Unit.



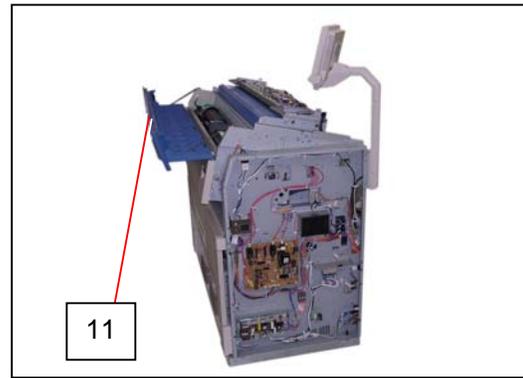
8. Remove 5 screws (9).



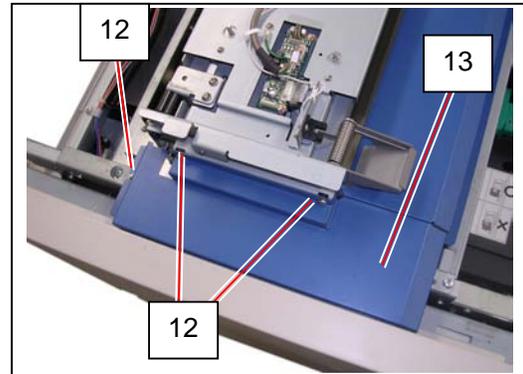
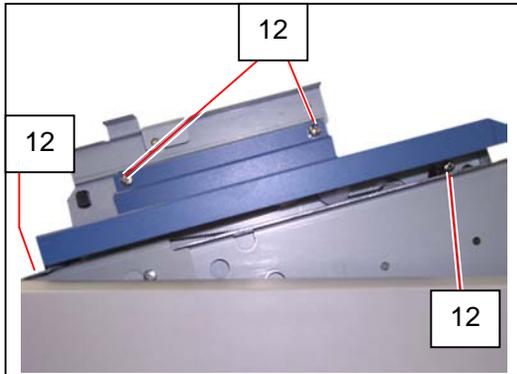
9. Remove Cover 2 (10).



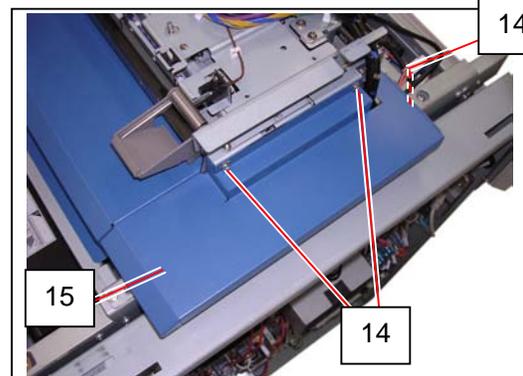
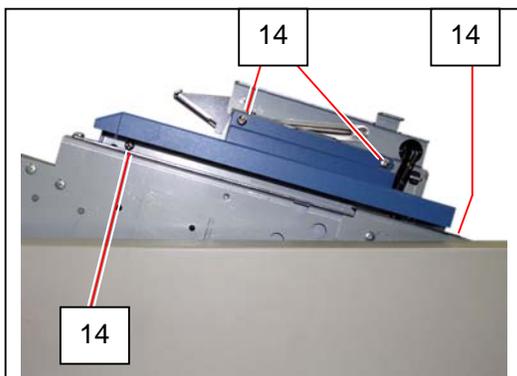
10. Open Cover 4 (11).



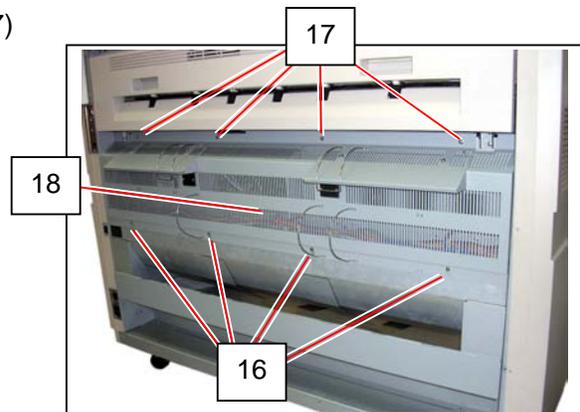
11. Remove 4 screws (12) to remove Cover (13).



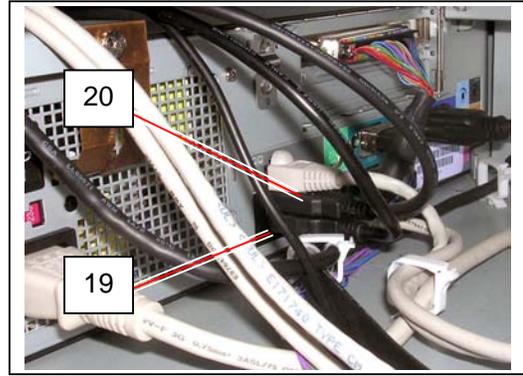
12. Remove 4 screws (14) to remove Cover 8 (15).



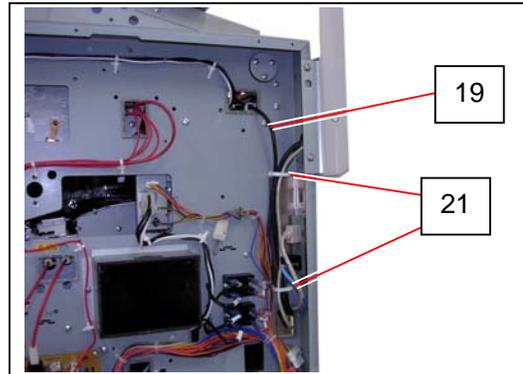
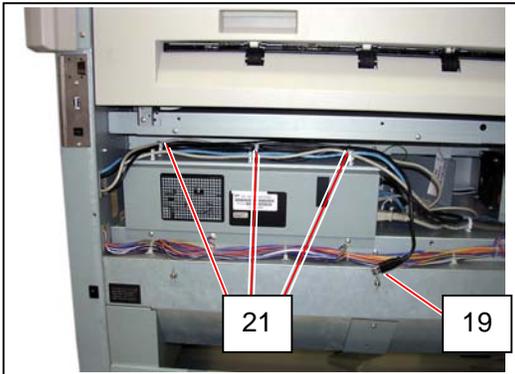
13. Loosen 4 screws (16) and remove 4 screws (17) to remove Cover 15 (18).



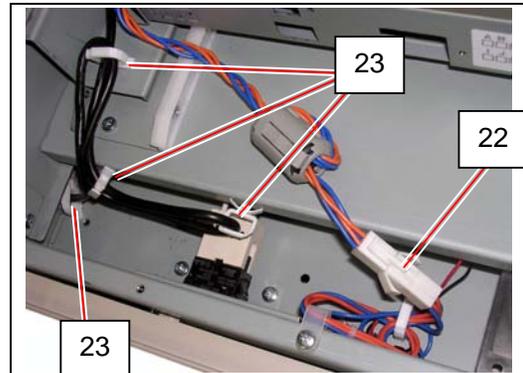
14. Disconnect the lower USB Cable (19) from the IPS, which runs from the Scanner Unit.
The upper one (20) is for the touchscreen.



15. Open the wire saddles (21) to release the USB Cable (19).

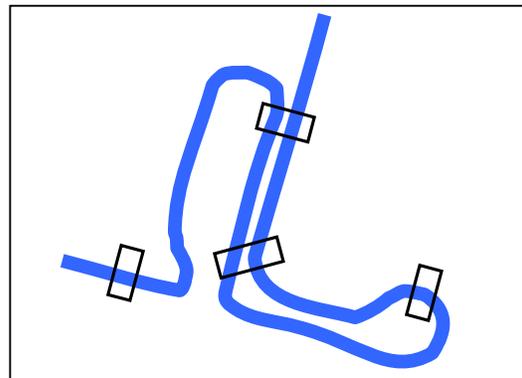


16. Disconnect the connector (22), and open the wire saddles (23) to release the harness.



NOTE

Wind excessive length of the USB Cable with the wire saddles (23) when reassembling.
Do not bundle the 2 cables in any of the wire saddles (23) together.



17. Close the Engine Unit.

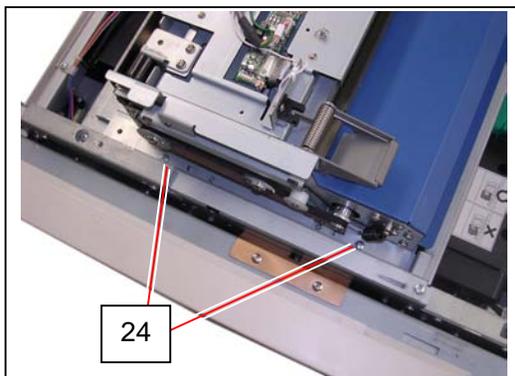


⚠ NOTE

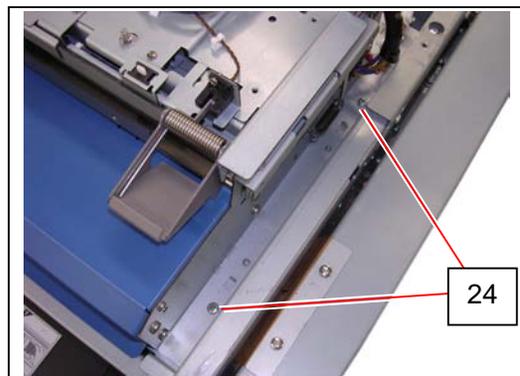
Be sure to close the Engine Unit before removing the screws which fix the Scanner Unit. Otherwise the Scanner Unit may fall down and damage.

18. Remove 4 screws (24) which fix the Scanner Unit.

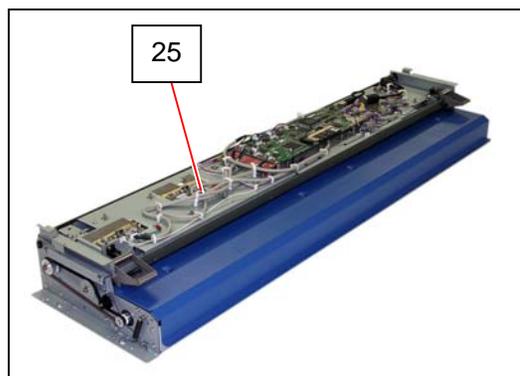
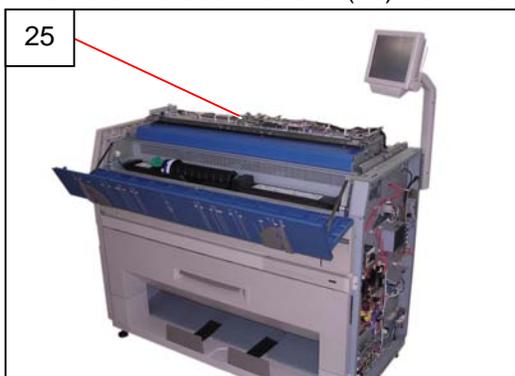
(Right side)



(Left side)



19. Remove the Scanner Unit (25) from the machine.

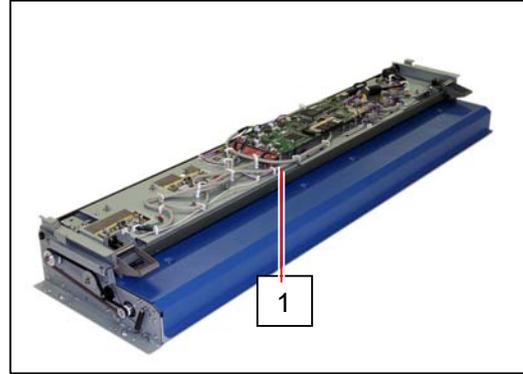


⚠ CAUTION

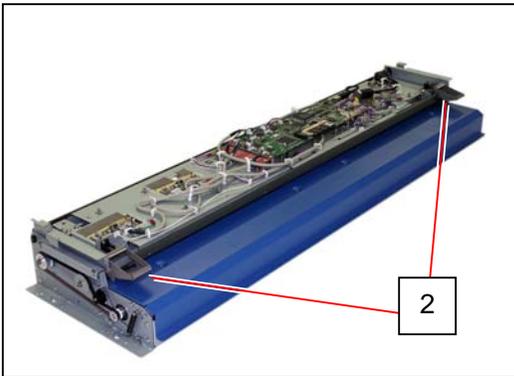
Please carry the Scanner Unit by 2 persons as it is heavy.

5. 12. 2 Replacement of Belt

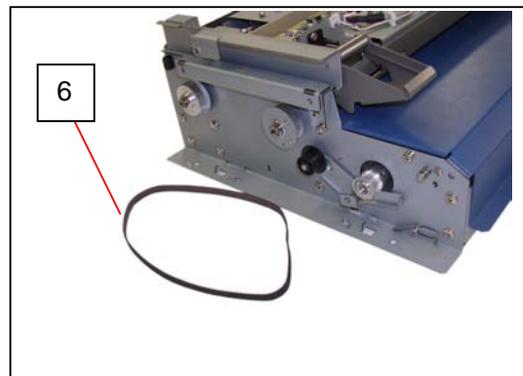
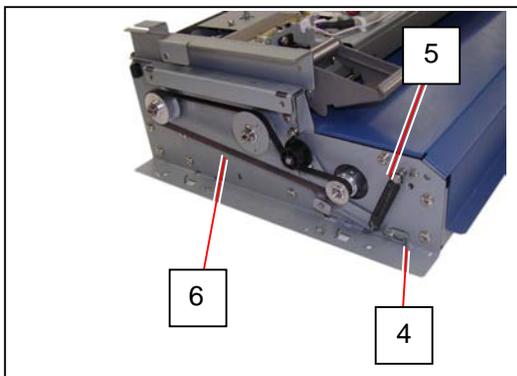
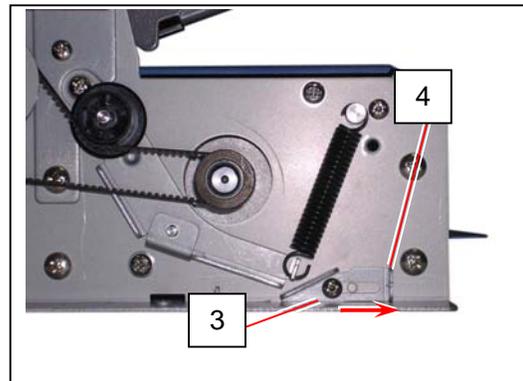
1. Remove the Scanner Unit (1) from the machine making reference to [5.12. 1 Removal of the Scanner Unit] on the page 5-323.



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.

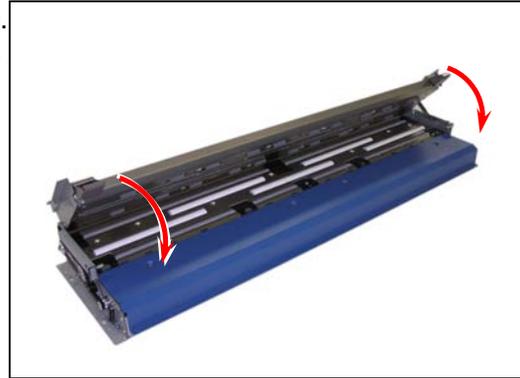


! NOTE

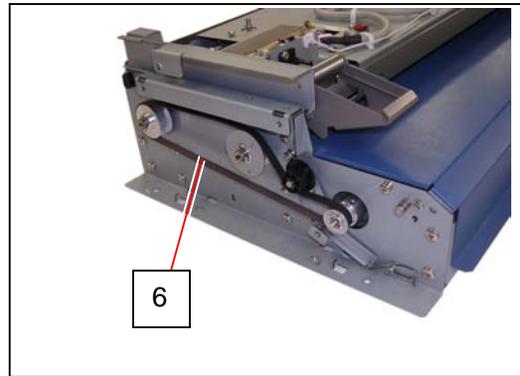
Belt (5) requires its tensioning when reassembling.

- (1) Be sure to close Upper Unit prior to tensioning. Not doing so may prevent a proper tensioning.

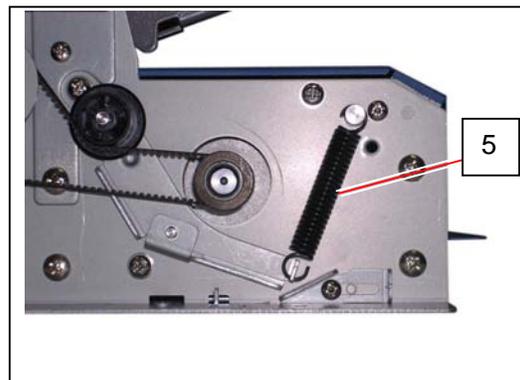
Press down Upper Unit on both sides to close it. Pressing only on one side may result in twisting the frame.



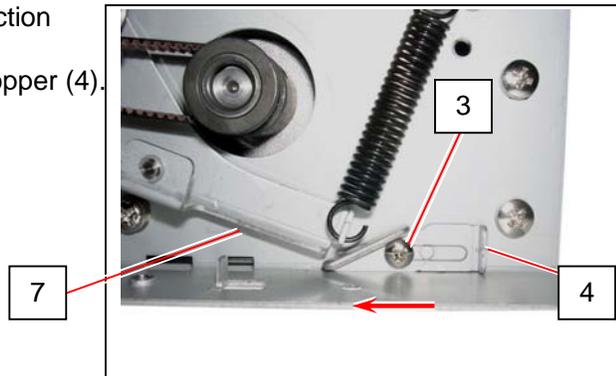
- (2) Place Belt (6) in the original routing position. (No tension is applied to Belt at this time.)



- (3) Replace Spring (5) in the original position. (A proper tension is applied to Belt.)

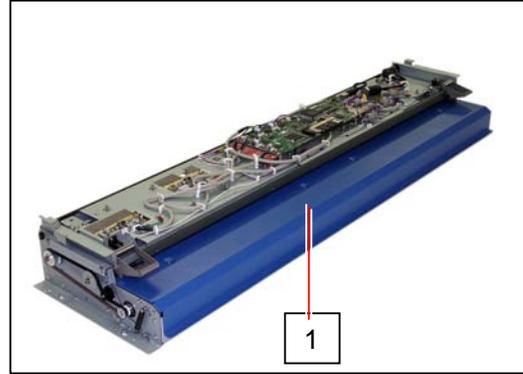


- (4) Move the stopper (4) to the arrow direction until it stops against Spring Hook (7). Tighten the screw (3) to secure the stopper (4).

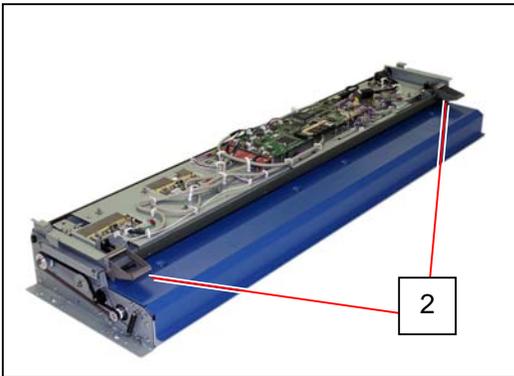


5. 12. 3 Replacement of Motor Assy

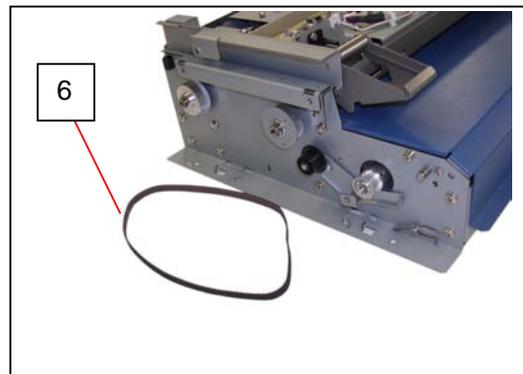
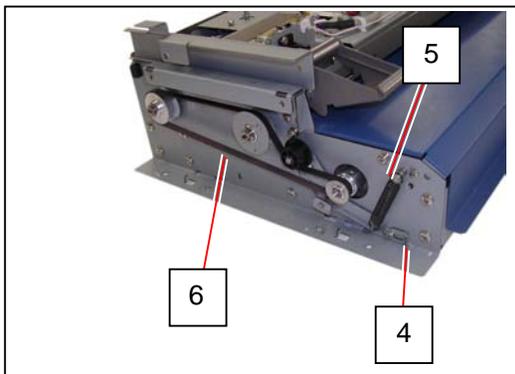
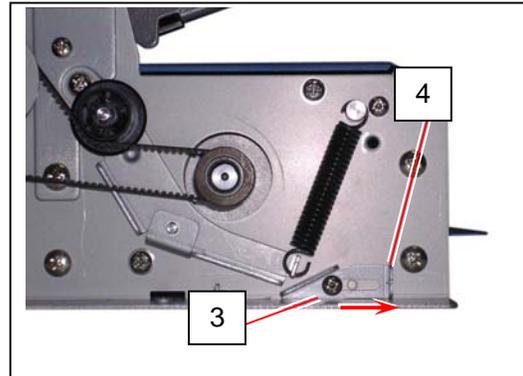
1. Remove the Scanner Unit (1) from the machine making reference to [5.12. 1 Removal of the Scanner Unit] on the page 5-323.



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).

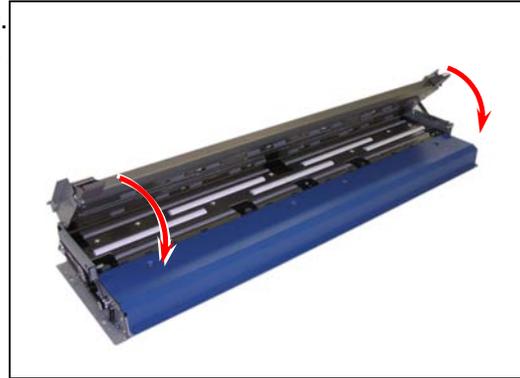


! NOTE

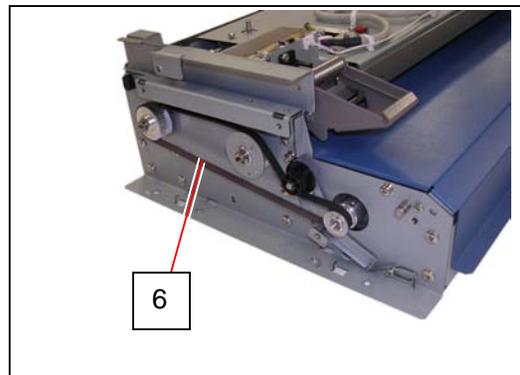
Belt (5) requires its tensioning when reassembling.

- (1) Be sure to close Upper Unit prior to tensioning.
Not doing so may prevent a proper tensioning.

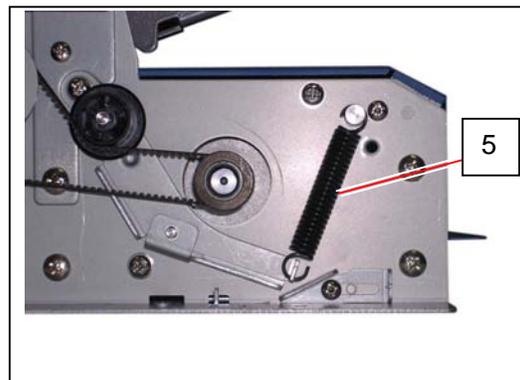
Press down Upper Unit on both sides to close it. Pressing only on one side may result in twisting the frame.



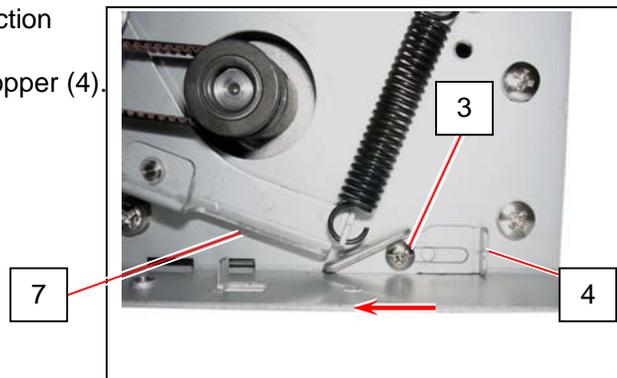
- (2) Place Belt (6) in the original routing position.
(No tension is applied to Belt at this time.)



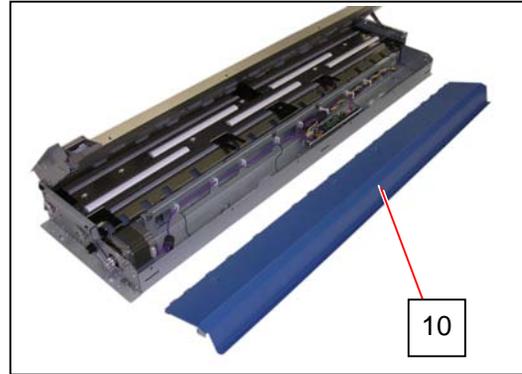
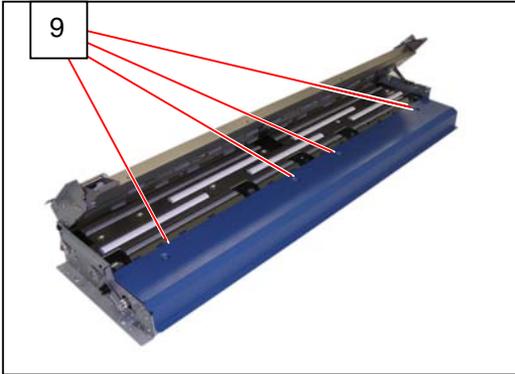
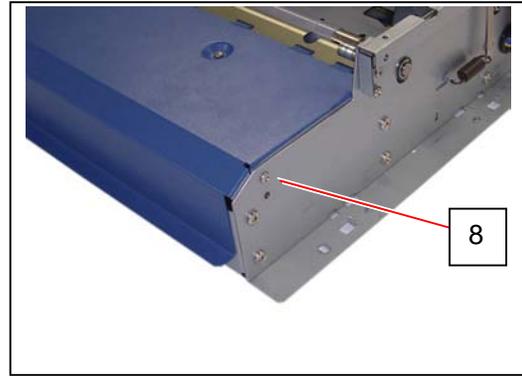
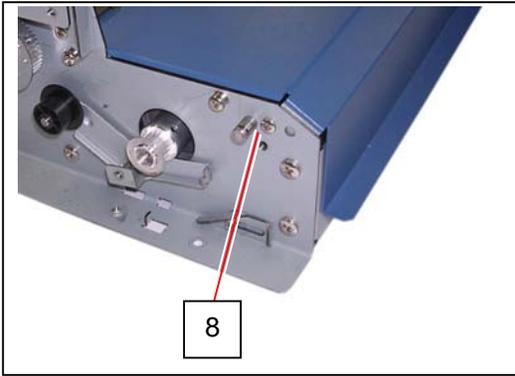
- (3) Replace Spring (5) in the original position.
(A proper tension is applied to Belt.)



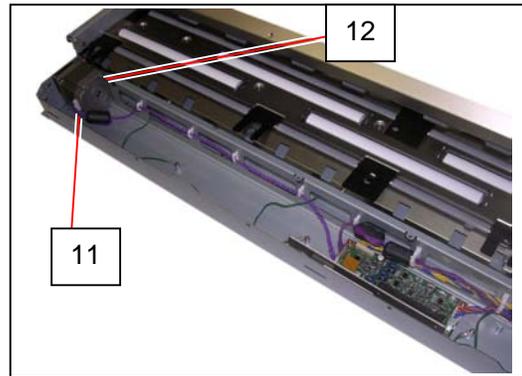
- (4) Move the stopper (4) to the arrow direction until it stops against Spring Hook (7).
Tighten the screw (3) to secure the stopper (4).



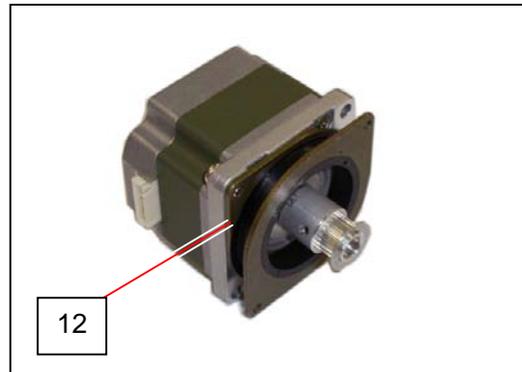
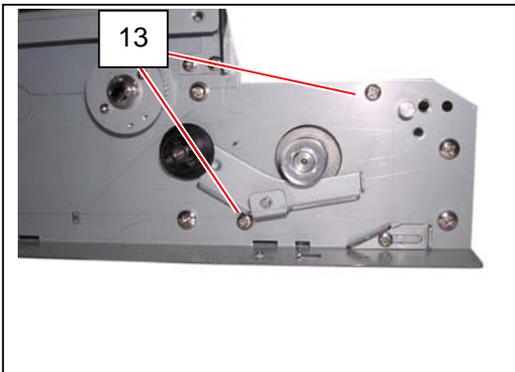
4. Remove 2 screws (8: M3x6) and 4 screws (9: M3x6 w/ FW) to remove Sheet Guide (10).



5. Disconnect the harness (11) from Motor Assy (12).

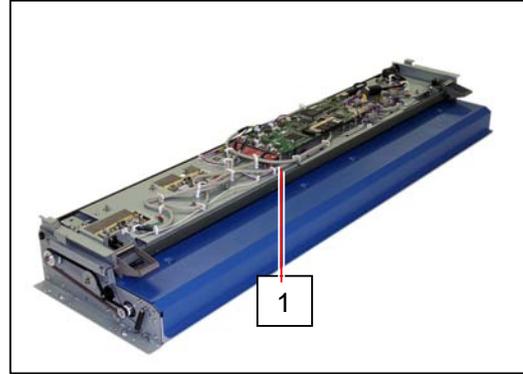


6. Remove 2 screws (13) to remove **Motor Assembly** (12).
Replace **Motor Assembly** with a new one.

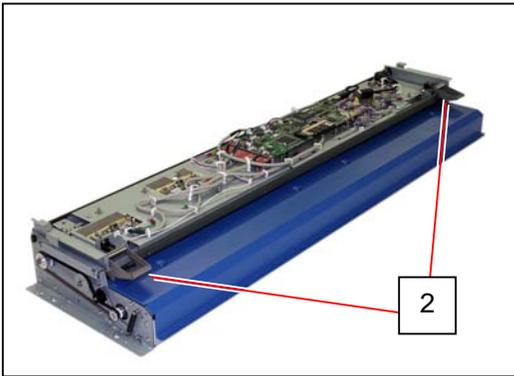


5. 12. 4 Replacement of Feed Roller

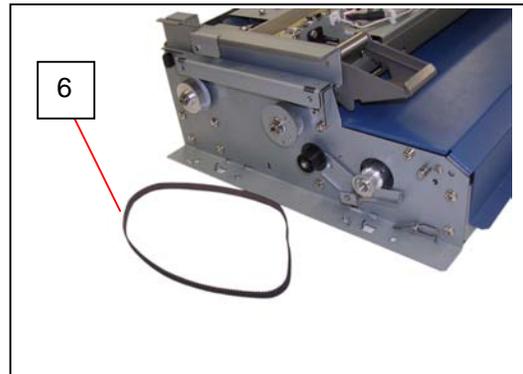
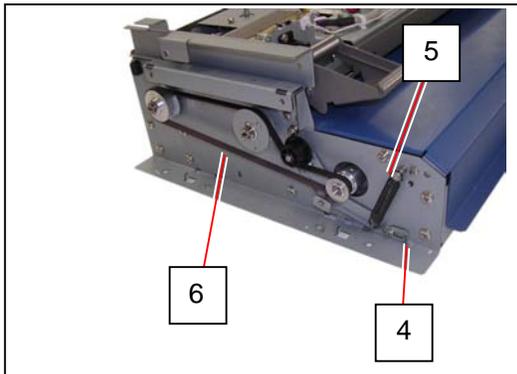
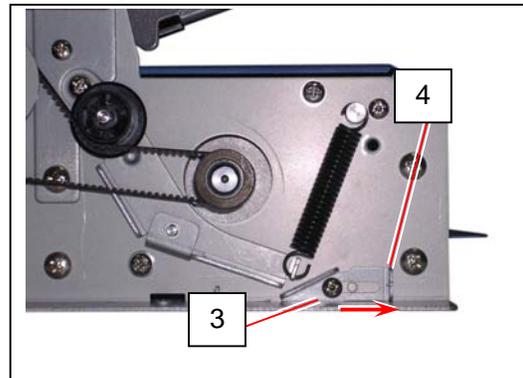
1. Remove the Scanner Unit (1) from the machine making reference to [5.12. 1 Removal of the Scanner Unit] on the page 5-323.



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

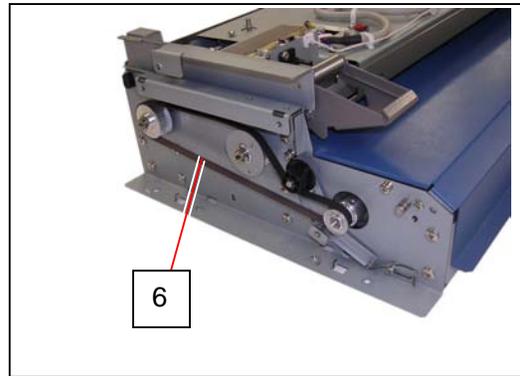
Belt (5) requires its tensioning when reassembling.

- (1) Be sure to close Upper Unit prior to tensioning. Not doing so may prevent a proper tensioning.

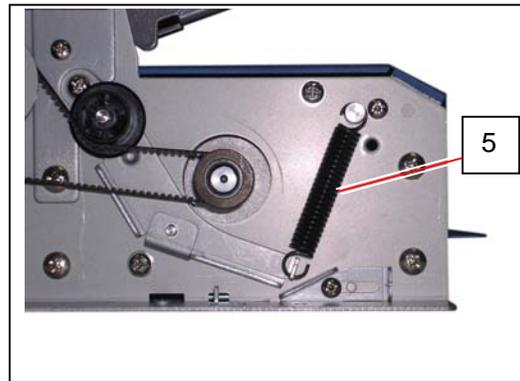
Press down Upper Unit on both sides to close it. Pressing only on one side may result in twisting the frame.



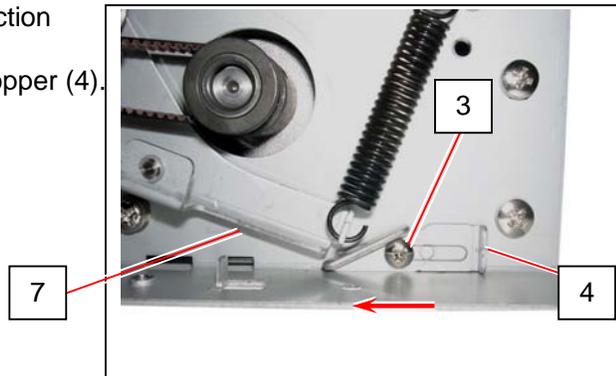
- (2) Place Belt (6) in the original routing position. (No tension is applied to Belt at this time.)



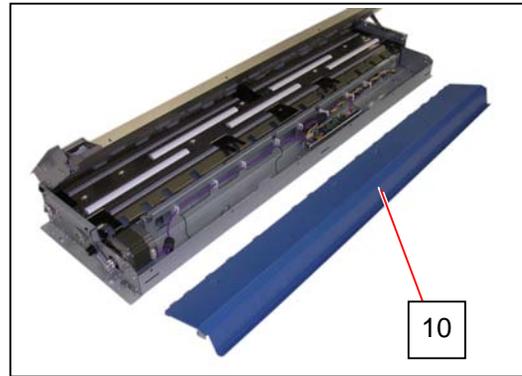
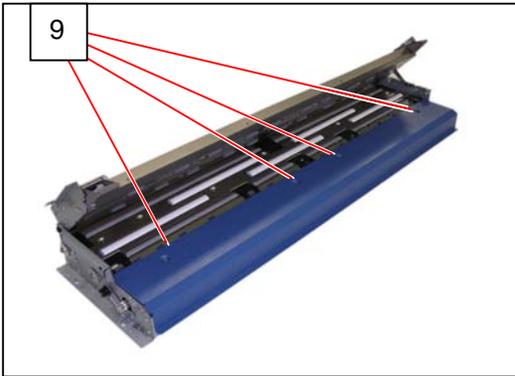
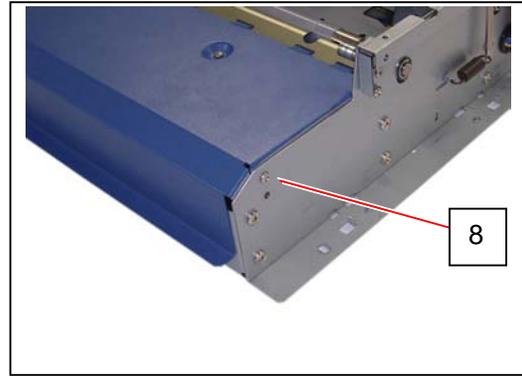
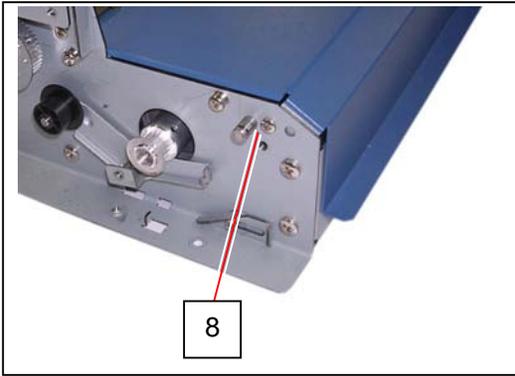
- (3) Replace Spring (5) in the original position. (A proper tension is applied to Belt.)



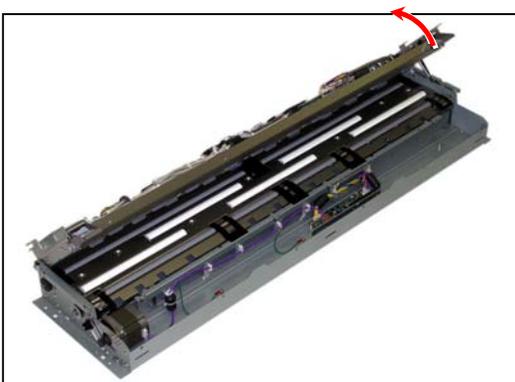
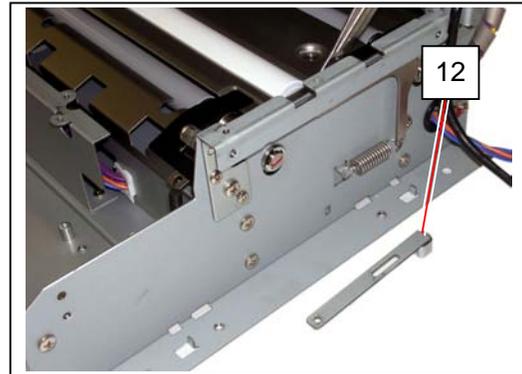
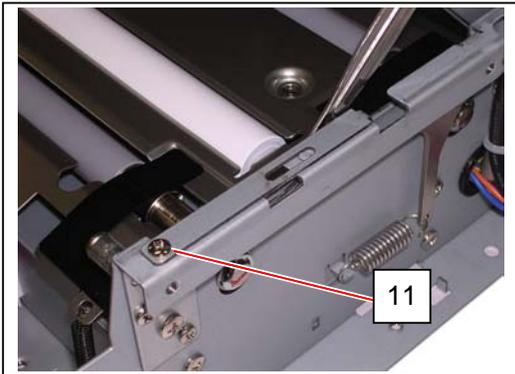
- (4) Move the stopper (4) to the arrow direction until it stops against Spring Hook (7). Tighten the screw (3) to secure the stopper (4).



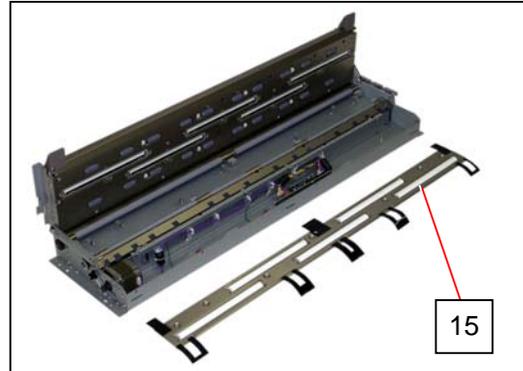
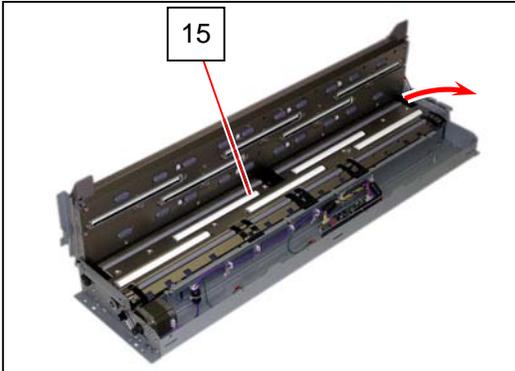
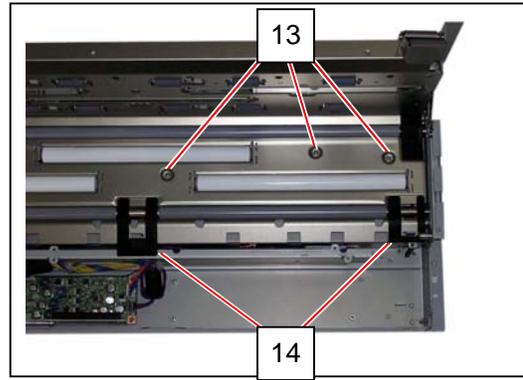
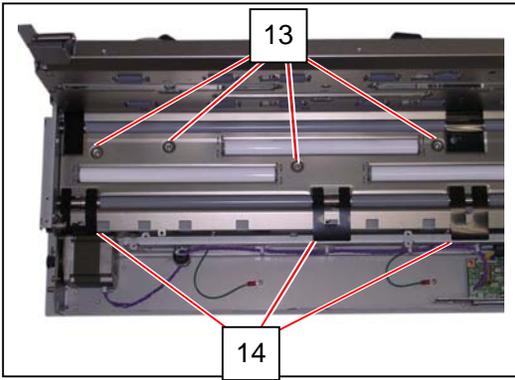
4. Remove 2 screws (8: M3x6) and 4 screws (9: M3x6 w/ FW) to remove Sheet Guide (10).



5. Remove 1 screw (11) to remove Stay (12). Open Upper Unit fully.

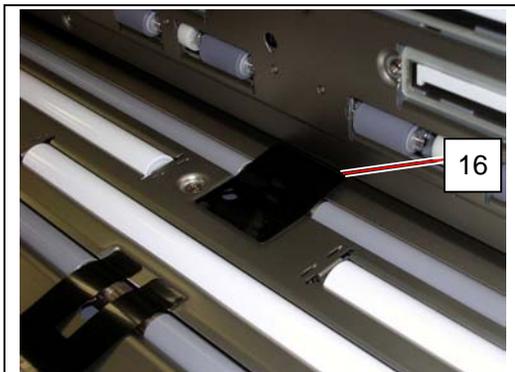
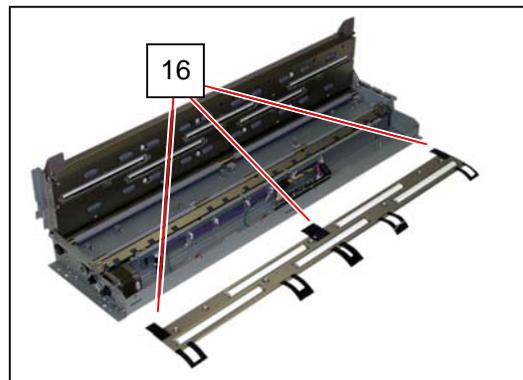


6. Remove 7 screws (13). Release the black plastic sheets (14) from the frame to remove Press Roller Assy (15).

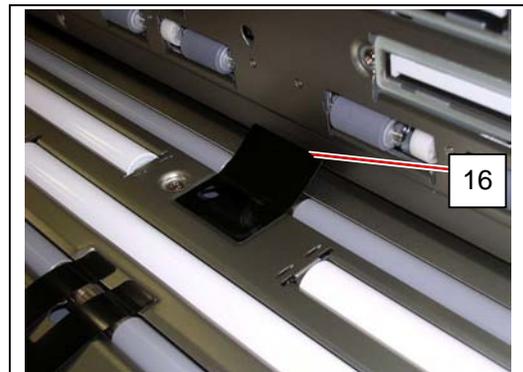


NOTE

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.

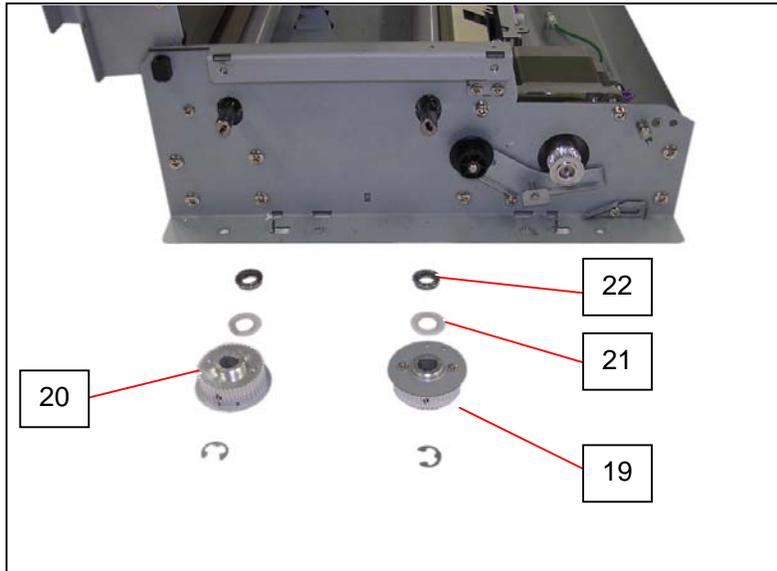
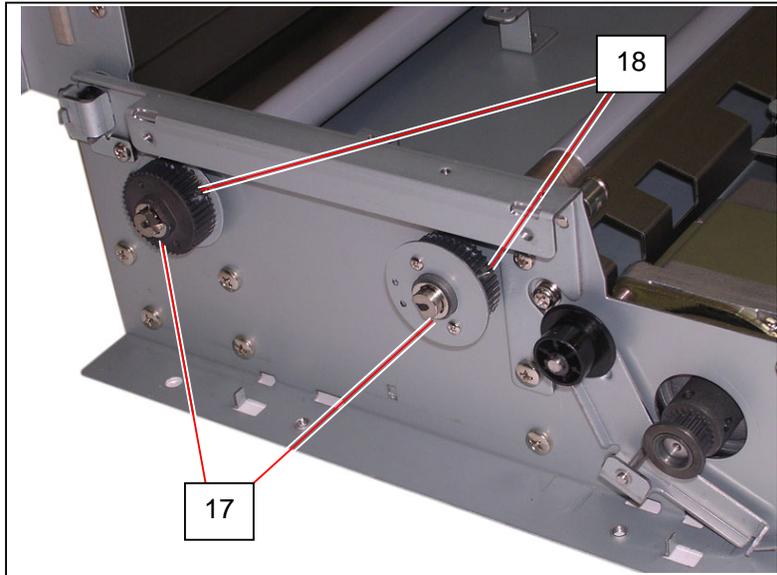


Correct: black sheet in position

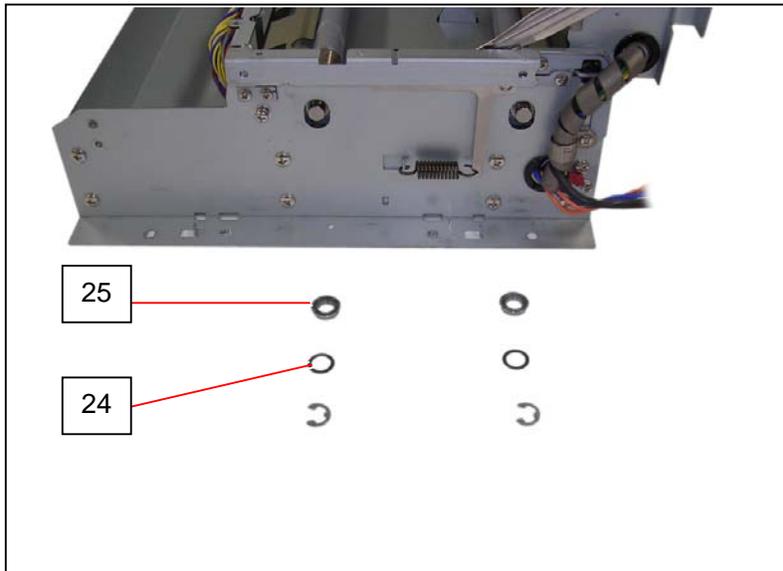
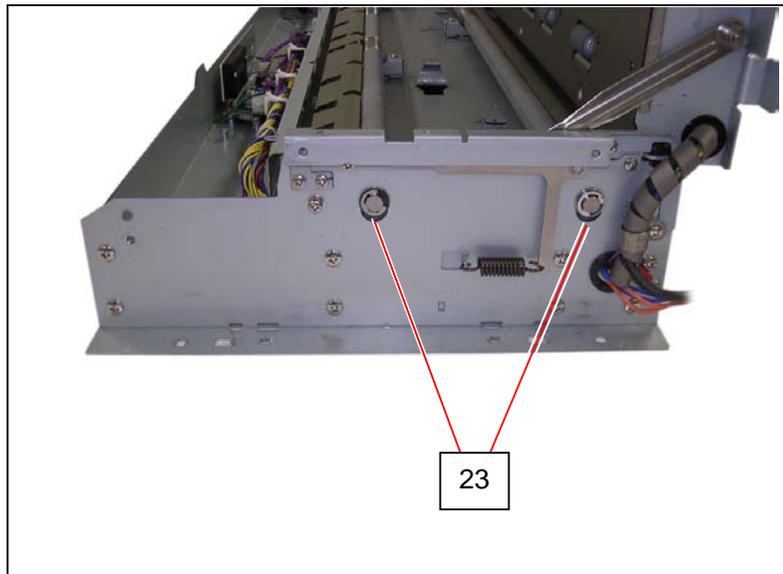


Wrong: flipping up

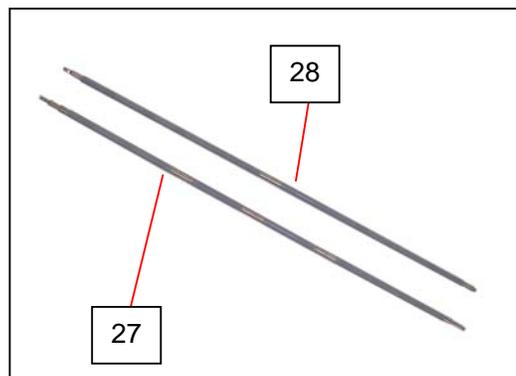
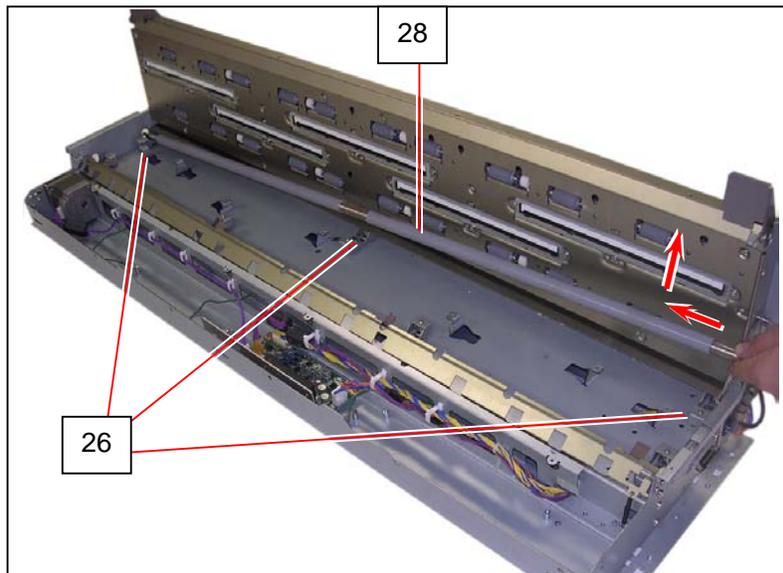
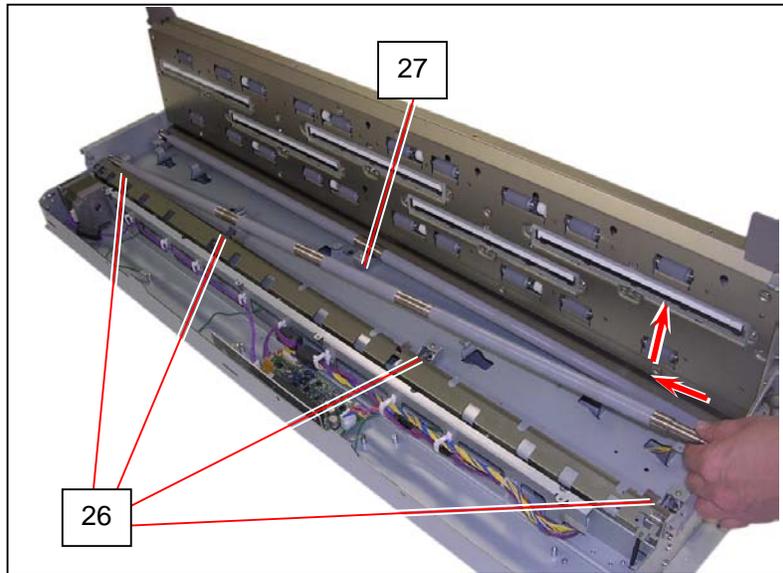
7. On the left side, remove Retaining Ring-E (17), Set Screw (18) to remove Pulley (19) (20), Spacer (21), Bearing (22) from each roller shaft.



8. On the right side, remove Retaining Ring-E (23) to remove Washer (24), Bearing (25) from each roller shaft.

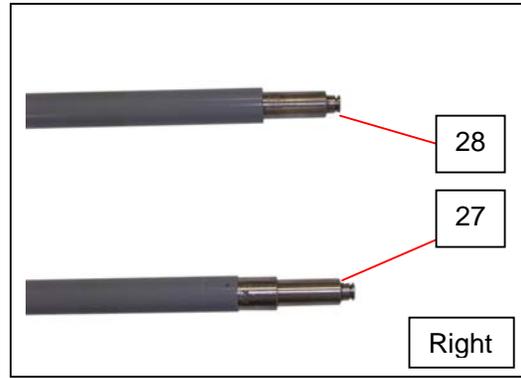
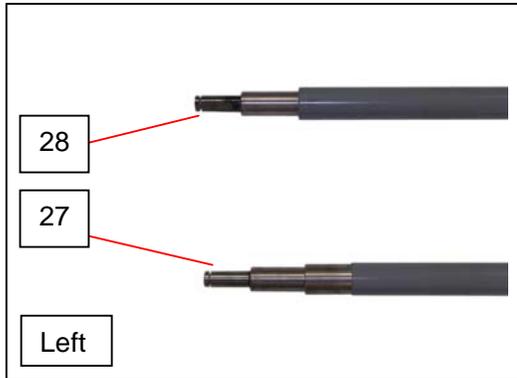


9. Pressing Press Assys (26) down, slide Feed Roller F (27: front) and Feed Roller R (28: rear) to the motor side and remove it.
Replace **Feed Roller F** and **Feed Roller R** with new ones.

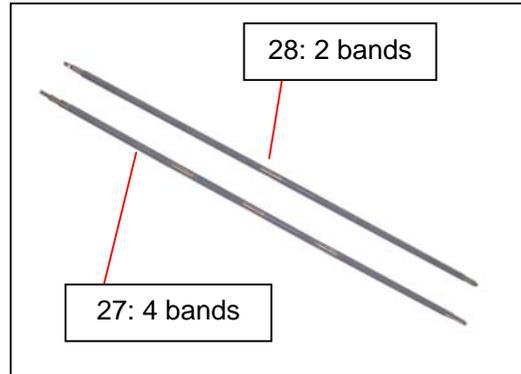


NOTE

(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.

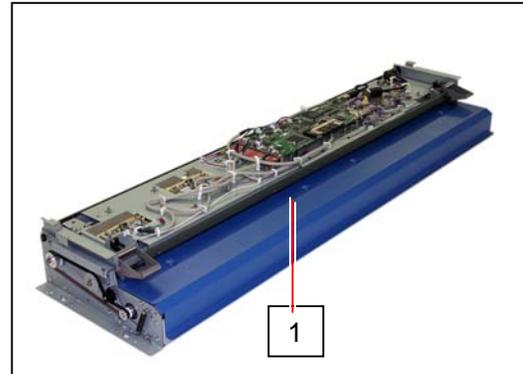
10. Replace all the parts in position.
11. Install Scanner Unit to the machine. Connect the USB cable of Scanner Unit to your PC.
12. Perform Feed Distance adjustment.

NOTE

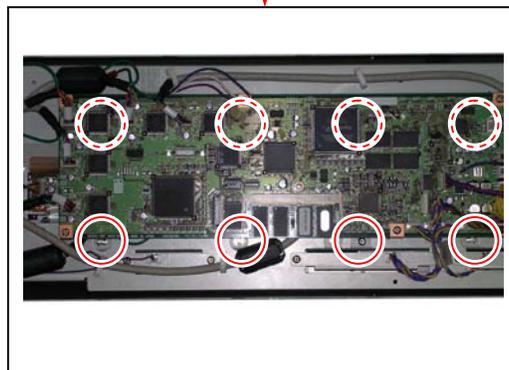
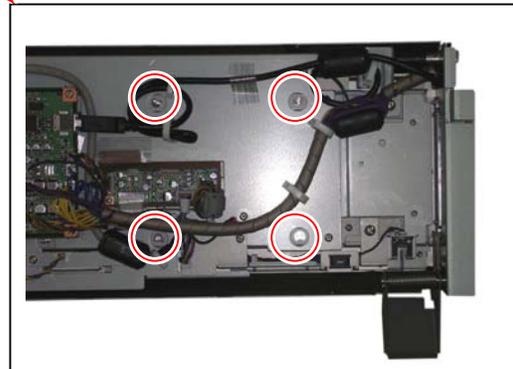
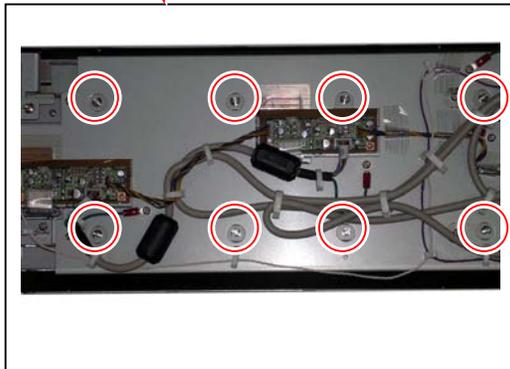
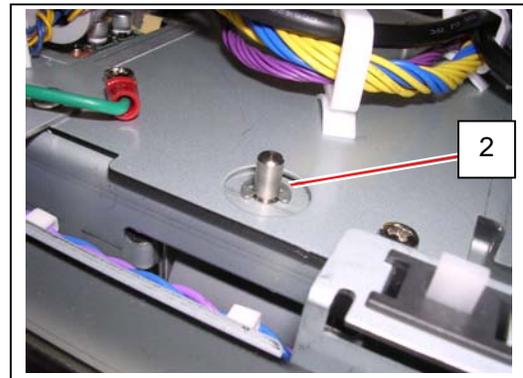
Replacement of Feed Rollers requires Feed Distance adjustment. Refer to [8. 12 Scanner Utility] on page 8-184 for adjustment.

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 5-323.

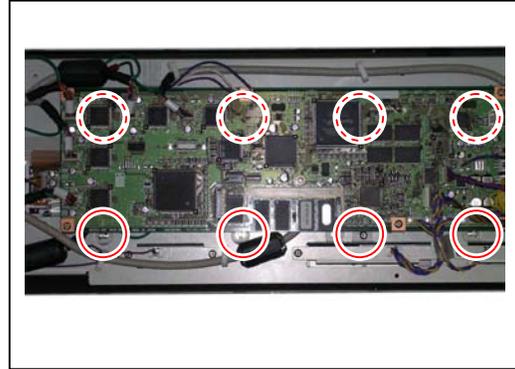


2. Remove Retaining Ring-E (2) from the shaft of Pinch Roller.

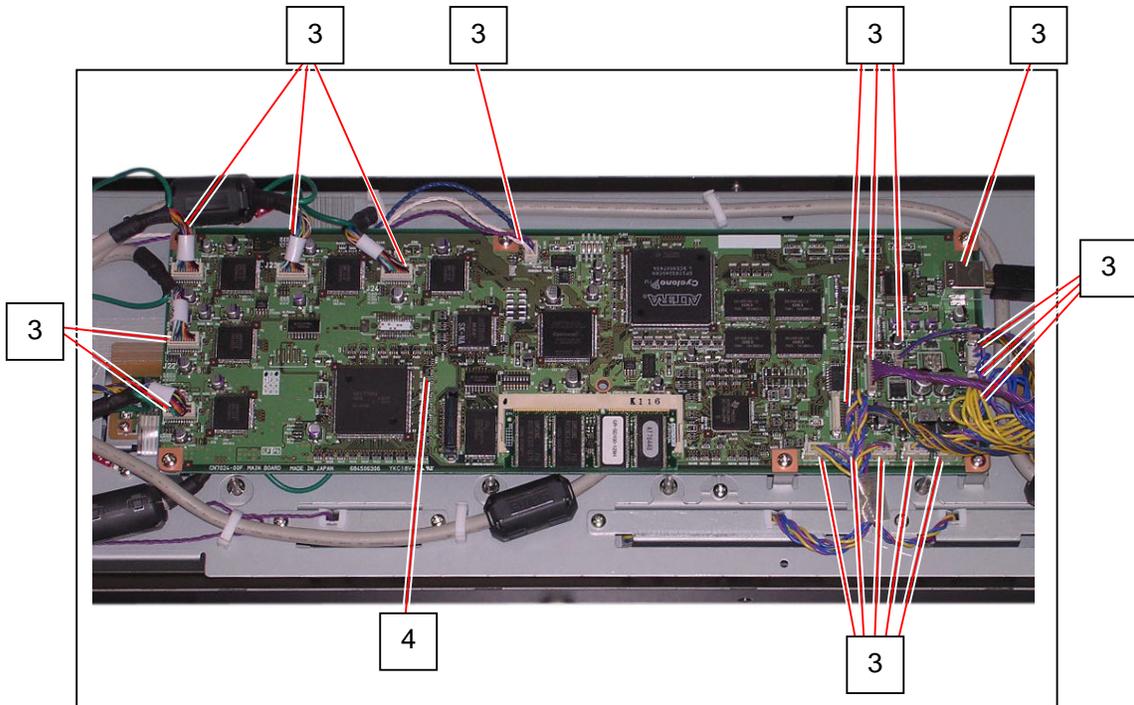


NOTE

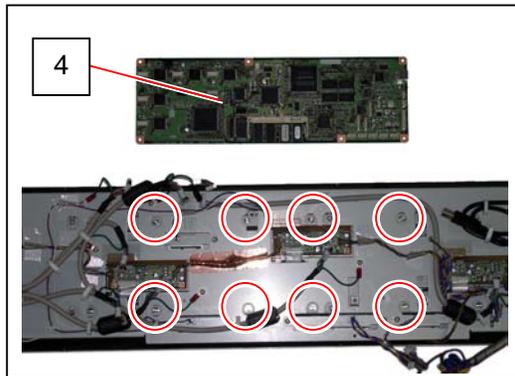
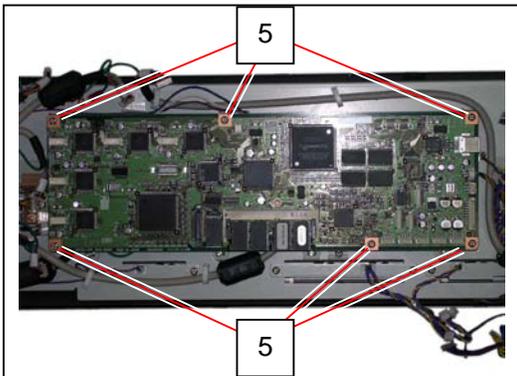
For replacement of Pinch Rollers beneath (or near) SVC Main BD K, remove Retaining Ring-E for the concerning Pinch Roller (shown below) after removing SVC Main BD K.



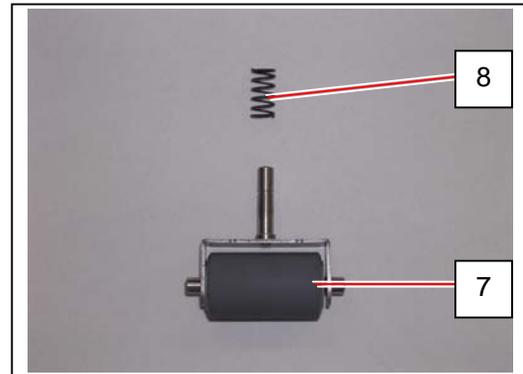
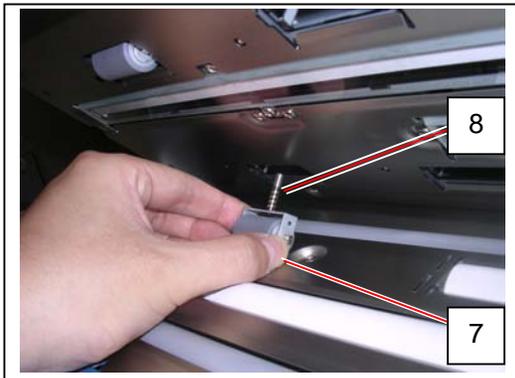
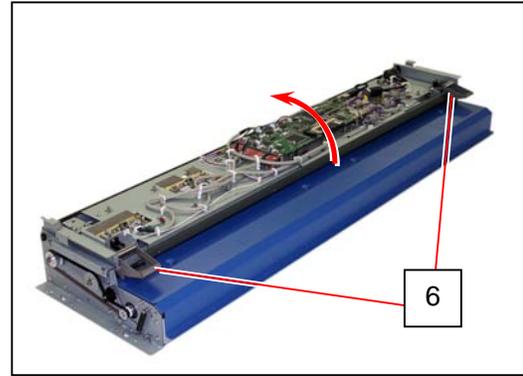
(1) Remove all the connectors (3) from SVC Main BD K (4).



(2) Remove 6 screws (5) to remove SVC Main BD K (4).



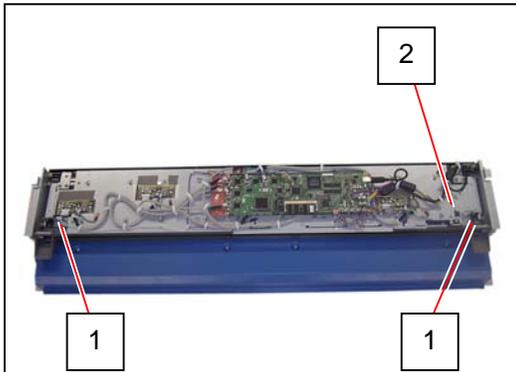
3. Pull up the Levers (6) and open Upper Unit slightly.
Put your hand in between Upper and Lower Unit and hold the Pinch Roller Assy (7) not to fall its Spring (8) inside Upper Unit.
Remove Pinch Roller Assy (7) and Spring (8).
Replace **Pinch Roller Assy** with a new one.



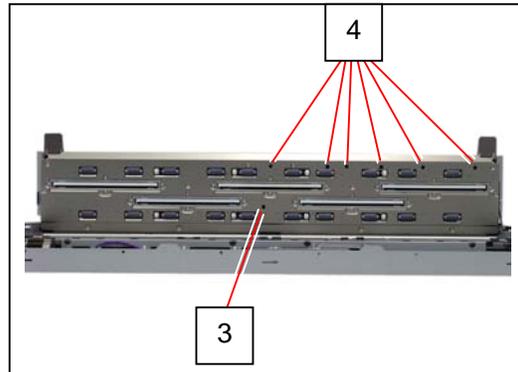
5. 12. 6 Replacement of Sensor

Reference

Sensor/Switch on Scanner Unit are located as follows.



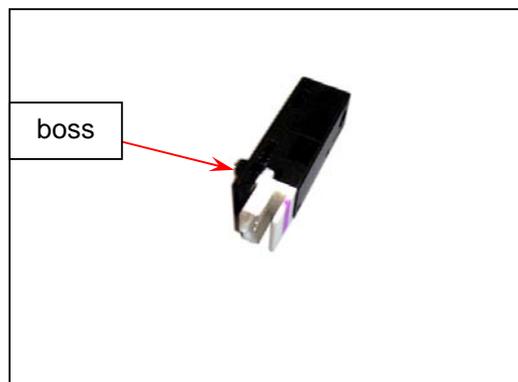
1: Upper Unit Open Sensor
2: Scan Feeding Stop Switch



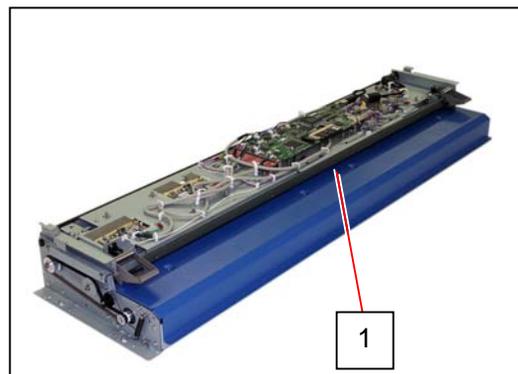
3: Original Jam Sensor
4: Original Size Sensor

NOTE

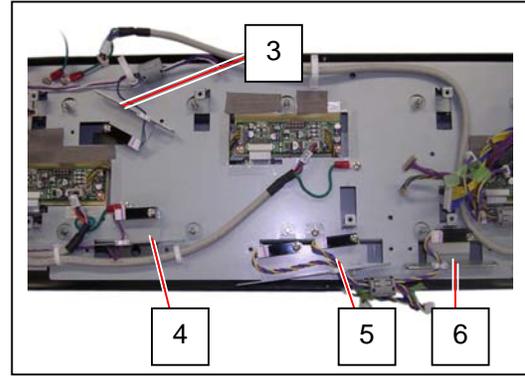
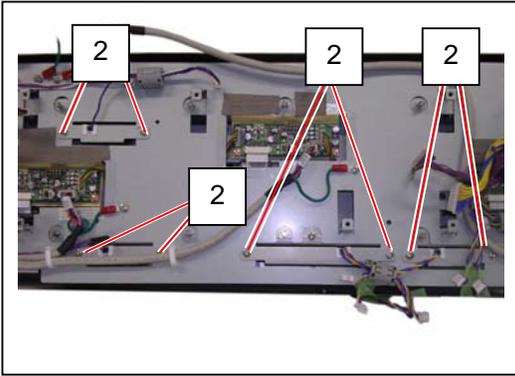
When reassembling, fit the positioning boss on the sensor into holes on the sensor bracket.



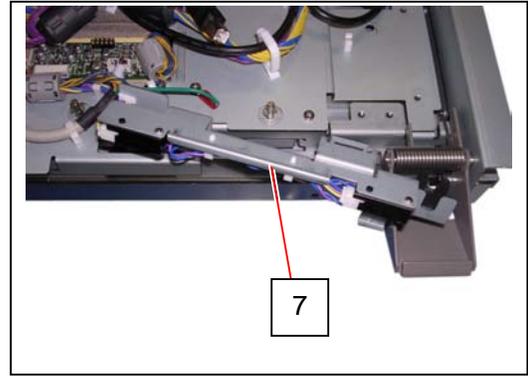
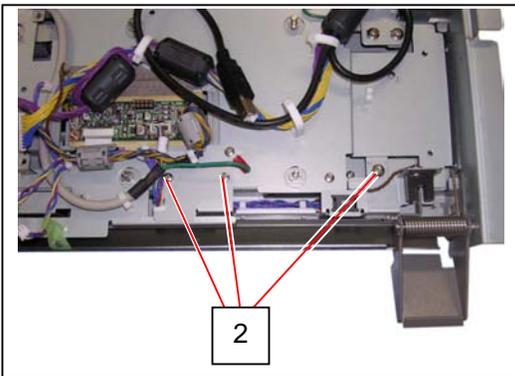
1. Remove the Scanner Unit (1) from the machine making reference to [5.12. 1 Removal of the Scanner Unit] on the page 5-264.



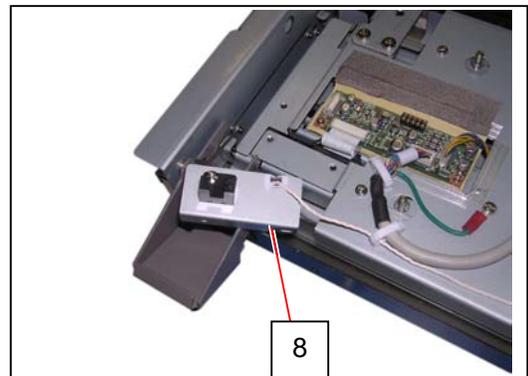
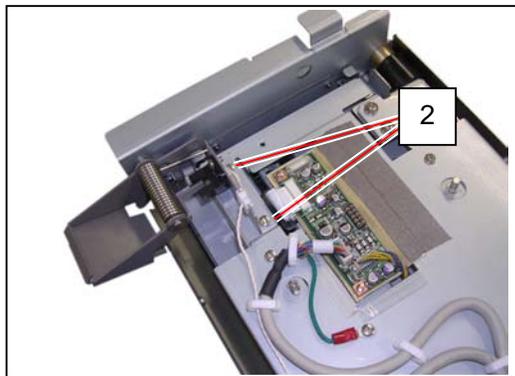
2. Remove 2 (or 3) screws (2) to release the sensor bracket (3) (4) (5) (6) (7) (8).



(Center: SVC Main BD K removed)



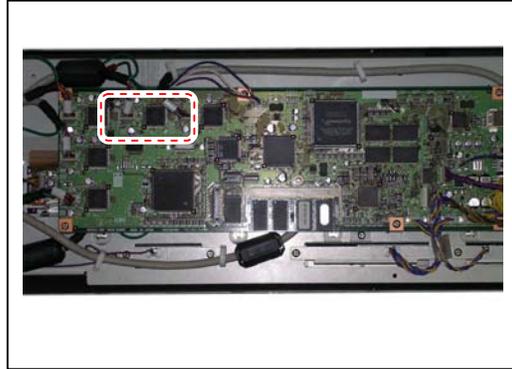
(Right)



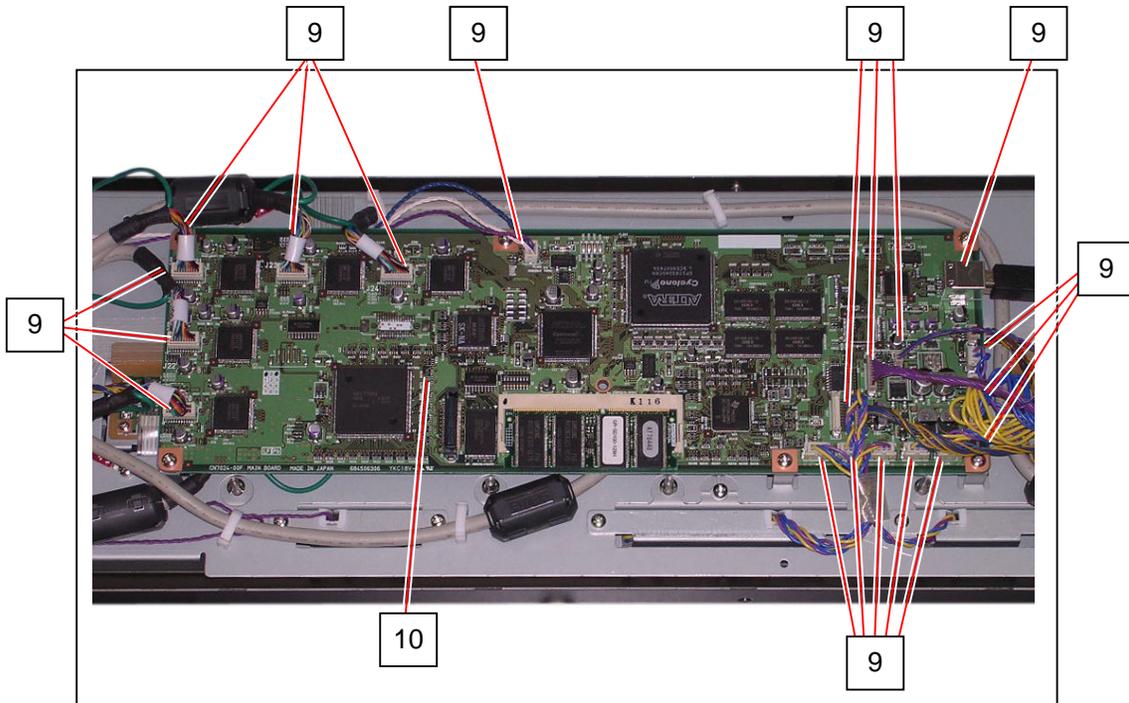
(Left)

NOTE

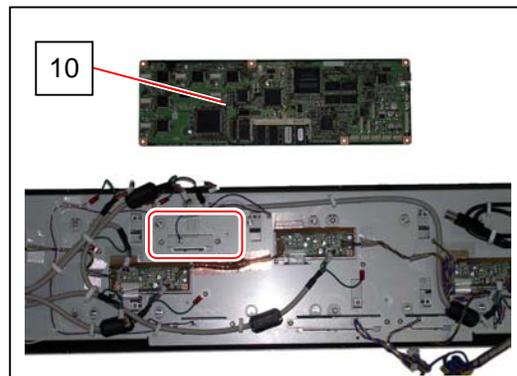
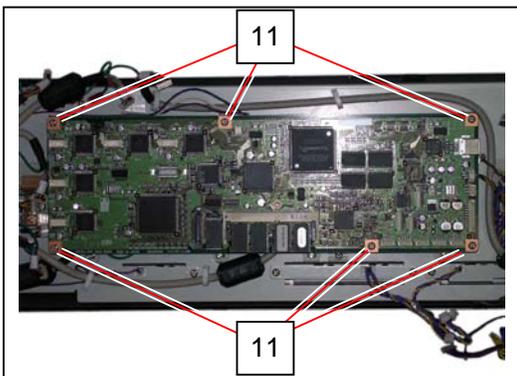
For replacement of Original Jam Sensor beneath SVC Main BD K, follow the instruction. The location of the relevant sensor bracket (3) is shown as follows.



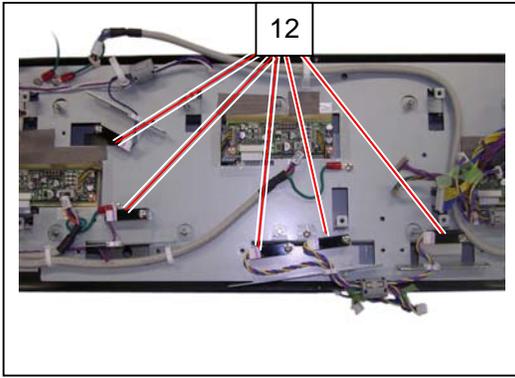
(1) Remove all the connectors (9) from SVC Main BD K (10).



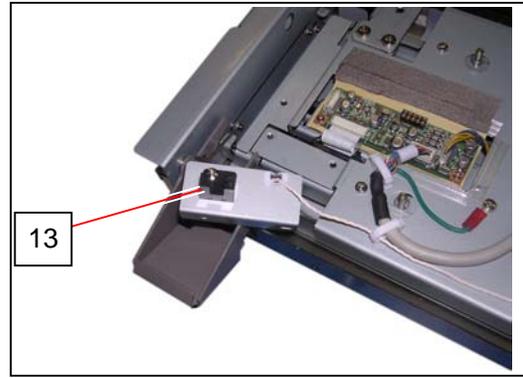
(2) Remove 6 screws (11) to remove SVC Main BD K (10).



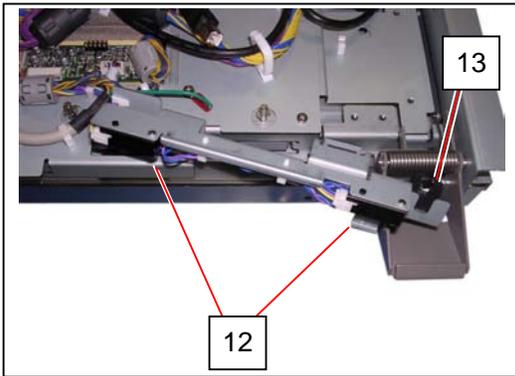
3. Remove one screw from the sensor bracket to remove Size Sensor (12) Lock Sensor (13), Switch (14).
Replace **Sensor** / **Switch** with a new one.



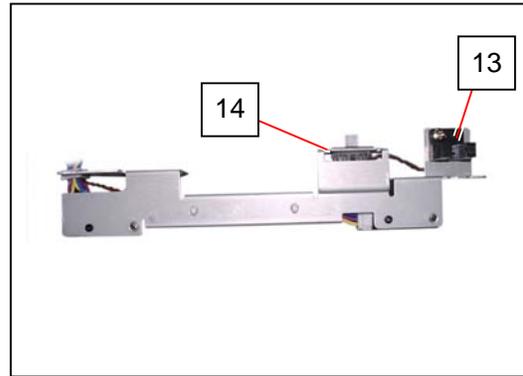
(Center)



(Left)



(Right)



5. 12. 7 Replacement of CIS

NOTE

A CIS is classified into classes according to wavelength variations of their LED.

Class	Part Number	Class	Part Number
CIS Sensor A	Z168300410	CIS Sensor I	Z168300490
CIS Sensor B	Z168300420	CIS Sensor J	Z168300500
CIS Sensor C	Z168300430	CIS Sensor K	Z168300510
CIS Sensor D	Z168300440	CIS Sensor L	Z168300520
CIS Sensor E	Z168300450	CIS Sensor M	Z168300530
CIS Sensor F	Z168300460	CIS Sensor N	Z168300540
CIS Sensor G	Z168300470	CIS Sensor O	Z168300550
CIS Sensor H	Z168300480	CIS Sensor P	Z168300560

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.

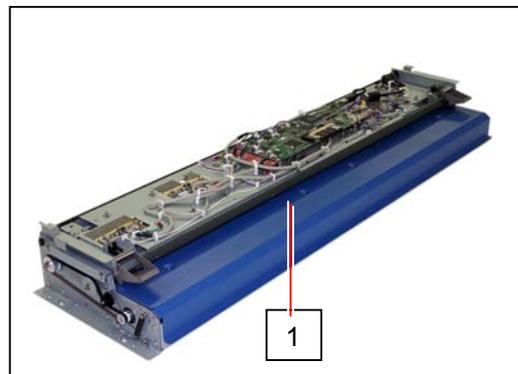
Be sure to check which CIS class is used to the scanner before replacing to avoid class mixing. Otherwise even image quality can not be expected.

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.

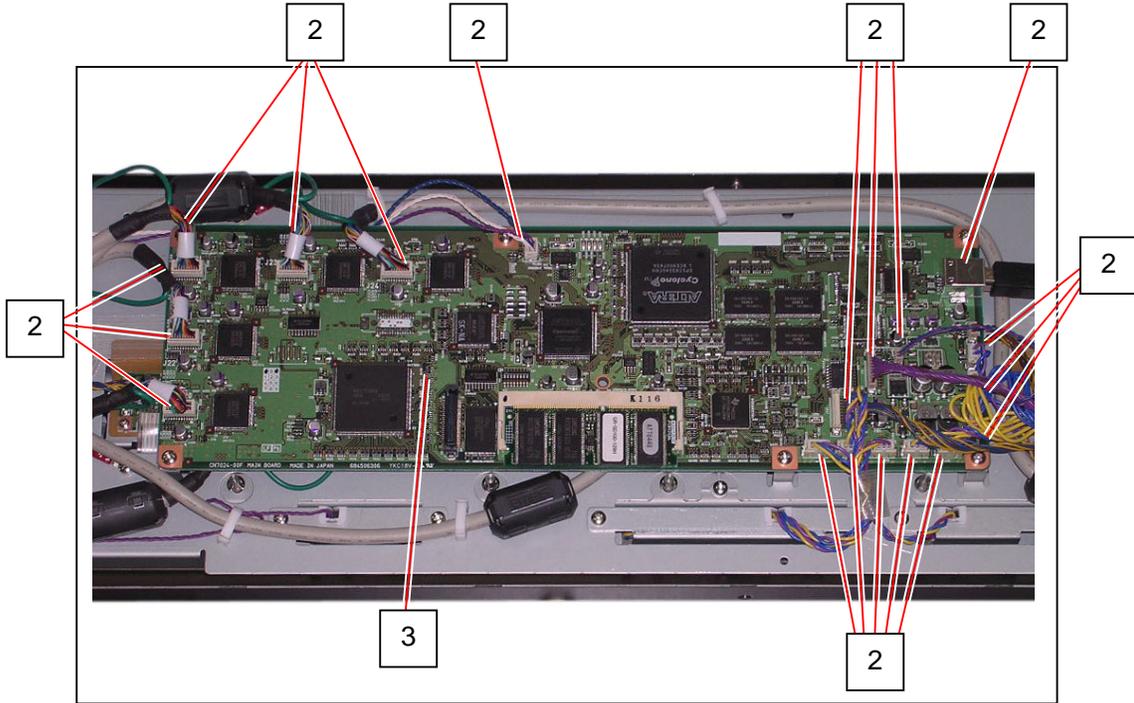


Label

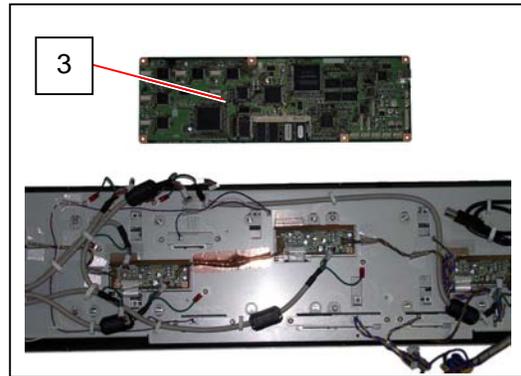
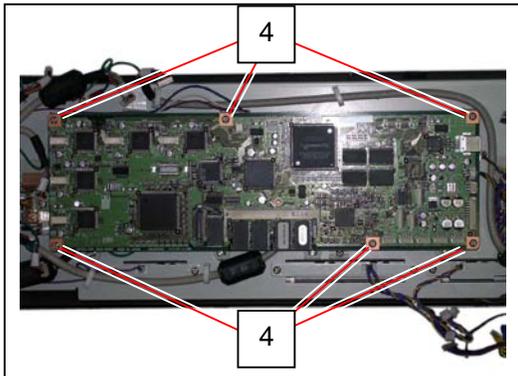
1. Remove the Scanner Unit (1) from the machine making reference to [5.12. 1 Removal of the Scanner Unit] on the page 5-323.



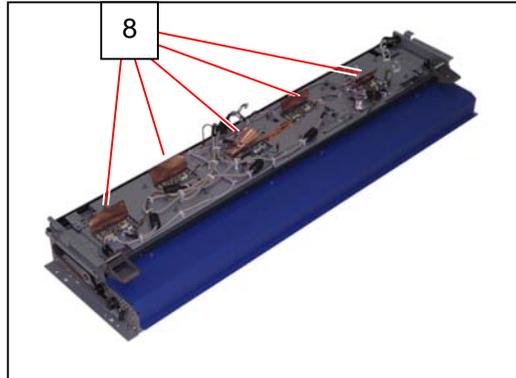
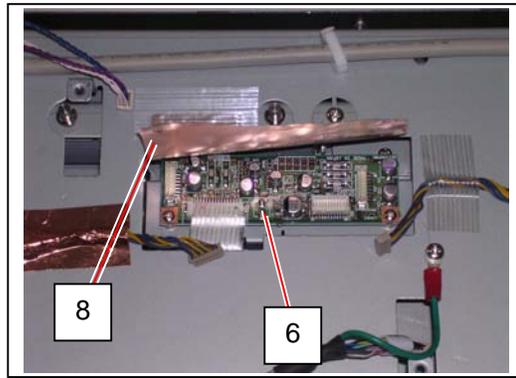
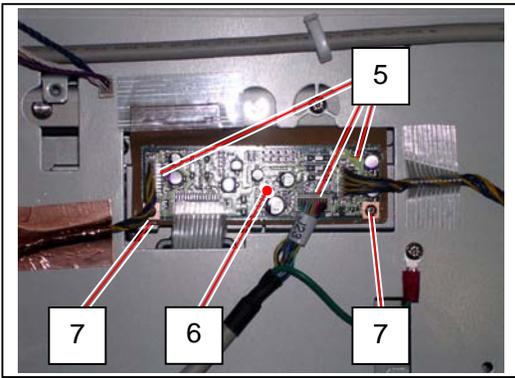
2. Remove all the connectors (2) from SVC Main BD K (3).



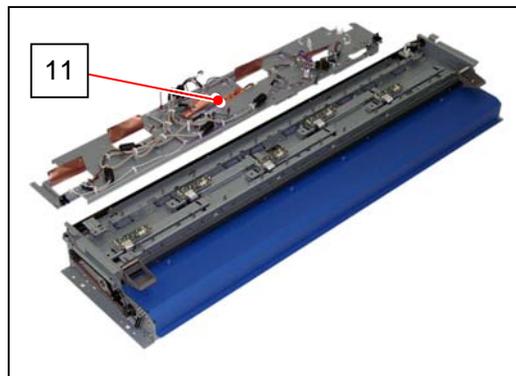
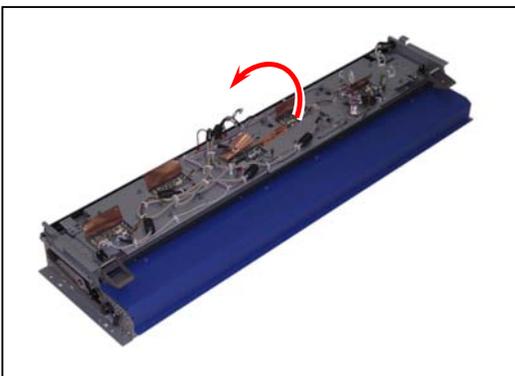
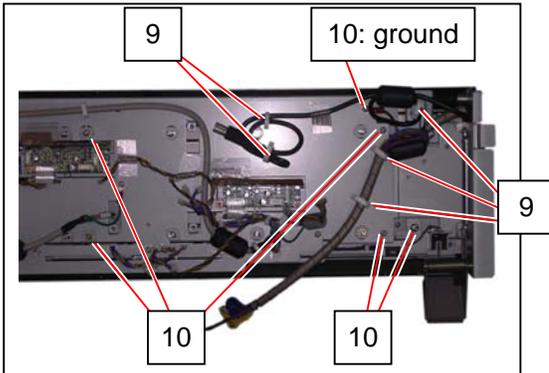
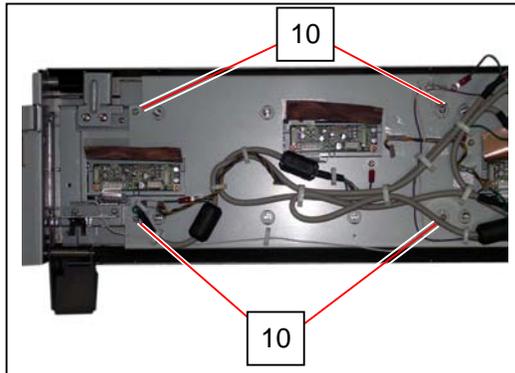
3. Remove 6 screws (4). Remove SVC Main BD K (3).



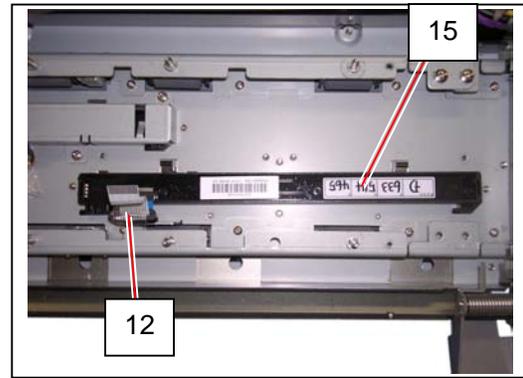
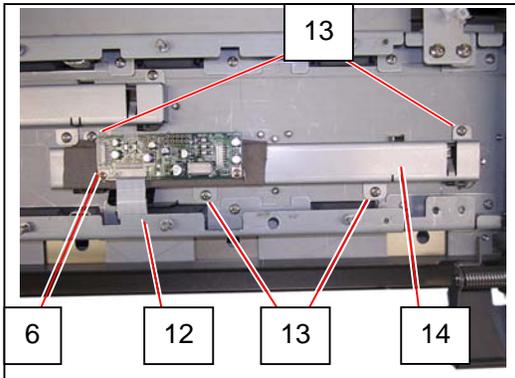
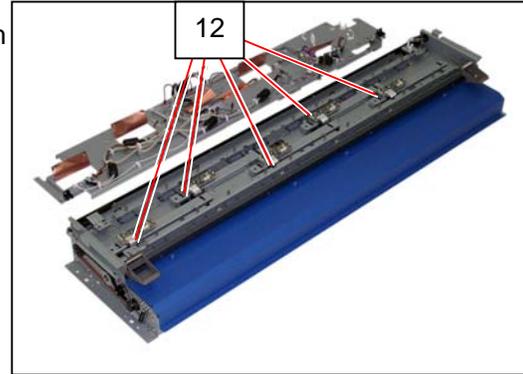
4. Remove the harnesses (5) from each SVC CIS BD (6).
Remove 2 screws (7) to release SVC CIS BD (6) and flip the shield sheet (8) over SVC CIS BD.



5. Open the wire saddles (9). Remove 10 screws (10) to remove Base Plate (11).

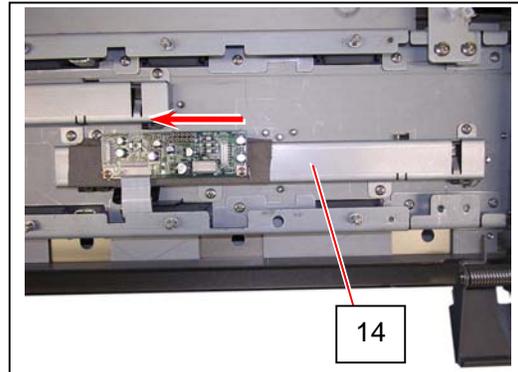


6. Remove the flexible cable (12) from SVC CIS BD (6). Remove 4 screws (13) to remove CIS Bracket (14). Remove the other end of the flexible cable (12) from CIS (15). Replace **CIS** (15) with a new one.



NOTE

- (1) Insert both ends of the flexible cable (12) fully to the terminal of SVC CIS BD and CIS when reassembling. If not connected firmly, the scan image may go wrong. (But be sure to handle it with great care as it is easily broken.)
- (2) When reassembling, fix CIS Bracket (14) with pushing to the left. Otherwise a correct CIS position may lose.



7. Replace all the parts in position.
8. Install Scanner Unit to the machine. Connect the USB cable of Scanner Unit to your PC.
9. Perform Shading, Position adjustments.

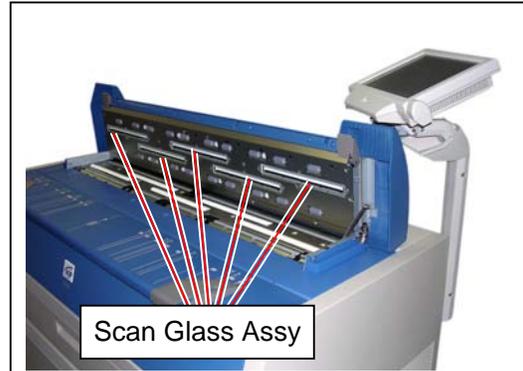
NOTE

Replacement of CIS requires Shading, Position adjustments. Refer to [8. 12 KIP Scanner Utility] on page 8-184 for adjustment.

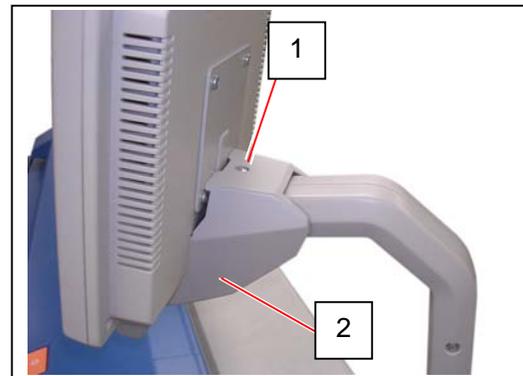
5. 12. 8 Replacement of Scan Glass Assy

Reference

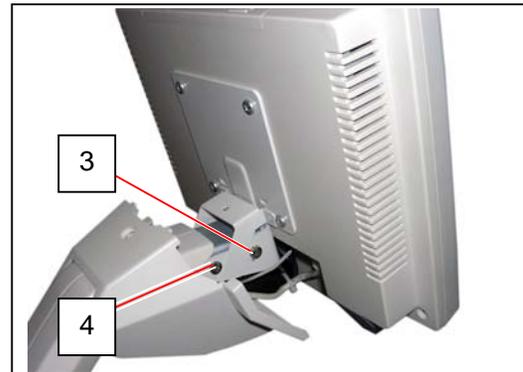
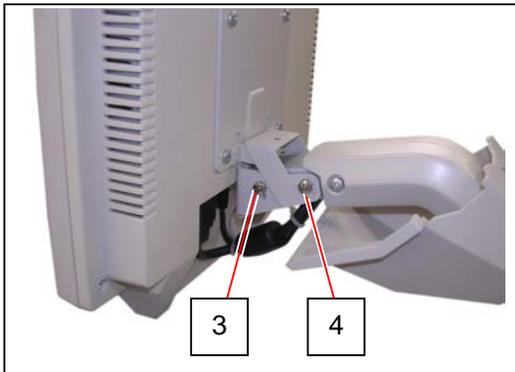
Scan Glass Assy can be removed without dismounting Scanner Unit.



1. Remove 1 screw (1) on top of Cover (2) and put it aside.



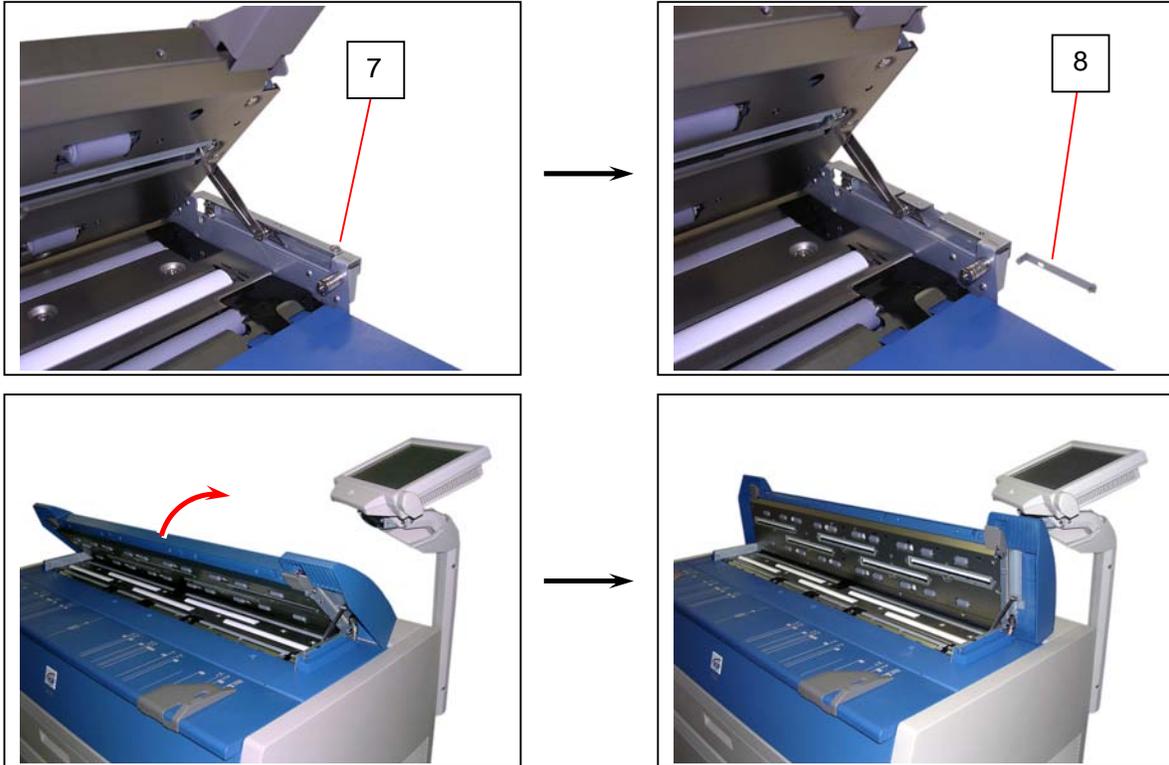
2. Remove 2 screws (3) and loosen 2 screws (4) to release Monitor Assy (5). Lean Monitor Assy (5) back.



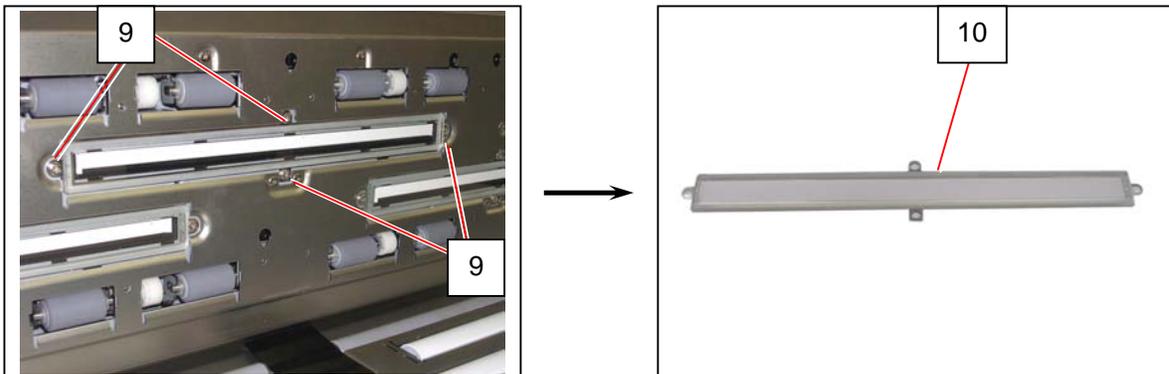
3. Pull up the Levers (6) and open Upper Unit.



4. Remove 1 screw (7) to remove Stay (8) Open Upper Unit fully.



5. Remove 4 screws (9) to remove Scan Glass Assy (10).
Replace **Scan Glass Assy** with a new one.



Chapter 6

Maintenance

6.1	Recommended Periodic Replacement Parts	page 6- 2
6.2	Maintenance Period	6- 3
6.2.1	Cleaning	6- 3
6.2.2	Lubrication	6- 4
6.2.2.1	Driving Gears on Machine Frame	6- 4
6.2.2.2	Developer Unit	6- 5
6.2.2.3	Terminal Plates on Machine Frame	6- 5
6.3	Service Kit	6- 6
6.4	Service Tool List	6- 7

KIP 3100 - PM Schedule

r2

-Please keep this form with the KIP 3100 ; Please perform PMs as scheduled

-As the PM comes due and items replaced or cleaned, please denote with an "X" in the Confirmation box. Please note nomenclature below.

Part / Description	Qty	Part Number	Square Feet X 1000																				
			Code	50	Complete	100	Complete	150	Complete	200	Complete	250	Complete	300	Complete	350	Complete	400	Complete	450	Complete	500	Complete
Document Glass (scanner)			#	C		C		C		C		C		C		C		C		C		C	
Document Rollers (scanner)			#			C				C				C				C				C	
Photoreceptor	1	SUP3000-101														R							
Main Charge Wire	1	SUP9810-104	#	C		C		C		R		C		C		C		R		C		C	
Transfer Wire	1	SUP3820-106	#	C		C		C		R		C		C		C		R		C		C	
Separation Wire	1	SUP3820-106	#	C		C		C		R		C		C		C		R		C		C	
Grid Screen			#			C				C				C				C				C	
LED Head			#	C		C		C		C		C		C		C		C		C		C	
Developer Space Discs			#			C				C				C				C				C	
Lube Gears						L				L				L				L				L	
Developer Roller - Kit	1	Z160980020								R								R					
Roll Compartment & Interior			@	C		C		C		C		C		C		C		C		C		C	
Knife			@							C								C					
Filters - Kit	1	Z160980220	@	C		C		C		C		C		C		R		C		C		C	
Fuser - Kit	1	Z160980040														R							
Lube Gears						L				L				L				L				L	
Fuser Fingers				C		C		C		C		C		C		C		C		C		C	
Pressure Roller										C								C					
Thermostat										C								C					
Thermistor										C								C					
Exterior Covers / GUI			#	C		C		C		C		C		C		C		C		C		C	

= Clean with glass cleaner and wipe dry

@ = Clean with vacuum

C = Clean

I = Inspect

R = Replace

A = Adjust position

L = Lubricate

Subject to change without notice

Actual intervals may vary due to customer requirements / installation location

KIP 3100 - PM Schedule

r2

-Please keep this form with the KIP 3100 ; Please perform PMs as scheduled

-As the PM comes due and items replaced or cleaned, please denote with an "X" in the Confirmation box. Please note nomenclature below.

Part / Description	Qty	Part Number	Square Feet X 1000																				
			Code	550	Complete	600	Complete	650	Complete	700	Complete	750	Complete	800	Complete	850	Complete	900	Complete	950	Complete	1000	Complete
Document Glass (scanner)			#	C		C		C		C		C		C		C		C		C		C	
Document Rollers (scanner)			#			C				C				C				C				C	
Photoreceptor	1	SUP3000-101								R													
Main Charge Wire	1	SUP9810-104	#	C		R		C		C		C		R		C		C		C		C	
Transfer Wire	1	SUP3820-106	#	C		R		C		C		C		R		C		C		C		C	
Separation Wire	1	SUP3820-106	#	C		R		C		C		C		R		C		C		C		C	
Grid Screen			#			C								C				C				C	
LED Head			#	C		C		C		C		C		C		C		C		C		C	
Developer Space Discs			#			C								C				C				C	
Lube Gears						L				L				L				L				L	
Developer Roller - Kit	1	Z160980020				R								R								R	
Roll Compartment & Interior			@	C		C		C		C		C		C		C		C		C		C	
Knife			@			C								C								C	
Filter - Kit	1	Z160980220	@	C		C		C		R		C		C		C		C		C		C	
Fuser - Kit	1	Z160980040								R													
Lube Gears						L				L				L				L				L	
Fuser Fingers				C		C		C		C		C		C		C		C		C		C	
Pressure Roller						C								C								C	
Thermostat						C								C								C	
Thermistor						C								C								C	
Exterior Covers / GUI			#	C		C		C		C		C		C		C		C		C		C	

= Clean with glass cleaner and wipe dry
 @ = Clean with vacuum

C = Clean
 I = Inspect

R = Replace
 A = Adjust position

L = Lubricate

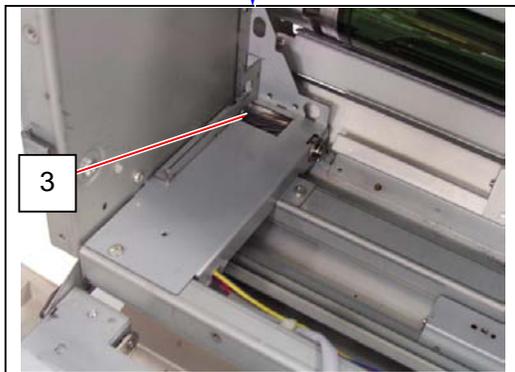
Subject to change without notice
 Actual intervals may vary due to customer requirements / installation location

6. 2. 2 Lubrication

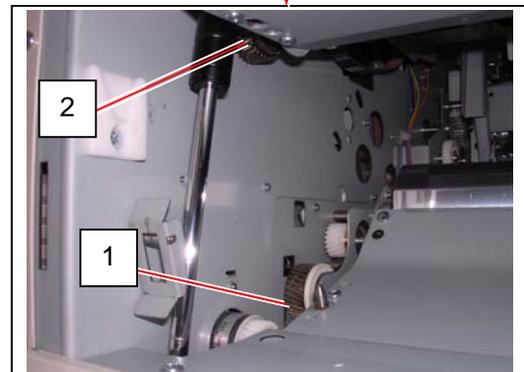
Please apply an adequate amount of grease to the components shown in the following section.
Recommended lubrication term is in every 18,000m.
Use silicone grease unless otherwise noted.

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).



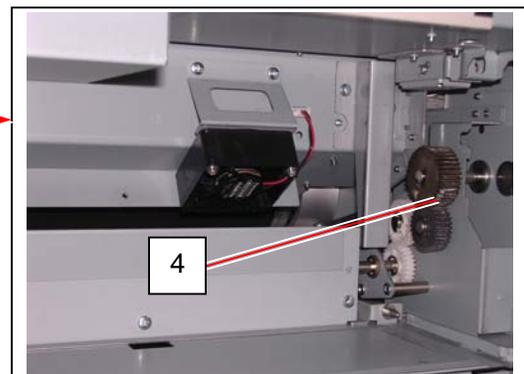
Engine Unit from top, Developer Unit removed



Engine Unit from bottom, Developer Unit removed



From rear, Fuser Unit removed

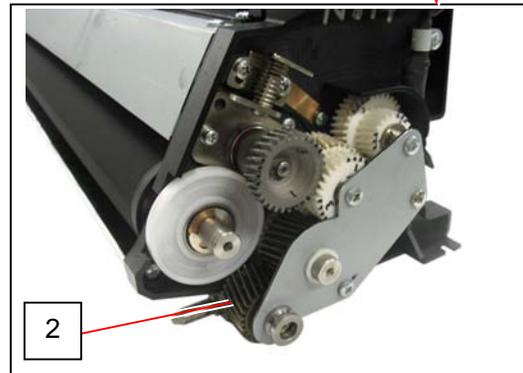
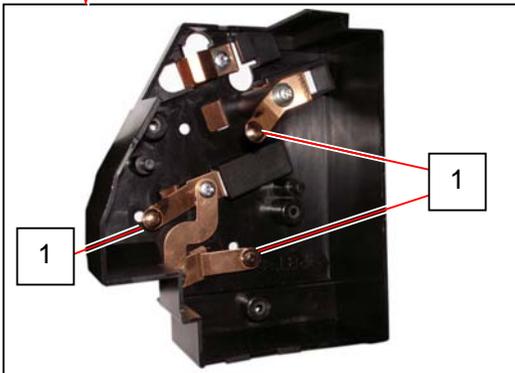
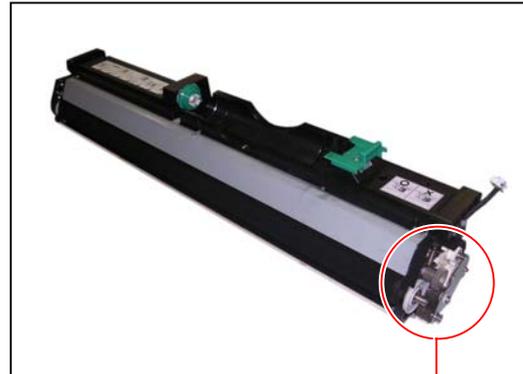


6. 2. 2. 2 Developer Unit

Remove Developer Unit.

Apply conductive grease to the contacting points for Developer/Blade/Toner Supply Rollers on the metal plates (1).

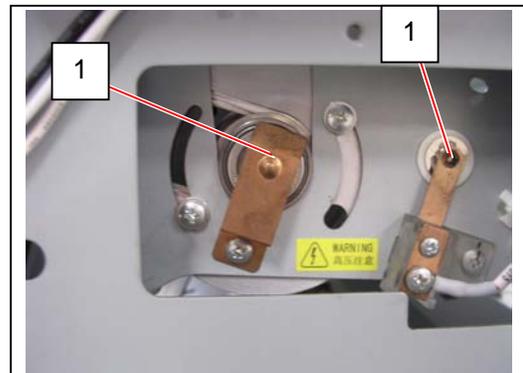
Apply grease to Gear Helical 28T (2).



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).



KIP 3100

Preventative Maintenance Procedure

- every 50,000 square feet -

Step #1 - Prepare Machine.

- Ask User on Printer Performance / Image Quality
- Run Test Print
- Locate the "KIP 3100 PM Schedule" Form
And check as each item completed.

Replace noted items as this procedure progresses.

- Remove Drum (into Box)
- Remove side and top covers.

Step #2 - Corona Units

- Clean Grid Screen (Simple Green, then rinse with water) let dry on paper towel.
- Clean 1st Charge wires and case (Glass cleaner)
- Clean transfer / separation wires and case. (Glass cleaner)

Step #3 - LED Print Head.

- Clean Selfoc lens. (Glass cleaner.)

Step #4 - Clean Interior of Printer.

- Separation fans / air guides.
- Transport belts.
- Transfer guide plates etc.

Step #5 - Development Unit.

- Clean spacing rollers.
- Vacuum any toner dust from ends of developer unit.
- Vacuum around toner hopper inlet.
- Clean / lube gears (only as needed with G501 grease / Lithium grease. - see Chapter 6 in Service Manual)

Step #6 - Paper Decks.

- Vacuum paper dust.
- Inspect media spools.

Step #7 - Air Flow.

- Vacuum Ozone Filters.
- Confirm all fans and blowers are clean.

Step #8 - Fuser Section.

- Clean upper Nails.
- Clean lower Nails.
- Clean and lube gears. (as needed with High temp. grease - see Chapter 6 in Service Manual)

Step #9 - Cutter Assembly.

- Clean paper dust.

Step #10 Run test pattern #1 and #3 and verify print quality. (save prints)

Step #11 Scanner

- Remove all glass and clean both sides.
- Clean original rollers

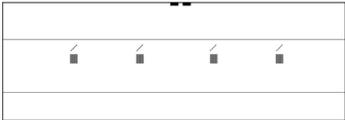
Step #12 Clean Panels and Covers.

Step #13 Make copies / prints

Step #14 Speak with key operator on your evaluation / status.

6.4 Service Tool List

Here is the table to list special tools for field service.
It is recommended to check them through in Parts Manual and Publication Bulletin for the latest information.

Part Name (Part Number)	Appearance / Usage Requirement	Related Section
DEV HANDLE ASSY (Developer Handle) (Z050320050)		2.5 Setup of Machine 5.2.2 Replacement of Recommended Replacement Parts 5.2.3 Replacement of Toner Supply Roller 5.2.8 Readjustment of the pressure of Regulation Roller
DRUM BLOCK FIX TOOL (Z168580040)		5.5.2 How to fix the Aluminum Blocks 5.5.3 Cleaning of Photoconductive Drum 5.6.2 LED focus adjustment
SPACER SET (LED focus) t0.1mm t0.08mm t0.05mm (Z160980210)		5.6.2 LED focus adjustment
SHADING SHEET (mono/color calibration) (Z168300570)		2.8 Initializing Scanner Unit 8.12.4.1 Shading (Calibration)
SCANNER ADJUSTMENT CHART (Feed Distance) (Z058501590)		8.12.4.2 Feed Distance (1:1)
STITCH ADJUSTMENT CHART (Position) (Z168300580)		8.12.4.3 Position (Stitching)
Scanner Utility Version 1.13 or later (Scanner adjustment)	Windows 2000/XP w/ scanner unit USB driver (Version 1.12 or later)	8.12.4.1 Shading (Calibration) 8.12.4.2 Feed Distance (1:1) 8.12.4.3 Position (Stitching) 8.12.5 Scanner Firmware Update
Flash Writing Tool Version 2.13 or later (Engine firmware update)	Windows 2000/XP	8.13 Firmware Update (PW11620)

Chapter 7

Troubleshooting

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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? (Refer to the page 8-9 as for the Signal Status Mode.)	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”? (Refer to the page 8-16 as for the Device Operation Mode.)	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? (Refer to the page 8-9 as for the Signal Status Mode.)	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”? (Refer to the page 8-16 as for the Device Operation Mode.)	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? (Refer to the page 8-9 as for the Signal Status Mode.)	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? (Refer to the page 8-9 as for the Signal Status Mode.)	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? (Refer to the page 8-16 as for the Device Operation Mode.)	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? (Refer to the page 8-9 as for the Signal Status Mode.)	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? (Refer to the page 8-16 as for the Device Operation Mode.)	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? (Refer to the page 8-9 as for the Signal Status Mode.)	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? (Refer to the page 8-9 as for the Signal Status Mode.)	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 rewind after printing. J-1100 will be indicated if you open the deck at that time.)	Yes	Wait until the roll paper is completely rewind.
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? (Refer to the page 8-9 as for the Signal Status Mode.)	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? (Refer to the page 8-9 as for the Signal Status Mode.)	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? (Refer to the page 8-16 as for the Device Operation Mode.)	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? (Refer to the page 8-9 as for the Signal Status Mode.)	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? (Refer to the page 8-9 as for the Signal Status Mode.)	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? (Refer to the page 8-16 as for the Device Operation Mode.)	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? (Refer to the page 8-152 as for Factory Adjustment Mode.)	No	1. Check if there is any problem with the wires among Toner Supply Motor, Driver PCB B and PW11620 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	<p>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.</p> <p>I/O Signal Code : 107 (Toner Sensor)</p> <p>Is the status "H" when the Toner Sensor is covered with the toner? And is it "L" when the sensor is not covered?</p> <p>(Refer to the page 8-9 as for the Signal Status Mode.)</p>	No	Replace the Toner Sensor.
			Yes	Replace the PW11620 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	<p>Check the status of the following signal in the Signal Status Mode of the Service Mode.</p> <p>Signal Code : 009 (Roll Deck Open)</p> <p>Is the status "L" when the Roll Deck is closed? And is it "H" when the Roll Deck is opened?</p> <p>(Refer to the page 8-9 as for the Signal Status Mode.)</p>	No	<p>1. Check if there is any problem with the wire connected to the Switch (MS5).</p> <p>2. Replace the Switch (MS5) if there is no problem with the wire.</p>
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	<p>Check the status of the following signal in the Signal Status Mode of the Service Mode.</p> <p>Signal Code : 109 (Feed Encoder)</p> <p>Is the status changed "H" and "L" alternately when rotating the encoder by hand?</p>	No	<p>1. Check if there is any problem with the wire connected to the Sensor (PH12).</p> <p>2. Replace the Sensor (PH12) if there is no problem with the wire.</p>
	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	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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 Error	<ol style="list-style-type: none"> 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? (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.
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? (Refer to the page 8-12 as for the Information Mode.)	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? (Refer to the page 8-16 as for the Device Operation Mode.)	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? Refer to the page 8-16 as for the Device Operation Mode.) CAUTION Change the signal of "21" (Fuser Lamp 1) to "L" after checking!	Yes	Replace the Solid State Relay
			No	Replace the PW11620 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? (Refer to the page 8-12 as for the Information Mode.)	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? (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.
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? (Refer to the page 8-12 as for the Information Mode.)	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 PW11620 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? (Refer to the page 8-16 as for the Device Operation Mode.)	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 PW11620 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.	Yes	Replace the Fuse.
		Is any Fuse broken?		
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? (Refer to the page 8-16 as for the Device Operation Mode.)	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), PW11620 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? (Refer to the page 8-9 as for the Signal Status Mode.)	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)

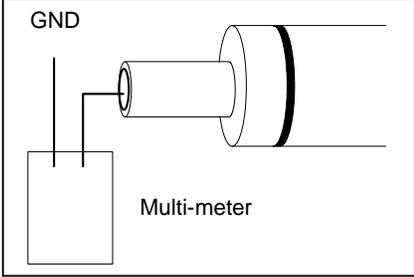
Cause	Checking order	Checking	Result	Treatment
Wires	1	Is the wire between Counter and PW11620 PCB connected properly?	No	Connect it properly.
DC Power Supply (DCP1) or Fuse	2	Confirm that the machine is turned on, and then check the voltage of the orange line (J220-5). Is it 24V?	No	Replace the DC Power 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? (Refer to the page 8-16 as for the Device Operation Mode.)	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 PW11620 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 PW11620 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 PW11620 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? (Refer to the page 8-9 as for the Signal Status Mode.)	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? (Refer to the page 8-16 as for the Device Operation Mode.)	No	Replace the Cutter Unit.

7. 1. 2. 11 FPGA Error (E-050)

Cause	Checking order	Checking	Result	Treatment
PW11620 PCB	1	Can you fix the problem if you replace the PW11620 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 PW11620 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 PW11620 PCB connected properly?	No	Connect it properly.
Density Sensor (PH11)	2	Can you fix the problem if you replace Density Sensor?	No	Replace PW11620 with a new one.

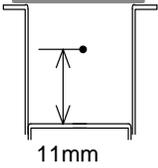
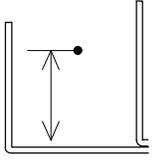
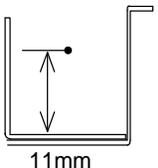
7. 1. 2. 14 Density Sensor Output Error (E-081)

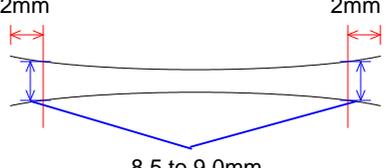
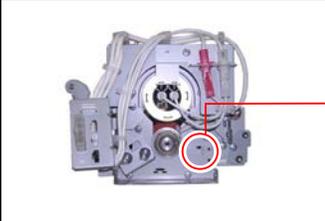
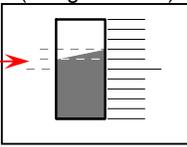
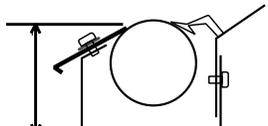
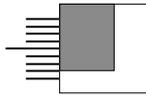
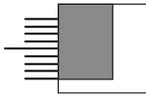
Cause	Checking order	Checking	Result	Treatment
Wires	1	Is the wire between Toner Density Sensor and PW11620 PCB connected properly?	No	Connect it properly.
Density Sensor (PH11)	2	Can you fix the problem if you replace Density Sensor?	No	Replace PW11620 with a new one.

7.2 Troubleshooting - Image Quality

7.2.1 Basic Image Adjustment

The followings are the settings specified to the image creation components.
When a defective image is printed out, please check whether or not these settings are satisfied for the beginning.

Component	Check Point (PW11620)	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	VR201 Service Mode 04-029 (Plain) 04-030 (Tracing) 04-031 (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	Service Mode 04-022 (Plain) 04-023 (Tracing) 04-024 (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	Service Mode 04-622	
Positive Cleaning Roller Bias	OUTPUT5 (+) Ground (-)	+450 +/-5VDC	VR001	
Negative Cleaning Roller Bias	OUTPUT5 (+) Ground (-)	-550 +/-5VDC	VR002	

<p>NIP Width Test Patter No.2 S(0) with a tracing paper (36" or A0)</p>  <p>2mm 2mm</p> <p>8.5 to 9.0mm</p>	 <p>(tilting +1 to +2)</p> 
<p>Entrance Guide Plate Height</p> <p>From the frame bottom surface,</p> <p>Side : 70.7 to 71.3mm</p> <p>Middle : 73.7 to 74.3mm (US)</p> <p> : 74.5 to 75.1mm (EU)</p> 	<p>(to both adjusters)</p> <p>US: 3 </p> <p>EU: 4 </p>

7. 2. 2 Countermeasures - Image Quality

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] on the page 7-20. Is the problem fixed?	Yes	OK
LED Head	2	Is the Lens Array of LED Head dirty?	Yes	Clean it.
Paper	3	Can you fix the problem if you use a newly unpacked paper?	Yes	1. If the paper was humidified, instruct the customer of the way store the paper. 2. If the paper was not the specified one, explain the customer that some image problem may occur in that case.
Image Corona	4	Is the Image Corona dirty?	Yes	Clean each Corona Wire, Grid Plate and housing, or replace the Corona Wire if it is too dirty.
		Is the input voltage to the Image Corona correct?	No	Readjust the input voltage making reference to [4. 3. 2 Check & Adjustment of Analog Voltage to the Image Corona] on the page 4-31. Or replace the HV Power Supply PCB.
Eraser Lamp	5	Does the Eraser Lamp light properly?	No	1. Check the wire connected to the Eraser Lamp. 2. Check or replace the Eraser Lamp.
Separation Lamp	6	Does the Separation Lamp light properly?	No	1. Check the wire connected to the Separation Lamp. 2. Check or replace the Separation Lamp.
Transfer Corona	7	Is the Transfer / Separation Corona dirty?	Yes	Clean each Corona Wire and housing, or replace the Corona Wire if it is too dirty.
		Is the input voltage to the Transfer Corona correct?	No	Readjust the input voltage making reference to [4. 3. 3 Check & Adjustment of Analog Voltage to the Transfer Corona] on the page 4-33. 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] on the page 7-20. 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	<ol style="list-style-type: none"> 1. If the paper was humidified, instruct the customer of the way store the paper. 2. If the paper was not the specified one, explain the customer that some image problem may occur in that case.
Lead Wire	5	Is the resistance of Lead Wire about 10 kilo ohm, which connects the HV Power Supply and the Transfer Corona?	No	Replace the Lead Wire.
Input voltage to the Transfer Corona	6	Is a correct voltage supplied from the HV Power Supply to the Transfer Corona?	No	Readjust the input voltage making reference to [4. 3. 3 Check & Adjustment of Analog Voltage to the Transfer Corona] on the page 4-33. 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	<ol style="list-style-type: none"> 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] on the page 7-20. 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 Check & Adjustment of Analog Voltage to the Transfer Corona] on the page 4-33. 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 PW11620 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] on the page 7-20. 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. 2 Cleaning of Photoconductive Drum]. Replace the Drum if it is damaged. Be sure to find the cause of the damage.

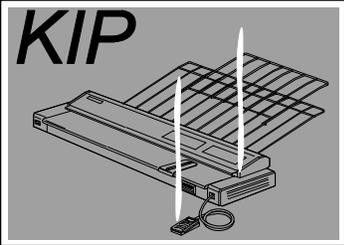
7. 2. 2. 8 White line (Vertical)

Check the following matters with the 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. 2 Cleaning of Photoconductive Drum]. Replace the Drum if it is damaged. Be sure to find the cause of the damage.

7. 2. 2. 9 Void of image

Check the following matters with the 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. 2 Cleaning of Photoconductive Drum]. Replace Drum if damaged. Be sure to find the cause of the damage.

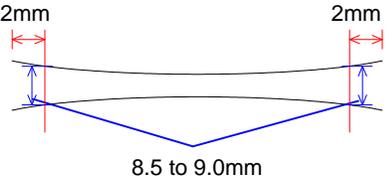
7. 2. 2.10 Dirt on the back of the print

Check the following matters with the 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] on the page 7-20. 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	<ol style="list-style-type: none"> 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	<p>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.)</p> 	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.

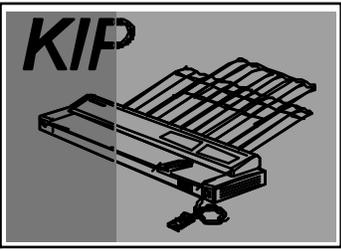
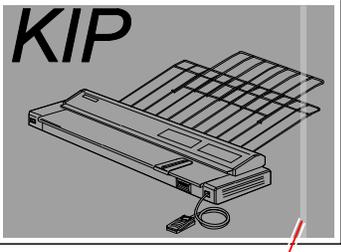
7. 2. 2.14 Image looks not sharp

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.	No	Replace the LED Head.
		Is there any toner image on the Drum?		
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
PW11620 PCB	8	Can you fix the problem if you replace the PW11620 PCB?	Yes	OK

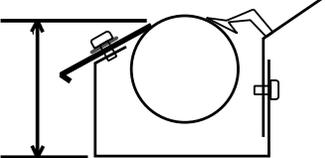
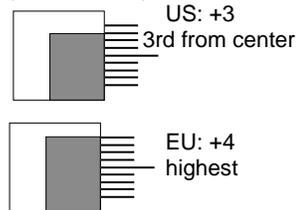
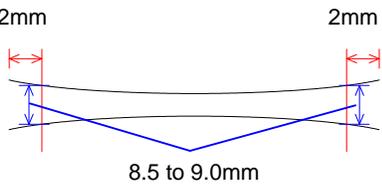
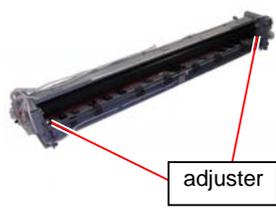
7. 2. 2.17 Completely black

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.
PW11620 PCB	2	Can you fix the problem if you replace the PW11620 PCB?	Yes	OK

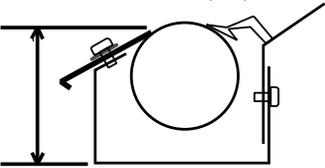
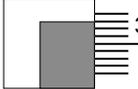
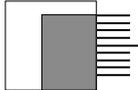
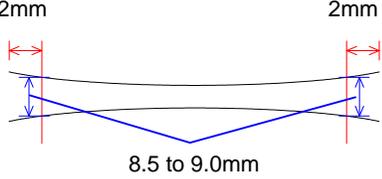
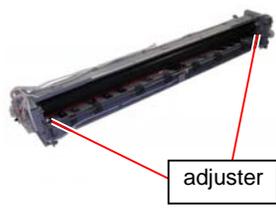
7. 2. 2.18 Crease of paper

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.) 	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	<ol style="list-style-type: none"> If the paper was humidified, instruct the customer of the way store the paper. 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  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.) 	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 (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] on Service Manual 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 No	OK 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. <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>4th Speed</th> <th>Plain</th> <th>Tracing</th> </tr> </thead> <tbody> <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> </tbody> </table> Does this fix image void problem?	4th Speed	Plain	Tracing	A3 /12"/11"	678	---	A2 /18"/17"	690	---	A1 /24"/22"	702	---	30"	726	728	A0 /36"/34"	714	716	Yes	OK
	4th Speed	Plain	Tracing																			
A3 /12"/11"	678	---																				
A2 /18"/17"	690	---																				
A1 /24"/22"	702	---																				
30"	726	728																				
A0 /36"/34"	714	716																				
6	Decrease the 4th Speed in another 1 (slower). Does this fix image void problem?	Yes	OK																			

Fuser Motor 4th Speed (cont.)	7	Decrease the 4th Speed in another 1 (slower). Does this fix image void problem?	No	Increase the 4th Speed in 3 to restore the original setting. Go to step 8.																		
Fuser Motor 3rd Speed	8	Decrease Fuser Motor 3rd Speed that corresponds to the media width/type in 1 (for slower speed) on Adjustment Mode. <table border="1"> <thead> <tr> <th>3rd Speed</th> <th>Plain</th> <th>Tracing</th> </tr> </thead> <tbody> <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> </tbody> </table> Does this fix image void problem?	3rd Speed	Plain	Tracing	A3 /12"/11"	074	080	A2 /18"/17"	110	116	A1 /24"/22"	146	152	30"	440	446	A0 /36"/34"	182	188	Yes	OK
			3rd Speed	Plain	Tracing																	
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A2 /18"/17"	110	116																				
A1 /24"/22"	146	152																				
30"	440	446																				
A0 /36"/34"	182	188																				
			No	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.																		
Fuser Motor 3rd Speed print pulled too fast before 2x standard	9	Decrease Fuser Motor 3rd Speed that corresponds to the media width/type in 1 (for slower speed) on Adjustment Mode. <table border="1"> <thead> <tr> <th>3rd Speed</th> <th>Plain</th> <th>Tracing</th> </tr> </thead> <tbody> <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> </tbody> </table> Does this fix image void problem?	3rd Speed	Plain	Tracing	A3 /12"/11"	074	080	A2 /18"/17"	110	116	A1 /24"/22"	146	152	30"	440	446	A0 /36"/34"	182	188	No	Decrease the 3rd Speed in another 1 (slower) until image void disappears.
3rd Speed	Plain	Tracing																				
A3 /12"/11"	074	080																				
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A1 /24"/22"	146	152																				
30"	440	446																				
A0 /36"/34"	182	188																				

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).

Cause	Checking order	Checking	Result	Treatment																		
Except feeding	1	Is everything on [7.2.2.18 Crease of paper] on Service Manual clear?	No	Refer to [7.2.2.18 Crease of paper] and check all the points.																		
	2	If image void appears at a time, is everything on [7.2.2.9 Void of Image] on Service Manual clear?	No	Refer to [7.2.2.9 Void of Image] and check all the points.																		
Cause analysis with image void location	3	Does a crease appear before 2x standard length?	Yes	Before 2x standard; Go to step 4.																		
			No	After 2x standard; Go to step 7.																		
Fuser Motor 3rd Speed slack appears before 2x standard	4	Increase Fuser Motor 3rd Speed that corresponds to the media width/type in 1 (for faster speed) on Adjustment Mode. <table border="1"> <thead> <tr> <th>3rd Speed</th> <th>Plain</th> <th>Tracing</th> </tr> </thead> <tbody> <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> </tbody> </table> Does this fix crease problem?	3rd Speed	Plain	Tracing	A3 /12"/11"	074	080	A2 /18"/17"	110	116	A1 /24"/22"	146	152	30"	440	446	A0 /36"/34"	182	188	No	Increase the 3rd Speed in another 1 (faster) until creases disappear. Go to step 5.
3rd Speed	Plain	Tracing																				
A3 /12"/11"	074	080																				
A2 /18"/17"	110	116																				
A1 /24"/22"	146	152																				
30"	440	446																				
A0 /36"/34"	182	188																				

Image Void Check	5	Is there any image void after 2x standard length? Note that step 4 would result in image void there.	Yes	Image void remains, or has just come after step 4; Go to step 6.																		
			No	OK																		
Fuser Motor 4th Speed print pulled too fast before 2x standard	6	Decrease Fuser Motor 4th Speed that corresponds to the media width/type in 1 (for slower speed) on Adjustment Mode. <table border="1"> <thead> <tr> <th>4th Speed</th> <th>Plain</th> <th>Tracing</th> </tr> </thead> <tbody> <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> </tbody> </table> Does this fix image void problem?	4th Speed	Plain	Tracing	A3 /12"/11"	678	---	A2 /18"/17"	690	---	A1 /24"/22"	702	---	30"	726	728	A0 /36"/34"	714	716	Yes	OK
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			No	Decrease the 4th Speed in another 1 (slower) until image void disappears.																		
Fuser Motor 3rd Speed	7	Increase Fuser Motor 3rd Speed that corresponds to the media width/type in 1 (for faster speed) on Adjustment Mode. <table border="1"> <thead> <tr> <th>3rd Speed</th> <th>Plain</th> <th>Tracing</th> </tr> </thead> <tbody> <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> </tbody> </table> Does this fix crease problem?	3rd Speed	Plain	Tracing	A3 /12"/11"	074	080	A2 /18"/17"	110	116	A1 /24"/22"	146	152	30"	440	446	A0 /36"/34"	182	188	Yes	Go to step 9.
	3rd Speed	Plain	Tracing																			
A3 /12"/11"	074	080																				
A2 /18"/17"	110	116																				
A1 /24"/22"	146	152																				
30"	440	446																				
A0 /36"/34"	182	188																				
	8	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?	Yes	Go to step 10.																		
			No	- no image void - no image void shift Go back to step 7.																		
	9	After crease disappears, is there any image void?	No	OK																		
Fuser Motor 4th Speed slack appears after 2x standard	10	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 border="1"> <thead> <tr> <th>4th Speed</th> <th>Plain</th> <th>Tracing</th> </tr> </thead> <tbody> <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> </tbody> </table> Does this fix image void / crease problem?	4th Speed	Plain	Tracing	A3 /12"/11"	678	---	A2 /18"/17"	690	---	A1 /24"/22"	702	---	30"	726	728	A0 /36"/34"	714	716	No	Increase the 4th Speed in another 1 (faster) until crease and image void disappear.
4th Speed	Plain	Tracing																				
A3 /12"/11"	678	---																				
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7.3 Troubleshooting - Scanner Defects

7.3.1 Countermeasures - Scanner operation

7.3.1.1 Original can not be set (Scanner does not transport)

Cause	Checking order	Checking	Result	Treatment
Sensor	1	Is the original detected? (Is it shown on the UI?)	No	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 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

7.3.1.3 Original can not be set (Original feeding does not stop)

Cause	Checking order	Checking	Result	Treatment
Sensor	1	Is any sensor broken?	Yes	Replace it.

7. 3. 1. 4 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. 5 Motor rotates endlessly at the time of turning on

Cause	Checking order	Checking	Result	Treatment
Foreign substance	1	Is there any foreign substance under the Upper Unit, which blocks the light of sensor?	Yes	Remove it.

7. 3. 1. 6 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 scanner (of KIP 3100) 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 [8.12.4.1 Shading].)	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 [8.12.4.1 Shading].)	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 [8.12.4.1 Shading].)	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 [8.12.4.3 Position].)	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 [8.12.4.3 Position].)	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 [8.12.4.1 Shading].)	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.

NOTE: Screenshot images shown with available options / may vary by system configuration

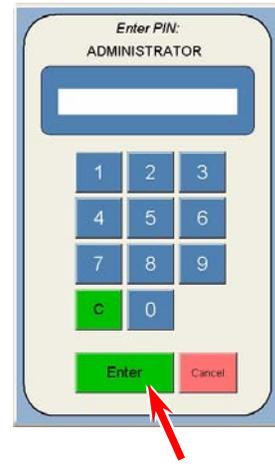
1. Press “? - Help” on Home screen.



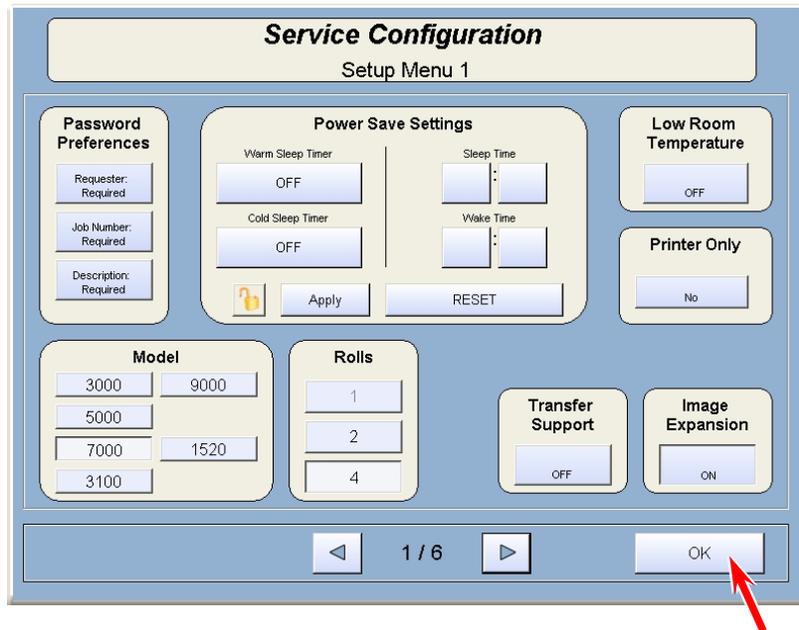
2. Press [Service].



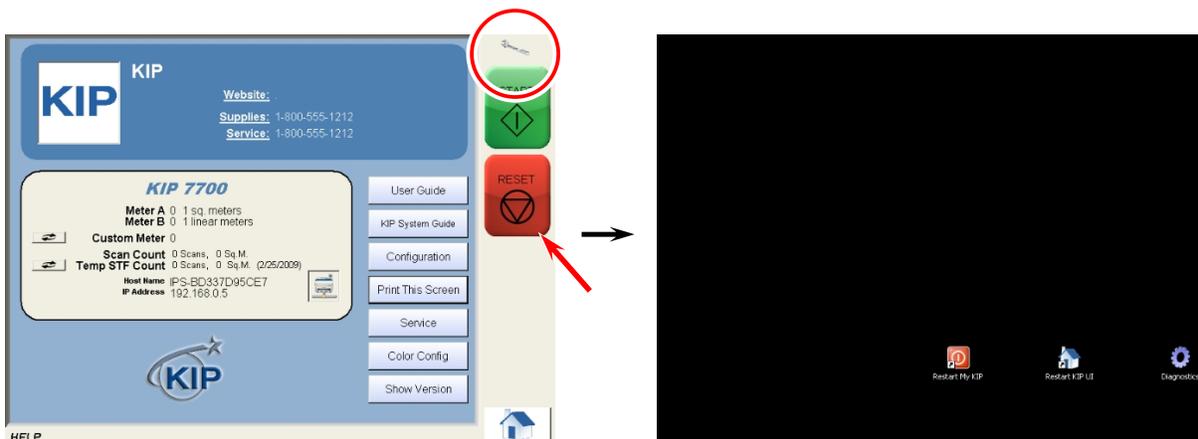
- On-screen Keypad appears.
Input "8495107" and press [Enter].



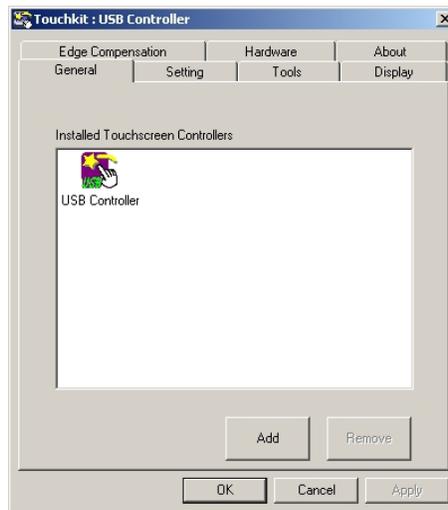
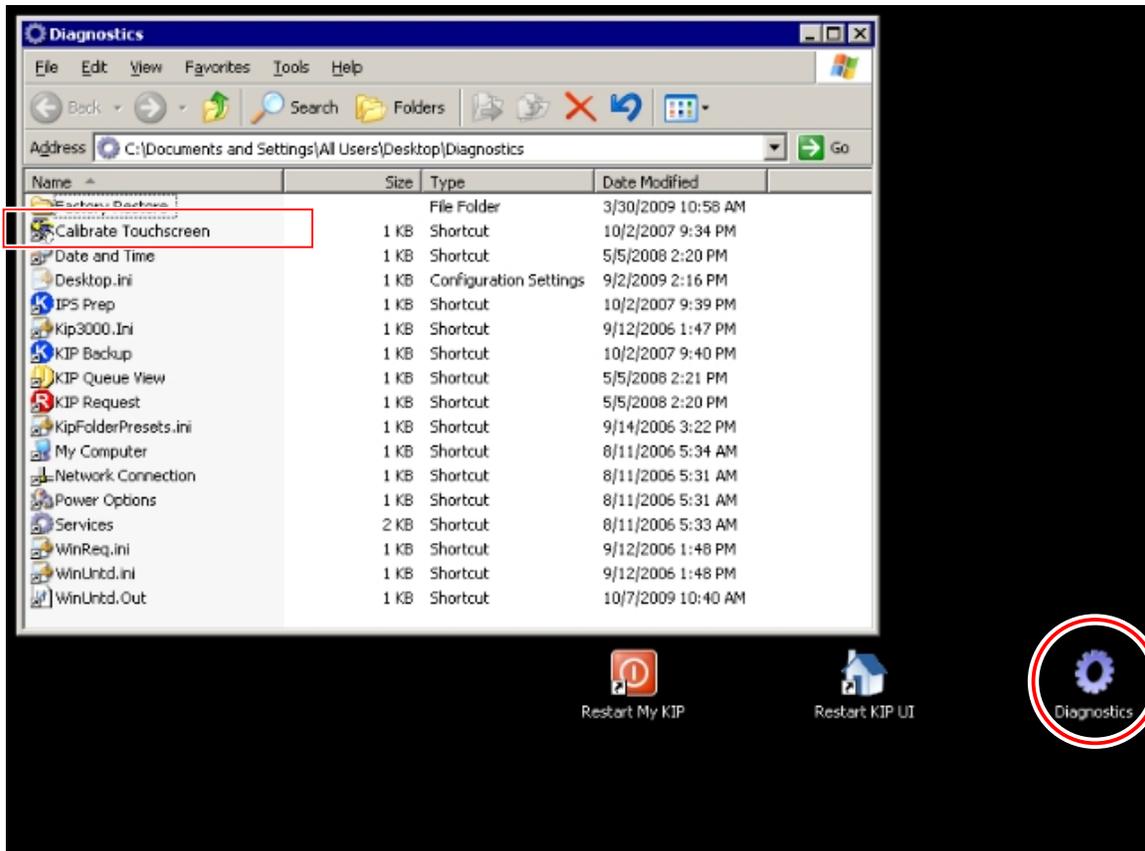
- Service Configuration screen is displayed. Press [OK].



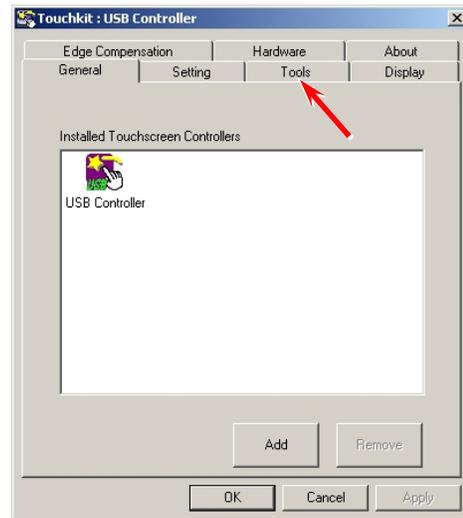
- Make sure that a wrench symbol is indicated at the upper right of the screen.
Press [Reset] to close UI operation window.



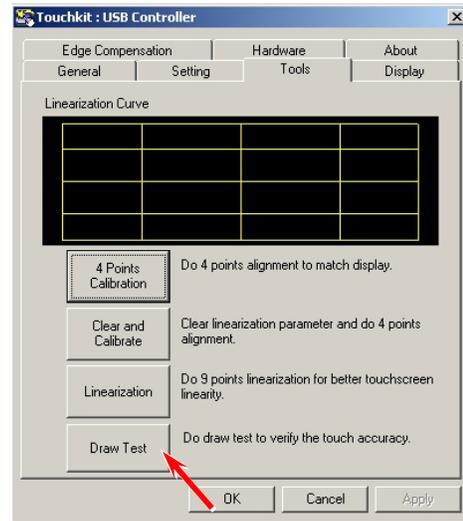
6. Tap Diagnostics folder twice as a double-click.
Run the shortcut "TouchScreen Configure Utility" for touch screen calibration.



7. Select [Tools] tab.

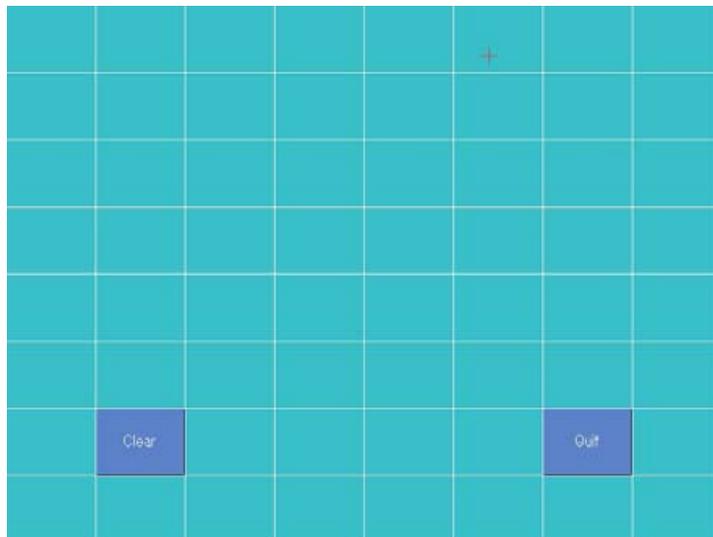


8. Press [Draw Test] to check that the touch screen correctly detects a tapped position.



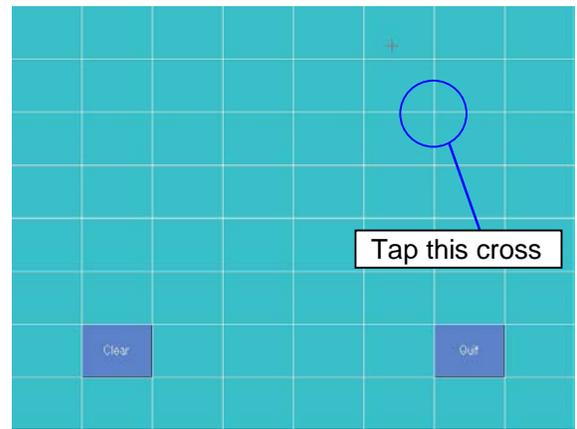
NOTE
Using a stylus is recommended for easy and accurate touch screen calibration.
Do not use any sharp instrument.

9. Test screen will appear.

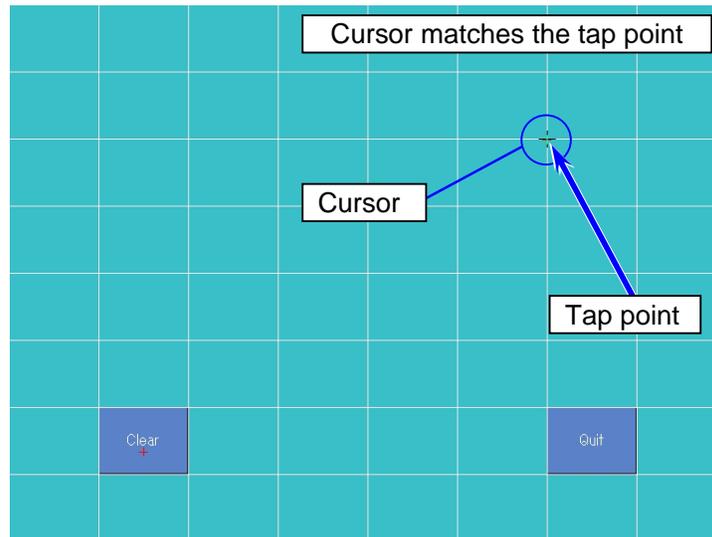


10. Tap a certain point and check the cursor appears directly underneath a stylus.

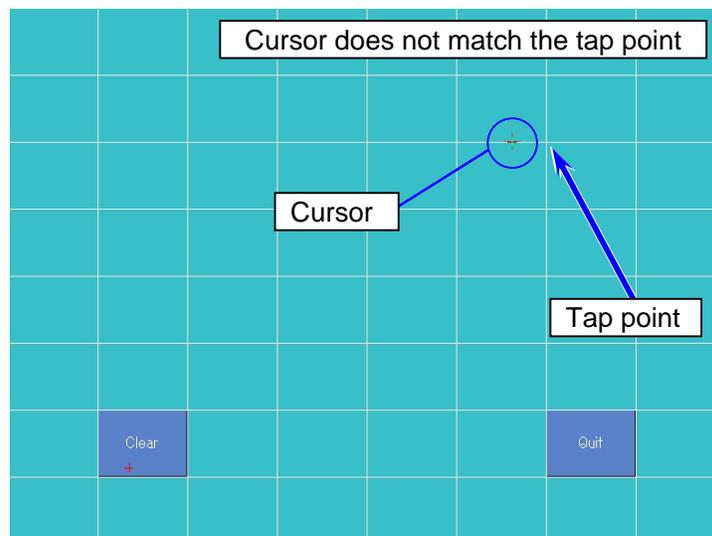
For example, suppose you tap the point shown in the next figure.



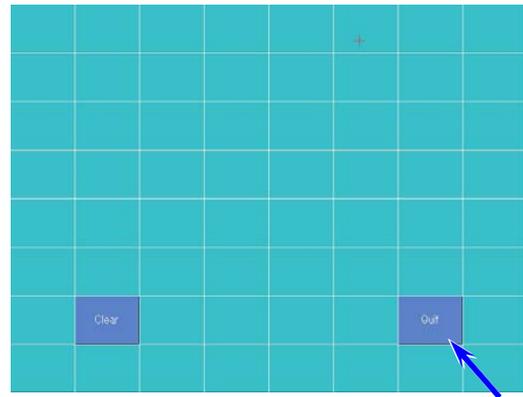
The cursor will appear just underneath the tapped point in a correct condition (calibration is not necessary).



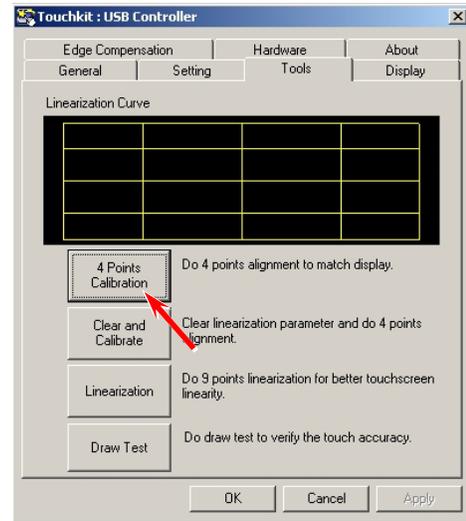
If the cursor appears an unintended position, the touch screen should be calibrated.



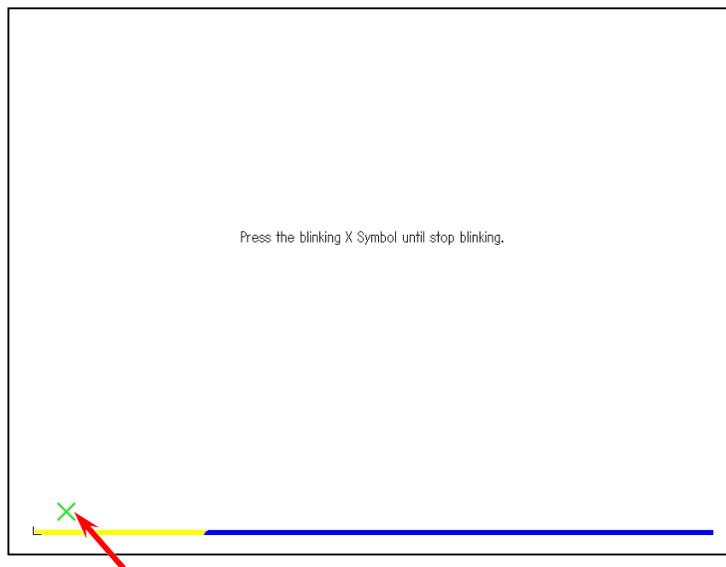
11. Tap [Quit] to close Test screen.



12. Press [4 Points Calibration].



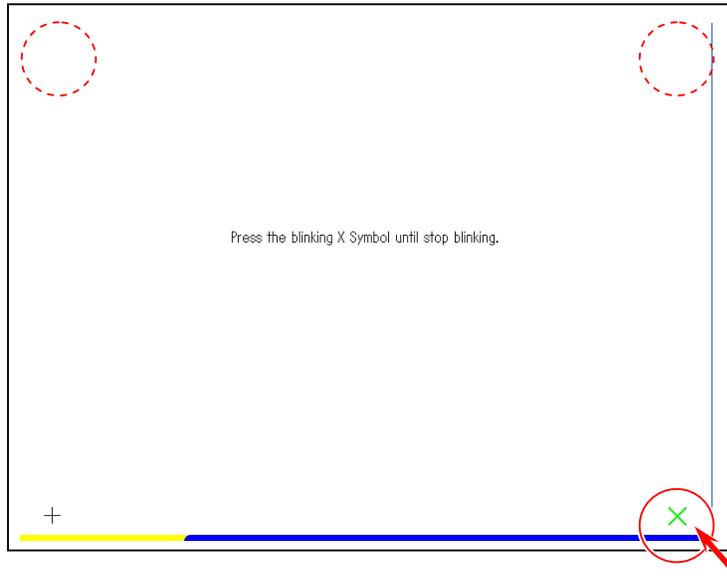
13. On Calibration screen, a blinking X symbol on the bottom left can be seen. Press the X until it stops blinking with a beep.



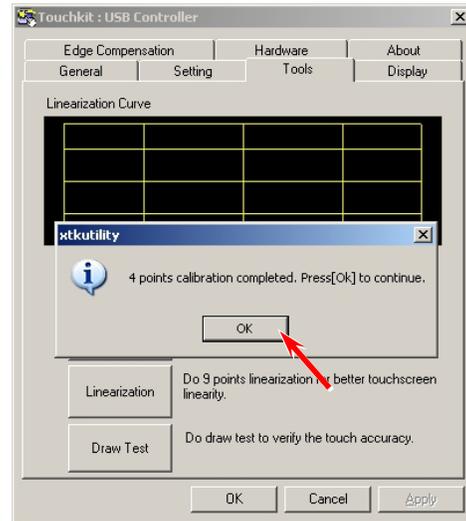
NOTE

Press the X symbol for several seconds before the progress bar at the bottom reaches the end.

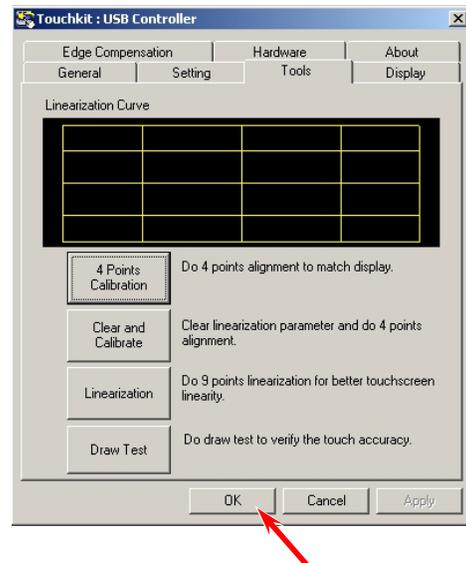
14. The X disappears and the next one will come in the following order:
 bottom right, top right, top left.
 Perform the same way for the other 3 points.



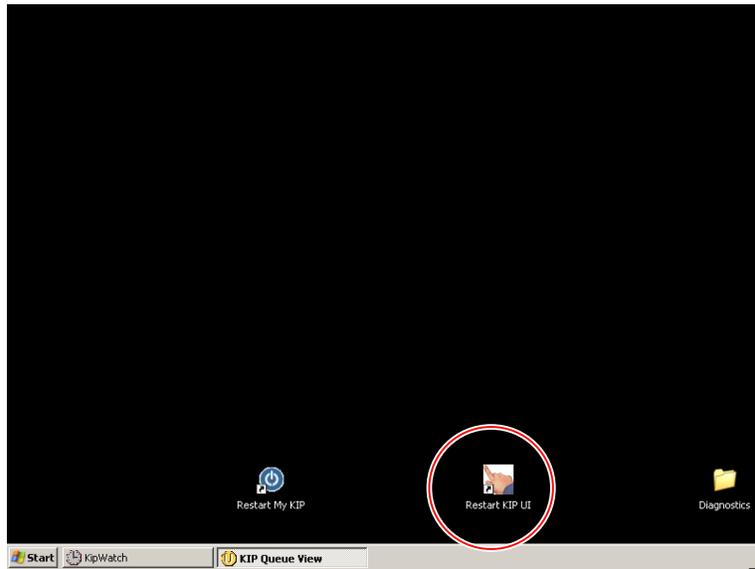
15. When all the 4 points are pressed successfully, Calibration screen disappears and the following dialog appears. Press [OK].



16. Press [OK] to finish touch screen calibration.



17. Run the shortcut "Restart KIP UI" for KIP UI operation.



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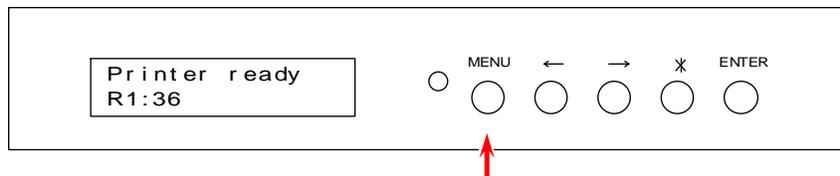
8. 1 Outline of Service Mode

8. 1. 1 Entering Service Mode

1. Remove the cover from the front face of the machine to access the Sub UI.



2. Confirm that the machine is OFF.
Then turn on the machine while pressing the [MENU] Key.
You can unlock the key operation of Sub UI by this operation, so it becomes possible to enter the Service Mode.

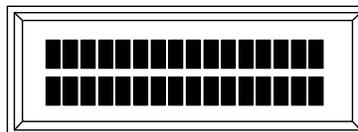


NOTE

It is impossible to enter the Service Mode if the key operation is locked.

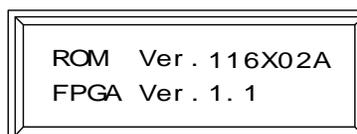
3. Press and hold the [*] key, and then press the keys in the order as [←], [←], [→] and [←] to enter the Service Mode.
All segments on the LCD light when you enter the Service Mode.

All segments light.



4. Keep your finger away from the [*] key, and the ROM version is indicated.

ROM version is indicated.



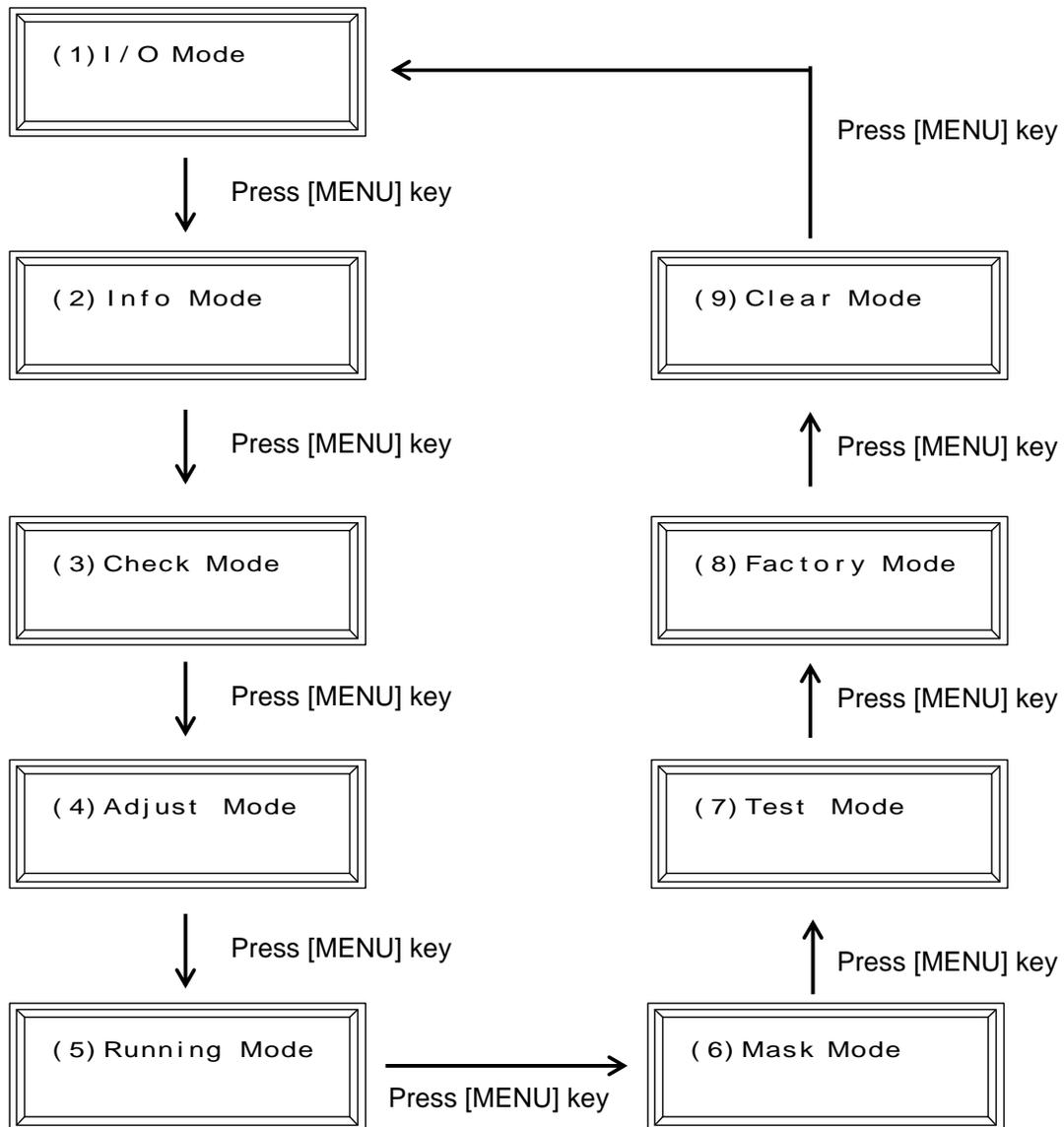
5. Then, select the necessary Sub Mode making reference to [8. 1. 2 Selecting each Sub Mode] on the next page.

8. 1. 2 Selecting each Sub Mode

Service Mode consists of the following 9 sub modes.

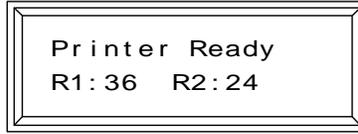
	Service Mode Name
1	Device Status Mode
2	Information Mode
3	Device Operation Mode
4	Adjustment Mode
5	Running Mode
6	Jam/Error Masking Mode
7	Test Print Mode
8	Factory Adjustment Mode
9	Clear Mode

You can select each sub mode orderly whenever you press the [MENU] key.



8. 1. 3 Celling the Service Mode

Press and hold the [MENU] key, and then press the [*] key to cancel the Service Mode.
The LCD indicates printer's status after the cancellation.



NOTE

The key operation of Sub UI is automatically locked if you turn off the machine.

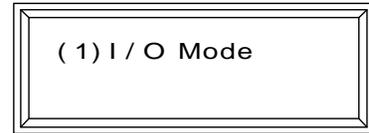
8. 2 Signal Status Mode

8. 2. 1 Function

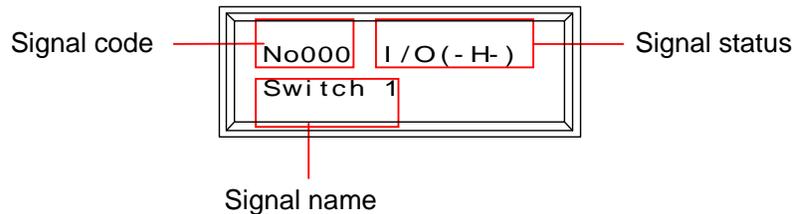
It is possible to observe the status of each signal (input and output) independently.

8. 2. 2 Indication and Operation

1. Indicate "(1) I/O Mode" on the LCD pressing the [MENU] key.



2. Press the [ENTER] key, and you can enter the Signal Status Mode.
The LCD indicates signal code, signal name and signal status.



3. Pressing [←] key or [→] key, indicate the necessary signal code on the LCD.
The LCD also indicates the signal name and its status according to the selected signal code.

8. 2. 3 Device 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		PW11620 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		

8.3 Information Mode

8.3.1 Function

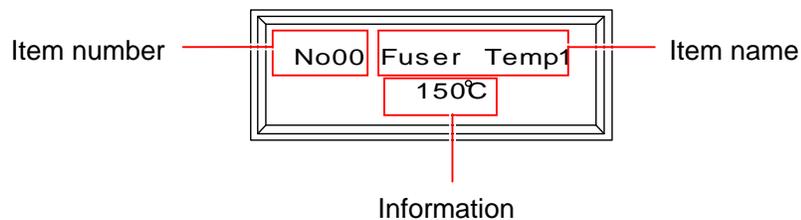
It is possible to monitor several kinds of information like analog data, operation time of each electric component and some other information.

8.3.2 Indication and Operation

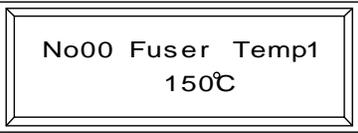
1. Indicate "(2) Info Mode" on the LCD pressing the [MENU] key.

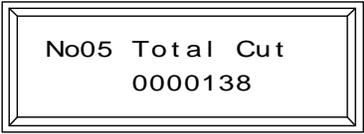
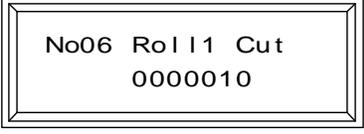
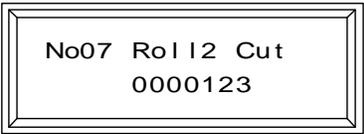
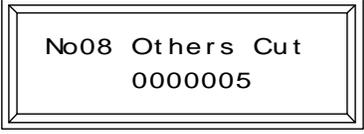


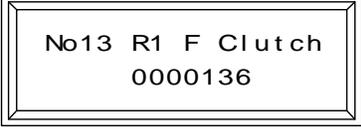
2. Press the [ENTER] key, and you can enter the Information Mode. The LCD indicates item number, item name and information.

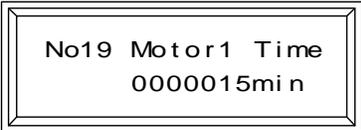
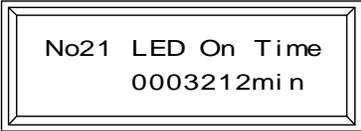
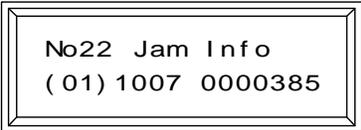
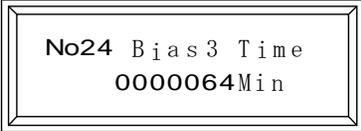


3. Indicate the necessary item number pressing [←] key or [→] key, and you can check the concerning information. The following list shows the item number, item name and the concerning information.

Item Number	Item Name (Indication)	Information
00	Fuser Temp 1 	This item indicates the temperature of the central part of Fuser Roller.
01	Fuser Temp 2 	This item indicates the temperature of the right side of Fuser Roller.

Item Number	Item Name (Indication)	Information
02	---	---
03	Board Temp 	This item indicates the temperature of inside the machine detected by a thermistor on PW11620.
04	---	---
05	Total Cut 	This item indicates how many times the Cutter has operated totally for cutting the paper supplied from every source.
06	Roll 1 Cut 	This item indicates how many times the Cutter has operated totally for cutting the paper supplied from Roll 1.
07	Roll 2 Cut 	This item indicates how many times the Cutter has operated totally for cutting the paper supplied from Roll 2.
08	Others cut 	This item indicates how many times the Cutter has operated when the machine was not on printing.
09	Total Image 	This item indicates how many times the printer has made printing operation totally.

Item Number	Item Name (Indication)	Information
10	R1 Image 	This item indicates how many times the printer has made printing operation with the Roll 1.
11	R2 Image 	This item indicates how many times the printer has made printing operation with the Roll 2.
12	M Image 	This item indicates how many times the printer has made printing operation with the cut sheet paper from Bypass Feeder.
13	R1 F Clutch 	This item indicates how many times the Roll 1 Feed Clutch has operated up to the present.
14	R2 F Clutch 	This item indicates how many times the Roll 2 Feed Clutch has operated up to the present.
15	R1 B Clutch 	This item indicates how many times the Roll 1 Back Clutch has operated up to the present.
16	R2 B Clutch 	This item indicates how many times the Roll 2 Back Clutch has operated up to the present.
17	Feed Clutch 	This item indicates how many times the Feed Clutch has operated up to the present.

Item Number	Item Name (Indication)	Information
18	Reg. Clutch 	This item indicates how many times the Registration Clutch has operated up to the present.
19	Motor 1 Time 	This item indicates how long minutes the Main Motor has operated up to the present.
20	Motor 2 Time 	This item indicates how long minutes the Fuser Motor has operated up to the present.
21	LED On Time 	It indicates how long minutes the LED Head has lighted up to the present.
22	JAM Info 	This item indicates the record of jams. The information indicated on the second line is "JAM History No.", "Jam Code" and "Counter Value (at the time of jam)". The latest 20 jams can be indicated in succession whenever you press the ENTER Key.
23	Error Info 	This item indicates the record of errors. The information indicated on the second line is "Error History No.", "Error Code" and "Counter Value (at the time of error)". The latest 20 errors can be indicated in succession whenever you press the ENTER Key.
24	Bias 3 Time 	This item indicates how long the Main Motor has operated. When counting up to 1080 Min (18 hours), it will be reset to 0. The timer detects the period of Density Measure in Density Compensation Process.

8. 4 Device Operation Mode

8. 4. 1 Function

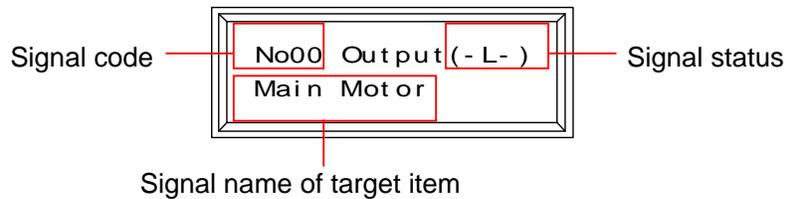
It is possible to operate several electrical components independently, such as motor, clutch, & fans. By this you can check whether or not the DC Controller PCB (PW11620) correctly outputs the signal to each component, and also you can check whether or not such electrical component operates correctly.

8. 4. 2 Indication and Operation

1. Indicate “(3) Check Mode” on the LCD pressing the [MENU] key.

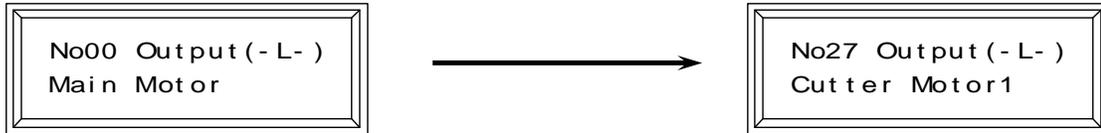


2. Press the [ENTER] key, and you can enter the Device Operation Mode. The LCD indicates signal code, signal name of target item and signal status.



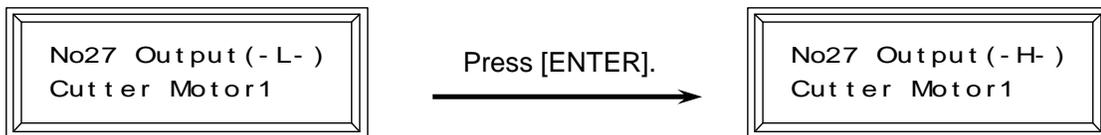
3. Pressing the [←] key or [→] key, indicate the signal code of which target item you would like to operate.

(Example : You will check the operation of Cutter Motor 1.)



Signal Code	Signal Name	Target item	Signal Code	Signal Name	Target item
00	Main Motor	Main Motor	18	Clean +/- SW	Positive/Negative selection of Cleaning Roller Voltage
01	Fuser Motor	Fuser Motor	19	---	Reserved
02	Fuser Rev Motor	Fuser Motor (Reversal rotation)	20	Tr Assist LED	Transfer Assist LED
03	Press Motor	Developer Press Motor	21	Heater Lamp 1	Fuser Lamp 1
04	Supply Motor	Toner Supply Motor	22	Heater Relay	Fuser Relay
05	---	Reserved	23	Heater Blower (L)	Fuser Blower (Low speed)
06	Roll 1 Feed CL	Roll 1 Feed Clutch	24	Heater Blower (H)	Fuser Blower (High speed)
07	Roll 1 Back CL	Roll 1 Back Clutch	25	Feed Blower	Paper Feed Blower
08	Roll 2 Feed CL	Roll 2 Feed Clutch	26	Counter	Counter
09	Roll 2 Back CL	Roll 2 Back Clutch	27	Cutter Motor 1	Cutter Motor 1
10	Feed CL	Feed Clutch	28	Cutter Motor 2	Cutter Motor 2
11	Reg. CL	Registration Clutch	29	Main Switch	Main Switch
12	1st Corona	Image Corona	30	---	Reserved
13	Tr Corona	Transfer Corona	31	Cooler Blower	Cooling Fan
14	Sep Corona	Separation Corona	32	Heater Lamp 2	Fuser Lamp 2
15	Bias	Developer Bias	33	Dens Sensor 1	Density Sensor for Density Compensation
16	Bias +/- Select	Positive/Negative selection of Developer Bias			
17	Clean Bias	Cleaning Roller Bias			

4. When you press the [ENTER] key, the status of output signal changes from “L” to “H” and the selected target item operates independently.



8. 5 Adjustment Mode

8. 5. 1 Function

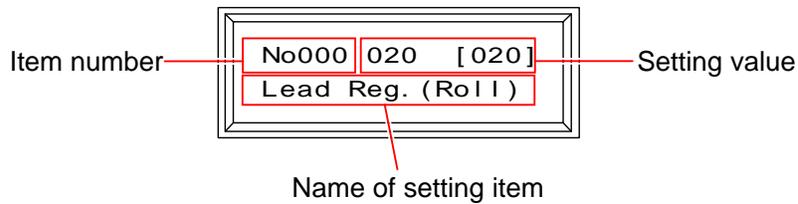
It is possible to adjust the fundamental settings of the printer.

8. 5. 2 Indication and Operation

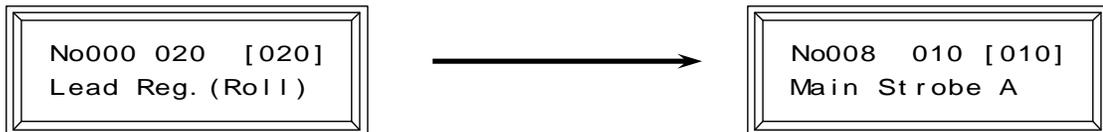
1. Indicate “(4) Adjust Mode” on the LCD pressing the [MENU] key.



2. Press the [ENTER] key, and you can enter the Adjustment Mode. The LCD indicates item number, name of setting item and setting value.

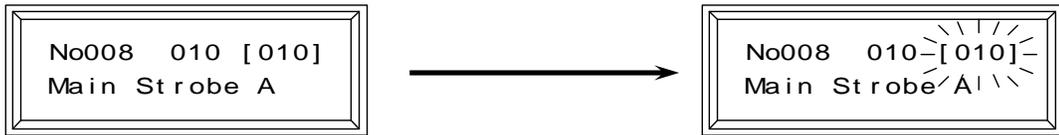


3. Pressing the [←] key or [→] key, indicate the Item Number of which Setting Value you will change. Please refer to [8.5.3 Setting item list] on and after the page 8-20 for the detail of each setting item. (Example: You will change “Main Strobe A”.)



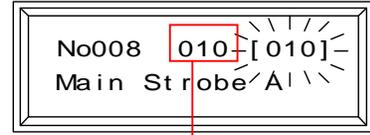
4. Press the [ENTER] key.

The setting value in the parentheses starts flashing and it becomes possible to change it.



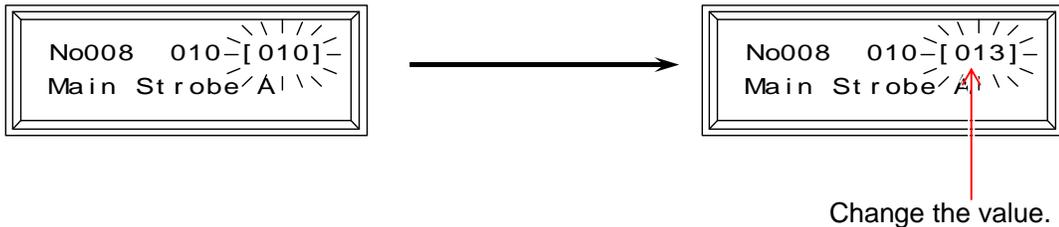
! NOTE

The LCD indicates another value that is not in the parentheses. This is the current setting value.



Current setting value

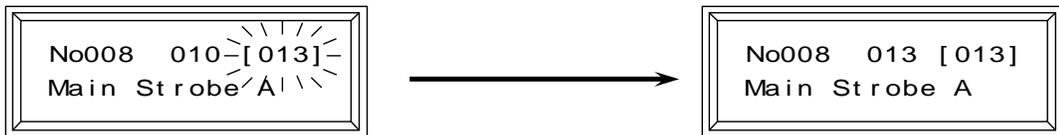
5. Change the setting value pressing [←] key or [→] key.



Change the value.

6. Press the [ENTER] key.

New value stops flashing and it is validated.



! NOTE

Some Setting Items may require another way of operation.
This kind of special operation is written in each explanation in [8. 5. 4 Explanation for each Setting Item].

8. 5. 3 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	Horizontal Alignment of Pixels between Image Blocks A & B	-	8	8	2 to 14
015	Horizontal 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 Roll Deck 2	-	1	1	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 ReverseTime	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

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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

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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	-			

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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) (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	
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 (Special / 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

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Item No.	Setting Item	Unit	Default Value		Setting range
			USA	EUR / AS	
650	Regulation Bias Increment for Auto 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

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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

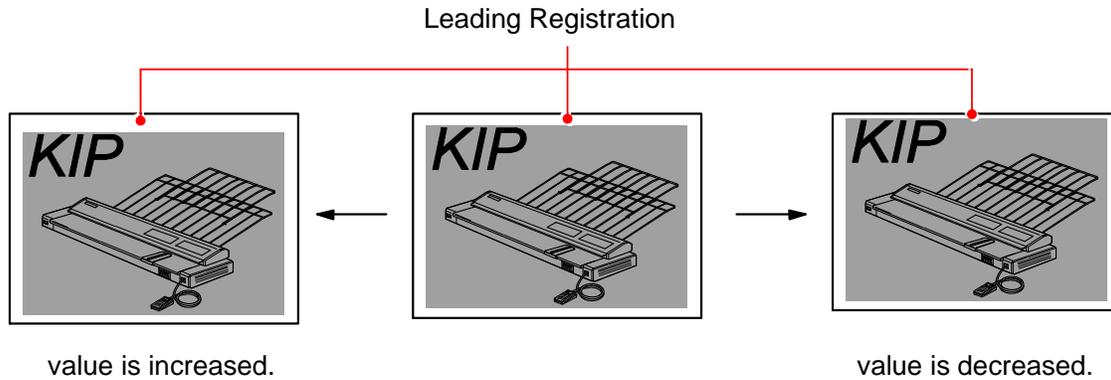
Item No.	Setting Item	Unit	Default Value		Setting range
			USA	EUR / AS	
732	Fuser Motor 4th Speed (Roll) (Special Media / Plain Paper / 30")	0.04mm/s	40	40	0 to 80
733	Switch Timing to Fuser Motor 4th Speed (Roll) (Special Media / Plain Paper / 30")	0.5 seconds	0	0	0 to 300
734	Fuser Motor 4th Speed (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	Short Interval Mode		0	0	0 to 1
753	Auto Cut After Long Print (Length)	100mm	10	10	10 to 60
754	Auto Cut After Long Print (Number of Sheet)	sheet	0	0	0 to 3
755	Forced Initial Cut Before Print	mm	594	594	210 to 600

8. 5. 4 Explanation for each Setting Item

8. 5. 4. 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.

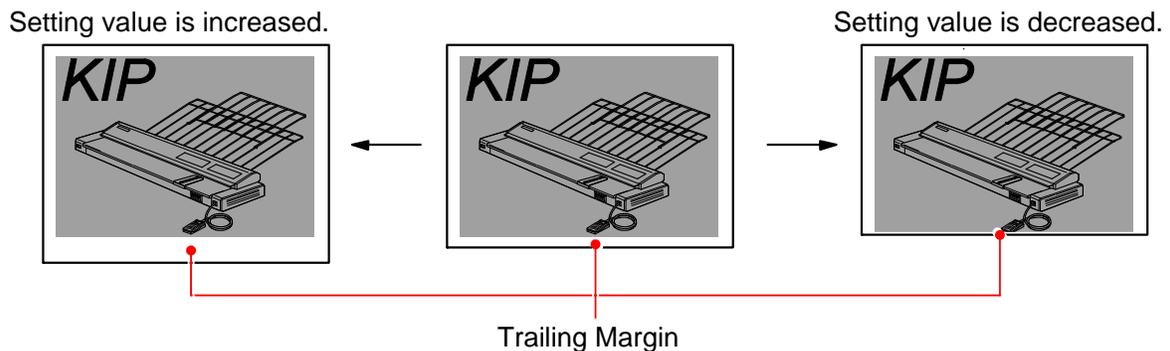
Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
000	Leading Registration (Roll paper)	19	19	1 to 40	1mm
001	Leading Registration (Cut sheet paper)	19	19	1 to 40	1mm



8. 5. 4. 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



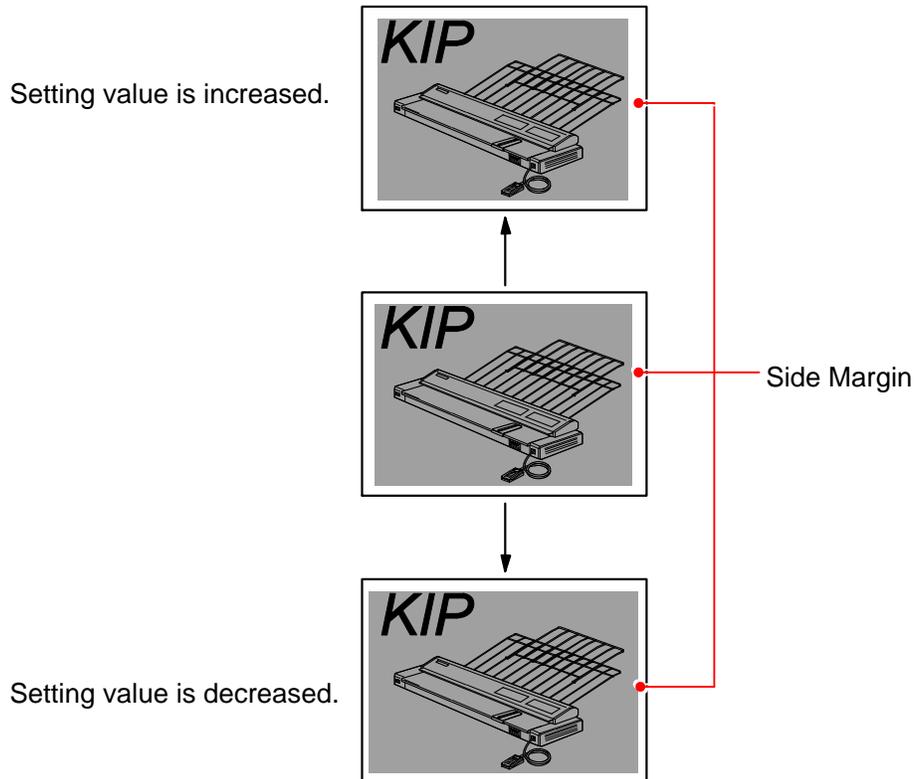
NOTE

Some trailing image may be lost if you decrease the value too much.

8. 5. 4. 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



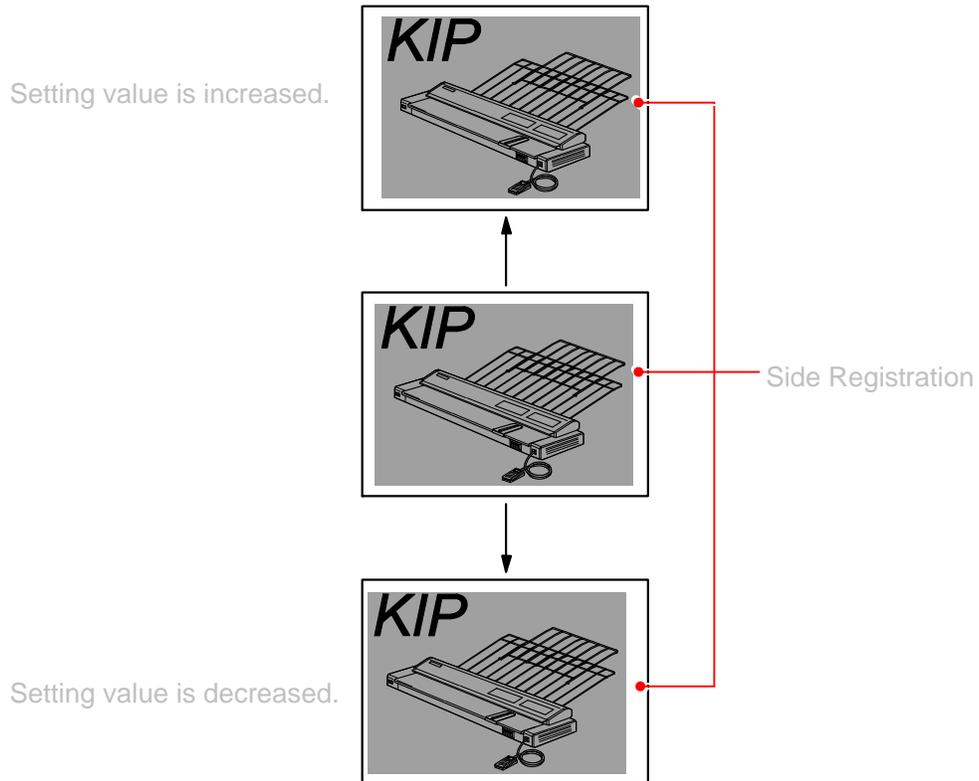
NOTE

Image quality created with a reduced side margin (less than 3 in the setting value) is not guaranteed.

8. 5. 4. 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.

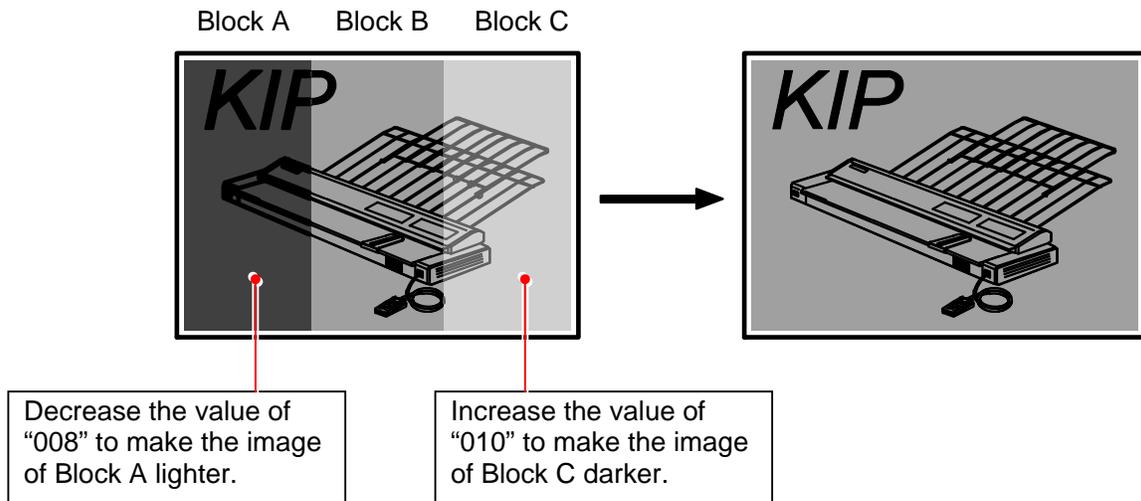
Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
005	Side Registration (Cutsheet)	50	50	0 to 100	0.1mm
006	Side Registration (Roll 1)	50	50	0 to 100	0.1mm
007	Side Registration (Roll 2)	50	50	0 to 100	0.1mm



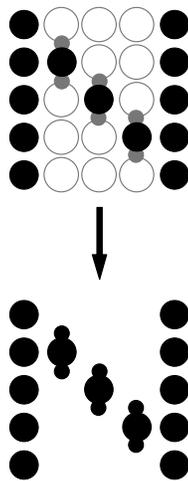
8. 5. 4. 5 LED Strobe Time for Main Pixel of each Block (No.008 to 010)

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.

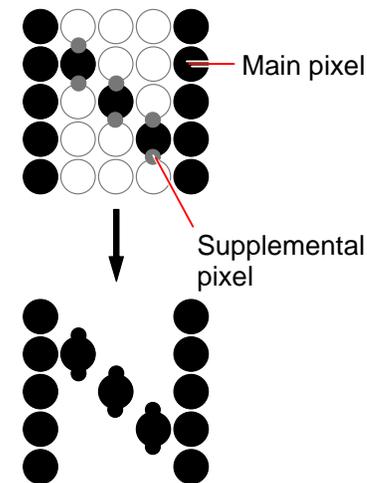
Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
008	LED Strobe Time for Main Pixel (Image Block A : Left)	6	6	0 to 9	1 micro second
009	LED Strobe Time for Main Pixel (Image Block B : Center)	6	6	0 to 9	1 micro second
010	LED Strobe Time for Main Pixel (Image Block C : Right)	6	6	0 to 9	1 micro second



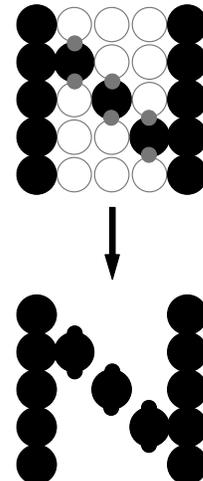
Setting value is decreased.



Default



Setting value is increased



Actual print image

Please read [REFERENCE] on the page 8-42 for the explanation about "Main Pixel" and "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).

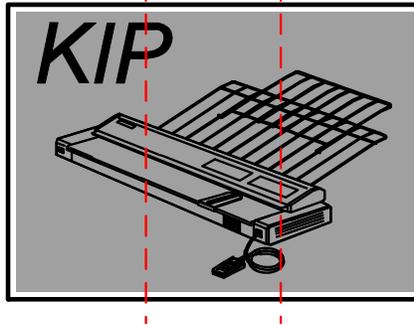
In case of Test Print

008: 7 microseconds

009: 8 microseconds

010: 9 microseconds

Block A (7) Block B (8) Block C (9)



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).

In case of copy or plot

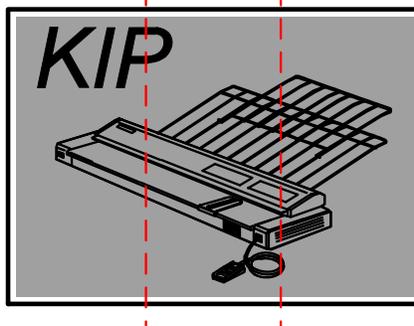
Density command from output device: 5 microseconds

008: 7 microseconds

009: 8 microseconds

010: 9 microseconds

Block A (5) Block B (6) Block C (7)



- (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.

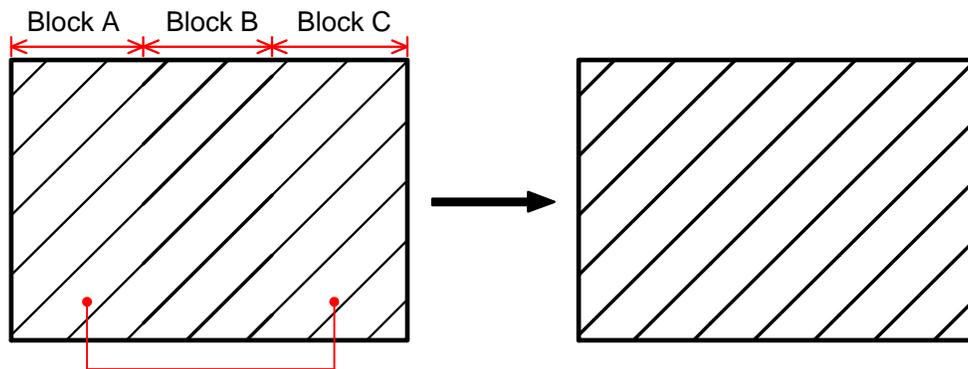
8. 5. 4. 6 LED Strobe Time for IST (Supplemental Pixel) of each Block (No.011 to 013)

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.

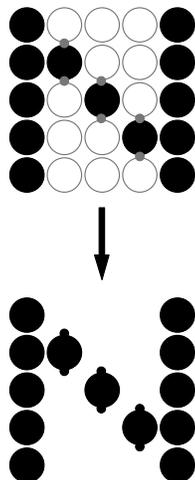
A diagonal line comes to look clearer if you increase the setting value, as the LED Strobe Time for the Supplemental Pixels becomes longer.

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

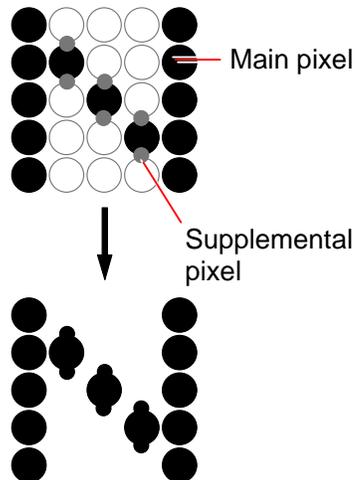


Increase the setting values of “011” and “013” to make the images of these blocks clearer.

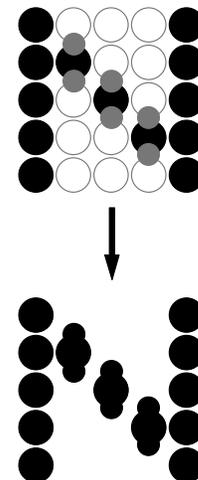
Setting value is decreased.



Default



Setting value is increased.

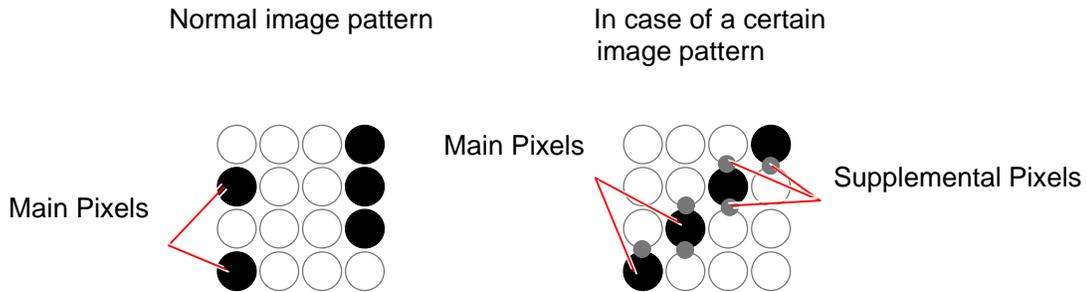


Actual print image

Please read [REFERENCE] on the page 8-42 for the explanation about “Main Pixel” and “Supplemental Pixel”.

Reference

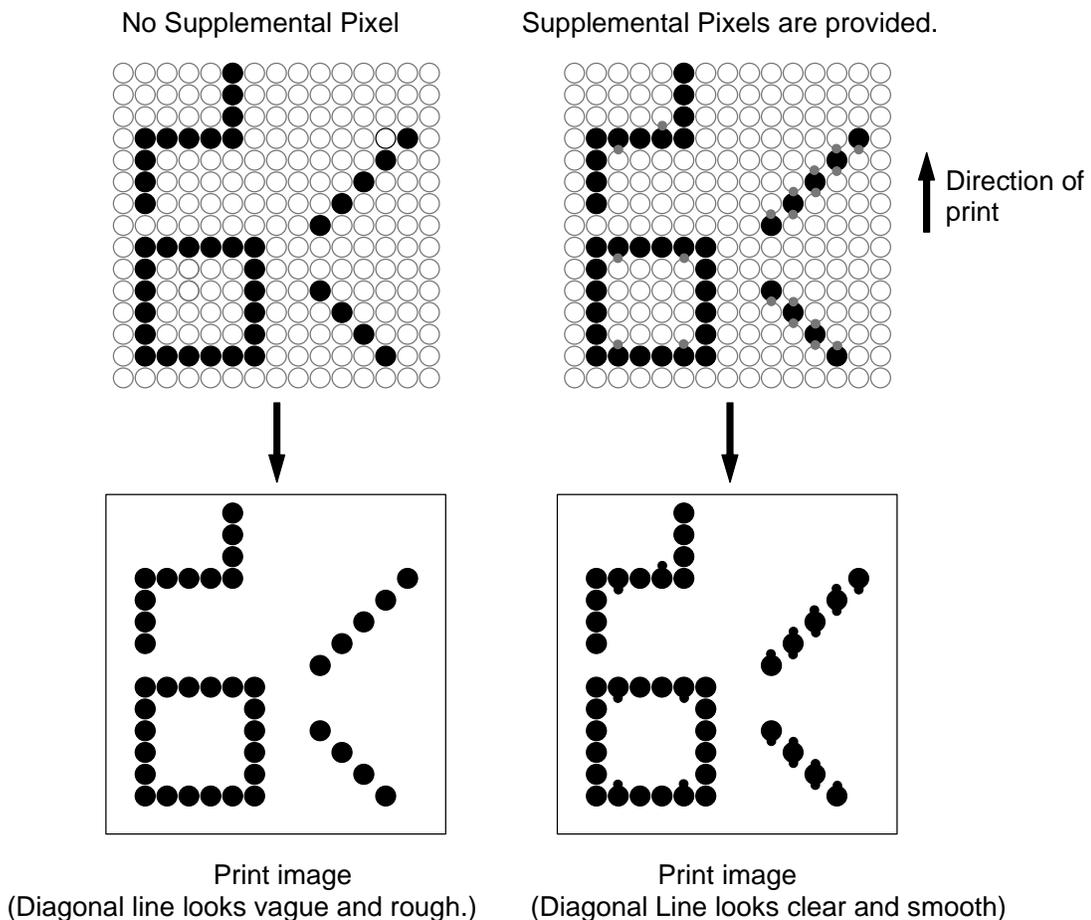
Normally the KIP 3100 takes 600 times of image exposure per inch for the vertical direction as its resolution is 600DPI. Pixels created by this normal timing are called [Main Pixel]. When a specific image pattern (like a diagonal line) is printed, however, the KIP 3100 will make additional image exposure 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.

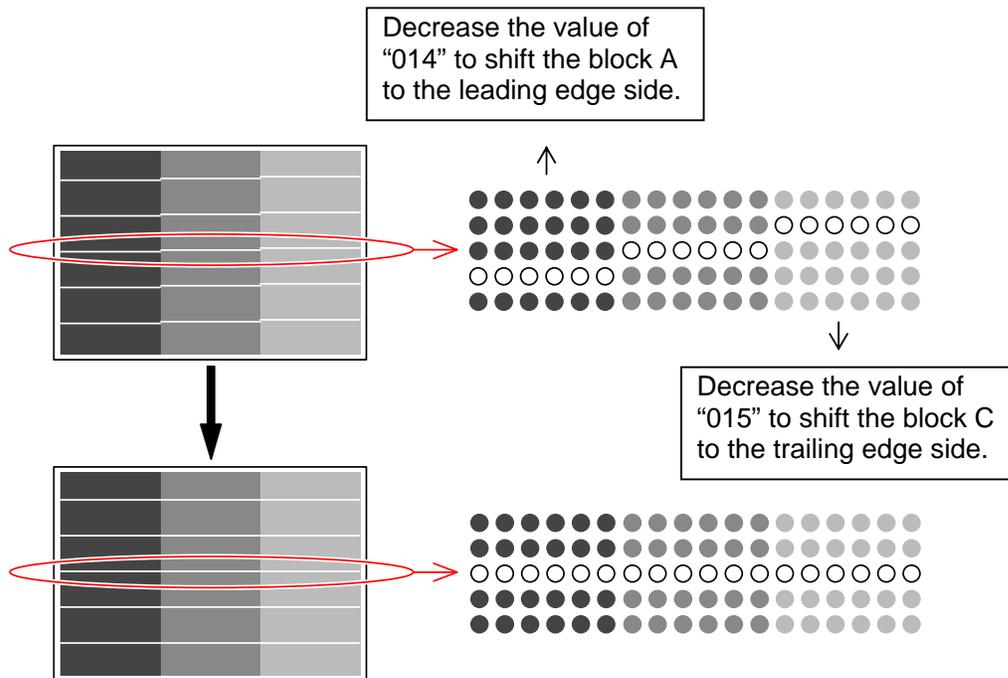
If this space is filled with the Supplemental Pixel, diagonal line comes to look smoother and clearer.



8. 5. 4. 7 Horizontal 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.

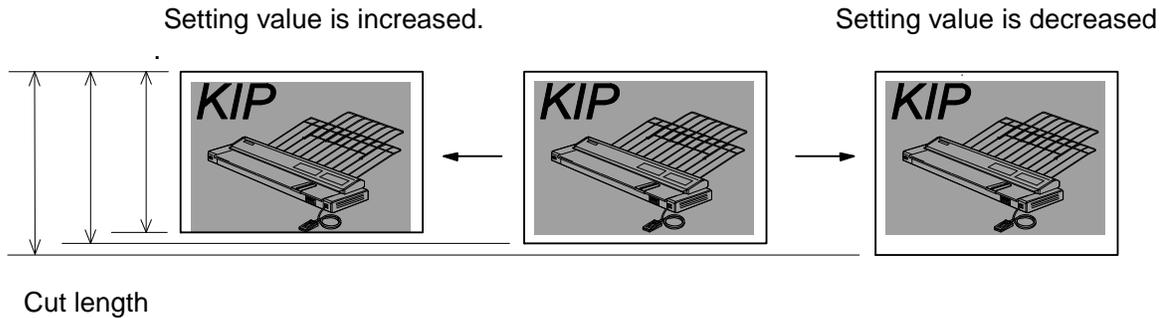
Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
014	Horizontal Alignment of Pixels between Image Blocks A & B	8	8	2 to 14	1 pixel
015	Horizontal Alignment of Pixels between Image Blocks B & C	8	8	2 to 14	1 pixel



8. 5. 4. 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.

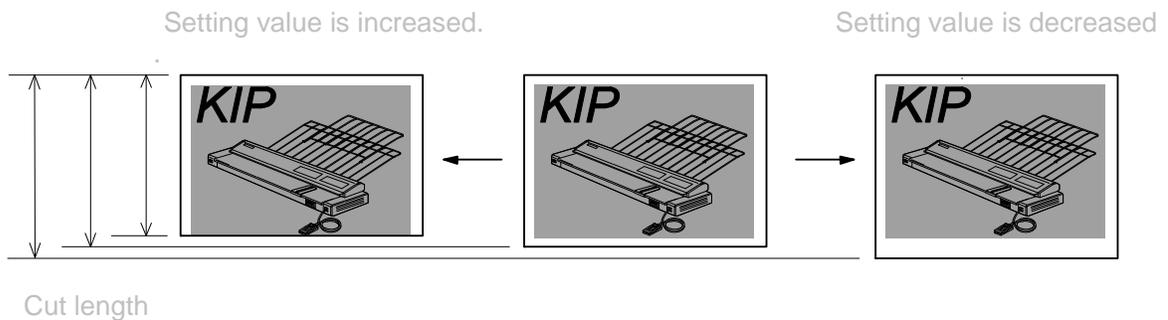
Default value		Setting range	Step of increment
USA	EUR/ASIA		
50	50	0 to 100	1mm



8. 5. 4. 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



8. 5. 4.10 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.

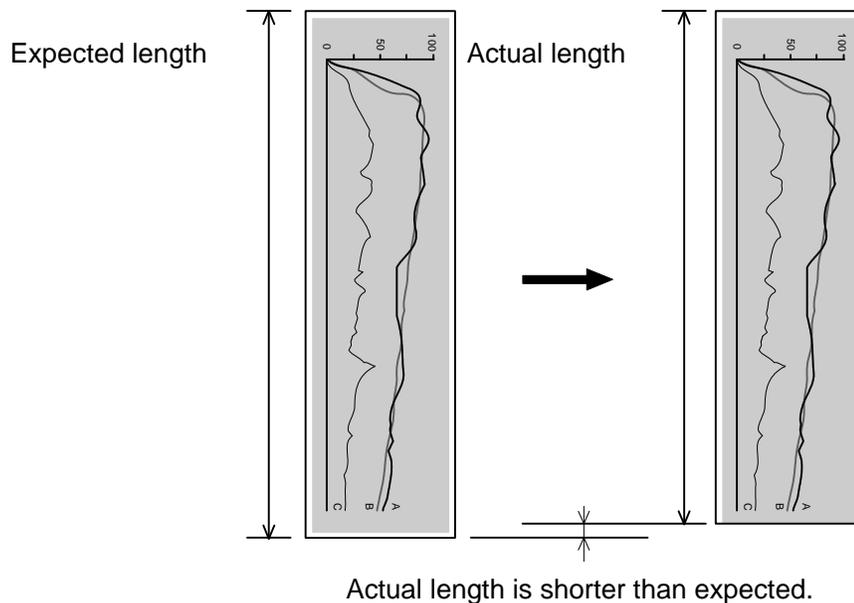
Default value	Setting range	Step of increment
USA : EUR/ASIA		
475 : 475	0 to 999	0.1mm

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).

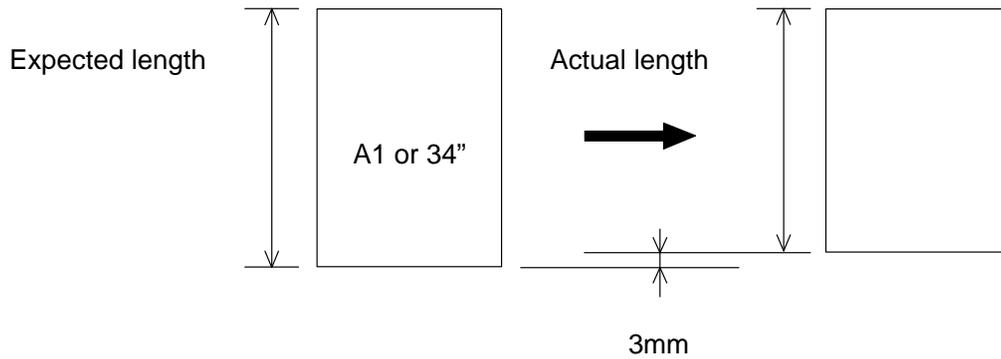
[Example of adjustment]

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.

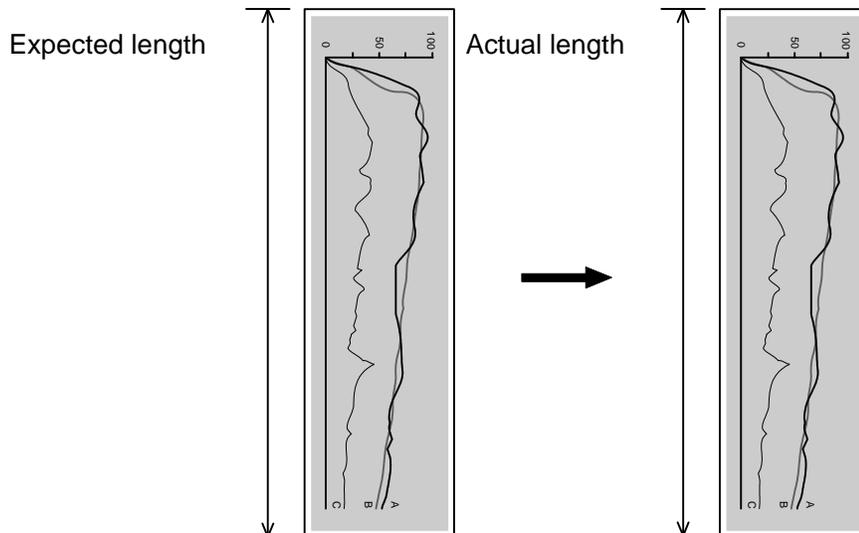
(Example: Print out is 838mm, so it is 3mm shorter than expected.)



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. ($3\text{mm} \times 10 = 30$)
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. 5. 4.11 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.

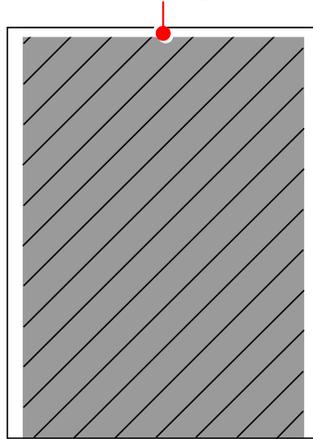
The length of the leading margin becomes 0.1mm longer if you increase the setting value by "+1".

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

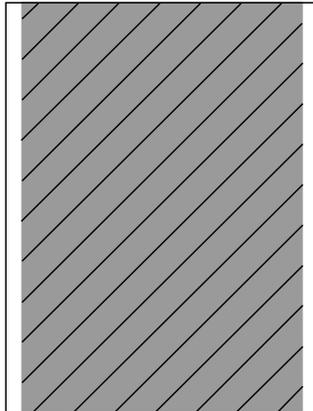
Default: 30

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. 5. 4.12 Cut Length 4 (Individual Compensation for Roll 2) (No.020)

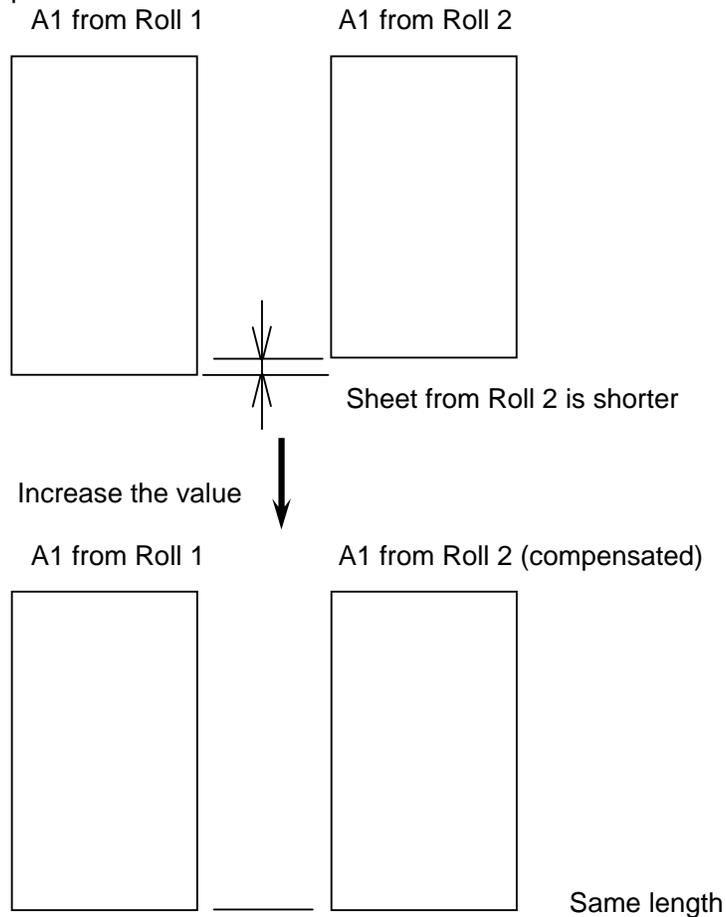
It is possible to compensate the print length of Roll 2 individually.
This setting would be used if a different cut length is provided to Roll 1 and Roll 2.

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

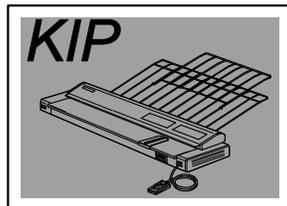
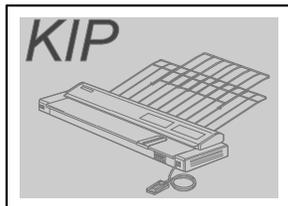
It is necessary to finish the adjustment of Cut Length 1 (No.016) before starting the adjustment in this Cut Length 3 (No.018).

8. 5. 4.13 Developer Bias (No.022 to 027)

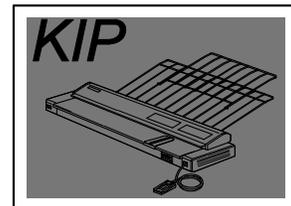
It is possible to make the print density darker or lighter by adjusting the Developer Bias (Negative Developer Roller Bias).
The print density becomes lighter if you increase the setting value.

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

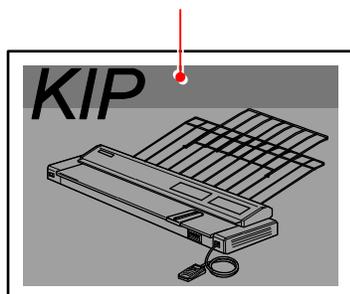
Please adjust the Developer Bias while checking the actual voltage with the multi-meter.

8. 5. 4.14 Developer Bias compensation - 1st Drum revolution (No.028)

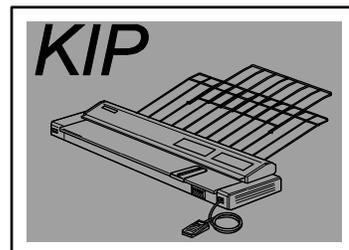
It is possible to compensate the Developer Bias only for the 1st Drum revolution.
The print density becomes lighter if you increase the setting value.
(Developer Bias is not compensated at all if the setting value is "0")

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. 5. 4.15 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. 5. 4.16 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. 5. 4.17 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

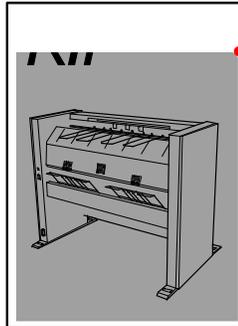
! NOTE

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. 5. 4.18 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. 5. 4.19 Print - Fuser Temperature Center (No.039 to 044)

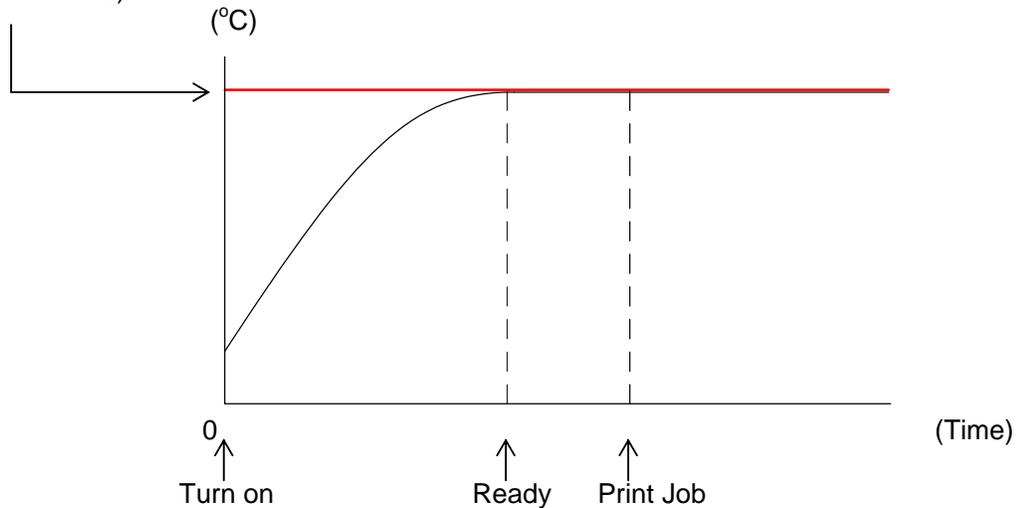
It is possible to adjust the center part of Fuser Temperature in a print cycle.

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. Refer to page 8-125 and 126 for further information.

(2) Item List of Fuser Temperature Control (center / side)

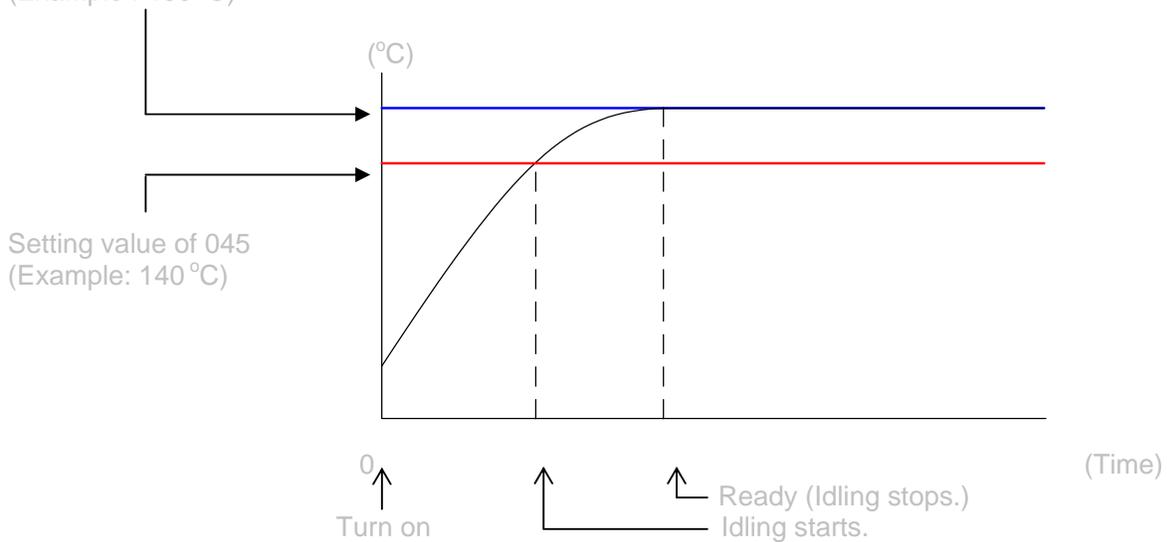
	Fuser Center	Fuser Sides
Print (for printing period)	No.039 to 044	No.625 to 648
Ready (target temperature to get "Ready")	No.660 to 665	No.666 to 671
Standby (during "standby")	No.738	No.739
Warm Sleep	No.046 (common to both Center / Side)	

8. 5. 4.20 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

Setting value of 039 to 044
(Example : 160 °C)

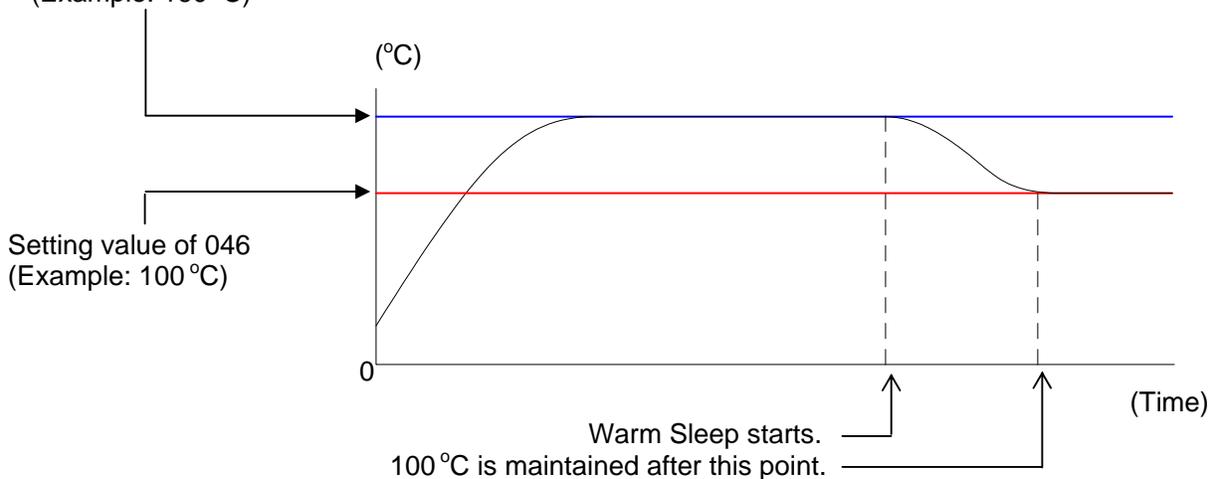


8. 5. 4.21 Warm Sleep – Fuser Temperature (No.046)

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

Setting value of 738, 739
(Example: 160 °C)



8. 5. 4.22 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".

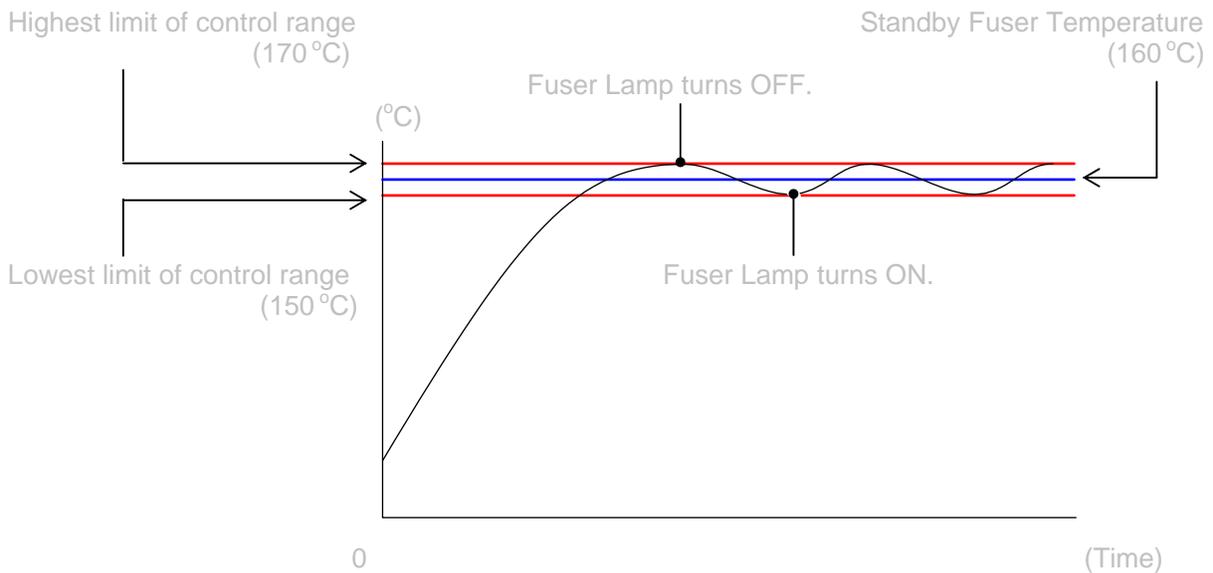
The Fuser Lamp continues to light up when the temperature of Fuser Roller is colder than the highest limit, and it is put out when the temperature reaches the highest limit.

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"



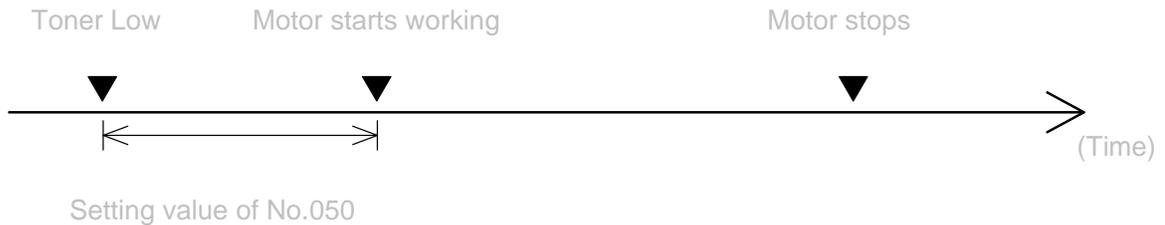
8. 5. 4.23 Reaction Time of Toner Supply Motor (No.050)

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

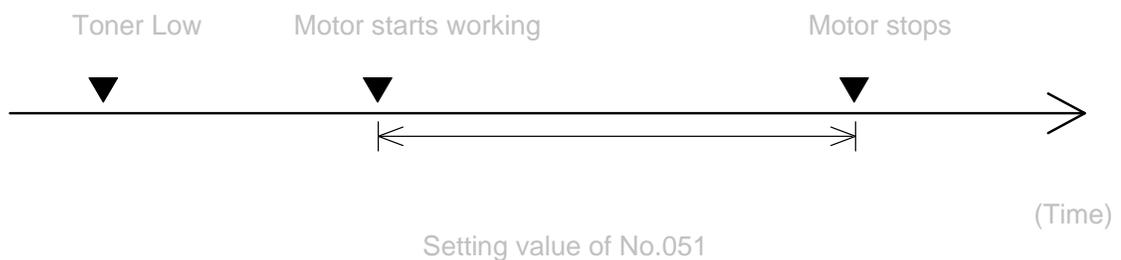
The reaction time may be too long if the image gets lighter and lighter when you make large volume prints continuously.
In this case try to decrease the setting value of No.050 to shorten the reaction time.

8. 5. 4.24 Toner Supply Motor ON Time (No.051)

It is possible to 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. 5. 4.25 Dot Enhancement Level (Dither) (No.052)

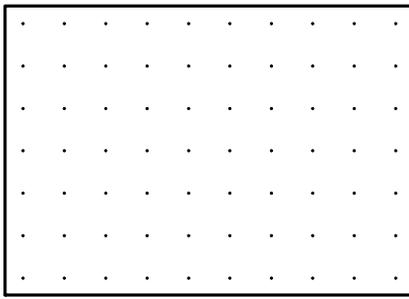
It is possible to validate the Dot Enhancement function which makes an isolated dot look clearer. An isolated dot image is more emphasized if you increase the setting value.

Setting value	Contents
1 (Default in USA, EUR & ASIA)	Emphasized
2	More emphasized
3	Most emphasized

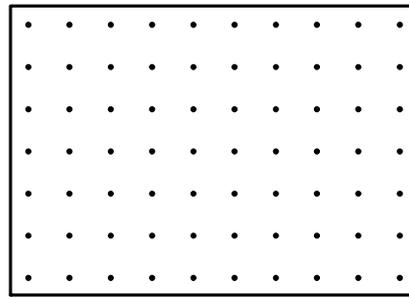
Reference

- (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.

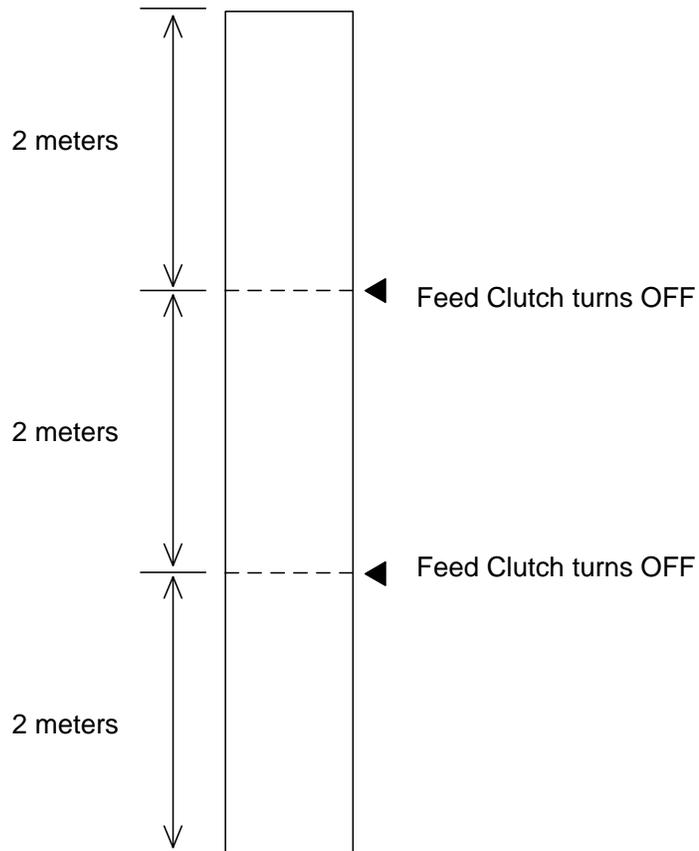


- (2) The Dot Enhancement function can be validated in the User Mode.
It will not work if not validated.

8. 5. 4.26 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. 5. 4.27 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

8. 5. 4.28 Language (No.056)

It is possible to specify the indication language of User Interface.

Setting value	Contents
0	Japanese
1 (Default in USA, EUR & ASIA)	English

8. 5. 4.29 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. 5. 4.30 Recognition of Roll Deck 2 (No.058)

It is possible to make the machine recognize the optional Roll Deck 2 if it is installed.

Setting value	Contents
0	Optional Roll Deck 2 is not installed.
1 (Default in USA, EUR & ASIA)	Optional Roll Deck 2 is installed.

8. 5. 4.31 Counter Value (No.059)

It is possible to specify the counting unit of Counter.

Setting value	Contents
0 (Default in EUR & ASIA)	1 linear meter
1	0.1 linear meter
2	1 square meter
3	0.1 square meter
4	1 linear foot
5 (Default in USA)	1 square foot

8. 5. 4.32 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 64m.

NOTE

(1) 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

(2) This is the limit for print, not the length data. For the limit of the controller, refer to the controller's document.

8. 5. 4.33 Stacking Device setting (No.061)

It is possible to make the KIP 3100 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. 5. 4.34 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.

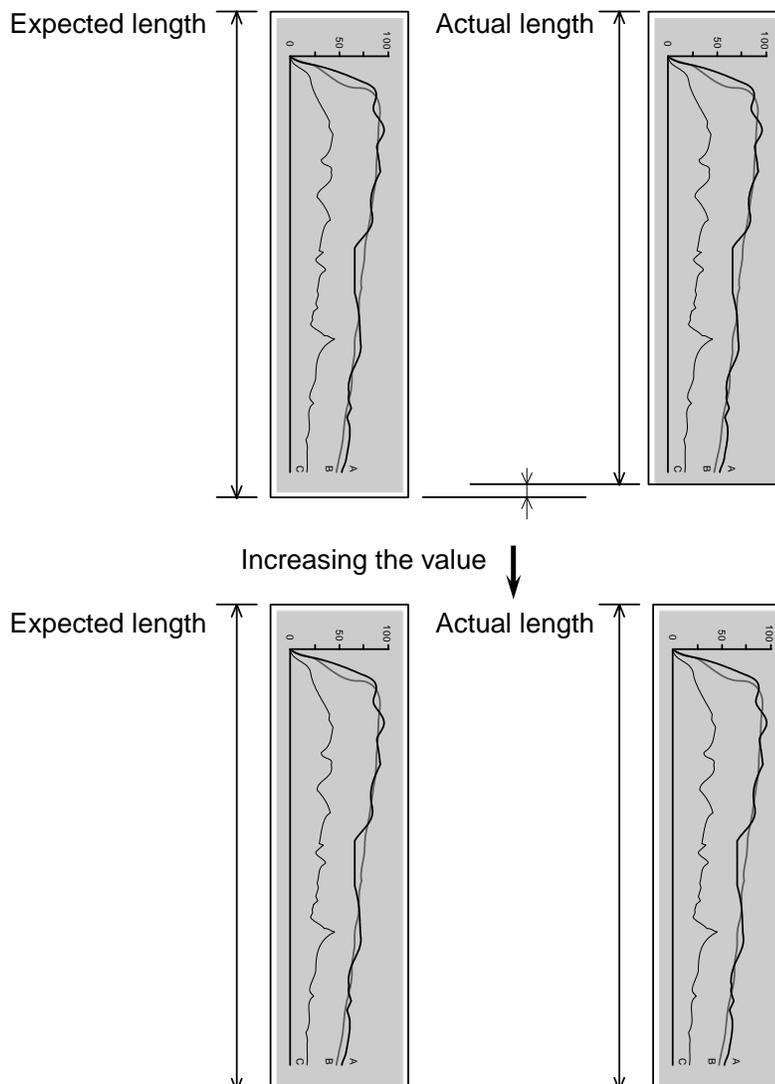
8. 5. 4.35 Cut Length 5 & 6 (Length Compensation for Tracing Paper / Film)(No.063, 064)

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



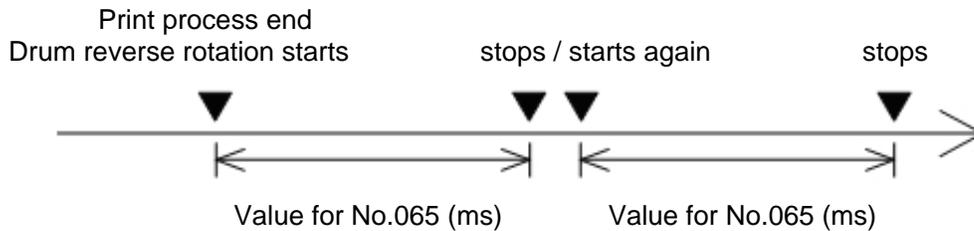
8. 5. 4.36 Drum Reverse Time (No.065)

It is possible to change the period for the Drum reverse rotation.

Developer Roller is strongly pressed to the Drum and that may cause an indentation on Developer Roller's surface. The indentation may result in defective imaging. The Drum makes a reverse rotation in a given period twice after finishing a job.

Setting a bigger value for No.065 makes the reverse rotation period longer.

Default value	Setting range	Step of increment
USA : EUR/ASIA		
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. 5. 4. 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. 5. 4.38 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. 5. 4.39 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

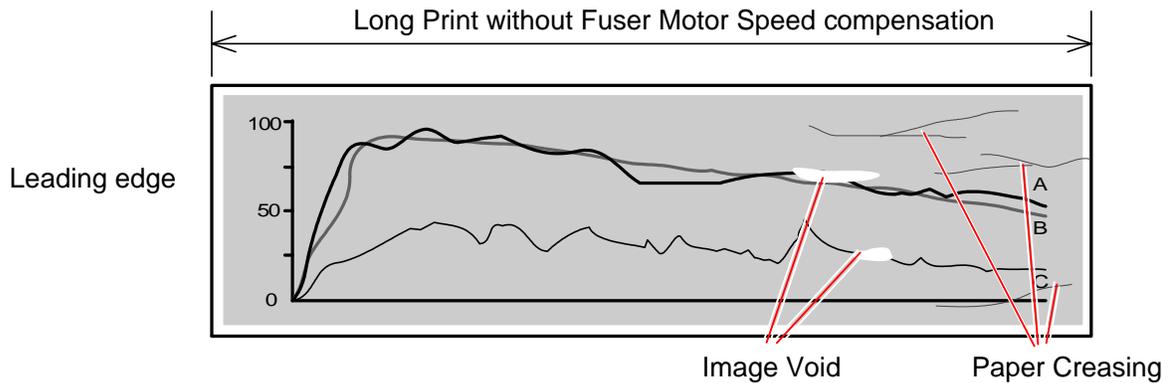
Please refer to the next page for further information.

NOTE

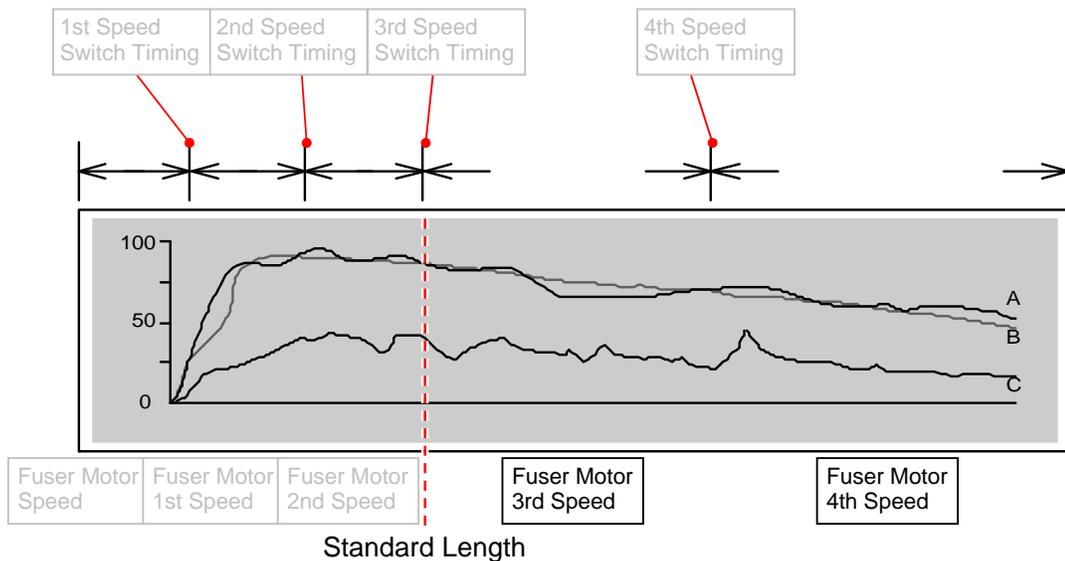
- (1) Fuser Motor Speed is factory-adjusted based on an individual machine, and the result is written in the service sheet. Be sure to confirm the service sheet in case of a setting change on Fuser Motor Speed.
- (2) Fuser Motor Speed should be changed with visual check. Remove the right cover and see 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)	all width (adjustment not recommended)	not used

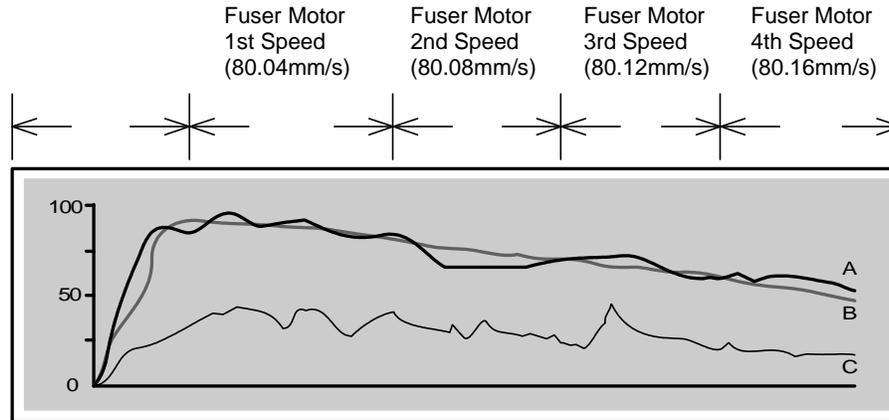
“not used” means that the previous Switch Timing is set to “0” because the corresponding print area exceeds the guaranteed length.

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.

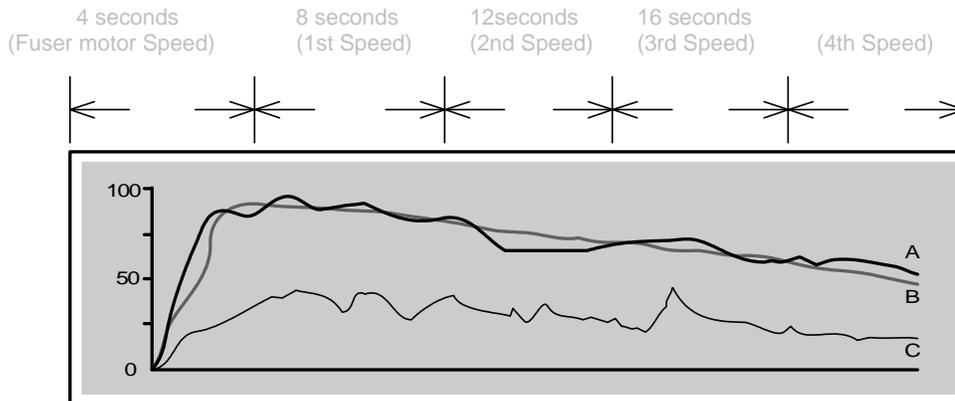


You can specify the switch timing to each Fuser Motor 1st Speed, 2nd, 3rd, 4th in each Item No.071, 073, 075, 679.

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. 5. 4.40 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.41 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.42 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.43 Compensation of Fuser Motor Speed for roll paper (Special tracing paper / A3, 12" & 11") (No.094 to 099)

It is possible to compensate the Fuser Motor speed specifying each Fuser Motor 1st, 2nd, 3rd and 4th Speed.

It is also possible to specify when to switch the speed. (Switch timing)

These settings become effective when you use a tracing paper (special media) of A3, 12" and 11" sizes by roll paper feeding.

Item No.	Setting Item	Default value		Setting range	Step of increment
		USA	EUR/ASIA		
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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.44 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.45 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.46 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.47 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.48 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.49 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.50 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.51 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.52 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.53 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.54 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.55 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.56 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.57 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.58 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.59 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.60 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.61 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 3 rd 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.62 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.63 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. 5. 4.64 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 [8.5.4.119 Fuser Motor Speed] on page 8-134 for narrower originals than the above.

8. 5. 4.65 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. 5. 4.66 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.67 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.68 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.69 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.70 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.71 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.72 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.73 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.74 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.75 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.76 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.77 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.78 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.79 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.80 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.81 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.82 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 3 rd 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.83 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.84 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.85 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.86 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.87 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.88 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.89 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.90 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.91 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.92 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.485, 487 and 489.

If you increase the setting value by "+1", the timing to switch the speed is 0.5 second delayed.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.93 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.94 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.95 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.

Please refer to the explanation on page 8-64 to 66 for the details of these settings.

8. 5. 4.96 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. 5. 4.97 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. 5. 4.98 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. 5. 4.99 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	No.614	No.618
24"	24"x36"	914mm		
22"	22"x34"	864mm		
594mm	A1	841mm	No.615	No.619
18"	18"x24"	610mm		
420mm	A2	594mm		
17"	17"x22"	559mm		
15"	15"x21"	533mm	No.616	No.620
12"	12"x18"	457mm		
11"	11"x17"	432mm		
297mm	A3	420mm		

(next page)

Reference

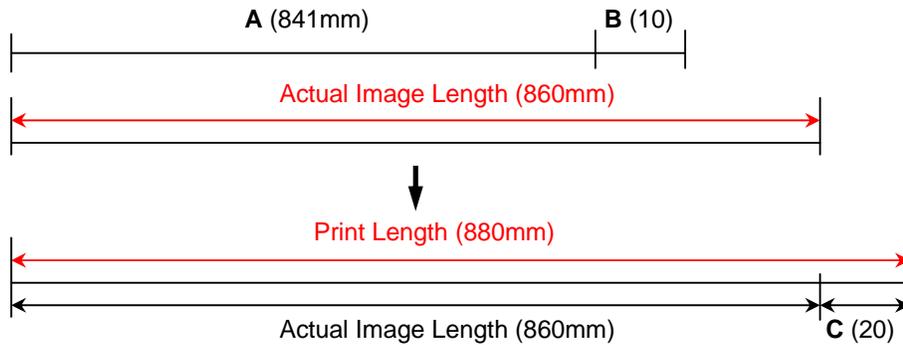
(2) If the actual image length is longer than (or equal to) "A+B", "C" is provided to the trailing edge of non-standard size print.

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



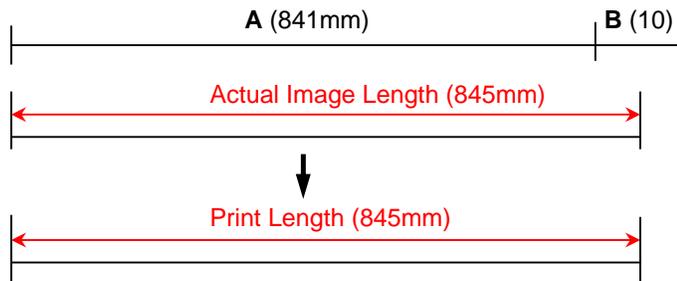
(3) If the actual image length is shorter than "A+B", the print is cut as long as the actual image length. ("C" is not provided to the trailing edge of the print.)

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. 5. 4.100 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. 5. 4. 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. 5. 4. 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. 5. 4. 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. 5. 4. 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. 5. 4. 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 [8.5.4.19 Print - Fuser Temperature Center (No.039 to 044)] on page 8-53 for further information.

8. 5. 4. 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 [8.5.4.19 Print - Fuser Temperature Center (No.039 to 044)] on page 8-53 for further information.

8. 5. 4. 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 [8.5.4.19 Print - Fuser Temperature Center (No.039 to 044)] on page 8-53 for further information.

8. 5. 4. 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 [8.5.4.19 Print - Fuser Temperature Center (No.039 to 044)] on page 8-53 for further information.

8. 5. 4. 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. 5. 4. 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. 5. 4. 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. 5. 4. 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

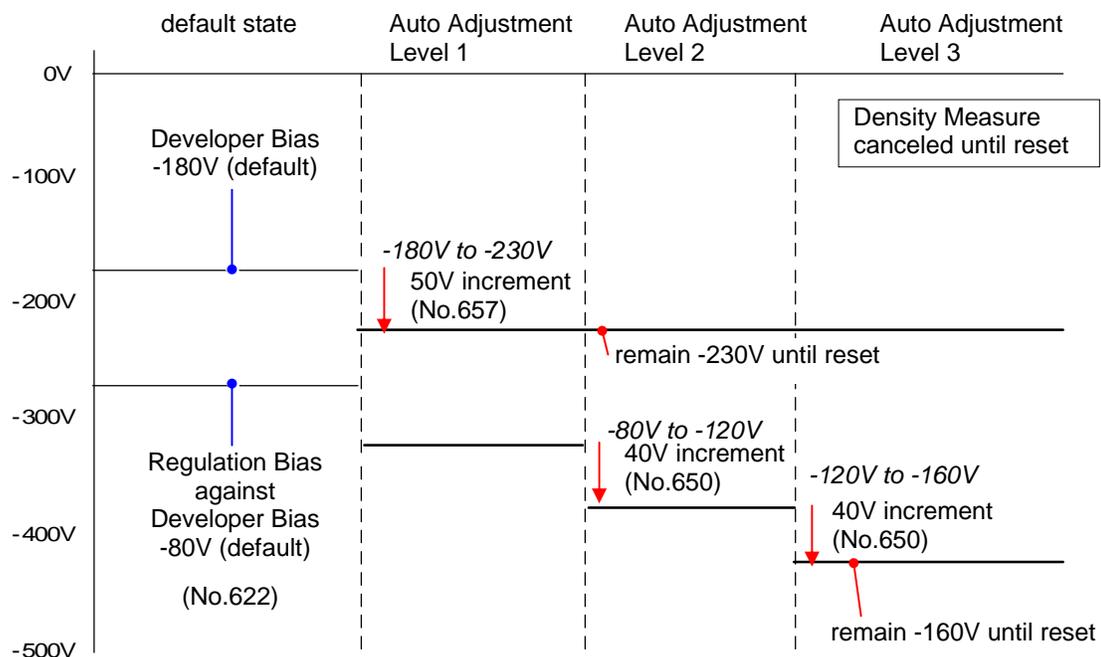
Reference

Density Compensation Process is performed as follows.

- Several solid patches are created on Drum and are measured by Density Sensor at a regular interval of Main Motor operating time (No.655, 656). This is called Density Measure.
- If the current density value (calculated based on Density Measure) falls short of the lower density limit (Minimum Density: No.653), one of the Auto Adjustment Level listed below will be applied.
- Developer Bias (No.657) and Regulation Bias (No.650) will be adjusted based on the current Auto Adjustment Level.

Once Level 3 is applied, Density Measure will remain canceled until reset in Clear Mode.

	Default upon shipment	No Compensation	Level 1	Level 2	Level 3
Developer Bias (Negative)	-180V	-180V remain default	-230V	-230V	-230V
Regulation Bias against Developer Bias	-80V	-80V remain default	-80V	-120V	-160V



 **NOTE**

- (1) While Density Value exceeds Minimum Density, the current Compensation Level will remain.
- (2) Auto Adjustment Level will not be reset to the previous level or to the default automatically at all. Even if Developer / Regulation Rollers are replaced, still the current Auto Adjustment will continue to be applied.
An applied Auto Adjustment Level should be reset after replacing Developer / Regulation Rollers. Refer to [8. 10. 2. 7 Density Compensation Reset Mode] on page 8-160.

8. 5. 4. 113 Minimum Density (No.653)

NOTE

This setting has been factory-adjusted. Keep the value unchanged.

It is possible to change Minimum Density, which is the lower density limit.
If Density Value falls short of Minimum Density, one of Auto Adjustment Level 1, Level 2, Level 3 will be applied.

If you increase the setting value by “+1”, Minimum Density will rise and thus Auto Adjustment Level would be switched to the next level earlier.

Default Value	Setting Range	Step of increment
135	110 to 150	1

8. 5. 4. 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. 5. 4. 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. 5. 4. 116 Developer Bias Increment for Auto Adjustment Level 1 and after (No.657)

NOTE

This setting has been factory-adjusted. Keep the value unchanged.

It is possible to change the amount (increment) of Developer Bias Adjustment. A specified increment of Developer Bias will be applied at switching to and as of Auto Adjustment Level 1.

The default voltage value of the increment is approximately 50V (corresponding to “80” in the setting value) for switching to Auto Adjustment Level 1. The increased Developer Bias will be applied to the subsequent Auto Adjustment Level.

If you increase the setting value by “+1”, the increment of Developer Bias Adjustment becomes higher.

Default Value	Setting Range	Step of increment
158	0 to 400	1

8. 5. 4. 117 Ready - Fuser Temperature Center (No.660 to 665)

It is possible to specify “Ready” temperature.

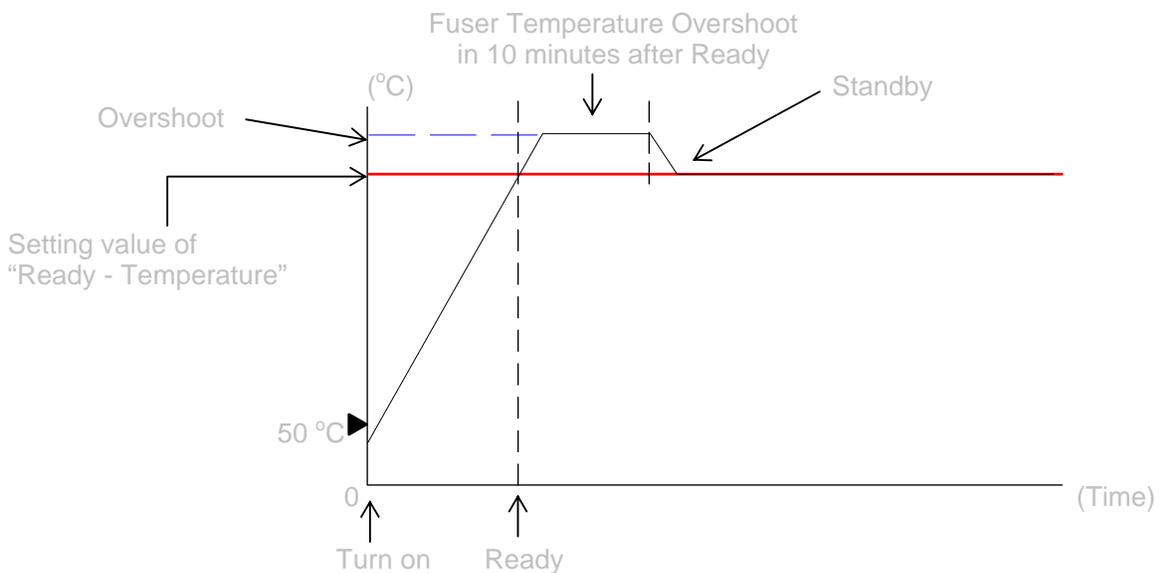
You can specify the temperature for each type of media separately.

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. 5. 4. 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. 5. 4. 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 [8.5.4.64 Fuser Motor Speed (36" / 34" / 30" / 24" / 22" / A0 / B1 / A1) (No.316 to 321) on page 8-90.

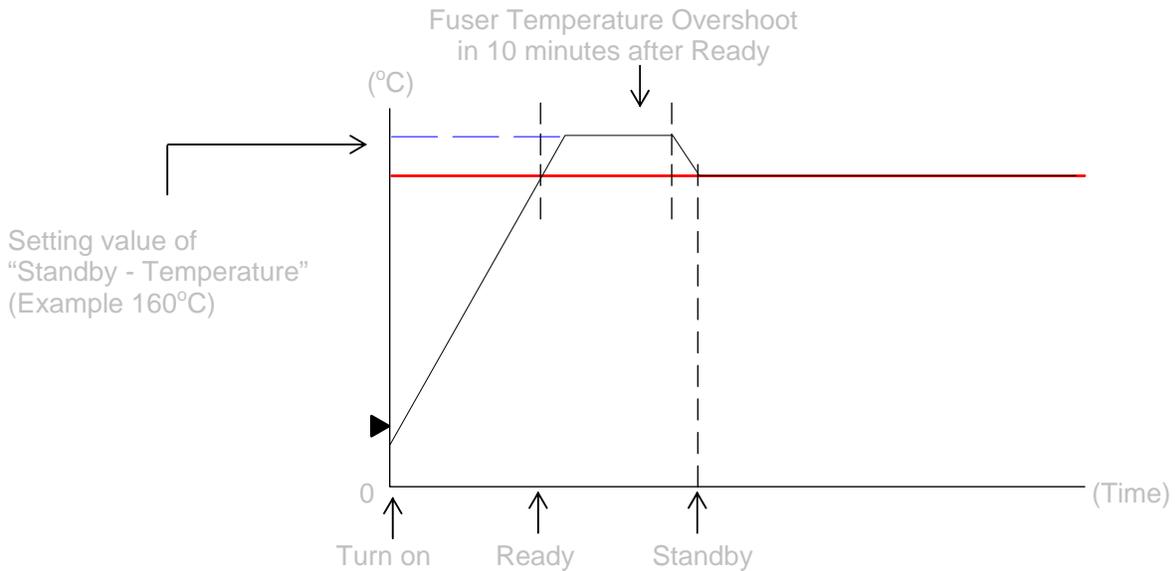
8. 5. 4. 120 Compensation of Fuser Motor Speed 4 (No.678 to 737)

Fuser Motor Speed 4 and its switch timing are explained on Fuser Motor Speed 1, 2, 3 together.
Please refer to [8.5.4.39 Compensation of Fuser Speed 1 (No.070 to 075)] on page 8-64 to 66 and the concerning pages for media type / size.

8. 5. 4. 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. 5. 4. 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. 5. 4. 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. 5. 4. 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. 5. 4. 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. 5. 4. 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. 5. 4. 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. 5. 4. 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. 5. 4. 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. 5. 4. 130 Short Interval Mode (No. 752)

“Short Interval Mode” changes any interval between sheets of a continuous print job from 251mm to 181mm. This reduces a total time of making a continuous print job. On the other hands, this also reduces the period for cleaning process, thus dirt on a print in the job or a jam may happen depending on the print image. Note that print quality in Short Interval Mode is not guaranteed.

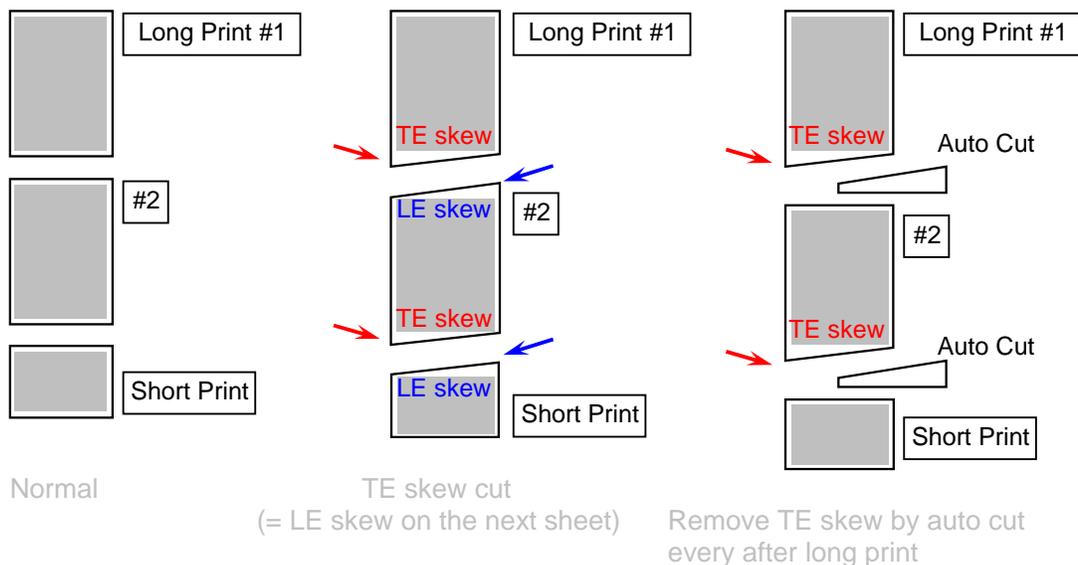
Setting value	Contents
0 (default)	Short Interval Mode disabled
1	Short Interval Mode enabled

8. 5. 4. 131 Auto Cut After Long Print (Length) (No. 753)

“Auto Cut After Long Print” is a “trimming the leading edge” function that will be automatically done every after making a long print.

The trailing edge of an extreme long print might be likely cut not in straight but having a slight angle (skew) against the feeding direction. This would create a skew leading edge on the next print, and may cause an unbalanced media transportation. If Auto Cut is done after making a long print, the next print will have the leading edge in a good angle.

Long print example: Auto Cut after one sheet of long print



No.753 defines the printer “how long millimeter in print length is a long print”.

Default Value	Setting Range	Step of increment
10	10 to 60	100mm

Note that “Auto Cut After Long Print” works only in the middle / after the completion of a specified number of sheets (No.754) of long prints. The leading edge is considered to be trimmed / cut properly by making a shorter print than No.754 or a roll replacement.

8. 5. 4. 132 Auto Cut After Long Print (Number of Sheet) (No. 754)

“Auto ICut After Long Print” is a “trimming the leading edge” function that will be automatically done evry after making a long print.

No.754 specifies the printer males an auto cut after “how many sheets of long prints”.
“0” stands for OFF.

Default Value	Setting Range	Step of increment
0	0 to 3	number of sheet

For the detail of “Auto Cut After Long Print”, see [8.5.4.131 Auto Cut After Long Print (Length) (No. 753)] in the previous section.

8. 5. 4. 133 Forced Initial Cut Before Print (No. 755)

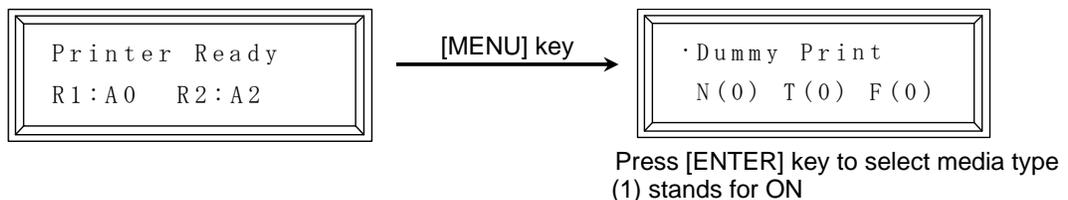
Under a certain usage environment, the first print of a job sometimes would have a wrinkle or an image void if the prints are made with a roll media left in the deck for a long period.

“Forced Initial Cut Before Print” makes an automatic initial cut in a certain amount at the leading edge before processing a job. This will remove almost one revolution of the roll media to obtain image quality and feed balance in such conditions.

No.755 specifies the cut length.

Default Value	Setting Range	Step of increment
594	210 to 600	mm

Which media type to be automatically cut with “Forced Initial Cut Before Print” can be defined in User Mode. See [8.11.3 Status Indication (Normal Mode)].



8. 6 Running Mode (Factory Mode)

NOTE

The Running Mode is prepared for factory use.
Do not take the following operation because it is meaningless to do it in the field.

8.7 Jam/Error Mask Mode

8.7.1 Function

If the printer has any paper jam or other error, it is possible to mask (ignore) it in Jam/Error Masking Mode.

The jam or error is not detected when it is masked, you can operate the printer as usual even if the cause of jam or error is not removed.

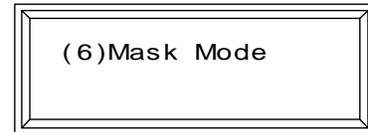
NOTE

All the current masking conditions (**except HV Error Mask**) are automatically canceled once (1) you cancel the manually in Jam/Error Masking Mode (2) you cancel Service Mode (3) you turn off the machine.

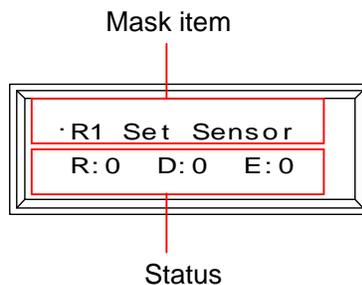
Only HV Error Mask condition will last until set it off manually.

8.7.2 Indication and Operation

1. Indicate "(6) Mask Mode" on the LCD pressing [MENU] key.



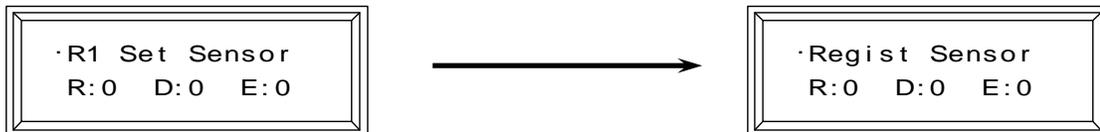
2. Press [ENTER] key, and you can enter Jam/Error Masking Mode.
The LCD indicates mask item (sensor name or error name) and status.



3. Pressing [←] key or [→] key, indicate the necessary mask item on the LCD.
 If you will mask any paper jam, go to the following step 4.
 If you will mask any error, go to the following step 6.

Mask item (Indication on the LCD)		Contents of mask
Paper jam	R1 Set Sensor	Roll Deck 1 Jam
	R2 Set Sensor	Roll Deck 2 Jam
	Feed Sensor	Feeding Jam
	Regist Sensor	Registration Jam
	Manual Sensor	Bypass Feeder Jam
	Sep Sensor	Internal Jam
	Exit Sensor	Fuser Jam
Error	M Motor Error	Main Motor Error
	F Motor Error	Fuser Motor Error
	P Motor Error	Paper Feed Motor Error
	Dev Motor Error	Developer Motor Error
	Counter Error	Counter Error
	1st Error	Image Corona Output Error
	Tr Error	Transfer Corona Output Error
	AC Error	Separation Corona Output Error
	Bias Error	Developer Bias Output Error
	FPGA Error	FPGA Configuration Error
	HV Error	High Voltage Error

4. In case you will mask any paper jam, press [ENTER] Key several times to indicate the necessary mask item.
 (Example: You will mask the Registration Jam.)



5. Each paper jam occurs being related with 3 factors such as R (Remain), D (Delay) and E (Early arrival), which can be masked separately.

The value "0" beside each factor means "not masked", and "1" means "masked".

Press [ENTER] Key several times until the necessary factor is masked.

```
·Regist Sensor  
R:0 D:0 E:0
```

↓
Press [ENTER] key.

```
·Regist Sensor  
R:0 D:0 E:1
```

The status of mask for the factor "E" (Early) changes to 1 (masked).

↓
Press [ENTER] key.

```
·Regist Sensor  
R:0 D:1 E:0
```

The status of mask for the factor "D" (Delay) changes to 1 (masked).

6. In case you will mask any error, press [ENTER] Key several times to indicate the necessary mask item.

(Example: You will mask the Main Motor Error.)

```
·R1 Set Sensor  
R:0 D:0 E:0
```



```
·M Motor Error
```

7. Press [ENTER] Key, and you can mask the selected mask item.

"Error Mask" will be indicated when the selected mask item is in the mask condition.

```
·M Motor Error
```



```
·M Motor Error  
Error Mask
```

⚠ NOTE

You can cancel the mask condition if you press [ENTER] Key once more.

8. 8 Test Print Mode

8. 8. 1 Function

Test Print Mode is available to make the printer perform printing operation by all alone (no output device is connected).

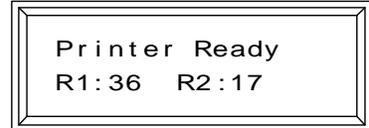
The image patterns printed in the Test Print Mode are memorized in the printer.

8. 8. 2 Indication and Operation

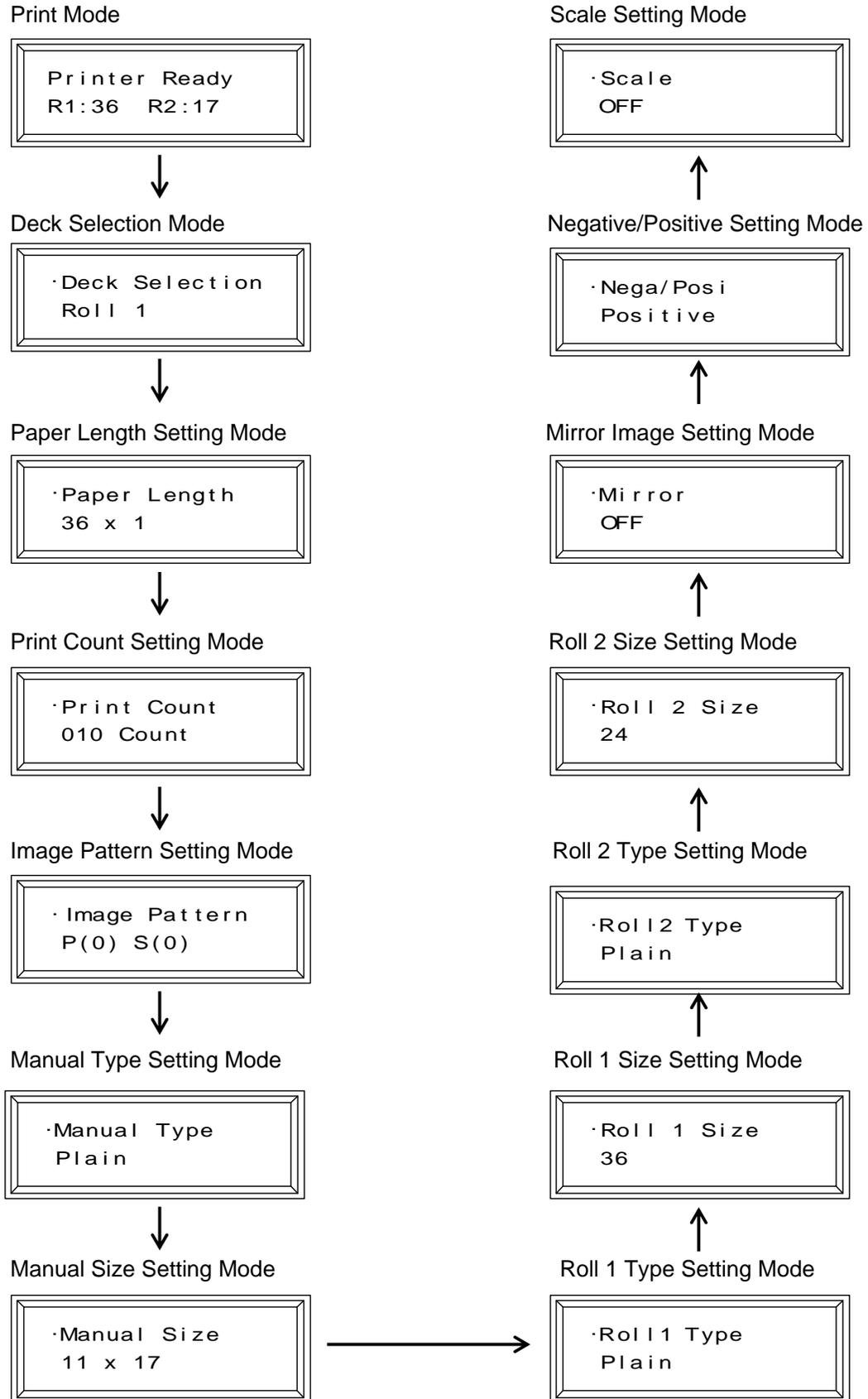
1. Indicate "(7) Test Mode" on the LCD pressing the [MENU] key.



2. Press the [ENTER] key, and you can enter the Test Print Mode.

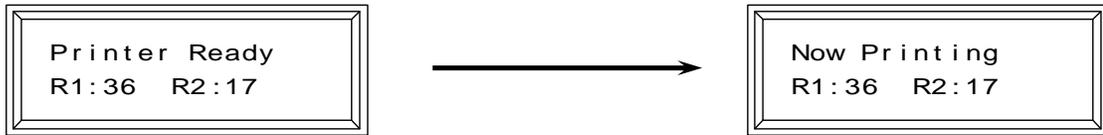


3. There are some kinds of Sub Item in the Test Print Mode.
 Please select the necessary Sub Item pressing [←] and [→] Keys.
 Please refer to the later pages as each Sub Mode is explained precisely.

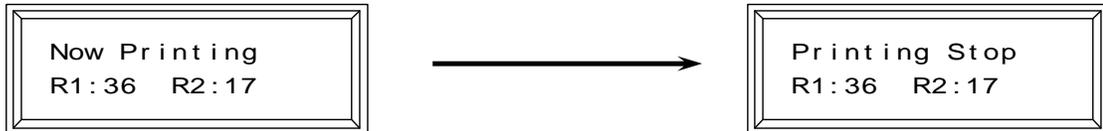


8. 8. 2. 1 Print Start Mode

Press the [ENTER] Key to start test printing.
“Now Printing” is indicated during Test Print.



Press the [ENTER] key again if you want to stop the Test Print in the middle.
“Printing Stop” is indicated.



NOTE

In addition to the above indications, you will find such indications as “Warming up”, “Printer stops.”, “Warm Sleep”, “Cold Sleep” and so on according to the condition of printer.

8. 8. 2. 2 Deck Selection

You can specify which paper source should be used for Test Print.

Select either “Roll 1” or “Roll 2” pressing the [ENTER] Key.



The Bypass Feeder is selected as the paper source automatically if only you set the cut sheet paper.
“Manual” is indicated in this case.
(It becomes impossible to make Test Print with Roll 1 or Roll 2.)



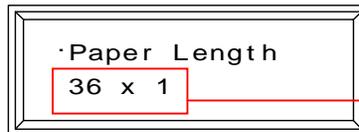
8. 8. 2. 3 Paper Length

You can specify the paper length (cut length) of the Test Print.
The following standard paper lengths are selectable.

Metric : A0, A1, A2, A3, A4, A5, B1, B2, B3, B4 and B5
Inch : 48, 44, 42, 36, 34, 24, 22, 18, 17, 12, 11, 9 and 8.5

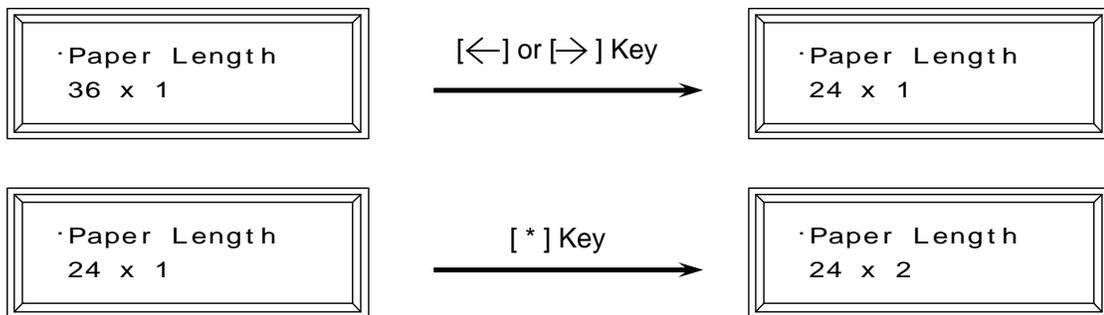
If you press the [*] key several times, you can magnify the standard size by the integral number.
(For example the cut length becomes A0 x 2 (2378mm) if you press the [*] key once when A0 is selected. It will become A0 x 3 (3567mm) if you press twice.)

1. Indicate "Paper Length" on the LCD, and then press the [ENTER] key.
The setting value ("36x1" in this case) starts flashing showing that you can change the setting now.



The setting value flashes.

2. Change the paper length pressing [←] key or [→] key.
And change the magnification pressing the [*] Key.



NOTE

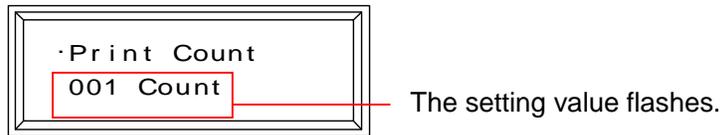
Even if you specify a longer paper length than the maximum cut length, it is automatically corrected to the maximum cut length.
(The maximum cut length relies on the paper size or the "maximum cut length" setting.)

3. Press the [ENTER] key to decide the setting.
The setting value stops flashing when decided.

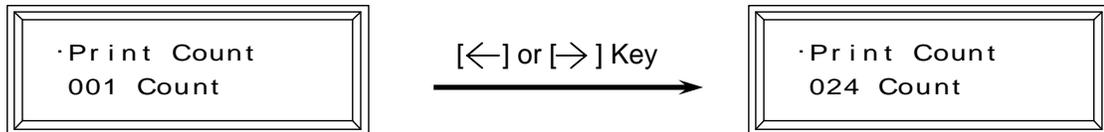
8. 8. 2. 4 Print Count

It is possible to specify how many sheets of test print should be done.

1. Indicate "Print Count" on the LCD, and then press the [ENTER] key.
The setting value ("001 Count" in this case) starts flashing showing that you can change the setting now.



2. Indicate the necessary print count pressing [←] key or [→] key.



3. Press the [ENTER] key to decide the setting.
The setting value stops flashing when decided.

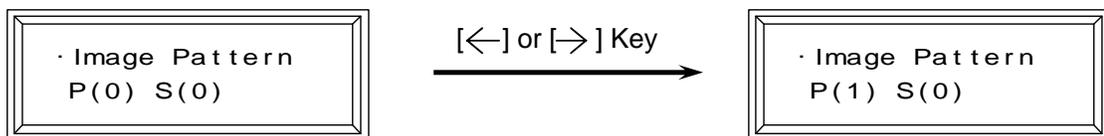
8. 8. 2. 5 Image Pattern

You can choose which image pattern should be printed in the Test Print.

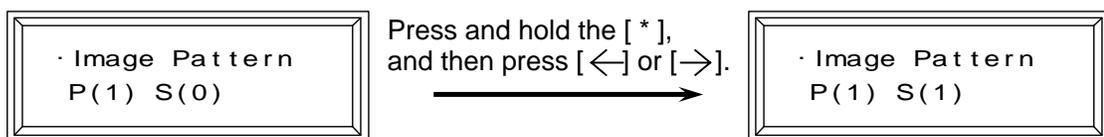
1. Indicate "Image Pattern" on the LCD, and then press the [ENTER] key.
The setting value ("P(0) S(0)" in this case) starts flashing showing that you can change the setting now.



2. "P(X)" of the setting value means the Test Pattern Number
Select the necessary Test Pattern Number pressing [←] key or [→] key.



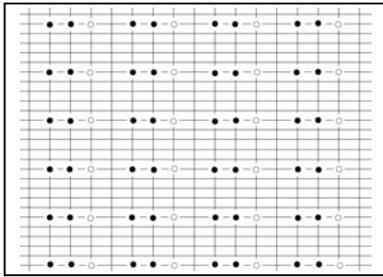
3. "S(X)" of the setting value means the size (enlargement or reduction of image pattern).
Press and hold the [*] Key, and then press [←] or [→] Key to change the size.



4. Press the [ENTER] key to decide the setting.
The setting value stops flashing when decided.

Reference

Examples of the test pattern images are shown below.



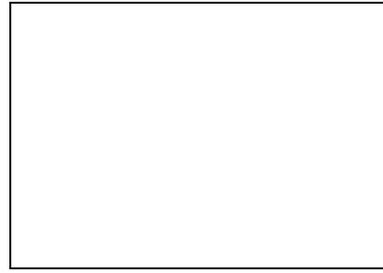
No.1



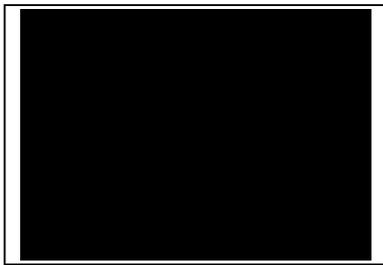
No.2



No.3



No.4 S(0) (solid white)



No.4 S(1) (solid black)



No.5 (halftone)



No.7

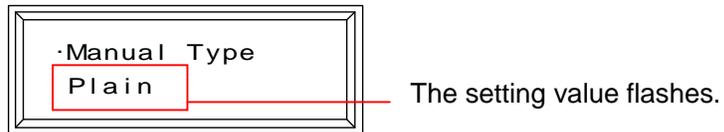


No.8 S(f)

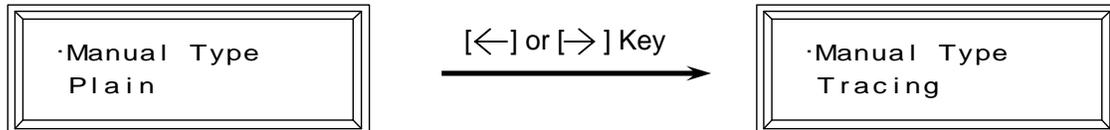
8. 8. 2. 6 Manual Type

It is possible to make the printer recognize the type of cut sheet paper you will use.

1. Indicate "Manual Type" on the LCD, and press the [ENTER] key.
The setting value ("Plain" in this case) starts flashing showing that you can change the setting now.



2. Pressing [←] key or [→] key, indicate the type of the cut sheet paper you will use.



3. Press the [ENTER] key to decide the setting.
The indication stops flashing when decided.

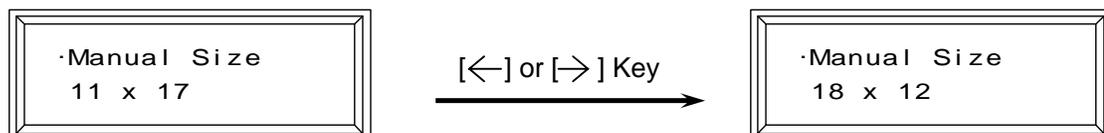
8. 8. 2. 7 Manual Size

It is possible to make the printer recognize the size of cut sheet paper you will use.

1. Indicate "Manual Size" on the LCD, and press the [ENTER] key.
The setting value ("11x17" in this case) starts flashing showing that you can change the setting now.



2. Indicate the same size with the used cut sheet paper pressing [←] key or [→] key.

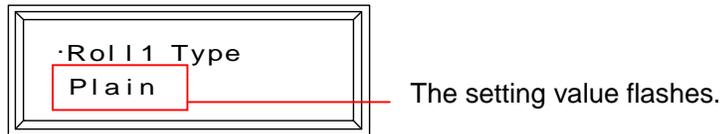


3. Press the [ENTER] key to decide the setting.
The indication stops flashing when decided.

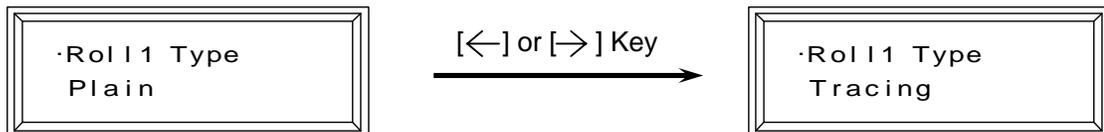
8. 8. 2. 8 Roll 1 Type

It is possible to make the printer recognize the type of roll paper in the Roll Deck 1.

1. Indicate "Roll 1 Type" on the LCD, and press the [ENTER] key.
The setting value ("Plain" in this case) starts flashing showing that you can change the setting now.



2. Pressing [←] key or [→] key, indicate the type of the roll paper installed in the Roll 1.

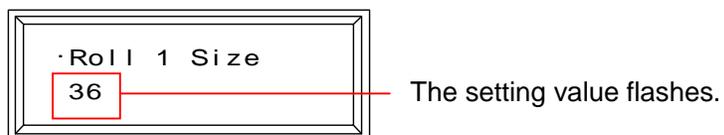


3. Press the [ENTER] key to decide the setting.
The indication stops flashing when decided.

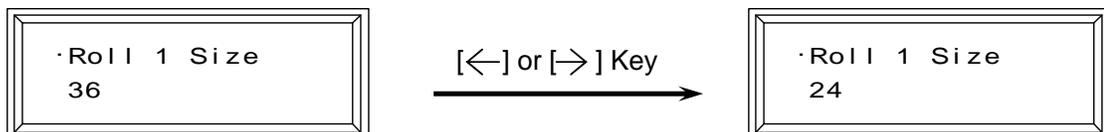
8. 8. 2. 9 Roll 1 Size

It is possible to make the printer recognize the size of roll paper in the Roll Deck 1.

1. Indicate either "Roll 1 Size" on the LCD, and press the [ENTER] key.
The setting value ("36" in this case) starts flashing showing that you can change the setting now.



2. Indicate the same size with the roll paper in the Roll Deck 1 pressing [←] key or [→] key.

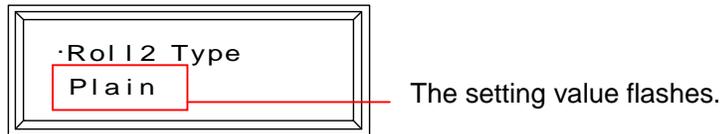


3. Press the [ENTER] key to decide the setting.
The setting value stops flashing when decided.

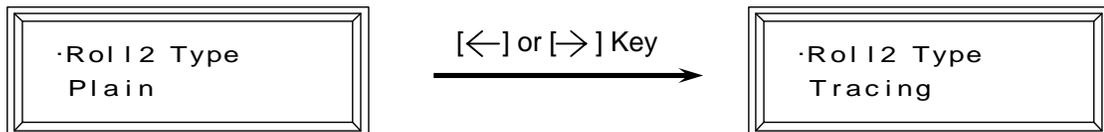
8. 8. 2.10 Roll 2 Type

It is possible to make the printer recognize the type of roll paper in the Roll Deck 2.

1. Indicate “Roll 2 Type” on the LCD, and press the [ENTER] key.
The setting value (“Plain” in this case) starts flashing showing that you can change the setting now.



2. Pressing [←] key or [→] key, indicate the type of the roll paper installed in the Roll 2.



3. Press the [ENTER] key to decide the setting.
The indication stops flashing when decided.

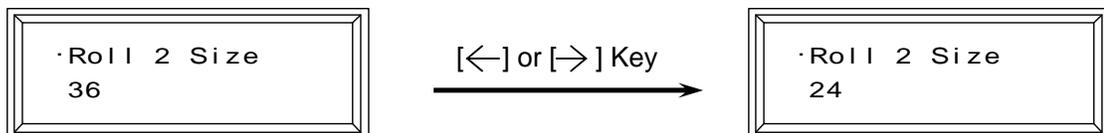
8. 8. 2.11 Roll 2 Size

It is possible to make the printer recognize the size of roll paper in the Roll Deck 2.

1. Indicate either “Roll 2 Size” on the LCD, and press the [ENTER] key.
The setting value (“36” in this case) starts flashing showing that you can change the setting now.



2. Indicate the same size with the roll paper in the Roll Deck 2 pressing [←] key or [→] key.

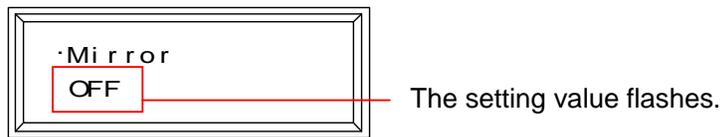


3. Press the [ENTER] key to decide the setting.
The setting value stops flashing when decided.

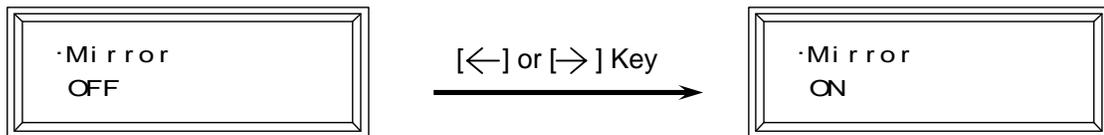
8. 8. 2.12 Mirror

It is possible to print a mirror image.

1. Indicate "Mirror" on the LCD, and press the [ENTER] key.
The setting value ("OFF" in this case) starts flashing showing that you can change the setting now.



2. Switch between ON and OFF pressing [←] key or [→] key.

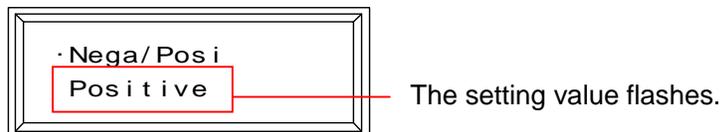


3. Press the [ENTER] key to decide the setting.
The setting value stops flashing when decided.

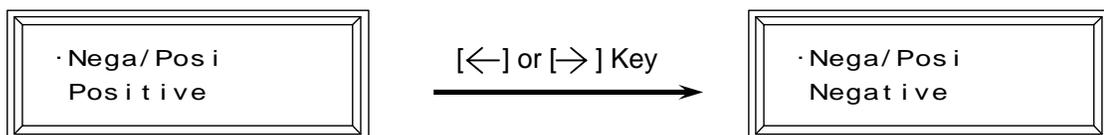
8. 8. 2.13 Nega/Posi

It is possible to print a negative image.

1. Indicate "Nega/Posi" on the LCD, and press the [ENTER] key.
The setting value ("Positive" in this case) starts flashing showing that you can change the setting now.



2. Switch between Positive and Negative pressing [←] key or [→] key.

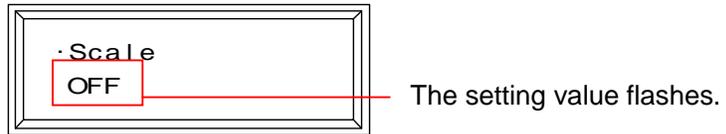


3. Press the [ENTER] key to decide the setting.
The setting value stops flashing when decided.

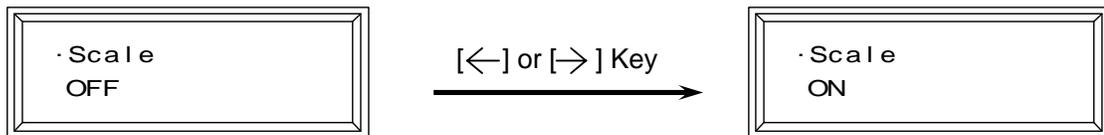
8. 8. 2.14 Scale

It is possible to print an image of “scale” on the printed paper for measuring purpose.

1. Indicate “Scale” on the LCD, and press the [ENTER] key.
The setting value (“OFF” in this case) starts flashing showing that you can change the setting now.



2. Switch between ON and OFF pressing [←] key or [→] key.



3. Press the [ENTER] key to decide the setting.
The indication stops flashing when decided.

8.9 Factory Adjustment Mode (Factory Use Only)

8.9.1 Function

This mode is used mainly in the Factory to adjust several units before shipment. The followings are available operations.

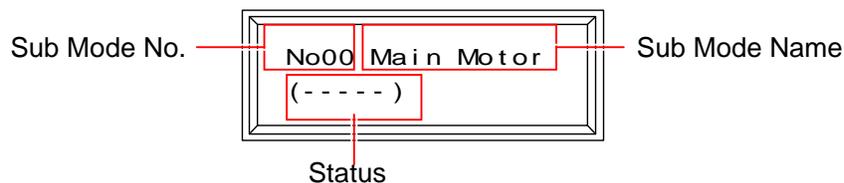
Sub Mode No.	Available operation
00	Main Motor rotates for 3 minutes.
01	Drum rotates for 1 revolution. Also the Image Corona takes discharging when the Drum is rotating.
02	Drum rotates for 1 revolution. Also the Transfer Corona takes discharging when the Drum is rotating.
03	Drum rotates for 1 revolution. Also the Separation Corona takes discharging when the Drum is rotating.
04	Main Motor rotates first, and then Bias is outputted for 3 minutes.
05	The machine makes the same operation with the normal printing.
06	Density Sensor will be tested for its sensibility.
07	Density Sensor will be tested for its standard output.
08	Density Measure will be performed.

8.9.2 Indication and Operation

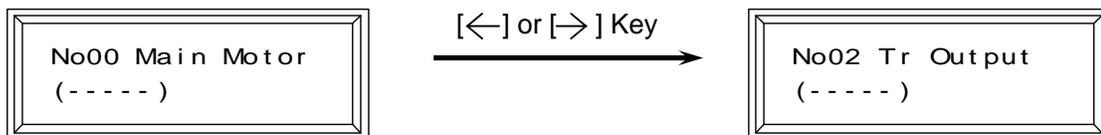
1. Indicate "(8) Factory Mode" on the LCD pressing the [MENU] key.



2. Press the [ENTER] key, and you can enter the Factory Adjustment Mode. The LCD indicates Sub Mode Number, Sub Mode Name and the status.



3. Select the necessary Sub Mode pressing [←] key or [→] key. (Example: You will make the Transfer Corona operate.)



4. Press the [ENTER] key, and the selected object starts operating. "Start" is indicated when the selected object is operating. Press the [ENTER] key again to stop the operation in the middle.



8. 10 Clear Mode

8. 10. 1 Function

It is possible to clear several kinds of information.
The following modes are available.

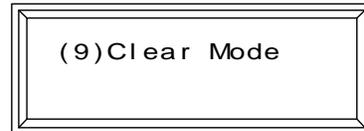
Name of mode	Contents
RAM Clear Mode	You can initialize all settings of Adjustment Mode and some other initial information memorized in the RAM.
Error Clear Mode	You can clear the error caused by the problem of Fuser Unit.
Jam Record Clear Mode	You can clear the record of jams memorized in the memory.
Error Record Clear Mode	You can clear the record of errors memorized in the memory.
Software Counter Setting Mode	You can input the value of Software Counter.
Total Counter Setting Mode	You can input the value of Total Counter which is a kind of Software Counter.
Density Compensation Reset Mode	You can reset the counter of Bias 3 Count (Main Motor operating time) and Developer / Regulation Bias to the default.

NOTE

Record all the present data for the safety before you make RAM Clear.

8. 10. 2 Indication and Operation

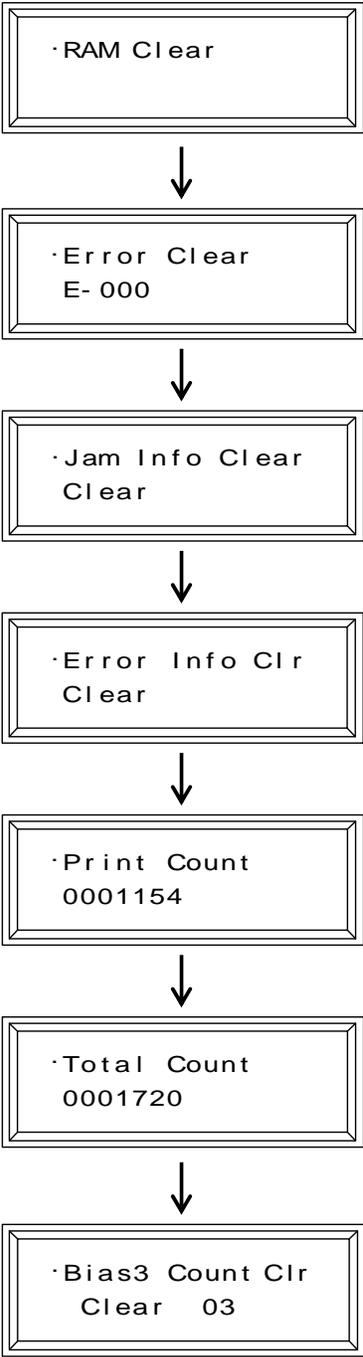
1. Indicate "(9) Clear Mode" on the LCD pressing the [MENU] key.



2. Press the [ENTER] key, and you can enter the Clear Mode.



3. Select any subordinate mode pressing [←] key or [→] key.
Please read the later pages for the explanation about each mode.

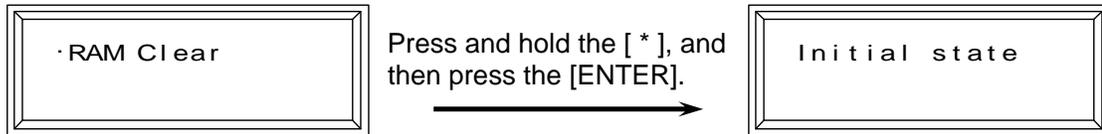


8. 10. 2. 1 RAM Clear Mode

You can initialize all setting values of Adjustment Mode and some other initial information memorized in the RAM.

To make RAM Clear, press and hold the [*] Key, and then press the [ENTER] Key. "Initial state" is indicated after the clearance.

Press any key after the RAM Clear, and you can cancel the Service Mode.



8. 10. 2. 2 Error Clear Mode

You can clear the error caused by the problem of Fuser Unit.

NOTE

The followings are possible errors caused by the problem of Fuser Unit.

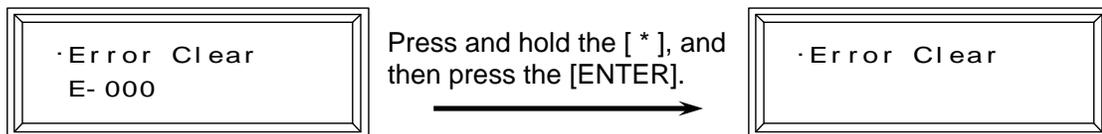
- E-000: Fuser Temperature Rising Error 1
- E-001: Fuser Over Temperature Error
- E-002: Fuser Temperature Rising Error 2
- E-003: Fuser Low Temperature Error 1
- E-004: Fuser Low Temperature Error 2

Once anyone of the above occurs, it is impossible to make copy, plot and scan unless you clear it in the Error Clear Mode!

If the Fuser has any error, its error code is indicated in the LCD.

To make Error Clear, press and hold the [*] key and then press the [ENTER] key.

No error code will be indicated after the Error Clear.



NOTE

Before you make Error Clear, please wait until the Fuser is enough cooled down.

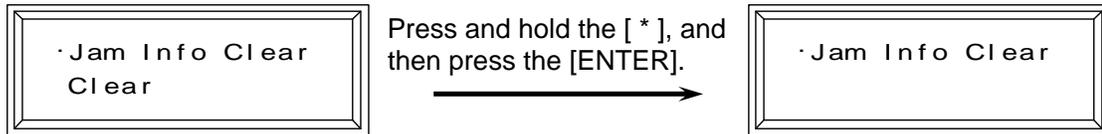
8. 10. 2. 3 Jam History Clear Mode

You can clear the record of jams memorized in the memory.

“Clear” is indicated on the LCD before the clearance.

Press and hold the [*] key and then press the [ENTER] key to clear the history of jams.

“Clear” disappears from the LCD after the clearance.



No jam code will be indicated in the No.22 (Jam Info) of the Information Mode.

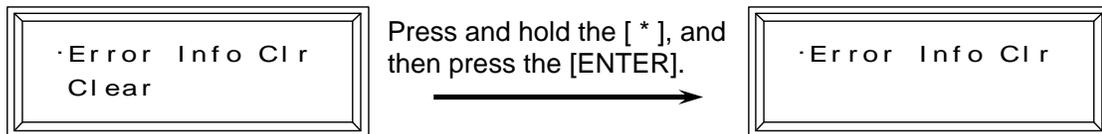
8. 10. 2. 4 Error History Clear Mode

You can clear the record of errors memorized in the memory.

“Clear” is indicated on the LCD before the clearance.

Press and hold the [*] key and then press the [ENTER] key to clear the history of errors.

“Clear” disappears from the LCD after the clearance.



No error code will be indicated in the No.23 (Error Info) of the Information Mode.

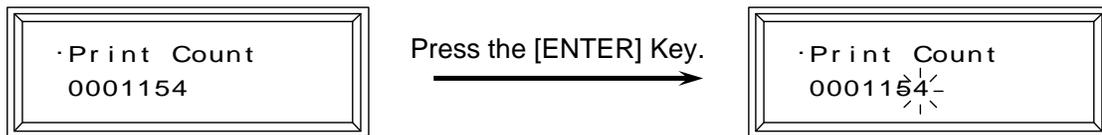
8. 10. 2. 5 Software Counter Setting Mode

You can input the value of Software Counter.

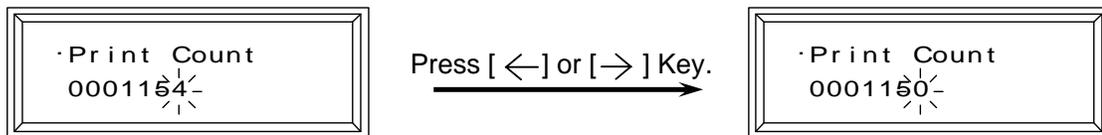
NOTE

The KIP 3100 has a Software Counter which was synchronized with the Hardware Counter. These are displayed in the UI. It is not necessary to change the value unless the PW10520 PCB is replaced or value lost to reset. In this case set the value in this mode.

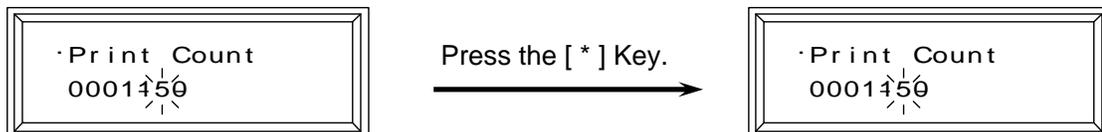
1. Indicate the Software Counter Setting Mode, and then press the [ENTER] Key.
The 1st digit of the counted value starts flashing and it becomes possible to change it.



2. Change the setting value pressing [←] key or [→] key.



3. If you press the [*] Key, one more upper digit flashes.
Change the value in the same way.



4. Press the [ENTER] key to decide the setting.
The indication stops flashing when decided.

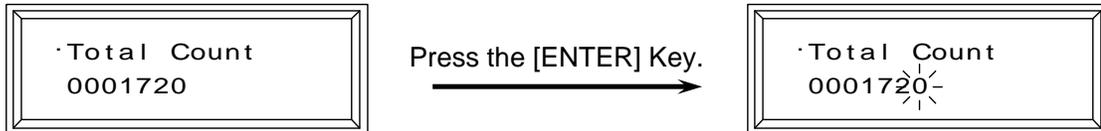
8. 10. 2. 6 Total Counter Setting Mode

You can input the value of Total Counter which is a kind of Software Counter.

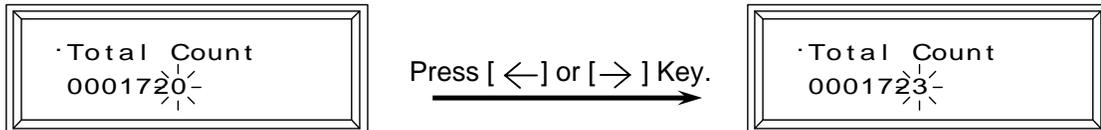
NOTE

The counting unit of Total Counter is always “linear meter”.
Note that you can not change it.

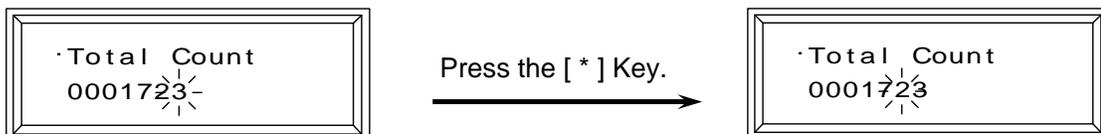
1. Indicate the Total Counter Setting Mode, and then press the [ENTER] Key.
The 1st digit of the counted value starts flashing and it becomes possible to change it.



2. Change the setting value pressing [←] key or [→] key.



3. If you press the [*] Key, one more upper digit flashes.
Change the value in the same way.



4. Press the [ENTER] key to decide the setting.
The indication stops flashing when decided.

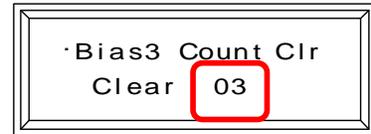
8. 10. 2. 7 Density Compensation Reset Mode

You can reset the current Auto Bias Adjustment based on Density Compensation Process to the default. This reset function will be used at the following situation.

- To be reset every after replacing Developer/Regulation Roller with new ones
- To be changed manually at replacing the whole Developer Unit

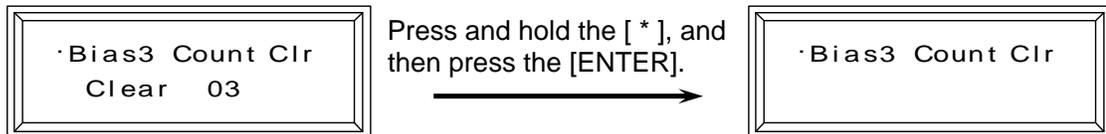
“Clear” is indicated on the LCD before the clearance.

The 2 digits in the lower row show an applied Auto Adjustment Level.

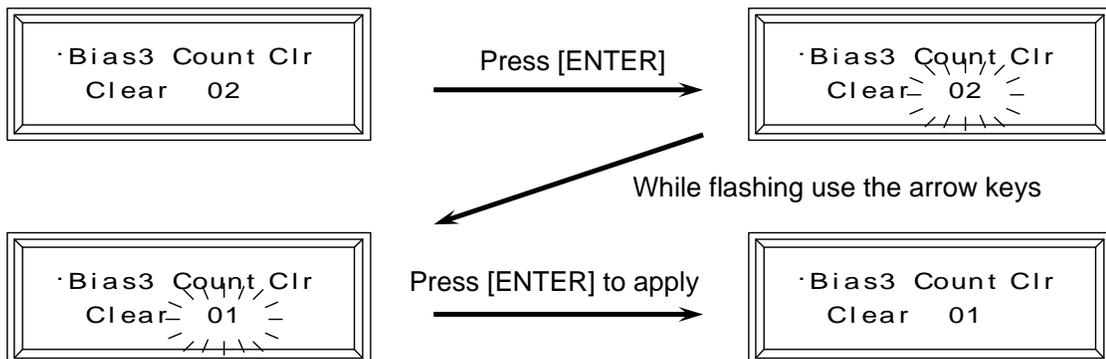


	Default upon shipment	No Compensation	Level 1	Level 2	Level 3
Developer Bias (Negative)	-180V	-180V remain default	-230V	-230V	-230V
Regulation Bias against Developer Bias	-80V	-80V remain default	-80V	-120V	-160V

Press and hold the [*] key and then press the [ENTER] key to reset the above settings. “Clear” and the digits (if shown) disappear from the LCD after the clearance.



Press only [ENTER] and the digits will flash. Use the arrow keys to change Auto Adjustment Level. Then press [ENTER] to apply the change.



8. 11 User Mode

8. 11. 1 Construction of the User Mode

The User Mode consists of following 5 sub modes.

- (1) Status Indication (Normal Mode)
- (2) Deck Information Mode
- (3) Setting Mode 1
- (4) Setting Mode 2
- (5) Command Mode

! NOTE

Almost all functions can be configured with the UI screen.
See IPS Touchscreen Operation Guide.

8. 11. 2 Selecting each sub mode

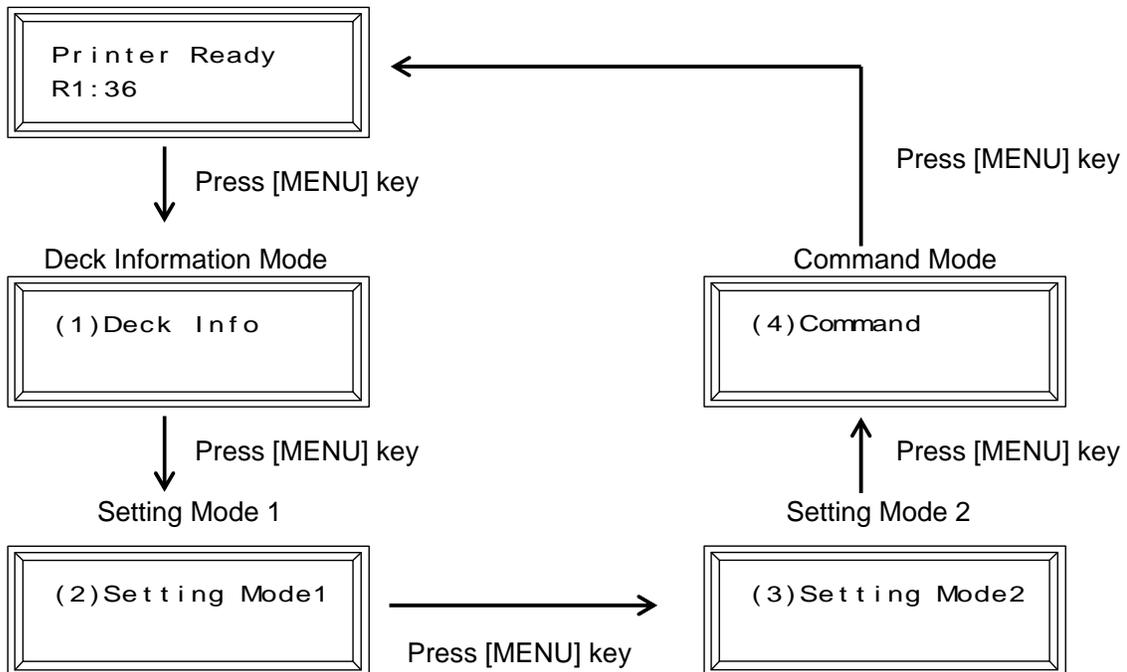
1. Confirm that the machine is OFF.
Then turn on the machine while pressing the [MENU] Key.
You can unlock the key operation of Sub UI by this operation, so it becomes possible to select each sub mode of the User Mode.

! NOTE

It is impossible to select the sub mode if the key operation is locked.

2. Select each sub mode pressing the [MENU] key.
The name of selected sub mode is indicated on the LCD.

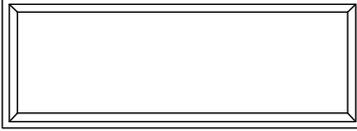
Status Indication (Normal Mode)



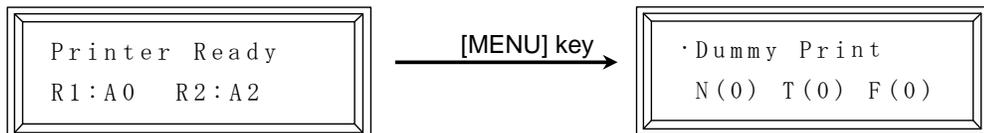
8. 11. 3 Status Indication (Normal Mode)

Normally the LCD indicates the status of printer.

The following list shows the possible indication and the status of printer.

LCD Indication	Status of printer
	Printer is in warming up.
	Printer is ready for printing.
	Printer is now on printing.
	Printing is stopped in the middle.
	Printer is stopped by some abnormal condition.
	Printer is in the Warm Sleep.
	Printer is in the Cold Sleep.

To use "Forced Initial Cut Before Print", press [MENU] key while Sub UI is displaying media width. Press [ENTER] key to scroll and select the media type to make an initial cut. "1" means "automatic initial cut ON". For further details, see [8.5.4.133 Forced Initial Cut Before Print] on page 8-138.



Press [ENTER] key to select media type

N: Plain / Bond	T: Tracing / Vellum	F: Film
(0) ---	(0) ---	(0) ---
(1) Initial Cut ON	(0) ---	(0) ---
(0) ---	(1) Initial Cut ON	(0) ---
(1) Initial Cut ON	(1) Initial Cut ON	(0) ---
(0) ---	(0) ---	(1) Initial Cut ON
(1) Initial Cut ON	(0) ---	(1) Initial Cut ON
(0) ---	(1) Initial Cut ON	(1) Initial Cut ON
(1) Initial Cut ON	(1) Initial Cut ON	(1) Initial Cut ON

(OFF) default →

[ENTER] key

8. 11. 4 Deck Information Mode

8. 11. 4. 1 Function

It is possible to indicate the information about the roll paper (size, type and remaining level).

8. 11. 4. 2 Indication and Operation

1. Indicate "(1) Deck Info" on the LCD pressing the [MENU] Key.



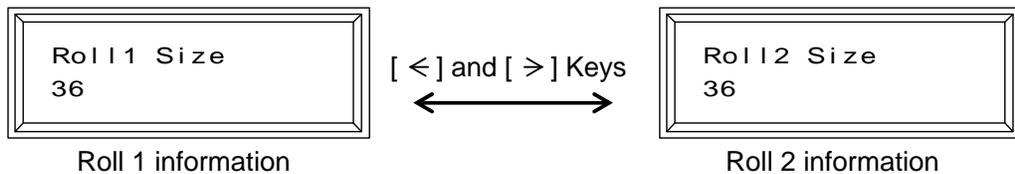
2. Press the [ENTER] key to enter the Deck Information Mode.



3. If you press [<] and [>] Keys, you can indicate either "Roll 1 Size" or "Roll 2 Size" on the LCD.

You check the information about the Roll1 when "Roll 1 Size" is indicated, and you can check that of Roll 2 when "Roll 2 Size" is indicated.

So select either Roll Deck of which information you will check.

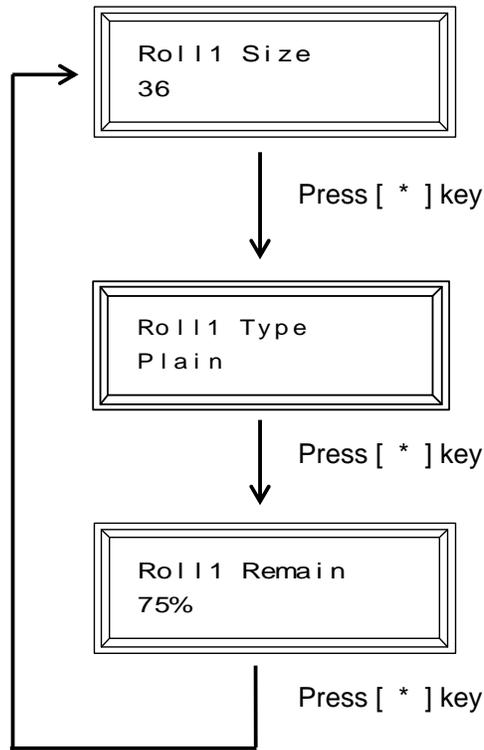


NOTE

You can indicate "Roll 2 Size" only when the machine is equipped with the Roll Deck 2.

4. After selecting the Roll Deck, press the [*] key several times to indicate the information about the selected Roll Deck.

The LCD indicates “Size (Width)”, “Type” and “Remain (Remaining level of roll)” orderly whenever you press the [*] Key.



Reference

(1) Each indication in “Roll Remain” means as follows.

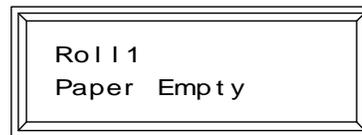
100%	From 100 to 75%
75%	From 75 to 50%
50%	From 50 to 10%
10%	Smaller than 10%

(2) The following messages are also indicated according to the situation.

Machine is checking the paper.



Selected roll paper is empty.



8. 11. 5 Setting Mode 1

8. 11. 5. 1 Function

This is a setting mode to make the machine recognize the size and the type of roll paper.

8. 11. 5. 2 Indication and Operation

(1) Roll type setting

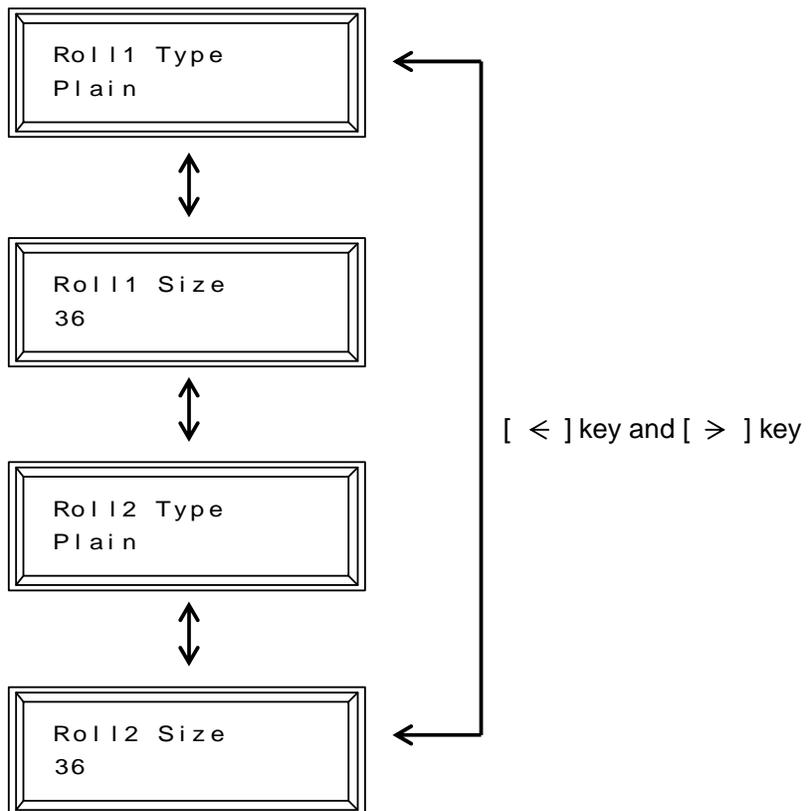
1. Indicate “(2) Setting Mode 1” on the LCD pressing the [MENU] Key.



2. Press the [ENTER] key to enter the Setting Mode 1. The LCD initially indicates “Roll 1 Type”.



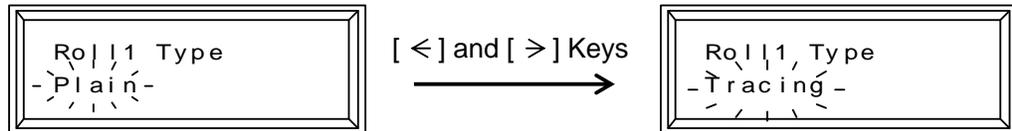
3. There are 2 setting items “Roll Type” and “Roll Size” in the Setting Mode, which you can specify for each Roll Deck 1 and 2 respectively. To specify the type of roll paper, indicate either “Roll 1 Type” or “Roll 2 Type” pressing the [<] key and [>] key.



- Press the [ENTER] Key when you will change the paper type.
The paper type indicated on the 2nd line starts flashing, which means now you can change the setting.



- Pressing the [<] and [>] Keys, select the type of the roll paper installed on the concerning Roll Deck.



! NOTE

“1” is indicated after the paper type if you press the [*] Key at this time.
It means the special paper.
(Tracing 1 in this example means “Tracing paper of special paper”.)



- Press the [ENTER] Key finally to decide the setting.
The selected setting (“Tracing” in this example) stops flashing when decided.



(2) Size setting

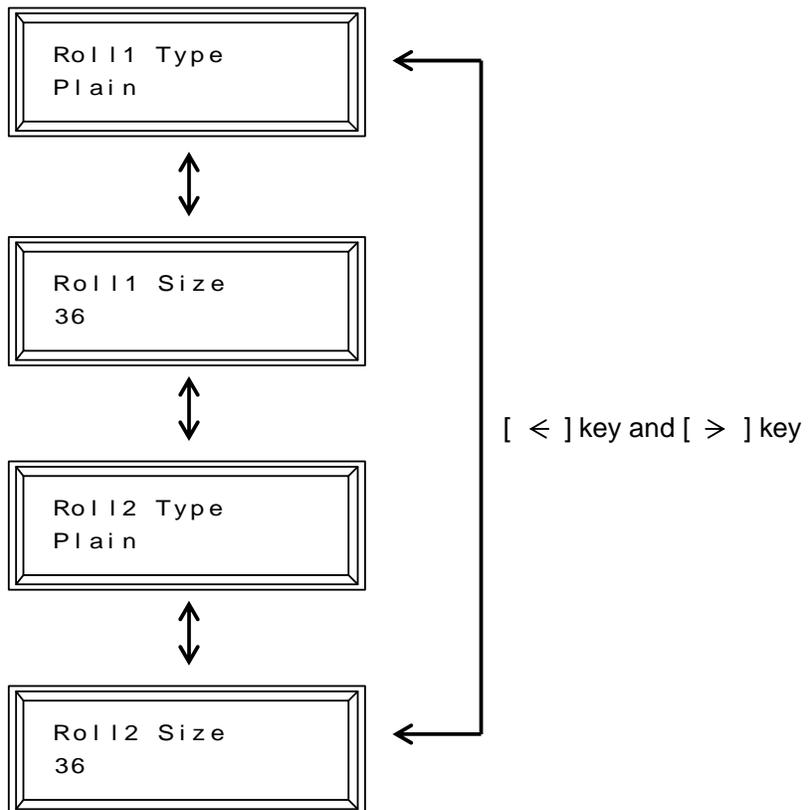
1. Indicate "(2) Setting Mode 1" on the LCD pressing the [MENU] Key.



2. Press the [ENTER] key to enter the Setting Mode 1. The LCD initially indicates "Roll 1 Type".



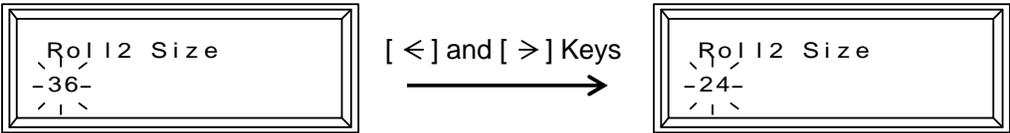
3. There are 2 setting items "Roll Type" and "Roll Size" in the Setting Mode, which you can specify for each Roll Deck 1 and 2 respectively. To specify the size of roll paper, indicate either "Roll 1 Size" or "Roll 2 Size" pressing the [<] key and [>] key.



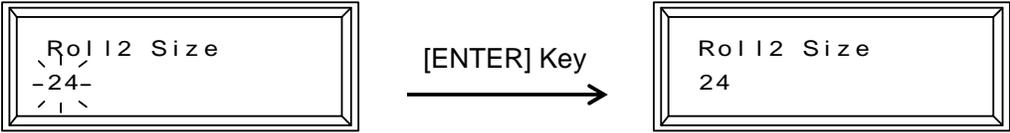
4. Press the [ENTER] Key when you will change the size setting. The size indicated on the 2nd line starts flashing, which means now you can change the setting.



5. Pressing the [<] and [>] Keys, select the size of the roll paper installed on the concerning Roll Deck.



6. Press the [ENTER] Key finally to decide the setting.
The selected setting ("24" in this example) stops flashing when decided.



8. 11. 6 Setting Mode 2

8. 11. 6. 1 Function

It is possible to validate several power saving functions or to change its timer setting.
Also it is possible to validate several functions related with image process.

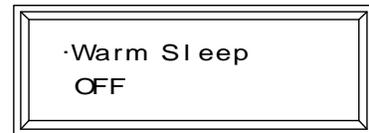
8. 11. 6. 2 Indication and Operation

(1) Selection of each Sub Mode

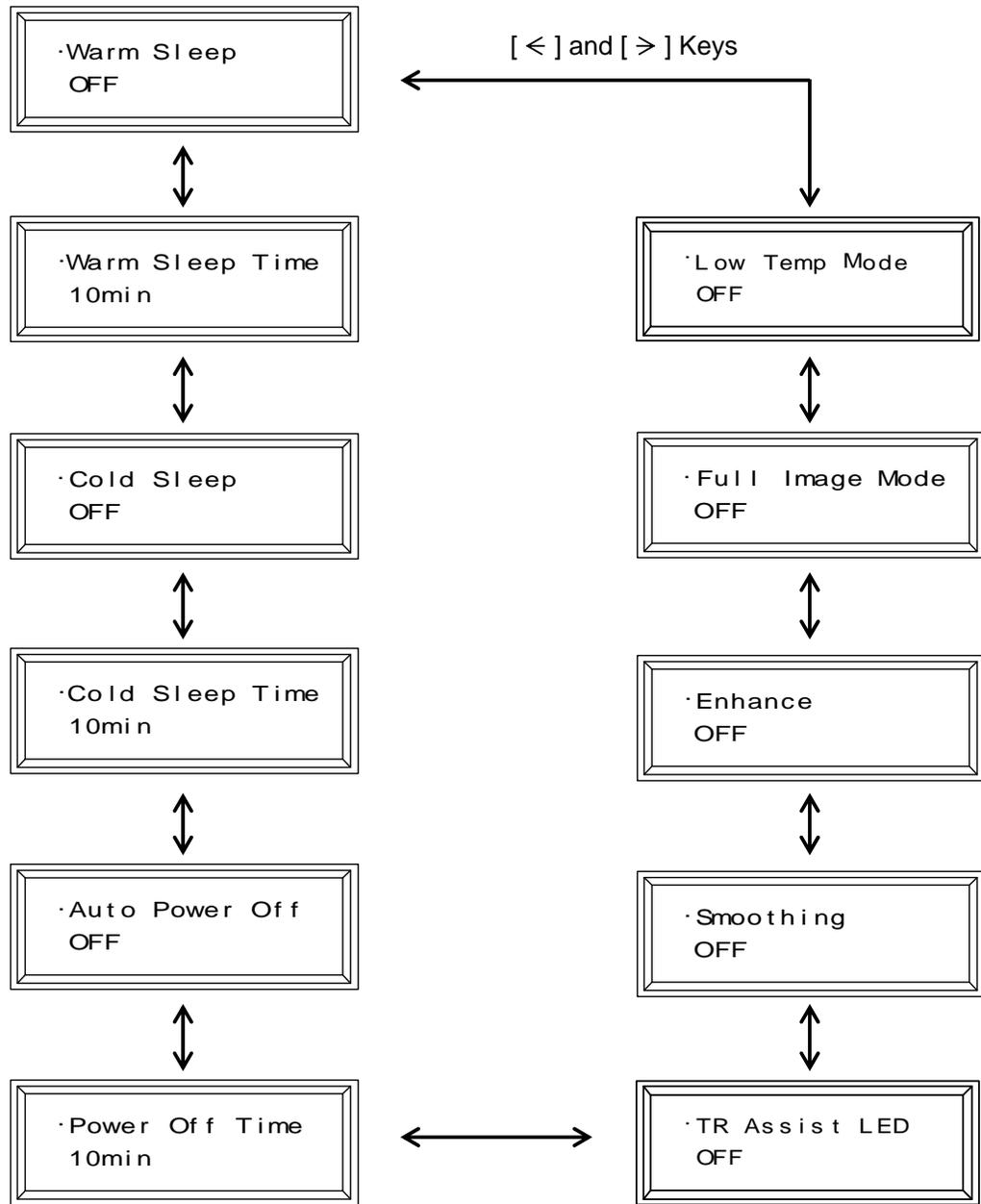
1. Press the [MENU] key to indicate "(3) Setting Mode 2".



2. Press the [ENTER] key to enter the Setting Mode 2.
The LCD initially indicates "Warm Sleep".



3. As there are 10 Sub Modes in the Setting Mode 2, select the necessary one pressing the [] and [>] Key.



(2) ON / OFF setting of Warm Sleep Mode

It is possible to validate the Warm Sleep Mode which is a kind of power saving function.
(You can set the timer of the Warm Sleep Mode in another Sub Mode. Refer to [(3) Timer setting of Warm Sleep Mode] on the page 8-172.)

Reference

The purpose of Warm Sleep Mode is to reduce the power consumption by falling down the temperature of heater some degrees.

The temperature of the heater unit is about 160 -170 degrees Centigrade when the KIP 3100 is ready.

But if no print job or copy job is sent for a long time, it is better for saving the power to fall down the temperature of heater.

(Temperature is kept about 100 degrees Centigrade.)

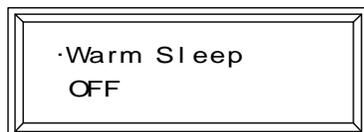
The Warm Sleep Mode will be cancelled automatically if only you send a print job or a copy job from the outer device.

However, please understand it takes some minutes to recover from the Warm Sleep Mode because it is necessary to raise the temperature again up to about 160 - 170 degrees Centigrade. (Print starts when the KIP 3100 gets ready.)

1. Select "Warm Sleep" in the Setting Mode 2.
(Refer to [(1) Selection of each Sub Mode] on the page 8-169 how to select it.)



2. Switch between "ON" and "OFF" pressing the [ENTER] Key.
The Warm Sleep Mode will work if you select "ON".



[ENTER] Key
↔



(3) Timer setting of Warm Sleep Mode

It is possible to set a timer of the Warm Sleep Mode.

If the KIP 3100 receives no job for the time you have specified here, the Warm Sleep Mode works. (It is necessary to validate the Warm Sleep Mode in another Sub Mode if you would like to work it. Refer to [(2) ON / OFF setting of Warm Sleep Mode] on the page 8-171.)

Reference

The purpose of Warm Sleep Mode is to reduce the power consumption by falling down the temperature of heater some degrees.

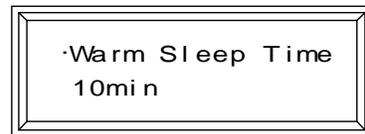
The temperature of the heater unit is about 160 -170 degrees Centigrade when the KIP 3100 is ready.

But if no print job or copy job is sent for a long time, it is better for saving the power to fall down the temperature of heater. (Temperature is kept about 100 degrees Centigrade.)

The Warm Sleep Mode will be cancelled automatically if only you send a print job or a copy job from the outer device.

However, please understand it takes some minutes to recover from the Warm Sleep Mode because it is necessary to raise the temperature again up to about 160 - 170 degrees Centigrade. (Print starts when the KIP 3100 gets ready.)

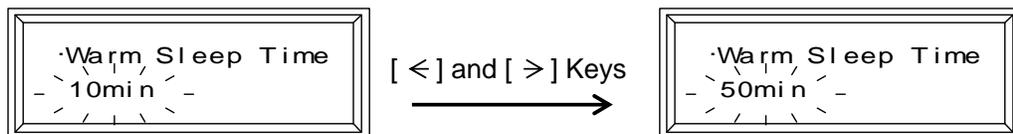
1. Select "Warm Sleep Time" in the Setting Mode 2.
(Refer to [(1) Selection of each Sub Mode] on the page 8-169 how to select it.)



2. Press the [ENTER] Key when you will change the timer setting.
The value indicated on the 2nd line starts flashing, which means now you can change the setting.



3. Change the timer value pressing the [<] and [>] Keys.
The setting range is from 10 minutes to 4 hours.



4. Press the [ENTER] Key finally to decide the timer setting.
The timer value stops flashing when decided.



(4) ON / OFF setting of Cold Sleep Mode

It is possible to validate the Cold Sleep Mode which is a kind of power saving function.
(You can set the timer of the Cold Sleep Mode in another Sub Mode. Refer to [(5) Timer setting of Cold Sleep Mode] on the page 8-174.)

Reference

The purpose of Cold Sleep Mode is not to consume as much power as possible by shutting off supplying the power to the heater unit.

It can save more power than Warm Sleep Mode.

The temperature of the heater unit is about 160 - 170 degrees Centigrade when the KIP 3100 is ready.

But if the KIP 3100 does not receive any print job or copy job for a long time, it is the best way for saving the power to stop supplying the power to the heater unit completely.

The Cold Sleep Mode will be cancelled automatically if only you send a print job or a copy job from the outer device.

However, please understand it takes a little long time to recover from the Cold Sleep Mode because it is necessary to raise the temperature again up to about 160 -170 degrees Centigrade. (Print starts when the KIP 3100 gets ready.)

1. Select "Cold Sleep" in the Setting Mode 2.
(Refer to [(1) Selection of each Sub Mode] on the page 8-169 how to select it.)



2. Switch between "ON" and "OFF" pressing the [ENTER] Key.
The Cold Sleep Mode will work if you select "ON".



[ENTER] Key
↔



(5) Timer setting of Cold Sleep Mode

It is possible to set a timer of the Cold Sleep Mode.

If the KIP 3100 receives no job for the time you have specified here, the Cold Sleep Mode works. (It is necessary to validate the Cold Sleep Mode in another Sub Mode if you would like to work it. Refer to [(4) ON / OFF setting of Cold Sleep Mode] on the page 8-173.)

Reference

The purpose of Cold Sleep Mode is not to consume as much power as possible by shutting off supplying the power to the heater unit.

It can save more power than Warm Sleep Mode.

The temperature of the heater unit is about 160 - 170 degrees Centigrade when the KIP 3100 is ready.

But if the KIP 3100 does not receive any print job or copy job for a long time, it is the best way for saving the power to stop supplying the power to the heater unit completely.

The Cold Sleep Mode will be cancelled automatically if only you send a print job or a copy job from the outer device.

However, please understand it takes a little long time to recover from the Cold Sleep Mode because it is necessary to raise the temperature again up to about 160 -170 degrees Centigrade. (Print starts when the KIP 3100 gets ready.)

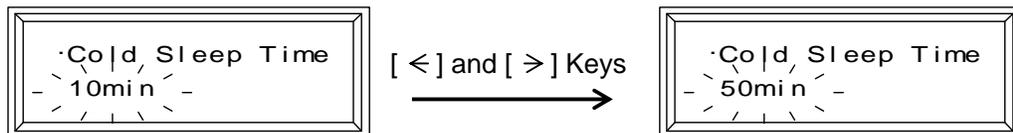
1. Select "Cold Sleep Time" in the Setting Mode 2.
(Refer to [(1) Selection of each Sub Mode] on the page 8-169 how to select it.)



2. Press the [ENTER] Key when you will change the timer setting.
The value indicated on the 2nd line starts flashing, which means now you can change the setting.



3. Change the timer value pressing the [<] and [>] Keys.
The setting range is from 10 minutes to 4 hours.



4. Press the [ENTER] Key finally to decide the timer setting.
The timer value stops flashing when decided.



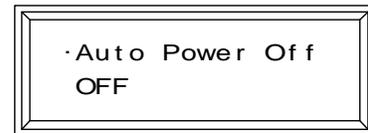
(6) ON / OFF setting of Auto Power OFF

It is possible to validate the Auto Power OFF which is a kind of power saving function.
(You can set the timer of the Auto Power OFF in another Sub Mode. Refer to [(7) Timer setting of Auto Power OFF] on the page 8-176.)

Reference

The Auto Power OFF is the function to switch off the KIP 3100 automatically if no print job or copy job is sent for the time you have specified in advance (timer).
If the KIP 3100 is turned off by the Auto Power OFF, the operator needs to turn it on again pressing the Power Switch. (It is impossible to turn it on automatically.)

1. Select "Auto Power Off" in the Setting Mode 2.
(Refer to [(1) Selection of each Sub Mode] on the page 8-169 how to select it.)



2. Switch between "ON" and "OFF" pressing the [ENTER] Key.
The Auto Power OFF will work if you select "ON".



(7) Timer setting of Auto Power OFF

It is possible to set a timer of the Auto Power OFF.

If the KIP 3100 receives no job for the time you have specified here, the Auto Power OFF works. (It is necessary to validate the Auto Power OFF in another Sub Mode if you would like to work it. Refer to [(6) ON / OFF setting of Auto Power OFF] on the page 8-175.)

Reference

The Auto Power OFF is the function to switch off the KIP 3100 automatically if no print job or copy job is sent for the time you have specified in advance (timer).

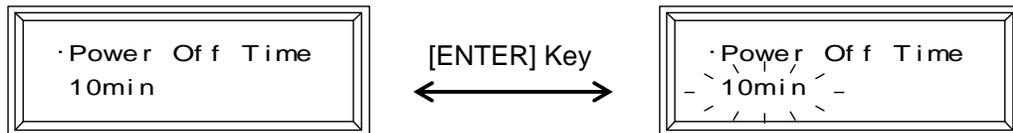
If the KIP 3100 is turned off by the Auto Power OFF the operator needs to turn it on again pressing the Power Switch. (It is impossible to turn it on automatically.)

1. Select "Power Off Time" in the Setting Mode 2.
(Refer to [(1) Selection of each Sub Mode] on the page 8-169 how to select it.)

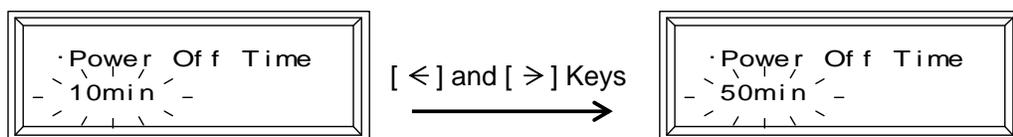


·Power Off Time
10min

2. Press the [ENTER] Key when you will change the timer setting.
The value indicated on the 2nd line starts flashing, which means now you can change the setting.



3. Change the timer value pressing the [<] and [>] Keys.
The setting range is from 10 minutes to 4 hours.



4. Press the [ENTER] Key finally to decide the timer setting.
The timer value stops flashing when decided.



(8) Transfer Assist setting

To print the image clearer, it is possible to make the Transfer Assist LED (Separation Lamp) work.

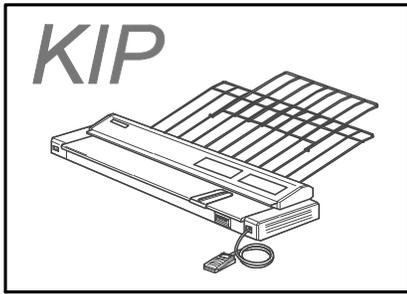
Reference

There may be the case that the print image looks so light (not so clear) although the density setting is proper or higher than required. This kind of problem may occur when the used printing paper is special, because it is difficult to transfer the toner image fully onto it.

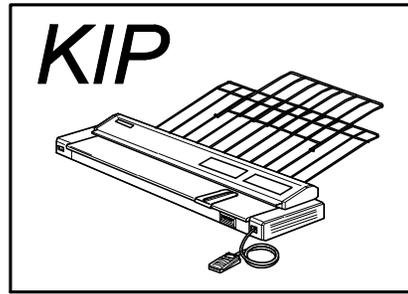
The Transfer Assist LED (Separation Lamp) is the solution for this kind of problem as it helps to transfer the toner image.

Try to make it work if you feel the print image is so light.

Transfer Assist LED is OFF.
(Image looks not so clear.)



Transfer Assist LED is ON.
(Image looks clear with enough density.)



NOTE

You can specify to which type of paper the Transfer Assist LED (Separation Lamp) should work.

It can be specified in the Service Mode.

Refer to [8. 5. 4.38 Operation of Separation Lamp (No.067)] on the page 8-63.

1. Select "TR Assist LED" in the Setting Mode 2.
(Refer to [(1) Selection of each Sub Mode] on the page 8-169 how to select it.)

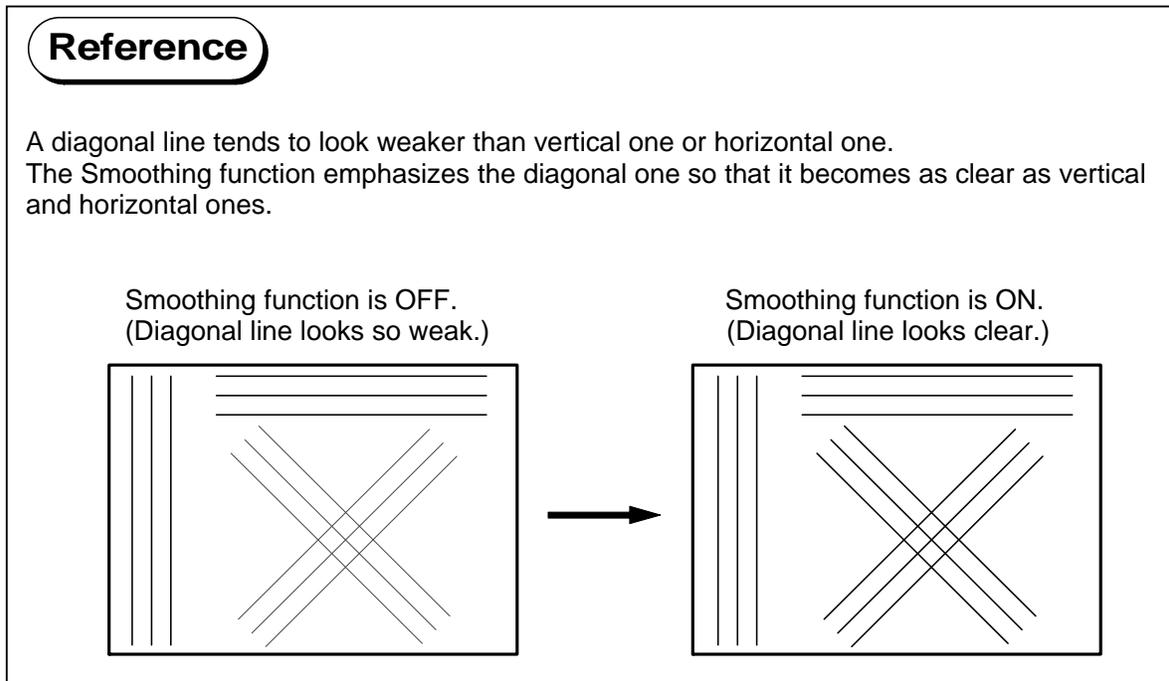


2. Switch between "ON" and "OFF" pressing the [ENTER] Key.
The Transfer Assist LED will work if you select "ON".



(9) Smoothing setting

It is possible to validate the Smoothing function which makes a diagonal line look clearer.



1. Select "Smoothing" in the Setting Mode 2.
(Refer to [(1) Selection of each Sub Mode] on the page 8-169 how to select it.)



2. Switch between "ON" and "OFF" pressing the [ENTER] Key.
The Smoothing function is validated if you select "ON".



(10) Dot Enhancement ON/OFF setting

It is possible to validate the Dot Enhancement function which makes an isolated dot look clearer.

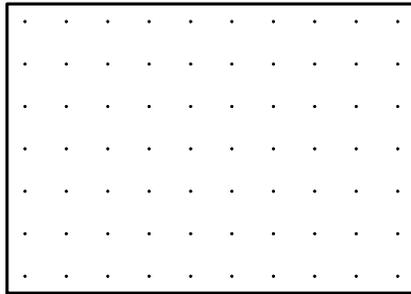
Reference

An isolated dot image tends to look so weak.

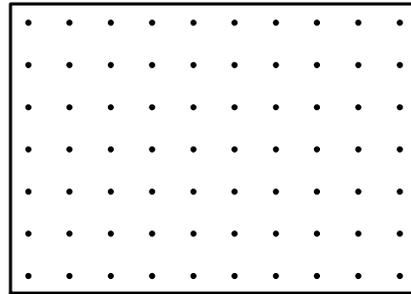
The Dot Enhancement function emphasizes the isolated dot so that it looks clear.

(Dot Enhancement function emphasizes only the isolated dot. It will not emphasize the dots coming together some degree.)

Dot Enhancement function is OFF.
(Diagonal line looks so weak.)



Dot Enhancement function is ON.
(Diagonal line looks clear.)



NOTE

The Dot Enhancement function is validated if you select ON in the User Mode.

At this time the Level (degree) of Dot Enhancement Function relies on the setting in the Service Mode.

Refer to [8. 5. 4.25 Dot Enhancement Level (Dither) (No.052)] on the page 8-57 for this setting.

1. Select "Enhance" in the Setting Mode 2.
(Refer to [(1) Selection of each Sub Mode] on the page 8-169 how to select it.)



2. Switch between "ON" and "OFF" pressing the [ENTER] Key.
The Dot Enhancement function is validated if you select "ON".



(11) Full Image Mode setting

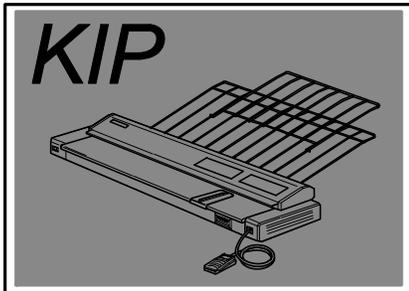
Full Image Mode can be validated, which makes it possible to print the image in the trailing margin area.

Reference

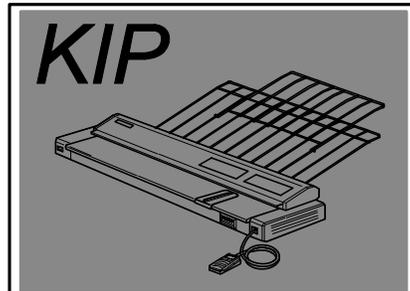
Usually each print is compulsively provided with a trailing margin of 3mm long regardless of the image size.

But the image can be printed even in the trailing margin area if you validate the Full Image Mode.

Full Image Mode is OFF.
(Print is provided with trailing margin.)



Full Image Mode is OFF.
(No trailing margin is provided.)



NOTE

The interval between each sheet of print becomes longer than usual if you validate the Full Image Mode, because it requires a cleaning operation between each sheet.

1. Select "Full Image Mode" in the Setting Mode 2.
(Refer to [(1) Selection of each Sub Mode] on the page 8-169 how to select it.)

· Full Image Mode
OFF

2. Switch between "ON" and "OFF" pressing the [ENTER] Key.
The Full Image Mode is validated if you select "ON".

· Full Image Mode
OFF

[ENTER] Key
↔

· Full Image Mode
ON

(12) Low Temperature Mode setting

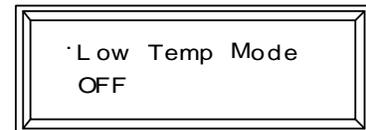
Low Temperature Mode can be validated to secure the fusing quality in the cold environment.

Reference

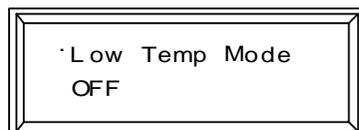
The toner image may not be fixed firmly onto the paper if you make a copy or plot right after turning on the machine (in the morning especially) in very cold environment. But it is possible to avoid this kind of fusing problem by the Low Temperature Mode. It works as follows.

1. If both the center and sides of the Fuser Roller are colder than 30 degrees centigrade when you turn on the machine (or when you cancel the Sleep Mode), the Low Temperature Mode is validated.
2. The Fuser Roller is heated up to 10 degrees higher than the setting temperature. (If the setting temperature is 170 degrees, it is heated up to 180 degrees.)
3. The machine does not get ready even if the Fuser Roller is heated up to 10 degrees higher than the setting temperature. Instead of that the Fuser Roller continues rotating for 360 seconds. (Setting temperature plus 10 degrees is kept during this period.)
4. When 360 seconds has passed, the machine gets ready.

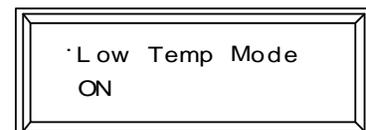
1. Select "Low Temp Mode" in the Setting Mode 2. (Refer to [(1) Selection of each Sub Mode] on the page 8-169 how to select it.)



2. Switch between "ON" and "OFF" pressing the [ENTER] Key. The Full Image Mode is validated if you select "ON".



[ENTER] Key
↔



8. 11. 7 Command Mode

8. 11. 7. 1 Function

This is a mode to make Initial Cut for the roll media.

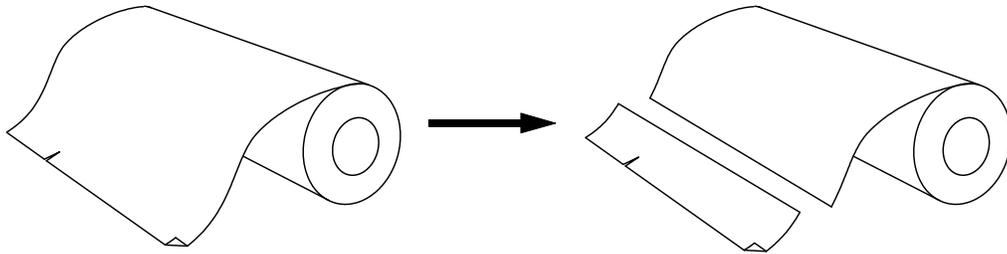
Reference

The leading edge of the new roll media may be rough or folded.

To straighten the leading edge easily, the KIP 3100 has a convenient function called "Initial Cut".

If you select one roll media and make the Initial Cut, the leading part (210mm from the leading edge) of roll media is cut off.

The leading edge of that roll media is straight after the Initial Cut.



8. 11. 7. 2 Indication and Operation

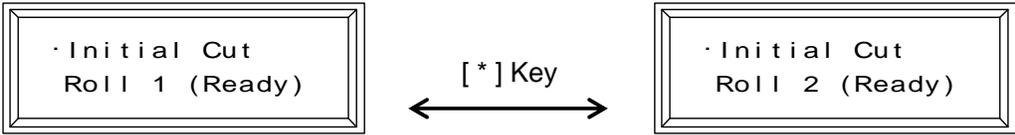
1. Press the [MENU] key to indicate "(4) Command".

(4) Command

2. Press the [ENTER] key to enter the Command Mode.
The LCD indicates "Initial Cut".

· Initial Cut
Roll 1 (Ready)

3. Pressing the [*] Key, select either “Roll 1” or “Roll 2” to which you will make Initial Cut.



4. Press the [ENTER] Key to make Initial Cut.
The LCD indicates “(Start)” during the Initial Cut.



! NOTE

The LCD indicates “(- - - -)” is it is impossible to make Initial Cut by some reason like an error of machine.

The diagram shows a rectangular box representing an LCD screen. It contains the text: "· Initial Cut" on the first line and "Roll 2 (- - - -)" on the second line.

8. 12 KIP Scanner Utility

8. 12. 1 Installation

NOTE

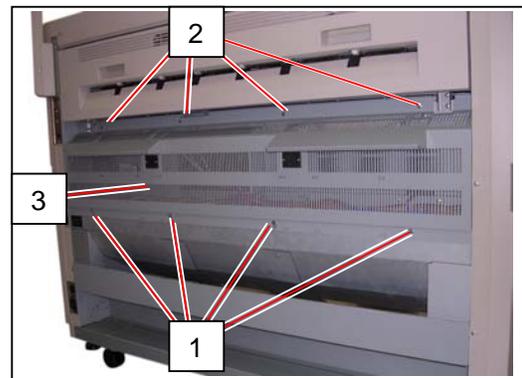
Below are the system requirements to operate KIP Scanner Utility.

- Windows 2000 / XP operating system
- USB 2.0 support

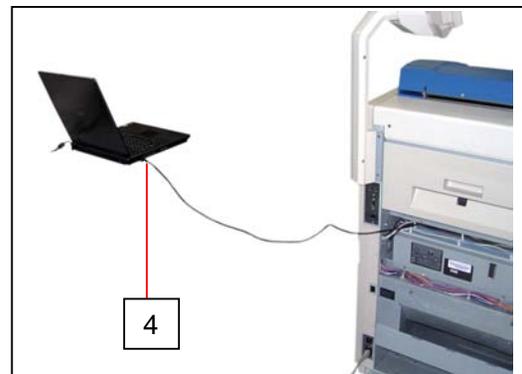
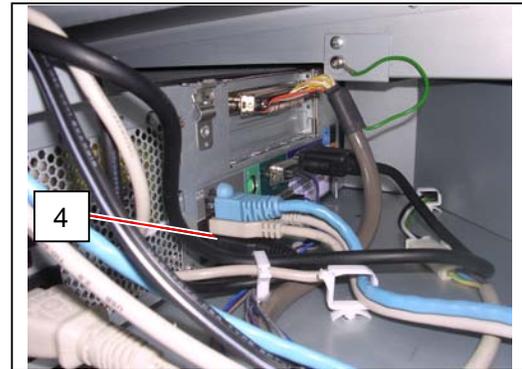
8. 12. 1. 1 Installing USB Driver

NOTE: Contact your KIP partner for the latest software and save it to any available storage on your service PC.

1. Loosen 4 screws (1), remove 4 screws (2) to remove Cover 10 (3).



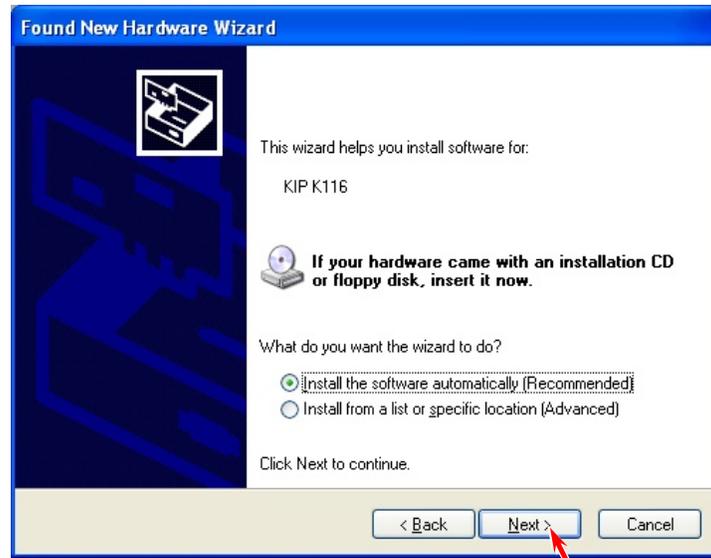
2. Disconnect the USB Cable (4), and connect it to the USB port to **your service PC**.



3. Turn on both your PC and the KIP 3100.
[Found New Hardware Wizard] for “KIP K116” starts automatically.
If the following message appears, select your driver update option and click [Next].



4. Choose “Search for a suitable driver for my device [recommended]”. Click [Next].
If the auto detection does not work properly, click “Install from a list of specific location [Advanced]” to locate the driver software (.ini).



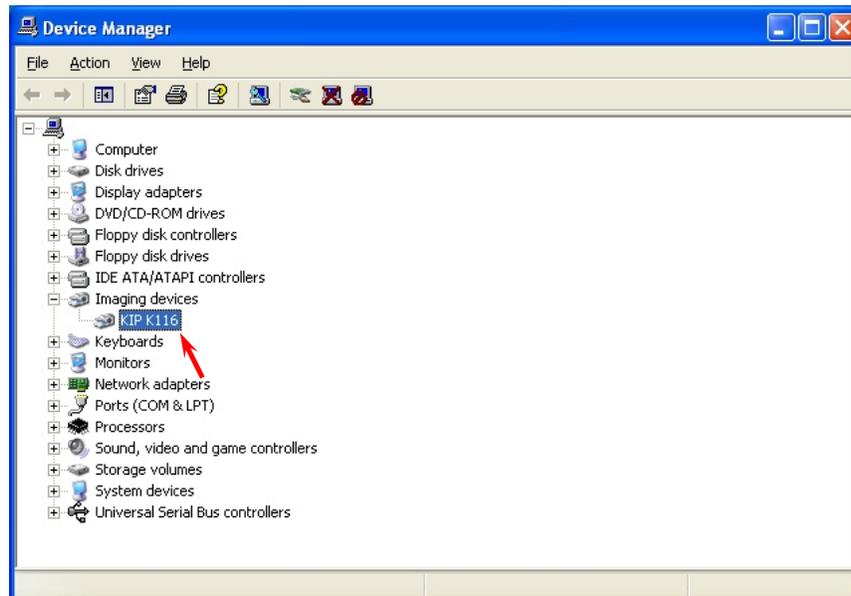
5. Click [Continue Anyway] when the following message is indicated.



6. Click [Finish] to close [Found New Hardware Wizard].



7. Open Device Manager, and confirm that "KIP K116" is operating properly.



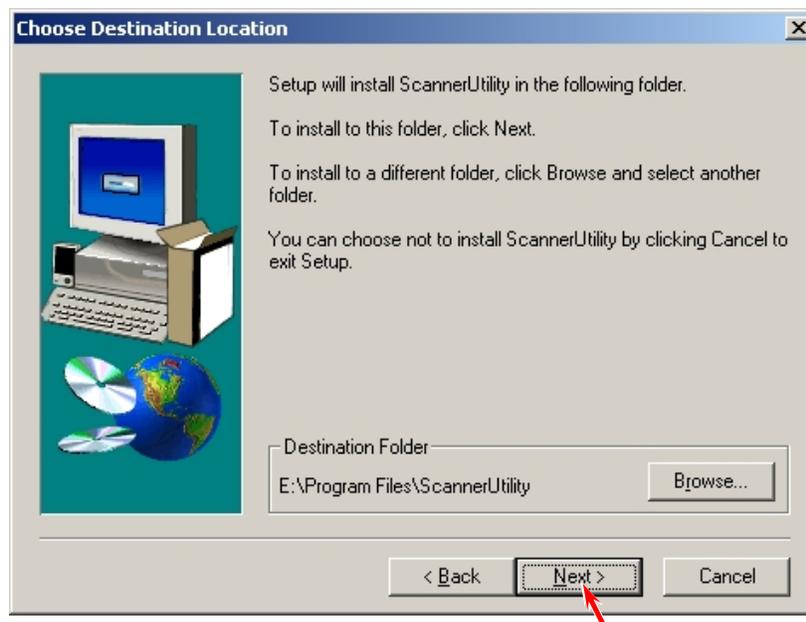
8. 12. 1. 2 Installing KIP Scanner Utility

NOTE: Contact your KIP partner for the latest software and save it to any available storage on your service PC.

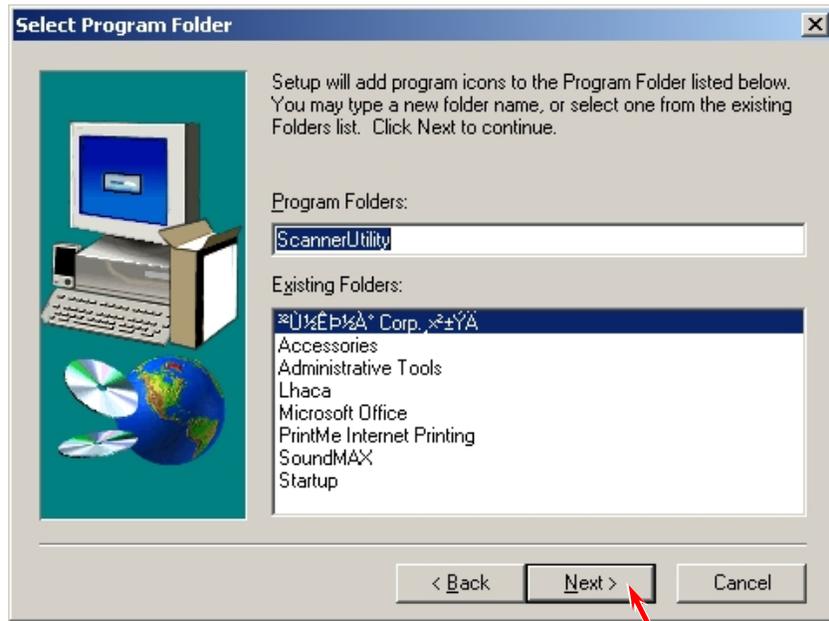
1. Locate your SETUP.EXE for Scanner Utility and execute it.
2. The Setup program starts. Click [Next].



3. The destination of the software can be changed. Click [Next].



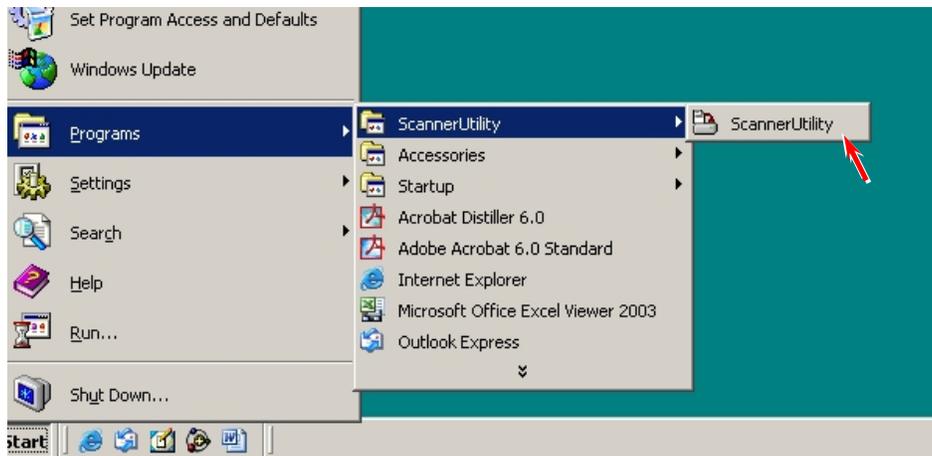
4. The name of the program folder can be changed. Click [Next].



5. The following message is indicated when all files have been copied. Click [Finish].

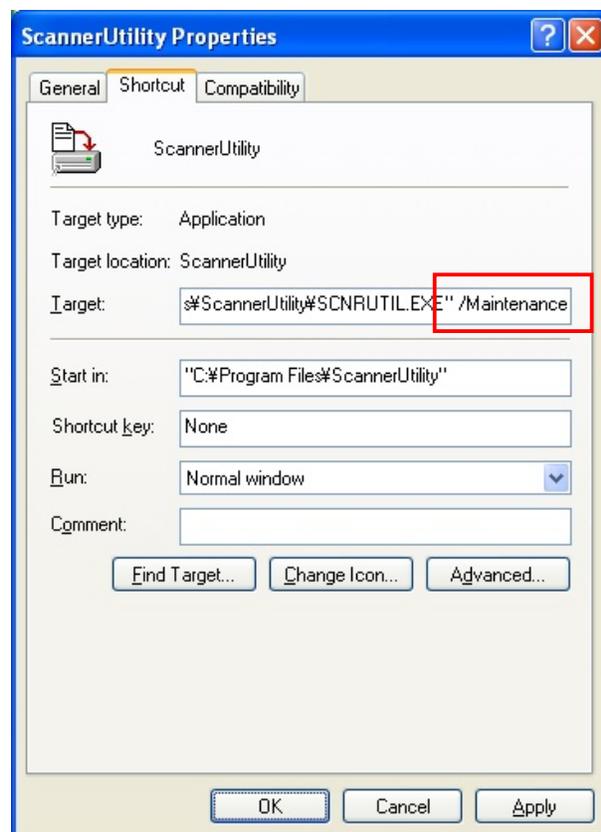


6. Open the properties panel for the “Scanner Utility” shortcut on “Start” _”Program” _ “Scanner Utility” _ “Scanner Utility”. (ex. right click on the shortcut)



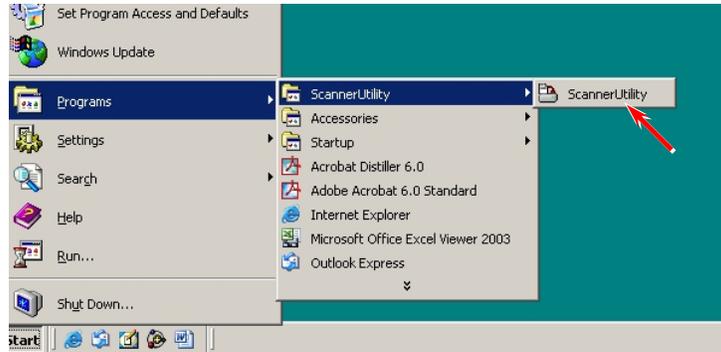
7. Add the following text to the end of the target path. Click [Apply].

“(one byte space)/Maintenance”

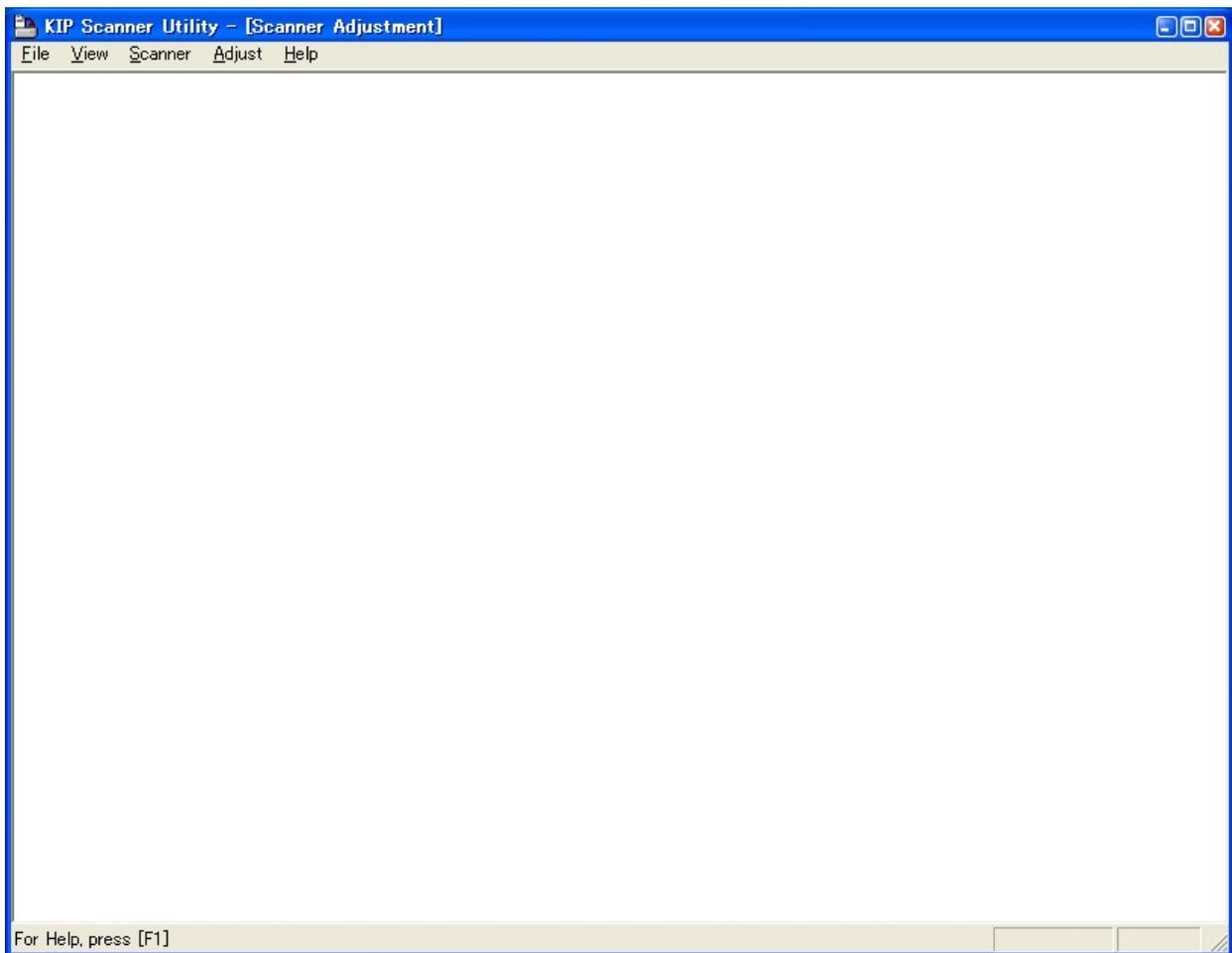


8. 12. 2 Starting KIP Scanner Utility

Start KIP Scanner Utility by; “Start” _”Program” _ “ScannerUtility” _ “ScannerUtility”



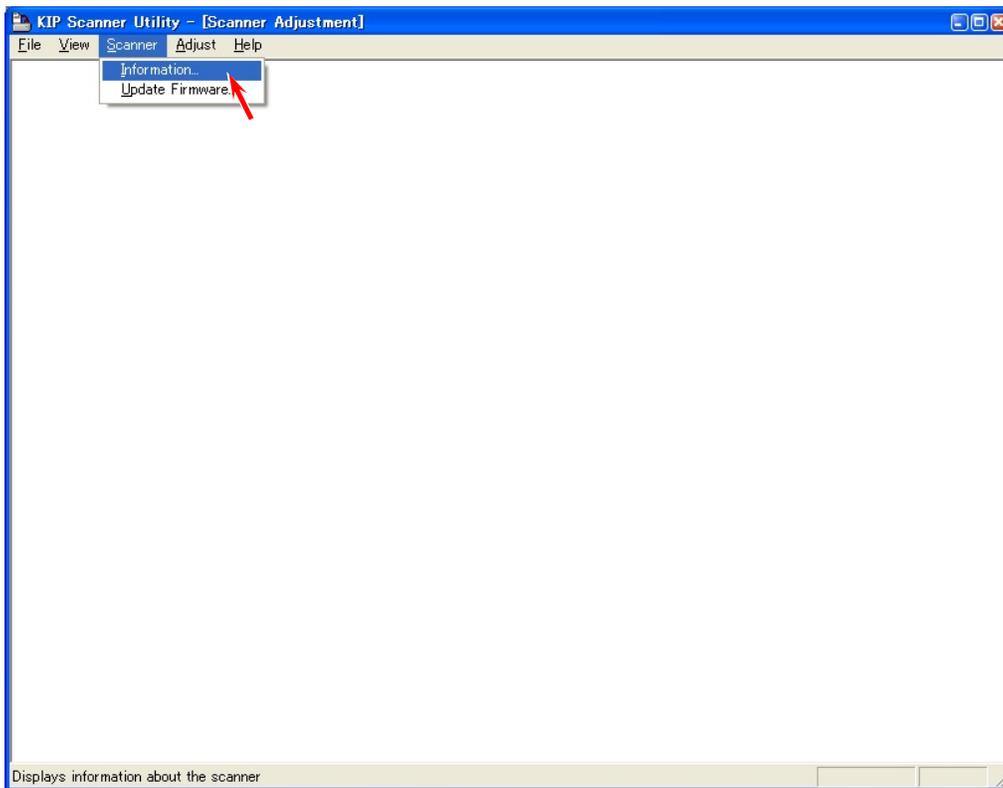
(KIP Scanner Utility's initial screen)



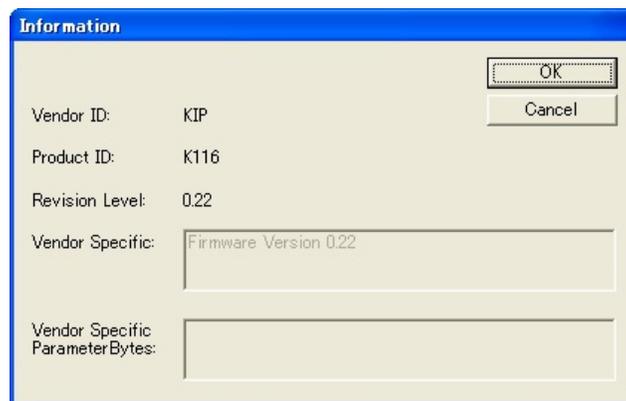
8. 12. 3 Displaying Scanner Information

It is possible to display the scanner information in the following way.

1. Select [Information] under [Scanner].



2. KIP Scanner Utility acquires the scanner information and displays it.



8. 12. 4 Scanner Adjustment

It is possible to make the following scanner adjustment with KIP 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. 12. 4. 1 Shading (calibration)

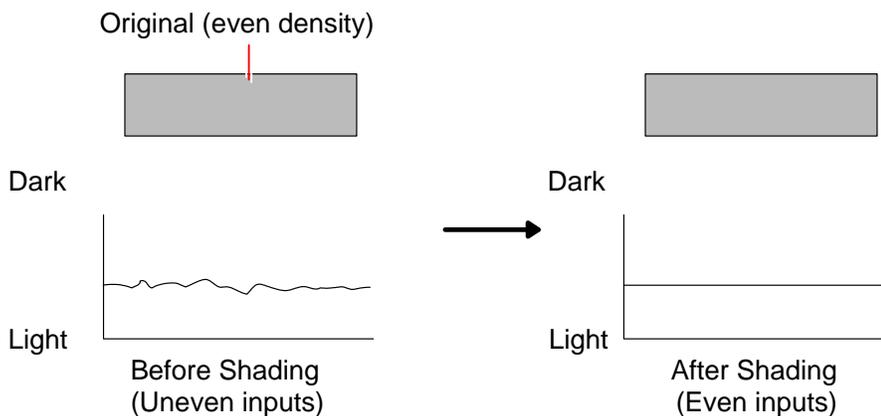
[Purpose of Shading (calibration)]

The pixels on the CIS are not same but they have their own characteristic.

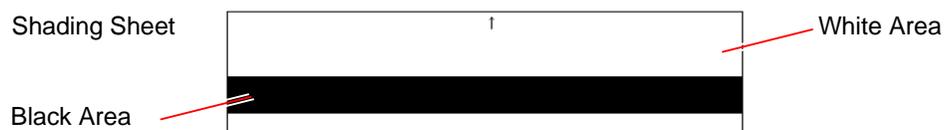
This may be a problem because the inputs (density) from those pixels are uneven although they read the same image (density).

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 KIP 3100 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;

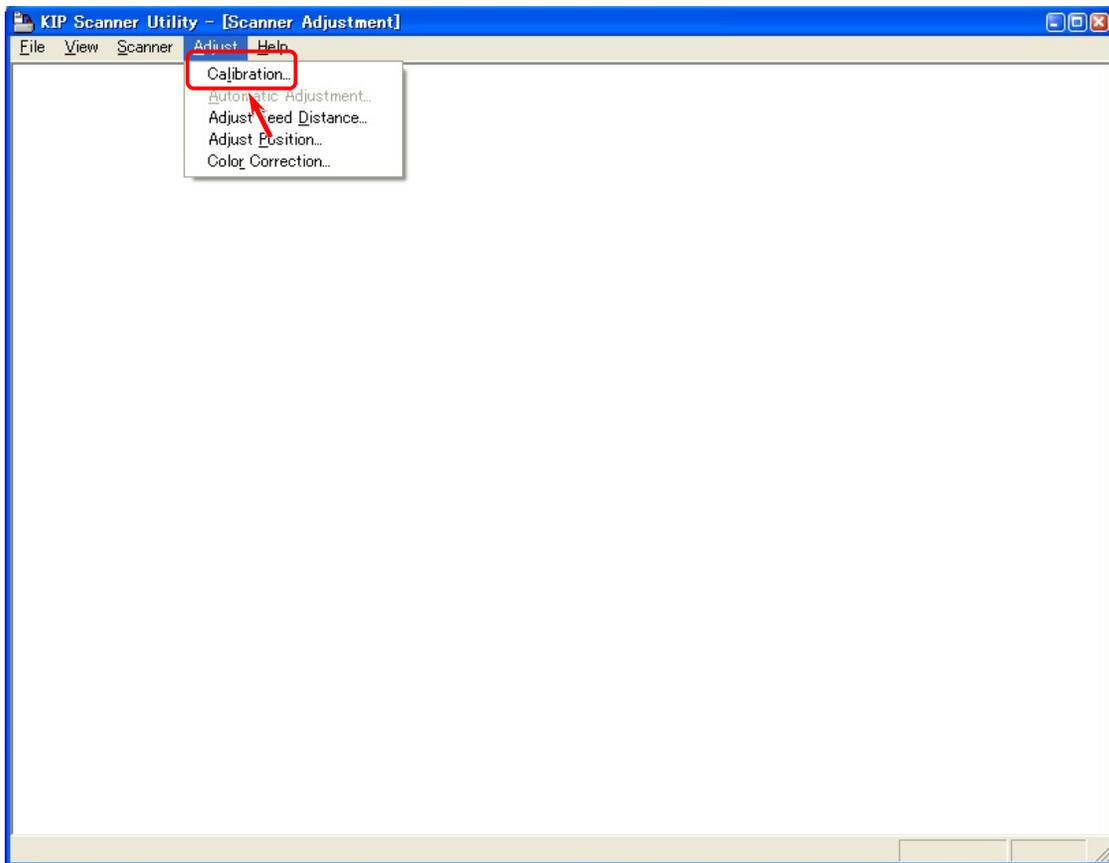
- Machine installation
- After replacing;
 - (1) CIS
 - (2) CIS Controller PCB (SVC CIS BD)
 - (3) Data Controller PCB (SVC Main BD K)

! NOTE

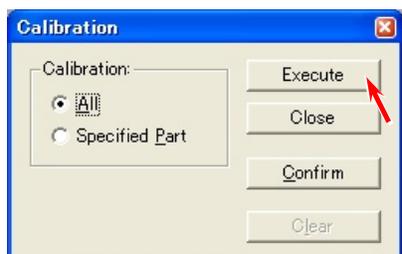
- (1) Shading adjustment should be performed with Shading Sheet (P/N: Z168300570).
1 sheet of Shading Sheet is included in the product accessory. Keep it in safe custody.
- (2) Shading adjustment should be performed with “KIP Scanner Utility 1.12 (or later)”.
No “K105Utility”.
- (3) Please clean Scan Glasses before Shading.

[Operation]

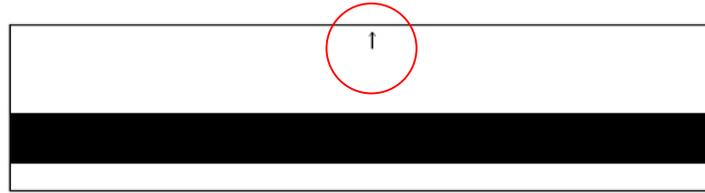
1. Connect the scanner unit and the PC directly with the USB 2.0 Cable.
2. Start KIP Scanner Utility.
3. Select [Calibration] under [Adjust].



4. At first it is required to calibrate all pixels.
Select [All] and then click [Execute].
You will be asked to set Shading Sheet.



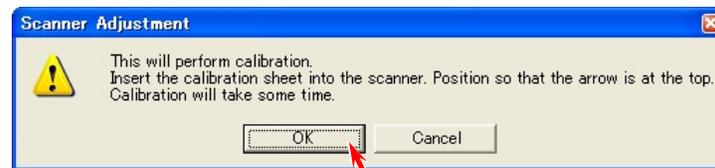
5. Set Shading Sheet in the KIP 3100 accessory to the scanner noting the arrow direction.



! NOTE

Handle Shading Sheet with great care. Keep it in safe custody for avoiding dirt, fold or tear.

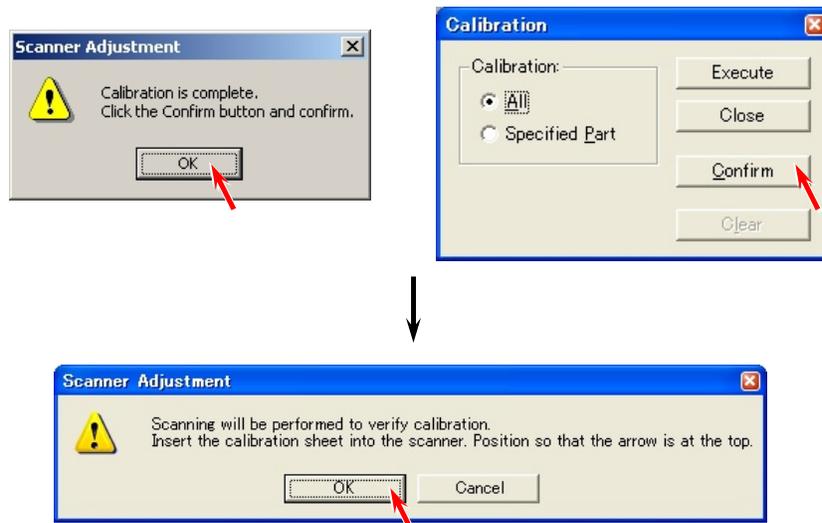
6. Click [OK] after setting Shading Sheet, and the scanner reads it.



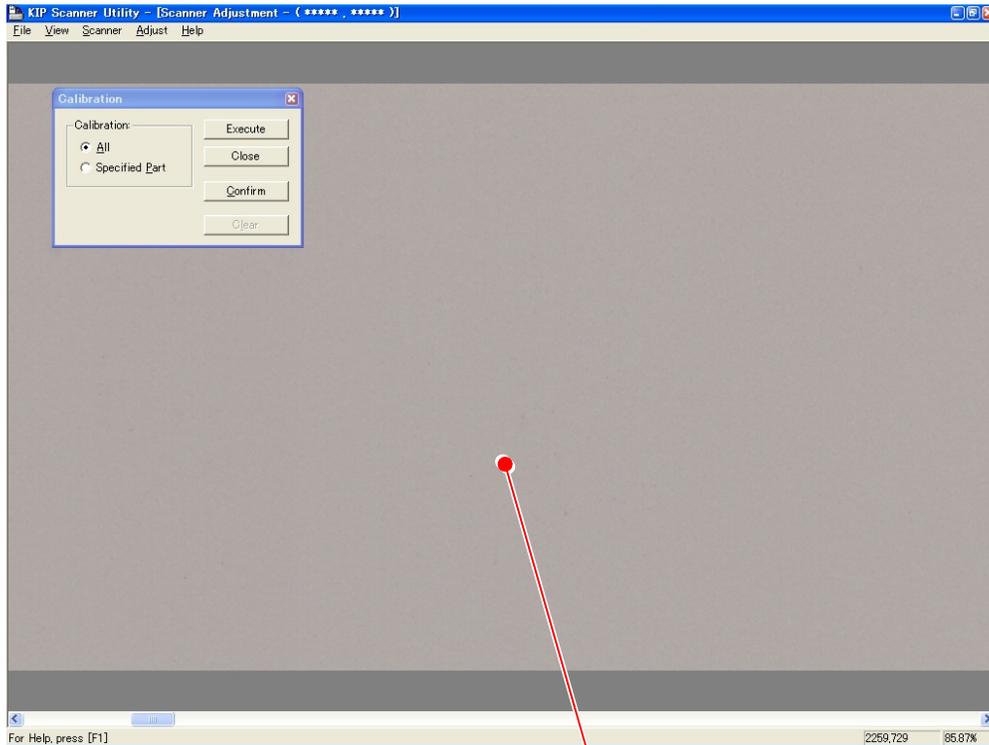
! NOTE

- (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.



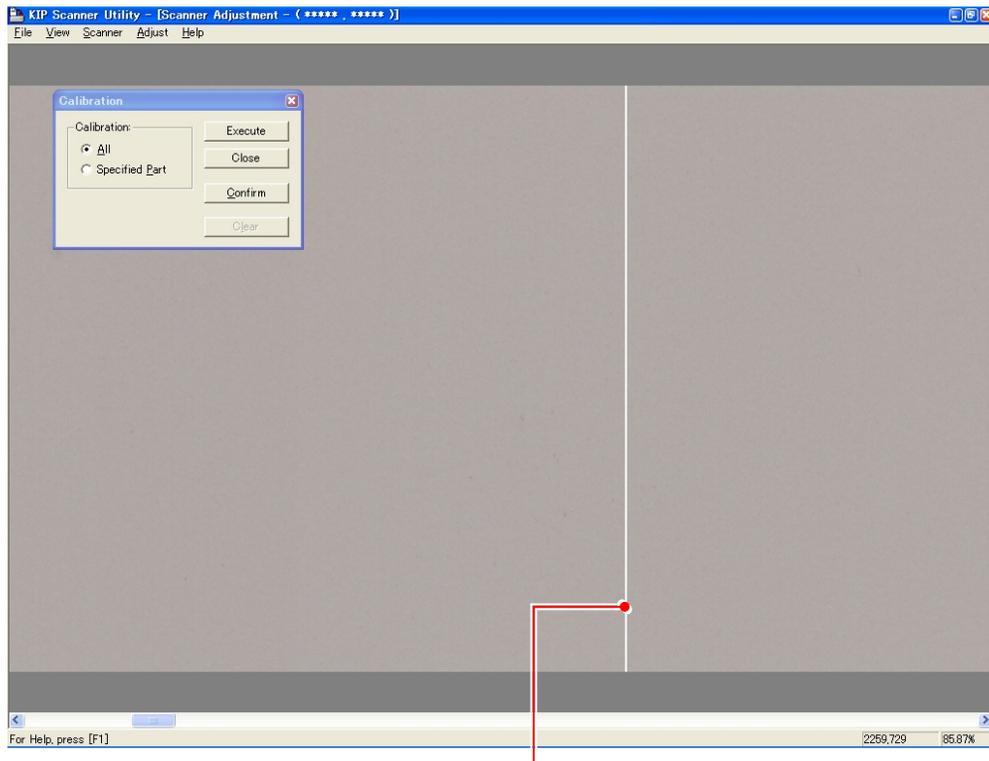
8. The scan image of Shading Sheet is displayed. (It looks gray due to “calibrating” scan)



Scan image of Shading Sheet

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.

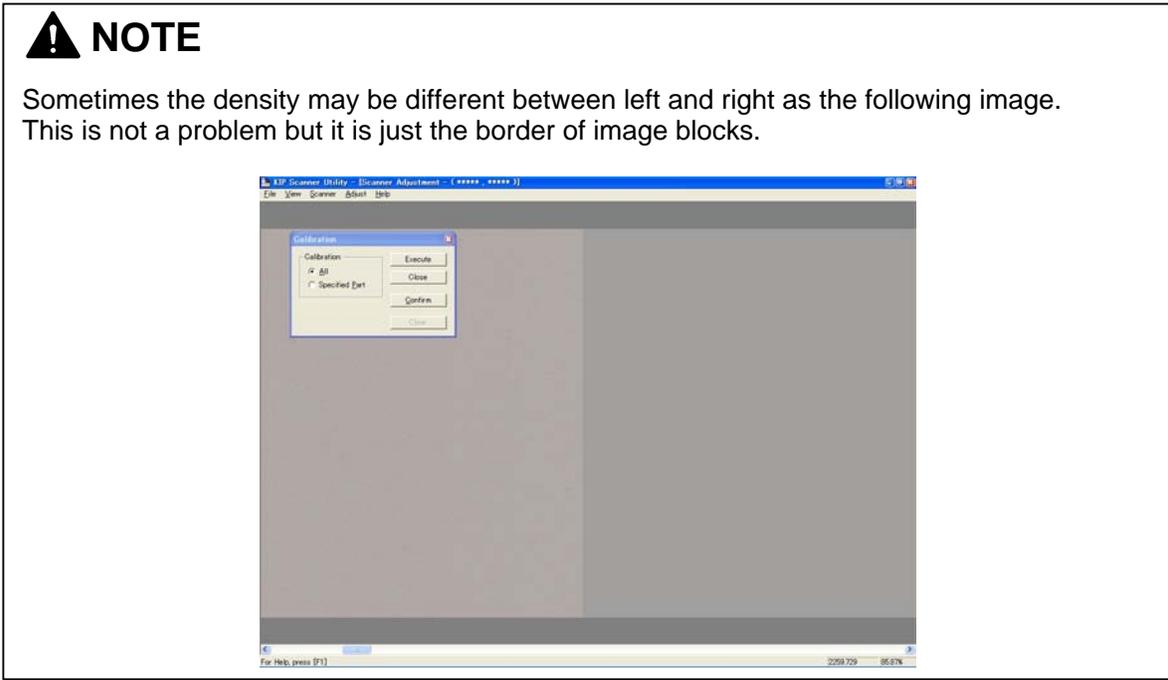
The following picture is an example of the line (due to “defective pixel”).
A defective pixel needs individual pixel calibration in the later steps.



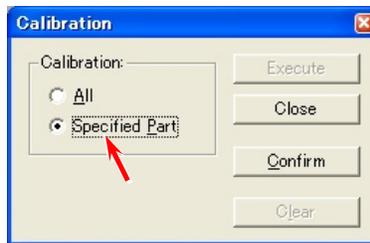
Defective pixel

NOTE

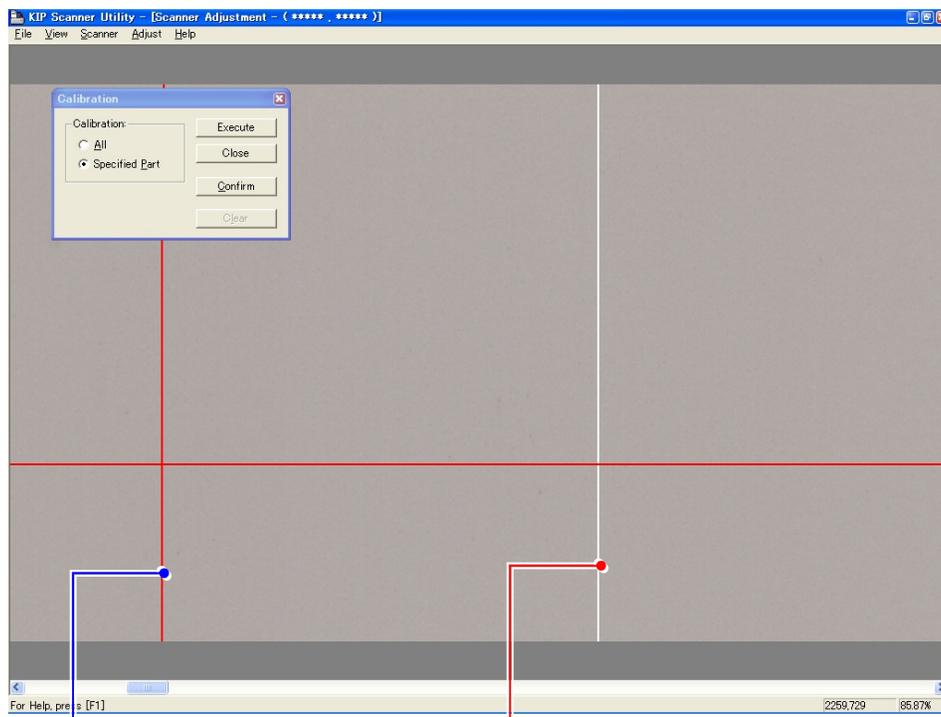
Sometimes the density may be different between left and right as the following image. This is not a problem but it is just the border of image blocks.



10. If you will calibrate an individual pixel, select [Specified part].



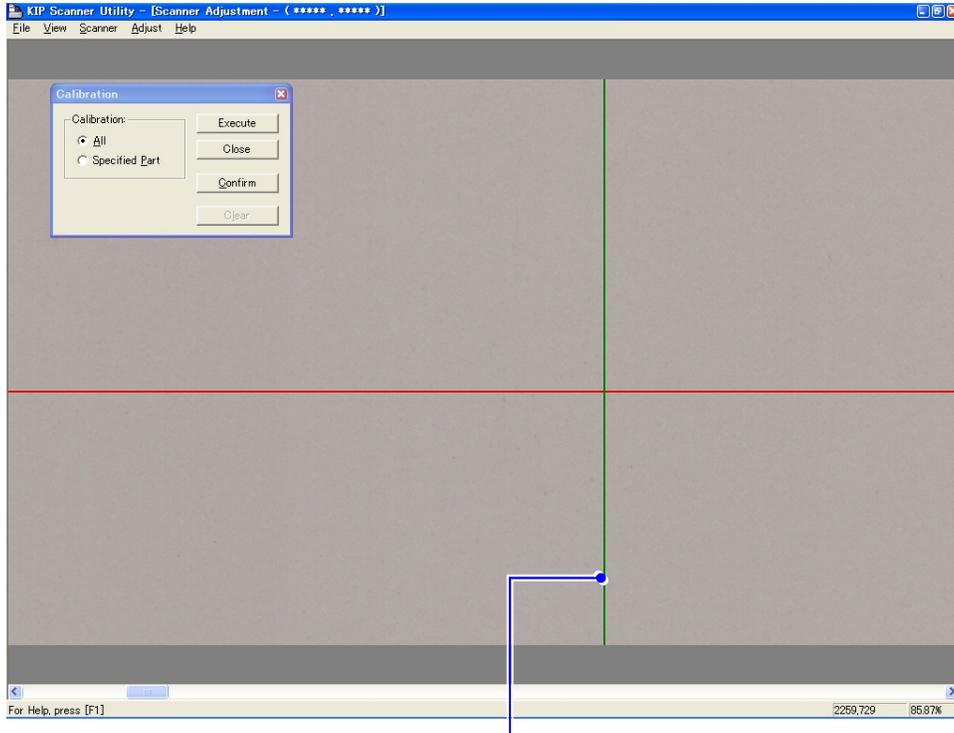
11. Move the pointer onto the scan image, and you will find a kind of red cursor.



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].



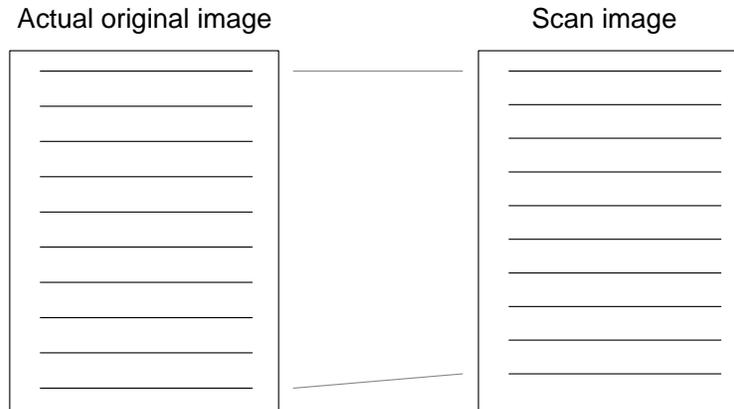
15. Shading (“white balance” / “color” calibration) is completed.

8. 12. 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

Feeding Distance adjustment should be performed with Scanner Adjustment Chart (P/N: Z058501590).



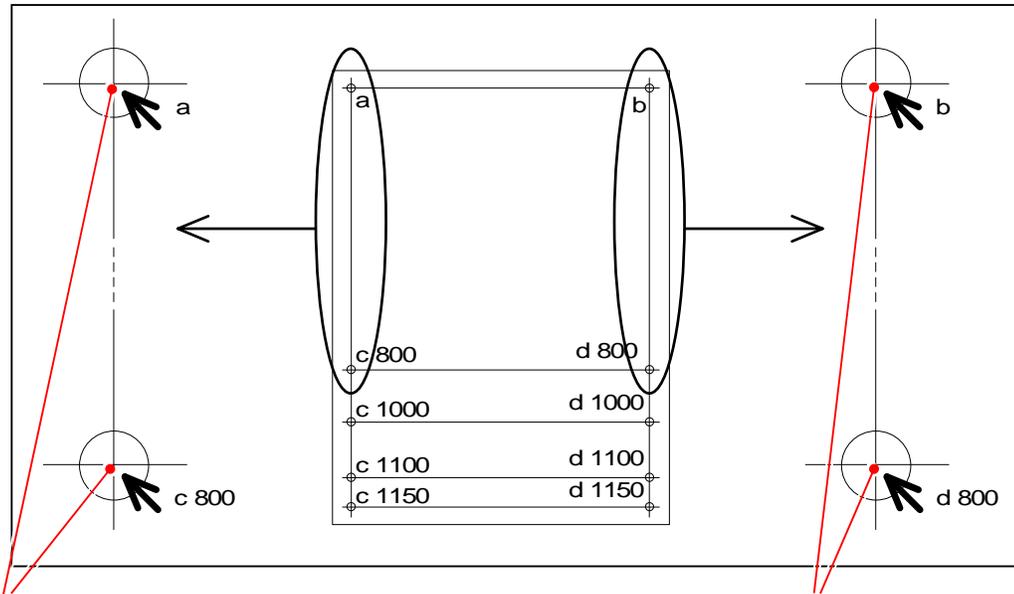
[Operation]

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



Measure between these 2 points.

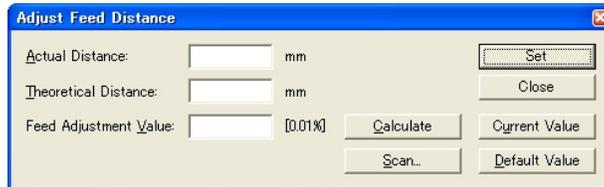
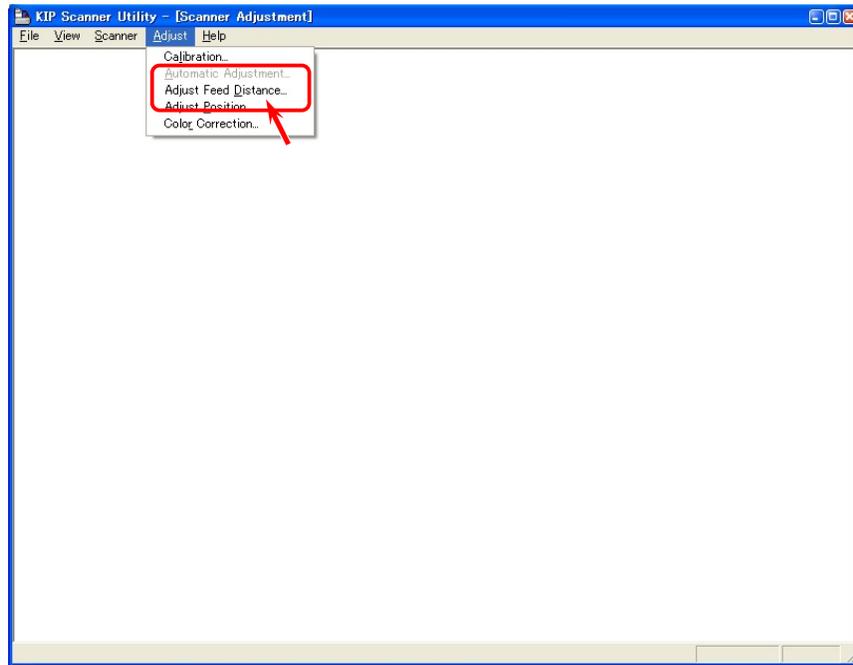
Measure between these 2 points.

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 KIP Scanner Utility.

4. Select [Adjust Feed Distance] from [Adjust]. Adjust Feed Distance Dialog is indicated.



NOTE

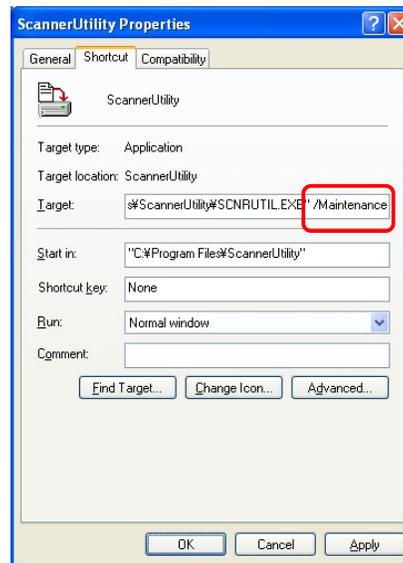
(1) If [Adjust Feed Distance] does not appear, follow the instruction below.

a) Open the properties panel for a KIP Scanner Utility shortcut. (ex. right click on the shortcut)

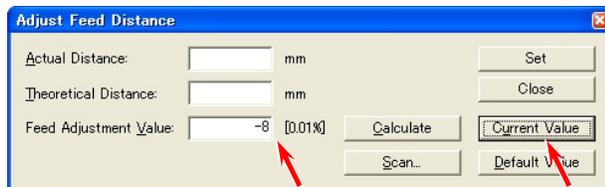
b) Add the following text to the end of the target path.

“(one byte space)/Maintenance”

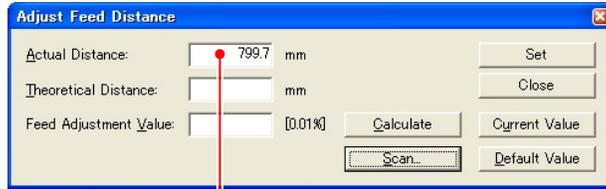
c) Click [Apply].



(2) Write down the current setting value that will be displayed with [Current Value].

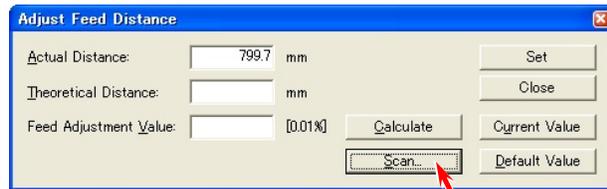
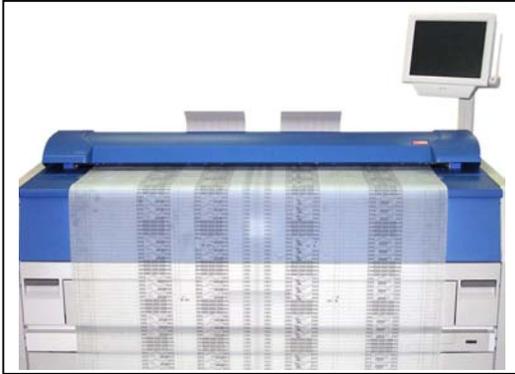


- At first, input the **actual distance between “a point” and “c point”** in [Actual Distance], which you have measured at the former step “1”.

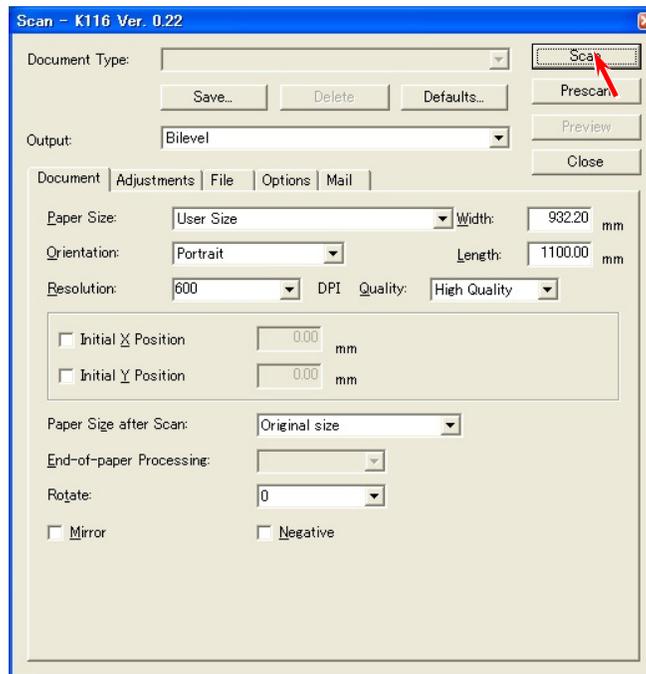


Actual distance between “a” and “b”

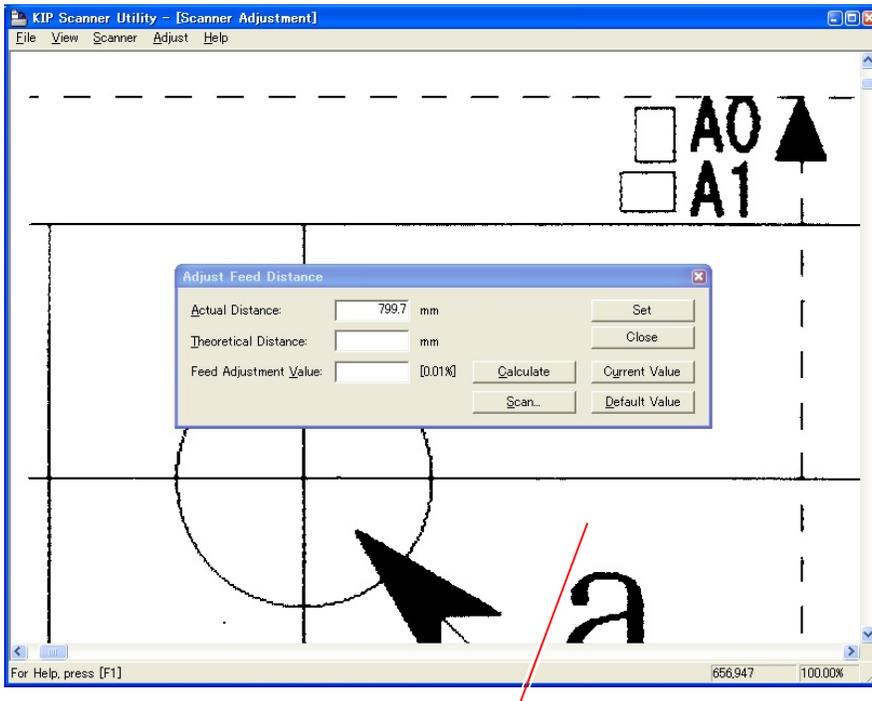
- Set Scanner Adjustment Chart to the scanner unit, and then click [Scan].



- 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 KIP Scanner Utility.

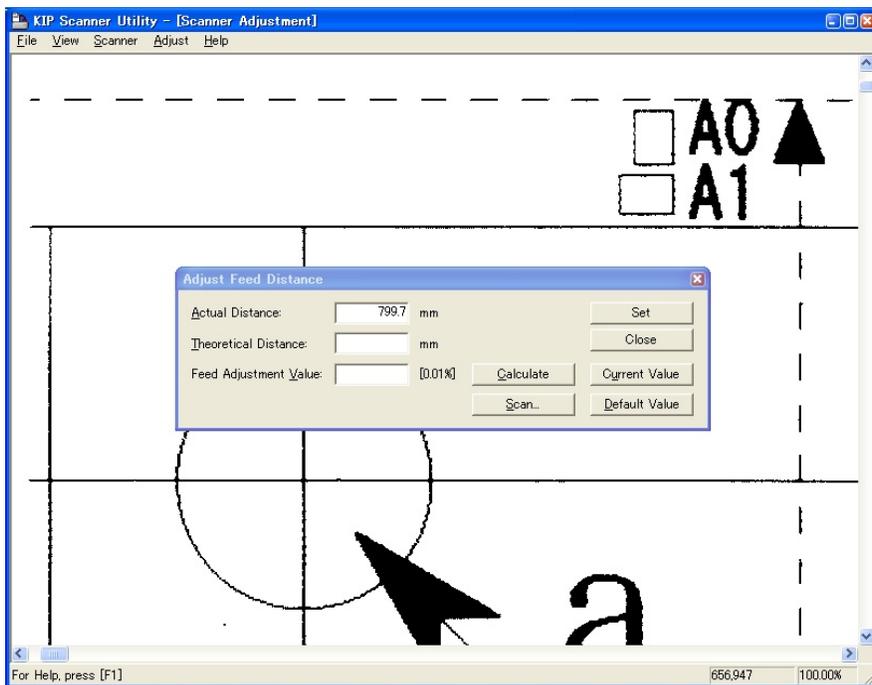


Scan image of the chart

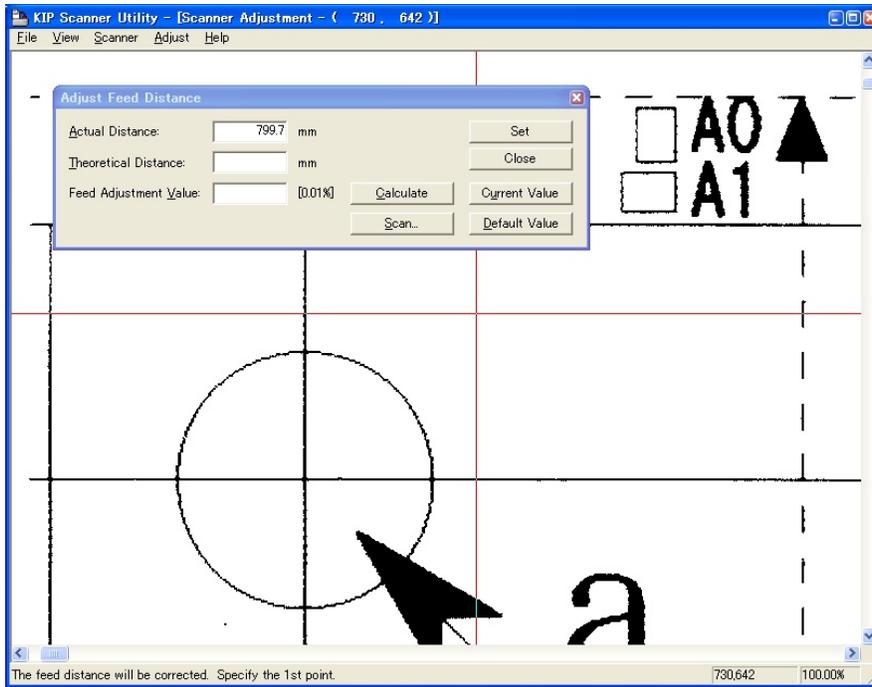
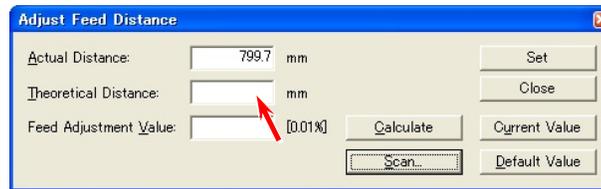
Reference

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.

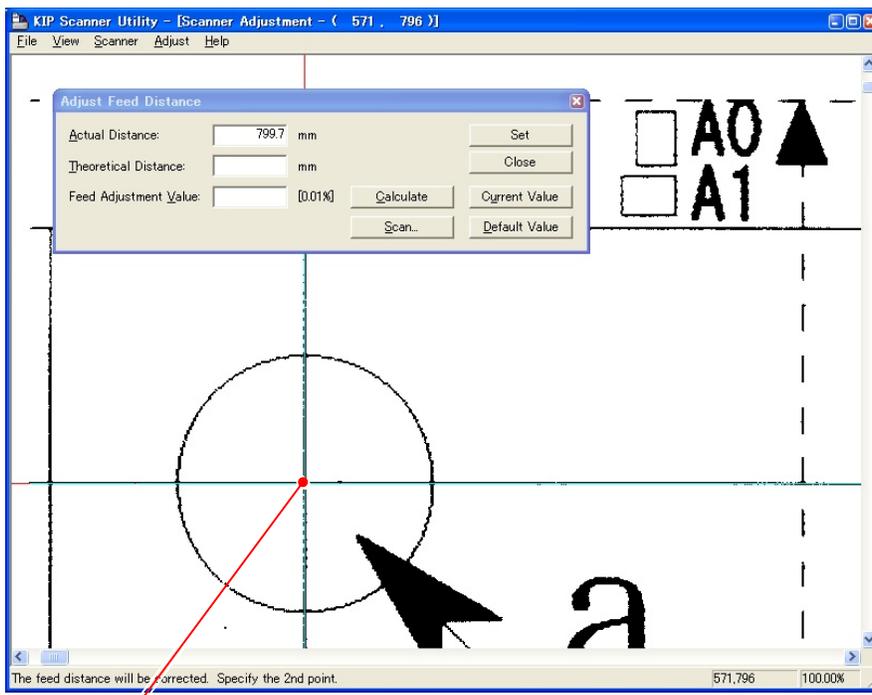
9. Indicate the enlarged image of “a point” on the screen, which was the measuring point at the former step “1”.



- Click the input window of [Theoretical Distance].
A red cursor appears on the screen.

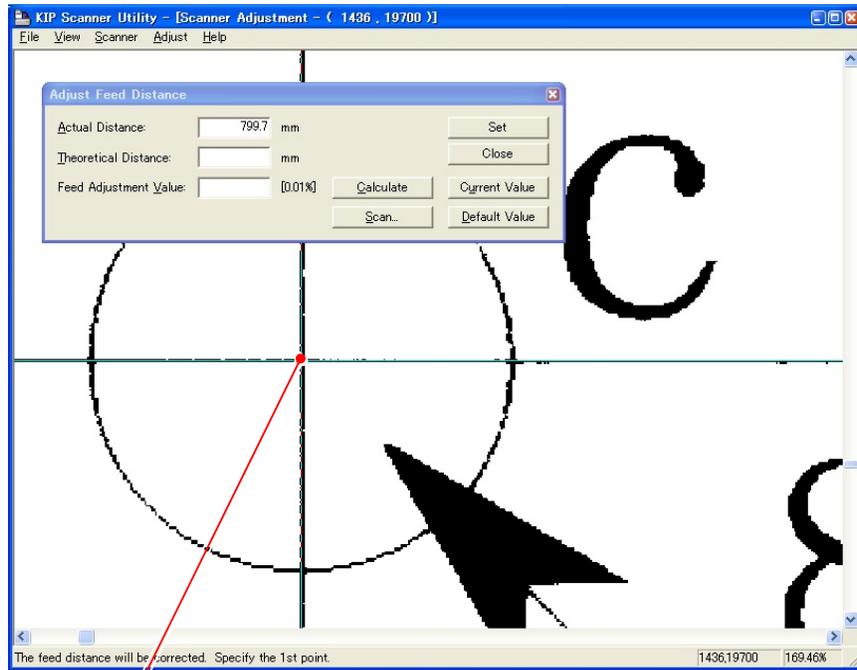


- Click the mouse once at the measuring point.



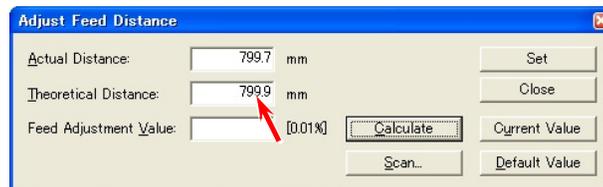
Click on the measuring point "a".

12. Similarly indicate the enlarged image of “c point” and click the mouse at the measuring point.

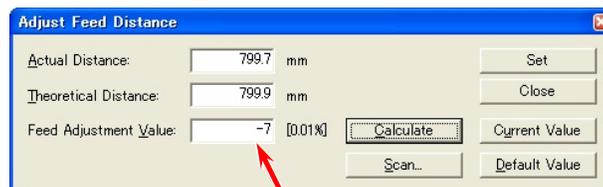
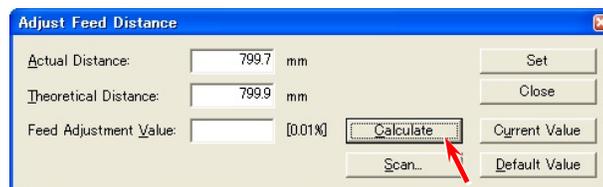


Click on the measuring point “c”.

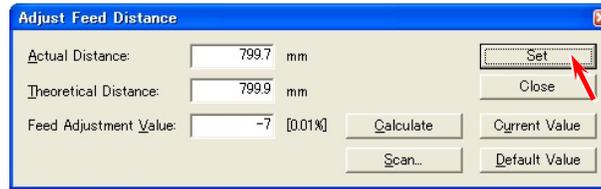
13. Some value is indicated in [Theoretical Distance] according to 2 measuring points you specified at both steps “9” and “10”.
This value means the distance between “a point” and “b point” of the resulting scan image.



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.

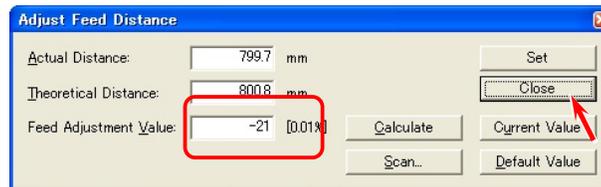
(Left side means “a-c points” side, and right side means “b-d points” side.)

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%.

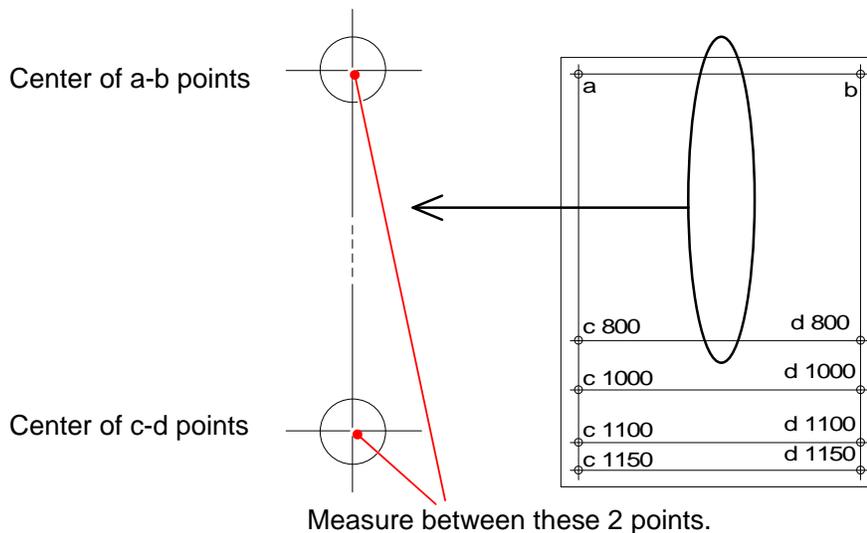
(“within 0.2%” means the difference of indicated values is within +/-20.)

Please click [Close] without clicking [Set].



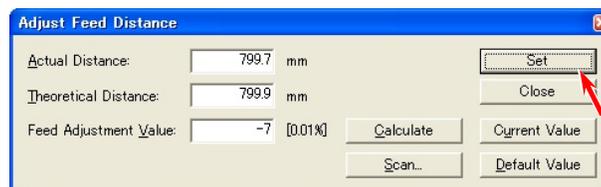
17. If the difference of the values of Feed Adjustment Value between left and right is larger than 0.2%, do as follows.

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.

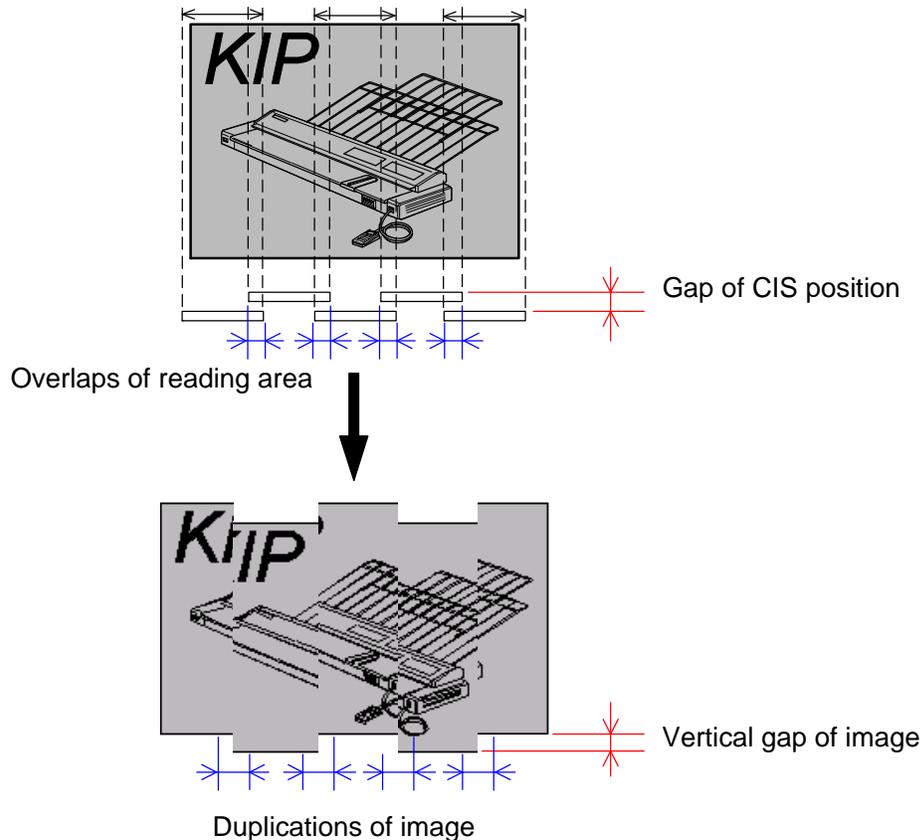
c) Click [Set] to validate the Value indicated in [Feed Adjustment Value].



8. 12. 4. 3 Position (stitching)

[Purpose of Position (stitching)]

The scanner part of KIP 3100 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 two Image Blocks).



“Position” is the solution for these kinds of phenomenon.

It is possible to 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).

KIP 3100 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

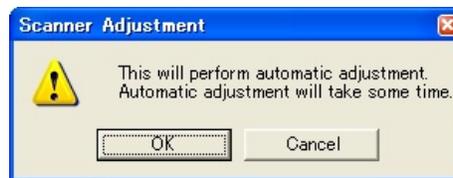
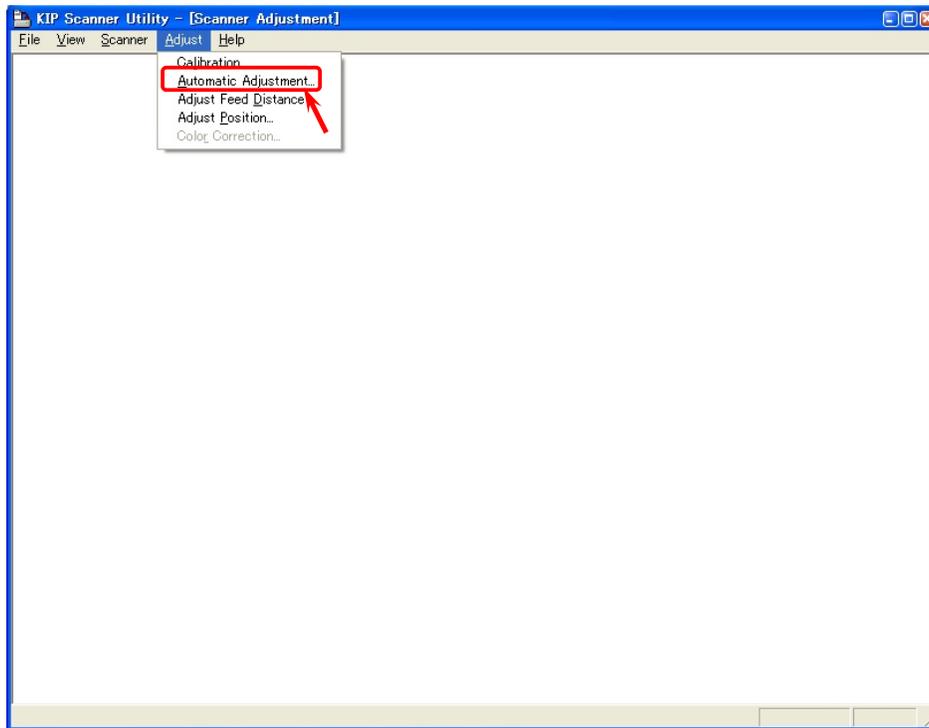
(1) Position adjustment should be performed with Stitch Adjustment Chart (P/N: Z168300580).

(2) Position adjustment should be performed with “KIP Scanner Utility 1.12 (or later)”.

No “K105Utility”.

[Operation]

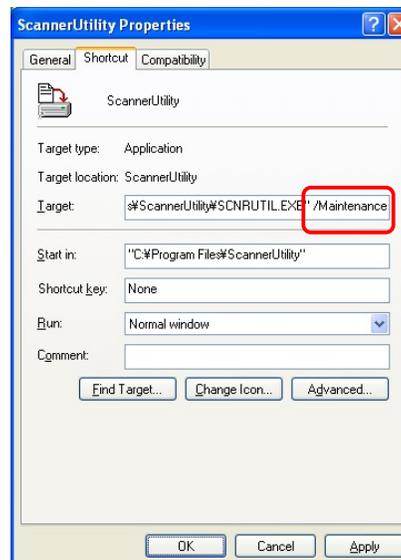
1. Connect the scanner unit and the PC directly with the USB 2.0 Cable.
2. Start KIP Scanner Utility.
3. Select [Automatic Adjustment] from [Adjust]. Scanner Adjustment Dialog is indicated.



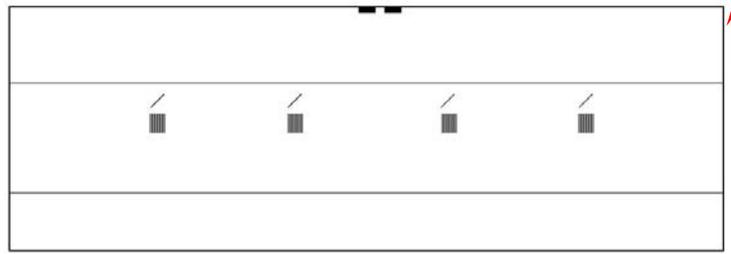
NOTE

If [Automatic Adjustment] does not appear, follow the instruction below.

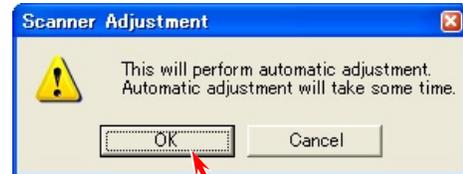
- a) Open the properties panel for KIP Scanner Utility shortcut. (ex. right click on the shortcut)
- b) Add the following text to the end of the target path.
“(one byte space)/Maintenance”
- c) Click [Apply].



4. Set Stitch Adjustment Chart to the scanner noting the set direction and press [OK].



Stitch Adjustment Chart

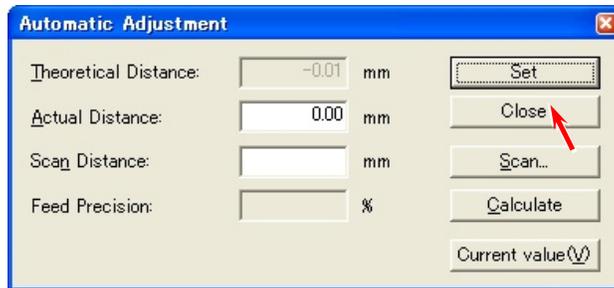


NOTE

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].

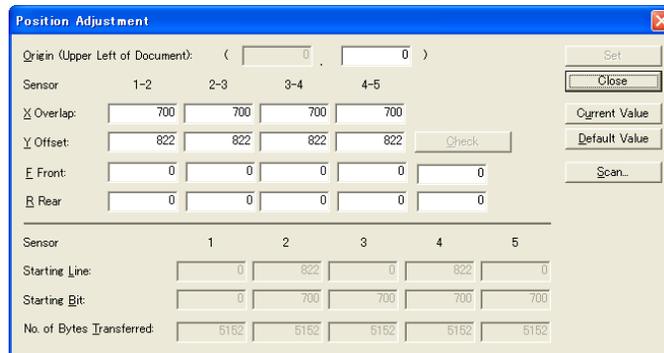
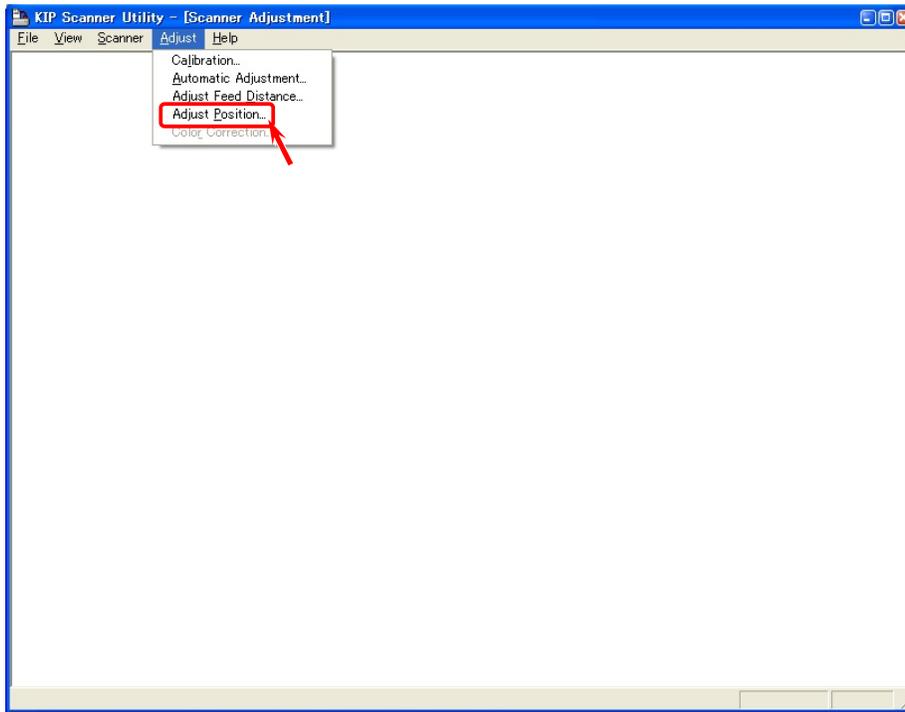


6. Automatic Adjustment for X/Y positioning is completed. Continue to the next step for the LE positioning.

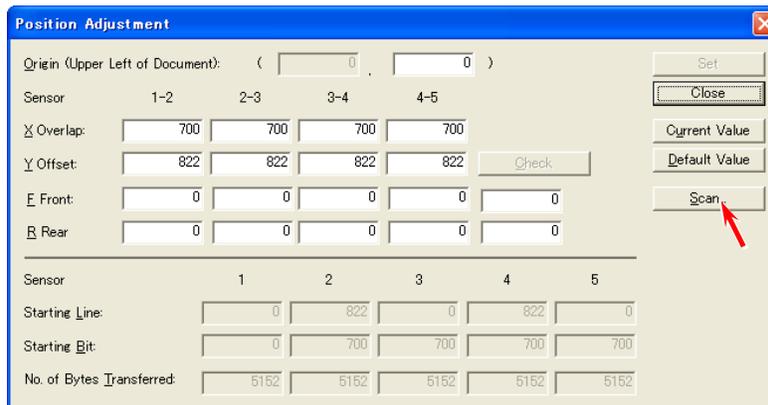
NOTE

After Automatic Adjustment for X/Y positioning, LE positioning is required. Be sure to follow the later procedure to adjust the LE positioning.

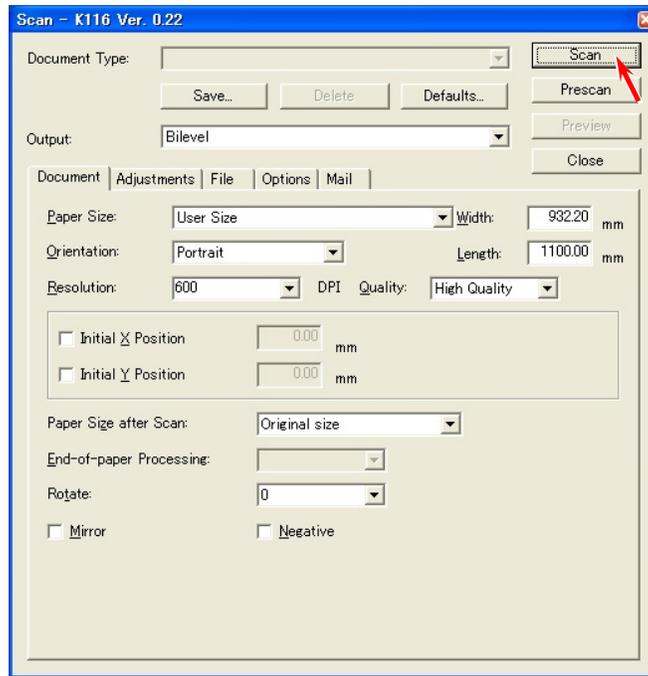
7. Select [Adjust Position] from [Adjust]. Adjust Position subscreen is indicated.



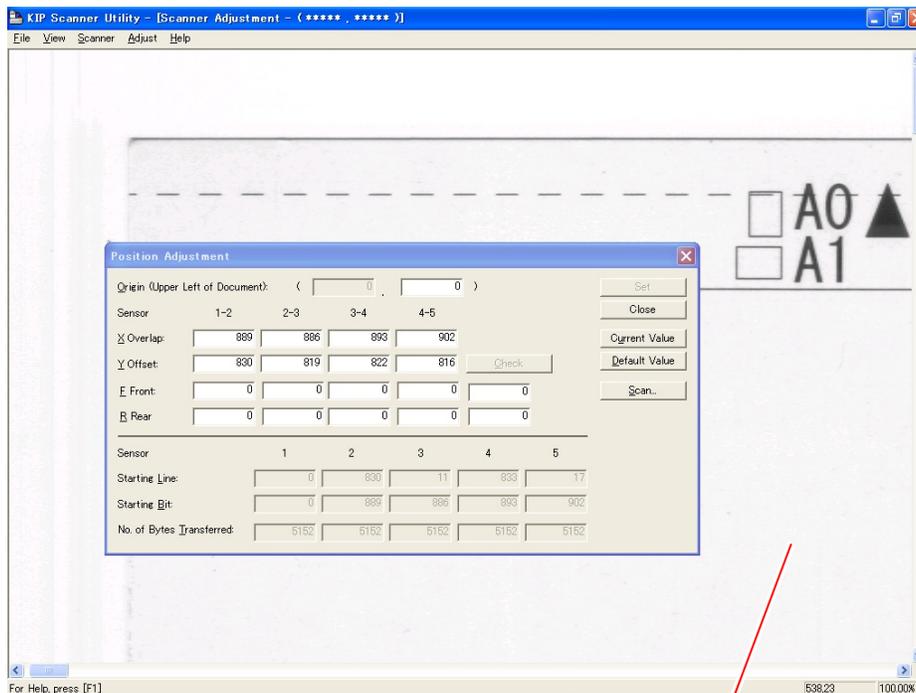
8. Set Stitch Adjustment Chart to the scanner again and press [Scan].



- 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.)

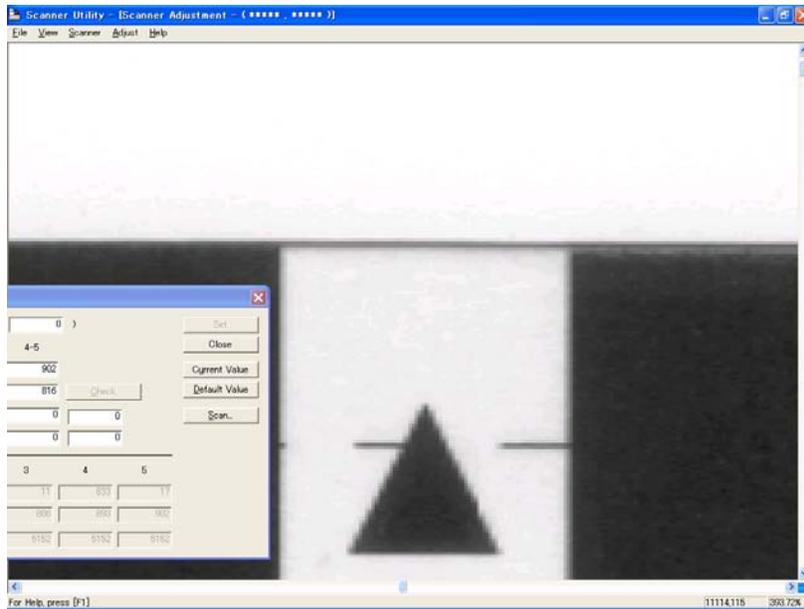
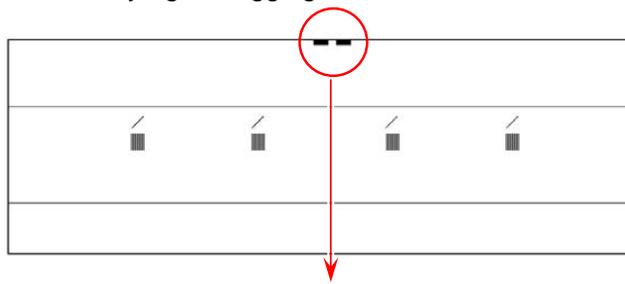


- The scan image of Scanner Adjustment Chart is indicated in the screen of KIP Scanner Utility.



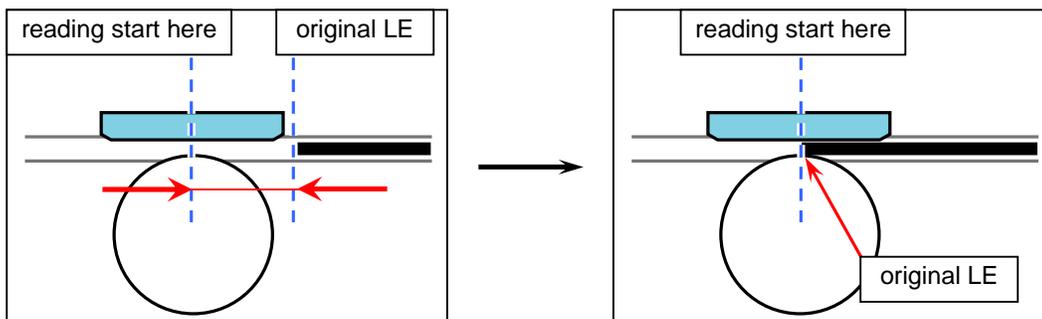
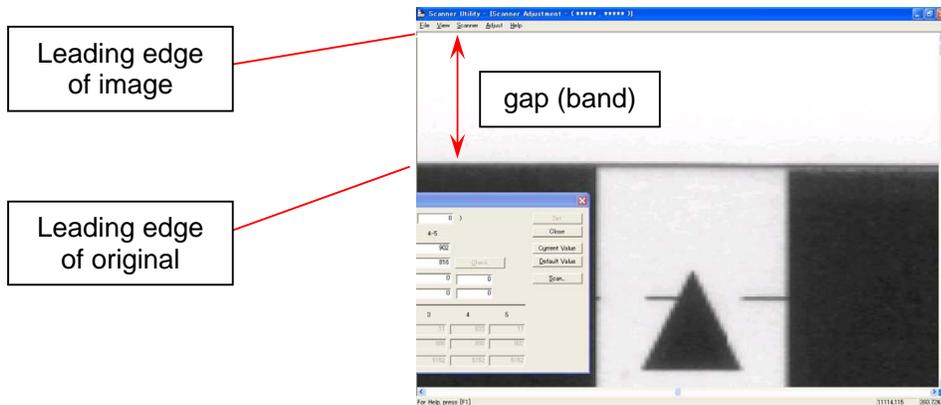
Scan image of the chart

11. Enlarge the top center area by right dragging.

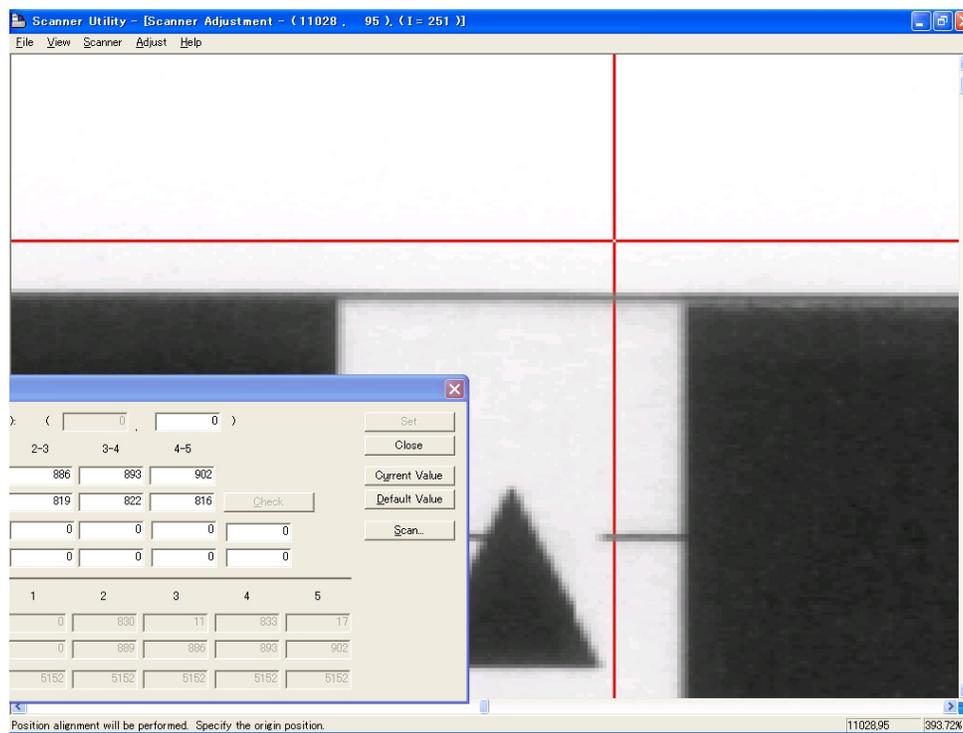
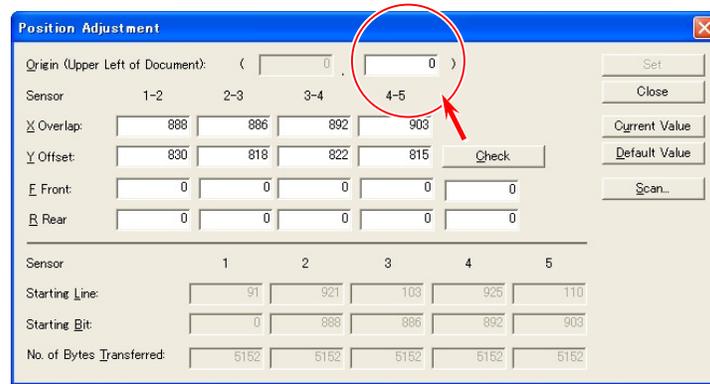


Reference

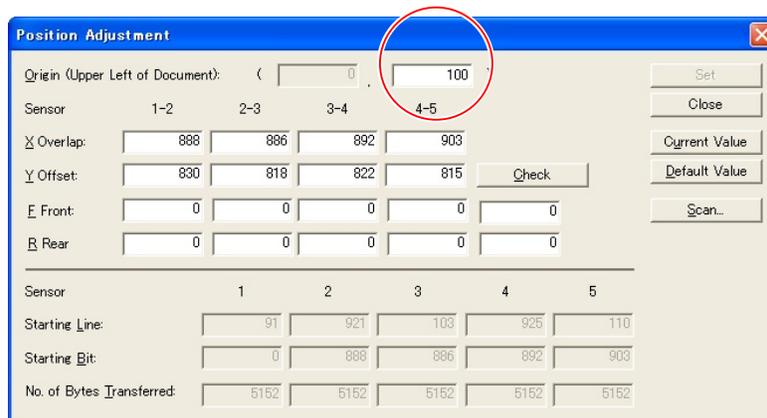
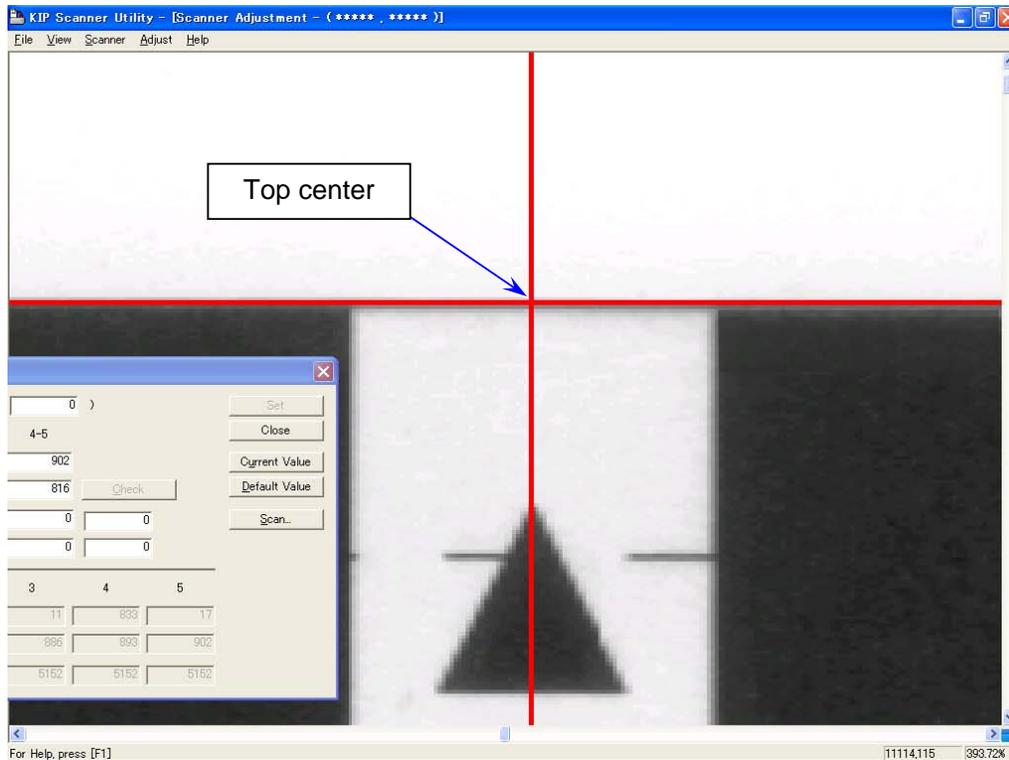
There is a gap between the leading edge of the scan image and the leading edge of the chart at this time. This band area shows that both of the edges do not match together. The gap will be removed after the completion of Position adjustment for the leading edge.



12. Click "Origin" entry field of the subscreen. A red cross cursor appears on the scan image.



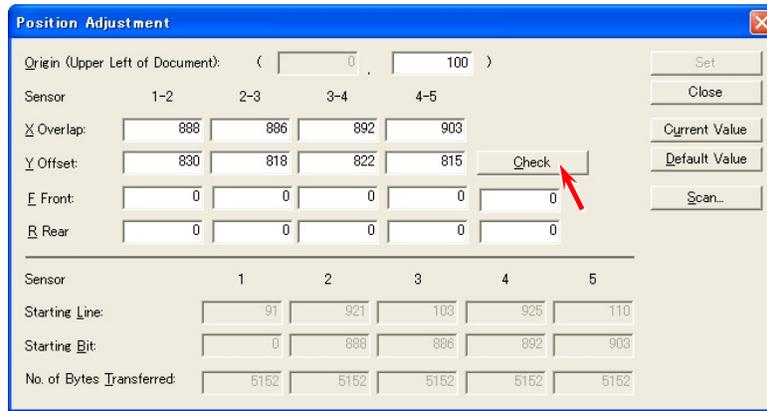
- Click once on the top center of the chart in the scan image.
A value appears in the field.



NOTE

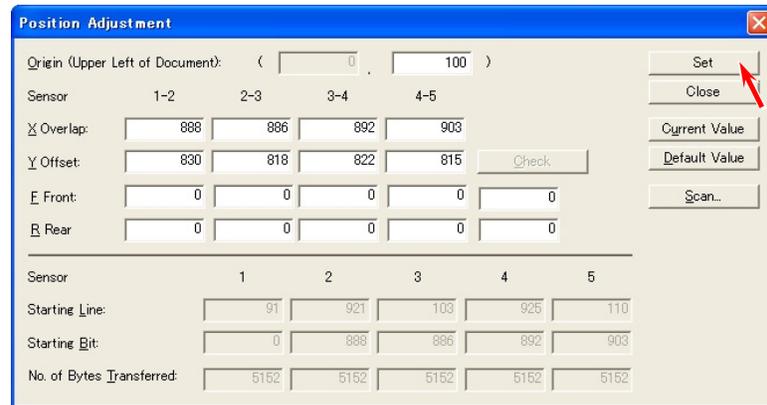
If you make any **unintended clicks** on the image, press [Close] and go back to step 8.

14. Press [Check] then [Set].



The 'Position Adjustment' dialog box contains the following fields and controls:

- Origin (Upper Left of Document): (,)
- Sensor: 1-2, 2-3, 3-4, 4-5
- X Overlap:
- Y Offset:
- E Front:
- R Rear:
- Sensor: 1, 2, 3, 4, 5
- Starting Line:
- Starting Bit:
- No. of Bytes Transferred:
- Buttons: Set, Close, Current Value, Default Value, Scan...



The 'Position Adjustment' dialog box is identical to the one above, but with a red arrow pointing to the 'Set' button.

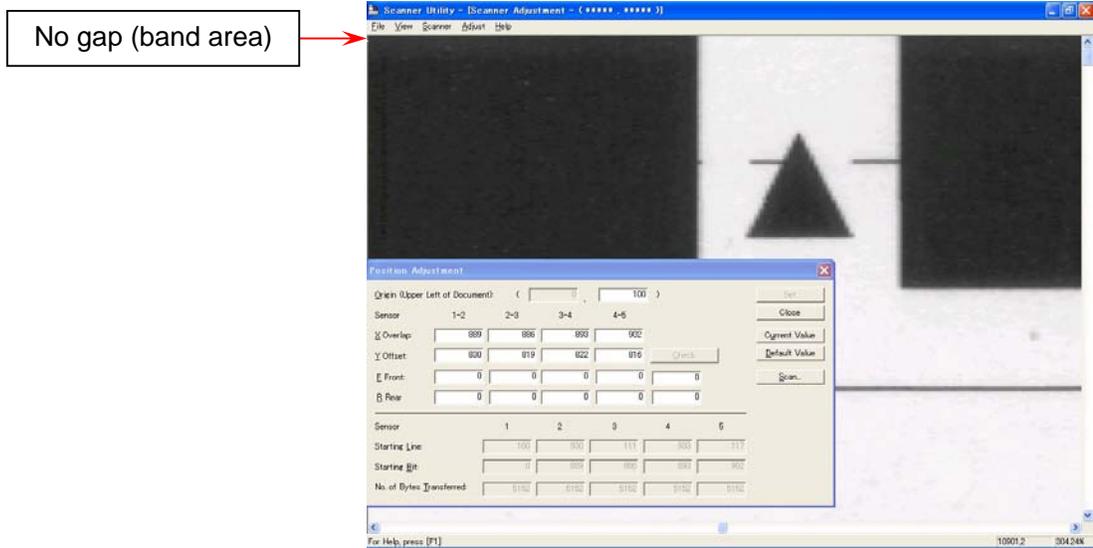
15. A dialog appears to prompt confirmation of the result. Press [OK].



The 'Scanner Adjustment' dialog box contains the following text and controls:

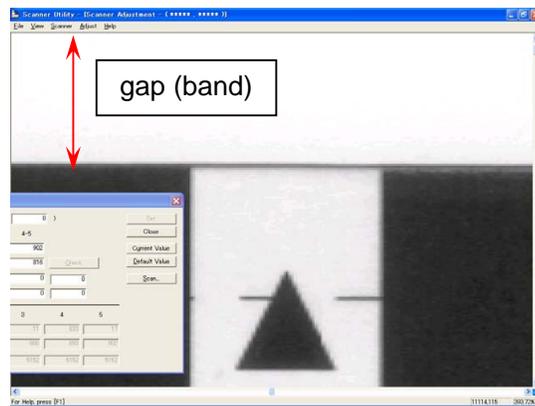
- Warning icon (yellow triangle with exclamation mark)
- Text: The Position Adjustment Value was set. Reload document.
- Button: OK

- 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.

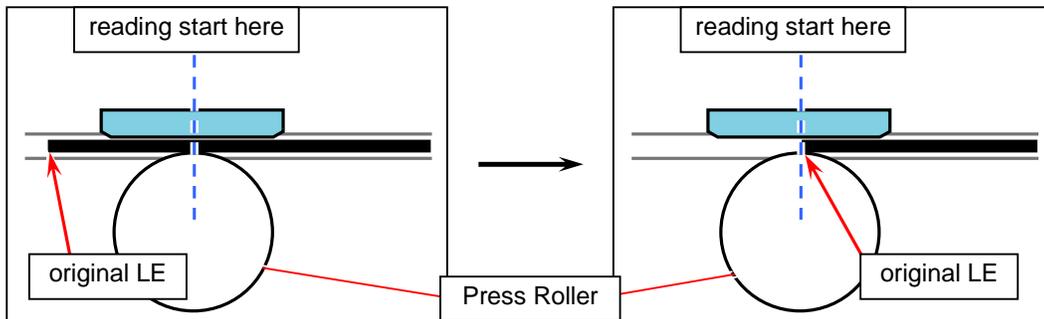


NOTE

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.

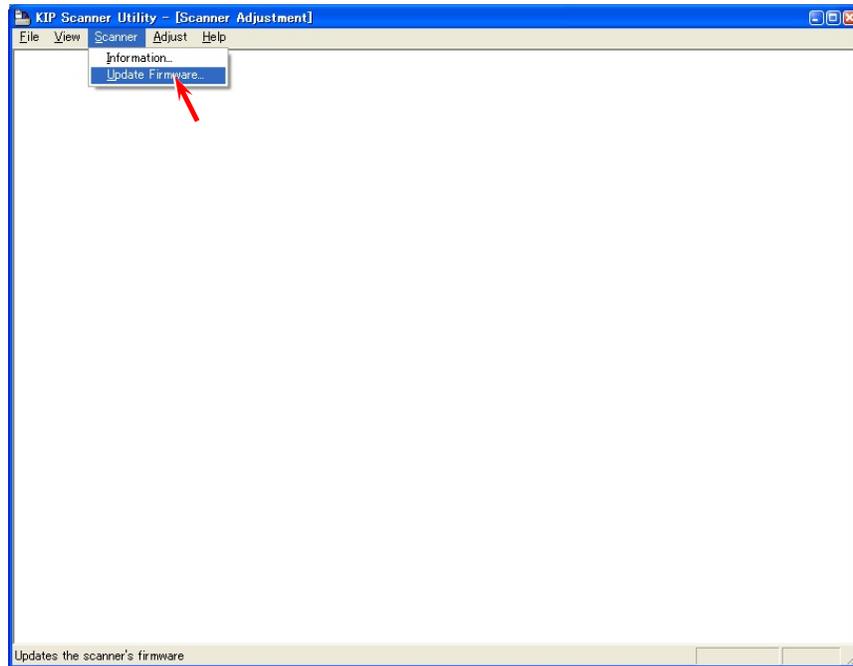


- The entire Position adjustment is completed.

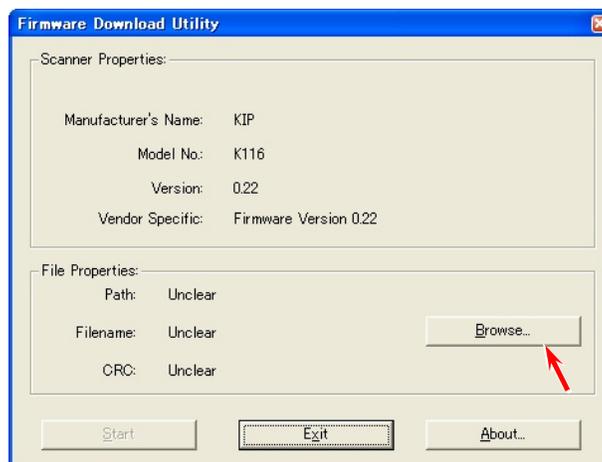
8. 12. 5 Updating Scanner Firmware

It is possible to install a new Firmware to the KIP 3100 with KIP Scanner Utility.

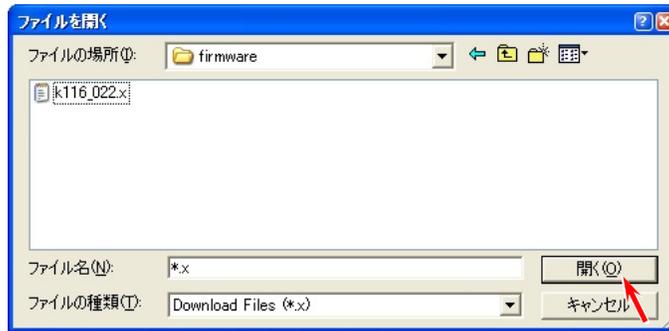
1. Select [Update Firmware] under [Scanner].



2. Firmware Download Utility is displayed.
Click [Browse].



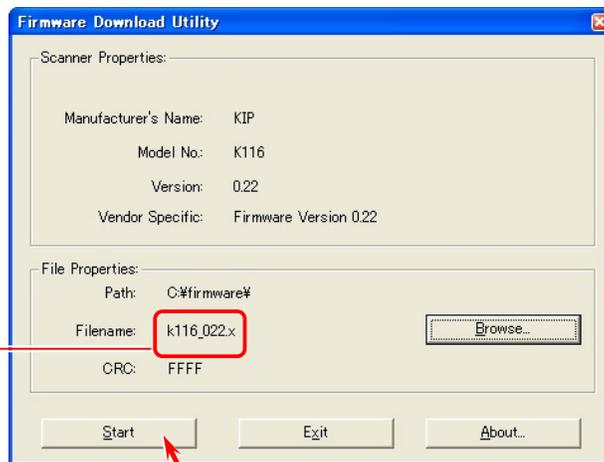
3. Select the Firmware component on the hard drive (or another drive). Click [Open].



NOTE

- (1) A firmware file for KIP 3100 scanner unit should be named “**k116_***.x**”.
- (2) Do not send any other file.
Doing so may result in malfunction of the scanner.

4. Confirm that the file name you will install is displayed.
Click [Start].
(The name of the firmware file or the CRC value may vary as the picture below is an example)



name of firmware file

5. A dialog is displayed, which request you to turn off the KIP 3100.
Turn off the machine.



6. Click [Exit] finally.

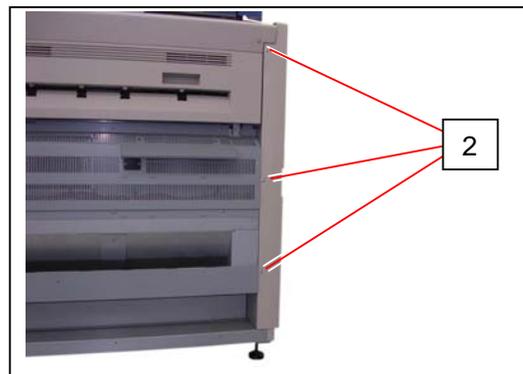
8. 13 Firmware Update (PW11620)

Data Controller PCB (PW11620) contains a flash type memory to store the firmware for Engine Unit. It is possible to send and apply a new firmware by using an exclusive tool with a Windows PC. Before operation, please turn off the machine.

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



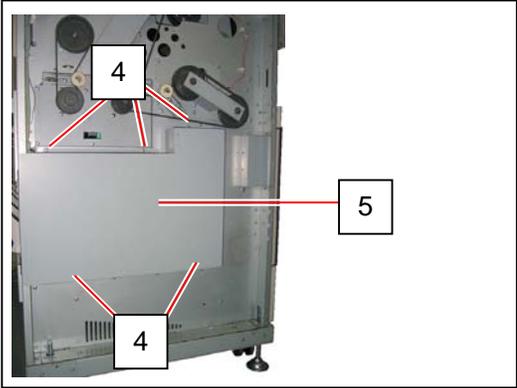
2. Remove 6 screws (2).



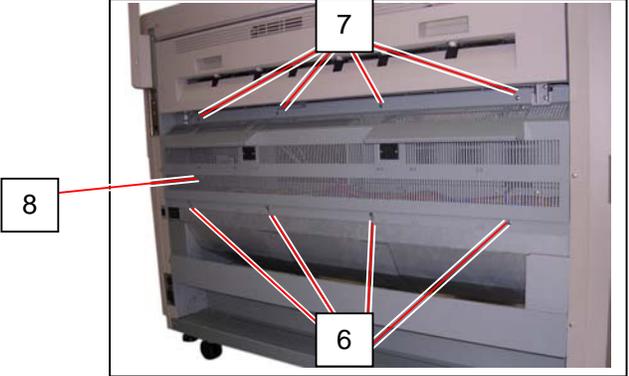
3. Remove Cover 5 (3).



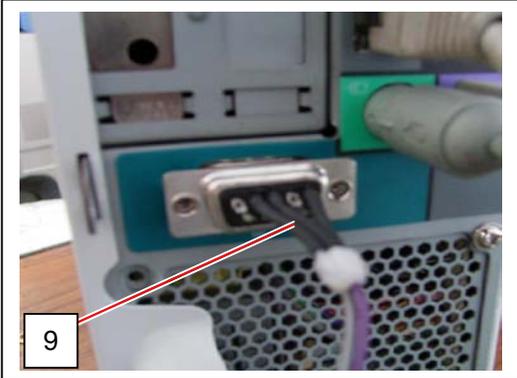
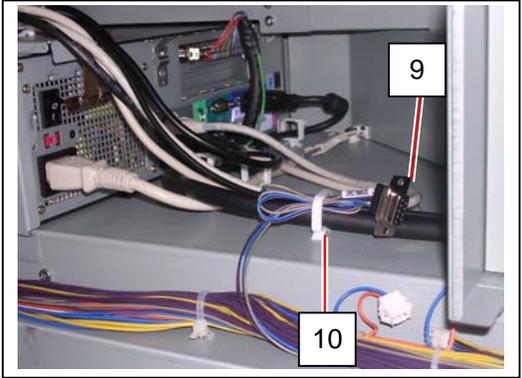
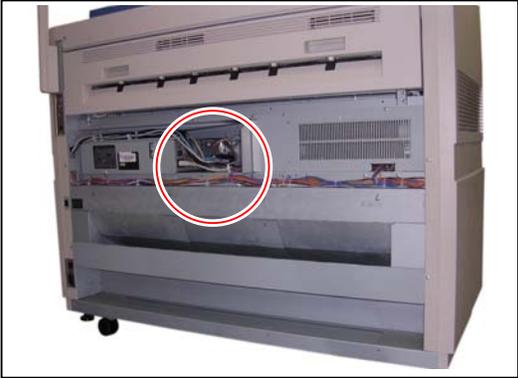
4. Remove 5 screws (4) to remove Cover 10 (5).



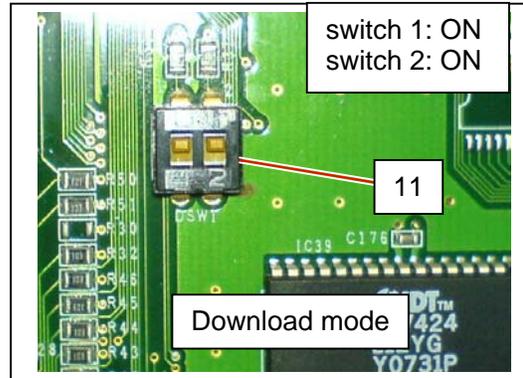
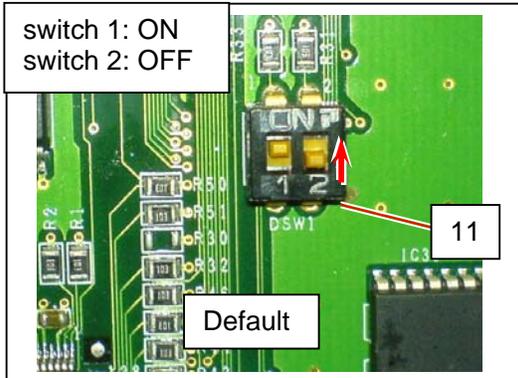
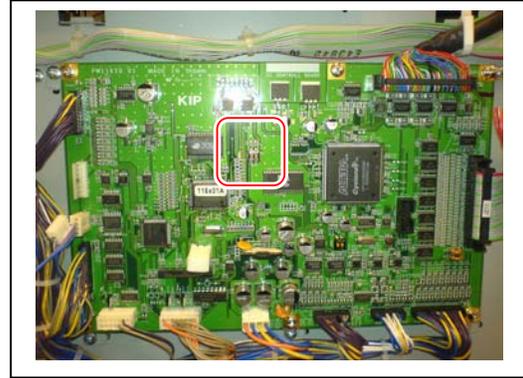
5. Loosen 4 screws (6) and remove 4 screws (7) to remove Cover 15 (8).



6. Release RS Signal Cable (9) from the wire saddle (10) and connect it to any available COM port on your PC.



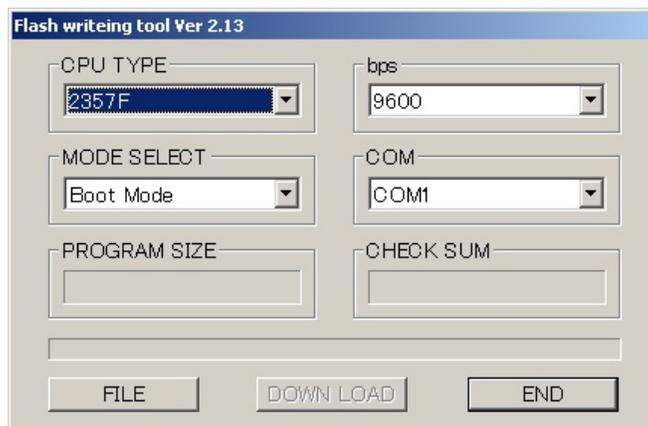
7. Set DIP switch No.2 (11: DSW1, right) to ON.



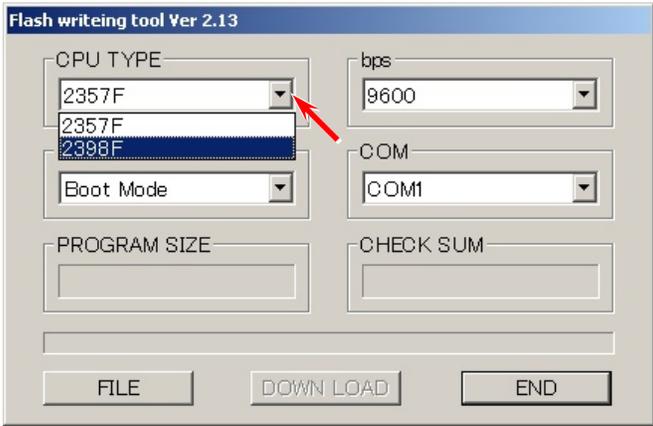
NOTE

- (1) Before changing the position of the switch, be sure to turn off KIP 3100.
- (2) An error occurs if you skip switching SW2 to ON.

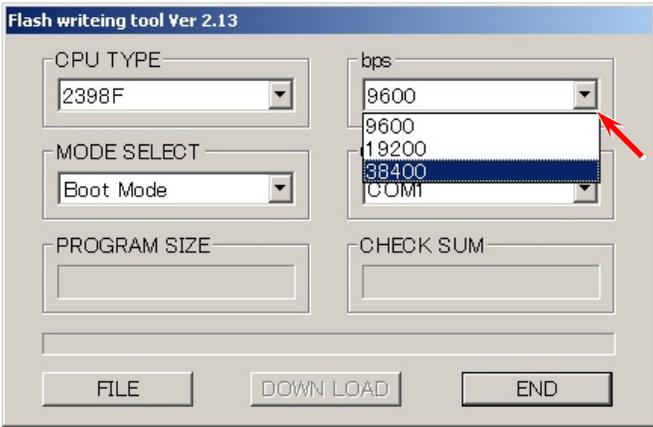
8. Run "WriteFlash.exe".
Flash Writing Tool screen is displayed.



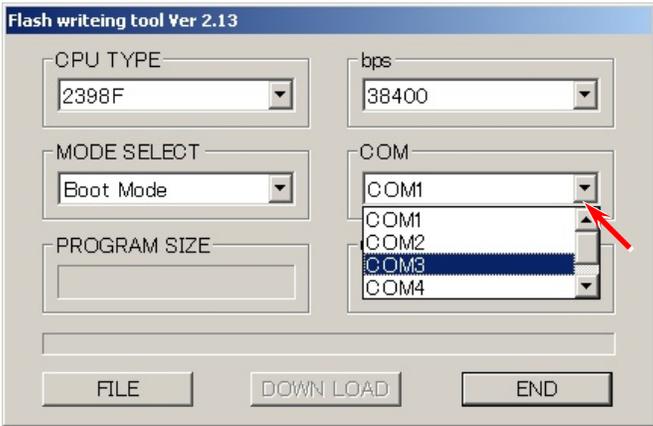
9. Choose "2398F" in CPU TYPE drop-down box.



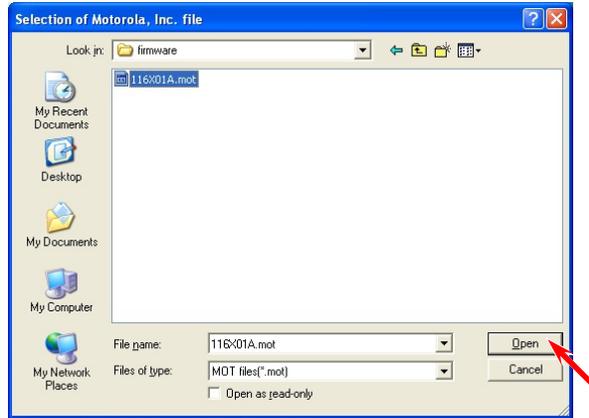
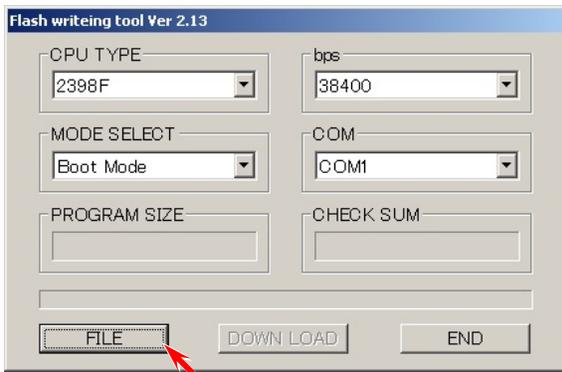
10. Select "38400" in bps drop-down box.



11. Select a COM port to be used for the communication in COM drop-down box.

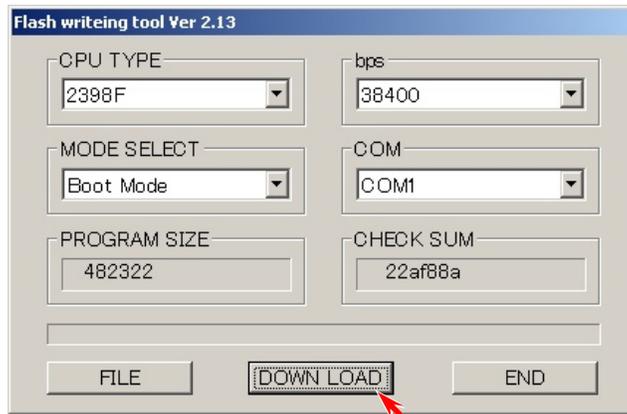


12. Press [FILE] to locate a firmware file and open it.
Program Size and Checksum will be displayed.



13. Turn on KIP 3100.

14. Press [DOWNLOAD] to start the process.



(program size / checksum may differ from the actual firmware information)

15. When “Writing success” dialog is displayed, press [OK].

NOTE

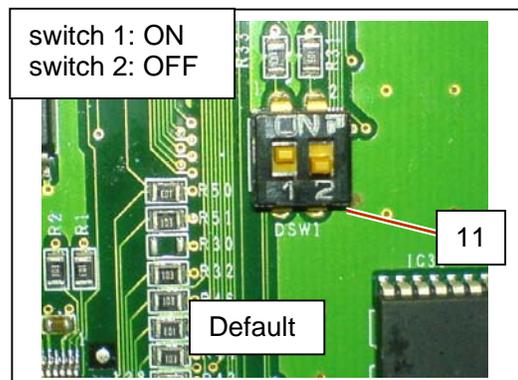
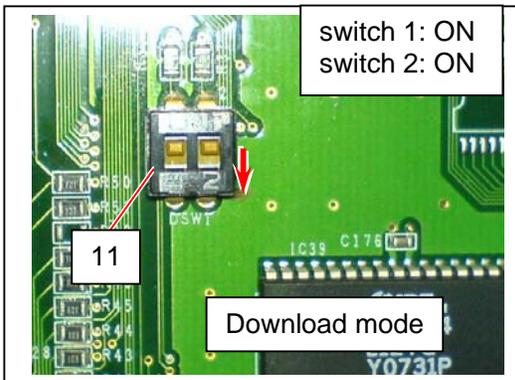
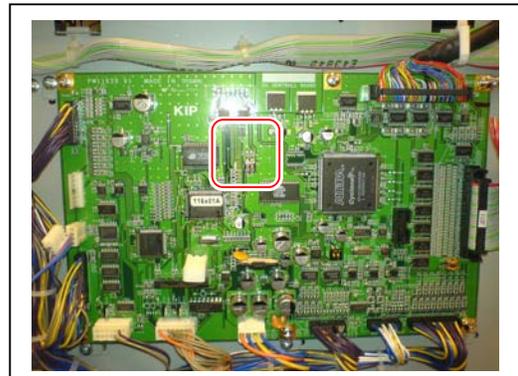
(1) Update may be failed if any of the following messages appear.
Take necessary measures and retry the operation.

Message	Cause	Measure
COM Port Open Error	Selected port is being used by an application	Stop the application. Use any unoccupied port.
	Selected port does not exist	
Reception Error	RS Signal Cable is not connected to selected port	Select the port been connecting.
	Selected port does not support a given communication speed	Select lower speed.
	RS Signal Cable failure	Replace the cable.

(2) If an unexpected communication failure occurs during the process, the writing process will end abnormally.
Retry the operation to overwrite the previous file. See step 8 and later.

16. Turn off KIP 3100.

17. Set DIP switch No.2 (11: DSW1, right) to OFF.



NOTE

(1) Before changing the position of the switch, be sure to turn off KIP 3100.
(2) An error occurs if you skip switching SW2 to OFF.

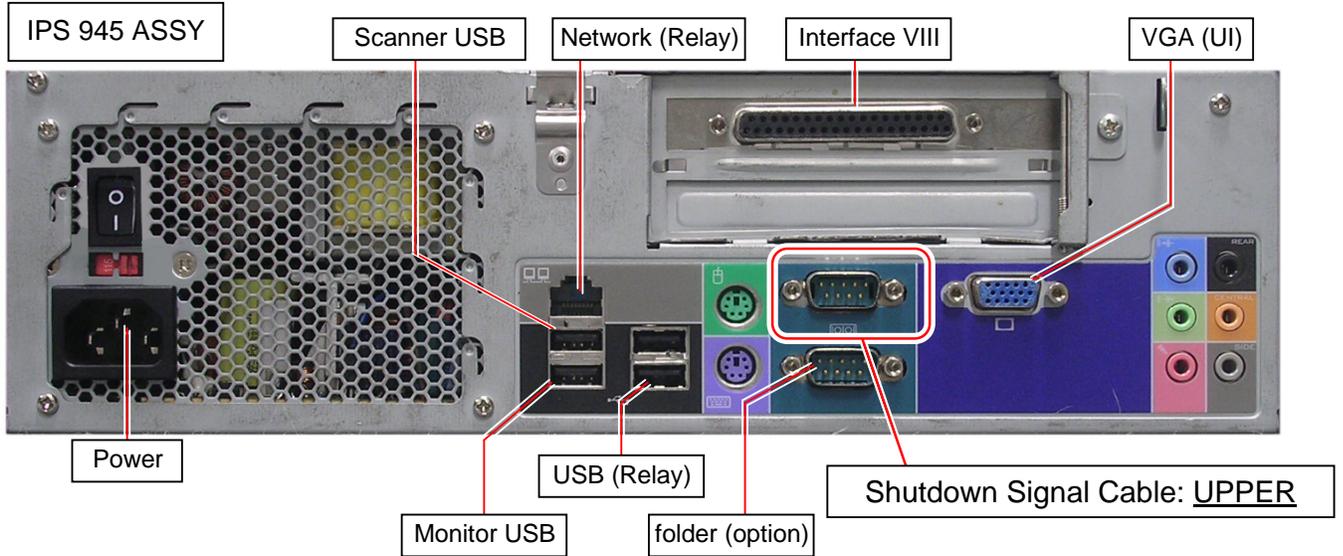
18. Replace RS Signal Cable.

Return Cover 10, Cover 2 and Cover 3 in the original position.

Chapter 9

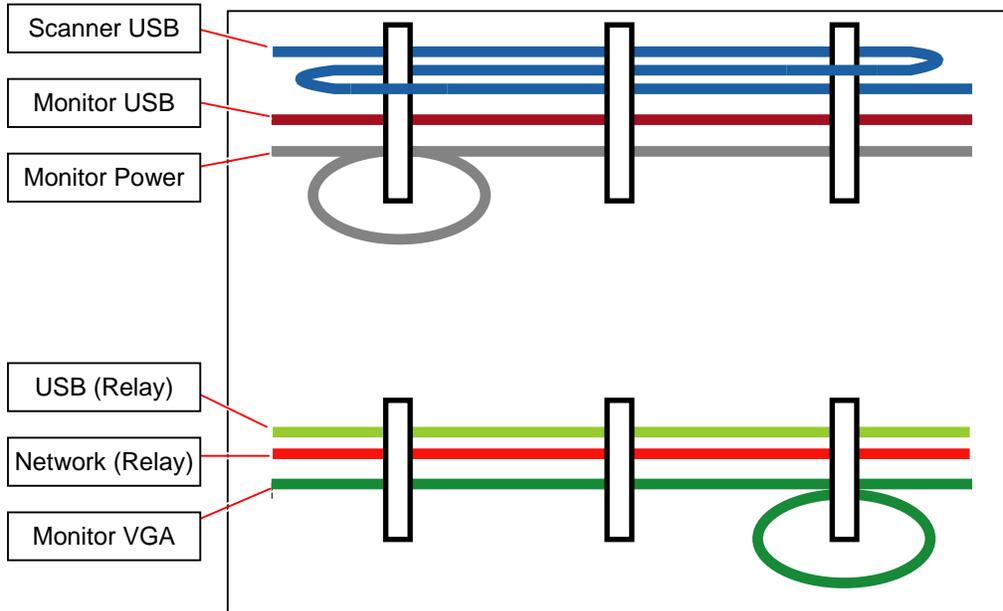
Appendix

9. 1 Schematic Wiring around Controller

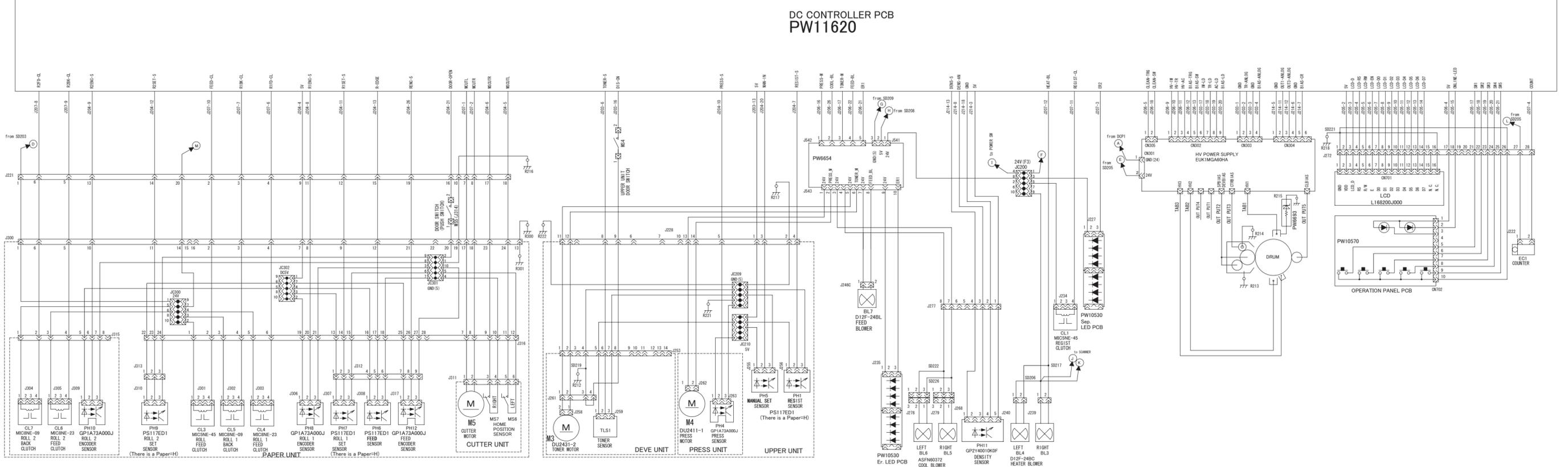
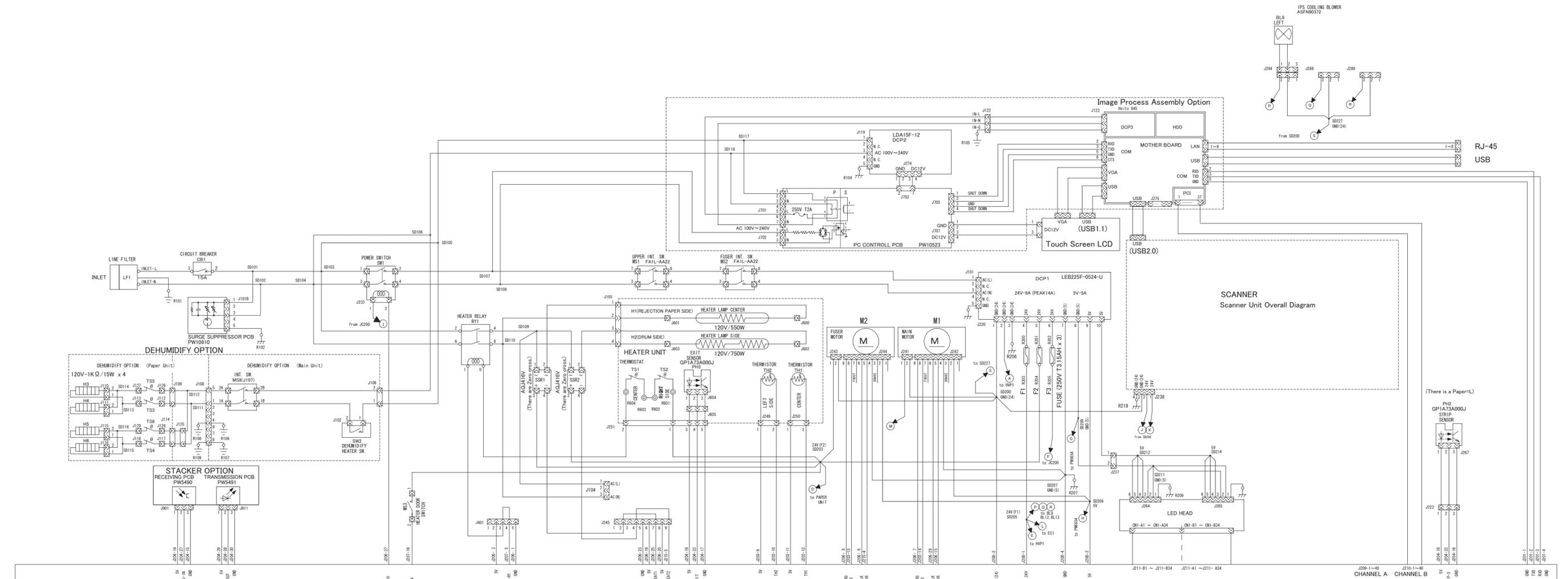


⚠ NOTE

If the connection of Shutdown Signal Cable is wrong, turning the machine's power switch to  side will shut the power supply not only for the machine but also for the IPS at a time. An abnormal shutdown on the IPS may cause damage on the components, damage or loss of data.



9. 2 Overall Diagram



KIP 3100 Overall Circuit Diagram (120v)

