Paper Feed Unit PB3270
Machine Code: D3G0
Field Service Manual
Ver. 1.0

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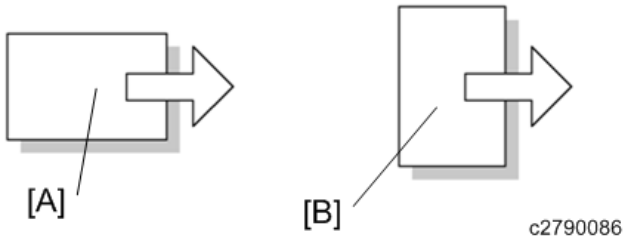
Symbols, Abbreviations and Trademarks

Symbols, Abbreviations

This manual uses several symbols and abbreviations. The meaning of those symbols and abbreviations are as follows:

Symbol	What it means
	Clip ring
	Screw
	Connector
	Clamp
	E-ring
	Flat Flexible Cable
	Timing Belt
SEF	Short Edge Feed
LEF	Long Edge Feed
K	Black
C	Cyan
M	Magenta
Y	Yellow
B/W, BW	Black and White
FC	Full color



[A] Short Edge Feed (SEF)

[B] Long Edge Feed (LEF)

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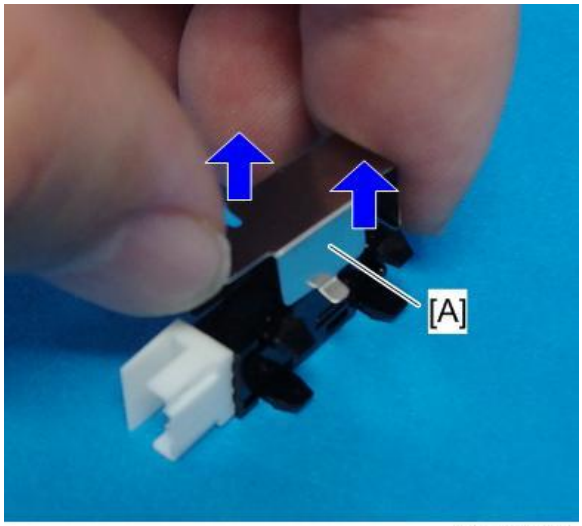
1. Detailed Descriptions

Changes from the Previous Machine

- **Antistatic Control**
  Metal cover [A] for antistatic control has been added to the transport sensor.
  When replacing the sensor, this cover will also be used after replacement, so remove it from the old sensor. When you do so, be careful not to deform or damage anything.



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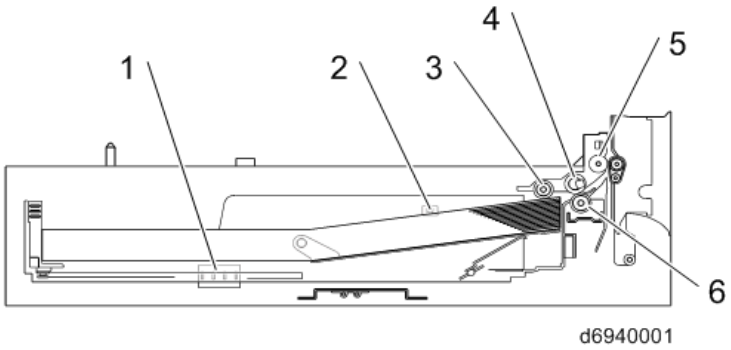
Specifications

Item	Specifications
Feed system:	RF (Roller Friction) paper feed system + Pick-up solenoid
Paper size:	• **Paper sizes that can be detected automatically** EU: A3 SEF, A4 LEF/SEF, A5 LEF, B4 JIS SEF, B5 JIS LEF/SEF, $8^1/_2$ × 11 SEF, SRA3 SEF NA: A4 LEF, A5 SEF, A6 SEF, B4 JIS SEF, B5 JIS LEF, B6 JIS SEF, $8^1/_2$ × 13 SEF, $8^1/_4$ × 14 SEF, $8^1/_4$ × 13 SEF, 8 × 13 SEF, 8 × 10 SEF, $7^1/_4$ × $10^1/_2$ SEF, $5^1/_2$ × $8^1/_2$ SEF, 8K SEF, 16K LEF/SEF, 11 × 15 SEF, 10 × 14 SEF, SRA3 SEF • **Select the paper size using the Tray Paper Settings menu** EU: A5 SEF, A6 SEF, B6 JIS SEF, 11 × 17 SEF, $8^1/_2$ × 14 SEF, $8^1/_2$ × 13 SEF, $8^1/_2$ × 11LEF, $8^1/_4$ × 14 SEF, $8^1/_4$ × 13 SEF, 8 × 13 SEF, 8 × 10 SEF, $7^1/_4$ × $10^1/_2$ LEF/SEF, $5^1/_2$ × $8^1/_2$ SEF, 8K SEF, 16K LEF/SEF, 12 × 18 SEF, 11 × 15 SEF, 10 × 14 SEF, $8^1/_2$ × $13^2/_5$ SEF NA: A3 SEF, A4 LEF, A5 SEF, A6 SEF, B4 JIS SEF, B5 JIS LEF, B6 JIS SEF, $8^1/_2$ × 13 SEF, $8^1/_4$ × 14 SEF, $8^1/_4$ × 13 SEF, 8 × 13 SEF, 8 × 10 SEF, $7^1/_4$ × $10^1/_2$ SEF, $5^1/_2$ × $8^1/_2$ SEF, 8K SEF, 16K LEF/SEF, 11 × 15 SEF, 10 × 14 SEF, SRA3 SEF • **Custom size** Vertical: 90.0–320.0 mm Horizontal: 148.0–457.2 mm
Paper weight:	60–300 g/m2 (16 lb. Bond–110 lb. Cover) Plain Paper 1–Thick Paper 4
Paper capacity (80 g/m^2, 20 lb. Bond):	550 sheets x 1 tray
Power consumption:	19 W (Power is supplied from the main unit.)
Dimensions (W x D x H):	587 x 685 x 120 mm (23.2 x 27.0 x 4.8 inches)
Weight:	Approx. 12 kg (26.5 lb.)

Parts Layout



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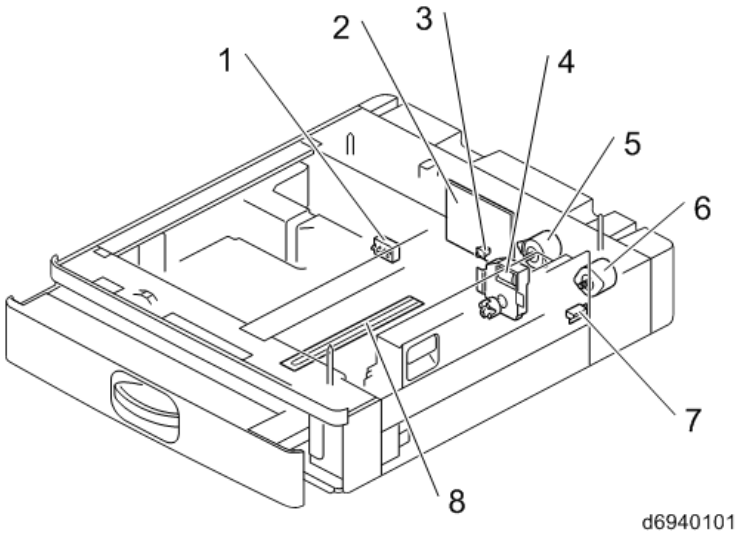
No.	Description	No.	Description
1	Paper size detection switch (SW1)	4	Feed roller
2	Tray set switch (SW2)	5	Transport roller
3	Pick-up roller	6	Friction roller



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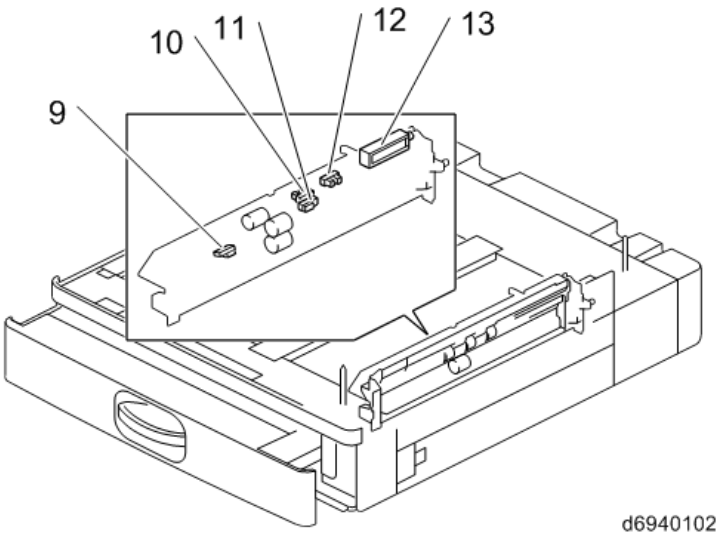

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No.	Description	No.	Description
1	Paper size detection switch (SW1)	8	Dehumidification heater (Option) (H1)
2	Controller board (PCB1)	9	Paper feed sensor (S1)
3	Tray set switch (SW2)	10	Paper end sensor (S3)
4	Tray lift motor (M3)	11	Vertical transport sensor (S2)
5	Paper feed motor (M2)	12	Upper limit sensor (S4)
6	Paper transport motor (M1)	13	Pick-up solenoid (SOL1)
7	Vertical transport cover switch (SW3)	-	-

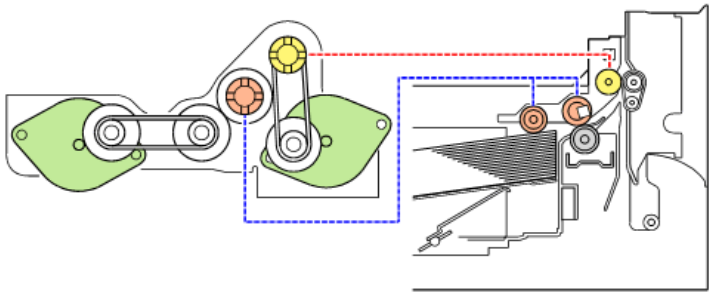
Mechanism

Paper Feed Separation Mechanism

The feed system is a RF paper feed system. The paper feed unit has a pick-up roller, feed roller, and friction roller. The feed roller and friction roller are high durability rollers.

Drive Mechanism

The pick-up roller and feed roller are driven by the paper feed motor (M2). The transport roller is driven by the paper transport motor (M1). The friction roller is not driven.



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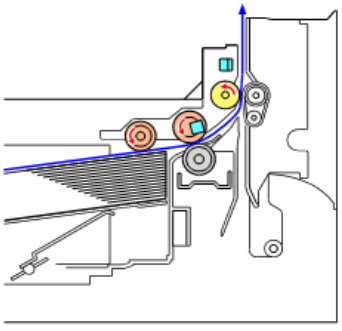
Separation Roller/Pick-up Roller Release Mechanism

When the right tray is set, the friction roller comes in contact with the feed roller. The pick-up roller touches the top sheet of paper that is to be transported.
When the right tray is opened, contact between the feed roller and friction roller, and contact between the pick-up roller and paper are released.

Paper Feed Transport Mechanism

In order to feed the paper at regular intervals, there is a paper feed sensor (S1) between the pick-up roller and the feed roller, and this sensor is used to adjust the paper feed timing.



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1. The paper feed motor (M2) turns ON, and feeds the first sheet of paper.
2. To prevent the next sheet from being transported, the pick-up solenoid (SOL1) turns ON just before the trailing edge of the first sheet passes through the pick-up roller, and the pick-up roller leaves

the paper surface.

3. Just before the trailing edge of the first sheet leaves the paper feed roller, the paper feed motor turns OFF.

However, at this time, if the paper feed sensor (S1) does not detect paper (the second sheet is not transported to the paper feed sensor position), the paper feed motor (M2) does not turn OFF. Pre-feed is performed as follows:

1. The pick-up solenoid (SOL1) turns OFF, and the second sheet of paper is transported to the paper feed sensor position.
2. When the trailing edge of the second sheet passes the feed roller, the paper feed motor (M2) is turned OFF. The pick-up solenoid (SOL1) remains OFF.

4. Just before the trailing edge of the first sheet passes the feed roller, the pick-up solenoid (SOL1) turns OFF. The pick-up roller is brought into contact with the paper surface.

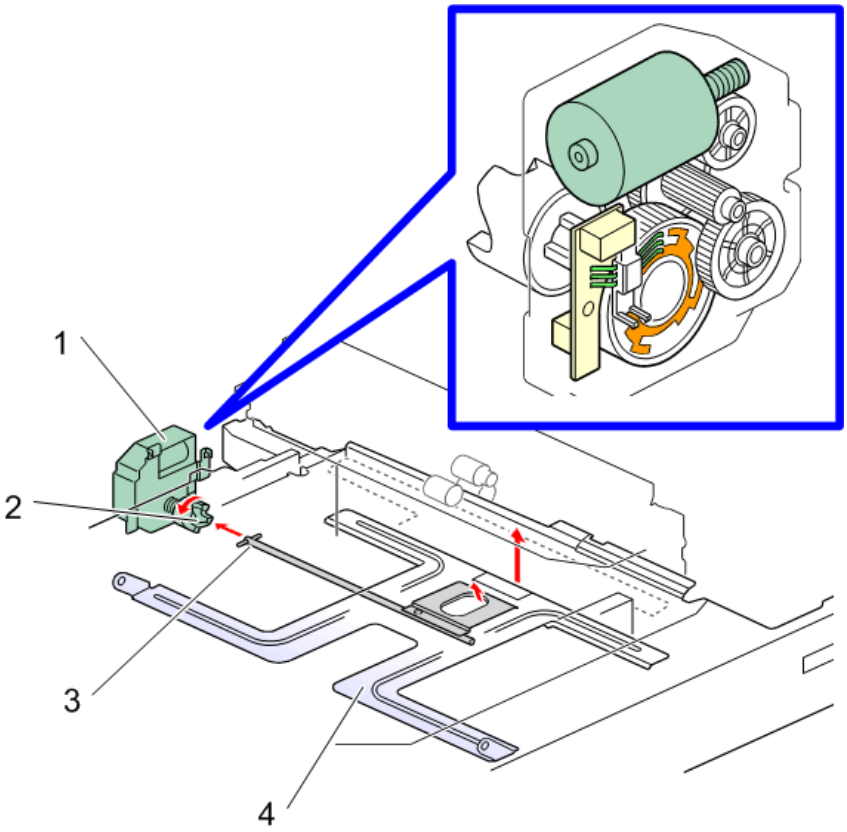
5. When the first sheet has been transported a specified distance by the downstream transport roller, the paper feed motor (M2) turns ON to feed the second sheet.

Tray Bottom Plate Lift

When the paper feed tray is set in the main frame, the tray set sensor switch turns ON. The coupling of the tray lift motor (M3) connects with the shaft at the rear of the tray, and the motor rotates to lift the tray bottom plate. The tray bottom plate rises until the paper surface lifts up the pick-up roller and the upper limit sensor (S4) turns OFF (the sensor is blocked). The tray is now ready to feed.

When the paper feed tray is removed, the coupling is disengaged, and the bottom plate descends. At this time, the tray lift motor (M3) rotates until the coupling returns to the home position.

1.Detailed Descriptions



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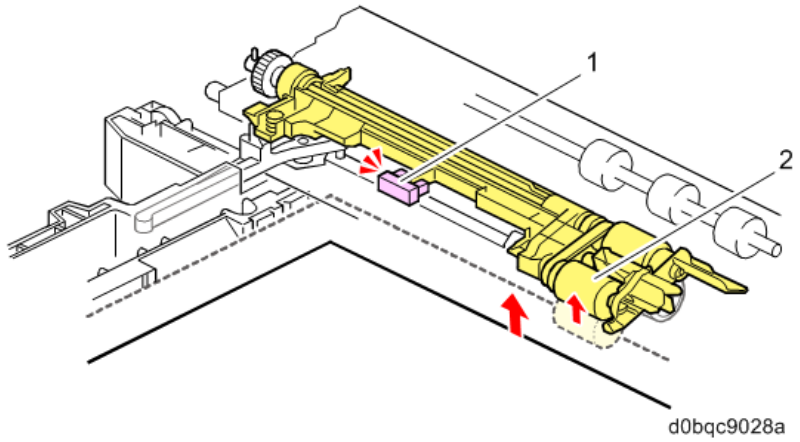
No.	Description	No.	Description
1	Tray lift motor (M3)	3	Tray shaft (rear)
2	Coupling	4	Tray bottom plate



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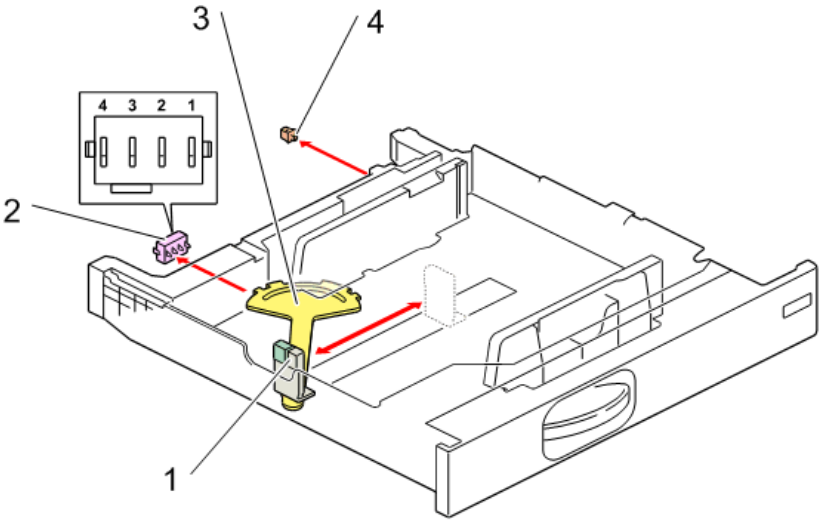
No.	Description	No.	Description
1	Upper limit sensor (S4)	2	Pick-up roller

Paper Size Detection

The end fence is linked mechanically with the size detection actuator. When the end fence is moved, the size detection actuator also moves.

When the paper feed tray is set, 4 paper size detection switches turn ON/OFF depending on the

position of the size detection actuator. Paper size is detected by a combination of these switches.



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No.	Description	No.	Description
1	End fence	3	Size detection actuator
2	Paper Size Detection Switch (SW1)	4	Tray set switch (SW2)

Paper size detection switch operation

Paper size	Size detection switch			
	SW4	SW3	SW2	SW1
SRA3 (12”×18”)	1	0	1	0
A3 (DLT)	0	1	0	0
B4 (LG)	0	0	1	1
	0	1	1	1
A4_SEF	1	1	1	0
LT_SEF	1	1	0	0
B5_SEF	1	0	0	0
A4_LEF (LT_LEF)	0	0	0	1
B5_LEF (Exe_LEF)	0	0	1	0
A5_LEF	0	1	0	1

Remaining Paper/Paper end Detection

Remaining paper detection

Remaining paper in the paper feed tray is detected by a combination of ON/OFF status (contact/non-contact) of contact-type remaining paper sensors (boards) CN-3 and CN-5.

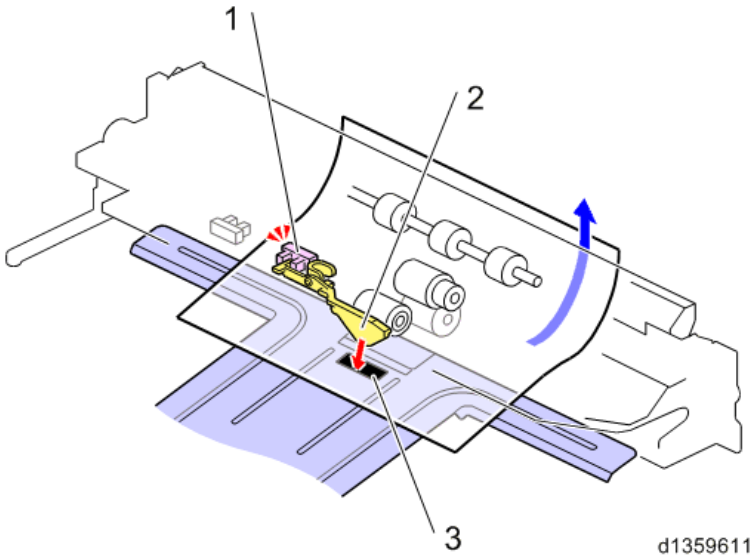
When the amount of remaining paper decreases, and the tray lift motor rotates, the remaining paper sensors CN-3 and CN-5 in the motor are turned ON/OFF.

The following 4 levels of remaining paper can be detected.

Remaining paper	100%	70%	30%	10%
CN-3	OFF	ON	ON	OFF
CN-5	OFF	OFF	ON	ON
Control panel display	4 bars	3 bars	2 bars	1 bar

Paper end detection

When there is no more paper in the paper feed tray, the paper end feeler turns ON the paper end sensor (S3) (the sensor is unblocked).



No.	Description	No.	Description
1	Paper end sensor (S3)	3	Slot
2	End feeler		

2. Replacement and Adjustment

The Aim of Anti-tip Components and Precautions

The anti-tip components are necessary for meeting the requirements of IEC60950-1, the international standard for safety.

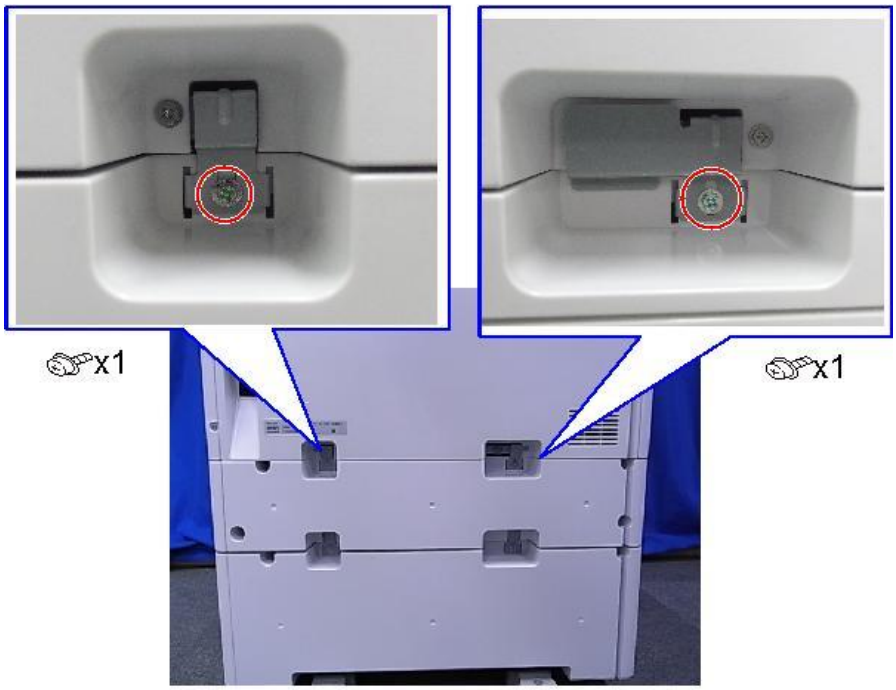
The aim of these components is to prevent the products, which are heavy in weight, from toppling as a result of people running into or leaning onto the products, which can lead to serious accidents such as persons becoming trapped under the product. (U.S.: UL60950-1, Europe: EN60950-1)

Therefore, removal of such components must always be with the consent of the customer.

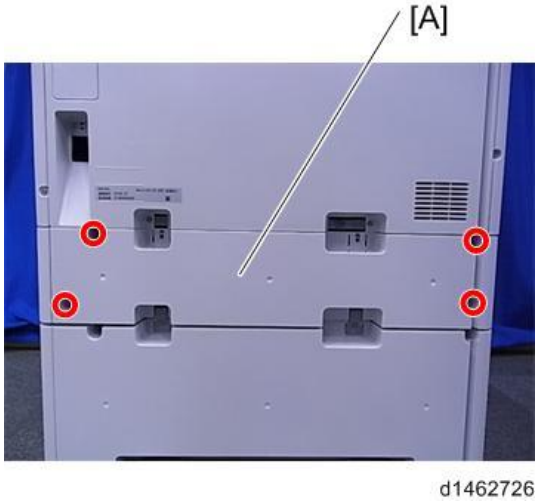
Do not remove them at your own judgment.

Rear Cover

1. Remove the securing brackets.

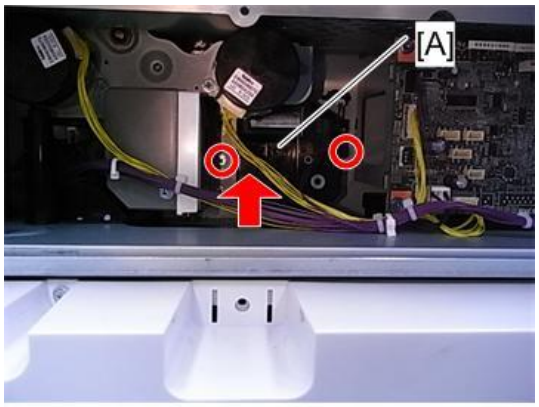


2. Remove the rear cover [A] (×4).



Tray Lift Motor (M3)

1. Remove the rear cover (Rear Cover).
2. Remove the tray lift motor (M3) [A] (×2, ×1).



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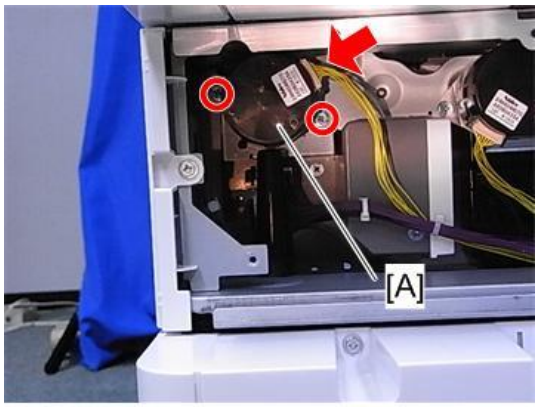
Paper Transport Motor (M1)

1. Remove the rear cover (Rear Cover).
2. Remove the paper transport motor (M1) [A] (×2, ×1).



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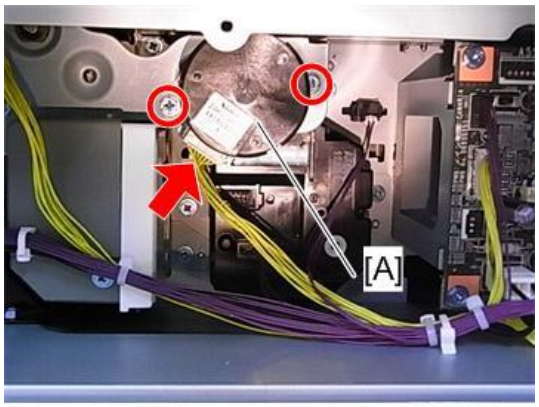
Paper Feed Motor (M2)

1. Remove the rear cover (Rear Cover).
2. Remove the paper feed motor (M2) [A] (×2, ×1).



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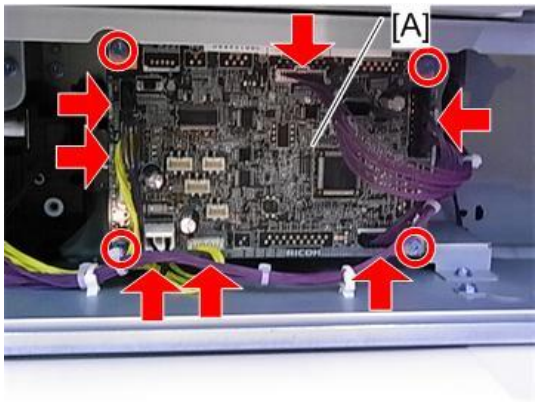
Controller Board (PCB1)

1. Remove the rear cover (Rear Cover).
2. Remove the controller board (PCB1) [A] (×4, ×7).



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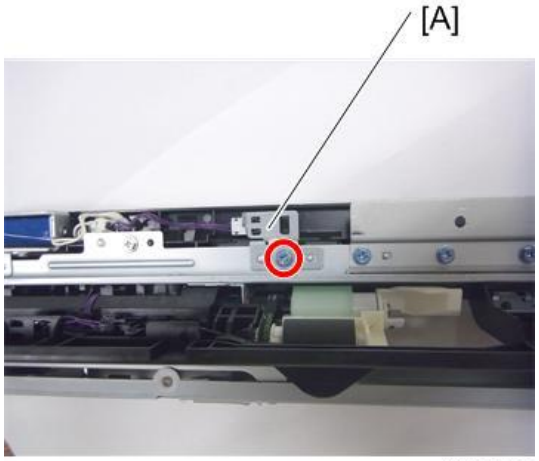
Vertical Transport Sensor (S2), Upper Limit Sensor (S4), Paper End Sensor (S3), Paper Feed Sensor (S1)

Vertical Transport Sensor

1. Remove the paper feed unit (Paper Feed Unit).
2. Remove the vertical transport sensor bracket [A] (×1, ×1).



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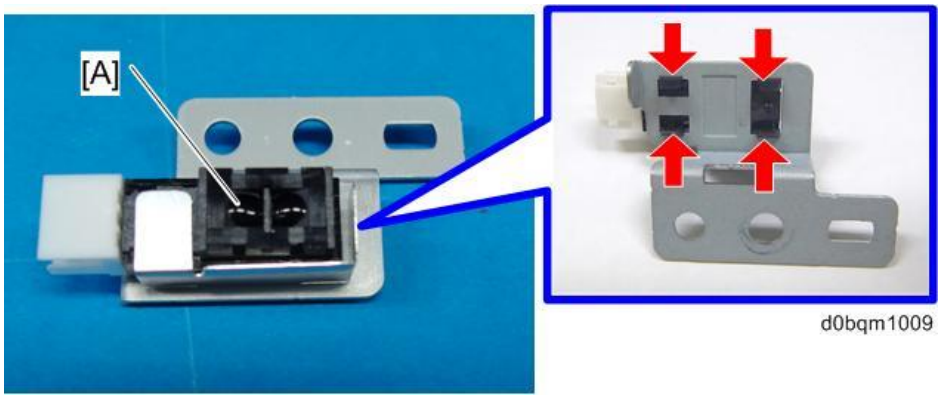
3. Remove the vertical transport sensor (S2) [A].



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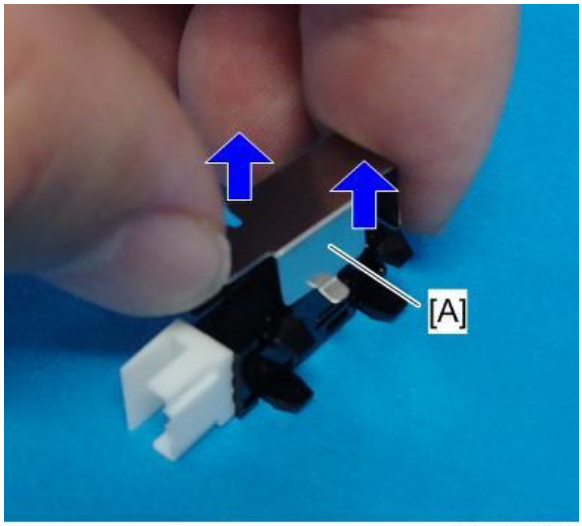
Metal cover [A] for antistatic control has been added to the vertical transport sensor.
When replacing the sensor, this cover will also be used after replacement, so remove it from the old sensor. When you do so, be careful not to deform or damage anything.



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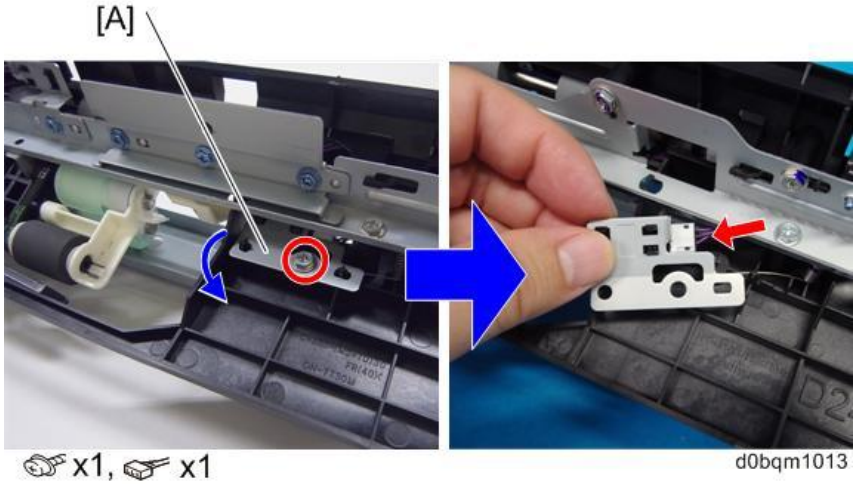
Paper Feed Sensor, Upper Limit Sensor, Paper End Sensor

1. Remove the paper feed sensor bracket [A].



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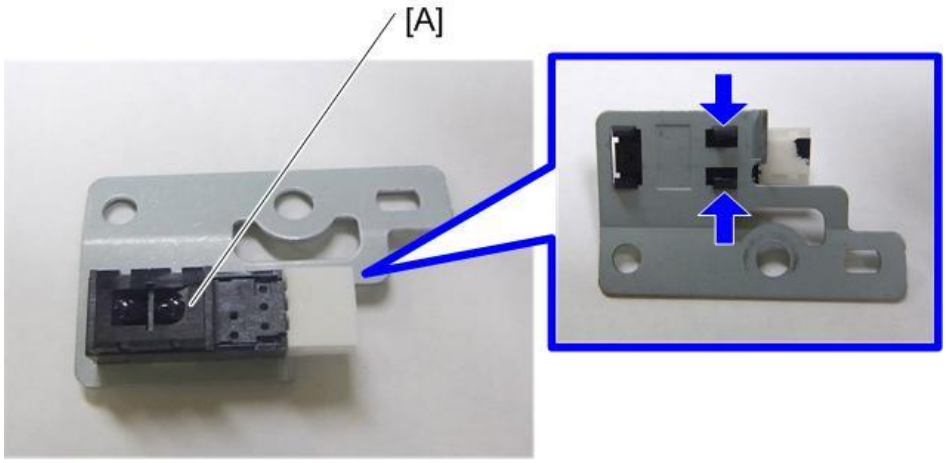
2. Remove the paper feed sensor (S1) [A].



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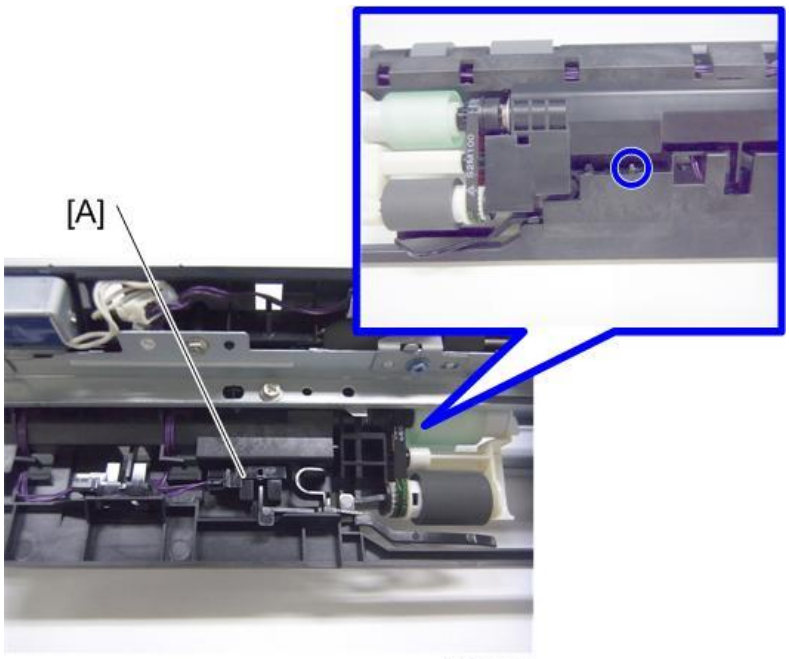
3. Remove the paper end sensor (S3) [A] (×1).



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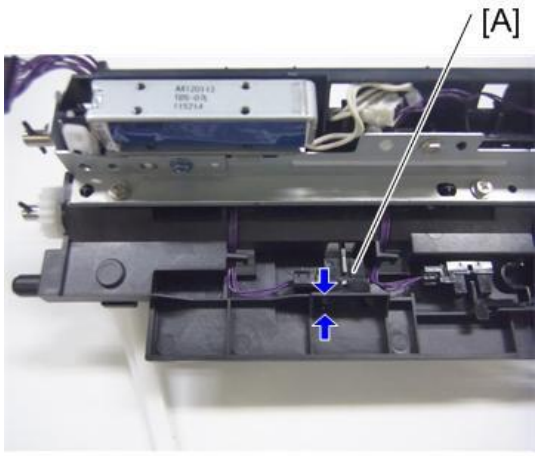
4. Remove the upper limit sensor (S4) [A] (×1).



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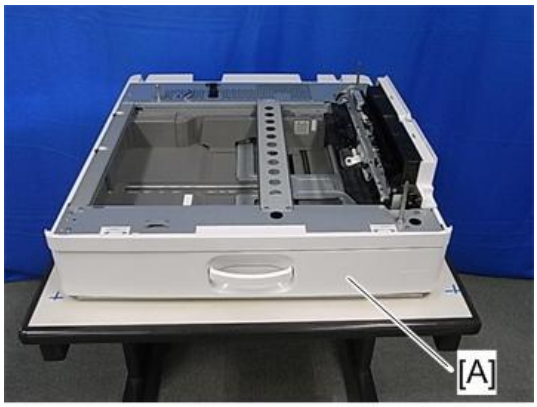
Paper Feed Unit

1. Pull out the paper tray [A].



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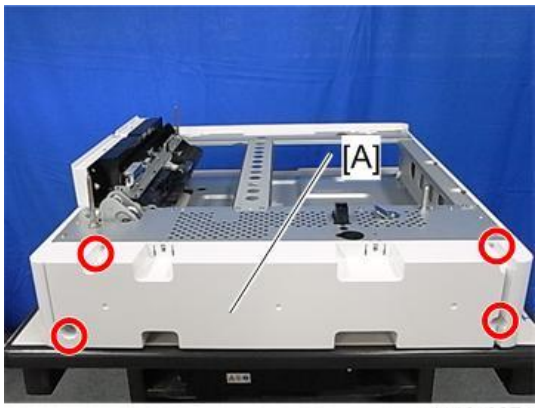
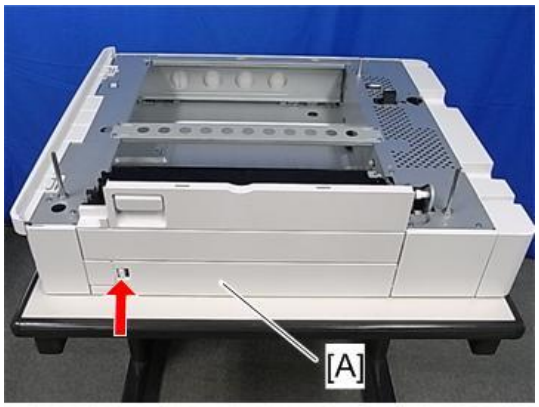
2. Remove the rear cover [A]. (×4)



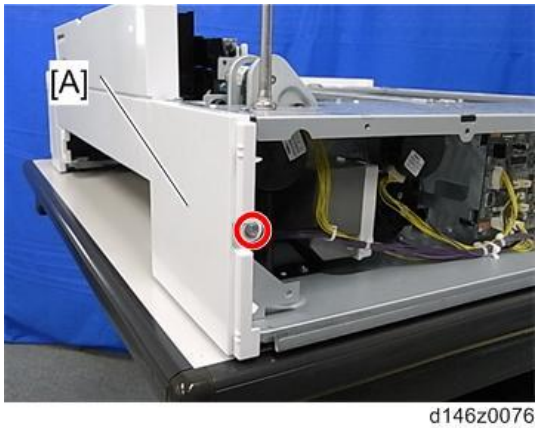
d146z0074

3. Remove the right lower cover [A] (hook ×1).



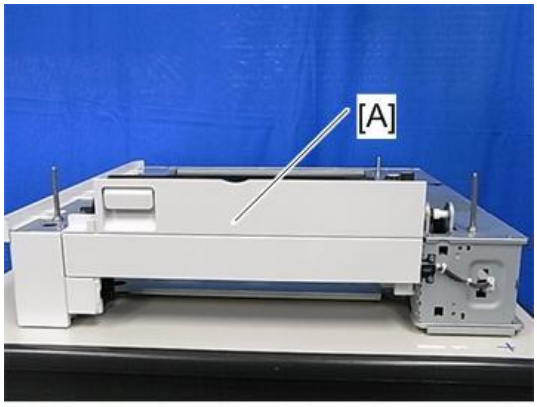
d146z0075

4. Remove the right rear cover [A] (×1).



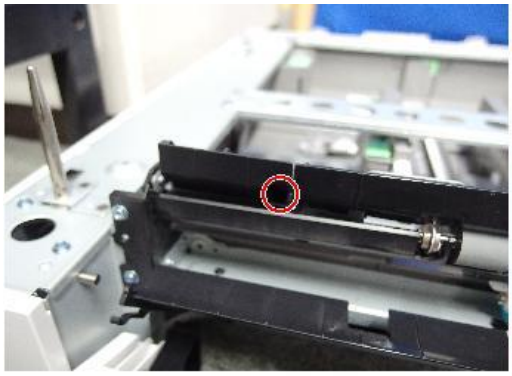
d146z0076

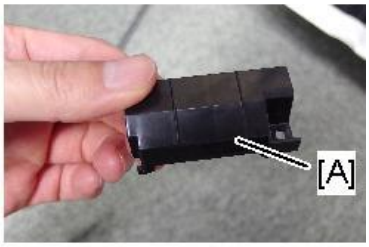
5. Open the transport cover [A].



d146z0077

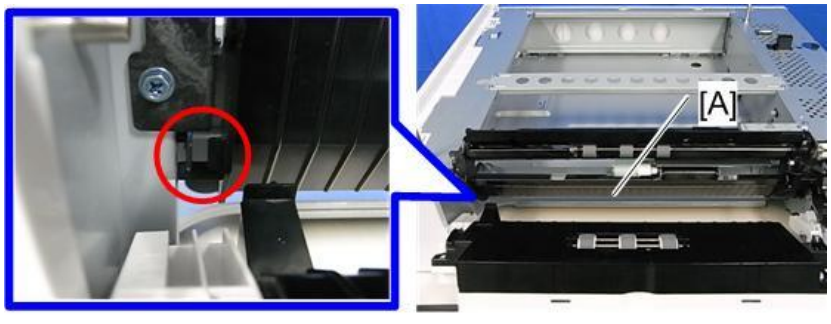
6. Remove the small guide [A].





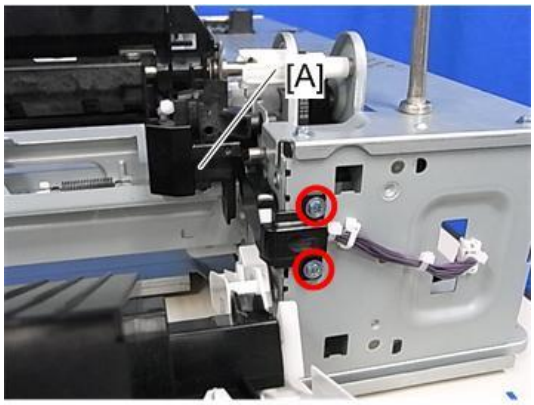
x1 d0bqm0563

7. Remove the transport guide [A] (tab ×1).



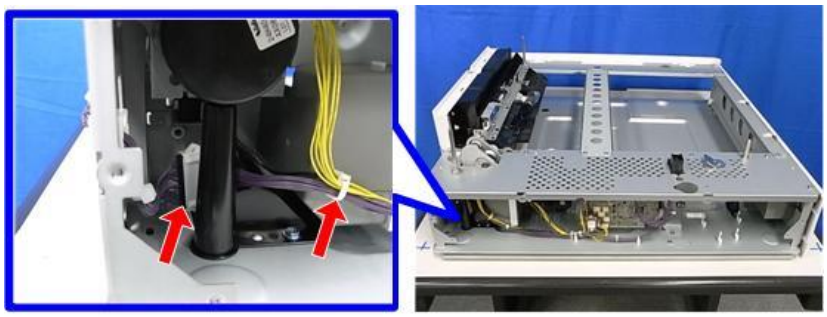
d146z0078

8. Remove the harness guide [A] (×2).



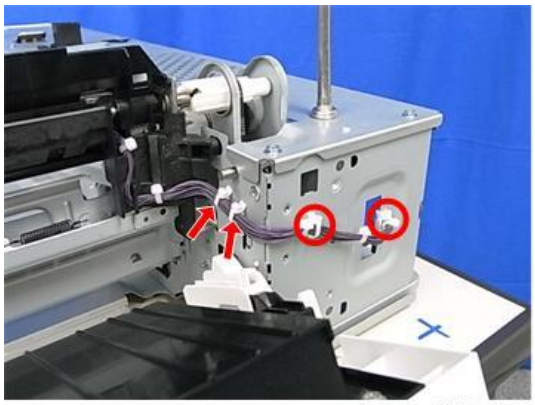
d146z0079

9. Release the clamp, and then disconnect the harness at the right rear of the unit (×1, ×1).



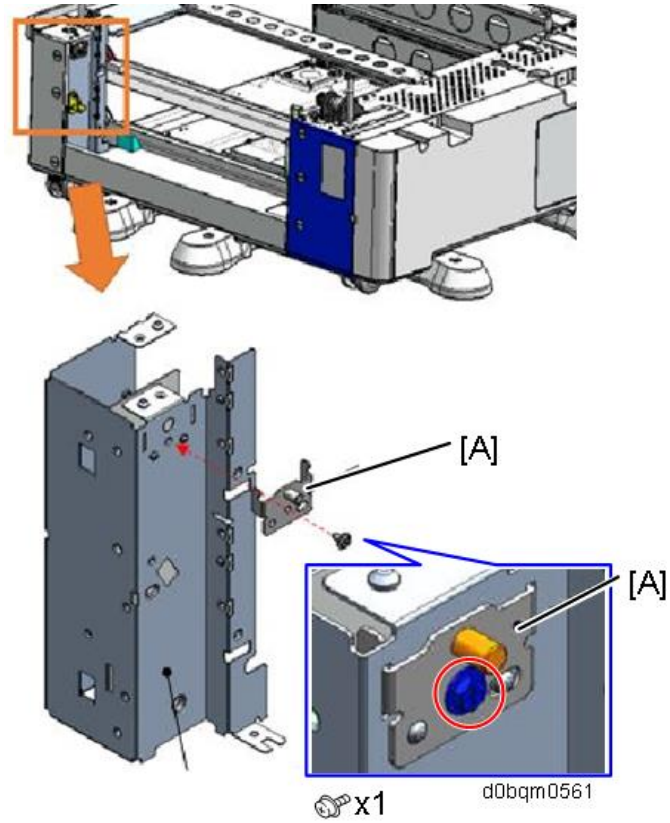
d146z0080

10. Release the four clamps (×4).

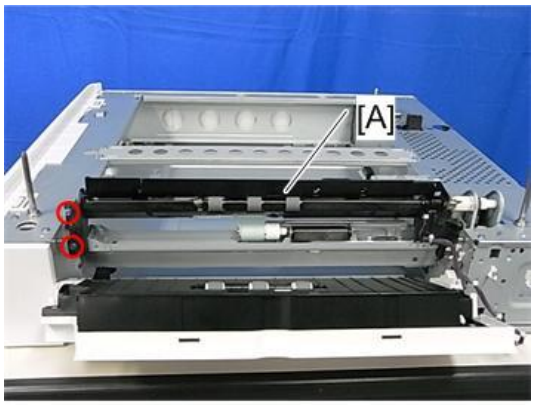


d146z0081

11. Remove the bracket [A].

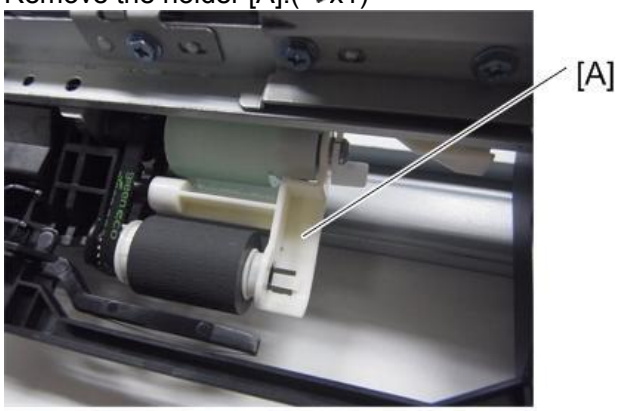


12. Remove the paper feed unit [A] (×2).



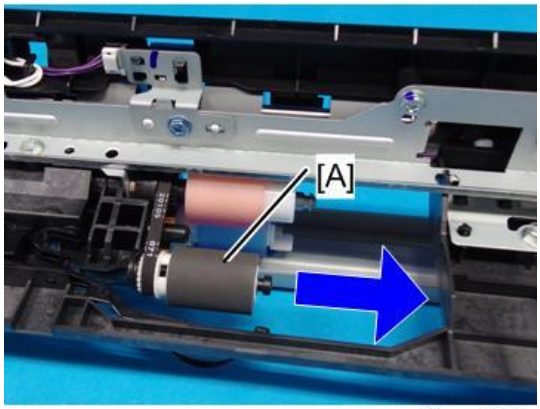
Pick-up Roller, Feed Roller, Friction Roller

1. Remove the paper feed unit (Paper Feed Unit).
2. Remove the holder [A].(x1)



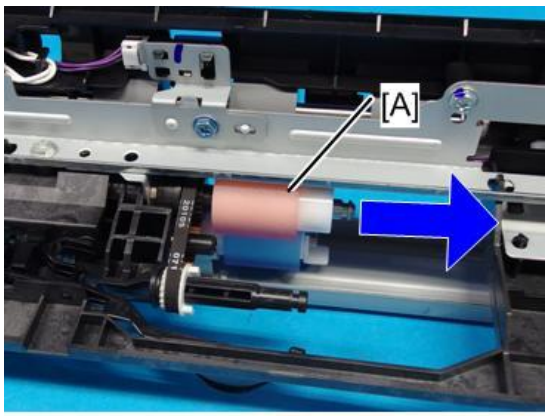
d1462188

3. Remove the pick-up roller [A].



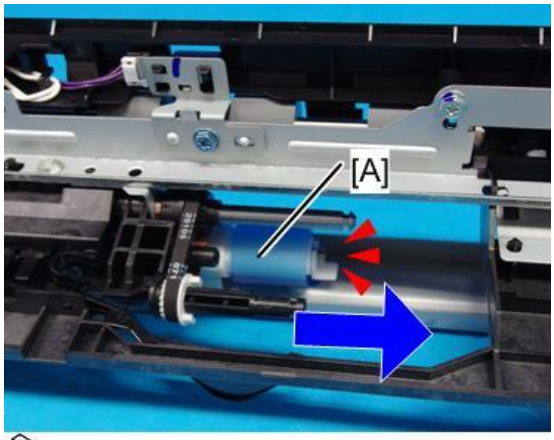
d0bqm1021

4. Remove the feed roller [A].



d0bqm1022

5. Remove the friction roller [A].



x1 d0bqm1023