



DF-650
MT-1(A)
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PH-4A/PH-4C

SERVICE
MANUAL

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Rev. 3

CAUTION

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

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

ATTENTION

IL Y A UN RISQUE D'EXPLOSION SI LA BATTERIE EST REMPLACÉE PAR UN MODÈLE DE TYPE INCORRECT. METTRE AU REBUT LES BATTERIES UTILISÉES SELON LES INSTRUCTIONS DONNÉES.

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

Revision history

Revision	Date	Replaced pages	Remarks
1.0	March 30, 2005	-	-
2.0	June 24, 2005	Contents, 1-2-3, 1-2-11, 1-2-17, 1-2-21 to 1-2-23, 1-6-2, 2-4-5 to 2-4-10, 2-4-12	-
3	April 4, 2007	1-5-4 to 1-5-6	-

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Safety precautions

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

Safety warnings and precautions

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

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

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

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

Symbols

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



General warning.



Warning of risk of electric shock.



Warning of high temperature.

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



General prohibited action.



Disassembly prohibited.

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



General action required.



Remove the power plug from the wall outlet.



Always ground the copier.

1. Installation Precautions

WARNING

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

CAUTION:

- Do not place the copier on an infirm or angled surface: the copier may tip over, causing injury. 
- Do not install the copier in a humid or dusty place. This may cause fire or electric shock. 
- Do not install the copier near a radiator, heater, other heat source or near flammable material.

This may cause fire. 

- Allow sufficient space around the copier to allow the ventilation grills to keep the machine as cool as possible. Insufficient ventilation may cause heat buildup and poor copying performance. 

- Always handle the machine by the correct locations when moving it. 
- Always use anti-toppling and locking devices on copiers so equipped. Failure to do this may cause the copier to move unexpectedly or topple, leading to injury. 

- Avoid inhaling toner or developer excessively. Protect the eyes. If toner or developer is accidentally ingested, drink a lot of water to dilute it in the stomach and obtain medical attention immediately. If it gets into the eyes, rinse immediately with copious amounts of water and obtain medical attention. 

- Advise customers that they must always follow the safety warnings and precautions in the copier's instruction handbook. 

2.Precautions for Maintenance

WARNING

- Always remove the power plug from the wall outlet before starting machine disassembly. 
 - Always follow the procedures for maintenance described in the service manual and other related brochures. 
 - Under no circumstances attempt to bypass or disable safety features including safety mechanisms and protective circuits. 
 - Always use parts having the correct specifications. 
 - Always use the thermostat or thermal fuse specified in the service manual or other related brochure when replacing them. Using a piece of wire, for example, could lead to fire or other serious accident. 
 - When the service manual or other serious brochure specifies a distance or gap for installation of a part, always use the correct scale and measure carefully. 
 - Always check that the copier is correctly connected to an outlet with a ground connection. 
 - Check that the power cable covering is free of damage. Check that the power plug is dust-free. If it is dirty, clean it to remove the risk of fire or electric shock. 
 - Never attempt to disassemble the optical unit in machines using lasers. Leaking laser light may damage eyesight. 
 - Handle the charger sections with care. They are charged to high potentials and may cause electric shock if handled improperly. 
- ### CAUTION
- Wear safe clothing. If wearing loose clothing or accessories such as ties, make sure they are safely secured so they will not be caught in rotating sections. 
 - Use utmost caution when working on a powered machine. Keep away from chains and belts. 
 - Handle the fixing section with care to avoid burns as it can be extremely hot. 
 - Check that the fixing unit thermistor, heat and press rollers are clean. Dirt on them can cause abnormally high temperatures. 

• Do not remove the ozone filter, if any, from the copier except for routine replacement.



• Do not pull on the AC power cord or connector wires on high-voltage components when removing them; always hold the plug itself.



• Do not route the power cable where it may be stood on or trapped. If necessary, protect it with a cable cover or other appropriate item.



• Treat the ends of the wire carefully when installing a new charger wire to avoid electric leaks.



• Remove toner completely from electronic components.



• Run wire harnesses carefully so that wires will not be trapped or damaged.



• After maintenance, always check that all the parts, screws, connectors and wires that were removed, have been refitted correctly. Special attention should be paid to any forgotten connector, trapped wire and missing screws.



• Check that all the caution labels that should be present on the machine according to the instruction handbook are clean and not peeling. Replace with new ones if necessary.



• Handle greases and solvents with care by following the instructions below:



· Use only a small amount of solvent at a time, being careful not to spill. Wipe spills off completely.

· Ventilate the room well while using grease or solvents.

· Allow applied solvents to evaporate completely before refitting the covers or turning the power switch on.

· Always wash hands afterwards.

• Never dispose of toner or toner bottles in fire. Toner may cause sparks when exposed directly to fire in a furnace, etc.



• Should smoke be seen coming from the copier, remove the power plug from the wall outlet immediately.



3.Miscellaneous

WARNING

• Never attempt to heat the drum or expose it to any organic solvents such as alcohol, other than the specified refiner; it may generate toxic gas.



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1-1-1 Specifications

Finisher

Type	Floor type
Number of trays	2 trays
Tray capacity	Main tray (80 g/m ² weight paper) A3, B4 (257 x 364 mm), 11" x 17", 8 1/2" x 14": 1500 sheets A4 - A6R, Folio, 8 1/2" x 11", 11" x 8 1/2", 5 1/2" x 8 1/2": 3000 sheets Sub tray (80 g/m ² weight paper) A3 - A6R, Folio, 11" x 17", 8 1/2" x 14", 8 1/2" x 11", 11" x 8 1/2", 5 1/2" x 8 1/2": 200 sheets
Stapling capacity	A3, B4 (257 x 364 mm), 11" x 17", 8 1/2" x 14": 30 sheets A4, A4R, B5, 8 1/2" x 11", 11" x 8 1/2": 50 sheets
Storage capacity	A3, B4 (257 x 364 mm), 11" x 17", 8 1/2" x 14" Stapling 2 - 4 sheets: 150 sets Stapling 5 - 10 sheets: 100 sets Stapling 11 - 30 sheets: 50 sets A4, A4R, 8 1/2" x 11", 11" x 8 1/2", 5 1/2" x 8 1/2" Stapling 2 - 4 sheets: 150 sets Stapling 5 - 10 sheets: 100 sets Stapling 11 - 30 sheets: 50 sets Stapling 31 - 50 sheets: 3000 sheets
Power source	Supplied via machine
Dimensions (W x D x H)	796 x 640 x 1070 mm 31 5/16" x 25 3/16" x 42 1/8"
Weight	Approx. 73 kg/160.6 lbs.

Multi job tray (option)

Number of trays	Job tray: 5
Paper size	A3, B4 (257 x 364 mm), A4, A4R, A5R, B6R, Folio, 11" x 17", 8 1/2" x 14", 8 1/2" x 11", 11" x 8 1/2", 5 1/2" x 8 1/2"
Tray capacity	A3, B4 (257 x 364 mm), 11" x 17", 8 1/2" x 14": 100 sheets (80 g/m ² weight paper) A4 - B6R, Folio, 8 1/2" x 11", 11" x 8 1/2", 5 1/2" x 8 1/2": 150 sheets (80 g/m ² weight paper)
Dimensions (W x D x H)	368 x 392 x 573 mm 14 1/2" x 15 7/16" x 22 9/16"
Weight	Approx. 15 kg/33 lbs.

Centerfold unit (option)

Foldable sizes	A3, B4 (257 x 364 mm), A4R, 11" x 17", 8 1/2" x 11"
Foldable number of sheets	1 - 16 (no stapling for 1 sheet)
Maximum number for storage	5 or less copies in a set: 30 sets 6 - 10 copies in a set: 20 sets 11 - 16 copies in a set: 10 sets
Paper thickness	60 - 200 g/m ² (only one cover for 81 g/m ² or more)

Punch unit (option)

Available sizes	A3, B4 (257 x 364 mm), A4, A4R, B5, B5R, A5R, Folio, 11" x 17", 8 1/2" x 14", 8 1/2" x 11", 11" x 8 1/2", 5 1/2" x 8 1/2"
-----------------------	--

1-1-2 Parts names

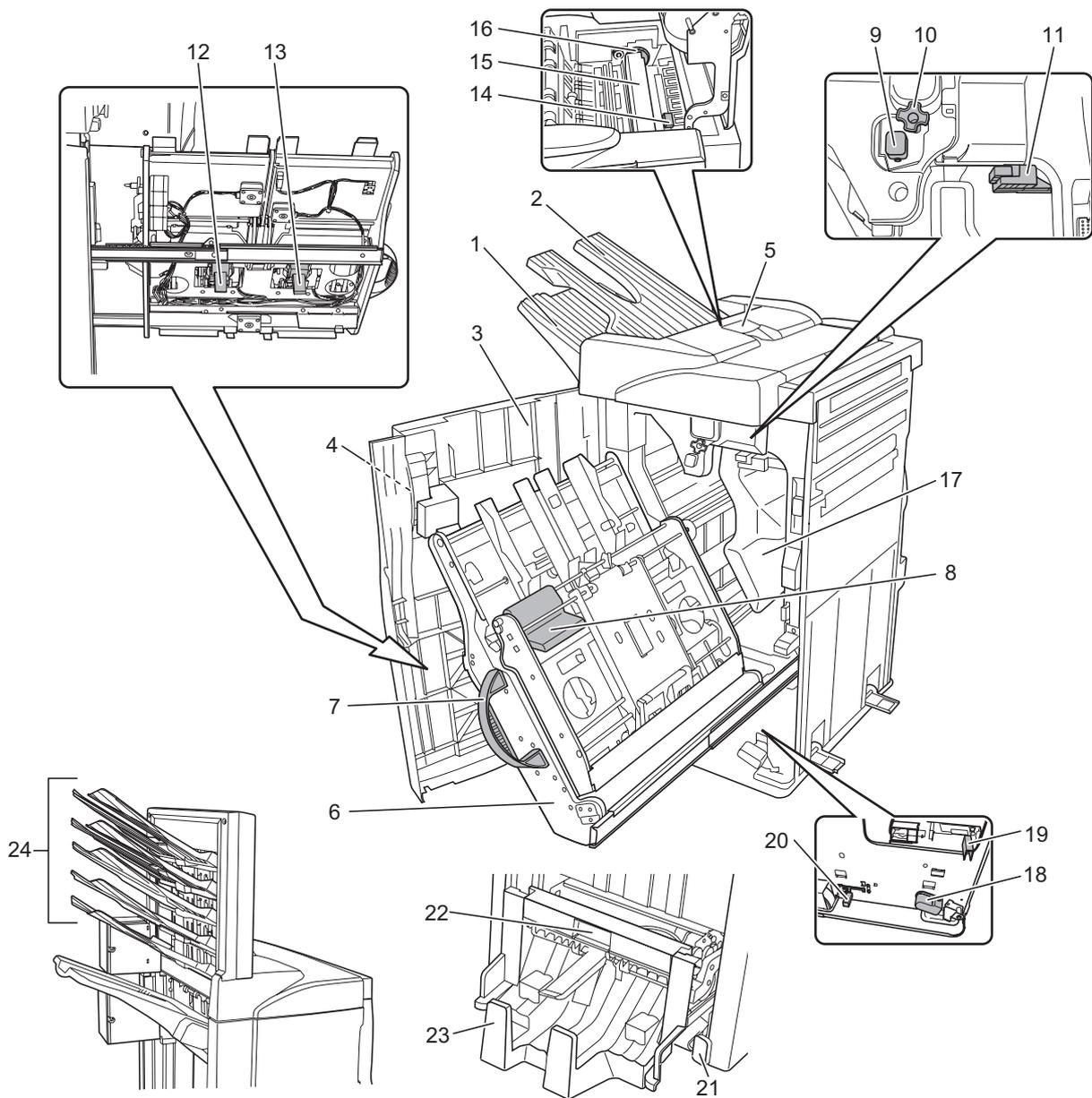


Figure 1-1-1

Finisher

- 1. Main tray (Tray A)
- 2. Sub tray (Tray B)
- 3. Front cover
- 4. Front cover handle
- 5. Upper cover
- 6. Intermediate tray
- 7. Intermediate tray handle
- 8. Intermediate tray release lever
- 9. Lower lever
- 10. Conveyor knob
- 11. Coupling section lower guide lever
- 12. Stapler cartridge A
- 13. Stapler cartridge B
- 14. Coupling section upper guide lever

Punch unit (option)

- 15. Punch unit
- 16. Punch unit adjustment dial
- 17. Punch waste box

Centerfold unit (option)

- 18. Unit release lever
- 19. Unit transport handle
- 20. Unit release handle
- 21. Centerfold unit installation button
- 22. Conveyor guide lever
- 23. Storage tray

Multi job tray (option)

- 24. Job trays No.1 - 5

1-1-3 Machine cross sectional view

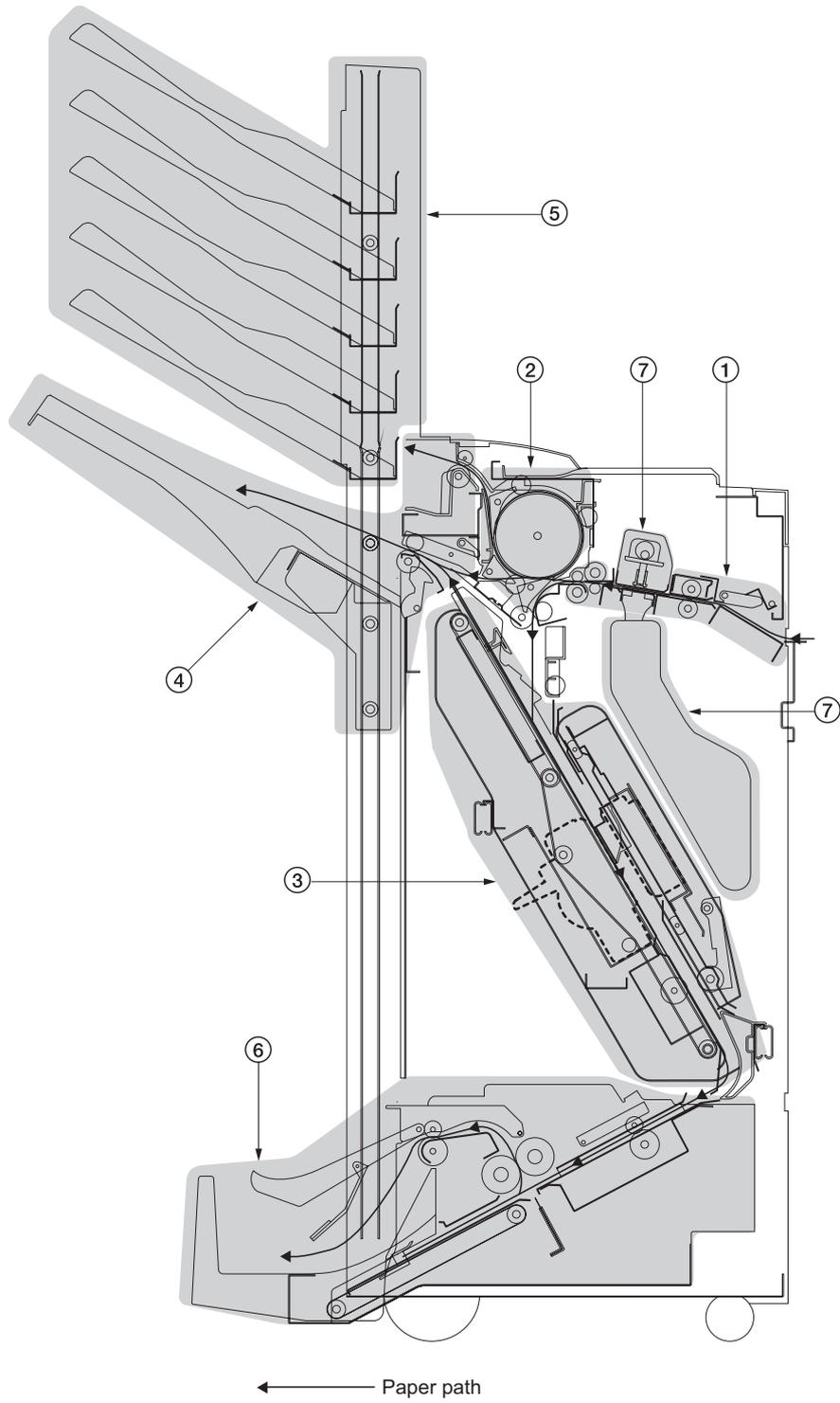
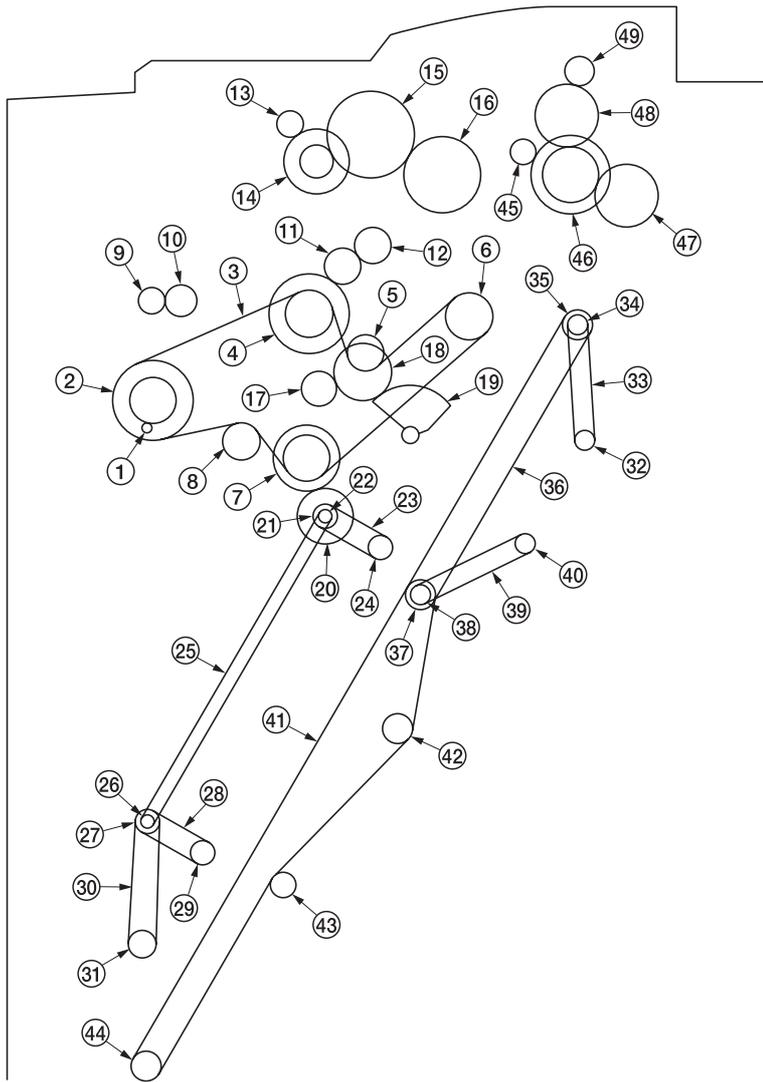


Figure 1-1-2

- 1. Paper insertion section
- 2. Feedshift section
- 3. Intermediate tray section
- 4. Paper ejection section
- 5. Multi job tray (option)
- 6. Centerfold unit (option)
- 7. Punch unit (option)

1-1-4 Machine drive system

(1) Finisher (paper feed and conveying section)



Viewed from the machine rear

Figure 1-1-3

- | | | |
|---|---|---|
| 1. Paper conveying motor gear | 16. Drum drive gear 46 | 33. Intermediate tray drive belt |
| 2. Paper conveying gear Z54/P50 | 17. Movable guide motor gear | 34. Eject pulley 20 |
| 3. Paper conveying drive belt | 18. Idle gear | 35. Pulley 20 |
| 4. Paper conveying gear Z48/P31 | 19. Idle cam gear 75 | 36. Intermediate tray conveying belt |
| 5. Drive tension pulley | 20. Intermediate tray joint gear 34 | 37. Pulley 20 |
| 6. Paper conveying roller pulley 31 | 21. Drive pulley 20 | 38. Eject pulley 20 |
| 7. Intermediate tray drive gear Z40/P30 | 22. Pulley 16 | 39. Intermediate tray drive belt |
| 8. Drive tension pulley | 23. Feed pulley belt | 40. Lower paper conveying belt motor gear |
| 9. Paper entry motor gear | 24. Forwarding roller gear | 41. Lower intermediate tray belt |
| 10. Paper entry gear 25 | 25. Feed pulley drive belt | 42. Pulley 20 |
| 11. Paddle gear 22 | 26. Pulley 16 | 43. Timing belt pulley |
| 12. Paddle gear 22 | 27. Drive pulley 20 | 44. Pulley 20 |
| 13. Siding drum motor gear | 28. Feed pulley belt | 45. Eject motor gear |
| 14. Drum gear Z50/Z20 | 29. Forwarding roller gear | 46. Eject gear Z60/Z32 |
| 15. Drum drive gear 53 | 30. Paper conveying pulley belt | 47. Intermediate drive gear 40 |
| | 31. Paper conveying drive pulley 27 | 48. Intermediate drive gear 40 |
| | 32. Upper paper conveying belt motor gear | 49. Gear 16T |

(2) Finisher (main tray driving section)

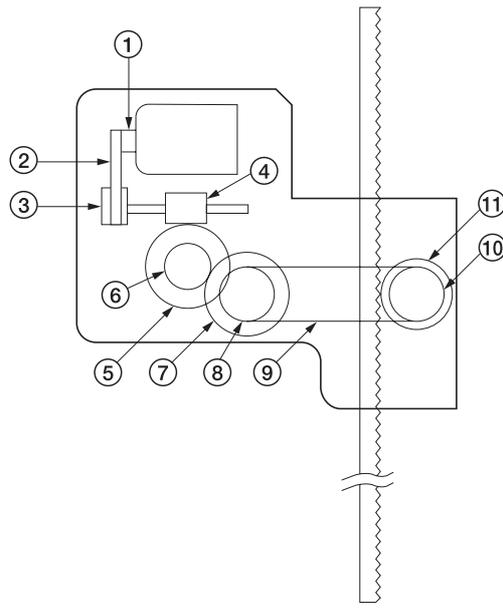
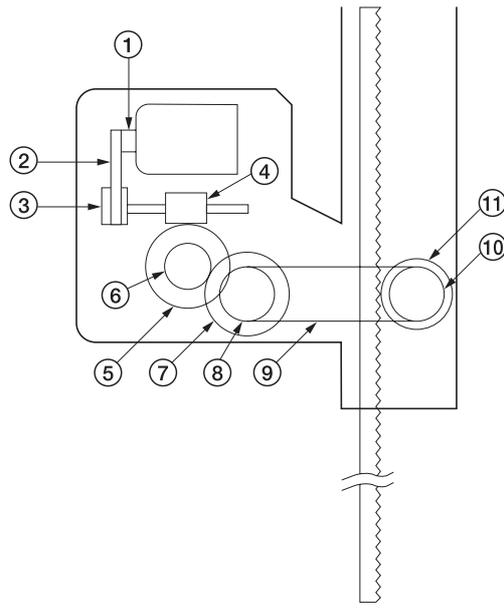


Figure 1-1-4

- | | |
|-------------------------------------|--------------------|
| 1. Main tray elevation motor pulley | 7. Gear 51 |
| 2. Feed belt | 8. Pulley 20S |
| 3. Pulley 34 | 9. Tray drive belt |
| 4. Worm gear | 10. Pulley 20S |
| 5. Gear 50 | 11. Gear 26 |
| 6. Gear 18 | |

(3) Multi job tray



- | | |
|--|--------------------|
| 1. Multi job tray elevation motor pulley | 7. Gear 51 |
| 2. Feed belt | 8. Pulley 20S |
| 3. Pulley 34 | 9. Tray drive belt |
| 4. Worm gear | 10. Pulley 20S |
| 5. Gear 50 | 11. Gear 26 |
| 6. Gear 18 | |

(4) Centerfold unit

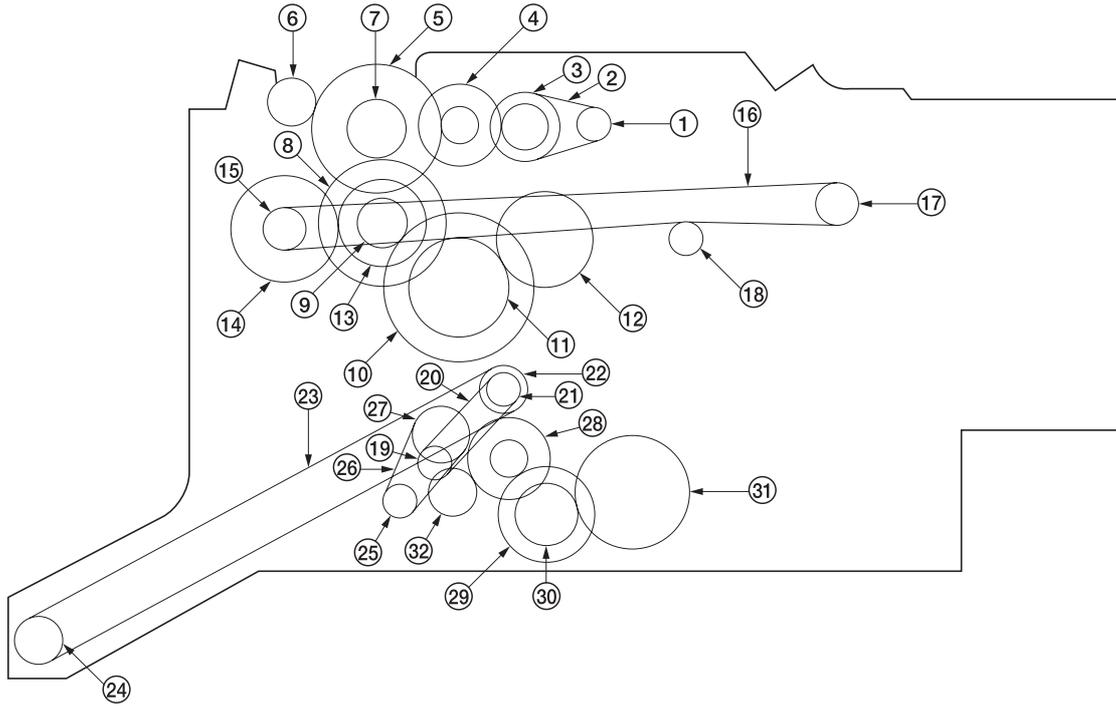


Figure 1-1-5

- | | | |
|--|----------------------------------|--------------------------|
| 1. Main motor pulley | 12. Gear 16/25 | 23. Paper conveying belt |
| 2. Belt 118P2M6 | 13. Bypass pulley gear | 24. Pulley 20 |
| 3. Gear 22/40 | 14. Gear 58 | 25. Blade motor pulley |
| 4. Gear 33/15 | 15. Pulley 28 | 26. Belt 126P2M6 |
| 5. Gear 51 | 16. Paper drive belt | 27. Gear 22/40 |
| 6. Manual roller gear
(conveyor guide knob) | 17. Pulley 28 | 28. Gear 33/15 |
| 7. Gear 22 | 18. Idle pulley 15 | 29. Gear 40 |
| 8. Gear 51 | 19. Centering plate motor pulley | 30. Gear 22 |
| 9. Gear 19 | 20. Belt 124 | 31. Gear 50 |
| 10. Gear 50/15 | 21. Pulley 22 | 32. Manual roller gear |
| 11. Gear 16/25 | 22. Pulley 20 | |

(5) Punch unit

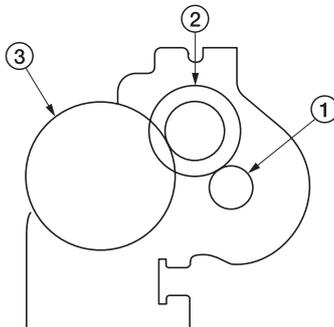


Figure 1-1-6

1. Punch motor gear
2. Idle gear 16/51
3. Drive cum gear 40

1-2-1 Unpacking and installation

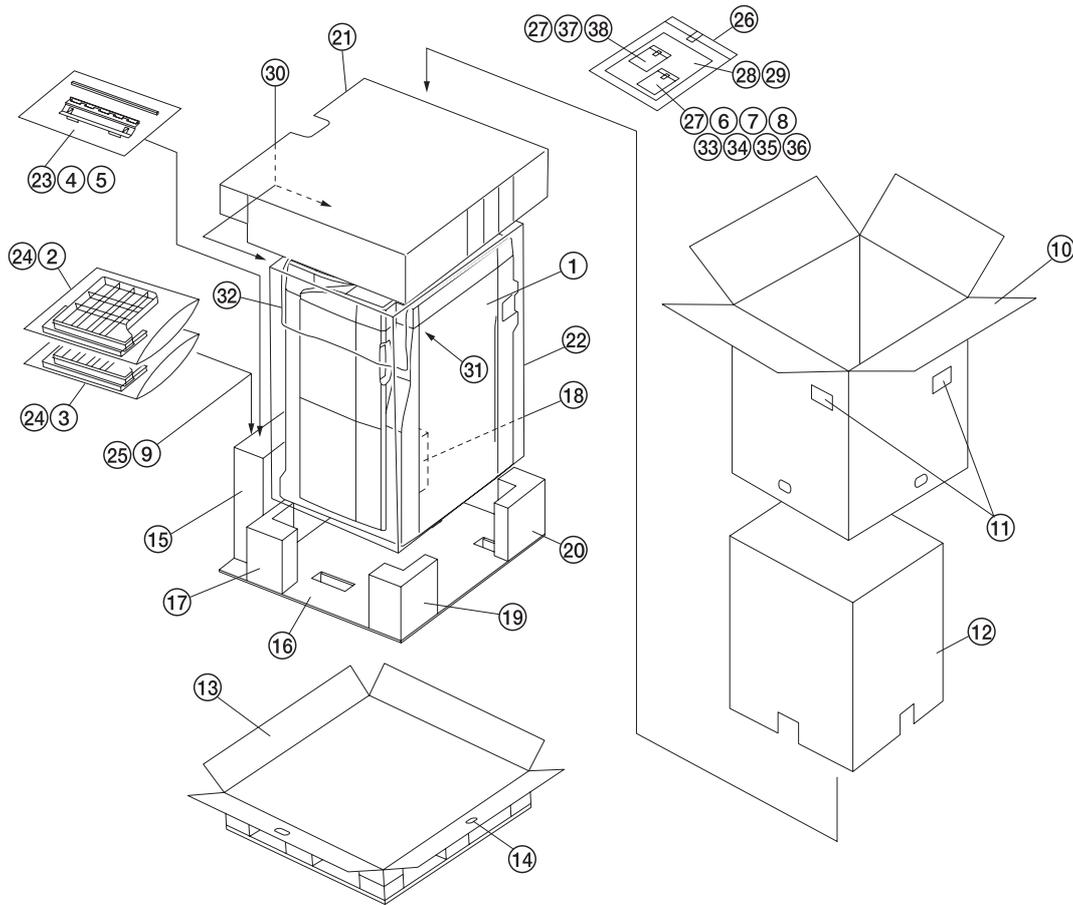


Figure 1-2-1 Unpacking (Finisher)

- | | |
|----------------------------------|--------------------------------|
| 1. Finisher | 20. Rear lower right pad |
| 2. Main tray | 21. Upper pad |
| 3. Sub tray | 22. Machine cover |
| 4. Connecting plate | 23. Air cap bag |
| 5. Sponge | 24. Air cap bag |
| 6. Pins | 25. Air cap bag |
| 7. Nuts | 26. Plastic bag |
| 8. M4 x 20 TP tap tight S screws | 27. Plastic bag |
| 9. Stapler cartridges | 28. Operation guide |
| 10. Outer case | 29. Installation guide |
| 11. Barcode labels | 30. Spacer |
| 12. Inner frame | 31. Spacer |
| 13. Skid | 32. Plastic sheet |
| 14. Hinge joint | 33. Clamp |
| 15. Accessory case | 34. M3 x 14 tap tight S screws |
| 16. Bottom cushion sheet | 35. M4 x 8 tap tight S screws |
| 17. Front lower left pad | 36. M3 x 10 tap tight S screw |
| 18. Rear lower left pad | 37. Grounding plates A |
| 19. Front lower right pad | 38. Grounding plates B |

Removing tapes and spacers

Procedure

1. Remove the plastic sheet.
2. Remove two tapes and spacer.

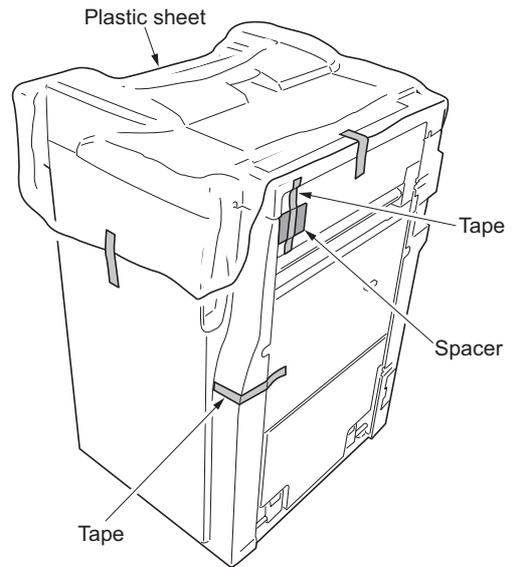


Figure 1-2-2

3. Remove eight tapes.

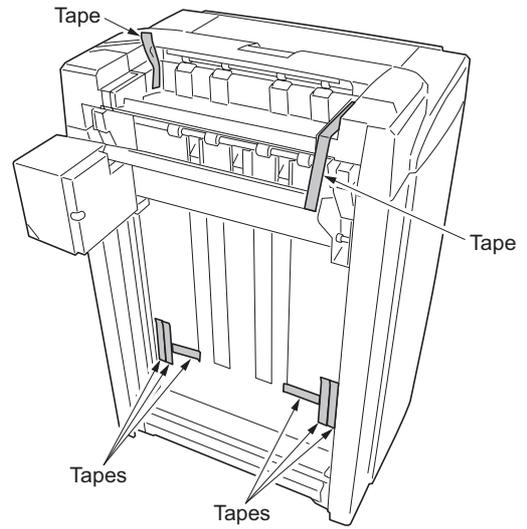


Figure 1-2-3

4. Remove four tapes and two spacers.

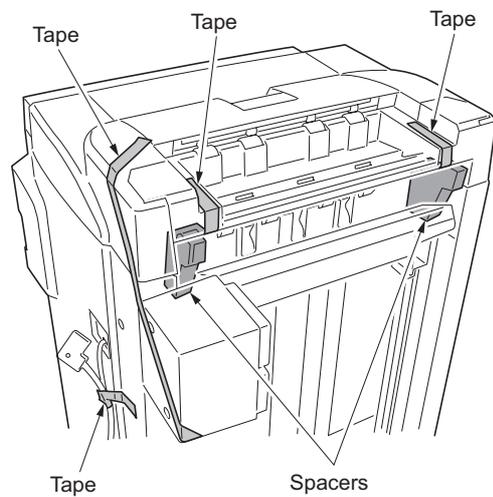


Figure 1-2-4

1-2-2 Installing the centerfold unit (option)

- When installing the centerfold unit and multi job tray as a set, first install the centerfold unit and then the multi job tray.
- Before installing the centerfold unit, press the Power key on the operation panel to off. Make sure that the Power lamp is off before turning off the main power switch. And then unplug the power cable from the wall outlet. Turning off the main power switch before pressing the Power key to off may cause damage to the equipped hard disk.

Procedure

- * When unpacking or installing, hold the centerfold unit by a indicated in the illustration. Do not hold it by b at the center of the unit.

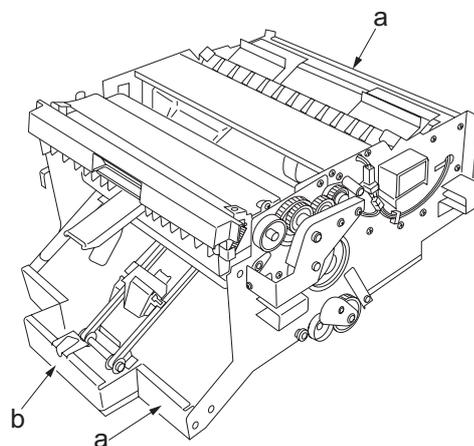


Figure 1-2-5

1. Remove the four screws locking down the guide plate followed by the plate.
2. Remove the left lower shaft from the finisher side plate.

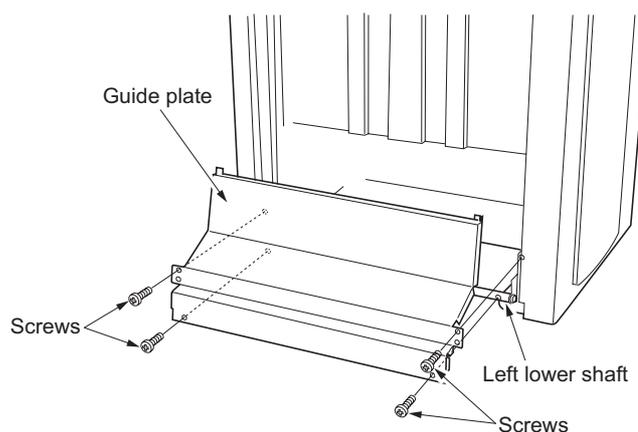


Figure 1-2-6

3. Open the front cover. Remove the screw locking down the retainer followed by the retainer.
4. While keeping the front cover perpendicular, detach the cover by raising it vertically in the direction of the arrow.

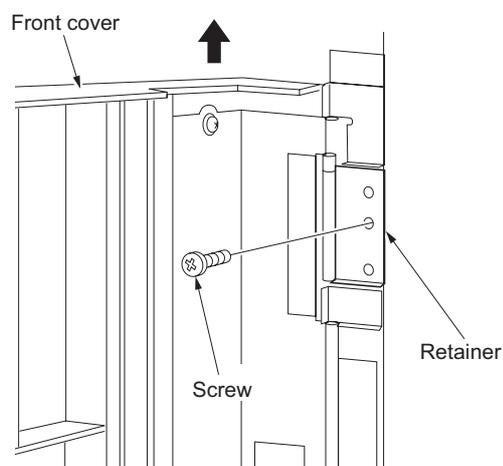


Figure 1-2-7

5. Hook the backstop onto the hook on the inside of the finisher plate, and install the two pins from the outside.
6. Attach one end of the small spring to the backstop and hang the other end over the hook inside the machine.

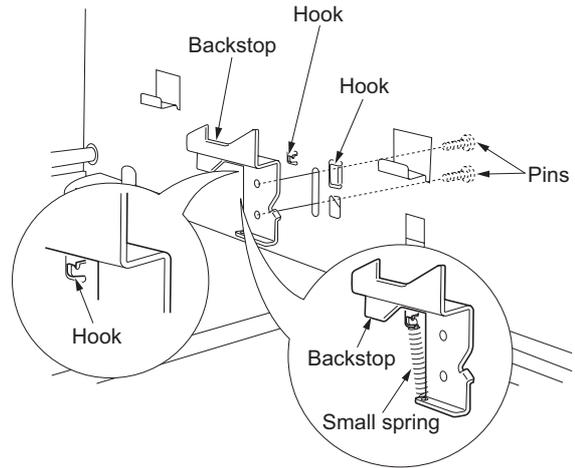


Figure 1-2-8

7. Insert the release lever actuating plate from the front side of the machine into the hole and fit with two pins. Then, make sure that the release lever actuating plate slides leftward and rightward.

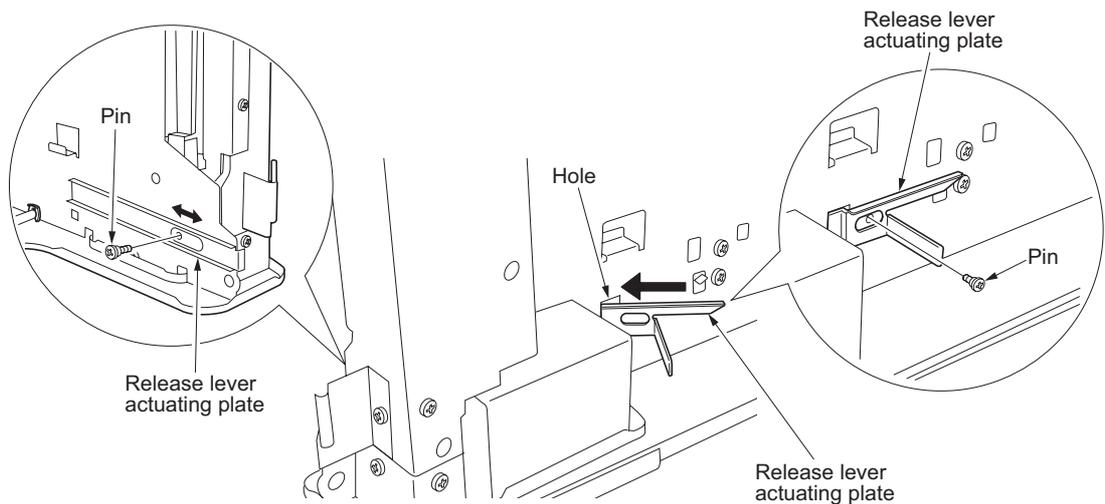


Figure 1-2-9

8. Attach one end of the small spring to the release lever actuating plate and hang the other end over the hook on the side plate.
9. Apply the release lever actuating plate with TEMP1 or the similar grease in the indicated area A.

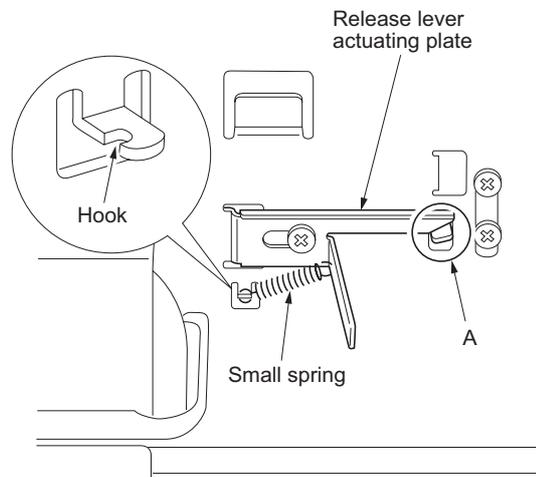


Figure 1-2-10

10. Insert one end of the release pole assembly into the square bypass hole and the other end into the hole with the projection, with the D-cut of the release pole assembly aligned with the projection.
11. Insert the end of the release pole assembly already inserted through the square bypass hole into the mounting hole.

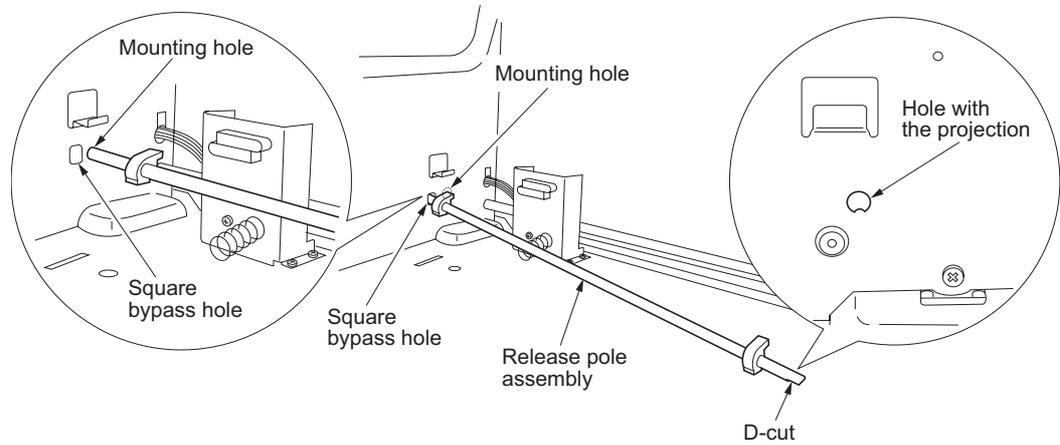


Figure 1-2-11

12. Fit the medium stop ring onto the release pole assembly. Then, make sure the release pole assembly can rotate slightly.

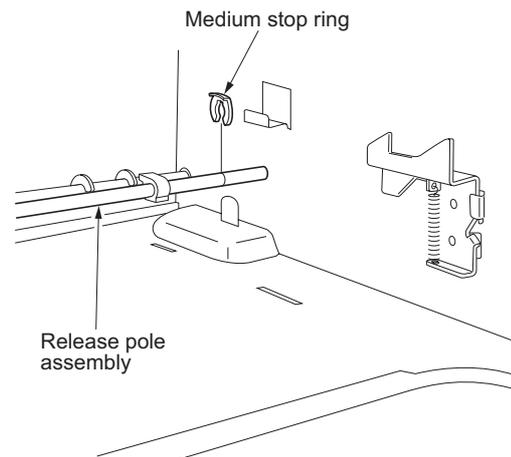


Figure 1-2-12

13. Attach the release handle to the release pole assembly at the machine front side with the M4 x 10 TP screw.

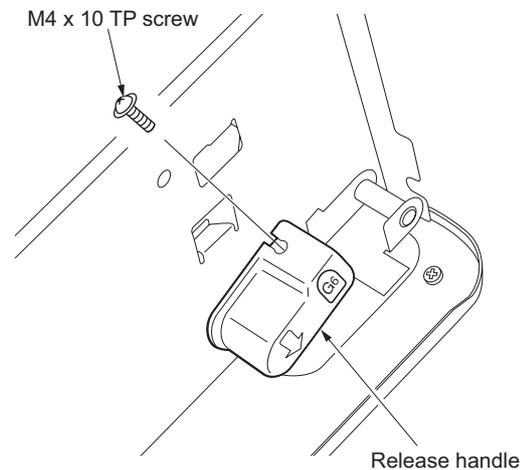


Figure 1-2-13

14. Place the slider on the projections on the finisher rear side-plate and lock down with three M4 x 8 S tight bind screws. Insert the M4 x 8 S tight bind screws from the round holes on the eject side of the finisher.
15. Place the slider on the projections on the finisher front side-plate and lock down with three M4 x 8 S tight bind screws. Insert the M4 x 8 S tight bind screws from the round holes on the eject side of the finisher.

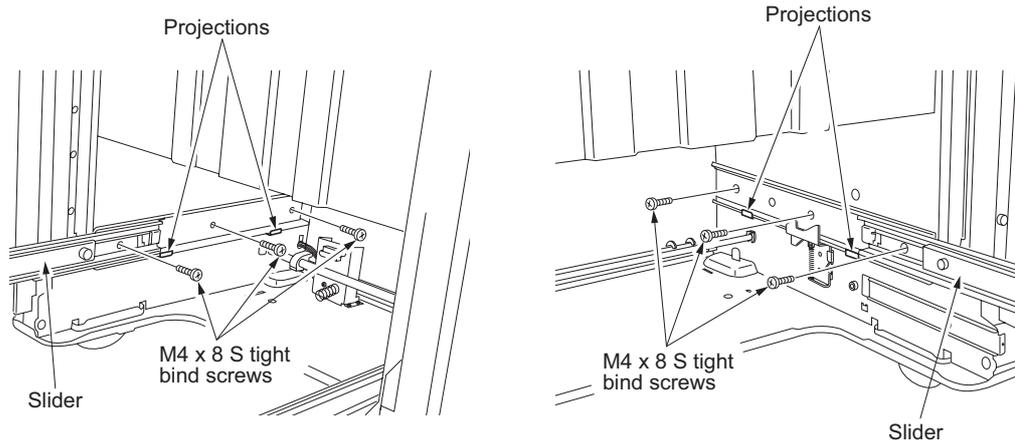


Figure 1-2-14

16. Pull out the intermediate tray of the finisher.
17. Fit the large stop ring onto the unit lock rod.
18. Attach the unit lock hook to the lower guide stay with the unit lock rod.

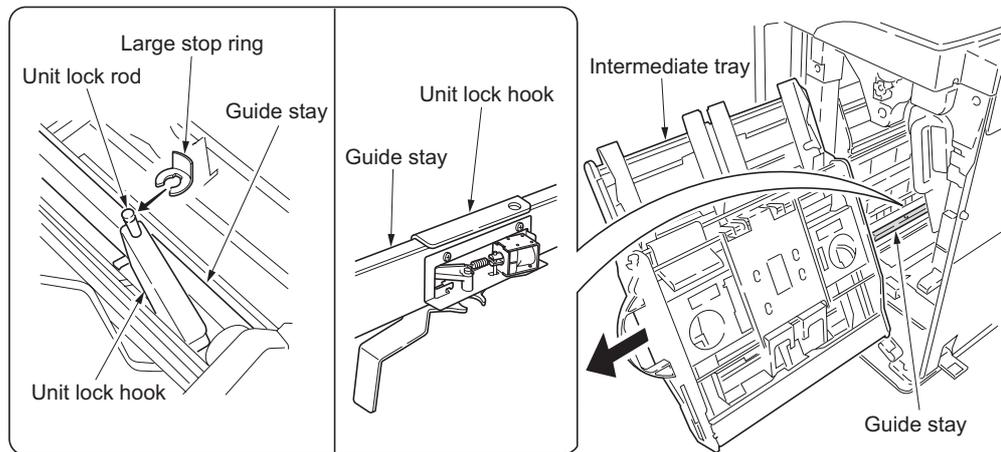


Figure 1-2-15

19. Fit the large stop ring onto the lower part of the unit lock rod.
20. Hang one end of the large spring over the hook on the unit lock hook and the other end over the hook on the guide stay.
21. Insert the intermediate tray of the finisher and return it to its original position.

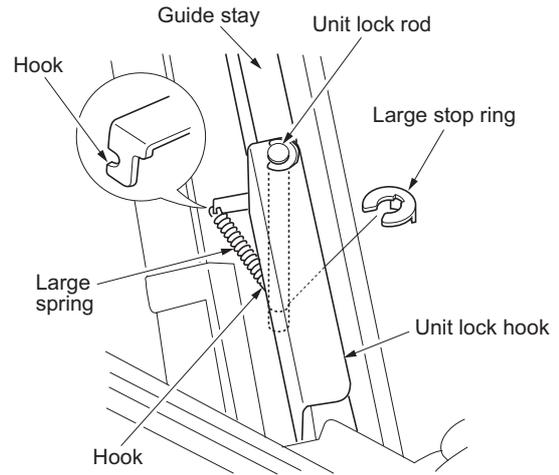


Figure 1-2-16

22. Remove the tapes and the cushioning materials provided on the centerfold unit.

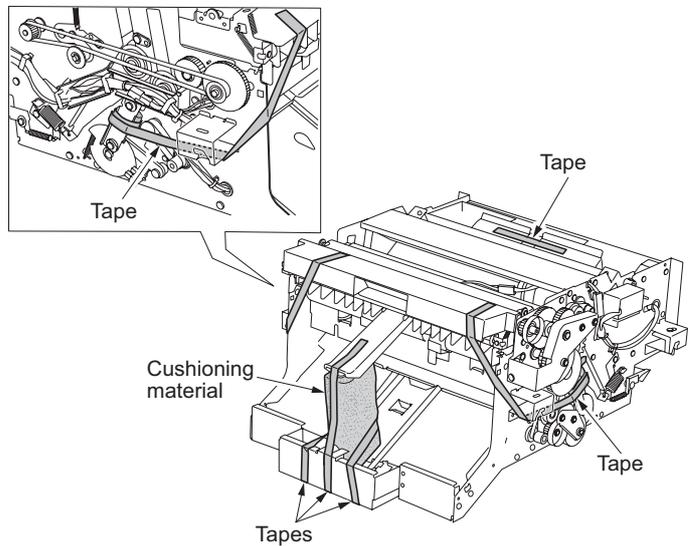


Figure 1-2-17

23. Pull the left and right sliders out until they stop. Attach the centerfold unit on the pins of the sliders. Hold the centerfold unit by a indicated in the illustration. Do not hold it by b at the center of the unit.

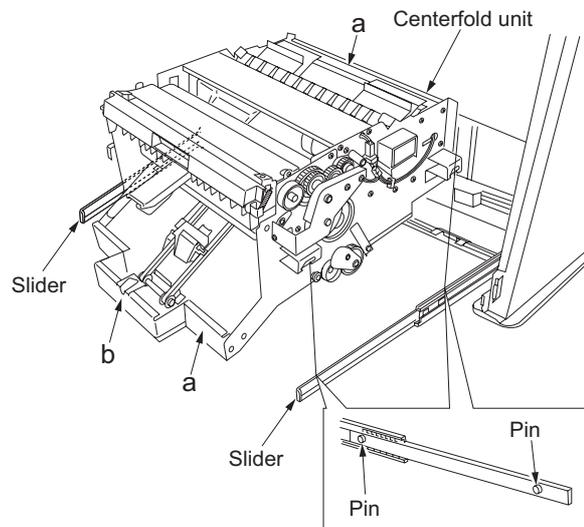


Figure 1-2-18

- 24. Slide the centerfold unit in the direction of the arrow.
- 25. Loosen the two screws and push the retainer in the direction of the arrow and retighten the screws.

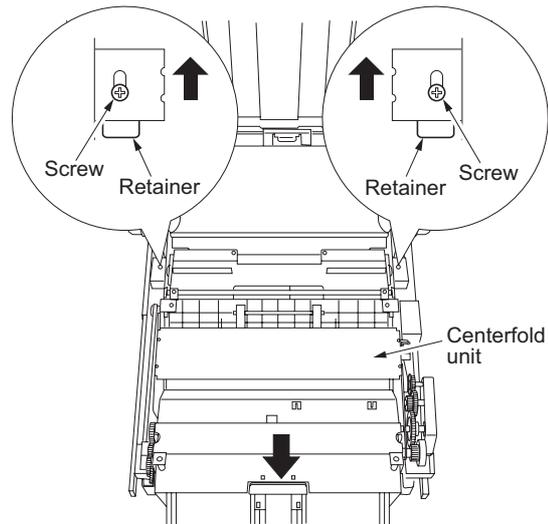


Figure 1-2-19

- 26. Fit the left cover and right cover into the rectangular holes on either side of the center fold unit, and secure each one with the M4 x 6 TP screw.

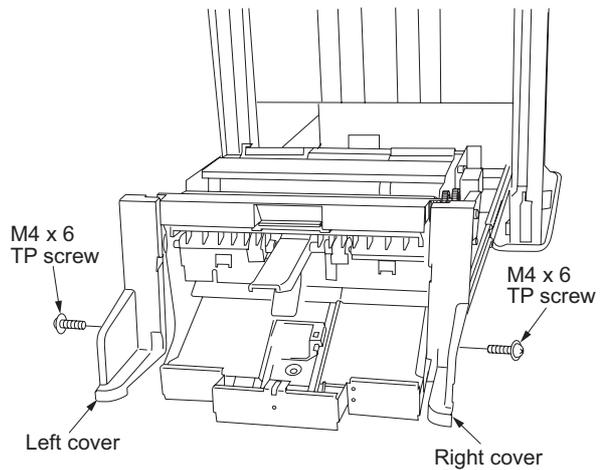


Figure 1-2-20

- 27. Attach the eject tray to the centerfold unit by inserting the projection of the tray into the hole inside the unit.

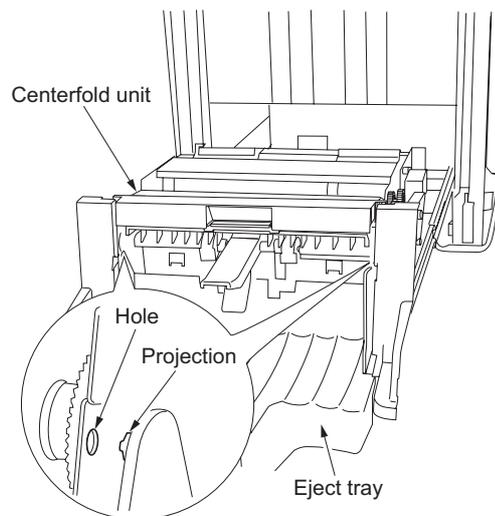


Figure 1-2-21

- 28. Engage the projection of the douser detecting PI with the cutout on the centerfold unit's rear side plate, and secure them with a M4 x 8 S tight bind screw.

When inserting the centerfold unit, make sure that the douser detecting PI does not come into contact with the finisher's folding unit sensor.

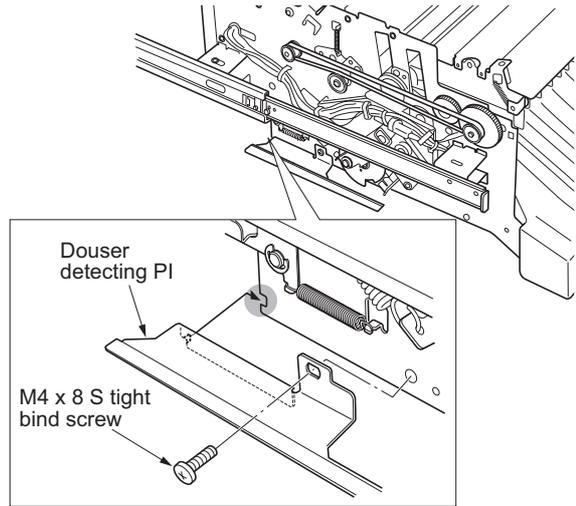


Figure 1-2-22

- 29. Push the release lever actuating plate.
- 30. Push in the centerfold unit until it stops.

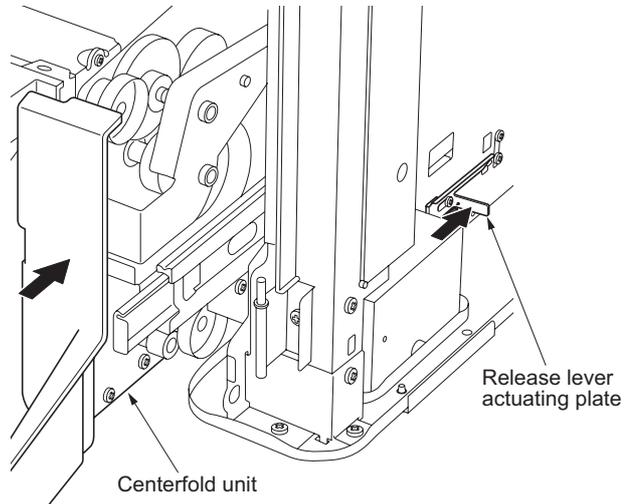


Figure 1-2-23

- 31. Attach the unit transport handle with the M4 x 8 S tight bind screw.

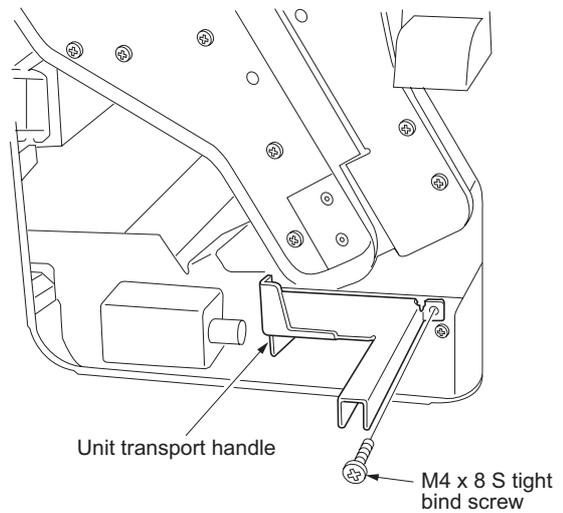


Figure 1-2-24

32. After cleaning each area with alcohol, affix the following labels from label sheet at the locations shown in the illustration: (C)-1 (G7), (C)-2.

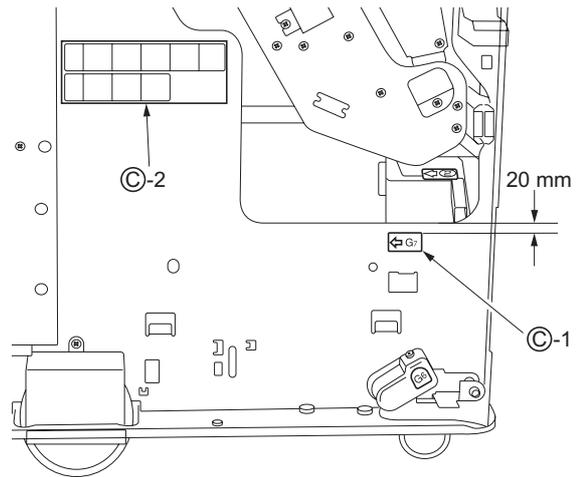


Figure 1-2-25

33. Plug the power cable into a wall outlet and turn the machine on from the main power switch.
34. Make a test copy to check that the center-fold unit operates correctly.
35. Adjust the paper folding position (see page 1-5-11.)

1-2-3 Installing the multi job tray (option)

- Hold the frame at the front and back when removing the multi job tray from the box. Supporting the multi job tray from the bottom can cause deformation of the film affixed to it.
- Before installing the multi job tray, press the Power key on the operation panel to off. Make sure that the Power lamp is off before turning off the main power switch. And then unplug the power cable from the wall outlet. Turning off the main power switch before pressing the Power key to off may cause damage to the equipped hard disk.
- When installing the multi job tray and centerfold unit as a set, first install the centerfold unit and then the multi job tray.
- Installation should be carried out with the finisher's rear cover removed.

Procedure

1. Remove the two screws locking down the top cover lid followed by the lid.
2. Open the upper cover and remove the nine screws locking down the top cover followed by the top cover.

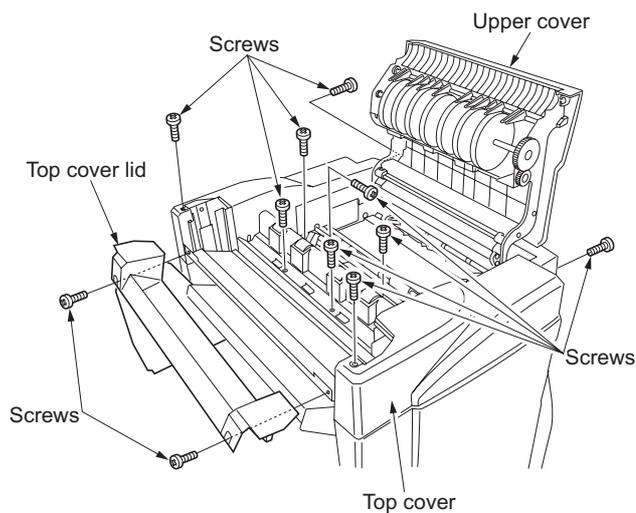


Figure 1-2-26

3. Remove the four screws locking down the top cover lid guide followed by the guide.

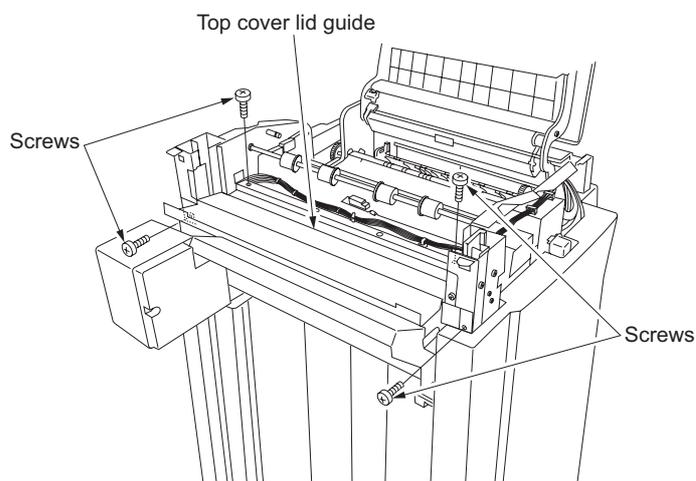


Figure 1-2-27

4. Attach the two size detection switches to the eject stay by inserting the tabs, and lock in place with one M3 x 5 binding screw each.
5. Connect the 3-pin connector of the size detection switch to the connector of the finisher.

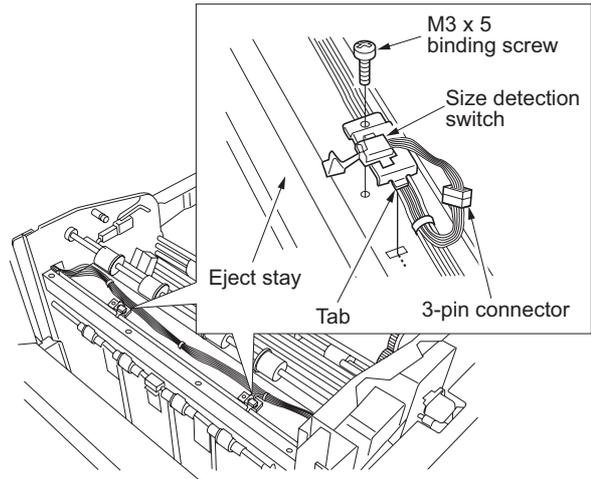


Figure 1-2-28

6. Attach the bin front guide plate and bin rear guide plate to the finisher by inserting the claws on plates into the finisher frame and lock in place with three M4 x 6 binding screws each.

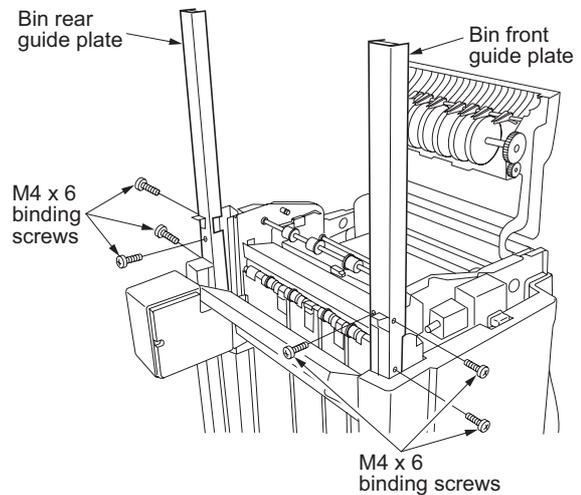


Figure 1-2-29

7. Attach the multi job tray to the bin front guide plate and bin rear guide plate by inserting the six pulleys at the tray front and rear into the plates. Make sure that the shading plate at the rear of the multi job tray does not make contact with the sensor.

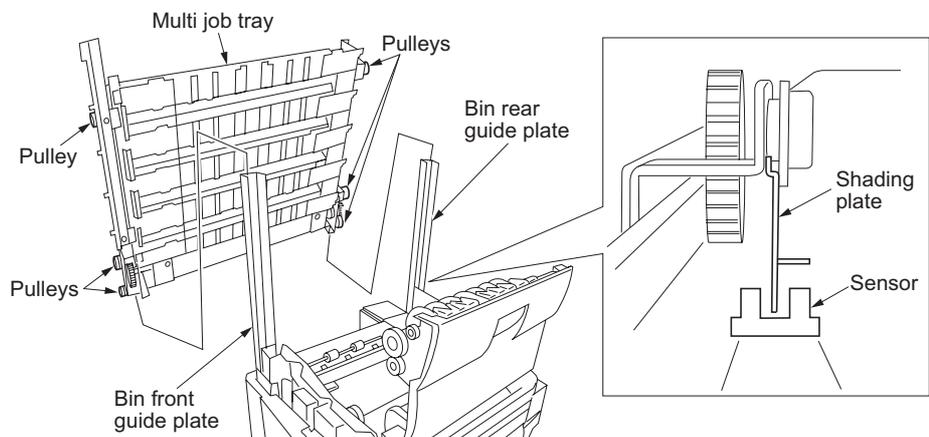


Figure 1-2-30

8. Measure the height *a* against the scale to make sure that the multi job tray is positioned properly to stay level from front to rear.
If the height *a* is not the same at the front and rear, the multi job tray may not be positioned on a level plane. Install the tray again.

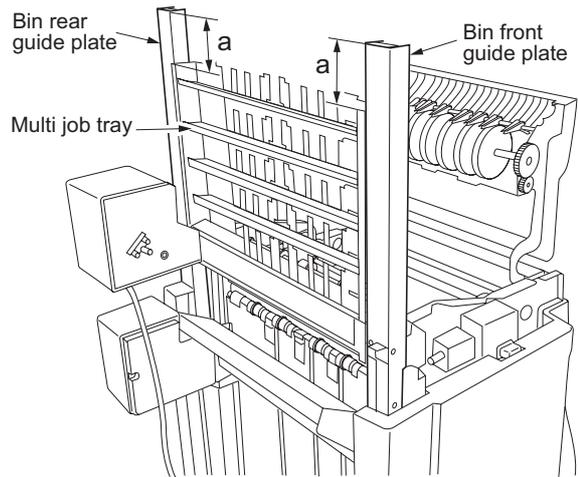


Figure 1-2-31

9. Loosen the two screws.
10. With the retainer slid upward, push in the gear shaft while holding the bottom of the multi job tray. Then, lower the multi job tray by about 30 mm.

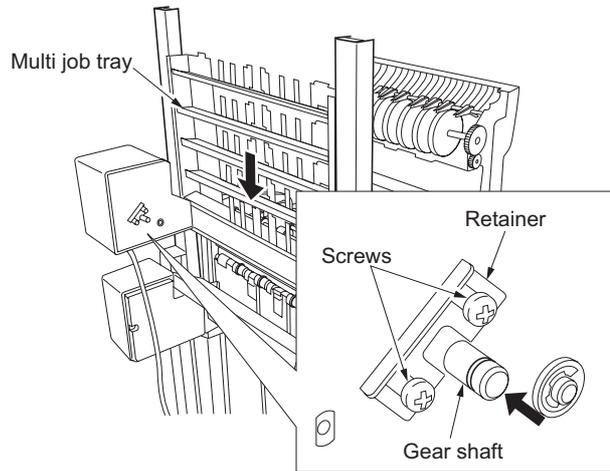


Figure 1-2-32

11. Pull out the gear shaft, slide the retainer to its original position and retighten the two screws.
Make sure the gear shaft is positioned so that the retainer will be engaged in groove on the shaft.

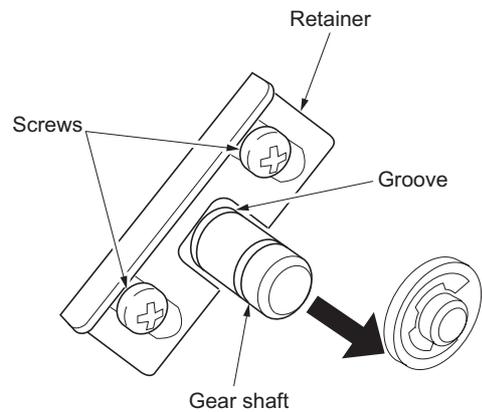


Figure 1-2-33

- 12. Attach the bin guide plate retainer with two M4 x 6 binding screws.
- 13. Reattach the top cover with the nine screws removed in step 2, keeping the upper cover open halfway to enable proper attaching.

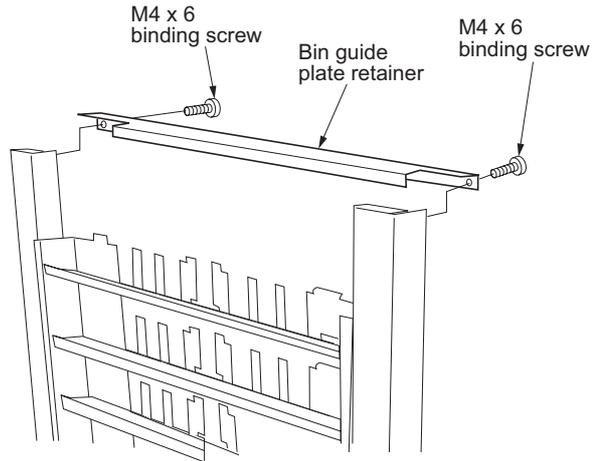


Figure 1-2-34

- 14. Attach the right cover with four M4 x 8 TP screws.

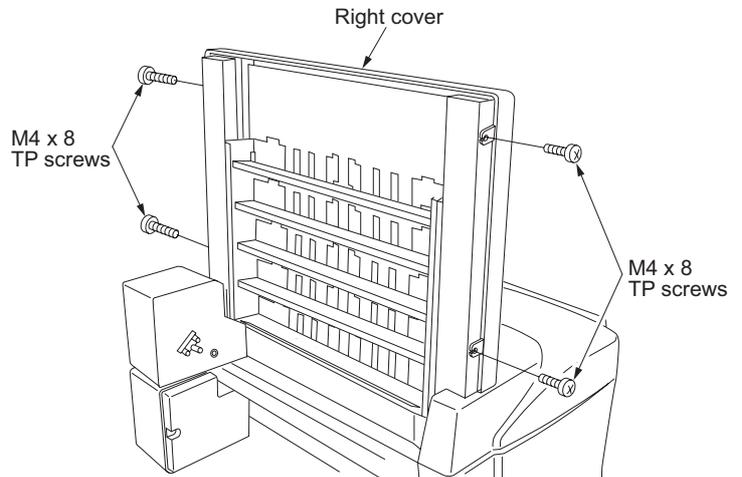


Figure 1-2-35

- 15. Attach the left cover by inserting the two pegs into the square holes, and lock in place with two M4 x 8 TP screws.

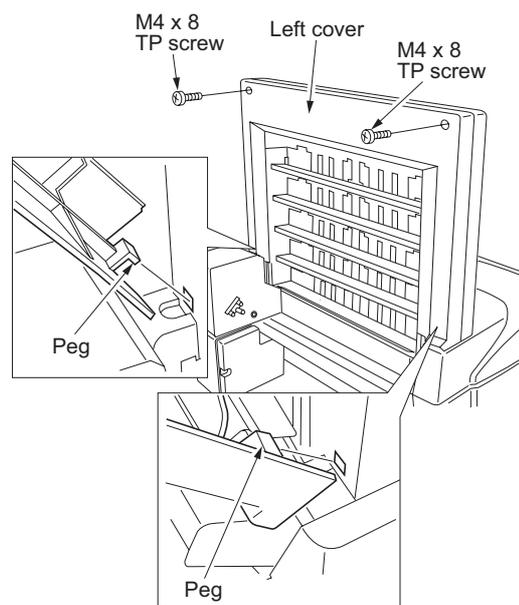


Figure 1-2-36

16. Affix a bin No. label to each of the five eject bins.

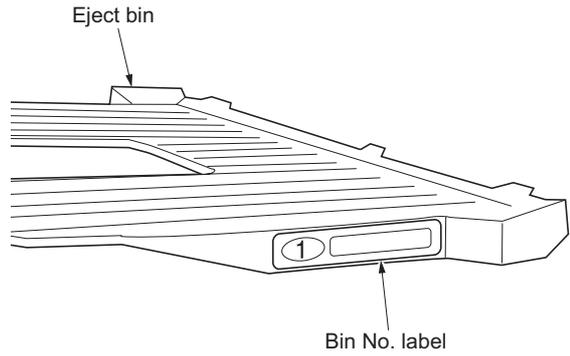


Figure 1-2-37

17. Attach the eject bin with the label No.1 affixed at the uppermost shelf of the multi job tray by inserting the three claws into the square holes.

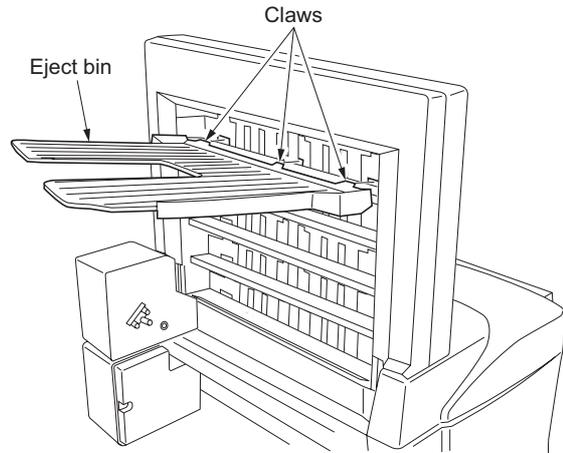


Figure 1-2-38

- 18. Connect the 3-pin connector at the back side of the eject bin.
- 19. Fit the cable of the 3-pin connector to the inside of the eject bin and lock down with the cable retainer.
- 20. Slide the eject bin lid into position and lock in place by inserting the two pegs into the square holes. Make sure that the cable is tidily fitted and not caught in the eject bin lid.
- 21. Repeat steps 17 to 20 to attach the other four eject bins. Attach the eject bins in the order of the bin No. labels so that the bin with the label No.1 is at the uppermost shelf, No.2 at the second and so forth.

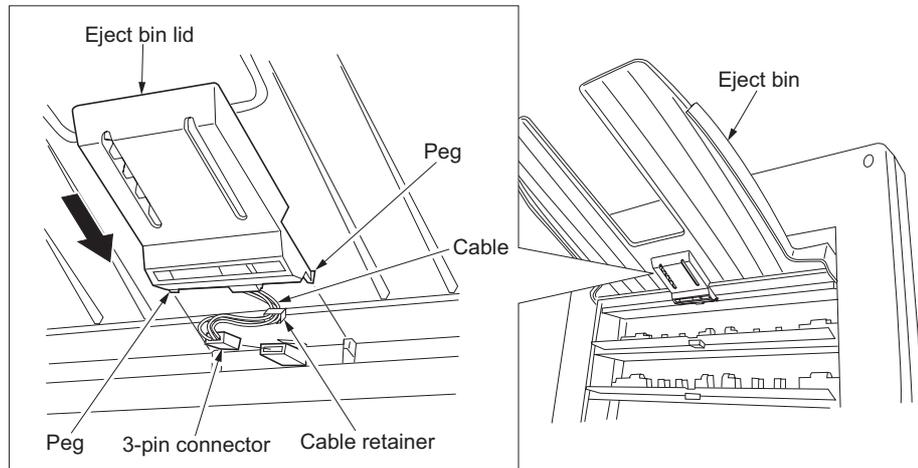


Figure 1-2-39

22. Insert the two lugs of the motor front cover into the rectangular holes, and secure them with the M4 x 8 TP screw.

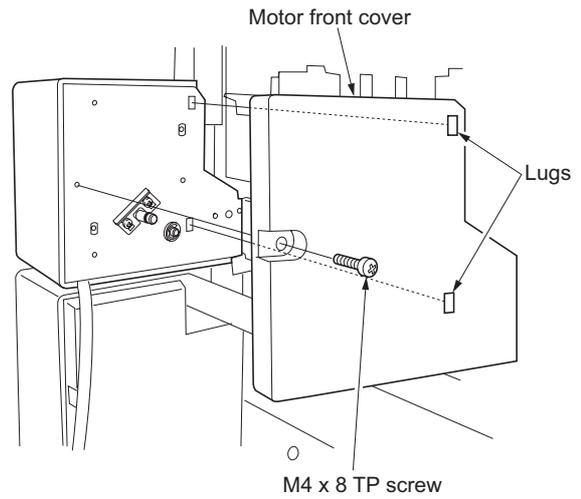


Figure 1-2-40

23. Connect the signal cable of the multi job tray to the finisher connector.
24. Plug the power cable into a wall outlet and turn the machine on from the main power switch.
25. Make a test copy and check the multi job tray performs properly.

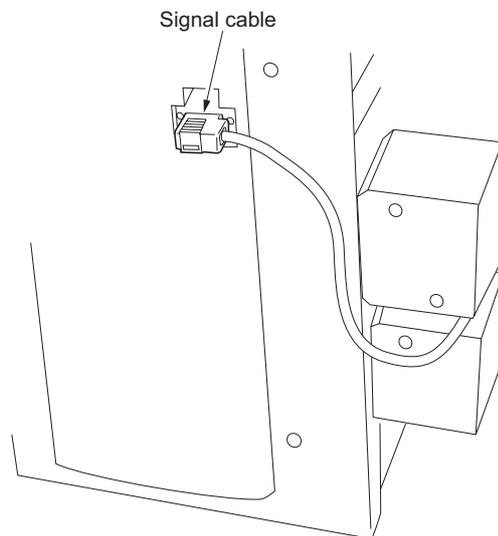


Figure 1-2-41

1-2-4 Installing the punch unit (option)

- Before installing the punch unit, press the Power key on the operation panel to off. Make sure that the Power lamp is off before turning off the main power switch. And then unplug the power cable from the wall outlet. Turning off the main power switch before pressing the Power key to off may cause damage to the equipped hard disk.

Procedure

- Remove the five screws, disconnect the connector, and then remove the rear cover.
- Open the upper cover.

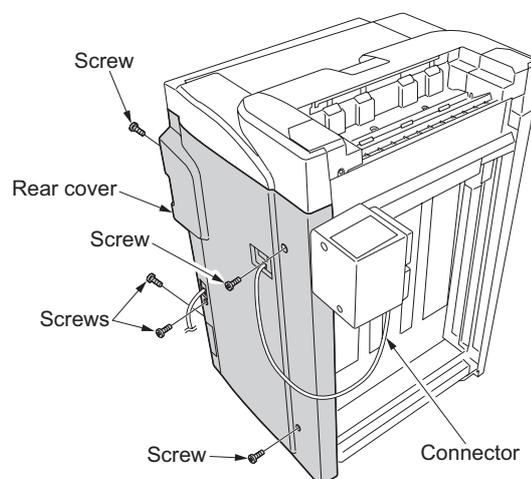


Figure 1-2-42

- Remove the two screws, and then remove the guide plate.

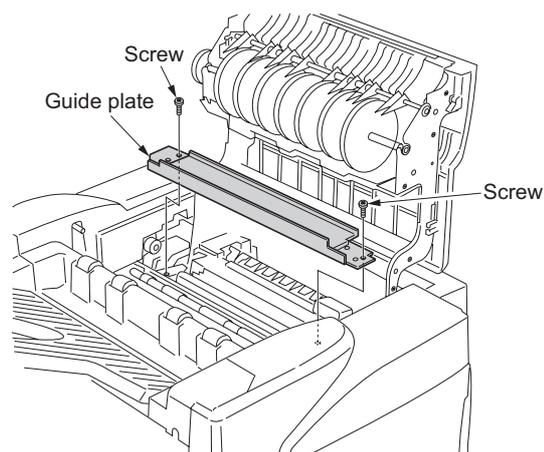


Figure 1-2-43

- Making sure that frame of the punch unit is in contact with lever of the finisher, insert the punch unit as far as it will go between the rails that held the guide plate that was removed in step 3.

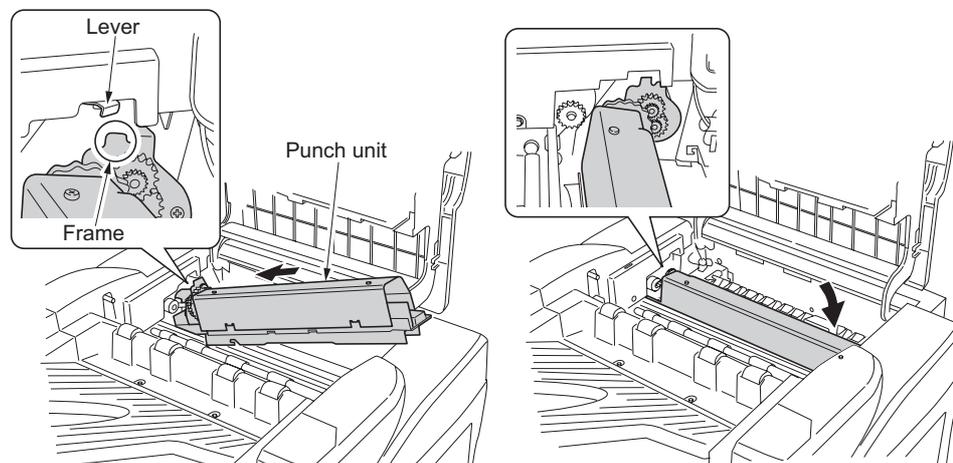


Figure 1-2-44

- Secure the punch unit with two M4 x 10 tap tight S screws. Make sure the center of the right long hole is aligned with the center guideline.

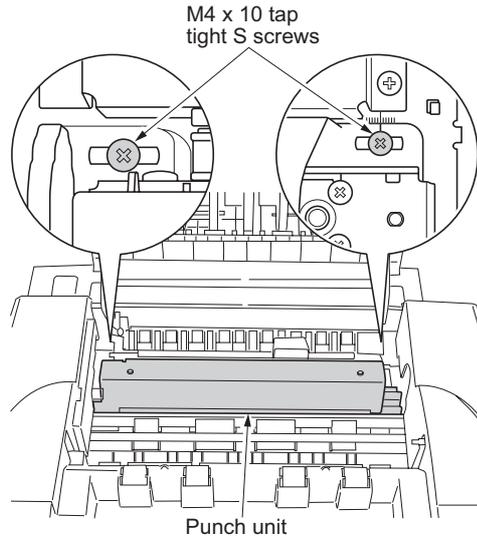


Figure 1-2-45

- Connect the 3-pin connector of the solenoid to the 3-pin connector on the front of the finisher.
- Close the top cover and open the front cover.

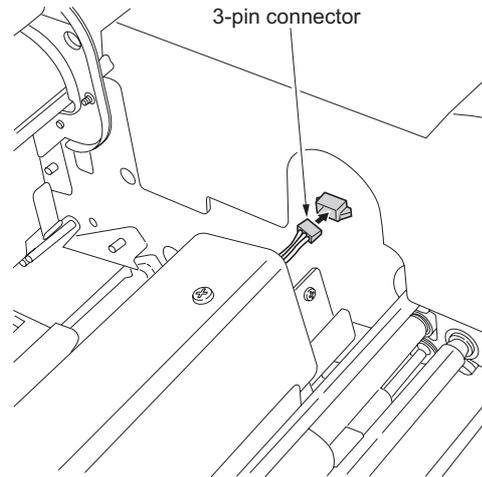


Figure 1-2-46

- Slide the guide along the rails on the bottom of the punch unit so it hooks on the tabs.
- Pull out the intermediate tray of the finisher.

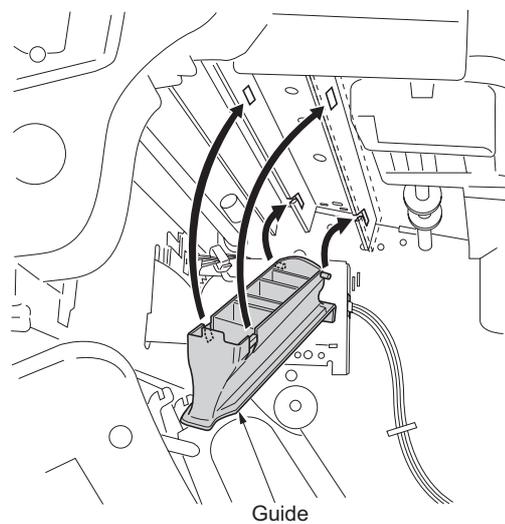


Figure 1-2-47

10. Insert the assembly tank holder into the holes in the side of the finisher, and then press it downwards to secure it. Next, secure it further with the screw that was removed in step 3. Install the screw from the outside.
11. Connect the 3-pin connector to the 3-pin connector inside the finisher.
12. Anchor the wires to the frame with a supplied wire saddle.

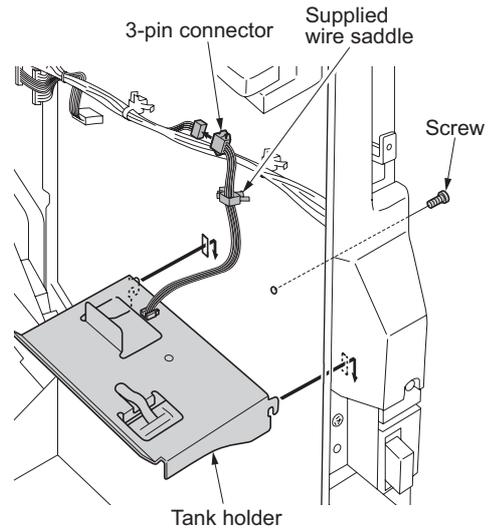


Figure 1-2-48

13. Insert the intermediate tray of the finisher so it is back to its original position, and then install the punch waste box.
14. Close the front cover.

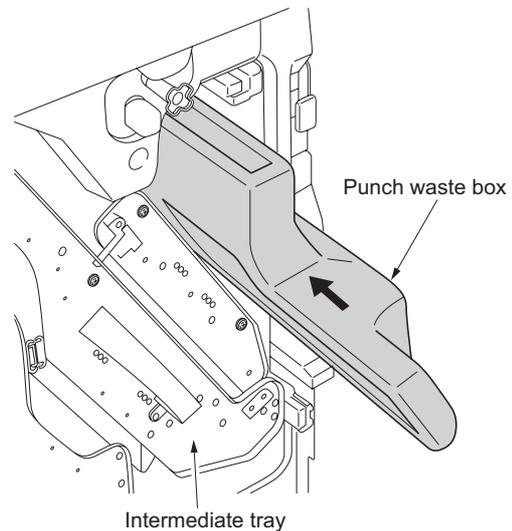


Figure 1-2-49

15. Insert the tab of the punch PWB into the hole on the back of the finisher, and secure it with the screw that was removed in step 3.

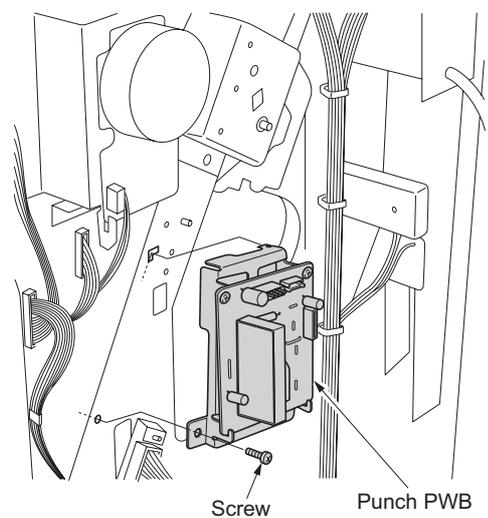


Figure 1-2-50

16. Make the following seven connections.

Top: 2-pin power connector and 2-pin motor connector; 6-pin power connector and 6-pin sensor connector
 Center: 4-pin power connector and YC1 of punch PWB; 6-pin power connector and YC3 of punch PWB;
 9-pin power connector and YC2 of punch PWB

Bottom: 2-pin power connector and 2-pin finisher power connector; 9-pin power connector and 9-pin finisher power connector

17. Secure wires at one location with wire saddle.

18. Secure wires with clamp and fix with M4 x 8 tap Tight S screw.

19. Fasten the snap-on band on core A to the hole on the finisher frame.

20. Fasten the snap-on band on core B to the hole on the finisher frame.

21. Refit the rear cover.

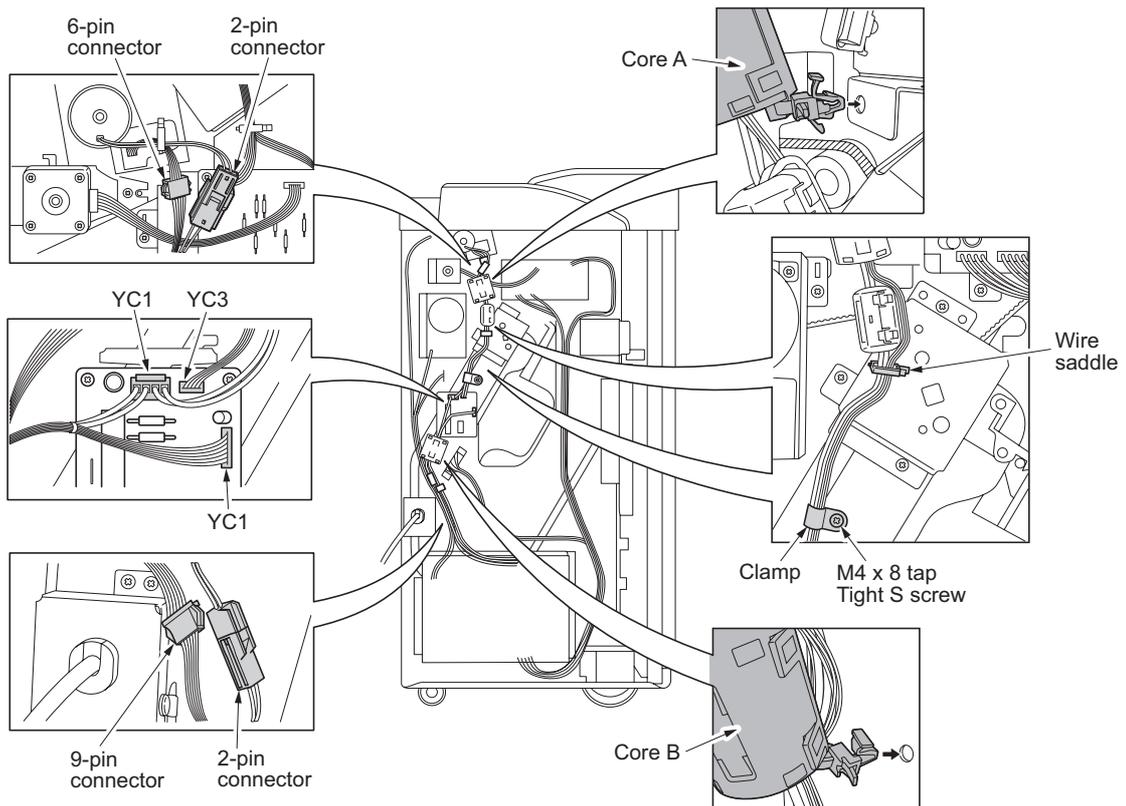


Figure 1-2-51

22. Plug the power cable into a wall outlet and turn the machine on from the main power switch.

23. Adjust the centering punch-holes (see page 1-5-12).

24. Set margin from the leading edge to punch holes (see page 1-5-13).

1-2-5 Installing the stopper guide (option)

- Before installing the stopper guide, press the Power key on the operation panel to off. Make sure that the Power lamp is off before turning off the main power switch. And then unplug the power cable from the wall outlet. Turning off the main power switch before pressing the Power key to off may cause damage to the equipped hard disk.

(1) Installing the stopper guide (To the finisher without the multi job tray)

Procedure

1. Secure the stopper assembly to the finisher sub tray with three screws (M3 × 8 tap tight P screw).
 - * The installation position varies from the inch specification and metric specification. Make sure to adjust the position to the mark of (I) and the position for the metric specification to the mark of (C).

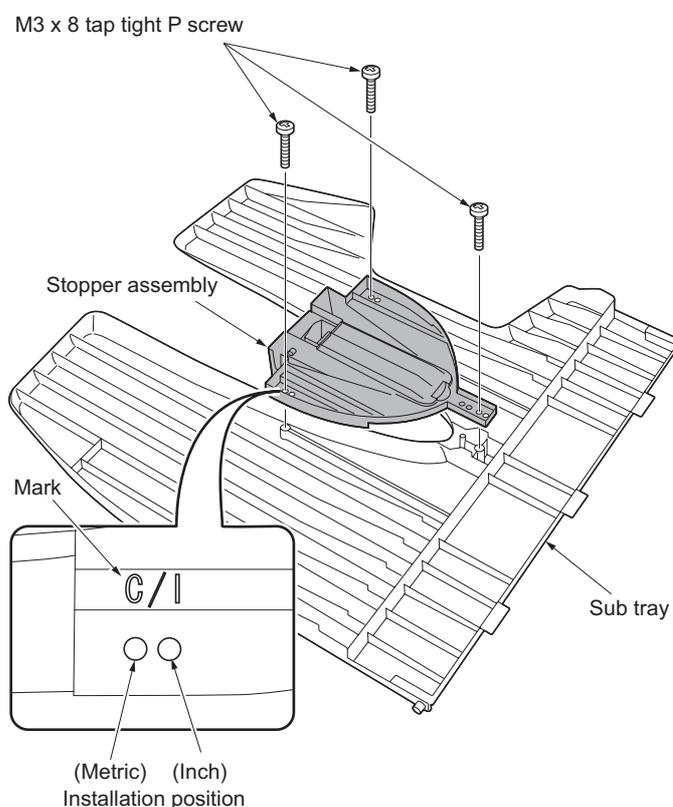


Figure 1-2-52

2. After cleaning with rubbing alcohol, affix the appropriate operation label (Inch or metric) to the finisher as indicated.

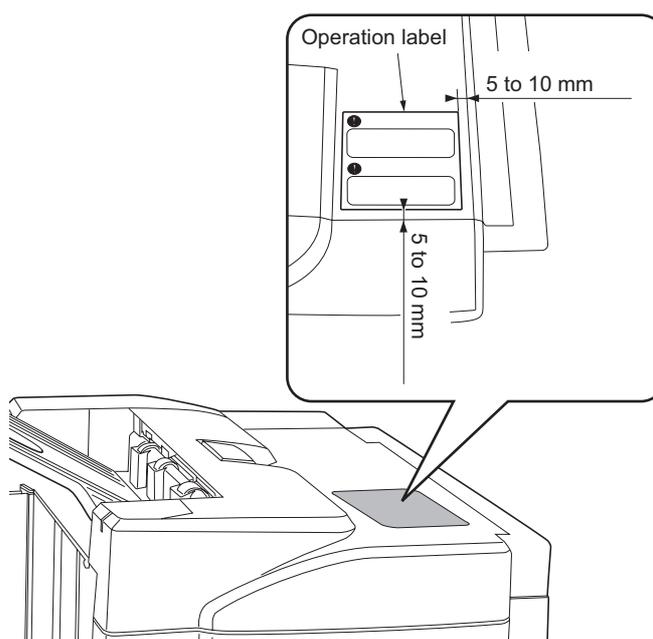


Figure 1-2-53

(2) Installing the stopper guide (To the finisher with the multi job tray)

Procedure

1. Install the stopper to the stopper mount using stop ring 3.
- * Be careful. The stopper hole on the stopper mount varies from the inch specification and metric specification.

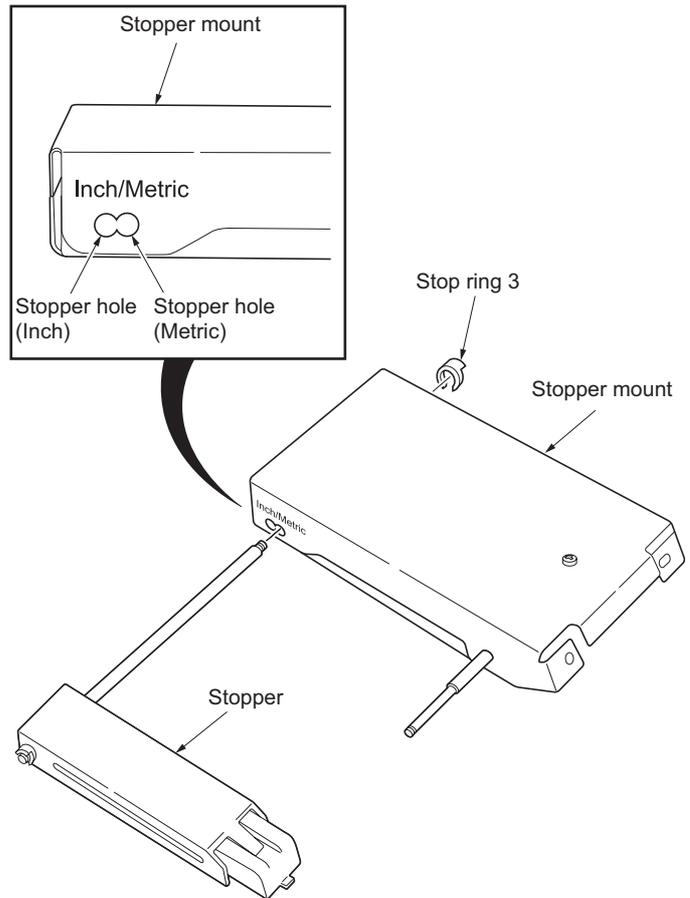


Figure 1-2-54

2. Push down the main tray of the finisher. (For the details, refer to step 10 on page 6 of multi job tray Installation guide.)
3. Hook the guide assembled in step 1 to the finisher as indicated. Secure it with two M4 x 8 tap tight S screws. Make sure that the stopper guide is dropped as indicated.

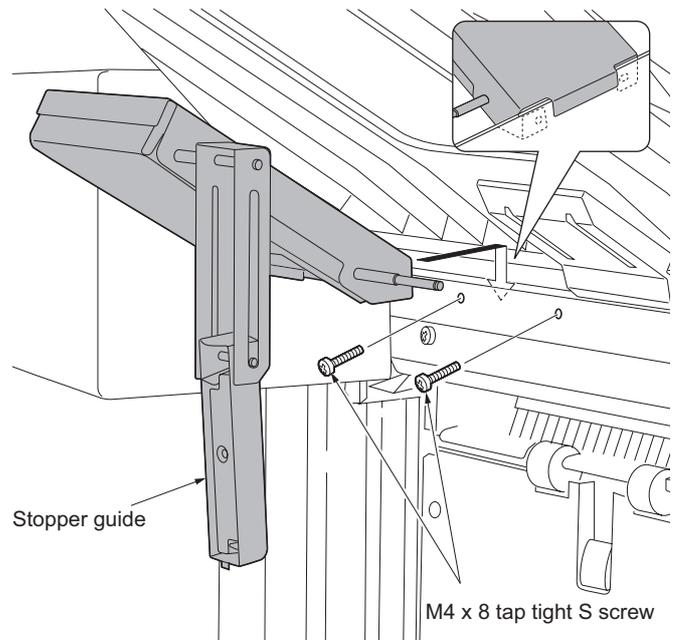
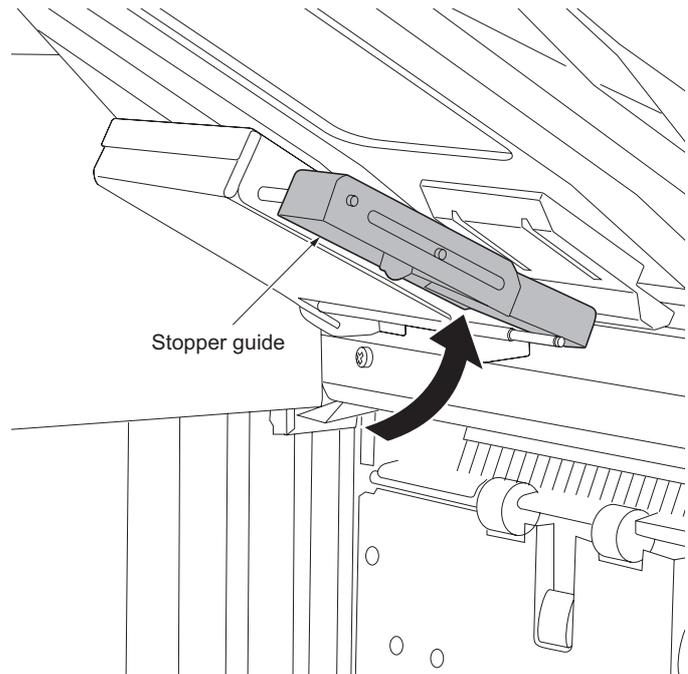
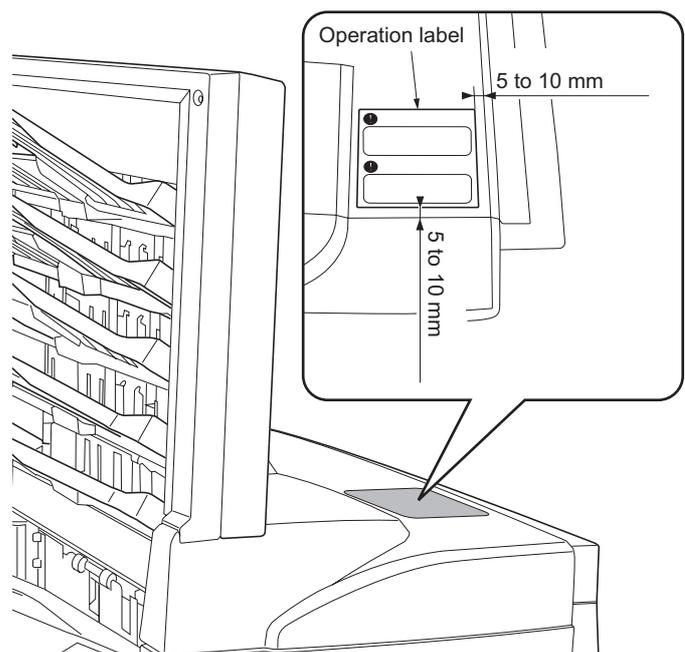


Figure 1-2-55

4. Hold the stopper guide as indicated.
5. Replace the cover removed in step 2.

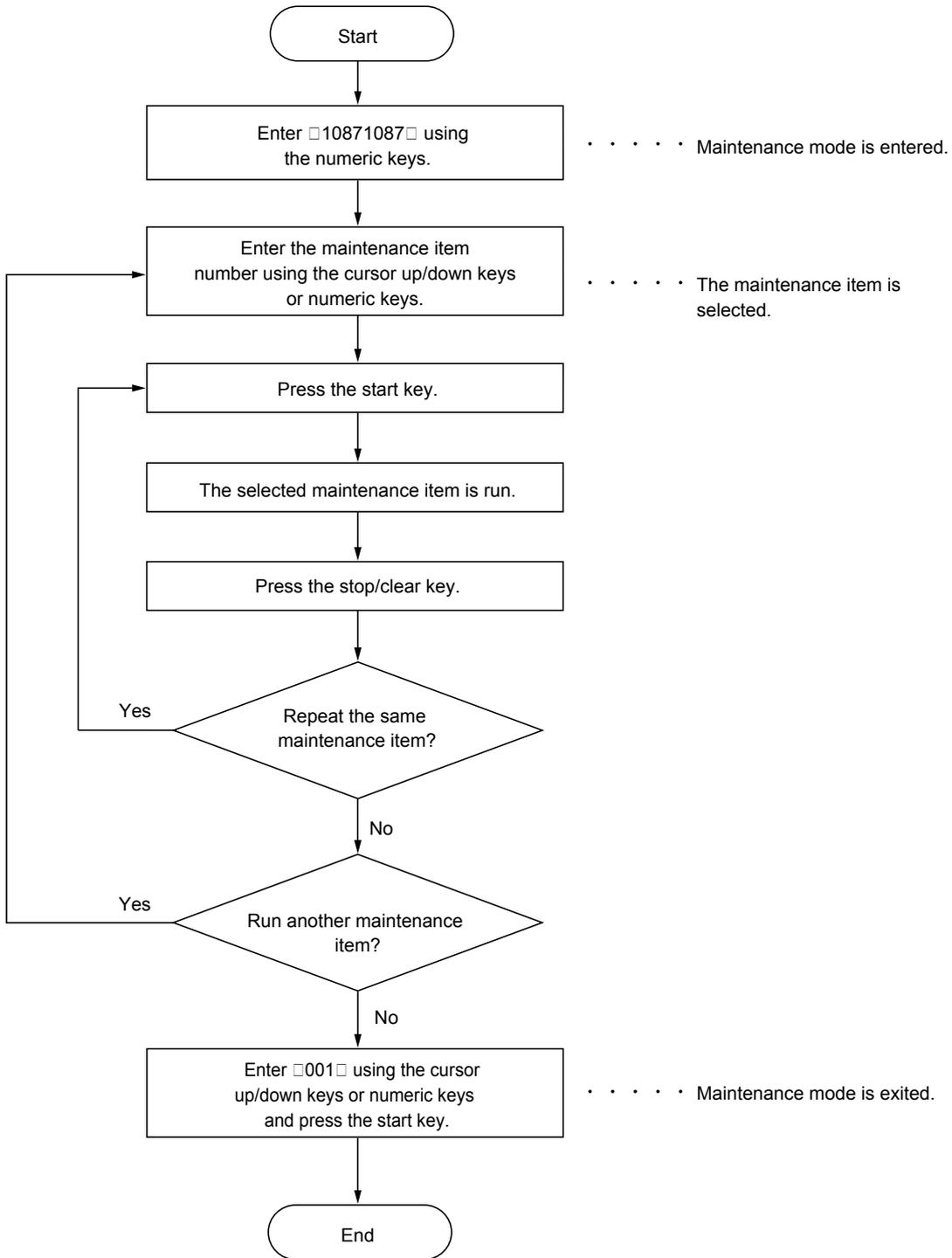
**Figure 1-2-56**

6. After cleaning with rubbing alcohol, affix the appropriate operation label to the finisher as indicated.

**Figure 1-2-57**

1-3-1 Maintenance mode

(1) Executing a maintenance item



(2) Contents of the maintenance mode items

Maintenance item No.	Description																																
U018	<p>Displaying the ROM checksum Description Displays the checksum of ROM. Purpose To check the checksum. Method Press the start key. The ROM checksum is displayed.</p> <table border="1" data-bbox="331 517 1398 815"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>MAIN*</td> <td>Main PWB ROM checksum</td> </tr> <tr> <td>ENGINE*</td> <td>Engine PWB ROM checksum</td> </tr> <tr> <td>SCANNER*</td> <td>Network scanner ROM checksum</td> </tr> <tr> <td>LANGUAGE(Stand.)*</td> <td>Standard language ROM checksum</td> </tr> <tr> <td>LANGUAGE(Option)*</td> <td>Optional language ROM checksum</td> </tr> <tr> <td>DP*</td> <td>DP main PWB ROM checksum</td> </tr> <tr> <td>FINISHER</td> <td>Document finisher ROM checksum</td> </tr> </tbody> </table> <p>*For the machine.</p> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	MAIN*	Main PWB ROM checksum	ENGINE*	Engine PWB ROM checksum	SCANNER*	Network scanner ROM checksum	LANGUAGE(Stand.)*	Standard language ROM checksum	LANGUAGE(Option)*	Optional language ROM checksum	DP*	DP main PWB ROM checksum	FINISHER	Document finisher ROM checksum																
Display	Description																																
MAIN*	Main PWB ROM checksum																																
ENGINE*	Engine PWB ROM checksum																																
SCANNER*	Network scanner ROM checksum																																
LANGUAGE(Stand.)*	Standard language ROM checksum																																
LANGUAGE(Option)*	Optional language ROM checksum																																
DP*	DP main PWB ROM checksum																																
FINISHER	Document finisher ROM checksum																																
U019	<p>Displaying the ROM version Description Displays the part number for the ROM fitted to each PWB. Purpose To check the part number or to decide, based on the last digit of the number, if the newest version of ROM is installed. Method</p> <ol style="list-style-type: none"> 1. Press the start key. The ROM version (the last 6 digits of the part number) is displayed. 2. Change the screen using the * or # keys. <table border="1" data-bbox="331 1211 1398 1816"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>MAIN*</td> <td>Main PWB ROM IC</td> </tr> <tr> <td>ENGINE*</td> <td>Engine PWB ROM IC</td> </tr> <tr> <td>SCANNER*</td> <td>Scanner PWB ROM IC</td> </tr> <tr> <td>LANGUAGE (Stand.)*</td> <td>Standard language ROM IC</td> </tr> <tr> <td>LANGUAGE(Option)*</td> <td>Optional language ROM IC</td> </tr> <tr> <td>MAIN BOOT*</td> <td>Main PWB booting</td> </tr> <tr> <td>PRINTER*</td> <td>Printer board booting</td> </tr> <tr> <td>NETWORK SCANNER*</td> <td>Network scanner ROM IC</td> </tr> <tr> <td>DP*</td> <td>DP ROM IC</td> </tr> <tr> <td>FINISHER</td> <td>Document finisher main PWB ROM IC</td> </tr> <tr> <td>ENGINE BOOT*</td> <td>Engine PWB booting</td> </tr> <tr> <td>CASSETTE1*</td> <td>Deck PWB ROM IC</td> </tr> <tr> <td>CASSETTE2*</td> <td>Cassette PWB ROM IC</td> </tr> <tr> <td>DUPLEX*</td> <td>Duplex PWB ROM IC</td> </tr> <tr> <td>SIDE FEEDER*</td> <td>Side feeder main PWB ROM IC</td> </tr> </tbody> </table> <p>*For the machine.</p> <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	MAIN*	Main PWB ROM IC	ENGINE*	Engine PWB ROM IC	SCANNER*	Scanner PWB ROM IC	LANGUAGE (Stand.)*	Standard language ROM IC	LANGUAGE(Option)*	Optional language ROM IC	MAIN BOOT*	Main PWB booting	PRINTER*	Printer board booting	NETWORK SCANNER*	Network scanner ROM IC	DP*	DP ROM IC	FINISHER	Document finisher main PWB ROM IC	ENGINE BOOT*	Engine PWB booting	CASSETTE1*	Deck PWB ROM IC	CASSETTE2*	Cassette PWB ROM IC	DUPLEX*	Duplex PWB ROM IC	SIDE FEEDER*	Side feeder main PWB ROM IC
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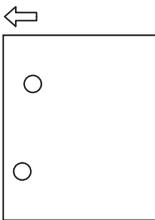
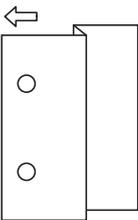
Maintenance item No.	Description												
<p>U234</p>	<p>Setting punch destination Description Sets the destination of optional punch unit of document finisher. Purpose To be set when installing the optional punch unit. Method Press the start key. The screen for selecting an item is displayed. Setting 1. Select the destination.</p> <table border="1" data-bbox="331 533 1302 768"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>NOTHING</td> <td>Automatic recognition</td> </tr> <tr> <td>JAPAN METRIC</td> <td>Metric (Japan) specifications</td> </tr> <tr> <td>INCH</td> <td>Inch (North America) specifications</td> </tr> <tr> <td>EUROPE METRIC</td> <td>Metric (Europe) specifications</td> </tr> <tr> <td>SWEDEN METRIC</td> <td>Metric (North Europe) specifications</td> </tr> </tbody> </table> <p>Initial setting: NOTHING 2. Press the start key. The setting is set. Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	NOTHING	Automatic recognition	JAPAN METRIC	Metric (Japan) specifications	INCH	Inch (North America) specifications	EUROPE METRIC	Metric (Europe) specifications	SWEDEN METRIC	Metric (North Europe) specifications
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<p>U235</p>	<p>Setting output tray initialize mode Description Sets whether or not initialization (shift of eject position to main tray) is performed when auto clear is triggered if a multi-job tray is installed to an optional finisher. Purpose To be set as required according to the user. Method Press the start key. The screen for selecting an item is displayed. Setting 1. Select the item to be set. The selected item is displayed in reverse.</p> <table border="1" data-bbox="331 1211 1398 1346"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>HP ON</td> <td>Job tray initialization is performed.</td> </tr> <tr> <td>HP OFF</td> <td>Job tray initialization is not performed.</td> </tr> </tbody> </table> <p>Initial setting: HP ON 2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed. Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	HP ON	Job tray initialization is performed.	HP OFF	Job tray initialization is not performed.						
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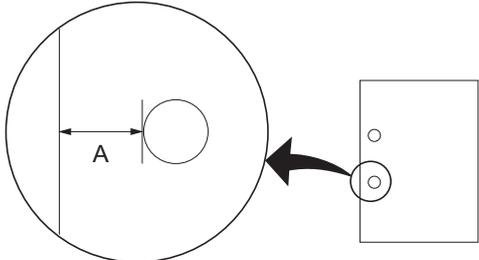
Maintenance item No.	Description						
<p>U237</p>	<p>Adjusting finisher stack quantity</p> <p>Description Sets the number of sheets of stack on the main tray in the document finisher.</p> <p>Purpose To change the setting when a stack malfunction has occurred.</p> <p>Method Press the start key. The screen for selecting an item is displayed.</p> <p>Setting</p> <ol style="list-style-type: none"> Change the setting using the cursor up/down keys. <table border="1" data-bbox="331 533 1398 672"> <thead> <tr> <th>Setting</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Stack quantity: 3000 sheets</td> </tr> <tr> <td>1</td> <td>Stack quantity: 1500 sheets</td> </tr> </tbody> </table> <p>Initial setting: 0 If the preset value is changed to 1, the number of sheets of a stack is limited to 1,500 in modes other than the staple mode.</p> <ol style="list-style-type: none"> Press the start key. The setting is set. <p>Completion Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Setting	Description	0	Stack quantity: 3000 sheets	1	Stack quantity: 1500 sheets
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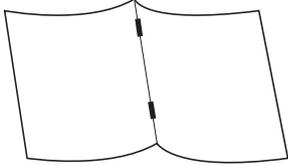
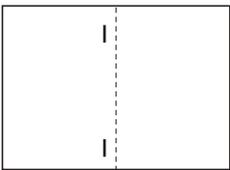
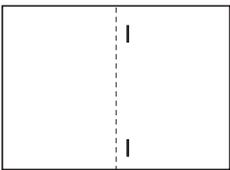
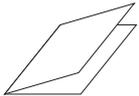
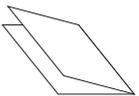
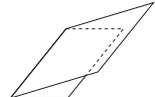
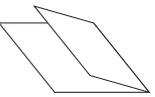
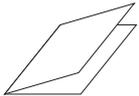
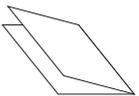
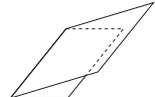
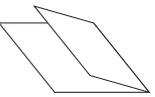
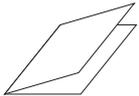
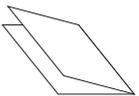
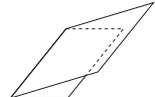
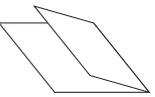
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<p>U240</p>	<p>Checking the operation of the finisher</p> <p>Description Turns each motor and solenoid of the document finisher ON.</p> <p>Purpose To check the operation of each motor and solenoid of the document finisher.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Select the item to be checked. <table border="1" data-bbox="331 504 1396 622"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>FINISHER</td> <td>Motors and solenoids of document finisher</td> </tr> <tr> <td>SADDLE</td> <td>Motors and solenoids of centerfold unit</td> </tr> </tbody> </table> <p>Method: Checking the motor and solenoid of the document finisher</p> <ol style="list-style-type: none"> 1. Select FINISHER on the screen for selecting an item. 2. Select the item to be operated. <table border="1" data-bbox="331 734 1396 1982"> <thead> <tr> <th>Display</th> <th>Motors and solenoids</th> </tr> </thead> <tbody> <tr> <td>FD_IN_MT_H</td> <td>Paper entry motor (PEM) is turned on high speed</td> </tr> <tr> <td>FD_IN_MT_M</td> <td>Paper entry motor (PEM) is turned on middle speed</td> </tr> <tr> <td>FD_IN_MT_L</td> <td>Paper entry motor (PEM) is turned on low speed</td> </tr> <tr> <td>CNV_MT_H</td> <td>Paper conveying motor (PCM) is turned on high speed</td> </tr> <tr> <td>CNV_MT_M</td> <td>Paper conveying motor (PCM) is turned on middle speed</td> </tr> <tr> <td>CNV_MT_L</td> <td>Paper conveying motor (PCM) is turned on low speed</td> </tr> <tr> <td>UP_MT</td> <td>Upper paper conveying belt motor (PCBM-U) is turned on</td> </tr> <tr> <td>DOWN_MT</td> <td>Lower paper conveying belt motor (PCBM-L) is turned on</td> </tr> <tr> <td>LGR_TEST</td> <td>Front/rear upper side registration guide motor (SRGM-FU/RU) test operation for 11" x 17" size</td> </tr> <tr> <td>A3_TEST</td> <td>Front/rear upper side registration guide motor (SRGM-FU/RU) test operation for A3 size</td> </tr> <tr> <td>WDTH_MT_L</td> <td>Lower side registration guide motor (SRGM-L) is turned on</td> </tr> <tr> <td>SLAP_MT_INI</td> <td>Movable guide motor (MGM) is turned on initial driving</td> </tr> <tr> <td>SLAP_MT_MOV</td> <td>Movable guide motor (MGM) is turned on</td> </tr> <tr> <td>DRM_MT_H</td> <td>Siding drum motor (SDM) is turned high speed</td> </tr> <tr> <td>DRM_MT_M</td> <td>Siding drum motor (SDM) is turned middle speed</td> </tr> <tr> <td>DRM_MT_L</td> <td>Siding drum motor (SDM) is turned low speed</td> </tr> <tr> <td>EJECT_MT_H</td> <td>Eject motor (EJM) is turned on high speed</td> </tr> <tr> <td>EJECT_MT_M</td> <td>Eject motor (EJM) is turned on middle speed</td> </tr> <tr> <td>EJECT_MT_L</td> <td>Eject motor (EJM) is turned on low speed</td> </tr> <tr> <td>MTRAY_MT</td> <td>Main tray elevation motor (MTEM) is turned on</td> </tr> <tr> <td>JTRAY_MT</td> <td>Multi job tray elevation motor (MJTEM) is turned on</td> </tr> <tr> <td>SOL_A</td> <td>Feedshift solenoid A (FSSOLA) is turned on</td> </tr> <tr> <td>SOL_B</td> <td>Feedshift solenoid B (FSSOLB) is turned on</td> </tr> <tr> <td>SOL_C</td> <td>Feedshift solenoid C (FSSOLC) is turned on</td> </tr> <tr> <td>COLO_SOL</td> <td>Paper forwarding pulley solenoid (PFPSOL) is turned on</td> </tr> <tr> <td>LOCK_SOL</td> <td>Lock solenoid (LSOL) is turned on</td> </tr> <tr> <td>P_PUT_SOL</td> <td>Paper holder solenoid (PHSOL) is turned on</td> </tr> <tr> <td>EJECT_SOL</td> <td>Eject guide solenoid (EGSOL) is turned on</td> </tr> <tr> <td>PUNCH_MT</td> <td>Punch motor (PUNM) is turned on</td> </tr> <tr> <td>PUNCH_SOL</td> <td>Punch solenoid (PUNSOL) is turned on</td> </tr> </tbody> </table>	Display	Description	FINISHER	Motors and solenoids of document finisher	SADDLE	Motors and solenoids of centerfold unit	Display	Motors and solenoids	FD_IN_MT_H	Paper entry motor (PEM) is turned on high speed	FD_IN_MT_M	Paper entry motor (PEM) is turned on middle speed	FD_IN_MT_L	Paper entry motor (PEM) is turned on low speed	CNV_MT_H	Paper conveying motor (PCM) is turned on high speed	CNV_MT_M	Paper conveying motor (PCM) is turned on middle speed	CNV_MT_L	Paper conveying motor (PCM) is turned on low speed	UP_MT	Upper paper conveying belt motor (PCBM-U) is turned on	DOWN_MT	Lower paper conveying belt motor (PCBM-L) is turned on	LGR_TEST	Front/rear upper side registration guide motor (SRGM-FU/RU) test operation for 11" x 17" size	A3_TEST	Front/rear upper side registration guide motor (SRGM-FU/RU) test operation for A3 size	WDTH_MT_L	Lower side registration guide motor (SRGM-L) is turned on	SLAP_MT_INI	Movable guide motor (MGM) is turned on initial driving	SLAP_MT_MOV	Movable guide motor (MGM) is turned on	DRM_MT_H	Siding drum motor (SDM) is turned high speed	DRM_MT_M	Siding drum motor (SDM) is turned middle speed	DRM_MT_L	Siding drum motor (SDM) is turned low speed	EJECT_MT_H	Eject motor (EJM) is turned on high speed	EJECT_MT_M	Eject motor (EJM) is turned on middle speed	EJECT_MT_L	Eject motor (EJM) is turned on low speed	MTRAY_MT	Main tray elevation motor (MTEM) is turned on	JTRAY_MT	Multi job tray elevation motor (MJTEM) is turned on	SOL_A	Feedshift solenoid A (FSSOLA) is turned on	SOL_B	Feedshift solenoid B (FSSOLB) is turned on	SOL_C	Feedshift solenoid C (FSSOLC) is turned on	COLO_SOL	Paper forwarding pulley solenoid (PFPSOL) is turned on	LOCK_SOL	Lock solenoid (LSOL) is turned on	P_PUT_SOL	Paper holder solenoid (PHSOL) is turned on	EJECT_SOL	Eject guide solenoid (EGSOL) is turned on	PUNCH_MT	Punch motor (PUNM) is turned on	PUNCH_SOL	Punch solenoid (PUNSOL) is turned on
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U241	<p>Checking the operation of the switches of the finisher</p> <p>Description Displays the status of each switch of the document finisher.</p> <p>Purpose To check the operation of each switch of the document finisher.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Turn each switch ON manually. When a switch is detected to be in the ON position, the display for that switch will be highlighted. 3. Change the screen using the * or # keys. <table border="1" data-bbox="331 1339 1398 1989"> <thead> <tr> <th>Display</th> <th>Switches</th> </tr> </thead> <tbody> <tr> <td>FD_IN_SW</td> <td>Paper entry sensor (PES)</td> </tr> <tr> <td>EJT_SW</td> <td>Paper ejection sensor (PEJS)</td> </tr> <tr> <td>DRM_SW</td> <td>Sub tray paper ejection sensor (STPES)</td> </tr> <tr> <td>M_TRAY_FD_SW</td> <td>Intermediate tray paper conveying sensor (ITPCS)</td> </tr> <tr> <td>P_DET_U_SW</td> <td>Upper paper conveying belt home position sensor (PCBHPS-U)</td> </tr> <tr> <td>P_DET_D_SW</td> <td>Lower paper conveying belt home position sensor (PCBHPS-L)</td> </tr> <tr> <td>PCH_BOX_SW</td> <td>Punch waste box sensor (PWBS)</td> </tr> <tr> <td>SLAP_HP_SW</td> <td>Movable guide home position sensor (MGHPS)</td> </tr> <tr> <td>P_PUT_SW</td> <td>Paper holder detection sensor (PHDS)</td> </tr> <tr> <td>STP_FPIN_SW</td> <td>Front stapler empty sensor (STES-F)</td> </tr> <tr> <td>STP_RPIN_SW</td> <td>Rear stapler empty sensor (STES-R)</td> </tr> <tr> <td>STP_F_CT_SW</td> <td>Front stapler cartridge sensor (STCS-F)</td> </tr> <tr> <td>STP_R_CT_SW</td> <td>Rear stapler cartridge sensor (STCS-R)</td> </tr> <tr> <td>STP_F_HP_SW</td> <td>Front stapler home position sensor (STHPS-F)</td> </tr> <tr> <td>STP_R_HP_SW</td> <td>Rear stapler home position sensor (STHPS-R)</td> </tr> <tr> <td>CRT_F_HP_SW</td> <td>Front clincher home position sensor (CLNHPS-F)</td> </tr> </tbody> </table>	Display	Switches	FD_IN_SW	Paper entry sensor (PES)	EJT_SW	Paper ejection sensor (PEJS)	DRM_SW	Sub tray paper ejection sensor (STPES)	M_TRAY_FD_SW	Intermediate tray paper conveying sensor (ITPCS)	P_DET_U_SW	Upper paper conveying belt home position sensor (PCBHPS-U)	P_DET_D_SW	Lower paper conveying belt home position sensor (PCBHPS-L)	PCH_BOX_SW	Punch waste box sensor (PWBS)	SLAP_HP_SW	Movable guide home position sensor (MGHPS)	P_PUT_SW	Paper holder detection sensor (PHDS)	STP_FPIN_SW	Front stapler empty sensor (STES-F)	STP_RPIN_SW	Rear stapler empty sensor (STES-R)	STP_F_CT_SW	Front stapler cartridge sensor (STCS-F)	STP_R_CT_SW	Rear stapler cartridge sensor (STCS-R)	STP_F_HP_SW	Front stapler home position sensor (STHPS-F)	STP_R_HP_SW	Rear stapler home position sensor (STHPS-R)	CRT_F_HP_SW	Front clincher home position sensor (CLNHPS-F)
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The screen for selecting a maintenance item No. is displayed.</p>	Display	Switches	CRT_R_HP_SW	Rear clincher home position sensor (CLNHPS-R)	T_OPEN_SW	Upper cover switch (UCSW)	F_OPEN_SW	Front cover switch (FCSW)	JTRAY_DT_SW	Multi job tray position sensor (MJTPS)	JTRAY_P_SW1	Paper detection switch 1 (PDSW1)	JTRAY_P_SW2	Paper detection switch 2 (PDSW2)	JTRAY_P_SW3	Paper detection switch 3 (PDSW3)	JTRAY_P_SW4	Paper detection switch 4 (PDSW4)	JTRAY_P_SW5	Paper detection switch 5 (PDSW5)	JTRAY_UL_T_SW	Multi job tray upper limit detection sensor (MJTULDS)	JTRAY_P_SW	Multi job tray front/rear switches (MJTSW-F/MJTSW-R)	JTRAY_U_SW	Multi job tray paper upper surface detection light emitting/intercepting sensors (MJTPUSDLES/MJTPUSDLIS)	MTRAY_U_SW	Main tray paper upper surface detection light emitting/intercepting sensors (MTPUSDLES/MTPUSDLIS)	MTRAY_LM_SW	Main tray upper limit detection sensor (MTULDS)	1000_SW	Main tray load 1000 detection sensor (MTLDS-10)	1500_SW	Main tray load 1500 detection sensor (MTLDS-15)	JTRAY_LLT_SW	Multi job tray lower limit detection sensor (MJTLLDS)	3000_SW	Main tray load 3000 detection sensors (MTLDS-30)	MTRAY_LLT_SW	Main tray lower limit detection sensor (MTLLDS)	N_STP_HP_SW	-	N_STP_CT_SW	-	W_UF_HP_SW	Front upper side registration guide home position sensor (SRGHPS-FU)	W_UR_HP_SW	Rear upper side registration guide home position sensor (SRGHPS-RU)	W_L_HP_SW	Lower side registration guide home position sensor (SRGHPS-L)	UP_HP_SW	Upper paper sensor (PS-U)	DWN_HP_SW	Lower paper sensor (PS-L)	SDL_SET_SW	Centerfold unit set switch (CUSW)	SDL_DET_SW	Eject tray detection switch (ETDSW)	SDL_W_HP_SW	Side Registration guide home position sensor (SRGHPS)	SDL_S_HP_SW	Centering plate home position sensor (CPHPS)	SDL_B_HP_SW	Centerfold blade home position sensor (CBLHPS)	SDL_FD_SW	Centerfold unit paper entry sensor (CUPES)	SDL_P_SW	Eject tray paper detection switch (ETPDSW)	SDL_E_SW	Folded edge detection sensor (FEDS)	SDL_T_SW	Inside tray detection sensor (ITDS)
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<p>U248</p>	<p>Setting the paper ejection device</p> <p>Description Adjusts the paper stop timing in the punch mode, the booklet stapling position, and the center folding position for the machine with the document finisher installed. Also, displays and clears the punch-hole scrap count.</p> <p>Purpose Adjustment or registration stop timing in punch mode Adjust if skewed paper conveying occurs or if the copy paper is Z-folded in punch mode. Adjustment of paper stop timing in the punch mode To adjust this item when the position of a punch hole is different from the specified one. Punch-hole scrap count display (clearing) Used to manually clear the punch-hole scrap count if a message requiring collection of punch-hole scrap is shown on the touch panel after collection. Adjustment of booklet stapling position Adjusts the booklet stapling position in the stitching mode if the position is not proper. Adjustment of center folding position Adjusts the center folding position in the stitching mode if the position is not proper. Setting the punch limit Sets the maximum number of punches possible in order to be informed of the timing for disposing of waste punch. Decrease the value when using thick paper frequently.</p> <p>Start Press the start key. The screen for selecting an item is displayed.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Display</th> <th style="text-align: left;">Description</th> </tr> </thead> <tbody> <tr> <td>PUNCH REGIST ADJUST</td> <td>Adjustment of registration stop timing in punch mode</td> </tr> <tr> <td>PUNCH POSITION ADJUST</td> <td>Adjustment of the paper stop timing in punch mode</td> </tr> <tr> <td>PUNCH COUNT</td> <td>Punch-hole scrap count display</td> </tr> <tr> <td>SADDLE STAPLE ADJUST</td> <td>Booklet stapling position adjustment</td> </tr> <tr> <td>SADDLE ADJUST</td> <td>Adjustment of center folding position</td> </tr> <tr> <td>PUNCH PRESET</td> <td>Punch limit</td> </tr> </tbody> </table> <p>Setting the registration stop timing in punch mode</p> <ol style="list-style-type: none"> Select PUNCH REGIST ADJUST on the screen for selecting an item. Change the value using the cursor up/down keys. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Description</th> <th style="text-align: left;">Setting range</th> <th style="text-align: left;">Default setting</th> </tr> </thead> <tbody> <tr> <td>Adjustment of registration stop timing in punch mode</td> <td>-5 to 5</td> <td>0</td> </tr> </tbody> </table> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Sample 1</p> </div> <div style="text-align: center;">  <p>Sample 2</p> </div> </div> <p>If skewed paper conveying occurs (sample 1), increase the preset value. If the copy paper is Z-folded (sample 2), decrease the preset value.</p> <ol style="list-style-type: none"> Press the start key. The value is set. To return to the screen for selecting an item, press the stop/clear key. 	Display	Description	PUNCH REGIST ADJUST	Adjustment of registration stop timing in punch mode	PUNCH POSITION ADJUST	Adjustment of the paper stop timing in punch mode	PUNCH COUNT	Punch-hole scrap count display	SADDLE STAPLE ADJUST	Booklet stapling position adjustment	SADDLE ADJUST	Adjustment of center folding position	PUNCH PRESET	Punch limit	Description	Setting range	Default setting	Adjustment of registration stop timing in punch mode	-5 to 5	0
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<p>U248</p>	<p>Setting the paper stop timing</p> <ol style="list-style-type: none"> 1. Select PUNCH POSITION ADJUST on the screen for selecting an item. 2. Change the value using the cursor up/down keys. <table border="1" data-bbox="331 360 1398 479"> <thead> <tr> <th>Description</th> <th>Setting range</th> <th>Default setting</th> <th>Change in value per step</th> </tr> </thead> <tbody> <tr> <td>Adjustment of the paper stop timing in punch mode</td> <td>-10 to 10</td> <td>0</td> <td>0.24 mm</td> </tr> </tbody> </table> <div data-bbox="438 519 1264 779" style="text-align: center;">  <p>Preset value A: 5.5±2mm (inch) 9.5±2mm (metric)</p> </div> <p>If the distance of the position of a punch hole is smaller than the specified value A, increase the preset value. If the distance is larger than the value A, decrease the preset value. Changing the value by 1 changes by 1.0 mm.</p> <ol style="list-style-type: none"> 3. Press the start key. The value is set. 4. To return to the screen for selecting an item, press the stop/clear key. <p>Displaying the punch-hole scrap count</p> <ol style="list-style-type: none"> 1. Select PUNCH COUNT on the screen for selecting an item. 2. Change the value using the cursor up/down keys. Press the reset key to clear the count. <table border="1" data-bbox="331 1077 1398 1196"> <thead> <tr> <th>Description</th> <th>Setting range</th> <th>Default setting</th> </tr> </thead> <tbody> <tr> <td>Punch-hole scrap count (current number of punching times)</td> <td>0 to 9999999</td> <td>-</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 3. Press the start key. The value is set. 4. To return to the screen for selecting an item, press the stop/clear key. <p>Setting the booklet stapling position</p> <ol style="list-style-type: none"> 1. Select SADDLE STAPLE ADJUST on the screen for selecting an item. 2. Select the size to be set. 3. Change the setting using the cursor up/down keys. <table border="1" data-bbox="331 1395 1398 1693"> <thead> <tr> <th>Display</th> <th>Description</th> <th>Setting range</th> <th>Default setting</th> <th>Change in value per step</th> </tr> </thead> <tbody> <tr> <td>A4R/8.5 x 11</td> <td>Adjustment of booklet stapling position for A4R/8.5 x 11 size</td> <td>-10 to 10</td> <td>0</td> <td>0.55 mm</td> </tr> <tr> <td>B4R/8.5 x 14</td> <td>Adjustment of booklet stapling position for B4R/8.5 x 14 size</td> <td>-10 to 10</td> <td>0</td> <td>0.55 mm</td> </tr> <tr> <td>A3R/11 x 17</td> <td>Adjustment of booklet stapling position for A3R/11 x 17 size</td> <td>-10 to 10</td> <td>0</td> <td>0.55 mm</td> </tr> </tbody> </table> <p>If the staple position is displaced toward the ejection side (copy sample 1), decrease the preset value. If the staple position is displaced toward the feeding side (copy sample 2), increase the preset value.</p>	Description	Setting range	Default setting	Change in value per step	Adjustment of the paper stop timing in punch mode	-10 to 10	0	0.24 mm	Description	Setting range	Default setting	Punch-hole scrap count (current number of punching times)	0 to 9999999	-	Display	Description	Setting range	Default setting	Change in value per step	A4R/8.5 x 11	Adjustment of booklet stapling position for A4R/8.5 x 11 size	-10 to 10	0	0.55 mm	B4R/8.5 x 14	Adjustment of booklet stapling position for B4R/8.5 x 14 size	-10 to 10	0	0.55 mm	A3R/11 x 17	Adjustment of booklet stapling position for A3R/11 x 17 size	-10 to 10	0	0.55 mm
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A3R/11 x 17	Adjustment of booklet stapling position for A3R/11 x 17 size	-10 to 10	0	0.55 mm																															

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<p>U248</p>	<div style="text-align: center;">  </div> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <div style="text-align: center;">  <p>Copy sample 1</p> </div> <div style="text-align: center;">  <p>Copy sample 2</p> </div> </div> <p>4. Press the start key. The value is set. 5. To return to the screen for selecting an item, press the stop/clear key.</p> <p>Setting the center folding position</p> <ol style="list-style-type: none"> 1. Select SADDLE ADJUST on the screen for selecting an item. 2. Select the size to be set. 3. Change the setting using the cursor up/down keys. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Display</th> <th>Description</th> <th>Setting range</th> <th>Default setting</th> <th>Change in value</th> </tr> </thead> <tbody> <tr> <td>A4R/8.5 x 11</td> <td>Adjustment of center folding position for A4R/8.5 x 11 size</td> <td>-10 to 10</td> <td>0</td> <td>0.55 mm</td> </tr> <tr> <td>B4R/8.5 x 14</td> <td>Adjustment of center folding position for B4R/8.5 x 14 size</td> <td>-10 to 10</td> <td>0</td> <td>0.55 mm</td> </tr> <tr> <td>A3R/11 x 17</td> <td>Adjustment of center folding position for A3R/11 x 17 size</td> <td>-10 to 10</td> <td>0</td> <td>0.55 mm</td> </tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Left stapling</th> <th>Right stapling</th> <th>Adjustment method</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;"></td> <td style="text-align: center;"></td> <td style="text-align: center;">Proper</td> </tr> <tr> <td style="text-align: center;">  Upper side is longer. </td> <td style="text-align: center;">  Lower side is longer. </td> <td style="text-align: center;">Increase the preset value.</td> </tr> <tr> <td style="text-align: center;">  Lower side is longer. </td> <td style="text-align: center;">  Upper side is longer. </td> <td style="text-align: center;">Decrease the preset value.</td> </tr> </tbody> </table> <p>4. Press the start key. The value is set. 5. To return to the screen for selecting an item, press the stop/clear key.</p>	Display	Description	Setting range	Default setting	Change in value	A4R/8.5 x 11	Adjustment of center folding position for A4R/8.5 x 11 size	-10 to 10	0	0.55 mm	B4R/8.5 x 14	Adjustment of center folding position for B4R/8.5 x 14 size	-10 to 10	0	0.55 mm	A3R/11 x 17	Adjustment of center folding position for A3R/11 x 17 size	-10 to 10	0	0.55 mm	Left stapling	Right stapling	Adjustment method			Proper	 Upper side is longer.	 Lower side is longer.	Increase the preset value.	 Lower side is longer.	 Upper side is longer.	Decrease the preset value.
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A3R/11 x 17	Adjustment of center folding position for A3R/11 x 17 size	-10 to 10	0	0.55 mm																													
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 Lower side is longer.	 Upper side is longer.	Decrease the preset value.																															

Maintenance item No.	Description						
<p>U248</p>	<p>Setting the punch limit</p> <ol style="list-style-type: none"> 1. Select PUNCH PRESET on the screen for selecting an item. 2. Change the value using the * or # keys. <table border="1" data-bbox="331 360 1398 443"> <thead> <tr> <th data-bbox="331 360 932 405">Description</th> <th data-bbox="932 360 1169 405">Setting range</th> <th data-bbox="1169 360 1398 405">Default setting</th> </tr> </thead> <tbody> <tr> <td data-bbox="331 405 932 443">Punch limit (max. number of punches)</td> <td data-bbox="932 405 1169 443">0 to 999000</td> <td data-bbox="1169 405 1398 443">100000</td> </tr> </tbody> </table> <p>The punch limit can be set to any value in increments of 1000.</p> <ol style="list-style-type: none"> 3. Press the start key. The value is set. 4. To return to the screen for selecting an item, press the stop/clear key. <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>	Description	Setting range	Default setting	Punch limit (max. number of punches)	0 to 999000	100000
Description	Setting range	Default setting					
Punch limit (max. number of punches)	0 to 999000	100000					
<p>U330</p>	<p>Setting the number of sheets to enter stacking mode during sort operation</p> <p>Description Sets the number of copies at which copy ejection will be switched from the optional document finisher's sub tray to its main tray when sorting is turned ON in the setting for the output mode under user simulation.</p> <p>Purpose To be set as required according to the number of copies the user makes.</p> <p>Method Press the start key. The current setting is displayed.</p> <p>Setting</p> <ol style="list-style-type: none"> 1. Change the setting using the cursor up/down keys. 2. Press the start key. The value is set, and the screen for selecting a maintenance item No. is displayed. Initial setting: 201 (sheets) <p>Completion To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.</p>						

Maintenance item No.	Description																		
<p>U905</p>	<p>Checking/clearing counts by optional devices</p> <p>Description Displays or clears the counts of the DP or optional finisher.</p> <p>Purpose To check the use of the DP and optional finisher. Also to clear the counts after replacing consumable parts.</p> <p>Method</p> <ol style="list-style-type: none"> 1. Press the start key. The screen for selecting an item is displayed. 2. Select the device, the count of which is to be checked. The count of the selected device is displayed. <p>DP</p> <table border="1" data-bbox="331 533 1398 672"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>ADP</td> <td>Number of single-sided originals that has passed through the DP</td> </tr> <tr> <td>RADP</td> <td>Number of double-sided originals that has passed through the DP</td> </tr> </tbody> </table> <p>Finisher</p> <table border="1" data-bbox="331 745 1398 1019"> <thead> <tr> <th>Display</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>CP CNT</td> <td>Number of copies that has passed</td> </tr> <tr> <td>STAPLE</td> <td>Frequency the stapler has been activated</td> </tr> <tr> <td>PUNCH</td> <td>Frequency the punch has been activated</td> </tr> <tr> <td>STACK</td> <td>Frequency the stacker has been activated</td> </tr> <tr> <td>SADDLE</td> <td>Frequency the center holding has been activated</td> </tr> </tbody> </table> <p>Clearing</p> <ol style="list-style-type: none"> 1. Select the item to be cleared. The selected item is displayed in reverse. Select the counts for all, press the reset key. 2. Press the start key. The count is cleared. To return to the screen for selecting an item, press the stop/clear key. <p>Completion Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.</p>	Display	Description	ADP	Number of single-sided originals that has passed through the DP	RADP	Number of double-sided originals that has passed through the DP	Display	Description	CP CNT	Number of copies that has passed	STAPLE	Frequency the stapler has been activated	PUNCH	Frequency the punch has been activated	STACK	Frequency the stacker has been activated	SADDLE	Frequency the center holding has been activated
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1-4-1 Paper misfeed detection

(1) Paper misfeed indication

When a paper jam occurs, the machine immediately stops copying and the operation panel shows a paper misfeed message.

Paper jam counts sorted by the detecting conditions can be checked by maintenance item U903.

To remove paper, open the front cover or upper cover.

To reset the paper misfeed detection, open and close the front cover or upper cover to turn the front cover switch or upper cover switch off and on, respectively.

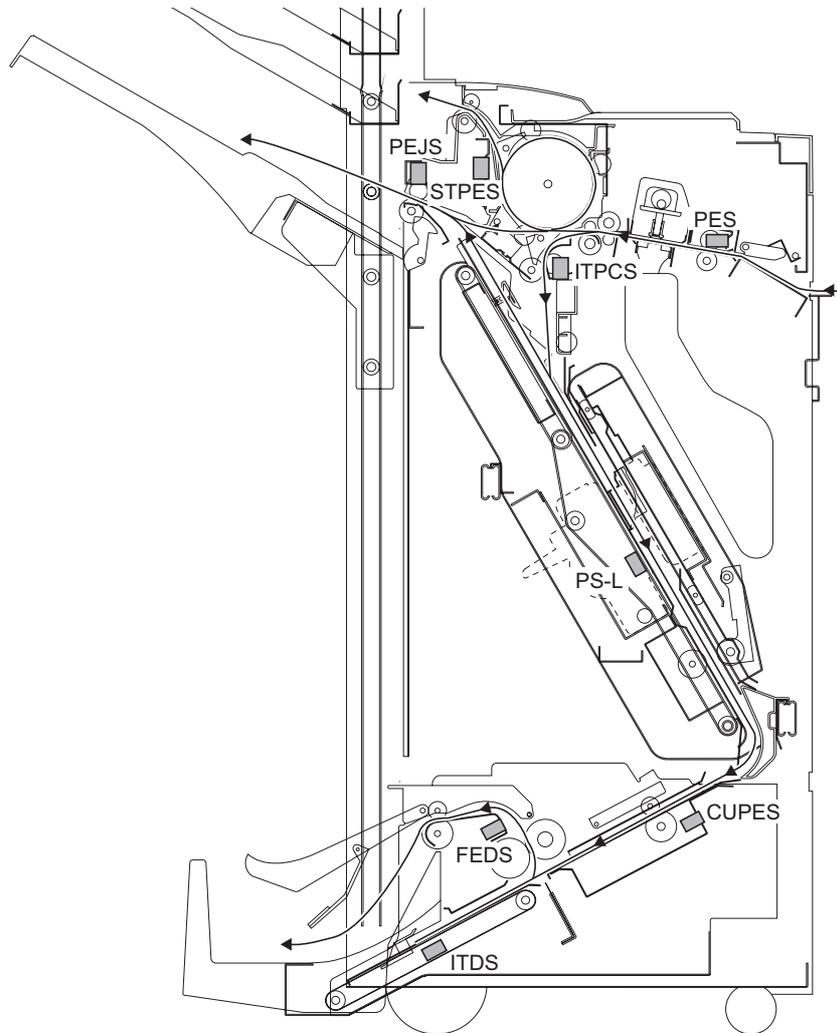


Figure 1-4-1

(2) Paper misfeed detection conditions

Section	Jam code	Description	Conditions
Document finisher	80	Jam between the finisher and copier	Paper ejection is not output from the copier to the document finisher within 15 s of the face-up exit sensor (FUES) turning off.
	81	Paper jam during paper insertion to the finisher	When the paper entry sensor (PES) does not turn on within 1950 ms of the face-up exit sensor (FUES) of the copier turning off.
	82	Paper jam during paper insertion to the finisher and paper ejection to the sub tray	When the sub tray paper ejection sensor (STPES) does not turn on within 2000 ms of the paper entry sensor (PES) turning on. When the paper entry sensor (PES) does not turn off within 1500 ms of its turning on.
	83	Paper jam at the siding drum	When the sub tray paper ejection sensor (STPES) does not turn off within 1000 ms of its turning on.
	84	Paper jam during paper insertion to the intermediate tray	When the intermediate tray paper conveying sensor (ITPCS) does not turn on within 1200 ms of the paper entry sensor (PES) turning on. When the paper entry sensor (PES) does not turn off within 1500 ms of its turning on. When the intermediate tray paper conveying sensor (ITPCS) does not turn on within 2000 ms of the sub tray paper ejection sensor (STPES) turning on.
	85	Paper jam during ejection of stack of paper	When the intermediate tray paper conveying sensor (ITPCS) does not turn off within 1000 ms of its turning on.
	86	Jam in eject section of main tray	When straight ejection is performed, the paper ejection sensor (PEJS) is not turned on even if 2600 ms elapse after the paper entry sensor (PES) is turned on.
	87	Jam in eject section (middle tray) of main tray	The paper ejection sensor (PEJS) is not turned on even if 2600 ms elapse after bundled ejection from the intermediate tray starts.
	88	Jam in eject section of main tray	When the paper ejection sensor (PEJS) does not turn off within 2600 ms of its turning on.
	89	Jam in cover open	During operation, any of safety switches (upper cover switch (UCSW), front cover switch (FCSW), and centerfold unit set switch (CUSSW) is turned off.
	90	Jam in stapler	The front/rear stapler home position sensor (STHPS-F/R) or front/rear clincher home position sensor (CLNHPS-F/R) cannot detect normally the home position.
	91	Jam in saddle paper entry section	The lower paper sensor (PS-L) is not turned on even if 3000 ms elapse after bundled ejection to the centerfold unit starts.
	92	Jam in saddle paper entry section	The centerfold unit paper entry sensor (CUPES) is not turned on even if 2000 ms elapse after sorter ejection notification (serial communication data from the finisher main body to the centerfold unit).
	93	Jam in saddle tray section	When the inside tray detection sensor (ITDS) does not turn on within 5000 ms of the centerfold unit paper entry sensor (CUPES) turning on.
	94	Jam in saddle eject section	The folded edge detection sensor (FEDS) is not turned on even if 5000 ms elapse after centerfold operation starts.
95	Jam in saddle eject section	When the folded edge detection sensor (FEDS) does not turn off within 6000 ms of its turning on.	

(3) Paper misfeeds

Problem	Causes/check procedures	Corrective measures
(1) Paper jam during paper insertion to the finisher Jam code 81	The paper entry roller is dirty with paper powder.	Check and, if it is dirty, clean it.
	The paper entry roller is deformed or worn.	Check and, if it is deformed or worn, fix or replace it.
	Defective paper entry sensor.	Run maintenance item U241 and turn the paper entry sensor on and off manually. Replace the paper entry sensor if indication of the corresponding sensor on the touch panel is not displayed in reverse.
(2) Paper jam during paper insertion to the finisher and paper ejection to the sub tray Jam code 82	The sub feed roller is dirty with paper powder.	Check and, if it is dirty, clean it.
	The sub feed roller is deformed or worn.	Check and, if it is deformed or worn, fix or replace it.
	Defective paper entry sensor.	Run maintenance item U241 and turn the paper entry sensor on and off manually. Replace the paper entry sensor if indication of the corresponding sensor on the touch panel is not displayed in reverse.
	Defective sub tray paper ejection sensor.	Run maintenance item U241 and turn the sub tray paper ejection sensor on and off manually. Replace the sub tray paper ejection sensor if indication of the corresponding sensor on the touch panel is not displayed in reverse.
(3) Paper jam at the siding drum Jam code 83	The siding drum is dirty with paper powder.	Check and, if it is dirty, clean it.
	The siding drum is deformed or worn.	Check and, if it is deformed or worn, fix or replace it.
	Defective intermediate tray paper conveying sensor.	Run maintenance item U241 and turn the intermediate tray paper conveying sensor on and off manually. Replace the intermediate tray paper conveying sensor if indication of the corresponding sensor on the touch panel is not displayed in reverse.
(4) Paper jam during paper insertion to the intermediate tray Jam code 84	The intermediate tray paper entry roller is dirty with paper powder.	Check and, if it is dirty, clean it.
	The intermediate tray paper entry roller is deformed or worn.	Check and, if it is deformed or worn, fix or replace it.
	Defective intermediate tray paper conveying sensor.	Run maintenance item U241 and turn the intermediate tray paper conveying sensor on and off manually. Replace the intermediate tray paper conveying sensor if indication of the corresponding sensor on the touch panel is not displayed in reverse.
(5) Paper jam during ejection of stack of paper Jam code 85	The eject roller is dirty with paper powder.	Check and, if it is dirty, clean it.
	The eject roller is deformed or worn.	Check and, if it is deformed or worn, fix or replace it.
	Defective paper eject sensor.	Run maintenance item U241 and turn the paper eject sensor on and off manually. Replace the paper eject sensor if indication of the corresponding sensor on the touch panel is not displayed in reverse.

Problem	Causes/check procedures	Corrective measures
(6) Jam in eject section of main tray Jam code 86	The eject roller is dirty with paper powder.	Check and, if it is dirty, clean it.
	The eject roller is deformed or worn.	Check and, if it is deformed or worn, fix or replace it.
	Defective paper eject sensor.	Run maintenance item U241 and turn the paper eject sensor on and off manually. Replace the paper eject sensor if indication of the corresponding sensor on the touch panel is not displayed in reverse.
(7) Jam in eject section (intermediate tray) of main tray Jam code 87	The eject roller is dirty with paper powder.	Check and, if it is dirty, clean it.
	The eject roller is deformed or worn.	Check and, if it is deformed or worn, fix or replace it.
	Defective paper eject sensor.	Run maintenance item U241 and turn the paper eject sensor on and off manually. Replace the paper eject sensor if indication of the corresponding sensor on the touch panel is not displayed in reverse.
(8) Jam in eject section of main tray Jam code 88	The eject roller is dirty with paper powder.	Check and, if it is dirty, clean it.
	The eject roller is deformed or worn.	Check and, if it is deformed or worn, fix or replace it.
	Defective paper eject sensor.	Run maintenance item U241 and turn the paper eject sensor on and off manually. Replace the paper eject sensor if indication of the corresponding sensor on the touch panel is not displayed in reverse.
(9) Jam in cover open Jam code 89	Defective upper cover switch.	If the voltage at CN3-3 on the finisher main PWB remains the same when the upper cover switch is turned on and off, replace the switch.
	Defective front cover switch.	If the voltage at CN3-4 on the finisher main PWB remains the same when the front cover switch is turned on and off, replace the switch.
	Defective centerfold unit set switch.	If the voltage at CN14-2 on the finisher main PWB remains the same when the centerfold unit set switch is turned on and off, replace the switch.
(10) Jam in stapler Jam code 90	Defective front/rear stapler home position sensor.	If the voltage at CN6-14B and CN6-10B on the finisher main PWB remain the same when the front/rear stapler home position sensor is turned on and off, replace the front/rear stapler driver.
	Defective front/rear clincher home position sensor.	If the voltage at CN6-22A and CN6-23A on the finisher main PWB remain the same when the front/rear clincher home position sensor is turned on and off, replace the front/rear stapler clincher.
(11) Jam in saddle paper entry section Jam code 91	The intermediate tray upper or lower sliding plate is deformed or worn.	Check and, if it is deformed or worn, fix or replace it.
	Defective lower paper sensor.	Run maintenance item U241 and turn the lower paper sensor on and off manually. Replace the lower paper sensor if indication of the corresponding sensor on the touch panel is not displayed in reverse.

Problem	Causes/check procedures	Corrective measures
(12) Jam in saddle paper entry section Jam code 92	The paper forwarding pulley, upper or lower forwarding roller is dirty with paper powder.	Check and, if it is dirty, clean it.
	The paper forwarding pulley, upper or lower forwarding roller is deformed or worn.	Check and, if it is deformed or worn, fix or replace it.
	Defective centerfold unit paper entry sensor.	Run maintenance item U241 and turn the centerfold unit paper entry sensor on and off manually. Replace the centerfold unit paper entry sensor if indication of the corresponding sensor on the touch panel is not displayed in reverse.
(13) Jam in saddle tray section Jam code 93	The paper entry roller is dirty with paper powder.	Check and, if it is dirty, clean it.
	The paper entry roller is deformed or worn.	Check and, if it is deformed or worn, fix or replace it.
	Defective inside tray detection sensor.	Run maintenance item U241 and turn the inside tray detection sensor on and off manually. Replace the inside tray detection sensor if indication of the corresponding sensor on the touch panel is not displayed in reverse.
(14) Jam in saddle eject section Jam code 94	The right or left centerfold roller is dirty with paper powder.	Check and, if it is dirty, clean it.
	The right or left centerfold roller is deformed or worn.	Check and, if it is deformed or worn, fix or replace it.
	Defective folded edge detection sensor.	Run maintenance item U241 and turn the folded edge detection sensor on and off manually. Replace the folded edge detection sensor if indication of the corresponding sensor on the touch panel is not displayed in reverse.
(15) Jam in saddle eject section Jam code 95	The eject roller is dirty with paper powder.	Check and, if it is dirty, clean it.
	The eject roller is deformed or worn.	Check and, if it is deformed or worn, fix or replace it.
	Defective folded edge detection sensor.	Run maintenance item U241 and turn the folded edge detection sensor on and off manually. Replace the folded edge detection sensor if indication of the corresponding sensor on the touch panel is not displayed in reverse.

1-4-2 Self-diagnosis

(1) Self-diagnostic function

This unit is equipped with a self-diagnostic function. When a problem is detected, copying is disabled and the problem displayed as a code consisting of C followed by a number between 8010 and 8330, indicating the nature of the problem. A message is also displayed requesting the user to call for service.

After removing the problem, the self-diagnostic function can be reset by turning front cover/upper cover switch off and back on.

(2) Self diagnostic codes

*The option equipment.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C8010	Paper conveying motor problem <ul style="list-style-type: none"> The LOCK signal of the paper conveying motor is detected for more than 500 ms while the paper conveying motor is operating. However, the first 1 s after the paper conveying motor is turned on is excluded from detection. 	Loose connection of the paper conveying motor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective paper conveying motor.	Replace the paper conveying motor and check for correct operation.
		Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.
C8020	Punch motor* problem <ul style="list-style-type: none"> The LOCK signal of the punch motor is detected for more than 500 ms while the punch motor is operating. However, the first 1 s after the punch motor is turned on is excluded from detection. 	Loose connection of the punch motor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective punch motor.	Replace the punch motor and check for correct operation.
		Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.
C8030	Upper paper conveying belt problem <ul style="list-style-type: none"> During initialization, the intermediate tray upper sliding plate is not detected in the home position within 3 s after the belt returns to the home position. JAM87 is indicated the first time this problem occurs. If the problem reoccurs after initialization when the front cover is opened and closed, the problem is in the upper paper conveying belt. When the intermediate tray upper sliding plate is operated from the home position, the upper paper conveying belt home position sensor does not turn off within 1 s. 	Phase shift of the upper paper conveying belt.	Correct the phase of the upper paper conveying belt and check for correct operation.
		Malfunction of the upper paper conveying belt motor.	Replace the upper paper conveying belt motor and check for correct operation.
		Malfunction of the upper paper conveying belt home position sensor.	Replace the upper paper conveying belt home position sensor and check for correct operation.
		Loose connection of the upper paper conveying belt home position sensor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Incorrect insertion of the intermediate tray.	Check whether the intermediate tray catches are damaged.
		Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C8040	<p>Lower paper conveying belt problem</p> <ul style="list-style-type: none"> • During initialization, the intermediate tray lower sliding plate is not detected in the home position within 3 s after the belt returns to the home position. JAM87 is indicated the first time this problem occurs. If the problem reoccurs after initialization when the front cover is opened and closed, the problem is in the lower paper conveying belt. • When the intermediate tray lower sliding plate is operated from the home position, the lower paper conveying belt home position sensor does not turn off within 1 s. 	Phase shift of the lower paper conveying belt.	Correct the phase of the lower paper conveying belt and check for correct operation.
		Malfunction of the lower paper conveying belt motor.	Replace the lower paper conveying belt motor and check for correct operation.
		Malfunction of the lower paper conveying belt home position sensor.	Replace the lower paper conveying belt home position sensor and check for correct operation.
		Loose connection of the lower paper conveying belt home position sensor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Incorrect insertion of the intermediate tray.	Check whether the intermediate tray catches are damaged.
		Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.
C8140	<p>Main tray problem</p> <ul style="list-style-type: none"> • When the main tray is not detected by the main tray upper limit detection sensor or the main tray load detection sensor within 20 s from the moment it starts ascending. • During main tray descent, the main tray upper limit detection sensor or the main tray load detection sensor does not turn off within 500 ms after it turns on. • During main tray ascent, the main tray upper limit detection sensor or the main tray load detection sensor stays on for more than 2 s. 	Loose connection of the main tray elevation motor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Malfunction of the main tray elevation motor.	Replace the main tray elevation motor and check for correct operation.
		Malfunction of the main tray upper limit detection sensor.	Replace the main tray upper limit detection sensor and check for correct operation.
		Loose connection of the main tray upper limit detection sensor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Malfunction of the main tray load detection sensor.	Replace the main tray load detection sensor and check for correct operation.
		Loose connection of the main tray load detection sensor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C8150	<p>Multi job tray* problem</p> <ul style="list-style-type: none"> When the multi job tray is not detected by the multi job tray upper limit detection sensor within 15 s from the moment it starts ascending. During multi job tray descent, the multi job tray upper limit detection sensor does not turn off within 500 ms after it turns on. 	Loose connection of the multi job tray elevation motor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Malfunction of the multi job tray elevation motor.	Replace the multi job tray elevation motor and check for correct operation.
		Malfunction of the multi job tray upper limit detection sensor.	Replace the multi job tray upper limit detection sensor and check for correct operation.
		Loose connection of the multi job tray upper limit detection sensor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.
C8170	<p>Front upper side registration guide problem</p> <ul style="list-style-type: none"> During initialization, the front upper side registration guide is not detected in the home position within 1.5 s after the guide returns to the home position. JAM87 is indicated the first time this problem occurs. If the problem occurs after initialization when the front cover is opened and closed, the problem is in the front upper side registration guide. When the front upper side registration guide is operated from the home position, the front upper side registration home position sensor does not turn off within 500 ms. 	Loose connection of the front upper side registration guide motor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Malfunction of the front upper side registration guide motor.	Replace the front upper side registration guide motor and check for correct operation.
		Malfunction of the front upper side registration guide home position sensor.	Replace the front upper side registration guide home position sensor and check for correct operation.
		Loose connection of the front upper side registration guide home position sensor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C8180	Rear upper side registration guide problem <ul style="list-style-type: none"> During initialization, the rear upper side registration guide is not detected in the home position within 1.5 s after the guide returns to the home position. JAM87 is indicated the first time this problem occurs. If the problem occurs after initialization when the front cover is opened and closed, the problem is in the rear upper side registration guide. When the rear upper side registration guide is operated from the home position, the rear upper side registration home position sensor does not turn off within 500 ms. 	Loose connection of the rear upper side registration guide motor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Malfuction of the rear upper side registration guide motor.	Replace the rear upper side registration guide motor and check for correct operation.
		Malfuction of the rear upper side registration guide home position sensor.	Replace the rear upper side registration guide home position sensor and check for correct operation.
		Loose connection of the rear upper side registration guide home position sensor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.
C8190	Lower side registration guide problem <ul style="list-style-type: none"> During initialization, the front/rear lower side registration guides are not detected in the home position within 1.5 s after the guide returns to the home position. JAM87 is indicated the first time this problem occurs. If the problem occurs after initialization when the front cover is opened and closed, the problem is in the lower side registration guide. When the lower side registration guide is operated from the home position, the lower side registration home position sensor does not turn off within 500 ms. 	Loose connection of the lower side registration guide motor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Malfuction of the lower side registration guide motor.	Replace the lower side registration guide motor and check for correct operation.
		Malfuction of the lower side registration guide home position sensor.	Replace the lower side registration guide home position sensor and check for correct operation.
		Loose connection of the lower side registration guide home position sensor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C8210	<p>Front stapler problem</p> <ul style="list-style-type: none"> During initialization, the front stapler is not detected in the home position within 500 ms after the front stapler returns to the home position. JAM90 is indicated the first time this problem occurs. If the problem occurs after initialization when the front cover is opened and closed, the problem is in the front stapler. When the front stapler is operated from the home position, the front stapler home position sensor does not turn off within 500 ms. 	Loose connection of the front stapler motor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Malfunction of the front stapler motor.	Replace the front stapler motor and check for correct operation.
		Malfunction of the front stapler home position sensor.	Replace the front stapler home position sensor and check for correct operation.
		Loose connection of the front stapler home position sensor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.
C8220	<p>Front clincher problem</p> <ul style="list-style-type: none"> During initialization, the front clincher is not detected in the home position within 500 ms after the front clincher returns to the home position. JAM90 is indicated the first time this problem occurs. If the problem occurs after initialization when the front cover is opened and closed, the problem is in the front clincher. When the front clincher is operated from the home position, the front clincher home position sensor does not turn off within 500 ms. 	Loose connection of the front clincher motor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Malfunction of the front clincher motor.	Replace the front clincher motor and check for correct operation.
		Malfunction of the front clincher home position sensor.	Replace the front clincher home position sensor and check for correct operation.
		Loose connection of the front clincher home position sensor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.
C8230	<p>Rear stapler problem</p> <ul style="list-style-type: none"> During initialization, the rear stapler is not detected in the home position within 500 ms after the rear stapler returns to the home position. JAM90 is indicated the first time this problem occurs. If the problem occurs after initialization when the front cover is opened and closed, the problem is in the rear stapler. When the rear stapler is operated from the home position, the rear stapler home position sensor does not turn off within 500 ms. 	Loose connection of the rear stapler motor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Malfunction of the rear stapler motor.	Replace the rear stapler motor and check for correct operation.
		Malfunction of the rear stapler home position sensor.	Replace the rear stapler home position sensor and check for correct operation.
		Loose connection of the rear stapler home position sensor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C8240	Rear clincher problem <ul style="list-style-type: none"> During initialization, the rear clincher is not detected in the home position within 500 ms after the rear clincher returns to the home position. JAM90 is indicated the first time this problem occurs. If the problem occurs after initialization when the front cover is opened and closed, the problem is in the rear clincher. When the rear clincher is operated from the home position, the rear clincher home position sensor does not turn off within 500 ms. 	Loose connection of the rear clincher motor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Malfunction of the rear clincher motor.	Replace the rear clincher motor and check for correct operation.
		Malfunction of the rear clincher home position sensor.	Replace the rear clincher home position sensor and check for correct operation.
		Loose connection of the rear clincher home position sensor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.
C8300	Centerfold unit* communication problem <ul style="list-style-type: none"> Communication with the centerfold unit is not possible although the connection is detected. 	Loose connection of the centerfold unit set switch connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective centerfold unit set switch.	Replace the centerfold unit set switch and check for correct operation.
		Defective centerfold unit main PWB.	Replace the centerfold unit main PWB and check for correct operation.
		Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.
C8310	Centerfold unit* side registration guide problem <ul style="list-style-type: none"> During initialization, the front/rear side registration guides are not detected in the home position within 600 ms after the guide returns to the home position. When the side registration guide is operated from the home position, the side registration guide home position sensor does not turn off within 100 ms. 	Loose connection of the side registration guide motor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Malfunction of the side registration guide motor.	Replace the side registration guide motor and check for correct operation.
		Malfunction of the side registration guide home position sensor.	Replace the side registration guide home position sensor and check for correct operation.
		Loose connection of the side registration guide home position sensor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective centerfold unit main PWB.	Replace the centerfold unit main PWB and check for correct operation.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C8320	Centerfold unit centering plate problem <ul style="list-style-type: none"> During initialization, the centering plate is not detected in the home position when the centering plate returns to the home position. 	Loose connection of the centering plate motor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Malfunction of the centering plate motor.	Replace the centering plate motor and check for correct operation.
		Malfunction of the centering plate home position sensor.	Replace the centering plate home position sensor and check for correct operation.
		Loose connection of the centering plate home position sensor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective centerfold unit main PWB.	Replace the centerfold unit main PWB and check for correct operation.
C8330	Centerfold blade* problem <ul style="list-style-type: none"> During initialization, the centerfold blade is not detected in the home position within a specified period of time. 	Loose connection of the centerfold blade motor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Malfunction of the centerfold blade motor.	Replace the centerfold blade motor and check for correct operation.
		Malfunction of the centerfold blade home position sensor.	Replace the centerfold blade home position sensor and check for correct operation.
		Loose connection of the centerfold blade home position sensor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective centerfold unit main PWB.	Replace the centerfold unit main PWB and check for correct operation.

1-4-3 Electric problems

Finisher

Problem	Causes	Check procedures/corrective measures
(1) The paper conveying motor does not operate.	Poor contact in the paper conveying motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken paper conveying motor gear.	Check visually and replace the paper conveying motor gear if necessary.
	Defective paper conveying motor.	Run maintenance item U240 and check if the paper conveying motor operates when YC14-3 on the finisher main PWB goes low. If not, replace the paper conveying motor.
	Defective finisher main PWB.	Run maintenance item U240 and check if YC14-3 on the finisher main PWB goes low. If not, replace the finisher main PWB.
(2) The upper paper conveying belt motor does not operate.	Poor contact in the upper paper conveying belt motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken upper paper conveying belt motor gear.	Check visually and replace the upper paper conveying belt motor gear if necessary.
	Defective upper paper conveying belt motor.	Run maintenance item U240 and check if the upper paper conveying belt motor operates when YC24-A1, YC24-A3, YC24-B28 and YC-B30 on the finisher main PWB go low. If not, replace the upper paper conveying belt motor.
	Defective finisher main PWB.	Run maintenance item U240 and check if YC24-A1, YC24-A3, YC24-B28 and YC-B30 on the finisher main PWB go low. If not, replace the finisher main PWB.
(3) The lower paper conveying belt motor does not operate.	Poor contact in the lower paper conveying belt motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken lower paper conveying belt motor gear.	Check visually and replace the lower paper conveying belt motor gear if necessary.
	Defective lower paper conveying belt motor.	Run maintenance item U240 and check if the lower paper conveying belt motor operates when YC24-A4, YC24-A6, YC24-B25 and YC-B27 on the finisher main PWB go low. If not, replace the lower paper conveying belt motor.
	Defective finisher main PWB.	Run maintenance item U240 and check if YC24-A4, YC24-A6, YC24-B25 and YC-B27 on the finisher main PWB go low. If not, replace the finisher main PWB.
(4) The front upper side registration guide motor does not operate.	Poor contact in the front upper side registration guide motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken front upper side registration guide motor gear.	Check visually and replace the front upper side registration guide motor gear if necessary.
	Defective front upper side registration guide motor.	Run maintenance item U240 and check if the front upper side registration guide motor operates when YC24-A7, YC24-A9, YC24-B22 and YC-B24 on the finisher main PWB go low. If not, replace the front upper side registration guide motor.
	Defective finisher main PWB.	Run maintenance item U240 and check if YC24-A7, YC24-A9, YC24-B22 and YC-B24 on the finisher main PWB go low. If not, replace the finisher main PWB.

Problem	Causes	Check procedures/corrective measures
(5) The rear upper side registration guide motor does not operate.	Poor contact in the rear upper side registration guide motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken rear upper side registration guide motor gear.	Check visually and replace the rear upper side registration guide motor gear if necessary.
	Defective front upper side registration guide motor.	Run maintenance item U240 and check if the rear upper side registration guide motor operates when YC24-A10, YC24-A12, YC24-B19 and YC-B21 on the finisher main PWB go low. If not, replace the rear upper side registration guide motor.
	Defective finisher main PWB.	Run maintenance item U240 and check if YC24-A10, YC24-A12, YC24-B19 and YC-B21 on the finisher main PWB go low. If not, replace the finisher main PWB.
(6) The lower side registration guide motor does not operate.	Poor contact in the lower side registration guide motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken lower side registration guide motor gear.	Check visually and replace the lower side registration guide motor gear if necessary.
	Defective lower side registration guide motor.	Run maintenance item U240 and check if the lower side registration guide motor operates when YC24-A13, YC24-A15, YC24-B16 and YC-B18 on the finisher main PWB go low. If not, replace the lower side registration guide motor.
	Defective finisher main PWB.	Run maintenance item U240 and check if YC24-A13, YC24-A15, YC24-B16 and YC-B18 on the finisher main PWB go low. If not, replace the finisher main PWB.
(7) The main tray elevation motor does not operate.	Poor contact in the main tray elevation motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken main tray elevation motor gear.	Check visually and replace the main tray elevation motor gear if necessary.
	Defective main tray elevation motor.	Run maintenance item U240 and check if the main tray elevation motor operates when YC9-1 and YC9-2 on the finisher drive PWB go low. If not, replace the main tray elevation motor.
	Defective finisher drive PWB.	Run maintenance item U240 and check if YC9-1 and YC9-2 on the finisher drive PWB go low. If not, replace the finisher drive PWB.
	Defective finisher main PWB.	Run maintenance item U240 and check if YC12-17 on the finisher main PWB goes low. If not, replace the finisher main PWB.
(8) The front stapler motor does not operate.	Poor contact in the front stapler motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken front stapler motor gear.	Check visually and replace the front stapler motor gear if necessary.
	Defective front stapler motor.	If the front stapler motor does not operate when 5 V DC is output to YC18-A13 on the finisher main PWB, replace the front stapler motor.
	Defective finisher main PWB.	If 5 V DC is not output from YC18-A13 on the finisher main PWB, replace the finisher main PWB.

Problem	Causes	Check procedures/corrective measures
(9) The rear stapler motor does not operate.	Poor contact in the rear stapler motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken rear stapler motor gear.	Check visually and replace the rear stapler motor gear if necessary.
	Defective rear stapler motor.	If the rear stapler motor does not operate when 5 V DC is output to YC18-A17 on the finisher main PWB, replace the rear stapler motor.
	Defective finisher main PWB.	If 5 V DC is not output from YC18-A17 on the finisher main PWB, replace the finisher main PWB.
(10) The front clincher motor does not operate.	Poor contact in the front clincher motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken front clincher motor gear.	Check visually and replace the front clincher motor gear if necessary.
	Defective front clincher motor.	If the front clincher motor does not operate when 5 V DC is output to YC18-B2 on the finisher main PWB, replace the front clincher motor.
	Defective finisher main PWB.	If 5 V DC is not output from YC18-B2 on the finisher main PWB, replace the finisher main PWB.
(11) The rear clincher motor does not operate.	Poor contact in the rear clincher motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken rear clincher motor gear.	Check visually and replace the rear clincher motor gear if necessary.
	Defective rear clincher motor.	If the rear clincher motor does not operate when 5 V DC is output to YC18-A25 on the finisher main PWB, replace the rear clincher motor.
	Defective finisher main PWB.	If 5 V DC is not output from YC18-A25 on the finisher main PWB, replace the finisher main PWB.
(12) The paper entry motor does not operate.	Poor contact in the paper entry motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken paper entry motor gear.	Check visually and replace the paper entry motor gear if necessary.
	Defective paper entry motor.	Run maintenance item U240 and check if the paper entry motor operates when YC12-1, YC12-3, YC12-4 and YC12-6 on the finisher drive PWB go low. If not, replace the paper entry motor.
	Defective finisher drive PWB.	Run maintenance item U240 and check if YC12-1, YC12-3, YC12-4 and YC12-6 on the finisher drive PWB go low. If not, replace the finisher drive PWB.
	Defective finisher main PWB.	Run maintenance item U240 and check if YC25-12 on the finisher main PWB goes low. If not, replace the finisher main PWB.

Problem	Causes	Check procedures/corrective measures
(13) The siding drum motor does not operate.	Poor contact in the siding drum motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken siding drum motor gear.	Check visually and replace the siding drum motor gear if necessary.
	Defective siding drum motor.	Run maintenance item U240 and check if the siding drum motor operates when YC11-1, YC11-3, YC11-4 and YC11-6 on the finisher drive PWB go low. If not, replace the siding drum motor.
	Defective finisher drive PWB.	Run maintenance item U240 and check if YC11-1, YC11-3, YC11-4 and YC11-6 on the finisher drive PWB go low. If not, replace the finisher drive PWB.
	Defective finisher main PWB.	Run maintenance item U240 and check if YC25-9 on the finisher main PWB goes low. If not, replace the finisher main PWB.
(14) The movable guide motor does not operate.	Poor contact in the movable guide motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken movable guide motor gear.	Check visually and replace the movable guide motor gear if necessary.
	Defective movable guide motor.	Run maintenance item U240 and check if the movable guide motor operates when YC16-1, YC16-3, YC16-4 and YC16-6 on the finisher main PWB go low. If not, replace the movable guide motor.
	Defective finisher main PWB.	Run maintenance item U240 and check if YC16-1, YC16-3, YC16-4 and YC16-6 on the finisher main PWB go low. If not, replace the finisher main PWB.
(15) The eject motor does not operate.	Poor contact in the eject motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken eject motor gear.	Check visually and replace the eject motor gear if necessary.
	Defective eject motor.	Run maintenance item U240 and check if the eject motor operates when YC11-7, YC11-9, YC11-10 and YC11-12 on the finisher drive PWB go low. If not, replace the eject motor.
	Defective finisher drive PWB.	Run maintenance item U240 and check if YC11-7, YC11-9, YC11-10 and YC11-12 on the finisher drive PWB go low. If not, replace the finisher drive PWB.
	Defective finisher main PWB.	Run maintenance item U240 and check if YC25-6 on the finisher main PWB goes low. If not, replace the finisher main PWB.
(16) The cooling fan motor does not operate.	Broken cooling fan motor coil.	Check for continuity across the coil. If none, replace the cooling fan motor.
	Poor contact in the cooling fan motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective finisher main PWB.	Check if YC26-1 on the finisher main PWB goes low. If not, replace the finisher main PWB.
(17) The eject guide solenoid does not operate.	Broken eject guide solenoid coil.	Check for continuity across the coil. If none, replace the eject guide solenoid.
	Poor contact in the eject guide solenoid connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective finisher main PWB.	Run maintenance item U240 and check if YC15-2 on the finisher main PWB goes low. If not, replace the finisher main PWB.

Problem	Causes	Check procedures/corrective measures
(18) The paper holder solenoid does not operate.	Broken paper holder solenoid coil.	Check for continuity across the coil. If none, replace the paper holder solenoid.
	Poor contact in the paper holder solenoid connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective finisher drive PWB.	Run maintenance item U240 and check if YC10-2 and YC10-3 on the finisher drive PWB go low. If not, replace the finisher drive PWB.
	Defective finisher main PWB.	Run maintenance item U240 and check if YC25-1 and YC25-2 on the finisher main PWB go low. If not, replace the finisher main PWB.
(19) The paper forwarding pulley solenoid does not operate.	Broken paper forwarding pulley solenoid coil.	Check for continuity across the coil. If none, replace the paper forwarding pulley solenoid.
	Poor contact in the paper forwarding pulley solenoid connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective finisher main PWB.	Run maintenance item U240 and check if YC24-B15 on the finisher main PWB goes low. If not, replace the finisher main PWB.
(20) The feedshift solenoid A does not operate.	Broken feedshift solenoid A coil.	Check for continuity across the coil. If none, replace the feedshift solenoid A.
	Poor contact in the feedshift solenoid A connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective finisher main PWB.	Run maintenance item U240 and check if YC15-4 and YC15-5 on the finisher main PWB go low. If not, replace the finisher main PWB.
(21) The feedshift solenoid B does not operate.	Broken feedshift solenoid B coil.	Check for continuity across the coil. If none, replace the feedshift solenoid B.
	Poor contact in the feedshift solenoid B connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective finisher drive PWB.	Run maintenance item U240 and check if YC5-2 and YC5-3 on the finisher drive PWB go low. If not, replace the finisher drive PWB.
	Defective finisher main PWB.	Run maintenance item U240 and check if YC25-3 and YC25-4 on the finisher main PWB go low. If not, replace the finisher main PWB.
(22) The feedshift solenoid C does not operate.	Broken feedshift solenoid C coil.	Check for continuity across the coil. If none, replace the feedshift solenoid C.
	Poor contact in the feedshift solenoid C connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective finisher main PWB.	Run maintenance item U240 and check if YC15-10 and YC15-11 on the finisher main PWB go low. If not, replace the finisher main PWB.

Problem	Causes	Check procedures/corrective measures
(23) The lock solenoid does not operate.	Broken lock solenoid coil.	Check for continuity across the coil. If none, replace the lock solenoid.
	Poor contact in the lock solenoid connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective finisher main PWB.	Run maintenance item U240 and check if YC17-2 and YC17-3 on the finisher main PWB go low. If not, replace the finisher main PWB.

Centerfold unit

Problem	Causes	Check procedures/corrective measures
(1) The main motor does not operate.	Poor contact in the main motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken main motor gear.	Check visually and replace the main motor if necessary.
	Defective main motor.	Run maintenance item U240 and check if the main motor operates when CN3-1 and CN3-2 on the centerfold unit main PWB go low. If not, replace the main motor.
	Defective centerfold unit main PWB.	Run maintenance item U240 and check if CN3-1 and CN3-2 on the centerfold unit main PWB go low. If not, replace the centerfold unit main PWB.
(2) The centerfold blade motor does not operate.	Poor contact in the centerfold blade motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken centerfold blade motor gear.	Check visually and replace the centerfold blade motor if necessary.
	Defective centerfold blade motor.	Run maintenance item U240 and check if the centerfold blade motor operates when CN3-3 and CN3-4 on the centerfold unit main PWB go low. If not, replace the centerfold blade motor.
	Defective centerfold unit main PWB.	Run maintenance item U240 and check if CN3-3 and CN3-4 on the centerfold unit main PWB go low. If not, replace the centerfold unit main PWB.
(3) The side registration guide motor does not operate.	Poor contact in the side registration guide motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken side registration guide motor gear.	Check visually and replace the side registration guide motor if necessary.
	Defective side registration guide motor.	Run maintenance item U240 and check if the side registration guide motor operates when CN4-1, CN4-2, CN4-3 and CN4-4 on the centerfold unit main PWB go low. If not, replace the side registration guide motor.
	Defective centerfold unit main PWB.	Run maintenance item U240 and check if CN4-1, CN4-2, CN4-3 and CN4-4 on the centerfold unit main PWB go low. If not, replace the centerfold unit main PWB.
(4) The centering plate motor does not operate.	Poor contact in the centering plate motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken centering plate motor gear.	Check visually and replace the centering plate motor if necessary.
	Defective centering plate motor.	Run maintenance item U240 and check if the centering plate motor operates when CN5-7A, CN5-9A, CN5-22B and CN5-24B on the centerfold unit main PWB go low. If not, replace the centering plate motor.
	Defective centerfold unit main PWB.	Run maintenance item U240 and check if CN4-7, CN4-8, CN4-9 and CN4-10 on the centerfold unit main PWB go low. If not, replace the centerfold unit main PWB.

Problem	Causes	Check procedures/corrective measures
(5) The pressures release solenoid does not operate.	Broken pressures release solenoid coil.	Check for continuity across the coil. If none, replace the pressures release solenoid.
	Poor contact in the pressures release solenoid connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective centerfold unit main PWB.	Run maintenance item U240 and check if CN6-27 and CN6-28 on the centerfold unit main PWB go low. If not, replace the centerfold unit main PWB.

Multi job tray

Problem	Causes	Check procedures/corrective measures
(1) The multi job tray elevation motor does not operate.	Poor contact in the multi job tray elevation motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken multi job tray elevation motor gear.	Check visually and replace the multi job tray elevation motor if necessary.
	Defective multi job tray elevation motor.	Run maintenance item U240 and check if the multi job tray elevation motor operates when YC8-7 and YC8-8 on the finisher drive PWB go low. If not, replace the multi job tray elevation motor.
	Defective finisher drive PWB.	Run maintenance item U240 and check if YC8-7 and YC8-8 on the finisher drive PWB go low. If not, replace the finisher drive PWB.
	Defective finisher main PWB.	Run maintenance item U240 and check if YC12-14 on the finisher main PWB goes low. If not, replace the finisher main PWB.

Punch unit

Problem	Causes	Check procedures/corrective measures
(1) The punch motor does not operate.	Poor contact in the punch motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken punch motor gear.	Check visually and replace the punch motor if necessary.
	Defective punch motor.	Run maintenance item U240 and check if the punch motor operates when YC3-3 and YC3-4 on the punch PWB go low. If not, replace the punch motor.
	Defective punch PWB.	Run maintenance item U240 and check if YC3-3 and YC3-4 on the punch PWB go low. If not, replace the punch PWB.
(2) The punch solenoid does not operate.	Broken punch solenoid coil.	Check for continuity across the coil. If none, replace the punch solenoid.
	Poor contact in the punch solenoid connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective finisher main PWB.	Run maintenance item U240 and check if YC15-7 and YC15-8 on the finisher main PWB go low. If not, replace the finisher main PWB.

1-4-4 Mechanical problems**Finisher**

Problem	Causes/check procedures	Corrective measures
(1) Paper jam.	Check if the paper entry pulley correctly contacts paper entry roller.	If not, fix as necessary.
	Check if the intermediate tray paper entry roller correctly contacts the intermediate tray paper entry pulley.	If not, fix as necessary.
(2) Abnormal noise.	Check if all the rollers and gears rotate smoothly.	If there is a problem, grease the bearings and gears.

Centerfold unit

Problem	Causes/check procedures	Corrective measures
(1) Paper jam.	Check if the paper entry pulley, paper entry roller, eject pulley and eject roller are deformed.	If they are, replace.
(2) Abnormal noise.	Check if all the rollers and gears rotate smoothly.	If there is a problem, grease the bearings and gears.

Multi job tray

Problem	Causes/check procedures	Corrective measures
(1) Paper jam.	Check if the finisher's eject pulley and eject roller are deformed.	If they are, replace.
(2) Abnormal noise.	Check if all the rollers and gears rotate smoothly.	If there is a problem, grease the bearings and gears.

1-5-1 Finisher

(1) Correcting paper curling

Follow the below procedure if paper ejected from the finisher is curled.

<Procedure>

1. Set the machine to the non-sort mode and run paper through the machine to make a test copy.
2. Check if the paper that is ejected from the finisher is curled. If it is, make the following adjustment.

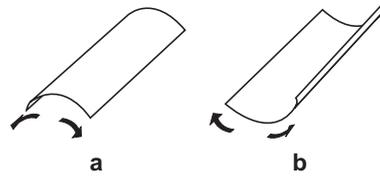


Figure 1-5-1

If the paper curls downward (a in figure 1-5-1)

1. Open the front cover.
2. Rotate the lower lever by one mark in the direction of the higher numbers. There are five marks.
3. Close the front cover.
4. Run paper through the machine and check if it is still curled downward.
5. Repeat steps 1 to 4 until the ejected paper does not curl downward anymore.

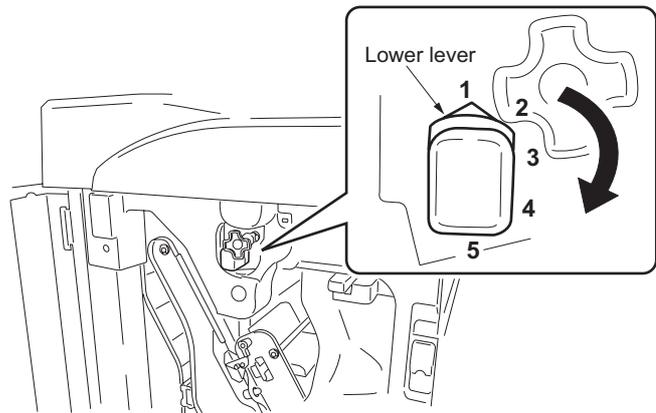


Figure 1-5-2

If the paper curls upward (b in figure 1-5-1)

1. Open the front cover.
2. Remove the two screws and then the inner left cover.

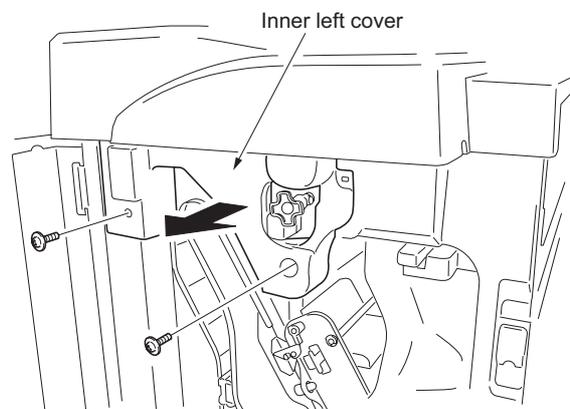


Figure 1-5-3

3. Rotate the upper lever by one mark in the direction of the higher numbers. There are five marks.
4. Close the front cover.
5. Run paper through the machine and check if it is still curled upward.
6. Repeat steps 1 to 5 until the ejected paper does not curl upward anymore.
7. When the correction is completed, reattach the inner left cover.

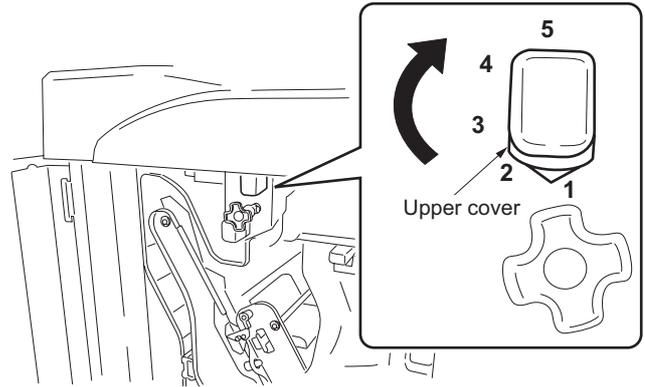


Figure 1-5-4

(2) Correcting centerfold-stapling

Follow the below procedure when the stapling position is off from the center when the machine is in the stitching copy mode.

Procedure

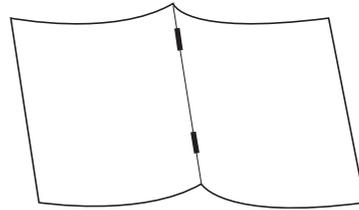


Figure 1-5-5

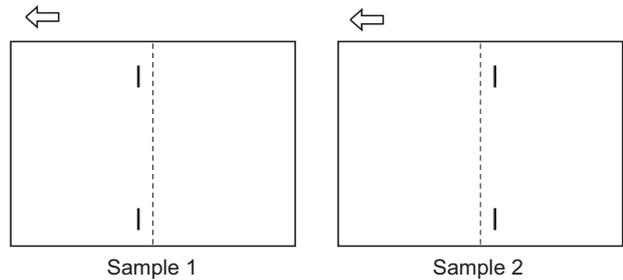
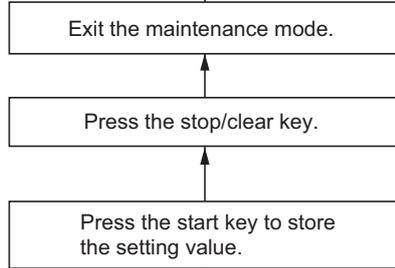
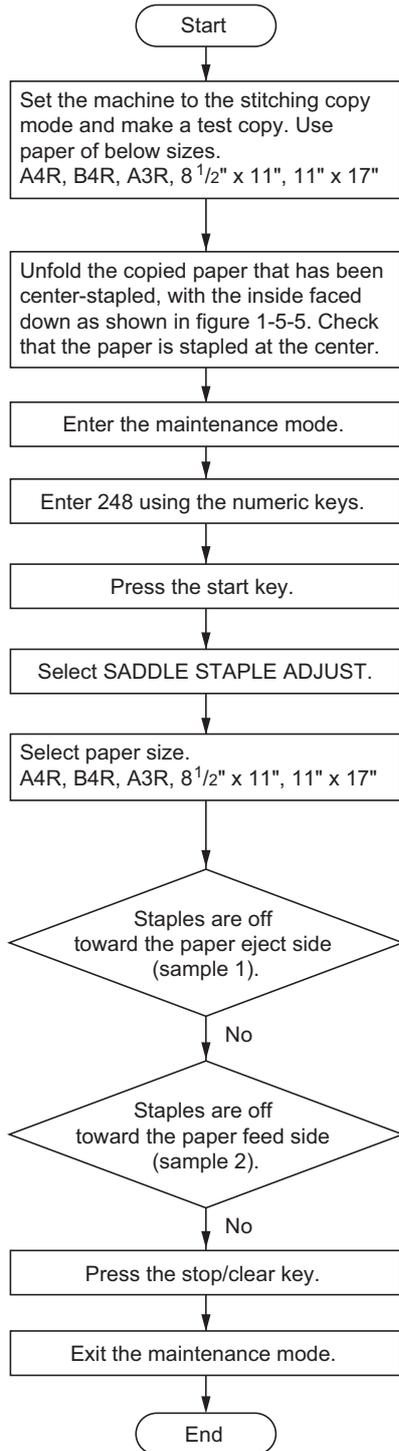


Figure 1-5-6



Setting range: -10 to +10
 Initial value: 0
 Changing the value by 1 changes the position of the stapling by approximately 0.6 mm (reference value). Increasing the setting value moves the stapling position toward the paper eject side. Decreasing it moves the stapling position toward the paper feed side.

(3) Adjusting the stapler unit mounting position

Perform this operation when replacing a stapler unit or when a stapling malfunction occurs.

Since the front stapler and the rear stapler in the finisher have the same construction, only the procedure for the front stapler is described below. Use similar procedure for adjusting the rear stapler.

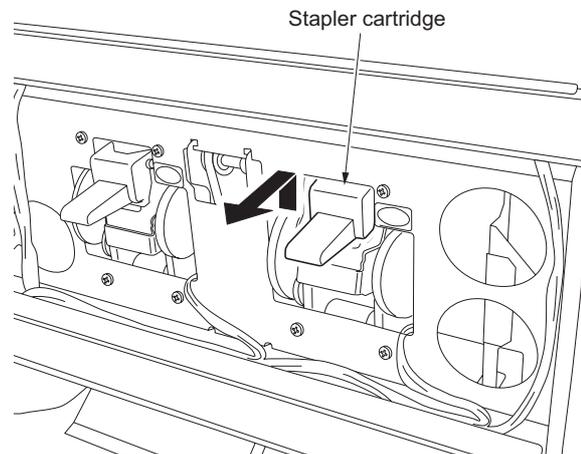
Tool required for adjustment

Stapler adjustment tool (P/N 3B868010)

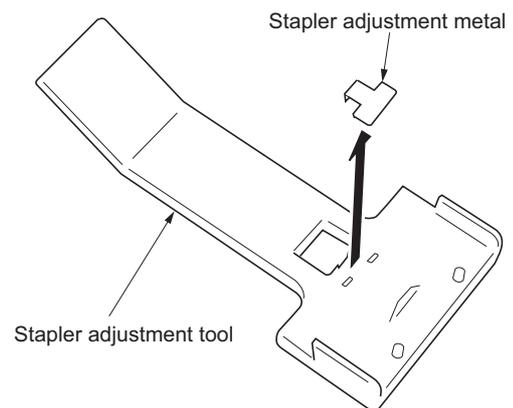
Cartridge adjustment tool (P/N 303H368040)

Procedure

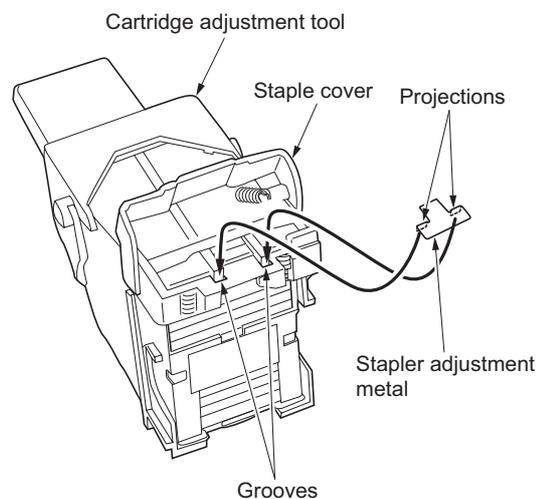
1. Pull out the intermediate tray and remove the stapler cartridge from the stapler.

**Figure 1-5-7**

2. Remove the stapler adjustment metal from the stapler adjustment tool (P/N 3B868010).

**Figure 1-5-8**

3. Open the staple cover of the cartridge adjustment tool (P/N 303H368040).
4. Attach the stapler adjustment metal to the cartridge adjustment tool and close the staple cover. Attach the stapler adjustment metal by inserting its projections into the grooves of the cartridge adjustment tool.
5. Install the cartridge adjustment tool into the stapler.

**Figure 1-5-9**

6. Open the intermediate tray and attach the stapler adjustment tool to the stapler. Attach the stapler adjustment tool by inserting its projections into the stapler holes. In addition, be careful not to get the film caught when attaching the tool.

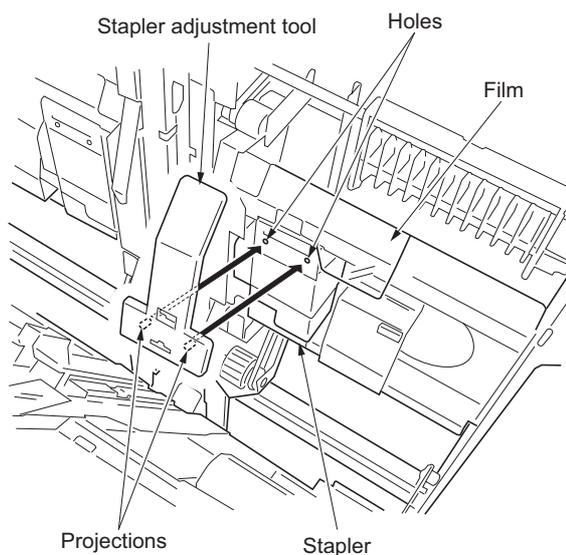


Figure 1-5-10

7. Close the intermediate tray. Do not carry out step 8 with the intermediate tray open because the stapler may be damaged.
8. Turn the gear manually to push the stapler into the inner part and ensure that the stapler adjustment metal is inserted smoothly into the adjustment hole of the stapler adjustment tool.

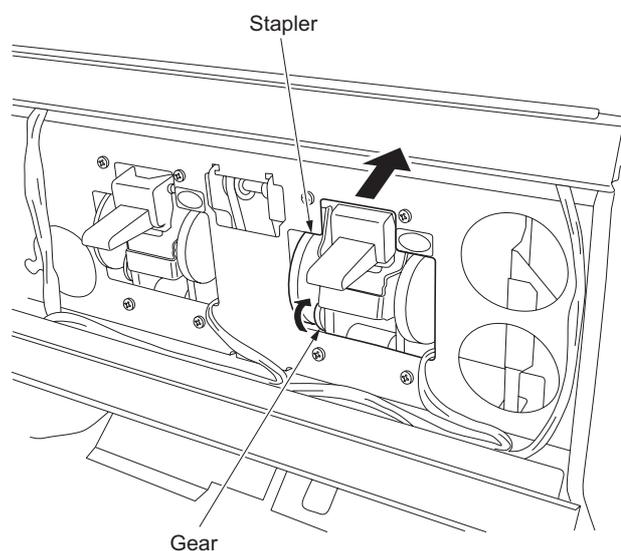


Figure 1-5-11

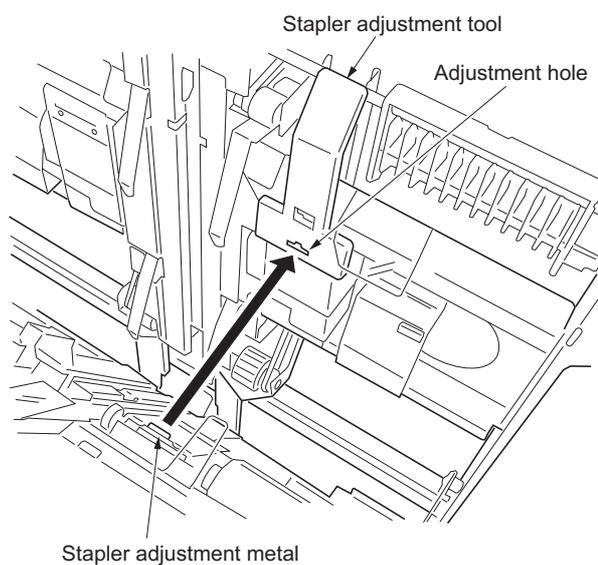


Figure 1-5-12

9. If the stapler adjustment metal is not inserted into the adjustment hole, loosen the four adjustment screws on the intermediate tray and adjust the stapler unit mounting position so that the metal is inserted into the hole.
At this time, turn the gear manually furthermore and ensure that the stapler is securely pushed into the inner part.
10. Tighten the adjustment screws in the order shown below.
 - 1) Tighten the upper two screws loosely.
 - 2) Tighten the lower two screws loosely.
 - 3) Finally tighten the upper two screws.
 - 4) Finally tighten the lower two screws.

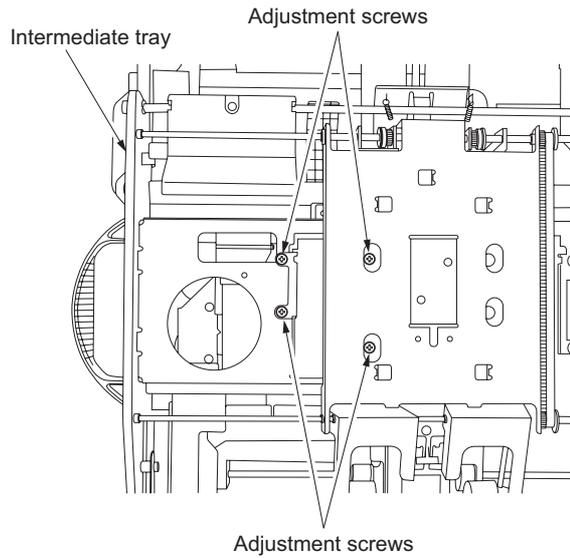


Figure 1-5-13

11. Turn the gear manually to pull back the stapler to its original position and then remove the cartridge adjustment tool.
12. Remove the stapler adjustment metal and the stapler adjustment tool.
13. With the stapler cartridge removed, return the intermediate tray to its original position and mount the finisher to the machine. Turn the machine main power switch on (to detect the noncartridge status).
14. Pull out the intermediate tray again and attach the stapler cartridge. Mount the finisher to the machine and turn the main power switch on.
15. Select the staple mode (mode specifying the stapler that has been adjusted) and carry out this mode.
After the staples in the cartridge are automatically fed in test stapling, the staple mode will be carried out.
16. Check the shape of the staples on the rear side that have been used in the test stapling and the staple mode above.
If the shape is defective, perform the adjustment again.

Shape of staples on the rear side	
Normal	Defective
<p>$a \leq 0.5\text{mm}$</p>	<p>$a > 0.5\text{mm}$</p>

(4) Centering stapling position

Follow the below procedure if the positioning of stapling are off the centerline of paper when the machine is in the two-point stapling mode.

Caution

Before making the following adjustment, ensure that the center position of each cassette in the machine is correct. When the adjustment distance of the upper side registration guide is too large, follow through on page 1-5-8 to adjust the position of the lower side registration guide.

Procedure

- Position adjustment of upper side registration guide

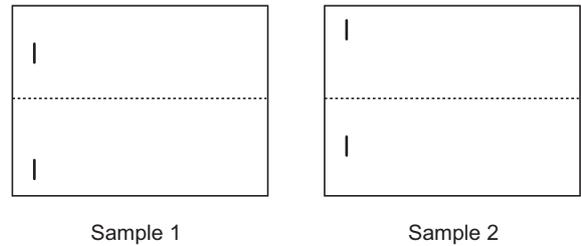
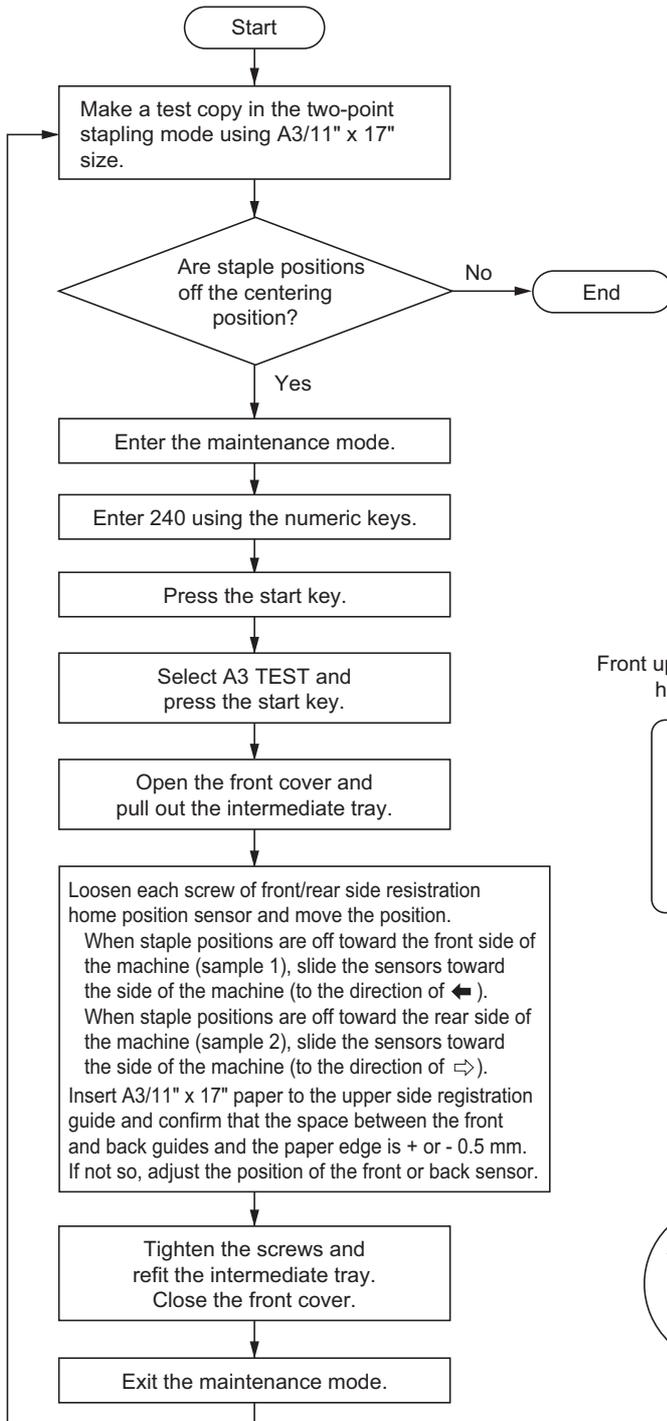


Figure 1-5-14

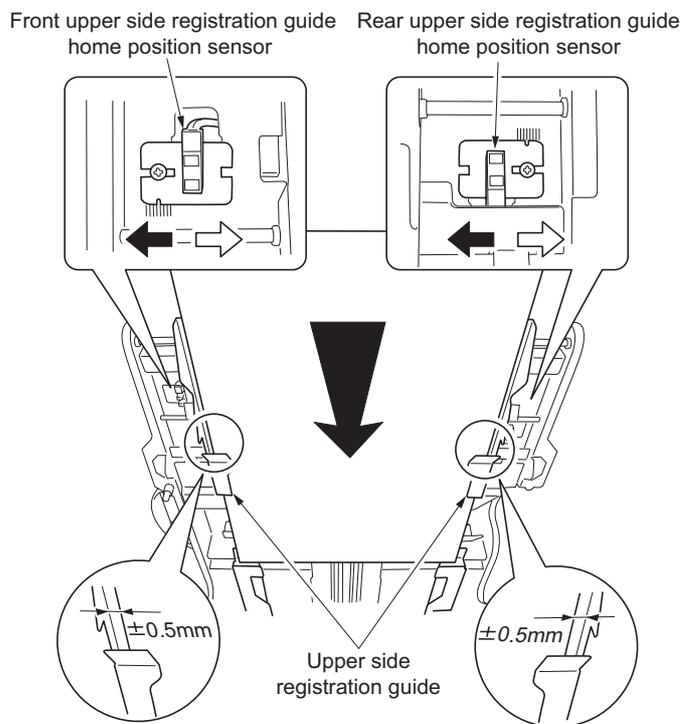


Figure 1-5-15

- Position adjustment of lower side registration guide

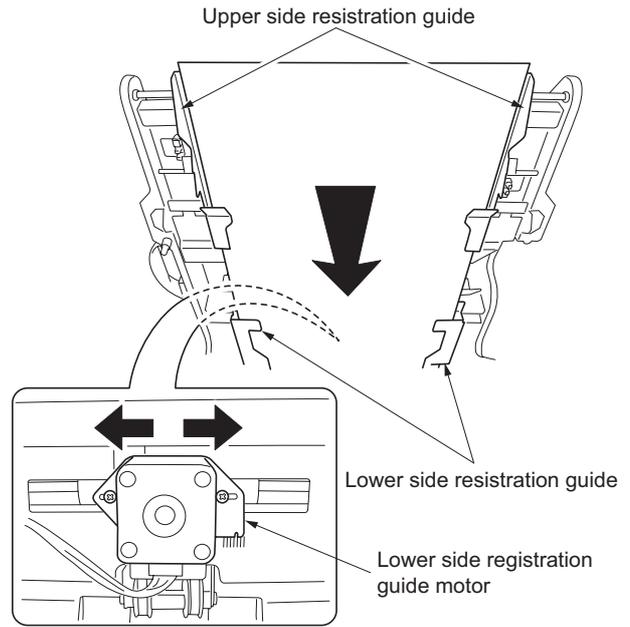
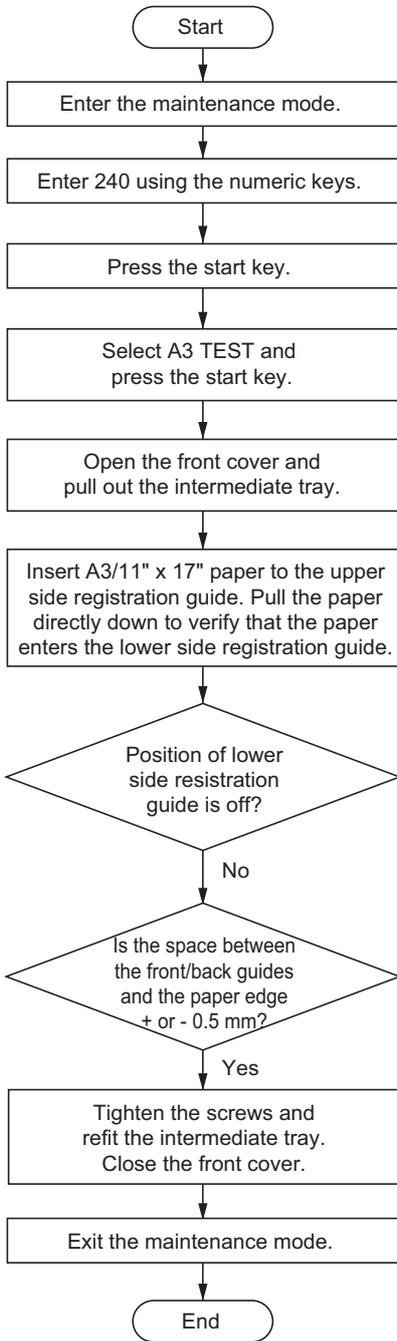


Figure 1-5-16

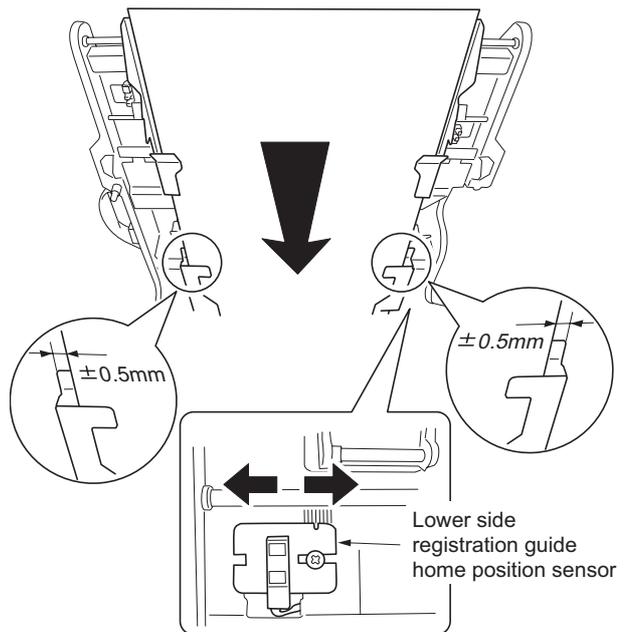


Figure 1-5-17

1-5-2 Centerfold unit

(1) Detaching and refitting the centerfold blade

Follow the below procedure to clean or replace the centerfold blade.

Procedure

1. Pull out the centerfold unit from the finisher.
2. Loosen the two screws, slide the retainers in the direction of the arrow, and remove the centerfold unit from the finisher.

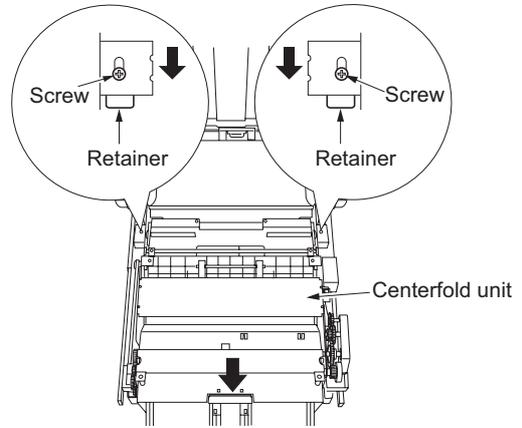


Figure 1-5-18

3. Stand the centerfold unit with its left side facing down.
4. Remove the six screws locking down the left base followed by the base.

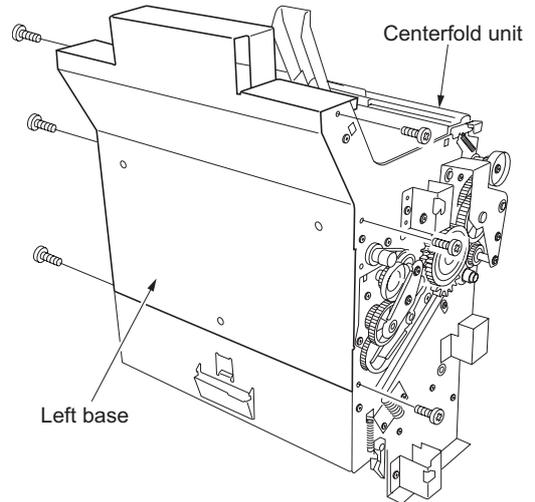


Figure 1-5-19

5. Disconnect the 2-pin connector of the blade motor.
6. Remove the two screws and then remove the blade motor.

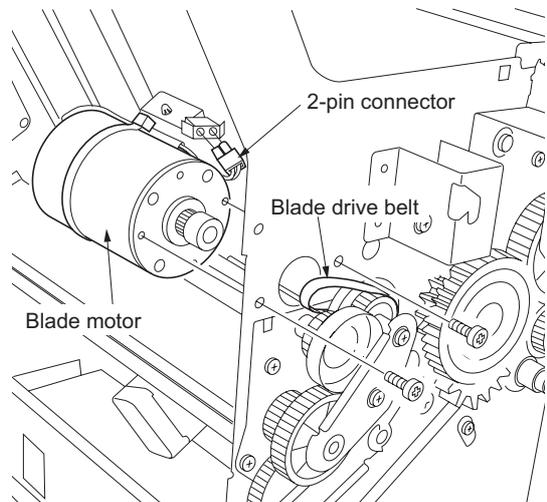


Figure 1-5-20

7. Remove the two springs from the blade retainer.
8. Remove the five screws locking down the blade retainer followed by the retainer.
9. Remove the centerfold blade.
10. Clean or replace the centerfold blade.
11. Refit all the removed parts.
 When attaching the centerfold blade to the blade support plate, fit the two holes in the blade over the two projections on the blade support plate.

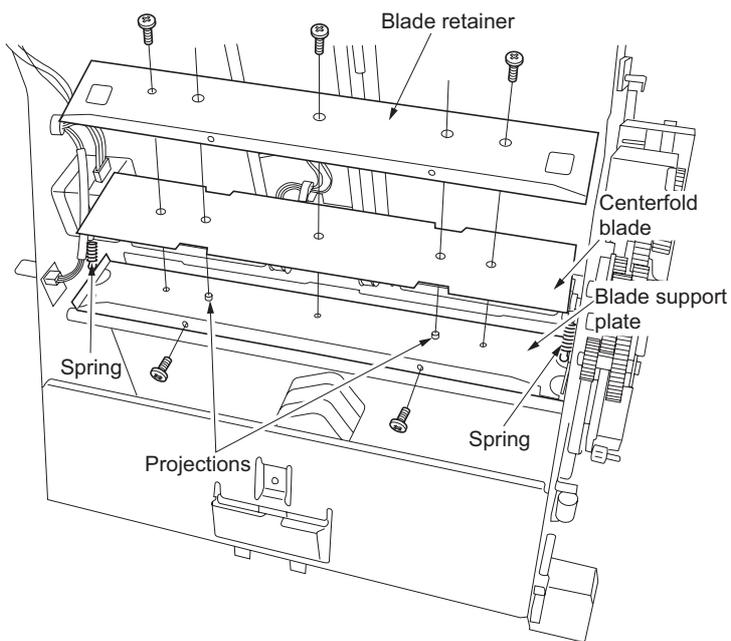


Figure 1-5-21

(2) Adjusting the paper folding position

Follow the below procedure when the folding position is not correct in the centerfold mode.

Procedure

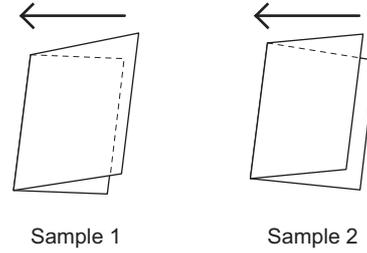
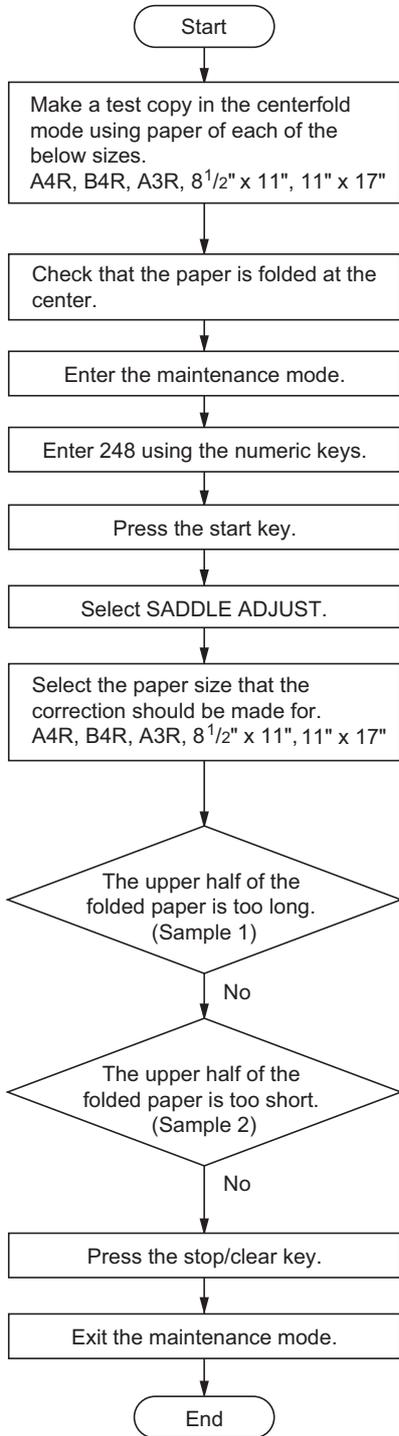


Figure 1-5-22

Setting range: -10 to +10
 Initial value: 0
 Changing the value by 1 moves the folding position by approximately 0.55 mm (reference value).
 Increasing the value makes the upper half of folded paper shorter while decreasing it makes the upper half longer.

1-5-3 Punch unit

(1) Centering punch-holes

Follow the below procedure if the positioning of punch holes are off the centerline of paper when the machine is in the punch mode.

Caution:

Before making the following adjustment, ensure that the center position of each cassette in the machine is correct.

Procedure

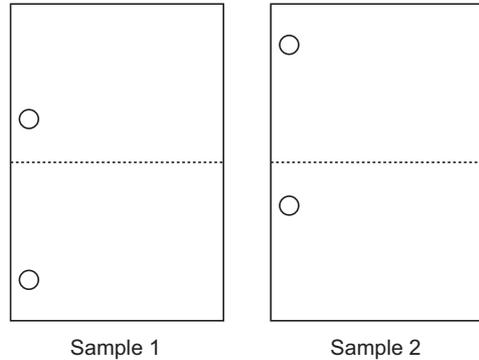
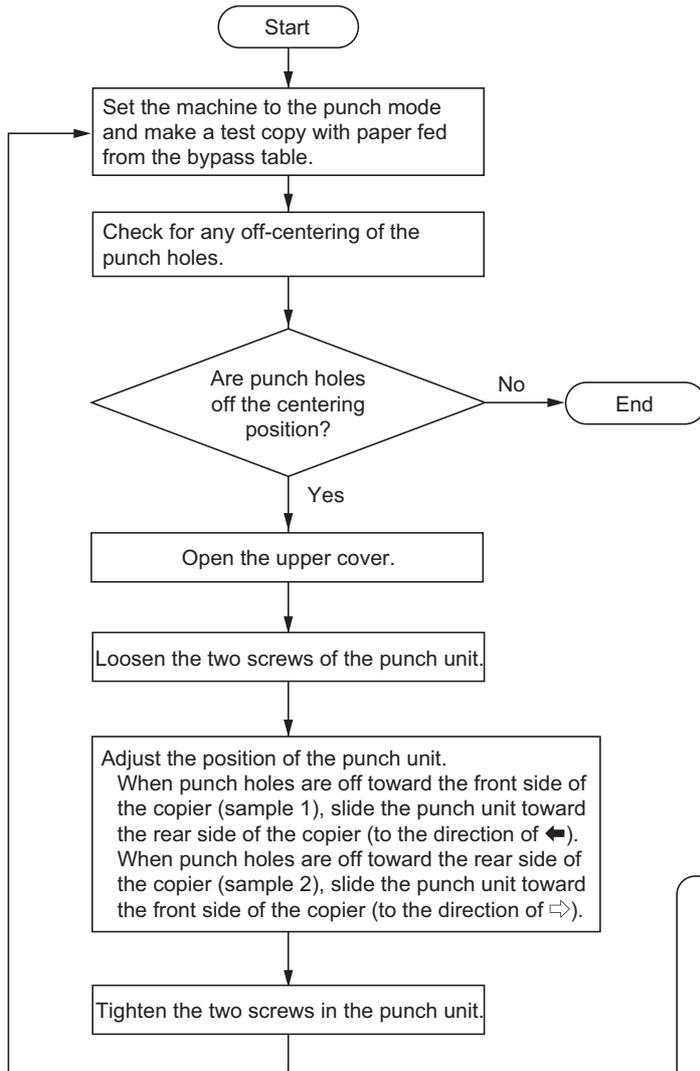


Figure 1-5-23

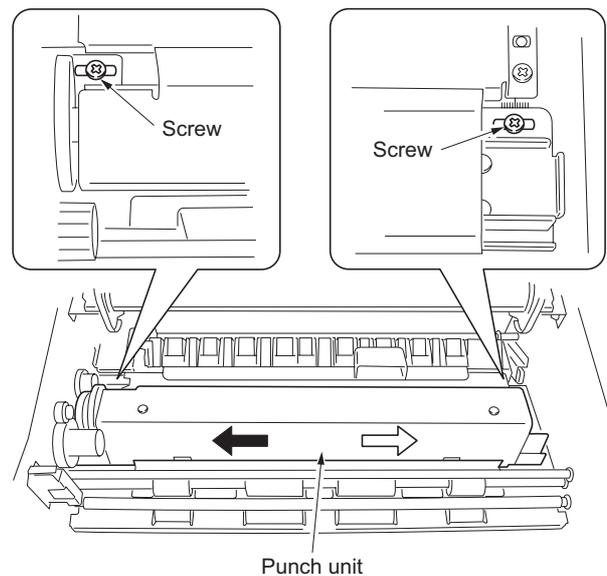


Figure 1-5-24

(2) Setting margin from the leading edge to punch holes

Follow the below procedure if the margin from the paper edge to punch holes is off the reference value.

Procedure

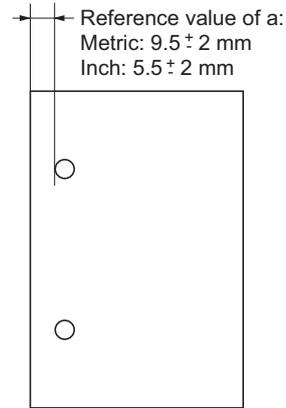
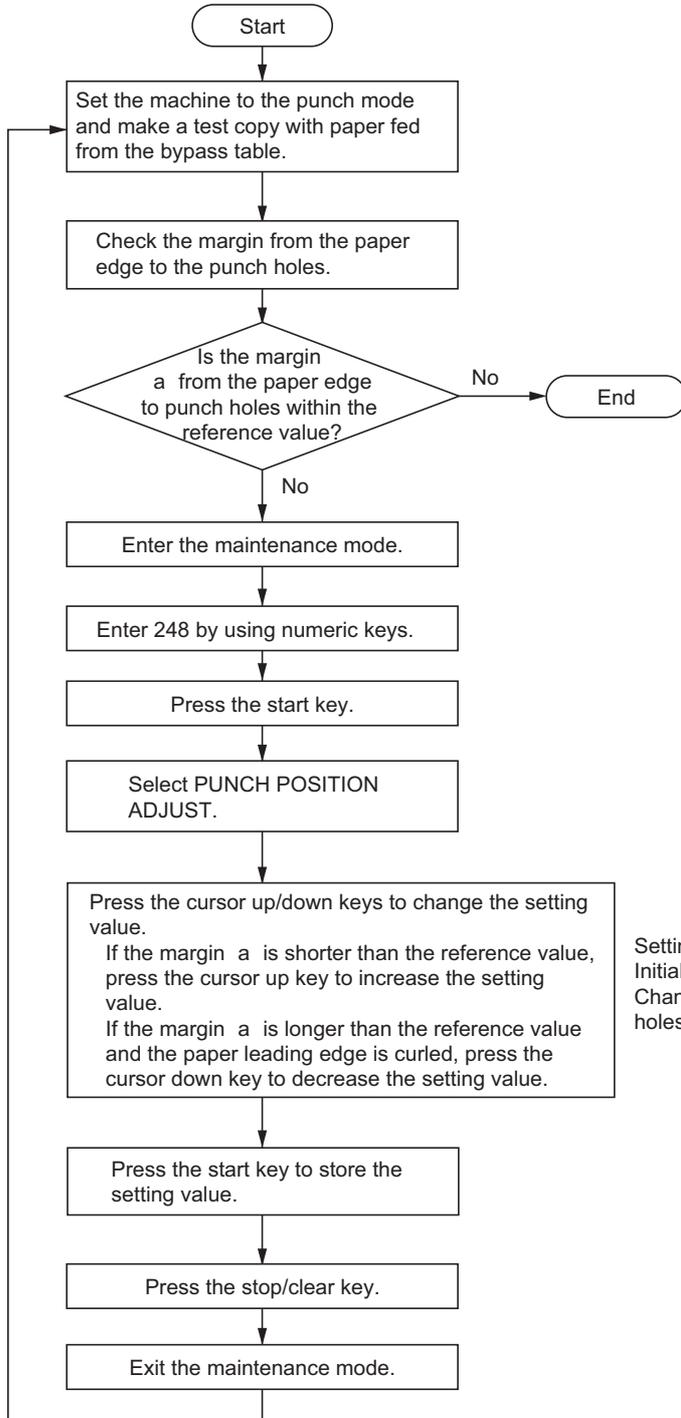


Figure 1-5-25

Setting range: -10 to +10
Initial value: 0
Changing the value by 1 moves the position of punch holes by approximately 0.25 mm (reference value).

1-6-1 Upgrading the version of the firmware of the finisher main PWB

Firmware upgrading requires the following tools:
Compact Flash (Products manufactured by SANDISK are recommended.)

NOTE

When writing data to a new Compact Flash from a computer, be sure to format it in advance.

Procedure

1. Enter the maintenance mode.
2. Run maintenance item U019 (Displaying the ROM version) to check the current version of the ROM.
3. Exit the maintenance mode.
4. Turn the machine off from the main power switch and unplug the power cable from the wall outlet.
5. Release three inserted parts and then remove the CF cover.

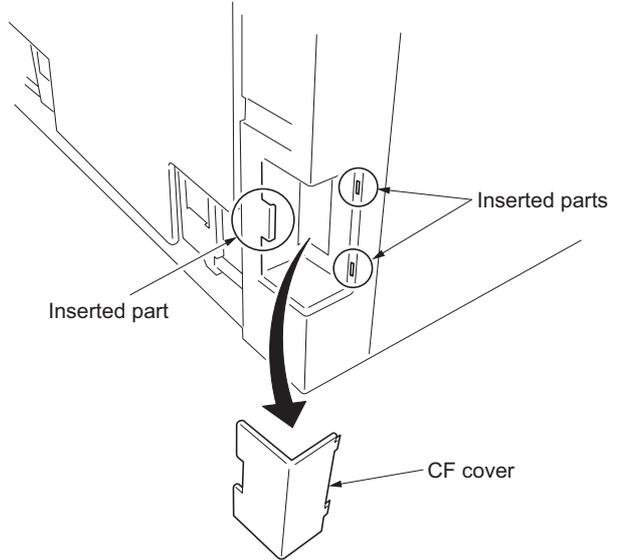


Figure 1-6-1

6. Insert the CompactFlash card in the CF slot on the finisher main PWB.
 - * Be sure to face the front side of the CompactFlash card to the machine rear and insert it straight until it stops. If the main power switch is turned on when the CompactFlash card is not properly inserted, the PWB may be damaged.
7. Plug the power cable into a wall outlet and turn the machine on from the main power switch.
 - * During upgrading the firmware, LED on PWB will be blinking. (Version up takes about 20 to 25 sec.)

Caution:

Never turn the main power switch off during upgrading.
The status of version up will not be shown on the operation panel and do not wrongly press any operation keys.

8. After completion of the version up, LED on PWB stops to blink and lights up.

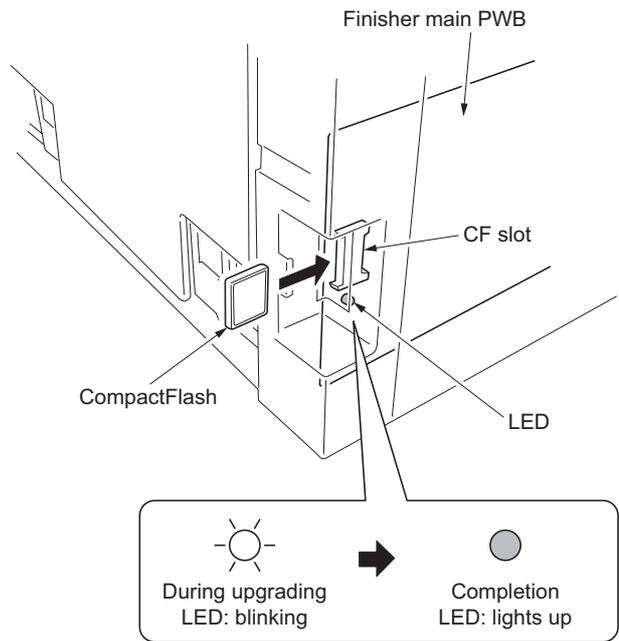


Figure 1-6-2

9. Turn the machine off from the main power switch and unplug the power cable from the wall outlet.
10. Remove the CompactFlash card from the CF slot on the finisher main PWB.
11. Refit the CF cover.
12. Plug the power cable into a wall outlet and turn the machine on from the main power switch.

13. Enter the maintenance mode.
14. Run maintenance item U019 (Displaying the ROM version) to check ROM version upgrading was successful.
15. Exit the maintenance mode.

1-6-2 Requirements on finisher main PWB replacement

NOTE

When replacing the finisher main PWB, be sure to conform DIPSW setting of the replaced PWB to that of the removed PWB.

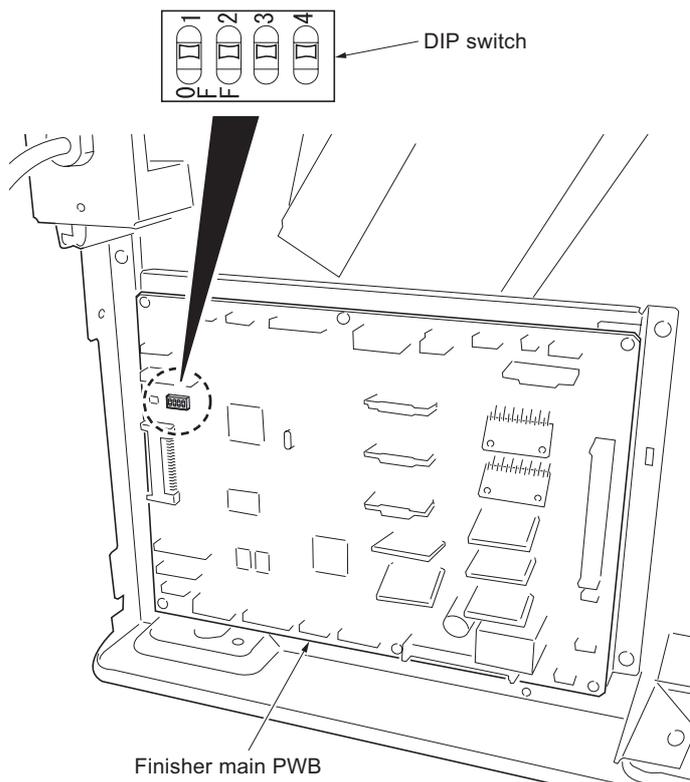


Figure 1-6-3

2-1-1 Finisher

(1) Paper insertion section

The paper insertion section inserts paper from the machine into the finisher and then conveys it to the feedshift section. The paper is fed out to the finisher. The paper entry motor (PEM) will be activated in a certain period of time after the paper entry sensor (PES) is turned on to convey the paper to the feedshift section. Attaching the paper to the paper entry roller for a certain period of time prevents skewed feeding.

Pressure rollers A and B correct upward paper curling and pressure rollers C and D correct downward paper curling.

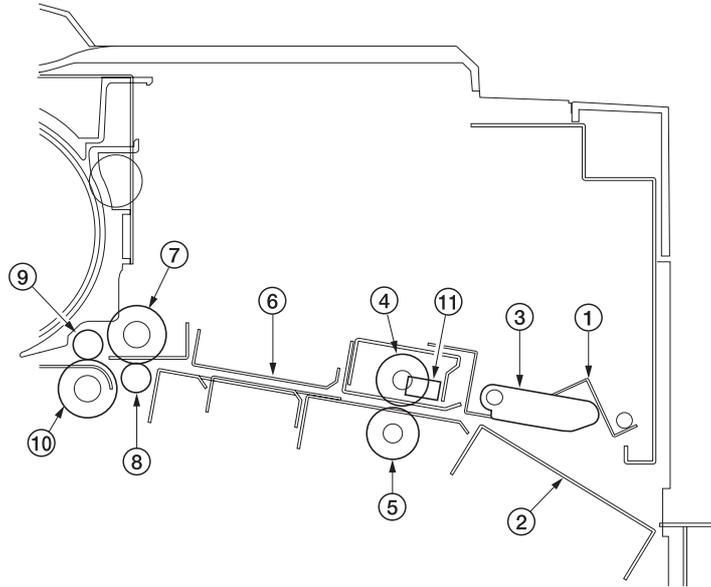


Figure 2-1-1 Paper insertion section

- | | |
|-----------------------------------|-------------------------------|
| (1) Upper paper entry guide plate | (7) Pressure roller A |
| (2) Lower paper entry guide plate | (8) Pressure roller B |
| (3) Paper entry guide | (9) Pressure roller C |
| (4) Upper paper entry roller | (10) Pressure roller D |
| (5) Lower paper entry roller | (11) Paper entry sensor (PES) |
| (6) Paper conveying guide | |

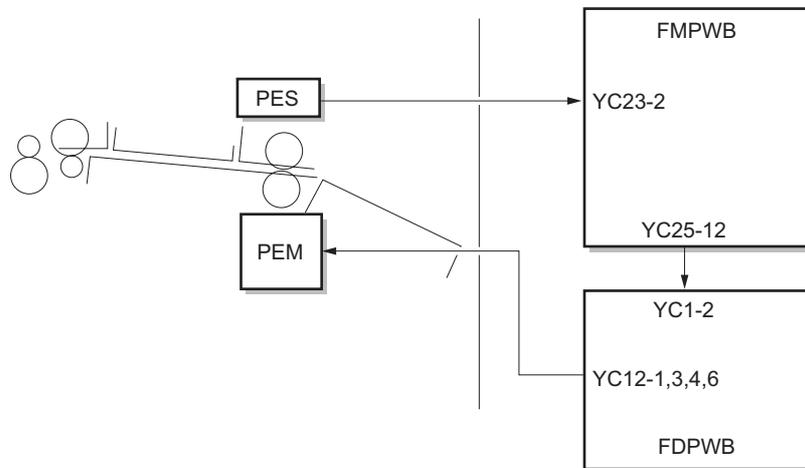


Figure 2-1-2 Block diagram of the paper insertion section

(2) Feedshift section

The feedshift section switches the path of the paper conveyed from the paper insertion section so as to convey the paper to the intermediate tray, main tray or sub tray.

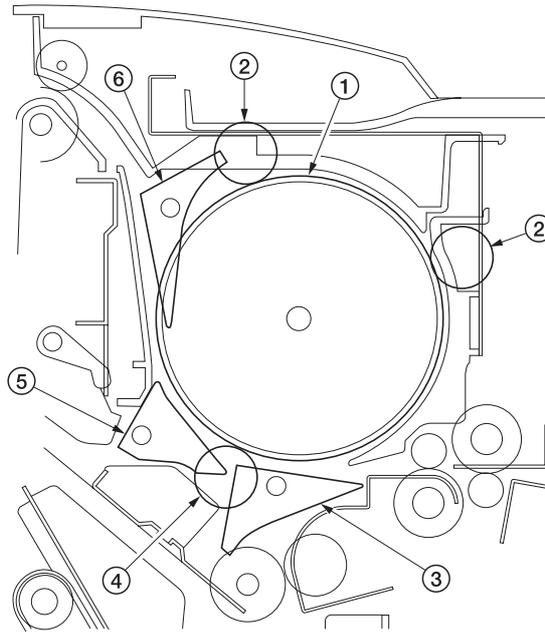


Figure 2-1-3 Feedshift section

- | | |
|--------------------------------|--------------------------------|
| (1) Siding drum | (4) Sub feed roller |
| (2) Siding pulleys | (5) Left eject feedshift guide |
| (3) Main eject feedshift guide | (6) Sub eject feedshift guide |

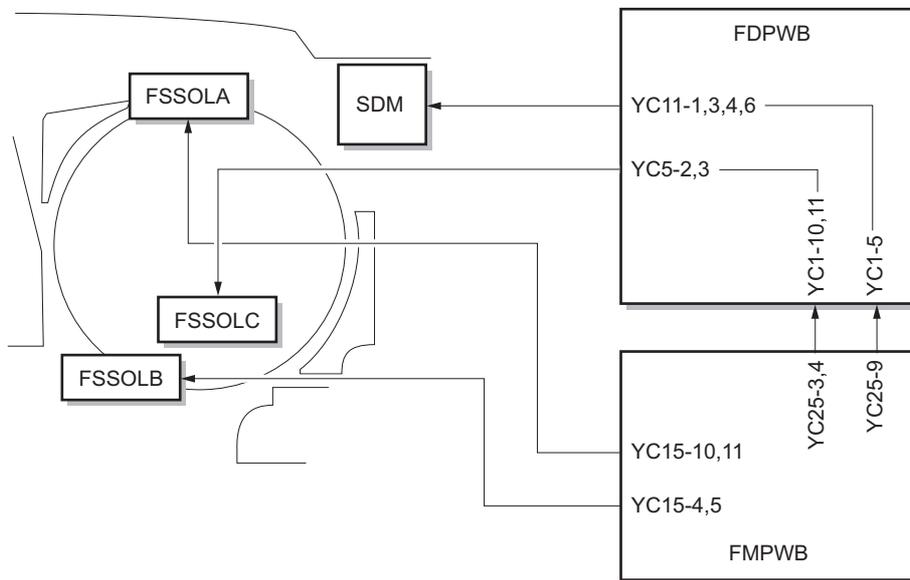


Figure 2-1-4 Block diagram of the feedshift section

Paper path switching

The paper path is switched by the operation of the main eject feedshift guide, left eject feedshift guide or sub eject feedshift guide.

There are four paper paths in the feedshift section as shown below.

The guide corresponding to the path to the selected tray operates to switch the paper path appropriately.

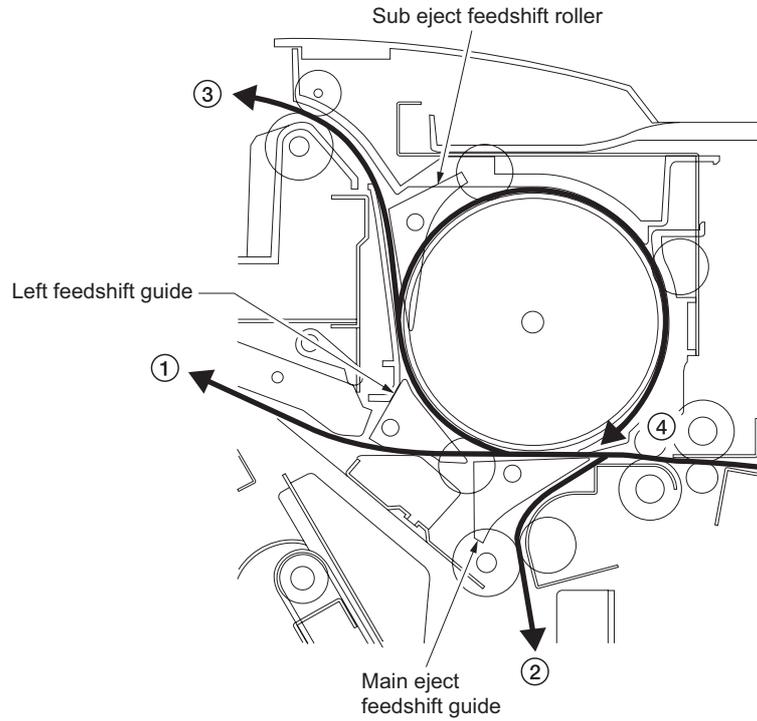


Figure 2-1-5

- (1) Paper path to the main tray
- (2) Paper path to the intermediate tray
- (3) Paper path to the sub tray
- (4) Paper path to the siding drum

Siding drum operation

When A4/11" x 8 1/2" size paper is processed in the intermediate tray for eventual multiple sets of copies, to ensure the time for paper processing, the first and second page of the next copy set are wound around the siding drum. The wounded paper are sided there until the third page is conveyed.

1. While paper is processed in the intermediate tray, feedshift solenoid A (FSSOLA) turns on so that the sub eject feedshift guide operates.

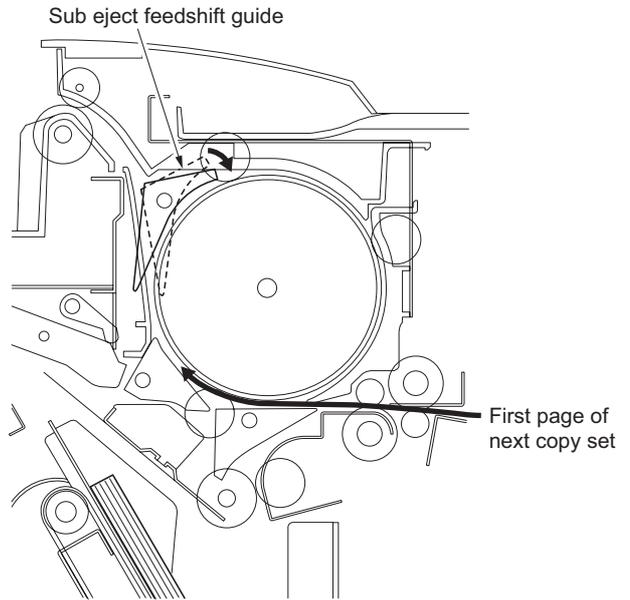


Figure 2-1-6

2. The siding drum motor (SDM) turns on so that the siding drum rotates and winds the first page of the next copy set around the drum. Feedshift solenoid C (FSSOLC) turns on so that the main eject feedshift guide operates.
3. When paper processing has been completed in the intermediate tray, the sided first and second pages of the next copy set is conveyed to the intermediate tray together with the third page.

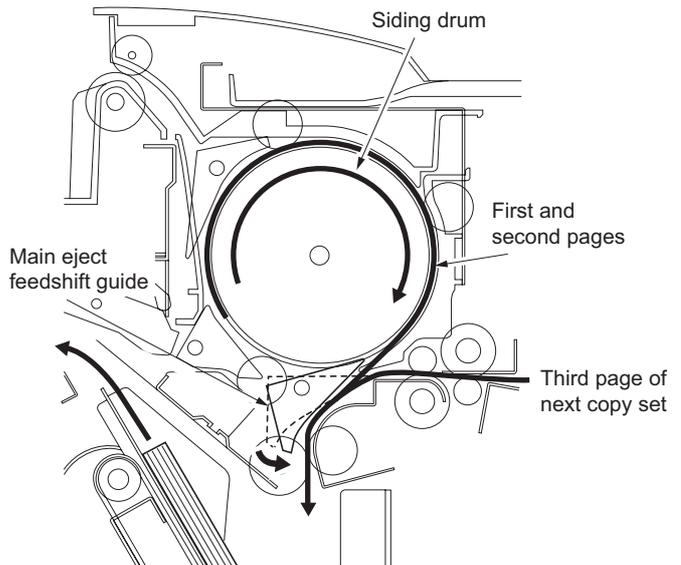


Figure 2-1-7

(3) Intermediate tray section

The intermediate tray section performs side identifying, eject position shifting and stapling of paper that is stacked in the tray. It then conveys paper to the main tray and centerfold unit.

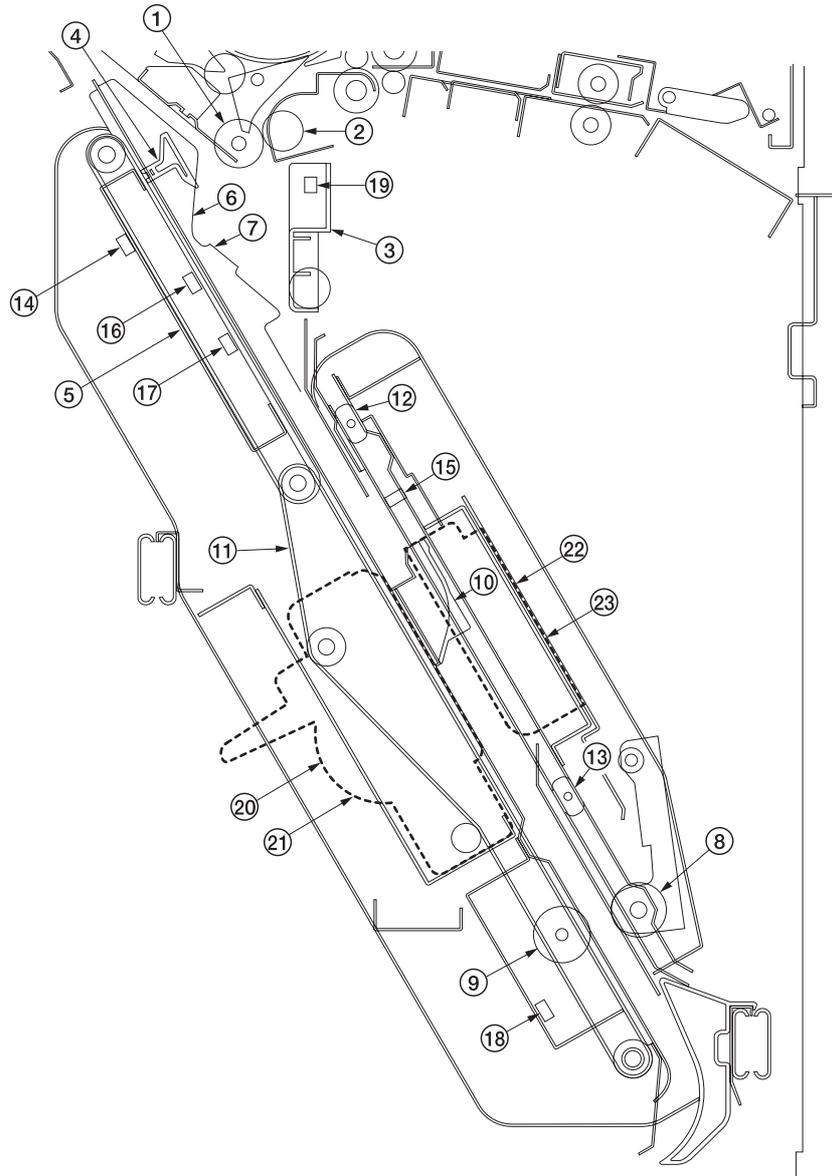


Figure 2-1-8 Intermediate tray section

- | | |
|---|---|
| (1) Intermediate tray paper entry roller | (15) Lower paper conveying belt home position sensor (PCBHPS-L) |
| (2) Intermediate tray paper entry pulley | (16) Front upper side registration guide home position sensor (SRGHPS-FU) |
| (3) Movable guide | (17) Rear upper side registration guide home position sensor (SRGHPS-RU) |
| (4) Intermediate tray upper sliding plate | (18) Lower side registration guide home position sensor (SRGHPS-L) |
| (5) Upper paper conveying belt | (19) Intermediate tray paper conveying sensor (ITPCS) |
| (6) Front upper side registration guide | (20) Front stapler driver (STD-F) |
| (7) Rear upper side registration guide | (21) Rear stapler driver (STD-R) |
| (8) Paper forwarding pulley | (22) Front stapler clincher (STCLN-F) |
| (9) Intermediate tray pulley | (23) Rear stapler clincher (STCLN-R) |
| (10) Intermediate tray lower sliding plate | |
| (11) Lower paper conveying belt | |
| (12) Upper forwarding roller | |
| (13) Lower forwarding roller | |
| (14) Upper paper conveying belt home position sensor (PCBHPS-U) | |

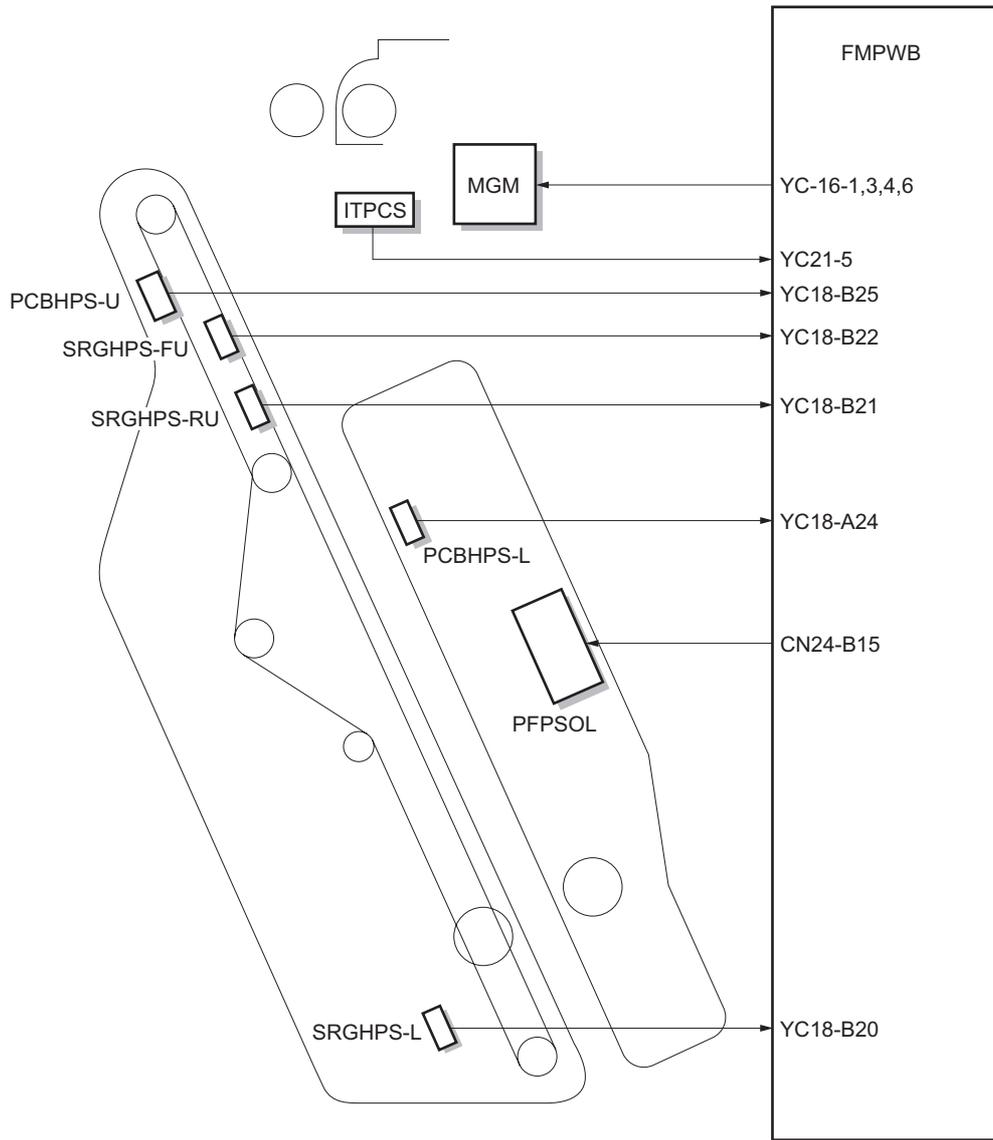


Figure 2-1-9 Block diagram of the intermediate tray section

Paper inserting operation to the intermediate tray

Each time a sheet of paper is inserted, the below operation takes place.

1. The front/rear upper/lower side registration guides move to the paper receiving positions that are slightly outside the actual paper width according to the paper size.
 - * The front/rear lower side registration guides stay at their home positions when paper of the below sizes is used.
A4, B5, 11" x 8 1/2"

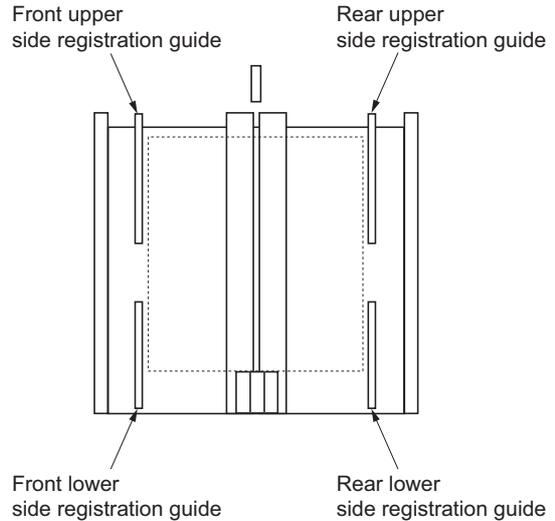


Figure 2-1-10

2. The upper paper conveying belt motor (PCBMU) rotates forward so that the intermediate tray upper sliding plate moves to the paper receiving position.
3. When paper is inserted into the intermediate tray, the movable guide motor (MGM) turns on so that the movable guide lowers and holds the paper to keep it from curling.
4. The upper paper conveying belt motor (PCBM-U) rotates backward so that the intermediate tray upper sliding plate moves to the paper holding position.

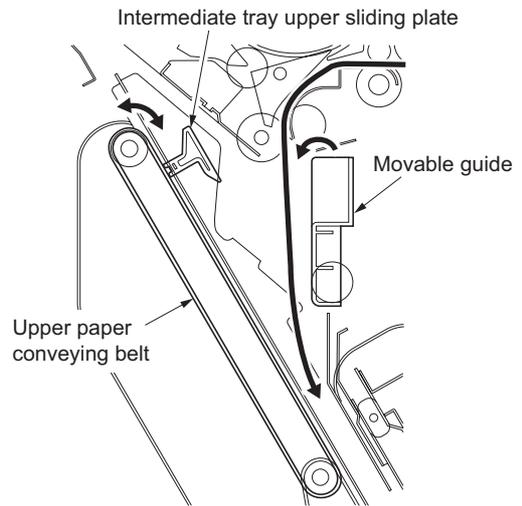


Figure 2-1-11

5. The front/rear upper/lower side registration guides move to and return from the paper size position to identify the sides of the paper.
 - When the last sheet of paper is inserted, each guide stops at the paper size position.
 - * The front/rear lower side registration guides do not operate when paper of the below sizes is used.
A4, B5, A4R, folio, 11" x 8 1/2", 8 1/2" x 11"

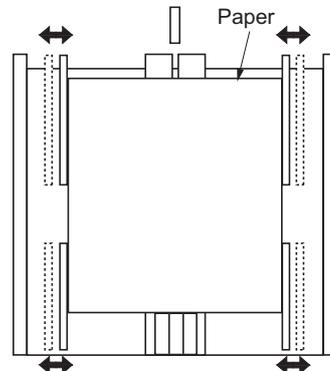


Figure 2-1-12

Stapling operation

There are four types of stapling. Paper is stapled with the selected stapling type and then moved to the shifted eject position.

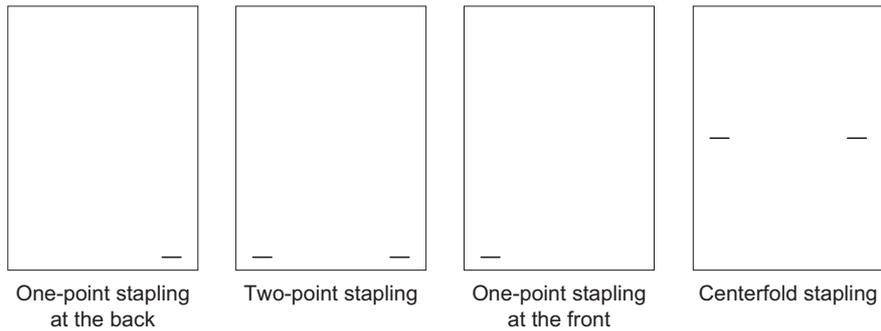


Figure 2-1-13

One-point stapling at the back/two-point stapling/one-point stapling at the front

1. The eject guide solenoid (EGSOL) turns on so that the eject guide rises and prevents the paper leading edge from contacting the eject roller when paper is stapled.

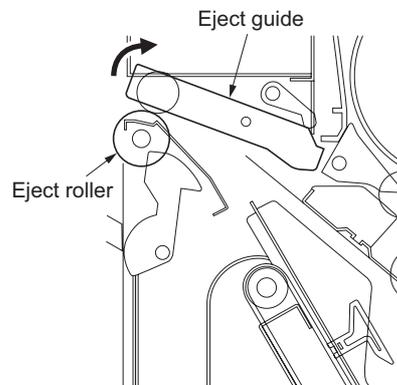


Figure 2-1-14

2. The front/rear upper side registration guides and the front/rear lower side registration guides (for large size paper only) move to the positions that are slightly outside the actual paper width.
3. The lower paper conveying belt motor (PCBM-L) rotates forward so that the intermediate tray lower sliding plate moves upward and moves paper to the stapling travel height.
4. The front/rear lower side registration guides return to their home positions.
5. The lower paper conveying belt motor (PCBM-L) rotates backward so that the intermediate tray lower sliding plate moves downward and moves paper to the stapling height.

* The operations described in step 1 to 5 above are not performed when A4/11" x 8 1/2" paper is used.

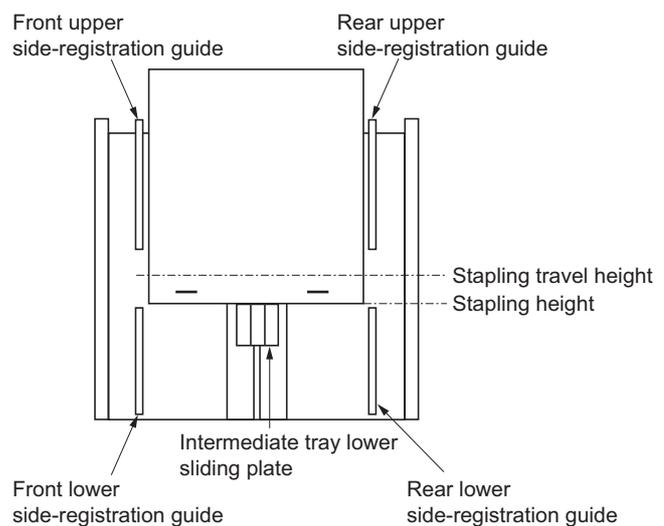


Figure 2-1-15

6. The front/rear upper side registration guides move toward the machine front or rear to move paper to the stapling position.
7. The stapler performs stapling.
8. The front/rear upper side registration guides move toward the machine front or rear to shift paper forward or backward.

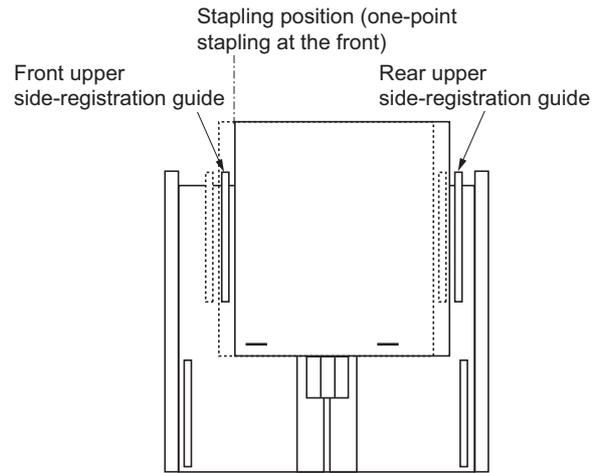


Figure 2-1-16

Centerfold stapling

1. The eject guide solenoid (EGSOL) turns on so that the eject guide rises and prevents the paper leading edge from contacting the eject roller when paper is stapled.

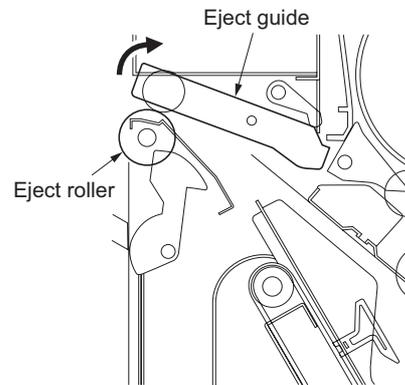


Figure 2-1-17

2. The front/rear upper side registration guides and front/rear lower side registration guides (for large size paper only) move to the positions that are slightly outside the actual paper width.
3. The upper/lower paper conveying belt motors (PCBM-U/L) rotate forward so that the intermediate tray upper/lower sliding plates move upward and move paper to the centerfold stapling height.
4. The front/rear lower side registration guides move to the paper size position and identify the sides of the paper.
5. The front/rear staplers perform two-point stapling.

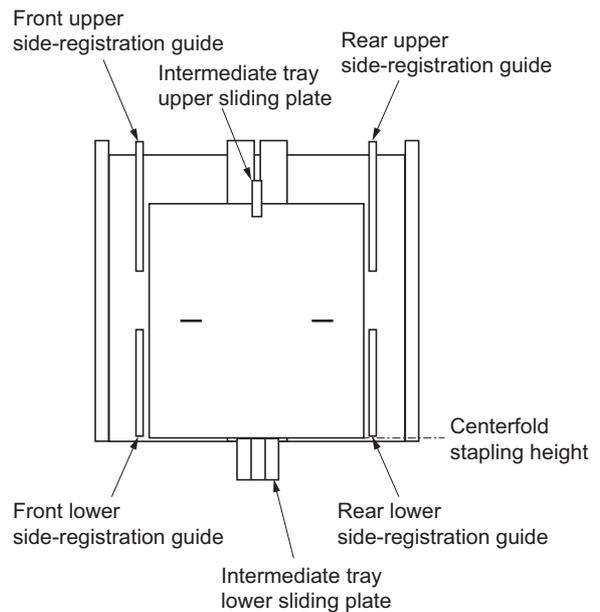


Figure 2-1-18

Stapling operation

The stapler is comprised of the front stapler driver, front stapler clincher, rear stapler driver and rear stapler clincher. The stapler cam that is connected to the stapler driving gear of the stapler driver rotates to drive in staples and then the stapler clincher clinches the staples.

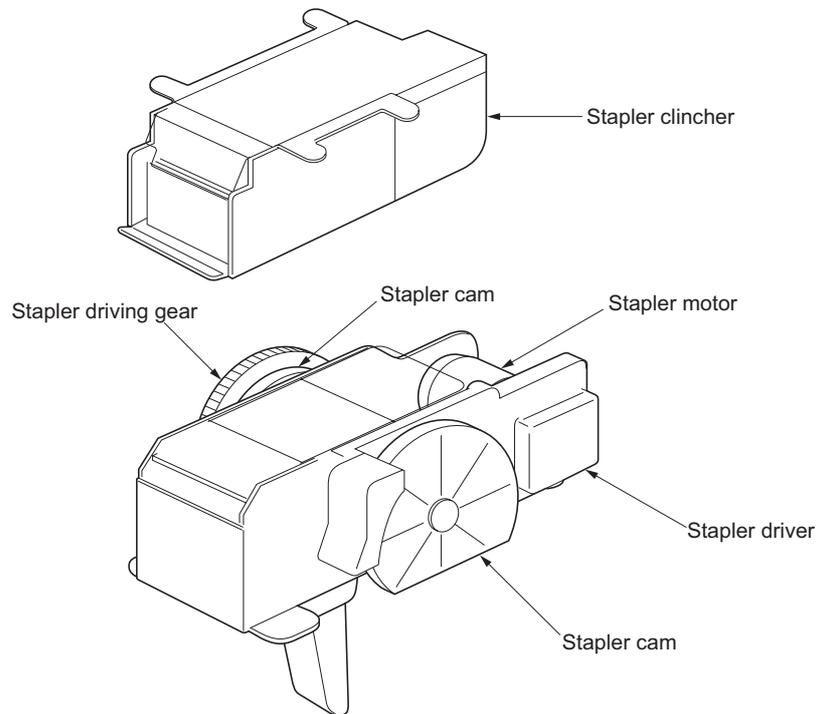


Figure 2-1-19

Paper ejection operation to the main tray

Paper is ejected from the intermediate tray to the main tray (or the optional multi job tray) by the upper/lower paper conveying belt motors (PCBM-U/L) rotating forward, which moves the intermediate tray upper/lower sliding plates upward so that the paper is pushed upward. When paper is ejected to the main tray, the eject guide solenoid (EGSOL) turns on so that the eject guide rises.

In the non-staple mode, the front/rear upper side registration guides move toward the machine front or rear to shift the paper eject position sides of the machine. Each time paper is ejected to the main tray, the paper holder solenoid (PHSOL) turns on so that the main eject holder lowers and presses the paper to the main tray so that it does not slip.

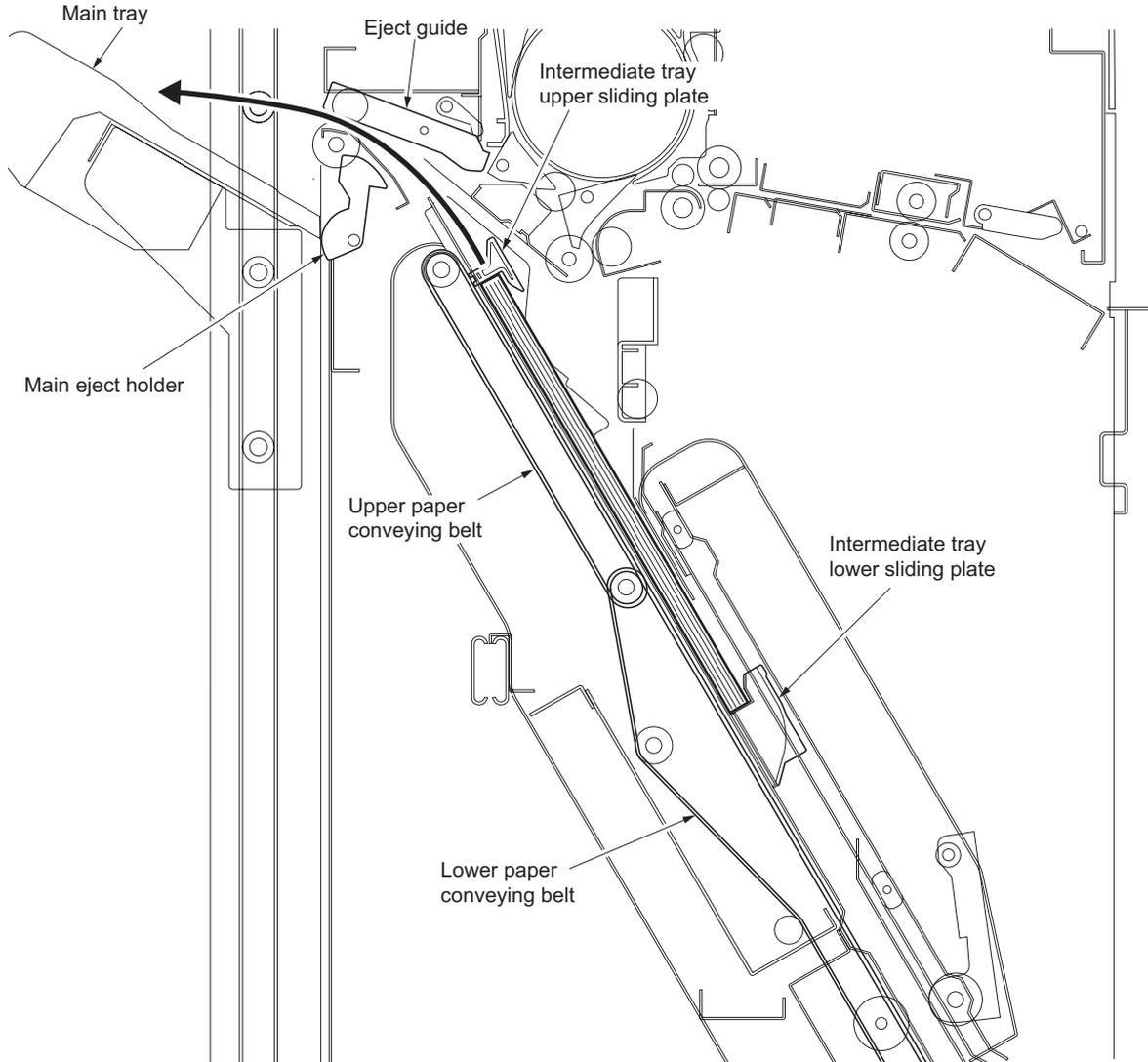


Figure 2-1-20

Paper ejection operation to the centerfold unit

In the stitching mode, a sheet of paper that was not stapled or multiple sheets of paper that were centerfold-stapled are conveyed from the intermediate tray to the centerfold unit. Paper is ejected to the centerfold unit by the upper/lower paper conveying belt motors (PCBM-U/L) rotating backward, which moves the intermediate tray upper/lower sliding plates downward so that the paper is pushed downward. When paper is ejected to the centerfold unit, the paper forwarding pulley solenoid (PFPSOL) turns on so that the paper forwarding pulley and upper/lower forwarding rollers lower to aid paper conveyance.

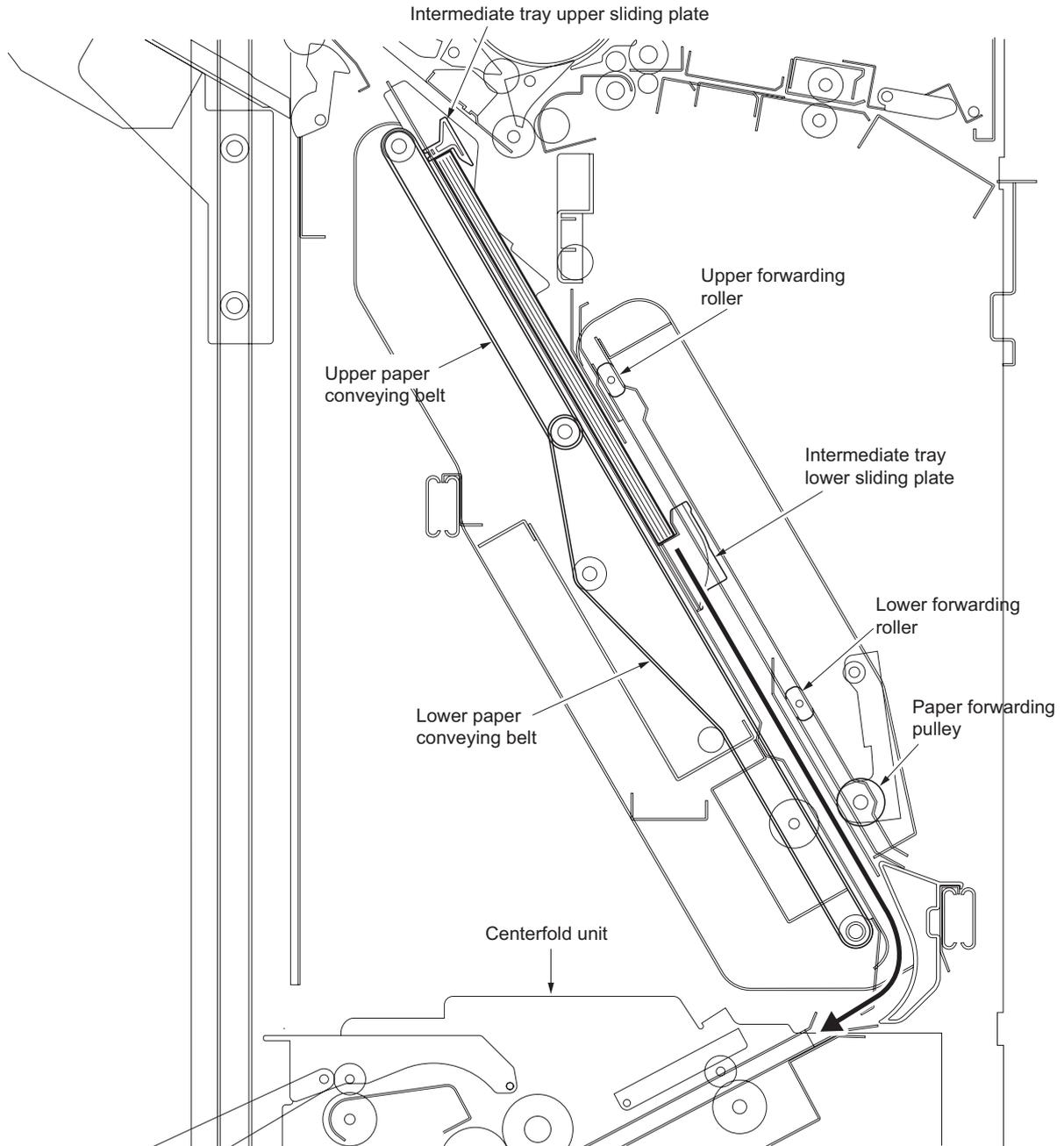


Figure 2-1-21

(4) Paper eject section

The paper eject section is comprised of the main tray eject section and sub tray eject section. In the multi finisher, paper is ejected to the main tray in the sort mode, group mode and staple mode. In the non-sort mode, paper is ejected to the sub tray, and if the number of ejected sheets of paper exceeds the sub tray capacity, the excess sheets are ejected to the main tray.

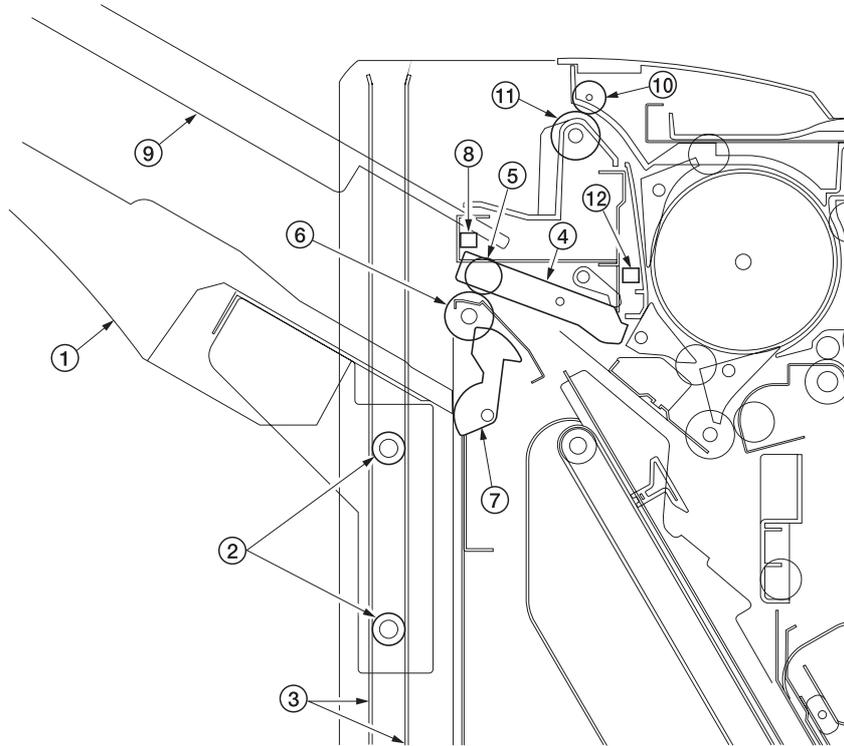


Figure 2-1-22 Paper eject section

- | | |
|----------------------|--|
| (1) Main tray | (7) Main eject holder |
| (2) Main tray pulley | (8) Paper ejection sensor (PEJS) |
| (3) Main tray rail | (9) Sub tray |
| (4) Eject guide | (10) Sub tray eject pulley |
| (5) Eject pulley | (11) Sub tray eject roller |
| (6) Eject roller | (12) Sub tray paper eject sensor (STPES) |

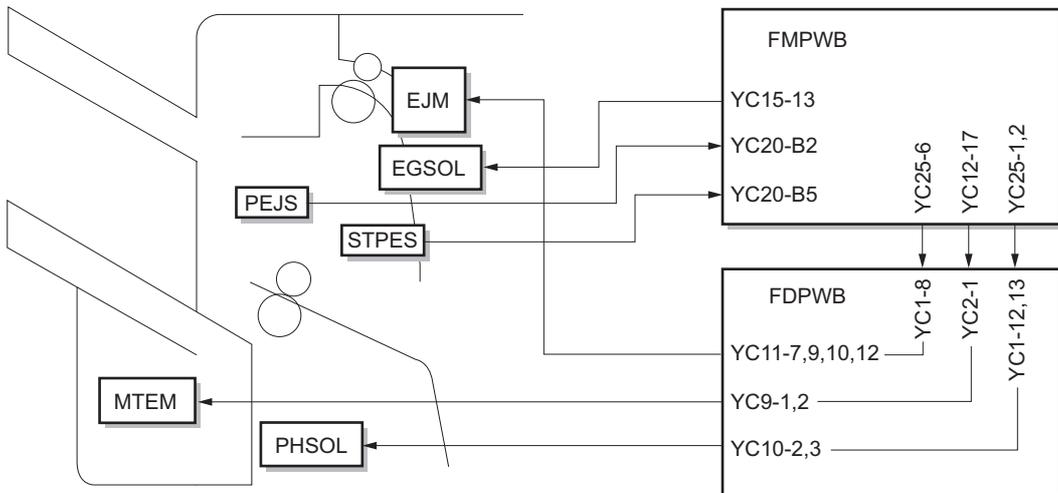
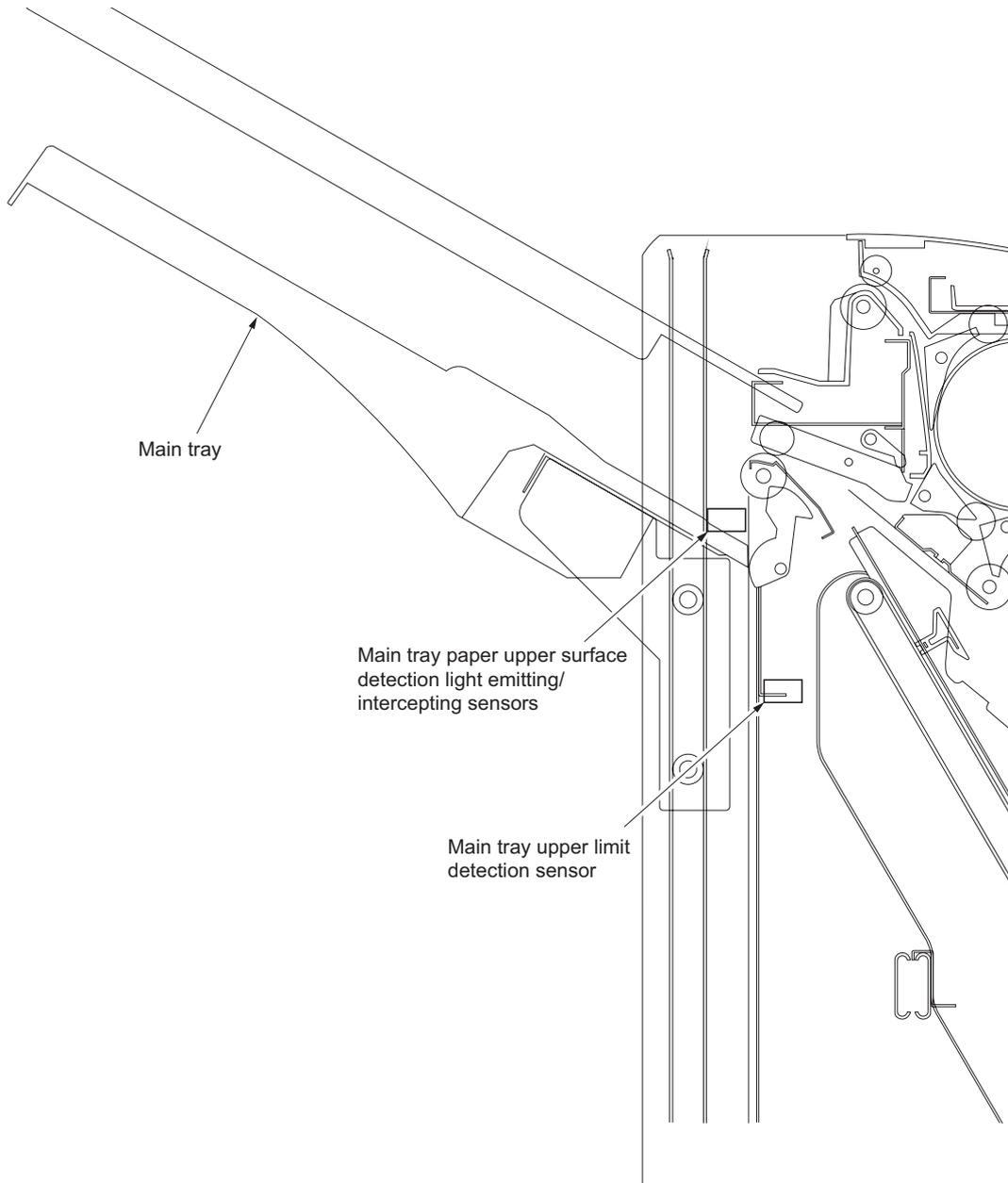


Figure 2-1-23 Block diagram of the paper eject section

Main tray elevation operation

The main tray lowers when paper is stacked on it. Once stacking has completed and paper has been removed, the main tray rises and stops at the home position. The main tray lowers and rises by the forward and backward rotation of the main tray elevation motor (MTEM), respectively. The position of the tray while it is rising or lowering is detected by the main tray paper upper surface detection light emitting/intercepting sensors (MTPUSDLES, MTPUSDLIS) detecting the paper upper surface and the main tray upper limit detection sensor (MTULDS) detecting the upper limit (home position) of the main tray.

**Figure 2-1-24**

2-1-2 Multi job tray

The multi job tray stacks paper by lowering to the position where the job tray that is pre-selected (from among Nos.1 to 5) in the printer mode is positioned at the main tray eject section.

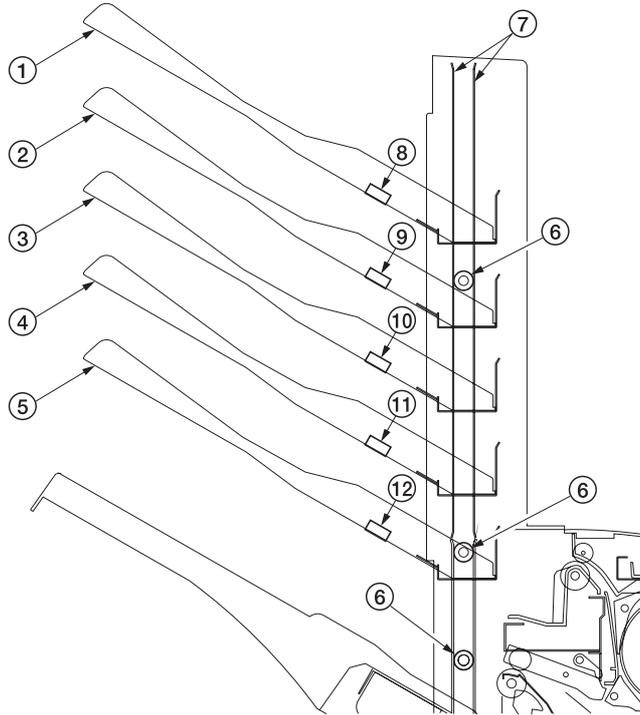


Figure 2-1-25 Multi job tray

- | | |
|---------------------------|---------------------------------------|
| (1) Job tray No.1 | (7) Multi job tray rail |
| (2) Job tray No.2 | (8) Paper detection switch 1 (PDSW1) |
| (3) Job tray No.3 | (9) Paper detection switch 2 (PDSW2) |
| (4) Job tray No.4 | (10) Paper detection switch 3 (PDSW3) |
| (5) Job tray No.5 | (11) Paper detection switch 4 (PDSW4) |
| (6) Multi job tray pulley | (12) Paper detection switch 5 (PDSW5) |

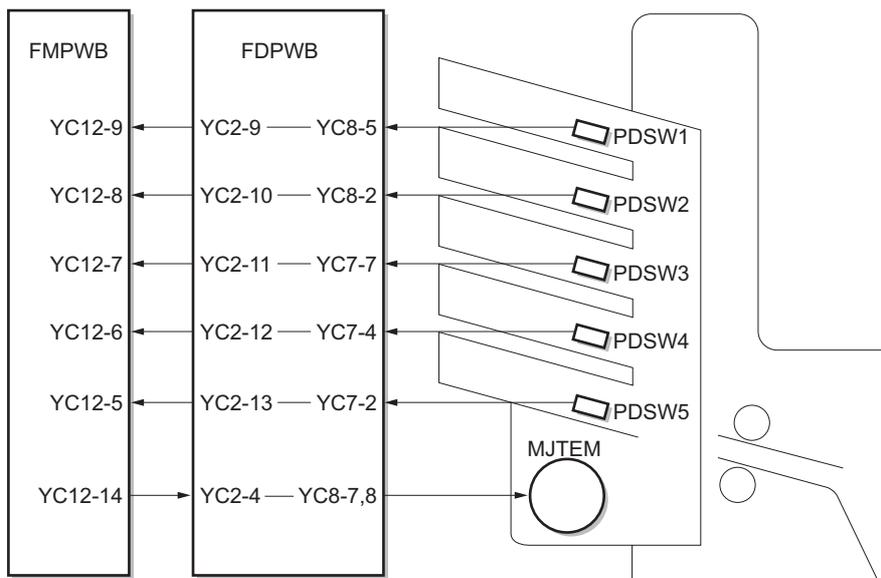


Figure 2-1-26 Block diagram of the multi job tray

Multi job tray elevation operation

The multi job tray lowers and rises by the forward and backward rotation of the multi job tray elevation motor (MJTEM), respectively.

The position detection plate is attached to the front side of the multi job tray. The position of the multi job tray is detected by the number of times the multi job tray position sensor (MJTPS) is interrupted (turned on) by the position detection plate. For instance, if job tray No.3 is selected for paper ejection, the multi job tray elevation motor (MJTEM) stops to halt the multi job tray's descent so that job No.3 is at the paper ejection position when the multi job tray position sensor (MJTPS) is interrupted (turned on) three times by the position detection plate.

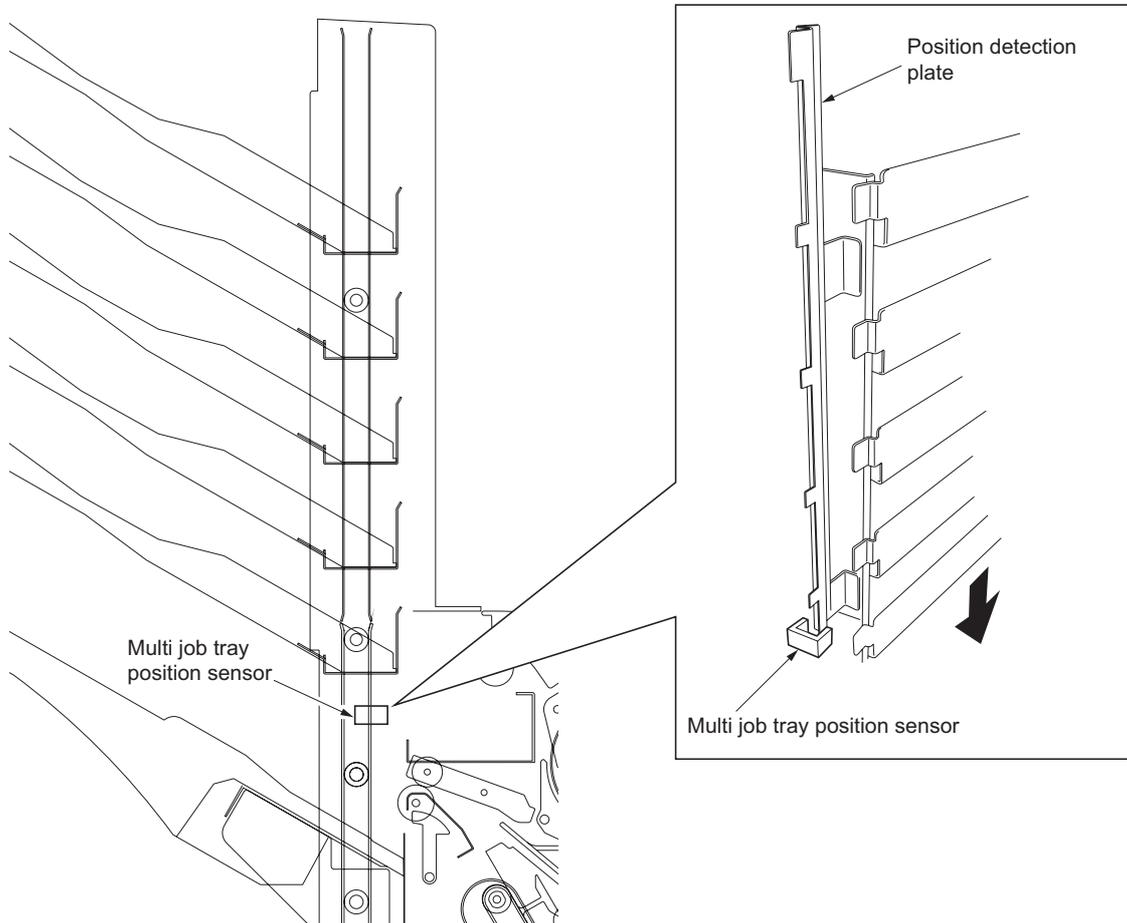


Figure 2-1-27

2-1-3 Centerfold unit

In the stitching mode, the centerfold unit folds a sheet of paper that was not stapled (multiple sheets of paper that were stapled at the center of the paper) and then ejects it (them).

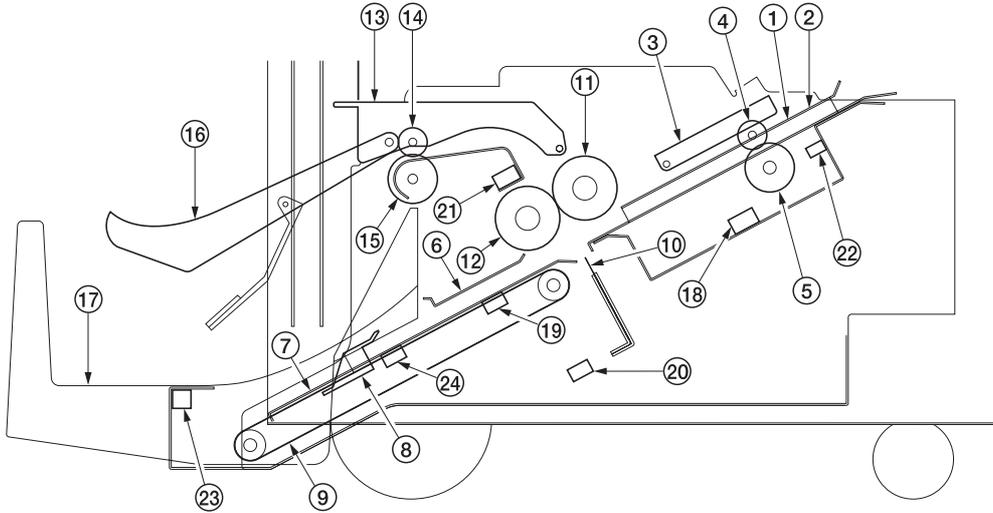


Figure 2-1-28 Centerfold unit

- | | | |
|---------------------------------------|--|---|
| (1) Front side registration guide | (12) Left centerfold roller | (21) Folded edge detection sensor (FEDS) |
| (2) Rear side registration guide | (13) Upper eject guide | (22) Centerfold unit paper entry sensor (CUPES) |
| (3) Paper entry pulley guide | (14) Eject pulley | (23) Eject tray paper detection switch (ETPDSW) |
| (4) Paper entry pulley | (15) Eject roller | (24) Inside tray detection sensor (ITDS) |
| (5) Paper entry roller | (16) Ejected paper holding arm | |
| (6) Upper paper conveying guide plate | (17) Storage cover | |
| (7) Lower paper conveying guide plate | (18) Side registration guide home position sensor (SRGHPS) | |
| (8) Centering plate | (19) Centering plate home position sensor (CPHPS) | |
| (9) Paper conveying belt | (20) Centerfold blade home position sensor (CBLHPS) | |
| (10) Centerfold blade | | |
| (11) Right centerfold roller | | |

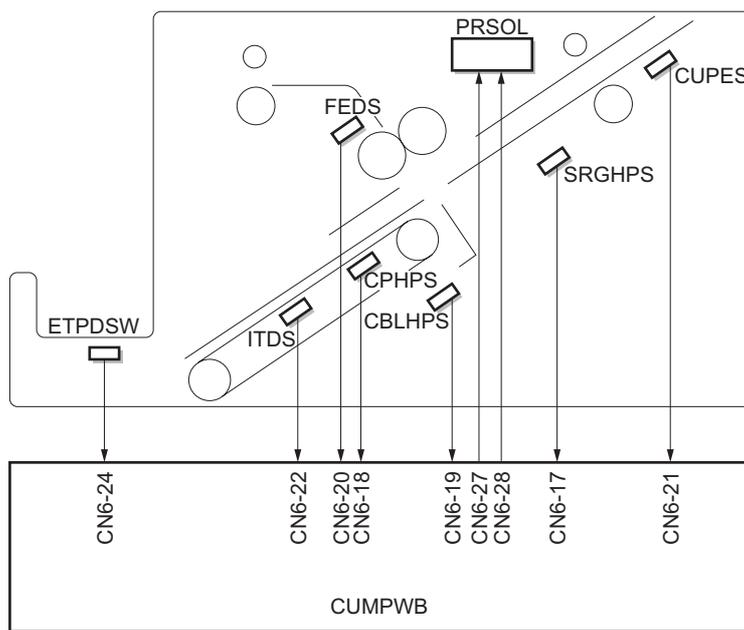


Figure 2-1-29 Block diagram of the centerfold unit

Paper centerfold operation

1. The pressure release solenoid (PRSOL) turns on so that the paper entry pulley guide rises.
The unit enters the paper insertion standby state.

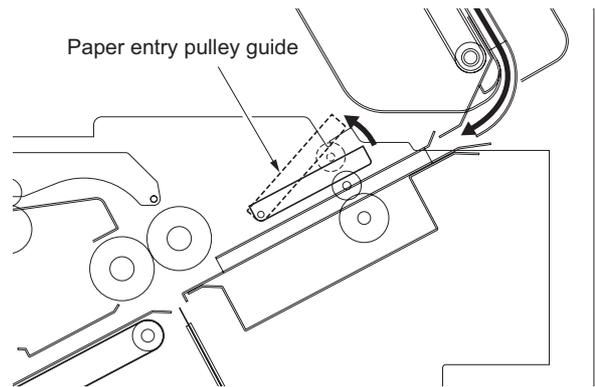


Figure 2-1-30

2. When paper is inserted from the intermediate tray, the pressure release solenoid (PRSOL) turns off so that the paper entry pulley guide lowers and conveys paper to the standby position.

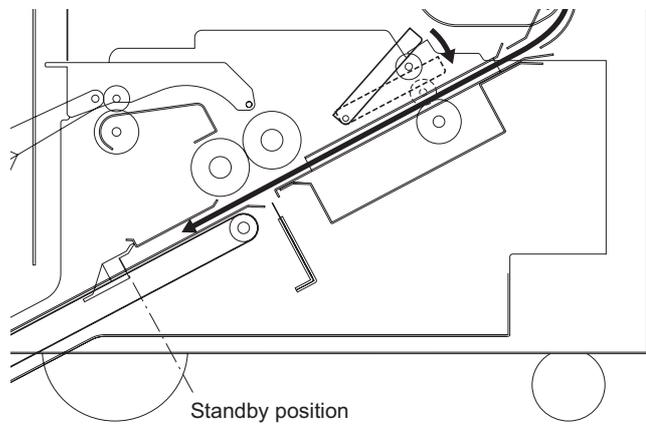


Figure 2-1-31

3. The pressure release solenoid (PRSOL) turns on so that the paper entry pulley guide rises.
4. The centering plate moves from the standby position (home position) to the centerfold position suited to the paper size.
5. The front/rear side registration guides identify the paper sides.

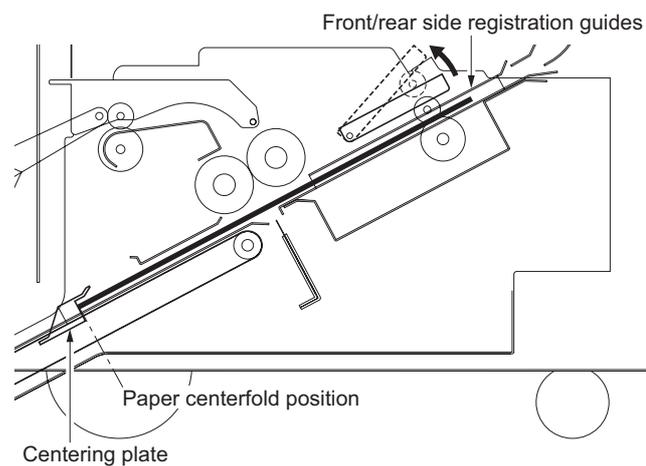


Figure 2-1-32

6. The centerfold blade pushes up the paper at the center and the paper is inserted between the right/left centerfold rollers.
7. Folded paper is ejected to the storage cover.

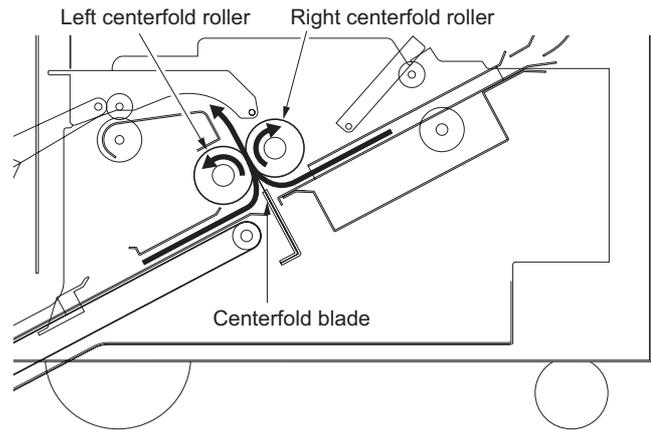


Figure 2-1-33

2-1-4 Punch unit

The punch unit is installed on the paper insertion section of the finisher. It stops paper conveyance and punches paper.

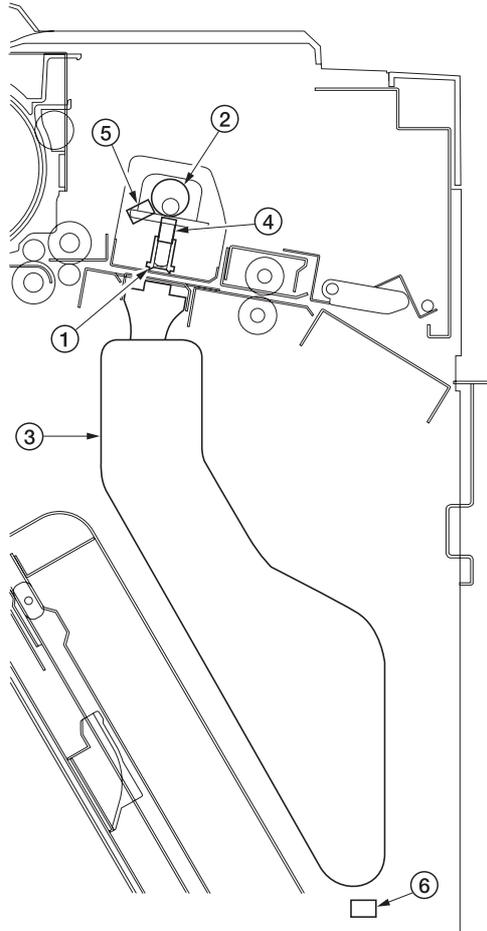


Figure 2-1-34 Punch unit

- | | |
|---------------------|---------------------------------------|
| (1) Punch cutter | (4) Punch pulse sensor (PPS) |
| (2) Punch cam | (5) Punch home position sensor (PHPS) |
| (3) Punch waste box | (6) Punch waste box sensor (PWBS) |

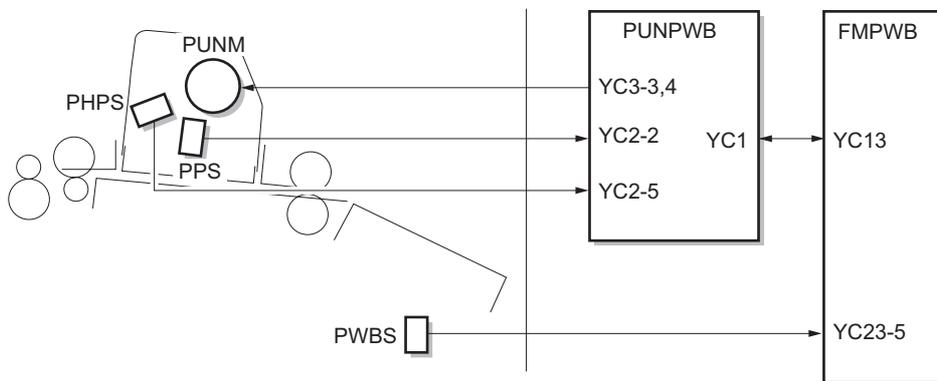


Figure 2-1-35 Block diagram of the punch unit

Punching operation

1. In the punch mode, the paper is fed out to the finisher. The paper entry motor (PEM) will be activated in a certain period of time after the paper entry motor (PEM) is turned on. The paper entry roller will be rotated.
- * Attaching the paper to the paper entry roller for a certain period of time prevents skewed feeding.

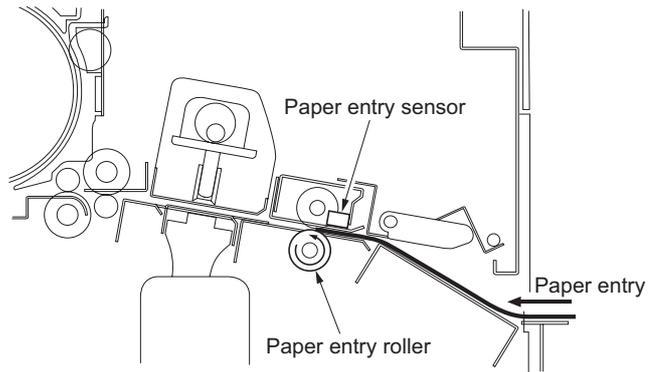


Figure 2-1-36

2. The paper rotated by the paper entry roller is fed to the punch position and stops at once. The rotation of the paper entry guide provides the paper curve.

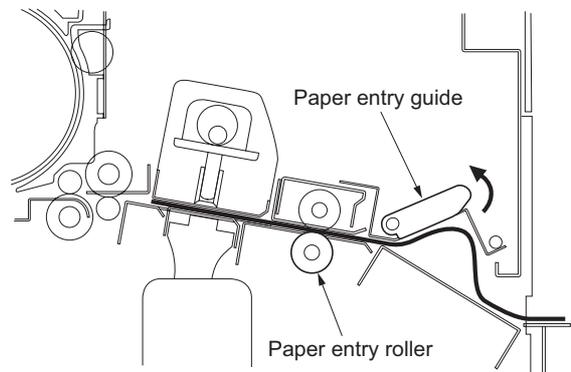


Figure 2-1-37

3. 10 msec before the paper entry roller stops, the punch motor (PUNM) will be activated to rotate the punch cam. The punch cutter descended by the rotation of the punch cam punches holes on the paper.

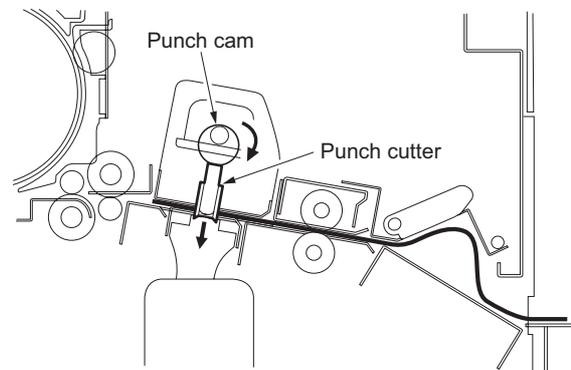


Figure 2-1-38

4. The punch cutter ascends. The punch home position sensor (PHPS) detects the home position to stop the punch. The paper entry roller rotates to convey the paper to the feedshift section.

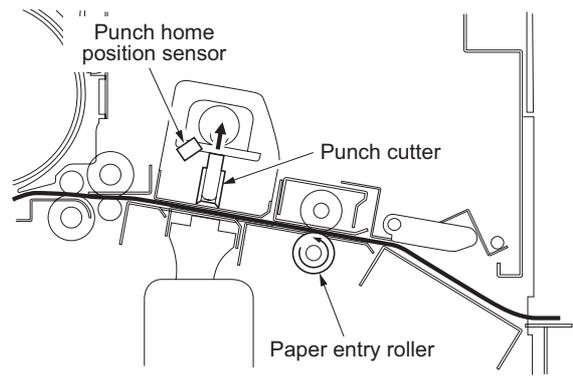


Figure 2-1-39

2-2-1 Electrical parts layout

(1) PWBs (finisher)

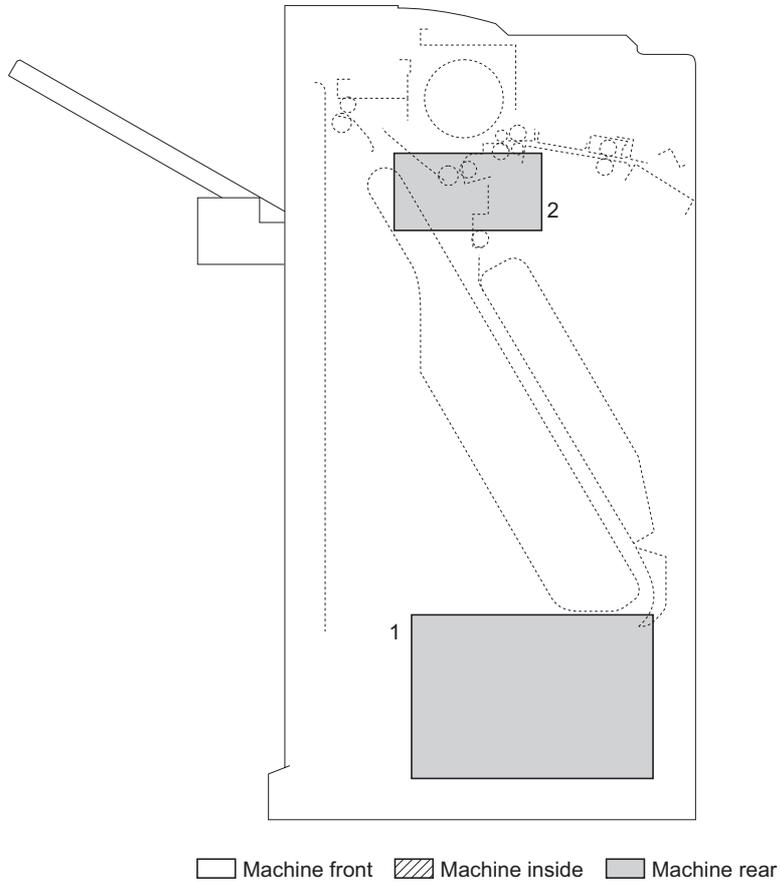


Figure 2-2-1 PWBs

1. Finisher main PWB (FMPWB) Controls electric components of finisher.
2. Finisher drive PWB (FDPWB)..... Controls each motor and solenoid.

(2) Switches and sensors (finisher)

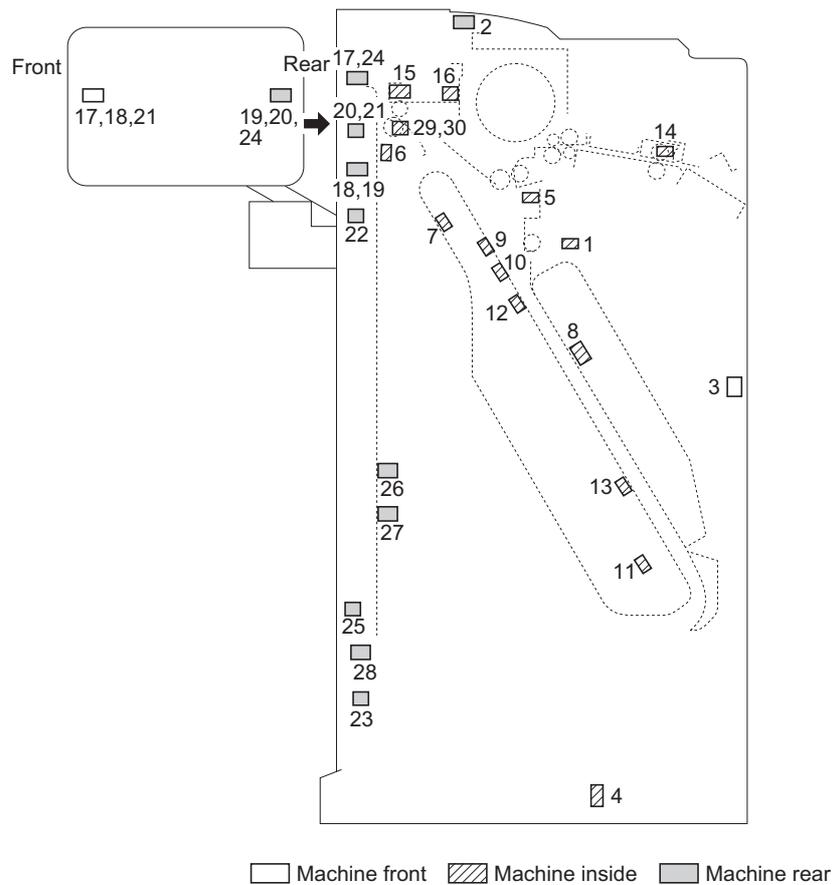


Figure 2-2-2 Switches and sensors

1. Movable guide
home position sensor (MGHPS) Detection of movable guide in home position.
2. Upper cover switch (UCSW) Detection of opening/closing of the upper cover.
3. Front cover switch (FCSW) Detection of opening/closing of the front cover.
4. Centerfold unit set switch (CUSSW) Detection of connection to the optional centerfold unit.
5. Intermediate tray
paper conveying sensor (ITPCS) Detection of paper jam in the intermediate tray.
6. Paper holder detection sensor (PHDS) Detection of paper jam in the main tray eject section.
7. Upper paper conveying belt
home position sensor (PCBHPS-U) Detection of upper paper conveying belt in home position.
8. Lower paper conveying belt
home position sensor (PCBHPS-L) Detection of lower paper conveying belt in home position.
9. Front upper side registration guide
home position sensor (SRGHPS-FU) Detection of front upper side registration guide in home position.
10. Rear upper side registration guide
home position sensor (SRGHPS-RU) Detection of rear upper side registration guide in home position.
11. Lower side registration guide
home position sensor (SRGHPS-L) Detection of front/rear lower side registration guides in home position.
12. Upper paper sensor (PS-U) Detection of paper in the intermediate tray upper section.
13. Lower paper sensor (PS-L) Detection of paper in the intermediate tray lower section.
14. Paper entry sensor (PES) Detection of paper insertion and paper jam in the finisher.
15. Paper ejection sensor (PEJS) Detection of paper ejection and paper jam.
16. Sub tray paper ejection sensor (STPES) Detection of paper ejection to and paper jam in the sub tray.
17. Multi job tray position sensor (MJTPS) Detection of optional multi job tray position.
18. Main tray paper upper surface detection
light emitting sensor (MTPUSDLES) Detection of upper surface of paper in the main tray.

19. Main tray paper upper surface detection
light intercepting sensor (MTPUSDLIS) Detection of upper surface of paper in the main tray.
20. Multi job tray paper upper surface detection
light emitting sensor (MJTPUSDLES) Detection of paper overflow in the optional multi job tray.
21. Multi job tray paper upper surface detection
light intercepting sensor (MJTPUSDLIS) Detection of paper overflow in the optional multi job tray.
22. Main tray upper limit
detection sensor (MTULDS) Detection of the main tray ascent position.
23. Main tray lower limit
detection sensor (MTLLDS) Detection of the main tray descent position.
24. Multi job tray upper limit
detection sensor (MJTULDS) Detection of the optional multi job tray ascent position.
25. Multi job tray lower limit
detection sensor (MJTLLDS) Detection of the optional multi job tray descent position.
26. Main tray load 1000
detection sensor (MTLDS-10) Detection of the paper load in the main tray.
27. Main tray load 1500
detection sensor (MTLDS-15) Detection of the paper load in the main tray.
28. Main tray load 3000
detection sensor (MTLDS-30) Detection of the paper load in the main tray.
29. Multi job tray front switch (MJTSW-F) Safety stop of optional multi job tray.
30. Multi job tray rear switch (MJTSW-R) Safety stop of optional multi job tray.

(3) Clutches and solenoids (finisher)

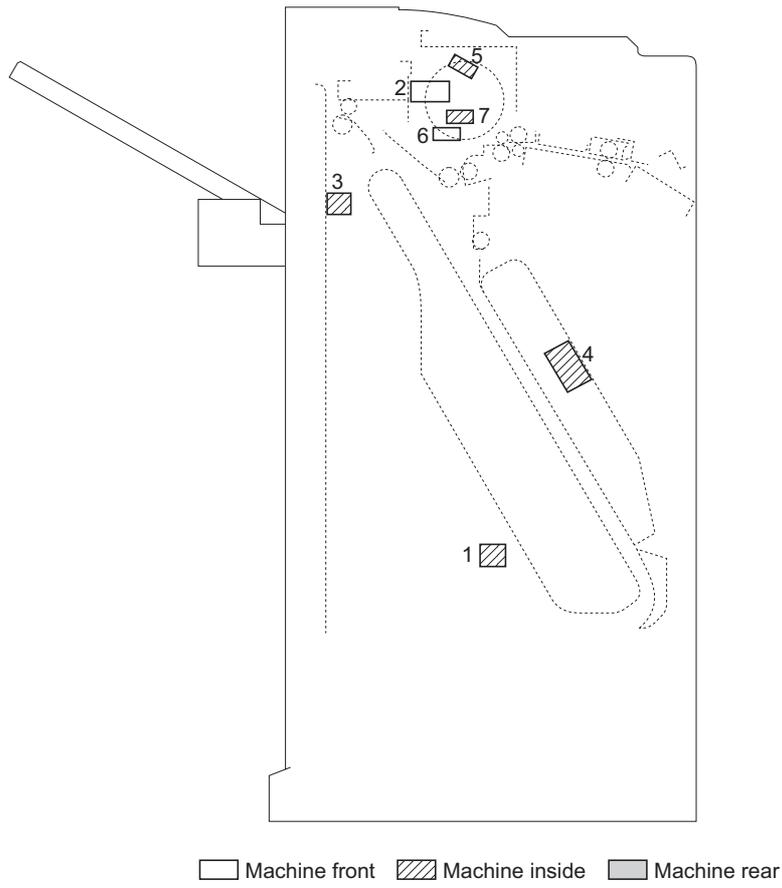


Figure 2-2-3 Clutches and solenoids

- 1. Lock solenoid (LSOL) Operates the intermediate tray holder.
- 2. Eject guide solenoid (EGSOL) Operates eject guide.
- 3. Paper holder solenoid (PHSOL) Operates main eject holder.
- 4. Paper forwarding pulley solenoid (PFPSOL) Forwards paper to the optional centerfold unit.
- 5. Feedshift solenoid A (FSSOLA) Operates sub eject feedshift guide.
- 6. Feedshift solenoid B (FSSOLB) Operates main eject feedshift guide.
- 7. Feedshift solenoid C (FSSOLC) Operates left feedshift guide.

(4) Motors and others (finisher)

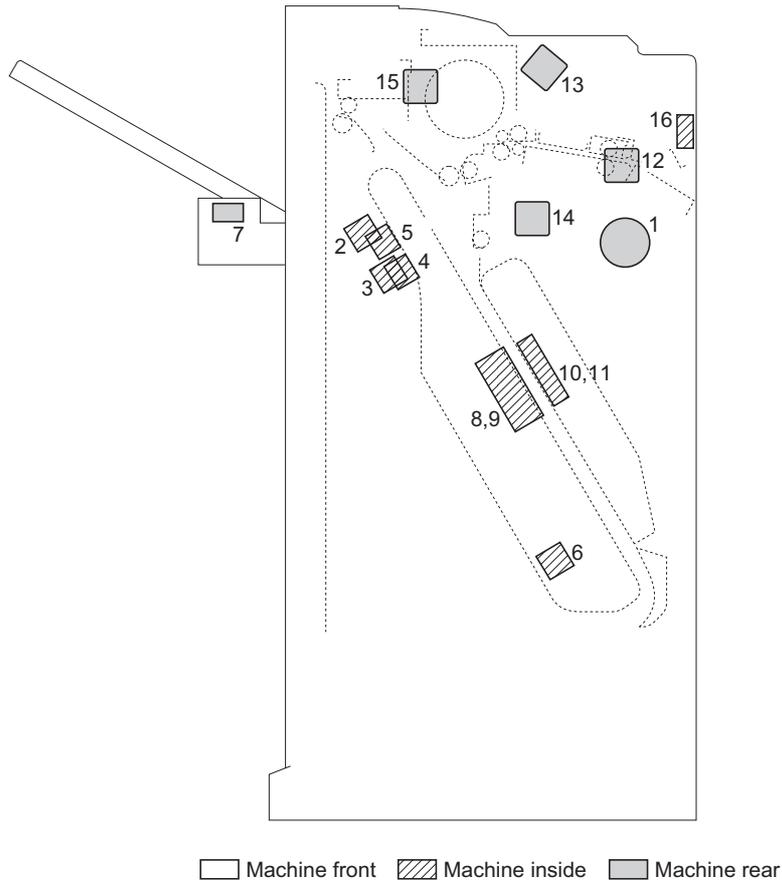


Figure 2-2-4 Motors and others

- 1. Paper conveying motor (PCM)..... Drives paper conveying section.
- 2. Upper paper conveying belt motor (PCBM-U) Drives upper paper conveying belt.
- 3. Lower paper conveying belt motor (PCBM-L)..... Drives lower paper conveying belt.
- 4. Front upper side registration guide motor (SRGM-FU)..... Drives front upper side registration guide.
- 5. Rear upper side registration guide motor (SRGM-RU) Drives rear upper side registration guide.
- 6. Lower side registration guide motor (SRGM-L) Drives lower side registration guide.
- 7. Main tray elevation motor (MTEM)..... Raises/Lowers the main tray.
- 8. Front stapler driver (STD-F) Staples paper.
- 9. Rear stapler driver (STD-R) Staples paper.
- 10. Front stapler clincher (STCLN-F) Clinches staples.
- 11. Rear stapler clincher (STCLN-R) Clinches staples.
- 12. Paper entry motor (PEM) Drives the paper entry roller.
- 13. Siding drum motor (SDM) Drives the siding motor.
- 14. Movable guide motor (MGM) Drives the movable guide.
- 15. Eject motor (EJM) Drives the eject roller.
- 16. Cooling fan motor (CFM) Cools the finisher inside.

(5) Stapler

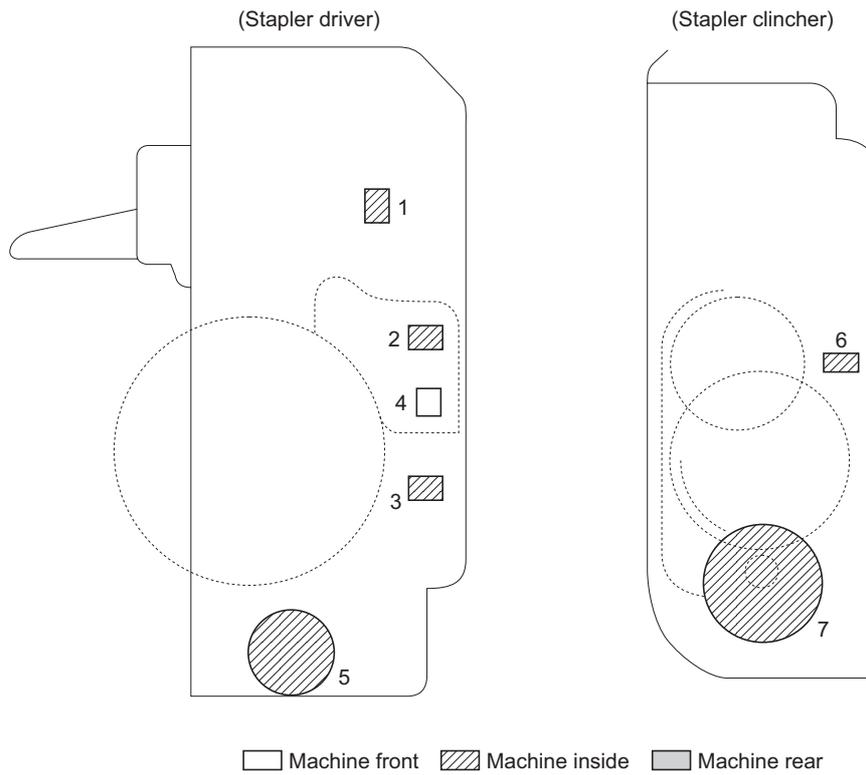


Figure 2-2-5 Stapler (Front/Rear stapler drivers, Front/Rear clinchers)

1. Front/Rear stapler empty sensor (STES-F/R) Detection of when specific stapler out of staples.
2. Front/Rear stapler cartridge sensor (STCS-F/R) Detection of whether specific staple cartridge is installed or not.
3. Front/Rear stapler home position sensor (STHPS-F/R) Detection of specific stapler in home position.
4. Front/Rear clincher start sensor (CLNSS-F/R) Drives clincher.
5. Front/Rear stapler motor (STM-F/R) Drives specific stapler (driver).
6. Front/Rear clincher home position sensor (CLNHPS-F/R) Detection of specific clincher in home position.
7. Front/Rear clincher motor (CLNM-F/R) Drives specific clincher.

(6) PWBs (optional centerfold unit)

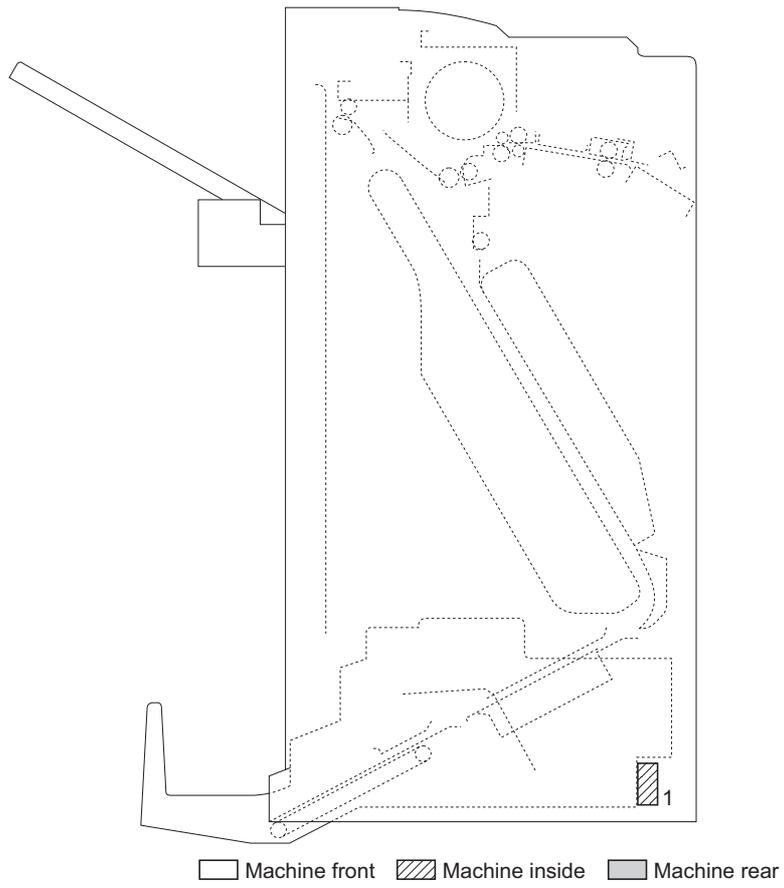


Figure 2-2-6 PWBs

1. Centerfold unit main PWB (CUMPWB)..... Controls electric components of centerfold unit.

(7) Switches and sensors (optional centerfold unit)

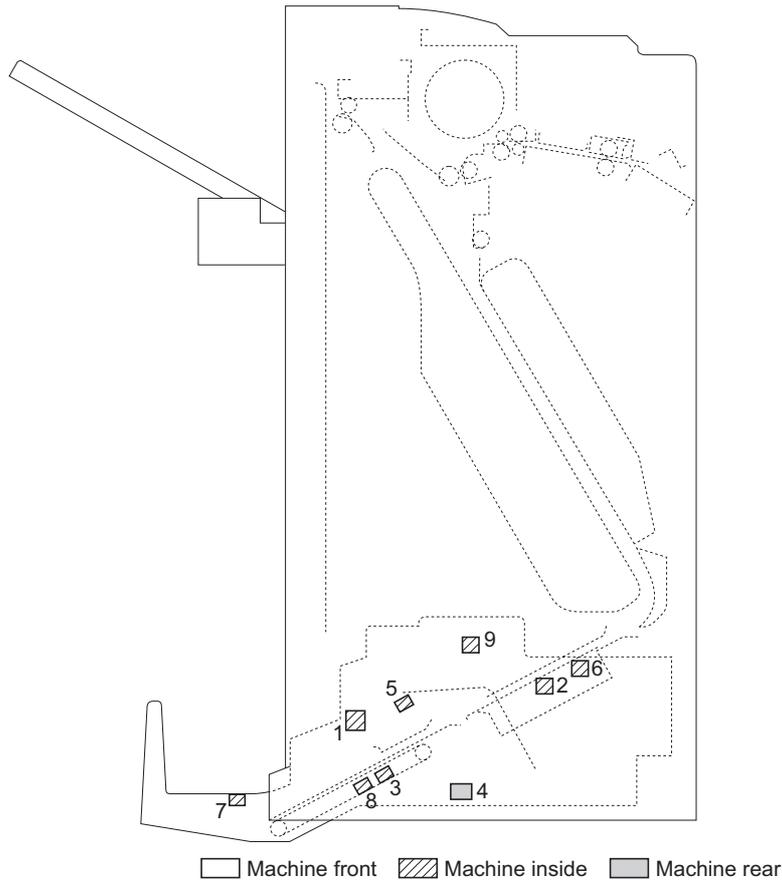


Figure 2-2-7 Switches and sensors

1. Eject tray detection switch (ETDSW) Detection of whether storage cover is installed or not.
2. Side registration guide home position sensor (SRGHPS) Detection of front/rear side registration guides in home position.
3. Centering plate home position sensor (CPHPS) Detection of centering plate in home position.
4. Centerfold blade home position sensor (CBLHPS) Detection of centerfold blade in home position.
5. Folded edge detection sensor (FEDS)..... Detection of folded edge of paper.
6. Centerfold unit paper entry sensor (CUPES) Detection of paper insertion into the centerfold unit.
7. Eject tray paper detection switch (ETPDSW)..... Detection of paper in the storage cover.
8. Inside tray detection sensor (ITDS) Detection of paper in the inside tray.
9. Motor pulse sensor (MPS) Detection of main motor pulse.

(8) Motors and solenoids (optional centerfold unit)

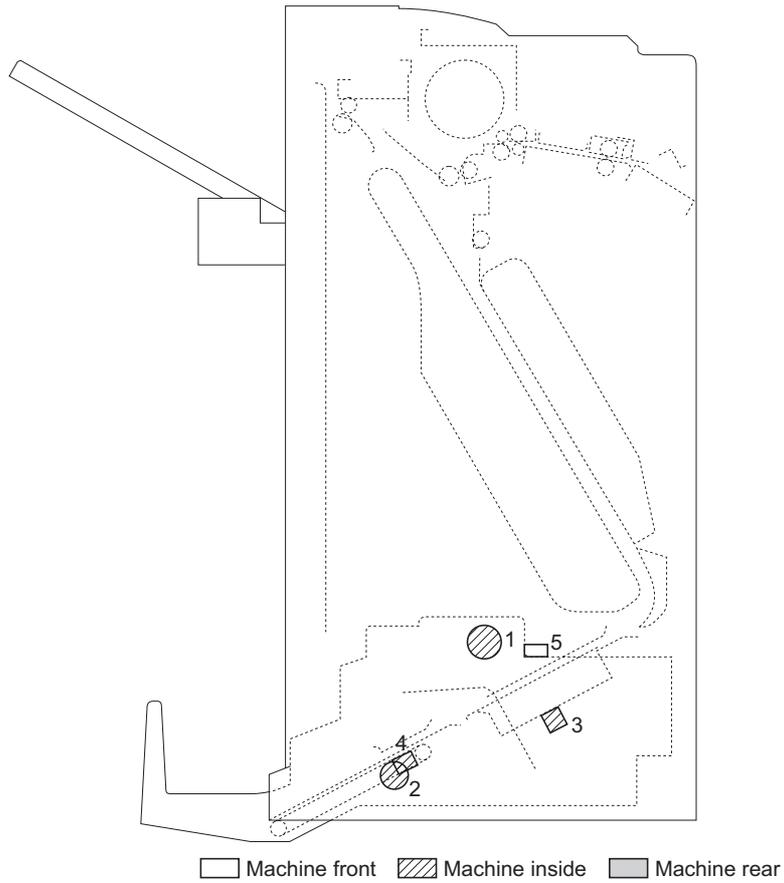


Figure 2-2-8 Motors and solenoids

- 1. Main motor (MM)..... Drives the paper conveying section.
- 2. Centerfold blade motor (CBLM)..... Drives centerfold blade.
- 3. Side registration guide motor (SRGM)..... Drives front/rear side registration guides.
- 4. Centering plate motor (CPM)..... Drives centering plate.
- 5. Pressures release solenoid (PRSOL)..... Operates paper entry pulley guide.

(9) Switches and motors (optional multi job tray)

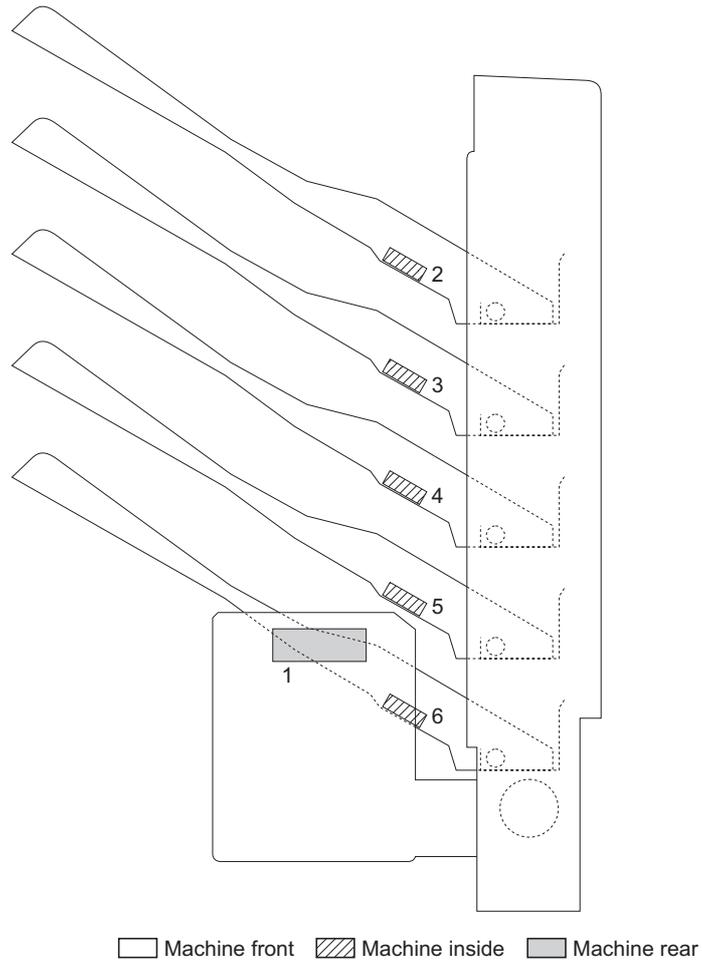


Figure 2-2-9

- 1. Multi job tray elevation motor (MJTEM) Raises/Lowers the multi job tray.
- 2. Paper detection switch 1 (PDSW1)..... Detection of paper in job tray No. 1.
- 3. Paper detection switch 2 (PDSW2)..... Detection of paper in job tray No. 2.
- 4. Paper detection switch 3 (PDSW3)..... Detection of paper in job tray No. 3.
- 5. Paper detection switch 4 (PDSW4)..... Detection of paper in job tray No. 4.
- 6. Paper detection switch 5 (PDSW5)..... Detection of paper in job tray No. 5.

(10) Switches and motors (optional punch unit)

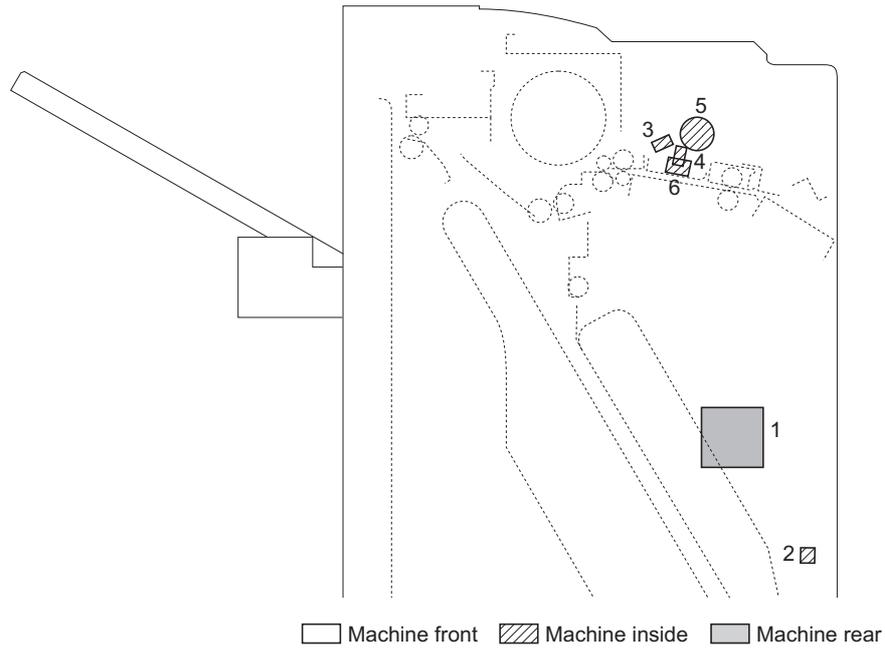


Figure 2-2-10 Switches and motors

- 1. Punch PWB (PUNPWB) Controls electric components of punch unit.
- 2. Punch waste box sensor (PWBS)..... Detection of whether punch waste box is installed or not.
- 3. Punch home position sensor (PHPS) Detection of punch cam in home position.
- 4. Punch pulse sensor (PPS)..... Controls the rotation of punch cam.
- 5. Punch motor (PUNM)..... Drives punching.
- 6. Punch solenoid (PUNSOL) Switches the position.

2-3-1 Finisher main PWB

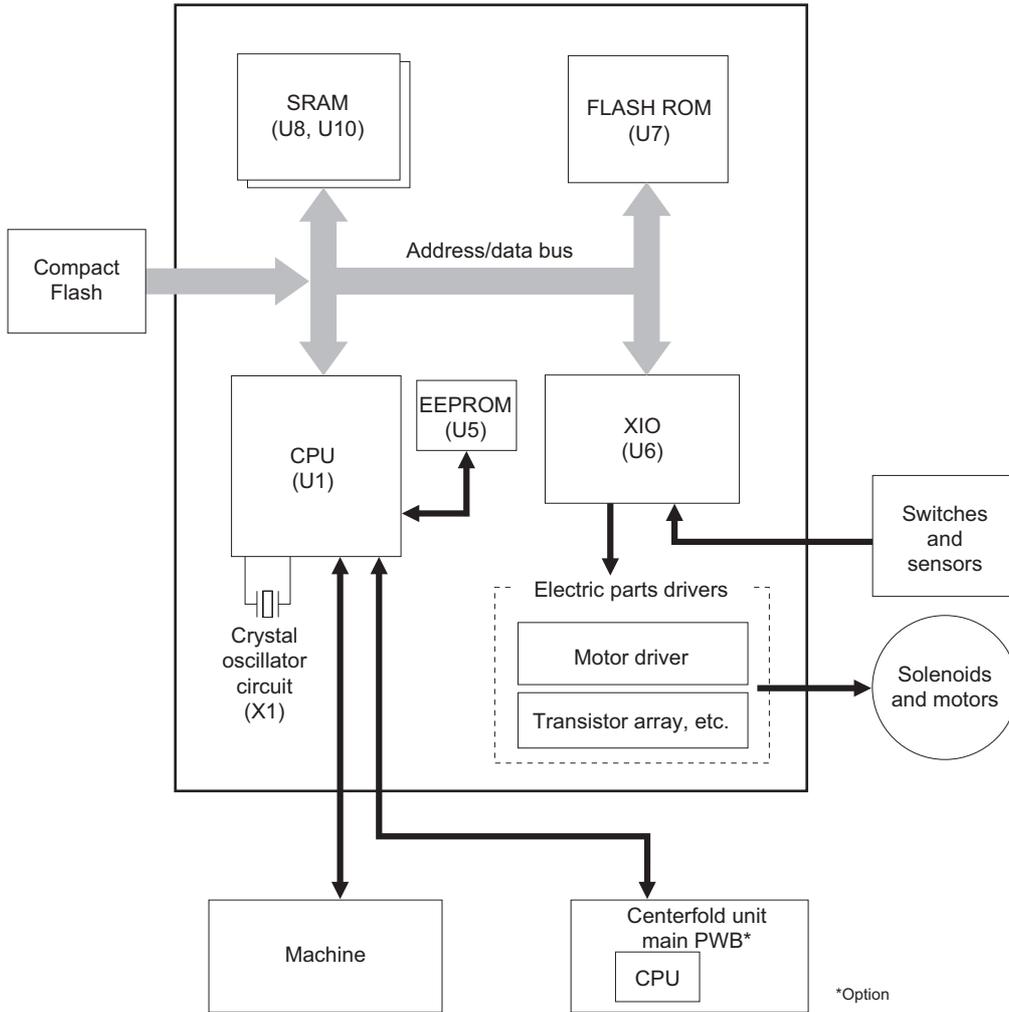


Figure 2-3-1 Block diagram of the finisher main PWB

The finisher main PWB (FMPWB) includes the CPU, EEPROM and, SRAM, ASIC and FLASH ROM. It controls each device as well as the entire finisher according to the program in the EEPROM. The EEPROM contains the control program that is executed by the SRAM. The ASIC is the extension I/O.

The machine and the finisher are controlled sequentially. The CPU of the finisher main PWB (FMPWB) controls the entire finisher in line with communications with the machine. Though the finisher uses a different control PWB from the one for the optional centerfold unit, operations are synchronized using the communication IC (UART).

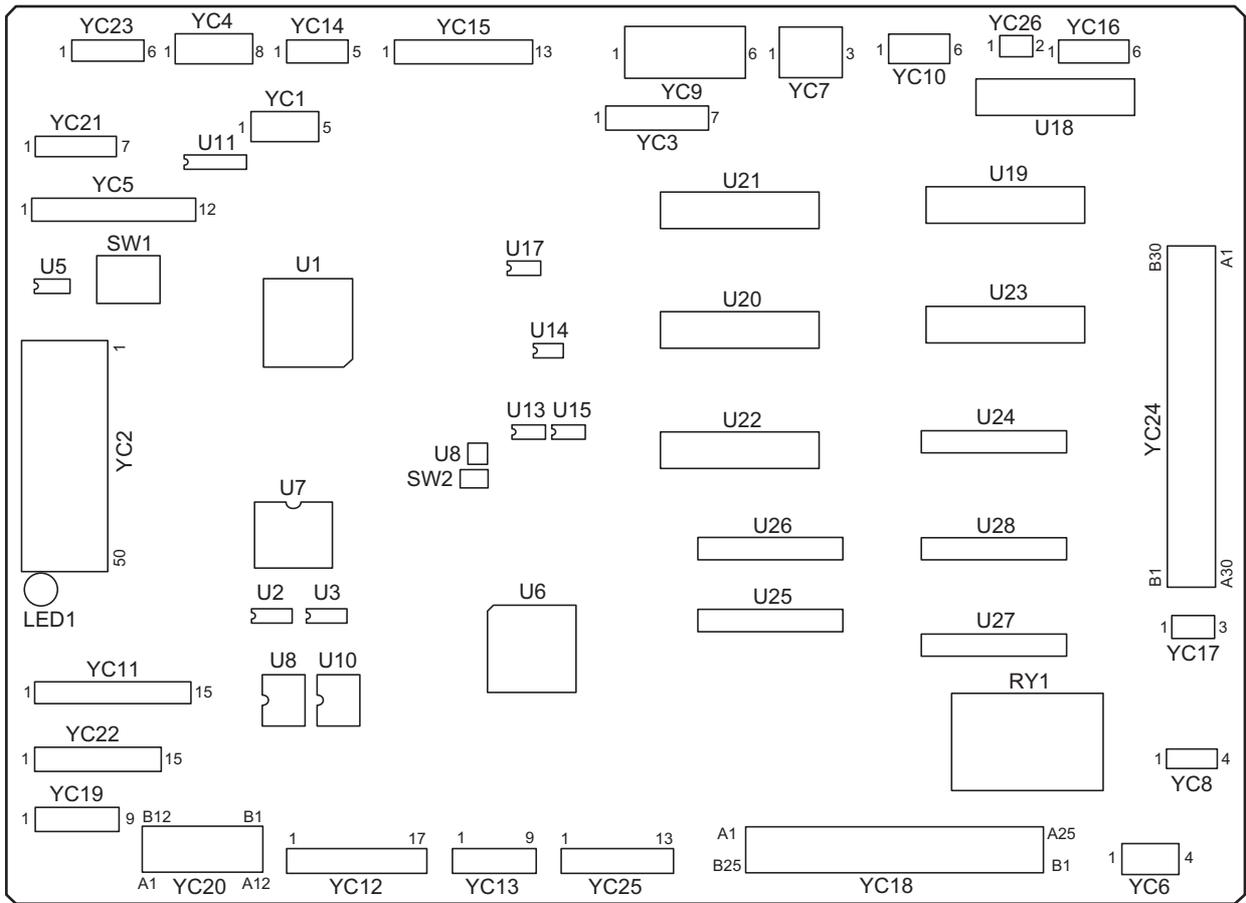


Figure 2-3-2 Finisher main PWB silk-screen diagram

Connector	Pin No.	Signal	I/O	Voltage	Description
YC4 Connected to the machine	1	SI RDY	O	0/5 V DC	SI RDY signal to the machine
	2	DF RDY	O	0/5 V DC	DF RDY signal to the machine
	3	SI SEL	I	0/5 V DC	SI SEL signal from the machine
	4	DF SEL	I	0/5 V DC	DF SEL signal from the machine
	5	SCLK	I	0/5 V DC (pulse)	SCLK signal from the machine
	6	SDO	O	0/5 V DC	SDO signal to the machine
	7	SDI	I	0/5 V DC	SDI signal from the machine
	8	DETEC- TION	O	0/5 V DC	DETECTION signal to the machine
YC6 Connected to the front cover switch	1	24V	O	24 V DC	24 V DC power output
	2	N.C.	-	-	Not used
	3	N.C.	-	-	Not used
	4	24V	I	24 V DC	24 V DC power input
YC7 Connected to the machine	1	5V	I	5 V DC	5 V DC power input
	2	PG	-	-	Power ground
	3	24V	I	24 V DC	24 V DC power input
YC8 Connected to the fin- isher drive PWB	1	24V	O	24 V DC	24 V DC power output
	2	N.C.	-	-	Not used
	3	N.C.	-	-	Not used
	4	24V	I	24 V DC	24 V DC power input
YC9 Connected to the fin- isher drive PWB and punch PWB	1	24VR	O	24 V DC	24 V DC power output
	2	PG	-	-	Power ground
	3	24VR	O	24 V DC	24 V DC power output
	4	PG	-	-	Power ground
	5	5V	O	5 V DC	5 V DC power output
	6	SG	-	-	Signal ground
YC10 Connected to the machine	1	SG	-	-	Signal ground
	2	SG	-	-	Signal ground
	3	SG	-	-	Signal ground
	4	SG	-	-	Signal ground
	5	SG	-	-	Signal ground
	6	SG	-	-	Signal ground
YC11 Connected to the cen- terfold unit and center- fold unit set switch	1	5V	O	5 V DC	5 V DC power output
	2	CUSSW	I	0/5 V DC	Centerfold unit set switch On/Off
	3	SG	-	-	Signal ground
	4	24VR	O	24 V DC	24 V DC power output
	5	24VR	O	24 V DC	24 V DC power output
	6	PG	-	-	Power ground
	7	PG	-	-	Power ground
	8	5V	O	5 V DC	5 V DC power output
	9	SG	-	-	Signal ground
	10	TxD	O	0/5 V DC (pulse)	Centerfold unit communication signal
	11	SG	-	-	Signal ground
	12	RxD	I	0/5 V DC (pulse)	Centerfold unit communication signal
	13	SG	-	-	Signal ground
	14	RESET	O	0/5 V DC	Centerfold unit RESET signal
	15	DETEC- TION	I	0/5 V DC	Centerfold unit detection signal

Connector	Pin No.	Signal	I/O	Voltage	Description
YC12 Connected to the fin- isher drive PWB	1	5V	O	5 V DC	5 V DC power output
	2	5V	O	5 V DC	5 V DC power output
	3	SG	-	-	Signal ground
	4	SG	-	-	Signal ground
	5	PDSW5	I	0/5 V DC	Paper detection switch 5 On/Off
	6	PDSW4	I	0/5 V DC	Paper detection switch 4 On/Off
	7	PDSW3	I	0/5 V DC	Paper detection switch 3 On/Off
	8	PDSW2	I	0/5 V DC	Paper detection switch 2 On/Off
	9	PDSW1	I	0/5 V DC	Paper detection switch 1 On/Off
	10	DETEC- TION	I	0/5 V DC	Multi job tray detection signal
	11	PHDS	I	0/5 V DC	Paper holder detection sensor On/Off
	12	MODE	O	0/24 V DC	Multi job tray elevation motor drive control signal
	13	CW/CCW	O	0/24 V DC	Multi job tray elevation motor drive control signal
	14	REM	O	0/24 V DC	Multi job tray elevation motor On/Off
	15	MODE	O	0/24 V DC	Main tray elevation motor drive control signal
	16	CW/CCW	O	0/24 V DC	Main tray elevation motor drive control signal
	17	REM	O	0/24 V DC	Main tray elevation motor On/Off
YC13 Connected to the punch PWB	1	EESDA	O	0/5 V DC	Punch unit EESDA signal
	2	EESCLK	O	0/5 V DC (pulse)	Punch unit EESCLK signal
	3	REM-C	O	0/5 V DC	Punch unit REM-C signal
	4	REM-I	O	0/5 V DC	Punch unit REM-I signal
	5	REDAY	I	0/5 V DC	Punch unit REDAY signal
	6	ERROR	I	0/5 V DC	Punch unit ERROR signal
	7	DETEC- TION	I	0/5 V DC	Punch unit detection signal
	8	SG	-	-	Signal ground
	9	5V	O	5 V DC	5 V DC power output
YC14 Connected to the paper conveying motor	1	24VR	O	0/24 V DC	24 V DC power output
	2	PG	-	-	Power ground
	3	PCM	O	0/24 V DC	Paper conveying motor on/off
	4	LOCK	I	0/5 V DC	Paper conveying motor lock signal
	5	CLK	O	0/5 V DC (pulse)	Paper conveying motor drive control signal
YC15 Connected to the eject guide sole- noid, feed- shift solenoid A, feedshift solenoid B, punch sole- noid and paper entry guide sole- noid	1	24VR	O	24 V DC	24 V DC power output
	2	ACT	O	0/24 V DC	Eject guide solenoid on/off
	3	24VR	O	24 V DC	24 V DC power output
	4	ACT	O	0/24 V DC	Feedshift solenoid B (latch-on)
	5	RET	O	0/24 V DC	Feedshift solenoid B (release)
	6	24VR	O	24 V DC	24 V DC power output
	7	ACT	O	0/24 V DC	Punch solenoid (latch-on) on/off
	8	RET	O	0/24 V DC	Punch solenoid (release) on/off
	9	24VR	O	24 V DC	24 V DC power output
	10	ACT	O	0/24 V DC	Feedshift solenoid A (latch-on)
	11	RET	O	0/24 V DC	Feedshift solenoid A (release)
	12	N.C.	-	-	Not used
	13	N.C.	-	-	Not used
YC16 Connected to the mov- able guide motor	1	_B	O	0/24 V DC (pulse)	Movable guide motor drive signal
	2	COM(24VR)	O	24 V DC	24 V DC poser output
	3	B	O	0/24 V DC (pulse)	Movable guide motor drive signal
	4	A	O	0/24 V DC (pulse)	Movable guide motor drive signal
	5	COM(24VR)	O	24 V DC	24 V DC poser output
	6	_A	O	0/24 V DC (pulse)	Movable guide motor drive signal

Connector	Pin No.	Signal	I/O	Voltage	Description
YC17	1	24VR	O	24 V DC	24 V DC power output
Connected to the lock solenoid	2	ACT	O	0/24 V DC	Lock solenoid (latch-on) on/off
	3	RET	O	0/24 V DC	Lock solenoid (release) on/off
YC18	A1	5V	O	5 V DC	5 V DC power output
Connected to the intermediate tray	A2	5V	O	5 V DC	5 V DC power output
	A3	5V	O	5 V DC	5 V DC power output
	A4	5V	O	5 V DC	5 V DC power output
	A5	5V	O	5 V DC	5 V DC power output
	A6	5V	O	5 V DC	5 V DC power output
	A7	N.C.	-	-	Not used
	A8	SG	-	-	Signal ground
	A9	SG	-	-	Signal ground
	A10	N.C.	-	-	Not used
	A11	CS	I	0/5 V DC	Front staple CS signal
	A12	CST	I	0/5 V DC	Front staple CST signal
	A13	5V	O	5 V DC	5 V DC power output
	A14	N.C.	-	-	Not used
	A15	CS	I	0/5 V DC	Rear staple CS signal
	A16	CST	I	0/5 V DC	Rear staple CST signal
	A17	5V	O	5 V DC	5 V DC power output
	A18	N.C.	-	-	Not used
	A19	N.C.	-	-	Not used
	A20	N.C.	-	-	Not used
	A21	N.C.	-	-	Not used
	A22	HP	I	0/5 V DC	Front clincher home position sensor on/off
	A23	HP	I	0/5 V DC	Rear clincher home position sensor on/off
	A24	PCBHPS-L	I	0/5 V DC	Lower paper conveying belt home position sensor on/off
		A25	5V	O	5 V DC
	B1	5V	O	5 V DC	5 V DC power output
	B2	5V	O	5 V DC	5 V DC power output
	B3	SG	-	-	Signal ground
	B4	SG	-	-	Signal ground
	B5	SG	-	-	Signal ground
	B6	SG	-	-	Signal ground
	B7	N.C.	-	-	Not used
	B8	N.C.	-	-	Not used
	B9	N.C.	-	-	Not used
	B10	DHP	I	0/5 V DC	Rear stapler home position sensor on/off
	B11	LS	I	0/5 V DC	Rear staple LS signal
	B12	CD	I	0/5 V DC	Rear staple CD signal
	B13	SG	-	-	Signal ground
	B14	DHP	I	0/5 V DC	Front stapler home position sensor on/off
	B15	LS	I	0/5 V DC	Front staple LS signal
	B16	CD	I	0/5 V DC	Front staple CD signal
	B17	N.C.	-	-	Not used
	B18	N.C.	-	-	Not used
	B19	N.C.	-	-	Not used
	B20	SRGHPS-L	I	0/5 V DC	Lower side registration guide home position sensor on/off
	B21	SRGHPS-RU	I	0/5 V DC	Rear upper side registration guide home position sensor on/off
	B22	SRGHPS-FU	I	0/5 V DC	Front upper side registration guide home position sensor on/off
	B23	PS-L	I	0/5 V DC	Lower paper sensor on/off
	B24	PS-U	I	0/5 V DC	Upper paper sensor on/off

Connector	Pin No.	Signal	I/O	Voltage	Description
YC18	B25	PCBHPS-U	I	0/5 V DC	Upper paper conveying belt home position sensor on/off
Connected to the intermediate tray					
YC19	1	5V	O	5 V DC	5 V DC power output
Connected to the main tray paper upper surface detection light emitting sensor, multi job tray paper upper surface detection light intercepting sensor and multi job tray position sensor	2	MTPUS-DLES	O	0/5 V DC	Main tray paper upper surface detection light emitting sensor on/off
	3	LED	I	0/5 V DC	Multi job tray paper upper surface detection light emitting sensor
	4	SG	-	-	Signal ground
	5	MJTPUSD-LIS	I	0/5 V DC	Multi job tray paper upper surface detection light intercepting sensor on/off
	6	5V	O	5 V DC	5 V DC power output
	7	SG	-	-	Signal ground
	8	MJTPUSD-LIS	I	0/5 V DC	Multi job tray position sensor on/off
9	5V	O	5 V DC	5 V DC power output	
YC20	A1	5V	O	5 V DC	5 V DC power output
Connected to the multi job tray paper upper surface detection light emitting sensor, multi job tray upper limit detection sensor, main tray paper upper surface detection light intercepting sensor, main tray upper limit detection sensor, paper ejection sensor, sub tray paper ejection sensor, multi job tray rear switch and multi job tray front switch	A2	MJTPUS-DLES	O	0/5 V DC	Multi job tray paper upper surface detection light emitting sensor on/off
	A3	SG	-	-	Signal ground
	A4	MJTULDS	I	0/5 V DC	Multi job tray upper limit detection sensor on/off
	A5	5V	O	5 V DC	5 V DC power output
	A6	LED	I	0/5 V DC	Main tray paper upper surface detection light emitting sensor
	A7	SG	-	-	Signal ground
	A8	MTPUSD-LIS	I	0/5 V DC	Main tray paper upper surface detection light intercepting sensor on/off
	A9	5V	O	5 V DC	5 V DC power output
	A10	SG	-	-	Signal ground
	A11	MTULDS	I	0/5 V DC	Main tray upper limit detection sensor on/off
	A12	5V	O	5 V DC	5 V DC power output
	B1	SG	-	-	Signal ground
	B2	PEJS	I	0/5 V DC	Paper ejection sensor on/off
	B3	5V	O	5 V DC	5 V DC power output
B4	SG	-	-	Signal ground	
B5	STPES	I	0/5 V DC	Sub tray paper ejection sensor on/off	
B6	5V	O	5 V DC	5 V DC power output	
B7	5V	O	5 V DC	5 V DC power output	
B8	MJT SW-R	I	0/5 V DC	Multi job tray rear switch on/off	
B9	SG	-	-	Signal ground	
B10	5V	O	5 V DC	5 V DC power output	
B11	MJT SW-F	I	0/5 V DC	Multi job tray front switch on/off	
B12	SG	-	-	Signal ground	

Connector	Pin No.	Signal	I/O	Voltage	Description
YC21 Connected to the movable guide home position sensor and intermediate tray paper conveying sensor	1	SG	-	-	Signal ground
	2	MGHPS	I	0/5 V DC	Movable guide home position sensor on/off
	3	5V	O	5 V DC	5 V DC power output
	4	SG	-	-	Signal ground
	5	ITPCS	I	0/5 V DC	Intermediate tray paper conveying sensor on/off
	6	5V	O	5 V DC	5 V DC power output
	7	N.C.	-	-	Not used
YC22 Connected to the main tray lower limit detection sensor, multi job tray lower limit detection sensor and main tray load 1000/1500/3000 detection sensors	1	SG	-	-	Signal ground
	2	MTLLDS	I	0/5 V DC	Main tray lower limit detection sensor on/off
	3	5V	O	5 V DC	5 V DC power output
	4	SG	-	-	Signal ground
	5	MTLDS-30	I	0/5 V DC	Main tray load 3000 detection sensor on/off
	6	5V	O	5 V DC	5 V DC power output
	7	SG	-	-	Signal ground
	8	MJTLDS	I	0/5 V DC	Multi job tray lower limit detection sensor on/off
	9	5V	O	5 V DC	5 V DC power output
	10	SG	-	-	Signal ground
	11	MTLDS-15	I	0/5 V DC	Main tray load 1500 detection sensor on/off
	12	5V	O	5 V DC	5 V DC power output
	13	SG	-	-	Signal ground
	14	MTLDS-10	I	0/5 V DC	Main tray load 1000 detection sensor on/off
	15	5V	O	5 V DC	5 V DC power output
YC23 Connected to the paper entry sensor and punch waste box sensor	1	SG	-	-	Signal ground
	2	PES	I	0/5 V DC	Paper entry sensor on/off
	3	5V	O	5 V DC	5 V DC power output
	4	SG	-	-	Signal ground
	5	PWBS	I	0/5 V DC	Punch waste box sensor on/off
	6	5V	O	5 V DC	5 V DC power output
YC24 Connected to the intermediate tray	A1	_B	O	0/24 V DC (pulse)	Upper paper conveying belt motor drive control signal
	A2	COM(24VR)	O	24 V DC	24 V DC power output
	A3	A	O	0/24 V DC (pulse)	Upper paper conveying belt motor drive control signal
	A4	_B	O	0/24 V DC (pulse)	Lower paper conveying belt motor drive control signal
	A5	COM(24VR)	O	24 V DC	24 V DC power output
	A6	A	O	0/24 V DC (pulse)	Lower paper conveying belt motor drive control signal
	A7	_B	O	0/24 V DC (pulse)	Front upper side registration guide motor drive control signal
	A8	COM(24VR)	O	24 V DC	24 V DC power output
	A9	A	O	0/24 V DC (pulse)	Front upper side registration guide motor drive control signal
	A10	_B	O	0/24 V DC (pulse)	Rear upper side registration guide motor drive control signal
	A11	COM(24VR)	O	24 V DC	24 V DC power output
	A12	A	O	0/24 V DC (pulse)	Rear upper side registration guide motor drive control signal
	A13	_B	O	0/24 V DC (pulse)	Lower side registration guide motor drive control signal
	A14	COM(24VR)	O	24 V DC	24 V DC power output
	A15	A	O	0/24 V DC (pulse)	Lower side registration guide motor drive control signal

Connector	Pin No.	Signal	I/O	Voltage	Description
YC24	A16	24VR	O	24 V DC	24 V DC power output
Connected to the intermediate tray	A17	N.C.	-	-	Not used
	A18	MOTOR R	O	0/24 V DC	Front stapler motor drive control signal
	A19	MOTOR F	O	0/24 V DC	Front stapler motor drive control signal
	A20	MOTOR F	O	0/24 V DC	Front stapler motor drive control signal
	A21	MOTOR R	O	0/24 V DC	Rear stapler motor drive control signal
	A22	MOTOR F	O	0/24 V DC	Rear stapler motor drive control signal
	A23	MOTOR F	O	0/24 V DC	Rear stapler motor drive control signal
	A24	N.C.	-	-	Not used
	A25	N.C.	-	-	Not used
	A26	N.C.	-	-	Not used
	A27	MOTOR F	O	0/24 V DC	Front clincher motor drive control signal
	A28	MOTOR R	O	0/24 V DC	Front clincher motor drive control signal
	A29	MOTOR F	O	0/24 V DC	Rear clincher motor drive control signal
	A30	MOTOR R	O	0/24 V DC	Rear clincher motor drive control signal
	B1	MOTOR R	O	0/24 V DC	Rear clincher motor drive control signal
	B2	MOTOR F	O	0/24 V DC	Rear clincher motor drive control signal
	B3	MOTOR R	O	0/24 V DC	Front clincher motor drive control signal
	B4	MOTOR F	O	0/24 V DC	Front clincher motor drive control signal
	B5	N.C.	-	-	Not used
	B6	N.C.	-	-	Not used
	B7	N.C.	-	-	Not used
	B8	N.C.	-	-	Not used
	B9	MOTOR F	O	0/24 V DC	Rear stapler motor drive control signal
	B10	MOTOR R	O	0/24 V DC	Rear stapler motor drive control signal
	B11	MOTOR R	O	0/24 V DC	Rear stapler motor drive control signal
	B12	MOTOR F	O	0/24 V DC	Front stapler motor drive control signal
	B13	MOTOR R	O	0/24 V DC	Front stapler motor drive control signal
	B14	MOTOR R	O	0/24 V DC	Front stapler motor drive control signal
	B15	PFPSOL	O	0/24 V DC	Paper forwarding pulley solenoid on/off
	B16	_A	O	0/24 V DC (pulse)	Lower side registration guide motor drive control signal
B17	COM(24VR)	O	24 V DC	24 V DC power output	
B18	B	O	0/24 V DC (pulse)	Lower side registration guide motor drive control signal	
B19	_A	O	0/24 V DC (pulse)	Rear upper side registration guide motor drive control signal	
B20	COM(24VR)	O	24 V DC	24 V DC power output	
B21	B	O	0/24 V DC (pulse)	Rear upper side registration guide motor drive control signal	
B22	_A	O	0/24 V DC (pulse)	Front upper side registration guide motor drive control signal	
B23	COM(24VR)	O	24 V DC	24 V DC power output	
B24	B	O	0/24 V DC (pulse)	Front upper side registration guide motor drive control signal	
B25	_A	O	0/24 V DC (pulse)	Lower paper conveying belt motor drive control signal	
B26	COM(24VR)	O	24 V DC	24 V DC power output	
B27	B	O	0/24 V DC (pulse)	Lower paper conveying belt motor drive control signal	
B28	_A	O	0/24 V DC (pulse)	Upper paper conveying belt motor drive control signal	
B29	COM(24VR)	O	24 V DC	24 V DC power output	
B30	B	O	0/24 V DC (pulse)	Upper paper conveying belt motor drive control signal	

Connector	Pin No.	Signal	I/O	Voltage	Description
YC25	1	RET	O	0/24 V DC	Paper holder solenoid (release) on/off
Connected to the finisher drive PWB	2	ACT	O	0/24 V DC	Paper holder solenoid (latch-on) on/off
	3	HOLD	O	0/24 V DC	Feedshift solenoid C (release) on/off
	4	ACT	O	0/24 V DC	Feedshift solenoid C (latch-on) on/off
	5	CLK	O	0/5 V DC (pulse)	Eject motor drive control signal
	6	REM	O	0/24 V DC	Eject motor on/off
	7	MODE	O	0/5 V DC	Eject motor drive control signal
	8	CLK	O	0/5 V DC (pulse)	Siding drum motor drive control signal
	9	REM	O	0/24 V DC	Siding drum motor on/off
	10	MODE	O	0/5 V DC	Siding drum motor drive control signal
	11	CLK	O	0/5 V DC (pulse)	Paper entry motor drive control signal
	12	REM	O	0/24 V DC	Paper entry motor on/off
	13	MODE	O	0/5 V DC	Paper entry motor drive control signal
	YC26	1	REM	O	0/24 V DC
Connected to the cooling fan motor	2	24VR	O	24 V DC	24 V DC power output

2-3-2 Finisher drive PWB

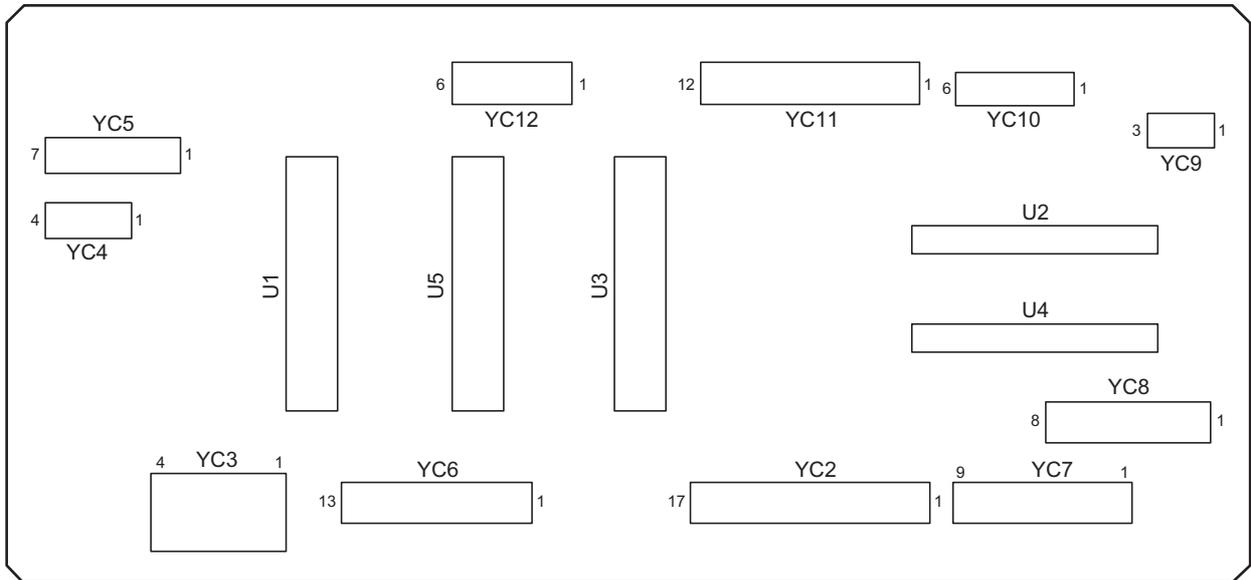


Figure 2-3-3 Finisher drive PWB silk-screen diagram

Connector	Pin No.	Signal	I/O	Voltage	Description
YC1 Connected to the fin- isher main PWB	1	MODE	I	0/5 V DC	Paper entry motor drive control signal
	2	REM	I	0/24 V DC	Paper entry motor on/off
	3	CLK	I	0/5 V DC (pulse)	Paper entry motor drive control signal
	4	MODE	I	0/5 V DC	Siding drum motor drive control signal
	5	REM	I	0/24 V DC	Siding drum motor on/off
	6	CLK	I	0/5 V DC (pulse)	Siding drum motor drive control signal
	7	MODE	I	0/5 V DC	Eject motor drive control signal
	8	REM	I	0/24 V DC	Eject motor on/off
	9	CLK	I	0/5 V DC (pulse)	Eject motor drive control signal
	10	ACT	I	0/24 V DC	Feedshift solenoid C (latch-on) on/off
	11	HOLD	I	0/24 V DC	Feedshift solenoid C (release) on/off
	12	ACT	I	0/24 V DC	Paper holder solenoid (latch-on) on/off
	13	RET	I	0/24 V DC	Paper holder solenoid (release) on/off
YC2 Connected to the fin- isher main PWB	1	REM	I	0/24 V DC	Main tray elevation motor on/off
	2	CW/CCW	I	0/24 V DC	Main tray elevation motor drive control signal
	3	MODE	I	0/24 V DC	Main tray elevation motor drive control signal
	4	REM	I	0/24 V DC	Multi job tray elevation motor on/off
	5	CW/CCW	I	0/24 V DC	Multi job tray elevation motor drive control signal
	6	MODE	I	0/24 V DC	Multi job tray elevation motor drive control signal
	7	PHDS	O	0/5 V DC	Paper holder detection sensor on/off
	8	DETEC- TION	O	0/5 V DC	Multi job tray detection signal
	9	PDSW1	O	0/5 V DC	Paper detection switch 1 on/off
	10	PDSW2	O	0/5 V DC	Paper detection switch 2 on/off
	11	PDSW3	O	0/5 V DC	Paper detection switch 3 on/off
	12	PDSW4	O	0/5 V DC	Paper detection switch 4 on/off
	13	PDSW5	O	0/5 V DC	Paper detection switch 5 on/off
	14	SG	-	-	Signal ground
	15	SG	-	-	Signal ground
	16	5V	I	5 V DC	5 V DC power input
	17	5V	I	5 V DC	5 V DC power input
YC3 Connected to the fin- isher main PWB	1	24VR	I	24 V DC	24 V DC power input
	2	PG	-	-	Power ground
	3	5V	I	5 V DC	5 V DC power input
	4	SG	-	-	Signal ground
YC4 Connected to the fin- isher main PWB	1	24V	I	24 V DC	24 V DC power input
	2	N.C.	-	-	Not used
	3	N.C.	-	-	Not used
	4	24V	O	24 V DC	24 V DC power output
YC5 Connected to the feed- shift sole- noid C and upper cover switch	1	24VR	I	24 V DC	24 V DC power output
	2	ACT	O	0/24 V DC	Feedshift solenoid C (latch-on) on/off
	3	HOLD	O	0/24 V DC	Feedshift solenoid C (release) on/off
	4	24V	O	24 V DC	24 V DC power output
	5	N.C.	-	-	Not used
	6	N.C.	-	-	Not used
	7	24V	O	24 V DC	24 V DC power input

Connector	Pin No.	Signal	I/O	Voltage	Description
YC7 Connected to the multi job tray	1	SG	-	-	Signal ground
	2	PDSW5	I	0/5 V DC	Paper detection switch 5 on/off
	3	5V	O	5 V DC	5 V DC power output
	4	PDSW4	I	0/5 V DC	Paper detection switch 4 on/off
	5	5V	O	5 V DC	5 V DC power output
	6	SG	-	-	Signal ground
	7	PDSW3	I	0/5 V DC	Paper detection switch 3 on/off
	8	5V	O	5 V DC	5 V DC power output
	9	N.C.	-	-	Not used
YC8 Connected to the multi job tray	1	SG	-	-	Signal ground
	2	PDSW2	I	0/5 V DC	Paper detection switch 2 on/off
	3	5V	O	5 V DC	5 V DC power output
	4	SG	-	-	Signal ground
	5	PDSW1	I	0/5 V DC	Paper detection switch 1 on/off
	6	5V	O	5 V DC	5 V DC power output
	7	REVERSE	O	0/24 V DC	Multi job tray elevation motor (reverse) on/off
	8	FORWARD	O	0/24 V DC	Multi job tray elevation motor (forward) on/off
YC9 Connected to the main tray eleva- tion motor	1	REVERSE	O	0/24 V DC	Main tray elevation motor (reverse) on/off
	2	FORWARD	O	0/24 V DC	Main tray elevation motor (forward) on/off
	3	DETEC- TION	I	0/5 V DC	Multi job tray detection signal
YC10 Connected to the paper holder sole- noid and paper holder detection sensor	1	24VR	O	24 V DC	24 V DC power output
	2	ACT	O	0/24 V DC	Paper holder solenoid (latch-on) on/off
	3	RET	O	0/24 V DC	Paper holder solenoid (release) on/off
	4	SG	-	-	Signal ground
	5	PHDS	I	0/5 V DC	Paper holder detection sensor on/off
	6	5V	O	5 V DC	5 V DC power output
YC11 Connected to the siding drum motor and eject motor	1	_A	O	0/24 V DC (pulse)	Siding drum motor drive control signal
	2	COM(24VR)	O	24 V DC	24 V DC power output
	3	A	O	0/24 V DC (pulse)	Siding drum motor drive control signal
	4	B	O	0/24 V DC (pulse)	Siding drum motor drive control signal
	5	COM(24VR)	O	24 V DC	24 V DC power output
	6	_B	O	0/24 V DC (pulse)	Siding drum motor drive control signal
	7	_A	O	0/24 V DC (pulse)	Eject motor drive control signal
	8	COM(24VR)	O	24 V DC	24 V DC power output
	9	A	O	0/24 V DC (pulse)	Eject motor drive control signal
	10	B	O	0/24 V DC (pulse)	Eject motor drive control signal
	11	COM(24VR)	O	24 V DC	24 V DC power output
	12	_B	O	0/24 V DC (pulse)	Eject motor drive control signal

Connector	Pin No.	Signal	I/O	Voltage	Description
YC12	1	_A	O	0/24 V DC (pulse)	Paper entry motor drive control signal
Connected to the paper entry motor	2	COM(24VR)	O	24 V DC	24 V DC power output
	3	A	O	0/24 V DC (pulse)	Paper entry motor drive control signal
	4	B	O	0/24 V DC (pulse)	Paper entry motor drive control signal
	5	COM(24VR)	O	24 V DC	24 V DC power output
	6	_B	O	0/24 V DC (pulse)	Paper entry motor drive control signal

2-3-3 Centerfold unit main PWB

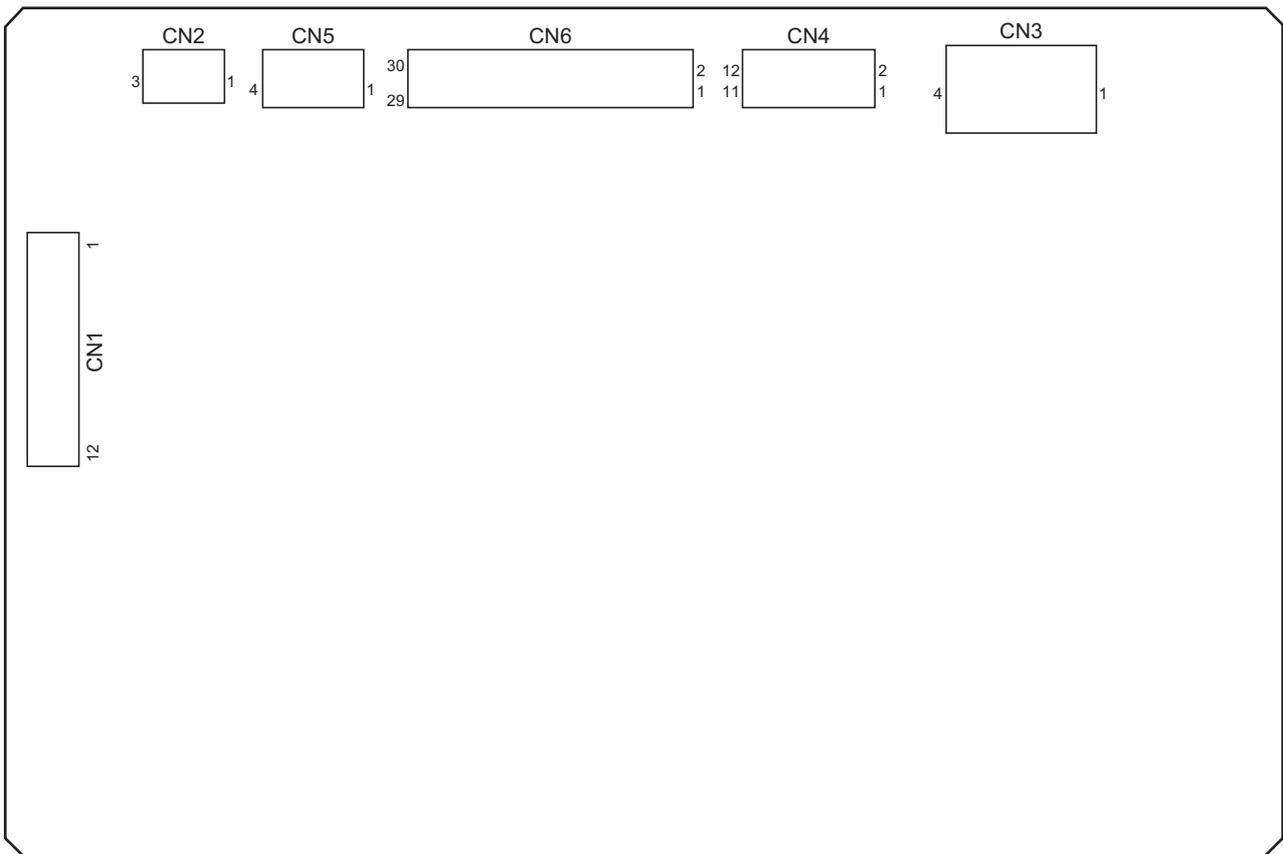
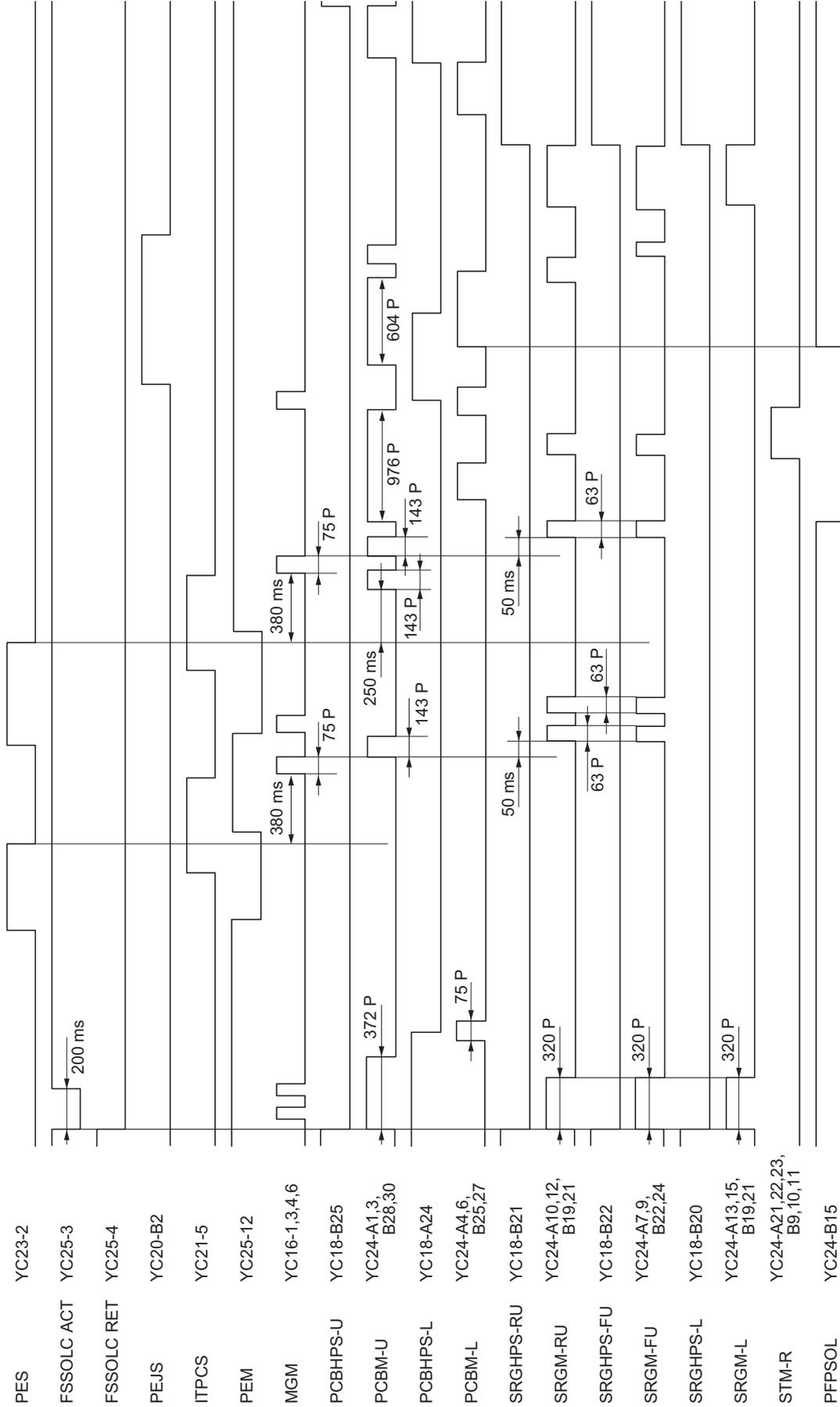


Figure 2-3-4 Centerfold unit main PWB block diagram

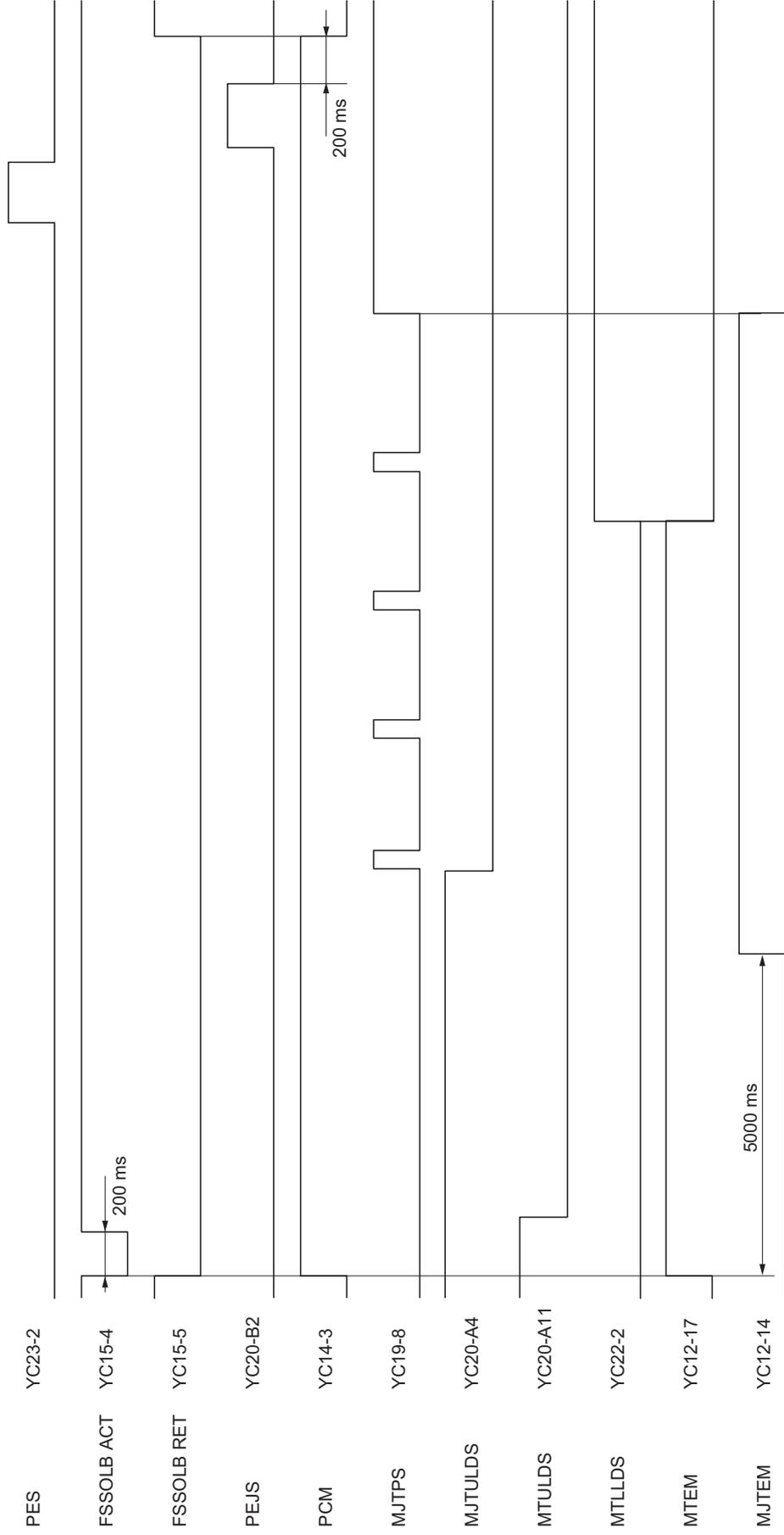
Connector	Pin No.	Signal	I/O	Voltage	Description
CN1 Connected to the finisher	1	24V	I	24 V DC	24 V DC power input
	2	24V	I	24 V DC	24 V DC power input
	3	PG(24V)	-	-	Power ground
	4	PG(24V)	-	-	Power ground
	5	SG	-	-	Signal ground
	6	5V	I	5 V DC	5 V DC power input
	7	TxD	O	0/5 V DC (pulse)	Finisher communication signal
	8	SG	-	-	Signal ground
	9	RxD	I	0/5 V DC (pulse)	Finisher communication signal
	10	SG	-	-	Signal ground
	11	RESET	I	0/5 V DC	RESET signal from the finisher
	12	DET	O	0/5 V DC	DET signal to the finisher
CN2 Connected to the eject tray detection switch	1	24V	O	24 V DC	24 V DC power output
	2	N.C.	-	-	Not used
	3	ETPSW	I	0/24 V DC	Eject tray detection switch on/off
CN3 Connected to the main motor and centerfold blade motor	1	MM F	O	0/24 V DC	Main motor (forward) on/off
	2	MM R	O	0/24 V DC	Main motor (reverse) on/off
	3	CBLM F	O	0/24 V DC	Centerfold blade motor (forward) on/off
	4	CBLM R	O	0/24 V DC	Centerfold blade motor (reverse) on/off
CN4 Connected to the side registration guide motor and centering plate motor	1	SRGM A	O	0/24 V DC (pulse)	Side registration guide motor drive control signal
	2	SRGM_A	O	0/24 V DC (pulse)	Side registration guide motor drive control signal
	3	SRGM B	O	0/24 V DC	Side registration guide motor drive control signal
	4	SRGM_B	O	0/24 V DC (pulse)	Side registration guide motor drive control signal
	5	24V	O	24 V DC	24 V DC power output
	6	24V	O	24 V DC	24 V DC power output
	7	CPM A	O	0/24 V DC	Centering plate motor drive control signal
	8	CPM_A	O	0/24 V DC	Centering plate motor drive control signal
	9	CPM B	O	0/24 V DC	Centering plate motor drive control signal
	10	CPM_B	O	0/24 V DC	Centering plate motor drive control signal
	11	24V	O	24 V DC	24 V DC power output
	12	24V	O	24 V DC	24 V DC power output
CN5 Connected to the motor pulse sensor	1	5V	O	5 V DC	5 V DC power output
	2	MPS	I	0/5 V DC (pulse)	Motor pulse sensor on/off
	3	N.C.	-	-	Not used
	4	SG	-	-	Signal ground

Connector	Pin No.	Signal	I/O	Voltage	Description
CN6 Connected to the side registration guide home position sensor, cen- tering plate home posi- tion sensor, centerfold blade home position sensor, folded edge detection sensor, cen- terfold unit paper entry sensor, inside tray detection sensor, eject tray paper detection switch and pressures release solenoid	1	5V	O	5 V DC	5 V DC power output
	2	5V	O	5 V DC	5 V DC power output
	3	5V	O	5 V DC	5 V DC power output
	4	5V	O	5 V DC	5 V DC power output
	5	5V	O	5 V DC	5 V DC power output
	6	5V	O	5 V DC	5 V DC power output
	7	N.C.	-	-	Not used
	8	5V	O	5 V DC	5 V DC power output
	9	SG	-	-	Signal ground
	10	SG	-	-	Signal ground
	11	SG	-	-	Signal ground
	12	SG	-	-	Signal ground
	13	SG	-	-	Signal ground
	14	SG	-	-	Signal ground
	15	N.C.	-	-	Not used
	16	SG	-	-	Signal ground
	17	SPGHPS	I	0/5 V DC	Side registration guide home position sensor on/off
	18	CPHPS	I	0/5 V DC	Centering plate home position sensor on/off
	19	CBLHPS	I	0/5 V DC	Centerfold blade home position sensor on/off
	20	FEPS	I	0/5 V DC	Folded edge detection sensor on/off
	21	CUPES	I	0/5 V DC	Centerfold unit paper entry sensor on/off
	22	ITDSS	I	0/5 V DC	Inside tray detection sensor on/off
	23	N.C.	-	-	Not used
	24	ETPDSW	I	0/5 V DC	Eject tray paper detection switch on/off
	25	24V	O	24 V DC	24 V DC power output
	26	PRSOL ACT	O	0/24 V DC	Pressures release solenoid (latch-on) on/off
	27	PRSOL REC	O	0/24 V DC	Pressures release solenoid (release) on/off
28	5V	O	5 V DC	5 V DC power output	
29	5V	O	5 V DC	5 V DC power output	

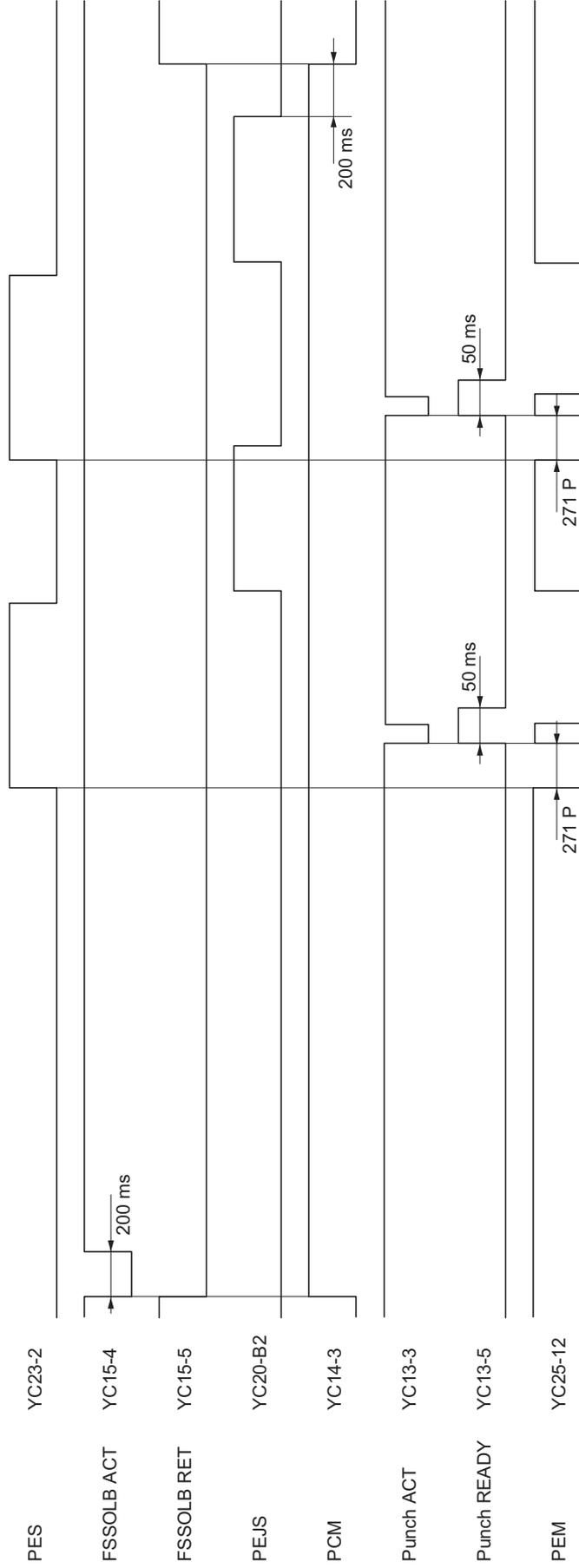
Timing chart No.1 Copying onto two sheets of A4/11" x 8 1/2" copy paper, stapling at one point at the back, ejecting to the main tray



Timing chart No.2 Copying onto a sheet of A4/11" x 81 /2" copy paper, ejecting to job tray No.1



Timing chart No.3 Copying onto two sheets of A4/11" x 81/2" copy paper in the punch mode, ejecting to the main tray



Maintenance parts list**Finisher**

Maintenance part name		Part No.	Alternative part No.	Fig. No.	Ref. No.
Name used in service manual	Name used in parts list				
Siding drum	GUIDE DRUM ASS'Y	303H316370	3H316370	3	8
Intermediate tray paper entry roller	ROLLER MIDDLE TRAY F I	3H316540		4	13
Upper paper entry roller	UPPER ROLLER FEED IN	303H316231	3H316231	4	45
Lower paper entry roller	LOWER ROLLER FEED IN	3H316220		4	28
Sub tray eject roller	ROLLER SUB EJECT	3H316550		5	10
Eject roller	ROLLER,MAIN EJECT	3H321010		5	16
Sub tray eject static eliminator	STATIC ELIMINATOR,SUB EJECT	3B816920		3	36
	STATIC ELIMINATOR,SUB EJECT	3B816920		5	58
Gear 18	GEAR 18,TRAY DRIVE	3B820190		10	35
Gear 50	GEAR 50,TRAY DRIVE	3B820180		10	34
Gear 51	GEAR 51	3AK20090		10	20
Worm gear	GEAR,WORM MAIN TRAY	3AK20130		10	21
Forwarding roller sheet	SHEET,LEADING FEED ROLLER	3B807820		9	49
Paper forwarding pulley	PULLEY,LEADING REGISTRATION	68721420		9	53
Main tray paper upper surface detection light emitting sensor	SENSOR A,SEPARATION	303H327460	3H327460	2	33
Main tray paper upper surface detection light intercepting sensor	SENSOR A,SEPARATION	303H327460	3H327460	2	33
Multi job tray paper upper surface detection light emitting sensor	SENSOR B SEPARATION	303H327470	3H327470	2	34
Multi job tray paper upper surface detection light intercepting sensor	SENSOR B SEPARATION	303H327470	3H327470	2	34
Paper entry sensor	SENSOR FEED B	303H327500	3H327500	4	48
Upper paper conveying belt home position sensor	SENSOR,CONVEYING	3H327410		6	13
Upper paper sensor	SENSOR,CONVEYING	3H327410		6	13
Lower paper sensor	SWITCH REGISTRATION	2FG27110		6	7
Intermediate tray paper conveying sensor	SENSOR,CONVEYING	3H327410		5	55
Paper ejection sensor	SENSOR,CONVEYING	3H327410		5	55
Sub tray paper ejection sensor	SENSOR FEED A	303H327490	3H327490	5	44

Multi job tray

Maintenance part name		Part No.	Alternative part No.	Fig. No.	Ref. No.
Name used in service manual	Name used in parts list				
Job tray	BIN,EJECT	303CB04011	3CB04011	2	4
Job tray lid	LID,BIN EJECT	303CB04021	3CB04021	2	5
Gear 18	GEAR 18,TRAY DRIVE	3B820190		1	47
Gear 50	GEAR 50,TRAY DRIVE	3B820180		1	46
Gear 51	GEAR 51	3AK20090		1	18
Worm gear	GEAR,WORM MAIN TRAY	3AK20130		1	19

Centerfold unit

Maintenance part name		Part No.	Alternative part No.	Fig. No.	Ref. No.
Name used in service manual	Name used in parts list				
Storage cover	TRAY,EJECT	303CA04011	3CA04011	5	3
Right cover	LEFT FRONT COVER H	303CA04090	3CA04090	5	25
Left cover	LEFT REAR COVER H	303CA04100	3CA04100	5	26
Eject guide upper spacer	UPPER SPACER,EJECT GUIDE	303CA04110	3CA04110	3	25
Ejected paper holding arm	ARM PAPER EJECT HOLDER H	303CA04120	3CA04120	3	1
Paper entry roller	ROLLER,FEED IN	303CA16081	3CA16081	2	29
Eject roller	ROLLER,EJECT	303CA16091	3CA16091	3	4
Paper ejecting brush	BRUSH,PAPER EJECT REGISTRATION	3CA16210		3	13
Paper entry pulley	PULLEY,FEEDBACK	62221110		2	42
Eject pulley	PULLEY,FEEDBACK	62221110		3	22
Left centerfold roller	ROLLER,PRESSURE	303CA08012	3CA08012	2	13
Right centerfold roller	ROLLER,PRESSURE	303CA08022	3CA08022	2	14
Centerfold blade	BLADE,MIDDLE PRESSING	3CA08030		2	15
Eject tray paper detection switch	SWITCH EMPTY	303CA27070	3CA27070	1	19
Folded edge detection sensor	SWITCH FEED	303CA27080	3CA27080	3	27
Inside tray detection sensor	SWITCH FEED	303CA27080	3CA27080	2	50
Centerfold unit paper entry sensor	SWITCH FEED	303CA27080	3CA27080	2	50
Centering plate home position sensor	SWITCH EMPTY	303CA27070	3CA27070	2	44
Eject tray detection switch	PT.SENSOR GP1A73AJ00	5FNXGP1A73A++02	2DC27180	1	23
Side registration guide home position sensor	PT.SENSOR GP1A73AJ00	5FNXGP1A73A++02	2DC27180	2	41
Centerfold blade home position sensor	PT.SENSOR GP1A73AJ00	5FNXGP1A73A++02	2DC27180	4	42

Punch unit

Maintenance part name		Part No.	Alternative part No.	Fig. No.	Ref. No.
Name used in service manual	Name used in parts list				
Drive cum gear 40	GEAR 40 CAM DRIVE	3H416110		1	4
Idle gear 16/51	GEAR 16-51 IDLE	3H416120		1	5

Periodic maintenance procedures

Finisher

Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Exterior	Overall exterior cover	Clean	Every service	Clean with alcohol or a dry cloth.	



Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Paper feed conveying section	Siding drum	Clean	Every service	Clean with alcohol or a dry cloth.	
	Intermediate tray paper entry roller	Clean	Every service	Clean with alcohol or a dry cloth.	
	Upper paper entry roller	Clean	Every service	Clean with alcohol or a dry cloth.	
	Lower paper entry roller	Clean	Every service	Clean with alcohol or a dry cloth.	
	Sub tray eject roller	Clean	Every service	Clean with alcohol or a dry cloth.	
	Eject roller	Clean	Every service	Clean with alcohol or a dry cloth.	
	Sub tray eject static eliminator	Check	Every service	If paper powder or dust adheres to tip of brush, remove it.	



Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Driving section	Gear 18	Grease	Every service	Apply grease EM-50L to teeth.	
	Gear 50	Grease	Every service	Apply grease EM-50L to teeth.	
	Gear 51	Grease	Every service	Apply grease EM-50L to teeth.	
	Worm gear	Grease	Every service	Apply grease EM-50L to teeth.	



Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Intermediate tray section	Forwarding roller sheet	Clean	Every service	Clean with alcohol or a dry cloth.	
	Paper forwarding pulley	Check and clean	Every service	If soiled with paper powder or toner, clean. Clean with alcohol or a dry cloth.	



Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Sensors	Main tray paper upper surface detection light emitting sensor	Clean	Every service	Air brush	
	Main tray paper upper surface detection light intercepting sensor	Clean	Every service	Air brush	
	Multi job tray paper upper surface detection light emitting sensor	Clean	Every service	Air brush	
	Multi job tray paper upper surface detection light intercepting sensor	Clean	Every service	Air brush	
	Paper entry sensor	Clean	Every service	Air brush	
	Upper paper conveying belt home position sensor	Clean	Every service	Air brush	
	Upper paper sensor	Clean	Every service	Air brush	
	Lower paper sensor	Clean	Every service	Air brush	
	Intermediate tray paper conveying sensor	Clean	Every service	Air brush	
	Paper ejection sensor	Clean	Every service	Air brush	
Sub tray paper ejection sensor	Clean	Every service	Air brush		

Multi job tray

Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Exterior	Job tray	Clean	Every service	Clean with alcohol or a dry cloth.	
	Job tray lid	Clean	Every service	Clean with alcohol or a dry cloth.	
	Others	Clean	Every service	Clean with alcohol or a dry cloth.	



Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Driving section	Gear 18	Grease	Every service	Apply grease EM-50L to teeth.	
	Gear 50	Grease	Every service	Apply grease EM-50L to teeth.	
	Gear 51	Grease	Every service	Apply grease EM-50L to teeth.	
	Worm gear	Grease	Every service	Apply grease EM-50L to teeth.	

Centerfold unit

Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Exterior	Storage cover	Clean	Every service	Clean with alcohol or a dry cloth.	
	Right cover	Clean	Every service	Clean with alcohol or a dry cloth.	
	Left cover	Clean	Every service	Clean with alcohol or a dry cloth.	
	Eject guide upper spacer	Clean	Every service	Clean with alcohol or a dry cloth.	
	Ejected paper holding arm	Clean	Every service	Clean with alcohol or a dry cloth.	



Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Paper feed and conveying section	Paper entry roller	Clean	Every service	Clean with alcohol or a dry cloth.	
	Eject roller	Clean	Every service	Clean with alcohol or a dry cloth.	
	Paper ejecting brush	Clean	Every service	Clean with alcohol or a dry cloth.	
	Paper entry pulley	Clean	Every service	Clean with alcohol or a dry cloth.	
	Eject pulley	Clean	Every service	Clean with alcohol or a dry cloth.	



Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Centerfold section	Left centerfold roller	Clean	Every service	Clean with alcohol or a dry cloth.	
	Right centerfold roller	Clean	Every service	Clean with alcohol or a dry cloth.	
	Centerfold blade	Check and replace	Every service	Clean with alcohol or a dry cloth. If deformed or bent, replace.	



Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Sensors	Eject tray paper detection switch	Clean	Every service	Air brush	
	Folded edge detection sensor	Clean	Every service	Air brush	
	Inside tray detection sensor	Clean	Every service	Air brush	
	Centerfold unit paper entry sensor	Clean	Every service	Air brush	
	Centering plate home position sensor	Clean	Every service	Air brush	
	Eject tray detection switch	Clean	Every service	Air brush	
	Side registration guide home position sensor	Clean	Every service	Air brush	
	Centerfold blade home position sensor	Clean	Every service	Air brush	

Punch unit

Section	Maintenance part/location	Method	Maintenance cycle	Points and cautions	Page
Driving section	Drive cum gear 40	Grease	Every service	Apply grease EM-50L to teeth.	
	Idle gear 16/51	Grease	Every service	Apply grease EM-50L to teeth.	

Optional devices supplied parts list**Multi job tray**

Name used in service manual	Name used in installation guide	Part No.	Alternative part No.
Eject bin	Eject bin	303CB04011	3CB04011
Bin front guide plate	Bin front guide plate	303CB02091	3CB02091
Bin rear guide plate	Bin rear guide plate	303CB02101	3CB02101
Bin guide plate retainer	Bin guide plate retainer	303CB02181	3CB02181
Right cover	Right cover	303CB04031	3CB04031
Left cover	Left cover	303CB04041	3CB04041
Size detection switch	Size detection switch	302FB25140	2FB25140
M3 x 5 binding screw	M3 x 5 binding screw	B1B03050	
M4 x 6 binding screw	M4 x 6 binding screw	B1B04060	
M4 x 8 TP screw	M4 x 8 TP screw	B4104080	
Sheet of bin No. labels	Sheet of bin No. labels	303CB05160	3CB05160
Sheet of name labels	Sheet of name labels	303CB05170	3CB05170
Motor front cover	Motor front cover	303CB04052	3CB04052

Centerfold unit

Name used in service manual	Name used in installation guide	Part No.	Alternative part No.
Storage tray	Eject tray	303CA04011	3CA04011
Left cover	Left cover	303CA04090	3CA04090
Right cover	Right cover	303CA04100	3CA04100
Release lever actuating plate	Release lever actuating plate	303CA02223	3CA02223
Backstop	Backstop	3CA02231	
Unit lock hook	Unit lock hook	303CA02261	3CA02261
Unit lock rod	Unit lock rod	3CA02270	
Large stop ring	Large stop ring	75706040	
Pin	Pin	2FB16280	
Large spring	Large spring	27302160	48527301
Small spring	Small spring	74608110	
Release pole assembly	Release pole assembly	303CA02101	3CA02101
Release handle	Release handle	33420440	
Unit transport handle	Unit transport handle	303CA02251	3CA02251
Slider	Slider	3036508211	36508211
Small stop ring	Medium stop ring	65016080	
M4 x 8 S tight bind screw	M4 x 8 S tight bind screw	B1A54080	
M4 x 6 TP screw	M4 x 6 TP screw	B4A04060	
M4 x 10 TP screw	M4 x 10 TP screw	B4A04100	
Detection PI douser	Douser detecting PI	303CA02241	3CA02241
Label sheet	Label sheet	303CA05220	3CA05220

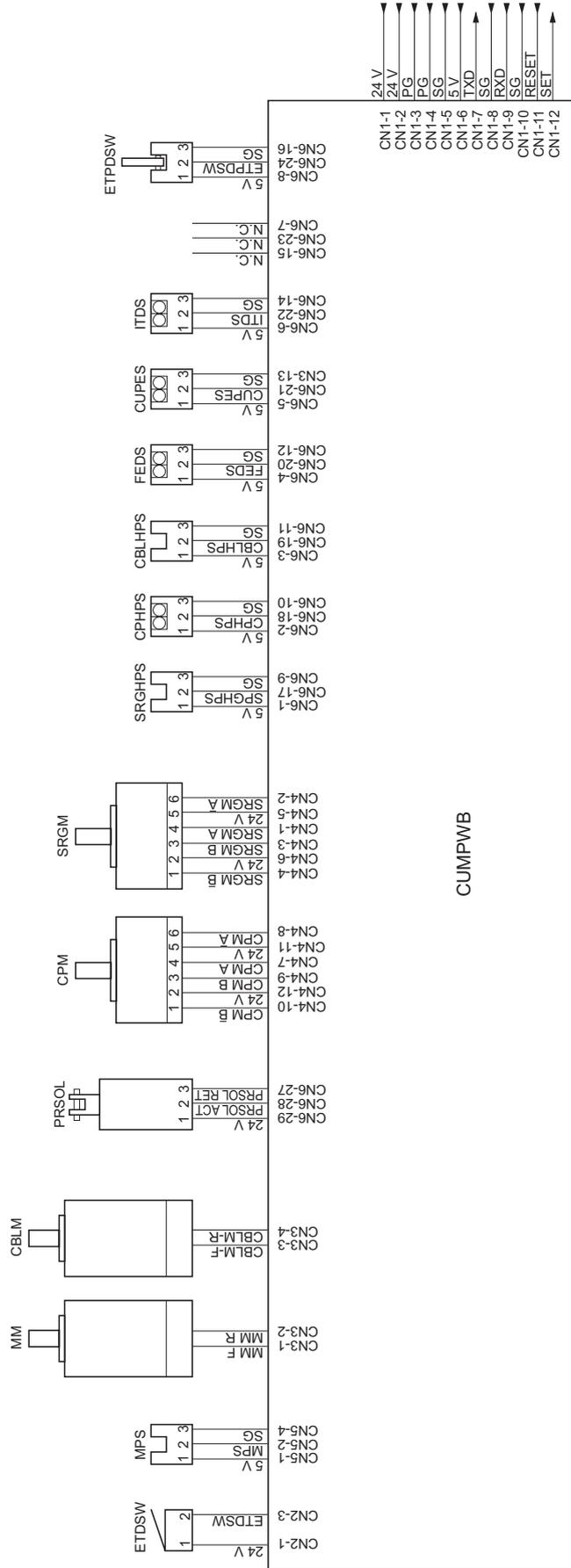
Punch unit

Name used in service manual	Name used in installation guide	Part No.	Alternative part No.
Tank holder	Tank holder	-	
Punch PWB	Punch PCB	-	
Power cord	Power cord	3H427020	
Punch waste box	Punch waste box	3H402010	
Guide	Guide	3H402030	
M4 x 8 tap tight S screw	M4 x 8 tap Tight S screw	B1A54080	
Wire saddle	Wire saddle	M21AK070	
Clamp	Clamp	M7005010	

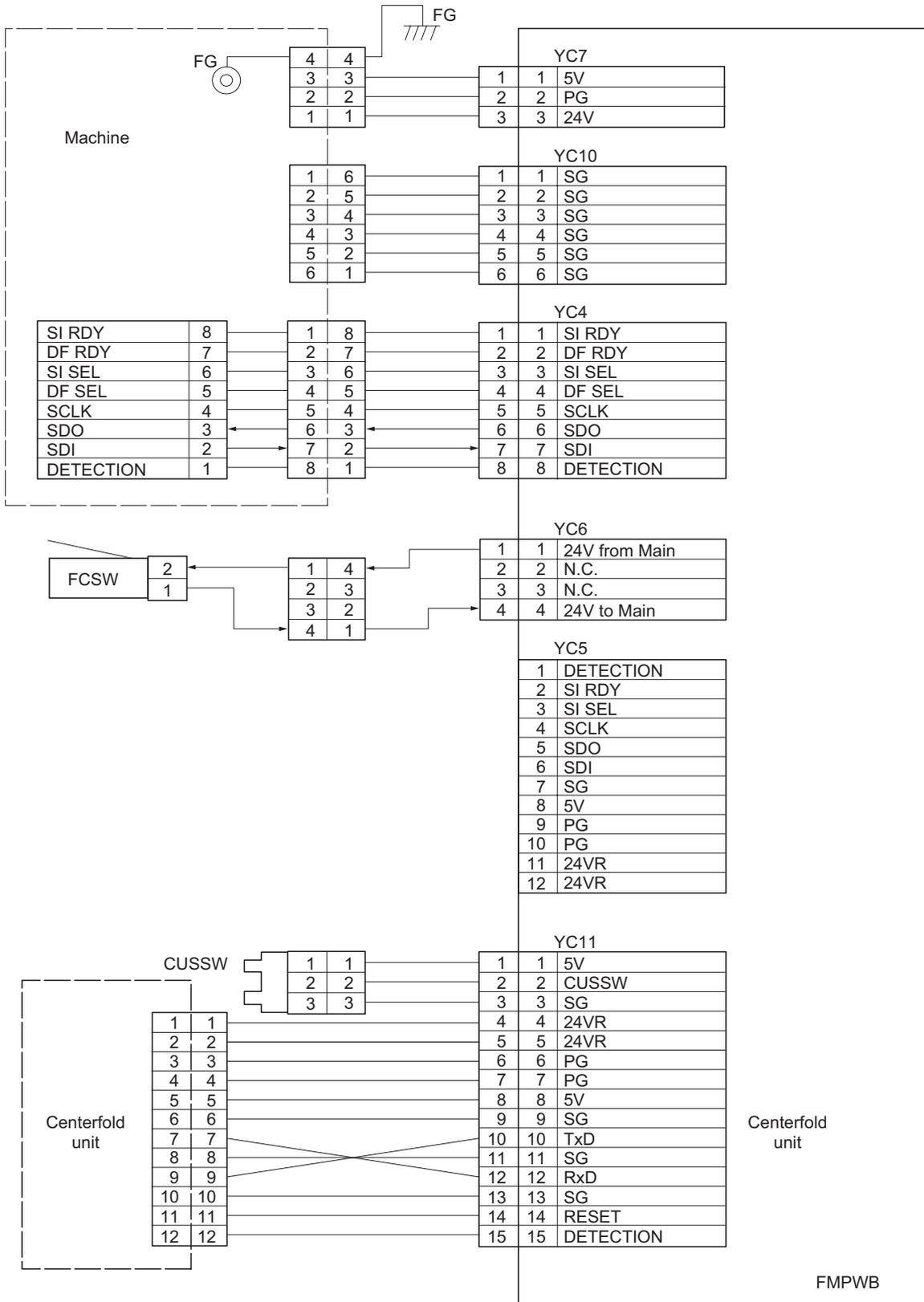
Stopper guide (service parts)

Name used in service manual	Name used in installation guide	Part No.	Alternative part No.
Stopper mount	Stopper Mount	303CB68010	3CB68010
Stopper	Stopper	303CB68020	3CB68020
Operation label	Operation Label	303CB05180	3CB05180
Stop ring 3	Stop Ring 3	5MVX111DN007	2BT11070
M4 × 8 tap tight S screw	M4 × 8 Tap Tight S screw	B1A54080	
Stopper assembly	Stopper Ass'y	303H368010	3H368010
Operation label (inch or metric)	Operation Label Inch	303H305100	3H305100
Operation label (inch or metric)	Operation Label Metric	303H305110	3H305110
M4 × 8 tap tight S screw	M3 × 8 Tap Tight P screw	5MBTPB3008PW++R	B1A63080

Centerfold unit wiring diagram

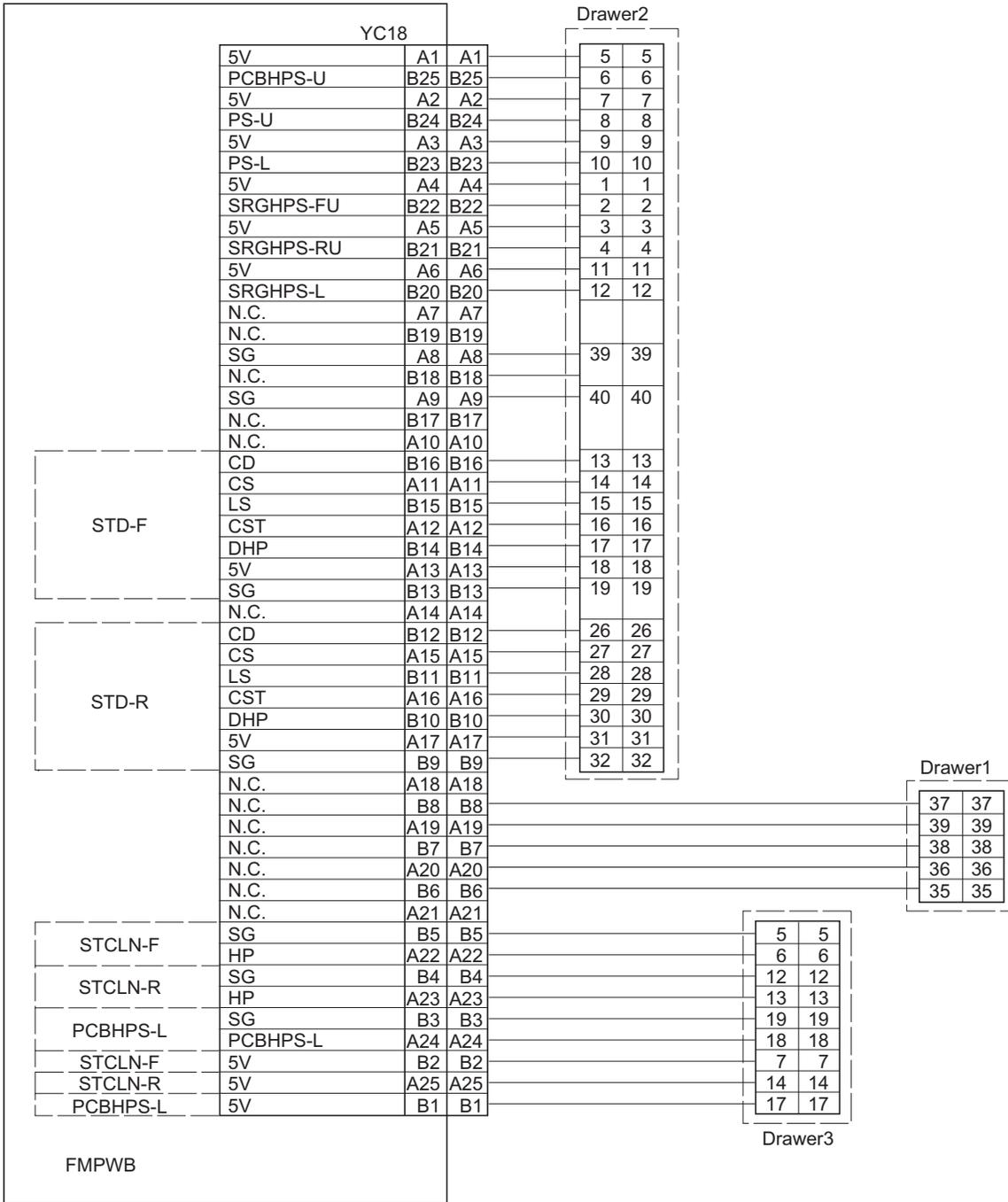


General wiring diagram No.1



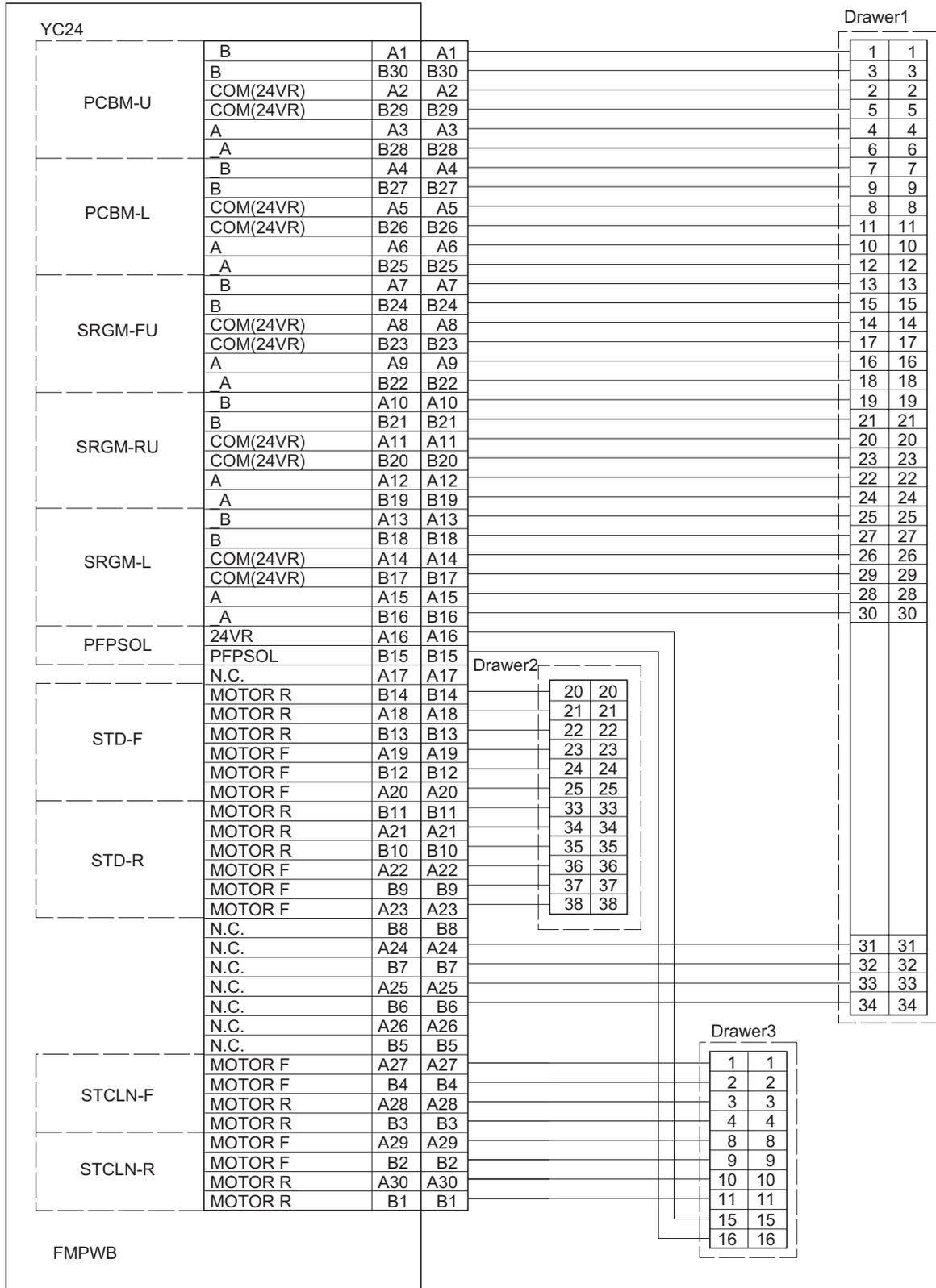
General wiring diagram No.2

FMPWB-Intermediate tray

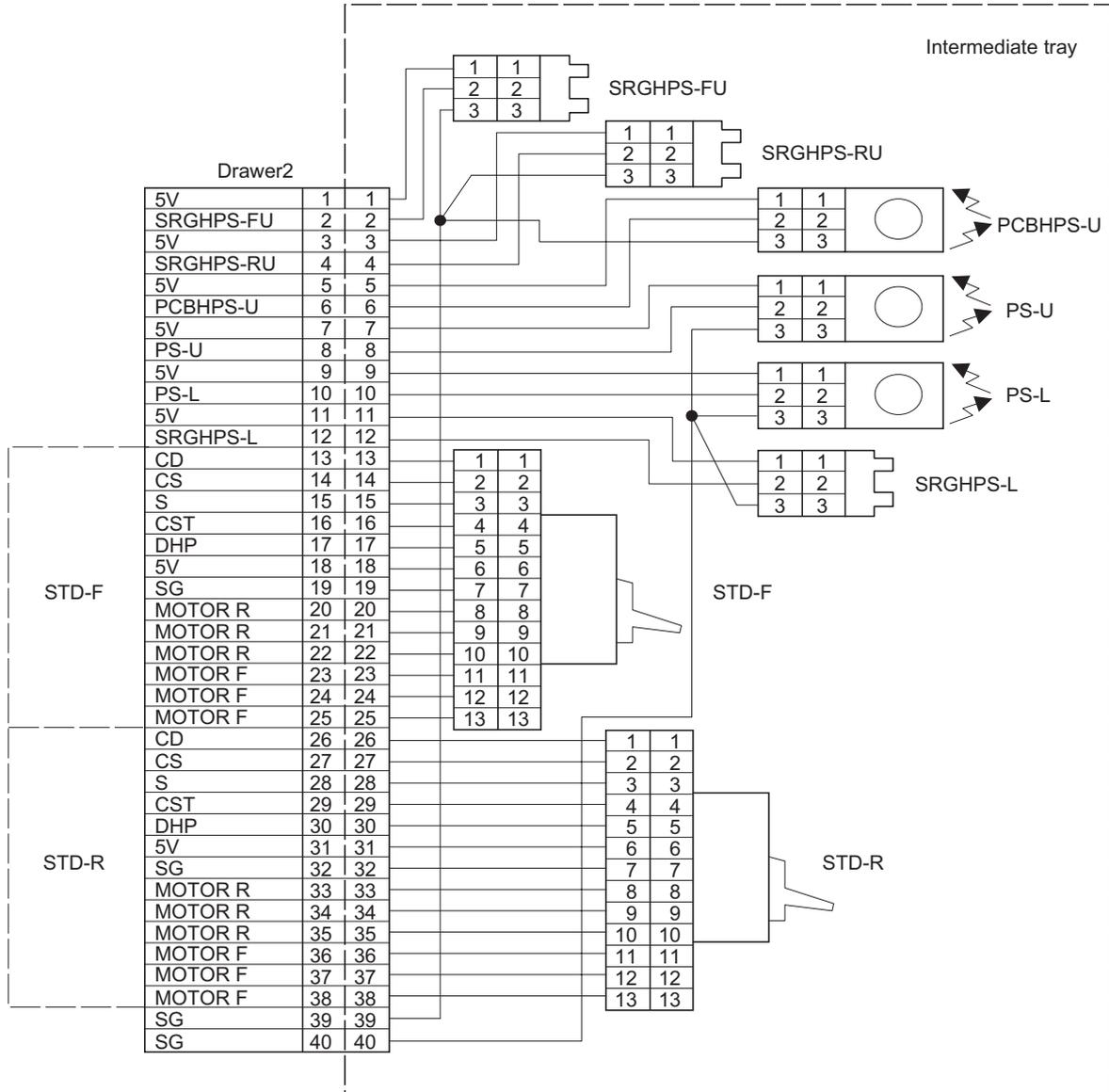


General wiring diagram No.3

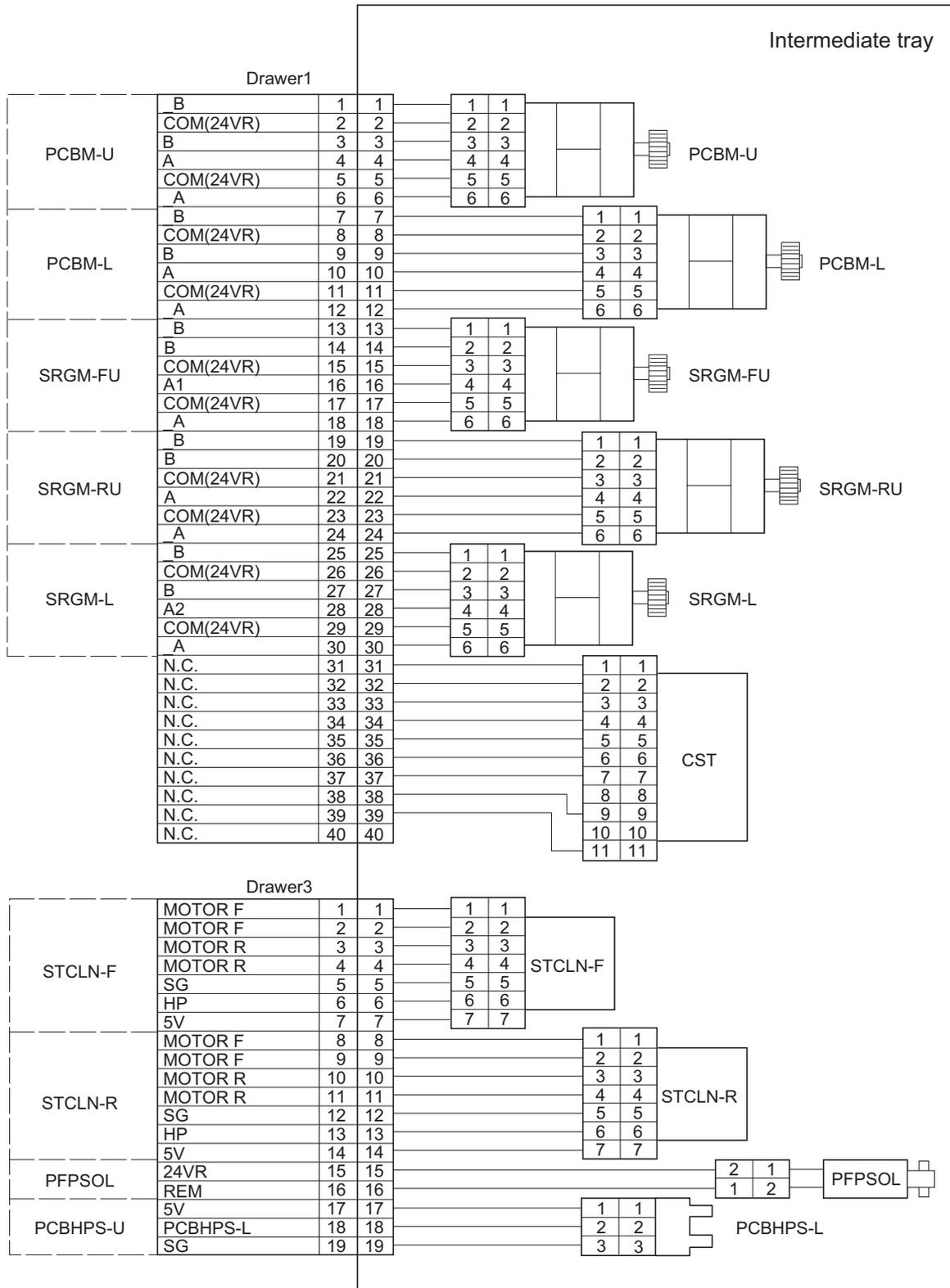
FMPWB-Intermediate tray



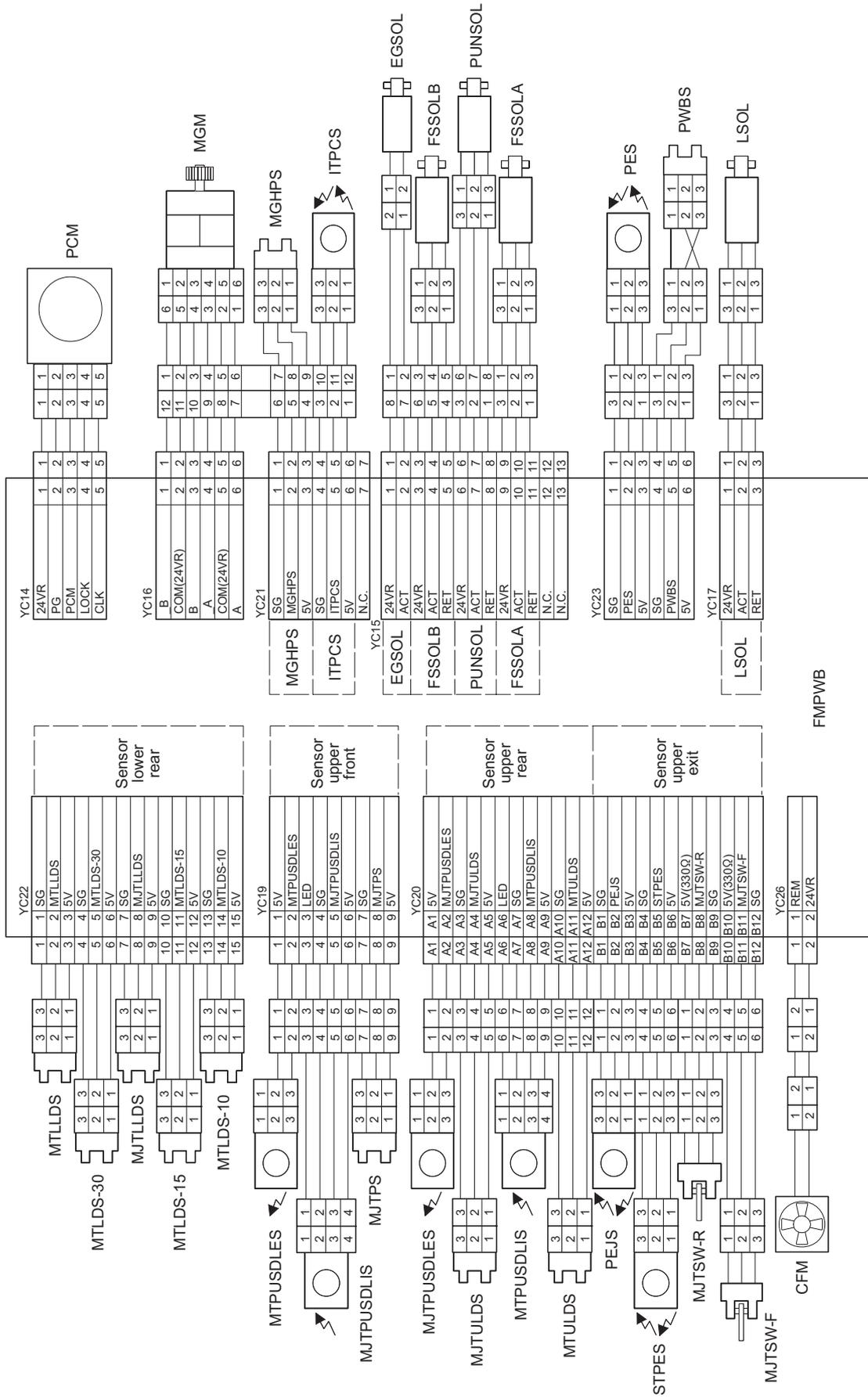
General wiring diagram No.4



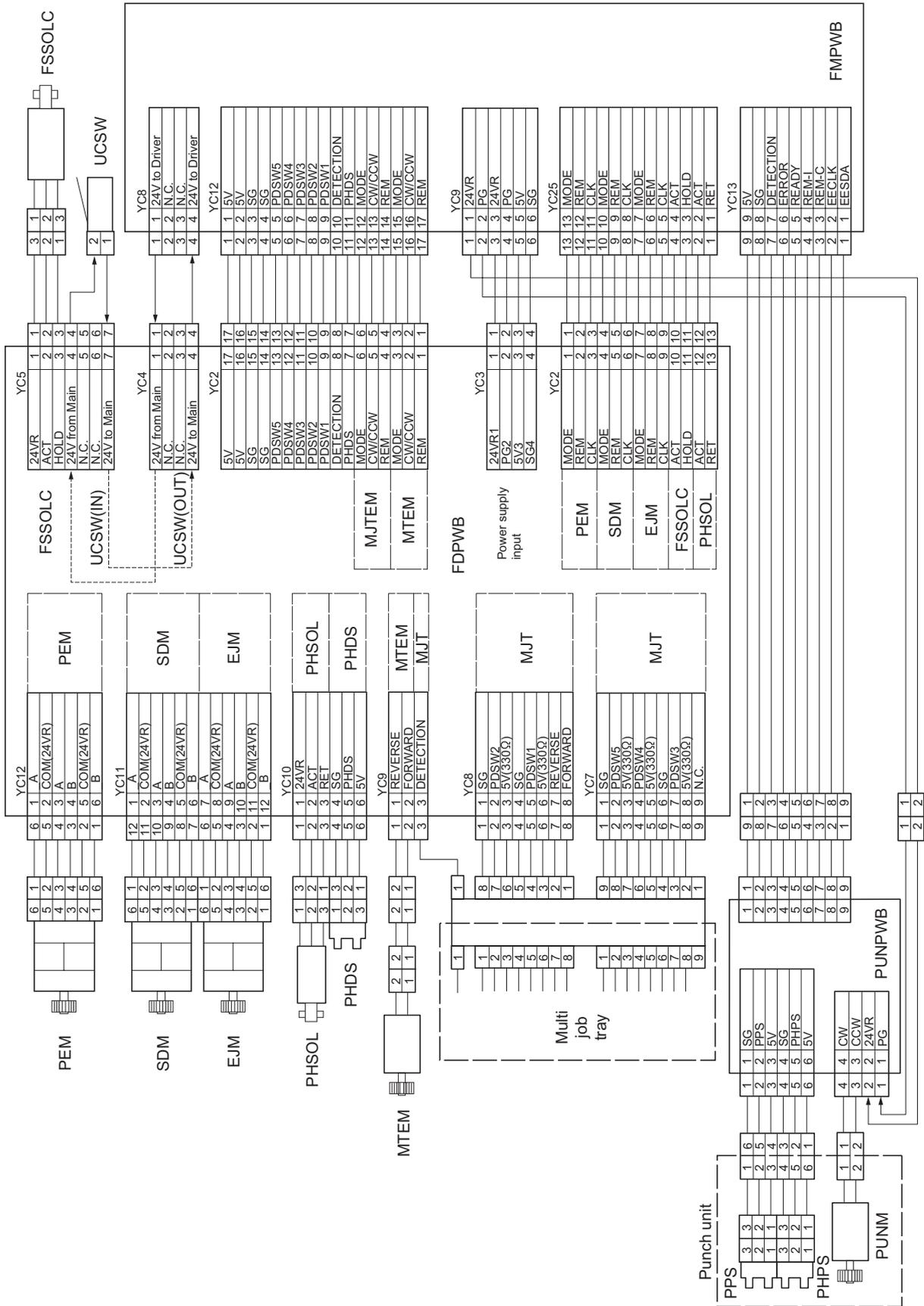
General wiring diagram No.5



General wiring diagram No.6



General wiring diagram No.7



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