Finisher SR3210 /
Booklet Finisher SR3220
Machine Code: D3B8/D3B9
Field Service Manual

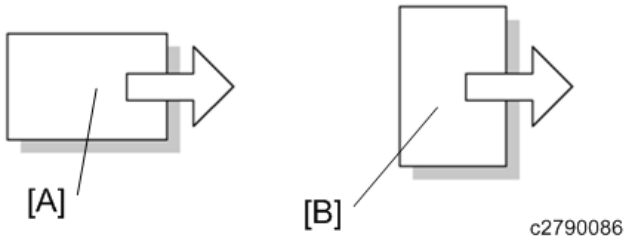
May, 2016

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 [A]
LEF	Long Edge Feed [B]
K	Black
C	Cyan
M	Magenta
Y	Yellow
B/W, BW	Black and White
FC	Full color



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The proper names of Internet Explorer 6, 7, and 8 are as follows:

- Microsoft® Internet Explorer® 6
- Windows® Internet Explorer® 7
- Windows® Internet Explorer® 8

The proper names of the Windows operating systems are as follows:

- The product names of Windows Vista are as follows:

  Microsoft® Windows Vista® Ultimate

  Microsoft® Windows Vista® Business

  Microsoft® Windows Vista® Home Premium

  Microsoft® Windows Vista® Home Basic

  Microsoft® Windows Vista® Enterprise
- The product names of Windows 7 are as follows:

  Microsoft® Windows® 7 Home Premium

  Microsoft® Windows® 7 Professional

  Microsoft® Windows® 7 Ultimate

  Microsoft® Windows® 7 Enterprise
- The product names of Windows 8 are as follows:

  Microsoft® Windows® 8

  Microsoft® Windows® 8 Pro

  Microsoft® Windows® 8 Enterprise
- The product names of Windows 8.1 are as follows:

  Microsoft® Windows® 8.1

  Microsoft® Windows® 8.1 Pro

  Microsoft® Windows® 8.1 Enterprise
- The product names of Windows 10 are as follows:

Microsoft® Windows® 10 Home Premium

Microsoft® Windows® 10 Pro

Microsoft® Windows® 10 Enterprise

Microsoft® Windows® 10 Education

- The product names of Windows Server 2003 are as follows:

  Microsoft® Windows Server® 2003 Standard Edition

  Microsoft® Windows Server® 2003 Enterprise Edition

- The product names of Windows Server 2003 R2 are as follows:

  Microsoft® Windows Server® 2003 R2 Standard Edition

  Microsoft® Windows Server® 2003 R2 Enterprise Edition

- The product names of Windows Server 2008 are as follows:

  Microsoft® Windows Server® 2008 Standard

  Microsoft® Windows Server® 2008 Enterprise

- The product names of Windows Server 2008 R2 are as follows:

  Microsoft® Windows Server® 2008 R2 Standard

  Microsoft® Windows Server® 2008 R2 Enterprise

- The product names of Windows Server 2012 are as follows:

  Microsoft® Windows Server® 2012 Foundation

  Microsoft® Windows Server® 2012 Essentials

  Microsoft® Windows Server® 2012 Standard

- The product names of Windows Server 2012 R2 are as follows:

  Microsoft® Windows Server® 2012 R2 Foundation

  Microsoft® Windows Server® 2012 R2 Essentials

  Microsoft® Windows Server® 2012 R2 Standard

TABLE OF CONTENTS

2. Detailed Descriptions

1. Replacement and Adjustment

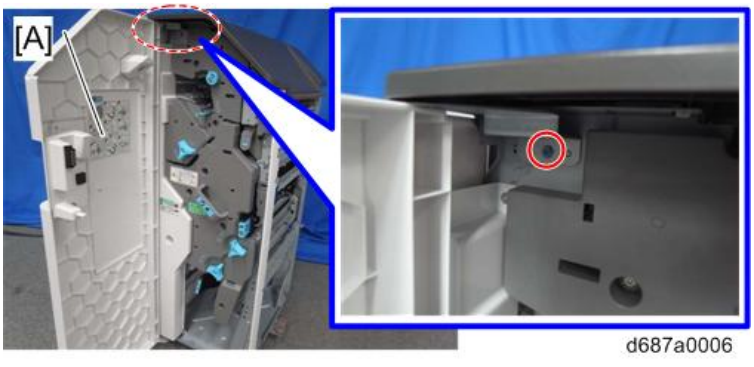
Exterior Parts

Front Cover

1. Open the front cover [A].

d6873230

2. Front cover [A] (×1)

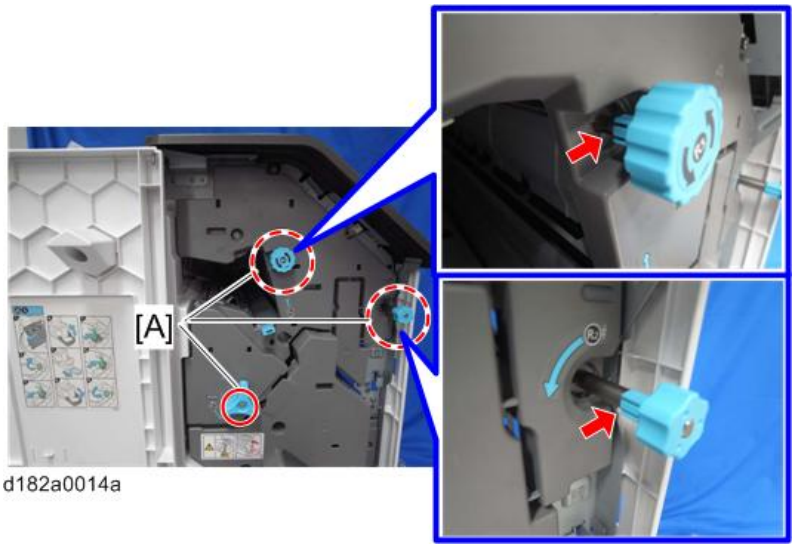


d687a0006

Inner Cover

1. Open the front cover (page 9 "Front Cover")

2. **Remove the three knobs [A] (hook×1 for each).**
    - Use a flathead screwdriver to release the hooks.



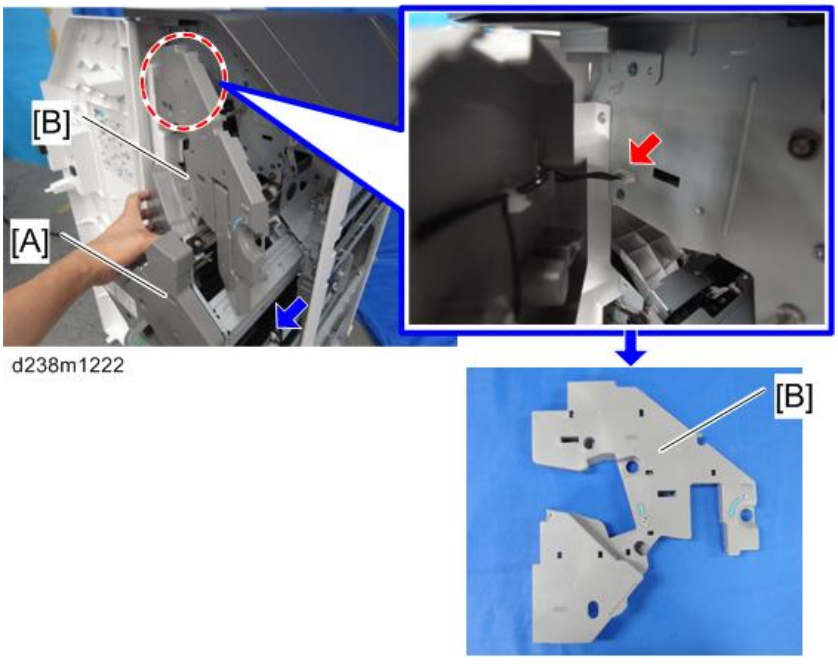
d182a0014a

3. **Remove the three screws on the inner cover [A] (×3).**

d182a0042

4. **Pull the booklet stapler unit [A].**

5. Inner cover [B] (×1)



d238m1222

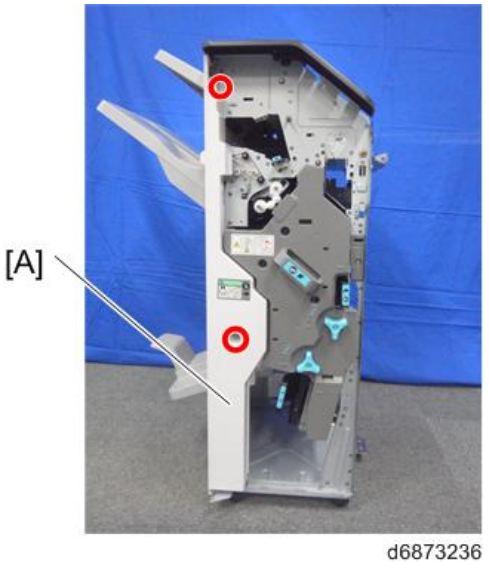
Rear Cover

1. Rear cover [A] (×3)

d238m1223

Front Left Cover

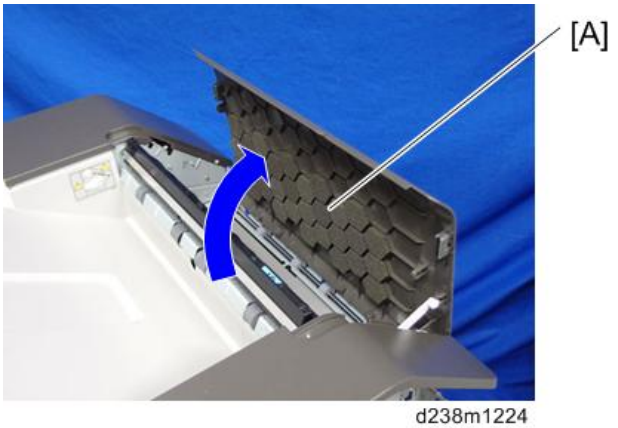
1. Front cover (page 9)
2. Inner cover (page 9)
3. Paper exit guide cover (front) (page 15 "Paper Exit Guide Cover")
4. Front left cover [A] (×2)



d6873236

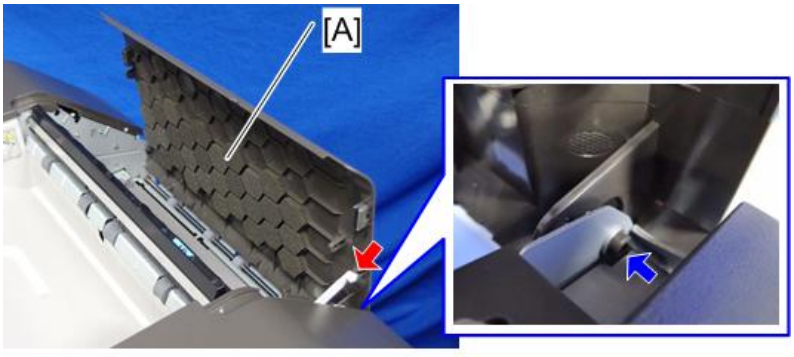
Upper Cover

1. Open the upper cover [A].



d238m1224

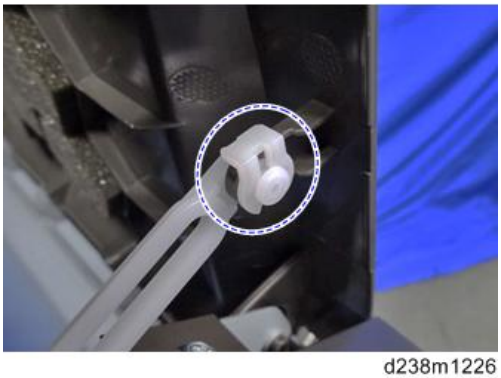
2. Upper cover [A] (×1, tab ×1)



d238m1125

Note

- When reattaching the upper cover, attach the clips so that their tabs face upward.

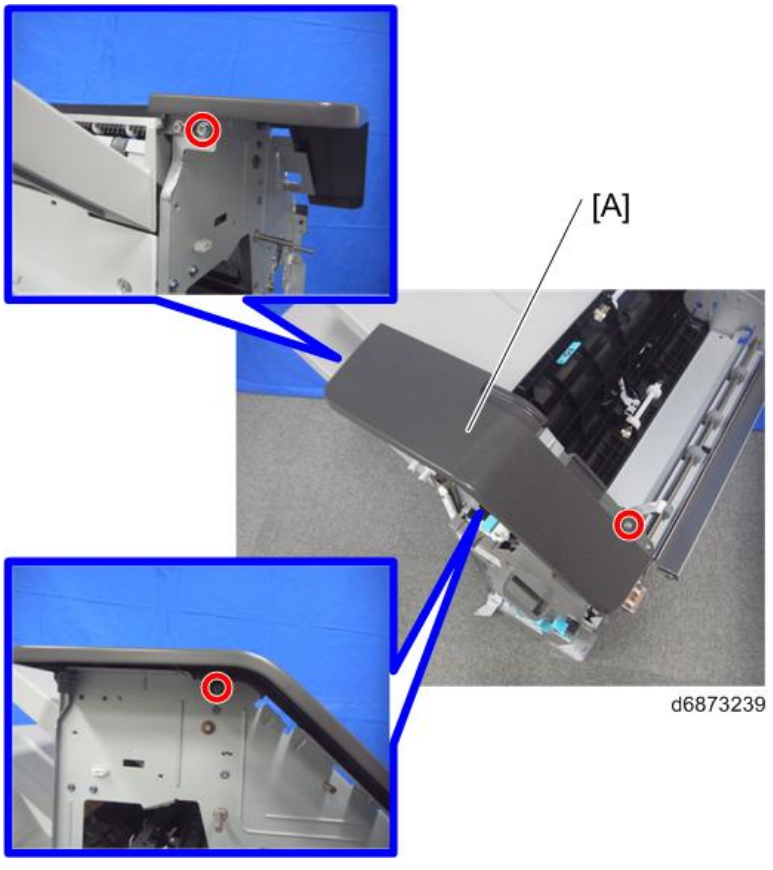


d238m1226

Upper Front Cover

1. Front left cover (page 12)
2. Upper cover (page 12)

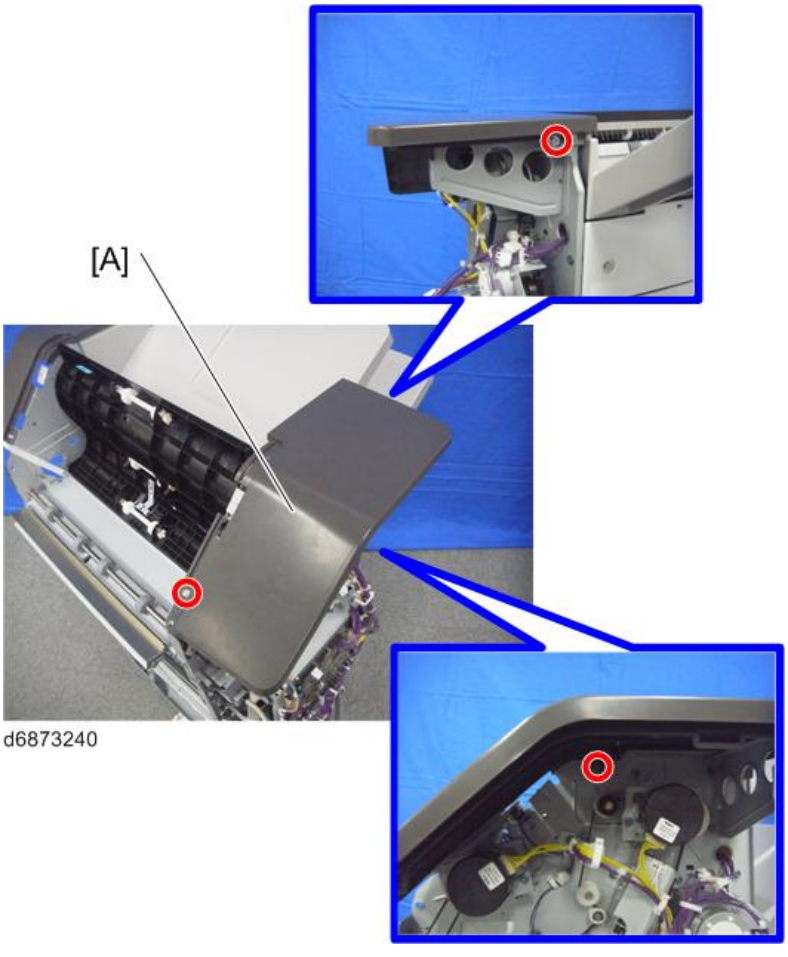
3. Upper front cover [A] (×3)



Upper Rear Cover

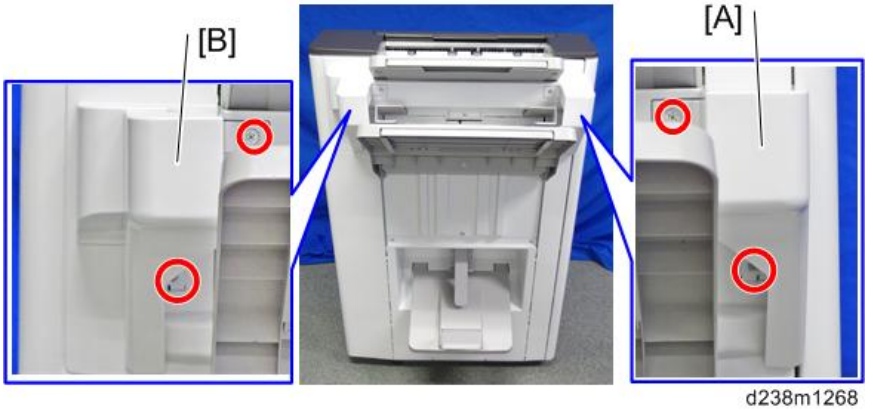
1. Rear cover (page 11)
2. Paper exit guide cover (page 15)
3. Upper left cover (page 16)
4. Upper cover (page 12)

5. Upper rear cover [A] (×3)



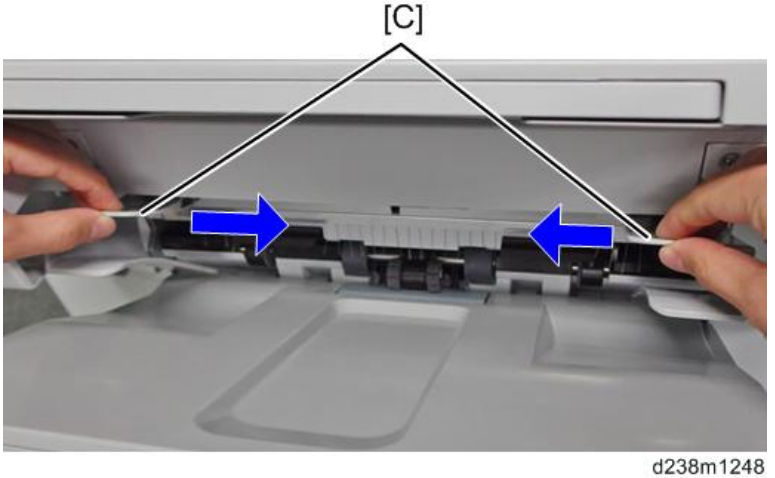
Paper Exit Guide Cover

1. Paper exit guide cover (front) [A]
2. Paper exit guide cover (rear) [B] (×4)



d238m1268

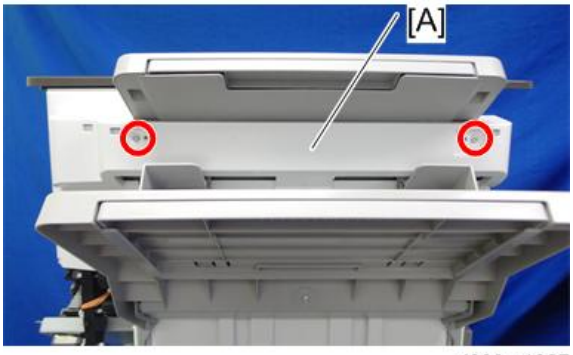
If the view of the screw hole is obstructed by the paper exit guides [C], hold the paper exit guides on the sides and move them inward.



d238m1248

Upper Left Cover

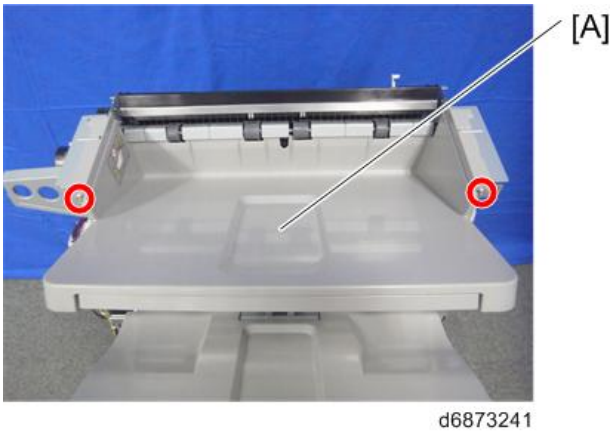
1. **Paper exit guide cover (page 15)**
2. **Upper left cover [A] (×2)**



d238m1227

Proof Tray

1. Upper front cover (page 13)
2. Upper rear cover (page 14)
3. Proof tray [A] (×2)



d6873241

Shift Tray

1. Shift tray [A] (×1)

d6873242

Booklet Tray (SR3220)

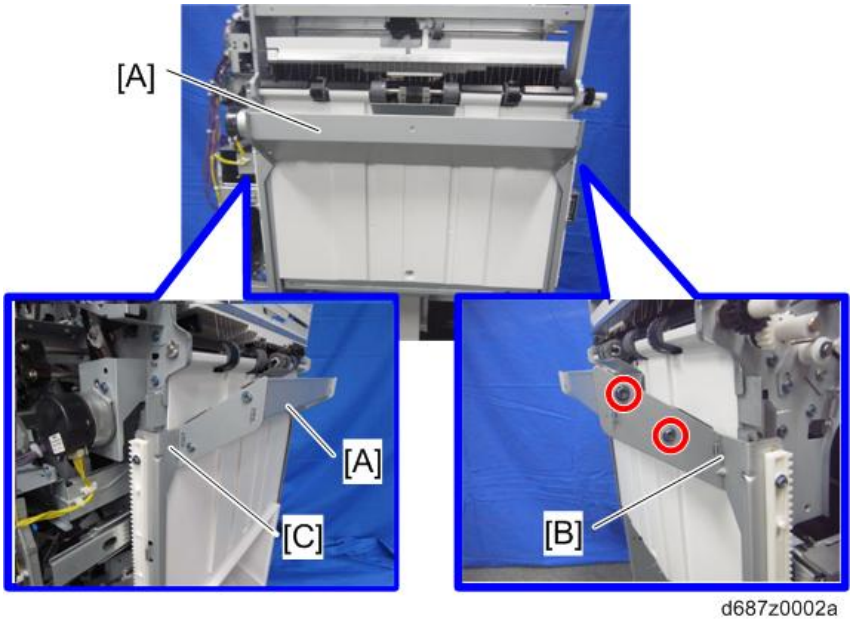
1. Booklet tray [A]

d6873243

Left Center Cover

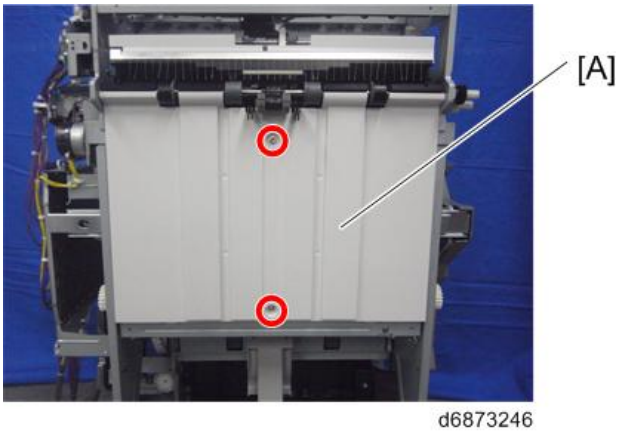
1. Front cover (page 9)
2. Rear cover (page 11)
3. Shift tray (page 18)
4. Shift tray front bracket [B] (×2)

5. Shift tray bracket [A] with the shift tray rear bracket [C]



d687z0002a

6. Left center cover [A] (×2)



d6873246

Left Lower Cover

For SR3220

1. Booklet tray (page 18)

2. **Left lower cover [A] (×2)**

d6873247

For SR3210

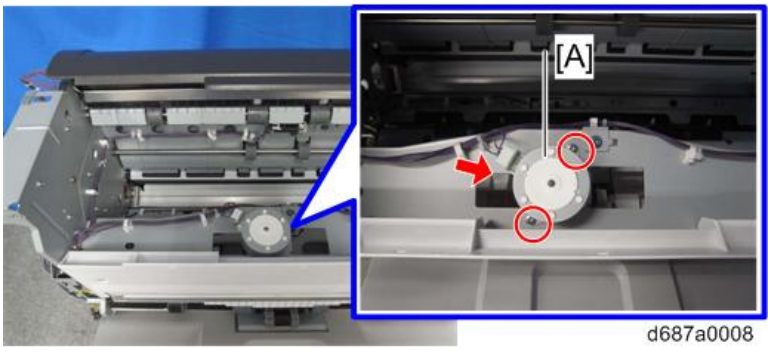
1. **Left lower cover [A] (×2)**

d238m1249

Main Unit

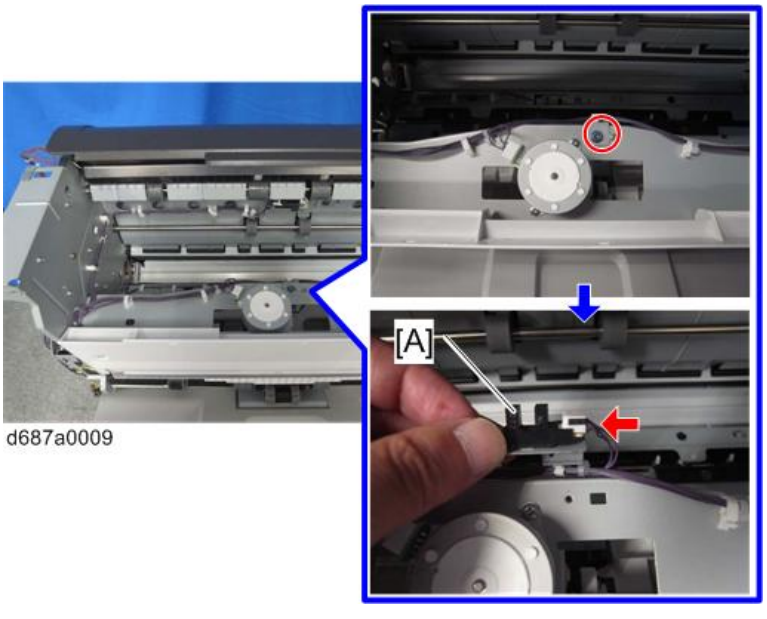
Paper Exit Guide Plate Open/Close Motor

1. Proof tray (page 17)
2. Paper exit guide plate open/close motor [A] (×2, ×1)



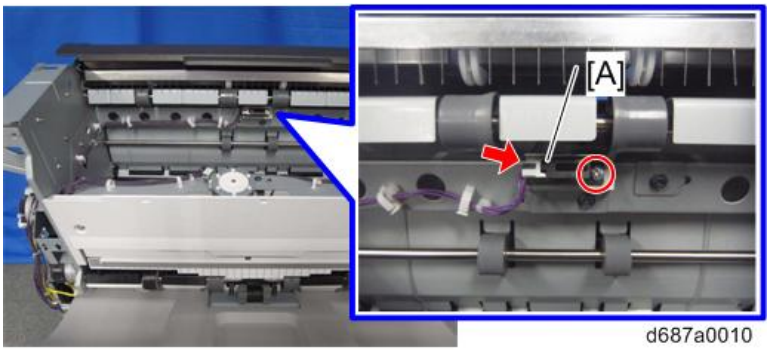
Paper Exit Guide Plate Open/Close HP Sensor

1. Proof tray (page 17)
2. Paper exit guide plate HP sensor [A] (×1, x1)



Proof Tray Full Sensor

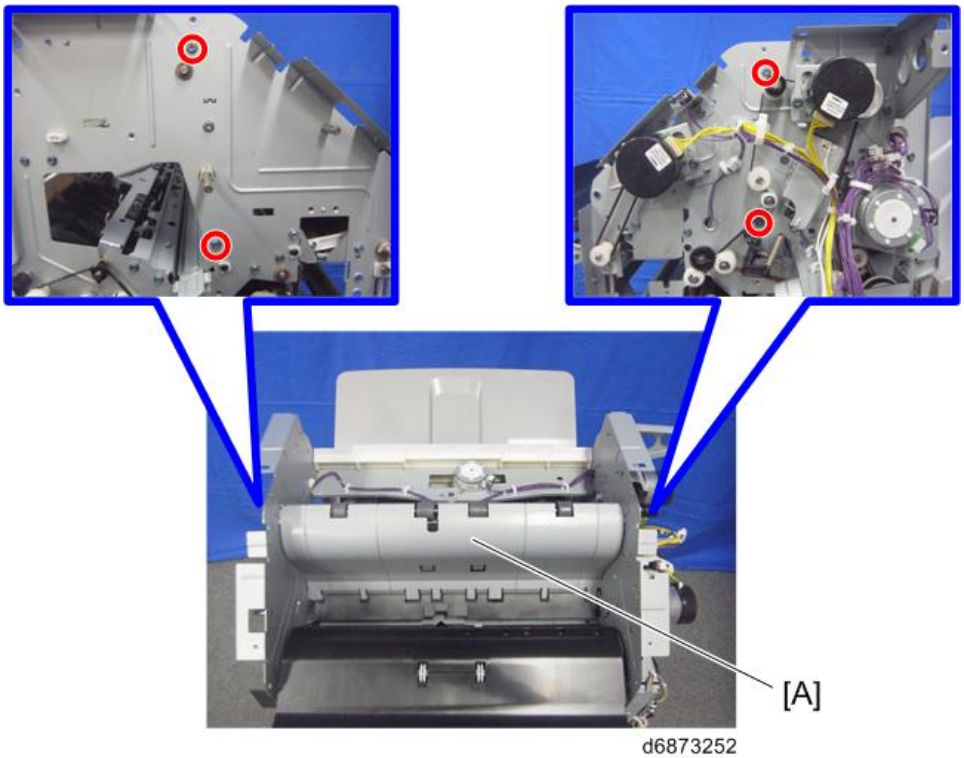
1. Proof tray (page 17)
2. Proof tray full sensor [A] (×1, ×1)



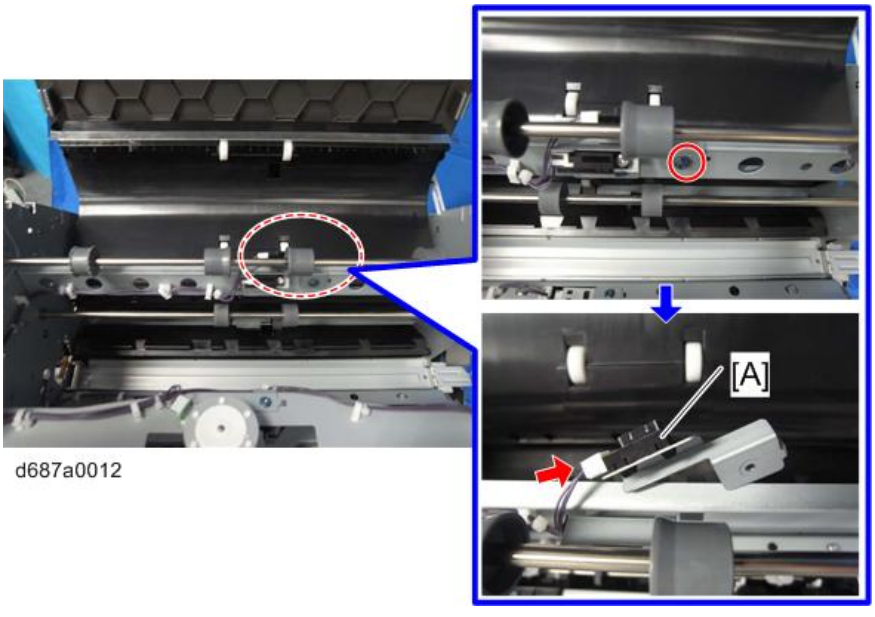
Proof Tray Paper Exit Sensor

1. Inner cover (page 9)
2. Proof tray (page 17)

3. Proof transport bracket [A] (×4)

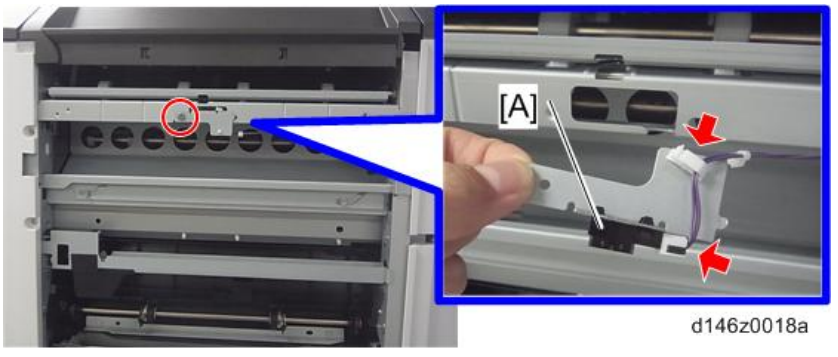


4. Proof tray paper exit sensor [A] (×1, ×1)



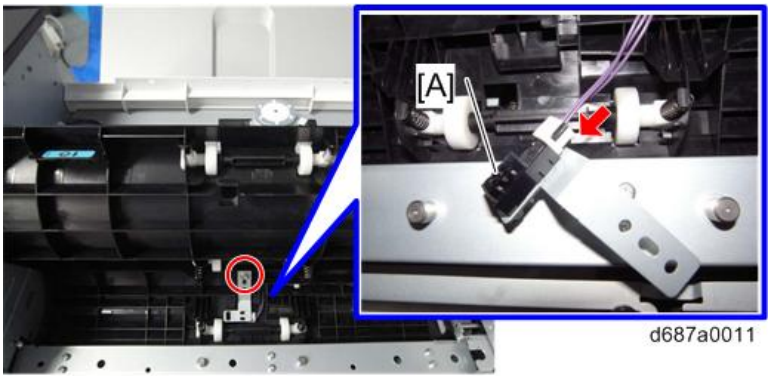
Entrance Sensor

1. Entrance sensor [A] (×1, ×1, ×1)



Intermediate Transport Sensor Right

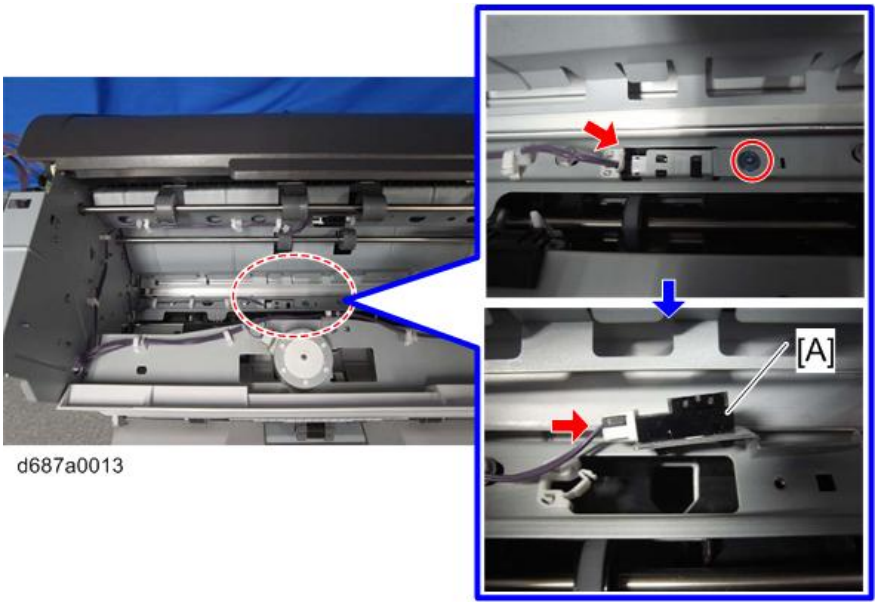
1. Upper cover (page 12)
2. Intermediate transport sensor right [A] (×1, ×1,)



Intermediate Transport Sensor Left

1. Proof tray (page 17)

2. Intermediate transport sensor left [A] (×1, ×1, ×1)

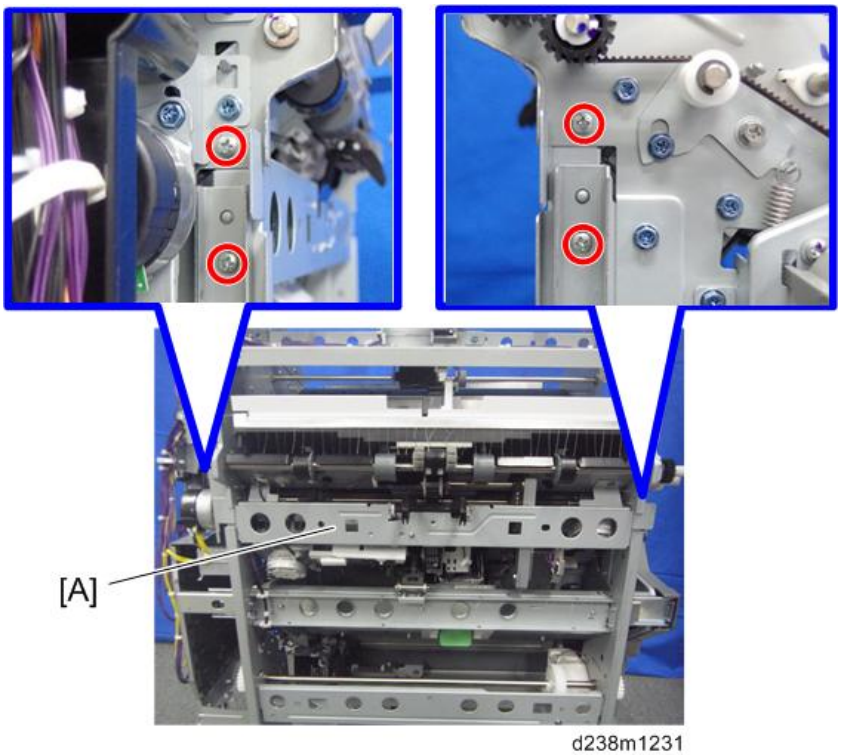


d687a0013

Shift Tray Paper Surface Sensor

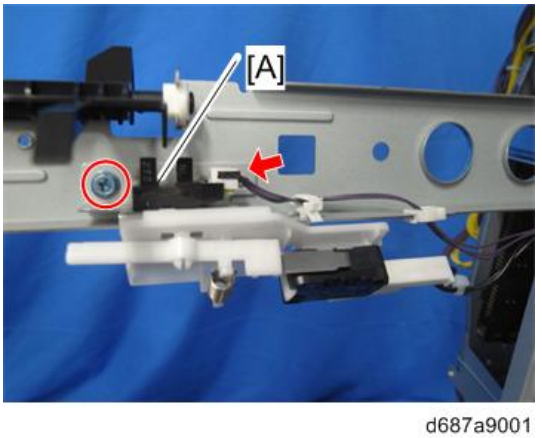
1. Left center cover (page 18)

2. Bracket [A] (×4)



d238m1231

3. Shift tray paper surface sensor [A] (×1, ×1)

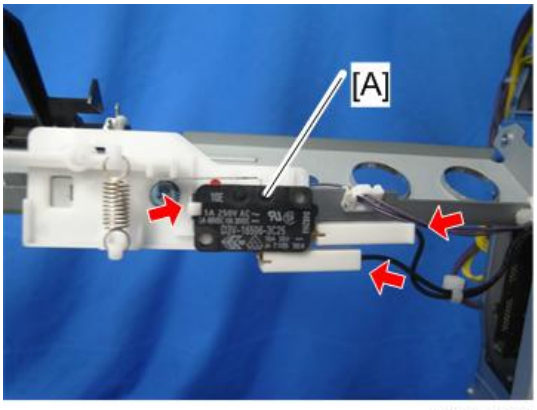


d687a9001

Shift Tray Upper Limit Switch

1. Bracket of the shift tray (page 25 "Shift Tray Paper Surface Sensor")

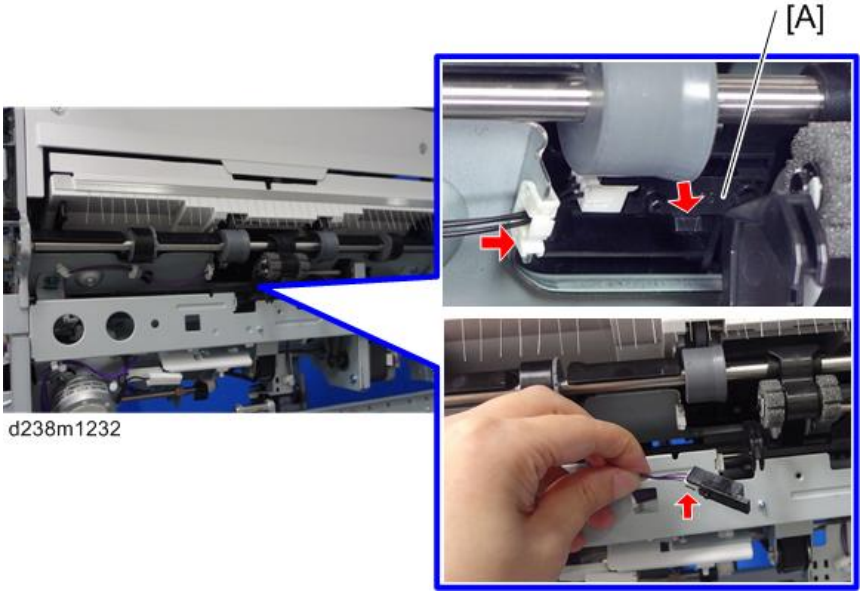
2. Shift tray upper limit switch [A] (x2, hook × 1)



d687a9002

Shift Tray Paper Exit Sensor

1. Left center cover (page 18)
2. Shift tray paper exit sensor [A] (hook ×1, x1, ×1)

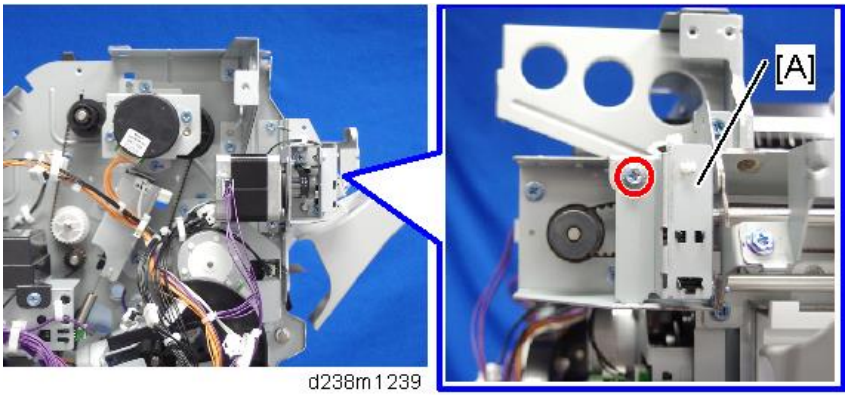


d238m1232

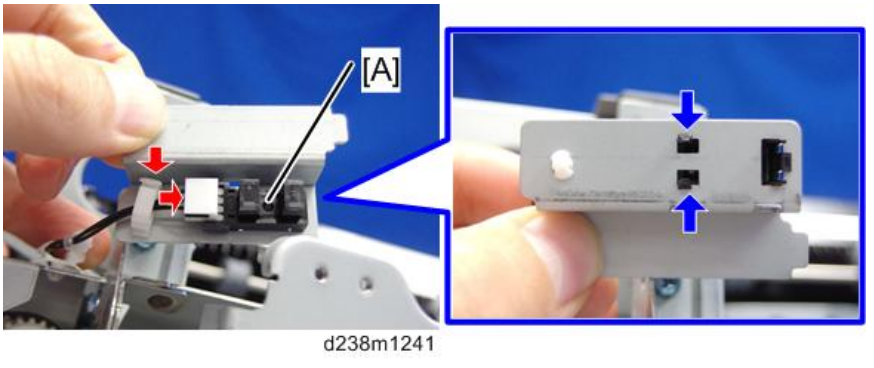
Paper Exit Guide HP Sensor

1. Upper left cover (page 16)

2. Paper exit guide HP sensor with bracket [A] (×1)



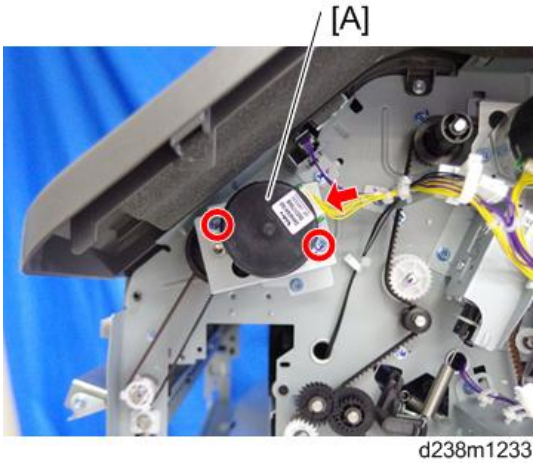
3. Paper exit guide HP sensor [A] (×1, hook ×2)



Entrance Transport Motor

1. Rear cover (page 11)

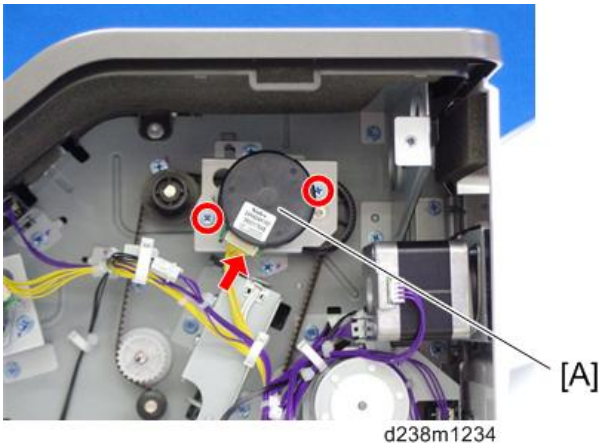
2. Entrance transport motor [A] (×2, ×1)



d238m1233

Proof Transport Motor

1. Rear cover (page 11)
2. Proof transport motor [A] (×2, ×1)



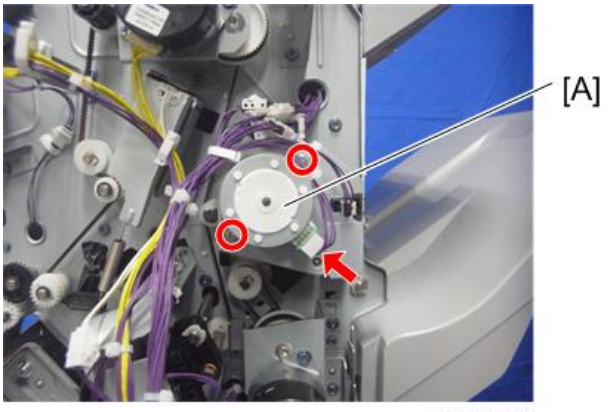
d238m1234

Positioning Roller Motor

For SR3220

1. Rear cover (page 11)

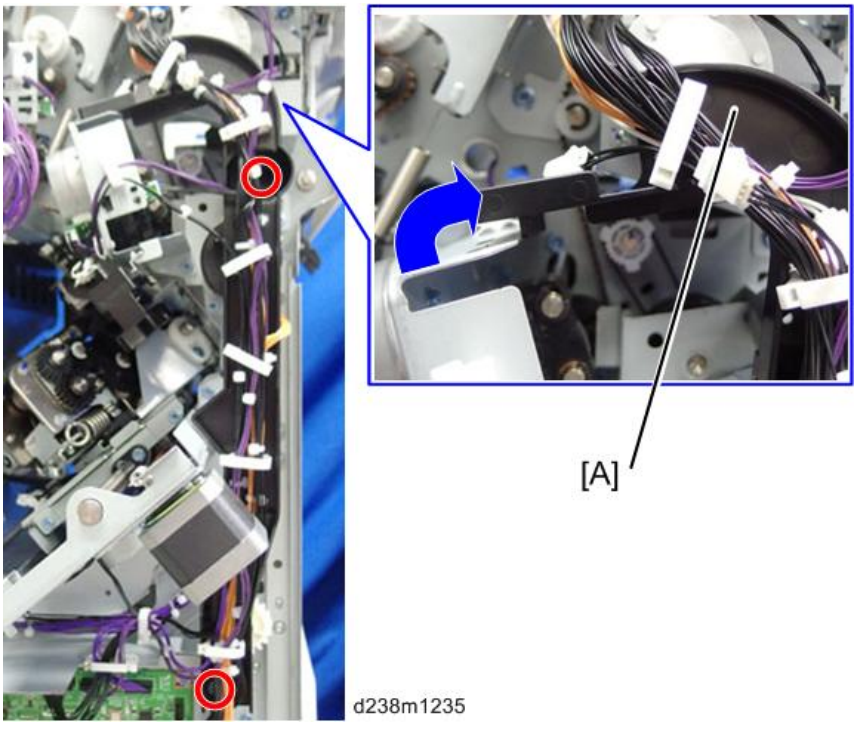
2. **Positioning roller motor [A] (×2, ×1)**



d6873291

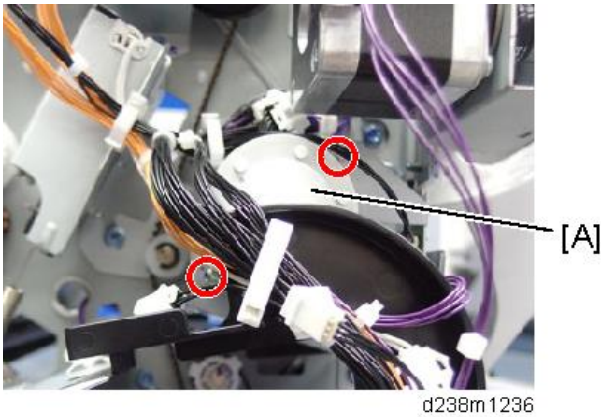
For SR3210

1. **Rear cover (page 11)**
2. **Move the harness guide [A] to the right. (×2)**



d238m1235

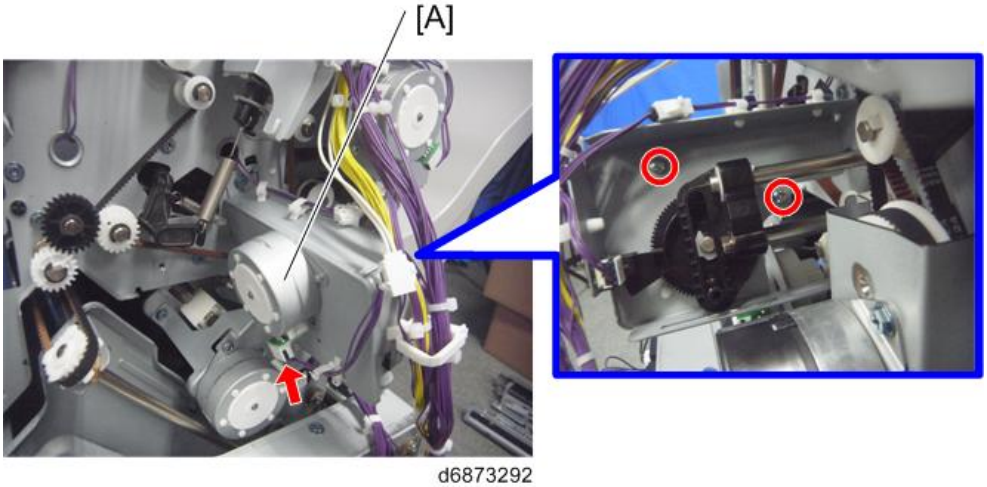
3. Positioning roller motor [A] (×2, ×1)



d238m1236

Shift Motor

1. Rear cover (page 11)
2. Paper exit guide cover (rear) (page 15 "Paper Exit Guide Cover")
3. Shift motor [A] (×2, x1)



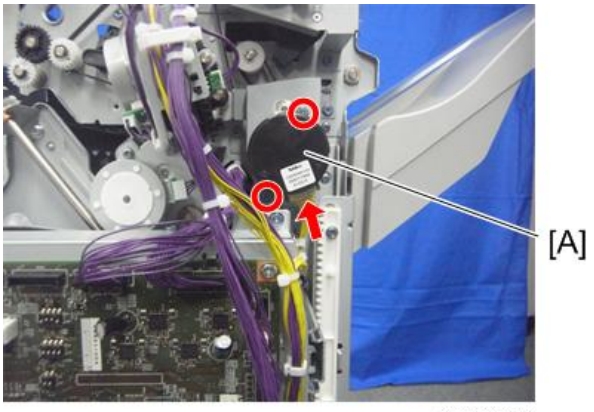
d6873292

Paper Exit Transport Motor

For SR3220

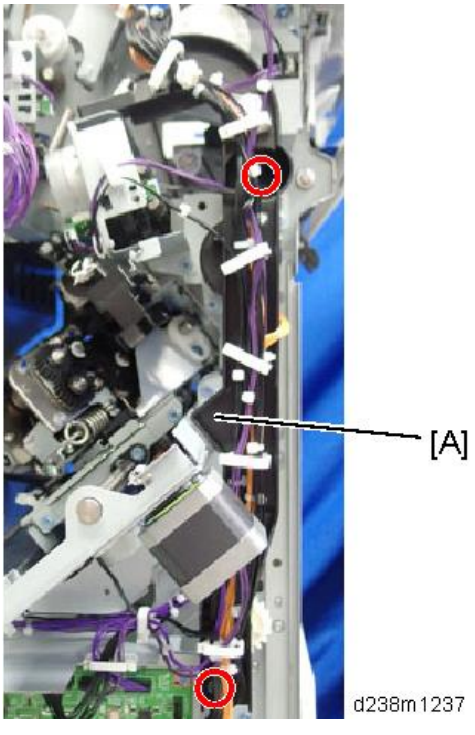
1. Rear cover (page 11)

2. **Paper exit transport motor [A] (×2, ×1)**

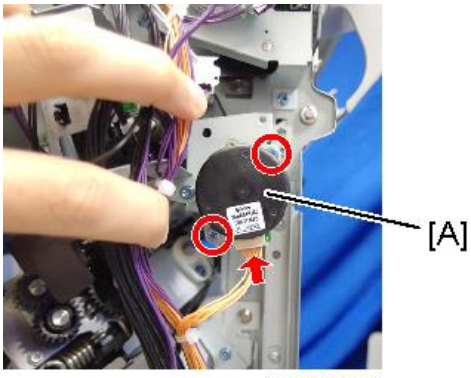


For SR3210

1. **Rear cover (page 11)**
2. **Harness guide [A] (×2, ×6)**



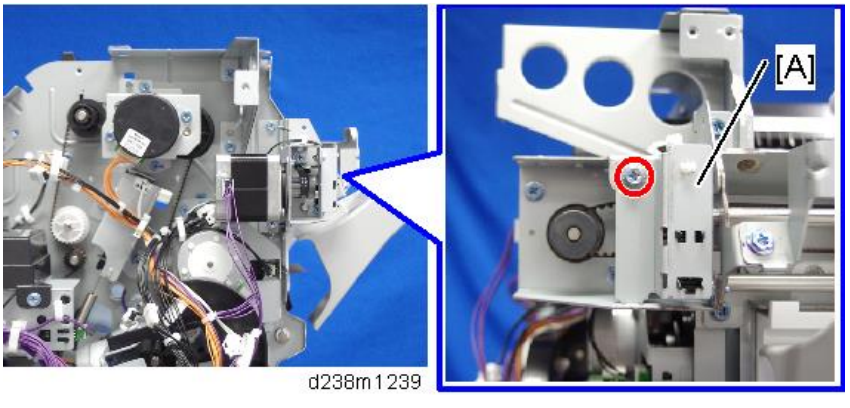
3. Paper exit transport motor [A] (×2, ×1)



d238m1238

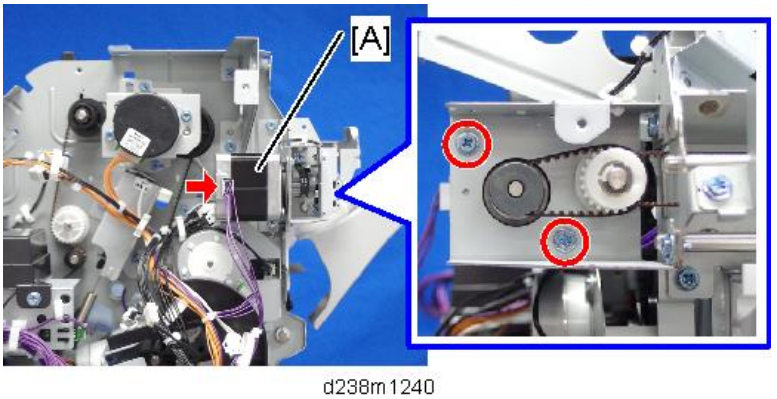
Paper Exit Guide Drive Motor

1. Upper left cover (page 16)
2. Paper exit guide HP sensor bracket [A] (×1)



d238m1239

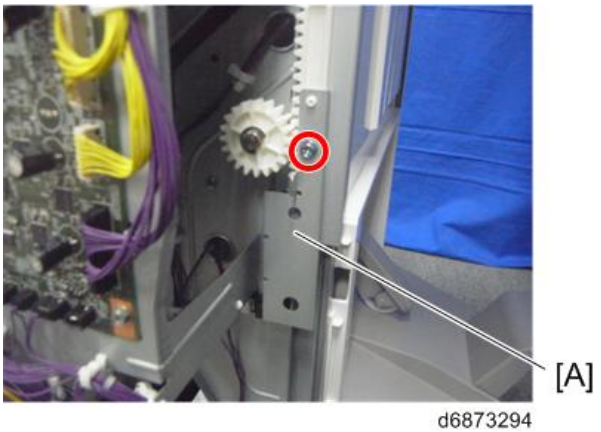
3. Paper exit guide drive motor [A] (×2, ×1)



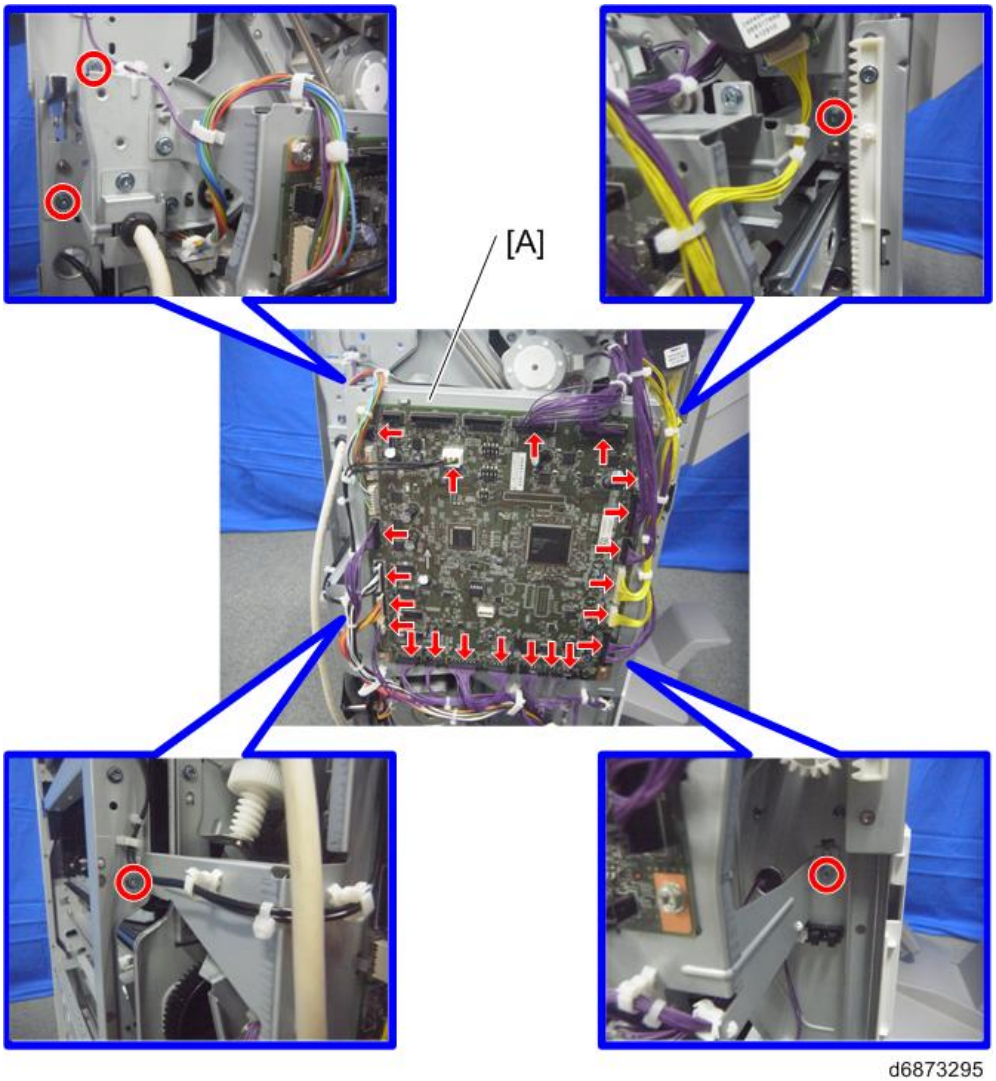
d238m1240

Paper Bundle Transport Upper Motor (SR3220)

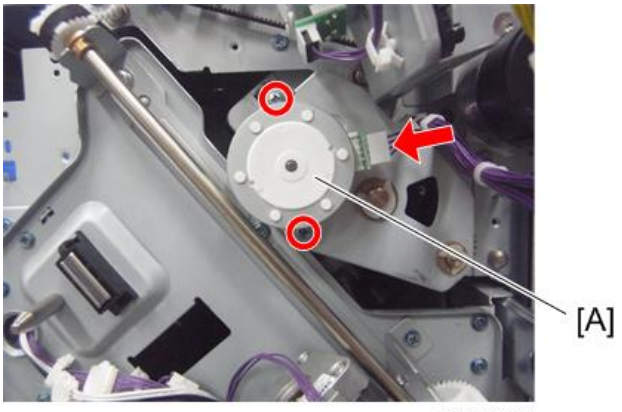
1. Rear cover (page 11)
2. Feeler [A] (×1)



3. Controller board bracket [A] (×5, ×21, ×17, ground plate×1)



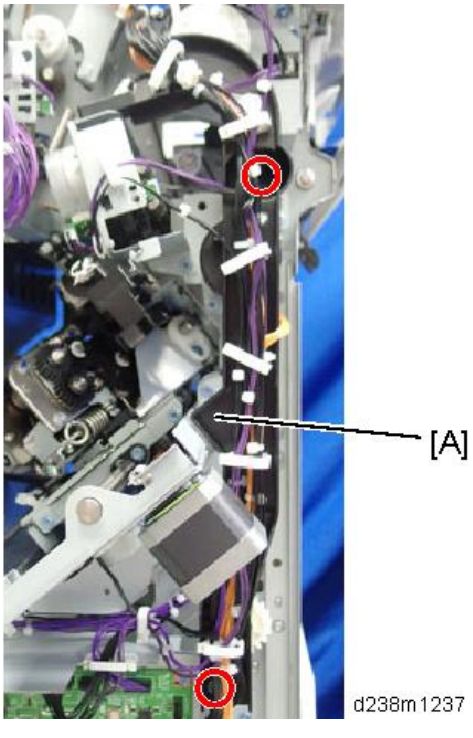
4. Paper bundle transport upper motor [A] (×2, ×1)



d6873296

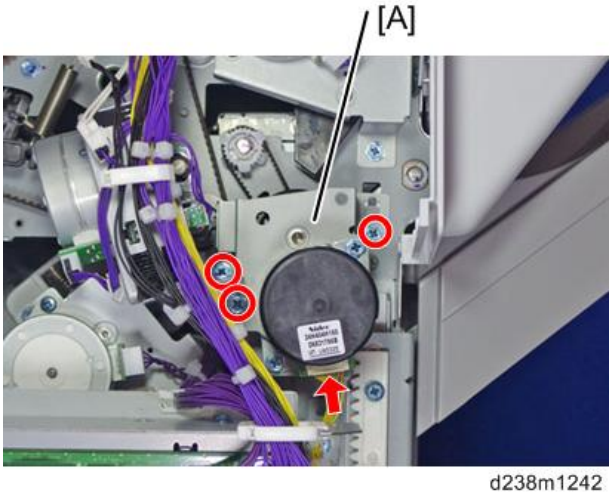
Stapler Tray

1. Inner cover (page 9)
2. Front left cover (page 12)
3. Booklet stapler unit (page 60)
4. Harness guide [A] (×2, ×6) (SR3210 only)



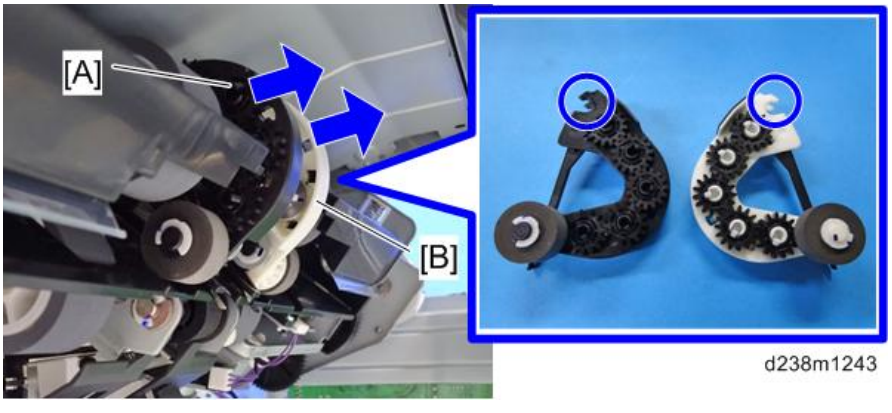
d238m1237

5. **Paper exit transport motor bracket [A] (×3, ×1)**



d238m1242

6. **Reverse roller (front) [A], reverse roller (rear) [B]**

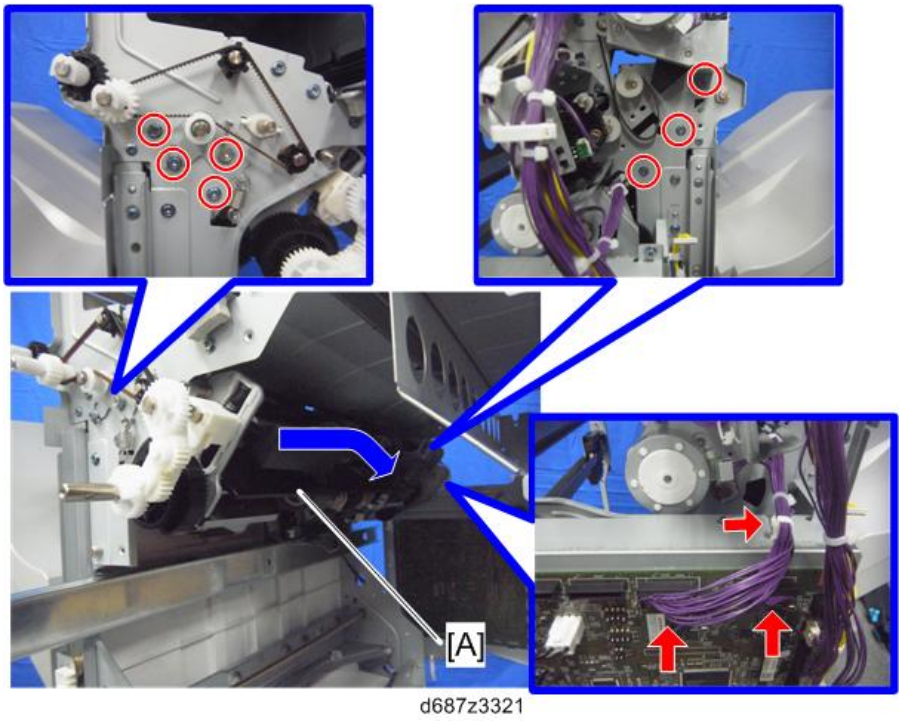


d238m1243

Note

- Be careful not to damage the shape of the hook enclosed by the blue circle when removing the reverse rollers.

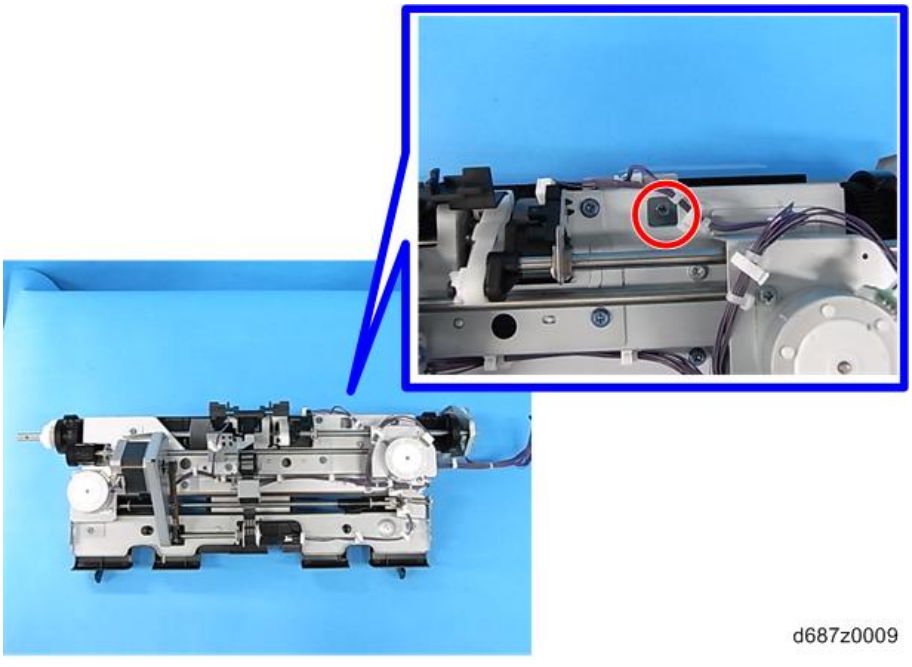
7. Stapler tray [A] (×7, ×2, ×1)



Stapler Tray Paper Sensor

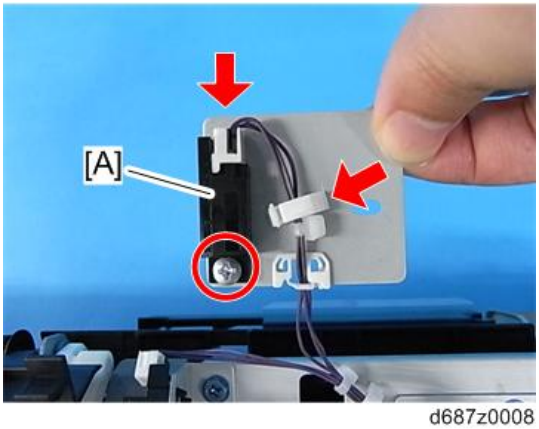
1. Stapler tray (page 36)

2. Stapler tray paper sensor bracket (×1)



d687z0009

3. Stapler tray paper sensor [A] (×1, ×1, ×1)

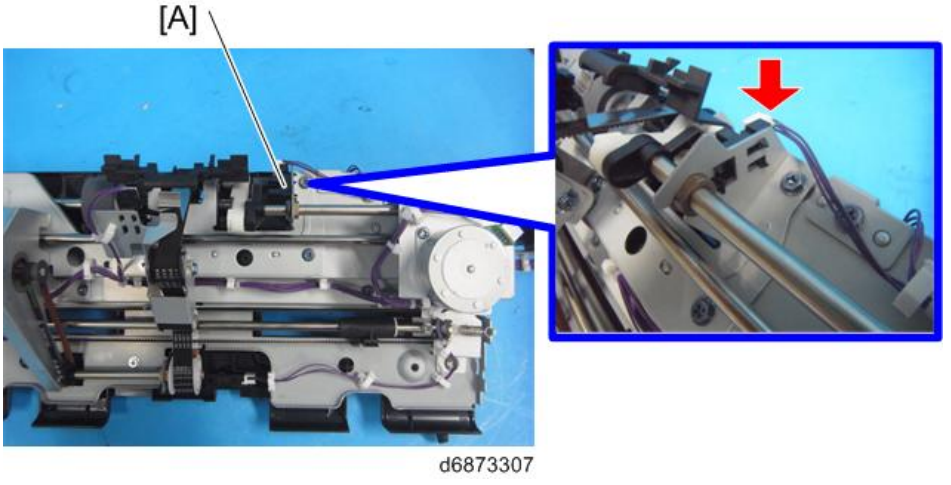


d687z0008

Paper Bundle Transport Upper Pressure Release HP sensor

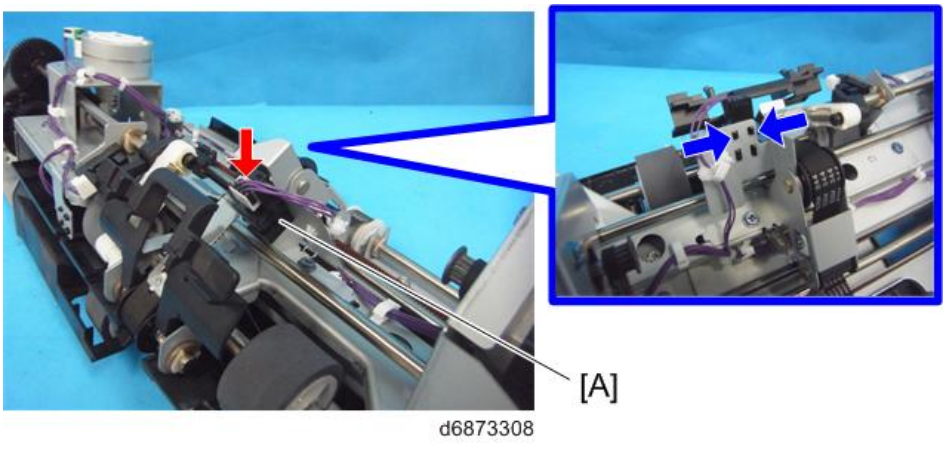
1. Stapler tray (page 36)

2. Paper bundle transport upper pressure release HP sensor [A] (×1)



Feedout Pawl HP Sensor

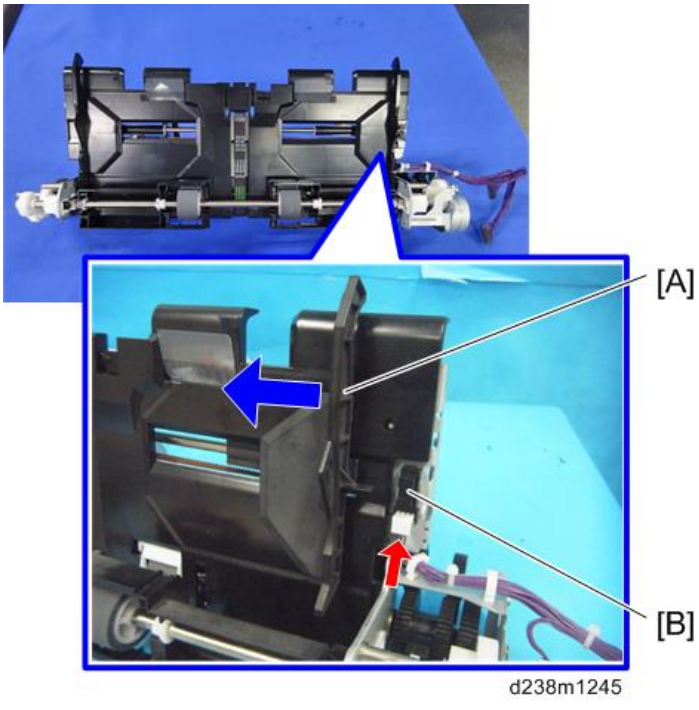
1. Stapler tray (page 36)
2. Feedout pawl HP sensor [A] (×1)



Jogger HP Sensor

1. Stapler tray (page 36)

2. Separate the jogger fence [A] from the jogger HP sensor [B].



3. Jogger HP sensor (×1)

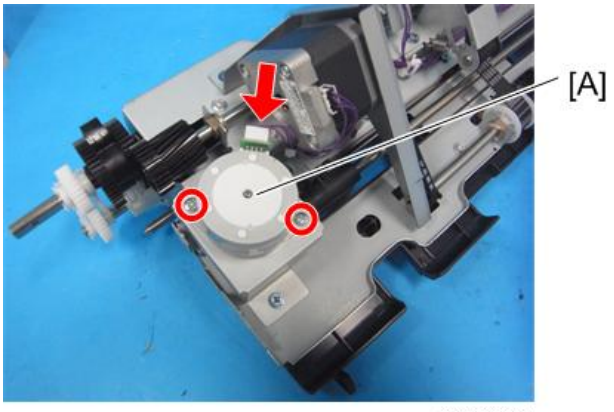
Note

- Release and remove the tab with a small driver, etc.

Jogger Motor

1. Stapler tray (page 36)

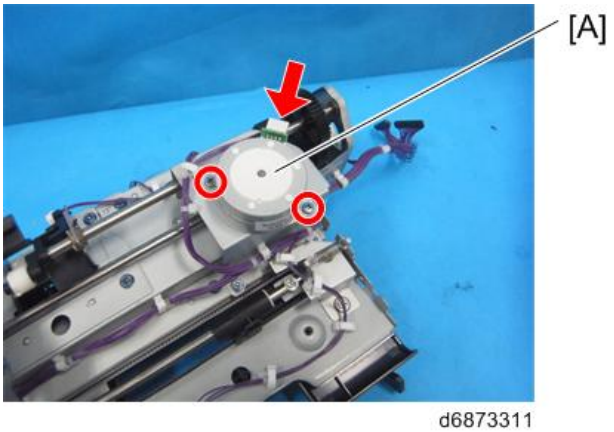
2. Jogger motor [A] (×2, ×1)



d6873310

Paper Bundle Transport Upper Pressure Release Motor

1. Stapler tray (page 36)
2. Paper bundle transport upper pressure release motor [A] (×2, ×1)

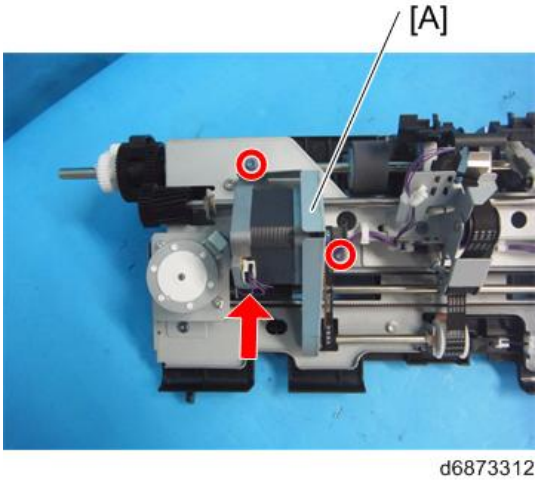


d6873311

Feedout Pawl Motor

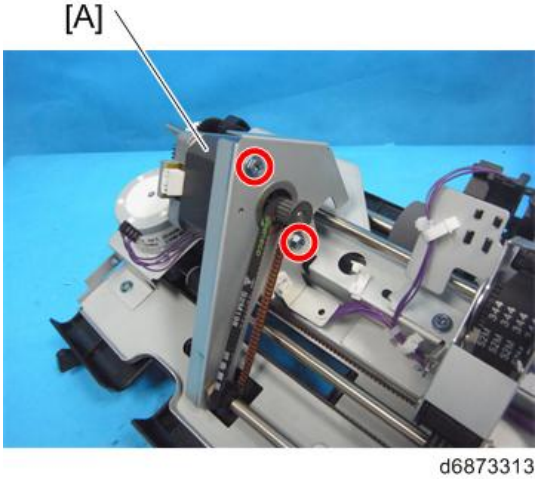
1. Stapler tray (page 36)

2. **Feedout Pawl motor bracket [A] (×2, ×1, ×2)**



d6873312

3. **Feedout Pawl motor [A] (×2)**

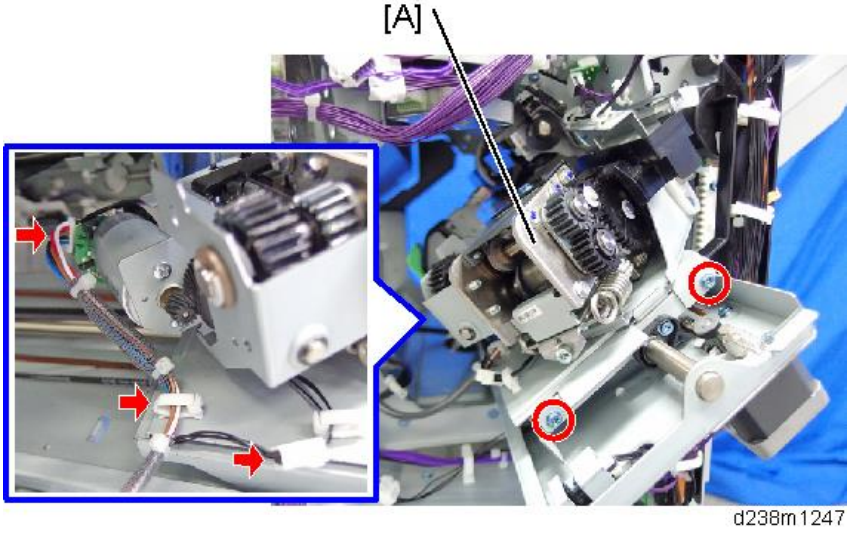


d6873313

Stapleless Stapler Unit/Stapler Unit (SR3210)

Stapleless Stapler Unit

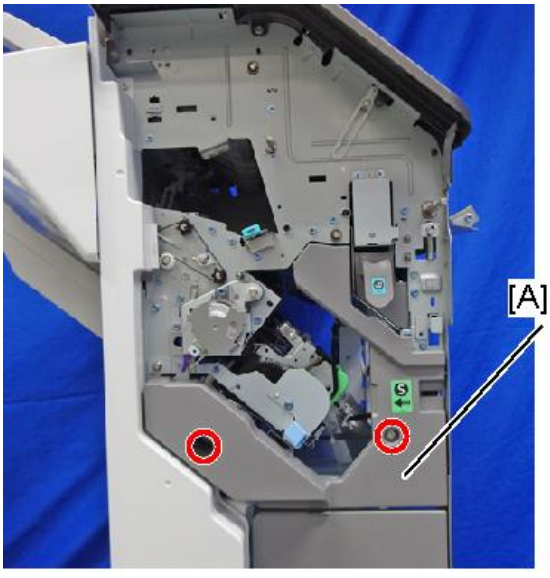
1. Rear cover (page 11)
2. Stapleless stapler unit [A] (×2, ×1, ×2)



Stapler Unit

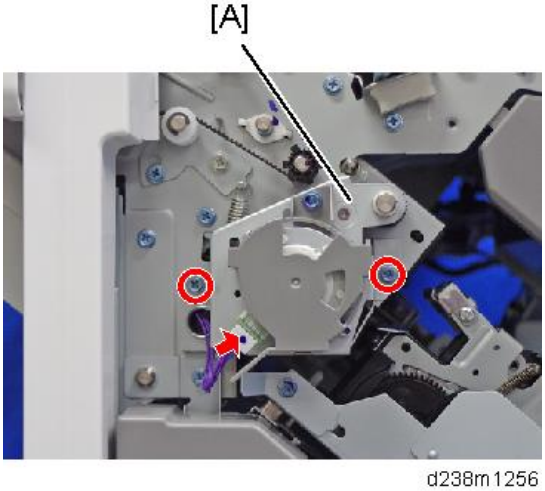
1. Inner cover (page 9)

2. **Inner middle cover [A] (×2)**



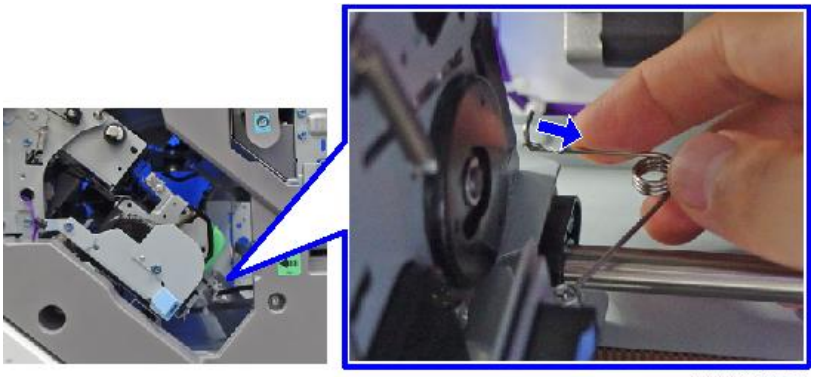
d238m1257

3. **Paper Guide Drive Motor with Bracket [A] (×2, ×1)**



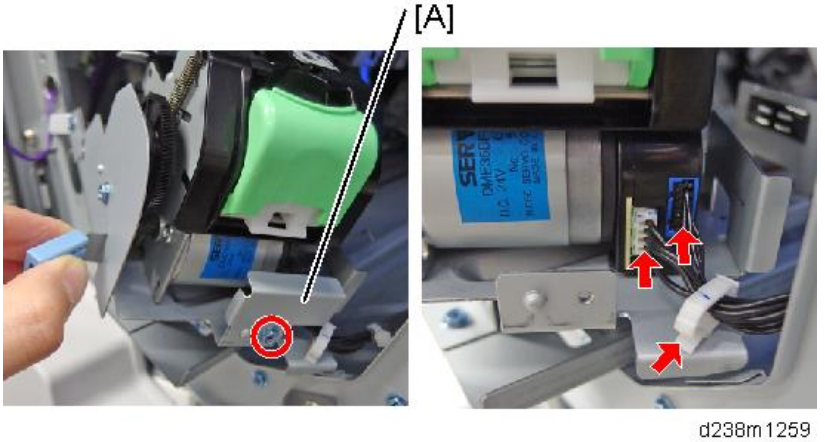
d238m1256

4. **Unhook the spring of the stapler unit.**



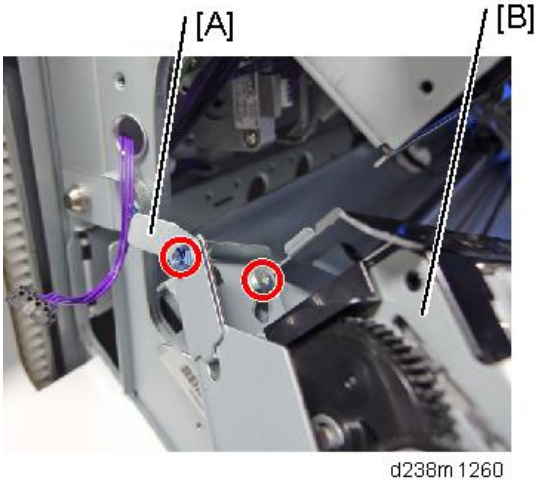
d238m1258

5. **Bracket [A] and harnesses (×1, ×1, ×2)**

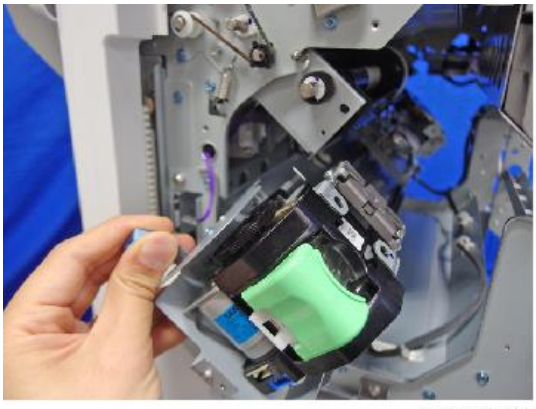


d238m1259

6. **Bracket [A], Stapler unit [B] (×2)**



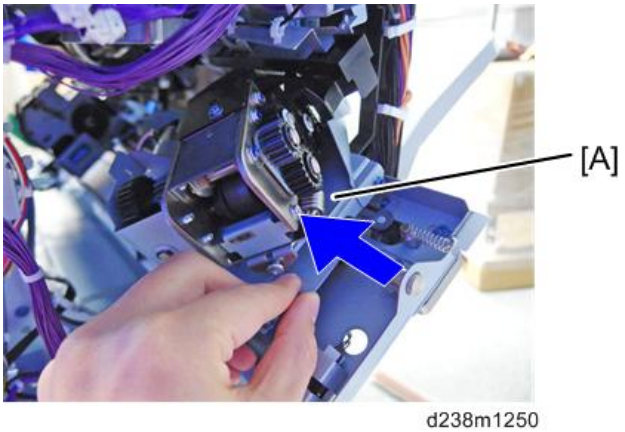
d238m1260



d238m1261

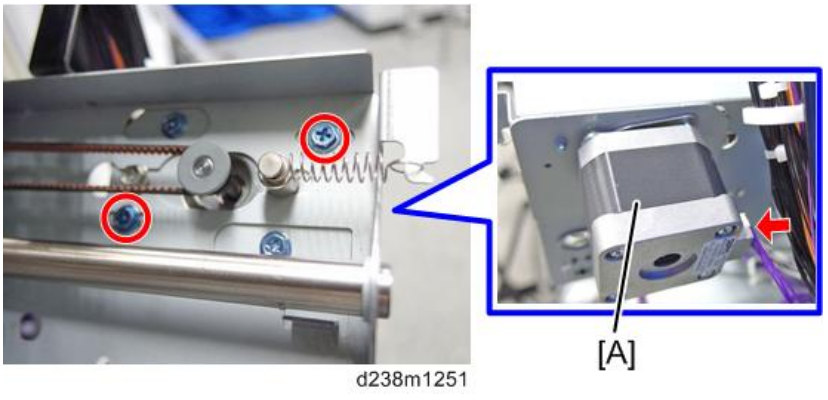
Stapleless Stapler Transfer Motor

1. Move the stapleless stapler [A] to the recess.



d238m1250

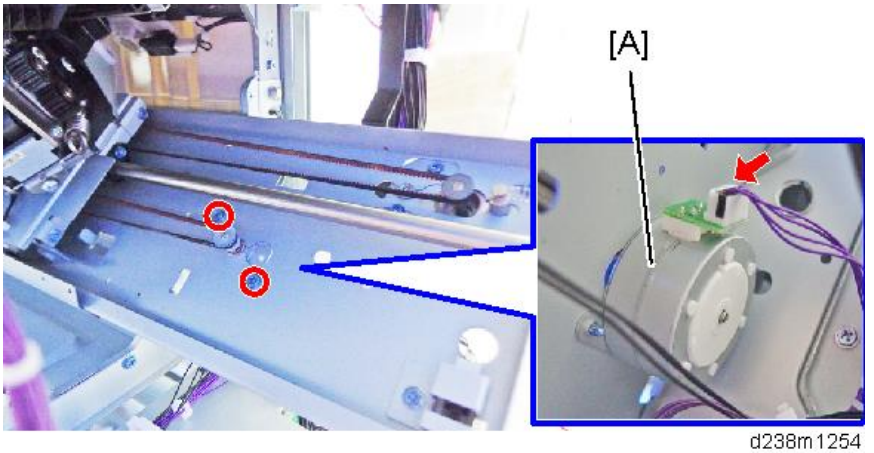
2. Stapleless stapler transfer motor [A] (×2, ×1)



d238m1251

Stapler Transfer Motor

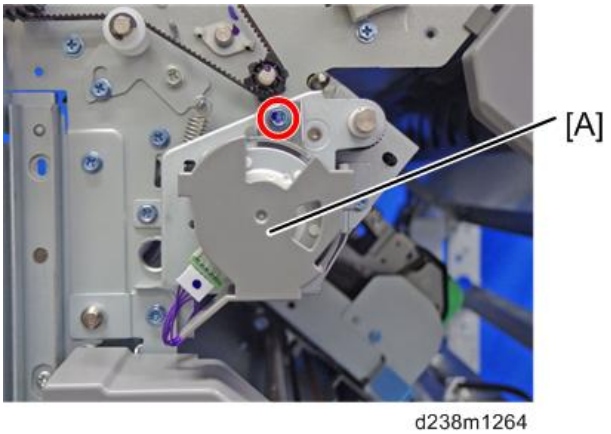
1. Move the stapleless stapler to the recess. (page 47 "Stapleless Stapler Transfer Motor")
2. Stapler transfer motor [A] (×2, ×1)



d238m1254

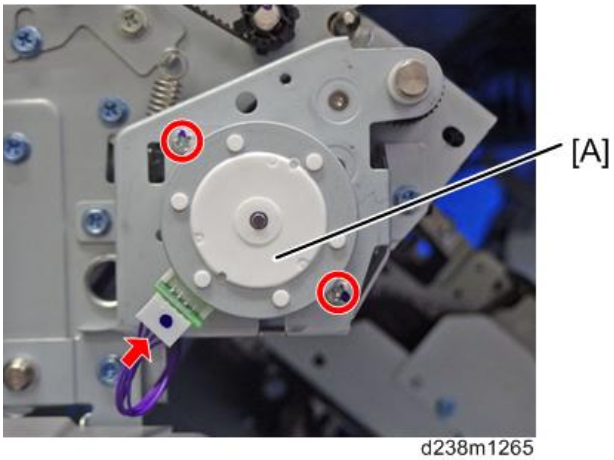
Paper Guide Drive Motor

1. Inner cover (page 9)
2. Bracket [A] (×1)



d238m1264

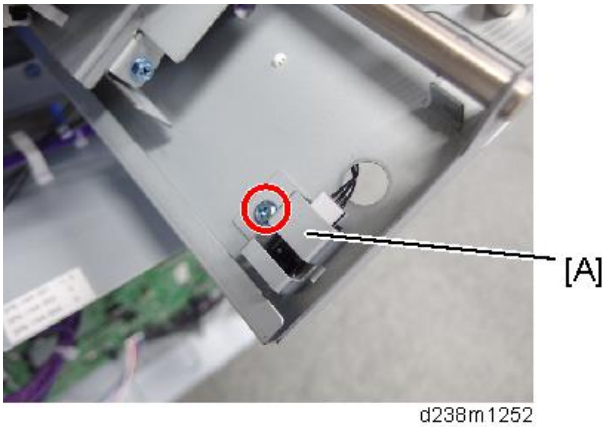
3. Paper guide drive motor [A] (×2, ×1)



d238m1265

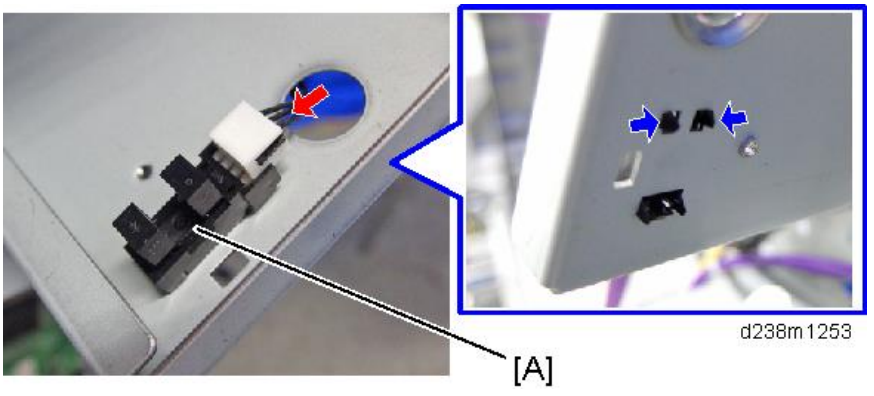
Stapleless Stapler HP Sensor

1. Move the stapleless stapler to the recess. (page 47 "Stapleless Stapler Transfer Motor")
2. Stapleless stapler HP sensor bracket [A] (×1)



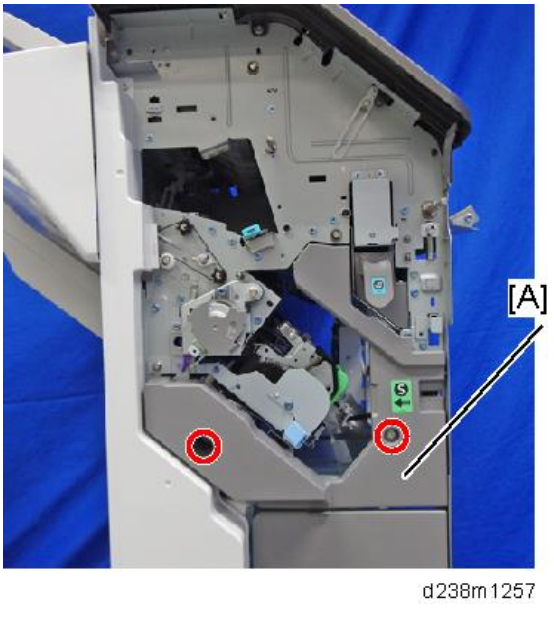
d238m1252

3. Stapleless stapler HP sensor [A] (×1)

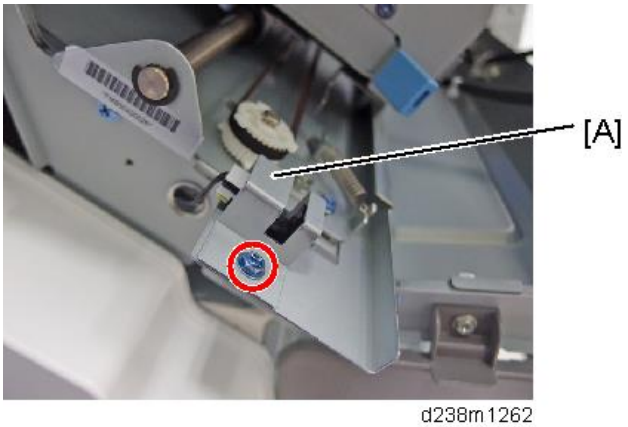


Stapler HP sensor

1. Open the front cover.
2. Inner middle cover [A] (×2)

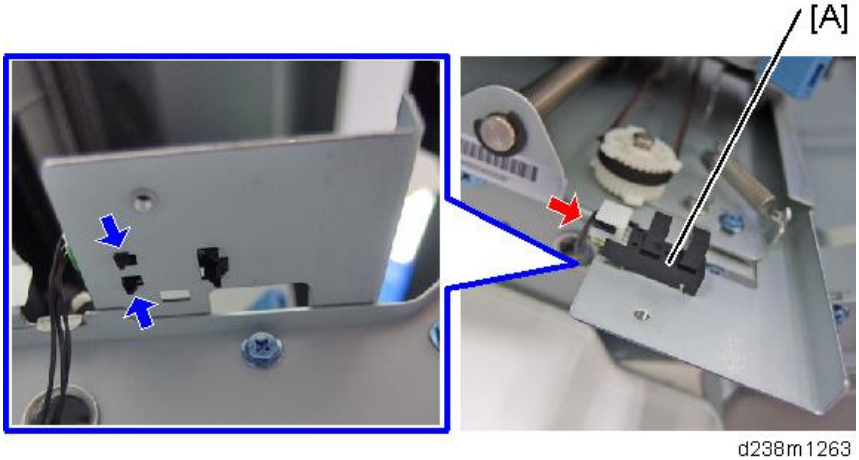


3. Bracket [A] (×1)



d238m1262

4. Stapler HP sensor [A] (×1)

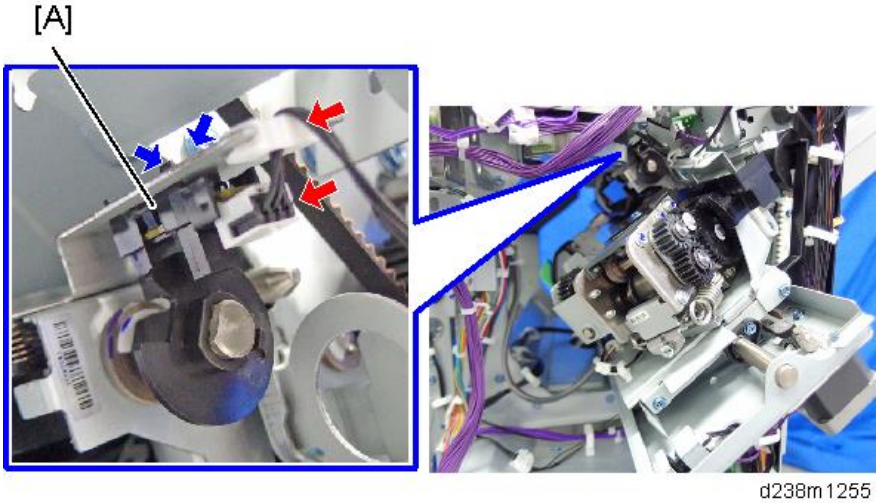


d238m1263

Paper Guide HP Sensor

1. Rear cover (page 11)

2. Paper guide HP sensor [A] (×1, ×1, hook ×2)

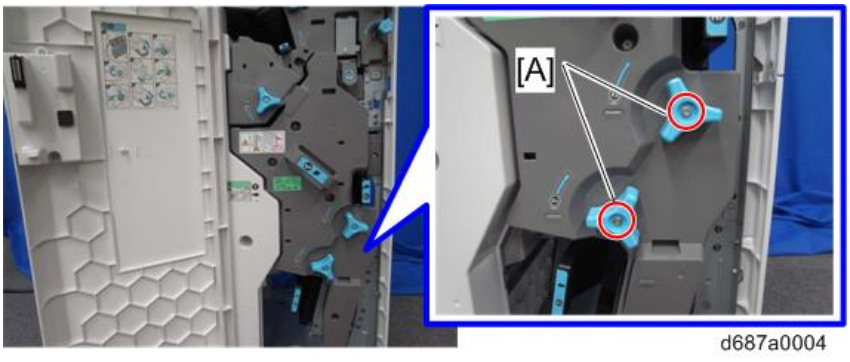


d238m1255

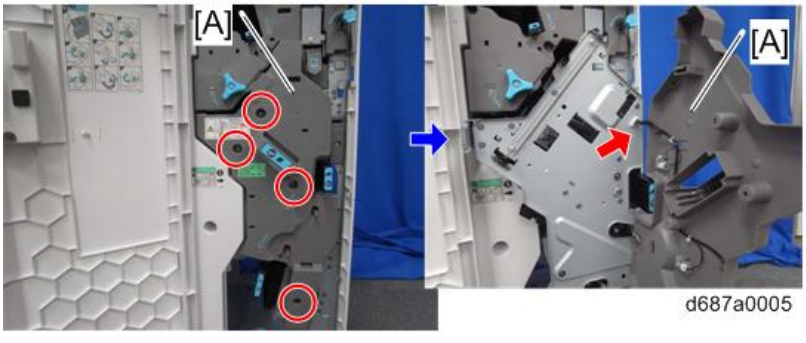
Booklet Stapler Unit (SR3220)

Stapler Unit

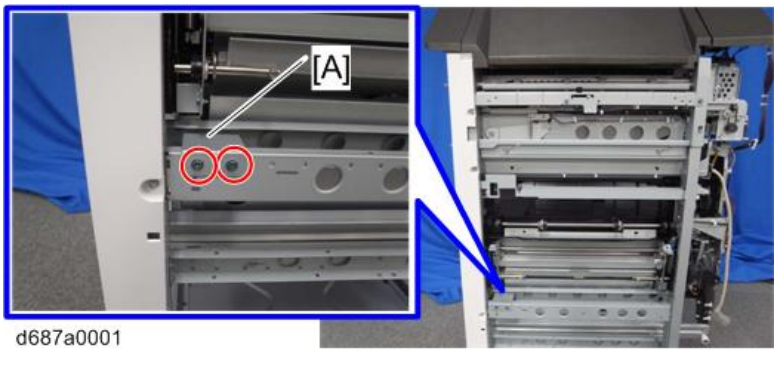
1. Open the front cover, and then remove two knobs [A] (x1 for each)



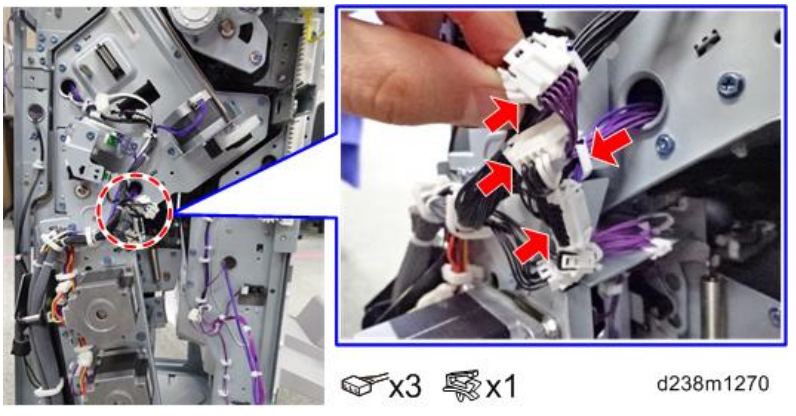
2. Booklet stapler unit cover [A] (x4, x1)



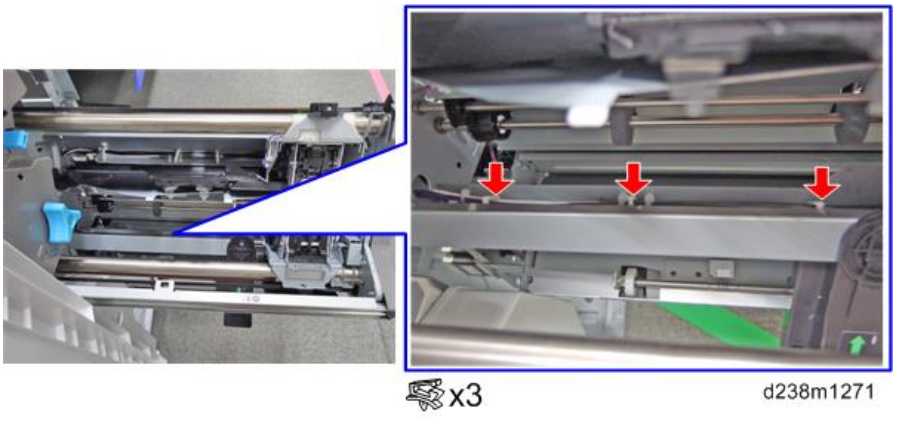
3. Stopper [A] (x2)



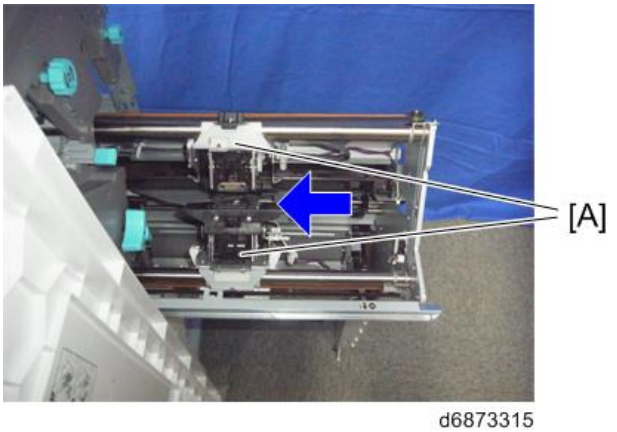
4. **Disconnect three connectors and one clamp at the rear side of the booklet stapler unit.**



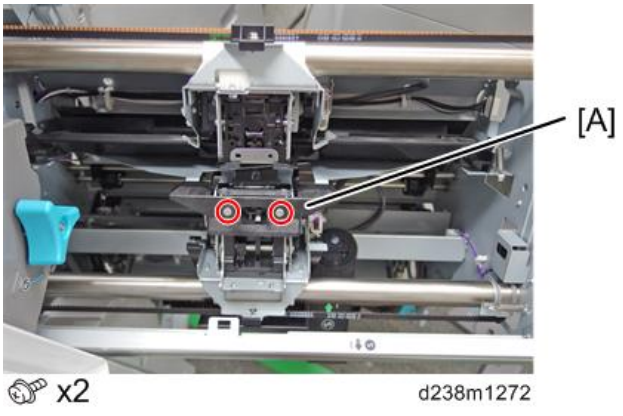
5. **Pull out the booklet stapler unit, and then release three clamps.**



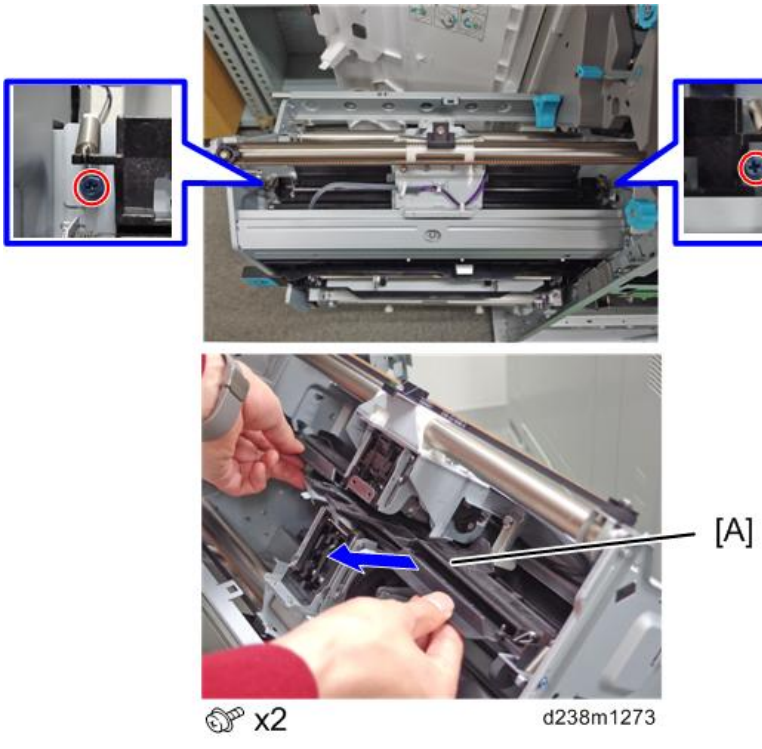
6. **Bring the stapler unit [A] near the center.**



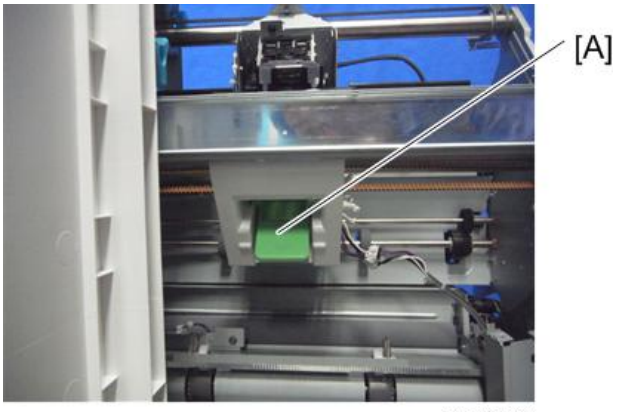
7. Small guide plate [A]



8. Guide plate [A]

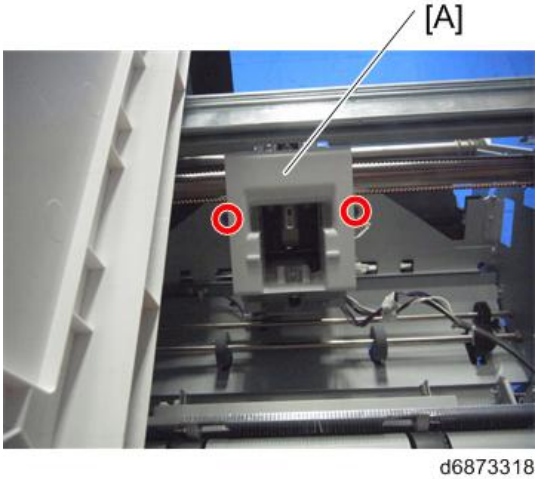


9. **Stapler cartridge [A]**



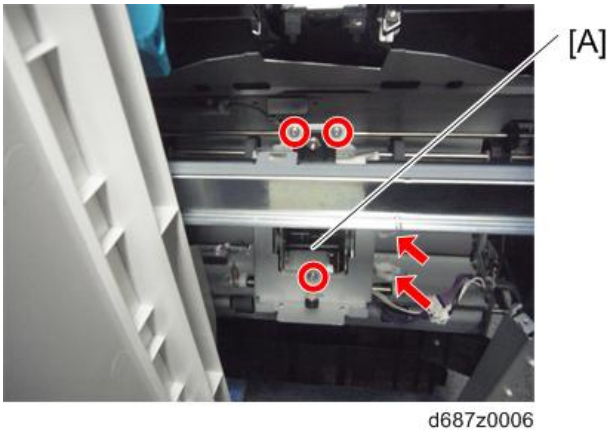
d6873317

10. **Cover [A] (×2)**



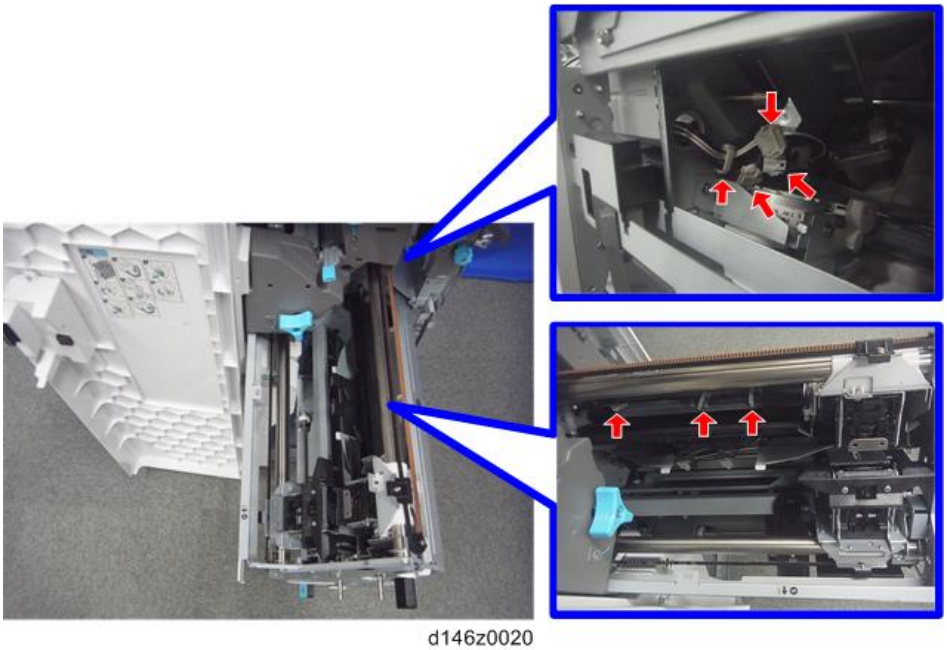
d6873318

11. **Stapler unit (clincher side) [A] (×3, ×2)**



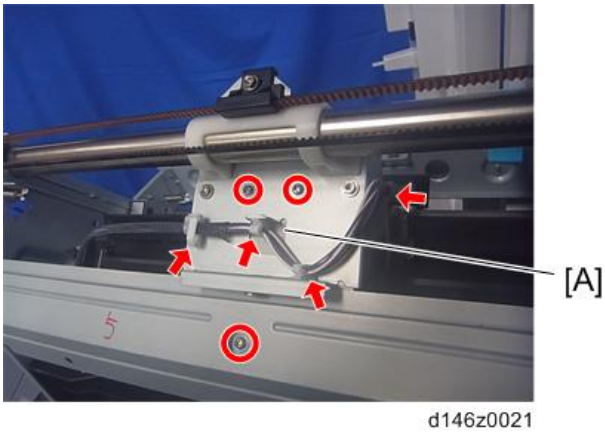
d687z0006

12. **Disconnect three connectors and release four clamps on the stapler unit (driver side).**



d146z0020

13. **Stapler unit (driver side) [A] (×3, ×4)**



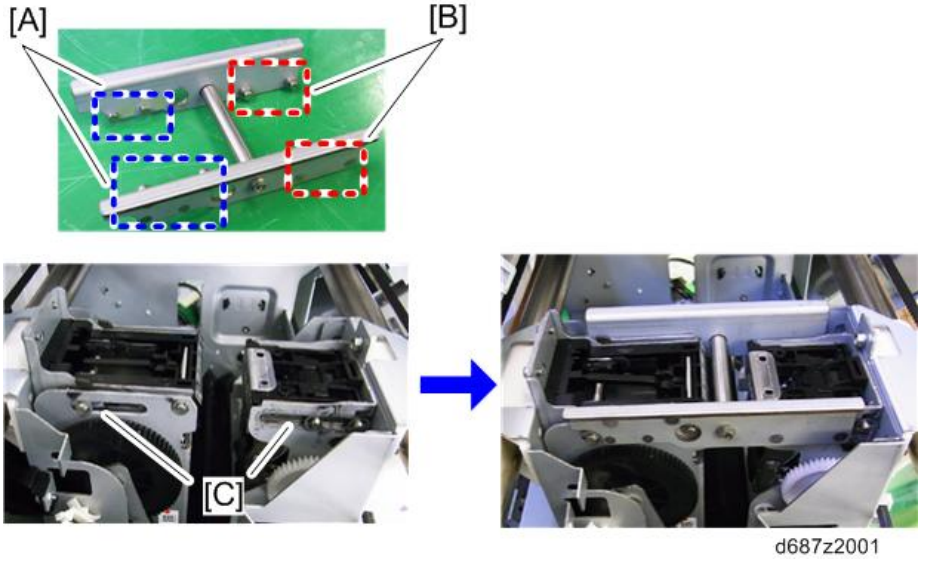
d146z0021

14. **Attach the special tool* to the stapler unit to adjust the staple position of the stapler unit.**

Check that four pins ([A] and [B]) on the special tool are fixed in the slots [C] on the stapler unit as shown below.

[A]: Two pins for driver

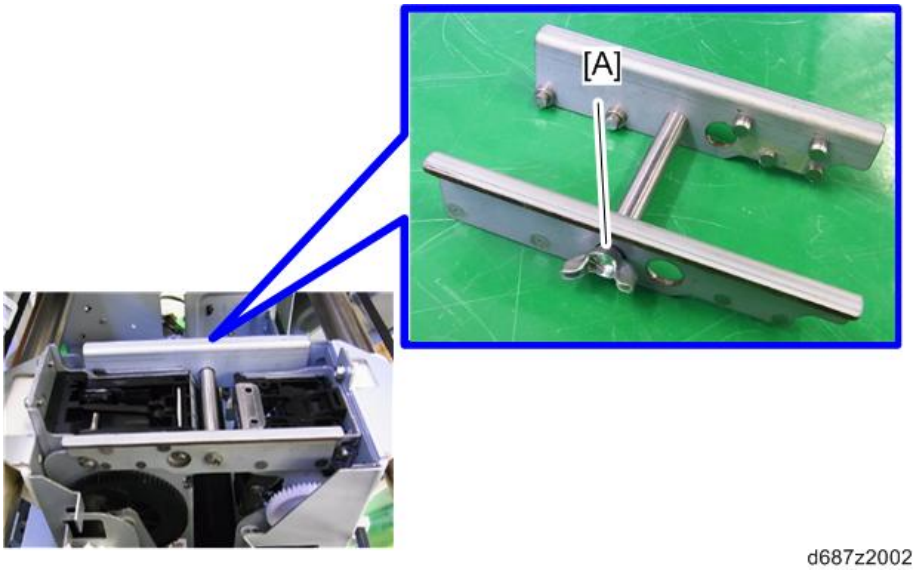
[B]: Two pins for clincher



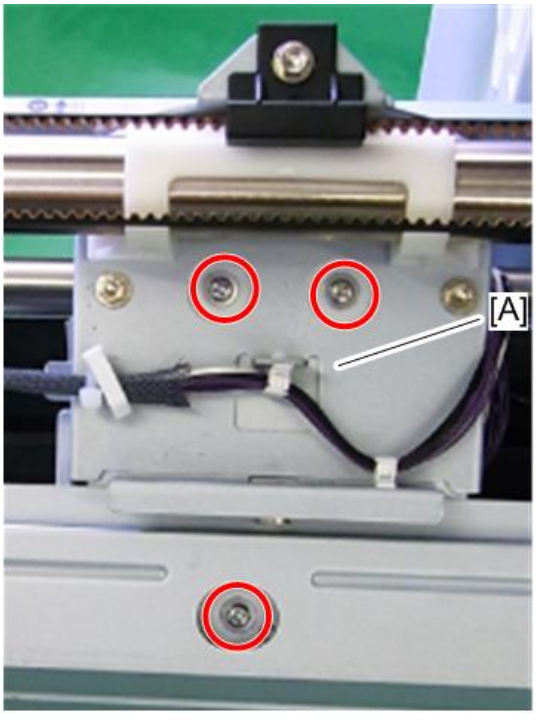
*Use the following part numbers to get the special tool

- HOLDER FLONT(B7936410)
- HOLDER: REAR (B7936420)
- ROD: CLAMP (B7936431)
- ADJUSTING SCREW: M4 (B7936432)
  -or-
- B7936400 STAPLER:SERVICE PARTS ASSY

15. Tighten the wing screw [A] on the special tool to secure the stapler and special tool.



16. Tighten the screws completely to secure the clincher side [A] of the stapler (×3).

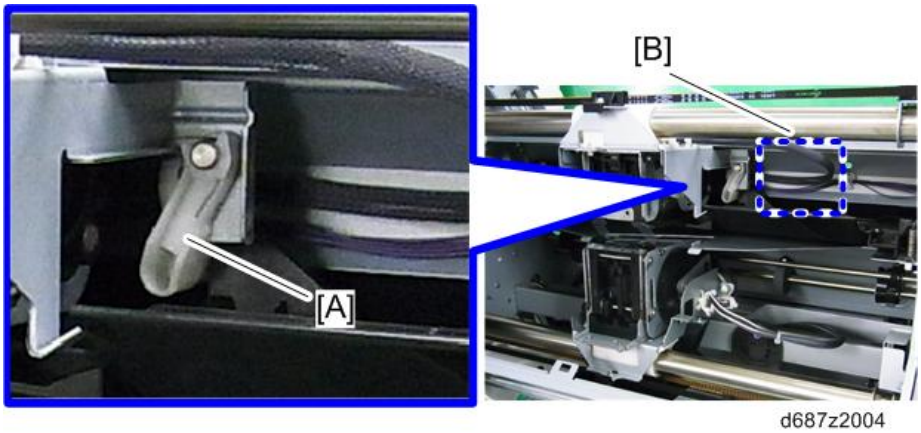


d687z2003

17. Loosen the wing screw to remove the special tool.
18. Reattach all the removed parts.

Note

- Make sure that the harnesses [B] are routed behind the resin part [A]. Otherwise, the harnesses block the route of the stapler, which causes a stapler transfer motor error.



d687z2004

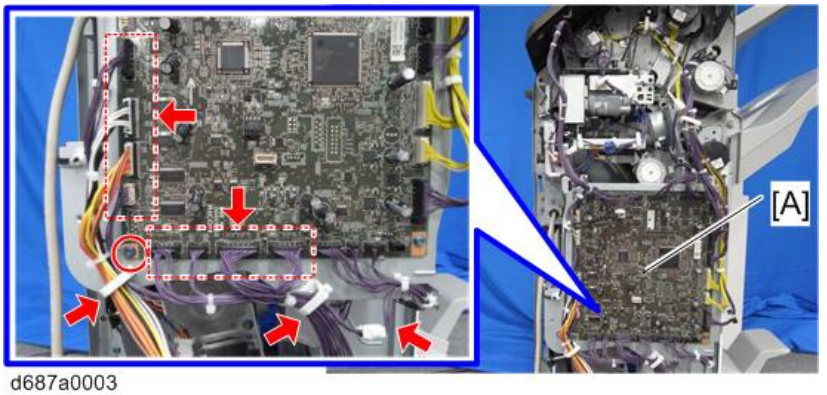
19. **Check that the stapler works properly.**

Note

- All staple patterns must be checked.
- If there are any problems with the clincher, adjust the staple position with the special tool again.

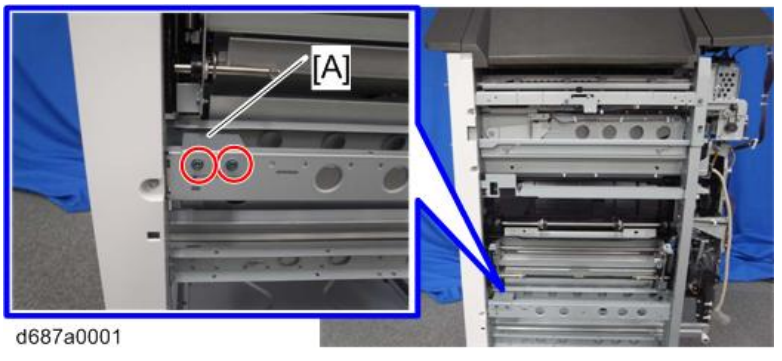
Booklet Stapler Unit

1. **Rear cover (page 11)**
2. **Remove the connectors of controller board [A] (×9, ×2, : ground plate×1)**



d687a0003

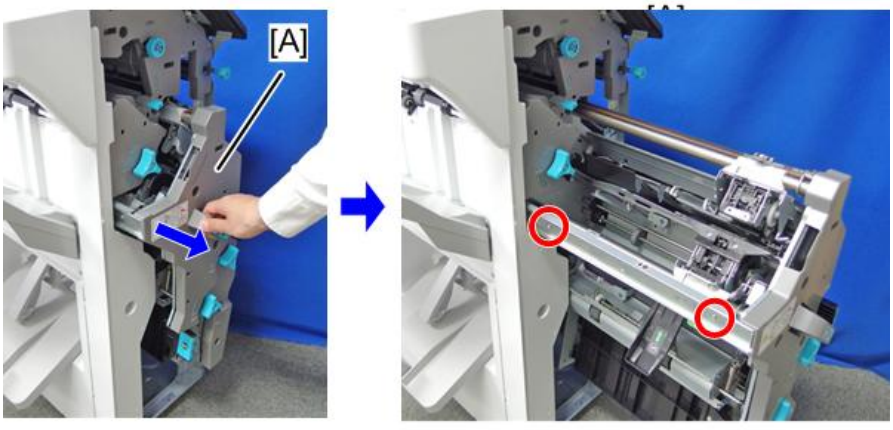
3. **Stopper [A] (×2)**



d687a0001

4. **Front cover (page 9)**
5. **Pull out the booklet stapler unit [A].**

6. **Booklet stapler unit (×2)**



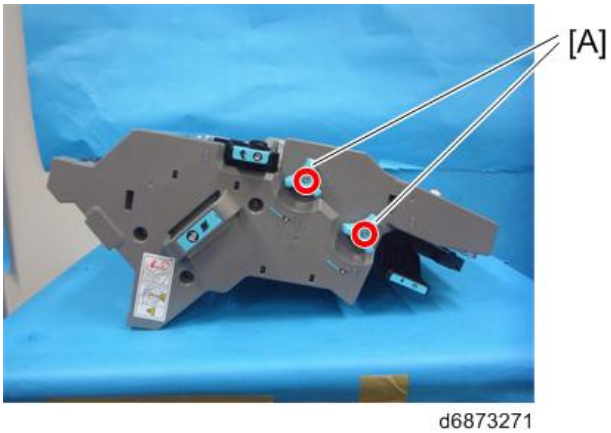
d238m1374

Note

- When you remove the booklet stapler unit from the main frame, be careful not to catch the cable on the frame.

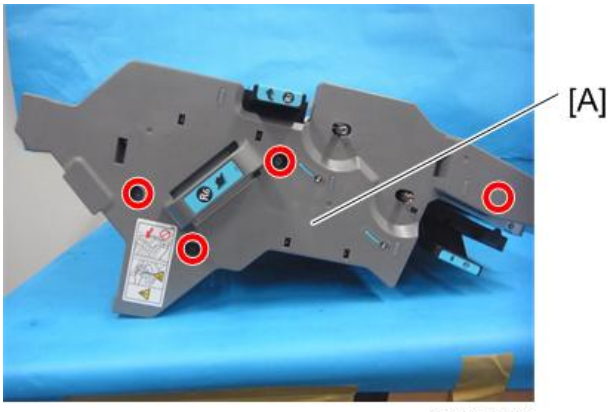
Center-Folding Unit

1. **Booklet stapler unit (page 60)**
2. **Knobs [A] (×2)**



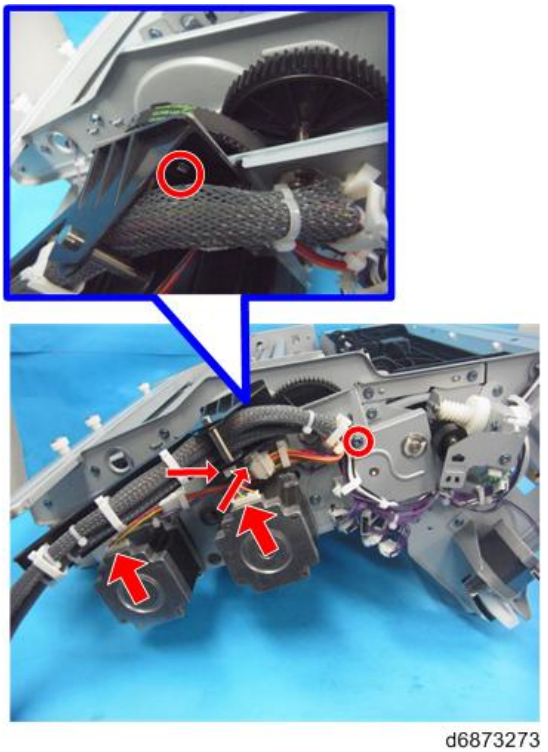
d6873271

3. **Booklet stapler unit cover [A] (×4, ×1)**



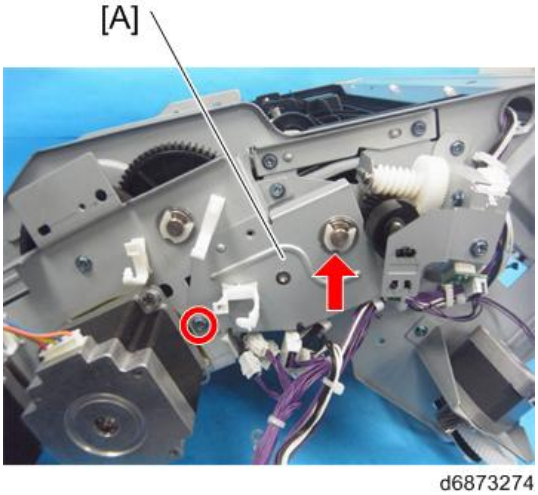
d687z0003

4. **Remove connectors (×1, ×4, ×4, ground plate×1)**



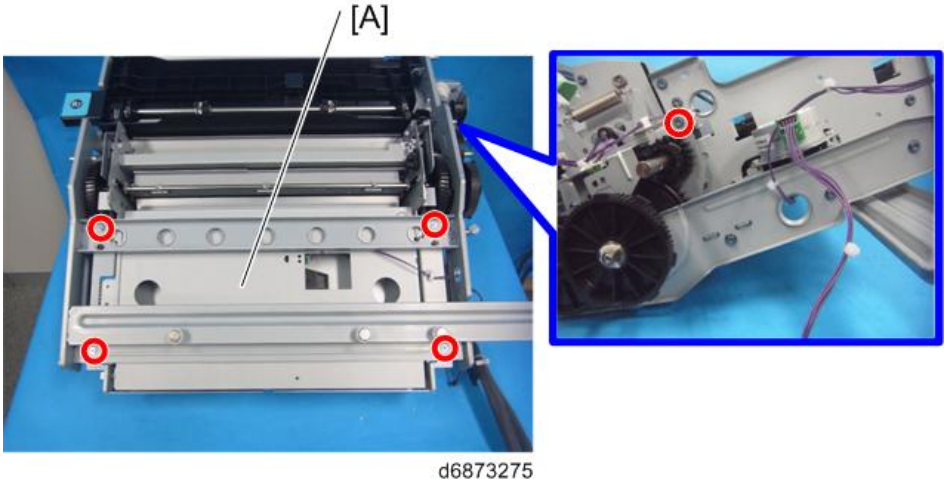
d6873273

5. Bracket [A] (×1, ×3, ×1)



d6873274

6. Center-folding unit [A] (×5)

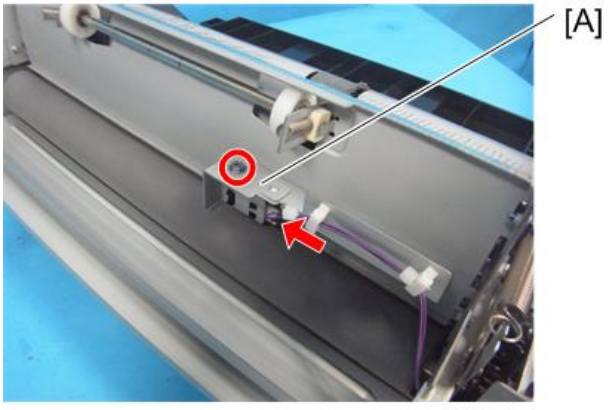


d6873275

Center-Folding Tray Paper Exit Sensor

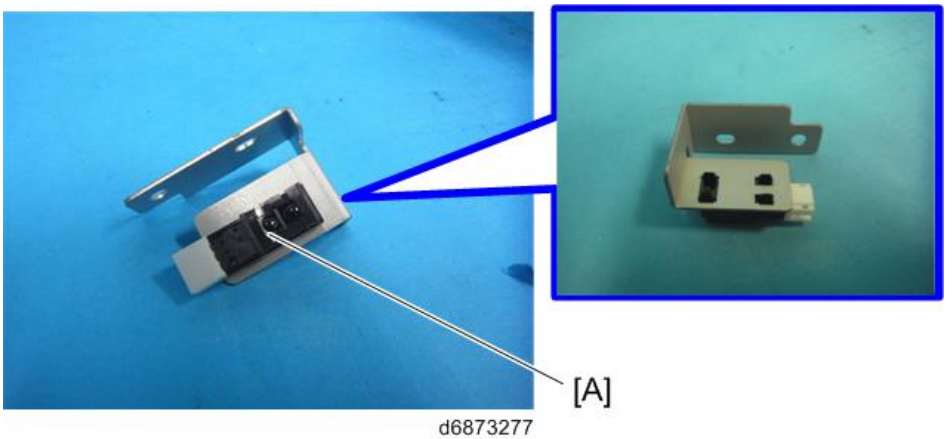
1. Center-folding unit (page 61)

2. Center-folding tray paper exit sensor bracket [A] (×1, ×1)



d6873276

3. Center-folding tray paper exit sensor [A]



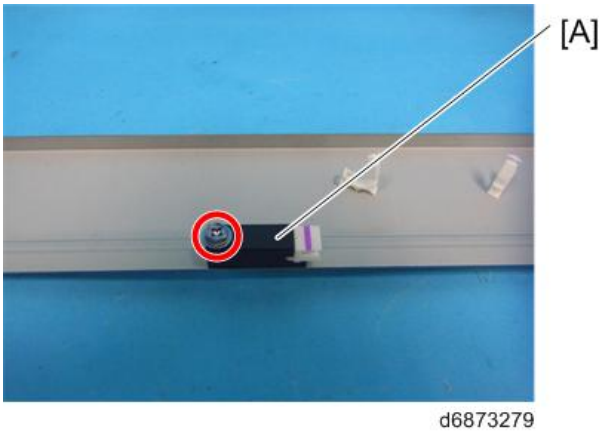
d6873277

Trailing Edge Stopper Transport Sensor

1. Center-folding unit (page 61)

2. Trailing edge stopper transport sensor bracket [A] (×2, ×1, ×4)

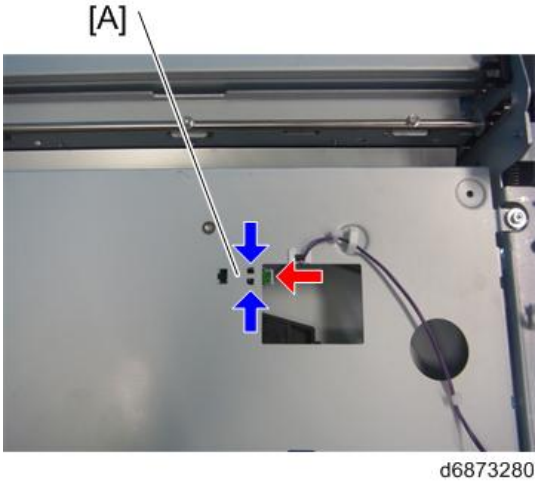
3. Trailing edge stopper paper surface sensor [A] (×1)



Trailing Edge Stopper HP Sensor

1. Center-folding unit (page 61)

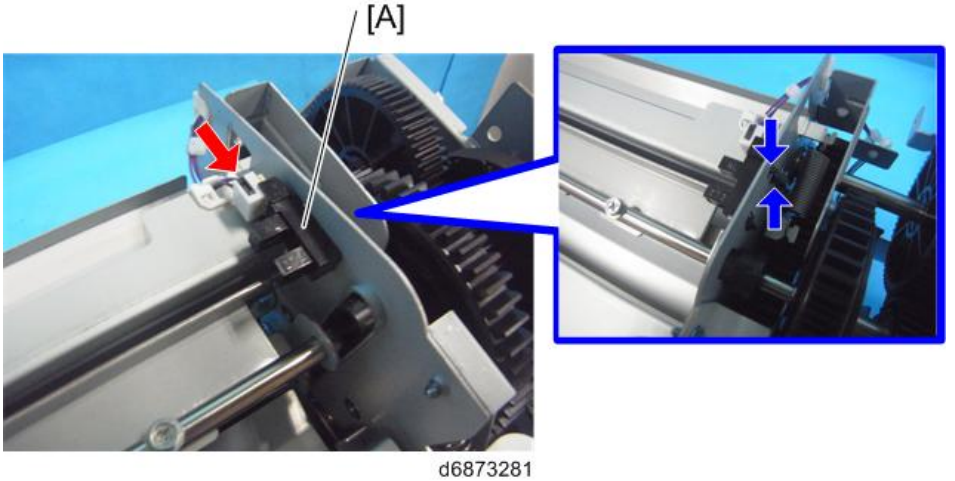
2. Trailing edge stopper HP sensor [A] (×1)



d6873280

Center-Folding Blade HP Sensor

1. Center-folding unit (page 61)
2. Center-folding blade HP sensor [A] (×1)

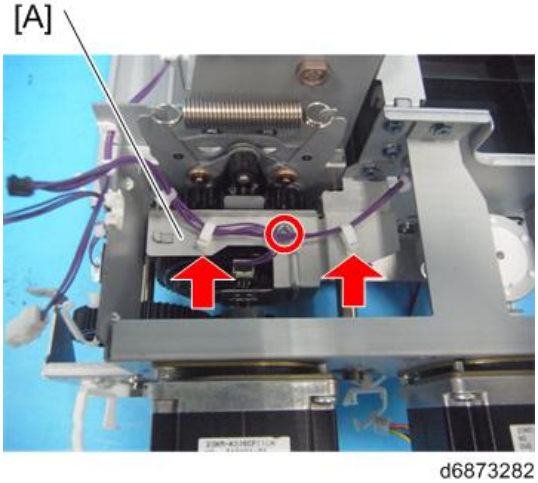


d6873281

Center-Folding Cam HP Sensor

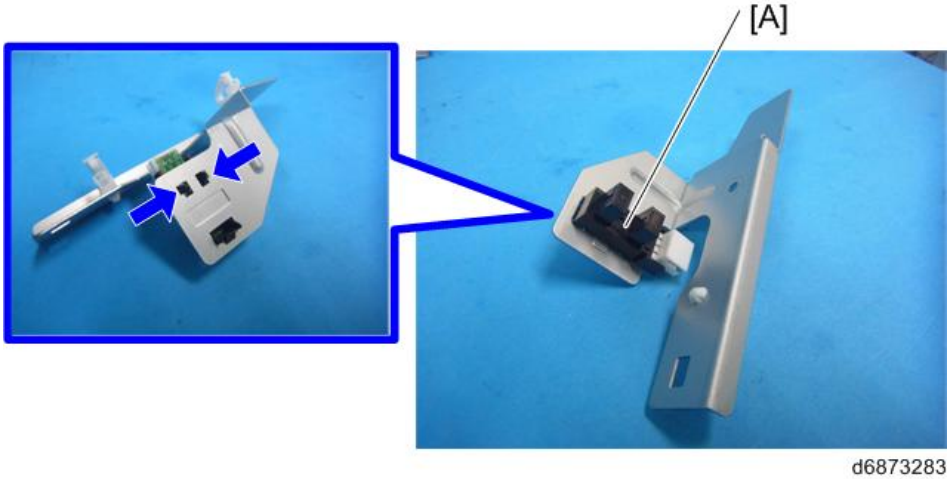
1. Center-folding unit (page 61)

2. Center-folding cam HP sensor bracket [A] (×1, ×2)



d6873282

3. Center-folding cam HP sensor [A] (×1)

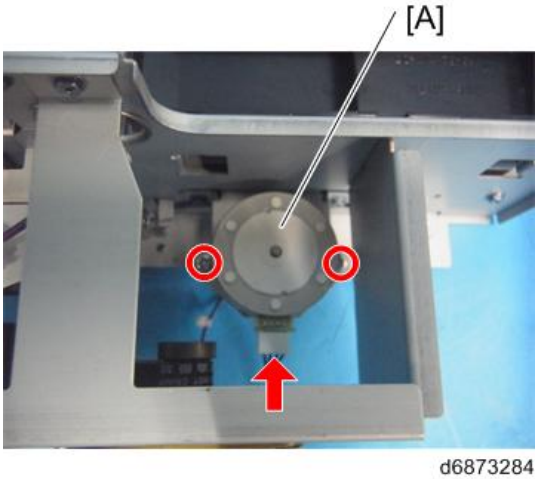


d6873283

Trailing Edge Stopper Motor

1. Center-folding unit (page 61)

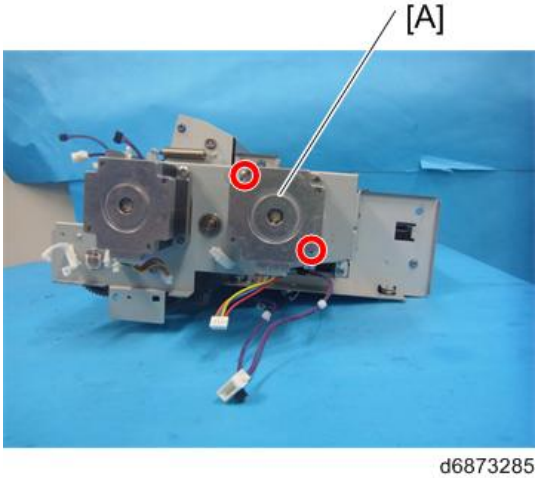
2. Trailing edge stopper motor [A] (×2, ×1)



d6873284

Folding Blade Motor

1. Center-folding unit (page 61)
2. Folding blade motor [A] (×2)

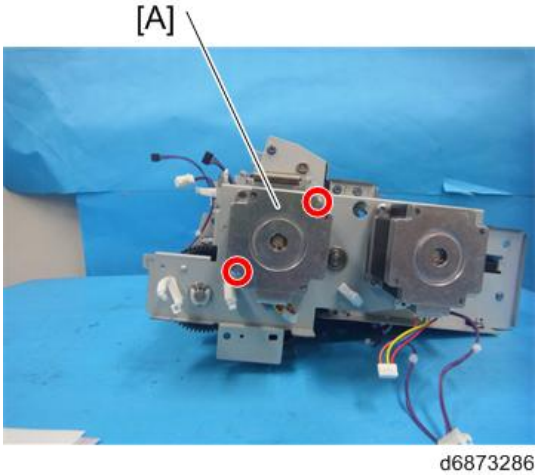


d6873285

Folding Transport Motor

1. Center-folding unit (page 61)

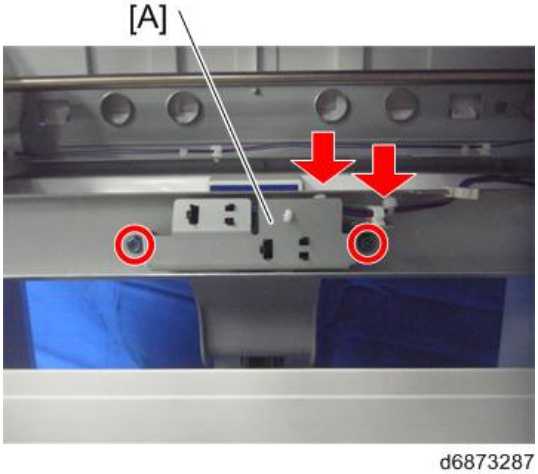
2. Folding transport motor [A] (×2)



d6873286

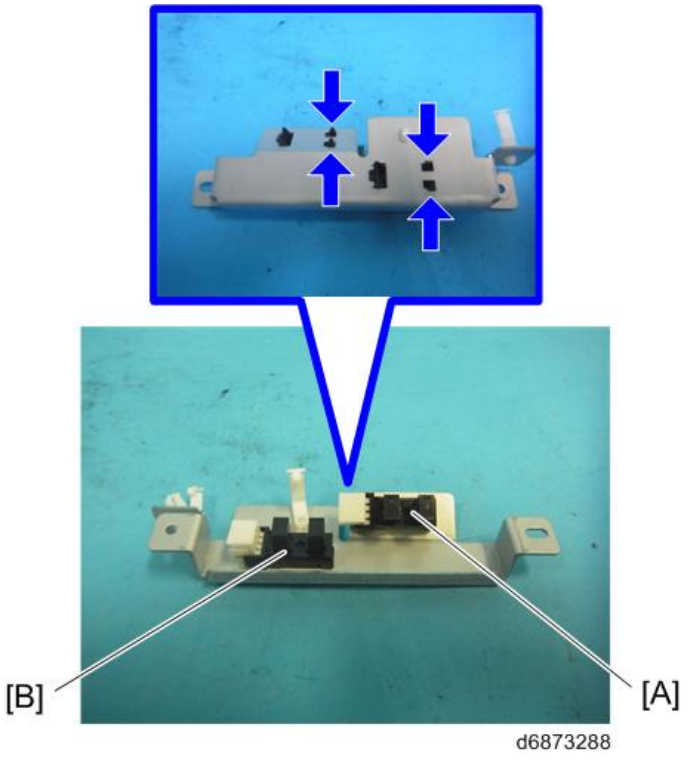
Booklet Tray Full Sensor 1, 2

1. Pull out the booklet stapler unit (page 60 "Booklet Stapler Unit")
2. Booklet tray full sensor bracket [A] (×2, ×2, ×2)



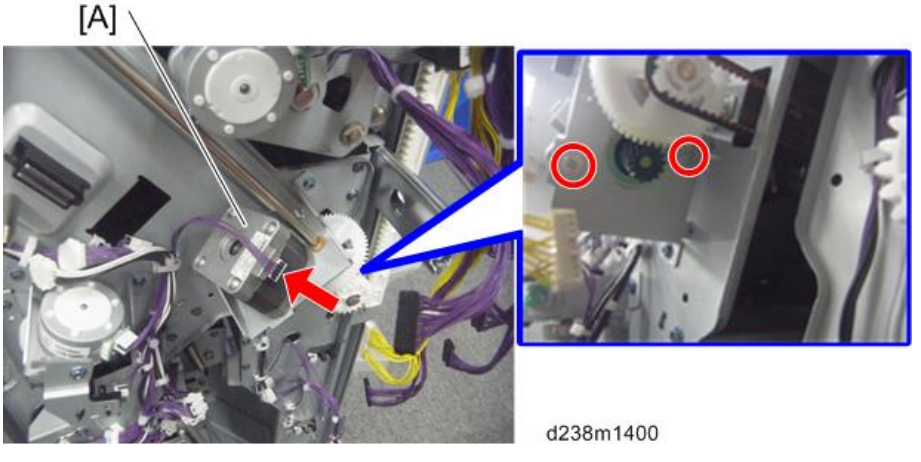
d6873287

3. Booklet tray full sensor 1 [A], 2 [B]



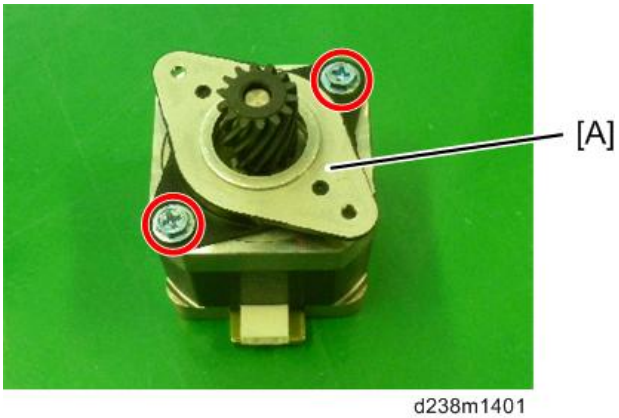
Stapler Transfer Motor (Middle)

1. Controller board bracket (page 34 "Paper Bundle Transport Upper Motor (SR3220)")
2. Stapler transfer motor (Mid.) [A] (×2, ×1)



3. **Damper [A] (×2)**

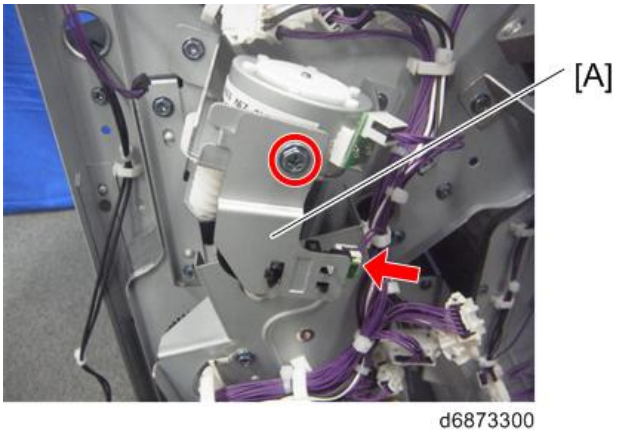
   Attach it in the correct orientation as shown below.



d238m1401

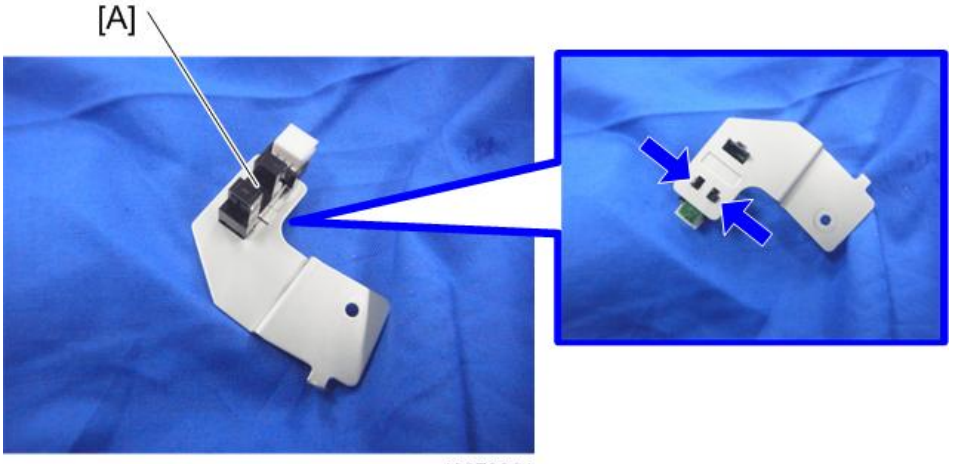
Paper Bundle Transport Lower Pressure Release HP Sensor

1. **Controller board bracket (page 34 "Paper Bundle Transport Upper Motor (SR3220)")**
2. **Paper bundle transport lower pressure release HP sensor bracket [A] (×1, ×1)**



d6873300

3. **Paper bundle transport lower pressure release HP sensor [A]**

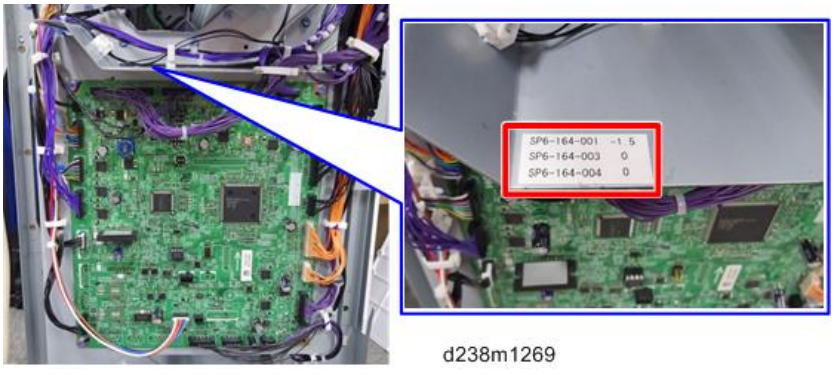


Boards

Main Controller Board

Important

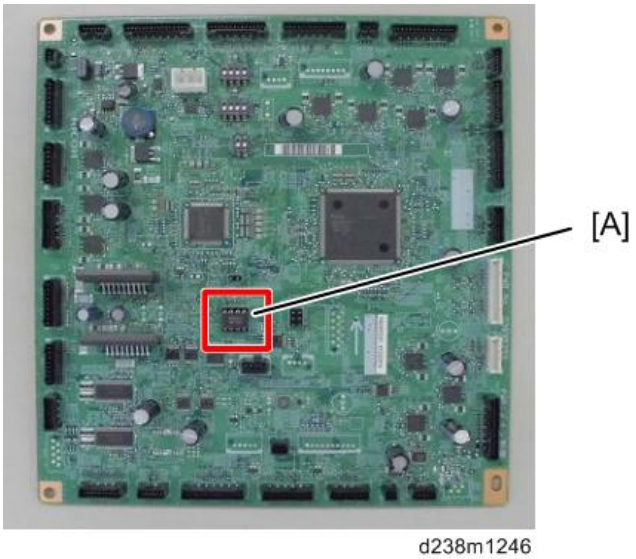
- Make sure to set the SP provided on the metal plate of the main controller board after replacing the main controller board.



d238m1269

Note

- An EEPROM [A] is installed in the controller board to record the drive frequency and number of sheets. When the controller board is replaced, take the EEPROM off the old board and install it on the new one.

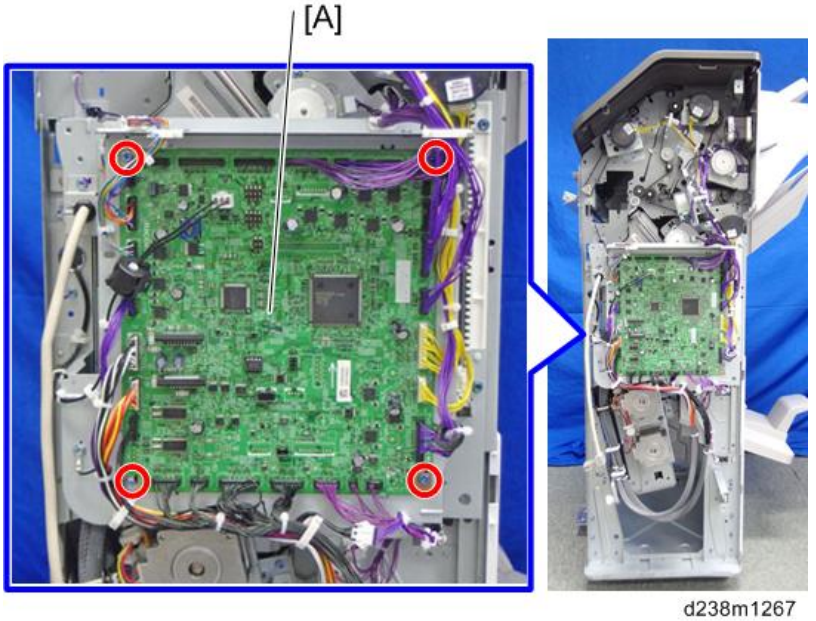


d238m1246

- There is an EEPROM on the new main controller board, but this is not needed and can be discarded or kept as a spare part.

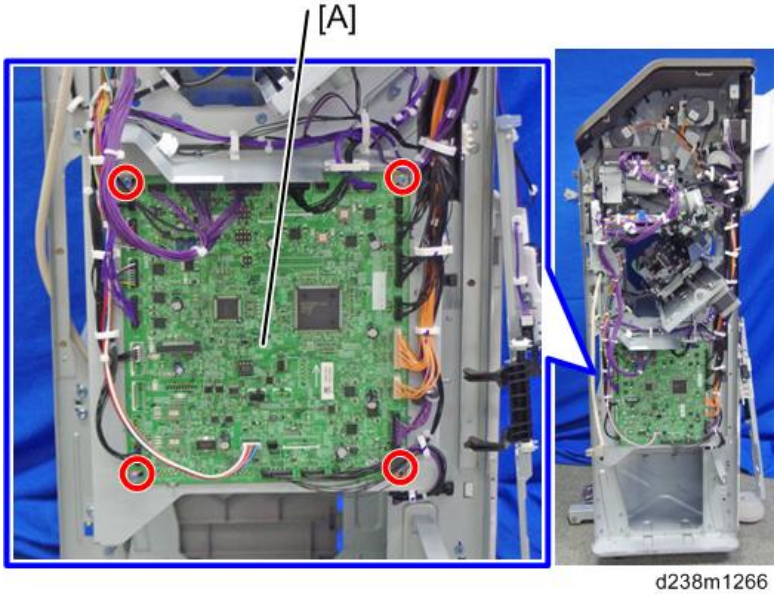
1. **Rear cover (page 11)**
2. **Main controller board [A] (×4, ×23)**

SR3220



d238m1267

SR3210



d238m1266

2. Detailed Descriptions

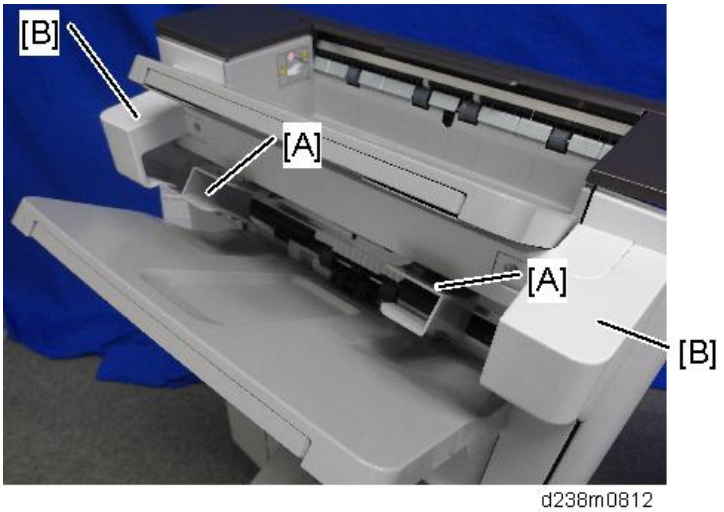
Booklet Finisher SR3220 / Finisher SR3210 (D3B9/D3B8)

Changes from the Previous Machine

Paper exit guide

Overview

To achieve stable stacking of printouts and to prevent users from touching the printouts, paper exit guide [A] and paper exit guide cover [B] have been added.

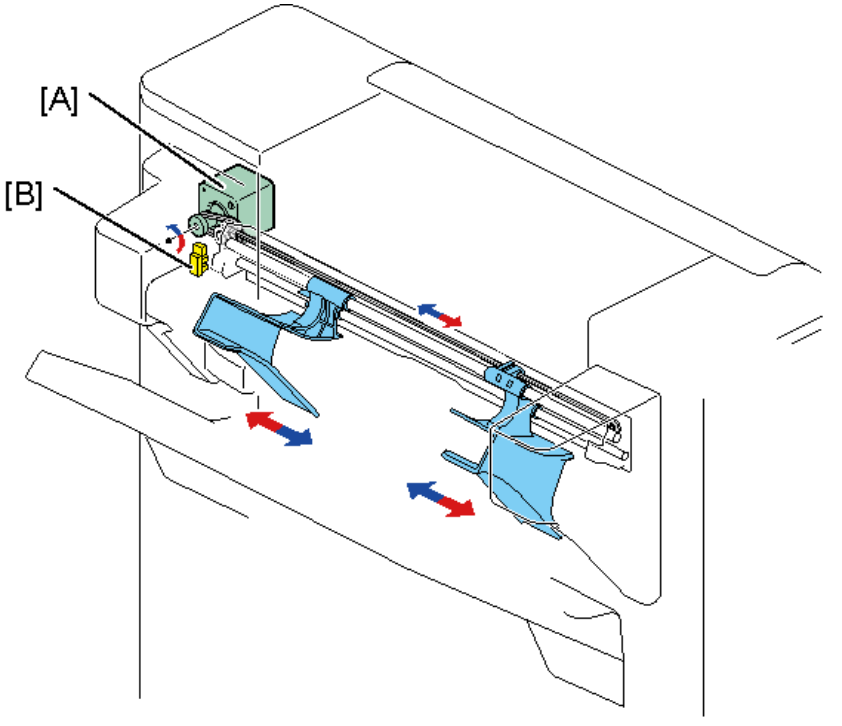


d238m0812

Drive

With the paper exit guide drive motor [A] and the timing belt, the paper exit guides on both sides move at the same time.

Home position is detected by the paper exit guide HP sensor [B].



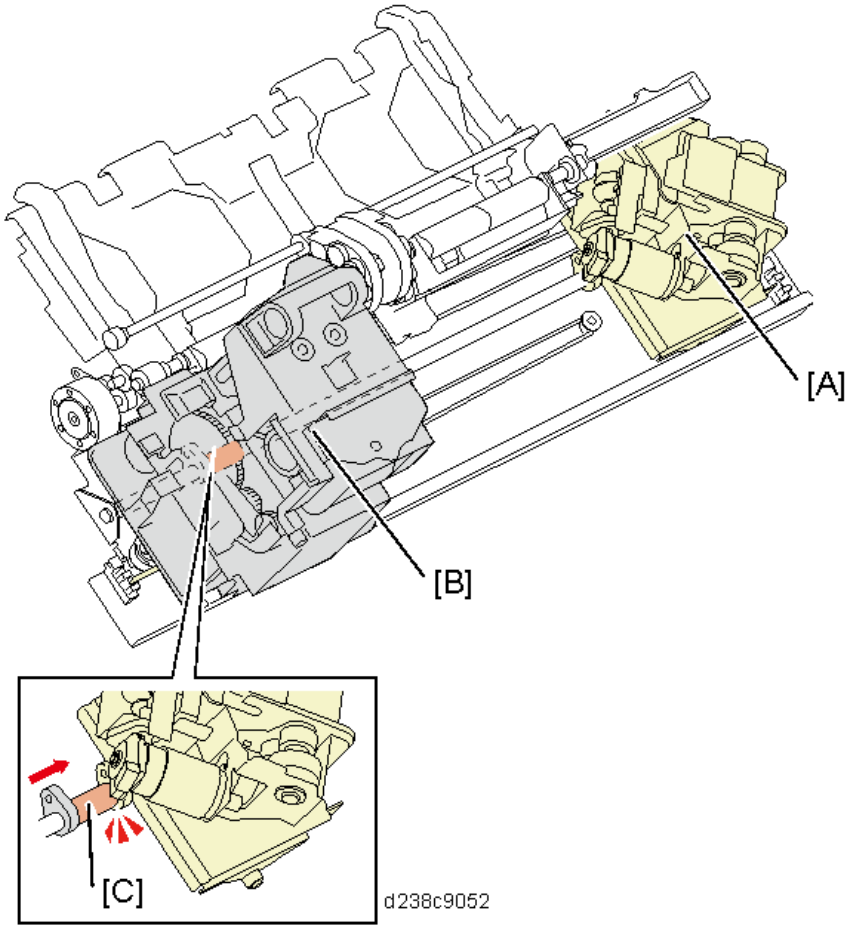
Stapleless Stapler (Finisher SR3210 only)

Location of the stapleless stapler unit

The stapleless stapler unit [A] is on the same shaft as the conventional stapler unit [B], which uses staples.

The stapleless stapler unit is at the back and the conventional stapler unit is at the front.

A spacer [C] on the shaft functions as a stopper, preventing the units from colliding.

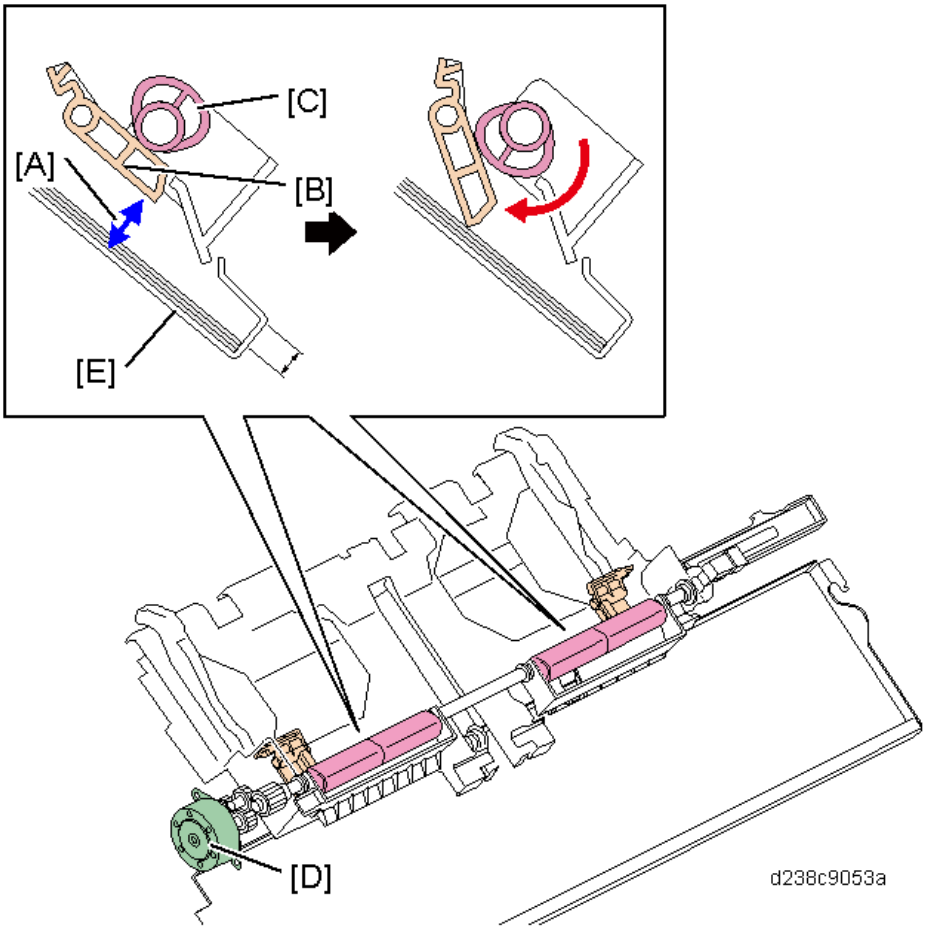


Paper stack mechanism for stapling

The maximum thickness of the stack is 50 sheets for the conventional stapler, and 5 sheets for the stapleless stapler.

In order for the stapleless stapler to stack the paper smoothly, cam [C] and paper guide [B] adjusts the gap [A] of the stapler tray [E].

The cam [C] controlled by the paper guide motor [D] pushes the paper guide [B] down during the stapleless staple operation.

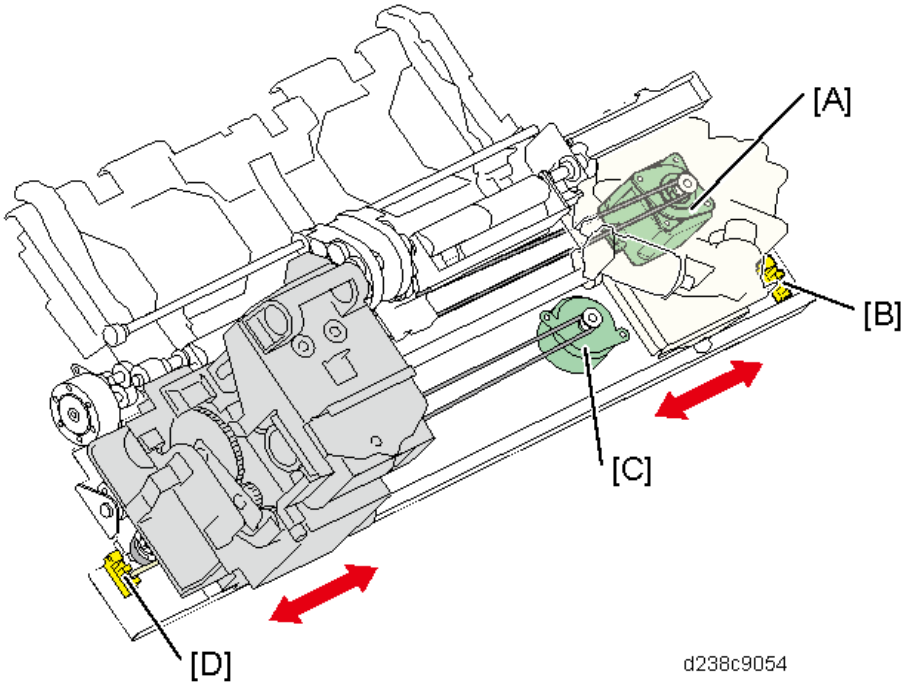


Stapleless stapler unit movement mechanism

The stapleless stapler transfer motor [A] moves the stapleless stapler unit to the stapling position from its home position when stapling with the stapleless stapler.

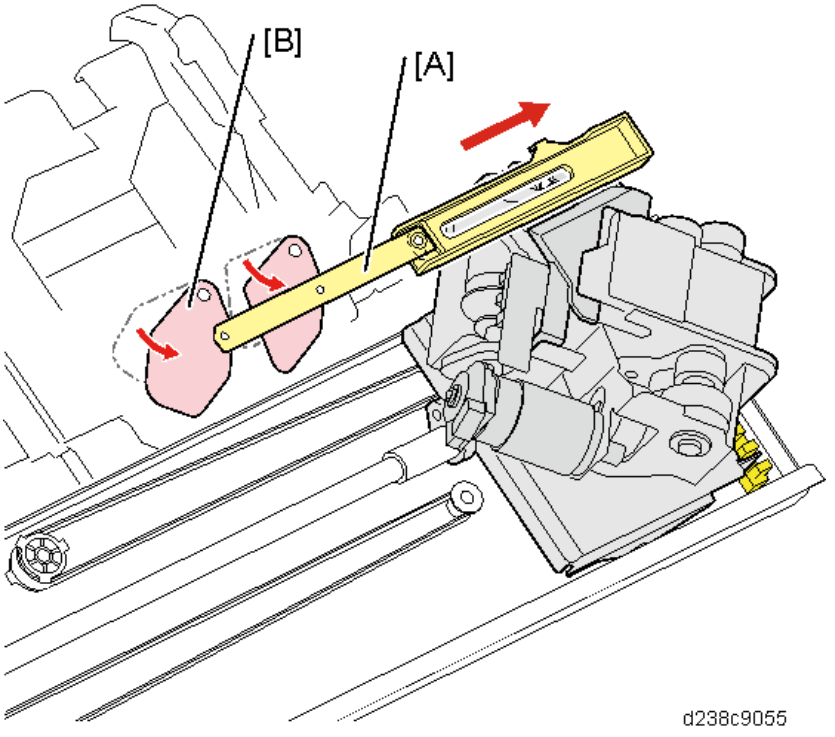
The home position is detected by the stapleless stapler HP sensor [B].

The stapler transfer motor [C] and the stapler HP sensor [D] are attached to the base plate.



There is a gap at the paper guide when the stapleless stapler unit is at the home position when stapling with the conventional stapler.

Because of this, paper will be guided with the paper guide [B] which works together with the lever [A] when the stapleless stapler unit moves to its home position.



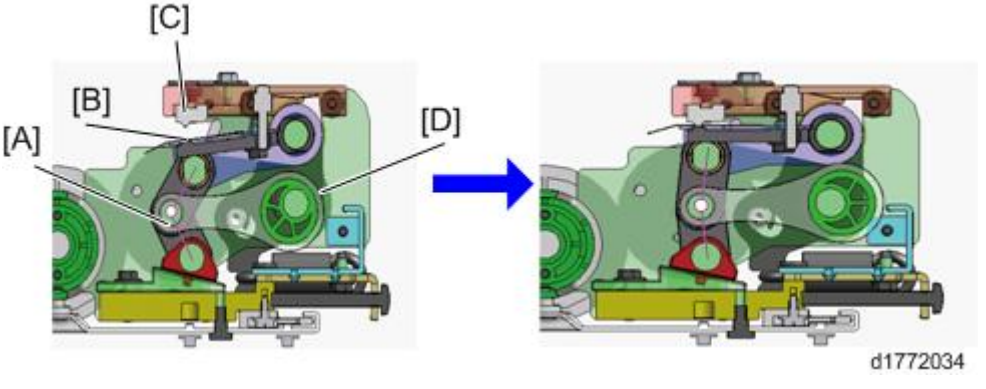
Stapleless Stapler mechanism

The staple operation in this option applies a crimping method. V-shaped teeth press the sheets, applying a pressure of 220 kg.

This option performs two stapling operations for a single stapling operation as follows.

[Moving to the first stapling position =>Stapling => Moving to the second stapling position => Stapling => Moving back to the home position]

Stapling is done by engaging the pressure cam [D] to stretch the pressure link [A], which applies pressure between to the upper tooth [C] and the lower tooth [B]. Moving and stapling operation for the stapler are driven by the stapler drive motor. The home position is detected by the stapleless stapler HP sensor.

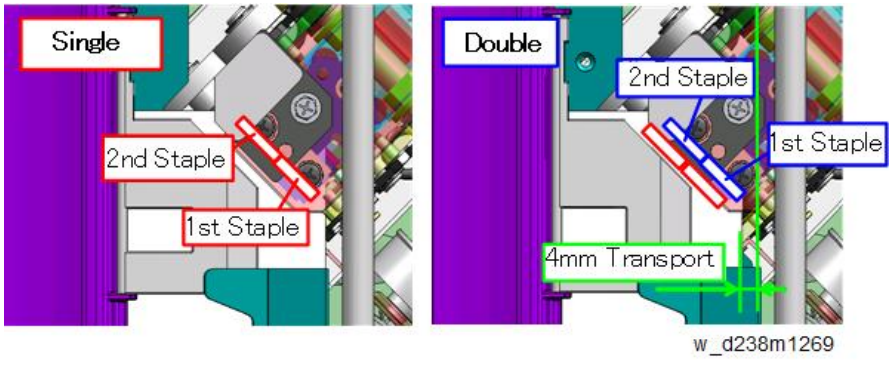


- Double/Single

  The bond strength depends on the degree of entwining of fibers between sheets of the paper bundle. Setting to Single or Double stapling allows you change the bond strength.

  Single applies one staple operation.

  Double applies one more, with the same operation as the first staple, at 4mm from the first. The stapleless stapler drive motor moves the paper after the first stapling.



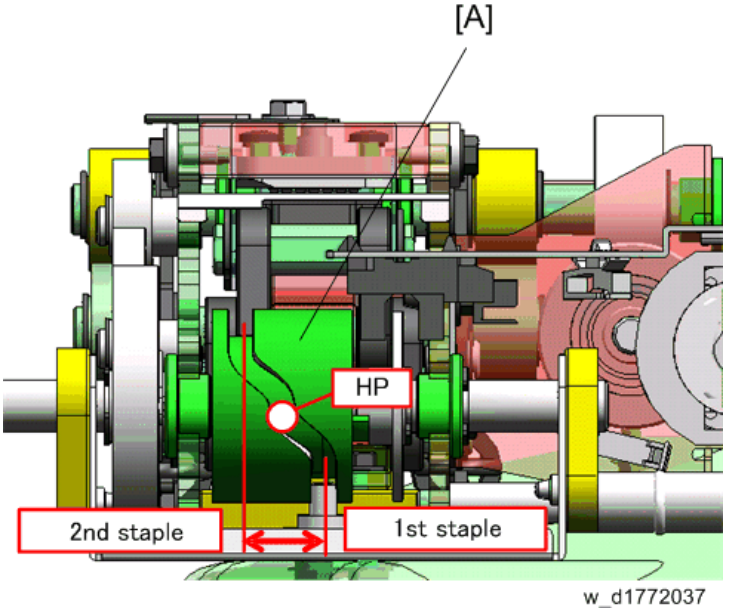
- Bundle ejection

  After stapling, the trailing edge presser is released. The bundle of paper is ejected by the paper output roller.

Stapler movement mechanism

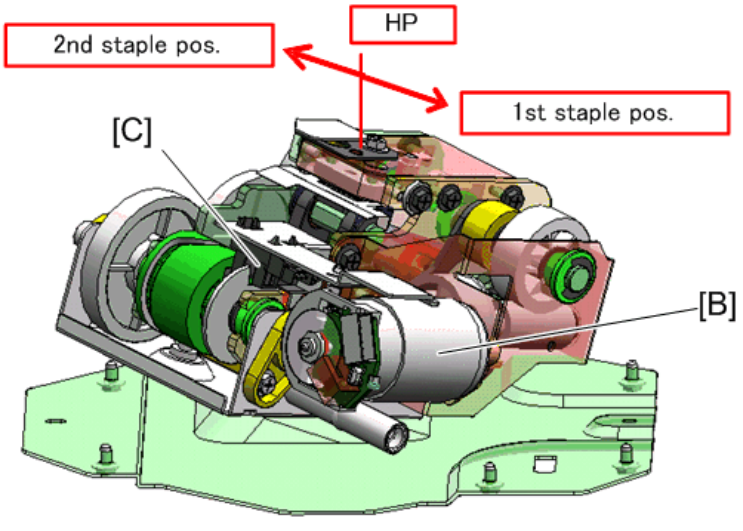
This stapler needs to staple twice for a single staple position, and must be moved to do this stapling.

A cam [A], which is located in the stapler unit and has a groove on the body, and a securing pin perform the moving operation when stapling.



w_d1772037

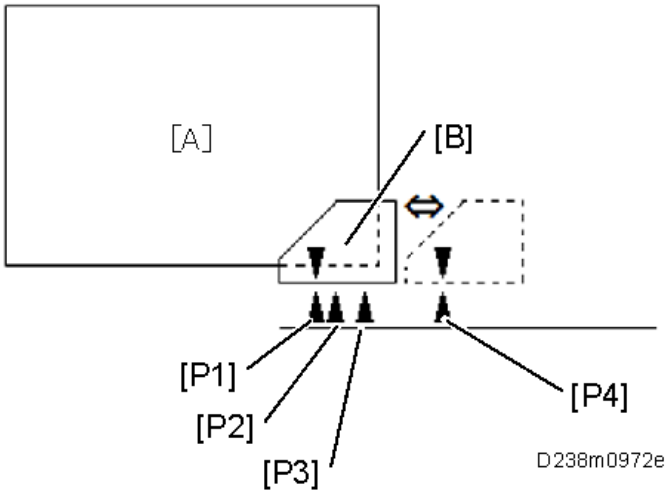
The moving and stapling is done by the stapleless stapler drive motor [B] and the home position is detected by the stapler HP sensor [C].



w_d1772036

Stapler movement process

The movement differs between Single and Double stapling.



[A]: Paper

[B]: Stapleless stapler unit

[P1]: Pre-stapling position

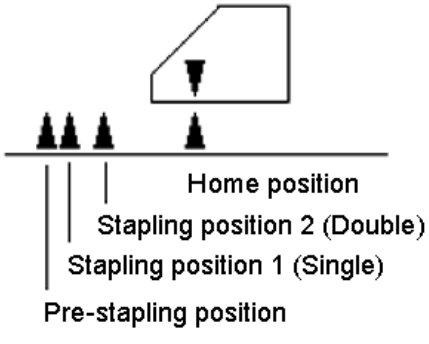
[P2]: Stapling position 1 (Single)

[P3]: Stapling position 2 (Double)

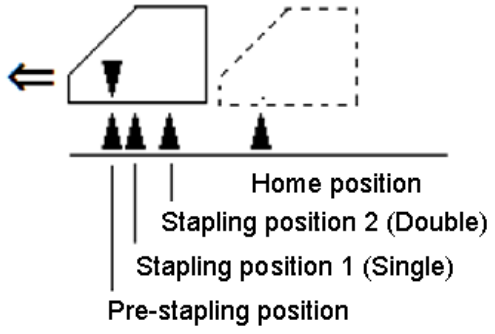
[P4]: Home position

Single stapling operation

1. **The stapleless stapler unit is at the home position before receiving paper.**

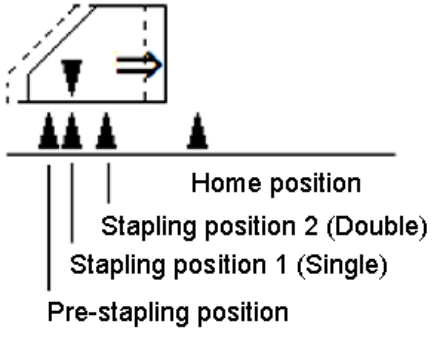


2. **The stapleless stapler unit moves to the pre-stapling position when starting a stapleless stapling job.**



w_d238m0974e

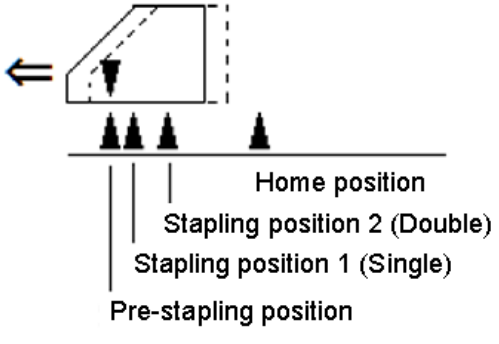
3. **After receiving the first sheet, the stapleless stapler unit moves from the Stapling Position 1 towards the rear by 2.2 mm. After stacking the sheets, stapling is performed. (Stapling Position 1)**



w_d238m0975e

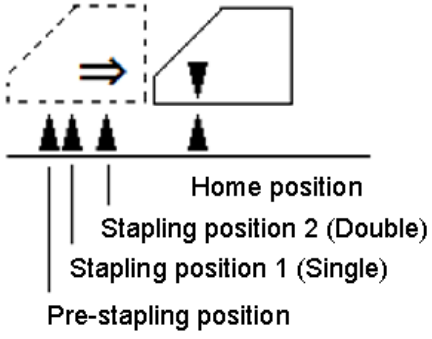
4. **When stapling on multiple copies, the stapleless stapler unit moves towards the front by 2.2 mm from the pre-stapling position after the paper is delivered.**

   When stapling on multiple copies, Steps 3 and 4 are repeated.



w_d238m0976e

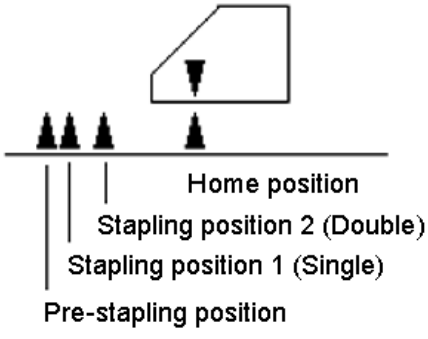
5. The stapleless stapler unit returns to the home position after completing the job.



w_d238m0977e

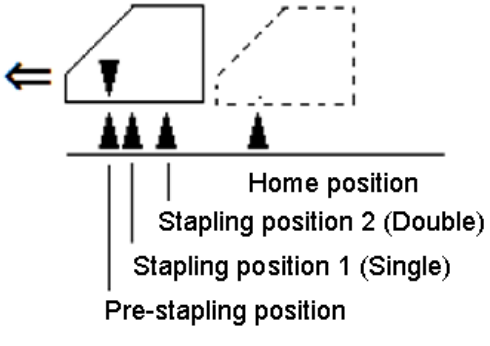
Double stapling operation

1. The stapleless stapler unit is at the home position before receiving paper.



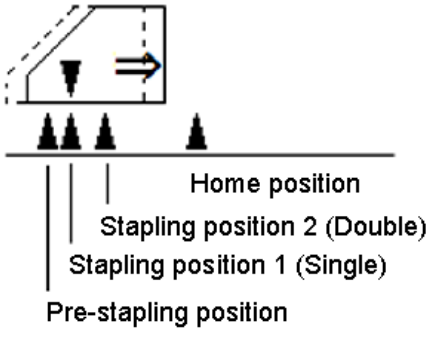
w_d238m0973e

2. The stapleless stapler unit moves to the pre-stapling position when starting a stapleless stapling job.



w_d238m0974e

3. **After receiving the first sheet, the stapleless stapler unit moves from the Stapling Position 1 towards the rear by 2.2 mm. After stacking the sheets, stapling is performed. (Stapling Position 1)**



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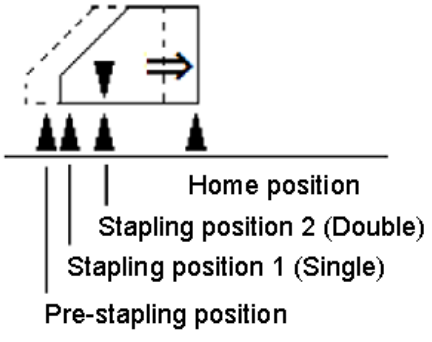
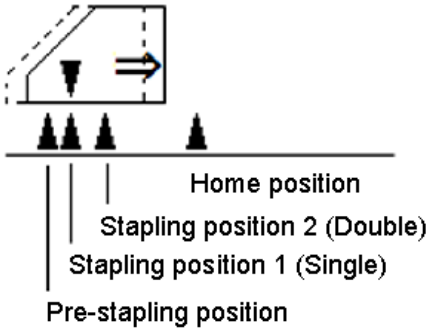
4. **The stapleless stapler unit moves further towards the rear by 4 mm and performs stapling. (Stapling Position 2)**



w_d238m0978e

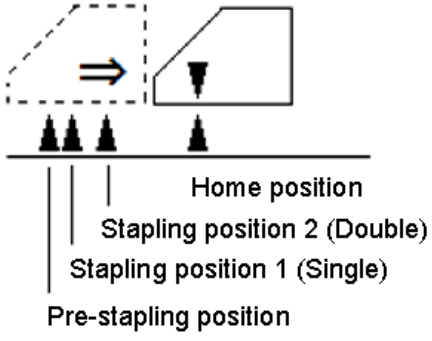
5. **When stapling multiple copies, the stapleless stapler unit moves towards the front by 6.4 mm from the pre-stapling position after the paper is delivered.**

   When stapling multiple copies, Steps 3 to 5 are repeated.



w_d238m0975e

6. The stapler returns to the home position after completing the job.



w_d238m0977e

SP6-160-004 (Replacement Mode for Service)

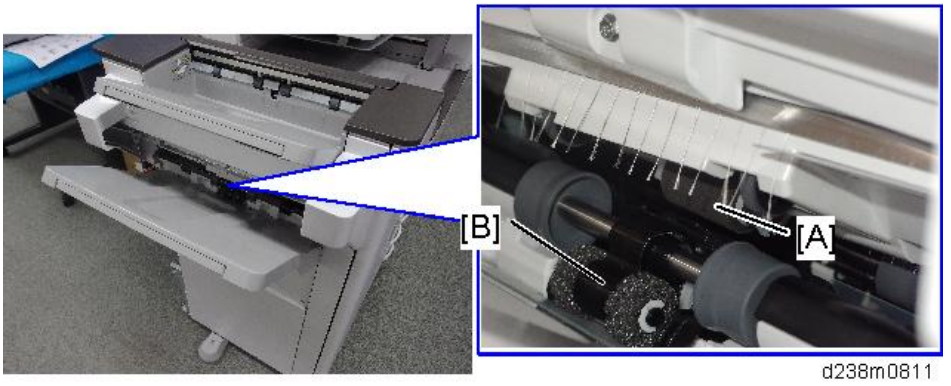
It is easier to access the following parts for replacement after running SP-6-160-004.

- Positioning Roller [A]

  The paper exit guide plate moves upwards and the positioning roller pops up in front for easier access.

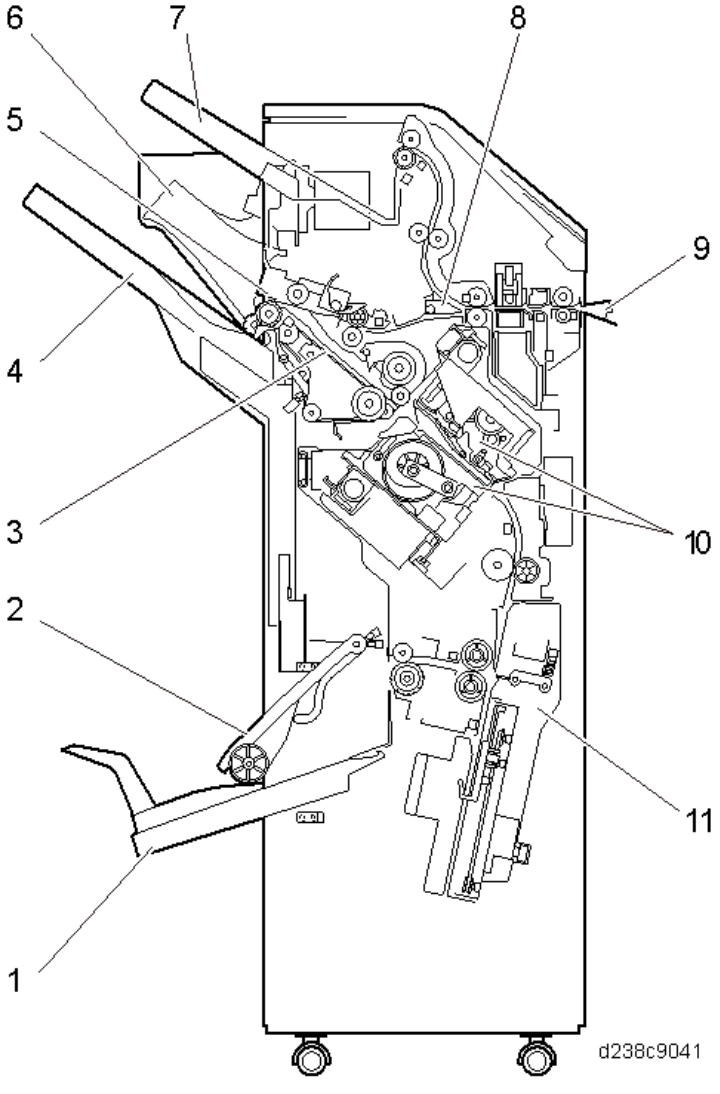
- Reverse Roller [B]

  The paper exit guide plate moves upwards and the reverse roller can be accessed.



d238m0811

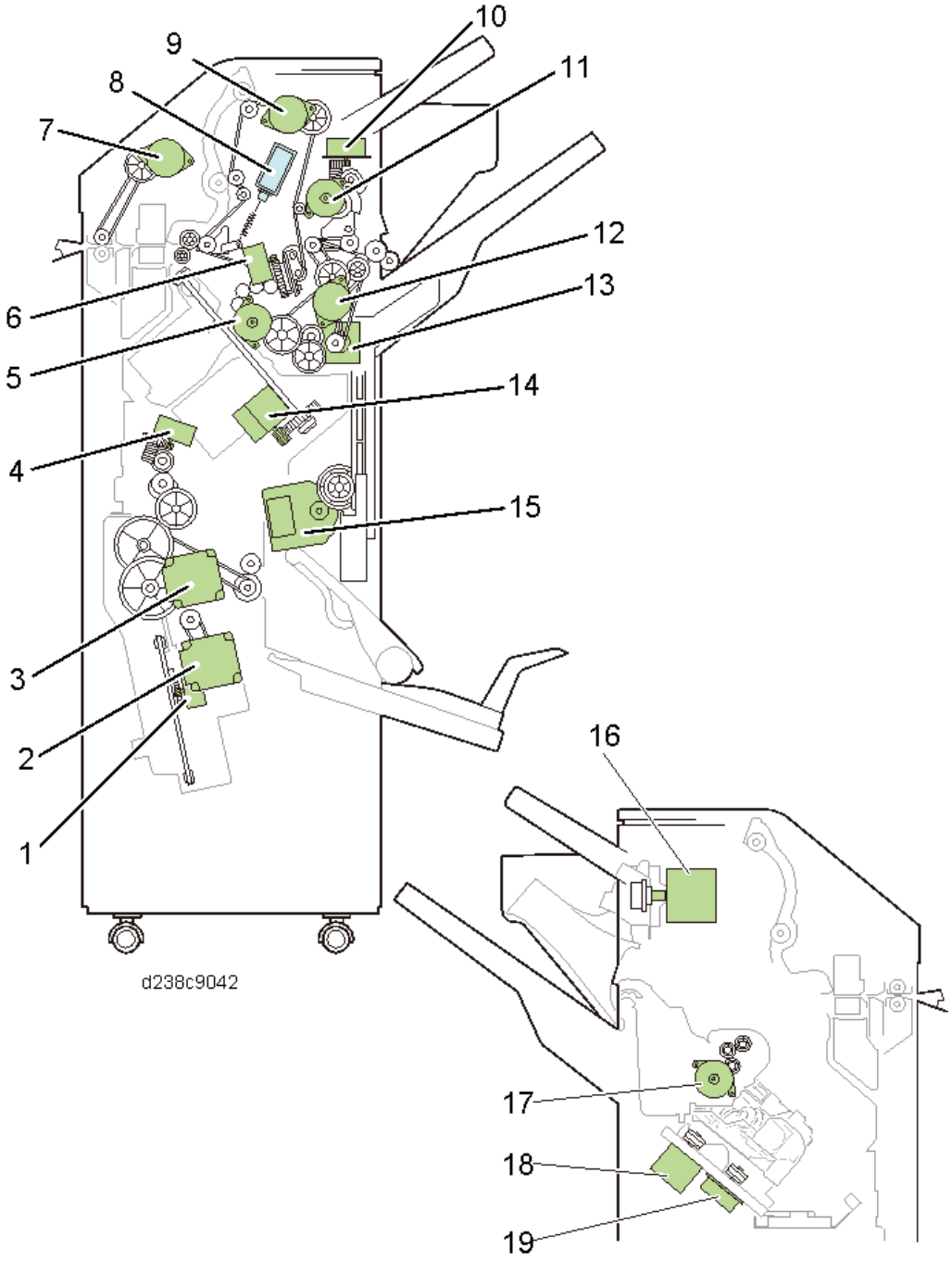
Parts Layout



No.	Description	No.	Description
1	Booklet tray	7	Proof tray
2	Paper surface detecting arm	8	Junction gate
3	Stapler tray	9	Relay Guide Plate
4	Shift tray	10	Stapler unit
5	Paper exit guide plate	11	Booklet unit

No.	Description	No.	Description
6	Paper exit guide		

Drive layout

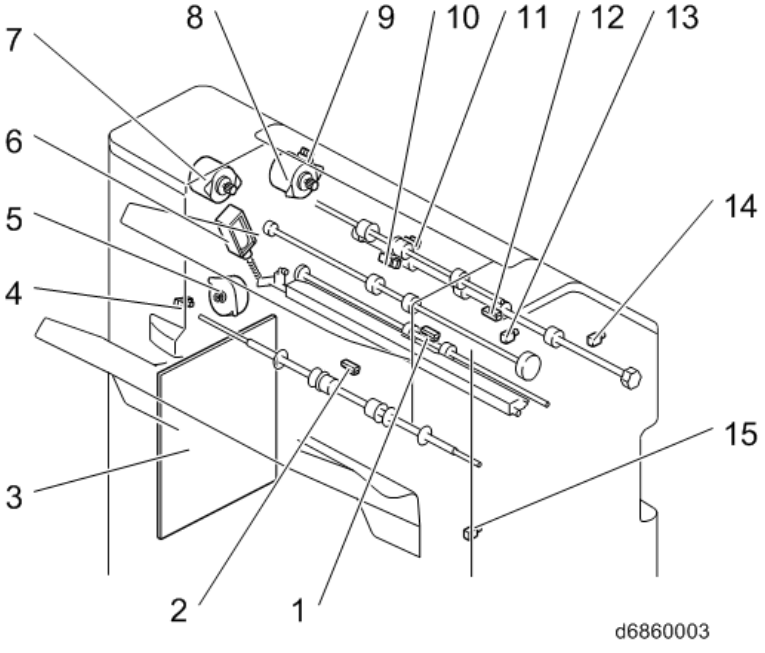


No.	Description	No.	Description
1	Edge stopper motor	12	Paper exit transport motor
2	Folding blade motor	13	Feedout Pawl motor
3	Folding transport motor	14	Stapler unit displacement motor
4	Booklet transport (lower) pressure release motor	15	Tray lift motor
5	Booklet bundle transport (upper) motor	16	Paper exit guide drive motor*
6	Shift motor	17	Paper guide drive motor*
7	Entrance transport motor	18	Stapleless stapler transfer motor*
8	Junction gate solenoid	19	Stapler transfer motor
9	Proof transport motor		
10	Paper exit guide plate open/close motor		
11	Positioning roller motor		

* Finisher SR3210 only

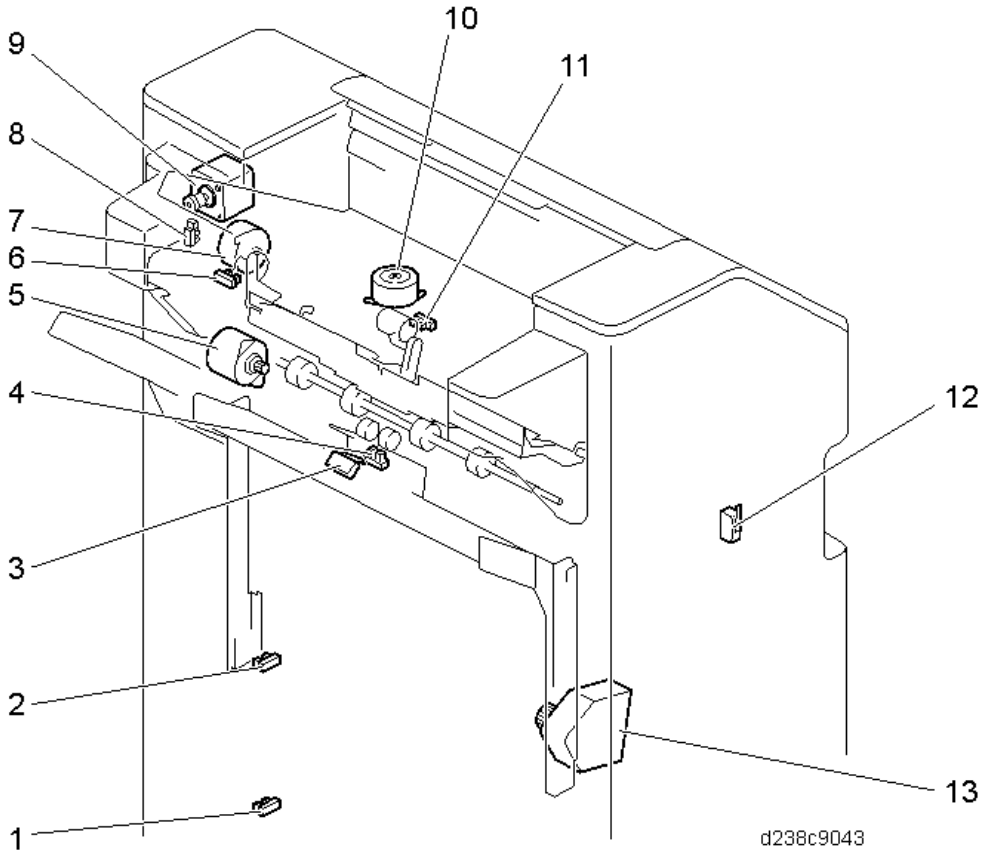
Electrical component layout

Transport system



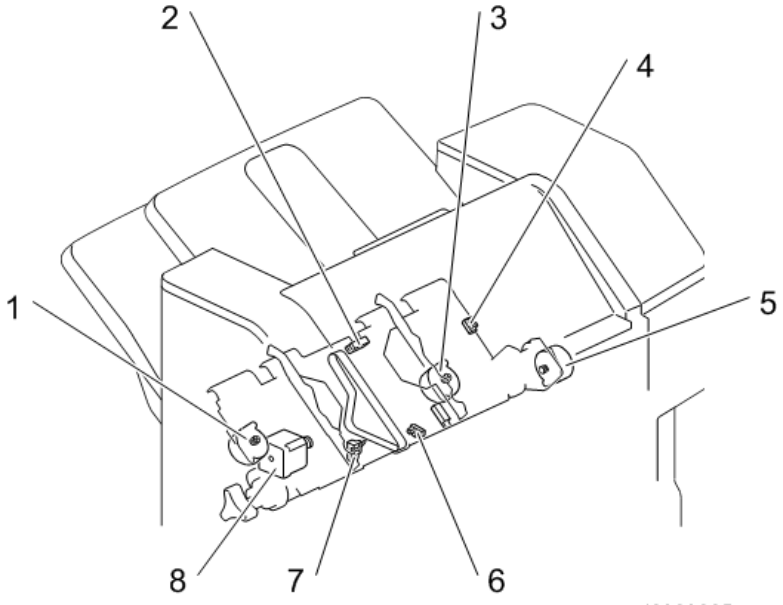
No.	Description	No.	Description
1	Intermediate transport (right) paper surface sensor	9	Upper cover open/close sensor
2	Intermediate transport (left) paper surface sensor	10	Proof tray full sensor
3	Controller	11	Proof paper exit sensor
4	Shift HP sensor	12	Entrance paper surface sensor
5	Shift motor	13	Straight transport LED
6	Junction gate solenoid	14	Entrance jam detection LED
7	Proof transport motor	15	Stapler jam detection LED
8	Entrance transport motor		

Shift system



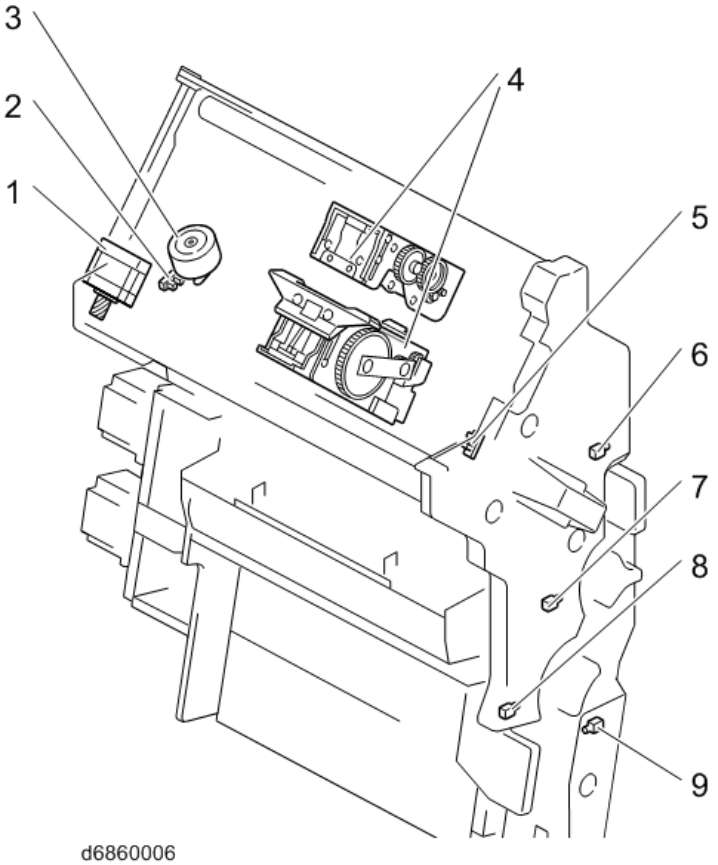
No.	Description	No.	Description
1	Tray lower limit sensor (upper)	8	Paper exit guide HP sensor
2	Tray lower limit sensor (lower)	9	Paper exit guide drive motor
3	Shift tray upper limit switch	10	Paper exit guide plate open/close motor
4	Shift tray paper surface sensor	11	Paper exit guide plate HP sensor
5	Paper Exit Transport Motor	12	Front door switch
6	Positioning roller HP sensor	13	Tray lift motor
7	Positioning roller motor		

Jogger system



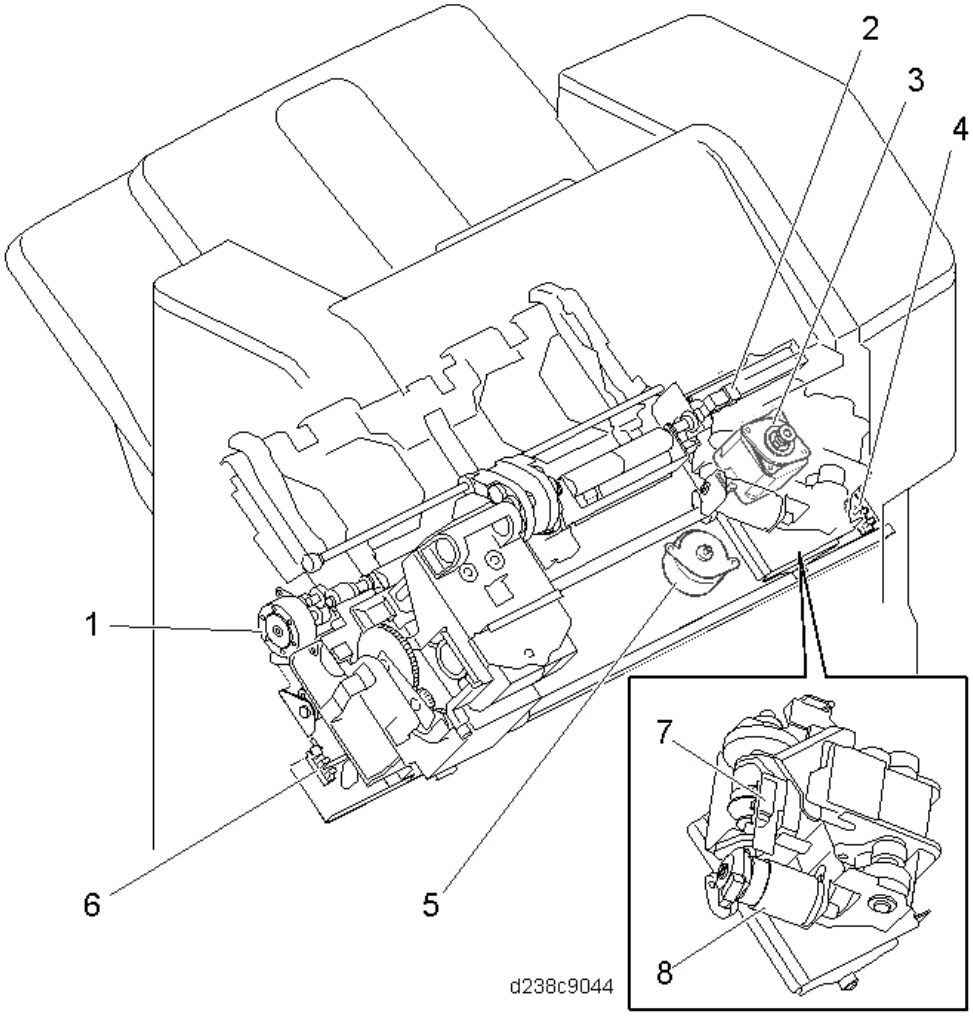
No.	Description	No.	Description
1	Jogger motor	5	Booklet stitch transport (upper) motor
2	Paper exit sensor	6	Stapler tray paper surface sensor
3	Booklet transport (upper) pressure release motor	7	Feedout Pawl HP sensor
4	Jogger HP sensor	8	Feedout Pawl motor

Stapler/Intermediate transport system



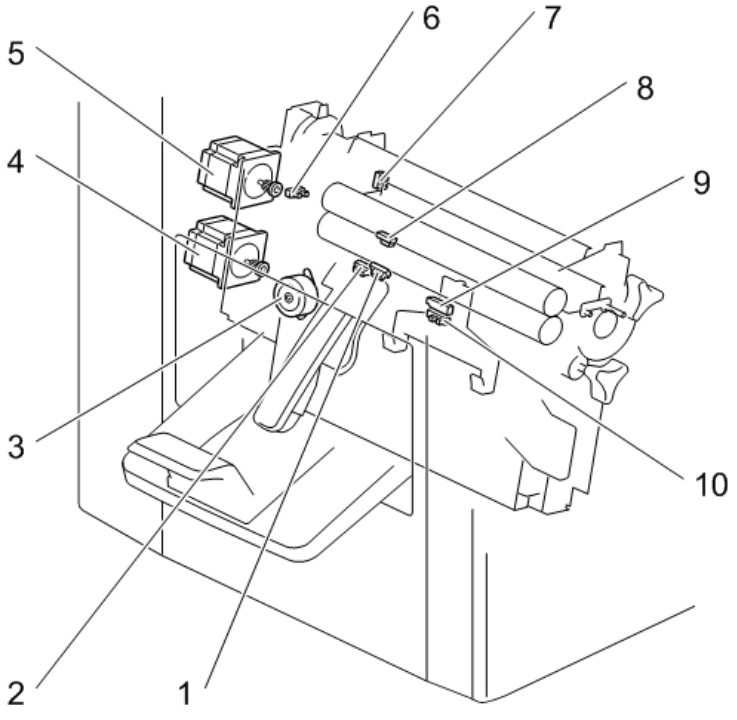
No.	Description	No.	Description
1	Stapler transfer motor	6	Booklet transport jam detection LED
2	Paper Bundle Transport Lower Pressure Release HP Sensor	7	Booklet unit jam detection LED1
3	Booklet transport (lower) pressure release motor	8	Stopper jam detection LED
4	Stapler unit	9	Booklet unit jam detection LED2
5	Stapler HP sensor		

Stapleless stapler unit (Finisher SR3210 only)



No.	Description	No.	Description
1	Paper guide drive motor	6	Stapler transfer motor
2	Paper guide HP sensor	7	Stapler HP sensor
3	Stapleless stapler transfer motor	8	Stapleless Stapler drive motor
4	Stapleless stapler HP sensor		
5	Stapler transfer motor		

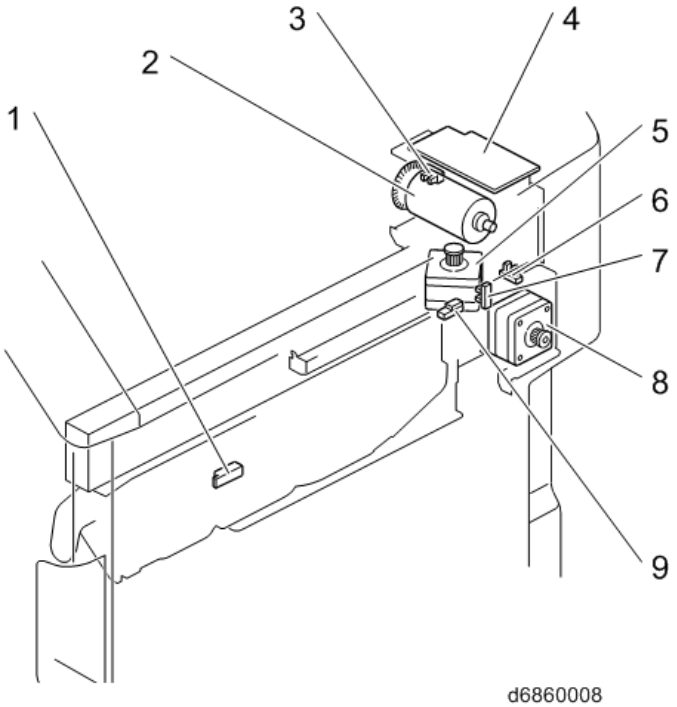
Paper folding system



d6860007

No.	Description	No.	Description
1	Booklet tray full sensor 1	6	Folding cam HP sensor
2	Booklet tray full sensor 2	7	Folding blade HP sensor
3	Edge stopper motor	8	Center-folding paper exit sensor
4	Folding blade motor	9	Edge stopper paper surface sensor
5	Folding transport motor	10	Edge stopper HP sensor

Punch system



d6860008

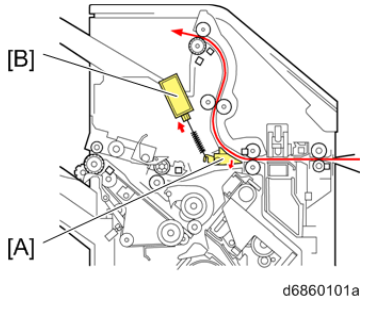
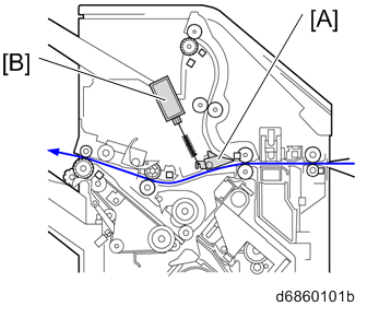
No.	Description	No.	Description
1	Hopper full sensor	6	Horizontal registration unit HP sensor
2	Punch unit drive motor	7	Horizontal registration correction unit HP sensor
3	Punch unit HP sensor	8	Horizontal registration correction motor
4	Controller	9	Horizontal registration correction sensor
5	Horizontal registration unit transfer motor		

Mechanisms

Separation mechanism

In the separation unit, the transport path of the paper is changed with the junction gate [A] by the junction gate solenoid [B].

The change-over action of the junction gate is as follows.

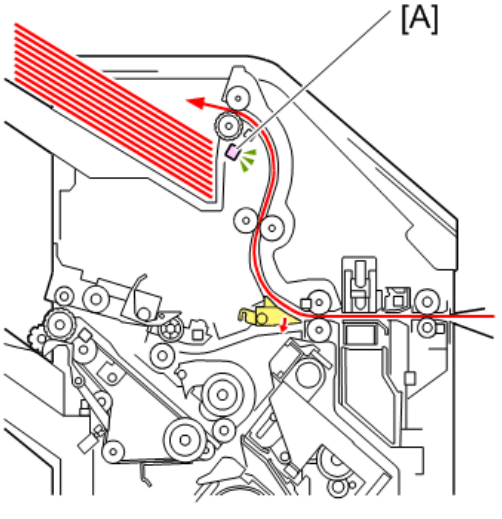
Mode	Proof mode	Shift mode
Paper transport path		
Junction gate solenoid	ON	OFF

Proof tray transport

The proof paper exit roller, proof transport roller and the intermediate transport roller are driven by the proof transport motor. The entrance transport roller is driven by the entrance transport motor.

Proof tray full detection

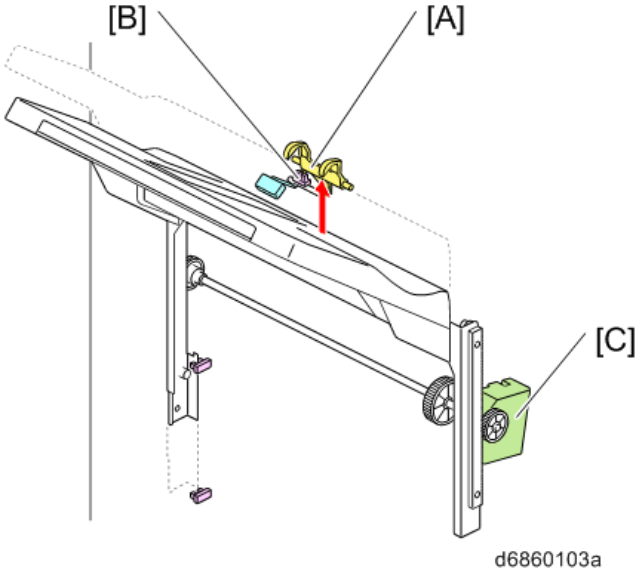
The proof tray full sensor [A] is above the proof tray. When a fixed amount of paper is ejected, it switches OFF (blocked), and "Full" is detected.



d6860102

Shift tray ascent/descent mechanism

Ascent/descent is performed according to the number of sheets of paper (paper surface height) released to the shift tray. This height is detected by the shift tray paper surface sensor [B] switching OFF/ON due to the rear end press lever [A], and is adjusted up and down by the tray lift motor [C] so that the shift tray paper surface sensor switches OFF (blocked).



Ascent

The shift tray paper surface sensor detects the movement upper limit of the shift tray, and disconnects the control circuit of the tray lift motor.

When paper is removed from the shift tray and the shift tray paper surface sensor switches ON (unblocked), the shift tray ascends, and when the sensor switches OFF (blocked), it stops.

Descent

- In shift mode

  When every 5 sheets of paper are delivered to the shift tray, the tray moves up and down.

  The shift tray first descends until the shift tray paper surface sensor switches ON (unblocked), and the shift tray then ascends until the sensor switches OFF (blocked).

- In stapling mode

  When exiting the paper to the shift tray, the tray lift motor switches ON/OFF for a definite time, and the tray height is adjusted.

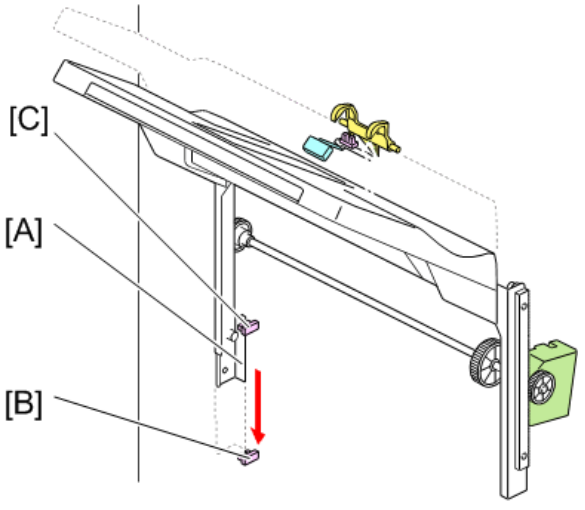
Shift tray full detection

Small size (Smaller than A4 SEF, LT LEF)

When the shift tray descends and the actuator [A] under the shift tray switches the lower limit sensor (lower) [B] OFF (blocked), shift tray "Full" is detected.

Large size (Larger than B4, LG)

When the shift tray descends and the actuator [A] under the shift tray switches the lower limit sensor (upper) [C] OFF (blocked), shift tray "Full" is detected.



Shift mechanism

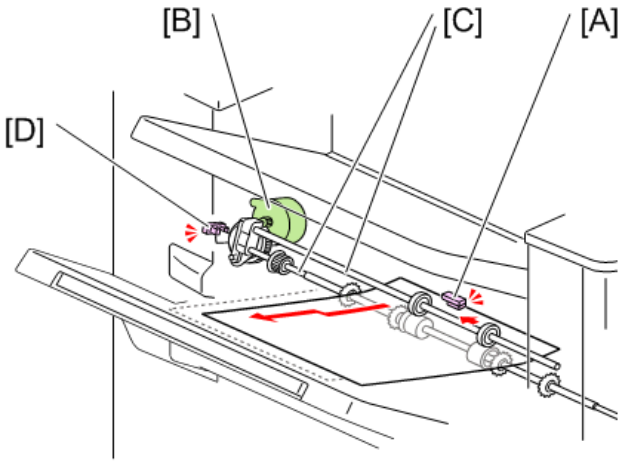
The paper is shifted from side to side by the shift roller in the transport path.

The paper exit guide plate floats up from the paper exit roller, and waits for the paper. After the shift paper exit sensor [A] switches ON, the paper exit guide plate is closed, and after the paper is ejected to the tray, the shift roller returns to the home position (center).

This operation is performed for every sheet, and when the shift direction changes (this happens when a new set of prints is fed out), the shift roller shifts in the opposite direction.

The shift roller [C] is moved to left and right by the shift motor [B].

The shift roller HP sensor [D] detects the home position of the shift roller.

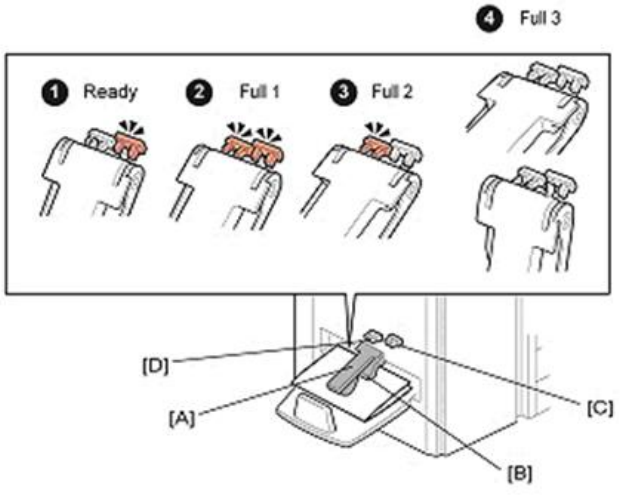


d6860104

Booklet tray

The paper surface detecting arm [A] detects the top of the pile of stapled booklets ejected to the booklet tray.

The arm press [B] presses the bulge of the edges of the booklets from the top. The booklet tray full sensor 1[C] and the booklet tray full sensor 2 [D] detect booklet tray "Full".



d1463120

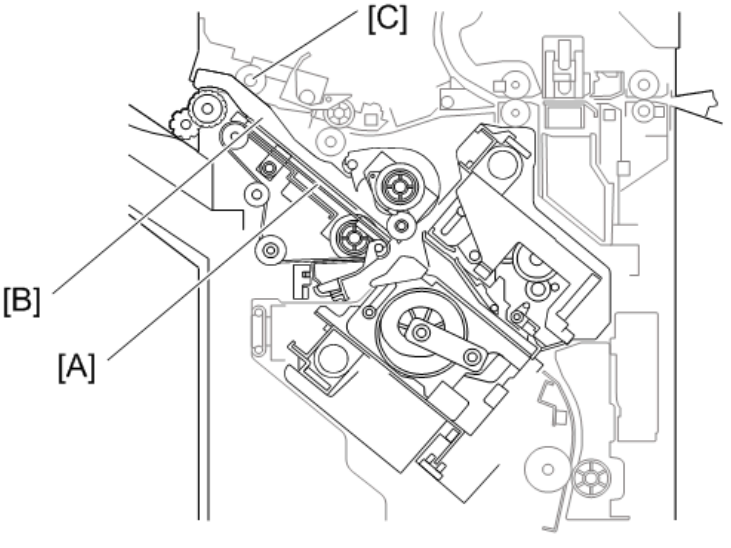
Tray full detection changes with the size of paper that has been stapled, and the number of sheets in one bundle. If the tray is full, the machine stops.

Tray status detection

Tray status	Booklet tray full sensor 1	Booklet tray full sensor 2
Standby position	ON	OFF
Full 1	ON	ON
Full 2	OFF	ON
Full 3	OFF	OFF

Stapled paper eject mechanism

Paper must first be stored in the stapler tray [A]. After the stapler tray paper surface sensor detects the paper sheet rear edge, the approach roller [C] descends, and transports the paper to the stapler tray.



d686z0003

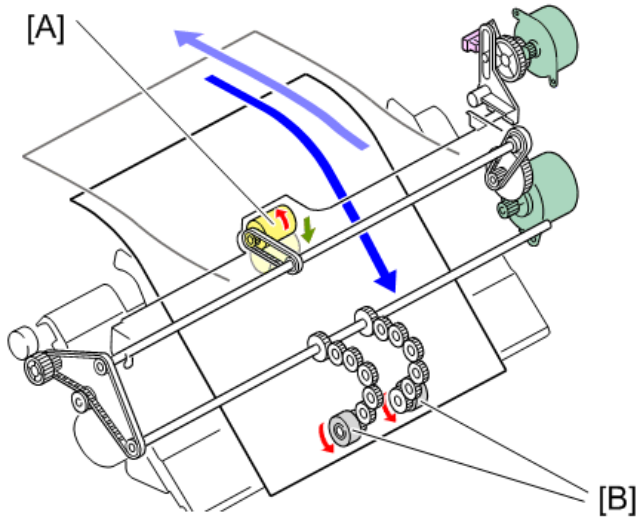
No.	Description	No.	Description
[A]	Stapler tray	[C]	Approach roller
[B]	Jogger fence		

Stacking mechanism (approach roller operation)

The rear edges of the paper stacked in the stapler tray are aligned one sheet at a time.

The paper is transferred to the reverse roller [B] by the approach roller [A], driven by the positioning roller motor, after the intermediate transport (left) paper surface sensor turns OFF.

The paper is then continuously pressed against the trailing edge fence by the reverse roller [B].



d6860108

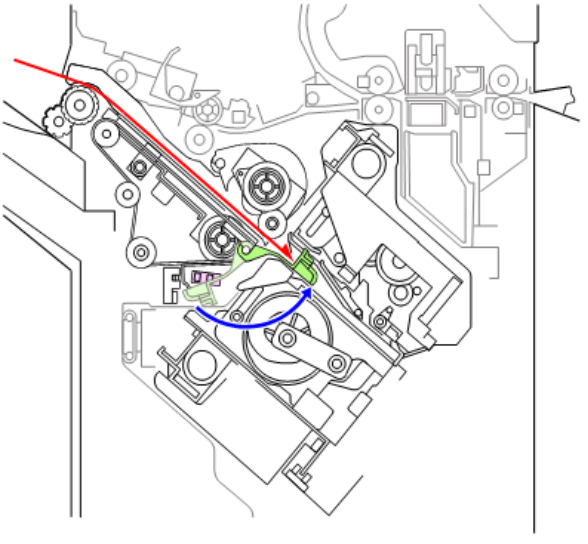
- Trailing edge fence operation

  The trailing edge fence used depends on the binding mode of the stapler. There are two trailing edge fences, upper and lower.

  Upper trailing edge fence

  Operated by the booklet transport (upper) pressure release motor.

  Binding modes: Edge binding mode (one position)/edge binding mode (two positions), and booklet stitch mode (small sizes: B5, A4, LT)

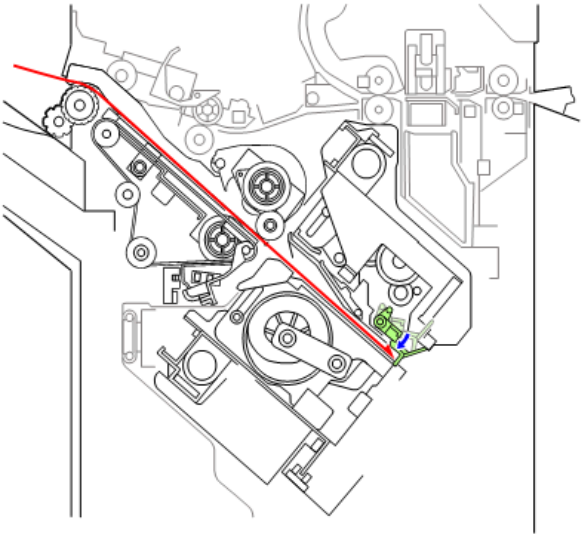


d6860106

Lower trailing edge fence

When the stapler moves to the center, the trailing edge fence is depressed by hitting the stapler.

Binding modes: booklet stitch mode (large sizes: LG, B4, A3, DLT, 12"×17.7")



d6860107

Jogger operation

After the paper rear edges have been aligned by stacking, jogger operation is then performed to align the width.

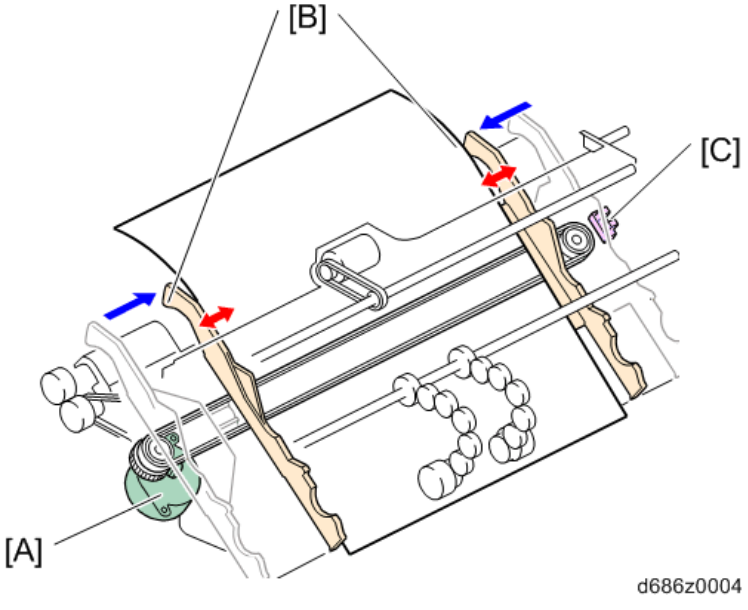
The jogger fences [B] are opened and closed by the jogger motor [A]. At the start of jogging, the jogger fences [B] stand by in a state where they are opened wider than the paper width.

When the rear edge of the transported paper is pressed against the trailing edge fence by the reverse roller, the jogger fences move close to the edges of the paper.

Next, the jogger fences move to the edges, to align the paper.

After jogging is complete, the jogger fences again open, and stand by to receive the next sheet.

The home position of the jogger fences is detected by the jogger HP sensor [C].



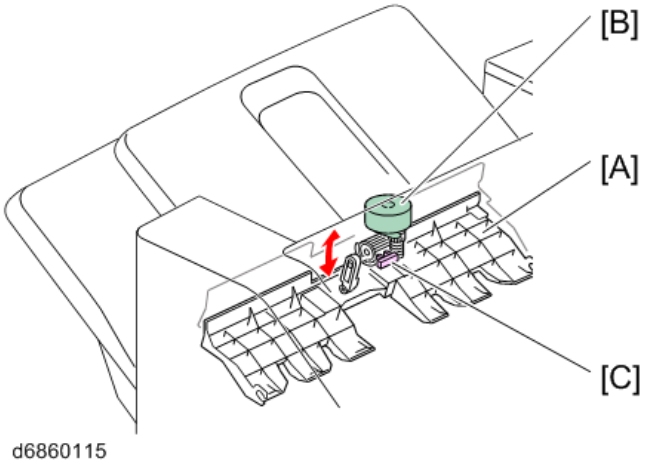
Paper exit guide plate open/close mechanism

When paper is stacked in the stapler tray, the paper exit guide plate [A] is opened to cancel the load on the paper exit roller.

When paper is stacked in the stapler tray, the paper exit guide plate remains open from the first page to the last page, and after the stapling operation is finished, the paper exit guide plate is closed, and the paper is ejected by the paper exit roller and release belt.

The switching action of the paper exit guide plate is driven by the paper exit guide plate open/close motor [B] via a link.

The home position of the paper exit guide plate is detected by the paper exit guide plate open/close HP sensor [C].



Stapler displacement mechanism

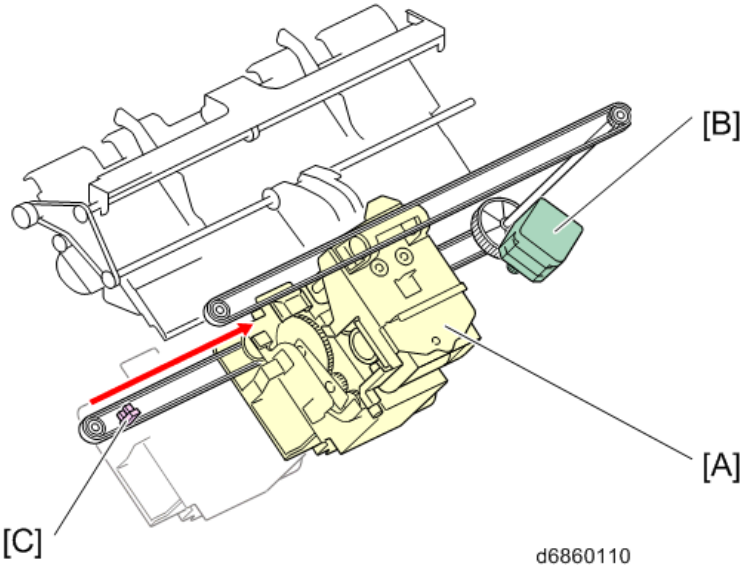
The stapler unit [A] staples the stack of sheets.

The stapling position changes with the stapling mode and paper size.

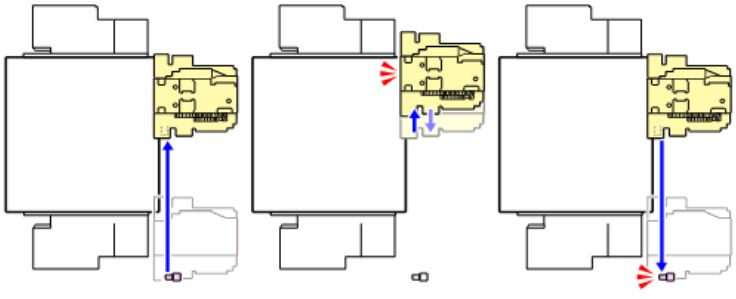
When the operation starts after power is switched on, or the front door opens and closes, the main controller board drives the stapler transfer motor [B] to return the stapler unit to the home position.

The stapler unit starts to transfer the paper to the front side of the stapler frame, and when the stapler HP sensor [C] under the stapler unit detects the screen, it temporarily stops. Then, the stapler transfer motor is driven for a predetermined number of pulses. The stapler unit moves to the rear side, and stands by.

To prevent the stapler unit colliding with the feedout pawl and trailing edge fences, a stapler retreat sensor is provided.



Edge binding mode (one position):



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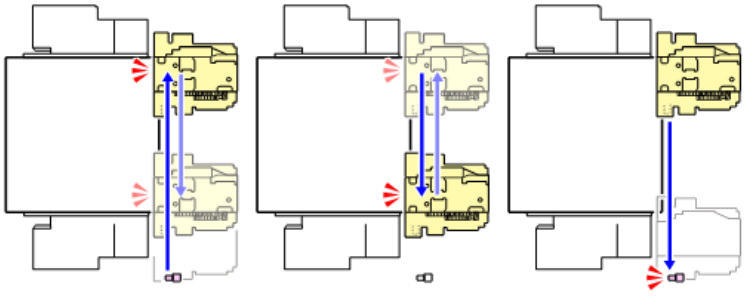
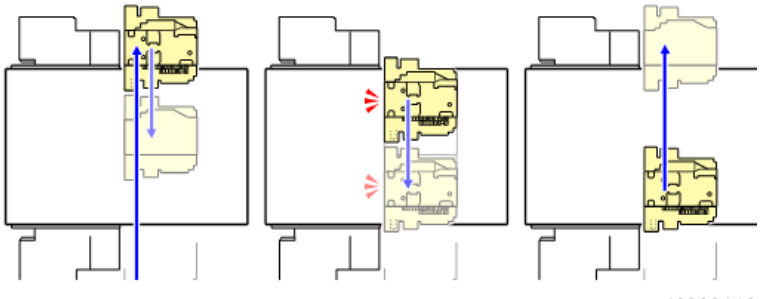
Edge binding mode (two positions):



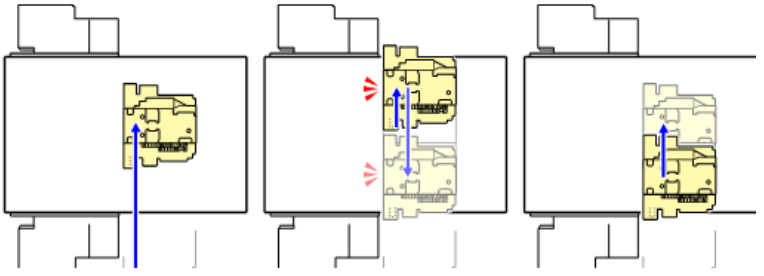
d6860112

Booklet stitch mode (small sizes: B5, A4, LT):



d6860113

Booklet stitch mode (large sizes: LG, B4, A3, DLT, 12"×17.7"):



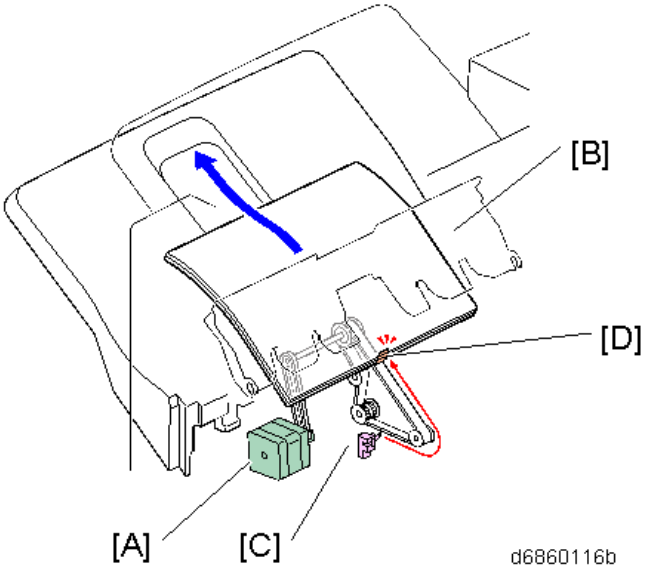
Release mechanism

Paper exits to the shift tray by the feedout pawl and the paper exit roller after the stapling is done.

When the feedout pawl motor [A] turns ON, the release belt is driven and the paper is moved upwards by the feedout pawl [D].

When the stapled stack touches the paper exit roller, the paper exit guide plate [B] closes and the paper is released. To prevent the stack from moving up too much, the feedout pawl motor is stopped temporarily.

The home position of the release belt is detected by the feedout pawl HP sensor [C].



Booklet stitching mechanism

Paper which has been stitched in the center is pressed in by the booklet stitch folding roller with the folding blade.

The paper folded by the folding roller is released by the paper exit shutter, and is stacked in the booklet tray one sheet at a time.

A compact layout is achieved by sharing the edge binding stapler, booklet tray, transport, and stack.

The stapler unit and the folding process unit are divided.

Booklet stitch bundle transport and pressure release

In the case of booklet stitching, the paper must be transported to the stapling position.

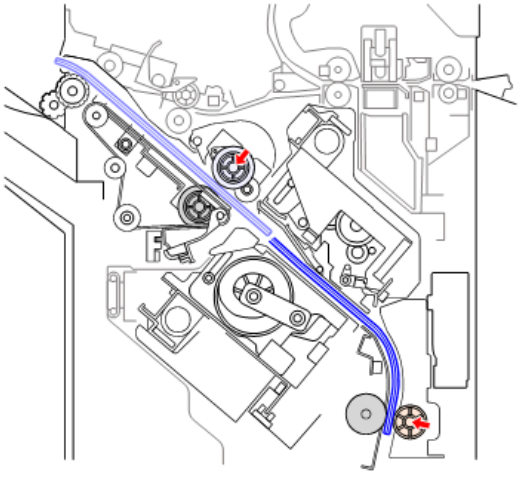
Booklet transport rollers are provided at two positions, upper and lower. The transport and timing of the rollers which transport the bundle differ according to the paper size.

A3, DLT, 12"×17.7"

After booklet stitching is complete, the (upper) booklet transport pressure release motor operates, and at the same time, the (lower) booklet transport roller starts applying pressure.

B4 or smaller

The (lower) booklet transport roller starts to pressurize after a certain amount of paper (as much as the leading edge goes through the nip of the (lower) booklet transport roller) for each size is transferred after booklet stitching is done.



d6860118

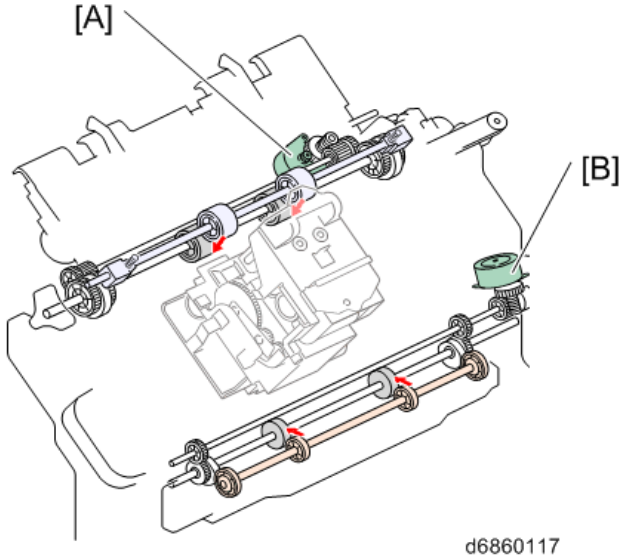
The booklet transport rollers transport the paper and apply pressure.

They transport the paper to the stapling position, and thence to the folding unit.

Transport and pressure/release are driven by upper and lower motors.

Upper: Booklet transport (upper) pressure release motor [A] (also performs trailing edge fence retreat)

Lower: Booklet transport (lower) pressure release motor [B]



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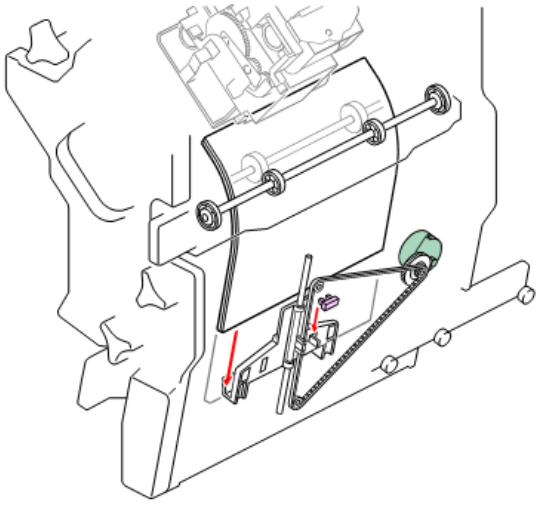
Edge stopper operation

The paper is transported to the leading edge stopper of the paper folding unit.

The leading edge stopper moves to the standby position according to the folding size.



d6860119

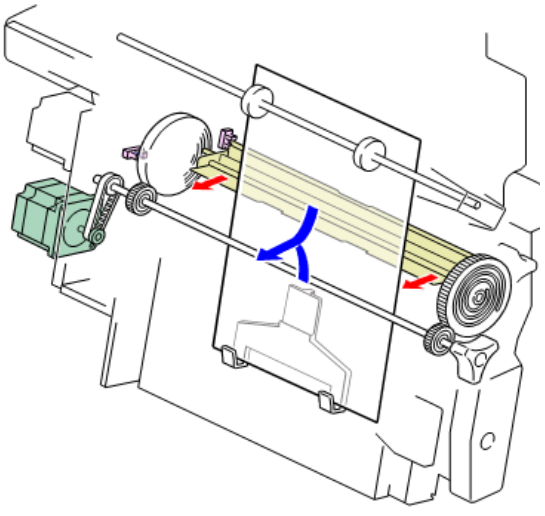
Folding blade operation

The binding position is pressed by the movement of the folding blade, and pushed in until the folding roller grips.

The movement is performed by front and rear folding cams, and the folding blade moves horizontally.

The rotation of the folding cam is controlled by the folding cam HP sensor, and the folding blade is controlled by the folding blade HP sensor.

This is driven by the folding blade motor.

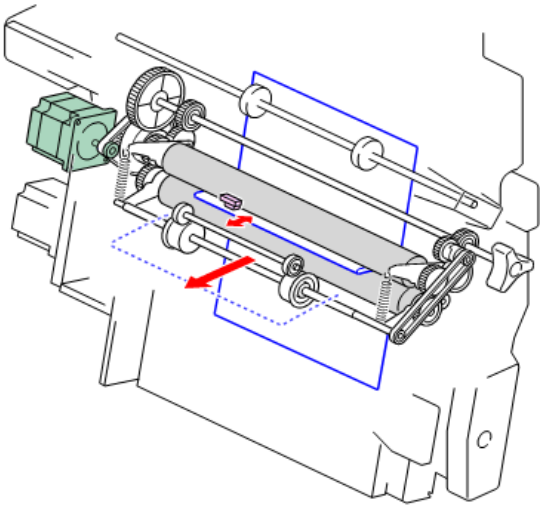


d6860120

Folding roller operation

The folding rollers apply pressure up and down by springs, and press the binding parts.

When the stitching position reciprocates back and forth, the paper is folded again, and the paper is then ejected.



d6860121

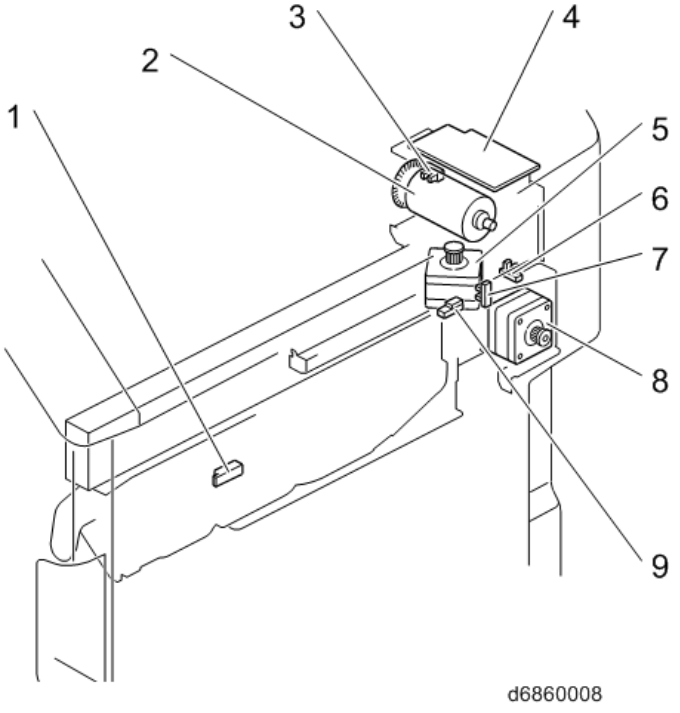
Punch Unit PU3050 (D717)

Changes from the Previous Machine

To prevent fire spreading from the circuit board, a cover [A] is placed over the controller board.

d238m0813

Parts Layout



d6860008

No.	Description	No.	Description
1	Hopper full sensor	6	Punch unit HP sensor
2	Punch drive motor	7	Horizontal registration correction unit HP sensor
3	Punch HP sensor	8	Horizontal registration correction motor
4	Controller	9	Horizontal registration correction sensor
5	Punch unit movement motor		

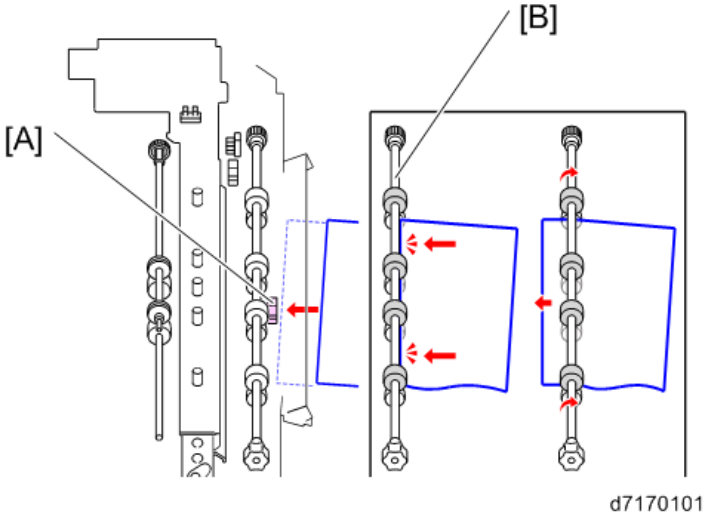
Mechanism

The punch unit is in the finisher paper feed unit, and when paper transported from the main machine stops, it makes two punch holes in the rear edge of the paper one sheet at a time.

Offset in the angle of the paper is corrected by skew correction, and offset in the lateral direction is corrected by moving the punch unit.

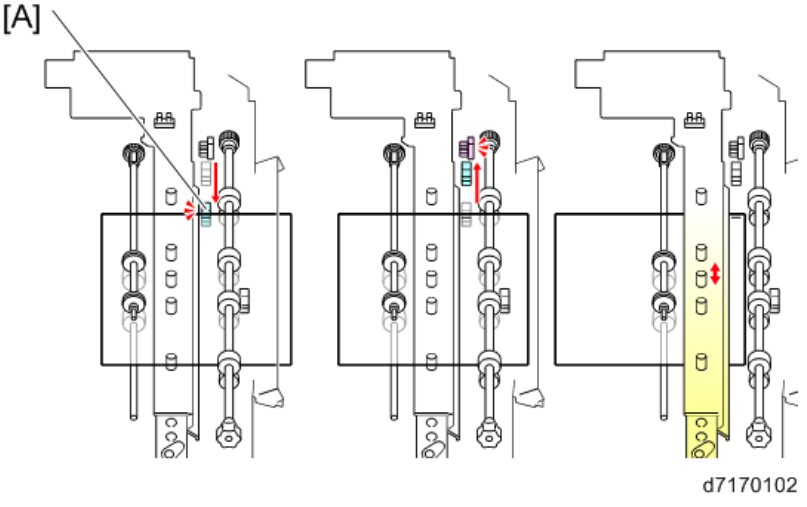
Skew Correction

1. Paper is output from the main machine.
2. The entrance sensor [A] detects the paper.
3. The paper is brought into contact with the entrance roller [B].
4. Skew correction is applied to the paper, and it is transported.



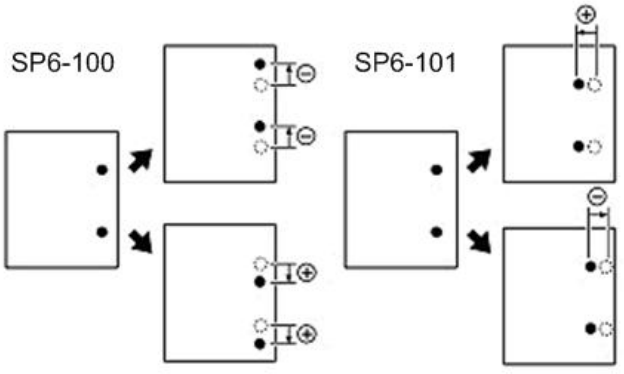
Registration

1. The horizontal registration correction sensor [A] detects the lateral offset of the paper.
2. The punch unit moves by the lateral offset detection amount, and completes punching.



Punch hole alignment adjustment

SP	Description
SP6-100-001	Sub-scanPunchPosAdj:2K/3K FIN JPN/EU: 2-Hole
SP6-100-002	Sub-scanPunchPosAdj:2K/3K FIN NA: 3-Hole
SP6-100-003	Sub-scanPunchPosAdj:2K/3K FIN Europe: 4-Hole
SP6-100-004	Sub-scanPunchPosAdj:2K/3K FIN NEU: 4-Hole
SP6-100-005	Sub-scanPunchPosAdj:2K/3K FIN NA: 2-Hole
SP6-101-001	Main-scanPunchPosAdj:2K/3K FIN JPN/EU: 2-Hole
SP6-101-002	Main-scanPunchPosAdj:2K/3K FIN NA: 3-Hole
SP6-101-003	Main-scanPunchPosAdj:2K/3K FIN Europe: 4-Hole
SP6-101-004	Main-scanPunchPosAdj:2K/3K FIN NEU: 4-Hole
SP6-101-005	Main-scanPunchPosAdj:2K/3K FIN NA: 2-Hole

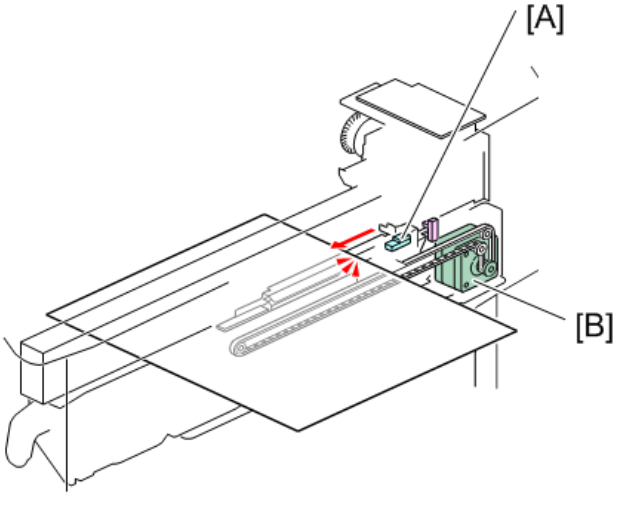


d1463124

Paper position detection

When the horizontal registration correction sensor [A] of the punch unit detects the leading edge of the paper from the MFP, the horizontal registration correction motor [B] is driven, and starts to move the punch unit to the front.

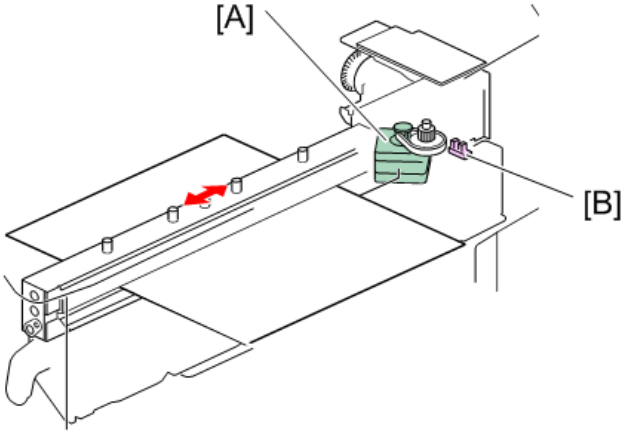
After the horizontal registration correction sensor detects the paper rear edge (as viewed from the front of the machine), the machine compares it with the paper size set in the MFP. The horizontal registration correction motor is then driven to a predetermined position at the front, and stops the punch unit.



d7170103

Punch unit movement

The punch unit moves towards the front or the rear according to the paper size. The front-rear movement is driven by the punch unit movement motor [A]. The home position of the punch unit is detected by the punch unit HP sensor [B].



d7170104

Punch drive

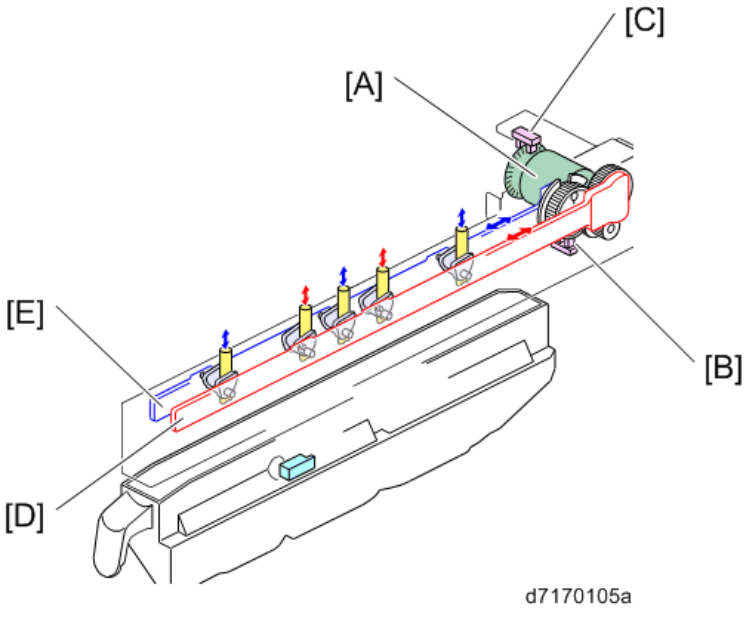
Punching is driven by the punch drive motor [A]. The punch home position is detected by the punch HP sensor [B].

Punch drive motor rotation control feeds back the encoder wheel rotation speed detected by the punch pulse wave count sensor [C] to the punch drive motor.

Punching is performed by moving the punch unit once back and forth, by rotating the punch shaft 180 degrees from the home position.

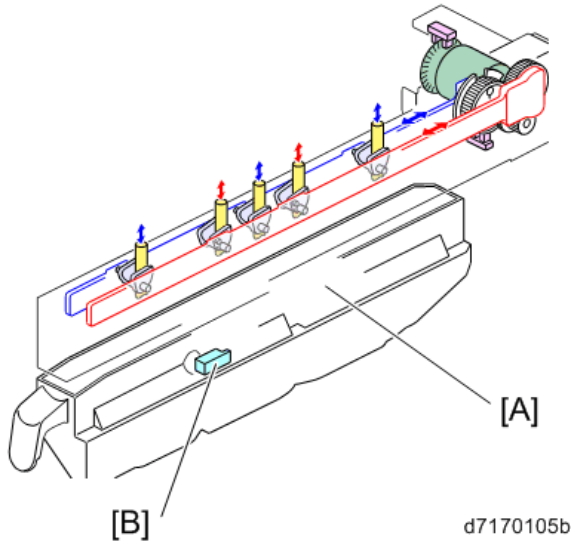
In the home position, the punch HP sensor is ON. The first sheet is punched by rotating the punch shaft 180 degrees in the forward direction, and is completed when the punch HP sensor switches from OFF to ON. The 2nd sheet is punched by rotating the punch shaft 180 degrees in the reverse direction, and is completed when the punch HP sensor switches from OFF to ON.

For 2 hole punch [D] and 3 hole punch [E], the timings are different.



Punch scrap collection/full detection

Punch scraps are collected by the hopper [A] provided under the punch unit. There is a hopper full sensor [B] in the hopper unit, and when punch scraps fill up to the sensor, the hopper is detected to be full.



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