LCIT RT5030
Machine Code: D452

Service Manual

30th January, 2009
Subject to change

TABLE OF CONTENTS

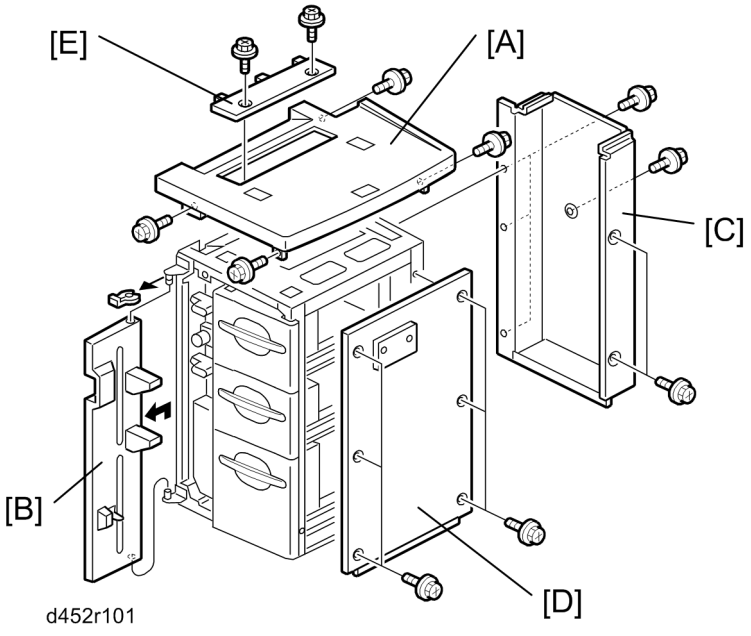
1. Replacement and Adjustment

2. Details

1. Replacement and Adjustment

Door and Covers

Front Door and Covers



[A] Top cover (x 4).

[B] Front door (x 1).

Note

- While lifting the top cover, remove the snap ring and front door.

[C] Rear cover (x 6).

[D] Right cover (x 6).

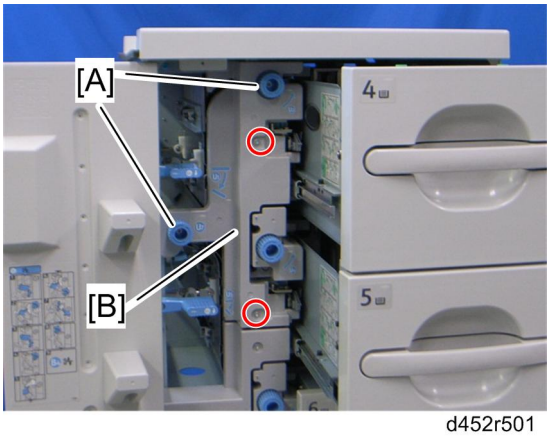
[E] Paper slot cover (x 2).

Inner Covers

Inner Upper Cover

1. Open the front door.

2. Pull out the top tray and middle tray.



d452r501

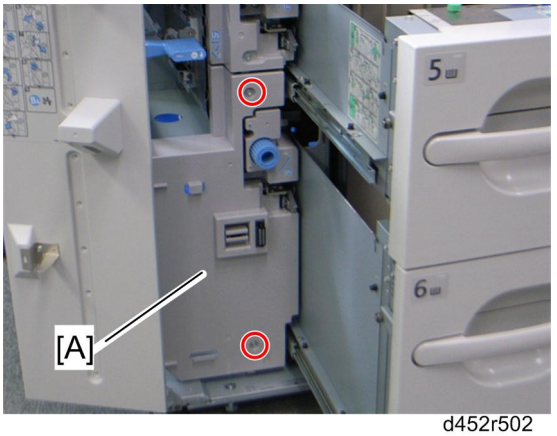
3. Remove:

[A] Knobs (x 2) (x 1 each)

[B] Inner upper cover (x 2)

Inner Lower Cover

1. Open the front door.
2. Pull out the middle tray and bottom tray.



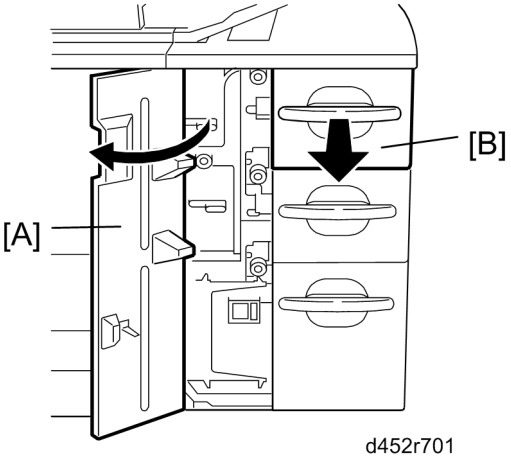
d452r502

3. Remove:

   [A] Inner lower cover (x 2)

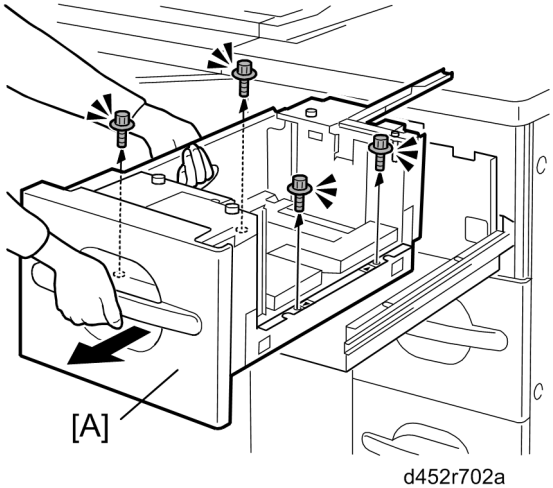
Trays

Top Tray (Tray 4)



d452r701

1. Open the front door [A].
2. Pull open the top tray [B] until it stops.

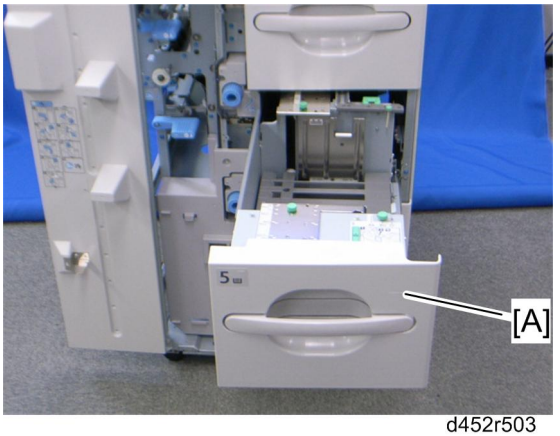


d452r702a

3. Lift the top tray [A] out of the drawer (black screw x 4).

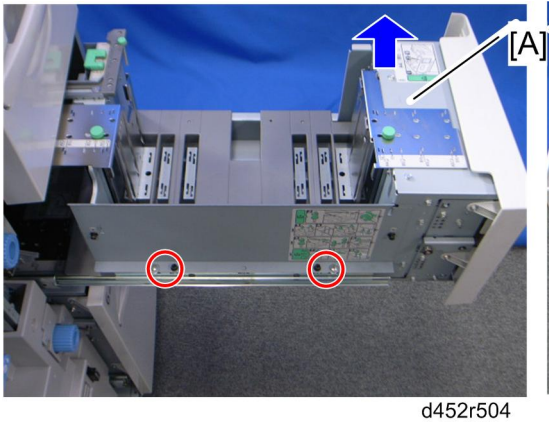
Middle Tray (Tray 5)

1. Open the front door.



d452r503

2. Pull open the middle tray [A] until it stops.



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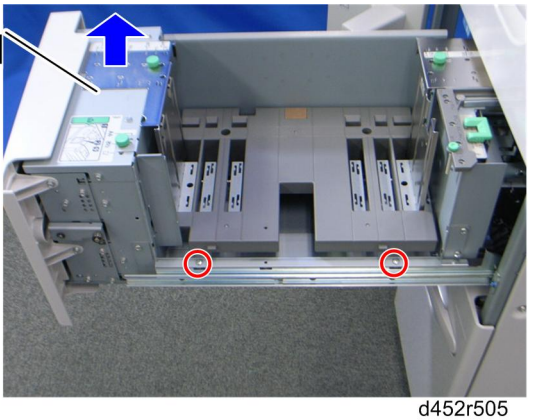
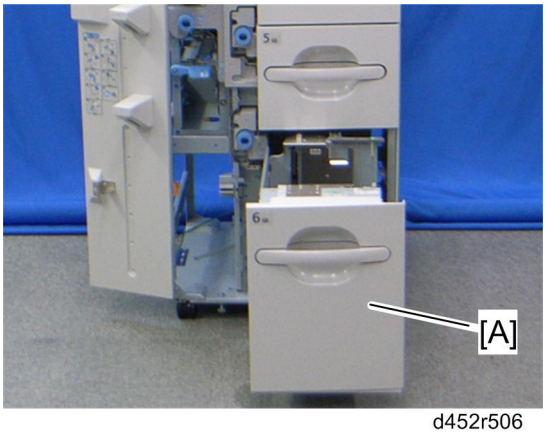


d452r505

3. Lift the middle tray [A] out of the drawer (x 4, black screw x 2).

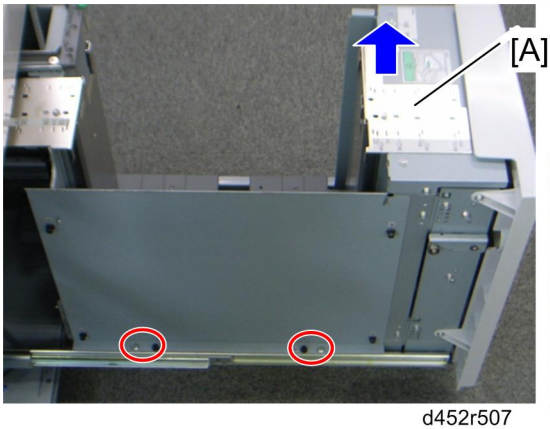
Bottom Tray (Tray 6)

1. Open the front door.



d452r506

2. Pull open the bottom tray [A] until it stops.



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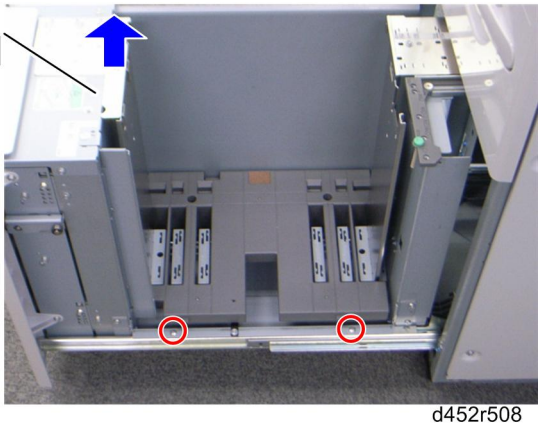


d452r508

3. Lift the bottom tray [A] out of the drawer (x 4, black screw x 2).

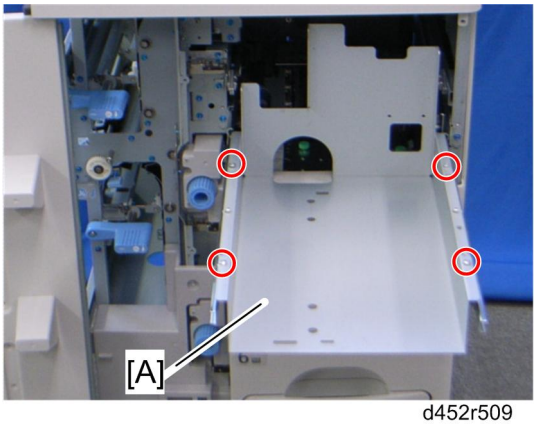
Paper Feed

1

Paper Feed Unit

For the Paper Feed Unit in the Top Tray

1. Open the front door.
2. Inner upper cover (☛ Inner Covers)
3. Rear cover (☛ Front Door and Covers)
4. Top tray (☛ Top Tray (Tray 4))



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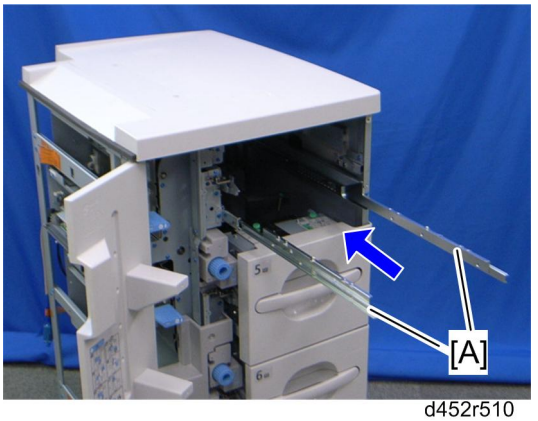
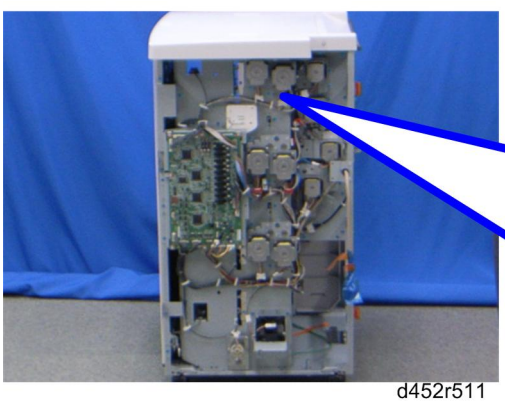
5. Cover bracket [A] (🔩 x 4)



d452r510

6. Push the slide rails [A] into the machine.



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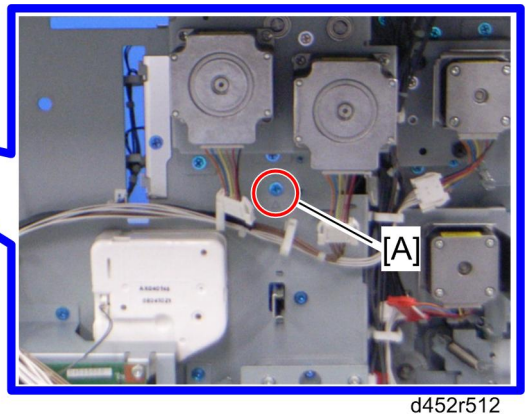
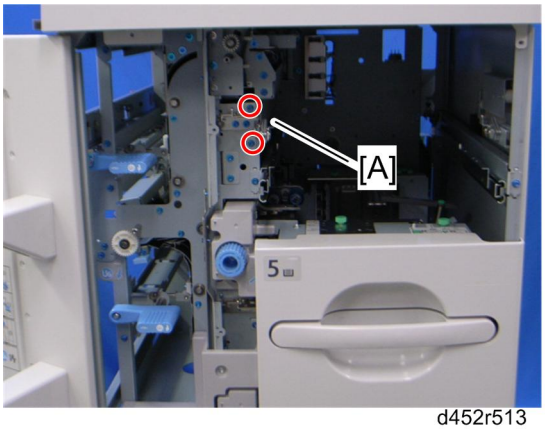


d452r512

7. Remove the screw [A] at the rear, indicated by the triangle mark.



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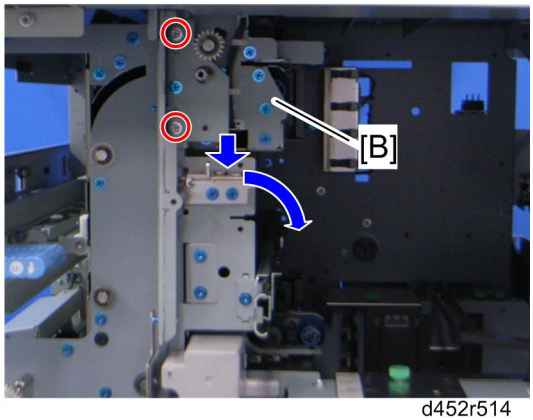
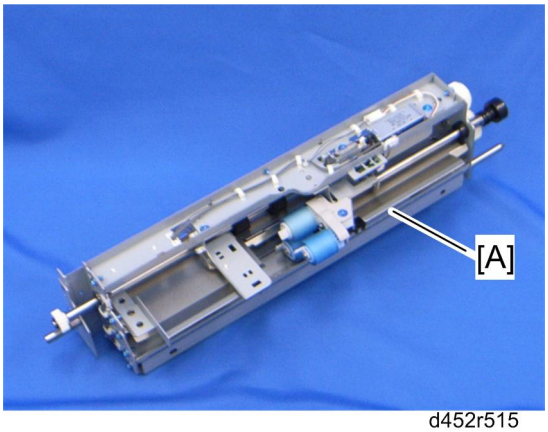


d452r514

8. Stay [A] (x 2)
9. Pull the paper feed unit [B], and then move it to the lower right side (x 2).

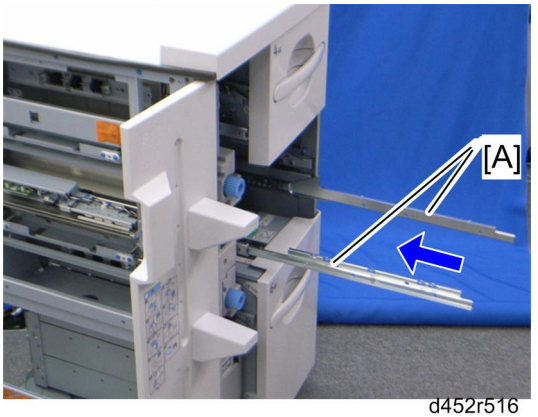


d452r515

10. Paper feed unit [A]

For the Paper Feed Unit in the Middle Tray

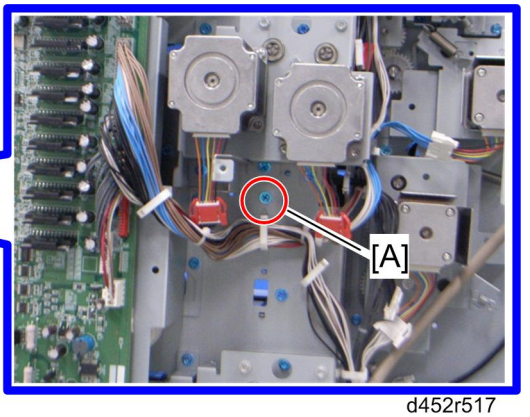
1. Open the front door.
2. Inner upper cover (☛ Inner Covers)
3. Rear cover (☛ Front Door and Covers)
4. Middle tray (☛ Middle Tray (Tray 5))



d452r516

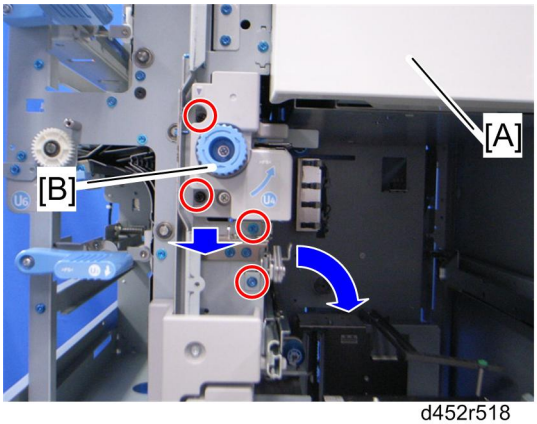
5. Push the slide rails [A] into the machine.


d452r511

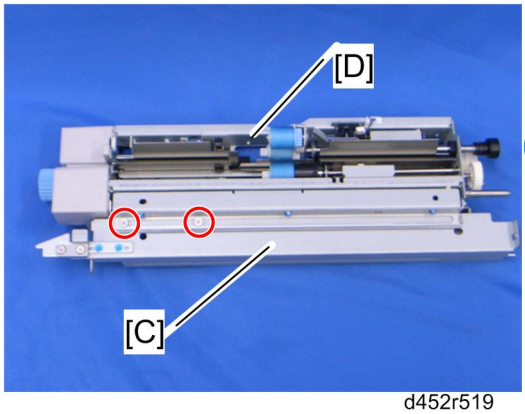


d452r517

6. Remove the screw [A] at the rear, indicated by the triangle mark.



d452r518

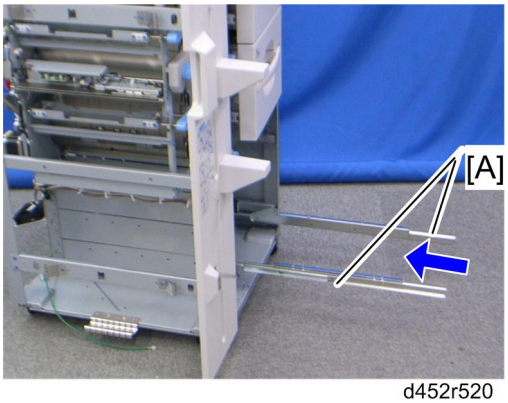


d452r519

7. Pull out the top tray [A].
8. Pull the paper feed unit with stay [B], and then move it to the lower right side (x 2, black screw x 2).
9. Stay [C] (step screw x 2)
10. Paper feed unit [D]

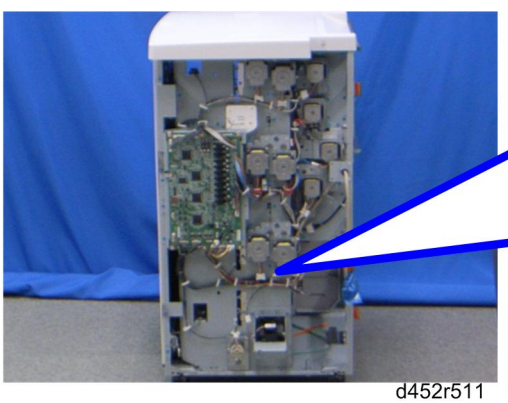
For the Paper Feed Unit in the Bottom Tray

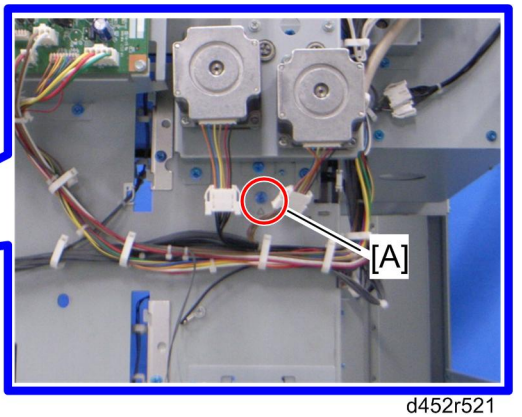
1. Open the front door.
2. Inner upper cover (☛ Inner Covers)
3. Rear cover (☛ Front Door and Covers)
4. Bottom tray (☛ Bottom Tray (Tray 6))



d452r520

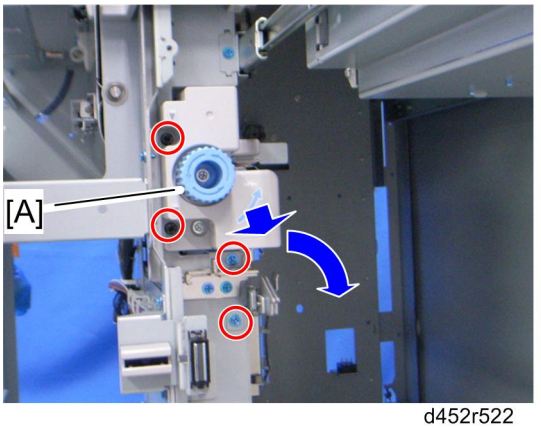
5. Push the slide rails [A] into the machine.


d452r511



d452r521

6. Remove the screw [A] indicated by the triangle mark at the rear.



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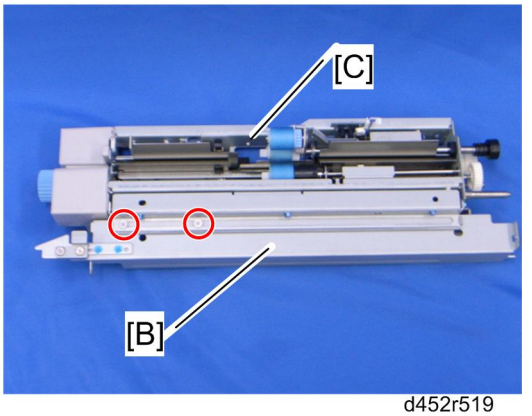


d452r519

7. Pull out the middle tray.
8. Pull the paper feed unit with stay [A], and then move it to the right-lower side (x 2, black screw x 2).
9. Stay [B] (step screw x 2)
10. Paper feed unit [C]

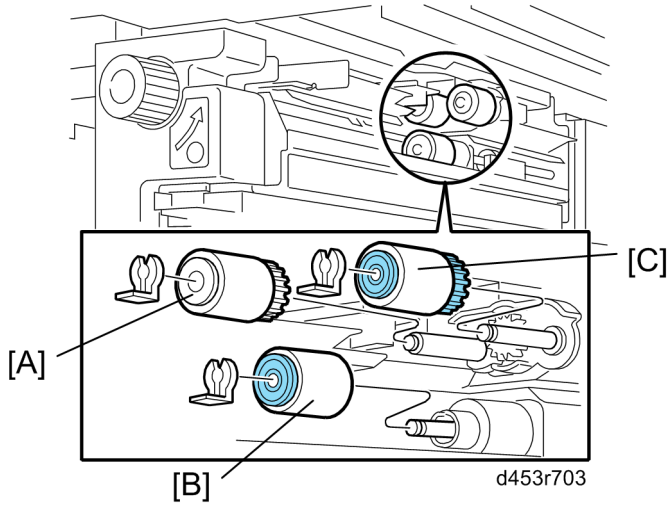
Paper Feed, Separation and Pickup Rollers

⚠CAUTION

- Before doing this procedure, turn off the main machine and disconnect it from its power source.

Top Tray

1. Top tray (☛ Top Tray (Tray 4))



2. Remove:

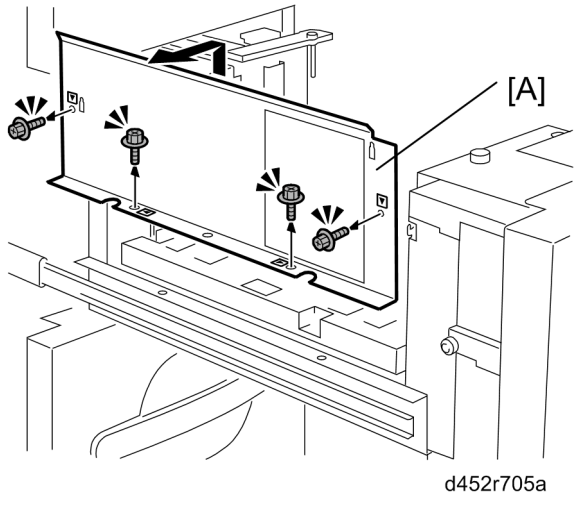
   [A]: Paper feed roller (x 1)

   [B]: Separation roller (x 1)

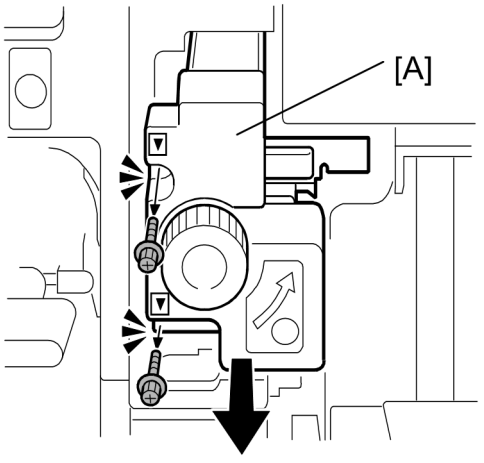
   [C]: Pickup roller (x 1)

Middle or Bottom Tray

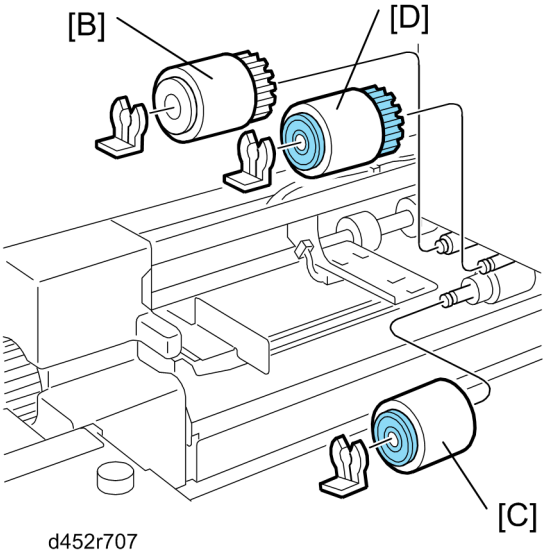
1. Middle tray or Bottom tray (☛ Middle Tray (Tray 5) or Bottom Tray (Tray 6))
2. Inner upper cover for the middle tray or Inner lower cover for the bottom tray (☛ Inner Covers)



3. Tray side plate [A] (black screw x 4).



d452r706b



d452r707

4. Pull the paper feed unit [A].
5. Remove:

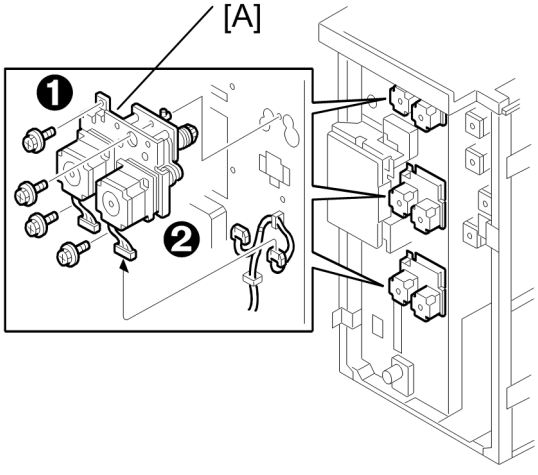
   [B]: Paper feed roller (x 1)

   [C]: Separation roller (x 1)

   [D]: Pickup roller (x 1)

LCT Motors

Paper Feed, Grip Motors

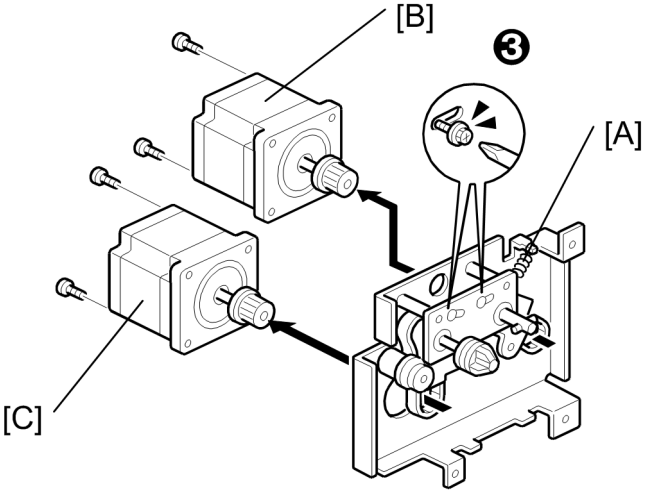


B832R109

Each paper feed unit has a paper feed motor ❶ and a grip motor ❷. The removal procedure is the same for each feed tray.

Remove:

1. Rear cover (☛ Front Door and Covers)
   [A] Motor unit (x4, x2)



B832R109A

[A] Springs (x 2), First, loosen the screws ❸ (x2)

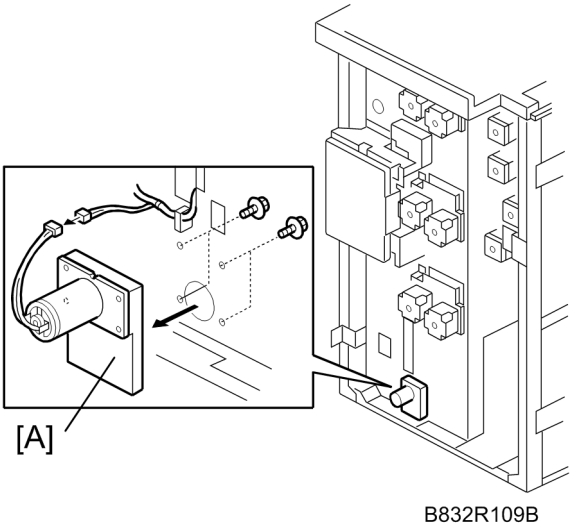
[B] Paper feed motor (🔩 x2)

[C] Grip motor (🔩 x2)

Reinstallation

- Attach the tension spring, then tighten the screws ❸ to tighten the belts.

6th Lift Motor



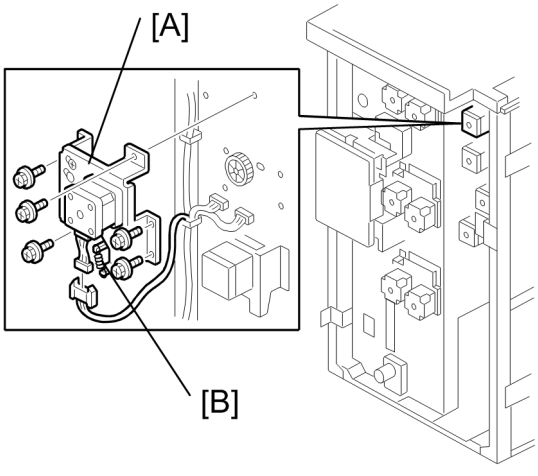
B832R109B

Remove:

- Rear cover (☛ Front Door and Covers)
- Right cover (☛ Front Door and Covers)

[A] 6th lift motor (🔩 x 4, 🖐 x1)

4th Transport Motor



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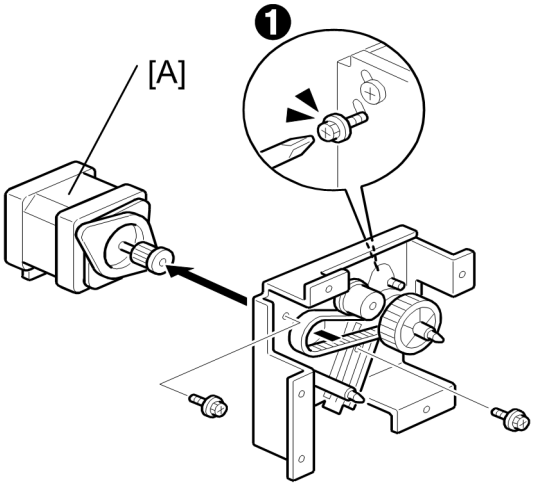
Remove:

- Rear cover (☛ Front Door and Covers

[A] 4th Transport motor unit (🔩 x 5, 🖐 x 1).

[B] Spring (x1). First, loosen screw ❶ (🔩 x 1).



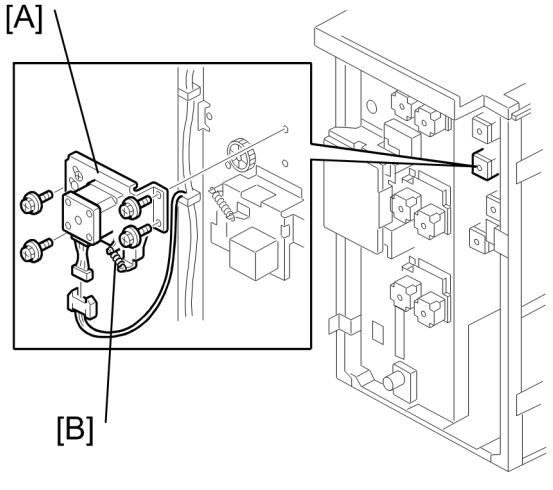
B832R109D

[A] 4th transport motor (🔩 x2, Timing belt x1)

Reinstallation

- Be sure that the tension spring is connected, then tighten the screw ❶.

5th Transport Motor



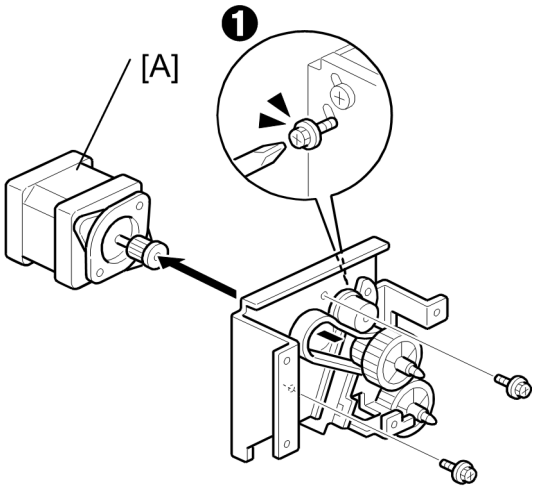
B832R109E

Remove:

- Rear cover (☛ Front Door and Covers)

[A] Motor unit (🔩 x4, 🖐 x 1).

[B] Spring (x1). First, loosen screw ❶ (🔩 x 1).



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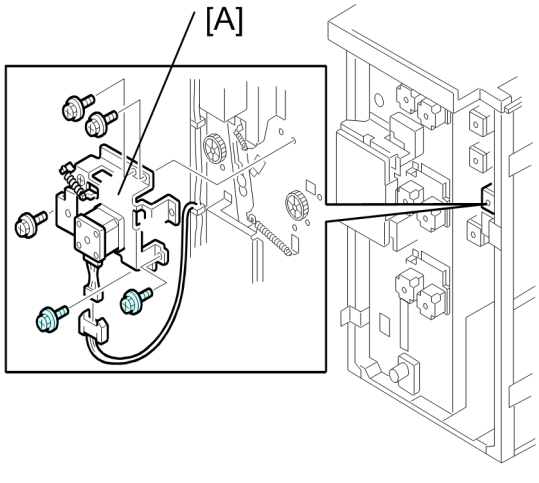
[A] 5th Transport motor (🔩 x2, Timing belt x1)

Reinstallation

- Be sure that the tension spring is connected, then tighten the screw ❶.

LCT Exit Motor

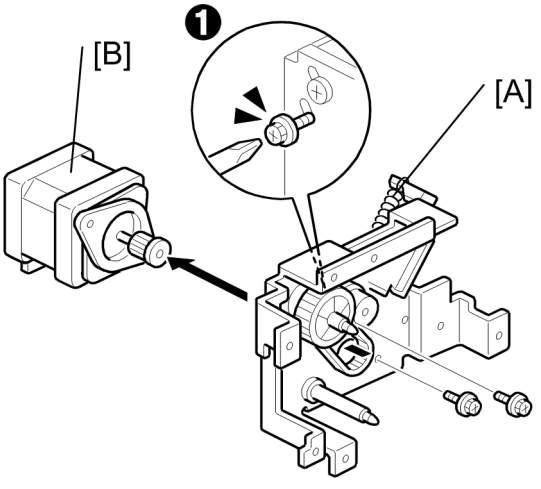


B832R109G

Remove:

- Rear cover (☛ Front Door and Covers)

[A] Motor unit (x6, x 1).



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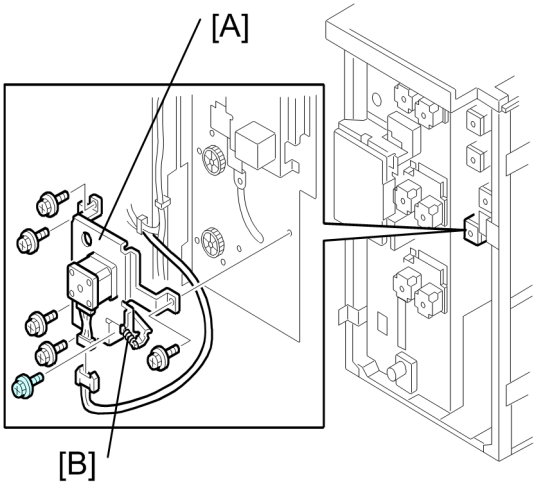
[A] Spring (x1). First, loosen screw ❶ (x 1).

[B] LCT exit motor (x2, Timing belt x1)

Reinstallation

- Be sure that the tension spring is connected, then tighten the screw ❶.

6th Transport Motor



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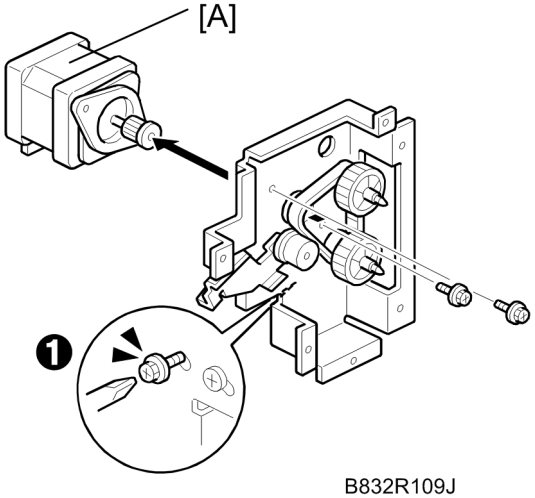
Remove:

- Rear cover (☛ Front Door and Covers)

[A] Motor unit (x6, x 1).

[B] Spring (x1). First, loosen screw ❶ (x 1).



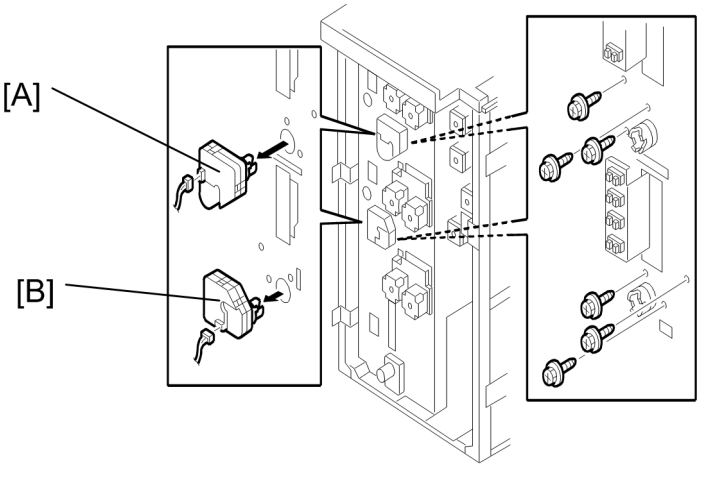
B832R109J

[A] LCT exit motor (x2, Timing belt x1)

Reinstallation

- Be sure that the tension spring is connected, then tighten the screw ❶.

4th, 5th Lift Motors



B832R109L

1

1. Remove:
    - Rear cover (☛ Front Door and Covers)
    - Main control board bracket (☛ Main Control Board)

[A] 4th lift motor (x3, x 1)

[B] 5th lift motor (x3, x 1)

Cooling Fan

1. Rear cover (☛ Front Door and Covers)

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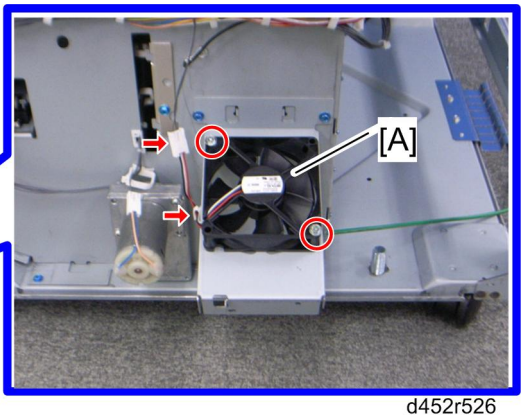

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2. Cooling fan [A] (x 2, x 1, x 1)

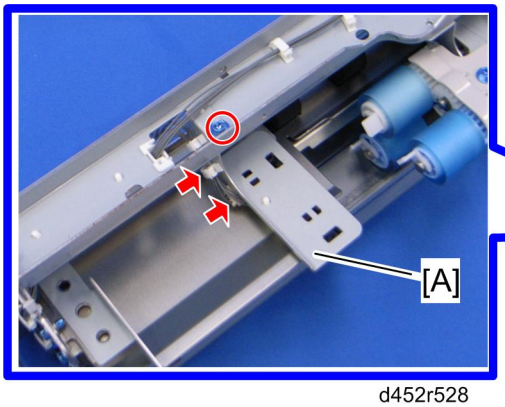
Important

- **When reinstalling the cooling fan, make sure that the cooling fan is installed with its decals facing upward.**

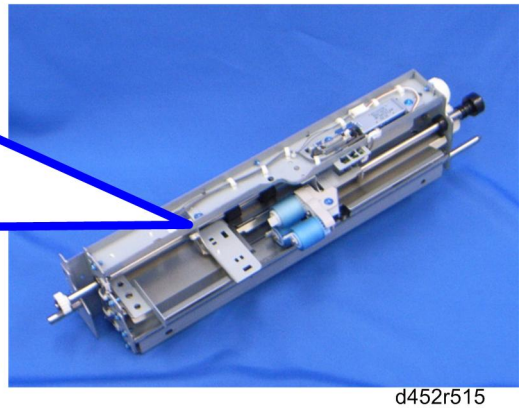
Electrical Components

Paper Feed and End Sensors

1. Paper feed unit (☛ Paper Feed Unit)

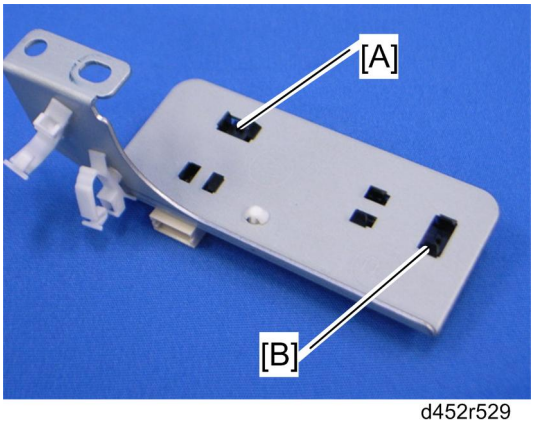


d452r528



d452r515

2. Sensor bracket [A] (x 1, x 3, x 1)



d452r529

3. Remove:

   [A]: Paper feed sensor (hooks)

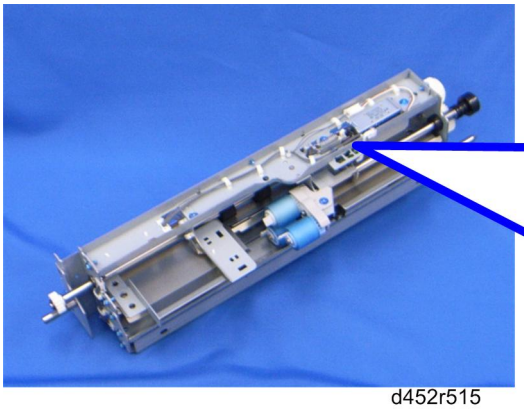
   [B]: Paper end sensor (hooks)

When reinstalling the sensor bracket

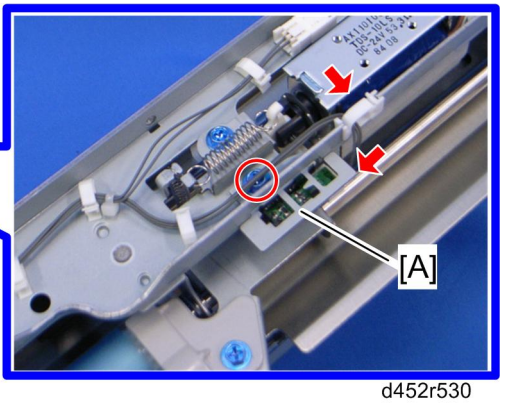
- Make sure that the white connector is connected to the paper feed sensor and the red connector is connected to the paper end sensor.

Lift Sensor

1. Paper feed unit (☛ Paper Feed Unit)

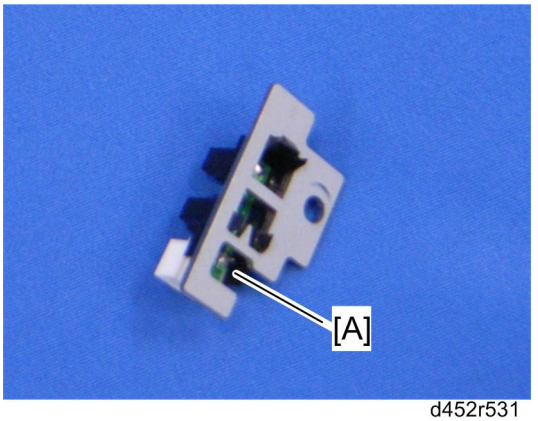


d452r515



d452r530

2. Sensor bracket [A] (x 1, x 1, x 1)



d452r531

3. Lift sensor [A] (hooks)

Image Position Sensor Board, Exit Sensor

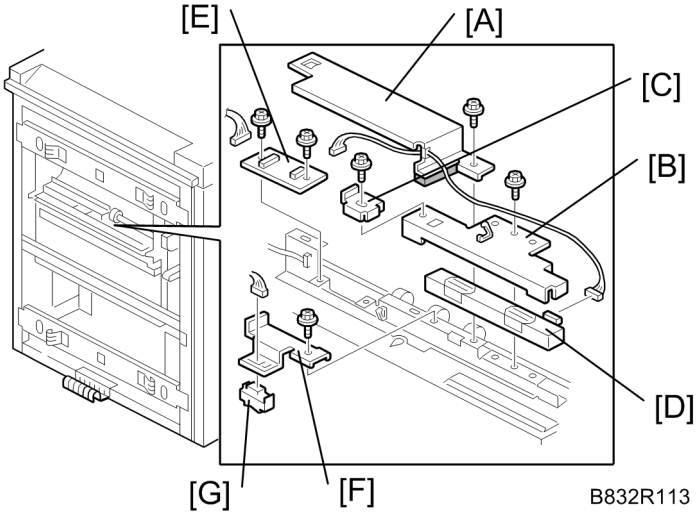


Image Position Sensor

1. Disconnect the LCT from the copier.
2. Remove:

   [A] Harness cover (x1, x1)

   [B] Image position sensor unit (x1, x1, x1)

   [C] Stopper (x1)

   [D] Image position sensor

- After replacing the image position sensor, do the procedure for image position sensor adjustment. (☛ Adjusting Image Position Sensor Strength and Side-To-Side Registration)

Image Position Sensor Board

1. Remove:

   [E] Image position sensor board (x2, x1, x 2)

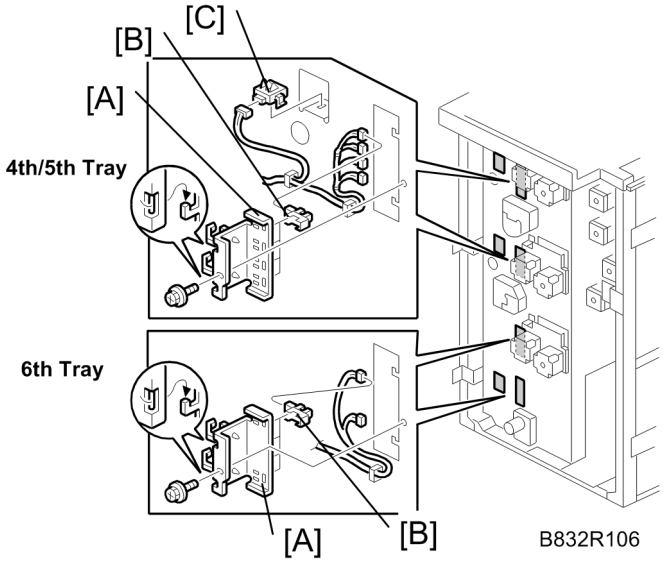
Exit Sensor

1. Remove:

   [F] Exit sensor unit (x1, x1, x 1)

   [G] Exit sensor

Paper Height Sensors, Paper Size Sensors



Remove:

- Rear cover (☛ Front Door and Covers)
- Right cover (☛ Front Door and Covers)

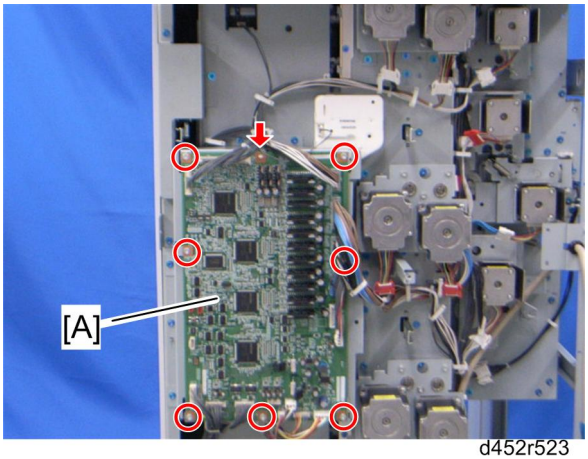
[A] Paper height sensor unit (x2, x 1, x 4).

[B] Paper height sensors (Hooks x 4 each)

[C] Paper size sensors (x 1 each)

Main Control Board

Main Control Board



d452r523

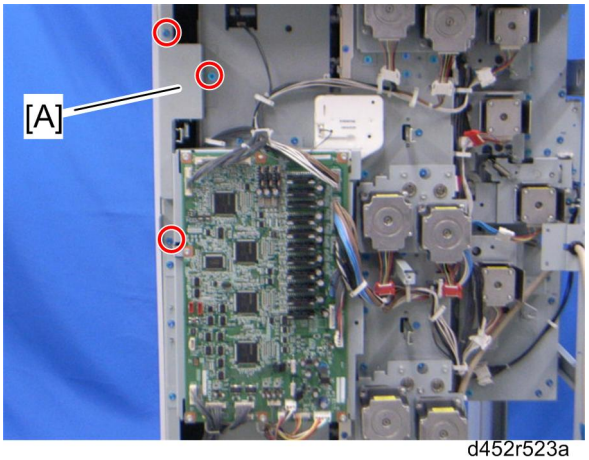
Remove:

- Rear cover (☛ Front Door and Covers)

[A] Main control board (🔩 x 7, Standoffs x 1, 🖐 x All)

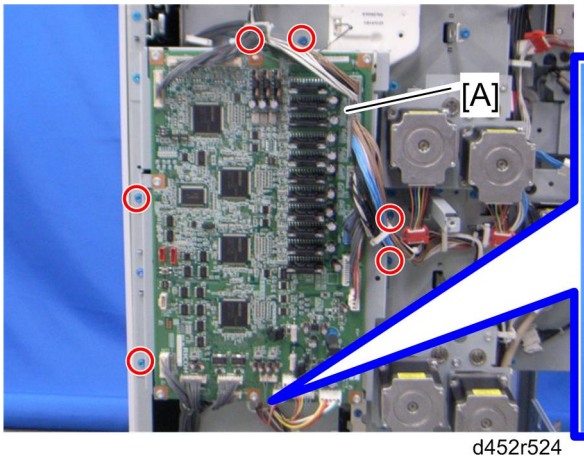
Main Control Board Bracket

1. Rear cover (☛ Front Door and Covers)

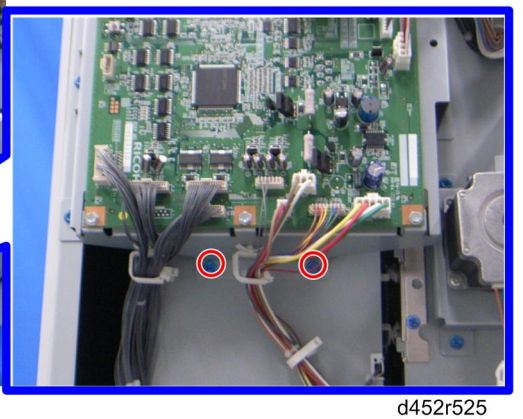


d452r523a

1. Bracket [A] (🔩 x 3)



d452r524

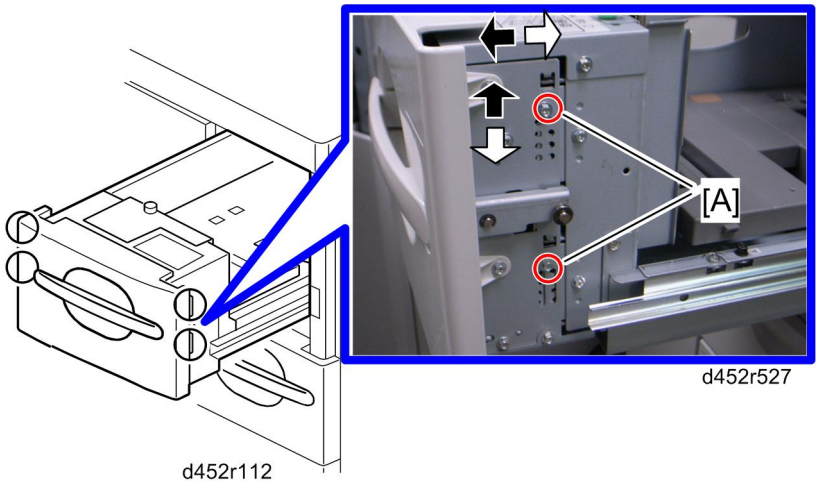


d452r525

2. Main control board bracket [A] (x 8, x 3, x All)

Adjustment

Side Registration Adjustment



Normally the side registration of the image can be adjusted with SP1002 004-006 (Side-to-Side Registration – Tray 4, 5, 6). When the punch hole positions are not aligned from a particular feed station, adjust the side registration by changing the tray cover position for the tray, as described below. Then adjust the side registration of the image with SP1002.

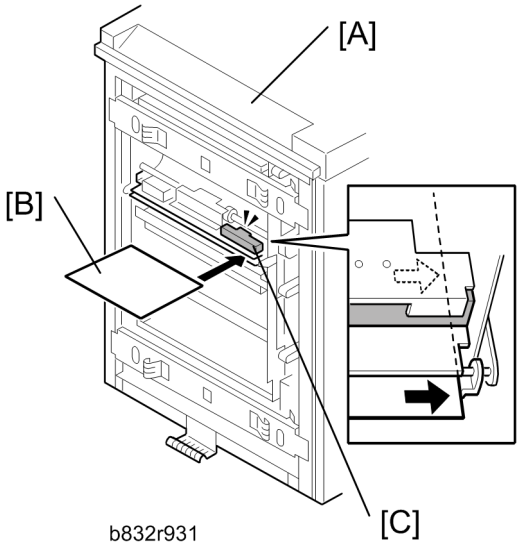
1. Pull out the tray.
1. Change the screw positions [A] at both the right and left sides as shown.

Note

- Adjustment range: 0 ± 2.0 mm adjustment step: 0.5 mm/step

Adjusting Image Position Sensor Strength and Side-To-Side Registration

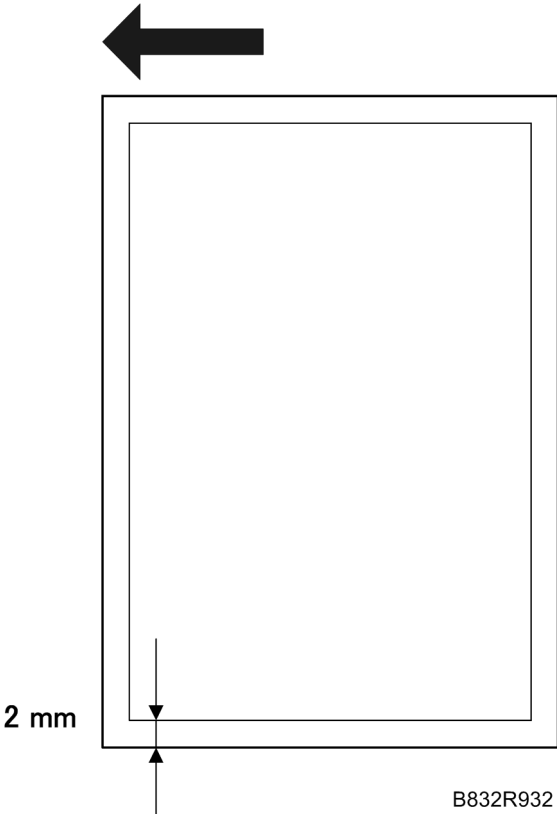
1. Turn off the main power of the main machine.



1. Disconnect the LCT from the mainframe with the LCT [A] separated from the mainframe, reconnect the LCT cable to the mainframe.
2. Turn on the main power switch.
3. Insert one sheet of plain white paper [B] in the paper path.
4. Make sure that the paper covers the entire area below the image position sensor (CIS) [C].
5. Enter the SP mode and do SP1910-002 (CIS Image Position Adjustment: LED Strength - LCT). This calibrates the amount of light to be emitted from the CIS.
6. Do SP1909 002 (CIS Image Position Adjustment: PWM After Adjustment - LCT).
   - If the displayed value is between 10 (Ah) and 40 (28h), the CIS is calibrated successfully. (The display is in hexadecimal code.)
   - If the value is outside this range, do SP 1910-002 and 1909-002 again. If the value does not come between 20 and 40, the CIS may be defective.
7. Exit the SP mode.
8. Reinstall the LCT to the side of the copier.
9. Push [User Tools]> [Adjust Settings for Operators].
10. Do "0111-4 to -7" for Trays 4, 5, 6, 7 and set the value for each tray to "Off".
11. Exit from SP 1911 and return to the SP mode menu.
12. Adjust the image positions in the main scan direction.
    - Do SP2902-003, select Pattern 27, then print the trimming pattern.
    - Do SP1002 and adjust the image position in the main scan direction for Trays 4, 5, 6, and 7.
    - Print the trimming pattern from each tray of the LCT and from the bypass tray (if installed).
    - To do this, touch "Copy Window" in the SP display, select a tray, then push [Start].

- The distance of the test pattern line from the paper edge for each tray must be 2 mm. If it is not 2 mm, adjust with SP1002-004 to -007, depending on which tray is not within the specified 2 mm.

13. Do SP1912-002 (CIS Image Position Adjustment: Normal Paper). This sets the CIS for operation with standard copy paper.
14. Exit the SP mode.
15. Push [User Tools]> [Adjust Settings for Operators].
16. Once again, do "0111-4 to -7" (CIS Image Position Adjustment: Feed Setting) and reset the values for Trays 4, 5, 6, and 7 to "On".

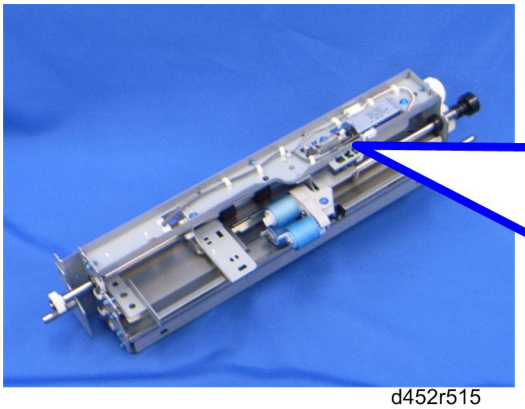


Double Feed Problem from the LCT

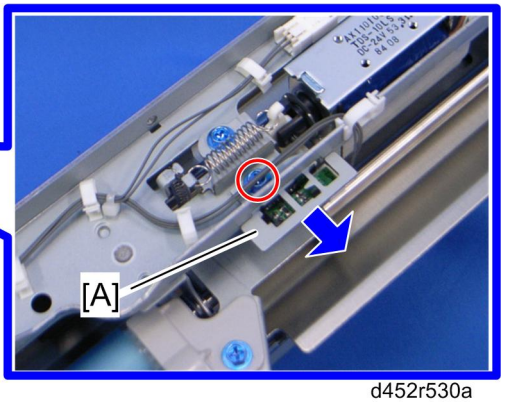
If double feed occurs several times when paper is fed from an LCT, try to change the upper limit of the paper stack in the LCT tray

Changing the upper limit of the paper stack in the LCT tray

Changing the upper limit of the paper stack in the LCT tray can improve paper separation for the paper stack in the LCT tray.



d452r515



d452r530a

1. Remove the paper feed unit of the LCT unit (☛ Paper Feed Unit).
2. Loosen the screw on the lift sensor bracket [A].
3. Move the bracket 0.7 mm in the arrow direction as shown above.
4. Tighten the screw on the lift sensor bracket [A].

Note

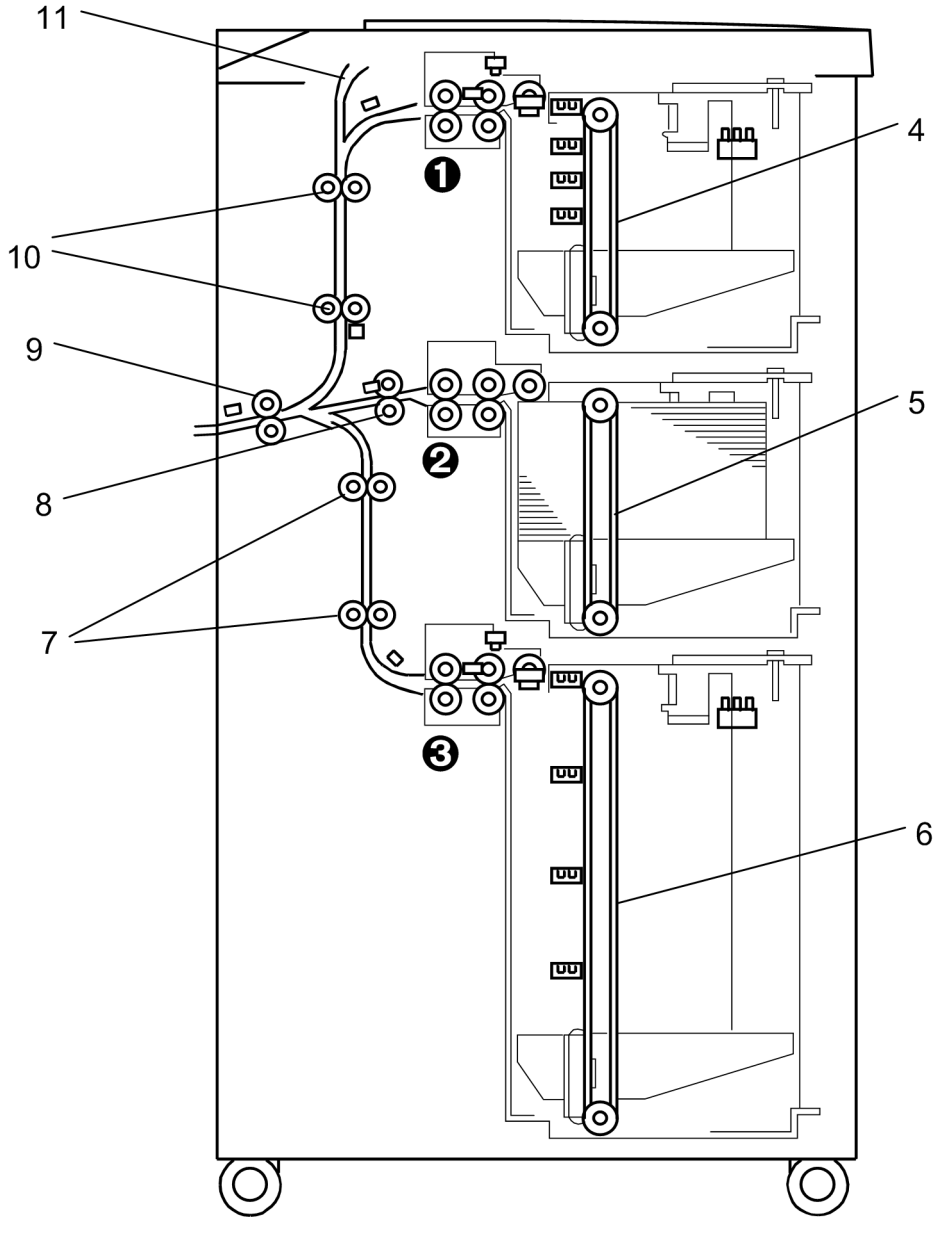
- To return the upper limit position to the default position, move the paper lift sensor bracket 0.7 mm to the opposite side.
- Return the upper limit position to the default if a paper jam occurs at the paper feed sensor in the LCT.

2. Details

Mechanical Overview

2

Mechanical Component Layout

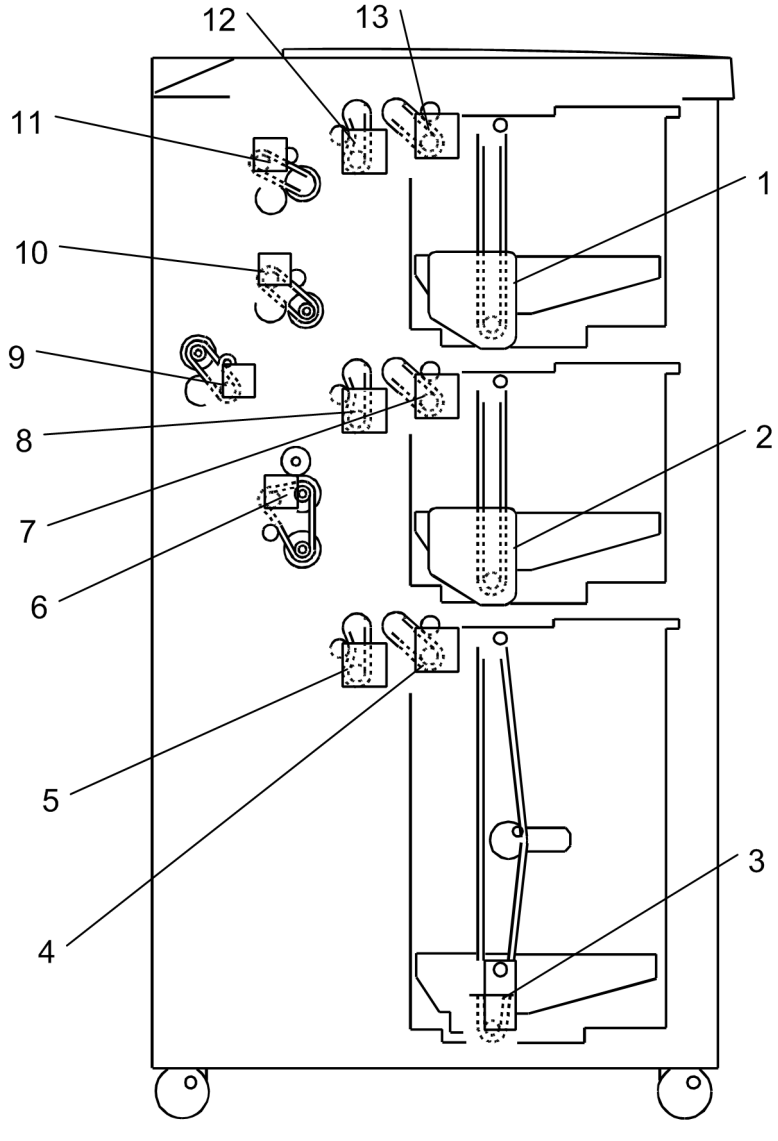


B832V101

1. 4th Paper Feed Unit *1
2. 5th Paper Feed Unit
3. 6th Paper Feed Unit
4. 4th Tray Drive Belt
5. 5th Tray Drive Belt
6. 6th Tray Drive Belt
7. Lower Transport Rollers
8. Horizontal Transport Roller

9. LCT Exit roller
10. Upper Transport Rollers
11. Feed Slot (from Bypass Tray)

Drive Layout



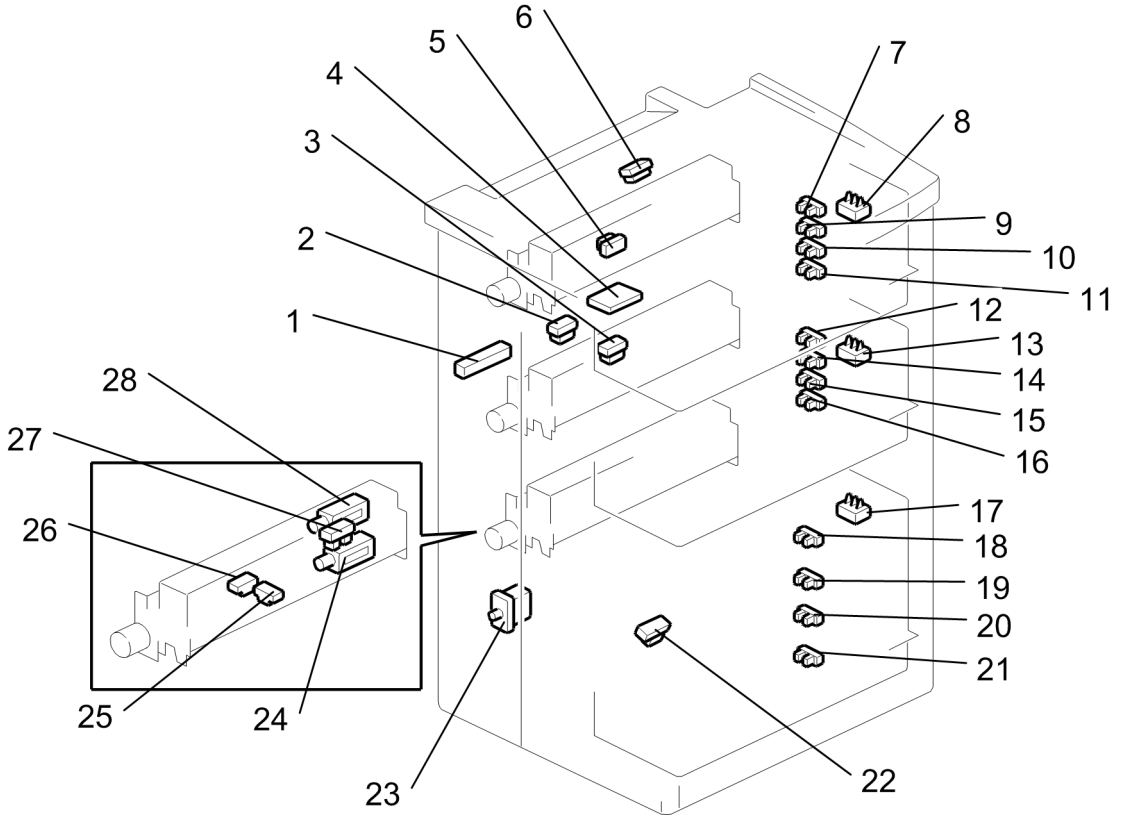
B832V102

1. 4th Lift Motor
2. 5th Lift Motor
3. 6th Lift Motor
4. 6th Paper Feed Motor
5. 6th Grip Motor
6. 6th Transport Motor

7. 5th Paper Feed Motor
8. 5th Grip Motor
9. LCT Exit Motor
10. 5th Transport Motor
11. 4th Transport Motor
12. 4th Grip Motor
13. 4th Paper Feed Motor

2

Electrical Components



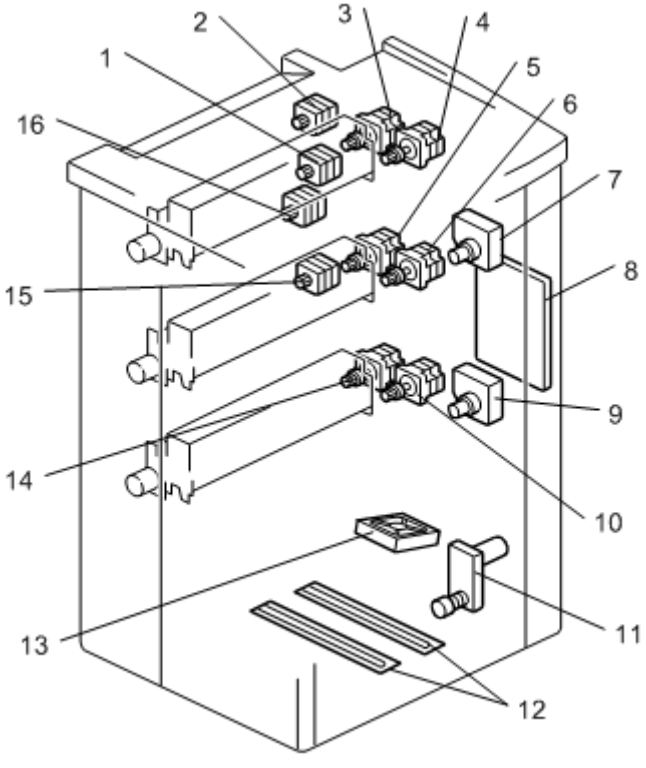
B832V102A

1. LCT Image Position Sensor
2. Exit Sensor
3. 5th Transport Sensor
4. Image Position Sensor Board
5. 4th Relay Sensor
6. 4th Transport Sensor
7. 4th Paper Height Sensor
8. 4th Paper Size Sensors
9. 4th Paper Height Sensor 3
10. 4th Paper Height Sensor 2
11. 4th Paper Height Sensor 1
12. 5th Paper Height Sensor 4
13. 5th Paper Size Sensors
14. 5th Paper Height Sensor 3

15. 5th Paper Height Sensor 2
16. 5th Paper Height Sensor 1
17. 6th Paper Size Sensors
18. 6th Paper Height Sensor 4
19. 6th Paper Height Sensor 3
20. 6th Paper Height Sensor 2
21. 6th Paper Height Sensor 1
22. 6th Transport Sensor
23. Door Safety Switch
24. 6th Separation Solenoid
25. 6th Paper End Sensor
26. 6th Paper Feed Sensor
27. 6th Lift Sensor
28. 6th Pick-up Solenoid

Note

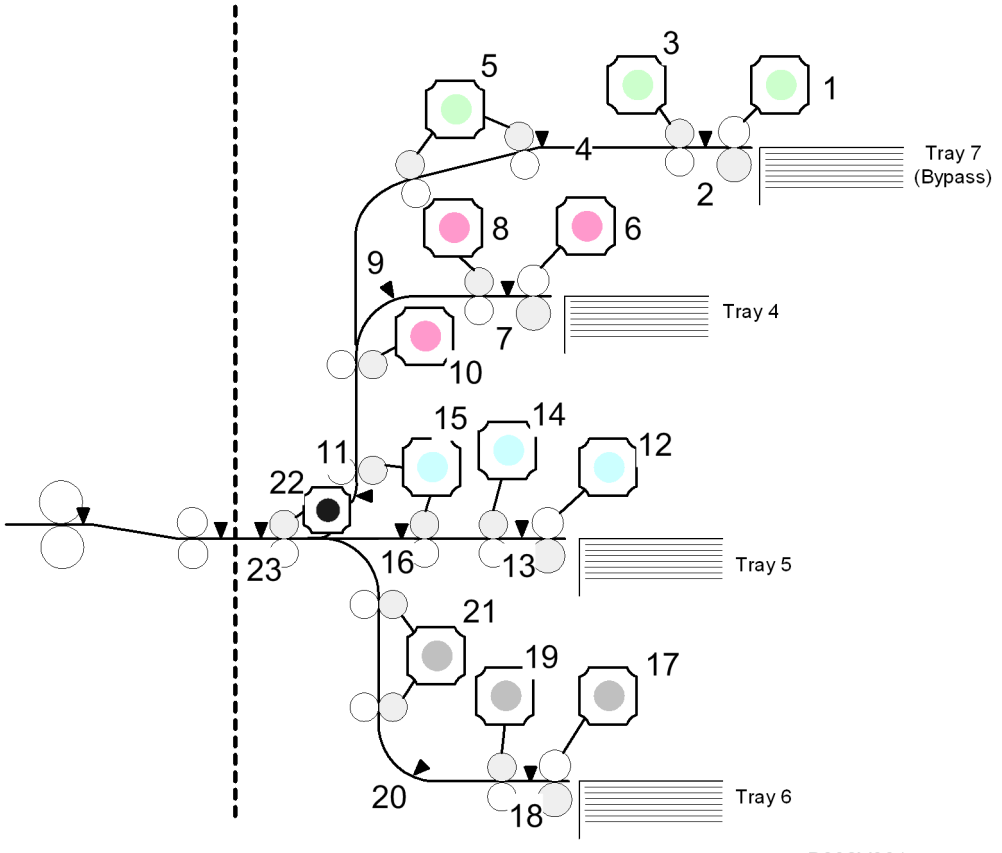
- Items 24, 25, 26, 27 and 28 are duplicated in the 4th and 5th units.



1.	5th Transport Motor	9.	5th Lift Motor
2.	4th Transport Motor	10.	6th Paper Feed Motor
3.	4th Grip Motor	11.	6th Lift Motor
4.	4th Paper Feed Motor	12.	Anti-Condensation Heaters

5.	5th Grip Motor	13.	Cooling Fan
6.	5th Paper Feed Motor	14.	6th Grip Motor
7.	4th Lift Motor	15.	6th Transport Motor
8.	Main Control Board	16.	LCT Exit Motor

A4/LT LCT B832 Layout (With Bypass)



B832V901

1. Paper Feed Motor (Bypass)
2. Paper Feed Sensor (Bypass)
3. Grip Motor (Bypass)
4. Transport Sensor (Bypass)
5. Transport Motor (Bypass)
6. 4th Paper Feed Motor
7. 4th Paper Feed Sensor
8. 4th Grip Motor
9. 4th Transport Sensor
10. 4th Transport Motor
11. 4th Relay Sensor
12. 5th Paper Feed Motor

13. 5th Paper Feed Sensor
14. 5th Grip Motor
15. 5th Transport Motor
16. 5th Transport Sensor
17. 6th Paper Feed Motor
18. 6th Paper Feed Sensor
19. 6th Grip Motor
20. 6th Transport Sensor
21. 6th Transport Motor
22. LCT Exit Motor
23. LCT Exit Sensor

Electrical Component Summary

Motors

No.	Name	Description
M1	4th Grip Motor	Drives the separation roller and the grip roller of the 4th tray.
M2	4th Lift Motor	Drives the bottom plate of the 4th tray up and down.
M3	4th Paper Feed Motor	Drives the pick-roller and feed roller that picks up each sheet and starts to feed it out of the 4th tray.
M4	4th Transport Motor	Drives the rollers in the vertical feed path that feed the paper from the 4th tray to the LCT exit motor.
M5	5th Grip Motor	Drives the separation roller and the grip roller of the 5th tray.
M6	5th Lift Motor	Drives the bottom plate of the 5th tray up and down.
M7	5th Paper Feed Motor	Drives the pick-roller and feed roller that picks up each sheet and starts to feed it out of the 5th tray.
M8	5th Transport Motor	Drives the transport rollers in the vertical feed path that feed the paper from the 4th tray and the 5th tray to the LCT exit motor.
M9	6th Grip Motor	Drives the separation roller and the grip roller of the 6th tray.

No.	Name	Description
M10	6th Lift Motor	Drives the 5th tray up and down.
M11	6th Paper Feed Motor	Drives the pick-roller and feed roller that picks up each sheet and starts to feed it out of the 6th tray.
M12	6th Transport Motor	Drives the rollers in the vertical feed path that feed the paper from the 6th tray to the LCT exit motor.
M13	LCT Exit Motor	Feeds the paper out the LCT and into the entrance of the copier.

PCBs

No.	Name	Description
PCB 1	Main Control Board	Controls the operation of all motors and sensors in the LCT unit.
PCB 2	Image Position Sensor Board	Operates the CIS sensor (performs waveform correction) in the LCT. The CRB (CIS Relay Board) and CIS sensor perform side-to-side image correction. The CRB and CIS are a single unit. The CRB is not a separate board.

Sensors

No.	Name	Description
S1	4th Lift Sensor	Detects when the paper in the 4th tray is at the correct height for paper feed and switches the 4th lift motor off.
S2	4th Paper End Sensor	Detects when the last sheet feeds from the 4th tray.
S3	4th Paper Feed Sensor	Detects the paper when it arrives at the 4th paper feed roller and checks for misfeeds.
S4	4th Paper Height Sensor 1	4th from the bottom of the 4th tray, detects stack height: 100%

No.	Name	Description
S5	4th Paper Height Sensor 2	5th from the bottom of the 4th tray, detects stack height: 75%
S6	4th Paper Height Sensor 3	6th from the bottom of the 4th tray, detects stack height: 50%
S7	4th Paper Height Sensor 4	4th from the bottom of the 4th tray, detects stack height: 25% and signals near-end.
S8	4th Paper Length Sensor (B834)	Detects the length of the paper in the 4th tray (used in combination with the paper width sensors).
S9	4th Paper Width Sensor 1 (B834)	1 of a set of 3 sensors that detect the width of the paper in the 4th tray.
S10	4th Paper Width Sensor 2 (B834)	1 of a set of 3 sensors that detect the width of the paper in the 4th tray.
S11	4th Paper Width Sensor 3 (B834)	1 of a set of 3 sensors that detect the width of the paper in the 4th tray.
S12	4th Paper Size Sensor 1 (B832)	1 of a set of 3 sensors that detect the width of the paper in the 4th tray.
S13	4th Paper Size Sensor 2 (B832)	1 of a set of 3 sensors that detect the width of the paper in the 4th tray.
S14	4th Paper Size Sensor 3 (B832)	1 of a set of 3 sensors that detect the width of the paper in the 4th tray.
S15	4th Relay Sensor	Detects the leading and trailing edges of the paper in the paper path near the bottom of the 4th tray. Checks the timing of the feed and signals a jam if the paper is late or lags at this location.

No.	Name	Description
S16	4th Relay Sensor - Upper (B834)	Detects the leading and trailing edges of the paper in the paper path near the top of the 4th tray. Checks the timing of the feed and signals a jam if the paper is late or lags at this location.
S17	4th Transport Sensor	Detects jams in the paper path where the transport motor feeds the paper from the 4th tray.
S18	5th Lift Sensor	Detects when the paper in the 5th tray is at the correct height for paper feed and switches the 4th lift motor off.
S19	5th Paper End Sensor	Detects when the last sheet feeds from the 5th tray.
S20	5th Paper Feed Sensor	Detects the paper when it arrives at the 5th paper feed roller and checks for misfeeds.
S21	5th Paper Height Sensor 1	4th from the bottom of the 5th tray, detects stack height: 100%
S22	5th Paper Height Sensor 2	5th from the bottom of the 5th tray, detects stack height: 75%
S23	5th Paper Height Sensor 3	6th from the bottom of the 5th tray, detects stack height: 50%
S24	5th Paper Height Sensor 4	4th from the bottom of the 5th tray, detects stack height: 25% and signals near-end.
S25	5th Paper Length Sensor (B834)	Detects the length of the paper in the 5th tray (used in combination with the paper width sensors).
S26	5th Paper Width Sensor 1 (B834)	1 of a set of 3 sensors that detect the width of the paper in the 5th tray.
S27	5th Paper Width Sensor 2 (B834)	1 of a set of 3 sensors that detect the width of the paper in the 5th tray.
S28	5th Paper Width Sensor 3 (B834)	1 of a set of 3 sensors that detect the width of the paper in the 5th tray.

No.	Name	Description
S29	5th Paper Size Sensor 1 (B832)	1 of a set of 3 sensors that detect the width of the paper in the 5th tray.
S30	5th Paper Size Sensor 2 (B832)	1 of a set of 3 sensors that detect the width of the paper in the 5th tray.
S31	5th Paper Size Sensor 3 (B832)	1 of a set of 3 sensors that detect the width of the paper in the 5th tray.
S32	5th Relay Sensor (B834)	Detects the leading and trailing edges of the paper in the paper path near the 5th tray. Checks the timing of the feed and signals a jam if the paper is late or lags at this location.
S33	5th Transport Sensor	Detects jams in the paper path where the transport motor feeds the paper from the 5th tray.
S34	6th Lift Sensor	Detects when the paper in the 6th tray is at the correct height for paper feed and switches the 4th lift motor off.
S35	6th Paper End Sensor	Detects when the last sheet feeds from the 6th tray.
S36	6th Paper Feed Sensor	Detects the paper when it arrives at the 6th paper feed roller and checks for misfeeds.
S37	6th Paper Height Sensor 1	4th from the bottom of the 6th tray, detects stack height: 100%
S38	6th Paper Height Sensor 2	5th from the bottom of the 6th tray, detects stack height: 75%
S39	6th Paper Height Sensor 3	6th from the bottom of the 6th tray, detects stack height: 50%
S40	6th Paper Height Sensor 4	4th from the bottom of the 6th tray, detects stack height: 25% and signals near-end.
S41	6th Paper Length Sensor (B834)	Detects the length of the paper in the 6th tray (used in combination with the paper width sensors).

No.	Name	Description
S42	6th Paper Width Sensor 1 (B834)	1 of a set of 3 sensors that detect the width of the paper in the 6th tray.
S43	6th Paper Width Sensor 2 (B834)	1 of a set of 3 sensors that detect the width of the paper in the 6th tray.
S44	6th Paper Width Sensor 3 (B834)	1 of a set of 3 sensors that detect the width of the paper in the 6th tray.
S45	6th Paper Size Sensor 1 (B832)	1 of a set of 3 sensors that detect the width of the paper in the 6th tray.
S46	6th Paper Size Sensor 2 (B832)	1 of a set of 3 sensors that detect the width of the paper in the 6th tray.
S47	6th Paper Size Sensor 3 (B832)	1 of a set of 3 sensors that detect the width of the paper in the 6th tray.
S48	6th Relay Sensor (B834)	Detects the leading and trailing edges of the paper in the paper path near the 6th tray. Checks the timing of the feed and signals a jam if the paper is late or lags at this location.
S49	6th Transport Sensor	Detects jams in the paper path where the transport motor feeds the paper from the 6th tray.
S50	LCT Exit Sensor	Detects jams at the exit of the LCT unit.
S51	LCT Image Position Sensor	Mounted on the CRB (CIS Relay Board), this contact image sensor detects the side-to-side edges of the paper in the paper path. The machine uses this information to correct the position of the image when the lasers fire.

Solenoids

No.	Name	Description
SOL1	4th Pick-up Solenoid	Engages/disengages rotation of the pick-up roller in the 4th tray.
SOL2	4th Separation Solenoid	Controls up-down movement of the separation roller in the 4th tray.
SOL3	5th Pick-up Solenoid	Engages/disengages rotation of the pick-up roller in the 5th tray.
SOL4	5th Separation SOL	Controls up-down movement of the separation roller in the 5th tray.
SOL5	6th Pick-up Solenoid	Engages/disengages rotation of the pick-up roller in the 6th tray.
SOL6	6th Separation Solenoid	Controls up-down movement of the separation roller in the 6th tray.

Switches

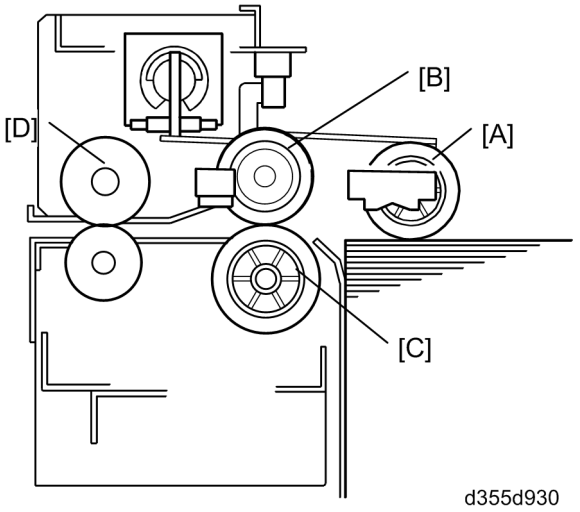
No.	Name	Description
SW 1	Door Safety Switch	An interlock safety switch that detects when the front door is opened and closed.

Other

No.	Name	Description
H1, H2	Anti-Condensation Heaters	Evaporates moisture around the trays in the LCT (230V 18W).

Paper Handling

Paper Feed Rollers



This LCT has three paper tray feed stations:

The 4th and 5th tray each hold 1,000 sheets of paper. The 6th tray holds 2,550 sheets of paper. Total: 4,550 sheets

Each tray contains four rollers:

[A] Pick-up roller

[B] Paper feed roller

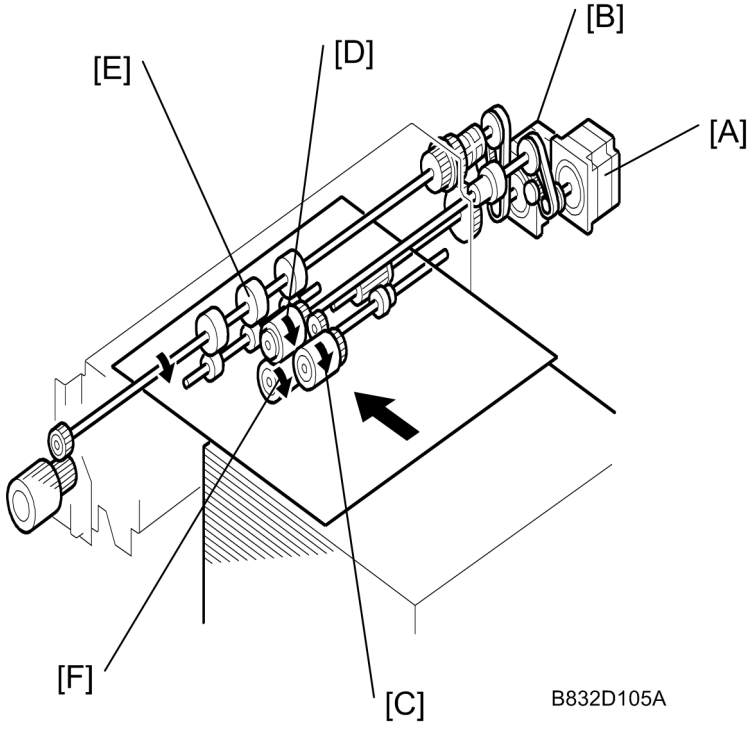
[C] Separation roller

[D] Grip roller

Note

- The pick-up roller, paper feed roller, and separation roller are a standard FRR paper feed system.

Paper Feed Motors



Two stepper motors control the paper feed drive:

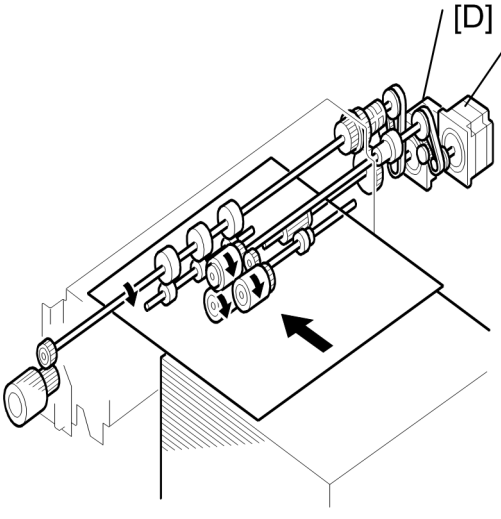
[A] Paper feed motor

[B] Grip motor

The paper feed motor drives the pick-up roller [C] and the paper feed roller [D].

The grip motor drives the grip roller [E] that feeds the paper out of the tray, and the separation roller [F].

Pick-Up and Feed



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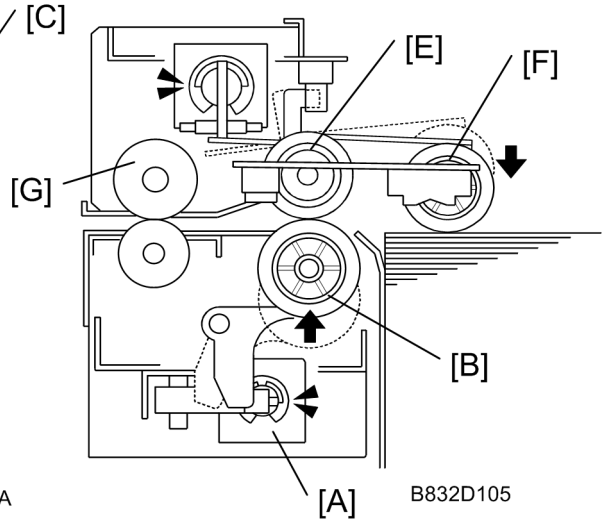

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When a paper feed station is not selected:

- Separation roller solenoid [A] is de-activated
- Separation roller [B] turns freely.

When the paper feed station is selected for a job:

- Paper feed motor [C] and grip motor [D] turn on.

When the feed motor [C] turns on, it drives the feed roller [E]. It also drives the pick-up roller [F] because the pick-up roller is linked to the feed roller by an idle gear.

When the separation solenoid [A] turns on, the separation roller [B] contacts the paper feed roller [E] and turns with the feed roller, unless more than one sheet of paper is fed. The three trays of the LCT unit use the standard FRR mechanism.

When the paper feed motor turns on, the pick-up solenoid turns on and the pick-up roller [F] lowers until it contacts the top sheet of the paper stack and then sends it to the paper feed and separation rollers.

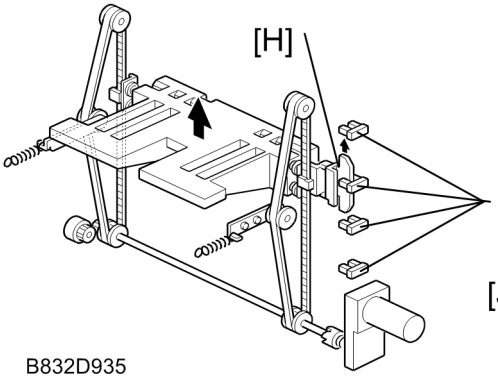
When the paper feed sensor detects the leading edge of the paper, the paper feed motor switches off, the pick-up roller lifts, and the grip rollers [G] feed the paper out of the tray.

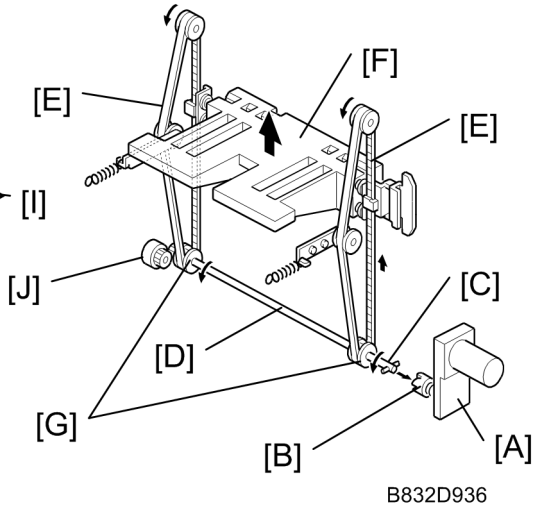
Tray Detection

When a tray is set in the machine, the tray detection method used depends on the tray:

- The upper tray and middle tray are detected when any one of the paper size switch signals is low.
- The lower tray is detected when the switch 1 signal of the paper size switch is low.

Lift Mechanism



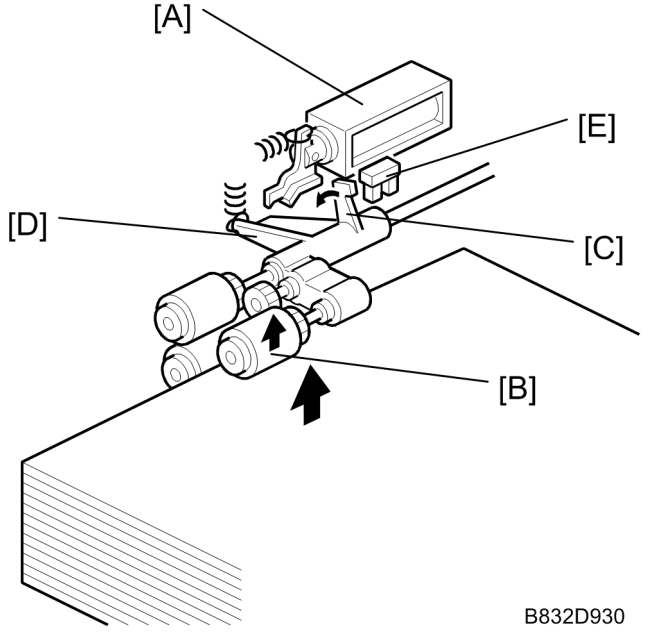


When the machine detects that the paper tray is set in the machine, the tray lift motor [A] rotates and the coupling gear [B] on the tray lift motor engages the pin [C] of the lift drive shaft [D]. The tray drive belts [E] are connected to the tray bottom plate [F] and are driven by the tray lift motor via the lift drive shaft [D] and tray drive pulleys [G]. When the lift motor turns counterclockwise, the tray bottom plate [F] moves up. The tray goes up until the top of the paper stack pushes up the pick-up roller and the lift sensor in the feed unit is de-activated.

When the actuator [H] on the rear end of the bottom plate activates the paper height sensors [I], the remaining paper capacity is detected. (☛ Remaining Paper Detection)

When pulling out the tray, the coupling gear [B] separates from the pin [C], so that the tray bottom plate moves downward. In the bottom tray, the damper [J] lets the tray bottom plate drop slowly.

Lift Sensor



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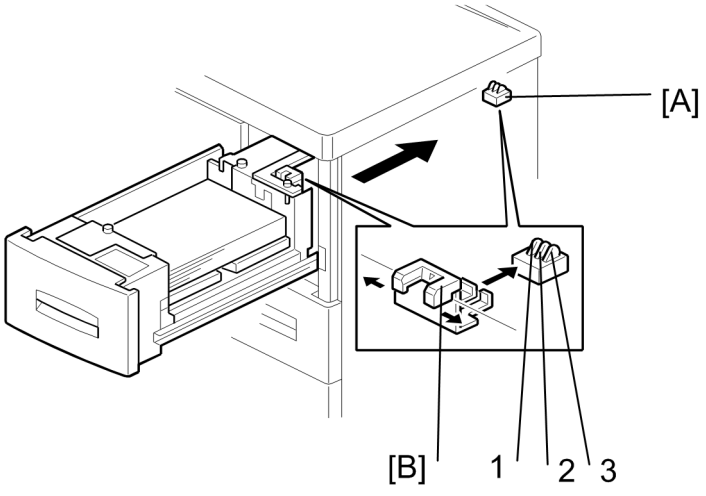
When the lift motor turns on, the pick-up solenoid [A] activates to lower the pick-up roller [B]. When the top sheet of paper reaches the proper paper feed level, the paper pushes up the pick-up roller and the actuator [C] on the pick-up roller supporter [D] de-activates the lift sensor [E] to stop the lift motor.

After several paper feeds, the paper level gradually lowers, then the lift sensor is activated and the lift motor turns on again until the lift sensor is de-activated again.

Paper Size Detection



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	A4-LEF	B5-LEF	A5-LEF	A5-SEF	LT-LEF	HLT-LEF	HTL-SEF
SW1	0	1	0	0	0	1	1
SW2	1	0	1	0	0	0	1
SW3	1	1	0	1	0	0	0

1: HIGH, 0: LOW

Top Tray (Tray 4) and Middle Tray (Tray 5)

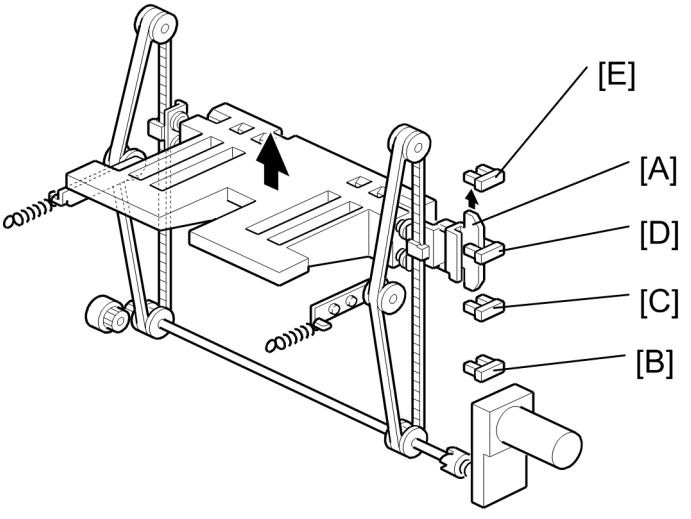
For the top and middle trays, the paper size switch [A] detects the paper size. The paper size switch contains three microswitches. The paper size switch is actuated by an actuator plate [B] at the rear of the tray. Each paper size has its own unique combination as shown in the table and the CPU determines the paper size by the combination.

Bottom Tray (Tray 6)

The bottom tray has the same switch as the top and middle trays. However, it is only used for detecting when the tray is pushed in.

For the bottom tray, the paper size must be selected with SP5019-007:

Remaining Paper Detection



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The amount of paper remaining in the tray is detected by the three paper height photo-interrupter sensors on the left rail as the bottom plate rises. Five states, determined by the position of the actuator are possible.

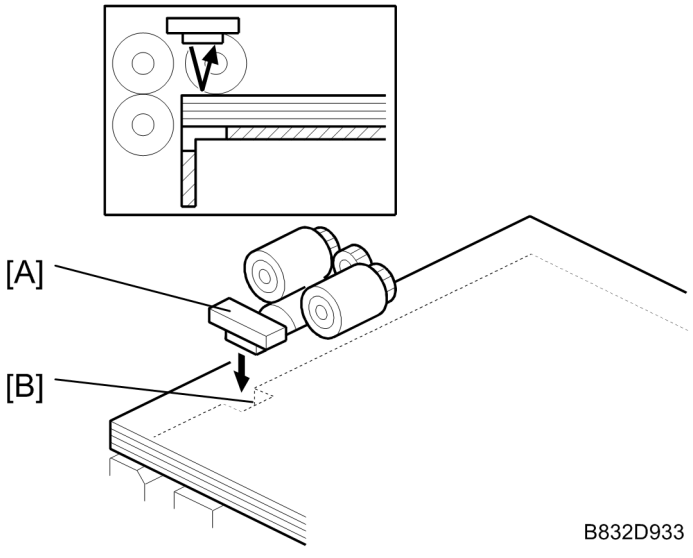
1. With the actuator [A] below paper height sensor 1 [B], no sensor is actuated and the display indicates 100%.
2. When the actuator passes paper height sensor 1 [B] , the display indicates 75% of the paper supply remaining.
3. When the actuator passes paper height sensor 2 [C], the display indicates 50% of the paper supply remaining.
4. When the actuator passes paper height sensor 3 [D], the display indicates 25% of the paper supply remaining.

Note

- When the actuator enters the gap of the near end sensor [E], the machine signals near end.

Finally, when the last sheet feeds, the paper end sensor signals that the tray is empty. (☛ Paper End Detection)

Paper End Detection



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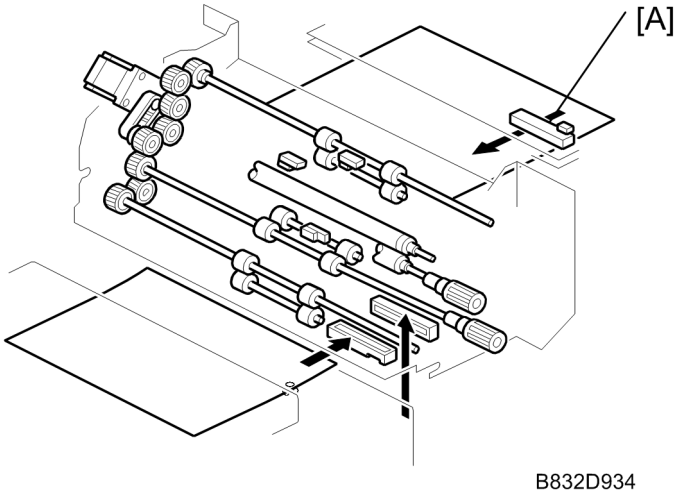
The paper end sensor [A] detects the top sheet of the paper in the tray by monitoring the reflected light. When the paper tray runs out of paper, the paper end sensor does not receive the reflected light due to the cutout [B]. Then, the tray lift motor rotates backwards 2 seconds to drop the tray bottom plate.

Image Position Correction



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The image position sensor [A] is located in the LCT paper path above the paper path and in front of the LCT exit rollers. (This sensor is mounted on its own control board.)

The sensor is a CIS (Contact Image Sensor). It checks the side edges of each sheet as it passes, and feeds this information back to the machine.

If the side-to-side registration of the paper is slightly out of alignment, the machine will correct the image position when the laser writes the image on the surface of the drum. This function does not correct the position of the paper.

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