KYOCERA mita

DF-610
DF-600
MT-1
BF-1
PH-3A
PH-3C

SERVICE MANUAL

Published in Nov. '01
843B8110

CAUTION

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

CAUTION

Double-pole/neutral fusing.

Safety precautions

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

Safety warnings and precautions

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

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

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

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

Symbols

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

 General warning.

 Warning of risk of electric shock.

 Warning of high temperature.

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

 General prohibited action.

 Disassembly prohibited.

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

 General action required.

 Remove the power plug from the wall outlet.

 Always ground the copier.

1. Installation Precautions

⚠ WARNING

- Do not use a power supply with a voltage other than that specified. Avoid multiple connections to one outlet: they may cause fire or electric shock. When using an extension cable, always check that it is adequate for the rated current. .....

- Connect the ground wire to a suitable grounding point. Not grounding the copier may cause fire or electric shock. Connecting the earth wire to an object not approved for the purpose may cause explosion or electric shock. Never connect the ground cable to any of the following: gas pipes, lightning rods, ground cables for telephone lines and water pipes or faucets not approved by the proper authorities. .....

⚠ CAUTION:

- Do not place the copier on an infirm or angled surface: the copier may tip over, causing injury. .....

- Do not install the copier in a humid or dusty place. This may cause fire or electric shock. .....

- Do not install the copier near a radiator, heater, other heat source or near flammable material. This may cause fire. .....

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

- Always handle the machine by the correct locations when moving it. .....

- Always use anti-toppling and locking devices on copiers so equipped. Failure to do this may cause the copier to move unexpectedly or topple, leading to injury. .....

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

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

2. Precautions for Maintenance

⚠WARNING

- Always remove the power plug from the wall outlet before starting machine disassembly. .....

- Always follow the procedures for maintenance described in the service manual and other related brochures. .....

- Under no circumstances attempt to bypass or disable safety features including safety mechanisms and protective circuits. .....

- Always use parts having the correct specifications. .....

- Always use the thermostat or thermal fuse specified in the service manual or other related brochure when replacing them. Using a piece of wire, for example, could lead to fire or other serious accident. .....

- When the service manual or other serious brochure specifies a distance or gap for installation of a part, always use the correct scale and measure carefully. .....

- Always check that the copier is correctly connected to an outlet with a ground connection. .....

- Check that the power cable covering is free of damage. Check that the power plug is dust-free. If it is dirty, clean it to remove the risk of fire or electric shock. .....

- Never attempt to disassemble the optical unit in machines using lasers. Leaking laser light may damage eyesight. .....

- Handle the charger sections with care. They are charged to high potentials and may cause electric shock if handled improperly. .....

⚠CAUTION

- Wear safe clothing. If wearing loose clothing or accessories such as ties, make sure they are safely secured so they will not be caught in rotating sections. .....

- Use utmost caution when working on a powered machine. Keep away from chains and belts. .....

- Handle the fixing section with care to avoid burns as it can be extremely hot. .....

- Check that the fixing unit thermistor, heat and press rollers are clean. Dirt on them can cause abnormally high temperatures. .....

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

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

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

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

• Remove toner completely from electronic components. .....

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

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

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

• Handle greases and solvents with care by following the instructions below: .....
· Use only a small amount of solvent at a time, being careful not to spill. Wipe spills off completely.
· Ventilate the room well while using grease or solvents.
· Allow applied solvents to evaporate completely before refitting the covers or turning the main 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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2-1 Mechanical Construction

2-2 Electrical Parts Layout

2-3 Operation of the PCBs

2-4 Appendixes

1-1-1 Specification

Finisher

Type ..... Floor type

Number of trays ..... Multi finisher: 2 trays, simple finisher: 1 tray

Tray capacity ..... <Metric specification>

Main tray [80 g/m^2 weight paper]

- When NOT stapling — A3, B4 (257 × 364 mm): 1500 (1000) sheets; A4, A4R, Folio: 3000 (2000) sheets
- When stapling 2 copies — A3, B4 (257 × 364 mm): 700 (500) sheets; A4, A4R: 1000 (1000) sheets
- When stapling 3 – 4 copies — A3, B4 (257 × 364 mm): 700 (500) sheets; A4, A4R: 1000 (1000) sheets
- When stapling 5 – 10 copies — A3, B4 (257 × 364 mm): 800 (500) sheets; A4, A4R: 1100 (1100) sheets
- When stapling 11 – 20 copies — A3, B4 (257 × 364 mm): 1000 (750) sheets; A4, A4R: 1200 (1200) sheets
- When stapling 21 – 30 copies — A3, B4 (257 × 364 mm): 1500 (1000) sheets
- When stapling 21 – 49 copies — A4, A4R: 2000 (2000) sheets
- When stapling 50 copies — A4, A4R: 3000 (2000) sheets

* Description in ( ) is written for the simple finisher.

Sub tray (multi finisher only) [80 g/m^2 weight paper]

A3, B4 (257 × 364 mm): 200 sheets

A4, A4R, A5R, A6R, Folio: 200 sheets

<Inch specification>

Main tray [75 g/m^2 weight paper]

- When NOT stapling — 11" × 17", 8^1/$_2$" × 14": 1500 (1000) sheets; 8^1/$_2$" × 11", 11" × 8^1/$_2$": 3000 (2000) sheets
- When stapling 2 copies — 11" × 17", 8^1/$_2$" × 14": 700 (500) sheets; 8^1/$_2$" × 11", 11" × 8^1/$_2$": 1000 (1000) sheets
- When stapling 3 – 4 copies — 11" × 17", 8^1/$_2$" × 14": 700 (500) sheets; 8^1/$_2$" × 11", 11" × 8^1/$_2$": 1000 (1000) sheets
- When stapling 5 – 10 copies — 11" × 17", 8^1/$_2$" ×14": 800 (500) sheets; 8^1/$_2$"x11", 11" × 8^1/$_2$": 1100 (1100) sheets
- When stapling 11 – 20 copies — 11" × 17": 1000 (750) sheets; 8^1/$_2$" × 14": 1200 (750) sheets, 8^1/$_2$" × 11", 11" × 8^1/$_2$": 1200 (1200) sheets
- When stapling 21 – 30 copies — 11" × 17", 8^1/$_2$" × 14": 1500 (1000) sheets
- When stapling 21 – 49 copies — 8^1/$_2$" × 11", 11" × 8^1/$_2$": 2000 (2000) sheets
- When stapling 50 copies — 8^1/$_2$" × 11", 11" × 8^1/$_2$": 3000 (2000) sheets

* Description in ( ) is written for the simple finisher.

Sub tray (multi finisher only) [75 g/m^2 weight paper]

11" × 17", 8^1/$_2$" × 14": 200 sheets

8^1/$_2$" × 11", 11" × 8^1/$_2$", 5^1/$_2$" × 8^1/$_2$": 200 sheets

Stapling capacity ..... A3, B4 (257 × 364 mm), 11" × 17", 8^1/$_2$" × 14": 30 sheets; A4, A4R, B5, 8^1/$_2$" × 11", 11" × 8^1/$_2$": 50 sheets [75 – 80 g/m^2 weight paper]

Power source ..... Copier

Dimensions (W × D × H) ..... 796 × 640 × 950 mm

31^5/$_{16}$" × 25^3/$_{16}$" × 37^3/$_8$"

Weight ..... Multi finisher: Approx. 78 kg/171.6 lbs.

Simple finisher: Approx. 77 kg/169.4 lbs.

Multi Job Tray (option)

Number of trays	Job tray: 5
Paper size	A3, B4 (257 × 364 mm), A4, A4R, A5R, B6R, Folio, 11" × 17", 8 1/2" × 14", 8 1/2" × 11", 11" × 8 1/2"
Tray capacity	A3, B4 (257 × 364 mm), 11" × 17", 8 1/2" × 14": 100 sheets (75 – 80 g/m^2 weight paper) A4 – B6R, Folio, 8 1/2" × 11", 11" × 8 1/2": 150 sheets (75 – 80 g/m^2 weight paper)
Dimensions (W × D × H)	368 × 392 × 573 mm 14 1/2" × 15 7/16" × 22 9/16"
Weight	Approx.15 kg/33 lbs.

Centerfold unit (option for multi finisher)

Foldable sizes	A3, B4 (257 × 364 mm), A4R, 11" × 17", 8 1/2" × 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 copies 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 for multi finisher)

Available sizes	75 – 80 g/m^2 weight paper A3, B4 (257 × 364 mm), A4, A4R, B5, B5R, Folio, 11" × 17", 8 1/2" × 14", 8 1/2" × 11", 11" × 8 1/2"

1-1-2 Part names and functions

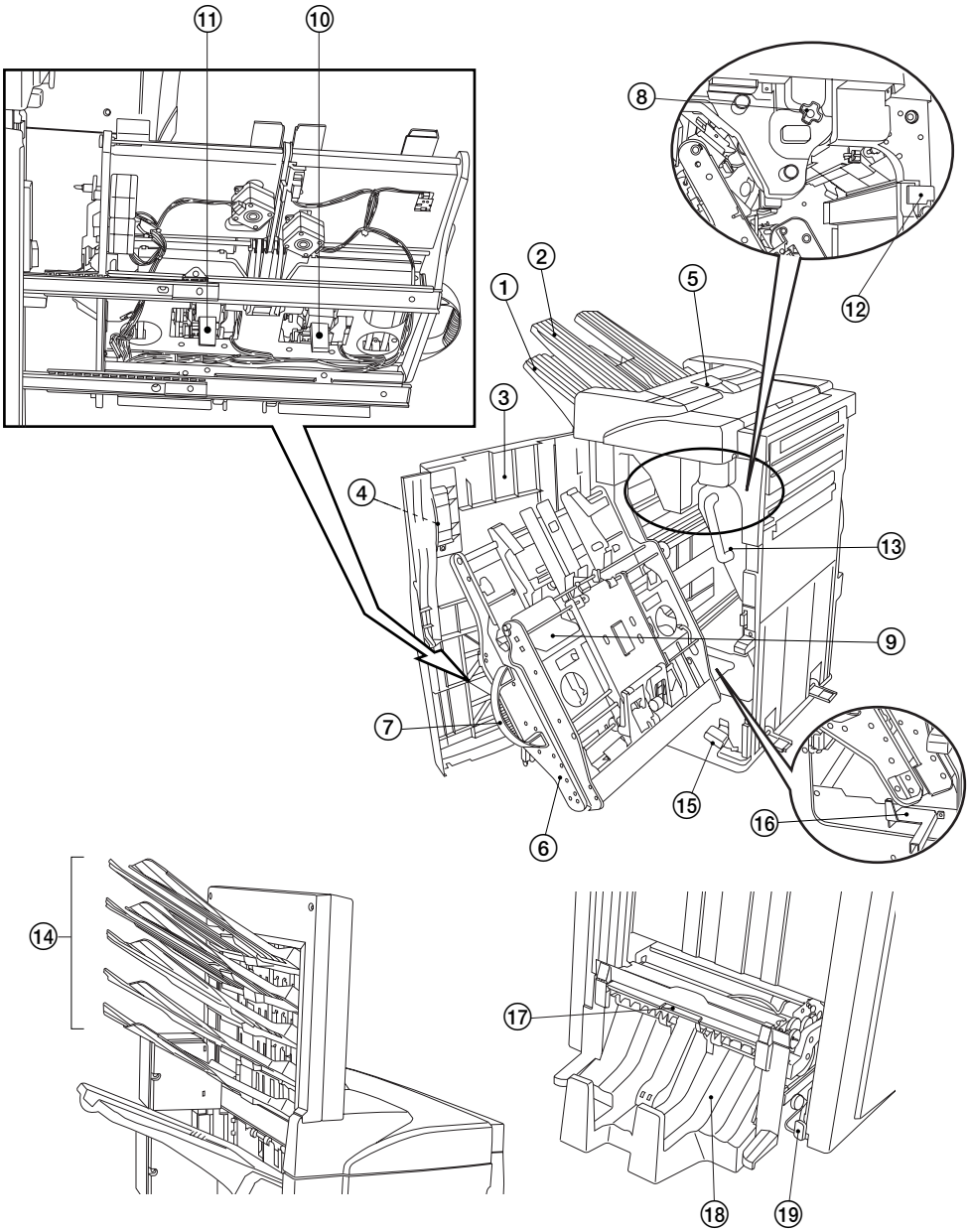


Figure 1-1-1

Finisher
① Main tray
② Sub tray*
③ Front cover
④ Front cover handle
⑤ Upper cover
⑥ Intermediate tray
⑦ Intermediate tray handle
⑧ Conveyor knob
⑨ Intermediate tray release lever
⑩ Staple holder B*
⑪ Staple holder A
⑫ Coupling section guide lever

Punch unit (option for multi finisher)
⑬ Punch waste box

Multi job tray (option)
⑭ Job trays Nos.1 – 5

Centerfold unit (option for multi finisher)
⑮ Unit release lever
⑯ Unit release handle
⑰ Conveyor guide lever
⑱ Storage cover
⑲ Centerfold unit installation buttons

* For multi finisher only.

1-1-3 Machine cross sectional view

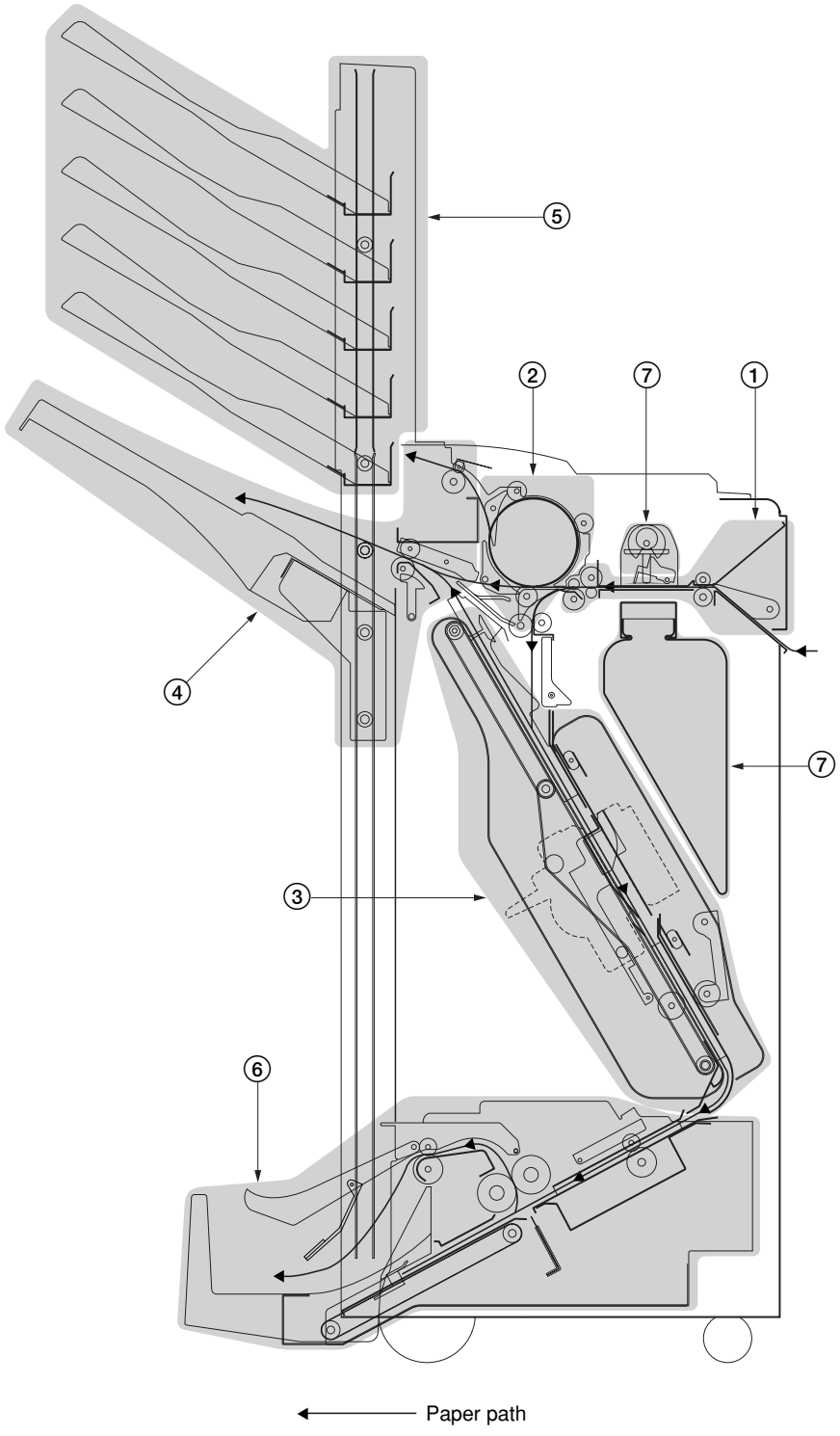


Figure 1-1-2

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

1-1-4 Machine drive system

(1) Finisher (paper feed and conveying section)

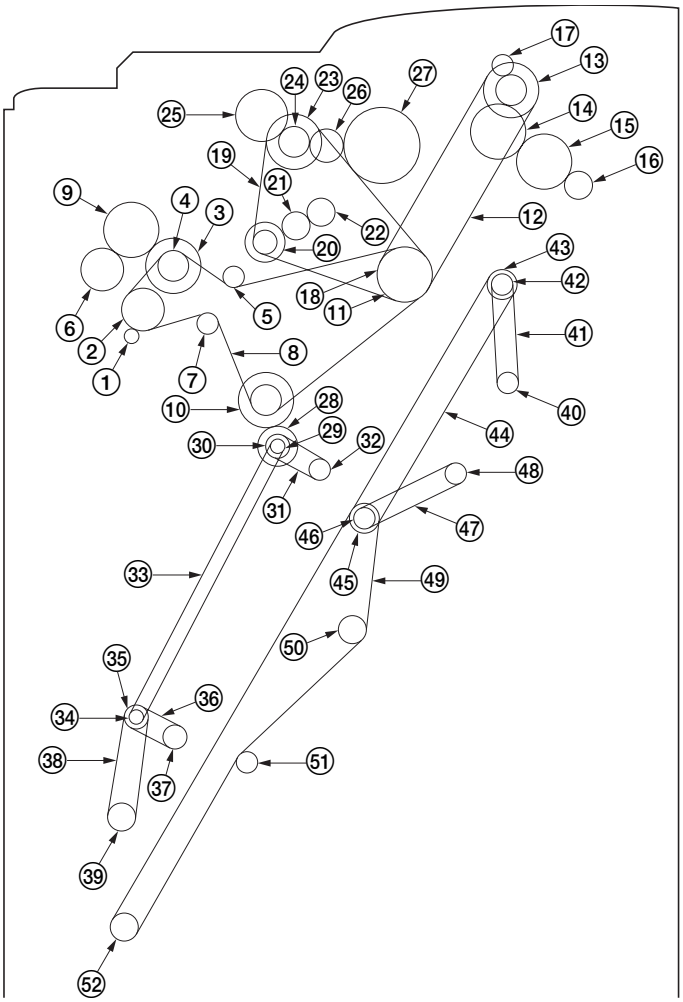


Figure 1-1-3

① Paper conveying motor gear
② Pulley 37/48
③ Gear 40
④ Pulley 30
⑤ Tension pulley
⑥ Paper conveying clutch gear*
⑦ Tension pulley
⑧ Timing belt C
⑨ Paper entry roller gear
⑩ Gear Z40/P30
⑪ Pulley 31 (machine rear)
⑫ Eject drive belt
⑬ Gear Z21/38
⑭ Gear 40
⑮ Gear 40
⑯ Eject roller gear
⑰ Sub eject roller gear*
⑱ Pulley 25 (machine front)
⑲ Siding drum drive belt
⑳ Gear Z31/P18
㉑ Torque limiter gear 20
㉒ Torque limiter gear 20
㉓ Pulley 36
㉔ Gear 20
㉕ Siding drum clutch gear*
㉖ Gear 26
㉗ Gear 53
㉘ Intermediate tray joint gear
㉙ Pulley 16
㉚ Pulley 20
㉛ Feed belt
㉜ Upper forwarding roller
㉝ Pulley drive belt
㉞ Pulley 16
㉟ Pulley 20
㊱ Feed belt
㊲ Lower forwarding roller
㊳ Paper forwarding pulley belt
㊴ Pulley 27
㊵ Upper paper conveying belt motor pulley
㊶ Intermediate tray drive belt
㊷ Pulley 20
㊸ Pulley 20
㊹ Upper paper conveying belt
㊺ Pulley 20
㊻ Pulley 20
㊼ Intermediate tray drive belt
㊽ Lower paper conveying belt motor pulley
㊾ Lower paper conveying belt
㊿ Pulley 20
(51) Tension pulley
(52) Pulley 20

* For multi finisher only.

(2) Finisher (main tray driving section)

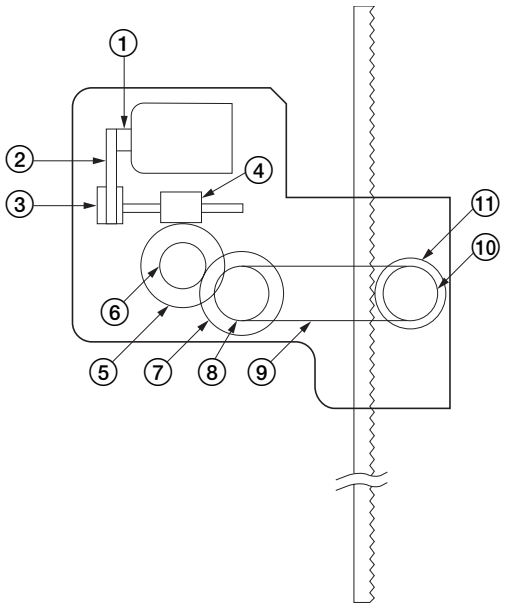


Figure 1-1-4

① Main tray elevation motor pulley
② Feed belt
③ Pulley 27
④ Worm gear
⑤ Gear 50
⑥ Gear 18
⑦ Gear 51
⑧ Pulley 20S
⑨ Tray drive belt
⑩ Pulley 20S
⑪ Gear 26

(3) Multi job tray

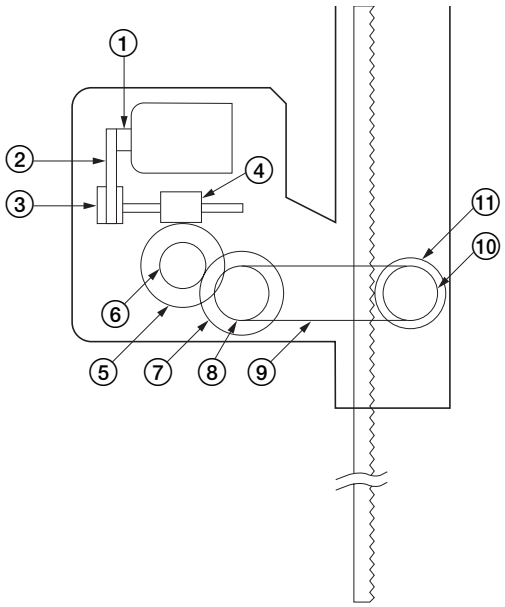


Figure 1-1-5

① Multi job tray elevation motor pulley
② Feed belt
③ Pulley 27
④ Worm gear
⑤ Gear 50
⑥ Gear 18
⑦ Gear 51
⑧ Pulley 20S
⑨ Tray drive belt
⑩ Pulley 20S
⑪ Gear 26

(4) Centerfold unit

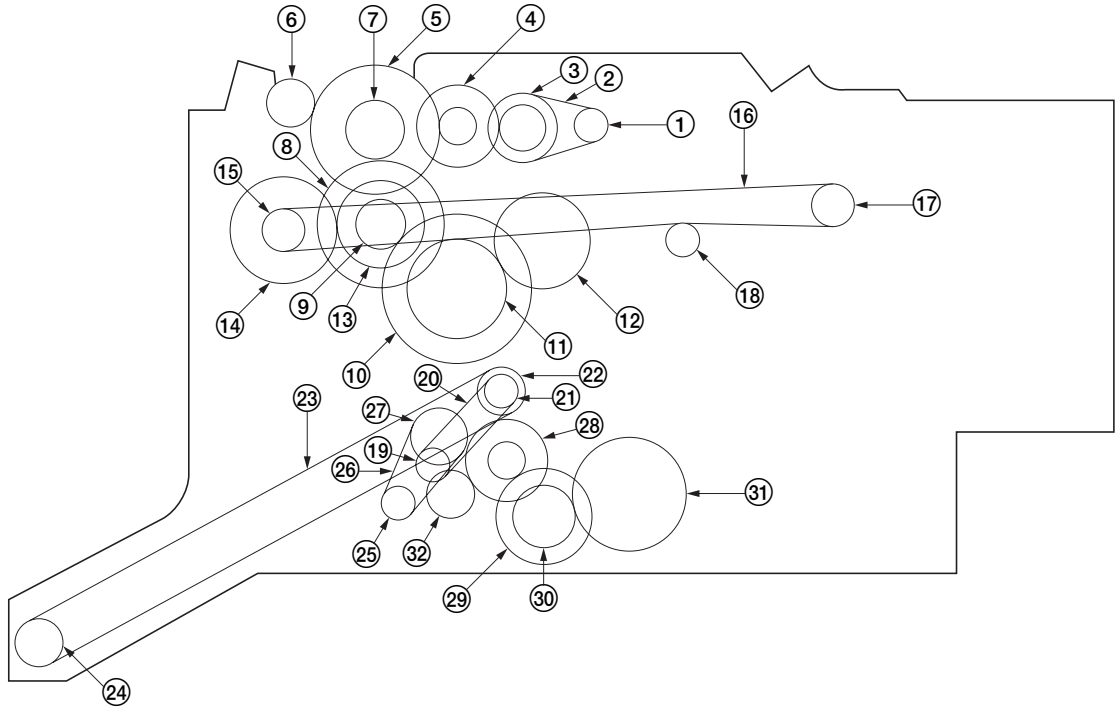


Figure 1-1-6

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

(5) Punch unit

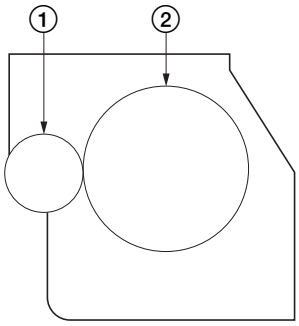


Figure 1-1-7

① Punch motor gear
② Punch clutch gear

1-2-1 Unpacking and installing the machines

(1) Finisher

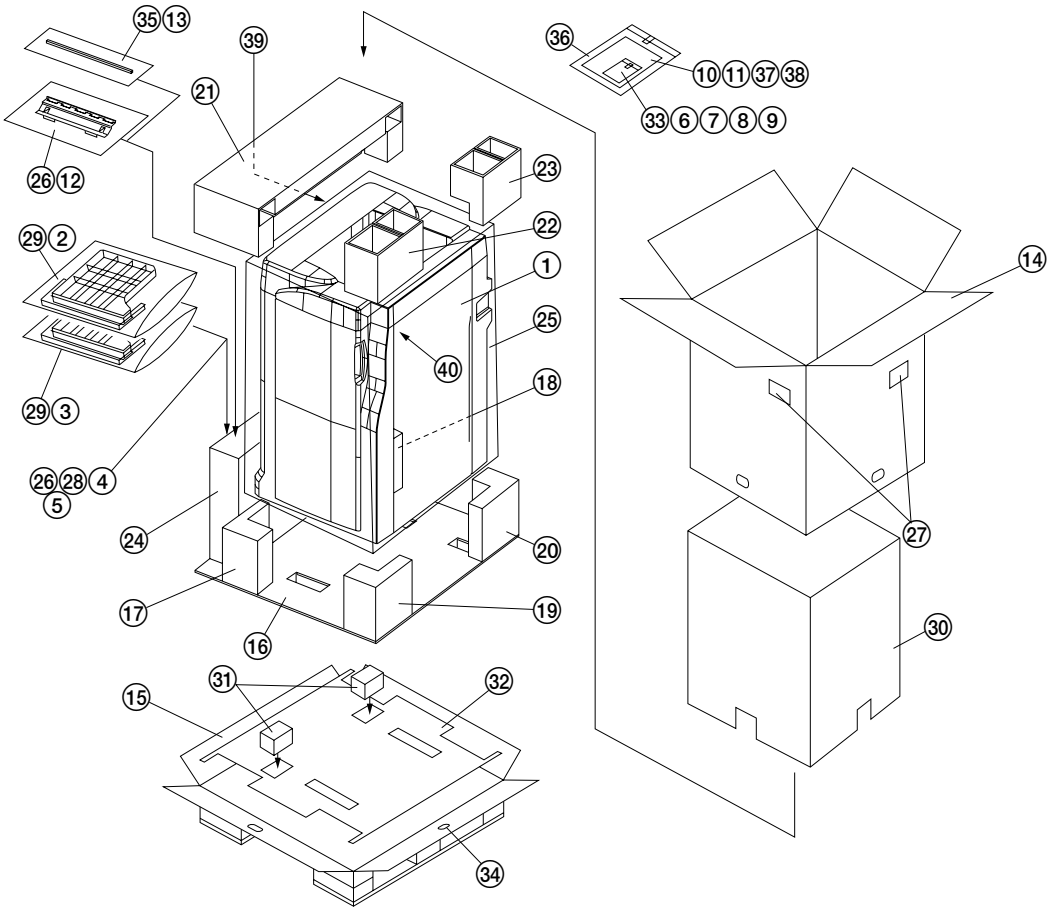


Figure 1-2-1 Finisher package

① Finisher
② Main tray
③ Sub tray*
④ Finisher connecting plate
⑤ Stapler cartridge
⑥ Pins
⑦ Hexagonal nuts
⑧ M4 × 10 tap-tight binding screws
⑨ BVM4 × 12 binding screws
⑩ Label A
⑪ Label B*
⑫ Paper insertion aid guide plate
⑬ Connecting sponge
⑭ Outer case
⑮ Skid
⑯ Bottom cushion sheet
⑰ Front lower left pad
⑱ Rear lower left pad
⑲ Front lower right pad
⑳ Rear lower right pad
㉑ Upper left pad
㉒ Front upper right pad
㉓ Rear upper right pad
㉔ Accessory case
㉕ Dust cover
㉖ Air cap bags
㉗ Barcode labels
㉘ Air cap bag
㉙ Air cap bags
㉚ Inner case
㉛ Bottom pads
㉜ Bottom board
㉝ Vinyl bag
㉞ Hinge joint
㉟ Polyethylene bag
㊱ Polyethylene bag
㊲ Instruction handbook
㊳ Installation guide
㊴ Spacer
㊵ Spacer

* For multi finisher only.

Installation procedure

Before installing the finisher, turn the copier off from the main switch and unplug the power cable from the wall outlet.

1. Attach the paper insertion aid guide plate to the eject cover of the copier and lock down with the two M4 × 10 tap-tight binding screws.

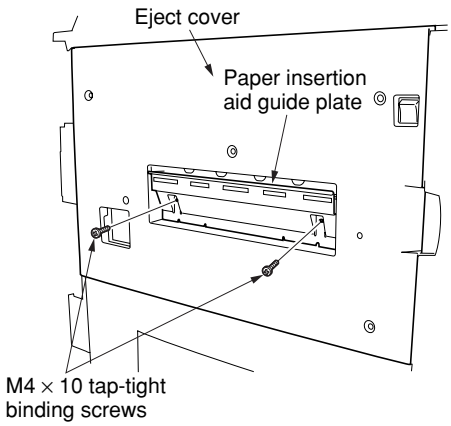


Figure 1-2-2

2. Attach the finisher connecting plate to the copier eject cover and then hold them together with the two BVM4 × 12 binding screws.

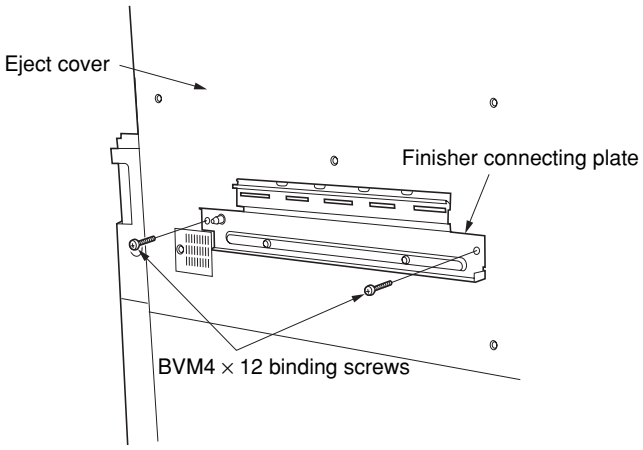


Figure 1-2-3

3. Attach the connecting sponge to the finisher by aligning the sponge to the upper end “a” and front end “b” of the paper port of the finisher.

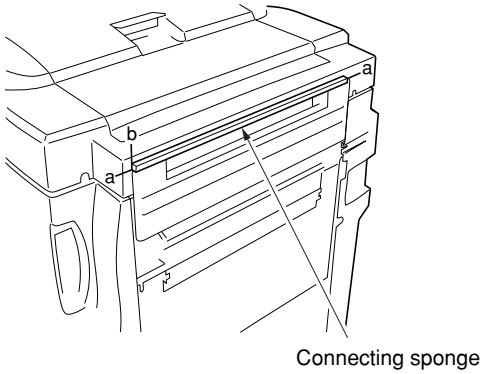


Figure 1-2-4

4. Open the front cover.
5. Remove the screw and raise the connecting lever at the bottom of the finisher. Raising the lever lowers the hooks.

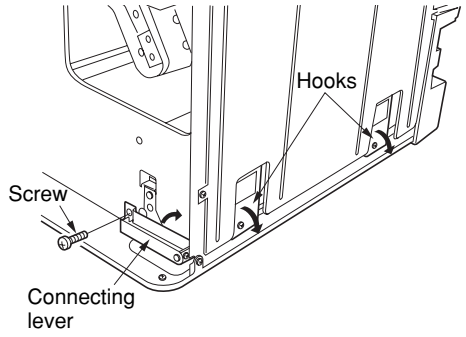


Figure 1-2-5

6. Remove the screw and pull out the connecting rail at the upper part of the finisher.

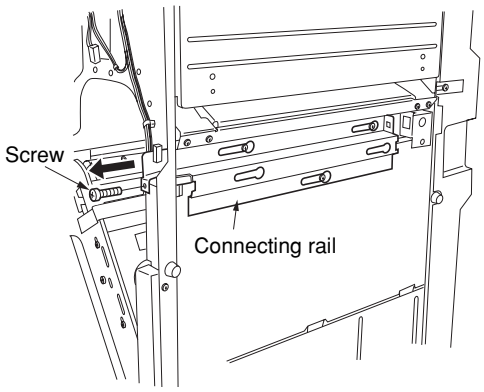


Figure 1-2-6

7. Join the finisher and the copier by hanging the hooks onto the fittings inside the copier.
8. Join the finisher and the copier so that the long pin of the finisher connecting plate is inserted into the hole at the rear of the finisher and the two short pins into the holes on the connecting rail.

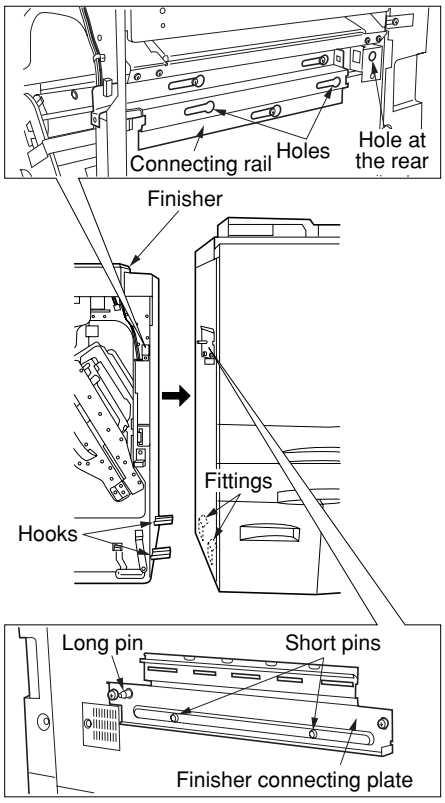


Figure 1-2-7

9. Make sure that the finisher is securely joined with the copier. Then, push the connecting rail in and lock back down with the screw.

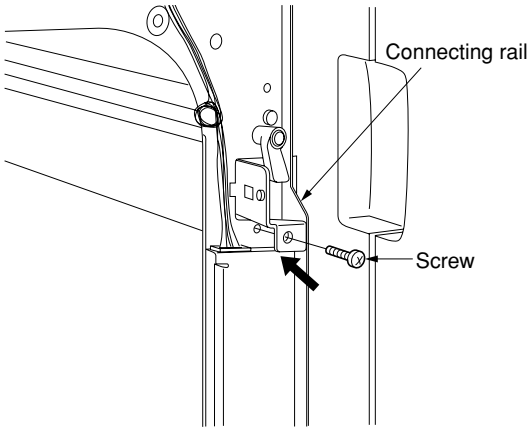


Figure 1-2-8

10. Slide the connecting lever rightward and lock down with the screw removed in step 5.

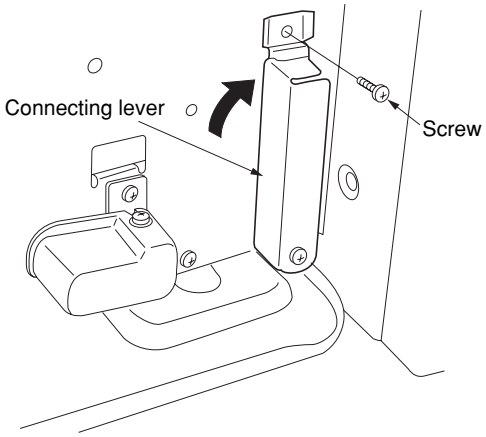


Figure 1-2-9

11. Remove the four blue screws locking each of the two separate retainers to the intermediate tray and detach both retainers.

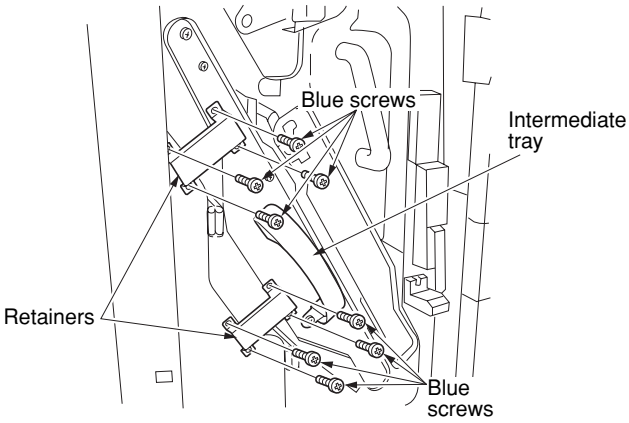


Figure 1-2-10

12. Pull out the intermediate tray.
13. Remove the strip of fixing tape from the release lever.

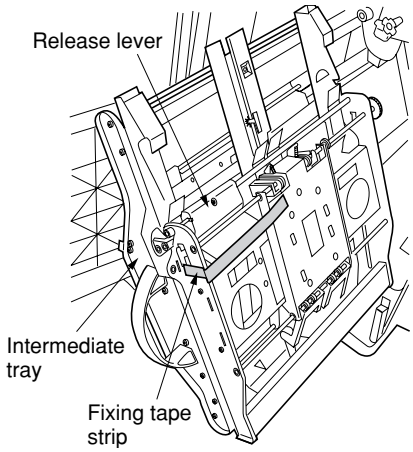


Figure 1-2-11

14. Raise the release lever to open the intermediate tray, and then remove the four strips of fixing tape.

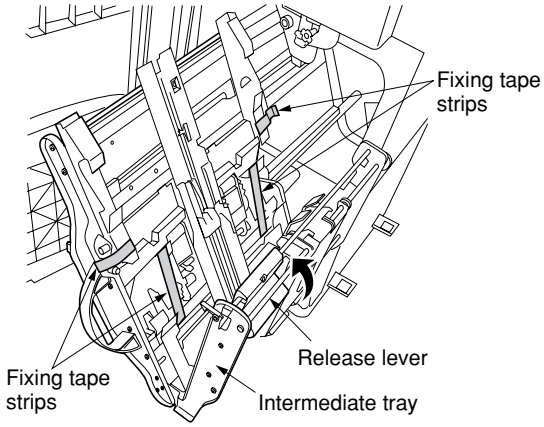


Figure 1-2-12

15. Insert a stapler cartridge into each of the staplers of the intermediate tray. Press on the cartridges until they are securely locked.
    Note: With the simple finisher, attach just one stapler cartridge to the stapler at the rear side.

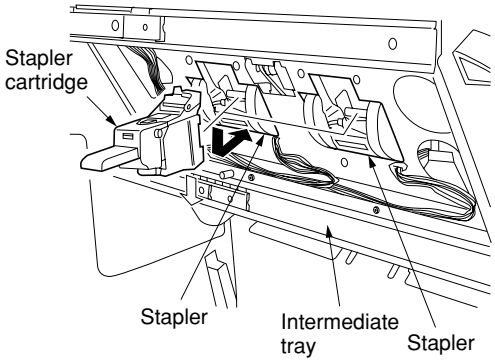


Figure 1-2-13

16. Fit the main tray with two hexagonal nuts.
17. Secure the main tray with two pins.

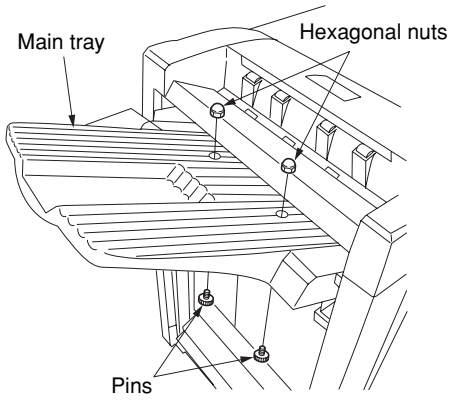


Figure 1-2-14

For the multi finisher only

18. Attach the sub tray to the finisher by inserting the projections at the front and back of the sub tray into the holes of the finisher.

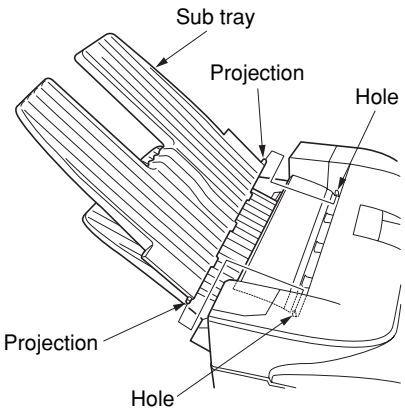


Figure 1-2-15

19. Affix label A to the recessed portion on the side of the main tray.

For multi finisher only

20. Affix label B to the recessed portion on the side of the sub tray.

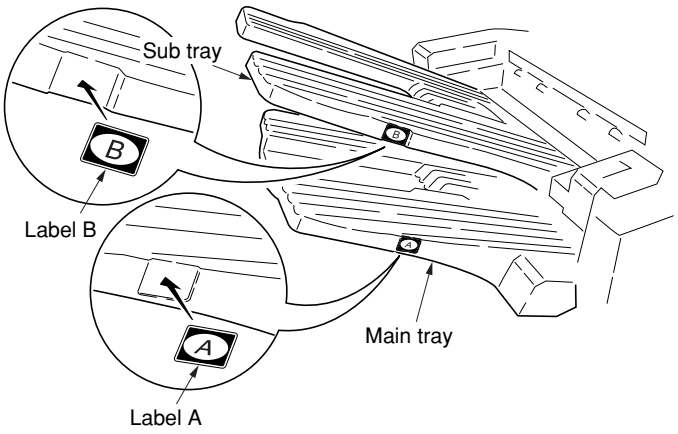


Figure 1-2-16

21. Connect the signal cable of the finisher to the connector of the copier.
22. Plug the copier's power cable into a wall outlet and turn the copier on from the main switch.

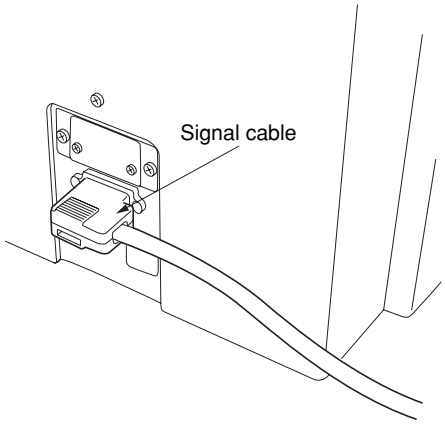


Figure 1-2-17

Adjustment

After installing the multi/simple finisher, perform the following adjustment.

- Correcting paper curling
  See page 1-5-1.
- Correcting centerfold-stapling (for multi finisher only)
  See page 1-5-2.

(2) Multi job tray

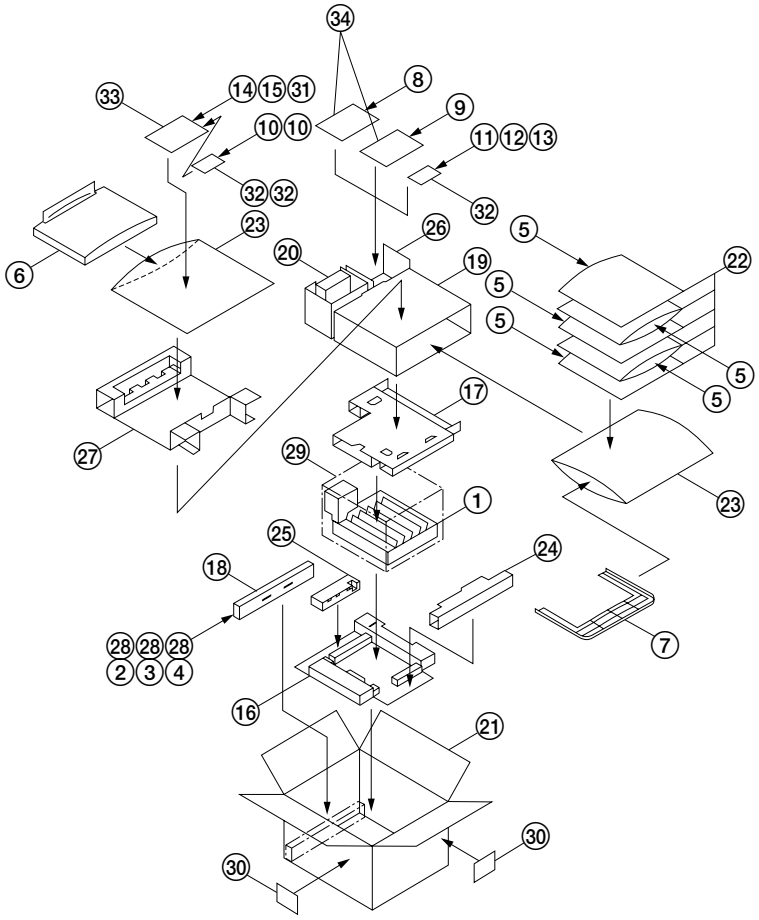


Figure 1-2-18 Multi job tray package

① Multi job tray
② Bin front guide plate
③ Bin rear guide plate
④ Bin guide plate retainer
⑤ Job trays
⑥ Right cover
⑦ Left cover
⑧ Tray detection plate A
⑨ Motor front cover
⑩ Job tray switches
⑪ BVM3 × 5 binding screws
⑫ BVM4 × 6 binding screws
⑬ M4 × 8 TP screws
⑭ Sheet of tray No. labels
⑮ Sheet of name labels
⑯ Bottom pad
⑰ Top pad
⑱ Rail case
⑲ Tray spacer
⑳ Spacer
㉑ Outer case
㉒ Air cap bags
㉓ Air cap bags
㉔ Front bottom spacer
㉕ Rear bottom spacer
㉖ Retaining spacer
㉗ Top spacer
㉘ Polyethylene bags
㉙ Dust cover
㉚ Barcode labels
㉛ Installation guide
㉜ Vinyl bags
㉝ Polyethylene bag
㉞ Vinyl bags

Installation procedure

Before installing the multi job tray, turn the copier off from the main switch and unplug the power cable from the wall outlet.
Install the multi job tray after attaching the finisher main tray.
When installing the multi job tray and centerfold unit as a set, first install the centerfold unit and then the multi job tray.

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.

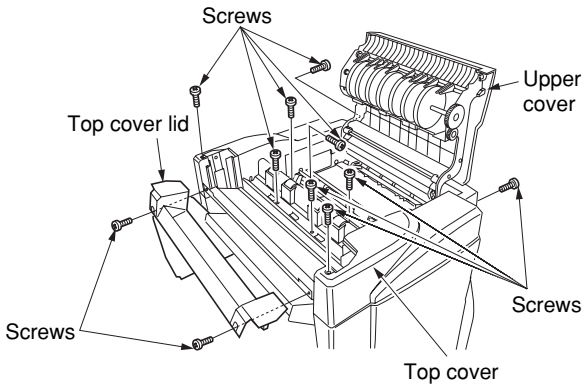


Figure 1-2-19

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

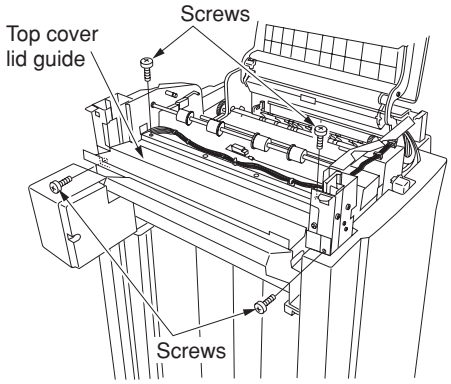


Figure 1-2-20

4. Attach the two multi job tray switches to the eject stay by inserting the tabs, and lock in place with one BVM3 × 5 binding screw each.
5. Connect the 3-pin connector of the size detection switch to the connector of the finisher.

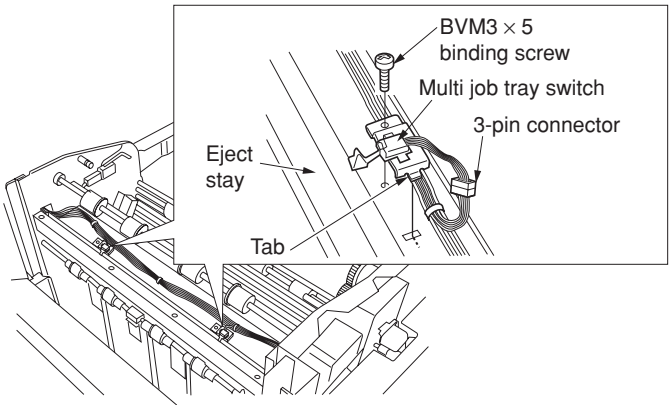


Figure 1-2-21

When installing the multi job tray and centerfold unit as a set, follow steps 6 to 18. When installing the multi job tray only, skip to step 19.

6. Disconnect the 2-pin connector of the main tray unit.
7. Remove the five screws locking down the finisher rear cover followed by the cover.

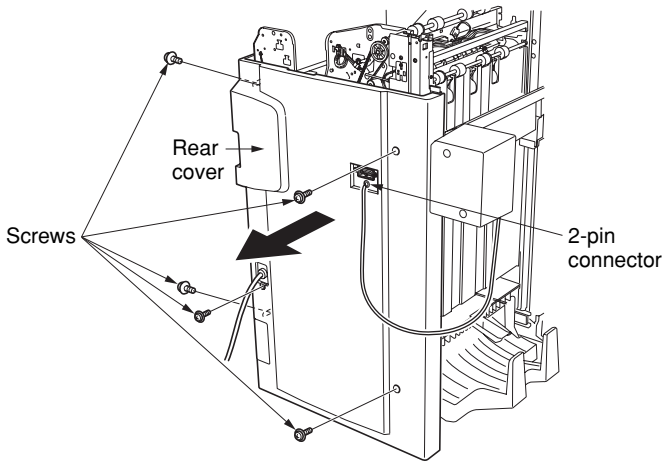


Figure 1-2-22

8. Raise the main tray unit by hand and detach from the finisher.

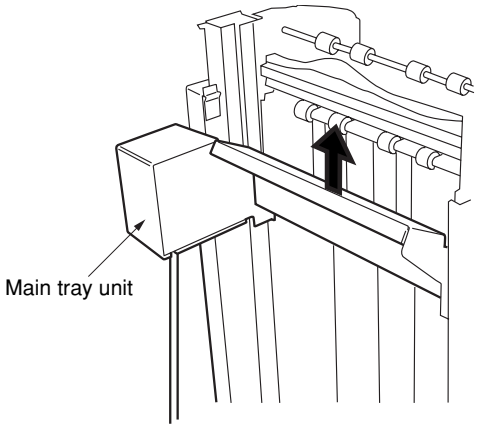


Figure 1-2-23

9. Remove the screw locking the tray detection plate to the main tray unit. Replace the tray detection plate with tray detection plate A included in the package.

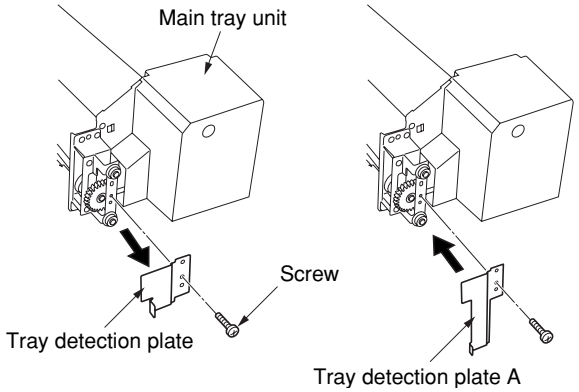


Figure 1-2-24

10. Remove the screw locking the motor front cover to the main tray unit followed by the cover.

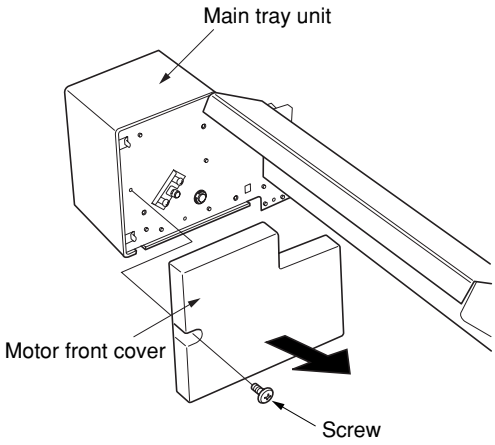


Figure 1-2-25

11. Attach the main tray unit to the finisher by inserting the main tray pulleys at the unit front and rear into the rails on the finisher.
Note: Be sure that tray detection plate A does not make contact with the sensors.

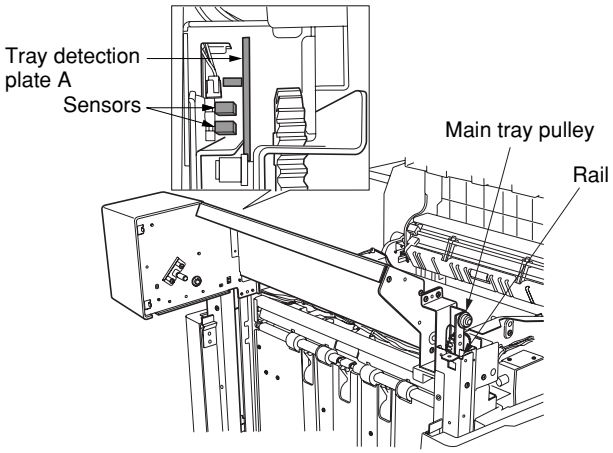


Figure 1-2-26

12. Measure the gaps “a” between the main tray unit and finisher rail ends against the scale to make sure that “a” is same at the front and rear.
Note: If gap “a” is not the same at the unit front and rear, install the main tray unit again so that it becomes the same.

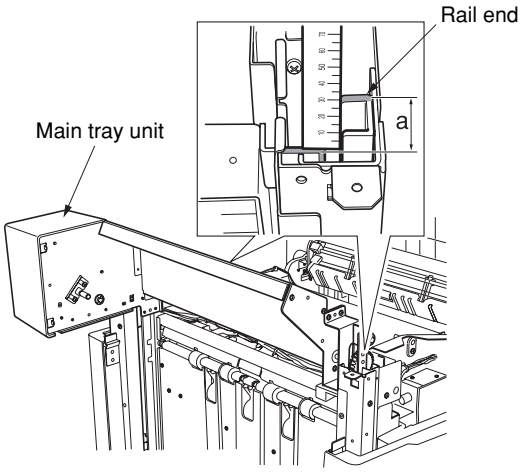


Figure 1-2-27

13. Loosen the two screws locking down the retainer. With the retainer slid upward, push in the gear shaft while holding the bottom of the main tray unit. Then, lower the main tray unit to its lowest position.
14. Pull out the gear shaft, slide the retainer to its original position and retighten the two screws.
    Note: Make sure the gear shaft is positioned so that the retainer will be engaged in groove "b" on the shaft.
15. Insert the two pegs of the motor front cover of the main tray unit into the square holes and lock down with the screw.

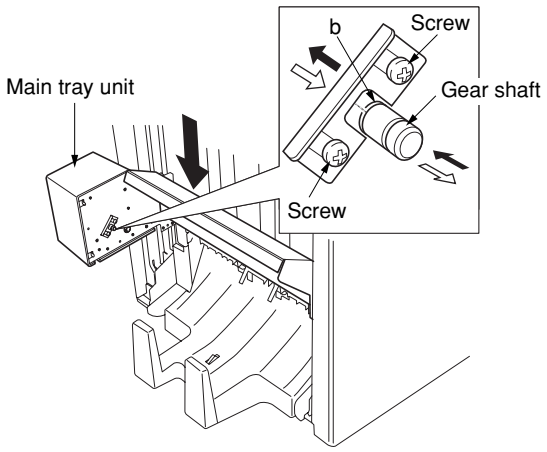


Figure 1-2-28

16. Remove the screw locking the mid-point detection sensor to the finisher rear panel. Lower the sensor and lock it down again.

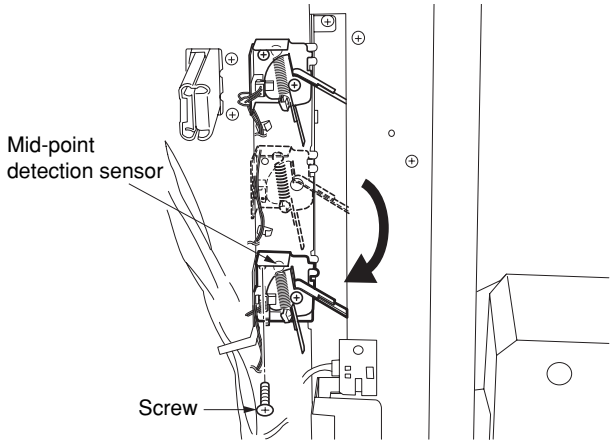


Figure 1-2-29

17. Reattach the finisher rear cover with the five screws.
18. Connect the 2-pin connector of the main tray unit.

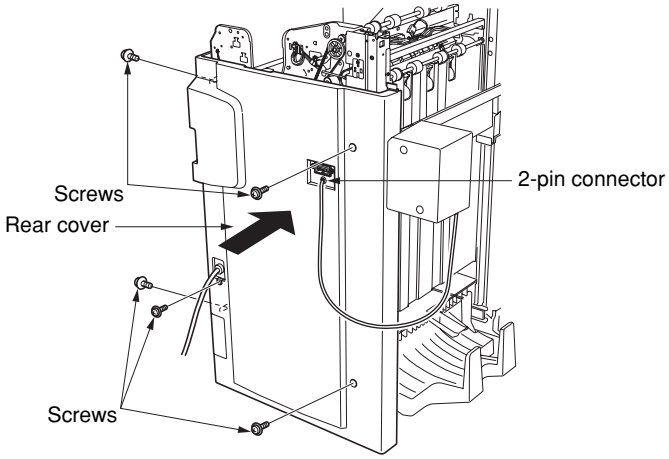


Figure 1-2-30

19. Remove the three blue screws locking the base retainer to the multi job tray followed by the retainer.

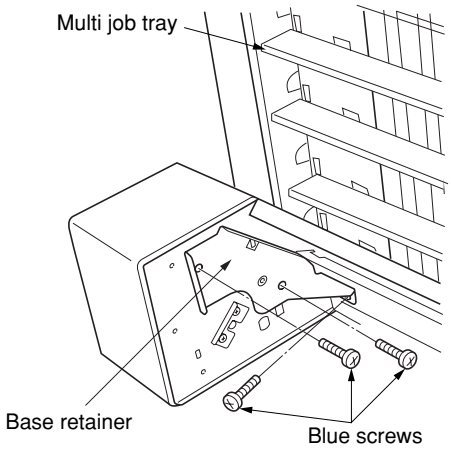


Figure 1-2-31

20. 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 BVM4 × 6 binding screws each.

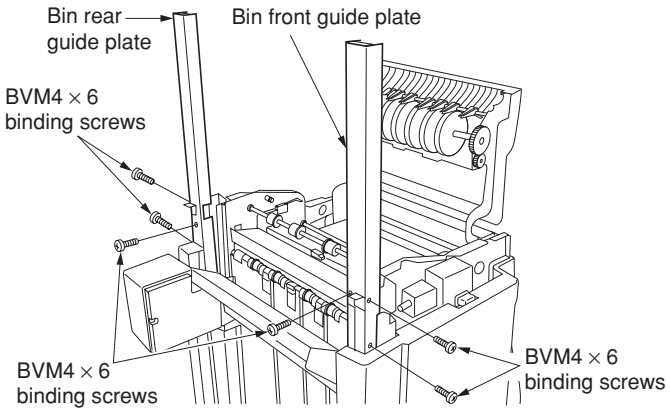


Figure 1-2-32

21. 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.
Note: Make sure that the shading plate at the rear of the multi job tray does not make contact with the sensor.

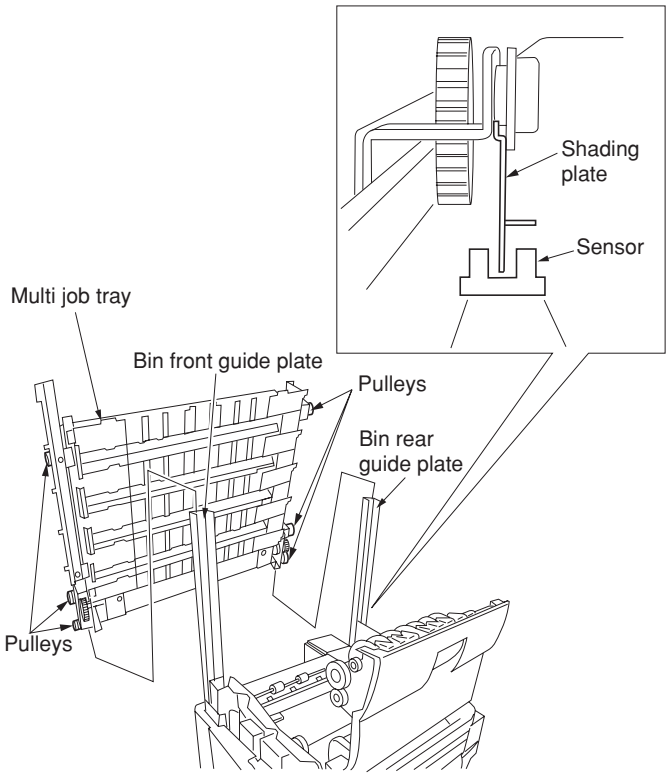


Figure 1-2-33

22. 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.

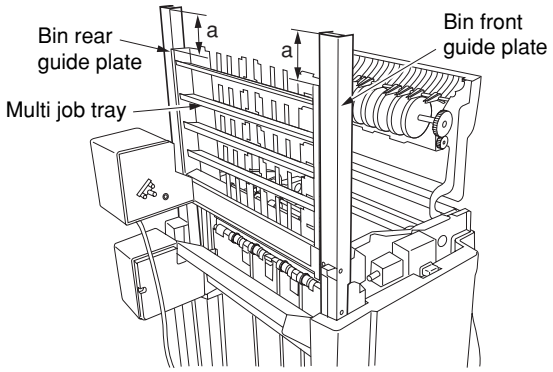


Figure 1-2-34

23. Loosen the two screws.
24. 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.

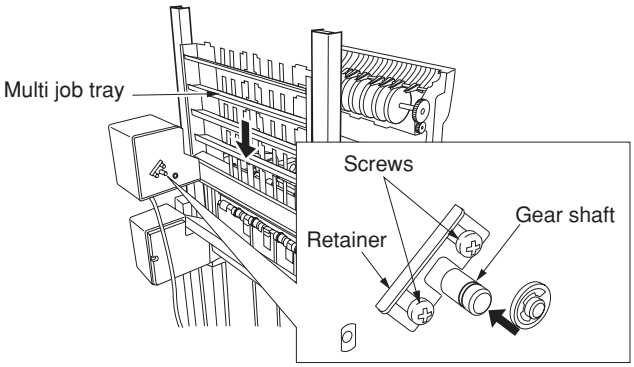


Figure 1-2-35

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

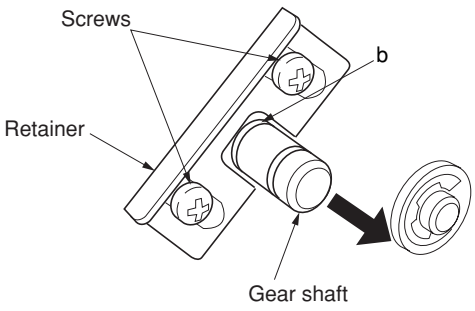


Figure 1-2-36

26. Attach the bin guide plate retainer with two BVM4 × 6 binding screws.
27. Reattach the top cover with the nine screws removed in step 2, keeping the upper cover open halfway to enable proper attaching.

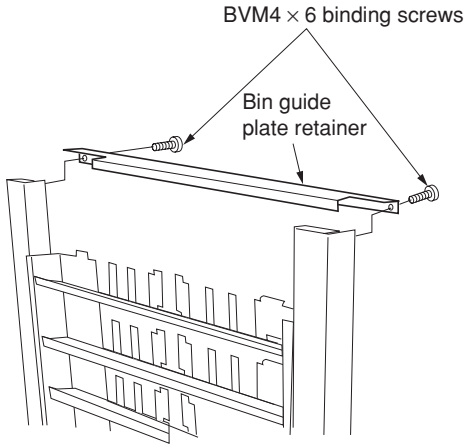


Figure 1-2-37

28. Attach the right cover with four M4 × 8 TP screws.

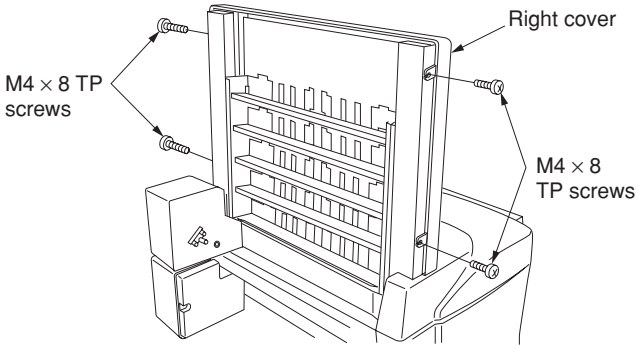


Figure 1-2-38

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

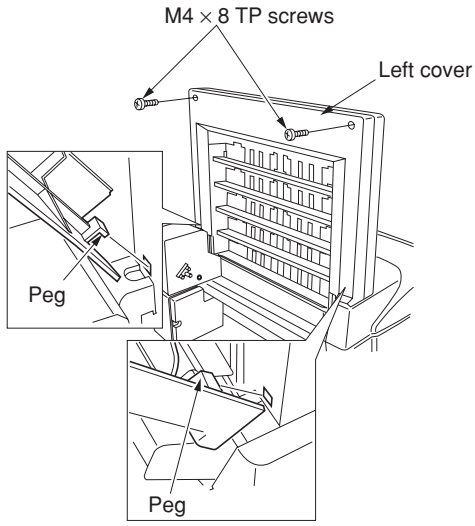


Figure 1-2-39

30. Affix a tray No. label to each of the five job trays.

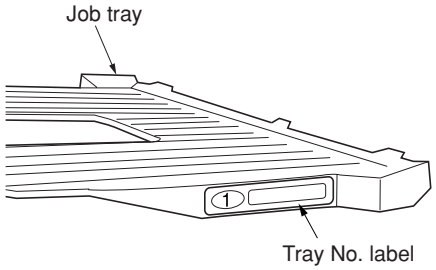


Figure 1-2-40

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

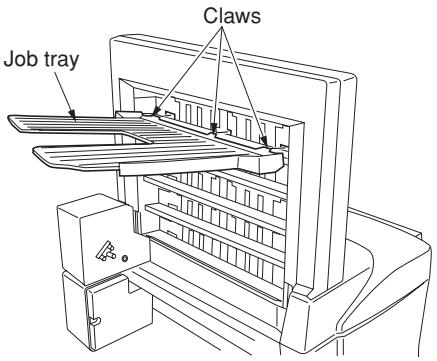


Figure 1-2-41

32. Connect the 3-pin connector at the back side of the job tray.
33. Fit the cable of the 3-pin connector to the inside of the job tray and lock down with the cable retainer.
34. Slide the job tray lid into position and lock in place by inserting the two pegs into the square holes.
    Note: Make sure that the cable is tidily fitted and not caught in the job tray lid.
35. Repeat steps 31 to 34 to attach the other four job trays.
    Note: Attach the job trays in the order of the tray No. labels so that the tray with the label No.1 is at the uppermost shelf, No.2 at the second and so forth.

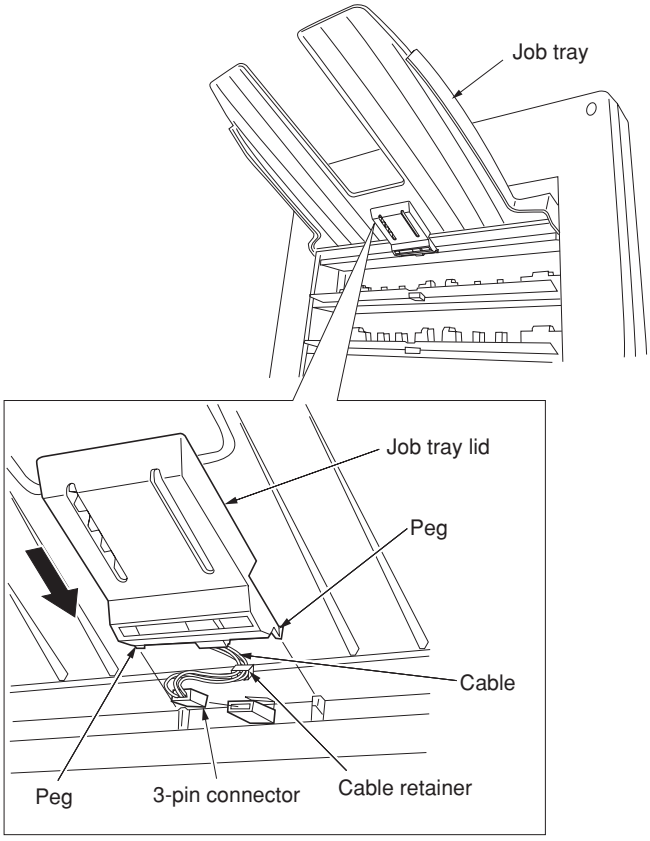


Figure 1-2-42

36. Attach the motor front cover by inserting the two pegs into the square holes, and lock in place by the M4 × 8 TP screw.

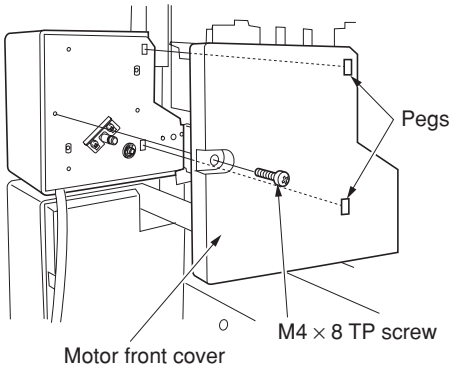


Figure 1-2-43

37. Connect the signal cable of the multi job tray to the finisher connector.

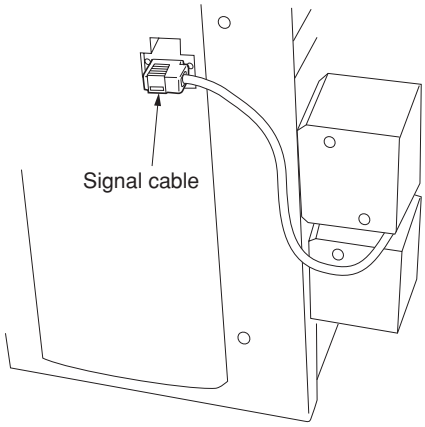


Figure 1-2-44

38. Plug the copier's power cable into a wall outlet and turn the copier on from the main switch.
39. Make a test print and check the multi job tray performs properly.

(3) Centerfold unit

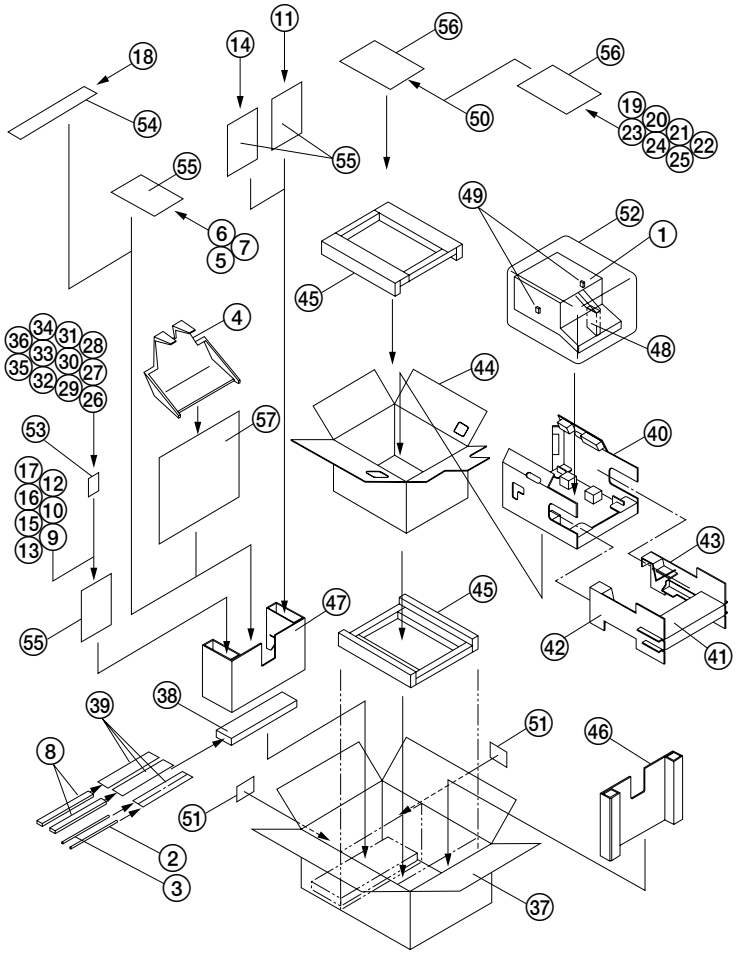


Figure 1-2-45 Centerfold unit package

① Centerfold unit
② Release pole assembly
③ Release stopper pole assembly
④ Storage cover
⑤ Right cover
⑥ Left cover
⑦ Release handle
⑧ Sliders
⑨ Release lever
⑩ Release pole retainer
⑪ Release lever actuating plate
⑫ Backstop
⑬ Detection PI douser
⑭ Unit transport handle
⑮ Unit lock hook
⑯ Unit lock rod
⑰ Tray stopper
⑱ Eject guide upper spacer
⑲ Unit insertion label
⑳ Jam correction label
㉑ Jam correction label (Japan)
㉒ Jam correction label (export)
㉓ Operation label 1
㉔ Operation label 2
㉕ Operation label 3
㉖ Large stop rings
㉗ Medium stop ring
㉘ Small stop ring
㉙ Pins
㉚ Small springs
㉛ Large spring
㉜ BVM4 × 6 bronze binding screws
㉝ M4 × 6 TP-A bronze screws
㉞ M4 × 10 TP-A bronze screw
㉟ BVM3 × 5 bronze binding screw
㊱ M3 × 10 tapping screws
㊲ Outer case
㊳ Accessory case
㊴ Air cap bags
㊵ Unit bottom pad
㊶ Unit left spacer
㊷ Unit rear spacer
㊸ Unit front spacer
㊹ Unit case
㊺ Top and bottom pads
㊻ Left spacer
㊼ Right spacer
㊽ Arm spacer
㊾ Centerfold blade spacers
㊿ Installation guide
(51) Barcode labels
(52) Dust cover
(53) Vinyl bag
(54) Polyethylene bag
(55) Vinyl bags
(56) Polyethylene bags
(57) Air cap bag

Installation procedure

Before installing the centerfold unit, turn the copier off from the main switch and unplug the power cable from the wall outlet.

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.

When installing the multi job tray and centerfold unit as a set, first install the centerfold unit and then the multi job tray.

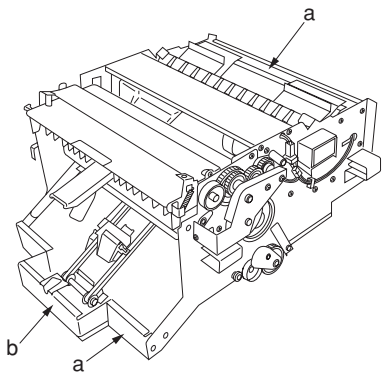


Figure 1-2-46

1. Disconnect the 2-pin connector of the main tray unit.
2. Remove the five screws locking down the finisher rear cover followed by the cover.

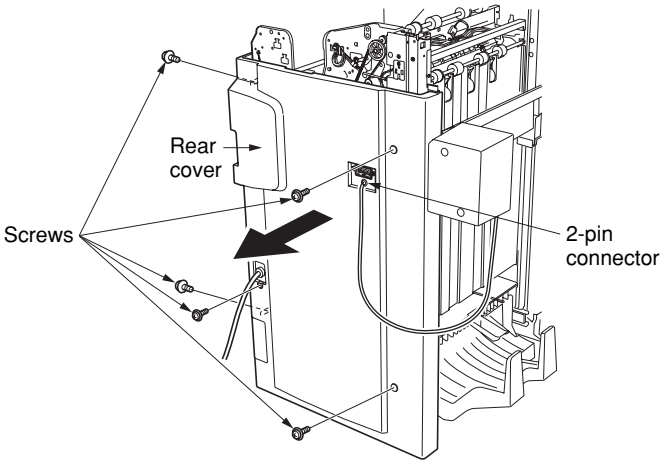


Figure 1-2-47

3. Disconnect the 3-pin connector of the sensor.

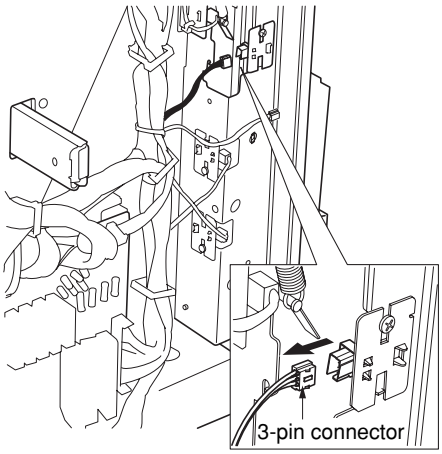


Figure 1-2-48

4. Remove the screw from the rear of the reinforcing plate.
5. Insert the tray stopper and lock it down with the screw removed in step 4 and the BVM4 × 6 bronze binding screw.
   Note: When inserting the tray stopper, take care not to damage the sensors.
6. Reconnect the 3-pin connector that was disconnected in step 3.

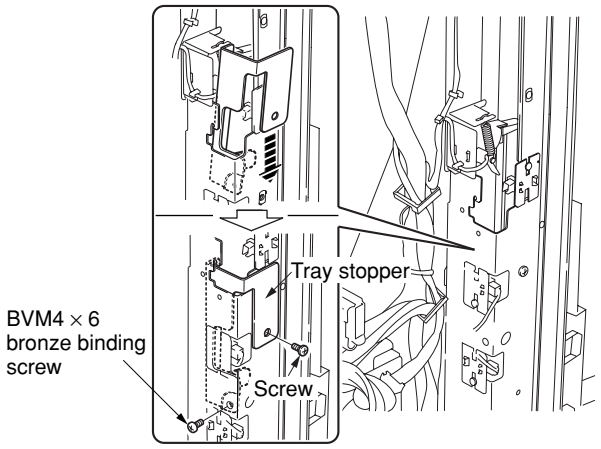


Figure 1-2-49

7. Reattach the finisher rear cover with five screws.
8. Connect the 2-pin connector of the main tray unit.

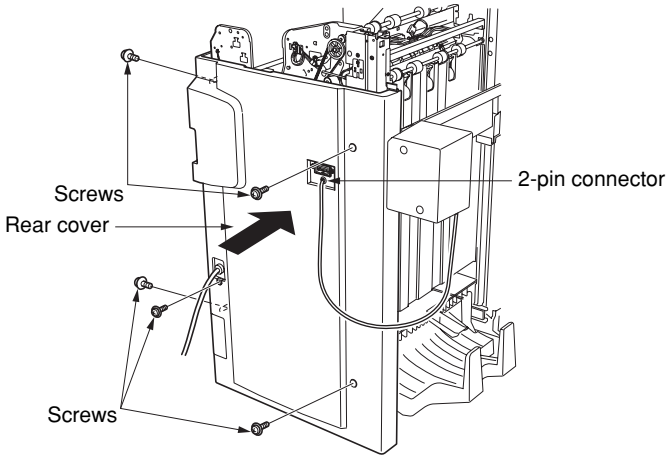


Figure 1-2-50

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

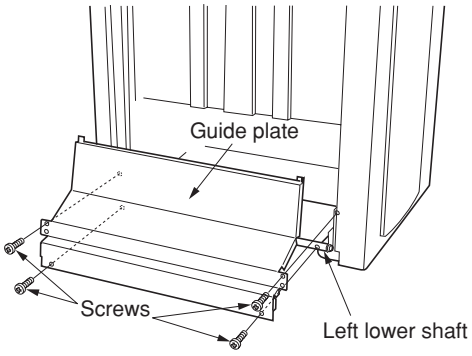


Figure 1-2-51

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

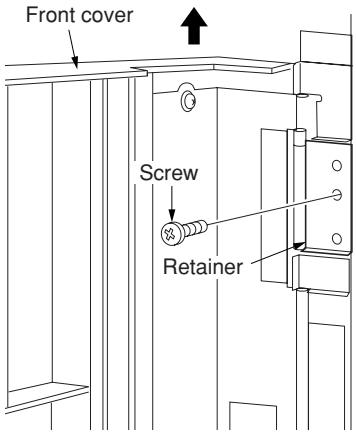


Figure 1-2-52

13. Hang the backstop over the claw on the side plate and fit with two pins.
14. Attach one end of the small spring to the backstop and hang the other end over the hook inside the machine.

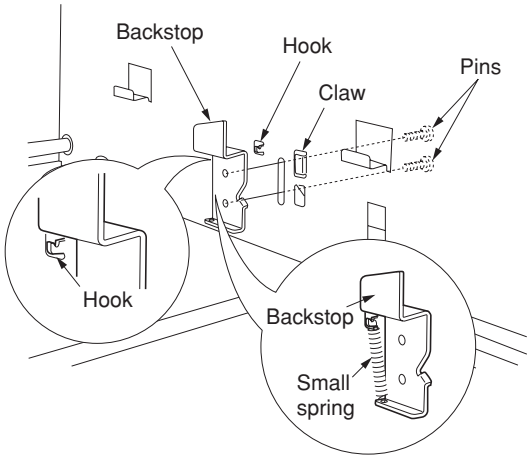


Figure 1-2-53

15. Insert the rear end of the release stopper pole assembly into the bypass hole and the front end into the mounting hole.
    Note: When attaching the assembly, make sure the release stopper is orientated correctly.
16. Insert the rear end of the release stopper pole assembly already inserted through the bypass hole into the mounting hole on the opposite side.

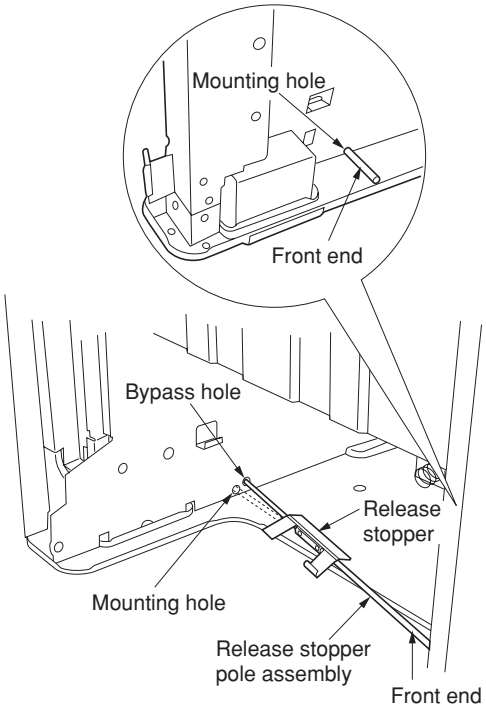


Figure 1-2-54

17. Fit the small stop ring into the groove on the left side of the release stopper pole assembly. Push the release stopper pole assembly in the direction of the arrow.

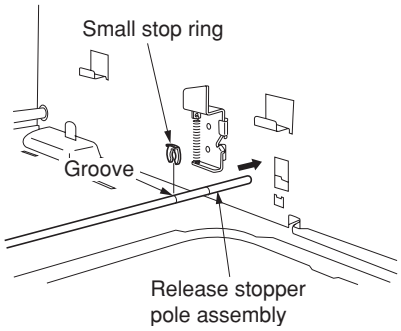


Figure 1-2-55

18. Attach the release lever to the release stopper pole assembly with the BVM3 × 5 bronze binding screw.

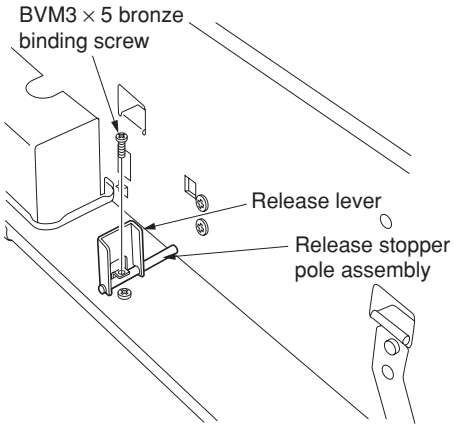


Figure 1-2-56

19. Loosely attach the release pole retainer with an BVM4 × 6 bronze binding screw.

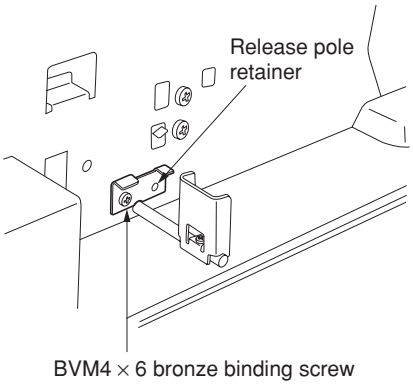


Figure 1-2-57

20. Insert the release lever actuating plate through the hole to the inside of the machine and fit with two pins. Then, make sure that the release lever actuating plate slides leftward and rightward.

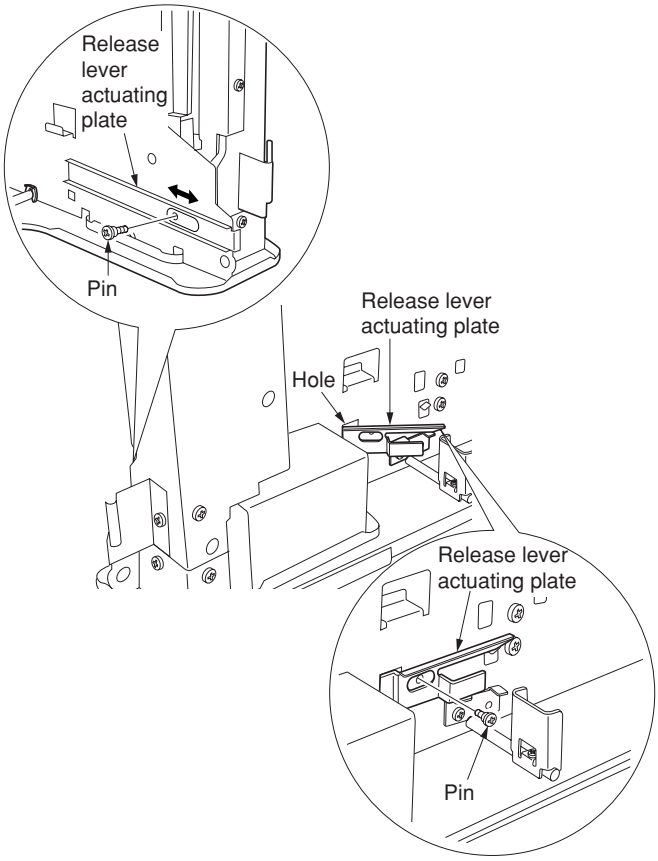


Figure 1-2-58

21. 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.
22. Coat the release lever actuating plate with TEMP1 or the similar grease in the indicated area “a”.

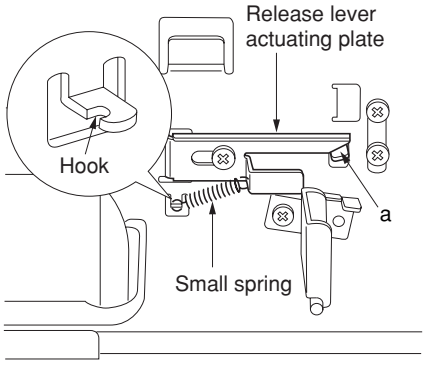


Figure 1-2-59

23. 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.
24. Insert the end of the release pole assembly already inserted through the square bypass hole into the mounting hole.

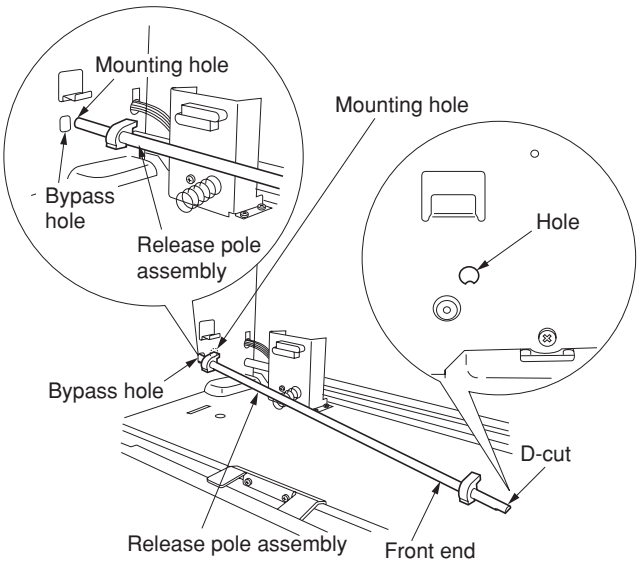


Figure 1-2-60

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

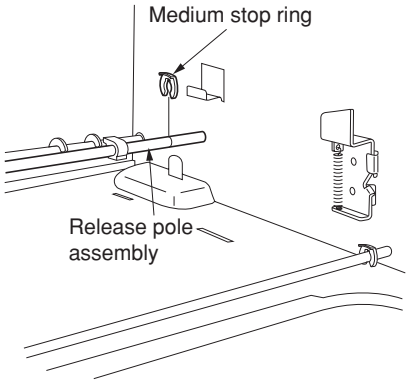


Figure 1-2-61

26. Attach the release handle to the release pole assembly at the machine front side with an M4 × 10 TP-A bronze screw.

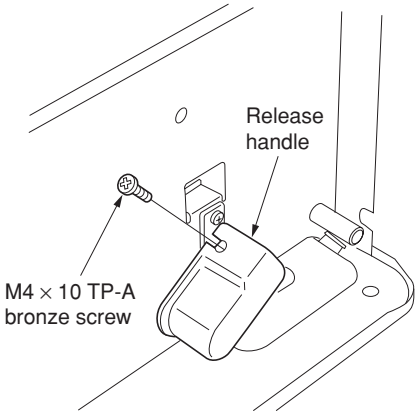


Figure 1-2-62

27. Place the slider on the projections on the finisher rear side-plate and lock down with three BVM4 × 6 bronze binding screws.
    Note: Insert the screws from the round holes on the eject side of the finisher.
28. Place the slider on the projections on the finisher front side-plate and lock down with three BVM4 × 6 bronze binding screws.
    Note: Insert the screws from the round holes on the eject side of the finisher.

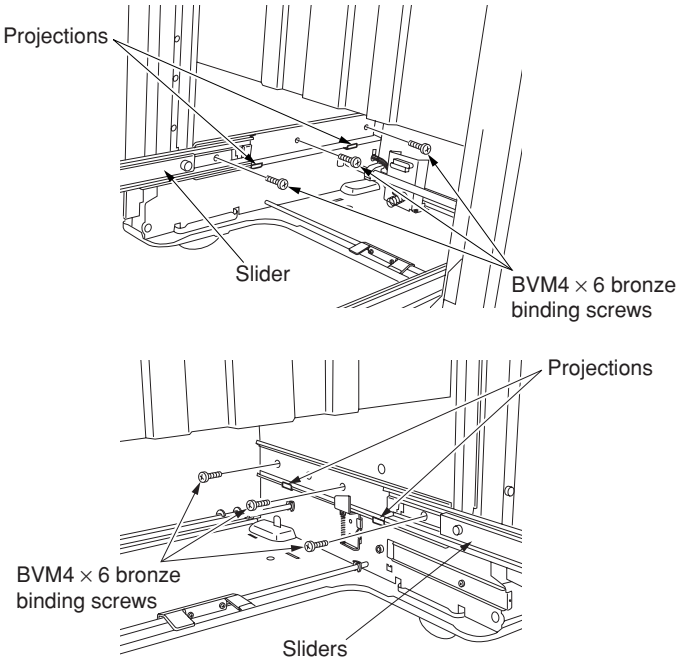


Figure 1-2-63

29. Pull out the intermediate tray.
30. Fit the large stop ring onto the unit lock rod.
31. Attach the unit lock hook to the guide stay with the unit lock rod.

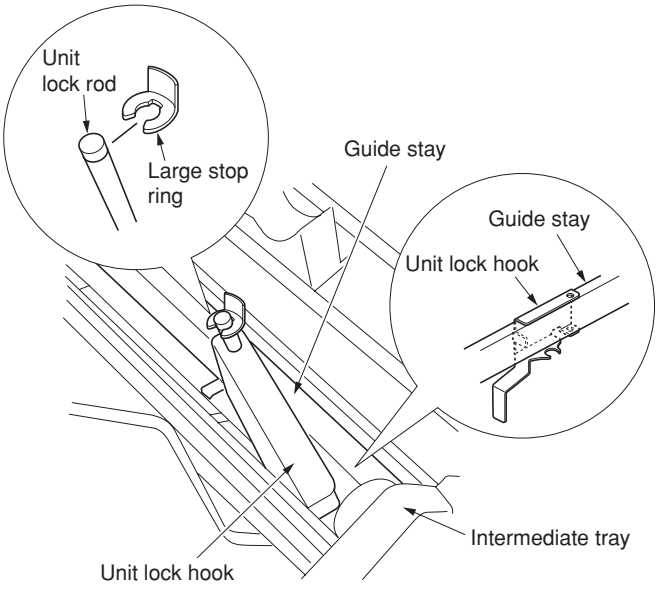


Figure 1-2-64

32. Fit the large stop ring onto the lower part of the unit lock rod.
33. 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.

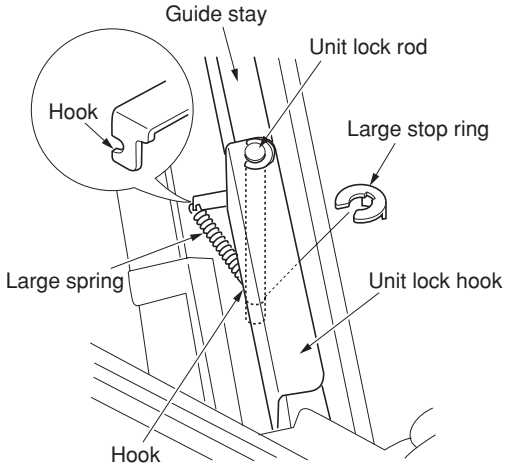


Figure 1-2-65

34. Remove the eight strips of fixing tape and the cushioning material from the centerfold unit.

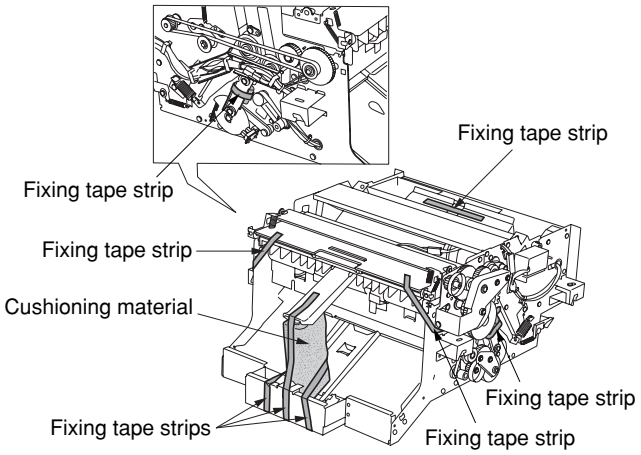


Figure 1-2-66

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

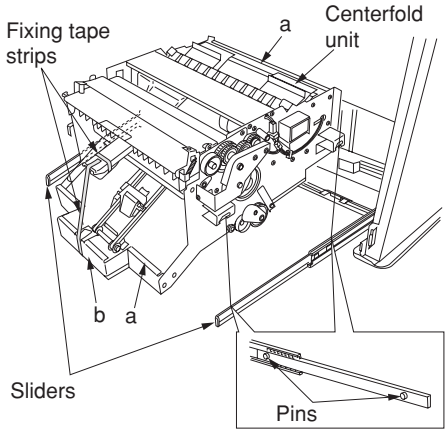


Figure 1-2-67

36. Slide the centerfold unit in the direction of the arrow.
37. Loosen the two screws and push the retainer in the direction of the arrow and retighten the screws.

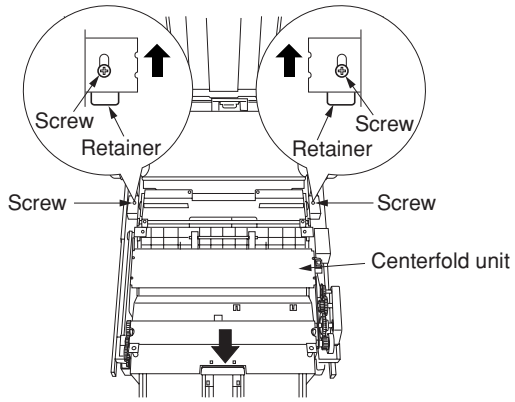


Figure 1-2-68

38. Attach the left and right covers by inserting the catches of the left and right covers into the square holes on the front and rear side-plates, respectively, of the centerfold unit with one M4 × 6 TP-A bronze screw each.

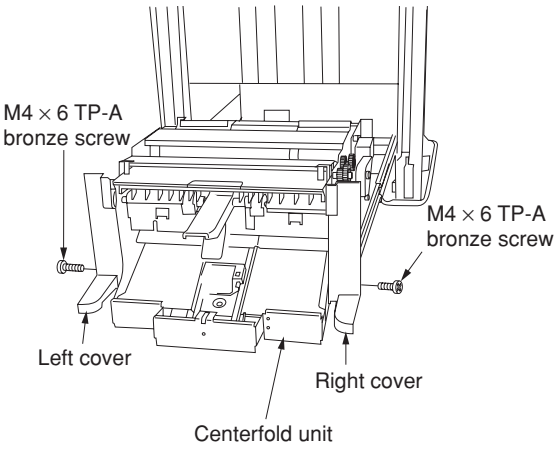


Figure 1-2-69

39. Attach the eject guide upper spacer with the three M3 × 10 tapping screws.

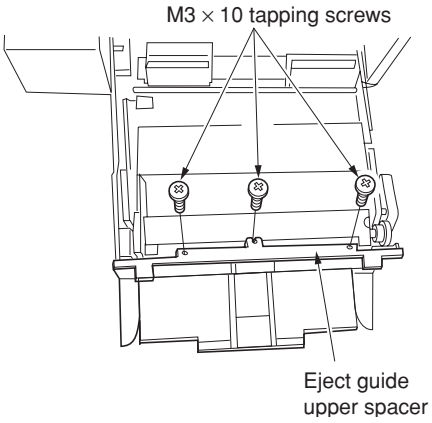


Figure 1-2-70

40. Attach the storage cover to the centerfold unit by inserting the projection of the tray into the hole inside the unit.

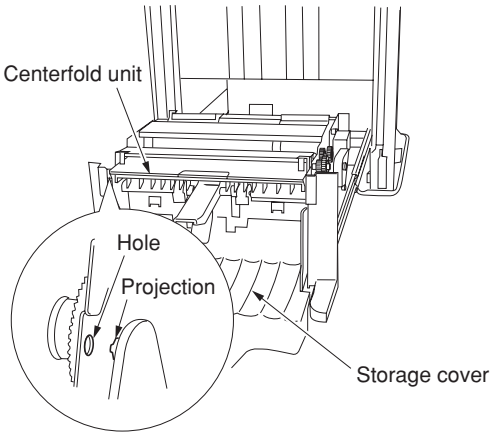


Figure 1-2-71

41. Engage the projection of the detection PI douser with the cutout on the centerfold unit rear panel and lock down the douser with the BVM4 × 6 bronze binding screw.
Note: When inserting the centerfold unit, make sure that the detection PI douser does not make contact with the finisher's centerfold unit set switch. If it does, bend the douser with your hand as much as needed so that the contact is avoided.

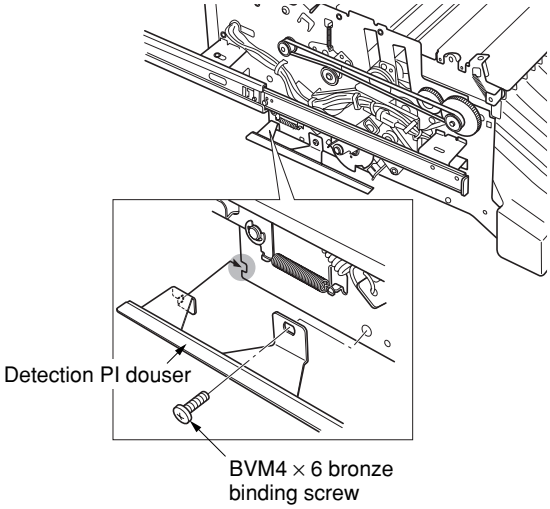


Figure 1-2-72

42. Pull the release lever in the direction of the arrow and push in the centerfold unit.

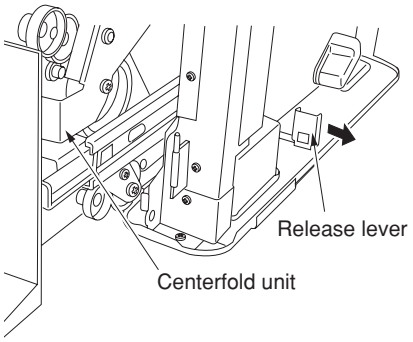


Figure 1-2-73

43. Push the release lever actuating plate.
44. Push in the centerfold unit until it stops.

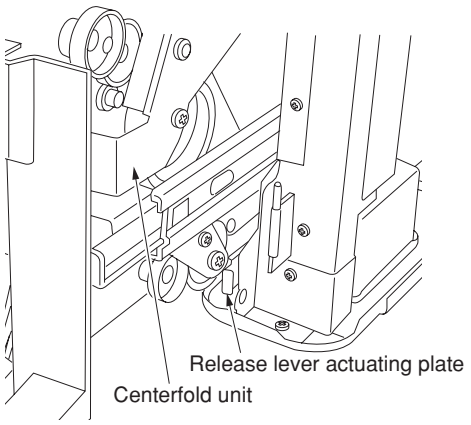


Figure 1-2-74

45. Push the release stopper pole assembly in the direction of the arrow and tighten the BVM4 × 6 bronze binding screw that loosely attached the release pole retainer.

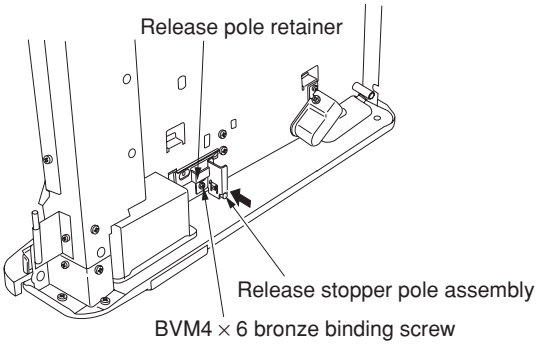


Figure 1-2-75

46. Attach the unit transport handle with an BVM4 × 6 bronze binding screw.

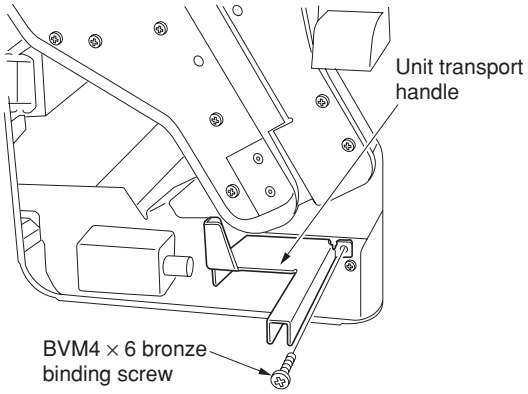


Figure 1-2-76

47. Affix the jam correction label on the rating plate of the finisher front side-plate, in a point 15 mm from each “a” and “b”.

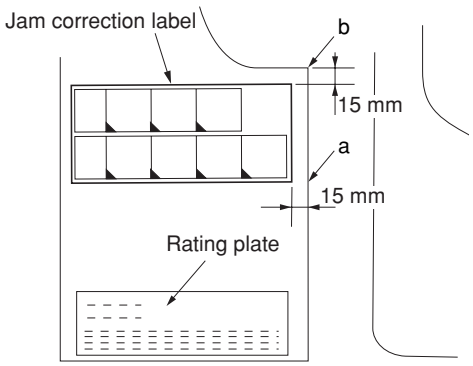


Figure 1-2-77

48. Reattach the front cover.
49. Affix the unit insertion label to the right cover aligning the label with the left end and bottom of the cover.

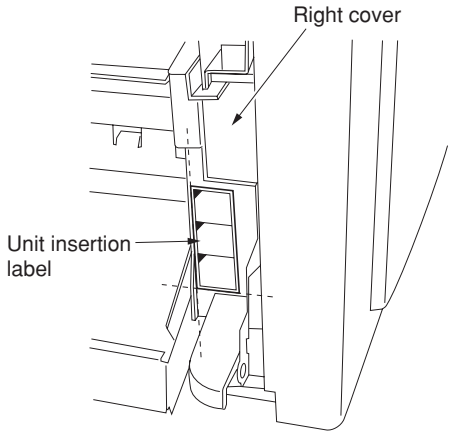


Figure 1-2-78

50. Affix operation labels 1 and 2 to the finisher front panel as shown in the illustration.

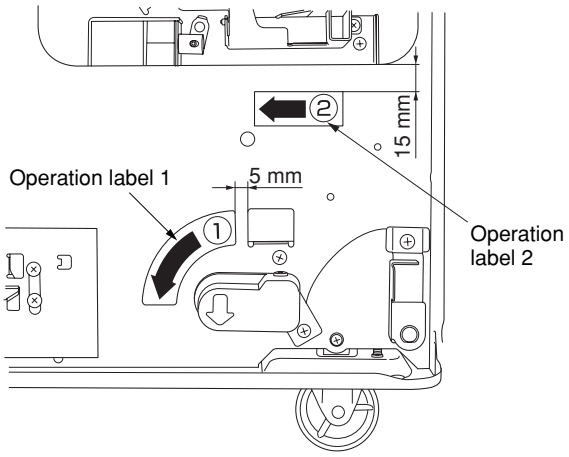


Figure 1-2-79

51. Affix operation label 3 to the finisher's intermediate tray handle as shown in the illustration.

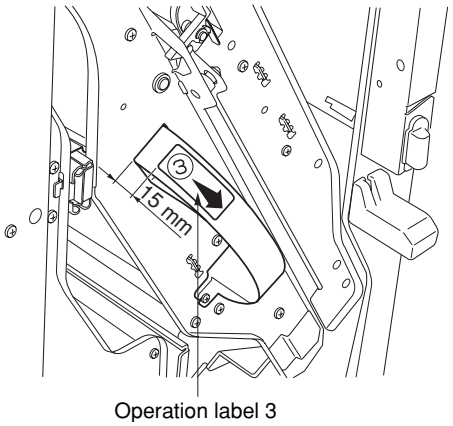


Figure 1-2-80

52. Affix the jam correction label (export) over the existing label on the inside of the finisher front cover, as shown in the illustration.

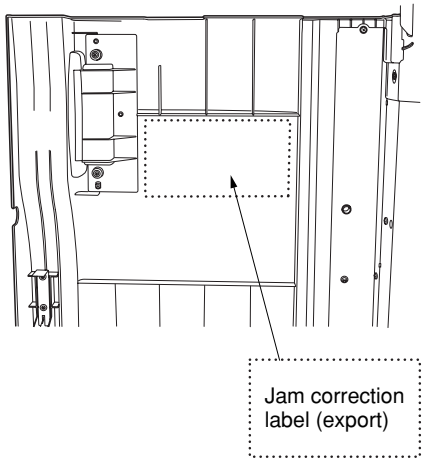


Figure 1-2-81

53. Plug the copier's power cable into a wall outlet and turn the copier on from the main switch.
54. Make a test copy to check that the centerfold unit operates correctly.

Adjustment

After installing the centerfold unit, perform the following adjustment.

- Adjusting the paper folding position

See page 1-5-5.

(4) Punch Unit

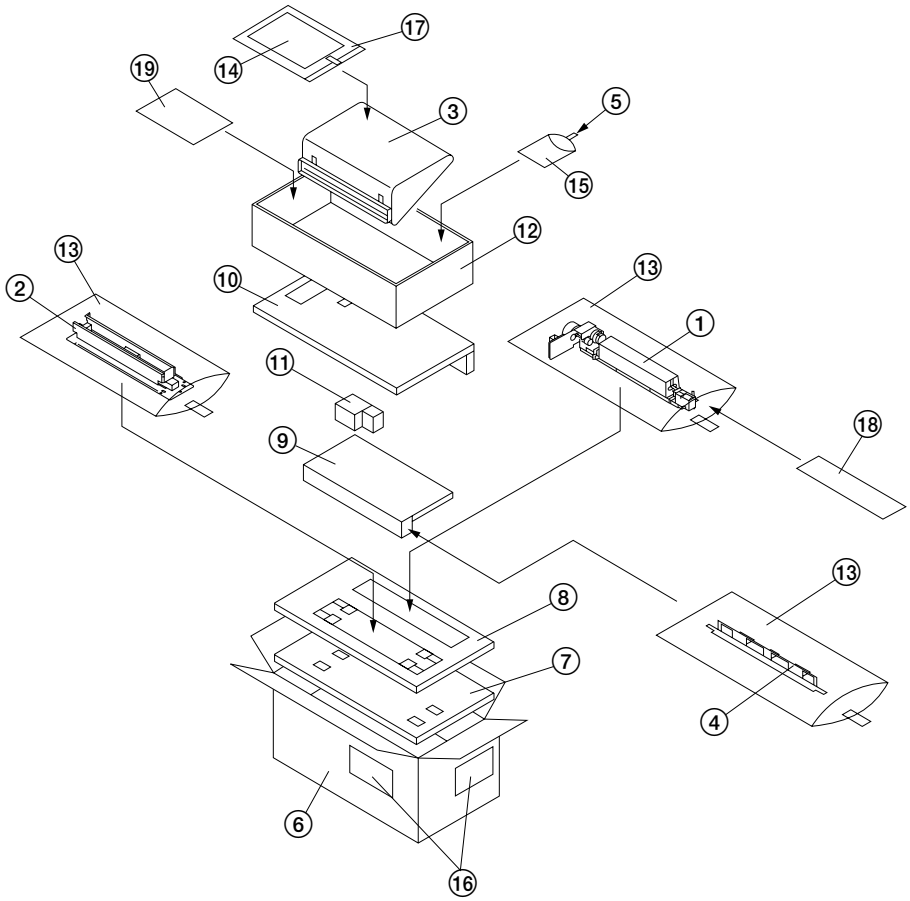


Figure 1-2-82 Punch unit package

① Punch unit
② Paper conveying unit
③ Punch waste box
④ Paper conveying unit upper guide
⑤ M4 × 6 TP screws
⑥ Outer case
⑦ Bottom pad A
⑧ Bottom pad B
⑨ Upper left pad
⑩ Upper right pad
⑪ Right pad
⑫ Spacer
⑬ Polyethylene bags
⑭ Installation guide
⑮ Vinyl bag
⑯ Bar code labels
⑰ Polyethylene bag
⑱ Rust-proofing sheet
⑲ Supply parts check list

Procedure

Before installing the punch unit, turn the copier off from the main switch and unplug the power cable from the wall outlet.

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.

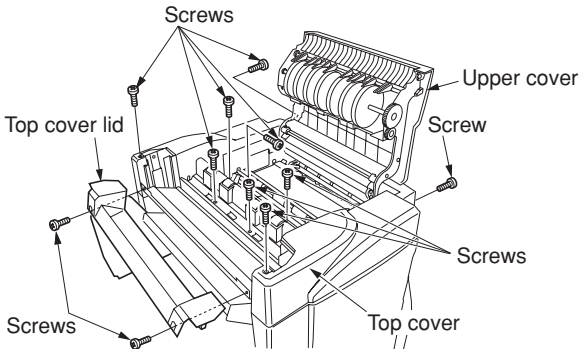


Figure 1-2-83

3. Open the front cover.
4. Remove the three screws locking down the right inner cover followed by the cover.

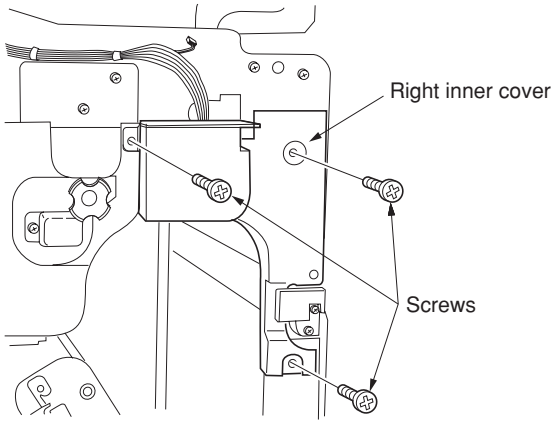


Figure 1-2-84

5. Remove the bushing from the side plate.
6. Disconnect the 7-pin connector and pass it through the hole where the bushing was fit, to the inside of the side plate.

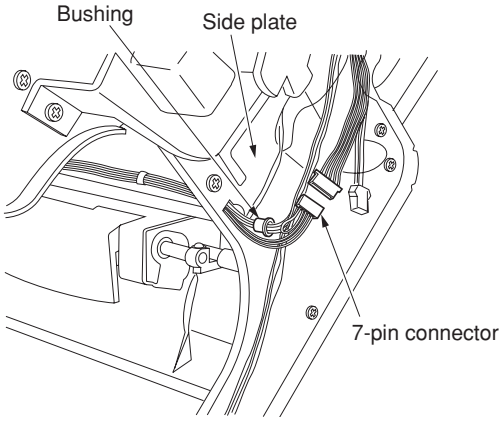


Figure 1-2-85

7. Detach the cables of the 2-pin connector and 9-pin connector on the finisher rear from the wire saddle.

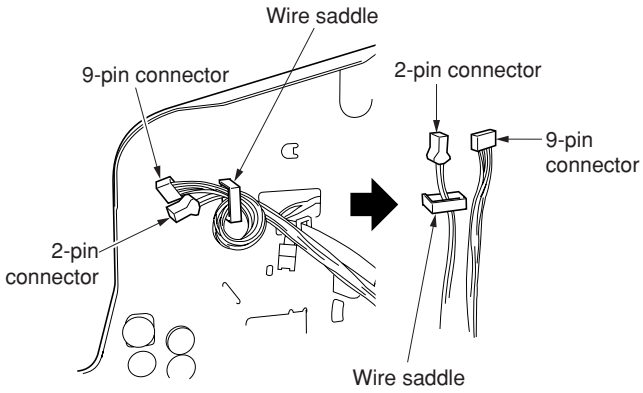


Figure 1-2-86

8. Remove the four screws locking down the guide plate followed by the plate.

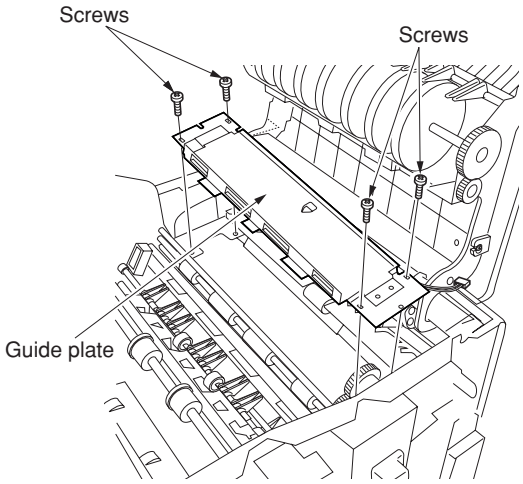


Figure 1-2-87

9. Set the paper conveying unit on the two projections and lock down with the four screws removed in step 8.

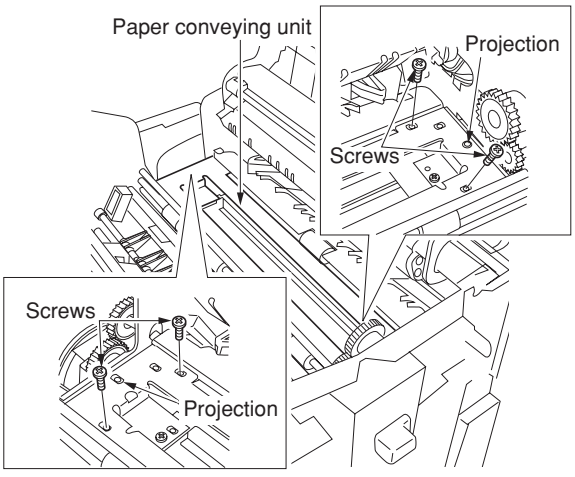


Figure 1-2-88

10. Fit the 7-pin connector and 3-pin connector of the paper conveying unit to the outside of the side plate, and connect them to the finisher cable.
11. Reattach the bushing to the side plate.

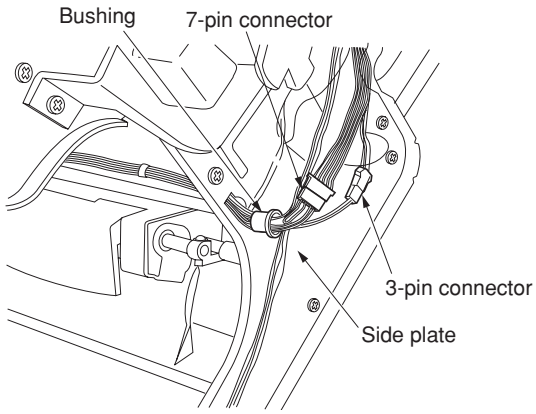


Figure 1-2-89

12. Attach the paper conveying unit upper guide to the paper conveying unit with two M4 × 6 TP screws.

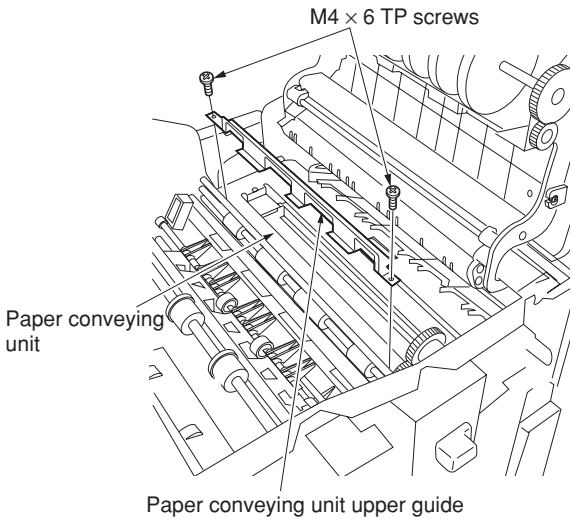


Figure 1-2-90

13. Attach the punch unit to the paper conveying unit with two M4 × 6 TP screws.
Note: Align the center of the markings on the front side with the center of the slot.

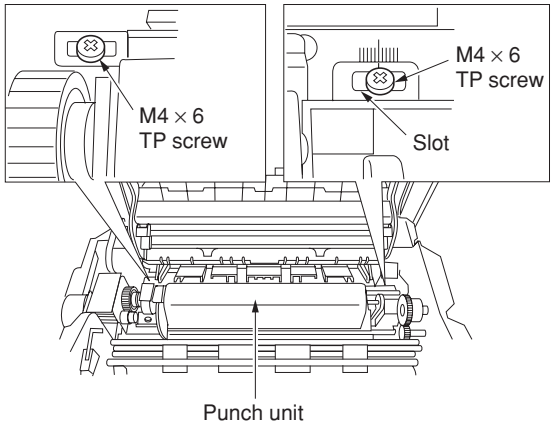


Figure 1-2-91

14. Connect the cable of the 2-pin connector to the 2-pin connector of the clutch.
15. Bind the cable of the 9-pin connector at the finisher rear with the wire saddle and connect the connector to CN1 on the motor PCB.

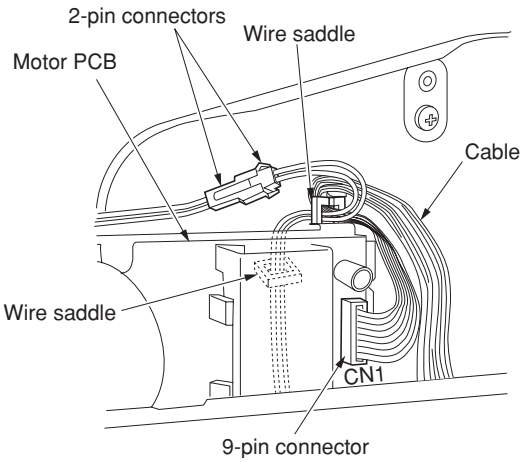


Figure 1-2-92

16. Connect the 3-pin connector at the front side of the finisher to the 3-pin connector of the solenoid.

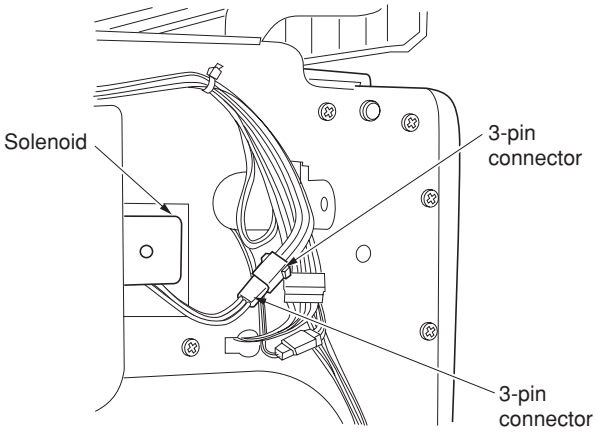


Figure 1-2-93

17. Attach the punch waste box to the rails.
18. Reattach the right inner cover, top cover and top cover lid.
19. Plug the copier's power cable into a wall outlet and turn the copier on from the main switch.

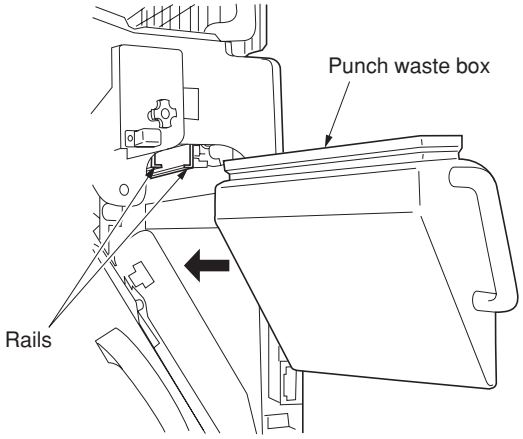


Figure 1-2-94

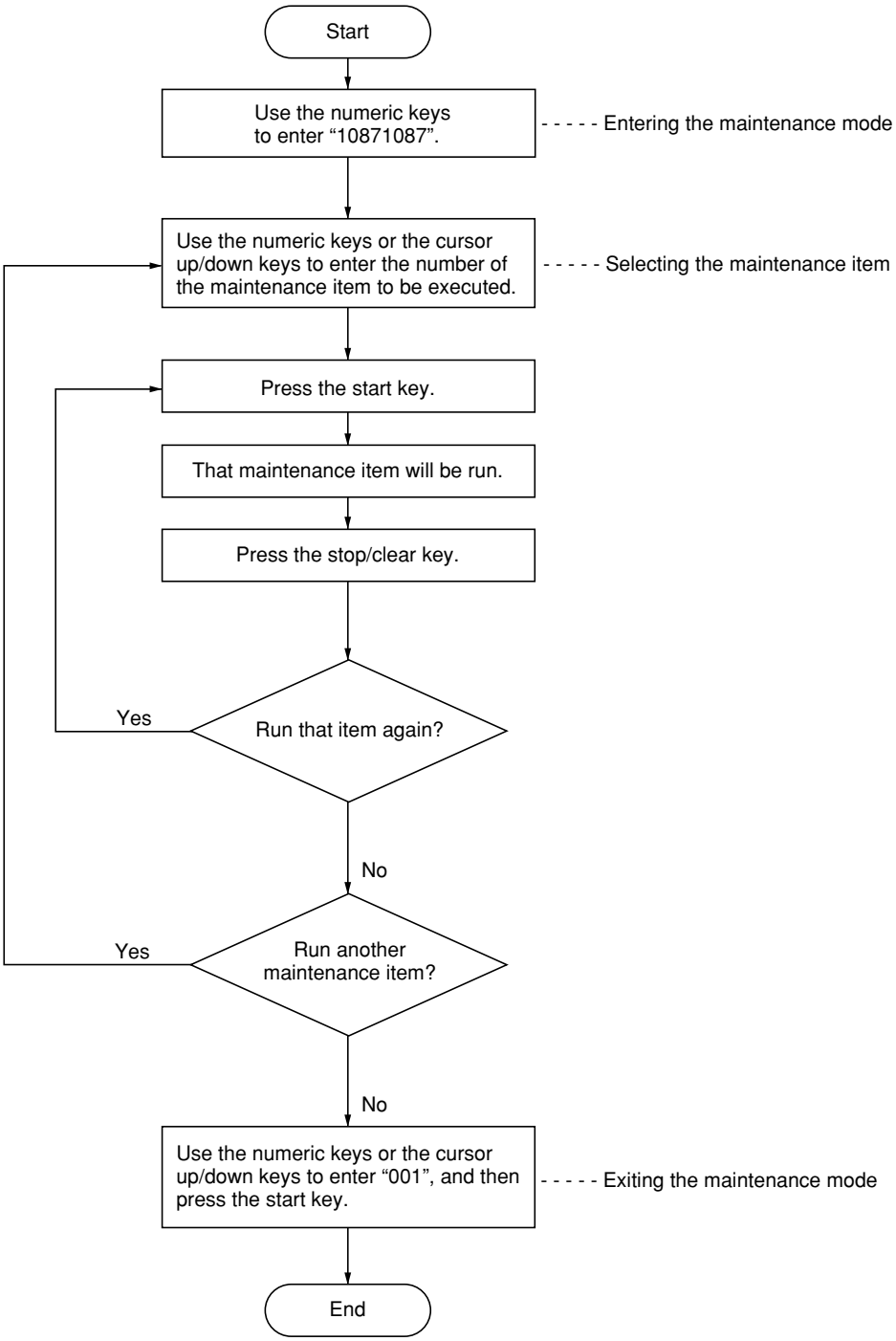
Adjustment

After installing the punch unit, perform the following adjustment.

- Centering punch-holes
  See page 1-5-6.
- Setting margin from leading edge to punch-holes
  See page 1-5-7.

1-3-1 Maintenance mode

(1) Executing a maintenance item



(2) Contents of maintenance mode items

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U019</td><td>
Displaying the ROM version
Description
Displays the part number of the ROM fitted to each PCB.
Purpose
To check the part number or to decide if the ROM version is new from the last digit of the number.
Method
Press the start key. The last eight digits of the part number indicating the ROM version are displayed.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>MAIN*</td><td>Main ROM IC</td></tr>
<tr><td>MMI*</td><td>Operation 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>Boot of main ROM IC</td></tr>
<tr><td>MMI BOOT*</td><td>Boot of operation ROM IC</td></tr>
<tr><td>NETWORK SCANNER*</td><td>Network scanner ROM IC</td></tr>
<tr><td>FINISHER</td><td>Finisher ROM IC</td></tr>
<tr><td>FINISHER</td><td>Boot of finisher ROM IC</td></tr>
</table>
* For the copier.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

Maintenance item No.	Description
U240	**Checking the operation of the finisher** **Description** Turns each motor, clutch and solenoid of the document finisher ON. **Purpose** Used to check the operation of each motor, clutch and solenoid of the document finisher. **Method** 1. Press the start key. The screen for selecting an item will be displayed. 2. Use the cursor up/down keys to select the clutch or solenoid that you want to check the operation for. The display for the selected motor, clutch or solenoid will be highlighted, and the operation will start.

Display	Motors, clutches and solenoids
CONV MOTOR	Paper conveying motor (PCM)
PUNCH MOTOR	Punch motor (PUNM)
WID T MOTOR	Font/Rear upper side-registration guide motors (SRGM-FU/SRGM-RU)
WID U MOTPR	Lower side-registration guide motor (SRGM-L)
MTRAY MOTOR	Main tray elevation motor (MTEM)
JTRAY MOTOR	Multi job tray elevation motor (MJTEM)
BRA A SOL	Feedshift solenoid A (FSSOLA)
BRA B SOL	Feedshift solenoid B (FSSOLB)
BRA C SOL	Feedshift solenoid C (FSSOLC)
PUNCH P SOL	Punch solenoid (PUNSOL)
MTRAY SOL	Paper holder solenoid (PHSOL)
EJEC SOL	Eject guide solenoid (EGSOL)
PUNCH I SOL	Paper entry guide solenoid (PEGSOL)
MIDDLE SOL	Movable guide solenoid (MGSOL)
DRAM CL	Siding drum clutch (SDCL)
FEED IN CL	Paper conveying clutch (PCCL)
PUNCH CL	Punch clutch (PUNCL)
SADDLE ROL1	Main motor (MM)
SADDLE ROL2	Main motor (MM)
SADDLE BLD	Centerfold blade motor (CBLM)
SADDLE INI1	Centering plate motor (CPM)
SADDLE INI2	Side-registration guide motor (SRGM)
SADDLE SOL	Pressure release solenoid (PRSOL)

3. To turn ON a clutch or solenoid with the motor driving, press the interrupt key before selecting the clutch or solenoid.
   * The driving motor will start operation, and the selected clutch or the solenoid will remain ON until the interrupt key is pressed again.
4. To stop motor driving, press the interrupt key again.
5. To return to the screen for selecting an item, press the stop/clear key with the motor stopped.

Completion
Press the stop/clear key with the operation stopped. The screen for selecting a maintenance item No. is displayed.

Maintenance item No.	Description
U241	**Checking the operation of the switches of the finisher** **Description** Displays the status of each switch of the document finisher. **Purpose** Used to check the operation of each switch of the document finisher. **Method** 1. Press the start key to run the maintenance item. 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.

Display	Switches
CONV	Paper entry sensor (PES)
EJECT SUB	Paper ejection sensor (PEJS)
CONV TRAY	Intermediate tray paper conveying sensor (ITPCS)
EJECT MAIN	Sub tray paper ejection sensor (STPES)
TRAY U PAP	Upper paper sensor (PS-U)
TRAY L PAP	Lower paper sensor (PS-L)
MTRAY U LMT	Main tray upper limit detection sensor (MTULDS)
MTRAY L LMT	Main tray lower limit detection sensor (MTLLDS)
MTRAY POS	Main tray paper upper surface detection light emitting/intercepting sensors (MTPUSDLES/MTPUSDLIS)
MTRAY PUSH	Paper holder detection sensor (PHDS)
MTRAY OVER1	Main tray load 1000 detection sensor (MTLDS-10)
MTRAY OVER2	Main tray load 1500 detection sensor (MTLDS-15)
MTRAY OVER3	Main tray load 3000/2000 detection sensors (MTLDS-30/MTLDS-20)
JOB U LMT	Multi job tray upper limit detection sensor (MJTULDS)
JOB L LMT	Multi job tray lower limit detection sensor (MJTLLDS)
JOB SAFETY	Multi job tray front/rear switches (MJTSW-F/MJTSW-R)
JOB POS	Multi job tray position sensor (MJTPS)
JOB OVER	Multi job tray paper upper surface detection light emitting/intercepting sensors (MJTPUSDLES/MJTPUSDLIS)
JOB PAP1	Paper detection switch 1 (PDSW1)
JOB PAP2	Paper detection switch 2 (PDSW2)
JOB PAP3	Paper detection switch 3 (PDSW3)
JOB PAP4	Paper detection switch 4 (PDSW4)
JOB PAP5	Paper detection switch 5 (PDSW5)
SDL CONV	Centerfold unit paper entry sensor (CUPES)
SDL EJECT	Eject switch (ESW)
SDL PAP	Eject tray paper detection switch (ETPDSW)
SDL BIN PAP	Inside tray detection sensor (ITDS)

Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.

Maintenance item No.	Description
U248	**Setting the paper eject device**

Description

Adjusts the amount of slack in the paper for finisher punch mode, the booklet stapling position, and the center folding position for the copier.

Purpose

- Adjustment of the amount of slack in the paper in punch mode
  Adjusts the amount of slack in the paper while in the punch section if, in punch mode, paper jams or is Z-folded frequently due to too much slack in the paper, or, the position of punch holes varies due to too little slack in the paper.
- 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.

Start

Press the start key. The screen for selecting an item is displayed.

Display	Operation
PUNCH TIMING	Adjustment of the amount of slack in the paper in punch mode
SADDLE STAPLE ADJUST	Booklet stapling position adjustment
SADDLE ADJUST	Adjustment of center folding position

Setting the amount of slack in the paper

1. Select PUNCH TIMING on the screen for selecting an item.
2. Change the setting using the cursor up/down keys.

Description	Setting range	Initial setting
Amount of slack in the paper	–15 to +15	0

If the position of punch holes varies, increase the setting to make the amount of slack larger.
If paper jams or is Z-folded frequently, decrease the setting to make the amount of slack smaller.
Changing the value by 1 changes the amount of slack by 1.25 mm.

3. Press the start key. The value is set.
4. To return to the screen for selecting an item, press the stop/clear key.

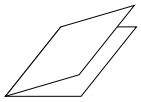
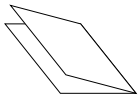
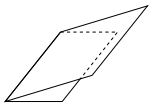
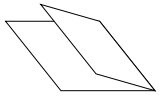
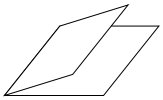
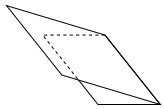
Setting the booklet stapling position

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.

Display	Description	Setting range	Initial setting
A4R	Adjustment of booklet stapling position for A4R size	–125 to +125	0
B4R	Adjustment of booklet stapling position for B4R size	–125 to +125	0
A3R	Adjustment of booklet stapling position for A3R size	–125 to +125	0
LTR	Adjustment of booklet stapling position for LTR size	–125 to +125	0
LDR	Adjustment of booklet stapling position for LDR size	–125 to +125	0

Change in value per step: 0.25 mm

Maintenance item No.	Description
U248	

Left stapling	Right stapling	Adjustment method
		Proper
 Upper side is longer.	 Lower side is longer.	Decrease the preset value.
 Lower side is longer.	 Upper side is longer.	Increase the preset value.

4. Press the start key. The value is set.
5. To return to the screen for selecting an item, press the stop/clear key.

Setting the center folding position

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.

Display	Description	Setting range	Initial setting
A4R	Adjustment of center folding position for A4R size	–4 to +3	0
B4R	Adjustment of center folding position for B4R size	–4 to +3	0
A3R	Adjustment of center folding position for A3R size	–4 to +3	0
LTR	Adjustment of center folding position for LTR size	–4 to +3	0
LDR	Adjustment of center folding position for LDR size	–4 to +3	0

Change in value per step: 0.56 mm

4. Press the start key. The value is set.
5. To return to the screen for selecting an item, press the stop/clear key.

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.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U905</td><td>
Checking/clearing counts by optional devices
Description
Displays or clears the counts of the DF or finisher.
Purpose
To check the use of the DF and optional finisher. Also to clear the counts after replacing consumable parts.
Method
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 and press the start key. The count of the selected device is displayed.
• DF
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>CHANGE
ADF
RADF</td><td>Original replacement count
No. of single-sided originals that has passed through the DF in ADF mode
No. of double-sided originals that has passed through the DF in RADF mode</td></tr>
</table>
• Finisher
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>CP CNT
STAPLE
PUNCH
STACK
SADDLE</td><td>No. of copies that has passed
Frequency the stapler has been activated
Frequency the punch has been activated
Frequency the stacker has been activated
Frequency of booklet stapling</td></tr>
</table>
Clearing
1. Select the item, the count of which is to be cleared. The selected item will be highlighted.
2. Press the start key. The count is cleared.
3. To return to the screen for selecting an item, press the stop/clear key.
Completion
Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

1-4-1 Paper misfeed detection

(1) Paper misfeed indication

When a paper jam occurs, the copier 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.

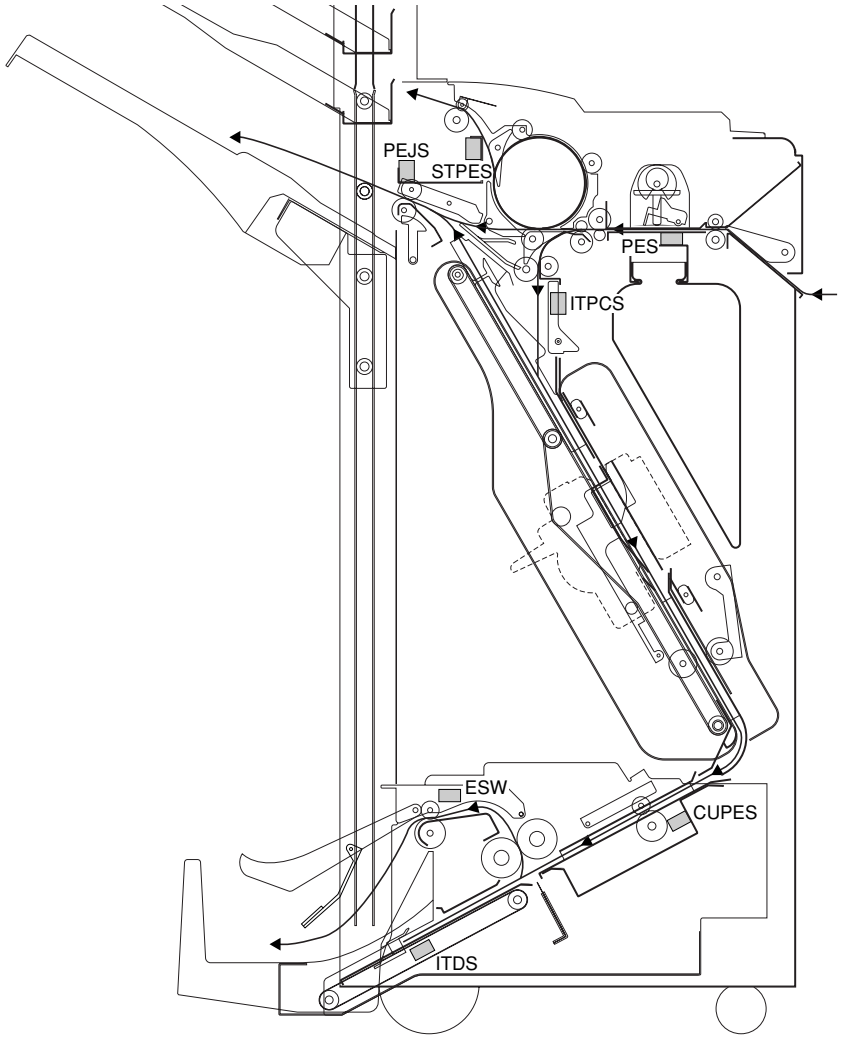


Figure 1-4-1 Paper misfeed detection

(2) Paper misfeed detection conditions

Section	Jam code	Description	Conditions
Finisher	81	Paper jam during paper insertion to the finisher	When the paper entry sensor (PES) does not turn on within 1950 ms of the eject switch (ESW) 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.

(3) Paper misfeeds

Problem	Causes	Check procedures/corrective measures
(J-81) Paper jam during paper insertion to the finisher	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.
	The paper entry sensor is defective.	If the voltage at CN7-20B on the finisher main PCB remains the same when the paper entry sensor is turned on and off, replace the sensor.
(J-82) Paper jam during paper insertion to the finisher and paper ejection to the sub tray	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.
	The paper entry sensor is defective.	If the voltage at CN7-20B on the finisher main PCB remains the same when the paper entry sensor is turned on and off, replace the sensor.
	The sub tray paper ejection sensor is defective.	If the voltage at CN7-19B on the finisher main PCB remains the same when the sub tray paper ejection sensor is turned on and off, replace the sensor.
(J-83) Paper jam at the siding drum	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.
	The intermediate tray paper conveying sensor is defective.	If the voltage at CN7-18B on the finisher main PCB remains the same when the intermediate tray paper conveying sensor is turned on and off, replace the sensor.
(J-84) Paper jam during paper insertion to the intermediate tray	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.
	The intermediate tray paper conveying sensor is defective.	If the voltage at CN7-18B on the finisher main PCB remains the same when the intermediate tray paper conveying sensor is turned on and off, replace the sensor.
(J-85) Paper jam during ejection of stack of paper	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.
	The paper eject sensor is defective.	If the voltage at CN7-17B on the finisher main PCB remains the same when the paper ejection sensor is turned on and off, replace the sensor.

1-4-2 Self-diagnostic function

(1) Self-diagnostic display

This unit is equipped with a self-diagnostic function. When it detects a problem itself, it disables copying and displays a 4-digit self-diagnostic code (8010 to 8330) preceded by “C” indicating the nature of the problem together with a message requesting to call for service on the copier’s operation panel display.

After removing the problem, the self-diagnostic function can be reset by detaching and reinstalling the finisher (the joint switch turning off and on).

(2) Self diagnostic codes (finisher)

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C8010	**Paper conveying motor problem** • 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 PCB.	Replace the finisher main PCB and check for correct operation.
C8020	**Punch motor problem*** • 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 PCB.	Replace the finisher main PCB and check for correct operation.
C8030	**Upper paper conveying belt problem** • 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 PCB.	Replace the finisher main PCB and check for correct operation.

* Option for multi finisher.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C8040	**Lower paper conveying belt problem** • 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 PCB.	Replace the finisher main PCB and check for correct operation
C8140	**Main tray problem** • 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 PCB.	Replace the finisher main PCB and check for correct operation.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C8150	**Multi job tray problem*** • 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 PCB.	Replace the finisher main PCB and check for correct operation.
C8170	**Front upper side-registration guide problem** • 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 PCB.	Replace the finisher main PCB and check for correct operation.

* Optional.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C8180	**Rear upper side-registration guide problem** • 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.
		Malfunction of the rear upper side-registration guide motor.	Replace the rear upper side-registration guide motor and check for correct operation.
		Malfunction 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 PCB.	Replace the finisher main PCB and check for correct operation.
C8190	**Lower side-registration guide problem** • 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.
		Malfunction of the lower side-registration guide motor.	Replace the lower side-registration guide motor and check for correct operation.
		Malfunction 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 PCB.	Replace the finisher main PCB and check for correct operation.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C8210	**Front stapler problem*** • 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 PCB.	Replace the finisher main PCB and check for correct operation.
C8220	**Front clincher problem*** • 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 PCB.	Replace the finisher main PCB and check for correct operation.

* For multiple finisher only.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C8230	**Rear stapler problem** • 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 PCB.	Replace the finisher main PCB and check for correct operation.
C8240	**Rear clincher problem** • 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 PCB.	Replace the finisher main PCB and check for correct operation.

Self diagnostic codes (centerfold unit)

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C8300	**Centerfold unit communication problem** • 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 PCB.	Replace the centerfold unit main PCB and check for correct operation.
		Defective finisher main PCB.	Replace the finisher main PCB and check for correct operation.
C8310	**Centerfold unit side-registration guide problem** • 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 PCB.	Replace the centerfold unit main PCB and check for correct operation.
C8320	**Centerfold unit centering plate problem** • 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 PCB.	Replace the centerfold unit main PCB and check for correct operation.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C8330	**Centerfold blade problem** • 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 PCB.	Replace the centerfold unit main PCB and check for correct operation.

1-4-3 Electrical problem

(1) Finisher

Problem	Causes	Check procedures/corrective measures
(1) The paper conveying motor does not operate.	The paper conveying motor coil is broken.	Check for continuity across the coil. If none, replace the paper conveying motor.
	The paper conveying motor is defective.	If the paper conveying motor dose not operate when the DC voltage at the CN7-7B on the finisher main PCB is “0” and 24 V DC is output to CN8-1A and CN8-15B, 5 V DC is output to CN7-1A, and the motor drive coil excitation signal is output from CN7-5B, replace the paper conveying motor.
	The paper conveying motor connector terminals make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	The finisher main PCB is defective.	If the DC voltage at the CN7-7B on the finisher main PCB is not “0” or if the motor drive coil excitation signal is not output from CN7-5B, replace the finisher main PCB.
(2) The upper paper conveying belt motor does not operate.	The upper paper conveying belt motor coil is broken.	Check for continuity across the coil. If none, replace the upper paper conveying belt motor.
	The upper paper conveying belt motor is defective.	If the upper paper conveying belt motor dose not operate when 24 V DC is output to CN5-2A and CN5-29B on the finisher main PCB and the motor drive coil excitation signal is output from CN5-1A, CN5-3A, CN5-28B and CN5-30B, replace the upper paper conveying belt motor.
	The upper paper conveying belt motor connector terminals make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	The finisher main PCB is defective.	If the motor drive coil excitation signal is not output from CN5-1A, CN5-3A, CN5-28B and CN5-30B on the finisher main PCB, replace the finisher main PCB.
(3) The lower paper conveying belt motor does not operate.	The lower paper conveying belt motor coil is broken.	Check for continuity across the coil. If none, replace the lower paper conveying belt motor.
	The lower paper conveying belt motor is defective.	If the lower paper conveying belt motor dose not operate when 24 V DC is output to CN5-5A and CN5-26B on the finisher main PCB and the motor drive coil excitation signal is output from CN5-4A, CN5-6A, CN5-25B and CN5-27B, replace the lower paper conveying belt motor.
	The lower paper conveying belt motor connector terminals make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	The finisher main PCB is defective.	If the motor drive coil excitation signal is not output from CN5-4A, CN5-6A, CN5-25B and CN5-27B on the finisher main PCB, replace the finisher main PCB.

Problem	Causes	Check procedures/corrective measures
(4) The front upper side-registration guide motor does not operate.	The front upper side-registration guide motor coil is broken.	Check for continuity across the coil. If none, replace the front upper side-registration guide motor.
	The front upper side-registration guide motor is defective.	If the front upper side-registration guide motor dose not operate when 24 V DC is output to CN5-8A and CN5-23B on the finisher main PCB and the motor drive coil excitation signal is output from CN5-7A, CN5-9A, CN5-22B and CN5-24B, replace the front upper side-registration guide motor.
	The front upper side-registration guide motor connector terminals make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	The finisher main PCB is defective.	If the motor drive coil excitation signal is not output from CN5-7A, CN5-9A, CN5-22B and CN5-24B on the finisher main PCB, replace the finisher main PCB.
(5) The rear upper side-registration guide motor does not operate.	The rear upper side-registration guide motor coil is broken.	Check for continuity across the coil. If none, replace the rear upper side-registration guide motor.
	The rear upper side-registration guide motor is defective.	If the rear upper side-registration guide motor dose not operate when 24 V DC is output to CN5-11A and CN5-20B on the finisher main PCB and the motor drive coil excitation signal is output from CN5-10A, CN5-12A, CN5-19B and CN5-21B, replace the rear upper side-registration guide motor.
	The rear upper side-registration guide motor connector terminals make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	The finisher main PCB is defective.	If the motor drive coil excitation signal is not output from CN5-10A, CN5-12A, CN5-19B and CN5-21B on the finisher main PCB, replace the finisher main PCB.
(6) The lower side-registration guide motor does not operate.	The lower side-registration guide motor coil is broken.	Check for continuity across the coil. If none, replace the lower side-registration guide motor.
	The lower side-registration guide motor is defective.	If the lower side-registration guide motor dose not operate when 24 V DC is output to CN5-14A and CN5-17B on the finisher main PCB and the motor drive coil excitation signal is output from CN5-13A, CN5-15A, CN5-16B and CN5-18B, replace the lower side-registration guide motor.
	The lower side-registration guide motor connector terminals make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	The finisher main PCB is defective.	If the motor drive coil excitation signal is not output from CN5-13A, CN5-15A, CN5-16B and CN5-18B on the finisher main PCB, replace the finisher main PCB.

Problem	Causes	Check procedures/corrective measures
(7) The main tray elevation motor does not operate.	The main tray elevation motor coil is broken.	Check for continuity across the coil. If none, replace the main tray elevation motor.
	The main tray elevation motor is defective.	If the main tray elevation motor dose not operate when the motor drive coil excitation signal is output from CN8-15A and CN8-1B on the finisher main PCB, replace the main tray elevation motor.
	The main tray elevation motor connector terminals make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	The finisher main PCB is defective.	If the motor drive coil excitation signal is not output from CN8-15A and CN8-1B on the finisher main PCB, replace the finisher main PCB.
(8) The front stapler motor* does not operate.	The front stapler motor coil is broken.	Check for continuity across the coil. If none, replace the front stapler motor.
	The front stapler motor is defective.	If the front stapler motor dose not operate when 5 V DC is output to CN6-13A on the finisher main PCB, replace the front stapler motor.
	The front stapler motor connector terminals make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	The finisher main PCB is defective.	If 5 V DC is not output from CN6-13A on the finisher main PCB, replace the finisher main PCB.
(9) The rear stapler motor does not operate.	The rear stapler motor coil is broken.	Check for continuity across the coil. If none, replace the rear stapler motor.
	The rear stapler motor is defective.	If the rear stapler motor dose not operate when 5 V DC is output to CN6-17A on the finisher main PCB, replace the rear stapler motor.
	The rear stapler motor connector terminals make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	The finisher main PCB is defective.	If 5 V DC is not output from CN6-17A on the finisher main PCB, replace the finisher main PCB.
(10) The front clincher motor* does not operate.	The front clincher motor coil is broken.	Check for continuity across the coil. If none, replace the front clincher motor.
	The front clincher motor is defective.	If the front clincher motor dose not operate when 5 V DC is output to CN6-2B on the finisher main PCB, replace the front clincher motor.
	The front clincher motor connector terminals make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	The finisher main PCB is defective.	If 5 V DC is not output from CN6-2B on the finisher main PCB, replace the finisher main PCB.

* For multi finisher only.

Problem	Causes	Check procedures/corrective measures
(11) The rear clincher motor does not operate.	The rear clincher motor coil is broken.	Check for continuity across the coil. If none, replace the rear clincher motor.
	The rear clincher motor is defective.	If the rear clincher motor dose not operate when 5 V DC is output to CN6-25A on the finisher main PCB, replace the rear clincher motor.
	The rear clincher motor connector terminals make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	The finisher main PCB is defective.	If 5 V DC is not output from CN6-25A on the finisher main PCB, replace the finisher main PCB.
(12) The paper conveying clutch* does not operate.	The paper conveying clutch coil is broken.	Check for continuity across the coil. If none, replace the paper conveying clutch.
	The paper conveying clutch connector terminals make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	The finisher main PCB is defective.	If CN8-11B on the finisher main PCB does not go low, replace the finisher main PCB.
(13) The siding drum clutch* does not operate.	The siding drum clutch coil is broken.	Check for continuity across the coil. If none, replace the siding drum clutch.
	The siding drum clutch connector terminals make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	The finisher main PCB is defective.	If CN8-10B on the finisher main PCB does not go low, replace the finisher main PCB.
(14) The paper entry guide solenoid* does not operate.	The paper entry guide solenoid coil is broken.	Check for continuity across the coil. If none, replace the paper entry guide solenoid.
	The paper entry guide solenoid connector terminals make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	The finisher main PCB is defective.	If CN8-13B on the finisher main PCB does not go low, replace the finisher main PCB.
(15) The eject guide solenoid does not operate.	The eject guide solenoid coil is broken.	Check for continuity across the coil. If none, replace the eject guide solenoid.
	The eject guide solenoid connector terminals make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	The finisher main PCB is defective.	If CN8-9B on the finisher main PCB does not go low, replace the finisher main PCB.

* For multi finisher only.

Problem	Causes	Check procedures/corrective measures
(16) The movable guide solenoid does not operate.	The movable guide solenoid coil is broken.	Check for continuity across the coil. If none, replace the movable guide solenoid.
	The movable guide solenoid connector terminals make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	The finisher main PCB is defective.	If CN8-12B on the finisher main PCB does not go low, replace the finisher main PCB.
(17) The paper forwarding pulley solenoid does not operate.	The paper forwarding pulley solenoid coil is broken.	Check for continuity across the coil. If none, replace the paper forwarding pulley solenoid.
	The paper forwarding pulley solenoid connector terminals make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	The finisher main PCB is defective.	If CN5-15B on the finisher main PCB does not go low, replace the finisher main PCB.
(18) The feedshift solenoid A* does not operate.	The feedshift solenoid A coil is broken.	Check for continuity across the coil. If none, replace the feedshift solenoid A.
	The feedshift solenoid A connector terminals make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	The finisher main PCB is defective.	If CN8-6B and CN8-5B on the finisher main PCB do not go low, replace the finisher main PCB.
(19) The feedshift solenoid B does not operate.	The feedshift solenoid B coil is broken.	Check for continuity across the coil. If none, replace the feedshift solenoid B.
	The feedshift solenoid B connector terminals make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	The finisher main PCB is defective.	If CN8-13A and CN8-4B on the finisher main PCB do not go low, replace the finisher main PCB.
(20) The feedshift solenoid C* does not operate.	The feedshift solenoid C coil is broken.	Check for continuity across the coil. If none, replace the feedshift solenoid C.
	The feedshift solenoid C connector terminals make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	The finisher main PCB is defective.	If CN8-14A and CN8-3B on the finisher main PCB do not go low, replace the finisher main PCB.

* For multi finisher only.

Problem	Causes	Check procedures/corrective measures
(21) The paper holder solenoid does not operate.	The paper holder solenoid coil is broken.	Check for continuity across the coil. If none, replace the paper holder solenoid.
	The paper holder solenoid connector terminals make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	The finisher main PCB is defective.	If CN8-7B and CN8-8B on the finisher main PCB do not go low, replace the finisher main PCB.

(2) Centerfold unit

Problem	Causes	Check procedures/corrective measures
(1) The main motor does not operate.	The main motor coil is broken.	Check for continuity across the coil. If none, replace the main motor.
	The main motor is defective.	If the main motor dose not operate when 24 V DC is output to CN3-1 and CN3-2 on the centerfold unit main PCB, replace the main motor.
	The main motor connector terminals make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	The centerfold unit main PCB is defective.	If 24 V DC is not output from CN3-1 and CN3-2 on the centerfold unit main PCB, replace the centerfold unit main PCB.
(2) The centerfold blade motor does not operate.	The centerfold blade motor coil is broken.	Check for continuity across the coil. If none, replace the centerfold blade motor.
	The centerfold blade motor is defective.	If the centerfold blade motor dose not operate when 24 V DC is output to CN3-3 and CN3-4 on the centerfold unit main PCB, replace the centerfold blade motor.
	The centerfold blade motor connector terminals make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	The centerfold unit main PCB is defective.	If 24 V DC is not output from CN3-3 and CN3-4 on the centerfold unit main PCB, replace the centerfold unit main PCB.
(3) The side-registration guide motor does not operate.	The side-registration guide motor coil is broken.	Check for continuity across the coil. If none, replace the side-registration guide motor.
	The side-registration guide motor is defective.	If the side-registration guide motor dose not operate when 24 V DC is output to CN4-5 and CN4-6 on the centerfold unit main PCB and the motor drive coil excitation signal is output from CN4-1, CN4-2, CN4-3 and CN4-4, replace the side-registration guide motor.
	The side-registration guide motor connector terminals make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	The centerfold unit main PCB is defective.	If the motor drive coil excitation signal is not output from CN4-1, CN4-2, CN4-3 and CN4-4 on the centerfold unit main PCB, replace the centerfold unit main PCB.
(4) The centering plate motor does not operate.	The centering plate motor coil is broken.	Check for continuity across the coil. If none, replace the centering plate motor.
	The centering plate motor is defective.	If the centering plate motor dose not operate when 24 V DC is output to CN4-11 and CN4-12 on the centerfold unit main PCB and the motor drive coil excitation signal is output from CN4-7, CN4-8, CN4-9 and CN4-10, replace the centering plate motor.
	The centering plate motor connector terminals make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	The centerfold unit main PCB is defective.	If the motor drive coil excitation signal is not output from CN4-7, CN4-8, CN4-9 and CN4-10 on the centerfold unit main PCB, replace the centerfold unit main PCB.

Problem	Causes	Check procedures/corrective measures
(5) The pressures release solenoid does not operate.	The pressures release solenoid coil is broken.	Check for continuity across the coil. If none, replace the pressures release solenoid.
	The pressures release solenoid connector terminals make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	The centerfold unit main PCB is defective.	If CN6-27 and CN6-28 on the centerfold unit main PCB do not go low, replace the finisher main PCB.

(3) Multi job tray

Problem	Causes	Check procedures/corrective measures
(1) The multi job tray elevation motor does not operate.	The multi job tray elevation motor coil is broken.	Check for continuity across the coil. If none, replace the multi job tray elevation motor.
	The multi job tray elevation motor is defective.	If the multi job tray elevation motor dose not operate when the motor drive coil excitation signal is output from CN4-1A and CN4-20B on the finisher main PCB, replace the multi job tray elevation motor.
	The multi job tray elevation motor connector terminals make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	The finisher main PCB is defective.	If the motor drive coil excitation signal is not output from CN4-1A and CN4-20B on the finisher main PCB, replace the finisher main PCB.

(4) Punch unit

Problem	Causes	Check procedures/corrective measures
(1) The punch motor does not operate.	The punch motor coil is broken.	Check for continuity across the coil. If none, replace the punch motor.
	The punch motor is defective.	If the punch motor dose not operate when the DC voltage at the CN12-7 on the finisher main PCB is “0” and 24 V DC is output to CN12-1 and CN12-2, 5 V DC is output to CN12-5, and the motor drive coil excitation signal is output from CN12-8, replace the punch motor.
	The punch motor connector terminals make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	The finisher main PCB is defective.	If the DC voltage at the CN12-7 on the finisher main PCB is not “0” or if the motor drive coil excitation signal is not output from CN12-8, replace the finisher main PCB.
(2) The punch clutch does not operate.	The punch clutch coil is broken.	Check for continuity across the coil. If none, replace the punch clutch.
	The punch clutch connector terminals make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	The finisher main PCB is defective.	If CN12-15 on the finisher main PCB does not go low, replace the finisher main PCB.
(3) The punch solenoid does not operate.	The punch solenoid coil is broken.	Check for continuity across the coil. If none, replace the punch solenoid.
	The punch solenoid connector terminals make poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	The finisher main PCB is defective.	If CN12-1 and CN12-2 on the finisher main PCB do not go low, replace the finisher main PCB.

1-4-4 Mechanical problem

(1) 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.

(2) 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.

(3) 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.

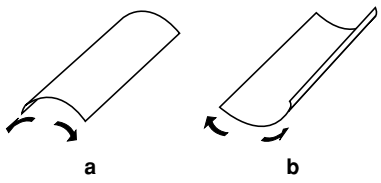


Figure 1-5-1

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. The lever is set to the first mark when shipped.
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.

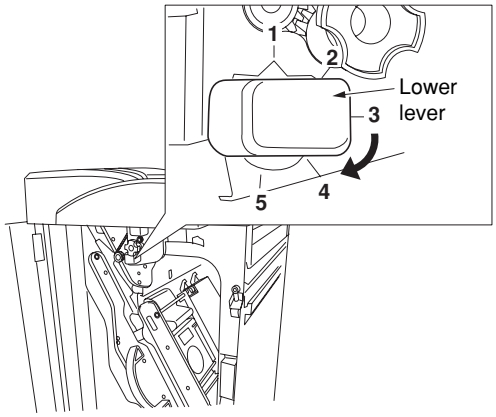


Figure 1-5-2

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

1. Open the front cover.
2. Remove the three screws locking down the inner left cover followed by the cover.

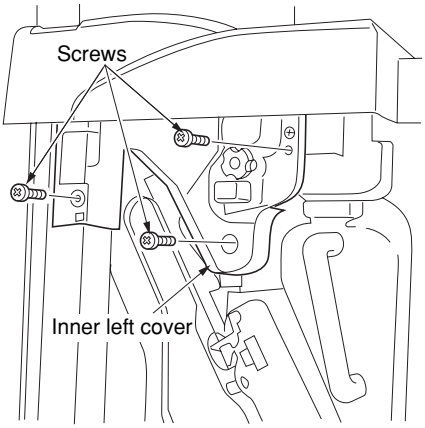


Figure 1-5-3

3. Rotate the upper lever by one mark in the direction of the higher numbers.
   * There are five marks. The lever is set to the first mark when shipped.
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.

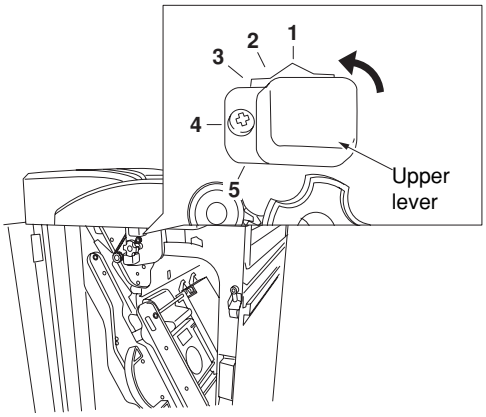


Figure 1-5-4

(2) Correcting centerfold-stapling (for multi finisher only)

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

Procedure

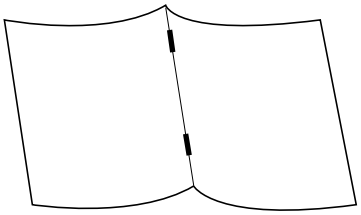


Figure 1-5-5

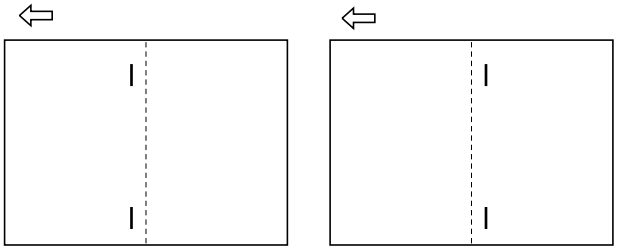
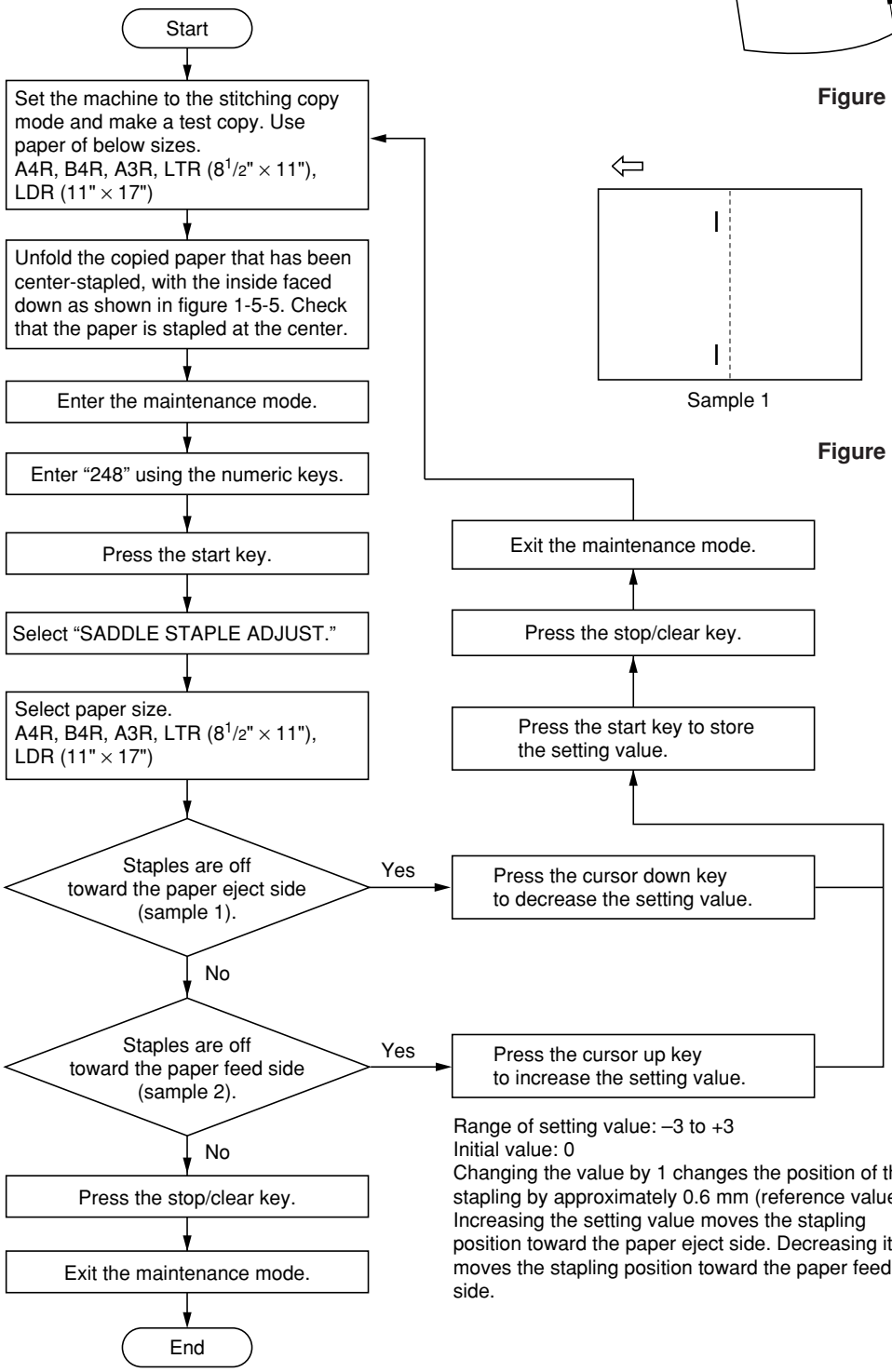


Figure 1-5-6



Range of setting value: –3 to +3
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.

1-5-2 Centerfold unit

(1) Removing and mounting the centerfold blade

Follow the below procedure to remove and mount the centerfold blade for cleaning and replacement.

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 dismount the centerfold unit from the finisher.

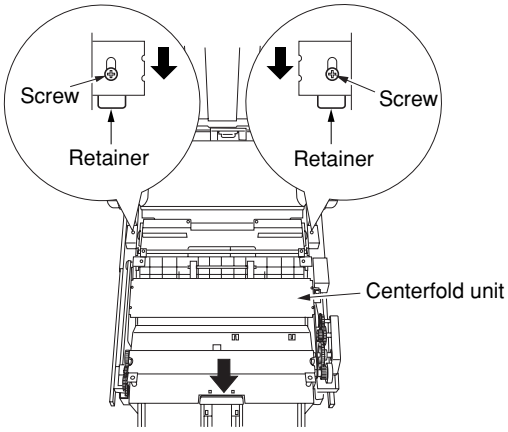


Figure 1-5-7

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.

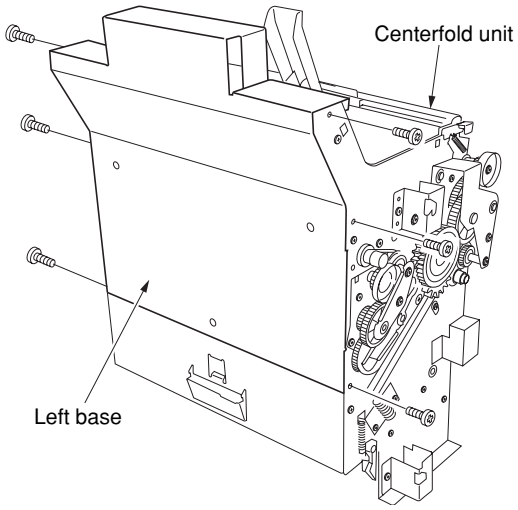


Figure 1-5-8

5. Disconnect the 2-pin connector of the blade motor.
6. Remove the two screws locking down the blade motor followed by the motor.

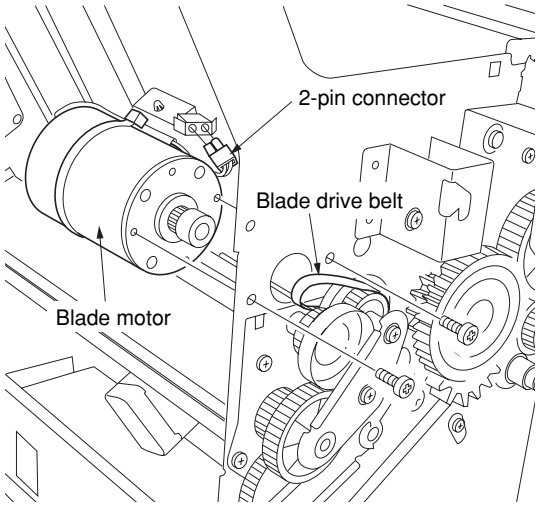


Figure 1-5-9

7. Remove the two springs form 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.

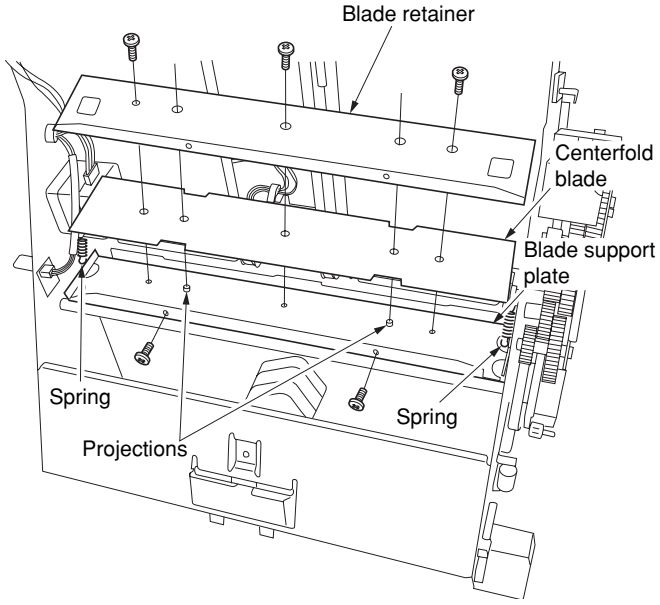
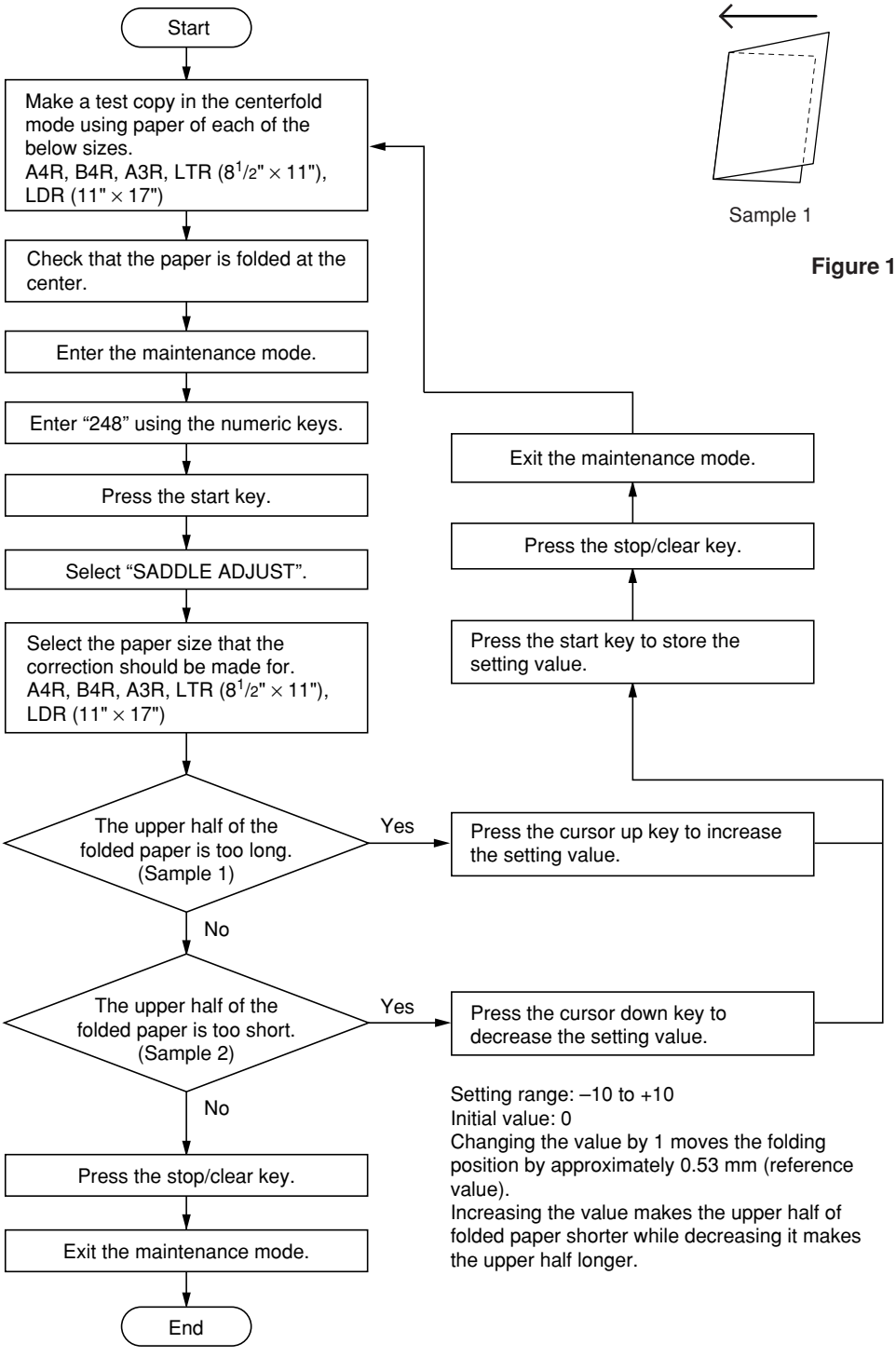


Figure 1-5-10

(2) Adjusting the paper folding position

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

Procedure



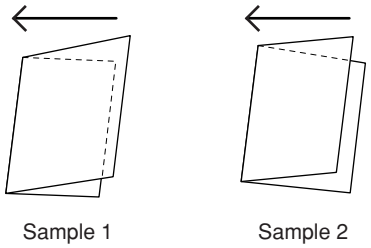


Figure 1-5-11

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 drawer in the copier is correct.

Procedure

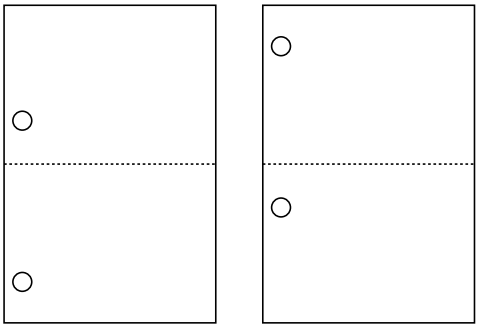
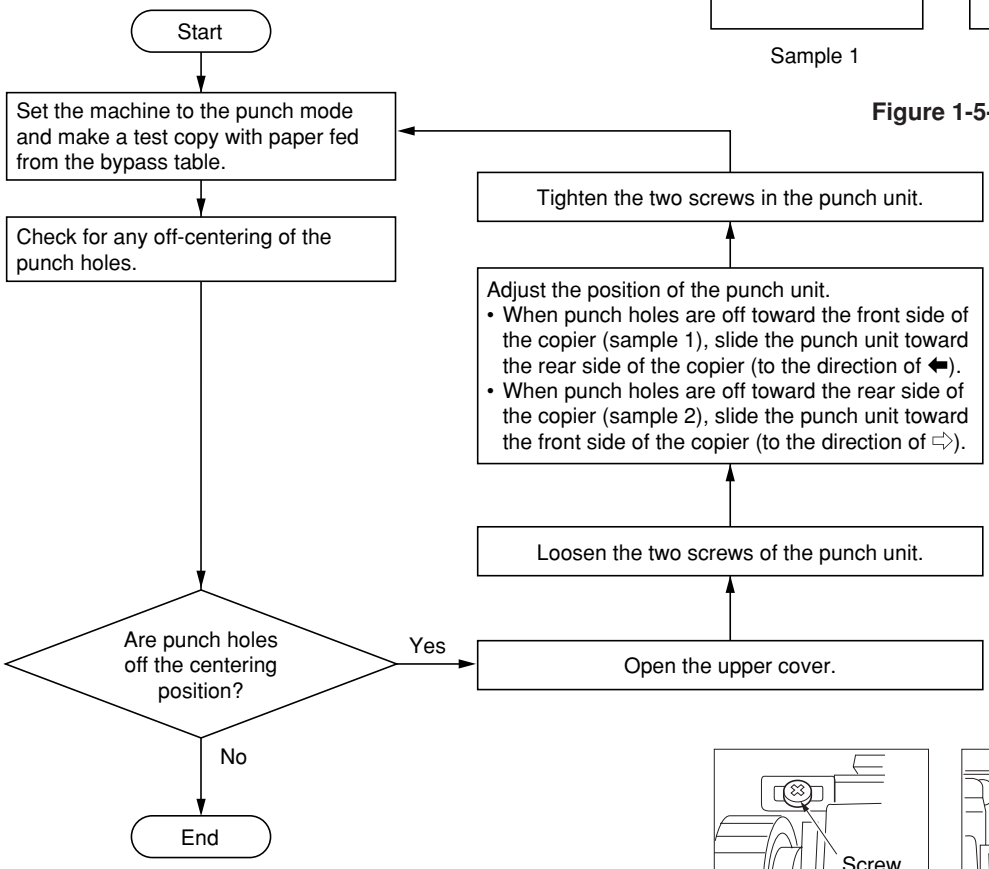


Figure 1-5-12



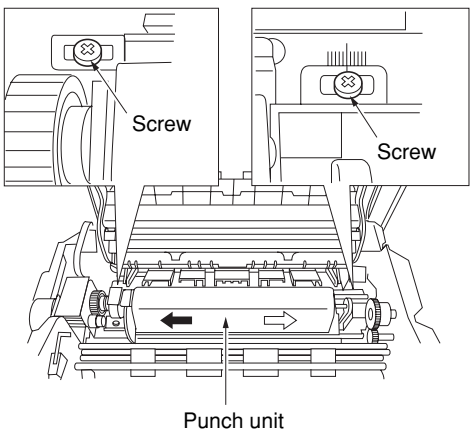


Figure 1-5-13

(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

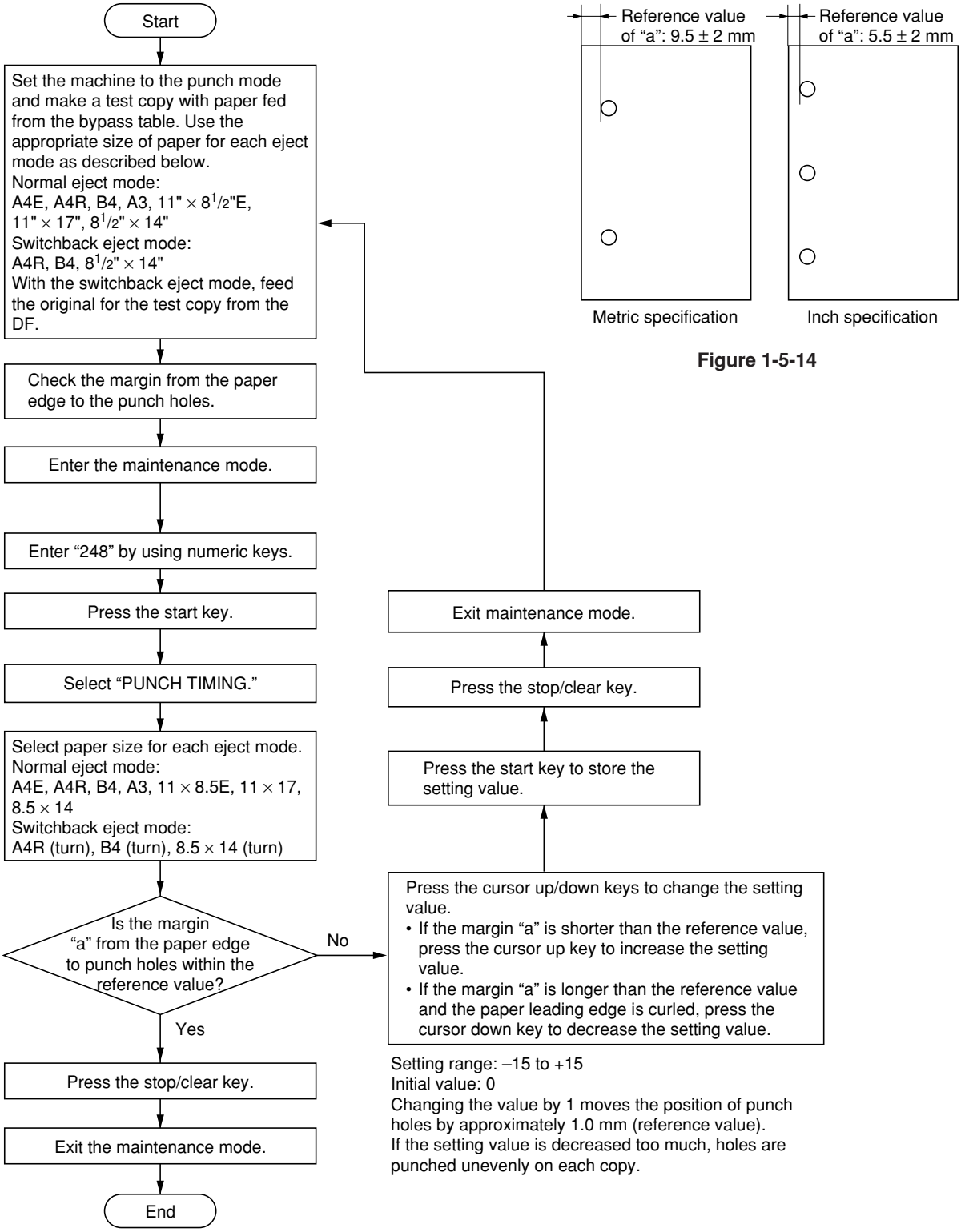


Figure 1-5-14

(3) Adjusting the stop position of the punch clutch (reference)

Follow the below procedure if paper jams occur frequently in the punch unit when the machine is set to the punch mode.

Procedure

1. Open the upper cover.
2. Remove the screw from the adjusting plate.

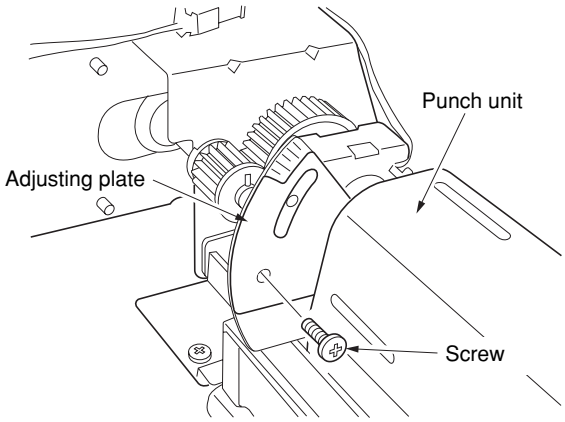


Figure 1-5-15

3. Adjust the mounted position of the adjusting plate.
   * The higher the adjusting plate is attached, the quicker the timing of the punch shaft becomes.
     The lower the adjusting plate is attached, the slower the timing of the punch shaft becomes.
4. Set the screw removed in step 2 into screw hole “a” and tighten the screw to lock down the adjusting plate.
5. Close the upper cover.

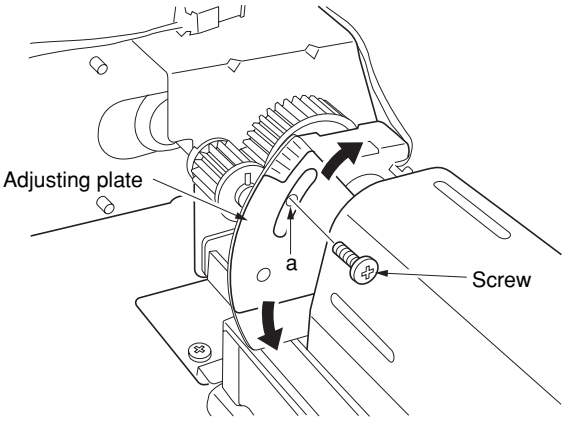


Figure 1-5-16

1-6-1 Replacing the finisher main PCB

When you replace the finisher main PCB, remove the backup memory that was installed on the old PCB and install it on the new PCB.

Procedure

1. Turn the copier off from the main switch and unplug the power cable from the wall outlet.
2. Remove the rear cover.
3. Using the PLCC removal tool, remove the backup memory (U6) from the finisher main PCB.
4. Mount the backup memory removed in step 3 on the replacement finisher main PCB.
5. Install the replacement finisher main PCB.
6. Reattach the rear cover.
7. Plug the copier's power cable into a wall outlet and turn the copier on from the main switch.

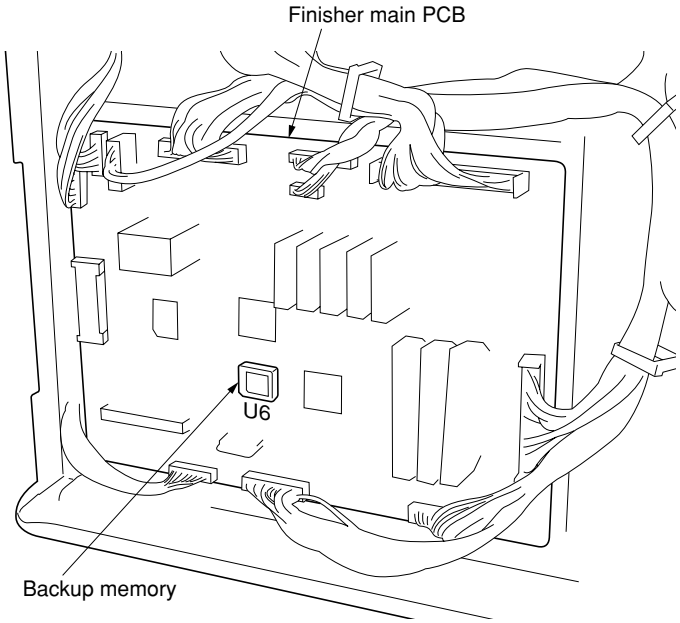


Figure 1-6-1

1-6-2 Upgrading the version of the firmware of the finisher main PCB

Firmware upgrading requires the following tool:
CompactFlash memory card (Products manufactured by SANDISK are recommended.)

Precautions
When writing to a new CompactFlash card from a computer, be sure to format it in advance.
(For formatting, insert a CompactFlash card and select a drive.)
For a desktop computer, connect a CompactFlash card reader/writer to it. For a notebook computer, use a PC card adapter or connection only for CompactFlash.

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 copier off from the main switch and unplug the power cable from the wall outlet.
5. Remove the rear cover.
6. Insert the CompactFlash card in the CF slot on the finisher main PCB.
   - 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 switch is turned on when the CompactFlash card is not properly inserted, the PCB may be damaged.
7. Plug the copier's power cable into a wall outlet and turn the copier on from the main switch.
   - The power save key and start key flash alternately and firmware upgrading stars. (Upgrading takes about 3 minutes.)

   Caution
   During upgrading, never turn off the main switch.
8. When version upgrading is complete, “Completed” is displayed on the touch panel.
9. Turn the copier off from the main switch and unplug the power cable from the wall outlet.
10. Remove the CompactFlash card from the CF slot on the finisher main PCB.
11. Reattach the rear cover.
12. Plug the copier's power cable into a wall outlet and turn the copier on from the main 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.

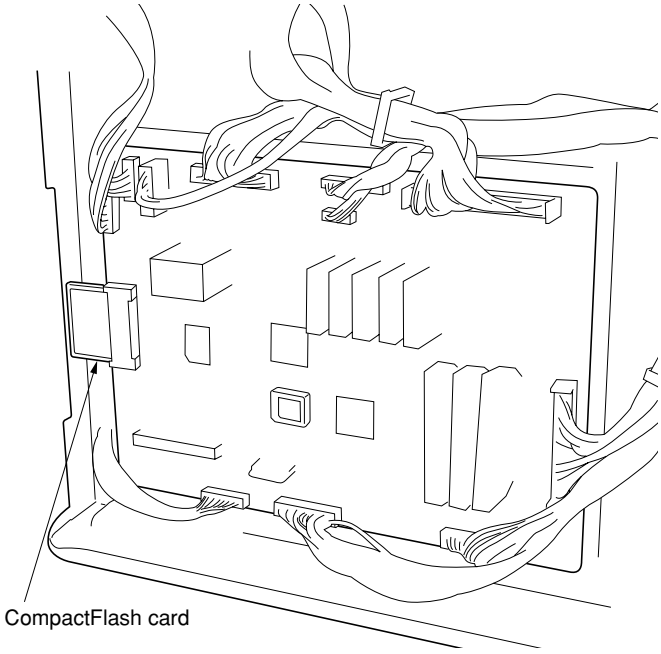


Figure 1-6-2

2-1-1 Finisher

(1) Paper insertion section

The paper insertion section inserts paper from the copier into the finisher and then conveys it to the feedshift section.
In the multi finisher, the paper conveying clutch (PCCL) turns on each time paper is inserted in the punch mode to bring paper to a standstill. Then, the paper entry guide solenoid (PEGSOL) turns on so that the paper entry guide rises and prevents paper from bending in the punch unit.
Pressure rollers A and B correct upward paper curling and pressure rollers C and D correct downward paper curling.

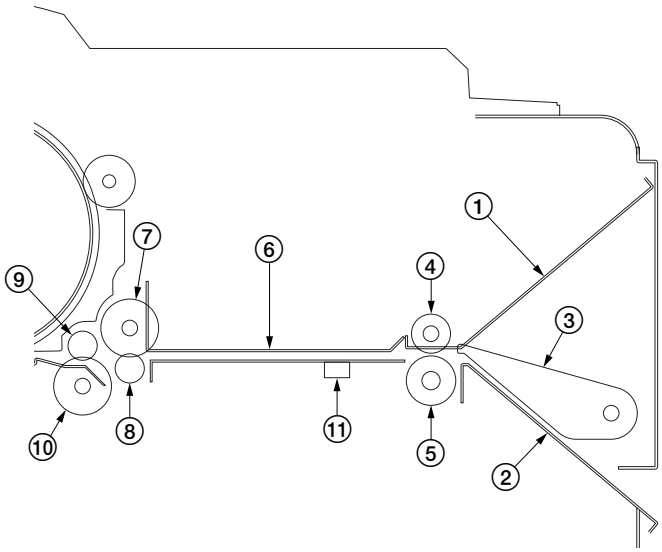


Figure 2-1-1 Paper insertion section

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

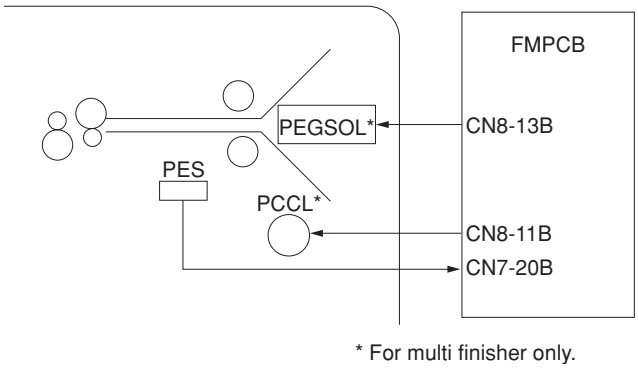


Figure 2-1-2 Block diagram of the paper insertion section

(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.

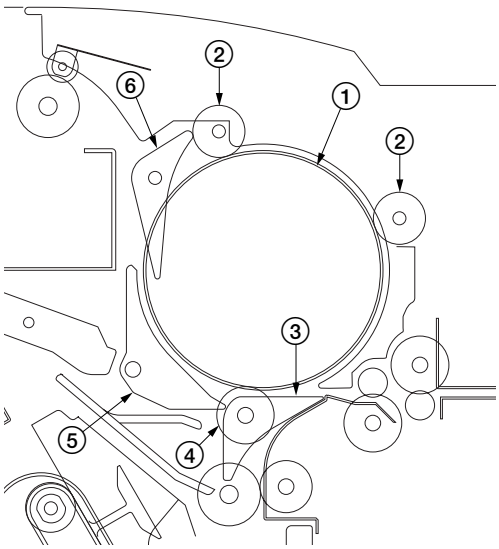


Figure 2-1-3 Feedshift section

① Siding drum
② Siding pulleys*
③ Main eject feedshift guide
④ Sub feed roller
⑤ Left eject feedshift guide
⑥ Sub eject feedshift guide*

* For multi finisher only.

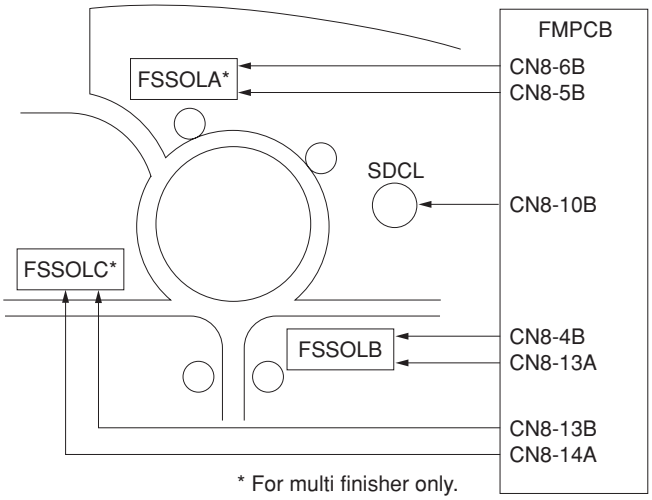


Figure 2-1-4 Block diagram of the feedshift section

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 three 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.

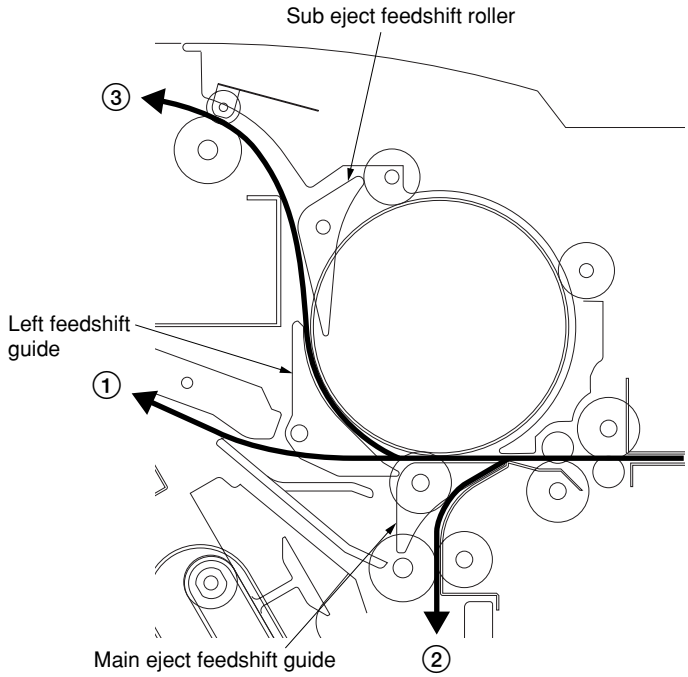


Figure 2-1-5

① Paper path to the main tray
② Paper path to the intermediate tray
③ Paper path to the sub tray (for multi finisher only)

Siding drum operation (for multi finisher)

When A4/11" × 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 page of the next copy set is wounded around the siding drum. The wounded paper is sided there until the second page is conveyed.

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

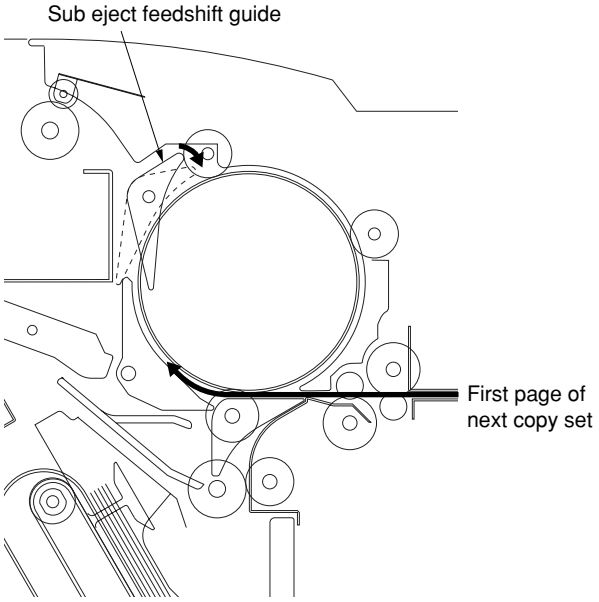


Figure 2-1-6

B: The siding drum clutch (SDCL) turns on so that the siding drum rotates and winds the fist page of the next copy set around the drum.
Feedshift solenoid B (FSSOLB) turns on so that the main eject feedshift guide operates.

C: When paper processing has been completed in the intermediate tray, the sided first page of the next copy set is conveyed to the intermediate tray together with the second page.

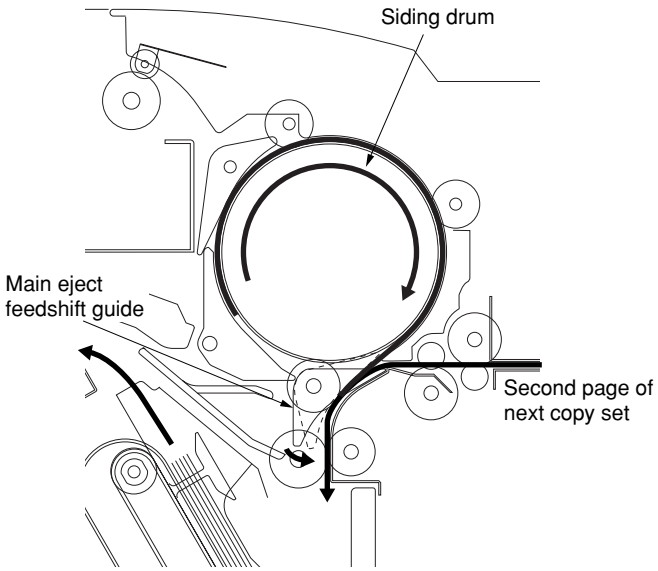


Figure 2-1-7

(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.

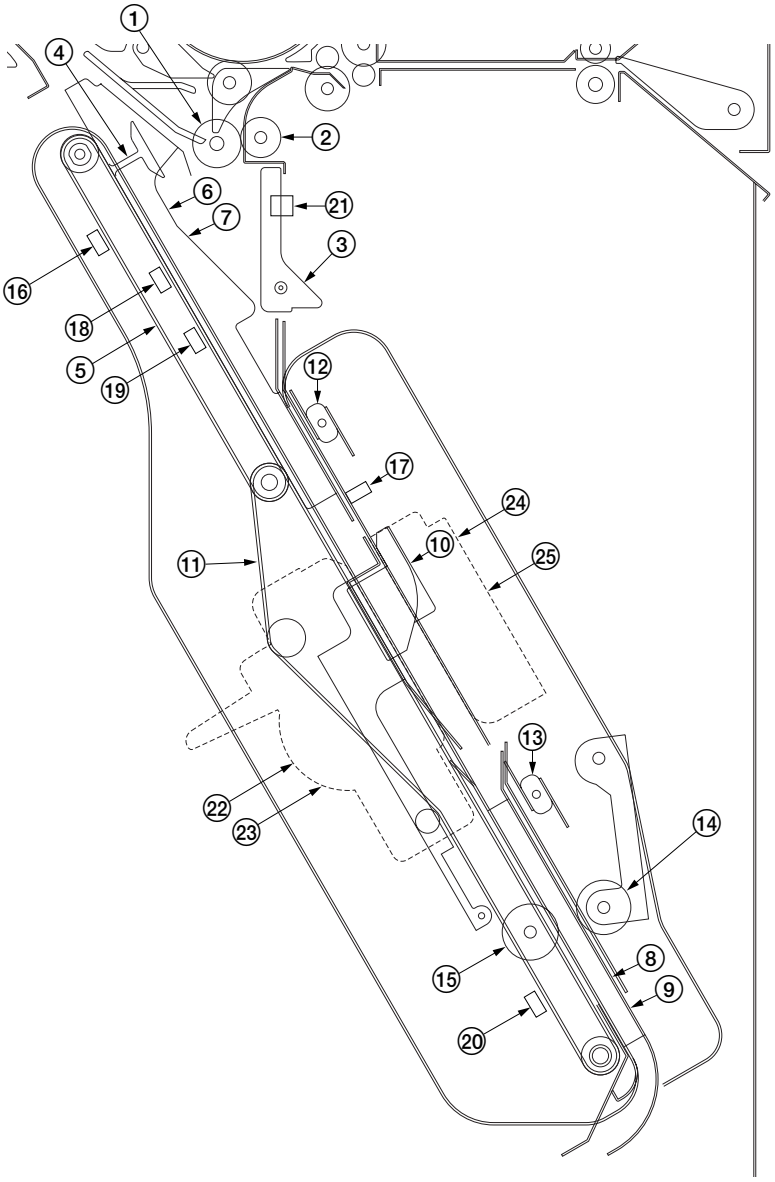


Figure 2-1-8 Intermediate tray section

① Intermediate tray paper entry roller
② Intermediate tray paper entry pulley
③ Movable guide
④ Intermediate tray upper sliding plate
⑤ Upper paper conveying belt
⑥ Front upper side-registration guide
⑦ Rear upper side-registration guide
⑧ Front lower side-registration guide
⑨ Rear lower side-registration guide
⑩ Intermediate tray lower sliding plate
⑪ Lower paper conveying belt
⑫ Upper forwarding roller
⑬ Lower forwarding roller
⑭ Paper forwarding pulley*
⑮ Intermediate tray pulley
⑯ Upper paper conveying belt home position sensor (PCBHPS-U)
⑰ Lower paper conveying belt home position sensor (PCBHPS-L)
⑱ Front upper side-registration guide home position sensor (SRGHPS-FU)
⑲ Rear upper side-registration guide home position sensor (SRGHPS-RU)
⑳ Lower side-registration guide home position sensor (SRGHPS-L)
㉑ Intermediate tray paper conveying sensor (ITPCS)
㉒ Front stapler driver* (STD-F)
㉓ Rear stapler driver (STD-R)
㉔ Front stapler clincher* (STCLN-F)
㉕ Rear stapler clincher (STCLN-R)

* For multi finisher only.

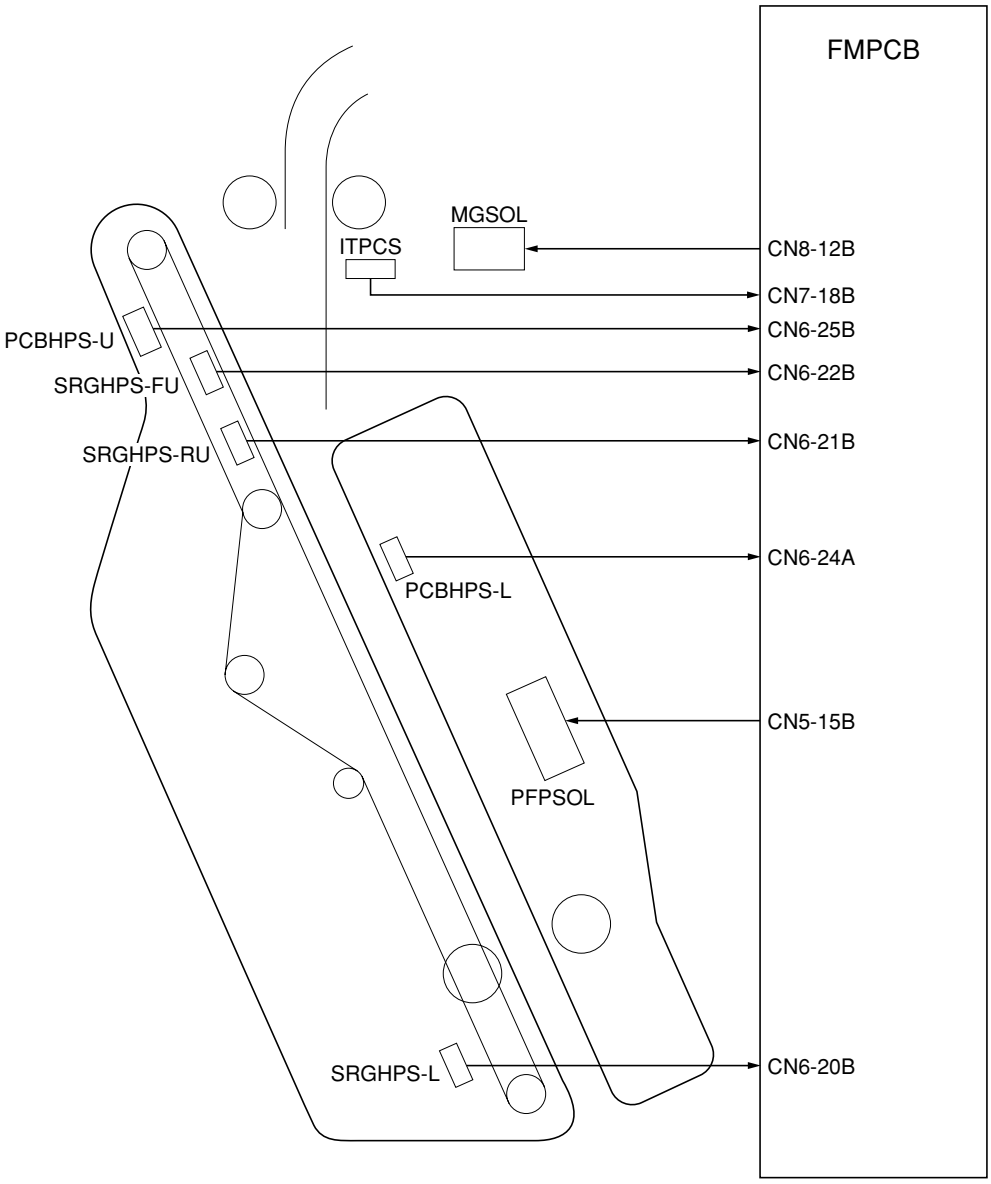


Figure 2-1-9 Block diagram of the intermediate tray section

Paper inserting operation to the intermediate tray

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

A: 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" × 8 1/2"

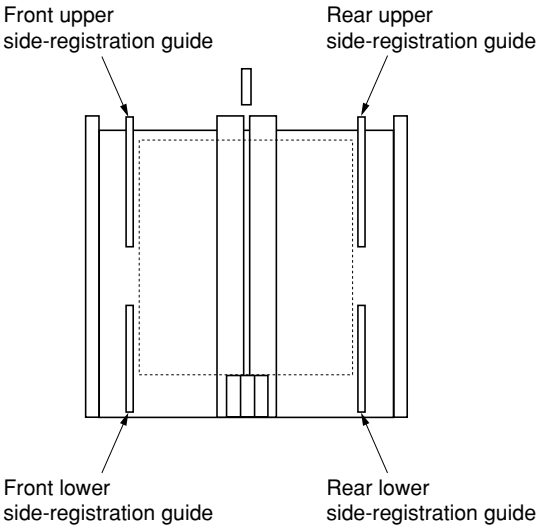


Figure 2-1-10

B: The upper paper conveying belt motor (PCBM-U) rotates forward so that the intermediate tray upper sliding plate moves to the paper receiving position.
C: When paper is inserted into the intermediate tray, the movable guide solenoid (MGSOL) turns on so that the movable guide lowers and holds the paper to keep it from curling.
D: The upper paper conveying belt motor (PCBM-U) rotates backward so that the intermediate tray upper sliding plate moves to the paper holding position.

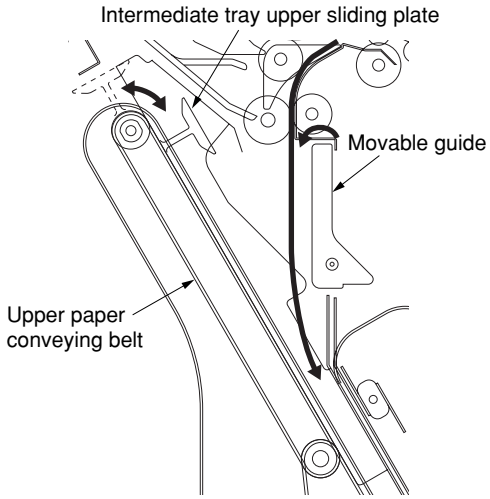


Figure 2-1-11

E: 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" × 8 1/2", 8 1/2" × 11"

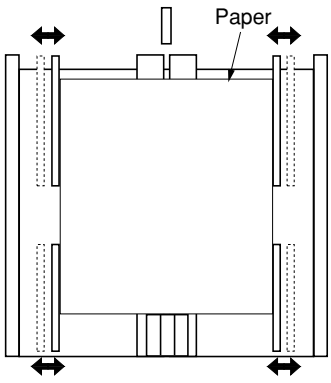
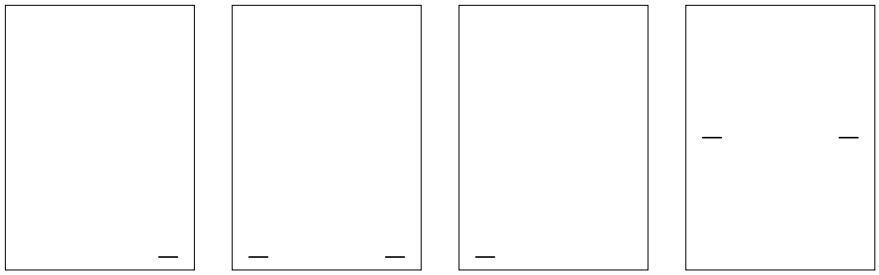


Figure 2-1-12

Stapling operation

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



* For multi finisher only.

Figure 2-1-13

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

A: 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.

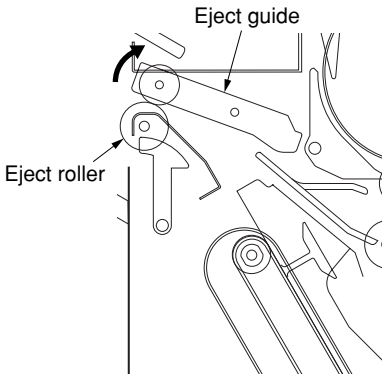


Figure 2-1-14

B: 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.
C: 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.
D: The front/rear lower side-registration guides return to their home positions.
E: 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 A to E above are not performed when A4/11" × 8 1/2" paper is used.

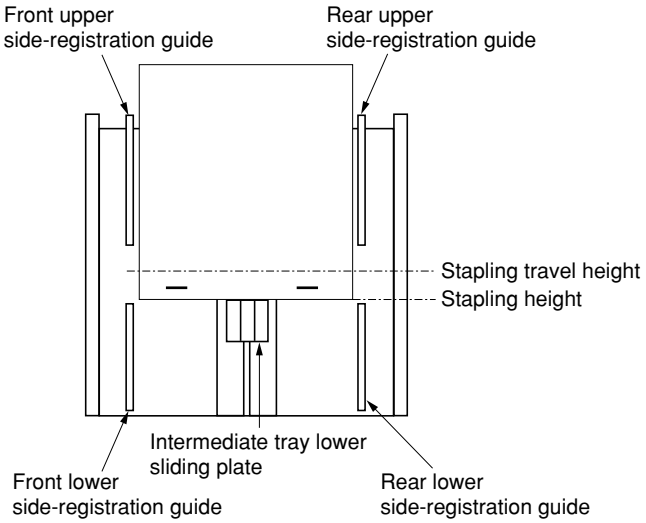


Figure 2-1-15

F: The front/rear upper side-registration guides move toward the machine front or rear to move paper to the stapling position.
G: The stapler performs stapling.
H: The front/rear upper side-registration guides move toward the machine front or rear to shift paper forward or backward.

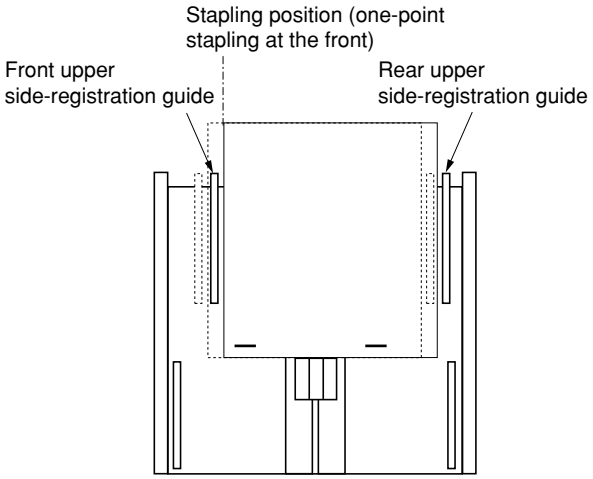


Figure 2-1-16

Centerfold stapling (multi finisher)

A: 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.

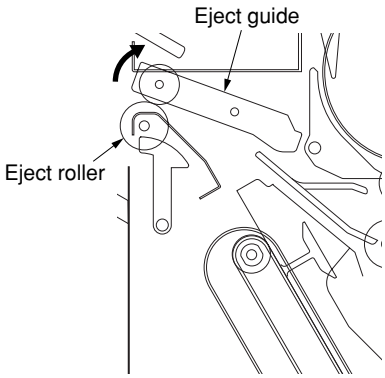


Figure 2-1-17

B: 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.
C: 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.
D: The front/rear lower side-registration guides move to the paper size position and identify the sides of the paper.
E: The front/rear staplers perform two-point stapling.

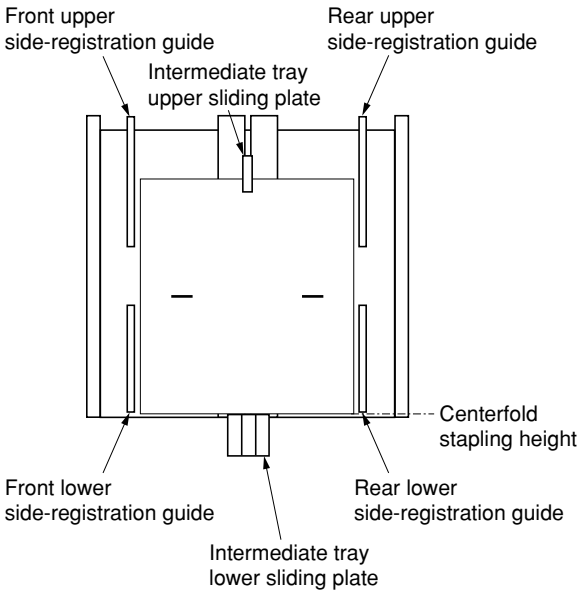


Figure 2-1-18

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.

* For multi finisher only.

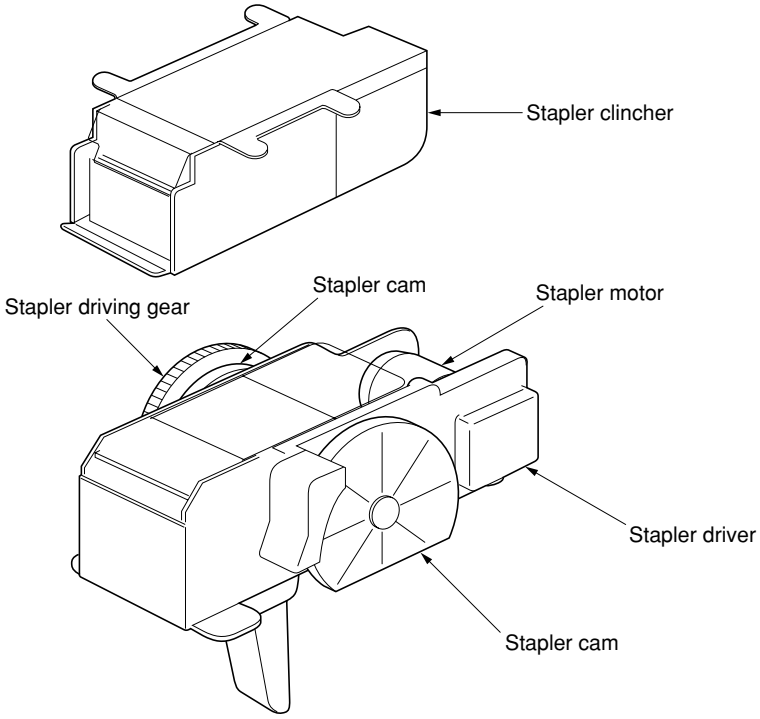


Figure 2-1-19

Paper ejection operation to the main tray

Paper is ejected from the intermediate tray to the main tray (or the 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.

* Optional.

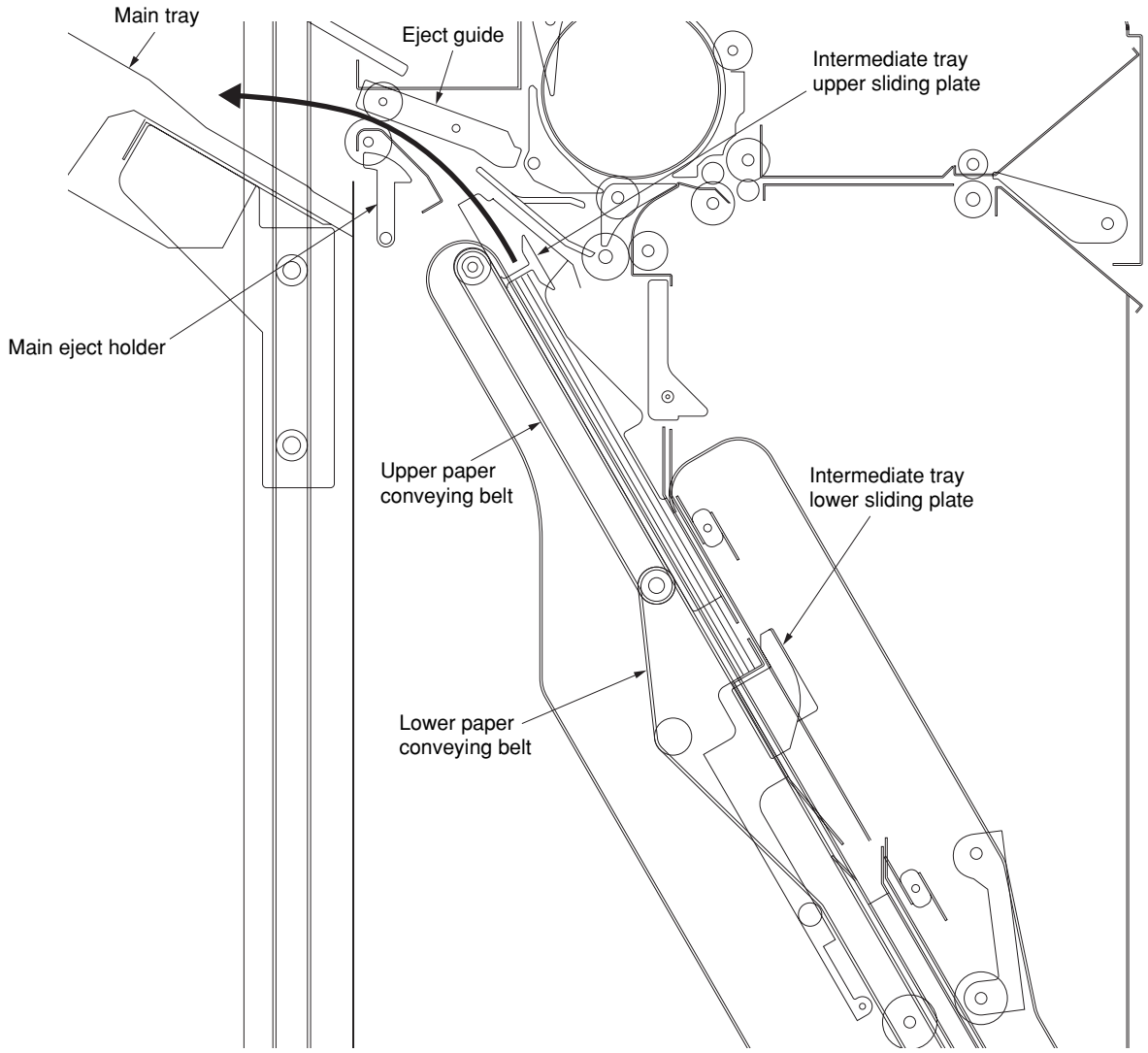


Figure 2-1-20

Paper ejection operation to the centerfold unit (for multi finisher)

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.

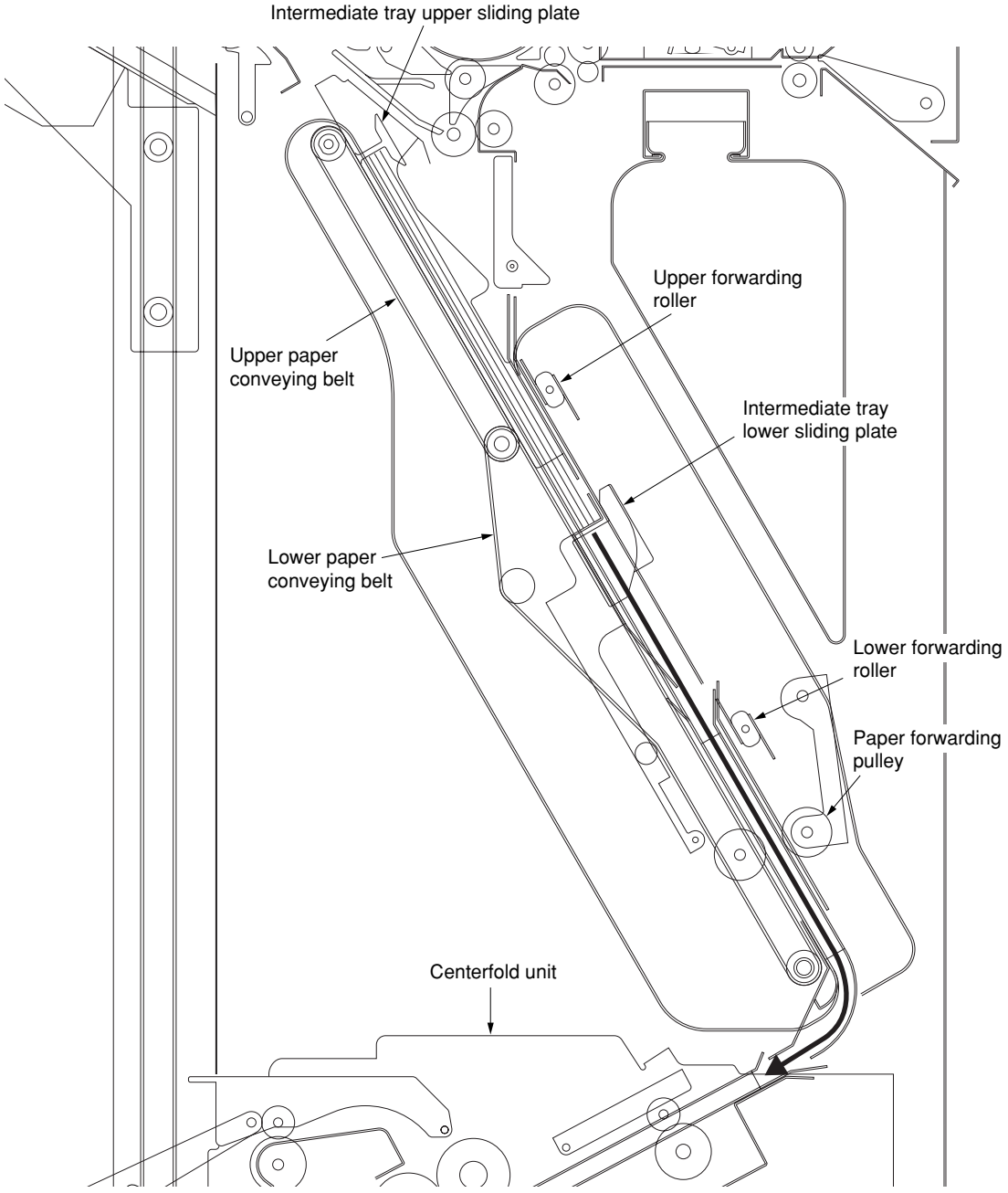


Figure 2-1-21

(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.

* For multi finisher only.

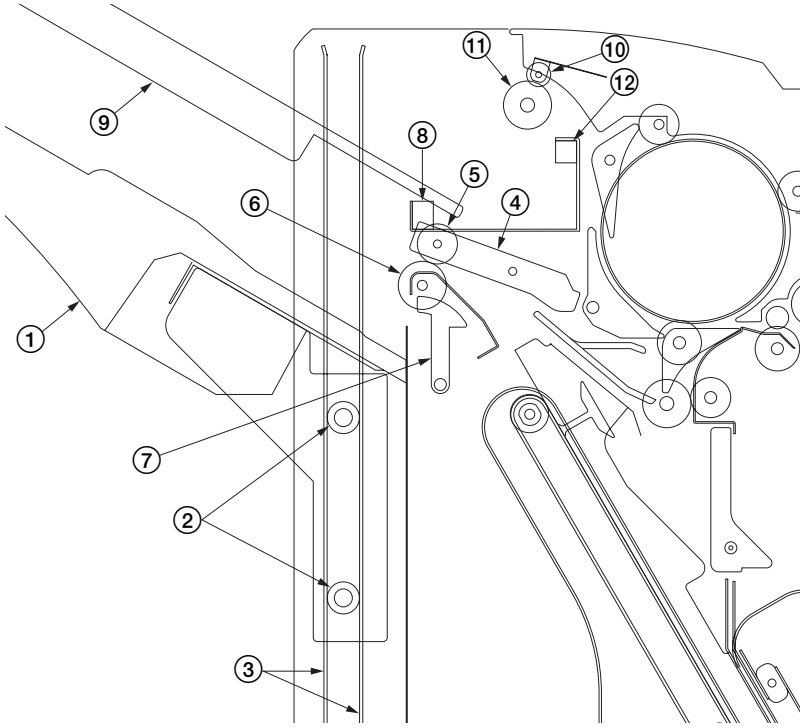
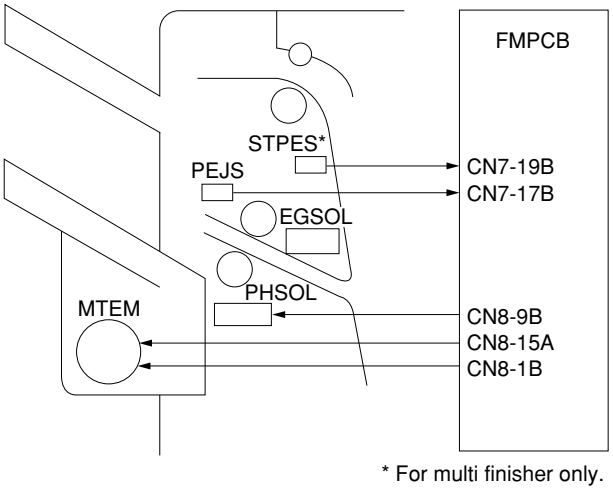


Figure 2-1-22 Paper eject section

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

* For multi finisher only.



* For multi finisher only.

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.

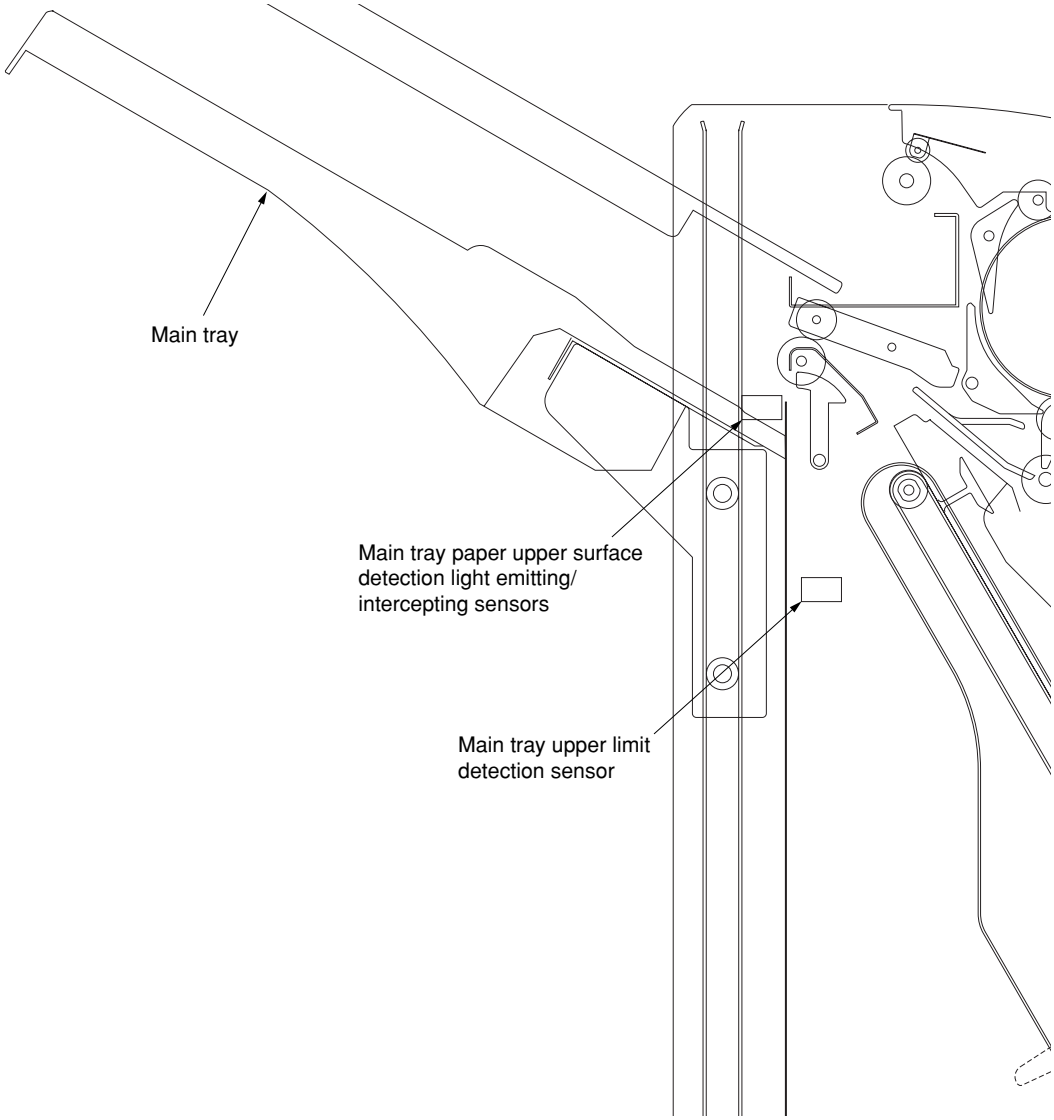


Figure 2-1-24

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.

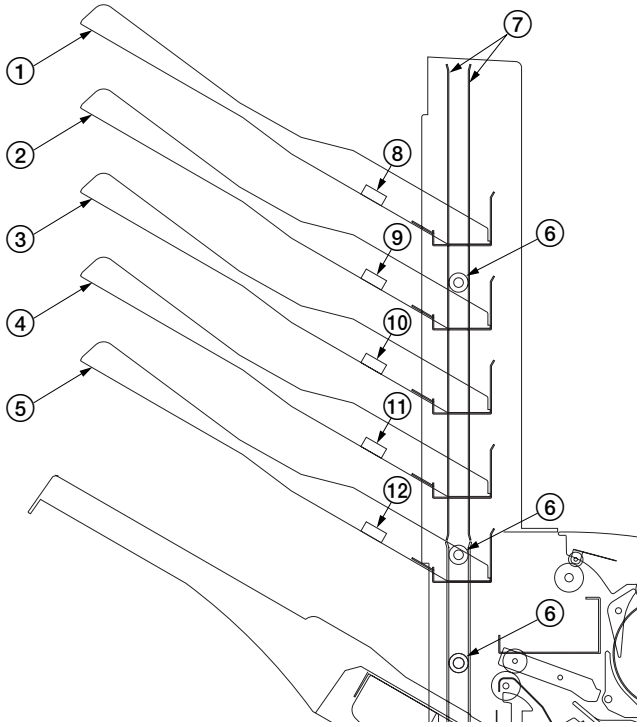


Figure 2-1-25 Multi job tray

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

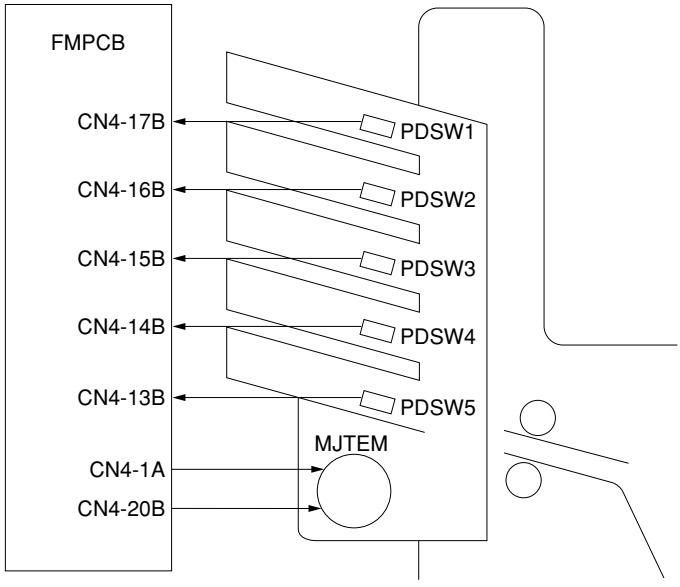


Figure 2-1-26 Block diagram of the multi job tray

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.

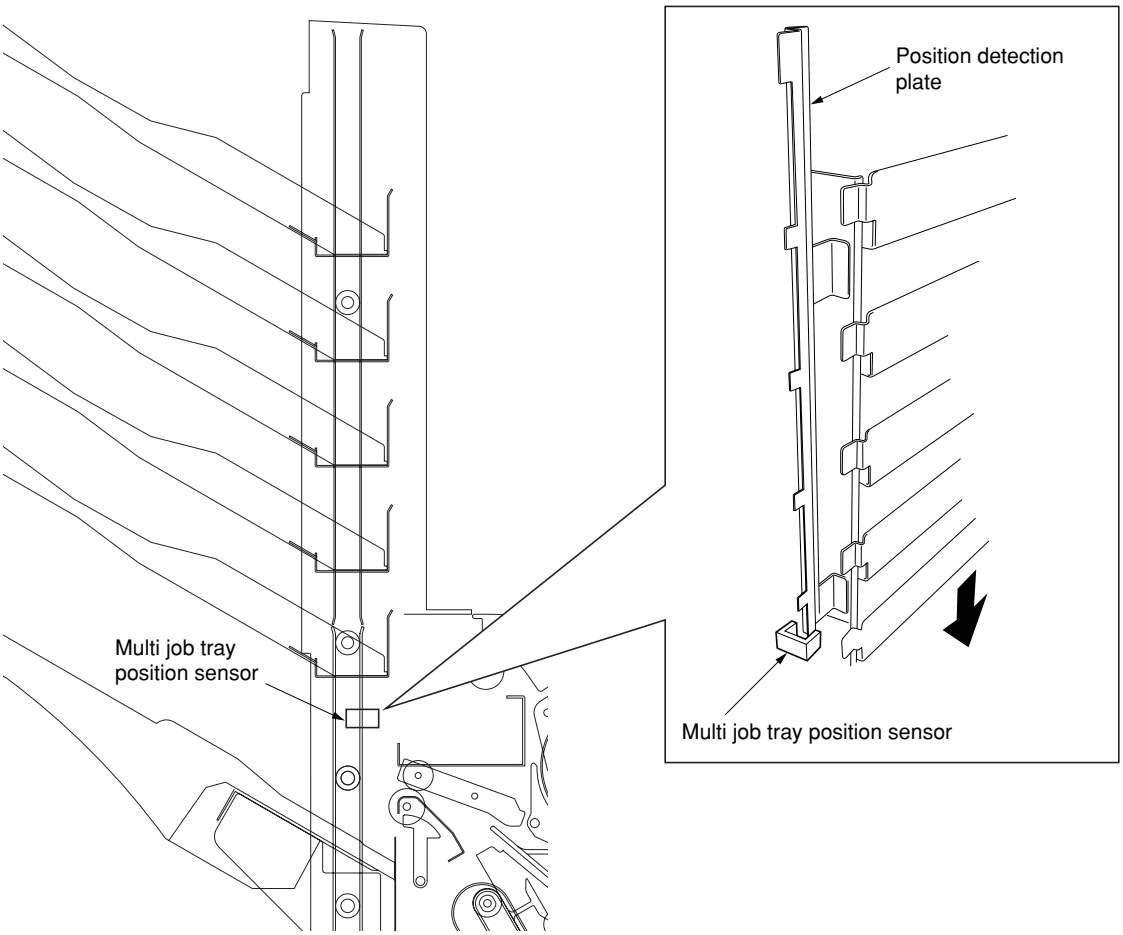


Figure 2-1-27

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).

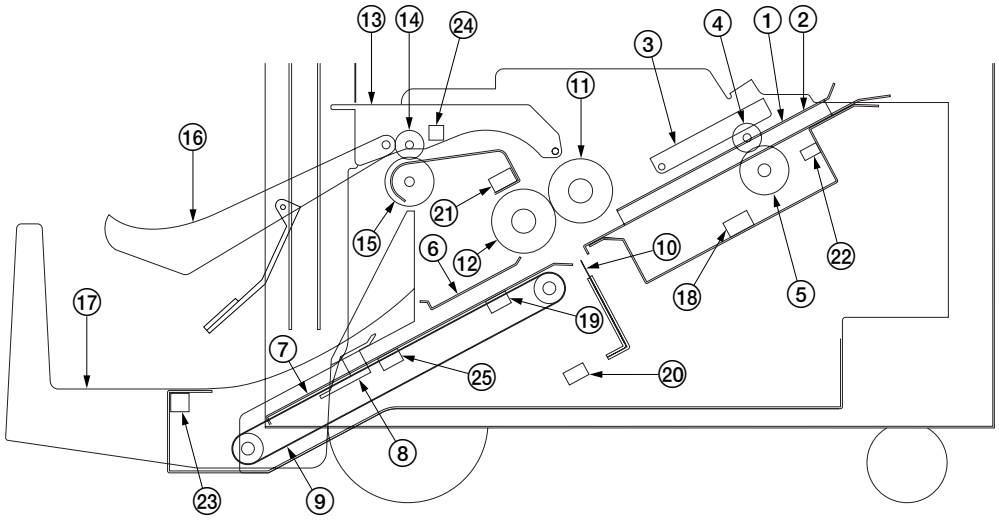


Figure 2-1-28 Centerfold unit

① Front side-registration guide
② Rear side-registration guide
③ Paper entry pulley guide
④ Paper entry pulley
⑤ Paper entry roller
⑥ Upper paper conveying guide plate
⑦ Lower paper conveying guide plate
⑧ Centering plate
⑨ Paper conveying belt
⑩ Centerfold blade
⑪ Right centerfold roller
⑫ Left centerfold roller
⑬ Upper eject guide
⑭ Eject pulley
⑮ Eject roller
⑯ Ejected paper holding arm
⑰ Storage cover
⑱ Side-registration guide home position sensor (SRGHPS)
⑲ Centering plate home position sensor (CPHPS)
⑳ Centerfold blade home position sensor (CBLHPS)
㉑ Folded edge detection sensor (FEDS)
㉒ Centerfold unit paper entry sensor (CUPES)
㉓ Eject tray paper detection switch (ETPDSW)
㉔ Eject switch (ESW)
㉕ Inside tray detection sensor (ITDS)

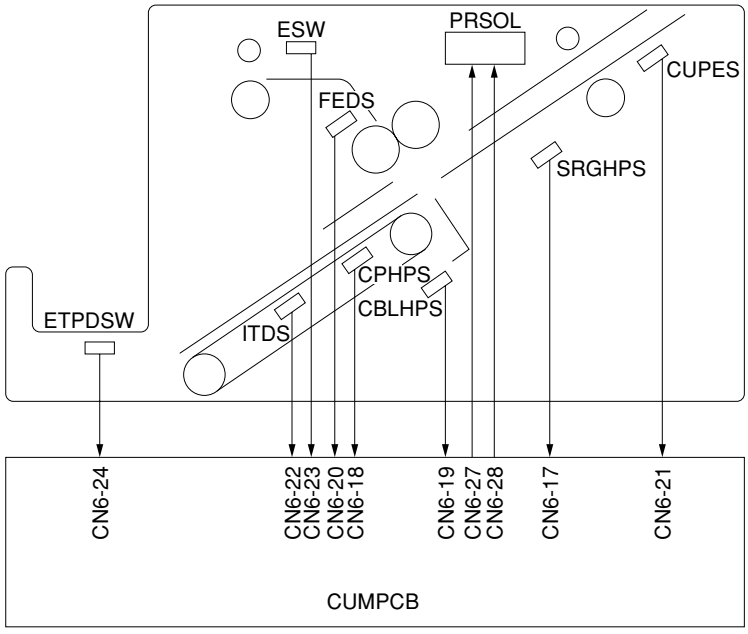


Figure 2-1-29 Block diagram of the centerfold unit

Paper centerfold operation

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

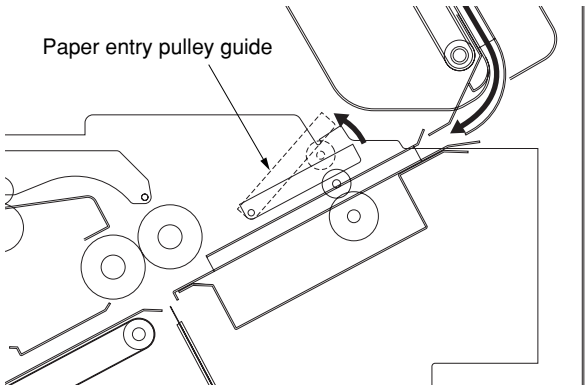


Figure 2-1-30

B: 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.

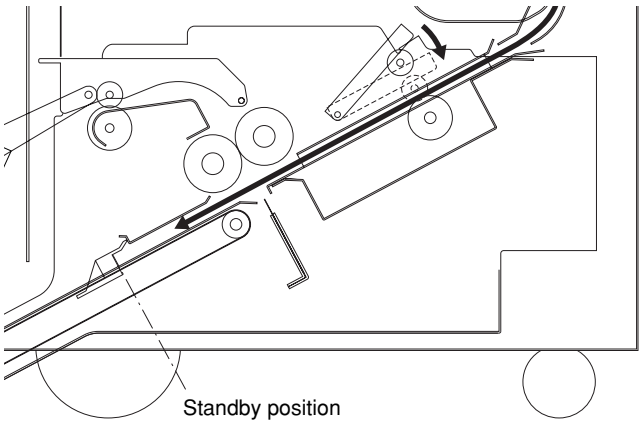


Figure 2-1-31

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

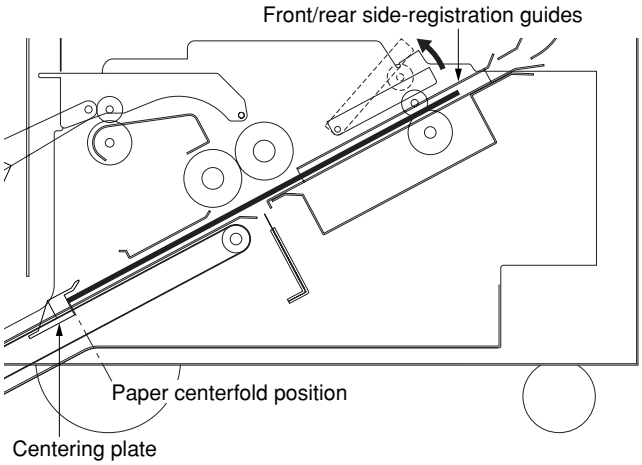


Figure 2-1-32

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

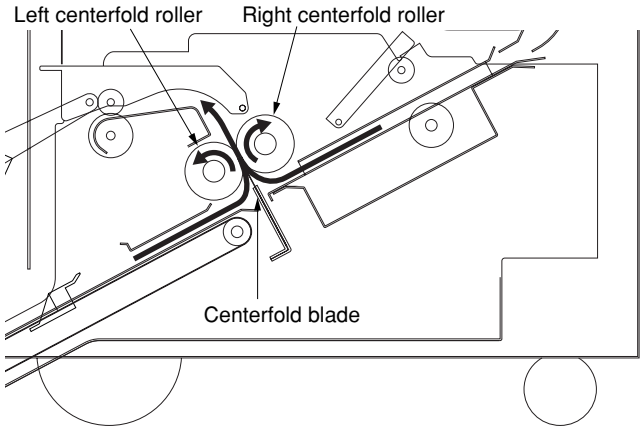


Figure 2-1-33

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.

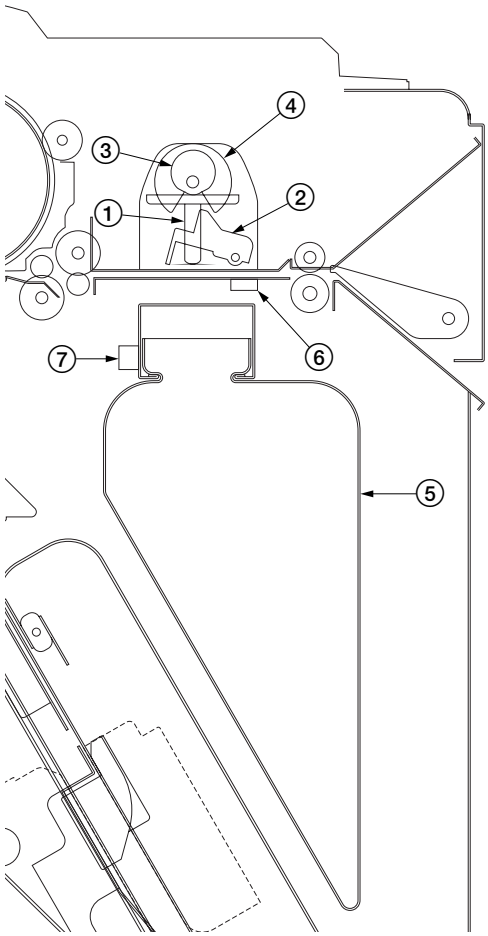


Figure 2-1-34 Punch unit

① Punch shaft
② Punch stopper
③ Punch cam
④ Stopper cam
⑤ Punch waste box
⑥ Paper entry sensor (PES)
⑦ Punch waste box sensor (PWBS)

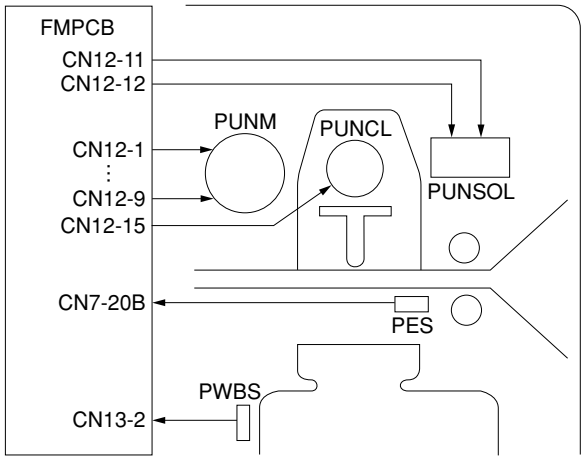


Figure 2-1-35 Block diagram of the punch unit

Punching operation

A: In the punch mode, when paper is inserted into the finisher, the paper conveying clutch (PCCL) turns on so that the paper is halted. The paper entry guide solenoid (PEGSOL) turns on so that the paper entry guide rises and prevents paper from bending inside the punch unit.

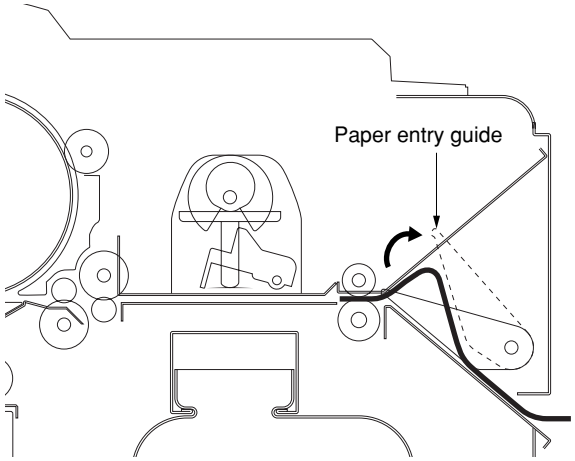


Figure 2-1-36

B: The punch clutch (PUNCL) turns on so that the stopper cam and punch cam rotate and lower the punch stopper. The punch stopper stops at the lowered position to identify the leading edge of the paper that is halted by the paper conveying clutch (PCCL) turning on.

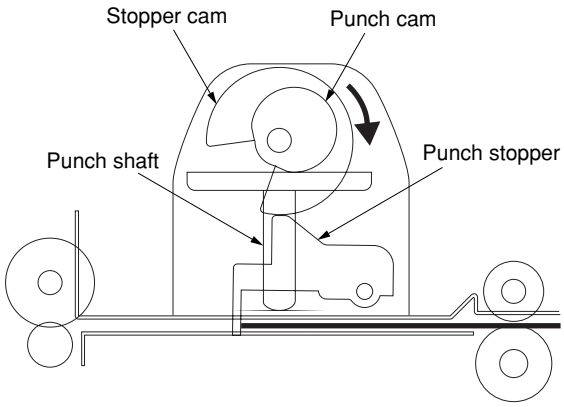


Figure 2-1-37

C: When the punch clutch (PUNCL) turns off, the punch shaft punches paper. The punch stopper rises and stops at the home position. Then the paper conveying clutch (PCCL) turns off and the paper is conveyed.

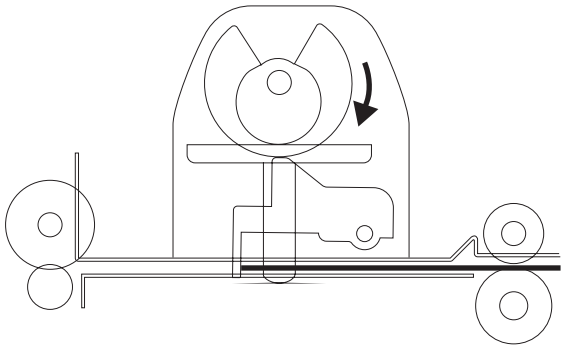
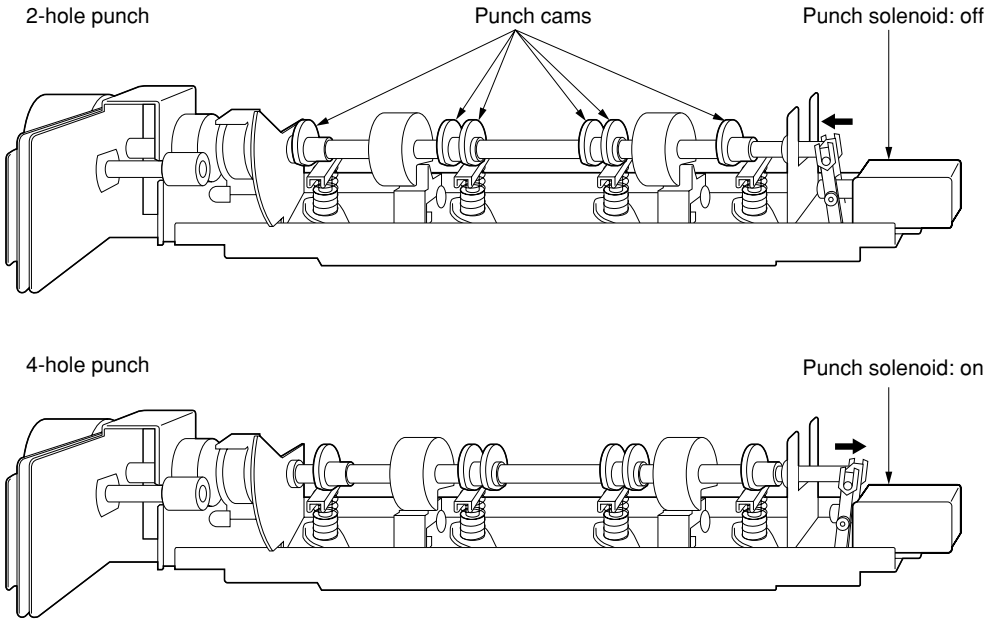


Figure 2-1-38

Punch pattern switching

The punch pattern is switched by turning the punch solenoid (PUNSOL) on and off. Turning the punch solenoid (PUNSOL) on and off moves the punch cam to the machine front and rear, respectively. Punch cam rotation switches the operating pattern of the punch shaft.

Metric specification



Inch specification

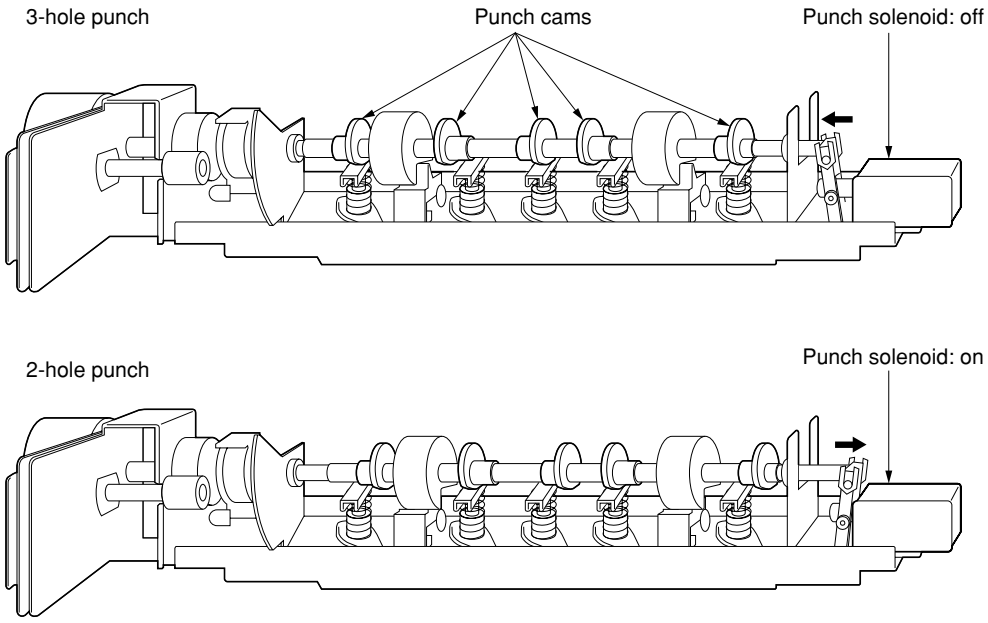


Figure 2-1-39

2-2-1 Electric parts layout

(1) PCBs (finisher)

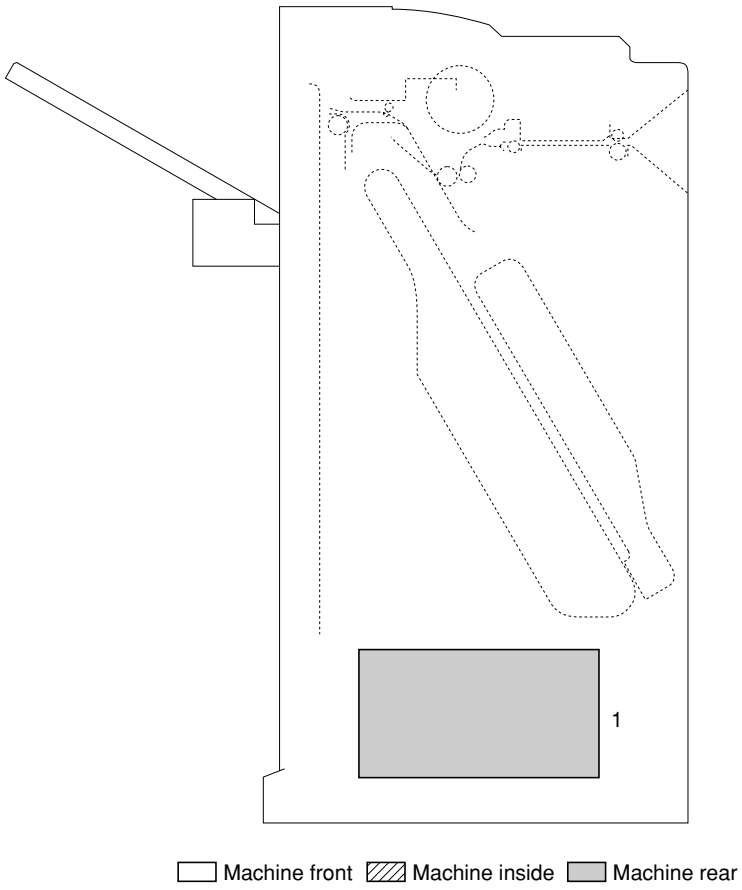


Figure 2-2-1 PCBs

1. Finisher main PCB (FMPCB) ..... Controls electric components of finisher.

(2) Switches and sensors (finisher)

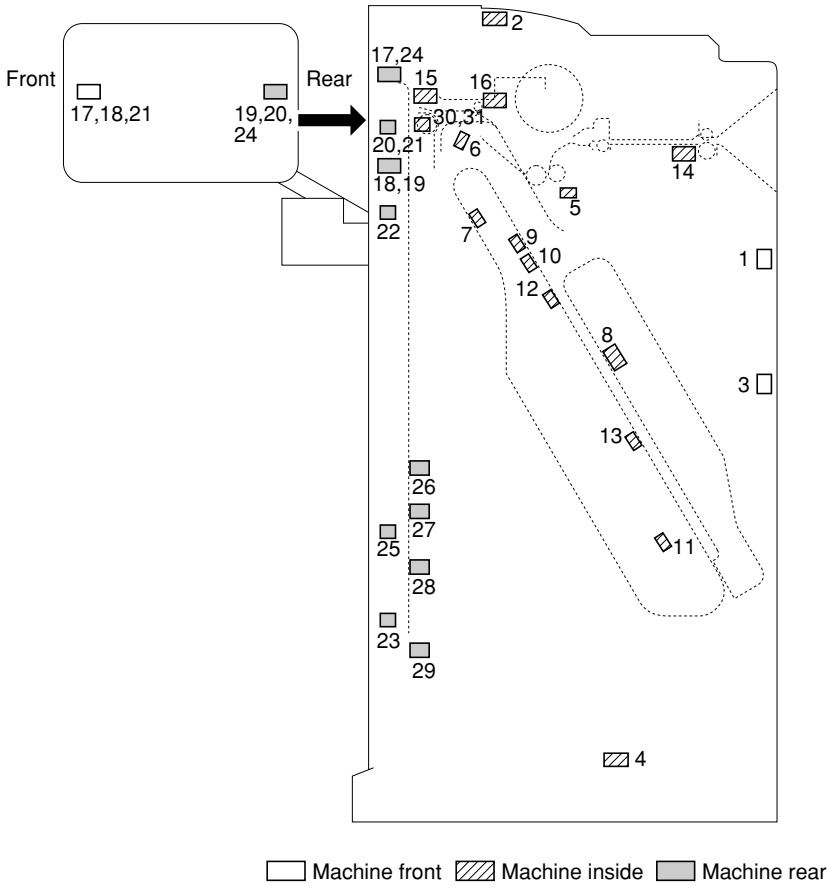


Figure 2-2-2 Switches and sensors

1. Joint switch (JSW) ..... Detection of connection to the copier.
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*2 (CUSSW) ..... Detection of connection to the centerfold unit*3.
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*2 (STPES) ..... Detection of paper ejection to and paper jam in the sub tray.
17. Multi job tray position sensor (MJTPS) ..... Detection of multi job tray*1 position.

*1 Optional. *2 For multi finisher only. *3 Option for multi finisher.

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 multi job tray*1.
21. Multi job tray paper upper surface detection light intercepting sensor (MJTPUSDLIS) ..... Detection of paper overflow in the multi job tray*1.
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 multi job tray*1 ascent position.
25. Multi job tray lower limit detection sensor (MJTLLDS) ..... Detection of the multi job tray*1 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*2 (MTLDS-15) ..... Detection of the paper load in the main tray.
28. Main tray load 2000 detection sensor*3 (MTLDS-20) ..... Detection of the paper load in the main tray.
29. Main tray load 3000 detection sensor*2 (MTLDS-30) ..... Detection of the paper load in the main tray.
30. Multi job tray front switch*1 (MJTSW-F) ..... Safety stop of multi job tray*1.
31. Multi job tray rear switch*1 (MJTSW-R) ..... Safety stop of multi job tray*1.

*1 Optional. *2 For multi finisher only. *3 For simple finisher only.

(3) Clutches and solenoids (finisher)

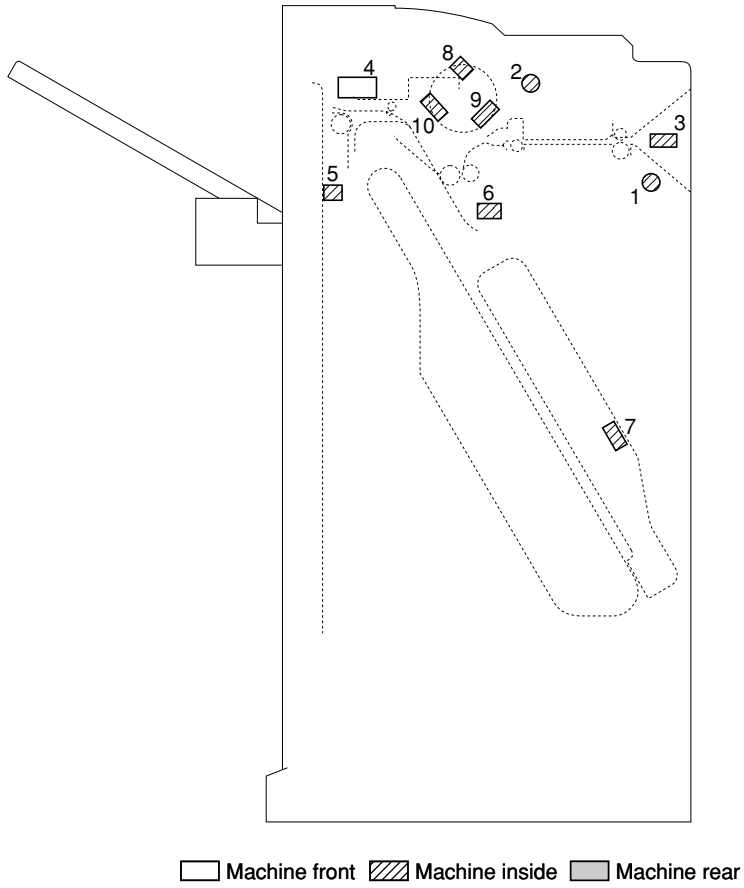


Figure 2-2-3 Clutches and solenoids

1. Paper conveying clutch*2 (PCCL) ..... Drive control of paper conveying section.
2. Siding drum clutch*2 (SDCL) ..... Drive control of siding drum.
3. Paper entry guide solenoid (PEGSOL) ..... Operates paper entry guide.
4. Eject guide solenoid (EGSOL) ..... Operates eject guide.
5. Paper holder solenoid (PHSOL) ..... Operates main eject holder.
6. Movable guide solenoid (MGSOL) ..... Operates movable guide.
7. Paper forwarding pulley solenoid (PFPSOL) ..... Forwards paper to the centerfold unit*1.
8. Feedshift solenoid A*2 (FSSOLA) ..... Operates sub eject feedshift guide.
9. Feedshift solenoid B (FSSOLB) ..... Operates main eject feedshift guide.
10. Feedshift solenoid C*2 (FSSOLC) ..... Operates left feedshift guide.

*1 Option for multi finisher. *2 For multi finisher only.

(4) Motors and others (finisher)

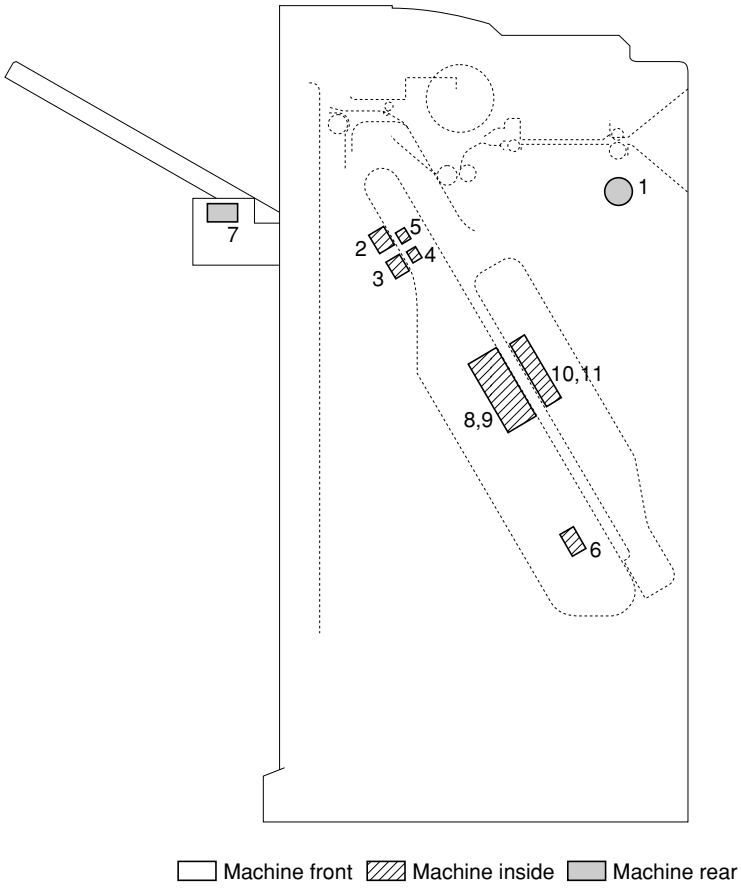


Figure 2-2-4 Motors and others

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.

* For multi finisher only.

(5) Stapler

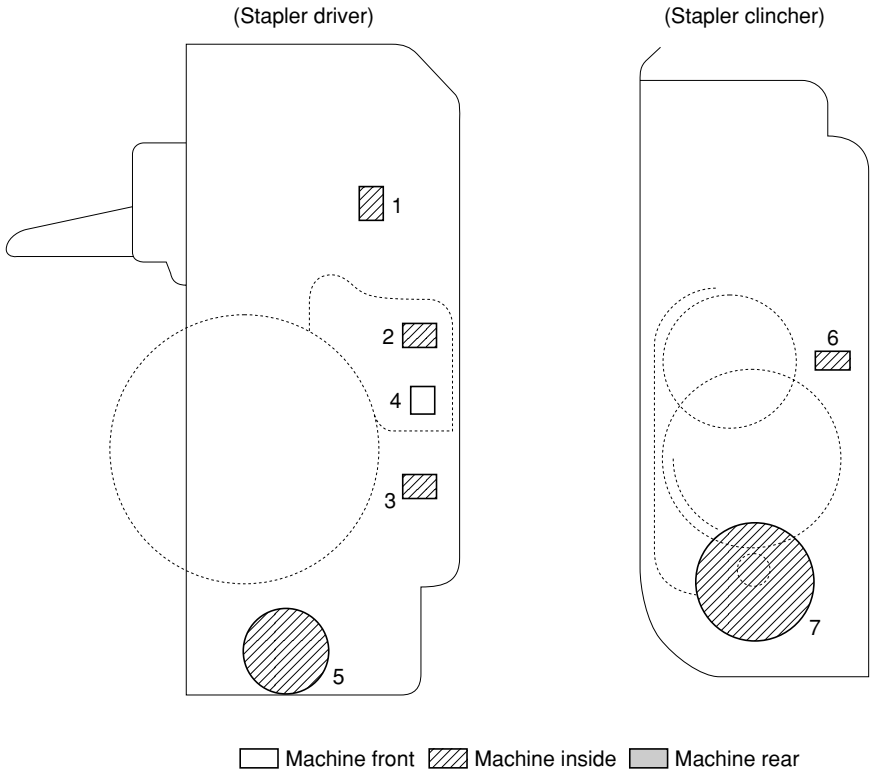


Figure 2-2-5 Stapler (Front*/Rear stapler drivers, Front*/Rear clinchers)

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.

* For multi finisher only.

(6) PCBs (centerfold unit*)

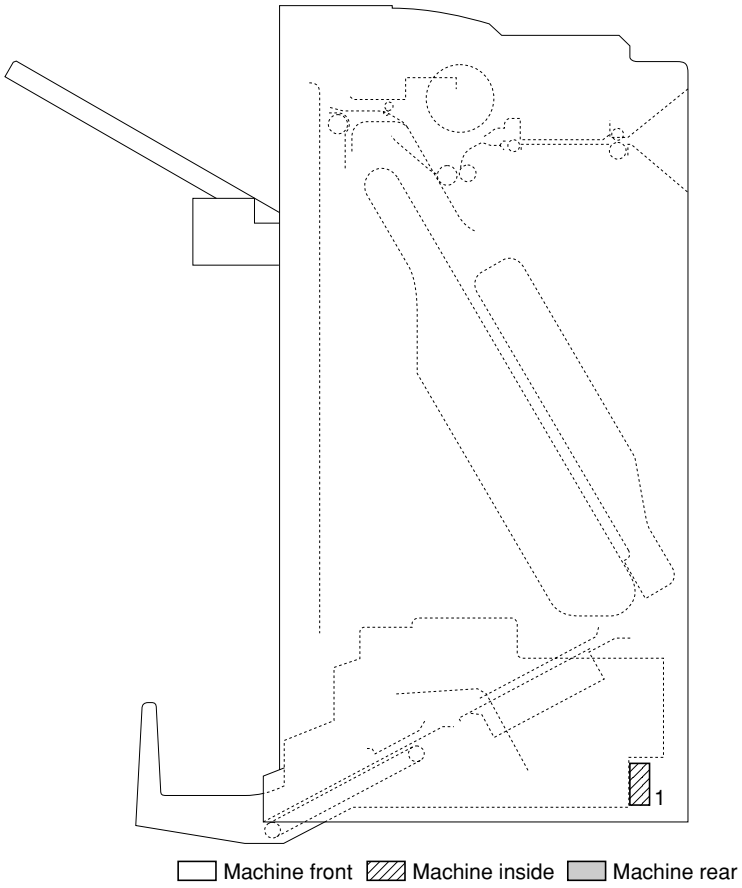


Figure 2-2-6 PCBs

1. Centerfold unit main PCB (CUMPCB) ..... Controls electric components of centerfold unit.

* Option for multi finisher.

(7) Switches and sensors (centerfold unit*)

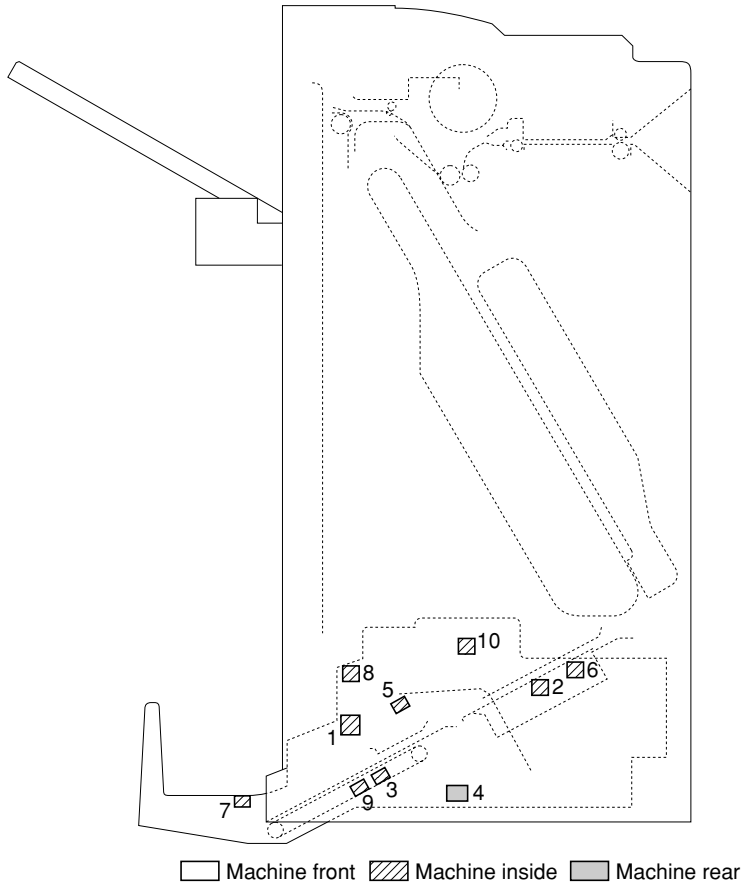


Figure 2-2-7 Switches and sensors

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. Eject switch (ESW) ..... Detection of paper ejection.
9. Inside tray detection sensor (ITDS) ..... Detection of paper in the inside tray.
10. Motor pulse sensor (MPS) ..... Detection of main motor pulse.

* Option for multi finisher.

(8) Motors and solenoids (centerfold unit*)

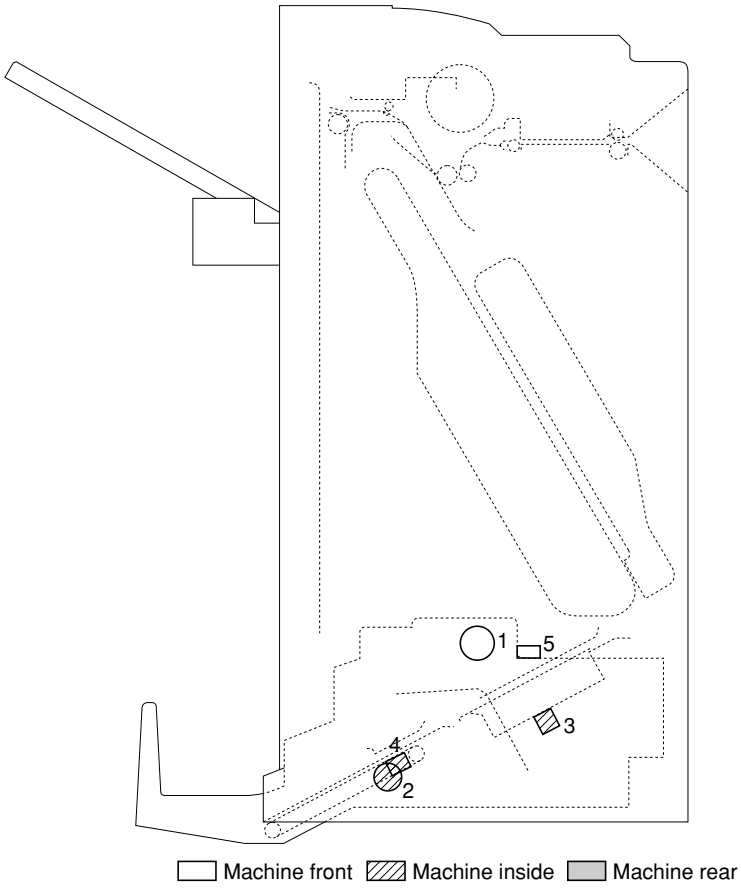


Figure 2-2-8 Motors and solenoids

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.

* Option for multi finisher.

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

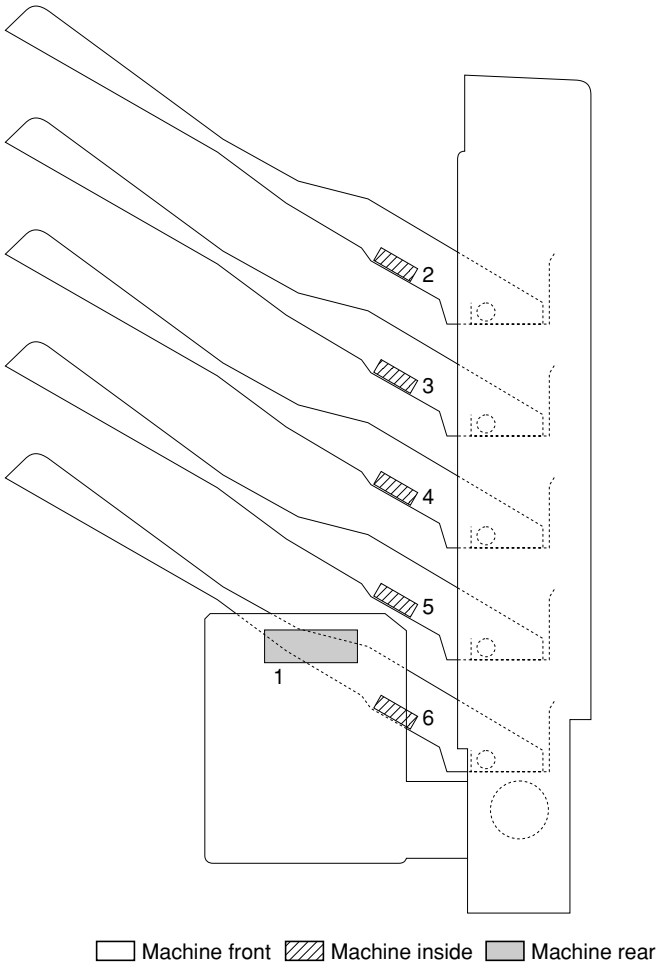


Figure 2-2-9

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.

* Optional.

(10) Switches, clutches, solenoids and motors (punch unit*)

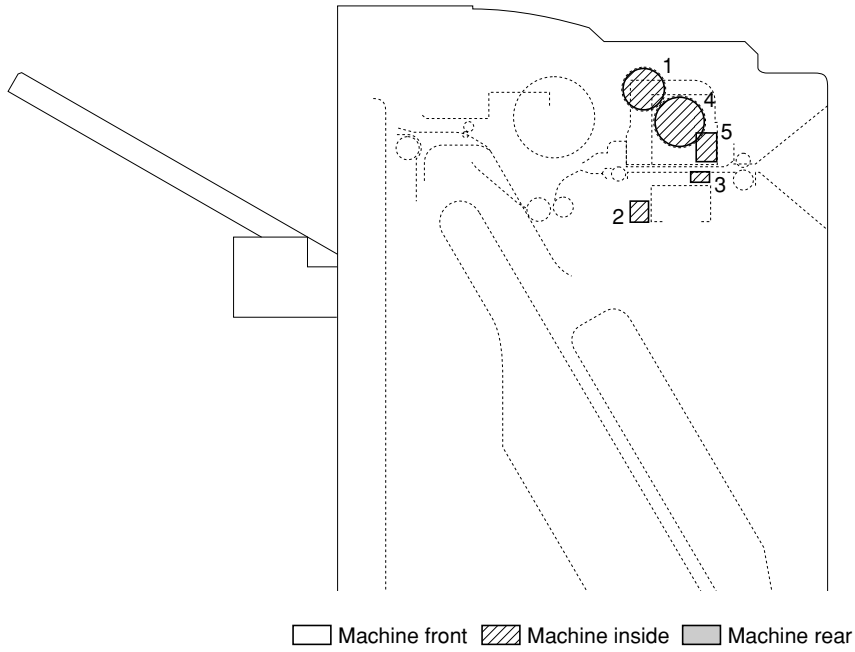


Figure 2-2-10 Switches, clutches, solenoids and motors

1. Punch motor (PUNM) ..... Drives punch unit.
2. Punch waste box sensor (PWBS) ..... Detection of whether punch waste box is installed or not.
3. Paper entry sensor (PES) ..... Detection of paper insertion into the punch unit.
4. Punch clutch (PUNCL) ..... Drive control of punch unit.
5. Punch solenoid (PUNSOL) ..... Switches punch cam.

* Option for multi finisher.

2-3-1 Finisher main PCB

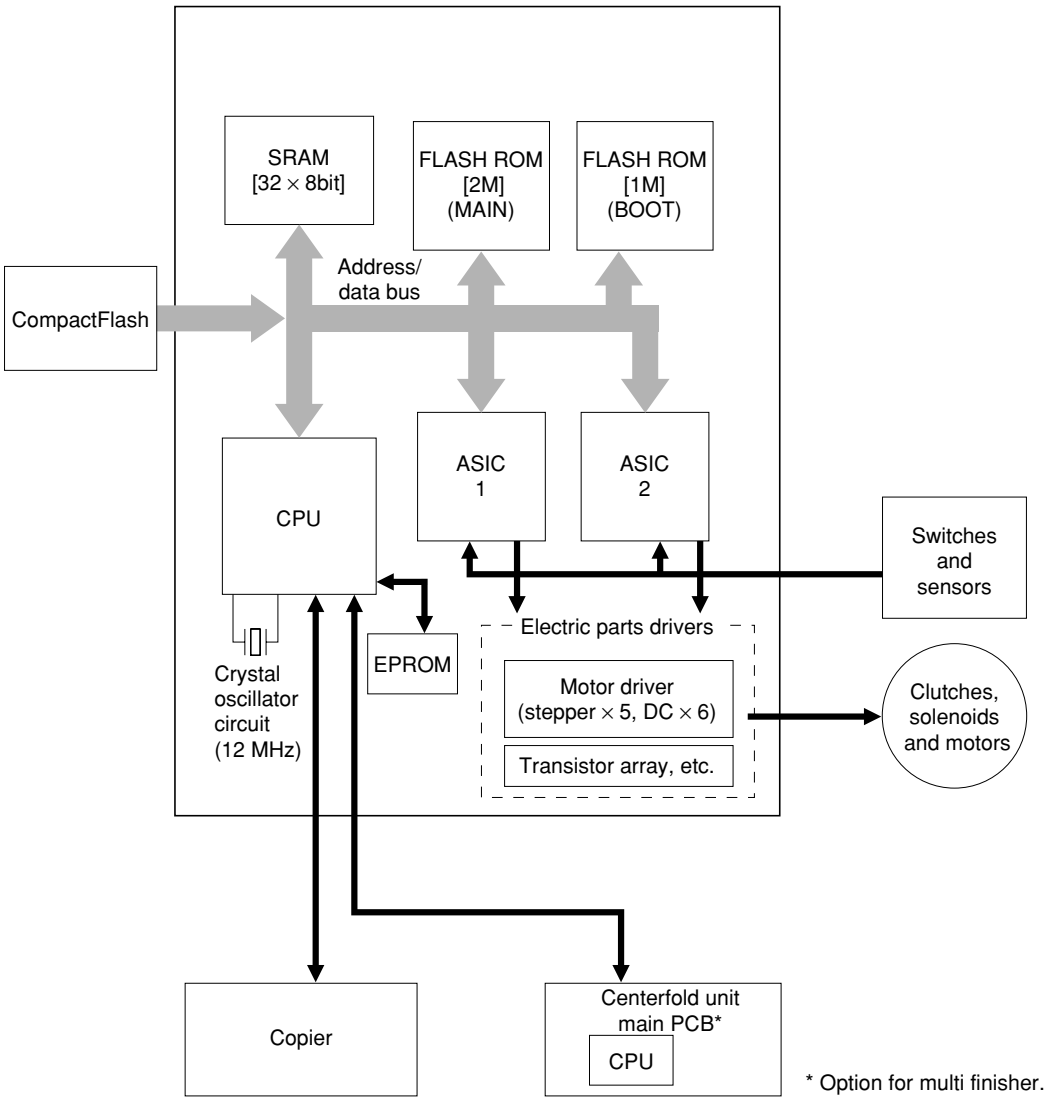


Figure 2-3-1 Block diagram of the finisher main PCB

The finisher main PCB (FMPCB) includes the CPU, EPROM and, SRAM, ASIC and FLASH ROM. It controls each device as well as the entire finisher according to the program in the EPROM. The EPROM contains the control program that is executed by the SRAM. The ASIC is the extension I/O.
The copier and the finisher are controlled sequentially. The CPU of the finisher main PCB (FMPCB) controls the entire finisher in line with communications with the copier. Though the finisher uses a different control PCB from the one for the centerfold unit*, operations are synchronized using the communication IC (UART).

* Option for multi finisher.

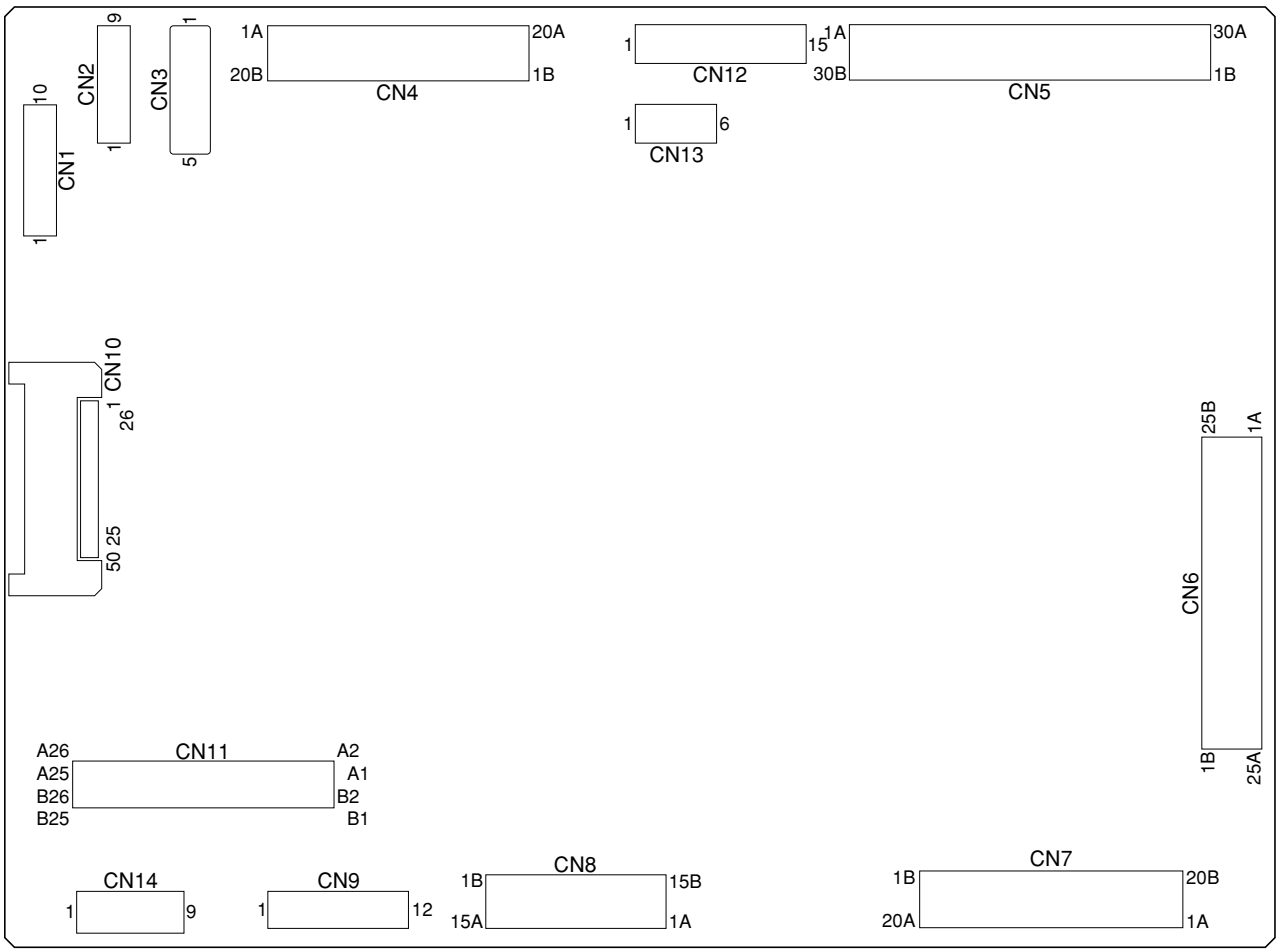


Figure 2-3-2 Finisher main PCB silkscreen image

Connector	Pin No.	Signal	I/O	Voltage	Description
CN1	1	5 V	I	5 V DC	5 V DC supply, input
	2	5 V	I	5 V DC	5 V DC supply, input
	3	SG	—	—	Ground
	4	N.C	—	—	No connection
	5	TXD	O	0/5 V DC (pulse)	Communication control with copier
	6	SG	—	—	Ground
	7	RXD	I	0/5 V DC (pulse)	Communication control with copier
	8	SG	—	—	Ground
	9	RESET	I	0/5 V DC	RESET signal from copier
	10	FIN DET	O	0/5 V DC	FIN DET signal
CN2	1	PG	—	—	Ground
	2	PG	—	—	Ground
	3	PG	—	—	Ground
	4	PG	—	—	Ground
	5	24 V	I	24 V DC	24 V DC supply, input
	6	24 V	I	24 V DC	24 V DC supply, input
	7	24 V	I	24 V DC	24 V DC supply, input
	8	24 V	I	24 V DC	24 V DC supply, input
	9	N.C	—	—	No connection
CN3	1	INT OUT	O	0/24 V DC	Interlock, detection
	2	INT IN	I	0/24 V DC	Interlock, detection
	3	UCSW	I	0/24 V DC	Upper cover switch, detection, H: ON
	4	FCSW	I	0/24 V DC	Front cover switch, detection, H: ON
	5	JSW	I	0/24 V DC	Joint switch, detection, H: ON
CN4	1A	MJTEM F	O	0/24 V DC	Multi job tray elevation motor*, drive
	2A	N.C	—	—	No connection
	3A	5 V	O	5 V DC	Multi job tray position sensor, 5 V DC supply
	4A	5 V	O	5 V DC	Paper detection switch 1*, 5 V DC supply
	5A	5 V	O	5 V DC	Paper detection switch 2*, 5 V DC supply
	6A	5 V	O	5 V DC	Paper detection switch 3*, 5 V DC supply
	7A	5 V	O	5 V DC	Paper detection switch 4*, 5 V DC supply
	8A	5 V	O	5 V DC	Paper detection switch 5*, 5 V DC supply
	9A	5 V	O	5 V DC	Multi job tray upper limit detection sensor, 5 V DC supply
	10A	5 V	O	5 V DC	Multi job tray lower limit detection sensor, 5 V DC supply
	11A	SG PNSET	—	—	Ground
	12A	SG	—	—	Ground
	13A	SG	—	—	Ground
	14A	SG	—	—	Ground
	15A	SG	—	—	Ground
	16A	SG	—	—	Ground
	17A	5 V	O	5 V DC	Multi job tray paper upper surface light intercepting sensor, 5 V DC supply
	18A	SG	—	—	Ground
	19A	SG	—	—	Ground
	20A	5 V	O	5 V DC	Main tray load 1000 detection sensor, 5 V DC supply
	1B	MTLDS-10	I	0/5 V DC	Main tray load 1000 detection sensor, detection, L: ON
	2B	N.C	—	—	No connection
	3B	MJTPUSDLIS	I	0/5 V DC	Multi job tray paper upper surface light intercepting sensor, detection

* Optional.

Connector	Pin No.	Signal	I/O	Voltage	Description
CN4	4B	5 V	O	5 V DC	Multi job tray paper upper surface light emitting sensor, 5 V DC supply
	5B	SG	—	—	Ground
	6B	JTSET	I	0/5 V DC	Multi job tray*1, connection detection
	7B	SG	—	—	Ground
	8B	SG	—	—	Ground
	9B	SG	—	—	Ground
	10B	N.C	—	—	No connection
	11B	MJTULDS	I	0/5 V DC	Multi job tray lower limit detection sensor, detection, L: ON
	12B	MJTLLDS	I	0/5 V DC	Multi job tray upper limit detection sensor, detection, L: ON
	13B	PDSW5	I	0/5 V DC	Paper detection switch 5*1, detection, L: ON
	14B	PDSW4	I	0/5 V DC	Paper detection switch 4*1, detection, L: ON
	15B	PDSW3	I	0/5 V DC	Paper detection switch 3*1, detection, L: ON
	16B	PDSW2	I	0/5 V DC	Paper detection switch 2*1, detection, L: ON
	17B	PDSW1	I	0/5 V DC	Paper detection switch 1*1, detection, L: ON
	18B	MJTPS	I	0/5 V DC	Multi job tray position sensor, detection, L: ON
	19B	PNSET	I	0/5 V DC	Punch unit*2, connection detection
	20B	MJTEM R	O	0/24 V DC	Multi job tray elevation motor*1, drive
CN5	1A	PCBM-U B_	O	0/24 V DC (pulse)	Upper paper conveying belt motor, drive control
	2A	24 V	O	24 V DC	Upper paper conveying belt motor, 24 V DC supply
	3A	PCBM-U A	O	0/24 V DC (pulse)	Upper paper conveying belt motor, drive control
	4A	PCBM-L B_	O	0/24 V DC (pulse)	Lower paper conveying belt motor, drive control
	5A	24 V	O	24 V DC	Lower paper conveying belt motor, 24 V DC supply
	6A	PCBM-L A	O	0/24 V DC (pulse)	Lower paper conveying belt motor, drive control
	7A	SRGM-FU B_	O	0/24 V DC (pulse)	Front upper side-registration guide motor, drive control
	8A	24 V	O	24 V DC	Front upper side-registration guide motor, 24 V DC supply
	9A	SRGM-FU A	O	0/24 V DC (pulse)	Front upper side-registration guide motor, drive control
	10A	SRGM-RU B_	O	0/24 V DC (pulse)	Rear upper side-registration guide motor, drive control
	11A	24 V	O	24 V DC	Rear upper side-registration guide motor, 24 V DC supply
	12A	SRGM-RU A	O	0/24 V DC (pulse)	Rear upper side-registration guide motor, drive control
	13A	SRGM-L B_	O	0/24 V DC (pulse)	Lower side-registration guide motor, drive control
	14A	24 V	O	24 V DC	Lower side-registration guide motor, 24 V DC supply
	15A	SRGM-L A	O	0/24 V DC (pulse)	Lower side-registration guide motor, drive control
	16A	24 V	O	24 V DC	Paper forwarding pulley solenoid, 24 V DC supply
	17A	N.C	—	—	No connection
	18A	STM-F R	O	0/24 V DC	Front stapler motor*3, drive control
	19A	STM-F F	O	0/24 V DC	Front stapler motor*3, drive control
	20A	STM-F R	O	0/24 V DC	Front stapler motor*3, drive control
	21A	STM-R R	O	0/24 V DC	Rear stapler motor, drive control
	22A	STM-R F	O	0/24 V DC	Rear stapler motor, drive control
	23A	STM-R F	O	0/24 V DC	Rear stapler motor, drive control

*1 Optional. *2 Option for multi finisher. *3 For multi finisher only.

Connector	Pin No.	Signal	I/O	Voltage	Description
CN5	26A	N.C	—	—	No connection
	27A	CLNM-F F	O	0/24 V DC	Front clincher motor*, drive control
	28A	CLNM-F R	O	0/24 V DC	Front clincher motor*, drive control
	29A	CLNM-R F	O	0/24 V DC	Rear clincher motor, drive control
	30A	CLNM-R R	O	0/24 V DC	Rear clincher motor, drive control
	1B	CLNM-R R	O	0/24 V DC	Rear clincher motor, drive control
	2B	CLNM-R F	O	0/24 V DC	Rear clincher motor, drive control
	3B	CLNM-F R	O	0/24 V DC	Front clincher motor*, drive control
	4B	CLNM-F F	O	0/24 V DC	Front clincher motor*, drive control
	5B	N.C	—	—	No connection
	8B	N.C	—	—	No connection
	9B	STM-R F	O	0/24 V DC	Rear stapler motor, drive control
	10B	STM-R R	O	0/24 V DC	Rear stapler motor, drive control
	11B	STM-R R	O	0/24 V DC	Rear stapler motor, drive control
	12B	STM-F F	O	0/24 V DC	Front stapler motor*, drive control
	13B	STM-F R	O	0/24 V DC	Front stapler motor*, drive control
	14B	STM-F R	O	0/24 V DC	Front stapler motor*, drive control
	15B	PFPSOL	O	0/24 V DC	Paper forwarding pulley solenoid, drive
	16B	SRGM-L A_	O	0/24 V DC (pulse)	Lower side-registration guide motor, drive control
	17B	24 V	O	24 V DC	Lower side-registration guide motor, 24 V DC supply
	18B	SRGM-L B	O	0/24 V DC (pulse)	Lower side-registration guide motor, drive control
	19B	SRGM-RU A_	O	0/24 V DC (pulse)	Rear upper side-registration guide motor, drive control
	20B	24 V	O	24 V DC	Rear upper side-registration guide motor, 24 V DC supply
	21B	SRGM-RU B	O	0/24 V DC (pulse)	Rear upper side-registration guide motor, drive control
	22B	SRGM-FU A_	O	0/24 V DC (pulse)	Front upper side-registration guide motor, drive control
	23B	24 V	O	24 V DC	Front upper side-registration guide motor, 24 V DC supply
	24B	SRGM-FU B	O	0/24 V DC (pulse)	Front upper side-registration guide motor, drive control
	25B	PCBM-L A_	O	0/24 V DC (pulse)	Lower paper conveying belt motor, drive control
	26B	24 V	O	24 V DC	Lower paper conveying belt motor, 24 V DC supply
	27B	PCBM-L B	O	0/24 V DC (pulse)	Lower paper conveying belt motor, drive control
	28B	PCBM-U A_	O	0/24 V DC (pulse)	Upper paper conveying belt motor, drive control
	29B	24 V	O	24 V DC	Upper paper conveying belt motor, 24 V DC supply
	30B	PCBM-U B	O	0/24 V DC (pulse)	Upper paper conveying belt motor, drive control
CN6	1A	5 V	O	5 V DC	Upper paper conveying belt home position sensor, 5 V DC supply
	2A	5 V	O	5 V DC	Upper paper sensor, 5 V DC supply
	3A	5 V	O	5 V DC	Lower paper sensor, 5 V DC supply
	4A	5 V	O	5 V DC	Front upper side-registration guide home position sensor, 5 V DC supply
	5A	5 V	O	5 V DC	Rear upper side-registration guide home position sensor, 5 V DC supply
	6A	5 V	O	5 V DC	Lower side-registration guide home position sensor, 5 V DC supply
	7A	N.C	—	—	No connection

* For multi finisher only.

Connector	Pin No.	Signal	I/O	Voltage	Description
CN6	8A	SG	—	—	Ground
	9A	SG	—	—	Ground
	10A	N.C	—	—	Ground
	11A	STCS-F	I	0/5 V DC	Front stapler cartridge sensor*, detection, L: ON
	12A	CLNSS-F	I	0/5 V DC	Front clincher start sensor*, detection, L: ON
	13A	5 V	O	5 V DC	Front stapler driver*, 5 V DC supply
	14A	N.C	—	—	No connection
	15A	STCS-R	I	0/5 V DC	Rear stapler cartridge sensor, detection, L: ON
	16A	CLNSS-R	I	0/5 V DC	Rear clincher start sensor, detection, L: ON
	17A	5 V	O	5 V DC	Rear stapler driver, 5 V DC supply
	18A	N.C	—	—	No connection
	21A	N.C	—	—	No connection
	22A	CLNHPS-F	I	0/5 V DC	Front clincher home position sensor*, detection, L: ON
	23A	CLNHPS-R	I	0/5 V DC	Rear clincher home position sensor, detection, L: ON
	24A	PCBHPS-L	I	0/5 V DC	Lower paper conveying belt home position sensor, detection, L: ON
	25A	5 V	O	5 V DC	Rear clincher home position sensor, 5 V DC supply
	1B	5 V	O	5 V DC	Lower paper conveying belt home position sensor, 5 V DC supply
	2B	5 V	O	5 V DC	Front clincher home position sensor*, 5 V DC supply
	3B	SG	—	—	Ground
	4B	SG	—	—	Ground
	5B	SG	—	—	Ground
	6B	SG	—	—	Ground
	9B	SG	—	—	Ground
	10B	STHPS-R	I	0/5 V DC	Rear stapler home position sensor, detection, L: ON
	11B	STES-R	I	0/5 V DC	Rear stapler empty sensor, L: ON
	12B	STD-R CD	I	0/5 V DC	Rear stapler, drive control
	13B	SG	—	—	Ground
	14B	STHPS-F	I	0/5 V DC	Front stapler home position sensor*, detection, L: ON
	15B	STES-F	I	0/5 V DC	Front stapler empty sensor*, detection, L: ON
	16B	STD-F CD	I	0/5 V DC	Front stapler, drive control
	17B	N.C	—	—	No connection
	18B	N.C	—	—	No connection
	19B	N.C	—	—	No connection
	20B	SRGHPS-L	I	0/5 V DC	Lower side-registration guide home position sensor, detection, L: ON
	21B	SRGHPS-RU	I	0/5 V DC	Rear upper side-registration guide home position sensor, detection, L: ON
	22B	SRGHPS-FU	I	0/5 V DC	Front upper side-registration guide home position sensor, detection, L: ON
	23B	RS-L	I	0/5 V DC	Lower paper sensor, detection, L: ON
	24B	RS-U	I	0/5 V DC	Upper paper sensor, detection, L: ON
	25B	PCBHPS-U	I	0/5 V DC	Upper paper conveying belt home position sensor, detection, L: ON
CN7	1A	5 V	O	5 V DC	Paper conveying motor, 5 V DC supply
	2A	5 V	O	5 V DC	Paper entry sensor, 5 V DC supply
	3A	5 V	O	5 V DC	Sub tray paper ejection sensor*, 5 V DC supply

* For multi finisher only.

Connector	Pin No.	Signal	I/O	Voltage	Description
CN7	4A	5 V	O	5 V DC	Intermediate tray paper conveying sensor, 5 V DC supply
	5A	5 V	O	5 V DC	Paper ejection sensor, 5 V DC supply
	6A	5 V	O	5 V DC	Paper holder detection sensor, 5 V DC supply
	7A	N.C	—	—	No connection
	8A	5 V	O	5 V DC	Main tray upper limit detection sensor, 5 V DC supply
	9A	5 V	O	5 V DC	Main tray lower limit detection sensor, 5 V DC supply
	10A	5 V	O	5 V DC	Main tray load 1500 detection sensor*1, 5 V DC supply
	11A	5 V	O	5 V DC	Main tray load 2000*2/3000*1 detection sensors, 5 V DC supply
	12A	5 V	O	5 V DC	Main tray paper upper surface detection light emitting sensor, 5 V DC supply
	13A	SG	—	—	Ground
	14A	SG	—	—	Ground
	15A	SG	—	—	Ground
	16A	SG	—	—	Ground
	17A	SG	—	—	Ground
	18A	N.C	—	—	No connection
	19A	SG	—	—	Ground
	20A	SG	—	—	Ground
	1B	N.C	—	—	No connection
	2B	SG	—	—	Ground
	3B	SG	—	—	Ground
	4B	SG	—	—	Ground
	5B	PCM CLOCK	O	0/5 V DC (pulse)	Paper conveying motor, CLOCK signal
	6B	PCM LOCK	O	0/5 V DC	Paper conveying motor, LOCK signal
	7B	PCM REM	O	0/5 V DC	Paper conveying motor, drive control
	8B	SG	—	—	Ground
	9B	5 V	I	5 V DC	Main tray paper upper surface detection light intercepting sensor, 5 V DC supply
	10B	MTPUSDLIS	I	0/5 V DC	Main tray paper upper surface detection light intercepting sensor, detection
	11B	MTLDS-20/30	I	0/5 V DC	Main tray load 2000*2/3000*1 detection sensors, detection, L: ON
	12B	MTLDS-15	I	0/5 V DC	Main tray load 1500 detection sensor*1, detection, L: ON
	13B	MTLLDS	I	0/5 V DC	Main tray lower limit detection sensor, detection, L: ON
	14B	MTULDS	I	0/5 V DC	Main tray upper limit detection sensor, detection, L: ON
	15B	N.C	—	—	No connection
	16B	PHDS	I	0/5 V DC	Paper holder detection sensor, detection, L: ON
	17B	PEJS	I	0/5 V DC	Paper ejection sensor, detection, L: ON
	18B	ITPCS	I	0/5 V DC	Intermediate tray paper conveying sensor, detection, L: ON
	19B	STPES	I	0/5 V DC	Sub tray paper ejection sensor*1, detection, L: ON
	20B	PES	I	0/5 V DC	Paper entry sensor, detection, L: ON
CN8	1A	24 V	O	24 V DC	Paper conveying motor, 24 V DC supply
	2A	PG	—	—	Ground
	3A	24 V	O	24 V DC	Paper entry guide solenoid*1, 24 V DC supply
	4A	24 V	O	24 V DC	Movable guide solenoid, 24 V DC supply

*1 For multi finisher only. *2 For simple finisher only.

Connector	Pin No.	Signal	I/O	Voltage	Description
CN8	5A	24 V	O	24 V DC	Paper conveying clutch*1, 24 V DC supply
	6A	24 V	O	24 V DC	Siding drum clutch*1, 24 V DC supply
	7A	24 V	O	24 V DC	Eject guide solenoid, 24 V DC supply
	8A	24 V	O	24 V DC	Paper holder solenoid, 24 V DC supply
	9A	N.C	—	—	No connection
	10A	24 V	O	24 V DC	Feedshift solenoid A*1, 24 V DC supply
	11A	24 V	O	24 V DC	Feedshift solenoid B, 24 V DC supply
	12A	24 V	O	24 V DC	Feedshift solenoid C*1, 24 V DC supply
	13A	FSSOLB RET	O	0/24 V DC	Feedshift solenoid B, drive (release)
	14A	FSSOLC RET	O	0/24 V DC	Feedshift solenoid C*1, drive (release)
	15A	MTEM F	O	0/24 V DC	Main tray elevation motor, drive
	1B	MTEM R	O	0/24 V DC	Main tray elevation motor, drive
	2B	N.C	—	—	No connection
	3B	FSSOLC ACT	O	0/24 V DC	Feedshift solenoid C*1, drive (latch-on)
	4B	FSSOLB ACT	O	0/24 V DC	Feedshift solenoid B, drive (latch-on)
	5B	FSSOLA RET	O	0/24 V DC	Feedshift solenoid A*1, drive (release)
	6B	FSSOLA ACT	O	0/24 V DC	Feedshift solenoid A*1, drive (latch-on)
	7B	PHSOL RET	O	0/24 V DC	Paper holder solenoid, drive (release)
	8B	PHSOL ACT	O	0/24 V DC	Paper holder solenoid, drive (latch-on)
	9B	EGSOL	O	0/24 V DC	Eject guide solenoid, drive
	10B	SDCL	O	0/24 V DC	Siding drum clutch*1, drive
	11B	PCCL	O	0/24 V DC	Paper conveying clutch*1, drive
	12B	MGSOL	O	0/24 V DC	Movable guide solenoid, drive
	13B	PEGSOL	O	0/24 V DC	Paper entry guide solenoid*1, drive
	14B	PG	—	—	Ground
	15B	24 V	O	24 V DC	Paper conveying motor, 24 V DC supply
CN9	1	24 V	O	24 V DC	Centerfold unit*2, 24 V DC supply
	2	24 V	O	24 V DC	Centerfold unit*2, 24 V DC supply
	3	PG	—	—	Ground
	4	PG	—	—	Ground
	5	5 V	O	5 V DC	Centerfold unit*2, 5 V DC supply
	6	SG	—	—	Ground
	7	TXD	O	0/5 V DC (pulse)	Centerfold unit*2, communication control
	8	SG	—	—	Ground
	9	RXD	I	0/5 V DC (pulse)	Centerfold unit*2, communication control
	10	SG	—	—	Ground
	11	RESET	O	0/5 V DC	Centerfold unit*2, RESET signal
	12	SET	I	0/5 V DC	Centerfold unit*2, SET signal
CN12	1	24 V	O	24 V DC	Punch motor*2, 24 V DC supply
	2	24 V	O	24 V DC	Punch motor*2, 24 V DC supply
	3	PG	—	—	Ground
	4	PG	—	—	Ground
	5	5 V	O	5 V DC	Punch motor*2, 5 V DC supply
	6	SG	—	—	Ground
	7	PUNM REM	O	0/5 V DC	Punch motor*2, drive control
	8	PUNM CLK	O	0/5 V DC (pulse)	Punch motor*2, drive control
	9	PUNM LOCK	O	0/5 V DC	Punch motor*2, drive control
	10	N.C	—	—	No connection
	11	PUNSOL RET	O	0/24 V DC	Punch solenoid*2, drive (release)
	12	PUNSOL ACT	O	0/24 V DC	Punch solenoid*2, drive (latch-on)
	13	24 V	O	24 V DC	Punch solenoid*2, 24 V DC supply
	14	24 V	O	24 V DC	Punch clutch*2, 24 V DC supply
	15	PUNCL	O	0/24 V DC	Punch clutch*2, drive

*1 For multi finisher only. *2 Option for multi finisher.

Connector	Pin No.	Signal	I/O	Voltage	Description
CN13	1	5 V	O	5 V DC	Punch waste box sensor*1, 5 V DC supply
	2	PWBS	I	0/5 V DC	Punch waste box sensor*1, detection, L: ON
	3	SG	—	—	Ground
	4	PN SET	I	0/5 V DC	Punch unit*1, connection detection
	5	SG	—	—	Ground
	6	N.C	—	—	No connection
CN14	1	5 V	O	5 V DC	Centerfold unit set switch, 5 V DC supply
	2	CUSSW	I	0/5 V DC	Centerfold unit set switch, detection, L: ON
	3	SG	—	—	Ground
	4	5 V	O	5 V DC	Multi job tray front switch*2, 5 V DC supply
	5	MJTSW-F	I	0/5 V DC	Multi job tray front switch*2, detection, L: ON
	6	SG	—	—	Ground
	7	5 V	O	5 V DC	Multi job tray rear switch*2, 5 V DC supply
	8	MJTSW-R	I	0/5 V DC	Multi job tray rear switch*2, detection, L: ON
	9	SG	—	—	Ground

*1 Option for multi finisher. *2 Optional.

2-3-2 Centerfold unit main PCB

Figure 2-3-3 Block diagram of the centerfold unit main PCB

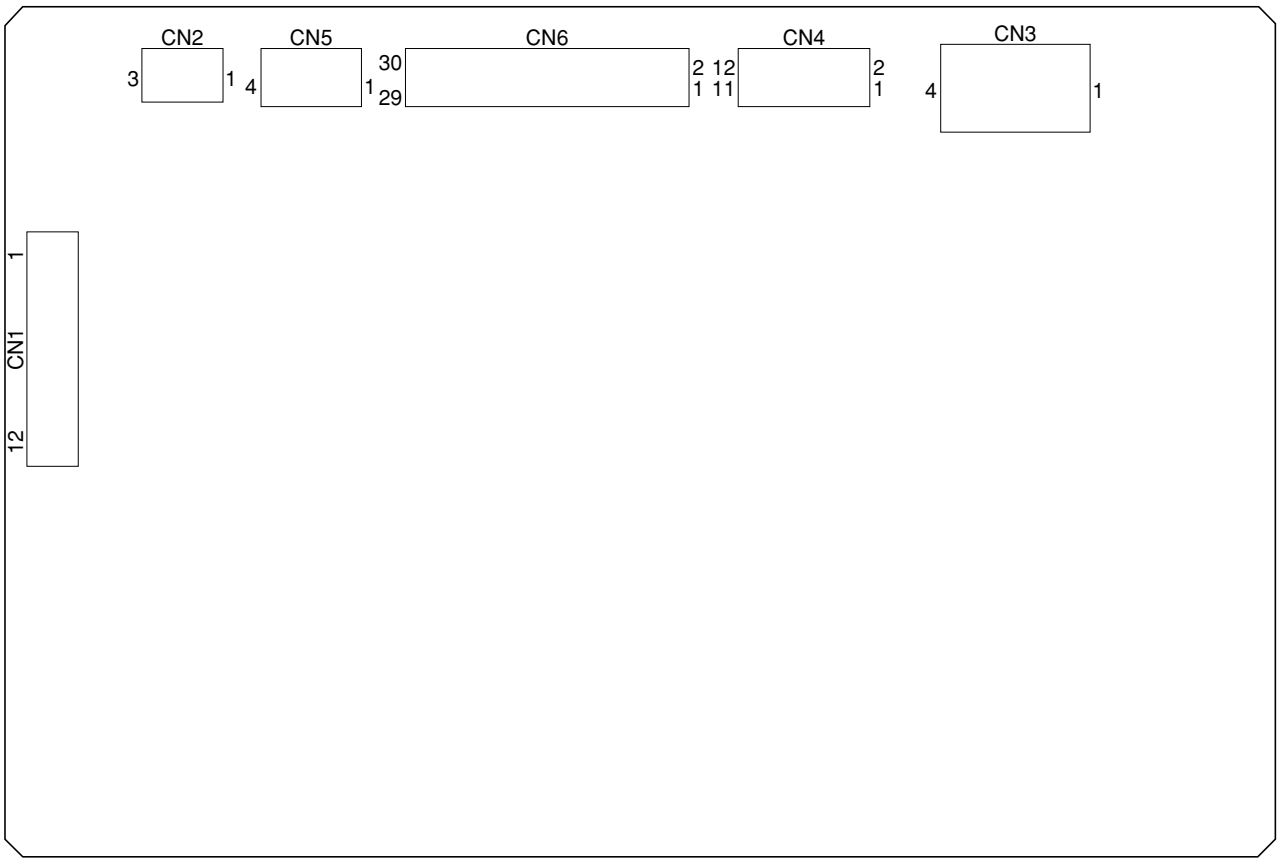


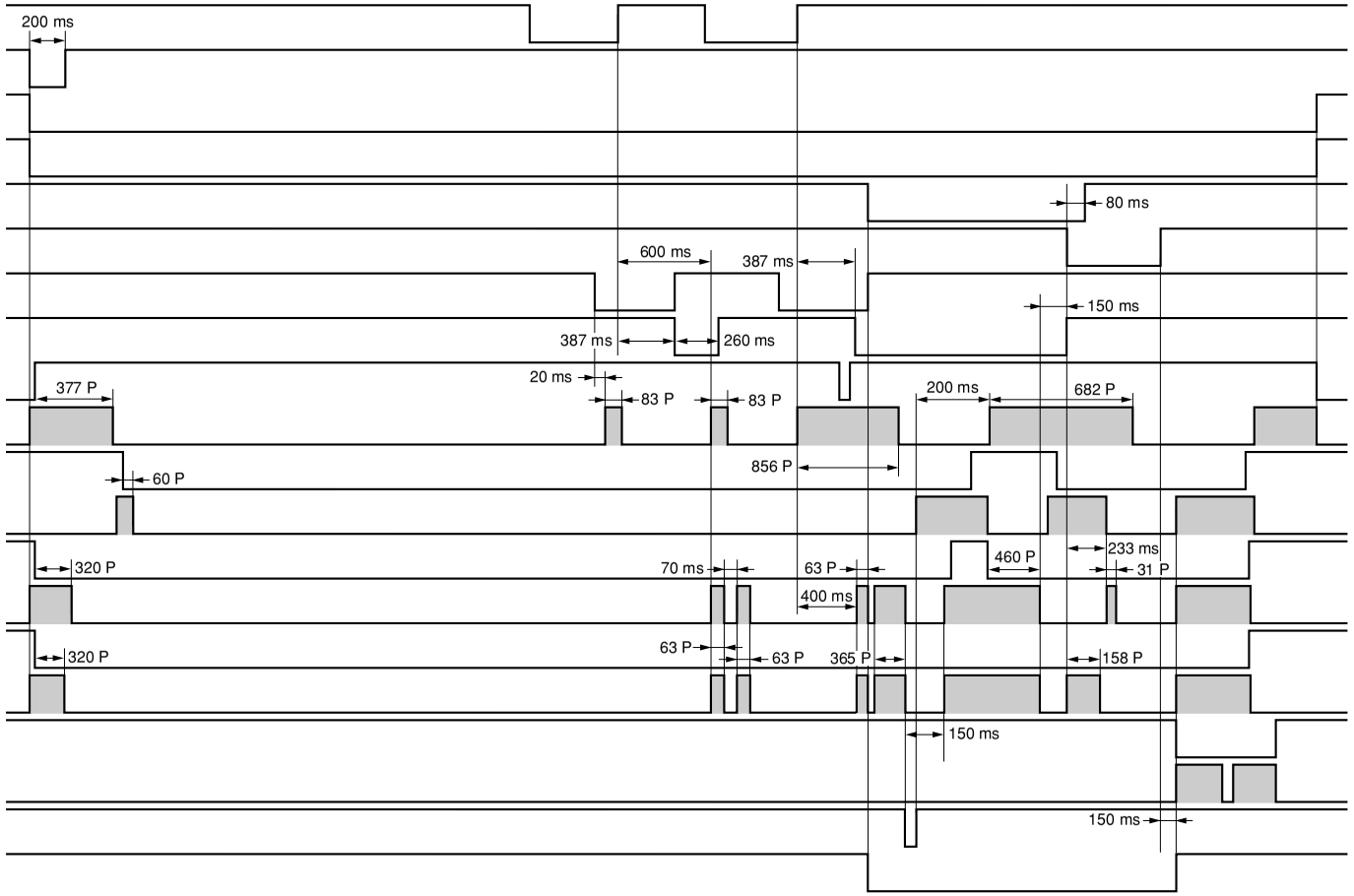
Figure 2-3-4 Centerfold unit main PCB silkscreen image

Connector	Pin No.	Signal	I/O	Voltage	Description
CN1	1	24 V	I	24 V DC	24 V DC
	2	24 V	I	24 V DC	24 V DC
	3	PG	—	—	Ground
	4	PG	—	—	Ground
	5	SG	—	—	Ground
	6	5 V	I	5 V DC	5 V DC
	7	TXD	O	0/5 V DC (pulse)	Finisher, communication control
	8	SG	—	—	Ground
	9	RXD	I	0/5 V DC (pulse)	Finisher, communication control
	10	SG	—	—	Ground
	11	RESET	I	0/5 V DC	RESET signal from finisher
	12	DET	O	0/5 V DC	DET signal to finisher
CN2	1	24 V	O	24 V DC	Eject tray detection switch, 24 V DC supply
	2	N.C	—	—	No connection
	3	ETPSW	I	0/24 V DC	Eject tray detection switch, detection, H: ON
CN3	1	MM F	O	0/24 V DC	Main motor, drive
	2	MM R	O	0/24 V DC	Main motor, drive
	3	CBLM F	O	0/24 V DC	Centerfold blade motor, drive
	4	CBLM R	O	0/24 V DC	Centerfold blade motor, drive
CN4	1	SRGM A	O	0/24 V DC (pulse)	Side-registration guide motor, drive control
	2	SRGM A_	O	0/24 V DC (pulse)	Side-registration guide motor, drive control
	3	SRGM B	O	0/24 V DC (pulse)	Side-registration guide motor, drive control
	4	SRGM B_	O	0/24 V DC (pulse)	Side-registration guide motor, drive control
	5	24 V	O	24 V DC	Side-registration guide motor, 24 V DC supply
	6	24 V	O	24 V DC	Side-registration guide motor, 24 V DC supply
	7	CPM A	O	0/24 V DC (pulse)	Centering plate motor, drive control
	8	CPM A_	O	0/24 V DC (pulse)	Centering plate motor, drive control
	9	CPM B	O	0/24 V DC (pulse)	Centering plate motor, drive control
	10	CPM B_	O	0/24 V DC (pulse)	Centering plate motor, drive control
	11	24 V	O	24 V DC	Centering plate motor, 24 V DC supply
	12	24 V	O	24 V DC	Centering plate motor, 24 V DC supply
CN5	1	5 V	O	5 V DC	Motor pulse sensor, 5 V DC supply
	2	MPS	I	0/5 V DC (pulse)	Motor pulse sensor, detection, L: ON
	3	N.C	—	—	No connection
	4	SG	—	—	Ground
CN6	1	5 V	O	5 V DC	Side-registration guide home position sensor, 5 V DC supply
	2	5 V	O	5 V DC	Centering plate home position sensor, 5 V DC supply
	3	5 V	O	5 V DC	Centerfold blade home position sensor, 5 V DC supply
	4	5 V	O	5 V DC	Folded edge detection sensor, 5 V DC supply
	5	5 V	O	5 V DC	Paper entry sensor, 5 V DC supply
	6	5 V	O	5 V DC	Inside tray detection sensor, 5 V DC supply
	7	5 V	O	5 V DC	Eject switch, 5 V DC supply
	8	5 V	O	5 V DC	Eject tray paper detection switch, 5 V DC supply
	9	SG	—	—	Ground
	10	SG	—	—	Ground
	11	SG	—	—	Ground
	12	SG	—	—	Ground

Connector	Pin No.	Signal	I/O	Voltage	Description
CN6	13	SG	—	—	Ground
	14	SG	—	—	Ground
	15	SG	—	—	Ground
	16	SG	—	—	Ground
	17	SPGHPS	I	0/5 V DC	Side-registration guide home position sensor, detection, L: ON
	18	CPHPS	I	0/5 V DC	Centering plate home position sensor, detection, L: ON
	19	CBLHPS	I	0/5 V DC	Centerfold blade home position sensor, detection, L: ON
	20	FEPS	I	0/5 V DC	Folded edge detection sensor, detection, L: ON
	21	CUPES	I	0/5 V DC	Paper entry sensor, detection, L: ON
	22	ITDS	I	0/5 V DC	Inside tray detection sensor, detection, L: ON
	23	ESW	I	0/5 V DC	Eject switch, detection, L: ON
	24	ETPDSW	I	0/5 V DC	Eject tray paper detection switch, detection, L: ON
	27	24 V	O	24 V DC	Pressure release solenoid, 24 V DC supply
	28	PRSOL ACT	O	0/24 V DC	Pressure release solenoid, drive (latch-on)
	29	PRSOL RET	O	0/24 V DC	Pressure release solenoid, drive (release)

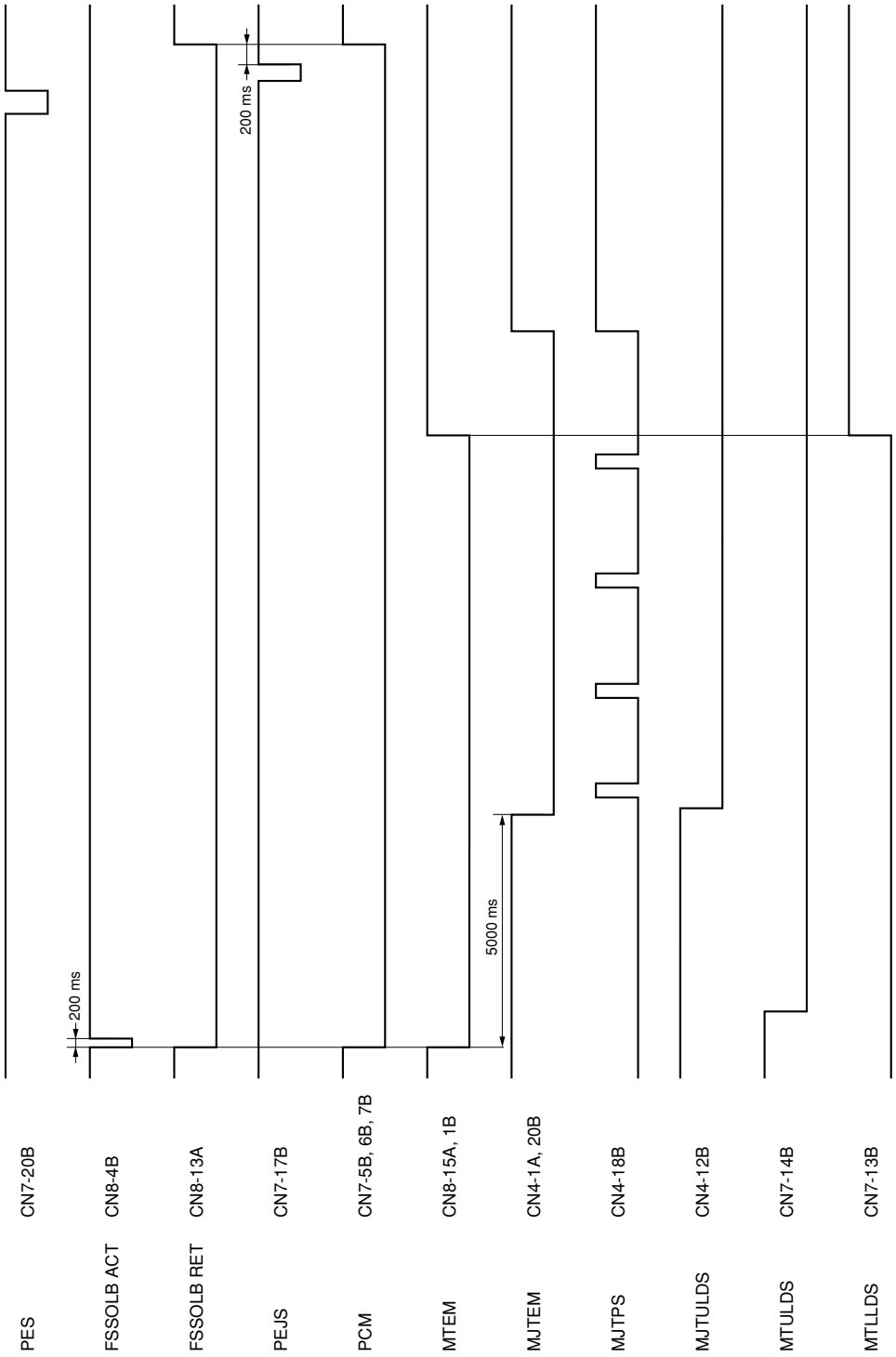
Timing chart No.1 Copying onto two sheets of A4/11" × 8 1/2" copy paper, stapling at one point at the back, ejecting to the main tray

PES	CN7-20B
FSSOLA ACT*	CN8-6B
FSSOLA RET*	CN8-5B
PCM	CN7-7B, 5B, 6B
EGSOL	CN8-9B
PEJS	CN7-17B
ITPCS	CN7-18B
MGSOL	CN8-12B
PCBHPS-U	CN6-25B
PCBM-U	CN5-1A, 3A, 28B, 30B
PCBHPS-L	CN6-24A
PCBM-L	CN5-4A, 6A, 25B, 27B
SRGHPS-RU	CN6-21B
SRGM-RU	CN5-10A, 12A, 19B, 21B
SRGHPS-FU	CN6-22B
SRGM-FU	CN5-7A, 9A, 22B, 24B
SRGHPS-L	CN6-20B
SRGM-L	CN5-13A, 15A, 16B, 18B
STM-R	CN5-21A, 22A, 23A, 9B, 10B, 11B
PFPSOL	CN5-15B

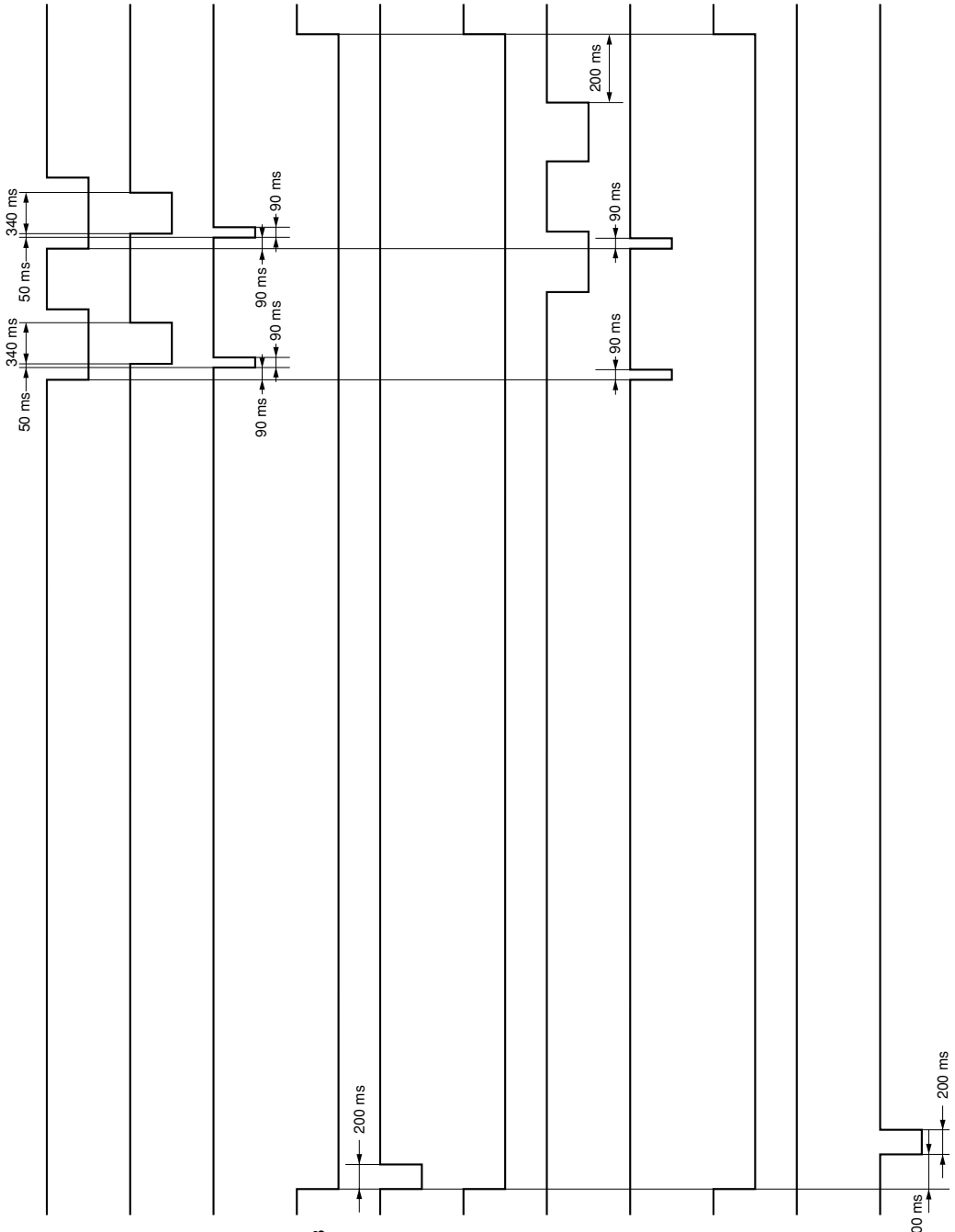


* For multi finisher only.

Timing chart No.2 Copying onto a sheet of A4/11" × 8 1/2" copy paper, ejecting to job tray No.1



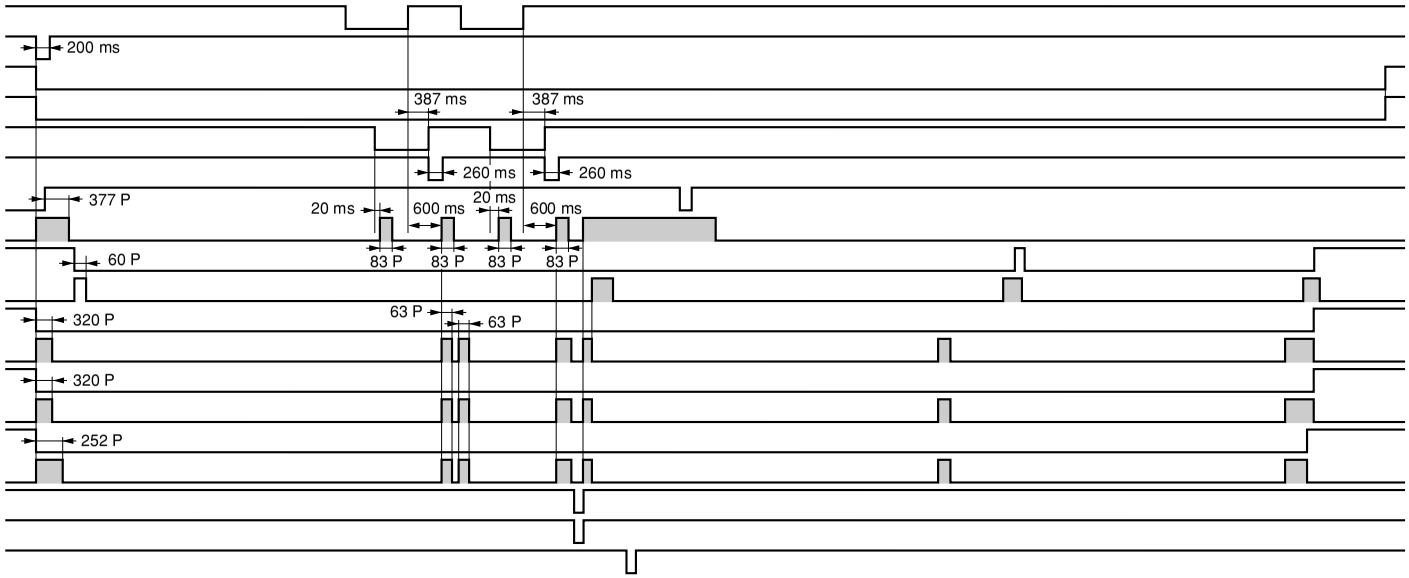
Timing chart No.3 Copying onto two sheets of A4/11" × 8$^{1}/_{2}$" copy paper in the punch mode, ejecting to the main tray



Timing chart No.4 Copying onto two sheets of A3/11" × 17" copy paper, stapling at the center in the centerfold mode

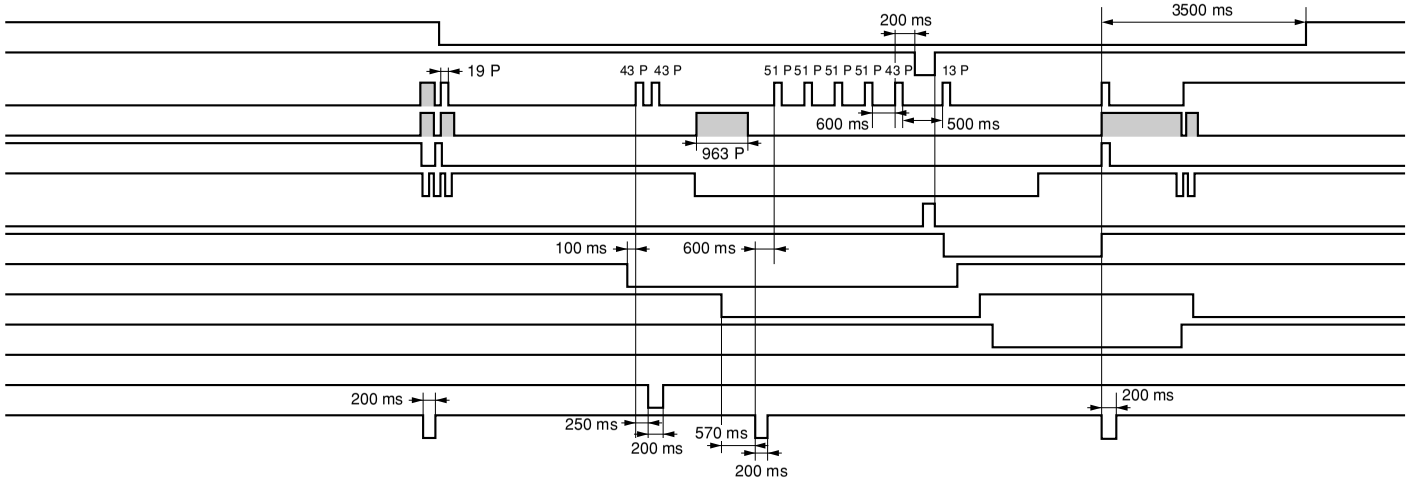
Finisher

PES	CN7-20B
FSSOLA ACT	CN8-6B
FSSOLA RET	CN8-5B
PCM	CN7-7B, 5B, 6B
ITPCS	CN7-18B
MGSOL	CN8-12B
PCBHPS-U	CN6-25B
PCBM-U	CN5-1A, 3A, 28B, 30B
PCBHPS-L	CN6-24A
PCBM-L	CN5-4A, 6A, 25B, 27B
SRGHPS-RU	CN6-21B
SRGM-RU	CN5-10A, 12A, 19B, 21B
SRGHPS-FU	CN6-22B
SRGM-FU	CN5-7A, 9A, 22B, 24B
SRGHPS-L	CN6-20B
SRGM-L	CN5-13A,15A, 16B, 18B
STM-R	CN5-21A, 22A, 23A, 9B, 10B, 11B
STM-F	CN5-18A, 19A, 20A, 12B, 13B, 14B
PFPSOL	CN5-15B



Centerfold unit

MM	CN3-1, 2
CBLM	CN3-3, 4
SRGM	CN4-1, 2, 3, 4
CPM	CN4-7, 8, 9, 10
SRGPS	CN6-17
CPHPS	CN6-18
CBLHPS	CN6-19
FEDS	CN6-20
CUPES	CN6-21
ITDS	CN6-22
ESW	CN6-23
PRSOL RET	CN6-27
PRSOL ACT	CN6-28



Periodic maintenance procedure

Finisher

Processing area	Maintenance part(s) and location	Contents	Maintenance cycle	Essential points and notes	Page
Exterior	Overall exterior cover	Cleaning	Every time	Wipe with dry cloth or cloth moistened with alcohol.	

Processing area	Maintenance part(s) and location	Contents	Maintenance cycle	Essential points and notes	Page
Paper feed and conveying section	Siding drum	Cleaning	Every time	Wipe with dry cloth or cloth moistened with alcohol.	
	Intermediate tray paper entry roller	Cleaning	Every time	Wipe with dry cloth or cloth moistened with alcohol.	
	Paper entry roller	Cleaning	Every time	Wipe with dry cloth or cloth moistened with alcohol.	
	Sub tray eject roller*	Cleaning	Every time	Wipe with dry cloth or cloth moistened with alcohol.	
	Eject roller	Cleaning	Every time	Wipe with dry cloth or cloth moistened with alcohol.	
	Sub tray eject static eliminator	Check	Every time	If paper powder or dust adheres to tip of brush, remove it.	

Processing area	Maintenance part(s) and location	Contents	Maintenance cycle	Essential points and notes	Page
Driving section	Gear 18	Greasing	Every time	Apply G501 to teeth.	
	Gear 50	Greasing	Every time	Apply G501 to teeth.	
	Gear 51	Greasing	Every time	Apply G501 to teeth.	
	Worm gear	Greasing	Every time	Apply G501 to teeth.	

Processing area	Maintenance part(s) and location	Contents	Maintenance cycle	Essential points and notes	Page
Intermediate tray section	Forwarding roller sheet	Cleaning	Every time	Wipe with dry cloth or cloth moistened with alcohol.	
	Paper forwarding pulley*	Check and cleaning	Every time	If soiled with paper powder or toner, clean. Wipe with dry cloth or cloth moistened with alcohol.	

* For multi finisher only.

Processing area	Maintenance part(s) and location	Contents	Maintenance cycle	Essential points and notes	Page
Sensors	Main tray paper upper surface detection light emitting sensor	Cleaning	Every time	Air brush	
	Main tray paper upper surface detection light intercepting sensor	Cleaning	Every time	Air brush	
	Multi job tray paper upper surface detection light emitting sensor	Cleaning	Every time	Air brush	
	Multi job tray paper upper surface detection light intercepting sensor	Cleaning	Every time	Air brush	
	Paper entry sensor	Cleaning	Every time	Air brush	
	Upper paper conveying belt home position sensor	Cleaning	Every time	Air brush	
	Upper paper sensor	Cleaning	Every time	Air brush	
	Lower paper sensor	Cleaning	Every time	Air brush	
	Intermediate tray paper conveying sensor	Cleaning	Every time	Air brush	
	Paper ejection sensor	Cleaning	Every time	Air brush	
	Sub tray paper ejection sensor*	Cleaning	Every time	Air brush	

* For multi finisher only.

Multi job tray

Processing area	Maintenance part(s) and location	Contents	Maintenance cycle	Essential points and notes	Page
Exterior	Job tray	Cleaning	Every time	Wipe with dry cloth or cloth moistened with alcohol.	
	Job tray lid	Cleaning	Every time	Wipe with dry cloth or cloth moistened with alcohol.	
	Others	Cleaning	Every time	Wipe with dry cloth or cloth moistened with alcohol.	

Processing area	Maintenance part(s) and location	Contents	Maintenance cycle	Essential points and notes	Page
Driving section	Gear 18	Greasing	Every time	Apply G501 to teeth.	
	Gear 50	Greasing	Every time	Apply G501 to teeth.	
	Gear 51	Greasing	Every time	Apply G501 to teeth.	
	Worm gear	Greasing	Every time	Apply G501 to teeth.	

Centerfold unit

Processing area	Maintenance part(s) and location	Contents	Maintenance cycle	Essential points and notes	Page
Exterior	Storage cover	Cleaning	Every time	Wipe with dry cloth or cloth moistened with alcohol.	
	Ejected paper holding arm	Cleaning	Every time	Wipe with dry cloth or cloth moistened with alcohol.	
	Right cover	Cleaning	Every time	Wipe with dry cloth or cloth moistened with alcohol.	
	Left cover	Cleaning	Every time	Wipe with dry cloth or cloth moistened with alcohol.	

Processing area	Maintenance part(s) and location	Contents	Maintenance cycle	Essential points and notes	Page
Paper feed and conveying section	Paper entry roller	Cleaning	Every time	Wipe with dry cloth or cloth moistened with alcohol.	
	Eject roller	Cleaning	Every time	Wipe with dry cloth or cloth moistened with alcohol.	
	Paper ejecting brush	Cleaning	Every time	Wipe with dry cloth or cloth moistened with alcohol.	
	Paper entry pulley	Cleaning	Every time	Wipe with dry cloth or cloth moistened with alcohol.	
	Eject pulley	Cleaning	Every time	Wipe with dry cloth or cloth moistened with alcohol.	

Processing area	Maintenance part(s) and location	Contents	Maintenance cycle	Essential points and notes	Page
Centerfold section	Left centerfold roller	Cleaning	Every time	Wipe with dry cloth or cloth moistened with alcohol.	
	Right centerfold roller	Cleaning	Every time	Wipe with dry cloth or cloth moistened with alcohol.	
	Centerfold blade	Check and replace	Every time	Wipe with dry cloth or cloth moistened with alcohol. If deformed or bent, replace.	1-5-3

Processing area	Maintenance part(s) and location	Contents	Maintenance cycle	Essential points and notes	Page
Sensors	Eject tray paper detection switch	Cleaning	Every time	Air brush	
	Folded edge detection sensor	Cleaning	Every time	Air brush	
	Inside tray detection sensor	Cleaning	Every time	Air brush	
	Centerfold unit paper entry sensor	Cleaning	Every time	Air brush	
	Centering plate home position sensor	Cleaning	Every time	Air brush	
	Eject switch	Check and cleaning	Every time	Check if actuator operates smoothly. Air brush	
	Eject tray detection switch	Cleaning	Every time	Air brush	
	Side-registration guide home position sensor	Cleaning	Every time	Air brush	
	Centerfold blade home position sensor	Cleaning	Every time	Air brush	

List of maintenance parts

Finisher

Part names		Part number	Fig. No.	Ref. No.
Name used in the service manual	Name used in the parts list			
Siding drum	GUIDE A, DRUM	3B816120	3	8
Intermediate tray paper entry roller	ROLLER, MIDDLE TRAY FEED IN	3B816150	4	8
Paper entry roller	LOWER ROLLER, FEED IN	3B816180	4	10
Sub tray eject roller*	ROLLER, SUB EJECT	3B816510	5	10
Eject roller	ROLLER, EJECT	3B821040	5	16
Sub tray eject static eliminator	STATIC ELIMINATOR, SUB EJECT	3B816920	3	36
			4	59
			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 12, SEPARATION	3B827040	2	33
Main tray paper upper surface detection light intercepting sensor	SENSOR 12, SEPARATION	3B827040	2	33
Multi job tray paper upper surface detection light emitting sensor	SENSOR 22, SEPARATION	3B827050	2	34
Multi job tray paper upper surface detection light intercepting sensor	SENSOR 22, SEPARATION	3B827050	2	34
Paper entry sensor	SWITCH, FEED	63227020	4	48
Upper paper conveying belt home position sensor	SWITCH, FEED	63227020	6	7
Upper paper sensor	SWITCH, FEED	63227020	6	7
Lower paper sensor	SWITCH, FEED	63227020	6	7
Intermediate tray paper conveying sensor	PAPER SWITCH	66006360	5	62
Paper ejection sensor	PAPER SWITCH	66006360	5	62
Sub tray paper ejection sensor*	PAPER SWITCH	66006360	5	62

* For multi finisher only.

Multi job tray

Part names		Part number	Fig. No.	Ref. No.
Name used in the service manual	Name used in the parts list			
Job tray	BIN, EJECT	3CB04010	2	4
Job tray lid	LID, BIN EJECT	3CB04020	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

Part names		Part number	Fig. No.	Ref. No.
Name used in the service manual	Name used in the parts list			
Storage cover	TRAY, EJECT	3CA04010	5	3
Ejected paper holding arm	ARM, PAPER EJECT HOLDER	3CA04020	3	1
Right cover	LEFT FRONT COVER	3CA04030	5	4
Left cover	LEFT REAR COVER	3CA04040	5	5
Paper entry roller	ROLLER, FEED IN	3CA16080	2	29
Eject roller	ROLLER, EJECT	3CA16090	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	3CA08010	2	13
Right centerfold roller	ROLLER, PRESSURE	3CA08020	2	14
Centerfold blade	BLADE, MIDDLE PRESSING	3CA08030	2	15
Eject tray paper detection switch	PAPER SWITCH	66006360	1	19
Folded edge detection sensor	JAM DETECTION SWITCH	78727110	3	27
Inside tray detection sensor	JAM DETECTION SWITCH	78727110	2	50
Centerfold unit paper entry sensor	JAM DETECTION SWITCH	78727110	2	50
Centering plate home position sensor	PAPER SWITCH	66006360	2	44
Eject switch	SWITCH, DUPLEX PAPER	71807711	3	25
Eject tray detection switch	SWITCH, FEED	35327400	1	23
Side-registration guide home position sensor	SWITCH, FEED	35327400	2	41
Centerfold blade home position sensor	SWITCH, FEED	35327400	4	42

Optional devices supplied parts list

Multi job tray

Name used in the service manual	Name used in installation guide	Part No.
Bin front guide plate	Bin front guide plate	3CB02090
Bin rear guide plate	Bin rear guide plate	3CB02100
Bin guide plate retainer	Bin guide plate retainer	3CB02180
Job tray	Eject bin	3CB04010
Right cover	Right cover	3CB04030
Left cover	Left cover	3CB04040
Tray detection plate A	Detection plate tray A	3CB02210
Motor front cover	Motor front cover	3CB04050
Job tray switches	Size detection switch	3CB02190
BVM4 × 6 binding screw	BVM4 × 6 binding screw	B1304060
M4 × 8 TP screw	M4 × 8 TP screw	B4104080
BVM3 × 5 binding screw	BVM3 × 5 binding screw	B1303050
Sheet of tray No. labels	Sheet of bin No. labels	3CB05020
Sheet of name labels	Sheet of name labels	3CB05030

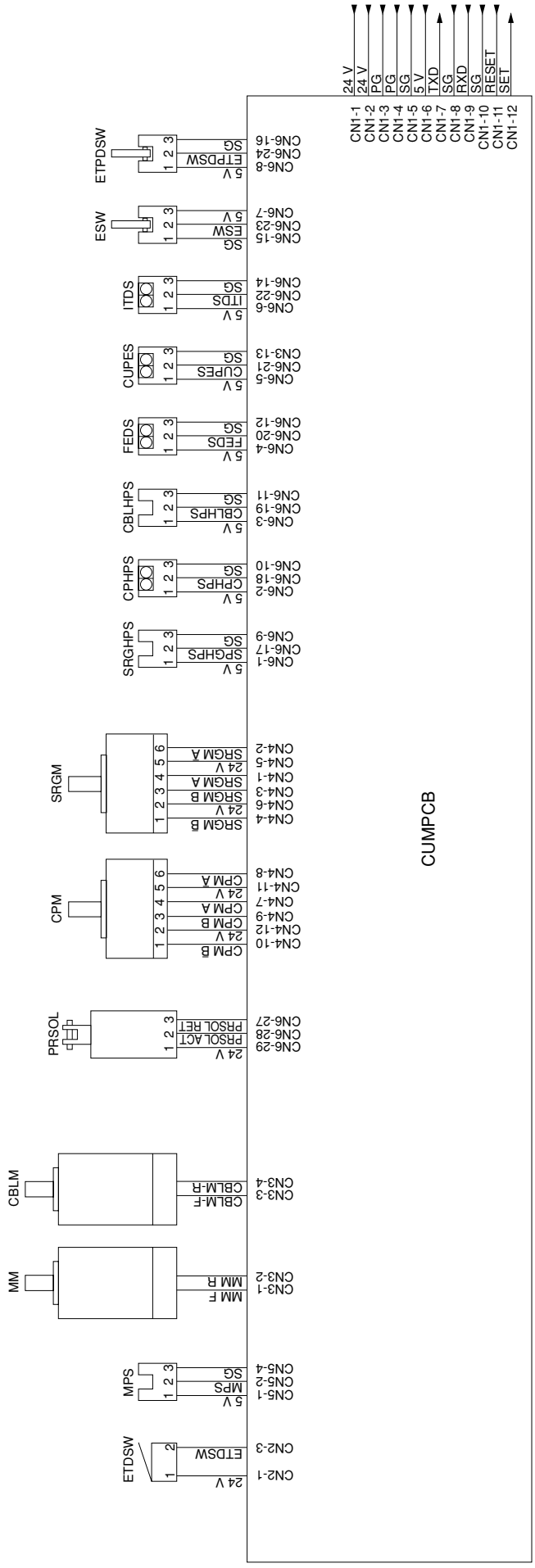
Centerfold unit

Name used in the service manual	Name used in installation guide	Part No.
Release pole assembly	Release pole assembly	3CA02100
Release stopper pole assembly	Release stopper pole assembly	3CA02200
Storage cover	Eject tray	3CA04010
Right cover	Right cover	3CA04030
Left cover	Left cover	3CA04040
Release handle	Release handle	33420440
Slider	Slider	36508210
Release lever	Release lever	3CA02180
Release pole retainer	Release pole retainer	3CA02210
Release lever actuating plate	Release lever actuating plate	3CA02220
Backstop	Backstop	3CA02230
Detection PI douser	Douser detection PI	3CA02240
Unit transport handle	Unit transport handle	3CA02250
Unit lock hook	Unit lock hook	3CA02260
Unit lock rod	Unit lock rod	3CA02270
Tray stopper	Stopper tray	3CA02280
Eject guide upper spacer	Eject guide upper spacer	3CA04050
Unit insertion label	Unit insertion label	3CA05020
Jam correction label	Jam correction label	3CA05030
Jam correction label (Japan)	Label, jam correction B (Japan)	3CA05050
Jam correction label (export)	Label, jam correction B (export)	3CA05060
Operation label 1	Label, operation 1	3CA05070
Operation label 2	Label, operation 2	3CA05080
Operation label 3	Label, operation 3	3CA05090
Large stop ring	Large stop ring	75706040
Medium stop ring	Medium stop ring	34806480
Small stop ring	Small stop ring	34806140
Pin	Pin	29012230
Small spring	Small spring	74608110
Large spring	Large spring	27302160
BVM4 × 6 bronze binding screw	M4 × 6 bronze binding screw	B1304060
M4 × 6 TP-A bronze screw	M4 × 6 TP-A bronze screw	B4304060
M4 × 10 TP-A bronze screw	M4 × 10 TP-A bronze screw	B4304100
BVM3 × 5 bronze binding screw	M3 × 5 bronze binding screw	B1303050
M3 × 10 tapping screw	M3 × 10 tapping screw	B3303100

Punch unit

Name used in the service manual	Name used in installation guide	Part No.
Paper conveying unit	Paper conveying unit	3B860160 (metric) 3B860170 (inch)
Punch waste box	Punch waste box	3B860100
Paper conveying unit upper guide	Paper conveying unit upper guide	3B860130
M4 × 6 TP screws	M4 × 6 TP screws	B4004060

Centerfold unit wiring diagram



General wiring diagram

Wire color	Symbol
BLACK	BK
YELLOW	YW
BLUE	BE
WHITE	WE
PINK	PK
RED	RD
ORANGE	OE
GRAY	GY

Centerfold unit*2

Copier

Punch unit*2

Multi job tray*1

*1 Optional.

*2 Option for multi finisher.

*3 Multi finisher only.

*4 Simple finisher only.

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