SPDF DF3120
Machine Code: D3FF
Field Service Manual
Ver. 1.0

Latest Release: December, 2018
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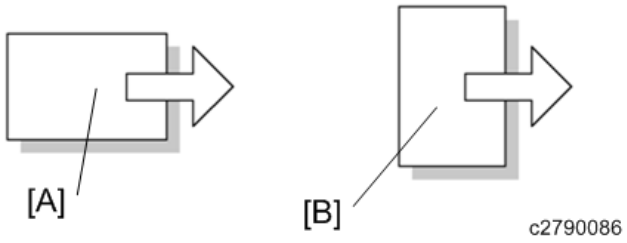
Symbols, Abbreviations and Trademarks

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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Table of Contents

1. Detailed Descriptions

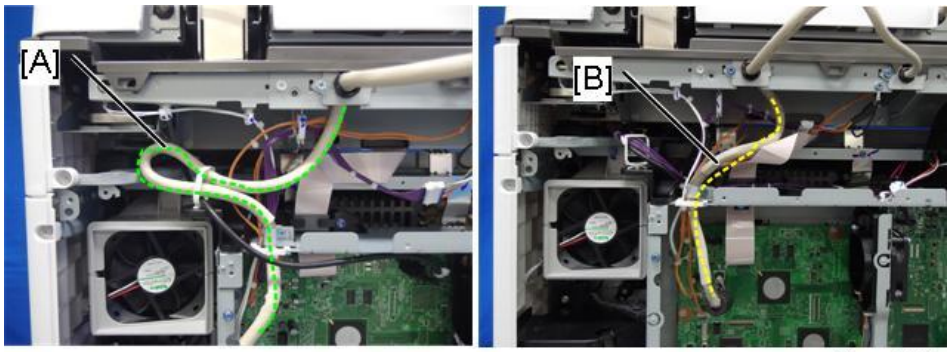
Changes from the Previous Machine

- **Interface Cable Length**

  The SPDF of the previous machine was also usable by other models, and the slack in the interface cable was taken up by folding the cable and accommodating it at the back of the machine. The SPDF of DF3220 is made specially for DF3220, so the interface cable is the right length for BICU connection.

  [A]: Previous Machine

  [B] DF3220



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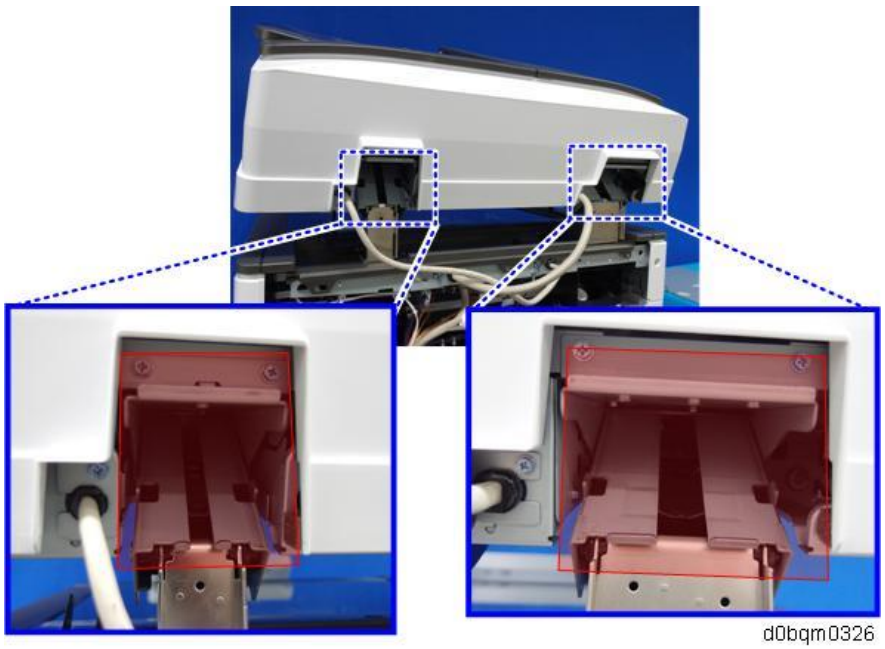
- **Mylars Added to Hinges**

  Mylars have been added to the hinge gaps (framed in red) to prevent fingers getting caught in the hinge gaps when raising or lowering the ADF or carrying out maintenance.



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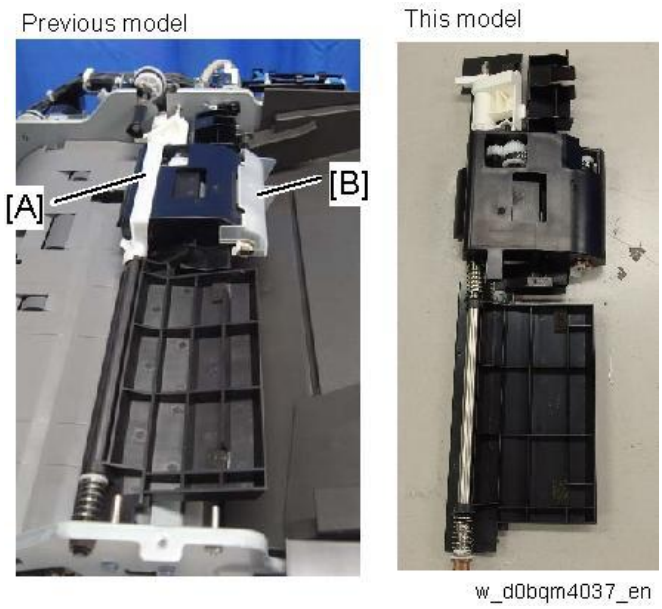
- **Original Feed Unit**

1.Detailed Descriptions

The snap fitting [A] of the previous machine has been eliminated.

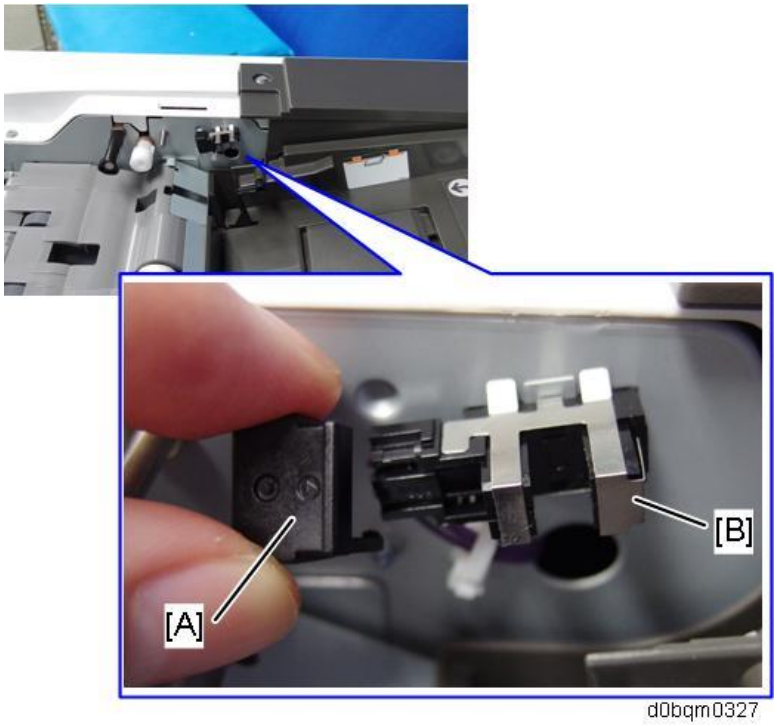
The pick-up roller cover [B] has been integrated with the original feed unit (making it easier to attach and detach the unit).



- **Antistatic Control**

  Covers [A] [B] for antistatic control have been added to the bottom plate position sensor. This reduces the occurrence rate of sensor failure.

  When replacing the sensor, these covers will be used after replacement, so remove them from the old sensor. When you do so, be careful not to deform or damage anything.



- **Page Keeper Type M37**

An optional double-feed sensor is available.

For details, refer to "Page Keeper Option (Double-feed Sensor)".

- **Supporting Small Originals Such as Checks**

  An optional small paper feeding unit is available.

  For details, refer to "Small Paper Feeding Unit".

Specifications

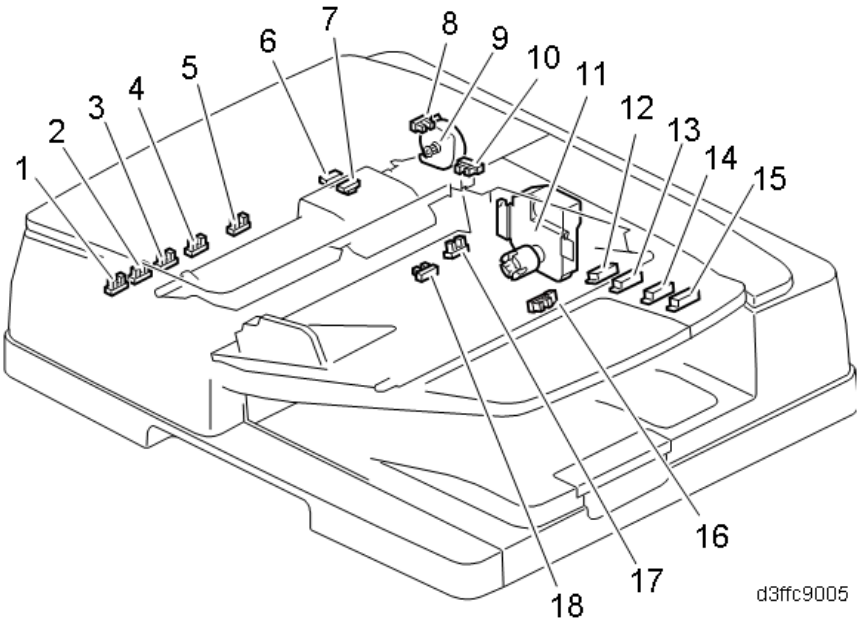
Item	Specifications
Configuration	Automatic document feed duplex scanner (one pass two-side scanning)
Mode:	Batch mode, SADF mode, Mixed Sizes mode, Original Orientation mode, and Custom Size originals mode
Original size	EU/AA • A3 SEF - A5 SEF/LEF, A6 SEF/LEF*1, B4 JIS SEF,- B6 JIS SEF/LEF, 11 x 17 SEF - 8 1/2 x 11 SEF/LEF You cannot scan two sides of B6 JIS originals. NA • 11 x 17 SEF - 5 1/2 x 8 1/2 SEF/LEF, A3 SEF - A4 SEF/LEF, A6 SEF/LEF*1
Scanning origin point	Origin at rear upper left corner
Original setting	Face-up on original tray
Original feed	Feeds from top of stack on original tray
Original separation	Feed belt and reverse roller separation by friction
Original scanning method	Through-sheet method (Front: White platen plate, Back: Color CIS and white roller)
Original tray capacity	220 sheets (80 g/m^2, 20 lb. Bond)
Dimensions (w x d x h)	587 x 520 x 175 mm (23.2 x 20.5 x 6.9 in.)
Weight	Approx. 15 kg (33.1 lb.)
Maximum power consumption:	60 W or less (Power is supplied from the main unit.)

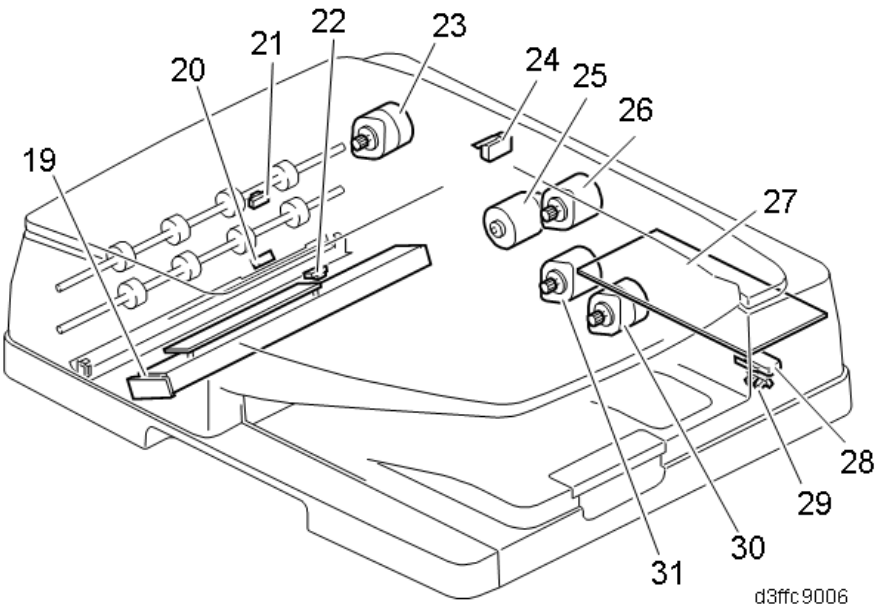
*1 Small Paper Feeding Unit Type M37 is used.

Small Paper Feeding Unit Type M37

Item	Specifications
supported original type	Check / Bill / Receipt etc.
Original size	Width:76 to 105mm Length:148 to 216mm
Original thickness	55 to 110 g/ m^2
Original tray capacity	50 sheets (55 g/ m^2) 44 sheets (70 g/ m^2) 30 sheets (110 g/ m^2)

Parts Layout

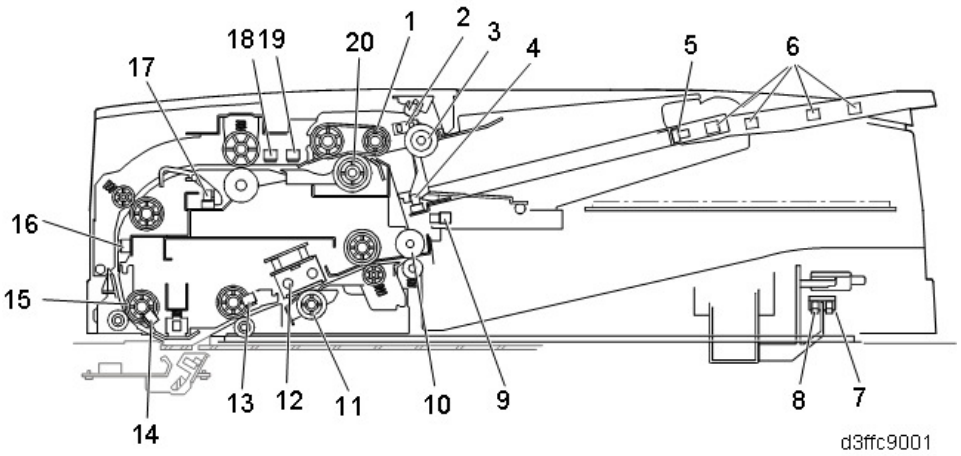




No.	Part	No.	Part
1	Original Width Sensor 5 (S1)	17	Original Set Sensor (S18)
2	Original Width Sensor 4 (S2)	18	Bottom Plate HP Sensor (S17)
3	Original Width Sensor 3 (S3)	19	CIS Unit
4	Original Width Sensor 2 (S4)	20	Original Registration Sensor (S12)
5	Original Width Sensor 1 (S5)	21	Interval Sensor (S10)
6	Skew Correction Sensor (S6)	22	Original Exit Sensor (S11)
7	Separation Sensor (S7)	23	ADF Transport Motor (M2)
8	Pick-up Roller HP Sensor (S8)	24	ADF Feed Cover Interlock Switch (SW1)

No.	Part	No.	Part
9	ADF Pick-Up Roller Lift Motor (M1)	25	ADF Feed Motor (M3)
10	Bottom Plate Position Sensor (S9)	26	Pull-out Motor (M4)
11	ADF Bottom Plate Lift Motor (M7)	27	ADF Controller Board (PCB1)
12	Original Length Sensor (A4/LT LEF) (S19)	28	ADF Lift Interlock Switch (SW2)
13	Original Length Sensor (B5) (S16)	29	Lift Sensor (S13)
14	Original Length Sensor (A4) (S15)	30	ADF Exit Motor (M5)
15	Original Length Sensor (LG) (S14)	31	ADF Scanning Motor (M6)
16	Small Size Paper Tray Set Sensor (S21)		

Cross-Section of the ADF Unit



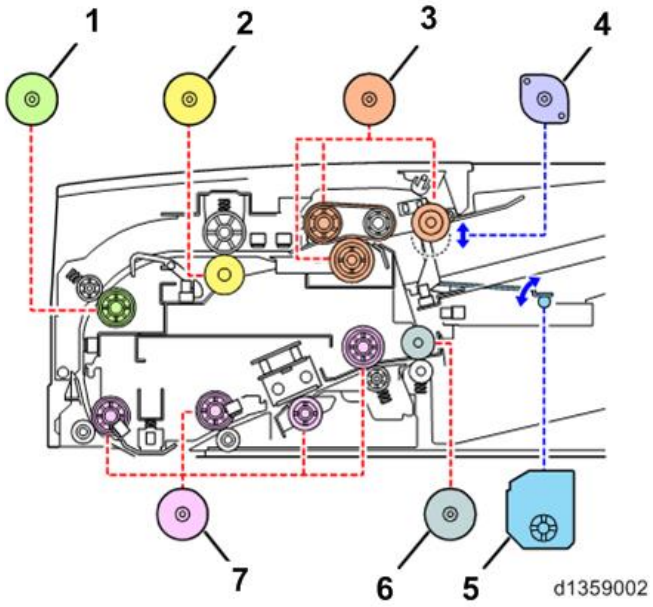
No,	Part	No.	Part
1	Feed Belt	11	CIS White Roller
2	Bottom Plate Position Sensor (S9)	12	CIS
3	Pick-up Roller	13	Original Exit Sensor (S11)
4	Original Set Sensor (S18)	14	Original Registration Sensor (S12)
5	Small Size Paper Tray Set Sensor (S21)	15	Scanning Entrance Roller
6	Original Length Sensors (S14-S16, S19)	16	Interval Sensor (S10)
7	Lift Sensor (S13)	17	Original Width Sensors (S1-S5)
8	ADF Lift Interlock Switch (SW2)	18	Skew Correction Sensor (S6)
9	Bottom Plate HP Sensor (S17)	19	Separation Sensor (S7)
10	Exit Roller	20	ADF Separation Roller

Mechanism

Scanning Sequence

- **Original Pick-up**. The pick-up roller picks up the leading edge of original.
- **Original Feed and Separation**. The feed belt and reverse roller feed the originals and prevent double-feeds.
- **Original size detection**. 9 original size sensors, 5 for width and 4 for length, detect the original size on the original tray.
- **Original Scanning**. A color CIS unit scans the reverse side of the originals (both sides are scanned in one pass).

Motors



No.	Part
1	ADF Transport Motor (M2)
2	Pull-out Motor (M4)
3	ADF Feed Motor (M3)
4	ADF Pick-up Roller Lift Motor (M1)
5	ADF Bottom Plate Lift Motor (M7)
6	ADF Exit Motor (M5)
7	ADF Scanning Motor (M6)

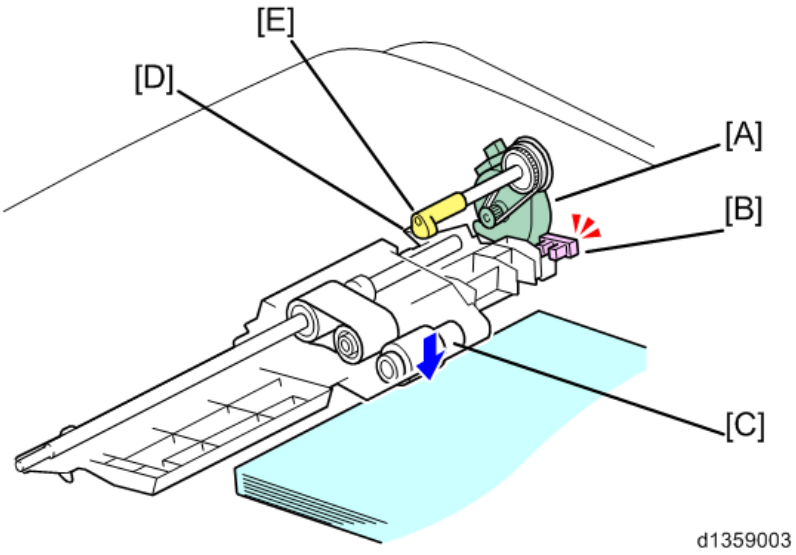
Original Pick-up

Paper Feed

When an original is placed on the original tray, its leading edge raises the feeler of the original set sensor (S18) and the sensor detects the original.

Pick-up Roller

- When there is no original on the original tray, the pick-up roller [C] swings up to the limit of its vertical movement.
- To lower the pick-up roller, the ADF pick-up roller lift motor (M1) [A] rotates the lift cam [E] which lowers the pick-up arm [D] and the pick-up roller.
- When the pick-up roller is lowered, the ADF pick-up roller lift motor (M1) [A] switches on.
- When the actuator switches off the bottom plate position sensor (S9) [B], the ADF pick-up roller motor (M1) goes off, and then the lift cam [E] holds the roller up.



Pick-up Roller Down Timing

The pick-up roller lowers:

- When an original (or stack of originals) is set on the original table.
- When the trailing edge of the original passes the sensor (but, it does not lower for the last original).
- For A4/LT LEF when the leading edge reaches the original registration sensor (S12).

Pick-up Roller Lift Motor On/Off Timing

The pick-up roller lift motor (M1) switches ON:

- When the original set sensor (S18) detects the leading edge of the original.
- Just after the machine is turned on

The pick-up roller lift motor switches OFF:

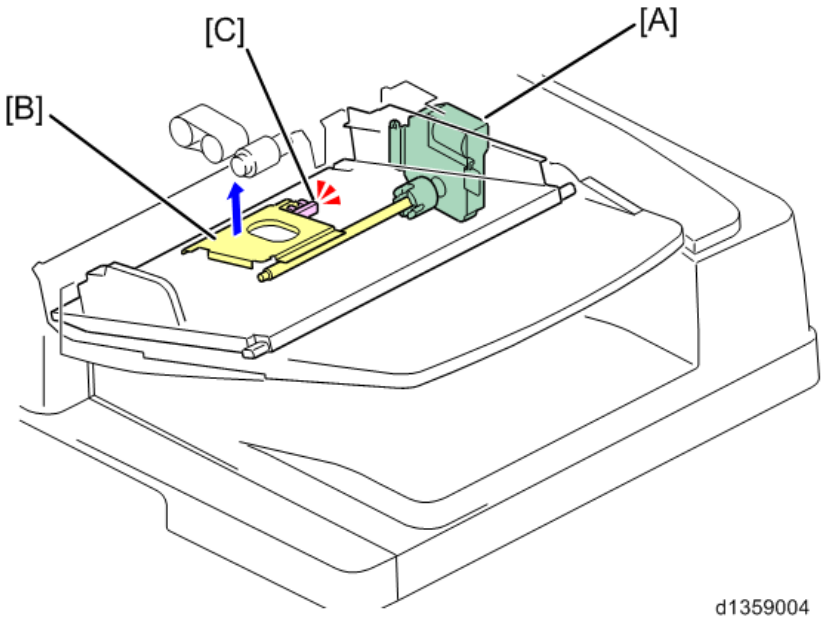
- When the original feed cover is open.
- When an original jams in the ADF paper path.

Bottom Plate Lift

- When an original is set on the original tray, after the pick-up roller drops, the bottom plate position sensor (S9) goes off, and then the ADF bottom plate lift motor (M7) [A] goes on and raises lift lever [B] which raises the bottom plate.
- The actuator above the pick-roller holder switches on the bottom plate position sensor (S9) (see the previous diagram), and this turns the ADF bottom plate lift motor (M7) [A] off so the stack is

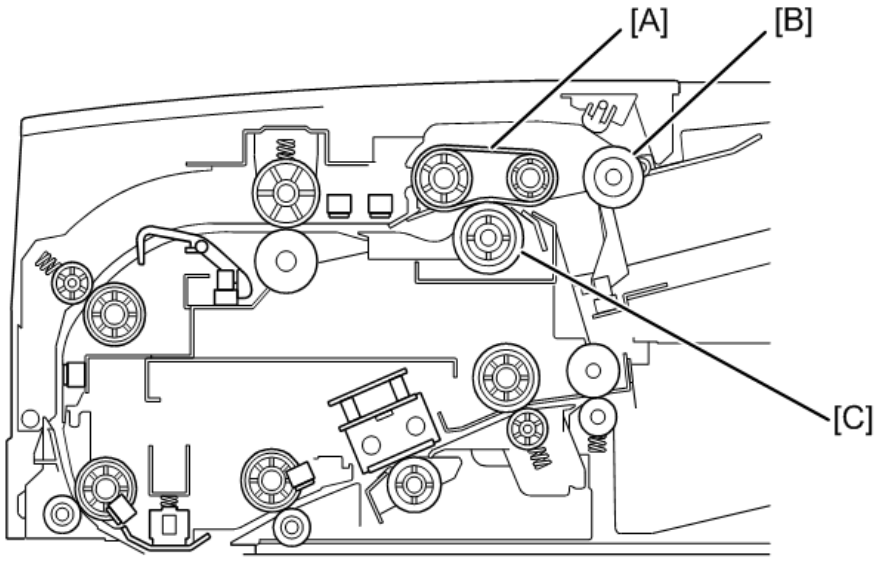
positioned at the correct feed position.

- During scanning with the ADF, when the top of the stack becomes too low, the pick-up roller drops low enough to turn the bottom plate position sensor (S9) off, which switches the ADF bottom plate lift motor (M7) [A] on again and raises the stack until once again it is at the paper feed position.
- This mechanism performs continuously and keeps the top of the stack at the correct feed height for original stacks of up to 220 sheets (81.4 g/m2).
- At the end of the job, the original table descends under its own weight as far as the bottom plate HP sensor (S17) [C].



Original Feed and Separation Mechanism

- A feed belt [A] and ADF separation roller [C] comprise the FRR original separation mechanism.
- If more than one original feeds between the nip of the feed roller and ADF separation roller, when the pick-up roller [B] picks up the front edge of the original, the rotation of the ADF separation roller [C] reverses immediately.
- This sends the bottom sheet back into the tray while the sheet above continues to feed normally.



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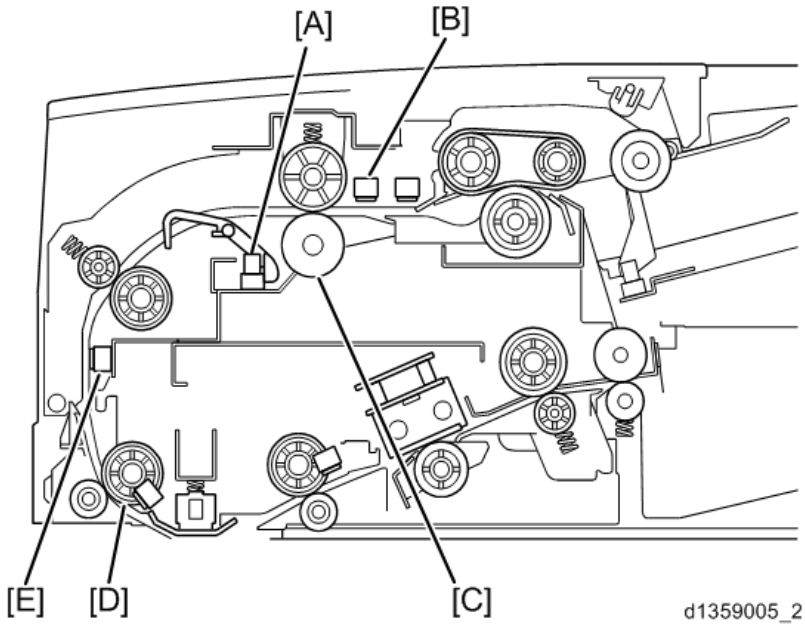
- When more than one original feeds, this increases torque above the limit of the spring loaded torque limiter which reverses the rotation of the ADF separation roller against the rotation of the feed belt above.
- The bottom sheet reverse feeds while the sheet above continues to feed into the paper path.

Skew Correction Mechanism

- After the original feeds, the skew correction sensor (S6) detects its leading edge, and stops the rotation of the feed motor for a prescribed number of pulses.
- The leading edge hits and straightens against the stationary roller to correct skew.
- If the original is small (B6, A5, B5, HLT) (or when duplex scanning regardless of paper size), when the interval sensor (S10) [E] detects the leading edge of the original, it stops the pre-scanning roller [D] for a prescribed number of pulses, long enough for the original to buckle against the stationary roller and correct skew.



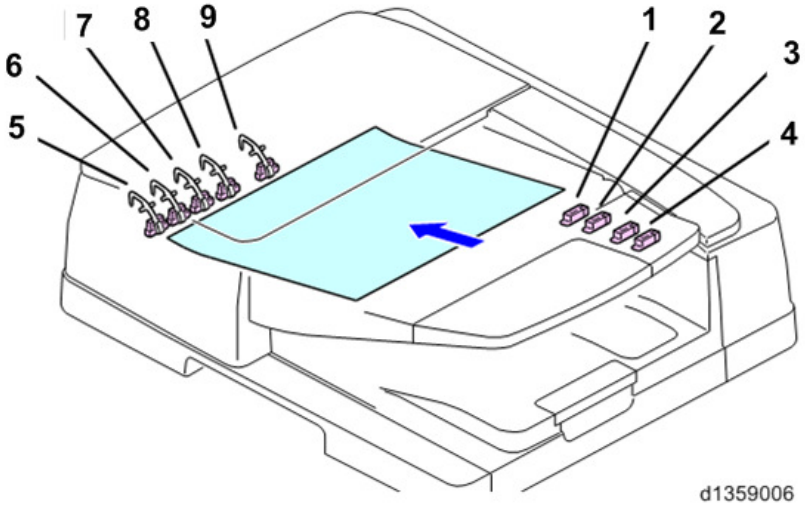
No.	Part
A	Original Width Sensors (S1-S5)
B	Skew Correction Sensor (S6)
C	Entrance Roller
D	Scanning Entrance Roller
E	Interval Sensor (S10)

- You can turn on **SP6020-001** (ADF Contact Mode In/Out) to enable skew correction at both the entrance roller above as well as the pre-scanning roller below for all paper sizes but this may slow down the speed of original feeding.

Original Size Detection

- When the leading edge of the original reaches the interval sensor (S10), the machine determines the width from the readings of the 5 original width sensors (S1-S5).
- The length of the original is determined by the readings of the 3 original length sensors under the original table and one sensor on the bottom plate.

- These two arrays of sensors are used to determine the size of the originals.



No.	Part
1	Original Length Sensor (A4/LT LEF) (S19)
2	Original Length Sensor (B5) (S16)
3	Original Length Sensor (A4) (S15)
4	Original Length Sensor (LG) (S14)
5	Original Width Sensor 5 (S1)
6	Original Width Sensor 4 (S2)
7	Original Width Sensor 3 (S3)
8	Original Width Sensor 2 (S4)
9	Original Width Sensor 1 (S5)

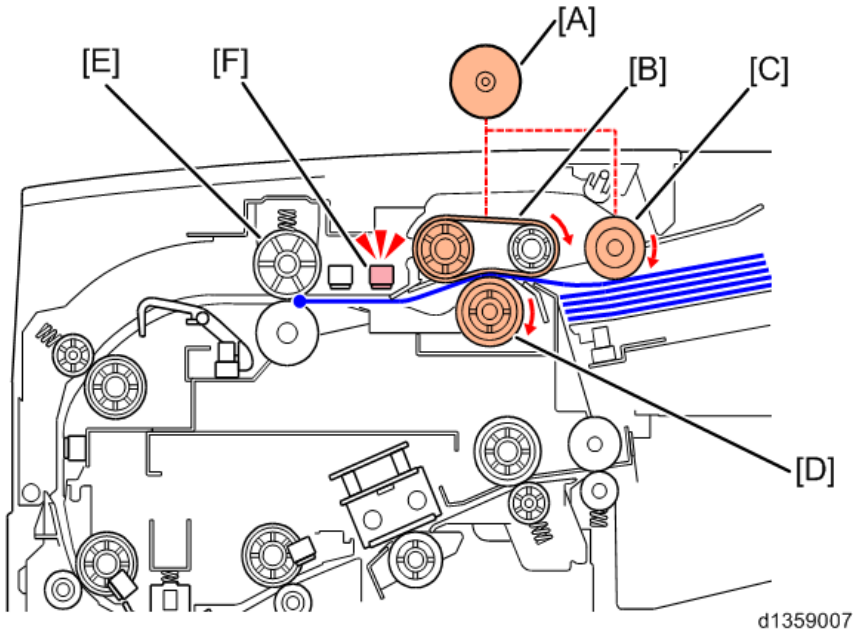
Size (W x L)	Width Sensors					Length Sensors			
	1	2	3	4	5	A4 LEF	B5	A4	LG
A3(297x420)	ON	ON	ON	ON	ON	ON	ON	ON	ON
B4(257x364)	ON	ON	ON	---	---	ON	ON	ON	ON
A4 SEF (210x297)	ON	ON	---	---	---	ON	ON	ON	-
A4 LEF (297x210)	ON	ON	ON	ON	ON	---	---	---	---
A4 SEF (210x297)	ON	---	---	---	---	ON	ON	---	---
A4 LEF (297x210)	ON	ON	ON	---	---	---	---	---	---
A4 SEF (210x297)	---	---	---	---	---	---	---	---	---
A4 LEF (297x210)	ON	---	---	---	---	---	---	---	---
DLT SEF (11"x17")	ON	ON	ON	ON	---	ON	ON	ON	ON
DLT SEF (11"x17")	ON	ON	ON	ON	---	ON	ON	ON	ON
8 1/2"x11" SEF (LT)	ON	ON	---	---	---	ON	ON	---	---
11"x8 1/2" LEF (LT)	ON	ON	ON	ON	---	---	---	---	---

Note

- 11"x17" and 11"x15" are detected as the same size, so you need to select one or the other with **SP6016-001** (Original Size Determination Priority) to choose whichever you are using.

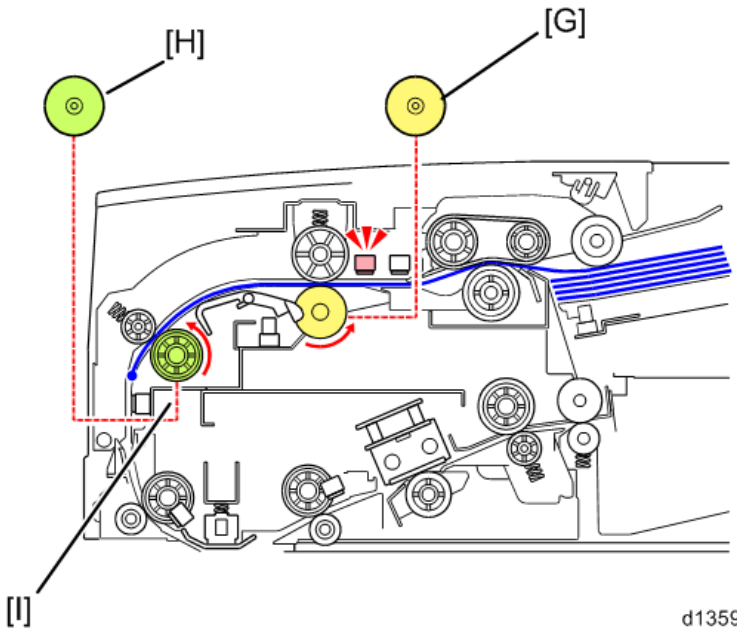
Original Transport

- At the beginning of the job, the ADF feed motor (M3) switches on and rotates the pick-up roller, feed belt, and reverse roller to feed the original into the original feed path.
- The original is fed to the entrance roller as it leaves the original tray. Original skew is corrected at the entrance roller.



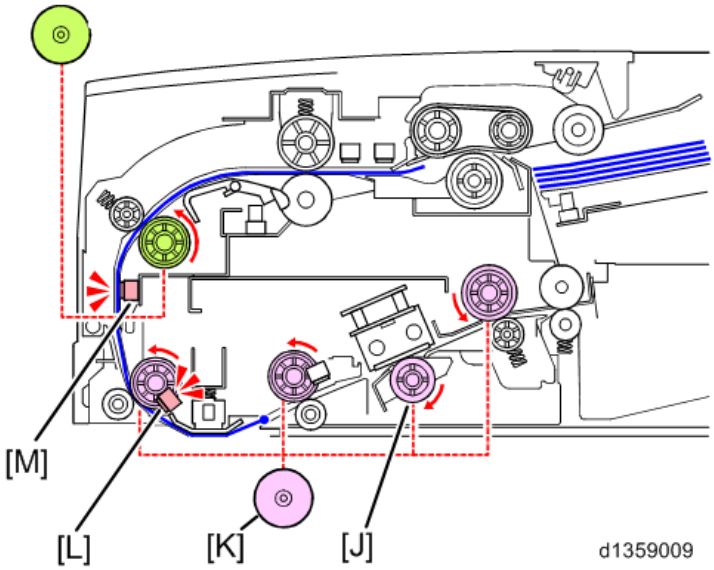
No.	Part
A	ADF Feed Motor (M3)
B	Feed Belt
C	Pick-up Roller
D	ADF Separation Roller
E	Entrance Roller
F	Separation Sensor (S6)

- After skew is corrected at the entrance roller, the pull-out motor (M4) [G] and ADF transport motor (M2) [H] rotate the rollers in the original path and feed the original to the scanning section below.

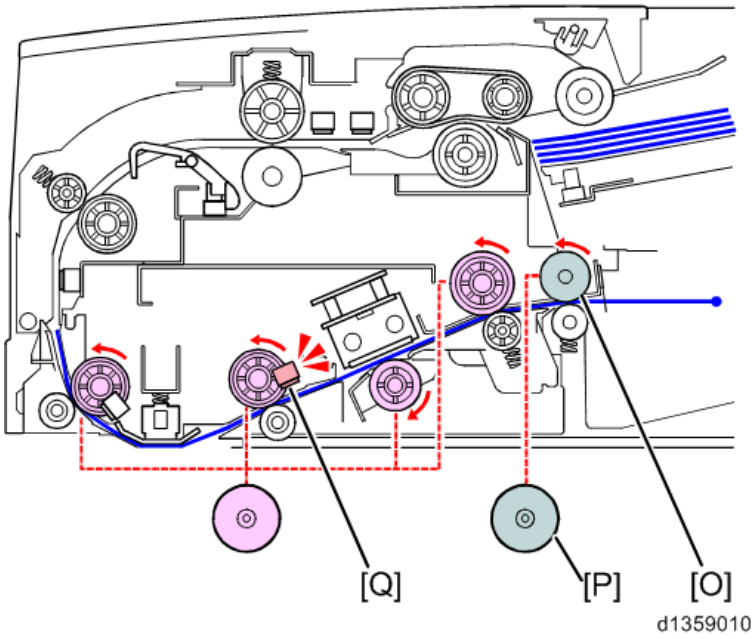


No.	Part
G	Pull-out Motor (M4)
H	ADF Transport Motor (M2)
I	Transport Roller

- When the interval sensor (S10) [M] detects the original, the ADF scanning motor (M6) [K] turns on and rotates the white roller [J] and feeds the original through the scan unit.
- After rotation of the entrance roller, the pull-out motor speeds up slightly to reduce the gap between the trailing edge of the original in the scanning unit and the leading edge of the next original in the path.
- If this were allowed to continue, the differences in roller rotation speed could cause the originals to bend or buckle in the original path around the pre-scanning roller.
- To avoid this, when the interval sensor detects the leading edge of an original it slows the rotation of the scanning belt and the speed of the original in the nip of the pre-scanning roller slows.

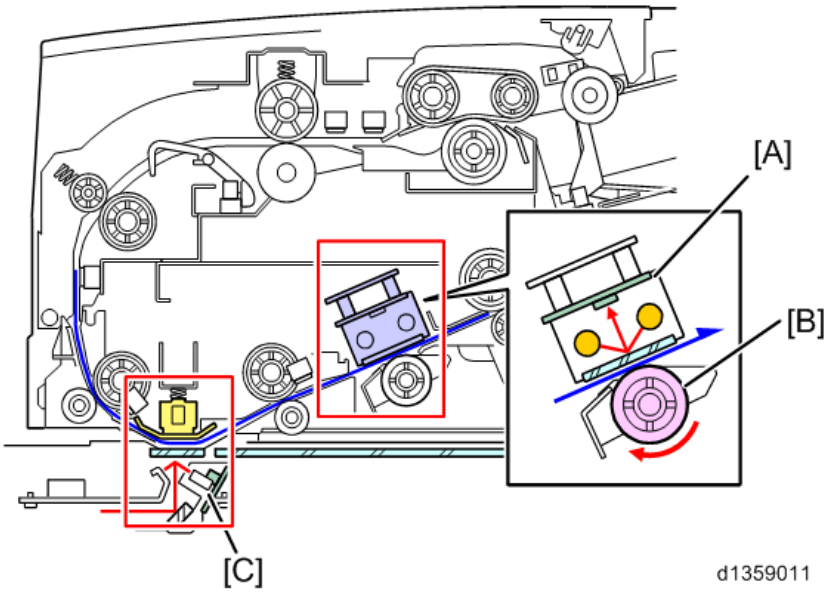


- When the original exit sensor [Q] detects the leading edge of the original, the exit motor [P] switches on and rotates the exit roller [O] which feeds the original out onto the original output tray.



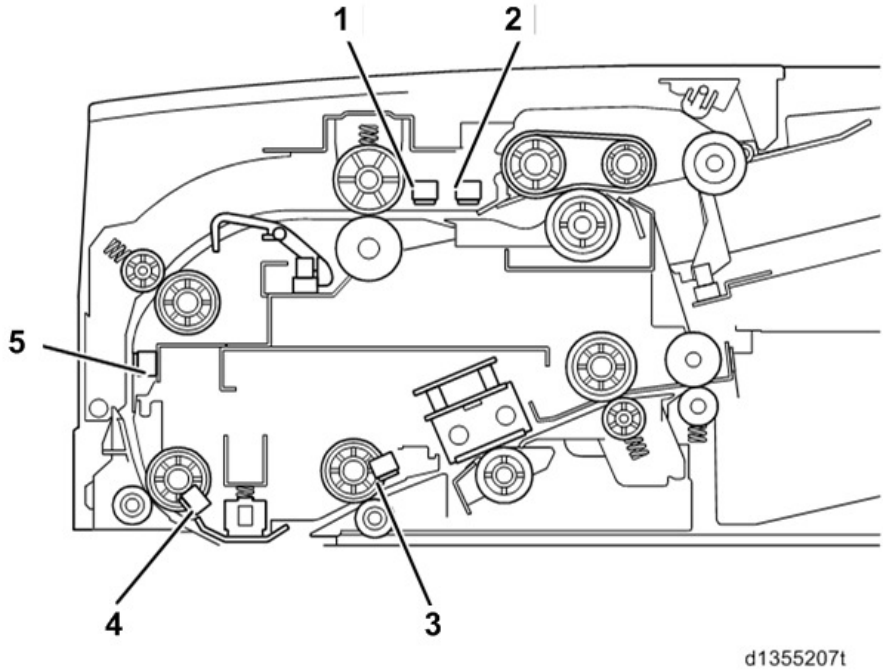
Original Scanning

This machine has a color CIS (Contact Image Sensor) so that it scan both sides of an original at the same time.



No.	Part
A	ADF
B	White Roller
C	Scanner LEDs (Exposure Lamps)

Jam Detection

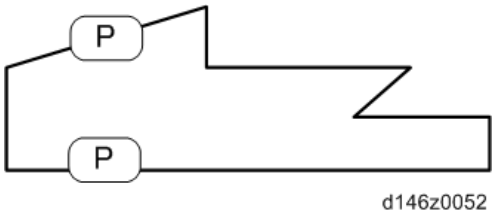


No.	Part
1	Skew Correction Sensor (S6)
2	Separation Sensor (S7)
3	Original Exit Sensor (S11)

1.Detailed Descriptions

No.	Part
4	Original Registration Sensor (S12)
5	Interval Sensor (S10)

Jams are detected by the 5 sensors listed above. The detection conditions are shown in the table below.



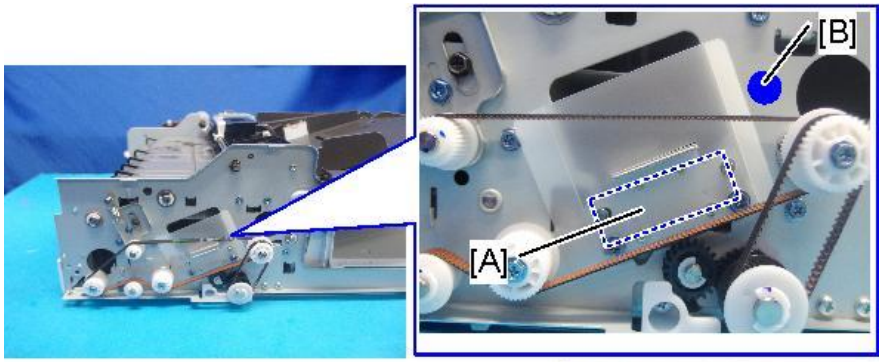
Jam Display	Jam Name		Detection Condition		
P	Separation sensor late jam		Feed motor on but leading edge failed to arrive after motor on long enough to feed 224 mm.		
P	Skew correction sensor late jam		Leading edge failed to arrive after separation sensor detection and enough time elapsed for the original to feed 46 mm.		
P	Interval sensor late jam		Leading edge failed to arrive after entrance motor started and remained on long enough for the original to feed 172 mm.		
P	Original registration sensor late jam		Original failed to arrive after it was detected by the interval sensor and enough time elapsed for the original to feed 96 mm.		
P	Original exit sensor late jam		Original failed to arrive after it was detected by the registration sensor and enough time elapsed for it to feed 130 mm.		
P	Separation sensor lag jam		After the entrance roller started to pull the original out of the original tray after initial feeding, the original failed to move based on the calculations below.		
	A4/LT	L1	L2	L3	Std.
	Not	Not	Not	Not	226.8
	Detected	Not	Not	Not	253.8
	-	**Detected**	Not	Not	291
	-	-	**Detected**	Not	320
	-	-	-	**Detected**	432
	However, in some cases the operator may have specified another length longer than the standard value and that value will be used as standard (Std.).				
P	Skew correction sensor		After the separation sensor detected the trailing edge, the		

Jam Display	Jam Name	Detection Condition
	lag jam	trailing edge was still detected after enough time had elapsed for the original to feed 46 mm.
P	Interval sensor lag jam	After the transport motor turned on, the trailing edge of the original was not detected after enough time had elapsed for the original to feed 82 mm.
P	Orginal registration sensor lag jam	After the interval sensor detected the trailing edge, the trailing edge was still detected after enough time had elapsed for the original to feed 93 mm.
P	Original exit sensor late lag	After the registration sensor detected the trailing edge, the trailing edge was still detected after enough time had elapsed for the original to feed 130 mm.

CIS Mis-installation Prevention

To prevent installing the wrong kind of CIS in the DF3120*1, a blue label [A] is attached to the CIS. Check that the color on this label is the same as the marking [B], to prevent installing the wrong CIS.

* The CIS of the DF3120 is the same as that of the DF3100 (previous machine).



d238m0790

Note

- [A] (Blue label): CIS for DF3120 or DF 3100
- [B] (Orange label): CIS for other machines

d238m0791

- If the wrong CIS is installed, JAM001 will occur if sheet-through scanning is done. When JAM001 continues three times, SC151 or SC152 will occur.

SP6-901-001 (Setting to give priority to stackability)

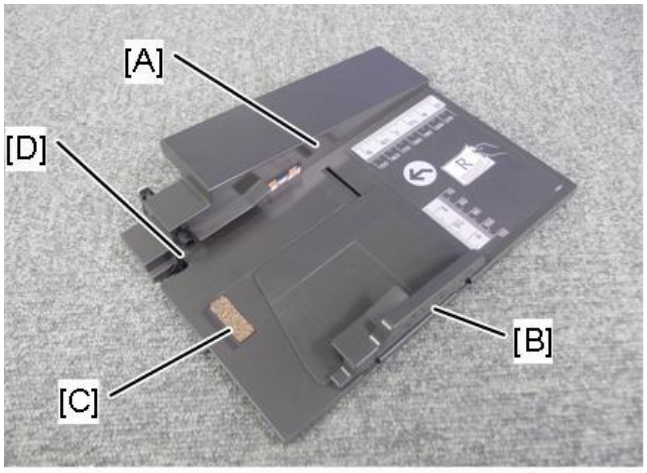
To improve the alignment of the delivered originals, select to give priority to stackability in the following SP. This will reduce the originals' delivery speed and improve their stackability.

- **SP6-901-001** (Setting to give priority to stackability):
  0: Higher throughput (default)
  1: Higher stackability

Small Paper Feeding Unit

Overview/Parts Layout

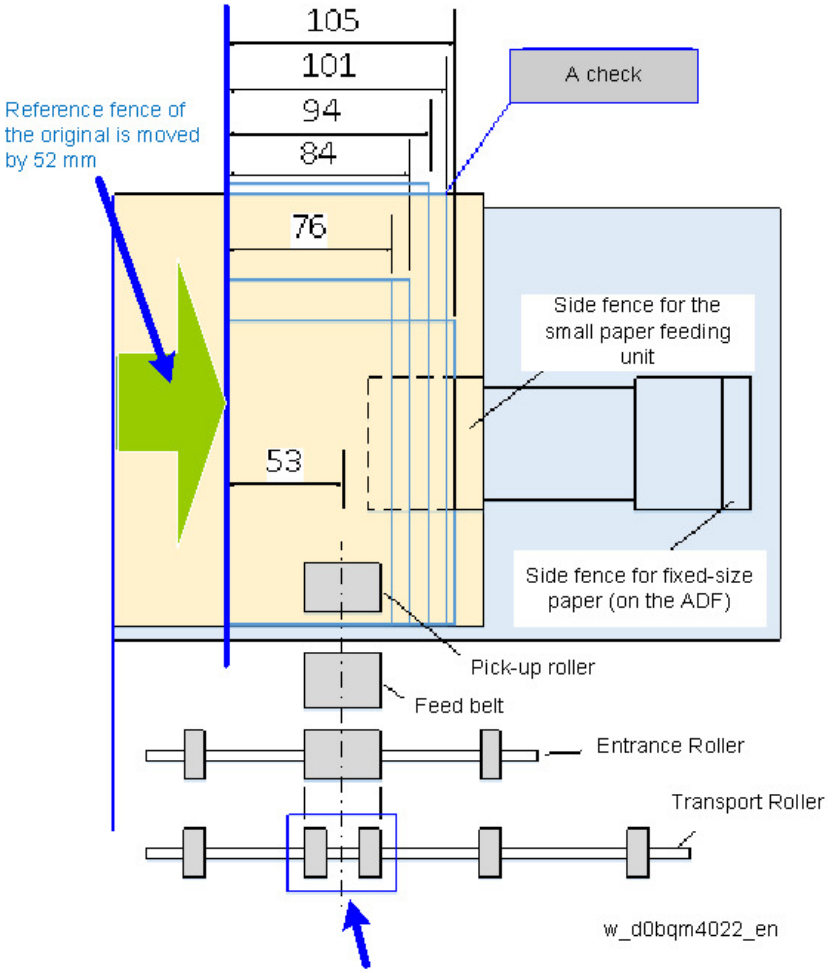
To meet customer demand that small originals be scannable, an optional paper tray for small originals is available.



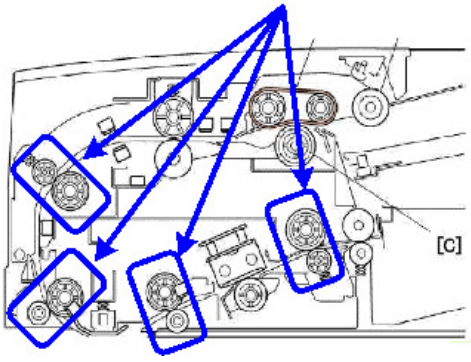
d0bqm0301

No.	Name	No.	Name
A	Reference fence at recesses	C	Friction Pad
B	Side Fence	D	Original Detection Feeler

By attaching the small paper feeding unit to the ADF original tray, the reference fence of the original is offset toward the center by 52 mm so that even small originals contact the ADF separation roller.
To prevent small originals skewing during transfer, there are also 2 rollers on the ADF side.
If the small paper feeding unit is attached, the image processing switches to small original mode, shifting the image by 52 mm.

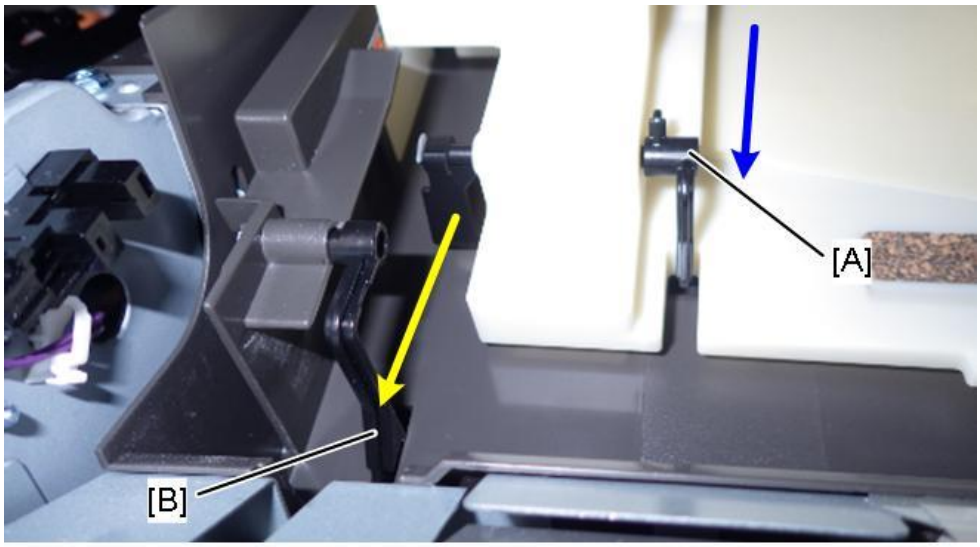


Changed the one roller to two rollers



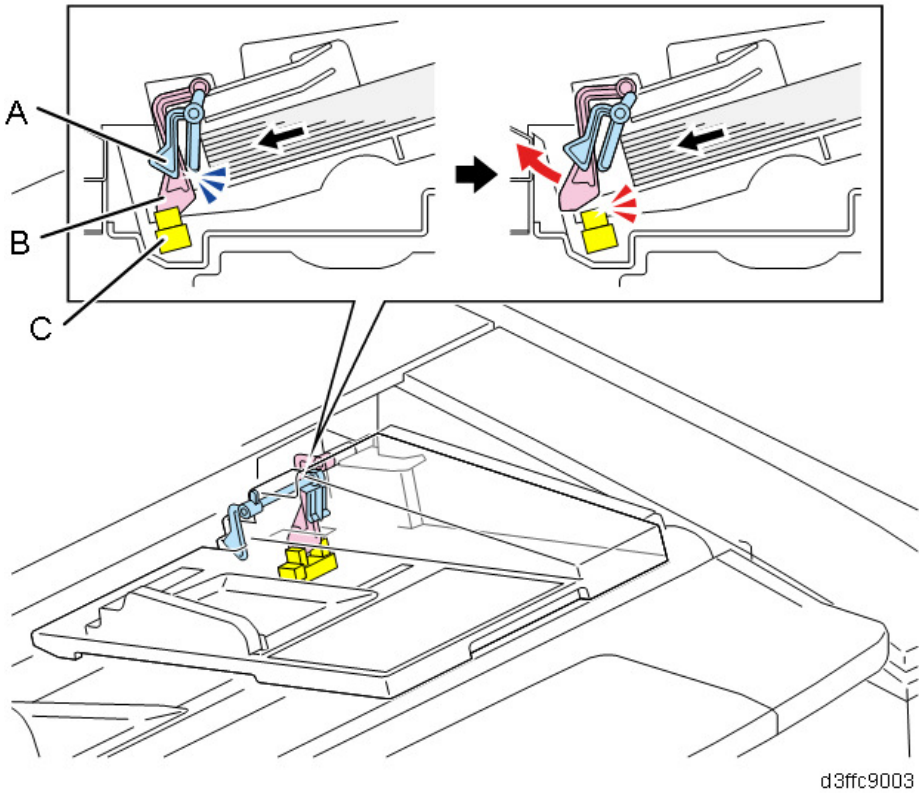
Original Detection

The original actuates the feeler [A] on the small paper feeding unit. The movement of the feeler actuates the feeler [B] on the ADF, allowing the original set sensor on the ADF to detect that the original has been loaded.



D0bqm0304

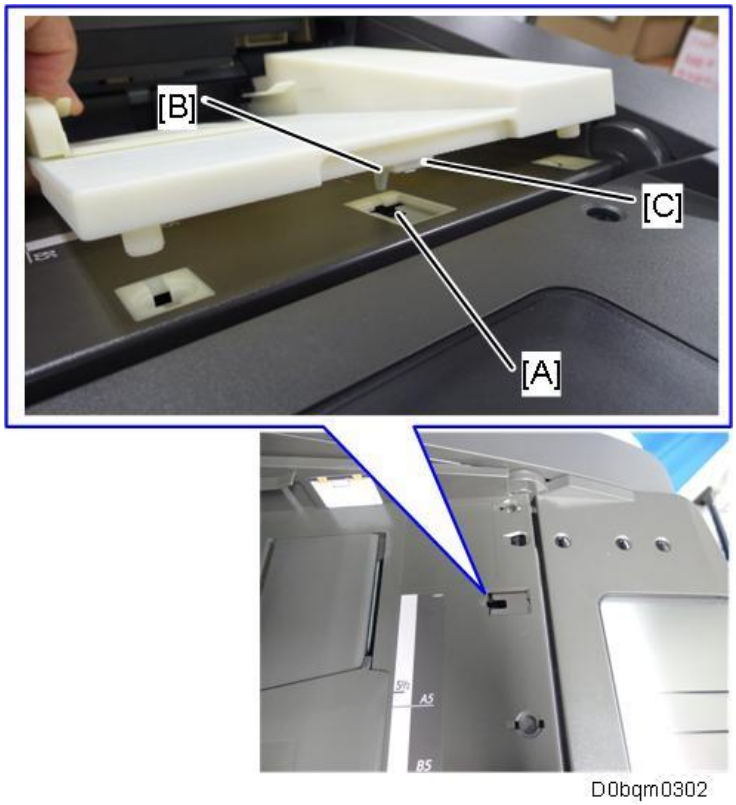
Conceptual Diagram



d3ffc9003

Small Paper Feeding Unit Detection

Attach the small paper feeding unit to the ADF by the magnet [C]. The small size paper tray set sensor [A] on the ADF original tray detects the presence of the feeler [B] on the small paper feeding unit to ascertain whether the unit is attached. (If the images shifts by 52 mm even though the small paper feeding unit is not attached, there may be dirt or paper particles in the sensor's fitting part, or the sensor may be broken.)



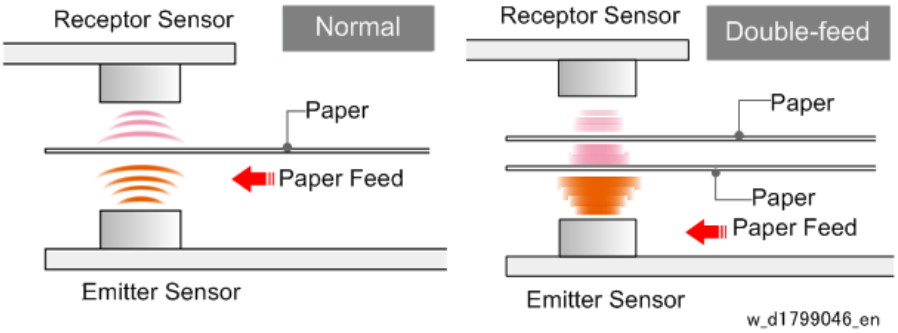
Registration Adjustment

The SPs for registration in small original mode differ from those for fixed-sized paper. Use the following SPs:

- SP6-006-017 (ADF Adjustment: Side-to-Side Regist:Front: with Feeding Unit])
- SP6-006-018 (ADF Adjustment: Side-to-Side Regist:Rear: with Feeding Unit)
- SP6-006-019 (ADF Adjustment: L-Edge Regist(1-Pass):Front:with FeedingUnit)
- SP6-006-020 (ADF Adjustment: L-Edge Regist(1-Pass):Rear:with Feeding Unit)
- SP6-006-021 (ADF Adjustment : T-Edge Erase(1-Pass):Front:with FeedingUnit)
- SP6-006-022 (ADF Adjustment : T-Edge Erase(1-Pass):Rear:with Feeding Unit])
- SP6-006-023 (ADF Adjustment : 1st Buckle(1-Pass):with Feeding Unit)

Page Keeper Option (Double-feed Sensor)

A pair of ultrasound sensors are mounted in the ADF, one below the original feed path (emitter) and the other above the path (receiver).



- When the original passes between the sensors, an ultra-sound wave from the emitter sensor below passes through the paper to the receiver above.
- The receiver converts the signal generated by the vibration of the signal against the paper to an electrical pulse and checks its level.
- If a double feed occurs, the space between the sheets will generate a lower signal. When the emitter detects this lower signal (lower than that of a single sheet) it causes the machine to issue Jam Code J099 (double-feed detected) and then original feed stops.

This double feed detection will not function with originals that have:

- Folds, wrinkles, tears
- Holes
- Imperfectly fused images
- Perforations
- Taped connections
- Taped surfaces

Feeding such originals could cause false detection of double-feeds.

The service technician can also switch double-feed detection off/on with SP6-040-001 (ADF Double Feed Detect Setup Detect enable (1-pass))

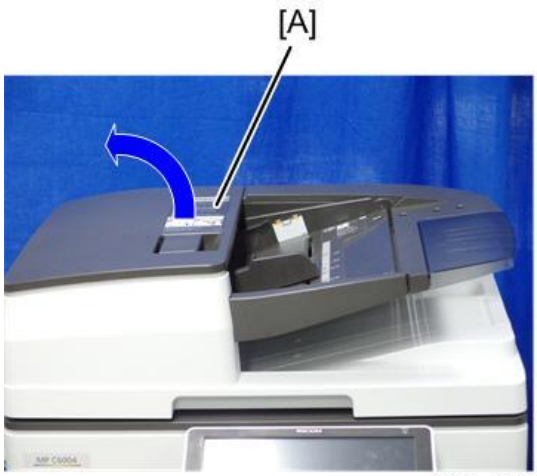
Default 1: On

2. Replacement and Adjustment

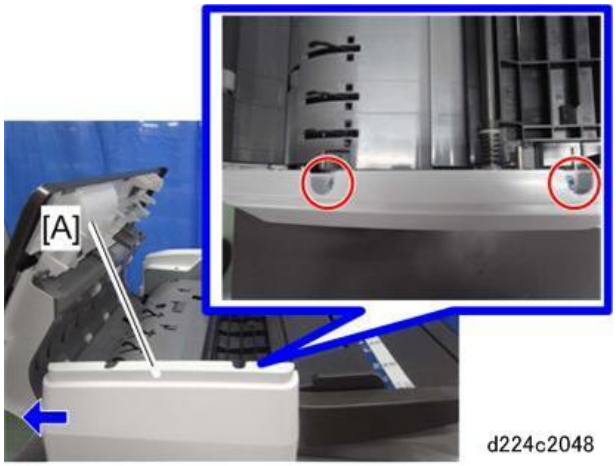
Exterior Covers

ADF Front Cover

1. Open the feed cover [A].



2. Slide the ADF front cover [A] to the left.



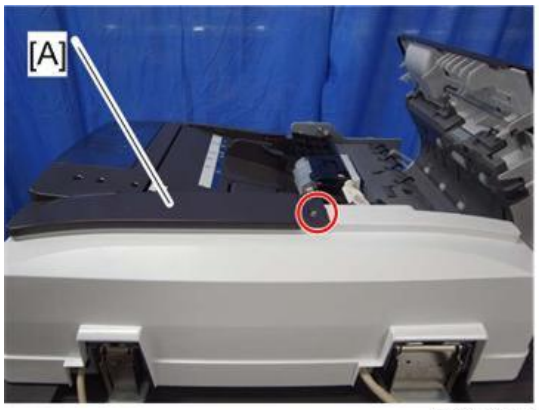
x2 x2

Note

- Check the position of the hooks in the photo below before removing.

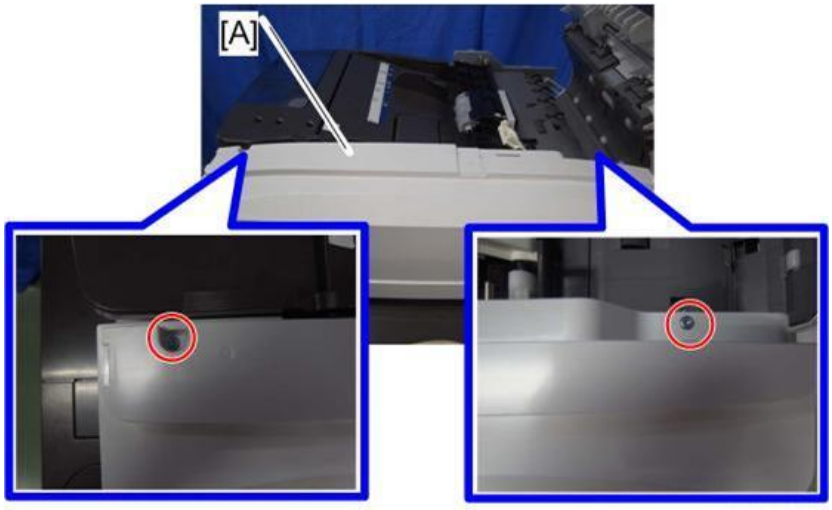
ADF Rear Cover

1. Open the feed cover.
2. Remove the cover [A].



x1

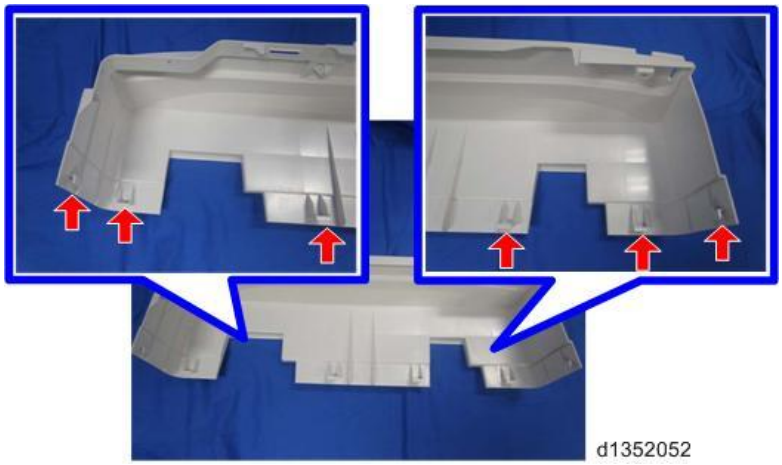
3. Lift off the rear cover [A].



x2 x4

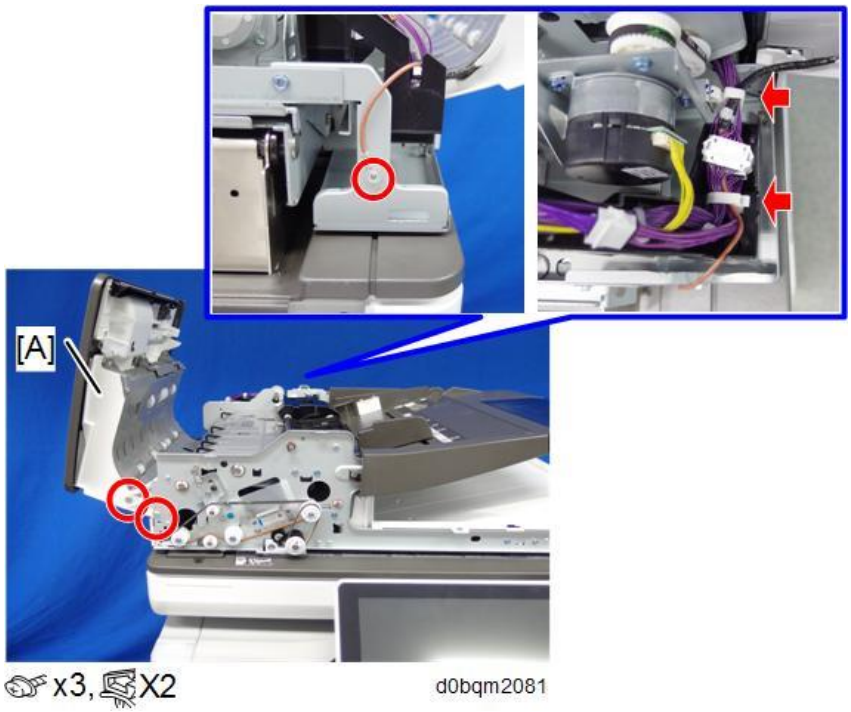
Note

- Check the position of the hooks before removing.



Feed Cover

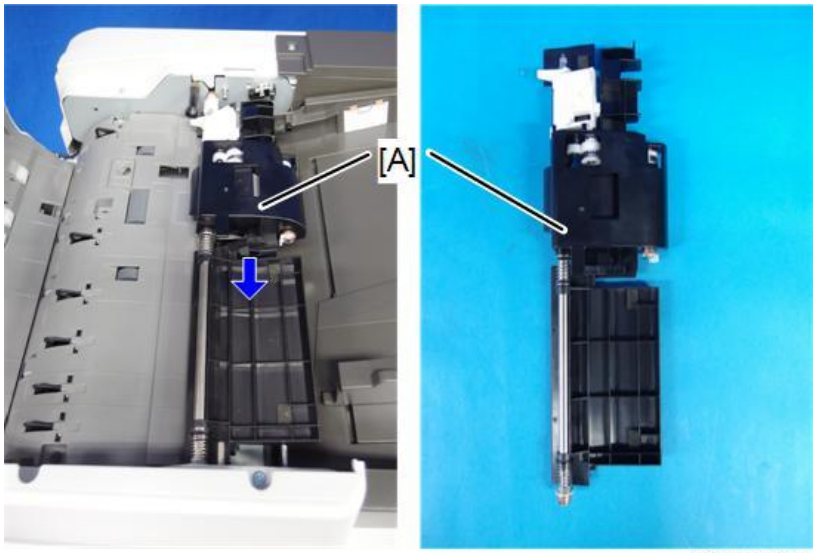
1. Remove the ADF front cover. (ADF Front Cover)
2. Remove the ADF rear cover. (ADF Rear Cover)
3. Remove the feed cover [A].



Feed Unit

Original Feed Unit

1. Open the feed cover.
2. Remove the original feed unit [A].
   Pull the original feed unit, remove the back side of the shaft. Then, remove the bushing in the foreground.



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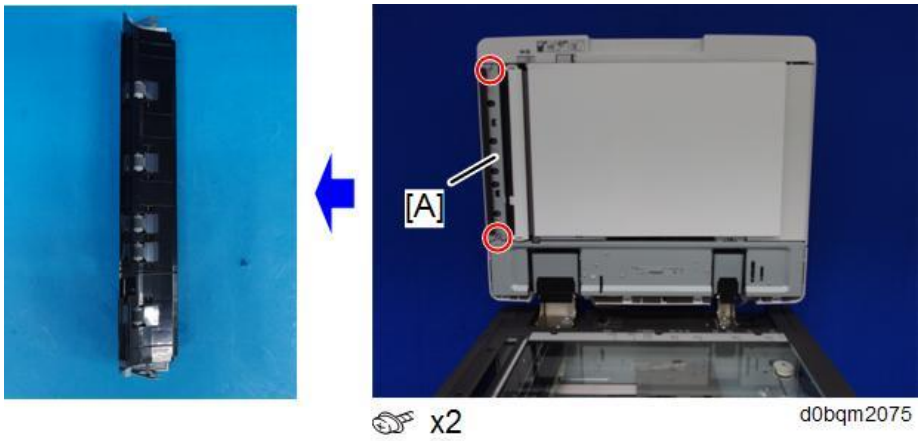
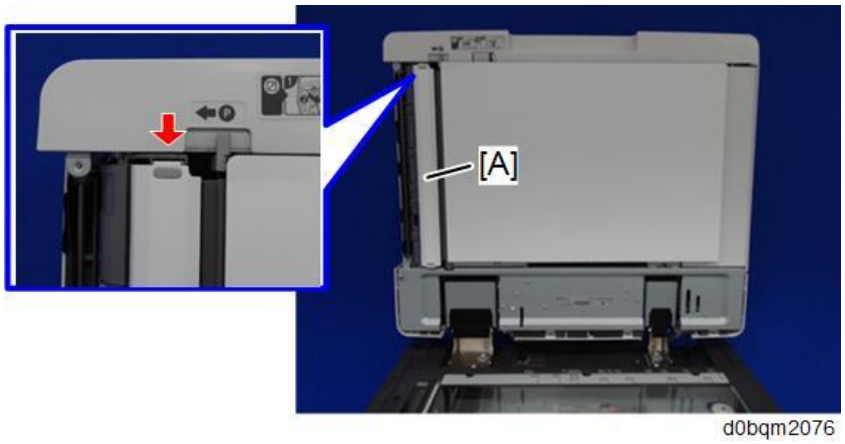
Sensors, Feeler, and Switches

Original Registration Sensor (S12)

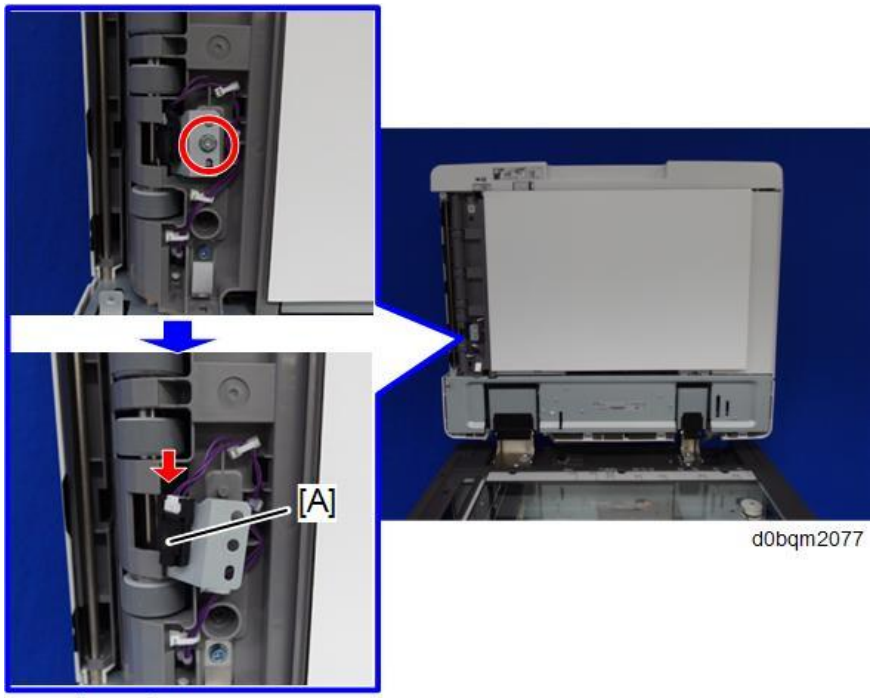
1. Remove the entrance lower guide [A].



2. Remove the scanning guide plate [A].

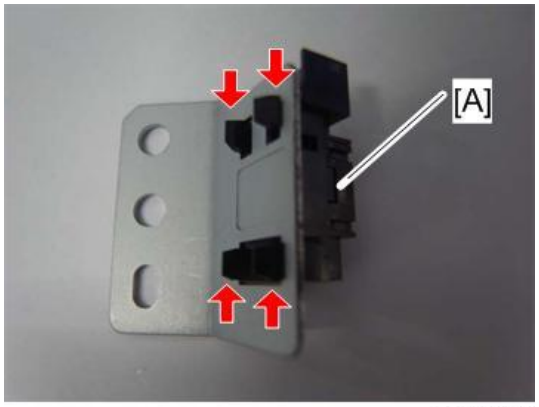


3. Remove the original registration sensor [A] along with the bracket.



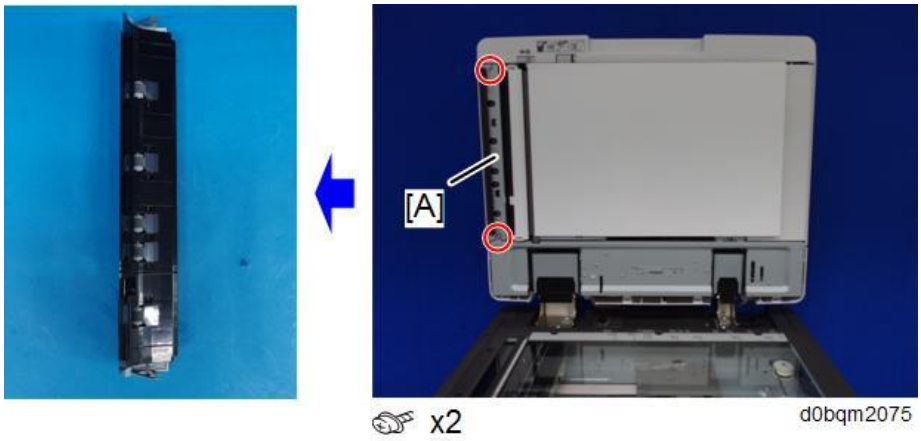
x1, X1

4. Remove the original registration sensor (S12) [A] (Tab x4).

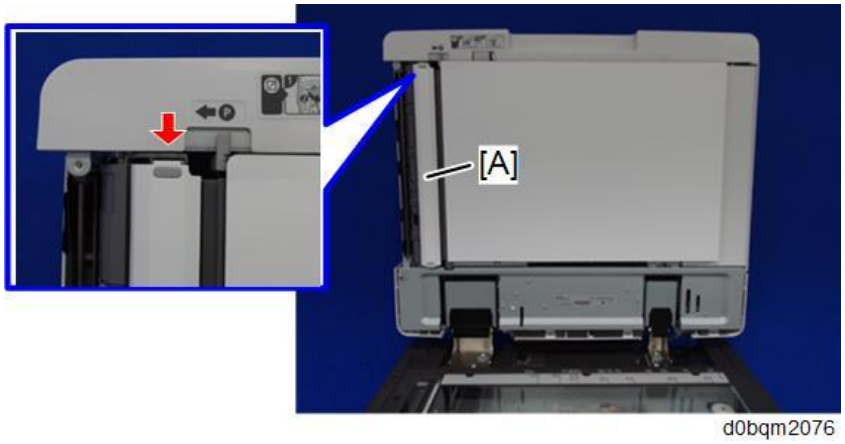


Original Exit Sensor (S11)

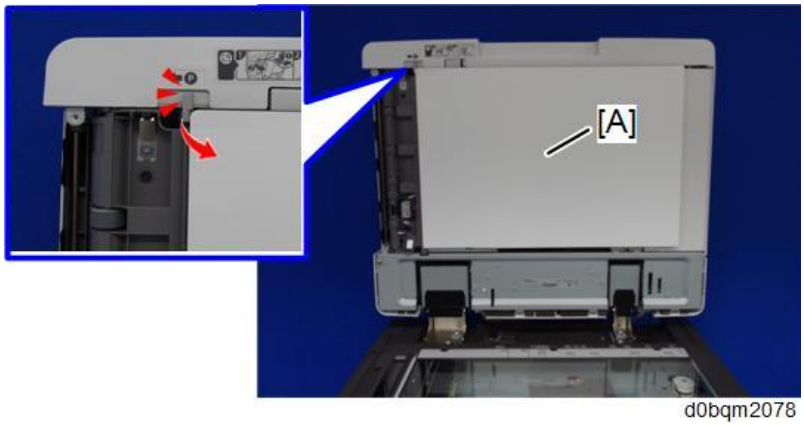
1. Remove the entrance lower guide [A].



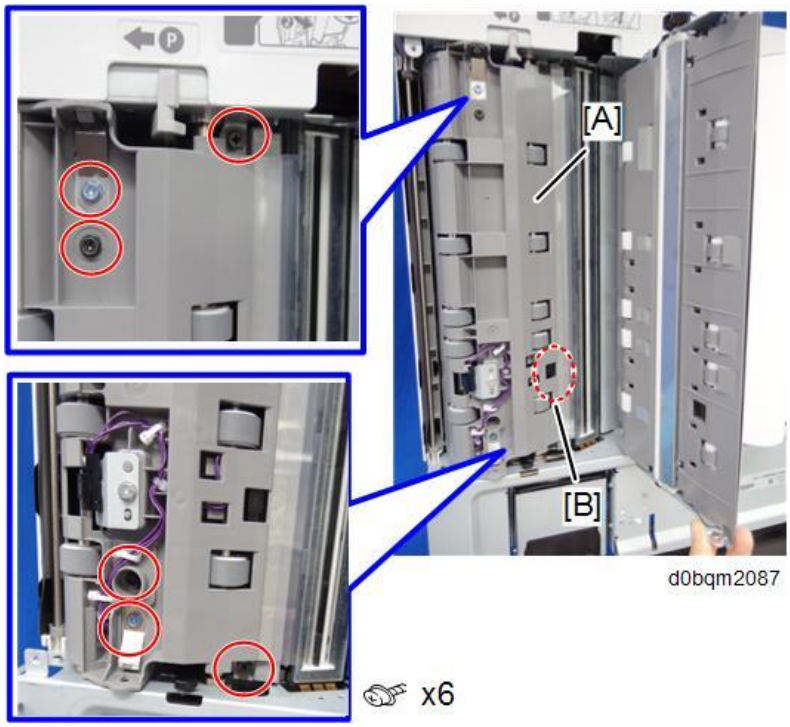
2. Remove the scanning guide plate [A].



3. At the upper left corner, release the white guide [A].



4. Remove the screws of the original exit sensor [B], which is mounted on the upper guide [A].



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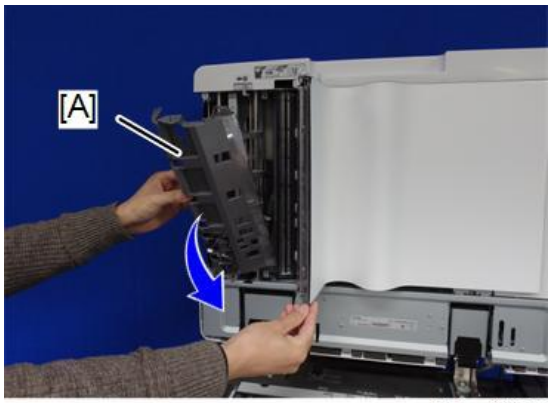
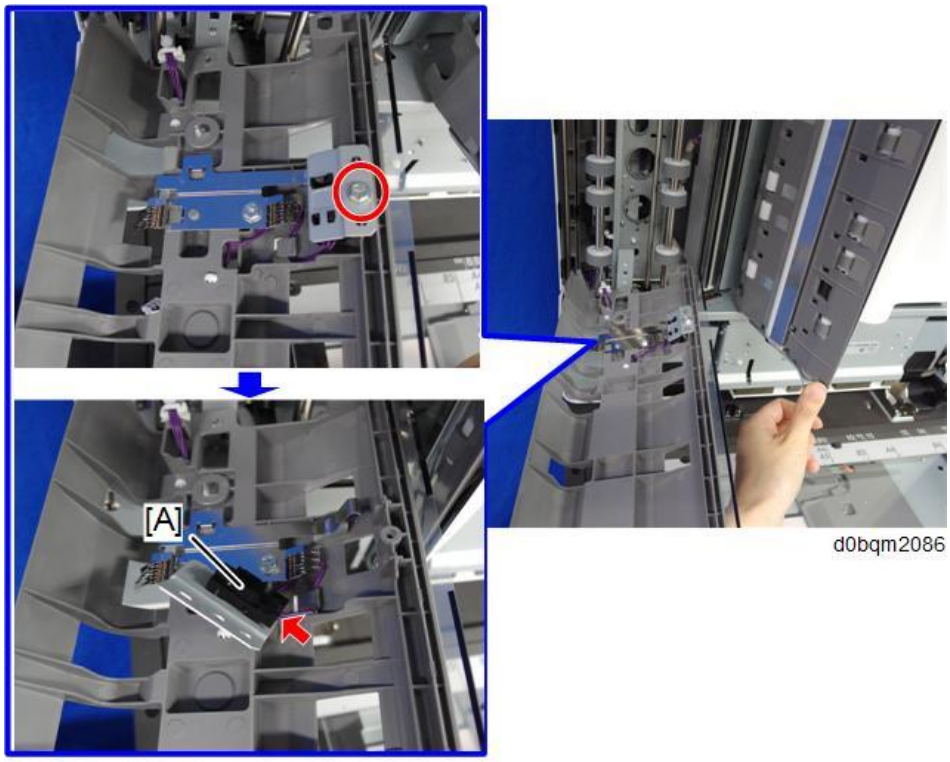
5. Tilt the upper guide [A] toward you.



d0bqm2079

6. Remove the original exit sensor (S11) [A]. (Tab x4).

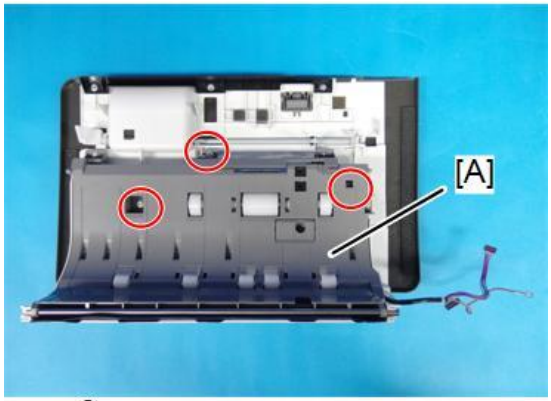


x1, x1

Separation Sensor (S7), Skew Correction Sensor (S6)

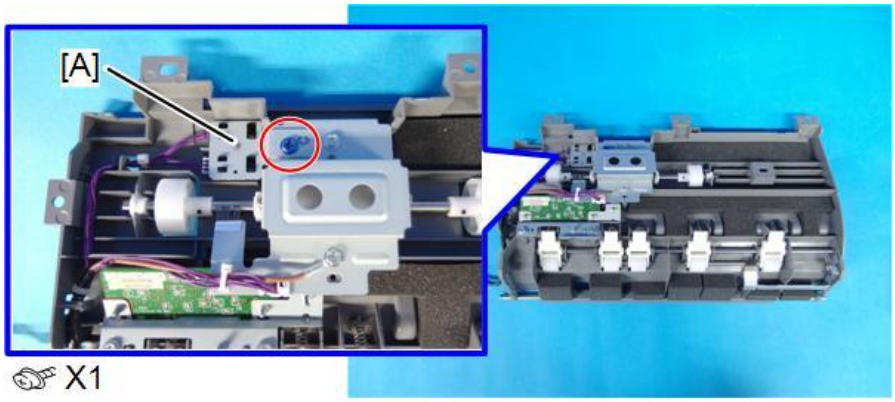
1. Remove the Feed cover. (Feed Cover)

2. Remove the feed upper guide [A] in the feed cover.

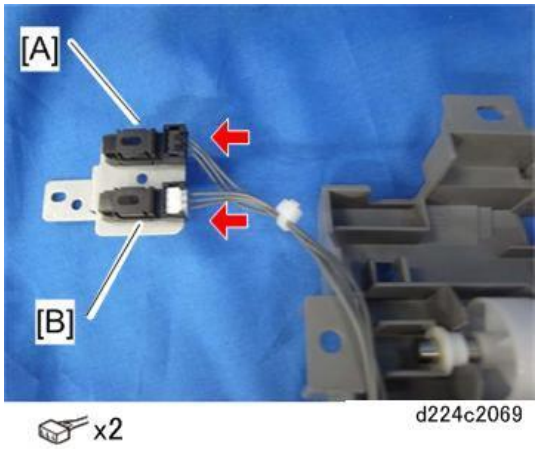


x3

3. Remove the sensors [A] along with the bracket.

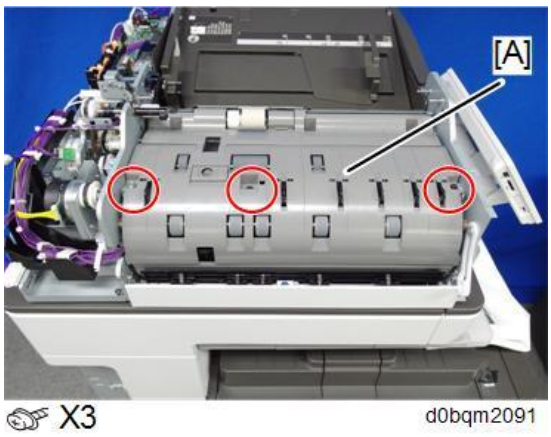


4. Remove the separation sensor (S7) [A] and skew correction sensor (S6) [B].

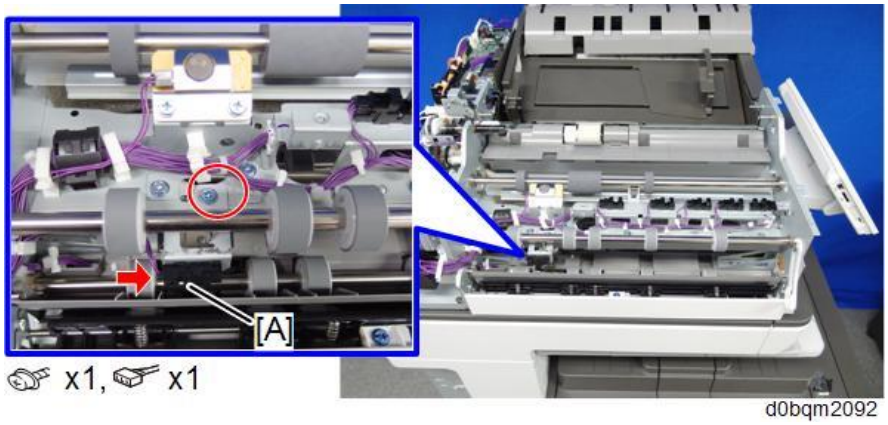


Original Width Sensor (S1)(S2)(S3)(S4)(S5), Interval Sensor (S10)

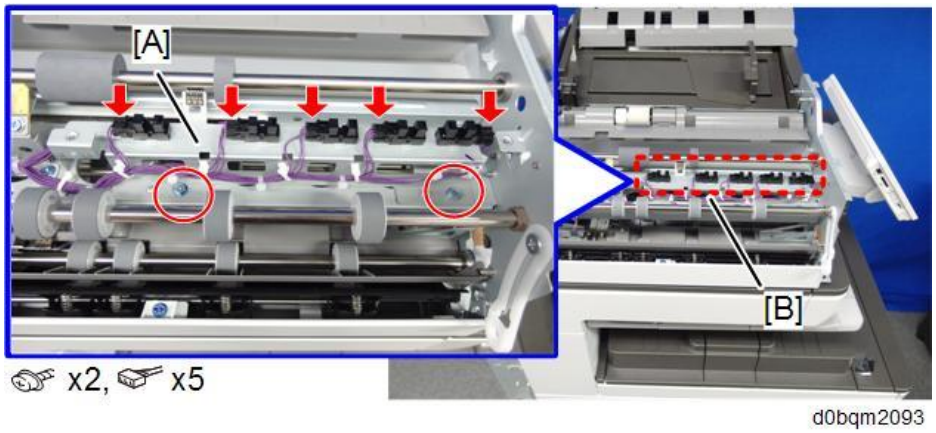
1. Remove the feed cover. (Feed Cover)
2. Remove the guide plate [A].



3. Remove the interval sensor (S10) [A].

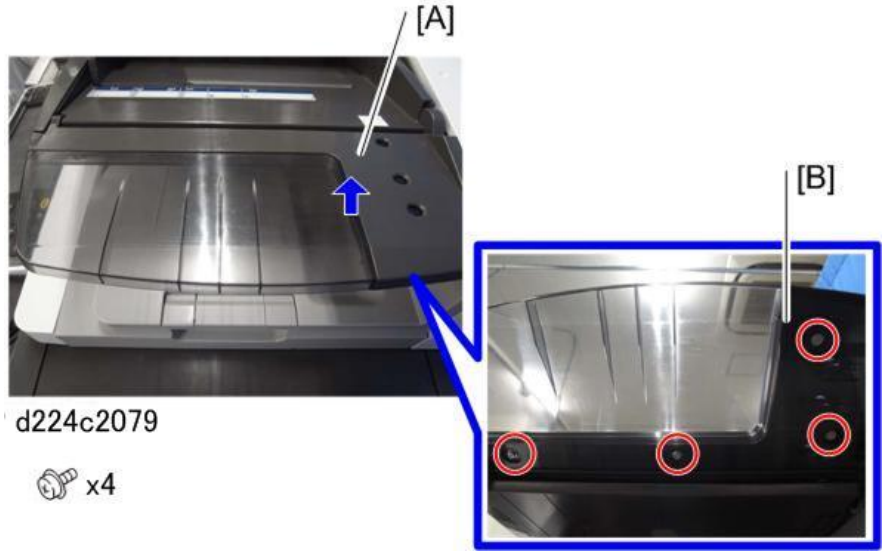


4. Remove the original width sensor guide plate [A] and then remove the five original width sensors [B].



Original Length Sensors (S14)(S15)(S16)

1. Raise the document tray [A], then remove the lower cover [B].

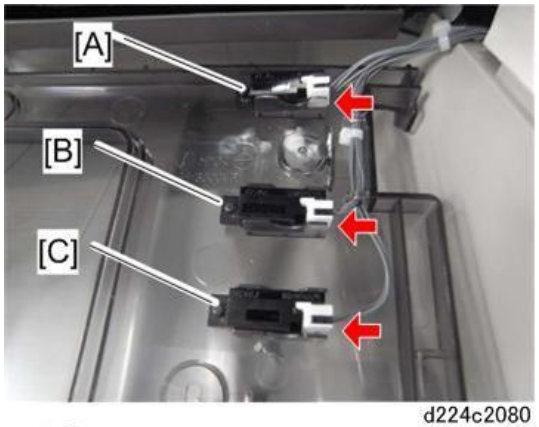


2. Remove the original length sensors.

[A] B5

[B] A4

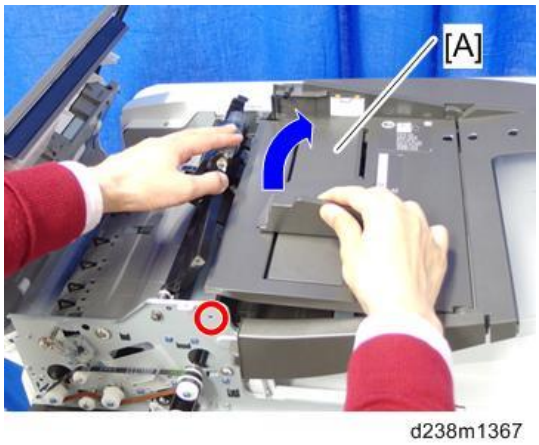
[C] LG



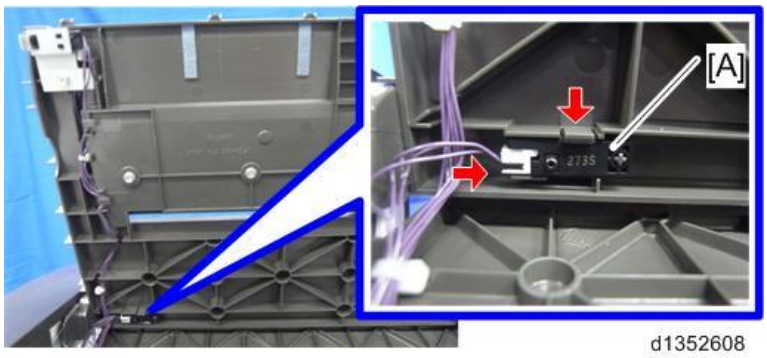
x3

Original Length Sensor (A4/LT LEF) (S19)

1. Remove the ADF front cover. (ADF Front Cover)
2. Remove the screw and raise the original tray [A].



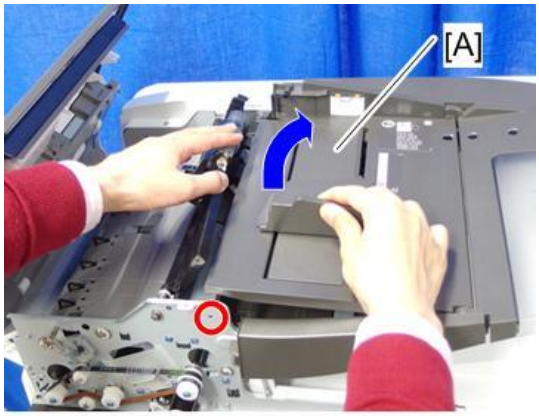
3. Remove the Original Length Sensor (A4/LT LEF) (S19) [A].



Small Size Paper Tray Set Sensor (S21)

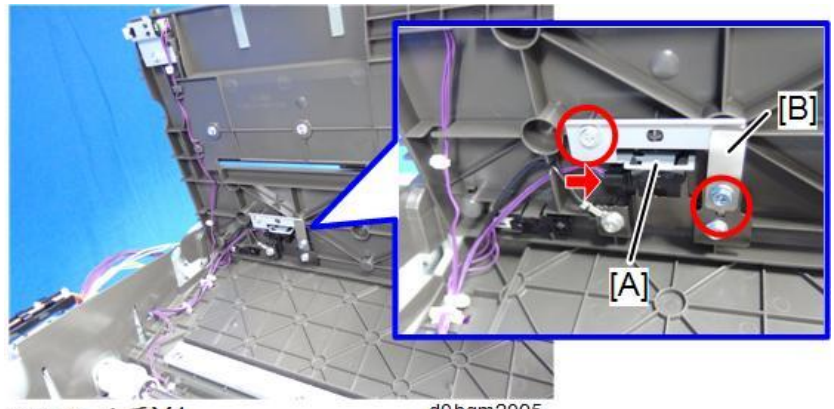
1. Remove the ADF front cover. (ADF Front Cover)

2. Remove the screw and raise the original tray [A].



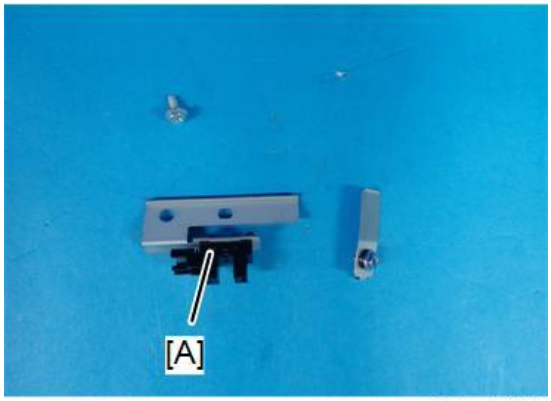
d238m1367

3. Remove the bracket [B], and then remove the small size paper tray set sensor (S21) [A] along with the bracket.



x2, X1 d0bqm2095

4. Remove the small size paper tray set sensor (S21) [A] from the bracket.

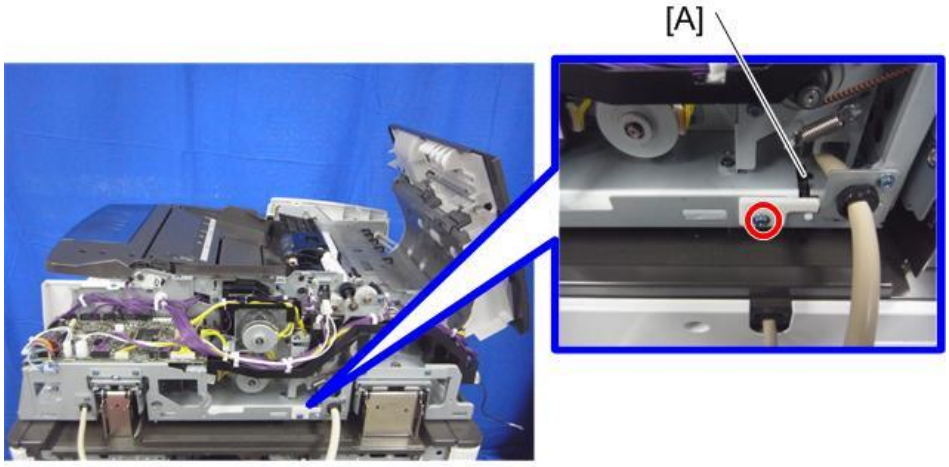


d0bqm2096

APS Feeler

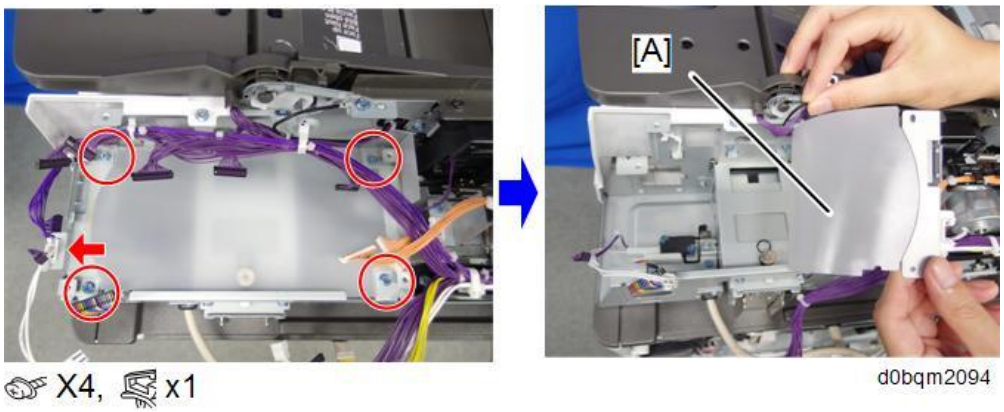
1. Remove the ADF rear cover. (ADF Rear Cover)

2. Remove the APS feeler [A].

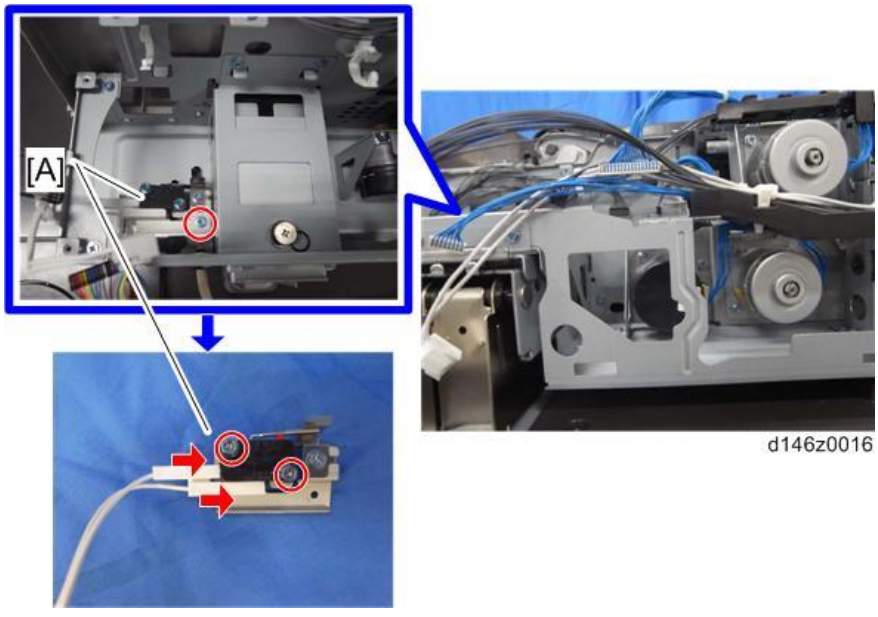


ADF Lift Interlock Switch (SW2), Lift Sensor (S13)

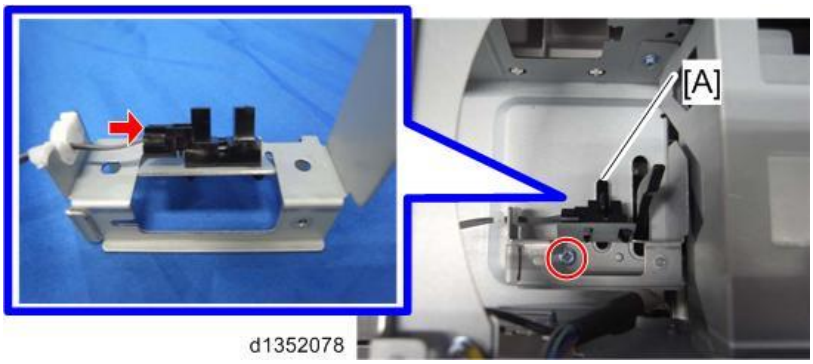
1. Remove the ADF Controller Board. (ADF Controller Board (PCB1))
2. Turn the sheet [A].



3. Remove the ADF lift interlock switch (SW2) [A] along with the bracket (x 3, x 2).

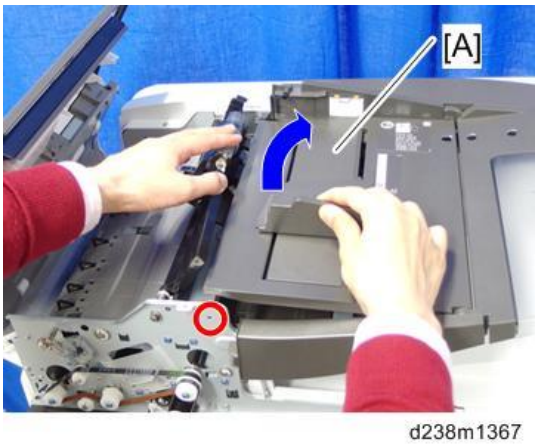


4. Remove the lift sensor (S13) [A] along with the bracket.



Original Set Sensor (S18)

1. Remove the ADF front cover. (ADF Front Cover)
2. Remove the screw and raise the original tray [A].

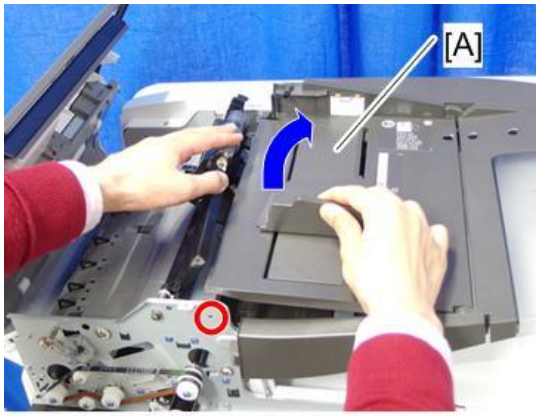


3. Remove the Original set sensor (S18) [A].

Bottom Plate HP Sensor (S17)

1. Remove the ADF front cover. (ADF Front Cover)

2. Remove the screw and raise the original tray [A].



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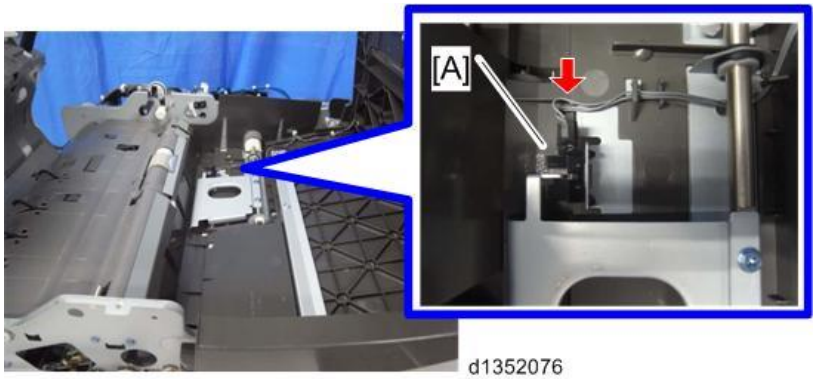
3. Remove the bottom plate HP sensor (S17) [A].



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Bottom Plate Position Sensor (S9)

1. Remove the ADF rear cover. (ADF Rear Cover)
2. Remove the original feed unit. (Original Feed Unit)
3. Remove the bottom plate position sensor (S9) [A] along with the cover.

x1

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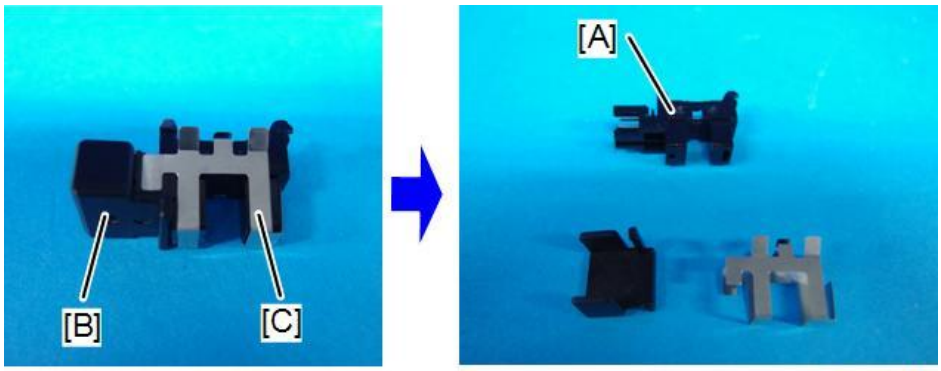
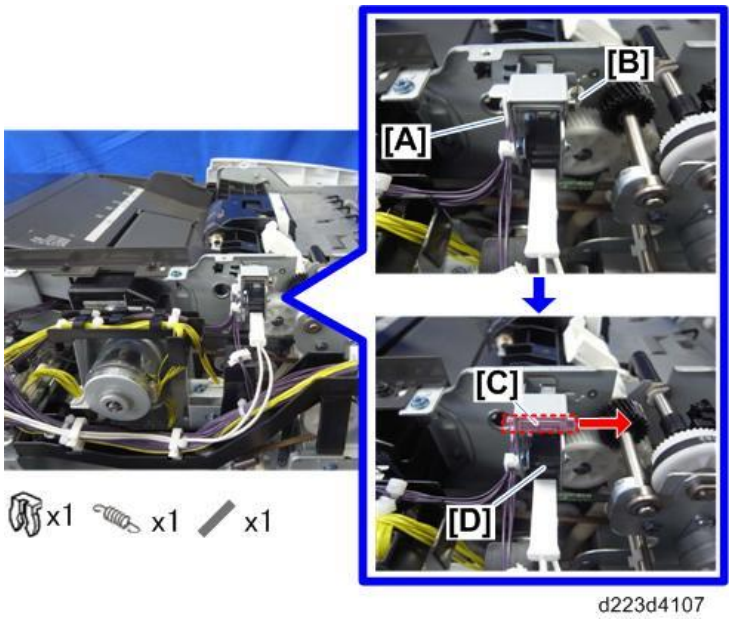
4. Remove the resin cover [B] and metal cover [C] of the bottom plate position sensor (S9) [A].

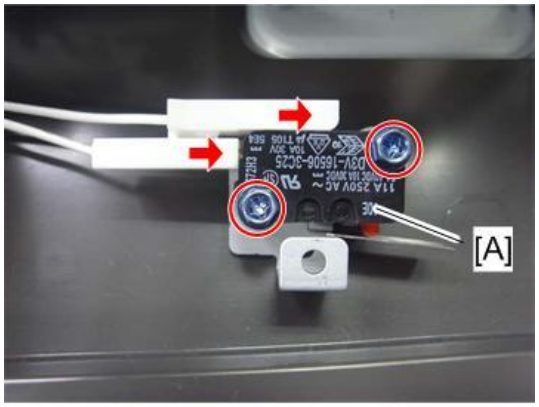


ADF Feed Cover Interlock Switch (SW1), Pick-up Roller HP Sensor (S8)

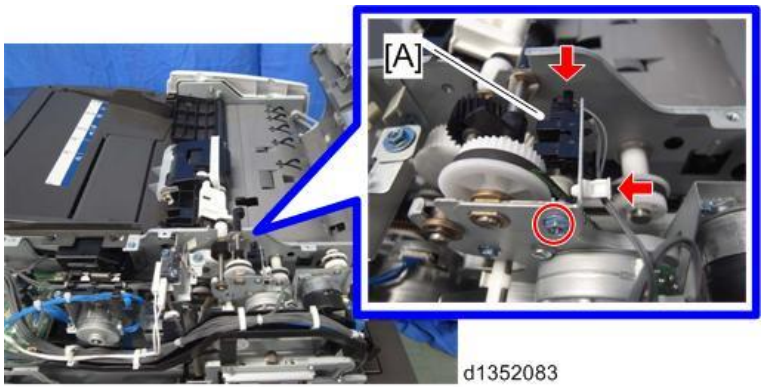
1. Remove the ADF rear cover. (ADF Rear Cover)
2. Remove the clip ring [A] and spring [B], and then pull out the pin [C].
3. Remove the ADF feed cover interlock switch (SW1) [A] from the retaining bracket.



4. Remove the ADF feed cover interlock switch (SW1) [A].



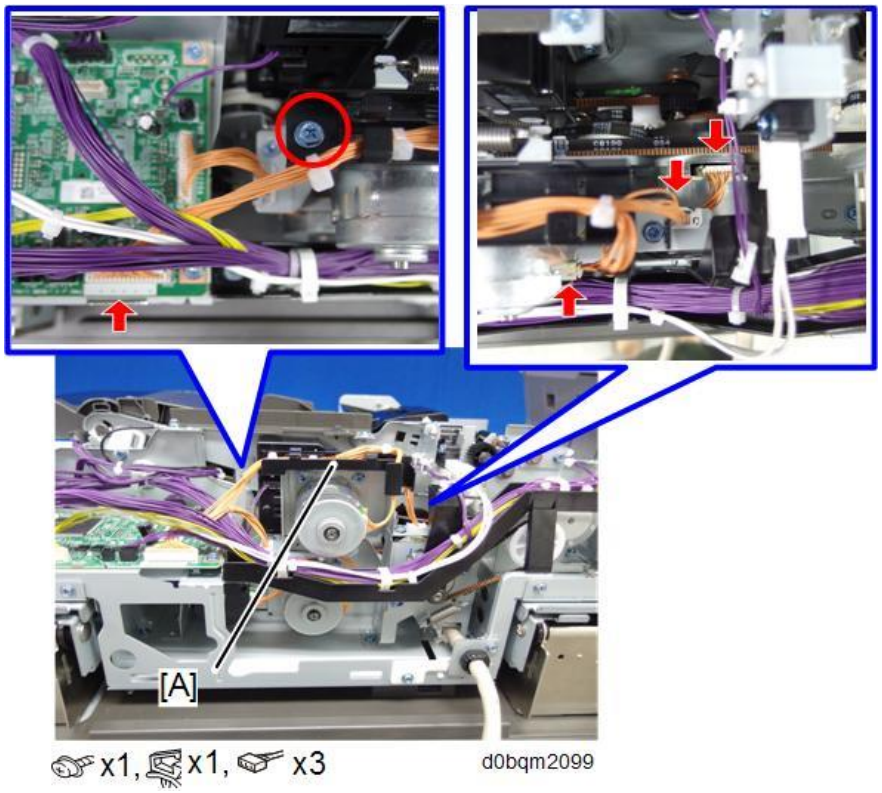
5. Remove the pick-up roller HP sensor (S8) [A] along with the bracket.



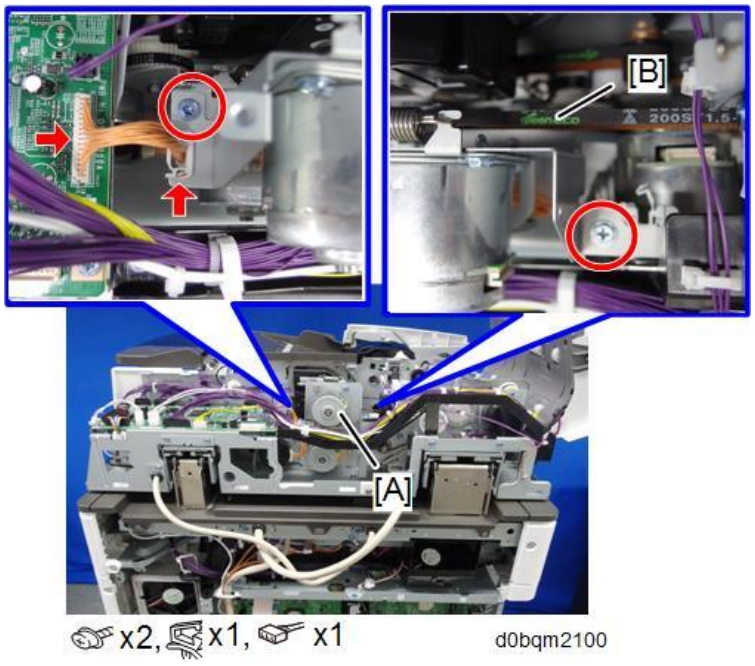
Motors

Pull-out Motor (M4)

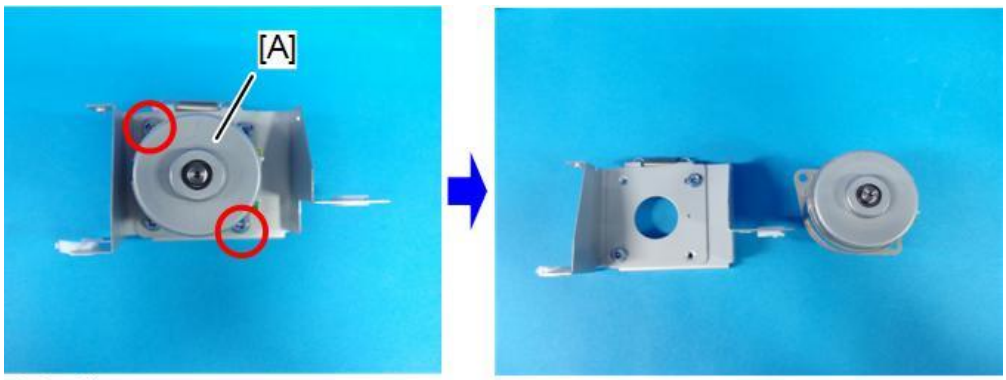
1. Remove the ADF rear cover. (ADF Rear Cover)
2. Remove the harness guide (black) [A] above the pull-out motor.



3. Remove the timing Belt, and then remove the pull-out motor (M4) [A] along with the bracket.

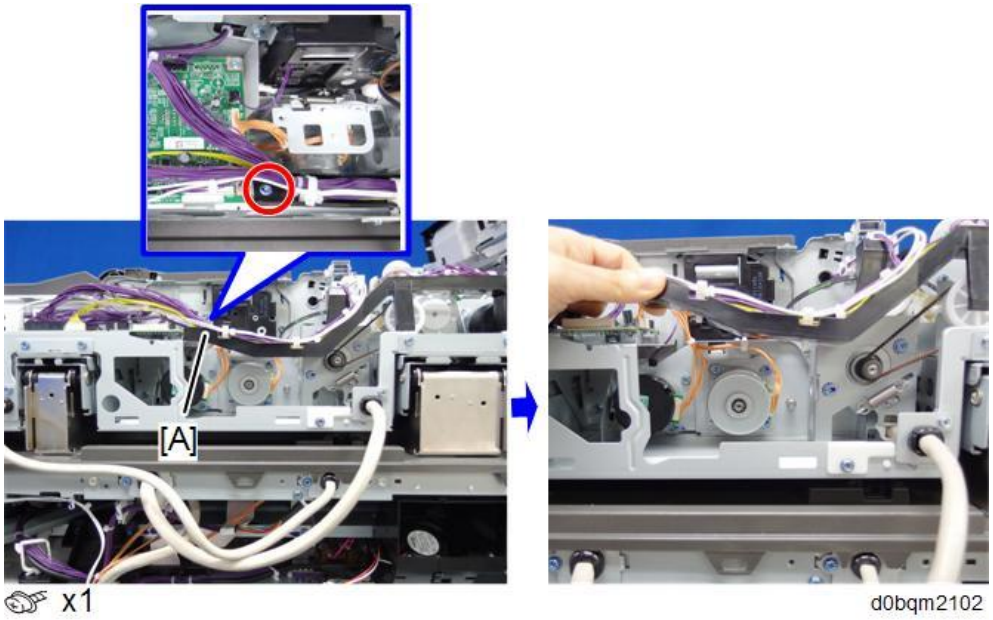


4. Remove the pull-out motor (M4) [A] from the bracket.

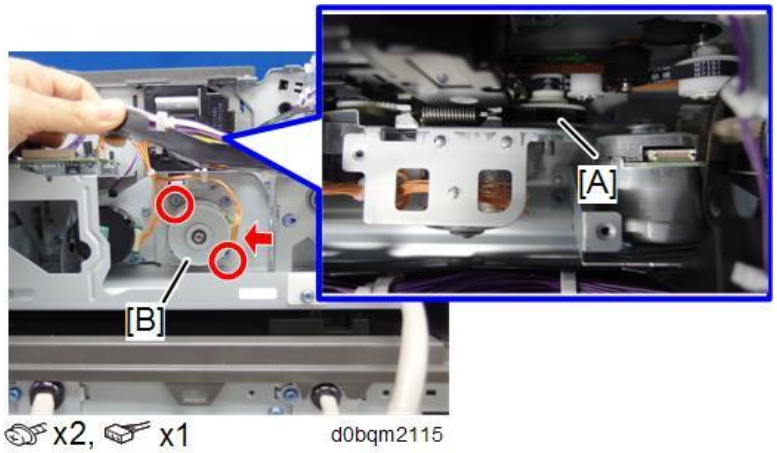


ADF Scanning Motor (M6)

1. Remove the harness guide (black) above the pull-out motor, and then remove the pull-out motor along with the bracket. (Pull-out Motor (M4))
2. Slide the harness guide (black) [A] as shown.

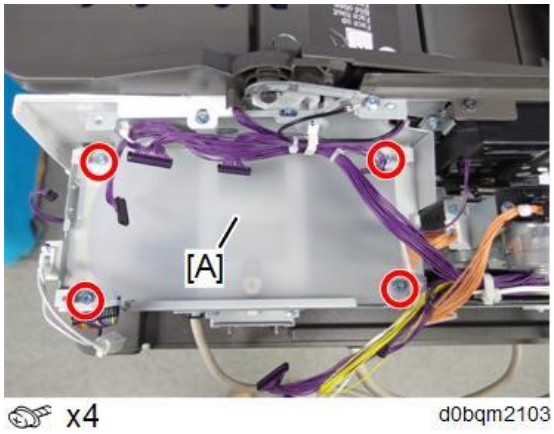


3. Remove the timing belt [A], and then remove the ADF scanning motor (M6) [A].

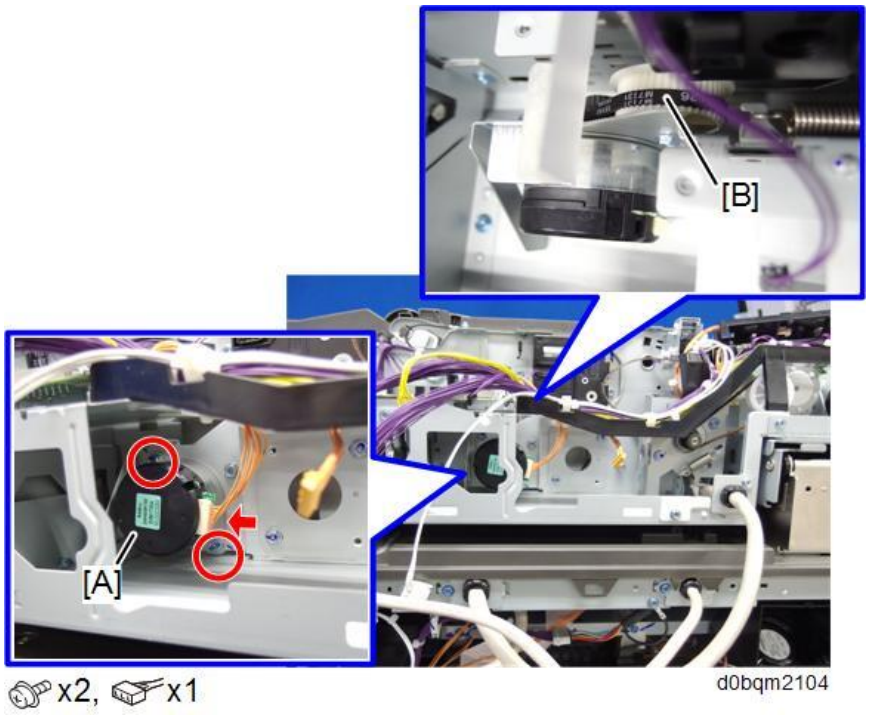


ADF Exit Motor (M5)

1. Remove the ADF controller board. (ADF Controller Board (PCB1))
2. Remove the ADF scanning motor. (ADF Scanning Motor (M6))
3. Remove the four screws and double-sided tape, and then remove the sheet [A].



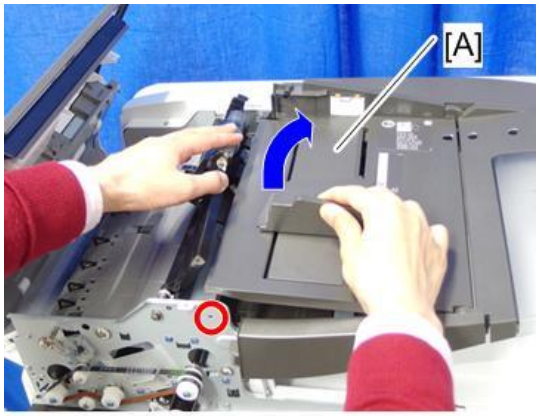
4. Remove the timing belt [B] and then remove the ADF Exit Motor (M5).



ADF Bottom Plate Lift Motor (M7)

1. Remove the ADF front cover. (ADF Front Cover)

2. Remove the screw and raise the original tray [A].



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3. Remove the harness guide (black) above the pull-out motor, and then remove the pull-out motor along with the bracket. (Pull-out Motor (M4))

4. Remove the ADF bottom plate lift motor (M7) [A].

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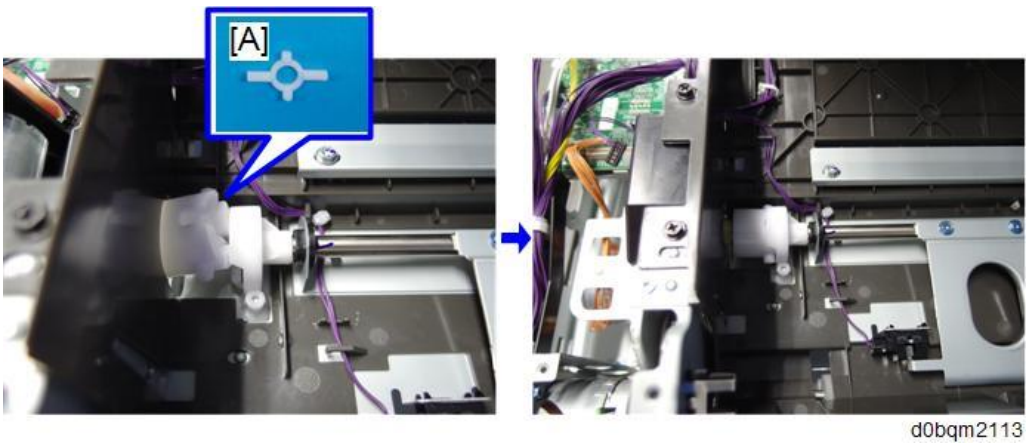
x2 x1

Note

- When installing the ADF bottom plate lift motor, remember to attach the part [A] to the motor shaft.



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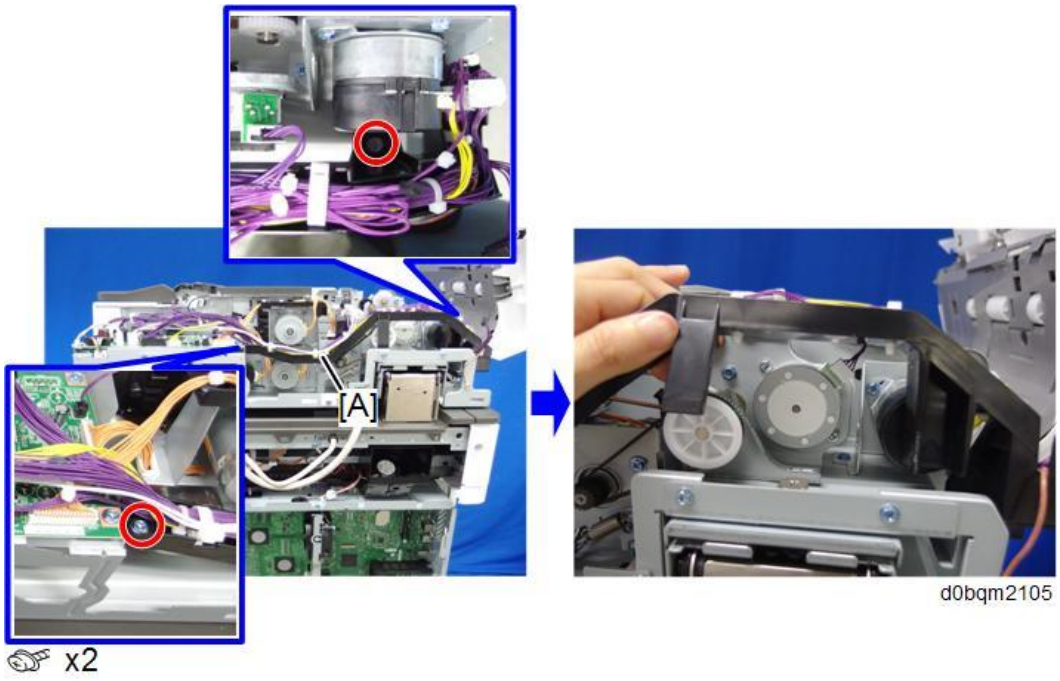
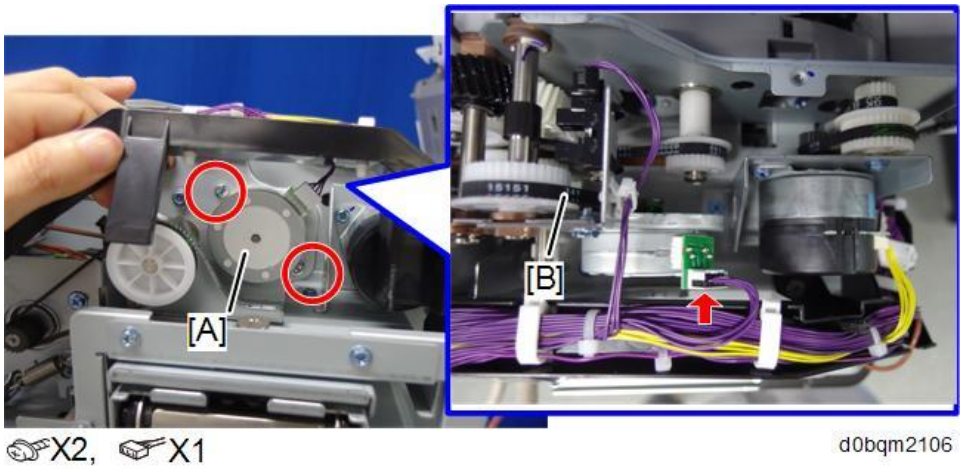
ADF Pick-up Roller Lift Motor (M1)

1. Remove the ADF rear cover. (ADF Rear Cover)
2. Slide the harness guide (black) [A] as shown.



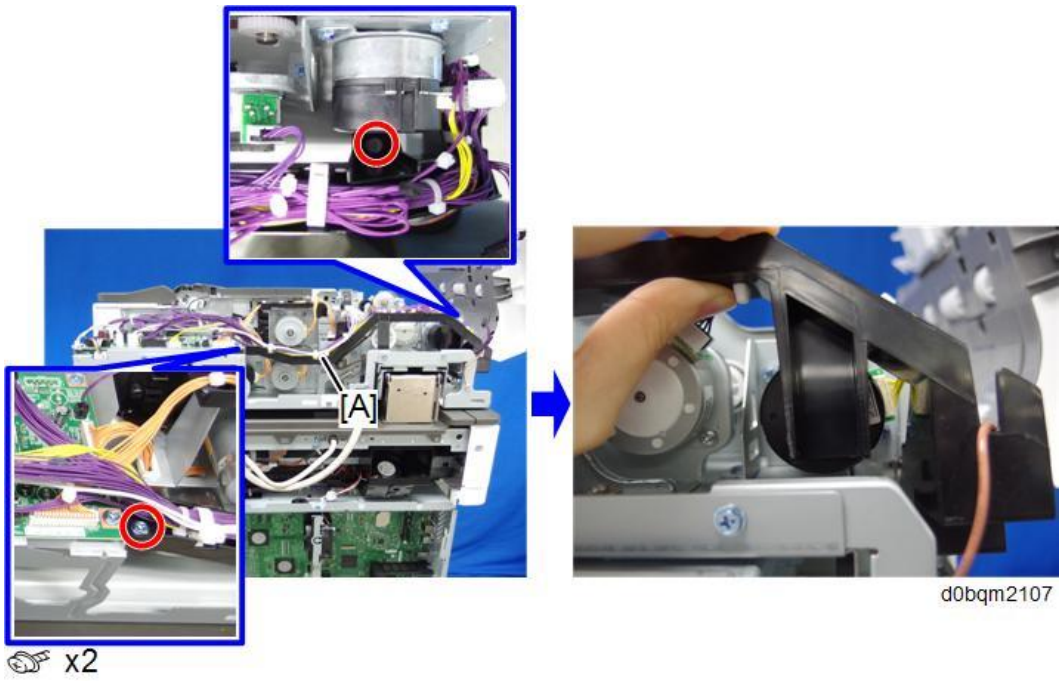
3. Remove the timing belt, and then remove the ADF pick-up roller lift motor (M1) [A].



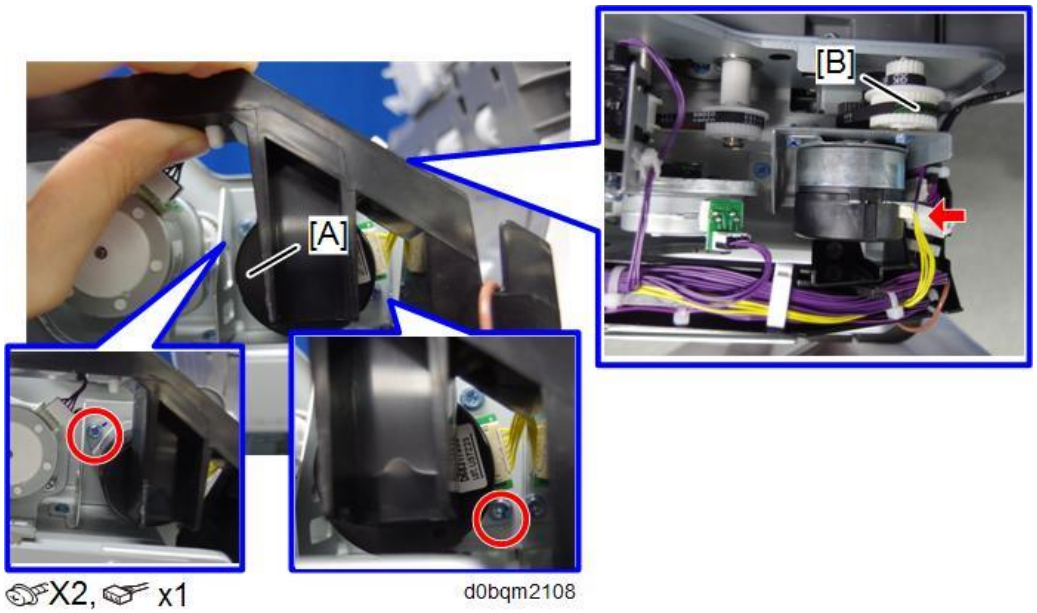
ADF Transport Motor (M2)

1. Remove the ADF rear cover. (ADF Rear Cover)

2. Slide the harness guide (black) [A] as shown.



3. Remove the timing belt, and then remove ADF transport motor (M2) [A].

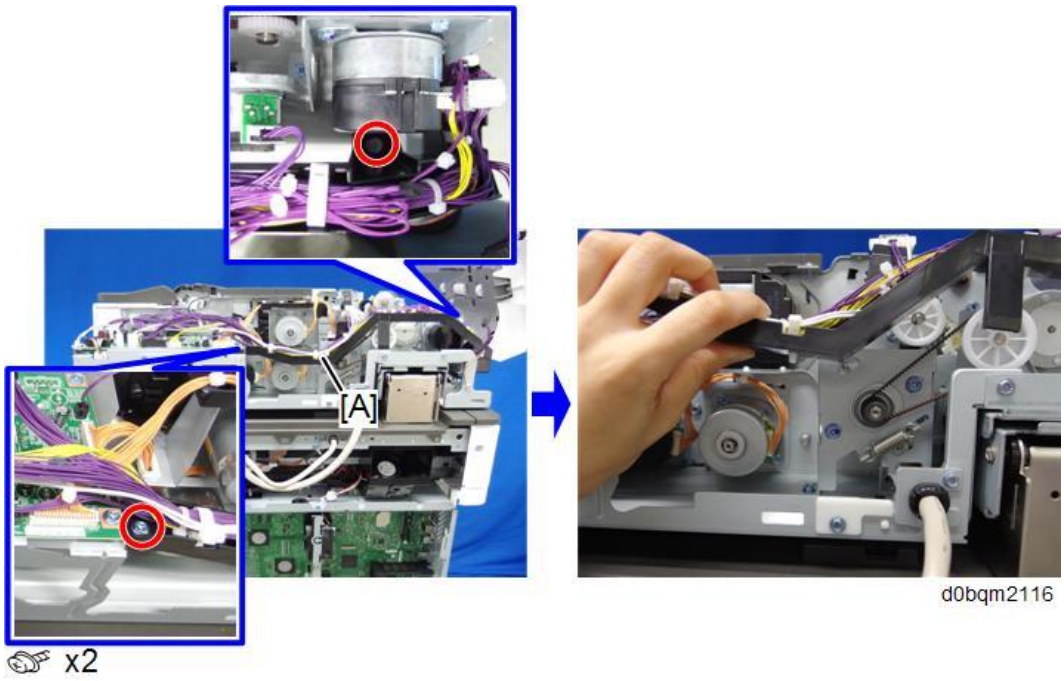


ADF Feed Motor (M3)

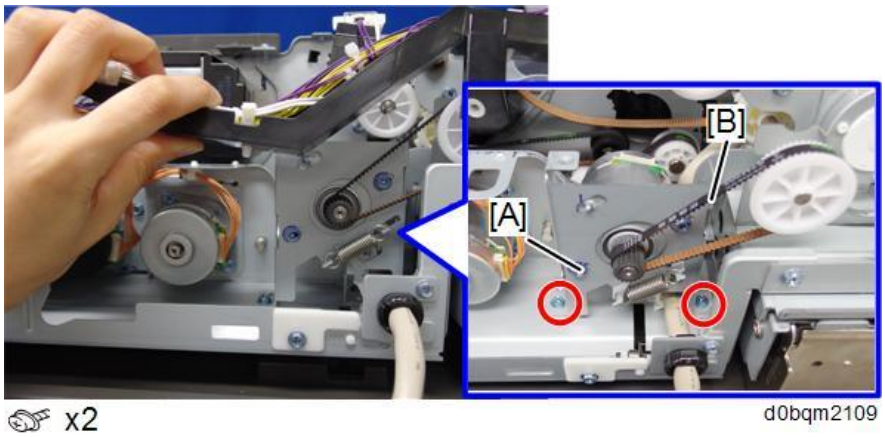
1. Remove the ADF rear cover. (ADF Rear Cover)

2. Remove the harness guide (black) above the pull-out motor, and then remove the pull-out motor. (Pull-out Motor (M4))

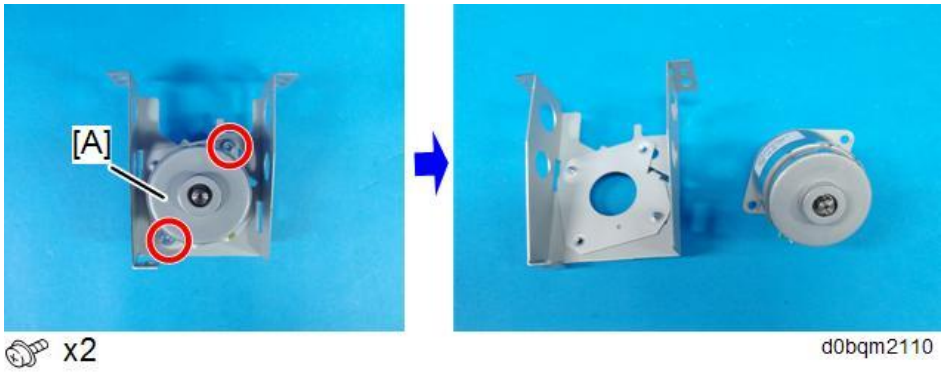
3. Slide the harness guide (black) [A] as shown.



4. Remove the timing belt, and then remove the ADF feed motor (M3) [A] along with the bracket.



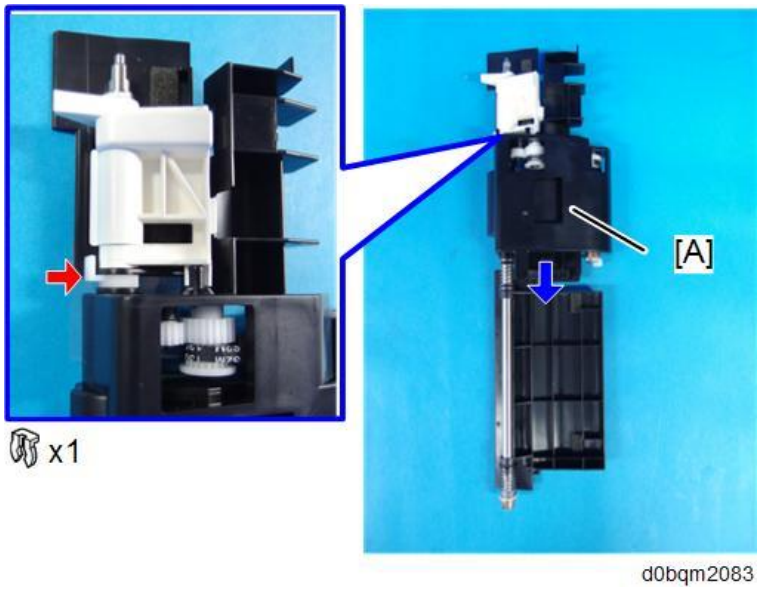
5. Remove the ADF feed motor (M3) [A] from the bracket.



Rollers and Belts

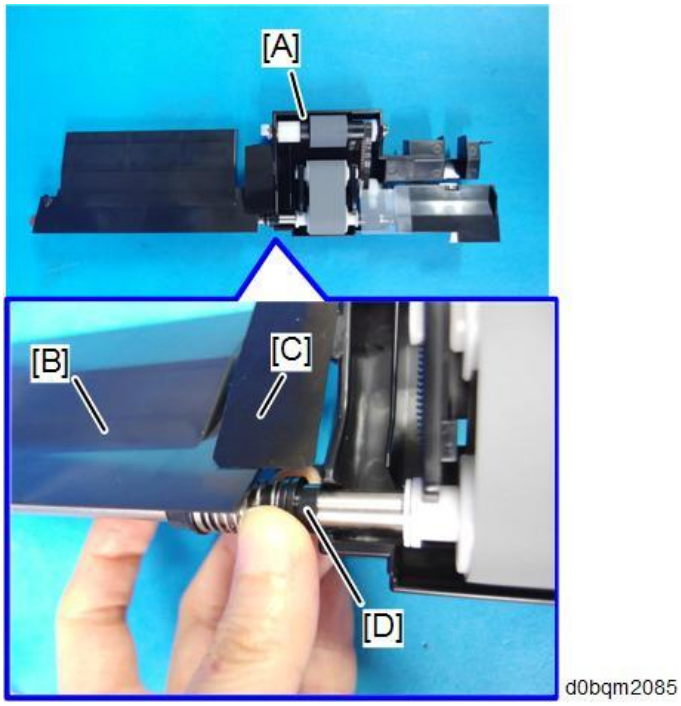
Pick-up Roller, Feed Belt

1. Remove original feed unit. (Original Feed Unit)
2. Pull the pick-up roller unit [A] as shown and then remove it.



Note

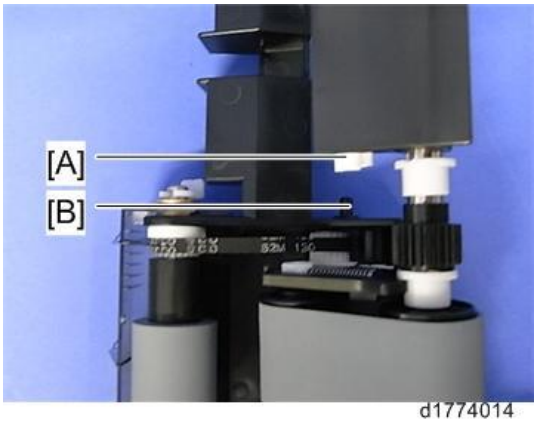
- At re-assembly, make sure that the mylar [C] of the pick-up roller [A] is above the guide [B].
- Mount the bearings [D] on the pick-up roller unit [A].



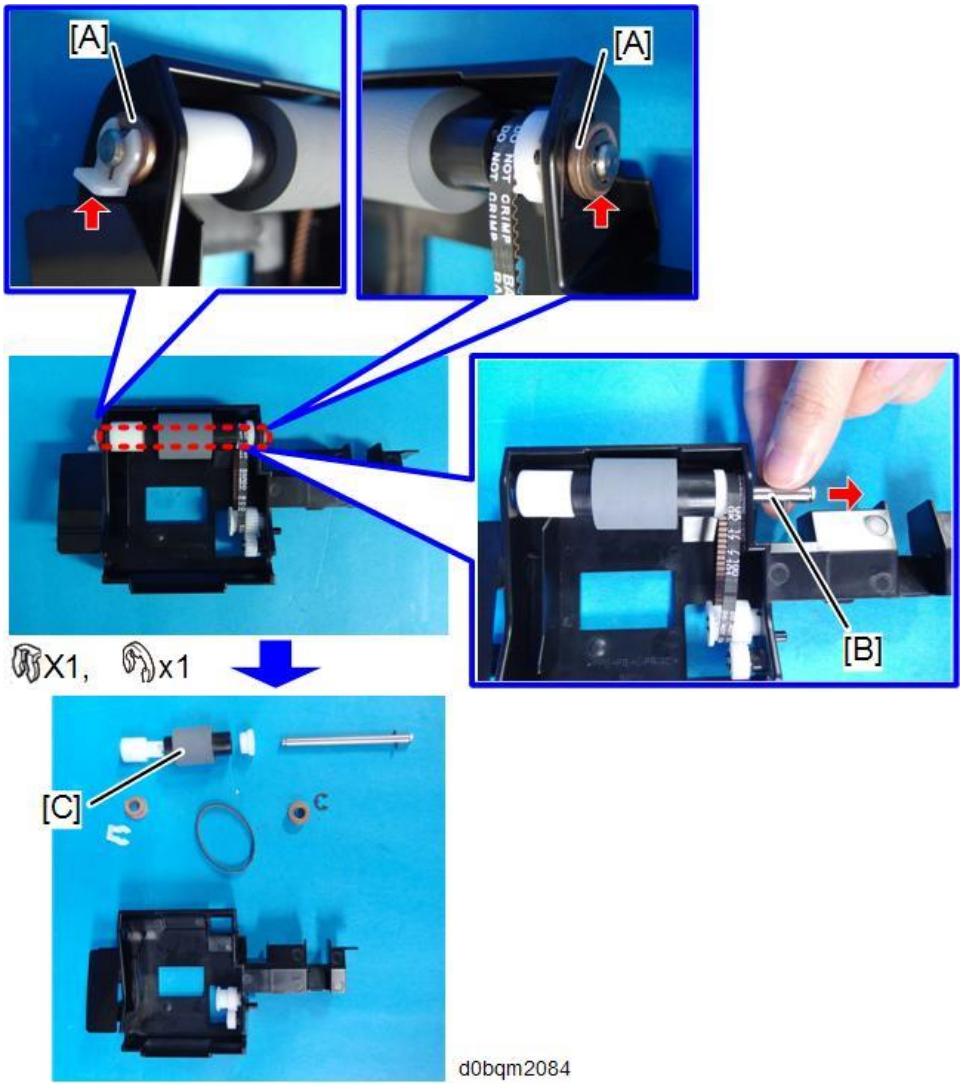
Note

- When you assemble the parts, connect the boss [B] of the pick-up roller unit to the

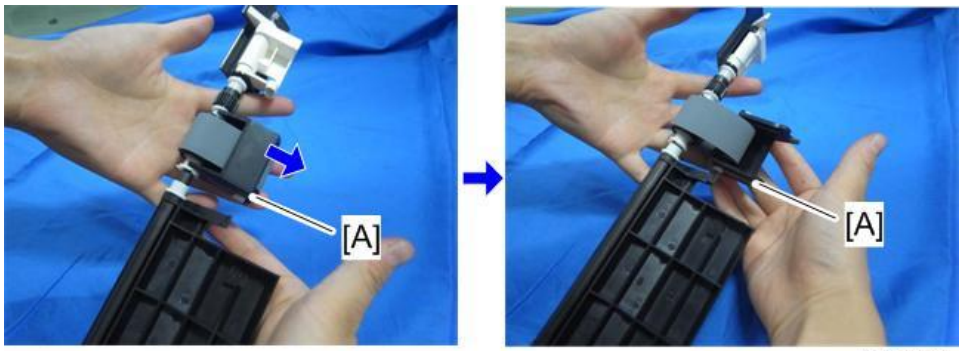
elevation lever [A].



3. Remove the two bearings [A], pull out the shaft [B], and then remove the pick-up roller [C].



4. Lift the left and right sides of the feed belt holder [A], then remove it.



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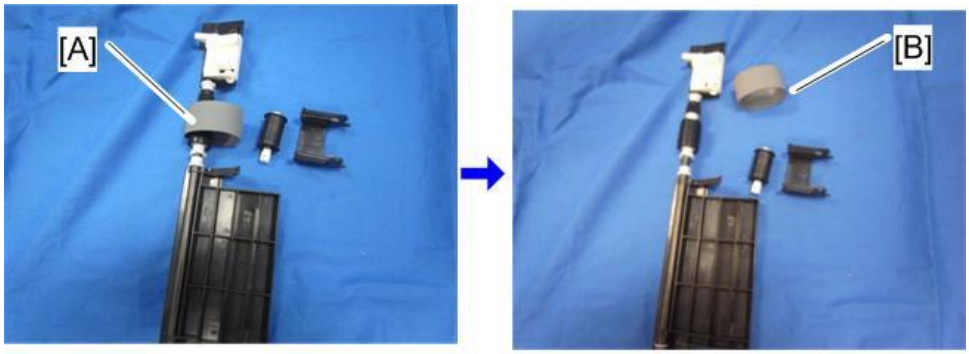
5. Remove the feed belt [B] from the feed belt holder [A].



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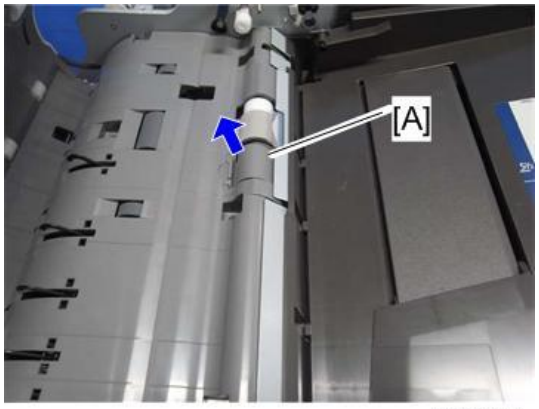
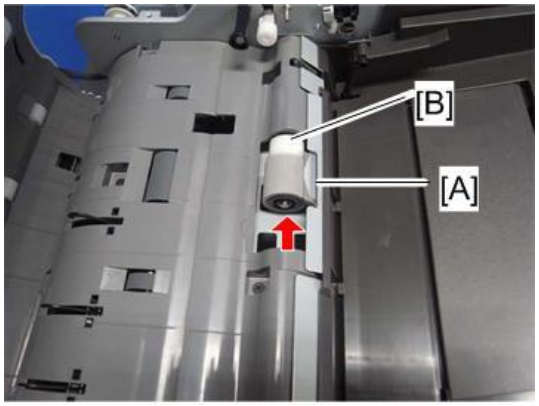
ADF Separation Roller

1. Remove the original feed unit. (Original Feed Unit)
2. Remove the ADF separation roller cover [A].



d1352056

3. Remove the ADF separation roller [A] and torque limiter clutch [B] (Clip ring x1).



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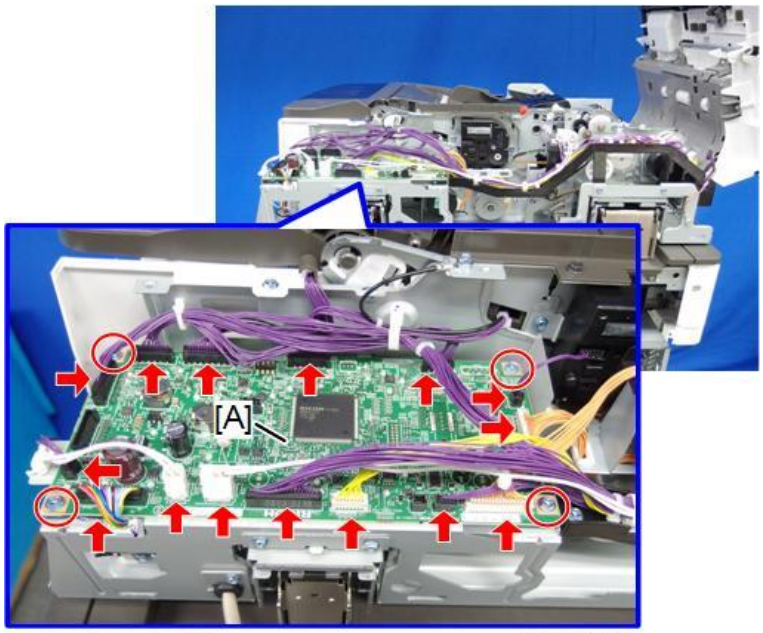
Boards

ADF Controller Board (PCB1)

1. Remove the ADF rear cover. (ADF Rear Cover)
2. Remove the ADF controller board (PCB1) [A].



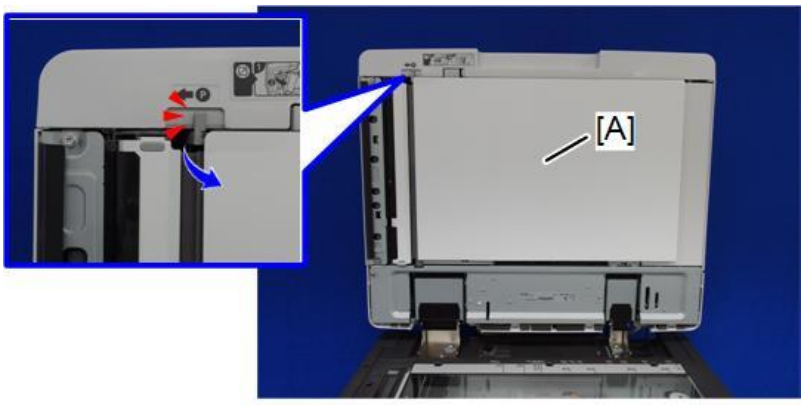
x4, x15 d0bqm2088

CIS Unit

CIS Unit (S20)

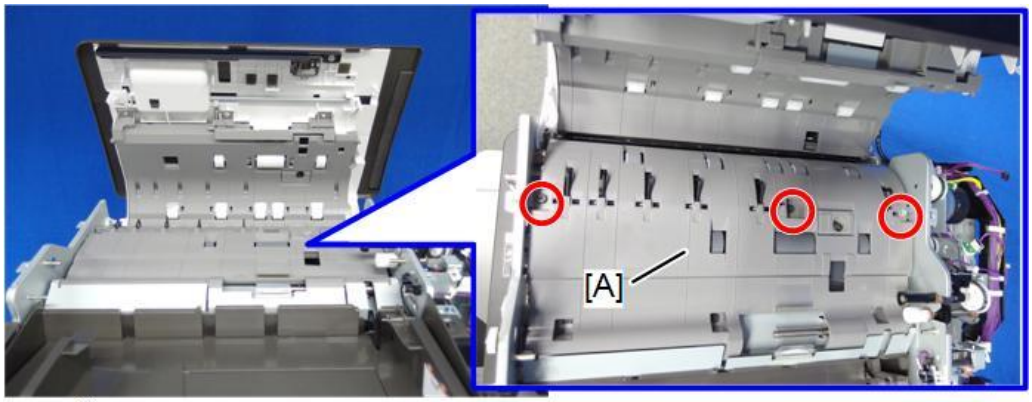
Note

- To prevent scratches on the CIS glass surface, remove the CIS unit with the white guide [A] open.
- When / After installing the CIS unit, adjust the gray balance of CIS. For details, refer to Reinstallation.



d0bqm2117

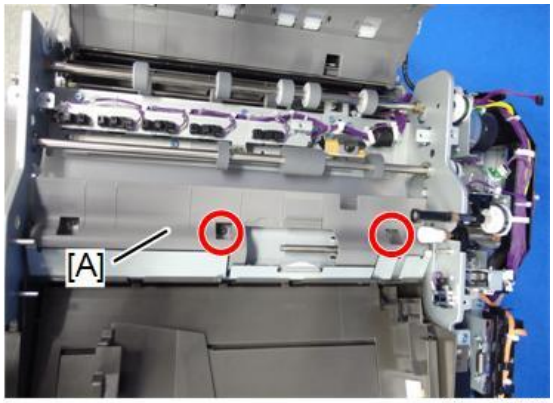
1. Remove the original feed unit. (Original Feed Unit)
2. Remove the ADF separation roller. (ADF Separation Roller)
3. Remove the ADF front cover. (ADF Front Cover)
4. Remove the guide plate (large) [A].



x3

d0bqm2111

5. Remove the guide plate (small) [A].

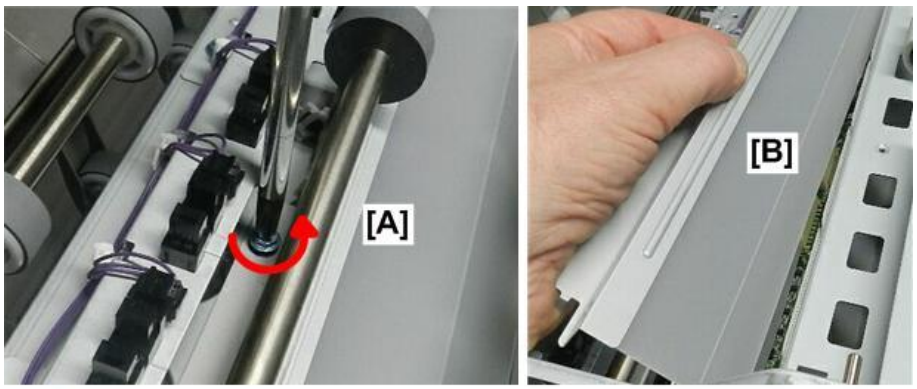


x2 d0bqm2112

6. Unfasten the guide plate [A].

Note

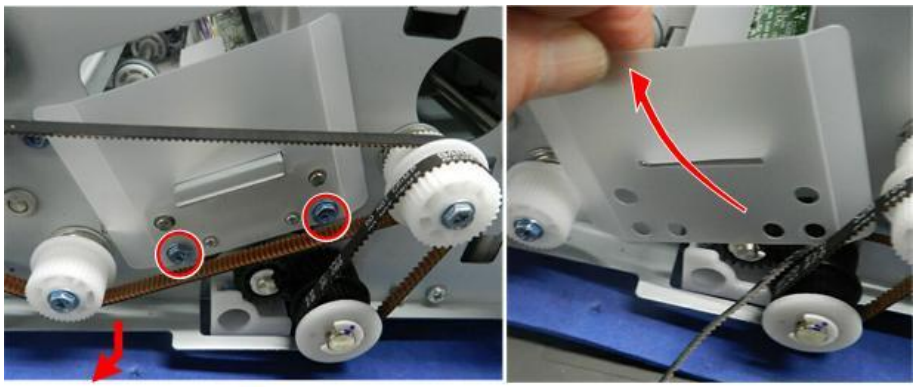
Be sure not to fold or bend because the sheet [B] is attached with the guide plate.



x1 d223c3522

7. At the front, disconnect the timing belt.

8. Unfasten the sheet and then remove it.

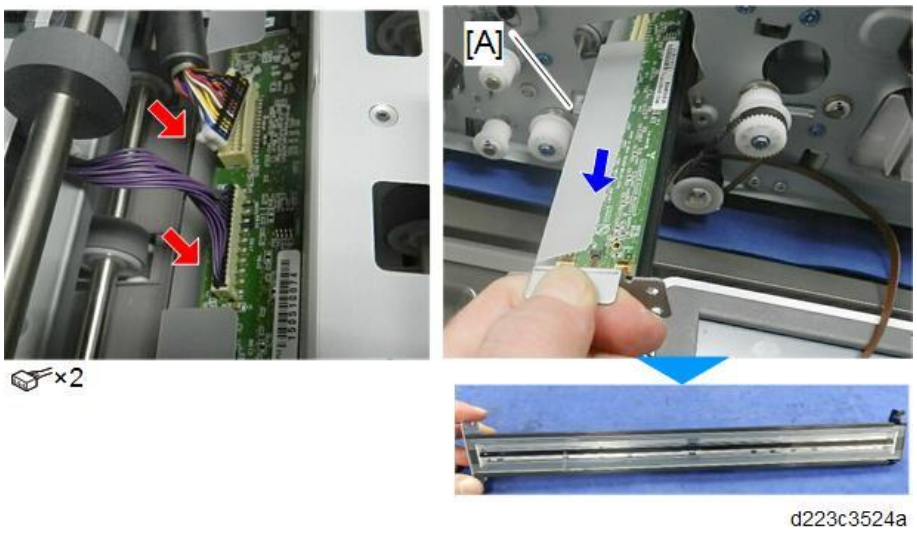


x1 x2 d223c3523

9. Disconnect the CIS unit [A].

10. Slowly, pull the CIS unit [B] out of the ADF, and then lay it on a flat, clean surface, with the glass

side facing up.



d223c3524a

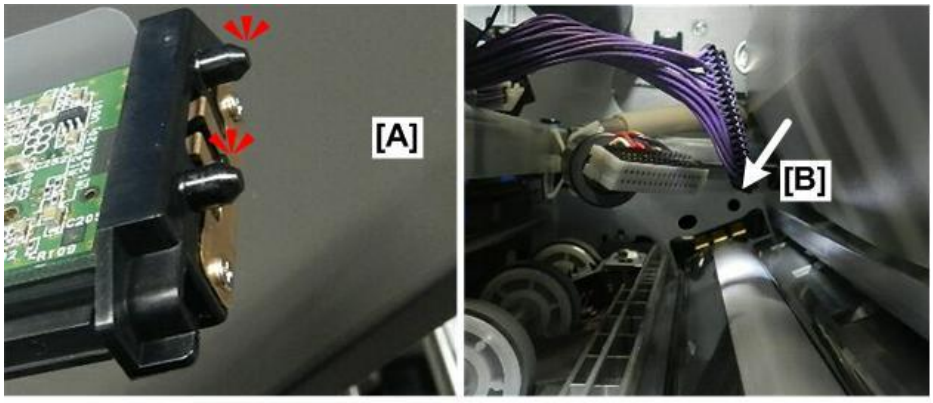
Reinstallation

1. Before reinstallation, clean the surface of the CIS lens with a lens cloth.

Important

- Never clean the surface of the CIS with tissue or any type of organic solvent.

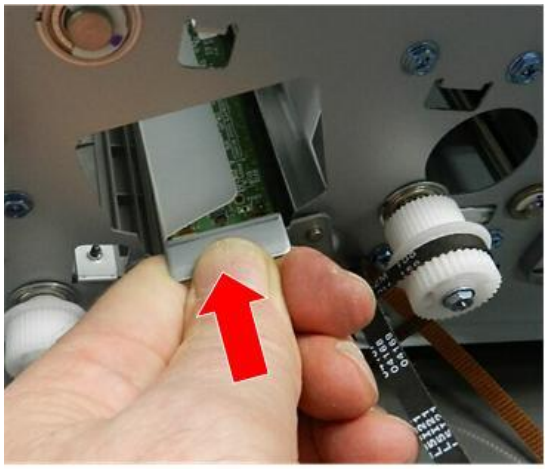
2. Two pegs on the rear end of the CIS [A] fit into two holes [B] at the back of the ADF unit.



d223c3526

3. To re-install the CIS, set the CIS in its channel so it is perfectly flat.

4. Slowly, push it to the rear until the pegs slide into the holes.



d223c3528

5. Follow the correct arrangement of the drive belt when you re-attach it.

d223c3527

6. If you have replaced the CIS unit, do these SP three codes in the following order:
   - SP4-730-001 (FROM ADF Factory Setting: CIS Parameter)
     Writes the initial value of the scan parameter in FROM.
   - SP4-730-004 (FROM Data Update)
     Writes the SP value of the scan parameter in FROM.
   - SP4-730-002 (FROM Main Factory Setting Execution ON/OFF)
     Copies the parameters written in FROM to the engine board in the MFP.

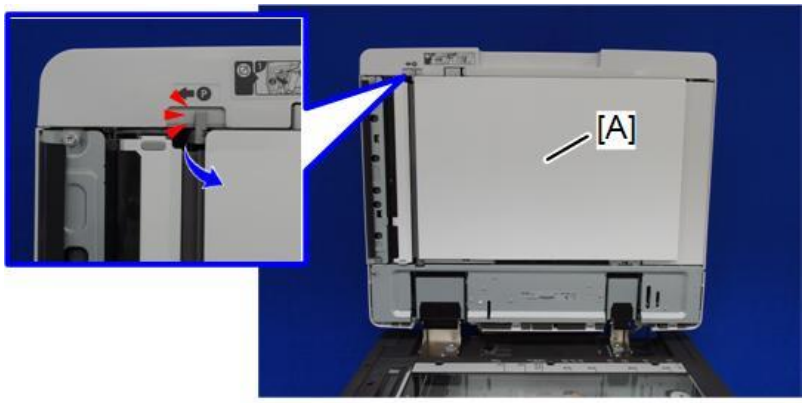
CIS White Roller Cleaning

Note

- Frequently inspect the CIS white roller.
  A dirty or incorrectly installed white roller will cause the machine to issue SC152-00 (White Level Error: Back Side).
- Mounting the CIS white roller of the DF3100 on the DF3120 may affect the density on the back.

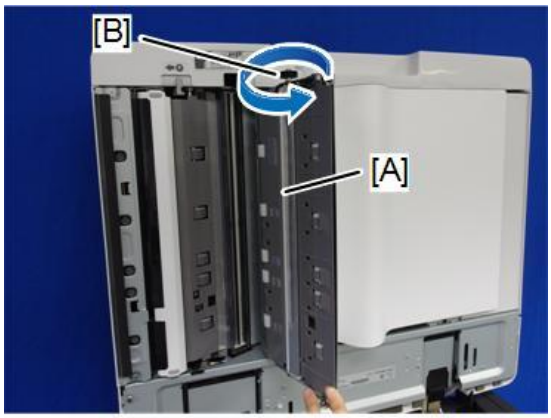
1. Open the ADF.

2. At the upper left corner, release the white guide [A].



d0bqm2117

3. With the white guide open, wipe the white roller [A] while rotating the gear [B].



d0bqm2118

Adjustment after ADF Replacement

After ADF replacement, make the following adjustments.

- Adjustment of CIS
- Transport Adjustment
- Platen Adjustment

GB Adjustment of CIS

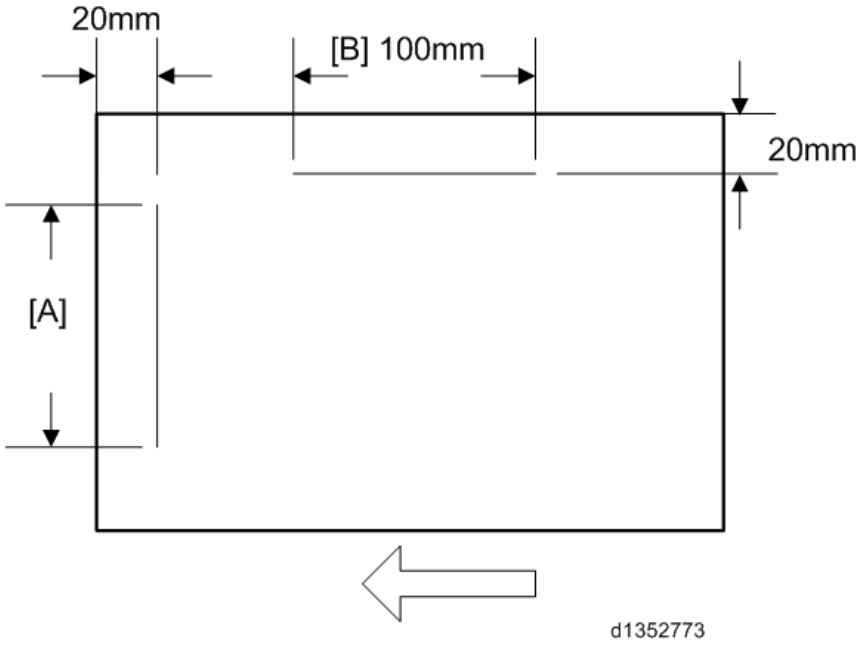
1. Execute SP4-730-002 (FROM Main Factory Setting Execution ON/OFF).
By executing this, the parameters (GB coefficients and pixel interpolation coefficients) are stored in the machine.

Checking the vertical registration

SP6-006-001 (ADF Adjustment Side-to-Side Regist: Front)

SP6-006-002 (ADF Adjustment Side-to-Side Regist: Rear)

1. Create an original as shown in the following picture.



The large white arrow indicates the direction of feed.

2. Copy the original and make sure that the position of the line [A] is within 0±1mm

3. If not within the standard, adjust with the SP modes.

Checking the horizontal registration

SP6-006-010 (ADF Adjustment L-Edge Regist (1-Pass): Front)

SP6-006-011 (ADF Adjustment L-Edge Regist (1-Pass): Rear)

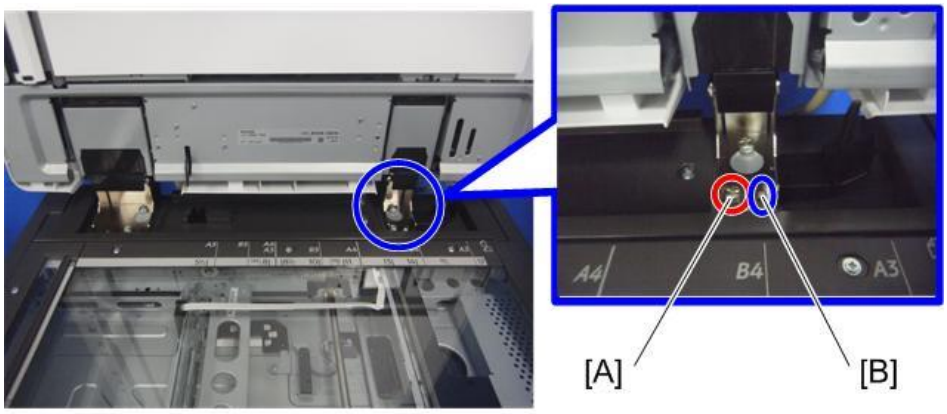
1. Copy the original and make sure that the position of the line [B] is within 0±2mm.

2. If not within the standard, adjust with the SP modes.

Checking skew

1. Make sure that the difference between both end positions of the line [A] that you wrote on the original (see above) is within 0±2mm.

2. If not within the standard, change the position of the fixing screw [A] to the long hole [B] at the right hinge.



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Checking magnification

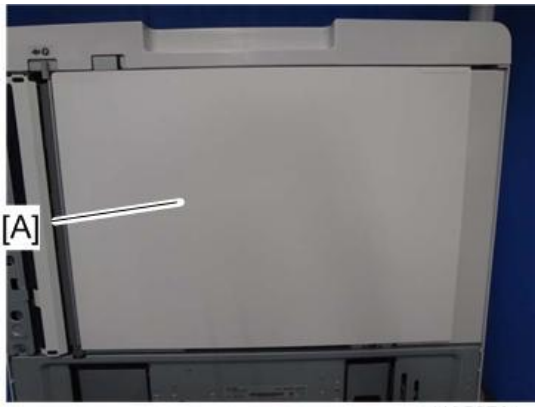
1. Copy the original and make sure that the length of the line [B] that you wrote on the original (see above) is within 100±1mm.

2. If not within the standard, adjust with the SP mode.

- SP6-017-001 (DF Magnification Adj.)

Platen Adjustment

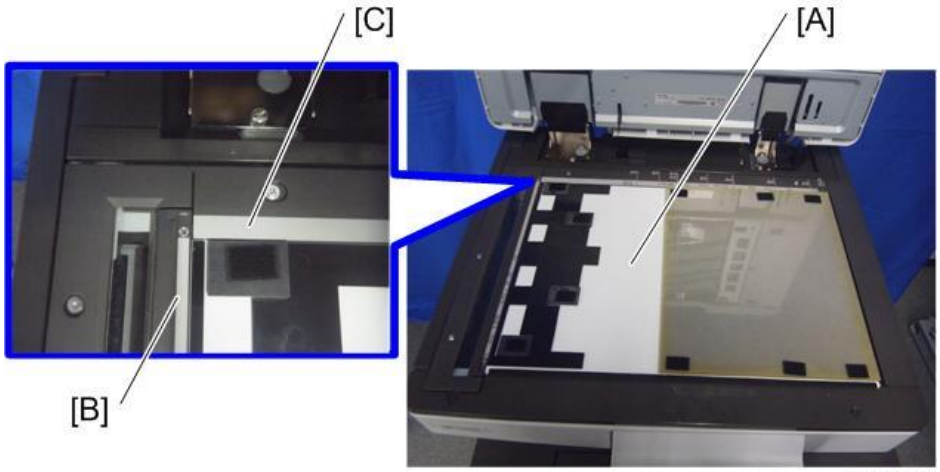
1. Open the ADF and remove the white guide [A].



d1352781

2. Put the white guide [A] in the correct position on the exposure glass, aligning it with the glass cover

[B] and the rear scale [C].



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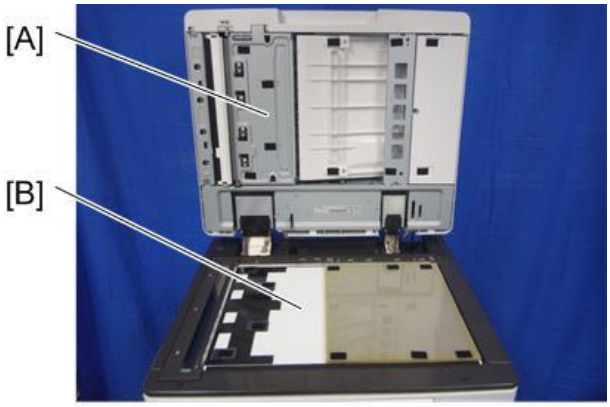
3. Close the ADF [A] slowly and attach the ADF to the white guide [B] with the hook and loop fastener.



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