

SERVICE MANUAL



DIGITAL MULTIFUNCTIONAL SYSTEM OPTION INNER TRIMMER

MODEL MX-TM10

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Parts marked with "△" are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

Explanation of Symbols

The following symbols are used throughout this Service Manual.

Symbols	Explanation	Symbols	Explanation
	Check.		Remove the claw.
	Check visually.		Insert the claw.
	Check the noise.		Use the bundled part.
	Disconnect the connector.		Push the part.
	Connect the connector.		Plug the power cable.
	Remove the cable/wire from the cable guide or wire saddle.		Turn on the power.
	Set the cable/wire to the cable guide or wire saddle.		
	Remove the screw.		
	Tighten the screw.		

The following rules apply throughout this Service Manual:

- Each chapter contains sections explaining the purpose of specific functions and the relationship between electrical and mechanical systems with reference to the timing of operation.
In the diagrams,  represents the path of mechanical drive; where a signal name accompanies the symbol, the arrow  indicates the direction of the electric signal. The expression "turn on the power" means flipping on the power switch, closing the front door, and closing the delivery unit door, which results in supplying the machine with power.
- In the digital circuits, '1' is used to indicate that the voltage level of a given signal is "High", while '0' is used to indicate "Low". (The voltage value, however, differs from circuit to circuit.) In addition, the asterisk (*) as in "DRMD*" indicates that the DRMD signal goes on when '0'.
In practically all cases, the internal mechanisms of a microprocessor cannot be checked in the field. Therefore, the operations of the microprocessors used in the machines are not discussed: they are explained in terms of from sensors to the input of the DC controller PCB and from the output of the DC controller PCB to the loads.

The descriptions in this Service Manual are subject to change without notice for product improvement or other purposes, and major changes will be communicated in the form of Service Information bulletins.

All service persons are expected to have a good understanding of the contents of this Service Manual and all relevant Service Information bulletins and be able to identify and isolate faults in the machine.

Signal list

Signal Name (Written in this manual)	Signal Name	Parts Name	Function / Operation
M101	FTM101	Motor	Feed motor
M102	FTM102	Motor	Registration motor
M103	FTM103	Motor	Front estrangement motor
M104	FTM104	Motor	Rear estrangement motor
M105	FTM105	Motor	Press motor
M106	FTM106	Motor	Cutter motor
SL101	FTSL101	Solenoid	Stopper solenoid
SL102	FTSL102	Solenoid	Paddle solenoid
S101	FTS101	Sensor	Inlet sensor
S102	FTS102	Sensor	Front estrangement motor HP sensor
S103	FTS103	Sensor	Paper delivery sensor
S104	FTS104	Sensor	Rear estrangement motor HP sensor
S105	FTS105	Sensor	Registration HP sensor
S106	FTS106	Sensor	Press motor HP sensor
S108	FTS108	Sensor	Cutter motor clock sensor
S109	FTS109	Sensor	Waste paper box detection sensor
S011	FTS111	Sensor	Waste paper full sensor

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Safety Precautions

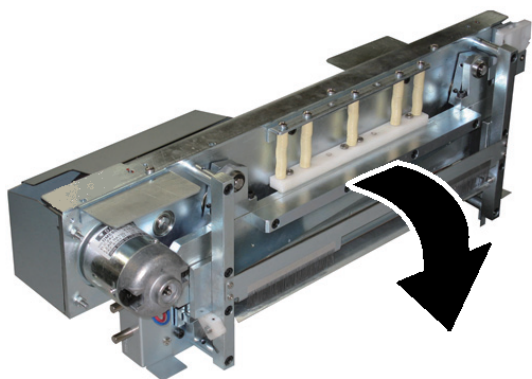
■ Notes Before it Works Serving

Notes Before it Works Serving

⚠ Caution:
When servicing, be sure to follow the specified procedure. Before starting the service work, be sure to turn off the host machine and finisher and unplug the finisher.

⚠ Caution:
Never turn off the host machine or finisher during downloading. If you do so, this equipment may become inoperative.

⚠ Caution:
When removing the cutter unit alone and putting it on a floor, be sure to put the cutter motor downside.



⚠ Caution:
When removing the cutter unit which is locked, be careful not to hold the lower section of the unit but hold the handle to avoid hurting.

⚠ Caution:
Never insert your finger into the cutter unit.



Product Outline

- Features
- Specifications
- Names of Parts



Features

High-quality Trimming

Enables high-quality trimming of the fore edge of a booklet.

Compact Design

Installable in the finisher, requiring a small room.

Specifications

Name	MX-TM10	
Trimming method	Fore-edge trimming by reciprocating the upper blade	
Trimming mode	Fore-edge trimming (only in one direction)	
Trim width	2 - 20mm (Adjustable in 1mm increments)	
Paper weight	Refer to "Paper size/type/weight for inserter and Trimming module"	
Paper size	Refer to "Paper size/type/weight for inserter and Trimming module"	
Acceptable number of sheets	Plain paper	2 - 20 sheets (60 - 81.4g/m ²) 2 - 10 sheets (more than 81.4 - 105g/m ²) 2 - 3 sheets (more than 105 - 209g/m ²) * 1 sheet of cover of 300g or less is included.
	Coated paper	2 - 10 sheets (80 - 105g/m ²) 2 - 3 sheets (more than 105 - 209g/m ²)
Time for trimming	4,000 msec. or less	
Capacity for holding cutting wastage	1,500 sheets (80g paper; Trim width: 20 mm)	
Productivity(compared to the saddle stitching speed)	70 - 100% (For A4/8.5 x 11, 100% for 5-sheets or more-fold.)	
Dimensions (of the inner trimmer)	251 x 625 x 403mm	
Weight	Approx. 32kg	
Power source	No	
Max. power consumption	88W or less.	
Trimmer life	12,000,000 sheets (When 80g/m ² paper is used.)	
Cutter life	50,000 times (5-fold/81.4g paper)	

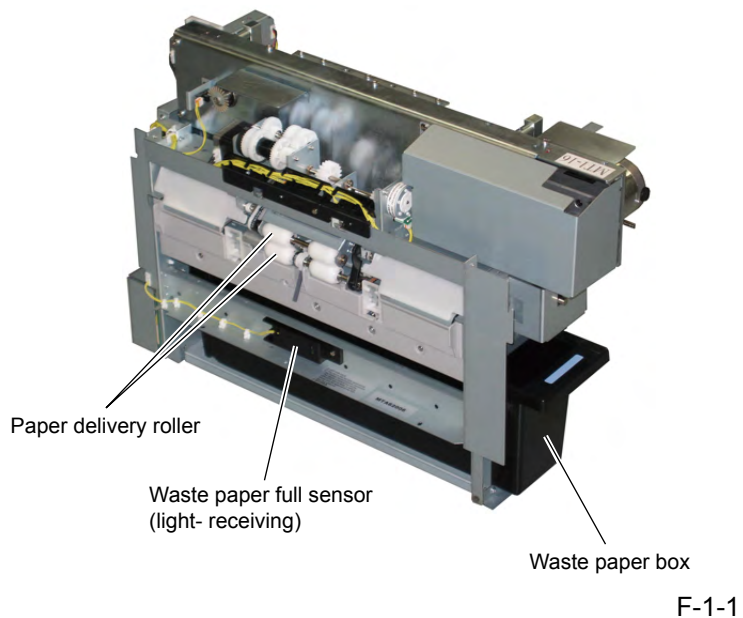
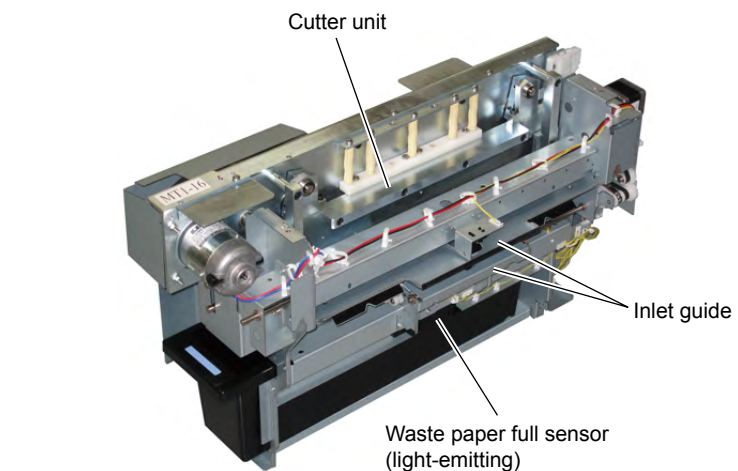
Paper size/type/weight for inserter and Trimming module

		Trimming	
Paper weight (Min)		60g/m ²	
Paper weight (Max)		300g/m ²	
Paper Type	Thin Paper	No	
	Plain Paper	Yes	
	Recycle Paper	Yes	
	Color paper	Yes	
	Letter Head	No	
	Pre Printed Paper	No	
	Pre Punched paper	No	
	Heavy Paper 1 106 - 176	Yes	
	Heavy Paper 2 177 - 220	Yes	
	Heavy Paper 3 221 - 256	Yes (Cover)	
	Heavy Paper 4 257 - 300	Yes (Cover)	
	Emboss paper	Yes	
	Tab Paper	No	
	OHP	No	
	Label	No	
Grossy Paper	Yes		
Paper Size	12" x 18" (A3W)	305 x 457	Yes
	Ledger (11" x 17")	279 x 432	Yes
	Ledger (11" x 17") Z-fold	279 x 216	-
	Legal (8.5" x 14")	216 x 356	Yes
	Legal (8.5" x 14") Z-fold	216 x 178	-
	Asian Legal (8.5" x 13.5")	216 x 343	Yes
	Mexico Legal (8.5" x 13.4")	216 x 340	Yes
	Foolscap (8.5" x 13")	216 x 330	Yes
	Letter (8.5" x 11")	279 x 216	No
	Letter-R (8.5" x 11"R)	216 x 279	Yes
	Letter-R (8.5" x 11"R) Z-fold	216 x 140	No
	Letter-R (8.5" x 11"R) Booklet	216 x 140	No
	Letter-R 3-fold/4-fold	216 x 93/70	No
	Invoice (5.5" x 8.5")	216 x 140	-
	Invoice-R (5.5" x 8.5"R)	140 x 216	No
	Executive-R (7.25" x 10.5")	184 x 266	No
	9 x 12 (A4W)	305 x 229	No
	A3	297 x 420	Yes
	A3 Z-fold	297 x 210	No
	B4	257 x 364	Yes
	B4 Z-fold	257 x 182	No
	A4	297 x 210	No
	A4R	210 x 297	Yes

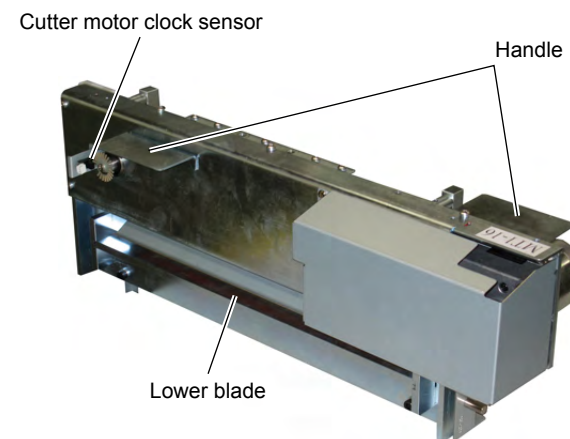
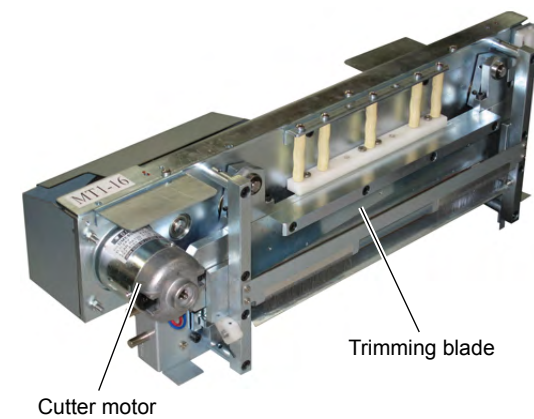
			Trimming
Paper Size	A4R Z-fold	210 x 148	No
	A4R Booklet	210 x 148	No
	A4R 3-fold/4-fold	210 x 99/74	No
	B5	257 x 182	No
	B5R	182 x 257	No
	A5	210 x 148	No
	A5R	148 x 210	No
	SRA3	320 x 450	Yes
	SRA4	320 x 225	No
	Kiku in eighths	318 x 234.75	-
	A-ban in eighths	312.5 x 220	-
	Kiku in quarters	318 x 469.5	-
	A-ban in quarters	312.5 x 440	-
	8K	270 x 390	Yes
	16K	270 x 195	No
	16K-R	195 x 270	No
	Postcard	100 x 148	No
	Monarch	98 x 191	No
	COM10	105 x 241	No
	DL	110 x 220	No
	C5	229 x 162	No
	Chokei 3	120 x 235	No
	Chokei 4	90 x 205	No
	Yokei 2	114 x 162	No
	Yokei 4	105 x 235	No
	Kakugata 2	240 x 332	No
	Kakugata 3	216 x 277	No
	Extra: custom size		Yes
	Custom range	Min X (Main scanning direction)	279 (11)
		Max X (Main scanning direction)	457 (18)
		Min Y (Vertical scanning direction)	210 (8.3)
		Max Y (Vertical scanning direction)	320 (12.5)
Extra: unknown size		No	
Baner paper	Width: 90 to 305 Length: 458 to 1200	No	

Names of Parts

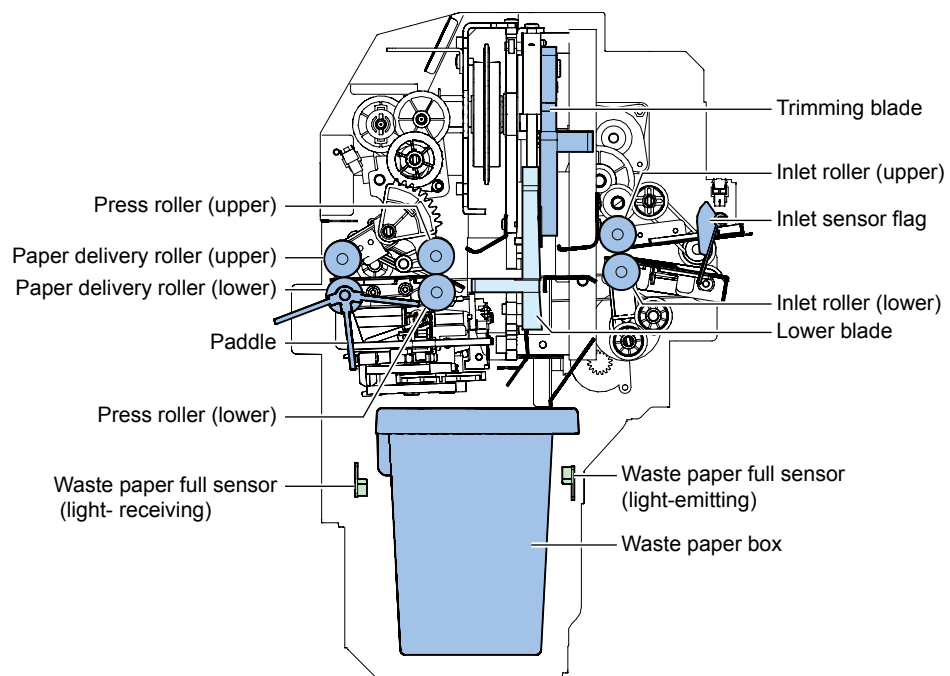
External View (Trimmer Unit Frame and Cutter Unit)



External View (Cutter Unit)



Cross Section



F-1-3



Technology

■ Basic Configuration

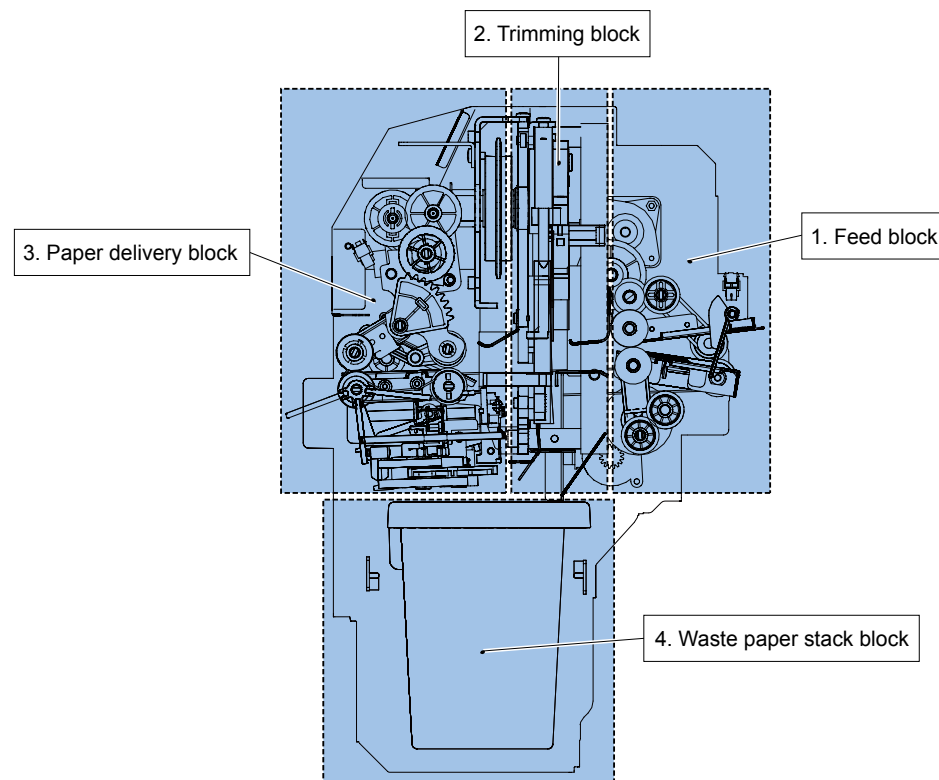


Basic Configuration

Functional Configuration

This equipment is mainly consists of a feed block, trimming block, paper delivery block, and waste paper stack block.

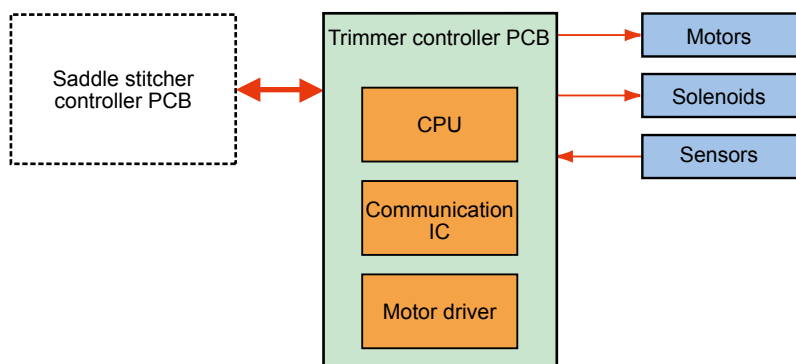
Feed block [1]	Receives the booklet stitched by the saddle stitcher, and then delivers it to the next block.
Trimming block [2]	Trims the fore edge of the stitched booklet. * When trimming is not done, the booklet just passes through the trimming block.
Paper delivery block [3]	Applies pressure on the press rollers during transfer, delivery, registration, and trimming of the stitched booklet. * When trimming is not done, registration of the booklet is not done either.
Waste paper stack block [4]	Collects the waste paper generated when fore edges of booklets are trimmed.



F-2-1

Overview of Electrical Circuitry

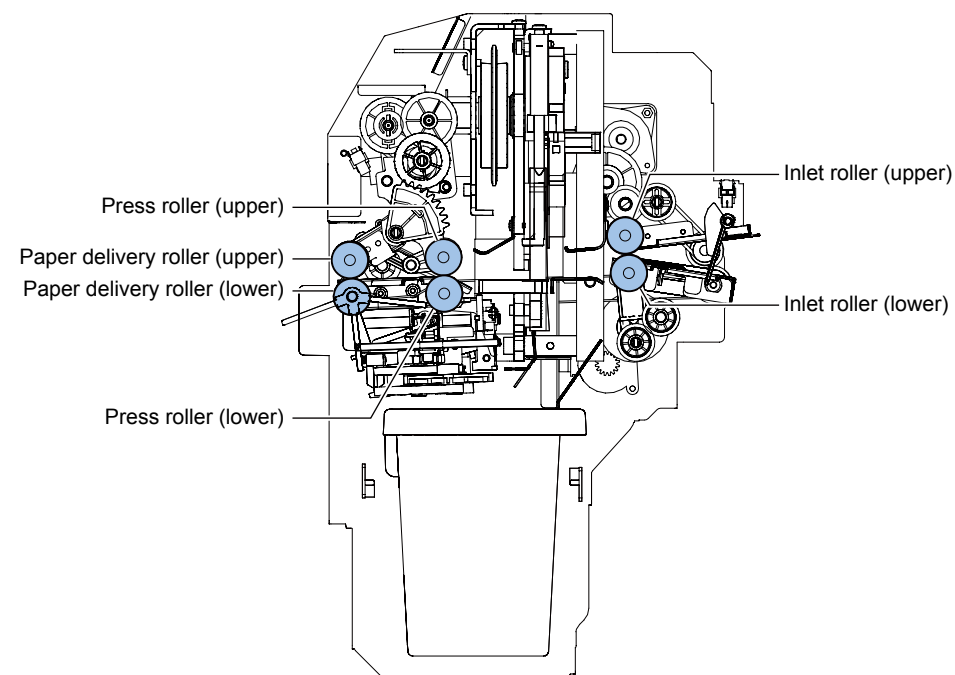
The operation sequence of this machine is controlled by the trimmer controller PCB.



F-2-2

Component Configuration

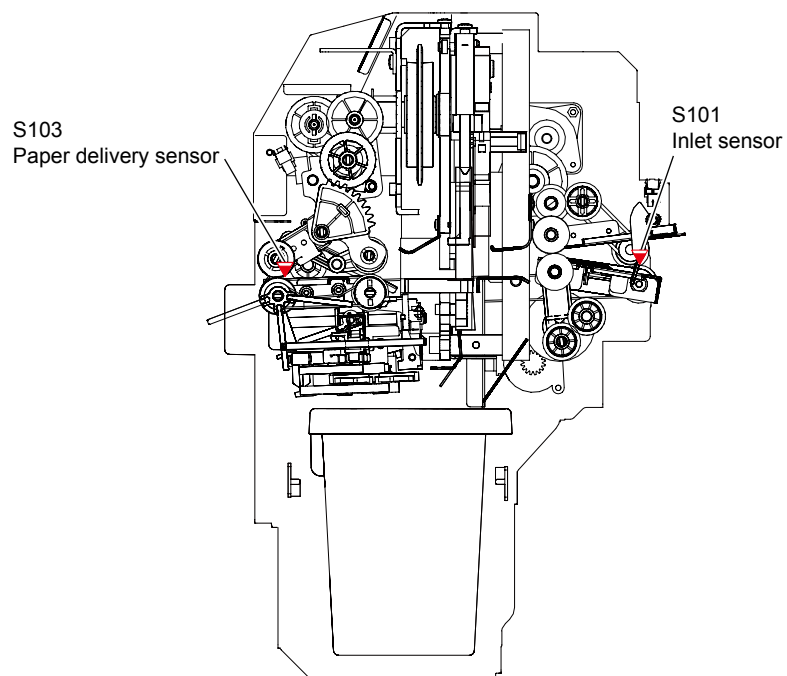
Roller Layout



F-2-3

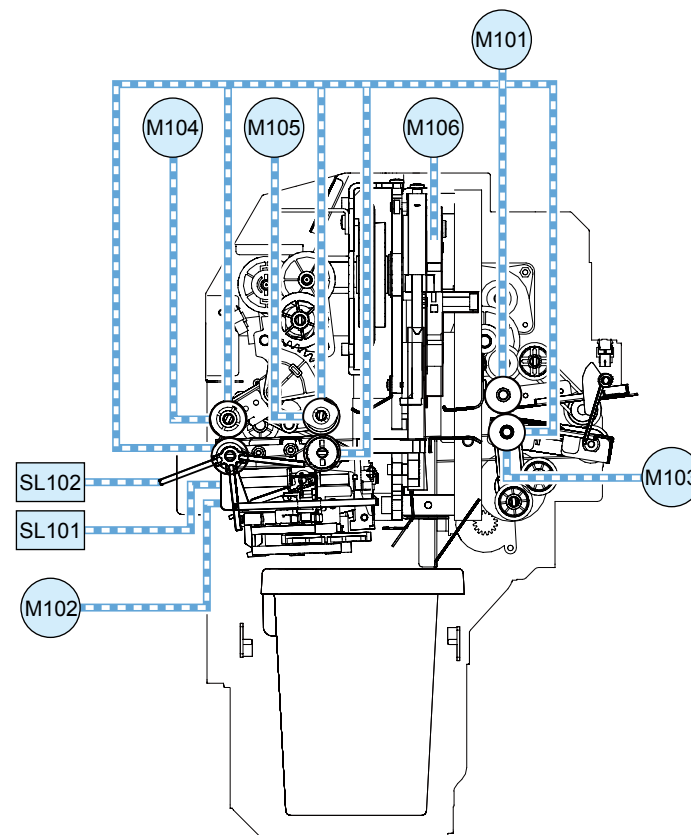
Sensor Layout

Only the optical sensors on the feed path are shown below.



F-2-4

Drive Configuration



F-2-5

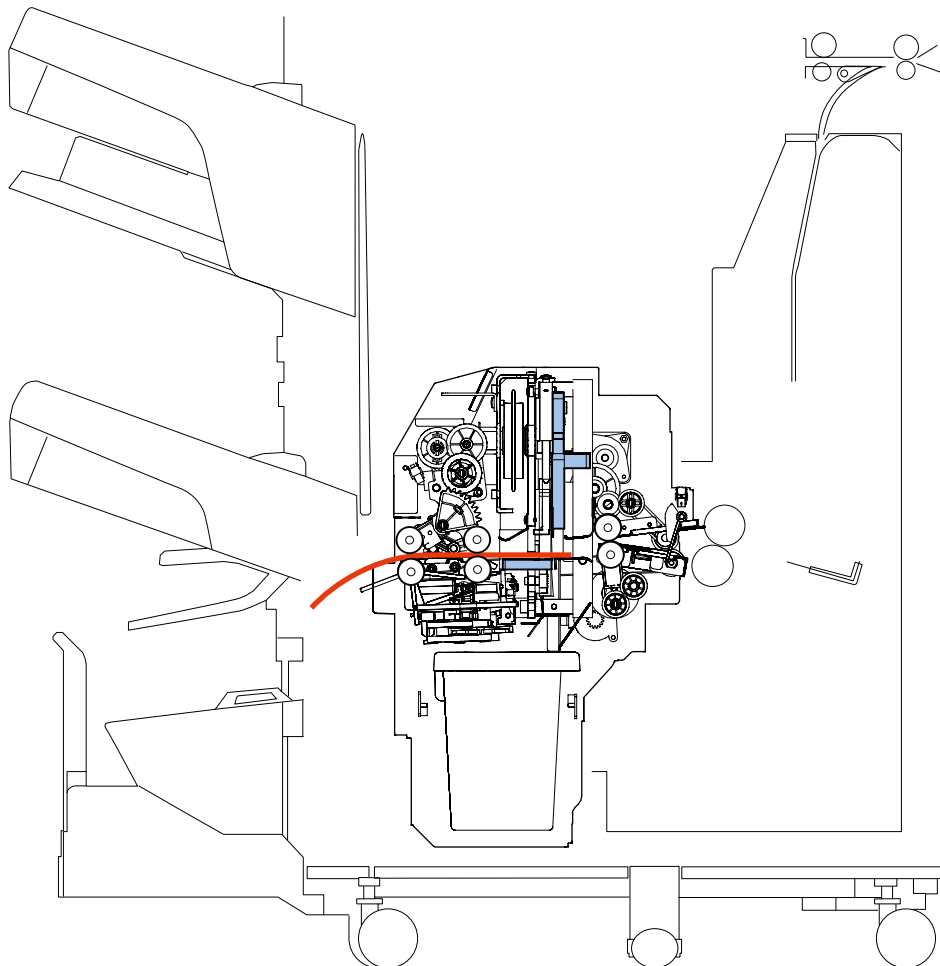
M101: Feed motor
 M102: Registration motor
 M103: Front estrangement motor
 M104: Rear estrangement motor

M105: Press motor
 M106: Cutter motor
 SL101: Stopper solenoid
 SL102: Paddle solenoid

Basic Operation Outline

This equipment trims the fore edge of the stitched booklet, and then delivers the booklet to the saddle delivery tray.

This equipment is optionally available and installed in the feed path inside the saddle finisher. When the booklet stitched by the saddle stitcher is fed to this equipment, registration is performed to be prepared for trimming. After this, the booklet is trimmed with it held down by press rollers and then delivered to the saddle delivery tray. These operations are controlled by the trimmer controller PCB.



F-2-6

Controls

Overview

This unit is installed between the saddle unit and saddle delivery tray of the saddle finisher. It stops the center bound booklet for a moment to trim the fore edge.

The booklet loaded from the saddle unit is fed by the inlet roller. When the leading edge of the media (back of the booklet) reaches a prescribed location, the booklet is stopped for a moment and registered. Then it is fed to the trim position and the fore edge of the booklet is trimmed.

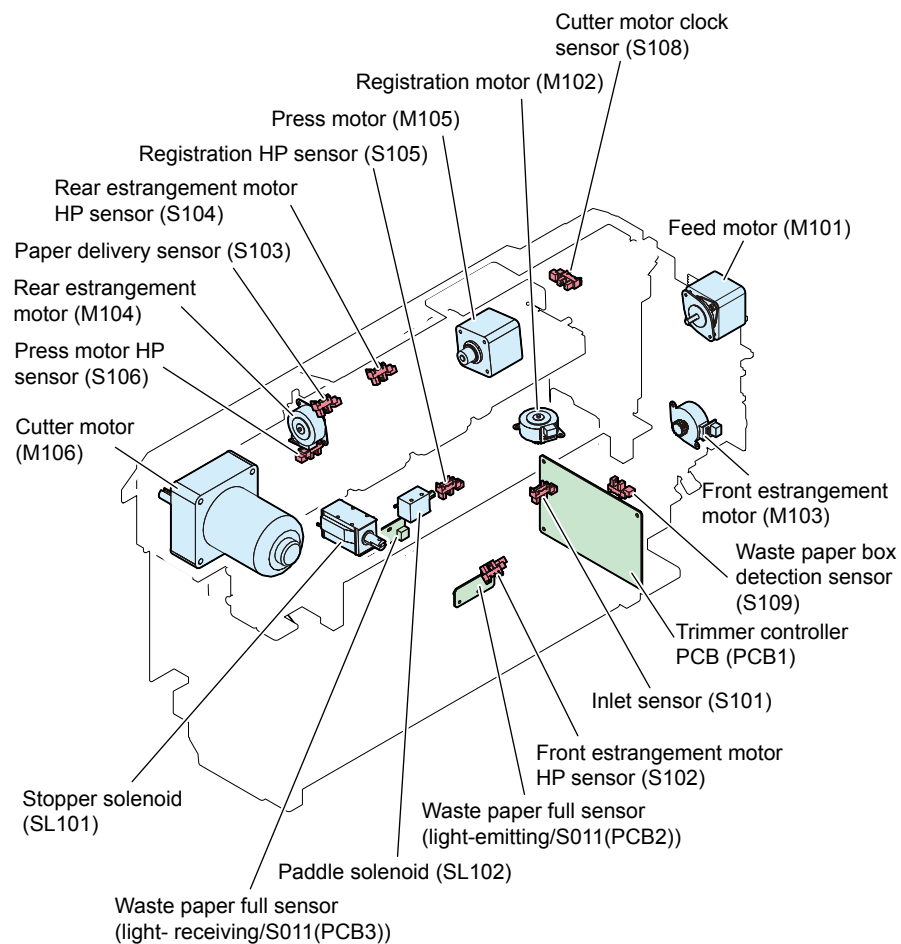
The name and role of motors, solenoids, and sensors used for trimming are shown below.

Motor	Function	Reference
Feed motor (M101)	Drives the inlet roller, press roller, and paper delivery roller (feed booklet)	4-21
Registration motor (M102)	Drives the registration unit (register the booklet)	4-20
Front estrangement motor (M103)	Drives the inlet roller (roller estrangement)	4-22
Rear estrangement motor (M104)	Drives the paper delivery roller (roller estrangement)	4-22
Press motor (M105)	Drives the press roller (press booklet)	4-21
Cutter motor (M106)	Drives the trimming blade (trim booklet)	-

Solenoid	Function	Reference
Stopper solenoid (SL101)	Drives the registration guide (lifts the registration plate)	4-19
Paddle solenoid (SL102)	Drives the paddle clutch lever (registers the booklet)	4-17

Sensor	Function	Reference
Inlet sensor (S101)	Detects booklet feeding	-
Front estrangement motor HP sensor (S102)	Detects the inlet roller home position	-
Paper delivery sensor (S103)	Detects booklet feeding	-
Rear estrangement motor HP sensor (S104)	Detects the paper delivery roller home position	-
Registration HP sensor (S105)	Detects the registration unit home position	-
Press motor HP sensor (S106)	Detects the press roller home position	-
Cutter motor clock sensor (S108)	Detects the cutter motor clock	-
Waste paper box detection sensor (S109)	Detects the waste paper box	

Sensor	Function	Reference
Waste paper full sensor (light-emitting/S011(PCB2))	Detects when waste paper is full	4-24
Waste paper full sensor (light-receiving/S011(PCB3))		4-25



F-2-7

Construction of the Control System

The booklet is fed by the inlet roller, press roller, and paper delivery roller.

Each roller is driven by the feed motor (M101).

The feed block is equipped with inlet rollers and the lower inlet roller is separated by the front estrangement motor (M103) in order to prepare for feeding of the center bound booklet. The home position of the inlet roller is detected by the front estrangement motor HP sensor (S102).

The feeding of the booklet at the feed block is detected by the inlet sensor (S101).

The trimming block consists of trimming blade and lower blade.

The trimming blade is driven by the cutter motor (M106). The cutter motor (M106) trims by lifting the trimming blade while drawing an arc. The home position of the trimming blade is the same as the stop position of the cutter motor (M106). In order to accurately stop the cutter motor (M106) which is a DC motor, the cutter motor clock sensor (S108) counts the prescribed number of clocks to stop the cutter motor (M106).

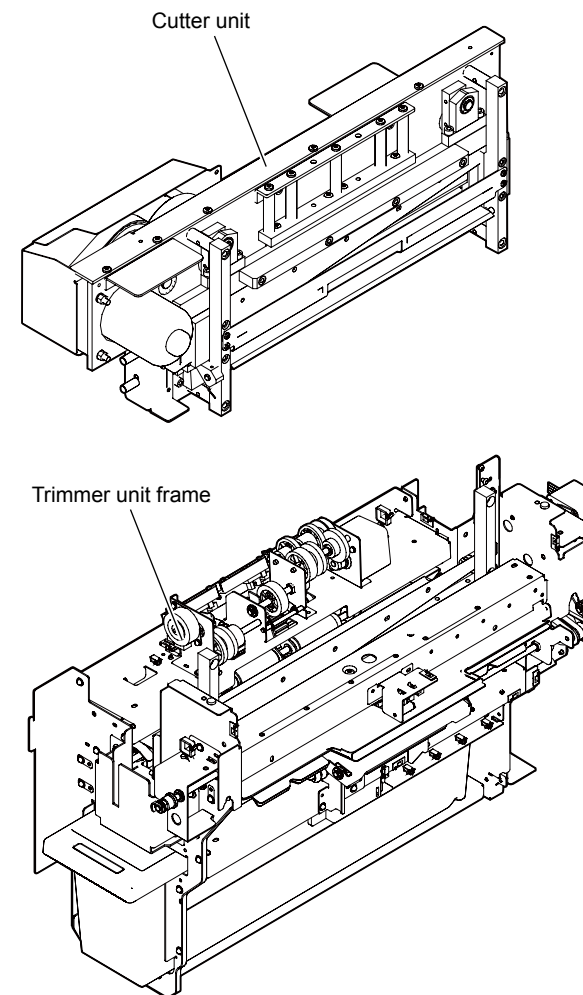
The paper delivery block consists of registration unit, press roller, and paper delivery roller.

The registration unit registers the booklet before trimming. The registration unit is driven by the registration motor (M102) and stopper solenoid (SL101). The home position of the registration unit is detected by the registration HP sensor (S105).

The press roller presses the booklet when trimming. The press motor (M105) lowers the upper press roller to press the booklet. The home position of the press roller is detected by the press motor HP sensor (S106).

The paper delivery roller performs separation when feeding as well as feeding/ejection of the booklet. The upper paper delivery roller is separated by the rear estrangement motor (M104) to prepare for feeding of the center bound booklet. The home position of the paper delivery roller is detected by the rear estrangement motor HP sensor (S104). The feeding/ejection of the booklet by the paper delivery block is detected by the paper delivery sensor (S103). In addition, the paper delivery roller shaft is equipped with a paddle and when the paddle clutch lever is released by the paddle solenoid (SL102), the rotation of the feed motor (M101) is conveyed to the paddle and rotates the paddle.

The waste paper stack block is equipped with a waste paper box detection sensor (S109) and a waste paper full sensor (S011). The waste paper box detection sensor (S109) detects the presence of the waste paper box. The paper waste generated by trimming is collected in the waste paper box. The filling of the waste paper box is detected by the waste paper full sensor (S011).

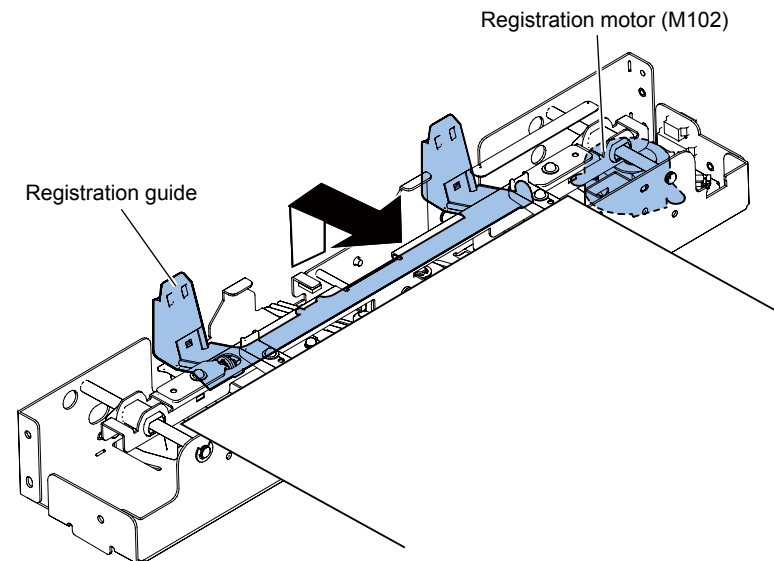


F-2-8

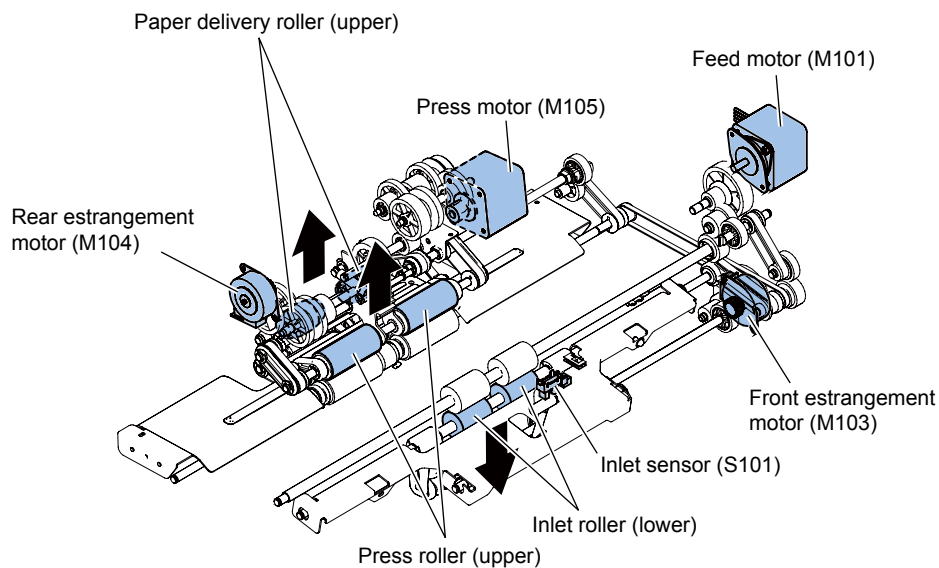
Registration operation

The sequence of registration operation is described below.

1. Drive the front estrangement motor (M103) before the center bound booklet is fed from the saddle unit to separate the inlet roller (lower).
2. Drive the feed motor (M101) when the booklet passed from the saddle unit reaches the inlet sensor (S101).
3. When the booklet reaches the inlet roller, drive the press motor (M105) and separate the press roller (upper). Then drive the front estrangement motor (M103) and press and feed the booklet with the inlet roller.
4. When the booklet reaches the trimming position, drive the rear estrangement motor (M104) and separate the paper delivery roller (upper). Also, drive the registration motor (M102) and move the registration unit to the registration start position. At the same time, drive the stopper solenoid (SL101) and lift the registration guide.
5. Feed the booklet to the registration start position and drive the front estrangement motor to separate the inlet roller (lower).
6. After separating the inlet roller, drive the registration motor (M102) to register.



F-2-10

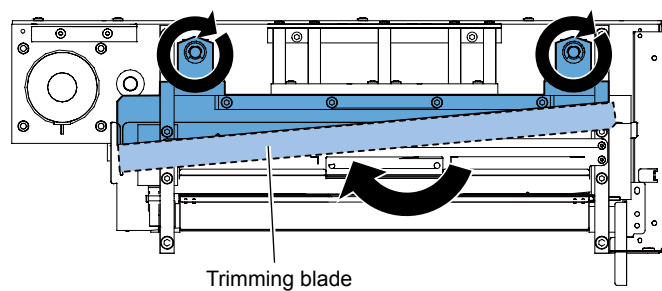


F-2-9

Trimming operation

The sequence of trimming operation is described below.

1. After registration completes, drive the press motor (M105) and press the booklet with the press roller. If the booklet is larger than A3, drive the rear estrangement motor and press the booklet with the paper delivery roller before pressing with the press roller because air must be released from the leading edge of the booklet (back of the booklet).
2. After pressing the booklet with the press roller, drive the registration motor (M102) and separate the registration unit from the booklet and then drive the stopper solenoid (SL101) to lower the registration guide.
3. After the registration guide is lowered, drive the feed motor (M101) and feed the booklet to the trimming position.
4. When the booklet reaches the trimming position, drive the cutter motor (M106) and trim the fore edge of the booklet.
At this time, drive the front estrangement motor (M103) to raise the inlet roller (lower) and drive the registration motor (M102) at the same time to return the registration unit to the home position.
5. After trimming the booklet, drive the feed motor (M101) and start paper ejection.
6. After feeding for a prescribed distance from the start of ejection operation, drive the rear estrangement motor (M104) to press the booklet with the eject roller and feed.
7. After the booklet passes the paper delivery sensor (S103), stop the feed motor (M101).



F-2-11

3

Maintenance

■ Maintenance List



Maintenance List

×: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate

No.	Part name	When calling	When maintenance of the machine	Remarks
1	Paddle solenoid	×	×	Replace at 120K bundles.
2	Discharge needle	×	×	Replace at 120K bundles.
3	Moquette	×	×	Replace at 120K bundles.

4

Disassembly and assembly

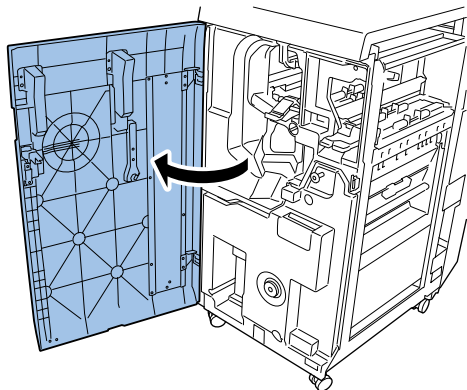
- Removing this Equipment
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- Motors
- Sensors
- PCBs



F-4-1

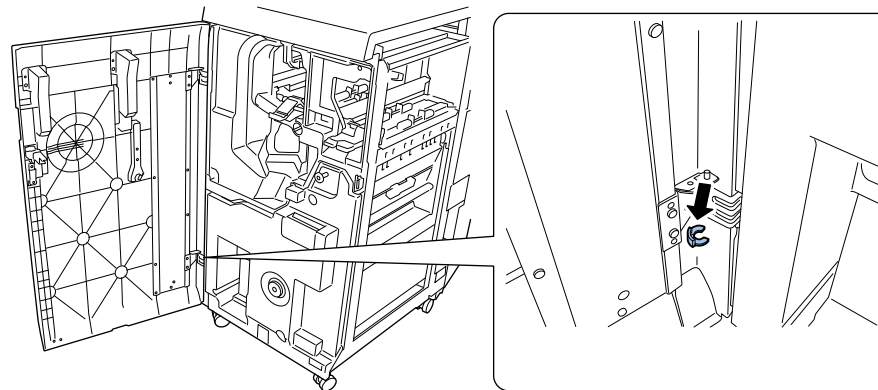
Removing this Equipment

1) Open the finisher front door.



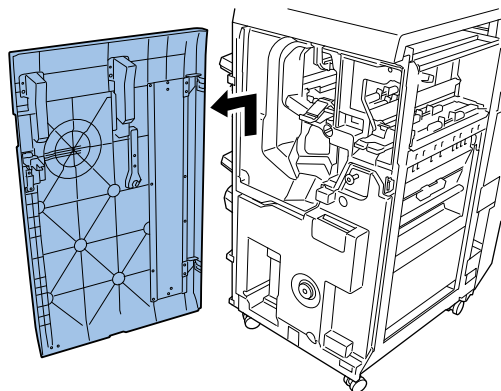
F-4-2

2) Remove the resin ring.



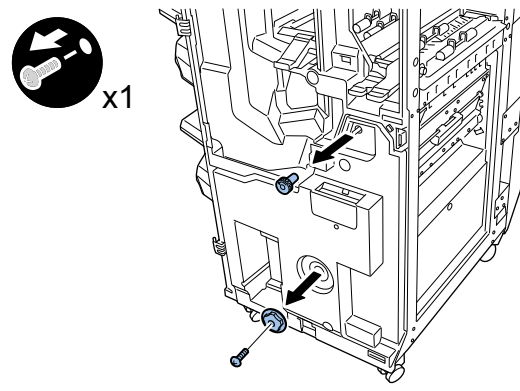
F-4-3

3) Remove the finisher front door in the direction of the arrow.



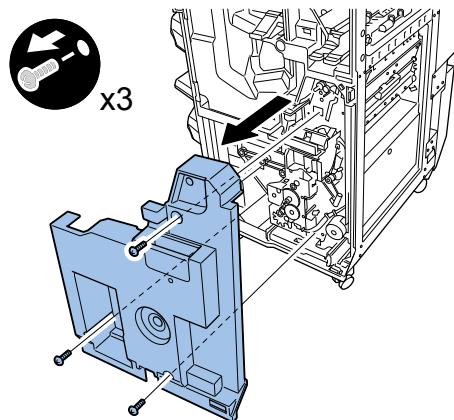
F-4-4

4) Remove the jam dial (top). Remove 1 screw and remove the jam dial (bottom).



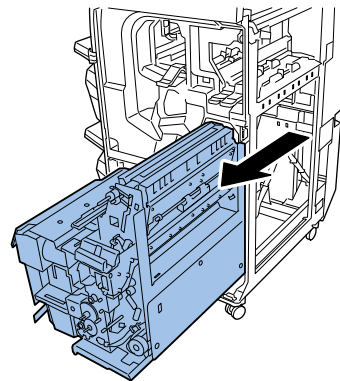
F-4-5

5) Remove 3 screws and remove the inner cover.



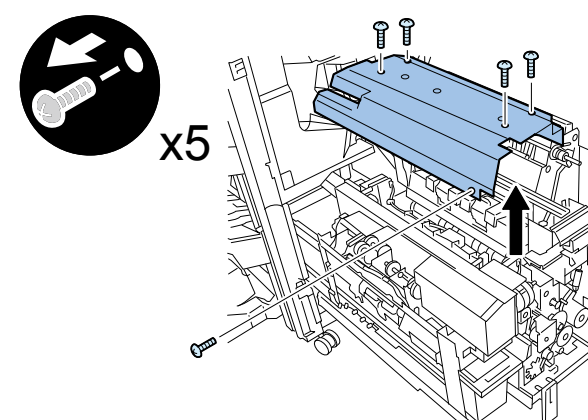
F-4-6

6) Pull out the saddle unit.



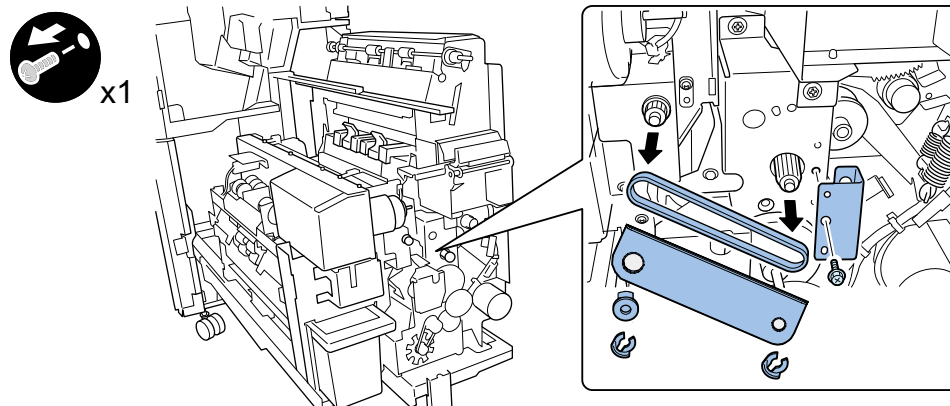
F-4-7

7) Remove 5 screws and remove the top cover.



F-4-8

8) Remove 1 screw and remove the steel plate. Remove 1 bearing and 2 resin rings. Remove the steel plate and remove the drive belt.

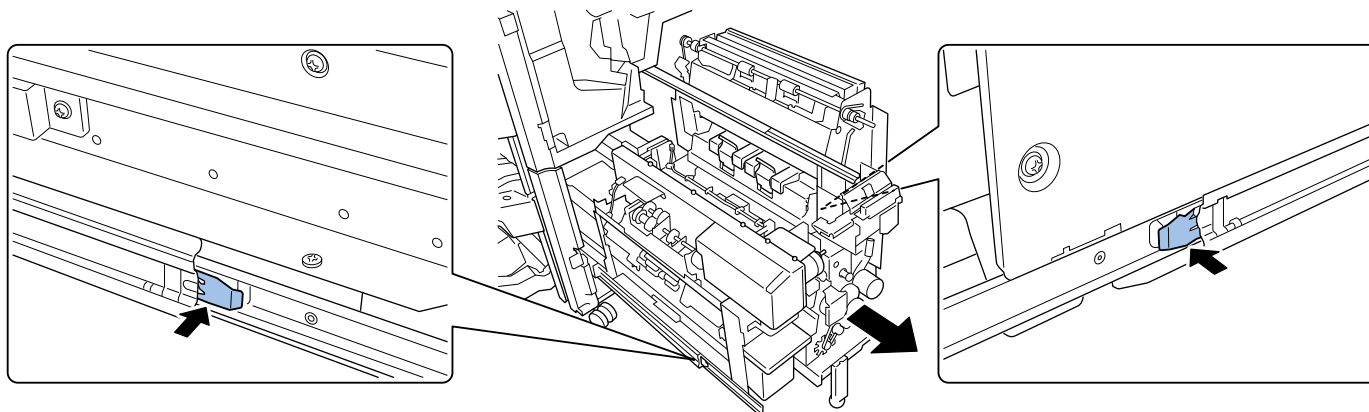


F-4-9

Note:

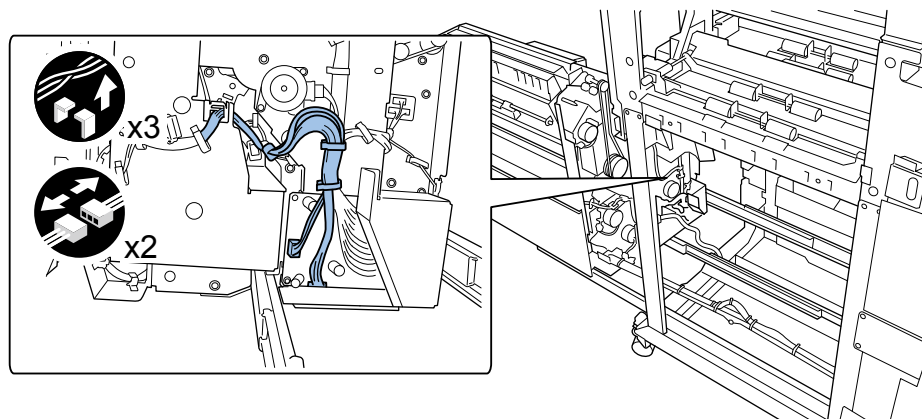
Be careful not to lose the parallel pin on the inside of the left side pulley.

9) Pull out the saddle unit fully while pushing the stopper on both sides of the accurate rail in the direction of the arrow.



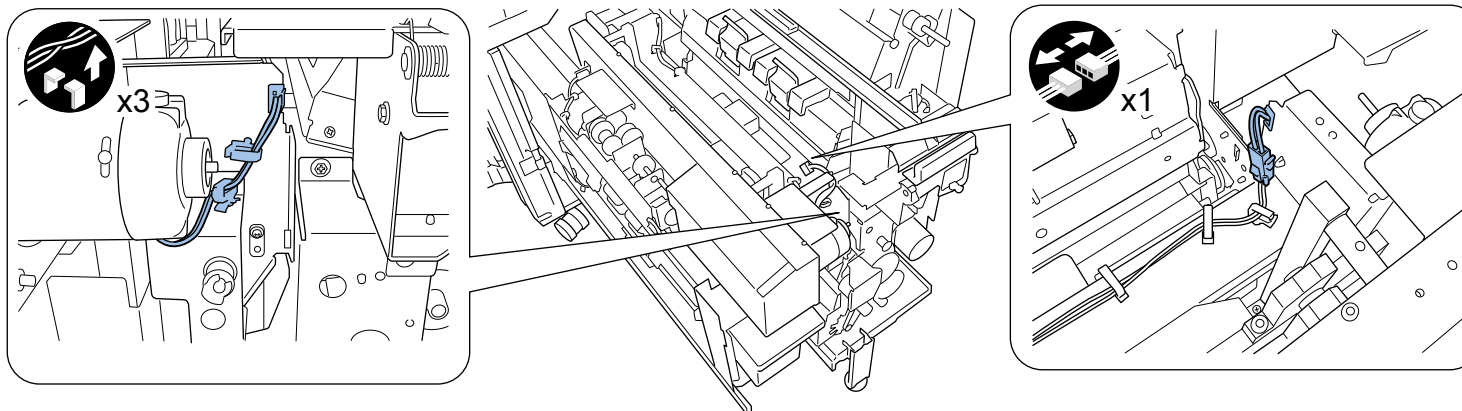
F-4-10

10) Remove 2 connectors and remove cable from 3 locations of the wire saddle.



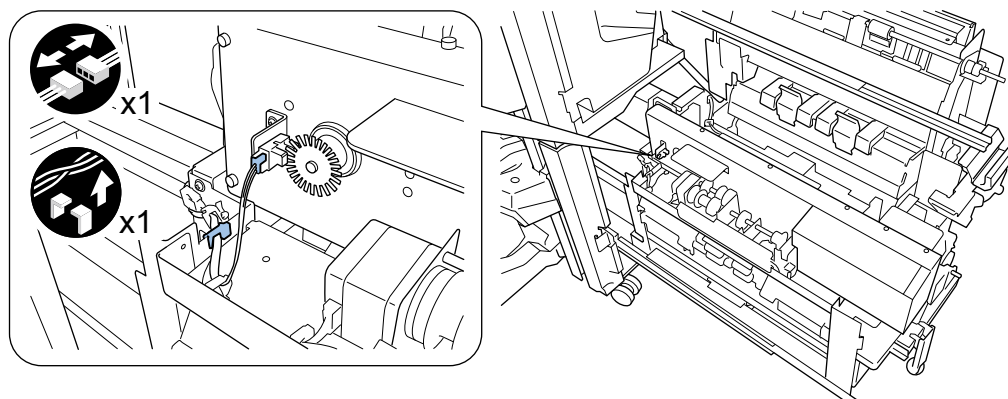
F-4-11

11) Remove cable from 3 locations of the wire saddle and remove 1 connector.



F-4-12

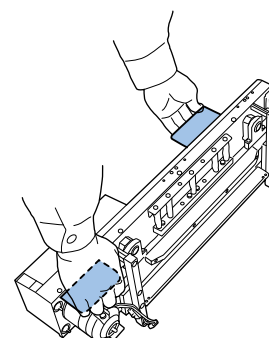
12) Remove 1 connector and secure the cable to the cable guide.



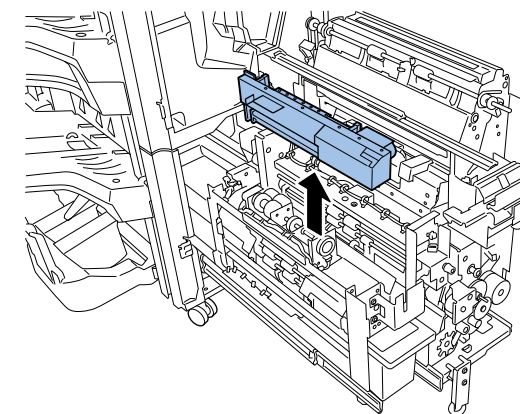
F-4-13

13) Remove the cutter unit from the trimmer unit frame.

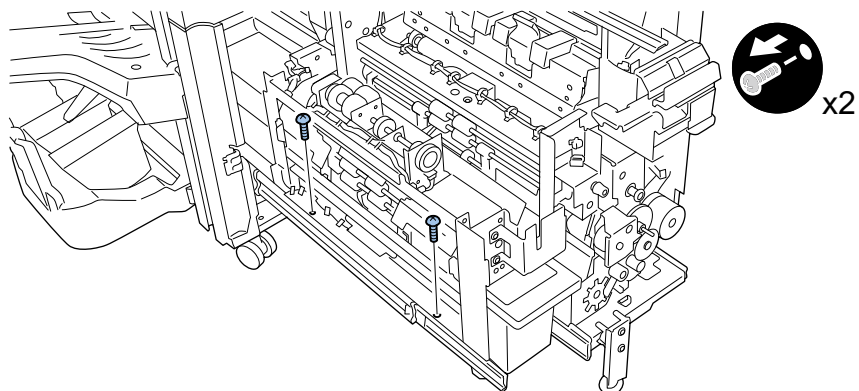
MEMO:
Hold the cutter unit at the
locations shown below.



F-4-14

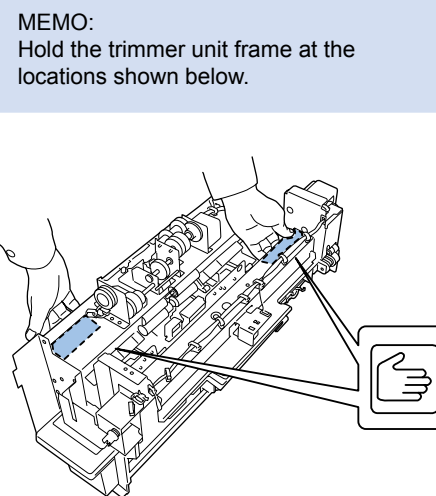


14) Remove 2 screws.

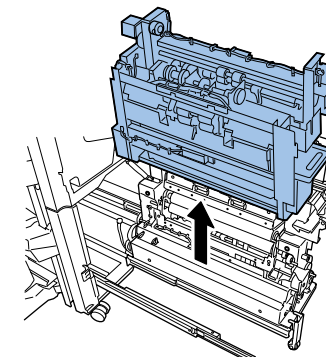


F-4-15

15) Remove the trimmer unit frame from the finisher.



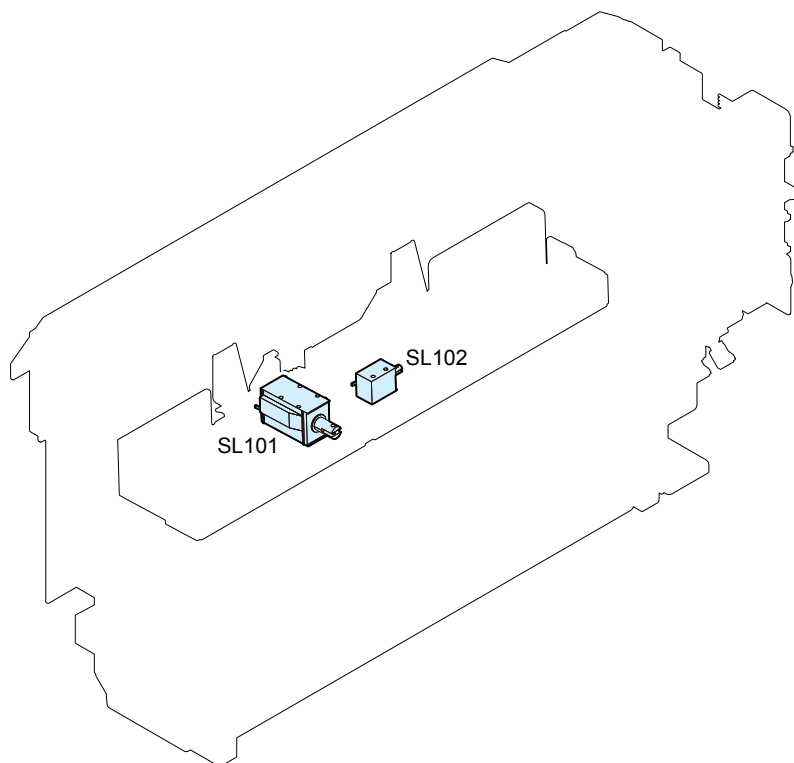
F-4-16



F-4-17

List of Parts

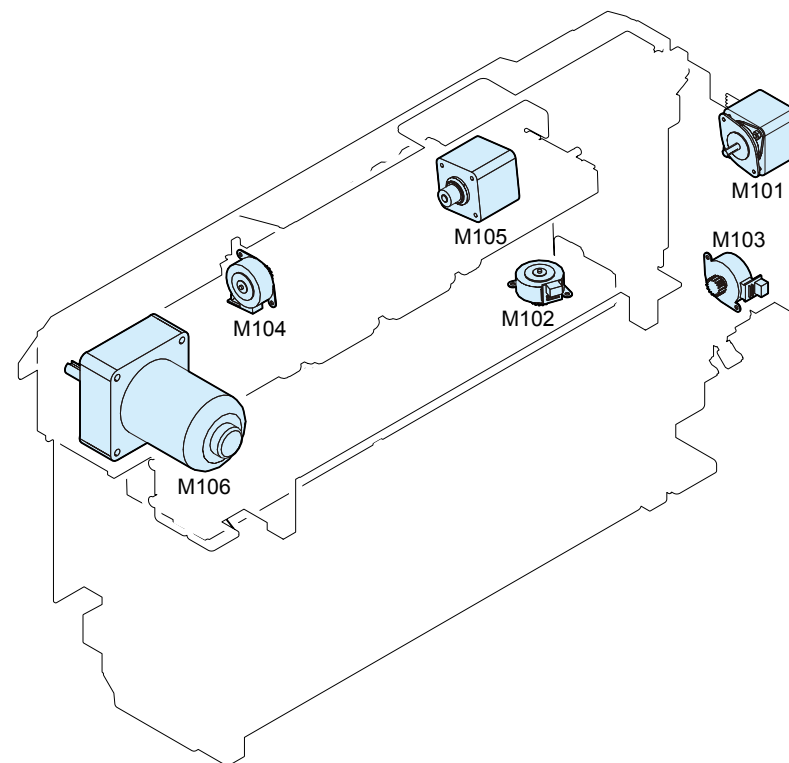
Solenoids



F-4-18

No.	Part name	Reference
SL101	Stopper solenoid	4-19
SL102	Paddle solenoid	4-17

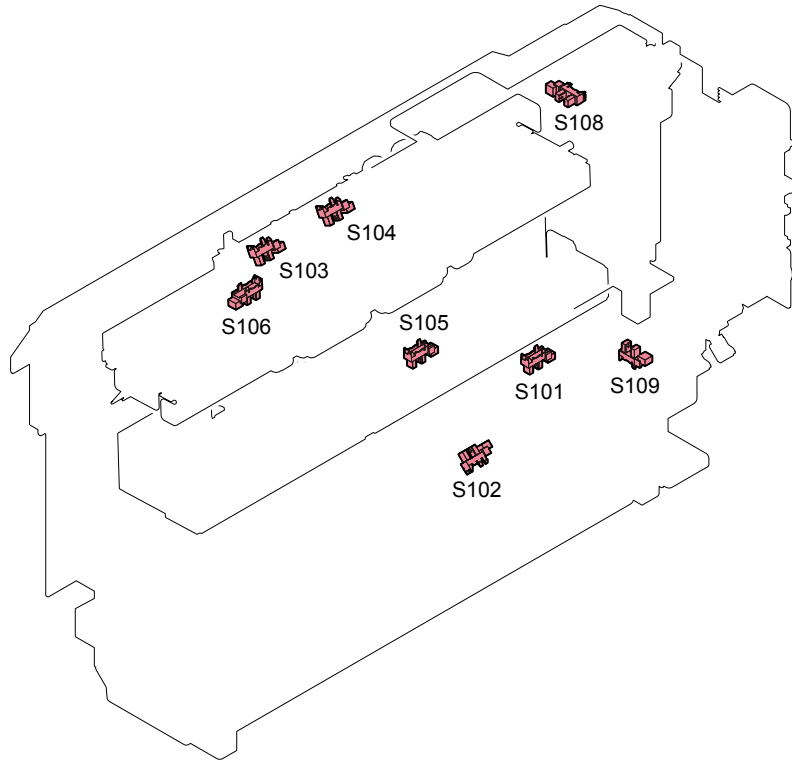
Motors



F-4-19

No.	Part name	Reference
M101	Feed motor	4-21
M102	Registration motor	4-20
M103	Front estrangement motor	4-22
M104	Rear estrangement motor	4-22
M105	Press motor	4-21
M106	Cutter motor	-

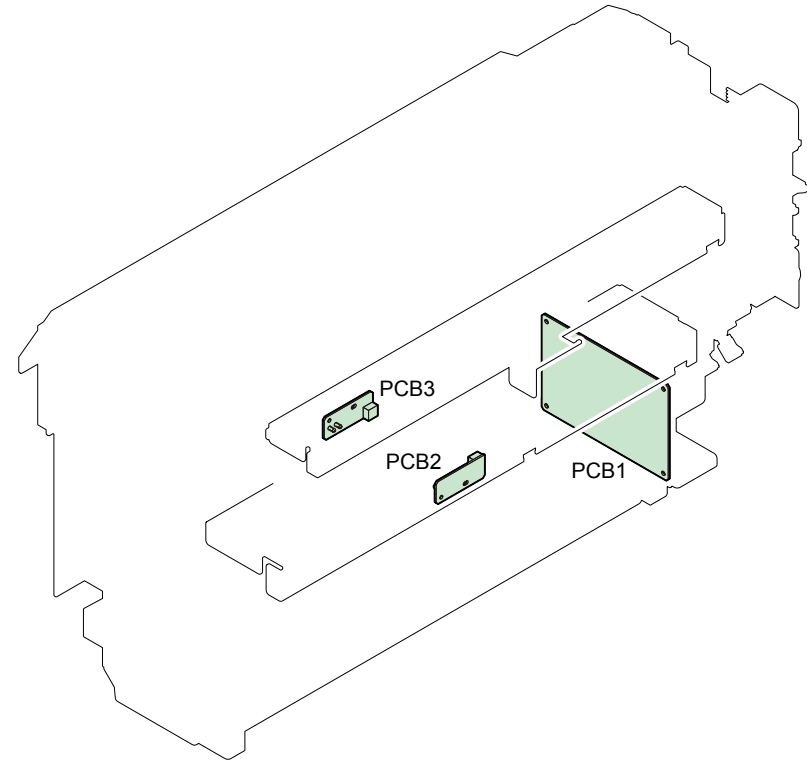
Sensors



F-4-20

No.	Part name	Reference
S101	Inlet sensor	-
S102	Front estrangement motor HP sensor	-
S103	Paper delivery sensor	-
S104	Rear estrangement motor HP sensor	-
S105	Registration HP sensor	-
S106	Press motor HP sensor	-
S108	Cutter motor clock sensor	-
S109	Waste paper box detection sensor	-
S011	Waste paper full sensor (light-emitting)	4-24
S011	Waste paper full sensor (light-receiving)	4-25

PCBs



F-4-21

No.	Part name	Reference
PCB1	Trimmer controller PCB	4-27

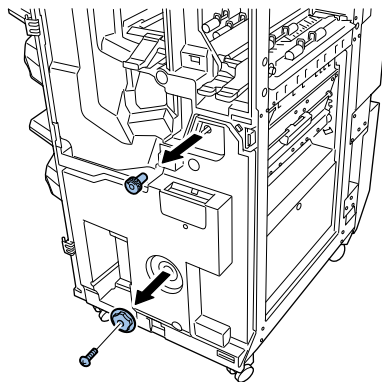
Main Units

● Removing the cutter unit

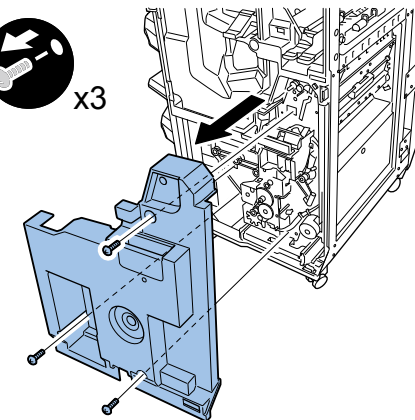
1) Remove the finisher front door.

2) Remove the jam dial (top). Remove 1 screw and remove the jam dial (bottom).

3) Remove 3 screws and remove the inner cover.

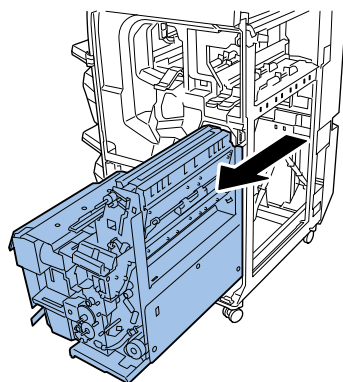


F-4-22



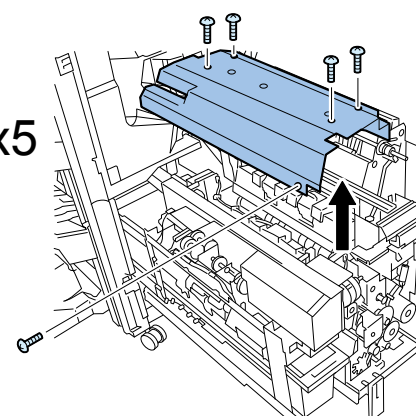
F-4-23

4) Pull out the saddle unit.



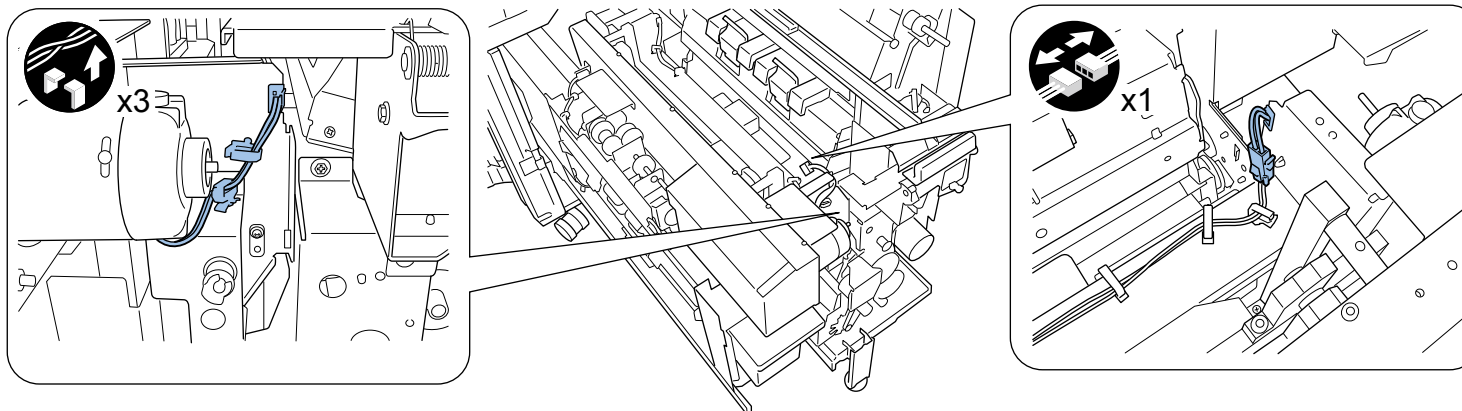
F-4-24

5) Remove 5 screws and remove the top cover.



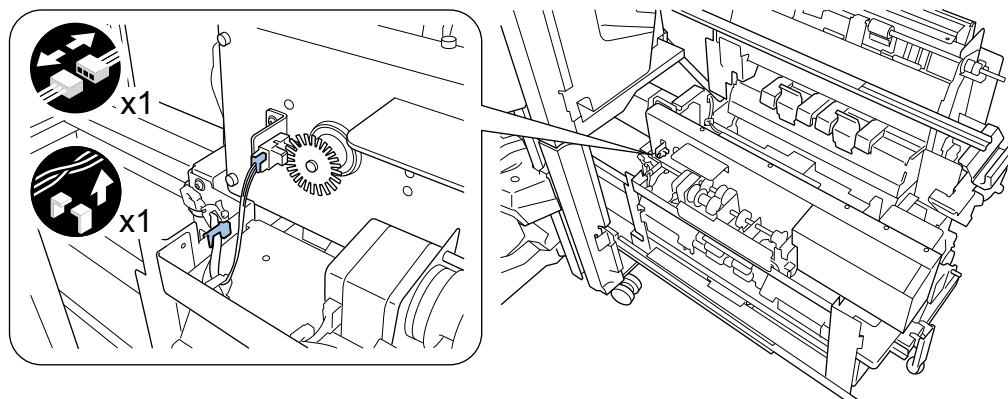
F-4-25

6) Remove the cable from 3 locations of the wire saddle and remove 1 connector.



F-4-26

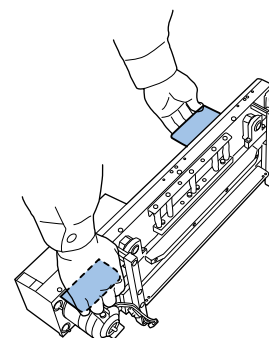
7) Remove 1 connector and secure the cable to the cable guide.



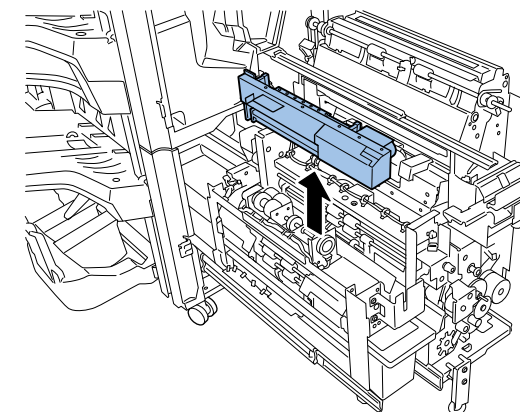
F-4-27

8) Remove the cutter unit from the trimmer unit frame.

MEMO:
Hold the cutter unit at the
locations shown below.



F-4-28

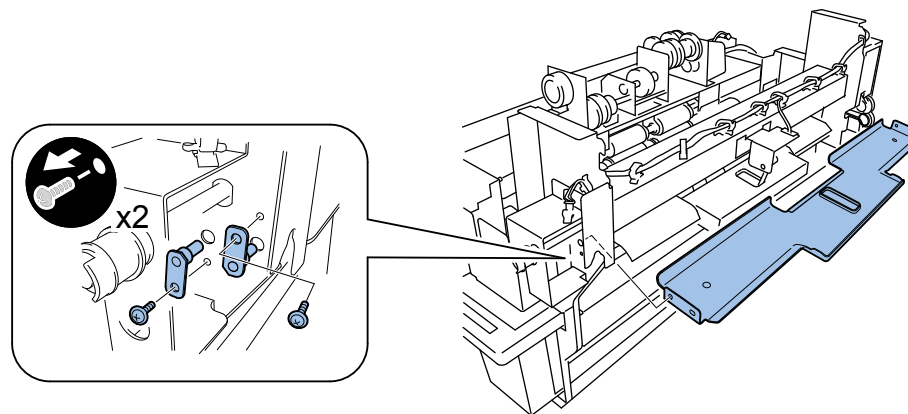


Periodic Parts Replacement, Consumable Parts, and Cleaning Parts

● Removing the scratch prevention sheet (front top)

1) Remove the trimmer unit from the finisher.

2) Remove 2 screws, 2 pins and remove the scratch prevention sheet (front top).



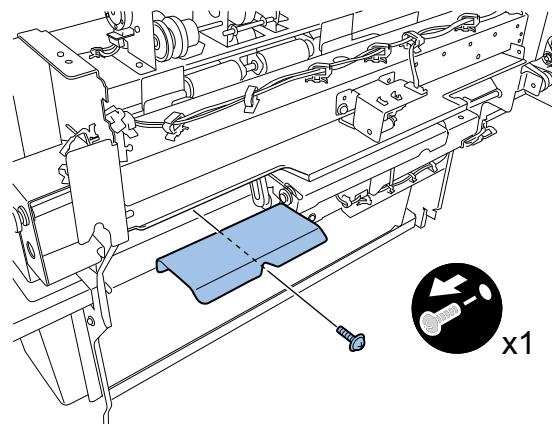
F-4-29

Removing the scratch prevention sheet (front bottom)

1) Remove the trimmer unit from the finisher.

2) Remove 1 screw and remove the scratch prevention sheet (front bottom).

MEMO:
Remove while lowering the
inlet lower guide unit.



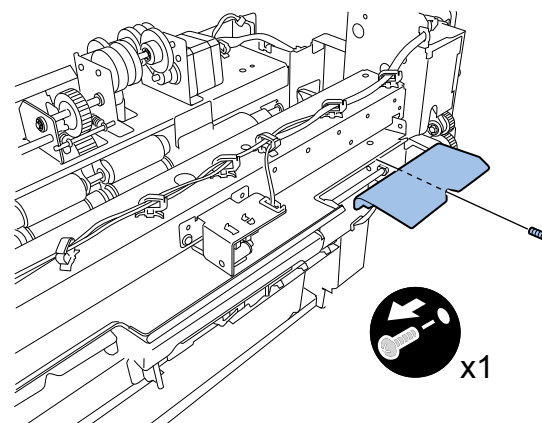
F-4-30

Removing the scratch prevention sheet (rear bottom)

1) Remove the trimmer unit from the finisher.

2) Remove 1 screw and remove the scratch prevention sheet (rear bottom).

MEMO:
Remove while lowering the
inlet lower guide unit.

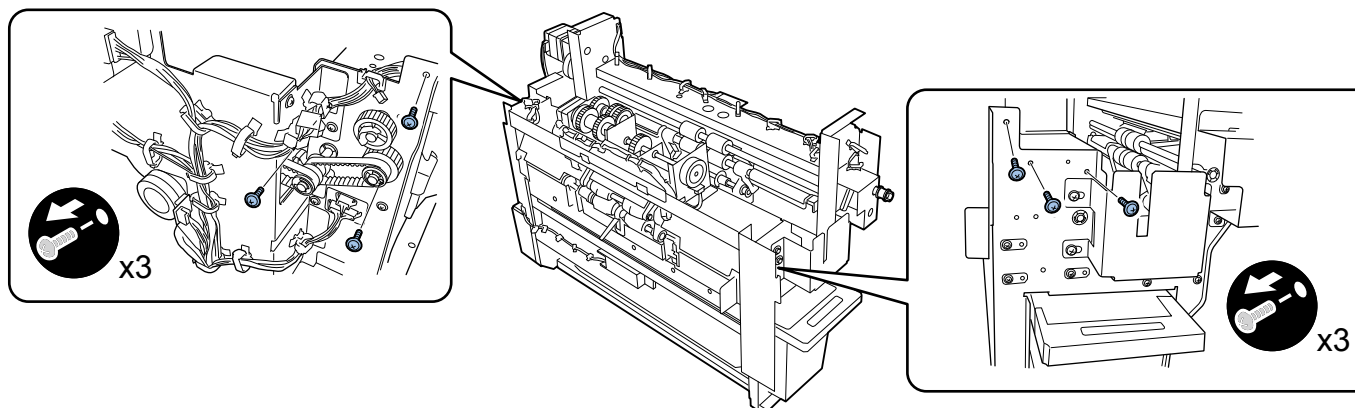


F-4-31

Removing the scratch prevention sheet (rear)

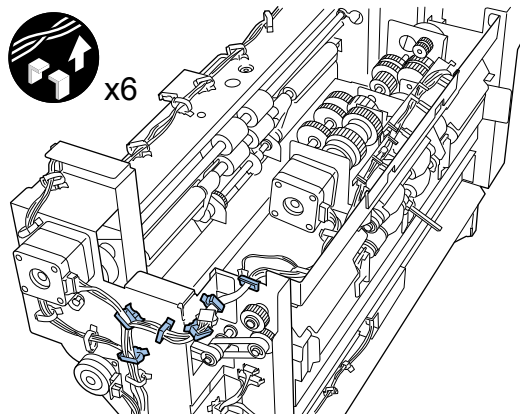
1) Remove the trimmer unit from the finisher.

2) Remove 3 screws at the front side, and 3 screws at the rear side.



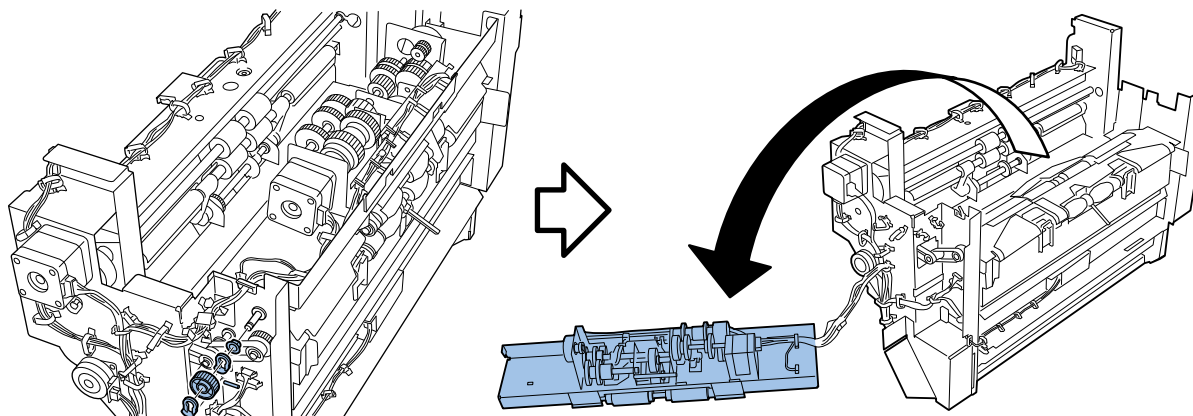
F-4-32

3) Remove the rear side cables from 6 cable guides.



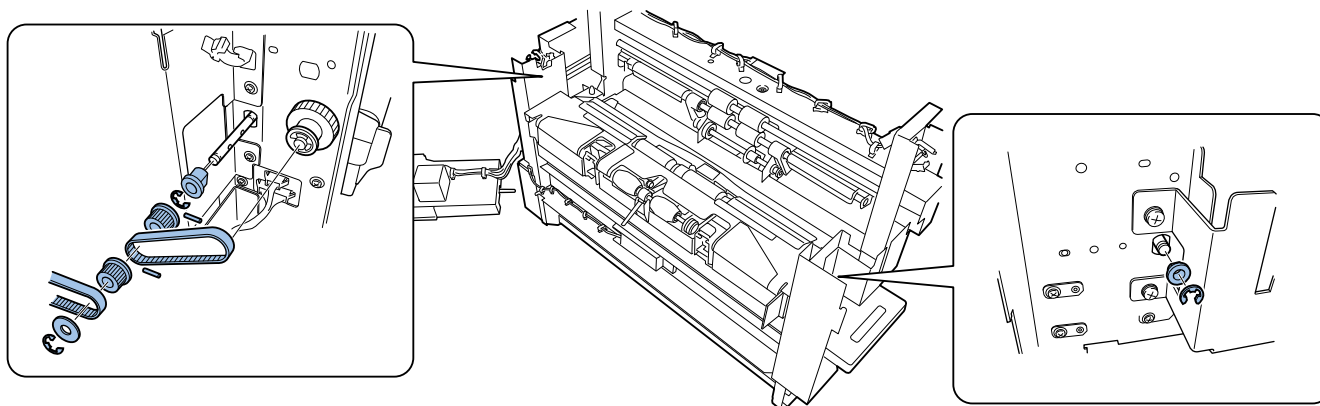
F-4-33

4) Remove 2 resin rings, 1 pulley, 1 parallel pin, and 1 bearing and remove the feeder top unit.



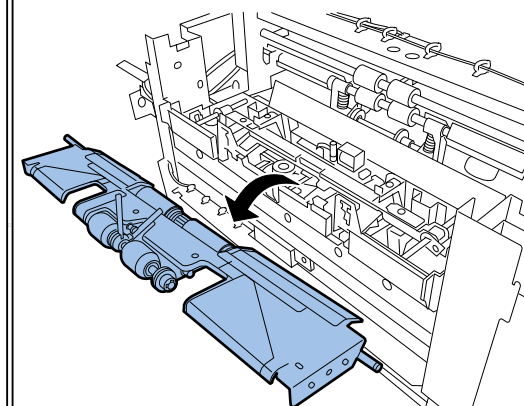
F-4-34

5) Remove 2 E rings, 1 resin flange, 2 pulleys, 2 parallel pins, 1 belt, and 1 bearing from the rear side. Remove 1 E ring and 1 bearing from the front side.



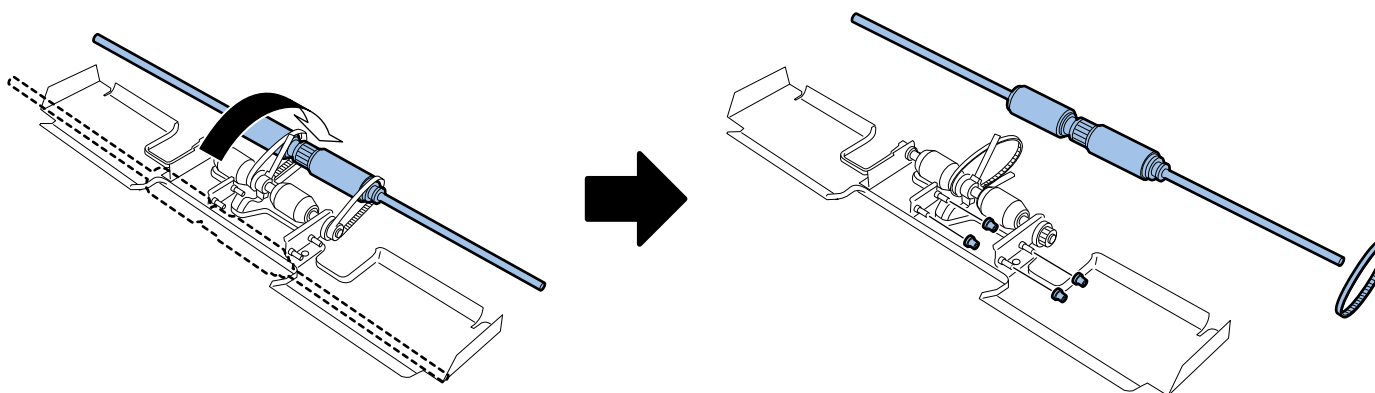
F-4-35

6) Remove the paper eject pass unit.



F-4-36

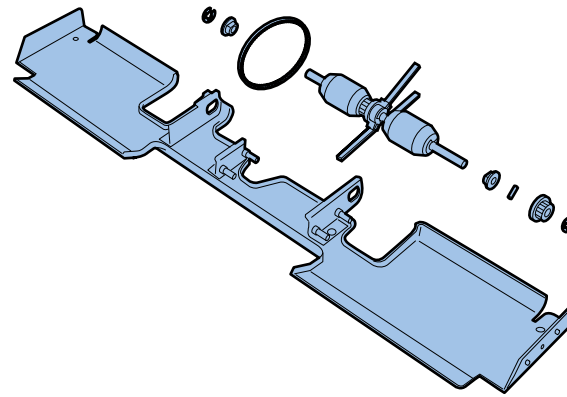
7) Rotate the pressure roller unit in the direction of the arrow and remove the pressure roller unit, belt and 4 rollers.



F-4-37

8) Remove E ring, pulley, parallel pin, and bearing at the front side.

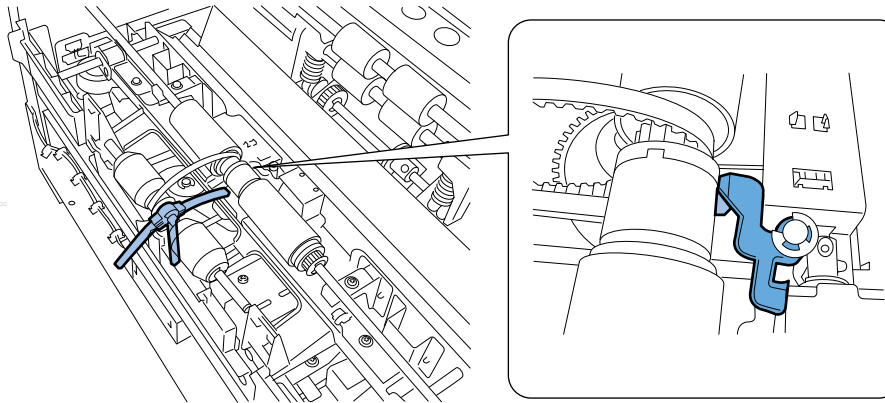
9) Remove E ring and bearing at the rear side. Remove the belt and roller unit, and remove the scratch prevention sheet (rear).



F-4-38

Note:

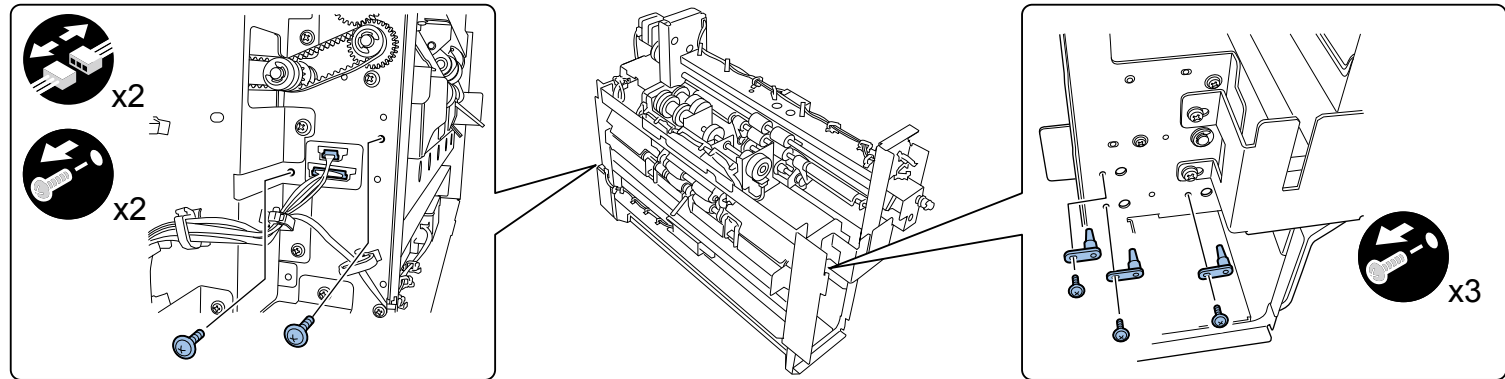
When installing the paper eject pass unit, attach so that the roller unit's paddle (center) is on the bottom side with the projection of the pressure roller unit positioned at the bottom of the stopper solenoid lever.



Solenoids

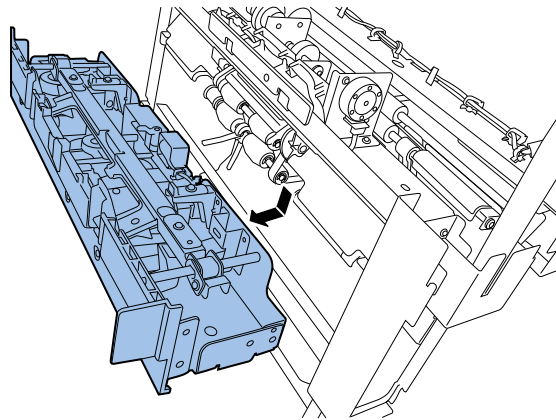
 Removing the paddle solenoid (SL102)

- 1) Remove the trimmer unit from the finisher.
 2) Remove the waste paper box.
- 3) Remove 2 far side connectors and remove 2 screws. Remove 3 front side screws and pull out 3 pins.



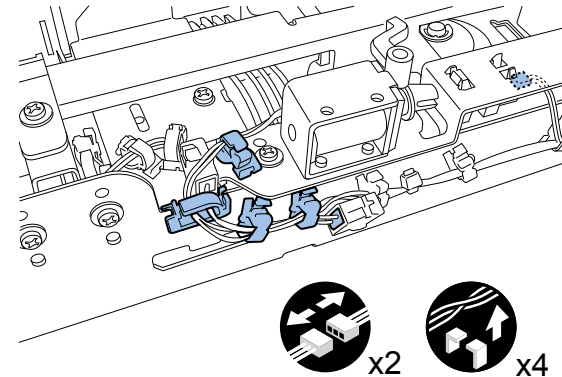
F-4-39

- 4) Remove the registration unit in the direction of the arrow.



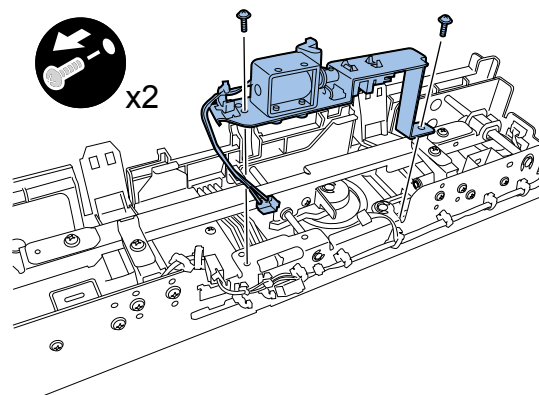
F-4-40

- 5) Remove the cable from 4 cable guides at the registration unit entrance side and remove 2 connectors.



F-4-41

6) Remove 2 screws and remove the paddle solenoid together with the mount.

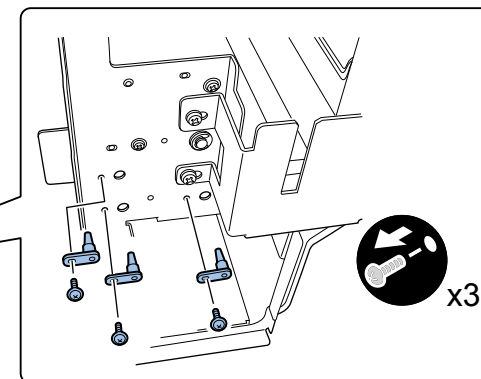
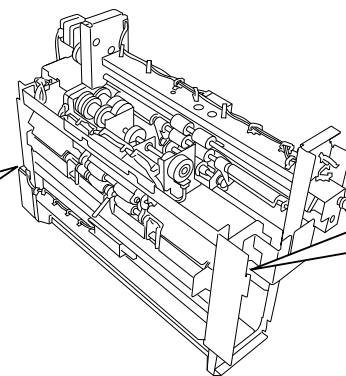
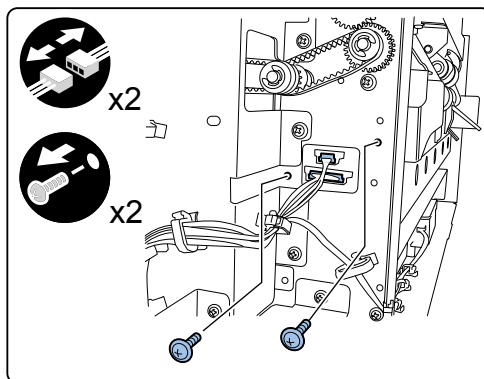


F-4-42

Removing the stopper solenoid (SL101)

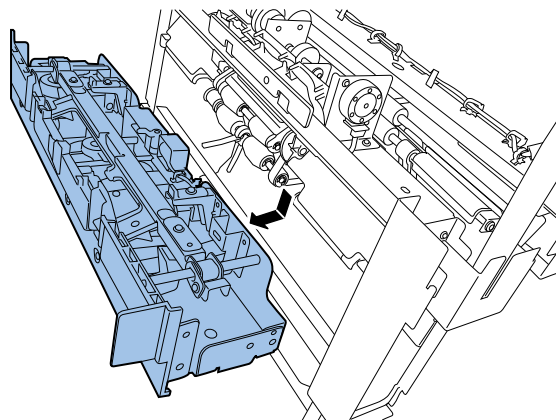
- 1) Remove the trimmer unit from the finisher.
2) Remove the waste paper box.

- 3) Remove 2 far side connectors and remove 2 screws. Remove 3 front side screws and pull out 3 pins.



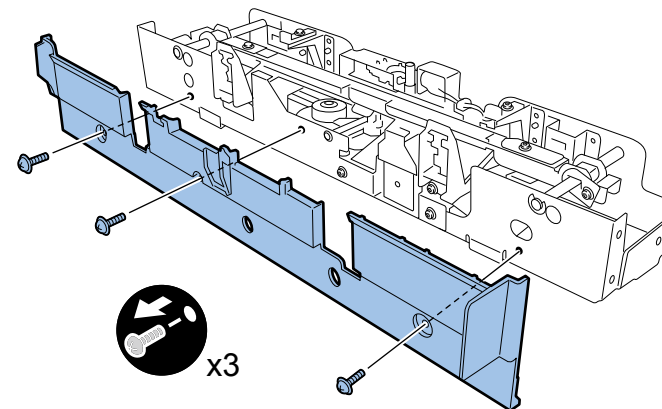
F-4-43

- 4) Remove the registration unit in the direction of the arrow.



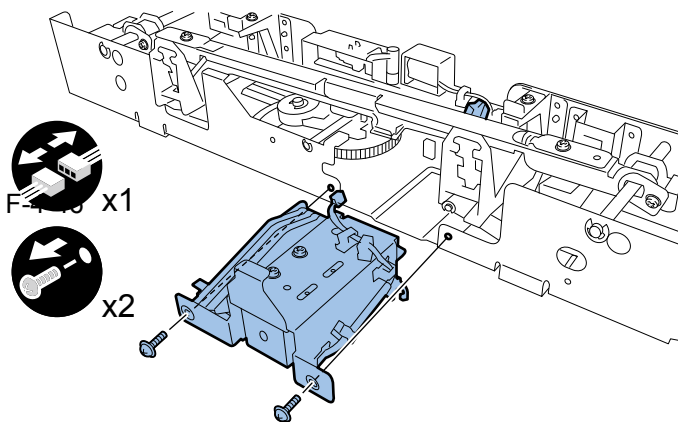
F-4-44

- 5) Remove 3 screws and remove the cover.



F-4-45

6) Remove the connector and 2 screws, and remove the stopper solenoid together with the mount.

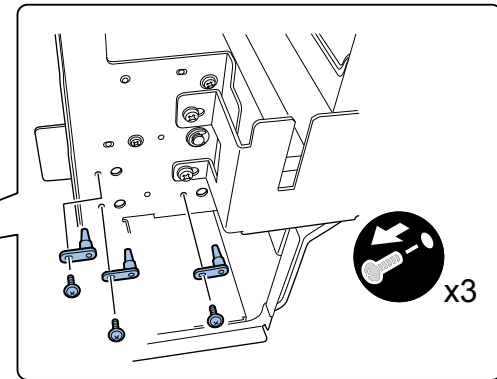
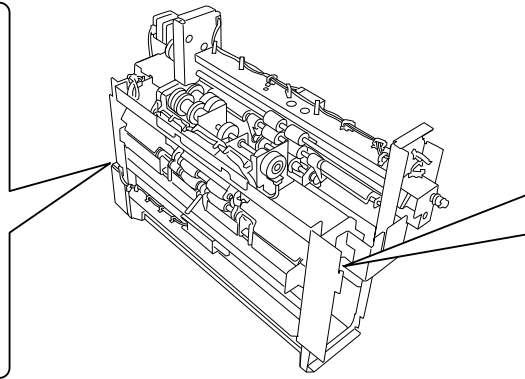
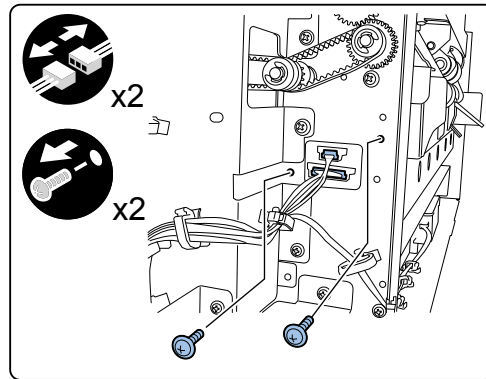


Motors

Removing the registration motor (M102)

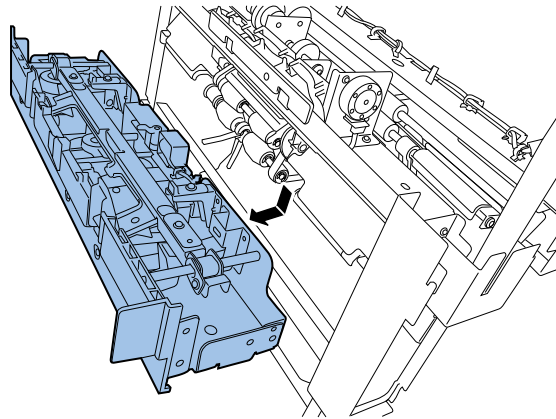
- 1) Remove the trimmer unit from the finisher.
2) Remove the waste paper box.

- 3) Remove 2 far side connectors and remove 2 screws. Remove 3 front side screws and pull out 3 pins.



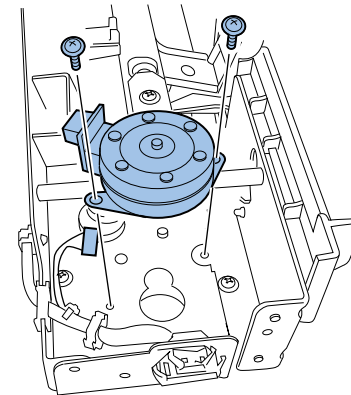
F-4-47

- 4) Remove the registration unit in the direction of the arrow.



F-4-48

- 5) Remove 2 screws and 1 connector, and remove the registration motor.

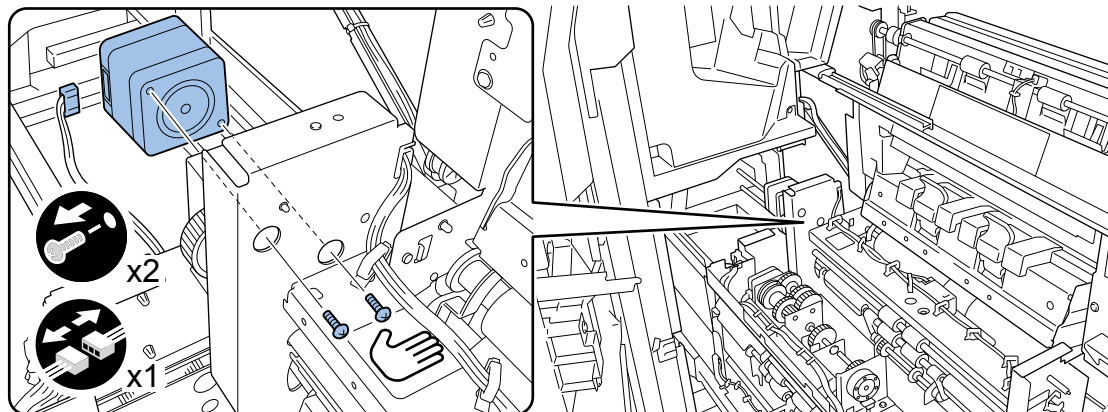


F-4-49

Removing the feed motor (M101)

- 1) Separate the finisher from the host machine.
- 2) Remove the cutter unit.

- 3) Remove 1 connector, 2 screws, and remove the feed motor.

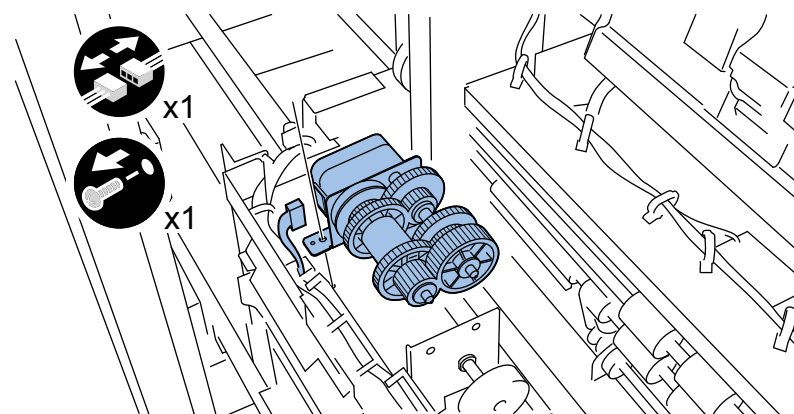


F-4-50

Removing the press motor (M105)

- 1) Separate the finisher from the host machine.
- 2) Remove the cutter unit.

- 3) Remove 1 connector, 1 screw, and remove the press motor unit.

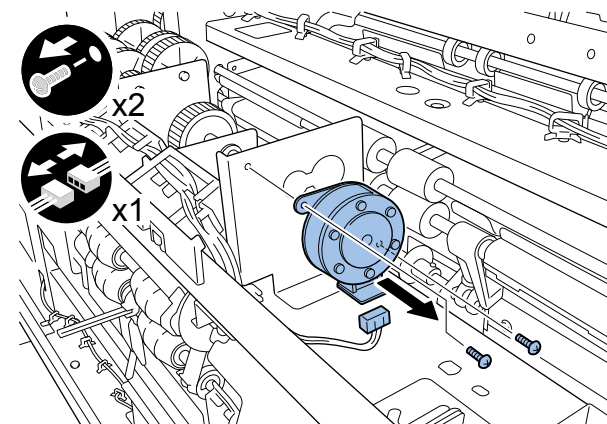


F-4-51

Removing the rear estrangement motor (M104)

- 1) Separate the finisher from the host machine.
- 2) Remove the cutter unit.

- 3) Remove 1 connector, 2 screws, and remove the rear estrangement motor.

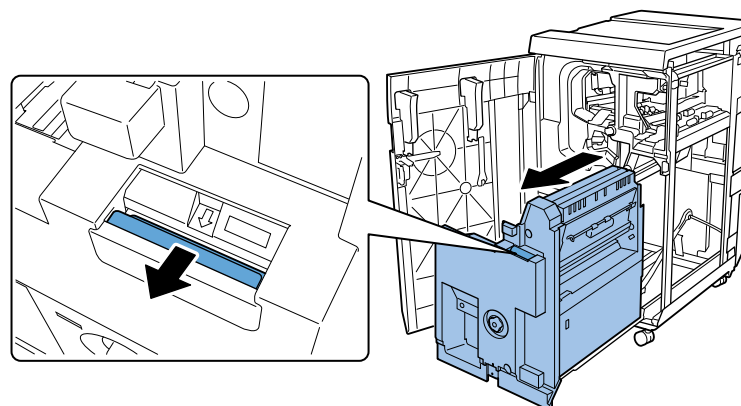


F-4-52

Removing the front estrangement motor (M103)

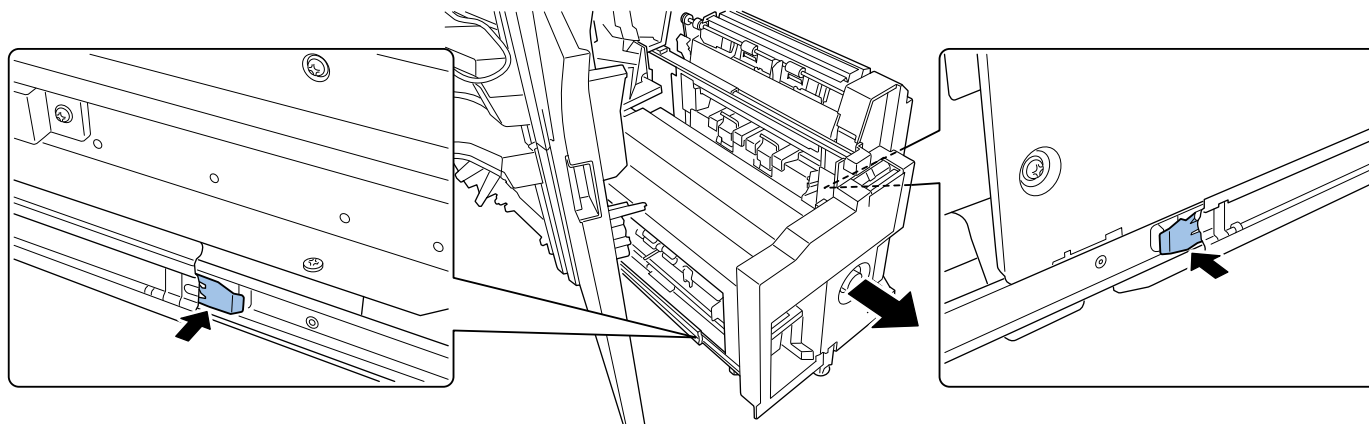
- 1) Separate the finisher from the host machine.

- 2) Pull out the saddle unit.



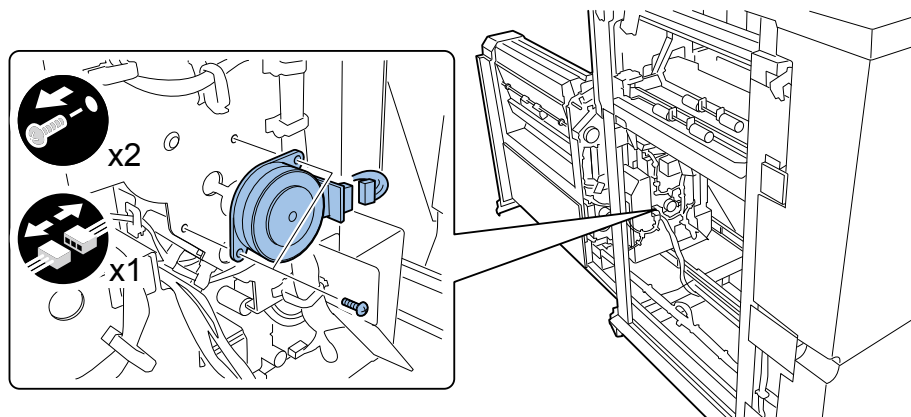
F-4-53

3) Pull out the saddle unit fully while pushing the stopper on both sides of the accurate rail in the direction of the arrow.



F-4-54

4) Remove 1 connector, 2 screws, and remove the front estrangement motor.



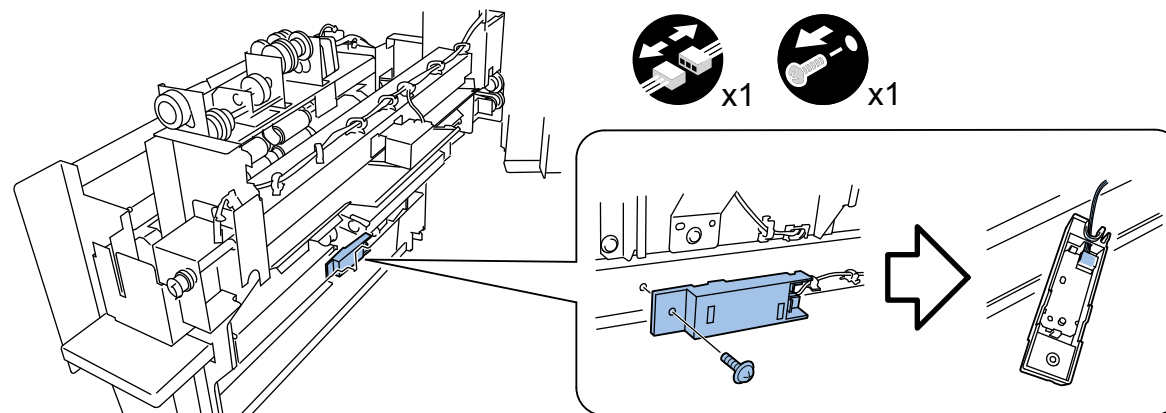
F-4-55

Sensors

● Removing the waste paper full sensor (light emitting/S011(PCB2))

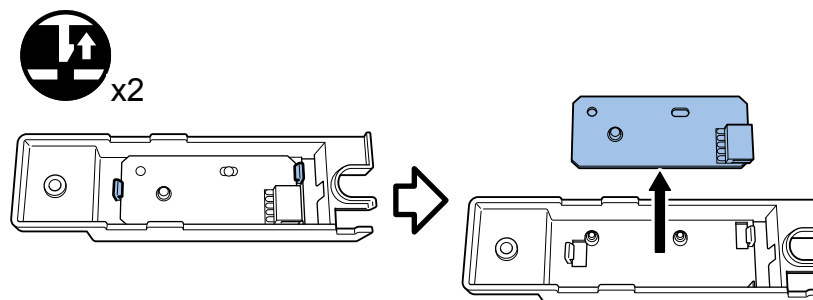
1) Remove the trimmer unit from the finisher.

2) Remove 1 screw and pull out the connector.



F-4-56

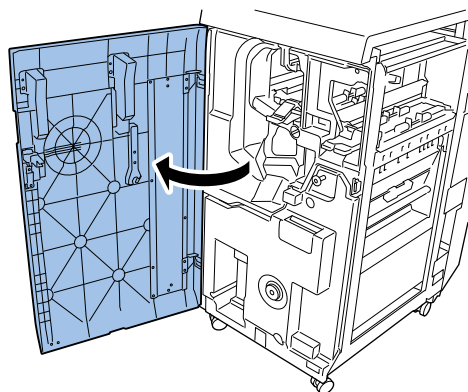
3) Remove 2 hooks and remove the waste paper full sensor.



F-4-57

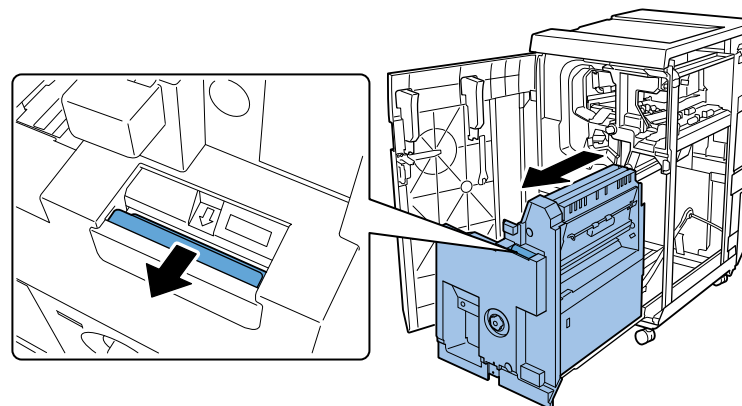
Removing the waste paper full sensor (light receiving/S011(PCB3))

1) Open the finisher front door.



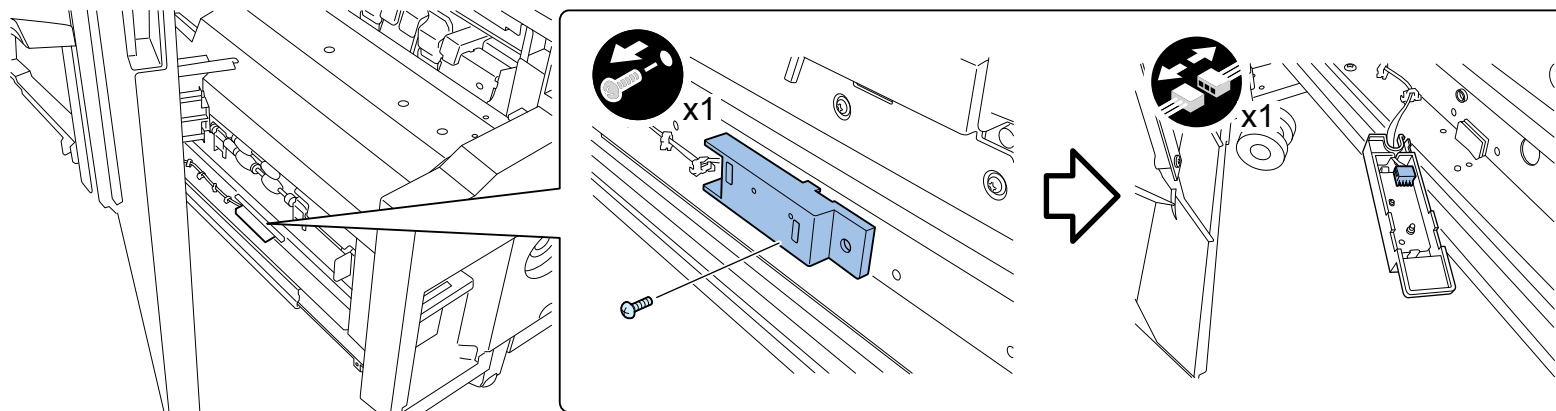
F-4-58

2) Pull out the saddle unit.



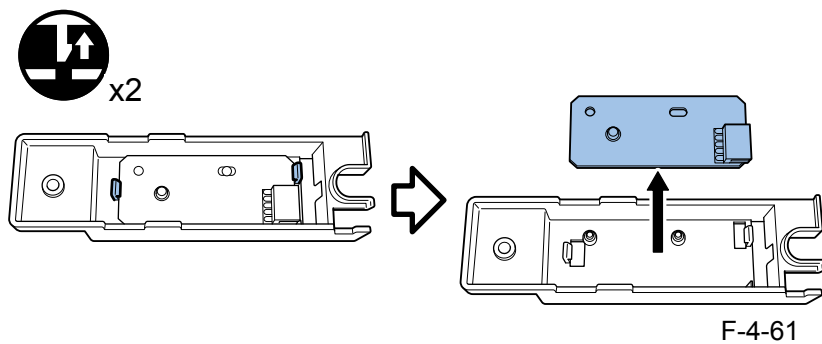
F-4-59

3) Remove 1 screw and pull out the connector.



F-4-60

4) Remove 2 hooks and remove the waste paper full sensor.

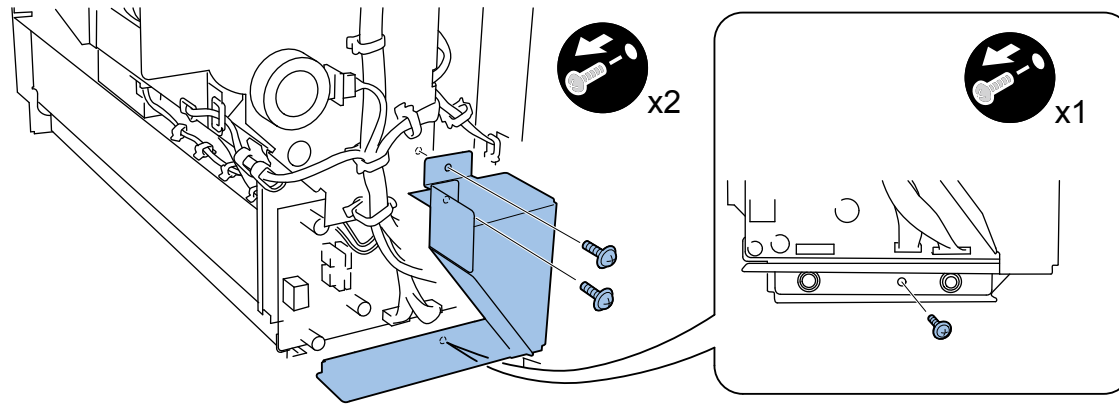


PCBs

● Removing the trimmer controller PCB (PCB1)

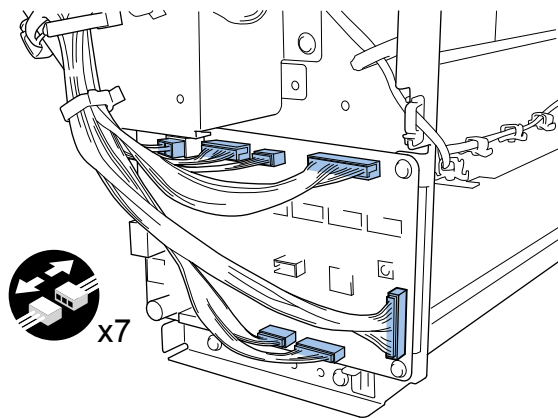
1) Remove the trimmer unit from the finisher.

2) Remove 3 screws and remove the PCB cover.



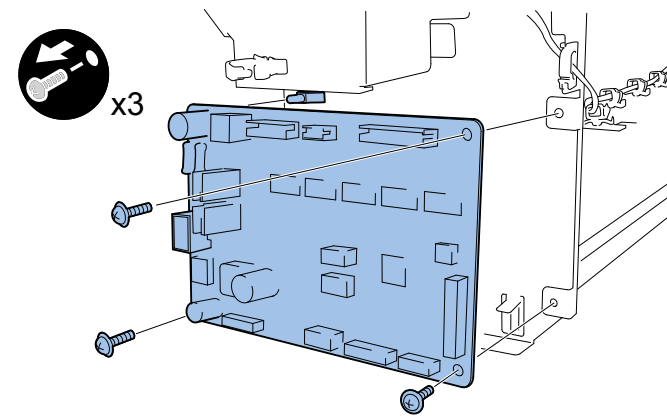
F-4-62

3) Pull out all connectors on the trimmer controller PCB.



F-4-63

4) Remove 3 screws, 1 locking support, and remove the trimmer controller PCB.



F-4-64

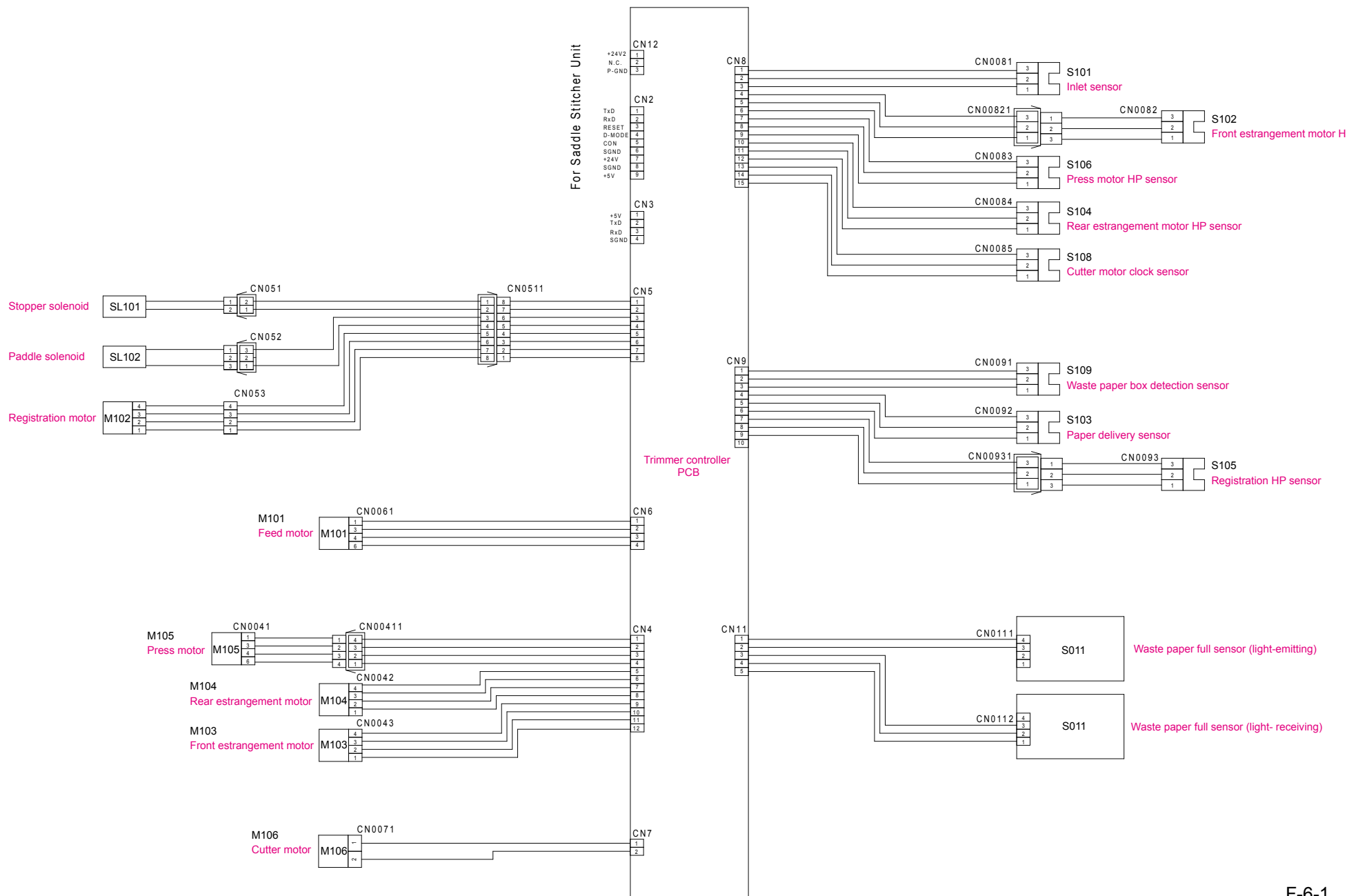
5

Actual wiring chart

■ Actual wiring chart



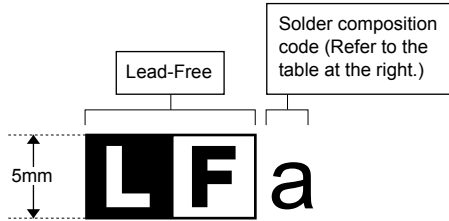
Actual wiring chart



LEAD-FREE SOLDER

The PWB's of this model employs lead-free solder. The "LF" marks indicated on the PWB's and the Service Manual mean "Lead-Free" solder. The alphabet following the LF mark shows the kind of lead-free solder.

Example:



<Solder composition code of lead-free solder>

Solder composition	Solder composition code
Sn-Ag-Cu	a
Sn-Ag-Bi Sn-Ag-Bi-Cu	b
Sn-Zn-Bi	z
Sn-In-Ag-Bi	i
Sn-Cu-Ni	n
Sn-Ag-Sb	s
Bi-Sn-Ag-P Bi-Sn-Ag	p

(1) NOTE FOR THE USE OF LEAD-FREE SOLDER THREAD

When repairing a lead-free solder PWB, use lead-free solder thread.

Never use conventional lead solder thread, which may cause a breakdown or an accident.

Since the melting-point of lead-free solder thread is about 40°C higher than that of conventional lead solder thread, the use of the exclusive-use soldering iron is recommended.

(2) NOTE FOR SOLDERING WORK

Since the melting-point of lead-free solder is about 220°C, which is about 40°C higher than that of conventional lead solder, and its soldering capacity is inferior to conventional one, it is apt to keep the soldering iron in contact with the PWB for longer time. This may cause land separation or may exceed the heat-resistive temperature of components. Use enough care to separate the soldering iron from the PWB when completion of soldering is confirmed.

Since lead-free solder includes a greater quantity of tin, the iron tip may corrode easily. Turn ON/OFF the soldering iron power frequently.

If different-kind solder remains on the soldering iron tip, it is melted together with lead-free solder. To avoid this, clean the soldering iron tip after completion of soldering work.

If the soldering iron tip is discolored black during soldering work, clean and file the tip with steel wool or a fine filer.

CAUTION FOR BATTERY REPLACEMENT

(Danish) ADVARSEL !
Lithiumbatteri – Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri
af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandoren.

(English) Caution !
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 manufacturer's instructions.

(Finnish) VAROITUS
Paristo voi räjähtää, jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan
tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden
mukaisesti.

(French) ATTENTION
Il y a danger d'explosion s' il y a remplacement incorrect
de la batterie. Remplacer uniquement avec une batterie du
même type ou d'un type équivalent recommandé par
le constructeur.
Mettre au rebut les batteries usagées conformément aux
instructions du fabricant.

(Swedish) VARNING
Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent
typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens
instruktion.

(German) Achtung
Explosionsgefahr bei Verwendung inkorrekt
er Batterien.
Als Ersatzbatterien dürfen nur Batterien vom gleichen Typ oder
vom Hersteller empfohlene Batterien verwendet werden.
Entsorgung der gebrauchten Batterien nur nach den vom
Hersteller angegebenen Anweisungen.

CAUTION FOR BATTERY DISPOSAL

(For USA, CANADA)

"BATTERY DISPOSAL"
THIS PRODUCT CONTAINS A LITHIUM PRIMARY
(MANGANESE DIOXIDE) MEMORY BACK-UP BATTERY
THAT MUST BE DISPOSED OF PROPERLY. REMOVE THE
BATTERY FROM THE PRODUCT AND CONTACT YOUR
LOCAL ENVIRONMENTAL AGENCIES FOR INFORMATION
ON RECYCLING AND DISPOSAL OPTIONS.

"TRAITEMENT DES PILES USAGÉES"
CE PRODUIT CONTIENT UNE PILE DE SAUVEGARDE DE
MÉMOIRE LITHIUM PRIMAIRE (DIOXYDE DE MANGANÈSE)
QUI DOIT ÊTRE TRAITÉE CORRECTEMENT. ENLEVEZ LA
PILE DU PRODUIT ET PRENEZ CONTACT AVEC VOTRE
AGENCE ENVIRONNEMENTALE LOCALE POUR DES
INFORMATIONS SUR LES MÉTHODES DE RECYCLAGE ET
DE TRAITEMENT.

